



Oventrop GmbH & Co. KG
Paul-Oventrop-Str. 1
D-59939 Olsberg
Germany
Phone +49 2962 82 0
Fax +49 2962 82 450
E-Mail mail@oventrop.com
Internet www.oventrop.com



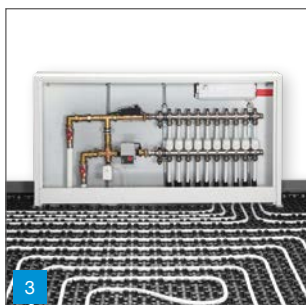
1

Radiator valves and controllers



2

Electronic room temperature control



3

Surface heating and cooling with individual room temperature control



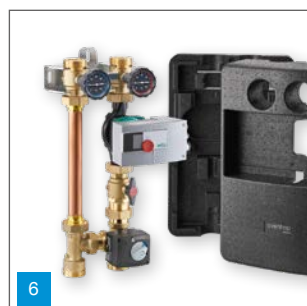
4

Hydronic control valves



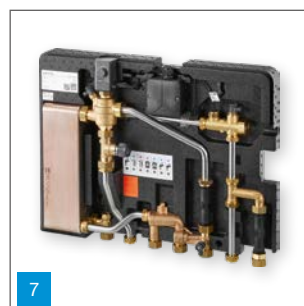
5

Flow controllers



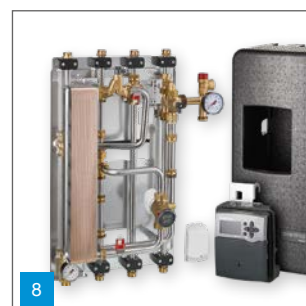
6

Stations for boiler connection



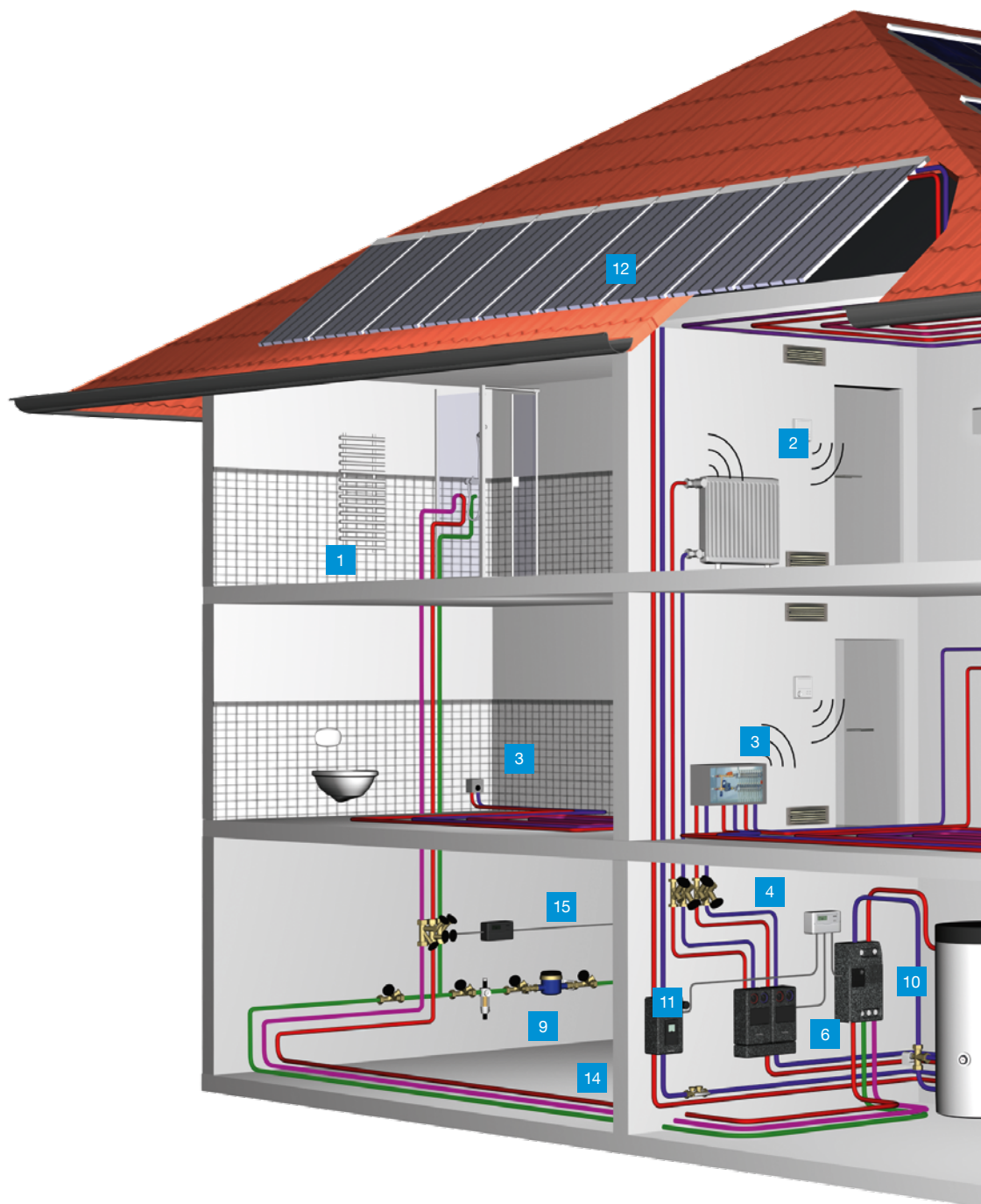
7

Dwelling stations



8

Local and district heating stations



System expertise for heating, cooling and potable water



16

Heating oil equipment



15

Central control technology



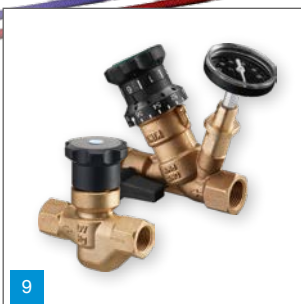
14

Connection technology



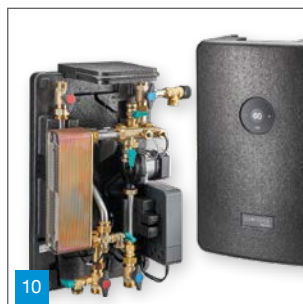
13

Energy storage centre/
Storage cylinders



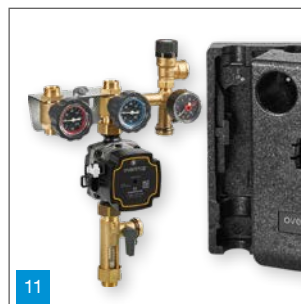
9

Products for potable water



10

Stations for hot potable water
preparation



11

Stations for solar thermal energy



12

Solar collectors



1.1 Room temperature and climate control
Hydronic balancing at the radiator



1.2 Surface heating and cooling "Cofloor"



2.1 Hydronic balancing in heating and cooling systems



2.2 Isolating and other pipe fittings



2.3 Dirt and magnetite separators



3.1 Stations for heating, cooling, potable water for dwellings/buildings



3.2 Local and district heating technology



3.3 Storage cylinders



3.4 Connection technology
"Combi-System"



4 Potable water technology
"Aquanova-System"



5.1 Heating oil technology



5.2 Solar thermal energy



6 Smart Home, centralised building control systems and other electronic controls



7 Customers services and data

1 Room climate	1.1	Room temperature and climate control / Hydronic balancing at the radiator Thermostats, room thermostats, actuators, controllers, fittings, valves and valve inserts	
	1.2	Surface heating and cooling “Cofloor” “Unidis” Surface heating system with local flow distribution, “Unibox” Room temperature control, “Cofloor” Systems, “Copex” Pipes and accessories, “Multidis” Distributors/collectors and “Regufloor” Control units	
2 Hydraulics	2.1	Hydronic balancing in heating and cooling systems “Hycocor”/“Hydrocontrol” Regulating and isolating valves, “Hydromat” Differential pressure and flow regulators, “Cocon” Regulating valves for automatic hydronic balancing and measuring systems	
	2.2	Isolating and other pipe fittings Valves, ball valves, gate valves and butterfly valves	
	2.3	Dirt and magnetite separators Dirt separators, magnetite separators, airvents and strainers	
3 Stations Storage cylinders Pipes	3.1	Stations for heating, cooling, potable water for dwellings/buildings “Regumat” Stations for the connection of heat generators to the heating circuit, “Regudis W” Dwelling stations and “Regumaq” Stations for hot potable water separation	
	3.2	Local and district heating technology “Regudis H-HT” Transmission station, components and accessories	
	3.3	Storage cylinders “Regucor” Energy storage centres and “Hydrocor” Storage cylinders	
	3.4	Connection technology “Combi-System” “Cofit” Fittings, “Cope” / “Copex” Pipes and accessories	
4 Potable water	4	Potable water technology “Aquanova-System” Isolating valves, valves for static or automatic thermal regulation, filters, distribution and flushing systems for the efficient and hygienic operation of potable water installations	
5 Oil Solar	5.1	Heating oil technology Filters, deaerators, tank equipment and fittings	
	5.2	Solar thermal energy “Regusol” Stations, “OKP”/“OKF” Collectors, “Solcos” Solar packages, components and accessories	
6 Smart Home Smart Building	6	Smart Home, centralised building control systems and other electronic controls “DynaTemp HA” Home Automation, “DynaTemp BA” Building Automation, “OVgateway”, actuators, components and accessories	
7		Customer services and data Customer service, calculations, seminars, software, measuring systems, data (ARGE Neue Medien, Datanorm, BIM, ETIM)	
8		General information Indices, Standard Terms and Conditions, Imprint	

1 Room climate

1.1 Room temperature and climate control / Hydronic balancing at the radiator	
Content	17
1.1.a Thermostats	24
1.1.b Room thermostats	38
1.1.c Actuators	42
1.1.d "i-Tronic" Climate display device	50
1.1.e "R-Tronic" Climate display device/control wibutler gateway and hydronic balancing	52
1.1.f Valves with "Q-Tech" for automatic hydronic balancing	62
1.1.g Valves for manual hydronic balancing	70
1.1.h Valves for large flow rates	84
1.1.i Thermostatic valve sets	90
1.1.j Exclusive radiator valves	94
1.1.k "Multiblock T/ T-RTL" Fittings for radiators with centre connection	100
1.1.l Valve sets, components and accessories for two pipe heating systems	110
1.1.m Valve sets, components and accessories for one pipe heating systems	114
1.1.n "Unofix" Refurbishment of one pipe heating systems	124
1.1.o Valve inserts for radiators with integrated distributor	128
1.1.p Valve inserts	134
1.1.q Return temperature limiters	138
1.1.r Manual radiator valves	142
1.1.s "Q-Tech" Fittings for automatic hydronic balancing	144
1.1.t Fittings for radiators with integrated distributor	146
1.1.u Lockshield valves for conventional radiators	152
1.1.v Distributors/collectors	156
1.1.w Conversion fittings/Accessories for radiators	160
1.1.x Connection technology	164
1.2 Surface heating and cooling "Cofloor"	
Content	173
1.2.a System summary	178
1.2.b "Unibox" Return temperature control	182
1.2.c "Unibox" Room temperature control	192
1.2.d "Unidis" Surface heating system with local distribution	196
1.2.e Accessories for "Unibox"	200
1.2.f "Unibox" (until 2019)	202
1.2.g Room thermostats	208
1.2.h Room thermostats with wireless transmitter, wireless receivers	210
1.2.i Actuators	216
1.2.j "Cofloor" Systems, "Copex" Pipes and accessories	218
1.2.k "Multidis SFQ" distributors/collectors with "Q-Tech" for automatic hydronic balancing	234
1.2.l "Multidis SF/SFB/SFI" Distributors/collectors for surface heating and cooling systems	238
1.2.m "Regufloor" Control units	248
1.2.n Single components for distributors/collectors	256
1.2.o Regulating sets for surface heating systems	260
1.2.p Return temperature limiter set	264
1.2.q Components for concrete core activation	268

2 Hydronics

2.1 Hydronic balancing in heating and cooling systems	
Content	273
2.1.a System summary	278
2.1.b "Hycoccon" Control, regulating and isolating valves	284
2.1.c "Hydrocontrol" Regulating and isolating valves	298
2.1.d "Hydromat" Differential pressure and flow regulators	308
2.1.e Accessories for "Hydrocontrol", "Hydromat", "Hycoccon"	312
2.1.f "Hycoflow" Double regulating and commissioning valves with flow display	322
2.1.g "Cocon" Regulating valves	324
2.1.h "Optibal" W6 Six-way ball valve	338
2.1.i "Flypass" Connection systems, valves and fittings	342
2.1.j "Tri-CTR" Three-way valves, temperature controllers	350
2.1.k Room thermostats, actuators	354
2.1.l "OV-DMC 3" Measuring system	362
2.1.m Products for air conditioning and ventilation	368
2.1.n Products for radiant and chilled ceiling systems	372

2.1.o	Connection technology	376
2.2	Isolating and other pipe fittings	
	Content	379
2.2.a	"Optibal" Ball valves	382
2.2.b	"Hygate" Gate valves	392
2.2.c	Valves PN 16/25	396
2.2.d	Butterfly valves	400
2.2.e	Piston type spring assisted check valves, swing type check valves	404
2.2.f	Spare parts	408
2.3	Dirt and magnetite separators	
	Content	409
2.3.a	Dirt separators	412
2.3.b	Airvents	416
2.3.c	Strainers	418

3 Stations, storage cylinders, pipes

3.1	Stations for heating, cooling, potable water for dwellings/buildings	
	Content	423
3.1.a	"Regumat 130/180" DN 20/25/32	428
3.1.b	"Regumat 220/280" DN 40/50	454
3.1.c	"Regumat F/FR" Stations for thermally controlled surface heating systems	462
3.1.d	"Regumat RTA" Stations for solid fuel boilers for return temperature increase	470
3.1.e	Products for heat pump systems	478
3.1.f	"Regumat S/M3-180" DN 25 for heat meters	482
3.1.g	Accessories for "Regumat"	486
3.1.h	"Regudis W" Dwelling stations	502
3.1.i	"Regumaq X" Fresh water stations	534
3.1.j	Further associated products	556
3.2	Local and district heating technology	
	Content	571
3.2.a	Local and district heating technology	574
3.3	Storage cylinders	
	Content	583
3.3.a	"Regucor WHS" Energy storage centres	586
3.3.b	"Regucor WHP" Energy storage centre ("Power to heat")	598
3.3.c	"Hydrocor" Storage cylinders	602
3.4	Connection technology "Combi-System"	
	Content	607
3.4.a	"Copipe", "Copex" and "Copert" pipes	612
3.4.b	"Cofit P" Press connection technology (bronze)	620
3.4.c	"Cofit PD" Press connection technology (bronze, pressing must be carried out to tighten the connection)	630
3.4.d	"Cofit PDK" Press connection technology (plastic, pressing must be carried out to tighten the connection)	638
3.4.e	"Cofit S" Screwed connection technology	640
3.4.f	Fixing material and accessories for pipes	646
3.4.g	Tools	648
3.4.h	"Copex HT" PE-Xc Plastic pipe	656
3.4.i	"Cofit PD-HT" Press connection system	658

4 Potable water

4.1	Potable water technology "Aquanova-System"	
	Content	665
4.1.a	System summary	670
4.1.b	"Aquastrum F"/"Aquastrum KFR" valves	674
4.1.c	"Aquastrum FR" and "Aquastrum R" valves	686
4.1.d	"Optibal TW" Ball valves for potable water	688
4.1.e	"Aquastrum VT/T plus" Thermal circulation valves	692
4.1.f	"Aquastrum C" Regulating valves, "Aquastrum P" Water sampling valves	696
4.1.g	"Aquastrum UP" Flush-mounted valves	700

	Page
4.1.h "Aquaström K" Thermostatic cold water circulation valve	710
4.1.i "Brawa-Mix" Thermostatic mixing valves	712
4.1.j "Regucirc" Circulation stations	716
4.1.k "Regudrain" Flushing station	720
4.1.l "Aquamodul" Distributor system for potable water	724
4.1.m "Ofix" Connection fittings	730
4.1.n Domestic water station/Heating system filling station	732
4.1.o "Aquanova" Water filters	734
4.1.p Valves for water softening	738
4.1.q "Multidis R" Sanitary distributor	742
4.1.r Connection technology	746
4.1.s Fresh water stations/Other products for water installations	748
5 Oil, solar	
5.1 Heating oil technology	
Content	751
5.1.a General information	754
5.1.b Deaerators, filters	758
5.1.c Tank equipment	772
5.1.d Heating oil valves in the pipework	786
5.1.e Fittings	792
5.1.f Heating oil kits for export	800
5.2 Solar thermal energy	
Content	803
5.2.a "Regusol" stations and "Regtronic" controllers for solar thermal energy	808
5.2.b Accessories for "Regusol" stations within the collector circuit	832
5.2.c "OKP" and "OKF" Collectors and accessories	842
5.2.d "Solcos" Solar packages	856
5.2.e "Solar" Diaphragm expansion tanks for solar thermal energy	860
5.2.f Pipes and connection fittings	862
5.2.g Valves, temperature controllers, actuators and other accessories for application outside the collector circuit	864
5.2.h Further accessories	872
6 Smart Home, Smart Building	
6.1 Smart Home, centralised building control systems and other electronic controls	
Content	875
6.1.a "DynaTemp" Home and Building automation	878
6.1.b "DynaTemp HA" Home Automation	880
6.1.c "DynaTemp BA" Building Automation	888
6.1.d "DynaTemp BA" Building Automation Local and central individual room temperature control via bus system "CR-BSX"	892
6.1.e "DynaTemp BA" Building Automation Automatic thermal balancing and thermal disinfection in potable water circulation systems "CW-BS"	900
6.1.f "DynaTemp BA" Building Automation Networking of stations for heat generator/heating circuit and solar thermal energy "CS-BS"	904
6.1.g Actuators, sensors, valves and fittings	916
7 Customer services and data	
7.1 Services, software and data	
Content	923
7.1.a Service	926
7.1.b Software, data, data sets	932

8 General information

8.1	General information	
	Content	935
8.1.a	Indices	938
8.1.b	General conditions	986
8.1.c	Imprint	988



1.1.a Thermostats

Content	23
Thermostat "Uni XH" (M 30 x 1.5)	24
Thermostat "Uni XHM" (M 30 x 1.5)	24
Thermostat "Uni XHT" (M 30 x 1.5)	24
Thermostat "Uni LH" (M 30 x 1.5)	25
Thermostat "Uni LGH" (M 30 x 1.5)	25
Thermostat "Uni LHB" (M 30 x 1.5)	26
Thermostat "Uni SH" (M 30 x 1.5)	26
Thermostat "pinox H" (M 30 x 1.5)	27
Thermostat "vindo TH" (M 30 x 1.5)	27
Thermostat "Uni CH" (M 30 x 1.5)	27
Thermostat with remote control "Uni FH" (M 30 x 1.5)	28
Thermostat "Uni XD" (squeeze connection)	29
Thermostat "Uni LD" (squeeze connection)	30
Thermostat "Uni LDB" (squeeze connection)	30
Thermostat "pinox D" (squeeze connection)	31
Thermostat "vindo TD" (squeeze connection)	31
Thermostat "vindo RTD"	31
Thermostat with remote control "Uni FD" (squeeze connection)	32
Thermostat "Uni LDV" (squeeze connection)	32
Thermostat "Uni LDVL" (squeeze connection)	32
Thermostat "Uni L" M 30 x 1.0	33
Special thermostats	33
"mote 200" Electronic wireless thermostat (bluetooth)	34
Accessories for thermostats	35
Manual heads	36



1.1.b Room thermostats

Content	37
Room thermostats (heating)	38
Room thermostats (heating/cooling)	39
Room thermostats (heating/cooling) with fan drive	40



1.1.c Actuators

Content	41
Combination possibilities of valves and actuators	42
"Aktor T" Electrothermal actuators	44
"Aktor M" Electromotive actuators	46
"Aktor M KNX" Electromotive actuator	47
"mote 420" Wireless actuator	47

1.1.d "i-Tronic" Climate display device

Content	49
"i-Tronic TFC"	50

1.1.e "R-Tronic" Climate display device/control wibutler gateway and hydronic balancing

Content	51
"R-Tronic RT B" Wireless thermostat	52
"R-Tronic RTF B" Wireless thermostat with humidity display	53
"R-Tronic RTFC K" Wireless thermostat with humidity and CO2 display	53
"mote 320" Wireless actuator (M 30 x 1.5)	54
"mote 320" Wireless actuator (squeeze connection)	54
"R-Con" Wireless receiver	55
Accessories	56
"FK-C F" Wireless window contact	56
RP-S F Wireless repeater	56
"R-Con 2P" Wireless receiver (1 channel)	56
wibutler Basic sets	58
"R-Tronic RT B" (ENOCLEAN) Wireless thermostat for Smart Home applications	59
"R-Tronic RTF B" (ENOCLEAN) Wireless thermostat for Smart Home applications	59
"mote 420" Wireless actuator for Smart Home applications	59
Accessories	60
"FK-C F" Wireless window contact	60
"RP-S F" Wireless repeater	60

1.1.f Valves with "Q-Tech" for automatic hydronic balancing

Content	61
Thermostatic valves "AQ"	62
Thermostatic valves "RFQ"	63
Exclusive radiator valves "EQ"	64
"Multiblock TQ" Two pipe fitting	65
"Multiblock TQ-RTL"	66
"Demo-Bloc"	67

1.1.g Valves for manual hydronic balancing

Content	69
Thermostatic valves "AV 9"	70
Thermostatic valves "AV 9" (press connection)	71
Thermostatic valves "AV 9" (male thread)	72
Thermostatic valves "CV 9"	73
Thermostatic valves "AF"	74
Accessories	76
Thermostatic valves "ADV 9"	77

Thermostatic valves "RFV 9"	78
Uniset Radiator valve sets	80
Radiator lockshield valve "Combi 3G"	80
"Demo-Bloc"	81

1.1.h Valves for large flow rates



Content	83
Thermostatic valves "A"	84
Thermostatic valves "A" (male thread)	85
Thermostatic valves "AZ V"	86
Thermostatic valves "AZ H"	86
Thermostatic valves "RF"	87

1.1.i Thermostatic valve sets



Content	89
Thermostatic valve sets with thermostat "vindo TH"	90
Thermostatic valve sets with thermostat "Uni LH"	91
Connection sets "Multiflex F" with thermostat "vindo TH"	91

1.1.j Exclusive radiator valves



Content	93
Thermostatic valves "E"	94
Design handgrips	95
Radiator lockshield valves "Combi E"	96
Sets of compression fittings (1-fold)	96
T-pieces	96
Wall connection sets (1-fold)	97
Thermostatic valve sets "E"	98

1.1.k "Multiblock T/ T-RTL" Fittings for radiators with centre connection



Content	99
"Multiblock T" Two pipe fitting	100
"Multiblock TU" One/two pipe fitting convertible	101
Design covers	102
Connection sets "Multiblock T"/"Uni SH" for towel radiators (radiators with G ½ female thread)	103
Connection sets "Multiblock T"/"pinox H" for towel radiators (radiators with G ½ female thread)	103
"Multiblock TFU" One/two pipe fitting convertible	104
Connection sets "Multiblock TFU"/"Uni SH" for towel radiators (radiators with G ½ female thread)	104
"Multiblock T-RTL"	105
Connection sets "Multiblock T-RTL"/"Uni SH"	107
Connection sets "Multiblock T-RTL"/"pinox H"	107



1.1.l Valve sets, components and accessories for for two pipe heating systems

Content	109
"Bypass-Combi Duo" two pipe with shut off	110
"Duo" Two pipe connection piece with shut off	110
Connection pieces	111
"Duo" Two pipe connection piece without shut off	112
Two pipe radiator valve with insertion tube with shut off	112
Valve for TKM system	112
Angle pattern fitting	112



1.1.m Valve sets, components and accessories for one pipe heating systems

Content	113
"Bypass-Combi Uno" one pipe	114
"Uno" One pipe connection piece	115
"Uno" One pipe connection piece M 24 x 1.5	116
"Ofix" Compression fittings M 24 x 1.5	116
"Cofit S" Compression fittings M 24 x 1.5	116
Plastic rosette cover	116
One pipe radiator valve with insertion tube with fixed bypass and shut off	117
Valve for TKM system	117
Angle pattern fitting	117
Three-way conversion valves	118
Accessories	118
Isolation fittings	120
S-connection fitting, flat sealing	121
Tailpipe sets	121



1.1.n "Unofix" Refurbishment of one pipe heating systems

Content	123
System illustrations	124
"Cocon QTZ" Pressure independent control valves PN 16	125
"Aktor T" Electrothermal actuators	125
Accessories	126



1.1.o Valve inserts for radiators with integrated distributor

Content	127
Valves inserts with "Q-Tech"	128
Valve inserts (M 30 x 1.5)	130
Valve inserts (squeeze connection)	132



1.1.p Valve inserts

Content	133
Valve inserts for valves with connection thread M 30 x 1.5	134
Valve inserts for valves with connection thread M 30 x 1.0 (for valves manufactured up to 1998)	136



1.1.q Return temperature limiters

Content	137
Return temperature limiter valves for thermostat "Uni RTLH"	138
Thermostat "Uni RTLH"	138
Thermostat "Uni RTL"	138
Valve inserts	139
Extension	139
Gland nut	139
Return temperature limiter sets	140



1.1.r Manual radiator valves

Content	141
Manual radiator valves "HRV"	142
Manual radiator valves "HR"	142



1.1.s "Q-Tech" Fittings for automatic hydronic balancing

Content	143
"Multiflex FQ" Fittings for G 1/2 female thread	144
"Multiflex FQ" Fittings for G 3/4 male thread	144



1.1.t Fittings for radiators with integrated distributor

Content	145
"Multiflex F" Fittings for G 1/2 female thread	146
"Multiflex F" Fittings for G 3/4 male thread	148
Radiator connection	149
Inversion fittings	149
Connection fittings	150
Plastic rosette cover, white	150



1.1.u Lockshield valves for conventional radiators

Content	151
"Combi 4"	152
"Combi C"	152
"Combi 3"	153
"Combi 2"	154
"Combi LR"	154



1.1.v Distributors/collectors

Content	155
"Multidis SH" Stainless steel distributor/collector	156
Ball valves	156
Flush-mounted cabinets	157
Ring spanner	157
Floor distributor/collector	157



1.1.w Conversion fittings/Accessories for radiators

Content	159
Conversion fittings	160
Strainer inserts	161
Accessories for radiators	162



1.1.x Connection technology





Content	163
"Ofix" Compression fittings	164
"Ofix" Compression fittings (2-fold)	166
"Cofit S" Compression fittings	167
Summary	168
Installation examples	169
"Ofix" for the connection of standard pipes to Oventrop valves and controls	170
Brass reinforcing sleeves	167



1.1.a Thermostats

Content

Thermostat "Uni XH" (M 30 x 1.5)	24
Thermostat "Uni XHM" (M 30 x 1.5)	24
Thermostat "Uni XHT" (M 30 x 1.5)	24
Thermostat "Uni LH" (M 30 x 1.5)	25
Thermostat "Uni LGH" (M 30 x 1.5)	25
Thermostat "Uni LHB" (M 30 x 1.5)	26
Thermostat "Uni SH" (M 30 x 1.5)	26
Thermostat "pinox H" (M 30 x 1.5)	27
Thermostat "vindo TH" (M 30 x 1.5)	27
Thermostat "Uni CH" (M 30 x 1.5)	27
Thermostat with remote control "Uni FH" (M 30 x 1.5)	28
Thermostat "Uni XD" (squeeze connection)	29
Thermostat "Uni LD" (squeeze connection)	30
Thermostat "Uni LDB" (squeeze connection)	30
Thermostat "pinox D" (squeeze connection)	31
Thermostat "vindo TD" (squeeze connection)	31
Thermostat "vindo RTD"	31
Thermostat with remote control "Uni FD" (squeeze connection)	32
Thermostat "Uni LDV" (squeeze connection)	32
Thermostat "Uni LDVL" (squeeze connection)	32
Thermostat "Uni L" M 30 x 1.0	33
Special thermostats	33
"mote 200" Electronic wireless thermostat (bluetooth)	34
Accessories for thermostats	35
Manual heads	36

Article	Control range	Packing unit	Article-No.	Hint
Thermostat "Uni XH" (M 30 x 1.5) with liquid sensor marking "Uni XH" on lower side				Temperature setting may be limited or locked by using the limiting elements. With setting device for visually handicapped persons. Marking of a set value by using the memo disk. Max. heating water temperature: 120 °C
	white	7-28 °C	(10) 1011365	<u>with '0' setting</u> <u>without '0' setting</u>
	white	7-28 °C	(10) 1011364	
Thermostat "Uni XHM" (M 30 x 1.5) with liquid sensor marking "Uni XHM" on lower side with higher specific piston stroke				In combination with valves, the specific piston stroke and thus the k_v -value is higher compared to the other Oventrop valves. Especially suitable for the valve design with 1K P-deviation.
	white,			<u>with '0' setting</u> <u>without '0' setting</u>
	with remote sensor			
	capillary 2 m long	7-28 °C	(10) 1011565	
	capillary 5 m long	7-28 °C	(10) 1011566	
	capillary 2 m long	7-28 °C	(10) 1011582°	
Thermostat "Uni XHT" (M 30 x 1.5) with liquid sensor marking "Uni XHT" on lower side				Max. heating water temperature: 90 °C
	white	7-28 °C	(10) 1011360	<u>with '0' setting</u>
Thermostat "Uni XHT" (M 30 x 1.5) with liquid sensor marking "Uni XHT" on lower side				
	transparent	7-28 °C	(10) 1011300°	<u>with '0' setting</u>

Awards:

Interclima Paris
Trophée du DesignIndustrial Design Forum Hanover
Award iF

Article	Control range	Packing unit	Article-No.	Hint
---------	------------------	-----------------	-------------	------

Thermostat "Uni LH" (M 30 x 1.5)
with liquid sensor
marking "Uni LH" on lower side



white	7-28 °C	(10)	1011465
white	7-28 °C	(10)	1011464
white	8-38 °C	(10)	1011488

Temperature setting may be limited or locked
by using the concealed limiting elements.
With setting device for visually handicapped
persons. Marking of a set value by using the
memo disk.

Max. heating water temperature: 120 °C

with '0' setting

without '0' setting

For indoor swimming pools and health spa.

bld Busse Design Ulm
award Longlife Design Award



signal grey with collar nut cover (RAL 7004)	7-28 °C	(25)	1011461°
anthracite with collar nut cover (RAL 7016)	7-28 °C	(25)	1011467
gold plated with collar nut cover	7-28 °C	(25)	1011468
chrome plated with collar nut cover	7-28 °C	(25)	1011469

with '0' setting



white, with remote sensor			
capillary 2 m long	7-28 °C		1011665
capillary 5 m long	7-28 °C	(75)	1011666
capillary 2 m long	7-28 °C	(75)	1011682

with '0' setting

without '0' setting



capillary 2 m long	8-38 °C	(10)	1011688
--------------------	---------	------	----------------

For indoor swimming pools and health spa.

without '0' setting

Thermostat "Uni LGH" (M 30 x 1.5)
with liquid sensor

white		(100)	1018561
-------	--	-------	----------------



Article	Control range	Packing unit	Article-No.
---------	------------------	-----------------	-------------

Hint

Thermostat "Uni LHB" (M 30 x 1.5)with liquid sensor
marking "Uni LHB" underneath
the memo disk

white

7-28 °C

(10) 1011410

Lockshield configuration with concealed
temperature setting, integrated anti-theft
device and increased flexional strength.
Max. heating water temperature: 120 °C
Award:

universal design award

without '0' settingTemperature setting is carried out with
the help of the setting key, item no.
1011497, or the universal tool, item no.
1011489.Setting key
for thermostats "Uni LHB" and "Uni LDB"

1011497

For nominal temperature setting at the
thermostat.**Thermostat "Uni SH" (M 30 x 1.5)**with liquid sensor
marking "Uni SH" on lower side

white/chrome plated

7-28 °C

(10) 1012065

white

7-28 °C

(10) 1012066

chrome plated

7-28 °C

(10) 1012069

stainless steel finish

7-28 °C

(10) 1012085



"SH-Cap" Design covers

anthracite (RAL 7016)

(25) 1012080

chrome plated

(25) 1012081

white

(25) 1012082

With setting device for visually handicapped
persons.

Max. heating water temperature: 120 °C

with '0' setting

With mounted design cover "SH-Cap"

With mounted design cover "SH-Cap"

Awards:

International Design Award
Baden Württemberg

DESIGN PLUS ISH Frankfurt











Design Award of the
Federal Republic of Germany
Nominated

Good Design Award Japan



universal design award

The Chicago Athenaeum:
Museum of Architecture and Design
GOOD DESIGN Award"Uni SH" in combination with
"Multiblock T" in stainless steel finish:Design Centre Essen
reddot design awardDesign Award of the
Federal Republic of Germany
Nominated

Article	Control range	Packing unit	Article-No.	Hint
Thermostat "pinox H" (M 30 x 1.5) with liquid sensor marking "pinox H" on lower side				
chrome plated		(12)	1012165	Single-lever thermostat. This thermostat can be fitted to all thermostatic radiator valves with connection thread M 30 x 1.5. Design similar to that of single-lever taps. Max. heating water temperature: 120 °C <u>without '0' setting</u> The thermostat "pinox H" has features which are protected by patent. Awards: DESIGN PLUS ISH Frankfurt 2013  Innovation Award Architecture & Design  ICONIC AWARDS 2013  German Design Award 2014  Interclima Paris Trophée du Design  Industrial Design Forum Hanover Award iF  ICONIC AWARDS 2016 INTERIOR INNOVATION  Plus X Award 2017/2018  EUROPEAN PRODUCT DESIGN AWARD Winner 2018
white		(12)	1012166	
Thermostat "vindo TH" (M 30 x 1.5) with liquid sensor				
white	7-28 °C	(10)	1013066	Temperature setting may be limited or locked by using the limiting elements. With setting device for visually handicapped persons. Max. heating water temperature: 120 °C <u>with '0' setting</u> The thermostat "vindo TH" has features which are protected by patent. Awards:  German Designer Club Good Design 08  Design Award of the Federal Republic of Germany Nominated
Thermostat "Uni CH" (M 30 x 1.5) Design Colanni with liquid sensor marking "Uni CH" on lower side				
white	7-28 °C	(10)	1011265	The thermostat "Uni CH" features a moveable collar not cover. Max. heating water temperature: 120 °C <u>without '0' setting</u>

Article	Control range	Article-No.	Hint
---------	---------------	-------------	------

Thermostat with remote control "Uni FH" (M 30 x 1.5)

Thermostats with remote control and with remote transmission are especially suitable for trench heaters, encased radiators and surface heating systems.
Max. heating water temperature: 120 °C



Thermostat with remote control "Uni FH" white

capillary 2 m long	7-28 °C	1012295
capillary 5 m long	7-28 °C	1012296
capillary 10 m long	7-28 °C	1012297

with '0' setting

white,
with additional remote sensor



capillary 2 m long	7-28 °C	1012395
capillary 5 m long	7-28 °C	1012396

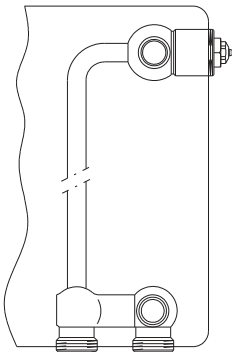
with '0' setting



The thermostats "Uni XH", "Uni XHM", "Uni XHT", "Uni LH", "Uni LHB", "Uni LHZ", "Uni FH", "Uni SH", "Uni CH", "vindo TH" and "pinox H" can be fitted without adapter to the radiators with integrated distributor of the following manufacturers:





- | | | |
|-------------------|-----------------|---------------|
| - ACOVA | - Delta | - Kampmann |
| - Alarko | - Demrad | - Kermi |
| - Arbonia | - DiaNorm | - Korado |
| - Baufa | - Dia-therm | - Purmo |
| - Baykan | - Dunafer | - Radson |
| - boki | - DURA | - Rettig |
| - Bemm | - Emco | - Runtal |
| - Borer | - Heatline | - Starpan |
| - Brema | - Henrad | - Superia |
| - Brugman | - HM-Heizkörper | - Termoteknik |
| - Caradon-Stelrad | - Hoval | - US-Steel |
| - Celikpan | - IMAS | - Vasco |
| - Cöskünöz | - Jaga | - VEHA |
| - Concept | - Jugotherm | - Zehnder |
| - DEF | - Kalor | - Zenith |

(Subject to change without notice)

Example of an integrated distributor for two pipe heating systems. G 3/4 male thread, distance between pipe centres 50 mm.



Article	Control range	Packing unit	Article-No.	Hint
Thermostat "Uni XD" (squeeze connection) with liquid sensor marking "Uni XD" on lower side				These thermostats can be fitted without adapter to the integrated distributors and thermostatic radiator valves with squeeze connection of the company Danfoss, series RA. Squeeze connection with collar nut: – easy installation – close connection Temperature setting may be limited or locked by using the limiting elements. With setting device for visually handicapped persons. Marking of a set value by using the memo disk. Max. heating water temperature: 120 °C <u>with '0' setting</u> <u>without '0' setting</u>
	white	7-28 °C	(10) 1011375	
	white	7-28 °C	(10) 1011374	
	white, with remote sensor			
	capillary 2 m long	7-28 °C	(10) 1011575	<u>with '0' setting</u>

Article	Control range	Packing unit	Article-No.	Hint
Thermostat "Uni LD" (squeeze connection) with liquid sensor marking "Uni LD" on lower side				
	white	7-28 °C	(10) 1011472	Temperature setting may be limited or locked by using the concealed limiting elements. With setting device for visually handicapped persons. Marking of a set value by using the memo disk. Max. heating water temperature: 120 °C <u>without '0' setting</u> <u>with '0' setting</u>
	white	7-28 °C	(10) 1011475	
	signal grey with collar nut cover (RAL 7004)	7-28 °C	(25) 1011470°	<u>with '0' setting</u>
	anthracite with collar nut cover (RAL 7016)		(25) 1011478	
	chrome plated with collar nut cover		(25) 1011479	
	white, with remote sensor			<u>with '0' setting</u>
	capillary 2 m long	7-28 °C	(75) 1011685	
Thermostat "Uni LDB" (squeeze connection) with liquid sensor marking "Uni LDB" underneath the memo disk				
	white	7-28 °C	(10) 1011440	Lockshield configuration with concealed temperature setting, integrated anti-theft device and increased flectional strength. Max. heating water temperature: 120 °C <u>without '0' setting</u> Temperature setting is carried out with the help of the setting key, item no. 1011497, or the universal tool, item no. 1011489.

Article	Control range	Packing unit	Article-No.
---------	------------------	-----------------	-------------

Hint

Thermostat "pinox D" (squeeze connection)
with liquid sensor
marking "pinox D" on lower side

Single-lever thermostat.
The thermostat can be fitted without adapter to
the integrated distributors and thermostatic
radiator valves of the company Danfoss, series
RA.
Design similar to that of single-lever taps.

Max. heating water temperature: 120 °C

without '0' setting

The thermostat "pinox D" has features which
are protected by patent.



chrome plated
white

(12) **1012175**
(12) **1012176**

Thermostat "vindo TD" (squeeze connection)
with liquid sensor

The thermostat can be fitted without adapter to
the integrated distributors and thermostatic
radiator valves of the company Danfoss, series
RA.

Temperature setting may be limited or locked
by using the limiting elements. With setting
device for visually handicapped persons.


Max. heating water temperature: 120 °C

with '0' setting

The thermostat "vindo TD" has features which
are protected by patent.

Awards:

 German Designer Club
Good Design 08

 Design Award of the
Federal Republic of Germany
Nominated



white

7-28 °C (10) **1013076**

Thermostat "vindo RTD"
with liquid sensor
for RTD valves of the company Danfoss

The thermostat can be fitted without adapter to
the integrated distributors and thermostatic
radiator valves with connection thread
M 30 x 1.5 of the company Danfoss,
series RTD.

Cannot be used with Oventrop valves with
connection thread M 30 x 1.5.

Temperature setting max be limited or locked
by using the limiting elements.
With setting device for visually handicapped
persons.

Max. heating water temperature: 120 °C

With '0' setting

The thermostat "vindo RTD" has features which
are protected by patent.



white

(10) **1613066**

Article	Control range	Packing unit	Article-No.	Hint
---------	---------------	--------------	-------------	------

Thermostat with remote control "Uni FD" (squeeze connection) Max. heating water temperature: 120 °C



white
capillary 2 m long 7-28 °C **1012275** with '0' setting

The thermostats "Uni XD", "Uni LD", "Uni LDB", "Uni FD", "vindo TD" and "pinox D" can be fitted without adapter to the radiators with integrated distributor of the following manufacturers:

- Agis

– Arbonia

– Brötje

– Brugman

– Buderus

– De'Longhi
- Hudevad

– Ribe/Rio

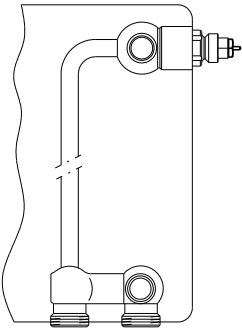
– Thor

– Vasco

– Vogel & Noot

(Subject to change without notice)

Example of an integrated distributor for one and two pipe heating systems. G ¾ male thread, distance between pipe centres 50 mm.



Fittings for the connection of these radiators to the pipework: pages 128-136 and 149-153.

Thermostat "Uni LDV" (squeeze connection)
with liquid sensor



white 7-28 °C (10) **1616575**

These thermostats can be fitted without adapter to the integrated distributors and thermostatic radiator valves with squeeze connection of the company Danfoss, series RAV (thermostat connection Ø 34 mm). Temperature setting may be limited or locked by using the concealed limiting elements. With setting device for visually handicapped people. Marking of a set value by using the memo disk.

Max. heating water temperature: 120 °C

with '0' setting

Thermostat "Uni LDVL" (squeeze connection)
with liquid sensor














white 7-28 °C (10) **1616675**









These thermostats can be fitted without adapter to the integrated distributors and thermostatic radiator valves with squeeze connection of the company Danfoss, series RAVL (thermostat connection Ø 26 mm). Temperature setting may be limited or locked by using the concealed limiting elements. With setting device for visually handicapped people. Marking of a set value by using the memo disk.

Max. heating water temperature: 120 °C

with '0' setting

Article	Control range	Packing unit	Article-No.	Hint
Thermostat "Uni L" M 30 x 1.0				
with liquid sensor marking "Uni L" on lower side				
				
white	7-28 °C	(10)	1011401	For Oventrop valves manufactured until 1998. Award: Thermostat "Uni L"  Busse Design Ulm Longlife Design Award <u>with '0' setting</u>
Special thermostats with liquid sensor				
Suitable for Kosmia thermostatic radiator valve bodies.				
Thermostat "Uni LK" (M 28 x 1.0)				
white	7-28 °C	(10)	1613501	<u>with '0' setting</u>
				
Thermostat "Uni LA" (M 28 x 1.5)				
white	7-28 °C 7-28 °C	(10)	1613401 1613465°	Suitable for Herz thermostatic radiator valve bodies. <u>with '0' setting</u> <u>without '0' setting</u>
				
Thermostat "Uni LI" (M 32 x 1.0)				
white	7-28 °C	(10)	1616200	Suitable for Ista thermostatic radiator valve bodies manufactured since 1985. <u>with '0' setting</u>
				
Thermostat "Uni LR" (M 33 x 2.0)				
white	7-28 °C	(10)	1616301	Suitable for Rosswein thermostatic radiator valve bodies. <u>with '0' setting</u>
				
Thermostat "Uni LM" (M 38 x 1.5)				
white	7-28 °C	(10)	1616100	Suitable for Meges thermostatic radiator valve bodies. <u>with '0' setting</u>
				
Thermostat "Uni LO" (M 38 x 1.5)				
white	7-28 °C	(10)	1616500	Suitable for Oreg (Ondal) thermostatic radiator valve bodies. <u>with '0' setting</u>
				
Thermostat "Uni LV" (squeeze connection)				
white	7-28 °C	(10)	1616001	Suitable for Vaillant thermostatic radiator valve bodies manufactured since 1981. <u>with '0' setting</u>
				
Thermostat only for "maxi/mini" thermostatic radiator valves manufactured up to 1974 (M 40 x 1.5)				
anthracite/white		(10)	1015500	The valves of this series are no longer produced. <u>with '0' setting</u>
				

Article	Packing unit	Article-No.	Hint
	"mote 200" Electronic wireless thermostat (bluetooth)		
	Electronic wireless thermostat Connection thread M 30 x 1.5 battery operated		
	white		
	Using bluetooth, timed programmes can be transmitted to the wireless thermostat via a smartphone/tablet app.		
	(20) 1150961		
			Electronic wireless thermostat "mote 200" for room temperature control according to freely adjustable timed programmes. Operation with two commercial batteries (AA). The nominal temperature can be set or programmed easily via the sensor keys of the thermostat or via the app.
			With programmable timed programmes, frost protection, child-proof lock, window-open-recognition and battery level indicator.
			Device and system requirements: Bluetooth: Version 4.2 Android: version 4.4 (Kitkat) iOS: Version 10.3


Article	Packing unit	Article-No.	Hint
Accessories for thermostats			
	Angle pattern adapter M 30 x 1.5/ M 30 x 1.5		Connection to the valve: M 30 x 1.5 Connection to the thermostat: M 30 x 1.5
	white	(25) 1011450	
	anthracite	(25) 1641451	
	squeeze connection/squeeze connection		Connection to the valve: squeeze connection Connection to the thermostat: squeeze connection
	white	(10) 1011452	
			For the connection of thermostats at a right angle to the operating direction of the valve; especially suitable for radiators with integrated distributor; connection at the left and right hand side of the radiator.
	Adapter, nickel plated for the conversion of connection thread		For Oventrop valves manufactured up to 1998. For Ista valves.
	M 30 x 1.0 to M 30 x 1.5	(10) 1011445	
	M 32 x 1.0 to M 30 x 1.5	(50) 1661445°	
	"Uni-Clip" Graduated collar for "Uni XH", "Uni XHM" and "Uni XD"		Due to the vertical position of the figures, the set values can be easily read off in case of lateral connection of the thermostat (for thermostats with '0' setting).
	left hand model, 50 pieces	1011397°	
	Collar nut cover Set = 5 pieces		For the collar nuts of the thermostats "Uni XH", "Uni XHM", "Uni LH", "Uni LHZ", "Uni LA", "Uni SH", "vindo TH" and "pinox H".
	anthracite	(10) 1011380	
	chrome plated	(10) 1011381	
	gold plated	(10) 1011382	
	stainless steel finish	(10) 1011383	
	white	(10) 1011393	
	white		"Uni L"
	set = 5 pieces	(10) 1011493°	
	Anti-thrift ring for thermostats "Uni XH", "Uni XHM", "Uni LH", "Uni LHZ", "Uni SH", "Uni L", "Uni LA" and "vindo TH"		For the stabilisation and protection of the thermostatic control head from theft.
	white	(10) 1011766	
	set = 5 pieces		
	for thermostats "Uni XD", "Uni LD" and "vindo TD"		
	set = 5 pieces	(10) 1011775	





	Article	Packing unit	Article-No.	Hint
	Reinforcing cap white			The reinforcing caps are delivered with an Allen key.
	for thermostats "Uni LH", "Uni LHZ" and "Uni LA"			
	not lockable	(10)	1011865	
	lockable	(10)	1011866	
	for thermostat "Uni LD"			
	not lockable	(10)	1011875°	
	Reinforcing cap made of brass			
	connection thread M 30 x 1.5	(10)	1189381°	
	Combined cap Open/Close with Allen screw			
	connection thread M 30 x 1.5	(5)	1627965	
	Tool for thermostats "Uni LH", "Uni LHZ", "Uni LD", "Uni LDV", "Uni LDVL", "Uni L" and special thermostats			To release the graduation cap and clips.
	bag of 5 pieces	(10)	1989100	
	Setting key for thermostats "Uni LHB" and "Uni LDB"		1011497	For nominal temperature setting at the thermostat.
	Universal tool			For setting of the nominal temperature value at the thermostats "Uni LHB" and "Uni LDB", presetting at the valve as well as releasing of the graduation cap of the thermostats "Uni LH", "Uni LHZ", "Uni LD", "Uni LDV", "Uni LDVL", "Uni L" and special thermostats. With additional Allen key (2.5 mm) to secure the thermostat "Uni LHB".
	for thermostats "Uni LHB", "Uni LDB", "Uni LH" and thermostatic valves "AV 9" and "AQ"	(50)	1011489	
	Extensions L = 20 mm			
	for thermostatic valves	(10)	1022698	
	Cover for all remote sensors			
	Set = 5 pieces	(10)	1011698°	
	Manual heads white			The manual head allows the subsequent conversion to actuators or thermostats without the necessity to drain the system.
	connection thread M 30 x 1.5	(10)	1012565	
	connection squeeze connection	(10)	1012575	

**1.1.b Room thermostats****Content**

Room thermostats (heating)	38
Room thermostats (heating/cooling)	39
Room thermostats (heating/cooling) with fan drive	40

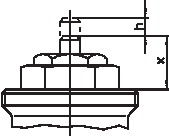
Article	Packing unit	Article-No.	Hint
Room thermostats (heating)			
Room thermostat-clock - surface mounting (heating)			
Heating two point control			
with daily setting			
230 V		1152552	The electric room thermostat-clock is required for individual room temperature control of heating systems in combination with the electrothermal actuators (two point) "Aktor T 2P". Output signal pulse-width modulation. Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) "closed with current off". Central temperature setback is carried out according to a timed programme. Limitation of the control range by using the concealed limiting elements.
Room thermostat - surface mounting (heating)			
Heating two point control			
230 V	(25)	1152051	The electric thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P". Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, the temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V). Cooling: Use electrothermal actuators (two point) "open with current off". Limitation of the control range of item no. 1152051/52/71/72 by using the concealed limiting elements.
24 V	(25)	1152052	
230 V	(25)	1152055	
with concealed temperature setting			
Room thermostat - flush mounting (heating)			
Heating two point control			
230 V	(128)	1152071	
Room thermostat - flush mounting (heating)			
with display			
Heating two point control			
230 V	(40)	1152561	With LCD display and adjustable timed programme. Temperature range: 5 °C up to 35 °C Operating current range (item no. 1152561): 100 up to 230 V AC Heating: Use electrothermal actuators (two point) "closed with current off" (terminal "NC") or "open with current off" (terminal "NO").
24 V	(40)	1152562°	

Article	Packing unit	Article-No.	Hint
Room thermostats (heating/cooling)			
	Room thermostat - surface mounting (heating and cooling)		
	Heating 0 - 10 V control Cooling 0 - 10 V control		
24 V	(25)	1152151	<p>The room thermostat is used for individual room temperature control in combination with the electrothermal actuator (0- 10 V) "Aktor T ST L NC", item no. 1012953, page 44, or the electromotive actuator "Aktor M ST L", item no. 1012705/06, page 46 (may also be used in three- or four-pipe systems). With one analogue output 0–10 V each for heating and cooling as well as adjustable neutral zone (0.5–7.5 K). Temperature range: 5 °C up to 30 °C</p>

Article	Packing unit	Article-No.	Hint
Room thermostats (heating/cooling) with fan drive			
	Room thermostat - surface mounting (heating or cooling) with display Heating two point control Cooling two point control with fan drive		
	230 V	1152451°	With LCD display and adjustable timed programme. Temperature range: 5 °C up to 35 °C Heating or cooling: Use electrothermal actuators (two point) closed with current "off".
	Room thermostat - surface mounting (heating or cooling) with display Heating two point control Cooling two point control with fan drive		
	230 V	(60) 1152453*	With LCD display and adjustable timed programme. Temperature range: 5 °C up to 35 °C Heating or cooling: Use electrothermal actuators (two point) "closed with current off".
	Room thermostat - surface mounting (heating and cooling) with display Heating 0 - 10 V control Cooling 0 - 10 V control Two point control for an additional heating, with fan drive		
	24 V	1152065	Electronic room thermostat with digital display for ventilation systems with heating and cooling function.
	Room thermostat - surface mounting (heating or cooling) with display Heating or cooling 0 - 10 V control Two point control for an additional heating, with fan drive		
	24 V	1152064	

1.1.c Actuators**Content**

Combination possibilities of valves and actuators	42
"Aktor T" Electrothermal actuators	44
"Aktor M" Electromotive actuators	46
"Aktor M KNX" Electromotive actuator	47
"mote 420" Wireless actuator	47

<p>① Can also be connected to valves with different connections using Oventrop valve adapters (for instance company Danfoss, series RA)</p> <p>④ Piston stroke actuator \geq effective valve lift</p> <p>⑤ k_{vs} value can be reduced</p> <p>④ NC = closed with current "off" NO = open with current "off" EM = electromotive ET = electrothermal</p> <p>Standard values without considering tolerances. With due consideration of the valve parameters, the combination with actuators of other manufacturers is possible on consultation.</p>									
									
<p>Illustration (examples)</p> <p>Ratings Valve</p> <p>Item no.</p> <p>DN</p> <p>Closing dimension x [mm] (lower lift position of valve)</p> <p>Recommended max. differential pressure in operation [bar]</p> <p>Valve lift h [mm]</p> <p>Demands on actuators</p> <p>Upper lift position [mm]</p> <p>Lower lift position [mm]</p> <p>Closing press. [N] min/max.</p>									
<p>1</p> <p>2</p> <p>3</p> <p>Illustration (examples)</p> <p>Ratings Valve</p> <p>Item no.</p> <p>DN</p> <p>Closing dimension x [mm] (lower lift position of valve)</p> <p>Recommended max. differential pressure in operation [bar]</p> <p>Valve lift h [mm]</p> <p>Demands on actuators</p> <p>Upper lift position [mm]</p> <p>Lower lift position [mm]</p> <p>Closing press. [N] min/max.</p>									
<p>Valve characteristic line</p> <p>Actuator characteristic line</p> <p>Flow rate</p> <p>Effective piston stroke</p>									
<p>Illustration</p> <p>Ratings actuators</p> <p>Item. no</p> <p>Model</p> <p>Operating current</p> <p>Operating behaviour (control signal of this controller)</p> <p>Interface</p> <p>Lower lift position [mm]</p> <p>Upper lift position [mm]</p> <p>Piston stroke [mm]</p> <p>Operating power [W]</p> <p>Medium floating time</p> <p>Protection</p> <p>Max. fluid temperature [°C]</p> <p>Permissible installation position</p>									
<p>A</p> <p>"Aktor T 2P L NC"/"Aktor T 2P H NC"</p> <p>①</p> <p>10124..</p> <p>ET NC</p> <p>230 V AC / 24 V AC/DC</p> <p>2 point</p> <p>digital</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~5 min</p> <p>IP54</p> <p>+100</p> <p>Any</p> <p>Piston stroke</p> <p>Drive</p>									
<p>B</p> <p>"Aktor T 2P L NO"/"Aktor T 2P H NO"</p> <p>①</p> <p>10124..</p> <p>ET NO</p> <p>230 V AC / 24 V AC/DC</p> <p>2 point</p> <p>digital</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~5 min</p> <p>IP54</p> <p>+100</p> <p>Any</p> <p>Piston stroke</p> <p>Drive</p>									
<p>C</p> <p>"Aktor T ST L NC"</p> <p>①</p> <p>1012953</p> <p>ET NC</p> <p>24 V AC</p> <p>steady (0-10 V)</p> <p>analogue</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~40 s/mm</p> <p>IP54</p> <p>+120</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>D</p> <p>"Aktor M ST L"</p> <p>①</p> <p>1012725</p> <p>EM</p> <p>24 V AC / DC</p> <p>steady (0-10 V)</p> <p>analogue</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~22 s/mm</p> <p>IP40</p> <p>+120</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>E</p> <p>"Aktor M ST L"</p> <p>①</p> <p>1012726</p> <p>EM</p> <p>24 V AC / DC</p> <p>steady (0-10 V)</p> <p>analogue</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~22 s/mm</p> <p>IP40</p> <p>+120</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>F</p> <p>"Aktor M ST L"</p> <p>①</p> <p>1012717</p> <p>EM</p> <p>24 V AC / DC</p> <p>steady (0-10 V)</p> <p>analogue</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~22 s/mm</p> <p>IP40</p> <p>+120</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>G</p> <p>"Aktor M 3P H"</p> <p>①</p> <p>1012729</p> <p>EM NO</p> <p>230 V AC</p> <p>3 point</p> <p>digital</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~22 s/mm</p> <p>IP40</p> <p>+120</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>H</p> <p>"Aktor M 2P H"/"Aktor M 2P L"</p> <p>①</p> <p>1012710/11</p> <p>EM NO</p> <p>230 V AC / 24 V AC</p> <p>2 point</p> <p>digital</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~22 s/mm</p> <p>IP54</p> <p>+100</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>I</p> <p>"Aktor M KNX"</p> <p>①</p> <p>1012746</p> <p>EM</p> <p>21...32 V DC SELV</p> <p>steady</p> <p>KNX</p> <p>11.2</p> <p>15.8</p> <p>4.0</p> <p>~22 s/mm</p> <p>IP40</p> <p>+100</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>J</p> <p>"mote 320"</p> <p>①</p> <p>1150665</p> <p>EM</p> <p>Mignon (2x)</p> <p>steady</p> <p>EnOcean (EEP AS-20-01)</p> <p>11.0</p> <p>15.4</p> <p>2</p> <p>~3 s/mm</p> <p>IP20</p> <p>+90</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									
<p>K</p> <p>"mote 420"</p> <p>①</p> <p>1150765</p> <p>EM</p> <p>Mignon (2x)</p> <p>steady</p> <p>EnOcean (EEP AS-20-01)</p> <p>11.0</p> <p>15.4</p> <p>2</p> <p>~3 s/mm</p> <p>IP20</p> <p>+90</p> <p>In vertical to horizontal position, not suspended.</p> <p>Piston stroke</p> <p>Drive</p>									

All values are standard values without tolerances

4	5	6	7	8	9	10	11	12	13	14
"AZ V"	"AZ H"	"AQ, RFQ"	"E"	"EQ"	"Multiblock T-RTL"	"Multiblock TQ-RTL"	"Multiblock TQ"	Valves with insertion tube	Three-way conversion valves	Valve inserts for radiators with integrated distributor
1187...	11884...	1183.../1185...	1163...	1163...	11840...	11840...	11835.../16435..	11805..	10180..	101908.
15 20 25	20 25	10 15 20	15	15	15	15	15	15 20	-	-
11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
5	0.2	0.6 (1.5)	0.2	0.6 (1.5)	0.2	0.6 (1.5)	0.2	0.2	0.2	0.6 (1.5)
3.0	3.2	1.8	2.2	1.8	2.2	1.8	2.9	1.6	2.2	1.8
14.8 or higher	15.0 or higher	13.6 or higher	14.0 or higher	13.6 or higher	14.0 or higher	13.6 or higher	14.7 or higher	13.4 or higher	14.0 or higher	13.6 or higher
11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower
90 / 150	90 / 150	90 / 150	90 / 150	90 / 150	90 / 150	90 / 150	90 / 150	90 / 150	90 / 150	90 / 150
•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•
• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②
•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•
• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②	• ②
•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	• ③	•	•	•
		•	•	•	•	•	• ③	•	•	•

Article	Article-No.	Hint
---------	-------------	------

"Aktor T" Electrothermal actuators



"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

"H NC", closed with current "off", 230 V	1012415
"H NO", open with current "off", 230 V	1012425
"L NC", closed with current "off", 24 V	1012416
"L NO", open with current "off", 24 V	1012426
"H NC", closed with current "off", 230 V with mounted auxiliary switch	1012435
"L NC", closed with current "off", 24 V cable 2 m long	1012442
"H NC", closed with current "off", 230 V cable 2 m long	1012452
"H NC", closed with current "off", 230 V cable 5 m long	1012455
"H NC", closed with current "off", 230 V cable 10 long	1012459
"M NC", closed with current "off", 120 V only in approved countries outside the EU	1012420#

Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats. Further applications in bivalent heating installations.

For zone and room temperature control.

Connecting cable 1 m.
With "First-Open" function (except for actuators "open with current off") and stroke index.
Simple plug-in connection with valve adapter.

Actuators can be installed in any position.

As for the model with auxiliary switch, a pump can for instance be switched via the integrated volt free contact.

Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.

NRTL approval according to UL-specification.
May only be installed in approved countries outside the EU.

"Aktor T 2P" Electrothermal actuators (two point)
squeeze connection



"H NC", closed with current "off", 230 V	1012418
"L NC", closed with current "off", 24 V	1012419

These actuators can be fitted without adapter to the integrated distributors and thermostatic radiator valves with squeeze connection of the company Danfoss, series RA.

Connecting cable 1 m.
With "First-Open" function and stroke index.
Simple plug-in connection with valve adapter.

Actuators can be installed in any position.

Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.

"Aktor T ST" Electrothermal actuator (0-10 V)
Proportional actuator
connection thread M 30 x 1.5



"L NC", closed with current "off", 24 V with automatic recognition of neutral point and valve travel	1012953
--	---------

The actuator (0-10 V) can be used in centralised building control systems in combination with the electronic room thermostat, item no. 1152151/1152153, or with a central controller.
Plug-in connecting cable 1 m.
With "First-Open" function and stroke index.
Easy plug-in connection with valve adapter.
Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on fluorescent tubes. A varistor is thus not necessary.

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Accessories electrothermal actuators

**For electrothermal actuators, item no.
1012415/25/16/26/35/42/52/55/59/20 and 1012953**



Valve adapter

connection thread M 30 x 1.5 (5) **1012461**

Replacement valve adapter for electrothermal actuators.



high model
connection thread M 30 x 1.5

(5) **1012462**

The high model is required when using the actuators, item no. 10124.. and 1012953, in combination with the regulating valves "Hycococon ETZ/HTZ" as well as the fittings "Multiblock T/TU/TFU/TQ" and the design cover (11 mm higher than standard).



connection thread M 30 x 1.0

(5) **1012890**

The adapter is required for Oventrop valves with connection thread M 30 x 1.0 (up to 1998) in combination with the electrothermal actuators.



Reinforcing cap

for electrothermal
actuators (two point)
and (0-10 V)

1012450

To protect electrothermal actuators against vandalism.
The special valve adapter with connection thread M 30 x 1.5 for fixing of the reinforcing cap is included.



Article	Article-No.	Hint
"Aktor M" Electromotive actuators		
"Aktor M" Electromotive actuators connection thread M 30 x 1.5 with manual setting, adjustable mode of operation		
	"ST L", 24 V, modulating proportional actuator, 0-10 V, two or three point control, with automatic valve anti-blocking function and automatic recognition of neutral point, multiple characteristic lines adjustable (for "Cocon QTZ" PN 16 / PN 25)	1012725 Oventrop electromotive actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating (except for item no. 1012710/11), radiant ceiling panels, chilled ceiling systems and induction air systems. Further application in bivalent heating installations. The actuators (0-10 V) can be used in centralised building control systems in combination with the electronic room thermostat or with a central controller. Connecting cable 1.5 m.
	"ST L", 24 V, modulating proportional actuator, 0-10 V, with position feedback, automatic valve anti-blocking function and automatic recognition of neutral point, multiple characteristic lines adjustable (for "Cocon QTZ" PN 16 / PN 25)	1012726 As for the model with electric emergency control function, the actuator moves to a specified stroke position if the power supply is interrupted.
	"3P H", 230 V, two or three point control, without valve anti-blocking function, with automatic recognition of neutral point, mode of operation not adjustable	1012729
	"ST L", 24 V, modulating proportional actuator, 0 - 10 V, with electric emergency control function, position feedback, automatic valve anti-blocking function and automatic recognition of neutral point, multiple characteristic lines adjustable (for "Cocon QTZ" PN 25)	1012717
	"2P H", 230 V, two point control, without valve anti-blocking function	1012710 Short operating time (about 3 sec.). Connecting cable 1.5 m.
	"2P L", 24 V, two point control, without valve anti-blocking function	1012711

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------



**"Aktor M KNX" Electromotive actuator
with KNX interface**

Connection thread M 30 x 1.5

with one binary input (120) **1012746***

The electromotive actuator "KNX" is suitable for the direct connection to the KNX bus. The power absorption is extremely low, so that a separate power supply is not needed. The actuator is equipped with an integrated binary input to which a window contact, a dew point sensor or a movement sensor may for instance be connected.



"mote 420" Wireless actuator

Connection thread M 30 x 1.5

1150766#

Electronic actuator
with bi-directional radio communication,
battery operated,
with automatic presetting of the
"Q-Tech" valves with "OVbalance Home"

traffic white (RAL 9016)

Electronic actuator for room temperature control. The actuator supports the EnOcean profile A5-20-01 and can be connected to communication centres/gateways or room thermostats supporting the profile.






**# Only functions in combination with
communication centres/gateways
(e.g. wibutler gateway) supporting the
EEP A5-20-1 (EnOcean Equipment Profile).**

System	Oventrop actuators	Item no.	The Oventrop actuators can e.g. be used with the following bus systems:
KNX	"Aktor M KNX" with one binary entry with two binary entries	1012746	<ul style="list-style-type: none"> – GIRA Instabus KNX/EIB – ABB i-bus KNX – Busch-Jäger installation bus – Jung KNX-System – Merten KNX – Siemens GAMMA instabus – Woertz Building Control Systems – and others
(EnOcean) wireless	"mote 420" with automatic presetting of the "Q-Tech" valves with "OVbalance Home"	1150766	<ul style="list-style-type: none"> – OVgateway – Eitako – and others
Modbus RTU	"Aktor M ST L" with Modbus RTU interface	1012745 1158014	<ul style="list-style-type: none"> – any automation systems with Modbus RTU interface

1.1.d "i-Tronic" Climate display device**Content**

"i-Tronic TFC"

50

Article	Article-No.	Hint
<p>"i-Tronic TFC" Climate meter displaying the temperature, humidity and CO₂ content in the ambient air traffic white (RAL 9016)</p> 	<p>for wall attachment with power pack for flush sockets (power supply 100-240 V ~/ 50-60 Hz) with wall bracket</p> <p>1150683°</p>	<p>Climate meter for monitoring the important room climate variables: temperature, humidity and CO₂ content. These values will supply information on the beginning and end of a necessary room airing (e.g. window opening). Furthermore, the min./max. values of the last 24 hours are displayed.</p> <p>The climate meter can not only be fixed onto the wall with the help of a wall bracket and a flush-mounted power pack but it is also suitable for mobile use.</p> <p>Two table stand solutions are offered for mobile use: One with a power pack for mains power supply and another with two rechargeable batteries with integrated charging electronics.</p>
	<p>for mobile use with wired power supply, table stand and mains adaptor (power supply: 100-240 V ~/ 50-60 Hz)</p> <p>1150685</p>	
	<p>for mobile use with rechargeable batteries, integrated charging electronics in the table stand and power pack for battery charging</p> <p>1150688°</p>	<p>Two integrated rechargeable batteries (2 x AA NiMH) allow for the mobile monitoring of the important room climate variables temperature, humidity and CO₂ content.</p> <p>Operation of rechargeable batteries: approx. 6 days</p>



1.1.e "R-Tronic" Climate display device/control wibutler gateway and hydronic balancing

Content

"R-Tronic RT B" Wireless thermostat	52
"R-Tronic RTF B" Wireless thermostat with humidity display	53
"R-Tronic RTFC K" Wireless thermostat with humidity and CO2 display	53
"mote 320" Wireless actuator (M 30 x 1.5)	54
"mote 320" Wireless actuator (squeeze connection)	54
"R-Con" Wireless receiver	55
Accessories	56
"FK-C F" Wireless window contact	56
RP-S F Wireless repeater	56
"R-Con 2P" Wireless receiver (1 channel)	56
wibutler Basic sets	58
"R-Tronic RT B" (ENOCEAN) Wireless thermostat for Smart Home applications	59
"R-Tronic RTF B" (ENOCEAN) Wireless thermostat for Smart Home applications	59
"mote 420" Wireless actuator for Smart Home applications	59
Accessories	60
"FK-C F" Wireless window contact	60
"RP-S F" Wireless repeater	60

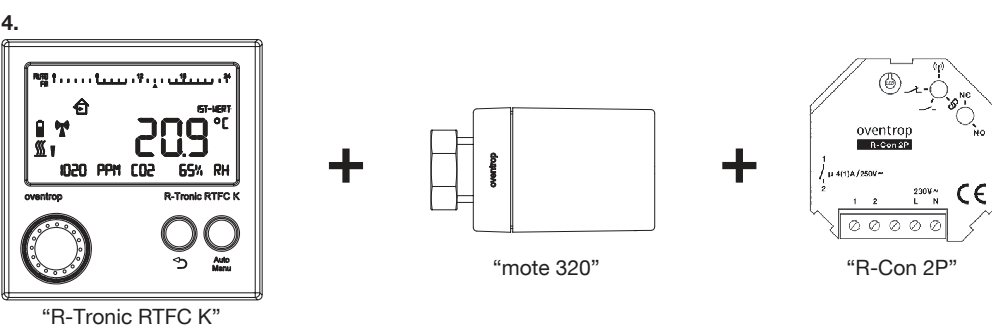
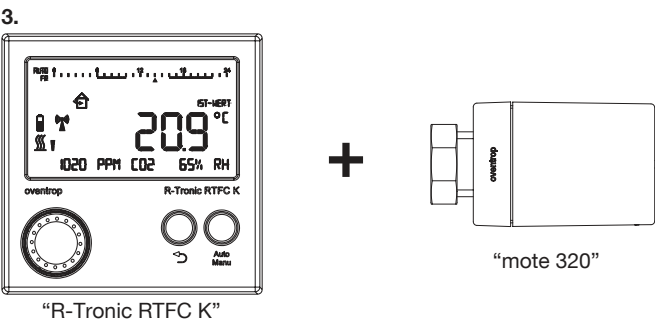
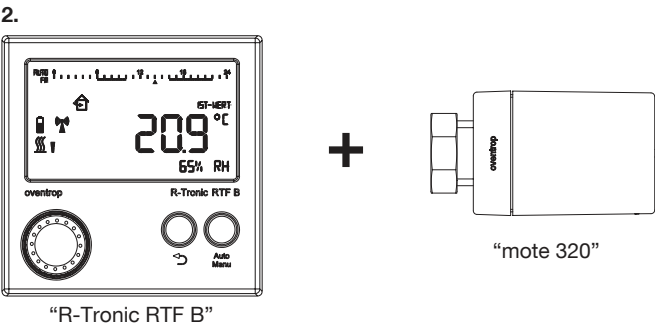
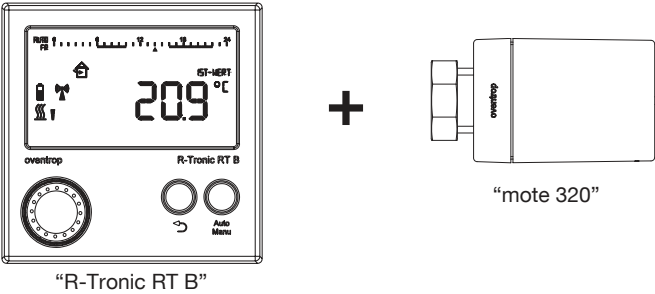
“R-Tronic” Climate display device/control

The system “R-Tronic” consists of a battery operated actuator for wireless thermostats “mote 320” and the wireless thermostat “R-Tronic”. The wireless thermostat can be battery or mains operated. During battery operation, a maximum of three actuators “mote 320” can be connected to one “R-Tronic” and up to 8 actuators during mains operation.

During mains operation, window contacts and the one channel wireless receiver “R-Con 2P” can be connected additionally. The wireless receiver transmits a switching signal depending on a CO₂ threshold for one fan.

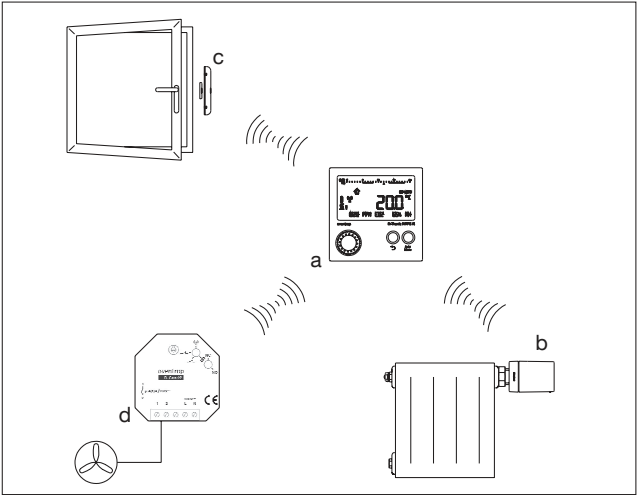
Options

1.



- Option 1: “R-Tronic RT B”
Wireless thermostat for room temperature control with timer functions (battery operated, flush-mounted power pack or mains adaptor available as accessories)
- Option 2: “R-Tronic RTF B”
As option 1, but with integrated humidity sensor and display of the relative humidity RH in % (battery operated, flush-mounted power pack or mains adaptor available as accessories)
- Option 3: “R-Tronic RTFC K”
As option 2, but with additional sensor for measurement of the CO₂ content and display of the CO₂ concentration in ppm (no battery operation, power supply via external flush-mounted power pack or mains adaptor).
- Option 4: “R-Tronic RTFC K” with “R-Con 2P”
As option 3, but additionally with one channel wireless receiver “R-Con 2P” for the activation of a fan depending on a CO₂ threshold for fresh air supply.

System illustrations



- Options 1, 2, 3, 4 (climate display device/control)
- a “R-Tronic RT B / RTF B / RTFC K” Wireless thermostat
- b “mote 320” Actuator for wireless thermostats
- c “FK-C F” Wireless window contact
- d “R-Con 2P” Wireless receiver (1 channel) for CO₂ dependent fan activation (only in combination with “R-Tronic RTFC K”)

Article

Article-No.

Hint

"R-Tronic RT B" Wireless thermostat

Wireless thermostat
with bi-directional radio communication,
battery operated,
surface mounting

traffic white (RAL 9016)

1150680

Electronic wireless thermostat "R-Tronic RT B" for room temperature control according to adjustable timed programmes. The nominal and actual room temperature can be displayed.

Up to 3 participants (such as actuators for wireless thermostats "mote 320" and wireless receivers "R-Con") can be connected during battery operation.

A supply via the network is an alternative, see accessories page 56.

During mains operation, the number of participants can be increased to 8 which allows, for instance, for an integration of window contacts for room temperature setback.

Award:

**"R-Tronic RTF B" Wireless thermostat with humidity display**

Wireless thermostat
with bi-directional radio communication and
integrated humidity sensor,
battery operated,
surface mounting

traffic white (RAL 9016)

1150681

Electronic wireless thermostat "R-Tronic RTF B" for room temperature control according to adjustable timed programmes. The nominal and actual room temperature can be displayed. An integrated humidity sensor supplies information on the relative humidity RH in %. The value is displayed in the text line.

Up to 3 participants (such as actuators for wireless thermostats "mote 320" and wireless receivers "R-Con") can be connected during battery operation.

A supply via the network is an alternative, see accessories page 56.

During mains operation, the number of participants can be increased to 8 which allows, for instance, for an integration of window contacts for room temperature setback.

"R-Tronic RTFC K" Wireless thermostat with humidity and CO₂ display

Wireless thermostat
with bi-directional radio communication and
integrated humidity and CO₂ sensor

traffic white (RAL 9016)



Power supply:
Flush-mounted power pack (100-240 V ~ / 50-60 Hz)
with wall bracket

1150682

Electronic wireless thermostat "R-Tronic RTFC K" for room temperature control according to adjustable timed programmes. The nominal and actual room temperature can be displayed. An integrated humidity sensor supplies information on the relative humidity RH in % and an integrated CO₂ sensor on the CO₂ content in ppm in the room air. Both values are displayed in the text line.

If preset limits are exceeded, a symbol asking for fresh air supply is displayed.






Up to 8 participants (such as actuators for wireless thermostats "mote 320", wireless receivers "R-Con" and wireless window contacts for room temperature setback) can be connected to the "R-Tronic RTFC K".

Power is supplied by a flush-mounted power pack or a mains adaptor with table stand.



Power supply:
Mains adaptor (100-240 V ~ / 50-60 Hz)
with table stand

1150684

Article	Article-No.	Hint
<div></div> <div><p>"mote 320" Wireless actuator (M 30 x 1.5)</p><p>Connection thread M 30 x 1.5 Electronic actuator for wireless thermostats with bi-directional radio communication, battery operated</p><p>traffic white (RAL 9016)</p><p>Only functions in combination with the wireless thermostats "R-Tronic RT B/ RTF B/ RTFC K".</p></div> <div><p>1150665</p></div>		<div><p>Electronic actuator for wireless thermostats for room temperature control according to adjustable timed programmes at the wireless thermostats "R-Tronic RT B/ RTF B/ RTFC K". Heating operation and the position of the valve (OPEN/CLOSED) of the "mote 320" are shown on the display of the wireless thermostat. Operation via the menu-driven wireless thermostat.</p><p>Awards:</p><div> ICONIC AWARDS 2016</div><div> ICONIC AWARDS 2017 Interior Innovation - Winner</div><div> German Design Award 2016</div></div>
<div></div> <div><p>"mote 320" Wireless actuator (squeeze connection)</p><p>Squeeze connection Electronic actuator for wireless thermostats with bi-directional radio communication, battery operated</p><p>traffic white (RAL 9016)</p><p>Only functions in combination with the wireless thermostats "R-Tronic RT B/ RTF B/ RTFC K".</p></div> <div><p>1150675</p></div>		<div><p>These actuators for wireless thermostats can be fitted without adapter to the integrated distributors and thermostatic radiator valves with squeeze connection of the company Danfoss, series RA.</p></div>

Article

Article-No.

Hint

"R-Con" Wireless receiver



230 V, without plug, wiring on site,
mounting rail installation according to DIN 60715

4 channels with logic module	1150770
4 channels without logic module	1150771
8 channels with logic module	1150772
8 channels without logic module	1150773

Electronic multichannel wireless receiver for room temperature control of up to 8 independent heating zones (surface heating) according to adjustable timed programmes at the wireless thermostats "R-Tronic RT B", "R-Tronic RTF B" and "R-Tronic RTFC K". Operation via the menu-driven wireless thermostat.

Additional functions (direct selection via the rotary switches at the wireless receiver):
- Pump logic with adjustable lead time and follow-up time (only item no. 1150770/ 72)
- Burner logic for heat demand (only item no. 1150770/ 72)
- Two point control
- PWM control for surface heating

Electrothermal actuators "Aktor T 2P" 24 V or 230 V can be connected to the channels (closing contact with 4A/250 V AC each).

The wireless receiver "R-Con" has to be installed in a cabinet (surface/flush mounting). The protective housing, item no. 1150776, is to be used alternatively.

An external transformer is required for the power supply of 24 V actuators.

Antenna extension for wireless receiver "R-Con"



surface mounting,
glossy white (similar RAL 9003)

1150777

Antenna extension (1 m) with SMA screw terminal.

"R-Con T 2P"



4 channel extension module for "R-Con",
mounting rail installation according to DIN 60715

1150775

The 4 channel extension module is connected to the wireless receiver "R-Con". It serves the extension by 4 channels which allows for the control of further heating zones (12, 16 ...) with one wireless receiver "R-Con".

"R-Con HC"



Extension module heating/cooling for
wireless receiver "R-Con",
mounting rail installation according to DIN 60715

1150774

The extension module is connected to the wireless receiver "R-Con" and is used for switching between heating and cooling operation via a C/O input (change-over input). The C/O signal is provided by a reversible heat pump (volt free). Furthermore, the "R-Con HC" module features an input for dew point monitoring which interrupts cooling when the dew point is exceeded.

Protective housing for "R-Con"



surface mounting

1150776

The wireless receiver "R-Con" is mounted onto the rail (included in the delivery) to avoid direct contact with live parts (230 V).

Article

Article-No.

Hint

Accessories

Flush-mounted power pack
(100-240 V ~ /50-60 Hz)
with wall bracket

1150692

For the conversion of battery operated
wireless thermostats "R-Tronic RT B/ RTF B"
to an external power supply
(100-240 V ~ / 50-60 Hz).



Mains adaptor (100-240 V ~ / 50-60 Hz)
with table stand, white
for stationary use, suitable for
"i-Tronic TFC" and
"R-Tronic RT B/RTF B"

1150694**"FK-C F" Wireless window contact**

solar powered,
white (similar to RAL 9003)

1153070

A radio signal is transmitted when opening or
closing the window. The solar powered energy
storage ensures a maintenance-free operation.

Compatible with:
- "R-Tronic" Wireless thermostats
("DynaTemp HA")
- Wireless room modules ("DynaTemp BA")

Note:

The wireless thermostats "R-Tronic" require the
software version 01-06-02 or higher and have
to be mains-operated.

RP-S F Wireless repeater

with switching function for installation
into an earthed plug (230 V)
white (similar to RAL 9003)

1150699°

The wireless repeater "RP-S F" serves to
amplify the signal between the wireless
thermostat "R-Tronic" and the "OVgateway" as
well as the wireless receiver "R-Con"/
"R-Con 2P".

Switching of electrical appliances (230 V) and
registration of the current consumption data
can be carried out with the help of the
intermediate plug.

"R-Con 2P" Wireless receiver (1 channel)

230 V, flush mounting,
cabling on site
Switching output (volt free):
"NC" closed with current "off"
"NO" open with current "off"

1150710

For activation and deactivation of fans
and ventilation systems. The switching
signal is generated by the wireless thermostat
"R-Tronic RTFC K" if a set CO₂ value is
exceeded or undercut.

Two rotary switches at the "R-Con 2P" allow
for

1. the configuration of the switching output
"NC" closed with current "off"
"NO" open with current "off"
2. a manual setting of the switching output to
AUTO, ON, OFF or TEACH IN.

Maximum switching capacity of the volt free
output: 4(1)A/ 250 V AC

Hydronic balancing with the wibutler gateway and "Q-Tech" in detached and semi-detached houses

Automatic presetting with the wibutler gateway:

Automatic presetting of thermostatic radiator valves, for instance in detached or semi-detached houses, can be carried out via a smartphone, tablet or PC with the help of the wibutler gateway and the wireless actuators "mote 420". Manual presetting at each radiator on the spot is thus not required.

The user may carry out automatic presetting within a few steps via his smartphone, tablet or PC with the help of the setup assistant.

Apart from room temperature control, the wibutler gateway allows for the calculation of the maximum required volume flow for each radiator. The wibutler gateway is preloaded with the calculation procedure (procedure according to "VdZ specialist rules for heating optimisation – procedure A").

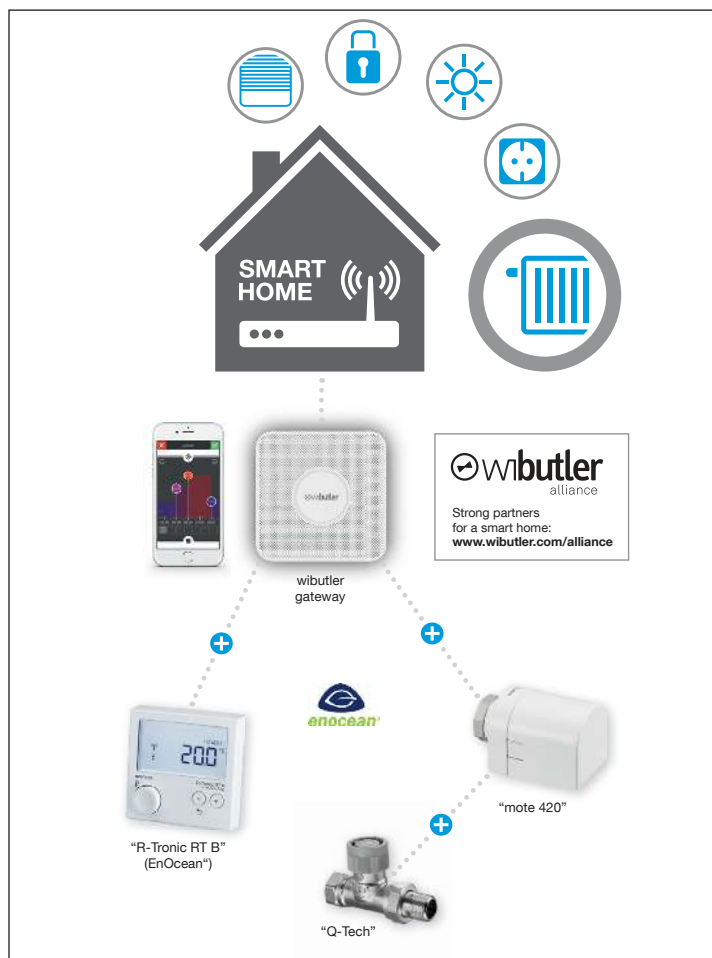
The valve characteristic line of the thermostatic valves with "Q-Tech" which allows for the conversion of the detected volume flows for the stroke limitation of the actuators "mote 420" (only in combination with item no 1150766) is integrated in the wibutler gateway.

Automatic balancing with "Q-Tech":

Irrespective of differential pressure variations in the heating system, the radiator volume flow required for room temperature control is constantly maintained by the control and regulating valve with "Q-Tech". After having carried out the automatic presetting described above, the volume flow is limited to a maximum value by the wibutler gateway and the actuator "mote 420" mounted onto the thermostatic valve with "Q-Tech".

Advantages:

- Automatic calculation of the required volume flow for each radiator and automatic presetting of the thermostatic valves with "Q-Tech" via the actuator "mote 420"
- Manual setting of the thermostatic valves at the radiator is not required
- Pipework calculation and regulation of the risers are not required
- Presetting of the valves in the riser is not required
- Hydronically balanced heating system during full and low demand periods
- Long battery life span as the "mote 420" only carries out control commands for room temperature control



Sequence of automatic presetting and balancing with the wibutler gateway and "Q-Tech"

Quick installation:

1. New installation of the "Q-Tech" valves at radiators or replacement of the valve inserts with valve inserts "QA"
2. Installation of the wireless actuators "mote 420"
3. Installation of the wireless thermostats "R-Tronic"
4. Commissioning of the wibutler gateway
5. Entry of the building and room data in the app with the help of the setup assistant

Article	Article-No.	Hint
---------	-------------	------

wibutler Basic sets



"OVbalance Home" Basic set - radiator

consisting of:
-wibutler gateway, item no. 1150799
-1 x "R-Tronic RT B" (ENOCEAN) Wireless thermostat, item no. 1150780
-1 x "mote 420" Wireless actuator, item no. 1150766

The "OVbalance Home" basic set-radiator is the starter set for automatic hydronic balancing with radiators.

1150790



Basic set - surface heating

consisting of:
-wibutler gateway, item no. 1150799
-1 x "R-Tronic RT B" (ENOCEAN) Wireless thermostat, item no. 1150780
-1 x "R-Con" Wireless receiver, item no. 1150772

The basic set - surface heating is the starter set for surface heating. The included wireless receiver "R-Con" features 8 channels for up to 8 independent heating zones.

1150795*



wibutler gateway

Included interfaces:
- EnOcean - Z-Wave - ZigBee
- LAN - WLAN

The intelligent gateway wibutler pro is the heart of a smart home. Multiple radio standards make the gateway highly compatible. Apart from heated surfaces and radiators, other trades, such as lighting and shading can also be integrated. For further information visit www.wibutler.com.

1150799*

Access options:
-Local access in the building
-Worldwide mobile remote access via Internet

User interfaces:
-App for iOS and Android terminals
-Amazon Alexa



Article

Article-No.

Hint



"R-Tronic RT B" (ENOCEAN) Wireless thermostat for Smart Home applications

Wireless thermostat with 5 selectable EnOcean profiles, battery operated, surface mounting

traffic white (RAL 9016)

1150780#

Electronic wireless thermostat for room temperature control. The wireless thermostat supports the EnOcean Equipment profiles (EEP) A5-10-02, A5-10-03, A5-10-04, A5-10-06 and RPS telegrams and can be connected to communication centres/gateways (e.g. "OVbalance Home" basic set) via the menu navigation. The nominal and actual temperature of the room are displayed. A supply via the network is an alternative, see accessories.



Individual control not only of the heating system but also of other appliances can be carried out via the plus/minus buttons (RPS telegram) with the help of configurations in the wibutler gateway. This way, the light can, for instance, be switched on and off with the help of the wireless thermostat.



"R-Tronic RTF B" (ENOCEAN) Wireless thermostat for Smart Home applications

Wireless thermostat with integrated humidity sensor and 5 selectable EnOcean profiles, battery operated, surface mounting

traffic white (RAL 9016)

1150781#

Electronic wireless thermostat for room temperature control. The wireless thermostat supports the EnOcean Equipment profiles (EEP) A5-10-11, A5-10-12, A5-10-22, A5-10-23 and RPS telegrams and can be connected to communication centres/gateways (e.g. "OVbalance Home" basic set) via the menu navigation. The nominal and actual temperature of the room are displayed. An integrated humidity sensor supplies information on the relative humidity RH in %. A supply via the network is an alternative, see accessories.



Individual control not only of the heating system but also of other appliances can be carried out via the plus/minus buttons (RPS telegram) with the help of configurations in the wibutler gateway. This way, the light can, for instance, be switched on and off with the help of the wireless thermostat.



"mote 420" Wireless actuator for Smart Home applications

Connection thread M 30 x 1.5
Electronic actuator with bi-directional radio communication, battery operated, with automatic presetting of the "Q-Tech" valves with "OVbalance Home"






traffic white (RAL 9016)

1150766#

Electronic actuator for room temperature control. The actuator supports the EnOcean profile A5-20-01 and can be connected to communication centres/gateways or room thermostats supporting the profile.












Only functions in combination with communication centres/gateways (e.g. wibutler gateway) supporting the EEP A5-20-1 (EnOcean Equipment Profile).



Article	Packing unit	Article-No.	Hint
Accessories			For the conversion of battery operated wireless thermostats "R-Tronic RT B/ RTF B" to an external power supply (100-240 V ~ / 50-60 Hz).
		1150692	
		1150694	
"FK-C F" Wireless window contact			A radio signal is transmitted when opening or closing the window. The solar powered energy storage ensures a maintenance-free operation.
		1153070	
"RP-S F" Wireless repeater			Compatible with: - "R-Tronic" Wireless thermostats ("DynaTemp HA") - Wireless room modules ("DynaTemp BA")
		1150699°	Note: The wireless thermostats "R-Tronic" require the software version 01-06-02 or higher and have to be mains-operated.
		(50) 1150693	The wireless repeater "RP-S F" serves to amplify the signal between the wireless thermostat "R-Tronic" and the "OVgateway" as well as the wireless receiver "R-Con"/ "R-Con 2P". Switching of electrical appliances (230 V) and registration of the current consumption data can be carried out with the help of the intermediate plug.
			For panelling flush sockets (milling holes up to Ø 83 mm, e.g. in Switzerland) for surface-mounted installation of the wireless thermostats "R-Tronic".



**1.1.f Valves with "Q-Tech" for automatic hydronic balancing****Content**

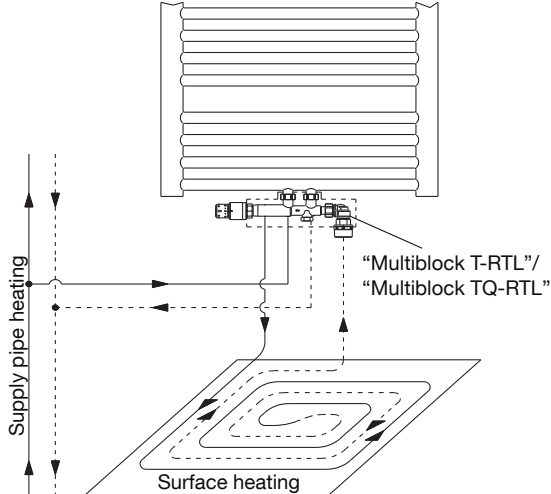
Thermostatic valves "AQ"	62
Thermostatic valves "RFQ"	63
Exclusive radiator valves "EQ"	64
"Multiblock TQ" Two pipe fitting	65
"Multiblock TQ-RTL"	66
"Demo-Bloc"	67

Article	Packing unit	Article-No.	Hint
Thermostatic valves "AQ" with "Q-Tech" for automatic hydronic balancing, infinitely adjustable presetting			Valves for thermostats with valve insert "QA" connection thread M 30 x 1.5 brass, nickel plated
Angle pattern valve			
	DN 10	(10) 1183063	Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 110 °C Flow range: 10 - 170 l/h Function: The valves with "Q-Tech" are combined control and regulating valves which are used for room temperature control in combination with thermostats with liquid sensor or actuators. The max. flow rate is set to the required nominal value and is constantly maintained within the necessary proportional band. Presetting is carried out by using the presetting key supplied with the valves. The thermostatic valves "AQ" and "RFQ" are not suitable for steam installations. The valves item no. 1183084 and 1183184 are equipped with a self sealing threaded tailpipe. All valve inserts are replaceable by using the special tool "Demo-Bloc" and the coupling set, page 81, without draining the system. All valves are suitable for the installation with copper pipes. Compression fittings page 164, reinforcing sleeves page 167. All thermostatic valves "AQ" and "RFQ" have a <u>light grey</u> protection cap.
	DN 15	(10) 1183064	
	DN 20	(10) 1183066	
	DN 25	(10) 1183068	
	DN 15	(10) 1183084	
	Straight pattern valve		
	DN 10	(10) 1183163	
	DN 15	(10) 1183164	
	DN 20	(10) 1183166	
	DN 25	(10) 1183168	
		DN 15	(10) 1183184
		Reversed angle pattern valve	
DN 10		(10) 1183263	
DN 15		(10) 1183264	
	DN 20	(10) 1183266	
	Double angle pattern valve Left hand side connection		
	DN 10	(10) 1183360	
	DN 15	(10) 1183362	
Right hand side connection			
	DN 10	(10) 1183361	
	DN 15	(10) 1183363	

Article	Packing unit	Article-No.	Hint
Thermostatic valves "RFQ" with "Q-Tech" for automatic hydronic balancing, infinitely adjustable presetting			Reduced dimensions compared with thermostatic valves "AQ".
Angle pattern valve			Thermostatic valves "RFQ" not suitable for use in combination with female threaded compression fittings "Cofit S".
	DN 10	(10) 1185503°	Compression fittings page 317, reinforcing sleeves page 167.
	DN 15	(10) 1185504°	
	DN 20	(10) 1185506°	
Straight pattern valve			
	DN 10	(10) 1185603°	
	DN 15	(10) 1185604°	
	DN 20	(10) 1185606°	

Article	Packing unit	Article-No.	Hint
Exclusive radiator valves "EQ" with "Q-Tech" for automatic hydroncing balancing, infinitely adjustable presetting			Exclusive radiator valves
Angle pattern valve DN 15			Valves for thermostats with valve insert "QA" connection thread M 30 x 1.5 brass
	chrome plated	(10) 1163552	Application: Central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 110 °C (chrome plated) 2 °C up to 90 °C (white) Flow range: 10 - 170 l/h Application: The valves with "Q-Tech" are combined control and regulating valves which are used for room temperature control in combination with thermostats with liquid sensor or actuators. The max. flow rate is set to the required nominal value and is constantly maintained within the necessary proportional band. Presetting is carried out by using the presetting key supplied with the valves. The thermostatic valves "EQ" are not suitable for steam installations. All valves inserts are replaceable by using the special tool "Demo-Bloc" and the coupling set, page 81, without draining the system. All valves are suitable for the installation with copper pipes. All thermostatic valves "EQ" have a light grey protection cap.
	white (RAL 9016)	(10) 1163562	
Straight pattern valve DN 15			
	chrome plated	(10) 1163652	
	white (RAL 9016)	(10) 1163662	

Article	Packing unit	Article-No.	Hint
"Multiblock TQ" Two pipe fitting with "Q-Tech" for automatic hydronic balancing Fitting with infinitely adjustable presetting and isolating and draining facility brass, nickel plated, with soft seal			
for the connection to radiators with G ½ female thread			
			
Straight pattern			
G ½ male x G ¾ male	(5)	1184073	"Multiblock TQ" for use on radiators with supply and return pipe connection. Distance between pipe centres 50 mm. Marking "OV 2" on valve body. With valve insert "QA".
			
Angle pattern			
G ½ male x G ¾ male	(5)	1184074	To be used: -for two pipe operation -as thermostatic valve -as isolating fitting -for draining -for filling Application: Central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 110 °C Flow range: 10 - 170 l/h Function: The fittings with "Q-Tech" are combined control and regulating fittings which are used for room temperature control in combination with thermostats with liquid sensor or actuators. The max. flow rate is set to the required nominal value and is constantly maintained within the necessary proportional band. Presetting is carried out by using the presetting key supplied with the valves. The "Multiblock TQ" is not suitable for steam installations. The fittings "Multiblock TQ" have a <u>light grey</u> protection cap. For the connection of copper, precision steel, stainless steel and plastic pipes as well as Oventrop composition pipe "Copipe", the Oventrop compression fittings are to be used, page 166. Alternatively, the compression fittings of other manufacturers which are suitable for the connection to male thread G ¾ according to DIN EN 16313 (cone "Euro") may also be used. The supply and return pipe connections must be strictly observed. The direction of flow must be observed!
Suitable design covers: page 102			

Article	Packing unit	Article-No.	Hint
<p>"Multiblock TQ-RTL" with "Q-Tech" for automatic hydronic balancing Connection fitting for the combination of radiator and surface temperature regulation, two pipe fitting, with infinitely adjustable presetting, isolating facility and integrated return temperature limiter, with soft seal, angle pattern, brass, nickel plated, including mounting aid</p>			
<p>for the connection to radiators with G ½ female thread</p>			
<p>G ½ male x G ¾ male</p>			
<p>1184076</p>			
<p>Design cover for "Multiblock T-RTL" and "Multiblock TQ-RTL"</p>			
<p>chrome plated</p>			
<p>white</p>			
<p>1184077 1184087</p>			
<p>System illustration:</p> 			
<p>Rosette cover for "Multiblock T-RTL" and "Multiblock TQ-RTL"</p>			
<p>chrome plated</p>			
<p>white</p>			
<p>1189077 (50) 1189087</p>			
<p>Block for initial operation for "Multiblock T-RTL" and "Multiblock TQ-RTL"</p>			
<p>1184094</p>			
<p>Mounting aid for "Multiblock T-RTL" and "Multiblock TQ-RTL"</p>			
<p>(5) 1189094</p>			

"Multiblock TQ-RTL" for simultaneous connection of radiators with supply and return connection and 50 mm distance between pipe centres as well as surface temperature regulation.
For the separate control of the room temperature and the return temperature (limitation).
With valve insert "QA".

To be used:
- for two pipe operation
- as thermostatic valve at the radiator
- as isolating fitting at the radiator
- for surface temperature regulation by use of a return temperature limiter

Application:
Central heating systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
Max operating pressure: p_s: 10 bar (PN 10)
Operating temperature t_s: 2 °C up to 70 °C

Function:
The fittings with "Q-Tech" are combined control and regulating fittings which are used for room temperature control in combination with thermostats with liquid sensor or actuators. The max. flow rate is set to the required nominal value and is constantly maintained within the necessary proportional band.

Presetting is carried out by using the presetting key supplied with the valves.

The fitting "Multiblock TQ-RTL" is not suitable for steam installations.






For the connection of copper, precision steel, stainless steel and plastic pipes as well as the Oventrop composition pipe "Copipe", the Oventrop compression fittings are to be used, page 166.

Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G ¾ male thread according to DIN EN 16313 (cone "Euro") may also be used.

The supply and return connections must be strictly observed to guarantee a perfect function of the fitting.

The surface circuit can be filled, drained, bled and leak tested with installed block for initial operation.

Used for the pre-assembly and fixing of the pipes of the heating circuit and the surface heating.

Article	Packing unit	Article-No.	Hint
Valve inserts  for thermostatic valves "AQ, RFQ, EQ", fittings "Multiblock TQ, TQ-RTL" and "Unibox TQ, Q plus" "QA" (25) 1187065 [#]			# These valve inserts are suitable for all valve bodies with connection thread M 30 x 1.5 of all sizes of the thermostatic valves "A, AV 9, AQ, ADV 9, CV 9, E, EQ, AF, RF, RFV 9 and RFQ".
 Replacement filter mesh for valve insert "QA" Set = 10 replacement filter meshes 1187090			
 "Demo-Bloc" special tool for replacing valve inserts <u>without draining the system</u> connection thread M 30 x 1.5 1188051			The "Demo-Bloc" is supplied in a handy bag. Max. operating pressure p_s : 10 bar (PN 10) Including coupling set for valve insert "QA".
 Coupling set for replacement of the valve insert "QA" 1188094 [°]			
 Differential pressure measuring stem 1188093			The differential pressure above the valve seat can be measured with the "Demo-Bloc" and the differential pressure measuring stem.

1.1.g Valves for manual hydronic balancing

Content



Thermostatic valves "AV 9"	70
Thermostatic valves "AV 9" (press connection)	71
Thermostatic valves "AV 9" (male thread)	72
Thermostatic valves "CV 9"	73
Thermostatic valves "AF"	74
Accessories	76
Thermostatic valves "ADV 9"	77
Thermostatic valves "RFV 9"	78
Uniset Radiator valve sets	80
Radiator lockshield valve "Combi 3G"	80
"Demo-Bloc"	81

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Thermostatic valves "AV 9"
infinitely adjustable presetting

Angle pattern valve



DN 10	0.36	0.67	1.10	(25)	1183703
DN 15	0.36	0.67	1.20	(25)	1183704
DN 20	0.36	0.67	1.30	(25)	1183706
DN 25	0.36	0.67	1.30	(10)	1183708



DN 15	0.32	0.65	0.90	(25)	1183784
-------	------	------	------	------	----------------

Straight pattern valve



DN 10	0.36	0.67	0.90	(25)	1183803
DN 15	0.36	0.67	1.00	(25)	1183804
DN 20	0.36	0.67	1.20	(25)	1183806
DN 25	0.36	0.67	1.20	(10)	1183808



DN 15	0.32	0.50	0.90	(25)	1183884
-------	------	------	------	------	----------------

Reversed angle pattern valve



DN 10	0.36	0.67	0.90	(25)	1183903
DN 15	0.36	0.67	1.00	(25)	1183904
DN 20	0.36	0.67	1.20	(25)	1183906

Double angle pattern valve
Left hand side connection

DN 10	0.36	0.67	0.90	(25)	1183470
DN 15	0.36	0.67	1.00	(25)	1183472

Right hand side connection



DN 10	0.36	0.67	0.90	(25)	1183471
DN 15	0.36	0.67	1.00	(25)	1183473

Valves for thermostatsconnection thread M 30 x 1.5
brass, nickel plated

Oventrop valves

Test according to EN 215

Reg.-no. 011-6 T 002

Keymark - The Oventrop thermostatic valves "A, AV 9, RF, AF, AQ, RFQ and AZ H" (angle and straight pattern valves DN 10 - DN 20) with the thermostats "Uni XH", "Uni LH", "Uni LH" with remote sensor, "Uni SH", "vindo TH" and "pinox H" are Keymark tested and certified. All materials used are silicone free.

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C
(for short periods up to 130 °C)

Presetting is carried out by using the presetting key, item no. 1183962, or a spanner 13 mm or the Heimeier presetting key.

The thermostatic valves "AV 9" are not suitable for steam installations.

The valves item no. 1183784 and 1183884 are equipped with a self sealing threaded taipipe.

All valve inserts are replaceable by using the special tool "Demo-Bloc", page 81, without draining the system.

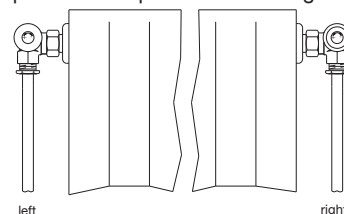
All valves DN 10 up to DN 20 are suitable for the installation with copper pipes.
Compression fittings page 164, reinforcing sleeves page 167.

Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted.

Press connection:

For the direct connection of copper pipes according to DIN EN 1057/ DVGW GW 392, stainless steel pipes according to DIN EN 10088/ DVGW GW 541 and thin-walled C-steel pipe (material no. E195/1.0034) according to DIN EN 10305-3. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.

All thermostatic valves "AV 9" have a white protection cap with 3 frontal lugs.



Thermostats from page 24.

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------------	-----	-----------------	-------------	------

Thermostatic valves "AV 9" (press connection)

infinitely adjustable presetting
with press connection for copper, stainless steel and
C-steel pipe Ø 15 mm

Angle pattern valve










DN 15 0.36 0.67 1.20 (25) **1183775°**

Straight pattern valve



DN 15 0.36 0.67 1.00 (25) **1183875°**

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
Thermostatic valves "AV 9" (male thread) infinitely adjustable presetting, with G ¾ male threaded pipe connection and R ½ male threaded radiator connection						
Angle pattern valve						
	DN 15	0.36	0.67	1.20	(25) 1183747	Especially suitable as flow and return valve for distributors of heating circuits.
Straight pattern valve						
	DN 15	0.36	0.67	1.00	(25) 1183847	The G ¾ male thread of the valves allows for the connection to copper, precision steel and plastic pipes as well as the Oventrop composition pipe "Copipe" by using the corresponding fittings.
Reversed angle pattern valve						
	DN 15	0.36	0.67	1.00	(25) 1183942	Fittings page 160, compression fittings page 164, reinforcing sleeves page 167.
Double angle pattern valve Left hand side connection						
	DN 15	0.36	0.67	1.00	(25) 1183446	Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted.
Right hand side connection						
	DN 15	0.36	0.67	1.00	(25) 1183447	All thermostatic valves "AV 9" have a <u>white</u> protection cap with 3 frontal lugs.
Universal tool for thermostats "Uni LHB", "Uni LDB", "Uni LH" and thermostatic valves "AV 9" and "AQ"						
					(50) 1011489	Thermostats from page 24.
Presetting key for thermostatic valves "AV 9, ADV 9, RFV 9, CV 9, E" and fittings "Multiblock T/TU/TFU/T-RTL" (manufactured since 2016)						
					(10) 1183962	For setting of the nominal temperature value at the thermostats "Uni LHB" and "Uni LDB", presetting at the valve as well as releasing of the graduation cap of the thermostats "Uni LH", "Uni LHZ", "Uni LD", "Uni LDV", "Uni LDVL", "Uni L" and special thermostats. With additional Allen key (2.5 mm) to secure the thermostat "Uni LHB".
The presetting value can be adjusted with the help of the marking on the hexagon of the valve insert.						
The presetting key fits only in one position.						

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Thermostatic valves "CV 9"
infinitely adjustable presetting
chrome plated

Angle pattern valve

DN 15 0.36 0.67 1.20 (25) **1162054**

Straight pattern valve

DN 15 0.36 0.67 1.00 (25) **1162154**Double angle pattern valve
Left hand side connectionDN 15 0.36 0.67 1.00 (25) **1162472**

Right hand side connection

DN 15 0.36 0.67 1.00 (25) **1162473**
Chrome plated valves for thermostats
connection thread M 30 x 1.5
brass, chrome plated

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C
(for short periods up to 130 °C)

Presetting is carried out by using the presetting key, item no. 1183962, or a spanner 13 mm or the Heimeier presetting key.

The thermostatic valves "CV 9" are not suitable for steam installations.

All valve inserts are replaceable by using the special tool "Demo-Bloc", page 67, without draining the system.

All valves are suitable for the installation with copper pipes.

Compression fittings page 164, reinforcing sleeves, page 167.

Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted.

All thermostatic valves "CV 9" have a white protection cap with 3 frontal lugs.

Thermostats from page 24.

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Thermostatic valves "AF"

infinitely adjustable fine presetting

Angle pattern valve



DN 10	0.20	0.32	0.37	(25)	1180603
DN 15	0.20	0.32	0.37	(25)	1180604
DN 20	0.20	0.32	0.37	(25)	1180606

Straight pattern valve



DN 10	0.20	0.32	0.37	(25)	1180703
DN 15	0.20	0.32	0.37	(25)	1180704
DN 20	0.20	0.32	0.37	(25)	1180706

Reversed angle pattern valve



DN 10	0.20	0.32	0.37	(25)	1180903
DN 15	0.20	0.32	0.37	(25)	1180904

Especially suitable for panel radiators and for the replacement of KOSMOS fine adjustment valves type 52 F1 - F7 with vertically pointing handwheel.

Double angle pattern valve
Left hand side connection

DN 10	0.20	0.32	0.37	(25)	1181460
DN 15	0.20	0.32	0.37	(25)	1181462

Right hand side connection



DN 10	0.20	0.32	0.37	(25)	1181461
DN 15	0.20	0.32	0.37	(25)	1181463

Presetting key

for thermostatic valves "AF" and valve inserts GHF



with pocket

1180791**Measuring device****1180793****Valves for thermostats**connection thread M 30 x 1,5
bronze/brass, nickel plated

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Especially suitable for direct or indirect connection to district heating circuits.

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 140 °C)

Central heating systems with a high temperature differential and systems requiring setting of low flow rates (low flow tolerances) for instance up to a maximum kv value of 0.32 at 2 K P-deviation, max. differential pressure 3.0 bar, against which the valves close.

All valves DN 10 up to DN 20 are suitable for the installation with copper pipes.

Compression fittings page 165, reinforcing sleeves page 167.

All valve inserts are replaceable by using the special tool "Demo-Bloc", page 67, without draining the system.

Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted.

All thermostatic valves "AF" have a red protection cap, the gland nut of the valves manufactured since end of 1993 has a red mark.

Thermostats from page 24.

For the exact control of the presetting of the thermostatic valves "AF".

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
Thermostatic valves "AF" infinitely adjustable fine presetting by using the valve insert (except for item no. 1180957)						Valves for thermostats connection thread M 30 x 1.5 brass, nickel plated Application: Central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Especially suitable for direct or indirect connection to district heating circuits. Max. operating pressure p _s : 20 bar (PN 20) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C)
Straight pattern valve both ports flat sealing with collar nut G ¾ female thread (length 66 mm)						
DN 15	0.20	0.32	0.37	(25)	1180955°	
DN 15	0.55	1.05	1.80	(25)	1180957°	
Set 5 = 2 weldable tailpipes for valve DN 15 						

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Accessories

Fittings and cap
for straight pattern and conversion valves
item no.: **1180964/65/67**



Weldable nipple (steel)

DN 10	(10)	1010989°
DN 15	(10)	1010990°



Solder nipple (brass)

15 mm	(10)	1010992°
-------	------	-----------------



Screwed nipple (brass)

R ½ DIN EN 10 226-1	(10)	1010993°
---------------------	------	-----------------



Collar nut (brass)

G ¾ female thread	(10)	1010994°
-------------------	------	-----------------



Threaded tailpipe (weldable nipple – steel)

G ¾ male thread x 15 mm	(10)	1010998°
-------------------------	------	-----------------



Cap (brass)

G ¾ female thread	(10)	1010997°
-------------------	------	-----------------

Article	kv at 1K P-dev.	kv at 2K P-dev.	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------------	-----------------	-------------	------

Thermostatic valves "ADV 9"

with double function and infinitely adjustable presetting

Angle pattern valve



DN 10	0.36	0.67	(25)	1188363
DN 15	0.36	0.67	(25)	1188364
DN 20	0.36	0.67	(25)	1188366

Straight pattern valve



DN 10	0.36	0.67	(25)	1188463
DN 15	0.36	0.67	(25)	1188464
DN 20	0.36	0.67	(25)	1188466

All other thermostatic valves "A, AV 9, AF, AQ, CV 9, E, RF, RFQ and RFV 9" can also be equipped with the valve insert with double function and presetting, item no. 1186002, page 134.

Valves for thermostats

connection thread M 30 x 1.5
brass, nickel plated

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C
(for short periods up to 130 °C)

The thermostatic valves "ADV 9" are not suitable for steam installations.

The double function of these valves provokes an automatic closing of the valve to 5 % of the nominal flow (frost protection) should the thermostat be removed or destroyed.

Not suitable for use with electric actuators.

All valve inserts are replaceable by using the special tool "Demo-Bloc", page 81, without draining the system.

All valves DN 10 up to DN 20 are suitable for the installation with copper pipes.

Compression fittings: page 164, reinforcing sleeves: page 167.

Attention: Before filling and draining the system, the protection cap has to be opened by one turn starting from the shut position.

All thermostatic valves "ADV 9" have a grey-green protection cap with 3 frontal lugs and a grey-green coloured marking on the bonnet.

Thermostats from page 24.

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Thermostatic valves "RFV 9"

reduced dimensions, infinitely adjustable presetting

Angle pattern valve



DN 10	0.36	0.67	1.10	(25)	1185003
DN 15	0.36	0.67	1.20	(25)	1185004
DN 20	0.36	0.67	1.30	(25)	1185006

Straight pattern valve



DN 10	0.36	0.67	0.90	(25)	1185103
DN 15	0.36	0.67	1.00	(25)	1185104
DN 20	0.36	0.67	1.20	(25)	1185106

Valves for thermostatsconnection thread M 30 x 1.5
brass, nickel plated

Application:

Central heating and cooling systems with
closed circuits, for operation with non-
aggressive, harmless fluids (e.g. water or
suitable water and glycol mixtures according
to VDI 2035/ÖNORM 5195).Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C
(for short periods up to 130 °C)The thermostatic valves "RFV 9" are not
suitable for steam installations.Reduced dimensions compared with
"AV 9".Thermostatic valves "RFV 9" are not suitable
for use in combination with female threaded
compression fittings "Cofit S".Compression fittings page 317, reinforcing
sleeves page 167.**Attention:** Filling and draining of the system
before the valves are preset and the thermostat
is mounted.All thermostatic valves "RFV 9" have a
light green protection cap with 3 frontal lugs.**Thermostats from page 24.**

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Return flow valvesThermostatic valves "AV 9"
infinitely adjustable presetting

Reversed angle pattern valve for the return pipe



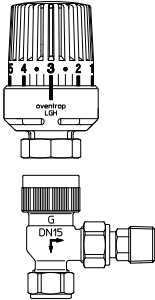
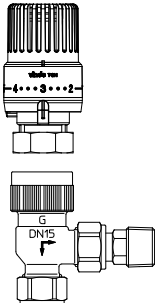

DN 10	0.36	0.67	1.10	(25)	1183793
DN 15	0.36	0.67	1.20	(25)	1183794









Straight pattern valve for the return pipe



DN 10	0.36	0.67	0.90	(25)	1183893
DN 15	0.36	0.67	1.00	(25)	1183894

Valves for thermostatsconnection thread M 30 x 1.5
brass, nickel plated**Application:**Central heating and cooling systems with
closed circuits, for operation with non-
aggressive, harmless fluids (e.g. water or
suitable water and glycol mixtures according
to VDI 2035/ÖNORM 5195).Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C bis 120 °C
(for short periods up to 130 °C)Especially suitable for installations with
reversed supply and return pipe and for upright
radiators.**Attention:** Reversed supply and return pipe at
the radiator might reduce the capacity.Compression fittings page 317, reinforcing
sleeves page 167.Presetting is carried out by using the presetting
key, item no. 1183962, or a spanner 13 mm
or the Heimeier presetting key.The return flow valves are not suitable for
use in combination with female threaded
compression fittings "Cofit S".All return flow valves are suitable for the
installation with copper pipes.The return flow valves "AV 9" have a white
protection cap with 3 frontal lugs.**Thermostats from page 24.**

Article	Packing unit	Article-No.	Hint
Uniset Radiator valve sets			
	"Uniset Pro" - Bi-directional Thermostatic valve body, liquid ("Uni LGH") thermostat and Combi 3G lockshield valve		For pumped 2 pipe systems PN 10 at 120 °C max. Angle nickel plated body having compression x 1/2" BSP union tail to suit copper pipe only.
	15 mm x 1/2" BSP tail	(50) 1188585	Fully bi-directional. Certified to EN 215.
	"Uniset Pro" - Bi-directional Thermostatic valve body, liquid (Vindo TGH) thermostat and Combi 3G lockshield valve		
	15 mm x 1/2" BSP tail	(50) 1189785	
Radiator lockshield valve "Combi 3G"			
	"Combi 3G"		Angle pattern nickel plated body having compression x 1/2" BSP union tail to suit copper pipe only. Pumped 2 pipe systems. PN 10 at 120 °C max.
	15 mm x 1/2" BSP tail	(50) 1098362	

Article	Packing unit	Article-No.	Hint
			
"Demo-Bloc" special tool for replacing valve inserts <u>without draining the system</u>			The "Demo-Bloc" is supplied in a handy bag. Max. operating pressure p _s : 10 bar (PN 10)
connection thread M 30 x 1.5		1188051	Including coupling set for valve insert "QA".
			
Cleaning head for all valves	(100)	1188400	The valve seat can be cleaned by use of the "Demo-Bloc" and the cleaning head.
			
Coupling set for replacement of the valve insert "HRV"		1188092°	
			
Coupling set for replacement of the valve insert "QA"		1188094°	
			
Differential pressure measuring stem		1188093	The differential pressure above the valve seat can be measured with the "Demo-Bloc" and the differential pressure measuring stem.
			
Coupling set for valves with connection thread M 30 x 1.0		1188089	
			
Coupling set for valves with connection thread M 30 x 1.5		1188091°	Not suitable for the replacement of the valve insert "QA".
			
Coupling set for replacement of the valve inserts "HRV" and "Combi LR"		1188095	The coupling set can also be used for the replacement of the isolating insert of the fitting "Multiflex FQ".

**1.1.h Valves for large flow rates****Content**

Thermostatic valves "A"	84
Thermostatic valves "A" (male thread)	85
Thermostatic valves "AZ V"	86
Thermostatic valves "AZ H"	86
Thermostatic valves "RF"	87

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Thermostatic valves "A"

Angle pattern valve



DN 10	0.50	0.95	1.20	(25)	1181003
DN 15	0.50	0.95	1.20	(25)	1181004
DN 20	0.55	1.10	3.50	(25)	1181006
DN 25	0.55	1.10	3.50	(10)	1181008
DN 32	0.55	1.10	4.10	(10)	1181010

Straight pattern valve



DN 10	0.50	0.95	1.20	(25)	1181103
DN 15	0.50	0.95	1.20	(25)	1181104
DN 20	0.55	1.10	2.50	(25)	1181106
DN 25	0.55	1.10	3.30	(10)	1181108
DN 32	0.55	1.10	4.10	(10)	1181110

Reversed angle pattern valve



DN 10	0.50	0.95	1.20	(25)	1181403
DN 15	0.50	0.95	1.20	(25)	1181404
DN 20	0.55	1.10	2.20	(25)	1181406

Double angle pattern valve
Left hand side connection

DN 10	0.50	0.95	1.20	(25)	1181390
DN 15	0.50	0.95	1.20	(25)	1181392

Right hand side connection



DN 10	0.50	0.95	1.20	(25)	1181391
DN 15	0.50	0.95	1.20	(25)	1181393

Valves for thermostats

connection thread M 30 x 1.5
brass, nickel plated

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C
(for short periods up to 130 °C)

Valves DN 20 up to DN 32, with high kvs value, to be used also for zone control as well as in one pipe, two pipe and gravity heating systems. Steam 0.5 bar at 110 °C.

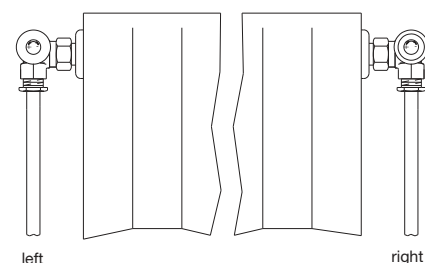
All valve inserts are replaceable by using the special tool "Demo-Bloc", page 81, without draining the system.

All valves DN 10 up to DN 20 are suitable for the installation with copper pipes.

All valves sized DN 15 can also be connected to the Oventrop composition pipe "Copipe".

Compression fittings page 164, reinforcing sleeves page 167.

All thermostatic valves "A" have a black protection cap.

Thermostats from page 24.

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Thermostatic valves "A" (male thread)

with G ¾ male threaded pipe connection and
R ½ male threaded radiator connection

Angle pattern valve



DN 15 0.50 0.95 1.20 (25) **1181097**

Straight pattern valve



DN 15 0.50 0.95 1.20 (25) **1181197**

Reversed angle pattern valve



DN 15 0.50 0.95 1.20 (25) **1181492**

Double angle pattern valve
Left hand side connection

DN 15 0.50 0.95 1.20 (25) **1181396**

Right hand side connection

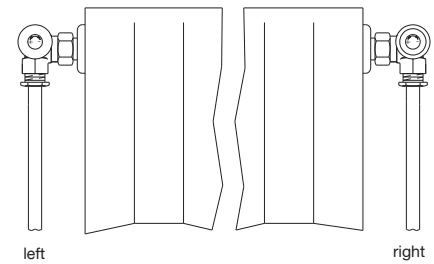


DN 15 0.50 0.95 1.20 (25) **1181397**

The G ¾ male thread of the valves allows for the connection to copper, precision steel and plastic pipes as well as the Oventrop composition pipe "Copipe" by using the corresponding fittings.

Fittings page 160, compression fittings page 164, reinforcing sleeves page 167.

All thermostatic valves "A" have a black protection cap.

Thermostats from page 24.

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Thermostatic valves "AZ V"
infinitely adjustable presetting

Angle pattern valve



DN 15	0.47	0.92	3.00	(25)	1187504
DN 20	0.47	0.92	3.00	(25)	1187506

Straight pattern valve



DN 15	0.47	0.92	1.70	(25)	1187604
DN 20	0.47	0.92	2.30	(25)	1187606
DN 25	0.47	0.92	3.00	(10)	1187608

Valves for thermostatsconnection thread M 30 x 1.5
brass, nickel plated

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)Operating temperature t_s : -10 °C up to 120 °C

With infinitely adjustable valve insert for high flow rates.

The thermostatic valves "AZ V" are, amongst others, used for the zone control in combination with thermostats or actuators in central heating and cooling systems.

All valve inserts are replaceable by using the special tool "Demo-Bloc", page 81, without draining the system.

All valves DN 15 up to DN 20 are suitable for the installation with copper pipes.

Compression fittings page 164, reinforcing sleeves page 167.

Presetting key, item no. 1068585, page 291.

All thermostatic valves "AZ V" have a green protection cap.**Thermostatic valves "AZ H"**

Straight pattern valve



DN 20	0.68	1.35	4.00	(25)	1188406°
DN 25	0.68	1.35	4.90	(10)	1188408°

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)Operating temperature t_s : 2 °C up to 120 °C

Valves with high flow capacity, especially suitable for zone control as well as one pipe, two pipe and gravity heating systems.

Not suitable for the installation with compression fittings.

The valve insert of the thermostatic valves "AZ H" can not be replaced by using the special tool "Demo-Bloc".All thermostatic valves "AZ H" have an orange protection cap.

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------------	-----	-----------------	-------------	------

Thermostatic valves "RF"
reduced dimensions

Valves for thermostats
connection thread M 30 x 1.5
brass, nickel plated

Application:
Central heating and cooling systems with
closed circuits, for operation with non-
aggressive, harmless fluids (e.g. water or
suitable water and glycol mixtures according
to VDI 2035/ÖNORM 5195).
Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C
(for short periods up to 130 °C)

Reduced dimensions compared with
thermostatic valves "A".

Compression fittings page 317, reinforcing
sleeves page 167.

Thermostatic valves "RF" are not suitable for
use in combination with female threaded
compression fittings "Cofit S".

All valves are suitable for the installation with
copper pipes.

All thermostatic valves "RF" have a blue
protection cap.

Thermostats from page 24.

Angle pattern valve



DN 10	0.50	0.95	1.20	(25)	1184703°
DN 15	0.50	0.95	1.20	(25)	1184704°
DN 20	0.55	1.10	3.50	(25)	1184706°

49 mm
54 mm
63 mm

Straight pattern valve









DN 10	0.50	0.95	1.20	(25)	1184803°
DN 15	0.50	0.95	1.20	(25)	1184804°
DN 20	0.55	1.10	2.50	(25)	1184806°

75 mm
83 mm
98 mm

**1.1.i Thermostatic valve sets****Content**

Thermostatic valve sets with thermostat "vindo TH"	90
Thermostatic valve sets with thermostat "Uni LH"	91
Connection sets "Multiflex F" with thermostat "vindo TH"	91

Article	Packing unit	Article-No.	Hint
Thermostatic valve sets with thermostat "vindo TH"			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10)
Angle pattern			Thermostatic valves "AQ": Operating temperature t_s : 2 °C up to 110 °C
	consisting of: Thermostatic valve "AQ" with "Q-Tech" for automatic hydronic balancing, radiator lockshield valve "Combi 2", thermostat "vindo TH"		Thermostatic valves "AV 9", RFV 9", "RF", "A" and radiator lockshield valve "Combi 2": Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C)
	DN 10	(10) 1713063°	
	DN 15	(10) 1713064°	
	consisting of: Thermostatic valve "AV 9" with infinitely adjustable presetting, radiator lockshield valve "Combi 2", thermostat "vindo TH"		
	DN 10	(10) 1673703°	
	DN 15	(10) 1673704°	
	consisting of: Thermostatic valve "A", radiator lockshield valve "Combi 2", thermostat "vindo TH"		
	DN 10	(10) 1671003°	
	DN 15	(10) 1671004°	
Straight pattern			
	consisting of: Thermostatic valve "AQ" with "Q-Tech" for automatic hydronic balancing, radiator lockshield valve "Combi 2", thermostat "vindo TH"		
	DN 10	(10) 1713163°	
	DN 15	(10) 1713164°	
	consisting of: Thermostatic valve "RFV 9" with infinitely adjustable presetting, radiator lockshield valve "Combi 2", thermostat "vindo TH"		
	DN 10	(10) 1675103°	
	DN 15	(10) 1675104°	
	consisting of: Thermostatic valve "RF", radiator lockshield valve "Combi 2", thermostat "vindo TH"		
	DN 10	(10) 1672003°	
	DN 15	(10) 1672004°	

Article	Packing unit	Article-No.	Hint	
Thermostatic valve sets with thermostat "Uni LH"				
Angle pattern				
consisting of: Thermostatic valve "AQ" with "Q-Tech" for automatic hydronic balancing, radiator lockshield valve "Combi 2", thermostat "Uni LH"				
DN 10	(10)	1703063	Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Thermostatic valves "AQ": Operating temperature t_s : 2 °C up to 110 °C Thermostatic valves "AV 9" and radiator lockshield valve "Combi 2": Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C)	
DN 15	(10)	1703064		
consisting of: Thermostatic valve "AV 9" with infinitely adjustable presetting, radiator lockshield valve "Combi 2", thermostat "Uni LH"				
DN 10	(10)	1683703		
DN 15	(10)	1683704		
Straight pattern				
consisting of: Thermostatic valve "AQ" with "Q-Tech" for automatic hydronic balancing, radiator lockshield valve "Combi 2", thermostat "Uni LH"				
DN 10	(10)	1703163	Application Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C)	
DN 15	(10)	1703164		
consisting of: Thermostatic valve "AV 9" with infinitely adjustable presetting, radiator lockshield valve "Combi 2", thermostat "Uni LH"				
DN 10	(10)	1683803		
DN 15	(10)	1683804		
Connection sets "Multiflex F" with thermostat "vindo TH"				
Angle pattern				
consisting of: "Multiflex F" ZB angle pattern isolating fitting and thermostat "vindo TH"				
for G ¾ male thread	(10)	1715814		
for G ½ female thread	(10)	1715884		
Straight pattern				
consisting of: "Multiflex" ZB isolating fitting, thermostat "vindo TH"				
for G ¾ male thread	(10)	1715813		
for G ½ female thread	(10)	1715883		

1.1.j Exclusive radiator valves**Content**

Thermostatic valves "E"	94
Design handgrips	95
Radiator lockshield valves "Combi E"	96
Sets of compression fittings (1-fold)	96
T-pieces	96
Wall connection sets (1-fold)	97
Thermostatic valve sets "E"	98

Article	kv at 1K P- dev.	kv at 2K P- dev.	kvs	Packing unit	Article-No.
---------	---------------------------	---------------------------	-----	-----------------	-------------

Hint

Thermostatic valves "E"

infinitely adjustable presetting

Angle pattern valve DN 15



anthracite (RAL 7016)	0.36	0.67	1.20	(10)	1163032
sand blasted and nickel plated	0.36	0.67	1.20	(10)	1163042°
chrome plated	0.36	0.67	1.20	(10)	1163052
white (RAL 9016)	0.36	0.67	1.20	(10)	1163062
gold plated	0.36	0.67	1.20	(10)	1163072
stainless steel finish	0.36	0.67	1.20	(10)	1163082

Straight pattern valve DN 15



anthracite (RAL 7016)	0.36	0.67	1.00	(10)	1163132
sand blasted and nickel plated	0.36	0.67	1.00	(10)	1163142°
chrome plated	0.36	0.67	1.00	(10)	1163152
white (RAL 9016)	0.36	0.67	1.00	(10)	1163162
gold plated	0.36	0.67	1.00	(10)	1163172
stainless steel finish	0.36	0.67	1.00	(10)	1163182

Reversed angle pattern valve DN 15



anthracite (RAL 7016)	0.36	0.67	1.00	(10)	1163232
chrome plated	0.36	0.67	1.00	(10)	1163252
white (RAL 9016)	0.36	0.67	1.00	(10)	1163262

Double angle pattern valve

Left hand side connection DN 15



anthracite (RAL 7016)	0.36	0.67	1.00	(10)	1163432
chrome plated	0.36	0.67	1.00	(10)	1163452
white (RAL 9016)	0.36	0.67	1.00	(10)	1163462
stainless steel finish	0.36	0.67	1.00	(10)	1163482

Right hand side connection DN 15



anthracite (RAL 7016)	0.36	0.67	1.00	(10)	1163433
chrome plated	0.36	0.67	1.00	(10)	1163453
white (RAL 9016)	0.36	0.67	1.00	(10)	1163463
stainless steel finish	0.36	0.67	1.00	(10)	1163483

Exclusive radiator valves**Valves for thermostats**connection thread M 30 x 1.5
brass

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).


Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C),
2 °C up to 90 °C for the white models
and in stainless steel finish.Oventrop exclusive thermostatic radiator and lockshield valves for an elegant home interior.
Technical data and nominal flow rate as thermostatic valves "AV 9", page 70.

All valve inserts are replaceable by using the special tool "Demo-Bloc", page 81, without draining the system.

All valves are suitable for the installation with copper pipes.



Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted.










Awards:

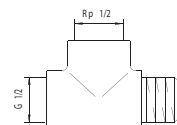
 Design Award of
North Rhine Westphalia,
Award of Honour for Industrial Products
Industrial Design Forum Hanover
Award iF
Design-Innovation of
Design Centre Essen
Award of High Quality of Design


Pragotherrm Prague



German Institute for Copper Berlin
Award "Product and Brass"
Admission to "The New Collection"
for exemplary Design Munich,
"Design Laboratory" Museum of Art
and Commerce Hamburg and
Design Museum London
Thermostats from page 24.


Article	Article-No.	Hint
Design handgrips for thermostatic valves "E", chrome plated connection thread M 30 x 1.5		
	TARA ◊	1168052°
		Consisting of handgrip and adapter. May be fitted onto the chrome plated thermostatic valves "E". Max. flow temperature: 75 °C
	MADISON ◊	1168152°
		◊ Product and trademark of the company Alois F. Dornbracht GmbH & Co. KG Armaturenfabrik.

Article	Packing unit	Article-No.	Hint
Radiator lockshield valves "Combi E"			Technical data as "Combi 4", page 152.
Angle pattern DN 15			Service tool, item no. 1090551, page 153.
	anthracite (RAL 7016)	(10) 1166032	
	sand blasted and nickel plated	(10) 1166042°	
	chrome plated	(10) 1166052	
	white (RAL 9016)	(10) 1166062	
	gold plated	(10) 1166072	
	stainless steel finish	(10) 1166082	
Straight pattern DN 15			
	anthracite (RAL 7016)	(10) 1167032	
	sand blasted and nickel plated	(10) 1167042°	
	chrome plated	(10) 1167052	
	white (RAL 9016)	(10) 1167062	
	gold plated	(10) 1167072	
	stainless steel finish	(10) 1167082	
Sets of compression fittings (1-fold)			Attention: When installing copper pipes with a wall thickness of ≤ 1 mm it is necessary to use reinforcing sleeves for the additional stabilisation of the pipe. Should the wall thickness exceed 1 mm, please contact the pipe manufacturer. Reinforcing sleeves for wall thickness = 1 mm, page 167. Note: The pipes are not held by the soft sealing fitting, they have to be fixed additionally. Regarding stretching of the pipe ends, the instructions of the pipe manufacturers have to be observed.
for copper pipe according to DIN EN 1057 consisting of: compression ring, compression nut, cap			
	G 1/2 M x 12 mm sand blasted and nickel plated	1169392°	
	G 1/2 M x 15 mm sand blasted and nickel plated	1169393°	
	G 1/2 M x 16 mm sand blasted and nickel plated	1169394°	
	G 1/2 M x 12 mm chrome plated	1169092°	
	G 1/2 M x 15 mm chrome plated	1169093°	
	G 1/2 M x 16 mm chrome plated	1169094°	
	G 1/2 M x 12 mm white (RAL 9016)	1169192°	
	G 1/2 M x 15 mm white (RAL 9016)	1169193°	
	G 1/2 M x 16 mm white (RAL 9016)	1169194°	
	G 1/2 M x 12 mm gold plated	1169292°	
	G 1/2 M x 15 mm gold plated	1169293°	
	G 1/2 M x 16 mm gold plated	1169294°	
	G 1/2 M x 12 mm anthracite (RAL 7016)	1169492°	
	G 1/2 M x 15 mm anthracite (RAL 7016)	1169493°	
	G 1/2 M x 12 mm stainless steel finish	1169592°	
	G 1/2 M x 15 mm stainless steel finish	1169593°	
T-pieces			For the installation of heating elements in towel radiators.
R 1/2 M x Rp 1/2 F, connection of heating element G 1/2 F			
	chrome plated	1167552°	
	white	1167562°	



Item no. 1167552/62

Article	Article-No.	Hint
Wall connection sets (1-fold)		
	chrome plated	<p>For the wall installation of the exclusive radiator valves. Consisting of: pipe Ø 15 mm white or chrome plated, L = 150 mm, R ½ male thread EN 10226-1 connection for the wall installation and compression fittings for the exclusive radiator valves.</p>
	DN 15	
	white	
	DN 15	

Article	Article-No.	Hint
Thermostatic valve sets "E" chrome plated, DN 15		
	Angle pattern consisting of:	Exclusive radiator valves Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C) Oventrop exclusive radiator and lockshield valves for an elegant home interior. Technical data and nominal flow rate as thermostatic valves "AV 9", page 70. All valve inserts are replaceable by using the special tool "Demo-Bloc", page 81, without draining the system. All valves are suitable for the installation with copper pipes. Compression fittings page 96. Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted.
	Angle pattern valve, angle pattern lockshield valve, thermostat "Uni SH"	
	1164052	
	Straight pattern consisting of:	
	Straight pattern valve, straight pattern lockshield valve, thermostat "Uni SH"	
	1164152	
	Double angle pattern left hand side connection consisting of:	
	Double angle pattern valve (left hand side connection), angle pattern lockshield valve, thermostat "Uni SH"	
	1164352	
	Double angle pattern right hand side connection consisting of:	
	Double angle pattern valve (right hand side connection), angle pattern lockshield valve, thermostat "Uni SH"	
	1164452	



1.1.k "Multiblock T/ T-RTL" Fittings for radiators with centre connection

Content



"Multiblock T" Two pipe fitting	100
"Multiblock TU" One/two pipe fitting convertible	101
Design covers	102
Connection sets "Multiblock T"/"Uni SH" for towel radiators (radiators with G ½ female thread)	103
Connection sets "Multiblock T"/"pinox H" for towel radiators (radiators with G ½ female thread)	103
"Multiblock TFU" One/two pipe fitting convertible	104
Connection sets "Multiblock TFU"/"Uni SH" for towel radiators (radiators with G ½ female thread)	104
"Multiblock T-RTL"	105
Connection sets "Multiblock T-RTL"/"Uni SH"	107
Connection sets "Multiblock T-RTL"/"pinox H"	107

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
"Multiblock T" Two pipe fitting						
Fitting with infinitely adjustable presetting and isolating and draining facility						
brass, nickel plated, with soft seal						
Installation irrespective of the position of the supply and return pipe						
for the connection to radiators with G ¾ male thread according to DIN EN 16313 (cone "Euro")						
	0.34	0.57	0.81	(5)	1184013	"Multiblock T" for use on radiators with supply and return pipe connection. Distance between pipe centres 50 mm. Marking "OV 2" on valve body. To be used: – for two pipe operation – as thermostatic valve – as isolating fitting – for draining – for filling Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Technical data as thermostatic valves "AV 9". For the connection of copper, precision steel, stainless steel and plastic pipes as well as the Oventrop composition pipe "Copipe", the Oventrop compression fittings are to be used, page 166. Alternatively, the compression fittings of other manufacturers which are suitable for the connection to male thread G ¾ according to DIN EN 16313 (cone "Euro") may also be used.
Straight pattern						
G ¾ collar nut x G ¾ male						
	0.34	0.57	0.81	(5)	1184014	
Angle pattern						
G ¾ collar nut x G ¾ male						
for the connection to radiators with G ½ female thread						
	0.34	0.57	0.81	(5)	1184083	
Straight pattern						
G ½ male x G ¾ male						
	0.34	0.57	0.81	(5)	1184084	
Angle pattern						
G ½ male x G ¾ male						

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint	
"Multiblock TU" One/two pipe fitting convertible Fitting with infinitely adjustable presetting, convertible, with isolating facility brass, nickel plated, with soft seal Installation irrespective of the position of the supply and return pipe for the connection to radiators with G ¾ male thread according to DIN EN 16313 (cone "Euro") <div><div><div>0.34</div><div>0.57</div><div>0.81</div><div>(5)</div><div>1184023</div></div><div>Straight pattern G ¾ collar nut x G ¾ male</div></div> <div><div><div>0.34</div><div>0.57</div><div>0.81</div><div>(5)</div><div>1184024</div></div><div>Angle pattern G ¾ collar nut x G ¾ male</div></div> for the connection to radiators with G ½ female thread <div><div><div>0.34</div><div>0.57</div><div>0.81</div><div>(5)</div><div>1184033</div></div><div>Straight pattern G ½ male x G ¾ male</div></div> <div><div><div>0.34</div><div>0.57</div><div>0.81</div><div>(5)</div><div>1184034</div></div><div>Angle pattern G ½ male x G ¾ male</div></div>							<p>"Multiblock TU" for use on radiators with supply and return pipe connection. Distance between pipe centres 50 mm. Supplied for two pipe operation. Conversion to one pipe operation see installation instructions.</p> <p>Marking "OV 1+2" on valve body.</p> <p>To be used:</p> <ul style="list-style-type: none">– for one or two pipe operation– as thermostatic valve– as isolating fitting <p>Application:</p> <p>Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).</p> <p>Max. operating pressure p_s: 10 bar (PN 10) Operating temperature t_s: 2 °C up to 120 °C (for short periods up to 130 °C)</p> <p>Technical data as thermostatic valves "AV 9". kv-/kvs values valid for two pipe operation. Values for one pipe operation see "Technical information".</p> <p>For the connection of copper, precision steel, stainless steel and plastic pipes as well as Oventrop composition pipe "Copipe", the Oventrop compression fittings are to be used, page 166.</p> <p>Alternatively, the compression fittings of other manufacturers which are suitable for the connection to male thread G ¾ according to DIN EN 16313 (cone "Euro") may also be used.</p> <p>Award:</p> <p>"Multiblock T" in combination with "Uni SH" in stainless steel finish</p> <div><div>Design Centre Essen reddot design award</div></div> <div><div>Design Award of the Federal Republic of Germany Nominated 2008</div></div>

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------	-------------	------

Design covers

for "Multiblock T/TU/TQ"

Straight pattern



anthracite	(5)	1184088
stainless steel finish	(5)	1184090
white	(5)	1184095
chrome plated	(5)	1184097

Angle pattern



anthracite	(5)	1184089
stainless steel finish	(5)	1184091
white	(5)	1184096
chrome plated	(5)	1184098

Special valve insert for reversed supply and return pipe
with infinitely adjustable presetting



"AV9U"	0.57	(100) 1187078
--------	------	----------------------

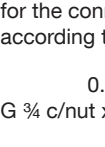
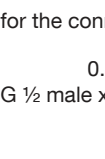
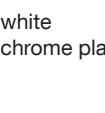
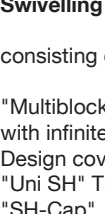
As replacement for:

- "Multiblock T/TU/TFU"
- "Unibox E T"
- "Unibox E plus"
- "Unibox E vario"
- "Unibox E BV"
- "Unibox T-RTL"
- "Unibox T-RTL vario"
- "Unibox T-RTL R-Tronic"

In case of reversed direction of flow for:

- "Unibox T"
- "Unibox TQ"
- "Unibox TQ-RTL"
- "Unibox TQ-RTL vario"
- "Unibox TQ-RTL R-Tronic"
- "Unibox plus" (connection for room temperature control)
- "Unibox vario" (connection for room temperature control)
- "Unibox Q plus" (connection for room temperature control)

Article	Packing unit	Article-No.	Hint
Connection sets "Multiblock T"/"Uni SH" for towel radiators (radiators with G ½ female thread)			
Straight pattern			
consisting of:			
"Multiblock T", connection fitting with infinitely adjustable presetting, two pipe fitting Design cover "Uni SH" Thermostat with liquid sensor "SH-Cap"			
white	(12)	1184183	"Multiblock T" for use on radiators with supply and return pipe connection. Distance between pipe centres 50 mm. Marking "OV 2" on valve body. To be used: -for two pipe operation -as thermostatic valve -as isolating fitting -for draining -for filling Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Technical data as thermostatic valves "AV 9". "Uni SH": <u>with 'O' setting</u> , temperature range 7–28 °C graduation on cap 0 ☼ 1-5 White set: Thermostat "Uni SH" white/chrome plated "Multiblock T" also available as one/two pipe fitting (convertible): page 100 Marking "OV 1+2" on valve body. Awards: "Multiblock T" in combination with "Uni SH" in stainless steel finish:  Design Centre Essen reddot design award  Design Award of the Federal Republic of Germany Nominated 2009 "pinox H": <u>without 'O' setting</u> Temperature range: 7 - 28 °C Graduation on cap: ☼ 1 - 5
chrome plated	(12)	1184283	
stainless steel finish	(12)	1184383	
Angle pattern			
consisting of:			
"Multiblock T", connection fitting with infinitely adjustable presetting, two pipe fitting Design cover "Uni SH" Thermostat with liquid sensor "SH-Cap"			
white	(12)	1184184	
chrome plated	(12)	1184284	
stainless steel finish	(12)	1184384	
Connection sets "Multiblock T"/"pinox H" for towel radiators (radiators with G ½ female thread)			
Straight pattern			
consisting of:			
"Multiblock T", connection fitting with infinitely adjustable presetting, two pipe fitting Design cover "pinox H" Thermostat with liquid sensor			
white		1184185	
chrome plated		1184285	
Angle pattern			
consisting of:			
"Multiblock T", connection fitting with infinitely adjustable presetting, two pipe fitting Design cover "pinox H" Thermostat with liquid sensor			
white		1184186	
chrome plated		1184286	

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint	
"Multiblock TFU" One/two pipe fitting convertible							
Fitting with infinitely adjustable presetting, pivoting supply/return pipe connection with isolating and draining facility brass, nickel plated, with soft seal Installation irrespective of the position of the supply and return pipe							
							
	0.31	0.47	0.60	(5)	1184025	"Multiblock TFU" for use on radiators with supply and return pipe connection. Distance between pipe centres 50 mm. To be used: – for one or two pipe operation – as thermostatic valve – as isolating fitting – for draining – for filling – as angle or straight pattern model (pivoting) allowing the connection of the thermostat on the right or left hand side	
G 3/4 c/nut x G 3/4 male							
							
	0.31	0.47	0.60	(5)	1184035	Application: Central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Technical data as thermostatic valves "AV 9". kv-/kvs values valid for two pipe operation. Values for one pipe operation see "Technical information". For the connection of copper, precision steel, stainless steel and plastic pipes as well as Oventrop composition pipe "Copipe", the Oventrop compression fittings are to be used, page 166. Alternatively, the compression fittings of other manufacturers which are suitable for the connection to male thread G 3/4 according to DIN EN 16313 (cone "Euro") may also be used.	
G 1/2 male x G 3/4 male							
Design covers							
for "Multiblock TFU"							
							
white				(5)	1184092		
chrome plated				(5)	1184093		
Connection sets "Multiblock TFU"/"Uni SH" for towel radiators							
(radiators with G 1/2 female thread)							
Swivelling supply/return pipe connection							
consisting of:							
							
"Multiblock TFU" connection fitting with infinitely adjustable presetting, one/two pipe fitting Design cover "Uni SH" Thermostat with liquid sensor "SH-Cap"							
white					1184135	"Uni SH": with '0' setting, temperature range 7–28 °C graduation on cap 0 ☼ 1-5	
chrome plated					1184235		
White set: Thermostat "Uni SH" white/chrome plated							

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Multiblock T-RTL"

Connection fitting for the combination of radiator and surface temperature regulation, two pipe fitting, with infinitely adjustable presetting, isolating facility and integrated return temperature limiter, with soft seal, angle pattern, brass, nickel plated, including mounting aid

for the connection to radiators with G ¾ male thread according to DIN EN 16313 (cone "Euro")

G ¾ collar nut x G ¾ male **1184016**



for the connection to radiators with G ½ female thread

G ½ male x G ¾ male **1184086**



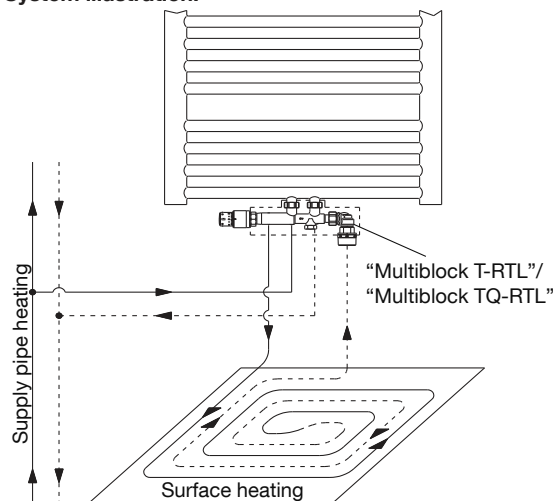
Design cover

for "Multiblock T-RTL" and "Multiblock TQ-RTL"

chrome plated **1184077**
white **1184087**



System illustration:



Rosette cover

for "Multiblock T-RTL" and "Multiblock TQ-RTL"

chrome plated **1189077**
white (50) **1189087**



"Multiblock T-RTL" for simultaneous connection of radiators with supply and return connection and 50 mm distance between pipe centres as well as surface temperature regulation.

For separate control of room and return temperature (limitation).

To be used:

- for two pipe operation
- as thermostatic valve at the radiator
- as isolating fitting at the radiator
- for surface temperature regulation by use of a return temperature limiter

Application:



Central heating systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 70 °C

Technical data as thermostatic valves "AV 9".

For the connection of copper, precision steel, stainless steel and plastic pipes as well as the Oventrop composition pipe "Copipe", the Oventrop compression fittings are to be used, page 166.

Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G ¾ male thread according to DIN EN 16313 (cone "Euro") may also be used.

The supply and return connections must be strictly observed to guarantee a perfect function of the fitting.

Article	Packing unit	Article-No.	Hint
		1184094	The surface circuit can be filled, drained, bled and leak tested with installed block for initial operation.
		(5) 1189094	Used for the pre-assembly and fixing of the pipes of the heating circuit and the surface heating.

Article

Article-No.

Hint

**Connection sets "Multiblock T-RTL"/"Uni SH"
for the combination of towel radiators (with G ½ female thread)
and surface heating**



Angle pattern

consisting of:

"Multiblock T-RTL"
connection fitting with infinitely adjustable presetting,
isolating facility and integrated
return temperature limiter, two pipe
fitting, including mounting aid
Design cover
"Uni SH" Thermostat with liquid sensor
"SH-Cap"

white

1184188

chrome plated

1184288

"Multiblock T-RTL" for simultaneous
connection of radiators with supply and return
connection and 50 mm distance between pipe
centres as well as surface heating.
For separate control of room and return
temperature (limitation).

To be used:

- for two pipe operation
- as thermostatic valve at the radiator
- as isolating fitting at the radiator
- for surface temperature regulation by
use of a return temperature limiter

Application:

Central heating systems with closed circuits,
for operation with non-aggressive, harmless
fluids (e.g. water or suitable water and glycol
mixtures according to VDI 2035/ÖNORM 5195).
Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 70 °C
Technical data as thermostatic valves "AV 9".

"Uni SH":

with '0' setting

Temperature range: 7 - 28 °C

Graduation on cap: 0 ☼ 1 - 5

**Connection sets "Multiblock T-RTL"/"pinox H"
for the combination of towel radiators (with G ½ female thread)
and surface heating**



Angle pattern

consisting of:

"Multiblock T-RTL"
connection fitting with infinitely adjustable presetting,
isolating facility and integrated
return temperature limiter, two pipe
fitting, including mounting aid
Design cover
"pinox H" Thermostat with liquid sensor

white

1184189

chrome plated

1184289

"pinox H":

without '0' setting

Temperature range: 7 - 28 °C

Graduation on cap: ☼ 1 - 5

Award:



ICONIC AWARDS 2017
winner



1.1.I Valve sets, components and accessories for for two pipe heating systems

Content

"Bypass-Combi Duo" two pipe with shut off"Duo Two pipe connection piece with shut off	110
"Duo" Two pipe connection piece with shut off	110
Connection pieces	111
"Duo" Two pipe connection piece without shut off	112
Two pipe radiator valve with insertion tube with shut off	112
Valve for TKM system	112
Angle pattern fitting	112

Room temperature and climate control / Hydronic balancing at the radiator

"Bypass-Combi Duo" two pipe with shut off
 Duo Two pipe connection piece with shut off
 "Duo" Two pipe connection piece with shut off

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

"Bypass-Combi Duo" two pipe with shut off
 Duo Two pipe connection piece with shut off
 comprising the following components:

Thermostatic valves "A"

Reversed angle pattern valve

DN 15	0.50	0.95	1.20	(25)	1181404
-------	------	------	------	------	----------------



Double angle pattern valve
 Left hand side connection

DN 15	0.50	0.95	1.20	(25)	1181392
-------	------	------	------	------	----------------



Right hand side connection

DN 15	0.50	0.95	1.20	(25)	1181393
-------	------	------	------	------	----------------



or
 straight pattern valve with pipe elbow DN 15

"A"	0.50	0.95	1.20	(25)	1181304
-----	------	------	------	------	----------------



"AV 9"	0.36	0.67	1.00	(25)	1184005
--------	------	------	------	------	----------------

Connecting pipe
 steel, chrome plated

15 x 560 mm long	1016951
15 x 1120 mm long	1016953
15 x 2000 mm long	1016954°



"Ofix CEP" Compression fittings
 2-fold, for connecting pipe, metal to metal sealing

G 1/2 x 15 mm	(50)	1016853
---------------	------	----------------



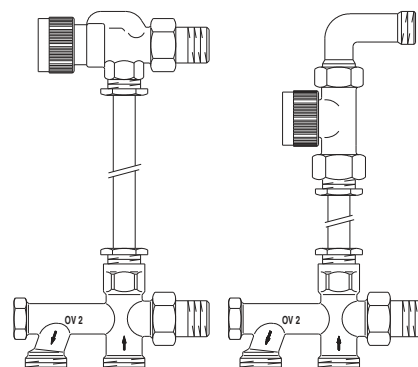
"Duo" Two pipe connection piece with shut off

Valves / Valves for two pipe heating systems
 connection thread M 30 x 1.5
 brass, nickel plated

Application:

Two pipe central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
 Operating temperature t_s : 2°C up to 120°C (for short periods up to 130°C)



The male threads G 3/4 according to DIN EN 16313 (cone "Euro") of the two pipe connection pieces "Duo" allow for the connection to copper, precision steel and plastic pipes as well as the Oventrop composition pipe "Copipe" by using the corresponding fittings, page 166.

Distance between pipe centres 50 mm.

"Unofix" System for refurbishment of one pipe heating systems: Pages 125, 326
Single fittings: Page 165



DN 15 G ¾ male thread

(25) 1013361

Connection pieces
nickel plated"h" fitting
without collar nut

G ½ M x G ¾ M x G ¾ M

(10) 1028750

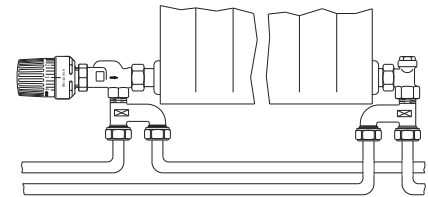


with collar nut

G ¾ F x G ¾ M x G ¾ M

(10) 1028851°

The "h" fitting G ½ x G ¾ x G ¾ is suitable for the installation of plastic, precision steel, copper and Oventrop composition pipe "Copipe" in combination with all Oventrop thermostatic radiator and lockshield valves DN 15 (Rp ½ F), distance between pipe centres 50 mm.



Item no. 1028851 for the connection of valves with male thread G ¾.

Thermostats from page 24.

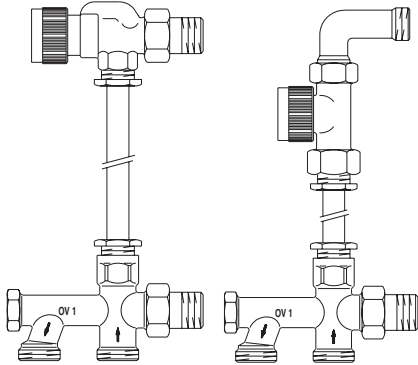
Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
"Duo" Two pipe connection piece without shut off or with shut off and infinitely adjustable presetting with brass fitting				Application: Two pipe central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Distance between pipe centres 35 mm.
DN 15 M 24 x 1.5 M				
without shut off		(25)	1182551°	
with shut off and infinitely adjustable presetting		(25)	1182651	
Compression fittings "Ofix" M 24 x 1.5: page 116.				
Two pipe radiator valve with insertion tube with shut off				Application: Two pipe central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) The insertion tube is 150 mm long, Ø 11 mm, distance between pipe centres 50 mm.
with vertical insertion tube				
DN 15 G ¾ M 0.90			1183581	Marking: 2 grooves on the front face of the lateral isolating stem.
with horizontal insertion tube				
DN 15 G ¾ M 0.90			1643561	Marking "OV 2" on valve body.
Valve for TKM system				These valves are required for the connection of radiators of the "TKM" system. The two pipe valve has an <u>anthracite</u> protection cap. Characteristic: 2 grooves on front face of the lateral isolating stem.
Two pipe valve				
DN 15 G ¾ M 0.90		(20)	1183661°	
Angle pattern fitting				For the connection to G ¾ male thread according to DIN EN 16313 (cone "Euro"). Thermostats from page 24.
G ¾ c/nut x G ¾ M		(10)	1189361	






1.1.m Valve sets, components and accessories for one pipe heating systems

Content

"Bypass-Combi Uno" one pipe	114
"Uno" One pipe connection piece	115
"Uno" One pipe connection piece M 24 x 1.5	116
"Ofix" Compression fittings M 24 x 1.5	116
"Cofit S" Compression fittings M 24 x 1.5	116
Plastic rosette cover	116
One pipe radiator valve with insertion tube with fixed bypass and shut off	117
Valve for TKM system	117
Angle pattern fitting	117
Three-way conversion valves	118
Accessories	118
Isolation fittings	120
S-connection fitting, flat sealing	121
Tailpipe sets	121

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
"Bypass-Combi Uno" one pipe with infinitely adjustable bypass and shut off comprising the following components:						
Thermostatic valves "A"						
Reversed angle pattern valve						
DN 15	0.50	0.95	1.20	(25)	1181404	
Double angle pattern valve Left hand side connection						
DN 15	0.50	0.95	1.20	(25)	1181392	
Right hand side connection						
DN 15	0.50	0.95	1.20	(25)	1181393	
or straight pattern valve with pipe elbow DN 15						
	0.50	0.95	1.20	(25)	1181304	
"A"						
Connecting pipe steel, chrome plated						
15 x 560 mm long					1016951	
15 x 1120 mm long					1016953	
15 x 2000 mm long					1016954°	
"Ofix CEP" Compression fittings 2-fold, for connecting pipe, metal to metal sealing						
G ½ x 15 mm					(50)	1016853
Valves / Valves for one pipe heating systems connection thread M 30 x 1.5 brass, nickel plated						
Application: One pipe central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). One pipe heating systems with outputs up to 8.000 Watt per circuit. Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C)						
						
The male threads G ¾ according to DIN EN 16313 (cone "Euro") of the one pipe connection pieces "Uno" allow for the connection to copper, precision steel and plastic pipes as well as Oventrop composition pipes "Copipe" by using the corresponding fittings, page 165. Distance between pipe centres 50 mm.						

"Unofix" System for refurbishment of one pipe heating systems: Pages 125, 326
Single fittings: Page 165

Article	Packing unit	Article-No.	Hint
"Uno" One pipe connection piece with infinitely adjustable bypass and shut off			
with radiator isolating fitting			
		DN 15 G ¾ M	(25) 1013161
with brass fitting			
		DN 15 G ¾ M	(25) 1013162
reversed direction of flow with radiator isolating fittings			
		DN 15 G ¾ M	(25) 1013164

A special radiator isolating fitting at the distributor, item no. 1013161, prevents even small capacity radiators from self convection heating.

Radiator share: 35 % (factory setting), adjustable between 20 and 50%.

Marking "OV 1" on valve body.

With reversed direction of flow (return radiator side) compared with item no. 1013161 and 1013162.

Marking "OV 1-U" on valve body.

Thermostats from page 24.

Article	Packing unit	Article-No.	Hint
"Uno" One pipe connection piece M 24 x 1.5			
without shut off with fixed bypass or			
with shut off and infinitely adjustable bypass			
with brass fitting			
DN 15 M 24 x 1.5 male thread			
without shut off	(25)	1182051°	Application: One pipe central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). One pipe heating systems with outputs up to 8.000 Watt per circuit. Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Distance between pipe centres 35 mm. Radiator share: 50 %
with fixed bypass			
with shut off	(25)	1182151	
and infinitely adjustable bypass			
"Ofix" Compression fittings M 24 x 1.5			
brass, collar nut nickel plated			
"Ofix CEP" 2-fold for copper pipes according to DIN EN 1057, metal to metal sealing			
15 mm	(50)	1016813	Attention: When installing copper pipes with a wall thickness of ≤ 1 mm, it is necessary to use reinforcing sleeves for the additional stabilisation of the pipe. Should the wall thickness exceed 1 mm, please contact the pipe manufacturer. Reinforcing sleeves for wall thickness = 1 mm, see page 167. Note: The pipes are not held by the soft sealing fitting, they have to be fixed additionally. Regarding stretching of the pipe ends, the instructions of the pipe manufacturers have to be observed.
"Ofix K" 2-fold for plastic pipes according to DIN 4726, PE-X according to DIN 16892/16893, PB according to DIN 16968, PP according to DIN 8078 A1, metal to metal sealing plus O-ring			
14 x 2 mm	(10)	1016823	
16 x 2 mm	(10)	1016824	
"Cofit S" Compression fittings M 24 x 1.5			
universal application for composition pipe and, provided similar preparation is used, for plastic pipes (PE-X pipes) , 2-fold, metal to metal sealing plus O-ring, brass, collar nut nickel plated			
14 x 2 mm	(10)	1507854°	The permissible operating pressures and operating temperatures depend on the application classes of the respective standards of the plastic pipework systems (e.g. PE-X, DIN EN ISO 15875).
16 x 2 mm	(10)	1507855°	
Plastic rosette cover			
flat, distance between pipe centres 35 mm			
14 - 16 mm	(25)	1016684	

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------------	-----	-----------------	-------------	------

One pipe radiator valve with insertion tube with fixed bypass and shut off

with horizontal insertion tube



DN 15 1.50 1.80 2.60 **1183561**
G 3/4 M

Application:
One pipe central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C)

The fixed bypass of the radiator valves with insertion tube is adjusted to a radiator flow share of 35 % (factory setting) at 2K P-deviation.
The insertion tube is 150 mm long, Ø 11 mm, distance between pipe centres 50 mm.

with vertical insertion tube



DN 15 1.50 1.80 2.20 **1183571**
G 3/4 M

The one pipe radiator valve with vertical insertion tube is especially suitable for towel radiators. (The technical instructions of the radiator manufacturers have to be observed.)

Valve for TKM system

One pipe valve



DN 15 1.22 1.50 1.80 (20) **1183671°**
G 3/4 M

Radiator share: 50 %
The valves are required for the connection of radiators of the "TKM" system.
The one pipe valve has an orange protection cap.

Angle pattern fitting









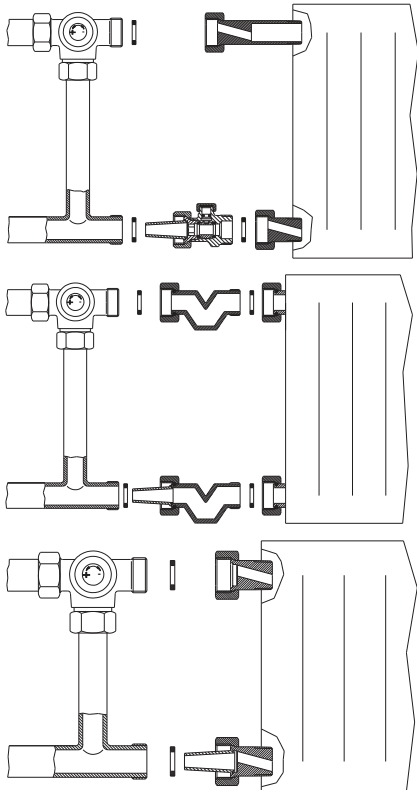


G 3/4 c/nut x G 3/4 M (10) **1189361**

For the connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro").

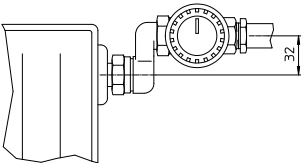
Thermostats from page 24.

Article	Packing unit	Article-No.	Hint
Three-way conversion valves connection thread M 30 x 1.5 bronze/brass, nickel plated, with presetting			Three-way conversion valves and accessories for the conversion of vertical one pipe heating systems to thermostatic systems. The Oventrop three-way conversion valves have the same dimensions as the manual radiator valves according to TGL 43191 (models A, B, C, D). Application: One pipe entral heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 16 bar (PN 16) Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C) One pipe systems with top and bottom connection at the radiator may experience a slight warming up of the radiator even with the valves being closed, all depending on the size of the radiator, the type of radiator and the flow temperature. This warming up is system related and cannot be eliminated by using thermostatic radiator valves. Isolation fittings to reduce this warming up: page 120. All three-way conversion valves have a <u>yellow</u> protection cap, the gland nut has a <u>yellow</u> marking since end of 1993.
	DN 15 Left hand side connection	(25) 1180584	
	DN 15 Right hand side connection	(25) 1180585	
	DN 20 Left hand side connection	(25) 1180586	
	DN 20 Right hand side connection	(25) 1180587	
Accessories			
	Presetting key with pocket		
	for three-way conversion valve with presetting	1010599	
	Fittings, flat sealing – to the radiator –		
	DN 15 (R ½ male / collar nut G ¾ female)	(25) 1019394	
	DN 20 (R ½ male / collar nut G 1 female)	(25) 1019396	
	– to the bypass pipe –		
	DN 15 (G ½ female / collar nut G ¾ female)	(25) 1019384	
	DN 20 (G ¾ female / collar nut G 1 ¼ female)	(25) 1019386	
	- to the pipework -		
	DN 15 (weldable tailpipe / collar nut G ¾ female)	(25) 1019374	
	DN 20 (weldable tailpipe / collar nut G 1 female)	(25) 1019376	
Isolating fitting, flat sealing 45 mm			
	DN 15 (G ¾ male / collar nut G ¾ female)	(25) 1016194	
	DN 20 (G 1 male / collar nut G 1 female)	(25) 1016196	

Article	Packing unit	Article-No.	Hint
Compensating fittings, flat sealing			
45 mm			
	DN 15 (G 3/4 male / collar nut G 3/4 female)	(25) 1016394°	
79 mm			
	DN 15 (G 1/2 male / collar nut G 3/4 female)	(25) 1019194°	
	DN 20 (G 1/2 male / collar nut G 1 female)	(25) 1019196°	
Connection sets			
The connection set with bypass consists of a full exchange pack of all the fittings required in front of the radiator. These components are required in combination with the three-way conversion valves and isolating fittings.			
	Centre distance 552 mm DN 15	1010558	
	Centre distance 552 mm DN 20	1010559	
	Centre distance 992 mm DN 15	1010568	
	Centre distance 992 mm DN 20	1010569	
Valve insert with presetting			Old model.
	suitable for three-way conversion valves with connection thread M 30 x 1.0	(25) 1017056	
	Valve insert for three-way conversion valve with presetting	(100) 1187056	For three-way conversion valve item no. 1180584/85/86/87.

Article	Packing unit	Article-No.	Hint
Isolation fittings to reduce heat transfer between valve/T-piece and radiators of vertical one pipe installations. The isolation fittings are supplied as a set for the top and the bottom connection of the radiator.			
Isolation loop and shut off set			
	DN 15	(25) 1016284	
	(G ¾ collar nut x G ¾ male thread)		
	DN 20	(25) 1016286	
	(G 1 collar nut x G 1 male thread)		
The isolation loop and shut off set are suitable for radiators with welded fitting.			
Isolation tailpipe (set) (reduced dimension – tailpipe and collar nut)			
	DN 15	(25) 1016295°	
	(G ¾ collar nut x G ½ male thread)		
	DN 20	(25) 1016297°	
	(G 1 collar nut x G ½ male thread)		
Isolation-compensation-shut off set			
	DN 15	(25) 1016254	
	(G ¾ collar nut x G ½ male thread)		
	DN 20	(25) 1016256	
	(G 1 collar nut x G ½ male thread)		
Refer to installation instructions.			
			The conversion from manual to thermostatic radiator valves and the installation of all a. m. components should be supervised by a qualified design engineer or plumber.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

S-connection fitting, flat sealing including radiator tailpipe (G ¾ collar nut x R ½ male thread)			
DN 15 (G ¾ male thread x G ¾ collar nut)	(10)	1019497	
DN 20 (G ¾ male thread x G 1 collar nut)	(10)	1019498	

The S-connection fitting is suitable for the replacement of radiators using existing pipework. The max. distance between pipe centres is 2 x 32 mm = 64 mm.

Tailpipe sets (2 pieces each)			
Set 5 = 2 weldable tailpipes			
for valve DN 15	(10)	1060592	
for valve DN 20	(10)	1060593	
Set 7 = 2 male threaded tailpipes			
R ½ for valve DN 15	(10)	1061492	
R ¾ for valve DN 20	(10)	1061493	
Set 8 = 2 female threaded tailpipes			
Rp ½ for valve DN 15	(10)	1061392	
Rp ¾ for valve DN 20	(10)	1061393	

**1.1.n "Unofix" Refurbishment of one pipe heating systems****Content**

System illustrations	124
"Cocon QTZ" Pressure independent control valves PN 16	125
"Aktor T" Electrothermal actuators	125
Accessories	126

System illustrations

"Unofix QB" consisting of:

- "Cocon QTZ" Pressure independent control valve , item no. 1145...
- Plastic cap, item no. 1146091

High-efficiency pump

Horizontal heating circuits with "Unofix QB"

"Unofix QR" consisting of:

- "Cocon QTZ" Pressure independent control valve, item no. 1145...
- Distance piece, item no. 140909.
- Thermostat "Uni RTLH", 10 °C – 70 °C, item no. 1149068

High-efficiency pump

Horizontal heating circuits with "Unofix QR"

"Unofix QT" consisting of:

- "Cocon QTZ" Pressure independent control valve, item no. 1145...
- Electrothermal actuator (two point), item no. 101241.
- Room thermostat, item no. 115256.

High-efficiency pump

Rooms supplied by the riser must belong to one residential unit!

Horizontal heating circuits with "Unofix QT"

High-efficiency pump

Vertical heating circuits with "Unofix QB"

High-efficiency pump

Vertical heating circuits with "Unofix QR"

Article	Control range	Packing unit	Article-No.
---------	---------------	--------------	-------------

Hint

"Cocon QTZ" Pressure independent control valves PN 16
connection thread M 30 x 1.5
both ports connections for measuring technique "classic"
(closed with blind plugs)

Inlet port: coupling, outlet port: female thread



DN 15	30 - 210 l/h	(10)	1145504
DN 15	90 - 450 l/h	(10)	1145604
DN 15	150 - 1050 l/h	(10)	1145704
DN 20	150 - 1050 l/h	(10)	1145506
DN 20	180 - 1300 l/h	(10)	1145606

both ports with connections for "classic" measuring technique
(closed with blind plugs)
both ports male thread



DN 10	30 - 210 l/h	(10)	1145563
DN 10	90 - 450 l/h	(10)	1145663
DN 15	30 - 210 l/h	(10)	1145564
DN 15	90 - 450 l/h	(10)	1145664
DN 15	150 - 1050 l/h	(10)	1145764
DN 20	150 - 1050 l/h	(10)	1145566
DN 20	180 - 1300 l/h	(10)	1145666

The system is used for the refurbishment of one pipe heating systems with horizontal or vertical heating circuits.

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +120 °C

Oventrop pressure independent control valves "Cocon QTZ" control the room temperature with the help of actuators or limit the return temperature with the help of the thermostat "Uni RTLH" (with distance piece item no. 114909.) The max. flow rate is set to the required nominal value and is constantly maintained within the necessary proportional band.

All valves DN 15 and DN 20 are suitable for the installation with copper pipes.

Model one port with coupling, one port with female thread:

Compression fittings page 164, reinforcing sleeves page 167.

Model both ports male thread:

DN 10: G 1/2 male threaded connection, flat sealing

DN 15: G 3/4 male threaded connection for compression fittings "Ofix", pages 164, 165 and 167.

With insert item no. 1661100 (page 150) suitable for flat sealing tailpipes.

DN 20: G 1 male threaded connection for compression fittings, page 833.

With insert item no. 1650793 (page 331) suitable for flat sealing tailpipes.

Further models page 326.

"Aktor T" Electrothermal actuators

"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5



"H NC", closed with current "off", 230 V	1012415
"L NC", closed with current "off", 24 V	1012416

Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats.

Further applications in bivalent heating installations.

Connecting cable 1 m.

With "First-Open" function and stroke index. Simple plug-in connection with valve adapter.






Actuators can be installed in any position.

Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.

Tailpipe sets: Page 331

Flexible hoses: Page 334

Combination possibilities of valves and actuators: Page 280

Article	Packing unit	Article-No.	Hint
"Uni RTHL" Thermostat connection thread M 30 x 1.5			
	anthracite	(10) 1149068	With '0' setting, may be limited or locked. Temperature range: 10° C - 70 °C The thermostats "Uni RTLH" may also be used in combination with the pressure independent control valves "Cocon QTZ" (with distance piece 114909.) for the limitation of the return temperature in one pipe risers.
	Room thermostat - flush mounting digital		With LCD display and adjustable timed programme.
	230 V	(40) 1152561	Temperature range: 5 °C up to 35 °C Operating current range (item no. 1152561): 100 up to 230 V AC
	24 V	(40) 1152562°	Heating: Use electrothermal actuators (two point) "closed with current off" (terminal "NC") or "open with current off" (terminal "NO").
Accessories			
	Plastic cap	(10) 1146091	Cap for the protection of the control unit at full stroke position. Is required if no actuator has been mounted.
	connection thread M 30 x 1.5		
	Distance piece	(10) 1149090	Distance piece for the optimisation of the return temperature in one pipe heating systems. Especially advantageous when using condensing appliances or for district heating systems. The distance piece is installed between the "Cocon QTZ" DN 10 up to DN 32 and the thermostat "Uni RTLH". A minimum flow rate of about 20% of the max. adjustable nominal value is maintained.
	with fixed minimum piston stroke		
	Distance piece	(10) 1149091	Minimum piston stroke infinitely adjustable, with recognition of the closing dimension. The required minimum flow rate can be set with the help of the scale.
	with adjustable minimum piston stroke		Can be used for "Cocon QTZ" DN 10 up to DN 20.

1.1.o Valve inserts for radiators with integrated distributor

Content



Valves inserts with "Q-Tech"	128
Valve inserts (M 30 x 1.5)	130
Valve inserts (squeeze connection)	132



Article

Packing
unit

Article-No.

Hint

Valves inserts with "Q-Tech"

for automatic hydronic balancing,
infinitely adjustable presetting, with G ½ male thread
and thermostat connection M 30 x 1.5
(in preparation)

GHQ
with front connection

(25) 1019080

GHQ
with internal O-ring

(25) 1019083

GHQ
with seat diameter 16 H 11

(25) 1019082

Application:

Central heating systems with closed circuits,
for operation with non-aggressive, harmless
fluids (e.g. water or suitable water and glycol
mixtures according to VDI 2035/ÖNORM 5195).
Max operating pressure: p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 110 °C
Flow range: 10 - 170 l/h

Function:

The valve inserts with "Q-Tech" are
combined control and regulating inserts
which are used for room temperature
control in combination with thermostats with
liquid sensor or actuators. The
max. flow rate is set to the required nominal
value and is constantly maintained within the
necessary proportional band.

The valve inserts are designed for the
installation into the valve bodies of integrated
distributors (e.g. panel radiators).

Presetting is carried out by using the
presetting key supplied with the valve inserts.

The valve inserts "GHQ" are not suitable for
steam installations.

All valve inserts "GHQ" have a light grey
protection cap.

Please observe installation instructions!

The valve insert item no. 1019080 is suitable
for the radiator types, e.g.:

- Arbonia (up to 2002)	- DiaNorm ¹	- Purmo ¹
- Baufa	- Dia-therm	- Radson ¹
- bremo	- HM-Heizkörper	- Rettig ¹
- DEF	- Hoval	- Runtal
- Manaut	-IMAS (since 2018)	

¹(up to end of 2010)

The valve insert item no. 1019083 is suitable
for the radiator types, e.g.:

- Caradon	- Henrad ²	- DURA
- Ferroli/IMA	- Korado	- Superia (since 2005)
- U.S. Steel	- Vasco	- Buderus (since 2001)
- De Longhi (since 2016)	-Brugman (since 2013)	

²(not suitable for ECO radiators)

The valve insert item no. 1019082 is suitable
for the radiator types, e.g.:

- De Longhi (up to 2016)	-Ribe
- Veba	-Brugman (up to 2013)

(Subject to technical modifications of the
radiator manufacturers)



Thermostat connection: squeeze connection

GDQ
with front connection(25) **1019099**

Please observe installation instructions!

The valve insert item no. 1019099 is suitable
for the radiator types, e.g.:

- Arbonia - DiaNorm¹ - Baufa
- (up to 2002)
- bremono - Dia-therm - Radson¹
- HM-Heizkörper- Rettig¹ - DEF
- Hoval - Runtal - Manaut
- Purmo¹ -IMAS
- (since 2018)

¹(up to end of 2010)GDQ
with internal O-ring(25) **1019084**The valve insert item no 1019084 is suitable
for the radiator types, e.g.:

- Brötje (since 2003)-Ferrol/IMA-DURA
- Caradon -Henrad² -Superia
- (since 2005)
- De Longhi -Buderus -Brugmann
- (since 2016) (since 2001)(since 2013)
- Vasco -Korado

² (not suitable for ECO radiators)GDQ
with seat diameter 16 H 11(25) **1019086**The valve insert item no. 1019086 is suitable
for the radiator types, e.g.:

- De Longhi (up to 2016) -Ribe
- Brugmann (up to 2013) -VEHA
- Brötje (since approx. 1994 up to approx. 2003)

(Subject to technical modifications of the
radiator manufacturers)

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

Valve inserts (M 30 x 1.5)

Application:

Central heating systems with closed circuits,
for operation with non-aggressive, harmless
fluids (e.g. water or suitable water and glycol
mixtures according to VDI 2035/ÖNORM 5195).
Max. operating pressure p_g : 10 bar (PN 10)
Operating temperature 2 °C bis 120 °C
(for short periods up to 130 °C)
Flow temperature up to 120 °C.

The valve inserts are designed for the
installation into the valve bodies of integrated
distributors (e. g. panel radiators).

The valve inserts are presettable to suit the
hydronic requirements of the heating system.

The hydronic values of the valve inserts GH
correspond to the values of the inserts of the
company Heimeier.

The valve inserts are suitable for the
thermostats "Uni XH", "Uni XHM",
"Uni XHT", "Uni LH", "Uni LHB", "Uni LHZ",
"Uni SH", "Uni CH", "vindo TH" and
"pinox H" (pages 24 - 27).

Attention: Filling and draining of the system
before the valves are preset and the thermostat
is mounted.

Please observe installation instructions!

The valve inserts item no. 1018080, 1018090
and 1648077 are suitable for the radiator types,
e.g.:

-Arbonia (up to 2002)-DiaNorm ¹	-Purmo ¹
-Baufa	-Dia-therm
-brema	-HM-Heizkörper-Rettig ¹
-DEF	-Hoval
-Manaut	-Runtal
	-IMAS
	(since 2018)

¹(up to end of 2010)

Is used for reversed supply and return pipe.

Attention: The radiator output can be reduced
when using this insert.



GH
with 6 presetting positions
with G ½ male thread
and thermostat connection M 30 x 1.5
with front connection
Protection cap: white

0.35	0.70	1.05	(25)	1018080
------	------	------	------	----------------

Brass



GHF
with fine presetting
with G ½ male thread
and thermostat connection M 30 x 1.5
with front connection
Protection cap: red

0.20	0.32	0.37	(25)	1018090
------	------	------	------	----------------



GH
with 6 presetting positions
with G ½ male thread
and thermostat connection M 30 x 1.5
with front connection
Protection cap: white

0.35	0.63	1.00	(25)	1648077
------	------	------	------	----------------



GH
with 6 presetting positions
with G ½ male thread
and thermostat connection M 30 x 1.5
with seat diameter 16 H 11
Protection cap: white

0.35	0.70	1.05	(25)	1018082
------	------	------	------	----------------

Brass

The valve inserts item no. 1018082 and
1018097 are suitable for the radiator types,
e.g.:

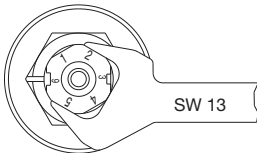
-De Longhi	-Veha
(up to 2016	
-Brugman	-Ribe
(up to 2013)	






(Subject to technical modifications of the
radiator manufacturers)



GHF
with fine presetting
with G ½ male thread
and thermostat connection M 30 x 1.5
with seat diameter 16 H 11
Protection cap: red

0.20	0.32	0.37	(25)	1018097
------	------	------	------	----------------

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
GH						The valve inserts item no. 1018083 and 1018098 are suitable for the radiator types, e.g.:
with 6 presetting positions						-Caradon
with G ½ male thread						-Henrad ²
and thermostat connection M 30 x 1.5						-DURA
with internal O-ring						-Ferroli/IMA
Protection cap: white						-Korado
						-Buderus
						-Brugman
						(since 2001)
						(since 2013)
						(since 2016)
	0.35	0.70	1.05	(25)	1018083	-Superia
Brass						(since 2005)
						² (not suitable for ECO radiators)
						(Subject to technical modifications of the radiator manufacturers)
GHF						
with fine presetting						
with G ½ male thread						
and thermostat connection M 30 x 1.5						
with internal O-ring						
Protection cap: red						
	0.20	0.32	0.37	(25)	1018098	
Presetting key					(10) 1183961	
for valves "AV 6, ADV 6, RFV 6, E",						The presetting value can be adjusted with the help of the marking on the hexagon of the valve insert.
fittings "Multiblock T/TU/TFU/T-RTL"						The presetting key fits only in one position.
(manufactured up to 2015) and valve inserts GH						
						
						Alternatively, presetting can also be carried out with a spanner sized 13 mm.
Presetting key						
for thermostatic valves "AF" and valve inserts GHF						
with pocket					1180791	
Valve insert						
with thread M 20 x 1.0						
and thermostat connection M 30 x 1.5						
Replacement for item no. 1879800 (M 30 x 1.0)						
e. g. Buderus/Brötje 1982 - 1986					(25) 1879850	
Further valve inserts for other types of radiators are prepared or are available on request.						
						Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted.

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.	Hint
Valve inserts (squeeze connection)						
	GD with 8 presetting positions with G ½ male thread and squeeze connection with front connection Protection cap: white					
	0.32	0.63	1.05	(25)	1018099	Application: Central heating systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature 2 °C bis 120 °C (for short periods up to 130 °C)
	GD with 8 presetting positions with G ½ male thread and squeeze connection with external O-ring with seat diameter 16 H 11 Protection cap: white					
	0.32	0.63	1.05	(25)	1018086	The valve inserts are designed for the installation into the valve bodies of integrated distributors (e.g. panel radiators). The valve inserts are presettable to suit the hydronic requirements of the heating system. The hydronic values of the valve inserts GD correspond to the values of the inserts of the competitors. The valve inserts are suitable for the thermostats "Uni XD", "Uni LD", "vindo TD" and "pinox D" (pages 29 - 31). Presetting of the valve inserts GD and GDF is carried out by hand.
	GDF with 8 fine presetting positions with G ½ male thread and squeeze connection with external O-ring with seat diameter 16 H 11 Protection cap: red					
	0.14	0.24	0.47	(25)	1018096°	Attention: Filling and draining of the system before the valves are preset and the thermostat is mounted. Please observe installation instructions!
	GD with 8 presetting positions with G ½ male thread and squeeze connection with internal O-ring Protection cap: white					
	0.32	0.63	1.05	(25)	1018084	The valve insert item no. 1018099 is suitable for the radiator types, e.g.: -Arbonia (up to 2002)-DiaNorm ¹ -Purmo ¹ -Baufa -Dia-therm -Radson ¹ -bremmo -HM-Heizkörper-Rettig ¹ -DEF -Hoval -Runtal -Manaut -IMAS (since 2018) ¹ (up to end of 2010)
	GDF with 8 fine presetting positions with G ½ male thread and squeeze connection with internal O-ring Protection cap: red					
	0.14	0.24	0.47	(25)	1018094°	The valve inserts item no. 1018086 and 1018096 are suitable for the radiator types, e.g.: -De Longhi -Brugmann (up to 2016) (up to 2013) -Ribe -VEHA -Brötje (since approx. 1994 up to approx. 2003) The valve inserts item no. 1018084 and 1018094 are suitable for the radiator types, e.g.: -Brötje (since 2003)-Ferrol/IMA -Caradon -Vasco -Henrad ² -Superia (since 2005) -DURA -Korado -Brugman (since 2013) -De Longhi -Buderus (since 2016) (since 2001) ² (not suitable for ECO radiators) (Subject to technical modifications of the radiator manufacturers)



1.1.p Valve inserts

Content

Valve inserts for valves with connection thread M 30 x 1.5	134
Valve inserts for valves with connection thread M 30 x 1.0 (for valves manufactured up to 1998)	136

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------	-------------	------

Valve inserts for valves with connection thread M 30 x 1.5

All valve inserts are replaceable with the help of the special tool "Demo-Bloc" without draining the system. Valve inserts for radiators with integrated distributors page 130.

Also for "Hycocoon ETZ" (manufactured since 2016).

#These valve inserts are suitable for all valve bodies with connection thread M 30 x 1.5 of all sizes of the thermostatic valves "A, AV 9, AQ, ADV 9, CV 9, E, EQ, AF, RF, RFV 9 and RFQ".



"AV 9, CV 9, RFV 9, E"
and "Multiblock T-RTL" (manufactured since 2016)

0.67 (100) **1187047#**



"A, RF" (DN 10 - DN 15)

0.95 (100) **1187059#**



"A" (DN 20 - DN 32) and "RF" (DN 20)

1.00 - 1.10 (100) **1187049#**



"AF"

0.32 (100) **1187352#**

Distinctive features of the valves:

Series	Protection cap	Gland nut (since end of 1993)
A	black	unplated brass
ADV 9	grey-green (3 frontal lugs)	grey-green
AF	red	red
AQ/ EQ/ RFQ	light grey	
AV 9/ CV 9/ E	white (3 frontal lugs)	
AZ H	orange	
AZ V	green	
RF	blue	unplated brass
RFV 9	light green (3 frontal lugs)	



for thermostatic valves "AQ, RFQ, EQ",
fittings "Multiblock TQ, TQ-RTL"
and "Unibox TQ, Q plus"

"QA" (25) **1187065#**










Replacement filter mesh for valve insert "QA"

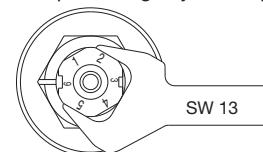
Set = 10 replacement filter meshes **1187090**






"ADV 9"

0.67 (100) **1186002#**

	Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
	"PTB" and "Cocon 2TZ"				
	kvs = 0.45 P1		(100)	1186052#	
	kvs = 1.0 P2		(100)	1186053#	
	kvs = 1.8 P3		(100)	1186054	
	with stainless steel seat				
	(especially for steam installations)		(100)	1186200#	
	"Combi LR" with cap		(100)	1187071	
	Special valve insert for reversed supply and return pipe for thermostatic valves "A, AV 9, ADV 9, CV 9, E, AF, RFV 9" without presetting				
		0.45	(100)	1187070#	
	Special valve insert for reversed supply and return pipe with infinitely adjustable presetting				
	"AV9U"	0.57	(100)	1187078	<p>As replacement for:</p> <ul style="list-style-type: none"> - "Multiblock T/TU/TFU" - "Unibox E T" - "Unibox E plus" - "Unibox E vario" - "Unibox E BV" - "Unibox T-RTL" - "Unibox T-RTL vario" - "Unibox T-RTL R-Tronic" <p>In case of reversed direction of flow for:</p> <ul style="list-style-type: none"> - "Unibox T" - "Unibox TQ" - "Unibox TQ-RTL" - "Unibox TQ-RTL vario" - "Unibox TQ-RTL R-Tronic" - "Unibox plus" (connection for room temperature control) - "Unibox vario" (connection for room temperature control) - "Unibox Q plus" (connection for room temperature control)
	Gland nut for all valves (except for "AV 9, CV 9, E, RFV 9, ADV 9, AQ, RFQ, EQ, A (manufactured since 2013), RF (manufactured since 2014) GH and GD")				
	Wrench size 14 mm		(10)	1017501	Suitable for M 30 x 1.5 and M 30 x 1.0.
	Presetting key				
	for valves "AV 6, ADV 6, RFV 6, E", fittings "Multiblock T/TU/TFU/T-RTL" (manufactured up to 2015) and valve inserts GH		(10)	1183961	<p>The presetting value can be adjusted with the help of the marking on the hexagon of the valve insert.</p> <p>The presetting key fits only in one position.</p>



Alternatively, presetting can also be carried out with a spanner sized 13 mm.

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
Valve inserts for valves with connection thread M 30 x 1.0 (for valves manufactured up to 1998)				Also suitable for Ista radiator valves. Illustration of distinctive features: page 1.144.
	"AZ"	1.10	(100) 1017060+	+ These valve inserts are suitable for all valve bodies with connection thread M 30 x 1.0 of all sizes of the valves "A, AV 6, ADV 6, AZ, E, RF and RFV 6".
	"AV 6 and RFV 6"	0.65	(25) 1017057+	
	"F"	0.32	(10) 1017351	



1.1.q Return temperature limiters

Content

Return temperature limiter valves for thermostat "Uni RTLH"	138
Thermostat "Uni RTLH"	138
Thermostat "Uni RTL"	138
Valve inserts	139
Extension	139
Gland nut	139
Return temperature limiter sets	140

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
Return temperature limiter valves for thermostat "Uni RTLH" connection thread M 30 x 1.5 brass, nickel plated				Application: Central heating systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ ÖNORM 5195). Combined radiator/surface heating. Max. operating pressure p _s : 10 bar (PN 10) Valve insert with double disc prevents inadvertent overheating, with frost protection. Compression fittings page 164, reinforcing sleeves page 167.
Reversed angle pattern valve for the return pipe				
	0.30	(25)	1024363	
	0.30	(25)	1024364	
Straight pattern valve for the return pipe				
	0.30	(25)	1024463	
	0.30	(25)	1024464	
 Thermostat "Uni RTLH" connection thread M 30 x 1.5				With '0' setting, may be limited or locked. Temperature range: 10 °C–40 °C factory setting (return temperature), may be increased to 50 °C by cancelling the limitation (40 °C).
white		(25)	1027165	
chrome plated		(25)	1027172	
anthracite		(10)	1149068	With '0' setting, may be limited or locked. Temperature range: 10° C - 70 °C The thermostats "Uni RTLH" may also be used in combination with the pressure independent control valves "Cocon QTZ" (with distance piece 114909.) for the limitation of the return temperature in one pipe risers.
 Thermostat "Uni RTL" connection thread M 30 x 1.0				
white		(25)	1027100	With '0' setting, may be limited or locked. RTL valves with connection thread M 30 x 1.0 are no longer produced.

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Valve inserts



for return flow valves
connection thread M 30 x 1.5

(100) **1026981**

Valve insert with double disc.
Prevents inadvertent overheating,
with frost protection.

Extension
L = 20 mm



for RTLH valves

(10) **1022699**



For "Unibox RTL", "Unibox vario", "Unibox TQ"
and "Unibox Q plus".

Gland nut
for all RTLH valves







Set = 5 pieces

(10) **1026986**

Article	kv at 2K P-dev.	Article-No.	Hint
Return temperature limiter sets			Packed as a set. Valve and thermostat RTLH. Temperature range: 10 °C–40 °C factory setting (return temperature), may be increased to 50 °C by cancelling the limitation (40 °C).
	Reversed angle connection consisting of:		
	Reversed angle pattern valve for the return pipe and thermostat “Uni RTLH”		
DN 15	0.30	1028364	
	Straight pattern connection consisting of:		
	Straight pattern valve for the return pipe and thermostat “Uni RTLH”		
DN 15	0.30	1028464	







**1.1.r Manual radiator valves****Content**

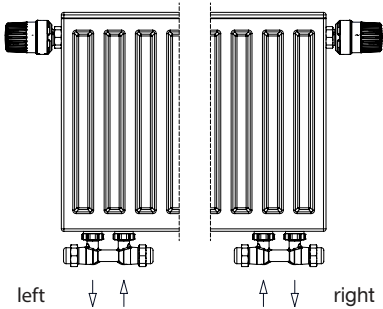
Manual radiator valves "HRV"	142
Manual radiator valves "HR"	142

Article	kvs	Packing unit	Article-No.	Hint
Manual radiator valves "HRV" presetting by using the stem manual head white				Application: Central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C) Steam 0.5 bar, 110 °C.
 Angle pattern valve				Lengths according to DIN EN 215. The protection cap (as delivered) protects the handwheel against damages. The manual radiator valve is suitable for subsequent conversion to thermostatic operation by replacing the manual head.
reduced dimensions, as thermostatic valves "RF"				The valves are suitable for installation with copper pipes.
DN 10 DN 15 DN 20	3.20 3.20 3.20	(25) (25) (25)	1191503 1191504 1191506	
 Straight pattern valve				Compression fittings page 164, compression fittings for valves with reduced dimensions page 317, reinforcing sleeves page 167.
reduced dimensions, as thermostatic valves "RF"				Valves with reduced dimensions are not suitable in combination with the female threaded compression fittings "Cofit S".
DN 10 DN 15 DN 20	1.70 1.70 2.30	(25) (25) (25)	1191603 1191604 1191606	
Manual radiator valves "HR" white handwheel				No subsequent conversion to thermostatic operation.
 Angle pattern valve				Lengths according to DIN 3842. Protection cap (as delivered) protects the handwheel against damages.
DN 10 DN 15 DN 20	1.45 1.45 1.45	(25) (25) (25)	1190503 1190504 1190506	
 Straight pattern valve				
DN 10 DN 15 DN 20	1.20 1.20 1.20	(25) (25) (25)	1190603 1190604 1190606	

1.1.s "Q-Tech" Fittings for automatic hydronic balancing**Content**

"Multiflex FQ" Fittings for G 1/2 female thread	144
"Multiflex FQ" Fittings for G 3/4 male thread	144

Article	Packing unit	Article-No.	Hint
"Multiflex FQ" Fittings for G ½ female thread brass connection fitting with "Q-Tech" for automatic hydronic balancing, soft sealing, flat sealing, nickel plated, for radiators with integrated distributor G ½ female thread			
			Fitting with "Q-Tech" and isolating facility for radiators with integrated distributor.
Straight pattern			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 110 °C Flow range: 10 - 170 l/h
G ½ male x G ¾ male	(5)	1015873	
			The volume flow for the radiator determined in the heat demand calculation can be set directly at the fitting. The volume flow is automatically limited to the set value (automatic hydronic balancing). Even if differential pressure variations occur in the heating system, the flow rate is constantly maintained within the necessary proportional band.
Angle pattern Left hand side connection			
G ½ male x G ¾ male	(5)	1015874	
			Setting is carried out by using the presetting key supplied with the fittings. Isolation is carried out with the help of an Allen key.
Angle pattern Right hand side connection			
G ½ male x G ¾ male	(5)	1015875	
"Multiflex FQ" Fittings for G ¾ male thread brass connection fitting with "Q-Tech" for automatic hydronic balancing, soft sealing, flat sealing, nickel plated, for radiators with integrated distributor G ¾ male thread			
			The nipples supplied with the fittings are self sealing. The fittings are not suitable for steam installations.
Straight pattern			
G ¾ c/nut x G ¾ male	(5)	1015803	For further information see chapter "Fittings for radiators with integrated distributor": page 146
			An existing angle pattern fitting for left hand side connection can be converted to a "Multiflex FQ" fitting for right hand side connection by swapping the valve insert and the isolating insert and vice versa.
Angle pattern Left hand side connection			
G ¾ collar nut x G ¾ male	(5)	1015804	
			For the connection of copper, precision steel, stainless steel and plastic pipes as well as the Oventrop composition pipe "Copipe", the Oventrop compression fittings are to be used, page 164.
Angle pattern Right hand side connection			
G ¾ collar nut x G ¾ male	(5)	1015805	Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G ¾ male thread according to DIN EN 16313 (cone "Euro") may also be used.














1.1.t Fittings for radiators with integrated distributor










Content

"Multiflex F" Fittings for G 1/2 female thread	146
"Multiflex F" Fittings for G 3/4 male thread	148
Radiator connection	149
Inversion fittings	149
Connection fittings	150
Plastic rosette cover, white	150

Article	Packing unit	Article-No.	Hint
"Multiflex F" Fittings for G ½ female thread brass connection fittings, soft sealing , flat sealing, nickel plated, for radiators with integrated distributor G ½ female thread			
Combinations distance between pipe centres 50 mm			
			The connection of the fitting to the radiator is soft sealing. Self sealing nipples are supplied with each fitting. Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C) The counterpart (thread of the distributor) of the self sealing nipple has to be equipped with a bevel (without burrs) in order not to damage the ring gasket. Soft seal between connection fitting and nipple. The connection fittings for G ½ female thread are suitable for radiators with integrated distributor of the following manufacturers: Agis, Alarko, Arbonia, Baykan, Bemm, Biasi, Borer, Bremo, Caradon-Stelrad, Celikpan, Concept, Cöskünöz, DEF, Delta, Demrad, DiaNorm, Dia-therm, Dunafer, DURA, Ferrol, HM-Galant, Henrad, Hoval, Hudevad, IMAS, Itemar, Jugoterm, Korado, Manaut, Quinn, Purmo, Radson, Runtal, Schäfer, Starpan, Stelrad, Superia, TermoTeknik, Thor, US-Steel, Vasco, VEHA, Zehnder, Zenith. (Subject to change without notice). The ZB fittings (two pipe block) are used for radiators with integrated distributor for two pipe systems. # Isolation with limit stop The ZBU fittings (two pipe block, convertible) can be used for two pipe systems (as supplied) or for one pipe systems. If used in one pipe systems, the bypass stem has to be adjusted according to the enclosed installation instructions. The CEW fittings can be used for one pipe operation (like ZBU fittings but preset to one pipe operation with a radiator share of 35 %) or for two pipe operation. The Oventrop compression fittings are to be used, page 166. Alternatively, the compression fittings of other manufacturers which are suitable for the connection to male thread G ¾ according to DIN EN 16313 (cone "Euro") may also be used. "Combi 3" for presetting, isolating, filling and draining. Service tool item no. 1090551, page 148. Fittings with Rp ½ female thread are not suitable for compression fittings (only for threaded pipes).
ZB isolating fitting for two pipe systems			
G ½ male x G ¾ male	(10)	1015883#	
			
ZB angle pattern isolating fitting for two pipe systems			
G ½ male x G ¾ male	(10)	1015884#	
			
Design cover for ZB isolating and angle pattern isolating fittings, item no. 1015813/14/83/84, white	(5)	1015896	
			
ZB isolating fitting for two pipe systems, pivoting			
G ½ male x G ¾ male	(10)	1015781	
			
ZBU preset isolating fitting for two pipe systems for filling and draining			
G ½ male x G ¾ male	(10)	1015993	
			
ZBU angle pattern preset isolating fitting for two pipe systems for filling and draining			
G ½ male x G ¾ male	(10)	1015994	
			
CEW preset isolating fitting for one pipe systems for filling and draining			
G ½ male x G ¾ male	(10)	1015933°	
			
CEW angle pattern preset isolating fitting for one pipe systems for filling and draining			
G ½ male x G ¾ male	(10)	1015934°	
			
Single fittings Isolating fitting "Combi 3"			
G ½ male x Rp ½ female	(25)	1016175	
G ½ male x G ¾ male	(25)	1016177	



Article	Packing unit	Article-No.	Hint
Angle pattern isolating fitting "Combi 3"			
G ½ male x Rp ½ female	(25)	1016575	
G ½ male x G ¾ male	(25)	1016577	

Article	Packing unit	Article-No.	Hint
"Multiflex F" Fittings for G ¾ male thread brass connection fittings, soft sealing , flat sealing, nickel plated, for radiators with integrated distributor G ¾ male thread according to DIN EN 16313 (cone "Euro")			
Combinations distance between pipe centres 50 mm			
ZB isolating fitting for two pipe systems			
	G ¾ collar nut x G ¾ male	(10) 1015813#	The connection of the fitting to the radiator is soft sealing. Self sealing inserts are supplied with each fitting. Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) The connection fittings for G ¾ male thread are suitable for radiators with integrated distributor of the following manufacturers: Baufa, Brötje, Brugman, Buderus, De 'Longhi, Kermi, Radel, Ribe, Vogel + Noot. (Subject to change without notice). The ZB fittings (two pipe block) are used for radiators with integrated distributor for two pipe systems. # Isolation with limit stop
	ZB angle pattern isolating fitting for two pipe systems	G ¾ collar nut x G ¾ male (10) 1015814#	
	Design cover for ZB isolating and angle pattern isolating fittings, item no. 1015813/14/83/84, white	(5) 1015896	
	ZB isolating fitting for two pipe systems, pivoting	G ¾ collar nut x G ¾ male (10) 1015711	
	ZBU preset isolating fitting for two pipe systems for filling and draining	G ¾ collar nut x G ¾ male (10) 1015943	If used in one pipe systems, the bypass stem has to be adjusted according to the enclosed installation instructions. The Oventrop compression fittings are to be used, page 166. Alternatively, the compression fittings of other manufacturers which are suitable for the connection to male thread G ¾ according to DIN EN 16313 (cone "Euro") may also be used. The presetting of the fittings is carried out with the help of a 4 mm Allen key. "Combi 3" for presetting, isolating, filling and draining. Fittings with Rp ½ female thread are not suitable for compression fittings (only for threaded pipes).
	ZBU angle pattern preset isolating fitting for two pipe systems for filling and draining	G ¾ collar nut x G ¾ male (10) 1015944	
	Single fittings Isolating fitting "Combi 3"	G ¾ collar nut x Rp ½ female (25) 1016166 G ¾ collar nut x G ¾ male (25) 1016168	
	Angle pattern isolating fitting "Combi 3"	G ¾ collar nut x Rp ½ female (25) 1016567 G ¾ collar nut x G ¾ male (25) 1016569	
	Service tool	1090551	

Article	Packing unit	Article-No.	Hint
Radiator connection			<p>The radiator connection module "Multimodul" allows for the installation and operation of the heating system without radiators during the construction period. The module is suitable for one and two pipe heating systems and has isolating, draining, filling and presetting facilities.</p> <p>The module is supplied with a wall installation box with white cover (RAL 9010), connecting pipes, compression fittings and a protection cover made of Styrofoam.</p>
"Multimodul" Radiator connection		1015651	
Inversion fittings brass, nickel plated, for reversed supply and return pipe, for two pipe heating systems, for radiators with integrated distributor			
with isolating facility distance between pipe centres 50 mm			
G ½ male x G ¾ male	(10)	1016363	
angle pattern, with isolating facility distance between pipe centres 50 mm			
G ½ male x G ¾ male	(10)	1016463	
with isolating facility distance between pipe centres 50 mm			
G ¾ collar nut x G ¾ male	(10)	1016362	
with isolating facility upper distance between pipe centres 50 mm lower distance between pipe centres 40 mm			Two nipples G ½ M x G ¾ M are included in the delivery.
G ¾ collar nut x G ¾ male	(10)	1016372	
angle pattern, with isolating facility distance between pipe centres 50 mm			
G ¾ collar nut x G ¾ male	(10)	1016462	
Bridging fitting distance between pipe centres 50 mm			For bridging-over the supply and the return pipe in case of subsequent installation of radiators.
G ¾ M	(10)	1016452	








Article	Packing unit	Article-No.	Hint
Connection fittings brass			For "Multiflex V" fittings. Effective length: 15.5 mm
	Insert as set = 2 pieces for cone according to DIN EN 16313 (cone "Euro")	(50) 1661100	For "Multiflex F/DP", "Multiblock T/TU/TFU/ TQ/T-RTL/TQ-RTL", "Cocon QTZ" and "Optibal W6" DN 15 with G 3/4 male threaded connection. Suitable for flat sealing tailpipes.
	Distance piece, nickel plated Set = 2 pieces G 3/4 female x G 3/4 male	(100) 1681650	For fittings "Multiflex F". Useable length: 15.5 mm Compression fittings, 2-fold, page 166. G 3/4 male thread side with tapered sealing according to DIN EN 16313 (cone "Euro").
	Nipple, unplated one port self sealing Set = 10 pieces		
	G 1/2 male x G 3/4 male	(10) 1028252	For "Multiflex F/DP", "Multiblock T/TU/TFU/TQ/ T-RTL/TQ-RTL". Port G 3/4 flat sealing. For "Multiflex V", port G 3/4 with tapered sealing according to DIN EN 16313 (cone "Euro").
	G 1/2 male x G 3/4 male	(10) 1028253	
	Nipple, nickel plated G 1/2 male x G 3/4 male	(10) 1028161	Port G 3/4 with tapered sealing according to DIN EN 16313 (cone "Euro"). Port G 1/2 self sealing.
	Double nipple, brass, nickel plated G 3/4 M x G 3/4 M	(10) 1028263	Port G 3/4 with tapered sealing according to DIN EN 16313 (cone "Euro").
Plastic rosette cover, white flat, distance between pipe centres 50 mm			For "Bypass-Combi" distributors, valves with insertion tube, two pipe connection pieces from page 111, "Multiblock T/TU/TFU/TQ" from page 100 and "Multiflex" fittings from page 146.
	Distance between pipe centres 50 mm Perforation		
	12 mm	(25) 1016671°	
	14 mm	(25) 1016672°	
	15 mm	(25) 1016673	
	16 mm	(25) 1016674	
	18 mm	(25) 1016675°	
	for pipe diameters 10, 12, 15, 16, 18, 20 mm, distance between pipe centres 50 mm	(25) 1016662°	
Single fitting			Fittings with Rp 1/2 female thread are not suitable for compression fittings (only for threaded pipes).
	Fitting G 3/4 collar nut x Rp 1/2 female	(25) 1016304	






1.1.u Lockshield valves for conventional radiators









Content

"Combi 4"	152
"Combi C"	152
"Combi 3"	153
"Combi 2"	154
"Combi LR"	154

Article	kvs	Packing unit	Article-No.	Hint	
"Combi 4" presetting with memory lock, isolating, filling and draining					
	Bronze/brass model, female thread according to EN 10226-1 Angle pattern nickel plated			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C)	
DN 10	1.70	(25)	1090661	Lengths according to DIN 3842 (except for item no. 1090672 und 1090772). All lockshield valves are also suitable for the installation with copper pipes.	
DN 15	1.70	(25)	1090662		
DN 20	1.70	(10)	1090663		
	DN 15	1.70	(25)	1090672	The lockshield valves DN 15 may be connected to the Oventrop composition pipe "Copipe".
G ¾ male thread x G ½ male thread					
	Straight pattern nickel plated			Compression fittings page 164, reinforcing sleeves page 167.	
DN 10	1.70	(25)	1090761	The lockshield valves item no. 1090662 and 1090762 are self sealing.	
DN 15	1.70	(25)	1090762		
DN 20	1.70	(10)	1090763		
	DN 15	1.70	(25)	1090772	
G ¾ male thread x G ½ male thread					
"Combi C" presetting with memory lock, isolating, filling and draining					
	Angle pattern chrome plated			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C)	
DN 15	1.70	(25)	1164554	Technical data as "Combi 4". Lengths according to DIN 3842.	
	Straight pattern chrome plated				
DN 15	1.70	(25)	1165554		
	Service tool			1090551	All lockshield valves are suitable for the installation with copper pipes.
					Compression fittings page 164, reinforcing sleeves page 167.

Article	kvs	Packing unit	Article-No.	Hint
"Combi 3" presetting, isolating, filling and draining bronze/brass model, female thread according to EN 10226-1 with female threaded pipe connection				Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 120 °C (for short periods up to 130 °C) Lengths according to DIN 3842. All lockshield valves are also suitable for the installation with copper pipes. The lockshield valves DN 15 may be connected to the Oventrop composition pipe "Copepe". Compression fittings page 164, reinforcing sleeves page 167. Press connection: For the direct connection of copper pipes according to DIN EN 1057/DVGW GW 392, stainless steel pipes according to DIN EN 10088/DVGW GW 541 and thin-walled C-steel pipe (material no. E 195/1.0034) according to DIN EN 10305-3. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit- Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.
Angle pattern nickel plated				
	DN 10	1.70	(25) 1090361	
	DN 15	1.70	(25) 1090362	
	DN 20	1.70	(10) 1090363	
Straight pattern nickel plated				
	DN 10	1.70	(25) 1090461	
	DN 15	1.70	(25) 1090462	
	DN 20	1.70	(10) 1090463	
with press connection for copper, stainless steel and C-steel pipe Ø 15 mm Angle pattern nickel plated				
	DN 15	1.70	(25) 1090374°	
Straight pattern nickel plated				
	DN 15	1.70	(25) 1090474°	
	Service tool		1090551	

Article	kvs	Packing unit	Article-No.	Hint			
"Combi 2" presetting, isolating brass model, female thread according to EN 10226-1							
Angle pattern nickel plated							
	DN 10	1.70	(25) 1091061	Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Lengths according to DIN 3842 (except for item no. 1091072 and 1091172) . All lockshield valves are also suitable for the installation with copper pipes. The lockshield valves DN 15 may be connected to the Oventrop composition pipe "Copipe". Compression fittings page 164, reinforcing sleeves page 167. The lockshield valves item no. 1091072, 1091172, 1091052 and 1091152 are equipped with a self sealing threaded tailpipe.			
	DN 15	1.70	(25) 1091062				
	DN 20	1.70	(10) 1091063				
Lengths according to DIN 3842 (except for item no. 1091072 and 1091172) .							
All lockshield valves are also suitable for the installation with copper pipes.							
The lockshield valves DN 15 may be connected to the Oventrop composition pipe "Copipe".							
Compression fittings page 164, reinforcing sleeves page 167.							
The lockshield valves item no. 1091072, 1091172, 1091052 and 1091152 are equipped with a self sealing threaded tailpipe.							
	DN 15	1.70	(25) 1091052	Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Lengths according to EN 215.			
	With higher kvs value, for instance for one pipe heating systems and cooling systems.						
	All lockshield valves from DN 10 up to DN 20 are suitable for the installation with copper pipes.						
The lockshield valves DN 15 may be connected to the Oventrop composition pipe "Copipe".							
Compression fittings page 164, reinforcing sleeves page 167.							
The lockshield valves item no. 1091072, 1091172, 1091052 and 1091152 are equipped with a self sealing threaded tailpipe.							
Straight pattern							
	DN 10	1.70	(25) 1091161		Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Lengths according to EN 215.		
	DN 15	1.70	(25) 1091162				
	DN 20	1.70	(10) 1091163				
	Straight pattern						
	DN 15	1.70	(25) 1091152	Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Lengths according to EN 215.			
	With higher kvs value, for instance for one pipe heating systems and cooling systems.						
	All lockshield valves from DN 10 up to DN 20 are suitable for the installation with copper pipes.						
	The lockshield valves DN 15 may be connected to the Oventrop composition pipe "Copipe".						
Compression fittings page 164, reinforcing sleeves page 167.							
The lockshield valves item no. 1091072, 1091172, 1091052 and 1091152 are equipped with a self sealing threaded tailpipe.							
Straight pattern							
	DN 10	1.80	(25) 1027562		Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Lengths according to EN 215.		
	DN 15	4.50	(25) 1027564				
	DN 20	4.50	(10) 1027566				
	DN 25	4.50	(10) 1027568				
Straight pattern							
	DN 10	1.80	(25) 1027662	Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C (for short periods up to 130 °C) Lengths according to EN 215.			
	DN 15	1.80	(25) 1027664				
	DN 20	2.40	(10) 1027666				
	DN 25	3.20	(10) 1027668				



1.1.v Distributors/collectors

Content

"Multidis SH" Stainless steel distributor/collector	156
Ball valves	156
Flush-mounted cabinets	157
Ring spanner	157
Floor distributor/collector	157

Article Packing unit Article-No.

Hint

"Multidis SH" Stainless steel distributor/collector for radiator connection
flat sealing



for 2 circuits	1407152
for 3 circuits	1407153
for 4 circuits	1407154
for 5 circuits	1407155
for 6 circuits	1407156
for 7 circuits	1407157
for 8 circuits	1407158
for 9 circuits	1407159
for 10 circuits	1407160
for 11 circuits	1407161
for 12 circuits	1407162

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
Max. operating pressure p_s : 10 bar (PN 10)
Max. operating temperature t_s : 100 °C

Description:
Pre-assembled distributor/collector.
Flow distributor and supply collector with vent plugs and terminal caps.
Heating circuit connections G 3/4 male thread according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings.
Brackets (loosely added) sound-absorbing as per DIN 4109 standard.

Ball valves

flat sealing



G 3/4 F x G 1 M	(10)	1406383
G 1 F x G 1 M	(10)	1406384

flat sealing, with thermometer (0–80°C) with red T-handle



G 3/4 F x G 1 M	1406483
G 1 F x G 1 M	1406484

flat sealing, with thermometer (0–80°C) with blue T-handle



G 3/4 F x G 1 M	1406583
G 1 F x G 1 M	1406584

flat sealing, with sensor connection M 10 x 1.0

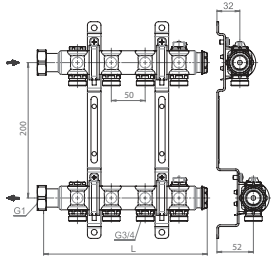


G 1 F x G 1 M	(10)	1406708
---------------	------	----------------

with cone "Euro"



G 3/4 male x G 3/4 collar nut	(50)	1406504
-------------------------------	------	----------------



Circuits	Length (L)	Length (L) with ball valve	Length (L) with ball valve
		1406383	1406384
2	142 mm	197 mm	222 mm
3	192 mm	247 mm	272 mm
4	242 mm	297 mm	322 mm
5	292 mm	347 mm	372 mm
6	342 mm	397 mm	422 mm
7	392 mm	447 mm	472 mm
8	442 mm	497 mm	522 mm
9	492 mm	547 mm	572 mm
10	542 mm	597 mm	622 mm
11	592 mm	647 mm	672 mm
12	642 mm	697 mm	722 mm

Ball valve for the isolation of the heating circuits at the distributor/collector. Heating circuit connection G 3/4 male thread according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings. Distributor/collector connection with collar nut G 3/4 and O-ring seal.

Article

Article-No.

Hint

Flush-mounted cabinets

steel, galvanised, frame and doors white lacquered
removable screen



No. 1: inner width: 560 mm
No. 2: inner width: 700 mm
No. 3: inner width: 900 mm
No. 4: inner width: 1200 mm

1401151
1401152
1401153
1401154

Depth: 115 - 180 mm

Height: 760 - 885 mm

To be used for the following distributors/
collectors:

S	No. °°	S + B	No. °°
8 circuits	1	7 circuits	1
11 circuits	2	10 circuits	2
12 circuits	3	12 circuits	3

°° No. of the cabinets

Distributor/collector for radiator connection:

S = stainless steel distributor/collector without
ball valves

S + B = stainless steel distributor/collector with
ball valves

Ring spanner



Spanner size 30/32

1401091

For the installation of the compression fittings.

Floor distributor/collector

with heat meter connections



for 2 dwelling units
for 3 dwelling units
for 4 dwelling units
for 5 dwelling units

1408652°
1408653°
1408654°
1408655°

consisting of:

- Flow distributor and return collector with G 1 and G ¾ connections
(flat sealing with collar nuts)
- Airvent, fill and drain valves, ring gaskets
- Heat meter connection groups
- Double bracket

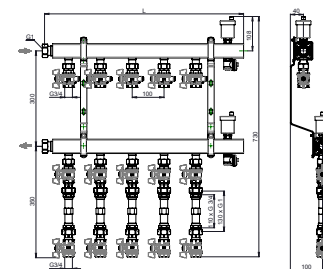
The components have to be assembled on site.

Application:

The floor distributor/collector with heat meter
connections is used for the distribution and
isolation of the volume flows on each floor to
the individual dwelling units.

The heat meter connection groups allow for the
installation of heat meters for the registration of
the heat consumption of the individual
dwellings.

Dimensions/connection sizes:



Lengths of the floor distributors/collectors:

Item no.	No. of dwelling units	Length (L)
1408652	2	325 mm
1408653	3	425 mm
1408654	4	525 mm
1408655	5	625 mm

1.1.w Conversion fittings/Accessories for radiators

Content



Conversion fittings	160
Strainer inserts	161
Accessories for radiators	162

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Conversion fittingsbrass, nickel plated, with tapered sealing
for thermostatic and manual valves**S-connection fitting**

(G 3/4 male thread x G 3/4 collar nut)	(10)	1019204
--	------	---------

**Length compensating tail (short)**

DN 10 G 3/8 male thread	(25)	1019003
DN 15 G 1/2 male thread	(25)	1019004
DN 20 G 3/4 M	(25)	1019006

**Length compensating tail (medium)**

DN 15 R 1/2 male thread	(25)	1019052°
-------------------------	------	----------

**Length compensating tail (long)**

DN 10 G 3/8 male thread	(20)	1019103
DN 15 G 1/2 male thread	(20)	1019104
DN 20 G 3/4 M	(10)	1019106

**Reducer**

G 1 F x G 1/2 M	(10)	1019251
G 1 F x G 3/4 M	(10)	1019252
G 1 1/4 F x G 1/2 M	(10)	1019253
G 1 1/4 F x G 3/4 M	(10)	1019254

**Reducing coupling**

DN 10 (G 3/8 c/nut x R 1/2 M)	(25)	1019351
-------------------------------	------	---------

**Reducing tail**

DN 20 (G 1/2 male thread)	(25)	1019352
DN 25 (G 1/2 male thread)	(25)	1019353°

**Coupling**

DN 10 (G 3/8 c/nut x R 3/8 M)	(50)	1019303
DN 15 (G 3/4 c/nut x R 1/2 M)	(50)	1019304
DN 20 (G 1 c/nut x R 3/4 M)	(50)	1019306
DN 25 (G 1 1/4 c/nut x R 1 M)	(50)	1019308°

**self sealing, with threaded ring gasket**

DN 15 (G 3/4 c/nut x G 1/2 M)	(50)	1019362
-------------------------------	------	---------

**self sealing with O-ring**

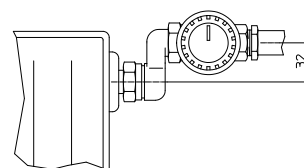
DN 15 (G 3/4 c/nut x G 1/2 M)	(25)	1019372
-------------------------------	------	---------

**Elbow**

DN 15 (G 1/2 M x G 3/4 c/nut)	(25)	1019365
-------------------------------	------	---------

**Compensation fitting for lower connection**

G 3/4 c/nut x G 3/4 M	(10)	1019451
-----------------------	------	---------

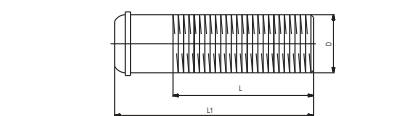


The S-connection fittings (protection of registered design) are suitable for the replacement of radiators using existing pipework. The max. distance between pipe centres is 2 x 32 mm = 64 mm (no sealing required).

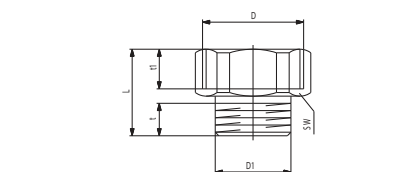
In combination with double angle pattern valves, the coupling item no. 1019304 has to be used in addition.



D	L	L ₁	D	L	L ₁
G 3/8	9	21	R 1/2		
G 1/2	10	23	DIN EN 10 226-1	13.2	43
G 3/4	11	25			



D	L	L ₁
G 3/8	55	75
G 1/2	55	75
G 3/4	50	70












Dim.	D	D ₁	L	t	t ₁	SW*
1" x 1/2"	G 1	G 1/2	26	9	11	38
1" x 3/4"	G 1	G 3/4	27	10	11	38
1 1/4" x 1/2"	G 1 1/4	G 1/2	28	9	13	46
1 1/4" x 3/4"	G 1 1/4	G 3/4	29	10	13	46

* SW = spanner size

Especially suitable for "Bypass-Combi" (pages 110 and 112) if a straight pattern valve shall be used instead of an angle pattern valve.



Axle distance 11.5 mm, H = 43 mm, both ports with tapered sealing.

Article	Packing unit	Article-No.	Hint
Strainer inserts			
	plastic		For the conversion of old installations in order to avoid a malfunction due to coarse impurity (deposits).
	DN 10 (3/8)	(50) 1019903°	
	DN 15 (1/2)	(50) 1019904°	
	DN 20 (3/4)	(25) 1019906°	
	DN 25 (1)	(25) 1019908°	
	Cap with washer and fixing loop		Female thread of the cap
	DN 10	(10) 1010999	G 5/8, without fixing chain
	DN 15	(50) 1034052	G 3/4, also for "Optiflex" DN 10
	DN 20	(25) 1034053	G 1
	DN 25	(25) 1034008	G 1 1/4

Article	Packing unit	Article-No.	Hint
Accessories for radiators			Application: Central heating systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 120 °C
	Vent plug brass, nickel plated for panel radiators with rotating water outlet self sealing		
G 3/8 male thread	(100)	1101603	
G 1/2 male thread	(10)	1101604	
	Blind plugs brass		
G 1/8 male thread	(100)	1100101°	
G 1/4 male thread	(100)	1100102°	
G 3/8 male thread		1100103°	
G 1/2 male thread	(50)	1100104°	
	brass, nickel plated self sealing		Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 100 °C
G 3/8 male thread	(100)	1101703	
G 1/2 male thread	(10)	1101704	
G 3/4 M	(50)	1101706	
	Keys suitable for item no. 10376.. and 10380.. (6 mm square)		
for all sizes	(10)	1103051	
	suitable for item no. 1101603 and 1101604 (5 mm square)		
for all sizes	(10)	1103151	
	Venting screw brass		
G 1/8 male thread	(25)	1109001°	
G 1/4 male thread	(25)	1109002°	
G 3/8 male thread	(25)	1109003°	
	Drain valve self sealing, with rotating outlet made of brass resistant to dezincification Set = 10 pieces Handwheel and outlet anthracite		Max. operating pressure: p_s : 10 bar (PN 10) Max. operating temperature t_s : 100 °C With nipple for 3/8 hose. Seal made of EPDM. For filling and deaeration, for use at radiators. Also suitable for valves and components of surface heating and potable water systems.
G 1/4 male thread	(10)	1102002	
G 3/8 male thread	(10)	1102003	
G 1/2 male thread	(10)	1102004	

**1.1.x Connection technology****Content**

"Ofix" Compression fittings	164
"Ofix" Compression fittings (2-fold)	166
"Cofit S" Compression fittings	167
Summary	168
Installation examples	169
"Ofix" for the connection of standard pipes to Oventrop valves and controls	170
Brass reinforcing sleeves	167

Article	Packing unit	Article-No.	Hint
"Ofix" Compression fittings brass			For the connection of Oventrop radiator fittings (except for single fittings "Multiflex" with female thread Rp 1/2) to the pipework.
for female thread "Ofix CEP" for copper pipes according to DIN EN 1057 compression nut nickel plated, metal to metal sealing			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
		G 3/8 x 10 mm (10) 1027151	Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C
		G 3/8 x 12 mm (10) 1027152	
		G 3/4 x 18 mm (10) 1027157	
		G 3/4 x 22 mm (10) 1027158	
		G 1/2 x 10 mm (10) 1028152	Compression fittings for female thread (item no. 1028152 up to 56) not suitable for thermostatic valves "RF/RFV 6/RFV 9/RFQ", manual valves "HRV" with reduced dimensions and return temperature limiter valves.
		G 1/2 x 12 mm (10) 1028153	
		G 1/2 x 14 mm (10) 1028154	
		G 1/2 x 15 mm (10) 1028155	
		G 1/2 x 16 mm (10) 1028156	Compression fittings for above valves: page 317
			Attention: When installing copper pipes with a wall thickness of ≤ 1 mm, it is necessary to use reinforcing sleeves for the additional stabilisation of the pipe. Should the wall thickness exceed 1 mm, please contact the pipe manufacturer. Reinforcing sleeves for wall thickness = 1 mm: page 167.



for G 3/4 male thread according to DIN EN 16313 (cone "Euro")
"Ofix CEP" for copper pipes according to DIN 1057
collar nut nickel plated, metal to metal sealing

10 mm	(10)	1027472°
12 mm	(10)	1027473°
14 mm	(10)	1027474°
15 mm	(10)	1027475°
16 mm	(10)	1027476°
18 mm	(10)	1027477°

For the connection of radiator fittings with male thread G 3/4 according to DIN EN 16313 (cone "Euro") to the pipework.

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)

Operating temperature t_s : 2 °C up to 120 °C



"Ofix CEP" – Snap & Seal – for copper pipes according to DIN EN 1057, precision steel pipes according to DIN EN 10305-1/2 and stainless steel pipes, collar nut nickel plated, with double compression ring function, one-piece pre-assembled, soft sealing (no reinforcing sleeves required)

10 mm	(10)	1027440°
12 mm	(10)	1027441°
14 mm	(10)	1027442°
15 mm	(10)	1027443°
16 mm	(10)	1027444°
18 mm	(10)	1027445°

Max. operating pressure p_s : 10 bar (PN 10)

Operating temperature t_s : 2 °C up to 95 °C

The "Ofix CEP" compression fittings - Snap & Seal - can also be used with galvanised steel pipes (DIN EN 10305-3):

- Geberit, Mapress C-steel system pipe (galvanised from outside)
- Seppelfricke, XPress C-steel pipe (galvanised from outside)
- Simplex, VSH C-steel pipe (galvanised from outside)
- Viega, Prestabo steel pipe (galvanised from outside)

Attention:

When installing copper pipes with a wall thickness of ≤ 1 mm it is necessary to use reinforcing sleeves for the additional stabilisation of the pipe. Should the wall thickness exceed 1 mm, please contact the pipe manufacturer.

Reinforcing sleeves for wall thickness = 1 mm, page 167.

Exception: Reinforcing sleeves are not required for soft sealing compression fittings.

Note: The pipes are not held by the soft sealing fitting, they have to be fixed additionally.



"Ofix K" for plastic pipes according to DIN 4726, PE-X according to DIN 16892/16893, PB according to DIN 16968, PP according to DIN 8078 A1, collar nut **nickel plated**, metal to metal sealing plus O-ring

12 x 1.1 mm	(10)	1027768°
12 x 2 mm	(10)	1027752°
14 x 2 mm	(10)	1027755°
16 x 1.5 mm	(10)	1027767°
16 x 2 mm	(10)	1027757°
17 x 2 mm	(10)	1027759°
18 x 2 mm	(10)	1027761°
20 x 2 mm	(10)	1027763°



The permissible operating pressures and operating temperatures depend on the application classes of the respective standards of the plastic pipework systems (e.g. PE-X, DIN EN ISO 15875).



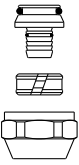
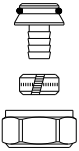
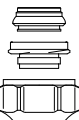


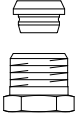
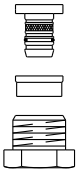
"Ofix K" for plastic pipes according to DIN 4726, PE-X according to DIN 16892/16893, PB according to DIN 16968, PP according to DIN 8078 A1, collar nut **unplated**, metal to metal sealing plus O-ring

12 x 2 mm	(10)	1027772°
-----------	------	-----------------

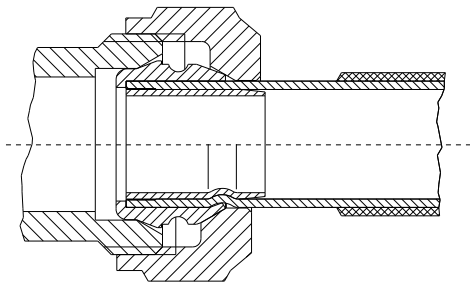
Article	Packing unit	Article-No.	Hint
"Ofix" Compression fittings (2-fold)			
brass			
for female thread			
"Ofix CEP" Compression fittings 2-fold, for connecting pipe, metal to metal sealing			
G ½ x 15 mm	(50)	1016853	Compression fittings for female thread: For the connection of Oventrop radiator fittings (except single fittings "Multiflex" with female thread Rp ½) to the pipework. Compression fittings for G ¾ male thread: For the connection of "Multiblock T/TU/TFU/TQ/T-RTL and TQ-RTL" and "Multiflex" fittings as well as radiator valves with insertion tube to the pipework.
for G ¾ male thread according to DIN EN 16313 (cone "Euro")			
collar nut nickel plated			
"Ofix CEP" – Snap & Seal – 2-fold for copper pipes according to DIN EN 1057, precision steel pipes according to DIN EN 10305-1/2 and stainless steel pipes, with double compression ring function, one-piece pre-assembled, soft sealing (no reinforcing sleeves required)			
10 mm	(50)	1016840	Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
12 mm	(50)	1016841	
14 mm	(50)	1016842	
15 mm	(50)	1016843	
16 mm	(50)	1016844	
18 mm	(50)	1016845	
"Ofix CEP" 2-fold for copper pipes according to DIN EN 1057, metal to metal sealing			
10 mm	(50)	1016860	Item no. 1016853 and 101686.: Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 120 °C Item no. 101684.: Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 95 °C
12 mm	(50)	1016861	
14 mm	(50)	1016862	
15 mm	(50)	1016863	
16 mm	(50)	1016864	
18 mm	(50)	1016865	
"Ofix K" 2-fold for plastic pipes according to DIN 4726, PE-X according to DIN 16892/16893, PB according to DIN 16968, PP according to DIN 8078 A1, metal to metal sealing plus O-ring			
12 x 1.1 mm	(10)	1016883	The "Ofix CEP" compression fittings - Snap & Seal - can also be used with galvanised steel pipes (DIN EN 10305-3): – Geberit, Mapress C-steel system pipe (galvanised from outside) – Seppelfricke, XPress C-steel pipe (galvanised from outside) – Simplex, VSH C-steel pipe (galvanised from outside) – Viega, Prestabo steel pipe (galvanised from outside) Attention: When installing copper pipes with a wall thickness of ≤ 1 mm, it is necessary to use reinforcing sleeves for the additional stabilisation of the pipe. Should the wall thickness exceed 1 mm, please contact the pipe manufacturer. Reinforcing sleeves for wall thickness = 1 mm: page 167. Exception: Reinforcing sleeves are not required for soft sealing compression fittings. Note: The pipes are not held by the soft sealing fitting, they have to be fixed additionally.
12 x 2 mm	(10)	1016870	
14 x 2 mm	(10)	1016873	
15 x 2.5 mm	(10)	1016885	
16 x 1.5 mm	(10)	1016882	
16 x 2 mm	(10)	1016874	
17 x 2 mm	(10)	1016876	
18 x 2 mm	(10)	1016877	
20 x 2 mm	(10)	1016879	
The permissible operating pressures and operating temperatures depend on the application classes of the respective standards of the plastic pipework systems (e.g. PE-X, DIN EN ISO 15875).			

Article	Packing unit	Article-No.	Hint
"Cofit S" Compression fittings for G ¾ male thread according to DIN EN 16313 (cone "Euro") universal application for composition pipe and, provided similar preparation is used, for plastic pipe (PE-X-pipe) 2-fold, metal to metal sealing plus O-ring, outlet made of bronze, compression ring and collar nut made of brass, collar nut nickel plated			Application: Central heating and cooling systems with closed circuits, for operation with non- aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). The permissible operating pressures and operating temperatures depend on the application classes of the respective standards of the plastic pipework systems (e.g. PE-X, DIN EN ISO 15875).
	14 x 2.0 mm x G ¾ collar nut	(10) 1507934	
	16 x 2.0 mm x G ¾ collar nut	(10) 1507935	
	17 x 2.0 mm x G ¾ collar nut	(10) 1507937	
	18 x 2.0 mm x G ¾ collar nut	(10) 1507938	
	20 x 2.0 mm x G ¾ collar nut	(10) 1507939	
	20 x 2.5 mm x G ¾ collar nut	(10) 1507940	
Brass reinforcing sleeves			
	6 mm	(100) 2083951	Is required for the installation of soft pipes with a wall thickness of 1 mm.
	8 mm	(100) 2083952	
	10 mm	(100) 1029651	Diameters are related to the outer diameter of the pipe.
	12 mm	(100) 1029652	
	14 mm	(100) 1029653	
	15 mm	(50) 1029654	
	16 mm	(50) 1029655	
	18 mm	(50) 1029656	
	22 mm	(50) 1029657	

Connection of pipes, valves, radiators, distributors etc. for heating, sanitary and air conditioning by use of compression fittings

			Oventrop composition pipe "Copipe" and composi- tion pipes of other manu- facturers Ø 14 – Ø 20	Plastic pipe to DIN 4726, PE-X to DIN 16 892/16 893, PB to DIN 16 968, PP to DIN 80 78 A1 Ø 12 – Ø 20	Copper pipe DIN EN 1057 (DIN 1786) Ø 10 – Ø 18	Precision steel pipe DIN EN 10305-1 (DIN 2391) DIN EN 10305-2 (DIN 2393) Ø 10 – Ø 18	Stainless steel pipe Ø 10 – Ø 18	Brass reinforcing sleeves
Compression fittings for male threaded connection G ¾ according to DIN EN 16313 (cone "Euro")	"Cofit S" outlet brass resistant to de-zincification compression ring brass		Ø 14 – Ø 20 page 641	Ø 14 – Ø 20 page 641 (only PE-X pipe)				
	"Ofix K" outlet and compression ring brass			Ø 12 – Ø 20 pages 165-166				
	"Ofix CEP" soft seal "Snap & Seal"				Ø 10 – Ø 18 page 166	Ø 10 – Ø 18 page 166	Ø 10 – Ø 18 page 166	
	"Ofix CEP" compression ring brass				Ø 10 – Ø 18 page 165			 for wall thickness = 1 mm page 167
Compression fittings for female threaded connection Rp ½	"Ofix CEP" compression ring brass				Ø 10 – Ø 16 page 166			
	"Cofit S" outlet brass resistant to de-zincification compression ring brass		Ø 14 + Ø 16 Page 641					

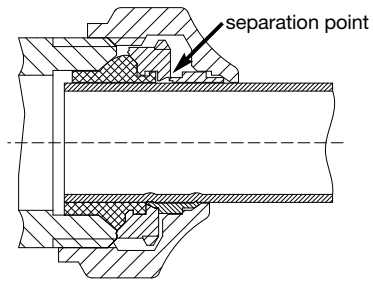
untightened



tightened

"Ofix CEP" compression fitting for copper pipe,
metal to metal sealing, male threaded connection

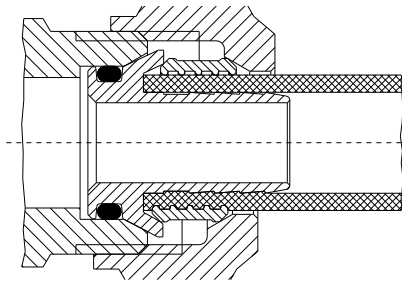
untightened



tightened

"Ofix CEP" compression fitting "Snap & Seal" for
copper, precision steel and stainless steel pipe,
soft sealing, male threaded connection

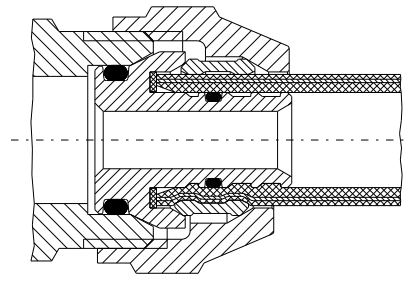
untightened



tightened

"Ofix K" compression fitting for plastic pipe,
male threaded connection

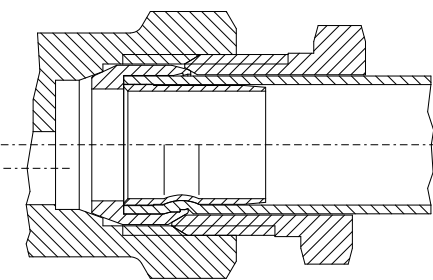
untightened



tightened

"Cofit S" compression fitting, universal application for
"Copipe" composition pipe, and, in case of identical
processing, also for PE-X plastic pipe, male threaded
connection

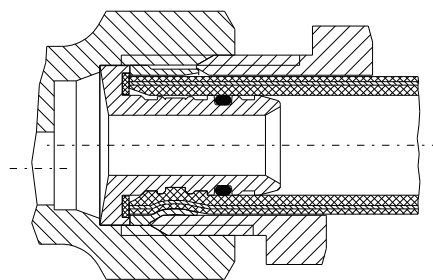
untightened



tightened

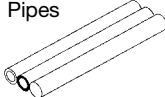
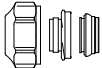
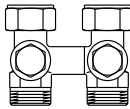


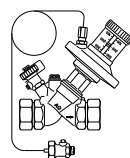


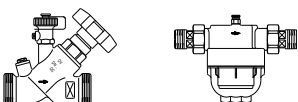










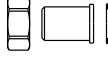
"Ofix CEP" compression fitting for copper pipe,
metal to metal sealing, female threaded connection

untightened

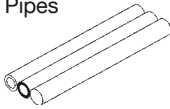

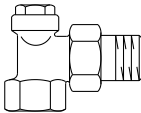
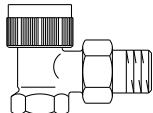



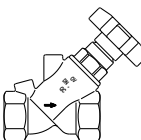
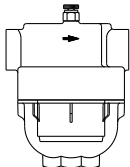
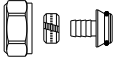


tightened

"Cofit S" compression fitting for composition pipe,
female threaded connection

Pipes 	Connection method	Connection system		Male threaded connection
		Connection fitting	Additional fitting	Oventrop valves (examples)
Copper pipe, stainless steel pipe, precision steel pipe 1)	Screwed connection	 for G 3/4 M according to DIN EN 16313 (cone "Euro"), soft sealing Item no. 102744. Page 166	—	Radiator valves 
Copper pipe 1)	Screwed connection	 for G 3/4 M according to DIN EN 16313 (cone "Euro"), metal to metal sealing Item no. 102747. Page 166	Connection piece  Item no. 15030.. Page 640	Valves for hydronic balancing 
	Soldering connection	 Item no. 10610.. Page 317	—	Valves for hydronic balancing
		 Item no. 42020.. Page 730	—	Valves for water distribution 
	Screwed connection	 for G 3/4 M according to DIN EN 16313 (cone "Euro") Item no. 10277.. Page 166	— Connection piece  Item no. 15030.. Page 640	Radiator valves Valves for hydronic balancing and valves for water distribution
Steel pipe as well as screwed fittings	Screwed connection	 Item no. 1016304 Page 150	—	Radiator valves
		 Item no. 10693.. Page 118 only three-way conversion valves	—	
		 Item no. 10613.. Page 317	—	Valves for hydronic balancing
		 Item no. 10614.. Page 317	—	
	Welding connection	 Item no. 42013.. Page 730	—	Valves for water distribution
		 Item no. 42014.. Page 730	—	
		 Item no. 10193.. Page 118 only three-way conversion valves	—	Radiator valves
		 Item no. 10605.. Page 317	—	Valves for hydronic balancing
		 Item no. 42005.. Page 730	—	Valves for water distribution
Other pipes e. g. stainless steel pipe, thick walled plastic pipe	All other pipes - with their special connection - may be connected with flat sealing tailpipes (with ring gaskets and collar nuts) to Oventrop flat sealing and male threaded valves.			

1) Pipes with a wall thickness of ≤ 1 mm will need reinforcing sleeves, except when the soft sealing fitting 102744. is used! Page 166

Pipes 	Connection method	Connection system		Female threaded connection
		Connection fitting	Additional fitting	Oventrop valves (examples)
Copper pipe 1)	Screwed connection	<p>Compression nut and compression ring</p>  <p>Item no. 10281.. for Rp 1/2 F Page 165 Exception: Single fittings "Multiflex", thermostatic valves "RF/RFV6", manual valves "HRV" with reduced dimensions and return temperature limiter valves</p>	—	<p>Radiator valves</p>  
		<p>Compression nut and compression ring</p>  <p>Item. no. 10271.. for Rp 3/8 – Rp 3/4 F, Page 165 Exception: "Multiflex" single fittings</p>		
<p>Collar nut, compression ring and ring gasket</p>  <p>for G 3/4 M according to DIN EN 16313 (cone "Euro"), soft sealing Item. no. 102744. Page 166</p>		<p>Double nipple</p>  <p>Item. no. 15031.. Page 640</p>	<p>Valves for water distribution</p>  	
<p>Collar nut, compression ring and outlet</p>  <p>for G 3/4 M according to DIN EN 16313 (cone "Euro") Item. no. 10277.. Page 166</p>				
Steel pipe as well as screwed fittings		Seal directly		
Other pipes e. g. stainless steel pipe, thick walled plastic pipe	All other pipes - with their special connection - may be connected with nipples to Oventrop female threaded valves.			

1) Pipes with a wall thickness of ≤ 1 mm will need reinforcing sleeves, except when the soft sealing fitting 102744. is used! Page 166.

1.2.a System summary

Content	177
System summary	178

1.2.b "Unibox" Return temperature control

Content	181
"Unibox RTL" Return temperature control	182
"Unibox E RTL" Return temperature control	183
"Unibox T-RTL" Room and return temperature control	184
"Unibox T-RTL vario" Room and return temperature control	185
"Unibox T-RTL R-Tronic" Room and return temperature control	186
"Unibox TQ-RTL" Room and return temperature control	187
"Unibox TQ-RTL vario" Room and return temperature control	188
"Unibox TQ-RTL R-Tronic"	189

1.2.c "Unibox" Room temperature control

Content	191
"Unibox T" Room temperature control	192
"Unibox T vario" Room temperature control (without cover)	192
Accessories	192
"Unibox TQ vario" Room temperature control (without cover)	193
Accessories	193

1.2.d "Unidis" Surface heating system with local distribution

Content	195
"Unibox E BV" Room temperature control with bypass	196
"Unibox E BV vario" Room temperature control with bypass	196
Accessories	196
"Unibox RLA vario" Flush-mounted box for return isolation	197
Accessories	197
"Floorbox U"	197
Fixing channel with return isolation	198

1.2.e Accessories for "Unibox"

Content	199
Covers	200
Thermostat with remote control	200
Valve insulation	200

1.2.f "Unibox" (until 2019)

Content	201
"Unibox E BV" Room temperature control with bypass	202
"Unibox RLA" Flush-mounted box for isolation	202
"Unibox E T" Room temperature control	202
"Unibox T" Room temperature control	202
"Unibox E RTL" Return temperature control	202
"Unibox plus" Room and return temperature control	203
"Unibox RTL" Return temperature control	203

Accessories	204
Thermostat "Uni RTLH"	204
Thermostat "Uni LH"	204
Valve inserts	204
Gland nut	205
Duo connection piece	205

1.2.g Room thermostats

Content	207
Room thermostats (heating)	208
Room thermostats (heating/cooling)	208



1.2.h Room thermostats with wireless transmitter, wireless receivers

Content	209
"R-Tronic RT B" Wireless thermostat	211
"R-Tronic RTF B" Wireless thermostat with humidity display	211
"R-Tronic RTFC K" Wireless thermostat with humidity and CO2 display	211
Accessories	212
"FK-C F" Wireless window contact	212
RP-S F Wireless repeater	212
"RP-C F" Wireless repeater	212
"R-Con" Wireless receiver	213



1.2.i Actuators

Content	215
"Aktor T" Electrothermal actuators	216
Accessories	216



1.2.j "Cofloor" Systems, "Copex" Pipes and accessories

Content	217
"Cofloor" Base mat system	218
"Cofloor" Base mat system NP-R	221
"Cofloor" Tacker system	222
"Cofloor" Clamping rail system	223
"Cofloor" Hook and loop system	224
"Cofloor" Dry-build system	225
Accessories	226
PE-Xc "Copex" Plastic pipes	228
PE-RT/AL/PE-RT "Copipe HSC" Composition pipes	229
PE-RT "Copert" Plastic pipes	230
"Ofix K" Compression fittings	231
"Cofit S" Compression fittings	231
Double nipples	232



"Cofit P" Press couplings	232
---------------------------	-----

1.2.k "Multidis SFQ" distributors/collectors with "Q-Tech" for automatic hydronic balancing

Content	233
"Multidis SFQ" Stainless steel distributor/collector	234
"Multidis SFQ" Stainless steel distributor/collector	234
Heat meter connection sets	235



1.2.l "Multidis SF/SFB/SFI" Distributors/collectors for surface heating and cooling systems

Content	237
"Multidis SF" Stainless steel distributor/collector	238
"Multidis SFB" Stainless steel distributor/collector	239
"Multidis SFI" Brass distributor/collector for industrial surface heating and cooling systems	239
Accessories	240
"Optiflex" Ball valve	240
"Cofit S" Compression fittings	240
Valve insert for stainless steel distributors/collectors "Multidis SF"	241
Ball valves	241
Flush-mounted cabinets	242
Surface-mounted cabinets	242
Cylinder lock	243
Heat meter connection sets	244
Differential pressure relief device	246
Angle pattern connection set	246
"Hycoco VTZ" Double regulating and commissioning valve	246
"Hycoco DTZ" Differential pressure regulator	246



1.2.m "Regufloor" Control units

Content	247
"Regufloor H"	248
"Regufloor HW"	248
"Regufloor HN"	248
System components	249
"Regtronic RH" Heating circuit controller	250
"Regtronic EM" Extension module	251
Accessories	251
"Regufloor HC"	252
System components for "Regufloor HC"	252
"Tri-CTR" Three-way diverting and mixing valves PN 16	253
"Regufloor HX"	254



1.2.n Single components for distributors/collectors



Content	255
Individual components for distributor systems	256
Accessories	257

1.2.o Regulating sets for surface heating systems



Content	259
Regulating sets for surface heating systems	260

1.2.p Return temperature limiter set



Content	263
Return temperature limiter set	264
Return temperature limiters	264
Thermostat "Uni RTLH"	264
Thermostat "Uni RTL"	264
Valve inserts	265
Gland nut	265

1.2.q Components for concrete core activation

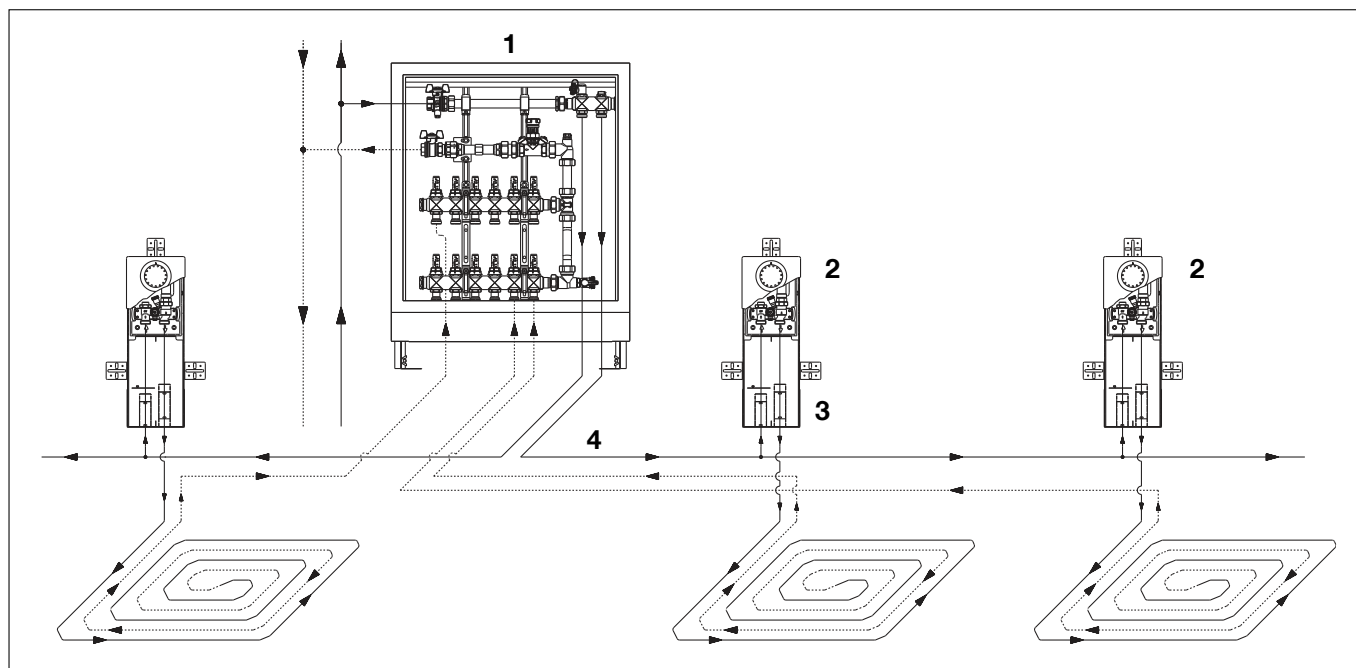


Content	267
"Multidis SF" Stainless steel distributor/collector	268
PE-Xc "Copex" Plastic pipes	268
"Cofit S" Compression fittings	268
"Multidis SFI" Brass distributor/collector for industrial surface heating/concrete core activation	269
PE-Xc "Copex" Plastic pipes	269
"Cofit S" Compression fittings	269
"Optiflex" Ball valve	270

1.2.a System summary

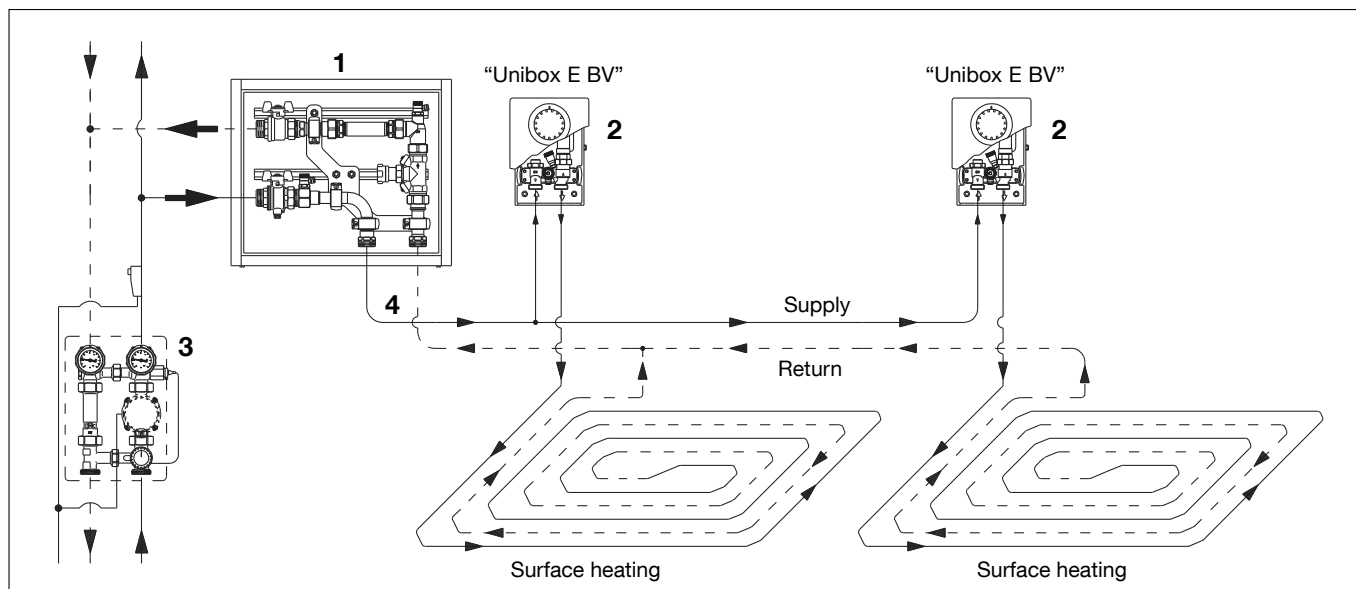
Content

System summary	178
----------------	-----



System illustration: "Unidis" Surface heating with return collector "Floorbox MH", "Unibox E BV" and fixing channel

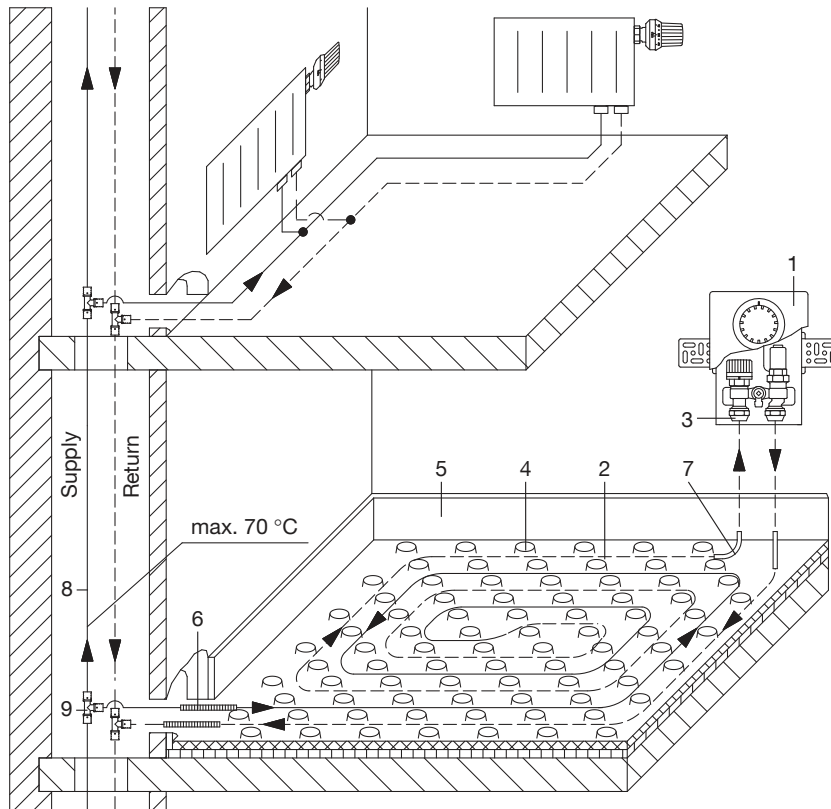
- 1 "Floorbox MH" Return collector
- 2 "Unibox E BV"
- 3 Fixing channel
- 4 "Copipe" Composition pipe
"Copex" PE-Xc pipe
"Copert" PE-RT pipe



System illustration: "Unidis" Surface heating with "Floorbox UH" and "Unibox E BV"

- 1 "Floorbox UH"
- 2 "Unibox E BV"
- 3 "Regumat F-130/180" Fixed value control unit
- 4 "Copipe" Composition pipe
"Copex" PE-Xc pipe
"Copert" PE-RT pipe

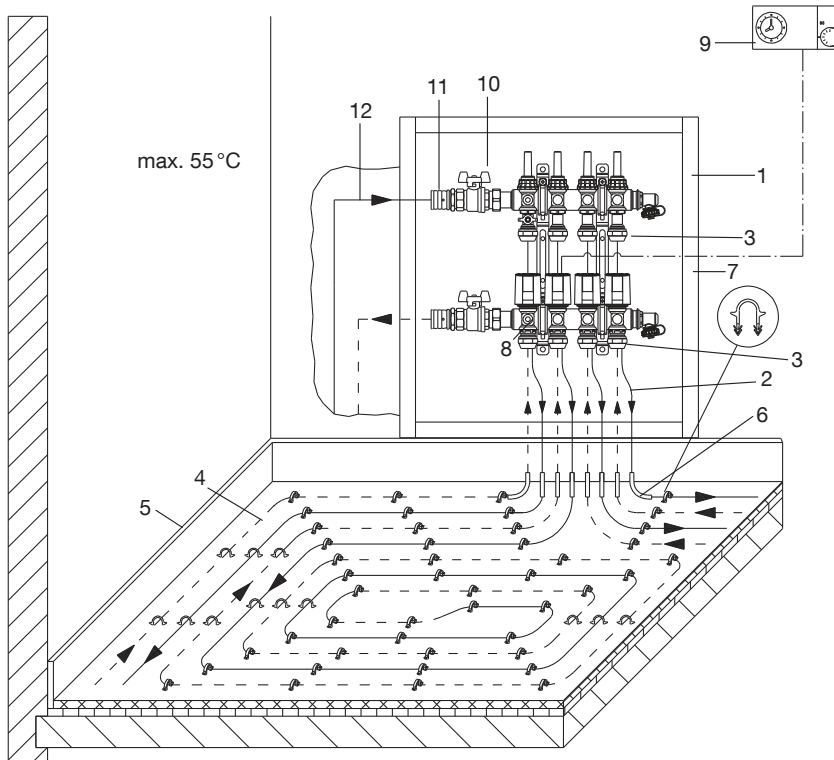
Examples of the application (further examples see product ranges "Unibox", "Multidis" stainless steel distributors/collectors and "Combi-System")



"Cofloor" Surface heating with "Unibox T-RTL" individual room temperature control

consisting of the Oventrop components:

- 1 "Unibox T-RTL" Installation set
- 2 "Copex" PE-Xc pipe
- 3 "Ofix K" Compression fittings
- 4 Base mat
- 5 Edge insulating strip
- 6 Protection pipe, slit
- 7 Pipe guiding elbow
- 8 "Copex HSC" Composition pipe
- 9 "Cofit P" Press T-piece



"Cofloor" Surface heating and cooling with stainless steel distributor/collector "Multidis SF"

consisting of the Oventrop components:

- 1 "Multidis SF" Stainless steel distributor/collector
- 2 "Copex" PE-Xc pipe
- 3 "Ofix K" Compression fitting
- 4 Tacker board
- 5 Edge insulating strip
- 6 Pipe guiding elbow
- 7 Cabinet
- 8 Electrothermal actuator
- 9 Room thermostat – clock
- 10 "Optibal" Ball valve
- 11 "Cofit P" Press connection
- 12 "Copex HSC" Composition pipe



1.2.b "Unibox" Return temperature control

Content

"Unibox RTL" Return temperature control	182
"Unibox E RTL" Return temperature control	183
"Unibox T-RTL" Room and return temperature control	184
"Unibox T-RTL vario" Room and return temperature control	185
"Unibox T-RTL R-Tronic" Room and return temperature control	186
"Unibox TQ-RTL" Room and return temperature control	187
"Unibox TQ-RTL vario" Room and return temperature control	188
"Unibox TQ-RTL R-Tronic"	189

Article

Article-No.

Hint

"Unibox RTL" Return temperature control
with pre-assembled thermostatic valve, thermostat "Uni RTL"
and cover with integrated handwheel
for limitation of return temperature
Depth: 60 mm

white

1022735*



genuine glass white

1022750*



genuine glass black

1022751*



**"Unibox" Limitation of return temperature
for surface temperature regulation**

**In combination with heating systems with
radiator operation.**

Installation set consisting of:
-Wall box unit with thermostatic valve
-Integrated return temperature limiter
-Venting and flushing valve
-Cover with integrated handwheel

Application:
Integration of a surface temperature regulation
in central heating systems with closed circuits.
For operation with non-aggressive, harmless
fluids (e.g. water or suitable water and glycol
mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range:
10-50 °C (return temperature)

The cover with integrated handwheel allows
for angle and depth compensation for an
optimum positioning of the "Unibox" installed
into the wall.

Valve with G $\frac{3}{4}$ pipework connection according
to DIN EN 16313 (cone "Euro") for Oventrop
compression fittings.

Alternatively, the compression fittings of other
manufacturers which are suitable for the
connection to G $\frac{3}{4}$ male thread according
to DIN EN 16313 (cone "Euro") may also be
used.

Dimensions of the cover (W x H x D):
155 x 155 x 6 mm (genuine glass)
155 x 155 x 8 mm (white)

Article

Article-No.

Hint

"Unibox E RTL" Return temperature control
with thermostatic valve and internal
return temperature limiter
Depth: 57 mm

white

1022731*



genuine glass white

1022760*



genuine glass black

1022761*



**"Unibox" Limitation of return temperature
for surface temperature regulation**

**In combination with heating systems with
radiator operation.**

Installation set consisting of:

- Wall box unit with thermostatic valve
- Integrated return temperature limiter
- Venting and flushing valve
- Closed cover

Application:

Integration of a surface temperature regulation
in central heating systems with closed circuits.
For operation with non-aggressive, harmless
fluids (e.g. water or suitable water and glycol
mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range:
20-40 °C (return temperature)

The cover allows for angle and depth
compensation for an optimum positioning
of the "Unibox" installed into the wall.

Valve with G $\frac{3}{4}$ pipework connection according
to DIN EN 16313 (cone "Euro") for Oventrop
compression fittings.

Alternatively, the compression fittings of other
manufacturers which are suitable for the
connection to G $\frac{3}{4}$ male thread according
to DIN EN 16313 (cone "Euro") may also be
used.

Dimensions of the cover (W x H x D):
155 x 155 x 6 mm (genuine glass)
155 x 155 x 8 mm (white)

Article	kvs	kv at 1K P-dev.	kv at 2K P-dev.	Article-No.	Hint
---------	-----	-----------------------	-----------------------	-------------	------

"Unibox T-RTL" Room and return temperature control
with presettable thermostatic valve,
cover with integrated thermostat "Uni FHU"
and internal return temperature limiter
Depth: 57 mm



white 0.81 0.34 0.57 **1022733***



genuine glass white 0.81 0.34 0.57 **1022770***



genuine glass black 0.81 0.34 0.57 **1022771***

"Unibox" Room temperature control and limitation of return temperature for surface temperature regulation

In combination with heating systems with radiator operation.

Installation set consisting of:
-Wall box unit with presettable thermostatic valve
-Integrated return temperature limiter
-Venting and flushing valve
-Valve insulation
-Cover with integrated thermostat

Application:
Integration of a surface temperature regulation in central heating systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range:
7-28 °C (room temperature)
20-40 °C (return temperature)


The cover with integrated thermostat allows for angle and depth compensation for an optimum positioning of the "Unibox" installed into the wall.

Valve with G 3/4 pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings.

Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro") may also be used.

Dimensions of the cover (W x H x D):
155 x 210 x 6 mm (genuine glass)
155 x 210 x 8 mm (white)

Award:

 Gold Winner in the category
"Home Interior Products/Switches,
Temperature Control Systems"

Article	kvs	kv at 1K P-dev.	kv at 2K P-dev.	Packing unit	Article-No.
---------	-----	-----------------------	-----------------------	-----------------	-------------

Hint



"Unibox T-RTL vario" Room and return temperature control (without cover)

Basic model for limitation of return temperature (concealed)
Depth: 57 mm

without cover	0.81	0.34	0.57	1022734*
---------------	------	------	------	-----------------

"Unibox" Room temperature control and limitation of return temperature for surface temperature regulation

In combination with heating systems with radiator operation.

Installation set consisting of:
-Wall box unit with presettable thermostatic valve
-Integrated return temperature limiter
-Venting and flushing valve

Application:
Integration of a surface temperature regulation in central heating systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range:
20-40 °C (return temperature)
Room temperature depending on the used control.

Valve with G 3/4 pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings.

Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro") may also be used.

Dimensions of the cover (W x H x D):
155 x 210 x 6 mm (genuine glass)
155 x 210 x 8 mm (white)

Accessories

Cover closed



white	1022776*
genuine glass white	1022774*
genuine glass black	1022775*



Room thermostat

230 V	(25) 1152051
-------	---------------------



"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

"H NC", closed with current "off", 230 V	1012415
--	----------------

Thermostat with remote control

Thermostat with remote control "Uni FHU"



capillary 2 m long	1012595*
capillary 5 m long	1012596*
capillary 10 m long	1012597*

Especially suitable for all
"Unibox vario" models

with '0' setting, handwheel closed

Article	kvs	kv at 1K P-dev.	kv at 2K P-dev.	Article-No.	Hint
---------	-----	-----------------------	-----------------------	-------------	------

"Unibox T-RTL R-Tronic" Room and return temperature control
with pre-assembled electrothermal actuator "Aktor T 2P"
and wireless receiver "R-Con FBH" as well as internal return
temperature limiter
Depth: 57 mm



white 0.81 0.34 0.57 **1022737***



genuine glass white 0.81 0.34 0.57 **1022772***

"Unibox" Room temperature control and limitation of return temperature for surface temperature regulation

In combination with heating systems with radiator operation.

Installation set consisting of:
-Wall box unit with presettable thermostatic valve
-Integrated return temperature limiter
-Pre-assembled actuator and wireless receiver
-Venting and flushing valve
-Closed cover

Application:
Integration of a surface temperature regulation in central heating systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range: 20-40 °C (return temperature)
Room temperature depending on the used control.

Accessories

"R-Tronic RT B" (ENOCEAN)



Wireless thermostat
with 5 selectable EnOcean profiles,
battery operated,
surface mounting

traffic white (RAL 9016) **1150780#**

"R-Tronic RTF B" (ENOCEAN)



Wireless thermostat with integrated humidity sensor
and 5 selectable EnOcean profiles,
battery operated,
surface mounting

traffic white (RAL 9016) **1150781#**

"mote 420" Wireless actuator



Connection thread M 30 x 1.5
Electronic actuator
with bi-directional radio communication,
battery operated,
with automatic presetting of the
"Q-Tech" valves with "OVbalance Home"

traffic white (RAL 9016)




The cover allows for angle and depth compensation for an optimum positioning of the "Unibox" installed into the wall.

Valve with G 3/4 pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings.

Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro") may also be used.

Dimensions of the cover (W x H x D):
155 x 210 x 6 mm (genuine glass)
155 x 210 x 8 mm (white)

#In combination with gateways (e.g. wibutler gateway) or others supporting the EEP A5-20-01 (EnOcean Equipment Profile). Local coupling with the "Unibox T(Q)-RTL R-Tronic" is possible as an option.

Article	Article-No.	Hint
<p>"Unibox TQ-RTL" Room and return temperature control with presettable thermostatic valve with "Q-Tech" for automatic hydronic balancing, cover with integrated thermostat "Uni FHU" and internal return temperature limiter Depth: 57 mm</p>		<p>"Unibox" Room temperature control and limitation of return temperature for surface temperature regulation</p> <p>In combination with heating systems with radiator operation.</p> <p>Installation set consisting of: -Wall box unit with presettable thermostatic valve with valve insert "QA" -Integrated return temperature limiter -Venting and flushing valve -Valve insulation -Cover with integrated thermostat</p> <p>Application: Integration of a surface temperature regulation in central heating systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).</p> <p>Max. operating pressure p_s: 10 bar (PN 10) Operating temperature t_s: 2 °C up to 100 °C Temperature range: 7-28 °C (room temperature) 20-40 °C (return temperature)</p> <p>The cover with integrated thermostat allows for angle and depth compensation for an optimum positioning of the "Unibox" installed into the wall.</p> <p>Valve with G $\frac{3}{4}$ pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings.</p> <p>Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G $\frac{3}{4}$ male thread according to DIN EN 16313 (cone "Euro") may also be used.</p> <p>Dimensions of the cover (W x H x D): 155 x 210 x 6 mm (genuine glass) 155 x 210 x 8 mm (white)</p>
	white	1022739*
	genuine glass white	1022780*
	genuine glass black	1022781*

Article	Packing unit	Article-No.	Hint
"Unibox TQ-RTL vario" Room and return temperature control (without cover) Basic model for limitation of return temperature (concealed) with presettable thermostatic valve with "Q-Tech" for automatic hydronic balancing Depth: 57 mm			"Unibox" Room temperature control and limitation of return temperature for surface temperature regulation In combination with heating systems with radiator operation. Installation set consisting of: -Wall box unit with presettable thermostatic valve with valve insert "QA" -Integrated return temperature limiter -Venting and flushing valve Application: Integration of a surface temperature regulation in central heating systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p _s : 10 bar (PN 10) Operating temperature t _s : 2 °C up to 100 °C Temperature range: 20-40 °C (return temperature) Room temperature depending on the used control. Valve with G ¾ pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings. Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G ¾ male thread according to DIN EN 16313 (cone "Euro") may also be used. Dimensions of the cover (W x H x D): 155 x 210 x 6 mm (genuine glass) 155 x 210 x 8 mm (white)
without cover		1022736*	
Accessories Cover closed			
white		1022776*	
genuine glass white		1022774*	
genuine glass black		1022775*	
Room thermostat 230 V (25) 1152051			
"Aktor T 2P" Electrothermal actuators (two point) connection thread M 30 x 1.5 "H NC", closed with current "off", 230 V 1012415			
Thermostat with remote control Thermostat with remote control "Uni FHU"			
capillary 2 m long		1012595*	Especially suitable for all "Unibox vario" models <u>with '0' setting</u> , handwheel closed
capillary 5 m long		1012596*	
capillary 10 m long		1012597*	

Article

Article-No.

Hint

"Unibox TQ-RTL R-Tronic"

Room and return temperature control
with presettable thermostatic valve with
"Q-Tech" for automatic hydronic balancing,
pre-assembled electrothermal actuator "Aktor T 2P"
and wireless receiver "R-Con FBH" as well as
internal return temperature limiter
Depth: 57 mm



white

1022738*



genuine glass white

1022782*

Accessories

"R-Tronic RT B" (ENOCEAN)

Wireless thermostat
with 5 selectable EnOcean profiles,
battery operated,
surface mounting



traffic white (RAL 9016)

1150780#

"R-Tronic RTF B" (ENOCEAN)

Wireless thermostat with integrated humidity sensor
and 5 selectable EnOcean profiles,
battery operated,
surface mounting



traffic white (RAL 9016)

1150781#

"mote 420" Wireless actuator

Connection thread M 30 x 1.5
Electronic actuator
with bi-directional radio communication,
battery operated,
with automatic presetting of the
"Q-Tech" valves with "OVbalance Home"



traffic white (RAL 9016)

**"Unibox" Room temperature control and
limitation of return temperature for surface
temperature regulation**

**In combination with heating systems with
radiator operation.**

Installation set consisting of:
-Wall box unit with presettable thermostatic
valve with valve insert "QA"
-Integrated return temperature limiter
-Pre-assembled actuator and wireless receiver
-Venting and flushing valve
-Closed cover

Application:
Integration of a surface temperature regulation
in central heating systems with closed circuits.
For operation with non-aggressive, harmless
fluids (e.g. water or suitable water and glycol
mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range:
20-40 °C (return temperature)
Room temperature depending on the used
control.

The cover allows for angle and depth
compensation for an optimum positioning
of the "Unibox" installed into the wall.

Valve with G 3/4 pipework connection according
to DIN EN 16313 (cone "Euro") for Oventrop
compression fittings.

Alternatively, the compression fittings of other
manufacturers which are suitable for the
connection to G 3/4 male thread according
to DIN EN 16313 (cone "Euro") may also be
used.

Dimensions of the cover (W x H x D):
155 x 210 x 6 mm (genuine glass)
155 x 210 x 8 mm (white)

**#In combination with gateways
(e.g. wibutler gateway) or others
supporting the EEP A5-20-01
(EnOcean Equipment Profile).
Local coupling with the "Unibox
T(Q)-RTL R-Tronic" is possible
as an option.**



1.2.c "Unibox" Room temperature control

Content

"Unibox T" Room temperature control	192
"Unibox T vario" Room temperature control (without cover)	192
Accessories	192
"Unibox TQ vario" Room temperature control (without cover)	193
Accessories	193

Article	kvs	kv at 1K P-dev.	kv at 2K P-dev.	Packing unit	Article-No.
---------	-----	-----------------------	-----------------------	-----------------	-------------

Hint

**"Unibox T" Room temperature control**

with thermostatic valve and cover with integrated thermostat "Uni FHU" for room temperature control
Depth: 57 mm

white 0.81 0.34 0.57 **1022722***

"Unibox T vario" Room temperature control (without cover)

Basic model for room temperature control (concealed)
Depth: 57 mm



without cover 0.81 0.34 0.57 **1022723***

Accessories

Cover closed



white **1022776***
genuine glass white **1022774***
genuine glass black **1022775***

Room thermostat

230 V (25) **1152051**

"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

"H NC", closed with current "off", 230 V **1012415**

Thermostat with remote control

Thermostat with remote control "Uni FHU"



capillary 2 m long **1012595***
capillary 5 m long **1012596***
capillary 10 m long **1012597***

"Unibox" Room temperature control for surface heating

For installations with flow temperatures suitable for surface heating systems.

Installation set consisting of:

- Wall box unit with presettable thermostatic valve
- Venting and flushing valve
- Valve insulation
- Cover with integrated thermostat

Application:

Integration of heated surfaces in central heating systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)Operating temperature t_s : 2 °C up to 100 °C

Temperature range:

7-28 °C (room temperature)

The cover with integrated thermostat allows for angle and depth compensation for an optimum positioning of the "Unibox" installed into the wall.

Valve with G 3/4 pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings.

Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro") may also be used.

Dimensions of the cover (W x H x D):

155 x 210 x 6 mm (genuine glass)

155 x 210 x 8 mm (white)

Especially suitable for all "Unibox vario" models

with '0' setting, handwheel closed

Article	Packing unit	Article-No.	Hint
"Unibox TQ vario" Room temperature control (without cover) Basic model for room temperature control (concealed) with presettable thermostatic valve with "Q-Tech" for automatic hydronic balancing Depth: 57 mm			"Unibox" Room temperature control for surface heating and cooling For installations with flow temperatures suitable for surface heating systems. Installation set consisting of: -Wall box unit with presettable thermostatic valve with valve insert "QA" -Venting and flushing valve Application: Integration of heated/chilled surfaces in central heating and cooling systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 2 °C up to 100 °C Valve with G 3/4 pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings. Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro") may also be used. Dimensions of the cover (W x H x D): 155 x 210 x 6 mm (genuine glass) 155 x 210 x 8 mm (white)
	without cover	1022729*	
Accessories Cover closed white genuine glass white genuine glass black			
		1022776*	
		1022774*	
		1022775*	
Room thermostat 230 V			
		(25) 1152051	
"Aktor T 2P" Electrothermal actuators (two point) connection thread M 30 x 1.5 "H NC", closed with current "off", 230 V			1012415
			
Thermostat with remote control Thermostat with remote control "Uni FHU"			Especially suitable for all "Unibox vario" models <u>with '0' setting</u> , handwheel closed
	capillary 2 m long capillary 5 m long capillary 10 m long	1012595* 1012596* 1012597*	



1.2.d "Unidis" Surface heating system with local distribution

Content

"Unibox E BV" Room temperature control with bypass	196
"Unibox E BV vario" Room temperature control with bypass	196
Accessories	196
"Unibox RLA vario" Flush-mounted box for return isolation	197
Accessories	197
"Floorbox U"	197
Fixing channel with return isolation	198

Article	kvs	kv at 1K P-dev.	kv at 2K P-dev.	Packing unit	Article-No.	Hint
---------	-----	-----------------------	-----------------------	-----------------	-------------	------

"Unibox E BV" Room temperature control with bypass
with thermostatic valve with presettable bypass
Depth: 57 mm



white 0.81 0.34 0.57 **1022724***

"Unibox" Room temperature control for surface heating

For use in installations with flow temperatures suitable for surface heating systems.

Installation set consisting of:
-Wall box unit with thermostatic valve with integrated bypass stem and regulating insert
-Venting and flushing valve
-Valve insulation
-Cover with integrated thermostat

"Unibox E BV vario" Room temperature control with bypass
with thermostatic valve with presettable bypass
Depth: 57 mm



without cover **1022725***

For the division of the heating water volume flow into a thermostatically controlled volume flow and a bypass volume flow. The bypass volume flow allows for the setting of a basic heat load (no cooling down).

Application:
Integration of heated surfaces in central heating systems with closed circuits. For operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range: 7-28 °C (room temperature)

Accessories

Cover closed



white **1022776***
genuine glass white **1022774***
genuine glass black **1022775***

Valve with G 3/4 pipework connection according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings.

Alternatively, the compression fittings of other manufacturers which are suitable for the connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro") may also be used.

Room thermostat



230 V (25) **1152051**
24 V (25) **1152052**

Dimensions of the cover (W x H x D):
155 x 210 x 6 mm (genuine glass)
155 x 210 x 8 mm (white)

Actuator

"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5



"H NC", closed with current "off", 230 V **1012415**

Thermostat with remote control

Thermostat with remote control "Uni FHU"



capillary 2 m long **1012595***
capillary 5 m long **1012596***
capillary 10 m long **1012597***

Especially suitable for all "Unibox vario" models

with '0' setting, handwheel closed

Article	kvs	kv at 1K P-dev.	kv at 2K P-dev.	Article-No.	Hint
---------	-----	-----------------------	-----------------------	-------------	------

"Unibox RLA vario" Flush-mounted box for return isolation
with thermostatic valve with isolating and regulating function
Depth: 57 mm



white 0.81 0.34 0.57 **1022726***

Application:
Integration of heated surfaces in
central heating systems with closed circuits.
For operation with non-aggressive, harmless
fluids (e.g. water or suitable water and glycol
mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 2 °C up to 100 °C
Temperature range: 7-28 °C (room temperature)

Valve with G $\frac{3}{4}$ pipework connection according
to DIN EN 16313 (cone "Euro") for Oventrop
compression fittings.

Alternatively, the compression fittings of other
manufacturers which are suitable for the
connection to G $\frac{3}{4}$ male thread according
to DIN EN 16313 (cone "Euro") may also be
used.

Accessories

Cover closed



white **1022766***
genuine glass black **1022765***
genuine glass white **1022764***

For "Unibox E RTL" and "Unibox RLA vario"
with depth 57 mm.

Dimensions (W x H x D):
155 x 155 x 6 mm (genuine glass)
155 x 155 x 8 mm (white)

"Floorbox U"
Connection without distributor/collector
for surface heating systems



"Floorbox UH" lateral riser connection **1022668**

The "Floorbox" serves to connect each
dwelling to the surface heating system together
with the installation sets "Unibox".

Installation set consisting of:

Supply:
- Ball valve G 1 with temperature sensor
connection



"Floorbox UV" lower riser connection **1022669**

Return:
- "Hycocoon VTZ" Double regulating
and commissioning valve
- Meter stool piece
- Ball valve with coupling
- Venting and flushing valve
- Flat seals

Depth: 110 - 145 mm
Width: 400 mm
Height: 350 mm

System illustration: page 2.06

Article

Article-No.

Hint

**Fixing channel with return isolation**

with cover and thermostat with remote control

for "Unibox", depth: 57 mm

1022654

For heavyweight and lightweight walls, made of galvanised steel sheet for pipework installation out of the ground into the wall to the "Unibox".

An additional installation set of the "Unibox" programme has to be ordered separately and has to be fit into the fixing channel.

For this purpose, the "Unibox E BV" is available without cover (item no. 1022725).

For the connection without distributors/collectors and the room to room isolation of the return of surface heating circuits.

Isolating facility consisting of:
Isolating valve, venting and flushing valve.
Valve connection G 3/4 for Oventrop compression fittings.

Assembly without screws or rivets. Adaptation to the installation height via an adjustable extension. The adaptation to the installation depth for heavyweight walls is carried out by use of elbows. In case of of lightweight walls, the fixing channel is screwed directly onto the profiles. Additional cut-outs in the reverse side of the fixing channel allow for the connection of the "Unibox" even from an adjoining room.

Height: 440 - 490 mm (extendible)
Width: 160 mm

Pipe connection press elbow

Pipe made of stainless steel, fitting made of brass for composition pipe "Copipe", with "Ofix CEP" - Snap & Seal - compression fitting for male thread G 3/4 according to DIN EN 16313 (cone "Euro")

16 x 2.0 mm

1515353

20 x 2.5 mm

1515356**Pipe connection press T-piece**

Pipe made of stainless steel, fitting made of brass for composition pipe "Copipe", with "Ofix CEP" - Snap & Seal - compression fitting for male thread G 3/4 according to DIN EN 16313 (cone "Euro")

16 x 2.0 mm

1515153°

20 x 2.5 mm

1515156°

Height: 321 mm
Stainless steel pipe: Ø 15 x 1.0 mm

For a simple connection of the "Unibox" to the supply pipe or the heating loop via the fixing channel.

The pipes have to be shortened according to the required installation height.



1.2.e Accessories for "Unibox"

Content

Covers	200
Thermostat with remote control	200
Valve insulation	200

Article

Article-No.

Hint

Accessories



Cover closed

white
genuine glass white
genuine glass black

1022776*
1022774*
1022775*

For "Unibox T-RTL vario, TQ-RTL vario, T vario and TQ vario" with depth 57 mm.

Also suitable for existing models of the "Unibox E vario" with depth 57 mm.

Dimensions (W x H x D):
155 x 210 x 6 mm (genuine glass)
155 x 210 x 8 mm (white)



Cover closed

white
genuine glass black
genuine glass white

1022766*
1022765*
1022764*

For "Unibox E RTL" and "Unibox RLA vario" with depth 57 mm.

Dimensions (W x H x D):
155 x 155 x 6 mm (genuine glass)
155 x 155 x 8 mm (white)



Cover with thermostat

white
genuine glass white
genuine glass black

1022779*
1022777*
1022778*

As replacement for "Unibox T-RTL".

Dimensions (W x H x D):
155 x 210 x 6 mm (genuine glass)
155 x 210 x 8 mm (white)



Cover with handwheel

white
genuine glass white
genuine glass black

1022789*
1022787*
1022788*

As replacement for "Unibox RTL".

Dimensions (W x H x D):
155 x 155 x 6 mm (genuine glass)
155 x 155 x 8 mm (white)



Thermostat with remote control "Uni FHU"

capillary 2 m long
capillary 5 m long
capillary 10 m long

1012595*
1012596*
1012597*

Especially suitable for all "Unibox vario" models

with '0' setting, handwheel closed



Valve insulation

1022792*



1.2.f "Unibox" (until 2019)

Content

"Unibox E BV" Room temperature control with bypass	202
"Unibox RLA" Flush-mounted box for isolation	202
"Unibox E T" Room temperature control	202
"Unibox T" Room temperature control	202
"Unibox E RTL" Return temperature control	202
"Unibox plus" Room and return temperature control	203
"Unibox RTL" Return temperature control	203
Accessories	204
Thermostat "Uni RTLH"	204
Thermostat "Uni LH"	204
Valve inserts	204
Gland nut	205
Duo connection piece	205

Article	kvs	kv at 1K P-dev.	kv at 2K P-dev.	Article-No.	Hint
---------	-----	-----------------------	-----------------------	-------------	------

"Unibox E BV" Room temperature control with bypass
Combination room temperature control
and presettable bypass
Depth: 57 mm



white

0.81 0.34 0.57 **1022662°**

"Unibox E" (exclusive model) and "Unibox" individual room temperature control for surface heating systems

Application:

For installations with flow temperatures suitable for surface heating systems

according to DIN EN 1264.

Installation set consisting of:

Wall box unit with thermostatic valve with integrated bypass stem and regulating insert, working without auxiliary energy. Venting and flushing valve, valve insulation, cover and thermostat with '0' setting. Valve connection G 3/4 for Oventrop compression fittings. For the division of the heating water volume flow into a thermostatically controlled volume flow and a bypass volume flow. The bypass volume flow allows for the setting of a basic heat load (no cooling down).

For the isolation of surface heating circuits in combination with the installation sets "Unibox".

"Unibox RLA" Flush-mounted box for isolation
Combination isolating and regulating function



white

1022663°

"Unibox E T" Room temperature control
Room temperature control



white 0.81 0.34 0.57 **1022632°**

Installation set consisting of:

Wall box unit with presettable thermostatic valve and venting and flushing valve.

"Unibox T" Room temperature control
Room temperature control
with thermostat "Uni LH"



white 1.10 0.36 0.67 **1022636°**

Installation set consisting of:

Wall box unit with presettable thermostatic valve, venting and flushing valve, cover and thermostat "Uni LH".

"Unibox E RTL" Return temperature control
Limitation of return temperature (concealed)
Depth: 57 mm



white

1022631°

chrome plated

1022641°

Limitation of the return temperature from the outside:
page 203, item no. 1022635

Installation set consisting of:

Wall box unit with integrated return temperature limiter, venting and flushing valve and closed cover. Valve connection G 3/4 for Oventrop compression fittings. For return temperature limitation. Temperature range: 20-40 °C (return temperature).



"Unibox plus" Room and return temperature control
 Combination thermostat "Uni LH"
 and thermostat "Uni RTLH"
 Depth: 57 mm

white 1.10 0.67 **1022637°**

"Unibox" individual room temperature control and limitation of return temperature for surface heating systems.

Application:

In combination with heating systems with radiator operation.

Installation set consisting of:
 Wall box unit with presettable thermostatic valve and RTLH valve, venting and flushing valve, cover and thermostats "Uni LH" and "Uni RTLH" with '0' setting. Valve connection G 3/4 for Oventrop compression fittings.

The RTLH valve insert with double disc prevents inadvertent overheating, with frost protection.

For the control of the room temperature and limitation of the return temperature.

Temperature range: 7–28 °C
 (room temperature)

Temperature range: 10–40 °C factory setting
 (return temperature) may be increased to 50 °C by cancelling the limitation (40 °C)

Awards "Unibox E plus":



Interclima Paris
 Concours de l'Innovation



Interclima Paris
 Trophée du Design



"Unibox RTL" Return temperature control
 with thermostat "Uni RTLH"
 Depth: 57 mm

white **1022635°**

Installation set consisting of:

Wall box unit with RTLH valve, venting and flushing valve, cover and thermostat "Uni RTLH" with '0' setting. Valve connection G 3/4 for Oventrop compression fittings.

The RTLH valve insert with double disc prevents inadvertent overheating, with frost protection.

For return temperature limitation.

Temperature range: 10–40 °C factory setting
 (return temperature) may be increased to 50 °C by cancelling the limitation (40 °C).

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------	-------------	------

Accessories

Thermostat "Uni RTLH"



white	(25)	1027165
chrome plated	(25)	1027172

With '0' setting,
may be limited or locked.
Temperature range:
10 °C–40 °C factory setting (return
temperature), may be increased to 50 °C by
cancelling the limitation (40 °C).

Thermostat "Uni LH"



white	(10)	1011465
-------	------	---------

with '0' setting



chrome plated with collar nut cover	(25)	1011469
--	------	---------

Valve inserts



"AV 9, CV 9, RFV 9, E" and "Multiblock T-RTL" (manufactured since 2016)	0.67	(100) 1187047#
--	------	----------------

Also for "Hycocoon ETZ" (manufactured since
2016).

#These valve inserts are suitable for all valve
bodies with connection thread M 30 x 1.5 of all
sizes of the thermostatic valves "A, AV 9, AQ,
ADV 9, CV 9, E, EQ, AF, RF, RFV 9 and RFQ".








for return flow valves connection thread M 30 x 1.5	(100)	1026981
--	-------	---------

Valve insert with double disc.
Prevents inadvertent overheating,
with frost protection.



Valve insert RTLH	(100)	1026970
-------------------	-------	---------

Special valve insert for reversed supply and
return pipe for "Unibox RTL".

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
	Special valve insert for reversed supply and return pipe with infinitely adjustable presetting			As replacement for: – "Multiblock T/TU/TFU" – "Unibox E T" – "Unibox E plus" – "Unibox E vario" – "Unibox E BV" – "Unibox T-RTL" – "Unibox T-RTL vario" – "Unibox T-RTL R-Tronic" In case of reversed direction of flow for: – "Unibox T" – "Unibox TQ" – "Unibox TQ-RTL" – "Unibox TQ-RTL vario" – "Unibox TQ-RTL R-Tronic" – "Unibox plus" (connection for room temperature control) – "Unibox vario" (connection for room temperature control) – "Unibox Q plus" (connection for room temperature control)
	"AV9U"	0.57	(100) 1187078	
	Extensions L = 20 mm			
	for thermostatic valves		(10) 1022698	For "Unibox T", "Unibox plus", "Unibox TQ" and "Unibox Q plus".
	for RTLH valves		(10) 1022699	For "Unibox RTL", "Unibox vario", "Unibox TQ" and "Unibox Q plus".
	Gland nut			
	Set = 5 pieces		(10) 1026986	
	Duo connection piece			
	1 x G ¾ collar nut 2 x G ¾ male thread		1022655	For the connection of two heating circuits.



1.2.g Room thermostats

Content

Room thermostats (heating)	208
Room thermostats (heating/cooling)	208

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Room thermostats (heating)

Room thermostat-clock - surface mounting (heating)

with daily setting



230 V		1152552
-------	--	---------

The electric room thermostat-clock is required for individual room temperature control of heating systems in combination with the electrothermal actuators (two point) "Aktor T 2P". Output signal pulse-width modulation.
Temperature range: 5 °C up to 30 °C
Heating:
Use electrothermal actuators (two point) "closed with current off".
Central temperature setback is carried out according to a timed programme.
Limitation of the control range by using the concealed limiting elements.

Room thermostat - surface mounting (heating)

Heating two point control



230 V	(25)	1152051
24 V	(25)	1152052

The electric thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P".
Temperature range: 5 °C up to 30 °C
Heating:
Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, the temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V).
Cooling:
Use electrothermal actuators (two point) "open with current off".
Limitation of the control range of item no. 1152051/52/71/72 by using the concealed limiting elements.



230 V	(25)	1152055
-------	------	---------

with concealed temperature setting



Room thermostat - flush mounting (heating)

Heating two point control

230 V	(128)	1152071
-------	-------	---------



Room thermostat - flush mounting (heating)

with display
Heating two point control

230 V	(40)	1152561
24 V	(40)	1152562°

With LCD display and adjustable timed programme.

Temperature range: 5 °C up to 35 °C

Operating current range (item no. 1152561):
100 up to 230 V AC

Room thermostats (heating/cooling)

Room thermostat - surface mounting (heating and cooling)

Heating 0 - 10 V control
Cooling 0 - 10 V control



24 V	(25)	1152151
------	------	---------

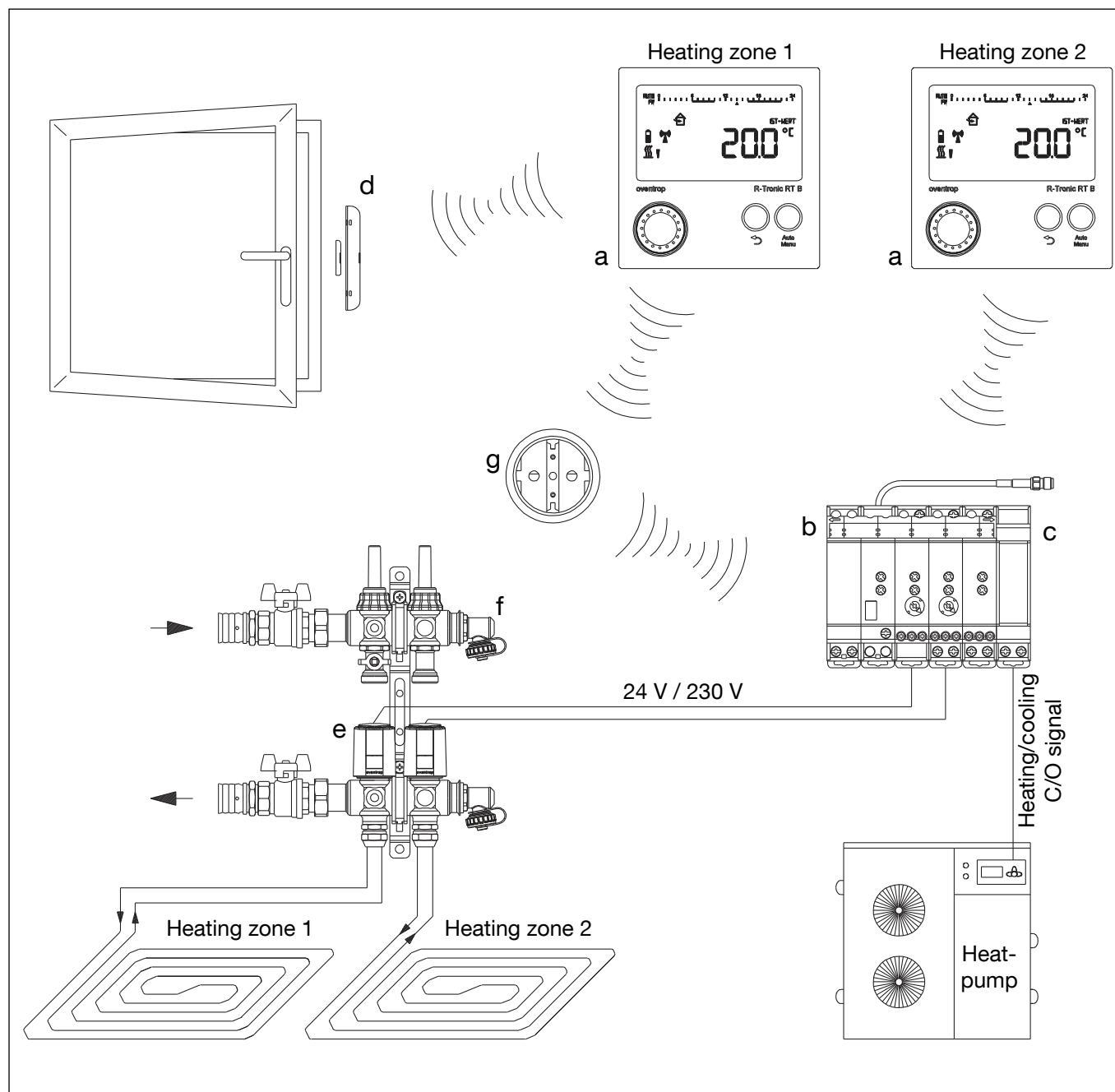
Heating:
Use electrothermal actuators (two point) "closed with current off" (terminal "NC") or "open with current off" (terminal "NO").
The room thermostat is used for individual room temperature control in combination with the electrothermal actuator (0- 10 V) "Aktor T ST L NC", item no. 1012953, page 44, or the electromotive actuator "Aktor M ST L", item no. 1012705/06, page 46 (may also be used in three- or four-pipe systems).
With one analogue output 0-10 V each for heating and cooling as well as adjustable neutral zone (0.5-7.5 K).
Temperature range: 5 °C up to 30 °C

1.2.h Room thermostats with wireless transmitter, wireless receivers



Content

"R-Tronic RT B" Wireless thermostat	211
"R-Tronic RTF B" Wireless thermostat with humidity display	211
"R-Tronic RTFC K" Wireless thermostat with humidity and CO2 display	211
Accessories	212
"FK-C F" Wireless window contact	212
RP-S F Wireless repeater	212
"RP-C F" Wireless repeater	212
"R-Con" Wireless receiver	213



- a "R-Tronic RT B" / "R-Tronic RTF B" / "R-Tronic RTFC K" Wireless thermostat
- b "R-Con" Wireless receiver
- c "R-Con HC" Extension module heating/cooling
- d "FK-C F" Wireless window contact
- e "Aktor T 2P" (two point) Electrothermal actuator
- f "Multidis SF" Stainless steel distributor/collector
- g "RP-S F" Wireless repeater

Article

Article-No.

Hint

"R-Tronic RT B" Wireless thermostat



Wireless thermostat
with bi-directional radio communication,
battery operated,
surface mounting

traffic white (RAL 9016)

1150680

Electronic wireless thermostat "R-Tronic RT B" for room temperature control according to adjustable timed programmes. The nominal and actual room temperature can be displayed.

Up to 3 participants (such as actuators for wireless thermostats "mote 320" and wireless receivers "R-Con") can be connected during battery operation.

A supply via the network is an alternative, see accessories page 56.

During mains operation, the number of participants can be increased to 8 which allows, for instance, for an integration of window contacts for room temperature setback.

Award:



GERMAN DESIGN AWARD
SPECIAL 2019

"R-Tronic RTF B" Wireless thermostat with humidity display



Wireless thermostat
with bi-directional radio communication and
integrated humidity sensor,
battery operated,
surface mounting

traffic white (RAL 9016)

1150681

Electronic wireless thermostat "R-Tronic RTF B" for room temperature control according to adjustable timed programmes. The nominal and actual room temperature can be displayed. An integrated humidity sensor supplies information on the relative humidity RH in %. The value is displayed in the text line.

Up to 3 participants (such as actuators for wireless thermostats "mote 320" and wireless receivers "R-Con") can be connected during battery operation. A supply via the network is an alternative, see accessories page 56.

During mains operation, the number of participants can be increased to 8 which allows, for instance, for an integration of window contacts for room temperature setback.

"R-Tronic RTFC K" Wireless thermostat with humidity and CO₂ display

Wireless thermostat
with bi-directional radio communication and
integrated humidity and CO₂ sensor

traffic white (RAL 9016)

Power supply:
Flush-mounted power pack (100-240 V ~ / 50-60 Hz)
with wall bracket



1150682

Electronic wireless thermostat "R-Tronic RTFC K" for room temperature control according to adjustable timed programmes. The nominal and actual room temperature can be displayed. An integrated humidity sensor supplies information on the relative humidity RH in % and an integrated CO₂ sensor on the CO₂ content in ppm in the room air. Both values are displayed in the text line.

If preset limits are exceeded, a symbol asking for fresh air supply is displayed.







Up to 8 participants (such as actuators for wireless thermostats "mote 320", wireless receivers "R-Con" and wireless window contacts for room temperature setback) can be connected to the "R-Tronic RTFC K".

Power is supplied by a flush-mounted power pack or a mains adaptor with table stand.

Power supply:
Mains adaptor (100-240 V ~ / 50-60 Hz)
with table stand



1150684

Article	Packing unit	Article-No.	Hint
Accessories			For the conversion of battery operated wireless thermostats "R-Tronic RT B/ RTF B" to an external power supply (100-240 V ~ / 50-60 Hz).
	Flush-mounted power pack (100-240 V ~ / 50-60 Hz) with wall bracket	1150692	
	Mains adaptor (100-240 V ~ / 50-60 Hz) with table stand, white for stationary use, suitable for "i-Tronic TFC" and "R-Tronic RT B/RTF B"	1150694	
"FK-C F" Wireless window contact			A radio signal is transmitted when opening or closing the window. The solar powered energy storage ensures a maintenance-free operation.
	solar powered, white (similar to RAL 9003)	1153070	Compatible with: - "R-Tronic" Wireless thermostats ("DynaTemp HA") - Wireless room modules ("DynaTemp BA")
			Note: The wireless thermostats "R-Tronic" require the software version 01-06-02 or higher and have to be mains-operated.
RP-S F Wireless repeater			The wireless repeater "RP-S F" serves to amplify the signal between the wireless thermostat "R-Tronic" and the "OVgateway" as well as the wireless receiver "R-Con" / "R-Con 2P".
	with switching function for installation into an earthed plug (230 V) white (similar to RAL 9003)	1150699°	Switching of electrical appliances (230 V) and registration of the current consumption data can be carried out with the help of the intermediate plug.
"RP-C F" Wireless repeater			The repeater serves to amplify the EnOcean radiograms and is for instance used to increase the radio range between wireless window contacts and the wireless room modules.
	for EnOcean wireless technology, flush mounting, 230 V / 50 Hz	(50) 1153060	
	Cover frame 88 x 88 mm traffic white (RAL 9016)	(50) 1150693	For panelling flush sockets (milling holes up to Ø 83 mm, e.g. in Switzerland) for surface-mounted installation of the wireless thermostats "R-Tronic".

Article

Article-No.

Hint

"R-Con" Wireless receiver

230 V, without plug, wiring on site,
mounting rail installation according to DIN 60715



4 channels with logic module	1150770
4 channels without logic module	1150771
8 channels with logic module	1150772
8 channels without logic module	1150773

Electronic multichannel wireless receiver for room temperature control of up to 8 independent heating zones (surface heating) according to adjustable timed programmes at the wireless thermostats "R-Tronic RT B", "R-Tronic RTF B" and "R-Tronic RTFC K". Operation via the menu-driven wireless thermostat.

Additional functions (direct selection via the rotary switches at the wireless receiver):
- Pump logic with adjustable lead time and follow-up time (only item no. 1150770/ 72)
- Burner logic for heat demand (only item no. 1150770/ 72)
- Two point control
- PWM control for surface heating

Electrothermal actuators "Aktor T 2P" 24 V or 230 V can be connected to the channels (closing contact with 4A/250 V AC each).

The wireless receiver "R-Con" has to be installed in a cabinet (surface/flush mounting). The protective housing, item no. 1150776, is to be used alternatively.

An external transformer is required for the power supply of 24 V actuators.

Antenna extension for wireless receiver "R-Con"

surface mounting,
glossy white (similar RAL 9003)



1150777

Antenna extension (1 m) with SMA screw terminal.

"R-Con T 2P"

4 channel extension module for "R-Con",
mounting rail installation according to DIN 60715



1150775

The 4 channel extension module is connected to the wireless receiver "R-Con". It serves the extension by 4 channels which allows for the control of further heating zones (12, 16 ...) with one wireless receiver "R-Con".

"R-Con HC"

Extension module heating/cooling for
wireless receiver "R-Con",
mounting rail installation according to DIN 60715



1150774

The extension module is connected to the wireless receiver "R-Con" and is used for switching between heating and cooling operation via a C/O input (change-over input). The C/O signal is provided by a reversible heat pump (volt free). Furthermore, the "R-Con HC" module features an input for dew point monitoring which interrupts cooling when the dew point is exceeded.

Protective housing for "R-Con"

surface mounting



1150776

The wireless receiver "R-Con" is mounted onto the rail (included in the delivery) to avoid direct contact with live parts (230 V).



1.2.i Actuators

Content

"Aktor T" Electrothermal actuators	216
Accessories	216



"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

"H NC", closed with current "off", 230 V	1012415
"L NC", closed with current "off", 24 V	1012416

Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats.
Further applications in bivalent heating installations.
Connecting cable 1 m.
With "First-Open" function and stroke index.
Simple plug-in connection with valve adapter.
Actuators can be installed in any position.
Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.

Accessories

Connecting block (6 control zones)
for room thermostats and actuators



24 V/ 230 V, heating	(25) 1400980
----------------------	---------------------

An external power supply of 24 V must be available when using item no. 1400980 and 1400982.

Item no. 1153053 can be used as transformer.




Connecting block (10 control zones)
for room thermostats and actuators






230 V, heating/cooling, pump control	(25) 1400981
24 V, heating/cooling, pump control	(25) 1400982
230 V, heating/cooling, pump and boiler control, casing cover with integrated time switch	(25) 1400983






1.2.j "Cofloor" Systems, "Copex" Pipes and accessories**Content**

"Cofloor" Base mat system	218
"Cofloor" Base mat system NP-R	221
"Cofloor" Tacker system	222
"Cofloor" Clamping rail system	223
"Cofloor" Hook and loop system	224
"Cofloor" Dry-build system	225
Accessories	226
PE-Xc "Copex" Plastic pipes	228
PE-RT/AL/PE-RT "Copipe HSC" Composition pipes	229
PE-RT "Copert" Plastic pipes	230
"Ofix K" Compression fittings	231
"Cofit S" Compression fittings	231
Double nipples	232
"Cofit P" Press couplings	232

Article	Packing unit	Article-No.	Hint
"Cofloor" Base mat system for fixing 14 and 16 mm pipes with the possibility of 45° diagonal laying without auxiliary material Laying distances 5, 10, 15, 20, 25, 30 cm			
			
Base mat NP-35 1.0 x 1.0 m = 1.0 m ² with thermal and sound insulation made of expanded polystyrene, thermal conductivity group 040, thickness: 35-2 mm, covered with polystyrene foil, building material class B2 according to DIN 4102			Thermal resistivity: R = 0.85 (m ² K)/W.
Max. load: 5 kN/m ²		1402210°	Only sold in units of 10 base mats per box.
			
Base mat NP-11 1.0 x 1.0 = 1.0 m ² with thermal insulation made of expanded polystyrene, thermal conductivity group 035, thickness: 11 mm, covered with polystyrene foil, building material class B2 according to DIN 4102			Thermal resistivity: R = 0.314 (m ² K)/W.
Max. load: 50 kN/m ²		1402310°	Only sold in units of 10 base mats per box.
			
Base mat NP 1.0 x 1.0 m = 1.0 m ² without thermal insulation made of made of moulded polystyrene foil		1402110°	Only sold in units of 18 base mats per box.
			
Compensation element 30 1.0 x 1.0 m folded made of expanded polystyrene, thermal conductivity group 040, thickness: 30-2 mm			
covered with foil	(5)	1402490	
			
Compensation element 11 1.0 x 1.0 m folded, made of expanded polystyrene, thermal conductivity group 035, thickness: 11 mm,			
covered with foil	(5)	1402390	

Article	Packing unit	Article-No.	Hint
 <p>Connection element for base mat</p>	(10)	1402391	For the connection of butt-jointed base mats.
 <p>Door and distributor/collector connection element</p>	(10)	1402392	For use in doorways and the distributor/collector area.
 <p>Fixing hook set for base mats plastic for 14 and 16 mm pipes</p>	1 bag = 200 pieces	1409082	For fixing heating pipes onto insulation boards > 30 mm, for instance in front of the distributor/collector.

Article	Packing unit	Article-No.	Hint
"Cofloor" Base mat system with foil overlap on two sides, for fixing 14, 16 and 17 mm pipes with the possibility of 45° diagonal laying without auxiliary material			
Laying distances 6, 12, 18, 24, 30 cm			
Base mat NP-30 1.44 x 0.84 m = 1.2 m ² with thermal and sound insulation made of expanded polystyrene, thermal conductivity group 040, thickness: 30-2 mm, covered with polystyrene foil, building material class B2 according to DIN 4102			
Thermal resistivity: R = 0.75 (m ² K)/W.			
Max. load: 5 kN/m ²			
(8) 1402430			
Only sold in units of 8 base mats per box.			
Base mat NP-11 1.44 x 0.84 = 1.2 m ² with thermal insulation made of expanded polystyrene, thermal conductivity group 035, thickness: 11 mm, covered with polystyrene foil, building material class B2 according to DIN 4102			
Thermal resistivity: R = 0.314 (m ² K)/W.			
Max. load: 45 kN/m ²			
(8) 1402330			
Only sold in units of 8 base mats per box.			
Base mat NP 1.44 x 0.84 m = 1.2 m ² made of moulded polystyrene foil			
(14) 1402130			
Only sold in units of 14 base mats per box.			
Connection element for base mat			
(10) 1402393			
For the connection of butt-jointed base mats.			
Door and distributor/collector connection element			
(10) 1402394			
For use in doorways and the distributor/ collector area.			

Article	Packing unit	Article-No.	Hint
"Cofloor" Base mat system NP-R			
Thin layered system			
Pre-punched base mat without thermal insulation with foil overlap on two sides, for fixing 12 mm pipes with the possibility of 45° diagonal laying without auxiliary material			
Laying distances 5, 10, 15 cm			
The perforation of the base mats allows for a simple application and a safe bonding of the levelling compound and the existing ground.			
Tested minimum construction heights:			
- Knauf N 430 min. 17 mm			
- PCI periplan extra min. 18 mm			
- Weber-Maxit weber.floor min. 18 mm			
- Knauf N 440 min. 21 mm			
- Mapei Novoplan-Maxi min. 18 mm			
- Sopro filler FS 15 plus (FS 15 550) min. 18 mm			
Further products on request!			
The laying advice must be observed.			
Only sold in units of 10 base mats per box.			
			
Base mat NP-R			
1.0 x 1.0 m = 1.0 m ²			
without thermal insulation			
made of moulded polystyrene foil,			
with adhesive layer on reverse			
	(10)	1402010	
Edge insulating strip			
with adhesive edge			
and integrated fleece back			
height: 50 mm, thickness: 5 mm			
length per roll 20 m			
	(5)	1401990	Only sold in units of 5 rolls per bag.
PE-RT "Copert" Plastic pipe			
with oxygen barrier			
rolls			
Dimension 12 x 2.0 mm			
length per roll 200 m			
	(200)	1401952	Application: Surface heating and cooling. Pipes according to DIN 16833 / DIN 16834. Oxygen tight according to DIN 4726. Max. operating pressure p _s : 6 bar at 70 °C
Duo connection piece			
1 x G ¾ collar nut 2 x G ¾ male thread			
		1022655	For the connection of two heating circuits.
"Ofix K" compression fittings			
"Ofix K" for plastic pipes according to DIN 4726, PE-X according to DIN 16892/16893, PB according to DIN 16968, PP according to DIN 8078 A1, collar nut unplated , metal to metal sealing plus O-ring			
12 x 2 mm			
	(10)	1027772°	

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Cofloor" Tacker system

for fixing 14, 16 and 17 mm pipes

Suitable for concrete and liquid screed complying with standards.

Base mat roll and folded board with laminated tissue foil, with imprinted laying screen (screen distance 5 cm), with foil overlap on one side and adhesive strip on the opposite

Laying distances 5, 10, 15, 20, 25, 30 cm

Base mat roll

10.0 x 1.0 m = 10.0 m²

with thermal and sound insulation

made of expanded polystyrene according to DIN EN 13163, building material class B2 according to DIN 4102



Thickness 20-2 mm	1402515
Thickness 35-3 mm	1402500
Thickness 30-3 mm	1402505
Thickness 25-2 mm	1402510
Thickness 30-2 mm	1402507
Thickness 20-2 mm	1402520

Thermal resistivity	Thermal conductivity group	Max. load
R = 0.50 (m ² K)/W	040	5 kN/m ²
R = 0.78 (m ² K)/W	045	4 kN/m ²
R = 0.67 (m ² K)/W	045	4 kN/m ²
R = 0.56 (m ² K)/W	045	4 kN/m ²
R = 0.75 (m ² K)/W	040	5 kN/m ²
R = 0.44 (m ² K)/W	045	4 kN/m ²

Folded board

2.0 x 1.0 m = 2.0 m²

with thermal and sound insulation

made of expanded polystyrene according to DIN EN 13163, building material class B2 according to DIN 4102



Thickness 35-3 mm	(5)	1402600
Thickness 30-3 mm	(5)	1402605
Thickness 30-2 mm	(5)	1402607
Thickness 25-2 mm	(5)	1402610
Thickness 20-2 mm	(5)	1402620

Thermal resistivity	Thermal conductivity group	Max. load
R = 0.78 (m ² K)/W	045	4 kN/m ²
R = 0.67 (m ² K)/W	045	4 kN/m ²
R = 0.75 (m ² K)/W	040	5 kN/m ²
R = 0.56 (m ² K)/W	045	4 kN/m ²
R = 0.44 (m ² K)/W	045	4 kN/m ²

Only sold in units of 5 boards per foil bag.

Tacker machine

1402597

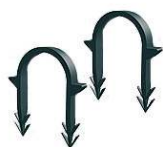


For fixing the heating pipes onto the base mat roll or folded board by use of tacker hooks.

Tacker hooks

plastic






for 14, 16, 17 and 20 mm pipes
















1 magazine = 30 pieces	(10)	1402591
10 magazines = 300 pieces	(20)	1402592





For fixing the heating pipes onto the base mat roll or folded board by use of the tacker machine.

Only sold in packing units.

Article	Packing unit	Article-No.	Hint
		1402596	For fixing the heating pipes onto the base mat roll or folded board by use of tacker hooks.
			
Tacker hooks heat-welded, plastic, for 14, 16, 17 and 20 mm pipes			For fixing the heating pipes onto the base mat roll or folded board by use of the tacker machine. Only sold in packing units.
10 magazines = 300 pieces	(20)	1402594	
			
Tape gun for tapes			For bonding the linings of the base mat rolls or insulation boards.
with a width of 50 mm		1402598	
			
Adhesive tape			For bonding the linings of the base mat rolls or insulation boards to prevent penetration of screed water.
50 mm x 66 m	(36)	1402599	
			
"Cofloor" Clamping rail system Self-adhesive clamping rail made of polypropylene, clamping distance 5 cm, length 1 m			For fixing the heating pipes onto the insulation.
for 14 mm pipe	(100)	1402580	
for 16 mm pipe	(100)	1402581	






Article	Packing unit	Article-No.	Hint
"Cofloor" Hook and loop system			
for fixing 16 x 2 mm pipes with hook and loop fixing			Suitable for concrete and liquid screed complying with standards.
Base mat roll with laminated velour foil with hook and loop fixing with imprinted laying screen (screen distance 5 cm), with foil overlap on one side and adhesive strip on the opposite			
Laying distances 5, 10, 15, 20, 25, 30 cm			
Base mat roll with hook and loop fixing			
10.0 x 1.0 m = 10.0 m ²			
with thermal and sound insulation, made of expanded polystyrene according to DIN EN 13163, building material class B2 according to DIN 4102			
Thickness 30-2 mm			Thermal resistivity
Thickness 20-2 mm			Thermal conductivity group
			Max. load
			R = 0.75 (m ² K)/W
			040
			5 kN/m ²
			R = 0.44 (m ² K)/W
			045
			4 kN/m ²
			
PE-RT "Copert" Plastic pipe with hook and loop fixing			
with oxygen barrier			Application:
rolls			Surface heating and cooling.
Dimension 16 x 2 mm			Pipe according to
length per roll 240 m			DIN 16833 / DIN 16834.
(240)			Oxygen tight according to DIN 4726.
			Max. operating pressure p _s : 6 bar at 70 °C
			
PE-RT/AL/PE-RT Composition pipe with hook and loop fixing			
rolls			Application:
Dimension 16 x 2 mm			Surface heating and cooling.
length per roll 200 m			Max. operating pressure p _s : 10 bar at 70 °C
(200)			
			
Tape gun			
for tapes			For bonding the linings of the base mat rolls or insulation boards.
with a width of 50 mm			
			
Adhesive tape			
50 mm x 66 m			For bonding the linings of the base mat rolls or insulation boards to prevent penetration of screed water.
(36)			
			
Pipe guiding eye for coil unwinder			
for pipes with hook and loop fixing			Adapter and pipeguiding eye with telescopic extension to be connected to the coil unwinders, item no. 1402096/98.
			Protects the pipe with hook and loop fixing from direct contact with the floor during laying.
			
Pipe guiding eye for walls			
for pipes with hook and loop fixing			For use, e.g. in lintel areas. Protects the pipe with hook and loop fixing from direct contact with the floor during laying.
			





Article	Packing unit	Article-No.	Hint
"Cofloor" Dry-build system for fixing 14 mm "Copipe" composition pipes Laying distances 12.5, 25 cm			For laying of surface heating systems on solid or timber beam floors as a dry-build system (reduced overall thickness, for instance renovation of existing buildings) or with heating screed according to DIN 18560 on a membrane made of polystyrene. Taking certain installation conditions into consideration, the dry-build system is also suitable for wall heating and cooling systems.
	Dry-build element 1000 x 500 x 25 mm made of expanded polystyrene according to DIN EN 13163, thermal conductivity group 035, building material class B1 according to DIN 4102 Max. load: 60 kN/m ²		Element for serpentine or spiral laying of the heat conducting strips and elbows. For "Copipe HSC" composition pipe 14 x 2 mm. Thermal resistivity: R = 0.5 (m ² K)/W. Only sold in units of 10 boards wrapped up in a plastic foil.
	Heat conducting strip 998 x 122 x 0.4 mm made of galvanised sheet steel with pre-punched break points in the grooves		For laying "Copipe HSC" composition pipe 14 x 2 mm and for improvement of the heat transmission by a large surface covering of the dry-build elements. Only sold in units of 48 strips per box.
	Heat conducting elbow 110 x 245 x 0.5 mm made of galvanised sheet steel		For serpentine laying of the "Copipe HSC" composition pipe 14 x 2 mm in the edge areas. Only sold in units of 25 elbows per box.
	Infill panel 1000 x 500 x 25 mm made of expanded polystyrene according to DIN EN 13163, thermal conductivity group 035, max. load 60 kN/m ² , building material class B1 according to DIN 4102		Only sold in units of 19 panels wrapped up in a plastic foil.
	Membrane made of polyethylene 0.2 mm Dimensions of roll 25 m x 4 m		As separation layer between dry-build system and concrete or liquid screed.
	Hot cutting machine		Manual tool for cutting individual pipe ducts into the infill panel.

Article	Packing unit	Article-No.	Hint
Accessories			
 <p>Edge insulating strip with bonded foil and perforation, height: 150 mm, thickness: 10 mm, made of polyethylene foam</p>	length per roll 25 m	(8) 1402090	Suitable for concrete and liquid screed complying with DIN EN 1264-4/ DIN 18560 T2.
 <p>Edge insulating strip with perforation self-adhesive on the wall side, with self-adhesive polyethylene flap, height: 150 mm, thickness: 10 mm, made of polyethylene foam</p>	length per roll 25 m	(8) 1402191	The self-adhesive polyethylene flap allows sealing of the junction between the base mat and the edge insulating strip when laying liquid screed.
 <p>Expansion strip with adhesive edge, height: 120 mm, thickness: 10 mm, made of polyethylene foam</p>	length: 1.20 m	(20) 1402091	To provide screed joints according to DIN EN 1264-4 / DIN 18560 T2.
 <p>Protective tube made of LDPE</p>	Length: 300 mm, slotted, for 14, 16 and 17 mm pipes	(20) 1501184	<p>For protecting the pipe</p> <ul style="list-style-type: none"> - at junction points of screed joints according to DIN EN 1264-4 / DIN 18560 T 2 - at the entry points when set in concrete - at the exit points when set in concrete <p>Only sold in units of 20 protective tubes per bag.</p>
 <p>Round profile made of polystyrene foam Ø 20 mm</p>	Dispenser of 150 m	1402092	<p>Serves as sealing between base mat and edge insulating strip when using concrete screed.</p> <p>Only sold in units = 1 dispenser.</p>
 <p>Pipe guiding elbow plastic</p>	<p>for 14 - 16 mm pipes Set = 10 pieces</p> <p>for 20 mm pipe Set = 10 pieces</p> <p>for 26 mm pipe Set = 10 pieces</p>	<p>(50) 1409085</p> <p>(10) 1409086</p> <p>(10) 1409087</p>	For the inversion and fixing of the "Copert" and "Copex" pipes in case of 90 ° bends, for instance in front of the distributor/collector and in screed passages.
 <p>Marker point for measuring screed humidity plastic</p>	Set = 5 pieces	(10) 1409090	To mark the points of measurement of humidity of the screed.



Article	Article-No.	Hint
<p>Screed additive Additional component to produce concrete screed for heated underfloor constructions</p>		<p>For homogenization and improvement of the workability as well as for increase of the concrete screed density.</p>
Content of canister 10 l	1409095	

Article	Packing unit	Article-No.	Hint
PE-Xc "Copex" Plastic pipes with oxygen barrier rolls			Application: Surface heating and cooling. Pipes according to DIN 16892 / DIN 16893 / DIN EN ISO 15 875 / EN1264-4 (except for dimension 26). Oxygen tight according to DIN 4726 (all dimensions).
	Dimension 14 x 2 mm		Max. operating pressure p_s : 6 bar at 90 °C 10 bar at 60 °C
	length per roll 120 m	(120) 1400051	
	length per roll 240 m	(240) 1400052	
	length per roll 600 m	(600) 1400054	
	Dimension 16 x 2 mm		Max. operating pressure p_s : 6 bar at 90 °C 10 bar at 60 °C
	length per roll 120 m	(120) 1400151	
	length per roll 240 m	(240) 1400152	
	length per roll 600 m	(600) 1400154	
	Dimension 17 x 2 mm		Max. operating pressure p_s : 6 bar at 90 °C 10 bar at 60 °C
	length per roll 120 m	(120) 1400251	
	length per roll 240 m	(240) 1400252	
	length per roll 600 m	(600) 1400254	
	Dimension 20 x 2 mm		Max. operating pressure p_s : 6 bar at 90 °C 8 bar at 70 °C
	length per roll 240 m	(240) 1400352	
	length per roll 600 m	(600) 1400354	
	Dimension 26 x 3 mm		Max. operating pressure p_s : 6 bar at 90 °C 10 bar at 60 °C
	length per roll 50 m	(50) 1400560	
	length per roll 200 m	(200) 1400562	
	length per roll 300 m	(300) 1400563	

Article	Packing unit	Article-No.	Hint
PE-RT/AL/PE-RT "Copipe HSC" Composition pipes			Application: Central heating systems with circulation pump, surface heating and cooling systems as well as sanitary installations.
rolls			
	Dimension 14 x 2 mm		DVGW tested (dimensions 14 x 2.0 mm and 17 x 2.0 mm).
	length per roll 50 m	(50) 1541054	DVGW approved (dimensions 16 x 2.0 mm and 20 x 2.5 mm).
	length per roll 100 m	(100) 1540154	DVGW reg.-no.: DW-8501 AT2407
	length per roll 200 m	(200) 1540254	
	Dimension 16 x 2 mm		Max. operating pressure p_s : 6 bar at 90 °C 10 bar at 70 °C
	length per roll 50 m	(50) 1541055	Oxygen tight three-layered composition pipe
	length per roll 100 m	(100) 1540155	– inner layer made of PE-RT
	length per roll 200 m	(200) 1540255	– aluminium pipe welded end to end
	Dimension 17 x 2 mm		– outer coating made of PE-RT bonded by adhesive layers
	length per roll 200 m	(200) 1540257	
	length per roll 500 m	(500) 1540557	
	Dimension 20 x 2.5 mm		
	length per roll 50 m	(50) 1541060	
	length per roll 100 m	(100) 1540160	
	length per roll 200 m	(200) 1540260	

Article	Packing unit	Article-No.	Hint
PE-RT "Copert" Plastic pipes with oxygen barrier			Application: Surface heating and cooling.
rolls			Pipes according to DIN 16833/DIN 16834. Oxygen tight according to DIN 4726.
	Dimension 14 x 2 mm		Max. operating pressure p_s : 6 bar at 70 °C
	length per roll 240 m length per roll 600 m	(240) 1402052 (600) 1402054	
	Dimension 16 x 2 mm		
	length per roll 240 m length per roll 600 m	(240) 1402152 (600) 1402154	
	Dimension 17 x 2 mm		
	length per roll 240 m length per roll 600 m	(240) 1402252 (600) 1402254	
	Dimension 20 x 2 mm		
	length per roll 240 m	(240) 1402352	
Other sizes, for instance for the installation of risers: page 612.			
Press and screwed fittings: from page 620.			
Tools, e. g. pipe cutter, pipe shears, universal tool for deburring and calibrating: from page 648.			
Coil unwinder for pipes			For rolls up to 600 m. Completely dismountable and collapsible.
	fixed	1402096	
	mobile	1402098	
	Transport chart	1402099	

Article	Packing unit	Article-No.	Hint
"Ofix K" Compression fittings for G ¾ male thread according to DIN EN 16313 (cone "Euro")			For the connection of the "Copex" PE-Xc pipes and the "Copert" PE-RT pipes to the distributor/collector and for couplings. The permissible operating pressures and operating temperatures depend on the application classes of the respective standards of the plastic pipework systems (e.g. PE-X, DIN EN ISO 15875).
"Ofix K" for plastic pipes according to DIN 4726, PE-X according to DIN 16892/16893, PB according to DIN 16968, PP according to DIN 8078 A1, collar nut nickel plated , metal to metal sealing plus O-ring			
14 x 2 mm	(10)	1027755°	
16 x 2 mm	(10)	1027757°	
17 x 2 mm	(10)	1027759°	
20 x 2 mm	(10)	1027763°	



"Cofit S" Compression fittings
for G ¾ male thread according to DIN EN 16313 (cone "Euro"),
for "Copipe" composition pipes and, provided similar
preparation is used, for plastic pipes,
metal to metal sealing plus O-ring,
outlet made of bronze,
compression ring and collar nut made of brass

For the connection of the pipes to the distributor/collector and for couplings.
(Interior of plastic pipes must be deburred.)

Collar nut nickel plated

14	x 2.0 mm	x G ¾ c/nut	(10)	1507954
16	x 2.0 mm	x G ¾ c/nut	(10)	1507955
17	x 2.0 mm	x G ¾ c/nut	(10)	1507959°



Collar nut unplated

14	x 2.0 mm	x G ¾ c/nut	(10)	1507974°
16	x 2.0 mm	x G ¾ c/nut	(10)	1507975°



Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Cofit S" Compression fittings

for G 3/4 male thread according to DIN EN 16313 (cone "Euro"),
 for "Copipe" composition pipes and, provided similar
 preparation is used, for plastic pipes,
 2-fold, metal to metal sealing plus O-ring,
 outlet made of bronze,
 compression ring and collar nut made of brass,
 collar nut **nickel plated**



14 x 2.0 mm x G 3/4 collar nut	(10)	1507934
16 x 2.0 mm x G 3/4 collar nut	(10)	1507935
17 x 2.0 mm x G 3/4 collar nut	(10)	1507937
18 x 2.0 mm x G 3/4 collar nut	(10)	1507938
20 x 2.0 mm x G 3/4 collar nut	(10)	1507939
20 x 2.5 mm x G 3/4 collar nut	(10)	1507940

Double nipples

Double nipple, brass, nickel plated



G 3/4 M x G 3/4 M	(10)	1028263
-------------------	------	----------------

Port G 3/4 with tapered sealing according to
 DIN EN 16313 (cone "Euro").

Double nipple, bronze, unplated



G 3/4 M	x G 3/4 M	(25)	1504054°
---------	-----------	------	-----------------

"Cofit P" Press couplings

for "Copipe HSC" composition pipes and, provided
 similar preparation is used, for plastic pipes,
 dimension 16 and 20 x 2.5 mm made of bronze,
 dimension 14, 17 and 20 x 2.0 mm made of brass resistant
 to dezincification, casing made of stainless steel

(Interior of plastic pipes must be deburred.)

Further sizes see page 620.

Press coupling



14 x 2 mm	x 14 x 2 mm	(10)	1512542
16 x 2 mm	x 16 x 2 mm	(10)	1512543
17 x 2 mm	x 17 x 2 mm	(10)	1512544
20 x 2.5 mm	x 20 x 2.5 mm	(10)	1512545
20 x 2 mm	x 20 x 2 mm	(10)	1512541

Suitable press bits:

Item no. 1519489 (Ø 14 x 2 mm)
 Item no. 1519491 (Ø 16 x 2 mm)
 Item no. 1519488 (Ø 17 x 2 mm)
 Item no. 1519492 (Ø 20 x 2.5 mm)
 Item no. 1519481 (Ø 20 x 2 mm)



1.2.k "Multidis SFQ" distributors/collectors with "Q-Tech" for automatic hydronic balancing

Content

"Multidis SFQ" Stainless steel distributor/collector	234
"Multidis SFQ" Stainless steel distributor/collector	234
Heat meter connection sets	235

Article

Article-No.

Hint

"Multidis SFQ" Stainless steel distributor/collector for surface heating and cooling systems with integrated isolating facilities in the flow distributor
with "Q-Tech" for automatic hydronic balancing
flat sealing, with valve inserts M 30 x 1.5
for thermostatic and electronic control



for 2 circuits	1404752
for 3 circuits	1404753
for 4 circuits	1404754
for 5 circuits	1404755
for 6 circuits	1404756
for 7 circuits	1404757
for 8 circuits	1404758
for 9 circuits	1404759
for 10 circuits	1404760
for 11 circuits	1404761
for 12 circuits	1404762

Application:
Stainless steel distributor/collector for surface heating and cooling systems.

Max. operating pressure p_s : 6 bar (PN 6)
Max. operating temperature t_s : 80 °C
Flow range: 0.5 - 5 l/min

Description:
Distributor/collector pre-assembled. With fill and drain valves. Heating circuit connections G 3/4 male thread for Oventrop compression fittings.
Flow distributor with integrated isolating facilities. Return collector with integrated "Q-Tech" valve inserts.
Brackets (loosely added) sound-absorbing according to DIN 4109.

Cabinets and dimension chart: page 242

"Multidis SFQ" Stainless steel distributor/collector for surface heating and cooling systems with integrated flow indicators in the flow distributor
with "Q-Tech" for automatic hydronic balancing
flat sealing, with valves inserts M 30 x 1.5
for thermostatic and electronic control





for 2 circuits	1404952
for 3 circuits	1404953
for 4 circuits	1404954
for 5 circuits	1404955
for 6 circuits	1404956
for 7 circuits	1404957
for 8 circuits	1404958
for 9 circuits	1404959
for 10 circuits	1404960
for 11 circuits	1404961
for 12 circuits	1404962

Application:
Stainless steel distributor/collector for surface heating and cooling systems.

Max. operating pressure p_s : 6 bar (PN 6)
Max. operating temperature t_s : 70 °C

Description:
Distributor/collector pre-assembled. With fill and drain valves. Heating circuit connections G 3/4 male thread for Oventrop compression fittings.
Flow distributor with integrated flow indicators. Return collector with integrated "Q-Tech" valve inserts.
Brackets (loosely added) sound-absorbing according to DIN 4109.

Article	Article-No.	Hint
Heat meter connection sets for "Multidis SFQ" stainless steel distributors/collectors for surface heating and cooling systems		
Set with ball valves		
	Angle pattern:	Heat meter connection sets are suitable for left and right hand side connection to the distributor/collector.
	with ball valves DN 20	Set consisting of:
	with ball valves DN 25	Supply
		-Ball valve with temperature sensor connection M 10 x 1 for sensor Ø 5.0 / 5.2 mm directly immersing
	Straight pattern:	Return
	with ball valves DN 20	-Ball valve with coupling
	with ball valves DN 25	-Meter stool piece
		-Ball valve with temperature sensor connection M 10 x 1 for sensor Ø 5.0 / 5.2 mm directly immersing
		-Flat seals



1.2.I "Multidis SF/SFB/SFI" Distributors/collectors for surface heating and cooling systems

Content

"Multidis SF" Stainless steel distributor/collector	238
"Multidis SFB" Stainless steel distributor/collector	239
"Multidis SFI" Brass distributor/collector for industrial surface heating and cooling systems	239
Accessories	240
"Optiflex" Ball valve	240
"Cofit S" Compression fittings	240
Valve insert for stainless steel distributors/collectors "Multidis SF"	241
Ball valves	241
Flush-mounted cabinets	242
Surface-mounted cabinets	242
Cylinder lock	243
Heat meter connection sets	244
Differential pressure relief device	246
Angle pattern connection set	246
"Hycococon VTZ" Double regulating and commissioning valve	246
"Hycococon DTZ" Differential pressure regulator	246

Article

Article-No.

Hint

"Multidis SF" Stainless steel distributor/collector for surface heating and cooling systems with integrated regulating inserts in the flow distributor
flat sealing, with valve inserts M 30 x 1.5
for thermostatic and electronic control



for 2 circuits	1405552
for 3 circuits	1405553
for 4 circuits	1405554
for 5 circuits	1405555
for 6 circuits	1405556
for 7 circuits	1405557
for 8 circuits	1405558
for 9 circuits	1405559
for 10 circuits	1405560
for 11 circuits	1405561
for 12 circuits	1405562

Application:
Stainless steel distributor/collector for surface heating and cooling systems.
Max. operating pressure p_s : 6 bar (PN 6)
Max. operating temperature t_s : 80° C

Description:
Distributor/collector pre-assembled. With fill and drain valves. Heating circuit connections G 3/4 male thread for Oventrop compression fittings.
Flow distributor with integrated regulating inserts. Return collector with integrated valve inserts. Brackets (loosely added) sound-absorbing according to DIN 4109.

Cabinets and dimension chart: page 242

"Multidis SF" Stainless steel distributor/collector for surface heating and cooling systems with integrated flow measuring and regulating devices 0-5 l/min. in the flow distributor
flat sealing, with valve inserts M 30 x 1.5
for thermostatic and electronic control



for 2 circuits	1405352
for 3 circuits	1405353
for 4 circuits	1405354
for 5 circuits	1405355
for 6 circuits	1405356
for 7 circuits	1405357
for 8 circuits	1405358
for 9 circuits	1405359
for 10 circuits	1405360
for 11 circuits	1405361
for 12 circuits	1405362

Article

Article-No.

Hint

"Multidis SFB" Stainless steel distributor/collector for surface heating and cooling systems with heating circuit valves with presettable bypass and integrated regulating inserts in the flow distributor

flat sealing, with valve inserts M 30 x 1.5
for thermostatic and electronic control



for 2 circuits	1405452
for 3 circuits	1405453
for 4 circuits	1405454
for 5 circuits	1405455
for 6 circuits	1405456
for 7 circuits	1405457
for 8 circuits	1405458
for 9 circuits	1405459
for 10 circuits	1405460
for 11 circuits	1405461
for 12 circuits	1405462

Application:

Stainless steel distributor/collector for surface heating and cooling systems.
 Max. operating pressure p_g : 6 bar (PN 6)
 Max. operating temperature t_g : 80°C
 Setting of a minimum volume flow via the bypass at the heating circuit valve guaranteeing a perfect operation of heat pumps and a basic heat load of the underfloor heating (no cooling down).

Description:

Distributor/collector pre-assembled. With fill and drain valves. Heating circuit connections G 3/4 male thread for Oventrop compression fittings.
 Flow distributor with integrated regulating inserts. Return collector with integrated valve inserts with presettable bypass. Brackets (loosely added) sound-absorbing according to DIN 4109.

Cabinets and dimension chart: page 242

"Multidis SFI" Brass distributor/collector for industrial surface heating and cooling systems

flat sealing distributor/collector modules, flow distributor with ball valves and return collector with regulating valves, extension to max. 20 circuits by connecting the distributor/collector modules



for 2 circuits	1414452
for 3 circuits	1414453
for 4 circuits	1414454
for 5 circuits	1414455
for 6 circuits	1414456

Application:

Central heating systems with circulation pump and cooling systems.
 Max. operating pressure p_g : 6 bar (PN 6)
 Max. operating temperature t_g : 90 °C

Description:

Pre-assembled distributor/collector modules, one port G 2 male thread, one port G 2 collar nut, with G 1/2 blind plug.
 Flow distributor with ball valves. Return collector with regulating valves.
 Heating circuit connections G 1 male thread for Oventrop compression fittings.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Accessories

Console



for "Multidis SFI" brass distributor/collector
2-fold, steel galvanised,
adjustable height and depth

1414490

Consoles with 2 pipe clamps each including sound insulation supports and quick acting lock.
Wall attachment included.

Cap G 2 female thread



for brass distributor/collector
"Multidis SFI"
2-fold, brass

1414493

For closing the ends of the distributor/collector.

Ball valve

flat sealing



DN 50

G 2 F x G 2 M

1406586

For the isolation of the flow distributors and return collectors.

"Optiflex" Ball valve

brass, handle with stop



self sealing, with couternut,
with hose connection (soft seal)
and cap

DN 15

(50) **1033314**

For filling and venting.

"Cofit S" Compression fittings

for "Copex" PE-Xc plastic pipes,
2-fold, metal to metal sealing plus O-ring,
outlet bronze / brass resistant to dezincification,
brass compression ring,
brass collar nut, unplated

For the connection of the "Copex" PE-Xc plastic pipes to the distributor as well as for couplings.











20 x 2.0 mm x G 1 collar nut

(10) **1507969°**

26 x 3.0 mm x G 1 collar nut

(10) **1507979°**

Article	Packing unit	Article-No.	Hint
Valve insert for stainless steel distributors/collectors "Multidis SF"			
	Brass	(25) 1404091	
Coupling			
	nickel plated		For the connection of two stainless steel distributors/collectors "Multidis SF" (do not exceed a maximum of 12 heating circuits in total).
	G 3/4 collar nut x G 1 collar nut	(50) 1407206	
Bracket			
	for stainless steel distributors/collectors "Multidis"	(25) 1408010	Bracket with two pipe clamps. Sound-absorbing according to DIN 4109. For stainless steel distributors/collectors "Multidis SF/SH/SFQ/SFB".
Ball valves			
	flat sealing		
	DN 20 G 3/4 F x G 1 M	(10) 1406383	
	DN 25 G 1 F x G 1 M	(10) 1406384	
	flat sealing, with thermometer (0–80°C) with red T-handle		
	DN 20 G 3/4 F x G 1 M	1406483	
	DN 25 G 1 F x G 1 M	1406484	
	flat sealing, with thermometer (0–80°C) with blue T-handle		
	DN 20 G 3/4 F x G 1 M	1406583	
	DN 25 G 1 F x G 1 M	1406584	
	flat sealing, with sensor connection M 10 x 1.0		
	DN 25 G 1 F x G 1 M	(10) 1406708	
Ball valve for "Multidis SF/SFB" stainless steel distributor/collector			
	with cone "Euro"		
	G 3/4 male x G 3/4 collar nut	(50) 1406504	Ball valve for the isolation of the heating circuits at the distributor/collector. Heating circuit connection G 3/4 male thread according to DIN EN 16313 (cone "Euro") for Oventrop compression fittings. Distributor/collector connection with collar nut G 3/4 and O-ring seal.

Article

Article-No.

Hint

Flush-mounted cabinets

steel, galvanised, frame and doors white lacquered
removable screen



No. 1: inner width: 560 mm

1401151

No. 2: inner width: 700 mm

1401152

No. 3: inner width: 900 mm

1401153

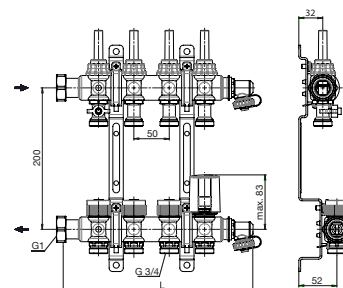
No. 4: inner width: 1200 mm

1401154

Depth: 115 – 180 mm

Height: 760 – 885 mm

When using heat meter connection sets, the sum of the installation length and the length of the distributor have to be taken into consideration.



Outlet	Length (L)	No. ^{°°}	Length (L) with ball valve 1406384	No. ^{°°}
2	168 mm	1	248 mm	1
3	218 mm	1	298 mm	1
4	268 mm	1	348 mm	1
5	318 mm	1	398 mm	1
6	368 mm	1	448 mm	1
7	418 mm	1	498 mm	2
8	468 mm	2	548 mm	2
9	518 mm	2	598 mm	2
10	568 mm	2	648 mm	3
11	618 mm	3	698 mm	3
12	668 mm	3	748 mm	3

^{°°}No. of cabinets

Surface-mounted cabinets

Surface-mounted model
steel, galvanised, frame and doors white lacquered



No. 1: inner width: 600 mm

1401171

No. 2: inner width: 750 mm

1401172

No. 3: inner width: 1000 mm

1401173





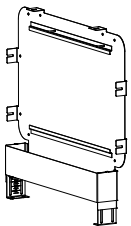

no. 4: inner width: 1250 mm

1401174

Depth: 160 mm

Height: 760 – 870 mm

When using heat meter connection sets, the sum of the installation length and the length of the distributor have to be taken into consideration.

Article	Article-No.	Hint
	"Regubox" Exclusive cabinet with white, frameless, opaque and lockable glass door Frame surface made of brushed stainless steel, without rear wall Surface-mounted model for dwelling stations "Regudis W-HTU" and "Regudis W-HTF" with constant temperature heating circuit and for stainless steel distributors/collectors "Multidis SF" with a maximum of 6 heating circuit connections (angle pattern connection set, item no. 1404780, taken into account)	Dimensions (W x H x D): 630 mm x 900 mm x 170 mm The mounting set for installation during construction for floor-standing installation (item no. 1341099) or wall attachment (item no. 1341199) is to be ordered separately. Awards: DESIGN PLUS ISH Frankfurt 2015 ICONIC AWARDS 2015 GERMAN DESIGN AWARD SPECIAL 2016 iF Design Award 2016
	Mounting set for installation during construction for "Regubox" steel sheet, galvanised Floor-standing installation, adjustable height	1341099 Only for "Regubox", item no. 1341098.
	Wall attachment	1341199 With screen for covering the lower connection channel of the "Regubox" in case of wall attachment.
	Surface-mounted model for dwelling station "Regudis W-HTE" or stainless steel distributors/collectors "Multidis SF" with a maximum of 9 heating circuit connections (angle pattern connection set, item no. 1404780, taken into account)	Dimensions (W x H x D): 900 mm x 600 mm 170 mm The mounting set for installation during construction for floor-standing installation (item no. 1341099) is to be ordered separately.
	Mounting set for installation during construction for "Regubox" steel sheet, galvanised Floor-standing installation adjustable height	1341299 Only for "Regubox", item no. 1341298.
	Cylinder lock with key for surface-mounted cabinets (1401171-74)	1401190 Only suitable for surface-mounted cabinets manufactured since November 2011.
	for flush-mounted cabinets (1401151-54) and all surface- and flush-mounted cabinets for dwelling stations "Regudis W"	1401191

Article	Article-No.	Hint
---------	-------------	------

Heat meter connection sets

for "Multidis SF/SFB" stainless steel distributors/collectors for surface heating and cooling systems as well as for "Multidis SH" stainless steel distributors/collectors for radiator connection

Heat meter connection sets are suitable for left and right hand side connection to the distributor/collector.

Set consisting of:

Supply
- Ball valve with temperature sensor connection M 10 x 1.0, for sensor Ø 5.0 / 5.2 mm directly immersing

Set with double regulating and commissioning valve "Hycococon VTZ"

Angle pattern:

with ball valves DN 20
with ball valves DN 25

1404578
1404580

Return

- "Hycococon VTZ" Double regulating and commissioning valve
- Meter stool piece
- Ball valve with temperature sensor connection M 10 x 1.0, for sensor Ø 5.0 / 5.2 mm directly immersing
- Flat seals



Straight pattern:

with ball valves DN 20
with ball valves DN 25

1404579
1404581



Set with differential pressure regulator "Hycococon DTZ"

Angle pattern:

with ball valves DN 25

1404682

Set consisting of:

Supply
- Ball valve with temperature sensor connection M 10 x 1.0, for sensor Ø 5.0 / 5.2 mm directly immersing
- Measuring adapter

Return

- "Hycococon DTZ" Differential pressure regulator
- Capillary
- Meter stool piece
- Ball valve with temperature sensor connection M 10 x 1.0, for sensor Ø 5.0 / 5.2 mm directly immersing
- Flat seals







Straight pattern:

with ball valves DN 25

1404683



Article	Packing unit	Article-No.	Hint
	Set with differential pressure regulator "Cocon QDP" with flow limitation and connection piece G 1 male x G 1 collar nut		Set consisting of:
	Angle pattern:		Supply -Ball valve with temperature sensor connection M 10 x 1, for sensor Ø 5.0 / 5.2 mm directly immersing
DN 20		1404884	Return -"Cocon QDP" Differential pressure regulator with flow limitation -Capillary -Meter stool piece -Ball valve with temperatur sensor connection M 10 x 1, for sensor Ø 5.0 / 5.2 mm directly immersing -Flat seals
DN 25		1404886	
	Straight pattern:		
DN 20		1404885	
DN 25		1404887	
	Double fitting		
both ports G 1 c/nut 30 mm	(10)	1359085	
	Change-over G 1 c/nut x G 1 M for stainless steel distributors/ collectors with female thread		
	(10)	1699085	

Article	kvs	Packing unit	Article-No.	Hint
---------	-----	--------------	-------------	------

Differential pressure relief device
 for "Multidis SF/SFB" stainless steel distributors/collectors

G 3/4 M

1404790

Differential pressure relief device for the right hand side connection to the distributor/collector.
 To avoid flow noises.

Control range: 50-400 mbar



Angle pattern connection set

for "Multidis SF/SFB" stainless steel distributors/collectors for surface heating and cooling systems as well as for "Multidis SH" stainless steel distributors/collectors for radiator connection

1404780

Angle pattern connection set for a bottom connection to the distributor/collector when using surface-mounted cabinets.



"Hycoccon VTZ" Double regulating and commissioning valve with infinitely adjustable presetting
"eco" measuring technique
 both ports with integrated pressure test points and drain valves

both ports male thread, flat sealing

DN 20

2.70

(10) **1061856**

"eco" measuring technique:
 Information: page 365.

Operating temperature:
 -10 °C up to +120 °C

General information:
 Body and bonnet made of brass resistant to dezincification.
 Male thread G 1.



"Hycoccon DTZ" Differential pressure regulator
nominal value: 50 to 300 mbar, infinitely adjustable
"eco" measuring technique
 with integrated pressure test point and drain valve

both ports male thread without collar nut

DN 20

2.70

1062166

"eco" measuring technique:
 Information: page 365.




Operating temperature:
 -10 °C up to +120 °C


General information:
 Body and bonnet made of brass resistant to dezincification.
 Male thread G 1.



1.2.m "Regufloor" Control units

Content	
"Regufloor H"	248
"Regufloor HW"	248
"Regufloor HN"	248
System components	249
"Regtronic RH" Heating circuit controller	250
"Regtronic EM" Extension module	251
Accessories	251
"Regufloor HC"	252
System components for "Regufloor HC"	252
"Tri-CTR" Three-way diverting and mixing valves PN 16	253
"Regufloor HX"	254

Article	Packing unit	Article-No.	Hint
<hr/>			
	"Regufloor H" Control unit DN 25 Heating for connection to the stainless steel distributor/collector		Application ("Regufloor H and HW"): Fixed value control unit for connection to the stainless steel distributor/collector for surface heating systems. Connection of 2 - 12 heating circuits. Length: 315 mm Depth: 145 mm Pump length: 130 mm Max. operating pressure: 6 bar Max. differential pressure: 0.75 bar Max. flow temperature: Primary side: 90 °C Secondary side: 50 °C Control range temperature controller: ("Regufloor H" only): 20–50 °C Control range electric pipe contact safety switch: 20–90 °C
	with Wilo pump E15/ 1-5 (export model, only for sales outside the European Union)	1151000°	
			Description ("Regufloor H"): Pre-assembled and tested fixed value control unit with electronic pump, three-way diverting valve, check valve, temperature controller with contact sensor. Electric pipe contact safety switch for max. limitation of the flow temperature.
	"Regufloor HW" Control unit DN 25 Heating as above, but with weather guided control for connection to the stainless steel distributor/collector		Description ("Regufloor HW"): As "Regufloor H" but three-way diverting valve with electromotive actuator (three point), heating circuit controller with outdoor sensor and flow temperature sensor.
	with high-efficiency pump Wilo-Yonos PARA RS 15/6, 130 mm and heating circuit controller "Regtronic RH" (Energy Efficiency Index EEl ≤ 0.23 according to EC Regulation 641/2009)	1151800	
	with Wilo pump E15/1-5 and heating circuit controller "Regtronic EH" (export model, only for sales outside the European Union)	1151500°	
	"Regufloor HN" Control unit DN 25 Heating for connection to the stainless steel distributor/collector		Application: Fixed value control unit for connection to the stainless steel distributor/collector for surface heating systems. Connection of 2 - 12 heating circuits. Length: 195 mm Depth: 100 mm Axial pump housing Max. operating pressure: 6 bar Permissible pressure difference: 200 kPa (2 bar) Max. flow temperature: Primary side: 90 °C Secondary side: 50 °C Control range temperature controller: 20 - 50 °C Control range electric pipe contact safety switch: 20 - 90 °C
	with high-efficiency pump Wilo-Yonos PARA RSB 15/6, 130 mm (Energy Efficiency Index EEl ≤ 0.23 according to EC Regulation 641/2009)	1151600	
			Description ("Regufloor HN"): Pre-assembled and tested fixed value control unit with electronic pump with axial pump housing, three-way diverting valve, check valve, temperature controller with contact sensor. Electric pipe contact safety switch for max. limitation of the flow temperature.

	Article	Article-No.	Hint
	System components		For the isolation of the supply and return, use Oventrop ball valves item no. 1406383 DN 20 and item no. 1406384 DN 25.
	T-connection piece	1151080	With check valve and sensor point.
	Three-way diverting valve with S-connection fitting	1151081	
	Temperature controllers with contact sensor	1151082	Control range 20–50 °C. Only supplied as replacement.
	Wilo E15/1-5 (export model, only for sales outside the European Union)	1151086°	Pump <u>without</u> pump cable. Only supplied as replacement.
	High-efficiency pump Wilo-Yonos PARA with axial pump housing (Energy Efficiency Index $EEI \leq 0.23$ according to EC Regulation 641/2009)	1151089	Only for "Regufloor HN", item no. 1151600. Pump <u>without</u> pump cable. Only supplied as replacement.
	High-efficiency pump Wilo-Yonos PARA (Energy Efficiency Index $EEI \leq 0.23$ according to EC Regulation 641/2009)	1151088	Pump <u>without</u> pump cable. Only supplied as replacement.
	Electric pipe contact safety switch	1151087	Including cabling for Wilo pump E15/1-5.
	Bracket		
	T-connection piece	1151085	



"Regtronic RH" Heating circuit controller

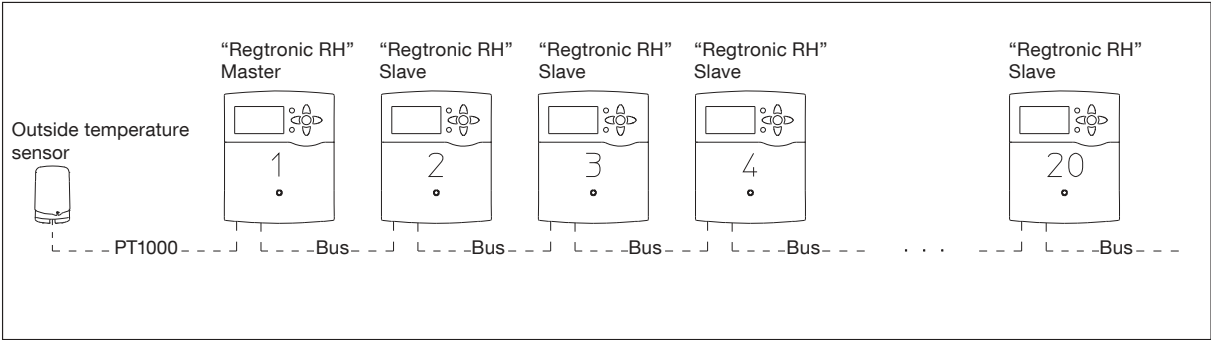
with 1 outdoor sensor (bus-compatible) and 3 additional sensors (PT1000) **1152083**

with 1 outdoor sensor (bus-compatible), 2 additional sensors (PT1000) and remote control including room temperature sensor (PT1000) **1152080**

Weather guided flow temperature control of the heating system via the demand of a heat generator and/or a mixing valve (e. g. "Regumat M3" or "Regufloor HW" with three-way mixing valve). Controller for wall mounting with data bus (S-bus) for the connection to the data logger "CS-BS".
Basic functions: 1 variable and 1 constant temperature heating circuit with heat demand. Extendable by "Regtronic EM".
The status can be viewed via a full graphic display.
Interfaces: S-bus (optional connection to the data logger "CS-BS") , SD-card slot for data recording, a central outdoor sensor can also be connected to the heating circuit controller.
Inputs: 8 sensor inputs (PT 1000, KTY, switch or remote control), 2 inputs for electronic volume flow sensor VFD (volume flow temperature)
Outputs: 3 solid-state relays (speed controlled), 2 electro-mechanical relays, 1 volt free low voltage relay 30 V, 1 volt free relay 240 V, 2 PWM outputs for the speed controlled activation of high-efficiency pumps. Both PWM outputs can be switched to 0-10 V.

For the connection of high-performance pumps (> 1A) see load relay, page 500.

ErP classification heating circuit controller "Regtronic RH"						
Item no.	Controller	Required accessories	Boiler control modulating (0-10 V)	On/Off	ErP %	Class
1152083	"Regtronic RH"	Adapter cable 1152086	X		2.0	II
1152083		—		X	1.5	III
1152080	"Regtronic RH" incl. remote control with room temperature sensor	Adapter cable 1152086	X		4.0	VI
1152080		—		X	3.5	VII
1152080		2 x room temperature sensor 1152095 Adapter cable 1152086	X		5.0	VIII



Example: Distribution of a temperature sensor (outside temperature sensor, item no. 1152099) up to 20 heating circuit controllers "Regtronic RH" (item no. 1152080/1152083)



"Regtronic EM" Extension module

for the connection to the heating circuit controller "Regtronic RH"

1152098

"Regtronic EM" for the extension of the heating circuit controller "Regtronic RH" by 6 sensor inputs and 5 relay outputs. This allows the activation of further variable and constant temperature heating circuits. Up to **five** extension modules can be connected to the heating circuit controller "Regtronic RH". 1 sensor attached to the pipe PT 1000 is included.

Accessories



Room temperature sensor PT 1000

1152095

Room temperature sensor for fixing on level surfaces (surface mounting).



Remote control with room temperature sensor PT 1000

1152096

Remote control with room temperature sensor PT 1000 for the connection to the electronic controllers "Regtronic RH, RM and RS" for a comfortable control of the heating curve of the controller from the living area. When increasing the heating curve, the flow temperature is increased and vice versa. The remote control also features the functions "heating circuit off" and "party position".

Article

Article-No.

Hint

"Regufloor HC"

Control unit DN 25 Heating/Cooling

for connection to the stainless steel distributor/collector

with high-efficiency pump
Wilo-Yonos PARA RS 15/6, 130 mm
(Energy Efficiency Index EEI ≤ 0.23
according to EC Regulation 641/2009)

1152100



Application:

Control unit for flow temperature control of surface heating systems or alternatively of surface cooling systems in combination with the Oventrop stainless steel distributors/collectors. Pre-assembled and tested control unit with electronic pump and three-way diverting valve.

Suitable for the connection of 2 - 12 heating circuits to two-, three- and four-pipe systems Heating and Cooling.

Length: 315 mm

Max. operating pressure: 6 bar

Max. differential pressure: 0.75 bar

Max. flow temperature:

Primary side: 90 °C

Secondary side: 50 °C

System components for "Regufloor HC"

"Aktor T 2P" Electrothermal actuators (two point)

connection thread M 30 x 1.5

"H NC", closed with current "off", 230 V

1012415

"L NC", closed with current "off", 24 V

1012416



Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats.

Further applications in bivalent heating installations.

Connecting cable 1 m.

With "First-Open" function and stroke index.

Simple plug-in connection with valve adapter.

Actuators can be installed in any position.

Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.



Electric pipe contact safety switch

1151087

Including cabling for Wilo pump E15/1-5.



"Sensor GA FD" Dew point control 24 V

with alternating contact

1141951

Is required in combination with room thermostats to protect chilled ceilings against condensation.

An actuator interrupting the cooling water flow is for instance activated in combination with the "Regufloor HC".

Connection to the cooling water supply.

Connecting cable 1 m.

Article	kvs	Packing unit	Article-No.
---------	-----	--------------	-------------

Hint

System components

"Aktor M" Electromotive actuators

connection thread M 30 x 1.5
with manual setting, adjustable mode of operation



"ST L", 24 V, modulating proportional actuator, 0-10 V, two or three point control, with automatic valve anti-blocking function and automatic recognition of neutral point, multiple characteristic lines adjustable (for "Cocon QTZ" PN 16 / PN 25)	1012725
--	---------

"ST L", 24 V, modulating proportional actuator, 0-10 V, with position feedback, automatic valve anti-blocking function and automatic recognition of neutral point, multiple characteristic lines adjustable (for "Cocon QTZ" PN 16 / PN 25)	1012726
---	---------

"3P H", 230 V, two or three point control, without valve anti-blocking function, with automatic recognition of neutral point, mode of operation not adjustable	1012729
--	---------

Oventrop electromotive actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating (except for item no. 1012710/11), radiant ceiling panels, chilled ceiling systems and induction air systems. Further application in bivalent heating installations.

The actuators (0-10 V) can be used in centralised building control systems in combination with the electronic room thermostat or with a central controller.

Connecting cable 1.5 m.

As for the model with electric emergency control function, the actuator moves to a specified stroke position if the power supply is interrupted.

"Tri-CTR" Three-way diverting and mixing valves PN 16 bronze

connection thread M 30 x 1.5
with collar nuts, flat sealing



DN 15	2.50	(10)	1131204
DN 20	4.40	(10)	1131206
DN 25	5.70	(10)	1131208
DN 32	7.20	(5)	1131210
DN 40	8.50	(5)	1131212
DN 50	10.00	(5)	1131216

Function:

For use as diverting valve, the three-way valve has one inlet port (AB) and two outlet ports (A and B). Depending on the position of the valve disc, the direction of flow is diverted from one to the other outlet port.

For use as mixing valve, the three-way valve has two inlet ports (A and B) and one outlet port (AB). Depending on the position of the valve disc, the cold and hot water is mixed.

The three-way valves "Tri-CTR" can be used for high differential pressures.

Article

Article-No.

Hint

"Regufloor HX"

Control unit DN 25 Heating

for connection to the stainless steel distributor/collector
For flow temperature control of
surface heating systems, with heat exchanger.



with high-efficiency pump
Wilo-Yonos PARA RS Ku 15/6, 130 mm
(Energy Efficiency Index $E_{EI} \leq 0.23$
according to EC Regulation 641/2009)

1151065

with Wilo pump E15/1-5
(export model, only for sales
outside the European Union)

1151060°

Application:

Fixed value control unit for the operation
of open vented surface heating systems in
heating systems (separate circuits).
Installation on the left hand side of the
distributor/collector.

Connection of 2-12 heating circuits.

Max. operating pressure:

Primary side: 6 bar

Secondary side: 3 bar

Max. flow temperature:

Primary side: 90 °C

Secondary side: 50 °C

Control range temperature controller:

20–50 °C

Description:

Pre-assembled and tested fixed value control
unit with electronic pump (plastic body).













Heat exchanger, diaphragm expansion tank
(3 l), pressure gauge, safety valve.










1.2.n Single components for distributors/collectors

Content



Individual components for distributor systems	256
Accessories	257

Article	Packing unit	Article-No.	Hint
Individual components for distributor systems			Distributor systems for central heating systems.
	Brass automatic airvent with automatic shut off		If not stated otherwise, all products are made of brass.
	G 3/8	(10) 1088303	
	Vent plug G 3/8		
	self sealing, set = 10 pieces	(10) 1400392	
	self sealing, with couternut, with hose connection (soft seal) and cap		
	DN 10	(50) 1033313	
	Flow valve "AZ" for thermostatic control		Valve for the flow distributor of surface heating systems.
	DN 15 G 3/4 M x G 3/4 F	(25) 1400164°	
	Return flow lockshield valve "Combi 2" with presetting and isolating facility		Lockshield valve for the return collector of underfloor heating systems.
	DN 15 G 3/4 M x G 3/4 F	(25) 1401194°	
	Brass terminal distributor/collector G 1 female thread G 3/4 male thread for circuit connection G 3/8 female thread for airvent connection		
	4 outlets	(2) 1400554	
	Brass distributor/collector G 1 female thread x G 1 male thread G 3/4 male thread for circuit connection		
	2 outlets	(2) 1400652	
	3 outlets		
		(2) 1400653	
	4 outlets		
		(2) 1400654	
	Terminal cap G 1 female thread G 3/8 female thread for airvent connection G 1/2 female thread for fill and drain ball valve connection		
		(10) 1400691	
	Ball valve DN 25 with coupling flat sealing		
		(10) 1406394	
	Bracket		Bracket with mounting clip. For the installation of the distributor/collector into the cabinet or onto the wall. Sound absorbing as per DIN 4109.
	steel, galvanised	(25) 1401061	

Article	Packing unit	Article-No.	Hint
Accessories			Thermostats with remote control and with remote transmission are especially suitable for trench heaters, encased radiators and surface heating systems. Max. heating water temperature: 120 °C
Thermostat with remote control "Uni FH" white			<u>with '0' setting</u>
	capillary 2 m long	1012295	
	capillary 5 m long	1012296	
	capillary 10 m long	1012297	
white, with additional remote sensor			
	capillary 2 m long	1012395	<u>with '0' setting</u>
	capillary 5 m long	1012396	
Manual heads white			The manual head allows the subsequent conversion to actuators or thermostats without the necessity to drain the system.
	connection thread M 30 x 1.5	(10) 1012565	
Contact thermometer			
	for distributors/collectors	(50) 1404095	
Coupling			
	DN 15 (G ¾ c/nut x R ½ M)	(50) 1019304	
Blind plug G ½			
	self sealing	(100) 1401704	
Cap G ¾ female thread (not illustr.)			To close outlets not in use.
		(10) 1400692	
Cap G 1 female thread (not illustr.)			Can be used instead of the cap, but does not allow for the connection of an airvent or a fill and drain ball valve.
		(10) 1400693	
Ring spanner			
	Spanner size 30/32	1401091	For the installation of the compression fittings.

1.2.o Regulating sets for surface heating systems

Content



Regulating sets for surface heating systems

260

Article

Article-No.

Hint

Regulating sets for surface heating systems with bypass valve

Set no. 1

for surfaces up to 85 m²

1144251



consisting of:

Valve DN 15, brass, nickel plated
straight pattern
item no. 1180104 (M 30 x 1.5)

Bypass valve DN 20, brass, nickel plated
straight pattern
item no. 1027666

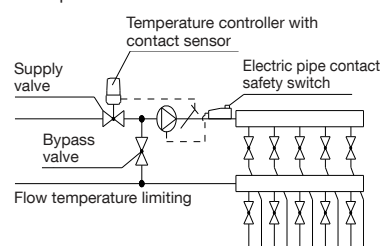
Temperature controller
with contact sensor
and heat transfer unit
capillary 2 m long
control range 20–50 °C
item no. 1142861 (M 30 x 1.5)

Electric pipe contact safety switch
with concealed temperature setting
control range 20–90 °C
item no. 1143000

Application:

The regulating set with bypass valve is required for the control of the flow temperature of a surface heating system, for instance in combined radiator/surface heating systems. The required flow temperature is set at the temperature controller. The electric pipe contact safety switch switches the circulation pump off as soon as the set flow temperature is exceeded due to a malfunction. The bypass valve serves to regulate the flow rate of the surface heating circuit.

Example:



Set no. 2

for surfaces up to 120 m²

1144252



consisting of:

Valve DN 20, brass, nickel plated
straight pattern
item no. 1187106 (M 30 x 1,5)

Bypass valve DN 25, brass, nickel plated
straight pattern
item no. 1027668

Temperature controller
with contact sensor
and heat transfer unit
capillary 2 m long
control range 20–50 °C
item no. 1142861 (M 30 x 1.5)

Electric pipe contact safety switch
with concealed temperature setting
control range 20–90 °C
item no. 1143000

Article

Article-No.

Hint

**Regulating set for surface heating systems
with "Tri-D TR" three-way diverting valve**

Set no. 3

for surfaces up to 200 m²

1144253



consisting of:

Three-way diverting valve „Tri-D TR“
DN 20 bronze
item no. 1130206 (M 30 x 1.5)

Temperature controller
with contact sensor
and heat transfer unit
capillary 2 m long
control range 20–50 °C
item no. 1142861 (M 30 x 1.5)

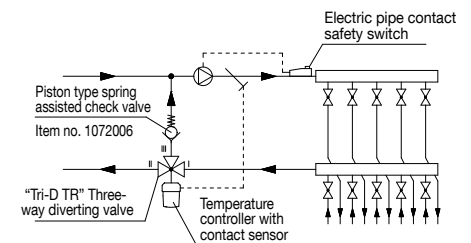
Electric pipe contact safety switch
with concealed temperature setting
control range 20–90 °C
item no. 1143000

Piston type spring assisted check valve DN 20
bronze/brass
item no. 1072006

Application:

The regulating set with "Tri-D TR" three-way diverting valve is required for the control of the flow temperature of a surface heating system, for instance in combined radiator/surface heating systems. The required flow temperature is set at the temperature controller. The electric pipe contact safety switch switches the pump off as soon as the set flow temperature is exceeded due to a malfunction. Depending on the setting of the temperature controller, the three-way diverting valve divides the volume flow into a return flow and a bypass flow. The piston type spring assisted check valve installed in the bypass prevents a wrong flow against the three-way diverting valve.

Example:











1.2.p Return temperature limiter set

Content

Return temperature limiter set	264
Return temperature limiters	264
Thermostat "Uni RTLH"	264
Thermostat "Uni RTL"	264
Valve inserts	265
Gland nut	265

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
Return temperature limiter set				Application: Central heating systems, combined radiator/surface heating. Max. operating pressure p_s : 10 bar (PN 10)
Reversed angle connection consisting of:				Valve insert with double disc prevents inadvertent overheating, with frost protection. Thermostat "Uni RTLH" with '0' setting, may be limited or locked. Control range: 10 °C-40 °C factory setting (return temperature) max be increased to 50 °C by cancelling the limitation (40 °C).
	0.30		1028364	
Straight pattern connection consisting of:				
Straight pattern valve for the return pipe and thermostat "Uni RTLH"				
	0.30		1028464	
Return temperature limiters Valves for thermostats "Uni RTLH" connection thread M 30 x 1.5 brass, nickel plated				Application: Central heating systems, combined radiator/surface heating systems. Max. operating pressure p_s : 10 bar (PN 10)
Reversed angle pattern valve for the return pipe				Valve insert with double disc prevents inadvertent overheating, with frost protection.
	DN 10 0.30	(25)	1024363	
	DN 15 0.30	(25)	1024364	
Straight pattern valve for the return pipe				
	DN 10 0.30	(25)	1024463	
	DN 15 0.30	(25)	1024464	
Thermostat "Uni RTLH" connection thread M 30 x 1.5				With '0' setting, may be limited or locked. 10-40 °C factory setting (return temperature) may be increased to 50 °C by cancelling the limitation (40 °C).
white				
		(25)	1027165	
chrome plated				
		(25)	1027172	
Thermostat "Uni RTL" connection thread M 30 x 1.5				With '0' setting, may be limited or locked. RTL valves with connection thread M 30 x 1.0 are no longer produced.
white				
		(25)	1027100	

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Valve inserts



for return flow valves
connection thread M 30 x 1.5

(100) 1026981

Valve insert with double disc.
Prevents inadvertent overheating,
with frost protection.

Gland nut
for all RTLH valves






Set = 5 pieces






(10) 1026986







1.2.q Components for concrete core activation

Content	
"Multidis SF" Stainless steel distributor/collector	268
PE-Xc "Copex" Plastic pipes	268
"Cofit S" Compression fittings	268
"Multidis SFI" Brass distributor/collector for industrial surface heating/concrete core activation	269
PE-Xc "Copex" Plastic pipes	269
"Cofit S" Compression fittings	269
"Optiflex" Ball valve	270

Article	Packing unit	Article-No.	Hint
"Multidis SF" Stainless steel distributor/collector for surface heating systems/concrete core activation with integrated regulating inserts (flow distributor) flat sealing, with valve inserts M 30 x 1.5 for thermostatic and electronic control			Application: Stainless steel distributor/collector for surface heating and cooling systems. Max. operating pressure p_s : 6 bar (PN 6) Max. operating temperature t_s : 80 °C
	for 2 circuits	1405552	Description: Distributor/collector pre-assembled. With fill and drain valves. Heating circuit connections G 3/4 male thread for Oventrop compression fittings. Flow distributor with integrated regulating inserts. Return collector with integrated valve inserts. Bracket (loosely added) sound-absorbing according to DIN 4109. Further distributors/collectors for surface heating systems: page 238
	for 3 circuits	1405553	
	for 4 circuits	1405554	
	for 5 circuits	1405555	
	for 6 circuits	1405556	
	for 7 circuits	1405557	
	for 8 circuits	1405558	
	for 9 circuits	1405559	
	for 10 circuits	1405560	
	for 11 circuits	1405561	
	for 12 circuits	1405562	
PE-Xc "Copex" Plastic pipes with oxygen barrier rolls			Application: Surface heating and cooling. Pipes according to DIN 16892/DIN 16893/ DIN EN ISO 15875/EN 1265-4. Oxygen tight according to DIN 4726 (all dimensions). Further dimensions: page 228 Max. operating pressure p_s : 6 bar at 90 °C 10 bar at 60 °C
	Dimension 17 x 2 mm		
	length per roll 120 m	(120) 1400251	
	length per roll 240 m	(240) 1400252	
	length per roll 600 m	(600) 1400254	
"Cofit S" Compression fittings for "Copex" PE-Xc plastic pipes, 2-fold, metal to metal sealing plus O-ring, outlet made of bronze, brass compression ring and collar nut, collar nut nickel plated			For the connection of the "Copex" PE-Xc plastic pipes to the distributor/collector and for couplings.
	17 x 2.0 mm x G 3/4 collar nut	(10) 1507937	

Article	Packing unit	Article-No.	Hint
"Multidis SFI" Brass distributor/collector for industrial surface heating/concrete core activation Distributor/collector modules flat sealing, flow distributor with ball valves, return collector with regulating valves, extension to max. 20 circuits by connecting the distributor/collector modules			Application: Brass distributor/collector for surface heating and cooling systems. Max. operating pressure p_s : 6 bar (PN 6) Max. operating temperature t_s : 90 °C Description: Distributor/collector modules pre-assembled. One port G 2 male thread, one port G 2 collar nut with G 1/2 blind plug. Flow distributor with ball valves. Return collector with regulating valves. Heating circuit connections with G 1 male thread for Oventrop compression fittings.
	for 2 circuits	1414452	
	for 3 circuits	1414453	
	for 4 circuits	1414454	
	for 5 circuits	1414455	
	for 6 circuits	1414456	
PE-Xc "Copex" Plastic pipes with oxygen barrier rolls Dimension 20 x 2 mm length per roll 240 m (240) 1400352 length per roll 600 m (600) 1400354			Application: Surface heating and cooling. Pipes according to DIN 16892/DIN 16893/ DIN EN ISO 15875/EN 1264-4 (except for dimension 26). Oxygen tight according to DIN 4726 (all dimensions). Max. operating pressure p_s : 6 bar at 90 °C 8 bar at 70 °C
	Dimension 20 x 2 mm		
	length per roll 240 m	(240) 1400352	
	length per roll 600 m	(600) 1400354	
	Dimension 26 x 3 mm		
	length per roll 50 m	(50) 1400560	
	length per roll 200 m	(200) 1400562	
	length per roll 300 m	(300) 1400563	Max. operating pressure p_s : 6 bar at 90 °C 10 bar at 60 °C
	Dimension 32 x 3 mm		
	length per roll 50 m	(50) 1400660	Max. operating pressure p_s : 6 bar at 90 °C 8 bar at 60 °C 10 bar at 20 °C
"Cofit S" Compression fittings for "Copex" PE-Xc plastic pipes, 2-fold, metal to metal sealing plus O-ring, outlet bronze / brass resistant to dezincification, brass compression ring, brass collar nut, unplated			For the connection of "Copex" PE-Xc plastic pipes to the distributor/collector and for couplings.
	20 x 2.0 mm x G 1 collar nut	(10) 1507969°	
	26 x 3.0 mm x G 1 collar nut	(10) 1507979°	

Article	Packing unit	Article-No.	Hint
Console			
 <p>for "Multidis SFI" brass distributor/collector 2-fold, steel galvanised, adjustable height and depth</p>		1414490	Consoles with 2 pipe clamps each including sound insulation supports and quick acting lock. Wall attachment included.
Cap G 2 female thread			
 <p>for brass distributor/collector "Multidis SFI" 2-fold, brass</p>		1414493	For closing the ends of the distributor/collector.
Ball valve flat sealing			
 <p>DN 50 G 2 F x G 2 M</p>		1406586	For the isolation of the flow distributors and return collectors.
"Optiflex" Ball valve brass, handle with stop			
 <p>self sealing, with couternut, with hose connection (soft seal) and cap</p>		(50) 1033314	For filling and venting.

Hydronics

2.1.a System summary

Content	277
Functions, constructions etc.	278
Combinations of the components/Integration into systems	280

2.1.b "Hycococon" Control, regulating and isolating valves



Content	283
"Hycococon VTZ" Double regulating and commissioning valves PN 16	284
"Hycococon ATZ" Isolating and orifice valves PN 16	285
"Hycococon ETZ" Regulating valves PN 16	286
"Hycococon HTZ" Regulating valves PN 16	287
"Hycococon DTZ" Differential pressure regulators PN 16	288
Insulation shells	289
Accessories	290
Valve inserts suitable for "Hycococon" valves	292
Measuring and draining unit	293
"Hycococon" Combination summary connection thread M 30 x 1.5	295
"Hycococon" System illustration of examples / Conversion possibilities	296
"Demo-Bloc"	294

2.1.c "Hydrocontrol" Regulating and isolating valves



Content	297
"Hydrocontrol VTR" Double regulating and commissioning valves PN 25 / PN 16	298
"Hydrocontrol VFC" Double regulating and commissioning valves PN 16	300
"Hydrocontrol VFC" Double regulating and commissioning valves PN 6	302
"Hydrocontrol VFR" Double regulating and commissioning valves PN 16	302
"Hydrocontrol VFN" Double regulating and commissioning valves PN 25	303
"Hydrocontrol VGC" Double regulating and commissioning valves PN 25	303
"Hydrocontrol STR" Double regulating and commissioning valves PN 25	304
"Hydrocontrol MTR" Double regulating and commissioning valves PN 25	304
"Hydrocontrol MPR" Double regulating and commissioning valves PN 16	304
"Hydrocontrol MFC" Double regulating and commissioning valves PN 16	305
"Hydrocontrol ATR" Isolating and orifice valves PN 25 / PN 16	306
"Hydrocontrol AFC" Isolating and orifice valves PN 16	306

2.1.d "Hydromat" Differential pressure and flow regulators



Content	307
"Hydromat DTR" Differential pressure regulators PN 16	308
"Hydrocontrol"/ "Hydromat" System examples	310
"Hydromat DFC" Differential pressure regulators PN 16	309

2.1



2.1.e Accessories for "Hydrocontrol", "Hydromat", "Hycococon"

Content	311
Connection sets	312
Stem extensions	314
Bonnets	314
Diaphragm actuators	314
Insulation shells	315
Accessories	315
Tailpipe sets	317
"Ofix" Compression fittings	317
Measuring orifices	318



2.1.f "Hycocoflow" Double regulating and commissioning valves with flow display

Content	321
"Hycocoflow VTB"	322



2.1.g "Cocon" Regulating valves

Content	323
"Cocon QTZ" Pressure independent control valves PN 25	324
"Cocon QTZ" Pressure independent control valves PN 16	326
"Cocon QTR" Pressure independent control valves PN 25 / PN 16	328
"Cocon QFC" Pressure independent control valves PN 16	328
"Cocon QFC" Pressure independent control valves PN 25	329
"Cocon QGC" Pressure independent control valves PN 16	329
"Cocon QDP" Differential pressure regulator PN 25	330
Accessories for "Cocon QTZ" PN 16, "Cocon QTR" and "Cocon QDP"	331
Accessories for "Cocon QTZ" PN 25	332
Accessories for "Cocon QTR" and "Cocon QFC"	332
Tailpipe sets	333
"OV-Flex HC" Flexible hoses	334
Accessories	334



2.1.h "Optibal" W6 Six-way ball valve

Content	337
System illustrations	338
"Optibal W6" Six-way ball valve	339
Tailpipe sets	339

2.1.i "Flypass" Connection systems, valves and fittings



Content	341
"Flypass" System illustration	342
"Flypass" Connection sets	343
"Flypass 4TZ" Connection fitting	346
Valves for combination with the "Flypass 4TZ"	346
Accessories	347

2.1.j "Tri-CTR" Three-way valves, temperature controllers



Content	349
"Tri-CTR" Three-way diverting and mixing valves PN 16	350
Accessories sets for three-way valves "Tri-CTR"	350
Temperature controllers	351
"Combi LR" Radiator lockshield valves	351
Two-way valve PN 16	352
Two-way valve PN 16	352

2.1.k Room thermostats, actuators



Content	353
Room thermostats	354
Sensor GA FD" Dew point control	355
"Aktor T" Electrothermal actuators	356
"Aktor M" Electromotive actuators	357
Accessories	359
"Aktor M KNX" Electromotive actuator	360
"mote 420" Wireless actuator	360

2.1.l "OV-DMC 3" Measuring system



Content	361
"OV-DMC 3" Measuring system	362
"OV-DMC 3", "OV-DMC 2", "OV-DMPC" Accessories	363
"OV-Connect" Differential pressure transmitter	364
"classic" measuring technique	365
Accessories "eco" measuring technique	365

2.1.m Products for air conditioning and ventilation



Content	367
Products for air conditioning and ventilation	368



2.1.n Products for radiant and chilled ceiling systems

Content	371
Products for radiant and chilled ceiling systems	372

2.1.o Connection technology

Content	375
Summary of the product groups and connection technologies with male thread	376
Summary of the product groups and connection technologies with female thread	377

2.1.a System summary

Content

Functions, constructions etc.	278
Combinations of the components/Integration into systems	280

Product group	"Hycococon"					"Hydrocontrol"									
	"Hycococon VTZ"	"Hycococon ATZ"	"Hycococon ETZ"	"Hycococon HTZ"	"Hycococon DTZ"	"Hydrocontrol VTR"	"Hydrocontrol VFC"	"Hydrocontrol VFR"	"Hydrocontrol VFN"	"Hydrocontrol VGC"	"Hydrocontrol STR"	"Hydrocontrol MTR/MPR"	"Hydrocontrol C"	"Hydrocontrol ATR"	"Hydrocontrol AFC"
Nominal pressure	PN16	PN16	PN16	PN16	PN16	PN16 PN25	PN6 PN16	PN16	PN25	PN16 PN25	PN25	PN16 PN25	PN16	PN16 PN25	PN16
Main function Double regulating and commissioning valve	•					•	•	•	•	•	•	•	•		
Isolating and orifice valve		•												•	•
Regulating valve			•	•											
Differential pressure regulator					•										
Flow regulator															
Mixing valve															
Diverting valve															
Pattern	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Straight pattern															
Angle pattern															
Reversed angle pattern															
Three-way valve															
Connection	•	•	•	•	•	•					•	•		•	
Female thread															
Male thread	•	•	•	•	•	•								•	
Female/male thread															
Press connection	•	•				•						•		•	
Compression connection											•				
Flange							•	•	•				•		•
Groove										•					
k _{vs} -value	DN 10					2.88								2.88	
	DN 15	1.7	1.7	0.9	1.7	3.88						0.55 / 1.15 / 2.1		3.88	
	DN 20	2.7	2.7	0.9	2.7 / 5.0	5.71	4.77				1.04 / 2.6	3.7		5.71	
	DN 25	3.6	3.6	0.9	3.6	8.89	8.38					6.1		8.89	
	DN 32	6.8	6.8		6.8	19.45	17.08					12.5		19.45	
	DN 40	10	10		10	27.51	26.88					18.1		27.51	
	DN 50	18	18		23	38.78	36	36				30.5		38.78	
	DN 65					50	98	98	98	98			86.7	50	98
	DN 80						122.2	122.2	122.2	122.2			102		122.2
	DN 100						201	201	201	201			198		201
	DN 125						293	293	293	293			271		293
	DN 150						404.3	404.3	404.3	404.3			400		404.3
	DN 200						814.5	814.5	814.5	814.5			750		
	DN 250						1200		1200	1200			1090		
	DN 300						1600		1600	1600			1600		
	DN 350						2250								
	DN 400						3750								
Permissible fluid temperature	-20 °C														
	-10 °C														
	0 °C														
	100 °C														
	120 °C														
	150 °C														
	200 °C														
Connection possibility Actuator			•	•											
Further information	Page 284	Page 285	Page 286	Page 287	Page 288	Page 290	Page 302	Page 302	Page 309	Page 309	Page 304	Page 304	Page 305	Page 306	Page 306

"Hydromat"		"Hycoflow"	"Cocon"					"Tri CTR" and "two-way valves"		
"Hydromat DTR"	"Hydromat DFC"	"Hycoflow VTB"	"Cocon QTZ"	"Cocon QDP"	"Cocon QTZ"	"Cocon QFC"	"Cocon QGC"	"Tri-CTR"	"Two-way valve"	
PN16	PN16	PN10	PN16	PN25	PN25	PN16 PN25	PN16	PN16	PN16	Nominal pressure
		•								Main function
										Double regulating and commissioning valve
			•	•	•	•	•		•	Isolating and orifice valve
•	•			•						Regulating valve
			•		•	•	•			Differential pressure regulator
										Flow regulator
								•		Mixing valve
								•		Diverting valve
•	•	•	•	•	•	•	•		•	Pattern
										Straight pattern
										Angle pattern
										Reversed angle pattern
								•	•	Three-way valve
•			•		•					Connection
•		•	•	•	•			•		Female thread
			•		•					Male thread
										Female/male thread
										Press connection
	•					•			•	Compression connection
							•			Flange
										Groove
										DN 10 k_{VS}-value
2.5			0.45 / 1/1.8		0.6 / 1.8/2.2				1 1.6/2.5	DN 15
5		2.7	1.8/2.5		2.9				4/6.3	DN 20
7.5		5.5/8.3	4		4.0				10	DN 25
10		13.7	6		7.6				16	DN 32
15						11.5			25	DN 40
34						12			35	DN 50
	52					36	36		63	DN 65
	75					56	56		100	DN 80
	110					80	80		160	DN 100
	145					150			220	DN 125
	170					220			320	DN 150
						270				DN 200
										DN 250
										DN 300
										DN 350
										DN 400
										Permissible fluid temperature
										-20 °C
										-10 °C
										0 °C
										100 °C
										120 °C
										150 °C
										200 °C
			•	•	•	•	•	•	•	Connection possibility
										Actuator
Page 308	Page 309	Page 345	Page 330	Page 330	Page 328	Page 328	Page 329	Page 350	Page 352	Further information

1. Oventrop valves and actuators: see table

2. Oventrop valves with actuators of other manufacturers:
With due consideration of the valve parameters,
the combination with actuators of other
manufacturers is possible on consultation.




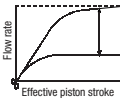
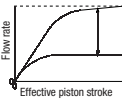
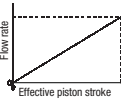
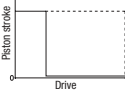





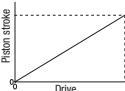







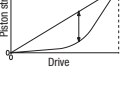



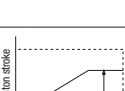



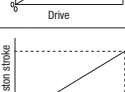



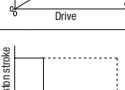



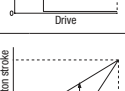



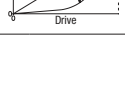



h = valve
x = lower stroke of the valve




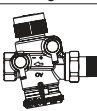

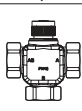

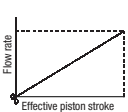
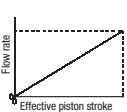
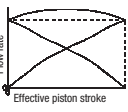
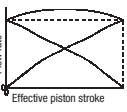
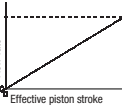




























































3. Oventrop actuators with valves of other manufacturers:
on consultation


4. Integration into the centralised building control system
(CBC): The four most important characteristic
parameters are shown in the table.

- ① NC = closed with current "off" NO = open with current "off"
EM = electromotive ET = electrothermal
② Operating behaviour: additionally 4–20 mA / 2–10 V
③ Valve adapter "Hycococon" (item no. 1012992) required.
④ K_{vs} -value can be reduced
⑤ Piston stroke \geq effective valve lift
⑥ Valve adapter 1012462 required.

Illustration (examples)		1	2	3
				
Ratings valves		“Hycococon ETZ”	“Hycococon HTZ”	“Cocon QTZ”
Item no.		10683...–10684..	10685...–10686..	11455...–11462..
DN		15 - 25	15 - 25/32/40	10/15/20/25/32
Connection		M 30 x 1.5	M 30 x 1.5	M 30 x 1.5
Closing dimension x [mm]		11.8	11.8	11.8
Δp max. [bar]		1	5/3/2	4
Valve lift h [mm]		2.2	3/4/4	2.8/2.8/2.8/3.5/4/4
PN		16	16	16
Demands on actuators	Upper lift position [mm]	14.0 or higher	15.8 or higher	14.6/15.8 or higher
	Lower lift position [mm]	11.3 or lower	11.3 or lower	11.3 or lower
	Closing press. [N] min/max.	90 / 150	90 / 150	90 / 150
Valve characteristic line				
		Actuator characteristic line		
				
				
				
				
				
				
				
				
				
				

All values are standard values without tolerances.

4	5	6	7	8
				
"Cocon QDP"	"Cocon QTZ"	"Tri-D TR"	"Tri CTR"	Two-way straight pattern valve
114460.	11431-11494..	11302..	11312..	11307..
20/25	10/15/20/25/32	20/25/40	15-50	20/25/40
M 30 x 1.5	M 30 x 1.5	M 30 x 1.5	M 30 x 1.5	M 30 x 1.5
11.8	11.8	11.8	11.8	11.8
	6	0.75/0.5/0.2		0.75/0.5/0.2
4	30-210 l/h: 2.8/4	2.8	2.8	3
25	25	16	16	16
15.8 or higher	14.6/15.8 or higher	14.6 or higher	14.6 or higher	14.8 or higher
11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower	11.3 or lower
90 / 150	90 / 150	90 / 150	90 / 150	90 / 150
				
				
				
				
				
				
				
				
				
				
				
				
				

<p>1. Oventrop valves and actuators: see table</p> <p>2. Oventrop valves with actuators of other manufacturers: With due consideration of the valve parameters, the combination with actuators of other manufacturers is possible on consultation.</p> <p>h = valve x = lower stroke of the valve</p> <p>3. Oventrop actuators with valves of other manufacturers: on consultation</p> <p>4. Integration into the centralised building control system (CBC): The four most important characteristic parameters are shown in the table.</p>								
<p>① NC = closed with current "off" NO = open with current "off" EM = electromotive ET = electrothermal NF = emergency control function</p> <p>② perating behaviour: additionally 4-20 mA / 2-10 V</p> <p>③ Valve adapter "Hycococon" (item no. 1012992) required.</p> <p>④ k_{vs}-value can be reduced</p> <p>⑤ Piston stroke \geq effective valve lift</p>			<p>Illustration (examples)</p> <p>Ratings valves</p> <p>Item no.</p> <p>DN</p> <p>Connection</p> <p>Closing dimension x [mm]</p> <p>Δp max. [bar]</p> <p>Valve lift h [mm]</p> <p>PN</p> <p>Demands on actuators</p> <p>Upper lift position [mm]</p> <p>Lower lift position [mm]</p> <p>Closing press. [N] min/max.</p>					
<p>Illustration (examples)</p> <p>Item no.</p> <p>Model</p> <p>Operating current</p> <p>Operating behaviour</p> <p>Interface</p> <p>Lower lift position [mm]</p> <p>Upper lift position [mm]</p> <p>Piston stroke [mm]</p> <p>Operating power [mm]</p> <p>Medium floating</p> <p>Protection</p> <p>Max. fluid temperature [°C]</p> <p>Permissible install. position</p>			<p>Actuator characteristic line</p> <p>Flow rate</p> <p>Effective piston stroke</p>					
<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>F</p> <p>G</p> <p>H</p> <p>I</p> <p>J</p> <p>K</p>			<p>Adjustable at the actuator</p> <p>Adjustable via Modbus</p> <p>Adjustable at the actuator</p> <p>Piston stroke</p> <p>Drive</p>					

All values are standard values without tolerances

2.1.b "Hycococon" Control, regulating and isolating valves

Content



"Hycococon VTZ" Double regulating and commissioning valves PN 16	284
"Hycococon ATZ" Isolating and orifice valves PN 16	285
"Hycococon ETZ" Regulating valves PN 16	286
"Hycococon HTZ" Regulating valves PN 16	287
"Hycococon DTZ" Differential pressure regulators PN 16	288
Insulation shells	289
Accessories	290
Valve inserts suitable for "Hycococon" valves	292
Measuring and draining unit	293
"Hycococon" Combination summary connection thread M 30 x 1.5	295
"Hycococon" System illustration of examples / Conversion possibilities	296
"Demo-Bloc"	294

Article	kvs	Packing unit	Article-No.	Hint
---------	-----	-----------------	-------------	------

"Hycococon VTZ" Double regulating and commissioning valves PN 16
(presettable, threaded connection, dezincification resistant brass)
with infinitely adjustable presetting
"eco" measuring technique

both ports with integrated pressure test points and drain valves
as well as insulation shells

both ports female thread according to EN 10226



DN 15	1.70	(10)	1061704
DN 20	2.70	(10)	1061706
DN 25	3.60	(10)	1061708
DN 32	6.80	(5)	1061710
DN 40	10.00	(5)	1061712
DN 50	18.00	(5)	1061716

both ports male thread with collar nut



DN 15	1.70	(10)	1061804
DN 20	2.70	(10)	1061806
DN 25	3.60	(10)	1061808
DN 32	6.80	(5)	1061810
DN 40	10.00	(5)	1061812
DN 50	18.00	(5)	1061816

Application:
Central heating and cooling systems with
closed circuits, for operation with non-
aggressive, harmless fluids (e.g. water or
suitable water and glycol mixtures according to
VDI 2035/ÖNORM 5195).

Measuring method:
Determination of the flow rate by measuring the
differential pressure and taking the presetting
values into consideration.

Measuring system "OV-DMC 3": page 362

Connection thread M 30 x 1.5.

All functioning components are located in one
plane which is especially advantageous where
space is limited. Different possibilities of
conversion of "Hycococon" valves see summary:
page 276

Function: "Hycococon" double regulating and
commissioning valves serve to achieve a
hydronic balance between the various risers or
different sections of the system. Installation is
possible in either the supply or the return pipe.

Description:

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +120 °C

Body and bonnet made of brass resistant to
dezincification.

Oventrop double regulating and commissioning
valves with reproducible, infinitely adjustable
presetting controllable at any time. Lockable
and lead sealable presetting (accessories set).
Under working conditions and without draining
the system (only DN 15 - DN 40):

- conversion to differential pressure regulator
"Hycococon DTZ" (diaphragm actuator for
the conversion: page 290)
- conversion to thermostatic operation
(thermostats "Uni XH/LH": e.g. page 24,
temperature controllers: page 351)
- can be used with electromotive and electro-
thermal actuators as well as electromotive
actuators "EIB" (actuators: from page 356)
- bonnet may be replaced with the help of the
"Demo-Bloc" for subsequent conversion of
sizes DN 15 - DN 25

The "Hycococon" valves are supplied with
insulation shells (max. temperature 110 °C/not
diffusion tight).



The valves DN 15 and DN 20 (female thread)
are suitable for use with compression fittings,
item no. 10271..., page 317.

Awards double regulating and commissioning
valve "Hycococon":

DESIGN PLUS ISH Frankfurt
"Design plus"

**design
preis
schweiz** Design Award Switzerland

if Industrial Design Forum Hanover
Award if

Article	kvs	Packing unit	Article-No.	Hint
"Hycococon ATZ" Isolating and orifice valves PN 16 (with isolating facility, threaded connection, dezincification resistant brass) "eco" measuring technique				<p>Application:</p> <p>Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).</p> <p>Connection thread M 30 x 1.5.</p> <p>All functioning components are located in one plane which is especially advantageous where space is limited.</p> <p>Description:</p> <p>Max. operating pressure p_s: 16 bar (PN 16) Operating temperature t_s: -10 °C up to +120 °C Body and bonnet made of brass resistant to dezincification.</p> <p>Under working conditions and without draining the system:</p> <ul style="list-style-type: none"> – conversion to double regulating and commissioning valve (handwheel for conversion: page 290) <p>The "Hycococon" valves are supplied with insulation shells (max. temperature 110 °C/not diffusion tight).</p> <p>The valves DN 15 - DN 20 (female thread) are suitable for use with compression fittings, item no. 10271.., page 317.</p>
<p>both ports with integrated pressure test points and drain valves as well as insulation shells</p> <p>both ports female thread according to EN 10226</p>				
	DN 15	1.70	(10)	1067304
	DN 20	2.70	(10)	1067306
	DN 25	3.60	(10)	1067308
	DN 32	6.80	(5)	1067310
	DN 40	10.00	(5)	1067312
	DN 50	18.00	(5)	1067316
<p>both ports male thread with collar nut</p>				
	DN 15	1.70	(10)	1067404
	DN 20	2.70	(10)	1067406
	DN 25	3.60	(10)	1067408
	DN 32	6.80	(5)	1067410
	DN 40	10.00	(5)	1067412
	DN 50	18.00	(5)	1067416

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

"Hycococon ETZ" Regulating valves PN 16
(can be motorised, threaded connection,
dezincification resistant brass)
with infinitely adjustable presetting (AV 9 technique)
"eco" measuring technique

both ports with integrated pressure test points and drain valves

both ports female thread according to EN 10226

DN 15	0.36	0.67	1.00	(10)	1068364
DN 20	0.36	0.67	1.20	(10)	1068366
DN 25	0.36	0.67	1.20	(10)	1068368



both ports male thread with collar nut

DN 15	0.36	0.67	1.00	(10)	1068464
DN 20	0.36	0.67	1.20	(10)	1068466
DN 25	0.36	0.67	1.20	(10)	1068468



Application:

Central heating and cooling systems
with closed circuits, for operation with non-
aggressive, harmless fluids (e. g. water or
suitable water and glycol mixtures according to
VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the
differential pressure and taking the presetting
values into consideration.

Measuring system "OV-DMC 3": page 362
Connection thread M 30 x 1.5.

All functioning components are located in one
plane which is especially advantageous where
space is limited.

Different possibilities of conversion of
"Hycococon" valves see summary: page 276

Function:

"Hycococon" regulating valves allow for the
regulation of sections of the system or an
individual room temperature control when
combined with actuators or thermostats.
Installation is possible in either the supply or
the return pipe.

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +120 °C
Body and bonnet made of brass resistant
to dezincification.

With infinitely presettable valve insert "AV 9".
Under working conditions and without draining
the system:

- conversion to thermostatic operation
(thermostats "Uni XH/LH": e. g. page 24,
temperature controllers: page 351)
- can be used with electromotive and
electrothermal actuators as well as
electrothermal actuators "EIB" (actuators:
from page 356)
- bonnet may be replaced with the help of
the "Demo-Bloc" for subsequent conversion

With white protection cap with 3 frontal lugs.
Presetting key: page 135

Article	kv at 1K P-dev.	kv at 2K P-dev.	kvs	Packing unit	Article-No.
---------	-----------------------	-----------------------	-----	-----------------	-------------

Hint

"Hycococon HTZ" Regulating valves PN 16
(high kv-value, threaded connection,
dezincification resistant brass)
with infinitely adjustable presetting
"eco" measuring technique

both ports with integrated pressure test points and drain valves

both ports female thread according to EN 10226



DN 15	0.52	0.95	1.70	(10)	1068564
DN 20	0.52	1.04	2.70	(10)	1068566
DN 25	0.52	1.08	3.60	(10)	1068568
DN 32	0.70	1.39	6.80	(5)	1068570
DN 40	0.84	1.58	10.00	(5)	1068572

both ports male thread with collar nut



DN 15	0.52	0.95	1.70	(10)	1068664
DN 20	0.52	1.04	2.70	(10)	1068666
DN 20	0.63	1.30	5.00	(10)	1068667
DN 25	0.52	1.08	3.60	(10)	1068668
DN 32	0.70	1.39	6.80	(5)	1068670
DN 40	0.84	1.58	10.00	(5)	1068672

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the differential pressure and taking the presetting values into consideration.

Measuring system "OV-DMC 3": page 362

Connection thread M 30 x 1.5.

All functioning components are located in one plane which is especially advantageous where space is limited.

"Hycococon" regulating valves allow for the regulation of sections of the system or an individual room temperature control when combined with actuators or thermostats.

Installation is possible in either the supply or the return pipe.

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +120 °C

Body and bonnet made of brass resistant to dezincification.

With infinitely presettable valve insert for high flow rates.

Under working conditions and without draining the system:

- conversion to differential pressure regulator "Hycococon DTZ" (diaphragm actuator for the conversion: page 290)
- conversion to thermostatic operation (thermostats "Uni XH/LH": e.g. page 24 , temperature controllers: page 351)
- can be used with electromotive and electrothermal actuators as well as electromotive actuators "EIB" (actuators: from page 44)
- conversion to double regulating and commissioning valve "Hycococon VTZ"

With green protection cap.

Set for presetting: page 135

Article

kvs

Packing unit

Article-No.

Hint

"Hycococon DTZ" Differential pressure regulators PN 16

(differential pressure control, threaded connection, dezincification resistant brass)

"eco" measuring technique

both ports with integrated pressure test points and drain valves as well as insulation shells

both ports female thread according to EN 10226

Nominal value: 50 to 300 mbar, infinitely adjustable

DN 15	1.70	(10)	1062004
DN 20	2.70	(10)	1062006
DN 25	3.60	(10)	1062008
DN 32	6.80	(5)	1062010
DN 40	10.00	(5)	1062012
DN 50	23.00		1062016

both ports female thread according to EN 10226

Nominal value: 250 to 600 mbar, infinitely adjustable

DN 15	1.70	(10)	1062204
DN 20	2.70	(10)	1062206
DN 25	3.60	(10)	1062208
DN 32	6.80	(5)	1062210
DN 40	10.00	(5)	1062212
DN 50	23.00		1062216

both ports male thread with collar nut

Nominal value: 50 to 300 mbar, infinitely adjustable

DN 15	1.70	(10)	1062104
DN 20	2.70	(10)	1062106
DN 25	3.60	(10)	1062108
DN 32	6.80	(5)	1062110
DN 40	10.00	(5)	1062112
DN 50	23.00		1062116

both ports male thread with collar nut

Nominal value: 250 to 600 mbar, infinitely adjustable

DN 15	1.70	(10)	1062304
DN 20	2.70	(10)	1062306
DN 25	3.60	(10)	1062308
DN 32	6.80	(5)	1062310
DN 40	10.00	(5)	1062312
DN 50	23.00		1062316

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Connection thread M 30 x 1.5.

All functioning components are located in one plane which is especially advantageous where space is limited.

Different possibilities of conversion of "Hycococon" valves see summary: page 276

Description:

"Hycococon DTZ" differential pressure regulators can be used for a local or central regulation of the differential pressure. They are proportional regulators working without auxiliary energy and are equipped with a pressure balanced valve disc.

The "Hycococon DTZ" differential pressure regulators are installed in the **return pipe**.

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +120 °C

Body and bonnet made of brass resistant to dezincification.

The "Hycococon DTZ" differential pressure regulators are supplied complete with the connection set and the drain valve as well as insulation shells (max. temperature 110 °C / not diffusion tight).

Capillary length 1 m.

Article

Article-No.

Hint

Insulation shells
for higher temperatures



DN 15	1061771
DN 20	1061772
DN 25	1061773
DN 32	1061774
DN 40	1061775

Insulation, consisting of two shells. Comply with the specifications of the German Energy Saving Directive (EnEV), appendix 5, table 1, line 5.
Not suitable for item no. 1068667 and "Hycococon DTZ".
Building material class B2 according to DIN 4102.
Max. operating temperature t_s : +120 °C

additionally required for cooling systems



DN 15	1061781
DN 20	1061782
DN 25	1061783
DN 32	1061784
DN 40	1061785

Not suitable for item no. 1068667 and "Hycococon DTZ".
For "Hycococon ETZ/HTZ" only suitable in combination with item no. 1061771-75.
Building material class B1 according to DIN 4102.
Operating temperature t_s : -10 °C up to +120 °C
Cold insulation: Min. fluid temperature: +6 °C
The insulation shells have to be bonded hermetically (restricted diffusion tightness at low fluid temperature and at high ambient temperature and/or humidity).

Article	Nominal value	Packing unit	Article-No.	Hint
Accessories				
	Handwheel for double regulating commissioning valves "Hycococon VTZ/VPZ"			For the conversion of isolating and orifice valves "Hycococon ATZ/APZ" to double regulating and commissioning valves "Hycococon VTZ/VPZ".
	DN 15	(10)	1061793	
	DN 20	(10)	1061794	
	DN 25	(10)	1061795	
	DN 32	(10)	1061796	
	DN 40	(10)	1061797	
	Locking pin with locking wire			For locking the set nominal values. For double regulating and commissioning valves "Hycococon VTZ/VPZ" as well as item no. 42055/56/65/66..
	for double regulating and commissioning valves "Hycococon VTZ/VPZ" as well as for "Aquastrum T plus" for differential pressure regulator "Hycococon DTZ"	(50)	1061792	
	Fill and drain tool for valves with "eco" measuring technique			"eco" measuring technique: For draining, venting and filling the installation.
			1061791	
	Measuring adapter	(50)	1060297	Measuring adapter with quick-coupling technic to be screwed onto the fill and drain tool.
	Set = 2 measuring needles for valves with "eco" measuring technique			For measurement with measuring systems "OV-DMC 3", "OV-DMC 2" and "OV-DMPC".
		(25)	1061799	
	Diaphragm actuators Nominal values infinitely adjustable			Used for the conversion of "Hycococon VTZ/VPZ" or "Hycococon HTZ" valves to differential pressure regulators "Hycococon DTZ". The valve insert required for the conversion of "Hycococon VTZ/VPZ" DN 15 - DN 25 is supplied with the diaphragm actuators.
	DN 15 - DN 25	(10)	1062082	
	DN 32 / DN 40	(10)	1062085	
	DN 15 - DN 25	(10)	1062282	
	DN 32 / DN 40	(10)	1062285	
	Adapter G 1/4 male thread	(50)	1609302	Adapter for the connection of the "Hycococon DTZ" capillary to the "classic" measuring technique connection G 1/4 female thread.
	Adapter G 3/4 female thread	(50)	1062090	Adapter for the connection of the "Hycococon DTZ" capillary to a G 3/4 male thread (flat sealing).
	Capillary 2 m long for "Hycococon DTZ" and "Hydromat DTR"	(10)	1062095	The capillary can also be used for "Hydromat DTR" manufactured since 2012.
	Capillary 5 m long for "Hycococon DTZ" and "Hydromat DTR"	(10)	1062097	



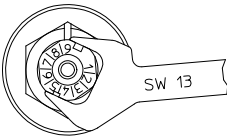
Article	Packing unit	Article-No.	Hint
Set for presetting for series "Hycococon HTZ"	(10)	1068585	



Presetting key (10) **1183962**
for thermostatic valves "AV 9, ADV 9, RFV 9, CV 9, E"
and fittings "Multiblock T/TU/TFU/T-RTL"
(manufactured since 2016)

The presetting value can be adjusted with the help of the marking on the hexagon of the valve insert.

The presetting key fits only in one position.



Alternatively, presetting can also be carried out with a spanner sized 13 mm.

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
---------	-----------------------	-----------------	-------------	------

**Valve inserts suitable for "Hycococon" valves
sizes DN 15 - DN 25**
(except for 1068667)

All valve inserts DN 15 - DN 25 (except for item no. 1026981 and 1187071) are replaceable by using the special tool "Demo-Bloc" without draining the system.

"AV 9, CV 9, RFV 9, E"
and "Multiblock T-RTL" (manufactured since 2016)

0.67 (100) **1187047**#

Also for "Hycococon ETZ" (manufactured since 2016).

#These valve inserts are suitable for all valve bodies with connection thread M 30 x 1.5 of all sizes of the thermostatic valves "A, AV 9, AQ, ADV 9, CV 9, E, EQ, AF, RF, RFV 9 and RFQ".

for return flow valves
connection thread M 30 x 1.5

(100) **1026981**

Valve insert with double disc.
Prevents inadvertent overheating,
with frost protection.

"AF"

0.32 (100) **1187352**#

Distinctive features of the valves:

Series	Protection cap	Gland nut (since end of 1993)
A	black	unplated brass
ADV 9	grey-green (3 frontal lugs)	grey-green
AF	red	red
AQ/ EQ/ RFQ	light grey	
AV 9/ CV 9/ E	white (3 frontal lugs)	
AZ H	orange	
AZ V	green	
RF	blue	unplated brass
RFV 9	light green (3 frontal lugs)	

for thermostatic valves "AQ, RFQ, EQ",
fittings "Multiblock TQ, TQ-RTL"
and "Unibox TQ, Q plus"










"QA" (25) **1187065**#




"PTB" and "Cocon 2TZ"

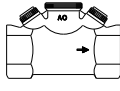

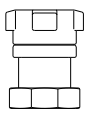
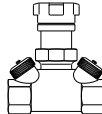
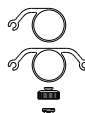


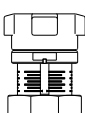
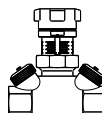

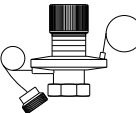
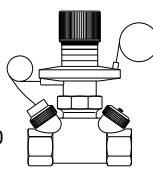












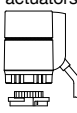



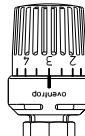
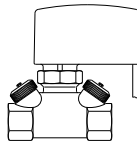


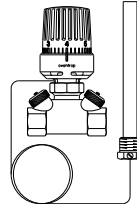
kvs = 0.45 P1 (100) **1186052**#
kvs = 1.0 P2 (100) **1186053**#
kvs = 1.8 P3 (100) **1186054**

#These valve inserts are suitable for all valve bodies with connection thread M 30 x 1.5 of all sizes of the thermostatic valves "A, AV 6, ADV 6, AZ, E, F, RF and RFV 6".

with stainless steel seat
(especially for steam installations) (100) **1186200**#

Article	kv at 2K P-dev.	Packing unit	Article-No.	Hint
		(100)	1187071	
	0.45	(100)	1187070#	
		(100)	1147169	
				
for "Hycococon HTZ/DTZ"				
DN 15 - DN 25	0.95 - 1.08	(10)	1067085	
				
for "Hycococon HTZ", "Hycococon DTZ", "Hycococon VTZ/VPZ"				The valve insert 1067066 is also suitable for item no. 1068867 ("Hycococon HTZ", DN 20 with kvs value 5.0).
DN 32	1.39	(10)	1067066	
DN 40	1.58	(10)	1067067	
				
for "Hycococon VTZ/VPZ" and "Hycococon ATZ/APZ"				
DN 15 - DN 25		(10)	1067065	
				
for "Hycococon ATZ/APZ"				
DN 32		(10)	1067068	
DN 40		(10)	1067069	
				
Measuring and draining unit for valves with "eco" measuring technique				"eco" measuring technique: Information: page 365
DN 15 - DN 40		(10)	1061790	
				
Plug for valves with "eco" measuring technique				
DN 15 - DN 40		(10)	1061798	

Article	Packing unit	Article-No.	Hint
<hr/>			
"Demo-Bloc" special tool for replacing the valve inserts, suitable for "Hycococon" DN 15, 20 and 25 (except for "Hycococon DTZ" and item no. 1068667) <u>without draining the system</u> Basic tool also suitable for all Oventrop thermostatic radiator valves			The "Demo-Bloc" is supplied in a handy bag.
	connection thread M 30 x 1.5	1188051	Including coupling set for valve insert "QA".
	Cleaning head for all valves	(100) 1188400	The valve seat can be cleaned by use of the "Demo-Bloc" and the cleaning head.
	Differential pressure measuring stem	1188093	The differential pressure above the valve seat can be measured with the "Demo-Bloc" and the differential pressure measuring stem.

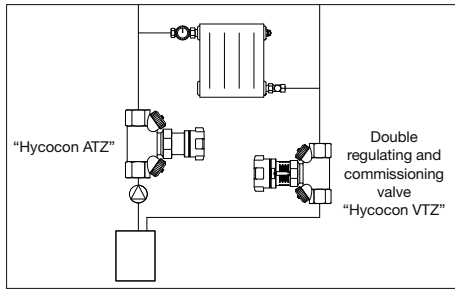
Body	Inserts	Control unit	Valves (examples)	Accessories
 DN 15-DN 40	 Valve insert item no. 1067065 for "Hycococon VTZ/VPZ/ATZ/APZ", DN 15-DN 25 Valve insert item no. 1067068 for "Hycococon ATZ/APZ", DN 32 Valve insert item no. 1067069 for "Hycococon ATZ/APZ", DN 40 Valve insert item no. 1067066 for "Hycococon VTZ/VPZ/HTZ/DTZ", DN 32 Valve insert item no. 1067067 for "Hycococon VTZ/VPZ/HTZ/DTZ", DN 40	 Handwheel for isolation DN 15-DN 25 DN 32-DN 40	 "Hycococon ATZ" DN 15-DN 25	 Measuring and draining unit Item no. 1061790  Plug Item no. 1061798
	 Valve insert item no. 1067085 for "Hycococon HTZ", DN 15-DN 25 Valve insert item no. 1067066 for "Hycococon VTZ/VPZ/HTZ/DTZ", DN 32 Valve insert item no. 1067067 for "Hycococon VTZ/VPZ/HTZ/DTZ", DN 40	 Handwheel for control DN 15-DN 25 Item no. 1061793-95 DN 32-DN 40 Item no. 106196-97	 "Hycococon VTZ" DN 15-DN 40	
	 Valve insert item no. 1067085 for "Hycococon HTZ", DN 15-DN 25 Valve insert item no. 1067066 for "Hycococon VTZ/VPZ/HTZ/DTZ", DN 32 Valve insert item no. 1067067 for "Hycococon VTZ/VPZ/HTZ/DTZ", DN 40	 Diaphragm actuator DN 15-DN 25 Item no. 1062082/ 1062282 (including valve insert) Item no. 1067085) DN 32-DN 40 Item no. 1062085/ 1062285	 "Hycococon DTZ" DN 15-DN 40	
	other valve inserts DN 15-DN 25  "A" Item no. 1187069  "AZ" Item no. 1187060  P1 kvs 0.45 Item no. 1186052  P2 kvs 1.0 Item no. 1186053  Reversed supply/return Item no. 1187070  "AF" Item no. 1187352  "KTB" Item no. 1147169  "ADV 9" Item no. 1186002  "Hycococon ETZ" and "AV 9" Item no. 1187047  Steam insert Item no. 1186200  Valve insert "QA" Item no. 1187065	 Thermostats and actuators DN 15-DN 40 e.g. item no. 1011365 Electrothermal actuators  Electromotive actuators 230 V/two point Item no. 1012710 24 V/0-10 V Item no. 1012705 24 V/three point Item no. 1012708 230 V/three point Item no. 1012709 Two point Item no. 10124../10129.. 24 V/0-10 V Item no. 1012952 Manual heads  Electromotive actuators System EIB Item no. 1156065 Item no. 1156066	 "Hycococon ETZ/HTZ" thermostatic operation DN 15-DN 40	
	 Valve insert for return temperature limitation DN 15-DN 25 Item no. 1026981	 "Uni RTLH" DN 15-DN 25 Item no. 1027165	 "Hycococon ETZ/HTZ" with actuator DN 15-DN 40	
	 "Combi LR" DN 15-DN 25 Item no. 1187071	 Spanner Control unit inside the insert	 "Hycococon ETZ/HTZ" with tempera- ture controller DN 15-DN 40	

The combination summary is not valid for item no. 1068667 (DN 20 – "Hycococon HTZ" with kvs value 5.0)

Further examples can be found in the product range "Flow, pressure and temperature balancing".

Note: The connection thread of all "Hycococon" valves sized DN 15 to DN 40 is M 30 x 1.5.

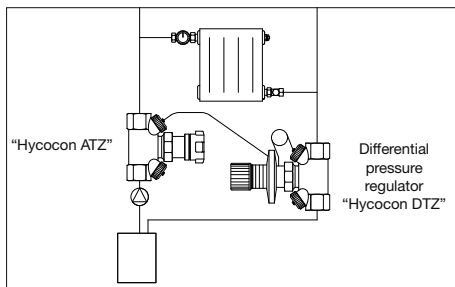
2.1



Hydronic balancing

Standard installation:

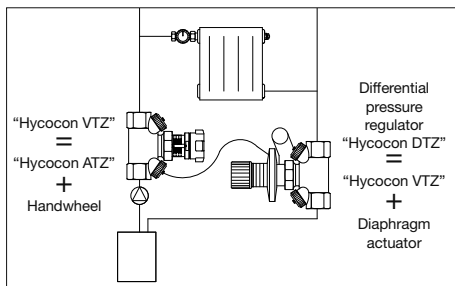
The valves "Hycococon VTZ/VPZ" and "Hycococon ATZ/APZ" allow a subsequent conversion as illustrated below.



Differential pressure regulation:

for instance consisting of the differential pressure regulators "Hycococon DTZ" and the isolating and orifice valve "Hycococon ATZ" for installations with presettable thermostatic valves.

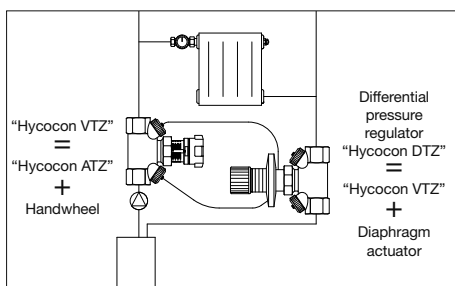
A subsequent conversion of the "Hycococon VTZ" (DN 15 – DN 40) with diaphragm actuator to differential pressure regulator "Hycococon DTZ" is possible.



Differential pressure regulation with flow limitation:

for instance consisting of the differential pressure regulator "Hycococon DTZ" and the double regulating and commissioning valve "Hycococon VTZ" for installations without presettable thermostatic valves or radiator lockshield valves in which the flow rate shall additionally be limited to the calculated value (capillary connection at the inlet nipple of the "Hycococon VTZ").

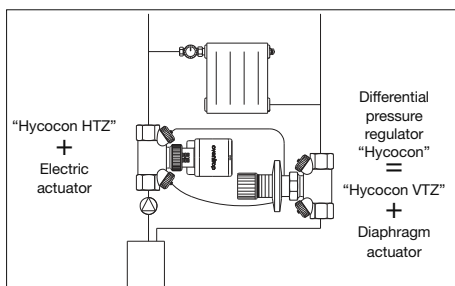
A subsequent conversion of the "Hycococon VTZ" (DN 15 – DN 40) with diaphragm actuator and use of the dismantled handwheel of the "Hycococon ATZ" is possible.



Flow regulation (DN 15 – DN 40):

for instance consisting of the differential pressure regulator "Hycococon DTZ" and the double regulating and commissioning valve "Hycococon VTZ" for installations without presettable thermostatic valves and radiator lockshield valves or for one pipe systems (capillary connection at the inlet and outlet nipple of the "Hycococon VTZ").

A subsequent conversion of the "Hycococon VTZ" with diaphragm actuator and use of the dismantled handwheel of the "Hycococon ATZ" is possible.



Flow regulation (DN 15 – DN 40):

for instance consisting of the regulating valve "Hycococon HTZ" and the differential pressure regulator "Hycococon DTZ" for electronically controlled installations (capillary connection at inlet and outlet nipple of the "Hycococon HTZ").

A subsequent conversion of the "Hycococon VTZ" with diaphragm actuator is required.

2.1.c "Hydrocontrol" Regulating and isolating valves

Content



"Hydrocontrol VTR" Double regulating and commissioning valves PN 25 / PN 16	298
"Hydrocontrol VFC" Double regulating and commissioning valves PN 16	300
"Hydrocontrol VFC" Double regulating and commissioning valves PN 6	302
"Hydrocontrol VFR" Double regulating and commissioning valves PN 16	302
"Hydrocontrol VFN" Double regulating and commissioning valves PN 25	303
"Hydrocontrol VGC" Double regulating and commissioning valves PN 25	303
"Hydrocontrol STR" Double regulating and commissioning valves PN 25	304
"Hydrocontrol MTR" Double regulating and commissioning valves PN 25	304
"Hydrocontrol MPR" Double regulating and commissioning valves PN 16	304
"Hydrocontrol MFC" Double regulating and commissioning valves PN 16	305
"Hydrocontrol ATR" Isolating and orifice valves PN 25 / PN 16	306
"Hydrocontrol AFC" Isolating and orifice valves PN 16	306

Article kvs Packing unit Article-No.

Hint

**"Hydrocontrol VTR" Double regulating and commissioning valves
PN 25 / PN 16
(presettable, threaded connection, bronze)
"classic" measuring technique**

PN 25 with mounted accessories set no. 3 = 1 pressure test point G 1/4
and 1 fill and drain ball valve G 1/4
both ports female thread according to EN 10226



DN 10	2.88	(10)	1060303
DN 15	3.88	(10)	1060304
DN 20	5.71	(10)	1060306
DN 25	8.89	(10)	1060308
DN 32	19.45	(5)	1060310
DN 40	27.51	(5)	1060312
DN 50	38.78	(5)	1060316

PN 25 with mounted accessories set no.2=2 pressure test points G 1/4
both ports female thread according to EN 10226



DN 10	2.88	(10)	1060203
DN 15	3.88	(10)	1060204
DN 20	5.71	(10)	1060206
DN 25	8.89	(10)	1060208
DN 32	19.45	(5)	1060210
DN 40	27.51	(5)	1060212
DN 50	38.78	(5)	1060216

PN 25 both ports with connection for "classic" measuring technique
(closed with blind plugs)
both ports female thread according to EN 10226



DN 10	2.88	(10)	1060103
DN 15	3.88	(10)	1060104
DN 20	5.71	(10)	1060106
DN 25	8.89	(10)	1060108
DN 32	19.45	(5)	1060110
DN 40	27.51	(5)	1060112
DN 50	38.78	(5)	1060116

PN 16
both ports female thread according to EN 10226



DN 65	50.00		1060120
-------	-------	--	----------------

PN 16 both ports with connection for "classic" measuring technique
(closed with blind plugs)
both ports male thread with collar nut



DN 10	2.88	(10)	1060503
DN 15	3.88	(10)	1060504
DN 20	5.71	(10)	1060506
DN 25	8.89	(10)	1060508
DN 32	19.45	(5)	1060510
DN 40	27.51	(5)	1060512
DN 50	38.78	(5)	1060516

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids, (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the differential pressure and taking the presetting values into consideration.

Measuring system "OV-DMC 3": page 362

Function:

Oventrop double regulating and commissioning valves are installed in the pipework of central heating and cooling systems and serve to achieve the hydronic balance between the various circuits of the system. The double regulating and commissioning valves may be installed in either the supply or the return pipe. The valves DN 10 - DN 20 are suitable for use with compression fittings, item no. 10271..., page 317. Body and bonnet made of bronze, stem and disc made of brass resistant to dezincification (DZR), disc with PTFE seal, fill and drain ball valve, blind plug and pressure test point made of brass resistant to dezincification (DZR). Colour rings to mark the supply (red) and return pipe (blue) are supplied with each valve (except for item no. 1060120).

Description "Hydrocontrol VTR":

Max. operating pressure p_s :

25 bar (PN 25), 362,5 psi
or 16 bar (PN 16), 232 psi for DN 65

Operating temperature t_s : -20 °C up to +150 °C

1060204-16: WaterMark certified.

1060103-16: WRAS certified.

1060104-20: WaterMark certified.

10601:

The sizes DN 40 and DN 50 are ACS (France) certified for installation in potable water systems.

Male thread:

DN 10 - G 5/8

DN 15 - G 3/4

DN 20 - G 1

DN 25 - G 1 1/4

DN 32 - G 1 1/2

DN 40 - G 1 3/4

DN 50 - G 2 3/4

Awards:



International Design Award
Baden Württemberg



Good Design Award Japan



Industrial Design Forum Hanover
Award iF

Accessories: Page 312

Bonnets: Page 314

Insulation shells: Page 315

Tailpipe sets: Pages 75, 121, 317



Article	kvs	Packing unit	Article-No.	Hint
PN 25 with mounted accessories set no.2=2 pressure test points G 1/4 <u>both ports female thread according to EN 10226</u>				16887...: Type approval for shipbuilding (DNV-GL).
DN 10	2.88	(10)	1688703	
DN 15	3.88	(10)	1688704	
DN 20	5.71	(10)	1688706	
DN 25	8.89	(10)	1688708	
DN 32	19.45	(5)	1688710	
DN 40	27.51	(5)	1688712	
DN 50	38.78	(5)	1688716	

Article kvs Article-No. Hint

**"Hydrocontrol VFC" Double regulating and commissioning valves
PN 16
(presettable, flanged connection, cast iron)
"classic" measuring technique**

both ports flanged according to DIN EN 1092-2
with mounted accessories set no. 2 = 2 pressure test points G 1/4



DN 20	4.80	1062646
DN 25	8.40	1062647
DN 32	17.10	1062648
DN 40	26.90	1062649
DN 50	36.00	1062650

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

For cooling systems: Please provide frost protection and diffusion tight insulation!

Measuring method:
Determination of the flow rate by measuring the differential pressure and taking the presetting values into consideration.
Measuring system "OV-DMC 3": page 362



DN 65	98.00	1062651
DN 80	122.20	1062652
DN 100	201.00	1062653
DN 125	293.00	1062654
DN 150	404.30	1062655

Oventrop double regulating and commissioning valves with secured infinitely adjustable presetting controllable at any time by use of the flow limiting device.
Lengths according to DIN EN 558-1, basic series 1.
All functioning components in one plane.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.



DN 200	814.50	1062656
DN 250	1,200.00	1062657
DN 300	1,600.00	1062658
DN 350	2,250.00	1062659
DN 400	3,750.00	1062660

Larger sizes on demand.

Function:
Oventrop double and regulating commissioning valves are installed in the pipework of central heating and cooling systems and serve to achieve the hydronic balance between the various circuits of the system.
Further additional functions:
Regulation, isolation.
Infinitely adjustable presetting.
The pressure loss can be controlled exactly by using the pressure test points.



both ports flanged with hole circle according to ANSI*
with mounted accessories set no. 2 = 2 pressure test points G 1/4

DN 20	4.80	1062946
DN 25	8.40	1062947
DN 32	17.10	1062948
DN 40	26.90	1062949
DN 50	36.00	1062950

Description "Hydrocontrol VFC":
Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +150 °C



DN 65	98.00	1062951
DN 80	122.20	1062952
DN 100	201.00	1062953
DN 125	293.00	1062954
DN 150	404.30	1062955

Body (DN 20 - DN 300) made of cast iron (EN-GJL - 250 DIN EN 1561), DN 350 and DN 400 made of nodular cast iron (EN-GJS-500 DIN EN 1563).
Disc with PTFE or EPDM seal.
Maintenance-free stem seal due to double O-ring made of EPDM.



DN 200	814.50	1062956
DN 250	1,200.00	1062957
DN 300	1,600.00	1062958
DN 350	2,250.00	1062959
DN 400	3,750.00	1062960

Award "Hydrocontrol VFC":



Pragotherm Prague

*US standard, class 150



Article	kvs	Article-No.	Hint
<u>both ports flanged according to DIN EN 1092-2</u> with mounted accessories set no. 2 = 2 pressure test points G 1/4			16887...: Type approval for shipbuilding (DNV-GL).
DN 20	4.80	1688746	
DN 25	8.40	1688747	
DN 32	17.10	1688748	
DN 40	26.90	1688749	
DN 50	36.00	1688750	

Article kvs Article-No. Hint

"Hydrocontrol VFC" Double regulating and commissioning valves PN 6

both ports flanged according to **DIN EN 1092-2**
 with mounted accessories set no. 2 = 2 pressure test points G 1/4



DN 20	4.80	1062676
DN 25	8.40	1062677
DN 32	17.10	1062678
DN 40	26.90	1062679
DN 50	36.00	1062680



DN 65	98.00	1062681
DN 80	122.20	1062682
DN 100	201.00	1062683
DN 125	293.00	1062684
DN 150	404.30	1062685



DN 200	814.50	1062686
--------	--------	----------------

"Hydrocontrol VFR" Double regulating and commissioning valves PN 16

(presettable, flanged connection, bronze)

"classic" measuring technique

both ports flanged according to **DIN EN 1092-2**
 with mounted accessories set no. 2 = 2 pressure test points G 1/4



DN 50	36.00	1062350
-------	-------	----------------



DN 65	98.00	1062351
DN 80	122.20	1062352
DN 100	201.00	1062353
DN 125	293.00	1062354
DN 150	404.30	1062355



DN 200	814.50	1062356
--------	--------	----------------

both ports flanged according to **DIN EN 1092-2**
 with mounted accessories set no. 2 = 2 pressure test points G 1/4



DN 50	36.00	1688350
DN 200	814.50	1688356

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the differential pressure and taking the presetting values into consideration.

Measuring system "OV-DMC 3": page 362

Oventrop double regulating and commissioning valves with secured infinitely adjustable presetting controllable at any time by use of the flow limiting device.

Lengths according to DIN EN 558-1, basic series 1.

All functioning components in one plane.

Function:

Oventrop double regulating and commissioning valves are installed in the pipework of central heating and cooling systems and serve to achieve the hydronic balance between the various circuits of the system.

Further additional functions:

Regulation, isolation.

Infinitely adjustable presetting.

The pressure loss can be controlled exactly by using the pressure test points.

Lead lockable presetting.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.

Description "Hydrocontrol VFC":

Max. operating pressure p_s : 6 bar (PN 6)

Operating temperature t_s : -10 °C up to +150 °C

Body made of cast iron (EN-GJL - 250 DIN EN 1561).

Disc with PTFE seal.

Maintenance-free stem seal due to double O-ring made of EPDM.

Description "Hydrocontrol VFR":

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -20 °C up to +150 °C

Body, bonnet and disc made of bronze, stainless steel stem, disc with PTFE seal.

Maintenance-free stem seal due to double O-ring made of EPDM.

The bronze double regulating and commissioning valves "Hydrocontrol VFR" may also be used for cold salt water (max. 38 °C) and domestic water.

Accessories: Page 312

Insulation shells: Pages 315, 683

Article

kvs

Article-No.

Hint

"Hydrocontrol VFN" Double regulating and commissioning valves PN 25

(presettable, flanged connection, nodular cast iron)

"classic" measuring technique

both ports flanged according to DIN EN 1092-2

with mounted accessories set no. 2 = 2 pressure test points G 1/4



DN 65	98.00	1062451
DN 80	122.20	1062452
DN 100	201.00	1062453
DN 125	293.00	1062454
DN 150	404.30	1062455



DN 200	814.50	1062456
DN 250	1,200.00	1062457
DN 300	1,600.00	1062458

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the differential pressure and taking the presetting values into consideration.

Measuring system "OV-DMC 3": page 362

Function:

Oventrop double regulating and commissioning valves are installed in the pipework of central heating and cooling systems and serve to achieve the hydronic balance between the various circuits of the system.

Further additional functions:

Regulation, isolation.

Infinitely adjustable presetting.

The pressure loss can be controlled exactly by using the pressure test points.

Lead lockable presetting.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.

Description "Hydrocontrol VFN":

Max. operating pressure p_s : 25 bar (PN 25)

Operating temperature t_s : -20 °C up to +150 °C

Body made of nodular cast iron (EN-GJS - 500 DIN EN 1563), stem made of brass resistant to dezincification. Disc with PTFE seal.

Maintenance-free stem seal due to double O-ring made of EPDM.

"Hydrocontrol VGC" Double regulating and commissioning valves PN 25

(presettable, groove connection, cast iron)

"classic" measuring technique

both ports groove connection for couplings

with mounted accessories set no. 2 = 2 pressure test points G 1/4



DN 65	98.00	1063051
DN 65	98.00	1064051
DN 80	122.20	1063052
DN 100	201.00	1063053
DN 125	293.00	1063054
DN 125	293.00	1064054
DN 150	404.30	1063055
DN 150	404.30	1064055



DN 200	814.50	1063056
DN 250	1,200.00	1063057
DN 300	1,600.00	1063058

Suitable for couplings of the systems Victaulic and Grinell and similar.

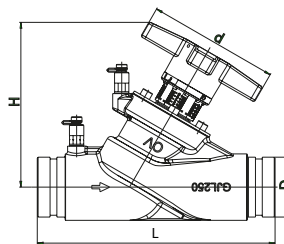
Description "Hydrocontrol VGC":

Max. operating pressure p_s : 25 bar (PN 25)

Operating temperature t_s : -10 °C up to +150 °C

Body made of cast iron (EN-GJL - 250 DIN EN 1561), stem made of brass resistant to dezincification.

Disc with PTFE seal. Maintenance-free stem seal due to double O-ring made of EPDM.



Item no.	DN	L	D	H	d
1063051	65	290	73.0	200	160
1064051	65	290	76.1	200	160
1063052	80	310	88.9	215	160
1063053	100	350	114.3	244	160
1064054	125	400	139.7	289	160
1063054	125	400	141.3	289	160
1063055	150	480	168.3	293	160
1064055	150	480	165.1	293	160
1063056	200	600	219.1	467	300
1063057	250	730	273.0	480	300
1063058	300	850	323.9	515	300

Accessories: Page 312

Insulation shells: Pages 315, 683

Article	kvs	Packing unit	Article-No.	Hint
---------	-----	--------------	-------------	------

"Hydrocontrol STR" Double regulating and commissioning valves PN 25

(solar, threaded connection, bronze)

with integrated measuring orifice, quick-coupling measuring technique,

both ports compression connection for compression fittings "Regusol"



DN 20 LF	1.04	(10)	1369050
DN 20 MF	2.60	(10)	1369055



both ports female thread according to EN 10226

DN 20 LF	1.04	(10)	1369062°
DN 20 MF	2.60	(10)	1369065°

"Hydrocontrol MTR" Double regulating and commissioning valves PN 25

(measuring orifice, threaded connection, bronze)

with integrated measuring orifice, "classic" measuring technique

both ports female thread according to EN 10226



DN 15 LF	0.55	(10)	1060464
DN 15 MF	1.15	(10)	1060434
DN 15 HF	2.10	(10)	1060404
DN 20	3.70	(10)	1060406
DN 25	6.10	(10)	1060408
DN 32	12.50	(5)	1060410
DN 40	18.10	(5)	1060412
DN 50	30.50	(5)	1060416

"Hydrocontrol MPR" Double regulating and commissioning valves PN 16

(measuring orifice, press connection, bronze)

with integrated measuring orifice, "classic" measuring technique

both ports press connection



DN 15 LF	Ø 15 mm	0.55	(10)	1060651°
DN 15 MF	Ø 15 mm	1.15	(10)	1061651°
DN 15 HF	Ø 15 mm	2.10	(10)	1060451°
DN 20	Ø 22 mm	3.70	(10)	1060454°
DN 25	Ø 28 mm	6.10	(10)	1060456°
DN 32	Ø 35 mm	12.50	(5)	1060458°
DN 40	Ø 42 mm	18.10	(5)	1060460°
DN 50	Ø 54 mm	30.50	(5)	1060462°

Application "Hydrocontrol STR":

Solar plants with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the differential pressure via the measuring orifice.

Description "Hydrocontrol STR":

Max. operating pressure p_s : 25 bar (PN 25)

Operating temperature t_s : -20 °C up to +200 °C

Especially for solar plants. As the valve has no isolation function, a minimum flow rate is guaranteed. It is used for the hydronic balancing of collector fields.

Accessories:

Compression fittings "Regusol": page: 833

Application "Hydrocontrol MTR/MPR":

Central heating and cooling systems with closed circuits, for operation with non-

aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the differential pressure via the measuring orifice.

Modification of the flow rates irrespective of the presetting values can be read off directly with the help of the measuring gauges

"OV-DMC 3"/"OV-DMC 2"/"OV-DMPC".

Description "Hydrocontrol MTR":

Max. operating pressure p_s : 25 bar (PN 25), 362,5 psi

Operating temperature t_s : -20 °C up to +150 °C

Colour rings to mark the supply (red) and the return pipe (blue) are supplied with each valve.

Description "Hydrocontrol MPR":

Max. operating pressure p_s : 16 bar (PN 16), 232 psi

Operating temperature t_s : -20 °C up to +120 °C

Colour rings to mark the supply (red) and the return pipe (blue) are supplied with each valve.

Press connection:

For the direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 541 and thin-walled C-steel pipe (material no. E195/1.0034) according to DIN EN 10305-3. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.

Article	kvs	Article-No.	Hint
---------	-----	-------------	------

**"Hydrocontrol MFC" Double regulating and commissioning valves
PN 16
(measuring orifice, flanged connection, cast iron)
"classic" measuring technique**

both ports flanged according to **DIN EN 1092-2**
with mounted accessories set no. 2 = 2 pressure test points G 1/4



DN 65	86.70	1065851
DN 80	102.00	1065852
DN 100	198.00	1065853
DN 125	271.00	1065854
DN 150	400.00	1065855



DN 200	750.00	1065856
DN 250	1,090.00	1065857
DN 300	1,500.00	1065858

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

For cooling systems: Please provide frost protection and diffusion tight insulation!

Measuring method:
Determination of the flow rate by measuring the differential pressure via the measuring orifice.
Measuring system "OV-DMC 3": page 362

Oventrop double regulating and commissioning valves, with secured infinitely adjustable presetting controllable at any time by use of the flow limiting device.
Lengths according to DIN EN 558-1, basic series 1.

All functioning components in one plane.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.

Function:
Oventrop double regulating and commissioning valves are installed in the pipework of central heating and cooling systems and serve to achieve a hydronic balance between the various circuits of the system.

Further additional functions:
Regulation, isolation.
Infinitely adjustable presetting.

Description "Hydrocontrol MFC":
Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +150 °C

Body made of cast iron (EN-GJL - 250 DIN EN 1561).
Disc with PTFE or EPDM seal.
Maintenance-free stem seal due to double EPDM O-ring.

Article	kvs	Packing unit	Article-No.	Hint
---------	-----	-----------------	-------------	------

**"Hydrocontrol ATR" Isolating and orifice valves PN 25 / PN 16
(with isolating facility, threaded connection, bronze)**
with two threaded ports for "classic" measuring technique
(closed with blind plugs)
without presetting

PN 25 both ports female thread according to EN 10226

DN 10	2.88	(10)	1067503
DN 15	3.88	(10)	1067504
DN 20	5.71	(10)	1067506
DN 25	8.89	(10)	1067508
DN 32	19.45	(5)	1067510
DN 40	27.51	(5)	1067512
DN 50	38.78	(5)	1067516



PN 16 both ports female thread according to EN 10226

DN 65	50.00		1067520
-------	-------	--	----------------



PN 16 both ports male thread with collar nut

DN 10	2.88	(10)	1067603
DN 15	3.88	(10)	1067604
DN 20	5.71	(10)	1067606
DN 25	8.89	(10)	1067608
DN 32	19.45	(5)	1067610
DN 40	27.51	(5)	1067612
DN 50	38.78	(5)	1067616



**"Hydrocontrol AFC" Isolating and orifice valves PN 16
(with isolating facility, flanged connection, cast iron)**

with two threaded ports for "classic" measuring technique
(closed with blind plugs)
without presetting
both ports flanged according to DIN EN 1092-2

DN 65	98.00		1062051
DN 80	122.00		1062052
DN 100	201.00		1062053
DN 125	293.00		1062054
DN 150	404.30		1062055



Application:

Central heating and cooling systems with
closed circuits, for operation with non-
aggressive, harmless fluids (e. g. water or
suitable water and glycol mixtures according
to VDI 2035/ÖNORM 5195).

Description "Hydrocontrol ATR":

Max. operating pressure p_s : 25 bar (PN 25)
or 16 bar (PN 16)

Operating temperature t_s : -20 °C up to +150 °C

Body and bonnet made of bronze, stem and
disc made of brass resistant to dezincification
(DZR), disc with PTFE seal, blind plugs made of
brass resistant to dezincification (DZR).

Colour rings to mark the supply (red) and the
return pipe (blue) are supplied with each valve.

Male thread

DN 10 - G $\frac{5}{8}$

DN 15 - G $\frac{3}{4}$

DN 20 - G 1

DN 25 - G $1\frac{1}{4}$

DN 32 - G $1\frac{1}{2}$

DN 40 - G $1\frac{3}{4}$

DN 50 - G 2 $\frac{3}{8}$

Description "Hydrocontrol AFC":

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +150 °C

Body made of cast iron.



2.1.d "Hydromat" Differential pressure and flow regulators

Content

"Hydromat DTR" Differential pressure regulators PN 16	308
"Hydrocontrol"/ "Hydromat" System examples	310
"Hydromat DFC" Differential pressure regulators PN 16	309

Article	kvs	Article-No.	Hint
---------	-----	-------------	------

**"Hydromat DTR" Differential pressure regulators PN 16
(differential pressure control, threaded connection, bronze)
with connection set and draining facility**

both ports female thread according to EN 10226
Nominal value: 50 to 300 mbar, infinitely adjustable



DN 15	2.50	1064504
DN 20	5.00	1064506
DN 25	7.50	1064508
DN 32	10.00	1064510
DN 40	15.00	1064512
DN 50	34.00	1064516

both ports female thread according to EN 10226
Nominal value: 250 to 700 mbar, infinitely adjustable



DN 15	2.50	1064704
DN 20	5.00	1064706
DN 25	7.50	1064708
DN 32	10.00	1064710
DN 40	15.00	1064712
DN 50	34.00	1064716

both ports male thread with collar nut
Nominal value: 50 to 300 mbar, infinitely adjustable



DN 15	2.50	1064604
DN 20	5.00	1064606
DN 25	7.50	1064608
DN 32	10.00	1064610
DN 40	15.00	1064612
DN 50	34.00	1064616

both ports male thread with collar nut
Nominal value: 250 to 700 mbar, infinitely adjustable



DN 15	2.50	1064804
DN 20	5.00	1064806
DN 25	7.50	1064808
DN 32	10.00	1064810
DN 40	15.00	1064812
DN 50	34.00	1064816

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

All functioning components in one plane.

Function:

Oventrop differential pressure regulators are proportional regulators working without auxiliary energy. They are used in existing or new buildings for a local or central regulation of the differential pressure.

With the differential pressure in the installation increasing, the valve disc closes down to maintain a constant differential pressure within a necessary proportional band.

The differential pressure is set to the desired nominal value. The nominal value is infinitely adjustable and lockable.

The differential pressure regulators are designed for installation in the return pipe. Further additional functions: Isolating, filling and draining.

The regulators are supplied complete with connection set (capillary length 1 m).

Male thread:

DN 15 - G 3/4
DN 20 - G 1
DN 25 - G 1 1/4
DN 32 - G 1 1/2
DN 40 - G 1 3/4
DN 50 - G 2 3/4

Description "Hydromat DTR":

Max. operating pressure p_s : 10 bar (PN 16), 232 psi

Operating temperature t_s : -10 °C up to +120 °C

Body and bonnet made of bronze. Disc and stem made of brass resistant to dezincification (DZR), disc with EPDM seal.

Maintenance-free stem seal due to double O-ring made of EPDM.

The regulators DN 15 and DN 20 are suitable for use with the compression fittings, item no. 10271..., page 317.

Bonnets: Page 314

Insulation shells: Pages 315, 683

Tailpipe sets: Pages 75, 121, 317

Article	kvs	Article-No.	Hint
---------	-----	-------------	------

**"Hydromat DFC" Differential pressure regulators PN 16
(differential pressure control, flanged connection, cast iron)
with connection set and draining facility**

both ports flanged according to EN 1092-2
Nominal value: 200 to 1000 mbar, infinitely adjustable



DN 65	52.00	1064651
DN 80	75.00	1064652
DN 100	110.00	1064653
DN 125	145.00	1064654
DN 150	170.00	1064655

both ports flanged according to EN 1092-2
Nominal value: 400 to 1800 mbar, infinitely adjustable



DN 65	52.00	1064751
DN 80	75.00	1064752
DN 100	110.00	1064753
DN 125	145.00	1064754
DN 150	170.00	1064755
DN 200	420.00	1064756

both ports flanged with hole circle according to ANSI
Nominal value: 400 to 1800 mbar, infinitely adjustable



DN 65	52.00	1064951
DN 80	75.00	1064952
DN 100	110.00	1064953
DN 125	145.00	1064954
DN 150	170.00	1064955

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

All functioning components in one plane.

Function:

Oventrop differential pressure regulators are proportional regulators working without auxiliary energy. They are used in existing or new buildings for a local or central regulation of the differential pressure. With the differential pressure in the installation increasing, the valve disc closes down to maintain a constant differential pressure within a necessary proportional band.

The differential pressure is set to the required nominal value.

The nominal value is infinitely adjustable and lockable.

The differential pressure regulators are designed for installation in the return pipe.

Further additional functions:

Isolation, filling and draining

The regulators are supplied complete with connection set (capillary length 1 m).

Description "Hydromat DFC":

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +120 °C

Body made of cast iron (EN-GJL-250 DIN EN 1561).

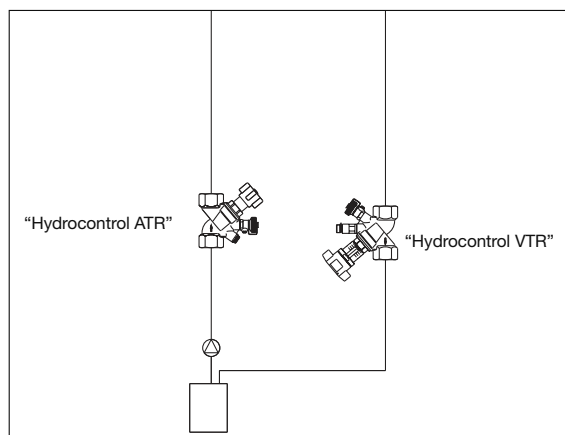
Lengths according to DIN EN 558-1, basic series 1.

Bonnet made of bronze, stem made of brass resistant to dezincification (DZR), disc made of stainless steel with EPDM seal.

Maintenance-free stem seal due to double O-ring made of EPDM.

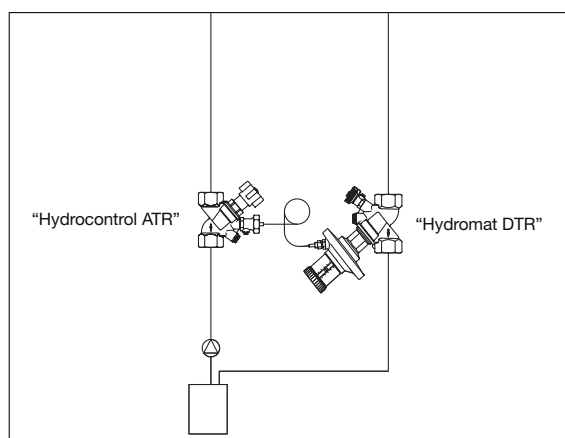
Further examples can be found in the product range "Flow, pressure and temperature balancing".

2.1



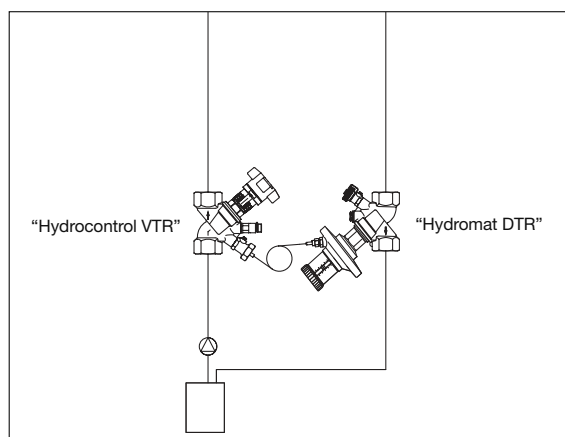
Standard installation:

for instance consisting of the double regulating and commissioning valve "Hydrocontrol VTR" and the isolating and orifice valve "Hydrocontrol ATR" for installations in which a hydronic balancing between the individual supply risers is required.



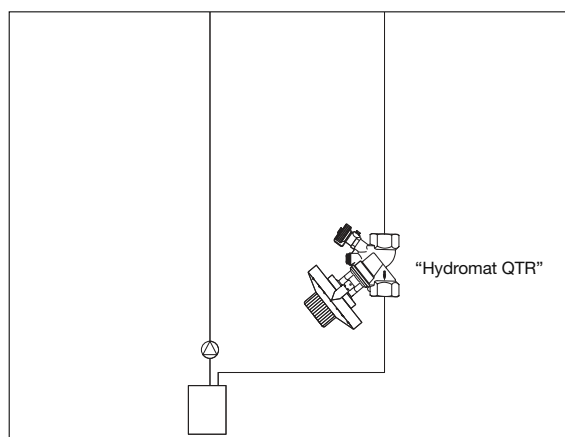
Differential pressure regulation:

for instance consisting of the differential pressure regulator "Hydromat DTR" and the isolating and orifice valve "Hydrocontrol ATR" for installations with presettable thermostatic valves.



Differential pressure regulation with flow limitation:

for instance consisting of the differential pressure regulator "Hydromat DTR" and the double regulating and commissioning valve "Hydrocontrol VTR" for installations without presettable thermostatic valves or radiator lockshield valves in which the flow rate shall additionally be limited to the calculated value.



Flow regulation:

for instance consisting of the flow regulator "Hydromat QTR" for installations in which the rate in the individual supply risers shall be constantly maintained.

2.1.e Accessories for "Hydrocontrol", "Hydromat", "Hycocoon"

Content



Connection sets	312
Stem extensions	314
Bonnets	314
Diaphragm actuators	314
Insulation shells	315
Accessories	315
Tailpipe sets	317
"Ofix" Compression fittings	317
Measuring orifices	318

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

**Connection sets
for subsequent conversion of double regulating and
commissioning valves "Hydrocontrol"
and for valves with "classic" measuring technique**

Set 1 = 1 fill and drain
ball valve G ¼ (50) **1060191**



Set 2 = 2 pressure test point G ¼, (50) **1060281**
"classic" measuring technique



Pressure test points made of brass resistant
to dezincification (DZR).

Set 3 = 1 pressure test point G¼, (50) **1060381**
"classic" measuring technique
1 fill and drain ball valve G ¼



Measuring adapter, (50) **1060298**
"classic" measuring technique



Set 13 = measuring adapter, (50) **1060296**
"classic" measuring technique
with fill and drain ball valve G ¼



Extended measuring adapter.

2 measuring adapters, (10) **1060299**
"classic" measuring technique



For differential pressure measurement at
the differential pressure regulators
"Hydromat DTR/DFC".

Extension for pressure test points (50) **1688290**
(L = 80 mm) with T-piece
connection



For differential pressure measurement, for
instance at the double regulating and
commissioning valve, and simultaneous
connection of the capillary of the differential
pressure regulator.

Set 9 = 2 measuring needles for (50) **1069199**
valves with "classic" measuring
technique



Set 11 = 1 pressure test point G (50) **1060391**
¼
1 fill and drain ball valve G ¼



Quick-coupling technic.

L = 80 mm (1 extension) (50) **1060295**
L = 40 mm (1 extension) (40) **1688295**



Pressure test point extension, can only be
mounted after having drained the system.



L = 100 mm
(2 pressure test points
with extensions)

(50) **1060282**






The pressure test point extensions can be
mounted without draining the system.



Bronze pressure test points
"classic" measuring technique

(50) **4209090**

Set = 2 pressure test points G 1/4

Article	Packing unit	Article-No.	Hint
Stem extensions			For double regulating and commissioning valves "Hydrocontrol VTR/ VPR/ MTR/ VFR/ VFC/ VFN/ VGC/ AFC".
	DN 10 - DN 50	(10) 1688296	L = 35 mm. For valve insulation with standard insulation material. Not suitable for use with Oventrop insulation shells.
	DN 65 - DN 150	(10) 1688297	
	Capillary 2 m long for "Hycoccon DTZ" and "Hydromat DTR"	(10) 1062095	The capillary can also be used for "Hydromat DTR" manufactured since 2012.
	Capillary 5 m long for "Hycoccon DTZ" and "Hydromat DTR"	(10) 1062097	
Bonnets			
for bronze double regulating and commissioning valves "Hydrocontrol VTR/VPR", "Hydrocontrol MTR/MPR" and cast iron double regulating and commissioning valves "Hydrocontrol VFC"			
	DN 10	1069003	The bonnets are required for replacement purposes or for the conversion of e. g. orifice and isolating valves to double regulating and commissioning valves. Bonnets item no. 4208192 (page 697) only for "Hydrocontrol MTR/MPR" DN 15 LF.
	DN 15	1069004	
	DN 20	1069006	
	DN 25	1069008	
	DN 32	1069010	
	DN 40	1069012	
	DN 50	1069016	
Diaphragm actuators			
for differential pressure regulator "Hydromat DTR", complete with connection set			
Nominal value: 50 to 300 mbar, infinitely adjustable			
	DN 15	1064592	
	DN 20	1064593	
	DN 25	1064594	
	DN 32	1064595	
	DN 40	1064596	
	DN 50	1064597	
Nominal value: 250 to 700 mbar, infinitely adjustable			
	DN 15	1064792	
	DN 20	1064793	
	DN 25	1064794	
	DN 32	1064795	
	DN 40	1064796	
	DN 50	1064797	

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Insulation shells



Insulation shells made of polyethylene flexible foam
for "Hydrocontrol VTR/VPR", "Hydrocontrol ATR/APR",
"Hydromat QTR" and "Hydromat DTR"
Operating temperature t_s : +100 °C

Meet the requirements of the German
Energy Saving Directive (EnEV) according
to appendix 5, table 1, line 5.

Only for heating systems.

DN 10 - DN 15	(100)	1060481
DN 20	(100)	1060482
DN 25	(125)	1060483
DN 32	(100)	1060484
DN 40	(100)	1060485
DN 50	(100)	1060486

Building material class B1 according to
DIN 4102.



Insulation shells made of polyurethane rigid foam
for "Hydrocontrol VTR/VPR", "Hydrocontrol ATR/APR",
"Hydromat QTR", "Hydromat DTR", as well as for free-flow
valves "Aquaström F" and "Aquaström KFR" valves
Operating temperature t_s : +130°C (for short periods up to +150°C)

Insulation shells (two-part) made of
polyurethane with tongue-and-groove fitting.
Meet the requirements of the German Energy
Saving Directive (EnEV), appendix 5, table 1,
line 5.

Building material class B2 according to DIN
4102.

DN 10 - DN 15	1060081
DN 20	1060082
DN 25	1060083
DN 32	1060084
DN 40	1060085
DN 50	1060086



**Insulation shells made of polyurethane rigid foam
with polystyrene shell**
for double regulating and commissioning valves
"Hydrocontrol VFC", "Hydrocontrol VFR",
"Hydrocontrol VFN", "Hydrocontrol VGC" and "Hydrocontrol AFC"
Operating temperature t_s : -10 °C up to +130 °C

For heating and cooling systems.
Building material class B2 according to
DIN 4102.

Meet the requirements of the German
Energy Saving Directive (EnEV) according to
appendix 5, table 1, line 5.

Cold insulation:

Min. fluid temperature: +6 °C

The insulation shells have to be bonded hermetically (restricted
diffusion tightness at low fluid temperature and at high ambient
temperature and/or humidity).

DN 20	1062581
DN 25	1062582
DN 32	1062583
DN 40	1062584
DN 50	1062585
DN 65	1062586
DN 80	1062587
DN 100	1062588
DN 125	1062589
DN 150	1062590

Accessories

for the double regulating and commissioning valves
"Hydrocontrol VTR/VPR" (up to DN 50),
"Hydrocontrol VFC" (up to DN 50) and "Hydrocontrol MTR/MPR"



Lead sealing set (10 fold) (10) **1089091**

Consisting of lead seal and locking wire.



Locking set (1 fold) (25) **1060180**

Consisting of locking cap, lead seal and
locking wire.



Article	Packing unit	Article-No.	Hint
Marking ring			Colour rings for marking the risers to be clipped onto the handwheel.
blue	(50)	1069650	
red	(50)	1069651	
violet	(50)	1069652	
green	(50)	1069653	

Article	Packing unit	Article-No.	Hint
Tailpipe sets for "Hycococon", "Hydrocontrol" and "Hydromat"			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
Set 5 = 2 weldable tailpipes			Max. operating pressure p _s : 16 bar (PN 16) Operating temperature t _s : -20 °C up to +150 °C
for valve DN 10	(10)	1060591	
for valve DN 15	(10)	1060592	
for valve DN 20	(10)	1060593	
for valve DN 25	(10)	1060594	
for valve DN 32	(5)	1060595	
for valve DN 40	(5)	1060596	
for valve DN 50	(5)	1060597	
Set 6 = 2 solder tailpipes			
18 mm for valve DN 15	(10)	1061091	
15 mm for valve DN 15	(10)	1061092	
18 mm for valve DN 20	(10)	1061093	
22 mm for valve DN 20	(10)	1061094	
28 mm for valve DN 25	(10)	1061095	
35 mm for valve DN 32	(5)	1061096	
42 mm for valve DN 40	(5)	1061097	
54 mm for valve DN 50	(5)	1061098	
Set 7 = 2 male threaded tailpipes			
R 3/8 for valve DN 10	(10)	1061491	
R 1/2 for valve DN 15	(10)	1061492	
R 3/4 for valve DN 20	(10)	1061493	
R 1 for valve DN 25	(10)	1061494	
R 1 1/4 for valve DN 32	(5)	1061495	
R 1 1/2 for valve DN 40	(5)	1061496	
R 2 for valve DN 50	(5)	1061497	
Set 8 = 2 female threaded tailpipes			
Rp 1/2 for valve DN 15	(10)	1061392	
Rp 3/4 for valve DN 20	(10)	1061393	
Rp 1 for valve DN 25	(10)	1061394	
Rp 1 1/4 for valve DN 32	(5)	1061395	
"Ofix" Compression fittings brass for female thread			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
"Ofix CEP" for copper pipes according to DIN EN 1057 compression nut nickel plated, metal to metal sealing			Max. operating pressure p _s : 25 bar (PN 25) Operating temperature t _s : -20 °C up to +150 °C
G 3/8 x 10 mm	(10)	1027151	The "Ofix" compression fittings for female thread are not supplied as a set of 2 pieces.
G 3/8 x 12 mm	(10)	1027152	
G 1/2 x 10 mm	(10)	1027150°	
G 1/2 x 12 mm	(10)	1027153°	
G 1/2 x 14 mm	(10)	1027154°	
G 1/2 x 15 mm	(10)	1027155°	
G 1/2 x 16 mm	(10)	1027156°	
G 3/4 x 18 mm	(10)	1027157	
G 3/4 x 22 mm	(10)	1027158	



Measuring orifices

PN 25 with 2 pressure test points "classic" measuring technique

made of brass resistant to dezincification (DZR)

inlet port female thread, outlet port male thread

DN 15 LF	0.55	(10)	1060644
DN 15 MF	1.20	(10)	1060634
DN 15	2.20	(10)	1060604
DN 20	4.25	(10)	1060606
DN 25	8.60	(10)	1060608
DN 32	15.90	(10)	1060610
DN 40	23.70	(10)	1060612
DN 50	48.00	(10)	1060616

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

The measuring orifices DN 15 and DN 20 are suitable for use with "Ofix" compression fittings, item no. 10271..., page 317 and 1028155, page 164.

Measuring method:

Determination of the flow rate by measuring the differential pressure via the measuring orifice. Modification of the flow rates irrespective of the presetting values can be read off directly with the help of the measuring system "OV-DMC 3".

Measuring system "OV-DMC 3": page 362

Description:

Measuring orifices made of brass resistant to dezincification.
Max. operating pressure: p_s 25 bar (PN 25)
Operating temperature t_s : -20 °C up to +150 °C

The measuring orifices made of brass resistant to dezincification (DZR) can be combined with any valves with female thread according to EN 10226, e. g.

"Hydrocontrol ATR"

item no.. 10675..

"Hycoccon ATZ"

item no. 10673..

Gate valves

item no.. 10400/30..

Oblique pattern globe valves

item no.. 10502/03.. and 10520/21..

"Aquastron" valves

item no. 420....

Double regulating and commissioning valves "Hydrocontrol MTR/MPR/MFC" with integrated measuring orifice: pages 304 and 305

Description:

Measuring orifices for installation between flanges.

Max. operating pressure p_s : 16 bar/ 25 bar (PN 16/ PN 25)

Operating temperature t_s : -10 °C up to +150 °C (1060771 - 78: t_s : -10 °C up to +120 °C)

The measuring orifices for installation between flanges can be combined with any flanged valves according to DIN EN 1092, e. g.

"Hydrocontrol VFR" (PN 16)

item no. 10626..

"Hydrocontrol VFC" (PN 16)

item no. 10623..

"Hydrocontrol VFN" (PN 25)

item no.: 10624..

Larger sizes on demand.

*Measuring orifices DN 65 and DN 80 are also suitable for flanges PN 25.



Wafer type to fit between two flanges "classic" measuring technique

made of stainless steel PN 16
with 2 extended pressure test points

DN 65	102.00		1060751°
DN 80	120.00		1060752°
DN 100	234.00		1060753
DN 125	335.00		1060754
DN 150	522.00		1060755
DN 200	780.00		1060756
DN 250	1,197.00		1060757
DN 300	1,810.00		1060758
DN 350	2,050.00		1060759
DN 400	2,650.00		1060760
DN 450	3,400.00		1060761
DN 500	4,200.00		1060762
DN 600	6,250.00		1060763
DN 700	10,690.00		1060764
DN 800	14,000.00		1060765
DN 900	17,577.00		1060766
DN 1,000	22,540.00		1060767

made of stainless steel PN 25
with 2 extended pressure test points

DN 100	234.00		1060853
DN 125	335.00		1060854
DN 150	522.00		1060855
DN 200	780.00		1060856
DN 250	1,197.00		1060857
DN 300	1,810.00		1060858
DN 350	2,050.00		1060859
DN 400	2,650.00		1060860
DN 450	3,400.00		1060861
DN 500	4,200.00		1060862
DN 600	6,250.00		1060863

made of cast iron (EN-GJL-250 DIN EN 1561) PN 16
with 2 extended pressure test points (L = 32 mm)

DN 65 °	93.00		1060771
DN 80 °	126.00		1060772
DN 100	244.00		1060773
DN 125	415.00		1060774
DN 150	540.00		1060775
DN 200	1,010.00		1060776
DN 250	1,450.00		1060777
DN 300	2,400.00		1060778





Article	Packing unit	Article-No.	Hint
Pressure test point extension			For wafer type measuring orifices made of cast iron item no. 1060771-78.
L = 80 mm (2 extensions)	(50)	1688291	



2.1.f "Hycoflow" Double regulating and commissioning valves with flow display

Content

"Hycoflow VTB"

322

Article	Control- range	kvs	Packing unit	Article-No.	Hint
---------	-------------------	-----	-----------------	-------------	------

"Hycoflow VTB"

Double regulating and commissioning valve with flow display PN 10

both ports male thread, flat sealing

DN 20	4 - 17 l/min	3.00	(10)	1060906
DN 25	10 - 40 l/min	8.30	(10)	1060908
DN 32	20 - 70 l/min	13.70	(5)	1060910



Inlet port: collar nut, outlet port: male thread

DN 25	5 - 40 l/min	5.50	1060925
-------	--------------	------	----------------



Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Measuring method:

Direct reading of the set volume flow.

Function:

Double regulating and commissioning valves with isolating facility and flow display. They facilitate the hydronic balancing of circuits or parts of the system and can be installed in the supply as well as in the return pipe either horizontally or vertically.

Description:

Max. operating pressure p_s : 10 bar (PN10)
Operating temperature t_s : up to 100 °C

Thread:

DN 20: G ¾

DN 25: G 1

DN 32: G 1¼



2.1.g "Cocon" Regulating valves

Content

"Cocon QTZ" Pressure independent control valves PN 25	324
"Cocon QTZ" Pressure independent control valves PN 16	326
"Cocon QTR" Pressure independent control valves PN 25 / PN 16	328
"Cocon QFC" Pressure independent control valves PN 16	328
"Cocon QFC" Pressure independent control valves PN 25	329
"Cocon QGC" Pressure independent control valves PN 16	329
"Cocon QDP" Differential pressure regulator PN 25	330
Accessories for "Cocon QTZ" PN 16, "Cocon QTR" and "Cocon QDP"	331
Accessories for "Cocon QTZ" PN 25	332
Accessories for "Cocon QTR" and "Cocon QFC"	332
Tailpipe sets	333
"OV-Flex HC" Flexible hoses	334
Accessories	334

Article Control range Packing unit Article-No.

Hint

**"Cocon QTZ" Pressure independent control valves PN 25
(flow control, threaded connection,
dezincification resistant brass)**

connection thread M 30 x 1.5
both ports with connections for "classic" measuring technique
(closed with blind plugs)

Inlet port: coupling, outlet port: female thread



DN 15	30 - 210 l/h	(10)	1143504
DN 15	150 - 700 l/h	(10)	1143604
DN 15	200 - 1300 l/h	(10)	1143704
DN 20	250 - 1800 l/h	(10)	1143606
DN 25	400 - 2500 l/h	(10)	1143608
DN 32	600 - 4800 l/h	(5)	1143610

with pressure test points "classic" measuring technique
Inlet port: coupling, outlet port: female thread



DN 15	30 - 210 l/h	(10)	1143104
DN 15	150 - 700 l/h	(10)	1143204
DN 15	200 - 1300 l/h	(10)	1143304
DN 20	250 - 1800 l/h	(10)	1143206
DN 25	400 - 2500 l/h	(10)	1143208
DN 32	600 - 4800 l/h	(5)	1143210

both ports with connections for "classic" measuring technique
(closed with blind plugs)
both ports male thread



DN 10	30 - 210 l/h	(10)	1143563
DN 10	150 - 700 l/h	(10)	1143663
DN 15	30 - 210 l/h	(10)	1143564
DN 15	150 - 700 l/h	(10)	1143664
DN 15	200 - 1300 l/h	(10)	1143764
DN 20	250 - 1800 l/h	(10)	1143666
DN 25	400 - 2500 l/h	(10)	1143668
DN 32	600 - 4800 l/h	(5)	1143670

with pressure test points "classic" measuring technique
both ports male thread



DN 10	30 - 210 l/h	(10)	1143163
DN 10	150 - 700 l/h	(10)	1143263
DN 15	30 - 210 l/h	(10)	1143164
DN 15	150 - 700 l/h	(10)	1143264
DN 15	200 - 1300 l/h	(10)	1143364
DN 20	250 - 1800 l/h	(10)	1143266
DN 25	400 - 2500 l/h	(10)	1143268
DN 32	600 - 4800 l/h	(5)	1143270

both ports with connections for "classic" measuring technique
(closed with blind plugs)
both ports female thread



DN 15	30 - 210 l/h	(10)	1147204
DN 15	150 - 700 l/h	(10)	1147304
DN 15	200 - 1300 l/h	(10)	1147404
DN 20	250 - 1800 l/h	(10)	1147306
DN 25	400 - 2500 l/h	(10)	1147308
DN 32	600 - 4800 l/h	(5)	1147310

Application:

Central heating and cooling systems (like fan convectors (fan coil units), chilled ceiling modules, induction air systems, cooling and heating zones) with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 25 bar (PN 25)
Operating temperature t_s : -10 °C up to +120 °C

Function:

Oventrop pressure independent control valves "Cocon QTZ" serve the automatic flow control (hydronic balancing) and the control of another variable (e.g. room temperature) by modifying the flow rate with the help of actuators, thermostats or temperature controllers. The max. flow is set to the required nominal value and is constantly maintained within the necessary proportional band. The installation can be drained, filled, bled and flushed via the measuring connections.

Fill and drain ball valve: page 312

Model both ports male threaded:

DN 10: G ½ male threaded connection, flat sealing

DN 15: G ¾ male threaded connection for compression fittings "Ofix", pages 164, 165 and 167.

With insert item no. 1661100 (page 150) suitable for flat sealing tailpipes.

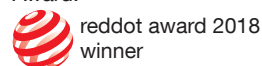
DN 20: G 1 male threaded connection for compression fittings, page 833.

With insert item no. 1650793 (page 331) suitable for flat sealing tailpipes.

DN 25: G 1¼ male threaded connection, flat sealing

DN 32: G 1¾ male threaded connection, flat sealing

Award:



Tailpipe sets: Page 331

Flexible hoses: Page 334

Combination possibilities of valves and actuators: Page 280



both ports with connections for "classic" measuring technique
both ports female thread

DN 15	30 - 210 l/h	(10)	1149204
DN 15	150 - 700 l/h	(10)	1149304
DN 15	200 - 1300 l/h	(10)	1149404
DN 20	250 - 1800 l/h	(10)	1149306
DN 25	400 - 2500 l/h	(10)	1149308
DN 32	600 - 4800 l/h	(5)	1149310



with mounted measuring orifice
and pressure test points "classic" measuring technique
both ports male thread

DN 15	30 - 210 l/h	(10)	1144864
DN 15	150 - 700 l/h	(10)	1144964
DN 15	200 - 1300 l/h	(10)	1145064
DN 20	250 - 1800 l/h	(10)	1144966

Article	Control range	Packing unit	Article-No.	Hint
---------	------------------	-----------------	-------------	------

**"Cocon QTZ" Pressure independent control valves PN 16
(flow control, threaded connection,
brass resistant to dezincification)**

connection thread M 30 x 1.5
both ports with connections for "classic" measuring technique
(closed with blind plugs)

Inlet port: coupling, outlet port: female thread



DN 15	30 - 210 l/h	(10)	1145504
DN 15	90 - 450 l/h	(10)	1145604
DN 15	150 - 1050 l/h	(10)	1145704
DN 20	150 - 1050 l/h	(10)	1145506
DN 20	180 - 1300 l/h	(10)	1145606
DN 25	300 - 2000 l/h	(5)	1145608
DN 32	600 - 3600 l/h	(5)	1145610

with pressure test points "classic" measuring technique
Inlet port: coupling, outlet port: female thread



DN 15	30 - 210 l/h	(10)	1146004
DN 15	150 - 1050 l/h	(10)	1146204
DN 15	90 - 450 l/h	(10)	1146104
DN 20	150 - 1050 l/h	(10)	1146006
DN 20	180 - 1300 l/h	(10)	1146106
DN 25	300 - 2000 l/h	(5)	1146108
DN 32	600 - 3600 l/h	(5)	1146110

both ports with connections for "classic" measuring technique
(closed with blind plugs)
both ports male thread



DN 10	30 - 210 l/h	(10)	1145563
DN 10	90 - 450 l/h	(10)	1145663
DN 15	30 - 210 l/h	(10)	1145564
DN 15	90 - 450 l/h	(10)	1145664
DN 15	150 - 1050 l/h	(10)	1145764
DN 20	150 - 1050 l/h	(10)	1145566
DN 20	180 - 1300 l/h	(10)	1145666

with pressure test points "classic" measuring technique
both ports male thread



DN 10	30 - 210 l/h	(10)	1146063
DN 10	90 - 450 l/h	(10)	1146163
DN 15	30 - 210 l/h	(10)	1146064
DN 15	90 - 450 l/h	(10)	1146164
DN 15	150 - 1050 l/h	(10)	1146264
DN 20	150 - 1050 l/h	(10)	1146066
DN 20	180 - 1300 l/h	(10)	1146166
DN 25	300 - 2000 l/h	(5)	1146168
DN 32	600 - 3600 l/h	(5)	1146170

both ports with connections for "classic" measuring technique
(closed with blind plugs)
both ports female thread



DN 15	30 - 210 l/h	(10)	1147504
DN 15	90 - 450 l/h	(10)	1147604
DN 20	150 - 1050 l/h	(10)	1147506
DN 15	150 - 1050 l/h	(10)	1147704
DN 20	180 - 1300 l/h	(10)	1147606
DN 25	300 - 2000 l/h	(5)	1147608
DN 32	600 - 3600 l/h	(5)	1147610

Tailpipe sets: Page 331

Flexible hoses: Page 334

"Unofix" Refurbishment of one pipe heating systems Page 124

Combination possibilities of valves and actuators: Page 280

Application:

Central heating and cooling systems (like fan convectors (fan coil units), chilled ceiling modules, induction air systems, cooling and heating zones) with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16),
232 psi

Operating temperature t_s : -10 °C up to +120 °C

Function:

Oventrop pressure independent control valves "Cocon QTZ" serve the automatic flow control (hydronic balancing) and the control of another variable (e.g. room temperature) by modifying the flow rate with the help of actuators, thermostats or temperature controllers. The maximum flow is set to the required nominal value and is constantly maintained within the necessary proportional band.

All valves DN 15 and DN 20 are suitable for the installation with copper pipes.

Model one port coupling, one port female thread:

Compression fittings page 164, reinforcing sleeves page 167.

Model both ports male threaded:

DN 10: G ½ male threaded connection, flat sealing

DN 15: G ¾ male threaded connection for compression fittings "Ofix", pages 164, 165 and 167.

With insert item no. 1661100 (page 150) suitable for flat sealing tailpipes.

DN 20: G 1 male threaded connection for compression fittings, page 833.

With insert item no. 1650793 (page 331) suitable for flat sealing tailpipes.

DN 25: G 1¼ male threaded connection, flat sealing

DN 32: G 1¾ male threaded connection, flat sealing

Award:



The Chicago Athenaeum:
Museum of Architecture and Design
GOOD DESIGN Award



Design Award of the
Federal Republic of Germany
Nominated

Article	Control range	Packing unit	Article-No.	Hint
---------	------------------	-----------------	-------------	------



with pressure test points "classic" measuring technique
both ports female thread

DN 15	30 - 210 l/h	(10)	1148504
DN 15	90 - 450 l/h	(10)	1148604
DN 15	150 - 1050 l/h	(10)	1148704
DN 20	150 - 1050 l/h	(10)	1148506
DN 20	180 - 1300 l/h	(10)	1148606
DN 25	300 - 2000 l/h	(5)	1148608
DN 32	600 - 3600 l/h	(5)	1148610



with mounted Venturi orifice
and pressure test points "classic" measuring technique
both ports male thread

DN 15	30 - 210 l/h	(10)	1144564
DN 15	90 - 450 l/h	(10)	1144664
DN 15	150 - 1050 l/h	(10)	1144764
DN 20	150 - 1050 l/h	(10)	1144566
DN 20	180 - 1300 l/h	(10)	1144666

Article	Control range	Article-No.	Hint
"Cocon QTR" Pressure independent control valves PN 25 / PN 16 (flow control, threaded connection, bronze) "classic" measuring technique			Application: Central heating and cooling systems (like fan convectors (fan coil units), chilled ceiling modules, induction air systems, cooling and heating zones) with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max operating pressure p _s : 16 bar (PN 16), 232 psi or 25 bar (PN 25), 362.5 psi Operating temperature t _s : -10 °C up to +120 °C Male thread: DN 40: Connection G 1¼, flat sealing DN 50: Connection G 2⅜, flat sealing
both ports female thread according to EN 10226, PN 25			
DN 40	1.5 - 7.5 m³/h	1146112	
DN 50	3.5 - 14 m³/h	1143116	
both ports male thread, PN 16			Function: Oventrop pressure independent control valves "Cocon QTZ" serve the automatic flow control (hydronic balancing) and the control of another variable (e.g. room temperature) by modifying the flow rate with the help of actuators, thermostats or temperature controllers. The maximum flow is set to the required nominal value and is constantly maintained within the necessary proportional band. Description "Cocon QTR": Body made of bronze. Description "Cocon QFC" (11461.., 16761..): Body made of cast iron (EN-GJL-250 DIN EN 1561) Description "Cocon QFC (11466.): Body made of nodular cast iron (EN-GJS-500 DIN EN 1563), DN 40 and DN 50 made of cast iron (EN-GJL-250 DIN EN 1561) Actuators: page 358 *US standard, class 150
DN 40	1.5 - 7.5 m³/h	1146172	
DN 50	2.5 - 10.0 m³/h	1146174	
"Cocon QFC" Pressure independent control valves PN 16 (flow control, flanged connection, cast iron) "classic" measuring technique			
both ports flanged according to EN 1092-2			
DN 40	1.5 - 7.5 m³/h	1146149	
DN 50	2.0 - 8.0 m³/h	1146150	
DN 65	5.0 - 20.0 m³/h	1146151	
DN 80	7.5 - 30.0 m³/h	1146152	
DN 100	12.5 - 50.0 m³/h	1146153	
DN 125	27.0 - 108.0 m³/h	1146154	
DN 150	36.0 - 150.0 m³/h	1146155	
DN 200	55.0 - 190.0 m³/h	1146156	
High-flow model			
DN 125		1143154	
DN 150		1143155	
both ports flanged with hole circle according to ANSI*			
DN 40	1.5 - 7.5 m³/h	1676149	
DN 50	2.0 - 8.0 m³/h	1676150	
DN 65	5.0 - 20.0 m³/h	1676151	
DN 80	7.5 - 30.0 m³/h	1676152	
DN 100	12.5 - 50.0 m³/h	1676153	
DN 125	27.0 - 108.0 m³/h	1676154	
DN 150	36.0 - 150.0 m³/h	1676155	
DN 200	55.0 - 190.0 m³/h	1676156	

Article	Control range	Article-No.	Hint
---------	------------------	-------------	------

"Cocon QFC" Pressure independent control valves PN 25
(flow control, flanged connection, cast iron)
"classic" measuring technique



both ports flanged according to DIN EN 1092-2

DN 40	1.5 - 7.5 m³/h	1146649
DN 50	2.0 - 8.0 m³/h	1146650
DN 65	5.0 - 20.0 m³/h	1146651
DN 80	7.5 - 30.0 m³/h	1146652
DN 100	12.5 - 50.0 m³/h	1146653
DN 125	27.0 - 108.0 m³/h	1146654
DN 150	36.0 - 150.0 m³/h	1146655
DN 200	55.0 - 190.0 m³/h	1146656

"Cocon QGC" Pressure independent control valves PN 16
(flow control, flanged connection, cast iron)
"classic" measuring technique



both ports groove connection for couplings

DN 65	5.0 - 20.0 m³/h	1676251
DN 80	7.5 - 30.0 m³/h	1676252
DN 100	12.5 - 50.0 m³/h	1676253



Article	Packing unit	Article-No.	Hint
"Cocon QDP" Differential pressure regulator PN 25 (differential pressure control, threaded connection, brass resistant to dezincification)			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 25 bar (PN 25) Operating temperature t_s : -10 °C up to +120 °C Max. differential pressure: 3 bar Max. flow rate: DN 20 - 1.35 m³/h (Δp 100 mbar across the controlled installation), DN 25 - 1.54 m³/h (Δp 100 mbar across the controlled installation) Function: The differential pressure regulators "Cocon QDP" with flow limitation and zone control are preset to a fixed nominal value for differential pressure control. With the differential pressure in the installation increasing, the regulator maintains a constant differential pressure within a necessary proportional band without auxiliary energy. Moreover, the regulators serve the control of another variable (e.g. room temperature) by modifying the flow rate with the help of actuators, thermostats or temperature controllers. The differential pressure regulators are designed for installation in the return pipe. The regulators are supplied complete with connection set (capillary length 1 m). DN 20: Connection G 1 for compression fittings, page 833 With insert item no. 1650793 (page 331) suitable for flat sealing tailpipes. DN 25: Connection G 1¼, flat sealing
Connection thread M 30 x 1.5 both ports male thread			
DN 20	(10)	1144606	
DN 25	(10)	1144608	

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Accessories for "Cocon QTZ" PN 16, "Cocon QTR" and "Cocon QDP"

**Tailpipe sets, flat sealing
with collar nut and ring gasket**



Set = 2 weldable tailpipes

for valve DN 10	(10)	1140591
for valve DN 15	(10)	1140592
for valve DN 20	(10)	1140593
for valve DN 25	(10)	1140594
for valve DN 32	(5)	1140595
for valve DN 40	(5)	1140596
for valve DN 50	(5)	1140597

DN 15 and DN 20:

Supplied with insert (change-over from tapered to flat sealing).



Set = 2 solder tailpipes

18 mm for valve DN 15	(10)	1140691
15 mm for valve DN 15	(10)	1140692
18 mm for valve DN 20	(10)	1140693
22 mm for valve DN 20	(10)	1140694
28 mm for valve DN 25	(10)	1140695
35 mm for valve DN 32	(5)	1140696
42 mm for valve DN 40	(5)	1140697
54 mm for valve DN 50	(5)	1140698



Set = 2 male threaded tailpipes

R 3/8 for valve DN 10	(10)	1140791
R 1/2 for valve DN 15	(10)	1140792
R 3/4 for valve DN 20	(10)	1140793
R 1 for valve DN 25	(10)	1140794
R 1 1/4 for valve DN 32	(5)	1140795
R 1 1/2 for valve DN 40	(5)	1140796
R 2 for valve DN 50	(5)	1140797



Set = 2 female threaded tailpipes

Rp 1/2 for valve DN 15	(10)	1140892
Rp 3/4 for valve DN 20	(10)	1140893
Rp 1 for valve DN 25	(10)	1140894
Rp 1 1/4 for valve DN 32	(5)	1140895

Insulation shells for "Cocon QTZ" PN 16



DN 15 - DN 20	1149104
DN 20	1149106
(model: 180 - 1300 l/h)	
DN 25 - DN 32	1149108

Insulation, consisting of two shells.

For heating and cooling systems.

Meet the requirements of the German Energy Saving Directive (EnEV) according to appendix 5, table 1, line 5.

Operating temperature ts: -10 °C up to +120 °C

Cold insulation:

Min. fluid temperature: +6 °C

The insulation shells have to be bonded hermetically (restricted diffusion tightness at low fluid temperature and at high ambient temperature and/or humidity).



Insert	(100)	1650793
--------	-------	---------

For "Cocon QTZ" and "Optibal W6" DN 20 with male threaded connection G 1.
Suitable for flat sealing tailpipes.

Tailpipe sets: Pages 333, 339
Flexible hoses: Page 334

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------



Adapter for "Cocon QTZ"

For the conversion of the rotary movement of the actuator (90°) into a stroke lift required for the valve (25) **1149095**



Adapter with stem for "Cocon QTZ", thermostatic valves Extension = 25 mm (10) **1149190**

Is required if the "Cocon QTZ" valves shall be equipped with insulation shells and actuators.

Accessories for "Cocon QTZ" PN 25 Tailpipe sets, flat sealing/tapered sealing, with collar nut and O-ring



Set = 2 female threaded tailpipes

DN 15 and DN 20 with tapered sealing.

Rp ½ for valve DN 15	(10)	1141292
Rp ¾ for valve DN 20	(10)	1141293
Rp 1 for valve DN 25	(10)	1141294
Rp 1¼ for valve DN 32	(5)	1141295



Set = 2 male threaded tailpipes

DN 15 and DN 20 with tapered sealing.

R ⅜ for valve DN 10	(10)	1140281
R ½ for valve DN 15	(10)	1140282
R ¾ for valve DN 20	(10)	1140284
R 1 for valve DN 25	(10)	1140285
R 1¼ for valve DN 32	(5)	1140286

Accessories for "Cocon QTR" and "Cocon QFC"

Adapter set for the adaptation of actuators of other manufacturers to Oventrop "Cocon QTR/QFC" valves



Adapter (Siemens)	(10)	1149011
Adapter (Honeywell)	(10)	1149021
Adapter (Johnson Controls)	(10)	1149031
Adapter (Belimo)	(10)	1149041

Actuator types:

1149011:

DN 40 - 100 SAX 61.03

DN 65 - 200 SKC 60

1149021:

DN 65 - 100 ML 7421 A3004

DN 65 - 100 ML 7420 A6009

DN 125 - 200 ML 7421 B3003

(restricted flow in combination with DN 150/ 200)

1149031:

DN 65 - 100 VA 7810-GGA-12

DN 125 - 200 VA 1125-GGA-1

1149041:

DN 40 - 200 AV24-MFT

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Tailpipe sets

with tapered sealing, with O-ring,
for "Cocon QTZ"



Solder tailpipe, 2-fold

12 mm DN 15	(10)	1140181
15 mm DN 15	(10)	1140182
18 mm DN 20	(10)	1140183
22 mm DN 20	(10)	1140184



Plug-in tailpipe, 2-fold

10 mm DN 15	(10)	1140380
12 mm DN 15	(10)	1140381
15 mm DN 15	(10)	1140382
18 mm DN 20	(10)	1140383
22 mm DN 20	(10)	1140384

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

**"OV-Flex HC" Flexible hoses
for heating and cooling systems**

one port G 3/4 collar nut with tapered sealing,
one port plug-in fitting for copper pipe according to EN 1057

for 15 mm copper pipe (100) **1140352**

one port G 3/4 collar nut, flat sealing,
one port plug-in fitting for copper pipe according to EN 1057

for 15 mm copper pipe (100) **1140552**

both ports G 3/4 collar nut, flat sealing

for 15 mm copper pipe (100) **1140451**

both ports G 1 collar nut, flat sealing

for 15 mm copper pipe (100) **1140452**

Diffusion impeding, flexible hose made of EPDM with outer sleeve made of stainless steel wire mesh.
Length: 500 mm

Application:
Heating and cooling systems (e. g. for the connection of radiant and chilled ceilings) with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : 0 °C up to 70 °C

Tapered sealing connection:
Suitable for "Cocon QTZ" with G 3/4 male thread.

Length: 610 mm

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : 0 °C up to 70 °C

Accessories

Fill and drain tool
for valves with "eco" measuring technique **1061791**

"eco" measuring technique:
For draining, venting and filling the installation.

Set = 2 measuring needles for
valves with "eco" measuring technique (25) **1061799**

For measurement with measuring systems "OV-DMC 3", "OV-DMC 2" and "OV-DMPC".

Measuring adapter,
"classic" measuring technique (50) **1060298**

Set 9 = 2 measuring needles for
valves with "classic" measuring technique (50) **1069199**



"FSA" Filling and isolation device
for chilled ceilings

DN 15

(10) **1149004**

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +120 °C

Function:
Filling and isolation device "FSA" for filling,
draining and isolating by turning the handle by
90°.



Service tool

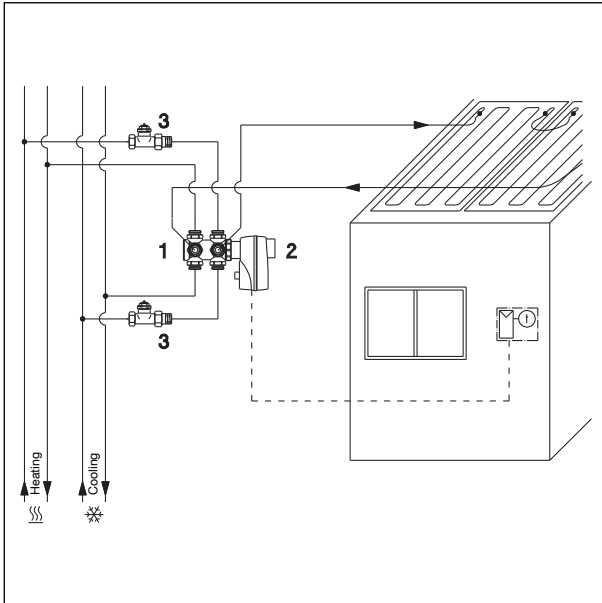
1090551



2.1.h "Optibal" W6 Six-way ball valve

Content

System illustrations	338
"Optibal W6" Six-way ball valve	339
Tailpipe sets	339



Six-way ball valve with rotary actuator and thermostatic valves "AQ" in the supply of the heating and cooling circuit.

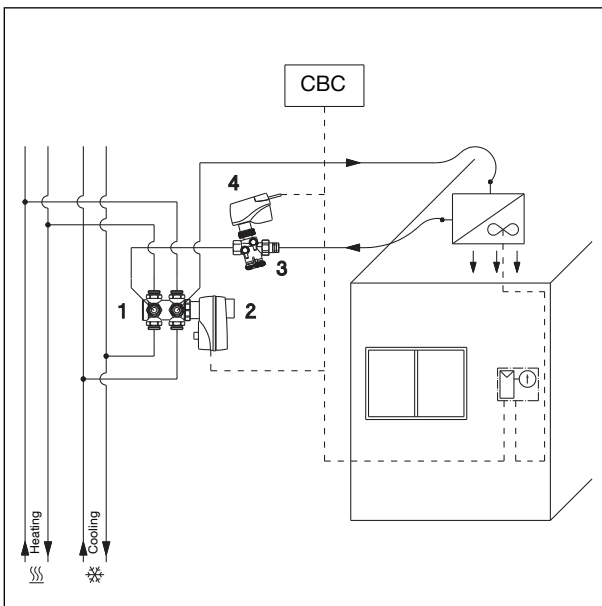
Automatic hydronic balancing is carried out by the thermostatic radiator valves "AQ" with combined control and regulating function in any position of the six-way ball valve during heating and cooling operation. The infinitely adjustable presetting of the maximum permissible volume flow can be carried out separately for both types of operation.

In case of larger volume flows, the pressure independent control valves "Cocon QTZ" can be installed instead of the thermostatic valves "AQ".

As the volume flow is constantly maintained in the terminal unit "chilled/radiant ceiling" by the valve combination, the terminal unit is not affected by differential pressure variations in the heating or cooling system.

Example:

- 1 Six-way ball valve, item no. 1132004
- 2 Rotary actuator, item no. 1132030
- 3 Thermostatic valve "AQ", item no. 1183164

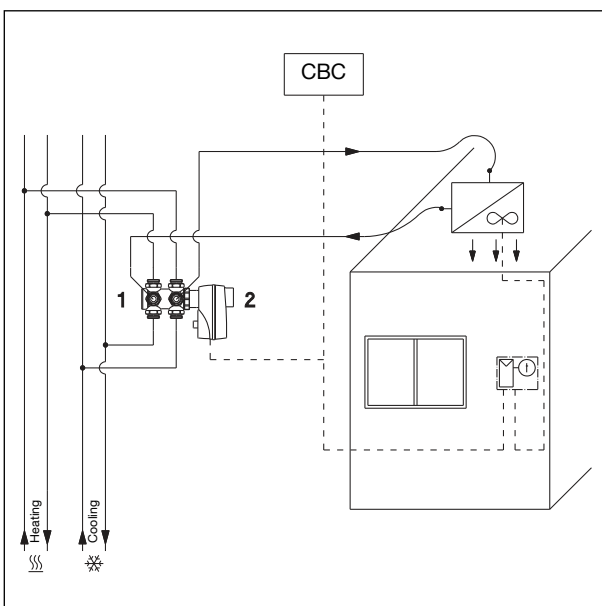


Six-way ball valve with rotary actuator, pressure independent control valve "Cocon QTZ" and stroke actuator in the return of the terminal unit.

Contrary to the application with the thermostatic valves "AQ" in the supply of the heating and cooling circuit, automatic hydronic balancing is guaranteed by the pressure independent control valve "Cocon QTZ" in the return of the terminal unit. The different volume flows which are required for the operating conditions heating/cooling can be realised with the help of the different characteristic lines of the actuator and stroke limitations.

Example:

- 1 Six-way ball valve, item no. 1132004
- 2 Rotary actuator, item no. 1132030
- 3 Pressure independent control valve "Cocon QTZ", item no. 1143264
- 4 Electromotive actuator "Aktor M", item no. 1012705



Six-way ball valves with rotary actuator as change-over and control ball valve with kvs orifice.

Integration option into a centralised building control system.

Example:

- 1 Six-way ball valve, item no. 1132004 with mounted kvs orifices of set item no. 1132020
- 2 Rotary actuator, item no. 1132030



"Optibal W6" Six-way ball valve
for switching between heating and cooling
in a four-pipe system

DN 15, G ¾ with inner taper **1132004**
DN 20, G 1 with inner taper (10) **1132006**


Application:
Four-pipe heating and cooling systems
for the connection of radiant/chilled
ceilings and fan coils.

PN 16
Max. differential pressure: 2 bar
Operating temperature t_s : 0 °C up to +90°C

Body made of dezincification resistant
brass.

Kvs value (without orifice): 3.2
Distance between pipe centres: 50 mm
Connections:

DN 15:
G ¾ male thread with cone "Euro"
according to EN 16313
DN 20:
G 1 male thread with taper

Award:
 GERMAN DESIGN AWARD
SPECIAL 2019



Kvs orifice set
with integrated control contour
Kvs values: 0.25/ 0.4/ 0.63/ 1,0/ 1.6 and 2.5
The set consists of 2 Kvs orifices.

(10) **1132020**

Kvs orifices for the supply pipes for
flow limitation.
High quality plastic.
The orifices feature a control contour which
allows for a linear up to equal percentage
flow control via the rotary actuator.



"Aktor R ST L"
Rotary actuator for six-way ball valve,
24 V, proportional rotary actuator 0 - 10 V
(or two point via forced control 24 V)
with position feedback signal 0 - 10 V

For DN 15 and DN 20 **1132030**

Rotary actuator for Oventrop six-way ball valve
Torque: 5 Nm
Angle of rotation: 90 °
With manual setting

Tailpipe sets
with tapered sealing with O-ring



Solder tailpipe, 2-fold

12 mm DN 15 (10) **1140181**
15 mm DN 15 (10) **1140182**
18 mm DN 20 (10) **1140183**
22 mm DN 20 (10) **1140184**



Plug-in tailpipe, 2-fold

10 mm DN 15 (10) **1140380**
12 mm DN 15 (10) **1140381**
15 mm DN 15 (10) **1140382**
18 mm DN 20 (10) **1140383**
22 mm DN 20 (10) **1140384**

Inserts



Insert (100) **1650793**

For "Cocon QTZ" and "Optibal W6" DN 20 with
male threaded connection G 1.
Suitable for flat sealing tailpipes.



Insert as set = 2 pieces
for cone according
to DIN EN 16313 (cone "Euro") (50) **1661100**

For "Multiflex F/DP", "Multiblock T/TU/TFU/
TQ/T-RTL/TQ-RTL", "Cocon QTZ" and
"Optibal W6" DN 15 with G ¾ male
threaded connection.
Suitable for flat sealing tailpipes.

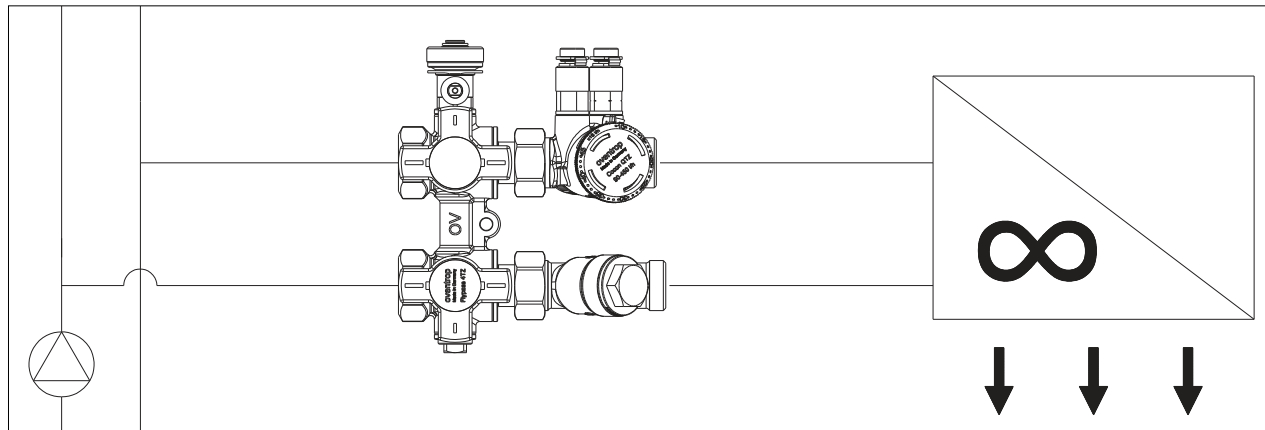
2.1.i "Flypass" Connection systems, valves and fittings

Content

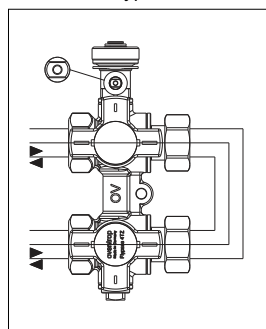


"Flypass" System illustration	342
"Flypass" Connection sets	343
"Flypass 4TZ" Connection fitting	346
Valves for combination with the "Flypass 4TZ"	346
Accessories	347

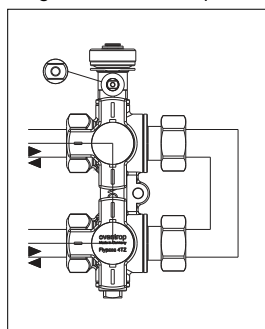
System example with "Flypass set 1":



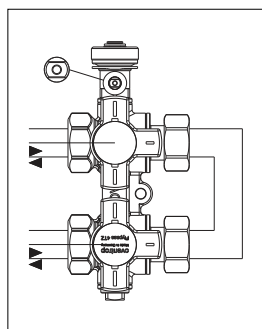
Functions "Flypass 4TZ", connection fitting/installation example:



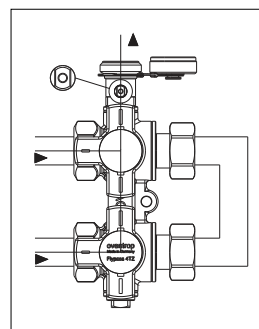
Normal operation



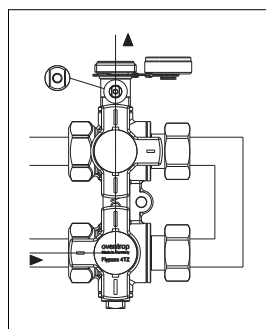
Bypass operation



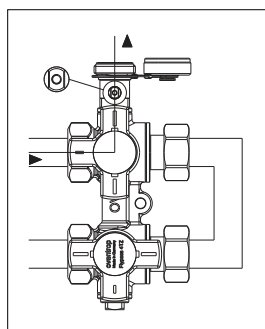
Isolation



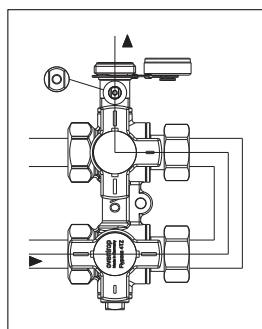
Filling and bleeding the
system side



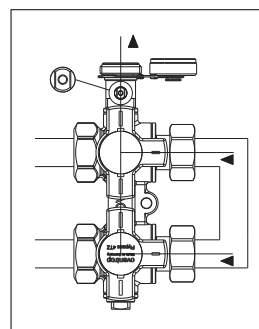
Draining of the system and
appliance side and bleeding
and flushing the system side



Draining, bleeding and
flushing the system side

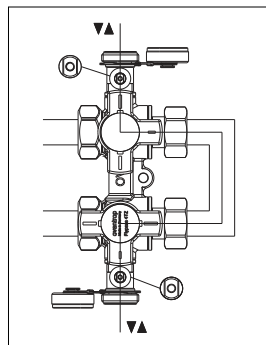


Filling, bleeding and flushing
the appliance side (1)

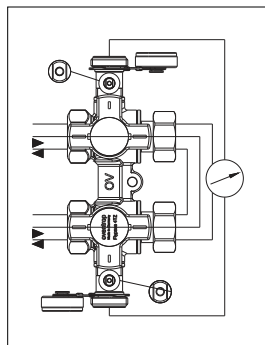


Isolating and draining the
appliance side

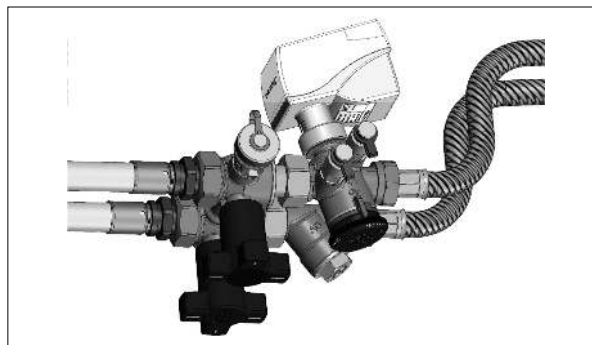
Functions "Flypass 4TZ" with accessories (fill and drain ball valve 1060191)



Re-filling, bleeding and
flushing appliance side (1) (2)



Differential pressure
measurement (3)



Installation example "Flypass" connection system consisting of:
"Flypass 4TZ" and accessories (to be ordered separately)

(1) If required, open all components on the appliance side completely.

(2) Accessory fill and drain valve required

(3) Accessory fill and drain valve as well as measuring system "OV-DMC3" or "OV-DMPC" required



Article	Article-No.	Hint
"Flypass" Connection sets		
"Flypass set 1"		
DN 15	1149450	
consisting of:		
1 x "Flypass 4TZ"	1149504	
1x Strainer	1141004	
1x "Cocon QTZ", PN 16 (30 - 210 l/h)	1146064	
1x Insert set (2 pces.)	1661100	
DN 15	1149550	
consisting of:		
1x "Flypass 4TZ"	1149504	
1x Strainer	1141004	
1x "Cocon QTZ", PN 16 (90 - 450 l/h)	1146164	
1x Insert set (2 pces.)	1661100	
DN 15	1149650	
consisting of:		
1x "Flypass 4TZ"	1149504	
1x Strainer	1141004	
1x "Cocon QTZ", PN 16 (150 - 1050 l/h)	1146264	
1x Insert set (2 pces.)	1661100	
DN 15	1149553	
consisting of:		
1x "Flypass 4TZ"	1149504	
1x Strainer	1141004	
1x "Cocon QTZ", PN 16 (30 - 210 l/h)	1144564	
with mounted Venturi orifice		
1x Female threaded tailpipe set (2 pces.)	1140892	
DN 20	1149551	
consisting of		
1x "Flypass 4TZ"	1149506	
1x Strainer	1141006	
1x "Cocon QTZ", PN 16 (150 - 1050 l/h)	1146066	
2x Insert	1650793	
DN 20	1149651	
consisting of:		
1x "Flypass 4TZ"	1149506	
1x Strainer	1141006	
1x "Cocon QTZ", PN 16 (180 - 1300 l/h)	1146166	
2x Insert	1650793	
DN 20	1149554	
consisting of:		
1x "Flypass 4TZ"	1149506	
1x Strainer	1141006	
1x "Cocon QTZ", PN 16 (180 - 1300 l/h)	1144666	
with mounted Venturi orifice		
1x Female threaded tailpipe set (2 pces.)	1140893	
DN 25	1149552	
consisting of:		
1x "Flypass 4TZ"	1149506	
1x Strainer	1141006	
1x "Cocon QTZ", PN 16 (300 - 2000 l/h)	1146168	



Article	Article-No.	Hint
"Flypass set 2"		
DN 15	1149560	
consisting of:		
1x "Flypass 4TZ"	1149504	
1x Strainer	1141004	
1x "Hydrocontrol VTR"	1060564	
DN 15	1149562	
consisting of:		
1x "Flypass 4TZ"	1149504	
1x Strainer	1141004	
1x "Hydrocontrol MTR"	1061964	
1x Female threaded tailpipe set (2 pces.)	1140892	
DN 15	1149563	
consisting of:		
1x "Flypass 4TZ"	1149504	
1x Strainer	1141004	
1x "Hydrocontrol MTR"	1061904	
1x Female threaded tailpipe set (2 pces.)	1140892	
DN 20	1149561	
consisting of:		
1x "Flypass 4TZ"	1149506	
1x Strainer	1141006	
1x "Hydrocontrol VTR"	1060566	
DN 20	1149564	
consisting of:		
1x "Flypass 4TZ"	1149506	
1x Strainer	1141006	
1x "Hydrocontrol MTR"	1061906	
1x Female threaded tailpipe set (2 pces.)	1140893	

Further connection sets

	Exemplary valve sets:	Components:	Item no.	
			DN 15	DN 20
	"Flypass set 3" consisting of "Flypass" fitting with strainer and double regulating and commissioning valve with flow display "Hycoflow VTB"	1x "Flypass 4TZ" 1x Strainer 1x "Hycoflow VTB" Double regulating and commissioning valve with flow display	1149504	1149506
			1141004	1141006
	"Flypass set 4" consisting of "Flypass" fitting with strainer and regulating valve "Hycoccon ETZ"	1x "Flypass 4TZ" 1x Strainer 1x "Hycoccon ETZ" Regulating valve	1149504	1149506
			1141004	1141006
	"Flypass set 5" consisting of fitting "Flypass" with strainer and double regulating and commissioning valve "Hycoccon VTZ"	1x "Flypass 4TZ" 1x Strainer 1x "Hycoccon VTZ" Double regulating and commissioning valve	1149504	1149506
			1141004	1141006
	"Flypass Set 6" consisting of "Flypass" fitting with strainer and double regulating and commissioning valve "Hydrocontrol MTR"	1x "Flypass 4TZ" 1x Strainer 1x "Hydrocontrol MTR" Double regulating and commissioning valve	1149504	1149506
			1141004	1141006
	"Flypass Set 7" consisting of "Flypass" fitting with double nipple and double regulating and commissioning valve "Hydrocontrol MTR"	1x "Flypass 4TZ" 1x Double nipple 1x "Hydrocontrol MTR" Double regulating and commissioning valve	1149504	1149506
			1149070	1149071
			10619..	1061906



"Flypass 4TZ" Connection fitting
PN 16

one port female thread,
one port collar nut
(flat sealing with enclosed ring gasket)

DN 15	22.00	1149504
DN 20	34.00	1149506

Application:
Central heating and cooling systems (like fan convectors (fan coil units), chilled ceiling modules, induction air systems, cooling and heating zones) with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).
Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to 120 °C
Function:
The Oventrop connection fitting "Flypass 4TZ" is used for the isolation, flushing, draining and bleeding of the supply and return pipe installed in the flow direction in front of the fitting or of the succeeding sections of the system. The connection fitting can be converted to bypass operation. The ball positions and thus the flow directions are displayed by the shape of the handle.

Valves for combination with the "Flypass 4TZ"



Strainer PN 25

both ports male thread, flat sealing
with double wire basket 250 µm

DN 15	2.70	(10)	1141004
DN 20	4.80	(10)	1141006

On principle, all flat sealing Oventrop valves in corresponding size with male thread $\frac{3}{4}$ (DN 15) or male thread 1 (DN 20) can be combined with the connection fitting "Flypass 4TZ".
The adapter 1149075/76 is required when using female threaded valves.

"Cocon QTZ" Pressure independent control valve PN 16



both ports with connections for "classic" measuring technique
(closed with blind plugs)
both ports male thread

DN 15	30 - 210 l/h	(10)	1145564
DN 15	90 - 450 l/h	(10)	1145664
DN 15	150 - 1050 l/h	(10)	1145764
DN 20	150 - 1050 l/h	(10)	1145566
DN 20	180 - 1300 l/h	(10)	1145666

"Cocon QTZ"
DN 15: G $\frac{3}{4}$ male threaded connection for compression fittings "Ofix", pages 164, 165 and 167.
With insert item no. 1661100 (page 348) suitable for flat sealing tailpipes.

DN 20: G 1 male threaded connection for compression fittings, page 833.
With insert item no. 1650793 (page 348) suitable for flat sealing tailpipes.



with pressure test points "classic" measuring technique
both ports male thread

DN 15	30 - 210 l/h	(10)	1146064
DN 15	90 - 450 l/h	(10)	1146164
DN 15	150 - 1050 l/h	(10)	1146264
DN 20	150 - 1050 l/h	(10)	1146066
DN 20	180 - 1300 l/h	(10)	1146166



"Hydrocontrol MTR" with integrated measuring orifice
"classic" measuring technique
both ports male thread, flat sealing

DN 15 LF	0.55	(10)	1061964
DN 15 MF	1.15	(10)	1061934
DN 15 HF	2.10	(10)	1061904
DN 20	3.70	(10)	1061906

Spare parts for strainers: Page 420
"Unofix" Refurbishment of one pipe heating systems Page 124

Article	Control- range	kvs	Packing unit	Article-No.	Hint
---------	-------------------	-----	-----------------	-------------	------

"Hycoccon VTZ"
Double regulating and commissioning valves PN 16

both ports male thread, flat sealing



DN 20		2.70	(10)	1061856	
-------	--	------	------	----------------	--

**"Hycocflow VTB" Double regulating and commissioning valves with
flow display PN 10**

both ports male thread, flat sealing



DN 20	4 - 17 l/min	3.00	(10)	1060906	
DN 25	10 - 40 l/min	8.30	(10)	1060908	

"Hycoccon ETZ" Regulating valves PN 16

both ports male thread, flat sealing



DN 15		0.90	(10)	1063964	
DN 20		0.90	(10)	1063966	

"Hycoccon HTZ" Regulating valves PN 16

both ports male thread, flat sealing



DN 15		1.70	(10)	1064264	
DN 20		2.70	(10)	1064266	
DN 20		5.00	(10)	1064267	






Accessories

Adapter
one port male thread (valve connection),
one port male thread, flat sealing



DN 15		(10)	1149075	
DN 20		(10)	1149076	

For the connection of female threaded valves
to the connection fitting "Flypass 4TZ". The
adapter has to be screwed into the female
threaded connection of the valve.

	Article	Packing unit	Article-No.	Hint
	Double nipple both ports male thread, flat sealing			For the direct connection of flat sealing pipes or valves with collar nut to the connection fitting "Flypass 4TZ" . Both ports male thread.
	DN 15	(10)	1149070	
	DN 20	(10)	1149071	
	Insert	(100)	1650793	For "Cocon QTZ" and "Optibal W6" DN 20 with male threaded connection G 1. Suitable for flat sealing tailpipes.
	Insert as set = 2 pieces for cone according to DIN EN 16313 (cone "Euro")	(50)	1661100	For "Multiflex F/DP", "Multiblock T/TU/TFU/ TQ/T-RTL/TQ-RTL", "Cocon QTZ" and "Optibal W6" DN 15 with G 3/4 male threaded connection. Suitable for flat sealing tailpipes.
	Insulation shells for connection sets "Flypass"			Insulation, consisting of two shells. Meet the requirements of the German Energy Saving Directive (EnEV) according to appendix 5, table 1, line 5. Building material class B2 according to DIN 4102. Operating temperature t_s : -10 °C up to +120 °C
	Polyurethane rigid foam with polystyrene shell			
	DN 15 - DN 20		1149581	
	Expanded polypropylene			For heating and cooling systems. Cold insulation: Min. fluid temperature: +6 °C The insulation shells have to be bonded hermetically (restricted diffusion tightness at low fluid temperature and at high ambient temperature and/or humidity).
	DN 15 - DN 20		1149580	Suitable for "Flypass set 1" (except for item no. 1149651, 1149552, 1149553, and 1149554), "Flypass set 2" (except for item no. 1149562, 1149563 and 1149564) and "Flypass sets 3 - 7" listed in the catalogue.
	DN 25		1149582	
	Adapter with stem for "Cocon QTZ", thermostatic valves Extension = 25 mm	(10)	1149190	Is required if the "Cocon QTZ" valves shall be equipped with insulation shells and actuators.



2.1.j "Tri-CTR" Three-way valves, temperature controllers

Content

"Tri-CTR" Three-way diverting and mixing valves PN 16	350
Accessories sets for three-way valves "Tri-CTR"	350
Temperature controllers	351
"Combi LR" Radiator lockshield valves	351
Two-way valve PN 16	352
Two-way valve PN 16	352



**"Tri-CTR" Three-way diverting and mixing valves PN 16
(three-way valve, threaded connection, bronze)**

connection thread M 30 x 1.5
with collar nuts, flat sealing

DN 15	2.50	(10)	1131204
DN 20	4.40	(10)	1131206
DN 25	5.70	(10)	1131208
DN 32	7.20	(5)	1131210
DN 40	8.50	(5)	1131212
DN 50	10.00	(5)	1131216

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +120 °C

Application, for instance for storage cylinder loading function or heating installations with two heat generators, for instance in solar plants or heat pump systems (bivalent heating systems).

Accessories sets for three-way valves "Tri-CTR"

Weldables tailpipe 3-fold



for valve DN 15	(10)	1130091°
for valve DN 20	(10)	1130093°
for valve DN 25	(10)	1130094°
for valve DN 32	(5)	1130095°
for valve DN 40	(5)	1130096°
for valve DN 50	(5)	1130098°

Male thread:

DN 15: G ¾

DN 20: G 1

DN 25: G 1 ¼

DN 32: G 1 ½

DN 40: G 2

DN 50: G 2 ½

The valves can be used in combination with Oventrop temperature controllers or actuators.

Solder tailpipes 3-fold



15 mm for valve DN 15	(10)	1130191°
15 mm for valve DN 20	(10)	1130192°
18 mm for valve DN 20	(10)	1130193°
22 mm for valve DN 20	(10)	1130194°
28 mm for valve DN 25	(10)	1130195°
35 mm for valve DN 32	(5)	1130199°
35 mm for valve DN 40	(5)	1130196°
42 mm for valve DN 40	(5)	1130197°
54 mm for valve DN 50	(5)	1130198°

Function:

For use as diverting valve, the three-way valve has one inlet port (AB) and two outlet ports (A and B). Depending on the position of the valve disc, the direction of flow is diverted from one to the other outlet port.

For use as mixing valve, the three-way valve has two inlet ports (A and B) and one outlet port (AB). Depending on the position of the valve disc, the cold and hot water is mixed.

The three-way valves "Tri-CTR" can be used for high differential pressures.

Threaded tailpipes 3-fold



R ½ for valve DN 15	(10)	1130291
R ½ for valve DN 20	(10)	1130292
R ¾ for valve DN 20	(10)	1130293
R 1 for valve DN 25	(10)	1130294
R 1¼ for valve DN 32	(5)	1130299
R 1¼ for valve DN 40	(5)	1130295
R 1½ for valve DN 40	(5)	1130296
R 2 for valve DN 50	(5)	1130298

Awards:



ICONIC AWARDS 2018
Innovative Interior



German Innovation Award 2018
Winner



GERMAN DESIGN AWARD
SPECIAL 2019

Article	kv s	Packing unit	Article-No.	Hint
---------	---------	-----------------	-------------	------

Temperature controllers

connection thread M 30 x 1.5

Temperature controller with immersion sensor

Immersion pocket G 1/2 connection

Control range

Capillary length

20 - 50 °C	2 m	1140561
40 - 70 °C	2 m	1140562
50 - 80 °C	2 m	1140563
70 - 100 °C	2 m	1140564
20 - 50 °C	5 m	1140571
40 - 70 °C	5 m	1140572
70 - 100 °C	5 m	1140574
Immersion pocket only		1141091



Application:

Water, max. sensor temperature 30 K above the set value.

For industrial installations, water heaters, air heaters, hot cabinets, dish-washers, surface heating systems or similar.

The control range can be limited or locked.

Temperature controller with contact sensor and heat transfer unit

Control range

Capillary length

20 - 50 °C	2 m	1142861
30 - 60 °C	2 m	1142862
40 - 70 °C	2 m	1142863
50 - 80 °C	2 m	1142864



"Combi LR" Radiator lockshield valves

Presetting, isolating

brass, nickel plated

Straight pattern

10 DN	1.80	(25)	1027662
15 DN	1.80	(25)	1027664
20 DN	2.40	(10)	1027666
25 DN	3.20	(10)	1027668



Acts as throttling valve in combination with the temperature controller to limit the flow temperature of surface heating installations.

Selection of valves:

up to 85 m² DN 15 straight DN 20 "Combi LR"

up to 120 m² DN 20 straight DN 25 "Combi LR"

Article	kvs	Article-No.	Hint
---------	-----	-------------	------

Two-way valve PN 16
(can also be used as three-way valve)

Flanged connections AB, A and B according to DIN EN 1092-2



DN 15	1.00	1130875
DN 15	1.60	1130865
DN 15	2.50	1130845
DN 20	4.00	1130866
DN 20	6.30	1130846
DN 25	10.00	1130847
DN 32	16.00	1130848
DN 40	25.00	1130849
DN 50	35.00	1130850
DN 65	63.00	1130851
DN 80	100.00	1130852
DN 100	160.00	1130853
DN 125	220.00	1130854
DN 150	320.00	1130855

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Description:

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : 0 °C up to 130 °C
Body made of cast iron, disc made of brass and stem made of stainless steel.
DN 15 up to DN 50 metal to metal seal between disc and seat.
DN 65 up to DN 150 soft sealing with EPDM seal between disc and seat.
The central nipple is closed with a cap. The valve can be used as three-way (mixing or diverting) valve after removal of the cap.

Two-way valve PN 16

Flanged connections AB and A with hole circle according to ANSI*



DN 65	63.00	1670851
DN 80	100.00	1670852
DN 100	160.00	1670853
DN 125	220.00	1670854
DN 150	320.00	1670855

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Description:

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : 0 °C up to 130 °C

Body made of cast iron, disc made of brass and stem made of stainless steel.
Soft sealing with EPDM seal between disc and seat.
The central nipple is closed with a cap.



2.1.k Room thermostats, actuators

Content

Room thermostats	354
Sensor GA FD" Dew point control	355
"Aktor T" Electrothermal actuators	356
"Aktor M" Electromotive actuators	357
Accessories	359
"Aktor M KNX" Electromotive actuator	360
"mote 420" Wireless actuator	360

Article	Packing unit	Article-No.	Hint	
Room thermostats				
Room thermostat - surface mounting (heating and cooling)				
Heating 0 - 10 V control Cooling 0 - 10 V control				
A white rectangular surface-mounted thermostat with a single rotary knob and a small display window.	24 V	(25) 1152151	<p>The room thermostat is used for individual room temperature control in combination with the electrothermal actuator (0- 10 V) "Aktor T ST L NC", item no. 1012953, page 44, or the electromotive actuator "Aktor M ST L", item no. 1012705/06, page 46 (may also be used in three- or four-pipe systems). With one analogue output 0–10 V each for heating and cooling as well as adjustable neutral zone (0.5–7.5 K). Temperature range: 5 °C up to 30 °C The electric room thermostat-clock is required for individual room temperature control of heating systems in combination with the electrothermal actuators (two point) "Aktor T 2P". Output signal pulse-width modulation. Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) "closed with current off". Central temperature setback is carried out according to a timed programme. Limitation of the control range by using the concealed limiting elements.</p> <p>The electric thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P". Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, the temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V). Cooling: Use electrothermal actuators (two point) "open with current off". Limitation of the control range of item no. 1152051/52/71/72 by using the concealed limiting elements.</p> <p>With LCD display and adjustable timed programme.</p> <p>Temperature range: 5 °C up to 35 °C</p> <p>Operating current range (item no. 1152561): 100 up to 230 V AC</p> <p>Heating: Use electrothermal actuators (two point) "closed with current off" (terminal "NC") or "open with current off" (terminal "NO").</p>	
Room thermostat-clock - surface mounting (heating)				
Heating two point control				
with daily setting				
A white rectangular surface-mounted thermostat with a large circular dial and a small display window.	230 V	1152552		
Room thermostat - surface mounting (heating)				
Heating two point control				
A white rectangular surface-mounted thermostat with a single rotary knob.	230 V	(25) 1152051		
A white rectangular surface-mounted thermostat with a single rotary knob.	24 V	(25) 1152052		
A white rectangular surface-mounted thermostat with a single rotary knob.	230 V	(25) 1152055		
with concealed temperature setting				
Room thermostat - flush mounting (heating)				
Heating two point control				
A white square flush-mounted thermostat with a single rotary knob.	230 V	(128) 1152071		
Room thermostat - flush mounting (heating)				
with display				
Heating two point control				
A white square flush-mounted thermostat with a large LCD display and a single rotary knob.	230 V	(40) 1152561		
A white square flush-mounted thermostat with a large LCD display and a single rotary knob.	24 V	(40) 1152562°		



Room thermostat - surface mounting (heating or cooling)
with display
Heating two point control
Cooling two point control
with fan drive

230 V

1152451°

With LCD display and adjustable timed programme.
Temperature range: 5 °C up to 35 °C
Heating or cooling:
Use electrothermal actuators (two point) closed with current "off".



Room thermostat - surface mounting (heating and cooling)
with display
Heating 0 - 10 V control
Cooling 0 - 10 V control
Two point control for an additional heating, with fan drive

24 V

1152065

Electronic room thermostat with digital display for ventilation systems with heating and cooling function.



Room thermostat - surface mounting (heating or cooling)
with display
Heating or cooling 0 - 10 V control
Two point control for an additional heating, with fan drive

24 V

1152064

Sensor GA FD" Dew point control



"Sensor GA FD" Dew point control 24 V
with alternating contact

1141951

Is required in combination with room thermostats to protect chilled ceilings against condensation.
An actuator interrupting the cooling water flow is for instance activated in combination with the "Regufloor HC".
Connection to the cooling water supply.
Connecting cable 1 m.

Article	Packing unit	Article-No.	Hint
"Aktor T" Electrothermal actuators			<p>Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats.</p> <p>Further applications in bivalent heating installations.</p> <p>Connecting cable 1 m.</p> <p>With "First-Open" function and stroke index.</p> <p>Simple plug-in connection with valve adapter.</p> <p>Actuators can be installed in any position.</p> <p>Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.</p>
"Aktor T 2P" Electrothermal actuators (two point)			
connection thread M 30 x 1.5			
"H NC", closed with current "off", 230 V		1012415	
"H NO", open with current "off", 230 V		1012425	
"L NC", closed with current "off", 24 V		1012416	
"L NO", open with current "off", 24 V		1012426	
"H NC", closed with current "off", 230 V with mounted auxiliary switch		1012435	
"L NC", closed with current "off", 24 V cable 2 m long		1012442	
"H NC", closed with current "off", 230 V cable 2 m long		1012452	
"H NC", closed with current "off", 230 V cable 5 m long		1012455	
"H NC", closed with current "off", 230 V cable 10 long		1012459	
"M NC", closed with current "off", 120 V only in approved countries outside the EU		1012420#	
"Aktor T ST" Electrothermal actuator (0-10 V)			<p>The actuator (0-10 V) can be used in centralised building control systems in combination with the electronic room thermostat, item no. 1152151/1152153, or with a central controller.</p> <p>Plug-in connecting cable 1 m.</p> <p>With "First-Open" function and stroke index.</p> <p>Easy plug-in connection with valve adapter.</p> <p>Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on fluorescent tubes. A varistor is thus not necessary.</p>
Proportional actuator			
connection thread M 30 x 1.5			
"L NC", closed with current "off", 24 V with automatic recognition of neutral point and valve travel		1012953	
Valve adapter			<p>The high model is required when using the actuators, item no. 10124.. and 1012953, in combination with the regulating valves "Hycoccon ETZ/HTZ" as well as the fittings "Multiblock T/TU/TFU/TQ" and the design cover (11 mm higher than standard).</p>
high model	(5)	1012462	
connection thread M 30 x 1.5			



"Aktor M" Electromotive actuators

connection thread M 30 x 1.5
with manual setting, adjustable mode of operation

"ST L", 24 V, **1012725**

modulating proportional actuator,
0-10 V, two or three point control,
with automatic valve anti-blocking function
and automatic recognition of neutral point,
multiple characteristic lines adjustable
(for "Cocon QTZ" PN 16 / PN 25)

"ST L", 24 V, **1012726**

modulating proportional actuator,
0-10 V, with position feedback,
automatic valve anti-blocking function
and automatic recognition of neutral point,
multiple characteristic lines adjustable
(for "Cocon QTZ" PN 16 / PN 25)

"3P H", 230 V, **1012729**

two or three point control,
without valve anti-blocking function,
with automatic recognition of neutral point,
mode of operation not adjustable

"ST L", 24 V, **1012717**

modulating proportional actuator,
0 - 10 V, with electric emergency control function,
position feedback, automatic valve anti-blocking function
and automatic recognition of neutral point,
multiple characteristic lines adjustable
(for "Cocon QTZ" PN 25)

"ST L Modbus", 24 V, **1012745**

with control signal (0 - 100 %) via
Modbus RTU communication,
automatic valve anti-blocking function
and recognition of neutral point,
multiple characteristic lines adjustable
for "Cocon QTZ" PN 16 / PN 25
via Modbus RTU

Description electromotive actuators 0 - 10 V:
The actuators can be used in centralised
building control systems in combination with
the electronic room thermostat, item no.
1152151, or with a central controller.
Connecting cable 1.5 m.
With stroke index.

Description electromotive actuators (10127..):
Connecting cable 1.5 m.
Valve anti-blocking function:
The valve is completely opened and closed
every 24 hours.

As for the model with electric emergency
control function, the actuator moves to a
specified stroke position if the power supply
is interrupted.

Function adjusted to the "Cocon QTZ" valves
PN 16 / PN 25.
Different parameters (e.g. volume flow, valve
characteristic line, sensor type, operating and
error messages, operating hours) can be
configured and/or read via the Modbus RTU
communication.
Two universal in- and outputs allow for
the connection of temperature sensors (e.g.
for energy measurement and dT control), of
window and humidity contacts and for the
activation of 0-10 V rotary actuators (e.g.
"Aktor R ST L", item no. 1132030, for six-way
ball valves).



"2P H", 230 V, two point control, **1012710**



without valve anti-blocking function

"2P L", 24 V, two point control, **1012711**

without valve anti-blocking function

Short operating time (about 3 sec.).
Connecting cable 1.5 m.

Article	Article-No.	Hint
"Aktor M" Electromotive actuators		
squeeze connection, 24 V		
Steady control with 0-10 V or switching as two or three point control. Type of characteristic line (linear, equal percentage) adjustable. With position feedback signal 0-10 V.		
"ST/ 2P/ 3P L", 10 mm piston stroke, with adapter	1158010°	For "Cocon QTR/QFC" DN 40 and DN 50.
"ST/ 2P/ 3P L", 10 mm piston stroke, without adapter	1158011°	For two-way valves 11308.. and 16708.. DN 15 up to DN 50.
0-10 V and two point control, with automatic valve anti-blocking function		
"ST / 2P / 3P / L" additionally for three point control, 10 mm piston stroke	1158012*	For "Cocon QTR/QFC" DN 40 and DN 50.
"ST / 2P / L" additionally with emergency control function (fail safe), 10 mm piston stroke	1158013*	For "Cocon QTR/QFC" DN 40 and DN 50.
"ST L Modbus", 24 V, with control signal (0 - 100 %) via Modbus RTU communication, automatic valve anti-blocking function and automatic recognition of neutral point, multiple characteristic lines adjustable via Modbus RTU, with adapter	1158014	Function adjusted to the "Cocon QTR/QFC" valves DN 40 and DN 50. Different parameters (e.g. volume flow, valve characteristic line, sensor type, operating and error messages, operating hours) can be configured and/or read via the Modbus RTU communication. Two universal in- and outputs allow for the connection of temperature sensors (e.g. for energy measurement and dT control), of window and humidity contacts and for the activation of 0-10 V rotary actuators (e.g. "Aktor R ST L", item no. 1132030, for six-way ball valves).
Steady control with 0(2) - 10 V or switching as three point control. Linear characteristic line. With position feedback signal 0-10 V.		
"ST/ 3P L", 20 mm piston stroke, with adapter	1158020	For "Cocon QTR/QFC" DN 40 up to DN 100.
Steady control with 0(2) - 10 V or 0(4) - 20 mA or switching as two or three point control. Linear characteristic line. With position feedback signal 0 - 10 V.		
"ST/ 3P L", 20 mm piston stroke, with spring return and adapter	1158021	Valves opening with current "off".
"ST/ 2P/ 3P L", 20 mm piston stroke, with spring return and adapter	1158022	Valves closing with current "off".
Steady control with 0 - 10 V or 4 - 20 mA or switching as two or three point control. Type of characteristic line (linear, square-law, equal percentage) adjustable. With position feedback signal 0 - 10 V.		
"ST/ 2P/ 3P L", 40 mm piston stroke, with adapter	1158030	For "Cocon QFC" DN 125 up to DN 200 as well as two-way valves, item no. 11308.. and 16708.. DN 65 up to DN 150.
"ST/ 2P/ 3P L", 40 mm piston stroke, with spring return and adapter	1158031	Valves opening with current "off".
"ST/ 2P/ 3P L", 40 mm piston stroke, with spring return and adapter	1158032	Valves closing with current "off".

Article	Article-No.	Hint
Accessories		
	1158033	For the connection of the 24 V actuators "Aktor M", item no. 1158030/ 31/ 32, to the 230 V supply voltage. Module for plug-in connection to the actuator.
	1158025	For the conversion of the actuator "Aktor M", item no. 1158020, from 0-10 V control to 0/4 mA control. The resistor is fitted into the actuator.



**"Aktor M KNX" Electromotive actuator
with KNX interface**

Connection thread M 30 x 1.5

with one binary input

(120) **1012746***

The electromotive actuator "KNX" is suitable for the direct connection to the KNX bus. The power absorption is extremely low, so that a separate power supply is not needed. Moreover, the actuator is equipped with an integrated binary input to which a window contact, a dew point sensor or a movement sensor may for instance be connected.



"mote 420" Wireless actuator

Connection thread M 30 x 1.5
Electronic actuator
with bi-directional radio communication,
battery operated,
with automatic presetting of the
"Q-Tech" valves with "OVbalance Home"

traffic white (RAL 9016)

1150766#

Electronic actuator for room temperature control. The actuator supports the EnOcean profile A5-20-01 and can be connected to communication centres/gateways or room thermostats supporting the profile.



**# Only functions in combination with
communication centres/gateways
(e.g. wibutler gateway) supporting the
EEP A5-20-1 (EnOcean Equipment Profile).**

System	Oventrop actuators	Item no.	The Oventrop actuators can e.g. be used with the following bus systems:
KNX	"Aktor M KNX" with one binary entry with two binary entries	1012746	<ul style="list-style-type: none"> – GIRA Instabus KNX/EIB – ABB i-bus KNX – Busch-Jäger installation bus – Jung KNX-System – Merten KNX – Siemens GAMMA instabus – Woertz Building Control Systems – and others
(EnOcean) wireless	"mote 420" with automatic presetting of the "Q-Tech" valves with "OVbalance Home"	1150766	<ul style="list-style-type: none"> – OVgateway – Eltako – and others
Modbus RTU	"Aktor M ST L" with Modbus RTU interface	1012745 1158014	<ul style="list-style-type: none"> – any automation systems with Modbus RTU interface



2.1.I "OV-DMC 3" Measuring system

Content

"OV-DMC 3" Measuring system	362
"OV-DMC 3", "OV-DMC 2", "OV-DMPC" Accessories	363
"OV-Connect" Differential pressure transmitter	364
"classic" measuring technique	365
Accessories "eco" measuring technique	365

Article

Article-No.

Hint

"OV-DMC 3" Measuring system

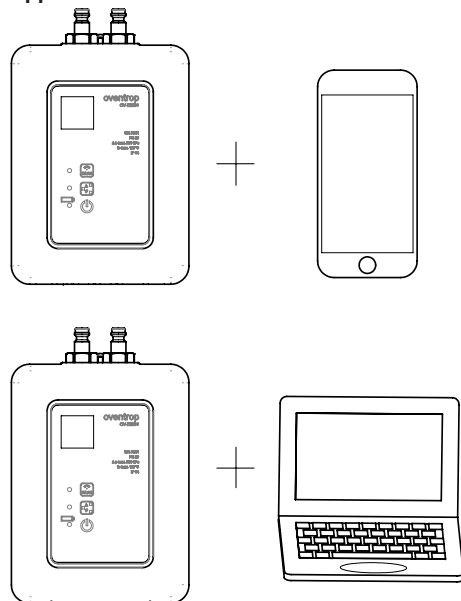
for measurement, transfer and determination of
pressure, flow, temperature and performance data

in a case, including accessories

1069278



Applications of "OV-DMC 3":



Application:

The measuring system "OV-DMC 3" can be used in combination with Oventrop products with "classic" or "eco" measuring technique (e.g. "Hycoccon", "Hydrocontrol" and "Cocon" valves as well as Oventrop measuring orifices).

Description "OV-DMC 3":

The measuring system "OV-DMC 3" has especially been designed for the regulation of heating and cooling systems.

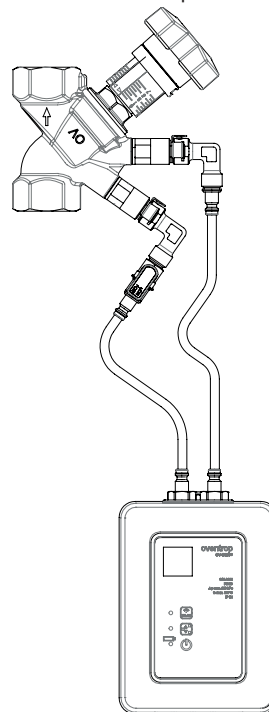
The interfaces for communication with standard smartphones, tablets and personal computers enable an easy regulation of heating and cooling systems as well as a simple generation of measured records.





The data obtained via the calculation programmes "OVplan" and "OVselect" can be accessed retrospectively.

Measuring system "OV-DMC 3" for differential pressure measurement and the resulting determination of the flow rate.

Calculation of the presetting for a double regulating and commissioning valve is possible after having entered the valve data and the required nominal flow rate. The permanent measurement of differential pressure and flow is possible, too. The measurement of two temperatures (e.g. supply and return) with the help of temperature sensors which can be connected to the "OV-DMC 3" allows for a direct calculation of the heating capacity.

Connection example "OV-DMC 3":



Article	Packing unit	Article-No.	Hint
"OV-DMC 3", "OV-DMC 2", "OV-DMPC" Accessories			
		1069197	For "OV-DMC 2" and "OV-DMPC".
		Set 16 = 2 measuring hoses (5) 1069178 Set 14 = 2 measuring hoses (5) 1069179	For "OV-DMC 3", "OV-DMC 2" and "OV-DMPC". L = 0.5 m. L = 2 m, red and blue
		Set 17 = 2 measuring nipples G 3/8 with screen (50) 1069186	For replacement purposes for measuring systems "OV-DMC 3", "OV-DMC 2" and "OV-DMPC". Quick-coupling technic.
		USB connecting cable (50) 1069299	Connecting cable for the transmission of data from the "OV-DMC 2" to the USB interface. Supplied with software for the data transmission to the USB stick.

2.1

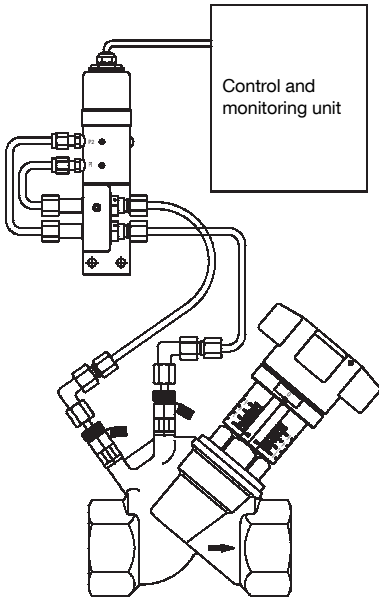


Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"OV-Connect" Differential pressure transmitter

including measuring needles and connecting cable (5) 1069180

The Oventrop "OV-Connect" differential pressure transmitter permanently controls the differential pressure of Oventrop products with "classic" measuring technique in heating, cooling and potable water systems which are operated with water or water and glycol mixtures. The signals can be processed via an electric control and monitoring unit. The differential pressure of the valve is measured via the measuring needles and 6 mm copper pipes at the pressure test points. Measuring range: 0 - 1000 mbar. During working conditions, the appliance provides an output signal proportional to the measured differential pressure (0 – 10 V). Supply voltage 24 V DC (18 up to 33 V) or 24 VAC ± 15%



Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

"classic" measuring technique

Function:

- differential pressure measurement



Set 9 = 2 measuring needles for
valves with "classic" measuring
technique (50) **1069199**

Accessories "eco" measuring technique



Fill and drain tool
for valves with "eco" measuring technique **1061791**

"eco" measuring technique:

For draining, venting and filling the
installation.



Measuring adapter (50) **1060297**

Measuring adapter with quick-coupling
technic to be screwed onto the fill and
drain tool.



Set = 2 measuring needles for
valves with "eco" measuring technique (25) **1061799**

For measurement with measuring
systems "OV-DMC 3", "OV-DMC 2"
and "OV-DMPC".



Measuring adapter,
"classic" measuring technique (50) **1060298**



2.1.m Products for air conditioning and ventilation

Content

Products for air conditioning and ventilation

368

Products for air conditioning and ventilation

Devices, such as e.g. fan convectors, chilled ceilings, hot air curtain systems, façade ventilation devices, have to be hydraulically integrated into heating and cooling installations, balanced and regulated. The following Oventrop valves comply with these requirements:

“Tri-CTR” Three-way diverting and mixing valves
with connection thread M 30 x 1.5 for thermostats and actuators

Divert and mix of volume flows
Page 350.



Temperature controllers
with connection thread M 30 x 1.5

For different temperature control ranges.
Page 351.



Thermostat with remote control
with connection thread M 30 x 1.5

Page 28.



“Hycolow” Double regulating and commissioning valves
with low display

Allows for the direct reading of the balanced flow values.
Page 322.





“Cocon QTZ” Pressure independent control valves
with connection thread M 30 x 1.5 for thermostats and actuators

Control of e.g. a room temperature via actuators and thermostats and automatic limitation of the volume flow to a presettable maximum value.
Page 326.



Dew point control

To avoid condensation.
Page 355



Electrothermal actuators
with connection thread M 30 x 1.5

With two point, three point or 0-10 V control.
Page 356.



Electromotive actuators
with connection thread M 30 x 1.5

With two point, three point or 0-10 V control for the installation bus control system EIB.
Page 357.



"A" Thermostatic straight pattern valves
with connection thread M 30 x 1.5

With high kvs value.
Page 84.



"Hycococon HTZ" Regulating valves
with connection thread M 30 x 1.5

Regulating valve with high kvs value.
Page 287.



**"Hydrocontrol VTR" Bronze double regulating and
commissioning valves**

For hydronic balancing.
Page 298.



2.1.n Products for radiant and chilled ceiling systems

Content

Products for radiant and chilled ceiling systems

372

Products for radiant and chilled ceiling systems

This is a summary of valves which are required for radiant and chilled ceiling systems, for the hydronic balancing and for the temperature and flow control.

“Cocon QTZ” Pressure independent control valves
with connection thread M 30 x 1.5 for thermostats and actuators



Control of e.g. a room temperature via actuators and thermostats and automatic limitation of the volume flow to a presettable maximum value.
Page 326.

Dew point control



To avoid condensation.
Page 355.

Electrothermal actuators
with connection thread M 30 x 1.5



With two point or 0-10 V control.
Page 356.

Electromotive actuators
with connection thread M 30 x 1.5



With two point, three point or 0-10 V control for the installation bus control system EIB.
Page 357.

“Hydrocontrol VTR” Bronze double regulating and commissioning valves



For hydronic balancing.
Page 298.



"Hydromat DTR" Differential pressure regulators

With the differential pressure in the installation changing, the differential pressure regulator maintains a constant fixed differential pressure between supply and return in the riser.
Page 308.



"Hydromat DTR" Differential pressure regulators

With the flow in the installation changing, the flow regulator maintains a constant fixed volume flow in the riser.
Page 0 .



"Optibal" Ball valves

For fluids in heating and cooling systems.
Page 382.



Strainers
bronze

For fluids in heating and cooling systems, with wire baskets with different mesh sizes to choose.
Page 418.



"Multidis SF" Stainless steel distributors/collectors
for surface heating and cooling

Models for 2 up to 12 circuits with flow measuring and regulating devices
Page 238.



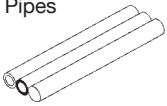


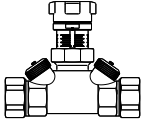


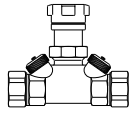

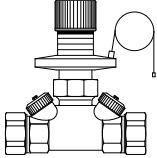
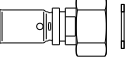
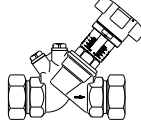
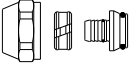

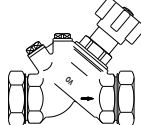
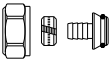

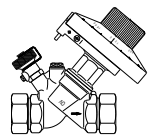


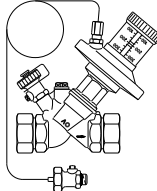

"Ofix" compression fittings

For different pipe materials and their connection to valves and distributors/collectors
Pages 164 and 231.

2.1.o Connection technology

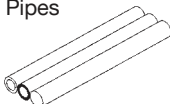

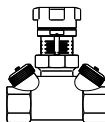
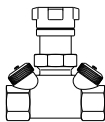
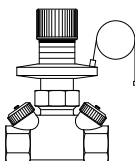
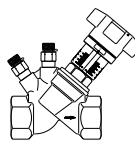
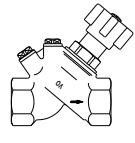
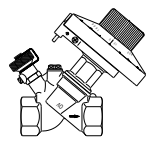
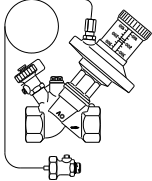



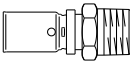
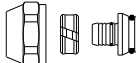

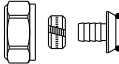
Content

Summary of the product groups and connection technologies with male thread	376
Summary of the product groups and connection technologies with female thread	377

Pipes 	Connection method	Connection system		Male threaded connection
		Connection fitting	Additional fitting	Oventrop valves (examples)
Copper pipe, stainless steel pipe, precision steel pipe 1)	Screwed connection	 for G 3/4 male thread according to DIN EN 16313 (cone "Euro") soft sealing Item no. 102744. Page 166	 Connection piece Item no. 15030.. Page 640	Valves for hydronic balancing 
Copper pipe 1)	Screwed connection	 for G 3/4 male thread according to DIN EN 16313 (cone "Euro") metal to metal sealing Item no. 102747. Page 166	 Item no. 15030.. Page 640	
	Soldering connection	 Item no. 10610.. Page 317	—	
"Copipe" Composition pipe	Press connection	 Item no. 15121.. Page 620	—	
	Screwed connection	 Item no. 15079.. Page 641	 Connection piece Item no. 15030.. Page 626	
PE-Xc pipe	Screwed connection	 for G 3/4 male thread according to DIN EN 16313 (cone "Euro") Item no. 10277.. Page 166	 Item no. 15030.. Page 626	
Steel pipe as well as screwed fittings	Screwed connection	 Item no. 10613.. Page 317  Item no. 10614.. Page 317	—	
	Welding connection	 Item no. 10605.. Page 317	—	
Other pipes e.g. stainless steel pipe, thick walled plastic pipe	All other pipes – with their special connection – may be connected with flat sealing tailpipes (with ring gaskets and collar nuts) to Oventrop flat sealing and male threaded valves.			

This table is not exhaustive.

1) Pipes with a wall thickness ≤ 1 mm need reinforcing sleeves, except when the soft sealing fitting 102744. is used! Page 166.

<div>Pipes</div> <div></div>	Connection method	Connection system		Female threaded connection
		Connection fitting	Additional fitting	Oventrop valves (examples)
Copper pipe 1)	Screwed connection	<div>Compression nut and compression ring</div> <div></div> <div>Item no. 10271.. Female thread G 3/8–G 3/4, Page 317</div>	—	<div>Valves for hydronic balancing</div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>
		<div>Collar nut and compression ring</div> <div></div> <div>for G 3/4 male thread according to DIN EN 16313 (cone "Euro") metal to metal sealing Item no. 102747. Page 166</div>	<div>Double nipple</div> <div></div> <div>Item no. 15031.. Page 641</div>	
Copper pipe, stainless steel pipe, precision steel pipe 1)	<div>Collar nut, compression ring and ring gasket</div> <div></div> <div>for G 3/4 male thread according to DIN EN 16313 (cone "Euro") soft sealing Item no. 102744 . Page 166</div>			
“Copipe” Composition pipe	Press connection	<div></div> <div>Item no. 15120.. Page 620</div>	—	
	Screwed connection	<div></div> <div>Item no. 15079.. Page 641</div>	<div>Double nipple</div> <div></div> <div>Item no. 15031.. Page 641</div>	
PE-Xc pipe thin walled plastic pipe		<div>Collar nut, compression ring and outlet</div> <div></div> <div>Item no. 10277.. Page 166</div>		
Steel pipe		seal directly		

1) Pipes with a wall thickness ≤ 1 mm will need reinforcing sleeves, except when the soft sealing fitting 102744. is used! Page 166.

2.2.a "Optibal" Ball valves



Content	381
"Optibal" Ball valves PN 16	382
"Optibal" Ball valves with coupling PN 16	384
Accessories	384
Insulation	384
"Optibal" Ball valves with lever PN 16	385
"Optibal" Ball valves with T-handle PN 16	386
Stem extensions	386
Conversion set plastic handle (anthracite)	386
Ball valves "DZR"	387
Ball valves NPT	388
"Optibal" High temperature ball valves PN 16	389
"Optibal" High pressure ball valves PN 40	390
Accessories	390

2.2.b "Hygate" Gate valves



Content	391
"Hygate ATB" Gate valves PN 25	392
"Hygate ATR" Gate valves PN 25	392
"Hygate AFC" Flanged gate valves PN 16	393
"Hygate AFC" Flanged gate valves PN 10	393

2.2.c Valves PN 16/25



Content	395
Oblique pattern globe valves with position indicator PN 25	396
Straight pattern globe valves with position indicator PN 25	396
Oblique pattern globe valves PN 25	396
Oblique pattern drain valves PN 25	396
Lockshield spindles	397
Airvent PN 25	397
Accessories	397

2.2.d Butterfly valves



Content	399
Lugged butterfly valves PN 16	400
Wafer butterfly valves PN 16	400
Accessories	401

2.2



2.2.e Piston type spring assisted check valves, swing type check valves

Content	403
Piston type spring assisted check valves (female threaded model) PN 25	404
Swing type check valves (female threaded model) PN 16	404
Swing type check valves (flanged model) PN 16	405
Swing type check valves (wafer model) PN 16	405
Double swing type check valves (wafer model) PN 16	405

2.2.f Spare parts



Content	407
Handwheels	408



2.2.a "Optibal" Ball valves

Content

"Optibal" Ball valves PN 16	382
"Optibal" Ball valves with coupling PN 16	384
Accessories	384
Insulation	384
"Optibal" Ball valves with lever PN 16	385
"Optibal" Ball valves with T-handle PN 16	386
Stem extensions	386
Conversion set plastic handle (anthracite)	386
Ball valves "DZR"	387
Ball valves NPT	388
"Optibal" High temperature ball valves PN 16	389
"Optibal" High pressure ball valves PN 40	390
Accessories	390

Article	kvs	Packing unit	Article-No.	Hint
---------	-----	--------------	-------------	------

"Optibal" Ball valves PN 16

brass, nickel plated, full flow,
extended plastic handle (anthracite)
with red cover plug for riser identification

both ports female thread



DN 10	8.80	(10)	1077103
DN 15	22.00	(10)	1077104
DN 20	43.00	(10)	1077106
DN 25	67.00	(10)	1077108
DN 32	99.00	(8)	1077110
DN 40	143.00	(6)	1077112
DN 50	254.00	(4)	1077116

as above, with thermometer (anthracite)



DN 10	8.80	(10)	1078003
DN 15	22.00	(10)	1078004
DN 20	43.00	(10)	1078006
DN 25	67.00	(10)	1078008
DN 32	99.00	(8)	1078010
DN 40	143.00	(6)	1078012
DN 50	254.00	(4)	1078016

one port male thread, one port female thread



DN 10	8.80	(10)	1077303
DN 15	22.00	(10)	1077304
DN 20	43.00	(10)	1077306
DN 25	67.00	(10)	1077308
DN 32	99.00	(8)	1077310
DN 40	143.00	(6)	1077312
DN 50	254.00	(4)	1077316

both ports female thread
with draining valve (connection thread G 1/4)



DN 15		(10)	1077804
DN 20		(5)	1077806
DN 25		(5)	1077808
DN 32		(5)	1077810

Application:

Pipe fitting for fluids.

Max. operating pressure p_s : 16 bar
(PN 16), for cold water 20 bar, for air
and other harmless gases (not for gaseous
fluids group 1 according to directive
2014/68/EU) 10 bar.

Operating temperature t_s : -10 °C up to +100 °C

Attention: Prevent formation of ice as it can
destroy the pipework and valve.

Chrome plated brass ball, PTFE seats, FKM
O-ring seal.

Advantages:

- full flow
- diverse applications
- all standard handles available
- simple insulation of models with extended
plastic handle
- high pressure rating due to blow-off proof
stem and high body resistance
- ball surface hard-chrome plated

With plug and draining valve.



both ports press connection

Article	P2	Packing unit	Article-No.
DN 15	Ø 15 mm	(10)	1077162
DN 15	Ø 18 mm	(10)	1077163
DN 20	Ø 22 mm	(10)	1077164
DN 25	Ø 28 mm	(10)	1077165
DN 32	Ø 35 mm	(5)	1077166

DN 40 and DN 50 see item no. 4208857/58: page 688

Application:

Pipe fitting for fluids.

Max. operating pressure p_s : 16 bar

(PN 16), for cold water 20 bar, for air and other harmless gases (not for gaseous fluids group 1 according to directive 2014/68/EU) 10 bar.

Operating temperature t_s : -10 °C up to +100 °C

Attention: Prevent formation of ice as it can destroy the pipework and valve.

Chrome plated brass ball, PTFE seats, FKM O-ring seal.



one port female thread,
one port press connection

Article	P2	Packing unit	Article-No.
DN 15	G ½ Ø 15 mm	(10)	1077152
DN 15	G ½ Ø 18 mm	(10)	1077153
DN 20	G ¾ Ø 22 mm	(10)	1077154
DN 25	G 1 Ø 28 mm	(10)	1077155
DN 32	G 1 ¼ Ø 35 mm	(5)	1077156

Advantages:

- full flow
- diverse applications
- all standard handles available
- simple insulation of models with extended plastic handle
- high pressure rating due to blow-off proof stem and high body resistance
- ball surface hard-chrome plated

Press connection:

For the direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 541 and thin-walled C-steel pipe (material no. E195/1.0034) according to DIN EN 10305-3. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Optibal" Ball valves with coupling PN 16

brass, nickel plated, full flow,
extended plastic handle (anthracite)
with red cover plug for riser identification

one port with tapered sealing coupling with male thread,
one port female thread



DN 15	(10)	1075704
DN 20	(10)	1075706
DN 25	(10)	1075708
DN 32	(10)	1075710

Application:
Pipe fitting for central heating and cooling systems.
Max. operating pressure p_s : 16 bar (PN 16), for cold water 20 bar, for air and other harmless gases (not for gaseous fluids group 1 according to directive 2014/68/EU) 10 bar.
Operating temperature t_s : -10 °C up to +100 °C
Attention: Prevent formation of ice as it can destroy the pipework and valve.
Chrome plated brass ball, PTFE seats, FKM O-ring seal.

Accessories

Insulation

for brass ball valves "Optibal"
with extended plastic handle
ball valves with female thread (item no. 10771/80/87/91..)



DN 15 (also for DN 10)	1078092
DN 20	1078093
DN 25	1078094
DN 32	1078095
DN 40	1078096
DN 50	1078097

Blue cover plug
for riser identification,
for replacement of the existing red cover plug



DN 10 + DN 15, set = 10 pieces	1077171
DN 20 + DN 25, set = 10 pieces	1077172
DN 32 - DN 50, set = 5 pieces	1077173

Thermometer conversion set, anthracite
for item no. 10771/73/78/57/91 ..



DN 10 + DN 15	(10)	1077181
DN 20 and DN 25	(10)	1077182
DN 32 - DN 50	(10)	1077183

Stem extensions

brass, with swivel plastic sleeve



	Extension in mm		
up to DN 15	38.5	(10)	1696081
DN 20 + DN 25	39	(10)	1696082

For heating and cooling systems.
With stem extension also suitable for other handles.
All ball valves "Optibal" with extended plastic handle can also be coated with standard insulation material.

Meet the requirements of the German Energy Saving Directive according to appendix 5, table 1, line 5.

Building material class B2 according to DIN 4102.

Operating temperature t_s : +100 °C

To upgrade brass ball valves "Optibal" with extended plastic handle (except for item no. 10787..).
By sealing the swivel plastic sleeve against the insulation in cooling systems, no humidity can reach the pipework via the stem extension.
Only one extension can be used.

Article	kvs	Packing unit	Article-No.
---------	-----	--------------	-------------

Hint

"Optibal" Ball valves with lever PN 16

brass, nickel plated, full flow,
galvanised steel lever with plastic coating

both ports female thread



DN 8	5.60	(10)	1076002
DN 10	8.80	(10)	1076003
DN 15	22.00	(10)	1076004
DN 20	43.00	(10)	1076006
DN 25	67.00	(10)	1076008
DN 32	99.00	(8)	1076010
DN 40	143.00	(6)	1076012
DN 50	254.00	(4)	1076016
DN 65	470.00	(2)	1076020
DN 80	720.00		1076024
DN 100	1,120.00		1076032

Application:

Pipe fitting for fluids.

Up to DN 50:

Max. operating pressure p_s : 16 bar
(PN 16) for cold water 20 bar, for air
and other harmless gases (not for gaseous
fluids group 1 according to directive
2014/68/EU) 10 bar.

Operating temperature t_s : -10 °C up to +100 °C

DN 65 up to DN 100:

Max. operating pressure p_s : 16 bar at 70 °C
(PN 16), 12 bar at 85 °C, 8 bar at 100 °C

Operating temperature t_s : -10 °C up to +100 °C
CE marking according to directive 2014/68/EU.

Attention: Prevent formation of ice as it can
destroy the pipework and valve.

one port male thread,
one port female thread



DN 10	8.80	(10)	1076203
DN 15	22.00	(10)	1076204
DN 20	43.00	(10)	1076206
DN 25	67.00	(10)	1076208
DN 32	99.00	(8)	1076210

Article	kv s	Packing unit	Article-No.	Hint
---------	---------	-----------------	-------------	------

"Optibal" Ball valves with T-handle PN 16

brass, nickel plated, full flow,
metal T-handle,
both ports female thread



DN 10	8.80	(10)	1076103
DN 15	22.00	(10)	1076104
DN 20	43.00	(10)	1076106
DN 25	67.00	(10)	1076108
DN 32	99.00	(8)	1076110

Application:

Pipe fitting for fluids.

Max. operating pressure p_s : 16 bar

(PN 16), for cold water 20 bar, for air

and other harmless gases (not for gaseous

fluids fluids group 1 according to directive

2017/68/EU) 10 bar.

Operating temperature t_s : -10 °C up to +100 °C

Attention: Prevent formation of ice as it can

destroy the pipework and valve.

one port male thread,
one port female thread



DN 10	8.80	(10)	1076303
DN 15	22.00	(10)	1076304
DN 20	43.00	(10)	1076306
DN 25	67.00	(10)	1076308
DN 32	99.00	(8)	1076310

one port with tapered sealing coupling with male thread,
one port female thread



DN 15		(10)	1075804
DN 20		(10)	1075806
DN 25		(8)	1075808
DN 32		(8)	1075810

Stem extensions

brass, with swivel plastic sleeve

Extension in mm



up to DN 15	38.5	(10)	1076081
DN 20 + DN 25	39	(10)	1076082
DN 32 - DN 50	64	(10)	1076083
DN 65 - DN 100	85	(10)	1076084

To upgrade brass ball valves "Optibal" (except for item no. 10787..).

By sealing the swivel plastic sleeve against the insulation in cooling systems, no humidity can reach the pipework via the stem extension.

To avoid condensation at the lever, the latter must also be insulated, for instance by slipping an elastic pipe insulation over the stem extension and the shank of the plastic handle.

Only one extension can be used.




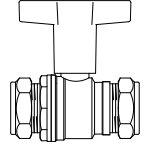

Conversion set plastic handle (anthracite)

with red cover plug for riser identification



up to DN 15		(10)	1076071
DN 20 + DN 25		(10)	1076072
DN 32 - DN 50		(10)	1076073

For subsequent conversion of brass ball valves "Optibal" with lever or metal T-handle to plastic handle (except for item no. 10787..) allowing the insulation of the ball valves.

Article	kvs	Packing unit	Article-No.	Hint
Ball valves "DZR" brass resistant to dezincification, full flow, both ports female thread according to ISO 228/1 (thread also corresponds to Rp according to EN 10226-1). Operating element: Galvanised steel lever with plastic coating				
	DN 15	22.00	(10)	1079004
	DN 20	43.00	(10)	1079006
	DN 25	67.00	(10)	1079008
	DN 32	99.00	(8)	1079010
	DN 40	143.00	(6)	1079012
	DN 50	254.00	(4)	1079016
 Aluminium T-handle, red				
	DN 15	22.00	(10)	1079404
	DN 20	43.00	(12)	1079406
 Extended plastic handle (anthracite) with red cover plug for riser identification				
	DN 15	22.00	(8)	1079104
	DN 20	43.00	(10)	1079106
	DN 25	67.00	(8)	1079108
	DN 32	99.00	(6)	1079110
	DN 40	143.00	(6)	1079112
	DN 50	254.00	(4)	1079116
 both ports compression ends for copper pipe according to EN 1254-2				
	Extended plastic handle (anthracite) with red cover plug for riser identification			
	15 mm		(8)	1079704
	22 mm		(10)	1079706
	28 mm		(8)	1079708
	35 mm		(6)	1079710
	 Locking cap, brass			
	DN 15		(5)	1079254
	DN 20 + DN 25		(5)	1079255
	DN 32 - DN 50		(5)	1079256
				Application: Pipe fitting for central heating and cooling systems. Max. operating pressure p_s : 30 bar pressure impact resistant at 30 °C (PN 30), 6 bar at 120 °C, for air max. 10 bar. Operating temperature t_s : -10 °C up to +120 °C Pressure/temperature allocation see data sheet. Attention: Prevent formation of ice as it can destroy the pipework and valve.
				Application: Pipe fitting for central heating and cooling systems. Max. operating pressure p_s : 16 bar pressure impact resistant at 30 °C (PN 16), 10 bar up to 65 °C, 6 bar up to 110 °C and 5 bar up to 120 °C Operating temperature t_s : -10 °C up to +120 °C WRAS certified. Attention: Prevent formation of ice as it can destroy the pipework and valve.
				The locking cap can be mounted instead of the handle. The ball valve is locked in open and shut-off position and setting is secured.

Article	Packing unit	Article-No.	Hint
Ball valves NPT brass, unplated, full flow extended plastic handle (anthracite) with red cover plug for riser identification both ports NPT female thread according to ANSI B1.20.1			Application: Pipe fitting for central heating and cooling systems. Max. operating pressure p_s : 16 bar Operating temperature t_s : -10 °C up to -100 °C Attention: Prevent formation of ice as it can destroy the pipework and the valve. Chrome plated brass ball, PTFE seats, FKM O-ring seal.
DN 15	NPT 1/2	(8) 1077904	
DN 20	NPT 3/4	(10) 1077906	
DN 25	NPT 1	(8) 1077908	
DN 32	NPT 1 1/4	(6) 1077910	
DN 40	NPT 1 1/2	(6) 1077912	
DN 50	NPT 2	(4) 1077916	





both ports female thread

DN 20	Rp 3/4	9.50	(10)	1078706
DN 25	Rp 1	17.00	(10)	1078708
DN 32	Rp 1 1/4	35.00	(5)	1078710



both ports press connection

DN 20	Ø 22 mm		(10)	1078760
DN 25	Ø 28 mm		(10)	1078761
DN 32	Ø 35 mm		(5)	1078762

Accessories


Stem seal for replacement purposes (set of 5 pieces)
(not suitable for valves with marking "HT")

DN 20	1078790°
DN 25 / 32	1078791°



Thermometer conversion set, anthracite

for item no.:	(10)	1078382
1078171/ 72/ 73, 1078371/ 72/ 73,		
1078708/ 10/ 61/ 62 and		
4208806/ 08, 4208854/ 55, 4208906/ 08		

Application:
Pipe fitting for central heating and cooling systems.

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +150 °C,
for short periods up to +180 °C;
with press connection max. +120 °C,
for short periods up to +150 °C

Attention: Prevent formation of ice as it can destroy the pipework and valve.

Press connection:
For the direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 541 and thin-walled C-steel pipe (material no. E 195/1.0034) according to DIN EN 10305-3. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Optibal" High pressure ball valves PN 40
bronze, unplated, full flow

Application:
Pipe fitting for central heating (especially for district heating) and cooling systems.

Max. operating pressure p_s : 40 bar at 150 °C (PN 40)
Operating temperature t_s : 2 °C up to 150 °C (with plastic handle up to 120 °C)

one port with weldable steel tailpipe,
one port with cap,
extended plastic handle (anthracite)



DN 15	(5)	1066604
DN 20	(5)	1066606
DN 25	(5)	1066608
DN 32	(5)	1066610

one port with weldable steel tailpipe,
one port with cap,
aluminium lever



DN 15		1066504
DN 20		1066506
DN 25		1066508
DN 32		1066510

both ports with weldable steel tailpipe,
extended plastic handle (anthracite)



DN 15	(5)	1065604
DN 20	(5)	1065606
DN 25	(5)	1065608
DN 32	(5)	1065610

both ports with weldable steel tailpipe,
aluminium lever



DN 15		1065504
DN 20		1065506
DN 25		1065508
DN 32		1065510

Accessories

Cap with washer and chain

For item no. 10650/51/55/56.. and
10660/61/65/66 ..



DN 15	(25)	1066904
DN 20	(25)	1066906
DN 25	(25)	1066908
DN 32	(25)	1066910

G ¾ female thread
G 1 female thread
G 1¼ female thread
G 1½ female thread



2.2.b "Hygate" Gate valves

Content

"Hygate ATB" Gate valves PN 25	392
"Hygate ATR" Gate valves PN 25	392
"Hygate AFC" Flanged gate valves PN 16	393
"Hygate AFC" Flanged gate valves PN 10	393



"Hygate ATB" Gate valves PN 25

(with isolating facility, threaded connection, brass)

Standard model

Article	kvs	Packing unit	Article-No.
DN 10	10.00	(50)	1040003
DN 15	11.00	(50)	1040004
DN 20	34.00	(50)	1040006
DN 25	46.00	(25)	1040008
DN 32	60.00	(25)	1040010
DN 40	105.00	(10)	1040012
DN 50	170.00	(5)	1040016
DN 65	280.00	(5)	1040020
DN 80	420.00	(2)	1040024
DN 100	650.00	(2)	1040032

Application:

Central heating and cooling systems with closed circuits and industrial plants, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Material resistant to: mineral, heating and hydraulic oils

Max. operating pressure p_s : 25 bar (PN 25)
Operating temperature t_s : -10 °C up to +120 °C
(The valid rules and standards for the use of these media may restrict the temperature range. Not suitable for gaseous fluids group 1 according to directive 2014/68/EU).

Body, bonnet, wedge and non-rising stem made of brass, with re-adjustable gland packing made of material containing PTFE.



"Hygate ATR" Gate valves PN 25

(with isolating facility, threaded connection, bronze)

DN 10	10.00	(50)	1043003
DN 15	11.00	(50)	1043004
DN 20	34.00	(50)	1043006
DN 25	46.00	(25)	1043008
DN 32	60.00	(20)	1043010
DN 40	105.00	(10)	1043012
DN 50	170.00	(5)	1043016
DN 65	280.00	(5)	1043020
DN 80	420.00	(2)	1043024

Application:

Central heating and cooling systems with closed circuits and industrial plants, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Material resistant to: mineral, heating and hydraulic oils, fuels, water vapour as well as air and other harmless and non-aggressive gases (not for gaseous fluids group 1 according to directive 2014/68/EU)

Max. operating pressure p_s : 25 bar (PN 25)
Operating temperature t_s :
-10 °C up to +200 °C for water
(0 °C up to 150 °C for water vapour)
(The valid rules and standards for the use of these media may restrict the temperature range.)

Body, bonnet and wedge made of bronze, non-rising stem made of brass resistant to dezincification, with re-adjustable gland packing made of material containing PTFE, brass gland nut.

Article kvs Article-No. Hint



"Hygate AFC" Flanged gate valves PN 16

(with isolating facility, flanged connection, cast iron)

DN 40	107.00	1045049
DN 50	250.00	1045050
DN 65	430.00	1045051
DN 80	790.00	1045052
DN 100	1,250.00	1045053
DN 125	1,960.00	1045054
DN 150	2,790.00	1045055
DN 200	2,880.00	1045056
DN 250	4,306.00	1045057
DN 300	6,380.00	1045058

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +120 °C
Body, bonnet and stuffing box assembly made of cast iron (EN-GJL-250 DIN EN1561), stem and valve seat made of brass, asbestos free seal.

Round flanges according to DIN EN 1092-2, PN 16.

Lengths according to EN 558-1, basic series 15



"Hygate AFC" Flanged gate valves PN 10

(with isolating facility, flanged connection, cast iron)

DN 40	120.00	1045149
DN 50	270.00	1045150
DN 65	470.00	1045151
DN 80	900.00	1045152
DN 100	1,600.00	1045153
DN 125	2,150.00	1045154
DN 150	3,680.00	1045155
DN 200		1045156
DN 250		1045157
DN 300		1045158

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 10 bar (PN 10)
Operating temperature t_s : -10 °C up to +120 °C
Body, bonnet and stuffing box assembly made of cast iron (EN-GJL-250 DIN EN1561), stem and valve seat made of brass, asbestos free seal.

Round flanges according to DIN EN 1092-2, PN 10.

Lengths according to EN 558-1, basic series 14








2.2.c Valves PN 16/25

Content

Oblique pattern globe valves with position indicator PN 25	396
Straight pattern globe valves with position indicator PN 25	396
Oblique pattern globe valves PN 25	396
Oblique pattern drain valves PN 25	396
Lockshield spindles	397
Airvent PN 25	397
Accessories	397

Article	kvs	Packing unit	Article-No.	Hint
Oblique pattern globe valves with position indicator PN 25				Application: Item no. 10502/03/21...: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195), as well as installations with open circuits which are operated with water. Max. operating pressure p _s : 25 bar (PN 25) Operating temperature t _s : -10 °C up to +150 °C Bronze body, brass bonnet. The oblique pattern globe valves DN 10 - DN 20 are suitable for use with compression fittings, item no. 10271..., page 317.
with plastic handwheel, bronze bonnet and stem with maintenance-free O-ring seal, additional sealing when stem is fully opened, setting indicator "valve fully opened", seat with PTFE seal, materials suitable for potable water				
without draining facility				
DN 10	3.10	(10)	1050203	
DN 15	4.40	(10)	1050204	
DN 20	9.50	(10)	1050206	
DN 25	17.40	(10)	1050208	
DN 32	29.20	(5)	1050210	
DN 40	42.90	(5)	1050212	
DN 50	64.00	(5)	1050216	
with draining facility (level with the handwheel)				
DN 10	3.10	(10)	1050303	
DN 15	4.40	(10)	1050304	
DN 20	9.50	(10)	1050306	
DN 25	17.40	(10)	1050308	
DN 32	29.20	(5)	1050310	
DN 40	42.90	(5)	1050312	
DN 50	64.00	(5)	1050316	
Straight pattern globe valves with position indicator PN 25				
with plastic handwheel, bronze length according to DIN 3844, series 2 bonnet and stem with maintenance-free O-ring seal, additional sealing when stem is fully opened, setting indicator "valve fully opened", seat with PTFE seal, materials suitable for potable water				
without draining facility				
DN 8	1.45	(10)	1052102	
DN 10	2.10	(10)	1052103	
DN 15	3.70	(10)	1052104	
DN 20	6.40	(10)	1052106	
DN 25	9.80	(10)	1052108	
DN 32	15.80	(5)	1052110	
DN 40	22.50	(5)	1052112	
DN 50	32.60	(5)	1052116	
Oblique pattern globe valves PN 25				Application: Central heating and cooling systems with closed circuits (especially for district heating and transmission units), for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035, ÖNORM 5195 and FW510). Max. operating pressure p _s : 25 bar (PN 25) Operating temperature t _s : 0 °C up to 150 °C Bonnet secured against accidental release.
bronze both ports with weldable steel tailpipes, with PTFE seal				
with handwheel				
DN 15			1065004	
DN 20			1065006	
DN 25			1065008	
DN 32			1065010	
Oblique pattern drain valves PN 25				
bronze one port with weldable steel tailpipe, one port with cap				
with handwheel				
DN 15			1066004	
DN 20			1066006	
DN 25			1066008	
DN 32			1066010	

Article	Packing unit	Article-No.	Hint
Lockshield spindles for oblique pattern valves and airvent PN 25			Lockshield spindle as replacement for oblique pattern valves and airvent PN 25.
	DN 15	(5) 1069292	
	DN 20	(5) 1069293	
	DN 25	(5) 1069294	
	DN 32	(5) 1069295	
Airvent PN 25 steel			
	DN 15	(25) 1067004	
Accessories			
Cap with washer and chain			For item no. 10650/51/55/56.. and 10660/61/65/66 ..
	DN 15	(25) 1066904	G ¾ female thread
	DN 20	(25) 1066906	G 1 female thread
	DN 25	(25) 1066908	G 1¼ female thread
	DN 32	(25) 1066910	G 1½ female thread
Washer for item no. 10650.., 10651.., 10660.., 10661..			
	DN 15	(10) 1065904	
	DN 20	(10) 1065906	
	DN 25	(10) 1065908	
	DN 32	(10) 1065910	
	General purpose lockshield key	(10) 1066151	



2.2.d Butterfly valves

Content

Lugged butterfly valves PN 16	400
Wafer butterfly valves PN 16	400
Accessories	401

Article

Article-No.

Hint

**Lugged butterfly valves PN 16
with EPDM liner**

Body: EN-GJS-400-15 (GGG-40) nodular cast iron
Stem: AISI420 (X20Cr13) stainless steel
Flap: AISI316 (CF8M) stainless steel

Lugged pattern, lever operated

DN 50	1048450
DN 65	1048451
DN 80	1048452
DN 100	1048453
DN 125	1048454
DN 150	1048455
DN 200	1048456

Application:

Central heating and cooling systems and industrial plants with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Lugged pattern butterfly valves (DN 50 up to DN 600) for installation between two flanges according to DIN EN 1092-2 (PN 10 or PN 16 for DN 50 up to DN 150; DN 200 up to DN 600 only for PN 16).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +120 °C

Extended neck for insulation purposes.

Item no. 10492...: Larger dimensions on demand.

Lugged pattern, gear operated

DN 100	1049253
DN 125	1049254
DN 150	1049255
DN 200	1049256
DN 250	1049257
DN 300	1049258
DN 350	1049259
DN 400	1049260
DN 450	1049261
DN 500	1049262
DN 600	1049263

**Wafer butterfly valves PN 16
with EPDM liner**

Body: EN-GJS-400-15 (GGG-40) nodular cast iron
Stem: AISI420 (X20Cr13) stainless steel
Flap: AISI316 (CF8M) stainless steel

Wafer pattern, lever operated

DN 50	1046450
DN 65	1046451
DN 80	1046452
DN 100	1046453
DN 125	1046454
DN 150	1046455
DN 200	1046456

Application:

Central heating and cooling systems and industrial plants with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Wafer pattern butterfly valves (DN 50 up to DN 300) for installation between two flanges according to DIN EN 1092-2 (PN 6, PN 10 or PN 16).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +120 °C

Extended neck for insulation purposes.

Wafer pattern, gear operated

DN 100	1047253
DN 125	1047254
DN 150	1047255
DN 200	1047256
DN 250	1047257
DN 300	1047258



Article	Article-No.	Hint
---------	-------------	------

Accessories



Lever handles
for butterfly valves, item no. 10484.. and 10464..

DN 50 - DN 80	1048491
DN 100 - DN 150	1048492
DN 200	1048493



Gear operators
for butterfly valves item no.
10484.., 10492.., 10464.. and 10472...

DN 50 - DN 100	1049850
DN 125 - DN 200	1049853

2.2.e Piston type spring assisted check valves, swing type check valves

Content



Piston type spring assisted check valves (female threaded model) PN 25	404
Swing type check valves (female threaded model) PN 16	404
Swing type check valves (flanged model) PN 16	405
Swing type check valves (wafer model) PN 16	405
Double swing type check valves (wafer model) PN 16	405

Article	kvs	Packing unit	Article-No.	Hint
Piston type spring assisted check valves (female threaded model) PN 25 bronze, brass with FKM seal				Non-return check valve for horizontal and vertical installation. Bronze body, inner parts made of brass. Valve disc spring assisted. Opening pressure 40 mbar (~400 mm WG). Sizes DN 10 - DN 20 are suitable for use with compression fittings, item no. 10271..., page 317.
DN 10	2.50	(10)	1072003	Application: Central heating and cooling systems with closed circuits and industrial plants, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Material resistant to: mineral, heating and hydraulic oils, fuels, air (The valid rules and standards for the use of these media may restrict the temperature range. Not suitable for gaseous fluids group 1 according to directive 2014/68/EU). Max. operating pressure p_s : 25 bar (PN 25) [6 bar (PN 25) for air] Operating temperature t_s : 0 up to 100°C [-10 °C up to +120 °C for water]
DN 15	3.80	(10)	1072004	
DN 20	6.00	(10)	1072006	
DN 25	13.00	(10)	1072008	
DN 32	17.00	(5)	1072010	
DN 40	19.00	(5)	1072012	
DN 50	30.50	(5)	1072016	



Piston type spring assisted check valves (female threaded model) PN 25

bronze, brass
with EPDM seal,
materials suitable for potable water



DN 10	3.40	(10)	1072103
DN 15	5.50	(10)	1072104
DN 20	10.30	(10)	1072106
DN 25	17.50	(10)	1072108
DN 32	33.00	(5)	1072110
DN 40	44.00	(5)	1072112
DN 50	68.00	(5)	1072116

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195), as well as systems with open circuits which are operated with water.

Max. operating pressure p_s : 25 bar (PN 25)
Operating temperature t_s : -10 °C up to +150 °C
WRAS certified

Swing type check valves (female threaded model) PN 16

bronze, brass
with metal to metal seal



DN 15	5.50	(10)	1075004
DN 20	10.20	(10)	1075006
DN 25	20.20	(10)	1075008
DN 32	34.70	(5)	1075010
DN 40	44.90	(5)	1075012
DN 50	104.40		1075016
DN 65	175.00		1075020

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +80 °C
[80 °C up to 120 °C: max. p_s 10 bar]

Non-return check valve for horizontal and vertical (riser, flap opening upwards) installation.
Bronze body, inner parts made of brass.



Swing type check valves (flanged model) PN 16
cast iron

Article	kvs	Article-No.
DN 40	85.00	1073049
DN 50	132.00	1073050
DN 65	326.00	1073051
DN 80	490.00	1073052
DN 100	770.00	1073053
DN 125	1,020.00	1073054
DN 150	1,700.00	1073055
DN 200	2,410.00	1073056
DN 250	3,870.00	1073057
DN 300	5,670.00	1073058

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +120 °C

Non-return check valve for horizontal and vertical (riser, flap opening upwards) installation.

Body, cover and stuffing box assembly made of cast iron (EN-GJL-250 DIN EN1561), valve seat made of brass, asbestos free gaskets. Round flanges according to DIN EN 1092-2, PN 16.



Swing type check valves (wafer model) PN 16
steel
with EPDM seal

DN 40	22.20	1072549
DN 50	54.00	1072550
DN 65	75.00	1072551
DN 80	112.00	1072552
DN 100	172.00	1072553
DN 125	342.00	1072554
DN 150	490.00	1072555
DN 200	1,128.00	1072556
DN 250	1,500.00	1072557
DN 300	1,850.00	1072558
DN 350	2,700.00	1072559
DN 400	3,500.00	1072560
DN 450	5,200.00	1072561

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +120 °C

Body and flap made of galvanised steel. Suitable for 3 m/s velocity.



Double swing type check valves (wafer model) PN 16
cast iron
seat seal made of EPDM

DN 50	55.00	1072650
DN 65	82.00	1072651
DN 80	115.00	1072652
DN 100	236.00	1072653
DN 125	500.00	1072654
DN 150	700.00	1072655
DN 200	1,100.00	1072656
DN 250	2,000.00	1072657
DN 300	3,300.00	1072658
DN 350	3,950.00	1072659
DN 400	5,000.00	1072660
DN 450	6,550.00	1072661
DN 500	8,250.00	1072662
DN 600	12,600.00	1072663

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : 0 °C up to 120 °C

Body made of cast iron (EN-GJL-250 DIN EN 1561), stainless steel flaps.

2.2.f Spare parts

Content



Handwheels

408

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Handwheels

red, for gate valves 10400/30.. and bronze valves 10520..



DN 10 + DN 15	(100)	1900051
DN 25	(100)	1900052
DN 32 + DN 40	(100)	1900053
DN 50	(100)	1900054
DN 65	(100)	1900055
DN 80 + DN 100	(100)	1900056

As for bronze valves, item no. 1900051 fits the sizes DN 10 and DN 15 and item no. 1900052 fits the sizes DN 20 and DN 25.



2.3.a Dirt separators

Content	411
Dirt separators PN 16 - threaded model	412
Dirt separators - flanged model	413



2.3.b Airvents

Content	415
Airvents PN 10	416



2.3.c Strainers

Content	417
Strainers PN 25	418
Spare parts	418
Strainers PN 16	419
Spare parts	419
Strainers PN 25	420
Spare parts	420



2.3.a Dirt separators

Content

Dirt separators PN 16 - threaded model	412
Dirt separators - flanged model	413

Article

Article-No.

Hint

Dirt separators PN 16 - threaded model
brass, with magnetite separator

For horizontal installation
Rp female thread according to EN 10226-1



DN 20	Rp ¾	1124006
DN 25	Rp 1	1124008
DN 32	Rp 1¼	1124010
DN 40	Rp 1½	1124012

Application:
Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : -10 °C up to +110 °C

For cooling systems: Please provide frost protection and diffusion tight insulation!

For vertical installation
Rp female thread according to EN 10226-1



DN 20	Rp ¾	1124106
DN 25	Rp 1	1124108

Function:
Oventop dirt separators serve the constant removal of smallest dirt particles without increasing the flow resistance. Magnetite is retained by a strong magnet. When removing the magnet, the magnetic particles fall into the sump and can be rinsed out via a ball valve without interruption of use.

Article

Article-No.

Hint

Dirt separators - flanged model
steel, with magnetite separator

Flanged according to **DIN EN 1092-1**


DN 50	1124550
DN 65	1124551
DN 80	1124552
DN 100	1124553
DN 125	1124554
DN 150	1124555
DN 200	1124556
DN 250	1124557
DN 300	1124558

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +110 °C

For cooling systems: Please provide frost protection and diffusion tight insulation!

Function:

Oventop dirt separators serve the constant removal of smallest dirt particles without increasing the flow resistance.

Magnetite is retained by a strong magnet. When removing the magnet, the magnetic particles fall into the sump and can be rinsed out via a ball valve without interruption of use.

Flanged with hole circle according to **ANSI**


DN 50	1124650
DN 65	1124651
DN 80	1124652
DN 100	1124653
DN 125	1124654
DN 150	1124655
DN 200	1124656
DN 250	1124657
DN 300	1124658

As above but ANSI class 150.

Max. operating pressure p_s : 20 bar (PN 20)

Larger dimensions on demand.






2.3.b Airvents

Content

Airvents PN 10

416

Article	Packing unit	Article-No.	Hint
Airvents PN 10			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures with a maximum glycol proportion of 30 % according to VDI 2035/ÖNORM 5195).
	Brass automatic airvent with automatic shut off		Max. operating pressure p_s : 10 bar (PN 10) Operating temperature t_s : 0 °C up to 110 °C
	G $\frac{3}{8}$	(10) 1088303	
	G $\frac{1}{2}$	(10) 1088304	
	G $\frac{3}{4}$	(10) 1088306	
	angle pattern nickel plated, without automatic shut off		
	G $\frac{1}{2}$	(10) 1088404	
	Brass precision airvent with automatic shut off		With air admission barrier in the venting valve.
	G $\frac{3}{8}$	(10) 1088203	



2.3.c Strainers

Content

Strainers PN 25	418
Spare parts	418
Strainers PN 16	419
Spare parts	419
Strainers PN 25	420
Spare parts	420

Article	kvs	Packing unit	Article-No.
---------	-----	--------------	-------------

Hint

Strainers PN 25
bronze



with simple wire basket, 600 µm

DN 8	1.50	(10)	1120002
DN 10	1.70	(10)	1120003
DN 15	3.80	(10)	1120004
DN 20	7.80	(10)	1120006
DN 25	13.40	(10)	1120008
DN 32	23.90	(5)	1120010
DN 40	32.50	(5)	1120012
DN 50	56.20	(5)	1120016
DN 65	101.30		1120020
DN 80	133.60		1120024

with double wire basket for fine filtering, 250 µm



DN 8	1.40	(10)	1121002
DN 10	1.60	(10)	1121003
DN 15	3.40	(10)	1121004
DN 20	6.90	(10)	1121006
DN 25	10.90	(10)	1121008
DN 32	20.70	(5)	1121010
DN 40	27.40	(5)	1121012
DN 50	47.30	(5)	1121016
DN 65	82.10		1121020
DN 80	102.00		1121024

Spare parts

Wire basket
(mesh size 600 µm)



DN 8 + DN 10			1123003
DN 15			1123004
DN 20			1123006
DN 25			1123008
DN 32			1123010
DN 40			1123012
DN 50	(100)		1123016
DN 65			1123020
DN 80			1123024

Double wire basket
(mesh size 250 µm)



DN 8 + DN 10			1123103
DN 15			1123104
DN 20			1123106
DN 25			1123108
DN 32			1123110
DN 40			1123112
DN 50			1123116
DN 65			1123120
DN 80			1123124



Strainer PN 25
both ports male thread, flat sealing
with double wire basket 250 µm

DN 15	2.70	(10)	1141004
DN 20	4.80	(10)	1141006

Application:

Central heating and cooling systems with closed circuits and industrial plants, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Strainers 11200/10:

Material resistant to: mineral, heating and hydraulic oils, fuels, water vapour, as well as air and other harmless, non-aggressive gases (not suitable for gaseous fluids group 1 according to directive 2014/68/EU)

Max. operating pressure p_s : 25 bar (PN 25)

Operating temperature t_s : -10 °C up to +150 °C

(The valid rules and standards for the use of these media may restrict the temperature range.)

The sizes DN 10 - DN 80 (1120002-24) are WRAS (United Kingdom) certified for installation in potable water systems.

The strainers DN 10 - DN 20 are suitable for use with compression fittings, item no. 10271..., page 317.

DN 8 - DN 50 bronze body, brass bonnet.

DN 65 - DN 80 brass body and bonnet.

Wire basket made of stainless chromium steel.

Item no. 11200:

Mesh size 0.6 mm

100 meshes/cm², Δ 600 µm.

Item no. 11210:

Mesh size 0.25 mm

600 meshes/cm², Δ 250 µm.



Wire basket

D	Height	Ø
DN 8 + DN 10	22	13.5
DN 15	27	19
DN 20	36	25
DN 25	42	31
DN 32	55	43
DN 40	62	48.5
DN 50	72	64
DN 65	110	70
DN 80	130	80

Strainer 11410:

Max. operating pressure p_s : 25 bar (PN 25)

Operating temperature t_s : -10 °C up to +120 °C

Article	kvs	Article-No.	Hint
Strainers PN 16 cast iron 			Application: Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Max. operating pressure p_s : 16 bar (PN 16) Operating temperature t_s : 0 up to 120 °C Body and cover: DN 15 - DN 300: made of cast iron (EN-GJL-250 DIN EN1561) DN 350 - DN 600: made of nodular cast iron (EN-GJS-500-7 DIN EN1563) Wire basket: made of stainless steel, asbestos free gasket Round flanges according to DIN EN 1092-2, PN 16 Screen aperture width: DN 15 - 32: 1.0 mm DN 40 - 150: 1.5 mm DN 200 - 300: 2.0 mm DN 350 - 600: 3.0 mm
DN 15	7.00	1122045	
DN 20	10.00	1122046	
DN 25	15.00	1122047	
DN 32	21.00	1122048	
DN 40	39.00	1122049	
DN 50	60.00	1122050	
DN 65	105.00	1122051	
DN 80	140.00	1122052	
DN 100	225.00	1122053	
DN 125	340.00	1122054	
DN 150	405.00	1122055	
DN 200	715.00	1122056	
DN 250	1,355.00	1122057	
DN 300	1,890.00	1122058	
DN 350	2,970.00	1122059	
DN 400	4,150.00	1122060	
DN 450	5,540.00	1122061	
DN 500	6,850.00	1122062	
DN 600	9,280.00	1122063	
Spare parts Wire basket and blind flange ring gasket 			
DN 15/20		1122085	
DN 25		1122087	
DN 32		1122088	
DN 40		1122089	
DN 50		1122090	
DN 65		1122091	
DN 80		1122092	
DN 100		1122093	
DN 125		1122094	
DN 150		1122095	
DN 200		1122096	
DN 250		1122097	
DN 300		1122098	
DN 350		1122159	
DN 400		1122160	
DN 450		1122161	
DN 500		1122162	
DN 600		1122163	
Larger sizes on demand.			

Article	Packing unit	Article-No.	Hint
Strainers PN 25 bronze			Application: Central heating and cooling systems with closed circuits and industrial plants, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Material resistant to: mineral, heating and hydraulic oils, fuels, water vapour as well as air and other harmless non-aggressive gases (not for gaseous fluids group 1 according to directive 2014/68/EU)
both ports with weldable steel tailpipe wire basket made of stainless chromium steel mesh size 0.6 mm			
DN 15		1068004	
DN 20		1068006	
DN 25		1068008	
DN 32		1068010	
Spare parts			Max. operating pressure p _s : 25 bar (PN 25) Operating temperature t _s : 0 °C up to 150 °C
Wire basket (mesh size 0.6 mm)			
DN 15	(10)	1068804	
DN 20	(10)	1068806	
DN 25	(10)	1068808	
DN 32	(10)	1068810	

Stations, storage cylinders, pipes



3.1.a "Regumat 130/180" DN 20/25/32

Content	427
"Regumat S-130" DN 20 - constant temperature heating circuit	428
"Regumat M3-130" DN 20 - variable temperature heating circuit	429
Accessories for "Regumat S/M3-130" DN 20	430
"Regumat S-130" DN 25 - constant temperature heating circuit	431
"Regumat M3-130" DN 25 - variable temperature heating circuit	432
Accessories for "Regumat S/M3/M4-130" DN 25	433
"Regumat S-180" DN 25 with pump ball valve - constant temperature heating circuit	435
"Regumat M3-180" DN 25 with pump ball valve - variable temperature heating circuit	436
"Regumat MF-180" DN 25 with pump ball valve - integrated fixed flow temperature value control	437
Accessories for "Regumat S/M3/MF-180" DN 25 with pump ball valve	438
"Regumat S-180" DN 25 with reduced dimensions - constant temperature heating circuit	440
"Regumat M3-180" DN 25 with reduced dimensions - variable temperature heating circuit	441
Accessories for "Regumat S/M3-180" DN 25 with reduced dimensions	442
Accessories for "Regumat S/M3-180" DN 25	444
"Regumat S-180" DN 32 with pump ball valve - constant temperature heating circuit	446
"Regumat M3-180" DN 32 with pump ball valve - variable temperature heating circuit	447
Accessories for "Regumat S/M3-180" DN 32 with pump ball valve	448
"Regumat S-180 plus" DN 32 with pump ball valve - constant temperature heating circuit	449
"Regumat M3-180 plus" DN 32 with pump ball valve - variable temperature heating circuit	450
Accessories for "Regumat S/M3-180 plus" with pump ball valve	451

3.1.b "Regumat 220/280" DN 40/50



Content	453
"Regumat S-220" DN 40 - constant temperature heating circuit	454
"Regumat M3-220" DN 40 - variable temperature heating circuit	455
Accessories for "Regumat S/M3-220" DN 40	456
"Regumat S-280" DN 50 - constant temperature heating circuit	457
"Regumat M3-280" DN 50 - variable temperature heating circuit	458
Accessories for "Regumat S/M3-280" DN 50	459

3.1.c "Regumat F/FR" Stations for thermally controlled surface heating systems



Content	461
"Regumat F-130" DN 25	462
"Regumat F-180" DN 25 with pump ball valve	463
"Regumat F-180" DN 25	464
"Regumat FR-180" DN 25	464
Accessories for "Regumat F-130/F-180/FR-180" DN 25	465
"Regumat" Heat exchangers	466
"Regumat" Heat exchangers - Examples of the application	467
Accessories for "Regumat" heat exchangers	466



3.1.d "Regumat RTA" Stations for solid fuel boilers for return temperature increase

Content	469
Summary	471
"Regumat RTA-130 VR" DN 25 - supply on the right hand side	472
"Regumat RTA-130 VL" DN 25 - supply on the left hand side	472
"Regumat RTA-130 TOP" DN 25 - connection from the top	472
"Regumat RTA-180" DN 25	473
Accessories for "Regumat RTA-130/180" DN 25	474
"Regumat RTA-180" DN 32	475
Accessories for "Regumat RTA-180" DN 32	475
Thermal drainage protection device	475

3.1.e Products for heat pump systems

Content	477
Products for heat pump systems	478
Accessories	479
Products for heat pump installations	480

3.1.f "Regumat S/M3-180" DN 25 for heat meters



Content	481
"Regumat S-180" DN 25 for heat meters	482
"Regumat M3-180" DN 25 for heat meters	482
Heat meter installation set	482
Accessories for "Regumat S/M3-180" DN 25 for heat meters	483

3.1.g Accessories for "Regumat"



Content	485
Distributor for "Regumat" DN 20	486
Distributor for "Regumat" DN 25	486
Modular distributor for "Regumat" DN 25	486
Distributor for "Regumat" DN 32 with pump ball valve	487
Distributor for "Regumat plus" DN 32 with pump ball valve	487
Distributor for "Regumat-220/280" DN 40/50	487
Wall consoles	487
"HydroFixx"	488
Accessories for hydronic headers / distributors	490
"Regumat" Tailpipe sets DN 20	491
"Regumat" Tailpipe sets DN 25	492
"Regumat" Tailpipe sets DN 32	493
"Regumat" Tailpipe sets DN 40/50	493
System illustration	495
Thermal insulation	494
"Regtronic RH" Heating circuit controller	496
"Regtronic EM" Extension module	497
Accessories	498



High-efficiency pumps 130 mm	500
High-efficiency pumps 180 mm	500

3.1.h "Regudis W" Dwelling stations

Content	501
General information	503
Regudis W-HTE Dwelling stations - electronic control, depth 110 mm	504
Extension modules for "Regudis W-HTE"	504
Accessories for "Regudis W-HTE"	505
Accessories for installation in a four-pipe system	506
Spare parts for "Regudis W-HTE"	507
Covers and cabinets for "Regudis W-HTE"	508
"Regtronic RD-W" System controller	512
Accessories for system controller "Regtronic RD-W"	513
"Regudis W-HTU" Dwelling stations, depth 150 - 175 mm	516
"Regudis W-HTU" Basic Dwelling stations, depth 150 - 175 mm	520
"Regudis W-HTF" Dwelling stations, depth 110 mm	521
Covers and cabinets for dwelling stations "Regudis W"	525



3.1.i "Regumaq X" Fresh water stations

Content	533
"Regumaq X-25"	534
"Regumaq X-45"	535
Accessories for "Regumaq X-25/45"	536
"Aquanova Magnum" Water filters	536
Connection fittings	537
"Aquaström P" Water sampling valve	537
"Aquaström R" Non-return check valve	538
Spare parts for "Regumaq X-25" stations	538
Spare parts for "Regumaq X-45" stations	540
"Regumaq X-80"	541
Accessories for "Regumaq X-80"	542
"Aquaström R" Non-return check valve	543
"Aquanova Magnum" Water filters	544
"Regumaq X-30" - without circulation connection	546
"Regumaq XZ-30" - with circulation connection	546
"Regumaq XZ-30" - with circulation connection and high-efficiency circulation pump	547
Heat exchangers	548
Accessories for "Regumaq X-/XZ-30"	548
"Regumaq K" Cascade control set for "Regumaq X/XZ-30"	552
"Regumaq XH"	553
Accessories for "Regumaq XH"	554



3.1.j Further associated products

Content	555
"Optibal P" Pump ball valves	556
"Optibal" Ball valves	556
Insulations	556
Thermometer conversion sets	556
"Optibal PK" Isolating set	557
"Optibal" Ball valves with press connection	557
Accessories for the connection of the boiler and the storage cylinder to the pipework	558
"MSM-Block" Boiler safety device	561
Heating system filling station	561
Expa-Con Valves with lead sealable cap	561
"Optiflex" Fill and drain ball valves	562
"Optiflex" Fill and drain ball valves for solar	563
Accessories	563
Ball valves with hose connection	563
Fiill and drain ball valves made of bronze	564
Draining and venting valves	564
Fill and drain cocks	565
Accessories	565
Gauge cocks	566
Gauge cock, button type	566
Accessories	566
Gauge isolating valves	567
Accessories	567
Check valves	568
Check valves made of bronze	568
Differential pressure relief valves PN 10	569



3.1.a "Regumat 130/180" DN 20/25/32

Content

"Regumat S-130" DN 20 - constant temperature heating circuit	428
"Regumat M3-130" DN 20 - variable temperature heating circuit	429
Accessories for "Regumat S/M3-130" DN 20	430
"Regumat S-130" DN 25 - constant temperature heating circuit	431
"Regumat M3-130" DN 25 - variable temperature heating circuit	432
Accessories for "Regumat S/M3/M4-130" DN 25	433
"Regumat S-180" DN 25 with pump ball valve - constant temperature heating circuit	435
"Regumat M3-180" DN 25 with pump ball valve - variable temperature heating circuit	436
"Regumat MF-180" DN 25 with pump ball valve - integrated fixed flow temperature value control	437
Accessories for "Regumat S/M3/MF-180" DN 25 with pump ball valve	438
"Regumat S-180" DN 25 with reduced dimensions - constant temperature heating circuit	440
"Regumat M3-180" DN 25 with reduced dimensions - variable temperature heating circuit	441
Accessories for "Regumat S/M3-180" DN 25 with reduced dimensions	442
Accessories for "Regumat S/M3-180" DN 25	444
"Regumat S-180" DN 32 with pump ball valve - constant temperature heating circuit	446
"Regumat M3-180" DN 32 with pump ball valve - variable temperature heating circuit	447
Accessories for "Regumat S/M3-180" DN 32 with pump ball valve	448
"Regumat S-180 plus" DN 32 with pump ball valve - constant temperature heating circuit	449
"Regumat M3-180 plus" DN 32 with pump ball valve - variable temperature heating circuit	450
Accessories for "Regumat S/M3-180 plus" with pump ball valve	451



"Regumat S-130" DN 20 - constant temperature heating circuit
with universal thermal insulation of modular construction

consisting of:
-isolation device with 2 ball valves, 2 thermometers and
wall mounting device
-flanged pipe with check valve
-distance piece
-thermal insulation

without pump

1355051

For the connection of the boiler to the
pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-
efficiency pumps: 95 °C

Dimensions product assembly:
Distance between pipe centres: 100 mm
Length: 315 mm

Outer dimensions thermal
insulation (W x H x D):
230 mm x 360 mm x 190 mm



with high-efficiency pump (EEI ≤ 0.2)

Grundfos ALPHA 2.1 15-60
Wilo-Stratos PICO 15/1-6

1355057

1355059

Connection:
To heating circuit:
G 1 male thread, flat sealing
To boiler:
G 1 male thread, flat sealing

Model without pump:
Components loosely connected,
individual components leak tested.



Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 20, length 130 mm,
G 1 male thread) can be installed.

Note: On delivery, the supply pipe is on the
right hand side. If required, the supply and the
return pipe can be changed on site (see
installation instructions).

**Tailpipe sets are available separately:
page 491**

**Heating circuit controller "Regtronic RH" for
weather guided control of the flow
temperature of the heating system:
page 496**

Article	Article-No.	Hint
	"Regumat M3-130" DN 20 - variable temperature heating circuit with three-way mixing valve with check valve and actuator with universal thermal insulation of modular construction consisting of: -isolation device with 2 ball valves, 2 thermometers and wall mounting device -three-way mixing valve with check valve and actuator -thermal insulation	
	without pump	1355251 For the connection of the boiler to the pipework. Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high- efficiency pumps: 95 °C With three-way mixing valve with check valve and actuator for flow temperature control in central heating systems with circulation pump. Dimensions product assembly: Distance between pipe centres: 100 mm Length: 315 mm
	with high-efficiency pump (EEI ≤ 0.2) Grundfos ALPHA 2.1 15-60 Wilo-Stratos PICO 15/1-6	
	1355257 1355259	Outer dimensions thermal insulation (W x H x D): 230 mm x 360 mm x 190 mm Connection: To heating circuit: G 1 male thread, flat sealing To boiler: G 1 male thread, flat sealing Model without pump: Components loosely connected, individual components leak tested. Models with high-efficiency pumps: Components screwed tightly, product assembly leak tested. Any standard pump (DN 20, length 130 mm, G 1 male thread) can be installed. Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions). Tailpipe sets are available separately: page 491 Heating circuit controller "Regtronic RH" for weather guided control of the flow temperature of the heating system: page 496

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Accessories for "Regumat S/M3-130" DN 20



Thermometer

Replacement thermometer for "Regumat/Regusol" DN 20

blue	1351701
red	1351702



Replacement ball valve for "Regumat-130" without thermometer, including set of seals

DN 20	1351703
-------	---------



Actuators

The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.

24 V (0-10 V)	1350951
24 V (three point)	1350952
230 V (three point)	1350953
230 V (three point)	1361098

For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".

Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 35 sec., torque 5 Nm



Three-way mixing valve for "Regumat M3"

without actuator,
including pipe for the return and set of seals

DN 20	1351704
-------	---------



Adapter	(25)	1350296
---------	------	---------

For the "plug & play" models of the Oventrop actuators manufactured since 2015.



Adapter	(25)	1350297
---------	------	---------

For Oventrop actuators manufactured up to 2005.



"Regumat S-130" DN 25 - constant temperature heating circuit
consisting of:

- isolation device with 2 ball valves and 2 thermometers (without pressure relief device)
- flanged pipe with check valve
- distance piece
- thermal insulation

without pump

1355071

with high-efficiency pump (EEI ≤ 0.2)

Wilo PARA 25-130/6-43/SC-9

1355074

For the connection of the boiler to the pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-efficiency pumps: 85 °C

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 311 mm

Outer dimensions thermal insulation (W x H x D):
248 mm x 364 mm x 197 mm

Connection:
To heating circuit:
G 1½ male thread, flat sealing
To boiler:
G 1½ male thread, flat sealing

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 25, length 130 mm, G 1½ male thread) can be installed.

Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).

Tailpipe sets (page 492) and a wall mounting device (page 433) are available separately.

Article

Article-No.

Hint

"Regumat M3-130" DN 25 - variable temperature heating circuit
with three-way mixing valve with bypass
with manual presetting and actuator

consisting of:
-isolation device with 2 ball valves and 2 thermometers
(without pressure relief device)
-flanged pipe with check valve
-three-way mixing valve with actuator
-thermal insulation

without pump

1355271

For the connection of the boiler to the
pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-
efficiency pumps: 85°C

With three-way mixing valve and actuator for
flow temperature control in central heating
systems with circulation pump.

The three-way mixing valve is additionally
equipped with a bypass with manual
presetting.

with high-efficiency pump (EEI ≤ 0.2)

Wilo PARA 25-130/6-43/SC-9

1355274

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 311 mm

Outer dimensions thermal
insulation (W x H x D):
248 mm x 364 mm x 197 mm

Connection:
To heating circuit:
G 1½ male thread, flat sealing
To boiler:
G 1½ male thread, flat sealing

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.









Any standard pump (DN 25, length 130 mm,
G 1½ male thread) can be installed.

Note: On delivery, the supply pipe is on the
right hand side. If required, the supply and the
return pipe can be changed on site (see
installation instructions).

**Tailpipe sets (page 492) and a wall mounting
device (page 433) are available separately.**

**Heating circuit controller "Regronic RH"
for weather guided control of the flow
temperature of the heating system:
page 496**



Article	Article-No.	Hint
Accessories for "Regumat S/M3/M4-130" DN 25		
	Thermal insulation with one-piece front insulation shell:	
	for "Regumat-130" DN 25	1355090
Not suitable for "Regumat 130" DN 25 with Grundfos ALPHA 2.		
	Isolation device DN 25 for "Regumat" with 2 ball valves and 2 thermometers, 2 collar nuts and set of seals	
	DN 25	1353181
	Thermometer for "Regumat" DN 25-50 as well as for "Regucirc M" and "Optibal PK"	
	blue	1351690°
	red	1355093*
		1355094*
Preset to 200 mbar.		
	Insert for pressure relief device (bypass) for subsequent conversion for "Regumat S/M3/M4"	
	DN 25-130 and DN 25-180	1353390
	Wall mounting device for "Regumat" including fixing material	
	DN 25-130 and DN 25-180	1352096
L = 212 mm. For "Regumat S-130" (replacement).		
	"Regumat" Flanged pipe with check valve	
	DN 25-130	1352296
For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".		
	Actuators The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.	
	24 V (0-10 V)	1350951
24 V (three point)		1350952
230 V (three point)		1350953
230 V (three point)		1361098
Operating time 140 sec., torque 5 Nm Operating time 140 sec., torque 5 Nm Operating time 140 sec., torque 5 Nm Operating time 35 sec., torque 5 Nm		
Three-way mixing valve for "Regumat M3"		
without actuator, with set of seals		
DN 25 <u>with</u> manually adjustable bypass		1350281
DN 25 <u>without</u> manually adjustable bypass		1350271
For flow temperature control. Manual setting, actuator can be mounted subsequently (only valid for DN 25). Distance between pipe centres: 125 mm Connection: G 1½ male thread x G 1½ collar nut		



Bronze four-way mixing valve for "Regumat M4"
without actuator and without manual operating device,
with bypass with manual presetting,
with set of seals

DN 25

1350954

Only as replacement for "Regumat"
DN 32 with "Lineg" actuator
manufactured since 2007.



Setting group

for manual setting of the
three- and four-way mixing valves

1651500



Set of seals

for three-way mixing valve DN 25

(20)

1350289

For Oventrop actuators.



Set of seals

for four-way mixing valve DN 25

1350299

For Oventrop actuators.



Adapter

(25)

1350296

For the "plug & play" models of the Oventrop
actuators manufactured since 2015.



Adapter

(25)

1350297

For Oventrop actuators manufactured
up to 2005.



Bypass plug M3 - DN 25

(25)

1350292

For three-way mixing valves with manually
adjustable bypass for closing the bypass
channel.



Regulating insert (spindle) for three-way mixing valve DN 25
with set of seals

1350285

For Oventrop actuators (without adapter).



Regulating insert (spindle) for four-way mixing valve DN 25
with set of seals

(30)

1350295

For "ESBE" actuator (without adapter).



Regulating insert (spindle) for four-way mixing valve DN 25
with set of seals

(30)

1350294

For "Lineg" actuator (without adapter).

Article

Article-No.

Hint



"Regumat S-180" DN 25 with pump ball valve - constant temperature heating circuit

with universal thermal insulation of modular construction.
Suitable for the installation of the following
high-efficiency pumps:

Wilo-Yonos PARA
Wilo-Stratos PICO 25/1-4/6
Grundfos ALPHA 2.1 25-40/60
Laing series Ecocirc
Biral AX 13-1

consisting of:
-isolation device with 2 ball valves and 2 thermometers
(without pressure relief device)
-wall mounting device
-flanged pipe
-check valve
-pump ball valve at the pump inlet
-distance piece
-thermal insulation

without pump

1357070

with high-efficiency pump ($EEL \leq 0.2$)



Wilo PARA 25-180/6-43/SC-9
Grundfos ALPHA 2.1 25-60

1357072
1357073

For the connection of the boiler to the
pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-
efficiency pumps: 95 °C

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 411 mm

Outer dimensions thermal
insulation (W x H x D):
248 mm x 465 mm x 213 mm

Connection:
To heating circuit:
G 1½ male thread, flat sealing
To boiler:
G 1½ male thread, flat sealing

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 25, length 180 mm,
G 1½ male thread) can be installed.

Note: On delivery, the supply pipe is on the
right hand side. If required, the supply and the
return pipe can be changed on site (see
installation instructions).

**Tailpipe sets are available separately:
page 492**

**Heating circuit controller "Regtronic RH"
for weather guided control of the flow
temperature of the heating system:
page 496**

**Heating circuit controller extension set
including controller "Regtronic RH" and
bracket for the direct connection to the
station: page 438**

**Heat meter connection set can be installed
subsequently.
Connection of a heat meter G ¾, 110 mm
or G 1, 130 mm: page 439**

Article

Article-No.

Hint



"Regumat M3-180" DN 25 with pump ball valve - variable temperature heating circuit
with three-way mixing valve with check valve and actuator

with universal thermal insulation of modular construction.
Suitable for the installation of the following
high-efficiency pumps:

Wilo-Yonos PARA
Wilo-Stratos PICO 25/1-4/6
Grundfos ALPHA 2.1 25-40/60
Laing series Ecocirc
Biral AX 13-1

consisting of:
-isolation device with 2 ball valves and 2 thermometers
(without pressure relief device)
-wall mounting device
-flanged pipe
-three-way mixing valve with check valve and actuator
-pump ball valve at the pump inlet
-thermal insulation

without pump

1357270

with high-efficiency pump (EEI ≤ 0.2)

Wilo PARA 25-180/6-43/SC-9
Grundfos ALPHA 2.1 25-60

1357272

1357273



For the connection of the boiler to the
pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-
efficiency pumps: 95 °C

With three-way mixing valve and actuator for
flow temperature control in central heating
systems with circulation pump.

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 411 mm

Outer dimensions thermal
insulation (W x H x D):
248 mm x 465 mm x 213 mm

Connection:
To heating circuit:
G 1½ male thread, flat sealing
To boiler:
G 1½ male thread, flat sealing

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 25, length 180 mm,
G 1½ male thread) can be installed.

Note: On delivery, the supply pipe is on the
right hand side. If required, the supply and the
return pipe can be changed on site (see
installation instructions).

The actuator can be mounted without tools -
"plug & play".

**Tailpipe sets are available separately:
page 492**

**Heating circuit controller "Regtronic RH"
for weather guided control of the flow
temperature of the heating system:
page 496**

**Heating circuit controller extension set
including controller "Regtronic RH" and
bracket for the direct connection to the
station: page 438**

**Heat meter connection set can be installed
subsequently.
Connection of a heat meter G ¾, 110 mm
or G 1, 130 mm: page 439**

**NR24/230 actuators (without mounting
plate) can be fitted to the "Regumat"
stations DN 25 with the help of the mounting
set: page 439**



"Regumat MF-180" DN 25 with pump ball valve - integrated fixed flow temperature value control

with three-way mixing valve with check valve and actuator with integrated electronic control

with universal thermal insulation of modular construction.
Suitable for the installation of the following high efficiency-pumps:

Wilo-Yonos PARA
Wilo-Stratos PICO 25/1-4/6
Grundfos ALPHA 2.1 25-40/60
Laing series Ecocirc
Biral AX 13-1

consisting of:

- isolation device with 2 ball valves and 2 thermometers (without pressure relief device)
- wall mounting device
- flanged pipe
- three-way mixing valve with check valve and actuator with fixed flow temperature value control including temperature sensor PT 1000 and mains connection 230 V AC
- pump ball valve at the pump inlet
- electronic pipe contact safety switch
- thermal insulation

without pump

1354260

For the connection of the boiler to the pipework.

Fixed value control unit "Regumat MF-180" for flow temperature control and limitation in combined radiator/surface heating systems. The flow temperature is controlled with the help of a three-way mixing valve in combination with a temperature controller with temperature sensor.

Temperature control ranges:

20 °C - 80 °C
0 °C - 95 °C
60 °C - 85 °C
25 °C - 45 °C

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-efficiency pumps: 95 °C

Dimensions product assembly:

Distance between pipe centres: 125 mm
Length: 411 mm

Outer dimensions thermal

insulation (W x H x D):
248 mm x 465 mm x 213 mm

Connection:

To heating circuit:
G 1½ male thread, flat sealing
To boiler:
G 1½ male thread, flat sealing

Components loosely connected,
individual components leak tested.

Any standard pump (DN 25, length 180 mm, G 1½ male thread) can be installed.

Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).

The actuator can be mounted without tools - "plug & play".

**Tailpipe sets are available separately:
page 492**

**Heating circuit controller "Regtronic RH" for weather guided control of the flow temperature of the heating system:
page 496**

Heating circuit controller extension set including controller "Regtronic RH" and bracket for the direct connection to the station: page 438

Heat meter connection set can be installed subsequently.

Connection of a heat meter G ¾, 110 mm or G 1, 130 mm: page 439

NR24/230 actuators (without mounting plate) can be fitted to the "Regumat" stations DN 25 with the help of the mounting set: page 439

Article	Article-No.	Hint
---------	-------------	------

Accessories for "Regumat S/M3/MF-180" DN 25 with pump ball valve

Thermal insulation

including expanded metal and Oventrop plate



for "Regumat 180" DN 25

1357096

Ball valve for isolation device "Regumat S/ M3"

including handle, collar nuts and seals,
without thermometer



1357090

Pump ball valve for "Regumat S/ M3"

including collar nuts and seals



1357089

Thermometer

for "Regumat" DN 25 / DN 32



blue

1357098

red

1357099

Wall mounting device for "Regumat"

including fixing set



1357097

Flanged pipe for "Regumat S/ M3"

including collar nuts and seals



1357091

Three-way mixing valve without actuator

including collar nuts and seals



1357092

Actuator

including mounting plate and adapter



1357093

Heating circuit controller extension set for "Regumat 180" DN 25 with pump ball valve

consisting of:

1357290

a) Heating circuit controller "Regtronic RH"

b) Controller location made of expanded polypropylene

c) Controller bracket made of metal including fixing material



Controller bracket for the variable direct connection of the heating circuit controller "Regtronic RH" on the left or right hand side of the station.

Extension set only suitable for "Regumat" DN 25:

1357070/72/73, 1357270/72/73, 1357020/27/29 and 1357220/27/29

Article	Packing unit	Article-No.	Hint
Actuators			
	The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.		
	24 V (0-10 V)	1350951	For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".
	24 V (three point)	1350952	Operating time 140 sec., torque 5 Nm
	230 V (three point)	1350953	Operating time 140 sec., torque 5 Nm
	230 V (three point)	1361098	Operating time 35 sec., torque 5 Nm
Mounting set for actuators NR 24/230 without mounting plate			
	for connection to "Regumat M3-180" DN 25		
		1350290	
Heat meter installation set			
	with integrated temperature sensor connection at the pump ball valve and adapters. For heat meters G 1, 130 mm or G 3/4, 110 mm		
		1352250	Only for "Regumat S/M3-180" DN 25 with pump ball valve, item no. 1357070/72/73, 1357270/72/73
Set of seals			
	for three-way mixing valve DN 25 (20)		
		1357094	
Regulating insert (spindle) for three-way mixing valve DN 25			
	including sleeves and O-rings		
		1357095	
Distance piece			
	for "Regumat S" including collar nuts and seals		
		1357086	
Check valve			
	for "Regumat S" including collar nuts and seals		
		1357087	
Adapter			
	(25) For the "plug & play" models of the Oventrop actuators manufactured since 2015 .		
		1357088	
Adapter			
	(e.g. Hydrometer, Ista, Techem, Minol, Rosswainer, Qundis, NRZ)		
	for heat meter installation set with temperature sensor M 10 x 1 male x M 10 x 1 female x Ø 5.6	1352258	
Adapter			
	(e.g. Allmess)		
	for heat meter installation set with temperature sensor M 10 x 1 male x M 12 x 1.5 male x Ø 6.2	1352259	



"Regumat S-180" DN 25 with reduced dimensions - constant temperature heating circuit

with universal thermal insulation of modular construction.
Suitable for the installation of the following
high-efficiency pumps:

Wilo-Yonos PARA
Wilo-Stratos PICO 25/1-4/6
Grundfos ALPHA 2.1 25-40/60
Laing series Ecocirc
Biral AX 13-1

consisting of:
-isolation device with 2 ball valves and 2 thermometers
(without pressure relief device)
-wall mounting device
-flanged pipe with check valve
-pump ball valve at the pump inlet
-thermal insulation

without pump

1357020

with high-efficiency pump (EEI ≤ 0.2)

Grundfos ALPHA 2.1 25-60
Wilo-Stratos PICO 25/1-6

1357027
1357029



For the connection of the boiler to the
pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-
efficiency pumps: 95 °C

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 339 mm

Outer dimensions thermal
insulation (W x H x D):
248 mm x 393 mm x 213 mm

Connection:
To heating circuit:
G 1½ male thread, flat sealing
To boiler:
G 1½ male thread, flat sealing

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 25, length 180 mm,
G 1½ male thread) can be installed.

Note: On delivery, the supply pipe is on the
right hand side. If required, the supply and the
return pipe can be changed on site (see
installation instructions).

**Tailpipe sets are available separately:
page 492**

**Heating circuit controller "Regtronic RH"
for weather guided control of the flow
temperature of the heating system:
page 496**

**Heating circuit controller extension set
including controller "Regtronic RH" and
bracket for the direct connection to the
station: page 442**

Article

Article-No.

Hint



"Regumat M3-180" DN 25 with reduced dimensions - variable temperature heating circuit

with three-way mixing valve with check valve and actuator

with universal thermal insulation of modular construction.
Suitable for the installation of the following
high-efficiency pumps:

Wilo-Yonos PARA
Wilo-Stratos PICO 25/1-4/6
Grundfos ALPHA 2.1 25-40/60
Laing series Ecocirc
Biral AX 13-1

consisting of:

- isolation device with 2 ball valves and 2 thermometers (without pressure relief device)
- wall mounting device
- flanged pipe
- three-way mixing valve with check valve and actuator
- thermal insulation

without pump

1357220

with high-efficiency pump ($EEL \leq 0.2$)



Grundfos ALPHA 2.1 25-60
Wilo-Stratos PICO 25/1-6

1357227

1357229

For the connection of the boiler to the pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-efficiency pumps: 95 °C

With three-way mixing valve with check valve and actuator for flow temperature control in central heating systems with circulation pump.

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 339 mm

Outer dimensions thermal insulation (W x H x D):
248 mm x 393 mm x 213 mm

Connection:
To heating circuit:
G 1½ male thread, flat sealing
To boiler:
G 1½ male thread, flat sealing

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 25, length 180 mm, G 1½ male thread) can be installed.

Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).
The actuator can be mounted without tools - "plug & play".

**Tailpipe sets are available separately:
page 492**

**Heating circuit controller "Regtronic RH" for weather guided control of the flow temperature of the heating system:
page 496**

Heating circuit controller extension set including controller "Regtronic RH" and bracket for the direct connection to the station: page 442

NR24/230 actuators (without mounting plate) can be fitted to the "Regumat" stations DN 25 with the help of the mounting set: page 439

Article	Article-No.	Hint
---------	-------------	------

Accessories for "Regumat S/M3-180" DN 25 with reduced dimensions



Ball valve for isolation device "Regumat S/ M3"
including handle, collar nuts and seals,
without thermometer

1357090



Thermometer

for "Regumat" DN 25 / DN 32

blue

1357098

red

1357099



Wall mounting device for "Regumat"

including fixing set

1357097



Three-way mixing valve without actuator
including collar nuts and seals

1357092



Actuator
including mounting plate and adapter

1357093



Heating circuit controller extension set for "Regumat 180" DN 25 with pump ball valve

consisting of:

1357290

- a) Heating circuit controller "Regtronic RH"
- b) Controller location made of expanded polypropylene
- c) Controller bracket made of metal including fixing material

Controller bracket for the variable direct connection of the heating circuit controller "Regtronic RH" on the left or right hand side of the station.

Extension set only suitable for "Regumat" DN 25:
1357070/72/73, 1357270/72/73,
1357020/27/29 and 1357220/27/29



Actuators

The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.

For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".

24 V (0-10 V)

1350951

24 V (three point)

1350952

230 V (three point)

1350953

230 V (three point)

1361098

Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 35 sec., torque 5 Nm



Mounting set for actuators NR 24/230 without mounting plate

for connection to "Regumat M3-180" DN 25

1350290



Set of seals

for three-way mixing valve DN 25 (20) **1357094**



Regulating insert (spindle) for three-way mixing valve DN 25

including sleeves and O-rings **1357095**



Adapter

(25) **1357088**

For the "plug & play" models of the Oventrop
actuators manufactured since 2015 .

Article

Article-No.

Hint

Accessories for "Regumat S/M3-180" DN 25

Universal thermal insulation:



for "Regumat-180" DN 25
without pump ball valve

1356098

Actuator with fixed flow temperature value control including temperature sensor PT 1000 and mains connection 230 V AC



Temperature control ranges:
20 - 80 °C
0 - 95 °C
60 - 85 °C
25 - 45 °C

1351055

For upgrading the station "Regumat M3-180"
DN 25, item no. 1356223.
Operating time: 140 sec.
Torque: 5 Nm

Thermometer

1351691°

for "Regumat-180" DN 25 with universal thermal insulation



blue
red

1356293*

1356294*

Insert for pressure relief device (bypass)

for subsequent conversion
for "Regumat S/M3/M4"



Preset to 200 mbar.

DN 25-130 and DN 25-180

1353390

Wall mounting device for "Regumat"

including fixing material



DN 25-130 and DN 25-180

1352096

"Regumat" Flanged pipe with check valve

DN 25-180

1352273

L = 180 mm.



Actuators

The mounting set for actuators, item no. 1350290,
is required for upgrading the stations "Regumat" DN 25
with pump ball valve and the "Regumat" DN 25 with
reduced dimensions with the actuator.



For the operation of three- and four-way
mixing valves. As replacement for
"Regumat M3/M4".

24 V (0-10 V)

1350951

24 V (three point)

1350952

230 V (three point)

1350953

230 V (three point)

1361098

Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 35 sec., torque 5 Nm

"Regumat MF-180" DN 25 with pump ball valve -
integrated fixed flow temperature value control: Page 437



Three-way mixing valve for "Regumat M3"

without actuator,
with set of seals

DN 25 with manually adjustable bypass **1350281**
DN 25 without manually adjustable **1350271**
bypass

For flow temperature control.
Manual setting, actuator can be mounted
subsequently (only valid for DN 25).
Distance between pipe centres: 125 mm
Connection:
G 1½ male thread x G 1½ collar nut



Setting group

for manual setting of the **1651500**
three- and four-way mixing valves



Set of seals
for three-way mixing valve DN 25 (20) **1350289**

For Oventrop actuators.



Set of seals
for four-way mixing valve DN 25 **1350299**

For Oventrop actuators.



Adapter (25) **1350296**

For the "plug & play" models of the Oventrop
actuators manufactured since 2015.



Adapter (25) **1350297**

For Oventrop actuators manufactured
up to 2005.





Bypass plug M3 - DN 25 (25) **1350292**



For three-way mixing valves with manually
adjustable bypass for closing the bypass
channel.



Regulating insert (spindle) for three-way mixing valve DN 25
with set of seals **1350285**

For Oventrop actuators (without adapter).

Article	Article-No.	Hint
	"Regumat S-180" DN 32 with pump ball valve - constant temperature heating circuit with universal thermal insulation of modular construction	
	consisting of: -isolation device with 2 ball valves and 2 thermometers (without pressure relief device) -wall mounting device -flanged pipe with check valve -distance piece -pump ball valve at the pump inlet -thermal insulation	
without pump	1355075	For the connection of the boiler to the pipework. Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high-efficiency pumps: 95 °C Dimensions product assembly: Distance between pipe centres: 125 mm Length: 445 mm Outer dimensions thermal insulation (W x H x D): 350 mm x 530 mm x 221 mm Connection: To heating circuit: G 2 male thread, flat sealing To boiler: G 2 male thread, flat sealing Model without pump: Components loosely connected, individual components leak tested. Models with high-efficiency pumps: Components screwed tightly, product assembly leak tested. Any standard pump (DN 32, length 180 mm, G 2 male thread) can be installed. Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions). Tailpipe sets are available separately: page 493 Heating circuit controller "Regtronic RH" for weather guided control of the flow temperature of the heating system: page 496
	with high-efficiency pump (EEI ≤ 0.2)	
	Grundfos ALPHA 2.1 32-60 Wilo-Stratos PICO plus 30/1-6	1355076 1355079

Article	Article-No.	Hint
 <p>"Regumat M3-180" DN 32 with pump ball valve - variable temperature heating circuit with three-way mixing valve and actuator</p> <p>with universal thermal insulation of modular construction</p> <p>consisting of:</p> <ul style="list-style-type: none"> -isolation device with 2 ball valves and 2 thermometers (without pressure relief device) -wall mounting device -flanged pipe with check valve -three-way mixing valve with actuator -pump ball valve at the pump inlet -thermal insulation 		<p>For the connection of the boiler to the pipework.</p> <p>Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high-efficiency pumps: 95 °C</p> <p>With three-way mixing valve with check valve and actuator for flow temperature control in central heating systems with circulation pump.</p> <p>Dimensions product assembly: Distance between pipe centres: 125 mm Length: 445 mm</p>
	without pump	<p>Outer dimensions thermal insulation (W x H x D): 350 mm x 530 mm x 221 mm</p> <p>Connection: To heating circuit: G 2 male thread, flat sealing To boiler: G 2 male thread, flat sealing</p>
 <p>with high-efficiency pump (EEI ≤ 0.2)</p>	Grundfos ALPHA 2.1 32-60	Model without pump: Components loosely connected, individual components leak tested.
	Wilo-Stratos PICO plus 30/1-6	Models with high-efficiency pumps: Components screwed tightly, product assembly leak tested.
		<p>Any standard pump (DN 32, length 180 mm, G 2 male thread) can be installed.</p> <p>Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).</p> <p>Tailpipe sets are available separately: page 493</p> <p>Heating circuit controller "Regtronic RH" for weather guided control of the flow temperature of the heating system: page 496</p>

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Accessories for "Regumat S/M3-180" DN 32 with pump ball valve

Thermometer



for "Regumat" DN 25 / DN 32

blue	1357098
red	1357099

Three-way mixing valve for "Regumat M3"
without actuator, including pipe for the return,
collar nut, set of seals and locking device



DN 32	1355299
-------	---------

Actuators



The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.

For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".

24 V (0-10 V)	1350951
24 V (three point)	1350952
230 V (three point)	1350953
230 V (three point)	1361098

Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 140 sec., torque 5 Nm
Operating time 35 sec., torque 5 Nm

Adapter	(25) 1350296
---------	--------------



For the "plug & play" models of the Oventrop actuators manufactured since 2015.

High-efficiency pumps 180 mm with connection thread G 2 DN 32



Wilo PARA	1358166*
30-180/6-43/SC-9	
KSB Calio 30-120 180	1358165

For subsequent installation into the "Regumat S/M3-180" DN 32 with pump ball valve.



Other circulation pumps on request.



Installation relay







with 2 contacts for 20A cabled in the casing	1152089
---	---------

For the connection of high-performance pumps (> 1A).

Article	Article-No.	Hint
	"Regumat S-180 plus" DN 32 with pump ball valve - constant temperature heating circuit with universal thermal insulation of modular construction	
	consisting of: -isolation device with 2 ball valves and 2 thermometers (without pressure relief device) -wall mounting device -flanged pipe -check valve -distance piece -pump ball valve at the pump inlet -thermal insulation	
without pump	1355070	For the connection of the boiler to the pipework. Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high-efficiency pumps: 95 °C Dimensions product assembly: Distance between pipe centres: 125 mm Length: 540,5 mm Outer dimensions thermal insulation (W x H x D): 428 mm x 626 mm x 221 mm
	with high-efficiency pump (EEI ≤ 0,2)	
	Grundfos MAGNA3 32-100 1355080 Wilo Stratos 30 1-10 1355081	
		Connection: To heating circuit: G 2 male thread, flat sealing To boiler: G 2 male thread, flat sealing Model without pump: Components loosely connected, individual components leak tested. Models with high-efficiency pump: Components screwed tightly, product assembly leak tested. Any standard pump (DN 32, length 180 mm, G 2 male thread) can be installed. Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions). Tailpipe sets are available separately: page 493 Heating circuit controller "Regtronic RH" for weather guided control of the flow temperature of the heating system: page 496

Article	Article-No.	Hint
	"Regumat M3-180 plus" DN 32 with pump ball valve - variable temperature heating circuit with three-way mixing valve with check valve and actuator with universal thermal insulation of modular construction consisting of: -isolation device with 2 ball valves and 2 thermometers (without pressure relief device) -wall mounting device -flanged pipe -three-way mixing valve with check valve and actuator -pump ball valve at the pump inlet -thermal insulation	For the connection of the boiler to the pipework. Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high-efficiency pumps: 95 °C With three-way mixing valve and actuator for flow temperature control in central heating systems with circulation pump. Dimensions product assembly: Distance between pipe centres: 125 mm Length: 540.5 mm
	without pump	1355270 Outer dimensions thermal insulation (W x H x D): 428 mm x 626 mm x 221 mm
	with high-efficiency pump (EEI ≤ 0,2) Grundfos MAGNA3 32-100 Wilo Stratos 30 1-10	1355280 1355281 Connection: To heating circuit: G 2 male thread, flat sealing To boiler: G 2 male thread, flat sealing Model without pump: Components loosely connected, individual components leak tested. Models with high-efficiency pumps: Components screwed tightly, product assembly leak tested. Any standard pump (DN 32, length 180 mm, G 2 male thread) can be installed. Note: On delivery, the supply pipe is on the right hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).
		Tailpipe sets are available separately: page 493 Heating circuit controller "Regtronic RH" for weather guided control of the flow temperature of the heating system: page 496

Article	Article-No.	Hint
Accessories for "Regumat S/M3-180 plus" with pump ball valve		
Thermometer		
	for "Regumat" DN 25 / DN 32	
	blue	1357098
	red	1357099
Actuators		
	The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.	For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".
	230 V for Regumat DN 40/50	1350956
	24 V (0-10 V) for Regumat DN 40/50	1350958
High-efficiency pumps 180 mm with connection thread G 2 DN 32		
	Wilo PARA	1358166*
	30-180/6-43/SC-9	
	KSB Calio 30-120 180	1358165
	Other circulation pumps on request.	
Installation relay		
	with 2 contacts for 20A	1152089
	cabled in the casing	



3.1.b "Regumat 220/280" DN 40/50

Content

"Regumat S-220" DN 40 - constant temperature heating circuit	454
"Regumat M3-220" DN 40 - variable temperature heating circuit	455
Accessories for "Regumat S/M3-220" DN 40	456
"Regumat S-280" DN 50 - constant temperature heating circuit	457
"Regumat M3-280" DN 50 - variable temperature heating circuit	458
Accessories for "Regumat S/M3-280" DN 50	459

Article

Article-No.

Hint

"Regumat S-220" DN 40 - constant temperature heating circuit
with universal thermal insulation of modular construction



consisting of:
-isolating ball valve for the supply pipe with thermometer
and draining/flushing valve
-isolating ball valve for the return pipe with integrated
check valve, thermometer and draining/flushing valve
-bracket
-pump ball valve with draining/flushing valve
-distance piece
-return pipe
-thermal insulation

without pump

1358240

For the connection of the boiler to the
pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-
efficiency pumps: 95 °C

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 797 mm

Outr dimensions thermal
insulation (W x H x D):
428 mm x 850 mm x 340 mm
(depending on installed pump)

Connection:
To heating circuit:
G 2 female thread
To boiler:
G 2 male thread, flat sealing
Pump: flanged connection DN 40

with high-efficiency pump (EEI ≤ 0.2)



Wilo-Stratos 40/1-8
Grundfos MAGNA3 40-100F

1358251

1358252

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 40, length
220 mm, flanged connection PN 10)
can be installed.

Note: On delivery, the supply pipe is on the left
hand side. If required, the supply and the return
pipe can be changed on site (see installation
instructions).

**Tailpipe sets (page 493) and a wall mounting
device (page 456) are available separately.**

Article

Article-No.

Hint



"Regumat M3-220" DN 40 - variable temperature heating circuit
with three-way mixing valve and actuator

with universal thermal insulation of modular construction

consisting of:

- isolating ball valve for the supply pipe with thermometer and draining/flushing valve
- isolating ball valve for the return pipe with integrated check valve, thermometer and draining/flushing valve
- bracket
- pump ball valve with draining/flushing valve
- three-way mixing valve with actuator (suitable for the standard boiler regulations)
- return pipe
- thermal insulation

without pump

1358340

For the connection of the boiler to the pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-efficiency pumps: 95 °C

With three-way mixing valve and actuator for flow temperature control in central heating systems with circulation pump.

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 797 mm

Outer dimensions thermal insulation (W x H x D):
428 mm x 850 mm x 340 mm
(depending on installed pump)

Connection:
To heating circuit:
G 2 female thread
To boiler:
G 2 male thread, flat sealing
Pump: flanged connection DN 40



with high-efficiency pump (EEI ≤ 0.2)

Wilo-Stratos 40/1-8

1358351

Grundfos MAGNA3 40-100F

1358352





Model without pump:
Components loosely connected,
individual components leak tested.



Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 40, length 220 mm, flanged connection PN 10) can be installed.

Note: On delivery, the supply pipe is on the left hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).

Tailpipe sets (page 493) and a wall mounting device (page 456) are available separately.

Article	Article-No.	Hint
Accessories for "Regumat S/M3-220" DN 40		
 <p>Thermometer for "Regumat" DN 25-50 as well as for "Regucirc M" and "Optibal PK"</p>	1351690°	
 <p>Wall mounting device for "Regumat" including fixing material DN 40/50</p>	1352098	
 <p>Actuators The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.</p>	<p>230 V for Regumat DN 40/50 1350956 24 V (0-10 V) for Regumat DN 40/50 1350958</p>	<p>For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".</p> <p>Operating time 140 sec., torque 15 Nm Operating time 140 sec., torque 10 Nm</p>
 <p>Installation relay with 2 contacts for 20A cabled in the casing</p>	1152089	<p>For the connection of high-performance pumps (> 1A).</p>

Article	Article-No.	Hint
	"Regumat S-280" DN 50 - constant temperature heating circuit with universal thermal insulation of modular construction	
	consisting of: -isolating ball valve for the supply pipe with thermometer and draining/flushing valve -isolating ball valve for the return pipe with integrated check valve, thermometer and draining/flushing valve -bracket -pump ball valve with draining/flushing valve -distance piece -return pipe -thermal insulation	
without pump	1358540	For the connection of the boiler to the pipework. Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high-efficiency pumps: 95 °C Dimensions product assembly: Distance between pipe centres: 125 mm Length: 797 mm Outer dimensions thermal insulation (W x H x D): 428 mm x 850 mm x 340 mm (depending on installed pump) Connection: To heating circuit: G 2 female thread To boiler: G 2 male thread, flat sealing Pump: flanged connection DN 50
	with high-efficiency pump (EEI ≤ 0.2)	
	Wilo-Stratos 50/1-12 Grundfos MAGNA3 50-120F	1358551 1358552
		Model without pump: Components loosely connected, individual components leak tested. Models with high-efficiency pumps: Components screwed tightly, product assembly leak tested. Any standard pump (DN 50, length 280 mm, flanged connection PN 10) can be installed. Note: On delivery, the supply pipe is on the left hand side. If required, the supply and the return pipe can be changed on site (see installation instructions). Tailpipe sets (page 493) and a wall mounting device (page 459) are available separately.

Article

Article-No.

Hint



"Regumat M3-280" DN 50 - variable temperature heating circuit
with three-way mixing valve and actuator

with universal thermal insulation of modular construction

consisting of:

- isolating ball valve for the supply pipe with thermometer and draining/flushing valve
- isolating ball valve for the return pipe with integrated check valve, thermometer and draining/flushing valve
- bracket
- pump ball valve with draining/flushing valve
- three-way mixing valve with actuator (suitable for the standard boiler regulations)
- return pipe
- thermal insulation

without pump

1358640

For the connection of the boiler to the pipework.

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-efficiency pumps: 95 °C

With three-way mixing valve and actuator for flow temperature control in central heating systems with circulation pump.

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 797 mm

Outer dimensions thermal insulation (W x H x D):
428 mm x 850 mm x 340 mm
(depending on installed pump)

Connection:
To heating circuit:
G 2 female thread
To boiler:
G 2 male thread, flat sealing
Pump: flanged connection DN 50

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 50, length 280 mm, flanged connection PN 10) can be installed.

Note: On delivery, the supply pipe is on the left hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).

Tailpipe sets (page 493) and a wall mounting device (page 459) are available separately.



with high-efficiency pump (EEI ≤ 0.2)

Wilo-Stratos 50/1-12
Grundfos MAGNA3 50-120F

1358651

1358652

Model without pump:
Components loosely connected,
individual components leak tested.

Models with high-efficiency pumps:
Components screwed tightly,
product assembly leak tested.

Any standard pump (DN 50, length 280 mm, flanged connection PN 10) can be installed.

Note: On delivery, the supply pipe is on the left hand side. If required, the supply and the return pipe can be changed on site (see installation instructions).

Tailpipe sets (page 493) and a wall mounting device (page 459) are available separately.

Article	Article-No.	Hint
Accessories for "Regumat S/M3-280" DN 50		
Thermometer for "Regumat" DN 25-50 as well as for "Regucirc M" and "Optibal PK"	1351690°	
Wall mounting device for "Regumat"		
including fixing material		
DN 40/50	1352098	
Actuators		
The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.		For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".
230 V for Regumat DN 40/50	1350956	Operating time 140 sec., torque 15 Nm
24 V (0-10 V) for Regumat DN 40/50	1350958	Operating time 140 sec., torque 10 Nm
Installation relay		
with 2 contacts for 20A cabled in the casing	1152089	For the connection of high-performance pumps (> 1A).



3.1.c "Regumat F/FR" Stations for thermally controlled surface heating systems

Content	
"Regumat F-130" DN 25	462
"Regumat F-180" DN 25 with pump ball valve	463
"Regumat F-180" DN 25	464
"Regumat FR-180" DN 25	464
Accessories for "Regumat F-130/F-180/FR-180" DN 25	465
"Regumat" Heat exchangers	466
"Regumat" Heat exchangers - Examples of the application	467
Accessories for "Regumat" heat exchangers	466

"Regumat F-130" and "Regumat F-180" for thermally controlled surface heating systems

"Regumat FR-180" with high-efficiency pump made of bronze or stainless steel for thermally controlled open vented surface heating systems

In general, the unit is used in combination with the heat exchanger "Regumat".

All modes with or without high-efficiency pump, isolation device with ball valves, thermometers and connection for immersion sensor, temperature controller with immersion sensor, flanged pipe with check valve, three-way mixing valve, electronic temperature controller and thermal insulation. The model "Regumat F-180" is additionally equipped with a pump ball valve at the pump inlet.

"Regumat F" DN 25			
	Model with cast iron pump		Model with stainless steel/bronze pump
	"Regumat F-130"	"Regumat F-180"	"Regumat FR-180"
Catalogue page	463		465
With pump ball valve at the pump inlet		X	
Fixed value control unit for sealed systems	X		
Fixed value control unit for open vented systems			X
Outer dimensions thermal insulation	H = 364 mm W = 248 mm D = 197 mm	H = 512 mm W = 248 mm D = 200 mm	H = 414 mm W = 248 mm D = 200 mm

Article	Article-No.	Hint
	"Regumat F-130" DN 25 Fixed value control unit to maintain the flow temperature of underfloor and wall heating systems consisting of: -isolation device with 2 ball valves and 2 thermometers (without pressure relief device) and connection for immersion sensor -temperature controller with immersion sensor -flanged pipe with check valve -three-way mixing valve -electric pipe contact safety switch -high-efficiency pump (cast iron) -thermal insulation	Fixed value control unit "Regumat F-130" for flow temperature control and limitation in combined radiator/surface heating systems. The flow temperature is controlled with the help of a three-way mixing valve in combination with a temperature controller with immersion sensor. Control range: 20 - 50 °C Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high- efficiency pumps: 85 °C Distance between pipe centres: 125 mm Connection: To heating circuit: G 1 ½ male thread, flat sealing To boiler: G 1 ½ male thread, flat sealing
	without pump 1354171	
	with high-efficiency pump (EEI ≤ 0.2) Wilo PARA 25-130/6-43/SC-9 1354166	Tailpipe sets (page 492) and a wall mounting device (page 465) are available separately.
	"Regumat F-180" DN 25 with pump ball valve Fixed value control unit to maintain the flow temperature of underfloor and wall heating systems with universal thermal insulation of modular construction consisting of: -isolation device with 2 ball valves and 2 thermometers (without pressure relief device) and connection for immersion sensor -temperature controller with immersion sensor -flanged pipe with check valve -three-way mixing valve -electric pipe contact safety switch -high-efficiency pump (cast iron) -pump ball valve at the pump inlet -thermal insulation	As "Regumat F-130" but with pump length 180 mm and additional pump ball valve at the pump inlet. Max. operating temperature for high- efficiency pumps: 95 °C Further models for fixed value control: "Regumat M3-180" DN 25 and actuator with temperature control: page 0
	without pump 1354270	
	with high-efficiency pump (EEI ≤ 0.2) Grundfos ALPHA 2.1 25-60 1354274 Wilo-Stratos PICO 25/1-6 1354276	
	without pump and thermostatic temperature controller 1354272	Further temperature controllers with different control ranges: page 351
	"Regumat MF-180" DN 25 with pump ball valve - integrated fixed flow temperature value control: Page 437	

Article

Article-No.

Hint



"Regumat F-180" DN 25

Fixed value control unit
to maintain the flow temperature
of underfloor and wall heatings
with universal thermal insulation of modular construction

consisting of:

- isolation device with 2 ball valves and 2 thermometers
(without pressure relief device)
and connection for immersion sensor
- temperature controller with immersion sensor
- flanged pipe with check valve
- three-way mixing valve
- electric pipe contact safety switch
- thermal insulation

without pump and pump ball valve

1354070

As "Regumat F-180", item no. 1354270, but
without pump ball valve.

Max. operating temperature for high-
efficiency pumps: 95 °C

"Regumat FR-180" DN 25

Fixed value control unit
to maintain the flow temperature
of open vented underfloor and wall heating systems
with universal thermal insulation of modular construction

consisting of:

- isolation device with 2 ball valves and 2 thermometers
(without pressure relief device)
and connection for immersion sensor
- temperature controller with immersion sensor
- flanged pipe with check valve
- three-way mixing valve
- electric pipe contact safety switch
- high-efficiency pump (stainless steel)
- thermal insulation

with high-efficiency pump (EEI ≤ 0.2)

Grundfos ALPHA 2.1 25-60N

1354087

Wilo-Stratos PICO plus 25/1-6 N

1354097

As "Regumat F-180", item no. 1354270, but
without pump ball valve. With stainless steel
pump instead of cast iron pump.

Max. operating temperature for high-
efficiency pumps: 95 °C

**Tailpipes sets (page 492) and a wall
mounting device (page 465) are available
separately.**



High-efficiency pumps 180 mm with connection thread G 1½ DN 25

Wilo PARA

1355159*

25-180/6-43/SC-9

Grundfos ALPHA 2.1 180

1357159

25-60N

Wilo-Stratos PICO 180

1357160

plus 25/1-6 N

For replacement purposes or for upgrading the
"Regumat 180" stations without pump, for
open vented systems.

with stainless steel body

with stainless steel body



Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Accessories for "Regumat F-130/F-180/FR-180" DN 25

Thermal insulation

with one-piece front insulation shell:

for "Regumat-130" DN 25

1355090

Not suitable for "Regumat 130" DN 25 with Grundfos ALPHA 2.



Universal thermal insulation:

for "Regumat-180" DN 25

1356097

with pump ball valve

for "Regumat-180" DN 25

1356098

without pump ball valve



Isolation device DN 25 for "Regumat"

with 2 ball valves and 2 thermometers,
2 collar nuts and set of seals

DN 25

1353181



Thermometer

1351690°

for "Regumat" DN 25-50 as well as for
"Regucirc M" and "Optibal PK"



Thermometer

1351691°

for "Regumat-180" DN 25 with universal thermal insulation



Wall mounting device for "Regumat"

including fixing material

DN 25-130 and DN 25-180

1352096



"Regumat" Flanged pipe with check valve

DN 25-180

1352273

DN 25-180

1352272

L = 180 mm.

L = 279 mm. For the conversion of
"Regumat S-180" with pump ball valve
to "Regumat M3/M4-180".



Temperature controller with contact sensor and heat transfer unit

Control range

Capillary length

20 - 50 °C

2 m

1142861

30 - 60 °C

2 m

1142862

40 - 70 °C

2 m

1142863

50 - 80 °C





2 m

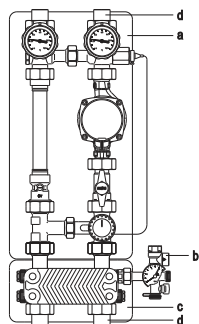
1142864



Three-way mixing valve for
"Regumat F" without temperature
controller

(10) **4723050**

Article	Article-No.	Hint
"Regumat" Heat exchangers High-capacity plate heat exchangers		
	without connection fitting for higher capacities	Connection distance: 466 mm x 50 mm 4 x G 1 flat sealing
	20 plates up to about 40 kW	1351790
	30 plates up to about 55 kW	1351791
	40 plates up to about 70 kW	1351792
	50 plates up to about 85 kW	1351793
The capacities are determined by the fixed default values in the primary circuit (80/60 °C) and in the secondary circuit (50/70 °C).		
	Safety group with diaphragm safety valve 3 bar, pressure gauge, fill and drain cock and connection facility for an expansion tank	1351598° For the protection of pressurized systems. For the connection to the heat exchanger "Regumat".
	Accessories for "Regumat" heat exchangers	
	Thermal insulation made of expanded polypropylene	
	for heat exchangers 1351790/91	1359591
	for heat exchangers 1351792/93	1359592
	Set of connection fittings	
	G 1½ female thread x pump flange for G 1½ with collar nuts and seals	1351597 For the connection of the heat exchanger "Regumat" to a pump group "Regumat" on the boiler side.

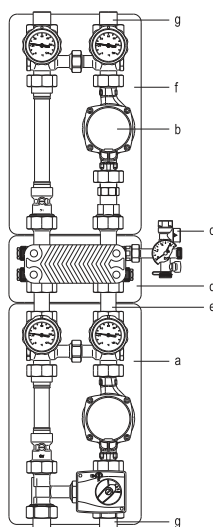


Example 1:

- | | |
|---|----------------|
| a "Regumat FR-180" DN 25
with Grundfos pump
ALPHA 2.1 25-60 N | 1354087 |
| with Wilo pump
Stratos PICO 25/1-6 RG | 1354097 |
| b Heat exchanger "Regumat"
with 14 plates up to 14 kW | 1351596 |
| c Safety group | 1351598 |
| d Tailpipe set | 13504.. |

For the extension of existing heating circuits
by a heat exchanger and a fixed value
control unit in open vented surface heating
systems.

Installation dimensions:
H = 640 mm, W = 250 mm



Example 2:

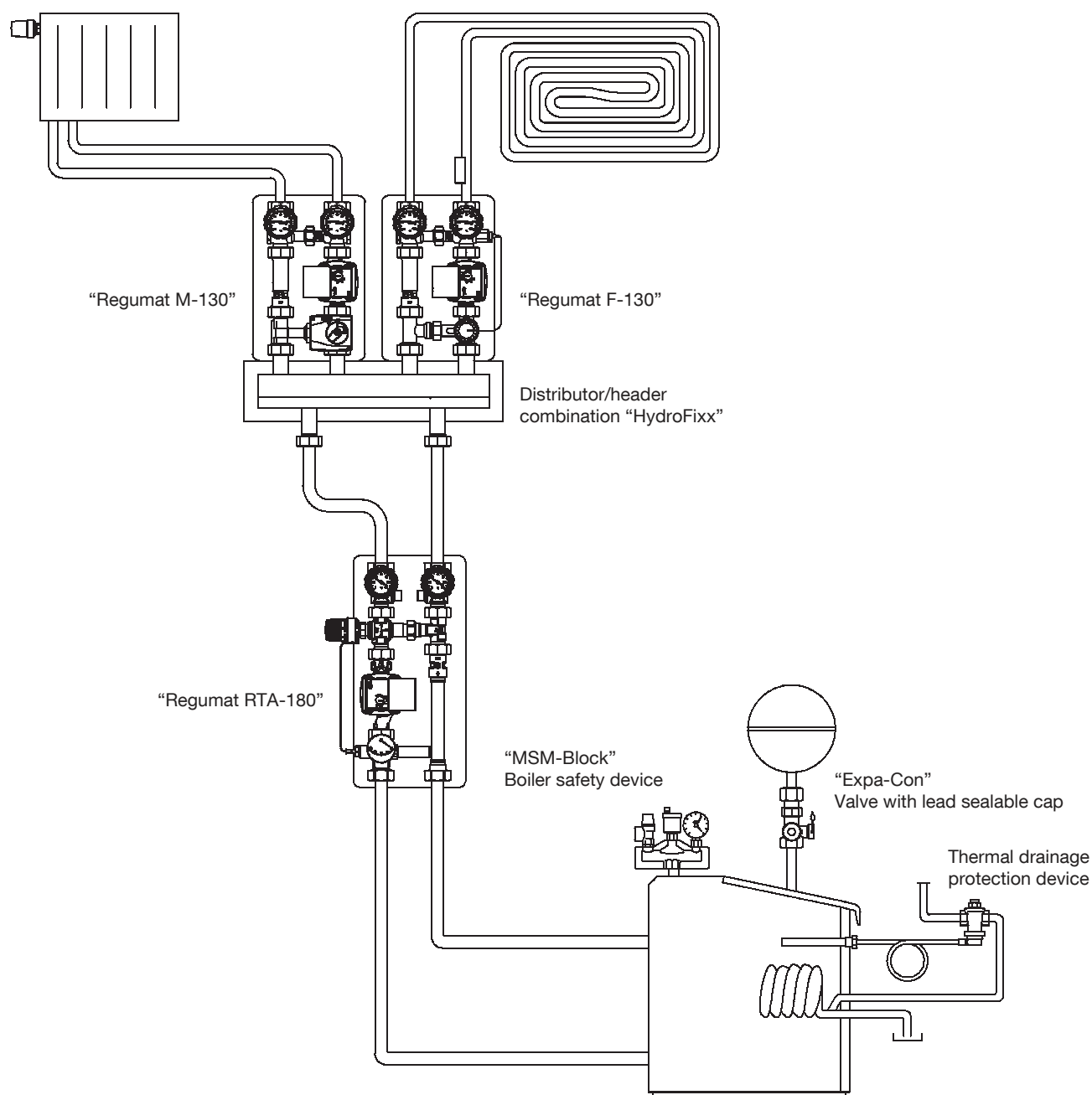
- | | |
|---|----------------|
| a "Regumat S-180" DN 25
without pump | 1356020 |
| b Heat exchanger "Regumat"
with 30 plates up to 28 kW | 1351696 |
| c Safety group | 1351598 |
| d Tailpipe set | 13504.. |
| e High-efficiency pump with
stainless steel/bronze body 180 mm
Grundfos ALPHA 2.1 25-60 N | 1357159 |
| Wilo-Stratos PICO 25/1-6 RG | 1357160 |
| f "Regumat M3-180" DN 25
with Grundfos pump
ALPHA 2.1 25-60 | 1356277 |
| with Wilo pump
Stratos PICO 25/1-6 | 1356279 |
| g Set of connection fittings | 1351597 |

Please observe:
When changing the supply, change both pumps.
Delivered with supply on the right hand side.
Installation dimensions:
H = 960 mm, W = 250 mm



3.1.d "Regumat RTA" Stations for solid fuel boilers for return temperature increase

Content	
Summary	471
"Regumat RTA-130 VR" DN 25 - supply on the right hand side	472
"Regumat RTA-130 VL" DN 25 - supply on the left hand side	472
"Regumat RTA-130 TOP" DN 25 - connection from the top	472
"Regumat RTA-180" DN 25	473
Accessories for "Regumat RTA-130/180" DN 25	474
"Regumat RTA-180" DN 32	475
Accessories for "Regumat RTA-180" DN 32	475
Thermal drainage protection device	475



System Illustration: Connection of "Regumat RTA" to a solid fuel installation (e.g. pellets) and two heating circuits

Solid fuel boiler connection systems "Regumat RTA"




Choice of the "Regumat RTA" systems





Product assembly DN 25/DN 32 for pump lengths 130/180 mm

All models with or without high-efficiency pump, ball valve with thermometer, ball valve with thermometer and connection for immersion sensor ("Regumat RTA-180" DN 25 with housing for immersion sensor with thermometer), three-way mixing valve, temperature controller with immersion sensor, flanged pipe with check valve and thermal insulation.

Models for solid fuel boilers "Regumat RTA"					
	"Regumat RTA-130 VR"	"Regumat RTA-130 VL"	"Regumat RTA-130 Top"	"Regumat RTA-180"	
Catalogue Page	472	472	472	473	473
Size	DN 25	DN 25	DN 25	DN 25	DN 32
Boiler connection from below	X	X		X	X
Boiler connection from the top			X		
Supply on right hand side	X		X	X	X
Supply on left hand side		X			
Pump length	L = 130 mm	L = 130 mm	L = 130 mm	L = 180 mm	L = 180 mm
Outer dimensions thermal insulation	H = 364 mm W = 248 mm D = 197 mm			Standard thermal insulation H = 513 mm W = 248 mm D = 211 mm Universal thermal insulation H = 414 mm W = 248 mm D = 200 mm	H = 471 mm W = 248 mm D = 207 mm

Tailpipe sets are available separately.

Article	Article-No.	Hint
 <p>"Regumat RTA-130 VR" DN 25 - supply on the right hand side with integrated three-way mixing valve and temperature controller for return temperature increase Supply on the right hand side</p> <p>consisting of:</p> <ul style="list-style-type: none"> -high-efficiency pump -ball valve with thermometer -three-way mixing valve -temperature controller with immersion sensor control range 40-70 °C -flanged pipe with check valve -ball valve with thermometer and connection for immersion sensor -thermal insulation <p>with high-efficiency pump (EEI ≤ 0.2) 1354795 Wilo PARA 25-130/6-43/SC-9</p>		<p>For the connection of the solid fuel boiler to the pipework. Pump length: 130 mm</p> <p>Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high- efficiency pumps: 85 °C</p> <p>Dimensions product assembly: Distance between pipe centres: 125 mm Length: 364 mm</p> <p>Outer dimensions thermal insulation (W x H x D): 310 mm x 364 mm x 197 mm</p> <p>Connection: To heating circuit: G 1½ male thread, flat sealing To boiler: G 1½ male thread, flat sealing</p>
		<p>For return temperature control of solid fuel and pellet boilers.</p> <p>The return temperature is increased to the set value with the help of a three-way mixing valve in combination with a temperature controller (control range 40 °C-70 °C) with immersion sensor.</p> <p>Tailpipe sets (page 492) and a wall mounting device (page 474) are available separately.</p>
 <p>"Regumat RTA-130 VL" DN 25 - supply on the left hand side as "Regumat RTA-130 VR" but supply on the left hand side</p> <p>consisting of:</p> <ul style="list-style-type: none"> -high-efficiency pump -ball valve with thermometer -three-way mixing valve -temperature controller with immersion sensor control range 40-70 °C -flanged pipe with check valve -ball valve with thermometer and connection for immersion sensor -thermal insulation <p>with high-efficiency pump (EEI ≤ 0.2) 1354798 Wilo PARA 25-130/6-43/SC-3</p>		
 <p>"Regumat RTA-130 TOP" DN 25 - connection from the top as "Regumat RTA-130 VR" but boiler is connected from the top</p> <p>consisting of:</p> <ul style="list-style-type: none"> -high-efficiency pump -ball valve with thermometer -three-way mixing valve -temperature controller with immersion sensor control range 40-70 °C -flanged pipe with check valve -ball valve with thermometer and connection for immersion sensor -thermal insulation <p>with high-efficiency pump (EEI ≤ 0.2) 1354783 Wilo PARA 25-130/6-43/SC-3</p>		

Article	Article-No.	Hint
	"Regumat RTA-180" DN 25 with integrated three-way mixing valve and temperature controller for return temperature increase	
	consisting of: -high-efficiency pump -ball valve with thermometer -three-way mixing valve -temperature controller with immersion sensor control range 40-70 °C -flanged pipe with check valve -housing for immersion sensor with thermometer -thermal insulation	
without pump	1354692	For the connection of the solid fuel boiler to the pipework. Pump length: 180 mm Max. operating pressure: 10 bar (PN 10) Max. operating temperature for high- efficiency pumps with standard thermal insulation: 85 °C Max. operating temperature for high- efficiency pumps with universal thermal insulation of modular construction: 95 °C Dimensions product assembly: Distance between pipe centres: 125 mm Length: 460 mm (with standard insulation) 371 mm (with universal insulation)
	with high-efficiency pump (EEL ≤ 0.2)	
	Wilo PARA 25-180/6-43/SC-9 Grundfos ALPHA 2.1 25-60	1354691 1354693°
	"Regumat RTA-180" DN 25 with integrated three-way mixing valve and temperature controller for return temperature increase with universal thermal insulation of modular construction	
	consisting of: -high-efficiency pump -ball valve with thermometer -three-way mixing valve -temperature controller with immersion sensor control range 40-70 °C -flanged pipe with check valve -ball valve with thermometer and connection for immersion sensor -thermal insulation	
without pump	1354580	For return temperature control of solid fuel and pellet boilers. The return temperature is increased to the set value with the help of a three-way mixing valve in combination with a temperature controller (control range 40 °C-70 °C) with immersion sensor.
	with high-efficiency pump (EEL ≤ 0.2)	
	Grundfos ALPHA 2.1 25-60 Wilo PARA 25-180/6-43/SC-9	1354586 1354587

Tailpipe sets (page 492) and a wall mounting device (page 474) are available separately.

Article	Article-No.	Hint
---------	-------------	------

Accessories for "Regumat RTA-130/180" DN 25



Thermometer
for "Regumat" DN 25-50 as well as for
"Regucirc M" and "Optibal PK"

1351690°

blue
red

1355093*

1355094*



Thermometer
for "Regumat-180" DN 25 with universal thermal insulation

1351691°

blue
red

1356293*

1356294*



Wall mounting device for "Regumat"
including fixing material

DN 25-130 and DN 25-180

1352096



Mixing valve group

as replacement for
"Regumat RTA-130/180" DN 25

1350260



"Regumat RTA-180" DN 32
with integrated three-way mixing valve and temperature controller for return temperature increase

consisting of:
-high-efficiency pump
-ball valve with thermometer
-three-way mixing valve
-temperature controller with immersion sensor
control range 40-70 °C
-flanged pipe with check valve
-ball valve with thermometer and connection for immersion sensor
-thermal insulation

with high-efficiency pump (EEI ≤ 0.2)

Wilo PARA 30-180/6-43/SC-9 **1354571**

Further temperature controllers with different control ranges:
page 351

For the connection of the solid fuel boiler to the pipework.
Pump length: 180 mm

Max. operating pressure: 10 bar (PN 10)
Max. operating temperature for high-efficiency pumps: 85 °C

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 419 mm

Connection:
To heating circuit:
G 2 male thread, flat sealing
To boiler:
G 2 male thread, flat sealing

For return temperature control of solid fuel and pellet boilers.

The return temperature is increased to the set value with the help of a three-way mixing valve in combination with a temperature controller (control range 40 °C-70 °C) with immersion sensor.

Accessories for "Regumat RTA-180" DN 32



Thermometer **1351690°**
for "Regumat" DN 25-50 as well as for "Regucirc M" and "Optibal PK"

Thermal drainage protection device
for "Regumat RTA"



DN 20 **1354699**

Application:
For thermal protection of solid fuel boilers in closed hot water heating systems according to DIN EN 12828.

Tested according to DIN 3440.

Response temperature: 95 °C
Max. heating capacity: 90 kW
Length of capillary with protective pipe: 1.3 m

Both ports female thread Rp ¾.

Immersion pocket G ½ connection.

3.1.e Products for heat pump systems

Content

Products for heat pump systems	478
Accessories	479
Products for heat pump installations	480

Article

Article-No.

Hint

Products for heat pump systems



Buffer storage cylinder connection group

for heat pumps
with connection set for safety group for diaphragm expansion tank

consisting of:
-isolation device with 2 ball valves and
2 thermometers (without pressure relief device)
-pump ball valve at the pump inlet
-thermal insulation
-connection set for safety group for diaphragm expansion tank
-high-efficiency pump Wilo PICO 25/1-6
-connection elbow G 1/2

1356872°

For the connection of a heat pump to the heating system and a buffer storage cylinder.

Max. operating pressure 10 bar: (PN 10)
Max. operating temperature for high-efficiency pumps: 95 °C

Dimensions product assembly:
Distance between pipe centres: 125 mm
Length: 588 mm

Connection:
To heating circuit:
G 1 1/2 male thread, flat sealing
To boiler:
G 1 1/2 male thread, flat sealing

Components screwed tightly,
product assembly leak tested.



Heating circuit connection group

for heat pumps
with connection set for safety group for diaphragm expansion tank

consisting of:
-isolation device with 2 ball valves and
2 thermometers (without pressure relief device)
-flanged pipe with check valve
-distance piece
-pump ball valve at the pump inlet
-thermal insulation
-connection set for safety group for diaphragm expansion tank
-high-efficiency pump Wilo PICO 25/1-6

1356972°

For the connection of a heat pump to the heating system.

Tailpipes sets (page 492) and a wall mounting device (page 479) are available separately.



Connection set for safety group for diaphragm expansion tank

1356989°

With the option to connect the safety group.



Safety group

with diaphragm safety valve 3 bar,
pressure gauge, fill and drain cock and
connection facility for an expansion tank

1351598°

For the protection of pressurized systems.
For the connection to the heat exchanger
"Regumat".

Article	Article-No.	Hint
---------	-------------	------

Accessories



Thermometer **1351691°**
for "Regumat-180" DN 25 with universal thermal insulation



Wall mounting device for "Regumat"
including fixing material

DN 25-130 and DN 25-180 **1352096**



"Regumat" Flanged pipe with check valve

DN 25-180 **1352297**

L = 361 mm. For "Regumat S-180"
with pump ball valve (replacement).



“Regusol” Filling and lushing device
G 1 male thread x G 1 male thread

For filling and lushing of heating systems
page 835.



“Expa-Con” Valve
with lead sealable cap brass

For control, maintenance and possible
replacement of diaphragm expansion tanks
page 561.



“MSM-Block” Boiler safety device
airvent with automatic shut-off
pressure gauge with automatic shut-off
insulation
DN 25, G 1 female thread

Complete safety group according to DIN EN
12828
page 561.



Strainer
bronze, with simple wire basket

For heating and cooling circuits
page 418.



“Regusol” Connection set for diaphragm expansion tank
consisting of:
angled wall bracket made of steel
quick-coupling for diaphragm expansion tank
flexible hose







For the connection of a diaphragm expansion
tank to the solar station “Regusol”
page 860.











3.1.f "Regumat S/M3-180" DN 25 for heat meters




Content



"Regumat S-180" DN 25 for heat meters	482
"Regumat M3-180" DN 25 for heat meters	482
Heat meter installation set	482
Accessories for "Regumat S/M3-180" DN 25 for heat meters	483

Article	Packing unit	Article-No.	Hint
	"Regumat S-180" DN 25 for heat meters For the installation of a heat meter G 1, 130 mm or G ¾, 110 mm, with spacer made of plastic, 110 mm long		For measurement of heat consumption in heating systems.
	consisting of: -isolation device with 2 ball valves and 2 thermometers -ball valve with check valve -distance piece -pump ball valve at the pump inlet -adapter G ¾ and G 1 -plug for temperature sensor M 10 x 1.0 -thermal insulation		Dimensions product assembly: Distance between pipe centres: 125 mm Length: 460 mm With universal thermal insulation element featuring perforated cut edges for a direct adaptation to the heat meter. When choosing the suitable heat meter, the technical specifications of the manufacturer must be observed. Oventrop recommends the use of ultrasonic heat meters.
without pump and heat meter		1356050	
	"Regumat M3-180" DN 25 for heat meters For the installation of a heat meter G 1, 130 mm or G ¾, 110 mm, with spacer made of plastic, 110 mm long		Adapters for fixing of the temperature sensors item no. 1352258/59: page 484
	consisting of: -isolation device with 2 ball valves and 2 thermometers -ball valve with check valve -three-way mixing valve with actuator -pump ball valve at the pump inlet -adapter G ¾ and G 1 -plug for temperature sensor M 10 x 1.0 -thermal insulation		
without pump and heat meter		1356250	
	Heat meter installation set with plug for the fixing of a temperature sensor M 10 x 1.0, for heat meters G 1, 130 mm or G ¾, 110 mm, for "Regumat 180" DN 25 with ball valve at the pump inlet		
	for "Regumat S-180"	1350443	
	with pump ball valve		
	for "Regumat M3/M4-180"	1350444	
	with pump ball valve		
Plug for heat meter installation set for fixing of a temperature sensor			
M 10 x 1.0	(25)	1350490	
	Heat meter installation set with integrated temperature sensor connection at the pump ball valve and adapters. For heat meters G 1, 130 mm or G ¾, 110 mm		Only for "Regumat S/M3-180" DN 25 with pump ball valve, item no. 1357070/72/73, 1357270/72/73
		1352250	

Article	Packing unit	Article-No.	Hint
Accessories for "Regumat S/M3-180" DN 25 for heat meters			
Universal thermal insulation:			
			
for "Regumat-180" DN 25 with pump ball valve		1356097	
Thermometer			
		1351691°	
for "Regumat-180" DN 25 with universal thermal insulation			
Wall mounting device for "Regumat"			
			
including fixing material			
DN 25-130 and DN 25-180		1352096	
Actuators			
			
The mounting set for actuators, item no. 1350290, is required for upgrading the stations "Regumat" DN 25 with pump ball valve and the "Regumat" DN 25 with reduced dimensions with the actuator.			For the operation of three- and four-way mixing valves. As replacement for "Regumat M3/M4".
24 V (0-10 V)		1350951	Operating time 140 sec., torque 5 Nm
24 V (three point)		1350952	Operating time 140 sec., torque 5 Nm
230 V (three point)		1350953	Operating time 140 sec., torque 5 Nm
230 V (three point)		1361098	Operating time 35 sec., torque 5 Nm
Three-way mixing valve for "Regumat M3"			
			
without actuator, with set of seals			For flow temperature control. Manual setting, actuator can be mounted subsequently (only valid for DN 25). Distance between pipe centres: 125 mm Connection: G 1½ male thread x G 1½ collar nut
DN 25 <u>with</u> manually adjustable bypass		1350281	
Setting group			
			
for manual setting of the three- and four-way mixing valves		1651500	
Set of seals			
			
for three-way mixing valve DN 25	(20)	1350289	For Oventrop actuators.
Adapter			
			
for the "plug & play" models of the Oventrop actuators manufactured since 2015.	(25)	1350296	
Adapter			
			
For Oventrop actuators manufactured up to 2005.	(25)	1350297	
Bypass plug M3 - DN 25			
			
For three-way mixing valves with manually adjustable bypass for closing the bypass channel.	(25)	1350292	









Article	Article-No.	Hint
	Regulating insert (spindle) for three-way mixing valve DN 25	
	with set of seals	1350285 For Oventrop actuators (without adapter).
	Adapter	
	for heat meter installation set with temperature sensor M 10 x 1 male x M 10 x 1 female x Ø 5.6	1352258 (e.g. Hydrometer, Ista, Techem, Minol, Rossweiner, Qundis, NRZ)
	Adapter	
	for heat meter installation set with temperature sensor M 10 x 1 male x M 12 x 1.5 male x Ø 6.2	1352259 (e.g. Allmess)















3.1.g Accessories for "Regumat"

Content

Distributor for "Regumat" DN 20	486
Distributor for "Regumat" DN 25	486
Modular distributor for "Regumat" DN 25	486
Distributor for "Regumat" DN 32 with pump ball valve	487
Distributor for "Regumat plus" DN 32 with pump ball valve	487
Distributor for "Regumat-220/280" DN 40/50	487
Wall consoles	487
"HydroFixx"	488
Accessories for hydronic headers / distributors	490
"Regumat" Tailpipe sets DN 20	491
"Regumat" Tailpipe sets DN 25	492
"Regumat" Tailpipe sets DN 32	493
"Regumat" Tailpipe sets DN 40/50	493
System illustration	495
Thermal insulation	494
"Regtronic RH" Heating circuit controller	496
"Regtronic EM" Extension module	497
Accessories	498
High-efficiency pumps 130 mm	500
High-efficiency pumps 180 mm	500

Article	Packing unit	Article-No.	Hint
	Distributor for "Regumat" DN 20 made of steel with insulation and wall bracket		Connection to the heating circuit: G 1 collar nut, flat sealing Connection to the boiler: G 1 male thread, flat sealing
	for 2 heating circuits	1351482	Max. operating pressure: 4 bar Max. operating temperature: 110 °C Max. flow rate: 2.5 m³/h
	for 3 heating circuits	1351483	
	Distributor for "Regumat" DN 25 with insulation		Connection to the heating circuit: G 1½ collar nut, flat sealing Connection to the boiler: G 1½ male thread, flat sealing Max. flow rate: 4 m³/h
	for 2 heating circuits DN 25	1351571	
	Wall bracket for 2-fold distributor made of bronze including fixing material		
	(10)	1351592	
	made of steel		Connection to the heating circuit: G 1½ collar nut, flat sealing Connection to the boiler: G 1½ male thread, flat sealing Including wall bracket for "Regumat" with a distance of 125 mm between pipe centres and insulation. Distributors for 9 heating circuits and more on request. Max. flow rate: 4 m³/h
	for 2 heating circuits DN 25	1351582	
	for 3 heating circuits DN 25	1351583	
	for 4 heating circuits DN 25	1351584	
	for 5 heating circuits DN 25	1351585	
	for 6 heating circuits DN 25	1351586	
	for 7 heating circuits DN 25	1351587	
	Compact distributor made of steel		Connection to the heating circuit: G 1½ collar nut, flat sealing Connection to the boiler: G 1½ male thread, flat sealing Including wall bracket for "Regumat" with a distance of 125 mm between pipe centres and insulation.
	for 3 heating circuits DN 25	1351783	
	for 5 heating circuits DN 25	1351785	
	Modular distributor for "Regumat" DN 25 made of brass with insulation		Heating distributor system of modular construction:
	for 2 heating circuits	1351471	– subsequently extendable – up to 6 groups can be connected to the boiler and heating circuit
	for 3 heating circuits	1351472	
	Extension module with insulation		Connection to the heating circuit: G 1½ collar nut, flat sealing Connection to the boiler: G 1½ male thread, flat sealing Max. flow rate: 4 m³/h
		1351470	
	Wall bracket for 2-fold modular distributor "Regumat" made of steel including fixing material		
	(10)	1351593	

Article	Article-No.	Hint
	Distributor for "Regumat" DN 32 with pump ball valve made of steel with insulation and wall bracket	
	for 2 heating circuits	1351672
	for 3 heating circuits	1351673
	for 4 heating circuits	1351674
	for 5 heating circuits	1351675
		Connection to the heating circuit: G 2 collar nut, flat sealing Connection to the boiler: G 2 male thread, flat sealing Max. operating pressure: 4 bar Max. operating temperature: 110 °C
		Max. flow rate: 9 m³/h
		Max. flow rate: 12 m³/h
	Distributor for "Regumat plus" DN 32 with pump ball valve made of steel with insulation	
	for 2 heating circuits	1351662
	for 3 heating circuits	1351663
	for 4 heating circuits	1351664
	for 5 heating circuits	1351665
		Connection to the heating circuit: G 2 collar nut, flat sealing Connection to the boiler: G 2 collar nut, flat sealing Max. operating pressure: 4 bar Max. operating temperature: 110 °C
		Max. flow rate: 12 m³/h
		Max. flow rate: 26 m³/h
	Distributor for "Regumat-220/280" DN 40/50 made of steel with insulation	
	for 2 heating circuits	1351692
	for 3 heating circuits	1351693
	for 4 heating circuits	1351694
		Distributor for "Regumat-220/280" with a distance of 180 mm between pipe centres.
		Connection to the heating circuit: G 2 collar nut, flat sealing Connection to the boiler: flanged DN 80
		Max. flow rate: 26 m³/h
	Mounting legs for distributors/"HydroFixx" DN 32 plus/DN 40/DN 50	
	infinitely adjustable height 285-480 mm including fixing material	1351697
	Wall consoles for distributors/"HydroFixx" DN 32 plus/DN 40/DN 50	
	distance to wall infinitely adjustable between 165 and 235 mm including fixing material	1351695
	Sealing plug set 2-fold	
	DN 25, G 1½	1351770
	DN 32, G 2	1351771
		For closing a pair of heating circuits at the distributor.

Article	Article-No.	Hint
"HydroFixx"		
Hydronic header / distributor combination		
		
"HydroFixx" for "Regumat" DN 20 made of steel with insulation and wall bracket		Distributor with horizontal integrated hydronic header, compact construction, made of steel.
for 2 heating circuits	1351568	Connection to the heating circuit: G 1 collar nut, flat sealing
for 3 heating circuits	1351569	Connection to the boiler: G 1 male thread, flat sealing
		Max. operating pressure: 4 bar Max. operating temperature: 110 °C
		Max. flow rate: 2.5 m³/h
		
"HydroFixx" for "Regumat" DN 25 made of steel with insulation and wall bracket		For the connection of "Regumat" DN 25 with a distance of 125 mm between pipe centres.
for 2 heating circuits	1351698	Connection to the heating circuit: G 1½ collar nut, flat sealing
for 3 heating circuits	1351699	Connection to the boiler: G 1½ male thread, flat sealing
		Max. flow rate: 4 m³/h
		
"HydroFixx" for "Regumat" DN 32 with pump ball valve made of steel with insulation and wall bracket		For the connection of "Regumat" DN 32 with a distance of 125 mm between pipe centres.
for 2 heating circuits	1351758	Connection to the heating circuit: G 2 collar nut, flat sealing
for 3 heating circuits	1351759	Connection to the boiler: G 2 male thread, flat sealing
		Max. flow rate: 9 m³/h
		
"HydroFixx" for "Regumat plus" DN 32 with pump ball valve made of steel with insulation		Distance between pipe centres: 125 mm
for 2 heating circuits	1351678	Connection to the heating circuit: G 2 collar nut, flat sealing
for 3 heating circuits	1351679	Connection to the boiler: G 2 male thread, flat sealing
		Max. flow rate: 12 m³/h Max. flow rate: 26 m³/h
		
"HydroFixx" for "Regumat" DN 40/50 made of steel with insulation		For the connection of "Regumat" DN 40/50 with a distance of 180 mm between pipe centres.
for 2 heating circuits	1351778	Connection to the heating circuit: G 2 collar nut, flat sealing
for 3 heating circuits	1351779	Connection to the boiler: flanged DN 80
		Max. flow rate: 26 m³/h
		
Hydronic header made of steel with insulation		For the hydronic decoupling of the heating and boiler circuit.
DN 25 connection G 1½ male thread, flat sealing	1351590	Max. flow rate: 4 m³/h
DN 32 connection G 2 male thread, flat sealing	1351591	Max. flow rate: 8 m³/h



"MonoFixx" for "Regumat" DN 25
made of steel
with insulation and wall bracket

for one heating circuit

1351589

For the hydronic decoupling of the heating
and boiler circuit.

For the connection of a "Regumat" DN 25
with a distance of 125 mm between pipe
centres.

Connection to the heating circuit:

G 1½ collar nut, flat sealing

Connection to the boiler:

G 1½ male thread, flat sealing

Max. flow rate: 4 m³/h

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Accessories for hydronic headers / distributors



Connection fitting

for "Regumat RTA"
below the distributor
2 x G 1 1/2 female thread/installation length 45 mm
Set = 2 pieces

(10) **1351655**



Connection pieces

for connection of a distributor
DN 25 to a "Regumat" DN 20
G 1 1/2 male thread x G 1 collar nut,
set = 2 pieces

1351654

From centre distance 125 to 100.

for connection of a distributor
DN 32 to a "Regumat" DN 25
G 2 male thread x G 1 1/2 collar nut

(10) **1351652**

for connection of a distributor
DN 40/50 to a "Regumat" DN 25
G 2 male thread x G 1 1/2 collar nut,
set = 2 pieces

1351657

From centre distance 180 to 125.

for connection of a distributor
DN 40/50 to a "Regumat" DN 32
G 2 male thread x G 2 collar nut,
set = 2 pieces







1351658

From centre distance 180 to 125.













for connection of a "Regumat"
DN 32 without pump ball valve
to a distributor DN 25

(25) **1351651**

	Article	Packing unit	Article-No.	Hint
"Regumat" Tailpipe sets DN 20				
	Set of weldable tailpipes			Required for the connection of the pipework to the heating circuit and for the connection of the "Regumat" DN 20 and "Regumaq" with G 1 connection to the boiler, including ring gaskets.
	2-fold: collar nut G 1, weldable tailpipe	(10)	1350445	
	Set of solder tailpipes, 22 mm			
	2-fold: collar nut G 1, solder tailpipe	(10)	1350446	
	Set of threaded tailpipes R ¾			
	2-fold: collar nut G 1, threaded tailpipe	(10)	1350448	
	Press connection set 26 x 3 mm			
	2-fold: collar nut G 1, press connection	(10)	1350449	
	Connection set, system Viega Sanpress 22 mm			
	2-fold: collar nut G 1, press connection		1350436°	
	Connection set Rp ¾			
	2-fold: collar nut G 1, nipple	(10)	1350447	

Article	Packing unit	Article-No.	Hint
"Regumat" Tailpipe sets DN 25			Required for the connection of the pipework to the heating circuit and for the connection of the "Regumat DN 25-130/180" to the boiler, without ring gaskets (come with the "Regumat").
Weldable tailpipe sets			
2-fold: collar nut G 1½, weldable tailpipe		1350455	
4-fold: collar nut G 1½, weldable tailpipe		1350465	
Solder tailpipe sets 28 mm			
2-fold: collar nut G 1½, solder tailpipe		1350456	
4-fold: collar nut G 1½, solder tailpipe		1350466	
Threaded tailpipe sets Rp 1			
2-fold:		1350457	
collar nut G 1½, threaded tailpipe			
4-fold:		1350467	
collar nut G 1½, threaded tailpipe			
Press connection set 26 mm x 3 mm with seal			
1-fold:	(5)	1511946	
press connection, collar nut G 1½			
Press connection set 32 mm x 3 mm with seal			
1-fold:	(5)	1511949	
press connection, collar nut G 1½			
Collar nut G 1½			
2-fold		1350450	
4-fold		1350451	
1-fold	(20)	1359099	
Weldable tailpipe			
2-fold		1350594	
Solder tailpipe 28 mm			
2-fold		1351095	
Threaded tailpipe Rp 1			
2-fold		1351394	

Article	Packing unit	Article-No.	Hint
"Regumat" Tailpipe sets DN 32			
Required for the connection of the "Regumat" DN 32 to the boiler.			
Solder tailpipe sets 35 mm			
	2-fold: collar nut G 2 and solder tailpipe	1350474°	
	4-fold: collar nut G 2 and solder tailpipe	1350475°	
Threaded tailpipe sets Rp 1¼			
	2-fold: collar nut G 2 and threaded tailpipe	1350476	
	4-fold: collar nut G 2 and threaded tailpipe	1350477	
Collar nut G 2			
	2-fold	1350470	
	4-fold	1350471	
Solder tailpipe 35 mm			
	2-fold	1351096	
Threaded tailpipe Rp 1¼			
	2-fold	1351396	
Ring gasket (Set = 10 pieces)			
	Ø 30 x Ø 25 x 2 mm	(100) 1359551	For junction G 1.
	Ø 44.5 x Ø 28 x 2 mm	(100) 1359552	For junction G 1½.
	Ø 27 x Ø 38 x 2 mm	1359553	for junction G 1¼
Set = 4 pieces			
	Ø 56 x Ø 36 x 2.5	(10) 1359554	For junction G 2.
Coupling			
	2 x G 2 collar nut	1352088	For connection to a "Regumat" DN 32.
"Regumat" Tailpipe sets DN 40/50			
"Cofit PD" Press fitting			
2-fold, made of brass resistant to dezincification, stainless steel casing, for "Copipe HS" composition pipe			
	63 x 6.0 mm x R 2	1350481°	
Coupling			
	R 2 male x G 2 collar nut	1352089	For connection to a "Regumat" DN 40/50.

Article	Article-No.	Hint
---------	-------------	------


Thermal insulation

with one-piece front insulation shell:

for "Regumat-130" DN 25	1355090	Not suitable for "Regumat 130" DN 25 with Grundfos ALPHA 2.
-------------------------	----------------	---

for "Regumat-180" DN 25	1355091
-------------------------	----------------

with pump ball valve

for "Regumat-180" DN 32	1355092
-------------------------	----------------

for "Regumat-180" DN 25

for "Regumat-180" DN 25	1356090
-------------------------	----------------

with pump ball valve, Grundfos

pump ALPHA 2.1 25-60

for "Regumat-180" DN 25	1356091
-------------------------	----------------

with pump ball valve,

Wilo pump Stratos ECO 25/1-5

for "Regumat-180" DN 25	1356092
-------------------------	----------------

without pump ball valve,

Grundfos pump ALPHA 2.1 25-60

for "Regumat-180" DN 25	1356093
-------------------------	----------------

without pump ball valve,

Wilo pump Stratos ECO 25/1-5

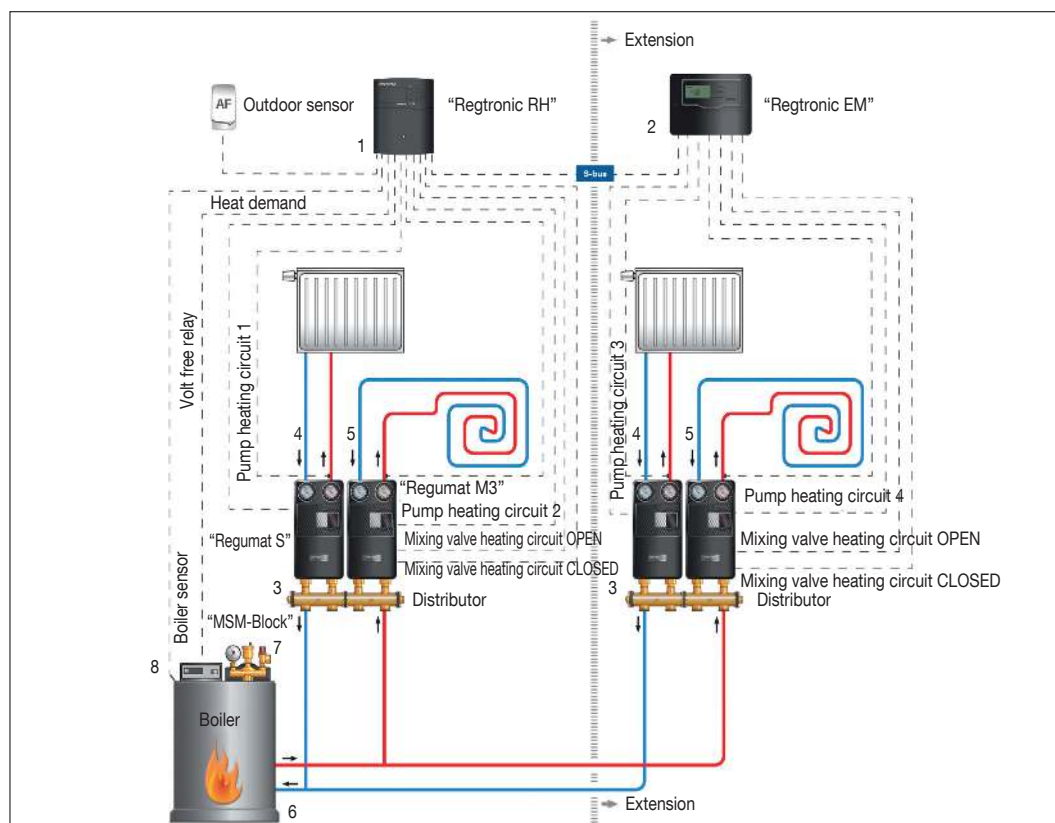

Universal thermal insulation:

for "Regumat-180" DN 25	1356097
-------------------------	----------------

with pump ball valve

for "Regumat-180" DN 25	1356098
-------------------------	----------------

without pump ball valve



Example: Weather guided control of 2 variable and 2 constant temperature circuits with heat demand (e.g. via a conventional boiler, solid fuel or heat pump) consisting of the heating circuit controller "Regtronic RH" with outdoor sensor and the extension module "Regtronic EM".

Oventrop products:

- 1 "Regtronic RH" Heating circuit controller with outdoor sensor
- 2 "Regtronic EM" Extension module
- 3 Distributor for "Regumat"
- 4 "Regumat S"
- 5 "Regumat M3"
- 6 "Optiflex" Ball valve
- 7 "MSM-Block" Boiler safety device
- 8 "Expa-Con" Valve with lead sealable cap

Article

Article-No.

Hint

"Regtronic RH" Heating circuit controller



with 1 outdoor sensor (bus-compatible) **1152083**
and 3 additional sensors (PT1000)

with 1 outdoor sensor (bus-compatible), **1152080**
2 additional sensors (PT1000) and
remote control including room
temperature sensor (PT1000)

ErP classification heating circuit controller "Regtronic RH"						
Item no.	Controller	Required accessories	Boiler control modulating (0-10 V)	On/Off	ErP %	Class
1152083	"Regtronic RH"	Adapter cable 1152086	X		2.0	II
1152083		—		X	1.5	III
1152080	"Regtronic RH" incl. remote control with room temperature sensor	Adapter cable 1152086	X		4.0	VI
1152080		—		X	3.5	VII
1152080		2 x room temperature sensor 1152095 Adapter cable 1152086	X		5.0	VIII

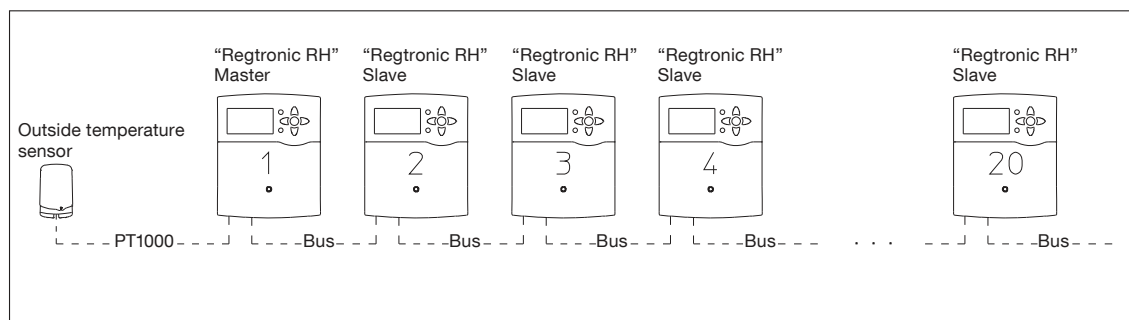


Adapter cable

PWM-/ 0-10 V

1152086

Adapter cable for signal transmission, for instance from the heating circuit controller "Regtronic RH" to a modulating heat generator with 0-10 V interface.
Accessory required for ErP classification II, VI and VIII.



Example: Distribution of a temperature sensor (outside temperature sensor, item no. 1152099) up to 20 heating circuit controllers "Regtronic RH" (item no. 1152080/1152083)

Heating circuit controller extension set for "Regumat 180" DN 25 with pump ball valve



consisting of: **1357290**
a) Heating circuit controller "Regtronic RH"
b) Controller location made of expanded polypropylene
c) Controller bracket made of metal including fixing material

Controller bracket for the variable direct connection of the heating circuit controller "Regtronic RH" on the left or right hand side of the station.
Extension set only suitable for "Regumat" DN 25:
1357070/72/73, 1357270/72/73,
1357020/27/29 and 1357220/27/29

Article

Article-No.

Hint

"Regtronic EM" Extension module



for the connection to the heating circuit controller "Regtronic RH" **1152098**

"Regtronic EM" for the extension of the heating circuit controller "Regtronic RH" by 6 sensor inputs and 5 relay outputs. Thus, further variable or constant temperature heating circuits can be activated. Up to **five** extension modules can be connected to the heating circuit controller "Regtronic RH". 1 sensor attached to the pipe PT 1000 is included.

"Regtronic RM"



for the control of heating and cooling circuits as well as solar plants

12 inputs PT 1000, PT 500 or KTY
3 pulse inputs
2 analogue inputs Grundfos Direct Sensors™
2 digital inputs Grundfos Direct Sensors™
14 outputs
4 PWM outputs (convertible to 0-10 V)
Data output S-bus

With 2 collector sensors and 6 storage cylinder sensors.
The outdoor sensor is not included.

Solar system controller with full graphic display for use in solar, heating and cooling systems. Control of weather guided heating and cooling circuits.
Operating current: 100-240 V

The system controller "Regtronic RM" for wall attachment has 14 relay outputs (13 speed controlled solid-state relays and 1 volt free relay) and 4 PWM outputs for the speed control of high-efficiency pumps which are convertible to the output of a 0-10 V signal.

The controller "Regtronic RM" controls solar plants with East-West roof orientation and several storage cylinders as well as weather guided variable / constant temperature heating and cooling circuits.

Preloaded function blocks simplify the system parameterization and thus facilitate an integration of various heat generators (e. g. oil, gas or solid fuel boilers).

Different optional functions such as storage cylinder loading section by section, heat exchange, heat demand, boiler loading, solid fuel boiler, mixing valve control, measurement of heat consumption, tube collector function, drain back option, thermostat function, ΔT-regulation, thermal disinfection, circulation and further functions may be activated via the intuitive user guidance.

Interfaces: S-bus for the connection to the data logger "CS-BS".
SD-card slot for data recording and transmission of set values as well as updating of the firmware.

Up to 5 extension modules "Regtronic EM" can be connected to the "Regtronic RM". Thus, there is a total number of 39 relay outputs for individual pipework configurations.

1369555

ErP classification "Regtronic RM"						
Item no.	Controller	Required accessories	Boiler control modulating (0-10 V)	On/Off	ErP %	Class
1369555	"Regtronic RM"	1 x outside temperature sensor 1152099	X		2.0	II
		1 x outside temperature sensor 1152099		X	1.5	III
		1x room temperature sensor 1152095	X		4.0	VI
		1 x outside temperature sensor 1152099				
		1x room temperature sensor 1152095		X	3.5	VII
		1 x outside temperature sensor 1152099				
		3x room temperature sensor 1152095	X		5.0	VIII

Article	Packing unit	Article-No.	Hint
Accessories			
Room temperature sensor PT 1000		1152095	Room temperature sensor for fixing on level surfaces (surface mounting).
Outside temperature sensor		1152099	Temperature sensor PT 1000.
Room thermostat - surface mounting			<p>The surface- or flush-mounted model of the electric thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P".</p> <p>Temperature range: 5 °C up to 30 °C</p> <p>Heating: Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, the temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V).</p> <p>Cooling: Use electrothermal actuators (two point) "open with current off".</p> <p>Limitation of the control range of item no. 1152051/52/71/72 by using the concealed limiting elements.</p> <p>The isolator terminals of the room thermostat can be connected to the sensor entry of the heating circuit controller "Regtronic RH".</p> <p>The heating circuit controller can for instance activate a 230 V actuator or can switch to reduced heating operation.</p>
230 V	(25)	1152051	
24 V	(25)	1152052	
230 V	(25)	1152055	
with concealed temperature setting			
Remote control with room temperature sensor PT 1000		1152096	Remote control with room temperature sensor PT 1000 for the connection to the electronic controllers "Regtronic RH, RM and RS" for a comfortable control of the heating curve of the controller from the living area. When increasing the heating curve, the flow temperature is increased and vice versa. The remote control also features the functions "heating circuit off" and "party position".



Room controller with
operating mode switch, remote control
and room temperature sensor PT 1000

1152087

Room controller with operating mode switch,
remote control and room temperature sensor
PT 1000 for the connection to the heating
circuit controller "Regtronic RH" for a
comfortable setting of the operating mode and
heating curve of the controller from the living
area.
Operating mode switch:
Setting of the operating modes "Automatic",
"Night setback", "Summer" and "Off".
Remote control:
An increase of the heating curve provokes an
increase of the flow temperature and vice
versa. Furthermore, the remote control features
the functions "Heating circuit off" and "Party
position".



"Sensor LW TH"
Temperature sensor PT 1000

Storage cylinder

1369093

Collector

1369094

For electronic registration of the riser
temperatures.

Continuous temperature range: up to 105 °C
L = 300 cm
Continuous temperature range: up to 180 °C
(for short periods up to 250 °C)
L = 200 cm.



Temperature sensor attached to the pipe **1369095**
Sensor element PT 1000,
with fixing clamp Ø 25 - 40
and heat conducting paste

Continuous operating temperature range:
up to 180 °C
L = 150 mm

Article	length	Article-No.	Hint
---------	--------	-------------	------



**High-efficiency pump 130 mm with connection thread G 1
DN 20**

Grundfos ALPHA 2.1 15-60	130	1357161	
--------------------------	-----	----------------	--

At the beginning of 2020, the Wilo pumps of the types Yonos PARA RKA and RKC will be replaced with the pumps of the type PARA SC which are identical in construction and capacity.



**High-efficiency pumps 130 mm with connection thread G 1 1/2
DN 25**

Wilo PARA 25-180/6-43/SC-9		1357163*	
Wilo-Yonos PARA RS 25/6-RKA	130	1357153°	
Wilo-Yonos PARA RS 25/6-RKC	130	1357154°	
Grundfos ALPHA 2.1 25-60	130	1357157	



**High-efficiency pumps 180 mm with connection thread G 1 1/2
DN 25**

Wilo PARA 25-180/6-43/SC-9		1355159*	
Wilo-Yonos PARA RS 25/6-RKA	180	1355158°	
Grundfos ALPHA 2.1 25-60	180	1358155	
Grundfos ALPHA 2.1 25-60N	180	1357159	
Wilo-Stratos PICO 25/1-6	180	1358157	
Wilo-Stratos PICO plus 25/1-6 N	180	1357160	

For replacement purposes or for upgrading the "Regumat 180" stations without pump, for open vented systems.

with stainless steel body

with stainless steel body



**High-efficiency pumps 180 mm with connection thread G 2
DN 32**

Wilo PARA 30-180/6-43/SC-9		1358166*	
Grundfos ALPHA 2.1 32-60	180	1358161	
Wilo-Yonos PARA RS 30/6-RKA	180	1358163°	
Wilo-Yonos PARA RS 30/6-RKC	180	1358164°	
KSB Calio 30-120	180	1358165	

For subsequent installation into the "Regumat S/M3-180" DN 32 with pump ball valve.

Other circulation pumps on request.



Power cord
for high-efficiency pumps
with right angle plug

for Grundfos ALPHA	1358150
for Wilo-Stratos PICO	1358170
for Wilo PARA	1358171

Small model for "Regumat 180" DN 25 without pump ball valve and "Regusol" stations.
Cable 2 m long.



Installation relay

with 2 contacts for 20A cabled in the casing	1152089
---	----------------

For the connection of high-performance pumps (> 1A).



Grounding clips

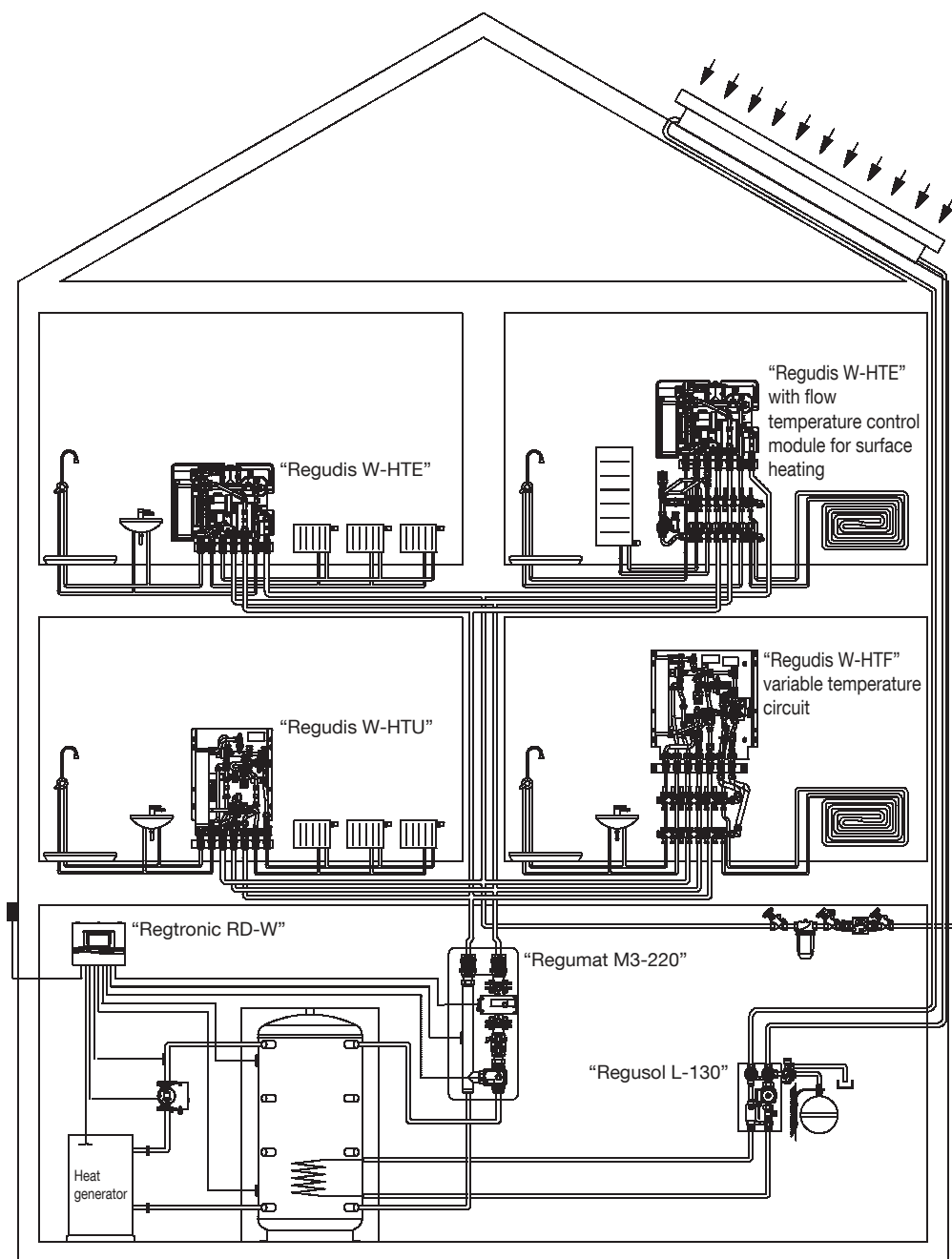
DN 20 - DN 32	1359995
DN 40 - DN 50	1359996

For the electrical connection of metal pipes to the earth bonding.



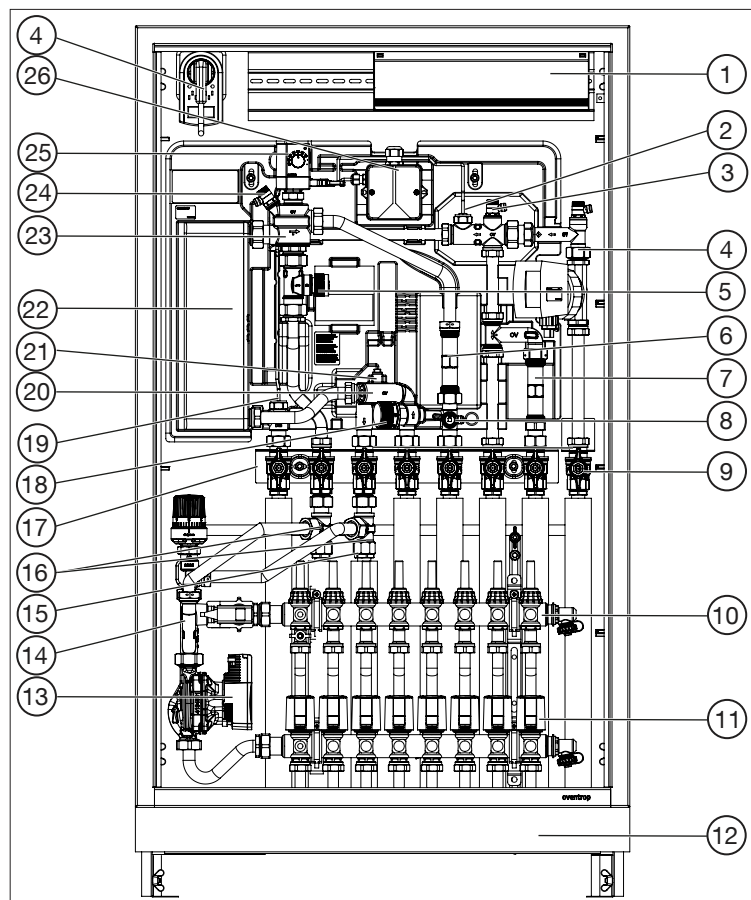
3.1.h "Regudis W" Dwelling stations

Content	
General information	503
Regudis W-HTE Dwelling stations - electronic control, depth 110 mm	504
Extension modules for "Regudis W-HTE"	504
Accessories for "Regudis W-HTE"	505
Accessories for installation in a four-pipe system	506
Spare parts for "Regudis W-HTE"	507
Covers and cabinets for "Regudis W-HTE"	508
"Regtronic RD-W" System controller	512
Accessories for system controller "Regtronic RD-W"	513
"Regudis W-HTU" Dwelling stations, depth 150 - 175 mm	516
"Regudis W-HTU" Basic Dwelling stations, depth 150 - 175 mm	520
"Regudis W-HTF" Dwelling stations, depth 110 mm	521
Covers and cabinets for dwelling stations "Regudis W"	525



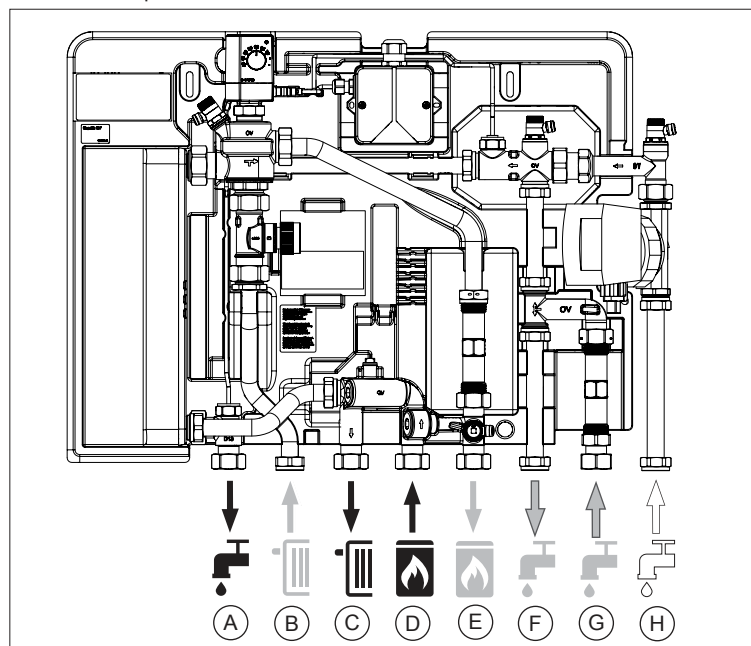
System illustration: "Regudis W" with conventional heat generator, buffer storage cylinder and solar integration
A control engineered integration of the "Regudis W" dwelling stations into the heating system can be carried out with the help of the "Regudis" system controller "Regtronic RD-W".

Dwelling stations supply heat as well as hot and cold potable water to individual dwellings or commercial units without using auxiliary energy. The hot water for heating purposes is provided by a central heat supply. The potable water is heated locally via a heat exchanger according to the continuous flow principle.



"Regudis W-HTE" - full featured model

With stainless steel distributor/collector for surface heating, outlet for a constant temperature heating circuit, potable water circulation module and derivative temperature control set



Connection assignment "Regudis W-HTE"

- 1 Connecting block for room thermostats and actuators
- 2 Volume flow sensor
- 3 Deaeration potable water circuit
- 4 Potable water circulation module with time switch
- 5 Zone valve for heating circuit control
- 6 Spacer for heat meter
- 7 Spacer for water meter
- 8 Draining valve heating circuit
- 9 Ball valve connection set for potable water circulation module
- 10 Stainless steel distributor/collector for surface heating
- 11 Actuator for individual room temperature control
- 12 Cabinet
- 13 Heating circuit pump (surface heating)
- 14 Flow temperature control module for surface heating
- 15 Outlet for a constant temperature heating circuit
- 16 Heating circuit connection fitting
- 17 Ball valve connector block
- 18 Derivative temperature control set
- 19 Temperature sensor potable water - hot
- 20 Strainer primary supply
- 21 Connection in the primary supply for the temperature sensor of the heat meter
- 22 Plate heat exchanger
- 23 Control valve with integrated differential pressure and volume flow control
- 24 Deaeration heating circuit
- 25 Electronic controller with actuator for potable water temperature control
- 26 Connection box for power supply

- A Hot potable water outlet
- B Heating circuit return
- C Heating circuit supply
- D Primary supply from the buffer storage cylinder
- E Primary return to the buffer storage cylinder
- F Cold water outlet
- G Cold water supply from the house connection
- H Potable water circulation return

Models:

The "Regudis W-HTE" is available with 3 performance ranges. Each performance range is available with copper brazed heat exchanger or with heat exchanger with Sealix® protective layer.

Dimensioning table at 10°C/50°C in [l/min]					
Temperature difference	ΔT 0K*		ΔT 15K*	Item no. copper brazed	Item no. Sealix®
Performance range 1	11	to	21	1344030	1344050
Performance range 2	15		25	1344031	1344051
Performance range 3	20		30	1344032	1344052

* acc. to SPF test procedure

"Regudis W-HTE"

Installation depth 110 mm. Modularly extensible.

Article	Nominal draw off capacity [l/min]	Article-No.	Hint
---------	-----------------------------------	-------------	------

Regudis W-HTE Dwelling stations - electronic control, depth 110 mm

consisting of:

- Plate heat exchanger
- Control valve with integrated differential pressure and volume flow control
- Actuator with integrated potable water temperature control
- Volume flow and temperature sensor
- Strainer
- Spacer for heat meter
- Spacer for water meter
- Connection facility for flow temperature sensor of the heat meter (M 10 x 1)
- Dearthion/draining facility

Dimensions (W x H x D): 600 mm x 455 mm x 110 mm

Heat exchanger copper brazed

Performance range 1	11 - 21 l/min	1344030
Performance range 2	15 - 25 l/min	1344031
Performance range 3	20 - 30 l/min	1344032



Heat transmission station with electronic control for the supply of hot and cold potable water as well as heating water to a dwelling. The maximum draw off volume flows per performance range can be reached at a heating water flow temperature set 0K to 15K above the draw off temperature. Station designs within a low temperature range of 0K to 5K are energetically advantageous, especially in combination with heat pumps, condensing appliances and solar thermal energy. The modular construction of the "Regudis W-HTE" station allows for upgrading the functional range with the help of the below extension modules.

Technical data:

Nominal size: DN 20

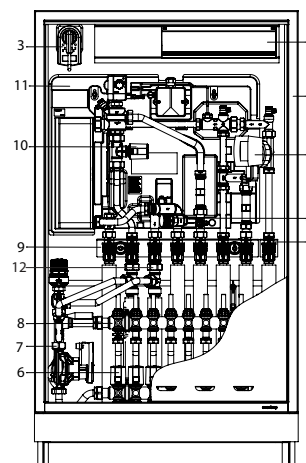
Max. operating pressure p_s : 10 bar

Max. operating temperature: 90 °C

Control range potable water temperature: 40 °C - 70 °C

1344030/31/32: SVGW certified

System illustration:



Heat exchanger copper brazed, with Sealix® protective layer

Performance range 1	11 - 21 l/min	1344050
Performance range 2	15 - 25 l/min	1344051
Performance range 3	20 - 30 l/min	1344052

Extension modules for "Regudis W-HTE"

Flow temperature control module for surface heating systems

For the extension of the "Regudis W-HTE" station by a thermostatic flow temperature control for surface heating circuits. Flow temperature control range: 25 °C - 50 °C

consisting of:

- High-efficiency pump Wilo PARA 15-130/6-43/SC-12
- Thermostatic temperature controller with contact sensor
- Set for connection to "Regudis W-HTE"
- Electric sensor attached to the pipe for max. limitation of the heating circuit temperature

1344550



Heating circuit connection fitting

For the extension of the flow temperature control module by one constant temperature heating circuit Connection to the pipework: Rp ¾

Set = 2 pieces

1344551



Potable water circulation module

For the extension of the "Regudis W-HTE" station by a time controlled potable water circulation function. SVGW certified.

consisting of:

- High-efficiency pump Wilo Star Z Nova
- Time switch
- Pipe connection set

1344555



- 1) 1400983 Connecting block for room thermostats and actuators
- 2) 1344598 Cabinet
- 3) 1344555 Potable water circulation module with time switch
- 4) 1344490 Derivative temperature control set
- 5) 1344484 Ball valve connection set for circulation module
- 6) 1012452 "Aktor T 2P H NC" Actuator for individual room temperature control
- 7) 1344550 Flow temperature control module
- 8) 1405358 "Multidis SF" 8-fold stainless steel distributor/collector
- 9) 1344480 Ball valve connector block
- 10) 1012452 "Aktor T 2P H NC" Actuator for zone control
- 11) 1344032 "Regudis W-HTE" Dwelling station
- 12) 1344551 Heating circuit connection fitting







Awards:



iF Design Awards 2019



German Innovation Award 2019 Winner

Article	Packing unit	Article-No.	Hint
Accessories for "Regudis W-HTE"			
		1344490	For maintaining an adequate temperature in the primary supply to guarantee a quick supply of hot potable water outside the heating period. Control range: 35 °C - 60 °C
		1349052	For replacement of the plastic spacers for water and heat meters.
	(50)	1341092	For equipotential bonding of the dwelling station.
		1344480	For the isolation of all connections of the "Regudis W-HTE" stations. 7 ball valves mounted onto a bracket. Connection to the pipework: Rp ¾
		1344485	Ball valve connector block consisting of ball valves and "Flypass" connection fitting. 5 ball valves and a "Flypass" connection fitting mounted onto a bracket. The Oventrop "Flypass" connection fitting is used for the isolation and flushing of the primary supply and return in the flow direction in front of the fitting. Connection to the pipework: Rp ¾
		1344484	1 ball valve mounted onto a bracket. For the isolation of the circulation pipe. Connection to the pipework: Rp ¾
		1344489	For flushing of the heating system.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Accessories for installation in a four-pipe system



Heating circuit plug		1344481*	
----------------------	--	----------	--



**Set with double regulating and commissioning valve
"Hycococon VTZ"**

Angle pattern:

with ball valves DN 20	1404578
with ball valves DN 25	1404580



**Set with differential pressure regulator
"Hycococon DTZ"**

Angle pattern:

with ball valves DN 25	1404682
------------------------	---------

Set consisting of:

Supply

- Ball valve with temperature sensor connection M 10 x 1.0, for sensor Ø 5.0 / 5.2 mm directly immersing
- Measuring adapter

Return

- "Hycococon DTZ" Differential pressure regulator
- Capillary
- Meter stool piece
- Ball valve with temperature sensor connection M 10 x 1.0, for sensor Ø 5.0 / 5.2 mm directly immersing
- Flat seals



Set with ball valves

Angle pattern:









with ball valves DN 20	1405578
with ball valves DN 25	1405580

Connecting block (6 control zones)
for room thermostats and actuators



24 V/ 230 V, heating	(25) 1400980
----------------------	--------------

An external power supply of 24 V must be available when using item no. 1400980 and 1400982.
Item no. 1153053 can be used as transformer.

Article	Packing unit	Article-No.	Hint
Spare parts for "Regudis W-HTE"			
	Heat exchanger copper brazed		
	Performance range 1	1344083	
	Performance range 2	1344084	
	Performance range 3	1344085	
	Heat exchanger copper brazed, with Sealix® protective layer		
	Performance range 1	1344093	
	Performance range 2	1344094	
	Performance range 3	1344095	
	Elbow with volume flow sensor		1344493
	With cable and plug for the connection to the actuator with integrated potable water temperature control, item no. 1344491.		
	Filter insert	(20)	1344495
	Potable water temperature sensor PT 1000	(10)	1344494
	Control valve with integrated differential pressure and volume flow control		1344492
	With cable and plug for the connection to the actuator with integrated potable water temperature control, item no. 1344491.		
	Actuator with integrated potable water temperature control		1344491
	Ring gaskets Set = 5 pieces		
	Ø 24 x Ø 16 x 2	(40)	1344497
	Ø 30 x Ø 21 x 2	(40)	1344498*
	For junction G ¾. For junction G 1.		
	Power pack 100 - 240 V, ~50 - 60 Hz		(4) 1344496
	For "Regudis" actuator with integrated potable water temperature control, item no. 1344491.		
	Ball valve for the supply pipe: red handle		1341980
	Ball valve for the return pipe: blue handle		1341981
	High-efficiency pumps		
	Wilco Star Z Nova		1344580*
	Wilco PARA 15-130/6-43/SC-12		1344581*
	Thermostatic temperature controller with contact sensor 25 - 50 °C		1344582*
	Insertion turbine for volume flow sensor		1381165*
	Only supplied as replacement for the stations "Regumaq X-25/45" and "Regudis W-HTE".		

Article

Article-No.

Hint

Covers and cabinets for "Regudis W-HTE"



Front insulation shell for "Regudis W-HTE"
expanded polypropylene, anthracite

1344470

Dimensions (W x H x D):
600 mm x 531 mm x 110 mm

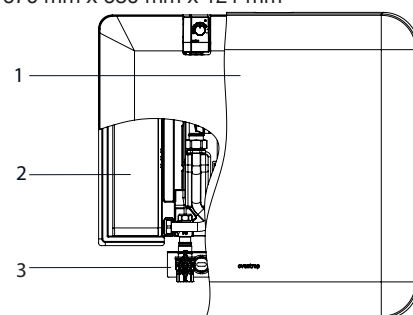
The installation depth of the "Regudis W-HTE" (110 mm) will not be exceeded in combination with the front insulation shell.



"Regubox" Exclusive surface-mounted cover
plastic, white

1344595

With thermal insulation integrated in the surface-mounted cover.
Not suitable for use in combination with the potable water circulation module.
Dimensions (W x H x D):
670 mm x 630 mm x 121 mm



- 1) 1344595 Surface-mounted cover
- 2) 1344032 "Regudis W-HTE" Dwelling station
- 3) 1344480 Ball valve connector block

Awards:



ICONIC AWARDS 2019
Innovative Interior



German Design Award
Winner 2020

Regubox Exclusive cabinet
with white, frameless, opaque and lockable glass door

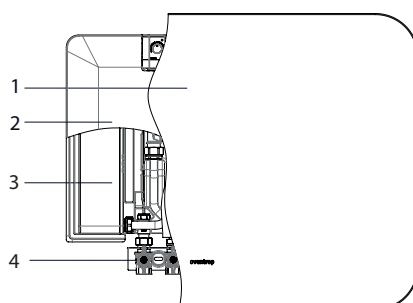
Frame surface made of brushed stainless steel,
without rear wall



Surface-mounted model
for dwelling station "Regudis W-HTE" or
stainless steel distributors/collectors "Multidis SF"
with a maximum of 9 heating circuit connections
(angle pattern connection set, item no. 1404780,
taken into account)

1341298

Dimensions (W x H x D):
900 mm x 600 mm x 170 mm




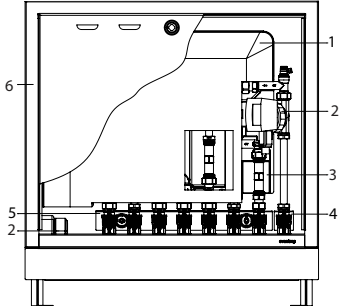
- 1) 1341298 "Regubox"
- 2) 1344470 Front insulation shell
- 3) 1344032 "Regudis W-HTE" Dwelling station
- 4) 1344480 Ball valve connector block



Mounting set for installation during
construction for exclusive cabinet
"Regubox", steel sheet, black RAL 9005
Freestanding installation, adjustable
height

1344097

Adjustable height for the adaptation to
different floor constructions. For "Regubox",
item no. 1341298.

Article	Article-No.	Hint
Cabinets - flush mounting Body steel, galvanised door, frame and plinth powder coated white RAL 9010, matt finish removable plinth		Adjustable height and depth.
	Standard model Low model	1344596* 1344597°#
		Dimensions without frame (W x H x D): 700 x 785 - 900 x 110 - 175 mm 700 x 745 - 860 x 110 - 175 mm 
		1) 1344470 Front insulation shell 2) 1344555 Potable water circulation module with time switch 3) 1344032 "Regudis W-HTE" Dwelling station 4) 1344484 Ball valve connection set for circulation module 5) 1344480 Ball valve connector block 6) 1344596 Cabinet
		#Low model, not suitable in combination with item no. 1344470.

Article

Article-No.

Hint



Long model
for direct installation of the dwelling station
"Regudis W-HTE" and stainless steel
distributors/collectors "Multidis SF"

for stainless steel distributors/collectors **1344598**

for up to 8 circuits

for stainless steel distributors/collectors **1344599**

for up to 12 circuits

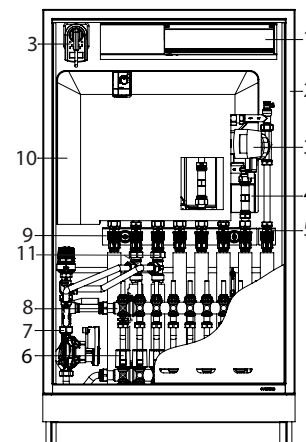
Dimensions without frame (W x H x D):

Item no. 1344598:

700 x 1298 - 1413 x 110 - 175 mm

Item no. 1344599:

880 x 1298 - 1413 x 110 - 175 mm



- 1) 1400983 Connecting block
- 2) 1344598 Cabinet
- 3) 1344555 Potable water circulation module with time switch
- 4) 1344032 "Regudis W-HTE" Dwelling station
- 5) 1344484 Ball valve connection set for circulation module
- 6) 1012452 "Aktor T 2P H NC" Actuator
- 7) 1344550 Flow temperature control module
- 8) 1405358 "Multidis SF" 8-fold stainless steel distributor/collector
- 9) 1344480 Ball valve connector block
- 10) 1344470 Front insulation shell
- 11) 1344551 Heating circuit connection fitting



Tiling ready frame for "Regudis W-HTE"

consisting of:

- aluminium frame, profile depth 25 mm
- trough-shaped door for wall planking
- 4 infinitely adjustable magnets for alignment and closing of the trough-shaped door
- fixing material

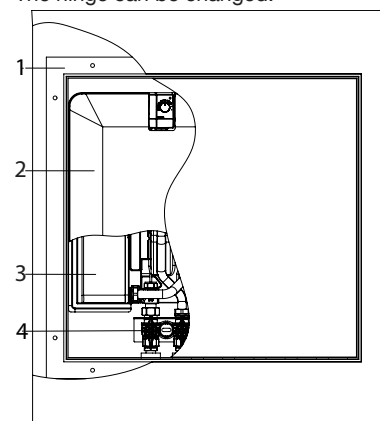
1344098

For flush wall mounting.




Frame dimensions (WxHxD):

742 mm x 660 mm x 25 mm

The hinge can be changed.



- 1) 1344098 Tiling ready frame
- 2) 1344470 Front insulation shell
- 3) 1344032 "Regudis W-HTE" Dwelling station
- 4) 1344480 Ball valve connector block

Article	Article-No.	Hint
Cabinets - surface mounting Body steel, galvanised door, frame and plinth powder coated white RAL 9010, matt finish removable plinth		Adjustable height
	Standard model	1344697
		Dimensions (W x H x D): 750 mm x 745 - 860 mm x 160 mm
	Long model for direct installation of the dwelling station "Regudis W-HTE" and stainless steel distributors/collectors "Multidis SF"	
for stainless steel distributors/collectors for up to 8 circuits		1344698
for stainless steel distributors/collectors for up to 12 circuits		1344699
		Dimensions (W x H x D): 750 mm x 1326 - 1441 mm x 160 mm Dimensions (W x H x D): 880 mm x 1326 - 1441 mm x 160 mm
Cylinder lock with key		
	for flush-mounted cabinets (1401151-54) and all surface- and flush-mounted cabinets for dwelling stations "Regudis W"	1401191

Article

Article-No.

Hint

"Regtronic RD-W" System controller

1342093

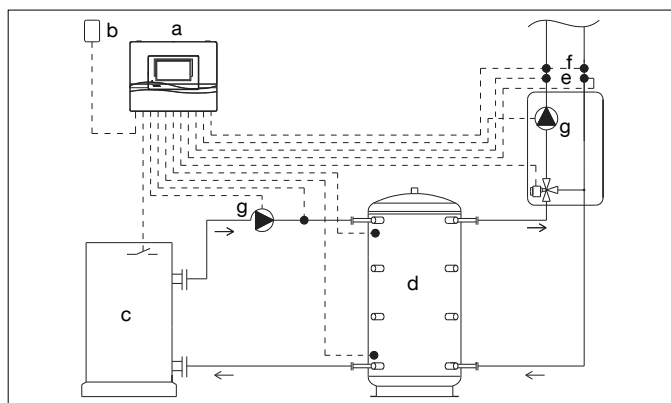


For the control engineered integration of the dwelling stations "Regudis W" into the heat supply.

The controller offers the following control options:










- Buffer storage cylinder loading
 - Flow temperature control with heat demand recognition
 - Differential pressure control of the heating circuit pump with heat demand recognition
- Furthermore, the flow and buffer storage cylinder temperatures as well as the differential pressure can be set back according to adjustable timed programmes, for instance overnight.

Sensors which are required for the operation are available as accessories.



System illustration "Regtronic RD-W"

- a "Regtronic RD-W" System controller
- b Outdoor sensor
- c Heat generator
- d Buffer storage cylinder
- e Flow and return temperature sensor
- f Differential pressure sensor
- g Pump (speed controlled via 0-10 V interface)

Article	Article-No.	Hint
Accessories for system controller "Regtronic RD-W"		
 <p>Sensor connection set "Regumat" for system controller "Regtronic RD-W"</p> <p>consisting of:</p> <p>2 x Adapter G 2 male x G 2 male 1 x Differential pressure sensor 2 x Temperature sensor PT 1000</p>	1357291	For the connection of differential pressure and temperature sensors to the pipework.
 <p>Sensor connection set "Regumat" for system controller "Regtronic RD-W"</p> <p>consisting of:</p> <p>2 x Adapter G 2 male x G 2 male 2 x Temperature sensor PT 1000</p>	1357292	As item no. 1357291, but without differential pressure sensor.
 <p>Coupling</p> <p>R 2 male x G 2 collar nut</p>	1352089	For connection to a "Regumat" DN 40/50.
 <p>Coupling</p> <p>2 x G 2 collar nut</p>	1352088	For connection to a "Regumat" DN 32.
 <p>Outside temperature sensor</p>	1152099	Temperature sensor PT 1000.
 <p>"Sensor LW TH" Temperature sensor PT 1000</p>		For electronic registration of the riser temperatures.
 <p>Storage cylinder</p>	1369093	Continuous temperature range: up to 105 °C L = 300 cm
 <p>Collector</p>	1369094	Continuous temperature range: up to 180 °C (for short periods up to 250 °C) L = 200 cm.
 <p>Temperature sensor attached to the pipe Sensor element PT 1000, with fixing clamp Ø 25 - 40 and heat conducting paste</p>	1369095	Continuous operating temperature range: up to 180 °C L = 150 mm

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Electronic control components for the constant temperature heating circuit



"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

"H NC", closed with current "off", 230 V
cable 2 m long **1012452**



Room thermostat - flush mounting (heating)

230 V (40) **1152561**

With LCD display and adjustable timed programme.

In combination with a two point actuator, e.g. item no. 1012415, the room thermostat can be used for the timed control of the **constant temperature heating circuit** of the dwelling of a "Regudis" station.



Electric pipe contact safety switch
20-90°C **1344583***

For max. limitation of the heating circuit temperature.

"Regtronic RH" Heating circuit controller



with 1 outdoor sensor (bus-compatible) and 3 additional sensors (PT1000) **1152083**



"Aktor M" Electromotive actuators

connection thread M 30 x 1.5
with manual setting, adjustable mode of operation

"3P H", 230 V,
two or three point control,
without valve anti-blocking function,
with automatic recognition of neutral point,
mode of operation not adjustable **1012729**

In combination with a heating circuit controller, the actuator allows for weather guided control of the **variable temperature heating circuit** of the dwelling of "Regudis" dwelling stations.



Remote control with room temperature sensor PT 1000 **1152096**

Remote control with room temperature sensor PT 1000 for the connection to the electronic controllers "Regtronic RH, RM and RS" for a comfortable control of the heating curve of the controller from the living area. When increasing the heating curve, the flow temperature is increased and vice versa. The remote control also features the functions "heating circuit off" and "party position".



Connecting block (10 control zones)
for room thermostats and actuators

230 V, heating/cooling,
pump and boiler control,
casing cover with integrated
time switch (25) **1400983**

For the connection of up to 10 room
thermostats and actuators for individual room
temperature control.

For the additional control of the pump for the
variable temperature heating circuit inside the
dwelling station.



Room thermostat - surface mounting (heating)

230 V (25) **1152051**



"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

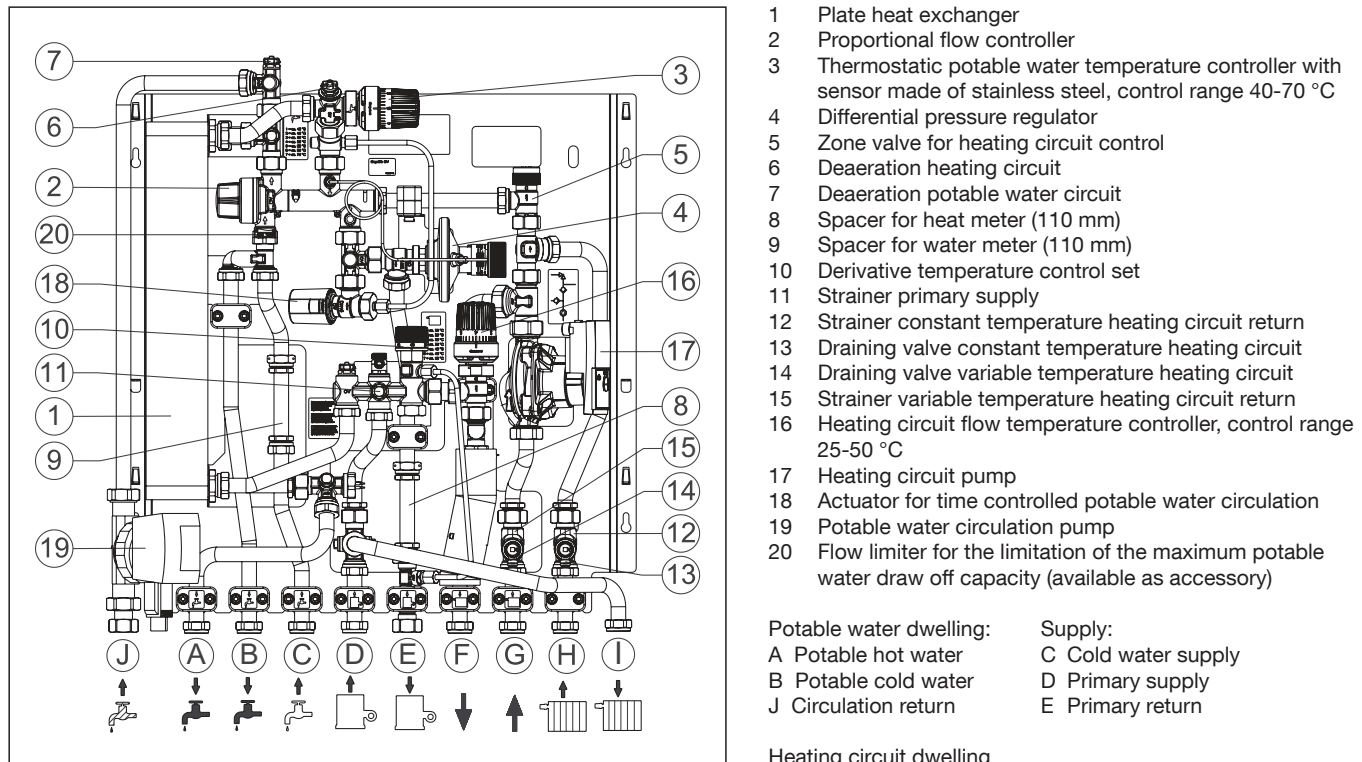
"H NC", closed with current "off", 230 V **1012452**
cable 2 m long

For individual room temperature control in
combination with the connecting block, item
no. 1400983.

For zone control in combination with the room
thermostat, item no. 1152561.

Further room thermostats and actuators: see
product range 1.2

Dwelling stations supply heat as well as hot and cold potable water to individual dwellings or commercial units without using auxiliary energy. The hot water for heating purposes is provided by a central heat supply. The potable water is heated locally via a heat exchanger according to the continuous flow principle.



"Regudis W-HTF" – full featured model
With variable temperature heating circuit, high temperature circuit, circulation pipe and derivative temperature control set

Models:

The "Regudis W" product range distinguishes between two standard models which differ in installation depth and function.

"Regudis W-HTU"

(W = Living, H = Heating, T = Hot potable water preparation,
U = all connections from below)

Installation depth between 150 mm and 175 mm.

With constant temperature heating circuit.

Ideal for the replacement of existing gas flow heaters during building refurbishment.

"Regudis W-HTF"

(W = Living, H = Heating, T = Hot potable water preparation, F = Flat format)
With constant and/or variable temperature heating circuit.

With an installation depth of only 110 mm ideal for installation in lightweight partitioning walls.

Connection possibility for underfloor heating distributors/collectors.

Technical data:

Nominal size:	DN 20
Max. operating pressure:	PN 10
Max. operating temperature: (heating water supply)	90 °C
Min. cold water pressure without flow limiter:	2.0 bar ²⁾
with flow limiter:	2.5 bar
Min. differential pressure supply:	300 mbar ¹⁾
Draw off temperature $t_{\text{draw off}}$	40-70 °C
Temperature variable temperature heating circuit:	25-50 °C
Min. flow temperature:	$t_{\text{draw off}} + 15\text{K}$

Nominal draw off capacity:

The use of different plate heat exchangers allows for the adaptation of the performance range to the individual requirements.

Performance range 1: Nominal draw off capacity 12 l/min.

Performance range 2: Nominal draw off capacity 15 l/min.

Performance range 3: Nominal draw off capacity 17 l/min.

The nominal draw off capacity depends on the selected performance range and the flow temperature of the heating water. The indicated performance range (nominal draw off capacity 12/ 15/ 17 l/min.) is related to a heating water flow temperature lying 15 K above the set draw off temperature (temperature difference of 15 K). Flow limiters for the limitation of the potable water draw off capacity are available as accessory.

If the temperature difference exceeds 15 K, the effective draw off capacity increases.²⁾

¹⁾ 150 mbar for dwelling stations without integrated differential pressure regulator.

²⁾ Since 01.03.2016, the Oventrop dwelling stations are no longer supplied with flow limiters for the limitation of the maximum potable water draw off capacity.

Draw off temperature $t_{\text{draw off}}$:

The draw off temperature is adjustable between 40 °C and 70 °C and remains constant within the performance range.

If the nominal draw off capacity is exceeded, $t_{\text{draw off}}$ may drop below the set value.

Plate heat exchanger:

When choosing the dwelling station, the water quality of the application area must be observed.

(A water analysis can be obtained from the local water authority.)

All "Regudis" dwelling stations are also available with nickel brazed heat exchangers. They are used in areas where copper brazed heat exchangers cannot be used, for instance, in mixed installations or areas with aggressive water.

Possible application of copper brazed plate heat exchangers has to be checked.

For further information visit www.oventrop.de/potable_water.

The double-walled heat exchanger with leakage paths offers additional protection of potable water.

Heat meters:

When using a heat meter, it is recommended to only use heat meters with quick sampling rate at one second intervals and with integrated return sensor in the body.

Flow temperature sensor M 10x1 according to DIN EN 1432-2, sensor type DS.

According to the German Energy Saving Directive (EnEV), "Regudis" dwelling stations can be equated with a central hot water preparation with potable water circulation. For further information visit www.oventrop.de.

Further information on request.

For further information see "Technical information".

Article	Nominal draw off capacity [l/min]	Article-No.	Hint
---------	--------------------------------------	-------------	------

"Regudis W-HTU" Dwelling stations, depth 150 - 175 mm
consisting of:

- Plate heat exchanger
- Proportional flow controller
- Thermostatic temperature controller
- Strainer
- Spacer for heat meter
- Spacer for water meter
- Zone valve for heating circuit control
- Differential pressure regulator
- Deaeration
- Draining facility

Heat exchanger copper brazed

Performance range 1	12	1341030
Performance range 2	15	1341031
Performance range 3	17	1341032

Heat exchanger nickel brazed

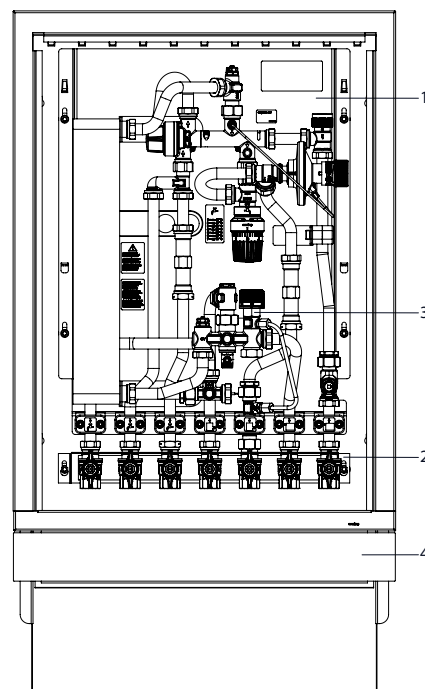
Performance range 1	12	1341050
Performance range 2	15	1341051
Performance range 3	17	1341052

Dimensions (W x H x D): 476 mm x 630 mm x 150 mm

Dwelling stations "Regudis W-HTU" with
constant temperature heating circuit.

Example of a complete station consisting of:






- 1) 1341032 "Regudis W-HTU"
- 2) 1341080 Ball valve connector block
- 3) 1341191 Derivative temperature control set
- 4) 1341070 Flush-mounted cabinet- slim model







Possible application of copper brazed plate
heat exchangers has to be checked. For further
information visit www.oventrop.com/to/trinkwasseranforderung.

SVGW, ACS and WRAS certified.



Article	Nominal draw off capacity [l/min]	Article-No.	Hint
Further models			Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung .
	"Regudis W-HTU" without cold water outlet dwelling and without spacer for water meter		SVGW certified. Item no. 1341231 also ACS certified.
	Heat exchanger performance range 2		Dimensions (W x H x D): 476 mm x 630 mm x 150 mm
	copper brazed	15	1341231
	nickel brazed	15	1341251
	Heat exchanger double-walled copper brazed	8	1341220
			Model with double-walled heat exchanger with leakage paths for the additional protection of potable water. Dimensions (W x H x D): 476 mm x 630 mm x 175 mm
	"Regudis W-HTO" Supply connections from the top, strainer in the potable water inlet, without cold water outlet dwelling, without spacer for water meter, 6 ball valves included		SVGW certified. Item no. 1341274 also ACS certified.
	Heat exchanger performance range 2		Dimensions (W x H x D): 476 mm x 630 mm x 150 mm
	copper brazed	15	1341274
	nickel brazed	15	1341271
	"Regudis W-TU" for hot potable water preparation without heating circuit, without cold water outlet dwelling, without spacer for water meter, without spacer for heat meter, derivative temperature control set pre-assembled, 4 ball valves included		SVGW and ACS certified.
	Heat exchanger performance range 3		Dimensions (W x H x D): 476 mm x 630 mm x 150 mm
	copper brazed	17	1341262
	nickel brazed	17	1341252
	"Regudis W-TU" for hot potable water preparation without heating circuit, derivative temperature control set pre-assembled		SVGW certified. Item no. 1341257 also ACS certified.
	Heat exchanger performance range 3		Dimensions (W x H x D): 476 mm x 630 mm x 150 mm
	copper brazed	17	1341257
	nickel brazed	17	1341267

Article	Nominal draw off capacity [l/min]	Article-No.	Hint
	"Regudis W-HTU Duo" with heating circuit separation system consisting of:		The "Regudis W-HTU Duo" dwelling stations feature two plate heat exchangers.
	<ul style="list-style-type: none"> -2 plate heat exchangers -Proportional flow controller -Thermostatic temperature controller -Strainer -Spacer for heat meter -Spacer for water meter -Zone valve for heating circuit control -Differential pressure regulator -Wilo pump Yonos PARA RS 15/1-6 RKA -Diaphragm expansion tank 3 l -Safety valve 3 bar -Pressure gauge -Deaeration -Draining facility 		<p>The additional heat exchanger allows for the separation of the primary circuit and the heating circuit.</p> <p>Heating circuit temperature control range: 40 °C up to 70 °C</p> <p>ASC and WRAS certified.</p> <p>Dimensions (W x H x D): 630 mm x 630 mm x 150 mm</p>
	Heat exchanger performance range 3		
copper brazed	17	1341332	
	"Regudis W-HTU Duo" with heating circuit separation system		Heating circuit temperature control range: 25 °C - 50 °C
	Potable water connections and supply connections from the top, without cold water outlet dwelling, without spacer for water meter, derivative temperature control set cannot be integrated		WRAS certified.
	Heat exchanger performance range 3		
copper brazed	17	1341372	Dimensions (W x H x D): 630 mm x 630 mm x 165 mm
	"Regudis W-HTU" Basic Dwelling stations, depth 150 - 175 mm		Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung .
	without differential pressure regulator, without cold water outlet dwelling and without spacer for water meter		
	copper brazed		Contrary to the standard model, the "Regudis W-HTU Basic" is supplied without integrated differential pressure regulator and without cold water outlet.
	Performance range 1	12	The demands on comfort and energy efficiency of the hot potable water preparation are still fulfilled by the combination consisting of proportional flow controller and temperature controller.
	Performance range 2	15	
	Performance range 3	17	
			Hydronic balancing of up to 5 dwelling stations connected to one riser can be carried out with the help of a differential pressure regulator "Hycocoon DTZ" installed in the riser.
	nickel brazed		Dimensions (W x H x D): 476 mm x 630 mm x 150 mm
	Performance range 1	12	
	Performance range 2	15	The model with double-walled heat exchanger with leakage paths offers additional protection of potable water.
	Performance range 3	17	Dimensions (W x H x D): 476 mm x 630 mm x 175 mm
			ACS certified (except for item no. 1340920).
	Heat exchanger double-walled copper brazed	8	Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung .

Article	Nominal draw off capacity [l/min]	Article-No.	Hint
---------	--------------------------------------	-------------	------

"Regudis W-HTF" Dwelling stations, depth 110 mm

consisting of:

- Plate heat exchanger
- Proportional flow controller
- Thermostatic temperature controller
- Strainer
- Stainless steel spacer for heat meter
- Stainless steel spacer for water meter
- Zone valve for heating circuit control
- Differential pressure regulator
- Deaeration
- Draining facility

alternatively with variable temperature heating circuit (fixed value control via heating circuit pump) or constant temperature heating circuit.

Dimensions: 565 x 655 mm constant temperature heating circuit

Dimensions: 630 x 655 mm variable temperature heating circuit

"Regudis W-HTF"

with constant temperature heating circuit

Heat exchanger copper brazed

Performance range 1	12	1341130
Performance range 2	15	1341131
Performance range 3	17	1341132

Heat exchanger nickel brazed

Performance range 1	12	1341150
Performance range 2	15	1341151
Performance range 3	17	1341152

"Regudis W-HTF"

with variable temperature heating circuit,
fixed value control,
Wilco pump Yonos PARA RS 15/1-6 RKA

Heat exchanger copper brazed

Performance range 1	12	1341140
Performance range 2	15	1341141
Performance range 3	17	1341142

Heat exchanger nickel brazed

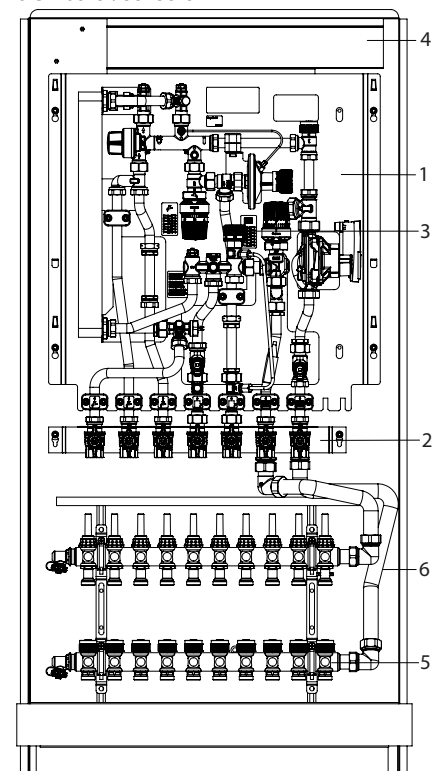
Performance range 1	12	1341160
Performance range 2	15	1341161
Performance range 3	17	1341162

Dwelling station "Regudis W-HTF" with variable temperature heating circuit for flow temperature control when using an underfloor heating.

Flow temperature control range:
25 °C - 50 °C

Example of a complete station consisting of:

- 1) 1341140 "Regudis W-HTF"
- 2) 1341180 Ball valve connector block
- 3) 1341191 Derivative temperature control set
- 4) 1341175 Cabinet - long model
- 5) 1405360 "Multidis SF" 10-fold stainless steel distributor/collector
- 6) 1341187 Connection set for stainless steel distributor/collector



Components for underfloor heating control:
product range 2







All stations are available with copper or nickel brazed heat exchanger.









ACS certified.

Further models on request.

Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung.



Article	Nominal draw off capacity [l/min]	Article-No.	Hint
	"Regudis W-HTF" with variable temperature heating circuit and high temperature circuit, Wilo pump Yonos PARA RS 15/1-6 RKA		As "Regudis W-HTF" with variable temperature heating circuit, but with additional outlet for a radiator circuit.
	Heat exchanger copper brazed		ASC certified.
	Performance range 1 12	1341340	
	Performance range 2 15	1341341	
	Performance range 3 17	1341342	
	Heat exchanger nickel brazed		
	Performance range 1 12	1341360	
	Performance range 2 15	1341361	
	Performance range 3 17	1341362	
	"Regudis W-HTF" with constant temperature heating circuit and circulation pipe, Potable water circulation pump: Wilo Star Z Nova C		As "Regudis W-HTF" with constant temperature heating circuit, but with additional time controlled potable water circulation pump.
	Heat exchanger copper brazed		
	Performance range 3 17	1341642	
	Heat exchanger nickel brazed		
	Performance range 3 17	1341662	
	"Regudis W-HTF" with variable temperature heating circuit and circulation pipe, Wilo pump Yonos PARA RS 15/1-6 RKA Potable water circulation pump: Wilo Star Z Nova C		As "Regudis W-HTF" with variable temperature heating circuit, but with additional time controlled potable water circulation pipe.
	Heat exchanger copper brazed		
	Performance range 3 17	1341442	
	Heat exchanger nickel brazed		
	Performance range 3 17	1341462	
	"Regudis W-HTF" with variable temperature heating circuit, high temperature circuit and circulation pipe, Wilo pump Yonos PARA RS 15/1-6 RKA Potable water circulation pump: Wilo Star Z Nova C		As "Regudis W-HTF" with variable temperature heating circuit, but with additional outlet for a radiator circuit and time controlled potable water circulation pipe.
	Heat exchanger copper brazed		Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/ trinkwasseranforderung .
	Performance range 3 17	1341542	
	Heat exchanger nickel brazed		
	Performance range 3 17	1341562	
	Heat exchanger nickel brazed		
	Performance range 3 17	1341562	

Article	Nominal draw off capacity [l/min]	Article-No.	Hint
 <p>"Regudis W-HTF" - GSWB Similar to "Regudis W-HTF" with constant temperature heating circuit, item no. 1341131, but additionally with spacer for cold and hot water meter, no potable water priority function, derivative temperature control set pre-assembled, return temperature imiter in the heating circuit</p>			
Heat exchanger copper brazed	15	1341121	<p>Possible application of copper brazed heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung</p> <p>Dimensions (W x H x D) 565 mm x 655 mm x 110 mm</p>
<p>"Regudis W-HTU" Ball valve connector blocks</p>			
			
Ball valve connector block		1341080	<p>For the isolation of all connections of the "Regudis" stations. Connection to the pipework: Rp ¾ 7 ball valves mounted onto a bracket.</p>
			
Ball valve connector block without cold water outlet dwelling		1341084	<p>6 ball valves mounted onto a bracket.</p>
			
Ball valve connector block without heating circuit connection dwelling		1341083	<p>5 ball valves mounted onto a bracket.</p>
			
Ball valve connector block with flushing function of the supply pipe		1341082	<p>Ball valve connector block consisting of ball valves and "Flypass" connection fitting. 5 ball valves and "Flypass" connection fitting mounted onto a bracket. The Oventrop "Flypass" connection fitting is used for the isolation and flushing of the supply and return pipework serving the "Regudis" station. The connection fitting can be converted to bypass operation. Connection to the pipework: Rp ¾</p>
<p>Accessories for "Regudis W-HTF" - GSWB</p>			
			
Surface-mounted cover with door		1341195	<p>Dimensions (W x H x D): 590 mm x 830 mm x 120 mm</p> <p>Frame closed on all sides.</p>
			
Refurbishment frame		1341196	<p>Dimensions (W x H x D): 590 mm x 830 mm x 60 mm</p>
			
Ball valve connector block		1341182	<p>7 angle pattern ball valves mounted onto a bracket for the isolation of all connections of the "Regudis W" station, corrugated pipe for a flexible device connection included. Connection to the pipework: Rp ¾</p>

Article

Article-No.

Hint

"Regudis W-HTF" Ball valve connector blocks



Ball valve connector block

1341180

7 ball valves mounted onto a bracket for the isolation of all connections of the "Regudis W" station.
Connection to the pipework: Rp 3/4



Ball valve connector block
with flushing function of the supply pipe

1341185

Ball valve connector block consisting of ball valves and "Flypass" connection fitting. 5 ball valves and "Flypass" connection fitting mounted onto a bracket. The Oventrop "Flypass" connection fitting is used for the isolation and flushing of the supply and return pipework serving the "Regudis" station. The connection fitting can be converted to bypass operation.
Connection to the pipework: Rp 3/4



Ball valve connection set
high temperature connection

1341183

2 ball valves mounted onto a bracket for the isolation of the high temperature connection of the "Regudis W-HTF" station.
Connection to the pipework: Rp 3/4



Ball valve connection set
circulation pipe

1341184

1 ball valve mounted onto a bracket for the isolation of the circulation pipe of the "Regudis W-HTF" station.
Connection to the pipework: Rp 3/4



Ball valve for the supply pipe: red handle
Ball valve for the return pipe: blue handle

1341980
1341981

Replacement ball valve for "Regudis" ball valve connector blocks.
G 3/4 male thread x Rp 3/4

Covers and cabinets for dwelling stations

	Item no.	Catalogue page	Covers						Cabinets									
			1341095	1341097	1341195	1341197	1341295	1341296	Flush mounting					Surface mounting				
									1341070	1341170	1341072	1341175	1341177	1341071	1341198	1341193	1341074	"Regubox" 1341098
1	1340920	511						x										
2	1340930/31/32	511	x	x					x			x ¹	x ¹		x	x		x
3	1340950/51/52	511	x	x					x			x ¹	x ¹		x	x		x
4	1341030/31/32	509	x	x					x			x ¹	x ¹		x	x		x
5	1341050/51/52	509	x	x					x			x ¹	x ¹		x	x		x
6	1341121	514			x							x	x	x	x	x		
7	1341130/31/32	512			x					x		x	x	x	x	x		x
8	1341140/41/42	512				x				x		x	x	x	x	x		
9	1341150/51/52	512			x					x		x	x	x	x	x		x
10	1341160/61/62	512				x				x		x	x	x	x	x		
11	1341220	510						x	x									
12	1341231/51	510	x	x					x			x ¹	x ¹		x	x		x
13	1341252/62	510	x	x					x			x ¹	x ¹		x	x		x
14	1341257/67	510	x	x					x			x ¹	x ¹		x	x		x
15	1341271/74	510					x											
16	1341332	511										x ¹	x ¹	x	x	x		
17	1341340/41/42	513				x				x		x	x	x	x	x		
18	1341360/61/62	513				x				x		x	x	x	x	x		
19	1341372	511									x						x	
20	1341442/62	513								x		x	x	x	x	x		
21	1341542/62	513								x		x	x	x	x	x		
22	1341642/62	513								x		x	x	x	x	x		

¹ = required min. installation depth: 150 mm

Article	Article-No.	Hint
Surface-mounted covers steel, galvanised and powder coated white RAL 9010, matt finish		
Standard model	1341095	Dimensions (W x H x D): 496 mm x 800 mm x 160 mm
Stainless steel model with "anti-fingerprint" coating	1341097	Dimensions (W x H x D): 496 mm x 800 mm x 160 mm
Model for "Regudis W-HTU" with double-walled heat exchanger	1341296	Dimensions (W x H x D): 496 mm x 800 mm x 185 mm
Long model Pipe cutouts at the top and bottom	1341295	Dimensions (W x H x D): 496 mm x 1100 mm x 160 mm
Surface-mounted cover with door	1341195	Dimensions (W x H x D): 590 mm x 830 mm x 120 mm Frame closed on all sides.
Model for wall attachment, pipe cutouts at the top and bottom	1341072	Dimensions (W x H x D): 750 mm x 1000 mm x 175 mm
Wide model	1341197	Dimensions (W x H x D): 645 mm x 800 mm x 120 mm
Cabinets - surface mounting Body steel, galvanised door, frame and plinth powder coated, white RAL 9010, matt finish removable plinth		
Standard model	1341071	Dimensions (W x H x D): 700 mm x 980 - 1105 mm x 160 mm
Long model for direct installation of dwelling stations and stainless steel distributors/collectors "Multidis SF"		Suitable stainless steel distributors/collectors "Multidis SF" (up to 10 circuits): page 238
for stainless steel distributors/collectors for up to 10 circuits	1341198	Dimensions (W x H x D): 700 mm x 1440 - 1565 mm x 160 mm
for stainless steel distributors/collectors for up to 12 circuits	1341193	Dimensions (W x H x D): 880 mm x 1440 - 1565 mm x 160 mm
Long model pipe cutouts at the top and bottom	1341074	Dimensions (W x H x D): 750 mm x 1523-1648 mm x 175 mm Suitable stainless steel distributors/collectors "Multidis SF" (up to 10 circuits): page 238



"Regubox" Exclusive cabinet

with white, frameless, opaque and lockable glass door

Frame surface made of brushed stainless steel,
without rear wall

Surface-mounted model **1341098**
for dwelling stations "Regudis W-HTU" and
"Regudis W-HTF" with constant temperature
heating circuit and for stainless steel distributors/
collectors "Multidis SF" with a maximum of
6 heating circuit connections (angle pattern
connection set, item no. 1404780, taken into
account)

Dimensions (W x H x D):
630 mm x 900 mm x 170 mm
The mounting set for installation during
construction for floor-standing installation (item
no. 1341099) or wall attachment (item no.
1341199) is to be ordered separately.

Awards:
DESIGN PLUS ISH Frankfurt 2015



ICONIC AWARDS 2015



GERMAN DESIGN AWARD
SPECIAL 2016



iF Design Award 2016



Mounting set for installation during construction for "Regubox"
steel sheet, galvanised

Floor-standing installation,
adjustable height

1341099




Only for "Regubox", item no. 1341098.






Wall attachment



1341199

With screen for covering the lower connection
channel of the "Regubox" in case of wall
attachment.

Article	Article-No.	Hint
Cabinets - flush mounting Body steel, galvanised door, frame and plinth powder coated white RAL 9010, matt finish removable plinth		
	Slim model, adjustable height and depth	1341070 Dimensions (W x H x D): 560 mm x 870-1075 mm x 150-215 mm
	Wide model adjustable height and depth	1341170 Dimensions (W x H x D): 700 mm x 985-1105 mm x 110-180 mm
	Long model for direct installation of dwelling stations and stainless steel distributors/collectors "Multidis SF"	Suitable stainless steel distributors/collectors "Multidis SF": page 238
	for stainless steel distributors/collectors for up to 10 circuits	1341175 Dimensions (W x H x D): 700 mm x 1440-1565 mm x 110-180 mm
	for stainless steel distributors/collectors for up to 12 circuits	1341177 Dimensions (W x H x D): 880 mm x 1440-1565 mm x 110-180 mm
	for flush-mounted cabinets (1401151-54) and all surface- and flush-mounted cabinets for dwelling stations "Regudis W"	1401191

Article	Packing unit	Article-No.	Hint
"Regudis W-HTU" Heat exchangers			
			Heat exchanger for "Regudis W-HTU" dwelling stations. Connections: G 3/4, flat sealing
Heat exchanger copper brazed			Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung .
Performance range 1 12 l/min - 24 plates		1341280	
Performance range 2 15 l/min - 30 plates		1341281	
Performance range 3 17 l/min - 30 plates		1341282	
			Heat exchanger nickel brazed
Heat exchanger nickel brazed			
Performance range 1 12 l/min - 24 plates		1341290	
Performance range 2 15 l/min - 30 plates		1341291	
Performance range 3 17 l/min - 30 plates		1341292	
"Regudis W-HTF" Heat exchangers			
			Heat exchanger for "Regudis W-HTF" dwelling stations. Connections: G 3/4, flat sealing
Heat exchanger copper brazed			Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung .
Performance range 1 12 l/min - 16 plates		1341283	
Performance range 2 15 l/min - 20 plates		1341284	
Performance range 3 17 l/min - 30 plates		1341282	
			Heat exchanger nickel brazed
Heat exchanger nickel brazed			
Performance range 1 12 l/min - 16 plates		1341383	
Performance range 2 15 l/min - 20 plates		1341384	
Performance range 3 17 l/min - 30 plates		1341292	
Plugs for temperature sensor			
			For temperature sensor with connection thread M 10 x 1.
G 1/2 M x M 10 x 1.0 F Ø 5.6 (25)		1349051	
			For temperature sensor with connection thread M 10 x 1.0 in dwelling stations with high temperature circuit.
G 1/4 M x M 10 x 1.0 F, Ø 5.6 (25)		1349054	
			For maintaining the flow temperature in the "Regudis W" station to guarantee a quick supply of hot potable water outside the heating period.
Derivative temperature control set for stations with mounted brass distributor/collector			
ready for installation for "Regudis W-HTU/TU"		1341088	
ready for installation for "Regudis W-HTO"		1341089	
ready for installation for "Regudis W-HTF"		1341188	
			For replacement of the plastic spacers for water and heat meters.
Stainless steel spacer G 3/4 x 110 mm		1349052	

	Article	Packing unit	Article-No.	Hint
	Draining set	(10)	1341094	For a simple draining of the heating circuit when installing a heat meter.
	Flow controller		1343050	Spare part for "Regudis W" dwelling stations except for GSWB model, "Regudis W-TU" and "Regudis" with circulation pipe manufactured up to 2016.
	Flow limiter			For the limitation of the maximum potable water draw off capacity.
	Draw off capacity limitation 12 l/min	(25)	1349980	Since 01.03.2016, flow limiters for the limitation of the maximum potable water draw off capacity are no longer mounted at works.
	Draw off capacity limitation 15 l/min	(25)	1349981	
	Draw off capacity limitation 17 l/min	(25)	1349982	
	Circulation pump 130 mm connection thread G 1			
	Wilo-Star-Z NOVA C		1349096	As replacement for the "Regudis W" dwelling stations with potable water circulation.
	Wilo-Yonos PARA RS 15/6 RK		1349097	As replacement for the "Regudis W-HTF" dwelling stations with variable temperature heating circuit.
	Flushing and bridging fitting		1341189	For flushing of the heating system.
	Filter insert Set = 2 pieces		1349098	
	Draining valve		1349099	
	Connection set for stainless steel distributor/collector "Multidis SF"		1341187	For the connection of the "Regudis W-HTF" dwelling station to the "Multidis SF" stainless steel distributor/collector.
	T-piece	(10)	1685121	2 T-pieces allow for the connection of two stainless steel distributors/collectors to one connection set.
	Temperature sensor with spiral sensor made of stainless steel		1343092	For potable water temperature control.
	Return temperature limiter set heating circuit		1341091	For temperature limitation of the heating circuit return temperature (control range 0 - 40 °C). Only suitable for "Regudis W-HTU" and "Regudis W-HTO".

Article	Article-No.	Hint
	Conversion set second water meter 1341093	For subsequent installation of a cold water meter to the dwelling. For stations with cold water outlet. Only suitable for "Regudis W-HTU", "Regudis W-HTU Duo" and "Regudis W-TU".
	Connection set for "Regudis W" with flexible corrugated hoses 1341081	Set consisting of 7 corrugated hoses which may be cut to required length for a flexible connection.
	Accessory set for equipotential bonding 1349983	Fixing material for the connection of the equipotential bonding to the base plate of the dwelling station.



3.1.i "Regumaq X" Fresh water stations

Content

"Regumaq X-25"	534
"Regumaq X-45"	535
Accessories for "Regumaq X-25/45"	536
"Aquanova Magnum" Water filters	536
Connection fittings	537
"Aquaström P" Water sampling valve	537
"Aquaström R" Non-return check valve	538
Spare parts for "Regumaq X-25" stations	538
Spare parts for "Regumaq X-45" stations	540
"Regumaq X-80"	541
Accessories for "Regumaq X-80"	542
"Aquaström R" Non-return check valve	543
"Aquanova Magnum" Water filters	544
"Regumaq X-30" - without circulation connection	546
"Regumaq XZ-30" - with circulation connection	546
"Regumaq XZ-30" - with circulation connection and high-efficiency circulation pump	547
Heat exchangers	548
Accessories for "Regumaq X-/XZ-30"	548
"Regumaq K" Cascade control set for "Regumaq X/XZ-30"	552
"Regumaq XH"	553
Accessories for "Regumaq XH"	554



"Regumaq X-25"

Fresh water station
with integrated controller box for temperature setting

with Wilo high-efficiency pump PARA 15-130/8-75/LIN-9
Number of heat exchanger plates: 46

Discharge capacity: 1 - 25 l/min.
depending on the set potable water temperature
and the existing water temperature inside the buffer storage cylinder

Max. operating pressure p_s : 10 bar

Max. operating temperature t_s : 95 °C

Performance data according to SPF test procedure:

Discharge capacity 25 l/min. with PWH-3K

PWC = 10 °C, PWH = 60 °C (setting)

$T_{\text{storage cylinder}} = 75 \text{ °C}$

Control range of potable water temperature: 20 °C - 60 °C

Connections: G 1 flat sealing for the connection to the
buffer and potable water circuit

Potable water circuit:

Volume flow sensor, safety valve 10 bar,
2 resistance thermometers PT 1000, 2 fill and drain cocks
and ball valves

Buffer circuit:

2 fill and drain cocks, ball valves,
circulation pump and check valve,
resistance thermometer PT 1000

Dimensions (outer dimensions of insulation):

Width: 400 mm

Height: 625 mm

Depth: 240 mm

Model with copper brazed
heat exchanger **1381125**

Model with heat exchanger with Sealix®
protective layer **1381127**

Electronically controlled product assembly
with heat exchanger for the hygienic heating
of potable water according to the continuous
flow principle. The potable water is only
heated when it is needed, i.e. "just in time".
The stations are especially suitable for
detached and semi-detached houses.
They are connected to buffer storage
cylinders which are heated up by solar
energy, solid fuels, gas or oil.

Depending on the temperature and the volume
flow on the potable water side, the circulation
pump on the heating side is speed regulated.
The plate heat exchanger complies with the
specifications of the European Pressure
Equipment Directive (PED).

Due to the turbulent flow, a good self-cleaning
effect avoiding a contamination is achieved.
The plate heat exchanger can be flushed using
the fill and drain cocks integrated in the
secondary circuit.

The potable water circuit is protected by a
10 bar safety valve.

The components of the heat exchanger
system have flat sealing connections, are pre-
assembled on a mounting board and leak
tested.

The controller is wired up with the internal
electric components.

Possible application of copper brazed plate
heat exchangers has to be checked. For further
information visit www.oventrop.com/to/trinkwasseranforderung.

Article

Article-No.

Hint

"Regumaq X-45"

Fresh water station

with intuitive touch display for the setting of different functions such as circulation, return temperature layering or heat demand. The operating element made of safety glass is integrated in the front insulation shell and is connected to the controller box without plug via magnetic contacts.

with Wilo high-efficiency pump PARA 15-130/8-75/LIN-9
Number of heat exchanger plates: 70

Discharge capacity: 1 - 45 l/min.
depending on the set potable water temperature
and the existing water temperature inside the buffer storage cylinder

Max. operating pressure p_s : 10 bar
Max. operating temperature t_s : 95 °C

Performance data according to SPF test procedure:
Discharge capacity 45 l/min. with PWH-3K
PWC = 10 °C, PWH = 60 °C (setting)
 $T_{\text{storage cylinder}} = 75 °C$

Control range of potable water temperature: 20 °C - 60 °C

Connections: G 1 flat sealing for the connection to the
buffer and potable water circuit

Potable water circuit:
Volume flow sensor, safety valve 10 bar,
2 resistance thermometers PT 1000, 2 fill and drain cocks
and ball valves

Buffer circuit:
2 fill and drain cocks, ball valves,
circulation pump and check valve,
resistance thermometer PT 1000

Dimensions (outer dimensions of insulation):
Width: 400 mm
Height: 625 mm
Depth: 240 mm

Model with copper brazed heat exchanger **1381140**
Model with heat exchanger with Sealix® protective layer **1381142**

Electronically controlled product assembly with heat exchanger for the hygienic heating of potable water according to the continuous flow principle. The potable water is only heated at the moment when it is needed, i.e. "just in time". The modular electronic control consists of an freely accessible operating element in the thermal insulation housing and a controller box in the station. Both components are connected without plug via magnetic contacts. The front insulation shell with the operating element can be removed without tools. The stations are especially suitable for detached houses and multiple occupancy dwellings. They are connected to buffer storage cylinders which are heated up by solar energy, solid fuels, gas or oil.

Depending on the temperature and the volume flow on the potable water side, the circulation pump on the heating side is speed regulated. The plate heat exchanger complies with the specifications of the European Pressure Equipment Directive (PED). Due to the turbulent flow, a good self-cleaning effect avoiding a contamination is achieved. The plate heat exchanger can be flushed using the fill and drain cocks integrated in the secondary circuit. The potable water circuit is protected by a 10 bar safety valve. The components of the heat exchanger system have flat sealing connections, are preassembled on a mounting board and leak tested. The controller is wired up with the internal electric components. The following free in- and outputs are available for different additional functions:

Outputs:

4 solid-state relays, 1 volt free change-over contact (switchable up to 230 V), 2 PWM outputs for speed controlled activation of high-efficiency pumps. Both PWM outputs can be switched to 0-10 V.

Inputs:

5 sensor inputs (PT 1000, switch)

Interfaces:

SD card slot for data recording, S-bus for the connection to the data logger "CS-BS".

The included SD-card is preloaded with common system examples for the quick and simple programming of circulation and return temperature layering, for instance.

Accessories for return temperature layering:
page 551

Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung.

Awards:

SILBER
German Designer Club
GUTE GESTALTUNG
2019 Good Design 2019

DESIGN PLUS Design Plus Award
(powered by ISH) - Winner

GERMAN DESIGN AWARD
2020 Winner 2020

Article	kvs	Packing unit	Article-No.	Hint
---------	-----	--------------	-------------	------

Accessories for "Regumaq X-25/45"

"Regumaq X-25/45" Potable water circulation set

Connection set for the extension of the
"Regumaq X-25/45" station by a potable water circulation

with high-efficiency pump 1381150

consisting of:
-high-efficiency pump
-check valve
-isolating ball valve
-flushing and draining cock

without pump 1381152

consisting of:
-check valve
-isolating ball valve
-flushing and draining cock
-distance piece

Valve for return layering with actuator

DN 25	7.80		1381190*
-------	------	--	----------



Installation relay

with 2 contacts for 20A cabled in the casing		1152089
---	--	---------



For the connection of high-performance pumps
(> 1A).

"Aquanova Magnum" Water filters

with transparent plastic filter cup (Trogamid T) PN 16
both ports female thread according to EN 10226-1

DVGW and ACS certified.

DN 25	6120008
DN 32	6120010
DN 40	6120012
DN 50	6120016



with transparent plastic filter cup (Trogamid T) PN 16
both ports male threaded tailpipe according to DIN EN 10226-1

DVGW and ACS certified.

DN 20	6122006
DN 25	6122008
DN 32	6122010



Filter inserts

Filter insert 95-140 µm, hygienically packed, DIN-DVGW tested	6125101
--	---------



Strainer PN 25

both ports male thread, flat sealing
with double wire basket 250 µm

DN 20	4.80	(10)	1141006
-------	------	------	---------



Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

Connection fittings



Tailpipe (bronze), flat sealing, with male thread according to
EN 10226-1, collar nut and ring gasket (EPDM)

(10) **4201473**



Solder tailpipe (bronze), flat sealing,
with collar nut and ring gasket (EPDM)











(10) **4202074**


















"Aquastrom P" Water sampling valve

DN 8 (10) **4209102**

DN 10 (10) **4209103**

Article	Article-No.	Hint
"Aquastrum R" Non-return check valve		
	both ports flat sealing male thread according to DIN ISO 228 for the universal connection of pipes and fittings	
	DN 20	4208706
	DN 25	4208708
	Inlet port: collar nut, flat sealing Outlet port: male thread, flat sealing according to DIN ISO 228 for the universal connection of pipes and fittings	
	DN 20	4208606
	DN 25	4208608
Connection fittings: page 730		
Grounding clips		
	DN 20 - DN 32	1359995
Spare parts for "Regumaq X-25" stations		
	Replacement controller, cabled for "Regumaq X-25"	1381162*
		Only supplied as replacement for the stations "Regumaq X-25".
	Temperature sensor PT 1000, length 1 m	1381163*
		Only supplied as replacement for the stations "Regumaq X-25/45".
	Elbow with volume flow sensor for "Regumaq X-25/45"	1381164*
		Only supplied as replacement for the stations "Regumaq X-25/45".
	Insertion turbine for volume flow sensor	1381165*
		Only supplied as replacement for the stations "Regumaq X-25/45" and "Regudis W-HTE".
	Check valve for storage cylinder circuit for "Regumaq X-25/45"	1381167*
		Only supplied as replacement for the stations "Regumaq X-25/45".
	Replacement pump for storage cylinder circuit for "Regumaq X25/45"	1381166*
		Only supplied as replacement for the stations "Regumaq X-25/45".
	Replacement pump for potable water circulation set for "Regumaq X-25/45"	1381168*
		Only supplied as replacement for the stations "Regumaq X-25/45".
	Elbow with check valve for potable water circulation set for "Regumaq X-25/45"	1381169*
		Only supplied as replacement for the stations "Regumaq X-25/45".

	Article	Packing unit	Article-No.	Hint
	Heat exchanger copper brazed			
	Performance range 2		1344084	
	Heat exchanger copper brazed, with Sealix® protective layer			
	Performance range 2		1344094	
	Ring gaskets			
	Set = 5 pieces			
	Ø 24 x Ø 16 x 2	(40)	1344497	For junction G ¾.
	Ø 30 x Ø 21 x 2	(40)	1344498*	For junction G 1.

Article	Packing unit	Article-No.	Hint
Spare parts for "Regumaq X-45" stations			
		1381160*	Only supplied as replacement for the stations "Regumaq X-45".
		1381161*	Only supplied as replacement for the stations "Regumaq X-45".
		1381163*	Only supplied as replacement for the stations "Regumaq X-25/45".
		1381164*	Only supplied as replacement for the stations "Regumaq X-25/45".
		1381165*	Only supplied as replacement for the stations "Regumaq X-25/45" and "Regudis W-HTE".
		1381167*	Only supplied as replacement for the stations "Regumaq X-25/45".
		1381166*	Only supplied as replacement for the stations "Regumaq X-25/45".
		1381168*	Only supplied as replacement for the stations "Regumaq X-25/45".
		1381169*	Only supplied as replacement for the stations "Regumaq X-25/45".
			
Performance range 3		1344085	
			
Performance range 3		1344095	
			
Ring gaskets Set = 5 pieces			
Ø 24 x Ø 16 x 2	(40)	1344497	For junction G ¾.
Ø 30 x Ø 21 x 2	(40)	1344498*	For junction G 1.



"Regumaq X-80"

Fresh water station
with electronic controller "Regtronic RQ"
with full graphic display and data output (S-bus)

with Grundfos high-efficiency pump UPML 25-105 PWM
Heat exchanger: 46 plates

Discharge capacity: 2- 80 l/min.
depending on the set potable water temperature
and the existing water temperature inside the buffer storage cylinder

Max. operating pressure p_s : 10 bar
Max. operating temperature t_s : 95 °C

Performance data according to SPF test procedure:
Discharge capacity 77 l/min. with PWH-3K
PWC = 10 °C, PWH = 60 °C (setting)
 $T_{\text{storage cylinder}} = 75 \text{ °C}$

Control range of potable water temperature: 20 °C - 60 °C

Connections: G 1½ flat sealing for the connection to the
buffer and potable water circuit

Potable water circuit:
Volume flow sensor, safety valve 10 bar,
electronic resistance thermometer, 2 fill and drain cocks
and ball valves

Buffer circuit: 2 fill and drain cocks, ball valves,
circulation pump and throttling valve with actuator

Dimensions (outer dimensions of insulation):
Width: 660 mm
Height: 875 mm
Depth: 300 mm

Model with copper brazed heat exchanger	1381580
Model with nickel brazed heat exchanger	1381581
Model with heat exchanger with Sealix® protective layer	1381582

Electronically controlled product assembly
with heat exchanger for the hygienic heating
of potable water according to the continuous
flow principle. The potable water is only
heated when it is needed, i.e. "just in time".
The stations are especially suitable for multiple
dwellings, hotels and sports facilities. They
are connected to buffer storage cylinders
which are heated up by solar energy, solid
fuels, gas or oil.
Depending on the temperature and the volume
flow on the potable water side, the circulation
pump on the heating side is speed regulated.
The plate heat exchanger complies with the
specifications of the European Pressure
Equipment Directive (PED).
Due to the turbulent flow, a good self-cleaning
effect avoiding a contamination is achieved.
The plate heat exchanger can be flushed using
the fill and drain cocks integrated in the
secondary circuit.
The potable water circuit is protected by a
10 bar safety valve.
The components of the heat exchanger
system have flat sealing connections, are pre-
assembled on a mounting board and leak
tested.
The controller is wired up with the internal
electric components and features a data bus
(S-bus) for the connection to the data logger
"CS-BS".

Possible application of copper brazed plate
heat exchangers has to be checked. For further
information visit www.oventrop.com/to/trinkwasseranforderung.

Article

Article-No.

Hint

Accessories for "Regumaq X-80"

"Regumaq X-80" Potable water circulation set



Connection set for the extension of the "Regumaq X-80"
station by a potable water circulation
Pipework set with seals and
ball valve with check valve

1381590

High-efficiency circulation pumps

with connection adapters for installation into the
potable water circulation set "Regumaq X-80"



Wilo-Yonos PARA Z 15/7.0 RKC 130

1381591



Wilo-Stratos PARA Z 25/1-12 RK 180

1381592

In conjunction with the fresh water controller
"Regtronic RQ", the circulation pump Wilo-
Stratos PARA Z 25/1-12 RK 180 must only be
used in combination with the load relay, item
no. 1152098.

Isolation device for "Regumaq X-80"

consisting of:

- 1 x "Hycococon HTZ" Regulating valve DN 40
- 1 x "Aktor M 2P H" Electromotive actuator



1381078

Isolating set to avoid gravity circulation in the
primary circuit (buffer circuit).

Fault signal module



1381594

Installation relay

with 2 contacts for 20A
cabled in the casing



1152089

For the connection of high-performance pumps
(> 1A).


Connection fittings for circulation pumps installed on site

G 1 female x G 1 female (10) **1381585**

One connection fitting, item no. 1381585, is required for the integration of a G 1 circulation pump installed on site into the potable water circulation set, item no. 1381590. One connection fitting, item no. 1381587, and one fitting, item no. 1359091, are required for a G 1½ circulation pump.


G 1½ female x G 1½ male (10) **1381587**

G 1½ female x G 1 c/nut 32 mm (10) **1359091**


Ball valve for return layering, PN 16

DN 25	10.00	1381191
DN 32	15.00	1381192
DN 40	47.00	1381193
DN 50	75.00	1381194

A set for return layering consists of:

- 1 x ball valve for return layering
- 1 x actuator for ball valve for return layering
- 1 x storage cylinder temperature sensor PT 1000, item no. 1369093: page 595


Actuator for ball valve for return layering **1381199**

Grounding clips

DN 20 - DN 32	1359995
DN 40 - DN 50	1359996

For the electrical connection of metal pipes to the earth bonding.

"Aquastrom R" Non-return check valve


both ports flat sealing male thread according to DIN ISO 228 for the universal connection of pipes and fittings

DN 32 **4208710**


Inlet port: collar nut, flat sealing
Outlet port: male thread, flat sealing according to DIN ISO 228 for the universal connection of pipes and fittings

DN 32 **4208610**

Connection fittings: page 730

Article	kv	Packing	Article-No.	Hint
cle	s	unit		

"Aquanova Magnum" Water filters

Head and collar nut: brass
Filter insert (one piece):
plastic body covered with mesh
Max. water temperature: 30 °C
Mesh size: 95-140 µm

Application:
Potable water installations PN 16.



with transparent plastic filter cup (Trogamid T) PN 16
both ports female thread according to EN 10226-1

DVGW and ACS certified.

DN 25	6120008
DN 32	6120010
DN 40	6120012
DN 50	6120016



with transparent plastic filter cup (Trogamid T) PN 16
both ports male threaded tailpipe according to DIN EN 10226-1

DVGW and ACS certified.

DN 32	6122010
-------	---------

Filter inserts

Filter insert 95-140 µm,
hygienically packed, DIN-DVGW tested

6125101



Strainer PN 25

both ports male thread, flat sealing
with double wire basket 250 µm



DN 20	4.80	(10)	1141006
-------	------	------	---------

Connection fittings

Tailpipe (bronze), flat sealing, with male thread according to
EN 10226-1, collar nut and ring gasket (EPDM)



R 1¼	x G 1½ (collar nut)	(5)	4201475
------	---------------------	-----	---------

"Aquastrum P" Water sampling valve

DN 8	(10)	4209102
------	------	---------



Flame resistant and chemically disinfestable
water sampling valve for hygienic-microbiologic
tests according to DIN EN ISO 19458, DVGW
W 551, TrinkwV (German Decree for Potable
Water) and VDI 6023.
PN 10.

Valve body made of bronze, stem made of
stainless steel, metal to metal sealing, with
additional seal made of heat-resistant PTFE,
with metal plate for marking the water sampling
point according to DIN EN ISO 19458 chapter
3.

All models with discharge elbow made of
stainless steel.
Operation with the help of the Allen key
supplied with the valve.



High-efficiency pump with connection thread G 1½

Grundfos UPML 25-105 180 PWM-C **1381599**
DN 25, PN 10, 95 °C
for the primary circuit (storage cylinder circuit) "Regumaq X-80"

Only supplied as replacement for the
stations "Regumaq X-80".



Heat exchanger

46 plates
Connection distance 470 x 63 mm
4 X G 1¼ male thread, flat sealing

Only supplied as replacement for the
stations "Regumaq X-80".

copper brazed **1381595**
nickel brazed **1381596**

copper brazed,
with Sealix® protective layer **1381584***



Electronic controller "Regtronic RQ"

cabled, replacement for "Regumaq X-80"

Only supplied as replacement for the
stations "Regumaq X-80".

1381597



Volume flow sensor

1381593

Are only supplied as replacement for the
"Regumaq X-80" stations.

Article

Article-No.

Hint

"Regumaq X-30" - without circulation connection

Fresh water station
with electronic controller "Regtronic RQ"
with full graphic display and data output (S-bus)



with Wilo high-efficiency pump Yonos PARA RS 130 15/7 PWM2
for the buffer side
Number of heat exchanger plates: 30

Discharge capacity: 2 - 30 l/min.
depending on the set potable water temperature
and the existing water temperature inside the buffer storage cylinder

Max. operating pressure p_s : 10 bar
Max. operating temperature t_s : 95 °C

Control range of potable water temperature: 20 °C - 60 °C

Connections: G 1 flat sealing for the connection to the
buffer and potable water circuit

Potable water circuit:
Volume flow sensor, safety valve 10 bar,
electronic resistance thermometer, 2 fill and drain cocks,
ball valves and thermometer

Buffer circuit: Fill and drain cocks, ball valves with and
without check valve and thermometer, circulation pump

Dimensions (outer dimensions of insulation):

Width: 500 mm

Height: 860 mm

Depth: 260 mm

Model with copper brazed heat exchanger **1381030°**

Model with heat exchanger completely made of stainless steel **1381032°**

"Regumaq XZ-30" - with circulation connection

Fresh water station
with electronic controller "Regtronic RQ"
and connection for potable water circulation systems



with Wilo high-efficiency pump Yonos PARA RS 130 15/7 PWM2
for the buffer side

with Wilo pump ZRS 130 15/4-3KU
for the potable water side (circulation)

Model with copper brazed heat exchanger **1381035°**

Model with heat exchanger completely made of stainless steel **1381037°**

Max. operating pressure p_s : 10 bar
Max. operating temperature t_s : 95 °C
Electronically controlled product assembly with
heat exchanger for the hygienic heating of
potable water according to the continuous flow
principle.

The potable water is only heated at the
moment when it is needed, i. e. "just in time".
The stations are especially suitable for
detached and semi-detached houses. They are
connected to buffer storage cylinders which
are heated up by solar energy, solid fuels, gas
or oil.

Depending on the temperature and the volume
flow on the potable water side, the circulation
pump on the heating side is speed regulated.
The plate heat exchanger complies with the
specifications of the European Pressure
Equipment Directive (PED).

Due to the turbulent flow, a good self-cleaning
effect avoiding a contamination is achieved.
The plate heat exchanger can be flushed using
the fill and drain cocks integrated in the
primary and secondary circuit.

The potable water circuit is protected by a
10 bar safety valve.

The components of the heat exchanger system
have flat sealing connections, are pre-
assembled on a mounting board and leak
tested.

The controller is wired up with the internal
electric components and features a data bus
(S-bus) for the connection to the data logger
"CS-BS".

Similar to "Regumaq X-30". The potable water
circuit is additionally equipped with a
circulation pump for the operation in a
circulation system.

With check valve in the circulation circuit.
Control functions individually programmable:
Adjustable circulation return temperature or
adjustable time frames and daily programmes.

Possible application of copper brazed plate
heat exchangers has to be checked. For further
information visit www.oventrop.com/to/trinkwasseranforderung.

Article

Article-No.

Hint

"Regumaq XZ-30" - with circulation connection and high-efficiency circulation pump

Fresh water station with electronic controller "Regtronic RQ" and connection for potable water circulation systems



with high-efficiency pump Wilo-Yonos PARA RS 130 15/7 PWM 2 for the buffer side

with high-efficiency pump Wilo-Yonos PARA Z RKC 130 15/7 for the potable water side (circulation)

Model with copper brazed heat exchanger

1381025°

Model with heat exchanger

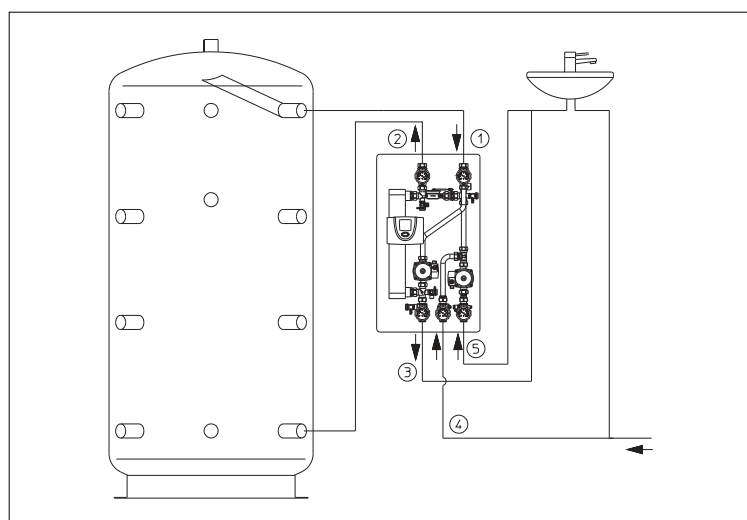
1381027°

completely made of stainless steel

Similar to "Regumaq X-30". The potable water circuit is additionally equipped with a high-efficiency circulation pump for the operation in a circulation system.

With check valve in the circulation circuit. Control functions individually programmable: Adjustable circulation return temperature or adjustable time frames and daily programmes.

Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung.



- 1 Supply from the storage cylinder
- 2 Return to the storage cylinder
- 3 Hot water
- 4 Cold water supply
- 5 Circulation – return (only "Regumaq XZ-30")



Retaining and fixing set for "Regumaq X/XZ-30"

1389090°

For fixing a fresh water station "Regumaq X/XZ-30" to a buffer storage cylinder "Hydrocor HP/HS".



Storage cylinder connection set for "Regumaq X/XZ-30"

1381185°

For the hydronic connection of a fresh water station "Regumaq X/XZ-30" fixed at a buffer storage cylinder "Hydrocor - HP/HS".



Fault signal module

1381594

Suitable buffer storage cylinders "Hydrocor HP/HS": page 602

Article

Article-No.

Hint

Heat exchangers

Replacement for "Regumaq" and "Regusol X"
copper brazed

without connection fitting
for higher capacities

20 plates up to about 40 kW
30 plates up to about 55 kW

1351790
1351791

The capacities are determined by the fixed default values in the
primary circuit (80/60 °C) and in the secondary circuit (50/70 °C).

Connection distance: 466 mm x 50 mm
4 x G 1 flat sealing

As replacement for "Regusol X-15".
As replacement for "Regusol X-25" and
"Regumaq X/XZ-30".


Model completely made of stainless steel

30 plates up to about 55 kW

1381068

As replacement for "Regumaq X/XZ-30".

Accessories for "Regumaq X-/XZ-30"


for the secondary circuit
(potable water circuit)
WILO ZRS 15/4-3 KU
three-stage speed control, plastic housing
DN 25, PN 10, 110 °C

1381091

Only supplied as replacement for the stations
"Regumaq XZ-30".
With Molex plug (without pump connecting
cable).


Circulation pump 130 mm, connection thread G 1

for the primary circuit
(buffer storage cylinder circuit)
Standard pump WILO RS 15/6-3,
three-stage speed control
DN 25, PN 10, 110 °C

1381090°

Only supplied as replacement for the stations
"Regumaq X-30" and "Regumaq XZ-30".
With Molex plug (without pump connecting
cable).


Connection thread G 1

Wilo PARA 15-130/7-50/iPWM2-9
Wilo-Yonos PARA 15-7 PWM2
DN 15, PN 10, 95 °C
for the secondary circuit (storage cylinder circuit) "Regusol"
or the primary circuit (storage cylinder circuit) "Regumaq"

1389010*
1389008°

Only supplied as replacement for the
stations "Regumaq X-30/XZ-30" and
"Regusol X-Uno/Duo 25" with controller
"Regtronic RQ/RX".


Replacement kit high-efficiency pump

consisting of:
– Electronic controller "Regtronic RQ"
– Volume flow sensor VFD 2-40 l/min.
– Controller location made of expanded polypropylene
for "Regtronic RQ"
– Screw-in sensor PT 1000
– High-efficiency pump Wilo-Yonos PARA RS 15/7 130 PWM
for the primary circuit

1389095

The high starting current of high-efficiency
pumps places special demands on the control
and regulation technology.
The control signal of the controller and the
high-efficiency pump must be co-ordinated.
If the control signals of the controller and the
pump are not co-ordinated, an operation is not
possible.

Accordingly, the controller must also be
replaced when replacing the asynchronous
pump of a "Regumaq X/XZ-30" station with a
high-efficiency pump.

Article	Article-No.	Hint
	"Regtronic RQ"	
	cabled, replacement for "Regumaq X/XZ-30"	1389099
	cabled, for "Regumaq XZ-30"	1381099° Only supplied as replacement for the stations "Regumaq X-30" and "Regumaq XZ-30" with controller "Regtronic RQ".
Volume flow sensors		
	Pulse water meter, 40 pulses/litre for the secondary circuit (potable water circuit) connection G 1 x G 1 collar nut, including seals	1381093 Only supplied as replacement for the stations "Regumaq X-30" and "Regumaq XZ-30" with controller "Regtronic PQ".
	VFD sensor 2-40 l/min. for the secondary circuit (potable water circuit) connection G 1 x G 1 collar nut, including seals	1389901 Only supplied as replacement for the stations "Regumaq X-30" and "Regumaq XZ-30" with controller "Regtronic RQ".
	VFD sensor, 2-40 l/min., for the secondary circuit (potable water circuit) sensor head, without housing	1389902 For insertion into an existing brass housing.
Ball valves, primary circuit		
	for the primary circuit (buffer storage cylinder circuit) connection G 1 x G 1 Return, blue thermometer	1381094 Only supplied as replacement for the stations "Regumaq X-30" and "Regumaq XZ-30".
	Supply, with check valve, red thermometer	1381095
Ball valves, secondary circuit		
	for the secondary circuit (potable water circuit) connection G 1 x G 1 collar nut Potable water outlet hot, with fill and drain cock, red thermometer	1381096 Only supplied as replacement for the stations "Regumaq X-30" and "Regumaq XZ-30".
	Potable water supply cold, blue thermometer	1381097



Potable water circulation,
red thermometer

Packing
unit Article-No.

1381088

Hint








Check valve
Potable water circulation

(10) **1381089**

Check valve for replacement purposes or for
subsequent installation in the potable water
circulation return pipe in front of the circulation
pump.

	Article	kvs	Packing unit	Article-No.	Hint
PT1000 Temperature sensors					
	Potable water outlet, hot (T2)			1389050	Only for "Regtronic PQ".
	Screw-in sensor				
	PT1000/pipe				
	Potable water supply, cold (T3)			1389051	Only for "Regtronic PQ".
	Sensor attached to the pipe				
	Potable water outlet, hot (S2)			1389052	Only for "Regtronic RQ".
	Screw-in sensor				
Conversion set for external circulation pump					
	Pipework set with seals, ball valve,			1381080	For the operation of "Regumaq X-30" stations in combination with an external circulation pump. Circulation pump not included.
	draining valve, check valve, thermometer, insulation screen and fixing material.				
Spacer for circulation pump					
	2 x G 1 male thread x 130 mm			1381079	
Tailpipe sets DN 20 for "Regusol X" and "Regumaq X/XZ" stations					
	To be ordered separately:				Are required for the connection of the "Regusol X" and "Regumaq X/XZ" stations to the storage cylinder circuit.
	Tailpipe sets 3-fold with collar nut and ring gasket				
	Solder tailpipes 22 mm	(10)		1367465	Use "Regusol" compression fittings for the connection of the "Regusol X" station to the solar circuit.
	Male threaded tailpipes R 3/4	(10)		1367468	May also be used for "Regumaq X/XZ" and accessories.
Accessories kit "Regumaq" for return layering					
	for the primary circuit (buffer storage cylinder circuit)				For layering the temperature dependent return water in the lower or central storage cylinder section. The switching function is already pre- configured inside the controller "Regtronic RQ". Not suitable for cascading constructions.
	Consisting of three-way valve G 1 1/4,			1381066	
	flat sealing, actuator and storage cylinder sensor				
Ball valve for return layering, PN 16					
	DN 25	10.00		1381191	A set for return layering consists of: 1 x ball valve for return layering 1 x actuator for ball valve for return layering 1 x storage cylinder temperature sensor PT 1000, item no. 1369093: page 595
	DN 32	15.00		1381192	
	DN 40	47.00		1381193	
	DN 50	75.00		1381194	
	Actuator for ball valve for return layering			1381199	

Article	Article-No.	Hint
<hr/>		
<p>"Regumaq K" Cascade control set for "Regumaq X/XZ-30" Cascade control set for hot potable water preparation</p> <p>Cascade control integrated in the actuators, with ball valves for potable water supply</p>		<p>Application: The cascade control set allows to increase the discharge capacity of the "Regumaq" stations up to 120 l/min. The set does not include the fresh water stations.</p>
 <p>"Regumaq K-2" Set for the control of 2 "Regumaq" stations</p> <p>Discharge capacity: 60 l/min. corresponds to the supply capacity (see technical information "Regumaq Fresh water stations") 2 actuators with ball valves DN 25 G 1¼</p>	1381082°	
 <p>"Regumaq K-3" Set for the control of 3 "Regumaq" stations</p> <p>Discharge capacity: 90 l/min. corresponds to the supply capacity (see technical information "Regumaq Fresh water stations") 3 actuators with ball valves DN 25 G 1¼</p>	1381083°	
 <p>"Regumaq K-4" Set for the control of 4 "Regumaq" stations</p> <p>Discharge capacity: 120 l/min. corresponds to the supply capacity (see technical information "Regumaq Fresh water stations") 4 actuators with ball valves DN 25 G 1¼</p>	1381084°	
 <p>"Regumaq K" Connection piping G 1¼ collar nut x G 1 collar nut</p>	1389082°	<p>Connection piece between "Regumaq" and cascade ball valves.</p> <p>One connection piping is required for each "Regumaq" station.</p>
 <p>Switching module</p>	1389085°	<p>The minimum draw off temperature is monitored by the switching module. A message can be sent to the centralised building control system or a signalling unit.</p>



"Regumaq XH"

Fresh water station

with high-efficiency pump Wilo-Yonos PARA RS 130 15/7 PWM2
in the buffer circuit

Recommended discharge capacity: 15-20 l/min.,
depending on the set potable water temperature
and the existing water temperature inside the buffer storage cylinder

Control range of potable water temperature: 40 °C - 60 °C

Connections:

G 3/4 flat sealing for the connection to the potable water circuit

G 1 flat sealing for the connection to the buffer circuit

Potable water circuit:

consisting of flow controller, connection for circulation pipe (G 3/4),
heat exchanger, temperature sensor and flow switch

Buffer circuit:

consisting of storage cylinder pump, heat exchanger,
venting valve, flow controller and thermostatic valve

Dimensions (outer dimensions of insulation):

Width: 400 mm

Height: 690 mm

Depth: 190 mm

"Regumaq XH"

1381042°

Heat exchanger made of stainless steel, copper brazed

Hydraulically controlled product assembly with
heat exchanger for the hygienic heating of
potable water according to the continuous flow
principle.

The potable water is only heated at the
moment when it is needed, i.e. "just in time".

For the connection to buffer storage cylinders
which are heated up by solar energy, solid
fuels, oil or gas.

PN 10 (at 20 °C), up to 95 °C.

Depending on the draw off capacity on the
potable water side, the circulation pump on the
heating side is switched on and the volume
flow is regulated.

The soldered plate heat exchanger complies
with the specifications of the European
Pressure Equipment Directive (PED).
Due to the turbulent flow, a good self-cleaning
effect avoiding a contamination is achieved.

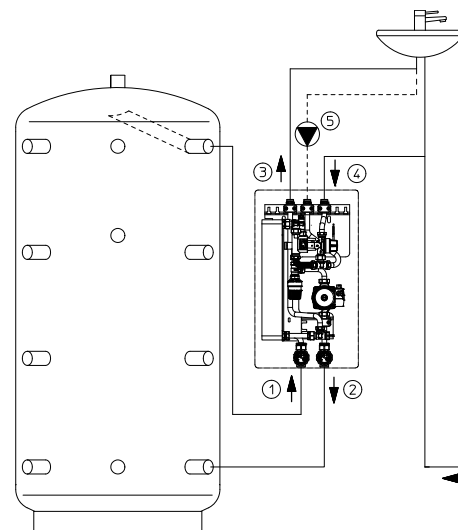
The components of the heat exchanger system
have flat sealing connections, are pre-
assembled on a carrier board and leak tested.

The product assembly is wired and ready for
plug-in.
With wall bracket.









The "Regumaq XH" is certified by the SVGW
under certificate no. 1212-6108.

Possible application of copper brazed plate
heat exchangers has to be checked. For further
information visit www.oventrop.com/to/trinkwasseranforderung.

System illustration:



- 1 Supply from the buffer storage cylinder
- 2 Return to the buffer storage cylinder
- 3 Hot water
- 4 Cold water supply
- 5 Circulation pipe - return
(optionally with 1381047 or 1381049)








Article	Article-No.	Hint
Accessories for "Regumaq XH"		
	"Regumaq XH" Potable water circulation set Connection set with circulation pump Wilo Star Z Nova C and time switch for the extension of the "Regumaq XH" station by a potable water circulation	1381047
	"Regumaq XH" Potable water circulation set as above but without circulation pump and without time switch	1381049
	Flow switch for "Regumaq" item no. 1381040 without high-efficiency pump	1381046
	Flow switch for add-on groups for hot potable water preparation with high-efficiency pump	1381043 Suitable for: "Regumaq XH" 1381042 "Regucor WH" 1383460/65 "Regucor WHS" 1383550/55/62/67 1383645
	"Regumaq XH" Filter insert	1381044 For the protection of the potable water circuit against contaminations. Mesh size 0.5 mm, made of stainless steel
	Upgrade kit high-efficiency pumps consisting of: – Electronic box with signal, power supply cords and flow switch – High efficiency pump Wilo-Yonos PARA ST 15/7 130 PWM2 for the primary circuit (buffer storage cylinder circuit)	1381048 The high starting current of high-efficiency pumps places special demands on the control and regulation technology. Accordingly, it is not only necessary to replace the asynchronous pump of the "Regumaq XH" station with a high-efficiency pump, but the flow switch also has to be replaced and connected to the electronic box. Suitable for: "Regumaq XH" 1381040 "Regucor WHS" 1383560, 1383565
	Circulation pump 130 mm Wilo-Yonos ST 15/7 130 PWM2 Connection thread G 1 for the primary circuit/buffer storage cylinder circuit	1383582 Suitable for: "Regumaq XH" 1381042 "Regucor WH" 1383460/65 "Regucor WHS" 1383550/55/62/67 1383645
	Flow controller	1381045 Suitable for: "Regumaq XH" 1381040/42 "Regucor WH" 1383460/65 "Regucor WHS" 1383550/55/62/67 1383645



3.1.j Further associated products

Content

"Optibal P" Pump ball valves	556
"Optibal" Ball valves	556
Insulations	556
Thermometer conversion sets	556
"Optibal PK" Isolating set	557
"Optibal" Ball valves with press connection	557
Accessories for the connection of the boiler and the storage cylinder to the pipework	558
"MSM-Block" Boiler safety device	561
Heating system filling station	561
Expa-Con Valves with lead sealable cap	561
"Optiflex" Fill and drain ball valves	562
"Optiflex" Fill and drain ball valves for solar	563
Accessories	563
Ball valves with hose connection	563
Fiill and drain ball valves made of bronze	564
Draining and venting valves	564
Fill and drain cocks	565
Accessories	565
Gauge cocks	566
Gauge cock, button type	566
Accessories	566
Gauge isolating valves	567
Accessories	567
Check valves	568
Check valves made of bronze	568
Differential pressure relief valves PN 10	569

Article	Packing unit	Article-No.	Hint
"Optibal P" Pump ball valves brass, nickel plated, (valves with marking "HT" can also be used up to 150 °C)			Max. opening pressure: 20 mbar Collar nuts and seals: pages 492 and 493 PN 10, max. 120 °C
with check valve, installation at the pump inlet			
	DN 25	Rp 1 x G 1½* (10)	1078171
	DN 32	Rp 1¼ x G 2* (10)	1078172
	DN 32	Rp 1¼ x G 1½* (10)	1078173
without check valve			
	DN 25	Rp 1 x G 1½* (10)	1078371
	DN 32	Rp 1¼ x G 2* (10)	1078372
	DN 32	Rp 1¼ x G 1½* (10)	1078373
* pump connection			
"Optibal" Ball valves brass, nickel plated extended plastic handle (anthracite), for the return pipe			The heights are identical with the pump ball valves "Optibal P".
both ports female thread			
	DN 25	Rp 1 (10)	1078708
	DN 32	Rp 1¼ (5)	1078710
Insulations for brass ball valves "Optibal" with extended plastic handle ball valves with female thread (item no. 10771/80/87/91..)			Meet the requirements of the German Energy Saving Directive according to appendix 5, table 1, line 5. Building material class B2 according to DIN 4102.
	DN 25		1078094
	DN 32		1078095
for pump ball valves "Optibal P"			
	DN 25		1078194
	DN 32		1078195
Thermometer conversion sets Thermometer conversion set, anthracite			
	for item no.:	(10)	1078382
	1078171/ 72/ 73, 1078371/ 72/ 73, 1078708/ 10/ 61/ 62 and 4208806/ 08, 4208854/ 55, 4208906/ 08		
Thermometer conversion set, red and blue red thermometer for supply pipe ("Optibal P") and blue thermometer for return pipe ("Optibal")			
	DN 25/ 32	(10)	1078182

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

"Optibal PK" Isolating set

Supply: Pump ball valve with check valve and
pump ball valve with thermometer (red) Ø 63 as well as
collar nuts and seals for the pump flanges

Return: Female threaded ball valve with thermometer
(blue) Ø 63

Suitable insulations:
for 1353583, DN 25:
2 x 1078194 + 1 x 1078094

for 1353584, DN 32:
2 x 1078195 + 1 x 1078095



DN 25	G 1½*	1353583
DN 32	G 2*	1353584

*pump connection

"Optibal" Ball valves with press connection

for the return pipe,
brass, nickel plated

PN 16, max. 120 °C

both ports press connection



DN 25	Ø 28 mm	(10)	1078761
DN 32	Ø 35 mm	(5)	1078762

Angle pattern ball valve DN 20

G 1 c/nut x G 1 M	1351705
-------------------	----------------



Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Accessories for the connection of the boiler and the storage cylinder to the pipework

Storage cylinder loading set DN 25



1359050

Connection nipple G 1 M x Rp 1
Elbow G 1 x G 1 collar nut
Corrugated metal hose, L = 1100 m,
may be cut to required length
Elbow G 1 collar nut x G 1 1/4
Pump connection nipple G 1 1/2 F x G 1
Pump with cable
Angle pattern non-return check valve
G 1 collar nut x pump flange G 1 1/2
Collar nut G 1 1/2
Set of seals
Brass connection pieces

Three-way mixing valve



Rp 3/4 F, Kv 6	(10)	1350106
Rp 1 F, Kv 12	(10)	1350108

For flow temperature control.
Manual setting, actuator (see page 433) can
be mounted subsequently.
(Do not use an actuator with "plug & play"
technology!)

Connection elbows



Connection elbow with pump flange G 1 x pump flange for G 1 1/2 40 x 35 mm suitable collar nut item no. 1359099	(25)	1359060
--	------	----------------



G 1 x G 1 35 x 35 mm	(25)	1359061
-------------------------	------	----------------



G 1 x G 1 c/nut 37 x 35 mm	(25)	1359062
-------------------------------	------	----------------



G 1 c/nut x G 1 c/nut 37 x 35 mm	(25)	1359063
-------------------------------------	------	----------------



G 1 c/nut x G 1 M x G 3/8 F 37 x 35 mm	(25)	1359064
---	------	----------------



G 1 c/nut x G 1 c/nut x G 3/8 F 37 x 35 mm	(25)	1359065
---	------	----------------














with fill and drain ball valve "Optiflex" G 1 c/nut x G 1 M 37 x 35 mm	(25)	1359066
--	------	----------------



with fill and drain ball valve "Optiflex" G 1 c/nut x G 1 c/nut 37 x 35 mm	(25)	1359067
--	------	----------------



G 1 1/4 c/nut x R 1 1/4 M 40 x 49 mm	(25)	1359043
---	------	----------------

	Article	Packing unit	Article-No.	Hint
	with pump flange, long G 1 c/nut x pump flange for G 1½ 88 x 35 mm R ½ vent plug and R ¾ blind plug suitable collar nut item no. 1359099	(25)	1359068	
	R ¾ blind plug G 1 c/nut x G 1 M 90 x 35 mm	(25)	1359069	
	2 x G 1 c/nut 88 x 35 mm	(25)	1359042	
	with fill and drain ball valve "Optiflex" 2 x G 1 c/nut 88 x 35 mm	(25)	1359073	
	Reducer G 1 F x G 1½ M 31.5 mm	(20)	1359041	
	Double fitting both ports G 1 c/nut 30 mm G ¾ F x G ¾ c/nut 19.5 mm	(10) (10)	1359085 1359086	
	Check valve G 1 M x pump flange for G 1½ 31 mm suitable collar nut item no. 1359099	(50)	1359070	
	Angle pattern non-return check valves G 1 c/nut x G 1 M 44 x 35 mm	(20)	1359071	
	with opening device and fill and drain ball valve "Optiflex" G 1 c/nut x pump flange for G 1½ 47 x 40 mm suitable collar nut item no. 1359099	(12)	1359072	
	T-piece G 1 x G 1 x G 1 c/nut	(10)	1359080	
	G 1 x G 1 c/nut x G 1	(10)	1359081	

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------


Pump connection nipple

G 1½ F x G 1 M 32 mm	(10)	1359090	
-------------------------	------	---------	--



G 1½ female x G 1 c/nut 32 mm	(10)	1359091	
----------------------------------	------	---------	--


Connection nipple

G 1 M x Rp ¾, 34 mm	(20)	1359095	
G 1 M x Rp 1, 37 mm	(20)	1359096	
G 1 M x Rp 1¼, 40 mm	(20)	1359097	


Double nipple

R 1 x G 1, 33 mm	(20)	1359094	
G 1 x G 1, 33 mm	(20)	1359098	








6-way block with pump flange







G 1½, G 1½ M and 4 x G 1 M		1359040	
----------------------------	--	---------	--


Extension

both ports G 1 M

51 mm	(10)	1359101	
65 mm	(10)	1359102	
89 mm	(10)	1359103	
104 mm	(10)	1359104	
125 mm	(10)	1359105	

Article	Packing unit	Article-No.	Hint
"MSM-Block" Boiler safety device Airvent with automatic shut-off Pressure gauge with automatic shut-off Insulation DN 25			Complete safety device according to DIN EN 12828.
 Female threaded connection Rp 1 Diaphragm safety valve 3.0 bar			1351062
 Male threaded connection G 1, flat sealing Diaphragm safety valve 3.0 bar			1351072
 Heating system filling station Filling combination according to DIN EN 1717 for heating systems, consisting of strainer, pressure reducer, system separator type BA and drain water connection, with isolating facility for maintenance. Brass body, cartridges of system separator and pressure reducer made of plastic DN 15 G ¾			1055004 Application: Potable water installations PN 10, Max. water temperature: 30 °C at the inlet port 65 °C at the outlet port Max. operating pressure p_g : 10 bar Outlet pressure adjustable between 1 and 5 bar. (factory preset to 1.5 bar). DVGW certified.
 Expa-Con Valves with lead sealable cap brass			Required according to DIN EN 12828. For control, maintenance and possible replacement of diaphragm expansion tanks. Technical data: Nominal pressure: PN 10 Max. operating temperature t_g : 120 °C Draining capacity: $k_{vs} = 1.25$
DN 20 *Rp ¾ (25) 1089006 DN 20 *Rp 1 (25) 1089008 DN 25 *Rp 1 (10) 1089052 DN 32 *Rp 1¼ (10) 1089010 DN 40 *Rp 1½ (10) 1089012			
* connection to expansion tank			
 Lead sealing set (10 fold) (10) 1089091			Consisting of lead seal and locking wire.
 Quick coupling for diaphragm expansion tank DN 20, G ¾ F x G ¾ M (25) 1088806			For the automatic separation of the expansion tank and the system.

Article	Packing unit	Article-No.	Hint
"Optiflex" Fill and drain ball valves brass, handle with stop with male thread			Application: For filling and draining of heating and cooling systems, boilers, radiators and pipework.
	self sealing, with counternut, with hose connection (soft seal) and cap		The brass ball valve is suitable for water and water and glycol mixtures up to PN 16 and 120 °C.
	DN 10	(50) 1033313	Also suitable for connection of plastic and copper pipes.
	DN 15	(50) 1033314	
	DN 20	(25) 1033316	Compression fittings and reinforcing sleeves: pages 165 -167
	DN 25	(10) 1033308	
	DN 15 (50 pieces loosely packed) DN 15 brass hose connection		If not stated otherwise the hose connection of the sizes DN 10 and DN 15 is made of plastic.
	DN 10 nickel plated	(50) 1033351	
	DN 15 nickel plated	(50) 1033352	
	DN 15 nickel plated (50 pieces loosely packed)	(50) 1033354	
	with cap DN 10 DN 15		
		(50) 1033413 (50) 1033414	
	brass, handle with stop with female thread with hose connection (soft seal) and cap		
	DN 15 DN 15 nickel plated	(50) 1033814 (50) 1033852	
	with cap DN 15		(50) 1033914
	"Optiflex" Fill and drain ball valves for potable water brass, nickel plated from outside, handle with stop, with male thread, self sealing, with counternut and cap		Application: Potable water installations, PN 10, DN 15 R (reduced). Max. water temperature: 90 °C
	DN 15	G ½ (50) 1033152	DVGW tested and certified. Further applications for heating systems see above.

Article	Packing unit	Article-No.	Hint
"Optiflex" Fill and drain ball valves for solar			Application: For filling and draining of heating and cooling systems, boilers, radiators and pipework also in solar plants.
brass, handle with stop with male thread, self sealing, with counternut			
with hose connection (soft seal) and cap			The brass ball valve is suitable for water and mixtures of water and glycol up to PN 16 and 150 °C, for short periods up to 180 °C.
DN 15 nickel plated	(50)	1033372	Also suitable for connection of plastic and copper pipes.
			Compression fittings and reinforcing sleeves: pages 164 -167
Angle pattern, with hose connection (soft seal) and cap			The hose connection is made of plastic.
DN 15 nickel plated	(50)	1033672	
Accessories			
Hose connection made of brass			Female thread of the collar nut
DN 10 + DN 15	(50)	1034552	G ¾
DN 20	(25)	1034553	G 1
DN 25	(25)	1034554	G 1¼
made of plastic			
DN 10 + DN 15	(50)	1034562	G ¾
Cap with washer and fixing loop			Female thread of the cap
DN 15	(50)	1034052	G ¾, also for "Optiflex" DN 10
DN 20	(25)	1034053	G 1
DN 25	(25)	1034008	G 1¼
Washer (for above caps)			Female thread of the cap
DN 15	(10)	1034092°	G ¾, also for "Optiflex" DN 10
DN 20	(10)	1034093°	G 1
DN 25	(10)	1034094°	G 1¼
Ball valves with hose connection			
brass nickel plated, full flow, with double FKM O-ring seal, ball hard-chrome plated, PTFE seats, inlet port female thread according to EN 10226-1, outlet port hose connection and cap with fixing loop			Application: Water, water and glycol mixtures, heating oil and fuels, saturated steam and air.
DN 15	(25)	1036154	Max. operating pressure p _s : 16 bar (PN 16), for air and harmless gases (not for gaseous fluids group 1 according to directive 2014/68/EU) 10 bar.
DN 20	(10)	1036156	Operating temperature t _s : -20 °C up to +120 °C
DN 25	(5)	1036158	Attention: Prevent formation of ice as it can



Fiill and drain ball valves made of bronze
with male thread

handle with stop
with hose connection and cap

DN 10	(50)	1032403
DN 15	(50)	1032404

Application:
Fluids, steam and treated heating water
(e. g. district heating).
Max. operating pressure p_s : 16 bar (PN 16)
Operating temperature t_s : 0 °C up to 150 °C
Operation of the fill and drain ball valves by use
of the grey handle.

Accessories: page 563



Handle for fill and drain ball
valves

(10) **1033091**

For further accessories see "Optiflex".

Draining and venting valves
brass

with metal seal



G 1/4	(50)	1038002
G 3/8	(50)	1038003

Application:
Central heating systems PN 16 up to 120 °C.
Key, item no. 1103051: page 162



Fill and drain cocks

Heavy pattern - bronze, PN 16
based on DIN 3848
with hose connection and cap

DN 10	(50)	1032003
DN 15	(50)	1032004
DN 20	(25)	1032006
DN 25	(10)	1032008

Application:

Bronze models: Fluids, steam and treated heating water (e.g. district heating) up to PN 16 and 150 °C, for short periods up to 180 °C.

Re-adjustment of the fill and drain cocks may become necessary to guarantee tightness during operation, for instance in case of:

- operation at low temperatures
- extreme temperature changes
- use of creeping additives in heat transfer liquids

Accessories



Cap
with washer and fixing loop

DN 10	(50)	1034003
DN 15	(50)	1034052
DN 20	(25)	1034053
DN 25	(25)	1034008

Female thread of the cap

G ½
G ¾, also for "Optiflex" DN 10
G 1
G 1¼



Square spanner

DN 10/DN 15	(10)	1035004
DN 20/DN 25	(5)	1035006

Spanner size: 12 mm
Spanner size: 14 mm



Washer (for above caps)

DN 10	(10)	1034091°
DN 15	(10)	1034092°
DN 20	(10)	1034093°
DN 25	(10)	1034094°

Female thread of the cap

G ½
G ¾, also for "Optiflex" DN 10
G 1
G 1¼













Hose connection






DN 10	(50)	1034551°
DN 15	(50)	1034504°
DN 20	(50)	1034506°
DN 25	(25)	1034508

Female thread of the collar nut

G ½ (for hose DN 15)
G ¾
G 1
G 1¼

Article	Packing unit	Article-No.	Hint
Gauge cocks brass, with gland, with female thread PN 10			Application: Central heating systems up to 120 °C and PN 10 as well as cooling systems. Re-adjustment of the gauge cocks may become necessary to guarantee tightness during operation, for instance in case of: - operation at low temperatures - extreme temperature changes - use of creeping additives in heat transfer liquids * connection for pressure gauge
	DN 15 G ½ DN 15 (PN25) G ½	(20) 1110104 (20) 1110174	
	with female thread with test flange 25 x 60 mm DN 15 (PN 25) G ½	(5) 1110204	
Gauge cock, button type brass, nickel plated, both ports female thread Rp ½ according to EN 10226-1, (outlet port also corresponds to pressure gauge threaded bore according to DIN EN 837-1)			Water: PN 25, 0 up to 90 °C Gas: MOP5, -20 °C up to +60 °C DVGW certified according to VP 308. Pressure is only measured when the button is pushed down. System separation is automatically achieved by releasing the button. In this position, the pressure gauge is depressurized.
	DN 15	(25) 1110504	
Accessories			
	Connection piece brass with rotating collar nut, with graphite washer for differential pressure gauge suitable for item no. 11100.. – 11105..	DN 15 (40) 1111904	
	Plastic handle red, for gauge cock DN 10 + DN 15	(10) 1905051	Connection thread and length of handle M 5 x 50 mm.
	Graphite washer for pressure gauges, gauge cocks and connection pieces	(50) 1905551	

Article	Packing unit	Article-No.	Hint
Gauge isolating valves DN 15, G ½, connecting nut x spigot for the connection of pressure gauges to installations			Application: Fluids, gas and steam to which the valve materials are resistant. Brass/stainless steel, PN 250 **: Body, connecting nut, collar nut and test spigot/flange made of brass. Stem and venting screw made of stainless steel, seal packing made of PTFE, handwheel made of plastic. Operating temperature t _g : -10 °C* up to -120 °C Steel/stainless steel, PN 400 **: Body, connecting nut, collar nut and test spigot/flange made of steel, stem and venting screw made of stainless steel, seal packing made of graphite, handwheel made of plastic. Operating temperature t _g : -10 °C* up to -120 °C *Prevent formation of ice **See pressure-temperature chart
	Valve DIN 16270 - A - 20 Ms brass/stainless steel, PN 250 (without test connection)	1115004	
	Valve DIN 16270 - A - 10 St steel/stainless steel, PN 400 (without test connection)	1116004	
	Valve DIN 16271 - A - 20 Ms brass/stainless steel, PN 250 with test spigot M 20 x 1.5	1115104	
	Valve (similar to DIN 16271 - A - 20 Ms) brass/stainless steel, PN 250 with test flange M 20 x 60 mm	1115204	
	Valve (similar to DIN 16271 - A - 10 St) steel/stainless steel, PN 400 with test flange M 20 x 1.5	1116204	
Accessories			
	Weldable steel nipple with collar nut	(50) 1117204	
	Copper washer DIN 16528 for gauge isolating valves	1905552	

Article	Packing unit	Article-No.	Hint
Check valves brass installation at the pump outlet			Application: Central heating systems PN 10 with circulation pump, up to 120 °C.
SVE  DN 20 *G 1¼ (10) 1070006 DN 25 *G 1½ (10) 1070008 DN 32 *G 2 (10) 1070010			Opening pressure: 20 mbar (~ 200 mm WG) Check valves avoid gravity circulation in different heating systems with the circulation pump being switched off.
with automatic deaeration  DN 25 *G 1½ (10) 1070308 DN 32 *G 2 (10) 1070310			
SVA  DN 25 *G 1½ (10) 1070108 DN 32 *G 2 (10) 1070110			For the direct connection to the circulation pump. Valve cover made of plastic, setting to gravity circulation.
SVI  DN 25 *G 1½ (10) 1070208 DN 32 *G 2 (10) 1070210			
Check valves made of bronze Universal model SVU  DN 25 1071008 DN 32 1071010 DN 40 1071012 DN 50 1071016			Application: Central heating systems PN 10 with circulation pump, up to 120 °C. Opening pressure: 20 mbar (~ 200 mm WG) For vertical installation as angle pattern, straight pattern or three-way valve. Plug and valve disc made of brass, soft seal, setting to gravity circulation.



Article	Article-No.	Hint
Differential pressure relief valves PN 10 bronze/brass		Application: Pump hot water heating systems PN 10, 120 °C, to reduce flow noises. Central heating systems with gas boilers to maintain a minimum water circulation. Range of setting: 50 - 500 mbar (~ 0.5 - 5.0 m WG) Preset at works to 200 mbar.
DN 20	1085206	
DN 25	1085208	
DN 32	1085210	



3.2.a Local and district heating technology

Content	573
System illustration	574
"Regudis H" Transmission station	577
"Regudis H-HT" Transmission station	578
"Regudis H-MT" Transmission station	578
"Regudis H-MHT" Transmission station	579
"Regudis H-H" Transmission station	580
"Regudis H-HM" Transmission station	580
"Regtronic EM" Extension module	581



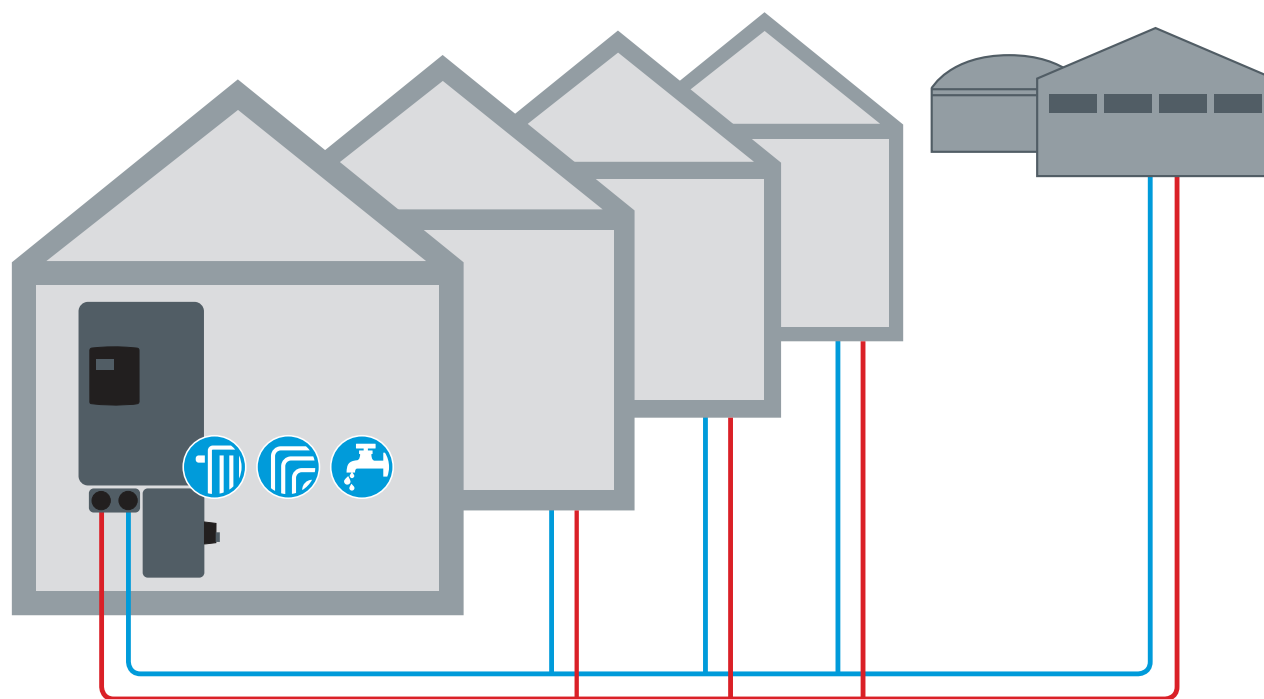
3.2.a Local and district heating technology

Content

System illustration	574
"Regudis H" Transmission station	577
"Regudis H-HT" Transmission station	578
"Regudis H-MT" Transmission station	578
"Regudis H-MHT" Transmission station	579
"Regudis H-H" Transmission station	580
"Regudis H-HM" Transmission station	580
"Regtronic EM" Extension module	581

Regudis H

Transmission stations for local and district heating networks.



The product range “Regudis H” is available in two performance ranges and different configurations.

“Regudis H”
for the installation of a heating circuit
and potable water system on site

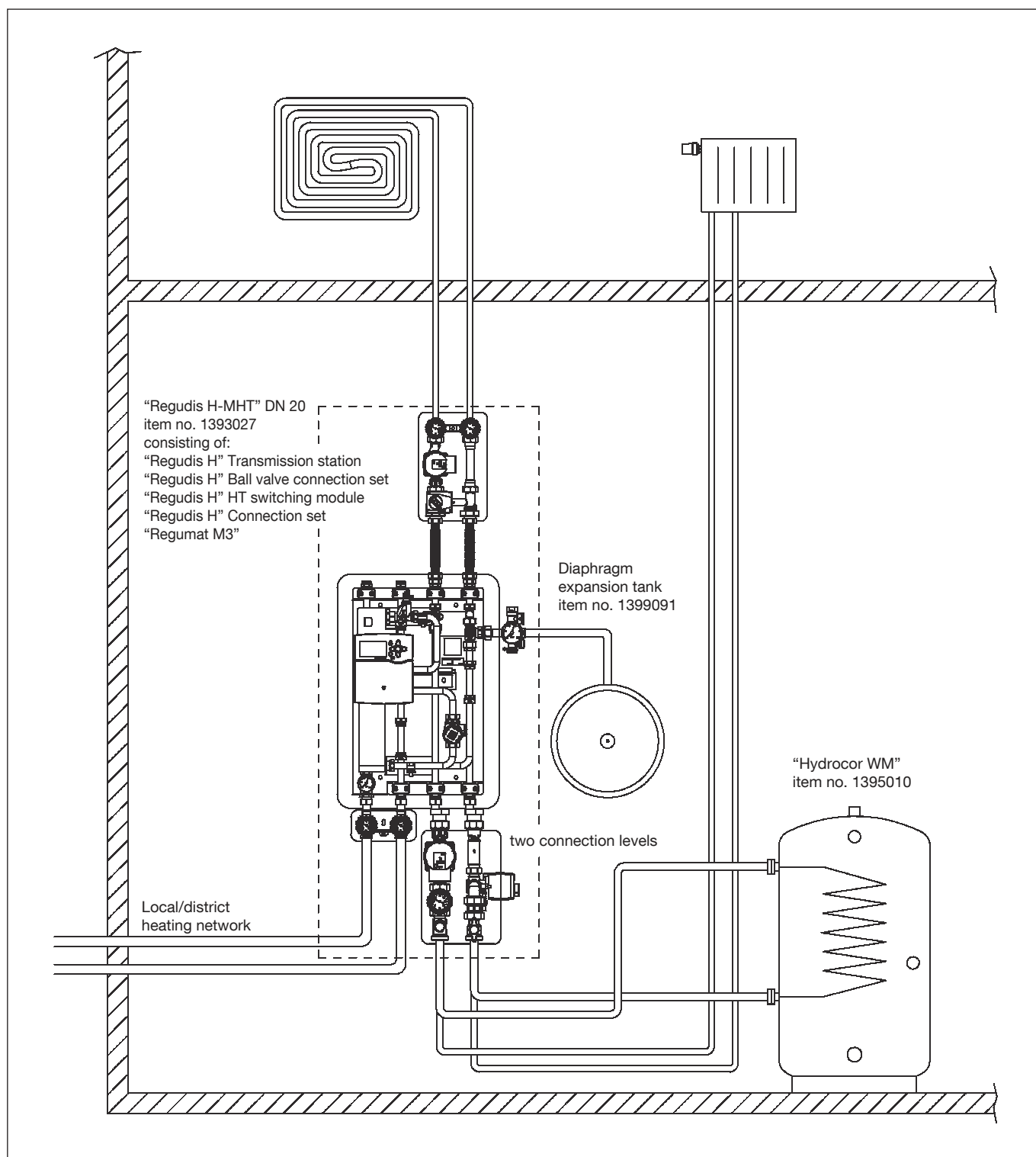
“Regudis H-HT”
for the connection of a constant temperature heating
circuit and a potable water storage cylinder

“Regudis H-MT”
for the connection of a variable temperature heating circuit
and a potable water storage cylinder

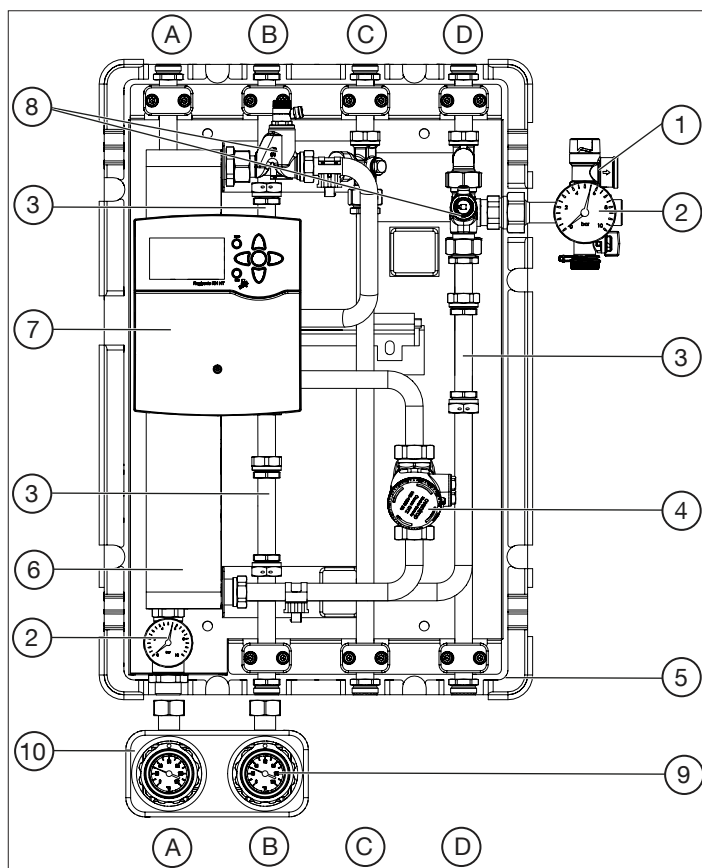
“Regudis H-MHT”
for the connection of a variable temperature heating circuit,
a constant temperature heating circuit and a potable water
storage cylinder

“Regudis H-H”
for the connection of a constant temperature heating
circuit and the installation of a potable water system on
site

“Regudis H-M”
for the connection of a variable temperature heating circuit
and the installation of a potable water system on site



System example:
Integration of a transmission station "Regudis H-MHT" DN 20 as system separation between a local/district heating network and the building installation



System illustration transmission station "Regudis H" DN 20

**"Regudis H" Transmission station
consisting of:**

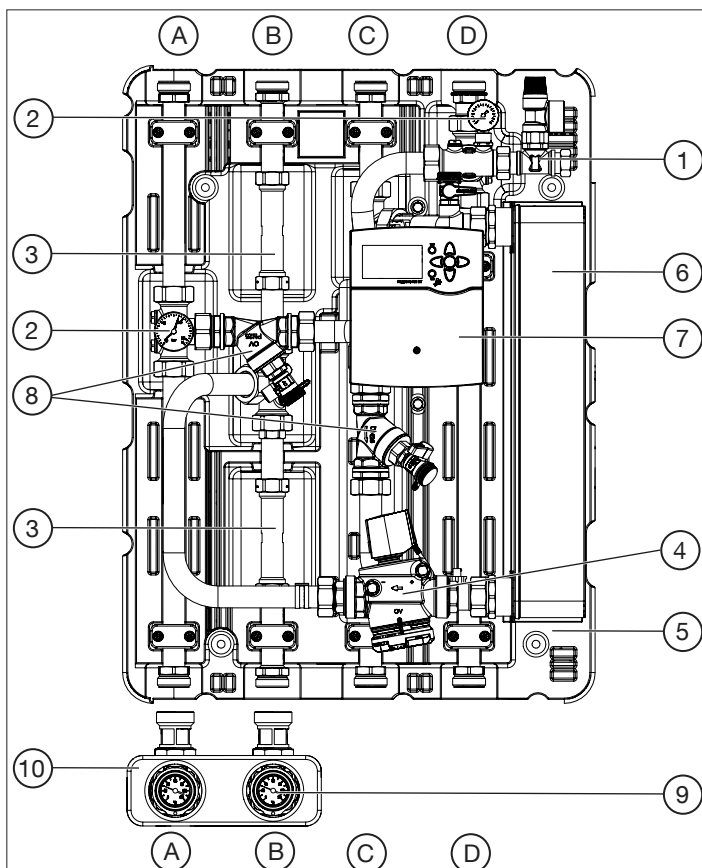
- 1 Safety group
- 2 Pressure gauge
- 3 Spacers for heat meter
- 4 Pressure independent control valve "Cocon QTZ" with actuator
- 5 Thermal insulation
- 6 Plate heat exchanger
- 7 Electronic controller
- 8 Strainer with draining and venting valve

Ball valve connection set consisting of:

- 9 2 ball valves with thermometer in a bracket
- 10 Thermal insulation housing made of expanded polystyrene

Connections:

- A Local/district heating - supply
- B Local/district heating - return
- C Heating circuit - supply
- D Heating circuit - return



System illustration transmission station "Regudis H" DN 25



"Regudis H" Transmission station
consisting of:

- plate heat exchanger (copper brazed)
- pressure independent control valve "Cocon QTZ" with actuator
- strainer
- pressure gauge
- safety valve
- draining valve
- electronic controller
- thermal insulation
- outside temperature sensor and 2 additional temperature sensors (PT 1000)
- connection facility for flow temperature sensor of the heat meter (M 10 x 1) with enclosed adapter
- "Regudis H" Ball valve connection set consisting of:
 - 2 ball valves with thermometer
 - bracket
 - thermal insulation housing made of expanded polypropylene

DN 20
DN 25

1391026*
1391036*

Transmission station with plate heat exchanger for indirect heat transmission from a local or district heating network to the potable water and heating system of detached houses and multiple occupancy dwellings.

The station is supplied with mounted functional modules and is completely parameterized and tested at works.

Operating pressure:
Primary side: PN 10
Secondary side: Safety valve 3 bar
Max. primary temperature: 95 °C

A potable water storage cylinder with internal heat exchanger (e.g. "Hydrocor WM") can be connected to the primary side.

With electronic controller for weather guided control of the flow temperature of the heating system and simultaneous limitation of the return temperature to the heat network.

For use in closed local and district heating networks, for operation with non-aggressive, harmless fluids (e.g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

"Regudis H" DN 20

- consisting of the functional modules
- 1391025 "Regudis H" DN 20
 - 1399090 Ball valve connection set DN 20

Design example:
20 kW:
with primary: 80/55 °C, secondary: 70/50 °C
Heating network connection: G 1
Domestic connection: G ¾
Dimensions (W x H x D):
545 mm x 775 mm x 295 mm

"Regudis H" DN 25

- consisting of the functional modules
- 1391035 "Regudis H" DN 25
 - 1399095 Ball valve connection set DN 25

Design example:
50 kW:
with primary: 80/55 °C, secondary: 70/50 °C
Heating network connection: G 1 ½
Domestic connection: G 1 ¼
Dimensions (W x H x D):
630 mm x 940 mm x 330 mm

Article	Article-No.	Hint
<hr/>		
"Regudis H-HT" Transmission station For the connection of a constant temperature heating circuit and a potable water storage cylinder consisting of:		
- "Regudis H" Transmission station		
- "Regudis H" Ball valve connection set		
- "Regudis H" HT switching module consisting of:		
- ball valve valve with thermometer and handle		
- 2 ball valves with handle		
- three-way switching valve with actuator		
- flanged pipe with check valve		
- 2 connection pieces		
- thermal insulation		
- Wilo pump PARA 25-180/6-43/SC (HT switching module DN 20)		
or		
- Wilo pump PARA 25-180/8-75/SC (HT switching module DN 25)		
DN 20	1391027*	The station is supplied with mounted functional modules and is completely parameterized and tested at works.
DN 25	1391037*	
"Regudis H-MT" Transmission station For the connection of a variable temperature heating circuit and a potable water storage cylinder consisting of:		
- "Regudis H" Transmission station		
- "Regudis H" Ball valve connection set		
- "Regudis H" HT switching module consisting of:		
- ball valve valve with thermometer and handle		
- 2 ball valves with handle		
- three-way switching valve with actuator		
- flanged pipe with check valve		
- 2 connection pieces		
- thermal insulation		
- electric sensor attached to the pipe for max. limitation of the heating circuit temperature		
- Wilo pump PARA 25-180/6-43/SC (HT switching module DN 20)		
or		
- Wilo pump PARA 25-180/8-75/SC (HT switching module DN 25)		
DN 20	1392027*	"Regudis H-HT" DN 20 consisting of the functional modules - 1391025 "Regudis H" DN 20 - 1399090 Ball valve connection set DN 20 - 1398027 HT switching module DN 20 Design example: 20 kW: with primary: 80/55 °C, secondary: 70/50 °C Heating network connection: G 1 Domestic connection: G ¾ Domestic connection with switching module: G 1 ½ Dimensions (W x H x D): 545 mm x 1074 mm x 295 mm
DN 25	1392037*	
"Regudis H-HT" DN 25 consisting of the functional modules - 1391035 "Regudis H" DN 25 - 1399095 Ball valve connection set DN 25 - 1398037 HT switching module DN 25 Design example: 50 kW: with primary: 80/55 °C, secondary: 70/50 °C Heating network connection: G 1 ½ Domestic connection: G 1 ¼ Domestic connection with switching module: G ½ Dimensions (W x H x D): 630 mm x 1182 mm x 330 mm		

Article

Article-No.

Hint

"Regudis H-MHT" Transmission station
For the connection of a variable temperature heating circuit,
a constant temperature heating circuit
and a potable water storage cylinder
consisting of:

- "Regudis H" Transmission station

- "Regudis H" Ball valve connection set

- "Regudis H" HT switching module
consisting of:

- ball valve valve with thermometer and handle
- 2 ball valves with handle
- three-way switching valve with actuator
- flanged pipe with check valve
- 2 connection pieces
- thermal insulation
- Wilo pump PARA 25-180/6-43/SC
(HT switching module DN 20)

or

- Wilo pump PARA 25-180/8-75/SC
(HT switching module DN 25)

- "Regumat M3"

- "Regudis H" Connection set

- Electric sensor attached to the pipe for max.
limitation of the heating circuit temperature

DN 20

1393027*

DN 25

1393037*

The station is supplied with mounted
functional modules and is completely
parameterized and tested at works.

"Regudis H-MHT" DN 20

consisting of the functional modules

- 1391025 "Regudis H" DN 20

- 1399090 Ball valve connection set DN 20

- 1398027 HT switching module DN 20

- "Regumat M3" (loosely added,
including connection material)

Design example:

25 kW:

with primary: 80/55 °C,

secondary: 70/50 °C with 10 kW,

secondary: 45/35 °C with 15 kW

Heating network connection: G 1

Domestic connection: G ¾

Domestic connection with

switching module: G 1 ½

Dimensions (W x H x D):

545 mm x 1550 mm x 295 mm

"Regudis H-MHT" DN 25

consisting of the functional modules

- 1391035 "Regudis H" DN 25

- 1399095 Ball valve connection set DN 25

- 1398037 HT switching module DN 25

- "Regumat M3" (loosely added,
including connection material)

Design example:

55 kW:

with primary: 80/55 °C,

secondary: 70/50 °C with 30 kW,

secondary: 45/35 °C with 25 kW

Heating network connection: G 1 ½

Domestic connection: G 1 ¼

Domestic connection with

switching module: G 1 ½

Dimensions (W x H x D):

630 mm x 1706 mm x 330 mm



Article

Article-No.

Hint

"Regudis H-H" Transmission station

For the connection of a constant temperature heating circuit
consisting of:



- "Regudis H" Transmission station
- "Regudis H" Ball valve connection set
- "Regumat S" - connection from the bottom
- "Regudis H" Connection set

DN 20
DN 25

1391021*
1391031*

The station is supplied with mounted functional modules and is completely parameterized and tested at works.

"Regudis H-H" DN 20

consisting of the functional modules
-1391025 "Regudis H" DN 20
-1399090 Ball valve connection set DN 20
- "Regumat S" (loosely added,
including connection material)

Design example:

20 kW:
with primary: 80/55 °C, secondary: 70/50 °C
Heating network connection: G 1
Domestic connection: G ¾
Dimensions (W x H x D):
545 mm x 1220 mm x 295 mm

"Regudis H-HM" Transmission station

For the connection of a variable temperature heating circuit
consisting of:



- "Regudis H" Transmission station
- "Regudis H" Ball valve connection set
- "Regumat S" - connection from the bottom
- "Regudis H" Connection set
- Electric sensor attached to the pipe for max.
limitation of the heating circuit temperature

DN 20
DN 25





1392021*
1392031*

"Regudis H-H" DN 25

consisting of the functional modules
-1391035 "Regudis H" DN 25
-1399095 Ball valve connection set DN 25
- "Regumat S" (loosely added,
including connection material)

Design example:

50 kW:
with primary: 80/55 °C, secondary: 70/50 °C
Heating network connection: G 1½
Domestic connection: G 1 ¼
Dimensions (W x H x D):
630 mm x 1365 mm x 330 mm

	Article	Article-No.	Hint
	<p>"Hydrocor WM" Monovalent potable water storage cylinder with internal tube heat exchanger</p> <p>Type 120 Energy efficiency class B</p> <p>Type 160 Energy efficiency class B</p> <p>Type 200 Energy efficiency class B</p>	<p>1395010</p> <p>1395011*</p> <p>1395012*</p>	<p>Thermal insulation made of polyurethane rigid foam.</p> <p>Max. operating pressure: Storage cylinder: 10 bar Heat exchanger: 16 bar Max. operating temperature: 95 °C With lateral connections.</p>
	<p>Diaphragm expansion tank feet welded on, R ¾ male thread, inlet pressure 1.5 bar</p> <p>Nominal volume 35 l</p> <p>Nominal volume 50 l</p>	<p>1399091</p> <p>1399092</p>	<p>Diaphragm expansion tank according to DIN EN 13831. Permissible operating temperature t_s: 70 °C Max. operating pressure p_s: 3 bar (1399091) Max. operating pressure p_s: 6 bar (1399092) Further components, such as valve with lead sealable cap and quick coupling (page 561) are required for the connection of a diaphragm expansion tank to the "Regudis H-HT".</p>
	<p>"Regtronic EM" Extension module for the connection to the heating circuit controller "Regtronic RH"</p>	<p>1152098</p>	<p>"Regtronic EM" for the extension of the heating circuit controller "Regtronic RH" by 6 sensor inputs and 5 relay outputs. Thus, further variable or constant temperature heating circuits can be activated. Up to five extension modules can be connected to the heating circuit controller "Regtronic RH". 1 sensor attached to the pipe PT 1000 is included.</p>
	<p>Electronic controller "Regtronic RH HT" cabled, as replacement for "Regudis H-HT"</p>	<p>1152070</p>	<p>Only supplied as replacement for the stations "Regudis H-HT".</p>



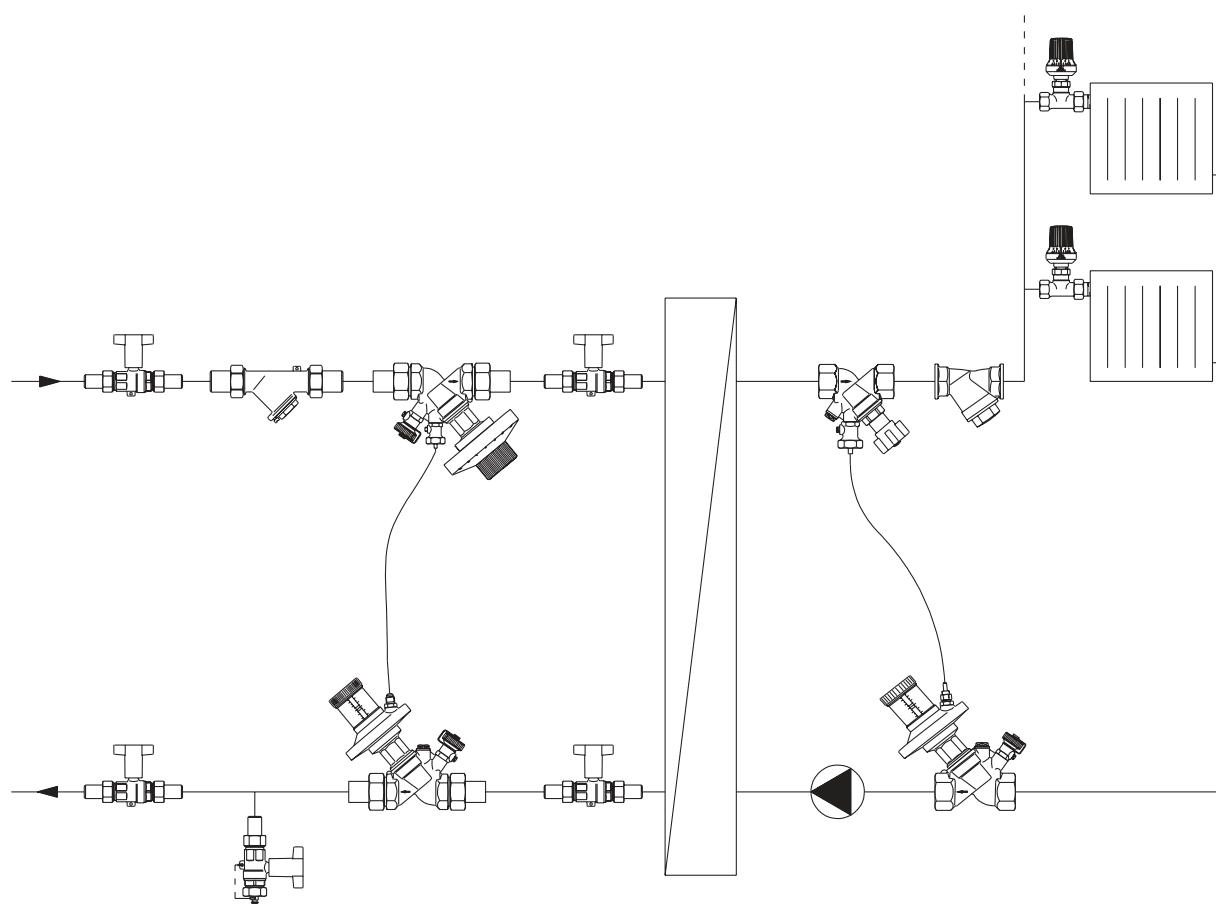
“Hycococon HTZ” Regulating valves PN 16
DN 20
DN 25

In combination with an actuator for the control of potable water storage cylinder loading for direct hot potable water preparation (system illustration page 10.04).
Page 3.14






“Aktor T2 P” Electrothermal actuator “H NC”
closed with current “off”, 230 V
Connecting cable 5 m

Page 1.26



System illustration: District heating/biomass plant (example)

	Page
	3.3.a "Regucor WHS" Energy storage centres
	Content 585
	System illustration 586
	System illustration (zone loading) 587
	"Regucor WHS" Energy storage centres 588
	"Regucor WH" Energy storage centres 590
	Accessories 592
	Accessories - zone loading 594
	3.3.b "Regucor WHP" Energy storage centre ("Power to heat")
	Content 597
	System illustration 598
	"Regucor WHP" Energy storage centre ("Power to heat") 599
	3.3.c "Hydrocor" Storage cylinders
	Content 601
	"Hydrocor HP" Buffer storage cylinder 602
	"Hydrocor HS" Solar buffer storage cylinder 602
	"Hydrocor WB" Bivalent potable water storage cylinder 603
	"Hydrocor WM" Monovalent potable water storage cylinder 603
	Accessories 605

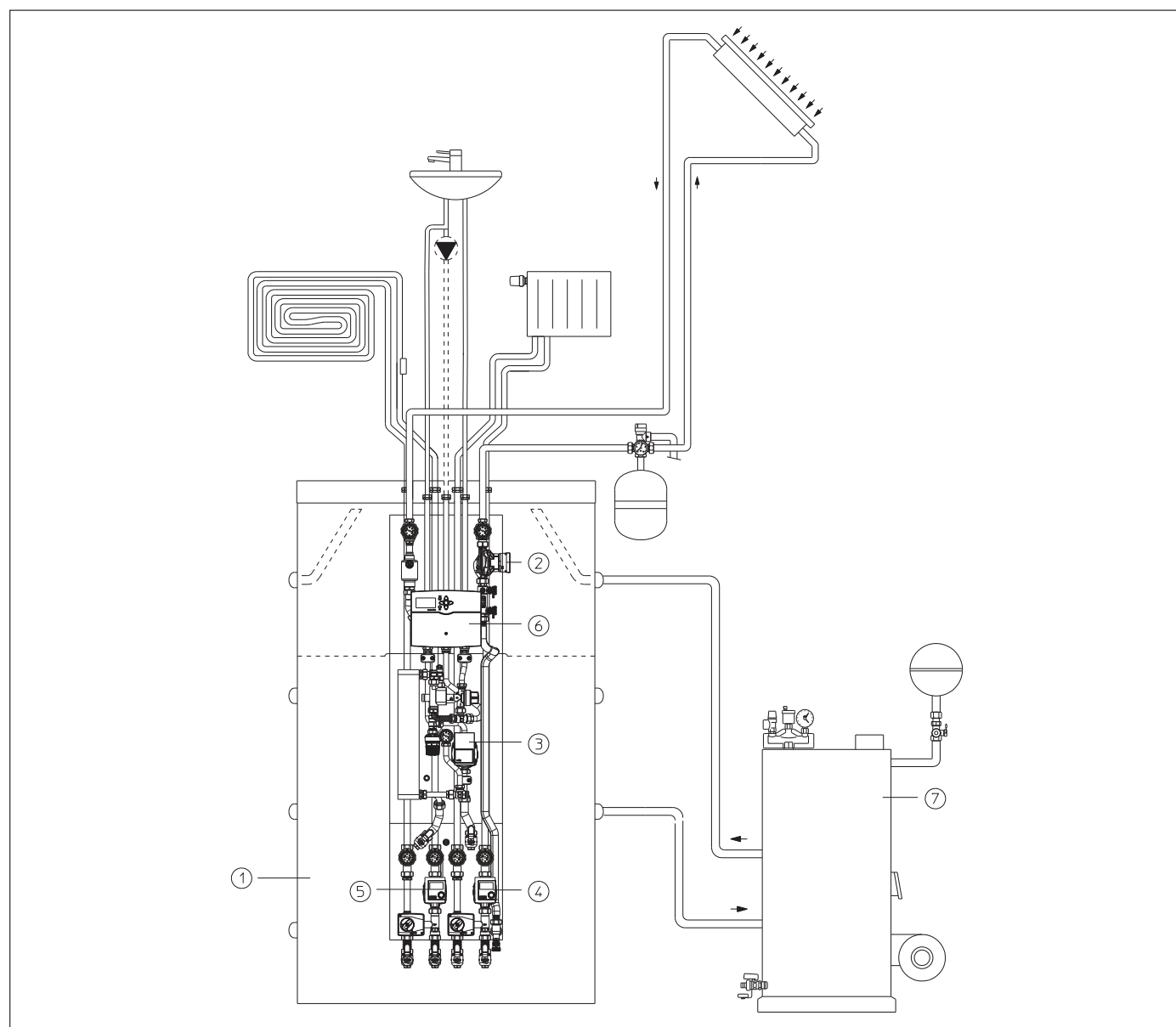


3.3.a "Regucor WHS" Energy storage centres

Content

System illustration	586
System illustration (zone loading)	587
"Regucor WHS" Energy storage centres	588
"Regucor WH" Energy storage centres	590
Accessories	592
Accessories - zone loading	594

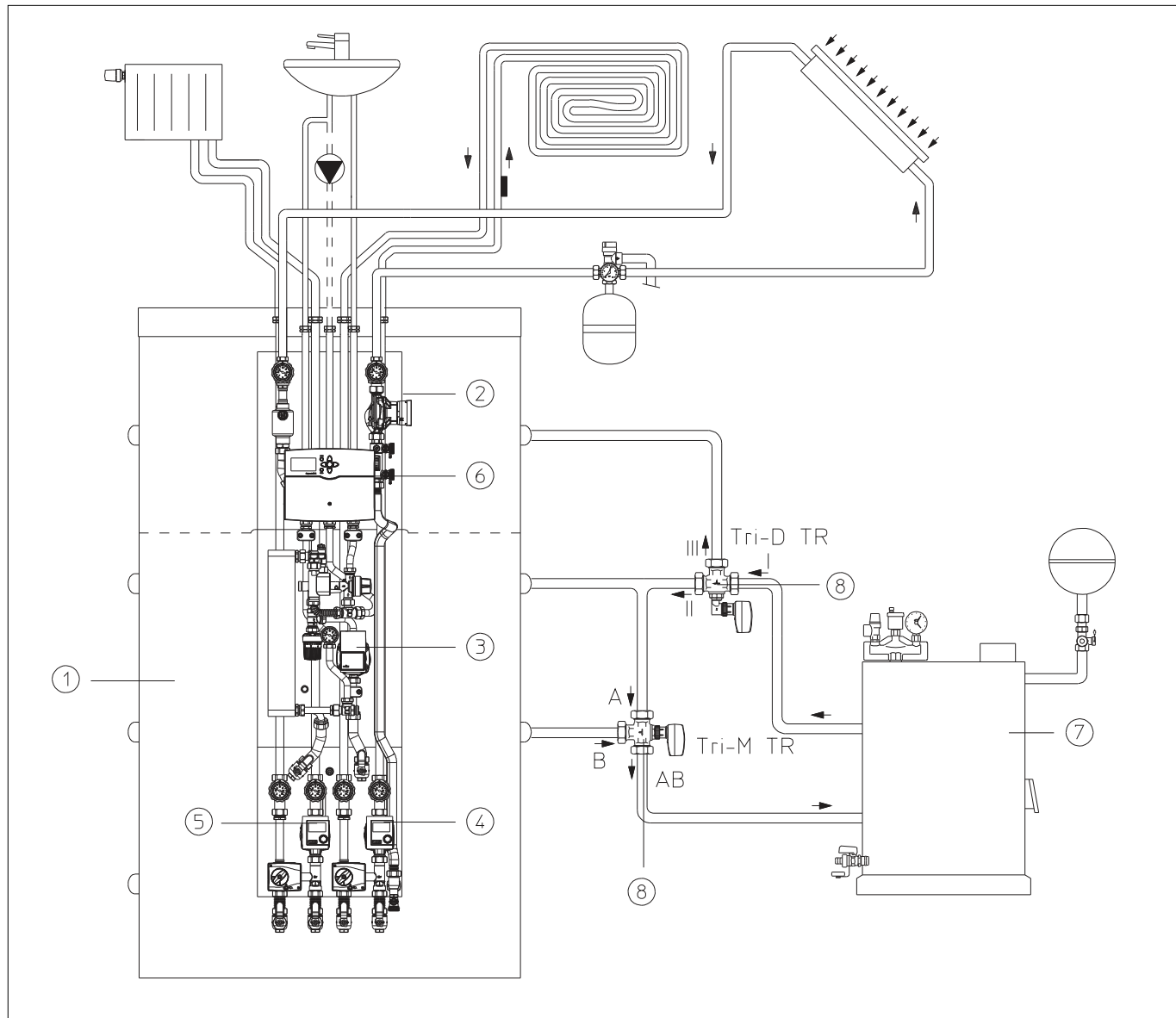
System illustration



"Regucor WHS" in combination with a conventional heat generator

- 1 System storage cylinder
- 2 Add-on group: Solar
- 3 Add-on group: Fresh water
- 4 Add-on group: Heating circuit 1
- 5 Add-on group: Heating circuit 2 (optional)
- 6 System controller "Regtronic RS"
- 7 Heat generator (e.g. oil/gas/heat pump/solid fuel)

System illustration



"Regucor WHS" in combination with heat generator for an energy efficient storage cylinder loading

- 1 System storage cylinder
- 2 Add-on group: Solar
- 3 Add-on group: Fresh water
- 4 Add-on group: Heating circuit 1
- 5 Add-on group: Heating circuit 2 (optional)
- 6 System controller "Regtronic RS"
- 7 Heat generator (e.g. oil/gas/heat pump/solid fuel)
- 8 Motorised conversion valve for zone loading

Re-loading is activated by the system controller "Regtronic RS" as soon as the temperature in the centre of the storage cylinder below the separation sheet (heating circuit operation) or in the part above the separation sheet (domestic water in stand-by motion) drops below the minimum adjustable temperature.

The domestic water section and the heating circuit section of the storage cylinder are loaded separately via the two motorised conversion valves for zone loading. Moreover, re-loading of the heating circuits is independent of the calculated nominal flow temperature which guarantees an efficient re-loading and loading of the corresponding part of the storage cylinder. The controller only asks for the heat which is really required by the heat generator (e.g. oil/gas/heat pump/solid fuel).

In order to achieve a high solar share, the largest possible volume of buffer storage cylinder is used for the storage of solar energy.

Article

Article-No.

Hint

"Regucor WHS" Energy storage centres

consisting of system storage cylinder
and storage cylinder add-on groups

Add-on group: Solar

"Regusol LH-130" DN 20 solar station
with high-efficiency pump Wilo-Yonos PARA ST 15/7 PWM,
flow measuring device 2-15 l/min.,
with safety group for riser installation 6 bar.

Connections:

G ¾ male thread according to DIN EN 16313 (cone "Euro")

Suitable for standard solar liquids.

Add-on group: Hot potable water preparation

"Regumaq XH" DN 20 hydraulically controlled
heat exchanger system for the hygienic heating of
potable water according to the continuous flow
principle. With high-efficiency pump Wilo-Yonos
PARA RS 15-7 PWM2, temperature controller
40 - 60 °C and copper or nickel brazed heat
exchanger.

Connections: G ¾ male thread, flat sealing

Recommended discharge capacity: 15-20 l/min.,
depending on the set potable water temperature and
the existing water temperature inside the buffer storage cylinder.

Add-on group: Heating circuit

"Regumat M3-130" DN 20 with high-efficiency pump
Wilo-Stratos PICO 15/1-6, three-way mixing valve
and actuator.

Connections: G 1 male thread, flat sealing

For weather guided flow temperature control.

System controller:

"Regtronic RS" for the control of the energy
storage centre "Regucor WHS" and further system
components. Up to 13 free inputs and up to 9 free
solid-state relay outputs. S-bus for the connection
to the data logger "CS-BS", SD-card slot for data
recording.

ErP classification "Regtronic RS" for "Regucor WHS"					
Controller	Required accessories	Boiler control modulating (0-10 V)	On/Off	ErP %	Class
"Regucor" controller "Regtronic RS" incl. remote control with room temperature sensor	–	X		4.0	VI
	–		X	3.5	VII
	2 x room temperature sensor 1152095	X		5.0	VIII

System storage cylinder:

Solar buffer storage cylinder with lifting eyes,
removable thermal insulation and integrated
temperature layer unit.

Connections and fixing positions co-ordinated
with "Regucor WHS" add-on groups.

Connections: 8 x G 1½ female thread

Max. operating pressure p_g : 3 bar (coil 10 bar)

Operating temperature t_g : 95 °C (coil 110 °C)

Energy storage centre "Regucor WHS" for
solar-assisted supply of detached and semi-
detached houses with heat and hot potable
water.

Storage cylinder and add-on groups
co-ordinated functionally and
thermodynamically. With integrated piping and
plug-in cabling. For combination with classic
(e.g. gas/oil) and regenerative heat generators
(e.g. heat pump/solid fuel) in existing and new
buildings.

Included accessories:

1 remote control with room temperature sensor
(PT1000)

1 collector sensor (PT1000) L = 2 m

3 storage cylinder sensors (PT1000) L = 4 m

1 sensor attached to the pipe (PT1000)
L = 1.5 m

1 outdoor sensor (PT1000)

1 safety group - solar 6 bar

2 "Regusol" compression fittings
(18 mm, G ¾ collar nut)

2 "Regusol" compression fittings
(18 mm, G 1 collar nut)

"Regusol" compression fittings and reinforcing
sleeves: page 833

Controller details: from page 809

Suitable tailpipes for the connection of the
heating circuit (G 1 collar nut, flat sealing) and
sanitary installations (G ¾ collar nut, flat
sealing): from page 730

Suitable collectors "OKP" and "OKF":
from page 842

The energy storage centre "Regucor" is
supplied on a pallet sized 1.20 x 1.60 m.

Stations of the same function for wall mounting
are available for the individual design of a
system:

- "Regusol LH-130" DN 20 solar stations:
from page 809

- "Regumat M3-130" DN 20 heating circuit
groups: from page 429

- "Regumaq XH" stations for hot potable
water preparation:
from page 553

- Solar buffer storage cylinders:
from page 602

Award:



Article	Article-No.	Hint
---------	-------------	------

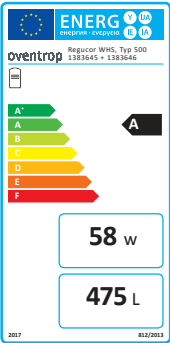


Type 500 Energy efficiency class A

System storage cylinder type 500, nominal content 475 l
Total height (without insulation): 1720 mm
Diameter (without insulation): 650 mm
Total height (with insulation): 2070 mm
Diameter (with insulation): 980 mm

Heat exchanger made of stainless steel, **1383645**
copper brazed
without insulation

As for the "Regucor" type 500 energy efficiency class A, the two-part insulation has to be ordered separately.



**Insulation for type 500
Energy efficiency class A**

1383646



Type 800

System storage cylinder type 800, nominal content 706 l
Total height (without insulation): 1775 mm
Diameter (without insulation): 790 mm
Total height (with insulation): 1880 mm

Heat exchanger made of stainless steel, **1383550**
copper brazed
Heat exchanger made of stainless steel, **1383562**
nickel brazed

Type 1000

System storage cylinder type 1000, nominal content 839 l
Total height (without insulation): 2055 mm
Diameter (without insulation): 790 mm
Total height (with insulation): 2120 mm

Heat exchanger made of stainless steel, **1383555**
copper brazed
Heat exchanger made of stainless steel, **1383567**
nickel brazed



"Regucor WH" Energy storage centres
as "Regucor WHS", but without solar station
and without electronic controller

System storage cylinder type 800, nominal content 706 l

Heat exchanger made of stainless steel, **1383460**
copper brazed

System storage cylinder type 1000, nominal content 900 l

Heat exchanger made of stainless steel, **1383465**
copper brazed

Hint

Energy storage centre "Regucor WH" for the supply of detached and semi-detached houses with heat and hot potable water. Storage cylinder and add-on groups co-ordinated functionally and thermodynamically.

Upgrading of the solar plant is prepared, a solar heat exchanger is integrated in the storage cylinder.

By subsequent installation of the solar station "Regusol LH-130" (item no. 1383480) and the electronic controller "Regtronic RS" (item no. 1383485), the station can be upgraded to a "Regucor WHS".

Suitable tailpipes for the connection of the heating circuit (G 1 collar nut, flat sealing) and sanitary installations (G ¾ collar nut, flat sealing): from page 730



The energy storage centre "Regucor" is supplied on a pallet sized 1.20 x 1.60 m.

Stations of the same function for wall mounting are available for the individual design of a system:

- "Regumat M3-130" DN 20 heating circuit groups: from page 429

- "Regumaq XH" stations for hot potable water preparation:
from page 553

- Solar buffer storage cylinders:
from page 602

Article	Article-No.	Hint
 <p>"Regusol LH-130" Extension set solar "Regucor WH" "Regusol LH-130" DN 20 solar station with high-efficiency pump Wilo-Yonos PARA ST 15/7 PWM, flow measuring device 2-14 l/min., with safety group for riser installation 6 bar, connections G 3/4 male thread according to DIN EN 16313 (cone "Euro"), suitable for standard solar liquids</p>	1383480	<p>"Regusol LH-130" for the connection of the solar collectors to the energy storage centre "Regucor WH".</p> <p>Included accessories:</p> <ul style="list-style-type: none"> 1 collector sensor (PT1000) L = 2 m 1 safety group - solar 6 bar 2 connection elbows 2 connecting pipes 2 "Regusol" compression fittings (18 mm, G 3/4 collar nut) 2 "Regusol" compression fittings (18 mm, G 1 collar nut) <p>"Regusol" compression fittings and reinforcing sleeves: page 833 Suitable collectors "OKP" and "OKF": from page 842 Further solar stations "Regusol": from page 809</p>
 <p>"Regtronic RS" Extension set "Regucor WH" 12 inputs PT1000, PT500 or KT 3 pulse inputs 14 outputs 4 PWM outputs (convertible to 0-10 bar) Data output S-bus</p>	1383485	<p>For the control of the energy storage centre "Regucor WH" and further system components. Up to 13 free inputs and up to 9 free solid-state relay outputs. S-bus for the connection to the data logger "CS-BS", SD-card slot for data recording.</p> <p>Cabled.</p> <p>Included accessory:</p> <ul style="list-style-type: none"> 1 outdoor sensor (PT1000) 1 collector sensor

Article

Article-No.

Hint

Accessories



"Regucor WHS/WH" - Extension heating circuit

"Regumat M3-130" DN 20 heating circuit, Wilo pump
Stratos PICO 15/1-6, with three-way mixing valve and actuator

1383575

Extension of the energy storage centres
"Regucor WHS/WH" by an additional variable
temperature heating circuit. Weather guided
control via "Regtronic RS".



Safety group Solar

for riser installation with safety valve 6 bar
for "Regusol" compression fitting

1364248

Connection facility for an expansion tank G ¾.
Display range pressure gauge: 10 bar

Suitable "Regusol" compression fittings:
page 833



Insulation cap

for G 1½ connection sleeves

1389001

Insulation cap made of expanded
polypropylene for buffer and solar buffer
storage cylinders. For thermal insulation of
unused connections.



"Regumaq XH"

Potable water circulation set

Connection set with circulation pump
Wilo Star Z Nova C and time switch
for the extension of the "Regumaq XH"
station by a potable water circulation

1381047

Extension of the energy storage centres
"Regucor WHS/WH" by a potable water
circulation. Control of the circulation pump via
"Regtronic RS".

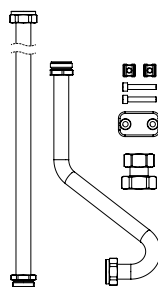


"Regumaq XH"

Potable water circulation set

as above but without circulation pump
and without time switch

1381049



Connection set potable water circulation for "Regucor WHS/WH"

as above, but with
connecting pipe G ¾ male x G ¾ collar nut
and adapter G ¾ collar nut x G 1 female

1383584

For the connection of the circulation of the
add-on group "Regumaq XH" DN 20 to the
potable water circulation pipe.



"Sensor LW TH" Electric sensor attached
to the pipe with concealed temperature setting

Control range 20-90 °C

1143000

For max. limitation of the flow temperature
of surface heating systems.



Connection set for "Regucor WHS/WH"

Connection:




1383580

- G 1 male x G 1 collar nut for heating circuit add-on group
- G ¾ male x G ¾ collar nut for hot potable water preparation
add-on group
including flat seals

For the connection of the heating circuit add-
on group "Regumat M3-130" DN 20 to the
heating circuit and for the connection of the hot
potable water preparation add-on group
"Regumaq XH" DN 20 to the potable water
circuit.



Article	Article-No.	Hint
<hr/>		
Extension connection set for "Regucor WHS/WH"		For the connection of the heating circuit add-on group "Regumat M3-130" DN 20 to the heating circuit.
Connection:	1383581	
- G 1 male x G 1 collar nut for heating circuit add-on group including flat seals		

Article	Packing unit	Article-No.	Hint
Accessories - zone loading			
	"Regucor" Extension set zone loading consisting of: <ul style="list-style-type: none"> - 1 x "Tri-D TR" Three-way diverting valve DN 25 - 1 x "Tri-M TR" Three-way mixing valve DN 25 - 2 x "Aktor M" Electromotive actuator - 1 x Angle pattern adapter - Seals 		The extension set allows for the connection of a boiler and the targeted loading of a buffer storage cylinder. Layering can be carried out into different buffer storage cylinder sections.
		1383583	
	"Aktor M" Electromotive actuators connection thread M 30 x 1.5		
		1012710	Short operating time (about 3 sec.). Connecting cable 1.5 m.
	Angle pattern adapter M 30 x 1.5/ M 30 x 1.5		
	white anthracite	(25) 1011450 (25) 1641451	Connection to the valve: M 30 x 1.5 Connection to the thermostat: M 30 x 1.5

Article	Packing unit	Article-No.	Hint
"Solar" Diaphragm expansion tanks			
for wall attachment, G ¾ male thread, inlet pressure 1.5 bar			
Nominal volume 18 l		1361421	Diaphragm according to DIN 4807 T 3. Permissible operating temperature t _s : 70 °C Further components, such as angled wall brackets, quick couplings or flexible hoses (page 595) are required for the connection of a diaphragm expansion tank to the pump groups "Regusol". Max. operating pressure p _s : 10 bar Max. diaphragm peak temperature t _s : 100 °C Approval according to directive 2014/68/EU.
Nominal volume 25 l		1361422	
Nominal volume 33 l		1361423	
"Regusol" Connection set for diaphragm expansion tank			
consisting of:			
- angled wall bracket made of steel			
- quick coupling G ¾ female thread for diaphragm expansion tank			
- flexible hose G ¾ female thread			
		1369051	For the connection of a diaphragm expansion tank to the "Regusol" solar station.
"Expa Con" Solar valve with lead sealable cap			
DN 20, Rp ¾ x G ¾ male thread	(25)	1364185	
"Sensor LW TH"			
Temperature sensor PT 1000			
Storage cylinder		1369093	For electronic registration of the riser temperatures.
Collector		1369094	Continuous temperature range: up to 105 °C L = 300 cm Continuous temperature range: up to 180 °C (for short periods up to 250 °C) L = 200 cm.
Controlled immersion heater		1383594	Controlled immersion heater for direct heating and warming up of the heating water in hot water storage cylinders, for instance in the energy storage centres "Regucor". Capacity (P): 9 kW U _{required} : 400 V Consisting of immersion heater with controller/limiter combination. 25 °C - 70 °C
Extension for connection pipe for storage cylinder loading	1383593		Extension for passing the loading nipple through the insulation.
Extension for electrical immersion heater	1383592		Extension for passing the electrical immersion heater through the insulation.

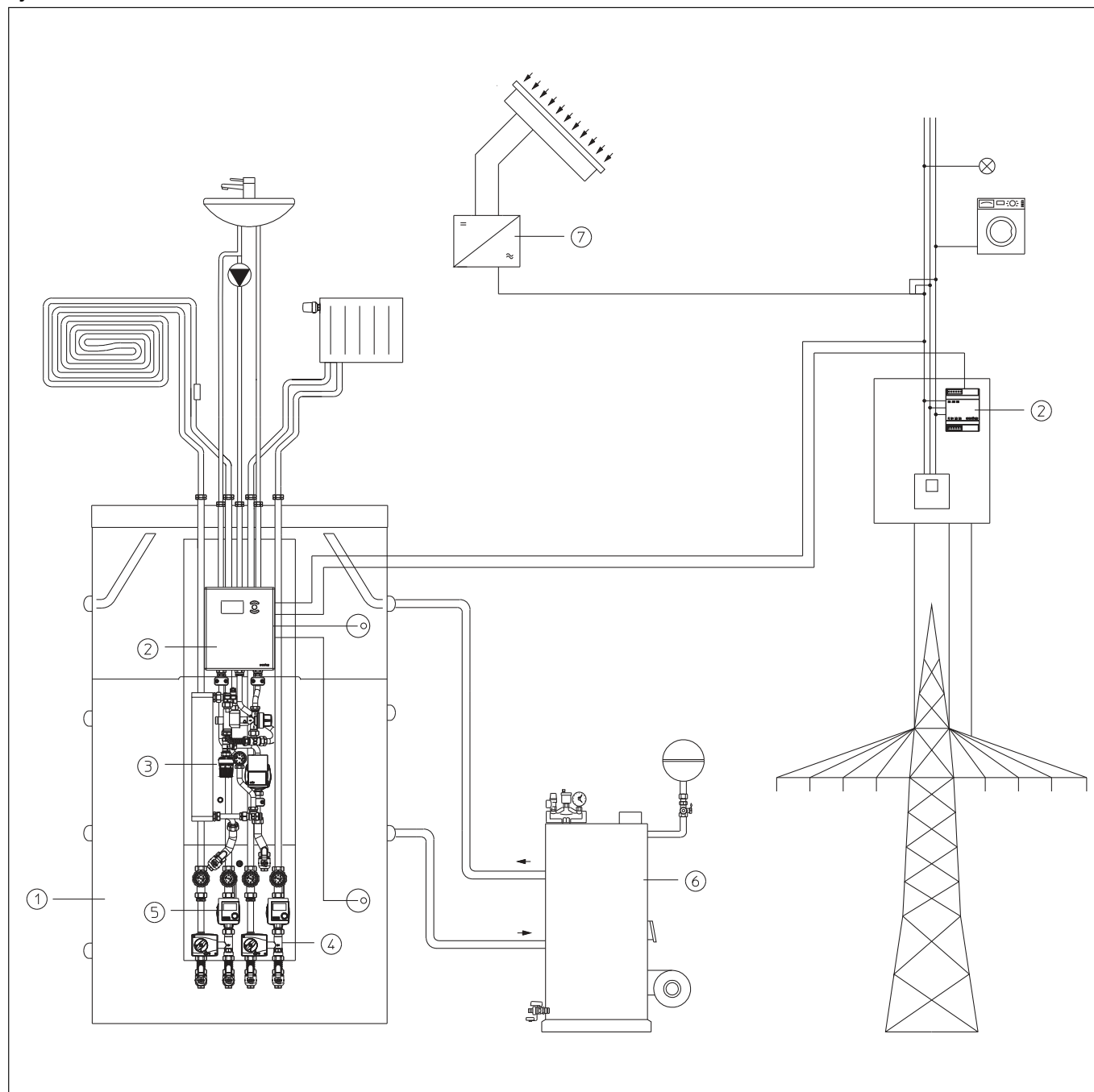


3.3.b "Regucor WHP" Energy storage centre ("Power to heat")

Content


System illustration	598
"Regucor WHP" Energy storage centre ("Power to heat")	599

System illustration



"Regucor WHP" in combination with a conventional heat generator

- 1 System storage cylinder
- 2 Add-on group: "Power to heat"
- 3 Add-on group: Fresh water
- 4 Add-on group: Heating circuit 1
- 5 Add-on group: Heating circuit 2 (optional)
- 6 Heat generator (e.g. oil/gas/heat pump/solid fuel)
- 7 Inverter

Article	Article-No.	Hint
	<p>"Regucor WHP" Energy storage centre ("Power to heat") consisting of system storage cylinder and storage cylinder add-on groups</p> <p>Type 500 Energy efficiency class C</p> <p>Add-on group: "Power to heat" Active power detection, electronic controller "Regtronic RP" and electrical immersion heater.</p> <p>Add-on group: Hot potable water preparation "Regumat XH" DN 20 hydraulically controlled heat exchanger system for hygienic heating of potable water according to the continuous flow principle. With high-efficiency pump Wilo-Yonos PARA RS 15-7 PWM2, temperature controller 40 - 60 °C and copper brazed heat exchanger. Connections: G ¾ male thread, flat sealing Recommended discharge capacity: 15-20 l/min., depending on the set potable water temperature and the existing water temperature inside the buffer storage cylinder.</p> <p>Add-on group: Heating circuit "Regumat M3-130" DN 20 with high-efficiency pump Wilo-Stratos PICO 15/1-6, three-way mixing valve and actuator. Connections: G 1 male thread, flat sealing</p> <p>System storage cylinder: Buffer storage cylinder with lifting eyes, removable thermal insulation and integrated temperature layer unit. Connections and fixing positions co-ordinated with "Regucor WHP" add-on groups. Connections: 8 x G 1½ female thread System storage cylinder type 500, nominal content: 475 litres Total height (without insulation): 1720 mm Diameter (without insulation): 650 mm Total height (with insulation): 1820 mm Diameter (with insulation): 950 mm</p> <p>Heat exchanger made of stainless steel, 1371000 copper brazed</p>	<p>Energy storage centre "Regucor WHP" for solar-assisted supply of heat generated by the surplus electricity of a photovoltaic installation or other regenerative electricity sources to detached and semi-detached houses. If more photovoltaic electricity is available than required for the supply of the household appliances, this electricity is used for heating the energy storage centre "Regucor WHP". Storage cylinder and add-on groups coordinated functionally and thermodynamically. With integrated piping and plug-in cabling. For combination with conventional (e.g. gas/oil) and regenerative heat generators (e.g. heat pump/solid fuel) in existing and new buildings.</p> <p>Power (P): 0-3 kW (infinitely variable) U_{reg}: 230 V</p>
	<p>"Power to heat" module for wall attachment consisting of:</p> <ul style="list-style-type: none"> - 1 x "Active power detection" - 1 x Electronic controller "Regtronic RP" - 1 x Electrical immersion heater (for further immersion heaters see extension set) - 1 x Temperature sensor <p>1371090</p>	<p>The module allows using surplus electricity (for instance from a photovoltaic installation) for buffer storage cylinder loading, for instance of a "Hydrocor" storage cylinder. The photovoltaic electricity is primarily used for the supply of the electrical household appliances. The buffer storage cylinder is only loaded if surplus electricity is available. A control function guarantees that no mains current is used for storage cylinder loading. Power (P): 0-3 kW (infinitely variable) U_{reg}: 230 V</p>
	<p>Extension set consisting of:</p> <ul style="list-style-type: none"> 1 x Electrical immersion heater 1 x Temperature sensor <p>1371091</p>	<p>The "power to heat" module of the energy storage centre "Regucor WHP" can be extended by a maximum of one immersion heater for zone loading of a buffer storage cylinder. Surplus photovoltaic electricity is primarily used for heating of the potable water reserve and then for support of the heating system. Power (P): 3 kW U_{reg}: 230 V Further accessories: from page 591</p>



3.3.c "Hydrocor" Storage cylinders

Content

"Hydrocor HP" Buffer storage cylinder	602
"Hydrocor HS" Solar buffer storage cylinder	602
"Hydrocor WB" Bivalent potable water storage cylinder	603
"Hydrocor WM" Monovalent potable water storage cylinder	603
Accessories	605



"Hydrocor HP" Buffer storage cylinder

Buffer storage cylinder for storage of heating water

Storage cylinder without insulation

Type

Type	H	D	Article-No.
500	1720 mm	650 mm	1387505

Insulation for item no. 1387505

Energy efficiency class:

Energy efficiency class	H	D	Article-No.
A	2070 mm	980 mm	1387506
C	1820 mm	950 mm	1387006

Storage cylinder with insulation (corresponds to energy efficiency class C)

Type	H	D	Article-No.
800	1830 mm	1090 mm	1385008
1000	2110 mm	1090 mm	1385010
1500	2190 mm	1300 mm	1385015



as above, but max. operating pressure p_s : 6 bar

Type	H	D	Article-No.
800	1775 mm	1090 mm	1386008
1000	2110 mm	1090 mm	1386010
1500	2190 mm	1300 mm	1386015

"Hydrocor HS" Solar buffer storage cylinder

Solar buffer storage cylinder for storage of heating water with internal tube heat exchanger

Storage cylinder without insulation

Type

Type	H	D	Article-No.
500	1720 mm	650 mm	1385105

Insulations for item no. 1385105

Energy efficiency class:

Energy efficiency class	H	D	Article-No.
A	2070 mm	980 mm	1387606
C	1820 mm	950 mm	1387106

Storage cylinder with insulation (corresponds to energy efficiency class C)

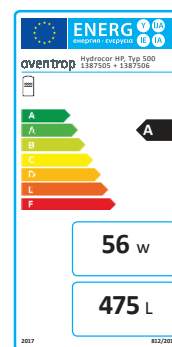
Type

Type	H	D	Article-No.
800	1830 mm	1090 mm	1385107
1000	2110 mm	1090 mm	1385110



Buffer storage cylinder for the connection of different heat generators (e.g. solar, solid fuel, heat pump or classic boilers).

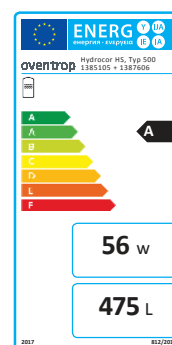
Suitable for the following stations:
"Regusol X", "Regumaq X-30/XZ-30/XH/X-80" and "Regudis".
Heat transmission from the solar collectors to the buffer storage cylinder and from the buffer storage cylinder to the potable water is carried out externally via the above stations.
Max. operating pressure p_s : 3 bar
Max. operating temperature t_s : 95 °C





Energy efficiency label is only valid for item no. 1387505 with 1387506.

Solar buffer storage cylinder for the connection of different heat generators (e.g. solar, solid fuel, heat pump or classic boilers).

Suitable for the following stations:
"Regusol", "Regusol E",
"Regumaq X-30/XZ-30/XH/X-80".
Heat transmission from the solar collectors to the solar buffer storage cylinder via a tube heat exchanger located inside the storage cylinder. The potable water is heated externally via the stations "Regumaq X-30/XZ-30".
Max. operating pressure p_s : 3 bar, (coil 10 bar)
Max. operating temperature t_s : 95 °C, (coil 110 °C)



Energy efficiency class label is only valid for item no. 1385105 with 1387606.

Article	H	D	Article-No.	Hint	
	"Hydrocor WB" Bivalent potable water storage cylinder with internal heat exchanger for solar heating and after-heating			Potable water storage cylinder for the connection of different heat generators (e.g. solar, heat pump or classic boilers). Suitable for the following stations: "Regusol", "Regusol E". Solar potable water storage cylinder with two internal tube heat exchangers. Heat transmission from the solar collectors to the potable water storage cylinder via a tube heat exchanger located inside the storage cylinder. A boiler for after-heating can for instance be connected to the upper tube heat exchanger. Max. operating pressure p_s solar return/solar supply/heating return/heating supply: 10 bar Max. operating temperature t_s solar return/solar supply/heating return/heating supply: 110/95 °C	
	Type				
	Energy efficiency class B				
	300	1900 mm	650 mm		1387303
	"Hydrocor WM" Monovalent potable water storage cylinder with internal tube heat exchanger			Thermal insulation made of polyurethane rigid foam (PUR). Max. operating pressure: Storage cylinder: 10 bar Heat exchanger: 16 bar Max. operating temperature: 95 °C With lateral connections.	
	Type 120				1395010
	Energy efficiency class B				
	Type 160				1395011*
	Energy efficiency class B				
	Type 200				1395012*
Energy efficiency class B					

Technical data:
Buffer storage cylinder "Hydrocor HP"

Type			500	800	1000	1500	Energy efficiency class A
H	Total height	mm	1820	1830	2110	2190	500
D	Diameter (without insulation)	mm	650	790	790	1000	2070
	Diameter (with insulation)	mm	950	1090	1090	1300	650
	Nominal content	l	475	739	895	1331	980
	Volume in stand-by motion	l	183	270	325	470	475
	Max. pivot height (without insulation)	mm	1770	1810	2100	2135	183
	Thickness of storage cylinder insulation (fibre fleece)	mm	150	160	160	160	1770
	Permissible operating pressure	bar	3	3	3	3	160**
	Permissible operating temperature	°C	95	95	95	95	3
	Weight (including insulation)	kg	approx. 110	approx. 122	approx. 134	approx. 206	95
							approx. 110

Solar buffer storage cylinder "Hydrocor-HS"

Type			500	800	1000	500
H	Total height	mm	1820	1830	2110	2070
D	Diameter (without insulation)	mm	650	790	790	650
	Diameter (with insulation)	mm	950	1090	1090	980
	Nominal content	l	475	739	895	475
	Volume in stand-by motion	l	183	270	325	183
	Content solar heating coil	l	15.9	20	22.9	15.9
	Max. pivot height (without insulation)	mm	1770	1810	2100	1770
	Thickness of storage cylinder insulation (fibre fleece)	mm	150	160	160	160**
	Permissible operating pressure	bar	3	3	3	3
	Permissible operating pressure (coil)	bar	10	10	10	10
	Permissible operating temperature	°C	95	95	95	95
	Permissible operating temperature (coil)	°C	110	110	110	110
	Solar heating coil	m ²	2.4	3.1	3.4	2.4
	Weight (including insulation)	kg	approx. 128	approx. 166	approx. 186	approx. 130






Bivalent solar storage cylinder "Hydrocor-WB"

Type			300
H	Total height	mm	1900
	Diameter (without insulation)	mm	500
D	Diameter (with insulation)	mm	650
	Nominal content	l	301
	Volume in stand-by motion	l	132
	Content solar heating coil	l	9.5
	Content heating coil	l	5.8
	Max. pivot height	mm	1800
	Thickness of storage cylinder insulation (polyurethane rigid foam)*	mm	75
	Permissible operating temperature potable water	°C	95
	Permissible operating temperature (solar return/solar supply/heating return/heating supply)	°C	110
	Permissible operating pressure potable water	bar	10
	Permissible operating pressure (solar return/solar supply/heating return/heating supply)	bar	10
	Solar heating coil (solar return/solar supply)	m ²	1.55
	Heating coil (heating return/heating supply)	m ²	0.8
	Weight (including insulation)	kg	approx. 120

* Insulation (polyurethane rigid foam) cannot be removed.

** Compound insulation

For further information see "Technical information".

Article	Article-No.	Hint
Accessories		
	Insulation cap for G 1½ connection sleeves	1389001 Insulation cap made of expanded polypropylene for buffer and solar buffer storage cylinders. For thermal insulation of unused connections.
	Controlled immersion heater	1383594 Controlled immersion heater for direct heating and warming up of the heating water in hot water storage cylinders, for instance in the energy storage centres "Regucor". Capacity (P): 9 kW U _{required} : 400 V Consisting of immersion heater with controller/limiter combination. 25 °C - 70 °C
	Retaining and fixing set for "Regumaq X/XZ-30"	1389090° For fixing a fresh water station "Regumaq X/XZ-30" to a buffer storage cylinder "Hydrocor HP/HS".
	Storage cylinder connection set for "Regumaq X/XZ-30"	1381185° For the hydronic connection of a fresh water station "Regumaq X/XZ-30" fixed at a buffer storage cylinder "Hydrocor - HP/HS". Suitable buffer storage cylinders "Hydrocor HP/HS": page 602
	Extension for electrical immersion heater	1383592 Extension for passing the electrical immersion heater through the insulation.

3.4.a "Copipe", "Copex" and "Copert" pipes



Content	611
"Copipe HSC" Composition pipe	612
"Copipe HS" Composition pipe	614
"Copex PE-Xc" Plastic pipe	616
"Copert" PE-RT Plastic pipe	617

3.4.b "Cofit P" Press connection technology (bronze)



Content	619
"Cofit P" Press fittings	620
"Cofit P" Press elbows	622
"Cofit P" Press T-pieces	623
"Cofit P" Press fittings	624
"Cofit P" Wall mounted connection pieces with press connection	626

3.4.c "Cofit PD" Press connection technology (bronze, pressing must be carried out to tighten the connection)



Content	629
"Cofit PD" Press fittings	630
"Cofit PD" Press elbows	632
"Cofit PD" Press T-pieces	633
"Cofit PD" Press fittings	634
"Cofit PD" Wall mounted connection pieces with press connection	635

3.4.d "Cofit PDK" Press connection technology (plastic, pressing must be carried out to tighten the connection)



Content	637
"Cofit PDK" Press fittings	638

3.4.e "Cofit S" Screwed connection technology



Content	639
"Cofit S" Compression fittings	640
"Cofit S" Compression fittings, female thread	640
"Cofit S" Nipples	640
"Cofit S" Connection pieces	640
"Cofit S" Screwed fittings	641
"Cofit S" Wall mounted connection pieces	643
"Cofit S" Brackets with wall mounted connection pieces	643

3.4.f Fixing material and accessories for pipes



Content	645
Fixing material	646
Accessories	646

	Page
--	------

3.4.g Tools



Content	647
Tools	648
Press tools	652
Accessories	653

3.4.h "Copex HT" PE-Xc Plastic pipe



Content	655
"Copex HT" PE-Xc Plastic pipe	656

3.4.i "Cofit PD-HT" Press connection system



Content	657
"Cofit PD-HT" Press fittings made of bronze	658
"Cofit PD-HT" Press fittings made of bronze	659
"Cofit PDK-HT" Press fittings made of plastic (PPSU)	660
"Cofit S-HT" Compression fittings	660
Tools	661

Pipe summary		Application		Approval	Fitting summary					
		Surface heating and cooling systems	Central heating systems		"Cofit P" Bronze	"Cofit PD" Bronze	"Cofit PDK" Plastic	"Cofit S" Brass + bronze	"Cofit PD-HT" Brass + bronze	"Cofit PDK-HT" Plastic
"Copex" PE-Xc plastic pipes with oxygen barrier	14 x 2 mm	X			X only press coupling			X		
	16 x 2 mm	X			X	X	X	X		
	17 x 2 mm	X			X only press coupling			X		
	20 x 2 mm	X			X only press coupling			X		
	20 x 2.5 mm	X	X		X	X	X	X		
	26 x 3 mm	X			X	X		X		
"Copert" PE-RT plastic pipes with oxygen barrier	12 x 2 mm	X								
	14 x 2 mm	X			X only press coupling			X		
	16 x 2 mm	X			X	X	X	X		
	17 x 2 mm	X			X only press coupling			X		
"Copepe HSC" PE-RT/AL/PE-RT composition pipes H: Heating systems S: Sanitary installations C: Cooling systems	20 x 2 mm	X			X			X		
	16 x 2 mm	X	X	DVGW				X		
	20 x 2.5 mm	X	X	DVGW	X	X	X	X		
	26 x 3.0 mm	X	X	DVGW	X	X		X		
	32 x 3.0 mm	X	X	DVGW	X			X		
	40 x 3.5 mm	X	X	DVGW	X					
	50 x 4.5 mm	X	X	DVGW	X					
	63 x 6.0 mm	X	X	DVGW	X					
"Copepe HS" PE-Xc/AL/PE-RT composition pipes H: Heating systems S: Sanitary installations	14 x 2.0 mm	X	X	DVGW				X		
	16 x 2.0 mm	X	X	DVGW	X	X	X	X		
	18 x 2.0 mm	X	X	DVGW				X		
	20 x 2.5 mm	X	X	DVGW	X	X	X	X		
	26 x 3.0 mm	X	X	DVGW	X	X	X	X		
	32 x 3.0 mm	X	X	DVGW	X			X		
	40 x 3.5 mm	X	X	DVGW	X					
"Copex HT" PE-Xc plastic pipes with oxygen barrier T: thick walled	16 x 2.2 mm	X							X	X
	20 x 2.8 mm	X							X	X
	25 x 3.5 mm	X							X	
	32 x 4.4 mm	X							X	

Fittings: Additional letters:

P: Press connection

PD: Press connection / Drop (designed not to seal in an uncompressed condition)

PDK: Press connection / Drop (designed not to seal in an uncompressed condition) / Plastic

HT: High temperature

S: Screwed connection






3.4.a "Copipe", "Copex" and "Copert" pipes



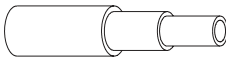

Content

"Copipe HSC" Composition pipe	612
"Copipe HS" Composition pipe	614
"Copex PE-Xc" Plastic pipe	616
"Copert" PE-RT Plastic pipe	617

Article	Packing unit	Article-No.	Hint
"Copipe HSC" Composition pipe PE-RT/AL/PE-RT white			Application: Central heating systems with circulation pump, surface heating and cooling systems as well as sanitary installations. DVGW tested (dimension 14 x 2.0 mm). DVGW approved (dimension 16 x 2.0 mm and above). DVGW reg.-no. DW-8501AT2407. Max. operating pressure p _s : 6 bar at 90 °C p _s : 10 bar at 70 °C Diffusion tight three-layered composition pipe - inner layer made of PE-RT - aluminium pipe welded end to end - outer coating made of PE-RT bonded by adhesive layers. The pipework has to be insulated according to the valid laws, decrees, standards and guidelines. Suitable insulation material to be obtained from specialist stores.
for press connection technology "Cofit P/PD/PDK" and screwed connection technology "Cofit S"			
rolls			
Dimension 14 x 2 mm			
length per roll 50 m	(50)	1541054	
length per roll 100 m	(100)	1540154	
length per roll 200 m	(200)	1540254	
Dimension 16 x 2 mm			
length per roll 50 m	(50)	1541055	
length per roll 100 m	(100)	1540155	
length per roll 200 m	(200)	1540255	
length per roll 500 m	(500)	1540555	
Dimension 20 x 2.5 mm			
length per roll 50 m	(50)	1541060	
length per roll 100 m	(100)	1540160	
length per roll 200 m	(200)	1540260	
Dimension 26 x 3.0 mm			
length per roll 50 m	(50)	1541066	
Dimension 32 x 3.0 mm			
length per roll 50 m	(50)	1541072	
with 4 mm insulation length per roll 50 m			
Dimension 16 x 2.0 mm		1541155°	
Dimension 20 x 2.5 mm		1541160°	
with 6 mm insulation length per roll 50 m			
Dimension 16 x 2.0 mm		1541355°	
Dimension 20 x 2.5 mm	(50)	1541360°	
with 9 mm insulation length per roll 50 m			
Dimension 16 x 2.0 mm		1541455°	
Dimension 20 x 2.5 mm	(50)	1541460°	

Article	Packing unit	Article-No.	Hint
	within protective tube (corrugated tube) length per roll 50 m		The black corrugated tube made of polyethylene offers an additional protection against damage and UV rays.
	Dimension 14 x 2.0 mm	(50) 1541254°	
	Dimension 16 x 2.0 mm	(50) 1541255°	
	Dimension 20 x 2.5 mm	(50) 1541260°	
	rods length: 5 m		<p>Fire protection:</p> <p>Tested fire protection systems of the Fire Resistance Regulations Class R90 for "Copipe HSC" composition pipes are available from specialist stores:</p> <ul style="list-style-type: none"> – Fire protection tape Curaflam of the company Doyma – Pipe coating Conlit 150 u and continuing insulation shell Rockwool 800 <p>Awards:</p>  Pragothem Prague
	Dimension 16 x 2.0 mm	(5) 1541555°	
	12 lengths		
	Dimension 20 x 2.5 mm	(5) 1541560°	
	10 lengths		
	Dimension 26 x 3.0 mm	(5) 1541566°	
	9 lengths		
	Dimension 32 x 3.0 mm	(5) 1541572°	
	6 lengths		
	Dimension 40 x 3.5 mm	(5) 1541584°	
	4 lengths		
	Dimension 50 x 4.5 mm	(5) 1541582°	
	4 lengths		
	Dimension 63 x 6.0 mm	(5) 1541585°	
	3 lengths		

Article	Packing unit	Article-No.	Hint
"Copipe HS" Composition pipe PE-Xc/AL/PE-Xb white			Application: Central heating systems with circulation pump, surface heating and cooling systems as well as sanitary installations. Max. operating pressure p _s : 10 bar at 95 °C 16 bar (PN 16) for cold water
for press connection technology "Cofit P/PD/PDK" and screwed connection technology "Cofit S"			
rolls			DVGW reg. no. DW-8501AT2407
Dimension 14 x 2.0 mm			Diffusion tight three-layered composition pipe – inner layer made of crosslinked polyethylene – aluminium pipe welded end to end – outer layer made of crosslinked polyethylene bonded by special layers.
length per roll 50 m	(50)	1501054°	
length per roll 100 m	(100)	1500154°	
length per roll 200 m	(200)	1500254°	
Dimension 16 x 2.0 mm			The pipework has to be insulated according to the valid laws, decrees, standards and regulations.
length per roll 50 m	(50)	1501055°	Suitable insulation material available from specialist stores.
length per roll 100 m	(100)	1500155°	
length per roll 200 m	(200)	1500255°	
length per roll 500 m	(500)	1500555°	
Dimension 18 x 2.0 mm			
length per roll 100 m	(100)	1500158°	
Dimension 20 x 2.5 mm			
length per roll 50 m	(50)	1501060°	
length per roll 100 m	(100)	1500160°	
Dimension 26 x 3.0 mm			
length per roll 50 m	(50)	1501066°	
Dimension 32 x 3.0 mm			
length per roll 50 m	(50)	1501072°	
with 4 mm insulation length per roll 50 m			Pipe with 4 mm insulation layer for the installation of cold water pipes according to DIN 1988.
Dimension 16 x 2.0 mm	(50)	1501155°	
Dimension 20 x 2.5 mm	(50)	1501160°	
with 6 mm insulation length per roll 50 m			Pipe with 6 mm insulation layer for the installation of cold water pipes according to DIN 1988.
Dimension 16 x 2.0 mm	(50)	1501355°	
Dimension 20 x 2.5 mm	(50)	1501360°	

Article	Packing unit	Article-No.	Hint
	with 9 mm insulation length per roll 50 m		Pipe with 9 mm insulation layer for insulation requirements according to the German Energy Saving Directive (EnEV) and DIN 1988.
	Dimension 16 x 2.0 mm (50) Dimension 20 x 2.5 mm (50)	1501455° 1501460°	
	within protective tube (corrugated tube) length per roll 50 m		The black corrugated tube made of polyethylene offers an additional protection against damage and UV rays.
	Dimension 14 x 2,0 mm (50) Dimension 16 x 2.0 mm (50) Dimension 20 x 2.5 mm (50)	1501254° 1501255° 1501260°	
	rods length: 5 m		Fire protection: Tested fire protection systems of the Fire Resistance Regulations Class R90 for "Copipe HS" composition pipes are available from specialist stores: - Fire protection tape Curaflam of the company Doyma - Pipe coating Conlit 150 and continuing insulation shell Rockwool 800
	Dimension 16 x 2.0 mm 20 lengths dimension 20 x 2.5 mm 13 lengths Dimension 26 x 3.0 mm 7 lengths Dimension 32 x 3.0 mm 5 lengths Dimension 40 x 3.5 mm 9 lengths	(5) 1501555° (5) 1501560° (5) 1501566° (5) 1501572° (5) 1501580°	
			Awards:  Pragotharm Prague

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Copex PE-Xc" Plastic pipe
with oxygen barrier

for press connection technology "Cofit P/PD/PDK" and
screwed connection technology "Cofit S"

rolls

Application:

**Central heating systems, surface heating
and cooling systems.**

Pipes according to DIN 16892 / DIN 16893 /
DIN EN ISO 15 875 / EN 1264-4 (except for
dimensions 26 and 32). Oxygen tight according
to DIN 4726 (all dimensions).



Dimension 14 x 2 mm

length per roll 120 m
length per roll 240 m
length per roll 600 m

(120) **1400051**
(240) **1400052**
(600) **1400054**

Max. operating pressure p_s :
6 bar at 90 °C
10 bar at 60 °C



Dimension 16 x 2 mm

length per roll 120 m
length per roll 240 m
length per roll 600 m

(120) **1400151**
(240) **1400152**
(600) **1400154**

Max. operating pressure p_s :
6 bar at 90 °C
10 bar at 60 °C



Dimension 20 x 2.5 mm

length per roll 50 m
length per roll 100 m

(50) **1400460**
(100) **1400461**

Max. operating pressure p_s :
8 bar at 90 °C
10 bar at 60 °C
13 bar at 20 °C



Dimension 26 x 3 mm

length per roll 50 m
length per roll 200 m
length per roll 300 m

(50) **1400560**
(200) **1400562**
(300) **1400563**

Max. operating pressure p_s :
6 bar at 90 °C
10 bar at 60 °C



Dimension 32 x 3 mm

length per roll 50 m

(50) **1400660**

Max. operating pressure p_s :
6 bar at 90 °C
8 bar at 60 °C
10 bar at 20 °C

Article	Packing unit	Article-No.	Hint
---------	-----------------	-------------	------

"Copert" PE-RT Plastic pipe
with oxygen barrier

for press connection technology "Cofit P/PD/PDK" and
screwed connection technology "Cofit S"

rolls

Application:

Surface heating and cooling systems.

Pipes according to DIN 16833/DIN 16834.
Oxygen tight according to DIN 4726.

Max. operating pressure p_s : 6 bar at 70 °C



Dimension 14 x 2 mm

length per roll 240 m
length per roll 600 m

(240) **1402052**
(600) **1402054**



Dimension 16 x 2 mm

length per roll 240 m
length per roll 600 m





(240) **1402152**
(600) **1402154**



3.4.b "Cofit P" Press connection technology (bronze)

Content

"Cofit P" Press fittings	620
"Cofit P" Press elbows	622
"Cofit P" Press T-pieces	623
"Cofit P" Press fittings	624
"Cofit P" Wall mounted connection pieces with press connection	626

Article	Packing unit	Article-No.	Hint
"Cofit P" Press fittings bronze, dimensions 40, 50 and 63 mm made of brass, stainless steel casing, for composition pipe "Copipe"			Universal application for heating and cooling systems and sanitary installations. Approvals: DVGW for all dimensions. ATEC, CSTBat and ÖNORM up to dimension 40. For valves and fittings with female thread.
Press connection with male thread unplated			
	16	x 2.0 mm x R 3/8	(10) 1512044°
	50	x 4.5 mm x R 1 1/2	1512056°
	63	x 6.0 mm x R 2	1512057°
	16	x 2.0 mm x R 1/2	(10) 1512043°
	20	x 2.5 mm x R 3/8	(10) 1512047°
	20	x 2.5 mm x R 1/2	(10) 1512045°
	20	x 2.5 mm x R 3/4	(10) 1512046°
	26	x 3.0 mm x R 3/4	(5) 1512048°
	26	x 3.0 mm x R 1	(5) 1512049°
	32	x 3.0 mm x R 1	(5) 1512051°
	40	x 3.5 mm x R 1 1/4	(5) 1512054°
Press connection with collar nut unplated			With flat seal. For instance for flat sealing Oventrop valves and fittings.
	16	x 2.0 mm x G 3/8 c/nut	(10) 1512141°
	16	x 2.0 mm x G 3/4 c/nut	(10) 1512143°
	20	x 2.5 mm x G 1/2 c/nut	(10) 1512144°
	20	x 2.5 mm x G 3/4 c/nut	(10) 1512145°
	26	x 3.0 mm x G 3/4 c/nut	(5) 1512146°
	26	x 3.0 mm x G 1 c/nut	(5) 1512147°
	32	x 3.0 mm x G 1 c/nut	(5) 1512148°
	32	x 3.0 mm x G 1 1/4 c/nut	(5) 1512149°
	40	x 3.5 mm x G 1 1/2 c/nut	(5) 1512151°
	50	x 4.5 mm x G 1 3/4 c/nut	1512156°
Press connection with female thread			For changing over to different pipe material and for valves and fittings with male threaded connection for sealing.
	16	x 2.0 mm x Rp 1/2	(10) 1512243°
	20	x 2.5 mm x Rp 1/2	(10) 1512245°
	20	x 2.5 mm x Rp 3/4	(10) 1512246°
	26	x 3.0 mm x Rp 3/4	(5) 1512247°
	26	x 3.0 mm x Rp 1	(5) 1512248°
	32	x 3.0 mm x Rp 1	(5) 1512249°
	40	x 3.5 mm x Rp 1 1/4	(5) 1512252°
	50	x 4.5 mm x Rp 1 1/2	1512256°
Press coupling			
	16 x 2 mm	x 16 x 2 mm	(10) 1512543
	20 x 2.5 mm	x 20 x 2.5 mm	(10) 1512545
	26 x 3 mm	x 26 x 3 mm	(5) 1512546
	32 x 3 mm	x 32 x 3 mm	(5) 1512547
	40 x 3.5 mm	x 40 x 3.5 mm	(5) 1512548°
	50 x 4.5 mm	x 50 x 4.5 mm	1512549°
	63 x 6 mm	x 63 x 6 mm	1512550°

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Press reducing coupling









20	x 16 mm	(10)	1512655°
50	x 40 mm		1512665°
63	x 40 mm		1512668°
63	x 50 mm		1512669°
26	x 16 mm	(5)	1512656°
26	x 20 mm	(5)	1512657°
32	x 20 mm	(5)	1512659°
32	x 26 mm	(5)	1512660°
40	x 20 mm	(5)	1512662°
40	x 26 mm	(5)	1512663°
40	x 32 mm	(5)	1512664°
50	x 32 mm		1512666°

Press connection coupling



16	x 2.0 mm	x 10 mm	(10)	1514041°
16	x 2.0 mm	x 12 mm	(10)	1514042°
16	x 2.0 mm	x 14 mm	(10)	1514040°
16	x 2.0 mm	x 15 mm	(10)	1514043°
16	x 2.0 mm	x 16 mm	(10)	1514044°
20	x 2.5 mm	x 15 mm	(10)	1514054°
20	x 2.5 mm	x 16 mm	(10)	1514055°
20	x 2.5 mm	x 18 mm	(10)	1514045°
20	x 2.5 mm	x 22 mm	(10)	1514046°
26	x 3.0 mm	x 22 mm	(5)	1514047°









For changing over from copper press systems and stainless steel press systems to composition pipe "Copipe".
Not suitable for solder connection.

Article	Packing unit	Article-No.	Hint
"Cofit P" Press elbows bronze, dimensions 40, 50 and 63 mm made of brass, stainless steel casing, for composition pipe "Copipe"			Universal application for heating and cooling systems and sanitary installations. Approvals: DVGW for all dimensions. ATEC, CSTBat and ÖNORM up to dimension 40. Male thread for sealing according to EN 10226.
Press connection elbow with male thread			
	16	x 2.0 mm	x R 3/8 (10) 1512344°
	16	x 2.0 mm	x R 1/2 (10) 1512343°
	20	x 2.5 mm	x R 3/8 (10) 1512358°
	20	x 2.5 mm	x R 1/2 (10) 1512345°
	20	x 2.5 mm	x R 3/4 (10) 1512346°
	26	x 3.0 mm	x R 3/4 (5) 1512347°
	26	x 3.0 mm	x R 1 (5) 1512357°
	32	x 3.0 mm	x R 1 (5) 1512348°
	40	x 3.5 mm	x R 1 1/4 (5) 1512349°
Press connection elbow with female thread			
	16	x 2.0 mm	x Rp 1/2 (10) 1512443°
	20	x 2.5 mm	x Rp 1/2 (10) 1512445°
	20	x 2.5 mm	x Rp 3/4 (10) 1512446°
	26	x 3.0 mm	x Rp 3/4 (5) 1512447°
	26	x 3.0 mm	x Rp 1 (5) 1512448°
	32	x 3.0 mm	x Rp 1 (5) 1512449°
Press angle pattern fitting with female thread			
	20	x 2.5 mm	x Rp 3/4 (5) 1512745°
	26	x 3.0 mm	x Rp 1 (5) 1512747°
Press connection elbow with collar nut			
	16	x 2.0 mm	x G 3/8 (10) 1512751°
	16	x 2.0 mm	x G 1/2 (10) 1512752°
	16	x 2.0 mm	x G 3/4 (10) 1512753°
	20	x 2.5 mm	x G 3/4 (10) 1512755°
	26	x 3.0 mm	x G 3/4 (5) 1512757°
Press elbow 90°			
	16	x 16 mm	(10) 1512843°
	20	x 20 mm	(10) 1512845°
	26	x 26 mm	(5) 1512847°
	32	x 32 mm	(5) 1512849°
	40	x 40 mm	(5) 1512851°
	50	x 50 mm	1512852°
	63	x 63 mm	1512853°
Press elbow 45°			
	32	x 32 mm	(5) 1512949°
	40	x 40 mm	(5) 1512951°
	50	x 50 mm	1512952°
	63	x 63 mm	1512953°

Female thread for sealing according to DIN EN 10226.

For instance for the connection of the composition pipe "Copipe" to hot water storage cylinders.

With flat seal.
For instance for flat sealing Oventrop valves and fittings.

Article	Packing unit	Article-No.	Hint
"Cofit P" Press T-pieces bronze, dimensions 40, 50 and 63 mm made of brass, stainless steel casing, for composition pipe "Copipe"			Universal application for heating and cooling systems and sanitary installations. Approvals: DVGW for all dimensions. ATEC, CSTBat and ÖNORM up to dimension 40.
Press T-piece			
	16	x 16 x 16 mm	(10) 1513043°
	20	x 20 x 20 mm	(10) 1513045°
	26	x 26 x 26 mm	(5) 1513046°
	32	x 32 x 32 mm	(5) 1513047°
	40	x 40 x 40 mm	(5) 1513048°
	50	x 50 x 50 mm	1513049°
	63	x 63 x 63 mm	1513050°
Press T-piece, reduced central port			
	20	x 16 x 20 mm	(10) 1513155°
	26	x 16 x 26 mm	(5) 1513156°
	26	x 20 x 26 mm	(5) 1513157°
	32	x 16 x 32 mm	(5) 1513158°
	32	x 20 x 32 mm	(5) 1513159°
	32	x 26 x 32 mm	(5) 1513160°
	40	x 20 x 40 mm	(5) 1513162°
	40	x 26 x 40 mm	(5) 1513163°
	40	x 32 x 40 mm	(5) 1513164°
	50	x 40 x 50 mm	1513165°
	63	x 40 x 63 mm	1513167°
Press T-piece, reduced straight port			
	20	x 20 x 16 mm	(10) 1513255°
	26	x 26 x 20 mm	(5) 1513257°
Press T-piece, reduced central and straight port			
	20	x 16 x 16 mm	(10) 1513354°
	26	x 16 x 20 mm	(5) 1513356°
	26	x 20 x 20 mm	(5) 1513358°
	32	x 20 x 26 mm	(5) 1513361°
	40	x 26 x 32 mm	(5) 1513365°
Press T-piece, enlarged central port			
	16	x 20 x 16 mm	(10) 1513454°
	20	x 26 x 20 mm	(5) 1513457°
	26	x 32 x 26 mm	(5) 1513460°
Press connection T-piece with female thread			
	16	x Rp 1/2 x 16 mm	(10) 1513643°
	20	x Rp 1/2 x 20 mm	(10) 1513645°
	26	x Rp 1/2 x 26 mm	(5) 1513647°
	26	x Rp 3/4 x 26 mm	(5) 1513648°
	32	x Rp 1/2 x 32 mm	(5) 1513649°
	32	x Rp 1 x 32 mm	(5) 1513651°
	40	x Rp 1/2 x 40 mm	(5) 1513652°
	40	x Rp 1 x 40 mm	(5) 1513655°
	50	x Rp 1 x 50 mm	1513656°
	63	x Rp 1 x 63 mm	1513658°
			Female thread for sealing according to DIN EN 10226.

50 mm made of brass.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Cofit P" Press fittings

stainless steel casing,
for composition pipe "Copipe"



Press connection with male thread

bronze, nickel plated

16	x 2.0 mm x R 3/8	(10)	1512062°
16	x 2.0 mm x R 1/2	(10)	1512063°
20	x 2.5 mm x R 1/2	(10)	1512065°

Application:

Central heating systems with circulation pump and cooling systems.

Max. pressure and temperature:
10 bar, 95 °C.

For valves and radiator lockshield valves "Combi 2, 3 and 4" as well as nickel plated valves and fittings of other manufacturers with Rp 1/2 female thread.

Press connection with collar nut

bronze, nickel plated



16	x 2.0 mm x G 3/4 c/nut	(10)	1512163°
20	x 2.5 mm x G 3/4 c/nut	(10)	1512165°

With spherical sealing surface.

Metal to metal seal against tapered surface, for instance for Oventrop distributors/collectors as well as valves and controls with G 3/4 compression connection.

brass resistant to dezincification, nickel plated



16	x 2.0 mm x G 3/8 c/nut	(10)	1512171°
16	x 2.0 mm x G 1/2 c/nut	(10)	1512172°

With flat seal.

For instance for flat sealing Oventrop valves and fittings.

Cross fitting with press connection

brass, unplated



16	x 16 mm x 16 mm		1514653°
20	x 16 mm x 16 mm		1514654°
20	x 16 mm x 20 mm		1514655°

With insulation box.

Pressure test plug with deaeration

brass

Set = 10 pieces, for composition pipe "Copipe"



16	x 2.0 mm	(10)	1506085
20	x 2.5 mm	(10)	1506087
26	x 3.0 mm	(10)	1506088
32	x 3.0 mm	(10)	1506089

Max. pressure 20 bar.

Radiator connection block

with composition pipe "Copipe" 16 x 2.0 mm
insulation made of expanded polystyrene






(10) **1015645°**










For simple radiator connection.


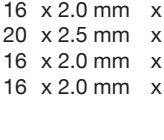
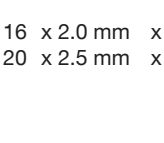
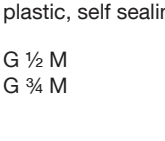

"Multimodul" Radiator connection



1015651

Article	Packing unit	Article-No.	Hint
	Radiator connection T-piece nickel plated, pipe made of copper, fitting made of brass for composition pipe "Copipe"		Height = 300 mm. Copper pipe: Ø 15 x 1.0 mm, Suitable compression fittings for instance item no. 1027443. Valid for item no. 1515143, 1515146 and 1515243.
16	x 2.0 mm	(10) 1515143°	Height: 750 mm
20	x 2.5 mm	(10) 1515146°	
16	x 2.0 mm	(10) 1515144°	
	Radiator connection elbow nickel plated, pipe made of copper, fitting made of brass for composition pipe "Copipe"		Height: 750 mm
16	x 2.0 mm	(10) 1515243	
16	x 2.0 mm	(10) 1515244°	
	Fixing set for radiator connection elbow		(10) 1515290°





Article	Packing unit	Article-No.	Hint
"Cofit P" Wall mounted connection pieces with press connection bronze, stainless steel casing, for composition pipe "Copipe"			Approvals: DVGW for all dimensions. ATEC, CSTBat and ÖNORM up to dimension 40. For the connection of apparatus, valves and fittings. Fixing and insulating material available from specialist stores.
Wall mounted connection piece with press connection, 90°, short model			
	16 x 2.0 mm x Rp 1/2	(10) 1517053°	
	20 x 2.5 mm x Rp 1/2	(10) 1517055°	
	20 x 2.5 mm x Rp 3/4	(10) 1517056°	
Wall mounted connection piece with press connection, 90°, long model			
	16 x 2.0 mm x Rp 1/2	(10) 1517043°	
	20 x 2.5 mm x Rp 1/2	(10) 1517045°	
Sound absorbing set			
		(10) 1518074°	
	Sound absorbing set	(10) 1518070°	For wall mounted connection pieces item no. 1517053/55/56 and 1537053/55/56. For wall mounted connection pieces item no. 1517043/45 and 1537043/45.
Wall mounted connection piece with press connection, angle pattern			
	16 x 16 mm x Rp 1/2	(10) 1517143°	
	20 x 20 mm x Rp 1/2	(10) 1517145°	
Wall mounted connection piece with press connection, straight pattern			
	16 x 16 mm x Rp 1/2	(10) 1517243°	For long model.
	20 x 20 mm x Rp 1/2	(10) 1517245°	
	16 x 16 mm x Rp 1/2	(10) 1517253°	For short model.
	20 x 20 mm x Rp 1/2	(10) 1517255°	
Wall traverse with press connection, 90° with fixing set G 3/4			
	16 x 2.0 mm x Rp 1/2	(10) 1517343°	
	20 x 2.5 mm x Rp 1/2	(10) 1517345°	
Flush-mounted elbow for cisterns with press connection with fixing set G 3/4			
	16 x 2.0 mm x Rp 1/2	(10) 1517443°	
Press connection with female thread with locking device			For flush mounting, for instance for outdoor taps.
	16 x 2.0 mm x Rp 1/2	(10) 1517643°	
	20 x 2.5 mm x Rp 1/2	(10) 1517645°	

Article	Packing unit	Article-No.	Hint
			
Brackets with wall mounted connection pieces, short model and sound insulation			
Wall mounted connection piece		Gauge for bore holes	
16 x 2.0 mm x Rp ½	153 mm	(5) 1518183°	With flat bracket.
16 x 2.0 mm x Rp ½	80 mm	(5) 1518184°	
16 x 2.0 mm x Rp ½	100 mm	(5) 1518185°	
			
16 x 2.0 mm x Rp ½	153 mm	(5) 1518186°	With cranked bracket.
20 x 2.5 mm x Rp ½	153 mm	(5) 1518187°	
16 x 2.0 mm x Rp ½	80 mm	(5) 1518188°	
16 x 2.0 mm x Rp ½	100 mm	(5) 1518189°	
			
with wall mounted connection pieces, long model with sound insulation			
16 x 2.0 mm x Rp ½	80 mm	(5) 1518198°	With cranked bracket.
16 x 2.0 mm x Rp ½	100 mm	(5) 1518199°	
			
16 x 2.0 mm x Rp ½	153 mm	(5) 1518196°	
20 x 2.5 mm x Rp ½	153 mm	(5) 1518197°	
			
Pressure test plug plastic, self sealing			
G ½ M	(50)	1506092°	
G ¾ M	(50)	1506093°	

3.4.c "Cofit PD" Press connection technology (bronze, pressing must be carried out to tighten the connection)



Content	
"Cofit PD" Press fittings	630
"Cofit PD" Press elbows	632
"Cofit PD" Press T-pieces	633
"Cofit PD" Press fittings	634
"Cofit PD" Wall mounted connection pieces with press connection	635

Article	Packing unit	Article-No.	Hint
"Cofit PD" Press fittings designed not to seal in an uncompressed condition, bronze, dimensions 40, 50 and 63 mm made of brass, stainless steel casing, for composition pipe "Copepe"			Universal application for heating and cooling systems and sanitary installations. Approval: DVGW Dimension 26: DVGW in preparation
 Press connection with male thread unplated			For valves with female threaded connection.
16	x 2.0 mm	x R 3/8 (10)	1532044°
50	x 4.5 mm	x R 1 1/2	1532056°
63	x 6.0 mm	x R 2	1532057°
16	x 2.0 mm	x R 1/2 (10)	1532043°
20	x 2.5 mm	x R 3/8 (10)	1532047°
20	x 2.5 mm	x R 1/2 (10)	1532045°
20	x 2.5 mm	x R 3/4 (10)	1532046°
26	x 3.0 mm	x R 3/4 (5)	1532048°
26	x 3.0 mm	x R 1 (5)	1532049°
32	x 3.0 mm	x R 1 (5)	1532051°
40	x 3.5 mm	x R 1 1/4	1532054°
 Press connection with collar nut unplated			With flat seal. For instance for flat sealing Oventrop valves and fittings.
16	x 2.0 mm	x G 3/8 c/nut (10)	1532141°
16	x 2.0 mm	x G 3/4 c/nut (10)	1532143°
20	x 2.5 mm	x G 1/2 c/nut (10)	1532144°
20	x 2.5 mm	x G 3/4 c/nut (10)	1532145°
26	x 3.0 mm	x G 3/4 c/nut	1532146
26	x 3.0 mm	x G 1 c/nut (5)	1532147°
32	x 3.0 mm	x G 1 c/nut	1532148°
32	x 3.0 mm	x G 1 1/4 c/nut (5)	1532149°
40	x 3.5 mm	x G 1 1/2 c/nut	1532151°
50	x 4.5 mm	x G 1 3/4 c/nut	1532156°
63	x 6.0 mm	x G 2 3/8 c/nut	1532157°
 Press connection with female thread			For changing over to different pipe material and for valves and fittings with male threaded connection for sealing.
16	x 2.0 mm	x Rp 1/2 (10)	1532243°
20	x 2.5 mm	x Rp 1/2 (10)	1532245°
20	x 2.5 mm	x Rp 3/4 (10)	1532246°
26	x 3.0 mm	x Rp 3/4 (5)	1532247°
26	x 3.0 mm	x Rp 1 (5)	1532248°
32	x 3.0 mm	x Rp 1 (5)	1532249°
40	x 3.5 mm	x Rp 1 1/4	1532252°
50	x 4.5 mm	x Rp 1 1/2	1532256°
63	x 6.0 mm	x Rp 2	1532257°
 Press coupling			
16	x 2 mm	x 16 x 2 mm (10)	1532543
20	x 2.5 mm	x 20 x 2.5 mm (10)	1532545
26	x 3 mm	x 26 x 3 mm (5)	1532546
32	x 3 mm	x 32 x 3 mm (5)	1532547
40	x 3.5 mm	x 40 x 3.5 mm	1532548°
50	x 4.5 mm	x 50 x 4.5 mm	1532549°
63	x 6 mm	x 63 x 6 mm	1532550°

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------



Press reducing coupling






20	x 16 mm	(10)	1532655°
26	x 16 mm	(5)	1532656°
26	x 20 mm	(5)	1532657°
32	x 20 mm	(5)	1532659°
32	x 26 mm	(5)	1532660°
40	x 20 mm		1532662°
40	x 26 mm		1532663°
40	x 32 mm		1532664°
50	x 40 mm		1532665°
50	x 32 mm		1532666°
63	x 40 mm		1532668°
63	x 50 mm		1532669°









Press connection coupling

16	x 2.0 mm	x 10 mm	(10)	1534041°
26	x 3.0 mm	x 22 mm	(5)	1534047°
16	x 2.0 mm	x 12 mm	(10)	1534042°
16	x 2.0 mm	x 14 mm	(10)	1534040°
16	x 2.0 mm	x 15 mm	(10)	1534043°
16	x 2.0 mm	x 16 mm	(10)	1534044°
20	x 2.5 mm	x 15 mm	(10)	1534054°
20	x 2.5 mm	x 16 mm		1534055°
20	x 2.5 mm	x 18 mm	(10)	1534045°
20	x 2.5 mm	x 22 mm	(10)	1534046°

For changing over from copper press systems and stainless steel press systems to composition pipe "Copepe".
Not suitable for solder connection.

Article	Packing unit	Article-No.	Hint
"Cofit PD" Press elbows designed not to seal in an uncompressed condition, bronze, dimensions 40, 50 and 63 mm made of brass, stainless steel casing, for composition pipe "Copepe"			Universal application for heating and cooling systems and sanitary installations. Approval: DVGW Dimension 26: DVGW in preparation
Press connection elbow with male thread			Male thread for sealing according to EN 10226.
	16	x 2.0 mm x R 3/8 (10)	1532344°
	16	x 2.0 mm x R 1/2 (10)	1532343°
	20	x 2.5 mm x R 3/8 (10)	1532358°
	20	x 2.5 mm x R 1/2 (10)	1532345°
	20	x 2.5 mm x R 3/4 (10)	1532346°
	32	x 3.0 mm x R 1 (5)	1532348°
	26	x 3.0 mm x R 3/4 (5)	1532347°
	26	x 3.0 mm x R 1 (5)	1532357°
Press connection elbow with female thread			Female thread for sealing according to EN 10226.
	16	x 2.0 mm x Rp 1/2 (10)	1532443°
	20	x 2.5 mm x Rp 1/2 (10)	1532445°
	20	x 2.5 mm x Rp 3/4 (10)	1532446°
	26	x 3.0 mm x Rp 3/4 (5)	1532447°
	26	x 3.0 mm x Rp 1 (5)	1532448°
	32	x 3.0 mm x Rp 1 (5)	1532449°
Press angle pattern fitting with female thread			For instance for the connection of the composition pipe "Copepe" to hot water storage cylinders.
	20	x 2.5 mm x Rp 3/4 (5)	1532745°
	26	x 3.0 mm x Rp 1 (5)	1532747°
Press connection elbow with collar nut			With flat seal. For instance for flat sealing Oventrop valves and fittings.
	16	x 2.0 mm x G 3/8 c/nut (10)	1532751°
	16	x 2.0 mm x G 1/2 c/nut (10)	1532752°
	16	x 2.0 mm x G 3/4 c/nut (10)	1532753°
	20	x 2.5 mm x G 3/4 c/nut (10)	1532755°
	26	x 3.0 mm x G 3/4 c/nut (5)	1532757°
Press elbow 90°			
	16	x 16 mm (10)	1532843°
	20	x 20 mm (10)	1532845°
	26	x 26 mm (5)	1532847°
	32	x 32 mm (5)	1532849°
	50	x 50 mm	1532851°
	50	x 50 mm	1532852°
	63	x 63 mm	1532853°
Press elbow 45°			
	32	x 32 mm (5)	1532949°
	40	x 40 mm	1532951°
	50	x 50 mm	1532952°
	63	x 63 mm	1532953°

Article	Packing unit	Article-No.	Hint
"Cofit PD" Press T-pieces designed not to seal in an uncompressed condition, bronze, dimensions 40, 50 and 63 mm made of brass, stainless steel casing, for composition pipe "Copeipe"			Universal application for heating and cooling systems and sanitary installations. Approval: DVGW Dimension 26: DVGW in preparation
Press T-piece			
	16 x 16 x 16 mm	(10) 1533043°	
	20 x 20 x 20 mm	(10) 1533045°	
	26 x 26 x 26 mm	(5) 1533046°	
	32 x 32 x 32 mm	(5) 1533047°	
	40 x 40 x 40 mm	1533048°	
	50 x 50 x 50 mm	1533049°	
	63 x 63 x 63 mm	1533050°	
Press T-piece, reduced central port			
	20 x 16 x 20 mm	(10) 1533155°	
	26 x 16 x 26 mm	(5) 1533156°	
	26 x 20 x 26 mm	(5) 1533157°	
	32 x 16 x 32 mm	(5) 1533158°	
	32 x 20 x 32 mm	(5) 1533159°	
	32 x 26 x 32 mm	(5) 1533160°	
	40 x 20 x 40 mm	1533162°	
	40 x 26 x 40 mm	1533163°	
	40 x 32 x 40 mm	1533164°	
	50 x 40 x 50 mm	1533165°	
	63 x 40 x 63 mm	1533167°	
Press T-piece, reduced straight port			
	20 x 20 x 16 mm	(10) 1533255°	
	26 x 26 x 20 mm	(5) 1533257°	
Press T-piece, reduced central and straight port			
	20 x 16 x 16 mm	(10) 1533354°	
	26 x 16 x 20 mm	(5) 1533356°	
	26 x 20 x 20 mm	(5) 1533358°	
	32 x 20 x 26 mm	(5) 1533361°	
Press T-piece, enlarged central port			
	16 x 20 x 16 mm	(10) 1533454°	
	20 x 26 x 20 mm	(5) 1533457°	
	26 x 32 x 26 mm	(5) 1533460°	
Press connection T-piece with female thread			
	16 x Rp 1/2 x 16 mm	(10) 1533643°	
	20 x Rp 1/2 x 20 mm	(10) 1533645°	
	26 x Rp 1/2 x 26 mm	(5) 1533647°	
	26 x Rp 3/4 x 26 mm	(5) 1533648°	
	32 x Rp 1/2 x 32 mm	(5) 1533649°	
	32 x Rp 1 x 32 mm	(5) 1533651°	
	40 x Rp 1/2 x 40 mm	1533652°	
	40 x Rp 1 x 40 mm	1533655°	
	50 x Rp 1 x 50 mm	1533656°	
	63 x Rp 1 x 63 mm	1533658°	

Female thread for sealing according to DIN EN 10226.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Cofit PD" Press fittings

designed not to seal
in an uncompressed condition,
stainless steel casing,
for composition pipe "Copepe"

Application:
Central heating systems with circulation pump
and cooling systems.

Max. pressure and temperature:
10 bar, 95 °C



Press connection with male thread

brass resistant to dezincification, nickel plated

16	x 2.0 mm	x R 3/8	(10)	1532062°
16	x 2.0 mm	x R 1/2	(10)	1532063°
20	x 2.5 mm	x R 1/2	(10)	1532065°

For valves and radiator lockshield valves
"Combi 2, 3 and 4" as well as nickel plated
valves and fittings with Rp 1/2 female thread
of other manufacturers.



Press connection with collar nut

brass resistant to dezincification, nickel plated

16	x 2.0 mm	x G 3/4 c/nut	(10)	1532163°
20	x 2.5 mm	x G 3/4 c/nut	(10)	1532165°

With spherical sealing surface.
Metal to metal seal against tapered surface,
for instance for Oventrop distributors/
collectors as well as valves and controls
with compression connection G 3/4.



brass resistant to dezincification, nickel plated

16	x 2.0 mm	x G 3/4 c/nut	(10)	1532171°
16	x 2.0 mm	x G 1/2 c/nut	(10)	1532172°
20	x 2.5 mm	x G 1 c/nut	(10)	1532173°

With flat seal.
For instance flat sealing Oventrop valves
and fittings.



Cross fitting with press connection

brass, unplated

16	x 16	x 16 mm		1534653°
20	x 16	x 16 mm		1534654°
20	x 16	x 20 mm		1534655°

With insulation box.

Radiator connection T-piece

nickel plated,
pipe made of copper, fitting made of brass
for composition pipe "Copepe"

16	x 2.0 mm		1535143°
20	x 2.5 mm		1535146°
16	x 2.0 mm		1535144°

Height: 300 mm
Copper pipe: Ø 15 x 1.0 mm
Suitable compression fittings:
e.g. item no. 1027443
Valid for item no. 1535143, 1535146
and 1535243.






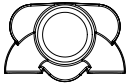


Height: 750 mm







Radiator connection elbow

nickel plated,
pipe made of copper, fitting made of brass
for composition pipe "Copepe"

16	x 2.0 mm		1535243°
16	x 2.0 mm		1535244°

Height: 750 mm

Article	Packing unit	Article-No.	Hint
"Cofit PD" Wall mounted connection pieces with press connection designed not to seal in an uncompressed condition, bronze, stainless steel casing, for composition pipe "Cope"			Universal application for heating and cooling systems and sanitary installations. Approval: DVGW Dimension 26: DVGW in preparation
 Wall mounted connection piece with press connection, 90°, short model 16 x 2.0 mm x Rp ½ (10) 1537053° 20 x 2.5 mm x Rp ½ (10) 1537055° 20 x 2.5 mm x Rp ¾ (10) 1537056°			Fixing and insulating material available from specialist stores. For the connection of apparatus, valves and fittings.
 Wall mounted connection piece with press connection, 90°, long model 16 x 2.0 mm x Rp ½ (10) 1537043° 20 x 2.5 mm x Rp ½ (10) 1537045°			
 Sound absorbing set (10) 1518074° Sound absorbing set (10) 1518070°			For wall mounted connection pieces item no. 1517053/55/56 and 1537053/55/56. For wall mounted connection pieces item no. 1517043/45 and 1537043/45.
 Wall mounted connection piece with press connection, angle pattern 16 x 16 mm x Rp ½ (10) 1537143° 20 x 20 mm x Rp ½ (10) 1537145°			
 Wall mounted connection piece with press connection, U-shape 16 x 16 mm x Rp ½ (10) 1537141° 20 x 20 mm x Rp ½ (10) 1537142° 20 x 16 mm x Rp ½ (10) 1537146° 26 x 20 mm x Rp ½ (10) 1537147° 26 x 26 mm x Rp ½ (10) 1537148°			
 Sound absorbing set for U-shaped wall mounting connection piece (10) 1539946° (10) 1539947°			For wall mounted connection piece item no. 1537146. For wall mounted connection pieces item no. 1537147/ 48.
 Wall mounted connection piece with press connection, straight pattern 16 x 16 mm x Rp ½ (10) 1537243° 20 x 20 mm x Rp ½ (10) 1537245° 16 x 16 mm x Rp ½ (10) 1537253° 20 x 20 mm x Rp ½ (10) 1537255°			For long model. For short model.
 Wall traverse with press connection, 90° with fixing set G ¾ 16 x 2.0 mm x Rp ½ (10) 1537343° 20 x 2.5 mm x Rp ½ (10) 1537345°			

Article	Packing unit	Article-No.	Hint
<hr/>			
	Flush-mounted elbow for cisterns with press connection with fixing set G ¾		
16 x 2.0 mm x Rp ½	(10)	1537443°	
	Press connection with female thread with locking device		
20 x 2.5 mm x Rp ½	(10)	1537645°	For flush mounting, for instance for outdoor taps.
Brackets with wall mounted connection pieces, short model and sound insulation			
Wall mounted connection piece		Gauge for bore holes	
	16 x 2.0 mm x Rp ½	80 mm (5)	1538184°
	16 x 2.0 mm x Rp ½	100 mm (5)	1538185°
	16 x 2.0 mm x Rp ½	153 mm (5)	1538183°
	16 x 2.0 mm x Rp ½	153 mm (5)	1538186°
	16 x 2.0 mm x Rp ½	80 mm (5)	1538188°
	16 x 2.0 mm x Rp ½	100 mm (5)	1538189°
	20 x 2.5 mm x Rp ½	153 mm (5)	1538187°
with wall mounted connection pieces, long model and sound insulation			
	16 x 2.0 mm x Rp ½	80 mm (5)	1538198°
	16 x 2.0 mm x Rp ½	100 mm (5)	1538199°
	16 x 2.0 mm x Rp ½	153 mm (5)	1538196°
	20 x 2.5 mm x Rp ½	153 mm (5)	1538197°

3.4.d "Cofit PDK" Press connection technology (plastic, pressing must be carried out to tighten the connection)

Content



"Cofit PDK" Press fittings

638








Article	Packing unit	Article-No.	Hint
"Cofit PDK" Press fittings designed not to seal in an uncompressed condition, plastic (PPSU) stainless steel casing for composition pipe "Copeipe"			Universal application for heating and cooling systems and sanitary installations. DVGW approval in preparation.
Press coupling			
	16 x 2 mm	x 16 x 2 mm (10)	1522543
	20 x 2.5 mm	x 20 x 2.5 mm (10)	1522545
Press reducing coupling			
	20 x 16 mm	(10)	1522655°
Press elbow 90°			
	16 x 16 mm	(10)	1522843°
	20 x 20 mm	(10)	1522845°
Press T-piece			
	16 x 16 x 16 mm	(10)	1523043°
	20 x 20 x 20 mm	(10)	1523045°
Press T-piece, reduced central port			
	20 x 16 x 20 mm	(10)	1523155°
Press T-piece, reduced straight port			
	20 x 20 x 16 mm	(10)	1523255°
Press T-piece, reduced central and straight port			
	20 x 16 x 16 mm	(10)	1523354°
Press T-piece, enlarged central port			
	16 x 20 x 16 mm	(10)	1523454°







3.4.e "Cofit S" Screwed connection technology

Content



"Cofit S" Compression fittings	640
"Cofit S" Compression fittings, female thread	640
"Cofit S" Nipples	640
"Cofit S" Connection pieces	640
"Cofit S" Screwed fittings	641
"Cofit S" Wall mounted connection pieces	643
"Cofit S" Brackets with wall mounted connection pieces	643

Article	Packing unit	Article-No.	Hint
"Cofit S" Compression fittings for G ¾ male thread according to DIN EN 16313 (cone "Euro") DVGW reg. no. DW-8501AT2407			
 Collar nut nickel plated			
14	x 2.0 mm	x G ¾ c/nut	(10) 1507954
16	x 2.0 mm	x G ¾ c/nut	(10) 1507955
18	x 2.0 mm	x G ¾ c/nut	(10) 1507958
20	x 2.5 mm	x G ¾ c/nut	(10) 1507960
Collar nut unplated			
14	x 2.0 mm	x G ¾ c/nut	(10) 1507974°
16	x 2.0 mm	x G ¾ c/nut	(10) 1507975°
20	x 2.5 mm	x G ¾ c/nut	(10) 1507980°
26	x 3.0 mm	x G 1 c/nut	(10) 1507983
32	x 3.0 mm	x G 1¼ c/nut	(10) 1507985
 "Cofit S" Compression fittings, female thread outlet made of brass resistant to dezincification, brass compression ring, compression nut made of nickel plated brass			
14	x 2.0 mm	x G ½ M	(10) 1507354°
16	x 2.0 mm	x G ½ M	(10) 1507355
 "Cofit S" Nipples bronze			
nickel plated			
R ¾	x G ¾ M	(25)	1503161°
R ½	x G ¾ M	(25)	1503162°
R ¾	x G ¾ M	(25)	1503164°
 unplated DVGW reg. no. DW-8501AT2407			
R ¾	x G ¾ M	(25)	1503151°
R ½	x G ¾ M	(25)	1503152
R ¾	x G 1 M	(10)	1503155°
R 1	x G 1¼ M	(10)	1503156°
R 1	x G 1 M	(10)	1503157°
 "Cofit S" Connection pieces DVGW reg. no. DW-8501AT2407 bronze with flat seal			
G ⅝ F	x G ¾ M	(25)	1503053°
G ¾ F	x G ¾ M	(25)	1503054°
G 1 F	x G 1 M	(10)	1503055°
G 1¼ F	x G 1¼ M	(10)	1503056°
			
			Universal application for heating and cooling systems and sanitary installations. For DVGW approved composition pipe "Cope" and PE-X plastic pipes for the same dimension and same processing. Installation instructions are to be followed. For nickel plated valves, radiator lockshield valves and other valves and fittings with G ¾ male thread, with tapered seal and O-ring seal. For distributors and fittings installed in risers and distributor pipes, with tapered seal and O-ring seal. For Oventrop valves and radiator lockshield valves with female thread Rp ½ and compression ends. No sealing required. Not suitable for thermostatic valves "RF". For the connection of composition pipes to valves and fittings with female thread according to EN 10226. For the connection of the composition pipe "Cope" to valves and fittings with male thread. Award:  Pragothem Prague

Article	Packing unit	Article-No.	Hint
"Cofit S" Screwed fittings DVGW reg. no. DW-8501AT2407 bronze for floor to floor distribution and risers			Universal application for heating and cooling systems and sanitary installations. When using compression fittings with G ¾ collar nut, the screwed fittings are suitable for use on composition pipe, copper, precision steel and plastic pipes. Tapered and cylindrical sealing surface for metal to metal and O-ring sealing.
Double nipple, bronze, unplated			
	G ¾ M	x G ¾ M (25) 1504054°	
	G 1 M	x G 1 M (10) 1504055°	
	G 1 ¼ M	x G 1 ¼ M (10) 1504056°	
reduced			
	G 1 M	x G ¾ M (10) 1504064°	
	G 1 ¼ M	x G 1 M (10) 1504065°	
	G 1 ¼ M	x G ¾ M (10) 1504066°	
Connection piece			
	G ¾ M	x Rp ½ (25) 1504153°	
	G ¾ M	x Rp ¾ (25) 1504154°	
	G 1 M	x Rp 1 (10) 1504155°	
	G 1 ¼ M	x Rp 1 ¼ (10) 1504156°	
T pieces with male thread			
	a	b	c
	G ¾	x G ¾	x G ¾ (10) 1504554°
	G 1	x G 1	x G 1 (10) 1504555°
	G 1 ¼	x G 1 ¼	x G 1 ¼ (5) 1504556°
reduced			
	a	b	c
	G ¾	x G 1	x G ¾ (10) 1504552°
	G ¾	x G 1 ¼	x G ¾ (5) 1504553°
	G 1	x G ¾	x G ¾ (10) 1504565°
	G 1	x G ¾	x G 1 (10) 1504564°
	G 1	x G 1	x G ¾ (10) 1504563
	G 1	x G 1 ¼	x G ¾ (5) 1504575°
	G 1	x G 1 ¼	x G 1 (5) 1504572°
	G 1 ¼	x G ¾	x G ¾ (5) 1504570°
	G 1 ¼	x G ¾	x G 1 (5) 1504574°
	G 1 ¼	x G ¾	x G 1 ¼ (5) 1504568°
	G 1 ¼	x G 1	x G ¾ (5) 1504573°
	G 1 ¼	x G 1	x G 1 (5) 1504567°
	G 1 ¼	x G 1	x G 1 ¼ (5) 1504566°
	G 1 ¼	x G 1 ¼	x G ¾ (5) 1504569°
	G 1 ¼	x G 1 ¼	x G 1 (5) 1504571°
T-bridging piece with male thread			
	G ¾	x G ¾	x G ¾ (5) 1504754°

To create junction points when using the T-piece, item no. 1504554.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------



**Cross connection piece
brass**

G 1	x G 1	x G ¾	x G ¾	(10)	1505565°
G 1¼	x G 1¼	x G ¾	x G ¾	(10)	1505566°
G 1¼	x G 1	x G ¾	x G ¾	(10)	1505567°

Elbow 90°



G ¾ M	x G ¾ M	(10)	1504454°
G 1 M	x G 1 M	(10)	1504455°
G 1¼ M	x G 1¼ M	(10)	1504456°



Connection elbow 90 °

G ¾ M	x Rp ½	(10)	1504353°
G ¾ M	x Rp ¾	(10)	1504354°
G 1 M	x Rp 1	(10)	1504355°
G 1¼ M	x Rp 1¼	(5)	1504356°

To extend the sanitary distributor for one connection.



Connection elbow 90 °

G ¾ M	x R ½	(10)	1504363°
-------	-------	------	----------

For instance for the connection of the composition pipe "Copipe" to flush-mounted valves and fittings.








Article	Packing unit	Article-No.	Hint
"Cofit S" Wall mounted connection pieces			
DVGW reg. no. DW-8501AT2407 bronze			For the connection of apparatus, valves and fittings. Fixing and insulating material available from specialist stores.
Wall mounted connection piece			
G ¾ M	x Rp ½	(25)	1506053°
G ¾ M	x Rp ¾	(25)	1506054°
Wall mounted connection piece, angle pattern			
G ¾ M	x Rp ½x G ¾ M	(25)	1506153°
Wall mounted connection piece, straight pattern			
G ¾ M	x Rp ½x G ¾ M	(25)	1506253°
Wall traverse 90° with fixing set G ¾			
G ¾ M	x Rp ½	(5)	1506553°
Flush-mounted elbow for cisterns with fixing set G ¾			
G ¾ M	x Rp ½	(10)	1506653°
"Cofit S" Brackets with wall mounted connection pieces			
Wall mounted connection piece	Gauge for bore holes		
G ¾ M	x Rp ½	80 mm (10)	1506073°
G ¾ M	x Rp ½	100 mm (10)	1506075°
G ¾ M	x Rp ½	80 mm (10)	1506176°
G ¾ M	x Rp ½	100 mm (10)	1506177°
G ¾ M	x Rp ½	153 mm (10)	1506178°
Pressure test plug plastic, self sealing			
G ½ M		(50)	1506092°
G ¾ M		(50)	1506093°



3.4.f Fixing material and accessories for pipes

Content

Fixing material	646
Accessories	646

Article	Packing unit	Article-No.	Hint
Fixing material for pipes			To fix the pipework on concrete flooring.
	Single dowel hook plastic		
	for pipes with an outer diameter of up to 32 mm	(50) 1509091°	
	Double dowel hook plastic		
	for pipes with an outer diameter of up to 32 mm	(50) 1509092°	
	Single dowel hook "Maxi" plastic		
	for insulated pipes with an outer diameter of up to 55 mm	(50) 1509093°	To fix insulated pipework on concrete flooring. No allowance for insulating material required.
	Single pipe clip plastic		With thread M 6. To fix the pipework on the wall.
	for pipes with an outer diameter of		
	14 mm	(100) 1509151°	
	16 mm	(100) 1509152°	
	Accessories for pipes		
	Protective tube made of LDPE		For protecting the pipe - at junction points of screed joints according to DIN EN 1264-4 / DIN 18560 T 2 - at the entry points when set in concrete - at the exit points when set in concrete
	Length: 300 mm, slotted, for 14, 16 and 17 mm pipes	(20) 1501184	Only sold in units of 20 protective tubes per bag.
	Single rosette cover plastic		Outer diameter of the covers: 56 mm
	for pipes with an outer diameter of		
	14 mm	1509661°	
	16 mm	1509662°	
	Distance between pipe centres 50 mm Perforation		
	12 mm	(25) 1016671°	
	14 mm	(25) 1016672°	
	15 mm	(25) 1016673	
	16 mm	(25) 1016674	
	18 mm	(25) 1016675°	



3.4.g Tools

Content

Tools	648
Press tools	652
Accessories	653

Article

Article-No.

Hint

Tools

for pipes


Pipe cutter
with special cutting wheel

up to 32 mm diameter
Spare cutting wheel

1509580°
1509588°

For cutting the pipes at right angles, one tool for all diameters.

Spare cutting wheel in the grip.

For pipe cutter 1509580.


up to 63 mm diameter
Spare cutting wheel

1509589°
1509593°

For pipe cutter 1509589.


Pipe shears
up to 20 mm diameter

with protective tube cutter

1509567°

Spare cutter for composition pipe
Spare cutter for protective tube

1509568°
1509569°
Universal tool

for deburring and calibrating
mandrels made of stainless steel

for pipes 14 x 2.0 mm
for pipes 16 x 2.0 mm
for pipes 20 x 2.5 mm
for pipes 26 x 3.0 mm
for pipes 32 x 3.0 mm

1509594

For calibrating and deburring the pipes at the same time. By calibrating and chamfering the pipe ends, optimal fitting conditions are ensured for the reinforcing sleeves of the press fittings "Cofit P" and for the outlets of the compression fittings "Cofit S".


for pipes 14 x 2.0 mm
for pipes 16 x 2.0 mm
for pipes 18 x 2.0 mm
for pipes 20 x 2.0 mm
for pipes 26 x 3.0 mm

1509596°


for pipes 40 x 3.5 mm

1519593°
Mandrels

for universal tool
for deburring and calibrating
made of stainless steel

for pipes 14 x 2.0 mm
for pipes 16 x 2.0 mm
for pipes 20 x 2.5 mm
for pipes 26 x 3.0 mm
for pipes 32 x 3.0 mm

1509570°
1509571°
1509573°
1509574°
1509575°

Article	Article-No.	Hint
---------	-------------	------

Smoothing tool

for deburring and smoothing
cutting edge made of hardened stainless steel



for pipes 40 x 3.5 mm

1519595°

Handgrip

for smoothing tool



1519596°

Universal tool

for deburring and calibrating



for pipes 50 x 4.5 mm

1519598°

for pipes 63 x 6.0 mm

1519599°

Tool case for deburring/calibrating

made of plastic

1519590°

Content:

Deburring and calibrating tools made of
tempered stainless steel
with protecting cover made of galvanised steel
for pipes 14 x 2 mm
for pipes 16 x 2 mm
for pipes 18 x 2 mm
for pipes 20 x 2.5 mm
for pipes 26 x 3 mm
for pipes 32 x 3 mm
for pipes 40 x 3.5 mm



Deburring and calibrating tool with 9 mm
hexagon seating.

Deburring and calibrating tool for use with
rechargeable battery screwdriver up to a max.
speed of 500 revolutions/min.

Content:

1519594°

Deburring and calibrating tools made of
tempered stainless steel
with protecting cover made of galvanised steel
with handgrip
for pipes 16 x 2 mm
for pipes 20 x 2.5 mm
for pipes 26 x 3 mm



Deburring and calibrating tool

made of tempered stainless steel
with protecting cover made of galvanised steel



for pipes 17 x 2 mm

1519589°

for pipes 20 x 2 mm

1519591°

Deburring and calibrating tool with 9 mm
hexagon seating.









Handgrip

for deburring and calibrating tool



1519592°

With 9 mm hexagon seating.

	Article	Article-No.	Hint
	Pipe bending spring made of stainless steel length 600 mm		Prevents folding and kinking of the pipe, especially when bending small radii by hand. For bending the composition pipe to radii smaller than 5 x D.
	for pipes 14 x 2.0 mm	1509561°	
	for pipes 16 x 2.0 mm	1509562	
	for pipes 20 x 2.5 mm	1509563	
	Pipe bending tool for pipes with an outer diameter		For the simple construction of even radii for outer pipe dimensions of 14 to 26 mm, mechanical transmission. Pipe bending tools for larger pipe diameters are available from specialist stores, e. g. Tube Bender Maxi of the company Rothenberger.
	14, 16, 18, 20 and 26 mm	1509591°	
	Holding key aluminium		For holding the fittings. Simplifies the installation of the compression fittings.
	Spanner size 24/30	1509585°	For fittings with G 3/4 or G 1 male thread.
	Spanner size 26/37	1509586°	For fittings with G 1 1/4 male thread or for tightening the G 1 collar nut of the dimension 26 x 3 mm.
	Pipe straightener for composition pipe "Copipe"		Suitable for coil unwinder 1519460.
	16-26 mm	1519461°	
	Ring spanner		
	Spanner size 30/32	1401091	For the installation of the compression fittings.
	Coil unwinder for pipes		With location for pipe straightener 1519461.
	16-26 mm	1519460°	
	Pipe straightener for composition pipe "Copipe"		Suitable for adapter and bench mounting set.
	14-26 mm	1519462°	
	Adapter for pipe straightener and coil unwinder		To fix the pipe straightener 1519462 to the coil unwinder 1402096.
		1519465°	



Bench mounting set

for pipe straightener

1519466°

To fix the pipe straightener 1519462 to a work bench or a table etc.

Article

Article-No.

Hint

Press tools

for "Cofit P" press fittings
and pipes

Press machine 18 V (Li-Ion rechargeable battery)

Battery charger
Rechargeable battery 18 V / 3.0 Ah
in a plastic case

1519476°

Machine only as replacement (without
plastic case and accessories) available on
demand.


Manual press tool

for "Cofit P" 14, 16, 20 and 26 mm

1519482°

Suitable press bits:
Item no. 1519489 (diameter 14 mm)
Item no. 1519491 (diameter 16 mm)
Item no. 1519492 (diameter 20 mm)
Item no. 1519493 (diameter 26 mm)
with two additional location holes.


Press system case

made of sheet steel
Content:
Press bits 16, 20, 26, 32 mm
Pipe cutter
Universal tool for deburring and calibrating

1519490


Type H 16 A,
for pipe Ø 16 mm

1519491°

Type H 20 A,
for pipe Ø 20 mm

1519492°

Type H 26 A,
for pipe Ø 26 mm

1519493°

Type H 32 A,
for pipe Ø 32 mm

1519494°

Type H 40 A (2G),
for pipe Ø 40 mm

1519495°



Press bits

Type RN 14,
for pipe Ø 14 x 2 mm

1519489

Type RN 17,
for pipe Ø 17 x 2 mm

1519488

Type RN 20
for pipe Ø 20 x 2 mm

1519481

Only suitable for use with the following press
couplings:

Item no. 1512542 (14 x 2 mm)

Item no. 1512544 (17 x 2 mm)

Item no. 1512541 (20 x 2 mm)


Press clamps with auxiliary bits
in a sheet steel case
for Ø 40 mm pipe

1519497°

Suitable for use with the Oventrop press
machines item no. 1519476 and 1519480
as well as the press machines of the following
companies:
Geberit type PWH75, Klauke types UAP2,
UAP3L, Mannesmann/Novopress types EFP2,
ECO1, AFP2, ACO1, Rems, Viega type 2.


Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Press bits



for pipe Ø 50 mm

(2) **1519445°**

Suitable for use with the Oventrop press machines item no. 1519476 and 1519480 well as the press machines of the following companies:
Klauke types UAP2, UAP3L, Uponor/Unicor type UP 75.

Pressing device



for pipe Ø 63 mm

1519446°

Press machine 18 V (Li-ion rechargeable battery)



Battery charger
Rechargeable battery 18 V / 1.5 V Ah
in a plastic case

1519681°

Suitable press bits:
Item no. 1519691 (Ø 16 mm)
Item no. 1519692 (Ø 20 mm)
Item no. 1519693 (Ø 26 mm)
Item no. 1519694 (Ø 32 mm)
Machine only as replacement (without plastic case) available on demand.

Press bits

for press machine 18 V (Li-ion rechargeable battery)



for pipe Ø 16 mm

1519691°

for pipe Ø 20 mm

1519692°

for pipe Ø 26 mm

1519693°

for pipe Ø 32 mm

1519694°

Suitable for use with the Oventrop press machine 18 V (rechargeable battery) (item no. 1519681).

Accessories



Battery charger

for press machine 18 V (Li-ion rechargeable battery)

1519483°



Rechargeable battery

18 V / 3.0 Ah

for press machine 18 V (Li-ion rechargeable battery)

1519484°

For Oventrop press machines 18 V item no. 1519476 and 1519681.







3.4.h "Copex HT" PE-Xc Plastic pipe

Content

"Copex HT" PE-Xc Plastic pipe

656





Article	Packing unit	Article-No.	Hint
"Copex HT" PE-Xc Plastic pipe with oxygen barrier			Application: Potable water and heating systems.
rolls			Pipes according to DIN 16892/ DIN 16893/ DIN EN ISO 15875. Oxygen tight according to DIN 4726.
	Dimension 16 x 2.2 mm length per roll 100 m	(100) 1410151	Operational conditions: Max. operating pressure p_s : 10 bar Max. design temperature t_s : 90 °C
	Dimension 20 x 2.8 mm length per roll 100 m	(100) 1410461	Attention: Observe "Technical information" advice! Connection technology "Cofit PD-HT": from page 658
	Dimension 25 x 3.5 mm length per roll 50 m	(50) 1410560	
	Dimension 32 x 4.4 mm length per roll 50 m	(50) 1410660	

3.4.i "Cofit PD-HT" Press connection system

Content



"Cofit PD-HT" Press fittings made of bronze	658
"Cofit PD-HT" Press fittings made of bronze	659
"Cofit PDK-HT" Press fittings made of plastic (PPSU)	660
"Cofit S-HT" Compression fittings	660
Tools	661

Article	Packing unit	Article-No.	Hint
"Cofit PD-HT" Press fittings made of bronze designed not to seal in an uncompressed condition, stainless steel casing for PE-Xc plastic pipes "Copex HT"			Universal application for heating systems and sanitary installations.
Press connection with male thread			For valves with female threaded connection.
	16	x 2.2 mm x R 1/2 (10)	1562043
	20	x 2.8 mm x R 1/2 (10)	1562045
	20	x 2.8 mm x R 3/4 (10)	1562046
	25	x 3.5 mm x R 3/4 (5)	1562048
	25	x 3.5 mm x R 1 (5)	1562049
	32	x 4.4 mm x R 1 (5)	1562051
Press connection with female thread			For changing over to different pipe material and for valves and fittings with male threaded connection for sealing.
	16	x 2.2 mm x Rp 1/2 (10)	1562243
	20	x 2.8 mm x Rp 3/4 (10)	1562246
Press coupling			
	16 x 2.2 mm	x 16 x 2.2 mm (10)	1562543
	20 x 2.8 mm	x 20 x 2.8 mm (10)	1562545
	25 x 3.5 mm	x 25 x 3.5 mm (5)	1562546
	32 x 4.4 mm	x 32 x 4.4 mm (5)	1562547
Press reducing coupling			
	20 x 2.8 mm	x 16 x 2.2 mm (10)	1562655
	25 x 3.5 mm	x 16 x 2.2 mm (5)	1562656
	25 x 3.5 mm	x 20 x 2.8 mm (5)	1562657
	32 x 4.4 mm	x 25 x 3.5 mm (5)	1562660

Article Packing unit Article-No.

Hint

"Cofit PD-HT" Press fittings made of bronze
designed not to seal
in an uncompressed condition,
stainless steel casing
for PE-Xc plastic pipes "Copex HT"

**Universal application for heating systems
and sanitary installations.**



Press elbow

16 x 2.2 mm	x 16 x 2.2 mm	(10)	1562843
20 x 2.8 mm	x 20 x 2.8 mm	(10)	1562845
25 x 3.5 mm	x 25 x 3.5 mm	(5)	1562847
32 x 4.4 mm	x 32 x 4.4 mm	(5)	1562849



Press T-piece

16 x 2.2 x 16 x 2.2 x 16 x 2.2 mm	(10)	1563043
20 x 2.8 x 20 x 2.8 x 20 x 2.8 mm	(10)	1563045
25 x 3.5 x 25 x 3.5 x 25 x 3.5 mm	(5)	1563046
32 x 4.4 x 32 x 4.4 x 32 x 4.4 mm	(5)	1563047



Press T-piece, reduced central port

20 x 2.8 x 16 x 2.2 x 20 x 2.8 mm	(10)	1563155
25 x 3.5 x 16 x 2.2 x 25 x 3.5 mm	(5)	1563156
25 x 3.5 x 20 x 2.8 x 25 x 3.5 mm	(5)	1563157



Press T-piece, reduced central and straight port

20 x 2.8 x 16 x 2.2 x 16 x 2.2 mm	(10)	1563354
25 x 3.5 x 16 x 2.2 x 20 x 2.8 mm	(5)	1563356



**Wall mounted connection piece with press connection,
90°, short model**

16 x 2.2 mm	x Rp 1/2	(10)	1567053
20 x 2.8 mm	x Rp 1/2	(10)	1567055



Radiator connection T-piece

nickel plated,
pipe made of copper, fitting made of brass
for PE-Xc plastic pipe "Copex HT"

16	x 2.2 mm	(10)	1565243
20	x 2.8 mm	(10)	1565245

Fixing and insulating material available from
specialist stores.
For the connection of apparatus, valves and
fittings.

Article	Packing	Article-No.	Hint
e	unit		

"Cofit PDK-HT" Press fittings made of plastic (PPSU)
 designed not to seal
 in an uncompressed condition,
 stainless steel casing
 for PE-Xc plastic pipes "Copex HT"

**Universal application for heating systems
 and sanitary installations.**



Press coupling

16 x 2.2 mm	x 16 x 2.2 mm	(10)	1552543
20 x 2.8 mm	x 20 x 2.8 mm	(10)	1552545



Press reducing coupling

20 x 2.8 mm	x 16 x 2.2 mm	(10)	1552655
-------------	---------------	------	----------------



Press elbow 90°

16 x 2.2 mm	x 16 x 2.2 mm	(10)	1552843
20 x 2.8 mm	x 20 x 2.8 mm	(10)	1552845



Press T-piece

16 x 2.2 x 16 x 2.2 x 16 x 2.2 mm	(10)	1553043
20 x 2.8 x 20 x 2.8 x 20 x 2.8 mm	(10)	1553045



Press T-piece, reduced central port

20 x 2.8 x 16 x 2.2 x 20 x 2.8 mm	(10)	1553155
-----------------------------------	------	----------------



Press T-piece, reduced central and straight port





20 x 2.8 x 16 x 2.2 x 16 x 2.2 mm	(10)	1553354
-----------------------------------	------	----------------

"Cofit S-HT" Compression fittings
 for G 3/4 male thread according to DIN EN 16313 (cone "Euro")
 outlet made of bronze, compression ring and collar nut made of brass,
 collar nut nickel plated

**Universal application for heating systems
 and sanitary installations.**
 For PE-Xc plastic pipes "Copex HT".

16	x 2.2 mm	x G 3/4 c/nut	(10)	1567955
20	x 2.8 mm	x G 3/4 c/nut	(10)	1567960



Article	Article-No.	Hint
Tools for PE-Xc plastic pipes "Copex" and press fittings "Cofit PHT"		
	Pipe cutter with special cutting wheel	For cutting the pipes at right angles, one tool for all diameters. Spare cutting wheel in the grip. For pipe cutter 1509580.
	up to 32 mm diameter 1509580° Spare cutting wheel 1509588°	
	Universal tool for deburring and calibrating mandrels made of stainless steel	For calibrating and deburring the pipes at the same time.
	for pipes 16 x 2.2 mm 1569594 for pipes 20 x 2.8 mm for pipes 25 x 3.5 mm for pipes 32 x 4.4 mm	
	Type H 16 A, for pipe Ø 16 mm 1519491°	Suitable for use with the Oventrop press machines item no. 1519476 and 1519480. The Oventrop press bits may also be used with the press machines of the following companies: Geberit type PWH75, Klauke types UAP2, UAP3L, UP2EL, Mannesmann/Novopress types EFP2, ECO1, AFP2, ACO1, Polytherm, Rems, Roller, Rothenberger, Uponor/Unicor, Velta, Viega type 2.
	Type H 20 A, for pipe Ø 20 mm 1519492°	
	Type H 25 A, for pipe Ø 25 mm 1569493	
	Type H 32 A, for pipe Ø 32 mm 1519494°	
	Press bits for press machine 18 V (Li-ion rechargeable battery)	Suitable for use with the Oventrop press machine 18 V (rechargeable battery) (item no. 1519681).
	for pipe Ø 16 mm 1519691°	
	for pipe Ø 20 mm 1519692°	
	for pipe Ø 25 mm 1569693 for pipe Ø 32 mm 1519694°	

Potable water



4.1.a System summary

Content	669
System illustrations	671

4.1.b "Aquastrum F"/"Aquastrum KFR" valves



Content	673
"Aquastrum F" Free-flow valves (both ports female thread)	674
"Aquastrum F" Free-flow valves (solder connection/collar nut)	675
"Aquastrum F" Free-flow valves (both ports male thread)	676
"Aquastrum F" Free-flow valves (female thread/male thread)	677
"Aquastrum KFR" Valves (both ports female thread)	678
"Aquastrum KFR" Valves (both ports male thread)	679
"Aquastrum KFR" Valves (female thread/male thread)	680
"Aquastrum F" Free-flow valves (both ports male thread)	681
"Aquastrum KFR" Valves (both ports male thread)	681
"Aquastrum F" Free-flow valves (both ports flanged)	682
"Aquastrum KFR" Valves (both ports flanged)	682
Accessories	683

4.1.c "Aquastrum FR" and "Aquastrum R" valves



Content	685
"Aquastrum FR" Free-flow valves	686
"Aquastrum R" Non-return check valves	686

4.1.d "Optibal TW" Ball valves for potable water



Content	687
"Optibal TW" Ball valves for potable water	688
Insulation shells	689

4.1.e "Aquastrum VT/T plus" Thermal circulation valves



Content	691
"Aquastrum VT"	692
"Aquastrum T plus"	693
Accessories for "Aquastrum T plus", "Aquastrum VT"	694

4.1.f "Aquastrum C" Regulating valves, "Aquastrum P" Water sampling valves



Content	695
"Aquastrum C" Double regulating and commissioning valves	696
"Aquastrum P" Water sampling valves	698
"Aquastrum M" Measuring and draining device	698
Accessories	698

4.1.g "Aquastrum UP" Flush-mounted valves



Content	699
"Aquastrum UP-F" Flush-mounted free-flow valves	700
"Aquastrum UP-Therm" Flush-mounted circulation valves	702
"Aquastrum UP-MS" Water meter installation set	704
Accessories for "Aquastrum" flush mounted valves	705
Accessories for "Aquastrum UP" flush-mounted valves flush-mounting pipe	706
Accessories for "Aquastrum UP" flush-mounted valves DN 15/DN 20 without flush-mounting pipe and "Aquastrum UP-MS" water meter installation sets	707
General accessories	708

4.1.h "Aquastrum K" Thermostatic cold water circulation valve



Content	709
"Aquastrum K"	710
Accessories	710

4.1.i "Brawa-Mix" Thermostatic mixing valves



Content	711
"Brawa-Mix"	712
Accessories	713
Strainers	713

4.1.j "Regucirc" Circulation stations



Content	715
"Regucirc B"	716
"Regucirc M"	717

4.1.k "Regudrain" Flushing station



Content	719
"Regudrain" Flushing station	720
Accessories	720

4.1.l "Aquamodul" Distributor system for potable water



Content	723
T-distributor	725
Extension	725
Elbow	725
"Aquanova Compact" Water filter	726
EAS - One pipe connection piece	726
Pressure relief cap	726
Bypass valve	726
Fill and drain ball valve	727
Draining ball valve	727
"Optiflex" Fill and drain ball valve	727
Bracket	727
Accessories	728

4.1.m "Ofix" Connection fittings



Content	729
Ofix Connection fittings	730

4.1.n Domestic water station/Heating system filling station



Content	731
Domestic water station	732
Heating system filling station	732

4.1.o "Aquanova" Water filters



Content	733
"Aquanova Compact" Water filters	734
Accessories	734
"Aquanova Magnum" Water filters	735
Accessories	736

4.1.p Valves for water softening



Content	737
Bypass isolating valve	738
Accessories for bypass isolating valve and bypass mixing valve DN 25	738
Bypass mixing valve DN 25	739
Bypass mixing valve DN 32	740
Spare parts	740
Bypass mixing valve DN 50	740
Spare parts	740



4.1.q "Multidis R" Sanitary distributor

Content	741
"Multidis R" Sanitary distributor	742
Accessories	742
"Multidis R" Sanitary distributor with isolating facility	743
Accessories	743

4.1.r Connection technology

Content	745
Connection of pipes and Oventrop valves with different connections in potable water installations	746

4.1.s Fresh water stations/Other products for water installations



Content	747
"Regumaq" Fresh water stations	748



4.1.a System summary

Content

System illustrations

671

"Aquanova System"

The quality of potable water, the most important product for our nutrition, is influenced by the potable water installation to a large extent.

The installation serves as "packaging" feeding the potable water from the house connection to the individual draw off points – hygienically safe, fit for human consumption and in accordance with the German Decree for Potable Water (TrinkwV). The potable water quality must not be impaired by operational conditions or the used materials.

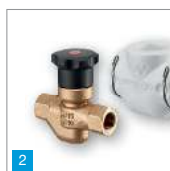
The "Aquanova System" includes systems, products, software and other useful services relating to potable water.

Advantages:

- the system interfaces (heat generation and hot potable water preparation) reflect the competence of Oventrop as system provider for potable water and heating installations and is therefore relevant to your design work
- Oventrop is an expert partner to the specialist trade and supports its partners during the design of potable water and heating installations
- Oventrop offers instruments and information as well as certified training courses and seminars to the specifying engineer and qualified installer



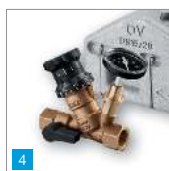
1
"Regudrain"
Flushing station



2
"Aquaström UP-Therm"



3
"Aquaström F" with
water sampling valve



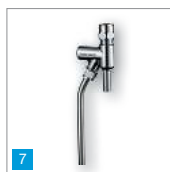
4
"Aquaström VT"



5
"Aquaström C"



6
"Aquaström F"



7
"Aquaström P"



8
"Regumaq X"
Fresh water station

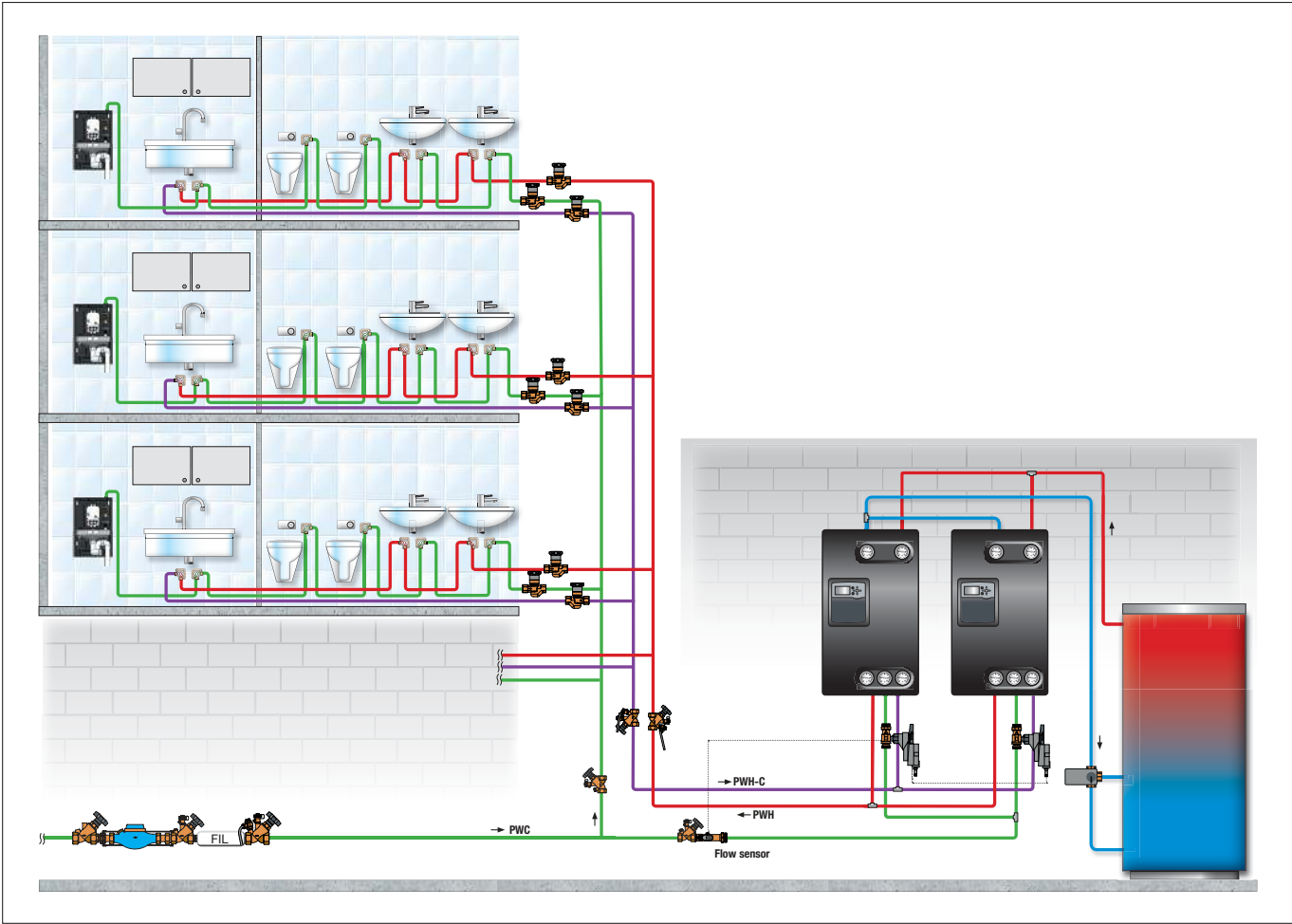


9
"Optibal TW"

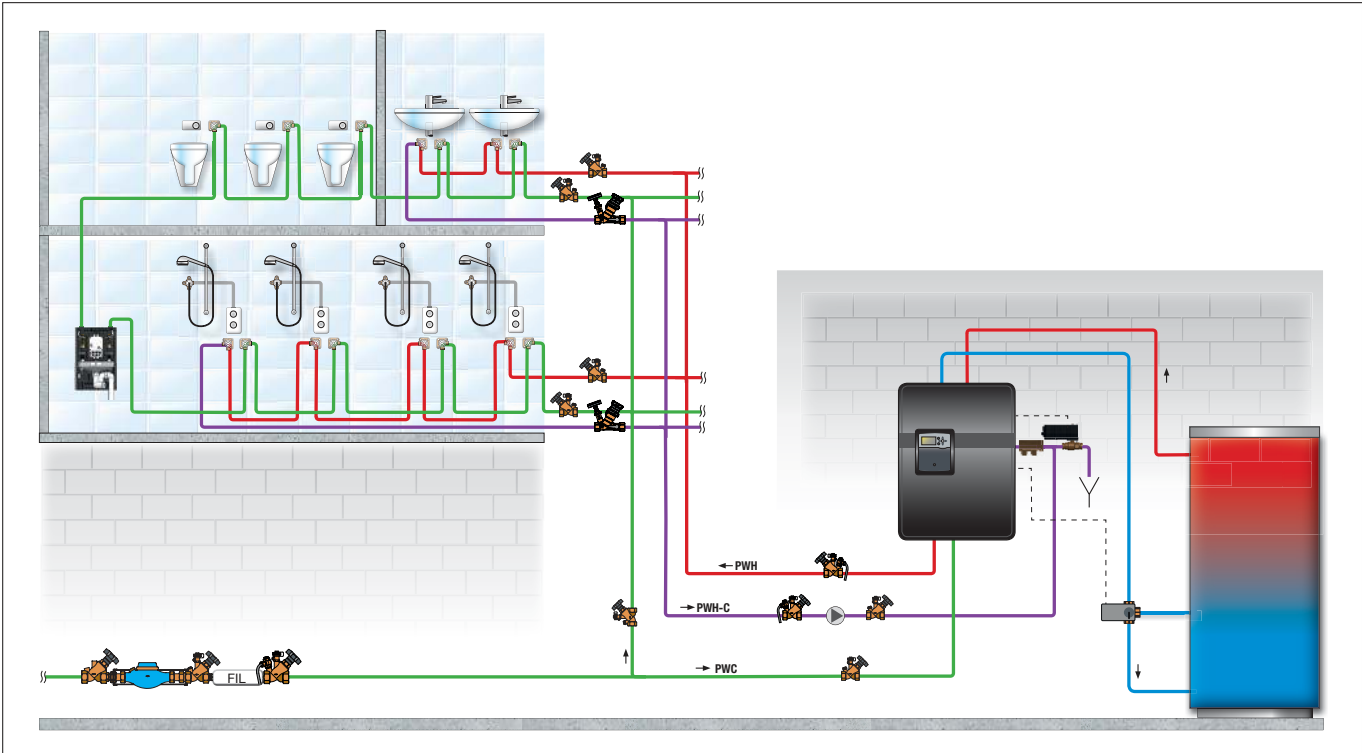


"Regudis W"
Dwelling station

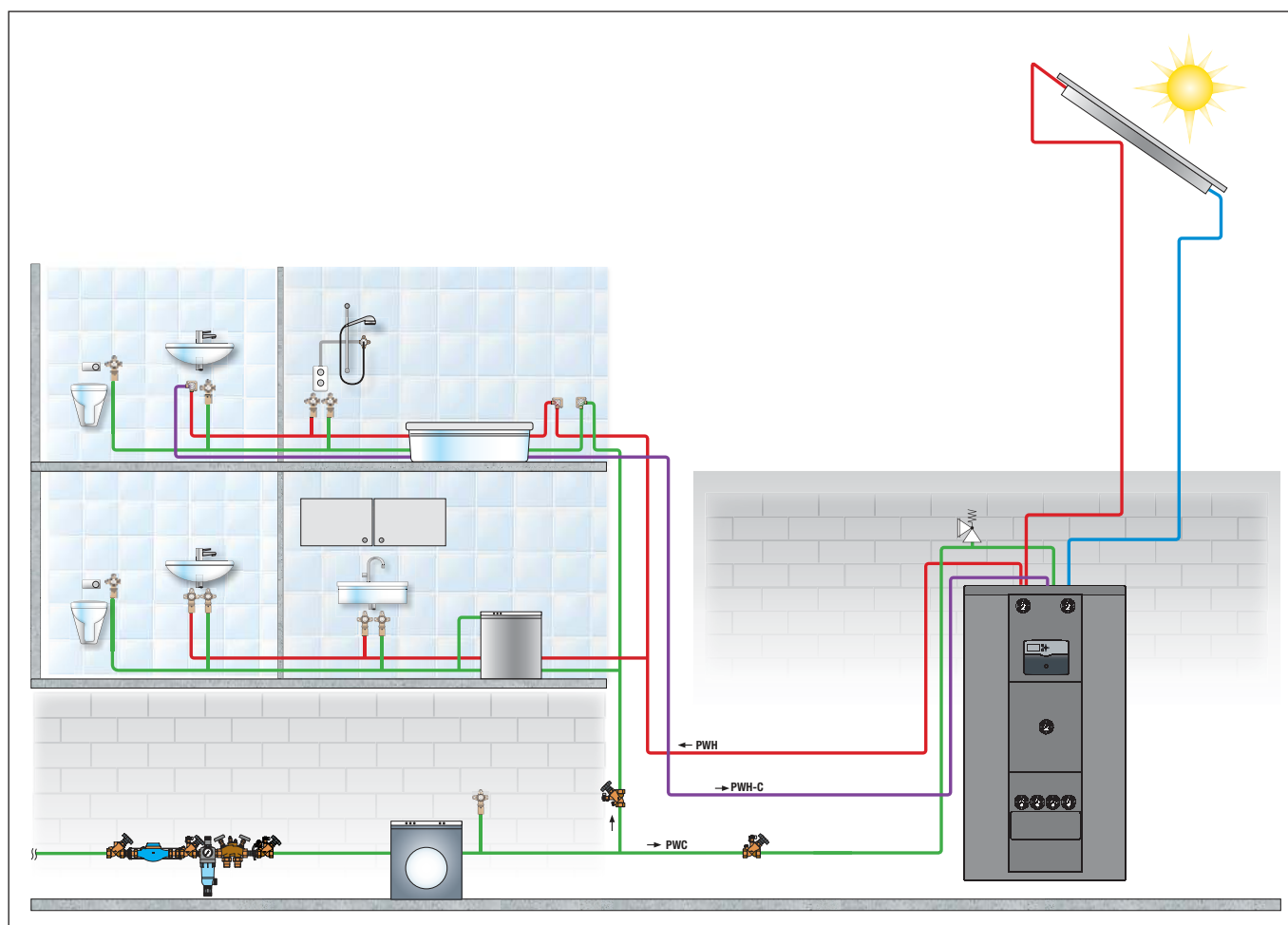
Hygiene with the Oventrop "Aquanova-System" – for the most important product for our nutrition: potable water



System illustration: Potable water installation in an office building



System illustration: Potable water installation in a sports facility








System illustration: Potable water installation in a detached house



4.1.b "Aquastrum F"/"Aquastrum KFR" valves


Content

"Aquastrum F" Free-flow valves (both ports female thread)	674
"Aquastrum F" Free-flow valves (solder connection/collar nut)	675
"Aquastrum F" Free-flow valves (both ports male thread)	676
"Aquastrum F" Free-flow valves (female thread/male thread)	677
"Aquastrum KFR" Valves (both ports female thread)	678
"Aquastrum KFR" Valves (both ports male thread)	679
"Aquastrum KFR" Valves (female thread/male thread)	680
"Aquastrum F" Free-flow valves (both ports male thread)	681
"Aquastrum KFR" Valves (both ports male thread)	681
"Aquastrum F" Free-flow valves (both ports flanged)	682
"Aquastrum KFR" Valves (both ports flanged)	682
Accessories	683

Article	Packing unit	Article-No.	Hint
"Aquaström F" Free-flow valves (both ports female thread) bronze			Application: Potable water installations PN 16, max. water temperature 120 °C.
both ports female thread according to EN 10226-1 without draining orifices DVGW, SVGW and KIWA certified (PN 10)			Sound absorbing according to DIN EN ISO 3822 product group I.
	DN 15	Rp 1/2 x Rp 1/2 (10) 4200804	All components in contact with potable water are made of non-brass materials, small dimensions, non-rising stem on size DN 25 and above. Construction according to DIN 3502.
	DN 20	Rp 3/4 x Rp 3/4 (10) 4200806	
	DN 25	Rp 1 x Rp 1 (10) 4200808	
	DN 32	Rp 1 1/4 x Rp 1 1/4 (5) 4200810	
	DN 40	Rp 1 1/2 x Rp 1 1/2 (5) 4200812	
	DN 50	Rp 2 x Rp 2 (5) 4200816	
both ports female thread according to EN 10226-1 draining orifices G 1/4 closed with plugs DVGW and KIWA certified (PN 10)			Draining facility within same plane as handle, therefore allowing pipes to be at close centres. Draining ball valve (see accessories) can be installed subsequently.
	DN 15	Rp 1/2 x Rp 1/2 (10) 4201004	Press connection: For direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 541. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit- Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.
	DN 20	Rp 3/4 x Rp 3/4 (10) 4201006	
	DN 25	Rp 1 x Rp 1 (10) 4201008	
	DN 32	Rp 1 1/4 x Rp 1 1/4 (5) 4201010	
	DN 40	Rp 1 1/2 x Rp 1 1/2 (5) 4201012	
	DN 50	Rp 2 x Rp 2 (5) 4201016	
both ports female thread according to EN 10226-1 with draining ball valve G 1/4 DVGW, SVGW and KIWA certified (PN 10)			Award:  Design Award Switzerland
	DN 15	Rp 1/2 x Rp 1/2 (10) 4201204	
	DN 20	Rp 3/4 x Rp 3/4 (10) 4201206	
	DN 25	Rp 1 x Rp 1 (10) 4201208	
	DN 32	Rp 1 1/4 x Rp 1 1/4 (5) 4201210	
	DN 40	Rp 1 1/2 x Rp 1 1/2 (5) 4201212	
both ports bronze press fittings system Sanha® with draining ball valve G 1/4 SVGW certified (PN 10)			
	Ø 15 mm	(10) 4201252	
	Ø 18 mm	(10) 4201253	
	Ø 22 mm	(10) 4201254	
	Ø 28 mm	(10) 4201255	
	Ø 35 mm	(5) 4201256	
	Ø 42 mm	(5) 4201257	
	Ø 54 mm	(5) 4201258	





Article	Packing unit	Article-No.	Hint
"Aquastrum F" Free-flow valves (solder connection/collar nut) bronze for the connection of copper pipes according to DIN EN 1057 Inlet port: solder connection Outlet port: male thread according to DIN ISO 228 with ring gasket, collar nut and solder tailpipe (bronze) with draining ball valve G 1/4			Application: Potable water installations PN 16, max. water temperature 120 °C. DVGW certified (PN 10). Sound absorbing according to DIN EN ISO 3822 product group I. All components in contact with potable water are made of non-brass materials, small dimensions, non-rising stem on size DN 25 and above. Construction according to DIN 3502. Draining facility within same plane as handle, therefore allowing pipes to be at close centres. Draining ball valve (see accessories) can be installed subsequently. The bonnet has to be removed before soldering. Award: <small>design preis SCHWEIZ</small> Design Award Switzerland
DN 15	Ø 15 x Ø 15	(10) 4203852	
DN 15	Ø 18 x Ø 18	(10) 4203853	
DN 20	Ø 22 x Ø 22	(10) 4203854	
DN 25	Ø 28 x Ø 28	(10) 4203855	
DN 32	Ø 35 x Ø 35	(5) 4203856	
DN 40	Ø 42 x Ø 42	(5) 4203857	
DN 50	Ø 54 x Ø 54	(5) 4203858	

Article	Packing unit	Article-No.	Hint
"Aquastrum F" Free-flow valves (both ports male thread) bronze			Application: Potable water installations PN 16, max. water temperature 120 °C.
both ports flat sealing male thread according to DIN ISO 228 with draining ball valve G ¼			DVGW, SVGW and KIWA certified (PN 10). Sound absorbing according to DIN EN ISO 3822 product group I.
DN 15	G ¾	x G ¾ (10) 4202204	All components in contact with potable water are made of non-brass materials, small dimensions, non-rising stem on size DN 25 and above. Construction according to DIN 3502.
DN 20	G 1	x G 1 (10) 4202206	
DN 25	G 1¼	x G 1¼ (10) 4202208	
DN 32	G 1½	x G 1½ (5) 4202210	
DN 40	G 1¾	x G 1¾ (5) 4202212	
DN 50	G 2⅝	x G 2⅝ (5) 4202216	
both ports flat sealing male thread according to DIN ISO 228 draining orifices G ¼ closed with plugs			Draining facility within same plane as handle, therefore allowing pipes to be at close centres. Draining ball valve (see accessories) can be installed subsequently.
DN 15	G ¾	x G ¾ (10) 4201804	Award:  Design Award Switzerland
DN 20	G 1	x G 1 (10) 4201806	
DN 25	G 1¼	x G 1¼ (10) 4201808	
DN 32	G 1½	x G 1½ (5) 4201810	
DN 40	G 1¾	x G 1¾ (5) 4201812	
DN 50	G 2⅝	x G 2⅝ (5) 4201816	
both ports enlarged, flat sealing male thread according to DIN ISO 228 for the connection of thick walled plastic pipes draining orifices G ¼ closed with plugs			
DN 15	G 1	x G 1 (10) 4202463	
DN 15	G 1¼	x G 1¼ (10) 4202464	
DN 25	G 1½	x G 1½ (10) 4202465	
DN 32	G 2	x G 2 (5) 4202466	
DN 40	G 2¼	x G 2¼ (5) 4202467	
DN 50	G 2¾	x G 2¾ (5) 4202468	



Article	Packing unit	Article-No.	Hint
"Aquaström F" Free-flow valves (female thread/male thread) bronze Inlet port: female thread according to EN 10226-1 Outlet port: male thread according to DIN ISO 228 draining orifices G 1/4 closed with plugs			Application: Potable water installations PN 16, max. water temperature 120 °C. DVGW and SVGW certified (PN 10). Sound absorbing according to DIN EN ISO 3822 product group I. All components in contact with potable water are made of non-brass materials, small dimensions, non-rising stem on size DN 25 and above. Construction according to DIN 3502. Draining facility within same plane as handle, therefore allowing pipes to be at close centres. Draining ball valve (see accessories) can be installed subsequently.
DN 15	Rp 1/2 x G 3/4	(10) 4202804	
DN 20	Rp 3/4 x G 1	(10) 4202806	
DN 25	Rp 1 x G 1 1/4	(10) 4202808	
DN 32	Rp 1 1/4 x G 1 1/2	(5) 4202810	
DN 40	Rp 1 1/2 x G 1 3/4	(5) 4202812	
DN 50	Rp 2 x G 2 3/8	(5) 4202816	
			Award: <small> Macinn preis schweiz </small> Design Award Switzerland

Article	Packing unit	Article-No.	Hint
"Aquaström KFR" Valves (both ports female thread) Combination free-flow valve and non-return check valve bronze			Application: Potable water installations PN 16, max. water temperature 120 °C.
both ports female thread according to EN 10226-1 construction according to DIN 3502 with draining ball valve G 1/4 for the universal connection of pipes and fittings			DVGW and SVGW certified (PN 10). Sound absorbing according to DIN EN ISO 3822 product group I.
	DN 15	Rp 1/2 x Rp 1/2 (10)	4206204
	DN 20	Rp 3/4 x Rp 3/4 (10)	4206206
	DN 25	Rp 1 x Rp 1 (10)	4206208
	DN 32	Rp 1 1/4 x Rp 1 1/4 (5)	4206210
	DN 40	Rp 1 1/2 x Rp 1 1/2 (5)	4206212
	DN 50	Rp 2 x Rp 2 (5)	4206216
both ports female thread according to DIN EN 10226-1 construction according to DIN 3502 draining orifices G 1/4 closed with plugs for the universal connection of pipes and fittings			All components in contact with potable water are made of non-brass materials, small dimensions, non-rising stem on size DN 25 and above. Draining and test orifice on the side of the handwheel. The valves without draining facility have a plugged draining orifice G 1/4. Drain ball valve (see accessories) may be installed subsequently.
	DN 15	Rp 1/2 x Rp 1/2 (10)	4205804
	DN 20	Rp 3/4 x Rp 3/4 (10)	4205806
	DN 25	Rp 1 x Rp 1 (10)	4205808
	DN 32	Rp 1 1/4 x Rp 1 1/4 (5)	4205810
	DN 40	Rp 1 1/2 x Rp 1 1/2 (5)	4205812
	DN 50	Rp 2 x Rp 2 (5)	4205816

Award:
 Design Award Switzerland

Article Packing unit Article-No.

Hint

**"Aquaström KFR" Valves (both ports male thread)
Combination free-flow valve and
non-return check valve
bronze**

both ports flat sealing male thread
according to DIN ISO 228
with draining ball valve G 1/4
for the universal connection of pipes and fittings


DN 15	G 3/4	x G 3/4	(10)	4208204
DN 20	G 1	x G 1	(10)	4208206
DN 25	G 1 1/4	x G 1 1/4	(10)	4208208
DN 32	G 1 1/2	x G 1 1/2	(5)	4208210
DN 40	G 1 3/4	x G 1 3/4	(5)	4208212
DN 50	G 2 3/8	x G 2 3/8	(5)	4208216

both ports flat sealing male thread
according to DIN ISO 228
draining orifices G 1/4 closed with plugs
for the universal connection of pipes and fittings


DN 15	G 3/4	x G 3/4	(10)	4207804
DN 20	G 1	x G 1	(10)	4207806
DN 25	G 1 1/4	x G 1 1/4	(10)	4207808
DN 32	G 1 1/2	x G 1 1/2	(5)	4207810
DN 40	G 1 3/4	x G 1 3/4	(5)	4207812
DN 50	G 2 3/8	x G 2 3/8	(5)	4207816

both ports enlarged, flat sealing male thread
according to DIN ISO 228
draining orifices G 1/4 closed with plugs
for the connection of thick walled plastic pipes


DN 15	G 1	x G 1	(10)	4208363
DN 20	G 1 1/4	x G 1 1/4	(10)	4208364
DN 25	G 1 1/2	x G 1 1/2	(10)	4208365
DN 32	G 2	x G 2	(5)	4208366
DN 40	G 2 1/4	x G 2 1/4	(5)	4208367
DN 50	G 2 3/4	x G 2 3/4	(5)	4208368

Application:
Potable water installations PN 16,
max. water temperature 120 °C.

DVGW and SVGW certified (PN 10).


Sound absorbing according to DIN EN ISO
3822 product group I.

All components in contact with potable water
are made of non-brass materials, small
dimensions, non-rising stem on size DN 25 and
above. Draining and test orifice on the side of
the handwheel.

The valves without draining facility have a
plugged draining orifice G 1/4.
Drain ball valve (see accessories) may be
installed subsequently.

Award:

*deutscher
preis
für
design* Design Award Switzerland

Article	Packing unit	Article-No.	Hint
"Aquaström KFR" Valves (female thread/male thread) Combination free-flow valve and non-return check valve bronze			Application: Potable water installations PN 16, max. water temperature 120 °C.
Inlet port: female thread according to EN 10226-1 Outlet port: male thread, flat sealing, according to DIN ISO 228 draining orifices G 1/4 closed with plugs for the universal connection of pipes and fittings			DVGW and SVGW certified (PN 10). Sound absorbing according to DIN EN ISO 3822 product group I.
	DN 15	Rp 1/2 x G 3/4 (10)	4206804
	DN 20	Rp 3/4 x G 1 (10)	4206806
	DN 25	Rp 1 x G 1 1/4 (10)	4206808
	DN 32	Rp 1 1/4 x G 1 1/2 (5)	4206810
	DN 40	Rp 1 1/2 x G 1 3/4 (5)	4206812
	DN 50	Rp 2 x G 2 3/8 (5)	4206816
			All components in contact with potable water are made of non-brass materials, small dimensions, non-rising stem on size DN 25 and above. Draining and test orifice on the side of the handwheel. The valves without draining facility have a plugged draining orifice G 1/4. Drain ball valve (see accessories) may be installed subsequently.

Award:

Design Award Switzerland

Article

Article-No.

Hint

"Aquastrum F" Free-flow valves (both ports male thread)
bronze



both ports flat sealing male thread
according to DIN ISO 228, without draining facility
for the universal connection of pipes

DN 65	G 3	x G 3	4201820
DN 80	G 3½	x G 3½	4201824



both ports flat sealing male thread
according to DIN ISO 228, with plugged draining
orifice G 3/8 in front of and behind the seat
for the universal connection of pipes

DN 65	G 3	x G 3	4202220
DN 80	G 3½	x G 3½	4202224

"Aquastrum KFR" Valves (both ports male thread)
Combination free-flow valve/non-return check valve
bronze



both ports flat sealing male thread
according to DIN ISO 228, without draining facility,
for the universal connection of pipes

DN 65	G 3	x G 3	4207820
DN 80	G 3½	x G 3½	4207824



both ports flat sealing male thread
according to DIN ISO 228, with plugged draining
orifice G 3/8 in front of and behind the seat
for the universal connection of pipes

DN 65	G 3	x G 3	4208220
DN 80	G 3½	x G 3½	4208224

Application:

Potable water installations PN 16,
max. water temperature 120 °C.

"Aquastrum F" valves:

DVGW certified (PN 10)

"Aquastrum KFR" valves:

DVGW and SVGW certified (PN 10)

Without dead zone, all components in contact
with potable water made of non-brass
materials, valve disc made of stainless steel,
non-rising stem, maintenance-free stem seal
due to double O-ring made of EPDM.
Draining orifices on the side of the
handwheel. Display of the valve setting with the
help of the stroke index integrated in the
handwheel even if the valve has been
insulated.

The valves with draining orifice can
subsequently be equipped with a drain ball
valve: page 727

Suitable insulation shells for the sizes DN 65
and DN 80 can be obtained from:
GWK Kuhlmann GmbH, 33154 Salzkotten
or

www.gwk.de

Energy saving box serie MS - standard:

DN 65 male thread x male thread:

item no. 1221 065 608

DN 80 male thread x male thread:

item no. 1221 080 608

Article

Article-No.

Hint

"Aquastrum F" Free-flow valves (both ports flanged)
bronze



both ports round flanges according to DIN EN 1092, with additional flattening to increase the static stability, without draining facility

DN 65	2½	4204351
DN 80	3	4204352

Application:

Potable water installations PN 16, max. water temperature 120 °C.

"Aquastrum F" valves:

DVGW and SVGW certified (PN 10)

"Aquastrum KFR" valves:

DVGW certified (PN 10)

Without dead zone, all components in contact with potable water made of non-brass materials, valve disc made of stainless steel, non-rising stem, maintenance-free stem seal due to double O-ring made of EPDM. Draining orifices on the side of the handwheel. Display of the valve setting with the help of the stroke index integrated in the handwheel even if the valve has been insulated.

The valves with draining orifice can subsequently be equipped with a drain ball valve: page 727

both ports round flanges according to DIN EN 1092, with additional flattening to increase the static stability, with plugged draining orifice G ¾ in front of and behind the seat



DN 65	2½	4204451
DN 80	3	4204452

"Aquastrum KFR" Valves (both ports flanged)
Combination free-flow valve/non-return check valve
bronze



both ports round flanges according to DIN EN 1092, with additional flattening to increase the static stability, without draining facility

DN 65	2½	4209351
DN 80	3	4209352

Suitable insulation shells for the sizes DN 65 and DN 80 can be obtained from: GWK Kuhlmann GmbH, 33154 Salzkotten or

www.gwk.de

Energy saving box serie FS - standard:

DN 65 flanged x flanged:

item no. 1112 065 609

DN 80 flanged x flanged:

item no. 1112 080 609

both ports round flanges according to DIN EN 1092, with additional flattening to increase the static stability, with plugged draining orifice G ¾ in front of and behind the seat



DN 65	2½	4209451
DN 80	3	4209452

Article	Article-No.	Hint
---------	-------------	------

Accessories

Bonnets for valve bodies of the free-flow valves "Aquaström F" and the valves "Aquaström KFR" as well as for replacement purposes for products of other manufacturers than Oventrop with a connection body/bonnet according to DIN 3502.

Bonnet for free-flow valves
bronze



DN 15	4209004
DN 20	4209006
DN 25	4209008
DN 32	4209010
DN 40	4209012
DN 50	4209016
DN 65	4209020
DN 80	4209024

Bonnet for "KFR" valves
bronze



DN 15	4209504
DN 20	4209506
DN 25	4209508
DN 32	4209510
DN 40	4209512
DN 50	4209516
DN 65	4209520
DN 80	4209524

Insulation shells made of polyurethane rigid foam
for "Hydrocontrol VTR/VPR", "Hydrocontrol ATR/APR", "Hydromat QTR", "Hydromat DTR", as well as for free-flow valves "Aquaström F" and "Aquaström KFR" valves
Operating temperature t_s : +130°C (for short periods up to +150°C)



DN 10 - DN 15	1060081
DN 20	1060082
DN 25	1060083
DN 32	1060084
DN 40	1060085
DN 50	1060086




Insulation shells (two-part) made of polyurethane with tongue-and-groove fitting. Meet the requirements of the German Energy Saving Directive (EnEV), appendix 5, table 1, line 5.
Building material class B2 according to DIN 4102.



4.1.c "Aquaström FR" and "Aquaström R" valves

Content

"Aquaström FR" Free-flow valves	686
"Aquaström R" Non-return check valves	686

Article	Packing unit	Article-No.	Hint
"Aquastrum FR" Free-flow valves with non-return check valve insert, bronze			
 both ports flat sealing male thread according to DIN ISO 228, with plugged draining orifice G ¼ in front of and behind the seat and integrated non-return check valve insert with low opening pressure for the universal connection of pipes and fittings			
DN 15	G ¾	x G ¾	(10) 4202704
DN 20	G 1	x G 1	(10) 4202706
DN 25	G 1¼	x G 1¼	(10) 4202708
DN 32	G 1½	x G 1½	(5) 4202710
Insulation shells: page 683			
"Aquastrum R" Non-return check valves straight pattern, with test orifices G ¼, DIN EN 13959 type EA, bronze			
 both ports flat sealing male thread according to DIN ISO 228 for the universal connection of pipes and fittings			
DN 15	G ¾	x G ¾	4208704
DN 20	G 1	x G 1	4208706
DN 25	G 1¼	x G 1¼	4208708
DN 32	G 1½	x G 1½	4208710
DN 40	G 1¾	x G 1¾	4208712
DN 50	G 2⅝	x G 2⅝	4208716
 Inlet port: collar nut, flat sealing Outlet port: male thread, flat sealing according to DIN ISO 228 for the universal connection of pipes and fittings			
DN 15	c/nut ¾	x G ¾	4208604
DN 20	c/nut 1	x G 1	4208606
DN 25	c/nut 1¼	x G 1¼	4208608
DN 32	c/nut 1½	x G 1½	4208610
DN 40	c/nut 1¾	x G 1¾	4208612
DN 50	c/nut 2⅝	x G 2⅝	4208616
Connection fittings: page 730			

Application:
Potable water installations PN 16, max. water temperature 95 °C. DVGW and SVGW certified (PN 10).

Especially suitable for circulation pipes due to low opening pressure $P_{\text{opening}} \geq 10$ mbar, reduced dimensions, non-rising stem on size DN 25 and above. The valves with draining facility have an additional plugged draining orifice G ¼ in front of the seat. The valves without draining facility have a plugged draining orifice G ¼ in front of and behind the seat.

Drain ball valve (see accessories) may be installed subsequently.

Application:
Potable water installations PN 16, max. water temperature 95 °C, model according to DIN EN 13959.

Safety device according to DIN EN 1717 up to liquid category 2.






Especially suitable for circulation pipes due to low opening pressure $P_{\text{opening}} \geq 10$ mbar, without dead zone. DVGW and SVGW certified (PN 10). Sound absorbing according to DIN EN ISO 3822 product group I.



4.1.d "Optibal TW" Ball valves for potable water

Content

"Optibal TW" Ball valves for potable water	688
Insulation shells	689

Article	Packing unit	Article-No.	Hint
"Optibal TW" Ball valves for potable water with full flow, bronze extended plastic handle (black/green)			Application: Potable water installations PN 10, max. water temperature 90 °C.
	extended plastic handle (black/green) both ports female thread according to EN 10226-1, with plugged draining orifice G ¼ on both sides DVGW, ACS, GDV and VA certified		Bronze body, ball made of chrome plated brass, without dead zone, ball always surrounded by water. Full flow according to DIN EN 13828.
	DN 15	Rp ½ x Rp ½ (10)	4208804
	DN 20	Rp ¾ x Rp ¾ (10)	4208806
	DN 25	Rp 1 x Rp 1 (10)	4208808
	DN 32	Rp 1¼ x Rp 1¼ (10)	4208810
	DN 40	Rp 1½ x Rp 1½ (5)	4208812
	DN 50	Rp 2 x Rp 2 (5)	4208816
lever made of galvanised steel, without draining orifice DVGW, GDV and VA certified			
	DN 65	Rp 2½ x Rp 2½	4208820
	DN 80	Rp 3 x Rp 3	4208824
	extended plastic handle (black/green) both ports flat sealing male thread according to DIN ISO 228, with plugged draining orifice G ¼ on both sides DVGW, ACS, GDV and VA certified		
	DN 15	G ¾ x G ¾ (10)	4208904
	DN 20	G 1 x G 1 (10)	4208906
	DN 25	G 1¼ x G 1¼ (10)	4208908
	DN 32	G 1½ x G 1½ (10)	4208910
	DN 40	G 1¾ x G 1¾ (5)	4208912
	DN 50	G 2⅝ x G 2⅝ (5)	4208916
	both ports bronze press fittings system Sanha® with plugged draining orifice G ¼ on both sides DVGW, ACS and VA certified		Press connection: For the direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 451. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit- Mapress (MM) or Viega (Profipress) n corresponding size. Processing must be carried out according to the installation instructions.
	Ø 15 mm	(10)	4208852
	Ø 18 mm	(10)	4208853
	Ø 22 mm	(10)	4208854
	Ø 28 mm	(10)	4208855
	Ø 35 mm	(10)	4208856
	Ø 42 mm	(5)	4208857
	Ø 54 mm	(5)	4208858
	Electromotive actuator 24 V AC/DC, with spring return		Electromotive actuator for the motorisation of "Optibal TW" ball valves DN 15 - DN 25.
	for "Optibal TW" DN 15 - DN 25	(10)	4208890



Article	Packing unit	Article-No.	Hint
Insulation shells			The insulation shells comply with the German Energy Saving Directive as well as the building material class B1 according to DIN 4102 as far as fire protection is concerned.
DN 15	Ø 15 mm, Ø 18 mm	(50) 4208881	
DN 20	Ø 22 mm	(25) 4208882	
DN 25	Ø 28 mm	(25) 4208883	
DN 32	Ø 35 mm	(25) 4208884	
DN 40	Ø 42 mm	(10) 4208885	
DN 50	Ø 54 mm	(10) 4208886	



Thermometer conversion set, anthracite		
for item no.:	(10)	1078382
1078171/ 72/ 73, 1078371/ 72/ 73, 1078708/ 10/ 61/ 62 and 4208806/ 08, 4208854/ 55, 4208906/ 08		
for item no.:	(10)	4208893
4208810/ 12/ 16/ 56/ 57/ 58, 4208910/ 12/ 16		

4.1.e "Aquastrom VT/T plus" Thermal circulation valves

Content



"Aquastrom VT"	692
"Aquastrom T plus"	693
Accessories for "Aquastrom T plus", "Aquastrom VT"	694

Article

Article-No.

Hint

"Aquastrum VT"

Thermostatic valve with adjustable temperature control range and adjustable residual volume flow for circulation pipes

bronze

with isolating facility, presettable, draining valve for hose connection in front of the thermal control unit, including insulation and thermometer

both ports female thread according to EN 10226-1

DN 15	Rp ½	x Rp ½	4205704
DN 20	Rp ¾	x Rp ¾	4205706



both ports flat sealing male thread according to DIN ISO 228

DN 15	G ¾	x G ¾	4206704
DN 20	G 1	x G 1	4206706



both ports bronze press fittings

Ø 15 mm	4205752
Ø 18 mm	4205753
Ø 22 mm	4205754



Application:

Potable water installations PN 16 for circulation pipes according to work sheets W551 and W553.

With the factory setting, the valve complies with DVGW W554.

DVGW, SVGW, KIWA, VA, WRAS and WaterMark certified (except for item no. 4205752-54).

Max. water temperature 90 °C.

Complete with insulation shells made of EPS according to the German Energy Saving Directive (EnEV), building material class B1 according to DIN 4102.

Thermal control:

Max. control range: 50 °C–65 °C

Recommended control range: 55 °C–60 °C

Preset to 57 °C.

Temperature and flow setting lockable. With integrated ball valve, with isolating facility for riser. Automatic thermal disinfection.

Disinfection range starts about 6 K above the set temperature. The disinfection volume flow returns to the residual volume flow approximately 12 K above the set temperature to guarantee the supply of the succeeding system during thermal disinfection.

Draining valve for hose connection.

Temperature monitoring via thermometer or temperature sensor.

Self-cleaning valve unit.

The thermal control function is maintained even if the residual volume flow is set very low. This way, an exact hydronic balance of the individual circuits according to the pipework calculation is possible.

All parts in contact with potable water are made of non-brass materials.

Press connection:

For direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 541.

Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installations instructions.

Awards:



Design Centre Essen
reddot design award



Design Award of the
Federal Republic of Germany
Nominated 2010

Article

Article-No.

Hint

"Aquastrum T plus"

Thermostatic valve with adjustable temperature control range and fixed residual volume flow for circulation pipes

bronze

with isolating facility, presettable, draining valve for hose connection in front of the thermal control unit, including insulation and thermometer

both ports female thread according to EN 10226-1

DVGW, SVGW, KIWA, WRAS, ACS, VA and WaterMark certified



DN 15	Rp ½	x Rp ½	4205504
DN 20	Rp ¾	x Rp ¾	4205506
DN 25	Rp 1	x Rp 1	4205508

both ports flat sealing male thread according to DIN ISO 228
DVGW, SVGW, KIWA, WRAS, ACS and VA certified



DN 15	G ¾	x G ¾	4206504
DN 20	G 1	x G 1	4206506
DN 25	G 1¼	x G 1¼	4206508

both ports bronze press fittings
SVGW and VA certified



Ø 15 mm	4205552
Ø 18 mm	4205553
Ø 22 mm	4205554
Ø 28 mm	4205555

with isolating facility, presettable,
but **without** draining valve for hose connection
in front of the thermal control unit,
without thermometer and **without** insulation
The draining valve with hose connection is
required for the installation of the thermometer.



Draining orifice G ¼ in front of the thermal control
unit closed with a plug.

both ports female thread according to EN 10226-1
SVGW, ACS, KIWA and VA certified

DN 15	Rp ½	x Rp ½	4205604
DN 20	Rp ¾	x Rp ¾	4205606
DN 25	Rp 1	x Rp 1	4205608

both ports flat sealing male thread according to DIN ISO 228
SVGW, ACS, KIWA and VA certified



DN 15	G ¾	x G ¾	4206604
DN 20	G 1	x G 1	4206606
DN 25	G 1¼	x G 1¼	4206608

as above, but without isolating facility
and not presettable



both ports female thread according to EN 10226-1
SVGW, ACS, KIWA and VA certified

DN 15	Rp ½	x Rp ½	4205404
DN 20	Rp ¾	x Rp ¾	4205406

Application:

Potable water installations PN 16 for circulation
pipes according to work sheets W551 and
W553.

Valve complies with DVGW W554.

Max. water temperature 90 °C.

Thermal control:

Recommended control range: 55 °C-60 °C

Preset to 57 °C

(max. control range 40 °C-65 °C).

Temperature setting can be protected against
unauthorised tampering.

Automatic thermal disinfection.

Disinfection range starts about 6 K above the
set temperature. When exceeding a
temperature of 73 °C, the disinfection volume
flow is - irrespective of the set temperature -
reduced to the residual volume flow to
guarantee the disinfection of the succeeding
system. Draining valve for hose connection.
Temperature monitoring via thermometer or
temperature sensor.

Presetting and isolation of the max. volume
flow irrespective of the set control temperature.

All parts in contact with potable water are
made of non-brass materials.

Complete with insulation shells made
of EPS according to the German Energy Saving
Directive (EnEV), building material class B1
according to DIN 4102.







Press connection:

For direct connection of copper pipes
according to DIN EN 1057 / DVGW GW
392, stainless steel pipes according to DIN EN
10088 / DVGW GW 541.

Pressing must be carried out to tighten the
connection. Only use press jaws with the
original contours SANHA (SA), Geberit-
Mapress (MM) or Viega (Profipress) in
corresponding size. Processing must be
carried out according to the installations
instructions.

Only for export.

Connection fittings: Pages 730, 544, 537







Article	Packing unit	Article-No.	Hint
Accessories for "Aquastrum T plus", "Aquastrum VT"			
	Lead sealing set (10 fold)	(10) 1089091	Consisting of lead seal and locking wire.
	Locking pin with locking wire for double regulating and commissioning valves "Hycococon VTZ/VPZ" as well as for "Aquastrum T plus"	(50) 1061792	For locking the set nominal values. For double regulating and commissioning valves "Hycococon VTZ/VPZ" as well as item no. 42055/56/65/66..
	Insulation shell DN 15 + DN 20 DN 25 DN 15 + DN 20	4205581 4205583 4205781	For item no. 42055/56/65/66.. For item no. 42057/67..
	Thermometer (bimetal) NG 50	4205591	The draining valve with hose connection, item no. 4205593, is required for installation.
	Draining valve for hose connection G 1/4	(10) 4205593	For hoses 3/8".
	"Sensor LW TQ" Sensor element PT 1000	(10) 4205592	For remote monitoring and connection to centralised building control systems. For installation in the draining valve with hose connection item no. 4205593.

4.1.f "Aquastrom C" Regulating valves, "Aquastrom P" Water sampling valves

Content



"Aquastrom C" Double regulating and commissioning valves	696
"Aquastrom P" Water sampling valves	698
"Aquastrom M" Measuring and draining device	698
Accessories	698

Article	Packing unit	Article-No.	Hint
"Aquastrum C" Double regulating and commissioning valves with thermometer, draining valve for hose connection G 1/4 and insulation for circulation pipes in potable water installations bronze			<p>Application:</p> <p>Potable water installations PN 16 for circulation pipes according to DVGW work sheets W551 and W553.</p> <p>DVGW, SVGW, KIWA, ACS, VA and WaterMark certified (except for item no. 4207504-10).</p> <p>Max. water temperature 90 °C.</p> <p>Temperature monitoring via thermometer.</p> <p>Draining valve for hose connection.</p>
both ports female thread according to EN 10226-1			
	DN 15 Rp 1/2 x Rp 1/2	4208104	
	DN 20 Rp 3/4 x Rp 3/4	4208106	
	DN 25 Rp 1 x Rp 1	4208108	
	DN 32 Rp 1 1/4 x Rp 1 1/4	4208110	
both ports female thread according to EN 10226-1 but without insulation, without draining valve for hose connection and without thermometer			<p>Description:</p> <p>Body, bonnet and draining valve made of bronze, stem and valve disc made of brass resistant to dezincification (DZR), disc with PTFE seal, plug made of brass resistant to dezincification (DZR); complete with insulation shells made of EPS according to the German Energy Saving Directive (EnEV), building material class B1 according to DIN 4102.</p>
	DN 15 Rp 1/2 x Rp 1/2	(10) 4208152	
	DN 20 Rp 3/4 x Rp 3/4	(10) 4208154	
	DN 25 Rp 1 x Rp 1	(10) 4208156	
	DN 32 Rp 1 1/4 x Rp 1 1/4	(5) 4208158	
both ports male thread according to DIN ISO 228			<p>Function:</p> <p>Oventrop double regulating and commissioning valves "Aquastrum C" are installed in the circulation pipes of potable water installations and serve to achieve a hydronic balance between the various circuits of the system. The Oventrop double regulating and commissioning valves have threaded ports for fill and drain ball valves.</p>
	DN 15 G 3/4 x G 3/4	4207104	
	DN 20 G 1 x G 1	4207106	
	DN 25 G 1 1/4 x G 1 1/4	4207108	
	DN 32 G 1 1/2 x G 1 1/2	4207110	
as above but additionally with flame resistant water sampling valve (bronze/stainless steel) for tests according to DVGW 551 and TrinkwV (German Decree for Potable Water)			<p>The double regulating and commissioning valves "Aquastrum C" are protected by patent. Further double regulating and commissioning valves: page 298</p>
	both ports female thread according to EN 10226-1		
	DN 15 Rp 1/2 x Rp 1/2	4208504	
	DN 20 Rp 3/4 x Rp 3/4	4208506	
	DN 25 Rp 1 x Rp 1	4208508	
	DN 32 Rp 1 1/4 x Rp 1 1/4	4208510	
both ports male thread according to DIN ISO 228			
	DN 15 G 3/4 x G 3/4	4207504	
	DN 20 G 1 x G 1	4207506	
	DN 25 G 1 1/4 x G 1 1/4	4207508	
	DN 32 G 1 1/2 x G 1 1/2	4207510	
	Replacement insulation shell for "Aquastrum C" with recess for water sampling valve "Aquastrum P"		
	DN 15 + DN 20	4208181	
	DN 25	4208182	
	DN 32	4208183	

Colour rings for marking the risers: page 698



Bonnet for "Aquastrom C"

DN 15	4208192
DN 20	4208193
DN 25	4208194
DN 32	4208195



Bronze pressure test points

Set = 2 pressure test points G 1/4

"classic" measuring technique	(50) 4209090
-------------------------------	--------------



"Aquastrum P" Water sampling valves

bronze/stainless steel

DN 8	G ¼	(10)	4209102
DN 10	G ¾	(10)	4209103

Flame resistant and chemically disinfestable water sampling valve for microbiologic-chemical tests according to TrinkwV (German Decree for Potable Water).
PN 10.

Models 4209102/03:

Valve body made of bronze, stem made of stainless steel, metal to metal sealing, with additional seal made of heat-resistant PTFE, with metal plate for marking the water sampling point according to DIN EN ISO 19458.

Model 4209202:

Valve body made of dezincification resistant brass according to DIN 50930-6, chrome plated, stem made of stainless steel, metal to metal sealing, with additional seal made of heat-resistant PTFE.

All models are flame resistant, with discharge elbows made of stainless steel.

Operation with the help of the 5 mm Allen key supplied with the valve. Body and discharge elbow can be turned by 360°.

All models are DVGW and SVGW certified.

chrome plated, for the connection to an angle pattern valve



Inlet port: Pipe 10 x 1.25

Outlet port: G ¾ male thread with tapered crimp fitting with length compensation

4209202


"Aquastrum M" Measuring and draining device

both ports male thread according to DIN ISO 228
bronze, with hole for lead seal

DN 15	G ¾	x G ¾	4209204
DN 20	G 1	x G 1	4209206
DN 25	G 1¼	x G 1¼	4209208
DN 32	G 1½	x G 1½	4209210

For potable water temperature control in cold and hot water supply pipes and for the installation of water sampling valves.

The device without dead zone features a G ¼ and a G ¾ outlet nipple.

When used in combination with the PT 1000 temperature sensor 1150090 (page 720), electronic monitoring of the potable water temperature is possible in a centralised building control system.

Consisting of lead seal and locking wire.

Accessories

for double regulating and commissioning valves "Aquastrum C"


Lead sealing set (10 fold) (10) **1089091**

Locking set (1 fold) (25) **1060180**

Consisting of locking cap, lead seal and locking wire.



Marking ring

blue	(50)	1069650
red	(50)	1069651
violet	(50)	1069652
green	(50)	1069653

Colour rings for marking the risers to be clipped onto the handwheel.

4.1.g "Aquastrum UP" Flush-mounted valves

Content



"Aquastrum UP-F" Flush-mounted free-flow valves	700
"Aquastrum UP-Therm" Flush-mounted circulation valves	702
"Aquastrum UP-MS" Water meter installation set	704
Accessories for "Aquastrum" flush mounted valves	705
Accessories for "Aquastrum UP" flush-mounted valves flush-mounting pipe	706
Accessories for "Aquastrum UP" flush-mounted valves DN 15/DN 20 without flush-mounting pipe and "Aquastrum UP-MS" water meter installation sets	707
General accessories	708

Article

Article-No.

Hint

"Aquastrum UP-F" Flush-mounted free-flow valves
PN 16, bronze

both ports female thread according to EN 10226-1
for the universal connection of pipes
in intermediate ceiling installations



DN 15	Rp ½	x Rp ½	4220004
DN 20	Rp ¾	x Rp ¾	4220006

Application:
Potable water installations PN 16,
max. water temperature 90 °C.
Sound absorbing according to DIN EN ISO
3822 product group I.

DVGW and SVGW certified (DN 15, DN 20)
(PN 10).

Without dead zone, non-rising stem,
maintenance-free stem seal due to double
O-ring made of EPDM, complete with
insulation shell made of EPS according to the
German Energy Saving Directive (EnEV),
building material class B1 according to DIN
4102.

Suitable accessories DN 15 / DN 20:
-Accessories for valves with flush-mounting
pipe
-Accessories vor valves without flush-mounting
pipe

Suitable accessories DN 25 / DN 32:
-Accessories for valves with flush-mounting
pipe

Press connection:
For the direct connection of copper pipes
according to DIN EN 1057 / DVGW GW 392,
stainless steel pipes according to DIN EN
10088 / DVGW W 541.
Pressing must be carried out to tighten the
connection. Only use press jaws with the
original contours SANHA (SA), Geberit-
Mapress (MM) or Viega (Profipress) in
corresponding size. Processing must be
carried out in accordance with the installation
instructions.

both ports bronze press fittings
for the universal connection of pipes
in intermediate ceiling installations



DN 15	Ø 15 mm	4220052
DN 15	Ø 18 mm	4220053
DN 20	Ø 22 mm	4220054

both ports female thread according to EN 10226-1
for the universal connection of pipes
for flush-mounting or front-wall installation,
with flush-mounting pipe and protection/operating cap











DN 15	Rp ½	x Rp ½	4220104
DN 20	Rp ¾	x Rp ¾	4220106
DN 25	Rp 1	x Rp 1	4220108
DN 32	Rp 1¼	x Rp 1¼	4220110

both ports bronze press fittings
for the universal connection of pipes
for flush-mounting or front-wall installation,
with flush-mounting pipe and protection/operating cap



DN 15	Ø 15 mm	4220152
DN 15	Ø 18 mm	4220153
DN 20	Ø 22 mm	4220154
DN 25	Ø 28 mm	4220155

Article	Article-No.	Hint
"Aquastrum UP-F" Flush-mounted free-flow valves PN 16, bronze		
	both ports female thread according to EN 10226-1 for the universal connection of pipes for flush-mounting installation, with chrome plated handle bonnet	Application: Potable water installations PN 16, max. water temperature 90 °C. Sound absorbing according to DIN EN ISO 3822 product group I. DVGW and SVGW certified (DN 15, DN 20) (PN 10). Without dead zone, non-rising stem, maintenance-free stem seal due to double O-ring made of EPDM, complete with insulation shell made of EPS according to the German Energy Saving Directive (EnEV), building material class B1 according to DIN 4102.
	DN 15 Rp ½ x Rp ½ 4220204 DN 20 Rp ¾ x Rp ¾ 4220206 DN 25 Rp 1 x Rp 1 4220208 DN 32 Rp 1¼ x Rp 1¼ 4220210	
	both ports bronze press fittings for the universal connection of pipes for flush-mounting installation, with chrome plated handle bonnet	Suitable accessories DN 15 / DN 20: -Accessories for valves <u>with</u> flush-mounting pipe -Accessories vor valves <u>without</u> flush-mounting pipe
	DN 15 Ø 15 mm 4220252 DN 15 Ø 18 mm 4220253 DN 20 Ø 22 mm 4220254	
	Lockshield configuration both ports female thread according to EN 10226-1 for the universal connection of pipes for flush-mounting installation, with chrome plated protective cover and 6 mm socket spanner for operation	Suitable accessories DN 25 / DN 32: -Accessories for valves <u>with</u> flush-mounting pipe Press connection: For the direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW W 541. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit- Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out in accordance with the installation instructions.
	DN 15 Rp ½ x Rp ½ 4220304 DN 20 Rp ¾ x Rp ¾ 4220306 DN 25 Rp 1 x Rp 1 4220308 DN 32 Rp 1¼ x Rp 1¼ 4220310	
	Lockshield configuration both ports bronze press fittings for the universal connection of pipes for flush-mounting installation, with chrome plated protective cover and 6 mm socket spanner for operation	
	DN 15 Ø 15 mm 4220352 DN 15 Ø 18 mm 4220353 DN 20 Ø 22 mm 4220354	

Article	Article-No.	Hint
"Aquaström UP-Therm" Flush-mounted circulation valves Thermostatic circulation regulating valve for hydronic balancing of potable water circulation systems with floor to floor distribution bronze		
 <p>both ports female thread according to EN 10226-1 for intermediate ceiling installations Fixed value setting: 57 °C ± 1 °C</p> <p>DN 15 Rp 1/2 x Rp 1/2</p>	4225004	Application: Potable water installations PN 10 for circulation pipes according to work sheets W551 and W553. DVGW, SVGW and WRAS certified (except for item no. 4225152). Max. water temperature 90 °C. Thermal control preset to 57 °C ± 1 °C or 63 °C ± 1 °C. With isolating facility for riser. Automatic thermal disinfection. Disinfection range starts about 6 K above the set temperature. The disinfection volume flow returns to the residual volume flow approximately 12 K above the set temperature to guarantee the supply of succeeding system during thermal disinfection. Minimum residual volume flow $k_v = 0.05$. All components in contact with the fluid are made of non-brass materials. Without dead zone, non-rising stem, maintenance-free stem seal due to double O-ring made of EPDM, complete with insulation shell made of expanded polystyrene according to the German Energy Saving Directive (EnEV), building material class B1 according to DIN 4102. Suitable accessories: -Accessories for valves <u>with</u> flush-mounting pipe
 <p>Fixed value setting: 63 °C ± 1 °C</p> <p>DN 15 Rp 1/2 x Rp 1/2</p>	4225504	
 <p>both ports flat sealing male thread according to DIN ISO 228, for intermediate ceiling installations Fixed value setting: 57 °C ± 1 °C</p> <p>DN 15 G 3/4 x G 3/4</p>	4226004	
 <p>Fixed value setting: 63 °C ± 1 °C</p> <p>DN 15 G 3/4 x G 3/4</p>	4226504	
 <p>both ports female thread according to EN 10226-1 for the universal connection of pipes for flush-mounting or front-wall installation, with flush-mounting pipe and protection/operating cap Fixed value setting: 57 °C ± 1 °C</p> <p>DN 15 Rp 1/2 x Rp 1/2</p>	4225104	
 <p>both ports bronze press fittings for the universal connection of pipes for flush-mounting or front-wall installation, with flush-mounting pipe and protection/operating cap Fixed value setting: 57 °C ± 1 °C</p> <p>DN 15 Ø 15 mm</p>	4225152	Press connection: For the direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 541. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.

Article	Article-No.	Hint
	"Aquastrum UP-Therm" Flush-mounted circulation valves Thermostatic circulation regulating valve for the hydronic balancing in potable water circulation systems with floor to floor distribution bronze	
	both ports female thread according to EN 10226-1 for the universal connection of pipes for flush-mounting installation, with chrome plated handle bonnet Fixed value setting: 57 °C ± 1 °C DN 15 Rp ½ x Rp ½ 4225204	
	Fixed value setting: 63 °C ± 1 °C DN 15 Rp ½ x Rp ½ 4225704	
	Lockshield configuration, both ports female thread according to EN 10226-1, for the universal connection of pipes for flush-mounting installation, with chrome plated protective cover and 6 mm socket spanner for operation Fixed value setting: 57 °C ± 1 °C DN 15 Rp ½ x Rp ½ 4225304	
	Fixed value setting: 63 °C ± 1 °C DN 15 Rp ½ x Rp ½ 4225804	
	Lockshield configuration, both ports bronze press fittings for the universal connection of pipes for flush-mounting installation, with chrome plated protective cover and 6 mm socket spanner for operation Fixed value setting: 57 °C ± 1 °C DN 15 Ø 15 mm 4225352	
	Press connection: For the direct connection of copper pipes according to DIN EN 1057 / DVGW GW 392, stainless steel pipes according to DIN EN 10088 / DVGW GW 541. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit- Mapress (MM) or Viega (Profipress) in corresponding size. Processing must be carried out according to the installation instructions.	
Application: Potable water installations PN 10 for circulation pipes according to work sheets W551 and W553. DVGW, SVGW and WRAS certified (except for item no. 4225352). Max. water temperature 90 °C. Thermal control preset to 57 °C ± 1 °C or 63 °C ± 1 °C. With isolating facility for riser. Automatic thermal disinfection. Disinfection range starts about 6 K above the set temperature. The disinfection volume flow returns to the residual volume flow approximately 12 K above the set temperature to guarantee the supply of the succeeding system during thermal disinfection. Minimum residual volume flow $k_v = 0,05$. All components in contact with the fluid are made of non-brass materials. Without dead zone, non-rising stem, maintenance-free stem seal due to double O-ring made of EPDM, complete with insulation shell made of expanded polystyrene according to the German Energy Saving Directive (EnEV), building material class B1 according to DIN 4102. Suitable accessories: -Accessories for valves <u>with</u> flush-mounting pipe		

Article

Article-No.

Hint

"Aquaström UP-MS" Water meter installation set

Water meter installation set DN 20, consisting of flush-mounted isolating valve and water meter housing with universal G2-coaxial thread, for the fixing of measuring capsules of different manufacturers up to Qn 1,5 m³/h. For an optimum installation and alignment of water meters and isolating valves. Complete pipe section made of bronze.

Model "Duo"

Two pipe model consisting of hot and cold water riser, distance between pipe centres 153 mm, including protection caps and fixing set, optionally dividable.



DN 20

Rp ¾ x Rp ¾

4223216

Model "Uno"

One pipe model consisting of hot or cold water riser, including protection caps and fixing set



DN 20

Rp ¾ x Rp ¾

4223116

Application:

Potable water installations PN 10, max. water temperature 90 °C. (The specifications of the manufacturer of the measuring capsules must be observed!)

Completely pre-assembled and leak tested unit. Complete pipe section made of bronze, one-piece casted.

Sound absorbing according to DIN EN ISO 3822 product group I.

DVGW and SVGW certified.

Supplied with fixing set for wall attachment or front-wall installation, measuring capsules not included.

Thermal insulation by high-quality insulation shells made of special expanded polystyrene according to the German Energy Saving Directive (EnEV), building material class B1 (hardly inflammable) according to DIN 4102.

Operation of the isolating valve during the construction phase with the help of the protection cap.

Connections:






Both ports female thread Rp ¾ according to EN 10226-1.






Water meter connection with universal G 2 coaxial thread.






Suitable accessories:

- Accessories for valves with flush-mounting pipe
- Accessories for valves without flush-mounting pipe

Article	Article-No.	Hint
Accessories for "Aquastrum" flush mounted valves		
Valve inserts		
Spare valve insert "Aquastrum UP-F" and "Aquastrum UP-MS"		Spare valve insert for flush-mounted valves "Aquastrum UP" manufactured since 2017 and water meter installation sets "Aquastrum UP-MS".
DN 15/ DN 20	4223191	
DN 25/ DN 32	4220191	
Spare valve insert "Aquastrum UP-F" manufactured up to 2016		Spare valve insert for flush-mounted valves "Aquastrum UP-F" manufactured up to 2016.
DN 15/ DN 20	4220190	
Spare valve insert "Aquastrum UP-KFR"		Spare valve insert for flush-mounted valves "Aquastrum UP-KFR".
DN 15 / DN 20	4221090	
Spare valve insert "UP-Therm"		Spare valve insert for flush-mounted valves "Aquastrum UP-Therm".
for circulation module 57 °C	4225090	
DN 15		
for circulation module 63 °C	4225590	
DN 15		

Article	Packing unit	Article-No.	Hint
Accessories for "Aquastrum UP" flush-mounted valves flush-mounting pipe			
	Standard bonnet handwheel set suitable for flush-mounted valves with flush-mounting pipe consisting of bonnet product assembly with clamping unit, toothed spindle, chrome plated operating element and three coloured marking laminas		For the operation of all flush-mounted valves "Aquastrum UP" when using the flush-mounting pipe. With handwheel and locking screw for fixing in the flush-mounting pipe.
	Handwheel set DN 15/ DN 20	4229001	
	Handwheel set DN 25/ DN 32	4229002	
	Lockshield bonnet handwheel set suitable for flush-mounted valves with flush-mounting pipe consisting of bonnet product assembly with clamping unit, toothed spindle, chrome plated rosette cover, chrome plated operating element, three coloured marking laminas and hexagon socket spanner for operation		For the operation of all flush-mounted valves "Aquastrum UP" when using the flush-mounting pipe. With socket spanner and locking screw for fixing in the flush-mounting pipe.
	Bonnet set DN 15/ DN 20	4229010	
	Bonnet set DN 25/ DN 32	4229011	
	Spare flush-mounting pipe with toothed spindle and protection/operating cap		
	DN 15/ DN 20	(25) 4229015	
	DN 25/ DN 32	(25) 4229016	
	Extension set flush-mounting pipe		For an increase of the installation depth by 90 mm.
	DN 15/ DN 20	(10) 4229040	
	DN 25/ DN 32	(10) 4229041	
	Mounting set for front-wall installation		To be screwed onto the flush-mounting pipe.
	DN 15/ DN 20	(10) 4229020	
	DN 25/ DN 32	(10) 4229021	

Article	Article-No.	Hint
Accessories for "Aquastrum UP" flush-mounted valves DN 15/DN 20 without flush-mounting pipe and "Aquastrum UP-MS" water meter installation sets		
	<p>Bonnet handwheel set For wall construction 0 - 35 mm Consisting of chrome plated operating element, chrome plated rosette cover, chrome plated sleeve and coloured marking laminas</p> <p>4223192</p>	For the operation of all flush-mounted valves "Aquastrum UP-F" DN 15/DN 20 manufactured since 2017 and all water meter installation sets "Aquastrum UP-MS".
	<p>Bonnet handwheel set long For wall construction 35 - 90 mm Consisting of chrome plated operating element, chrome plated rosette cover, adjustable plastic extension and coloured marking laminas</p> <p>4223195</p>	Further information regarding installation options of the accessories of the flush-mounted valves and the wall installation height can be found in the "Technical information".
	<p>Lockshield bonnet set For wall construction 0 - 40 mm</p> <p>4223196</p>	
	<p>Lockshield bonnet set long For wall construction 35 - 135 mm</p> <p>4223193</p>	
	<p>Handwheel for surface-mounted installation</p> <p>4223197</p>	

Article	Packing unit	Article-No.	Hint
General accessories			
	Pipe socket wrench for all flush-mounted valves		
	DN 15 - DN 32	(25) 4229035	
	Spare insulation shells		
	DN 15/ DN 20	4229050	
	DN 25	4229051	
	DN 32	4229052	
	Spare insulation shells for water meter installation sets "Aquastrom UP-MS"		
	Model "Duo"	4223290	
	Model "Uno"	4223190	
	Fixing set for "Aquastrom UP-MS" consisting of 4 elbows and fixing material	4223194	Consisting of 4 elbows, 4 screws and 4 discs.

4.1.h "Aquastrum K" Thermostatic cold water circulation valve




Content



"Aquastrum K"	710
Accessories	710

Article	Packing unit	Article-No.	Hint
"Aquastrom K" Thermostatic cold water circulation valve Thermostatic double regulating and commissioning valve for the hydronic balancing of chilled potable water or domestic water systems bronze			Application: Potable water installations PN 10 for cold water systems.
both ports female thread according to EN 10226-1 for intermediate ceiling installations			Max. water temperature 25 °C. Thermal control preset to 8 °C ± 1 °C (4205904), to 20 °C ± 1 °C (4206304). With isolating facility.
Temperature adjustable between 6°C and 18 °C WRAS certified			The valve opens above the set temperature and automatically increases the cold water volume flow. Thus, the valve allows an automatic, thermally controlled hydronic balancing in cold water circulation pipes. This way, the supply of chilled potable water at each draw off point of the system is guaranteed.
DN 15	Rp ½ x Rp ½	4205904	
Temperature adjustable between 12 °C and 24 °C			Minimum cold water volume flow $k_v = 0.05$
DN 15	Rp ½ x Rp ½	4206304	Adjustable temperature range: 6 °C - 18 °C (4205904), 12 °C - 24 °C (4206304)
			All components in contact with potable water are made of non-brass materials, without dead zone, non-rising stem, maintenance-free stem seal due to double O-ring seal made of EPDM, complete with insulation shells made of EPS according to the German Energy Saving Directive (EnEV), fire protection class B1 according to DIN 4102.
			Note: In order to improve diffusion tightness, the insulation shells have to be sealed with silicone.
			With the accessories (page 706) the double regulating and commissioning valve can be used as flush-mounted valve or in dry-build systems.

Accessories

Spare valve insert cold water module		
	adjustable between 6 °C and 18 °C	4205990
	adjustable between 12 °C and 24 °C	4205992
Spare insulation shells		
	DN 15/ DN 20	4229050
Thermometer 0-30 °C for potable water temperature control with draining valve for hose connection		
	DN 8	G 1/4 (25) 4205991

The control thermometer can be screwed into all valves with G 1/4 threaded coupling.



4.1.i "Brawa-Mix" Thermostatic mixing valves

Content

"Brawa-Mix"	712
Accessories	713
Strainers	713

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Brawa-Mix" Thermostatic mixing valve

with "fail-safe" function




Bronze, spring made of vanadium steel, control piston made of polyphenylene ether, EPDM O-rings, both ports flat sealing male thread according to DIN ISO 228, handwheel lockable and lead lockable

DN 20	G 1	x G 1	x G 1	1300306
DN 25	G 1¼	x G 1¼	x G 1¼	1300308
DN 32	G 1½	x G 1½	x G 1½	1300310

Application:
Potable water installations PN 10,
up to 90 °C.
Control range: 35 °C up to 65 °C
Connection fittings: from page 730

Awards:
 German Designer Club
Good Design 08

 universal design award



Bronze body, brass components resistant to dezincification, brass couplings, G 1 male thread with 3 collar nuts

DN 20	G 1	x G 1	x G 1	1300351
-------	-----	-------	-------	----------------

Application:
Potable water installations PN 10,
up to 90 °C.
Control range: 35 °C up to 50 °C

WRAS certified.



without collar nuts
(for compression fittings) **1300352**



without "fail-safe" function
Bronze body, brass components resistant to dezincification, brass couplings

G 1 male thread without collar nuts	(25)	1300200
--	------	----------------

Application:
Potable water installations PN 10,
up to 90 °C, with lateral mixed water outlet.
Control range: 30 °C up to 70°C



as above but with lead lockable protection cap, preset to 57 °C, with 3 collar nuts and gaskets	(20)	1300251
---	------	----------------

Article	Packing unit	Article-No.	Hint	
Accessories				
Insulation shells made of expanded polypropylene for thermostatic mixing valves according to the German Energy Saving Directive (EnEV), building material class B2 according to DIN 4102				
DN 20		1300385	For item no. 1300306	
DN 25/DN 32		1300386	For item no. 1300308-10	
Compression fittings – 3-fold – complete with 3 collar nuts				
Ø 15 mm	(10)	1300381°	Only for item no. 1300352.	
Ø 18 mm	(10)	1300382°		
Ø 22 mm	(10)	1300383°		
Bronze inline thermometer with dial				
DN 20	G 1 c/nut	x G 1 M	1300952	Length: 74 mm
DN 25	G 1¼ c/nut	x G 1¼ M	1300953	Length: 70 mm
DN 32	G 1½ c/nut	x G 1½ male	1300954	Length: 81 mm
Bronze non-return valve for cold water				
DN 20	Rp ¾	x Rp ¾	1302006	Up to 95 °C
DN 25	Rp 1	x Rp 1	1302008	Length: 61 mm
DN 32	Rp 1 ¼	x Rp 1 ¼	1302010	Length: 81 mm
Strainers				
bronze, with stainless steel wire basket				
for the protection of the thermostatic mixing valve against contaminations and malfunctions				
with simple wire basket, 600 µm				
DN 20	Rp ¾	x Rp ¾	(10) 1120006	Accessories: page 418
DN 25	Rp 1	x Rp 1	(10) 1120008	
DN 32	Rp 1¼	x Rp 1¼	(5) 1120010	
WRAS certified for installation in potable water systems.				

For connection to the "Brawa-Mix".

Length: 74 mm
Length: 70 mm
Length: 81 mm

Up to 95 °C

Length: 61 mm
Length: 81 mm
Length: 91 mm

Accessories: page 418






WRAS certified for installation in potable water systems.

4.1.j "Regucirc" Circulation stations

Content



"Regucirc B"	716
"Regucirc M"	717

Article	Article-No.	Hint
 <p>"Regucirc B"</p> <p>DN 20 G 1 male thread x male thread</p> <p>Circulation pump group for use in detached or semi-detached houses, consisting of an energy-saving high-efficiency pump, a non-return check valve, a thermostatic valve "Aquaström VT" and a control thermometer</p> <p>with Biral pump AX20-4 120 BLUE 4206776</p> <p>Circulation pump with bronze body, high-efficiency pump, automatic infinitely variable speed control</p>		<p>Application: Potable water installations PN 16, max. water temperature 90 °C.</p> <p>Completely pre-assembled and leak tested feed unit for circulation systems in detached or semi-detached houses.</p> <p>Both ports G 1 male thread, complete with insulation shell made of EPP according to the German Energy Saving Directive (EnEV), with isolating facility for an easy replacement of the pump. Max. continuous operating temperature: 90 °C</p> <p>Award:</p> <div>  Industrial Design Forum Hanover Award iF </div>
 <p>Accessories</p> <p>Biral high-efficiency pump AX20-4 120 BLUE 4206790</p> <p>G 1¼ x 120 mm, 230 V, 50 Hz</p>		
 <p>Thermometer (bimetal)</p> <p>NG 50 4205591</p>		<p>The draining valve with hose connection, item no. 4205593, is required for installation.</p>
 <p>Spare insulation shell 4206795</p>		

Article	Packing unit	Article-No.	Hint
"Regucirc M"			
DN 20 G 1 male thread x male thread			Application: Potable water installations PN 16, max. water temperature 90 °C.
Circulation pump group with thermostatic mixing valve for use in detached or semi-detached houses, consisting of an energy-saving high-efficiency pump, a non-return check valve, ball valves with thermometer and a thermostatic mixing valve (control range 35 °C - 65 °C)			Completely pre-assembled and leak tested circulation mixing and feed unit for circulation systems in detached or semi-detached houses.
with Biral pump AX20-4 120 BLUE 4206780			With flat sealing connections G 1 male thread x male thread, complete with insulation shell made of EPP according to the German Energy Saving Directive (EnEV). With isolating facility for an easy replacement of the pump or the thermostatic mixing valve.
Circulation pump with bronze body, high-efficiency pump, automatic infinitely variable speed control			Max. continuous operating temperature: 90 °C
Accessories			
Biral high-efficiency pump AX20-4 120 BLUE G 1¼ x 120 mm, 230 V, 50 Hz			4206790
Thermometer for "Regumat" DN 25-50 as well as for "Regucirc M" and "Optibal PK"			1351690°
"Sensor LW TH" Temperature sensor PT 1000			For electronic registration of the riser temperatures.
Storage cylinder			1369093 Continuous temperature range: up to 105 °C L = 300 cm
Spare insulation shell			4206797
Strainer bronze, with stainless steel wire basket 600 µm for the protection of the thermostatic mixing valve against contaminations and malfunctions			WRAS certified.
with simple wire basket, 600 µm			
DN 20	(10)	1120006	

4.1.k "Regudrain" Flushing station



Content

"Regudrain" Flushing station	720
Accessories	720

Article

Article-No.

Hint

"Regudrain" Flushing station

Hygiene flushing station for the maintenance of normal operation in potable water systems, for instance during interruptions of use.

Application:
Potable water installations PN 10,
max. water temperature 90 °C.

For the installation at the end of the riser or in ring circuits.

Completely pre-assembled and leak tested unit. Bracket for front-wall installation systems and wall attachment. Insulation made of expanded polypropylene. Flushing riser with solenoid valve and volume flow sensor, with isolating facility. Free outlet according to EN 1717 for the connection to the sewerage network.

Connections:

Potable water circuit: G ¾, flat sealing

Sewerage network: DN 40

Electronic controller "Regtronic HS" for valve control, individually programmable, with web access and log function.

Suitable for the protection of the PWC or PWH circuit .

DVGW certified according to W 540 and SVGW certified.

Awards:



ICONIC AWARDS 2018
Innovative Interior



German Innovation Award 2018
Winner



GERMAN DESIGN AWARD
WINNER 2019

Model "Duo"

4207005

For the protection of two risers in a potable water installation



Model "Uno"

4207004

as 4207005, but for the protection of one riser (PWC or PWH) in a potable water installation



Accessories

Extension set "Duo"

4207094

for the extension of the model "Uno" by a second flushing riser (PWC or PWH) including fixing material



Completely pre-assembled and leak tested unit including fixing material.

Extension ring circuit

4207095

"h" fitting for the connection in ring circuits
G ¾ collar nut x G ¾ x G ¾



"h" fitting for the extension of the "Regudrain" flushing station for installation in ring circuit systems. 2 sets are required for the model "Duo".

"Sensor LW TQ"

Sensor element PT 1000
G ¾, bronze body,
temperature sensor made of stainless steel,
two wire system

1150090



For remote monitoring of the riser temperatures and integration into a centralised building control system.

Humidity sensor

4207099








Sensor cable
1500 mm, bipolar with plug
and connecting terminal

4207098



One sensor cable with plug, item no. 4207098, is required for the connection of the sensors 1150090, 1369095 and 4207099 to the flushing station.

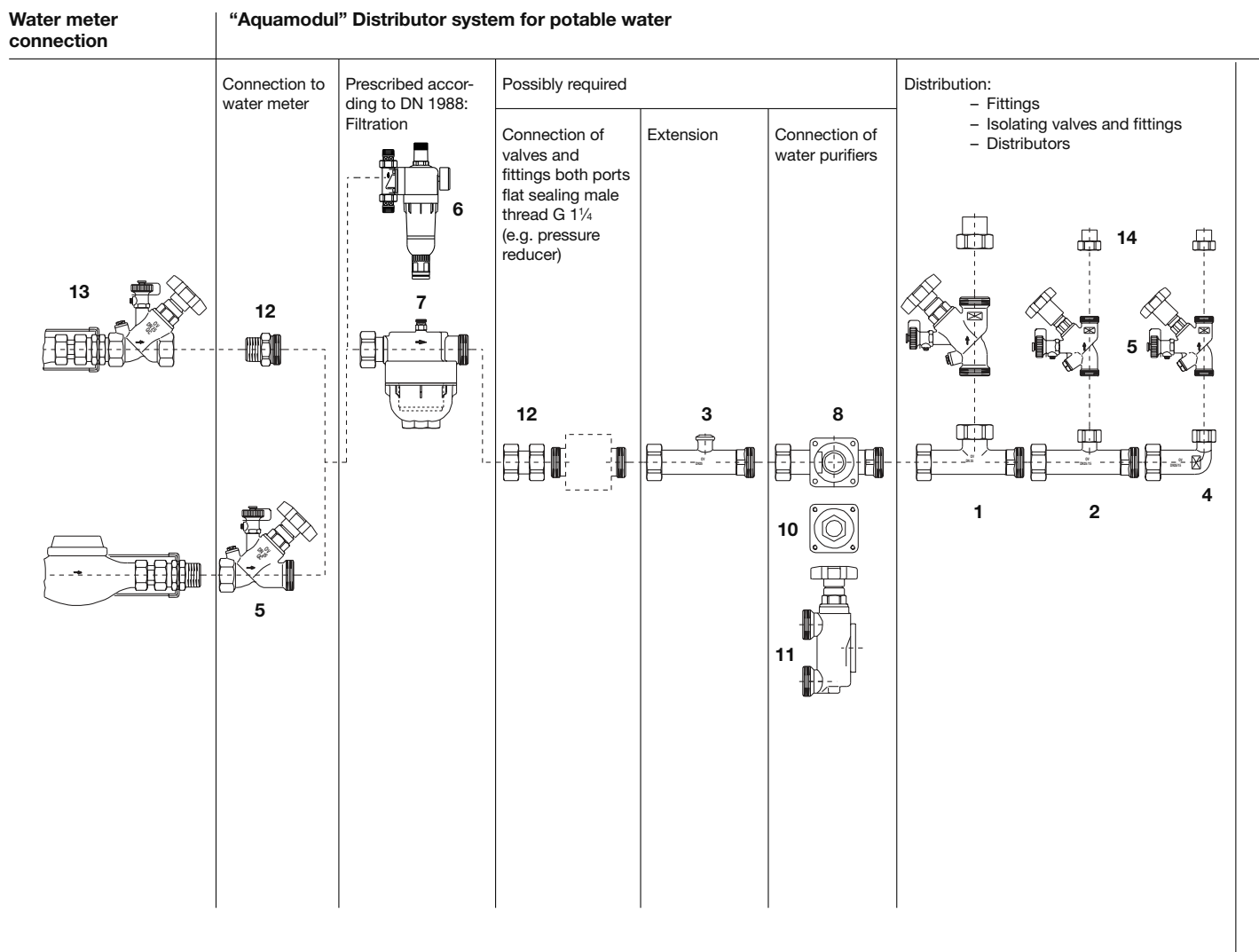
Article	Article-No.	Hint
	Temperature sensor attached to the pipe Sensor element PT 1000, with fixing clamp Ø 25 - 40 and heat conducting paste	1369095 Continuous operating temperature range: up to 180 °C L = 150 mm
	Tiling ready frame	4207090 Made of aluminium, infinitely adjustable between 200 mm x 350 mm and 520 mm x 620 mm, including fixing material.
	Surface-mounted cover for flushing station steel, galvanised white lacquered	4207091 Dimensions (W x H x D): 315 mm x 472 mm x 108 mm
	Flushing valve 24 V DC with volume flow sensor, flow controller and jet regulator	4207092
	Siphon for flushing station	4207093
	Jet regulator for flushing valve	4207097
	Flow controller set for flushing valve Model 7 l/min. Model 5 l/min., 7 l/min. and 11 l/min.	4207089° 4207096

4.1.I "Aquamodul" Distributor system for potable water

Content



T-distributor	725
Extension	725
Elbow	725
"Aquanova Compact" Water filter	726
EAS - One pipe connection piece	726
Pressure relief cap	726
Bypass valve	726
Fill and drain ball valve	727
Draining ball valve	727
"Optiflex" Fill and drain ball valve	727
Bracket	727
Accessories	728



The Oventrop distributor system for potable water made of bronze (PN 16) enables a fast installation of pipework for domestic water distribution. The components are connected by using flat sealing screws. The G 1 distributor line has a G 1 1/4 collar nut at the inlet port and is male threaded accordingly at the outlet port. The dimension is 140 mm.

For connecting the columns, the T-pieces (pos. 1 and 2) and the elbow (pos. 4) are equipped with a collar nut and are suitable for a direct connection of isolating valves and fittings with flat sealing male thread G 1 1/4, G 1 or G 3/4 (pos. 5).




A suitable domestic water station (pos. 6) or a water filter (pos. 7) can be directly incorporated into the system.

The one pipe connection piece EAS (pos. 8) serves to connect Oventrop water- and backflush filters with one pipe connection piece. Water purifiers or pipe flushing devices can be connected by use of the bypass valve (pos. 11).

Also available are extensions (pos. 3), pressure relief caps (pos. 10), nipples (pos. 12) and connection fittings for all standard pipes (pos. 14).

Advantages:

- bronze bodies
(all parts coming into contact with potable water are made of non-brass materials)
- simple and quick installation
- all valves and fittings with flat sealing male thread G 1 1/4 may be connected
- all isolating valves and fittings with flat sealing male thread G 1 1/4, G 1 or G 3/4 may be connected
- all standard pipe materials may be connected
- standard pipe fixing devices for DN 25 may be used

Article	Packing unit	Article-No.	Hint
<hr/>			
T-distributor bronze flat sealing (140 mm) Inlet port: collar nut G 1¼ Outlet port: male thread G 1¼ Column:			Application: Potable water installations PN 16, max. water temperature 120 °C. Connection of isolating valves and fittings with flat sealing male thread G ¾, G 1 or G 1 ¼.
	collar nut G ¾	(10) 4200252	Bracket: page 727
	collar nut G 1	(10) 4200253	
	collar nut G 1¼	(10) 4200254	
Extension bronze flat sealing (140 mm) Inlet port: collar nut G 1 ¼ Outlet port: male thread G 1 ¼			
		(10) 4200256	
Elbow bronze flat sealing (70 mm) Inlet port: collar nut G 1¼ Column:			Connection of isolating valves and fittings with flat sealing male thread G ¾.
	collar nut G ¾	(10) 4200255	



**"Aquanova Compact" Water filter
with transparent plastic filter cup PN 16**

Head: bronze
flat sealing
Filter insert: plastic body covered with mesh
Mesh size: 100-120 µm
Inlet port: collar nut G 1¼
Outlet port: male thread G 1¼

4202508

Application:
Potable water installations PN 16,
max. water temperature 30 °C.
DVGW and ACS certified.

Length: 140 mm



EAS - One pipe connection piece

for the connection of the
Oventrop bypass valve
bronze
flat sealing (140 mm)
Inlet port: collar nut G 1¼
Outlet port: male thread G 1¼

4200208

Connection of the Oventrop bypass valve, item
no. 4200308.



Pressure relief cap

to close the EAS one pipe connection piece,
with ring gasket and fixing screws,
bronze

without connection thread
with connection thread Rp ¾

(10) **4200211**
(10) **4200212**

For closing or bridging the EAS one pipe
connection piece until a water purifier is
installed.







Bypass valve








for the connection to the EAS one pipe connection piece,
with ring gasket and fixing screws,
bronze

Connections: G 1¼ male thread

4200308

For connecting or bridging a water purifier or a
pipe flushing device.
Max. water temperature 90 °C, PN 10.

Article	Packing unit	Article-No.	Hint
Fill and drain ball valve bronze			Max. PN 16 and 90 °C (150 °C).
			
handle with stop with hose connection and cap			
DN 10	G 3/8	(50) 1032403	
Draining ball valve			
			
DN 8	G 1/4	(25) 4200191	
"Optiflex" Fill and drain ball valve brass, outside nickel plated			PN 10, DN 15R (reduced) Max. water temperature: 90 °C DVGW certified.
			
Handle with stop, with male thread, self sealing with counternut, with cap			
DN 15	G 1/2	(50) 1033152	
Bracket			
			
consisting of 2 clamp rings with rubber profile layer, 2 blind screws M 10 and suitable dowels			Clamping range Ø 31-35 mm. To fix the distributor components onto the wall. Item no. 4200252-56: page 725
4200295			

Article	Packing unit	Article-No.	Hint
Accessories			
	Double fitting bronze, flat sealing (38 mm) both ports collar nut G 1 1/4	(10) 4200285	For the integration of valves and fittings with flat sealing male thread G 1 1/4.
	Double nipple bronze both ports R 1	(10) 4200283	
	Nipple bronze R 1 x G 1 1/4	(10) 4200284	
	Cap brass with washer G 1 1/4 female thread	(10) 4200291	For closing the T-distributor, item no. 4200254 (if no elbow is used).
	Plug bronze DN 15 DN 20 DN 25	G 3/4 (10) 4200289 G 1 (10) 4200288 G 1 1/4 (10) 4200290	For closing the distributor connections.
	Venting screw brass G 1/8 male thread G 1/4 male thread G 3/8 male thread	(25) 1109001° (25) 1109002° (25) 1109003°	
	Drain valve self sealing, with rotating outlet made of brass resistant to dezincification Handwheel and outlet anthracite coloured G 1/4 male thread G 3/8 male thread G 1/2 male thread	(100) 4209602 (100) 4209603 (100) 4209604	Max. pressure and temperature: 10 bar, 100 °C, with connection nipple for 3/8 hose. Seal made of EPDM. For draining and bleeding, for use in potable water systems.

4.1.m "Ofix" Connection fittings

Content



Ofix Connection fittings

730

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Ofix Connection fittings



Tailpipe (bronze), flat sealing, with male thread according to EN 10226-1, collar nut and ring gasket (EPDM)

R ¾	x G 1¼ (collar nut)	(10)	4201471
R ½	x G ¾ (collar nut)	(10)	4201472
R ¾	x G 1 (collar nut)	(10)	4201473
R 1	x G 1¼ (collar nut)	(10)	4201474
R 1¼	x G 1½ (collar nut)	(5)	4201475
R 1½	x G 1¾ (collar nut)	(5)	4201476
R 2	x G 2¾ (collar nut)	(5)	4201477



Tailpipe (bronze), flat sealing, with female thread according to EN 10226-1, collar nut and ring gasket (EPDM)

Rp ½	x G ¾ (collar nut)	(10)	4201372
Rp ¾	x G 1 (collar nut)	(10)	4201373
Rp ¾	x G 1¼ (collar nut)	(10)	4200282
Rp 1	x G 1¼ (collar nut)	(10)	4201374
Rp 1¼	x G 1½ (collar nut)	(5)	4201375
Rp 1½	x G 1¾ (collar nut)	(5)	4201376
Rp 2	x G 2¾ (collar nut)	(5)	4201377



Rp 2½	x G 3 (collar nut)	4201378
Rp 3	x G 3½ (collar nut)	4201379



Solder tailpipe (bronze), flat sealing, with collar nut and ring gasket (EPDM)

Ø 15 mm	x G ¾ (collar nut)	(10)	4202072
Ø 15 mm	x G 1¼ (collar nut)	(10)	4200272
Ø 18 mm	x G ¾ (collar nut)	(10)	4202073
Ø 18 mm	x G 1¼ (collar nut)	(10)	4200273
Ø 22 mm	x G 1 (collar nut)	(10)	4202074
Ø 28 mm	x G 1¼ (collar nut)	(10)	4202075
Ø 35 mm	x G 1½ (collar nut)	(5)	4202076
Ø 42 mm	x G 1¾ (collar nut)	(5)	4202077
Ø 54 mm	x G 2¾ (collar nut)	(5)	4202078



4.1.n Domestic water station/Heating system filling station

Content

Domestic water station	732
Heating system filling station	732



Domestic water station
consisting of backflush filter,
pressure reducer with bronze
swivel connection piece for
horizontal and vertical installation
and with bronze male threaded
couplings.
Body and transparent cup made
of plastic

DN 20	R ¾	4204506
DN 25	R 1	4204508
DN 32	R 1¼	4204510

Accessories

Pressure reducer insert	4204590
Filter insert 100 µm	4204591
Filter cup, complete	4204592
Pressure gauge	4204593

Application:
Potable water installations PN 16,
water temperature up to 90 °C.

Mesh size: 95-110 µm
Pressure at station inlet:
min. 1.5 bar, max. 16 bar
Pressure at station outlet:
adjustable between 1.5 and 6 bar
(factory preset to 4 bar)

DVGW certified (PN 10).

Compact unit with backflush filter, pressure
reducer, pressure gauge and male threaded
couplings.



Heating system filling station
Filling combination according to DIN EN 1717 for
heating systems consisting of strainer, pressure
reducer, system separator type BA and drain water
connection, with isolating facility for maintenance.
Brass body, cartridges of system separator and
pressure reducer made of plastic.

DN 15	G ¾	1055004
-------	-----	----------------

Application:
Potable water installations PN 10.
Max. water temperature
at the inlet port: 30 °C
Max. water temperature
at the outlet port: 65 °C

Max. operating pressure: 10 bar
Outlet pressure adjustable between
1 and 5 bar (factory preset to 1.5 bar).

According to DIN EN 1717 all installations have
to be realised intrinsically safe and as
permanent connections.

Hence filling of the heating system has to be
carried out via a system separator type BA or
BC!

Accessories



Replacement cartridge for system separator	1055095
---	----------------

DVGW certified.



Replacement cartridge for pressure reducer	1055096
---	----------------



4.1.o "Aquanova" Water filters

Content

"Aquanova Compact" Water filters	734
Accessories	734
"Aquanova Magnum" Water filters	735
Accessories	736

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

**"Aquanova Compact" Water filters
with transparent plastic filter cup (Trogamid T) PN 16**

Head: brass
Filter insert: plastic body covered with mesh
Mesh size: 100-120 µm
Max. water temperature: 30 °C

Application:
Potable water installations PN 16,
DVGW and ACS certified.

Awards:
DESIGN PLUS ISH Frankfurt
Design Award Switzerland

both ports female thread according to EN 10226-1

DN 25	Rp 1	x Rp 1	6120508
-------	------	--------	----------------



Head and tailpipes: bronze
both ports flat sealing male threaded tailpipe
according to EN 10226-1

DN 20	R ¾	6122506
DN 25	R 1	6122508
DN 32	R 1¼	6122510



Head: bronze
flat sealing
Filter insert: plastic body covered with mesh
Mesh size: 100-120 µm
Inlet port: collar nut G 1¼
Outlet port: male thread G 1¼

Length: 140 mm



Accessories

Venting screw
brass

G ½ male thread	(25)	1109001°
-----------------	------	-----------------







Filter cup made of Trogamid T		6120581
-------------------------------	--	----------------









Filter insert 100-120 µm, DIN-DVGW tested, hygienically packed	(10)	6120591
--	------	----------------

O-ring for filter cup		6120595
-----------------------	--	----------------

Special key to loosen filter cup		6124100
-------------------------------------	--	----------------



Article	Article-No.	Hint
"Aquanova Magnum" Water filters		
Head and collar nut: brass Filter insert (one piece): plastic body covered with mesh Max. water temperature: 30 °C Mesh size: 95-140 µm		Application: Potable water installations PN 16.
	with transparent plastic filter cup (Trogamid T) PN 16 both ports female thread according to EN 10226-1	
	DN 25	Rp 1 x Rp 1 6120008
	DN 32	Rp 1¼ x Rp 1¼ 6120010
	DN 40	Rp 1½ x Rp 1½ 6120012
	DN 50	Rp 2 x Rp 2 6120016
	with brass filter cup PN 16 both ports female thread according to EN 10226-1	
	DN 25	Rp 1 x Rp 1 6120108
	with transparent plastic filter cup (Trogamid T) PN 16 both ports male threaded tailpipe according to DIN EN 10226-1	
	DN 20	R ¾ x R ¾ 6122006
	DN 25	R 1 x R 1 6122008
	DN 32	R 1¼ x R 1¼ 6122010
	with transparent plastic filter cup (Trogamid T) PN 16 Mesh size: 250-280 µm both ports female thread according to EN 10226-1	
	DN 25	Rp 1 x Rp 1 6120058
	DN 32	Rp 1¼ x Rp 1¼ 6120060
	DN 40	Rp 1½ x Rp 1½ 6120062
	DN 50	Rp 2 x Rp 2 6120066
		For industrial use.

Article	Packing unit	Article-No.	Hint
Accessories			
	Venting screw brass		
	G 1/8 male thread	(25) 1109001°	
	2 pressure gauges with ring gasket for all sizes DN 6 G 1/8	(50) 6127000	Downward connection.
	Special key to loosen filter cup	6124000	
	Collar nut	(10) 6125000	
	O-ring for filter cup	(10) 6126000	
	Filter cup made of Trogamid T	6125400	
	Filter cup made of brass	6125500	
Filter inserts			
	Filter insert 95-140 µm, hygienically packed, DIN-DVGW tested	6125101	
	Filter insert 80-120 µm, multi-piece, hygienically packed	(10) 6125100	Consisting of body, collar and mesh, for industrial use.
	Filter insert 250-280 µm, multi-piece	(10) 6125161	
	Filter insert 800-1000 µm, multi-piece	(10) 6125163	
	Body with collar	(10) 6125200	
	Mesh 80-120 µm, hygienically packed	(150) 6125300	Mesh may only be used for multi-piece filter element. If required, body and collar have to be ordered separately (item no. 6125200).
	Mesh 250-280 µm	(50) 6125361	
	Mesh 800-1000 µm	(50) 6125363	



4.1.p Valves for water softening

Content

Bypass isolating valve	738
Accessories for bypass isolating valve and bypass mixing valve DN 25	738
Bypass mixing valve DN 25	739
Bypass mixing valve DN 32	740
Spare parts	740
Bypass mixing valve DN 50	740
Spare parts	740

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Bypass isolating valve
brass,
for installations with integrated bypass mixing valve

Application:
Potable water softeners PN 10,
max. water temperature 90 °C.

with isolating valves and draining plugs,
with draining facilities G ¼ and G ½

Bypass valve in lockshield configuration

DN 25 Rp 1 x Rp 1 **6105008**



Bypass valve with handwheel

DN 25 Rp 1 x Rp 1 **6105108**



**Accessories for bypass isolating valve and bypass mixing valve
DN 25**

Bonnet, flat sealing **6109551**
Bonnet with O-ring (25) **6109552**
brass

Up to July 2004
Since July 2004



Coupling
DN 25 G 1¼ x R 1 (50) **6100508**



S-type coupling
DN 20 G 1¼ x G ¾ (50) **6100606**
DN 25 G 1¼ x G 1 (50) **6100608**



Two couplings or two flexible hoses are
required for each bypass isolating valve
6105008/6105108.

Flexible hose
WA-NIRO, 600 mm long
DN 25 G 1 (c/nut) x G 1 (male thread) **6105751**



Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Bypass mixing valve DN 25
bronze body



with isolating valves for the direct connection of the water softener by using the couplings or flexible hoses on page 738

DN 25	G 1	x G 1 (male thread)	6101008
DN 25	G 1	x G 1 1/4 (male thread)	6101051

Application:
Potable water softeners PN 10,
max. water temperature 90 °C.

ACS certified.

Two couplings or two flexible hoses are required for each bypass mixing valve, item no. 6101051 / 6101008.

Spare parts



Bonnet, flat sealing	6109551	
Bonnet with O-ring	(25) 6109552	
brass		

Up to July 2004
Since July 2004



Brass regulating bonnet for setting of high flow rates
(bonnet with adjustment spindle, regulating insert, and spring)

brass	6101053
-------	----------------



Brass valve insert for setting of low flow rates

brass	(100) 6102051
-------	----------------------

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Bypass mixing valve DN 32
bronze body,
brass bonnet



DN 32	G 1¼	6102010	
-------	------	----------------	--

For industrial installations.
ACS certified.

Spare parts

Brass regulating bonnet for setting of high flow rates
(bonnet with adjustment spindle, regulating insert and spring)



brass	(10)	6102053	
-------	------	----------------	--

Brass valve insert for setting of low flow rates



brass	(100)	6102051	
-------	-------	----------------	--

Bypass mixing valve DN 50
bronze body,
brass bonnet



DN 50	G 2	6102016	
-------	-----	----------------	--

For industrial installations.

Spare parts

Bonnet with adjustment spindle



brass		6109052	
-------	--	----------------	--

Regulating insert with diaphragm
and spring



bronze		6109152	
--------	--	----------------	--

Regulating screw for setting
of low flow rates








brass		6109851	
-------	--	----------------	--








4.1.q "Multidis R" Sanitary distributor

Content

"Multidis R" Sanitary distributor	742
Accessories	742
"Multidis R" Sanitary distributor with isolating facility	743
Accessories	743

Article	Packing unit	Article-No.	Hint
"Multidis R" Sanitary distributor bronze, self sealing			
	DN 20	(2) 4200453	Tapered sealing surface for metal to metal and O-ring sealing. To be used in combination with "Cofit S" and "Ofix" compression fittings as well as "Cofit P" press connections with collar nut and spherical sealing surface. ACS certified.
Accessories			
	Cap G 3/4 female thread (not illustr.)	(10) 1400692	To close outlets not in use.
	Bracket steel, galvanised	(10) 4201071	Bracket with mounting clip. For mounting the sanitary distributor into the cabinet or onto the wall. Sound-absorbing as per DIN 4109.
	Cabinets - flush mounting steel, galvanised frame and doors white lacquered removable screen		Depth: 110-145 mm Height: 350 mm
	Inner width: 400 mm	4201081	For distributors with 6 outlets without water meter or distributors with 3 outlets with water meter.
	Inner width: 600 mm	4201082	For distributors with 10 outlets without water meter or distributors with 7 outlets with water meter.
Connection elbow 90 °			
		(10) 1504353° (10) 1504354° (10) 1504355° (5) 1504356°	To extend the sanitary distributor for one connection.




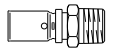












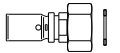

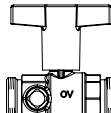
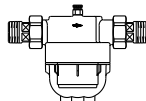
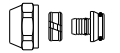






Article	Packing unit	Article-No.	Hint
"Multidis R" Sanitary distributor with isolating facility bronze, without dead zone, self sealing G ¾ x G ¾			Application: Potable water installations PN 10 Max. water temperature: 90 °C
	2-fold	4200552	Completely pre-assembled and leak tested unit. Complete pipe section made of bronze, one-piece casted.
	3-fold	4200553	Connections: Female thread according to EN 10226-1 Male thread according to DIN ISO 228, flat sealing
	4-fold	4200554	Tapered sealing surface for metal to metal and O-ring sealing. To be used in combination with "Cofit S" and "Ofix" compression fittings as well as "Cofit P" press connections with collar nut and spherical sealing surface.
Accessories			
	Replacement bonnet	4200590	
	Bracket, small steel, galvanised	(10) 4200571	Bracket with mounting clip. For mounting the sanitary distributor with isolating facility into the cabinet or onto the wall.

4.1.r Connection technology

Content

Connection of pipes and Oventrop valves with different connections in potable water installations	746
---	-----

Connection of pipes and Oventrop valves with different connections in potable water installations

Pipes 	Connection method	Connection system		Female threaded connection
		Connection fitting	Additional fitting	Oventrop valves for water installations (examples)
“Copipe” Composition pipe	Screwed connection	 Item no. 15073.. DN 15 Page 640	—	
	Press connection	 Item no. 15120.. Page 620	—	  
	Screwed connection	 Item no. 15079.. Page 640	 Item no. 15031.. Page 640	
Copper pipe EN 1057	Screwed connection	 Item no. 10271.. DN 15–DN 20 Page 317	—	
Copper pipe, stainless steel pipe, precision steel pipe ¹⁾		 G 3/4 cone “Euro” metal to metal sealing Item no. 102747. Page 164	 Item no. 15031.. Page 640	  
Steel pipe as well as screwed fittings	seal directly	—		
				Male threaded connection
“Copipe” Composition pipe	Press connection	 Item no. 15121.. Page 620	—	 Oblique pattern free-flow valves and KFR valves “Aquaström” with normal male thread  
	Screwed connection	 Item no. 15079.. Page 640	 Item no. 15030.. Page 640	
Copper pipe EN 1057	Screwed connection	 G 3/4 cone “Euro” metal to metal sealing Item no. 102747. Page 164		
Copper pipe, stainless steel pipe, precision steel pipe ¹⁾	Screwed connection	 G 3/4 cone “Euro” soft sealing Item no. 102744. Page 164		
Copper pipe EN 1057	Soldering connection	Brass solder tailpipe, collar nut and ring gasket  Item no. 42020.. and 42002.. Page 730	—	
Copper pipe (galvanised) as well as screwed fittings	Screwed connection	 Item no. 42013.. and 42002.. Page 730	—	
		 Item no. 42014.. Page 730		
Other pipe e.g. stainless steel pipe, thick walled plastic pipe	Other pipes may be connected by use of the fittings of the corresponding manufacturers			

¹⁾ Pipes with a wall thickness ≤ 1 mm will need reinforcing sleeves, item no. 2083951/52 or 1029651-57 (page 1.147), unless the soft sealing fitting 102744.! Page 1.145.

4.1.s Fresh water stations/Other products for water installations



Content

"Regumaq" Fresh water stations

748



"Regumaq X-30"
Heat exchanger system with electronic controller

Page 546



"Regumaq XZ-30"
Heat exchanger system with electronic controller and connection for potable water circulation systems.

Page 546



"Regumaq X-80"
Heat exchanger system with electronic controller and connection for potable water circulation systems. For higher discharge capacities.

Page 541



"Regumaq X-25"
Fresh water station with integrated controller box for temperature setting

Page 534



"Regumaq X-45"
Fresh water station with intuitive touch display for the setting of different functions such as circulation, return temperature layering or heat demand. The operating element made of safety glass is integrated in the front insulation shell and is connected to the controller box without plug via magnetic contacts.

Page 535



DDC "CW-BS"
Control unit

Page 901



"Regudis W" Dwelling station
Dwelling station with plate heat exchanger for heat transmission from a central heat supply to the sanitary and heating installation of a dwelling

Page 504

Oil, solar

5.1.a General information

Content	753
General information	754



5.1.b Deaerators, filters

Content	757
"Toc-Duo-3" Combination heating oil filter/heating oil deaerator	758
"Toc-Uno" Heating oil deaerators	759
Accessories for "Toc-Duo" and "Toc-Uno"	759
"Oilpur E A" Heating oil filters for one pipe systems with isolation	761
"Oilpur E A R" Heating oil filters for one pipe systems with isolation and return flow feed	762
"Oilpur E" Heating oil filters for one pipe systems without isolation	763
"Oilpur Z A" Heating oil filters for two pipe systems with isolation	764
Filter cups	765
Vacuum gauges	766
Filter inserts	767
"Oilpur" Heating oil filter for one pipe systems	769

5.1.c Tank equipment



Content	771
Screwed tank inlet caps	772
Fuel gauge lock	772
Caps with chain	772
Tank inlet cap with bayonet catch	773
Tank inlet caps for export	774
Vent caps	774
Mechanical level indicators	775
Condensate collector	775
Tank filling limiters -adjustable-	776
Accessories for tank filling limiters	778
Flexo-Bloc Oil draining facilities	779
Double ball foot valves (non-return check valves)	781
Double ball non-return ball check valves	781
Gland fittings	782
Flexible suction pipes	782
Liquid safety device	783
Steel bracket	783
Liquid safety device with condensate collector	783
Elbow	783
Spacer stud made of steel	784
Hose nozzles	784
Condensate collector	784



5.1.d Heating oil valves in the pipework

Content	785
"Oilstop" Anti-siphon valves	786
"Olex" Pressure compensation device	787
Isolating fitting	787
Isolating valve	788
Quick acting isolating valve	788
Change-over valve	788
Double change-over valve	788



5.1.e Fittings

Content	791
Connection technology summary	792
"Ofix-Oil" Compression fittings	793
"Ofix-Oil" Couplings (steel, galvanised)	794
Brass reinforcing sleeves	795
"Ofix-Oil" Double nipples	795
"Ofix-Oil" Double nipple - elbow	795
Flexible hoses DIN EN ISO 6806	796
Sets of flexible hoses	797
Flexible hoses	797



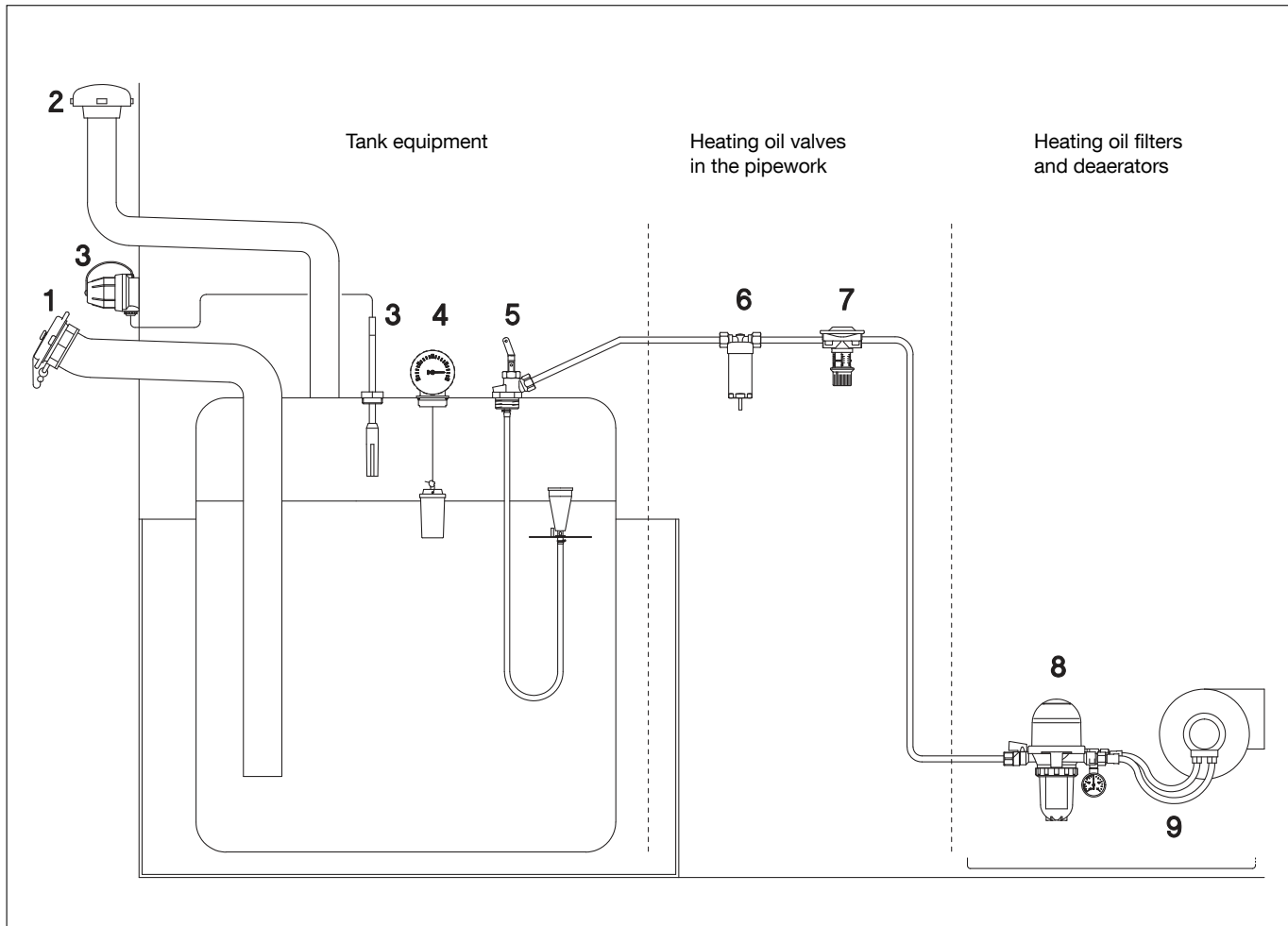
5.1.f Heating oil kits for export

Content	799
Oil tank installation kit for the installation of a two pipe system with steel tank	800
Oil tank installation kit for the installation of a two pipe system with plastic tank	800
Heating oil filter kit for two pipe systems	801
Heating oil filter kit for one pipe systems with return flow feed	801
Heating oil filter kit for one pipe systems (without return flow feed)	801
"Ofix-Oil" Compression fittings (for export only)	801

5.1.a General information

Content

General information	754
---------------------	-----



Example one pipe system

1. Tank inlet cap
2. Vent cap
3. Tank filling limiter
4. Level indicator
5. Oil draining facility
6. Pressure compensation device (if required)
7. Anti-siphon valve
8. Combination heating oil filter/heating oil deaerator with vacuum gauge
9. Burner hoses

Further components:

- Connection elements of valves to the pipework
- Isolating device (in the suction pipe, if the isolating device at the tank cannot be reached directly or has to be actuated with the help of a release cord)
- Change-over valve (for installations with more than one tank)
- Isolation fittings (for underground tanks with corrosion protection by sacrificial anode)

The one pipe system:

There is only one oil pipe from the tank to the filter. The oil flow corresponds to the nozzle capacity, i.e. the heating oil consumption for a heating capacity of 10 kW only amounts to about 1 litre per hour. The oil pipe to the tank should be dimensioned accordingly.

One pipe system with return flow feed:

In general, this system features two pipes running from the heating oil filter or heating oil deaerator to the burner pump. The quantity of heating oil delivered by the burner pump is higher than the quantity of heating oil consumed. The surplus heating oil is fed back to the pump via the heating oil filter or heating oil deaerator.

One pipe system (without return flow feed):

There is only one pipe from the heating oil filter to the burner pump. The quantity of heating oil delivered by the burner pump is higher than the quantity of heating oil consumed, the pump must therefore feature an internal pressure relief device or a return flow feed. This type of installation is rare.

The two pipe system:

There are two oil pipes from the tank to the burner pump. The oil flow corresponds to that of the burner pump.

This system is no longer recommended for new installations.

Recommendations regarding the conversion of an existing two pipe system to a one pipe system:

- The suction pipe should be replaced by a correctly sized smaller one as the oil flow is much lower. This way, malfunctions caused by airlocks are avoided. According to DIN 4755, velocities between 0.2 and 0.5 m/s are recommended.
The advice in the installations instructions and data sheets must be observed.
- The installation of a heating oil deaerator or a combined heating oil filter/heating oil deaerator "Toc-Duo" is recommended.
Note: A two pipe filter cannot be used as one pipe filter with return flow feed!
- Old oil pipes should be removed.

Note regarding liquid fuels:

Heating oil is a liquid fuel produced from fossil mineral oil. In order to save the fossil deposits, liquid fuels which are extracted from regenerative raw materials, the so-called "alternative additives" or "bio oils" can be added to the heating oil. This is amongst others bio diesel (FAME = "fatty acid methyl esters").

The fatty acids of the bio oils may cause damage to conventional seals and hoses.

In general, the components in existing installations can be used for a bio proportion up to 5% and new components for a bio proportion up to 20% and more. The notes are to be observed.

Recommendations when changing to "bio heating oil" (low sulphur heating oil with bio proportion):

- A one pipe system is strongly recommended for the pipework.
- Check whether existing components are suitable for the designated bio proportion and replace them, if necessary.
- Before filling, the heating oil tank should be empty.
- The tank should be cleaned and the residual oil be disposed of.
- Filter inserts with a large filter surface should be used, for instance "opticlean". This does especially apply if the tank has not been cleaned.

Reasons:

- Bio proportions (FAME) may release existing deposits which may block the filter inserts.
- Heating oil returning in two pipe systems may have an adverse effect on the storage life of the oil.
- The mix of old, sulphurous and new, low sulphurous heating oil can lead to corrosion at the flame tubes of the burner (metal dusting).



5.1.b Deaerators, filters

Content

"Toc-Duo-3" Combination heating oil filter/heating oil deaerator	758
"Toc-Uno" Heating oil deaerators	759
Accessories for "Toc-Duo" and "Toc-Uno"	759
"Oilpur E A" Heating oil filters for one pipe systems with isolation	761
"Oilpur E A R" Heating oil filters for one pipe systems with isolation and return flow feed	762
"Oilpur E" Heating oil filters for one pipe systems without isolation	763
"Oilpur Z A" Heating oil filters for two pipe systems with isolation	764
Filter cups	765
Vacuum gauges	766
Filter inserts	767
"Oilpur" Heating oil filter for one pipe systems	769

Article	µm	Article-No.	Hint
---------	----	-------------	------

"Toc-Duo-3" Combination heating oil filter/heating oil deaerator
with integrated isolation and wall bracket

Max. nozzle capacity: 110 l/h EL type of heating oil
Max. flow of returned heating oil: 120 l/h EL type of heating oil
Min. deaeration capacity: 6 l/h air

Connections:

- tank side G 3/8 female thread
for connection of compression fittings 6, 8, 10 and 12 mm
(sets of compression fittings to be ordered separately, item no. 21276...: page 793)
- burner side G 3/8 male thread with inner taper for
burner hoses with G 3/8 collar nut



Siku (sintered plastic)	25 - 40	2142732
"opticlean" MC-7	5 - 20	2142735
"opticlean" long MX-11	~ 2	2142737



similar to 2142732,
but burner side female thread G 1/4

Siku (sintered plastic)	50 - 75	2142700
-------------------------	---------	----------------



similar to 2142732, but additionally
with vacuum gauge

"opticlean" MC-7	5 - 20	2142754
Siku (sintered plastic)	25 - 40	2142762

"Toc-Duo-3" Metal model Combination heating oil filter/heating oil deaerator



similar to 2142754,
but with deaerator cap and filter cup made of metal
and vacuum gauge

"opticlean" MC-7	5 - 20	2152754
------------------	--------	----------------



TÜV tested according to DIN EN 12 514-2.
Sign of conformity (sign Ü) according to valid rules of construction.
DIN tested (reg.-no.: 2 Y 111).

Application:

Heating oil installations according to DIN 4755
for EL type of heating oil according to DIN 51603-1.



"Toc-Duo-3" also for heating oils with
"alternative additives" or with a bio proportion
of up to 20% according to DIN SPEC 51603-1.

Combination of heating oil filter and deaerator
for use in one pipe systems with return flow
feed. For **suction systems** only. Deaerator
body made of metal, filter cup and deaerator
cap made of transparent plastic for easy
function control.

The heating oil filter/heating oil deaerator
features an isolation, a wall bracket, a vacuum
gauge (optional) and a filter cup.

Installation is possible below and above the oil
level.

Installation instructions are to be observed
strictly.

Advantages:

- fine filtering
- long service life
- integrated isolation
- vacuum gauge to control the filter
contamination (optional)



"Toc-Duo-3" with deaerator cap and filter cup
made of metal also for EL A Bio type of heating
oil according to DIN SPEC 51603-6 with a bio
proportion of up to 100%, FAME as well as
various thin vegetable oils.

Article

Article-No.

Hint

"Toc-Uno" Heating oil deaerators



"Toc-Uno-A" Heating oil deaerator with wall bracket

Max. nozzle capacity: 110 l/h EL type of heating oil
Max. flow of returned heating oil: 120 l/h EL type of heating oil
Min. deaeration capacity: 6 l/h air

Connections:

- tank side G 1/4 female thread, with flexible hose for connection to heating oil filter, G 1/4 male thread x G 3/8 collar nut, 300 mm long
- burner side G 3/8 male thread with inner taper for burner hoses with G 3/8 collar nut

2142951

Connections:

- tank and burner side G 1/4 female thread, without accessories



2142901

Connections:

- tank and burner side G 1/4 female thread, with the following accessories:
2 double nipples G 1/4 male thread x G 3/8 male thread with inner taper for burner hoses with G 3/8 collar nut



2142900

"Toc-Uno-B" Heating oil deaerator with wall bracket

similar to 2142951, but deaerator cap made of metal



2152951

Accessories for "Toc-Duo" and "Toc-Uno"

Flexible hose

300 mm long, according to DIN EN ISO 6806 with ring gasket, G 1/4 male thread x G 3/8 collar nut



NI 8 (also for "Toc-Uno-B")

2162993



Sign of conformity (sign Ü) according to valid rules of construction.

DIN tested (reg.-no.: 2 Y 111).



Application:

Heating oil installations according to DIN 4755 for EL type of heating oil according to DIN 51603-1.

"Toc-Uno-A" also for heating oils with "alternative additives" or with a bio proportion of up to 20% according to DIN SPEC 51603-1.

Heating oil deaerator for an automatic deaeration of heating oil installations.

For use in one pipe systems with return flow feed. For **suction systems** only. Body of deaerator made of metal with bracket for wall installation. Deaerator cap made of transparent plastic for an easy function control.

Installation is possible below and above the oil level. Installation instructions are to be observed strictly.



"Toc-Uno-B" with deaerator cap made of metal also for EL A Bio type of heating oil according to DIN SPEC 51603-1 with a bio proportion of up to 100%, FAME as well as various thin vegetable oils.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Bracket

and screws

(50) **2142992**

For all "Toc-Uno/Duo"
(manufactured since 2004)



Hose nipple with 10 m hose

2142990

To expel vapour emissions in badly
ventilated boiler-rooms.
For "Toc-Duo"/"Toc-Uno".



Article	µm	Packing unit	Article-No.	Hint
---------	----	--------------	-------------	------

"Oilpur E A" Heating oil filters for one pipe systems with isolation
quick acting isolating valve with double O-ring seal,
body made of brass, with bracket,
with transparent filter cup for **suction**



DN 10, G 3/8 female thread x male thread

burner side male thread G 3/8 with inner taper for
hose connection,
tank side female thread G 3/8
(The female thread G 3/8 on the tank side can be connected
with Oventrop brass compression fittings 6, 8, 10 or 12 mm.
Sets of compression fittings to be ordered separately.)

Felt	50 - 75	(10)	2123503
Siku (sintered plastic)	50 - 75	(10)	2123561

Siku - Magnum	25 - 40	(10)	2123871
---------------	---------	------	----------------



similar to 2123503,
but with metal cup PN 16 (not illustr.)

"opticlean"	5 - 20	(10)	2153554
-------------	--------	------	----------------

DN 10 G 3/8 female thread

(The female thread G 3/8 on the tank side can be connected
with Oventrop brass compression fittings 6, 8, 10 or 12 mm.
Sets of compression fittings to be ordered separately.)



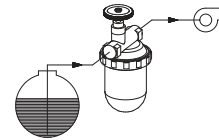
Stainless steel	100 - 150	(10)	2123103
Siku (sintered plastic)	50 - 75	(10)	2123261

DN 15 G 1/2 female thread

Stainless steel	100 - 150	(10)	2123104
-----------------	-----------	------	----------------



Sign of conformity (sign Ü) according to the
valid rules of construction.
DIN tested (reg.-no.: 2 Y 118).



Application:

Heating oil installations according to DIN 4755,
for EL type of heating oil according to DIN
51603-1.



Also for heating oils with "alternative additives"
or with a bio proportion of up to 20 %
according
to DIN SPEC 51603-6 (marking A on the body).
If this filter is equipped with a metal filter cup,
the bio proportion may be up to 100 %.



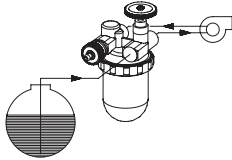

The flow rates depending on the pressure loss
and the filter insert can be obtained from the
technical information "Heating oil filters".



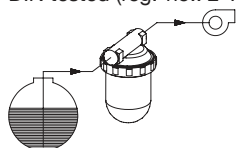



Award:



Busse Design Ulm
Longlife Design Award

Article	µm	Packing unit	Article-No.	Hint	
"Oilpur E A R" Heating oil filters for one pipe systems with isolation and return flow feed quick acting isolating valve with double O-ring seal, airvent expelling air prior to operation, body made of brass, with bracket, with transparent filter cup for suction					
DN 10, G ¾ female thread x male thread burner side male thread G ¾ with inner taper for hose connection, tank side female thread G ¾ (The female thread G ¾ on the tank side can be connected with Oventrop brass compression fittings 6, 8, 10 or 12 mm. Sets of compression fittings to be ordered separately.)					
Stainless steel	100 - 150	(10)	2122403	  Sign of conformity (sign Ü) according to the valid rules of construction. DIN tested (reg.-no.: 2 Y 118).  Application: Heating oil installations according to DIN 4755, for EL type of heating oil according to DIN 51603-1.  Also for heating oils with "alternative additives" or with a bio proportion of up to 20 % according to DIN SPEC 51603-6 (marking A on the body). If this filter is equipped with a metal filter cup, the bio proportion may be up to 100 %.	
Felt	50 - 75	(10)	2122503		
Siku (sintered plastic)	50 - 75	(10)	2122561		
Siku - Magnum	25 - 40	(10)	2121871		
similar to 2122403, but with metal cup PN 16					
"opticlean"	5 - 20	(10)	2152554	<p>The flow rates depending on the pressure loss and the filter insert can be obtained from the technical information "Heating oil filters".</p> <p>Function: In one pipe systems with return flow feed the heating oil fed back by the burner pump is directed to the suction side inside the heating oil filter. A partial quantity is fed through the filter insert again (multiple filtration). This partial quantity is automatically adjusted depending on the return flow quantity (patented). Possible airlocks are reduced by the repeated flow through the filter insert.</p> <p>These filters may only be installed if the burner pump allows for a return pressure of 1 bar.</p> <p>Advantages:</p> <ul style="list-style-type: none">– Reduced airlocks due to multiple filtration– No whistling sounds during constant operation.– The burner is switched off in heating oil suction systems if the burner hose breaks (air is drawn in).	
DN 10, G ¾ female thread (The female thread G ¾ on the tank side can be connected with Oventrop brass compression fittings 6, 8, 10 or 12 mm. Sets of compression fittings to be ordered separately.)					
Stainless steel	100 - 150	(10)	2122103		
Siku (sintered plastic)	50 - 75	(10)	2122261		
DN 15, G ½ female thread (not illustr.)					
Siku (sintered plastic)	50 - 75	(10)	2122262		

Article	µm	Packing unit	Article-No.	Hint	
"Oilpur E" Heating oil filters for one pipe systems without isolation body made of brass, transparent filter cup for suction					
DN 8, G ¼ female thread					
	Siku (sintered plastic)	50 - 75	(10) 2124360	<div></div> <p>Sign of conformity (sign Ü) according to the valid rules of construction. DIN tested (reg.-no.: 2 Y 118).</p> <div></div> <p>Application: Heating oil installations according to DIN 4755, for EL type of heating oil according to DIN 51603-1.</p> <div>Bio20</div> <p>Also for heating oils with "alternative additives" or with a bio proportion of up to 20 % according to DIN SPEC 51603-6 (marking A on the body). If this filter is equipped with a metal filter cup, the bio proportion may be up to 100 %.</p>	
DN 10, G ¾ female thread (The female thread G ¾ on the tank side can be connected with Oventrop brass compression fittings 6, 8, 10 or 12 mm. Sets of compression fittings to be ordered seperately.)					
	Stainless steel	100 - 150	(10) 2124203		
	Siku (sintered plastic)	50 - 75	(10) 2124361		
DN 15, G ½ female thread					
	Stainless steel	100 - 150	(10) 2124204		
	Siku (sintered plastic)	50 - 75	(10) 2124362		

Article	µm	Packing unit	Article-No.	Hint
---------	----	--------------	-------------	------

"Oilpur Z A" Heating oil filters for two pipe systems with isolation

quick acting isolating valve with double O-ring seal,
non-return check valve on the return side,
body made of brass, with bracket,
transparent filter cup for **suction**

DN 10, G 3/8 female thread x male thread

burner side male thread G 3/8 with inner taper for
hose connection,
tank side female thread G 3/8
(The female thread G 3/8 on the tank side can be connected
with Oventrop brass compression fittings 6, 8, 10 or 12 mm.
Sets of compression fittings to be ordered separately.)

Stainless steel	100 - 150	(10)	2120403
Felt	50 - 75	(10)	2120503
Siku (sintered plastic)	50 - 75	(10)	2120561

Siku - Magnum	50 - 75	(10)	2120803
---------------	---------	------	----------------

DN 10, G 3/8 female thread

(The female thread G 3/8 on the tank side can be connected
with Oventrop brass compression fittings 6, 8, 10 or 12 mm.
Sets of compression fittings to be ordered separately.)

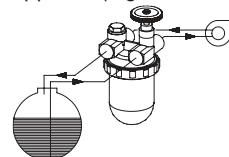
Sika 0 (sintered bronze)	50 - 100	(10)	2120003
Stainless steel	100 - 150	(10)	2120103
Siku (sintered plastic)	50 - 75	(10)	2120261

DN 15, G 1/2 female thread

Stainless steel	100 - 150	(10)	2120104
-----------------	-----------	------	----------------



Sign of conformity (sign Ü) according to the
valid rules of construction and DIN
approval (reg.-no.: 2 Y 118)



Application:
Heating oil installations according to DIN 4755,
for EL type of heating oil according to DIN
51603-1.



Also for heating oils with "alternative additives"
or with a bio proportion of up to 20 %
according to DIN V 51603-6 (marking A on the
body).

If this filter is equipped with a metal filter cup,
the bio proportion may be up to 100 %.






Function:

In two pipe systems the heating oil fed back by
the burner pump is returned to the tank via a
non-return check valve. If the hose on the
return side is loosened for maintenance work,
the non-return check valve keeps the oil in the
return pipe.

Award:

bld Busse Design Ulm
award Longlife Design Award



	Article	Packing unit	Article-No.	Hint
	Filter cups for heating oil filters "Oilpur" with collar nut and "Toc-Duo"			Application: Heating oil installations according to DIN 4755, for EL type of heating oil. Also suitable for bio heating oils.
	O-ring for sealing filter cup/filter head	(10)	2166500	
	Collar nut	(100)	2126600	
	Transparent filter cup for suction systems	(25)	2126751	
	Transparent filter cup for suction systems for "Magnum"	(25)	2126755	
	Transparent filter cup for suction systems for "opticlean" long	(25)	2126774	
	Metal filter cup for pressurised systems PN 16		2126754	
	Conversion set for heating oil filters "Magnum"			
	consisting of filter cup, filter insert (Siku 50 - 75 µm) and O-ring	(10)	2120891	
	Bracket (not illustr.)			Not suitable for "Toc-Uno"/"Toc-Duo".
	DN 10	(50)	2126803	
	DN 15	(50)	2126804	
	Handwheel (not illustr.)			
	DN 8/ 10	(10)	2126951	
	DN 15	(10)	2126952	
	Multi purpose spanner for heating oil filters		2126691	To loosen the collar nut of the Oventrop heating oil filters and the "Toc-Duo".


Vacuum gauges
with connection fitting

for filters with female thread
on the burner side

R $\frac{3}{8}$ x Rp $\frac{3}{8}$

(10) 2120285

The vacuum gauge serves to control the degree of contamination of the filter. It is installed directly behind the filter in the suction pipe to the burner.

Pivoting display allowing any positioning.


for filters with male thread
on the burner side

G $\frac{3}{8}$ c/nut x G $\frac{3}{8}$ with inner taper

(10) 2120585

Article	µm	Packing unit	Article-No.	Hint
---------	----	--------------	-------------	------

Filter inserts

The filter inserts have a bayonet catch. With due consideration of the size of the filter cup, they are interchangeable (except for filter cartridge PN 10).

Most of the filter inserts may not be cleaned and have to be replaced at the beginning of each heating period. According to DIN 4755, heating oil installations have to be installed frost-free as oil of low temperature expels paraffin which may block the filter. The finer the filter, the more this phenomena applies.



"opticlean" Fine filter insert

short MC-7	5 - 20	(25)	2126454
long** MC-18	5 - 20	(10)	2126474
long** MX-11	~ 2	(10)	2126484

** only suitable for filter cup "opticlean" long

The filter insert "opticlean" consists of a special paper and allows for the finest filtering with a very large surface.

The "opticlean" fine filter insert with a mesh size of 5 - 20 µm is especially recommended for small and medium burner capacities in one pipe systems. It is also recommended for installations which are operated with bio heating oils.

Bio heating oils may dissolve coarse deposits which may block filter inserts with a small surface.

The "opticlean" fine filter insert MX-11 with a mesh size of ~ 2 µm is a "high end" filter. The filter material developed by the car industry features a micro fibre fleece surface and is especially suitable for small pipes or very fine burner nozzles.

Filter surface:

MC-7 (short)	~ 700 cm ²
MC-18 (long**)	~ 1850 cm ²
MX-11 (long**)	~ 1200 cm ²

To avoid blocking of these fine filter inserts, they have to be operated at a frost-free location.



Sintered plastic

Siku	50 - 75	(25)	2126300
		(500)	2126351
	25 - 40	(25)	2126354

The sintered plastic insert (Siku) consists of a mass of miniature plastic balls. Its surface is enlarged by the inwards drawn form. Possible burner malfunctions caused by erosion of fibre particles or similar are avoided. In case of heavily polluted heating oil, the longer model (Magnum) is recommended which increases the service life.







Filter surface: Siku ~ 100 cm²



Siku-Magnum ~ 185 cm²

The fine filter inserts (25-40 µm) have a red bayonet.



Siku for "Magnum"	50 - 75	(10)	2126355
	25 - 40	(10)	2126371

	Article	µm	Packing unit	Article-No.	Hint
	Felt	50 - 75	(25)	2126200	The felt insert provides very fine filtering and many ageing by-products of the heating oil are filtered out. A fine tissue almost completely retaining the felt fibres is integrated on the inside. Individual felt fibres may, however, not be retained by the tissue and reach the burner nozzle. The felt insert is not recommended for smaller burner capacities. Filter surface: ~ 53 cm²
	Stainless steel	100 - 150	(25)	2126100	The stainless steel insert is a rugged insert and provides good quality of filtering coarse impurities. It is a typically long lasting insert especially suitable for installations with higher capacities. It can be cleaned with heating oil or detergent. Filter surface: ~ 50 cm²
	Sintered bronze Sika 0	50 - 100	(25)	2126051	The sintered bronze insert (Sika) consists of a mass of miniature bronze balls. It is dimensionally stable but is not easy to clean. Filter surface: ~ 50 cm²
	Adapter for conversion to cartridges		(25)	2120691	Adapter to connect the cartridge to any Oventrop filter housing with bayonet catch (size DN 15 only for models manufactured since end of 1991).
	Cartridge PN 10	25		2126400	The filter cartridge is a fine paper filter offering a long service life due to its large surface. Moreover, it can be installed in pressurised systems up to 10 bar. The Oventrop heating oil filters "Oilpur" can be converted using the adapter, item no. 2120691 for the filter cartridge. Filter surface: ~ 1020 cm²
	Tool for cartridge			2126695	The tool for cartridge includes with 2 spanners to hold the filter cartridge firm while tightening.

Article	Packing unit	Article-No.	Hint
"Oilpur" Heating oil filter for one pipe systems brass body, with isolating valve transparent filter cup for suction systems both ports female thread, plastic fibre mesh insert 80 µm  DN 10 G 3/8 2125003 (The female threads G 3/8 can be connected with Oventrop brass compression fittings 6, 8, 10 or 12 mm. Sets of compression fittings to be ordered separately.)			Supply of EL type of heating oil to individual stoves from one central point of storage. Flow capacity: 100 l/h with Δp = 50 mbar 150 l/h with Δp = 100 mbar Only for suction systems . After replacing the transparent filter cup by a brass filter cup these filters can also be used for pressurised systems.
Accessories Plastic fibre mesh insert 80 µm 2129000  			

5.1.c Tank equipment

Content



Screwed tank inlet caps	772
Fuel gauge lock	772
Caps with chain	772
Tank inlet cap with bayonet catch	773
Tank inlet caps for export	774
Vent caps	774
Mechanical level indicators	775
Condensate collector	775
Tank filling limiters -adjustable-	776
Accessories for tank filling limiters	778
Flexo-Bloc Oil draining facilities	779
Double ball foot valves (non-return check valves)	781
Double ball non-return ball check valves	781
Gland fittings	782
Flexible suction pipes	782
Liquid safety device	783
Steel bracket	783
Liquid safety device with condensate collector	783
Elbow	783
Spacer stud made of steel	784
Hose nozzles	784
Condensate collector	784

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Screwed tank inlet caps

suitable for padlocking, with seal and chain

flat sealing connection



G 2	x G 2	cap	(25)	2010152
Rp 2	x G 2½	cap	(25)	2010153
G 2	x G 2¾	cap	(5)	2010154
G 3	x G 3	cap	(2)	2010155

Application:

Heating oil installations according to DIN 4755.
If not stated otherwise, all products are made of brass.

In Germany, tank inlet caps with bayonet according to DIN EN 14420-6 have to be used in new installations.

Fuel gauge lock

with seal and chain



G 1	x G 1¼	cap	(25)	2013051
-----	--------	-----	------	---------

Universal fuel gauge lock G 1

quick acting lock with fixing device for fuel gauge, lockable













G 1		(20)	2014151
-----	--	------	---------





Caps with chain



G 1¼	(thread of cap)		2018090
G 1½	(thread of cap)	(100)	2018091
G 2	(thread of cap)		2018092
G 2½	(thread of cap)		2018093
G 2¾	(thread of cap)		2018094
G 3	(thread of cap)		2018095

Article	Packing unit	Article-No.	Hint
Tank inlet cap with bayonet catch based on DIN EN 14420-6 consisting of coupling VK (brass) with thread Rp 2, cap MB (brass) and chain			The tank inlet caps according to DIN EN 14420-6 (formerly DIN 28450) are also called road tanker couplings. The hose couplings of the road tankers can be directly connected to the tank inlet caps without adapter. The coupling with threaded connection Rp 2 complies with the specifications of the TRwS 791-1 for new tank installations and is recommended for retrofitting.
	DN 50 VK 50 + MB 50	Rp 2 (10) 2010851	
Tank inlet caps with bayonet catch according to DIN 14420-6 consisting of coupling VK (brass), cap MB (brass or aluminium) and chain			
	DN 50 VK 50 (brass) + MB 50 (brass)	G 2 (10) 2010816	
	DN 80 VK 80 (brass) + MB 80 (brass)	G 3 (5) 2010824	
	DN 100 VK 100 (brass) + MB 100 (aluminium)	G 4 (5) 2010832	
	DN 50 VK 50 (brass) + MB 50 green (brass)	G 2 (10) 2010882	For marking of installations which are suitable for "low sulphur EL type of heating oil".
Tank inlet cap with bayonet catch according to DIN EN 14420-6 cap MB (brass or aluminium) and chain			
	DN 50 MB 50 (brass)	(10) 2018192	
	DN 80 MB 80 (brass)	(5) 2018195	
	DN 100 MB 100 (aluminium)	(5) 2018197	
	DN 50 MB 50 green (brass)	(10) 2018182	For marking of installations which are suitable for "low sulphur EL type of heating oil".

Article	Packing unit	Article-No.	Hint	
Tank inlet caps for export			According to French standard NF E-29-572. (System Guillemin, see also EN 14420-8).	
Brass tank inlet caps				
Coupling with male thread				
	DN 50	G 2	(20) 2010516	
Coupling with female thread				
	DN 50	G 2	(20) 2010616	
Cap				
	DN 50		(20) 2010716	
Vent caps			Application: Heating oil installations according to DIN 4755.	
brass				
without screen				
	DN 20	G ¾	(50) 2020006	
	DN 25	G 1	(50) 2020008	
	DN 32	G 1¼	(50) 2020010	
	DN 40	G 1½	(50) 2020012	
	DN 50	G 2	(20) 2020016	
	DN 65	G 2½	(10) 2020020	
DN 80	G 3	(5) 2020024		
with screen (export model)			According to DIN 4755 vent caps with screen are inadmissible. The screens of the vent caps DN 20 - DN 50 are made of plastic, the screens of the vent caps DN 65 and DN 80 are made of brass.	
	DN 20	G ¾		(50) 2020106
	DN 25	G 1		(50) 2020108
	DN 32	G 1¼		(50) 2020110
	DN 40	G 1½		(50) 2020112
	DN 50	G 2		(20) 2020116
	DN 65	G 2½		(10) 2020120
	DN 80	G 3		(5) 2020124

Article	Packing unit	Article-No.	Hint
Mechanical level indicators			Application: Heating oil installations according to DIN 4755.
	Mechanical level indicator odour-tight model, infinitely adjustable, for tank depths between 0 and 200 cm, round display		Content measuring of cylindrical and rectangular tanks for EL type of heating oil.
	G 1½	2060312	Also suitable for areas prone to flooding. Diameter of float: approx. 38 mm
	Mechanical level indicator Set for subsequent installation, for plastic tanks without free screw-in opening with installation accessories odour-tight model, infinitely adjustable, for tank depths up to 200 cm		Recommended for plastic tanks which are no longer fully transparent so that the filling height can hardly be controlled.
		2060200	
	Pneumatic level indicator infinitely adjustable, for tank depths between 100 and 300 cm, with scale graduated in %		For cylindrical tanks in horizontal or vertical position as well as rectangular tanks. Max. length of level indicator pipe 50 m. Connection for pipe diameter 6 mm.
		2060400	Level indicator pipe not included.
Condensate collector			
	6 x 6 mm	(2) 2061051	
	(Condensate collector with hose connection 4 mm: page 784)		

Article	Probe length	Packing unit	Article-No.	Hint
---------	--------------	--------------	-------------	------

Tank filling limiters -adjustable-



Tank filling limiter (type 21300) with fixed fitting for installation to pipe for the following tanks/underground tanks:

- Cylindrical tanks in horizontal position made of steel according to DIN 6608, DIN 6616, DIN 6617, EN 12285-1, EN 12285-2 and DIN 6624
- Cylindrical tanks in vertical position made of steel according to DIN 6619 and DIN 6623
- Flat-bottom tanks according to DIN 4119

cabled,
with different probe lengths depending on the depth of the dome shaft

G 1	400 mm		2130051
G 1	700 mm		2130052
G 1	1000 mm		2130053
G 1	1500 mm		2130054

Application:
Heating oil installations according to DIN 4755.

These tank filling limiters are defined as a sensor for tanks with current interface as part of an overfill protection device of type B and type of construction B 1 according to EN 13616.

Tank filling limiters are type tested and have a CE marking.

The overfill protection device being a part of a supply system, avoids that a maximum tank filling height is exceeded.

The tank filling limiters may be installed in metal or non-metal tanks below and above ground level with a maximum height of 5 m for fuels.

The tank filling limiters also comply with the specifications of TRbF 511.



Storage fluids:

- EL type of heating oil (e.g. according to DIN 51603-1)
- Diesel oil (e.g. according to EN 590)
- Fatty acid methyl esters (FAME) as heating oil (e.g. according to EN 14213)
- Fatty acid methyl esters (FAME) as bio diesel oil (e.g. according to EN 14214)
- Mixtures of heating oil/diesel oil with FAME and/or vegetable oils



Tank filling limiter (type 21301) with ~ 5 m cable and fitting for wall installation for the following storage basins/tanks:

- Storage basins according to DIN 6620 (battery tanks lower connection)
- Storage basins according to DIN 6625 (height 1 - 4 m) ("tanks welded in the cellar")
- Battery storage basins made of plastic with general construction approval, for installation of up to 25 individual storage basins in series
- Tanks made of thermoplastics according to DIN EN 12573, parts 1-3
- Tanks made of thermoplastics according to DIN EN 13341, parts 1-3
- GFK tanks and storage basins above ground level according to DIN EN 13121, parts 1-3

G 1	385 mm	(10)	2130108
-----	--------	------	----------------



Tank filling limiter probe for replacement purposes, (as 2130108, but without screw-in fitting and without fitting for wall installation)

	385 mm		2130150
--	--------	--	----------------



Tank filling limiter (type 21301) with ~ 5 m cable, fitting for wall installation and mechanical level indicator, infinitely adjustable for storage basins/tanks with depths between 100 and 200 cm, for the following storage basins/tanks:

- Storage basins according to DIN 6620 (battery tanks lower connection)
- Storage basins according to DIN 6625 (height 1 - 2 m) ("tanks welded in cellars")
- Battery storage basins made of plastic with general construction approval, for installation of up to 25 individual storage basins in series
- Tanks made of thermoplastics according to DIN EN 12573, parts 1-3
- Tanks made of thermoplastics according to DIN EN 13341, parts 1-3
- GFK tanks and storage basins above ground level according to DIN EN 13121, parts 1-3

G 1½	385 mm		2130512
------	--------	--	----------------



"Flexo-Bloc"

Oil draining facility for storage basins/tanks with a max. height of 2 m, with connections for one and two pipe systems, combined with tank filling limiter (type 21301) , probe length 385 mm, without level indicator pipe.

Supply and return connection G $\frac{3}{4}$ female thread and enclosed brass compression fittings 10 and 12 mm.

Tank filling limiter with ~ 5 m cable and fitting for wall installation for the following storage basins/tanks:

- Storage basins according to DIN 6620 (battery tanks lower connection)
- Storage basins according to DIN 6625 (height 1 - 2 m) ("tanks welded in the cellar")
- Battery storage basins made of plastic with general construction approval
- Tanks made of thermoplastics according to DIN EN 12573, parts 1-3
- Tanks made of thermoplastics according to DIN EN 13341, parts 1-3
- GFK tanks and storage basins above ground level according to DIN EN 13121, parts 1-3

G 1½

2052351

Article	Article-No.	Hint
Accessories for tank filling limiters		
Plug-in fittings for tank filling limiters		
Fixed fitting for installation to pipe Type 904	2133000	Includes the flanged socket, type 901.
Fitting for wall installation Type 905	2133100	Includes the flanged socket, type 901.
Plug-in couplers for extension cables		
Coupler plug Type 902	2133200	Includes the flanged socket, type 901.
Coupler socket Type 903	2133300	To plug onto the tank filling limiter or accessories, see above.
Testing unit for tank filling limiters (pluggable) for checking the connections of tank filling limiters (short circuit, interruption)	2134100	The battery operated unit may only be used for checking the tank filling limiters installed in heating oil or diesel oil tanks. The use is not allowed in hazardous locations or for tank filling limiters installed in tanks with potentially explosive media. The unit is supplied without batteries.

Article	Max. tank height	Packing unit	Article-No.
---------	------------------	--------------	-------------

Hint

Flexo-Bloc Oil draining facilities

May also be used for self-monitoring suction pipes after having removed the non-return ball.



"Flexo-Bloc"

for two pipe systems,
supply and return connection G ¾ female thread with
brass compression fittings 10 and 12 mm,
with level indicator pipe

G 1	2000 mm	(10)	2052151
G 1	3000 mm	(10)	2052152
G 1½	2000 mm	(10)	2052153
G 1½	3000 mm	(10)	2052154



Sign of conformity (sign Ü) according to the valid rules of construction.

Application:

Heating oil installations according to DIN 4755, for EL type of heating oil according to DIN 51603-1.



With marking "A" also for heating oils with "alternative additives" or with a bio proportion of up to 20 % according to DIN SPEC 51603-6.



"Flexo-Bloc"

Oil draining facility for storage basins/tanks with a max. height of 2 m,
with connections for one and two pipe systems,
combined with tank filling limiter (type 21301) , probe length 385 mm,
without level indicator pipe.

Supply and return connection G ¾ female thread and enclosed
brass compression fittings 10 and 12 mm.

Tank filling limiter with ~ 5 m cable and fitting for wall installation
for the following storage basins/tanks:

- Storage basins according to DIN 6620 (battery tanks lower connection)
- Storage basins according to DIN 6625 (height 1 - 2 m) ("tanks welded in the cellar")
- Battery storage basins made of plastic with general construction approval
- Tanks made of thermoplastics according to DIN EN 12573, parts 1-3
- Tanks made of thermoplastics according to DIN EN 13341, parts 1-3
- GFK tanks and storage basins above ground level according to DIN EN 13121, parts 1-3

G 1½	2052351
------	----------------

Non-return ball check valve with quick acting isolation (can be operated by use of a release cord).

Brass compression fittings 6, 8, 10 or 12 mm can be connected to the connection threads G ¾ (if not enclosed, connection sets have to be ordered separately: page 793).

In heating oil installations according to DIN 4755, reinforcing sleeves are to be used when installing copper pipes: page 795

"Flexo-Bloc" (floating suction)

for one pipe systems,
supply connection G ¾ female thread,
brass compression fittings 6, 8, 10 or 12 mm
to be ordered separately



G 1½	2000 mm	(10)	2052051
G 1	2000 mm	(10)	2052053

As for the model with floating suction, the heating oil is drawn off approx. 4 -6 cm below the oil level.

This way only the cleanest oil will be used.

Conversion set

consisting of hose and float



up to 3000	(50)	2052091
------------	------	----------------


"Flexo-Bloc" (export model)

for two pipe systems,
supply and return connection G $\frac{3}{8}$ female thread with
compression fittings with plastic compression
rings for metal pipes 8, 10 and 12 mm,
with level indicator pipe

G 2	2000 mm	(10)	2053051
G 2	3000 mm	(10)	2053052

Export models:

The export models comply with the German
regulations if brass compression fittings (page
793) are used.


"Flexo-Bloc" (export model)

for one pipe systems,
supply connection G $\frac{3}{8}$ female thread with
compression fittings with plastic compression
rings for metal pipes 6 and 8 mm,
with level indicator pipe

G 2	2000 mm	(10)	2053351
G 2	3000 mm	(10)	2053352
G 1	2000 mm	(10)	2053353
G 1	3000 mm	(10)	2053354

Article Packing unit Article-No.

Hint

Double ball foot valves (non-return check valves)
with distance spring (DN 10, DN, 15)
or distance foot (DN 20, DN 25)
and stainless steel balls



DN 10	Rp 3/8	(25)	2030003
DN 15	Rp 1/2	(25)	2030004
DN 20	Rp 3/4	(10)	2030006
DN 25	Rp 1	(10)	2030008



Sign of conformity (sign Ü) according to the valid rules of construction.

Application:
Heating oil installations according to DIN 4755,
for heating oil according to DIN 51603-1.



The valves can also be used for bio heating oils.

To avoid bimetallic corrosion, the distance springs are made of spring steel.

Example of the application: page 782

Double ball non-return ball check valves
with stainless steel balls



DN 10	Rp 3/8	(25)	2031103
DN 15	Rp 1/2	(25)	2031104

For vertical installation.

Non-return ball check valves

with handwheel isolation,
both ports female thread G 3/8



G 3/8	(10)	2033053
-------	------	----------------

with quick acting isolation,
both ports female thread G 3/8 with
brass compression fittings 10 and 12 mm



10/12 mm	(10)	2033151
----------	------	----------------



Sign of conformity (sign Ü) according to valid rules of construction.

Application:
Heating oil installations according to DIN 4755,
for EL type of heating oil according to DIN 51603-1.



With marking "A" also for heating oils with "alternative additives" or with a bio proportion of up to 20% according to DIN SPEC 51603-1.

May also be used for self-monitoring suction pipes after having removed the non-return ball.

The connection threads G 3/8 can be equipped with brass compression fittings 6, 8, 10 or 12 mm (if not enclosed, connection sets to be ordered separately: page 793).

In heating oil installations according to DIN 4755, reinforcing sleeves are to be used when installing copper pipes: page 795

Example of the application: page 782

Release cord
for remote operation of quick acting isolating valves
with screws, dowels and lead seal



10 m	2052080
------	----------------

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Gland fittings

for the introduction of copper and steel pipes into the tank

single, for the following pipe dimensions:



R 1	x 6/ 8/ 10/ 12 mm	(25)	2040050
R 1	x 14, 15 mm, steel pipe 1/4	(50)	2040053
R 1	x 18 mm, steel pipe 3/8	(50)	2040055
R 1	x 22 mm, steel pipe 1/2	(25)	2040056
R 3/8	x 6 mm	(50)	2041051

Application:

Heating oil installations according to DIN 4755.

Example of the application: see below

If not stated otherwise, all products are made of brass.

double, for supply and return pipe



R 1	x 8/ 10/ 12 mm	(25)	2040152
R 1	x 15 mm	(25)	2040154

The return connection is supplied with brass compression fittings. In heating oil installations according to DIN 4755 reinforcing sleeves are to be used when installing copper pipes: page 167

Reducers made of anthracite plastic
Set in the following sizes



G 2 x G 1 1/2 and G 1 1/2 x G 1	(25)	2040090
---------------------------------	------	----------------

Not suitable for filling pipes.

Flexible suction pipes

with weight,
upper connection for cutting ring,
lower connection G 3/8 for foot valve



10 mm x 1250	2050051
10 mm x 1500	2050052
10 mm x 1600	2050053
10 mm x 1750	2050054
10 mm x 2000	2050055
10 mm x 2500	2050056

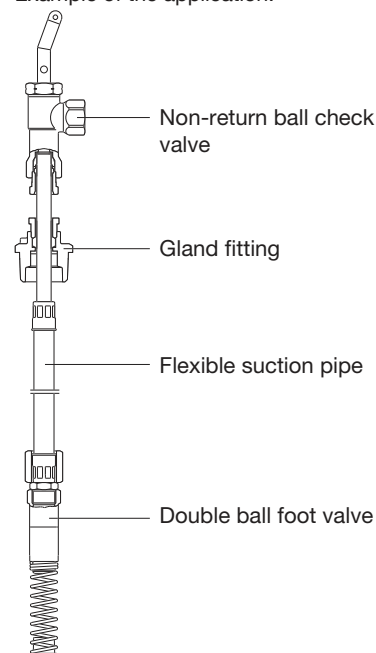
Application:





Heating oil installations according to DIN 4755,
for EL type of heating oil according to DIN 51603-1.



The suction pipes are also suitable for heating oils with "alternative additives" or with a bio proportion of up to 20 % according to DIN SPEC 51603-6.

Example of the application:



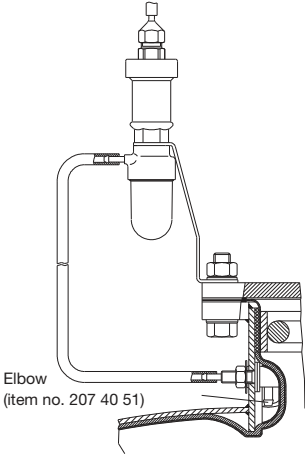
Article	Packing unit	Article-No.	Hint
			Liquid safety device for the suction and measuring pipe, lower connection G 3/8 female thread and G 1/2 male thread, upper connection M 18 x 1.5 mm with taper ball socket for connection of hose
	(10)	2073051	
			Counternut G 1/2 suitable for liquid safety device
	(100)	2076004	
			Steel bracket to fit the liquid safety device on the dome cover
	(10)	2076100	
			Liquid safety device with condensate collector and bracket for fitting on dome cover
	Hose connections 4 and 6 mm	(10) 2073161	
			Elbow with counternut and two seals, for the introduction of the suction and the measuring pipe into the tank
	Outer hose connections 4 and 6 mm Hose connection in the tank 6 mm	(50) 2074061	
			as above, but extended with copper pipes
	Outer hose connections 4 and 6 mm Hose connection in the tank 6 mm	(50) 2074261	

Only for holders of a type approval.

Liquid safety devices have to be checked by an inspector and are thus TÜV approved.

Note:
The installation of a condensate collector with brass cup is recommended for tanks with inner jackets made of PVC in which petrol containing ethanol is stored. Ethanol can diffuse via the inner jacket and cause damage to the transparent cup in the long term.
Brass cup, item no. 2129152: page 769

Example of installation:



Liquid safety device with condensate collector (item no. 2073151) fitted on the dome cover and connection pipes.

If not stated otherwise, all products are made of brass.



Spacer stud made of steel

with inner fixing device
for the elbows item no. 2074051
and 2074251

(25) **2076200**

Is required if the hose pipe is not led to the
tank bottom.

Hose nozzles

with female thread M 18 x 1.5
and inner taper for hose I.D.



4 and 6 mm
10 mm

(100) **2075061**
(50) **2075053**

with male thread G $\frac{3}{8}$
for hose I.D.



4 and 6 mm
10 mm

(50) **2075161**
(50) **2075153**

with male thread G $\frac{1}{4}$
for hose I.D.

4 and 6 mm

(100) **2075261**

Condensate collector

Hose connections
4 and 6 mm I.D

2072061

Condensate collector with compression fitting 6 mm: page 775



Note:

The installation of a condensate collector with
brass cup is recommended for tanks with inner
jackets made of PVC in which petrol containing
ethanol is stored. Ethanol can diffuse via the
inner jacket and cause damage to the
transparent cup in the long term.
Brass cup, item no. 2129152: page 769



5.1.d Heating oil valves in the pipework

Content	
"Oilstop" Anti-siphon valves	786
"Olex" Pressure compensation device	787
Isolating fitting	787
Isolating valve	788
Quick acting isolating valve	788
Change-over valve	788
Double change-over valve	788

Article

Article-No.

Hint

"Oilstop" Anti-siphon valves



"Oilstop V" Diaphragm anti-siphon valve

General construction supervising admission by DIBt: Z - 65.50 - 305.
Infinitely adjustable safety heights between 1 m and 4 m, lead sealable, venting facility for initial operation, with isolating facility, pressure balanced in the direction of the tank, permissible ambient temperature: -25 °C up to +60 °C, therefore also suitable for use in the dome shaft.
max. oil flow 200 l/h, both ports female thread G $\frac{3}{8}$ for connection of compression fittings 6, 8, 10 or 12 mm (sets of compression fittings to be ordered separately)

2104203



Diaphragm anti-siphon valves are installed in the suction pipes of heating oil installations according to DIN 4755, where the maximum tank filling point is above the lowest point of the suction pipe. The infinitely adjustable safety height allows for an adaptation to the requirements of the system.

The valve is approved for EL type of heating oil and "bio heating oil" with a FAME proportion of up to 15 % according to DIN SPEC 51603-6, e.g. heating oil DIN 51603-6 EL A Bio 15.

Installation instructions must be observed.
TÜV tested according to DIN EN 12514-2.

Awards:



Industrial Forum Design Hanover
iF-Ecology Design Award – TOP 3



Design Award Switzerland



"Oilstop MV" Solenoid valve

General construction supervising admission by DIBt: Z – 65.50 – 456.

2104553

for safety heights up to 3 m*,
pressure balanced in the direction of the tank,
closed with current "off", ~ 230 V / 50 Hz,
protection: IP 65 with socket
max. oil flow 100 l/h
both ports female thread G $\frac{3}{8}$



The solenoid valves "Oilstop MV" shut off the oil pipe between the tank and the subsequent installation of one and two pipe systems if the burner is not in operation. It is thus avoided that the oil in the tank is siphoned off in case of a leakage.

* These solenoid valves can be used on the suction pipe up to -0.9 bar.

The installation instructions must be observed.



The materials used are also suitable for heating oils with "alternative additives" or with a bio proportion of up to 100 % according to DIN SPEC 51603-6.

Note regarding two-pipe systems:

Only the suction pipe to the boiler can be protected by anti-siphon valves. They do not impact the return pipes of two pipe systems. The return pipes in two pipe systems should have free drainage into the tank so that the tank cannot be siphoned off via the return pipe when the burner is not in operation.



Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Olex" Pressure compensation device

both ports female thread G $\frac{3}{8}$
for connection of compression fittings 6, 8, 10 und 12 mm
(sets of compression fittings to be ordered separately: page 793)

(5) **2107003**



Sign of conformity (sign Ü) according to valid rules of construction.

Application:

Heating oil installations according to DIN 4755, for EL type of heating oil according to DIN 51603-1.



With marking A also for heating oils with "alternative additives" or with a bio proportion of up to 20 % according to DIN SPEC 51603-6.

"Olex" is a pressure compensation device according to DIN EN 12514-2 for oil pipes in which a thermal conditional volume expansion and therefore a pressure increase in the pipework may occur.

Pipe content to be compensated:

Max. 730 cm³ with a temperature increase of 40 K (e. g. from 0 °C to 40 °C).

Pipe dimension [mm]	Max. pipe length [m]
Ø 6 x 1	58
Ø 8 x 1	27
Ø 10 x 1	15,5
Ø 12 x 1	10



Isolating fitting

both ports coupling

6	x 6 mm	(10)	2080851
8	x 8 mm	(10)	2080852
10	x 10 mm	(10)	2080853
12	x 12 mm	(10)	2080854
15	x 15 mm	(10)	2080855
18	x 18 mm	(10)	2080856

To avoid any harmful effects of galvanic and vagrant current, the DIN standard 4755 recommends the installation of such isolating fittings.

For suction systems.

TÜV tested according to TRbF 521/6.51-2.

Couplings made of galvanised steel, cutting rings made of brass.

In heating oil installations according to DIN 4755, reinforcing sleeves are to be used when installing copper pipes: page 795

Article	Packing unit	Article-No.	Hint
<hr/>			
Isolating valve brass needle type straight pattern valve			Application: Pipeworks PN 16 for mineral, heating and hydraulic oils, air PN 6.
DN 8	G ¼	(10) 2091002	
Quick acting isolating valve for a quick isolation (quarter turn operation). Isolating valve made of brass according to DIN EN 12514-2 and DIN 4817-1, PN 16, straight pattern, with coupling according to DIN 2353, collar nut made of galvanised steel, brass cutting ring.			Application: Heating oil installations according to DIN 4755, for light heating oils on mineral oil basis, e. g. EL type of heating oil. Further applications: Liquid gas according to DIN 51622 (DVGW-G approved), as well as compressed air.
6	x 6 mm	(20) 2100051	In heating oil installations according to DIN 4755, reinforcing sleeves are to be used when installing copper pipes. Reinforcing sleeves for soft pipes with a wall thickness ≤ 1 mm: page 795
8	x 8 mm	(20) 2100052	
10	x 10 mm	(20) 2100053	
12	x 12 mm	(20) 2100054	
15	x 15 mm	(20) 2100055	
Change-over valve brass (quick acting model), according to DIN EN 12514-2, PN 6, with coupling according to DIN 2353 made of galvanised steel, brass cutting ring.			Application: Heating oil installations according to DIN 4755, for light heating oils on mineral oil basis, e. g. EL type of heating oil. For the quick isolation or change-over of the fuel supply, for instance for heating oil installations (one pipe system) with 2 tanks.
6	x 6	x 6 mm	(10) 2102051
8	x 8	x 8 mm	(10) 2102052
10	x 10	x 10 mm	(10) 2102053
12	x 12	x 12 mm	(10) 2102054
Double change-over valve ball type, brass			Application: Fuel installations.
G ¾ (6 x)		2103260	Temperature range: 0 °C up to 60 °C Pressure range: -0.6 bar up to 10 bar Oventrop double change-over valve (with compulsory change-over) for the connection of two storage tanks to one burner in two pipe systems. By throwing over the lever, the supply and the return pipe of one tank are isolated and the supply and return pipe of the other tank are released. Also for fuels with "alternative additives" or with a bio proportion of up to 20 %, e.g. heating oil according to DIN SPEC 1606.6.



"Hygate" Gate valves DN 10 - DN 80

Page 392.



Piston type spring assisted check valves DN 10 - DN 50

Page 404.



Ball valves "Optibal" DN 15 - DN 50

Page 385.

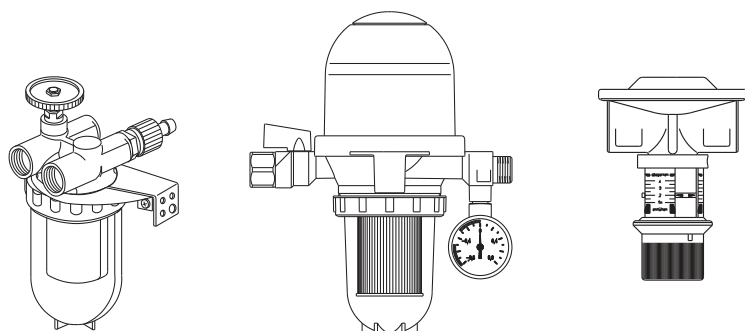


5.1.e Fittings

Content

Connection technology summary	792
"Ofix-Oil" Compression fittings	793
"Ofix-Oil" Couplings (steel, galvanised)	794
Brass reinforcing sleeves	795
"Ofix-Oil" Double nipples	795
"Ofix-Oil" Double nipple - elbow	795
Flexible hoses DIN EN ISO 6806	796
Sets of flexible hoses	797
Flexible hoses	797

Connection of pipes and valves in heating oil installations



Valve connection

Female
thread

G 3/8 female
thread with
additional
connection
for Oventrop
compression
fittings

G 3/8 male
thread with
additional
inner taper
for hose
connection

Coupling
supplied
with valve

Pipe		Additional couplings/connection fittings			Valve connection			
Material	Producer Examples	Type	Producer Examples					
Copper pipe	Wieland Kabelmetall	Compression or cutting ring	Compression fitting "Ofix-Oil" (page 793)			X		
			Couplings "Ofix-Oil" (page 794)		X	X		
		Not required if compression fitting is integrated in the valve						X
Flexible hoses	Oventrop (page 796)	Not required for flexible hose with female and/or male thread			X	X	X	
		Double nipple	Double nipple "Ofix-Oil" (page 793)		X	X		
Steel pipe	Mannesmann Thyssen	Not required for threaded connection			X			

Subject to alteration.



"Ofix-Oil" Compression fittings
brass

For two pipe filters "Oilpur", "Flexo-Bloc" (two pipe),
diaphragm anti siphon valves, solenoid valves and pressure
compensation devices
– size DN 10 –

Connection set
(set consisting of two compression fittings)

6 mm	(50)	2127050
8 mm	(50)	2127051
10 mm	(50)	2127052
12 mm	(50)	2127053

For "Oilpur" one pipe filters , one pipe filters with return flow feed,
"Toc-Duo" as well as "Flexo-Bloc" (one pipe)
– size DN 10 –
(set consisting of one compression fitting)



6 mm	(50)	2127650
8 mm	(50)	2127651
10 mm	(50)	2127652
12 mm	(50)	2127653

Compression ring



6 mm	(50)	2127150
8 mm (with intermediate ring)	(50)	2127151
10 mm (with intermediate ring)	(50)	2127152
12 mm	(50)	2127153

Compression nut



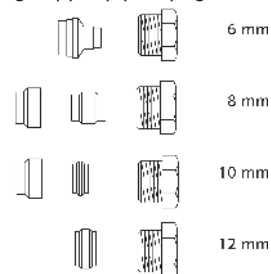
6 mm	(50)	2127250
8 mm	(50)	2127251
10 / 12 mm	(10)	2127253

Connection technology
Brass and steel couplings,
brass reinforcing sleeves: from page 795








Application:

These compression fittings are only suitable for
Oventrop products for heating oil installations
with female thread G 3/4 with compression
contour.








In heating oil installations according to DIN
4755 reinforcing sleeves are to be used when
installing copper pipes: page 795.



The metal compression fittings are also
resistant to bio heating oils.

Article	Packing unit	Article-No.	Hint
"Ofix-Oil" Couplings (steel, galvanised) brass cutting ring series L, DIN 2353			Application: Pipe connection for heating oil installations, compressed air, hydraulic, propane gas. Temperature range: -20 °C up to +120 °C Pressure: PN 100, up to Ø 15 PN 160 In heating oil installations according to DIN 4755, reinforcing sleeves are to be used when installing copper pipes: page 795 The metal couplings are also resistant to bio heating oils.
			
R 1/8 x 6 mm	(25)	2083051	
R 1/4 x 6 mm	(25)	2083061	
x 8 mm	(25)	2083052	
x 10 mm	(25)	2083063	
R 3/8 x 6 mm	(25)	2083060	
R 3/8 x 8 mm	(25)	2083053	
x 10 mm	(25)	2083054	
x 12 mm	(25)	2083055	
R 1/2 x 10 mm	(25)	2083056	
x 12 mm	(25)	2083057	
x 15 mm	(10)	2083058	
			
G 3/8 x 6 mm	(25)	2083074	
x 8 mm	(25)	2083075	
x 10 mm	(25)	2083076	
			
6 x 6 mm	(25)	2083251	
8 x 8 mm	(25)	2083252	
10 x 10 mm	(25)	2083253	
12 x 12 mm	(25)	2083254	
15 x 15 mm	(10)	2083255	
			
8 x 6 mm	(25)	2083350	
10 x 8 mm	(25)	2083351	
12 x 10 mm	(25)	2083353	
			
6 x 6 mm	(25)	2083451	
8 x 8 mm	(25)	2083452	
10 x 10 mm	(25)	2083453	
12 x 12 mm	(25)	2083454	
15 x 15 mm	(10)	2083455	
			Other dimensions on demand.
6 x 6	6 mm	(25) 2083551	
8 x 8	8 mm	(25) 2083552	
10 x 10	10 mm	(25) 2083553	
12 x 12	12 mm	(25) 2083554	
			Thread
6 mm	(50)	2083751	M 12 x 1.5
8 mm	(50)	2083752	M 14 x 1.5
10 mm	(50)	2083753	M 16 x 1.5
12 mm	(50)	2083754	M 18 x 1.5
15 mm	(25)	2083755	M 22 x 1.5
18 mm	(25)	2083756	M 26 x 1.5

Article	Packing unit	Article-No.	Hint
Cutting ring			
6 mm	(50)	2083851	
8 mm	(50)	2083852	
10 mm	(50)	2083853	
12 mm	(50)	2083854	
15 mm	(25)	2083855	
18 mm	(25)	2083856	
Brass reinforcing sleeves			
6 mm	(100)	2083951	Is required for the installation of soft pipes with a wall thickness of 1 mm.
8 mm	(100)	2083952	
10 mm	(100)	1029651	Diameters are related to the outer diameter of the pipe.
12 mm	(100)	1029652	
15 mm	(50)	1029654	
18 mm	(50)	1029656	
"Ofix-Oil" Double nipples			
brass			Application: Heating oil installations according to DIN 4755 for EL type of heating oil.
both ports with inner taper for connection hose/hose			The double nipples are also resistant to bio heating oils.
G 1/4 x G 3/8	(10)	2080050	
G 3/8 x G 3/8	(10)	2080051	
G 3/8 x G 1/2	(10)	2080053	
G 1/2 x G 1/2	(10)	2080052	
with one inner taper for connection hose/burner or valve			
G 3/8* x NPT 1/8	(10)	2080251	
G 3/8* x NPT 1/4	(10)	2080252	
G 1/2* x NPT 1/4	(10)	2080255	
G 1/4* x R 3/8	(10)	2080151	
G 3/8* x R 3/8	(10)	2080352	
G 3/8* x R 1/2	(10)	2080353	
G 1/2* x R 1/2	(10)	2080354	
G 3/8* x G 1/8	(10)	2080253	
G 3/8* x G 1/4	(10)	2080254	
G 1/4* x G 1/4	(10)	2080351	
*with inner taper			
"Ofix-Oil" Double nipple - elbow			
brass			
with one inner taper for connection hose/burner or hose/valve			
G 3/8* x NPT 1/4	(10)	2080451	
G 3/8* x R 3/8	(10)	2080452	
* with inner taper			

Article	Hose length	Article-No.	Hint
Flexible hoses DIN EN ISO 6806			Application: Heating oil installations according to DIN 4755, for EL type of heating oil according to DIN 51603-1.
	both ports with collar nut G $\frac{3}{8}$ with tapered seal		 Bio20 Up to a maximum temperature of 70 °C, the flexible hoses are also suitable for heating oils with "alternative additives" or with a bio proportion of up to 20 % according to DIN SPEC 51603-6.
	NI 8	500 mm	
		750 mm	
		1,000 mm	
		1,250 mm	
		1,500 mm	
	both ports with collar nut G $\frac{1}{2}$ with tapered seal		For higher bio proportions or temperatures up to 100 °C, burner hoses with diffusion tight inner layer are for instance to be used.
	NI 12.5	750 mm	2110056
		1,000 mm	2110057
		1,250 mm	2110058
		1,500 mm	2110059
	both ports with collar nut G $\frac{3}{8}$ and tapered seal, one port straight, one port with 90 ° elbow		Flexible hoses with outer sleeve made of galvanised wire mesh PN 10. Flexible hoses may be used as connection between solid pipe and burner or feeder unit.
	NI 8	500 mm	
		750 mm	
		1,000 mm	
	one port G $\frac{3}{8}$ male thread, one port with collar nut G $\frac{3}{8}$ with tapered seal		
	NI 8	500 mm	
		750 mm	
		1,000 mm	
		1,250 mm	
		1,500 mm	
	one port $\frac{1}{4}$ NPT male thread, one port with collar nut G $\frac{3}{8}$ with tapered seal		
	NI 8	500 mm	
		750 mm	
		1,000 mm	
		1,250 mm	
		1,500 mm	
	one port G $\frac{1}{4}$ male thread, one port with collar nut G $\frac{3}{8}$ with tapered seal		
	NI 8	300 mm	
		500 mm	
		750 mm	
		1,000 mm	
		1,250 mm	
		1,500 mm	



both ports with length of steel pipe
for connection of coupling

NI 8 8 x 8 mm	300 mm	2110551
	500 mm	2110552
	750 mm	2110553
	1,000 mm	2110554
NI 10 10 x 10 mm	300 mm	2110555
	500 mm	2110556
	750 mm	2110557
	1,000 mm	2110558
NI 10 12 x 12 mm	300 mm	2110559
	500 mm	2110560
	750 mm	2110561
	1,000 mm	2110562

Application:
Heating oil installations according to DIN 4755,
for EL type of heating oil according to DIN
51603-1.



Up to a max. temperature of 70 °C, the
flexible hoses are also suitable for heating
oils with "alternative additives" or with a bio
proportion of up to 20% according to DIN
SPEC 51603-1.

For higher bio proportions or temperatures up
to 100 °C, burner hoses with diffusion tight
inner layer are for instance to be used.

Flexible hoses with outer sleeve made of
galvanised wire mesh PN 10.

Flexibles hoses may be used as connection
between solid pipe and burner or feeder unit.

Further flexible hoses with special connections
for the different burner types on request.

Sets of flexible hoses

based on DIN EN ISO 6806.
Flexible rubber hoses with diffusion tight inner layer
and outer sleeve made of galvanised wire mesh.
They are resistant to bio heating oils and EL type of
heating oil, PN 10, thermal resistance up to 100 °C.



both ports G 3/8 collar nut with tapered seal
Set = 2 pieces

NI 6.3	500 mm	2111051
	750 mm	2111052
	1,000 mm	2111053
	1,500 mm	2111055

Application:

Heating oil installations according to DIN 4755.



Due to the diffusion tight inner layer also
suitable for heating oils with "alternative
additives" according to DIN V 51603-6 and
other liquid fuels which are burned for heating
purposes, such as FAME according to DIN EN
14213, RME, rape oil, palm oil, etc.

These flexible hoses are also suitable for
systems with increased return temperatures,
e. g. miniature CHP.

Flexible hose

300 mm long, according to DIN EN ISO 6806 with ring gasket,
G 1/4 male thread x G 3/8 collar nut



NI 8 (also for "Toc-Uno-B")	2162993
-----------------------------	---------



Flexible hose for the connection of the
preinstalled heating oil filter.



5.1.f Heating oil kits for export

Content

Oil tank installation kit for the installation of a two pipe system with steel tank	800
Oil tank installation kit for the installation of a two pipe system with plastic tank	800
Heating oil filter kit for two pipe systems	801
Heating oil filter kit for one pipe systems with return flow feed	801
Heating oil filter kit for one pipe systems (without return flow feed)	801
"Ofix-Oil" Compression fittings (for export only)	801

Article	Article-No.	Hint
	Oil tank installation kit for the installation of a two pipe system with steel tank	
	consisting of: "Flexo-Bloc" with compression fittings 8, 10 and 12 mm item no. 2053051 G 2 x 2000 mm	
	"Oilpur" heating oil filter, both ports female thread, with nickel mesh insert, item no. 2120103 G 3/8	
	"Ofix-Oil" compression fitting for the connection of the heating oil filter to the tank side item no. 2127500 8, 10 and 12 mm	
	Coupling with female thread item no. 2010616 G 2	
	Cap item no. 2010716 G 2	
	Double nipple item no. 2080360 G 2	
	Vent cap item no. 2020110 G 1 1/4	
	packed in a carton	2064351
	Oil tank installation kit for the installation of a two pipe system with plastic tank	
	consisting of: "Flexo-Bloc" with compression fittings 8, 10 and 12 mm item no. 2053051 G 2 x 2000 mm	
	"Oilpur" heating oil filter, both ports female thread with nickel mesh insert item no. 2120103 G 3/8	
	"Ofix-Oil" compression fitting for the connection of the heating oil filter to the tank side item no. 2127500 8, 10 and 12 mm	
	Vent cap item no. 2020110 G 1 1/4	
	packed in a carton	2065351
	as above, but packed in a plastic case	2064051

Application:
Heating oil installations

Plastic compression fittings are not approved in Germany.

Coupling and cap according to French standard NF E-25-572.

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

Heating oil filter kit for two pipe systems

consisting of:



„Oilpur“ heating oil filter, both ports female thread,
with nickel mesh insert,
item no. 2120103 G $\frac{3}{8}$

„Ofix Oil“ compression fitting
item no. 2127500 8, 10 and 12 mm

packed in a carton (10) **2120153**

Heating oil filter kit for one pipe systems with return flow feed

consisting of:



„Oilpur“ heating oil filter, both ports female thread
with nickel mesh insert
item no. 2122103 G $\frac{3}{8}$

„Ofix Oil“ compression fitting
item no. 2127700 8, 10 and 12 mm

packed in a carton (10) **2122153**

Heating oil filter kit for one pipe systems (without return flow feed)

consisting of:



„Oilpur“ heating oil filter, both ports female thread
with nickel mesh insert,
item no. 2123103 G $\frac{3}{8}$

„Ofix-Oil“ compression fitting
item no. 2127700 8, 10 and 12 mm

packed in a carton (10) **2123153**

"Ofix-Oil" Compression fittings (for export only)

plastic for metal pipes
Compression fittings (interchangeable) for
Oilpur" heating oil filters G $\frac{3}{8}$, "Flexo-Bloc" and "Toc-Duo"
- compression ring made of plastic, nuts made of brass -
for metal pipes

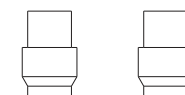
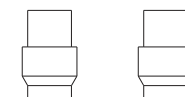
2-fold, for two pipe filters (50) **2127500**
8, 10 and 12 mm

plastic compression rings 1-fold, for one pipe filters (50) **2127700**
8, 10 and 12 mm

plastic compression rings



Plastic compression fittings are not approved in Germany and must therefore not be installed.



8 mm

10 mm

12 mm

5.2.a "Regusol" stations and "Regtronic" controllers for solar thermal energy



Content	807
Summary	808
"Regusol SH-130" Station DN 20	809
"Regusol LH-130" Station DN 20	809
"Regusol PH-130" Station DN 25	810
"Regusol SH-130" Station DN 25	810
"Regusol LH-130" Station DN 25	811
"Regusol ELH-130-RC" Station DN 25	812
"Regusol ELH-130-RC-P" Station DN 25	813
"Regusol PH-180" Station DN 25	814
"Regusol SH-180" Station DN 25	815
"Regusol LH-180" Station DN 25	816
"Regusol ELH-180-RC" Station DN 25	817
"Regusol SH-180" Station DN 32	818
"Regusol X-Uno 25" with heat exchanger	819
"Regusol X-Duo 25" with heat exchanger	821
"Regtronic" - Electronic controllers, summary	823
"Regtronic" - Electronic controllers, pipework configurations, summary	824
"Regtronic" - Electronic controllers	823
Outside temperature sensor	829
Room controller	829
"Regumat" Heat exchangers	830

5.2.b Accessories for "Regusol" stations within the collector circuit



Content	831
"Hydrocontrol STR" Double regulating and commissioning valves PN 25	832
"Regusol" Compression fittings	833
"Regusol" Compression fittings with reinforcing sleeves	833
Tailpipe sets DN 32	834
Brass reinforcing sleeves	834
Tailpipe sets DN 20 for "Regusol X" and "Regumaq X/XZ" stations	834
Accessories	835
High-efficiency pumps 130 mm	839
High-efficiency pumps 180 mm	839



5.2.c "OKP" and "OKF" Collectors and accessories

Content	841
"OKP" Tube collectors	842
"OKP" Vertical freestanding installation	843
"OKP" Vertical freestanding / facade installation	843
"OKP" Roof hooks made of stainless steel	844
Accessories	844
"OKF" Flat-plate collectors	846
"OKF" Rooftop installation	847
"OKF-MQ25" Rooftop installation	847
"OKF" Vertical roof integration side by side	848
"OKF-CK22/CS22" Connection options	849
"OKF" Vertical freestanding installation	848
"OKF-MQ25" Freestanding installation	850
"OKF" Gravel plate set	851
"OKF" Roof hooks made of galvanised steel	852
Carrying handles for "OKF" flat-plate collectors	852
Accessories for flat-plate collector "OKF-MQ25"	853

5.2.d "Solcos" Solar packages

Content	855
"Solcos" Solar packages with "OKP" tube collectors	856
"Solcos" Solar packages with "OKF-CK22" flat-plate collectors	857
"Solcos" Solar packages with "OKF-CS22" flat-plate collectors	858

5.2.e "Solar" Diaphragm expansion tanks for solar thermal energy

Content	859
"Solar" Diaphragm expansion tanks	860
"Solar" In-line tanks	860
Accessories	860



5.2.f Pipes and connection fittings

Content	861
"OV-Flex ST" Flexible pipes for solar thermal energy	862
Connection pieces	862
Further connection accessories	862





5.2.g Valves, temperature controllers, actuators and other accessories for application outside the collector circuit

Content	863
"Tri-CTR" Three-way diverting and mixing valves PN 16	864
Accessories sets for three-way valves "Tri-CTR"	864
Temperature controllers	865
"Brawa-Mix"	866
Strainers PN 25	867
Spare parts	867
"Hygate ATR" Gate valves PN 25	868
"Optibal" High temperature ball valves	868
"Optiflex" Fill and drain ball valves for solar plants	868
Fill and drain cocks PN 16 heavy pattern - DIN 3848	869



5.2.h Further accessories

Content	871
Further accessories	872



5.2.a "Regusol" stations and "Regtronic" controllers for solar thermal energy

Content

Summary	808
"Regusol SH-130" Station DN 20	809
"Regusol LH-130" Station DN 20	809
"Regusol PH-130" Station DN 25	810
"Regusol SH-130" Station DN 25	810
"Regusol LH-130" Station DN 25	811
"Regusol ELH-130-RC" Station DN 25	812
"Regusol ELH-130-RC-P" Station DN 25	813
"Regusol PH-180" Station DN 25	814
"Regusol SH-180" Station DN 25	815
"Regusol LH-180" Station DN 25	816
"Regusol ELH-180-RC" Station DN 25	817
"Regusol SH-180" Station DN 32	818
"Regusol X-Uno 25" with heat exchanger	819
"Regusol X-Duo 25" with heat exchanger	821
"Regtronic" - Electronic controllers, summary	823
"Regtronic" - Electronic controllers, pipework configurations, summary	824
"Regtronic" - Electronic controllers	823
Outside temperature sensor	829
Room controller	829
"Regumat" Heat exchangers	830

"Regusol" Stations for the connection of collector and storage cylinder

Product assembly DN 20 for pump lengths 130 mm, distance between pipe centres 100 mm

Product assembly DN 25 for pump lengths 130/180 mm, distance between pipe centres 100 mm

Product assembly DN 32 for pump lengths 180 mm, distance between pipe centres 125 mm

You may choose between

"Regusol" station with or without electronic controller,

"Regusol" station with deaerator with and without electronic controller and

"Regusol" pump circuit (return pipe)

	"Regusol" Stations											
	Model with pump length L = 130 mm							Model with pump length L = 180 mm				
	"Regusol SH-130" DN 20	"Regusol LH-130" DN 20	"Regusol PH-130" DN 25	"Regusol SH-130" DN 25	"Regusol LH-130" DN 25	"Regusol ELH- 130-RC" DN 25	"Regusol ELH- 130-RC- P" DN 25	"Regusol PH-180" DN 25	"Regusol SH-180" DN 25	"Regusol LH-180" DN 25	"Regusol ELH-180- RC" DN 25	"Regusol SH-180" DN 32
Page	809	809	810	810	811	812	813	814	815	816	817	818
Connection G 3/4	X	X										
Connection G 1 "Regusol" compression fitting			X	X	X	X	X	X	X	X	X	
Connection G 2 male thread, flat sealing												X
Ball valve for the return pipe with integrated check valve, thermometer and connection for a safety group	X	X	X	X	X	X	X	X	X	X	X	X*
Ball valve for the supply pipe with integrated check valve and thermometer	X	X		X	X	X	X		X	X	X	X*
Flow measuring and regulating device with isolation, filling and draining facility	X	X	X	X	X	X		X	X	X	X	X*
Safety group with safety valve 6 bar, pressure gauge 10 bar, fill and drain ball valve, connection to expansion tank	X	X	X	X	X	X	X	X	X	X	X	X
Wall mounting device	X	X	X	X	X	X	X	X	X	X	X	X
Insulation	X	X	X	X	X	X	X	X	X	X	X	X
Insulation with integrated electronic controller. The stations without electronic controller can be combined with Oventrop controllers as well as controllers of other suppliers.						X	X				X	
Deaerator		X			X	X	X			X	X	
Installation dimensions	Height 200 mm Width 200 mm Depth 145 mm	365 mm 200 mm 145 mm	375 mm 180 mm 197 mm	375 mm 250 mm 197 mm	375 mm 250 mm 197 mm	375 mm 250 mm 197 mm	375 mm 250 mm 197 mm	424 mm 180 mm 197 mm	424 mm 250 mm 197 mm	424 mm 250 mm 197 mm	424 mm 250 mm 197 mm	530 mm 350 mm 221 mm

Controllers for the operation of the complete solar plant see page 823 up to 829.

*"Regusol SH-180" DN 32: Ball valves without integrated check valves, flanged pipe in the supply with check valve, flow measuring and regulating device without filling and draining facility.



"Regusol SH-130" Station DN 20
 with safety group

consisting of:

- high-efficiency pump
- ball valve for the return pipe with integrated check valve, thermometer and connection for safety group
- ball valve for the supply pipe with integrated check valve and thermometer
- flow measuring and regulating device with isolation and lateral fill and drain ball valve
- safety valve 6 bar
- outlet G 3/4" male thread to expansion tank
- pressure gauge 10 bar
- fill and drain ball valve
- wall mounting device
- insulation

Control range of the flow measuring and regulating device: 2-14 l/min.

Grundfos UPM 3 Solar 15-75 PWM C 130 **1360033**

Complete, pre-assembled and leak tested unit for the connection to the solar circuit.
 With G 3/4 male thread according to DIN EN 16313 (cone "Euro").

For copper and precision steel pipes.

With the option to connect an expansion tank to the safety group.

Distance between pipe centres: 100 mm
 Pump 130 mm long.

Continuous operating temperature: 120 °C
 Max. short-term starting temperature: 160 °C

Suitable for standard solar liquids.

Controllers and accessories for the operation of the complete solar plant: from page 827

To activate the pump, the controller must provide a PWM activation signal.





"Regusol LH-130" Station DN 20
 as "Regusol SH-130" station, but with deaerator



consisting of:

- high-efficiency pump
- ball valve for the return pipe with integrated check valve, thermometer and connection for safety group
- ball valve for the supply pipe with integrated check valve and thermometer
- flow measuring and regulating device with isolation and lateral fill and drain ball valve
- safety valve 6 bar
- outlet G 3/4" male thread to expansion tank
- pressure gauge 10 bar
- fill and drain ball valve
- wall mounting device
- insulation
- deaerator

Control range of the flow measuring and regulating device: 2-14 l/min.

Grundfos UPM 3 Solar 15-75 PWM C 130 **1360573**

Article	Article-No.	Hint
	"Regusol PH-130" Station DN 25 Pump circuit with safety group	Complete, pre-assembled and leak tested unit for the connection to the solar circuit. With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe. For copper and precision steel pipes. With the option to connect an expansion tank to the safety group. Distance between pipe centres: 100 mm (station) Pump 130 mm long. Continuous operating temperature: 120 °C Max. short-term starting temperature: 160 °C Suitable for standard solar liquids. When connecting the "Regusol" station to a flexible pipework (e. g. corrugated metal pipe), the locking shackle 1369090 (page 835) has to be used in addition to the wall mounting device. Controllers and accessories for the operation of the complete solar plant: from page 827 To activate the pump, the controller must provide a PWM activation signal.
	Wilo PARA ST 25-130/7-50/iPWM2-6 1362063 Grundfos UPM 3 Solar 25-75 PWM C 130 1362064°	
	"Regusol SH-130" Station DN 25 as "Regusol PH-130" station, but with supply pipe	A controller location made of expanded polypropylene for upgrading the station with a controller "Regtronic RC/RC-P" is available on page 829.
	consisting of: -high-efficiency pump -ball valve for the return pipe with integrated check valve, thermometer and connection for safety group -ball valve for the supply pipe with integrated check valve and thermometer -flow measuring and regulating device with isolation and lateral fill and drain ball valve -safety valve 6 bar -outlet G ¾ male thread to expansion tank -pressure gauge 10 bar -fill and drain ball valve -wall mounting device -insulation Control range of the flow measuring and regulating device: 2-15 l/min. Grundfos UPM 3 Solar 25-75 PWM C 130 1360063	

Article	Article-No.	Hint
	"Regusol LH-130" Station DN 25 as "Regusol SH-130" station, but with deaerator	Complete, pre-assembled and leak tested unit for the connection to the solar circuit. With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe. For copper and precision steel pipes. With the option to connect an expansion tank to the safety group. Distance between the pipe centres: 100 mm Pump 130 mm long. Continuous operating temperature: 120 °C Max. short-term starting temperature: 160 °C Suitable for standard solar liquids.
	consisting of: -high-efficiency pump -ball valve for the return pipe with integrated check valve, thermometer and connection for safety group -ball valve for the supply pipe with integrated check valve and thermometer -flow measuring and regulating device with isolation and lateral fill and drain ball valve -safety valve 6 bar -outlet G 3/4" male thread to expansion tank -pressure gauge 10 bar -fill and drain ball valve -wall mounting device -insulation -deaerator Control range of the flow measuring and regulating device: 2-15 l/min. Wilo PARA ST 25-130/7-50/iPWM2-6 1360557 Grundfos UPM 3 Solar 25-75 PWM C 130 1360556	When connecting the "Regusol" station to a flexible pipework (e.g. corrugated metal pipe), the locking shackle 1369090, (page 835) has to be used in addition to the wall mounting device. Controllers and accessories for the operation of the complete solar plant: from page 827
	Control range of the flow measuring and regulating device: 7-30 l/min. Wilo PARA ST 25-130/8-75/iPWM2-9 1360558	To activate the pump, the controller must provide a PWM activation signal. A controller location made of expanded polypropylene for upgrading the station with a controller "Regtronic RC/RC-P" is available on page 829.



"Regusol ELH-130-RC" Station DN 25
with safety group and electronic controller

consisting of:

- high-efficiency pump
- ball valve for the return pipe with integrated check valve, thermometer and connection for safety group
- ball valve for the supply pipe with integrated check valve and thermometer
- flow measuring and regulating device with isolation and lateral fill and drain ball valve
- safety valve 6 bar
- outlet G 3/4 male thread to expansion tank
- pressure gauge 10 bar
- fill and drain ball valve
- wall mounting device
- electronic controller
- insulation
- deaerator

Control range of the flow measuring and regulating device: 2-15 l/min.

Wilo PARA ST 25-130/7-50/iPWM2-9 **1366597**
and controller "Regtronic RC"
with data output (S-bus)

Complete, pre-assembled and leak tested unit for the connection to the solar circuit.

With integrated electronic controller for the control and monitoring of a solar thermal plant according to the temperature difference principle.

These stations are mainly used for hot potable water preparation.

With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe.

For copper and precision steel pipes.

With the option to connect an expansion tank to the safety group.

Distance between pipe centres: 100 mm
Pump 130 mm long.

Continuous operating temperature: 120 °C
Max. short-term starting temperature: 160 °C

Suitable for standard solar liquids.

When connecting the "Regusol" station to a flexible pipework (e. g. corrugated metal pipe), the locking shackle 1369090 (page 835) has to be used in addition to the wall mounting device.

Inputs: 4 temperature sensors (PT1000)
Outputs: 3 relays, 1 is a volt free relay

The controller is already cabled with a temperature sensor (PT1000).
Another temperature sensor (PT1000) for the connection to the collector is included.

Temperature sensors PT1000 for the registration of additional temperatures are available as accessories.



"Regusol ELH-130-RC-P" Station DN 25

with safety group, electronic volume flow sensor and electronic controller

consisting of:

- high-efficiency pump
- ball valve for the return pipe with integrated check valve, thermometer and connection for safety group
- ball valve for the supply pipe with integrated check valve and thermometer
- electronic volume flow sensor VFS (2-40 l/min.)
- safety valve 6 bar
- outlet G 3/4 male thread to expansion tank
- pressure gauge 10 bar
- fill and drain ball valve
- wall mounting device
- electronic controller
- insulation
- deaerator

Wilo PARA ST 25-130/7-50/iPWM2-9 **1360394**

and controller OV-"Regtronic RC-P"
with data output (S-bus)

Complete, pre-assembled and leak tested unit for the connection to the solar circuit.

With integrated electronic controller for the control and monitoring of a solar thermal plant according to the temperature difference principle.

With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe.

For copper and precision steel pipes.

With the option to connect an expansion tank to the safety group.

Distance between pipe centres: 100 mm
Pump 130 mm long.

Continuous operating temperature: 120 °C
Max. short-term starting temperature: 160 °C

Suitable for standard solar liquids.

When connecting the "Regusol" station to a flexible pipework (e. g. corrugated metal pipe), the locking shackle 1369090 (page 835) has to be used in addition to the wall mounting device.

Apart from hot potable water preparation, this station with high-efficiency pump offers additional functions.

The integrated additional controller allows for a support of the heating system, a difference control or a circulation function.

Yield measurement is possible via the **electronic volume flow sensor**.

Volume flow sensor without lateral fill and drain

ball valve, use filling and flushing device "Regusol": page 835

Interfaces: S-bus for connection to the data logger "CS-BS", SD-card slot for data recording

Inputs: 4 temperature sensors (PT1000),
1 input for electronic volume flow sensor (volume flow/temperature)

Outputs: 4 relays, 1 is a volt free relay,
2 pulse-width modulation (PWM) outputs for the speed controlled activation of high-efficiency pumps.



"Regusol PH-180" Station DN 25

Pump circuit with safety group

consisting of:

- high-efficiency pump
- ball valve for the return pipe with integrated check valve, thermometer and connection for safety group
- flow measuring and regulating device with isolation and lateral fill and drain ball valve
- safety valve 6 bar
- outlet G 3/4" male thread to expansion tank
- pressure gauge 10 bar
- fill and drain ball valve
- wall mounting device
- insulation

Control range of the flow measuring and regulating device: 2-15 l/min.

Grundfos UPM 3 Solar 25-75 PWM C 180 **1368163**

Complete, pre-assembled and leak tested unit for the connection to the solar circuit.
With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe.

For copper and precision steel pipes.

With the option to connect an expansion tank to the safety group.

Pump 180 mm long.

Continuous operating temperature: 120 °C
Max. short-term starting temperature: 160 °C

Suitable for standard solar liquids.



When connecting the station "Regusol" to a flexible pipework (e. g. corrugated metal pipe), the locking shackle 1369090 (page 835) has to be used in addition to the wall mounting device.

Controllers and accessories for the operation of the complete solar plant: from page 827

To activate the pump, the controller must provide a PWM activation signal.



Article	Article-No.	Hint
<p>"Regusol SH-180" Station DN 25 as "Regusol PH-180" station, but with supply pipe</p> <p>consisting of:</p> <ul style="list-style-type: none"> -high-efficiency pump -ball valve for the return pipe with integrated check valve, thermometer and connection for safety group -ball valve for the supply pipe with integrated check valve and thermometer -flow measuring and regulating device with isolation and lateral fill and drain ball valve -safety valve 6 bar -outlet G 3/4" male thread to expansion tank -pressure gauge 10 bar -fill and drain ball valve -wall mounting device -insulation <p>Control range of the flow measuring and regulating device: 2-15 l/min.</p> <p>Grundfos UPM 3 Solar 25-75 PWM C 180 1368064</p>		<p>Complete, pre-assembled and leak tested unit for the connection to the solar circuit. With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe.</p> <p>For copper and precision steel pipes.</p> <p>With the option to connect an expansion tank to the safety group.</p> <p>Distance between pipe centres: 100 mm Pump 180 mm long.</p> <p>Continuous operating temperature: 120 °C Max. short-term starting temperature: 160 °C</p> <p>Suitable for standard solar liquids.</p> <p>When connecting the "Regusol" station to a flexible pipework (e.g. corrugated metal pipe), the locking shackle 1369090, (page 835) has to be used in addition to the wall mounting device.</p> <p>Controllers and accessories for the operation of the complete solar plant: page 827</p> <p>To activate the pump, the controller must provide a PWM activation signal.</p> <p>A controller location made of expanded polypropylene for upgrading the station with a controller "Regtronic RC/RC-P" is available on page 829.</p>

Article	Article-No.	Hint
 <p>"Regusol LH-180" Station DN 25 as "Regusol SH-180" station, but with deaerator</p> <p>consisting of:</p> <ul style="list-style-type: none"> -high-efficiency pump -ball valve for the return pipe with integrated check valve, thermometer and connection for safety group -ball valve for the supply pipe with integrated check valve and thermometer -flow measuring and regulating device with isolation and lateral fill and drain ball valve -safety valve 6 bar -outlet G 3/4" male thread to expansion tank -pressure gauge 10 bar -fill and drain ball valve -wall mounting device -insulation -deaerator <p>Control range of the flow measuring and regulating device: 2-15 l/min.</p> <p>Wilo PARA ST 25-130/7-50/iPWM2-6 1360851 Grundfos UPM 3 Solar 25-75 PWM C 180 1360853 Wilo PARA ST 25-130/7-50/iPWM2-6 1360854 with 10 bar safety valve</p>		<p>Complete, pre-assembled and leak tested unit for the connection to the solar circuit. With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe.</p> <p>For copper and precision steel pipes.</p> <p>With the option to connect an expansion tank to the safety group.</p> <p>Distance between pipe centres: 100 mm Pump 180 mm long.</p> <p>Continuous operating temperature: 120 °C Max. short-term starting temperature: 160 °C</p> <p>Suitable for standard solar liquids.</p> <p>When connecting the "Regusol" station to a flexible pipework (e. g. corrugated metal pipe), the locking shackle 1369090 (page 835) has to be used in addition to the wall mounting device.</p> <p>Controllers and accessories for the operation of the complete solar plant: from page 827</p>
	<p>Control range of the flow measuring and regulating device: 7-30 l/min.</p> <p>Wilo PARA ST 25-130/8-75/iPWM2-9 1360852</p> 	<p>To activate the pump, the controller must provide a PWM activation signal.</p> <p>A controller location made of expanded polypropylene for upgrading the station with a controller "Regtronic RC/RC-P" is available on page 829.</p>



"Regusol ELH-180-RC" Station DN 25
as "Regusol LH-180" station, but with electronic controller

- consisting of:
- high-efficiency pump
 - ball valve in the return pipe with integrated check valve, thermometer and connection for safety group
 - ball valve in the supply pipe with integrated check valve and thermometer
 - flow measuring and regulating device with isolation and lateral fill and drain ball valve
 - safety valve 6 bar
 - outlet G 3/4 male thread to expansion tank
 - pressure gauge 10 bar
 - fill and drain ball valve
 - wall mounting device
 - electronic controller
 - insulation
 - deaerator

Control range of the flow measuring and regulating device: 2 - 15 l/min.

Wilo PARA ST 25-130/7-50/iPWM2-6 **1360862**
Wilo PARA ST 25-130/7-50/iPWM2-6 **1360864**
with 10 bar safety valve
and controller "Regtronic RC"
with data output (S-bus)

Complete, pre-assembled and leak tested unit for the connection to the solar circuit.

With integrated electronic controller for the control and monitoring of a solar thermal plant according to the temperature difference principle.

These stations are mainly used for hot potable water preparation.

With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe.

For copper and precision steel pipes.

With the option to connect an expansion tank to the safety group.

Distance between pipe centres: 100 mm
Pump 180 mm long.

Continuous operating temperature: 120 °C
Max. short-term starting temperature: 160 °C

Suitable for standard solar liquids.

When connecting the "Regusol" station to a flexible pipework (e. g. corrugated metal pipe), the locking shackle 1369090 (page 835) has to be used in addition to the wall mounting device.

Inputs: 4 temperature sensors (PT1000)
Outputs: 3 relays, 1 is a volt free relay

The controller is already cabled with a temperature sensor (PT1000).
Another temperature sensor (PT1000) for the connection to the collector is included.

Temperature sensors PT1000 for the registration of additional temperatures are available as accessories.



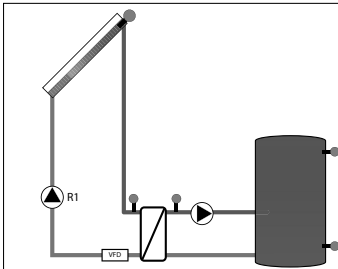
Article	Article-No.	Hint
<p>"Regusol SH-180" Station DN 32 with safety group</p> <p>consisting of:</p> <ul style="list-style-type: none"> -high-efficiency pump -ball valve with thermometer -ball valve with thermometer -check valve -safety valve 6 bar -outlet G 3/4" male thread to expansion tank -pressure gauge 10 bar -flow measuring and regulating device -insulation <p>Control range of the flow measuring and regulating device: 10 - 40 l/min.</p> <p>Wilo-Stratos PARA 1-9 PWM 2</p>	<p>1368251</p>	<p>Complete, pre-assembled and leak tested unit for the connection to the solar circuit. With flat sealing male threaded connection G 2 to the solar supply and return pipe.</p> <p>With the option to connect an expansion tank to the safety group.</p> <p>Distance between pipe centres: 125 mm Pump 180 mm long.</p> <p>Continuous operating temperature: 120 °C Max. short-term starting temperature: 160 °C</p> <p>Suitable for standard solar liquids.</p> <p>Controllers and accessories for the operation of the complete solar plant: from page 827</p> <p>To activate the pump, the controller must provide a PWM activation signal.</p>

"Regusol X" Stations for the connection of collector and storage cylinder with heat exchanger

Models: "Regusol X-Duo 25" Electronically controlled station with heat exchanger for the transmission of the heat of a solar circuit (primary circuit) to two loading circuits (secondary circuit) activated by a conversion valve.
"Regusol X-Uno 25" Electronically controlled heat exchanger system for the transmission of the heat of a solar circuit (primary circuit) to a loading circuit (secondary circuit).

Installation dimensions: H = 860 mm, W = 500 mm, D = 260 mm

Characteristics	Heat exchanger system without conversion function 1 loading circuit	Heat exchanger system with conversion function to 2 nd loading circuit
	"Regusol X-Uno 25"	"Regusol X-Duo 25"
Catalogue page	821	821
Primary side:		
Filling and flushing connection	x	x
Electronic flow transducer	x	x
Ball valve with check valve, temperature sensor connection and thermometer inside handle, with connection for safety group	x	x
Safety group with safety valve (6 bar), pressure gauge, fill and drain ball valve and connection for an expansion tank	x	x
Ball valve with check valve, temperature sensor connection, thermometer inside handle and additional fill and drain valve in the elbow	x	x
Plate heat exchanger	25 kW	25 kW
Secondary side:		
Vent plug	x	x
Check valve	x	x
Three-way conversion valve with actuator		x
Ball valve with temperature sensor connection and thermometer inside handle	x	x
Ball valve with temperature sensor connection, thermometer inside handle and additional fill and drain valve	x	x
Safety valve (3 bar)	x	x
Solar controller with different programmable loading strategies – target loading of upper part of the storage cylinder – active loading section by section – loading of the complete storage cylinder	x	x
Insulation with integrated controller "Regtronic RX"	x	x



Storage cylinder connection for simple operation

"Regusol X-Uno 25"

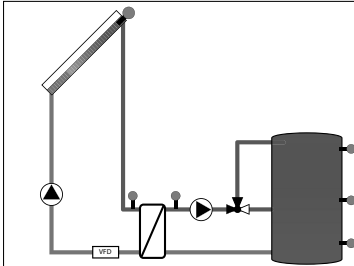
Heat exchanger capacity 25 kW

Primary circuit:

1 circuit for the connection of the collector fields

Secondary circuit:

1 circuit for the connection of the storage cylinder for simple operation



Storage cylinder connection for loading section by section

"Regusol X-Duo 25"

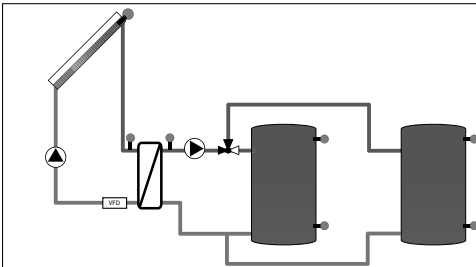
Heat exchanger capacity 25 kW

Primary circuit:

1 circuit for the connection of the collector fields

Secondary circuit:

2 circuits for the connection of the storage cylinder for loading section by section



Storage cylinder connection for loading operation of 2 separate storage cylinders

"Regusol X-Duo 25"

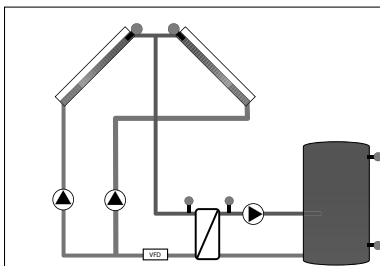
Heat exchanger capacity 25 kW

Primary circuit:

1 circuit for the connection of the collector fields

Secondary circuit:

2 circuits but with loading operation of 2 separate storage cylinders



For 2 collector fields with storage cylinder connection for simple operation

"Regusol X-Uno 25" with "Regusol X" supplementary set

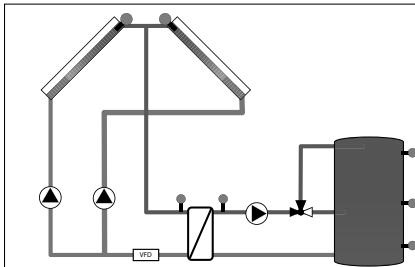
Heat exchanger capacity 25 kW

Primary circuit:

2 circuits for the connection of the collector fields

Secondary circuit:

1 circuit for the connection of the storage cylinder for simple operation



For 2 collector fields for storage cylinder connection for loading section by section

"Regusol X-Duo 25" with "Regusol X" supplementary set

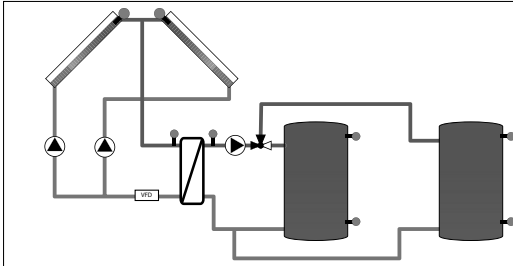
Heat exchanger capacity 25 kW

Primary circuit:

2 circuits for the connection of the collector fields

Secondary circuit:

2 circuits for the connection of the storage cylinder for loading section by section



For 2 collector fields for storage cylinder connection for loading operation of 2 separate storage cylinders

"Regusol X-Duo 25" with "Regusol X" supplementary set

Heat exchanger capacity 25 kW

Primary circuit:

2 circuits for the connection of the collector fields

Secondary circuit:

2 circuits but with loading operation of 2 separate storage cylinders

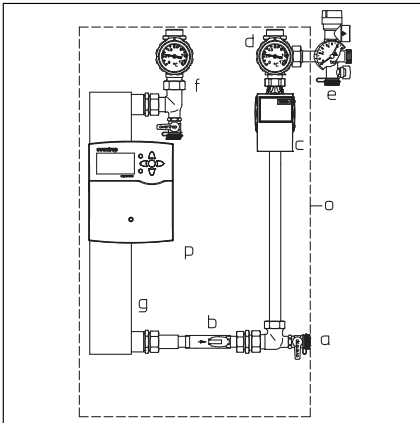


Article	Article-No.	Hint
<p>"Regusol X-Uno 25" with heat exchanger Station with heat exchanger 1 solar circuit connection with electronic controller "Regtronic RX" with full graphic display and data output (S-bus)</p> <p>Capacity: 25 kW Number of heat exchanger plates: 30</p> <p>Connections: Primary side: G 1 "Regusol" compression fittings Secondary side: G 1 flat sealing</p> <p>kvs = 2.4 m³/h primary side (with a glycol proportion of 40% in the solar liquid) kvs = 3.6 m³/h secondary side</p> <p>with Wilo PARA high-efficiency pumps 1361060 Primary side: ST 15-130/7-50/iPWM2-6 Secondary side: 15-130/7-50/iPWM2-9</p>		<p>Product assembly with electronic controller, heat exchanger and three-way conversion valve ("Regusol X-Duo 25" only) for second loading circuit for the controlled transmission of the heat of the solar circuit (primary circuit) to a buffer storage cylinder (secondary circuit); for instance for existing storage cylinders without direct solar connection.</p> <p>The three-way valve integrated in the supply pipe of the secondary circuit ("Regusol X-Duo 25" only) allows for the conversion to an additional loading circuit running in parallel, for instance for the loading section by section of the storage cylinder or the thermal loading of a second storage cylinder.</p> <p>Primary circuit: up to PN 10 and 120 ° Starting temperature: 160 °C Secondary circuit: up to PN 6 and 120 °C constant operation</p>

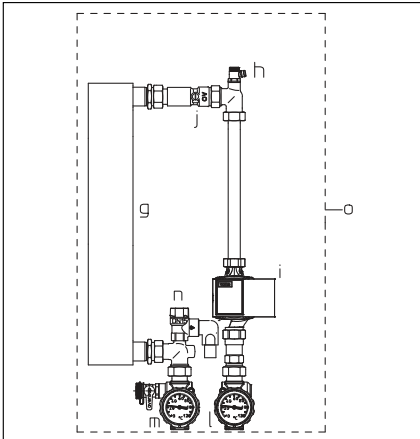


<p>"Regusol X-Duo 25" with heat exchanger Station with heat exchanger 1 solar circuit connection/ 2 loading circuit connections with electronic controller "Regtronic RX" with full graphic display and data output (S-bus)</p> <p>Capacity: 25 kW Number of heat exchanger plates: 30</p> <p>Connections: Primary side: G 1 "Regusol" compression fittings Secondary side: G 1 flat sealing</p> <p>kvs = 2.4 m³/h primary side (with a glycol proportion of 40% in the solar liquid) kvs = 3.2 m³/h secondary side</p> <p>with Wilo PARA high-efficiency pumps 1361050 Primary side: ST 15-130/7-50/iPWM2-6 Secondary side: 15-130/7-50/iPWM2-9</p>	<p>For the extension of a "Regusol X" station with high-efficiency pump for the interconnection and regulation of different collector fields (e.g. east/west), see supplementary set "Regusol X": page 838</p>	<p>The soldered plate heat exchanger complies with the requirements of the European Pressure Equipment Directive (2014/68/EU). Due to turbulent flow conditions, an excellent self-cleaning effect is produced and thus, a contamination is avoided.</p> <p>The leak tested components of the heat exchanger system are pre-assembled on a board.</p> <p>The controller is wired with the internal electric components and features the following connections: Output for solar circuit pump Output for loading pump Output for three-way conversion valve ("Regusol X-Duo 25" only) Apart from the mentioned outputs, the "Regtronic RX" features a data bus (S-bus) for the connection to the data logger "CS-BS".</p> <p>Temperature inputs for: Collector, heat exchanger entry point - primary side, heat exchanger exit point - secondary side, 3 temperature inputs for storage cylinder with loading operation section by section, interface for electronic flow transducer.</p> <p>Plain text is clearly shown on the display of the controller.</p> <p>The heat exchanger system is completely insulated.</p> <p>The indicated capacity for the heat transmission is valid for a usable global solar radiation of 500 W/m².</p> <p>The heat transmission depends on: - the reached flow temperature and the volume flow of the primary circuit - the flow temperature difference between the primary and secondary circuit - the required flow temperature and the volume flow of the secondary circuit.</p>
--	---	--

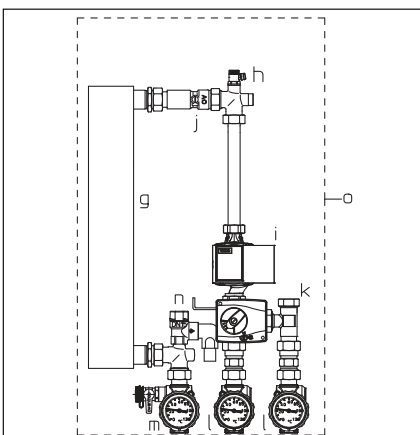
The stations described on the preceding pages consist of two connection levels:



Front level, solar circuit
(primary circuit X-Uno 25 and X-Duo 25)



Back level, loading circuit
(secondary circuit X-Uno 25)



Back level, loading circuit
(secondary circuit X-Duo 25)

1. Primary circuit (X-Uno 25 and X-Duo 25)

- a Flushing, filling and draining connection
- b Electronic volume flow sensor VFD (2-40 l/min.)
- c Pump (solar circuit)
- d Ball valve, temperature sensor connection and thermometer inside handle, with connection for safety group
- e Safety group with safety valve (6 bar), pressure gauge, fill and drain ball valve and connection for an expansion tank
- f Ball valve with check valve, temperature sensor connection, thermometer inside handle and additional fill and drain valve in the elbow
- g Plate heat exchanger
- o Insulation with integrated controller
- p Solar controller with different programmable loading strategies
 - target loading of upper part of the storage cylinder
 - active loading section by section
 - loading of the complete storage cylinder

2. Secondary circuit (X-Uno 25)

- g Plate heat exchanger
- h Venting valve
- i Pump (loading circuit)
- j Check valve
- l Ball valve with temperature sensor connection and thermometer inside handle
- m Ball valve with temperature sensor connection, thermometer inside handle and additional fill and drain valve
- n Safety valve (3 bar)
- o Insulation

Dimensions	(outer dimensions insulation)
width:	approx. 500 mm
depth:	approx. 260 mm
height:	approx. 860 mm

3. Secondary circuit (X-Duo 25)

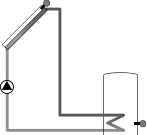
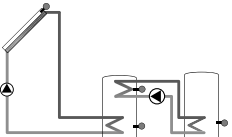
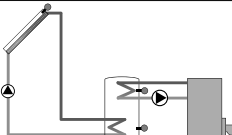
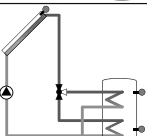
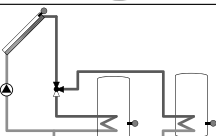
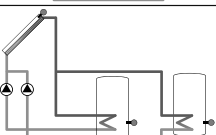
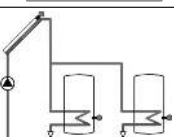
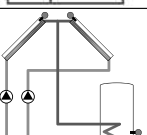
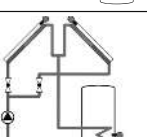
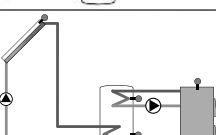
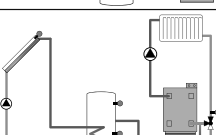
- g Plate heat exchanger
- h Venting valve
- i Pump (loading circuit)
- j Check valve
- k Three-way conversion valve with actuator
- l Ball valve with temperature sensor connection and thermometer inside handle
- m Ball valve with temperature sensor connection, thermometer inside handle and additional fill and drain valve
- n Safety valve (3 bar)
- o Insulation

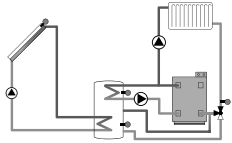
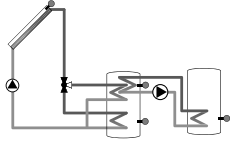
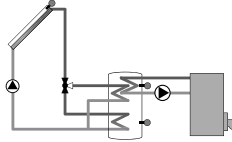
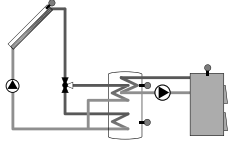
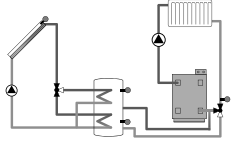
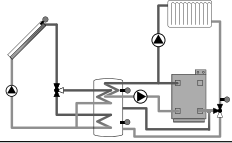
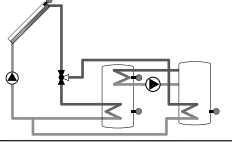
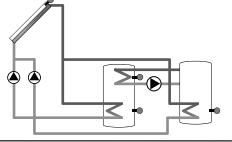
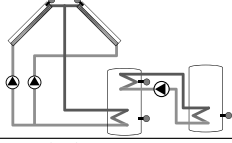
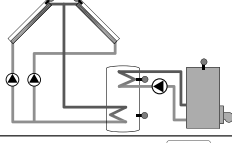
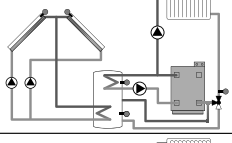
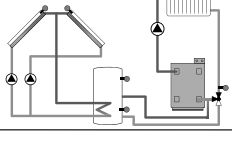
Dimensions	(outer dimensions insulation)
width:	approx. 500 mm
depth:	approx. 260 mm
height:	approx. 860 mm

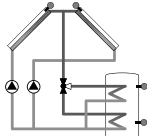
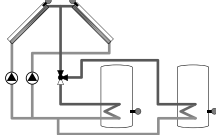
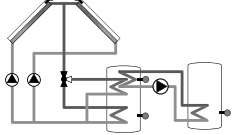
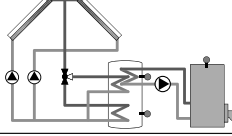
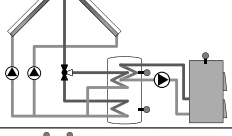
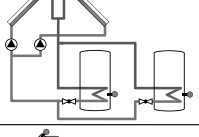
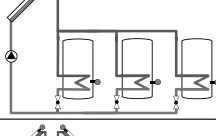
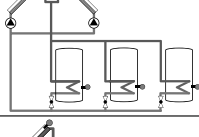
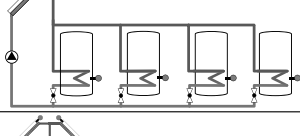
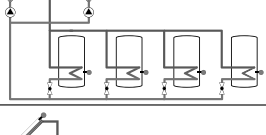
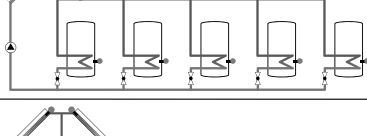
Controller	"Regtronic RC"	"Regtronic RC-P"	"Regtronic RM"
Item no.	1369549	1369551	1369555
Application	<ul style="list-style-type: none"> – Solar storage cylinder loading via a heat exchanger located inside the storage cylinder – Control with heat exchanger – Activation of high-efficiency pumps by PWM and 0-10 V signal – Automatic functional control according to VDI guideline 2169 	<ul style="list-style-type: none"> – Solar storage cylinder loading via a heat exchanger located inside the storage cylinder – Control with heat exchanger – Activation of high-efficiency pumps by PWM and 0-10 V signal – Additional functions, e.g. support of a heating system, differential control, control of a circulation pipe or a wood burning stove – Automatic functional control according to VDI guideline 2169 	<ul style="list-style-type: none"> – Solar storage cylinder loading via a heat exchanger located inside the storage cylinder – Control with heat exchanger – Freely programmable outputs – Heating systems – Activation of high-efficiency pumps by PWM and 0-10 V signal – 2 variable temperature heating circuits
Energy measurement (for instance using an electronic flow sensor)	–	X	X
Number of inputs (PT 1000)	4	4	12
Flow sensor (VFS)	–	1	2
Flow sensor (VFD)	–	–	2
Pulse input V40	1	1	–
Number of outputs	3	4	14
Speed controlled pump output (standard pump)	2	3	13
Speed controlled pump output (high-efficiency pump)	2	2	4
Data output (S-bus) for connection to the "Datalog CS-BS-1 / CS-BS-6"	X	X	X
Integrated in the stations	"Regusol ELH-RC"	"Regusol ELH-RC-P"	"Regucor WHS"





The Oventrop controllers allow for a number of possible pipework configurations. Amongst others, functions like return temperature increase, boiler activation, circulation function, threshold function as well as heating and cooling function can be easily realised.

The below mentioned pipework configurations can be realised with the Oventrop controllers.

Pipework configuration	"Regtronic RC"	"Regtronic RC-P"	"Regtronic RM"
	X	X	X
	X	X	X
	X	X	X
	X		X
	X	X	X
	X	X	X
		X	X
	X	X	X
		X	X
	X	X	X
	X	X	X

Pipework configuration	"Regtronic RC"	"Regtronic RC-P"	"Regtronic RM"
			X
			X
			X
			X
			X
			X
		X	X
		X	X
		X	X
		X	X
			X
			X

Pipework configuration	"Regtronic RC"	"Regtronic RC-P"	"Regtronic RM"
			X
		X	X
			X
			X
			X
			X
			X
			X
			X
			X
			X
		X	X

Article	Article-No.	Hint
"Regtronic" - Electronic controllers		
 <p>"Regtronic RC" 4 inputs PT 1000, PT 500 or KTY 1 pulse input 3 outputs, 1 is a volt free relay 2 PWM outputs for speed controlled activation of high-efficiency pumps Data output S-bus 10 selectable basic systems Automatic functional control according to VDI 2169 With 1 collector sensor and 3 storage cylinder sensors</p>	1369549	<p>Simple solar controller for wall attachment for the control of a solar plant with one collector and one (maximum of 2) storage cylinder. The controller controls two PWM outputs. This controller is mainly used for the operation of small and medium-sized solar plants and heating systems. As the first controller in its class, the "Regtronic RC" allows the automatic functional control according to the VDI directive 2169.</p>
 <p>"Regtronic S-bus" Interface adapter for high-efficiency pumps</p>	1369531	<p>When combined with the interface adapter "Regtronic S-bus", standard solar controllers can be used for the speed control of high-efficiency pumps. Depending on the pump type, the control signal can be switched from PWM to 0-10 V.</p>
 <p>"Regtronic PSW" Signal converter for PWM/0 - 10 V pump control (high-efficiency pumps)</p>	1369532	<p>Signal converter for the conversion of an asynchronous signal to a high-efficiency pump control signal (PWM or 0 - 10 V)</p>
 <p>"Regtronic RC-P" 4 inputs for PT 1000, PT 500 or KTY 4 outputs, 1 is a volt free relay 1 analogue input Grundfos Direct Sensors™ 1 input flow rotor 1 pulse input V 40 (convertible to PT 1000, PT 500 or KTY) 2 PWM outputs Data output S-bus 4 solar basic systems, each with up to 3 hydraulic variants Automatic functional control according to VDI 2169</p>	1369551	<p>Flexible solar controller for wall attachment for the control of complex solar plants. Apart from the operation of solar plants for hot potable water preparation, this controller is mainly used for the realisation of additional functions such as:</p> <ul style="list-style-type: none"> - Zone loading - Support of the heating system - Control of a circulation pipe - Vacation function <p>The controller is preloaded with 27 pipework configurations which allow for the control of the majority of common pipework configurations. The "Regtronic RC-P" allows the automatic functional control according to the VDI directive 2169.</p>



"Regtronic RM"

for the control of heating and cooling circuits as well as solar plants

12 inputs PT 1000, PT 500 or KTY
3 pulse inputs
2 analogue inputs Grundfos Direct Sensors™
2 digital inputs Grundfos Direct Sensors™
14 outputs
4 PWM outputs (convertible to 0-10 V)
Data output S-bus

With 2 collector sensors and 6 storage cylinder sensors.
The outdoor sensor is not included.

Solar system controller with full graphic display for use in solar, heating and cooling systems. Control of weather guided heating and cooling circuits.
Operating current: 100-240 V

The system controller "Regtronic RM" for wall attachment has 14 relay outputs (13 speed controlled solid-state relays and 1 volt free relay) and 4 PWM outputs for the speed control of high-efficiency pumps which are convertible to the output of a 0-10 V signal.

The controller "Regtronic RM" controls solar plants with East-West roof orientation and several storage cylinders as well as weather guided variable / constant temperature heating and cooling circuits.

Preloaded function blocks simplify the system parameterization and thus facilitate an integration of various heat generators (e. g. oil, gas or solid fuel boilers).

Different optional functions such as storage cylinder loading section by section, heat exchange, heat demand, boiler loading, solid fuel boiler, mixing valve control, measurement of heat consumption, tube collector function, drain back option, thermostat function, ΔT -regulation, thermal disinfection, circulation and further functions may be activated via the intuitive user guidance.

Interfaces: S-bus for the connection to the data logger "CS-BS".
SD-card slot for data recording and transmission of set values as well as updating of the firmware.

Up to 5 extension modules "Regtronic EM" can be connected to the "Regtronic RM". Thus, there is a total number of 39 relay outputs for individual pipework configurations.

1369555

ErP classification "Regtronic RM"						
Item no.	Controller	Required accessories	Boiler control modulating (0-10 V)	On/Off	ErP %	Class
1369555	"Regtronic RM"	1 x outside temperature sensor 1152099	X		2.0	II
		1 x outside temperature sensor 1152099		X	1.5	III
		1 x room temperature sensor 1152095	X		4.0	VI
		1 x outside temperature sensor 1152099				
		1 x room temperature sensor 1152095		X	3.5	VII
		1 x outside temperature sensor 1152099				
		3x room temperature sensor 1152095	X		5.0	VIII

	Article	Article-No.	Hint
	Outside temperature sensor	1152099	Temperature sensor PT 1000.
	Room temperature sensor PT 1000	1152095	Room temperature sensor for fixing on level surfaces (surface mounting).
	Remote control with room temperature sensor PT 1000	1152096	Remote control with room temperature sensor PT 1000 for the connection to the electronic controllers "Regtronic RH, RM and RS" for a comfortable control of the heating curve of the controller from the living area. When increasing the heating curve, the flow temperature is increased and vice versa. The remote control also features the functions "heating circuit off" and "party position".
	Room controller with operating mode switch, remote control and room temperature sensor PT 1000	1152087	Room controller with operating mode switch, remote control and room temperature sensor PT 1000 for the connection to the heating circuit controller "Regtronic RH" for a comfortable setting of the operating mode and heating curve of the controller from the living area. Operating mode switch: Setting of the operating modes "Automatic", "Night setback", "Summer" and "Off". Remote control: An increase of the heating curve provokes an increase of the flow temperature and vice versa. Furthermore, the remote control features the functions "Heating circuit off" and "Party position".
	Controller location for "Regtronic RC/ RC-P"	1369553	For upgrading the stations "Regusol SH/LH" DN 25 manufactured since 2015 with a "Regtronic RC/ RC-P" controller.
	"Sensor LW TH" Temperature sensor PT 1000		For electronic registration of the riser temperatures.
	Storage cylinder	1369093	Continuous temperature range: up to 105 °C L = 300 cm
	Collector	1369094	Continuous temperature range: up to 180 °C (for short periods up to 250 °C) L = 200 cm.
	Sensor socket with surge protection	1369591	The weatherproof socket protects the collector sensor from electric surge and lightning.

Article	Article-No.	Hint
"Regumat" Heat exchangers		
High-capacity plate heat exchanger		
with connection fitting		
14 plates up to 14 kW	1351596	Modular complement to the boiler connection systems "Regumat 130/180" DN 25 with a distance of 125 mm between pipe centres. System with plate heat exchanger for the separation of different product assemblies and individual components for: - surface and underfloor heating and cooling - storage cylinder loading - fresh water loading Connection distance: 125 mm One port 2 x pump flange with collar nut G 1½, one port 2 x G 1½ male thread with additional lateral connection facilities, including insulation.
30 plates up to 28 kW	1351696	
The capacities are determined by the fixed default values in the primary circuit (70/50 °C) and the secondary circuit (40/50 °C).		
without connection fitting for higher capacities		
20 plates up to about 40 kW	1351790	Tailpipe sets are available separately: page 492 Connection distance: 466 mm x 50 mm 4 x G 1 flat sealing As replacement for "Regusol X-15". As replacement for "Regusol X-25" and "Regumaq X/XZ-30".
30 plates up to about 55 kW	1351791	
40 plates up to about 70 kW	1351792	
50 plates up to about 85 kW	1351793	
The capacities are determined by the fixed default values in the primary circuit (80/60 °C) and in the secondary circuit (50/70 °C).		
Thermal insulation made of expanded polypropylene		
for heat exchangers 1351790/91	1359591	
for heat exchangers 1351792/93	1359592	



5.2.b Accessories for "Regusol" stations within the collector circuit

Content

"Hydrocontrol STR" Double regulating and commissioning valves PN 25	832
"Regusol" Compression fittings	833
"Regusol" Compression fittings with reinforcing sleeves	833
Tailpipe sets DN 32	834
Brass reinforcing sleeves	834
Tailpipe sets DN 20 for "Regusol X" and "Regumaq X/XZ" stations	834
Accessories	835
High-efficiency pumps 130 mm	839
High-efficiency pumps 180 mm	839



"Hydrocontrol STR" Double regulating and commissioning valves PN 25

(solar, threaded connection, bronze)
both ports compression connection for
compression fittings "Regusol" (DN 25)

DN 20 LF	1.04	(10)	1369050
DN 20 MF	2.60	(10)	1369055

both ports female thread according to EN 10226

DN 20 LF	1.04	(10)	1369062°
DN 20 MF	2.60	(10)	1369065°

Application:

Solar plants with closed circuits, for operation
with non-aggressive, harmless fluids (e. g.
water or suitable water and glycol mixtures
according to VDI 2035/ÖNORM 5195).

Measuring method:

Determination of the flow rate by measuring the
differential pressure via the measuring orifice.

Description "Hydrcontrol STR":

Max. operating pressure p_s : 25 bar (PN 25)
Operating temperature t_s : -20 °C up to +200 °C
Especially for solar plants.





As the valve has no isolation function, a
minimum flow rate is guaranteed.











Is used for the hydronic balancing of collector
fields.

Accessories:

"Regusol" compression fittings

Article	Packing unit	Article-No.	Hint
"Regusol" Compression fittings			
DN 20			
brass			
for copper and precision steel pipe, collar nut G ¾, collar nut unplated			
Set = 4 compression fittings			
12 mm	(25)	1367393	Attention: When installing copper pipes or precision steel pipes with a wall thickness of ≤ 1 mm, it is necessary to use reinforcing sleeves for the additional stabilisation of the pipe. Should the wall thickness exceed 1 mm, please contact the pipe manufacturer. Reinforcing sleeves for wall thickness = 1 mm: page 834
15 mm	(25)	1367395	
16 mm	(25)	1367396	
18 mm	(25)	1367397	
"Regusol" Compression fittings with reinforcing sleeves			
DN 25			
brass			
for copper and precision steel pipe, collar nut G 1, collar nut unplated			
Set 1 = 1 compression fitting			
12 mm	(10)	1367573°	For the connection of the solar circuit to "Regusol" valves and "Regusol" stations DN 25.
15 mm	(10)	1367575°	
16 mm	(10)	1367576°	
18 mm	(10)	1367577°	
22 mm	(10)	1367579°	
Set 2 = 2 compression fittings			
12 mm	(10)	1367583	
15 mm	(10)	1367585	
16 mm	(10)	1367586	
18 mm	(10)	1367587	
22 mm	(10)	1367589	
Set 3 = 4 compression fittings			
12 mm	(10)	1367593°	
15 mm	(10)	1367595°	
16 mm	(10)	1367596°	
18 mm	(10)	1367597°	
22 mm	(10)	1367599°	

Article	Packing unit	Article-No.	Hint
Tailpipe sets DN 32			For the connection of the solar circuit to "Regusol" stations DN 32.
Solder tailpipe sets 35 mm			
	2-fold: collar nut G 2 and solder tailpipe	1350474°	
	4-fold: collar nut G 2 and solder tailpipe	1350475°	
Threaded tailpipe sets Rp 1¼			
	2-fold: collar nut G 2 and threaded tailpipe	1350476	
	4-fold: collar nut G 2 and threaded tailpipe	1350477	
Brass reinforcing sleeves			
	12 mm	(100) 1029652	Is required for the installation of soft pipes with a wall thickness of 1 mm.
	15 mm	(50) 1029654	
	16 mm	(50) 1029655	Diameters are related to the outer diameter of the pipe.
	18 mm	(50) 1029656	
	22 mm	(50) 1029657	
Tailpipe sets DN 20 for "Regusol X" and "Regumaq X/XZ" stations			Are required for the connection of the "Regusol X" station to the loading circuit.
To be ordered separately:			
Tailpipe sets 3-fold with collar nut and ring gasket			
	Solder tailpipes 22 mm	(10) 1367465	Use "Regusol" compression fittings for the connection of the "Regusol X" station to the solar circuit.
	Male threaded tailpipes R ¾	(10) 1367468	Also suitable for "Regumaq X/XZ-30" and accessories.

Article	Packing unit	Article-No.	Hint
Accessories			
	"Regusol" Connection nipple 2 x G 1 with cone	(20) 1369089	For the connection of collector pipes (e. g. copper pipes).
	Locking shackle	(25) 1369090	For use of the product assemblies "Regusol" with flexible pipe (e. g. corrugated pipe). Combined with the wall mounting device supplied with the product assemblies "Regusol".
	Wall mounting device for solar stations "Regusol 130/180" (1 piece)	1369080	
	for "Regusol" pump circuit	1369081	
	"Regusol" - Connection set Collar nut G 1 and G 3/4 male threaded tailpipe	(10) 1369085	Connection fitting for the connection of the flexible stainless steel corrugated pipe "2 in 2" DN 16 with G 3/4 collar nut to "Regusol" stations DN 25.
	Flat sealing insert for "Regusol" stations DN 20 for "Regusol" stations DN 25	(100) 1369086 1659990	For the conversion of a tapered (metal to metal sealing) connection to a flat sealing connection.
	"Regusol SG" Safety group manufactured up to 2015		
	with safety valve 10 bar	1364247	
	manufactured since 2015 with safety valve 6 bar	1364192	
	"Regusol SB" Safety block with safety valve 6 bar	1364140°	T-piece with safety valve for the additional protection of the solar circuit against excess pressure. Installation in the solar return pipe between the storage cylinder and the solar station.
	"Regusol" Filling and flushing device G 1 male thread x G 1 male thread	1363051	Isolating ball valve with lateral connection for filling and flushing pipes to be installed at the lowest point of the solar circuit.



"Regusol" Filling pump
manual filling pump,
with hose connection,
with ball valves on suction and pressure side

1364250



Connection set for "Regusol" filling pump

1364290°

Consisting of:
- wall bracket for filling pump with
fixing material
- flexible hose 300 mm long

Application up to 150 °C.



Check valve

G 1 x G 1

(10) 1364199

Check valves avoid a gravity circulation if the
pump is switched off.
Opening pressure: 20 mbar
Continuous operating temperature: 120 °C
Short-term starting temperature: 160 °C








"Flow Stop Solar" Check valve








G 1 x G 1

(10) 1364186

Both ports G 1 for "Regusol" compression
connection.
Opening pressure: 20 mbar

Article	Article-No.	Hint
	Flow measuring and regulating device with isolation 1-6 l/min. 1364160° 2-15 l/min. 1364161 7-30 l/min. 1364162 2-14 l/min. 1364163	G 1½ collar nut x G 1 for "Regusol" compression fitting Item no. 1364163: G 1 collar nut x G ¾ for "Regusol" compression fitting
	as replacement for old model "Regusol 180" (manufactured up to 2005, flat insulation) 1-6 l/min. 1364149° 2-14 l/min. 1364151°	
	Electronic volume flow sensor VFS for replacement at existing "Regusol ELH-RC-P" DN 25 stations, with connecting cable 2-40 l/min. 1364170	The electronic volume flow sensors may only be used in combination with a controller which is able to evaluate the signal of the Grundfos sensor.
	Electronic flow sensor VFD for replacement at existing "Regusol X-Uno/Duo 25" stations with electronic controller "Regtronic RX", with connecting cable 2-40 l/min. 1369092	
	"Regusol" Venting circuit DN 25 for replacement at existing "Regusol" stations consisting of: ball valve with integrated check valve, thermometer and deaerator manufactured up to 2015 for "Regusol-130" 1364190	Both ports G 1 for "Regusol" compression fittings: page 833
	manufactured since 2015 for "Regusol-130" 1364193 for "Regusol-180" 1364194	
	"Regusol" Deaerator 1364260	For the separate connection to the collector supply pipe. Both ports G 1 for "Regusol" compression fittings: page 833

Article	Article-No.	Hint
"Regusol" Pump ball valves DN 25		
	with check valve 20 mbar opening pressure and connection facility for a "Regusol" safety group	
	manufactured up to 2015 manufactured since 2015	With white thermometer. With black thermometer.
	1364198 1364187	
Thermometer		
	for "Regusol" stations manufactured up to 2015 Display range: 0 - 120 °C	
	1364195	
	for "Regusol" stations manufactured since 2015	
	red blue	1364188 1364189
Pressure gauge		
	for "Regusol" stations Display range: 0 - 10 bar	
	1364196	
	"Regusol X" Supplementary set	For the extension of a "Regusol X" station with high-efficiency pump for the inter- connection and regulation of different collector fields (e. g. east-west).
	1361092	

Article	Article-No.	Hint
High-efficiency pumps 130 mm		
	Connection thread G 1 ½ DN 25, PN 10, 95 °C	
	Wilo PARA ST 25-130/7-50/iPWM2-9	1360590*
	Wilo PARA ST 25-130/7-50/iPWM2-6	1360588°
<p>Only supplied as replacement for the "Regusol" stations.</p> <p>When using a PWM pump, it is to be observed that the used controller provides a PWM signal that matches the pump type. If this is not the case, the signal converter "Regtronic PSW" (item no. 1369532) can be alternatively used.</p> <p>The signal converter allows for the connection of speed controlled high-efficiency pumps with PWM or 0 - 10 V control input to controllers without appropriate output.</p>		
	Grundfos UPM 3 Solar 25-75 PWM C 130	1360589
	<p>The high-efficiency pump Grundfos UPM 3 can be operated without an external PWM signal (control type volume flow = constant).</p>	
	Connection thread G 1	
	Wilo PARA ST 15-130/7-50/iPWM2-6	1369010*
	Wilo-Yonos PARA ST 15-7 PWM2	1369008°
	DN 25, PN 10, 110 °C for the primary circuit (collector circuit)	
	Wilo PARA 15-130/7-50/iPWM2-9	1389010*
	Wilo-Yonos PARA 15-7 PWM2	1389008°
	DN 15, PN 10, 95 °C for the secondary circuit (storage cylinder circuit) "Regusol" or the primary circuit (storage cylinder circuit) "Regumaq"	
High-efficiency pumps 180 mm		
	Connection thread G 1½ multi-speed control DN 25, PN 10, 110 °C	
	Wilo PARA ST 25-180/7-50/iPWM2-9	1367260*
	Wilo PARA ST 25-130/7-50/iPWM2-6	1367258°
<p>Only supplied as replacement for the "Regusol" stations.</p> <p>When using a PWM pump, it is to be observed that the used controller provides a PWM signal that matches the pump type. If this is not the case, the signal converter "Regtronic PSW" (item no. 1369532) can be alternatively used.</p> <p>The signal converter allows for the connection of speed controlled high-efficiency pumps with PWM or 0 - 10 V control input to controllers without appropriate output.</p>		
	Grundfos UPM 3 Solar 25-75 PWM C 180	1367259
	<p>The high-efficiency pump Grundfos UPM 3 can be operated without an external PWM signal (control type volume flow = constant).</p>	
	"Regtronic PSW" Signal converter for PWM/0 - 10 V pump control (high-efficiency pumps)	
		1369532
<p>Signal converter for the conversion of an asynchronous signal to a high-efficiency pump control signal (PWM or 0 - 10 V)</p>		
Power cord		
	for high-efficiency pumps Grundfos UPM 3	1358149
		Cable 2 m long.


Signal connection cable

for Grundfos UPM 3 and
Wilo PARA

1358180

Power cord
for high-efficiency pumps
with right angle plug

for Wilo PARA

1358171

Small model for "Regumat 180"
DN 25 without pump ball valve and "Regusol"
stations.
Cable 2 m long.



5.2.c "OKP" and "OKF" Collectors and accessories

Content	
"OKP" Tube collectors	842
"OKP" Vertical freestanding installation	843
"OKP" Vertical freestanding / facade installation	843
"OKP" Roof hooks made of stainless steel	844
Accessories	844
"OKF" Flat-plate collectors	846
"OKF" Rooftop installation	847
"OKF-MQ25" Rooftop installation	847
"OKF" Vertical roof integration side by side	848
"OKF-CK22/CS22" Connection options	849
"OKF" Vertical freestanding installation	848
"OKF-MQ25" Freestanding installation	850
"OKF" Gravel plate set	851
"OKF" Roof hooks made of galvanised steel	852
Carrying handles for "OKF" flat-plate collectors	852
Accessories for flat-plate collector "OKF-MQ25"	853

Article

Article-No.

Hint

"OKP" Tube collectors

for solar heating of
domestic water
heating circuit
swimming pool water



"OKP-10" Tube collector

Set 1:

consisting of:

- a) 10 vacuum tubes
- b) collector
- c) tube bracket (foot rail)
- d) set of side rails (pre-assembled set of side rails
for an easy and quick installation)
- e) solar supply and return with compression connection 4 x 22 mm

Dimensions:

Gross surface area: 1.70 m² (L = 1.995 m, W = 0.852 m)

Aperture surface area: 0.94 m²

Absorber surface area: 0.81 m²

Weight: 42 kg

Roof fixing devices are to be ordered separately: page 844

1361230

"OKP-20" Tube collector

Set 2:

consisting of:

- a) 20 vacuum tubes
- b) collector
- c) tube bracket (foot rail)
- d) set of side rails (pre-assembled set of side rails
for an easy and quick installation)
- e) solar supply and return with compression connection 4 x 22 mm

Dimensions:

Gross surface area: 3.25 m² (L = 1.995 m, W = 1.632 m)

Aperture surface area: 1.88 m²

Absorber surface area: 1.62 m²

Weight: 78 kg

Roof fixing devices are to be ordered separately: page 844

1361231

The "OKP" tube collector is a heat pipe tube collector. Due to its hydronic features, the collector can be fixed to the building (pitched or flat roof, facade or detached) with an inclination of the axis between 15 ° and 75 °. The tube collector can be used for heating of potable or swimming pool water, solar support of the heating system and the production of process heat.

Due to the high-selective absorber surface area, a high solar share is achieved.

The vacuum inside the tube guarantees maximum insulation. The high quality corrosion resistant materials ensure a long service life of the "OKP" tube collector.

With no air inside the vacuum which may transport the heat from the absorber surface area to its surroundings, a high efficiency is achieved even with low radiation and low outside temperatures.

The heat pipe inside the glass tube is a quick acting heat transfer system working efficiently even with diffused radiation.


The heat is transmitted from the absorber to the heat pipe via an aluminium sheet. This way, the liquid inside the heat pipe evaporates and the steam rises into the condenser. The heat is transmitted to the passing fluid via the double tube heat exchanger (collector) in which the condenser is located. The steam condenses and flows back again inside the heat pipe and the procedure repeats itself.

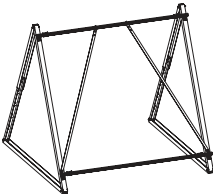




To maintain this permanent heat transport, the minimum pitch of the roof must be observed when installing the tubes. As the heat pipe is a closed system, it is maintenance-free.

The connection between the condenser and the collector is a "dry" connection (immersion pocket). Due to this system separation, individual tubes can be replaced without the necessity to drain the collector circuit.

Installation can be carried out by one person.

Award:

 Deutscher Designer Club
Gute Gestaltung 10

Article	Article-No.	Hint
"OKP" Vertical freestanding installation		
	Basic set "OKP-10"	Pre-assembled hinged mounting triangles for flexible setting of the inclination angle (30 ° up to 60 °) for vertical flat roof installation of an "OKP" collector.
	1361270	
	Basic set "OKP-20"	A basic set is required for the installation of an extension set. Two collector couplings are included.
	1361275	
	Extension set "OKP-10"	
	1361271	
	Extension set "OKP-20"	
	1361276	
"OKP" Vertical freestanding / facade installation		
	Individual set 15° for the installation of one "OKP" tube collector	The pre-assembled mounting set can be used for the tube collectors "OKP-10" and "OKP-20". <u>Possible types of installation:</u> 1. Installation on a flat roof: The minimum axis inclination of the collector of 15° will be achieved by this. 2. Installation on the facade: The tube collector can be installed directly on the facade with an angle of 75° (see illustration).
	1361278	

Article	Article-No.	Hint
"OKP" Roof hooks made of stainless steel		
for pan tiled roofs		
	Basic set = 4 roof hooks 1361260	<p>Roof hooks to be screwed to the side rails. Roof hook reinforced against torsion with high resilience. The side rails of the vacuum tube collector can be easily screwed to the roof hooks from the side. The maximum permissible span of the roof hooks depends on the snow and wind load stressing zone and is related to each individual collector. Calculations according to DIN 1055-4 and DIN 1055-5. Please contact Oventrop for information on higher capacities.</p> <p>A suitable fixing base which can absorb the emerging forces (weight, wind and snow load stressing) is paramount for correct usage.</p>
for pan tiled roofs, for high snow load stressing		
	Basic set = 4 roof hooks 1361262	
for pan tiled roofs, adjustable height		
	Basic set = 4 roof hooks 1361266	
for slate and plain tiled roofs		
	Basic set = 4 roof hooks 1361264	
Accessories		
"OKP" Stainless steel corrugated pipe set 1 m		
	Set = 2 pieces	<p>Quick mounting pipe for a flexible roof conduit and the connection of the collector field to the pipe system. High temperature-resistant insulating covering with a UV-resistant foil coating. Flat seals are included</p> <p>Max. operating pressure p_s: 16 bar Continuous operating temperature t_s: 150 °C (for short periods up to 175 °C)</p>
	DN 16 one port 22 mm stainless steel nipple one port G ¾ collar nut, flat sealing	
	DN 20 one port 22 mm stainless steel nipple one port G 1 collar nut, flat sealing	
"OKP" Connection set 100 mm		
	Set = 2 pieces	<p>The connection set allows a quick and safe pipe connection and the series coupling of several manifolds into a large collector field.</p>
	DN 20 both ports 22 mm stainless steel nipple	
	1361622	
"OKP" U-bend		
	for the connection of the return pipe to the supply pipe	<p>Both ports for 22 mm compression fitting, U-bend pre-insulated.</p>
	1361295	
Insulation set		
	Solar EPDM insulation layer 2 x 0.5 m with tear-proof foil and adhesive roll	<p>For the insulation of connection pieces and collector connections (for instance connection set 100 mm, item no. 1361622). The insulation is slotted on the entire length.</p>
	1361623	
Braiding set		
	2 x 1.2 m with adhesive roll	<p>Braided sleeve/tissue made of polyamide 6.6 as additional protection against bird's pecking in the open. For instance suitable for the roof conduits 1361671 or 1361672.</p>
	1361694	
Spare tube for tube collectors "OKP"		
	L = 1800 mm; D = 58 mm 1361290	<p>Spare tube consisting of: Vacuum tube with heat conducting steel sheet and heat pipe.</p>



Cover sheet

for "OKP" tube collectors
for covering the junction
between two tube collectors

1361625

For the connection of two modules (collector housing).



Heat transfer liquid

ready-mixed liquid
for "OKP" and "OKF" collectors

Content of canister 10 l

1361690

Content of canister 25 l

1361691

Ready-to-use, vaporisation-safe special heat transfer liquid on 1.2 propylene glycol basis especially designed for use in solar plants with a high thermal load.

Heat transfer liquid for a long term and reliable protection against corrosion with a frost protection up to -28 °C. Available in 10 l or 25 l plastic disposable canisters.



"Regusol" Flushing and filling station

with connection hose and
fill and drain cock

1364240

The "Regusol" flushing and filling station with a tank content of 30 l is used for flushing and filling of solar thermal plants and heating systems.

Pump output: 1000 W (230 V, 50 Hz)

Pump head: 42 m

Pump capacity: 5-47 l/min.

Pumped fluid: Water, water-glycol

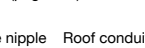
Further "OKP" accessories and "OKP" connection alternatives: page 862

"OKP" Connection possibilities

Stainless steel
corrugated pipe
DN 20 1361653/54
(page 844)



Stainless steel
corrugated pipe
DN 16 1361651/52
(page 844)



Connection of
corrugated pipe
with G 1 collar nut



Connection of
corrugated pipe
with G 3/4 collar nut



Double nipple
1369098
(page 844)



Double nipple
1369096
(page 844)



Roof conduit
DN 20 1361672
(page 844)



Roof conduit
DN 16 1361671
(page 844)



1361622
(page 844)



1361295
(page 844)



Article

Article-No.

Hint

"OKF" Flat-plate collectors

for solar heating of
domestic water
heating circuit
swimming pool water

"OKF-CK22" Flat-plate collector

consisting of:
a) antireflective glass
b) supply and return with plug-in connection Ø 18 mm
c) aluminium collector frame with insulation

Also available with black outer frame on request.

Dimensions:
Gross surface area: 2.25 m²
(L = 1933 mm, W = 1163 mm, H = 110 mm)
Aperture surface area: 2.01 m²
Weight: 37 kg

1361340

"OKF-CS22" Flat-plate collector

consisting of:
a) transparent solar safety glass
b) supply and return with plug-in connection Ø 18 mm
c) aluminium collector frame with insulation

Dimensions:
Gross surface area: 2.25 m²
(L = 1933 mm, W = 1163 mm, H = 80 mm)
Aperture surface area: 2.01 m²
Weight: 33 kg

1361345

"OKF-MQ25" Flat-plate collector

consisting of:
a) highly transparent solar safety glass
b) collector connection for gripper clamp Ø 22 mm
c) aluminium collector frame with insulation

Dimensions:
Gross surface area: 2.61 m²
(L = 2151 mm, W = 1215 mm, H = 80 mm)
Aperture surface area: 2.37 m²
Weight: 44 kg

1361440°

"OKF-MQ25" Flat-plate collector

consisting of:
a) highly transparent solar safety glass
b) supply and return with plug-in connection Ø 22 mm
c) aluminium collector frame with insulation

Dimensions:
Gross surface area: 2.61 m²
(L = 2151 mm, W = 1215 mm, H = 80 mm)
Aperture surface area: 2.37 m²
Weight: 44 kg

1361450

"OKF" flat-plate collector for use on pitched roofs and on level surfaces on freestanding installations.
The laser welded aluminium absorber and high quality materials such as mineral wool of the thermal conductivity group 040 guarantee a high efficiency. "OKF" flat-plate collectors can be used for heating of potable and swimming pool water and solar support of the heating system. The flat-plate collectors "OKF-CK22" and "OKF-CS22" can be mounted horizontally or vertically and are suitable for rooftop installation or freestanding installation (flat roof installation).

A vertical roof integration is possible with "OKF-CK22" only. The "OKF-MQ25" with a serpentine patterned absorber and a heat conducting steel sheet made of aluminium can only be used for horizontal rooftop or freestanding installation.

The flat-plate collectors are connected with one another using flexible stainless steel corrugated pipes which also serve to compensate any thermal conditional expansions.







As for the flat-plate collector "OKF-MQ25", a longer field compensator has to be used after the 6th collector. Hydronic connection of all "OKF" flat-plate collectors without tools.



The collector is tested according to DIN EN 12975-1 and certified according to "Solar Keymark".

Large solar plant: page 935.

Construction identical to item no. 1341440, but with modified collector connection technology.

Article	Article-No.	Hint
	"OKF" Rooftop installation for flat-plate collectors "OKF-CK22" and "OKF-CS22"	
	Basic set for the installation of two collectors 1361380	
	Extension set for each additional collector for stacked horizontal installation or vertical installation side by side 1361381	
	Individual set for the installation of one collector 1361385	
	"OKF-CK22/OKF-CS 22" Collector connection pipe with plug-in connection Ø 18 1361288	
	Basic set for the connection of the first collector to the supply and return pipe of the solar station 1361288	
	"OKF-MQ25" Rooftop installation	
	Basic set for the installation of one collector 1361480°	
	Extension set for each additional collector for horizontal installation side by side 1361481°	
	"OKF-MQ25" Rooftop installation	
	Basic set for the installation of one collector 1361490	
	Extension set for each additional collector for horizontal installation side by side 1361491	

Pre-assembled aluminium mounting rails for vertical or horizontal rooftop installation of **two** collectors with a minimum axis inclination of 10°-85°. A collector coupling made of stainless steel with UV-resistant insulation is included.
The collector connection pipes for roof conduit are to be ordered separately.

A basic set is required for the installation of an extension set. A collector coupling made of stainless steel with UV-resistant insulation is included.

For vertical or horizontal installation of **one** collector (e.g. horizontal installation from left to right).
The collector connection pipes for roof conduit are to be ordered separately.




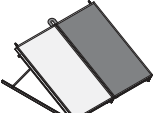


Two collector connection pipes with plug-in connection Ø 18, approx. length 940 mm
(only for item no. 1361340 and 1361345)

Pre-assembled aluminium mounting rails for horizontal rooftop installation of one collector with a minimum roof pitch of 15° - 75°. Two roof conduits with connection set are included.

A basic set is required for the installation of an extension set. A collector coupling with connection set is included.

Pre-assembled aluminium mounting rails for horizontal rooftop installation of one collector with a minimum roof pitch of 15° - 75°. Two roof conduits with connection set are included **(only for item no. 1361450)**.

A basic set is required for the installation of an extension set. 2 collector couplings with connection set are included **(only for item no. 1361450)**.

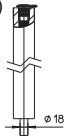
Article	Article-No.	Hint
 <p>"OKF" Vertical roof integration side by side for flat-plate collector "OKF-CK22"</p> <p>For pan tiled roofs</p> <p>Basic set for the installation of two collectors</p>	1361391	For roof integration with peripheral frame for roof covering made of anthracite aluminium for vertical installation with a minimum axis inclination of 27 °– 85 °. A collector coupling made of stainless steel with UV-resistant insulation is included. The collector connection pipes for roof conduit are to be ordered separately. Complete with screws, nails, sealing tapes and silicone T-profile.
<p>Extension set for each additional collector</p>	1361392	A basic set is required for the installation of an extension set.
 <p>For plain tile and slate roofs</p> <p>Basic set for the installation of two collectors</p>	1361393	
<p>Extension set for each additional collector</p>	1361394	A basic set is required for the installation of an extension set.
 <p>"OKF" Vertical freestanding installation for flat-plate collectors "OKF-CK22" and "OKF-CS22"</p> <p>Basic set for vertical installation for the installation of one collector</p>	1361387	Pre-assembled hinged mounting triangles for flexible setting of the inclination angle (37° up to 50°) for vertical flat roof installation of an "OKF" collector.
 <p>Extension set for vertical installation for each additional collector</p>	1361388	A basic set is required for the installation of an extension set. A collector coupling made of stainless steel with UV-resistant insulation is included.
 <p>Individual set for horizontal installation for the installation of one collector</p>	1361389	Due to the positioning of the collector supply and return pipe connections (see page 846), horizontal installation has to be carried out as individual unit.
 <p>Installation set consisting of: - 8 aluminium clamping brackets - 8 screws 8 x 80 and washers - 8 dowels S 12</p>	1361289	Aluminium clamping brackets required for fixing the mounting triangles (e. g. on truss or concrete blocks).

"OKF-CK22/CS22" - Connection alternatives

Connection with "OV-Flex ST"
stainless steel corrugated pipe:



Flat-plate collectors with plug-in connection
"OKF-CK22", item no. 1361340
"OKF-CS22", item no. 1361345
(page 846)



Collector connection pipe
with plug-in connection Ø 18 mm
item no. 1361288 (page 847)



"Regusol" Compression fitting
DN 25, Ø 18 mm, G 1,
item no. 1367577/87 (page 833)



Connection fitting
DN 16 G 3/4 x G 1, item no. 1369076
DN 20 G 1 x G 1, item no. 1369078
(page 862)



"OV-Flex ST" Stainless steel corrugated pipe
DN 16 G 3/4, item no. 1361651/52
DN 20 G 1, item no. 1361653/54
(page 862)

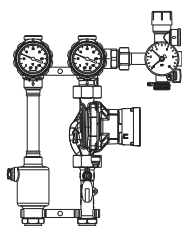


Connection and coupling set
DN 16 G 3/4, item no. 1369083
DN 20 G 1, item no. 1369084
(page 862)



Flat sealing insert
for "Regusol" stations DN 20
item no. 1369086

for "Regusol" stations DN 25
item no. 1659990
(page 835)

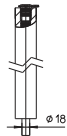


"Regusol" Stations DN 20/ DN 25

Connection with copper pipe:



Flat-plate collectors with plug-in connection
"OKF-CK22", item no. 1361340
"OKF-CS22", item no. 1361345
(page 846)



Collector connection pipe
with plug-in connection Ø 18 mm
item no. 1361288 (page 847)



"Regusol" Compression fitting
DN 25, Ø 18 mm, G 1, item no.
1367577/87 (page 833)



Connection nipple
G 1 x G 1
item no. 136908 (page 835)



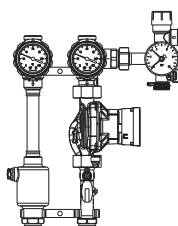
"Regusol" Compression fitting
DN 25, G 1
item no. 1367577/87 (page 833)



Copper pipe



"Regusol" Compression fitting
DN 25, G 1
item no. 1367577/87 (page 833)



"Regusol" Stations DN 20/ DN 25

Alternative: Solder nipple
connection and flat sealing insert

Connection with "OV-Flex ST"
stainless steel corrugated pipe:



Flat-plate collectors with plug-in connection
"OKF-CK22", item no. 1361340
"OKF-CS22", item no. 1361345
(page 846)



Collector connection pipe
with plug-in connection Ø 18 mm
item no. 1361288 (page 847)



"Regusol" Compression fitting
DN 25, Ø 18 mm, G 1,
item no. 1367577/87 (page 833)



Connection fitting
DN 16 G 3/4 x G 1, item no. 1369076
DN 20 G 1 x G 1, item no. 1369078
(page 862)



"OV-Flex ST" Stainless steel corrugated pipe
DN 16 G 3/4, item no. 1361651/52
DN 20 G 1, item no. 1361653/54
(page 862)

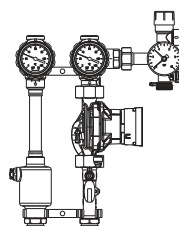


Connection and coupling set
DN 16 G 3/4, item no. 1369083
DN 20 G 1, item no. 1369084
(page 862)



Flat sealing insert
for "Regusol" stations DN 20
item no. 1369086

for "Regusol" stations DN 25
item no. 1659990
(page 835)



"Regusol" Stations DN 20/ DN 25

Connection with copper pipe:



Flat-plate collectors with plug-in connection
"OKF-CK22", item no. 1361340
"OKF-CS22", item no. 1361345
(page 846)



Collector connection pipe
with plug-in connection Ø 18 mm
item no. 1361288 (page 847)



"Regusol" Compression fitting
DN 25, Ø 18 mm, G 1,
item no. 1367577/87 (page 833)



Connection nipple
G 1 x G 1
item no. 1369089 (page 835)



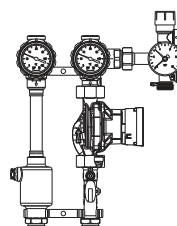
"Regusol" Compression fitting
DN 25, G 1
item no. 1367577/87 (page 833)



Copper pipe


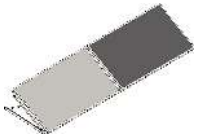

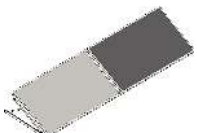





"Regusol" Compression fitting
DN 25, G 1
item no. 1367577/87 (page 833)



"Regusol" Stations DN 20/ DN 25

Alternative: Solder nipple
connection and flat sealing insert

Article	Article-No.	Hint
"OKF-MQ25" Freestanding installation for "OKF-MQ25" flat-plate collectors		
	Basic set for the installation of one collector	1361486° Pre-assembled aluminium mounting rails for horizontal freestanding installation of one collector with an inclination angle of 35° - 55°. A connection set is included.
	Extension set for each additional collector for horizontal installation side by side	1361487° A basic set is required for the installation of an extension set. A collector coupling with connection set is included.
	"OKF-MQ25" Freestanding installation for "OKF-MQ25" flat-plate collectors Basic set for the installation of one collector	1361496 Pre-assembled aluminium mounting rails for horizontal freestanding installation of one collector with an inclination angle of 35° - 55°. A connection set is included (only for item no. 1361450).
	Extension set for each additional collector for horizontal installation side by side	1361497 A basic set is required for the installation of an extension set. 2 collector couplings with connection set are included (only for item no. 1361450).

Article	Article-No.	Hint
"OKF" Gravel plate set		
	Trapezoidal sheet for vertical installation (1300 x 1035 x 0.75)	1361283
	Trapezoidal sheet for horizontal installation (1035 x 1000 x 0.75)	1361284
	Installation set for vertical installation consisting of: -10 aluminium clamping brackets -14 rivets	1361228
	Installation set for horizontal installation consisting of: -16 aluminium clamping brackets -24 rivets	1361229

Trapezoidal sheets made of corrosion protected steel for floor anchoring of the "OKF" freestanding installation.
The mounting triangles are fixed on the trapezoidal sheets by use of clamping brackets and rivets.
Depending on the type of installation (vertical or horizontal) and the size of the collector field, the trapezoidal sheets and mounting sets have to be ordered separately - see below table.
Due to the positioning of the collector supply and return connections (see page 846), horizontal installation has to be carried out as an individual unit.








"OKF-CK22/OKF-CS22"

		Number of vertical collectors					
	Item no.	1	2	3	4	5	6
Trapezoidal sheet for vertical installation (1300 x 1035 x 0.75)	1361283	2 x	4 x	6 x	8 x	10 x	12 x
Installation set for vertical installation (10 clamping brackets, 14 rivets)	1361228	2 x	3 x	4 x	5 x	6 x	7 x
Vertical freestanding installation (basic set)	1361387	1 x	1 x	1 x	1 x	1 x	1 x
Vertical freestanding installation (extension set)	1361388	–	1 x	2 x	3 x	4 x	5 x

		Number of horizontal collectors					
	Item no.	1	2	3	4	5	6
Trapezoidal sheet for horizontal installation (1035 x 1000 x 0.75)	1361284	4 x	8 x	12 x	16 x	20 x	24 x
Installation set for horizontal installation (16 clamping brackets, 24 rivets)	1361229	1 x	2 x	3 x	4 x	5 x	6 x
Horizontal freestanding installation (individual set)	1361389	1 x	2 x	3 x	4 x	5 x	6 x

"OKF-MQ25"

		Number of horizontal collectors									
	Item no.	1	2	3	4	5	6	7	8	9	10
Trapezoidal sheet for horizontal installation (1035 x 1000 x 0.75)	1361284	2	3	4	5	6	7	8	9	10	11
Installation set for horizontal installation (16 clamping brackets, 24 rivets)	1361229	1	2	3	4	5	6	7	8	9	10
Horizontal freestanding installation (basic set)	1361486	1	1	1	1	1	1	1	1	1	1
Horizontal freestanding installation (extension set)	1361487	–	1	2	3	4	5	6	7	8	9

Article	Article-No.	Hint
"OKF" Roof hooks made of galvanised steel		
for pan tiled roofs		
	Basic set = 6 roof hooks	1361250
	Extension set = 2 roof hooks	1361251
for pan tiled roofs, adjustable height		
	Basic set = 6 roof hooks	1361252
	Extension set = 2 roof hooks	1361253
for plain tiled roofs		
	Basic set = 6 roof hooks	1361254
	Extension set = 2 roof hooks	1361255
for slate roofs		
	Basic set = 6 roof hooks	1361256
	Extension set = 2 roof hooks	1361257
for corrugated Eternit and sheet metal roofs		
	Basic set = 6 roof hooks	1361258
	Extension set = 2 roof hooks	1361259
Carrying handles for "OKF" flat-plate collectors		
Two carrying handles for an easy transport of the "OKF" flat-plate collectors on site. The carrying handles are connected to the collector frame laterally.		
Carrying handles for "OKF-CK22"		
	Set = 2 pieces	1361249
Carrying handles for „OKF-CS22“ and "OKF-MQ25"		
	Set = 2 pieces	1361248

Article	Article-No.	Hint
---------	-------------	------

Accessories for flat-plate collector "OKF-MQ25"



Field compensator for "OKF-MQ25" 1361448°

Field compensator for collector fields with more than 6 flat-plate collectors "OKF-MQ25" installed side by side
(2 compensators are required)



"OKF-MQ25" Connection set 1361488°

for one collector field



"OKF-MQ25" Mounting aid 1361489°

To simplify the installation of the compensators for the collector couplings



Field compensator for "OKF-MQ25" 1361458

consisting of:

- 2 field compensators for collector fields with more than 6 flat-plate collectors "QKF-MQ25" installed side by side
- 4 safety clamps

(Only for item no. 1361450)



"OKF-MQ25" Collector connection pipe set 1361453

consisting of:

- 2 collector connection pipes,
one port plug- in connection Ø 22 mm,
one port outer diameter Ø 22 mm
- 2 safety clamps

Length : 900 mm
(only for item no. 1361450)



"OKF-MQ25" Collector connection nipple set 1361454

consisting of:

- 2 collector couplings,
one port plug- in connection Ø 22 mm,
one port outer diameter Ø 22 mm
- 2 safety clamps

(Only for item no. 1361450)



"OKF-MQ25" Collector coupling set 1361455

both ports with plug-in connection Ø 22 mm

consisting of:

- 2 collector couplings
- 4 safety clamps

(Only for item no. 1361450)



"OKF-MQ25" Vent plug set 1361456

consisting of:

- 1 vent plug
- 1 safety clamp

(Only for item no. 1361450)



"OKF-MQ24" Plug set 1361457

consisting of:

- 2 plugs
- 2 safety clamps

(Only for item no. 1361450)

5.2.d "Solcos" Solar packages

Content

"Solcos" Solar packages with "OKP" tube collectors	856
"Solcos" Solar packages with "OKF-CK22" flat-plate collectors	857
"Solcos" Solar packages with "OKF-CS22" flat-plate collectors	858

Article

Article-No.

Hint

"Solcos" Solar packages with "OKP" tube collectors

consisting of:
"OKP" tube collectors
Pre-assembled mounting rails
for rooftop installation
Solar station
Collector connection set
Roof conduits
Connection pieces for the connection of
the roof conduits to the solar circuit
Solar liquid
Expansion tank
Storage cylinder

Hot potable water preparation and support of the heating system

Package 2: **1365040**
Living space up to approx. 130 m²
Package 3: **1365050**
Living space up to approx. 200 m²
Package 4: **1365060**
Living space up to approx. 240 m²

The "OKP" roof hooks (see page 844) are not included in the solar packages and have to be ordered separately depending on the roof construction and covering. The compression fittings for the connection of the fittings 1369076 and 1369078 to copper and precision steel pipes (12, 15, 16, 18 and 22 mm) are to be ordered separately: page 833

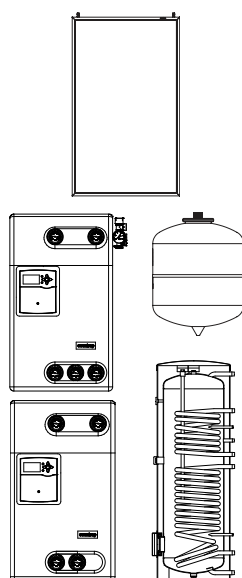
For installation, for instance on a flat roof, the basic and extension sets are to be ordered separately: page 843

For the connection of a diaphragm expansion tank to the "Regusol" pump groups, further components, such as angled wall brackets, quick-coupling and flexible hose are required: page 860

For further important advice regarding the design of a solar plant see "Thermal solar plant - Construction, initial operation and maintenance" at www.oventrop.de.

Hot potable water preparation and heating system

	Item no.	Package 2 1365040	Package 3 1365050	Package 4 1365060
"OKP-20"	1361231	4	4	5
Collector connection set				
Connection set 100 mm (set = 2 pieces)	1361622	3	3	4
U-bend for the connection of supply and return	1361295	1	1	1
DN 16 roof conduit, G ¾ collar nut	1361671			
DN 20 roof conduit, G 1 collar nut	1361672	1	1	1
Insulation				
Insulation set (set = 2 x 0.5 m)	1361623	2	2	2
Connection pieces				
DN 16, G 3/4 x G 1 (set = 2 pieces)	1369076			
DN 20, G 1 x G 1 (set = 2 pieces)	1369078	1	1	1
Expansion tank				
18 l	1361421			
25 l	1361422		1	1
33 l	1361423	1		
50 l	1361424			
80 l	1361425			
Connection set for diaphragm expansion tank	1369051	1	1	1
Solar liquid				
10 l	1361690	1		
25 l	1361691	1	1	1
Solar station				
"Regusol EL-130-RC" with controller "Regtronic RC"	1366597			
"Regusol ELH-130-RC-P" with controller "Regtronic RC-P"	1360394	1		
"Regusol X-Uno 25"	1361060		1	
"Regusol X-Duo 25"	1361050			1
Fresh water station				
"Regumaq X-30"	1381030	1	1	1
Storage cylinders				
Buffer storage cylinder (type: 1000, 1500)	1385010/15		Type 1.000	Type 1.500
Solar buffer storage cylinder (type: 800)	1385107	Type 800		
Bivalent solar storage cylinder (type: 300)	1387303			
Energy efficiency class		corresponds to C	corresponds to C	corresponds to C



"Solcos" Solar packages with "OKF-CK22" flat-plate collectors

consisting of:
"OKF-CK22" flat-plate collector with plug-in connection
Pre-assembled mounting rails
for roof top installation
Solar station
Collector connection set
Collector connection pipe
Solar liquid
Expansion tank
Storage cylinder

The "OKF" roof hooks (see page 852) are not included in the solar packages and have to be ordered separately depending on the roof construction/roof covering.

For the connection of a diaphragm expansion tank to the "Regusol" pump groups, further components, such as angled wall brackets, quick-coupling and flexible hose are required: page 860

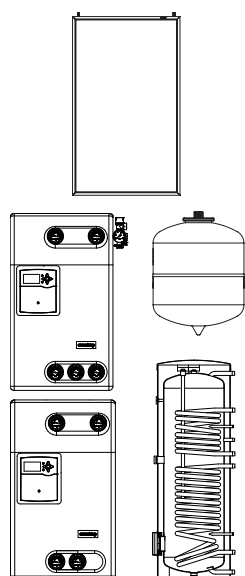
For further important advice regarding the design of a solar plant see "Thermal solar plant - Construction, initial operation and maintenance" at www.oventrop.de.

Hot potable water preparation and support for the heating system

Package 6: **1365540**
Living space up to approx. 130 m²
Package 7: **1365550**
Living space up to approx. 200 m²
Package 8: **1365560**
Living space up to approx. 240 m²

Hot potable water preparation and heating system

	Item no.	Package 6 1365540	Package 7 1365550	Package 8 1365560
"OKF-CK22"	1361340	5	5	6
"OKF" Rooftop installation including accessories				
Basic set for two collectors with pre-assembled mounting rails for rooftop installation including one collector coupling	1361380	1	1	2
Extension set for each additional collector with pre-assembled mounting rails for rooftop installation including one collector coupling	1361381	3	3	2
Collector connection pipe	1361288	1	1	1
Expansion tank				
18 l	1361421			
25 l	1361422		1	1
33 l	1361423	1		
50 l	1361424			
80 l	1361425			
Connection set for diaphragm expansion tank	1369051	1	1	1
Solar liquid				
10 l	1361690	1		
25 l	1361691	1	1	1
Solar station				
"Regusol ELH-130 RC" with controller "Regtronic RC"	1366597			
"Regusol ELH-130-RC-P" with controller "Regtronic RC-P"	1360394	1		
"Regusol X-Uno 25"	1361060		1	
"Regusol X-Duo 25"	1361050			1
Fresh water station				
"Regumaq X-30"	1381030	1	1	1
Storage cylinder				
Buffer storage cylinder (type: 1000, 1500)	1385010/15		Type 1.000	Type 1.500
Solar buffer storage cylinder (type: 800)	1385107	Type 800		
Bivalent solar storage cylinder (type: 300)	1387303			
Energy efficiency class		corresponds to C	corresponds to C	corresponds to C



"Solcos" Solar packages with "OKF-CS22" flat-plate collectors

consisting of:
"OKF-CS22" flat-plate collector with plug-in connection
Pre-assembled mounting rails for rooftop installation
Solar station
Collector connection set
Collector connection pipe
Solar liquid
Expansion tank
Storage cylinder

The "OKF" roof hooks (see page 852) are not included in the solar packages and have to be ordered separately depending on the roof construction/roof covering.

For the connection of a diaphragm expansion tank to the "Regusol" pump groups, further components, such as angled wall brackets, quick-coupling and flexible hose are required: page 860

Hot potable water preparation and support of the heating system

Package 10: **1366040**
Living space up to approx. 130 m²
Package 11: **1366050**
Living space up to approx. 200 m²
Package 12: **1366060**
Living space up to approx. 240 m²

For further important advice regarding the design of a solar plant see "Thermal solar plant - Construction, initial operation and maintenance" at www.oventrop.de.

Hot potable water preparation and heating system







	Item no.	Package 10 1366040	Package 11 1366050	Package 12 1366060
"OKF-CS22"	1361345	5	5	6
"OKF" Rooftop installation including accessories				
Basic set for two collectors with pre-assembled mounting rails for rooftop installation including one collector coupling	1361380	1	1	2
Extension set for each additional collector with pre-assembled mounting rails for rooftop installation including one collector coupling	1361381	3	3	2
Collector connection pipe	1361288	1	1	1
Expansion tank				
18 l	1361421			
25 l	1361422		1	1
33 l	1361423	1		
50 l	1361424			
80 l	1361425			
Connection set for diaphragm expansion tank	1369051	1	1	1
Solar liquid				
10 l	1361690	1		
25 l	1361691	1	1	1
Solar station				
"Regusol ELH-130 RC" with controller "Regtronic RC"	1366597			
"Regusol ELH-130-RC-P" with controller "Regtronic RC-P"	1360394	1		
"Regusol X-Uno 25"	1361060		1	
"Regusol X-Duo 25"	1361050			1
Fresh water station				
"Regumaq X-30"	1381030	1	1	1
Storage cylinder				
Buffer storage cylinder (type: 1000, 1500)	1385010/15		Type 1.000	Type 1.500
Solar buffer storage cylinder (type: 800)	1385107	Type 800		
Bivalent solar storage cylinder (type: 300)	1387303			
Energy efficiency class		corresponds to C	corresponds to C	corresponds to C



5.2.e "Solar" Diaphragm expansion tanks for solar thermal energy

Content

"Solar" Diaphragm expansion tanks	860
"Solar" In-line tanks	860
Accessories	860

Article	Packing unit	Article-No.	Hint
"Solar" Diaphragm expansion tanks			Diaphragm according to DIN 4803 T3. Permissible operating temperature: 70 °C Max. operating pressure p_s : 10 bar Max. diaphragm peak temperature: 100 °C For the connection of a diaphragm expansion tank to the "Regusol" pump groups, further components, such as angled wall brackets, quick-coupling and flexible hose are required: page 860.
for wall attachment, G $\frac{3}{4}$ male thread, inlet pressure 1.5 bar			Approval according to directive 2014/68/EU.
	Nominal volume 18 l	1361421	
	Nominal volume 25 l	1361422	
	Nominal volume 33 l	1361423	
feet welded on, inlet pressure 3 bar			
	Nominal volume 50 l, R $\frac{3}{4}$ male thread	1361424	
	Nominal volume 80 l, R 1 male thread	1361425	
"Solar" In-line tanks			In-line tank for the protection of the diaphragm expansion tank and the solar station from excess temperatures. The in-line tanks are for instance required if flat-plate collectors "OKF" are installed vertically or in central roof heating systems with short pipes. For further important advice regarding thermal protection see "Thermal solar plant - Construction, initial operation and maintenance" at www.oventrop.de . Max. operating pressure p_s : 10 bar Approval according to directive 2014/68/EU.
for wall attachment, R $\frac{3}{4}$ male thread			
	Nominal volume 6 l	1361011	
	Nominal volume 12 l	1361012	
	Nominal volume 20 l	1361013	
Accessories			
	"Regusol" Connection set for diaphragm expansion tank		For the connection of a diaphragm expansion tank to the "Regusol" solar station.
	consisting of: - angled wall bracket made of steel - quick coupling G $\frac{3}{4}$ female thread for diaphragm expansion tank - flexible hose G $\frac{3}{4}$ female thread		
		1369051	
	Quick coupling for diaphragm expansion tank		For the automatic separation of the expansion tank and the system.
	DN 20, G $\frac{3}{4}$ F x G $\frac{3}{4}$ M	(25) 1088806	
	"Expa Con" Solar valve with lead sealable cap		
	DN 20, Rp $\frac{3}{4}$ x G $\frac{3}{4}$ male thread	(25) 1364185	



5.2.f Pipes and connection fittings

Content

"OV-Flex ST" Flexible pipes for solar thermal energy	862
Connection pieces	862
Further connection accessories	862

Article	Packing unit	Article-No.	Hint	
"OV-Flex ST" Flexible pipes for solar thermal energy				
Stainless steel corrugated pipe "2 in 2" DN 16, may be cut to required length one port 22 mm stainless steel nipple one port G ¾ collar nut, flat sealing				
length per roll 15 m		1361651	Quick mounting pipe for a flexible roof conduit and the connection of the collector field to the pipe system. Supply and return in a two-part high temperature-resistant insulation covering with a UV-resistant foil coating. 2-core sensor cable inside the insulation covering for the connection of a temperature sensor (e. g. PT 1000). The stainless steel corrugated pipes may be cut to required length. Flat seals, collar nuts and spacer rings are included. Max. operating pressure p _s : 16 bar Continuous operating temperature t _s : 150 °C (for short periods up to 175 °)	
length per roll 25 m		1361652		
Stainless steel corrugated pipe "2 in 2" DN 20, may be cut to required length one port 22 mm stainless steel nipple one port G 1 collar nut, flat sealing				
length per roll 15 m		1361653		
length per roll 25 m		1361654		
Oval clamp set				
"2 in 2"		1361655	Oval clamps to fix the stainless steel corrugated pipes onto the wall or the ceiling.	
- 4 oval clamps, galvanised - 4 dowels, 10 mm - 4 screws, M 8 x 80				
Connection pieces				
for "OKP" tube collectors (flat sealing)				
G ¾ x 22 mm pipe coupling	(25)	1361680	For the connection of "OKP" collectors to G ¾ corrugated metal pipes. For the connection of "OKP" collectors to G 1 corrugated metal pipes.	
DN 20				
G 1 x 22 mm pipe coupling	(25)	1361681		
DN 20				
for "OKP" tube collectors + "OKF" flat-plate collectors (for compression fittings "Regusol")				
G ¾ x G 1, DN 16	(10)	1369076	Connection piece with flat seal for the connection of the stainless steel corrugated pipe 1 m to "Regusol" compression fittings (12, 15, 16, 18 and 22 mm). The compression fittings are to be ordered separately: page 833	
Set = 2 pieces				
G 1 x G 1, DN 20	(10)	1369078		
Set = 2 pieces				
Double nipple set				
G ¾ x G ¾	(10)	1369096	Set consisting of 2 double nipples and 4 flat seals. Double nipple, for instance for the extension of stainless steel corrugated pipes "2 in 2".	
G 1 x G 1	(10)	1369098		
for "OKF" flat-plate collectors (for compression fittings „Regusol“)				
G ½ female thread x G 1	(10)	1361279	Connection piece for the connection of the stainless steel corrugated pipe "2 in 2" and stainless steel corrugated pipe 1 m to the "OKF" flat-plate collectors (G ½ male thread). Apart from the connection pieces, the collar nut as well as the 22 mm compression rings are included.	
Set = 2 pieces				
Further connection accessories				
Connection and coupling sets consisting of: 2 x collar nut, 2 x spacer ring and 2 x ring gasket				
DN 16, G ¾ collar nut		1369083	Spare part for the extension or shortening of corrugated stainless steel pipes "2 in 2".	
DN 20, G 1 collar nut		1369084		



5.2.g Valves, temperature controllers, actuators and other accessories for application outside the collector circuit		
Content		
"Tri-CTR" Three-way diverting and mixing valves PN 16		864
Accessories sets for three-way valves "Tri-CTR"		864
Temperature controllers		865
"Brawa-Mix"		866
Strainers PN 25		867
Spare parts		867
"Hygate ATR" Gate valves PN 25		868
"Optibal" High temperature ball valves		868
"Optiflex" Fill and drain ball valves for solar plants		868
Fill and drain cocks PN 16 heavy pattern - DIN 3848		869



"Tri-CTR" Three-way diverting and mixing valves PN 16 bronze

connection thread M 30 x 1.5
with collar nuts, flat sealing

DN 15	(10)	1131204
DN 20	(10)	1131206
DN 25	(10)	1131208
DN 32	(5)	1131210
DN 40	(5)	1131212
DN 50	(5)	1131216

Application:

Central heating and cooling systems with closed circuits, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195).

Max. operating pressure p_s : 16 bar (PN 16)

Operating temperature t_s : -10 °C up to +120 °C

Application, for instance for storage cylinder loading function or heating installations with two heat generators, for instance in solar plants or heat pump systems (bivalent heating systems).

Accessories sets for three-way valves "Tri-CTR"

Weldables tailpipe 3-fold



for valve DN 15	(10)	1130091°
for valve DN 20	(10)	1130093°
for valve DN 25	(10)	1130094°
for valve DN 32	(5)	1130095°
for valve DN 40	(5)	1130096°
for valve DN 50	(5)	1130098°

Male thread:

DN 15: G ¾

DN 20: G 1

DN 25: G 1 ¼

DN 32: G 1 ½

DN 40: G 2

DN 50: G 2 ½

The valves can be used in combination with Oventrop temperature controllers or actuators.

Solder tailpipes 3-fold



15 mm for valve DN 15	(10)	1130191°
15 mm for valve DN 20	(10)	1130192°
18 mm for valve DN 20	(10)	1130193°
22 mm for valve DN 20	(10)	1130194°
28 mm for valve DN 25	(10)	1130195°
35 mm for valve DN 32	(5)	1130199°
35 mm for valve DN 40	(5)	1130196°
42 mm for valve DN 40	(5)	1130197°
54 mm for valve DN 50	(5)	1130198°

Threaded tailpipes 3-fold



R ½ for valve DN 15	(10)	1130291
R ½ for valve DN 20	(10)	1130292
R ¾ for valve DN 20	(10)	1130293
R 1 for valve DN 25	(10)	1130294
R 1¼ for valve DN 32	(5)	1130299
R 1¼ for valve DN 40	(5)	1130295
R 1½ for valve DN 40	(5)	1130296
R 2 for valve DN 50	(5)	1130298

Function:

For use as diverting valve, the three-way valve has one inlet port (AB) and two outlet ports (A and B). Depending on the position of the valve disc, the direction of flow is diverted from one to the other outlet port.

For use as mixing valve, the three-way valve has two inlet ports (A and B) and one outlet port (AB). Depending on the position of the valve disc, the cold and hot water is mixed.

The three-way valves "Tri-CTR" can be used for high differential pressures.

Awards:



ICONIC AWARDS 2018
Innovative Interior



German Innovation Award 2018
Winner



GERMAN DESIGN AWARD
SPECIAL 2019

Article	Article-No.	Hint
---------	-------------	------

Temperature controllers

connection thread M 30 x 1.5
Temperature controller
with immersion sensor
Immersion pocket G ½ connection

Application:
Water, max. sensor temperature 30 K above
the set value.
For industrial installations, water heaters, air
heaters, hot cabinets, dish-washers, surface
heating systems or similar.
The control range can be limited or locked.

Control range	Capillary length	
20 - 50 °C	2 m	1140561
40 - 70 °C	2 m	1140562
50 - 80 °C	2 m	1140563
70 - 100 °C	2 m	1140564
20 - 50 °C	5 m	1140571
40 - 70 °C	5 m	1140572
70 - 100 °C	5 m	1140574
Immersion pocket only		1141091



Temperature controller with contact sensor and heat transfer unit

Control range	Capillary length	
20 - 50 °C	2 m	1142861
30 - 60 °C	2 m	1142862
40 - 70 °C	2 m	1142863
50 - 80 °C	2 m	1142864



Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Brawa-Mix"
Thermostatic mixing valve
with "fail-safe" function



Bronze, spring made of vanadium steel, control piston made of polyphenylene ether, EPDM O-rings, both ports flat sealing male thread according to DIN ISO 228, handwheel lockable and lead lockable

DN 20	1300306
DN 25	1300308
DN 32	1300310

Application:
Potable water installations PN 10,
up to 90 °C.
Control range: 35 °C up to 65 °C
Connection fittings: from page 730

Awards:
 German Designer Club
Good Design 08

 universal design award



Bronze body, brass components resistant to dezincification, brass couplings, G 1 male thread with 3 collar nuts

DN 20	1300351
-------	----------------

Application:
Potable water installations PN 10,
up to 90 °C.
Control range: 35 °C up to 50 °C

WRAS certified.



without collar nuts
(for compression fittings)

1300352



Compression fittings – 3-fold – complete with 3 collar nuts

Ø 15 mm	(10)	1300381°
Ø 18 mm	(10)	1300382°
Ø 22 mm	(10)	1300383°

Only for item no. 1300352.



Bronze inline thermometer with dial

DN 20	1300952
-------	----------------

For connection to the "Brawa-Mix".

Length: 74 mm



Bronze non-return valve for cold water

DN 20	1302006
-------	----------------

Up to 95 °C

Length: 61 mm

without "fail-safe" function



Bronze body, brass components resistant to dezincification, brass couplings

G 1 male thread without collar nuts	(25)	1300200
--	------	----------------

Application:
Potable water installations PN 10,
up to 90 °C, with lateral mixed water outlet.
Control range: 30 °C up to 70°C



as above but with lead lockable protection cap, preset to 57 °C, with 3 collar nuts and gaskets	(20)	1300251
---	------	----------------

Connection fittings: Pages 730, 544, 537

Article	Packing unit	Article-No.	Hint
Strainers PN 25			
bronze			
			
with simple wire basket, 600 µm			
DN 8	(10)	1120002	Application: Central heating and cooling systems with closed circuits and industrial plants, for operation with non-aggressive, harmless fluids (e. g. water or suitable water and glycol mixtures according to VDI 2035/ÖNORM 5195). Strainers 11200/10: Material resistant to: mineral, heating and hydraulic oils, fuels, water vapour, as well as air and other harmless non-aggressive gases (not suitable for gaseous fluids group 1 according to directive 2014/68/EU) Max. operating pressure p _g : 25 bar (PN 25) Operating temperature t _s : -10 °C up to +150 °C (The valid rules and standards for the use of these media may restrict the temperature range.) The sizes DN 10 - DN 80 are WRAS (United Kingdom) certified for installation in potable water systems. CE-marking for size DN 65 and above according to directive 2014/68/EU. The strainers DN 10 - DN 20 are suitable for use with compression fittings, item no. 10271..., page . DN 8 – DN 50 bronze body, brass bonnet. DN 65 – DN 80 brass body and bonnet. Wire basket made of stainless chromium steel. Item no. 11200: Mesh size 0.6 mm 100 meshes/cm², △ 600 µm. Item no. 11210: Mesh size 0.25 mm 600 meshes/cm², △ 250 µm.
DN 10	(10)	1120003	
DN 15	(10)	1120004	
DN 20	(10)	1120006	
DN 25	(10)	1120008	
DN 32	(5)	1120010	
DN 40	(5)	1120012	
DN 50	(5)	1120016	
DN 65		1120020	
DN 80		1120024	
with double wire basket for fine filtering, 250 µm			
			
DN 8	(10)	1121002	
DN 10	(10)	1121003	
DN 15	(10)	1121004	
DN 20	(10)	1121006	
DN 25	(10)	1121008	
DN 32	(5)	1121010	
DN 40	(5)	1121012	
DN 50	(5)	1121016	
DN 65		1121020	
DN 80		1121024	
Spare parts			
Wire basket (mesh size 600 µm)			
			
DN 8 + DN 10		1123003	
DN 15		1123004	
DN 20		1123006	
DN 25		1123008	
DN 32		1123010	
DN 40		1123012	
DN 50	(100)	1123016	
DN 65		1123020	
DN 80		1123024	
Double wire basket (mesh size 250 µm)			
			
DN 8 + DN 10		1123103	
DN 15		1123104	
DN 20		1123106	
DN 25		1123108	
DN 32		1123110	
DN 40		1123112	
DN 50		1123116	
DN 65		1123120	
DN 80		1123124	

Article	Packing unit	Article-No.	Hint
---------	--------------	-------------	------

"Hygate ATR" Gate valves PN 25

(with isolating facility, threaded connection, bronze)



DN 10	(50)	1043003
DN 15	(50)	1043004
DN 20	(50)	1043006
DN 25	(25)	1043008
DN 32	(20)	1043010
DN 40	(10)	1043012
DN 50	(5)	1043016
DN 65	(5)	1043020
DN 80	(2)	1043024

"Optibal" High temperature ball valves

brass, nickel plated, reduced flow,
 PN 16, max. continuous operating temperature 150 °C,
 max. short-time starting temperature 180 °C,
 extended plastic handle

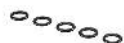


both ports female thread

DN 20	(10)	1078706
DN 25	(10)	1078708
DN 32	(5)	1078710

Accessories

Stem seal for replacement purposes (set of 5 pieces)
 (not suitable for valves with marking "HT")



DN 20	1078790°
DN 25 / 32	1078791°

"Optiflex" Fill and drain ball valves for solar plants

brass, handle with stop
 male thread, self sealing, with counternut

with hose connection (soft seal)
 and cap



DN 15 nickel plated	(50)	1033372
---------------------	------	----------------

Angle pattern,
 with hose connection (soft seal)
 and cap



DN 15 nickel plated	(50)	1033672
---------------------	------	----------------

Application:





For filling and draining of heating systems,
 boilers, radiators and pipework also in solar
 plants.

The brass ball valve is suitable for water and
 mixtures of water and glycol up to PN 16 and
 150°C.

Also suitable for the connection to plastic or
 copper pipe.

Compression fittings and reinforcing sleeves:
 pages 164 -167

The hose connection is made of plastic.

Article	Packing unit	Article-No.	Hint
Fill and drain cocks PN 16 heavy pattern - DIN 3848 bronze			Application: Fluids, steam and treated heating water (e. g. district heating) up to PN 16 and 150 °C (for short periods up to 180 °C)
	Heavy pattern - bronze, PN 16 based on DIN 3848 with hose connection and cap		
	DN 10	(50) 1032003	
	DN 15	(50) 1032004	
	DN 20	(25) 1032006	
	DN 25	(10) 1032008	
	Cap with washer and fixing loop		Female thread of the cap
	DN 10	(50) 1034003	G ½
	DN 15	(50) 1034052	G ¾, also for "Optiflex" DN 10
	DN 20	(25) 1034053	G 1
	DN 25	(25) 1034008	G 1¼
	Square spanner		
	DN 10/DN 15	(10) 1035004	Spanner size: 12 mm
	DN 20/DN 25	(5) 1035006	Spanner size: 14 mm
	Hose connection		Female thread of the collar nut
	DN 10	(50) 1034551°	G ½ (for hose DN 15)
	DN 15	(50) 1034504°	G ¾
	DN 20	(50) 1034506°	G 1
	DN 25	(25) 1034508	G 1¼



5.2.h Further accessories

Content

Further accessories	872
---------------------	-----



“Regudis W” Dwelling station

Dwelling station with plate heat exchanger for heat transmission from a central heat supply to the sanitary and heating installation of a dwelling.

Page 518



“Regumaq” Fresh water station

Electronically controlled product assembly with integrated plate heat exchanger for the hygienic heating of potable water on the flow principle.

Page 546



“Hydrocor” Storage cylinder

Page 602



“Regucor” Energy storage centres

for the supply of detached and semi-detached houses

Page 589

Smart Home, Smart Building

6.1.a "DynaTemp" Home and Building automation

Content	877
System summary	878

6.1.b "DynaTemp HA" Home Automation



Content	879
System summary	880
wibutler Basic Sets	882
"R-Tronic RT B" (ENOCEAN) Wireless thermostat for Smart Home applications	883
"R-Tronic RTF B" (ENOCEAN) Wireless thermostat for Smart Home applications	883
"mote 420" Wireless actuator for Smart Home applications	883
Accessories	884
"FK-C F" Wireless window contact	884
RP-S F Wireless repeater	884
"R-Con" Wireless receiver	885

6.1.c "DynaTemp BA" Building Automation

Content	887
System summary	888
System types	889



6.1.d "DynaTemp BA" Building Automation Local and central individual room temperature control via bus system "CR-BSX"

Content	891
System illustration	892
DDC "CR-BSX" Control unit	893
TR-250 Transformer	893
TR-80 Transformer	893
"RM-C K" Room module	893
"RM-C K8" Room module	893
"RM-C F" Room module	893
"RM-C F8" Room module	894
"ABR-55" Cover frame	894
"RBG-C K" Room controller	894
"RBG-C F" Room controller	894
Room thermostat - surface mounting	894
"FK-C F" Wireless window contact	895
"BWM-C F" Wireless movement sensor	895
"RS-C F" Wireless temperature sensor	895
"FM-C WS" Outside temperature sensor	895
"RP-C F" Wireless repeater	895
"Aktor T" Electrothermal actuators	896
"Aktor T ST" Electrothermal actuator (0-10 V)	896
Thermostat "Uni LHZ"	897
Reinforcing cap	897
Thermostat with remote control "Uni FHZ"	897

Wall connection set

897

6.1.e "DynaTemp BA" Building Automation Automatic thermal balancing and thermal disinfection in potable water circulation systems "CW-BS"

Content

899

System illustration

900

DDC "CW-BS" Control unit

901

"Aquastrom DT" Electronic circulation regulating valve

901

"FM-CW Plus" Field module

901

TR-250 Transformer

901

TR-80 Transformer

901

"REM-CW" Relay module

902

"FM-CW K" Field module

902

6.1.f "DynaTemp BA" Building Automation Networking of stations for heat generator/heating circuit and solar thermal energy "CS-BS"

Content

903

System illustration

904

Datalog "CS-BS-1" (WLAN)

905

Datalog "CS-BS-6"

905

"Regtronic RH" Heating circuit controller

906

"Regtronic EM" Extension module

907

Accessories

908

"Regusol ELH-130-RC" Station DN 25

910

"Regusol ELH-130-RC-P" Station DN 25 with high-efficiency pump

910

"Regusol X-Uno 25" with heat exchanger

911

"Regusol X-Duo 25" with heat exchanger

911

"Regumaq X-30" - without circulation connection

912

"Regumaq XZ-30" - with circulation connection

912

"Regumaq XZ-30" - with circulation connection and high-efficiency circulation pump

913

6.1.g Actuators, sensors, valves and fittings

Content

915

System summary

916



6.1.a "DynaTemp" Home and Building automation

Content

System summary	878
----------------	-----

"DynaTemp" Home and Building Automation









Communication-capable valves, actuators, sensors and controllers become more and more important, not only for new buildings but also for the renovation of existing buildings. Building automation systems with their monitoring, controlling and optimising devices are paramount for comfortable, energy-efficient and cost-saving building management.

The effectiveness of such systems is, however, only guaranteed if the above products are coordinated to the optimum and if they adapt to the different demands during heat transport and transmission.

Oventrop offers systems consisting of actuators, controllers and valves which can be combined for different tasks of building automation. The Oventrop products may also be integrated into the systems of other manufacturers.

The Oventrop systems cover the following areas:

- Individual room temperature control
- Potable water circulation
- Heat generation, storage, distribution and transmission

"DynaTemp" Home and Building Automation		
	Home Automation	Building Automation
Operation		
Interfaces	TCP / IP	TCP / IP, Bacnet, Mod-Bus
Communication centres	Gateway (e.g. wibutler, Eltako, ...) 	DDC (Oventrop, Siemens, Honeywell, Kieback & Peter, Sauter, ...) 
Interfaces	EnOcean	EnOcean, C-Bus, KNX, ...
Sensors / Actuators		
Valves, controllers and regulators		
Application		

Summary Automation and System components



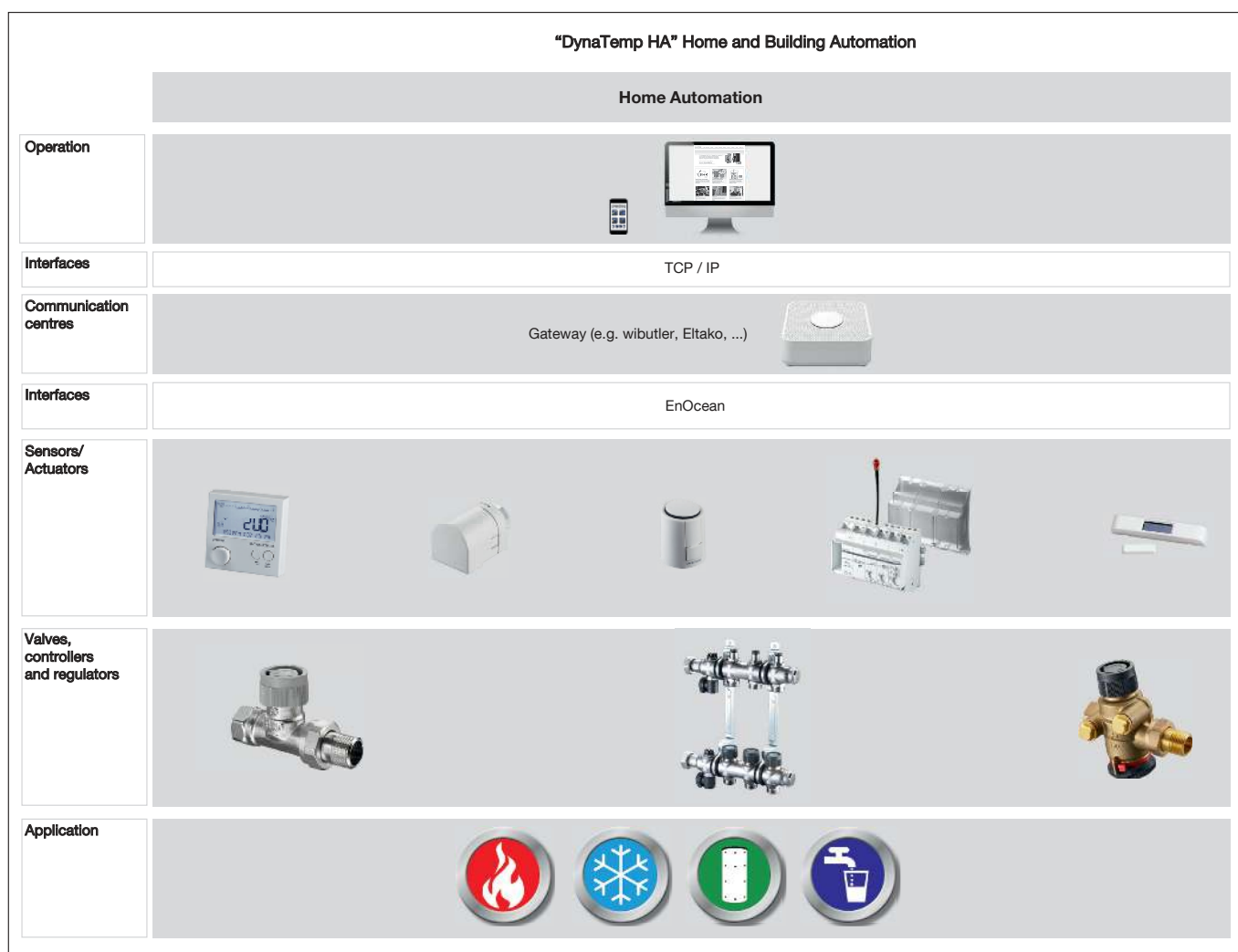
6.1.b "DynaTemp HA" Home Automation

Content	
System summary	880
wibutler Basic Sets	882
"R-Tronic RT B" (ENOCEAN) Wireless thermostat for Smart Home applications	883
"R-Tronic RTF B" (ENOCEAN) Wireless thermostat for Smart Home applications	883
"mote 420" Wireless actuator for Smart Home applications	883
Accessories	884
"FK-C F" Wireless window contact	884
RP-S F Wireless repeater	884
"R-Con" Wireless receiver	885

"DynaTemp HA" Home Automation

Components communicating with communication centres (gateways) are used in the area of Home Automation (for individual dwellings and detached houses). The gateways communicate with smartphones, tablets and personal computers using the "TCP/IP" protocol. Easy remote access is possible by connecting the gateways to common routers.

With their system "DynaTemp HA", Oventrop offers gateways and components for room temperature control. Components, such as the wireless actuator "mote 420" or the wireless thermostat "R-Tronic RT B" (ENOCEAN) and "R-Tronic RTF B" (ENOCEAN) can communicate with gateways of other manufacturers.



Summary Automation and System components

Hydronic balancing with the wibutler gateway and "Q-Tech" in detached and semi-detached houses

Automatic presetting with the wibutler gateway:

Automatic presetting of thermostatic radiator valves, for instance in detached or semi-detached houses, can be carried out via a smartphone, tablet or PC with the help of the wibutler gateway and the wireless actuators "mote 420". Manual presetting at each radiator on the spot is thus not required.

The user may carry out automatic presetting within a few steps via his smartphone, tablet or PC with the help of the setup assistant.

Apart from room temperature control, the wibutler gateway allows for the calculation of the maximum required volume flow for each radiator. The wibutler gateway is preloaded with the calculation procedure (procedure according to "VdZ specialist rules for heating optimisation – procedure A").

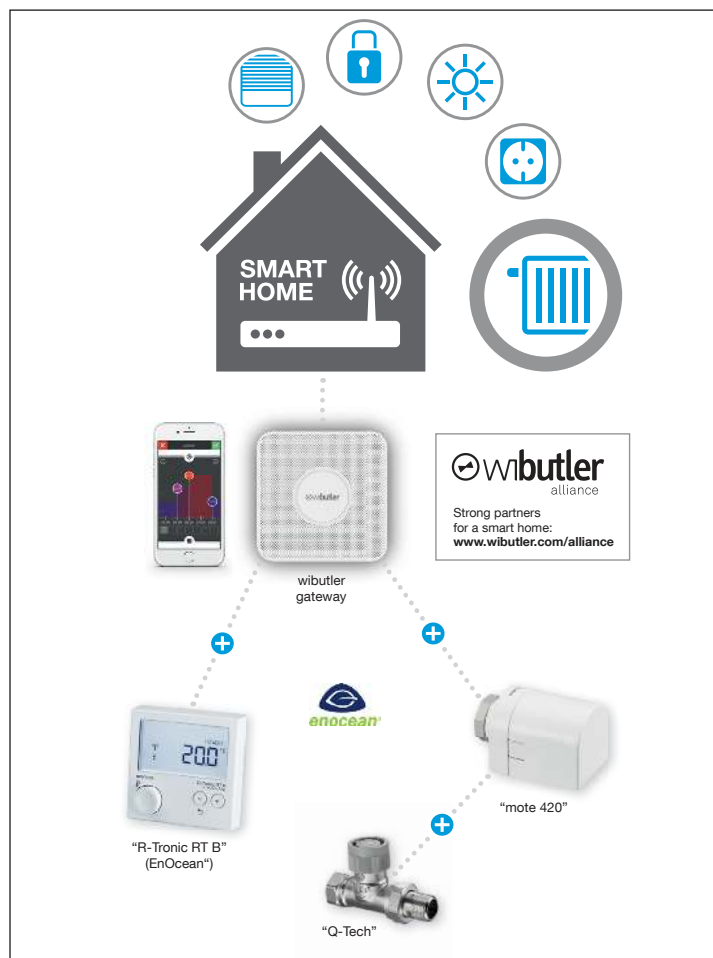
The valve characteristic line of the thermostatic valves with "Q-Tech" which allows for the conversion of the detected volume flows for the stroke limitation of the actuators "mote 420" (only in combination with item no 1150766) is integrated in the wibutler gateway.

Automatic balancing with "Q-Tech":

Irrespective of differential pressure variations in the heating system, the radiator volume flow required for room temperature control is constantly maintained by the control and regulating valve with "Q-Tech". After having carried out the automatic presetting described above, the volume flow is limited to a maximum value by the wibutler gateway and the actuator "mote 420" mounted onto the thermostatic valve with "Q-Tech".

Advantages:

- Automatic calculation of the required volume flow for each radiator and automatic presetting of the thermostatic valves with "Q-Tech" via the actuator "mote 420"
- Manual setting of the thermostatic valves at the radiator is not required
- Pipework calculation and regulation of the risers are not required
- Presetting of the valves in the riser is not required
- Hydronically balanced heating system during full and low demand periods
- Long battery life span as the "mote 420" only carries out control commands for room temperature control



Sequence of automatic presetting and balancing with the wibutler gateway and "Q-Tech"

Quick installation:

1. New installation of the "Q-Tech" valves at radiators or replacement of the valve inserts with valve inserts "QA"
2. Installation of the wireless actuators "mote 420"
3. Installation of the wireless thermostats "R-Tronic"
4. Commissioning of the wibutler gateway
5. Entry of the building and room data in the app with the help of the setup assistant

Article

Article-No.

Hint

wibutler Basic Sets

"OVbalance Home" Basic set - radiator

consisting of:

- wibutler gateway, item no. 1150799
- 1 x "R-Tronic RT B" (ENOCEAN) Wireless thermostat, item no. 1150780
- 1 x "mote 420" Wireless actuator, item no. 1150766

1150790

The "OVbalance Home" basic set-radiator is the starter set for automatic hydronic balancing with radiators.

Basic set - surface heating

consisting of:

- wibutler gateway, item no. 1150799
- 1 x "R-Tronic RT B" (ENOCEAN) Wireless thermostat, item no. 1150780
- 1 x "R-Con" Wireless receiver, item no. 1150772

1150795*

The basic set - surface heating is the starter set for surface heating. The included wireless receiver "R-Con" features 8 channels for up to 8 independent heating zones.

wibutler gateway

Included interfaces:

- EnOcean - Z-Wave - ZigBee
- LAN - WLAN

1150799*

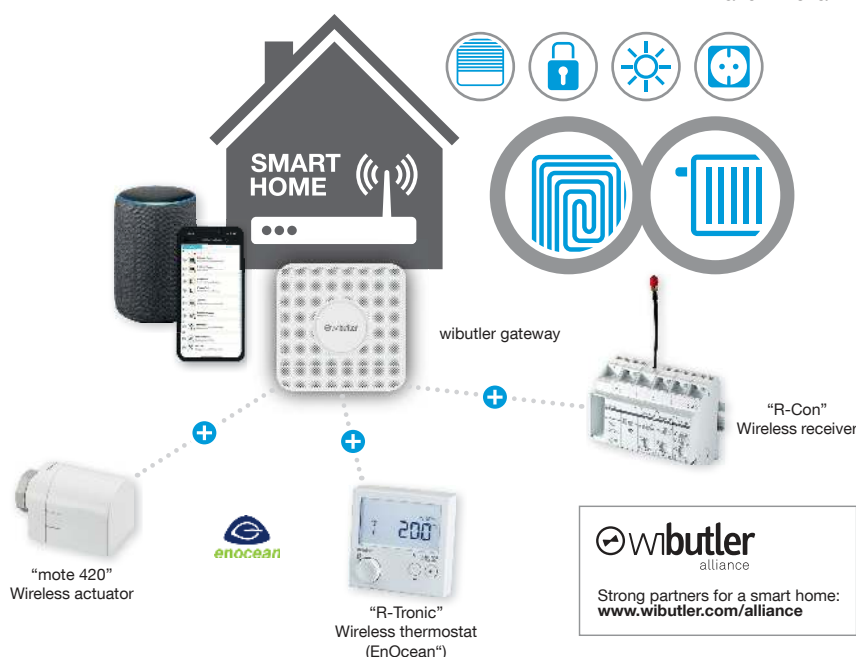
The intelligent gateway wibutler pro is the heart of a smart home. Multiple radio standards make the gateway highly compatible. Apart from heated surfaces and radiators, other trades, such as lighting and shading can also be integrated. For further information visit www.wibutler.com.







Access options:






- Local access in the building
- Worldwide mobile remote access via Internet






User interfaces:

- App for iOS and Android terminals
- Amazon Alexa



Article	Article-No.	Hint
	"R-Tronic RT B" (ENOCEAN) Wireless thermostat for Smart Home applications	
	Wireless thermostat with 5 selectable EnOcean profiles, battery operated, surface mounting traffic white (RAL 9016)	Electronic wireless thermostat for room temperature control. The wireless thermostat supports the EnOcean Equipment profiles (EEP) A5-10-02, A5-10-03, A5-10-04, A5-10-06 and RPS telegrams and can be connected to communication centres/gateways (e.g. "OVbalance Home" basic set) via the menu navigation. The nominal and actual temperature of the room are displayed. A supply via the network is an alternative, see accessories.  Individual control not only of the heating system but also of other appliances can be carried out via the plus/minus buttons (RPS telegram) with the help of configurations in the wibutler gateway. This way, the light can, for instance, be switched on and off with the help of the wireless thermostat.
	"R-Tronic RTF B" (ENOCEAN) Wireless thermostat for Smart Home applications	
	Wireless thermostat with integrated humidity sensor and 5 selectable EnOcean profiles, battery operated, surface mounting traffic white (RAL 9016)	Electronic wireless thermostat for room temperature control. The wireless thermostat supports the EnOcean Equipment profiles (EEP) A5-10-11, A5-10-12, A5-10-22, A5-10-23 and RPS telegrams and can be connected to communication centres/gateways (e.g. "OVbalance Home" basic set) via the menu navigation. The nominal and actual temperature of the room are displayed. An integrated humidity sensor supplies information on the relative humidity RH in %. A supply via the network is an alternative, see accessories.  Individual control not only of the heating system but also of other appliances can be carried out via the plus/minus buttons (RPS telegram) with the help of configurations in the wibutler gateway. This way, the light can, for instance, be switched on and off with the help of the wireless thermostat.
	"mote 420" Wireless actuator for Smart Home applications	
	Connection thread M 30 x 1.5 Electronic actuator with bi-directional radio communication, battery operated, with automatic presetting of the "Q-Tech" valves with "OVbalance Home" traffic white (RAL 9016)	Electronic actuator for room temperature control. The actuator supports the EnOcean profile A5-20-01 and can be connected to communication centres/gateways or room thermostats supporting the profile.  # Only functions in combination with communication centres/gateways (e.g. wibutler gateway) supporting the EEP A5-20-1 (EnOcean Equipment Profile).

Article	Packing unit	Article-No.	Hint
Accessories			For the conversion of battery operated wireless thermostats "R-Tronic RT B/ RTF B" to an external power supply (100-240 V ~ / 50-60 Hz).
	Flush-mounted power pack (100-240 V ~ /50-60 Hz) with wall bracket	1150692	
	Mains adaptor (100-240 V ~ / 50-60 Hz) with table stand, white for stationary use, suitable for "i-Tronic TFC" and "R-Tronic RT B/RTF B"	1150694	
	"FK-C F" Wireless window contact solar powered, white (similar to RAL 9003)	1153070	A radio signal is transmitted when opening or closing the window. The solar powered energy storage ensures a maintenance-free operation. Compatible with: - "R-Tronic" Wireless thermostats ("DynaTemp HA") - Wireless room modules ("DynaTemp BA") Note: The wireless thermostats "R-Tronic" require the software version 01-06-02 or higher and have to be mains-operated.
	RP-S F Wireless repeater with switching function for installation into an earthed plug (230 V) white (similar to RAL 9003)	1150699°	The wireless repeater "RP-S F" serves to amplify the signal between the wireless thermostat "R-Tronic" and the "OVgateway" as well as the wireless receiver "R-Con" / "R-Con 2P". Switching of electrical appliances (230 V) and registration of the current consumption data can be carried out with the help of the intermediate plug.
	Cover frame 88 x 88 mm traffic white (RAL 9016)	(50) 1150693	For panelling flush sockets (milling holes up to Ø 83 mm, e.g. in Switzerland) for surface-mounted installation of the wireless thermostats "R-Tronic".

Article	Article-No.	Hint
	"R-Con" Wireless receiver	
	230 V, without plug, wiring on site, mounting rail installation according to DIN 60715	
	4 channels with logic module	1150770
	4 channels without logic module	1150771
	8 channels with logic module	1150772
	8 channels without logic module	1150773
		Electronic multichannel wireless receiver for room temperature control of up to 8 independent heating zones (surface heating) according to adjustable timed programmes at the wireless thermostats "R-Tronic RT B", "R-Tronic RTF B" and "R-Tronic RTFC K". Operation via the menu-driven wireless thermostat.
		Additional functions (direct selection via the rotary switches at the wireless receiver): - Pump logic with adjustable lead time and follow-up time (only item no. 1150770/ 72) - Burner logic for heat demand (only item no. 1150770/ 72) - Two point control - PWM control for surface heating
		Electrothermal actuators "Aktor T 2P" 24 V or 230 V can be connected to the channels (closing contact with 4A/250 V AC each).
		The wireless receiver "R-Con" has to be installed in a cabinet (surface/flush mounting). The protective housing, item no. 1150776, is to be used alternatively.
		An external transformer is required for the power supply of 24 V actuators.
	Antenna extension for wireless receiver "R-Con"	
	surface mounting, glossy white (similar RAL 9003)	
		1150777
	"R-Con T 2P"	
	4 channel extension module for "R-Con", mounting rail installation according to DIN 60715	
		1150775
	"R-Con HC"	
	Extension module heating/cooling for wireless receiver "R-Con", mounting rail installation according to DIN 60715	
		1150774
	Protective housing for "R-Con"	
	surface mounting	
		1150776
		The wireless receiver "R-Con" is mounted onto the rail (included in the delivery) to avoid direct contact with live parts (230 V).

6.1.c "DynaTemp BA" Building Automation

Content

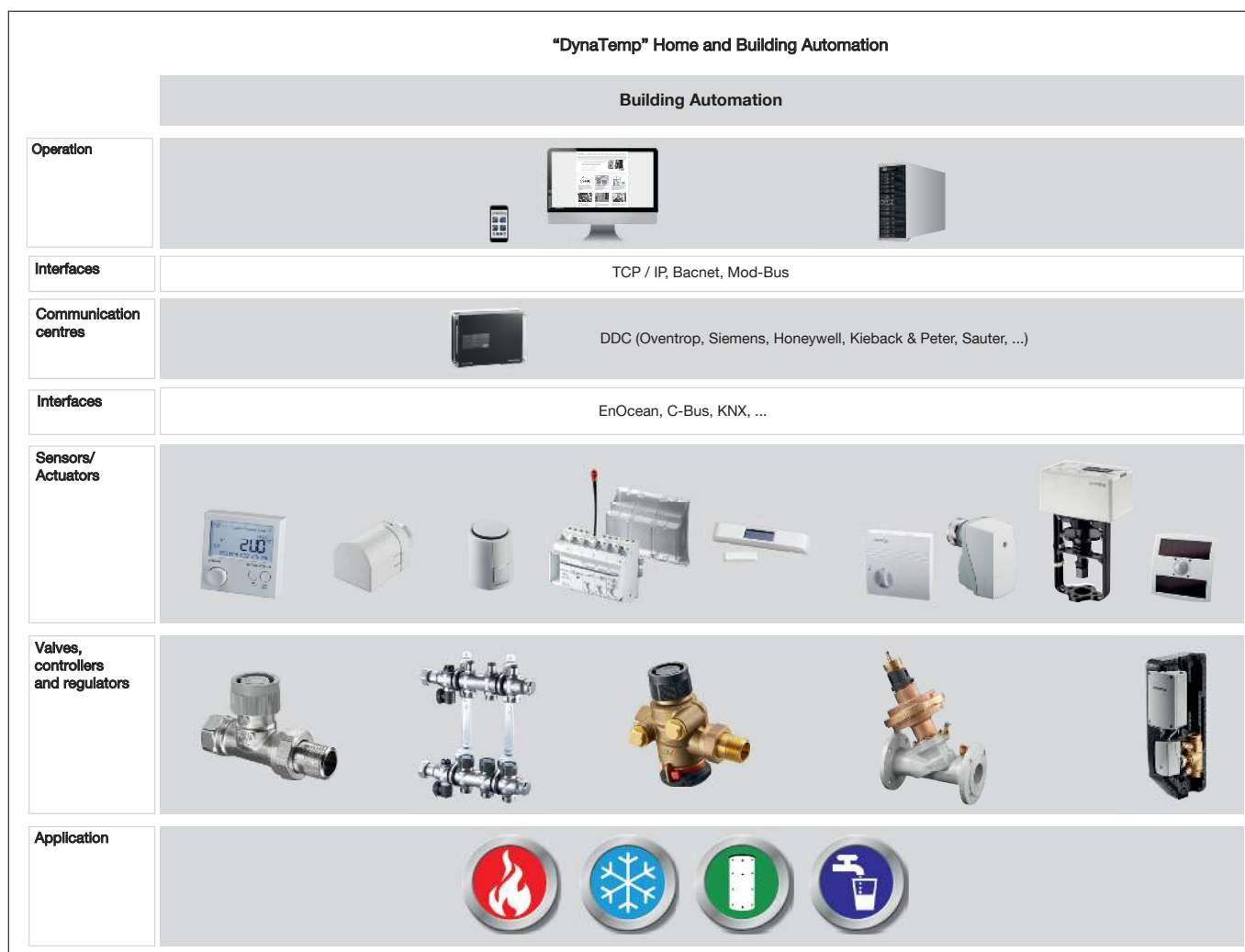
System summary	888
System types	889

"DynaTemp BA" Building Automation

The system "DynaTemp BA" allows for the automation of control processes for heat generation, distribution and transmission in larger residential and non-residential buildings.

Compared with the system "DynaTemp HA" (for individual dwellings and detached houses), the "DynaTemp BA" components for control within the building automation system are determined by the type of use, degree of automation and the system technology.

Oventrop control units (DDC) and components, such as room thermostats, actuators and control valves can be integrated into the building automation systems of any manufacturer.



Summary Automation and System components

Models:

"CR-BSX" Local and central room temperature control via bus technology

The control unit (DDC) allows for combined room temperature control with the help of sensors and actuators as well as temperature setback via the electric entry of classic thermostats, such as the thermostats with liquid sensor "Uni LHZ". The data is exchanged with the help of field modules via a bus system between the DDC and the individual rooms. This is done according to time profiles and by evaluating sensor data (e.g. movement sensors or window contacts). The system allows for an energy-saving operating with the help of time profiles and sensors for temperature control. The presence of people in a room and the opening of windows are also recognised. The combined local and central room temperature control allows for a flexible reaction to different requirements in a building.

"CW-BS" Automatic thermal balancing and thermal disinfection in potable water circulation systems

The installation hydronics which is governed by the maintenance of an adequate potable water circulation temperature (according to DVGW 57 °C) is optimised by the control unit. Temperature detection is carried out by the Oventrop valve "Aquaström DT" for potable water circulation systems. The sensor temperatures are transmitted to the control units via the bus based field module and the control demands for the "Aquaström DT" are transmitted to the actuators by the "CW" via the field module.

Thermal disinfection is also controlled via the control unit. The latter transmits a starting signal to the boiler control; the potable water temperature is increased and thermal disinfection of the risers of the circulation installation is carried out.

The control unit can be connected to the centralised building control system for monitoring and visualization purposes. Warning messages can be transmitted via LAN or Internet.

"CS-BS" Networking of stations for heat generation and distribution

This system allows the linkage of up to six bus application controllers of stations for solar heat generation, hot water preparation and different heating circuits via a bus technology. The data from the different controllers is fed into the data logger "CS-BS" in order to store and view the operating status, temperatures, flow rates and energy data over a longer period. New parameter settings for the controllers can be determined with the help of this data and the operation behaviour of the complete installation, including the storage cylinder and the boiler can be improved. Error diagnosis can also be carried out.

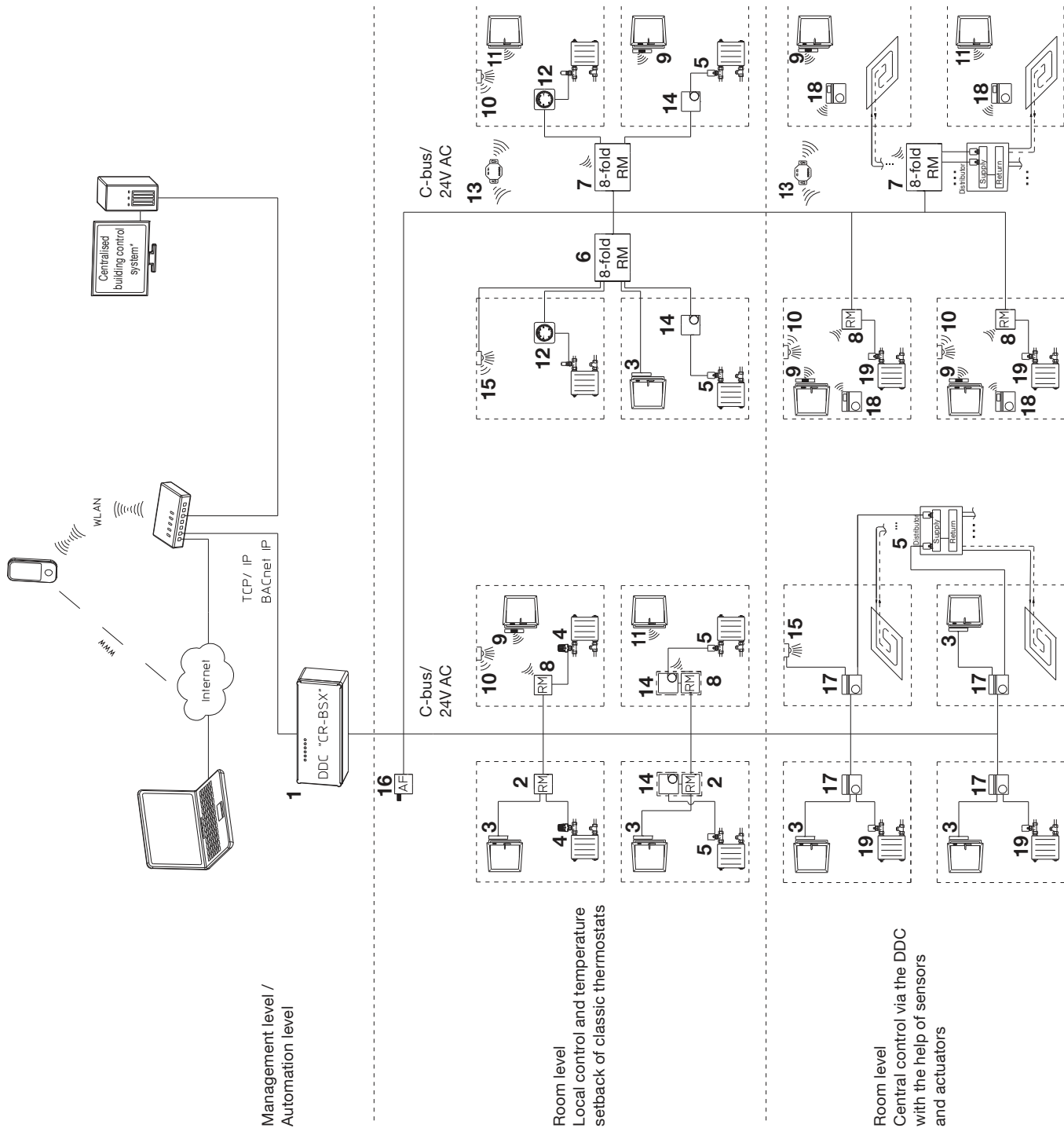
The installation data can be viewed via a PC or a standard smartphone. The integrated Web interface allows access to the system via a standard web browser. The connection to the network (LAN) and the Internet can be carried out via a standard router. A flexible, even external, access to the installation is thus possible. It is, however, not necessary to integrate the data logger into a network, the direct connection of a PC is also possible.



6.1.d "DynaTemp BA" Building Automation Local and central individual room temperature control via bus system "CR-BSX"

Content

System illustration	892
DDC "CR-BSX" Control unit	893
TR-250 Transformer	893
TR-80 Transformer	893
"RM-C K" Room module	893
"RM-C K8" Room module	893
"RM-C F" Room module	893
"RM-C F8" Room module	894
"ABR-55" Cover frame	894
"RBG-C K" Room controller	894
"RBG-C F" Room controller	894
Room thermostat - surface mounting	894
"FK-C F" Wireless window contact	895
"BWM-C F" Wireless movement sensor	895
"RS-C F" Wireless temperature sensor	895
"FM-C WS" Outside temperature sensor	895
"RP-C F" Wireless repeater	895
"Aktor T" Electrothermal actuators	896
"Aktor T ST" Electrothermal actuator (0-10 V)	896
Thermostat "Uni LHZ"	897
Reinforcing cap	897
Thermostat with remote control "Uni FHZ"	897
Wall connection set	897













*Integration into a centralised building control system of other manufacturers (e.g. Honeywell, Kieback & Peter, Sauter, Siemens etc) via the standardized interface "BACnet IP".

DDC "CR-BSX" Control unit for temperature control with control signal transmission via radio (EnOcean) or cable.

- 1 DDC "CR-BSX" Control unit
- 2 "RM-C K" Flush-mounted room module, wired, 1-fold
- 3 Wired window contact (installation on site)
- 4 "Uni LHZ" Thermostat
- 5 "Aktor T 2P" Electrothermal actuator, 24 V, two point
- 6 "RM-C K8" Surface-mounted room module, wired, 8-fold
- 7 "RM-C F8" Surface-mounted room module, wireless, 8-fold
- 8 "RM-C F" Flush-mounted room module, wireless, 1-fold
- 9 "FK-C F" Solar powered window contact, wireless
- 10 "BWM-C F" Movement sensor, wireless
- 11 "SecuSignal" Window handle of the company Hoppe (installation on site)
- 12 "Uni FHZ" Thermostat with remote control
- 13 "RP-C F" Flush-mounted repeater, 230 V, wireless
- 14 Room thermostat with setback entry, 24 V
- 15 Movement sensor, wired (installation on site)
- 16 "FM-C WS" Outside temperature sensor
- 17 "RBG-C K" Surface-mounted room controller, wired
- 18 "RBG-C F" Solar powered room controller, wireless
- 19 Electrothermal actuator, 0-10 V or two point

Article	Article-No.	Hint
	DDC "CR-BSX" Control unit with bus technology, for the connection of 31 C-bus room modules, BACnet IP interface, surface mounting, operating/bus current: 24 V / 50 Hz	1153100 The control unit DDC "CR-BSX" is used for combined temperature control with local, conventional thermostat technology (liquid sensor) and central temperature control with the help of bus-coupled sensors, actuators and thermostats. The integrated web server allows for access to the system via a PC and a standard web browser (e.g. Mozilla Firefox). The parameters (e.g. time profiles with setback values, user profiles etc.) of the system can be set via the menu and the trend data as well as the current status can be queried. The integration of the system into the central building control system is possible via "BACnet IP".
	TR-250 Transformer primary: 230 V; 50 Hz secondary: 24 V/ 250 VA	1153055 Transformer for the power supply of the DDC, room modules, field modules, thermostats and actuators.
	TR-80 Transformer primary: 230 V, 50-60 Hz secondary: 24 V / 80 VA	1153053 Transformer for the power supply of the DDC, room modules, field modules, thermostats and actuators.
	"RM-C K" Room module for one room without wireless technology, with C-bus communication, wired, flush mounting, 24 V/50 Hz, white (RAL 9010), cover frame to be ordered separately	1153121 Comparable to item no. 1153101, but without EnOcean wireless technology. Window contacts or movement sensors installed on site can be evaluated via cable.
	"RM-C K8" Room module for 8 rooms without wireless technology, with C-bus communication, wired, surface mounting, 24 V/50 Hz	1153128 Comparable to "RM-C F8" but without EnOcean wireless technology. Cabled window contacts or cabled movement sensors installed on site can be evaluated.
	"RM-C F" Room module for one room with EnOcean wireless technology and C-bus communication, flush mounting, 24 V/50 Hz, white (RAL 9010), cover frame to be ordered separately	1153101 The "RM-C F" is a bus based wireless room module for the connection of actuators or thermostats "Uni LHZ" or "Uni FHZ" as well as wireless window contacts and wireless movement sensors with EnOcean wireless technology. Moreover, window contacts or movement sensors installed on site can be evaluated via a voltage free contact by use of a cable. Connection module for one room (1-fold). Installation in a standard flush socket with cover, but without cover frame.

Article	Packing unit	Article-No.	Hint
	"RM-C F8" Room module		<p>The "RM-C F8" is a bus based 8-fold wireless room module for the connection of thermostats "Uni LHZ" or "Uni FHZ" respectively room thermostats (item no. 1152052/72) as well as wireless window contacts "FK-C F" or wireless movement sensors "BWM-C F" with EnOcean wireless technology. Moreover, cabled window contacts or cabled movement sensors installed on site can be evaluated. Connection module for 8 rooms (8-fold) for surface-mounted installation.</p>
	for 8 rooms with EnOcean wireless technology and C-bus communication, surface mounting, 24 V/50 Hz	1153118	
	"ABR-55" Cover frame		<p>Cover frame for item no. 1153101 and 1153121.</p>
	white (RAL 9016)	1153170	
	"RBG-C K" Room controller		<p>The "RBG-C K" is a bus application room controller with room temperature sensor for the connection of actuators as well as window contacts or movement sensors installed on site via cable. Connection module for 1 room (1-fold), for surface-mounted installation. A nominal room temperature setting device and a presence key button with LED display and possibility to switch from comfort to setback operation are integrated.</p>
	with C-bus communication, nominal room temperature setting device and presence key button with LED, wired, surface mounting, 24 V/50 Hz, white (RAL 9010)	1153271	
	"RBG-C F" Room controller		<p>Solar operated wireless room controller with room temperature sensor, nominal room temperature setting device and presence key button for setback and comfort operation, for surface-mounted installation. The room controller transfers the data to the wireless room modules via EnOcean wireless technology.</p>
	with EnOcean wireless technology, nominal room temperature setting device and presence key button, solar powered, white (RAL 9010)	(75) 1153050	
	Room thermostat - surface mounting		<p>The electric room thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P". Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, the temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V).</p>
	230 V 24 V	(25) 1152051 (25) 1152052	

Article	Packing unit	Article-No.	Hint
	"FK-C F" Wireless window contact		<p>A radio signal is transmitted when opening or closing the window. The solar powered energy storage ensures a maintenance-free operation.</p> <p>Compatible with:</p> <ul style="list-style-type: none"> - "R-Tronic" Wireless thermostats ("DynaTemp HA") - Wireless room modules ("DynaTemp BA") <p>Note:</p> <p>The wireless thermostats "R-Tronic" require the software version 01-06-02 or higher and have to be mains-operated.</p>
	solar powered, white (similar to RAL 9003)	1153070	
	"BWM-C F" Wireless movement sensor		<p>The solar powered wireless ceiling sensor serves the presence detection. Transmission to the wireless room modules via EnOcean wireless technology. The solar powered energy storage ensures a maintenance-free operation. The device detects movements within a range of 360°.</p>
	with EnOcean wireless technology surface mounting, solar powered, white (RAL 9010)	1153280	
	"RS-C F" Wireless temperature sensor		<p>The solar powered wireless temperature sensor is used for room temperature monitoring. The temperature values or sequences can be viewed via the control unit DDC "CR-BS"/DDC "CR-BSX".</p>
	with EnOcean wireless technology	(75) 1153195	
	"FM-C WS" Outside temperature sensor		<p>Outside temperature sensor to use the "DDC" function "variable heating-up time". Power supply via the C-bus.</p>
	with C-bus communication, surface mounting, IP 65	1153130	
	"RP-C F" Wireless repeater		<p>The repeater serves to amplify the EnOcean radiograms and is for instance used to increase the radio range between wireless window contacts and the wireless room modules.</p>
	for EnOcean wireless technology, flush mounting, 230 V/ 50 Hz	(50) 1153060	

Article

Article-No.

Hint



"Aktor T" Electrothermal actuators

"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

"L NC", closed with current "off", 24 V **1012416**

"L NC", closed with current "off", 24 V **1012442**
cable 2 m long

Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats. Further applications in bivalent heating installations.

For zone and room temperature control. Connecting cable 1 m.

With "First-Open" function (except for actuators "open with current off") and stroke index.

Simple plug-in connection with valve adapter. Actuators can be installed in any position. Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on fluorescent tubes. A varistor is thus not necessary.



"Aktor T ST" Electrothermal actuator (0-10 V)

Proportional actuator
connection thread M 30 x 1.5

"L NC", closed with current "off", 24 V **1012953**
with automatic recognition of neutral point and valve travel

The actuator (0-10 V) can be used in centralised building control systems in combination with the electronic room thermostat, item no. 1152151/1152153, or with a central controller.

Plug-in connecting cable 1 m.

With "First-Open" function and stroke index.

Easy plug-in connection with valve adapter. Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on fluorescent tubes. A varistor is thus not necessary.







Reinforcing cap

for electrothermal actuators (two point) and (0-10 V)

1012450

To protect electrothermal actuators against vandalism.

The special valve adapter with connection thread M 30 x 1.5 for fixing of the reinforcing cap is included.

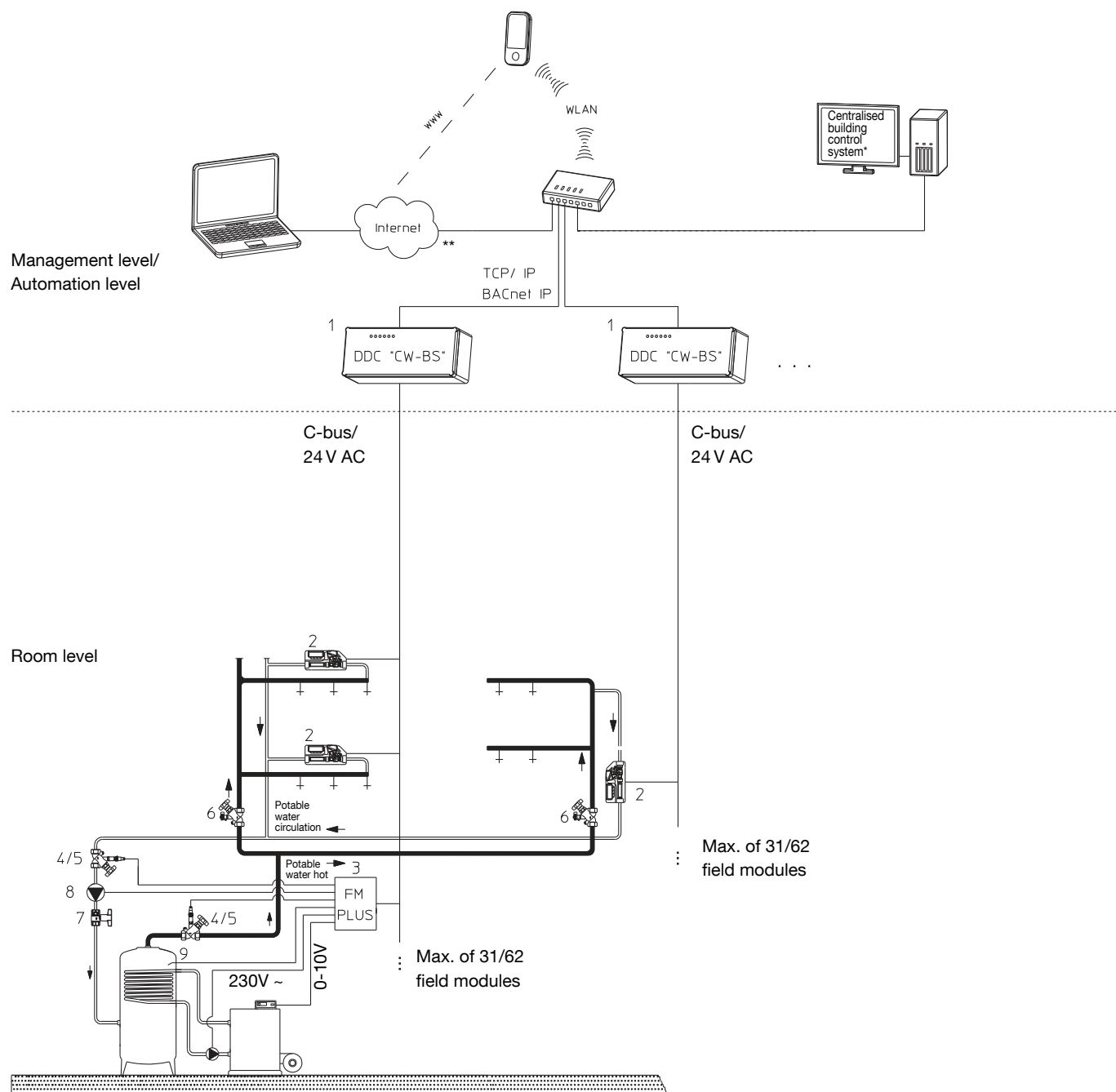
Article	Packing unit	Article-No.	Hint
Thermostat "Uni LHZ"			
		1150300	In combination with the control unit DDC "CR-BSX", the thermostats "Uni LHZ" and "Uni FHZ" allow for a timed temperature setback with the help of an integrated electrically heated liquid sensor. The operation is identical with that of a standard thermostat. If the thermostat is energized with a voltage of 24 V, it switches to temperature setback. The thermostats "Uni LHZ" and "Uni FHZ" can be activated via the control unit DDC "CR-BSX" and the room modules via LAN networks or the Internet.
			without '0' setting Temperature range: 7 - 28 °C Graduation on cap: * 1-4 Operating current: 24 V Temperature setback: about 7 K Connecting cable 1 m
			The reinforcing caps are delivered with an Allen key.
			for thermostats "Uni LH", "Uni LHZ" and "Uni LA"
		not lockable (10)	1011865
		lockable (10)	1011866
Thermostat with remote control "Uni FHZ"			
		1152265	without '0' setting Temperature range: 7 - 28 °C Graduation on cap: * 1-4 Operating current: 24 V Temperature setback: about 7 K Connecting cable 1 m
			Is used as additional protection for the wall installation (in a flush box) of the connecting cable of the thermostat "Uni LHZ".
		1150390	



6.1.e "DynaTemp BA" Building Automation Automatic thermal balancing and thermal disinfection in
potable water circulation systems "CW-BS"

Content

System illustration	900
DDC "CW-BS" Control unit	901
"Aquastron DT" Electronic circulation regulating valve	901
"FM-CW Plus" Field module	901
TR-250 Transformer	901
TR-80 Transformer	901
"REM-CW" Relay module	902
"FM-CW K" Field module	902



* Integration into a centralised building control system of other manufacturers (e.g. Honeywell, Kieback & Peter, Sauter, Siemens etc.) via the standardized interface "BACnet IP".

** Router configurations, such as port forwarding, are required to access the DDC.

DDC "CW-BS" for automatic thermal balancing and thermal disinfection in potable water circulation systems

- | | |
|---|--|
| 1 DDC "CW-BS" Control unit | 5 Temperature sensor G ¼ |
| 2 "Aqastrom DT" Regulating valve including field module with actuator 24 V, 0-10 V and temperature sensor | 6 "Aqastrom KFR" |
| 3 "FM-CW Plus" Field module for the connection of sensors and pumps | 7 "Optibal TW" Ball valve for potable water |
| 4 "Aqastrom FR" | 8 Circulation pump |
| | 9 Storage cylinder temperature sensor, PT 1000 |

Article	Article-No.	Hint
DDC "CW-BS" Control unit		
with bus technology, for the connection of 31 C-bus field modules, surface mounting, 24/ 50 Hz, bus current: 24 V/50 Hz	1153350	The control unit DDC "CW-BS" is used for automatic thermal balancing and thermal disinfection in potable water circulation systems. The control valves "Aquastrom DT" with electromotive actuator are connected to the C-bus via the bus application field modules. The integrated web server allows for access to the system via a PC and a standard web browser (e.g. Mozilla Firefox). The parameters (e.g. time profiles) of the system can be set via the menu and the trend data, the current status as well as the disinfection records can be queried. The integration of the system into the centralised building control system is possible via "BACnet IP".
as item no. 1153350, but for 62 C-bus field modules	1153351	
"Aquastrum DT" Electronic circulation regulating valve		
Potable water installations PN 10 Max. water temperature: 90 °C		
both ports female thread according to EN 10226-1		
DN 15, Rp ½ x Rp ½	1150004	Bronze according to DIN 50930-6, with temperature sensor PT 1000, without dead zone, with isolating facility, draining valve for draining of the riser and insulation shells made of expanded polypropylene according to the German Energy Saving Directive (EnEV), building material class B2 according to DIN 4102.
DN 20, Rp ¾ x Rp ¾	1150006	
DN 25, Rp 1 x Rp 1	1150008	
both ports male thread according to DIN ISO 228, flat sealing		
DN 15, G ¾ x G ¾	1150104	The "FM-CW Plus" is a bus based field module for temperature detection, utilising 3 PT 1000 sensors. Two volt free relays can, for instance, be used for the control of the circulation/ storage cylinder pump, a thermostatic mixing valve or the burner demand. Optionally, control of the burner demand can also be carried out via a 0-10 V signal.
DN 20 , G 1 x G 1	1150106	
DN 25, G 1¼ x G 1¼	1150108	
"FM-CW Plus" Field module		
for the connection of sensors and pumps with C-bus communication, 3 x PT 1000 temperature sensors/inputs, surface mounting, 24 V/50 Hz	1153321	One field module "FM-CW Plus" and all three temperature sensors (item no. 1150090) are required for operation in the system.
TR-250 Transformer		
primary: 230 V; 50 Hz secondary: 24 V/ 250 VA	1153055	Transformer for the power supply of the DDC, room modules, field modules, thermostats and actuators.
TR-80 Transformer		
primary: 230 V, 50-60 Hz secondary: 24 V / 80 VA	1153053	Transformer for the power supply of the DDC, room modules, field modules, thermostats and actuators.

Article

Article-No.

Hint

Accessories



"Sensor LW TQ"

Sensor element PT 1000
G 1/4, bronze body,
temperature sensor made of stainless steel,
two wire system

1150090

For remote monitoring of the riser temperatures and integration into a centralised building control system.



"REM-CW" Relay module

with analogue outlet (0 - 10 V)
Relay contact: closing contact,
(max.) 230 V / 5 A,
volt free

1153331

Volt free contact which is activated via a 0 - 10 V analogue inlet (e.g. of the "FM-CW Plus") and which can be used for boiler control.



"FM-CW K" Field module

only supplied as replacement, already comes with the
regulating valve "Aquastrum DT"

1153301

with C-bus communication,
surface mounting,
24 V/50 Hz

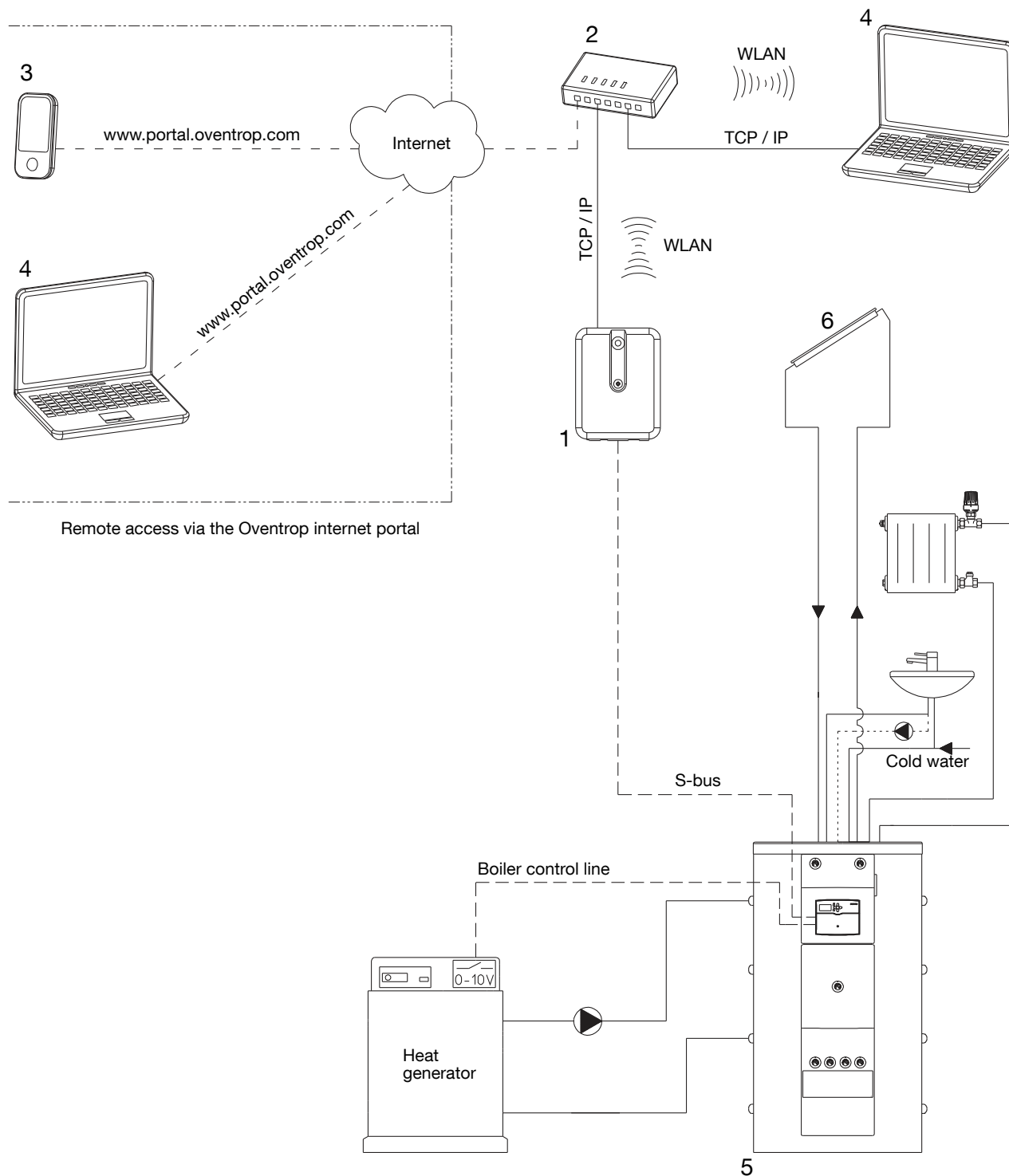
The "FM-CW K" is a bus based field module for the connection of the regulating valve "Aquastrum DT" for one riser.



6.1.f "DynaTemp BA" Building Automation Networking of stations for heat generator/heating circuit and solar thermal energy "CS-BS"

Content

System illustration	904
Datalog "CS-BS-1" (WLAN)	905
Datalog "CS-BS-6"	905
"Regtronic RH" Heating circuit controller	906
"Regtronic EM" Extension module	907
Accessories	908
"Regusol ELH-130-RC" Station DN 25	910
"Regusol ELH-130-RC-P" Station DN 25 with high-efficiency pump	910
"Regusol X-Uno 25" with heat exchanger	911
"Regusol X-Duo 25" with heat exchanger	911
"Regumaq X-30" - without circulation connection	912
"Regumaq XZ-30" - with circulation connection	912
"Regumaq XZ-30" - with circulation connection and high-efficiency circulation pump	913



- 1 Datalog "CS-BS-1" (WLAN)
- 2 Standard router/switch (e.g. FritzBox)
- 3 Mobile displays (iPhone, iPod touch, iPad, Blackberry etc.)
- 4 PC/Laptop
- 5 "Regucor WHS" with controller "Regtronic RS"
- 6 "OKF" Flat-plate collector or "OKP" tube collector



Datalog "CS-BS-1" (WLAN)

Data logger for data collection and reading of controller data (1 controller)
A system visualization is possible via the Oventrop portal.
Suitable for wall attachment

1159097#



Datalog "CS-BS-6"

Data logger for data collection and parameterization of up to 6 controllers.
Suitable for wall attachment

1159095

Hint

Data logger for an easy networking and visualization of different components/ controllers for solar thermal energy, heating and fresh water technology.
The following controllers can be connected to the data logger "CS-BS":
"Regtronic RC/RC-P"
"Regtronic RX"
"Regtronic RQ"
"Regtronic RH"
"Regtronic RM"
"Regtronic RS" ("Regucor")
Controller data can be read via an integrated web interface. The data can be transmitted to a standard file format and be evaluated via third party software (see CSV file format).
Connection to the centralised building control system can be carried out via the Datalog "CS-BS-6". For the preparation of trend data, the sensor and relay states are cyclically transmitted to the Oventrop portal (www.portal.ventrop.com) by the datalogger.
The connection is encrypted and supplies the following functions without additional router configurations:
-remote access
-data/system visualization
-backup of history data
Interfaces:
LAN, WLAN (only item no. 1159097)
Inputs: 3 temperature inputs (PT1000)
The data logger can be easily operated via three keys and features a full graphic display for status visualization (only datalog "CS-BS-6").

Power supply via an external mains adaptor.

#Only for use inside the EU.

Article

Article-No.

Hint

"Regtronic RH" Heating circuit controller



with 1 outdoor sensor (bus-compatible) and 3 additional sensors (PT1000) **1152083**

with 1 outdoor sensor (bus-compatible), 2 additional sensors (PT1000) and remote control including room temperature sensor (PT1000) **1152080**

ErP classification heating circuit controller "Regtronic RH"						
Item no.	Controller	Required accessories	Boiler control modulating (0-10 V)	On/Off	ErP %	Class
1152083	"Regtronic RH"	Adapter cable 1152086	X		2.0	II
1152083		—		X	1.5	III
1152080	"Regtronic RH" incl. remote control with room temperature sensor	Adapter cable 1152086	X		4.0	VI
1152080		—		X	3.5	VII
1152080		2 x room temperature sensor 1152095 Adapter cable 1152086	X		5.0	VIII

Weather guided control of the flow temperature of the heating system via the demand of a heat generator and/or a mixing valve (e. g. "Regumat M3" or "Regufloor HW" with three-way mixing valve).

Controller for wall mounting with data bus (S-bus) for the connection to the data logger "CS-BS".

Basic functions: 1 variable and 1 constant temperature heating circuit with heat demand. Extendable by "Regtronic EM".

The status can be viewed via a full graphic display.

Interfaces: S-bus (optional connection to the data logger "CS-BS"), SD-card slot for data recording, a central outdoor sensor can also be connected to the heating circuit controller. Inputs: 8 sensor inputs (PT1000, KTY, switch or remote control), 2 inputs for electronic volume flow sensor VFD (volume flow temperature).

Outputs: 3 solid-state relays (speed controlled), 2 electro-mechanical relays, 1 volt free low voltage relay 30 V, 1 volt free relay 240 V, 2 PWM outputs for the speed controlled activation of high-efficiency pumps. Both PWM outputs can be switched to 0-10 V.

For the connection of high-performance pumps (> 1A) see load relay, page 500.

Adapter cable



PWM-/ 0-10 V

1152086

Adapter cable for signal transmission, for instance from the heating circuit controller "Regtronic RH" to a modulating heat generator with 0-10 V interface.

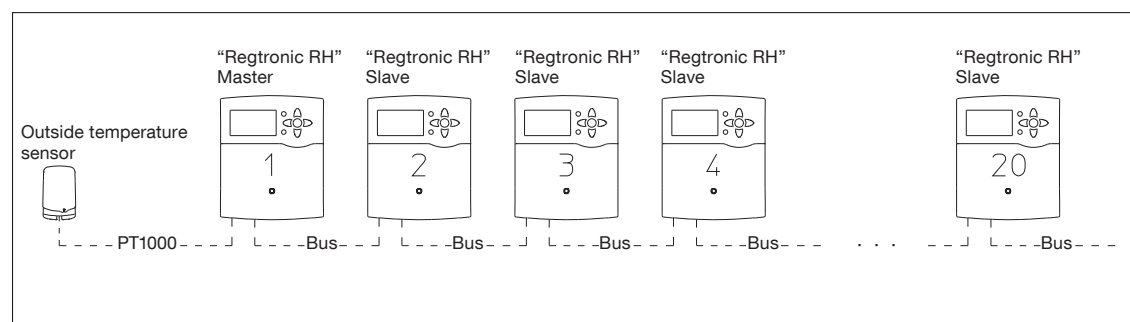
Accessory required for ErP classification II, VI and VIII.

Outside temperature sensor



1152099

Temperature sensor PT 1000.



Example: Distribution of a temperature sensor (outside temperature sensor, item no. 1152099) up to 20 heating circuit controllers "Regtronic RH" (item no. 1152080/1152083)

"Regtronic EM" Extension module



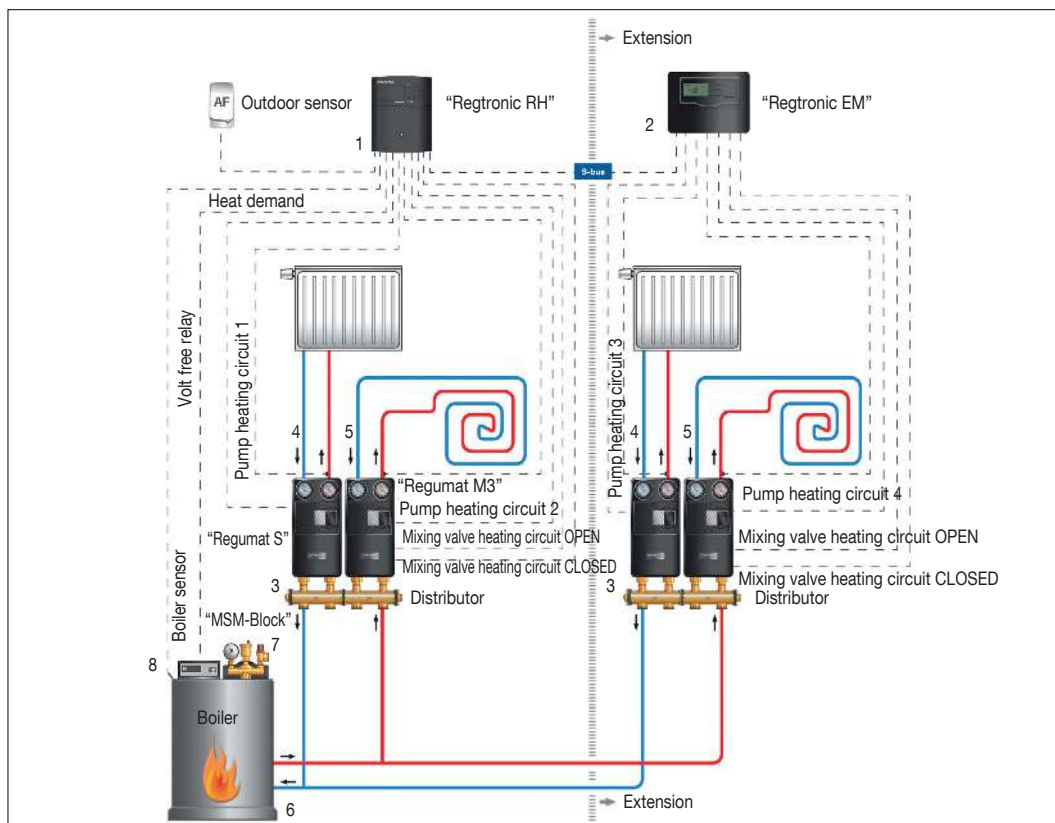
for the connection to the heating circuit controller "Regtronic RH"

1152098

"Regtronic EM" for the extension of the heating circuit controller "Regtronic RH" by 6 sensor inputs and 5 relay outputs.

This way, further variable or constant temperature heating circuits can be activated. Up to five extension modules can be connected to the heating circuit controller "Regtronic RH".




1 sensor attached to the pipe PT 1000 is included.



Example: Weather guided control of 2 variable and 2 constant temperature circuits with heat demand (e.g. via a conventional boiler, solid fuel or heat pump) consisting of the heating circuit controller "Regtronic RH" with outdoor sensor and the extension module "Regtronic EM".

Oventrop products:

- 1 "Regtronic RH" Heating circuit controller with outdoor sensor
- 2 "Regtronic EM" Extension module
- 3 Distributor for "Regumat"
- 4 "Regumat S"
- 5 "Regumat M3"
- 6 "Optiflex" Ball valve
- 7 "MSM-Block" Boiler safety device
- 8 "Expa-Con" Valve with lead sealable cap

Article	Article-No.	Hint
Accessories		
	<p>Room temperature sensor PT 1000</p> <p>1152095</p>	<p>Room temperature sensor for fixing on level surfaces (surface mounting).</p>
	<p>Remote control with room temperature sensor PT 1000</p> <p>1152096</p>	<p>Remote control with room temperature sensor PT 1000 for the connection to the electronic controllers "Regtronic RH, RM and RS" for a comfortable control of the heating curve of the controller from the living area. When increasing the heating curve, the flow temperature is increased and vice versa. The remote control also features the functions "heating circuit off" and "party position".</p>
	<p>Room controller with operating mode switch, remote control and room temperature sensor PT 1000</p> <p>1152087</p>	<p>Room controller with operating mode switch, remote control and room temperature sensor PT 1000 for the connection to the heating circuit controller "Regtronic RH" for a comfortable setting of the operating mode and heating curve of the controller from the living area. Operating mode switch: Setting of the operating modes "Automatic", "Night setback", "Summer" and "Off". Remote control: An increase of the heating curve provokes an increase of the flow temperature and vice versa. Furthermore, the remote control features the functions "Heating circuit off" and "Party position".</p>



Room thermostat-clock - surface mounting (heating)

with daily setting

230 V

1152552

The electric room thermostat-clock is required for individual room temperature control of heating systems in combination with the electrothermal actuators (two point) "Aktor T 2P". Output signal pulse-width modulation.
Temperature range: 5 °C up to 30 °C
Heating: Use electrothermal actuators (two point) "closed with current off".
Central temperature setback is carried out according to a timed programme.
Limitation of the control range by using the concealed limiting elements.



Room thermostat - surface mounting

230 V

(25) **1152051**

24 V

(25) **1152052**

The surface- or flush-mounted model of the electric thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P".
Temperature range: 5 °C up to 30 °C
Heating: Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, the temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V).
Cooling: Use electrothermal actuators (two point) "open with current off".
Limitation of the control range of item no. 1152051/52/71/72 by using the concealed limiting elements.
The isolator terminals of the room thermostat can be connected to the sensor entry of the heating circuit controller "Regtronic RH".
The heating circuit controller can for instance activate a 230 V actuator or can switch to reduced heating operation.

Article

Article-No.

Hint



"Regusol ELH-130-RC" Station DN 25

with safety group and electronic controller
consisting of:

- a) high-efficiency pump
- b) ball valve with integrated check valve, thermometer and connection for safety group
- c) ball valve with integrated check valve and thermometer
- d) flow measuring and regulating device with isolation and lateral fill and drain ball valve
- e) safety valve 6 bar
- f) outlet G 3/4 male thread to expansion tank
- g) pressure gauge 10 bar
- h) fill and drain ball valve
- i) wall mounting device
- j) electronic controller
- k) insulation
- l) deaerator

Control range of the flow measuring and regulating device:
2-15 l/min

Wilo PARA ST 25-130/7-50/iPWM2-9 1366597

and controller "Regtronic RC"
with data output (S-bus)

Complete, pre-assembled and leak tested unit
for the connection to the solar circuit.

With integrated electronic controller for the
control and monitoring of a solar thermal
plant according to the temperature difference
principle. These stations are mainly used for
hot potable water preparation.

With G 1 male threaded connection for
"Regusol" compression fittings to the solar
supply and return pipe.

For copper and precision steel pipes.

Alternatively, compression fittings according to
DIN EN 16313 (cone "Euro") of other
manufactures may also be used.

With the option to connect an expansion tank
to the safety group.

Distance between pipe centres: 100 mm

Pump 130 mm long.

Continuous operating temperature: 120 °C

Short-term max. starting temperature: 160 °C

Suitable for standard solar liquids.

The data output of the "Regtronic RC" can be
connected to the data logger "CS-BS".

Inputs: 4 temperature sensors (PT 1000)

Outputs: 3 relays, 1 is a volt free relay

The controller is already cabled with a
temperature sensor (PT1000).

Another temperature sensor (PT 1000) for the
connection to the collector is included.

Temperature sensors PT 1000 for the
registration of additional temperatures are
available as accessories.

Apart from hot potable water preparation,
this station with high-efficiency pump
offers additional functions.

The integrated additional controller allows a
support of the heating system, a difference
control or a circulation function.

Yield measurement is possible via the
electronic volume flow sensor.

**Volume flow sensor without lateral fill and
drain**

**ball valve, use filling and flushing device
"Regusol": page 835.**

Interfaces: S-bus for connection to the data
logger "CS-BS", SD-card slot for data
recording

Inputs: 4 temperature sensors (PT 1000),

1 input for electronic volume flow sensor
(volume flow / temperature)

Outputs: 3 relays, 1 is a volt free relay,
2 pulse-width modulation (PWM) outputs for
the speed controlled activation of high-
efficiency pumps.



**"Regusol ELH-130-RC-P" Station DN 25 with high-efficiency
pump**

with safety group and electronic volume flow sensor

consisting of:

- a) high-efficiency pump
- b) ball valve with integrated check valve, thermometer and connection for safety group
- c) ball valve with integrated check valve and thermometer
- d) electronic flow sensor (2-40 l/min.)
- e) safety valve 6 bar
- f) outlet G 3/4 male thread to expansion tank
- g) pressure gauge 10 bar
- h) fill and drain ball valve
- i) wall mounting device
- j) electronic controller
- k) insulation
- l) deaerator

Wilo PARA ST 25-130/7-50/iPWM2-9 1360394

and controller OV-"Regtronic RC-P"
with data output (S-bus)

Interfaces: S-bus for connection to the data
logger "CS-BS", SD-card slot for data
recording

Inputs: 4 temperature sensors (PT 1000),

1 input for electronic volume flow sensor
(volume flow / temperature)

Outputs: 3 relays, 1 is a volt free relay,
2 pulse-width modulation (PWM) outputs for
the speed controlled activation of high-
efficiency pumps.

Article

Article-No.

Hint



"Regusol X-Uno 25" with heat exchanger

Station with heat exchanger
1 solar circuit connection
with electronic controller "Regtronic RX"
with full graphic display and data output (S-bus)

Capacity: 25 kW
Number of heat exchanger plates: 30

Connections:
Primary side: G 1 "Regusol" compression fittings
Secondary side: G 1 flat sealing

kvs = 2.4 m³/h primary side
(with a glycol proportion of 40 % in the solar liquid)
kvs = 3.6 m³/h secondary side

with Wilo PARA high-efficiency pumps 1361060

Primary side: ST 15-130/7-50/iPWM2-6
Secondary side: 15-130/7-50/iPWM2-9



"Regusol X-Duo 25" with heat exchanger

Station with heat exchanger
1 solar circuit connection/
2 loading circuit connections
with electronic controller "Regtronic RX"
with full graphic display and data output (S-bus)

Capacity: 25 kW
Number of heat exchanger plates: 30

Connections:
Primary side: G 1 "Regusol" compression fittings
Secondary side: G 1 flat sealing

kvs = 2.4 m³/h primary side
(with a glycol proportion of 40 % in the solar liquid)
kvs = 3.2 m³/h secondary side

with Wilo PARA high-efficiency pumps 1361050

Primary side: ST 15-130/7-50/iPWM2-6
Secondary side: 15-130/7-50/iPWM2-9

For the extension of a "Regusol X" station with high-efficiency pump for the interconnection and regulation of different collector fields (e.g. east/west), see supplementary set "Regusol X": page 838

Product assembly with electronic controller, with heat exchanger, with three-way conversion valve for second secondary circuit ("Regusol X-Duo 25" only) for a controlled transmission of the heat of the solar circuit (primary circuit) to a buffer storage cylinder (secondary circuit), for instance for existing storage cylinders without direct solar connection.

The three-way valve integrated in the supply pipe of the secondary circuit ("Regusol X-Duo 25" only) allows the conversion to an additional loading circuit running in parallel, for instance for the loading section by section of the storage cylinder or the thermal loading of another storage cylinder.

Primary circuit: up to PN 10 and 120 °C
Starting temperature: 160 °C
Secondary circuit: up to PN 6 and 120 °C constant operation

The soldered plate heat exchanger complies with the demands of the European Pressure Equipment Directive (PED). Due to turbulent flow conditions, an excellent self-cleaning effect is produced and a contamination is avoided.

The solar circuit is protected against excess pressure by a safety group integrated in the heat exchanger system. The leak tested components of the heat exchanger system are pre-assembled on a board. The controller is cabled with the internal electric components and has the following connections:

Output for solar circuit pump
Output for loading pump
Output for conversion valve
("Regusol X-Duo 25" only)

Apart from the outputs mentioned above the "Regtronic RX" has a data bus (S-bus) for the connection to the data logger "CS-BS".

Temperature inputs for:
Collector, heat exchanger entry point - primary side, heat exchanger exit point - secondary side, 3 temperature inputs for storage cylinder with loading operation section by section, interfaces for electronic flow sensor.
Plain text is clearly shown on the display of the controller.

The heat exchanger system is completely insulated and can be quickly connected to the primary side using compression fittings and to the secondary circuit using flat seals and be put into operation.

The indicated capacity for the heat transmission applies to a useable solar global radiation of 500 W/m².

The actual heat transmission depends on:

- the reached flow temperature and the volume flow of the primary circuit
- the flow temperature difference between the primary and the secondary circuit
- the required flow temperature and the flow rate of the secondary circuit

Article

Article-No.

Hint

"Regumaq X-30" - without circulation connection

Fresh water station
with electronic controller "Regtronic RQ"
with full graphic display and data output (S-bus)



with Wilo high-efficiency pump Yonos PARA RS 130 15/7 PWM2
for the buffer side
Number of heat exchanger plates: 30

Discharge capacity: 2 - 30 l/min.
depending on the set potable water temperature
and the existing water temperature inside the buffer storage cylinder

Max. operating pressure p_s : 10 bar
Max. operating temperature t_s : 95 °C

Control range of potable water temperature: 20 °C - 60 °C

Connections: G 1 flat sealing for the connection to the
buffer and potable water circuit

Potable water circuit:
Volume flow sensor, safety valve 10 bar,
electronic resistance thermometer, 2 fill and drain cocks,
ball valves and thermometer

Buffer circuit: Fill and drain cocks, ball valves with and
without check valve and thermometer, circulation pump

Dimensions (outer dimensions of insulation):

Width: 500 mm

Height: 860 mm

Depth: 260 mm

Model with copper brazed
heat exchanger **1381030°**

Model with heat exchanger
completely made of stainless steel **1381032°**

Max. operating pressure p_s : 10 bar
Max. operating temperature t_s : 95 °C
Electronically controlled product assembly with
heat exchanger for the hygienic heating of
potable water according to the continuous flow
principle.

The potable water is only heated at the
moment when it is needed, i. e. "just in time".
The stations are especially suitable for
detached and semi-detached houses. They are
connected to buffer storage cylinders which
are heated up by solar energy, solid fuels, gas
or oil.

Depending on the temperature and the volume
flow on the potable water side, the circulation
pump on the heating side is speed regulated.
The plate heat exchanger complies with the
specifications of the European Pressure
Equipment Directive (PED).

Due to the turbulent flow, a good self-cleaning
effect avoiding a contamination is achieved.
The plate heat exchanger can be flushed using
the fill and drain cocks integrated in the
primary and secondary circuit.

The potable water circuit is protected by a
10 bar safety valve.

The components of the heat exchanger system
have flat sealing connections, are pre-
assembled on a mounting board and leak
tested.

The controller is wired up with the internal
electric components and features a data bus
(S-bus) for the connection to the data logger
"CS-BS".

"Regumaq XZ-30" - with circulation connection

Fresh water station
with electronic controller "Regtronic RQ"
and connection for potable water circulation systems



with Wilo high-efficiency pump Yonos PARA RS 130 15/7 PWM2
for the buffer side

with Wilo pump ZRS 130 15/4-3KU
for the potable water side (circulation)

Model with copper brazed
heat exchanger **1381035°**

Model with heat exchanger
completely made of stainless steel **1381037°**

Similar to "Regumaq X-30". The potable water
circuit is additionally equipped with a
circulation pump for the operation in a
circulation system.

With check valve in the circulation circuit.
Control functions individually programmable:
Adjustable circulation return temperature or
adjustable time frames and daily programmes.



"Regumaq XZ-30" - with circulation connection and high-efficiency circulation pump

Fresh water station
with electronic controller "Regtronic RQ"
and connection for potable water circulation systems

with high-efficiency pump Wilo-Yonos PARA RS 130 15/7 PWM 2
for the buffer side

with high-efficiency pump Wilo-Yonos PARA Z RKC 130 15/7
for the potable water side (circulation)

Model with copper brazed
heat exchanger **1381025°**

Model with heat exchanger
completely made of stainless steel **1381027°**

Similar to "Regumaq X-30". The potable water circuit is additionally equipped with a high-efficiency circulation pump for the operation in a circulation system.

With check valve in the circulation circuit.
Control functions individually programmable:
Adjustable circulation return temperature or
adjustable time frames and daily programmes.

Possible application of copper brazed plate
heat exchangers has to be checked. For further
information visit www.oventrop.com/to/trinkwasseranforderung.

6.1.g Actuators, sensors, valves and fittings

Content

System summary	916
----------------	-----

“Aktor” Actuators

Different types of control and actuators are used for the building automation:

For a complete isolation of the volume flow, the installation of an actuator with two point control (“on”/“off”) on the flow valve is sufficient.

Short and long stroke periods are optional.

When using mixing- or diverting valves, intermediate actuator positions become necessary for the adaptation of two volume flows.

These actuators feature a steady control and any position between fully open and fully closed can be initiated.

Depending on whether a control voltage is supplied by the building automation permanently or only at the point of adjustment, distinction is made between the 0-10 V and three point control.

As before with the two point actuators, a long or short stroke period is optional.



“Aktor T 2P”
Electrothermal actuator (two point)

For room temperature control
or as a zone valve.
Page 44.



“Aktor M 2P”
Electromotive actuator (two point)
230 V/24 V, two point actuator,
without anti-blocking function

With quick stroke.
Page 45.



“Aktor M 3P”
Electromotive actuator (three point)
230 V/24 V, three point actuator,
without anti-blocking function

Page 46.



“Aktor T ST L”
Electrothermal actuator (0-10 V)
24 V, steady control

For steady room temperature
control.
Page 45.



“Aktor M ST L” with adjustable characteristic lines
Electromotive actuator (0-10 V)
24 V, steady control

Electromotive actuator with
varied adjustable characteristic
lines (linear, equal percentage).
Page 46.



Actuators with Modbus RTU interface
“Aktor M ST”
connection thread M 30 x 1.5

Page 357 and page 358.

Legend: M: Electromotive actuator
T: Electrothermal actuator

NO: Normal open
NC: Normal closed

2P: Two point control
3P: Three point control

ST: Steady control
CON: Controller integrated

L: 24V
H: 230V
B: Battery

“Sensor” Sensors

Different types of sensors for the detection of temperature, humidity, pressure and other physical values are used in centralised building control systems. Distinction is made between passive sensors (e.g. PT1000, N1000) and active sensors (e.g. 0-10 V output signal). Moreover, the sensors are used for different applications (e.g. potable water).



“Sensor GA FD”
Dew point control with alternating contact

Is required in conjunction with room thermostats to protect chilled surfaces against condensation.
Page 252.



“Sensor LW TH/pipe”
Temperature sensor, PT1000, cold

Sensor attached to the pipe with clip fixing.
Page 513.



“Sensor LW TH”
Electric sensor attached to pipe, bimetal

For max. limitation of the flow temperature of surface heating systems.
Page 592.



“Sensor LW TH”
Temperature sensor, PT1000
Solar collector
-50 °C up to +180 °C

For electronic detection of the solar collector temperature.
Page 513.



“Sensor LW TH”
Temperature sensor, PT1000
Heating systems
-10 °C up to +105 °C

For electronic temperature detection in storage cylinders or heating systems.
Page 513.



“Sensor LW TQ”
Temperature sensor G ¼, PT1000

For electronic temperature detection in storage cylinders or heating systems.
Page 720.



“Sensor LW TQ”
Insertion sensor element, PT1000

For electronic temperature detection in potable water risers. Suitable for all “Aquaström” valves with thermometer connection.
Page 902.

Legend: L: Liquid W: Water A: Air T: Temperature C: Concentration Q: Potable water D: Dew point
G: Gas O: Oil C: CO₂ content F: Humidity P: Pressure H: Heating water/cooling water U: Transformer

Valves and controls

For heating and cooling system control, the volume flows in the terminal units such as radiators, chilled ceilings, fan coils etc. are balanced by corresponding valves and controls.

At the same time, presetting for hydronic balancing can be carried out at the valves or the volume flow is limited automatically.

The list illustrates a choice of valves and controls for different applications.

The valves and controls can be combined with the preceding actuators.



"AQ/AV9" Thermostatic valves
DN 10 – DN 25

Thermostatic valve for room temperature control at radiators with classic valve connection. Can also be used as zone valve for smaller dimensions
Page 62 / 60-61



"Multiblock TQ" Two pipe fitting
Straight pattern

Connection fittings
"Multiblock T" for the control and isolation of radiators with a lower connection of 50 mm. For two and one pipe heating systems.
Page 65 / 100.



Valve insert (M 30 x 1.5)
for radiators with integrated distributor

Valve insert for radiators with integrated distributor.
Page 130.



"Multidis SH" Stainless steel distributor/collector for radiator connection
flat sealing

Stainless steel distributor/collector "Multidis SH" for radiator connection, surface temperature balance (heating/cooling). Connection of one actuator for each connected circuit.
Page 156.



"Cocon QTZ" Pressure independent control valves PN 16

Pressure independent control valve "Cocon QTZ" for central heating and cooling systems with closed circuits. The valve combination consists of an automatic flow regulator and a regulating valve. It is also used for room temperature control with the help of an actuator or can be used as a zone valve.
Page 326.



"Cocon QFC" Pressure independent control valves PN 16
"classic" measuring technique

The pressure independent control valve "Cocon QFC" is installed in heating and cooling systems with closed water circuit (e.g. central heating systems, surface heating systems, fan coil units, chilled ceilings and fan convectors) for an automatic low control (hydraulic balancing) and for room temperature control via actuators with a modified low rate.
Page 328.

Hydronic balancing of heating and cooling systems is of major importance for an efficient operation.

This relates for instance to the regulation of radiators, chilled ceiling elements or pipework valves in heating and cooling systems. The status data is processed or monitored by the centralised building control system.

Oventrop offers valves and controls for different applications which are displayed in the below list.

The valves and controls can be combined with the preceding actuators.



**"Hycococon HTZ" Regulating valve PN 16
with infinitely variable presetting
"eco" measuring technique**

High kv value.
Page 287.



**"Flypass" connection sets
DN 15 – DN 20**

Consisting of connection fitting,
strainer and "Cocon QTZ".
Page 343.



**"Optibal W6"
Six-way ball valve
DN 15 – DN 20**

Page 339.

Customer services and data

	Page
<hr/>	
7.1.a Service	
Content	925
System design	926
Rental devices	929
Catalogue	930
<hr/>	
7.1.b Software, data, data sets	
Content	931
Software	932
Oventrop App	932
BIM/CAD data	932
ETIM classifications	932
VDI 3805 data sets	932
Article master data	932

7.1.a Service

Content

System design	926
Rental devices	929
Catalogue	930

Article	Article-No.	Hint
System design		Prerequisite: A service agreement is concluded for the design.
Surface heating design "Cofloor"		
Basic	9900015	The design is based on the parameters, data and installations indicated in the service agreement. The results have to be checked on site. The service agreements can be found under www.oventrop.com/service .
Scope of service: – Determination and tabular output of room heating and laying data (number of heating circuits, pipe lengths, laying pattern, volume flow, pressure loss, presetting values, surface temperatures) – Determination of Oventrop components – Optional: Compilation of tender specifications (word and GAEB format)		
Basic plus	9900016	
Scope of service: – Determination and tabular output of room heating and laying data (number of heating circuits, pipe lengths, laying pattern, volume flow, pressure loss, presetting values, surface temperatures) – Determination of Oventrop components – Optional: Compilation of tender specifications (word and GAEB format) – Entry of the laying data (number of heating circuits, laying pattern, circuit length) into the ground plan in the form of heating circuit stamps		
Premium	9900017	
Scope of service: – Determination and tabular output of room heating and laying data (number of heating circuits, pipe lengths, laying pattern, volume flow, pressure loss, presetting values, surface temperatures) – Determination of Oventrop components – Optional: Compilation of tender specifications (word and GAEB format) – Entry of the laying data (number of heating circuits, laying pattern, circuit length) into the ground plan in the form of heating circuit stamps – Graphic planning for heating circuit installation / location of the distributors/collectors, supply pipes and heating circuits – Determination of the pipe diameters from the heat generator to the respective heating circuit distributor/collector – Determination of the pump output – Buffer storage cylinder design, if required – Data output in a riser scheme		
Industrial surface heating design Premium	9900020	
Scope of service: – Determination and tabular output of room heating and laying data (number of heating circuits, pipe lengths, laying pattern, volume flow, pressure loss, presetting values, surface temperatures) – Determination of Oventrop components – Optional: Compilation of tender specifications (word and GAEB format) – Entry of the laying data (number of heating circuits, laying pattern, circuit length) into the ground plan in the form of heating circuit stamps – Graphic planning for heating circuit installation / location of the distributors/collectors, supply pipes and heating circuits – Determination of the pipe diameters from the heat generator to the respective heating circuit distributor/collector – Determination of the pump output – Buffer storage cylinder design, if required – Data output in a riser scheme		

Article	Article-No.	Hint
Dwelling station "Regudis" design Scope of service: <ul style="list-style-type: none"> – Determination and calculation of the number of "Regudis" dwelling stations – Dimensioning of the pipework (heating) from the heat generator to the dwelling stations – Determination of the pipe diameters (PWC) from the house connection to the dwelling stations – Determination of the pump output – Heat generator and buffer storage cylinder design – Result output in a riser scheme 	9900033	Prerequisite: A service agreement is concluded for the design. The design is based on the parameters, data and installations indicated in the service agreement. The results have to be checked on site. The service agreements can be found under www.oventrop.com/service .
Fresh water stations "Regumaq" design Scope of service: <ul style="list-style-type: none"> – Determination and calculation of the number of "Regumaq" stations – Determination of the total number of cascades – Determination of the pipe diameters between the buffer storage cylinder and the fresh water station – Determination of the pipe diameters (PWC) from the house connection to the fresh water station – Heat generator and buffer storage cylinder design – Tabular result output 	9900034	
Solar package "Solcos" design Basic Scope of service: <ul style="list-style-type: none"> – Determination and calculation of the number of solar collectors – Solar pipework design with pipe diameters, pump head and valve settings – Buffer storage cylinder design – Output of a material list – Calculation of a package, if required 	9900039	
Premium Scope of service: <ul style="list-style-type: none"> – Determination and calculation of the number of solar collectors – Solar pipework design with pipe diameters, pump head and valve settings – Buffer storage cylinder design – Output of a material list – Calculation of a package, if required – Static calculation of the wind and snow load 	9900041	
Building Automation "DynaTemp" design Scope of service: <ul style="list-style-type: none"> – Determination and elaboration of a concept – Creation of parts lists – Transformer design – Entry of the components and pipes into the ground plan 	9900040	

Article	Article-No.	Hint
Thermostatic valve design Scope of service: – Thermostatic valve design including presetting values – Determination of the pipe diameters (heating) according to the specifications – Determination of the pump output – Heat generator and buffer storage cylinder design – Data output in a riser scheme	9900025	Prerequisite: A service agreement is concluded for the design. The design is based on the parameters, data and installations indicated in the service agreement. The results have to be checked on site. The service agreements can be found under www.oventrop.com/service .

Rental devices



"OV-DMC 3" Measuring system	1069278
-----------------------------	---------

with interfaces for communication with standard smartphones, tablets and personal computers

Item	Note
------	------



Seminars
Oventrop offers professional seminars.
E.g.: Hydronic systems
Calculation of heating cooling and
sanitary installations

For detailed information
on the seminars visit
www.oventrop.com



Slide rules
for the design of valves for
hydronic balancing



Catalogue
Catalogue “Products” **9999971**

7.1.b Software, data, data sets

Content

Software	932
Oventrop App	932
BIM/CAD data	932
ETIM classifications	932
VDI 3805 data sets	932
Article master data	932

Item

Note



Software (Windows)

“OVplan”

Software for pipework calculation for heating, cooling, potable water, surface heating systems as well as dwelling stations “Regudis”

“OVe.r.p.”

Software for the calculation of the energy efficiency classes of packages according to the ErP Directives.

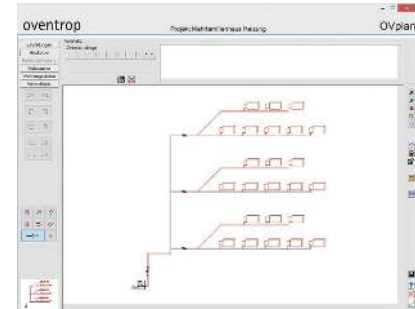
“OVsol”

Solar pipework calculation

“OVselect”

Software for valve design

The software can be downloaded from the Internet (www.orientrop.com).



Oventrop App

- iOS
- Android

Functions of the Oventrop App:

- Calculation of the energy efficiency classes of packages according to the ErP Directives
- Heat load calculation according to DIN EN 12831
- Determination of the radiator capacity
- Thermostatic valve design
- Double regulating and commissioning valve design
- Differential pressure regulator design
- Technical data
- Oventrop catalogue



Data

BIM/CAD data

(Building Information Modelling)

Formats:

- Revit
- DWG
- VDI 3805

ETIM Classification

VDI 3805 – Data sets for technical software

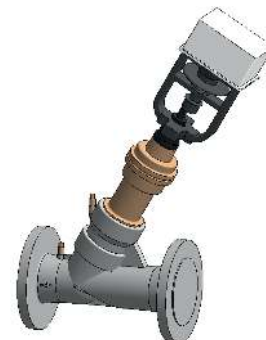
- Heating
- Potable water
- Surface heating
- Solar thermal energy
- Storage cylinders

Article master data

Formats:

- Excel
- 2ba

All data can be downloaded from the Internet (www.orientrop.com).



General information

	Page
<hr/>	
8.1.a Indices	
Content	937
Alphabetical Index	938
Article number, EAN code	944
<hr/>	
8.1.b General conditions	
Content	985
Standard Terms and Conditions	986
<hr/>	
8.1.c Imprint	
Content	987
Imprint	988

8.1.a Indices

Content

Alphabetical Index	938
Article number, EAN code	944

Article	Page	Article	Page
A			
"ABR-55"	894	"Cocon QDP" Differential pressure regulator PN 25	330
Actuator for wireless thermostats "mote 320"	54	"Cocon QFC" Pressure independent control valves	328
Adapter	35	"Cocon QTR" Pressure independent control valves	328
Adapter for "Cocon QTZ"	332	"Cocon QTZ" Pressure independent control valves	125, 326
Air conditioning and ventilation	367	"Cofit P"	620
Airvent PN 25	397	"Cofit PD"	630
Airvents	256, 416	"Cofit PD-HT"	658
"Aktor M" Electromotive actuators	46, 253, 357, 514	"Cofit PDK-HT"	638
"Aktor T 2P" Electrothermal actuators (two point)	44	"Cofit S"	231, 640
"Aktor T ST" Electrothermal actuators (0-10 V)	44, 356, 896	"Cofloor" Surface heating and cooling	173
Angle pattern adapter	35, 594	Collar nut cover	35
Angle pattern connection set	246	Collectors "OKF", "OKP"	841
Anti-siphon valves	786	"Combi 2"	154
Anti-theft ring	35	"Combi 3"	153
"Aquamodul"	725	"Combi 3G"	80
"Aquamodul" Distributor system for potable water	723	"Combi 4"	152
"Aquanova Compact"	726, 734	"Combi C"	152
"Aquanova Magnum"	536, 544, 735	"Combi E"	96
"Aquastron T plus"	693	"Combi LR"	154
"Aquastron C"	696	"Combi-System" Connection technology	607
"Aquastron DT"	901	Components for concrete core activation	267
"Aquastron F"	674	Composition pipes "Copipe HS"	614
"Aquastron KFR"	678	Composition pipes "Copipe HSC"	229, 612
"Aquastron M" Measuring and draining device	698	Compression fittings "Cofit S"	116
"Aquastron P"	537, 544, 698	Compression fittings "Ofix CEP"	164, 317
"Aquastron R"	538, 543, 686	Compression fittings "Ofix K"	165, 231
"Aquastron UP"	700	Compression fittings "Ofix-Oil"	793
"Aquastron UP-MS" Water meter installation set	704	Compression fittings "Snap & Seal"	165
"Aquastron VT"	692	Concrete core activation	267
Automatic hydronic balancing	61	Condensate collectors	775
		Connection couplings "Cofit"	621
		Connection fittings	150, 537, 544, 730
		Connection of heat generators to heating circuit	423
B		Connection of the boiler and the storage cylinder to the pipework	558
Ball valves "Optibal" brass	382	Connection pieces	150
Ball valves "Optibal" bronze	390	Connection pieces "Cofit"	640
Ball valves "Optibal TW"	688	Connection piping "Regumaq K"	552
Ball valves "Optiflex"	240, 256, 270, 562	Connection system for "Bypass-Combi" one pipe/two pipe	110, 114, 166
Ball valves DZR "Optibal"	387	Connection technology "Combi-System"	607
Base mats	218	Connection technology for fittings "Multiflex"	110, 114, 164, 166, 317
BIM	931	Connection technology for heating oil valves	791
Blind plugs	162	Connection technology for radiator lockshield valves "Combi 2/ 3/ 4"	164, 317
Boiler connection systems "Regumat"	423, 431	Connection technology for thermostatic valves	164, 317
Boiler safety device "MSM-Block"	561	Connection technology for valves for water distribution	745
Brass distributor/collector for industrial surface heating and cooling systems "Multidis SFI"	239, 269	Control unit "Regufloor H"	248
Brass reinforcing sleeves	167, 795, 834	Control unit "Regufloor HC"	252
"Brawa-Mix"	712, 866	Control unit "Regufloor HX"	254
Bronze four-way mixing valve	434	Conversion fittings	160
Buffer storage cylinders	602	Conversion valves	118
Buffer storage cylinders "Hydrocor HP"	602	"Copert"	230, 617
"Bypass-Combi Duo"	111	"Copex"	228, 616
"Bypass-Combi Uno"	115	"Copipe HS"	614
Bypass isolating valve	738	"Copipe HSC"	229, 612
Bypass mixing valves	739	Cover	36
		"CS-BS" data logger	905
		D	
C		DDC "CS-BS"	905
Cabinets	157, 242	DDC "CW-BS"	901
Cascade control sets	552	Deaerator	256, 416
Change-over valves	788		
Check valves	568		
Check valve - universal model	568		
Circulation stations	716		
Clamping rail	223		
"classic" measuring technique	312, 334, 365		
Climate meter "i-Tronic TFC"	50		

Article	Page	Article	Page
"Demo-Bloc"	67, 81, 294	Filters	757
Dew point control	252, 355	Fittings	791
Diaphragm anti-siphon valves "Oilstop"	786	Fixing channel with isolating facility	198
Diaphragm expansion tanks	595, 860	Fixing material for pipes	646
Differential pressure regulators "Hycoccon DTZ"	288	"FK-C F"	56, 60, 212, 884, 895
Differential pressure regulators "Hydromat DFC"	309	Flanged pipes	433, 444, 465, 479
Differential pressure regulators "Hydromat DTR"	308	Flat-plate collectors "OKF"	846
Differential pressure relief valves	569	Flexible hoses	796
Differential pressure transmitter "OV-Connect"	364	Flexible pipes	862
Distributor/collector for surface heating and cooling systems	238, 268	Flexible suction pipes	782
Distributors for "Regumat"	486	"Flexo-Bloc"	779
Distributor system for potable water	723	"Floorbox U"	197
"Aquamodul"		Floor distributor/collector	157
District heating	571, 573	Flow controller	530
Domestic water stations	732	Flow switch	554
Double ball foot valves	781	Flushing station "Regudrain"	720
Double nipples "Cofit S"	232, 641	Flush-mounted valves "Aquastrum UP"	700
Double nipples "Ofix-Oil"	795	"Flypass 4TZ"	346
Double regulating and commissioning valves "Aquastrum C"	696	"FM-CW K"	902
Double regulating and commissioning valves "Hycoccon VTZ"	284	"FM-CW Plus"	901
Double regulating and commissioning valves "Hydrocontrol STR"	304, 832	Four-way mixing valve	434
Double regulating and commissioning valves "Hydrocontrol VFC"	300	Free-flow valves "Aquastrum F"	674
Double regulating and commissioning valves "Hydrocontrol VFN"	303	Fresh water station "Regumaq XH"	553
Double regulating and commissioning valves "Hydrocontrol VFR"	302	Fresh water stations "Regumaq"	533
Double regulating and commissioning valves "Hydrocontrol VGC"	303	Fuel gauge locks	772
Double regulating and commissioning valves "Hydrocontrol VTR"	298		
Double regulating and commissioning valves with flow display "Hycoflow"	322, 347	G	
Double regulating and commissioning valves with measuring orifice "Hydrocontrol MPR"	304	Gate valves	392
Double regulating and commissioning valves with measuring orifice "Hydrocontrol MTR"	304	Gate valves "Hygate"	392
Draining and venting valves	564	Gauge cock, button type	566
Dry-build system "Cofloor"	225	Gauge cocks	566
"DynaTemp HA"	54	Gauge isolating valves	567
		General conditions	24
E		Gland fittings	782
"eco" measuring technique	312, 334, 365	Graduated collar "Uni Clip"	35
Elbows "Cofit"	622	Gravel plate set "OKF"	851
Elbows "Cofit PD"	632		
Electric sensor attached to the pipe	592	H	
Electromotive actuators "Aktor M"	46, 253, 357, 514	Heat exchangers "Regumat"	830
Electronic volume flow sensor	837	Heating oil deaerator "Toc-Uno-A"	759
Electrothermal actuator (0-10 V) "Aktor T ST"	44, 356, 896	Heating oil deaerator "Toc-Uno-B"	759
Electrothermal actuators (two point) "Aktor T 2P"	44	Heating oil filter/Heating oil deaerator "Toc-Duo-3"	758
Energy storage centre	589	Heating oil filters "Oilpur"	762
ETIM	931	Heating oil filters for two pipe systems	764
Exclusive radiator valves	94	Heating oil flexible hoses	796
"Expa-Con"	561	Heating oil kits	799
Expansion strip	226	Heating oil sets	800
Expansion tanks	595, 860	Heating oil technology	751
Expansion tanks "Solar"	595, 860	Heating oil valves in the pipework	785
		Heating system filling station	561, 732
F		Heat meter connection set	482
Fill and drain ball valves	564, 727	Heat meter connection sets	244, 506
Fill and drain ball valves for potable water	562, 727	Heat pump installation products	477
"Optiflex"		Heat pump installations	478
Filter inserts for heating oil filters	768	Heat transfer liquid	845
		High-efficiency pumps	464, 500
		High-efficiency pump Wilo-Yonos PARA	249
		High pressure ball valves "Optibal"	390
		High-temperature ball valves "Optibal"	389, 556, 868
		"Hycoccon ATZ"	285
		"Hycoccon DTZ"	288
		"Hycoccon ETZ"	286
		"Hycoccon HTZ"	287
		"Hycoccon VTZ"	284
		"Hycoflow VTB"	322, 347
		"Hydrocontrol AFC"	306
		"Hydrocontrol ATR"	306
		"Hydrocontrol MFC"	305

Article	Page	Article	Page
"Hydrocontrol MPR"	304	"Multiflex F"	146
"Hydrocontrol MTR"	304	"Multiflex FQ"	144
"Hydrocontrol STR"	304, 832	"Multimodul"	149, 624
"Hydrocontrol STR" Double regulating and commissioning valves	304, 832		
"Hydrocontrol VFC"	300	N	
"Hydrocontrol VFN"	303	Nipples "Cofit S"	231, 640
"Hydrocontrol VFR"	302	Non-return ball check valves	781
"Hydrocontrol VGC"	303		
"Hydrocontrol VTR"	298	O	
"Hydrocor HP"	602	Oblique pattern drain valves PN 25	396
"Hydrocor HS"	602	Oblique pattern globe valves bronze	396
"Hydrocor WM"	581, 603	Oblique pattern globe valves PN 25	396
"HydroFixx" Hydronic header	488	"Ofix" Connection technology	164, 317
"Hydromat DFC"	309	"Ofix-Oil" Compression fittings	793
"Hydromat DFC" Differential pressure regulators	309	"Ofix-Oil" Double nipples	795
"Hydromat DTR"	308	Oil draining facilities "Flexo-Bloc"	779
Hydronic balancing in heating and cooling systems	273	"Oilpur"	762, 764
Hydronic header	488	"Oilstop"	786
Hydronic headers	488	"Oilstop MV"	786
"Hygate AFC"	393	"Oilstop V"	786
"Hygate ATB"	392	"OKF" Flat-plate collectors	846
"Hygate ATR"	392, 868	"OKF" Gravel plate set	851
		"OKP" Tube collectors	842
I		"Olex"	787
Indices	24	One pipe system	762
Industrial surface heating and cooling	239, 269	"Optibal"	382, 389, 556, 868
Inserts for pressure relief device	433, 444	"Optibal TW"	687, 688
Isolating and orifice valves "Hycocan ATZ"	285	Optibal W6 Six-way ball valve	339
Isolating and orifice valves "Hydrocontrol AFC"	306	"Optiflex"	240, 256, 270, 562
Isolating and orifice valves "Hydrocontrol ATR"	306	"Optiflex" Fill and drain ball valves for potable water	562, 727
Isolating and other pipe fittings	379	Oval clamps	862
Isolating valves	788	"OVbalance Home"	58, 882
"i-Tronic TFC" Climate meter	50	"OVbalance Home" Basic set	58, 882
		"OV-DMC 3"	362
K		"OV-Flex"	862
KFR-valves "Aquastron KFR"	678	"OV-Flex ST"	862
		P	
L		"pinox D"	31
Liquid safety device	783	"pinox H"	27
Local and district heating technology	571, 573	Pipe connection elbow	198
Lockshield valves "Combi 2"	154	Pipe connection T-piece	198
Lockshield valves "Combi LR"	154	Pipes "Copert"	230, 617
		Pipes "Copex"	228, 616
M		Pipes "Copipe HS"	614
Manual heads	36, 257	Pipes "Copipe HSC"	229, 612
Manual radiator valves	142	Piston type spring assisted check valves	404
Manual radiator valves "HR"	142	Plastic pipes	230, 617
Manual radiator valves "HRV"	142	Pneumatic level Indicators	775
Measuring and draining device "Aquastron M"	698	Potable water technology "Aquanova-System"	665
Measuring orifices	318	"Power to heat"	597, 0
Measuring system "OV-DMC 3"	362	Press fittings	620, 630
Measuring systems	361	Pressure balance device "Olex"	787
Mixing valves	433, 445, 483	Pressure independent control valves "Cocon"	323
"mote 200" Electronic wireless thermostat	34	Pressure test plug	627, 643
"mote 320" Actuator for wireless thermostats	54	Products for air conditioning and ventilation	367
"MSM-Block"	561	Products for heat pump installations	477
"Multiblock T"	100	Protective tube for "Copipe"	226, 646
"Multiblock TF"	104	Pump ball valves "Optibal P"	556
"Multiblock TQ" Two pipe fitting	65		
"Multiblock TQ-RTL"	66	Q	
"Multiblock T-RTL"	105	Quick acting isolating valves	788
"Multiblock TU"	101		
"Multidis R" Sanitary distributor	742	R	
"Multidis SF"	238, 268	Radiant and chilled ceiling systems	371
"Multidis SFB"	239	Radiator connection	149, 624
"Multidis SFI"	239, 269	Radiator connection "Multimodul"	149, 624
"Multidis SFQ"	234	Radiator connection block	624
		Radiator connection elbow	625

Article	Page	Article	Page
Radiator lockshield valve "Combi 3G"	80	Room temperature sensor	251, 498, 829, 908
Radiator lockshield valves "Combi 2"	154	Room temperature sensor with remote control	251, 498, 514, 829, 908
Radiator lockshield valves "Combi 3"	153	Rosette covers	150, 646
Radiator lockshield valves "Combi 4"	152	"RP-C F"	212, 895
Radiator lockshield valves "Combi C"	152	"R-Tronic" Climate display device/control	53, 211
Radiator lockshield valves "Combi E"	96	"R-Tronic RT B"	53, 211
Radiator lockshield valves "Combi LR"	154	"R-Tronic RTF B"	53, 211
Radiator valve sets "Uniset"	80	"R-Tronic RTFC K"	53, 211
Radiator valves with insertion tube	112		
"RBG-C F"	894	S	
"RBG-C K"	894	Sanitary distributor "Multidis R"	742
"R-Con" Wireless receiver	55, 213, 885	S-connection fittings	121, 160
"R-Con 2P" Wireless receiver	56	Screwed fittings "Cofit"	630
"Regtronic EM"	251, 497, 581, 907	Screwed fittings "Cofit S"	232, 641
"Regtronic RC"	827	"Sensor GA FD" Dew point control	252, 355
"Regtronic RC plus"	827	"Sensor LW TH/pipe" Temperature sensors	551
"Regtronic RD-W"	512	"Sensor LW TH" Electric sensor attached to the pipe	592
"Regtronic RM"	497, 828	"Sensor LW TH" Temperature sensor	499, 513, 595, 717, 829
"Regtronic S-bus"	827	"Sensor LW TQ" Plug-in sensor element	694
Regubox Exclusive cabinet	243, 527	"Sensor LW TQ" Temperature sensor	720, 902
"Regucirc B"	716	Service	923
"Regucirc M"	717	"SH-Cap"	26
"Regucor WH"	590	Smart Home, centralised building control systems and other electronic controls	875
"Regucor WHP" Energy storage centre	599	"Solar" expansion tanks	595, 860
"Regucor WHS"	589	Solar buffer storage cylinder "Hydrocor HS"	602
"Regudis W-HTE" Dwelling station	504	Solar buffer storage cylinders	602
"Regudis W-HTF"	521, 523	Solar packages "Solcos"	856
"Regudis W-HTO" Dwelling stations	519	Solar thermal energy	803
"Regudis W-HTU Basic"	520	Solenoid valve "Oilstop MV"	786
"Regudis W-HTU Duo"	520	Special thermostats	33
"Regudis W-TU"	519	Stainless steel corrugates pipes	862
"Regudrain" Flushing station	720	Stainless steel distributor/collector for surface heating and cooling systems "Multidis SF"	238, 268
"Regufloor H"	248	Stainless steel distributor/collector for surface heating and cooling systems "Multidis SFB"	239
"Regufloor HC"	252	Stem extension	386
"Regufloor HN"	248	Storage cylinder loading set	558
"Regufloor HW"	248	Storage cylinders	602
"Regufloor HX"	254	Storage cylinders "Hydrocor"	602
Regulating sets for surface heating systems	259, 260	Straight pattern globe valves bronze	396
Regulating valves "Hycococon ETZ"	286	Strainers	418, 713, 717, 867
Regulating valves "Hycococon HTZ"	287	Suction pipes	782
"Regumaq K"	552	Surface heating and cooling "Cofloor"	173
"Regumaq K" Connection piping	552	Surface heating without distributor/collector	195
"Regumaq X-25"	534	"Unidis"	
"Regumaq X-30"	546, 912	Swing type check valves	404
"Regumaq X-45"	535		
"Regumaq X-80"	541	T	
"Regumaq XH"	553	Tacker system "Cofloor"	222
"Regumaq XZ-30"	546, 912	Tailpipe set	75, 121, 317
"Regumat"	431	Tank filling limiters	776
"Regumat" Modular distributor	486	Tank inlet caps	772
"Regumat F/FR"	463	Temperature controllers	351, 865
"Regumat RTA"	472	Temperature sensors	499, 513, 595, 717, 829
"Regusol" Flushing and filling station	845	Thermal drainage protection device	475
"Regusol FSA"	835	Thermostas for radiant and chilled ceiling systems	371
"Regusol MAG"	595, 860	Thermostat "pinox D"	31
"Regusol SB"	835	Thermostat "pinox H"	27
"Regusol SG"	835	Thermostat "Uni CH"	27
"Regusol X" Supplementary set	838	Thermostat "Uni FD"	32
"Regusol X-Duo 25"	821, 911	Thermostat "Uni FH"	28, 257
"Regusol X-Uno 25"	821, 911	Thermostat "Uni FHZ"	897
Reinforcing cap	36, 897	Thermostat "Uni L"	33
Relay module "REM-CW"	902	Thermostat "Uni LA"	33
"REM-CW" Relay module	902		
Return temperature control "Unibox"	181		
Return temperature limiters	140, 264		
"RM- C F"	893		
"RM- C F8"	894		
"RM-C K"	893		
"RM-C K8"	893		
Roof fixing devices "OKF"	852		
Roof hooks	844		

Article	Page	Article	Page
Thermostat "Uni LDV"	32	"Unibox E BV"	202
Thermostat "Uni LDVL"	32	"Unibox E RTL"	202
Thermostat "Uni LH"	25, 204	"Unibox E T"	202
Thermostat "Uni LHB"	26	"Unibox plus"	203
Thermostat "Uni LHZ"	897	"Unibox RLA"	202
Thermostat "Uni LI"	33	"Unibox RTL"	203
Thermostat "Uni LK"	33	"Unibox T"	202
Thermostat "Uni LM"	33	"Uni CH"	27
Thermostat "Uni LO"	33	"Uni Clip"	35
Thermostat "Uni LR"	33	"Unidis" Surface heating without distributor/ collector	195
Thermostat "Uni LV"	33	"Uni FD" Thermostat with remote control	32
Thermostat "Uni RTL"	138, 264	"Uni FH" Thermostat with remote control	28, 257
Thermostat "Uni RTLH"	138, 204, 264	"Uni FHZ"	897
Thermostat "Uni SH"	26	"Uni L"	33
Thermostat "Uni XD"	29	"Uni LA"	33
Thermostat "Uni XH"	24	"Uni LD"	30
Thermostat "Uni XHM"	24	"Uni LDV"	32
Thermostat "vindo TD"	31	"Uni LDVL"	32
Thermostat "vindo TH"	27	"Uni LH"	25, 204
Thermostatic mixing valve	712, 866	"Uni LHB"	26
Thermostatic mixing valves "Brawa-Mix"	712, 866	"Uni LHZ"	897
Thermostatic regulating valves "Aquaström T plus"	693	"Uni LI"	33
Thermostatic valve "RFV 9"	78	"Uni LK"	33
Thermostatic valves "A"	84	"Uni LM"	33
Thermostatic valves "ADV 9"	77	"Uni LO"	33
Thermostatic valves "AF"	74	"Uni LR"	33
Thermostatic valves "AQ"	62	"Uni LV"	33
Thermostatic valves "AV 9"	70	"Uni RTL"	138, 264
Thermostatic valves "AZ H"	86	"Uni RTLH"	138, 204, 264
Thermostatic valves "AZ V"	86	"Uniset" Radiator valve sets	80
Thermostatic valves "CV 9"	73	"Uni SH"	26
Thermostatic valves "E"	94	Universal fuel gauge lock	772
Thermostatic valves "EQ"	64	Universal tool	36, 72, 648
Thermostatic valves "RF"	87	"Uni XD"	29
Thermostatic valves "RFQ"	63	"Uni XH"	24
Thermostat with remote control "Uni FD"	32	"Uni XHM"	24
Thermostat with remote control "Uni FHZ"	897	"Uni XHT"	24
Thermostat with remote control and additional remote sensor	28, 257	"Unifix" Refurbishment of one pipe heating systems	123
Thermostat with remote sensor "Uni LH"	25		
Thermostat with remote sensor "Uni XH"	24		
Thin layer system	221		
Three-way conversion valves	118		
Three-way diverting and mixing valves "Tri- CTR"	253, 350, 864		
Three-way mixing valve	433, 445, 483		
"TKM" valves	112		
"TKM" Valves	117		
"Toc-Duo-3" Heating oil filter/heating oil deaerator	758		
"Toc-Duo-3" Metal model	758		
"Toc-Uno-A"	759		
"Toc-Uno-B"	759		
Tools for pipes	648, 661		
T-pieces "Cofit P"	623		
T-pieces "Cofit PD"	633		
TR-250	893, 901		
TR-80	893, 901		
"Tri-CTR" Three-way diverting and mixing valves	253, 350, 864		
Tube collectors	842		
Two pipe system	764		
Two-way valve PN 16	352		
U			
Underfloor control unit "Regufloor H"	248		
Underfloor control unit "Regufloor HC"	252		
Underfloor control unit "Regufloor HW"	248		
Underfloor control unit "Regufloor HX"	254		
V			
Vacuum gauge	766		
Valve inserts	130		
Valve inserts "GHQ"	128		
Valves "A"	84		
Valves "ADV 9"	77		
Valves "AQ"	62		
Valves "AV 9"	70		
Valves "AZ H"	86		
Valves "AZ V"	86		
Valves "CV 9"	73		
Valves "E"	94		
Valves "EQ"	64		
Valves "F"	74		
Valves "HR"	142		
Valves "HRV"	142		
Valves "RF"	87		
Valves "RFQ"	63		
Valves "RFV 9"	78		
Valves for "TKM" system one pipe	117		
Valves for "TKM" system two pipe	112		
Valves for water softening	737		
Valves PN 16/ 25	396		
Valves with lead sealable cap "Expa-Con"	561		
Vent caps	774		
Ventilation and air conditioning	367		
Venting screws	162, 728, 734, 736		
"vindo RTD"	31		
"vindo TD"	31		

Article	Page
"vindo TH"	27
Volume flow sensor	837
W	
Wall connection set	897
Wall mounted connection pieces "Cofit P"	626
Wall mounted connection pieces "Cofit S"	643
Wall mounting device for "Regumat"	433, 444, 465, 474, 479, 483
Water meter installation set "Aquastrum UP-MS"	704
Wilo-Yonos PARA high-efficiency pump	249
Wireless receiver "R-Con"	55, 213, 885
Wireless receiver "R-Con 2P"	56
Wireless thermostat "R-Tronic RT B"	53, 211
Wireless thermostat "R-Tronic RTF B"	53, 211
Wireless thermostat "R-Tronic RTFC K"	53, 211

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1010558	4026755285321	119	1012069	4026755355222	26
1010559	4026755285338	119	1012080	4026755301236	26
1010568	4026755285345	119	1012081	4026755301243	26
1010569	4026755285352	119	1012082	4026755320039	26
1010599	4026755114348	118	1012085	4026755316001	26
1010989°	4026755114652	76	1012165	4026755396461	27
1010990°	4026755114669	76	1012166	4026755414233	27
1010992°	4026755114683	76	1012175	4026755402018	31
1010993°	4026755114690	76	1012176	4026755440416	31
1010994°	4026755114706	76	1012275	4026755115437	32
1010997°	4026755114737	76	1012295	4026755115444	28
1010998°	4026755114744	76	1012295	4026755115444	257
1010999	4026755114751	161	1012296	4026755187526	28
1011265	4026755114850	27	1012296	4026755187526	257
1011300°	4026755249118	24	1012297	4026755187533	28
1011360	4026755276916	24	1012297	4026755187533	257
1011364	4026755219838	24	1012395	4026755187540	28
1011365	4026755219845	24	1012395	4026755187540	257
1011374	4026755231830	29	1012396	4026755187557	28
1011375	4026755225068	29	1012396	4026755187557	257
1011380	4026755353433	35	1012415	4026755415520	44
1011381	4026755353440	35	1012415	4026755415520	125
1011382	4026755353457	35	1012415	4026755415520	185
1011383	4026755353464	35	1012415	4026755415520	188
1011393	4026755248494	35	1012415	4026755415520	192
1011397°	4026755254525	35	1012415	4026755415520	193
1011401	4026755114904	33	1012415	4026755415520	196
1011410	4026755318043	26	1012415	4026755415520	216
1011440	4026755461565	30	1012415	4026755415520	252
1011445	4026755228717	35	1012415	4026755415520	356
1011450	4026755208160	35	1012416	4026755415537	44
1011450	4026755208160	594	1012416	4026755415537	125
1011452	4026755232004	35	1012416	4026755415537	216
1011461°	4026755296969	25	1012416	4026755415537	252
1011464	4026755182972	25	1012416	4026755415537	356
1011465	4026755114959	25	1012416	4026755415537	896
1011465	4026755114959	204	1012418	4026755420715	44
1011467	4026755114973	25	1012419	4026755420722	44
1011468	4026755175387	25	1012420	4026755418965	44
1011469	4026755175349	25	1012420	4026755418965	356
1011469	4026755175349	204	1012425	4026755415544	44
1011470°	4026755296976	30	1012425	4026755415544	356
1011472	4026755208801	30	1012426	4026755415551	44
1011475	4026755114980	30	1012426	4026755415551	356
1011478	4026755175363	30	1012435	4026755415568	44
1011479	4026755175332	30	1012435	4026755415568	356
1011488	4026755227758	25	1012442	4026755415988	44
1011489	4026755419467	36	1012442	4026755415988	356
1011489	4026755419467	72	1012442	4026755415988	896
1011493°	4026755232011	35	1012450	4026755422122	45
1011497	4026755342741	26	1012450	4026755422122	896
1011497	4026755342741	36	1012452	4026755415995	44
1011565	4026755229455	24	1012452	4026755415995	356
1011566	4026755231847	24	1012452	4026755415995	514
1011575	4026755229462	29	1012452	4026755415995	515
1011582°	4026755231854	24	1012455	4026755416008	44
1011665	4026755115123	25	1012455	4026755416008	356
1011666	4026755187489	25	1012459	4026755416015	44
1011682	4026755187502	25	1012459	4026755416015	356
1011685	4026755115185	30	1012461	4026755422139	45
1011688	4026755227765	25	1012462	4026755422146	45
1011698°	4026755232035	36	1012462	4026755422146	356
1011766	4026755232042	35	1012565	4026755115567	36
1011775	4026755234237	35	1012565	4026755115567	257
1011865	4026755115277	36	1012575	4026755182965	36
1011865	4026755115277	897	1012595*	4026755463224	185
1011866	4026755187519	36	1012595*	4026755463224	188
1011866	4026755187519	897	1012595*	4026755463224	192
1011875°	4026755115284	36	1012595*	4026755463224	193
1012065	4026755295030	26	1012595*	4026755463224	196
1012066	4026755382181	26	1012595*	4026755463224	200

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1012596*	4026755468564	185	1016196	4026755116885	118
1012596*	4026755468564	188	1016254	4026755116939	120
1012596*	4026755468564	192	1016256	4026755116946	120
1012596*	4026755468564	193	1016284	4026755116977	120
1012596*	4026755468564	196	1016286	4026755116984	120
1012596*	4026755468564	200	1016295°	4026755117028	120
1012597*	4026755468571	185	1016297°	4026755117042	120
1012597*	4026755468571	188	1016304	4026755117059	150
1012597*	4026755468571	192	1016362	4026755117141	149
1012597*	4026755468571	193	1016363	4026755229677	149
1012597*	4026755468571	196	1016372	4026755117158	149
1012597*	4026755468571	200	1016394°	4026755117226	119
1012710	4026755332285	46	1016452	4026755117257	149
1012710	4026755332285	357	1016462	4026755179569	149
1012710	4026755332285	594	1016463	4026755229684	149
1012711	4026755372182	46	1016567	4026755302585	148
1012711	4026755372182	357	1016569	4026755302592	148
1012717	4026755424744	46	1016575	4026755302608	147
1012717	4026755424744	357	1016577	4026755302615	147
1012725	4026755441055	46	1016662°	4026755117370	150
1012725	4026755441055	253	1016671°	4026755117387	150
1012725	4026755441055	357	1016671°	4026755117387	646
1012726	4026755441062	46	1016672°	4026755117394	150
1012726	4026755441062	253	1016672°	4026755117394	646
1012726	4026755441062	357	1016673	4026755117400	150
1012729	4026755441086	46	1016673	4026755117400	646
1012729	4026755441086	253	1016674	4026755117417	150
1012729	4026755441086	357	1016674	4026755117417	646
1012729	4026755441086	514	1016675°	4026755117424	150
1012745	4026755464672	357	1016675°	4026755117424	646
1012746*	4026755468472	47	1016684	4026755252804	116
1012746*	4026755468472	360	1016813	4026755250343	116
1012890	4026755357851	45	1016823	4026755250350	116
1012953	4026755423365	44	1016824	4026755250367	116
1012953	4026755423365	356	1016840	4026755281866	166
1012953	4026755423365	896	1016841	4026755281873	166
1013066	4026755327588	27	1016842	4026755281880	166
1013076	4026755327595	31	1016843	4026755281897	166
1013161	4026755115611	115	1016844	4026755281903	166
1013162	4026755115628	115	1016845	4026755281910	166
1013164	4026755370867	115	1016853	4026755117653	110
1013361	4026755115642	111	1016853	4026755117653	114
1015500	4026755116694	33	1016853	4026755117653	166
1015645°	4026755262537	624	1016860	4026755117660	166
1015651	4026755162479	149	1016861	4026755117677	166
1015651	4026755162479	624	1016862	4026755117684	166
1015711	4026755183931	148	1016863	4026755117691	166
1015781	4026755183924	146	1016864	4026755117707	166
1015803	4026755443080	144	1016865	4026755117714	166
1015804	4026755443097	144	1016870	4026755117721	166
1015805	4026755443103	144	1016873	4026755117738	166
1015813	4026755228878	148	1016874	4026755117745	166
1015814	4026755228885	148	1016876	4026755117769	166
1015873	4026755443110	144	1016877	4026755117776	166
1015874	4026755443127	144	1016879	4026755117790	166
1015875	4026755443134	144	1016882	4026755117820	166
1015883	4026755228892	146	1016883	4026755117837	166
1015884	4026755228908	146	1016885	4026755117844	166
1015896	4026755330649	146	1016951	4026755117851	110
1015896	4026755330649	148	1016951	4026755117851	114
1015933°	4026755254181	146	1016953	4026755117868	110
1015934°	4026755254198	146	1016953	4026755117868	114
1015943	4026755228359	148	1016954°	4026755117875	110
1015944	4026755228366	148	1016954°	4026755117875	114
1015993	4026755228373	146	1017056	4026755117943	119
1015994	4026755228380	146	1017057	4026755117950	136
1016166	4026755302547	148	1017060	4026755117967	136
1016168	4026755302554	148	1017351	4026755118162	136
1016175	4026755302561	146	1017501	4026755232059	135
1016177	4026755302578	146	1018080	4026755118247	130
1016194	4026755116878	118	1018082	4026755298949	130

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1018083	4026755118261	131	1022699	4026755221961	205
1018084	4026755333510	132	1022722*	4026755471601	192
1018086	4026755171846	132	1022723*	4026755471618	192
1018090	4026755118278	130	1022724*	4026755471625	196
1018094°	4026755333527	132	1022725*	4026755471632	196
1018096°	4026755182996	132	1022726*	4026755471649	197
1018097	4026755236934	130	1022729*	4026755471656	193
1018098	4026755308037	131	1022731*	4026755462531	183
1018099	4026755333534	132	1022733*	4026755463231	184
1018561	4026755216493	25	1022734*	4026755463248	185
1019003	4026755118469	160	1022735*	4026755462555	182
1019004	4026755118476	160	1022736*	4026755462562	188
1019006	4026755118483	160	1022737*	4026755467833	186
1019052°	4026755118490	160	1022738*	4026755467840	189
1019080	4026755424362	128	1022739*	4026755463255	187
1019082	4026755424379	128	1022750*	4026755462579	182
1019083	4026755424386	128	1022751*	4026755462586	182
1019084	4026755454246	129	1022760*	4026755462609	183
1019086	4026755454253	129	1022761*	4026755462616	183
1019099	4026755454277	129	1022764*	4026755467857	197
1019103	4026755118506	160	1022764*	4026755467857	200
1019104	4026755118513	160	1022765*	4026755467864	197
1019106	4026755118520	160	1022765*	4026755467864	200
1019194°	4026755118551	119	1022766*	4026755467871	197
1019196°	4026755118568	119	1022766*	4026755467871	200
1019204	4026755356595	160	1022770*	4026755463279	184
1019251	4026755118599	160	1022771*	4026755463286	184
1019252	4026755118605	160	1022772*	4026755463293	186
1019253	4026755118612	160	1022774*	4026755467888	185
1019254	4026755118629	160	1022774*	4026755467888	188
1019303	4026755118636	160	1022774*	4026755467888	192
1019304	4026755118643	160	1022774*	4026755467888	193
1019304	4026755118643	257	1022774*	4026755467888	196
1019306	4026755118650	160	1022774*	4026755467888	200
1019308°	4026755118667	160	1022775*	4026755467895	185
1019351	4026755118674	160	1022775*	4026755467895	188
1019352	4026755118681	160	1022775*	4026755467895	192
1019353°	4026755118698	160	1022775*	4026755467895	193
1019362	4026755118704	160	1022775*	4026755467895	196
1019365	4026755118728	160	1022775*	4026755467895	200
1019372	4026755366624	160	1022776*	4026755467901	185
1019374	4026755118742	118	1022776*	4026755467901	188
1019376	4026755118759	118	1022776*	4026755467901	192
1019384	4026755118773	118	1022776*	4026755467901	193
1019386	4026755118780	118	1022776*	4026755467901	196
1019394	4026755118797	118	1022776*	4026755467901	200
1019396	4026755118803	118	1022777*	4026755471663	200
1019451	4026755118827	160	1022778*	4026755471670	200
1019497	4026755356601	121	1022779*	4026755471687	200
1019498	4026755356618	121	1022780*	4026755463309	187
1019903°	4026755118919	161	1022781*	4026755463316	187
1019904°	4026755118926	161	1022782*	4026755463323	189
1019906°	4026755118933	161	1022787*	4026755471694	200
1019908°	4026755118940	161	1022788*	4026755471700	200
			1022789*	4026755471717	200
1022631°	4026755250374	202	1022792*	4026755471724	200
1022632°	4026755250381	202	1024363	4026755187649	138
1022635°	4026755207989	203	1024363	4026755187649	264
1022636°	4026755207996	202	1024364	4026755187656	138
1022637°	4026755208009	203	1024364	4026755187656	264
1022641°	4026755250404	202	1024463	4026755187663	138
1022654	4026755401202	198	1024463	4026755187663	264
1022655	4026755313000	205	1024464	4026755187670	138
1022655	4026755313000	221	1024464	4026755187670	264
1022662°	4026755318050	202	1026970	4026755295054	204
1022663°	4026755324457	202	1026981	4026755187687	139
1022668	4026755330618	197	1026981	4026755187687	204
1022669	4026755330625	197	1026981	4026755187687	265
1022698	4026755221954	36	1026981	4026755187687	292
1022698	4026755221954	205	1026986	4026755232066	139
1022699	4026755221961	139	1026986	4026755232066	205

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1026986	4026755232066	265	1028364	4026755187724	264
1027100	4026755119350	138	1028464	4026755187748	140
1027100	4026755119350	264	1028464	4026755187748	264
1027150°	4026755207200	317	1028750	4026755119893	111
1027151	4026755207217	164	1028851°	4026755119916	111
1027151	4026755207217	317	1029651	4026755119923	167
1027152	4026755207224	164	1029651	4026755119923	795
1027152	4026755207224	317	1029652	4026755119930	167
1027153°	4026755207231	317	1029652	4026755119930	795
1027154°	4026755207248	317	1029652	4026755119930	834
1027155°	4026755207255	317	1029653	4026755119947	167
1027156°	4026755207262	317	1029654	4026755119954	167
1027157	4026755207279	164	1029654	4026755119954	795
1027157	4026755207279	317	1029654	4026755119954	834
1027158	4026755207286	164	1029655	4026755119961	167
1027158	4026755207286	317	1029655	4026755119961	834
1027165	4026755187700	138	1029656	4026755119978	167
1027165	4026755187700	204	1029656	4026755119978	795
1027165	4026755187700	264	1029656	4026755119978	834
1027172	4026755217209	138	1029657	4026755119985	167
1027172	4026755217209	204	1029657	4026755119985	834
1027172	4026755217209	264			
1027440°	4026755281927	165	1032003	4026755120141	565
1027441°	4026755281934	165	1032003	4026755120141	869
1027442°	4026755281941	165	1032004	4026755120158	565
1027443°	4026755281958	165	1032004	4026755120158	869
1027444°	4026755281965	165	1032006	4026755120165	565
1027445°	4026755281972	165	1032006	4026755120165	869
1027472°	4026755207293	165	1032008	4026755120172	565
1027473°	4026755207309	165	1032008	4026755120172	869
1027474°	4026755207316	165	1032403	4026755120226	564
1027475°	4026755207323	165	1032403	4026755120226	727
1027476°	4026755207330	165	1032404	4026755120233	564
1027477°	4026755207347	165	1033091	4026755120318	564
1027562	4026755245400	154	1033152	4026755400311	562
1027564	4026755245417	154	1033152	4026755400311	727
1027566	4026755245424	154	1033308	4026755120387	562
1027568	4026755245431	154	1033313	4026755199581	256
1027662	4026755245448	154	1033313	4026755199581	562
1027662	4026755245448	351	1033314	4026755199598	240
1027664	4026755192827	154	1033314	4026755199598	270
1027664	4026755192827	351	1033314	4026755199598	562
1027666	4026755192834	154	1033315	4026755199833	562
1027666	4026755192834	351	1033316	4026755199840	562
1027668	4026755192841	154	1033351	4026755205718	562
1027668	4026755192841	351	1033352	4026755199864	562
1027752°	4026755119695	165	1033354	4026755199871	562
1027755°	4026755119701	165	1033372	4026755394764	563
1027755°	4026755119701	231	1033372	4026755394764	868
1027757°	4026755119718	165	1033413	4026755208283	562
1027757°	4026755119718	231	1033414	4026755208290	562
1027759°	4026755119725	165	1033672	4026755394771	563
1027759°	4026755119725	231	1033672	4026755394771	868
1027761°	4026755119732	165	1033814	4026755199888	562
1027763°	4026755119749	165	1033852	4026755199895	562
1027763°	4026755119749	231	1033914	4026755199901	562
1027767°	4026755119756	165	1034003	4026755120547	565
1027768°	4026755119763	165	1034003	4026755120547	869
1027772°	4026755119770	165	1034008	4026755120578	161
1027772°	4026755119770	221	1034008	4026755120578	563
1028152	4026755295979	164	1034008	4026755120578	565
1028153	4026755295986	164	1034008	4026755120578	869
1028154	4026755295993	164	1034052	4026755317459	161
1028155	4026755296006	164	1034052	4026755317459	563
1028156	4026755296013	164	1034052	4026755317459	565
1028161	4026755119862	150	1034052	4026755317459	869
1028252	4026755248876	150	1034053	4026755317466	161
1028253	4026755248883	150	1034053	4026755317466	563
1028263	4026755119886	150	1034053	4026755317466	565
1028263	4026755119886	232	1034053	4026755317466	869
1028364	4026755187724	140	1034091°	4026755120585	565

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1034092°	4026755120592	563	1045153	4026755121490	393
1034092°	4026755120592	565	1045154	4026755121506	393
1034093°	4026755120608	563	1045155	4026755121513	393
1034093°	4026755120608	565	1045156	4026755121520	393
1034094°	4026755120615	563	1045157	4026755121537	393
1034094°	4026755120615	565	1045158	4026755121544	393
1034315	4026755324785	562	1046450	4026755440010	400
1034504°	4026755120639	565	1046451	4026755440027	400
1034504°	4026755120639	869	1046452	4026755440034	400
1034506°	4026755120646	565	1046453	4026755440041	400
1034506°	4026755120646	869	1046454	4026755440058	400
1034508	4026755120653	565	1046455	4026755440065	400
1034508	4026755120653	869	1046456	4026755440072	400
1034551°	4026755120660	565	1047253	4026755440089	400
1034551°	4026755120660	869	1047254	4026755440096	400
1034552	4026755120677	563	1047255	4026755440102	400
1034553	4026755317473	563	1047256	4026755440119	400
1034554	4026755317480	563	1047257	4026755456356	400
1034562	4026755317497	563	1047258	4026755456363	400
1035004	4026755120707	565	1048450	4026755302011	400
1035004	4026755120707	869	1048451	4026755301922	400
1035006	4026755120714	565	1048452	4026755301939	400
1035006	4026755120714	869	1048453	4026755301946	400
1036154	4026755275261	563	1048454	4026755301953	400
1036156	4026755275278	563	1048455	4026755301960	400
1036158	4026755275285	563	1048456	4026755301977	400
1038002	4026755120806	564	1048491	4026755457346	401
1038003	4026755120813	564	1048492	4026755457353	401
			1048493	4026755457360	401
1040003	4026755120882	392	1049253	4026755440126	400
1040004	4026755120899	392	1049254	4026755440133	400
1040006	4026755120905	392	1049255	4026755440140	400
1040008	4026755120912	392	1049256	4026755440157	400
1040010	4026755120929	392	1049257	4026755456370	400
1040012	4026755120936	392	1049258	4026755456387	400
1040016	4026755120943	392	1049259	4026755456394	400
1040020	4026755120950	392	1049260	4026755456400	400
1040024	4026755120967	392	1049261	4026755456417	400
1040032	4026755120974	392	1049262	4026755456424	400
1043003	4026755121209	392	1049263	4026755456431	400
1043003	4026755121209	868	1049850	4026755457377	401
1043004	4026755121216	392	1049853	4026755457384	401
1043004	4026755121216	868			
1043006	4026755121223	392	1050203	4026755335491	396
1043006	4026755121223	868	1050204	4026755335507	396
1043008	4026755121230	392	1050206	4026755335514	396
1043008	4026755121230	868	1050208	4026755335521	396
1043010	4026755121247	392	1050210	4026755335538	396
1043010	4026755121247	868	1050212	4026755335545	396
1043012	4026755121254	392	1050216	4026755335552	396
1043012	4026755121254	868	1050303	4026755335569	396
1043016	4026755121261	392	1050304	4026755335576	396
1043016	4026755121261	868	1050306	4026755335583	396
1043020	4026755121278	392	1050308	4026755335590	396
1043020	4026755121278	868	1050310	4026755335606	396
1043024	4026755121285	392	1050312	4026755335613	396
1043024	4026755121285	868	1050316	4026755335620	396
1045049	4026755250954	393	1052102	4026755335637	396
1045050	4026755121377	393	1052103	4026755335644	396
1045051	4026755121384	393	1052104	4026755335651	396
1045052	4026755121391	393	1052106	4026755335668	396
1045053	4026755121407	393	1052108	4026755335675	396
1045054	4026755121414	393	1052110	4026755335682	396
1045055	4026755121421	393	1052112	4026755335699	396
1045056	4026755121438	393	1052116	4026755335705	396
1045057	4026755121445	393	1055004	4026755372403	561
1045058	4026755121452	393	1055004	4026755372403	732
1045149	4026755250961	393	1055095	4026755371741	732
1045150	4026755121469	393	1055096	4026755371758	732
1045151	4026755121476	393			
1045152	4026755121483	393	1060081	4026755167870	315

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1060081	4026755167870	683	1060508	4026755125238	298
1060082	4026755167887	315	1060510	4026755125245	298
1060082	4026755167887	683	1060512	4026755125252	298
1060083	4026755167894	315	1060516	4026755125269	298
1060083	4026755167894	683	1060591	4026755125276	317
1060084	4026755167900	315	1060592	4026755125283	75
1060084	4026755167900	683	1060592	4026755125283	121
1060085	4026755167917	315	1060592	4026755125283	317
1060085	4026755167917	683	1060593	4026755125290	121
1060086	4026755167924	315	1060593	4026755125290	317
1060086	4026755167924	683	1060594	4026755125306	317
1060103	4026755124934	298	1060595	4026755125313	317
1060104	4026755124941	298	1060596	4026755125320	317
1060106	4026755124958	298	1060597	4026755125337	317
1060108	4026755124965	298	1060604	4026755216332	318
1060110	4026755124972	298	1060606	4026755216349	318
1060112	4026755124989	298	1060608	4026755216356	318
1060116	4026755124996	298	1060610	4026755216363	318
1060120	4026755125009	298	1060612	4026755216370	318
1060180	4026755273809	315	1060616	4026755216387	318
1060180	4026755273809	698	1060634	4026755272666	318
1060191	4026755125023	312	1060644	4026755125344	318
1060203	4026755125061	298	1060651°	4026755375411	304
1060204	4026755125078	298	1060751	4026755125351	318
1060206	4026755125085	298	1060752	4026755125368	318
1060208	4026755125092	298	1060753	4026755125375	318
1060210	4026755125108	298	1060754	4026755125382	318
1060212	4026755125115	298	1060755	4026755125399	318
1060216	4026755125122	298	1060756	4026755125405	318
1060281	4026755179149	312	1060757	4026755125412	318
1060282	4026755335378	313	1060758	4026755125429	318
1060295	4026755125160	312	1060759	4026755260052	318
1060296	4026755231113	312	1060760	4026755248043	318
1060297	4026755125177	290	1060761	4026755260069	318
1060297	4026755125177	365	1060762	4026755248050	318
1060298	4026755192230	312	1060763	4026755270662	318
1060298	4026755192230	334	1060764	4026755260076	318
1060298	4026755192230	365	1060765	4026755274257	318
1060299	4026755324471	312	1060766	4026755274264	318
1060303	4026755191622	298	1060767	4026755298413	318
1060304	4026755191639	298	1060771	4026755258516	318
1060306	4026755191646	298	1060772	4026755258523	318
1060308	4026755191653	298	1060773	4026755258530	318
1060310	4026755191660	298	1060774	4026755258547	318
1060312	4026755191677	298	1060775	4026755258554	318
1060316	4026755191684	298	1060776	4026755258561	318
1060381	4026755179156	312	1060777	4026755258578	318
1060391	4026755125184	312	1060778	4026755258585	318
1060404	4026755348026	304	1060853	4026755275735	318
1060406	4026755348033	304	1060854	4026755275742	318
1060408	4026755348040	304	1060855	4026755125436	318
1060410	4026755348057	304	1060856	4026755275940	318
1060412	4026755348064	304	1060857	4026755275957	318
1060416	4026755348071	304	1060858	4026755125443	318
1060434	4026755372038	304	1060859	4026755275964	318
1060451°	4026755375343	304	1060860	4026755275971	318
1060454°	4026755375367	304	1060861	4026755275988	318
1060456°	4026755375374	304	1060862	4026755275995	318
1060458°	4026755375381	304	1060863	4026755276008	318
1060460°	4026755375398	304	1060906	4026755381672	322
1060462°	4026755375404	304	1060906	4026755381672	347
1060464	4026755372045	304	1060908	4026755381689	322
1060481	4026755356625	315	1060908	4026755381689	347
1060482	4026755356632	315	1060910	4026755381696	322
1060483	4026755356649	315	1060925	4026755381412	322
1060484	4026755356656	315	1061091	4026755282108	317
1060485	4026755356663	315	1061092	4026755125474	317
1060486	4026755356670	315	1061093	4026755125481	317
1060503	4026755125207	298	1061094	4026755125498	317
1060504	4026755125214	298	1061095	4026755125504	317
1060506	4026755125221	298	1061096	4026755125511	317

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1061097	4026755125528	317	1062055	4026755370638	306
1061098	4026755125535	317	1062082	4026755250732	290
1061392	4026755400205	121	1062085	4026755250749	290
1061392	4026755400205	317	1062090	4026755281231	290
1061393	4026755400212	121	1062092	4026755272000	290
1061393	4026755400212	317	1062095	4026755283907	290
1061394	4026755125627	317	1062095	4026755283907	314
1061395	4026755125634	317	1062097	4026755423723	290
1061491	4026755125641	317	1062097	4026755423723	314
1061492	4026755125658	121	1062104	4026755250756	288
1061492	4026755125658	317	1062106	4026755250763	288
1061493	4026755125665	121	1062108	4026755250770	288
1061493	4026755125665	317	1062110	4026755250787	288
1061494	4026755125672	317	1062112	4026755250794	288
1061495	4026755125689	317	1062116	4026755364088	288
1061496	4026755125696	317	1062166	4026755451337	246
1061497	4026755169065	317	1062204	4026755263664	288
1061651°	4026755375428	304	1062206	4026755263671	288
1061704	4026755238235	284	1062208	4026755263688	288
1061706	4026755238242	284	1062210	4026755263695	288
1061708	4026755238259	284	1062212	4026755263701	288
1061710	4026755250473	284	1062216	4026755364095	288
1061712	4026755250480	284	1062282	4026755262216	290
1061716	4026755364057	284	1062285	4026755262223	290
1061771	4026755250497	289	1062304	4026755263718	288
1061772	4026755250503	289	1062306	4026755263725	288
1061773	4026755250510	289	1062308	4026755263732	288
1061774	4026755250527	289	1062310	4026755263749	288
1061775	4026755250534	289	1062312	4026755263756	288
1061781	4026755250541	289	1062316	4026755364101	288
1061782	4026755250558	289	1062350	4026755253832	302
1061783	4026755250565	289	1062351	4026755251623	302
1061784	4026755250572	289	1062352	4026755251630	302
1061785	4026755250589	289	1062353	4026755251647	302
1061790	4026755263619	293	1062354	4026755251654	302
1061791	4026755250596	290	1062355	4026755251661	302
1061791	4026755250596	334	1062356	4026755252422	302
1061791	4026755250596	365	1062451	4026755241112	303
1061792	4026755250602	290	1062452	4026755241129	303
1061792	4026755250602	694	1062453	4026755241136	303
1061793	4026755250619	290	1062454	4026755241143	303
1061794	4026755250626	290	1062455	4026755241150	303
1061795	4026755250633	290	1062456	4026755241167	303
1061796	4026755250640	290	1062457	4026755241174	303
1061797	4026755262209	290	1062458	4026755241181	303
1061798	4026755263626	293	1062581	4026755125993	315
1061799	4026755250657	290	1062582	4026755126006	315
1061799	4026755250657	334	1062583	4026755126013	315
1061799	4026755250657	365	1062584	4026755126020	315
1061804	4026755238266	284	1062585	4026755126037	315
1061806	4026755238273	284	1062586	4026755126044	315
1061808	4026755238280	284	1062587	4026755126051	315
1061810	4026755250664	284	1062588	4026755126068	315
1061812	4026755250671	284	1062589	4026755126075	315
1061816	4026755364064	284	1062590	4026755126082	315
1061856	4026755306392	246	1062646	4026755173154	300
1061856	4026755306392	347	1062647	4026755173178	300
1061904	4026755395778	346	1062648	4026755173215	300
1061906	4026755395785	346	1062649	4026755126105	300
1061934	4026755395792	346	1062650	4026755126112	300
1061964	4026755395808	346	1062651	4026755126129	300
1062004	4026755250688	288	1062652	4026755126136	300
1062006	4026755250695	288	1062653	4026755126143	300
1062008	4026755250701	288	1062654	4026755126150	300
1062010	4026755250718	288	1062655	4026755126167	300
1062012	4026755250725	288	1062656	4026755126174	300
1062016	4026755364071	288	1062657	4026755180190	300
1062051	4026755370591	306	1062658	4026755180206	300
1062052	4026755370607	306	1062659	4026755324570	300
1062053	4026755370614	306	1062660	4026755324587	300
1062054	4026755370621	306	1062676	4026755329261	302

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1062677	4026755329278	302	1064752	4026755246025	309
1062678	4026755329285	302	1064753	4026755301076	309
1062679	4026755329292	302	1064754	4026755333145	309
1062680	4026755329308	302	1064755	4026755333152	309
1062681	4026755329315	302	1064756	4026755377453	309
1062682	4026755329322	302	1064792	4026755340105	314
1062683	4026755329339	302	1064793	4026755340112	314
1062684	4026755329346	302	1064794	4026755340129	314
1062685	4026755329353	302	1064795	4026755340136	314
1062686	4026755329360	302	1064796	4026755340143	314
1062946	4026755277531	300	1064797	4026755340488	314
1062947	4026755277579	300	1064804	4026755333046	308
1062948	4026755277566	300	1064806	4026755333053	308
1062949	4026755277573	300	1064808	4026755333060	308
1062950	4026755277580	300	1064810	4026755333077	308
1062951	4026755179415	300	1064812	4026755333084	308
1062952	4026755179422	300	1064816	4026755305593	308
1062953	4026755179439	300	1064951	4026755407952	309
1062954	4026755179446	300	1064952	4026755407969	309
1062955	4026755179453	300	1064953	4026755407976	309
1062956	4026755179460	300	1064954	4026755407983	309
1062957	4026755179477	300	1064955	4026755407990	309
1062958	4026755179484	300	1065004	4026755127287	396
1062959	4026755333138	300	1065006	4026755127294	396
1062960	4026755430363	300	1065008	4026755127300	396
1063051	4026755225099	303	1065010	4026755127317	396
1063052	4026755225105	303	1065504	4026755127409	390
1063053	4026755225112	303	1065506	4026755127416	390
1063054	4026755225129	303	1065508	4026755127423	390
1063055	4026755225136	303	1065510	4026755127430	390
1063056	4026755225143	303	1065604	4026755127447	390
1063057	4026755225150	303	1065606	4026755127454	390
1063058	4026755225167	303	1065608	4026755127461	390
1063964	4026755395815	347	1065610	4026755127478	390
1063966	4026755395822	347	1065851	4026755390520	305
1064051	4026755231861	303	1065852	4026755390537	305
1064054	4026755231878	303	1065853	4026755390544	305
1064055	4026755231885	303	1065854	4026755390551	305
1064264	4026755395839	347	1065855	4026755390568	305
1064266	4026755395846	347	1065856	4026755390575	305
1064267	4026755395853	347	1065857	4026755390582	305
1064504	4026755127133	308	1065858	4026755390599	305
1064506	4026755127140	308	1065904	4026755127485	397
1064508	4026755127157	308	1065906	4026755127492	397
1064510	4026755127164	308	1065908	4026755127508	397
1064512	4026755127171	308	1065910	4026755127515	397
1064516	4026755216912	308	1066004	4026755127522	396
1064592	4026755127188	314	1066006	4026755127539	396
1064593	4026755127195	314	1066008	4026755127546	396
1064594	4026755127201	314	1066010	4026755127553	396
1064595	4026755127218	314	1066151	4026755127607	397
1064596	4026755127225	314	1066504	4026755127614	390
1064597	4026755304251	314	1066506	4026755127621	390
1064604	4026755127232	308	1066508	4026755127638	390
1064606	4026755127249	308	1066510	4026755127645	390
1064608	4026755127256	308	1066604	4026755127652	390
1064610	4026755127263	308	1066606	4026755127669	390
1064612	4026755127270	308	1066608	4026755127676	390
1064616	4026755292176	308	1066610	4026755127683	390
1064651	4026755305432	309	1066904	4026755127690	390
1064652	4026755305449	309	1066906	4026755127690	397
1064653	4026755305456	309	1066906	4026755127706	390
1064654	4026755332124	309	1066906	4026755127706	397
1064655	4026755332131	309	1066908	4026755127713	390
1064704	4026755324594	308	1066908	4026755127713	397
1064706	4026755324600	308	1066910	4026755127720	390
1064708	4026755324617	308	1066910	4026755127720	397
1064710	4026755324624	308	1067004	4026755127775	397
1064712	4026755324631	308	1067065	4026755264869	293
1064716	4026755305586	308	1067066	4026755264876	293
1064751	4026755246018	309	1067067	4026755264883	293

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1067068	4026755264890	293	1069278	4026755419603	362
1067069	4026755264906	293	1069292	4026755402551	397
1067085	4026755264913	293	1069293	4026755402568	397
1067304	4026755250800	285	1069294	4026755402575	397
1067306	4026755250817	285	1069295	4026755402582	397
1067308	4026755250824	285	1069299	4026755419610	363
1067310	4026755250831	285	1069650	4026755355505	316
1067312	4026755250848	285	1069650	4026755355505	698
1067316	4026755364118	285	1069651	4026755355512	316
1067404	4026755250879	285	1069651	4026755355512	698
1067406	4026755250886	285	1069652	4026755355529	316
1067408	4026755250893	285	1069652	4026755355529	698
1067410	4026755250909	285	1069653	4026755355536	316
1067412	4026755250916	285	1069653	4026755355536	698
1067416	4026755364125	285			
1067503	4026755127942	306	1070006	4026755128321	568
1067504	4026755127959	306	1070008	4026755128338	568
1067506	4026755127966	306	1070010	4026755128345	568
1067508	4026755127973	306	1070108	4026755128352	568
1067510	4026755127980	306	1070110	4026755128369	568
1067512	4026755127997	306	1070208	4026755128376	568
1067516	4026755128000	306	1070210	4026755128383	568
1067520	4026755330755	306	1070308	4026755128390	568
1067603	4026755128017	306	1070310	4026755128406	568
1067604	4026755128024	306	1071008	4026755128451	568
1067606	4026755128031	306	1071010	4026755128468	568
1067608	4026755128048	306	1071012	4026755128475	568
1067610	4026755128055	306	1071016	4026755128482	568
1067612	4026755128062	306	1072003	4026755128499	404
1067616	4026755128079	306	1072004	4026755128505	404
1068004	4026755128086	420	1072006	4026755128512	404
1068006	4026755128093	420	1072008	4026755128529	404
1068008	4026755128109	420	1072010	4026755128536	404
1068010	4026755128116	420	1072012	4026755128543	404
1068364	4026755260939	286	1072016	4026755128550	404
1068366	4026755260946	286	1072103	4026755335729	404
1068368	4026755260953	286	1072104	4026755335736	404
1068464	4026755260960	286	1072106	4026755335743	404
1068466	4026755260977	286	1072108	4026755335750	404
1068468	4026755260991	286	1072110	4026755335767	404
1068564	4026755264920	287	1072112	4026755335774	404
1068566	4026755264937	287	1072116	4026755335781	404
1068568	4026755264944	287	1072549	4026755335132	405
1068570	4026755264951	287	1072550	4026755128574	405
1068572	4026755264968	287	1072551	4026755128581	405
1068585	4026755270457	291	1072552	4026755128598	405
1068664	4026755264975	287	1072553	4026755128604	405
1068666	4026755264982	287	1072554	4026755128611	405
1068667	4026755264999	287	1072555	4026755128628	405
1068668	4026755265002	287	1072556	4026755128635	405
1068670	4026755265019	287	1072557	4026755128642	405
1068672	4026755265026	287	1072558	4026755128659	405
1068804	4026755128147	420	1072559	4026755310368	405
1068806	4026755128154	420	1072560	4026755310375	405
1068808	4026755128161	420	1072561	4026755310382	405
1068810	4026755128178	420	1072650	4026755357585	405
1069003	4026755163872	314	1072651	4026755357592	405
1069004	4026755163889	314	1072652	4026755357608	405
1069006	4026755163896	314	1072653	4026755357615	405
1069008	4026755163902	314	1072654	4026755357622	405
1069010	4026755163919	314	1072655	4026755357639	405
1069012	4026755163926	314	1072656	4026755357646	405
1069016	4026755163933	314	1072657	4026755357653	405
1069178	4026755280340	363	1072658	4026755357660	405
1069179	4026755248920	363	1072659	4026755357677	405
1069180	4026755325409	364	1072660	4026755357684	405
1069186	4026755273984	363	1072661	4026755357691	405
1069197	4026755329919	363	1072662	4026755357707	405
1069199	4026755202779	312	1072663	4026755357714	405
1069199	4026755202779	334	1073049	4026755251357	405
1069199	4026755202779	365	1073050	4026755128666	405

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1073051	4026755128673	405	1077165	4026755344431	383
1073052	4026755128680	405	1077166	4026755344448	383
1073053	4026755128697	405	1077171	4026755358377	384
1073054	4026755128703	405	1077172	4026755358384	384
1073055	4026755128710	405	1077173	4026755358391	384
1073056	4026755128727	405	1077181	4026755283396	384
1073057	4026755128734	405	1077182	4026755283402	384
1073058	4026755128741	405	1077183	4026755283419	384
1075004	4026755128758	404	1077303	4026755129502	382
1075006	4026755128765	404	1077304	4026755129519	382
1075008	4026755128772	404	1077306	4026755129526	382
1075010	4026755128789	404	1077308	4026755129533	382
1075012	4026755128796	404	1077310	4026755129540	382
1075016	4026755128802	404	1077312	4026755367706	382
1075020	4026755128819	404	1077316	4026755367713	382
1075704	4026755277548	384	1077804	4026755262650	382
1075706	4026755277555	384	1077806	4026755262667	382
1075708	4026755277562	384	1077808	4026755262674	382
1075710	4026755277579	384	1077810	4026755357721	382
1075804	4026755327755	386	1077904	4026755393675	388
1075806	4026755327762	386	1077906	4026755393682	388
1075808	4026755128833	386	1077908	4026755393699	388
1075810	4026755335057	386	1077910	4026755393705	388
1076002	4026755128840	385	1077912	4026755393712	388
1076003	4026755128857	385	1077916	4026755393729	388
1076004	4026755128864	385	1078003	4026755305678	382
1076006	4026755128871	385	1078004	4026755305685	382
1076008	4026755128888	385	1078006	4026755305692	382
1076010	4026755128895	385	1078008	4026755305708	382
1076012	4026755128901	385	1078010	4026755305715	382
1076016	4026755128918	385	1078012	4026755305722	382
1076020	4026755128925	385	1078016	4026755305739	382
1076024	4026755128932	385	1078092	4026755382624	384
1076032	4026755128949	385	1078093	4026755382631	384
1076071	4026755283365	386	1078094	4026755382648	384
1076072	4026755283372	386	1078094	4026755382648	556
1076073	4026755283389	386	1078095	4026755382655	384
1076081	4026755317503	386	1078095	4026755382655	556
1076082	4026755317510	386	1078096	4026755382662	384
1076083	4026755317527	386	1078097	4026755382679	384
1076084	4026755370874	386	1078171	4026755360431	556
1076103	4026755128956	386	1078172	4026755360448	556
1076104	4026755128963	386	1078173	4026755360455	556
1076106	4026755128970	386	1078182	4026755328530	556
1076108	4026755128987	386	1078194	4026755382686	556
1076110	4026755128994	386	1078195	4026755382693	556
1076203	4026755129021	385	1078371	4026755360462	556
1076204	4026755129038	385	1078372	4026755360479	556
1076206	4026755129045	385	1078373	4026755360486	556
1076208	4026755129052	385	1078382	4026755283426	389
1076210	4026755129069	385	1078382	4026755283426	556
1076303	4026755129076	386	1078382	4026755283426	689
1076304	4026755129083	386	1078706	4026755317534	389
1076306	4026755129090	386	1078706	4026755317534	868
1076308	4026755129106	386	1078708	4026755317541	389
1076310	4026755129113	386	1078708	4026755317541	556
1077103	4026755129274	382	1078708	4026755317541	868
1077104	4026755129281	382	1078710	4026755317558	389
1077106	4026755129298	382	1078710	4026755317558	556
1077108	4026755129304	382	1078710	4026755317558	868
1077110	4026755129311	382	1078760	4026755345094	389
1077112	4026755129328	382	1078761	4026755344493	389
1077116	4026755129335	382	1078761	4026755344493	557
1077152	4026755370645	383	1078762	4026755344509	389
1077153	4026755370652	383	1078762	4026755344509	557
1077154	4026755370669	383	1078790°	4026755317565	389
1077155	4026755370676	383	1078790°	4026755317565	868
1077156	4026755370683	383	1078791°	4026755333589	389
1077162	4026755344400	383	1078791°	4026755333589	868
1077163	4026755344417	383	1079004	4026755232073	387
1077164	4026755344424	383	1079006	4026755232080	387

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1079008	4026755232097	387	1100101°	4026755130966	162
1079010	4026755232103	387	1100102°	4026755130973	162
1079012	4026755232110	387	1100103°	4026755130980	162
1079016	4026755232127	387	1100104°	4026755130997	162
1079104	4026755232134	387	1101603	4026755131253	162
1079106	4026755232141	387	1101604	4026755131260	162
1079108	4026755232158	387	1101703	4026755131277	162
1079110	4026755232165	387	1101704	4026755131284	162
1079112	4026755232172	387	1101706	4026755131291	162
1079116	4026755232189	387	1102002	4026755299519	162
1079254	4026755353006	387	1102003	4026755299526	162
1079255	4026755353013	387	1102004	4026755328882	162
1079256	4026755353020	387	1103051	4026755131345	162
1079404	4026755232196	387	1103151	4026755131352	162
1079406	4026755232202	387	1109001°	4026755172379	162
1079704	4026755232295	387	1109001°	4026755172379	728
1079706	4026755232301	387	1109001°	4026755172379	734
1079708	4026755232318	387	1109001°	4026755172379	736
1079710	4026755232325	387	1109002°	4026755172386	162
			1109002°	4026755172386	728
1085206	4026755129885	569	1109003°	4026755172393	162
1085208	4026755129892	569	1109003°	4026755172393	728
1085210	4026755129908	569			
1088203	4026755130102	416	1110104	4026755131390	566
1088303	4026755130119	256	1110174	4026755131420	566
1088303	4026755130119	416	1110204	4026755131437	566
1088304	4026755130126	416	1110504	4026755131444	566
1088306	4026755130133	416	1111904	4026755131451	566
1088404	4026755130157	416	1115004	4026755131468	567
1088806	4026755238792	561	1115104	4026755131475	567
1088806	4026755238792	860	1115204	4026755131482	567
1089006	4026755130164	561	1116004	4026755131499	567
1089008	4026755130171	561	1116204	4026755131512	567
1089010	4026755130188	561	1117204	4026755131543	567
1089012	4026755130195	561			
1089052	4026755130201	561	1120002	4026755131550	418
1089091	4026755130218	315	1120002	4026755131550	867
1089091	4026755130218	561	1120003	4026755131567	418
1089091	4026755130218	694	1120003	4026755131567	867
1089091	4026755130218	698	1120004	4026755131574	418
			1120004	4026755131574	867
1090361	4026755130225	153	1120006	4026755131581	418
1090362	4026755130232	153	1120006	4026755131581	713
1090363	4026755130249	153	1120006	4026755131581	717
1090374°	4026755344516	153	1120006	4026755131581	867
1090461	4026755130256	153	1120008	4026755131598	418
1090462	4026755130263	153	1120008	4026755131598	713
1090463	4026755130270	153	1120008	4026755131598	867
1090474°	4026755344523	153	1120010	4026755131604	418
1090551	4026755130287	148	1120010	4026755131604	713
1090551	4026755130287	152	1120010	4026755131604	867
1090551	4026755130287	153	1120012	4026755131611	418
1090551	4026755130287	335	1120012	4026755131611	867
1090661	4026755130294	152	1120016	4026755131628	418
1090662	4026755130300	152	1120016	4026755131628	867
1090663	4026755130317	152	1120020	4026755131635	418
1090672	4026755130324	152	1120020	4026755131635	867
1090761	4026755130348	152	1120024	4026755131642	418
1090762	4026755130355	152	1120024	4026755131642	867
1090763	4026755130362	152	1121002	4026755131659	418
1090772	4026755130379	152	1121002	4026755131659	867
1091052	4026755461466	154	1121003	4026755131666	418
1091061	4026755130461	154	1121003	4026755131666	867
1091062	4026755130478	154	1121004	4026755131673	418
1091063	4026755130485	154	1121004	4026755131673	867
1091152	4026755461473	154	1121006	4026755131680	418
1091161	4026755130522	154	1121006	4026755131680	867
1091162	4026755130539	154	1121008	4026755131697	418
1091163	4026755130546	154	1121008	4026755131697	867
1098362	4026755130904	80	1121010	4026755131703	418
			1121010	4026755131703	867

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1121012	4026755131710	418	1123110	4026755132021	418
1121012	4026755131710	867	1123110	4026755132021	867
1121016	4026755131727	418	1123112	4026755132038	418
1121016	4026755131727	867	1123112	4026755132038	867
1121020	4026755131734	418	1123116	4026755132045	418
1121020	4026755131734	867	1123116	4026755132045	867
1121024	4026755131741	418	1123120	4026755132052	418
1121024	4026755131741	867	1123120	4026755132052	867
1122045	4026755251364	419	1123124	4026755132069	418
1122046	4026755251371	419	1123124	4026755132069	867
1122047	4026755251388	419	1124006	4026755465228	412
1122048	4026755251395	419	1124008	4026755465235	412
1122049	4026755251401	419	1124010	4026755465242	412
1122050	4026755202076	419	1124012	4026755465259	412
1122051	4026755131819	419	1124106	4026755465273	412
1122052	4026755131826	419	1124108	4026755465280	412
1122053	4026755131833	419	1124550	4026755465303	413
1122054	4026755131840	419	1124551	4026755465310	413
1122055	4026755131857	419	1124552	4026755465327	413
1122056	4026755131864	419	1124553	4026755465334	413
1122057	4026755131871	419	1124554	4026755465341	413
1122058	4026755131888	419	1124555	4026755465358	413
1122059	4026755171624	419	1124556	4026755465365	413
1122060	4026755340082	419	1124557	4026755465372	413
1122061	4026755340150	419	1124558	4026755465389	413
1122062	4026755340167	419	1124650	4026755465396	413
1122063	4026755340174	419	1124651	4026755465402	413
1122085	4026755279221	419	1124652	4026755465419	413
1122087	4026755279245	419	1124653	4026755465426	413
1122088	4026755279252	419	1124654	4026755465433	413
1122089	4026755279269	419	1124655	4026755465440	413
1122090	4026755279276	419	1124656	4026755465457	413
1122091	4026755279283	419	1124657	4026755465464	413
1122092	4026755279290	419	1124658	4026755465471	413
1122093	4026755279306	419			
1122094	4026755279313	419	1130091°	4026755401882	350
1122095	4026755279320	419	1130091°	4026755401882	864
1122096	4026755279337	419	1130093°	4026755132106	350
1122097	4026755279344	419	1130093°	4026755132106	864
1122098	4026755279351	419	1130094°	4026755132113	350
1122159	4026755408027	419	1130094°	4026755132113	864
1122160	4026755408034	419	1130095°	4026755401899	350
1122161	4026755408041	419	1130095°	4026755401899	864
1122162	4026755408058	419	1130096°	4026755132120	350
1122163	4026755408065	419	1130096°	4026755132120	864
1123003	4026755131895	418	1130098°	4026755401905	350
1123003	4026755131895	867	1130098°	4026755401905	864
1123004	4026755131901	418	1130191°	4026755401912	350
1123004	4026755131901	867	1130191°	4026755401912	864
1123006	4026755131918	418	1130192°	4026755132137	350
1123006	4026755131918	867	1130192°	4026755132137	864
1123008	4026755131925	418	1130193°	4026755132144	350
1123008	4026755131925	867	1130193°	4026755132144	864
1123010	4026755131932	418	1130194°	4026755132151	350
1123010	4026755131932	867	1130194°	4026755132151	864
1123012	4026755131949	418	1130195°	4026755132168	350
1123012	4026755131949	867	1130195°	4026755132168	864
1123016	4026755131956	418	1130196°	4026755132175	350
1123016	4026755131956	867	1130196°	4026755132175	864
1123020	4026755131963	418	1130197°	4026755132182	350
1123020	4026755131963	867	1130197°	4026755132182	864
1123024	4026755131970	418	1130198°	4026755401929	350
1123024	4026755131970	867	1130198°	4026755401929	864
1123103	4026755131987	418	1130199°	4026755401936	350
1123103	4026755131987	867	1130199°	4026755401936	864
1123104	4026755131994	418	1130291	4026755401943	350
1123104	4026755131994	867	1130291	4026755401943	864
1123106	4026755132007	418	1130292	4026755132199	350
1123106	4026755132007	867	1130292	4026755132199	864
1123108	4026755132014	418	1130293	4026755132205	350
1123108	4026755132014	867	1130293	4026755132205	864

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1130294	4026755132212	350	1140451	4026755437591	334
1130294	4026755132212	864	1140452	4026755437607	334
1130295	4026755132229	350	1140552	4026755387612	334
1130295	4026755132229	864	1140561	4026755187847	351
1130296	4026755132236	350	1140561	4026755187847	865
1130296	4026755132236	864	1140562	4026755187854	351
1130298	4026755401950	350	1140562	4026755187854	865
1130298	4026755401950	864	1140563	4026755187861	351
1130299	4026755401967	350	1140563	4026755187861	865
1130299	4026755401967	864	1140564	4026755187878	351
1130845	4026755367065	352	1140564	4026755187878	865
1130846	4026755367072	352	1140571	4026755187885	351
1130847	4026755367089	352	1140571	4026755187885	865
1130848	4026755367096	352	1140572	4026755187892	351
1130849	4026755367102	352	1140572	4026755187892	865
1130850	4026755367218	352	1140574	4026755187908	351
1130851	4026755366242	352	1140574	4026755187908	865
1130852	4026755366259	352	1140591	4026755370942	331
1130853	4026755366266	352	1140592	4026755370959	331
1130854	4026755366273	352	1140593	4026755370966	331
1130855	4026755366280	352	1140594	4026755370973	331
1130865	4026755406900	352	1140595	4026755370980	331
1130866	4026755406917	352	1140596	4026755370997	331
1130875	4026755406924	352	1140597	4026755371000	331
1131204	4026755397390	253	1140691	4026755371017	331
1131204	4026755397390	350	1140692	4026755371024	331
1131204	4026755397390	864	1140693	4026755371031	331
1131206	4026755397406	253	1140694	4026755371048	331
1131206	4026755397406	350	1140695	4026755371055	331
1131206	4026755397406	864	1140696	4026755371062	331
1131208	4026755397413	253	1140697	4026755371079	331
1131208	4026755397413	350	1140698	4026755371086	331
1131208	4026755397413	864	1140791	4026755371093	331
1131210	4026755397420	253	1140792	4026755371109	331
1131210	4026755397420	350	1140793	4026755371116	331
1131210	4026755397420	864	1140794	4026755371123	331
1131212	4026755397437	253	1140795	4026755371130	331
1131212	4026755397437	350	1140796	4026755371147	331
1131212	4026755397437	864	1140797	4026755371154	331
1131216	4026755397444	253	1140892	4026755371161	331
1131216	4026755397444	350	1140893	4026755371178	331
1131216	4026755397444	864	1140894	4026755371185	331
1132004	4026755440782	339	1140895	4026755371192	331
1132006	4026755443608	339	1141004	4026755395860	346
1132020	4026755446616	339	1141004	4026755395860	418
1132030	4026755446623	339	1141006	4026755395877	346
			1141006	4026755395877	418
1140181	4026755263763	333	1141006	4026755395877	536
1140181	4026755263763	339	1141006	4026755395877	544
1140182	4026755263770	333	1141091	4026755191691	351
1140182	4026755263770	339	1141091	4026755191691	865
1140183	4026755263787	333	1141292	4026755447323	332
1140183	4026755263787	339	1141293	4026755447330	332
1140184	4026755263794	333	1141294	4026755447347	332
1140184	4026755263794	339	1141295	4026755447354	332
1140281	4026755447293	332	1141951	4026755248449	252
1140282	4026755263800	332	1141951	4026755248449	355
1140284	4026755263817	332	1142861	4026755187991	351
1140285	4026755447309	332	1142861	4026755187991	465
1140286	4026755447316	332	1142861	4026755187991	865
1140352	4026755382204	334	1142862	4026755188004	351
1140380	4026755263824	333	1142862	4026755188004	465
1140380	4026755263824	339	1142862	4026755188004	865
1140381	4026755263831	333	1142863	4026755188011	351
1140381	4026755263831	339	1142863	4026755188011	465
1140382	4026755263848	333	1142863	4026755188011	865
1140382	4026755263848	339	1142864	4026755188028	351
1140383	4026755263855	333	1142864	4026755188028	465
1140383	4026755263855	339	1142864	4026755188028	865
1140384	4026755263862	333	1143000	4026755132656	592
1140384	4026755263862	339	1143104	4026755421569	324

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1143116	4026755428889	328	1145704	4026755347623	326
1143154	4026755438833	328	1145764	4026755347630	125
1143155	4026755438840	328	1145764	4026755347630	326
1143163	4026755421583	324	1145764	4026755347630	346
1143164	4026755421590	324	1146004	4026755244960	326
1143204	4026755421613	324	1146006	4026755306699	326
1143206	4026755421620	324	1146063	4026755363999	326
1143208	4026755421637	324	1146064	4026755347647	326
1143210	4026755421644	324	1146064	4026755347647	346
1143263	4026755421651	324	1146066	4026755347654	326
1143264	4026755421668	324	1146066	4026755347654	346
1143266	4026755421675	324	1146091	4026755357875	126
1143268	4026755421682	324	1146104	4026755244977	326
1143270	4026755421699	324	1146106	4026755347661	326
1143304	4026755421705	324	1146108	4026755340181	326
1143364	4026755421712	324	1146110	4026755340198	326
1143504	4026755421729	324	1146112	4026755353051	328
1143563	4026755421743	324	1146149	4026755372465	328
1143564	4026755421750	324	1146150	4026755355246	328
1143604	4026755421774	324	1146151	4026755355253	328
1143606	4026755421781	324	1146152	4026755355260	328
1143608	4026755421798	324	1146153	4026755355277	328
1143610	4026755421804	324	1146154	4026755355284	328
1143663	4026755421811	324	1146155	4026755355291	328
1143664	4026755421828	324	1146156	4026755391176	328
1143666	4026755421835	324	1146163	4026755364002	326
1143668	4026755421842	324	1146164	4026755347678	326
1143670	4026755421859	324	1146164	4026755347678	346
1143704	4026755421866	324	1146166	4026755347685	326
1143764	4026755421873	324	1146166	4026755347685	346
1144251	4026755188035	260	1146168	4026755347692	326
1144252	4026755188042	260	1146170	4026755347708	326
1144253	4026755306415	261	1146172	4026755353068	328
1144564	4026755411676	327	1146174	4026755372472	328
1144566	4026755411683	327	1146204	4026755244984	326
1144606	4026755458145	330	1146264	4026755347715	326
1144608	4026755458152	330	1146264	4026755347715	346
1144664	4026755411690	327	1146649	4026755411720	329
1144666	4026755411706	327	1146650	4026755411737	329
1144764	4026755411713	327	1146651	4026755411744	329
1144864	4026755421880	325	1146652	4026755411751	329
1144964	4026755421903	325	1146653	4026755411768	329
1144966	4026755421910	325	1146654	4026755411775	329
1145064	4026755421927	325	1146655	4026755411782	329
1145504	4026755347500	125	1146656	4026755411799	329
1145504	4026755347500	326	1147169	4026755191257	293
1145506	4026755347517	125	1147204	4026755305623	324
1145506	4026755347517	326	1147304	4026755421941	324
1145563	4026755363975	125	1147306	4026755421958	324
1145563	4026755363975	326	1147308	4026755421965	324
1145564	4026755347524	125	1147310	4026755421972	324
1145564	4026755347524	326	1147404	4026755421989	324
1145564	4026755347524	346	1147504	4026755394849	326
1145566	4026755347531	125	1147506	4026755394856	326
1145566	4026755347531	326	1147604	4026755394863	326
1145566	4026755347531	346	1147606	4026755394870	326
1145604	4026755347548	125	1147608	4026755394887	326
1145604	4026755347548	326	1147610	4026755394894	326
1145606	4026755347555	125	1147704	4026755394900	326
1145606	4026755347555	326	1148504	4026755414448	327
1145608	4026755347562	326	1148506	4026755414455	327
1145610	4026755347579	326	1148604	4026755414462	327
1145663	4026755363982	125	1148606	4026755414479	327
1145663	4026755363982	326	1148608	4026755414486	327
1145664	4026755347586	125	1148610	4026755414493	327
1145664	4026755347586	326	1148704	4026755414509	327
1145664	4026755347586	346	1149004	4026755342765	335
1145666	4026755347593	125	1149011	4026755411034	332
1145666	4026755347593	326	1149021	4026755411041	332
1145666	4026755347593	346	1149031	4026755411058	332
1145704	4026755347623	125	1149041	4026755411065	332

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1149068	4026755400380	126	1150694	4026755414080	212
1149068	4026755400380	138	1150694	4026755414080	884
1149070	4026755395884	348	1150699°	4026755430370	56
1149071	4026755395891	348	1150699°	4026755430370	60
1149075	4026755395907	347	1150699°	4026755430370	212
1149076	4026755395914	347	1150699°	4026755430370	884
1149090	4026755367232	126	1150710	4026755448245	56
1149091	4026755394146	126	1150766	4026755461862	47
1149095	4026755407075	332	1150766	4026755461862	59
1149104	4026755393965	331	1150766	4026755461862	186
1149106	4026755393972	331	1150766	4026755461862	189
1149108	4026755393989	331	1150766	4026755461862	360
1149190	4026755394009	332	1150766	4026755461862	883
1149190	4026755394009	348	1150770	4026755421095	55
1149204	4026755421996	325	1150770	4026755421095	213
1149304	4026755422016	325	1150770	4026755421095	885
1149306	4026755422023	325	1150771	4026755421101	55
1149308	4026755422030	325	1150771	4026755421101	213
1149310	4026755422047	325	1150771	4026755421101	885
1149404	4026755422054	325	1150772	4026755421118	55
1149450	4026755430097	343	1150772	4026755421118	213
1149504	4026755395921	346	1150772	4026755421118	885
1149506	4026755395938	346	1150773	4026755421125	55
1149550	4026755408683	343	1150773	4026755421125	213
1149551	4026755408690	343	1150773	4026755421125	885
1149552	4026755430035	343	1150774	4026755425543	55
1149553	4026755436686	343	1150774	4026755425543	213
1149554	4026755437010	343	1150774	4026755425543	885
1149560	4026755408614	344	1150775	4026755451580	55
1149561	4026755408621	344	1150775	4026755451580	213
1149562	4026755436693	344	1150775	4026755451580	885
1149563	4026755436709	344	1150776	4026755451597	55
1149564	4026755436716	344	1150776	4026755451597	213
1149580	4026755448658	348	1150776	4026755451597	885
1149581	4026755414387	348	1150777	4026755460643	55
1149582	4026755448665	348	1150777	4026755460643	213
1149650	4026755430103	343	1150777	4026755460643	885
1149651	4026755430110	343	1150780	4026755449693	59
			1150780	4026755449693	186
1150004	4026755428988	901	1150780	4026755449693	189
1150006	4026755372052	901	1150780	4026755449693	883
1150008	4026755428995	901	1150781	4026755449709	59
1150090	4026755388688	720	1150781	4026755449709	186
1150090	4026755388688	902	1150781	4026755449709	189
1150104	4026755429008	901	1150781	4026755449709	883
1150106	4026755429015	901	1150790	4026755459623	58
1150108	4026755429022	901	1150790	4026755459623	882
1150300	4026755320282	897	1150795*	4026755468687	58
1150390	4026755332292	897	1150795*	4026755468687	882
1150665	4026755400151	54	1150799*	4026755471991	58
1150675	4026755420050	54	1150799*	4026755471991	882
1150680	4026755400557	53	1150961	4026755463743	34
1150680	4026755400557	211	1151000°	4026755281613	248
1150681	4026755409130	53	1151060°	4026755332148	254
1150681	4026755409130	211	1151065	4026755404937	254
1150682	4026755410778	53	1151080	4026755306422	249
1150682	4026755410778	211	1151081	4026755306439	249
1150683°	4026755410822	50	1151082	4026755306446	249
1150684	4026755414790	53	1151085	4026755306477	249
1150684	4026755414790	211	1151086°	4026755390605	249
1150685	4026755406665	50	1151087	4026755390612	249
1150688°	4026755423396	50	1151087	4026755390612	252
1150692	4026755414073	56	1151088	4026755407488	249
1150692	4026755414073	60	1151089	4026755435368	249
1150692	4026755414073	212	1151500°	4026755340006	248
1150692	4026755414073	884	1151600	4026755401523	248
1150693	4026755453409	60	1151800	4026755404944	248
1150693	4026755453409	212	1152051	4026755132748	38
1150693	4026755453409	884	1152051	4026755132748	185
1150694	4026755414080	56	1152051	4026755132748	188
1150694	4026755414080	60	1152051	4026755132748	192

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1152051	4026755132748	193	1152552	4026755132779	38
1152051	4026755132748	196	1152552	4026755132779	208
1152051	4026755132748	208	1152552	4026755132779	354
1152051	4026755132748	354	1152552	4026755132779	909
1152051	4026755132748	498	1152561	4026755363395	38
1152051	4026755132748	515	1152561	4026755363395	126
1152051	4026755132748	894	1152561	4026755363395	208
1152051	4026755132748	909	1152561	4026755363395	354
1152052	4026755227017	38	1152561	4026755363395	514
1152052	4026755227017	196	1152562°	4026755363401	38
1152052	4026755227017	208	1152562°	4026755363401	126
1152052	4026755227017	354	1152562°	4026755363401	208
1152052	4026755227017	498	1152562°	4026755363401	354
1152052	4026755227017	894	1153050	4026755359039	894
1152052	4026755227017	909	1153053	4026755393514	893
1152055	4026755434088	38	1153053	4026755393514	901
1152055	4026755434088	208	1153055	4026755392883	893
1152055	4026755434088	354	1153055	4026755392883	901
1152055	4026755434088	498	1153060	4026755332308	212
1152064	4026755425550	40	1153060	4026755332308	895
1152064	4026755425550	355	1153070	4026755336238	56
1152065	4026755425567	40	1153070	4026755336238	60
1152065	4026755425567	355	1153070	4026755336238	212
1152070	4026755464443	581	1153070	4026755336238	884
1152071	4026755308082	38	1153070	4026755336238	895
1152071	4026755308082	208	1153100	4026755453362	893
1152071	4026755308082	354	1153101	4026755384499	893
1152080	4026755459340	250	1153118	4026755384505	894
1152080	4026755459340	496	1153121	4026755382341	893
1152080	4026755459340	906	1153128	4026755382358	893
1152083	4026755459357	250	1153130	4026755394153	895
1152083	4026755459357	496	1153170	4026755392906	894
1152083	4026755459357	514	1153195	4026755393354	895
1152083	4026755459357	906	1153271	4026755382471	894
1152086	4026755436723	496	1153280	4026755431001	895
1152086	4026755436723	906	1153301	4026755382488	902
1152087	4026755436389	499	1153321	4026755382495	901
1152087	4026755436389	829	1153331	4026755398960	902
1152087	4026755436389	908	1153350	4026755382501	901
1152089	4026755429756	448	1153351	4026755392920	901
1152089	4026755429756	451	1158010°	4026755370799	358
1152089	4026755429756	456	1158011°	4026755409239	358
1152089	4026755429756	459	1158012*	4026755468717	358
1152089	4026755429756	500	1158013*	4026755468724	358
1152089	4026755429756	536	1158014	4026755464894	358
1152089	4026755429756	542	1158020	4026755409147	358
1152095	4026755393163	251	1158021	4026755409154	358
1152095	4026755393163	498	1158022	4026755409161	358
1152095	4026755393163	829	1158025	4026755455601	359
1152095	4026755393163	908	1158030	4026755370805	358
1152096	4026755375923	251	1158031	4026755370812	358
1152096	4026755375923	498	1158032	4026755399202	358
1152096	4026755375923	514	1158033	4026755436792	359
1152096	4026755375923	829	1159095	4026755383973	905
1152096	4026755375923	908	1159097	4026755448054	905
1152098	4026755375947	251			
1152098	4026755375947	497	1162054	4026755436341	73
1152098	4026755375947	581	1162154	4026755436358	73
1152098	4026755375947	907	1162472	4026755436730	73
1152099	4026755413229	498	1162473	4026755436747	73
1152099	4026755413229	513	1163032	4026755200157	94
1152099	4026755413229	829	1163042°	4026755191066	94
1152099	4026755413229	906	1163052	4026755172096	94
1152100	4026755405101	252	1163062	4026755172102	94
1152151	4026755217216	39	1163072	4026755191073	94
1152151	4026755217216	208	1163082	4026755330175	94
1152151	4026755217216	354	1163132	4026755200164	94
1152265	4026755364019	897	1163142°	4026755191080	94
1152451°	4026755336092	40	1163152	4026755172119	94
1152451°	4026755336092	355	1163162	4026755172126	94
1152453*	4026755468038	40	1163172	4026755191097	94

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1163182	4026755330182	94	1180904	4026755420746	74
1163232	4026755200171	94	1180955°	4026755186352	75
1163252	4026755172133	94	1180957°	4026755246032	75
1163262	4026755172140	94	1180964°	4026755186369	75
1163432	4026755200188	94	1180965°	4026755186376	75
1163433	4026755204667	94	1180967°	4026755186390	75
1163452	4026755172157	94	1181003	4026755401219	84
1163453	4026755172171	94	1181004	4026755401226	84
1163462	4026755172164	94	1181006	4026755401233	84
1163463	4026755172188	94	1181008	4026755401240	84
1163482	4026755330199	94	1181010	4026755401257	84
1163483	4026755330205	94	1181097	4026755401264	85
1163552	4026755423419	64	1181103	4026755401271	84
1163562	4026755423426	64	1181104	4026755401288	84
1163652	4026755423433	64	1181106	4026755401295	84
1163662	4026755423440	64	1181108	4026755401301	84
1164052	4026755332629	98	1181110	4026755401318	84
1164152	4026755332636	98	1181197	4026755401325	85
1164352	4026755332643	98	1181304	4026755407730	110
1164452	4026755332650	98	1181304	4026755407730	114
1164554	4026755436365	152	1181390	4026755401561	84
1165554	4026755436372	152	1181391	4026755401578	84
1166032	4026755200195	96	1181392	4026755401585	84
1166042°	4026755133080	96	1181392	4026755401585	110
1166052	4026755133103	96	1181392	4026755401585	114
1166062	4026755133127	96	1181393	4026755401592	84
1166072	4026755133141	96	1181393	4026755401592	110
1166082	4026755330212	96	1181393	4026755401592	114
1167032	4026755200201	96	1181396	4026755401349	85
1167042°	4026755133165	96	1181397	4026755401356	85
1167052	4026755133189	96	1181403	4026755420753	84
1167062	4026755133202	96	1181404	4026755420760	84
1167072	4026755133226	96	1181404	4026755420760	110
1167082	4026755330229	96	1181404	4026755420760	114
1167552°	4026755173512	96	1181406	4026755420777	84
1167562°	4026755173529	96	1181460	4026755224665	74
1168052°	4026755279740	95	1181461	4026755224672	74
1168152°	4026755279757	95	1181462	4026755224689	74
1169092°	4026755133325	96	1181463	4026755224696	74
1169093	4026755133332	96	1181492	4026755420784	85
1169094°	4026755133349	96	1182051°	4026755251463	116
1169192°	4026755133363	96	1182151	4026755251470	116
1169193	4026755133370	96	1182551°	4026755251487	112
1169194°	4026755133387	96	1182651	4026755251494	112
1169292°	4026755133400	96	1183063	4026755416107	62
1169293	4026755133417	96	1183064	4026755416114	62
1169294°	4026755133424	96	1183066	4026755416121	62
1169392°	4026755133448	96	1183068	4026755440799	62
1169393°	4026755133455	96	1183084	4026755461480	62
1169394°	4026755133462	96	1183163	4026755416138	62
1169492°	4026755304114	96	1183164	4026755416145	62
1169493	4026755304121	96	1183166	4026755416152	62
1169553	4026755286557	97	1183168	4026755440805	62
1169563	4026755286564	97	1183184	4026755461497	62
1169592°	4026755333541	96	1183263	4026755416169	62
1169593	4026755333558	96	1183264	4026755418972	62
			1183266	4026755431544	62
1180584	4026755186222	118	1183360	4026755431551	62
1180585	4026755186239	118	1183361	4026755431568	62
1180586	4026755186246	118	1183362	4026755424768	62
1180587	4026755186253	118	1183363	4026755424775	62
1180603	4026755186260	74	1183446	4026755422153	72
1180604	4026755186277	74	1183447	4026755422160	72
1180606	4026755186284	74	1183470	4026755407211	70
1180703	4026755186291	74	1183471	4026755407228	70
1180704	4026755186307	74	1183472	4026755407235	70
1180706	4026755186314	74	1183473	4026755407242	70
1180791	4026755186321	74	1183561	4026755186406	117
1180791	4026755186321	131	1183571	4026755186413	117
1180793	4026755205497	74	1183581	4026755186420	112
1180903	4026755420739	74	1183661°	4026755186444	112

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1183671°	4026755248975	117	1184288	4026755422672	107
1183703	4026755407259	70	1184289	4026755431193	107
1183704	4026755407266	70	1184383	4026755332490	103
1183706	4026755407273	70	1184384	4026755332506	103
1183708	4026755407280	70	1184703°	4026755401363	87
1183747	4026755422177	72	1184704°	4026755401370	87
1183775°	4026755407297	71	1184706°	4026755401387	87
1183784	4026755358421	70	1184803°	4026755401394	87
1183793	4026755431629	79	1184804°	4026755401400	87
1183794	4026755431636	79	1184806°	4026755401417	87
1183803	4026755407303	70	1185003	4026755422719	78
1183804	4026755407310	70	1185004	4026755422726	78
1183806	4026755407327	70	1185006	4026755422733	78
1183808	4026755407334	70	1185103	4026755422740	78
1183847	4026755422184	72	1185104	4026755422757	78
1183875°	4026755407341	71	1185106	4026755422764	78
1183884	4026755358438	70	1185503°	4026755430394	63
1183893	4026755431643	79	1185504°	4026755430400	63
1183894	4026755431650	79	1185506°	4026755430417	63
1183903	4026755407358	70	1185603°	4026755430424	63
1183904	4026755407365	70	1185604°	4026755430431	63
1183906	4026755407372	70	1185606°	4026755430448	63
1183942	4026755422191	72	1186002	4026755431674	134
1183961	4026755191790	131	1186052	4026755251500	135
1183961	4026755191790	135	1186052	4026755251500	292
1183962	4026755414110	72	1186053	4026755251517	135
1183962	4026755414110	291	1186053	4026755251517	292
1184005	4026755431667	110	1186054	4026755297980	135
1184013	4026755241655	100	1186054	4026755297980	292
1184014	4026755241662	100	1186200	4026755191813	135
1184016	4026755384284	105	1186200	4026755191813	292
1184023	4026755291087	101	1187047	4026755414424	134
1184024	4026755291094	101	1187047	4026755414424	204
1184025	4026755312089	104	1187047	4026755414424	292
1184033	4026755291100	101	1187049	4026755407747	134
1184034	4026755291117	101	1187056	4026755191820	119
1184035	4026755312096	104	1187059	4026755429817	134
1184073	4026755423457	65	1187065	4026755417975	67
1184074	4026755423464	65	1187065	4026755417975	134
1184076	4026755431476	66	1187065	4026755417975	292
1184077	4026755384291	66	1187070	4026755191844	135
1184077	4026755384291	105	1187070	4026755191844	293
1184083	4026755241679	100	1187071	4026755235104	135
1184084	4026755241686	100	1187071	4026755235104	293
1184086	4026755384307	105	1187078	4026755432862	102
1184087	4026755384314	66	1187078	4026755432862	135
1184087	4026755384314	105	1187078	4026755432862	205
1184088	4026755348835	102	1187090	4026755436402	67
1184089	4026755348842	102	1187090	4026755436402	134
1184090	4026755316018	102	1187352	4026755169430	134
1184091	4026755316025	102	1187352	4026755169430	292
1184092	4026755312102	104	1187504	4026755393521	86
1184093	4026755312119	104	1187506	4026755393538	86
1184094	4026755417623	66	1187604	4026755391589	86
1184094	4026755417623	106	1187606	4026755391596	86
1184095	4026755271607	102	1187608	4026755391602	86
1184096	4026755268942	102	1188051	4026755182279	67
1184097	4026755277302	102	1188051	4026755182279	81
1184098	4026755277319	102	1188051	4026755182279	294
1184135	4026755319583	104	1188089	4026755454123	81
1184183	4026755314977	103	1188091°	4026755311143	81
1184184	4026755314984	103	1188092°	4026755252828	81
1184185	4026755422641	103	1188093	4026755311150	67
1184186	4026755420586	103	1188093	4026755311150	81
1184188	4026755422658	107	1188093	4026755311150	294
1184189	4026755431186	107	1188094°	4026755417630	67
1184235	4026755319590	104	1188094°	4026755417630	81
1184283	4026755314991	103	1188095	4026755379129	81
1184284	4026755315004	103	1188363	4026755431681	77
1184285	4026755422665	103	1188364	4026755431698	77
1184286	4026755420593	103	1188366	4026755431704	77

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1188400	4026755191868	81	1340931	4026755423211	520
1188400	4026755191868	294	1340932	4026755423228	520
1188406°	4026755416466	86	1340950	4026755423235	520
1188408°	4026755416473	86	1340951	4026755423242	520
1188463	4026755431711	77	1340952	4026755423259	520
1188464	4026755431728	77	1341030	4026755358544	518
1188466	4026755431735	77	1341031	4026755358551	518
1188585	4026755390629	80	1341032	4026755358568	518
1189077	4026755435405	66	1341050	4026755384857	518
1189077	4026755435405	105	1341051	4026755384864	518
1189087	4026755432909	66	1341052	4026755384871	518
1189087	4026755432909	105	1341070	4026755371772	528
1189094	4026755418927	66	1341071	4026755413168	526
1189094	4026755418927	106	1341072	4026755435658	526
1189361	4026755231625	112	1341074	4026755441109	526
1189361	4026755231625	117	1341080	4026755358445	523
1189381°	4026755217230	36	1341081	4026755402506	531
1189785	4026755390636	80	1341082	4026755417043	523
			1341083	4026755422818	523
1190503	4026755232370	142	1341084	4026755425437	523
1190504	4026755232387	142	1341088	4026755446630	529
1190506	4026755232394	142	1341089	4026755446647	529
1190603	4026755232400	142	1341091	4026755410693	530
1190604	4026755232417	142	1341092	4026755410723	505
1190606	4026755232424	142	1341093	4026755412574	531
1191503	4026755251678	142	1341094	4026755419627	530
1191504	4026755251685	142	1341095	4026755358469	526
1191506	4026755296457	142	1341097	4026755422337	526
1191603	4026755251692	142	1341098	4026755424522	243
1191604	4026755251708	142	1341098	4026755424522	527
1191606	4026755296464	142	1341099	4026755428117	243
1194503	4026755257953	142	1341099	4026755428117	527
1194504	4026755257960	142	1341121	4026755398328	523
1194506	4026755304152	142	1341130	4026755383140	521
1194603	4026755257977	142	1341131	4026755383157	521
1194604	4026755257984	142	1341132	4026755383164	521
1194606	4026755304169	142	1341140	4026755383171	521
			1341141	4026755383188	521
1300200	4026755133516	712	1341142	4026755383195	521
1300200	4026755133516	866	1341150	4026755394245	521
1300251	4026755133523	712	1341151	4026755394252	521
1300251	4026755133523	866	1341152	4026755394269	521
1300306	4026755372533	712	1341160	4026755394276	521
1300306	4026755372533	866	1341161	4026755394283	521
1300308	4026755372540	712	1341162	4026755394290	521
1300308	4026755372540	866	1341170	4026755396607	528
1300310	4026755372557	712	1341175	4026755396614	528
1300310	4026755372557	866	1341177	4026755435412	528
1300351	4026755133530	712	1341180	4026755394306	524
1300351	4026755133530	866	1341182	4026755398342	523
1300352	4026755133547	712	1341183	4026755412710	524
1300352	4026755133547	866	1341184	4026755412734	524
1300381°	4026755133554	713	1341185	4026755435429	524
1300381°	4026755133554	866	1341187	4026755396621	530
1300382°	4026755133561	713	1341188	4026755446654	529
1300382°	4026755133561	866	1341189	4026755443561	530
1300383°	4026755133578	713	1341193	4026755457216	526
1300383°	4026755133578	866	1341195	4026755397819	523
1300385	4026755399080	713	1341195	4026755397819	526
1300386	4026755399097	713	1341196	4026755401974	523
1300952	4026755133684	713	1341197	4026755405040	526
1300952	4026755133684	866	1341198	4026755411577	526
1300953	4026755389784	713	1341199	4026755430462	243
1300954	4026755389791	713	1341199	4026755430462	527
1302006	4026755133745	713	1341220	4026755421002	519
1302006	4026755133745	866	1341231	4026755393552	519
1302008	4026755389807	713	1341251	4026755431810	519
1302010	4026755389814	713	1341252	4026755392098	519
			1341257	4026755400564	519
1340920	4026755431209	520	1341262	4026755399943	519
1340930	4026755423204	520	1341267	4026755431827	519

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1341271	4026755399981	519	1344497	4026755462418	507
1341274	4026755405057	519	1344497	4026755462418	539
1341280	4026755392104	529	1344497	4026755462418	540
1341281	4026755392111	529	1344498*	4026755466409	507
1341282	4026755392128	529	1344498*	4026755466409	539
1341282	4026755392128	529	1344498*	4026755466409	540
1341283	4026755407808	529	1344550	4026755447392	504
1341284	4026755407815	529	1344551	4026755459432	504
1341290	4026755392135	529	1344555	4026755447408	504
1341291	4026755392142	529	1344580*	4026755466416	507
1341292	4026755392159	529	1344581*	4026755466423	507
1341292	4026755392159	529	1344582*	4026755466430	507
1341295	4026755399998	526	1344583*	4026755466447	514
1341296	4026755424256	526	1344595	4026755454338	508
1341298	4026755441116	243	1344596*	4026755467673	509
1341298	4026755441116	508	1344597°	4026755454420	509
1341299	4026755455397	243	1344598	4026755454437	510
1341332	4026755411805	520	1344599	4026755454444	510
1341340	4026755411812	522	1344697	4026755454451	511
1341341	4026755411829	522	1344698	4026755454468	511
1341342	4026755411836	522	1344699	4026755454475	511
1341360	4026755411843	522	1349051	4026755384758	529
1341361	4026755411850	522	1349052	4026755392180	505
1341362	4026755411867	522	1349052	4026755392180	529
1341372	4026755430974	520	1349054	4026755413748	529
1341383	4026755407839	529	1349096	4026755450682	530
1341384	4026755407846	529	1349097	4026755438642	530
1341442	4026755412239	522	1349098	4026755431575	530
1341462	4026755412260	522	1349099	4026755431483	530
1341542	4026755412666	522	1349980	4026755434385	530
1341562	4026755412697	522	1349981	4026755434392	530
1341642	4026755435467	522	1349982	4026755434408	530
1341662	4026755435474	522	1349983	4026755464450	531
1341980	4026755430479	507			
1341980	4026755430479	524	1350106	4026755433036	558
1341981	4026755430486	507	1350108	4026755433043	558
1341981	4026755430486	524	1350260	4026755407501	474
1342093	4026755422825	512	1350271	4026755363043	433
1343050	4026755336252	530	1350271	4026755363043	445
1343092	4026755422832	530	1350281	4026755133776	433
1344030	4026755446890	504	1350281	4026755133776	445
1344031	4026755446906	504	1350281	4026755133776	483
1344032	4026755446913	504	1350285	4026755336269	434
1344050	4026755446920	504	1350285	4026755336269	445
1344051	4026755446937	504	1350285	4026755336269	484
1344052	4026755446944	504	1350289	4026755283136	434
1344083	4026755462302	507	1350289	4026755283136	445
1344084	4026755462319	507	1350289	4026755283136	483
1344084	4026755462319	539	1350290	4026755425734	439
1344085	4026755462326	507	1350290	4026755425734	442
1344085	4026755462326	540	1350292	4026755391442	434
1344093	4026755462333	507	1350292	4026755391442	445
1344094	4026755462340	507	1350292	4026755391442	483
1344094	4026755462340	539	1350294	4026755336276	434
1344095	4026755462357	507	1350295	4026755336283	434
1344095	4026755462357	540	1350296	4026755336290	430
1344097	4026755459418	508	1350296	4026755336290	434
1344098	4026755459425	510	1350296	4026755336290	445
1344470	4026755457223	508	1350296	4026755336290	448
1344480	4026755447361	505	1350296	4026755336290	483
1344481*	4026755469547	506	1350297	4026755336306	430
1344484	4026755456257	505	1350297	4026755336306	434
1344485	4026755447378	505	1350297	4026755336306	445
1344489	4026755462968	505	1350297	4026755336306	483
1344490	4026755447385	505	1350299	4026755283150	434
1344491	4026755461619	507	1350299	4026755283150	445
1344492	4026755462364	507	1350436°	4026755395402	491
1344493	4026755462371	507	1350443	4026755343823	482
1344494	4026755462388	507	1350444	4026755343830	482
1344495	4026755462395	507	1350445	4026755395419	491
1344496	4026755462401	507	1350446	4026755395426	491

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1350447	4026755395433	491	1351586	4026755355574	486
1350448	4026755395440	491	1351587	4026755355581	486
1350449	4026755395457	491	1351588	4026755355598	486
1350450	4026755342369	492	1351589	4026755408010	489
1350451	4026755342376	492	1351590	4026755280791	488
1350455	4026755342383	492	1351591	4026755336429	488
1350456	4026755342390	492	1351592	4026755306484	486
1350457	4026755342406	492	1351593	4026755348453	486
1350465	4026755342413	492	1351596	4026755318074	830
1350466	4026755342420	492	1351597	4026755328547	466
1350467	4026755342437	492	1351598°	4026755330663	466
1350470	4026755342444	493	1351598°	4026755330663	478
1350471	4026755342451	493	1351651	4026755134025	490
1350474°	4026755342468	493	1351652	4026755343137	490
1350474°	4026755342468	834	1351654	4026755409246	490
1350475°	4026755342475	493	1351655	4026755305401	490
1350475°	4026755342475	834	1351657	4026755381580	490
1350476	4026755342482	493	1351658	4026755381597	490
1350476	4026755342482	834	1351662	4026755458046	487
1350477	4026755342499	493	1351663	4026755458053	487
1350477	4026755342499	834	1351664	4026755458060	487
1350481°	4026755384468	493	1351665	4026755458077	487
1350490	4026755372137	482	1351672	4026755394986	487
1350594	4026755133820	492	1351673	4026755394993	487
1350951	4026755347210	430	1351674	4026755395006	487
1350951	4026755347210	433	1351675	4026755396638	487
1350951	4026755347210	439	1351678	4026755458084	488
1350951	4026755347210	442	1351679	4026755458091	488
1350951	4026755347210	444	1351690°	4026755306491	433
1350951	4026755347210	448	1351690°	4026755306491	456
1350951	4026755347210	483	1351690°	4026755306491	459
1350952	4026755336313	430	1351690°	4026755306491	465
1350952	4026755336313	433	1351690°	4026755306491	474
1350952	4026755336313	439	1351690°	4026755306491	475
1350952	4026755336313	442	1351690°	4026755306491	717
1350952	4026755336313	444	1351691°	4026755407860	444
1350952	4026755336313	448	1351691°	4026755407860	465
1350952	4026755336313	483	1351691°	4026755407860	474
1350953	4026755336320	430	1351691°	4026755407860	479
1350953	4026755336320	433	1351691°	4026755407860	483
1350953	4026755336320	439	1351692	4026755370027	487
1350953	4026755336320	442	1351693	4026755373035	487
1350953	4026755336320	444	1351694	4026755373042	487
1350953	4026755336320	448	1351695	4026755407518	487
1350953	4026755336320	483	1351696	4026755333169	830
1350954	4026755336337	434	1351697	4026755371529	487
1350956	4026755394160	451	1351698	4026755332704	488
1350956	4026755394160	456	1351699	4026755332711	488
1350956	4026755394160	459	1351701	4026755400755	430
1350958	4026755432992	451	1351702	4026755400762	430
1350958	4026755432992	456	1351703	4026755400779	430
1350958	4026755432992	459	1351704	4026755400786	430
1351055	4026755454840	444	1351705	4026755400793	557
1351062	4026755133868	561	1351758	4026755396157	488
1351072	4026755251531	561	1351759	4026755396164	488
1351095	4026755133882	492	1351770	4026755411584	487
1351096	4026755133899	493	1351771	4026755411591	487
1351394	4026755133981	492	1351778	4026755371550	488
1351396	4026755133998	493	1351779	4026755371567	488
1351470	4026755348422	486	1351783	4026755407082	486
1351471	4026755348439	486	1351785	4026755407099	486
1351472	4026755348446	486	1351790	4026755358575	466
1351482	4026755395464	486	1351790	4026755358575	548
1351483	4026755395471	486	1351790	4026755358575	830
1351568	4026755395488	488	1351791	4026755358582	466
1351569	4026755395495	488	1351791	4026755358582	548
1351571	4026755134018	486	1351791	4026755358582	830
1351582	4026755400861	486	1351792	4026755358599	466
1351583	4026755249514	486	1351792	4026755358599	830
1351584	4026755280777	486	1351793	4026755369977	466
1351585	4026755280784	486	1351793	4026755369977	830

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1352088	4026755442250	493	1355159*		464
1352088	4026755442250	513	1355159*		500
1352089	4026755442267	493	1355251	4026755387650	429
1352089	4026755442267	513	1355257	4026755387667	429
1352096	4026755258677	433	1355259	4026755387674	429
1352096	4026755258677	444	1355270	4026755290578	450
1352096	4026755258677	465	1355271	4026755249217	432
1352096	4026755258677	474	1355274	4026755343892	432
1352096	4026755258677	479	1355275	4026755381337	447
1352096	4026755258677	483	1355276	4026755383225	447
1352098	4026755382389	456	1355279	4026755383232	447
1352098	4026755382389	459	1355280	4026755451368	450
1352250	4026755429039	439	1355281	4026755451375	450
1352250	4026755429039	482	1355299	4026755446494	448
1352258	4026755435184	439	1356050	4026755399608	482
1352258	4026755435184	484	1356090	4026755352139	494
1352259	4026755435191	439	1356091	4026755352146	494
1352259	4026755435191	484	1356092	4026755352153	494
1352272	4026755318944	465	1356093	4026755352160	494
1352273	4026755318951	444	1356097	4026755381344	465
1352273	4026755318951	465	1356097	4026755381344	483
1352296	4026755280814	433	1356097	4026755381344	494
1352297	4026755280821	479	1356098	4026755381351	444
1353181	4026755273830	433	1356098	4026755381351	465
1353181	4026755273830	465	1356098	4026755381351	494
1353390	4026755249347	433	1356250	4026755399615	482
1353390	4026755249347	444	1356293*	4026755472059	444
1353583	4026755401424	557	1356293*	4026755472059	474
1353584	4026755401431	557	1356294*	4026755472066	444
1354070	4026755439267	464	1356294*	4026755472066	474
1354087	4026755385205	464	1356872°	4026755386769	478
1354097	4026755385212	464	1356972°	4026755386776	478
1354166	4026755454291	463	1356989°	4026755386783	478
1354171	4026755356878	463	1357020	4026755438659	440
1354260	4026755461503	437	1357027	4026755438666	440
1354270	4026755391459	463	1357029	4026755438673	440
1354272	4026755422511	463	1357070	4026755419009	435
1354274	4026755391466	463	1357072	4026755423471	435
1354276	4026755386271	463	1357073	4026755423488	435
1354571	4026755383355	475	1357086	4026755433050	439
1354580	4026755396904	473	1357087	4026755433067	439
1354586	4026755383393	473	1357088	4026755433074	439
1354587	4026755406986	473	1357088	4026755433074	443
1354691	4026755455014	473	1357089	4026755430516	438
1354692	4026755401608	473	1357090	4026755430523	438
1354693°	4026755400816	473	1357090	4026755430523	442
1354699	4026755370348	475	1357091	4026755430530	438
1354783	4026755407112	472	1357092	4026755430547	438
1354795	4026755407136	472	1357092	4026755430547	442
1354798	4026755407143	472	1357093	4026755430554	438
1355051	4026755387629	428	1357093	4026755430554	442
1355057	4026755387636	428	1357094	4026755430561	439
1355059	4026755387643	428	1357094	4026755430561	443
1355070	4026755456943	449	1357095	4026755430578	439
1355071	4026755249170	431	1357095	4026755430578	443
1355074	4026755343854	431	1357096	4026755430585	438
1355075	4026755381320	446	1357097	4026755430592	438
1355076	4026755383201	446	1357097	4026755430592	442
1355079	4026755383218	446	1357098	4026755430608	438
1355080	4026755451344	449	1357098	4026755430608	442
1355081	4026755451351	449	1357098	4026755430608	448
1355090	4026755263510	433	1357098	4026755430608	451
1355090	4026755263510	465	1357099	4026755430615	438
1355090	4026755263510	494	1357099	4026755430615	442
1355091	4026755280845	494	1357099	4026755430615	448
1355092	4026755280852	494	1357099	4026755430615	451
1355093*	4026755472035	433	1357153°	4026755407532	500
1355093*	4026755472035	474	1357154°	4026755407549	500
1355094*	4026755472042	433	1357157	4026755344080	500
1355094*	4026755472042	474	1357159	4026755383249	464
1355158°	4026755407525	500	1357159	4026755383249	500

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1357160	4026755383256	464	1359094	4026755328554	560
1357160	4026755383256	500	1359095	4026755318319	560
1357161	4026755395150	500	1359096	4026755318326	560
1357163*		500	1359097	4026755318333	560
1357220	4026755438680	441	1359098	4026755318340	560
1357227	4026755438697	441	1359099	4026755318357	492
1357229	4026755438703	441	1359101	4026755318364	560
1357270	4026755419016	436	1359102	4026755318388	560
1357272	4026755423495	436	1359103	4026755318395	560
1357273	4026755423501	436	1359104	4026755318401	560
1357290	4026755423792	438	1359105	4026755318418	560
1357290	4026755423792	442	1359551	4026755318463	493
1357290	4026755423792	496	1359552	4026755318470	493
1357291	4026755440645	513	1359553	4026755359077	493
1357292	4026755446500	513	1359554	4026755375688	493
1358149	4026755434781	839	1359591	4026755359114	466
1358150	4026755381955	500	1359591	4026755359114	830
1358155	4026755344103	500	1359592	4026755359121	466
1358157	4026755370690	500	1359592	4026755359121	830
1358161	4026755358605	500	1359995	4026755455762	500
1358163°	4026755407556	500	1359995	4026755455762	538
1358164°	4026755407563	500	1359995	4026755455762	543
1358165	4026755431506	448	1359996	4026755455779	500
1358165	4026755431506	451	1359996	4026755455779	543
1358165	4026755431506	500			
1358166*		448	1360033	4026755422849	809
1358166*		451	1360063	4026755422856	810
1358166*		500	1360394	4026755420463	813
1358170	4026755434798	500	1360394	4026755420463	910
1358171	4026755434804	500	1360556	4026755422863	811
1358171	4026755434804	840	1360557	4026755422870	811
1358180	4026755434811	840	1360558	4026755422887	811
1358240	4026755379136	454	1360573	4026755422894	809
1358251	4026755355710	454	1360588°	4026755431216	839
1358252	4026755414134	454	1360589	4026755447835	839
1358340	4026755379143	455	1360590*		839
1358351	4026755355734	455	1360851	4026755391497	816
1358352	4026755414141	455	1360852	4026755422900	816
1358540	4026755379150	457	1360853	4026755422917	816
1358551	4026755371970	457	1360854	4026755427448	816
1358552	4026755414158	457	1360862	4026755430905	817
1358640	4026755379167	458	1360864	4026755427455	817
1358651	4026755371994	458	1361011	4026755373486	860
1358652	4026755414165	458	1361012	4026755373493	860
1359040	4026755337266	560	1361013	4026755373509	860
1359041	4026755337273	559	1361050	4026755401981	821
1359042	4026755337280	559	1361050	4026755401981	911
1359043	4026755352795	558	1361060	4026755401998	821
1359050	4026755317350	558	1361060	4026755401998	911
1359060	4026755318135	558	1361092	4026755413236	838
1359061	4026755318142	558	1361098	4026755349153	430
1359062	4026755318159	558	1361098	4026755349153	433
1359063	4026755318166	558	1361098	4026755349153	439
1359064	4026755318173	558	1361098	4026755349153	442
1359065	4026755318180	558	1361098	4026755349153	444
1359066	4026755318197	558	1361098	4026755349153	448
1359067	4026755318203	558	1361098	4026755349153	483
1359068	4026755318210	559	1361228	4026755406993	851
1359069	4026755318227	559	1361229	4026755407006	851
1359070	4026755318234	559	1361230	4026755346831	842
1359071	4026755318241	559	1361231	4026755346848	842
1359072	4026755318258	559	1361248	4026755389302	852
1359073	4026755352801	559	1361249	4026755373523	852
1359080	4026755318265	559	1361250	4026755366419	852
1359081	4026755318272	559	1361251	4026755366426	852
1359085	4026755318289	245	1361252	4026755405231	852
1359085	4026755318289	559	1361253	4026755405248	852
1359086	4026755437614	559	1361254	4026755366433	852
1359090	4026755318296	560	1361255	4026755366440	852
1359091	4026755318302	543	1361256	4026755366457	852
1359091	4026755318302	560	1361257	4026755366464	852

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1361258	4026755366471	852	1361694	4026755379822	844
1361259	4026755366488	852	1362063	4026755417012	810
1361260	4026755350739	844	1362064°	4026755422924	810
1361262	4026755350753	844	1363051	4026755166286	835
1361264	4026755356007	844	1364140°	4026755369922	835
1361266	4026755405132	844	1364149°	4026755200249	837
1361270	4026755364439	843	1364151°	4026755200263	837
1361271	4026755364446	843	1364160°	4026755280869	837
1361275	4026755364453	843	1364161	4026755280876	837
1361276	4026755364460	843	1364162	4026755281651	837
1361278	4026755385533	843	1364163	4026755372571	837
1361279	4026755379174	862	1364170	4026755365054	837
1361283	4026755400328	851	1364185	4026755370034	595
1361284	4026755400335	851	1364185	4026755370034	860
1361288	4026755400342	847	1364186	4026755370041	836
1361289	4026755366365	848	1364187	4026755430271	838
1361290	4026755363623	844	1364188	4026755430288	838
1361295	4026755364026	844	1364189	4026755430295	838
1361340	4026755416923	846	1364190	4026755283570	837
1361345	4026755416930	846	1364192	4026755430301	835
1361380	4026755416947	847	1364193	4026755430318	837
1361381	4026755416954	847	1364194	4026755430325	837
1361385	4026755416961	847	1364195	4026755319897	838
1361387	4026755385557	848	1364196	4026755319903	838
1361388	4026755417050	848	1364198	4026755344141	838
1361389	4026755417067	848	1364199	4026755343533	836
1361391	4026755416978	848	1364240	4026755393743	845
1361392	4026755416985	848	1364247	4026755347388	835
1361393	4026755416992	848	1364248	4026755387469	592
1361394	4026755417005	848	1364250	4026755305470	836
1361421	4026755350777	595	1364260	4026755332179	837
1361421	4026755350777	860	1364290°	4026755318487	836
1361422	4026755350784	595	1365040	4026755358650	856
1361422	4026755350784	860	1365050	4026755358667	856
1361423	4026755350791	595	1365060	4026755358674	856
1361423	4026755350791	860	1365540	4026755372229	857
1361424	4026755350807	860	1365550	4026755372236	857
1361425	4026755350814	860	1365560	4026755372243	857
1361440°	4026755415148	846	1366040	4026755386387	858
1361448°	4026755415247	853	1366050	4026755386394	858
1361450	4026755462975	846	1366060	4026755386400	858
1361453	4026755462982	853	1366597	4026755420470	812
1361454	4026755462999	853	1366597	4026755420470	910
1361455	4026755463002	853	1367258°	4026755431223	839
1361456	4026755463019	853	1367259	4026755447842	839
1361457	4026755463026	853	1367260*		839
1361458	4026755463033	853	1367393	4026755371628	833
1361480°	4026755415155	847	1367395	4026755371635	833
1361481°	4026755415261	847	1367396	4026755371642	833
1361486°	4026755415278	850	1367397	4026755371659	833
1361487°	4026755415285	850	1367465	4026755332735	551
1361488°	4026755415292	853	1367465	4026755332735	834
1361489°	4026755415308	853	1367468	4026755332742	551
1361490	4026755463040	847	1367468	4026755332742	834
1361491	4026755463057	847	1367573°	4026755386455	833
1361496	4026755463064	850	1367575°	4026755386462	833
1361497	4026755463071	850	1367576°	4026755386479	833
1361622	4026755350838	844	1367577°	4026755386486	833
1361623	4026755362329	844	1367579°	4026755386493	833
1361625	4026755379181	845	1367583	4026755386509	833
1361651	4026755350845	862	1367585	4026755386516	833
1361652	4026755350852	862	1367586	4026755386523	833
1361653	4026755350869	862	1367587	4026755386530	833
1361654	4026755350876	862	1367589	4026755386547	833
1361655	4026755352399	862	1367593°	4026755386554	833
1361671	4026755359145	844	1367595°	4026755386561	833
1361672	4026755359152	844	1367596°	4026755386578	833
1361680	4026755359169	862	1367597°	4026755386585	833
1361681	4026755359176	862	1367599°	4026755386592	833
1361690	4026755350883	845	1368064	4026755422931	815
1361691	4026755350890	845	1368163	4026755422948	814

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1368251	4026755394320	818	1381048	4026755415315	554
1369008°	4026755417029	839	1381049	4026755391275	554
1369010*		839	1381049	4026755391275	592
1369050	4026755363135	304	1381066	4026755396645	551
1369050	4026755363135	832	1381068	4026755400403	548
1369051	4026755225259	595	1381078	4026755429046	542
1369051	4026755225259	860	1381079	4026755397680	551
1369055	4026755371222	304	1381080	4026755395310	551
1369055	4026755371222	832	1381082°	4026755356915	552
1369062°	4026755399288	304	1381083°	4026755356922	552
1369062°	4026755399288	832	1381084°	4026755356939	552
1369065°	4026755399295	304	1381088	4026755381368	550
1369065°	4026755399295	832	1381089	4026755380408	550
1369076	4026755364279	862	1381090°	4026755366938	548
1369078	4026755364286	862	1381091	4026755366945	548
1369080	4026755330847	835	1381093	4026755366976	549
1369081	4026755330854	835	1381094	4026755366983	549
1369083	4026755367119	862	1381095	4026755366990	549
1369084	4026755367126	862	1381096	4026755367003	549
1369085	4026755330861	835	1381097	4026755367010	549
1369086	4026755364293	835	1381099°	4026755367270	549
1369089	4026755350906	835	1381125	4026755465075	534
1369090	4026755315936	835	1381127	4026755465082	534
1369092	4026755415940	837	1381140	4026755465099	535
1369093	4026755331004	499	1381142	4026755465105	535
1369093	4026755331004	513	1381150	4026755465112	536
1369093	4026755331004	595	1381152	4026755465129	536
1369093	4026755331004	717	1381160*	4026755468076	540
1369093	4026755331004	829	1381161*	4026755468083	540
1369094	4026755331011	499	1381162*	4026755468090	538
1369094	4026755331011	513	1381163*	4026755468106	538
1369094	4026755331011	595	1381163*	4026755468106	540
1369094	4026755331011	829	1381164*	4026755468113	538
1369095	4026755418323	499	1381164*	4026755468113	540
1369095	4026755418323	513	1381165*	4026755468120	507
1369095	4026755418323	721	1381165*	4026755468120	538
1369096	4026755364316	862	1381165*	4026755468120	540
1369098	4026755364323	862	1381166*	4026755468137	538
1369531	4026755400144	827	1381166*	4026755468137	540
1369532	4026755417647	827	1381167*	4026755468144	538
1369532	4026755417647	839	1381167*	4026755468144	540
1369549	4026755420487	827	1381168*	4026755468151	538
1369551	4026755420494	827	1381168*	4026755468151	540
1369553	4026755435054	829	1381169*	4026755468168	538
1369555	4026755396379	497	1381169*	4026755468168	540
1369555	4026755396379	828	1381185°	4026755409406	547
1369591	4026755344189	829	1381185°	4026755409406	605
			1381190*	4026755471977	536
1371000	4026755440812	599	1381191	4026755430622	543
1371090	4026755447859	599	1381191	4026755430622	551
1371091	4026755447866	599	1381192	4026755430639	543
			1381192	4026755430639	551
1381025°	4026755415742	547	1381193	4026755430646	543
1381025°	4026755415742	913	1381193	4026755430646	551
1381027°	4026755415759	547	1381194	4026755430653	543
1381027°	4026755415759	913	1381194	4026755430653	551
1381030°	4026755400878	546	1381199	4026755431742	543
1381030°	4026755400878	912	1381199	4026755431742	551
1381032°	4026755400885	546	1381580	4026755419634	541
1381032°	4026755400885	912	1381581	4026755434422	541
1381035°	4026755400892	546	1381582	4026755434118	541
1381035°	4026755400892	912	1381584*	4026755434132	545
1381037°	4026755400908	546	1381585	4026755439670	543
1381037°	4026755400908	912	1381587	4026755439694	543
1381042°	4026755400397	553	1381590	4026755422955	542
1381043	4026755418330	554	1381591	4026755434439	542
1381044	4026755417395	554	1381592	4026755434446	542
1381045	4026755406931	554	1381593	4026755438871	545
1381046	4026755406948	554	1381594	4026755438888	542
1381047	4026755391268	554	1381594	4026755438888	547
1381047	4026755391268	592	1381595	4026755438895	545

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1381596	4026755438901	545	1395011*	4026755471854	581
1381597	4026755438918	545	1395011*	4026755471854	603
1381599	4026755443349	545	1395012*	4026755471861	581
1383460	4026755400571	590	1395012*	4026755471861	603
1383465	4026755400588	590	1399091	4026755424249	581
1383480	4026755413199	591	1399092	4026755438321	581
1383485	4026755413205	591			
1383550	4026755401813	589	1400051	4026755278361	228
1383555	4026755401820	589	1400051	4026755278361	616
1383562	4026755394917	589	1400052	4026755278378	228
1383567	4026755394924	589	1400052	4026755278378	616
1383575	4026755402025	592	1400054	4026755333596	228
1383580	4026755396317	592	1400054	4026755333596	616
1383581	4026755396324	593	1400151	4026755278385	228
1383582	4026755418347	554	1400151	4026755278385	616
1383583	4026755427097	594	1400152	4026755278392	228
1383584	4026755455403	592	1400152	4026755278392	616
1383592	4026755410518	595	1400154	4026755296983	228
1383592	4026755410518	605	1400154	4026755296983	616
1383593	4026755412826	595	1400164°	4026755188158	256
1383594	4026755429763	595	1400251	4026755280609	228
1383594	4026755429763	605	1400251	4026755280609	268
1383645	4026755422535	589	1400252	4026755280616	228
1383646	4026755435481	589	1400252	4026755280616	268
1385008	4026755373240	602	1400254	4026755338591	228
1385010	4026755352498	602	1400254	4026755338591	268
1385015	4026755352504	602	1400352	4026755303001	228
1385105	4026755352528	602	1400352	4026755303001	269
1385107	4026755352535	602	1400354	4026755303018	228
1385110	4026755352542	602	1400354	4026755303018	269
1386008	4026755417654	602	1400392	4026755134490	256
1386010	4026755417661	602	1400460	4026755359190	616
1386015	4026755417678	602	1400461	4026755359206	616
1387006	4026755435498	602	1400554	4026755134513	256
1387106	4026755435504	602	1400560	4026755359213	228
1387303	4026755420876	603	1400560	4026755359213	269
1387505	4026755420883	602	1400560	4026755359213	616
1387506	4026755435511	602	1400562	4026755360493	228
1387606	4026755435528	602	1400562	4026755360493	269
1389001	4026755382211	592	1400562	4026755360493	616
1389001	4026755382211	605	1400563	4026755366372	228
1389008°	4026755413250	548	1400563	4026755366372	269
1389008°	4026755413250	839	1400563	4026755366372	616
1389010*		548	1400652	4026755134520	256
1389010*		839	1400653	4026755134537	256
1389050	4026755391282	551	1400654	4026755134544	256
1389051	4026755391299	551	1400660	4026755359220	269
1389052	4026755426861	551	1400660	4026755359220	616
1389082°	4026755401448	552	1400691	4026755134551	256
1389085°	4026755413403	552	1400692	4026755134568	257
1389090°	4026755389166	547	1400692	4026755134568	742
1389090°	4026755389166	605	1400693	4026755134575	257
1389095	4026755419412	548	1400980	4026755435016	216
1389099	4026755450088	549	1400980	4026755435016	506
1389901	4026755413267	549	1400981	4026755435023	216
1389902	4026755414608	549	1400982	4026755435030	216
			1400983	4026755441123	216
1391021*	4026755471731	580	1400983	4026755441123	515
1391026*	4026755471748	577	1401061	4026755134681	256
1391027*	4026755471755	578	1401091	4026755134698	157
1391031*	4026755471762	580	1401091	4026755134698	257
1391036*	4026755471779	577	1401091	4026755134698	650
1391037*	4026755471786	578	1401151	4026755369366	157
1392021*	4026755471793	580	1401151	4026755369366	242
1392027*	4026755471809	578	1401152	4026755369427	157
1392031*	4026755471816	580	1401152	4026755369427	242
1392037*	4026755471823	578	1401153	4026755369434	157
1393027*	4026755471830	579	1401153	4026755369434	242
1393037*	4026755471847	579	1401154	4026755369441	157
1395010	4026755424218	581	1401154	4026755369441	242
1395010	4026755424218	603	1401171	4026755369571	242

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1401172	4026755369588	242	1402891	4026755306668	225
1401173	4026755369595	242	1402895	4026755306675	225
1401174	4026755369601	242	1403507	4026755459951	224
1401190	4026755367737	243	1403520	4026755459968	224
1401191	4026755395297	243	1404091	4026755395327	241
1401191	4026755395297	511	1404095	4026755277104	257
1401191	4026755395297	528	1404578	4026755350371	244
1401194°	4026755134704	256	1404578	4026755350371	506
1401704	4026755134735	257	1404579	4026755350401	244
1401952	4026755395532	221	1404580	4026755288834	244
1401990	4026755395549	221	1404580	4026755288834	506
1402010	4026755342796	221	1404581	4026755288841	244
1402052	4026755371239	230	1404682	4026755450699	244
1402052	4026755371239	617	1404682	4026755450699	506
1402054	4026755371246	230	1404683	4026755450705	244
1402054	4026755371246	617	1404752	4026755423587	234
1402070	4026755460049	224	1404753	4026755423594	234
1402071	4026755460056	224	1404754	4026755423600	234
1402090	4026755279078	226	1404755	4026755423617	234
1402091	4026755279085	226	1404756	4026755423624	234
1402092	4026755286953	226	1404757	4026755423631	234
1402096	4026755307979	230	1404758	4026755423648	234
1402098	4026755384734	230	1404759	4026755423655	234
1402099	4026755384741	230	1404760	4026755423662	234
1402110°	4026755335064	218	1404761	4026755423679	234
1402130	4026755446661	220	1404762	4026755423686	234
1402152	4026755371253	230	1404780	4026755329926	246
1402152	4026755371253	617	1404790	4026755342802	246
1402154	4026755371260	230	1404884	4026755465501	245
1402154	4026755371260	617	1404885	4026755465518	245
1402162	4026755460063	224	1404886	4026755465525	245
1402191	4026755422207	226	1404887	4026755465532	245
1402210°	4026755335071	218	1404952	4026755464245	234
1402252	4026755371277	230	1404953	4026755464252	234
1402254	4026755371284	230	1404954	4026755464269	234
1402310°	4026755335088	218	1404955	4026755464276	234
1402330	4026755446685	220	1404956	4026755464283	234
1402352	4026755380163	230	1404957	4026755464290	234
1402390	4026755300031	218	1404958	4026755464306	234
1402391	4026755338607	219	1404959	4026755464313	234
1402392	4026755338614	219	1404960	4026755464320	234
1402393	4026755446692	220	1404961	4026755464337	234
1402394	4026755446708	220	1404962	4026755464344	234
1402430	4026755446715	220	1405352	4026755437652	238
1402490	4026755418187	218	1405353	4026755437669	238
1402500	4026755306538	222	1405354	4026755437676	238
1402505	4026755328813	222	1405355	4026755437683	238
1402507	4026755336351	222	1405356	4026755437690	238
1402510	4026755328820	222	1405357	4026755437706	238
1402515	4026755336368	222	1405358	4026755437713	238
1402520	4026755412192	222	1405359	4026755437720	238
1402580	4026755306545	223	1405360	4026755437737	238
1402581	4026755306552	223	1405361	4026755437744	238
1402591	4026755306569	222	1405362	4026755437751	238
1402592	4026755306576	222	1405452	4026755437768	239
1402594	4026755446951	223	1405453	4026755437775	239
1402596	4026755443288	223	1405454	4026755437782	239
1402597	4026755306583	222	1405455	4026755437799	239
1402598	4026755306590	223	1405456	4026755437805	239
1402598	4026755306590	224	1405457	4026755437812	239
1402599	4026755306606	223	1405458	4026755437829	239
1402599	4026755306606	224	1405459	4026755437836	239
1402600	4026755306613	222	1405460	4026755437843	239
1402605	4026755424409	222	1405461	4026755437850	239
1402607	4026755424416	222	1405462	4026755437867	239
1402610	4026755424423	222	1405552	4026755437874	238
1402620	4026755424430	222	1405552	4026755437874	268
1402800	4026755306620	225	1405553	4026755437881	238
1402850	4026755306637	225	1405553	4026755437881	268
1402855	4026755306644	225	1405554	4026755437898	238
1402857	4026755306651	225	1405554	4026755437898	268

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1405555	4026755437904	238	1414453	4026755373158	239
1405555	4026755437904	268	1414453	4026755373158	269
1405556	4026755437911	238	1414454	4026755373165	239
1405556	4026755437911	268	1414454	4026755373165	269
1405557	4026755437928	238	1414455	4026755373172	239
1405557	4026755437928	268	1414455	4026755373172	269
1405558	4026755437935	238	1414456	4026755373257	239
1405558	4026755437935	268	1414456	4026755373257	269
1405559	4026755437942	238	1414490	4026755371789	240
1405559	4026755437942	268	1414490	4026755371789	270
1405560	4026755437959	238	1414493	4026755384024	240
1405560	4026755437959	268	1414493	4026755384024	270
1405561	4026755437966	238			
1405561	4026755437966	268	1500154°	4026755134988	614
1405562	4026755437973	238	1500155°	4026755172430	614
1405562	4026755437973	268	1500158°	4026755251784	614
1405578	4026755453416	235	1500160°	4026755225266	614
1405578	4026755453416	506	1500254°	4026755135008	614
1405579	4026755453492	235	1500255°	4026755172447	614
1405580	4026755453508	235	1500555°	4026755310610	614
1405580	4026755453508	506	1501054°	4026755135039	614
1405581	4026755453515	235	1501055°	4026755172423	614
1406383	4026755249873	156	1501060°	4026755135053	614
1406383	4026755249873	241	1501066°	4026755135060	614
1406384	4026755249880	156	1501072°	4026755234701	614
1406384	4026755249880	241	1501155°	4026755217742	614
1406394	4026755134971	256	1501160°	4026755217759	614
1406483	4026755360615	156	1501184	4026755135077	226
1406483	4026755360615	241	1501184	4026755135077	646
1406484	4026755360622	156	1501254°	4026755238365	615
1406484	4026755360622	241	1501255°	4026755238372	615
1406504	4026755343144	156	1501260°	4026755238389	615
1406504	4026755343144	241	1501355°	4026755291575	614
1406583	4026755360646	156	1501360°	4026755291582	614
1406583	4026755360646	241	1501455°	4026755291599	615
1406584	4026755360653	156	1501460°	4026755291605	615
1406584	4026755360653	241	1501555°	4026755172454	615
1406586	4026755379587	240	1501560°	4026755135091	615
1406586	4026755379587	270	1501566°	4026755135107	615
1406708	4026755172409	156	1501572°	4026755135114	615
1406708	4026755172409	241	1501580°	4026755205503	615
1407152	4026755437980	156	1503053°	4026755135121	640
1407153	4026755437997	156	1503054°	4026755135138	640
1407154	4026755438000	156	1503055°	4026755135145	640
1407155	4026755438017	156	1503056°	4026755135152	640
1407156	4026755438024	156	1503151°	4026755135169	640
1407157	4026755438031	156	1503152	4026755135176	640
1407158	4026755438048	156	1503155°	4026755135183	640
1407159	4026755438055	156	1503156°	4026755135190	640
1407160	4026755438062	156	1503157°	4026755135206	640
1407161	4026755438079	156	1503161°	4026755135213	640
1407162	4026755438086	156	1503162°	4026755135220	640
1407206	4026755278712	241	1503164°	4026755135237	640
1408010	4026755275292	241	1504054°	4026755135244	232
1408652°	4026755419061	157	1504054°	4026755135244	641
1408653°	4026755419078	157	1504055°	4026755135251	641
1408654°	4026755419085	157	1504056°	4026755135268	641
1408655°	4026755419092	157	1504064°	4026755135275	641
1409082	4026755299182	219	1504065°	4026755135282	641
1409085	4026755279115	226	1504066°	4026755135299	641
1409086	4026755431759	226	1504153°	4026755135305	641
1409087	4026755431766	226	1504154°	4026755135312	641
1409090	4026755279122	226	1504155°	4026755135329	641
1409095	4026755385847	227	1504156°	4026755135336	641
			1504353°	4026755135343	642
1410151	4026755436419	656	1504353°	4026755135343	742
1410461	4026755436556	656	1504354°	4026755135350	642
1410560	4026755436426	656	1504354°	4026755135350	742
1410660	4026755436433	656	1504355°	4026755135367	642
1414452	4026755373141	239	1504355°	4026755135367	742
1414452	4026755373141	269	1504356°	4026755135374	642

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1504356°	4026755135374	742	1507969°	4026755379594	269
1504363°	4026755170177	642	1507974°	4026755135817	231
1504454°	4026755135381	642	1507974°	4026755135817	640
1504455°	4026755135398	642	1507975°	4026755172478	231
1504456°	4026755135404	642	1507975°	4026755172478	640
1504552°	4026755135411	641	1507979°	4026755379600	240
1504553°	4026755135428	641	1507979°	4026755379600	269
1504554°	4026755135435	641	1507980°	4026755135831	640
1504555°	4026755135442	641	1507983	4026755135848	640
1504556°	4026755135459	641	1507985	4026755135855	640
1504563	4026755135466	641	1509091°	4026755135862	646
1504564°	4026755135473	641	1509092°	4026755135879	646
1504565°	4026755135480	641	1509093°	4026755135886	646
1504566°	4026755135497	641	1509151°	4026755135893	646
1504567°	4026755135503	641	1509152°	4026755135909	646
1504568°	4026755135510	641	1509153°	4026755135916	646
1504569°	4026755135527	641	1509561°	4026755135992	650
1504570°	4026755135534	641	1509562	4026755136005	650
1504571°	4026755135541	641	1509563	4026755136012	650
1504572°	4026755135558	641	1509567°	4026755262544	648
1504573°	4026755135565	641	1509568°	4026755262551	648
1504574°	4026755135572	641	1509569°	4026755262568	648
1504575°	4026755135589	641	1509570°	4026755188165	648
1504754°	4026755164039	641	1509571°	4026755188172	648
1505565°	4026755178319	642	1509573°	4026755188196	648
1505566°	4026755178326	642	1509574°	4026755188202	648
1505567°	4026755178333	642	1509575°	4026755188219	648
1506053°	4026755135596	643	1509580°	4026755170184	648
1506054°	4026755135602	643	1509580°	4026755170184	661
1506073°	4026755135619	643	1509585°	4026755172799	650
1506075°	4026755135626	643	1509586°	4026755172805	650
1506085	4026755276015	624	1509588°	4026755170191	648
1506087	4026755276022	624	1509588°	4026755170191	661
1506088	4026755348859	624	1509589°	4026755263527	648
1506089	4026755390643	624	1509591°	4026755136036	650
1506092°	4026755135633	627	1509593°	4026755264159	648
1506092°	4026755135633	643	1509594	4026755188226	648
1506093°	4026755166149	627	1509596°	4026755219463	648
1506093°	4026755166149	643	1509661°	4026755136067	646
1506153°	4026755135640	643	1509662°	4026755136074	646
1506176°	4026755332186	643			
1506177°	4026755332193	643	1511946	4026755353471	492
1506178°	4026755135657	643	1511949	4026755353488	492
1506253°	4026755135664	643	1512043°	4026755188233	620
1506553°	4026755135671	643	1512044°	4026755314366	620
1506653°	4026755219043	643	1512045°	4026755188240	620
1507354°	4026755135688	640	1512046°	4026755188257	620
1507355	4026755192162	640	1512047°	4026755314373	620
1507854°	4026755342819	116	1512048°	4026755204407	620
1507855°	4026755342826	116	1512049°	4026755245332	620
1507934	4026755135725	167	1512051°	4026755204414	620
1507934	4026755135725	232	1512054°	4026755204421	620
1507935	4026755192179	167	1512056°	4026755246858	620
1507935	4026755192179	232	1512057°	4026755255881	620
1507937	4026755349214	167	1512062°	4026755269741	624
1507937	4026755349214	232	1512063°	4026755181937	624
1507937	4026755349214	268	1512065°	4026755182255	624
1507938	4026755254266	167	1512141°	4026755329032	620
1507938	4026755254266	232	1512143°	4026755188264	620
1507939	4026755288773	167	1512144°	4026755337648	620
1507939	4026755288773	232	1512145°	4026755188271	620
1507940	4026755135749	167	1512146°	4026755311754	620
1507940	4026755135749	232	1512147°	4026755217476	620
1507954	4026755135787	231	1512148°	4026755359725	620
1507954	4026755135787	640	1512149°	4026755217483	620
1507955	4026755172461	231	1512151°	4026755217490	620
1507955	4026755172461	640	1512156°	4026755276336	620
1507958	4026755253313	640	1512157°	4026755276343	620
1507959°	4026755349221	231	1512163°	4026755188288	624
1507960	4026755135800	640	1512165°	4026755188295	624
1507969°	4026755379594	240	1512171°	4026755229721	624

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1512172°	4026755269512	624	1513047°	4026755204476	623
1512243°	4026755188301	620	1513048°	4026755204483	623
1512245°	4026755188318	620	1513049°	4026755246926	623
1512246°	4026755245349	620	1513050°	4026755255928	623
1512247°	4026755216189	620	1513155°	4026755188417	623
1512248°	4026755248982	620	1513156°	4026755228410	623
1512249°	4026755216196	620	1513157°	4026755218107	623
1512252°	4026755216202	620	1513158°	4026755228014	623
1512256°	4026755276350	620	1513159°	4026755228021	623
1512257°	4026755276367	620	1513160°	4026755218114	623
1512343°	4026755188325	622	1513162°	4026755218121	623
1512344°	4026755314663	622	1513163°	4026755218138	623
1512345°	4026755188332	622	1513164°	4026755225624	623
1512346°	4026755225617	622	1513165°	4026755246933	623
1512347°	4026755218053	622	1513167°	4026755276381	623
1512348°	4026755218060	622	1513255°	4026755188424	623
1512349°	4026755218077	622	1513257°	4026755217766	623
1512357°	4026755248999	622	1513354°	4026755188431	623
1512358°	4026755314670	622	1513356°	4026755225631	623
1512443°	4026755188349	622	1513358°	4026755217506	623
1512445°	4026755188356	622	1513361°	4026755225648	623
1512446°	4026755245356	622	1513365°	4026755225655	623
1512447°	4026755218084	622	1513454°	4026755188448	623
1512448°	4026755223569	622	1513457°	4026755218145	623
1512449°	4026755218091	622	1513460°	4026755218152	623
1512456°	4026755276374	622	1513643°	4026755245363	623
1512541	4026755434149	232	1513645°	4026755188455	623
1512542	4026755329933	232	1513647°	4026755218169	623
1512543	4026755181951	232	1513648°	4026755399660	623
1512543	4026755181951	620	1513649°	4026755218176	623
1512544	4026755347418	232	1513651°	4026755329094	623
1512545	4026755181968	232	1513652°	4026755218183	623
1512545	4026755181968	620	1513655°	4026755329100	623
1512546	4026755204438	620	1513656°	4026755276398	623
1512547	4026755204445	620	1513658°	4026755285833	623
1512548°	4026755204452	620	1514040°	4026755297539	621
1512549°	4026755246865	620	1514041°	4026755291056	621
1512550°	4026755256130	620	1514042°	4026755288230	621
1512655°	4026755188363	621	1514043°	4026755247855	621
1512656°	4026755224702	621	1514044°	4026755297546	621
1512657°	4026755216219	621	1514045°	4026755247862	621
1512659°	4026755224719	621	1514046°	4026755247879	621
1512660°	4026755216226	621	1514047°	4026755247886	621
1512662°	4026755246872	621	1514054°	4026755307856	621
1512663°	4026755246889	621	1514055°	4026755351729	621
1512664°	4026755216233	621	1514653°	4026755271164	624
1512665°	4026755246896	621	1514654°	4026755271171	624
1512666°	4026755302110	621	1514655°	4026755271188	624
1512668°	4026755256154	621	1515143°	4026755268959	625
1512669°	4026755256161	621	1515144°	4026755411522	625
1512745°	4026755228397	622	1515146°	4026755268966	625
1512747°	4026755228403	622	1515153°	4026755407570	198
1512751°	4026755329049	622	1515156°	4026755407587	198
1512752°	4026755329056	622	1515243°	4026755268973	625
1512753°	4026755329063	622	1515244°	4026755411539	625
1512755°	4026755329070	622	1515290°	4026755269987	625
1512757°	4026755329087	622	1515353°	4026755407594	198
1512843°	4026755188370	622	1515356°	4026755407600	198
1512845°	4026755188387	622	1517043°	4026755188462	626
1512847°	4026755216097	622	1517045°	4026755188479	626
1512849°	4026755216103	622	1517053°	4026755223323	626
1512851°	4026755216110	622	1517055°	4026755223330	626
1512852°	4026755246902	622	1517056°	4026755252194	626
1512853°	4026755255904	622	1517143°	4026755188486	626
1512949°	4026755216127	622	1517145°	4026755188493	626
1512951°	4026755216134	622	1517243°	4026755188509	626
1512952°	4026755246919	622	1517245°	4026755188516	626
1512953°	4026755255911	622	1517253°	4026755288780	626
1513043°	4026755188394	623	1517255°	4026755288797	626
1513045°	4026755188400	623	1517343°	4026755188523	626
1513046°	4026755204469	623	1517345°	4026755188530	626

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1517443°	4026755206203	626	1523454°	4026755316827	638
1517643°	4026755253320	626			
1517645°	4026755228427	626	1532043°	4026755353495	630
1518070°	4026755200300	626	1532044°	4026755353501	630
1518070°	4026755200300	635	1532045°	4026755353518	630
1518074°	4026755304268	626	1532046°	4026755353525	630
1518074°	4026755304268	635	1532047°	4026755353532	630
1518183°	4026755314380	627	1532048°	4026755353549	630
1518184°	4026755188547	627	1532049°	4026755353556	630
1518185°	4026755188554	627	1532051°	4026755353563	630
1518186°	4026755188561	627	1532054°	4026755458312	630
1518187°	4026755223132	627	1532056°	4026755458329	630
1518188°	4026755332209	627	1532057°	4026755458336	630
1518189°	4026755332216	627	1532062°	4026755354492	634
1518196°	4026755339086	627	1532063°	4026755354508	634
1518197°	4026755339093	627	1532065°	4026755354515	634
1518198°	4026755339109	627	1532141°	4026755353570	630
1518199°	4026755339116	627	1532143°	4026755353587	630
1519445°	4026755277432	653	1532144°	4026755353594	630
1519446°	4026755278736	653	1532145°	4026755353600	630
1519460°	4026755331783	650	1532146°	4026755353617	630
1519461°	4026755331837	650	1532147°	4026755353624	630
1519462°	4026755335309	650	1532148°	4026755458343	630
1519465°	4026755335316	650	1532149°	4026755353631	630
1519466°	4026755335323	651	1532151°	4026755458350	630
1519476°	4026755371369	652	1532156°	4026755458367	630
1519481°	4026755434156	652	1532157°	4026755458374	630
1519482°	4026755262599	652	1532163°	4026755354522	634
1519483°	4026755371376	653	1532165°	4026755354539	634
1519484°	4026755371383	653	1532171°	4026755354546	634
1519488°	4026755347425	652	1532172°	4026755354553	634
1519489°	4026755329940	652	1532173°	4026755412369	634
1519490°	4026755219470	652	1532243°	4026755353648	630
1519491°	4026755188578	652	1532245°	4026755353655	630
1519491°	4026755188578	661	1532246°	4026755353662	630
1519492°	4026755188585	652	1532247°	4026755353679	630
1519492°	4026755188585	661	1532248°	4026755353686	630
1519493°	4026755216004	652	1532249°	4026755353693	630
1519494°	4026755216011	652	1532252°	4026755458381	630
1519494°	4026755216011	661	1532256°	4026755458398	630
1519495°	4026755328295	652	1532257°	4026755458404	630
1519497°	4026755219487	652	1532343°	4026755353808	632
1519589°	4026755359237	649	1532344°	4026755353815	632
1519590°	4026755337792	649	1532345°	4026755353822	632
1519591°	4026755337808	649	1532346°	4026755353839	632
1519592°	4026755337815	649	1532347°	4026755353846	632
1519593°	4026755227475	648	1532348°	4026755353853	632
1519594°	4026755348866	649	1532357°	4026755353860	632
1519595°	4026755228434	649	1532358°	4026755353877	632
1519596°	4026755228441	649	1532443°	4026755353884	632
1519598°	4026755277449	649	1532445°	4026755353891	632
1519599°	4026755278743	649	1532446°	4026755353907	632
1519681°	4026755427462	653	1532447°	4026755353914	632
1519691°	4026755328929	653	1532448°	4026755353921	632
1519691°	4026755328929	661	1532449°	4026755353938	632
1519692°	4026755328936	653	1532543	4026755353709	630
1519692°	4026755328936	661	1532545	4026755353716	630
1519693°	4026755328943	653	1532546	4026755353723	630
1519694°	4026755328950	653	1532547	4026755353730	630
1519694°	4026755328950	661	1532548°	4026755458572	630
			1532549°	4026755458589	630
1522543	4026755316742	638	1532550°	4026755458596	630
1522545	4026755316759	638	1532655°	4026755353945	631
1522655°	4026755317404	638	1532656°	4026755353952	631
1522843°	4026755316773	638	1532657°	4026755353969	631
1522845°	4026755316780	638	1532659°	4026755353976	631
1523043°	4026755317046	638	1532660°	4026755353983	631
1523045°	4026755317053	638	1532662°	4026755458602	631
1523155°	4026755316797	638	1532663°	4026755458619	631
1523255°	4026755316803	638	1532664°	4026755458626	631
1523354°	4026755316810	638	1532665°	4026755458633	631

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1532666°	4026755458640	631	1535143°	4026755458879	634
1532668°	4026755458657	631	1535144°	4026755458886	634
1532669°	4026755458664	631	1535146°	4026755458893	634
1532745°	4026755353990	632	1535243°	4026755354591	634
1532747°	4026755354003	632	1535244°	4026755458909	634
1532751°	4026755354010	632	1537043°	4026755354607	635
1532752°	4026755354027	632	1537045°	4026755354614	635
1532753°	4026755354034	632	1537053°	4026755354621	635
1532755°	4026755354041	632	1537055°	4026755354638	635
1532757°	4026755354058	632	1537056°	4026755354645	635
1532843°	4026755354065	632	1537141°	4026755439878	635
1532845°	4026755354072	632	1537142°	4026755439885	635
1532847°	4026755354089	632	1537143°	4026755354652	635
1532849°	4026755354096	632	1537145°	4026755354669	635
1532851°	4026755458671	632	1537146°	4026755419528	635
1532852°	4026755458688	632	1537147°	4026755419535	635
1532853°	4026755458695	632	1537148°	4026755419542	635
1532949°	4026755354102	632	1537243°	4026755354676	635
1532951°	4026755458701	632	1537245°	4026755354683	635
1532952°	4026755458718	632	1537253°	4026755354690	635
1532953°	4026755458725	632	1537255°	4026755354706	635
1533043°	4026755354119	633	1537343°	4026755354713	635
1533045°	4026755354126	633	1537345°	4026755354720	635
1533046°	4026755354133	633	1537443°	4026755354737	636
1533047°	4026755354140	633	1537645°	4026755354751	636
1533048°	4026755458732	633	1538183°	4026755354799	636
1533049°	4026755458749	633	1538184°	4026755354768	636
1533050°	4026755458756	633	1538185°	4026755354775	636
1533155°	4026755354157	633	1538186°	4026755354805	636
1533156°	4026755354164	633	1538187°	4026755354812	636
1533157°	4026755354171	633	1538188°	4026755354829	636
1533158°	4026755354188	633	1538189°	4026755354836	636
1533159°	4026755354195	633	1538196°	4026755354843	636
1533160°	4026755354201	633	1538197°	4026755354850	636
1533162°	4026755458763	633	1538198°	4026755354867	636
1533163°	4026755458770	633	1538199°	4026755354874	636
1533164°	4026755458787	633	1539946°	4026755430783	635
1533165°	4026755458794	633	1539947°	4026755430790	635
1533167°	4026755458800	633			
1533255°	4026755354218	633	1540154	4026755383492	229
1533257°	4026755354225	633	1540154	4026755383492	612
1533354°	4026755354232	633	1540155	4026755383508	229
1533356°	4026755354249	633	1540155	4026755383508	612
1533358°	4026755354256	633	1540160	4026755383522	229
1533361°	4026755354263	633	1540160	4026755383522	612
1533454°	4026755354270	633	1540254	4026755383539	229
1533457°	4026755354287	633	1540254	4026755383539	612
1533460°	4026755354294	633	1540255	4026755383546	229
1533643°	4026755354300	633	1540255	4026755383546	612
1533645°	4026755354317	633	1540257	4026755424782	229
1533647°	4026755354324	633	1540260	4026755396669	229
1533648°	4026755419399	633	1540260	4026755396669	612
1533649°	4026755354331	633	1540355	4026755460070	224
1533651°	4026755354348	633	1540555	4026755383553	229
1533652°	4026755458824	633	1540555	4026755383553	612
1533655°	4026755458831	633	1540557	4026755424799	229
1533656°	4026755458848	633	1541054	4026755383560	229
1533658°	4026755458855	633	1541054	4026755383560	612
1534040°	4026755354355	631	1541055	4026755383577	229
1534041°	4026755354362	631	1541055	4026755383577	612
1534042°	4026755354379	631	1541060	4026755383584	229
1534043°	4026755354386	631	1541060	4026755383584	612
1534044°	4026755354393	631	1541066	4026755383591	612
1534045°	4026755354409	631	1541072	4026755383607	612
1534046°	4026755354416	631	1541155°	4026755383614	612
1534047°	4026755354423	631	1541160°	4026755383621	612
1534054°	4026755354430	631	1541254°	4026755383638	613
1534055°	4026755458862	631	1541255°	4026755383645	613
1534653°	4026755354560	634	1541260°	4026755383652	613
1534654°	4026755354577	634	1541355°	4026755383669	612
1534655°	4026755354584	634	1541360°	4026755383676	612

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1541455°	4026755383683	612	1616675	4026755330786	32
1541460°	4026755383690	612			
1541555°	4026755383706	613	1627965	4026755211832	36
1541560°	4026755383713	613			
1541566°	4026755383720	613	1641451	4026755308013	35
1541572°	4026755383737	613	1641451	4026755308013	594
1541582°	4026755460209	613	1643561	4026755334609	112
1541584°	4026755383744	613	1648077	4026755303070	130
1541585°	4026755460216	613			
			1650793	4026755388732	331
1552543	4026755437027	660	1650793	4026755388732	339
1552545	4026755437034	660	1650793	4026755388732	348
1552655	4026755437041	660	1651500	4026755163797	434
1552843	4026755437058	660	1651500	4026755163797	445
1552845	4026755437065	660	1651500	4026755163797	483
1553043	4026755437072	660	1659990	4026755281019	835
1553045	4026755437089	660			
1553155	4026755437096	660	1661100	4026755171853	150
1553354	4026755437102	660	1661100	4026755171853	339
			1661100	4026755171853	348
1562043	4026755437119	658	1661445°	4026755340624	35
1562045	4026755437126	658			
1562046	4026755437133	658	1670851	4026755419689	352
1562048	4026755437140	658	1670852	4026755419696	352
1562049	4026755437157	658	1670853	4026755419702	352
1562051	4026755437164	658	1670854	4026755419719	352
1562243	4026755437171	658	1670855	4026755419726	352
1562246	4026755437188	658	1671003°	4026755388428	90
1562543	4026755437195	658	1671004°	4026755388435	90
1562545	4026755437201	658	1672003°	4026755388442	90
1562546	4026755437218	658	1672004°	4026755388497	90
1562547	4026755437225	658	1673703°	4026755427820	90
1562655	4026755437232	658	1673704°	4026755427837	90
1562656	4026755437249	658	1675103°	4026755427882	90
1562657	4026755437256	658	1675104°	4026755427899	90
1562660	4026755437263	658	1676149	4026755392753	328
1562843	4026755437270	659	1676150	4026755392760	328
1562845	4026755437287	659	1676151	4026755392777	328
1562847	4026755437294	659	1676152	4026755392784	328
1562849	4026755437300	659	1676153	4026755392791	328
1563043	4026755437317	659	1676154	4026755392807	328
1563045	4026755437324	659	1676155	4026755392814	328
1563046	4026755437331	659	1676156	4026755427677	328
1563047	4026755437348	659	1676251	4026755396034	329
1563155	4026755437355	659	1676252	4026755396041	329
1563156	4026755437362	659	1676253	4026755396058	329
1563157	4026755437379	659			
1563354	4026755437386	659	1681650	4026755219579	150
1563356	4026755437393	659	1683703	4026755448702	91
1565243	4026755454628	659	1683704	4026755448719	91
1565245	4026755454635	659	1683803	4026755448726	91
1567053	4026755436440	659	1683804	4026755448733	91
1567055	4026755436457	659	1685121	4026755375138	530
1567955	4026755455410	660	1688290	4026755384031	312
1567960	4026755455427	660	1688291	4026755434187	319
1569493	4026755446722	661	1688295	4026755256789	312
1569594	4026755446739	661	1688296	4026755256796	314
1569693	4026755446746	661	1688297	4026755256802	314
			1688350	4026755419733	302
1609302	4026755284539	290	1688356	4026755419740	302
			1688703	4026755419757	299
1613066	4026755369236	31	1688704	4026755419764	299
1613401	4026755136876	33	1688706	4026755419771	299
1613465°	4026755237498	33	1688708	4026755419788	299
1613501	4026755171655	33	1688710	4026755419795	299
1616001	4026755222531	33	1688712	4026755419801	299
1616100	4026755192759	33	1688716	4026755419818	299
1616200	4026755205404	33	1688746	4026755419825	301
1616301	4026755210330	33	1688747	4026755419832	301
1616500	4026755329957	33	1688748	4026755419849	301
1616575	4026755330779	32	1688749	4026755419856	301

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
1688750	4026755419863	301	2020120	4026755148541	774
1696081	4026755361995	384	2020124	4026755148558	774
1696082	4026755362008	384	2030003	4026755148565	781
1699085	4026755385632	245	2030004	4026755148572	781
1703063	4026755448740	91	2030006	4026755148589	781
1703064	4026755448757	91	2030008	4026755148596	781
1703163	4026755448764	91	2031103	4026755148602	781
1703164	4026755448771	91	2031104	4026755148619	781
1713063°	4026755448788	90	2033053	4026755148671	781
1713064°	4026755448795	90	2033151	4026755148688	781
1713163°	4026755448801	90	2040050	4026755379389	782
1713164°	4026755448818	90	2040053	4026755148718	782
1715813	4026755448825	91	2040055	4026755148725	782
1715814	4026755448832	91	2040056	4026755148732	782
1715883	4026755448849	91	2040090	4026755394719	782
1715884	4026755448856	91	2040152	4026755148770	782
1879850	4026755320329	131	2040154	4026755148787	782
1900051	4026755146493	408	2041051	4026755148800	782
1900052	4026755146509	408	2050051	4026755148817	782
1900053	4026755146516	408	2050052	4026755148824	782
1900054	4026755146523	408	2050053	4026755148831	782
1900055	4026755146530	408	2050054	4026755148848	782
1900056	4026755146547	408	2050055	4026755148855	782
1905051	4026755146639	566	2050056	4026755148862	782
1905551	4026755146646	566	2052051	4026755166996	779
1905552	4026755146653	567	2052053	4026755182989	779
1989100	4026755147667	36	2052080	4026755394726	781
2010152	4026755148268	772	2052091	4026755183948	779
2010153	4026755148275	772	2052151	4026755148930	779
2010154	4026755148282	772	2052152	4026755148947	779
2010155	4026755148299	772	2052153	4026755148954	779
2010516	4026755148329	774	2052154	4026755148961	779
2010616	4026755148343	774	2052351	4026755148978	777
2010716	4026755148367	774	2052351	4026755148978	779
2010816	4026755288889	773	2053051	4026755148985	780
2010824	4026755288896	773	2053052	4026755148992	780
2010832	4026755288902	773	2053351	4026755149029	780
2010851	4026755432879	773	2053352	4026755149036	780
2010882	4026755289022	773	2053353	4026755149043	780
2013051	4026755148381	772	2053354	4026755149050	780
2014151	4026755148411	772	2060200	4026755394733	775
2018090	4026755192292	772	2060312	4026755279368	775
2018091	4026755192308	772	2060400	4026755359718	775
2018092	4026755192315	772	2061051	4026755202069	775
2018093	4026755192322	772	2064051	4026755232448	800
2018094	4026755192339	772	2064351	4026755232479	800
2018095	4026755192346	772	2065351	4026755290790	800
2018182	4026755288919	773	2072061	4026755419870	784
2018192	4026755288926	773	2073051	4026755149319	783
2018195	4026755288933	773	2073161	4026755419887	783
2018197	4026755288940	773	2074061	4026755419894	783
2020006	4026755148428	774	2074261	4026755419900	783
2020008	4026755148435	774	2075053	4026755149371	784
2020010	4026755148442	774	2075061	4026755419917	784
2020012	4026755148459	774	2075153	4026755149395	784
2020016	4026755148466	774	2075161	4026755419924	784
2020020	4026755148473	774	2075261	4026755419931	784
2020024	4026755148480	774	2076004	4026755149418	783
2020106	4026755148497	774	2076100	4026755149425	783
2020108	4026755148503	774	2076200	4026755149432	784
2020110	4026755148510	774	2080050	4026755149487	795
2020112	4026755148527	774	2080051	4026755149494	795
2020116	4026755148534	774	2080052	4026755149500	795
			2080053	4026755149517	795
			2080151	4026755149524	795

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
2080251	4026755149531	795	2100055	4026755150803	788
2080252	4026755149548	795	2102051	4026755150865	788
2080253	4026755149555	795	2102052	4026755150872	788
2080254	4026755149562	795	2102053	4026755150889	788
2080255	4026755149579	795	2102054	4026755150896	788
2080351	4026755149586	795	2103260	4026755425857	788
2080352	4026755149593	795	2104203	4026755240474	786
2080353	4026755149609	795	2104553	4026755355369	786
2080354	4026755149616	795	2107003	4026755279047	787
2080451	4026755149647	795			
2080452	4026755149654	795	2110051	4026755151022	796
2080851	4026755149678	787	2110052	4026755151039	796
2080852	4026755149685	787	2110053	4026755151046	796
2080853	4026755149692	787	2110054	4026755151053	796
2080854	4026755149708	787	2110055	4026755151060	796
2080855	4026755149715	787	2110056	4026755151077	796
2080856	4026755149722	787	2110057	4026755151084	796
2083051	4026755150230	794	2110058	4026755151091	796
2083052	4026755150247	794	2110059	4026755151107	796
2083053	4026755150254	794	2110071	4026755317572	796
2083054	4026755150261	794	2110072	4026755317589	796
2083055	4026755150278	794	2110073	4026755317596	796
2083056	4026755150285	794	2110151	4026755151114	796
2083057	4026755150292	794	2110152	4026755151121	796
2083058	4026755150308	794	2110153	4026755151138	796
2083060	4026755421453	794	2110154	4026755151145	796
2083061	4026755421460	794	2110155	4026755151152	796
2083063	4026755421477	794	2110251	4026755151169	796
2083074	4026755422344	794	2110252	4026755151176	796
2083075	4026755422351	794	2110253	4026755151183	796
2083076	4026755422368	794	2110254	4026755151190	796
2083251	4026755150377	794	2110255	4026755151206	796
2083252	4026755150384	794	2110350	4026755151213	796
2083253	4026755150391	794	2110351	4026755151220	796
2083254	4026755150407	794	2110352	4026755151237	796
2083255	4026755150414	794	2110353	4026755151244	796
2083350	4026755421484	794	2110354	4026755151251	796
2083351	4026755421491	794	2110355	4026755151268	796
2083353	4026755421507	794	2110551	4026755151275	797
2083451	4026755150438	794	2110552	4026755151282	797
2083452	4026755150445	794	2110553	4026755151299	797
2083453	4026755150452	794	2110554	4026755151305	797
2083454	4026755150469	794	2110555	4026755151312	797
2083455	4026755150476	794	2110556	4026755151329	797
2083551	4026755150483	794	2110557	4026755151336	797
2083552	4026755150490	794	2110558	4026755151343	797
2083553	4026755150506	794	2110559	4026755151350	797
2083554	4026755150513	794	2110560	4026755151367	797
2083751	4026755150537	794	2110561	4026755151374	797
2083752	4026755150544	794	2110562	4026755151381	797
2083753	4026755150551	794	2111051	4026755328677	797
2083754	4026755150568	794	2111052	4026755328684	797
2083755	4026755150575	794	2111053	4026755328691	797
2083756	4026755150582	794	2111055	4026755328707	797
2083851	4026755150599	795			
2083852	4026755150605	795	2120003	4026755151398	764
2083853	4026755150612	795	2120103	4026755151411	764
2083854	4026755150629	795	2120104	4026755151428	764
2083855	4026755150636	795	2120153	4026755290806	801
2083856	4026755150643	795	2120261	4026755151459	764
2083951	4026755150650	167	2120285	4026755271256	766
2083951	4026755150650	795	2120403	4026755151480	764
2083952	4026755150667	167	2120503	4026755151497	764
2083952	4026755150667	795	2120561	4026755151503	764
			2120585	4026755271263	766
2091002	4026755150711	788	2120691	4026755151527	768
			2120803	4026755151558	764
2100051	4026755150766	788	2120891	4026755151572	765
2100052	4026755150773	788	2121871	4026755151619	762
2100053	4026755150780	788	2122103	4026755151664	762
2100054	4026755150797	788	2122153	4026755290813	801

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
2122261	4026755151701	762	2133100	4026755152791	778
2122262	4026755151718	762	2133200	4026755152807	778
2122403	4026755151732	762	2133300	4026755152814	778
2122503	4026755151749	762	2134100	4026755152821	778
2122561	4026755151756	762			
2123103	4026755151886	761	2142700	4026755407679	758
2123104	4026755151893	761	2142732	4026755407686	758
2123153	4026755290820	801	2142735	4026755407693	758
2123261	4026755151930	761	2142737	4026755407709	758
2123503	4026755151985	761	2142754	4026755403435	758
2123561	4026755151992	761	2142762	4026755403442	758
2123871	4026755152050	761	2142900	4026755309874	759
2124203	4026755152104	763	2142901	4026755298512	759
2124204	4026755152111	763	2142951	4026755298529	759
2124360	4026755152159	763	2142990	4026755298536	760
2124361	4026755152166	763	2142992	4026755420951	760
2124362	4026755152173	763			
2125003	4026755152197	769	2152554	4026755388381	762
2126051	4026755152241	768	2152754	4026755407716	758
2126100	4026755152272	768	2152951	4026755356182	759
2126200	4026755152296	768	2153554	4026755388404	761
2126300	4026755152302	767			
2126351	4026755152319	767	2162993	4026755347173	759
2126354	4026755344226	767	2162993	4026755347173	797
2126355	4026755152326	767	2166500	4026755344240	765
2126371	4026755152333	767			
2126400	4026755152340	768	4200191	4026755155525	727
2126454	4026755279054	767	4200208	4026755166699	726
2126474	4026755371437	767	4200211	4026755166705	726
2126484	4026755394740	767	4200212	4026755166712	726
2126600	4026755152364	765	4200252	4026755166248	725
2126691	4026755152371	765	4200253	4026755179132	725
2126695	4026755279061	768	4200254	4026755166231	725
2126751	4026755152388	765	4200255	4026755166262	725
2126754	4026755344233	765	4200256	4026755166255	725
2126755	4026755152401	765	4200272	4026755167696	730
2126774	4026755371444	765	4200273	4026755167702	730
2126803	4026755152418	765	4200282	4026755167672	730
2126804	4026755152425	765	4200283	4026755167757	728
2126951	4026755152432	765	4200284	4026755167764	728
2126952	4026755152449	765	4200285	4026755167740	728
2127050	4026755152456	793	4200288	4026755183474	728
2127051	4026755152463	793	4200289	4026755166903	728
2127052	4026755152470	793	4200290	4026755167788	728
2127053	4026755152487	793	4200291	4026755167771	728
2127150	4026755152494	793	4200295	4026755166637	727
2127151	4026755152500	793	4200308	4026755166729	726
2127152	4026755152517	793	4200453	4026755165395	742
2127153	4026755152524	793	4200552	4026755431230	743
2127250	4026755152531	793	4200553	4026755431247	743
2127251	4026755152548	793	4200554	4026755431254	743
2127253	4026755152555	793	4200571	4026755439847	743
2127500	4026755152562	801	4200590	4026755435597	743
2127650	4026755152586	793	4200804	4026755155594	674
2127651	4026755152593	793	4200806	4026755155600	674
2127652	4026755152609	793	4200808	4026755155617	674
2127653	4026755152616	793	4200810	4026755155624	674
2127700	4026755152623	801	4200812	4026755155631	674
2129000	4026755152678	769	4200816	4026755155648	674
2129102	4026755152685	769	4201004	4026755399141	674
2129152	4026755152708	769	4201006	4026755399158	674
2129200	4026755152715	769	4201008	4026755399165	674
			4201010	4026755399172	674
2130051	4026755152722	776	4201012	4026755399189	674
2130052	4026755152739	776	4201016	4026755399196	674
2130053	4026755152746	776	4201071	4026755218565	742
2130054	4026755152753	776	4201081	4026755218589	742
2130108	4026755152760	776	4201082	4026755218596	742
2130150	4026755394757	776	4201204	4026755155716	674
2130512	4026755152777	776	4201206	4026755155723	674
2133000	4026755152784	778	4201208	4026755155730	674

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
4201210	4026755155747	674	4203854	4026755156645	675
4201212	4026755155754	674	4203855	4026755156652	675
4201216	4026755155761	674	4203856	4026755156669	675
4201252	4026755344851	674	4203857	4026755156676	675
4201253	4026755344868	674	4203858	4026755156683	675
4201254	4026755344875	674	4204351	4026755332797	682
4201255	4026755344882	674	4204352	4026755332803	682
4201256	4026755344899	674	4204451	4026755332810	682
4201257	4026755344905	674	4204452	4026755332827	682
4201258	4026755344912	674	4204506	4026755191363	732
4201372	4026755155839	730	4204508	4026755191370	732
4201373	4026755155846	730	4204510	4026755191387	732
4201374	4026755155853	730	4204590	4026755328714	732
4201375	4026755155860	730	4204591	4026755328721	732
4201376	4026755340464	730	4204592	4026755328738	732
4201377	4026755340471	730	4204593	4026755328745	732
4201378	4026755318562	730	4205404	4026755392685	693
4201379	4026755318579	730	4205406	4026755392692	693
4201471	4026755166910	730	4205504	4026755288964	693
4201472	4026755155877	730	4205506	4026755288971	693
4201473	4026755155884	537	4205508	4026755288988	693
4201473	4026755155884	730	4205552	4026755347760	693
4201474	4026755155891	730	4205553	4026755347777	693
4201475	4026755155907	544	4205554	4026755347784	693
4201475	4026755155907	730	4205555	4026755347791	693
4201476	4026755155914	730	4205581	4026755306033	694
4201477	4026755155921	730	4205583	4026755306057	694
4201804	4026755155938	676	4205591	4026755306064	694
4201806	4026755155945	676	4205591	4026755306064	716
4201808	4026755155952	676	4205592	4026755306071	694
4201810	4026755155969	676	4205593	4026755307528	694
4201812	4026755155976	676	4205604	4026755312522	693
4201816	4026755155983	676	4205606	4026755312539	693
4201820	4026755332537	681	4205608	4026755312546	693
4201824	4026755332544	681	4205704	4026755332230	692
4202072	4026755156065	730	4205706	4026755332247	692
4202073	4026755156072	730	4205752	4026755347807	692
4202074	4026755156089	537	4205753	4026755347814	692
4202074	4026755156089	730	4205754	4026755347821	692
4202075	4026755156096	730	4205781	4026755332575	694
4202076	4026755156102	730	4205804	4026755156799	678
4202077	4026755156119	730	4205806	4026755156805	678
4202078	4026755156126	730	4205808	4026755156812	678
4202204	4026755156133	676	4205810	4026755156829	678
4202206	4026755156140	676	4205812	4026755156836	678
4202208	4026755156157	676	4205816	4026755156843	678
4202210	4026755156164	676	4205904	4026755359305	710
4202212	4026755156171	676	4205990	4026755385243	710
4202216	4026755156188	676	4205991	4026755390018	710
4202220	4026755332551	681	4205992	4026755412932	710
4202224	4026755332568	681	4206204	4026755156881	678
4202463	4026755156263	676	4206206	4026755156898	678
4202464	4026755156270	676	4206208	4026755156904	678
4202465	4026755156287	676	4206210	4026755156911	678
4202466	4026755156294	676	4206212	4026755156928	678
4202467	4026755156300	676	4206216	4026755156935	678
4202468	4026755156317	676	4206304	4026755412949	710
4202508	4026755166033	726	4206504	4026755288995	693
4202508	4026755166033	734	4206506	4026755289008	693
4202704	4026755341997	686	4206508	4026755289015	693
4202706	4026755342000	686	4206604	4026755312553	693
4202708	4026755342017	686	4206606	4026755312560	693
4202710	4026755342024	686	4206608	4026755312577	693
4202804	4026755156386	677	4206704	4026755332254	692
4202806	4026755156393	677	4206706	4026755332261	692
4202808	4026755156409	677	4206776	4026755369847	716
4202810	4026755156416	677	4206780	4026755375978	717
4202812	4026755156423	677	4206790	4026755370768	716
4202816	4026755156430	677	4206790	4026755370768	717
4203852	4026755156621	675	4206795	4026755370775	716
4203853	4026755156638	675	4206797	4026755382600	717

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
4206804	4026755156942	680	4208608	4026755340693	538
4206806	4026755156959	680	4208608	4026755340693	686
4206808	4026755156966	680	4208610	4026755340709	543
4206810	4026755156973	680	4208610	4026755340709	686
4206812	4026755156980	680	4208612	4026755340716	686
4206816	4026755156997	680	4208616	4026755340723	686
4207004	4026755421354	720	4208704	4026755340662	686
4207005	4026755418033	720	4208706	4026755340730	538
4207089°	4026755432756	721	4208706	4026755340730	686
4207090	4026755418040	721	4208708	4026755340747	538
4207091	4026755418057	721	4208708	4026755340747	686
4207092	4026755418064	721	4208710	4026755340754	543
4207093	4026755418071	721	4208710	4026755340754	686
4207094	4026755421361	720	4208712	4026755340761	686
4207095	4026755421378	720	4208716	4026755340778	686
4207096	4026755421385	721	4208804	4026755324860	688
4207097	4026755421521	721	4208806	4026755324877	688
4207098	4026755422542	720	4208808	4026755324884	688
4207099	4026755422559	720	4208810	4026755324891	688
4207104	4026755289046	696	4208812	4026755324907	688
4207106	4026755289053	696	4208816	4026755324914	688
4207108	4026755289060	696	4208820	4026755363357	688
4207110	4026755289077	696	4208824	4026755363364	688
4207504	4026755314090	696	4208852	4026755344998	688
4207506	4026755314106	696	4208853	4026755345001	688
4207508	4026755314113	696	4208854	4026755345018	688
4207510	4026755314120	696	4208855	4026755345025	688
4207804	4026755157185	679	4208856	4026755345032	688
4207806	4026755157192	679	4208857	4026755345049	688
4207808	4026755157208	679	4208858	4026755345056	688
4207810	4026755157215	679	4208881	4026755356793	689
4207812	4026755157222	679	4208882	4026755356809	689
4207816	4026755157239	679	4208883	4026755356816	689
4207820	4026755332582	681	4208884	4026755356823	689
4207824	4026755332599	681	4208885	4026755369458	689
4208104	4026755295177	696	4208886	4026755369465	689
4208106	4026755295184	696	4208890	4026755422566	688
4208108	4026755295191	696	4208893	4026755404333	689
4208110	4026755295207	696	4208904	4026755340990	688
4208152	4026755347265	696	4208906	4026755341034	688
4208154	4026755347272	696	4208908	4026755341041	688
4208156	4026755347289	696	4208910	4026755341058	688
4208158	4026755347296	696	4208912	4026755341065	688
4208181	4026755308044	696	4208916	4026755341072	688
4208182	4026755308051	696	4209004	4026755157567	683
4208183	4026755308068	696	4209006	4026755157574	683
4208192	4026755314182	697	4209008	4026755157581	683
4208193	4026755314199	697	4209010	4026755157598	683
4208194	4026755314205	697	4209012	4026755157604	683
4208195	4026755314212	697	4209016	4026755157611	683
4208204	4026755157314	679	4209020	4026755334616	683
4208206	4026755157321	679	4209024	4026755334623	683
4208208	4026755157338	679	4209090	4026755363821	313
4208210	4026755157345	679	4209090	4026755363821	697
4208212	4026755157352	679	4209102	4026755309959	537
4208216	4026755157369	679	4209102	4026755309959	544
4208220	4026755332605	681	4209102	4026755309959	698
4208224	4026755332612	681	4209103	4026755309966	537
4208363	4026755157444	679	4209103	4026755309966	698
4208364	4026755157451	679	4209202	4026755412963	698
4208365	4026755157468	679	4209204	4026755405064	698
4208366	4026755157475	679	4209206	4026755405071	698
4208367	4026755157482	679	4209208	4026755405088	698
4208368	4026755157499	679	4209210	4026755405095	698
4208504	4026755314137	696	4209351	4026755332834	682
4208506	4026755314144	696	4209352	4026755332841	682
4208508	4026755314151	696	4209451	4026755332858	682
4208510	4026755314168	696	4209452	4026755332865	682
4208604	4026755340655	686	4209504	4026755157628	683
4208606	4026755340686	538	4209506	4026755157635	683
4208606	4026755340686	686	4209508	4026755157642	683

Art.-No.	EAN/Code	Page	Art.-No.	EAN/Code	Page
4209510	4026755157659	683	4229035	4026755407785	708
4209512	4026755157666	683	4229040	4026755396485	706
4209516	4026755157673	683	4229041	4026755396492	706
4209520	4026755334630	683	4229050	4026755357530	708
4209524	4026755334647	683	4229050	4026755357530	710
4209602	4026755413779	728	4229051	4026755396430	708
4209603	4026755413786	728	4229052	4026755407181	708
4209604	4026755413793	728			
4220004	4026755356977	700	4723050	4026755398090	465
4220006	4026755356984	700	6100508	4026755159158	738
4220052	4026755356991	700	6100606	4026755159165	738
4220053	4026755357004	700	6100608	4026755159172	738
4220054	4026755357011	700	6101008	4026755159196	739
4220104	4026755357028	700	6101051	4026755159202	739
4220106	4026755357035	700	6101053	4026755159219	739
4220108	4026755391374	700	6102010	4026755159233	740
4220110	4026755391381	700	6102016	4026755159240	740
4220152	4026755357042	700	6102051	4026755159257	739
4220153	4026755357059	700	6102051	4026755159257	740
4220154	4026755357066	700	6102053	4026755285079	740
4220155	4026755391398	700	6105008	4026755159271	738
4220190	4026755357455	705	6105108	4026755248821	738
4220191	4026755396386	705	6105751	4026755159288	738
4220204	4026755357073	701	6109052	4026755159301	740
4220206	4026755357080	701	6109152	4026755159325	740
4220208	4026755391404	701	6109551	4026755159349	738
4220210	4026755391411	701	6109551	4026755159349	739
4220252	4026755357097	701	6109552	4026755295764	738
4220253	4026755357103	701	6109552	4026755295764	739
4220254	4026755357110	701	6109851	4026755159363	740
4220304	4026755357127	701			
4220306	4026755357134	701	6120008	4026755159370	536
4220308	4026755391428	701	6120008	4026755159370	544
4220310	4026755391435	701	6120008	4026755159370	735
4220352	4026755357141	701	6120010	4026755159387	536
4220353	4026755357158	701	6120010	4026755159387	544
4220354	4026755357165	701	6120010	4026755159387	735
4221090	4026755357462	705	6120012	4026755159394	536
4223116	4026755412970	704	6120012	4026755159394	544
4223190	4026755418095	708	6120012	4026755159394	735
4223191	4026755421392	705	6120016	4026755159400	536
4223192	4026755421408	707	6120016	4026755159400	544
4223193	4026755421415	707	6120016	4026755159400	735
4223194	4026755421422	708	6120058	4026755236170	735
4223195	4026755421439	707	6120060	4026755236187	735
4223196	4026755425468	707	6120062	4026755236194	735
4223197	4026755435603	707	6120066	4026755236200	735
4223216	4026755418101	704	6120108	4026755267433	735
4223290	4026755418118	708	6120508	4026755159455	734
4225004	4026755357271	702	6120581	4026755159462	734
4225090	4026755357479	705	6120591	4026755159479	734
4225104	4026755357288	702	6120595	4026755159486	734
4225152	4026755357295	702	6122006	4026755159578	536
4225204	4026755357301	703	6122006	4026755159578	735
4225304	4026755357318	703	6122008	4026755159585	536
4225352	4026755357325	703	6122008	4026755159585	735
4225504	4026755357332	702	6122010	4026755159592	536
4225590	4026755357486	705	6122010	4026755159592	544
4225704	4026755357349	703	6122010	4026755159592	735
4225804	4026755357356	703	6122506	4026755163490	734
4226004	4026755357363	702	6122508	4026755163506	734
4226504	4026755357370	702	6122510	4026755163513	734
4229001	4026755357493	706	6124000	4026755159639	736
4229002	4026755396393	706	6124100	4026755159646	734
4229010	4026755357509	706	6125000	4026755159660	736
4229011	4026755396409	706	6125100	4026755159677	736
4229015	4026755357516	706	6125101	4026755159684	536
4229016	4026755396416	706	6125101	4026755159684	544
4229020	4026755357523	706	6125101	4026755159684	736
4229021	4026755396423	706	6125161	4026755159691	736

Art.-No.	EAN/Code	Page
6125163	4026755159707	736
6125200	4026755159714	736
6125300	4026755159721	736
6125361	4026755159738	736
6125363	4026755159745	736
6125400	4026755159752	736
6125500	4026755159769	736
6126000	4026755159806	736
6127000	4026755159813	736
9900015	4026755466836	926
9900016	4026755466843	926
9900017	4026755466850	926
9900020	4026755466867	926
9900025	4026755468052	928
9900033	4026755466874	927
9900034	4026755466997	927
9900039	4026755467048	927
9900040	4026755467055	927
9900041	4026755467062	927

8.1.a General conditions

Content

Standard Terms and Conditions	986
-------------------------------	-----

STANDARD TERMS AND CONDITIONS

PREAMBLE

These Standard Terms and Conditions for the Sales of Export Goods shall exclusively apply, unless varied by express agreement accepted in writing by both parties. The offer, order acknowledgment, order acceptance of sale of any products covered herein is conditioned upon the terms contained in this instrument. Any conditional or different terms proposed by the Purchaser are objected to and will not be binding upon the Supplier unless assented in writing by the Supplier.

These conditions shall govern any future individual contract of sale between the Supplier and the Purchaser to the exclusion of any other terms and conditions subject to which any such order is made or purported to be made, by the Purchaser.

Any typographical, clerical or other error or omission in any sales literature, quotation, price list, acceptance of offer, invoice or other documents of information issued by the Supplier shall be subject to correction without any liability on the part of the Supplier.

The provisions of these Standard Terms and Conditions extend to standard contract conditions which are used in a contract with a merchant in the course of business only.

1. ORDERS AND SPECIFICATIONS

- No order submitted by the Purchaser shall be deemed to be accepted by the Supplier unless and until confirmed in writing by the Supplier or the Supplier's representative within 21 days after submittal.
- The quantity, quality and description of an any specification for the goods shall be those set out in the Supplier's quotation (if accepted by the Purchaser) or the Purchaser's order (if accepted by the Supplier). Any such specification, sales literature, quotation etc. shall be strictly confidential and must not be made available to third parties.
- The Purchaser shall be responsible for the Supplier for ensuring the accuracy of the terms of any order submitted by the Purchaser, and for giving the Supplier any necessary information relating to the goods within a sufficient time to enable the Supplier to perform the contract in accordance with its terms.
- If the goods are to be manufactured or any process is to be applied to the goods by the Supplier in accordance with a specification submitted by the Purchaser, the Purchaser shall indemnify the Supplier against all loss, damages, costs and expenses awarded against or incurred by the Supplier in connection with or paid or agreed to be paid by the Supplier in settlement of any claim for infringement of any patent, copyright, design, trade mark or other industrial or intellectual rights of any other person which results from the Supplier's use of the Purchaser's specification.
- The Supplier reserves the right to make any changes in the specification of the goods which are required to conform with any applicable statutory requirements or, where the goods are to be supplied to the Supplier's specification, which do not materially affect their quality or performance.

2. PRICE OF THE GOODS; PAYMENT

- Unless specifically agreed, the prices and conditions in force on the date of delivery will apply. Prices apply ex works plus statutory VAT at the applicable statutory rate. Prices confirmed in non-commercial transactions, are binding if delivery is made within four months after order confirmation. After this period, if production costs have risen the Supplier reserves the right to increase the prices accordingly. In commercial transactions, if production costs have risen, the Supplier reserves the right to adapt prices also within the 4 month period. Insofar as the Supplier quotes prices for resale, they are a non-binding retail price.
- Freight with a net value of goods from €1,000.00, are delivered with freight and packaging paid within the territory of Germany, otherwise we will charge any additional freight costs incurred, such as express delivery, guaranteed deadline and/or notification costs. For deliveries to third parties, we will charge for any additional costs incurred. In the case of third party deliveries / deliveries to building sites, the Purchaser is responsible for the immediate unloading of the goods. A charge will be made for waiting times. Third party deliveries will be made on condition that heavy goods vehicles are able to reach the delivery address without any difficulty. The Supplier is entitled to choose the mode of shipment at its discretion. Export deliveries are subject to prior arrangement.
- For deliveries with a net value of goods under €1,000.00, freight and packing will be charged at cost.
- Unless agreed otherwise by the parties, payment is due to the Supplier's designated account within 30 days without any deduction and free of transaction charges. 14 days from the date of invoice with a 2% discount, 30 days net, unless otherwise indicated. Arrears interest will be charged at 4% above the respective base interest rate of the ECB.
- All invoices will be made out in and payable in €. For bills of exchange or cheques the Supplier will not accept any liability for the timely presentation or provision of the relative deed of protest. Collection costs will be borne by the Purchaser. Any cost approaches incurred will be refunded. The Supplier's representatives are entitled to collect payments. In the event of payment difficulties or the suspension of payments on the part of the Purchaser, all receivables will become due immediately. The right of retention is excluded. Off-setting is only admissible with claims that are undisputed or legally enforceable

3. DELIVERY

- All delivery periods indicated are only binding if they have been designated as binding.
- A delivery time begins when the order confirmation is sent, however, not before the documents, permits and approvals to be procured by the Purchaser have been provided and not before any agreed down payments have been received.
- The delivery period is met if before expiry of this period, the delivery item has left the factory premises or notification has been sent that it is ready for delivery.
- The delivery period will be extended accordingly in the case of measures taken in relation to labour disputes, in particular strikes and lockouts, and in the event of unforeseeable hindrances that are beyond the Supplier's control if such hindrances can demonstrably shown to have a considerable influence on the production or delivery of the delivery item. This also applies if the circumstances arise for sub-suppliers.
- If the shipment is delayed at the Purchaser's request, the latter will be charged with any storage costs incurred, however, at least 1 percent of the invoice amount in the case of storage on the Supplier's premises, for each month starting one month after notification of readiness for delivery. However, after a suitable deadline has been set and expired without results, the Supplier is entitled to dispose of the delivery item otherwise and to deliver to the Purchaser with an adequate extended delivery time.
- For any claims of the Purchaser due to non-compliance with a delivery period to be valid, the latter must have complied with its contractual obligations.

4. TRANSFER OF RISKS

Risk of damage to or loss of the goods shall pass to the Purchaser as follows:

- in the case of goods to be delivered otherwise than at the Supplier's premises, at the time of delivery or, if the Purchaser wrongfully fails to take delivery of the goods, the time when the Supplier has tendered delivery of the goods;
- in the case of goods to be delivered at the Supplier's premises ("ex works", Incoterms 2010) at that time when the Supplier notifies the Purchaser that the goods are available for collection.

5. RETENTION OF TITLE

- Notwithstanding delivery and the passing of risk in the Goods, or any other provision of these conditions, the property in the Goods shall not pass to the Purchaser until the Supplier has received payment in full of the price of the Goods and all other Goods agreed to be sold by the Supplier to the Purchaser for which payment is then due.
- After termination of the contract the Supplier shall have absolute authority to retake, sell or otherwise deal with or dispose of all or any part of the goods. Until such time as the property in the Goods passes to the Purchaser, the Purchaser shall hold the Goods as the Supplier's fiduciary agent, and shall keep the Goods properly stored, protected and insured.
- Until that time the Purchaser shall be entitled to resell or use the Goods in the ordinary course of its business, but shall account to the Supplier for the proceeds of sale or otherwise of the Goods including insurance proceeds, and shall keep all such proceeds separate from any moneys or properties of the Purchaser and third parties.

- If the Goods are processed or reshaped by the Purchaser and if processing is done with Goods that Supplier has no property in, Supplier shall become co-owner of the Goods. The same shall apply if Supplier's Goods are completely reshaped and mixed with other goods.
- If third parties take up steps to pledge to otherwise dispose of the goods, the Purchaser shall immediately notify the Supplier in order to enable the Supplier to seek a court injunction. If the Purchaser fails to do so in due time he will be held liable for any damages caused.
- The Supplier shall on demand of the Purchaser release any part of the collateral if the value of the collateral held in favor of the Supplier exceeds the value of the claims being secured. It is to the Supplier's decision to release those parts of the collateral suitable for him.
- For business abroad, the following also applies: The Supplier retains the right of ownership to the goods delivered until the sale price has been paid in full in compliance with the respective legal provisions in force in the country of destination. This retention of ownership is deemed to have been expressly agreed between the Supplier and the Purchaser. Insofar as the country of destination admits other liens in lieu of the retention of ownership, the lien that comes closest to the effect of the retention of ownership will be deemed to have been agreed.

§ 6 WORKPIECE RELATED PRODUCTION UNITS

- Insofar as workpiece related models or production units are manufactured or procured by the Supplier on behalf of the Purchaser, the Supplier will invoice them. Insofar as only cost components have been charged, the Purchaser will also bear any remaining costs if he does not accept the quantities it promised when concluding the contract or if the Purchaser wishes the withdrawal of the models or production units.
- The models and production units are the property of the Purchaser but will still remain in the Supplier's possession.
- The models and production units will only be used for deliveries to the Purchaser, if the latter fulfils its acceptance and payment obligations towards the Supplier.
- The Supplier will treat all models and production units with care. At the Purchaser's request, its models and production units will be insured at its expenses. Any further claims deriving from damage to or the loss of models and production units are excluded.
- If deliveries are made in accordance with drawings or other specifications of the Purchaser and if property rights of third parties are violated as a result, the Purchaser will release the Supplier from any claims.

§ 7 WARRANTIES AND EXCLUSION CLAUSES

For defects in delivery the supplier will be liable subject to the exclusion of all further claims as follows:

- All parts that within 24 months of commissioning turn out to be unusable or only usable with major impairment due to a circumstance that existed prior to the transfer of risk, in particular due to faulty construction, poor construction materials or defective design, are to be repaired or re-supplied without charge at the reasonable discretion of the Supplier. If such defects are found, the Supplier must be notified immediately in writing. Replaced parts will become property of the Supplier. If the dispatch, installation or commissioning is delayed at no fault of the Supplier, this liability will expire at the latest 30 months after the transfer of risk. For deliveries in Germany and to Austria only: with the exception of electric components or products that are connected with electric components, the above liability will expire after 60 months provided that the products have been installed by a company specialised in sanitary, heating and air-conditioning technology and approved in accordance with the "Handwerksordnung" [Crafts Code] in Germany and in Austria according to similar provisions.
- The Purchaser's right to assert claims due to defects will in all cases become time-barred 24 months after the date on which the complaint is made in a timely manner, however, at the earliest on the expiry of the warranty period.
- No warranty is given for damage that occurs for the following reasons: Unsuitable or improper use, faulty installation or commissioning by the Purchaser or third parties, natural wear and tear, defective or negligent handling, unsuitable operating equipment or replacement materials, defective construction work, chemical, electro-chemical or electric influences, non-compliance with standards and regulations, etc. and the information and advice provided by the Supplier, unless they are the Supplier's fault.
- After informing the Supplier, the Purchaser must give the Supplier the necessary time and opportunity to carry out any repairs and replacement deliveries that appear necessary at the Supplier's discretion, otherwise the Supplier will be released from liability for defect. Only in urgent cases where there is a risk to operational safety and to avert disproportionately large damage does the Supplier have the right to remedy the defect itself or have the defect remedied by third parties and to demand that Supplier reimburses any costs incurred, whereby the Supplier must be informed immediately of the remedy. It is also the case if the Supplier is late remedying the defect.
- Of the costs incurred for repairs or replacement deliveries, the Supplier will bear the costs of the replacement part including shipment provided that as the complaint proves to be justified. For the rest, the costs will be borne by the Purchaser.
- The warranty period for the replacement part and the repair will be 12 months. It will run at least until the expiry of the original warranty period for the delivery item. The period of liability for defects to the delivery item will be extended by the duration of interruption to business due to the repair works.
- In the case modifications or maintenance work carried out incorrectly by the Purchaser or third parties without the prior authorization of the Supplier, the liability for any resulting consequences will be excluded.
- Any further claims of the Purchaser, in particular a claim for compensation for damage that has not occurred to the delivery item itself, are excluded. This exclusion of liability will not apply in the case of intent or gross negligence, the culpable breach of essential contractual obligations and in cases in which liability exists under the product liability law for damage to persons or property for privately used objects in the case of defects of the delivery item.
- The limitation of warranty to the repair or new delivery (supplementary performance) will be omitted if the supplementary performance fails.
- The Supplier will not be liable for consequential damage resulting from defective software.
- Only for the "Copepe" multi-layer composite pipe, the "Copepex" PE-Xc-synthetic pipe and the "Cofit" connection as well as the "Cofloor" system of panel heating and air conditioning: provided they have been installed together in the system by a company that is demonstrably specialized in sanitary, heating and air-conditioning technology and approved in accordance with the "Handwerksordnung" [Crafts Code] in Germany or according to similar provisions in Austria: Throughout an extended warranty period of ten years after the date of production, the Supplier will be liable for the maximum total amount of 1 million euro per loss and 5 million euro per year. In all other cases, the provisions of clauses 1 to 9 apply.

§ 8 RETURN SHIPMENTS

- Return shipments will only be accepted after prior, specific agreement in writing, indicating proof of delivery. The goods must be in their unopened and undamaged original packaging and must meet the state of the art. The goods may not be any older than 12 months after the delivery date. Returns will be accepted subject to an inspection by the Supplier. For items returned carriage-paid, a credit note will be issued to the amount of the invoice with a deduction of 20% for processing charges, however, at least 20.00 € per return shipment.
- The possibility of return shipments of custom-made productions or modified serial fittings as well as electric or electronic control components is excluded.

§ 9 CHOICE OF LAW; PLACE OF JURISDICTION;

- For any disputes arising from the contractual relationship, if the Purchaser is a merchant, a legal entity under public law or a special fund under public law, law suits must be filed at the court which has jurisdiction over the Supplier's head office or its branch office that carried out the delivery. The Supplier is also entitled to file a suit at the place in which the Purchaser has its head offices.
- The Purchaser will acknowledge these General Terms and Conditions of the Supplier when issuing orders. Any conditions of purchase of the Purchaser that contradict those herein do not apply. Any diverging agreements must be made in writing. If individual clauses of the above conditions are fully or partially invalid, it will not affect the validity of the remaining clauses and/or parts of such clauses. Any invalid provision shall be deemed to be replaced by a valid provision that comes closest to the economic purpose of the invalid provision.

8.1.b Imprint

Content

Imprint	988
---------	-----

Oventrop GmbH &Co. KG
Paul-Oventrop-Straße 1
D-59939 Olsberg
Germany
Telephone +49 2962 82 0
Fax +49 2962 82 450
Internet www.oventrop.com
E-Mail mail@oventrop.de

Limited partnership, seat Olsberg, commercial register: Court of Arnsberg HRA 4050
Personally liable partner: OV Verwaltungs-GmbH, seat Olsberg, commercial register: Court of Arnsberg HRB 3860

Managing directors: Jochen Fähnrich, Johannes Rump

VAT ID no.: DE 124283065

Subject to modifications without notice.
Printed on paper free from chlorine bleaching.

Room climate

Hydronics

Stations
Storage cylinders
Pipes

Potable water

Oil
Solar

Smart Home
Smart Building

Oventrop is leading in the design of products all around the heating system.



DESIGN PLUS



oventrop

Oventrop GmbH & Co. KG
Paul-Oventrop-Str. 1
D-59939 Olsberg
Germany
Phone +49 2962 82 0
Fax +49 2962 82 450
E-Mail mail@oventrop.com
Internet www.oventrop.com

