

General Catalogue

 **WATTS[®]**
INDUSTRIES
Technology by nature

OUR EUROPEAN PRESENCE



WATTS WATER TECHNOLOGIES

It is time to show our roots.

*Watts Water Technologies is on the global market with several companies, each with their own history and product line. Within their diversity the companies of the Watts Water Technologies Group share the object of an intense technological development. Each product, designed for heating, plumbing, water protection and control represents an optimum example of synergy between technology, innovation and protection of the environment. These are the roots which the Watts Water Technologies Group share by nature; and these roots allow the Group to place itself on the market as strong and reliable partner with the motto “ **Technology by nature** ”.*



Biassono - Milano

Established in 1874 in New England, USA, and today known as WATTS WATER TECHNOLOGIES, WATTS INDUSTRIES (W.I.) is a world leader for the manufacture and distribution of plumbing, heating and air-conditioning products, quoted on the New York Stock Exchange (NYSE) with constantly growing consolidated group results.

It started out by manufacturing pressure control valves for the flourishing textile industry. It now offers high quality pollution control devices, pressure reducing valves, automatic control valves, safety valves, mixing valves and other products for industrial applications to foreign markets, industry as well as small and large distributors.



Caldaro - Bolzano

In 1984, W.I. began an aggressive European acquisitions programme, looking for companies strong in know-how and with a reliable organisation able to guarantee customers a high quality service.

In Europe, the WATTS INDUSTRIES group includes numerous European companies. In Italy, it has three production centres and is a leader on the Italian heating, air conditioning and plumbing market.



Lavis - Trento

In the 2005 edition, WATTS Cazzaniga - traditionally known for the fundamental role played in the sector with the launch onto the market of systems and products such as flush Modul manifolds, zone control, quick-connect one-piece fittings, balancing valves, heat metering/billing systems and hydraulic back flow preventer units.

Also offers its partners (wholesalers and OEMs) a new series of reliable high performance products, digital and radio frequency thermostats, new concept thermal energy meters, components for solar systems and a new domestic hot water distribution system.

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NEW PRODUCTS



Electrothermic Actuator

New electrothermic actuator Series 22C, compact design with on/off action and cap made of flame-retardant material. Available in normally open/closed models, either 2-wire or 4-wire (complete with auxiliary microswitch).

Page 20

Components for solar systems

High quality, efficient and reliable products for systems with solar integration for heating domestic water.

Pages 39 - 46



Programmable chrono thermostat, room thermostat and timer switches

Electronic timing thermostats MILUX Series and Room thermostats BELUX Series, quick and easy to install and use, of compact design. Models with daily or weekly programming and with RF control.

Pages 69 - 73



Pressure reducing valves

Pressure reducing valve of anti-dezincification brass, designed for protection of electrical heating appliances or appliances for producing domestic hot water. Models to cover all installation requirements.

Page 83





Safety units

Safety units for boilers; complete with safety valve, shut-off valve, inspectable check valve and lever for manual discharge.

Page 100

Thermostatic mixing valve

Thermostatic mixing valve. Designed to supply sinks, hand wash-basins or electronic faucets. Provides high security level against scalding and Legionella bacteria. Ideal for multi-facility applications : hospitals, nursing homes, hotels, schools, restaurants, laboratories, motorway services.

Page 102



Components for sanitary systems

Components for domestic hot and cold water distribution systems.

Page 117

Jerk handle on/off valve

Protection valve for boiler room with lever-operated command for shutting off flow of fuel.

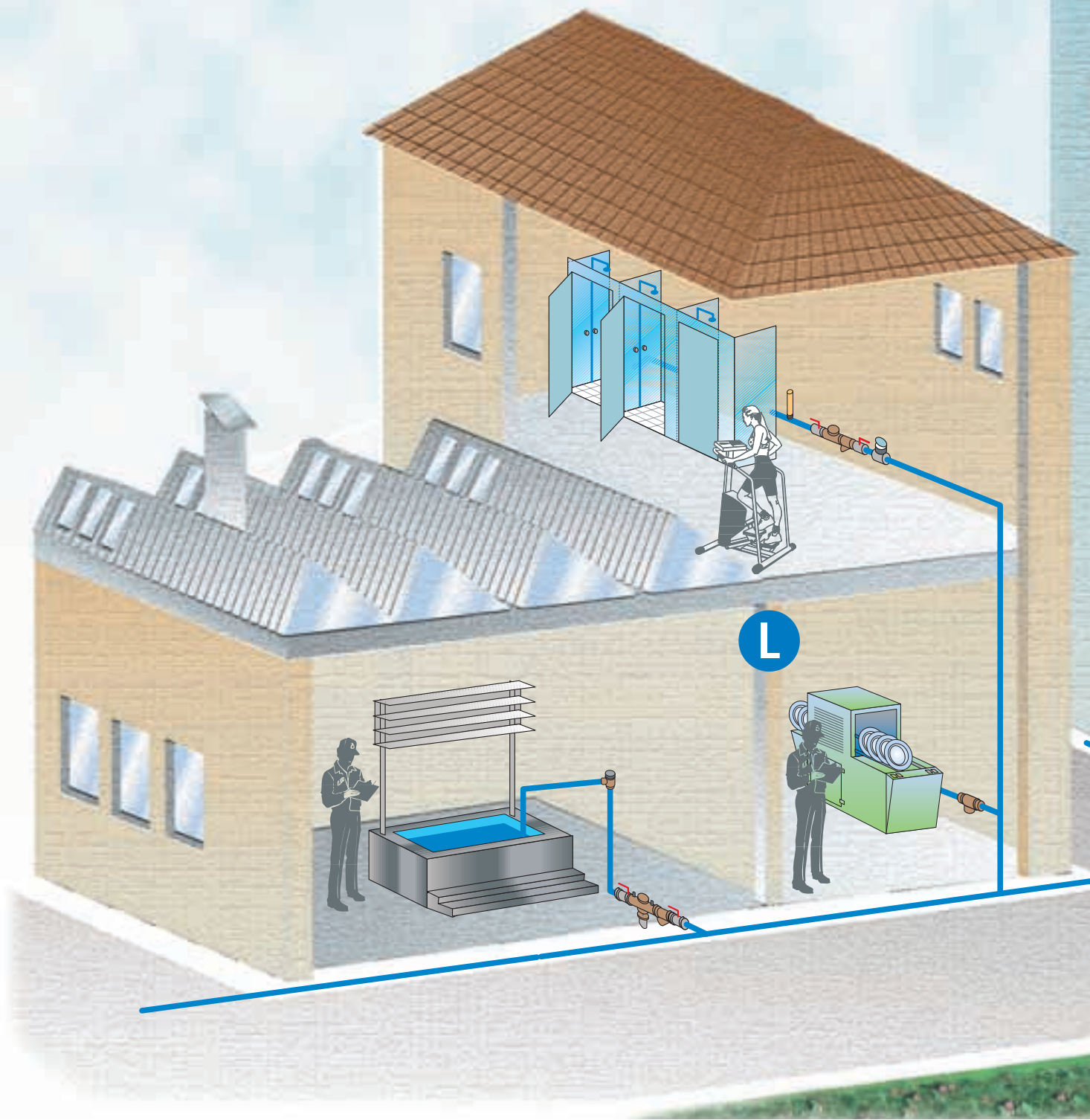
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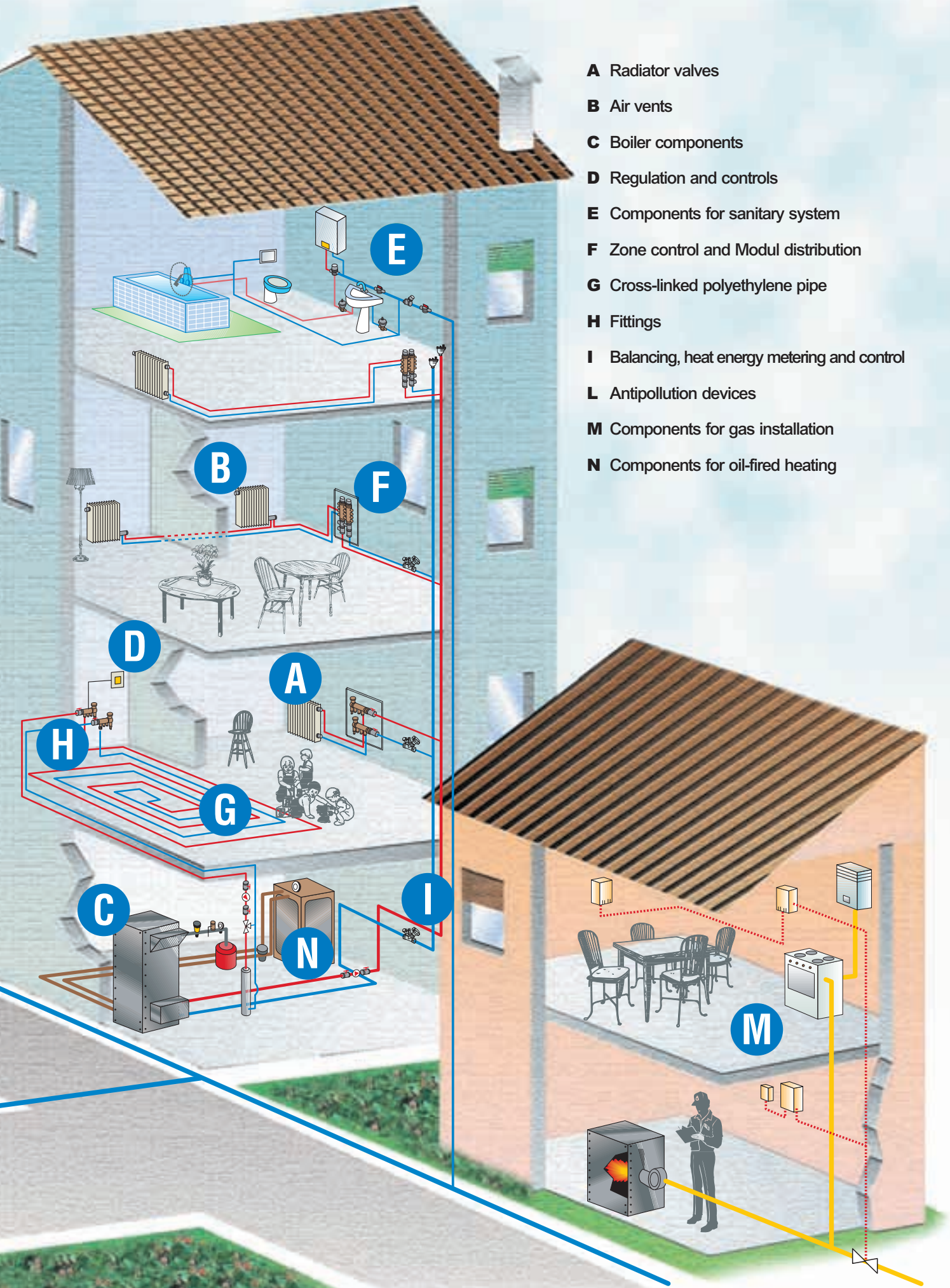


Something for all your installation needs :

Components and Systems designed and manufactured with experience and quality

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- A** Radiator valves
- B** Air vents
- C** Boiler components
- D** Regulation and controls
- E** Components for sanitary system
- F** Zone control and Modul distribution
- G** Cross-linked polyethylene pipe
- H** Fittings
- I** Balancing, heat energy metering and control
- L** Antipollution devices
- M** Components for gas installation
- N** Components for oil-fired heating

QUALITY SYSTEM CERTIFICATIONS

The companies of the WATTS Group operating in Italy have achieved an important result with the certification of the company quality system to the new ISO9001:2000 (Vision 2000).



STANDARDS

The controls performed ensure that WATTS CAZZANIGA products according to the following standards :

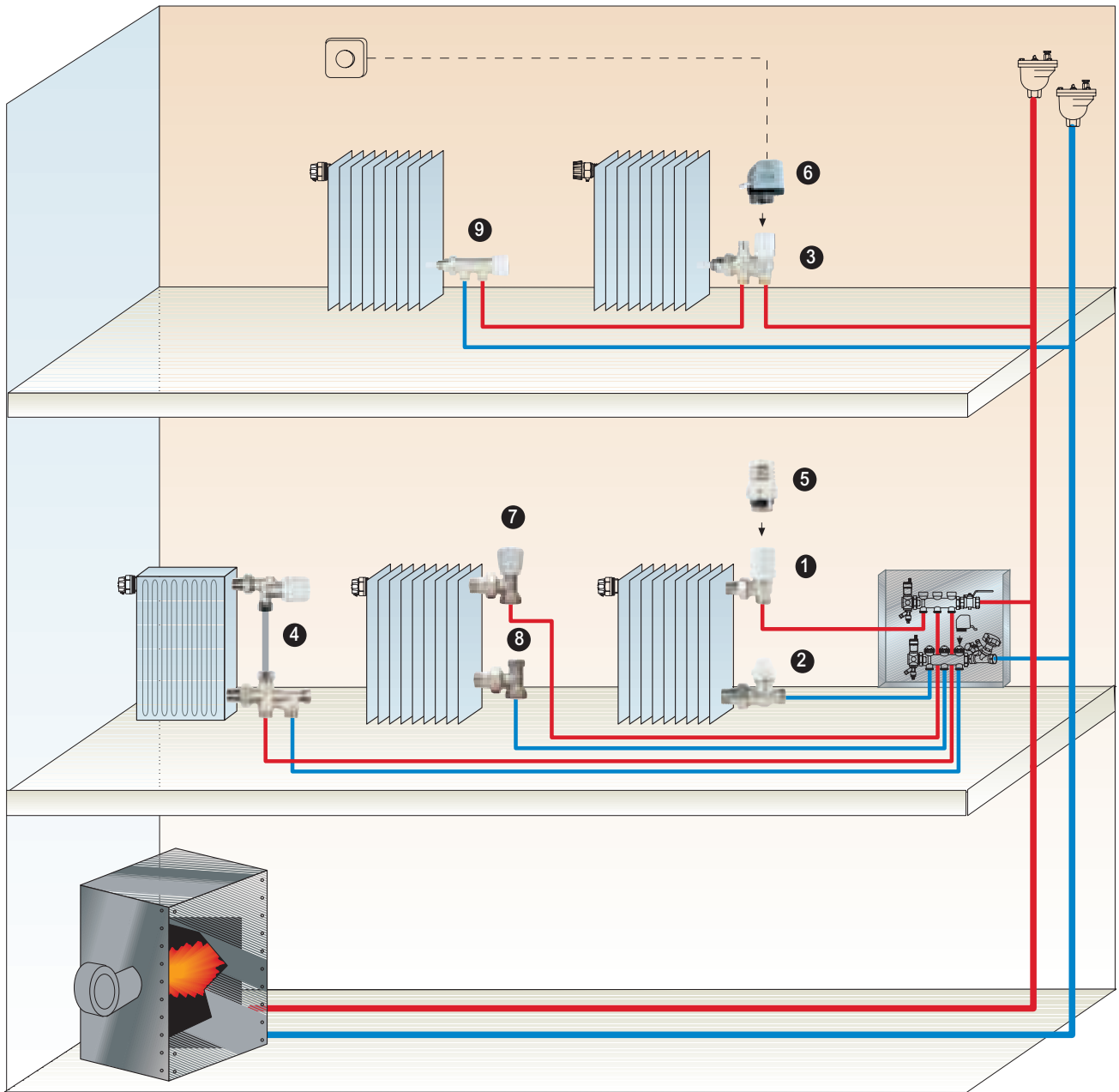
<p>ITALY</p> <p>I.S.P.E.S.L.</p> <p>Interior Department</p> <p>UNI</p> <p>UNI - CIG</p> <p>UNI - IIP</p> <p>IMQ</p> <p>ENEC</p>	<p>GERMANY</p> <p>PTB</p> <p>TÜV</p> <p>DVGW</p> <p>SKZ</p> <p>DIN</p> <p>VDE</p> <p>LGA</p> <p>ENEC</p>	<p>SWITZERLAND</p> <p>RCC</p> <p>SEV</p> <p>SVGW</p> <p>ENEC</p>	<p>U.S.A.</p> <p>PDI</p> <p>UPC</p> <p>ASSE</p> <p>F.M.S.</p> <p>UL</p> <p>CSA</p> <p>ICBO</p> <p>NSF</p> <p>UMC</p>	<p>AUSTRIA</p> <p>OEKI</p> <p>OEVGW</p> <p>ÖVE</p> <p>ENEC</p>
<p>FRANCE</p> <p>NF</p> <p>CSTB</p> <p>ENEC</p>	<p>BELGIUM</p> <p>CEBEC</p> <p>ANSENAU</p> <p>ENEC</p>	<p>POLAND</p> <p>TIN</p> <p>DTU</p> <p>UDT</p> <p>ENEC</p>	<p>NETHERLAND</p> <p>KIWA</p> <p>KEMA/KEUR</p> <p>ENEC</p>	<p>SLOVAKIA</p> <p>TSUP</p> <p>ENEC</p>
<p>DENMARK</p> <p>DEMKO</p> <p>ENEC</p>	<p>NORWAY</p> <p>NEMKO</p> <p>ENEC</p>	<p>SPAIN</p> <p>UNE</p> <p>ENEC</p>	<p>HUNGARY</p> <p>EMI</p> <p>ENEC</p>	<p>CANADA</p> <p>ULC</p>





Radiator valves

EXAMPLE OF APPLICATION



- 1 Thermostat adaptable valves series 1178SN - 178SN - 1179SN - 179SN
- 2 Lockshield valves series 1195SN - 195SN - 1196SN - 195SN - 196SN
- 3 4-way thermostat adaptable valves for one-pipe and two-pipe systems series 120B - 102M - 100M
- 4 4-way valves for one-pipe and two-pipe systems series 126CB - 126PB - 126CM - 126PM
- 5 Thermostatic actuators series 148 - 148SD - 148CD - 148SD2
- 6 Electrothermic actuators series 22C - 10C - 20C
- 7 Manual valves series 1163R - 1164R - 163R - 164R
- 8 Lockshield valves series 1193S - 1194S - 193S - 194S
- 9 Manual valves for one-pipe systems series 119SX

THERMOSTAT ADAPTABLE AND LOCKSHIELD VALVES, CONNECTION FOR COPPER PIPE

1178SN

Nickel-plated thermostat adaptable valve. Angle body. Connection for copper or plastic pipe, size 1/2" M. Standard tailpiece. ABS handwheel with movable stem. Compatible with thermostatic actuators series 148 and electrothermic actuators 10C, 20C, 22C.

* Available with O-ring sealed straight tailpiece.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1178SN	1178SN38X	3/8"	1/2"	2,6	10	--
1178SN	1178SN12	1/2"	1/2"	2,6	10	--
*	1178UMSN38X	3/8"	1/2"	2,6	10	--
*	1178UMSN12	1/2"	1/2"	2,6	10	--


1188UM

Nickel-plated thermostat adaptable valve like 1178UM **with presetting**. ABS handwheel with fixed stem.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1188UM	1188UMSN38X	3/8"	1/2"	2,6	10	--
1188UM	1188UMSN12	1/2"	1/2"	2,6	10	--


1130UM

Thermostat adaptable valve like 1188UM but with easily removable protective cap to allow installation of thermal commands series 148 and electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1130UM	1130UMSN38X	3/8"	1/2"	2,6	10	--
1130UM	1130UMSN12	1/2"	1/2"	2,6	10	--


1195SN

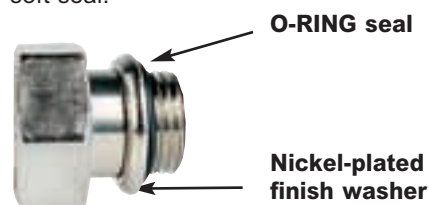
Nickel-plated balancing lockshield valve. Angle body. Connection for copper or plastic pipe, size 1/2" M. Standard tailpiece. ABS cap.

* Available with O-ring sealed straight tailpiece.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1195SN	1195SN38X	3/8"	1/2"	2,3	10	--
1195SN	1195SN12	1/2"	1/2"	2,3	10	--
*	1195UMSN38X	3/8"	1/2"	2,3	10	--
*	1195UMSN12	1/2"	1/2"	2,3	10	--

Advantage of the O-RING

The straight tailpiece is SEALED WITH O-RING. Perfect adaptability to the radiator plug is ensured thanks to the soft seal.


The new CEN Certified thermostatic valve

THE RESULT IS CONSTANT TEMPERATURE AT THE REQUIRED LEVEL IN THE VARIOUS ROOMS, WITH AN ANNUAL ENERGY SAVING UP TO 20%

The thermostatic radiator valve is the simplest device for automatic room temperature control. When the room temperature exceeds the required level, the sensitive element expands thereby determining the shutting-off or appropriate reduction in flow of the hot water supplying the radiator. The heat emitted by the radiator is decreased. When the room temperature drops, the sensitive element contracts thus causing an increase in the circulation of hot water. Heat emitted by the radiator is increased.



With Radiator valves series 130 and series 131, and thermostatic actuators series 138 and series 148.

THERMOSTAT ADAPTABLE AND LOCKSHIELD VALVES, CONNECTION FOR COPPER PIPE



1179SN

Nickel-plated thermostat adaptable valve. Straight body. Connection for copper or plastic pipe, size 1/2"M. Standard tailpiece. ABS handwheel with movable stem.

Compatible with thermostatic actuators series 148 and electrothermic actuators 10C, 20C, 22C.

* Available with O-ring sealed straight tailpiece.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1179SN	1179SN38X	3/8"	1/2"	1,8	10	--
1179SN	1179SN12	1/2"	1/2"	1,8	10	--
*	1179UMSN38X	3/8"	1/2"	1,8	10	--
*	1179UMSN12	1/2"	1/2"	1,8	10	--



1189UM

Nickel-plated thermostat adaptable valve like 1179UM **with presetting** and ABS handwheel with fixed stem.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1189UM	1189UMSN38X	3/8"	1/2"	1,8	10	--
1189UM	1189UMSN12	1/2"	1/2"	1,8	10	--



1131UM

Thermostat adaptable valve like 1189UM but with easily removable protective cap to allow installation of thermal commands series 148 and electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1131UM	1131UMSN38X	3/8"	1/2"	1,8	10	--
1131UM	1131UMSN12	1/2"	1/2"	1,8	10	--



1196SN

Nickel-plated balancing lockshield valve. Straight body.

Connection for copper or plastic pipe, size 1/2"M. Standard tailpiece. ABS cap.

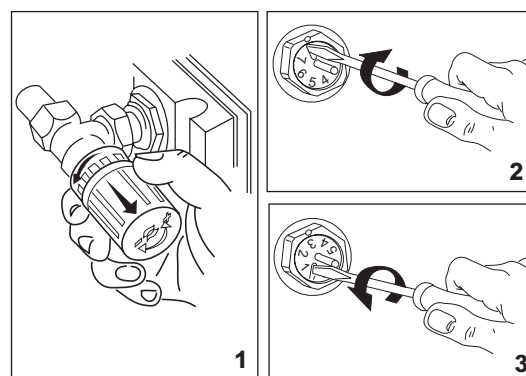
* Available with O-ring sealed straight tailpiece.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1196SN	1196SN38X	3/8"	1/2"	1,5	10	--
1196SN	1196SN12	1/2"	1/2"	1,5	10	--
*	1196UMSN38X	3/8"	1/2"	1,5	10	--
*	1196UMSN12	1/2"	1/2"	1,5	10	--

Presetting

Thermostat adaptable valves series 188UM-1188UM-189UM-1189UM-130UM-1130UM-131UM-1131UM allow fixing a well defined maximum flow rate by controlling any unbalances in the circuits as follows : the presetting device is with plug stroke limiting and each setting position is obtained by adjusting the ring nut under the handwheel. The hydraulic flow rate and pressure drop characteristics can be deduced from the special charts: as regards the thermostatic function, they assume the characteristics of such device.

- 1 Pull out the handwheel.
- 2 Fully close the presetting ring nut.
- 3 Open to the required position as specified by design or selected on the specific chart by making the number coincide with the reference notch. Refit the handwheel.



THERMOSTAT ADAPTABLE AND LOCKSHIELD VALVES, CONNECTION FOR IRON PIPE

178SN

Nickel-plated thermostat adaptable valve. Angle body. Connection for iron pipe. Standard tailpiece. ABS handwheel with movable stem. Compatible with thermostatic actuators series 148 and electrothermic actuators 10C, 20C, 22C.

* **Available with O-ring sealed straight tailpiece.**

Type	Part number	Size body	Kvs	Min. order	€uro
178SN	178SN38	3/8"	2,1	10	--
178SN	178SN12	1/2"	2,6	10	--
178SN	178SN34	3/4"	3,3	10	--
*	178UMSN38	3/8"	2,1	10	--
*	178UMSN12	1/2"	2,6	10	--
*	178UMSN34	3/4"	3,3	10	--


188UM

Nickel-plated thermostat adaptable valve like 178UM **with presetting** and ABS handwheel with fixed stem.

Type	Part number	Size body	Kvs	Min. order	€uro
188UM	188UMSN38	3/8"	2,1	10	--
188UM	188UMSN12	1/2"	2,6	10	--
188UM	188UMSN34	3/4"	3,3	10	--


130SN

Thermostatic valve like 178SN but with easily removable protective cap to allow installation of thermal commands series 148 and electrothermic actuators 10C, 20C, 22C.

* **Available with O-ring sealed straight tailpiece.**

Type	Part number	Size body	Kvs	Min. order	€uro
130SN	130SN38	3/8"	2,1	10	--
130SN	130SN12	1/2"	2,6	10	--
130SN	130SN34	3/4"	3,3	10	--
*	130UMSN38	3/8"	2,1	10	--
*	130UMSN12	1/2"	2,6	10	--
*	130UMSN34	3/4"	3,3	10	--


195SN

Nickel-plated balancing lockshield valve. Angle body. Connection for iron pipe. Standard tailpiece. ABS cap.

* **Available with O-ring sealed straight tailpiece.**

Type	Part number	Size body	Kvs	Min. order	€uro
195SN	195SN38	3/8"	1,8	10	--
195SN	195SN12	1/2"	2,3	10	--
195SN	195SN34	3/4"	4,6	10	--
*	195UMSN38	3/8"	1,8	10	--
*	195UMSN12	1/2"	2,3	10	--
*	195UMSN34	3/4"	4,6	10	--

THERMOSTAT ADAPTABLE AND LOCKSHIELD VALVES, CONNECTION FOR IRON PIPE

16

A

**179SN**

Nickel-plated thermostat adaptable valve. Straight body. Connection for iron pipe. Standard tailpiece. ABS handwheel with movable stem. Compatible with thermostatic actuators series 148 and electrothermic actuators 10C, 20C, 22C.

* Available with O-ring sealed straight tailpiece.

Type	Part number	Size body	Kvs	Min. order	€uro
179SN	179SN38	3/8"	1,1	10	--
179SN	179SN12	1/2"	1,8	10	--
179SN	179SN34	3/4"	2,6	10	--
*	179UMSN38	3/8"	1,1	10	--
*	179UMSN12	1/2"	1,8	10	--
*	179UMSN34	3/4"	2,6	10	--

**189UM**

Nickel-plated thermostat adaptable valve like 179UM **with presetting** and ABS handwheel with fixed stem.

Type	Part number	Size body	Kvs	Min. order	€uro
189UM	189UMSN38	3/8"	1,1	10	--
189UM	189UMSN12	1/2"	1,8	10	--
189UM	189UMSN34	3/4"	2,6	10	--

**131SN**

Thermostatic valve like 179SN but with easily removable protective cap to allow installation of thermal commands series 148 and electrothermic actuators 10C, 20C, 22C.

* Available with O-ring sealed straight tailpiece.

Type	Part number	Size body	Kvs	Min. order	€uro
131SN	131SN38	3/8"	1,1	10	--
131SN	131SN12	1/2"	1,8	10	--
131SN	131SN34	3/4"	2,6	10	--
*	131UMSN38	3/8"	1,1	10	--
*	131UMSN12	1/2"	1,8	10	--
*	131UMSN34	3/4"	2,6	10	--

**196SN**

Nickel-plated balancing lockshield valve. Straight body. Connection for iron pipe. Standard tailpiece. ABS cap.

* Available with O-ring sealed straight tailpiece.

Type	Part number	Size body	Kvs	Min. order	€uro
196SN	196SN38	3/8"	1,1	10	--
196SN	196SN12	1/2"	1,5	10	--
196SN	196SN34	3/4"	3,5	10	--
*	196UMSN38	3/8"	1,1	10	--
*	196UMSN12	1/2"	1,5	10	--
*	196UMSN34	3/4"	3,5	10	--

4-WAY THERMOSTAT ADAPTABLE VALVES FOR ONE-PIPE AND TWO-PIPE SYSTEMS

120B

4-way nickel-plated thermostat adaptable valve for **two-pipe systems**.

With presetting. Built-in lockshield valve. Connection for copper or plastic pipe.

O-ring sealed straight tailpiece, complete with flow separation probe. ABS handwheel.

Differential pressure (item 148): 1.5 bar. Kvn coefficient with 2K proportional band :

ND 1/2" = 0.58 - ND 3/4" = 0.62. Compatible with thermostatic actuators series 148 and electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
120B	120B12AM12	1/2"	1/2"	0,82	2	--
120B	120B12AM34	3/4"	1/2"	0,93	2	--
120B	120B24AM12	1/2"	1/2"S	0,82	2	--
120B	120B24AM34	3/4"	1/2"S	0,93	2	--


102M

4-way nickel-plated thermostat adaptable valve for **one-pipe systems with fixed**

by-pass. With presetting. Built-in lockshield valve. Connection for copper or plastic pipe.

O-ring sealed straight tailpiece, complete with flow separation probe. ABS handwheel.

Differential pressure (item 148) : 1.5 bar. Kvn coefficient with 2K proportional band :

ND 1/2" = 1.76 - ND 3/4" = 1.84 Flow rate to radiator: 50%. Compatible with thermostatic actuators series 148 and electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
102M	102M12AM12	1/2"	1/2"	2	2	--
102M	102M12AM34	3/4"	1/2"	2,15	2	--
102M	102M24AM12	1/2"	1/2"S	2	2	--
102M	102M24AM34	3/4"	1/2"S	2,15	2	--


100M

4-way nickel-plated thermostat adaptable valve for **one-pipe systems with fixed**

by-pass. With presetting. Built-in lockshield valve. Connection for copper or plastic pipe.

O-ring sealed straight tailpiece, complete with flow separation probe.

With protective cap. Differential pressure (item 148) : 1.5 bar. Kvn coefficient with 2K

proportional band : ND 1/2" = 1.76 - ND 3/4" = 1.84 Flow rate to radiator : 35% with

thermostatic actuators. Compatible with thermostatic actuators series 148, 138 and

electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
100M	100M12BM12	1/2"	1/2"	2	2	--
100M	100M12BM34	3/4"	1/2"	2,15	2	--
100M	100M24BM12	1/2"	1/2"S	2	2	--
100M	100M24BM34	3/4"	1/2"S	2,15	2	--

4-way thermostat adaptable valves

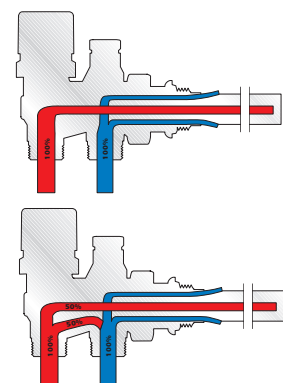
The 4-way valves incorporate, in just one piece, the different valve and lockshield functions. For the thermostat function, connect the delivery port to the connection under the head.

For two-pipe systems

Valves type 120B (without by-pass) allow building two-pipe heating systems where, for reasons of style or installation, it is preferable to keep just one connection point (at the bottom) to the radiator with consequent less masonry work and quicker installation.

For one-pipe systems

Valves Type 100M and 102M allow distribution of the water flow calculated for the entire ring into a part reserved for the heat exchange and into a part leading towards the next radiator. This permanently open by-pass allows constant recirculation of the heat carrier fluid when the valve is closed.



4-WAY DIVERTER VALVES AND REVERSE THERMOSTAT ADAPTABLE VALVES

18
A



126CB

4-way nickel-plated diverter valve for **two-pipe systems**, complete with nut and ring dia. 15. For nickel-plated pipe series 125. **Floor connections.**

Can be used on radiators where there is no space for the flow separator probe.

Kvn coefficient with 1K proportional band : 0.37

Kvn coefficient with 2K proportional band : 0.61

Type	Part number	Size body	Size tube	Min. order	€uro
126CB	126C1215B	1/2"	1/2"	10	--
126CB	126C2415B	1/2"	1/2"S	10	--



126PB

4-way nickel-plated diverter valve for **two-pipe systems**, complete with nut and ring dia. 15. For nickel-plated pipe series 125. **Wall connections.**

Can be used on radiators where there is no space for the flow separator probe.

Kvn coefficient with 1K proportional band : 0.37

Kvn coefficient with 2K proportional band : 0.61

Type	Part number	Size body	Size tube	Min. order	€uro
126PB	126P1215B	1/2"	1/2"	10	--
126PB	126P2415B	1/2"	1/2"S	10	--



126CM

4-way nickel-plated diverter valve for **one-pipe systems**, complete with nut and ring dia. 15. For nickel-plated pipe series 125. **Floor connections.**

Can be used on radiators where there is no space for the flow separator probe.

Kvn coefficient with 1K proportional band : 1.56

Kvn coefficient with 2K proportional band : 1.71

Type	Part number	Size body	Size tube	Min. order	€uro
126CM	126C1215M	1/2"	1/2"	10	--
126CM	126C2415M	1/2"	1/2"S	10	--



126PM

4-way nickel-plated diverter valve for **one-pipe systems**, complete with nut and ring dia. 15. For nickel-plated pipe series 125. **Wall connections.**

Can be used on radiators where there is no space for the flow separator probe.

Kvn coefficient with 1K proportional band : 1.56

Kvn coefficient with 2K proportional band : 1.71

Type	Part number	Size body	Size tube	Min. order	€uro
126PM	126P1215M	1/2"	1/2"	10	--
126PM	126P2415M	1/2"	1/2"S	10	--



125

Nickel-plated copper pipe dia. 15 for connection of diverter valves.

Type	Part number	Dimensions	Min. order	€uro
125	12560015	60 cm	10	--
125	12580015	80 cm	10	--
125	12590015	90 cm	10	--
125	125110015	110 cm	10	--

4-WAY DIVERTER VALVES AND REVERSE THERMOSTAT ADAPTABLE VALVES

1180M

Nickel-plated thermostat adaptable valve. With presetting. Reverse body. Connection for copper or plastic pipe, size 1/2"M complete with nut and ring for pipe dia. 15. ABS handwheel. Compatible with thermostatic actuators series 148 and electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1180M	1180MN1215	1/2"	1/2"	1,4	10	--


180M

Like 1180M but with connection for iron pipe.

Type	Part number	Size body	Kvs	Min. order	€uro
180M	180MN12	1/2"	1,4	10	--


1134M

Thermostatic valve like 1180M but with easily removable protective cap to allow installation of thermal commands series 148 and electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
1134M	1134MN1215	1/2"	1/2"	1,4	10	--


134M

Thermostatic valve like 180M but with easily removable protective cap to allow installation of thermal commands series 148 and electrothermic actuators 10C, 20C, 22C.

Type	Part number	Size body	Kvs	Min. order	€uro
134M	134MN12	1/2"	1,8	10	--

THERMOSTATIC AND ELECTROTHERMIC ACTUATORS

20

A

**148**

Thermostatic actuator with oil-filled sensitive element.
Temperature limiting and locking device. ABS handwheel. Graduated scale from 0 to 5.
Setting range : 0°C - 28°C. Anti-freeze position : 8°C.
Max. differential pressure: 1.5 bar.

Available in chrome-plated version.

Type	Part number	Min. order	€uro
148	148	10	--
148 Chrome-plated version	148CR	10	--

**148SD**

Thermostatic actuator with remote sensor.
2 m capillary tube.
Other characteristics as per Item 148.

Type	Part number	Min. order	€uro
148SD	148SD	1	--

**148CD**

Thermostatic actuator with remote sensor.
2 m capillary tube.
Max. pressure differential : 1.0 bar.
Other characteristics as per Item 148.

Type	Part number	Min. order	€uro
148CD	148CD	1	--

**148GA**

Tamper-proof cover for thermostatic actuators series 148.
Provision for limiting and locking temperature range on rivettable closing position.
Complete with standard mounting screws and break-stem rivets.

Type	Part number	Min. order	€uro
148GA	148GA	1	--

**148SD2**

Thermostatic actuator with immersion remote sensor for adjust flow of heat carrier in relation to the temperature in radiant panel heating systems, with presence of a storage tank and for water-air heat exchangers. Setting range : 20°C ÷ 50°C and 20°C ÷ 70°C.
Bulb length : 97 mm (20°C ÷ 50 °C) - 66 mm (20°C ÷ 70 °C).
Bulb thickness : 12 mm.
2,5 m capillary tube.

Type	Part number	Min. order	€uro
148SD2	148SD2050	1	--
148SD2	148SD2070	1	--

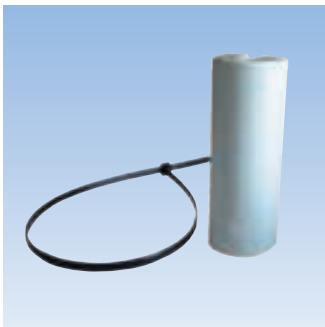
THERMOSTATIC AND ELECTROTHERMIC ACTUATORS



148SD12

Sensor pocket for actuator series 148SD2.
Threaded : 1/2" M.
Sealing with o-ring.

Type	Part number	Min. order	€uro
148SD12	148SD122050	10	--
148SD12	148SD122070	10	--



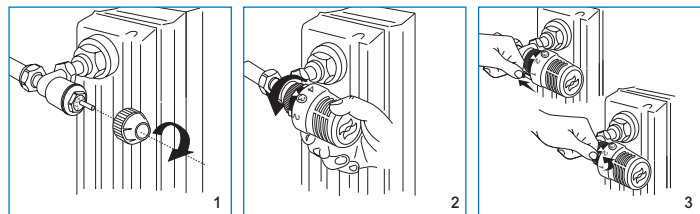
148SDCOP

Insulating cover and string fixing on each manifolds 20-50 and 20-70.

Type	Part number	Min. order	€uro
148SDCOP	148SDCOP	10	--

Installation of thermostatic actuators series 148

- 1) Remove the manual handwheel (Fig. 1)
- 2) Turn the thermostatic actuator fully open (position 5)
- 3) Approach the actuator to the valve body with the reference pointer clearly visible, then fully screw in the nickel-plated ring unit (Fig. 2)



Avoid vertical positions of the actuator; use the two setting blocks and position them to coincide with the required min./max. values (Fig. 3).

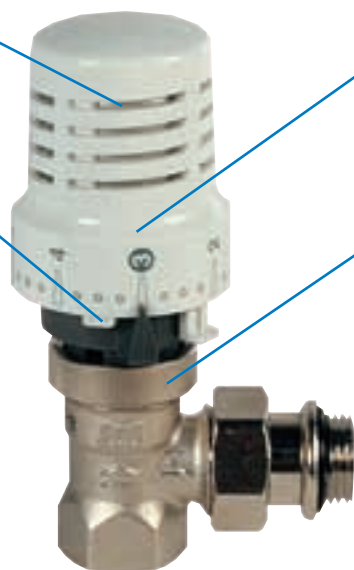
0	❄	1	2	3	4	5
Closed	8 °C Anti-freeze	12 °C	16 °C	20 °C	24 °C	28 °C

Radial slots
high sensitivity in ambient temperature measurement

5 temperature levels
Quick and easy setting of the required temperature

Adjustment riders
Provision for adjusting or blocking the preset temperature range

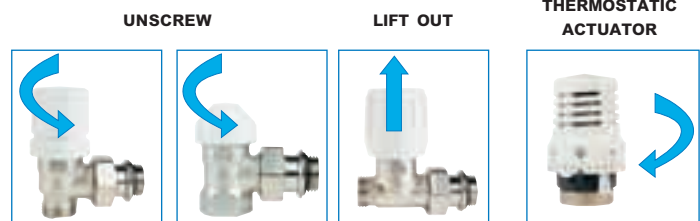
Threaded ring nut
Practical and quick in installation operations



Modern design
adaptable to any type of furnishing

EN215 Certified

SCREW-IN THE RING NUT OF THE THERMOSTATIC ACTUATOR



THERMOSTATIC AND ELECTROTHERMIC ACTUATORS

22

A



22C

NEW TELESTAT

Electrothermic actuator compact design with on/off action, compatible with thermostat adaptable radiator valves, valve for fan-coils and manifolds Series 822MM.

Cap made of flame retardant plastic. Chrome-plated brass threaded ring nut M30 x 1.5.

Normally Closed (N.C.). Normally Open (N.O.). Stroke : 3.5mm.

Power cable : 1 m dia. 7.2 mm.

* With power cable : dia. 5.5 mm Exempt from ENEC marking

Opening time : Version 230V 90 sec (start)- 3 Min (end) - Version 24V 3 Min (start) - 5 Min (end)

Plug thrust : 140N (NC version) - 80N (NO version). Power consumption : 2,5W

Inalterability range: 0°C / +50°C. 4-wire version (NO4 - NC4) complete with auxiliary

Microswitch. Auxiliary contact load capacity : 700mA. Available with cable lenght 2m.

According to EEC 89/336, EEC 73/23, Italian Law 10/91. CEI-EN 55104/95 CEI-EN 55014/93C. Marking CE EN 60730- 214.

ENEC marking pending.

Type	Part number	Power supply	Protection	Min. order	€uro
22C	22C230NC2	230V	IP44	10	--
22C	22C24NC2	24V	IP44	10	--
22C	22C230NC4	230V	IP44	10	--
22C	22C24NC4	24V	IP44	10	--
22C	22C230NA2	230V	IP44	10	--
22C	22C24NA2	24V	IP44	10	--
22C	22C230NA4	230V	IP44	10	--
22C	22C24NA4	24V	IP44	10	--
*22C	22C230NC2-5	230V	IP44	10	--
*22C	22C24NC2-5	24V	IP44	10	--
*22C	22C230NA2-5	230V	IP44	10	--
*22C	22C24NA2-5	24V	IP44	10	--



UNTIL SOLD OUT

10C

TELESTAT

Electrothermic actuator with auxiliary. Microswitch (only for version NC4 and NA4).

Insert thrust : 110 N. 1 m power cable. Normally Open (N.O.). Normally Closed (N.C.)

Wax thermostat element. Positioning time: Opening / Closing : 120 / 180 seconds

Power consumption: 5W. Auxiliary contact load capacity: 700 Ma.

Inalterability range: 0°C / + 50°C

According to EEC 89/336, EEC 73/23, Italian Law 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
10C	10C220NC2	230V	IP42	10	--
10C	10C24NC2	24V	IP42	10	--
10C	10C220NC4	230V	IP42	10	--
10C	10C24NC4	24V	IP42	10	--
10C	10C220NA2	230V	IP44	10	--
10C	10C24NA2	24V	IP44	10	--
10C	10C220NA4	230V	IP44	10	--
10C	10C24NA4	24V	IP44	10	--



UNTIL SOLD OUT

20C

TELESTAT

Compact electrothermic actuator, normally closed. Provided with varistor for protection against surges. Insert thrust: 180N. Stroke: 2,5. 1 m power cable. Wax thermostat element. Positioning time: Opening / Closing: 120 / 180 seconds.

Power consumption: 5W. Inalterability range: 0°C / + 50°C.

According to EEC 89/336, EEC 73/23, Italian Law 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
20C	20C-220V	230V	IP44	10	--
20C	20C-24V	24V	IP44	10	--

MANUAL VALVES AND LOCKSHIELDS, CONNECTION FOR COPPER PIPE



1163R

Nickel-plated manual valve. Angle body. Plug with soft seal.
Connection for copper or plastic pipe, size 1/2" M.
Taper tailpiece knurled to facilitate the hemp sealing operations. ABS handwheel.

Type	Part number	Size body	Size tube	Min. order	€uro
1163R	1163SN38XR	3/8"	1/2"	10	--
1163R	1163SN12R	1/2"	1/2"	10	--

**SEAT WITH SOFT SEAL
EASY HANDLING**



1193R

Nickel-plated lockshield valve. Angle body. Plug with soft seal.
Connection for copper or plastic pipe, size 1/2" M.
Taper tailpiece knurled to facilitate the hemp sealing operations. ABS cap.

Type	Part number	Size body	Size tube	Min. order	€uro
1193R	1193SN38XR	3/8"	1/2"	10	--
1193R	1193SN12R	1/2"	1/2"	10	--

**WITH SOFT SEAL
FINE ADJUSTMENT**



1164R

Nickel-plated manual valve. Straight body. Plug with soft seal.
Connection for copper or plastic pipe, size 1/2" M.
Taper tailpiece knurled to facilitate the hemp sealing operations. ABS handwheel.

Type	Part number	Size body	Size tube	Min. order	€uro
1164R	1164SN38XR	3/8"	1/2"	10	--
1164R	1164SN12R	1/2"	1/2"	10	--

**SEAT WITH SOFT SEAL
EASY HANDLING**



1194R

Nickel-plated lockshield valve. Straight body. Plug with soft seal.
Connection for copper or plastic pipe, size 1/2" M.
Taper tailpiece knurled to facilitate the hemp sealing operations. ABS cap.

Type	Part number	Size body	Size tube	Min. order	€uro
1194R	1194SN38XR	3/8"	1/2"	10	--
1194R	1194SN12R	1/2"	1/2"	10	--

**WITH SOFT SEAL
FINE ADJUSTMENT**

MANUAL VALVES AND LOCKSHIELDS, CONNECTION FOR IRON PIPE



163R

Nickel-plated manual valve. Angle body. Plug with soft seal. Connection for iron pipe. Taper tailpiece knurled to facilitate the hemp sealing operations. ABS handwheel.

Type	Part number	Size body	Min. order	€uro
163R	163SN38R	3/8"	10	--
163R	163SN12R	1/2"	10	--

**SEAT WITH SOFT SEAL
EASY HANDLING**



193R

Nickel-plated lockshield valve. Angle body. Plug with soft seal. Connection for iron pipe. Taper tailpiece knurled to facilitate the hemp sealing operations. ABS cap.

Type	Part number	Size body	Min. order	€uro
193R	193SN38R	3/8"	10	--
193R	193SN12R	1/2"	10	--

**WITH SOFT SEAL
FINE ADJUSTMENT**



164R

Nickel-plated manual valve. Straight body. Plug with soft seal. Connection for iron pipe. Taper tailpiece knurled to facilitate the hemp sealing operations. ABS cap.

Type	Part number	Size body	Min. order	€uro
164R	164SN38R	3/8"	10	--
164R	164SN12R	1/2"	10	--

**SEAT WITH SOFT SEAL
EASY HANDLING**



194R

Nickel-plated lockshield valve. Straight body. Plug with soft seal. Connection for iron pipe. Taper tailpiece knurled to facilitate the hemp sealing operations. ABS cap.

Type	Part number	Size body	Min. order	€uro
194R	194SN38R	3/8"	10	--
194R	194SN12R	1/2"	10	--

**WITH SOFT SEAL
FINE ADJUSTMENT**

MANUAL VALVES AND LOCKSHIELDS, CONNECTION FOR IRON PIPE

190

Nickel-plated manual valve. Angle body. Connection for iron pipe.
Taper tailpiece knurled to facilitate the hemp sealing operations.
Polypropylene handwheel.

Type	Part number	Size body	Kvs	Min. order	€uro
190	190SN1	1"	9,5	10	--
190	190SN114	1.1/4"	17	10	--


195S

Nickel-plated balancing lockshield valve. Angle body. Connection for iron pipe.
Taper tailpiece knurled to facilitate the hemp sealing operations.
ABS cap.

Type	Part number	Size body	Kvs	Min. order	€uro
195S	195SN1	1"	8,9	10	--
195S	195SN114	1.1/4"	18	10	--


191

Nickel-plated manual valve. Straight body. Connection for iron pipe.
Taper tailpiece knurled to facilitate the hemp sealing operations.
Polypropylene handwheel.

Type	Part number	Size body	Kvs	Min. order	€uro
191	191SN1	1"	6,3	10	--
191	191SN114	1.1/4"	11,4	10	--


196S

Nickel-plated balancing lockshield valve. Straight body. Connection for iron pipe.
Taper tailpiece knurled to facilitate the hemp sealing operations.
ABS cap.

Type	Part number	Size body	Kvs	Min. order	€uro
196S	196SN1	1"	6,4	10	--
196S	196SN114	1.1/4"	11,6	10	--

SINGLE-PIPE MANUAL VALVES

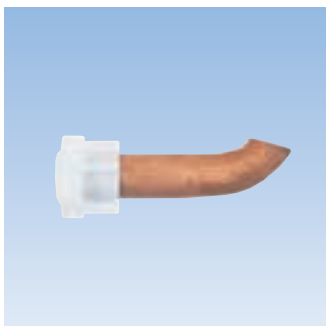
26

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**119SX**

Nickel-plated 4-way valve for one-pipe systems. Connection for copper or plastic pipe.
Straight tailpiece complete with flow separation probe.
Flow rate to radiator : 100%. ABS handwheel.

Type	Part number	Size body	Size tube	Kvs	Min. order	€uro
119SX	119S1212X	1/2"	1/2"	1,6	1	--
119SX	119S3412X	3/4"	1/2"	2	1	--
119SX	119SS1212SX	1/2"	1/2"S	1,6	1	--
119SX	119SS3412SX	3/4"	1/2"S	2	1	--

**RV141**

Bent probe for 4 ways valves, Series 119SX,100M,102M,120B for radiant panels where there is no seating for the straight probe.

Type	Part number	Size	Min. order	€uro
RV141	RV14112	1/2"		--

ACCESSORIES AND SPARE PARTS

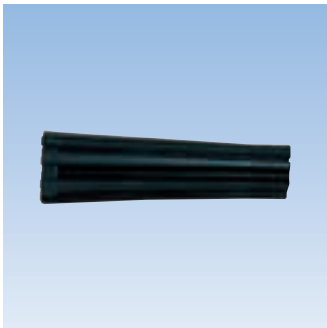


223

Lockshield valve wrench for series 195 - 196 - 1195 - 1196.

* Series 193 - 194 - 1193 - 1194.

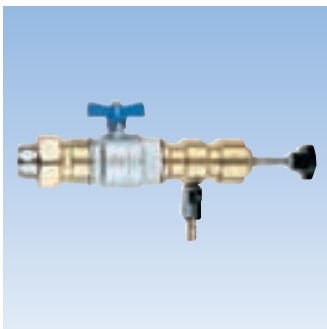
Type	Part number	Size	Min. order	€uro
223	2233812	3/8" - 1/2"	1	--
223	22334	3/4"	1	--
*223	2238	3/8"	1	--



224

Resetting wrench for thermostat adaptable valves and manifolds series 822M.

Type	Part number	Min. order	€uro
224	224	1	--



225

Puller for replacing thermostatic valves and thermostat adaptable valves, without emptying the system.

Type	Part number	Min. order	€uro
225	225	1	--



808D

White plastic single-hole rose.

Type	Part number	Size	Min. order	€uro
808D	808D10W	10 mm	25	--
808D	808D12W	12 mm	25	--
808D	808D14W	14 mm	25	--
808D	808D15W	15 mm	25	--
808D	808D16W	16 mm	25	--
808D	808D18W	18 mm	25	--
808D	808D22W	22 mm	25	--
808D	808D28W	28 mm	25	--

ACCESSORIES AND SPARE PARTS

28

A

**128**

White plastic double-hole rose.

Type	Part number	Size	Min. order	€uro
128	12812W	12 mm	20	--
128	12814W	14 mm	20	--
128	12816W	16 mm	20	--
128	12818W	18 mm	20	--

**127**

Plastic wall template, connection centre distance 35mm.

Type	Part number	Size	Min. order	€uro
127	12712	12 mm	25	--
127	12714	14 mm	25	--
127	12716	16 mm	25	--
127	12718	18 mm	25	--

**234**

Straight tailpiece with nickel-plated nut for valves and lockshields of UM series, with soft seal on radiator side and valve side.

Type	Part number	Size	Min. order	€uro
234	234USN38X	3/8"	10	--
234	234SN12	1/2"	10	--
234	234SN34	3/4"	10	--

**2361**

Taper tailpiece knurled for valves and lockshields.

Type	Part number	Size	Min. order	€uro
2361	236138X	3/8"	10	--
2361	236112	1/2"	10	--
2361	236134	3/4"	10	--
2361	23611	1"	10	--
2361	2361114	1.1/4"	10	--


236

Nickel-plated nut for tailpiece 2361 and 2361S.

Type	Part number	Size	Min. order	€uro
236	2363858	3/8" (5/8")	10	--
236	23612	1/2"	10	--
236	23634	3/4"	10	--
236	2361	1"	10	--
236	236114	1.1/4"	10	--


235

Straight tailpiece with nickel-plated nut and probe holder for 4-way one- and two-pipe valves.

Type	Part number	Size	Min. order	€uro
235	235SN3412	1/2"	10	--
235	235SN3434	3/4"	10	--
235	235SN341	1"	10	--


RV140

Flow separation probe for four-way valves 119S, 100M, 102M and 120B.

Type	Part number	Size	Min. order	€uro
RV140	RV14010	1/2"	10	--
RV140	RV14014	3/4"	10	--


RP130

Plug assembly for thermostatic and thermostat adaptable valves.

Type	Part number	Size	Min. order	€uro
RP130	RP130	M22 x 1,5	1	--

ACCESSORIES AND SPARE PARTS

30

A

**RV119**

Handwheel for one-pipe valves series 119SX and 119SP.

Type	Part number	Size	Min. order	€uro
RV119	RV119B	Only	10	--

**RV130**

White cap for thermostat adaptable valves series 1130M, 1131UM, 130UM, 131UM, 1134M, 134M, 100M and fan-coil valves series 2131, 3131, 4131

Type	Part number	Size	Min. order	€uro
RV130	RV130-131	Only	10	--

**RV178**

White handwheel for thermostat adaptable valves series 178U, 179U, 1178U, 1179U, 120B, 102M.

Type	Part number	Size	Min. order	€uro
RV178	RV178	Only	10	--

**RV188**

White handwheel for thermostat adaptable valves series 188UM, 189UM, 1188UM, 1189UM.

Type	Part number	Size	Min. order	€uro
RV188	RV188-189W	Only	10	--



RV190

White handwheel for manual valves series 190, 191.

Type	Part number	Size	Min. order	€uro
RV190	RV1901	1"	5	--
RV190	RV190114	1.1/4"	5	--



RV195

White cap for lockshield valves series 195, 196, 1195, 1196.

Type	Part number	Size	Min. order	€uro
RV195	RV195B	3/8" - 1/2"	10	--
RV195	RV19534B	3/4"	10	--
RV195	RV1951	1"	5	--
RV195	RV195114	1.1/4"	5	--



VO

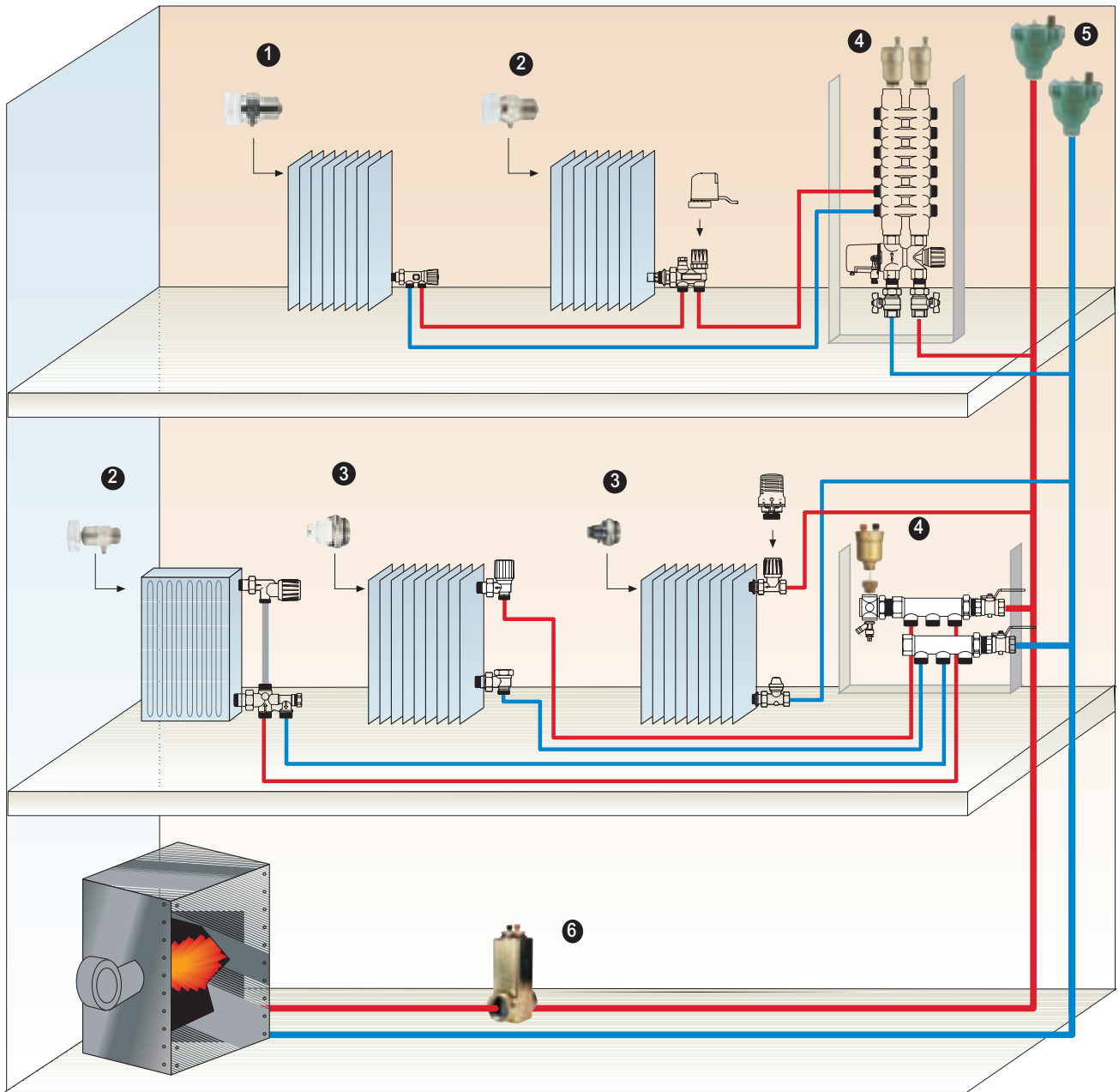
White handwheel for manual valves series 1163R, 1164R, 163R, 164R.

Type	Part number	Size	Min. order	€uro
VO	VOWATTS3812	3/8" - 1/2"	10	--



**Air
vents**

EXAMPLE OF APPLICATION



- 1 Automatic air vent valves series 228C.
- 2 Manual air vent valves series 231C and 2390S.
- 3 Air vent valves with adjustable discharge nozzle series VMM and SMM
- 4 Air vents with float series MVD and 2161C.
- 5 Automatic large capacity air separator series MXV
- 6 Automatic deaerators series ERD

AUTOMATIC, MANUAL AND WITH ADJUSTABLE DISCHARGE AIR VENT VALVES



228C

HYGROVENT

Automatic air vent valve, with check device and discharge nozzle.
Chrome-plated brass body CW617N. Max. pressure: 6 bar.

Type	Part number	Size body	Min. order	€uro
228C	2280C18X	1/8"	100	--
228C	2281C14X	1/4"	100	--
228C	2282C38X	3/8"	100	--



2283C

Spare handwheel complete with discs and seals for HYGROVENT valve.

Type	Part number	Size body	Min. order	€uro
2283C	2283CX	Only	50	--



238C

Manual air vent valve, with discharge nozzle.
Chrome-plated brass body CW617N.
Max. pressure: 10 bar.

Type	Part number	Size body	Min. order	€uro
238C	2381C18X	1/8"	100	--
238C	2382C14X	1/4"	100	--
238C	2383C38X	3/8"	100	--



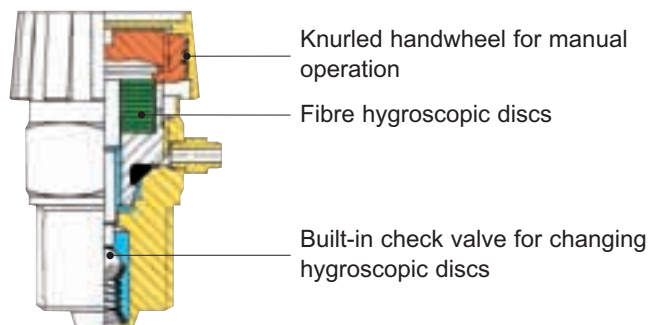
231C

"Super" manual air vent valve, with discharge nozzle.
Chrome-plated brass body CW617N.
Max. pressure: 10 bar.

Type	Part number	Size body	Min. order	€uro
231C	231C18SNX	1/8"	100	--
231C	231C14SNX	1/4"	100	--
231C	231C38SNX	3/8"	100	--

Hygrovent

When the hygroscopic discs change from the moist state to the dry state, they decrease in volume thereby allowing automatic discharge of the air present



AUTOMATIC, MANUAL AND WITH ADJUSTABLE DISCHARGE AIR VENT VALVES



VMM

Manual air vent valve for radiators, with **adjustable discharge** nozzle. Manual discharge opening through screw driver, coin. Chrome-plated brass body CW617N. Glass fibre reinforced nylon handwheel and discharge nozzle body. **Sealed on radiator through O-ring.** Max. operating pressure: 10 bar.

Type	Part number	Size body	Min. order	€uro
VMM	0256206	1/8"	100	--
VMM	0256208	1/4"	100	--
VMM	0256210	3/8"	100	--



PMC

Manual air vent valve for radiators, with **adjustable discharge** nozzle. Manual vent opening through screw driver, coin. Chrome-plated brass body CW617N. Glass fibre reinforced nylon discharge nozzle. **Sealed on radiator through O-ring.** Max. pressure : 10 bar.

Type	Part number	Size body	Min. order	€uro
PMC	0256306	1/8"	100	--
PMC	0256308	1/4"	100	--
PMC	0256310	3/8"	100	--
PMC	0256315	1/2"	100	--



CH

Air vent valve wrench series VMM, PMC, RSR

Type	Part number	Min. order	€uro
CH	0256101	10	--



SMM

Manual air vent valve for radiators, with **adjustable discharge** nozzle. Knurled handwheel. Chrome-plated brass CW617N body and discharge nozzle. **Sealed on radiator through O-ring.** Max. pressure : 10 bar.

Type	Part number	Size body	Min. order	€uro
SMM	0257106	1/8"	100	--
SMM	0257108	1/4"	100	--
SMM	0257110	3/8"	100	--
SMM	0257115	1/2"	100	--

Manual air vent valve

VMM

Inlet hole smaller than the outlet hole to avoid infiltration of particles which could block air discharge.

O-ring for easy assembly and perfectly tight seal on the radiator.



Handwheel designed for manual opening with screw-driver or coin. Limit stop on the screw to avoid the handwheel coming out from the valve body.

Adjustable discharge nozzle, glass fibre reinforced nylon body.

PMC

Valve handwheel PMC with opening by screw-driver or coin.



CH

Insert for adjusting discharge nozzle body. Wrench CH can be left inserted on the body.



Insert for opening valves PMC, RSR

insert for opening valve VMM



AIR VENTS WITH FLOAT



MVD

DUOVENT (PATENTED)

Automatic and manual air vent valve with unscrewable cover for inspection. Body and cover of brass CW617N. Corrosion-resistant polyethylene float. Nominal pressure : 12 bar. Max. operating pressure: 8 bar. Max. temperature : 115° C. Automatic venting capacity at 3 bar : 17.9 litres/min. Manual venting capacity at 3 bar: 139.5 litres/min. Also suitable for water containing additive (glycol up to 30%).

Type	Part number	Size body	Min. order	€uro
MVD	0250608	1/4"	10	--
MVD	0250610	3/8"	10	--
MVD	0250615	1/2"	10	--

MVDR

DUOVENT

Like MVD but complete with automatic shut-off valve RIA.

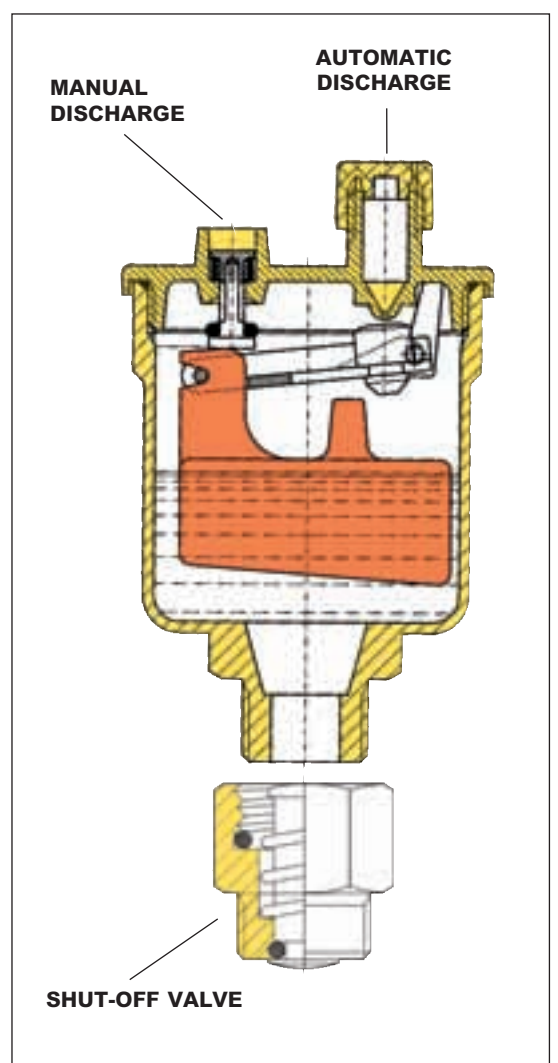
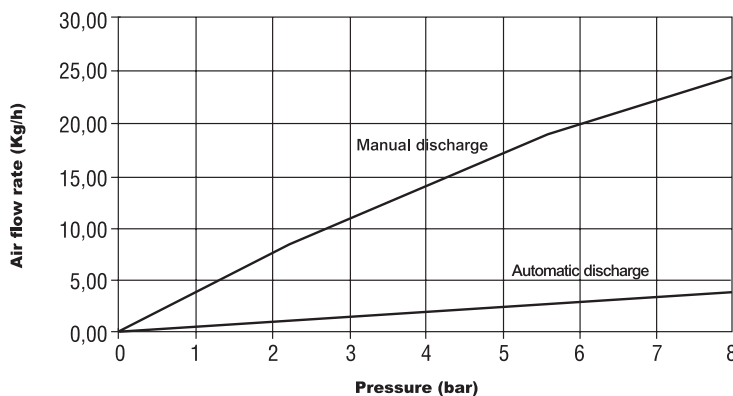
Type	Part number	Size body	Min. order	€uro
MVDR	0250708	1/4"	10	--
MVDR	0250710	3/8"	10	--
MVDR	0250715	1/2"	10	--

Advantage of built-in manual discharge

The ever increasing use of the horizontal Modul or Single-pipe distribution systems has led to the engineering of networks with small diameter piping, without slopes and with closed circuits, thus requiring the development of a special product line for venting air from the circuits. Compared to the conventional automatic operation with float determined by the water level in the heating system, the **DUOVENT** air vent valve offers the advantage of manual discharge which allows checking for correct operation and cleaning of the automatic discharge orifice as well as reducing emptying times. For manual discharge, unscrew the red cap and push the disc down with a screw driver. When held down, it allows the water to flow through the orifice.

The presence of the shut-off valve allows maintenance operations without emptying the system.

Automatic and manual vent at the various pressures



AIR VENTS WITH FLOAT

**MV**

MINIVENT

Automatic air vent valve with unscrewable cover for inspection.
Body and cover of brass CW617N. Corrosion-resistant polyethylene float.
Max. pressure : 12 bar. Max. temperature : 115° C.
Also suitable for water containing additive (glycol up to 30%)

Type	Part number	Size body	Min. order	€uro
MV	0250008	1/4"	10	--
MV	0250010	3/8"	10	--
MV	0250215	1/2"	10	--

MVR

MINIVENT

Automatic air vent valve like MVD but complete with automatic shut-off valve RIA.

Type	Part number	Size body	Min. order	€uro
MVR	0250108	1/4"	10	--
MVR	0250110	3/8"	10	--
MVR	0250115	1/2"	10	--

**MKV**

MICROVENT

Automatic vertical air vent valve. Body and cover of brass CW617N. Sealed with O-Ring
Max. pressure : 10 bar. Max. temperature : 110° C.
Also suitable for water containing additive (glycol up to 30%)

Type	Part number	Size body	Min. order	€uro
MKV	0251210	3/8"	50	--

MKVR

MICROVENT

Automatic vertical air vent valve like MVD but complete with automatic **sealed** shut-off valve RIA.

Type	Part number	Size body	Min. order	€uro
MKVR	0251310	3/8"	50	--

**MKL**

MICROVENT

Automatic side air vent valve. Body and cover of brass CW617N. Sealed with O-Ring
Max. pressure : 10 bar. Max. temperature : 110° C.
Also suitable for water containing additive (glycol up to 30%).

Type	Part number	Size body	Min. order	€uro
MKL	0252210	3/8"	50	--

MKLR

MICROVENT

Automatic side air vent valve like MVD but complete with automatic **sealed** shut-off valve RIA.

Type	Part number	Size body	Min. order	€uro
MKLR	0252310	3/8"	50	--

AIR VENTS WITH FLOAT



MV-SOL

MINIVENT

Automatic air vent valve for solar systems with unscrewable cover for inspection. Body and cover of brass CW617N, 1265-99. Polyethylene float. Seal between reservoir and cover with O-ring. Connection ND 3/8" - 1/2" DIN - ISO 228/1 Stainless steel (AISI 304) vacuum breaker (only for ND 3/8")
Max. operating pressure : 12 bar. Max. operating temperature : 160 °C.

FOR SOLAR SYSTEMS

Type	Part number	Size body	Min. order	€uro
MV-SOL	0249110	3/8"	10	--
MV-SOL	0249115	1/2"	10	--



2161C

FLOATVENT.

Automatic vertical air vent valve. Sealed with O-ring. Designed for installation on head connections of flush manifolds. Brass CW617N body. Max. pressure: 10 bar. Max. temperature: 110°C

Type	Part number	Size body	Min. order	€uro
2161C	2161C38	3/8"	50	--
2161C	2161C12	1/2"	50	--
2161C	2161C34	3/4"	50	--
2161C	2161C1	1"	50	--



2311C

CHECKVENT.

Sealed check valve for automatic vertical air vent valve 2161C38.

Type	Part number	Size body	Min. order	€uro
2311C	2311C38	3/8"	50	--



RIA

Automatic shut-off valve for automatic air vent valves series MVD, MV, MKV, MKL. Complete with device for quick and total drainage of water from the valve.

Type	Part number	Size body	Min. order	€uro
RIA	0259008	1/4"	10	--
RIA	0259010	3/8"	10	--
RIA	0259015	1/2"	10	--



AV15

Automatic vertical air vent valve with side connection. Nickel-plated brass CW617N body and cover. Max. pressure : 6 bar. Max. temperature : 100°C.

Type	Part number	Size body	Min. order	€uro
AV15	0254015	1/2"	1	--

AIR SEPARATORS

40

B



MXV

MAXIVENT.
Automatic large capacity deaerator provided with manual air vent valve.
Cast iron body and cover with epoxy finish. Max. operating pressure : 12 bar.
Max. operating temperature : 115° C. Female air outlet connection : 3/8".

Type	Part number	Size body	Min. order	€uro
MXV	0253020	3/4"	1	--
MXV	0253025	1"	1	--
MXV	0253032	1.1/4"	1	--



ERD

EUROVENT
Automatic /manual double deaerator with expansion vessel. Tropicalized sheet steel body.
Brass OT58 body. Max. pressure : 8 bar. Max. temperature : 115° C

Type	Part number	Size body	Min. order	€uro
ERD	0253625	1"	1	--
ERD	0253640	1.1/2"	1	--



SA

Air separator with 5 threaded instrument connections.
Painted malleable cast iron body (ND 3/8" to 1/2").
Female threaded connections.

Type	Part number	Size body	Min. order	€uro
SA	0260125	1"	1	--
SA	0260132	1.1/4"	1	--
SA	0260140	1.1/2"	1	--
SA	0260150	2"	1	--
SA	0260165	2.1/2"	1	--
SA	0260180	3"	1	--



SAF

Flanged air separator. Complete with female connection
(3/4" for SAF ND 100 and 1" for SAF DIN 125) for installation of automatic deaerator MXV.
Complete with counterflange, bolts and seals.

Type	Part number	Size body	Min. order	€uro
SAF	0260200	100	1	--
SAF	0260225	125	1	--
SAF	0260300	200	1	--

WATER DRAIN VALVES



238

Drain valve with stuffing box and hose fitting.

Type	Part number	Size body	Min. order	€uro
238	23814	1/4"	10	--
238	23838	3/8"	10	--



290

Drain valve for boilers, with hose fitting, plug and chain.

Type	Part number	Size body	Min. order	€uro
290	29038	3/8"	10	--
290	29012	1/2"	10	--
290	29034	3/4"	10	--



RSR

Drain valve for radiators. Chrome-plated brass body. Adjustable plastic discharge nozzle. Sealed on radiator through O-ring.

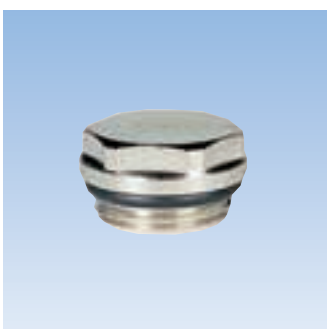
Type	Part number	Size body	Min. order	€uro
RSR	0256008	1/4"	100	--
RSR	0256010	3/8"	100	--
RSR	0256015	1/2"	100	--



RSM

Adapter for radiators. Chrome-plated brass body. Sealed on radiator through O-ring.

Type	Part number	Size body	Min. order	€uro
RSM	0258015	1/2" M x 3/8" F	100	--



TSM

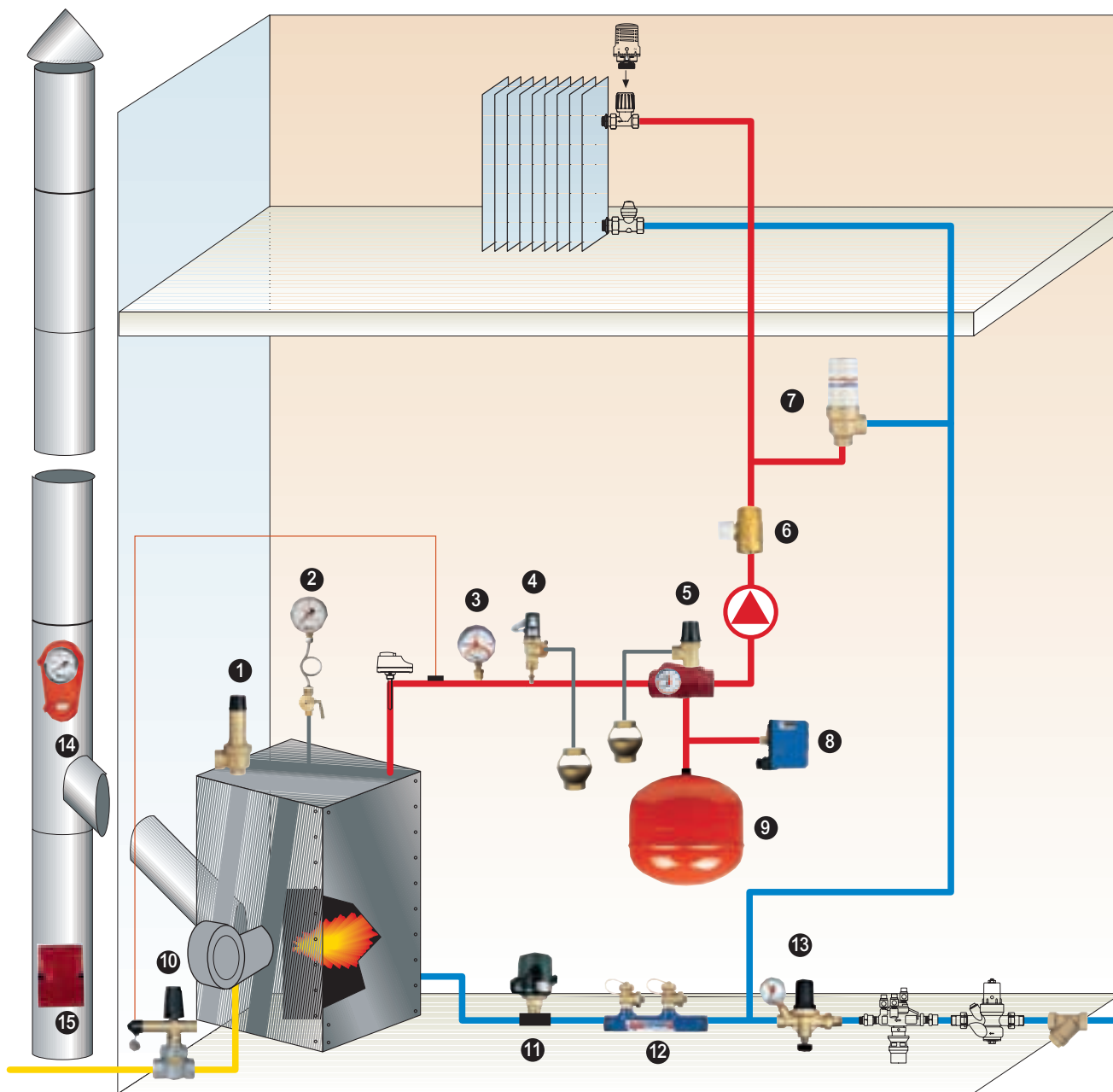
Closing plug for radiators. Chrome-plated brass body. Sealed on radiator through O-ring.

Type	Part number	Size body	Min. order	€uro
TSM	0258115	1/2" M	100	--



Boiler components

EXAMPLE OF APPLICATION



- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Safety valves series VST 2 Pressure gauge series M1-ABS and holder cock series 403R 3 Thermometer/pressure gauge series TIRM-ABS80 4 Thermal drain valves series VTFN 5 Safety valves series MSL 6 Check valves series RDF 7 Relief valves series 466 8 Pressure switch for heating systems series PRM | <ul style="list-style-type: none"> 9 Expansion tank series VEIS 10 Fuel shut-off valves series NVFN 11 Flow switch series FS25 12 Metering pipes series MT 13 Filling valve series ALM 14 Fume inspection plate series PFT 15 Inspection door series SC |
|---|--|


VST

Diaphragm safety valve, fixed setting. Body and cap of brass CW617N.

Nominal pressure : NP10. Overpressure : 10%. Blowdown : 20% Max. temperature : 120° C.

Female connections with reinforced outlet.

**ISPEL approved and calibrated. According to Directive PED 97/23/CE.
Identification number CE1115.**

Type	Part number	Size body	bar	Min. order	€uro
VST	0212122	1/2" x 3/4"	2,25	1	--
VST	0212125	1/2" x 3/4"	2,5	1	--
VST	0212127	1/2" x 3/4"	2,7	1	--
VST	0212130	1/2" x 3/4"	3	1	--
VST	0212135	1/2" x 3/4"	3,5	1	--
VST	0212140	1/2" x 3/4"	4	1	--
VST	0212145	1/2" x 3/4"	4,5	1	--
VST	0212150	1/2" x 3/4"	5	1	--
VST	0212154	1/2" x 3/4"	5,4	1	--
VST	0212160	1/2" x 3/4"	6	1	--
VST	0213122	3/4" x 1"	2,25	1	--
VST	0213125	3/4" x 1"	2,5	1	--
VST	0213127	3/4" x 1"	2,7	1	--
VST	0213130	3/4" x 1"	3	1	--
VST	0213135	3/4" x 1"	3,5	1	--
VST	0213140	3/4" x 1"	4	1	--
VST	0213145	3/4" x 1"	4,5	1	--
VST	0213150	3/4" x 1"	5	1	--
VST	0213154	3/4" x 1"	5,4	1	--
VST	0213160	3/4" x 1"	6	1	--
VST	0214122	1" x 1.1/4"	2,25	1	--
VST	0214125	1" x 1.1/4"	2,5	1	--
VST	0214127	1" x 1.1/4"	2,7	1	--
VST	0214130	1" x 1.1/4"	3	1	--
VST	0214135	1" x 1.1/4"	3,5	1	--
VST	0214140	1" x 1.1/4"	4	1	--
VST	0214145	1" x 1.1/4"	4,5	1	--
VST	0214150	1" x 1.1/4"	5	1	--
VST	0214154	1" x 1.1/4"	5,4	1	--
VST	0214160	1" x 1.1/4"	6	1	--

Technical data and discharge flow rates for valves series VST

Model	Pressure of (bar)			Orifice Ø mm	Orifice Section cm²	Flow coefficient K	Potential	
	Setting	Discharge	Closing				Steam discharge Capacity Kg/h	Boiler kW
1/2"x3/4"	2,25	2,475	1,80				205,67	119,29
	2,50	2,75	2,00				221,40	128,41
	2,70	2,97	2,16				233,78	135,59
	3,00	3,30	2,40				253,74	147,17
	3,50	3,85	2,80	15	1,7671	0,71	284,07	164,76
	4,00	4,40	3,20				318,07	164,76
	4,50	4,95	3,60				344,78	199,97
	5,00	5,50	4,00				376,39	218,30
	5,40	5,94	4,32				399,70	231,24
	6,00	6,60	4,80				442,81	256,83

Model	Pressure of (bar)			Orifice Ø mm	Orifice Section cm²	Flow coefficient K	Potential		
	Setting	Discharge	Closing				Steam discharge Capacity Kg/h	Boiler kW	
3/4"x1"	2,25	2,475	1,80					412,01	238,96
	2,50	2,75	2,00					443,52	257,24
	2,70	2,97	2,16					468,31	271,62
	3,00	3,30	2,40					508,30	294,81
	3,50	3,85	2,80	20	3,1416	0,80		569,04	330,04
	4,00	4,40	3,20					637,17	369,55
	4,50	4,95	3,60					690,67	400,58
	5,00	5,50	4,00					753,98	437,31
	5,40	5,94	4,32					804,25	466,50
	6,00	6,60	4,80					887,04	514,48

Model	Pressure of (bar)			Orifice Ø mm	Orifice Section cm²	Flow coefficient K	Potential		
	Setting	Discharge	Closing				Steam discharge Capacity Kg/h	Boiler kW	
1"x1.1/4"	2,25	2,475	1,80				571,37	331,37	
	2,50	2,75	2,00				615,03	356,71	
	2,70	2,97	2,16				649,41	376,65	
	3,00	3,30	2,40				704,86	408,82	
	3,50	3,85	2,80	25	4,9087	0,71		789,09	457,67
	4,00	4,40	3,20					883,56	512,46
	4,50	4,95	3,60					957,75	555,49
	5,00	5,50	4,00					1045,55	606,42
	5,40	5,94	4,32					1120,24	649,79
	6,00	6,60	4,80					1230,06	713,43

SAFETY VALVES



MSL

Normal type diaphragm safety valve. Brass CW617N body.
 Plastic manual discharge knob.
 Ni-Cr steel spring.
 Operating temperature : -10°C ÷ 110°C
 Also with glycol : 50%.
 1/2" M/F connections.

MSL at 3 bar according to UDT and is AFNOR, CSTB approved.

According to Directive PED 97/23/CE. Identification number CE1115.

Type	Part number	Size body	bar	Min. order	€uro
MSL	0206115	1/2"	1,5	30	--
MSL	0206525	1/2"	2,5	30	--
MSL	0206530	1/2"	3	30	--
MSL	0206540	1/2"	4	30	--
MSL	0206150	1/2"	5	30	--
MSL	0206160	1/2"	6	30	--
MSL	0206170	1/2"	7	30	--
MSL	0206180	1/2"	8	30	--
MSL	0206190	1/2"	9	30	--
MSL	0206199	1/2"	10	30	--



MSV

Like MSL but with 1/2" female connections.

Type	Part number	Size body	bar	Min. order	€uro
MSV	0207110	1/2"	1	30	--
MSV	0207115	1/2"	1,5	30	--
MSV	0207525	1/2"	2,5	30	--
MSV	0207530	1/2"	3	30	--
MSV	0207540	1/2"	4	30	--
MSV	0207150	1/2"	5	30	--
MSV	0207160	1/2"	6	30	--
MSV	0207170	1/2"	7	30	--
MSV	0207180	1/2"	8	30	--
MSV	0207190	1/2"	9	30	--
MSV	0207199	1/2"	10	30	--



NEW

SVE-SOL

Diaphragm safety valve for solar systems. Body and cap of brass CW617N, EN 12165-99.
 Elastomeric diaphragm. Discharge pressure factory set and with sealed knob.
 Suitable for water, also water mixtures (glycol up to 50%) as according to DIN 4757 Part 1.
 Max operating temperature : 160 °C

**TÜV SOLAR certified. According to Directive PED 97/23/CEE.
 Identification number CE1115.**

FOR SOLAR SYSTEMS

Type	Part number	Size body	bar	Min. order	€uro
SVE-SOL	0215835	1/2" x 3/4"	3,5	10	--
SVE-SOL	0215840	1/2" x 3/4"	4	10	--
SVE-SOL	0215860	1/2" x 3/4"	6	10	--
SVE-SOL	0215880	1/2" x 3/4"	8	10	--
SVE-SOL	0215899	1/2" x 3/4"	10	10	--

SAFETY VALVES

SV

Normal type diaphragm safety valve. Brass CW617N body Plastic manual discharge knob. Ni-Cr steel spring. Diaphragm and seals of rubber resistant to 140°C. Female connections with reinforced outlet.

TÜV/TSUP approved. According to Directive PED 97/23/CE.
Identification number CE1115.

Type	Part number	Size body	bar	Min. order	€uro
SV	0216115	1/2" x 3/4"	1,5	10	--
SV	0215125	1/2" x 3/4"	2,5	10	--
SV	0215130	1/2" x 3/4"	3	10	--
SV	0215104	1/2" x 3/4"	4	10	--
SV	0216105	1/2" x 3/4"	5	10	--
SV	0216106	1/2" x 3/4"	6	10	--
SV	0216107	1/2" x 3/4"	7	10	--
SV	0216108	1/2" x 3/4"	8	10	--
SV	0216110	1/2" x 3/4"	10	10	--
SV	0217215	3/4" x 1"	1,5	10	--
SV	0217625	3/4" x 1"	2,5	10	--
SV	0217630	3/4" x 1"	3	10	--
SV	0217604	3/4" x 1"	4	10	--
SV	0217205	3/4" x 1"	5	10	--
SV	0217206	3/4" x 1"	6	10	--
SV	0217207	3/4" x 1"	7	10	--
SV	0217208	3/4" x 1"	8	10	--
SV	0217210	3/4" x 1"	10	10	--
SV	0218615	1" x 1.1/4"	1,5	10	--
SV	0218625	1" x 1.1/4"	2,5	10	--
SV	0218630	1" x 1.1/4"	3	10	--
SV	0218604	1" x 1.1/4"	4	10	--
SV	0218305	1" x 1.1/4"	5	10	--
SV	0218606	1" x 1.1/4"	6	10	--
SV	0218607	1" x 1.1/4"	7	10	--
SV	0218608	1" x 1.1/4"	8	10	--
SV	0218610	1" x 1.1/4"	10	10	--
SV	0219615	1" x 1.1/4"	1,5	10	--
SV	0219625	1" x 1.1/4"	2,5	10	--
SV	0219630	1" x 1.1/4"	3	10	--
SV	0219604	1" x 1.1/4"	4	10	--
SV	0219405	1" x 1.1/4"	5	10	--
SV	0219606	1" x 1.1/4"	6	10	--
SV	0219607	1" x 1.1/4"	7	10	--
SV	0219608	1" x 1.1/4"	8	10	--
SV	0219610	1" x 1.1/4"	10	10	--


PT

Pressure and temperature relief valve. Fully automatic temperature and pressure relief protection for domestic hot water supply tanks and heaters. Pressed DZR brass body. BSP threaded. Ethilene-propylene diaphragm. Temperature setting : 92 °C.

WRAS approved.

Type	Part number	Size body	Pressure setting	Min. order	€uro
PT	1502020	3/4"	7	-	--
PT	1502021	3/4"	10	-	--

SAFETY VALVES

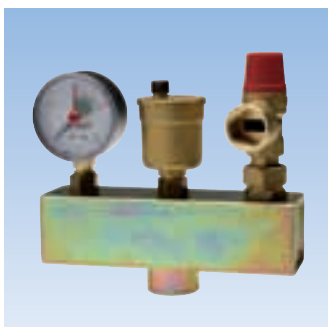


KSGN

Safety unit for boilers up to 50 kW, complete with air vent valve, safety valve and expanded polystyrene insulation. Brass body. Max. operating temperature: 110°C. 1" F inlet connection. 3/4" F drain connection, safety valve. Overall dimensions with insulation: height 109.5 - width 130.5 - depth 115 mm.

TÜV standards.

Type	Part number	Size body	bar	Min. order	€uro
KSGN	0272025	1"	2,5	1	--
KSGN	0272030	1"	3	1	--



KSG30

Galvanized stainless steel manifold for systems up to 50 kW according to DIN 4751. Complete with air vent valve series MVD, manometer (4 bar) with check valve, safety valve SV 1/2" (3 bar). Connection 1" F.

- * SV with pushfit connection and Minivent
- ** SV with pushfit connection and Duovent
- *** Insulation

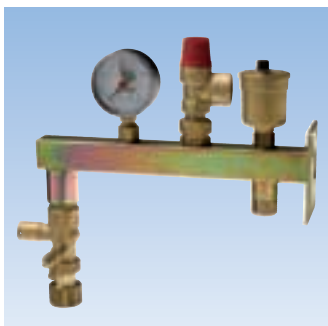
Type	Part number	Size body	Min. order	€uro
KSG30	0270130	1" F	1	--
* KSG30	0273130	1" F	1	--
** KSG30	0273139	1" F	1	--
*** KSG30	0271002	-	1	--



KSG30-ISO

Like KSG30 but complete with expanded polystyrene insulating according to DIN 4102-B2. 0270136 = SV 3/4" for systems up to 100kW. 0270137 = SV 1" for systems up to 200kW.

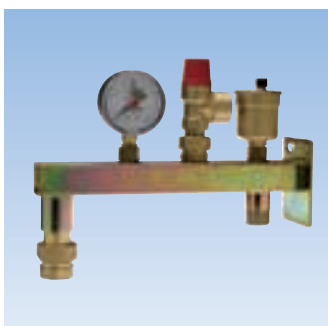
Type	Part number	Size body	Min. order	€uro
KSG30-ISO	0270136	1" F	-	--
KSG30-ISO	0270137	1" F	-	--



GAG/KAV

Multi-function unit connecting expansion tank of a closed circuit system. For tanks from 5l up to 24l. Complete with : Automatic air vent MV10.R, Safety valve SVH/E30.1/2" with adjustable fitting, Manometer MHR 63/4 - 3/8" with check valve REM10 and tanks shut off valve KAV20 to allow maintenance without emptying of the system and availability pressure discharge.

Type	Part number	Min. order	€uro
GAG/KAV	0606210	1	--



GAG/MR20

Multi-function unit connecting expansion tank of a closed circuit system. For tanks from 5l up to 24l. Complete with : Automatic air vent MV10.R MV10.R, Safety valve SVH/E30.1/2" with adjustable fitting, Manometer MHR 63/4 - 3/8" with check valve REM10 and tanks shut off valve SK20 to allow maintenance without emptying of the system.

Type	Part number	Min. order	€uro
GAG/MR20	0606112	1	--

FUEL SHUT-OFF AND THERMAL DRAIN VALVES

464

FULLMATIC

Shut-off valve for liquid and gaseous fuels. Positive action with manual resetting. Liquid expansion thermostatic element. 5 m capillary length. Brass CW617N body for the 1/2" version. Bronze body for versions from 3/4" to 2". Cast iron valve body from versions from ND 65 to ND 80. Sensor sheath connection 1/2" M. Set temperature: 97°C ± 3°C. Nominal pressure: NP10. Max. temperature, valve side: 40°C. Max. temperature, sensor side : 115°C ± 3°C. Models ND 65 and 80 flanged.

ISPESL approved and calibrated. According to Directive PED 97/23/CE. Identification number CE1115.



Type	Part number	Size body	bar	Min. order	€uro
464	4640C12	1/2"MM	10	1	--
464	4641C34	3/4"FF	10	1	--
464	4642C1	1"FF	10	1	--
464	4643C114	1.1/4"FF	10	1	--
464	4644C112	1.1/2"FF	10	1	--
464	4645C2	2"FF	10	1	--
464	4646C65X	65	10	1	--
464	4647C80X	80	10	1	--

NVFN

FLAMSTOP

Shut-off valve for liquid and gaseous fuels, NVFN size 1/2" and 3/4" suitable for vegetable diesel or "biodiesel" oil fuel. Positive action with manual resetting. Liquid expansion thermostatic element. 5 m capillary length. Compact sensor. Aluminium body, stainless steel springs. NBR seals (NVFN, size 1/2" - 3/4" in FPM). Sensor sheath connection 1/2" M (complete with nipple 1/2" F x 3/4" M). Set temperature : 97°C ± 3°C. Nominal pressure: NP6. Max. temperature, sensor side : 120°C. Max. temperature, valve side : 50°C. Models ND 65 to 80 flanged NP16 UNI 2223. Model ND 100 flanged NP16 ISO 7005/2.

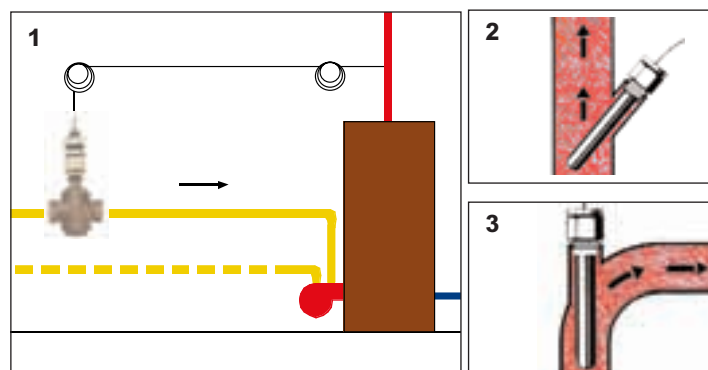
ISPESL approved and calibrated. According to Directive PED 97/23/CE. Identification number CE1115.



Type	Part number	Size body	bar	Min. order	€uro
NVFN	0231415	1/2" MM	10	1	--
NVFN	0231420	3/4" FF	10	1	--
NVFN	0231425	1" FF	10	1	--
NVFN	0231432	1.1/4" FF	10	1	--
NVFN	0231440	1.1/2" FF	10	1	--
NVFN	0231450	2" FF	10	1	--
NVFN	0231465	65	10	1	--
NVFN	0231480	80	10	1	--
VIC	VIC100	100	1	1	--

Installation notes

- Install the valve on the fuel piping upstream to the burner (Figure 1), duly observing the direction of flow indicated by the arrow stamped on the valve body.
- Install the delivery temperature probe on the piping within 0.5 m of the boiler upstream to any shut-off valve. Insert the probe in relative sheath immersed in fuel. Direction of circulation should preferably be that indicated in (Figures 2 and 3).
- When connecting the valve to the piping, take the utmost care not to damage the capillary.



FUEL SHUT-OFF AND THERMAL DRAIN VALVES

**468**

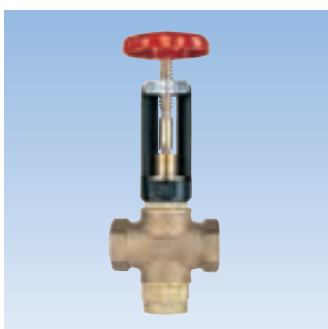
1/2" copper sheath for fuel shut-off valves series 464.

Type	Part number	Size body	Min. order	€uro
468	4680C12	1/2" F	1	--

**GA**

1/2" Sheath with nipple 1/2" F x 3/4" M for fuel shut-off valves series NVFN.

Type	Part number	Size body	Min. order	€uro
GA	0299011	1/2" F x 3/4" M	1	--

**296**

Three-way valve for boiler and expansion vessel shut-off.

For threaded versions from ND 1/2" to ND 2" bronze valve body and nominal pressure NP10.

For flanged versions from ND 65 to ND 200 cast iron body and nominal pressure NP16.

The port sections inside the valve correspond to those of the piping with the same nominal diameter **according to ISPEL Standards (DM 1-12-75 Body R)**.

Type	Part number	Size body	bar	Min. order	€uro
296	2961	1"	10	1	--
296	296114	1.1/4"	10	1	--
296	296112	1.1/2"	10	1	--
296	2962	2"	10	1	--
296	296212	65	16	1	--
296	2963	80	16	1	--
296	296100	100	16	1	--
296	296125	125	16	1	--
296	296150	150	16	1	--
296	296200	200	16	1	--

**VTFN**

THERMOFLUX

Positive action thermal drain valve, with manual resetting and optical signal. Protection class : IP40. Set temperature : 95°C. Drain capacity without filling : VTF 1.1/4" - 226.149 W equal to 7778 litres/h VTF 1.1/2" - 370.000 W equal to 12728 litres/h.

ISPEL approved. According to EEC 89/336, EEC 73/23, PED 97/23/CE.

Identification number CE1115.

Type	Part number	Size body	Min. order	€uro
VTFN	0230232	1.1/4"	1	--
VTFN	0230240	1.1/2"	1	--

European directive PED 97/23/CE

" The European Directive PED 97/23/CE covering pressure equipment specified that as from 29/11/1999 up to 29/05/2002 a manufacturer could, at his discretion, request for the design and manufacturer of pressure equipment as follows :

1) Application of the current present arrangement, governed by Bodies of ISPEL documents and handled, as regards level of control, solely by ISPEL; or else

2) Full application of PED Directive 97/23/CE in accordance with the essential safety requirements and the intervention of a notified body (public, private, Italian or non Italian) qualified to operate and chosen by the manufacturer.

In this connection, WATTS Cazzaniga opts for the full and **definite application of the directive "PED 97/23/CE"**, combined with, solely as regards the safety equipment, **ISPEL approval.**

FUEL SHUT-OFF AND THERMAL DRAIN VALVES

STS
SECURFLUX

Thermal safety drain for non atomized, solid fuel boilers with double safety.
 Nickel-plated brass CW617N body. Immersion probe with 145 mm sheath and 1/2" M connection.
 Max. drain capacity: 6500 litres/h at 8 bar. Max. operating pressure: 10 bar.
 Set temperature : 97°C. Max. drain capacity temperature : 107°C

According to TÜV/SVGW.

According to Directive PED 97/23/CE. Identification number CE1115.

Type	Part number	Size body	Capillary	Min. order	€uro
STS	0232120	3/4" F	1300 m	1	--
STS	0232220	3/4" F	2000 m	1	--


STSR
SECURFLUX

Like STS but with just one compact sensitive element.
 Immersion probe with 108 mm sheath and 3/8" M connection.
 Max. drain capacity : 3000 litres/h.

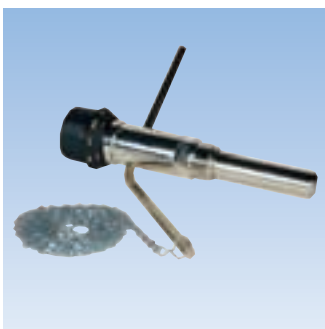
Type	Part number	Size body	Capillary	Min. order	€uro
STSR	0232520	3/4" F	1300 m	1	--


TH

Spare sheath for valves SECURFLUX series.

- Item 0299014 for STS
- Item 0299016 for STSR.

Type	Part number	Size body	Min. order	€uro
TH	0299016	3/8"	1	--
TH	0299014	1/2"	1	--


RT
AIRSTOP

Draught regulator for boilers running on non atomized fuels, with single safety (Item 0234200) or double safety (Item 0234100).
 Setting range : 40°C to 100°C. Connection ND 3/4". Wax heat sensitive element.

Type	Part number	Stroke	Chain lenght	Min. order	€uro
RT	0234100	60 mm	100 cm	1	--
RT	0234125	60 mm	125 cm	1	--
RT	0234200	80 mm	100 cm	1	--
RT	0234215	80 mm	125 cm	1	--


IS

Exposed drain funnel for safety and thermal drain valves.
 Allows venting of valves at atmospheric back-pressure.

Type	Part number	Size body	Min. order	€uro
IS	0235115	1/2" FF	1	--
IS	0235120	3/4" FF	1	--
IS	0235125	1" FF	1	--
IS	0235132	1.1/4" FF	1	--

AUTOMATIC FILLING VALVES AND RELIEF VALVES



AL

ALIMAT.
Automatic filling valve complete with check valve, manual shut-off, stainless steel filter, vent screw. Brass CW617N body. High impact plastic cap. Pressure gauge connection 1/4" F. Max. upstream pressure: 10 bar. Adjustable downstream pressure: 0.3 to 4 bar.

Type	Part number	Size body	Min. order	€uro
AL	0240100	1/2" MF	10	--



ALM

Like AL but with pressure gauge M1-ABS50 (50 mm dial, bottom entry, 0 - 4 bar).

Type	Part number	Size body	Min. order	€uro
ALM	0240200	1/2" MF	10	--



ALOM

Like AL but with pressure gauge M1-ABS50 (50 mm dial, bottom entry, 0 - 4 bar).

Type	Part number	Size body	Min. order	€uro
ALOM	0240210	1/2" MF	10	--



M1-ABS50

Pressure gauge complete with reference pointer. Dial gauge 50 mm in diameter. Bottom entry, 1/4".

According to ISPESEL.

Type	Part number	Size body	bar	Min. order	€uro
M1-ABS50	PA2204BB01	1/4" M	4	100	--
M1-ABS50	PA2206BB02	1/4" M	6	100	--
M1-ABS50	PA2210BB02	1/4" M	10	100	--
M1-ABS50	PA2216BB01	1/4" M	16	100	--
M1-ABS50	PA222501	1/4" M	25	100	--



3110C

FILLMATIC
Automatic filling valve complete with 0-6 bar pressure gauge 3112C, self-cleaning check valve, manual shut-off, sintered bronze filter. Brass CW617N body. Max. upstream pressure : 10 bar. Adjustable downstream pressure : 0.3 to 4 bar. Set pressure : 1 bar. Setting ratio : 1 rev. = 0.4 m w.g.

Type	Part number	Size body	Min. order	€uro
3110C	3110C12	1/2" MF	1	--

AUTOMATIC FILLING VALVES AND RELIEF VALVES

3111C

Spare set for FILLMATIC.

Type	Part number	Min. order	€uro
3111C	3111C	1	--


3112C

Spare pressure gauge, 0 to 6 bar, for FILLMATIC.

Type	Part number	Size body	Min. order	€uro
3112C	3112C	1/4"	1	--

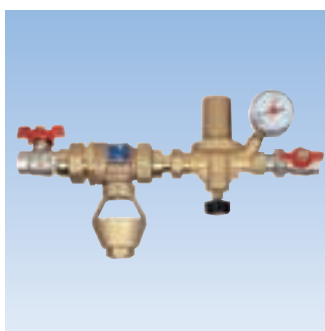

ALOMDIW

Combined filling and back flow preventing unit complete with drain funnel, assembled for heating and air conditioning systems with capacity > 79 kW.

Back flow preventer DIW. Automatic filling valve ALOM. Two ball valves. 1/2" female external connections.

UNI 9157 certification only for DIW.
According to NF/SVGW/KIWA/UPC only for DIW.

Type	Part number	Size body	Min. order	€uro
ALOMDIW	1505199	1/2"	1	--


ALOMDNW

Combined filling and back flow preventing unit, assembled for heating and air conditioning systems with capacity < 70 kW. Back flow preventer DNW complete with drain funnel.

Automatic filling valve ALOM. Two ball valves. 1/2" female external connections.

According to KIWA/ANSEAU only for DNW.

Type	Part number	Size body	Min. order	€uro
ALOMDNW	1505299	1/2"	1	--

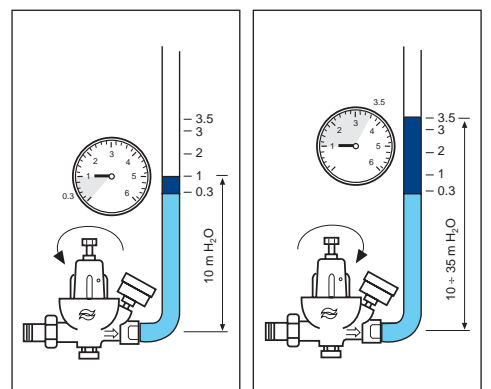
Filling valves
Pressure setting

The filling valve is factory set at a pressure of 1 bar.

To adjust for pressures other than the factory setting, merely turn the screw clockwise to increase the pressure (max. 4 bar) or anti-clockwise to decrease it (min. 0.3 bar).

Installation

Install the valve according to the direction of the arrow stamped on the valve body. For quicker filling, make sure the regulating valve is fully open, even if it is advisable to introduce the water at a sufficiently low speed in order to avoid formation of water pockets which are difficult to expel. When filling, the device ensures that all water supplied from the mains is filtered.



AUTOMATIC FILLING VALVES AND RELIEF VALVES



466

THERMATIC.
Relief valve for systems with automatic or manual shut-off elements on the radiators (thermostatic valves, two-way zone valves). Brass CW617N body and ABS cap.
Nominal pressure : NP 10. Overpressure : 10 - 15%. Max operating temperature : 110°C.

Type	Part number	Size body	bar	Min. order	€uro
466	4660C12	1/2" FF	0,05 - 0,7	1	--
466	4661C34	3/4" FF	0,05 - 0,7	1	--
466	4662C1	1" FF	0,05 - 0,7	1	--



USVR

Relief valve for systems with automatic or manual shut-off elements on the radiators (thermostatic valves, two-way zone valves). Female inlet connections, Male union outlet. Body and cap of brass CW617N.
Adjustment : Position "0" = Fully open - Position "7" = Close to closing $\Delta p = 0.5$ bar
Plastic knob. Max operating pressure : 6 bar.
Overpressure : 10 - 15%. Max operating temperature : 110°C

Type	Part number	Size body	bar	Min. order	€uro
USVR	0265216	3/4" FM	0,06 - 0,36	1	--
USVR	0265220	3/4" FM	0,03 - 0,50	1	--
USVR	0265225	1" FM	0,03 - 0,55	1	--
USVR	0265232	1.1/4" FM	0,06 - 0,46	1	--



RDF

Check valve with manual stop for systems with thermostat-controlled recirculating pump. Brass CW617N body. High impact plastic knob. Max. pressure : 10 bar.
Opening pressure : 25 - 26 mbar. Operating temperature : 105°C. Max. temperature : 130°C.

Type	Part number	Size body	Min. order	€uro
RDF	0262125	1" FF	1	--
RDF	0262132	1.1/4" FF	1	--
RDF	0262140	1.1/2" FF	1	--

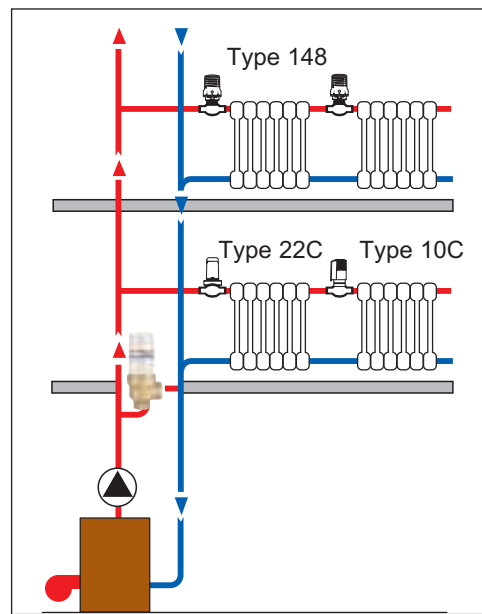
Filling valves

Selection

Valve selection is normally based on a by-pass flow rate equal to 25-30% of the total flow rate of the mains water to be protected and at an overpressure of 10-15% of the head expected at that point (check curve of the motor-driven pump if necessary).

Installation

Install the relief valve downstream to the pump pressure port, connecting the delivery piping to the return piping. Observe the direction of flow indicated on the valve body.



FLOW AND PRESSURE SWITCHES


FLU

Flow switch for piping ND 1" to ND 8". Aluminium body. Brass pipe fitting. 3-contact microswitch : 20 (8) A-250V. Max. fluid operating pressure : 10 bar. Max. fluid operating temperature : 110°C. Max. room temperature : 60°C.

According to Body R Dossier 2.C.6. EEC 89/336, EEC 73/23.

Type	Part number	Size body	Protection	Min. order	€uro
FLU	0401125	1"	IP64	10	--
FLU	0401126	1"	IP67 (tin)	10	--


FS25

Flow switch for piping ND 1" to ND 6". Can be used in humid environments. Galvanized casing protected with epoxy finish. Contact rating : 20A-250V. Max. operating pressure : 10 bar. Max. operating temperature : 140°C.

According to UL/CSA, EEC 89/336, EEC 73/23.

Type	Part number	Size body	bar	Min. order	€uro
FS25	1505825	1"	IP55	1	--


PRM

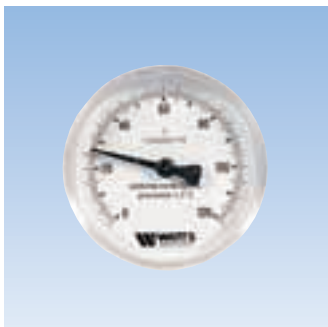
Pressure switch with manual resetting for heating systems. Setting range: 1- 5 bar. Contact rating : 16A (10) -250V. Protection class : IP40. Max. fluid temperature : 90°C.

ISPESL approved. According to Directive PED 97/23.

Identification number CE0100. According to EEC 89/336, EEC 73/23.

Type	Part number	Size body	bar	Min. order	€uro
PRM	0402101	1/4" F	3	10	--

THERMOMETERS, PRESSURE GAUGE, METERING PIPES AND ACCESSORIES



TB

Bimetal immersion thermometer. Scale divisions 1°C.
Zinc plated steel case. Central axial stem.
Brass sheath, connection 3/8" M for model PTA457002.
Brass sheath, connection 1/2" M for all other models.

According to ISPEL.

Type	Part number	Scale	Face	Dimension	Min. order	€uro
TB	PT1A457002	0-80 °C	40 mm	30	240	--
TB	PT3A447001	0-60 °C	63 mm	50	100	--
TB	PT3A507002	0-120 °C	63 mm	50	50	--
TB	PT3B507001	0-120 °C	63 mm	100	50	--
TB	PT31987001	-30/50°C	63 mm	100	50	--
TB	PT4A987001	-30/50°C	80 mm	50	50	--
TB	PT4A447001	0-60 °C	80 mm	50	50	--
TB	PT4A507001	0-120 °C	80 mm	50	50	--
TB	PT4B507001	0-120 °C	80 mm	100	50	--
TB	PT4B447001	0-60 °C	80 mm	100	50	--
TB	PT5A447001	0-60 °C	100 mm	50	32	--
TB	PT5A507001	0-120 °C	100 mm	50	32	--
TB	PT509870	-30/50°C	100 mm	50	32	--
TB	PT5B507001	0-120 °C	100 mm	100	32	--
TB	PT409870	-30/50°C	80 mm	50	32	--
TB	PT404470	0-60 °C	80 mm	50	32	--
TB	PT419870	-30/50°C	80 mm	100	32	--
TB	PT414470	0-60 °C	80 mm	100	32	--



THT

Spare sheath for thermometers series T. Connection 1/2" M.
Total length: 100 mm.

Type	Part number	Size	Dimension	Min. order	€uro
THT	PGUAOTT002	1/2"	50	1	--
THT	PGUAOTT005	1/2"	100	1	--



TBR-80

Like thermometer of series TB but with stem having bottom entry.
Brass sheath, connection 1/2" M.

According to ISPEL.

Type	Part number	Scale	Face	Dimension	Min. order	€uro
TBR-80	PT8A987001	-30/50 °C	80 mm	75	50	--
TBR-80	PT8A447001	0-60 °C	80 mm	75	50	--
TBR-80	PT8A507001	0-120 °C	80 mm	50	50	--
TBR-80	PT8B987001	-30/50 °C	80 mm	100	40	--
TBR-80	PT8B447001	0-60 °C	80 mm	100	40	--
TBR-80	PT8B507001	0-120 °C	80 mm	100	40	--

THERMOMETERS, PRESSURE GAUGE, METERING PIPES AND ACCESSORIES

TV

Thermometer with straight glass, xylene (XI) and mercury (ME) filled.
Temperature scale : 0°C - 120°C.

According to ISPEL.

Type	Part number	Scale	Dimension	Min. order	€uro
TV	PZ175070	0-120 °C ME	200 mm	20	--
TV	PZ185070	0-120 °C XI	200 mm	20	--
TV	PZ195070	0-120 °C ME	250 mm	20	--
TV	PZ205070	0-120 °C XI	250 mm	20	--
TV	PZ215070	0-120 °C ME	300 mm	20	--
TV	PZ225070	0-120 °C XI	300 mm	20	--


CD

Straight case for glass thermometer series TV. Brass body. Connection : 1/2" M.

Type	Part number	Dimension	Min. order	€uro
CD	PZ050000	200 mm	20	--
CD	PZ060000	250 mm	20	--
CD	PZ070000	300 mm	20	--


TVA

Glass thermometer with angular bulb, xylene (XI) and mercury (ME) filled.
Temperature scale : 0°C - 120°C.

Type	Part number	Scale	Dimension	Min. order	€uro
TVA	PZ235070	0-120 °C ME	200 mm	20	--
TVA	PZ265070	0-120 °C XI	200 mm	20	--
TVA	PZ245070	0-120 °C ME	250 mm	20	--
TVA	PZ275070	0-120 °C XI	250 mm	20	--
TVA	PZ255070	0-120 °C ME	300 mm	20	--
TVA	PZ285070	0-120 °C XI	300 mm	20	--


CA

With angular case for glass thermometer series TVA. Brass body. Connection : 1/2" M.

Type	Part number	Dimension	Min. order	€uro
CA	PZ080000	200 mm	20	--
CA	PZ090000	250 mm	20	--
CA	PZ100000	300 mm	20	--

THERMOMETERS, PRESSURE GAUGE, METERING PIPES AND ACCESSORIES



TID

Immersion thermometer, industrial type. Swivels on connection to allow reading in any direction. Straight type. Brass sheath. 1/2" M connection. Case size L = 150x36 mm.

According to DIN 16185/16186.

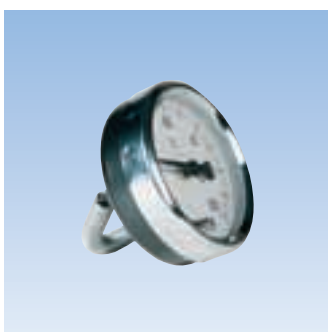
Type	Part number	Scale	Dimension	Min. order	€uro
TID	0307503	0-120 °C	63 mm	1	--
TID	0307510	0-120 °C	100 mm	1	--
TID	0307603	-30/50 °C	63 mm	1	--
TID	0307610	-30/50 °C	100 mm	1	--



TIS

Like thermometers series TID but angle type.

Type	Part number	Scale	Dimension	Min. order	€uro
TIS	0307703	0-120 °C	63 mm	1	--
TIS	0307710	0-120 °C	100 mm	1	--
TIS	0307803	-30/50 °C	63 mm	1	--
TIS	0307810	-30/50 °C	100 mm	1	--



TC

Contact thermometer with bimetallic helix element. Complete with steel sheet spring for holding on pipe. Black painted steel case. Chrome-plated rim. Scale divisions 1°C.

Type	Part number	Scale	Face	Min. order	€uro
TC	PT05507002	0-120 °C	63 mm	10	--



TBE-63

Thermometer with bimetallic helix element with centre back entry. Connection ND 15. Temperature scale : 20°C - 100°C.

Type	Part number	Face	Min. order	€uro
TBE-63	PT6A499002	63 mm	100	--



PZ

Pocket for fitting control thermometer. Brass body. Length: 50 mm. Diameter: 10 mm.

According to ISPESL.

Type	Part number	Face	Min. order	€uro
PZ	0309115	1/2" M	1	--

THERMOMETERS, PRESSURE GAUGE, METERING PIPES AND ACCESSORIES

M3A-ABS50

Pressure gauge complete with reference needle. Dial diameter : 50 mm.
1/4" M axial connection.

According to ISPEL.

Type	Part number	Size	Scale	Min. order	€uro
M3A-ABS50	PB2204BB06	1/4"M	0-4 bar	100	--
M3A-ABS50	PB2206BB02	1/4"M	0-6 bar	100	--
M3A-ABS50	PB2210BB00	1/4"M	0-10 bar	100	--
M3A-ABS50	PB221601	1/4"M	0-16 bar	100	--
M3A-ABS50	PB222501	1/4"M	0-25 bar	100	--


M1-ABS50

Pressure gauge complete with reference needle. Dial diameter : 50 mm.
1/4" M bottom entry.

According to ISPEL.

Type	Part number	Size	Scale	Min. order	€uro
M1-ABS50	PA2204BB01	1/4"M	0-4 bar	100	--
M1-ABS50	PA2206BB02	1/4"M	0-6 bar	100	--
M1-ABS50	PA2210BB02	1/4"M	0-10 bar	100	--
M1-ABS50	PA2216BB01	1/4"M	0-16 bar	100	--
M1-ABS50	PA222501	1/4"M	0-25 bar	100	--


M3A-ABS63

Pressure gauge complete with reference needle. Dial diameter : 60 mm.
1/4"M axial connection.

According to ISPEL.

Type	Part number	Size	Scale	Min. order	€uro
M3A-ABS63	PB3204BB02	1/4"M	0-4 bar	100	--
M3A-ABS63	PB3206BB02	1/4"M	0-6 bar	100	--
M3A-ABS63	PB3210BB00	1/4"M	0-10 bar	100	--
M3A-ABS63	PB3216BB00	1/4"M	0-16 bar	100	--
M3A-ABS63	PB322501	1/4"M	0-25 bar	100	--


M1-ABS63

Pressure gauge complete with reference needle. Dial diameter : 60 mm.
1/4"M bottom entry.

According to ISPEL.

Type	Part number	Size	Scale	Min. order	€uro
M1-ABS63	PA3204BB01	1/4"M	0-4 bar	100	--
M1-ABS63	PA3206BB01	1/4"M	0-6 bar	100	--
M1-ABS63	PA3210BB03	1/4"M	0-10 bar	100	--
M1-ABS63	PA3216BB03	1/4"M	0-16 bar	100	--
M1-ABS63	PA322501	1/4"M	0-25 bar	100	--
M1-ABS63	PA324001	1/4"M	0-40 bar	100	--

THERMOMETERS, PRESSURE GAUGE, METERING PIPES AND ACCESSORIES



M1-ABS80

Pressure gauge complete with reference needle. Dial diameter : 80 mm. 3/8"M bottom entry.

According to ISPEL.

Type	Part number	Size	Scale	Min. order	€uro
M1-ABS80	PA4101BC00	3/8"	0-1 bar	50	--
M1-ABS80	PA4102BC00	3/8"	0-1,6 bar	50	--
M1-ABS80	PA4203BC00	3/8"	0-2,5 bar	50	--
M1-ABS80	PA4204BC00	3/8"	0-4 bar	50	--
M1-ABS80	PA4206BC00	3/8"	0-6 bar	50	--
M1-ABS80	PA4210BC00	3/8"	0-10 bar	50	--
M1-ABS80	PA4216BC00	3/8"	0-16 bar	50	--
M1-ABS80	PA4225BC00	3/8"	0-25 bar	50	--
M1-ABS80	PA4240BC00	3/8"	0-40 bar	50	--
M1-ABS80	PA4101WC00	3/8"	0-10 mH ² O	50	--
M1-ABS80	PA4102WC00	3/8"	0-16 mH ² O	50	--
M1-ABS80	PA4203WC00	3/8"	0-25 mH ² O	50	--
M1-ABS80	PA4204WC00	3/8"	0-40 mH ² O	50	--
M1-ABS80	PA4206WC00	3/8"	0-60 mH ² O	50	--
M1-ABS80	PA4204BD00	1/2"	0-4 bar	50	--
M1-ABS80	PA4206BD01	1/2"	0-6 bar	50	--
M1-ABS80	PA4210BD00	1/2"	0-10 bar	50	--
M1-ABS80	PA4216BD00	1/2"	0-16 bar	50	--



REM

Automatic shut-off valve for exclusion of pressure gauges series M1.. and M3.. Brass body. Plastic plug with O-ring seal.

Type	Part number	Dimension	Min. order	€uro
REM	0329008	1/4" MF	10	--
REM	0329010	3/8" MF	10	--
REM	0329015	1/2" MF	10	--



TIM-ABS80

Thermometer/pressure gauge with ABS case, complete with sheath and shut-off valve. Dial diameter : 80 mm. 1/2" M axial connection. Temperature scale : 0° - 120°C.

According to ISPEL.

Type	Part number	Size	Scale	Min. order	€uro
TIM-ABS80	PN4203BD00	1/2"M	0-2,5 bar	50	--
TIM-ABS80	PN4204BD00	1/2"M	0-4 bar	50	--
TIM-ABS80	PN4206BD00	1/2"M	0-6 bar	50	--

THERMOMETERS, PRESSURE GAUGE, METERING PIPES AND ACCESSORIES


TIRM-ABS80

Thermometer/pressure gauge with ABS case, complete with sheath and shut-off valve. Dial diameter : 80 mm. 1/2" M radial connection. Temperature scale : 0° - 120°C.

According to ISPEL.

Type	Part number	Size	Scale	Min. order	€uro
TIRM-ABS80	PL4203BD00	1/2"M	0-2,5 bar	50	--
TIRM-ABS80	PL4204BD00	1/2"M	0-4 bar	50	--
TIRM-ABS80	PL4206BD00	1/2"M	0-6 bar	50	--


TC50

Dial thermometer with capillary. Thermoplastic case. 1000 mm copper capillary. Outer diameter 57.5 mm. bore 52 mm. Temperature scale : 0°C - 120°C.

Type	Part number	Min. order	€uro
TC50	0300050	50	--


MC50

Dial pressure gauge, capillary type, complete with 1/2" check valve. Thermoplastic case. Copper capillary L = 1000 mm. Outer diameter 57.5 mm, bore 52 mm. Pressure scale : 0 - 6 bar.

Type	Part number	Min. order	€uro
MC50	0328560	50	--


TMC50

Dial thermometer/pressure gauge, capillary type, complete with 1/2" check valve. Thermoplastic case. Copper capillary L = 1000 mm. Outer diameter 57.5 mm, bore 52 mm. Pressure scale : 0 - 6 bar. Temperature scale : 0°C - 120°C.

Type	Part number	Min. order	€uro
TMC50	0332206	50	--

THERMOMETERS, PRESSURE GAUGE, METERING PIPES AND ACCESSORIES



403R

Pressure gauge holder cock with control flange. Stuffing box packed.
Nominal pressure: 16 bar.

According to ISPESEL.

Type	Part number	Dimension	Min. order	€uro
403R	403R14	1/4"	10	--
403R	403R38	3/8"	10	--
403R	403R12	1/2"	10	--



407D

Copper insulation loop for water gauges, pressure gauges and pressure switches.

Type	Part number	Dimension	Min. order	€uro
407D	407D14	1/4"	10	--
407D	407D38	3/8"	10	--
407D	407D12	1/2"	10	--



MT

FLOWTEST

Metering pipe with piezometric on/off connections.
Brass shut-off valves. Painted steel body.
Threaded head connection 3/4" and 1" male/male.
Flange connections ND 32 / 100 : NP 6.
Flange connections ND 125 / 150 : NP 16.
Flange connections ND 200 : NP 10.

The flanged models are supplied complete with counter flanges, seals and bolts.
Preferably to be installed on horizontal piping with intakes facing up; when installing, observe direction of flow indicated.

Type	Part number	Size body	Kvs	Min. order	€uro
MT	0290020	3/4"	6	1	--
MT	0290025	1"	10	1	--
MT	0290032	32	14	1	--
MT	0290040	40	26	1	--
MT	0290050	50	50	1	--
MT	0290065	65	82	1	--
MT	0290080	80	110	1	--
MT	0290100	100	192	1	--
MT	0290125	125	416	1	--
MT	0290150	150	533	1	--
MT	0290200	200	1050	1	--

EXPANSION TANKS

VEIS

Expansion vessels with fixed diaphragm suitable for plumbing and heating systems. Can be used for water heaters and autoclaves. Butyl diaphragm. Painted steel body. Steel cap internally coated with non-toxic epoxy paint.

Max pressure :10 bar.

Max. operating temperature : 99°C.

1/2" M connection for VEIS, capacity 2 litres.

3/4" M connection for other models.

1" M connection for 24 litres

*THE ADVANTAGE
TO HAVE IN STOCK ONLY ONE
EXPANSION TANK (VEIS) FOR
HEATING AND SANITARY SYSTEM !!*

According to directive PED 97/23/CE.

Type	Part number	Capacity	Precharging pressure	Min. order	€uro
VEIS	0604402	2 lt	3,5 bar	1	--
VEIS	0604405	5 lt	3 bar	1	--
VEIS	0604408	8 lt	3 bar	1	--
VEIS	0604412	12 lt	2 bar	1	--
VEIS	0604418	18 lt	2 bar	1	--
VEIS	0604424	24 lt	2 bar	1	--


VEN

Expansion vessels designed for heating systems. Max. operating temperature : 99°C.

3/4" M connection (35 - 300 liters). 1" M connection (500 liters). Models with capacity greater than 80 litres, are supplied with mounting feet. **SBR diaphragm to DIN 4807.**

According to directive PED 97/23/CE.

Type	Part number	Capacity	Precharging pressure	P. max	Min. order	€uro
VEN	0601035	35 lt	1,5 bar	4	1	--
VEN	0601050	50 lt	1,5 bar	4	1	--
VEN	0601080	80 lt	2 bar	6	1	--
VEN	0601105	105 lt	2 bar	6	1	--
VEN	0601150	150 lt	2 bar	6	1	--
VEN	0601200	200 lt	2,5 bar	6	1	--
VEN	0601250	250 lt	2,5 bar	6	1	--
VEN	0601300	300 lt	2,5 bar	6	1	--
VEN	0601500	500 lt	2,5 bar	6	1	--


VEP

Circular flat expansion vessels, diaphragm type, dia. 387 mm, designed in accordance with Italian DM 1/12/75. Precharging pressure : 1.5 bar.

Max. operating pressure : 4 bar. 3/4" M fitting.

According to directive PED 97/23/CE.

Type	Part number	Capacity	bar	Min. order	€uro
VEP	0603008	8 lt	4	5	--
VEP	0603010	10 lt	4	5	--
VEP	0603012	12 lt	4	5	--
VEP	0603014	14 lt	4	3	--
VEP	0603018	18 lt	4	1	--

INSPECTION PLATES, THERMOMETERS AND COMPONENTS FOR CHIMNEY



PFT

2-hole fume inspection plate.
 Top hole for chimney thermometer series PC, lockable by relative ring nut. 50 mm dia.
 bottom hole for fume sampling.
 Easily removable fume-resistant plugs.
 Aluminium body.

Type	Part number	Min. order	€uro
PFT	0801100	5	--



TB-63FUMI

Chimney thermometers, easy to insert in pressure gauge holder/fume inspection plate PFT.
 Thermometer with bimetallic helix element. Steel sheet case. Chrome-plated rim.
 Galvanized steel stem without sheath, centre back entry.

Type	Part number	Scale	Face	Dimension	Min. order	€uro
TB-63FUMI	PT36687002	0-500 °C	63 mm	100	50	--
TB-63FUMI	PT37687002	0-500 °C	63 mm	150	50	--
TB-63FUMI	PT38687003	0-500 °C	63 mm	200	40	--
TB-63FUMI	PT39687003	0-500 °C	63 mm	300	20	--

Samples of the combustion products - Standard UNI 10389/94

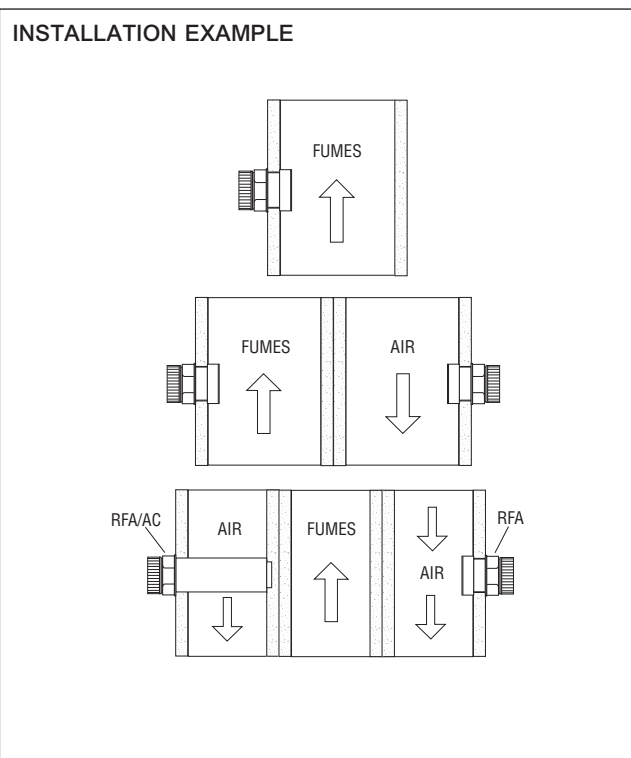
OMISSIS.....

Chap. 5.1: Samples of the combustion products should be taken for analysis at a suitable point of the chimney; in fact analysis carried out from different sample points do not yield the same results.

The combustion products should be taken from a hole to be drilled in the flue pipe (downstream of any draught breaker or diverter) at a distance from the boiler equal to twice the flue pipe diameter.

The presence of draught breaker (or anti-refouleur) devices dilutes and cools the combustion gases thus altering the measurement of efficiency, normally in favour of the user. If the flue pipe has an elbow within this distance, the hole should be drilled at a distance from the elbow equal to one diameter. If devices are installed for recovering heat from the fumes, samples should be taken downstream of such devices, with the same procedures.

OMISSIS.....



INSPECTION PLATES, THERMOMETERS AND COMPONENTS FOR CHIMNEY


RFA

Sample fitting for withdrawing burnt gases of boilers from the discharge pipes, essential for checking combustion efficiency.

Can be used for any type of analyzer prescribed by UNI10389/94.

Chrome-plated body and nuts. Fasin seal. Chrome-plated brass plug with silicone seal.

Analyzer probe bore: dia. 10.2 mm.

Type	Part number	Min. order	€uro
RFA	0804001	100	--


RFAC

Like RFA, but for coaxial pipe, with nipples for sampling discharge fumes.

Type	Part number	Min. order	€uro
RFAC	0804002	100	--


SC

Chimney inspection door of painted steel construction.

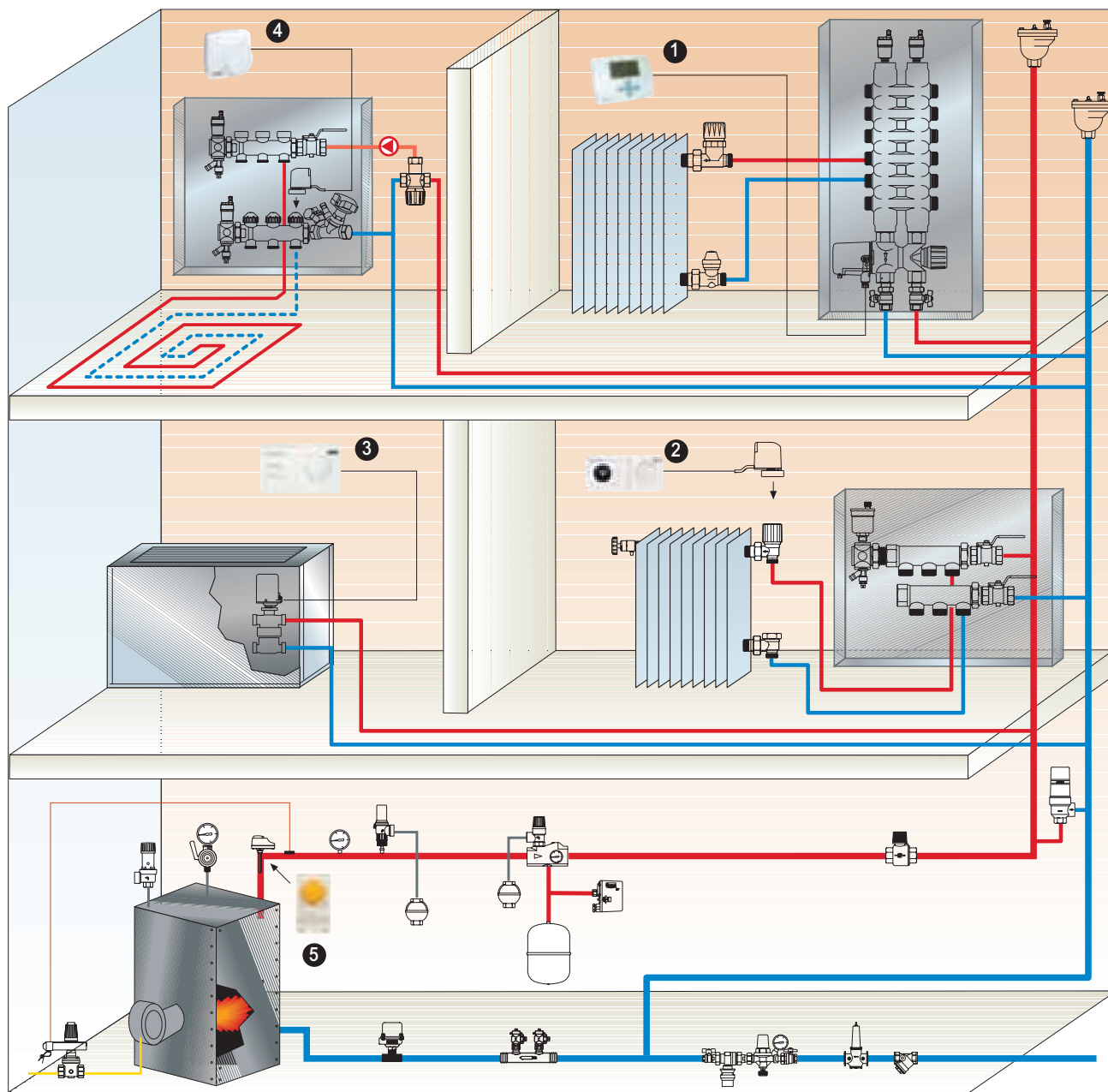
According to Italian D.P.R. 1391, 22/12/1970.

Type	Part number	Dimension	Min. order	€uro
SC	0803100	200 x 300 x 25	10	--
SC	0803200	300 x 400 x 70	10	--



Regulation and control

EXAMPLE OF APPLICATION



- 1 Electronic room timing chrono thermostat series MILUX
- 2 Electronic thermostat with analog programming series BATTERY
- 3 Room thermostat for fan-coil series FAN COMFORT
- 4 Room thermostat for floor heating systems series WFTH
- 5 Immersion control thermostat series TRE100

PROGRAMMABLE CHRONO THERMOSTAT, ROOM THERMOSTAT AND TIMER SWITCHES



MILUX

Digital electronic room timing chrono thermostat with day/week programming. **9 preset and 4 customizable programs available.** Constant room temperature, time and status display. White casing with removable front panel for access to the batteries and connections. Easy wiring: two-wire connection (3-position connector) for heating and air conditioning systems. Complete with 3 alkaline batteries LR6 (AAA) 1.5V: **autonomy 3 years.** Battery replacement without loss of programming. Temperature setting range: 5 - 35°C. (comfort and night energy saving programmes). Anti-freeze (0,5 - 10 °C). Load capacity of 3 contacts : 8A - 250 Vac. Automatic or manual operation. Special functions :

- Reset, locking of keys (to prevent accidental modification of the preset parameters)
- Temporary suspension (holidays) of the operation during periods of absences.

According to EEC 89/336, EEC 73/23, Italian Act 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
MILUX	P185800 (Daily)	3 batteries 1,5V	IP30	10	--
MILUX	P185900 (Weekly)	3 batteries 1,5V	IP30	10	--



MILUX-RF

Digital electronic room timing chrono thermostat with RF control (not requiring electrical connections) complete with 3 alkaline batteries LR6 (AAA) 1.5V: **autonomy 3 years.** For other characteristics: see MILUX.

Compatible receiving unit :

Receiver unit provided with antenna compatible with electronic timing thermostat Series MILUX-RF. Power supply 230 Vac.

Contacts 10A / 250 Vac. Two-wire (2.5 mm²) connection.

N° 3 led's indicating operating status :

- Green led (ready in RF),
- red led (operative),
- black led (configuration)

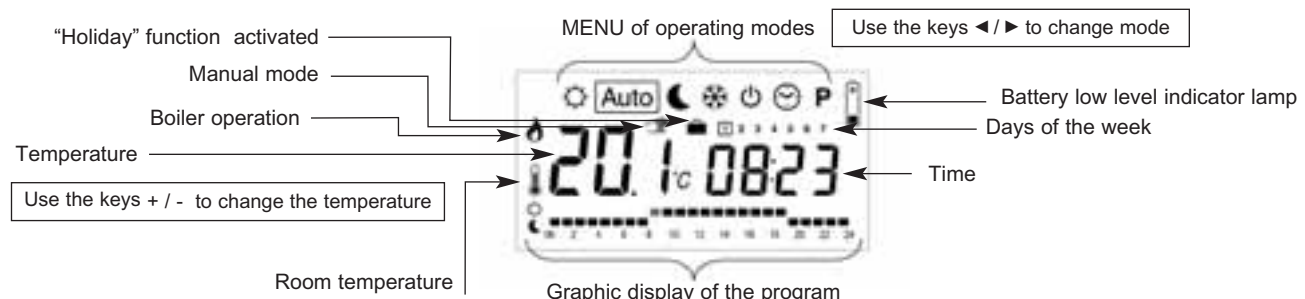
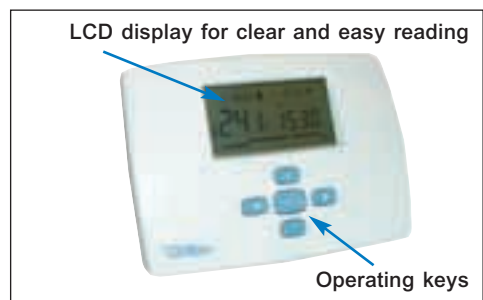
On/Off switch. Distance: 50 m with free range of action. Output relay: 16A.

According to EEC 89/336, EEC 73/23, Italian Act 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
MILUX-RF	P2054 (Weekly)	3 batteries 1,5V	IP30	10	--

Milux

MILUX, easy to install and use, of compact size, plain and essential style, but with surprising characteristics, is the new line of digital electronic timing room chrono thermostats, available with programming on a daily or weekly basis. The device features a discrete design with rounded lines, while an amply display allows easily reading of the operating status, as well as the room temperature measured and current programming profile. The installation of MILUX adapts the system for current energy saving requirements (Italian Act 10/91) to ensure maximum comfort and for all types of habits. Install the timing room chrono thermostat in zones not affected by draughts of air, or heat sources or the solar radiation in order to avoid risk of measuring temperatures differing from the actual room temperature. Recommended height from the floor is 1.5 m.



PROGRAMMABLE CHRONO THERMOSTAT, ROOM THERMOSTAT AND TIMER SWITCHES

70

**BATTERYEL**

BATTERY ELECTRONIC DAY.

Electronic room timing chrono thermostat with analog programming for heating and air conditioning. Sliding front clock guard. Minimum operating interval :

- 10 min. on daily basis.
- 120 min. on weekly basis.

Two presettable temperature programs (comfort and save) and fixed anti-freeze (5°C) with thermostat off. Setting range: 5 - 30°C. Differential at 20°C: 0.8 K.

Load rating, three switching contacts: 8 (3) A/250V.

Complete with 2 alkaline batteries LR6 1.5V

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
BATTERYEL	0407831 (Daily)	2 batteries 1,5V	IP30	10	--
BATTERYEL	0407830 (Wily)	2 batteries 1,5V	IP30	10	--

**BATTERY**

ECOLUX CHRONO BATTERY.

Analogic room timing chrono thermostat with daily programming for heating and air conditioning systems. Sliding front clock guard. Minimum operating interval: 10 min.

Number of operations per day: 24.

Comfort temperature presettable as required and fixed anti-freeze (5°C) with thermostat off.

Complete with 1 alkaline battery LR6 1.5V. AUT/MAN switch (excludes clock).

Setting range: 5 - 30°C. Differential at 20°C: 0.8K.

Load rating, three switching contacts: 10 (3) A/250V.

According to EEC 89/336, EEC 73/23, Italian Act 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
BATTERY	0407825	1 battery 1,5V	IP30	10	--

**BELUX FAN**

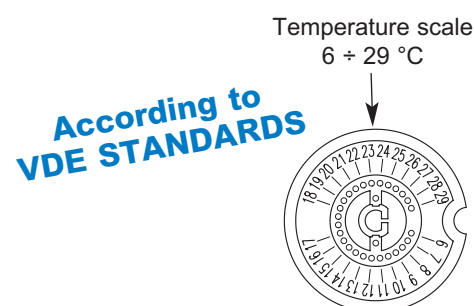
Mechanical thermostat for fan-coils. ON/OFF switch. 3 speed control. Contact: 6(2) A / 250V.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
BELUX FAN	0407600	230 VAC	IP 30	1	--

Limiting and locking of setting range

All ECOLUX, BELUX and FAN COMFORT room thermostats allow limiting or locking the setting range at predetermined temperature values through two riders at the back of the knob.



PROGRAMMABLE CHRONO THERMOSTAT, ROOM THERMOSTAT AND TIMER SWITCHES

FAN OPEN

Mechanical thermostat for fan-coils. ON/OFF switch (excludes thermostat). 3-position switch for setting fan speed. Temperature locking device at back of knob. Setting range: 5 - 30°C. Temperature differential: 0.6°C. Contact load rating: 6 (2) A/250V.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
FAN OPEN	0407605	230V	IP30	1	--


FAN COMFORT2T

Mechanical thermostat for fan-coils.ON/OFF switch (excludes thermostat). 3-position switch for setting fan speed. Summer/Winter switch. Setting range: 5 - 30°C. Temperature differential: 0.6°C. Temperature locking device at back of knob. Contact power rating: 6 (2) A/250V. **1 output for control of one valve.**

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
FAN COMFORT2T	0407618	230V	IP30	1	--


FAN COMFORT4T

Electronic thermostat for fan-coils **4-pipe** type. ON/OFF switch (excludes thermostat). 3-position switch for setting fan speed. Summer/Winter switch. Setting range: 5 - 30°C. Temperature differential: 0.2°C. Contact power rating: 6 (2) A/250V. Dead zone adjustment from 1°C to 10°C. 2 independent outputs for control of valve governing hot/cold. Connection for external probe. Led's : Red=hot - Green=cold

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
FANCOMFORT4T	0407614	230V	IP30	1	--


WFHT

Electronic thermostat for floor heating systems controlled by actuators. Operating temperature : 0 - 50°C. Setting temperature: 5 - 30°C. Differential temperature : 0,5 °K. Output power: max 15 W.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Actuator	Protection	Min. order	€uro
WFHT	P2060	24 VAC	N.O	IP30	1	--
WFHT	P2061	24 VAC	N.C	IP30	1	--
WFHT	P2062	230 VAC	N.O	IP30	1	--
WFHT	P2063	230 VAC	N.C	IP30	1	--


WFHT1

Like WFHT plus switch to select comfort, reduction and clock mode.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Actuator	Protection	Min. order	€uro
WFHT1	P2064	24 VAC	N.O	IP30	1	--
WFHT1	P2065	24 VAC	N.C	IP30	1	--
WFHT1	P2066	230 VAC	N.O	IP30	1	--
WFHT1	P2067	230 VAC	N.C	IP30	1	--

**NEW****WFHT2**

Like WFHT1 plus 3 function modes selected by separate jumper :

- regulating on internal room sensor
- regulating on external room sensor
- regulating on internal room sensor and limiting the floor temperature through the external floor sensor

Setting limiter temperature: 10 to 40°C. Differential temperature : 0,5 °K.

Equipped with external floor sensor (3m).

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Actuator	Protection	Min. order	€uro
WFHT2	P2068	24 VAC	N.O	IP30	1	--
WFHT2	P2069	24 VAC	N.C	IP30	1	--
WFHT2	P2070	230 VAC	N.O	IP30	1	--
WFHT2	P2071	230 VAC	N.C	IP30	1	--

**NEW****WFHT3**

Like WFHT2 but designed for public area (school, offices, ...). Differential temperature : 0,5 °K.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Actuator	Protection	Min. order	€uro
WFHT3	P2072	24 VAC	N.O	IP30	1	--
WFHT3	P2073	24 VAC	N.C	IP30	1	--
WFHT3	P2074	24 VAC	N.O	IP30	1	--
WFHT3	P2075	230 VAC	N.C	IP30	1	--

**NEW****WFHT-LCD**

Digital electronic thermostat for floor heating systems controlled by actuators with liquid cristal display showing all informations. Technical features as WFHT2 plus switch ON/OFF.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Actuator	Protection	Min. order	€uro
WFHT-LCD	P2076	24 VAC	N.O & N.C	IP30	1	--
WFHT-LCD	P2077	230 VAC	N.O & N.C	IP30	1	--

**NEW****BELUX-RF**

Digital room timing chrono thermostat with RF control.

Complete with 2 alkaline batteries LR03 AAA 1.5V: carica 1 anno.

Temperature setting range: 5 - 30°C. Differential at 20°C: 0.8K.

Operating status displayed red led (on/off). Transmission power rating : <10mW

Frequency: 433.92 MHz.

Compatible receiving unit : **Receiver unit provided with antenna** compatible with electronic timing chrono thermostat Series BELUX-RF. Power supply 230 Vac.

Contacts 10A / 250 Vac. Two-wire (2.5 mm²) connection.

N° 3 led's indicating operating status :

- Green led (ready in RF),
- red led (operative),
- black led (configuration)

On/Off switch. Distance: 50 m with free range of action. Output relay: 16A.

According to EEC 89/336 CE 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
BELUX-RF	P2078	2 batteries 1,5V	IP30	10	--

AVAILABLE SHORTLY

PROGRAMMABLE CHRONO THERMOSTAT, ROOM THERMOSTAT AND TIMER SWITCHES



BELUXTI

Room chrono thermostat with heat sensitive element of steam expansion diaphragm type, **with 3 contacts**. Stainless steel diaphragm. Temperature locking device at back of knob. Setting range: 5 - 30°C. Differential at 20°C: 0.8K. Contact load rating: 10 (2.5) A/250V. **Silver contacts 1000/1000.**

According to EEC 89/336, EEC 73/23, VDE.

Type	Part number	Power supply	Protection	Min. order	€uro
BELUXTI	0403202	230V	IP30	10	--

BELUXTIC

Like BELUXTI **but with indicator lamp and Summer/Winter switch.**

Type	Part number	Power supply	Protection	Min. order	€uro
BELUXTIC	0403302	230V	IP30	10	--

BELUXTOF

Like BELUXTI **but with indicator lamp and ON/OFF switch**

Type	Part number	Power supply	Protection	Min. order	€uro
BELUXTOF	0403162	230V	IP30	10	--



BELUX Digital

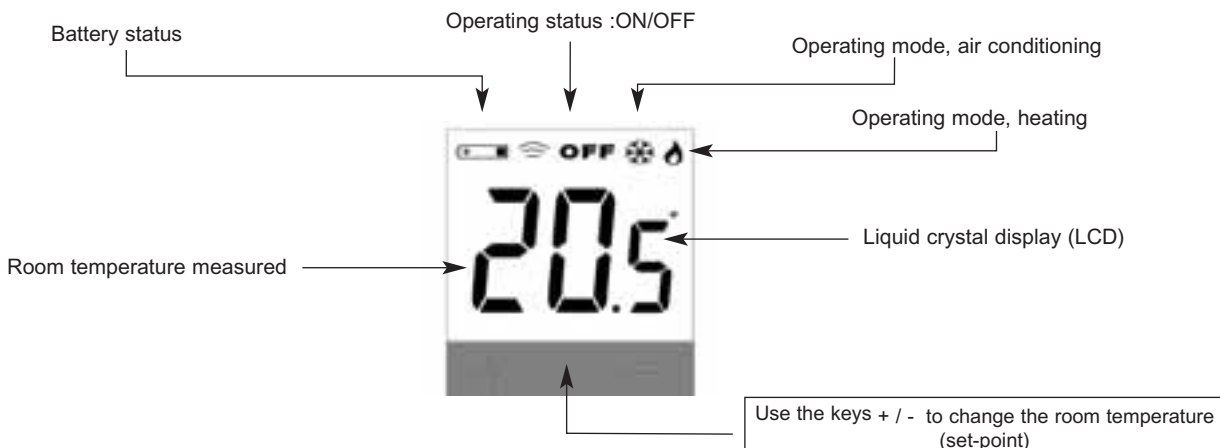
Digital room timing chrono thermostat, with NTC element. The two buttons under the LCD display serve for displaying room temperature, operating mode (heating/air conditioning), operating status (on/off), battery charge. Complete with 2 alkaline batteries LR03 (AAA) 1.5V. Temperature setting range: 5 - 35°C. Differential at 20°C: 0.5K. Contact Load rating: 8 A-250VAC. On/Off function Easy connection via two wires

According to EEC 89/336 CE 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
BELUX Digital	185000	2 batteries 1,5V	IP30	10	--

Belux Digital

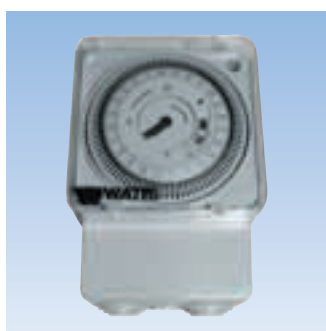
The BELUX series of room chrono thermostat is further enhanced with the digital version, featuring a compact model with design easily adaptable to any environment. This modern and smart thermostat includes an ample liquid crystal display in which the room temperature measured is displayed constantly: by pressing the button, it is possible to modify the required set-point temperature. For correct installation, position the thermostat at a height of 1.5 m from the floor, in an accessible place, sheltered from sources of heat or draughts of air, which could affect the temperature measurement.



**228R**

Electronic room regulator with built-in probe for modulating valves. Scale : 10 to 30 °C. Output signal: 2-10 Vdc. Power supply : 16 Vdc – Current drawn 10 mA. Provision for re-calibration with SPC function. Provision for connection to remote probe EGX-C. Suitable for servomotors ETM24.

Type	Part number	Description	Min. order	€uro
228R	228R		1	--
EGX-C	EGX-C	Remote probe	1	--

**ORLUXGM**

Electromechanical time switch quartz with running reserve, daily program, clockface and manual switch. Complete with casing and terminal board for wall mounting and on DIN bar. Power consumption : 2VA. Resistive load : 16A / 250Vac. Inductive load : 8A / 250Vac. Shortest switching time: 15 min. Battery with back-up 150 h. Ambient temperature : - 20°C / +55°C. Security level : II.

EN 60730-1 and 60730-2-7 approved.
According to EEC 89/336, EEC 73/23.

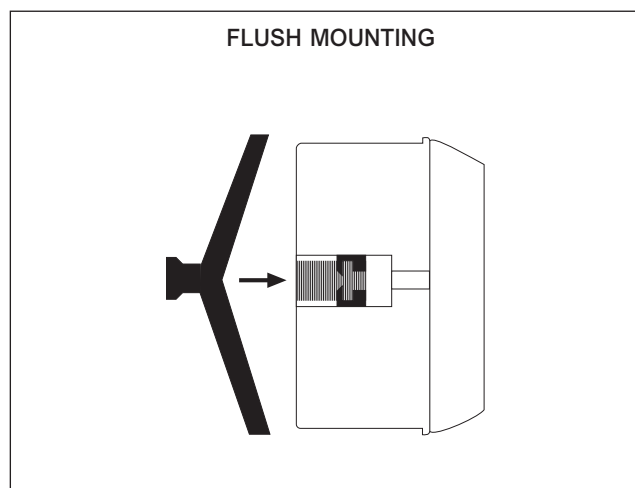
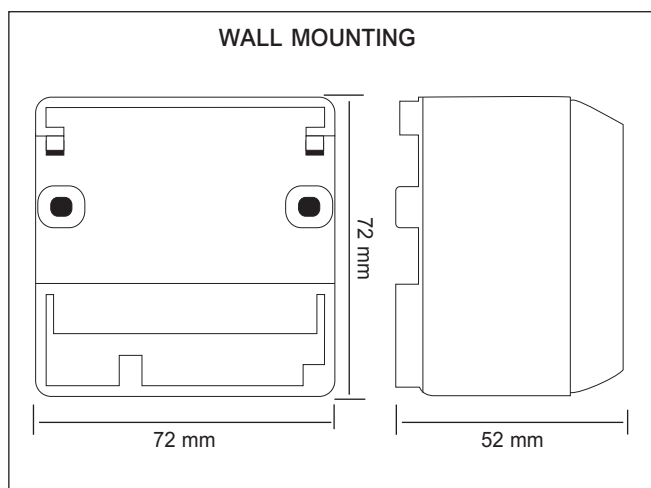
Type	Part number	Power supply	Min. order	€uro
ORLUXGM	0410501	230 Vac	1	--

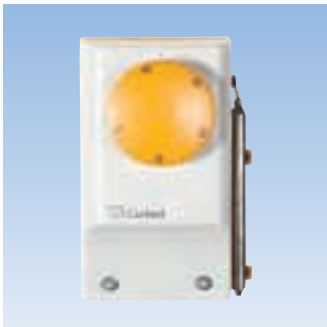
**OH6**

Hour counter for flush mounting 45x45 mm. Synchronous motor 1VA. Power supply: 230V - 50Hz. Counting capacity up to 99,999.99 hours.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Min. order	€uro
OH6	0410100	230V	1	--

Notes for mounting series ORLUX and OH6

CONTROL THERMOSTAT AND SAFETY THERMOSTAT

TAS

Room thermostat for greenhouses with 3 switching contacts. Setting range: 4 - 40°C. Differential at 20°C: 1.5K. Contact load rating: 10 (2.5) A/250V.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
TAS	0403381	230V	IP53	10	--


TCN

Compact contact thermostat with spring for holding on pipes up to 2". Setting range: 30 - 90°C. Differential at 20°C: < 10K. Contact load rating: 15 (2.5) A/250V.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
TCN	0404102	230V	IP30	10	--


TRE100

Immersion control thermostat with 3 switching contacts. Shut off heat supply when the water temperature reaches the set-point. Electrically welded stainless steel diaphragm. Sensitive bulb with sheath, 1/2" male connection. 100 mm long. High impact plastic case with external setting knob (30° - 90°). Differential: 8° ± 3°C. Contact load rating: 16 (5) A/250V; 380V 10 (1)A.

ISPESL approved. According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
TRE100	0405101	230V	IP53	10	--


TS100

Immersion control thermostat with fixed set-point, positive safety and manual resetting. Characteristics as per thermostat TRE100. Set temperature: 95°C. Sensitive bulb with sheath, 1/2" male connection, length 100 mm. Contact load rating: 10 (2) A/250V.

ISPESL approved. According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
TS100	0405201	230V	IP53	10	--

CONTROL THERMOSTAT AND SAFETY THERMOSTAT

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**THRT**

Sheath for thermostats TRE100 and TS100. 1/2" M connection, total length 100 mm.

Type	Part number	Min. order	€uro
THRT	0499010	10	--

**TRS100**

Immersion bi-thermostat for temperature control with manual resetting. Characteristics like thermostat TRE100. Temperature setting range: 30°C - 90°C. Differential: 8°C ± 3°C. Cut-off temperature: 95°C. Sensitive bulb with sheath 1/2" male connection, length 100 mm.

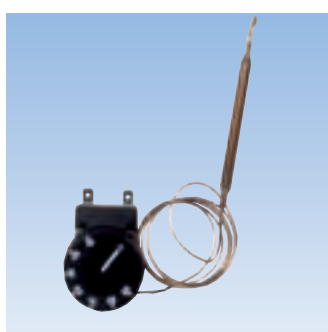
ISPESL approved. According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Protection	Min. order	€uro
TRS100	0405301	230V	IP53	10	--

**THTRS**

Sheath for thermostats TRS100. 1/2" M connection, total length 100 mm.

Type	Part number	Min. order	€uro
THTRS	0499011	1	--

**TRC100**

Capillary type control thermostat with 3 contacts. Copper capillary L = 900 mm (bulb 100 mm x dia. 6). Setting range: 30°C - 90°C. Contact load rating: 16 (5) A - 250 V. Complete with knob.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Min. order	€uro
TRC100	0408200	230V	100	--

CONTROL THERMOSTAT AND SAFETY THERMOSTAT



TBC100

Capillary and bulb type safety thermostat with manual resetting.
Set temperature: 97°C ± 3°C. Copper capillary L = 900 mm (bulb 100 mm x dia. 0.6).
Contact load rating: 16 (5) A - 250 V.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Min. order	€uro
TBC100	0408500	230V	100	--



MTV

Bimetallic contact type microthermostat for fan-coils. Only allows the fan to start when the water is at preset temperature. Complete with 250 mm leads, terminal and steel spring for holding on pipes. Contact load rating: 10A (2.5) 250V.
Contact opening temperature ≥ 35°C. Contact closing temperature: 42 ± 3°C.
Item ...302 is supplied with cables wired and insulated on the thermostat and 6.3mm female faston on the terminal.

According to EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Min. order	€uro
MTV	0408300	230V	100	--
MTV	0408301	230V	100	--
MTV	0408302	230V	100	--

FLOAT SWITCHES



IGD

DOLOMIT.
Float switch for liquid level control in tanks, wells, etc. (for drinking water and grey water)
Contact load rating: 16 (4) A - 230V. Peak current 36 A. Three-pole plastic-rubber cable.
Complete with counterweight. Protection grade IP67

According to EEC 89/336, EEC 73/23.

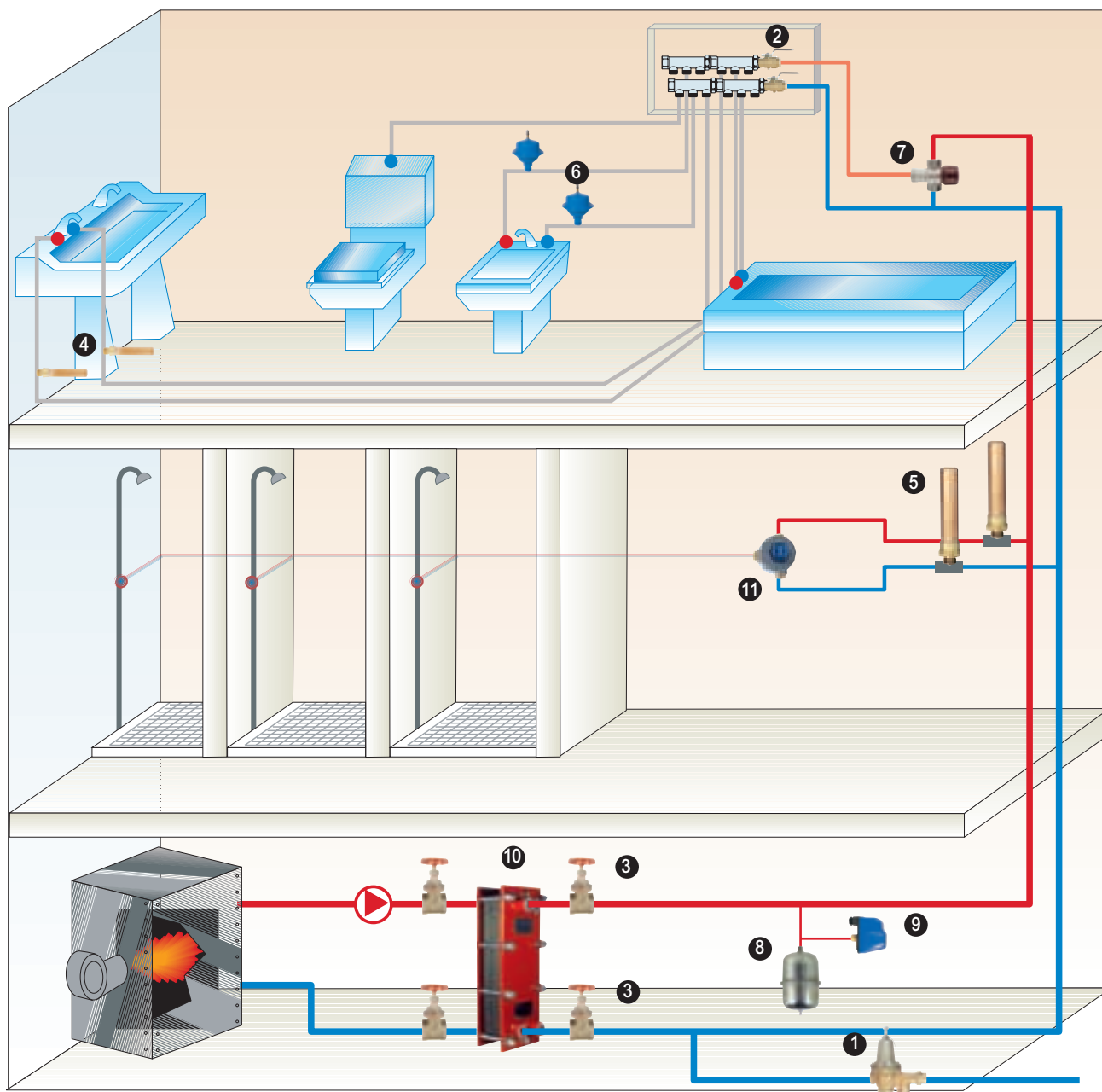
On request DOLOMIT can be supplied **with the following approvals** :
IMQ/VDE/CEBEC/DEMKO/KEMA/KEUR-IMQ/NEMKO/SEMKO/OEVE/SEV/
UTE-USE/AEE/SASQ/SETI.

Type	Part number	Cable	Min. order	€uro
IGD	0420202	2 m	10	--
IGD	0420203	3 m	10	--
IGD	0420205	5 m	10	--
IGD	0420210	10 m	10	--



Components for sanitary system

EXAMPLE OF APPLICATION



- | | |
|---|---|
| <ul style="list-style-type: none"> 1 Pressure reducer valves series U5B and DRV 2 Butterfly valves series 3800 3 Shut-off valves series 240 4 Mini water hammer arrestor series APW 5 Water hammer arrestor series CAW 6 Water hammer arrestor series VAM | <ul style="list-style-type: none"> 7 Thermostatic mixing valves series 61C - 62C 8 Expansion tanks series VEIS 9 Pressure switches series PA5 10 Heat exchangers for sanitary systems Series SCM and SCX 11 Thermostatic mixing valves series ULTRAMIX |
|---|---|

PRESSURE REDUCING VALVES

DRV

Diaphragm pressure reducing valve with compensated seat and complete with unions. Brass CW617N body and cap. Stainless steel strainer. 1/2" - 3/4" - 1" = 600 μ . 1.1/4" - 1.1/2" - 2" = 750 μ . Plastic valve seat. Interchangeable filter-regulator unit. Max. inlet pressure: 25 bar. Adjustable downstream pressure: 1.5 - 6 bar. Can be used for water, air and neutral gases up to 70°C. Pressure drops less than 1.3 bar at characteristic flow rate DIN. Noise < 20 dB - **Class 1 in Germany.**

According to DVGW, SVGW, TIN, NF (only for ND 1/2" and 3/4").

Type	Part number	Size body	Min. order	€uro
DRV	0501115	1/2" MM	10	--
DRV	0501120	3/4" MM	10	--
DRV	0501125	1" MM	10	--
DRV	0501132	1.1/4" MM	1	--
DRV	0501140	1.1/2" MM	1	--
DRV	0501150	2" MM	1	--


DRVM

Like DRV, but with pressure gauge M1-ABS50 (Scale 0 – 6 bar).

Type	Part number	Size body	Min. order	€uro
DRVM	0501315	1/2" MM	10	--
DRVM	0501320	3/4" MM	10	--
DRVM	0501325	1" MM	10	--
DRVM	0501332	1.1/4" MM	1	--
DRVM	0501340	1.1/2" MM	1	--
DRVM	0501350	2" MM	1	--


RDRV

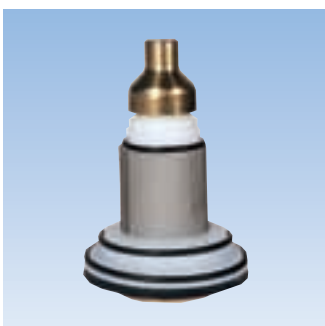
Spare unions complete with nut and seals for pressure reducing valves series DRV.

Type	Part number	Size body	Min. order	€uro
RDRV	0599001	1/2" MM	1	--
RDRV	0599002	3/4" MM	1	--
RDRV	0599003	1" MM	1	--
RDRV	0599004	1.1/4" MM	1	--
RDRV	0599005	1.1/2" MM	1	--
RDRV	0599006	2" MM	1	--


MDRV

Spare diaphragm for pressure reducing valves series DRV.

Type	Part number	Size body	Min. order	€uro
MDRV	0599007	1/2" MM	1	--
MDRV	0599008	3/4" MM	1	--
MDRV	0599009	1" MM	1	--
MDRV	0599010	1.1/4" MM	1	--
MDRV	0599011	1.1/2" MM	1	--
MDRV	0599012	2" MM	1	--


GRDRV

Spare regulator unit complete with cartridge, diaphragm and O-ring for pressure reducing valves series DRV.

Type	Part number	Size body	Min. order	€uro
GRDRV	0599025	1/2" MM	1	--
GRDRV	0599026	3/4" MM	1	--
GRDRV	0599027	1" MM	1	--
GRDRV	0599028	1.1/4" MM	1	--
GRDRV	0599029	1.1/2" MM	1	--
GRDRV	0599030	2" MM	1	--

PRESSURE REDUCING VALVES

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**DRVN**

Patented diaphragm pressure reducing valve with compensated seat, outlet pressure adjusting knob and external graduated scale for easy reading of set pressure. Complete with unions. Body and cap of shot-blasted stamped brass CW617N. Stainless steel filter cartridge. Pressure gauge connection on both sides: 1/4". Materials in contact with fluids KTW certified. Max. inlet pressure: 25 bar. Adjustable downstream pressure: 1.5 and 6 bar. Max. operating temperature: 70°C. Can be used for water, air and neutral gases. Noise < 20 dB - **Class 1 in Germany.**

According to DVGW.

Type	Part number	Size body	Min. order	€uro
DRVN	0502515	1/2" MM	10	--
DRVN	0502520	3/4" MM	10	--
DRVN	0502525	1" MM	10	--
DRVN	0502532	1.1/4" MM	1	--
DRVN	0502540	1.1/2" MM	1	--
DRVN	0502550	2" MM	1	--

**DRVMN**

Like DRVN but with pressure gauge M3A-ABS50 (Scale 0 - 6 bar).

Type	Part number	Size body	Min. order	€uro
DRVMN	0502615	1/2" MM	10	--
DRVMN	0502620	3/4" MM	10	--
DRVMN	0502625	1" MM	10	--
DRVMN	0502632	1.1/4" MM	1	--
DRVMN	0502640	1.1/2" MM	1	--
DRVMN	0502650	2" MM	1	--

**DRVE**

Single seated pressure reducing valves with female connections. Brass CW617N body. High impact plastic cap. Max. inlet pressure : 25 bar. Adjustable downstream pressure : 1.5 - 6 bar. Diaphragm pressure reducing valve, compact design. Brass CW617N body. Max. upstream pressure: 25 bar. Adjustable downstream pressure : 1.5 - 6bar. Max fluid temperature : 70°C

Type	Part number	Size body	Min. order	€uro
DRVE	0502015	1/2" FF	1	--
DRVE	0502020	3/4" FF	1	--

Cavitation diagram for pressure reducing valves series DRV

CAVITATION

The cavitation diagram shows three operating zones of the pressure reducing valve plotted against the upstream and downstream pressures, namely :

Zone C : normal duty, no cavitation

Zone B : medium duty, risk of cavitation

Zone A : heavy duty, the pressure reducing valve shows cavitation.

Continuous operation in the red cavitation zone could cause rapid damage of the internal parts.

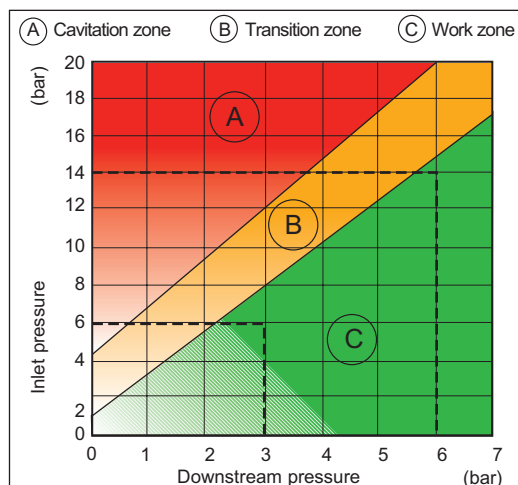
SIZING**Example 1 (cavitation)**

Pressure reducing valve with : Inlet pressure P1 = 14 bar- Outlet pressure P2 = 3 bar.

From the cavitation diagram it can be seen that the pressure reducing valve is constantly working in the red zone. To avoid rapid deterioration, two pressure reducing valves could be used, one connected upstream to the other.

Upstream pressure reducing valve: pressure front from 14 to 6 bar (green zone).

Downstream pressure reducing valve: pressure front from 6 to 3 bar (green zone).



PRESSURE REDUCING VALVES

DRVED

Diaphragm pressure reducing valve, compact design.
 Brass CW602N body (anti-dezincification alloy), with male connections complete with swivel nut.
 Pipe dia. 15 and 22. Gauge connection 1/4". Max. upstream pressure : 25 bar.
 Adjustable downstream pressure: 1.5 - 6 bar. Max. fluid temperature : 70°C.
 Can be used for water, compressed air. Mounting in any position.

WRAS approved.

Type	Part number	Size body	Min. order	€uro
DRVED	0502115	15	10	--
DRVED	0502120	22	10	--


REDUFIX

Diaphragm pressure reducing valve, designed for protecting electrical heating appliances or appliance for domestic hot water production. Anti-dezincification (anti-corrosion) brass body, especially suitable for single users. Gauge connection 1/4" female.
 Can be installed in all positions. Max. upstream pressure: 15 bar. Max. temperature: 70 °C.

Type	Part number	Dimension	Min. order	€uro
REDUFIX	82000	1/2"FF	10	--
REDUFIX	82210	3/4"MF con dado girevole	10	--
REDUFIX	82110	3/4"MM	10	--


COMPACT2RM

Electronic system for pumps. Electronic controller Compact 2RM orders the automatic start and stop of the water pump when opening and closing any tap or valve of installation. When the water pump starts, it keeps while exists any tap opened in the system, giving a constant flow and pressure to the network.

Max water flow temperature : 60°C. Max working pressure : 10 bar.

Max flow rate : 10.000l/h. Starting pressure : 1,5 - 2,5 bar

Supply voltage : 220/240Vca. Frequency : 50/60 Hz. Max intensity : 10(6) A.

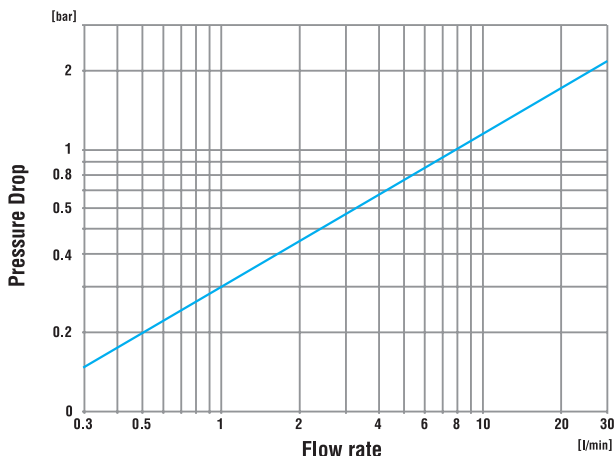
Protection : IP65. Max power of pump : 1,5CV (1100 W). Inlet male : 1". Outlet male : 1".

Pressure gauge. Manual start switch (RESET). Tension led (POWER).

Pump-working led (ON). Security system led (FAILURE). Installing : vertical position.

Conform with 89/336 EEC, 73/23/EEC.

Type	Part number	Power supply	Min. order	€uro
COMPACT2RM	0605226	220/240 Vca	1	--

REDUFIX chart

The great advantages of COMPACT2RM

- Automatic start / stop of the electrically-driven pump depending on a minimum difference in water pressure (opening / closing of a valve).
- Elimination of pressure switch, 5-way fitting, float, probes, safety flow switch, expansion vessel.
- Saving in labour and installation space.
- Easy installation.
- Protection of the electrically-driven pump in the case of water supply failure.
- Display of system performance (pressure reading by pressure gauge).

All pump control and protection functions are incorporated in just the one unit !!

PRESSURE REDUCING VALVES

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U5B

Diaphragm pressure reducing valve. Watts U.S. Patent N° 3. 115. 154. Heavy duty bronze series, with large built-in filter and separate connection for quick maintenance. Internal by-pass for upstream discharge of any downstream overpressures. Bronze body, cast iron cap. Stainless steel filter and seat. Diaphragm made of Nordel reinforced with Nylon fibres. Max. inlet pressure: 20 bar. Adjustable downstream pressure: 1.5 - 5 bar. Can be used for water, air and neutral gases up to 80°C.

According to ASSE, ANSI, CSA, UPC.

Type	Part number	Size body	Min. order	€uro
U5B	1506115	1/2" FF	1	--
U5B	1506120	3/4" FF	1	--
U5B	1506125	1" FF	1	--
U5B	1506132	1.1/4" FF	1	--
U5B	1506140	1.1/2" FF	1	--
U5B	1506150	2" FF	1	--



PRECISIO

Bracketed diaphragm pressure reducing valve; complete with 2 pressure gauge connections 1/4"F. Reduces the pressure without lowering the flow rate. Rugged and reliable unit not requiring maintenance. Complies with comfort and acoustic standards. Plug connected to diaphragm through bracket. Pressure set through PHILLIPS screw. Its compact size allows interchangeability with most of the pressure reducing valves on the market. Brass DZR (corrosion-resistant) body. Max. inlet pressure : 16 bar. Adjustable downstream pressure: 1.5 to 5.5 bar. Max. operating temperature: 80° C.

Type	Part number	Size body	Min. order	€uro
PRECISIO	1506615	1/2" FF	1	--
PRECISIO	1506620	3/4" FF	1	--
PRECISIO	1506621	3/4" MM	1	--

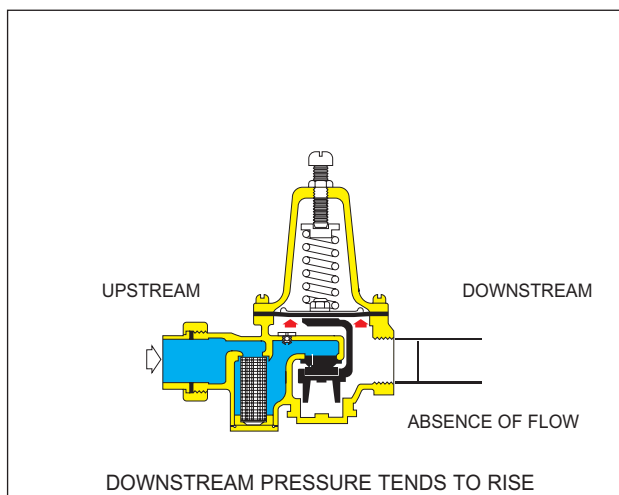
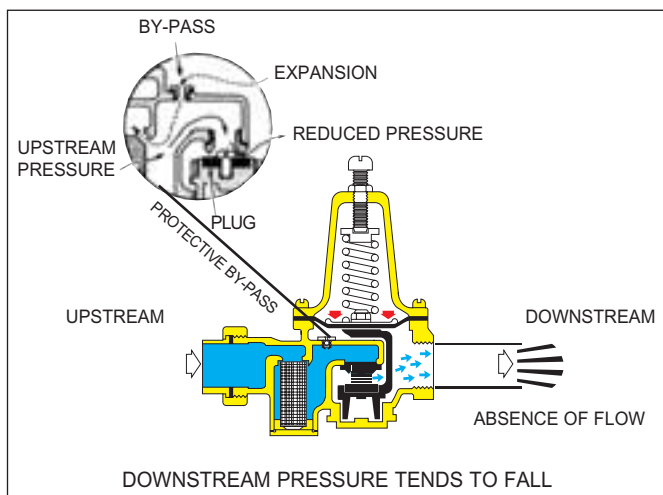


KU5B

Spares kit for pressure reducing valves series U58 complete with filter, seals, O-rings, diaphragm, plug seat and plug seal.

Type	Part number	Size body	Min. order	€uro
KU5B	1599041	1/2" FF	1	--
KU5B	1599042	3/4" FF	1	--
KU5B	1599043	1" FF	1	--
KU5B	1599044	1.1/4" FF	1	--
KU5B	1599045	1.1/2" FF	1	--
KU5B	1599046	2" FF	1	--

Pressure reducing valves covered by WATTS US PATENT N° 3,115,154



PRESSURE REDUCING VALVES

DRVD16

Flanged pressure reducing valve with single spring-compensated seat, pressure gauge connections upstream and downstream 1/4" (ND 50 - 65) and 3/8" (ND 80 - 200).

Cast iron body, cap and flanges with epoxy finish. Max. inlet pressure: 16 bar.

Adjustable downstream pressures: standard version: 1.5 - 6 bar.

Special version: 2 - 8 bar / 4 - 12 bar.

Can be used for water, air and neutral gases up to 80°C.

Flanged connections UNI 2223.

N.B. For information on delivery dates for special versions, please contact the WATTS Cazzaniga Sales Department.

Type	Part number	Size body	bar	Min. order	€uro
DRVD16	0504053	50	1,5 - 6	1	--
DRVD16	0504068	65	1,5 - 6	1	--
DRVD16	0504083	80	1,5 - 6	1	--
DRVD16	0504103	100	1,5 - 6	1	--
DRVD16	0504128	125	1,5 - 6	1	--
DRVD16	0504153	150	1,5 - 6	1	--
DRVD16	0504203	200	1,5 - 6	1	--
DRVD16	0504054	50	2 - 8	1	--
DRVD16	0504069	65	2 - 8	1	--
DRVD16	0504084	80	2 - 8	1	--
DRVD16	0504104	100	2 - 8	1	--
DRVD16	0504129	125	2 - 8	1	--
DRVD16	0504154	150	2 - 8	1	--
DRVD16	0504204	200	2 - 8	1	--
DRVD16	0504055	50	4 - 12	1	--
DRVD16	0504070	65	4 - 12	1	--
DRVD16	0504085	80	4 - 12	1	--
DRVD16	0504105	100	4 - 12	1	--
DRVD16	0504130	125	4 - 12	1	--
DRVD16	0504155	150	4 - 12	1	--
DRVD16	0504205	200	4 - 12	1	--


DRVD25

Like DRVD16 but with max. inlet pressure: 25 bar.

Type	Part number	Size body	bar	Min. order	€uro
DRVD25	0504050	50	1,5 - 6	1	--
DRVD25	0504065	65	1,5 - 6	1	--
DRVD25	0504080	80	1,5 - 6	1	--
DRVD25	0504100	100	1,5 - 6	1	--
DRVD25	0504125	125	1,5 - 6	1	--
DRVD25	0504150	150	1,5 - 6	1	--
DRVD25	0504200	200	1,5 - 6	1	--
DRVD25	0504051	50	2 - 8	1	--
DRVD25	0504066	65	2 - 8	1	--
DRVD25	0504081	80	2 - 8	1	--
DRVD25	0504101	100	2 - 8	1	--
DRVD25	0504126	125	2 - 8	1	--
DRVD25	0504151	150	2 - 8	1	--
DRVD25	0504201	200	2 - 8	1	--
DRVD25	0504052	50	4 - 12	1	--
DRVD25	0504067	65	4 - 12	1	--
DRVD25	0504082	80	4 - 12	1	--
DRVD25	0504102	100	4 - 12	1	--
DRVD25	0504127	125	4 - 12	1	--
DRVD25	0504152	150	4 - 12	1	--
DRVD25	0504202	200	4 - 12	1	--

PRESSURE REDUCING VALVES



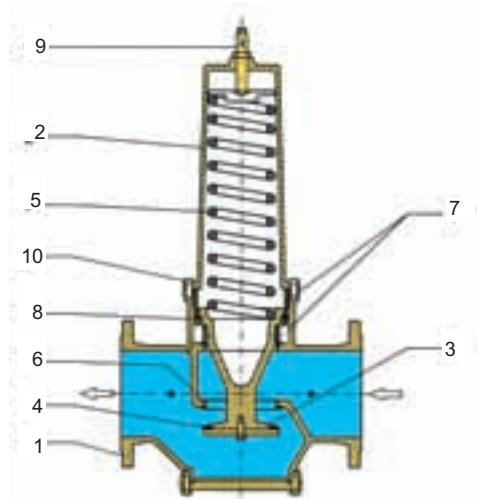
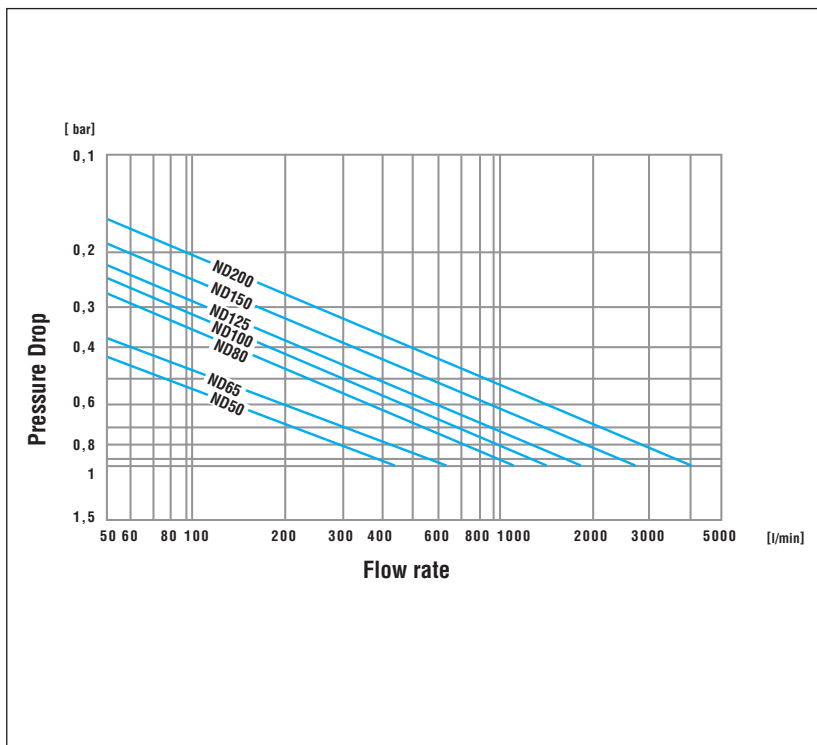
DRVD40

Like DRVD16 but with max. inlet pressure: 40 bar.

Type	Part number	Size body	bar	Min. order	€uro
DRVD40	0504056	50	1,5 - 6	1	--
DRVD40	0504071	65	1,5 - 6	1	--
DRVD40	0504086	80	1,5 - 6	1	--
DRVD40	0504106	100	1,5 - 6	1	--
DRVD40	0504131	125	1,5 - 6	1	--
DRVD40	0504156	150	1,5 - 6	1	--
DRVD40	0504057	50	2 - 8	1	--
DRVD40	0504072	65	2 - 8	1	--
DRVD40	0504087	80	2 - 8	1	--
DRVD40	0504107	100	2 - 8	1	--
DRVD40	0504132	125	2 - 8	1	--
DRVD40	0504157	150	2 - 8	1	--
DRVD40	0504058	50	4 - 12	1	--
DRVD40	0504073	65	4 - 12	1	--
DRVD40	0504088	80	4 - 12	1	--
DRVD40	0504108	100	4 - 12	1	--
DRVD40	0504133	125	4 - 12	1	--
DRVD40	0504158	150	4 - 12	1	--

Pressure reducing valves series DRVD

FLOW RATE CHART - PRESSURE DROP



Legend :

- 1 Body
- 2 Cap
- 3 Plug
- 4 Packing
- 5 Spring
- 6 Seal ring
- 7 Guide bushings
- 8 Lip seal
- 9 Setting screw
- 10 Cap mounting screws

AUTOMATIC CONTROL VALVES

SERIES EU100

Automatic self-acting control valves designed for regulating water flow in water pipelines, such as: Waterworks, irrigation, fire-fighting, process plants, etc.

The main functions performed by the valve (also valve combinations) are as follows:

- Shut-off - check - reduction, stabilization of the pressure - relief, overpressure
- pressure support - level control - flow control.

The more advanced models are equipped with a central control unit (EU900), of AISI 303 stainless steel construction, which allows the regulating action to be performed as required by setting the flow opening and closing speeds as well as the response gradient to the deviations. The pilot devices serve for determining the type of function and the set-point of the parameter under control. All valves are provided with visual indication of the valve plug stem position.

Technical characteristics common to all models

Valve body and cover	Malleable cast iron GGG40 with full epoxy lining 150 μ
Stem guide in the cover	Self-lubricating bronze
Inner valve parts	Steel AISI (316, 303, 302)
Piattelli membrana	Steel ASTM AA 36 (DN 50-150) or cast iron GGG25 (DN 200-600) with full epoxy lining
Plug seal and diaphragm	Nitrile rubber BUNA N 70 Sh
Body and cover, pilot device	Nickel-plated bronze
Piping and fittings, pilot circuit	Nickel-plated brass
Minimum operating differential pressure	0.25 bar (standard spring) 0.50 bar (reinforced spring)
Max. operating temperature	70 °C

PRINCIPIO DI FUNZIONAMENTO

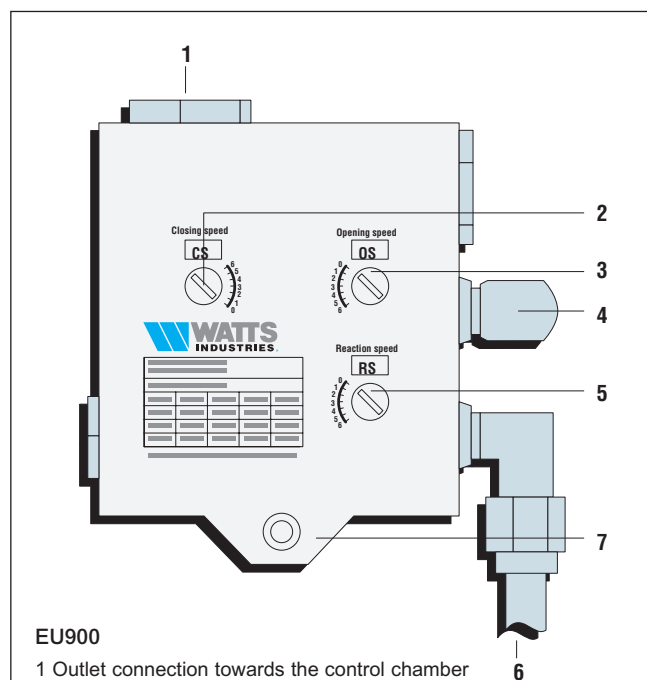
The self-acting valves of Series EU100 consist of a main two-way body of globe type Fig 1, whose flow section is controlled by a shaped plug actuated by the energy supplied by the flow under control through a diaphragm inserted between the body and cover to form the operating chamber. When a small quantity of the fluid flows through the water control circuit, this circuit places the following ports in communication with each other :

- upstream port with pressure generally higher
- downstream port with pressure generally lower
- port of the operating chamber with regulated intermediate pressure.

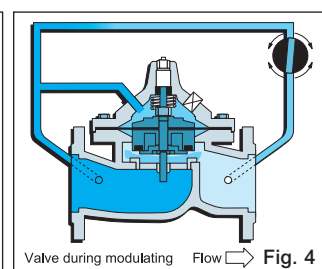
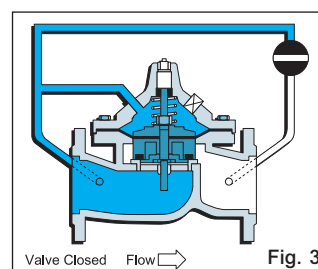
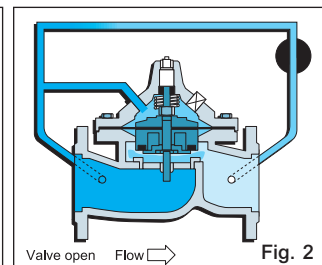
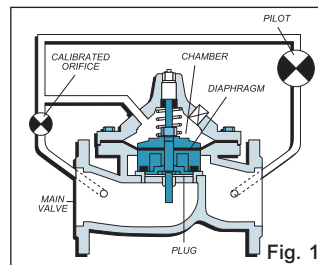
An adjustable throttle is installed at the outlet of the upstream port, and before communication with the operating chamber. The pilot device is installed at the inlet of the downstream port. When the pilot device is fully open Fig 2 it allows direct discharge of the operating fluid coming from the upstream port; this causes a drop in pressure due to the throttling and determines a low level of pressure in the operating chamber and discharge of the latter.

The valve plug is raised to full opening position, thrust by the fluid under control. The fully closed pilot device Fig 3 causes the same high pressure present on upstream side to be present in the operating chamber (throttling with zero flow does not cause drops) and determines the fluid under control to be shut-off.

When the pilot device is in intermediate position Fig 4 it allows partial discharge of the operating fluid coming from the upstream port; this produces a proportional drop in pressure due to the throttling and determines, in the operating chamber, an intermediate level of pressure and volume. Hence the valve plug modulates the lifting of the valve plug (in opening or in closing) thus ensuring that the required levels of flow or pressure are reached.


EU900

- 1 Outlet connection towards the control chamber
- 2 Setting of closing speed
- 3 Setting of opening speed
- 4 Outlet connection towards the pilot
- 5 Calibration of the gradient of response to deviations
- 6 Inlet connection of the upstream port
- 7 Positioning of plate padlock



AUTOMATIC CONTROL VALVES

**EU115**

Self-acting diaphragm valve serving to reduce and stabilize the **downstream** pressure. The higher, upstream pressure is adjusted, on downstream side, to a lower and constant level even in the presence of upstream overpressure and/or variations in flow rate.

Version with needle valves. Adjustment range of pilot device :

STANDARD : 1.4 - 12.0 bar.

On request : 0.1 - 2.0 bar

7.0 - 21.0 bar (stainless steel version)

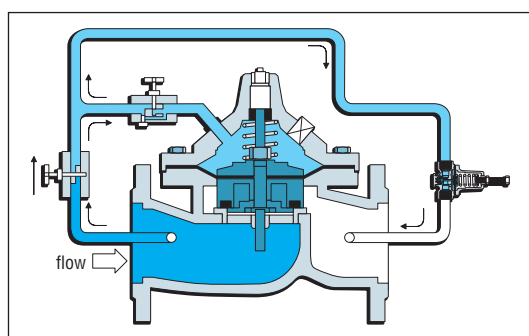
The additional non-return function is available on request (EU115-3).

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU115	0527001	50	10/16	47	1	--
EU115	0527002	65	10/16	52	1	--
EU115	0527003	80	10/16	58	1	--
EU115	0527004	100	10/16	120	1	--
EU115	0527005	125	10/16	215	1	--
EU115	0527006	150	10/16	228	1	--
EU115	0527008	200	16	456	1	--
EU115	0527010	250	16	847	1	--
EU115	0527012	300	16	1370	1	--
EU115	0527014	350	16	1450	1	--
EU115	0527016	400	16	1767	1	--
EU115	0527018	500	16	2480	1	--
EU115	0527020	600	16	3205	1	--

**EU115-UR**

Like EU115 valve but **with regulator unit EU900.**

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU115-UR	0527050	50	10/16	47	1	--
EU115-UR	0527065	65	10/16	52	1	--
EU115-UR	0527080	80	10/16	58	1	--
EU115-UR	0527100	100	10/16	120	1	--
EU115-UR	0527125	125	10/16	215	1	--
EU115-UR	0527150	150	10/16	228	1	--
EU115-UR	0527200	200	10	456	1	--
EU115-UR	0527201	200	16	456	1	--
EU115-UR	0527250	250	10	847	1	--
EU115-UR	0527251	250	16	847	1	--
EU115-UR	0527300	300	10	1370	1	--
EU115-UR	0527301	300	16	1370	1	--
EU115-UR	0527350	350	10	1450	1	--
EU115-UR	0527351	350	16	1450	1	--
EU115-UR	0527400	400	10	1767	1	--
EU115-UR	0527401	400	16	1767	1	--
EU115-UR	0527500	500	10	2480	1	--
EU115-UR	0527501	500	16	2480	1	--
EU115-UR	0527600	600	10	3205	1	--
EU115-UR	0527601	600	16	3205	1	--



AUTOMATIC CONTROL VALVES

EU116

Self-acting diaphragm valve serving to hold the **downstream** pressure at a constant and adjustable level. When the level of upstream pressure tends to decrease, it is held by gradually reducing the flow rate; instead when the downstream pressure level tends to increase, it is held by gradually increasing the flow rate at the outlet (**relief or overpressure** function). Version with needle valves. Adjustment range of pilot device :

STANDARD : 1.4 - 12.0 bar

On request : 0.1 - 2.0 bar or 7.0 - 21.0 bar

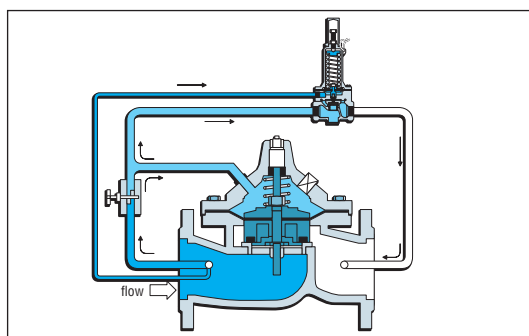
The additional non-return function is available on request (EU116-3).

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU116	0528001	50	10/16	47	1	--
EU116	0528002	65	10/16	52	1	--
EU116	0528003	80	10/16	58	1	--
EU116	0528004	100	10/16	120	1	--
EU116	0528005	125	10/16	215	1	--
EU116	0528006	150	10/16	228	1	--
EU116	0528008	200	16	456	1	--
EU116	0528010	250	16	847	1	--
EU116	0528012	300	16	1370	1	--
EU116	0528014	350	16	1450	1	--
EU116	0528016	400	16	1767	1	--
EU116	0528018	500	16	2480	1	--
EU116	0528020	600	16	3205	1	--


EU116-UR

Like EU116 valve but **with regulator unit EU900**.

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU116-UR	0528050	50	10/16	47	1	--
EU116-UR	0528065	65	10/16	52	1	--
EU116-UR	0528080	80	10/16	58	1	--
EU116-UR	0528100	100	10/16	120	1	--
EU116-UR	0528125	125	10/16	215	1	--
EU116-UR	0528150	150	10/16	228	1	--
EU116-UR	0528200	200	10	456	1	--
EU116-UR	0528201	200	16	456	1	--
EU116-UR	0528250	250	10	847	1	--
EU116-UR	0528251	250	16	847	1	--
EU116-UR	0528300	300	10	1370	1	--
EU116-UR	0528301	300	16	1370	1	--
EU116-UR	0528350	350	10	1450	1	--
EU116-UR	0528351	350	16	1450	1	--
EU116-UR	0528400	400	10	1767	1	--
EU116-UR	0528401	400	16	1767	1	--
EU116-UR	0528500	500	10	2480	1	--
EU116-UR	0528501	500	16	2480	1	--
EU116-UR	0528600	600	10	3205	1	--
EU116-UR	0528601	600	16	3205	1	--



AUTOMATIC CONTROL VALVES



EU114

Self-acting diaphragm valve **servicing to control the flow rate** passing the valve at a constant and settable value: normally the maximum acceptable drawing off value is held. The flow rate is monitored continuously through a calibrated flange located upstream of the valve, whose piezometric sockets are connected to the special pilot device which also allows setting with a differential pressure gauge. **Version with needle valves. Obviously the available flow rate range (see table below) depends on the ND and calibrated flange; therefore it should be stated when ordering.**

Range of differential pressure adjustment with STANDARD pilot device: 0.2 - 1 bar.

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU114	0526001	50	10/16	47	1	--
EU114	0526002	65	10/16	52	1	--
EU114	0526003	80	10/16	58	1	--
EU114	0526004	100	10/16	120	1	--
EU114	0526005	125	10/16	215	1	--
EU114	0526006	150	10/16	228	1	--
EU114	0526008	200	16	456	1	--
EU114	0526010	250	16	847	1	--
EU114	0526012	300	16	1370	1	--
EU114	0526014	350	16	1450	1	--
EU114	0526016	400	16	1767	1	--
EU114	0526018	500	16	2480	1	--
EU114	0526020	600	16	3205	1	--



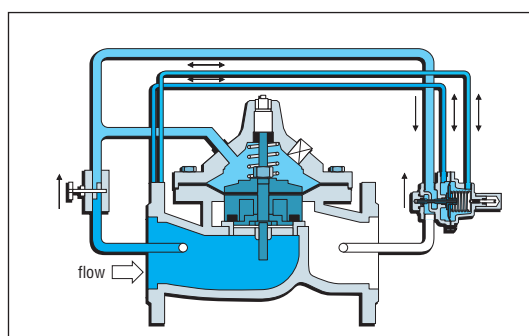
EU114-UR

Like EU114 valve but **with regulator unit EU900.**

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU114-UR	0526050	50	10/16	47	1	--
EU114-UR	0526065	65	10/16	52	1	--
EU114-UR	0526080	80	10/16	58	1	--
EU114-UR	0526100	100	10/16	120	1	--
EU114-UR	0526125	125	10/16	215	1	--
EU114-UR	0526150	150	10/16	228	1	--
EU114-UR	0526200	200	10	456	1	--
EU114-UR	0526201	200	16	456	1	--
EU114-UR	0526250	250	10	847	1	--
EU114-UR	0526251	250	16	847	1	--
EU114-UR	0526300	300	10	1370	1	--
EU114-UR	0526301	300	16	1370	1	--
EU114-UR	0526350	350	10	1450	1	--
EU114-UR	0526351	350	16	1450	1	--
EU114-UR	0526400	400	10	1767	1	--
EU114-UR	0526401	400	16	1767	1	--
EU114-UR	0526500	500	10	2480	1	--
EU114-UR	0526501	500	16	2480	1	--
EU114-UR	0526600	600	10	3205	1	--
EU114-UR	0526601	600	16	3205	1	--

Chart set flanges

EU114	
ND	Flow rate m ³ /h
50	4 - 10
	10 - 25
	25 - 35
65	12 - 37
	15 - 45
80	10 - 25
	20 - 40
	30 - 50
	35 - 55
100	45 - 75
	30 - 45
125	30 - 80
	35 - 120
150	35 - 120
	60 - 200
200	110 - 280
	Other models on request.



AUTOMATIC CONTROL VALVES

EU127

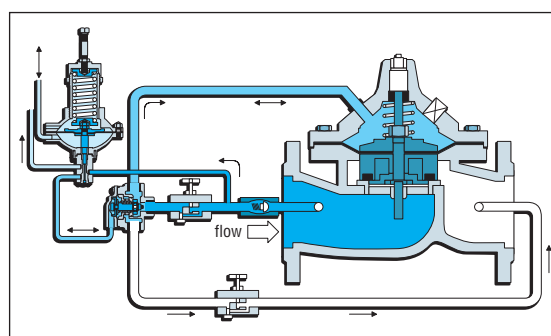
Self-acting diaphragm valve with function of **piezometric level control** for the tank (piezometric tower). The valve closes the flow when max. level is reached, then it is reopened proportionally with a variable proportional band from 0.3 to 1.0 m w.g. depending on the adjustment range chosen. The piezometric pilot device is fastened to the main valve located at the bottom of the tank and is connected to the latter with piezometric tubes (not included in the supply). **Version with needle valves.** Adjustment range of pilot device : STANDARD: 3 - 20 m w.g.
On request : 1 - 6 m.w.g. or 15-65 m.w.g.

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU127	0529001	50	10/16	47	1	--
EU127	0529002	65	10/16	52	1	--
EU127	0529003	80	10/16	58	1	--
EU127	0529004	100	10/16	120	1	--
EU127	0529005	125	10/16	215	1	--
EU127	0529006	150	10/16	228	1	--
EU127	0529008	200	16	456	1	--
EU127	0529010	250	16	847	1	--
EU127	0529012	300	16	1370	1	--
EU127	0529014	350	16	1450	1	--
EU127	0529016	400	16	1767	1	--
EU127	0529018	500	16	2480	1	--
EU127	0529020	600	16	3205	1	--


EU127-UR

Like EU127 valve but **with regulator unit EU900.**

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU127-UR	0529050	50	10/16	47	1	--
EU127-UR	0529065	65	10/16	52	1	--
EU127-UR	0529080	80	10/16	58	1	--
EU127-UR	0529100	100	10/16	120	1	--
EU127-UR	0529125	125	10/16	215	1	--
EU127-UR	0529150	150	10/16	228	1	--
EU127-UR	0529200	200	10	456	1	--
EU127-UR	0529201	200	16	456	1	--
EU127-UR	0529250	250	10	847	1	--
EU127-UR	0529251	250	16	847	1	--
EU127-UR	0529300	300	10	1370	1	--
EU127-UR	0529301	300	16	1370	1	--
EU127-UR	0529350	350	10	1450	1	--
EU127-UR	0529351	350	16	1450	1	--
EU127-UR	0529400	400	10	1767	1	--
EU127-UR	0529401	400	16	1767	1	--
EU127-UR	0529500	500	10	2480	1	--
EU127-UR	0529501	500	16	2480	1	--
EU127-UR	0529600	600	10	3205	1	--
EU127-UR	0529601	600	16	3205	1	--



AUTOMATIC CONTROL VALVES

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**EU110-14**

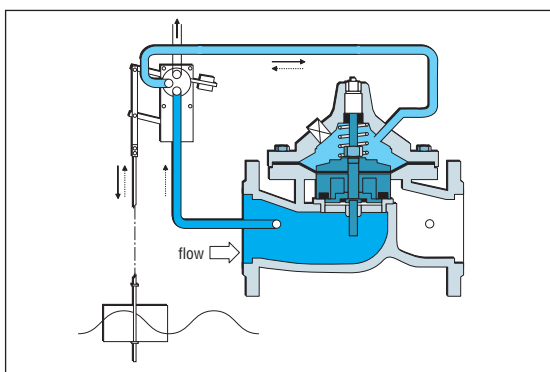
Self-acting diaphragm valve with function of **float type level control** for storage tanks in general. The valve closes the flow when max. level is reached, then reopens it at minimum level. **Version with needle valves.** The float pilot device is normally placed inside the tank while the main valve it is at bottom of the tank. The float operating rod allows setting the differential between max. and min. levels between 0.5 and 2.0 metres. Standard rod length 2 metres.

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU110-14	0522041	50	10/16	47	1	--
EU110-14	0522042	65	10/16	52	1	--
EU110-14	0522043	80	10/16	58	1	--
EU110-14	0522044	100	10/16	120	1	--
EU110-14	0522045	125	10/16	215	1	--
EU110-14	0522046	150	10/16	228	1	--
EU110-14	0522048	200	16	456	1	--
EU110-14	0522050	250	16	847	1	--
EU110-14	0522052	300	16	1370	1	--
EU110-14	0522054	350	16	1450	1	--
EU110-14	0522056	400	16	1767	1	--
EU110-14	0522058	500	16	2480	1	--
EU110-14	0522060	600	16	3205	1	--

**EU110-14-UR**

Like EU110-14 valve but **with regulator unit EU900.**

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU110-14-UR	0522061	50	10/16	47	1	--
EU110-14-UR	0522062	65	10/16	52	1	--
EU110-14-UR	0522063	80	10/16	58	1	--
EU110-14-UR	0522064	100	10/16	120	1	--
EU110-14-UR	0522065	125	10/16	215	1	--
EU110-14-UR	0522066	150	10/16	228	1	--
EU110-14-UR	0522068	200	16	456	1	--
EU110-14-UR	0522070	250	16	847	1	--
EU110-14-UR	0522072	300	16	1370	1	--
EU110-14-UR	0522074	350	16	1450	1	--
EU110-14-UR	0522076	400	16	1767	1	--
EU110-14-UR	0522078	500	16	2480	1	--
EU110-14-UR	0522080	600	16	3205	1	--



AUTOMATIC CONTROL VALVES

EU110-10

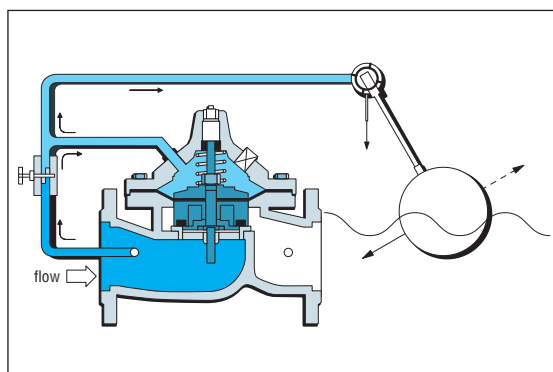
Like series EU 110-14 but with reverse operation : it opens the flow at max. level and closes it at minimum level (**overflow version**). **Version with needle valves.**

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU110-10	0522001	50	10/16	47	1	--
EU110-10	0522002	65	10/16	52	1	--
EU110-10	0522003	80	10/16	58	1	--
EU110-10	0522004	100	10/16	120	1	--
EU110-10	0522005	125	10/16	215	1	--
EU110-10	0522006	150	10/16	228	1	--
EU110-10	0522008	200	16	456	1	--
EU110-10	0522010	250	16	847	1	--
EU110-10	0522012	300	16	1370	1	--
EU110-10	0522014	350	16	1450	1	--
EU110-10	0522016	400	16	1767	1	--
EU110-10	0522018	500	16	2480	1	--
EU110-10	0522020	600	16	3205	1	--


EU110-10-UR

Like EU110-10 valve but **with regulator unit EU900.**

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU110-10-UR	0522021	50	10/16	47	1	--
EU110-10-UR	0522022	65	10/16	52	1	--
EU110-10-UR	0522023	80	10/16	58	1	--
EU110-10-UR	0522024	100	10/16	120	1	--
EU110-10-UR	0522025	125	10/16	215	1	--
EU110-10-UR	0522026	150	10/16	228	1	--
EU110-10-UR	0522028	200	16	456	1	--
EU110-10-UR	0522030	250	16	847	1	--
EU110-10-UR	0522032	300	16	1370	1	--
EU110-10-UR	0522034	350	16	1450	1	--
EU110-10-UR	0522036	400	16	1767	1	--
EU110-10-UR	0522038	500	16	2480	1	--
EU110-10-UR	0522040	600	16	3205	1	--



AUTOMATIC CONTROL VALVES

**EU113**

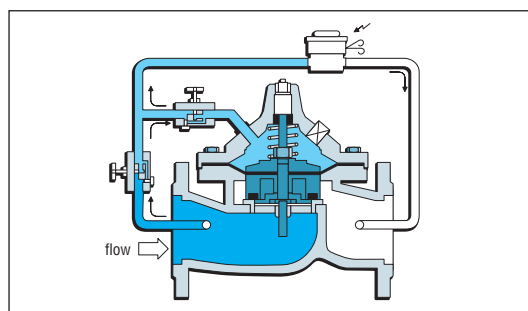
Self-acting diaphragm valve serving to **shut off the flow rate through the valve via a remote electrical control**. The pilot circuit is provided with a solenoid valve, whose function must be stated whether as normally open (NO) or normally closed (NC).
Version with needle valves. The additional non-return function is available on request.

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU113	0525001	50	10/16	47	1	--
EU113	0525002	65	10/16	52	1	--
EU113	0525003	80	10/16	58	1	--
EU113	0525004	100	10/16	120	1	--
EU113	0525005	125	10/16	215	1	--
EU113	0525006	150	10/16	228	1	--
EU113	0525007	200	10	456	1	--
EU113	0525008	200	16	456	1	--
EU113	0525009	250	10	847	1	--
EU113	0525010	250	16	847	1	--
EU113	0525011	300	10	1370	1	--
EU113	0525012	300	16	1370	1	--
EU113	0525013	350	10	1450	1	--
EU113	0525014	350	16	1450	1	--
EU113	0525015	400	10	1767	1	--
EU113	0525016	400	16	1767	1	--
EU113	0525017	500	10	2480	1	--
EU113	0525018	500	16	2480	1	--
EU113	0525019	600	10	3205	1	--
EU113	0525020	600	16	3205	1	--

**EU113-UR**

Like EU113 valve but **with regulator unit EU900**.

Type	Part number	Size body	Np	Kvs	Min. order	€uro
EU113-UR	0525050	50	10/16	47	1	--
EU113-UR	0525065	65	10/16	52	1	--
EU113-UR	0525080	80	10/16	58	1	--
EU113-UR	0525100	100	10/16	120	1	--
EU113-UR	0525125	125	10/16	215	1	--
EU113-UR	0525150	150	10/16	228	1	--
EU113-UR	0525200	200	10	456	1	--
EU113-UR	0525201	200	16	456	1	--
EU113-UR	0525250	250	10	847	1	--
EU113-UR	0525251	250	16	847	1	--
EU113-UR	0525300	300	10	1370	1	--
EU113-UR	0525301	300	16	1370	1	--
EU113-UR	0525350	350	10	1450	1	--
EU113-UR	0525351	350	16	1450	1	--
EU113-UR	0525400	400	10	1767	1	--
EU113-UR	0525401	400	16	1767	1	--
EU113-UR	0525500	500	10	2480	1	--
EU113-UR	0525501	500	16	2480	1	--
EU113-UR	0525600	600	10	3205	1	--
EU113-UR	0525601	600	16	3205	1	--





FC

Spheroidal cast iron check valve with flanged connections.
Check function controllable according to EN 13959.

Field of application :

- as anti-pollution device in drinking water supply with EA protection according to EN1717
- as non return (check) valve in all hot and cold domestic water supply circuits, in distribution networks of fluid operating in the systems, in pumping stations, etc.

Operating pressure : 16 bar.

Max. temperature : 70°C.

Min. temperature : 4°C.

Spheroidal cast iron body.

Pull-out polymeric functional device (Check).

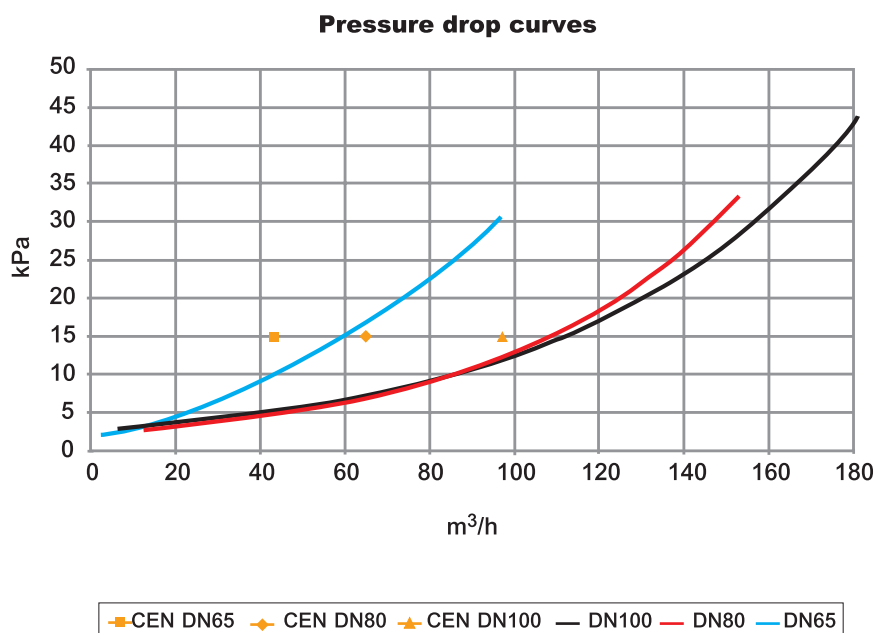
Elastomeric parts : NBR.

Other components: stainless steel.

Approvals : Belgaqua.

Type	Part number	Size body	Min. order	€uro
FC	1513065	65	1	--
FC	1513080	80	1	--
FC	1513100	100	1	--
FC	1513125	125	1	--
FC	1513150	150	1	--
FC	1513200	200	1	--
FC	1513250	250	1	--

FC idraulic characteristic



BUTTERFLY, BALL AND SHUT OFF VALVE

96



**MINIMUM
PRESSURE DROP
FULLY
PRESSURE TIGHT
EASY ASSEMBLY**

WAFEPDM**WAFER**

Butterfly valve with face to face dimensions according to DIN 3202 part 3 K1, and corresponding to ISO 5752-20 and API 609. Valve neck designed to accept 50 mm of insulation. Complete with manual lever. **Nodular cast iron SG-400-12 body.**

Nickel-plated nodular cast iron disc. Stainless steel AISI 416 shaft.

Nominal pressure: NP 16. Operating temperature : -40° + 130°C.

EPDM valve seat for applications in :

sea and industrial water, heating, steam, abrasive substances, phosphates, inorganic acids.

Not suitable for hydrocarbons and derivatives.

Type	Part number	Size body	Oles	Kvs	Min. order	€uro
WAFEPDM	1801026	50	4	116	1	--
WAFEPDM	1802026	65	4	188	1	--
WAFEPDM	1803026	80	4	259	1	--
WAFEPDM	1804026	100	4	514	1	--
WAFEPDM	1805026	125	4	876	1	--
WAFEPDM	1806026	150	4	1353	1	--
WAFEPDM	1807026	200	4	2687	1	--
WAFEPDM	1808026	250	4	4575	1	--
WAFEPDM	1809026	300	4	7068	1	--

**LUGEPDM**

Like WAFEPDM but with tapped holes (LUG version).

Type	Part number	Size body	Oles	Kvs	Min. order	€uro
LUFEPDM	1801062	50	4 (M16)	116	1	--
LUFEPDM	1802062	65	4 (M16)	188	1	--
LUFEPDM	1803062	80	8 (M16)	259	1	--
LUFEPDM	1804062	100	8 (M16)	514	1	--
LUFEPDM	1805062	125	8 (M16)	876	1	--
LUFEPDM	1806062	150	8 (M20)	1353	1	--
LUFEPDM	1807062	200	12 (M20)	2687	1	--
LUFEPDM	1808062	250	12 (M24)	4575	1	--
LUFEPDM	1809062	300	12 (M24)	7068	1	--

**240**

Bronze gate valve with sleeve. Max. pressure: 16 bar. Operating temperature: -15 to 80°C.

Type	Part number	Size body	Min. order	€uro
240	24012	1/2" FF	6	--
240	24034	3/4" FF	6	--
240	2401	1" FF	10	--
240	240114	1.1/4" FF	10	--
240	240112	1.1/2" FF	5	--
240	2402	2" FF	5	--
240	240212	2.1/2" FF	1	--
240	2403	3" FF	1	--
240	2404	4" FF	1	--

BUTTERFLY, BALL AND SHUT OFF VALVE

3800

EUROVALVE.

 Butterfly shut-off valve. Sleeve connections with lever handle and indicator for split flow.
 Nominal pressure: 16 bar.

Type	Part number	Size body	Kvs	Min. order	€uro
3800	380012	1/2" FF	10	6	--
3800	380034	3/4" FF	10	6	--
3800	38001	1" FF	22	6	--
3800	3800114	1.1/4" FF	34	6	--
3800	3800112	1.1/2" FF	46	6	--
3800	38002	2" FF	62	4	--


210

Ball shut-off valve with union for manifold head connections.

Max. operating pressure : 25 bar up to 95°C. 16 bar up to 120°C.

Type	Part number	Size body	Min. order	€uro
210	2101212	1/2" MF	10	--
210	2103434	3/4" MF	10	--
210	21011	1" MF	10	--
210	210114114	1.1/4" MF	10	--


850T

Solenoid valve for water. Operating temperature: - 10°C / +90°C.

Max. pressure: 25 bar. Normally closed. Normally open (NO).

Type	Part number	Size body	Power supply	Min. order	€uro
850T	850T38W220	3/8"	230V	1	--
850T	850T38W24	3/8"	24V	1	--
850T	850T12W220	1/2"	230V	1	--
850T	850T12W24	1/2"	24V	1	--
850T	850T34W220	3/4"	230V	1	--
850T	850T34W24	3/4"	24V	1	--
850T	850T1W220	1"	230V	1	--
850T	850T1W24	1"	24V	1	--

850T	850T38W220NA	3/8"	220V	1	--
850T	850T38W24NA	3/8"	24V	1	--
850T	850T12W220NA	1/2"	220V	1	--
850T	850T12W24NA	1/2"	24V	1	--
850T	850T34W220NA	3/4"	220V	1	--
850T	850T34W24NA	3/4"	24V	1	--
850T	850T1W220NA	1"	220V	1	--
850T	850T1W24NA	1"	24V	1	--

NEW

RB850T

Spare coil for solenoid valves series 850T.

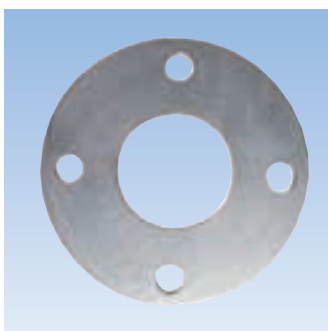
Type	Part number	Power supply	Min. order	€uro
RB850T	RB850T230V	230 V	1	--
RB850T	RB850T24VCA	24 Vca	1	--
RB850T	RB850T24VCC	24 Vcc	1	--
RB850T	RB850T12VCA	12 Vca	1	--
RB850T	RB850T12VCC	12 Vcc	1	--

BUTTERFLY, BALL AND SHUT OFF VALVE

**W20**

Flanged gate valve with cast iron oval body finished with food-grade non-toxic paint. NP 16 bar. Operating temperature: 0 °C - 100 °C.

Type	Part number	Size body	Min. order	€uro
W20	W205065	65	1	--
W20	W205080	80	1	--
W20	W2050100	100	1	--
W20	W2050150	150	1	--
W20	W2050200	200	1	--
W20	W2050250	250	1	--

**PPN**

Steel flange NP16, UNI 2278, complete with bolts and seals.

Type	Part number	Size body	Min. order	€uro
PPN	PPN1665	65	1	--
PPN	PPN1680	80	1	--
PPN	PPN16100	100	1	--
PPN	PPN16150	150	1	--
PPN	PPN16200	200	1	--
PPN	PPN16250	250	1	--

WATER HAMMER ARRESTORS

APW

Mini sliding piston water hammer arrestor in sealed copper tube.
 Can be installed in any position. Does not require maintenance.
 Suitable for washing machines, dish washers, sinks, sanitary systems, etc.
 Nickel-plated copper body. Acetal resin piston. Precharging pressure: 4 bar.
 Operating pressure: 10 bar. Peak pressure: 16 bar. Max. temperature: 85°C.

Type	Part number	Size body	Protection	Min. order	€uro
APW	1505405	1/2" M	A	1	--


CAW

Water hammer arrestor like APW but with double sealed brass piston (O-ring and EPDM).
 Peak pressure: 20 bar. Max. temperature: 110°C.

According to ASSE, ANSI, PDI.

Type	Part number	Size body	Protection	Min. order	€uro
CAW	1505415	1/2" M	A	1	--
CAW	1505420	3/4" M	B	1	--
CAW	1505425	1" M	C	1	--
CAW	1505432	1.1/4" M	D	1	--
CAW	1505440	1.1/2" M	E	1	--
CAW	1505450	2" M	F	1	--


WAM

Water hammer arrestor designed for washing machines, dish washers, sinks, sanitary systems, etc. Can be installed in any position. Painted stainless steel body.
 Elastomeric diaphragm. Max. temperature: 90°C Precharging pressure: 3 bar.
 Peak pressure: 13 bar. Capacity: 0.16 litres.

Type	Part number	Size body	Protection	Min. order	€uro
APW	1505405	1/2" M	A	1	--

Selection of water hammer arrestors series CAW

UNI 9182 standard cites: "All hot and cold water distribution systems must be provided with water hammer arrestors of hydropneumatic type (with permanent or resettable air cushions)." Each model of the CAW series is able to offer a certain cushioning action (table 1); hence for facilitating the choice we have given a table (table 2) with the unit load values assigned to each shut-off component (or units) normally installed in plumbing and hot water systems.

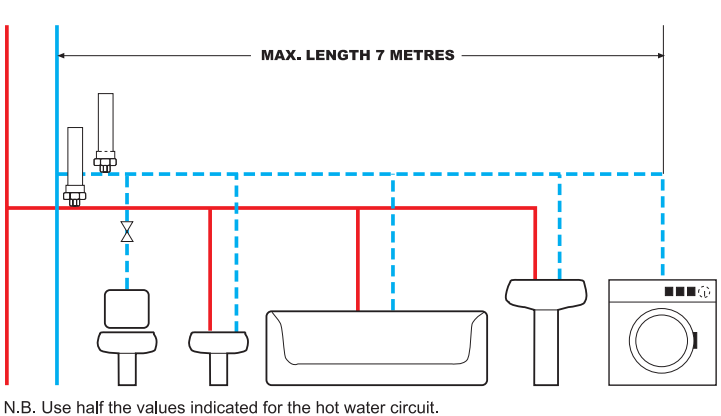
N.B. Install the water hammer arrestor as close as possible to the shut-off component causing the water hammer.

Table 1

SELECTION OF WATER HAMMER ARRESTOR ACCORDING TO THE UNIT LOAD NUMBER			
MODEL	Nd	Protection	Unit load
APW -CAW -WAM	1/2" M	A	1 - 11
CAW	3/4" M	B	12 - 32
CAW	1" M	C	33 - 60
CAW	1.1/4" M	D	61 - 113
CAW	1.1/2" M	E	114 - 154
CAW	2" M	F	155 - 330

Table 2

APPLIANCE	UNIT LOAD
Quick flushing WC	6
Float WC	3
Wash basins	1
Bath-tub	2
Bidet	1
Shower	1
Washing machine/dish washer	2
Sink	2
Bath suite complete with quick flushing WC	8
Bath suite complete with float WC	6

BATH SUITE complete with quick flushing = 8 load units - 1 CAW or WAM 1/2"


SAFETY VALVES



SFR-D

Safety unit with straight body for water heater, complete with safety valve, shut-off valve (to isolate the water heater from the supply line), inspectable check valve (to prevent return of contaminated water in the supply line), lever for manual discharge via the safety valve. Safety valve setting : 7 bar. Discharge connection : 1" M.

NF approved : D 36401 and P 43008. According to EN 1487.

Type	Part number	Size body	Body	Min. order	€uro
SFR-D	52551	1/2" MF	Chrome	10	--
SFR-D	52550	3/4" MF	Chrome	10	--
SFR-D	52570	3/4" MF	Inox	10	--



SFR-C

Safety unit for water heater, like SFR-D but with angle body. Safety valve setting : 7 bar. Discharge connection : 1" M.

NF approved: D 36401 e P 43008.

*** According to EN 1487 (Model 52571).**

Type	Part number	Size body	Body	Min. order	€uro
SFR-C	52571	3/4" MF	Inox	10	--
SFR-C	54555	1" MF	Chrome	10	--



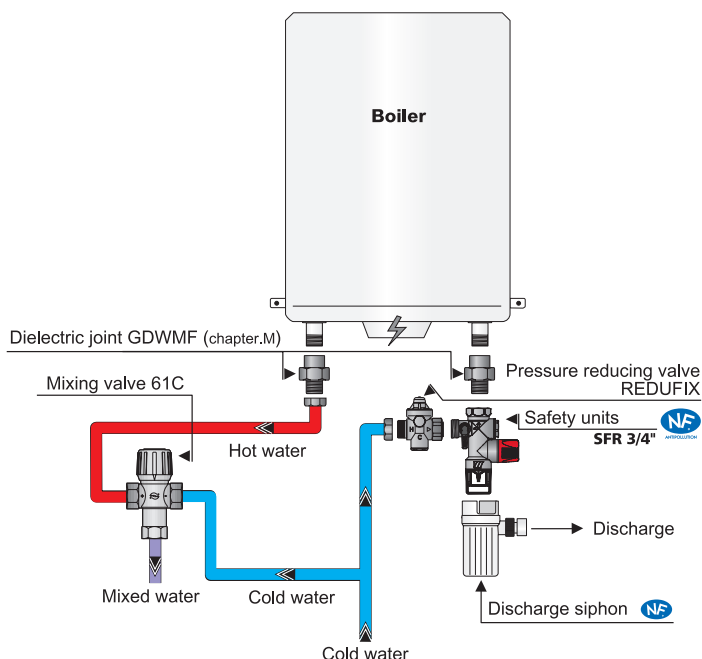
SIF

Discharge siphon for safety units SFR. White polypropylene body.

NF approved.

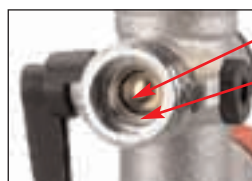
Type	Part number	Size body	Min. order	€uro
SIF	92315NF	1" F	10	--

Installation exemple



Characteristics of safety units series SFR

The special seat arrangement facilitates removal of any impurities present under the valve diaphragm.



Safety unit with ball valve
Flat connection, cold water side, with specific machining (pipe up to 16/18) for quick connection, snap-on type.

THERMOSTATIC MIXING VALVE

61C

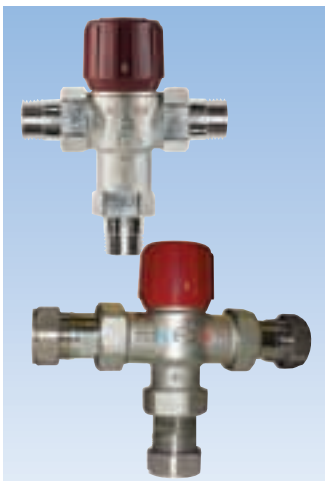
AQUAMIX.
 Thermostatic mixing valve with 4 set positions. Anti-scald protection.
 Setting range: 32°C ÷ 50°C. Max. differential pressure: 2 bar.
 Female connections. Without internal check valves.

Type	Part number	Size body	Min. order	€uro
61C	6109C12	1/2" F	1	--
61C	6110C34	3/4" F	1	--
61C	6111C1	1" F	1	--


61CM

AQUAMIX.
 Thermostatic mixing valve with 4 set positions. Anti-scald protection.
 Setting range: 32°C ÷ 50°C. Max. differential pressure: 2 bar.
 Connections with male tailpieces. Without internal check valves.

Type	Part number	Size body	Min. order	€uro
61CM	61CM12	1/2" M	1	--
61CM	61CM34	3/4" M	1	--
61CM	61CM1	1" M	1	--


61CMTMV2

AQUAMIX.
 Thermostatic mixing valve with 4 set positions. Anti-scald protection.
 Temperature setting range : 32 / 50°C. Max differential pressure : 1 bar.
 Flow rate : 1/2" 27 l/min. Flow rate: 3/4" 33 l/min. Male connections with internal check valves.
 ** Male connections plus 15 mm compression fittings.
 *** Male connections plus 22 mm compression fittings.

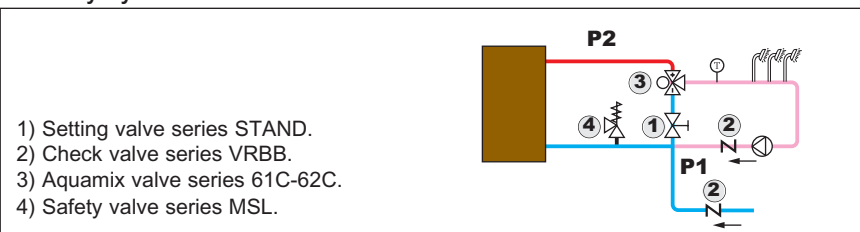
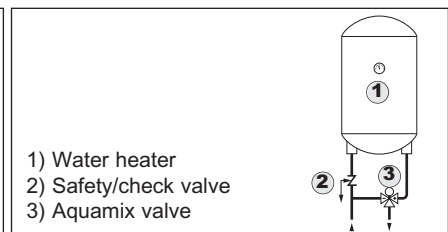
Tested according to BS EN 1287 : 1999.
WRAS Approval number : 0409132. TMV2 Approval number : BC 083 0904.

Type	Part number	Size body	Min. order	€uro
61CMTMV2	61CM12TMV2	1/2"	1	--
61CMTMV2	61CM34TMV2	3/4"	1	--
** 61CMTMV2	61CM15TMV2	for pipe 15 mm	1	--
*** 61CMTMV2	61CM22TMV2	for pipe 22 mm	1	--


62C

AQUAMIX.
 Thermostatic mixing valve with 4 set positions. Anti-scald protection.
 Setting range: 42°C ÷ 60°C. Max. differential pressure: 2 bar.
 Female connections. Without internal check valves.

Type	Part number	Size body	Min. order	€uro
62C	6209C12	1/2" F	1	--
62C	6210C34	3/4" F	1	--
62C	6211C1	1" F	1	--

Aquamix valve installation diagrams
Sanitary systems with recirculation

Domestic hot water


THERMOSTATIC MIXING VALVE



64C

Mixing valve for boilers. Setting range : 49°C + 71°C. Nominal pressure : 10 bar.

Type	Part number	Size body	Min. order	€uro
64C	6410C12	1/2"	1	--



68C

Mixing valve for boilers. Setting range : 40°C + 62°C. Nominal pressure : 10 bar.

Type	Part number	Size body	Min. order	€uro
68C	6810C12	1/2"	1	--



MINIMIX

Thermostatic mixing valve. Designed to supply sinks, hand wash-basins or electronic faucets. Provides high security level against scalding and Legionella bacteria. Ideal for multi-facility applications : hospitals, nursing homes, hotels, schools, restaurants, laboratories, motorway services. Body: DZR brass CW602N chrome polished. Cap: ABS. Max working pressure: 10 bar. Factory set temperature: 38°C. Minimum flow rate: 5 l/min. Under 1bar: 14,9 l/min - 2bar: 22 l/min - 3bar: 25l/min. Temperature setting range: 30°C to 70°C. Max inlet hot water: 85°C. * = 3/8" (12x17) flat sealing. ** = 1/2" (15x21) flat sealing. Cartridge replace: TCP6.

Compliance with EN1111.

Type	Part number	Size body	Min. order	€uro
* MINIMIX	97320	3/8" F	1	--
** MINIMIX	97321	1/2" F	1	--



MINCP6

Thermostic cartridge for MINIMIX replacement.

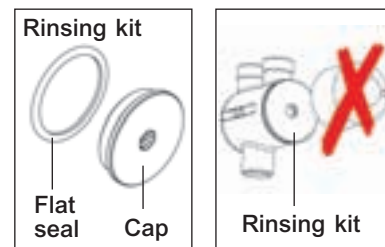
Type	Part number	Min. order	€uro
MINCP6	TCP6	1	--

Typical installation

Paralell to the wall



Perpendicular to the wall



THERMOSTATIC MIXING VALVE



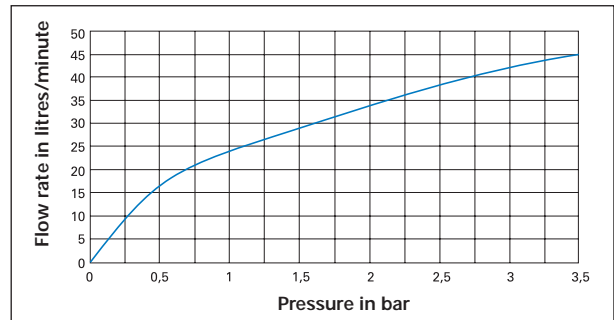
TL

Thermostatic mixer for widely differing applications such domestic applications, in schools, restaurants, etc.. Wall-mounted fixture, not graduated, to be set during installation phase. Brass body. White polypropylene. Protection knob fastened by socket head screw. Hot/cold water inlet 1/2" F. Two mixed water outlets (at bottom or top) 1/2" F.

Anti-scald protection : water shut off in less than 2 seconds in the event of cold water missing. Max. pressure : 10 bar. **Setting range: 5 ÷ 80°C**. Max. hot water temperature : 85°C.

Mixer warranted for 2 years.

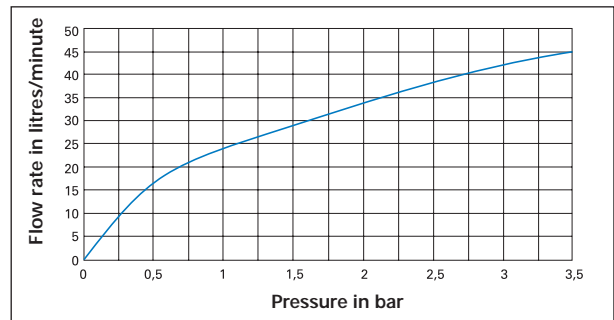
Type	Part number	Size body	N° of users	Flow rate l/min	Min. order	€uro
TL	TL117	1/2"F	3-4	42 (at 3 bar)	1	--



T9B/C

Thermostat mixer for the community, suitable for all sanitary appliances (showers, wash basins). It allows controlling and holding the temperature of the mixed water to a constant value also in the presence of variations in pressure (max. 1.5 bar). Hot water inlet provided on left, mixed water outlet at top. Brass body. Graduated knob, either white ABS (B) or chrome-plated (C). **Anti-scald protection** : water shut off in less than 2 seconds in the event of cold water missing. Operating pressure: 10 bar. **Setting range: 10°C ÷ 50°C**. Max. hot water temperature: 85 °C. * as a guide consider the simultaneity coefficient.

Type	Part number	Size body	N° of users	Flow rate l/min	Min. order	€uro
T9B/C	T9715B	1/2"M	1-5	3-42 *	1	--
T9B/C	T9715C	1/2"M	1-5	3-42 *	1	--
T9B/C	T9107B	3/4"M	1-5	3-42 *	1	--
T9B/C	T9107C	3/4"M	1-5	3-42 *	1	--



CAR-T

Spare cartridge for mixers series TL and T9B/C.

Type	Part number	Min. order	€uro
CAR-T	TCP7	1	--

THERMOSTATIC MIXING VALVE

**TX90****ULTRAMIX.**

Visible thermostatic mixers for community installations such as swimming pools, sports centres, schools, factories, camping sites, hospitals, spas, etc. which allow controlling and holding of the mixed water temperature at a constant level also in the presence of variations in pressure (max. 1.5 bar). Brass body. Cover with grey epoxy finish and blue graduated knob (Type E). Chrome-plated cover with white graduated knob (Type C). Anti-seize mechanism with filters and check valves. Bimetal steel strip coated with rilsan to protect against scale formation. **Temperature setting range: 10°C ÷ 50°C** (on request 30 to 70°C and 50 and 90°C) with provision or locking. **Anti-scald protection** : water shut off in less than 2 seconds in the event of cold water missing. Max. operating pressure : 10 bar.

Max. hot water temperature : 85°C.

Flow rates guaranteed with upstream dynamic pressure : 3 bar

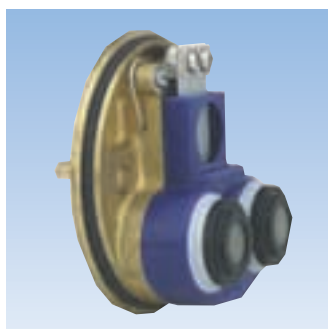
Hot water inlet provided on the left, mixed water outlet at the top.

Min. difference in inlet/outlet temperature : 5°C

* as a guide consider the simultaneity coefficient.



Type	Part number	Size body	N° of users	Flow rate l/min	Min. order	€uro
TX90	TX91E	3/4"M	1-7	3-56 *	1	--
TX90	TX91C	3/4"M	1-7	3-56 *	1	--
TX90	TX92E	3/4"M	1-10	3-80 *	1	--
TX90	TX92C	3/4"M	1-10	3-80 *	1	--
TX90	TX93E	1"M	1-15	3-120 *	1	--
TX90	TX93C	1"M	1-15	3-120 *	1	--
TX90	TX94E	1.1/4"M	1-21	5-175 *	1	--
TX90	TX94C	1.1/4"M	1-21	5-175 *	1	--
TX90	TX95E	1.1/2"M	1-32	5-260 *	1	--
TX90	TX95C	1.1/2"M	1-32	5-260 *	1	--
TX90	TX96E	2"M	1-50	6-400 *	1	--
TX90	TX96C	2"M	1-50	6-400 *	1	--

**CAR-TX90**

Spare cartridge for community mixers series TX90 ULTRAMIX.

Type	Part number	For model	Flow rate l/min	Min. order	€uro
CAR-TX90	TX1	TX91E, TX91C	3-56	1	--
CAR-TX90	TX2	TX92E, TX92C	3-80	1	--
CAR-TX90	TX3	TX93E, TX93C	3-120	1	--
CAR-TX90	TX4	TX94E, TX94C	5-175	1	--
CAR-TX90	TX5	TX95E, TX95C	5-260	1	--
CAR-TX90	TX6	TX96E, TX96C	6-400	1	--

Bimetal thermostatic mixing valves

Thermostatic mixing valves of the TX90 Series are very precise, stable and reliable domestic hot water regulators. The high performance ratings are possible thanks to the use of the original cartridge based on the principle of joint cold water – hot water control through double piloting, as shown in the illustration on the next page; in fact the bimetal sensitive element controls the pressures in the two operating chambers provided with a diaphragm; these chambers, in turn, suitably modulate the flows of hot and cold water in order to obtain a perfect mixture.

Moreover the sensitivity of the system offers maximum safety against risk of scalding.

The inlets are provided with a check (non return) device and mesh strainer.

The bimetal control device is internally lined with anti-stick material (Rilsan) to avoid scale formation.

Principle of operation with double pilot and function diagram

The functional diagram reproduced alongside involves the application of fine setting valves VM1 and VM2 designed to pre-adjust the recirculating flow thereby avoiding risk of initial hunting of the mixture temperature when domestic hot water is again drawn off after a period of no demand.

It should be noticed at once that valves **VM2C** and **D** with relative by-pass and checks should be provided, **only if adding a new mixer to an already existing system** having a pump of limited head; in all cases they are an alternative to valves VM1A and B.

The diameter of these valves is the same as that of the recirculation piping while setting positions are as follows :

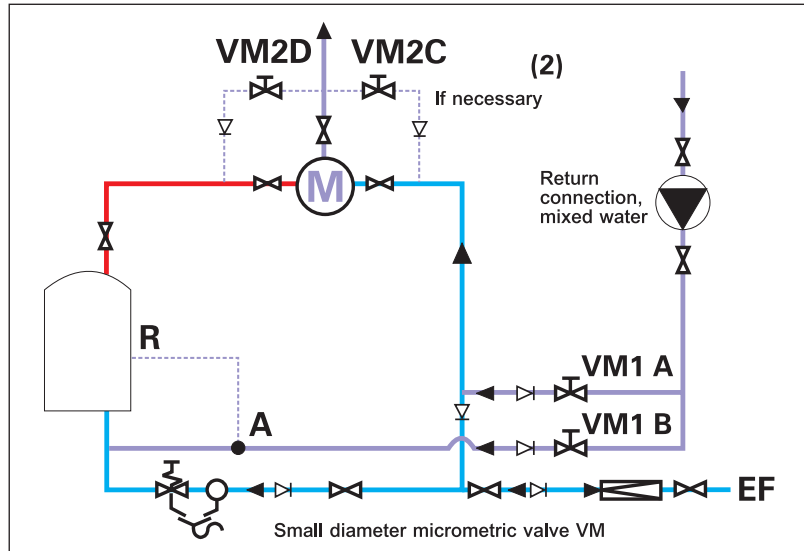
- for valve VM2C (cold) opening 70 - 90 %
- for valve VM2D (hot) opening 30 - 10 %

Valves **VM1A** and **B** with relative checks are installed on two double sections of the recirculation return line, located across a check valve installed at the cold inlet so that, when no water is drawn off, the two flows feed the inlet ports of the mixer in the correct proportion.

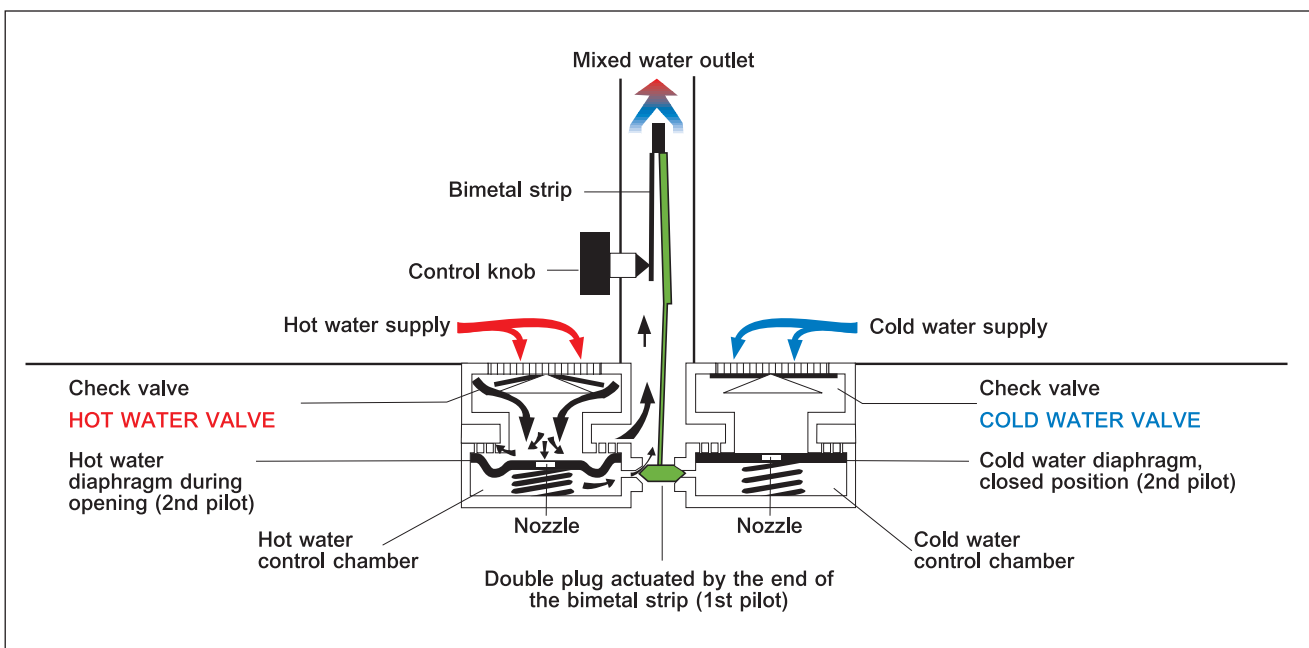
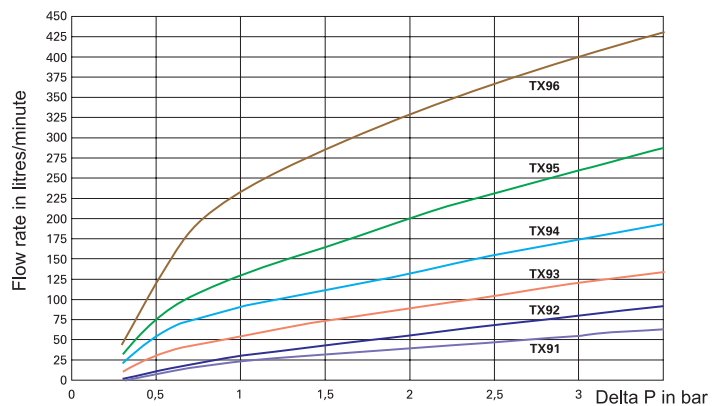
Setting positions are as follows :

- for valve VM1A (cold) opening 70 - 90%
- for valve VM1B (hot) opening 30 - 10%

Connection section A - R should always be made when the storage water heater is provided with a recirculation connections.



Mixer TX90



THERMOSTATIC MIXING VALVE

106

**TX90FIX**

Like the ULTRAMIX mixer, but for flush mounting, finished with stainless steel plate.

Type	Part number	Size body	N° of users	Flow rate l/min	Min. order	€uro
TX90FIX	T9107FIX	1/2"F	1-5	3-42	1	--
TX90FIX	TX91FIX	3/4"F	1-7	3-56	1	--
TX90FIX	TX92FIX	3/4"F	1-10	3-80	1	--
TX90FIX	TX93FIX	1"F	1-15	3-120	1	--

**TX90CHP**

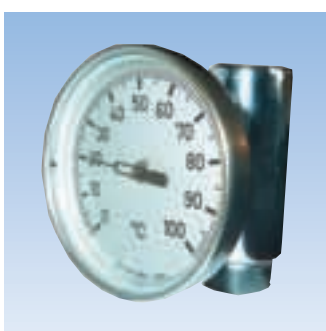
Like the ULTRAMIX mixer, but with chrome-plated body, protected by a vandal-proof plate.

Type	Part number	Size body	N° of users	Flow rate l/min	Min. order	€uro
TX90CHP	TX91CHP	3/4"M	1-7	3-56	1	--
TX90CHP	TX92CHP	3/4"M	1-10	3-80	1	--
TX90CHP	TX93CHP	1"M	1-15	3-120	1	--
TX90CHP	TX94CHP	1.1/4"M	1-21	5-175	1	--
TX90CHP	TX95CHP	1.1/2"M	1-32	5-260	1	--
TX90CHP	TX96CHP	2"M	1-50	6-400	1	--

**TX90OMDA**

Like the ULTRAMIX mixer, but suitable for treated water (sea water, demineralized water, soft water). Cover with grey epoxy finish and blue graduated knob.

Type	Part number	Size body	N° of users	Flow rate l/min	Min. order	€uro
TX90OMDA	TX91OMDA	3/4"M	1-7	3-56	1	--
TX90OMDA	TX92OMDA	3/4"M	1-10	3-80	1	--
TX90OMDA	TX93OMDA	1"M	1-15	3-120	1	--

**T109**

High precision thermometer with rapid response: 4°C /second. To be installed directly at the mixed water outlet.

Type	Part number	Size body	Min. order	€uro
T109	T109111	3/4" MF	1	--
T109	T109112	1" MF	1	--
T109	T109114C	1.1/4" MF	1	--
T109	T109115C	1.1/2" MF	1	--
T109	T109116C	2" MF	1	--

**R109**

Control valve for mixers: series TX91E TX91C TX92E TX92C (3/4" male/female). series TX93E, TX93C (1" male/female).

Type	Part number	Size body	Min. order	€uro
R109	T109918S	3/4" MF	1	--
R109	T109919S	1" MF	1	--

E

THERMOSTATIC MIXING VALVE

RD43

Straight connector with taper thread.

Type	Part number	Size body	Min. order	€uro
RD43	T43000T1	1/2" M	1	--
RD43	T43000T2	3/4" M	1	--
RD43	T43000T3	1" M	1	--
RD43	T43000T4	1.1/4" M	1	--
RD43	T43000T5	1.1/2" M	1	--
RD43	T43000T6	2" M	1	--


RD109

Straight connector with flat-edge thread.

Type	Part number	Size body	Min. order	€uro
RD109	T109186	1/2" M	1	--
RD109	T109286	3/4" M	1	--
RD109	T109486	1" M	1	--
RD109	T109686	1.1/4" M	1	--


C109

Elbow, flat-edge thread.

Type	Part number	Size body	Min. order	€uro
C109	T109187	1/2" M	1	--
C109	T109287	3/4" M	1	--
C109	T109487	1" M	1	--


CC109

Elbow, taper thread.

Type	Part number	Size body	Min. order	€uro
CC109	T43002T1	1/2" M	1	--
CC109	T43002T2	3/4" M	1	--
CC109	T43002T3	1" M	1	--
CC109	T43002T4	1.1/4" M	1	--
CC109	T43002T5	1.1/2" M	1	--


R43

Angle body shut-off valve.

Type	Part number	Size body	Min. order	€uro
R43	T43012T1	1/2" M	1	--
R43	T43012T2	3/4" M	1	--
R43	T43012T3	1" M	1	--
R43	T43012T4	1.1/4" M	1	--
R43	T43012T5	1.1/2" M	1	--

THERMOSTATIC MIXING VALVE



T70

Thermostatic mixer for central domestic hot water systems, with high flow rates: apartment blocks, industries, hotels, hospitals, schools, etc. Cast iron body and bronze/brass internal parts. Flanged series NP 16. Adjustment range: 10 to 50 °C.

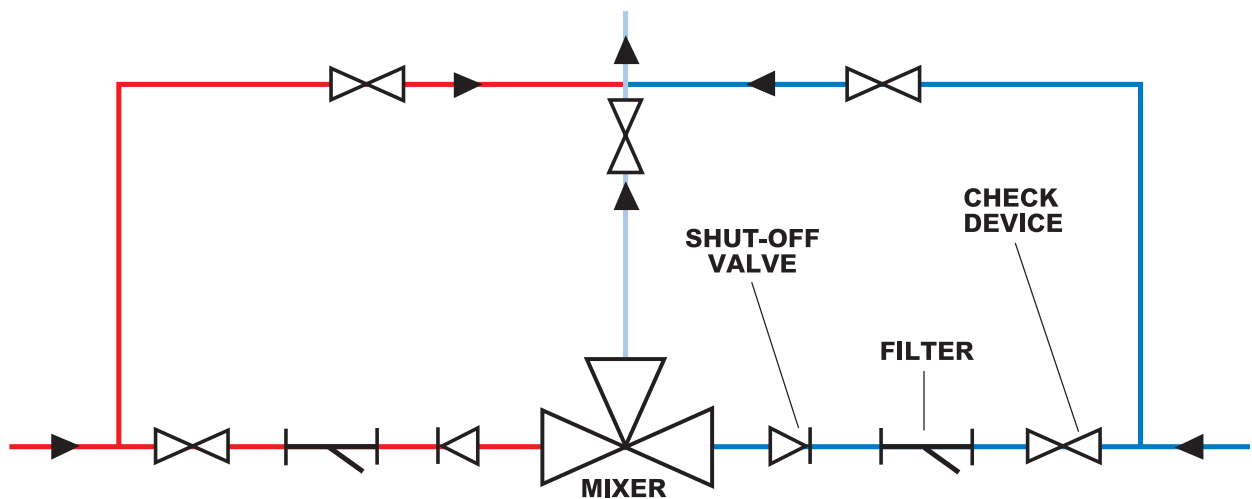
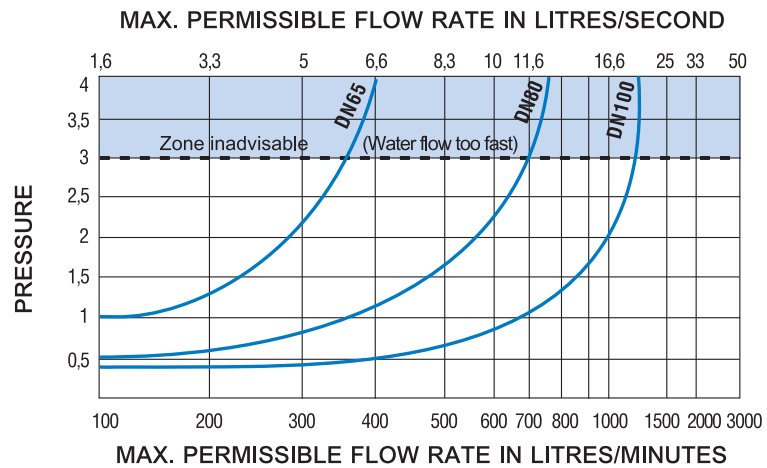
On request 30 to 70 °C and 50 to 90 °C. Max. pressure : 10 bar. Max. temperature: 85 °C

Flow rates with upstream pressures: 3 bar. Max. dynamic pressure : 6 bar

Hot water inlet provided on the left and cold water inlet on the right; mixed water outlet at the top. A filter and check valve should be installed at the hot/cold water inlets. Adoption of this unit discharges obligation under Italian Act governing domestic hot water production (DPR 412/93).

* as a guide consider the simultaneity coefficient.

Type	Part number	Size body	N° of users	Flow rate l/min	Min. order	€uro
T70	T70065	65	1-36	10-360*	1	--
T70	T70080	80	1-70	12-700*	1	--
T70	T70100	100	2-120	14-1200*	1	--



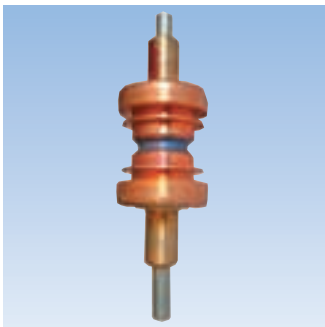
THERMOSTATIC MIXING VALVE



170

Thermostatic mixer for central systems. Bronze body. Max. pressure: 10 bar.
Max. temperature: 95 °C. Min. flow rate (for all diameters) : 34 litres/min.
Model 2" ND with cold water inlet size 1.1/2".

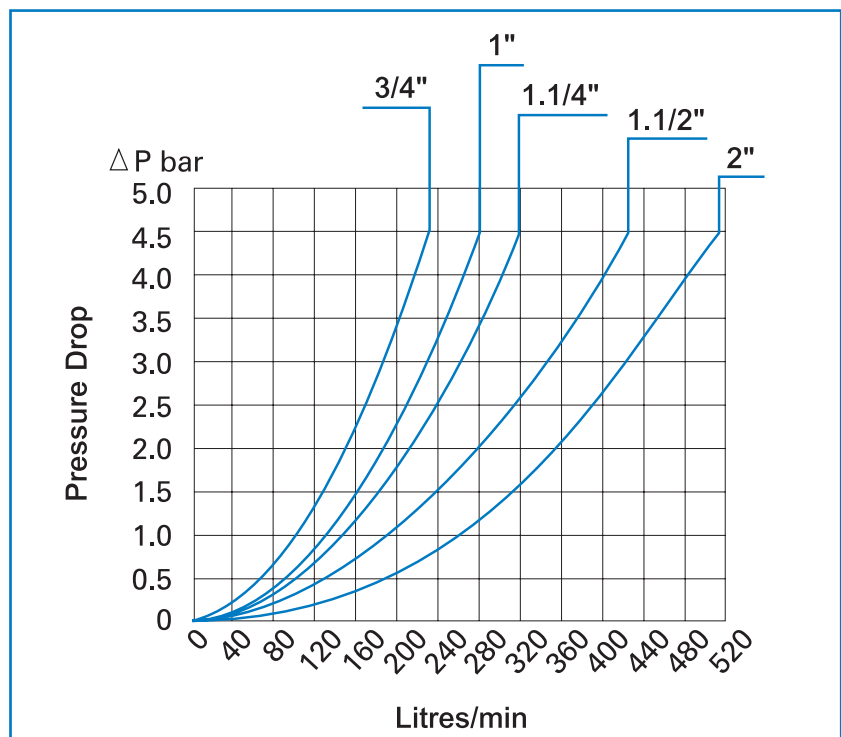
Type	Part number	Size body	Setting range	Min. order	€uro
170	29101	3/4"F	55-80°C	1	--
170	29102	1"F	55-80°C	1	--
170	29103	1.1/4"F	55-80°C	1	--
170	29104	1.1/2"F	55-80°C	1	--
170	29105	2"F	55-80°C	1	--
170	29111	3/4"F	38-55°C	1	--
170	29112	1"F	38-55°C	1	--
170	29113	1.1/4"F	38-55°C	1	--
170	29114	1.1/2"F	38-55°C	1	--
170	29115	2"F	38-55°C	1	--



CAR-170

Spare thermostatic cartridge for mixer Series 170.

Type	Part number	Size body	Min. order	€uro
CAR-170	29800K	38-55 °C	1	--
CAR-170	29801K	55-80 °C	1	--

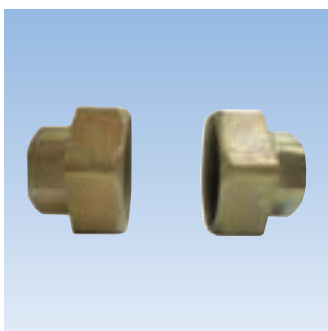


CIRCULATING PUMP

**HP**

Circulating pump series Compact. Body: cast iron. Max water temperature: 110 °C. Max system pressure: 10 bar. Supply voltage: 230 Vac. Protection: IP42.

Type	Part number	Size body	Suction head	Min. order	€uro
HP	HP23-180-15	1.1/2"	2 m	1	--
HP	HP23-180-20	2"	2 m	1	--
HP	HP43-130-10	1"	4 m	1	--
HP	HP43-130-15	1.1/2"	4 m	1	--
HP	HP43-180-15	1.1/2"	4 m	1	--
HP	HP43-180-20	2"	4 m	1	--
HP	HP53-130-10	1"	5 m	1	--
HP	HP53-130-15	1.1/2"	5 m	1	--
HP	HP53-180-15	1.1/2"	5 m	1	--
HP	HP53-180-20	2"	5 m	1	--
HP	HP63-130-10	1"	6 m	1	--
HP	HP63-130-15	1.1/2"	6 m	1	--
HP	HP63-180-15	1.1/2"	6 m	1	--
HP	HP63-180-20	2"	6 m	1	--

**BP**

Tailpieces for Compact pumps HP series.

Type	Part number	Size body	Min. order	€uro
BP	BP4025	1.1/2" x 1"F	1	--
BP	BP4032	1.1/2" x 1.1/4"M	1	--
BP	BP5032	2" x 1.1/4"F	1	--

STRAINERS

**F21N0**

Brass Y strainer with removable stainless steel mesh. Female threaded connections. Bronze version available on request.

Type	Part number	Size body	Filtration efficiency	Min. order	€uro
F21N0	F21N015	1/2"	400 µm	1	--
F21N0	F21N020	3/4"	400 µm	1	--
F21N0	F21N025	1"	400 µm	1	--
F21N0	F21N032	1.1/4"	500 µm	1	--
F21N0	F21N040	1.1/2"	500 µm	1	--
F21N0	F21N050	2"	500 µm	1	--

**F21N**

Cast iron Y strainer with removable stainless steel mesh. Flanged connections PN16.

Type	Part number	Size body	Filtration efficiency	Min. order	€uro
F21N	F21N-65	65	800 µm	1	--
F21N	F21N-80	80	800 µm	1	--
F21N	F21N-100	100	1000 µm	1	--
F21N	F21N-125	125	1000 µm	1	--
F21N	F21N-150	150	1000 µm	1	--
F21N	F21N-200	200	1000 µm	1	--
F21N	F21N-250	250	1600 µm	1	--

EXPANSION VESSELS AND ACCESSORIES

VEIS

Expansion vessels with fixed diaphragm suitable for plumbing and heating systems. Can be used for water heaters and autoclaves. Butyl diaphragm. Painted steel body. Steel cap internally coated with non-toxic epoxy paint.

Max pressure :10 bar.

Max. operating temperature : 99°C.

1/2" M connection for VEIS, capacity 2 litres.

3/4" M connection for other models.

1" M connection for 24 litres

According to directive PED 97/23/CE.

*THE ADVANTAGE
TO HAVE IN STOCK ONLY ONE
EXPANSION TANK (VEIS) FOR
HEATING AND SANITARY SYSTEM !!*

Type	Part number	Capacity	Precharging pressure	Min. order	€uro
VEIS	0604402	2 lt	3,5 bar	1	--
VEIS	0604405	5 lt	3 bar	1	--
VEIS	0604408	8 lt	3 bar	1	--
VEIS	0604412	12 lt	2 bar	1	--
VEIS	0604418	18 lt	2 bar	1	--
VEIS	0604424	24 lt	2 bar	1	--


VES

SANITEX.

Stainless steel AISI 304 expansion vessel for hot drinking water.

Max. operating pressure: 10 bar. Operating temperature: 99°C.

1/2" M connection for VES, 2 litre model. 3/4" M connection for VES, 18 litre model.

According to directive EC 97/23.

Type	Part number	Capacity	bar	Min. order	€uro
VES	0612002	2 lt	3,5	1	--
VEIS	0612018	18 lt	2	1	--


PVM1-ABS63

Pressure gauge for monitoring loading pressure in the expansion vessels with flexible tubing for connection to the vessel. Accuracy class : 1,6. Degree of protection : IP31
Connection V40

Type	Part number	Scale	Face	Min. order	€uro
PVM1-ABS63	PV3112DC00	0-12 bar	63 mm	1	--


R5

5-way fitting. Brass CW617N body.

Type	Part number	Size body	Dimension	Min. order	€uro
R5	0630025	1" x 1"	71 mm	1	--
R5	0630125	1" x 1"	81 mm	1	--

EXPANSION VESSELS AND ACCESSORIES

112

**PA5**

Pressure switch for pumps and autoclaves. Setting range: 1 - 5 bar.
 Factory setting: 1.4 bar (contacts close), 2.8 bar (contacts open).
 Differential from 0.5 to 2.5 bar. Contact load rating: 16A (10) Max. fluid temperature: 90°C.
 Max. room temperature: 55°C. Degree of protection: IP44.

**TÜV approved (only 0402202). According to VDE 0660 CEI 61-1.
 EEC 89/336, EEC 73/23, EEC 93/68.**

Type	Part number	Size body	Power supply	Min. order	€uro
PA5	0402202	1/4"	250V - Single-phase	10	--
PA5	0402105	1/4"	500V - Three-phase	10	--

**PA12**

Pressure switch for pumps and autoclaves. Setting range: 2 - 12 bar.
 Factory setting: 5 bar (contacts close), 7 bar (contacts open).
 Differential from 1.5 to 4 bar. Other characteristics like PA5.

Type	Part number	Size body	Power supply	Min. order	€uro
PA12	0402206	1/4"	250V - Single-phase	10	--
PA12	0402205	1/4"	500V - Three-phase	10	--

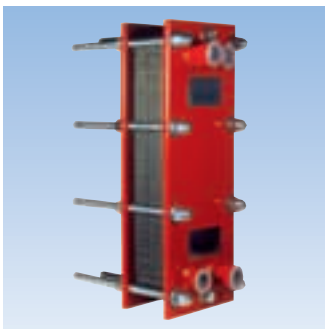
E

HEAT EXCHANGERS

SCM

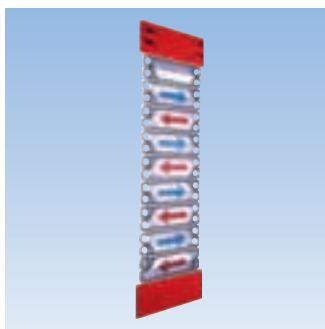
Heat exchanger with removable plates for instantaneous domestic hot water production. Stainless steel (AISI 316L) plates. 1" F painted steel fitting. Max. operating pressure: 10 bar. Max. operating temperature: 140 °C. Dimensions (w x h): 180 x 488 mm. Plates available on request for max. operating pressure 16 bar.

Type	Part number	Plates Number	Min. order	€uro
SCM	0650107	7	1	--
SCM	0650109	9	1	--
SCM	0650111	11	1	--
SCM	0650113	13	1	--
SCM	0650115	15	1	--
SCM	0650117	17	1	--
SCM	0650119	19	1	--
SCM	0650121	21	1	--
SCM	0650123	23	1	--
SCM	0650125	25	1	--
SCM	0650127	27	1	--
SCM	0650129	29	1	--
SCM	0650131	31	1	--
SCM	0650133	33	1	--
SCM	0650135	35	1	--
SCM	0650137	37	1	--
SCM	0650139	39	1	--
SCM	0650141	41	1	--
SCM	0650143	43	1	--
SCM	0650145	45	1	--


TSCM

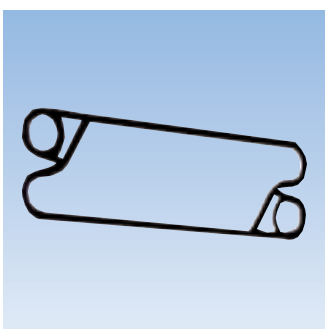
Frame with guides and tie-rods for heat exchangers Series SCM.

Type	Part number	Min. order	€uro
TSCM	0699024	1	--


PCSCM

Spare plates and gaskets for heat exchangers Series SCM. Initial plate: type A. Intermediate plate: type B. Intermediate plate: type C. End plate: type D.

Type	Part number	Description	Min. order	€uro
PCSCM	0699052	A	1	--
PCSCM	0699051	B	1	--
PCSCM	0699050	C	1	--
PCSCM	0699053	D	1	--


GSCM

Spare gasket for plates Series PCSCM.

Type	Part number	Min. order	€uro
GSCM	0699037	1	--

HEAT EXCHANGERS

**SCX**

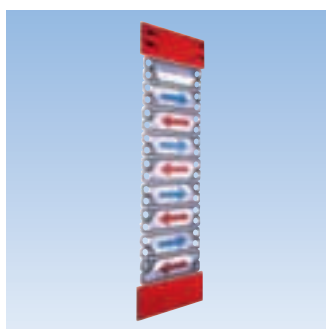
Heat exchanger like SCM but with: 2" M stainless steel (AISI 304) fittings.
Dimensions (w x h): 340 x 740 mm. Plates for operating pressures max. 16 bar and heat exchangers up to 125 plates available on request.

Type	Part number	Plates Number	Min. order	€uro
SCX	0650307	7	1	--
SCX	0650309	9	1	--
SCX	0650311	11	1	--
SCX	0650313	13	1	--
SCX	0650315	15	1	--
SCX	0650317	17	1	--
SCX	0650319	19	1	--
SCX	0650321	21	1	--
SCX	0650323	23	1	--
SCX	0650325	25	1	--
SCX	0650327	27	1	--
SCX	0650329	29	1	--
SCX	0650331	31	1	--
SCX	0650333	33	1	--
SCX	0650335	35	1	--
SCX	0650337	37	1	--
SCX	0650339	39	1	--
SCX	0650341	41	1	--
SCX	0650343	43	1	--
SCX	0650345	45	1	--
SCX	0650347	47	1	--
SCX	0650349	49	1	--
SCX	0650351	51	1	--
SCX	0650353	53	1	--
SCX	0650355	55	1	--
SCX	0650357	57	1	--
SCX	0650359	59	1	--

**TSCX**

Frame with guides and tie-rods for heat exchangers Series SCX.

Type	Part number	Min. order	€uro
TSCX	0699026	1	--

**PCSCX**

Spare plates and gaskets for heat exchangers Series SCX.
Initial plate: type A. Intermediate plate: type B. Intermediate plate: type C.
End plate: type D.

Type	Part number	Description	Min. order	€uro
PCSCX	0699056	A	1	--
PCSCX	0699055	B	1	--
PCSCX	0699054	C	1	--
PCSCX	0699057	D	1	--

GSCX

Spare gasket for plates Series PCSCX.



Type	Part number	Min. order	€uro
GSCX	0699042	1	--

SCS

Heat exchangers with brazed plates made of stainless steel. Stainless steel (AISI 316L) plates. Brazing material : Copper Threaded fittings : Nd 1/2" - 3/4"M. Max. pressure : 16 bar Centre distance of connections : 172/42 mm.



Type	Part number	Plates Number	Min. order	€uro
SCS	0650710	10	1	--
SCS	0650712	12	1	--
SCS	0650714	14	1	--
SCS	0650716	16	1	--
SCS	0650718	18	1	--
SCS	0650720	20	1	--
SCS	0650722	22	1	--
SCS	0650724	24	1	--
SCS	0650726	26	1	--
SCS	0650730	30	1	--
SCS	0650734	34	1	--
SCS	0650740	40	1	--

Heat exchangers series scm-scx

The removable plate exchangers Series SCM-SCX consist of suitably shaped stainless steel plates, separated by gaskets and enclosed within a painted carbon steel frame. The special arrangement of the plates causes the motion of the fluids inside the heat exchanger to be particularly turbulent thus ensuring a high coefficient of heat exchange. Thanks to this it is possible to reach large heat exchange capacities with reduced weights and overall dimensions. To increase the number of plates of a heat exchanger (see figure with example of a 9-plate heat exchanger) proceed to insert one or more pairs of intermediate plates before the final plate (type D). The pair of intermediate plates is made of one plate of type B and one of type C. To correct assembly of a heat exchanger, use the following components: one frame with guides and tie-rods, an initial plate (type A) followed by an intermediate plate (type C) and an end plate (type D), plus a certain number of pairs of intermediate plates, depending on requirements, to be inserted between the first plate type C and the end plate type D.

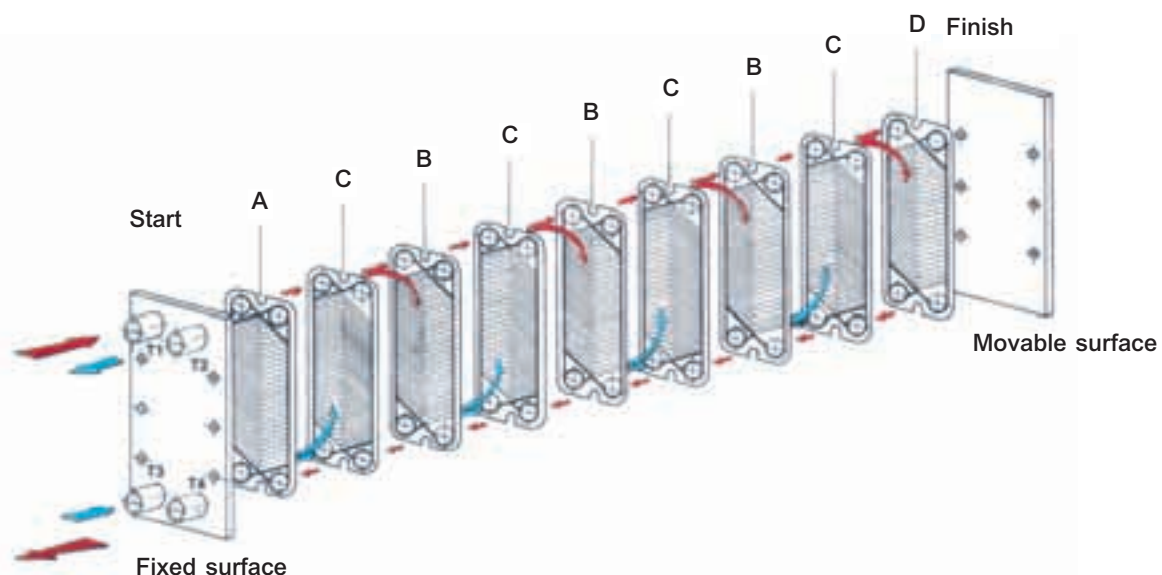


TABLE FOR SELECTING HEAT EXCHANGERS TO BE USED FOR DHW (DOMESTIC HOT WATER)

BOILER CAPACITY Kcal/h	PRIMARY CIRCUIT			SECONDARY CIRCUIT			NUMBER OF PLATES	
	BOILER DELIVERY LINE T1 80°			HOT WATER, USERS T2 46°			SCM	SCX
	BOILER RETURN LINE T4 59°			COLD WATER, MAINS T3 15°				
	FLOW RATE LITRES/HOUR	SCM	SCX	FLOW RATE LITRES/HOUR	SCM	SCX		
2.000.000	95.238		12,4	64.516		6,10		83
1.500.000	71.429		9,40	48.387		4,60		63
1.000.000	47.619		6,90	32.258		3,30		45
500.000	23.809		4,90	16.129		2,40		25
450.000	21.428		4,60	14.516		2,30		23
400.000	19.048		4,40	12.903		2,10		21
380.000	18.095		4,80	12.258		2,30		19
360.000	17.143		4,30	11.613		2,10		19
340.000	16.190		3,90	10.967		1,90		19
320.000	15.238		4,20	10.322		2,10		17
300.000	14.286		3,80	9.677		1,80		17
280.000	13.333		4,20	9.032		2,00		15
260.000	12.381	8,10	3,60	8.387	4,10	1,80	55	15
240.000	11.428	7,10	3,10	7.742	3,60	1,50	51	15
220.000	10.476	6,20	3,50	7.097	3,10	1,70	47	13
200.000	9.524	5,50	2,90	6.451	2,80	1,40	43	13
180.000	8.571	4,90	3,30	5.806	2,50	1,60	39	11
160.000	7.619	4,40	2,70	5.161	2,20	1,30	35	11
140.000	6.666	3,90	2,10	4.516	2,00	1,00	31	11
120.000	5.714	3,50	2,30	3.871	1,80	1,10	27	9
110.000	5.238	3,30	2,00	3.548	1,70	1,00	25	9
100.000	4.762	3,10	1,70	3.226	1,60	0,80	23	9
90.000	4.286	2,90	1,40	2.903	1,50	0,70	21	9
80.000	3.809	2,40	1,90	2.581	1,20	0,90	21	7
70.000	3.333	2,20	1,50	2.258	1,10	0,70	19	7
60.000	2.857	2,00	1,10	1.935	1,00	0,50	17	7
50.000	2.381	1,70	0,80	1.613	0,90	0,40	15	7
45.000	2.143	1,80	0,60	1.452	0,90	0,30	13	7
40.000	1.905	1,50		1.290	0,80		13	
35.000	1.667	1,50		1.129	0,80		11	
30.000	1.428	1,20		968	0,60		11	
25.000	1.190	1,20		806	0,60		9	
18.000	860	1,10		580	0,60		7	

DOMESTIC HOT WATER DISTRIBUTION SYSTEM

T08

Plain modular manifold with stop and control valves for sanitary systems. Side outlet connections M24. Head connections 3/4" F. **Patented.**

Chrome-plated versions available on request.

Type	Part number	Size body	Outlets	Min. order	€uro
T08	14052401	M24 3/4"	1	16	--
T08	14052402	M24 3/4"	2	8	--
T08	14052403	M24 3/4"	3	12	--
T08	14052404	M24 3/4"	4	9	--
T08	14052405	M24 3/4"	5	8	--
T08	14052406	M24 3/4"	6	7	--
T08	14052407	M24 3/4"	7	7	--


T14

Modular manifold for sanitary systems. Side outlets M24. Head connections 3/4" F.

Chrome-plated versions available on request.

Type	Part number	Size body	Outlets	Min. order	€uro
T14	13052402	M24 3/4"	2	18	--
T14	13052403	M24 3/4"	3	12	--
T14	13052404	M24 3/4"	4	9	--


T02

Modular brass manifold with stop and control valves for sanitary systems. Side outlet connections M24. Head connections 1/2" F. **Patented.**

Chrome-plated versions available on request.

Type	Part number	Size body	Outlets	Min. order	€uro
T02	102424	M24 1/2"	2 + 2	20	--


T04

Modular brass manifold with stop and control valves for sanitary systems: 4 cold and 2 hot. Side outlet connections M24. Head connections 1/2" F. **Patented.**

Chrome-plated versions available on request.

Type	Part number	Size body	Outlets	Min. order	€uro
T04	10442406	M24 1/2"	4 + 2	16	--


T06

Modular brass manifold with for sanitary systems. Side outlet connections M24. Head connections 3/4" F. **Patented.**

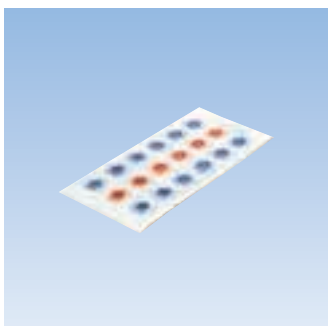
Chrome-plated versions available on request.

Type	Part number	Size body	Outlets	Min. order	€uro
T06	126524	M24 3/4"	2+2	16	--
T06	12652408	M24 3/4"	4+4	8	--
T06	12652412	M24 3/4"	6+6	6	--
T06	12652416	M24 3/4"	8+8	6	--
T06	12652420	M24 3/4"	10+10	6	--

**T62**

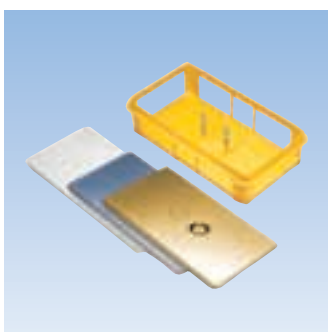
Spare knob.

Type	Part number	Colour	Min. order	€uro
T62	115NCB	Blue	10	--
T08	115NCR	Red	10	--

**T66**

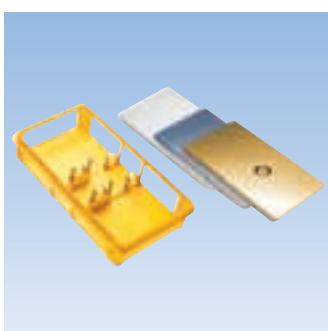
Set of adhesive labels for knobs.

Type	Part number	Colour	Min. order	€uro
T66	112NE	Hydraulics	10	--
T66	112NE1	Heating 1	10	--
T66	112NE2	Heating 2	10	--

**T68**

Plastic box for manifold Series T02 - T04 - T06.

Type	Part number	Size	Door	Min. order	€uro
T68	255PP	30 x 20 cm	White	10	--

**T74**

Universal plastic box for manifold Series T02 - T04 - T06 - T08 - T14.

Type	Part number	Size	Door	Min. order	€uro
T74	2741	32	White	5	--
T74	2742	40	White	5	--
T74	2743	50	White	5	--

Type	Part number	Description	€uro
T74	274AC1	accessories for manifolds T02 - T04 - T06	--
T14	274AC2	accessories for manifold T08	--
T14	274AC3	accessories for manifold T14	--

**T92**

Box spanner.

Type	Part number	Size	Min. order	€uro
T92	8202427	24 x 27	5	--

NEW

DOMESTIC HOT WATER DISTRIBUTION SYSTEM



T82

Spacer for elbows T36.

Type	Part number	Min. order	€uro
T82	469	1	--



T50

UNIFIT.

Fitting for copper, multi-layer or plastic piping.

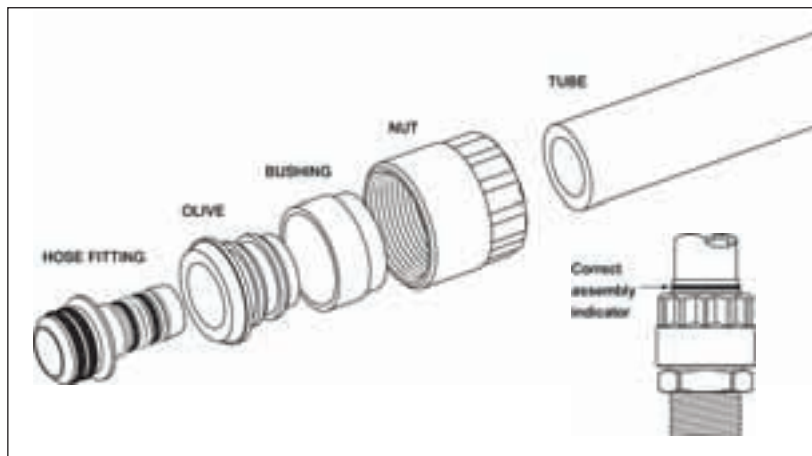
Type	Part number	Ø e	Ø i	Size	Min. order	€uro
Copper						
T50	500108	10	8	M24	20	--
T50	5001210	12	10	M24	20	--
T50	5001412	14	12	M24	20	--
T50	5001513	15	13	M24	20	--
T50	5001614	16	14	M24	20	--
T50	5051816	18	16	M27	20	--
Multi-layer						
T50	5001410W	14	10	M24	20	--
T50	50016115W	16	11,5	M24	20	--
T50	5001612W	16	12	M24	20	--
T50	5001814W	18	14	M24	20	--
T50	5051814W	18	14	M27	20	--
T50	5052015W	20	15	M27	20	--
T50	50520155W	20	15,5	M27	20	--
T50	5052016W	20	16	M27	20	--
Plastic						
T50	500128	12	8	M24	20	--
T50	5001510	15	10	M24	20	--
T50	5001612	16	12	M24	20	--
T50	5001713	17	13	M24	20	--
T50	5001813	18	13	M24	20	--
T50	5001814	18	14	M24	20	--
T50	5051814	18	14	M27	20	--
T50	5052015	20	15	M27	20	--
T50	5052016	20	16	M27	20	--

Unifit fitting, assembly instructions

- Cut, debur and calibrate the hose.
- Fit the nut, bushing and olive in the direction indicated.
- Insert the hose fitting using just hand-force.
- Slip the olive on the pipe until touching the hose fitting.
- Screw the nut onto the required piece.
- Tightening is finished when the correct assembly indicator is visible.

Test the system as prescribed by rules of good practice.

Only for multi-layer hose, make sure that the insulating ring is on the hose fitting.



**T54**

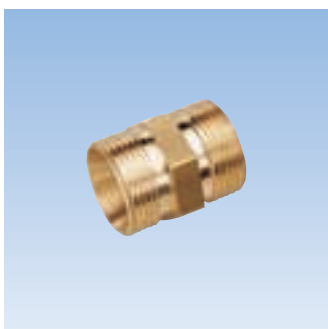
Fitting with single tapered olive of P.T.F.E for copper piping.

Type	Part number	Ø e	Size	Min. order	€uro
T54	540108	10	M24	20	--
T54	5401210	12	M24	20	--
T54	5401412	14	M24	20	--
T54	5501614	16	M24	20	--

**T20**

Straight male connector.

Type	Part number	Size	Min. order	€uro
T20	370424	M24 1/2"	10	--
T20	370427	M27 1/2"	10	--
T20	370524	M24 3/4"	10	--
T20	370527	M27 3/4"	10	--

**T22**

Straight union.

Type	Part number	Size	Min. order	€uro
T22	3752424	M24	10	--
T20	3752727	M27	10	--

**T24**

Straight female connection.

Type	Part number	Size	Min. order	€uro
T24	380424	M24 1/2"	10	--
T24	380427	M27 1/2"	10	--
T24	380524	M24 3/4"	10	--
T24	380527	M27 3/4"	10	--

NEW
DOMESTIC HOT WATER DISTRIBUTION SYSTEM

T28

Female elbow.

Type	Part number	Size	Min. order	€uro
T28	420424	M24 1/2"	10	--
T28	420524	M24 3/4"	10	--
T28	420427	M27 1/2"	10	--
T28	420527	M27 3/4"	10	--


T30

Male elbow. (type L = long).

Type	Part number	Size	Min. order	€uro
T30	470424	M24 1/2"	10	--
T30	470524	M24 3/4"	10	--
T30	470427	M27 1/2"	10	--
T30	470527	M27 3/4"	10	--
T30	470527-L	M27 3/4"	10	--


T32

Union elbow.

Type	Part number	Size	Min. order	€uro
T32	480424	M24	10	--
T32	4802727	M27	10	--


T36

Female elbow with flange.

Type	Part number	Size	Min. order	€uro
T36	460424	M24 1/2"	10	--
T36	460427	M27 1/2"	10	--

**T38**

Female Tee.

Type	Part number	Size	Min. order	€uro
T38	740424	M24 1/2" M24	10	--
T38	740427	M27 1/2" M27	10	--

**T40**

Male Tee.

Type	Part number	Size	Min. order	€uro
T40	760424	M24 1/2" M24	10	--
T40	760427	M27 1/2" M27	10	--
T40	760527	M27 3/4" M27	10	--

**T42**

Union Tee.

Type	Part number	Size	Min. order	€uro
T42	7702424	M24 M24 M24	10	--
T42	7702727	M27 M27 M27	10	--
T42	7802724	M27 M24 M27	10	--

**T44**

Square head male plug.

Type	Part number	Size	Min. order	€uro
T44	35004U	1/2"	10	--
T44	35005U	3/4"	10	--

NEW

DOMESTIC HOT WATER DISTRIBUTION SYSTEM



T46

Female cap.

Type	Part number	Size	Min. order	€uro
T46	365024	M24	10	--
T46	36005	3/4"	10	--



T48

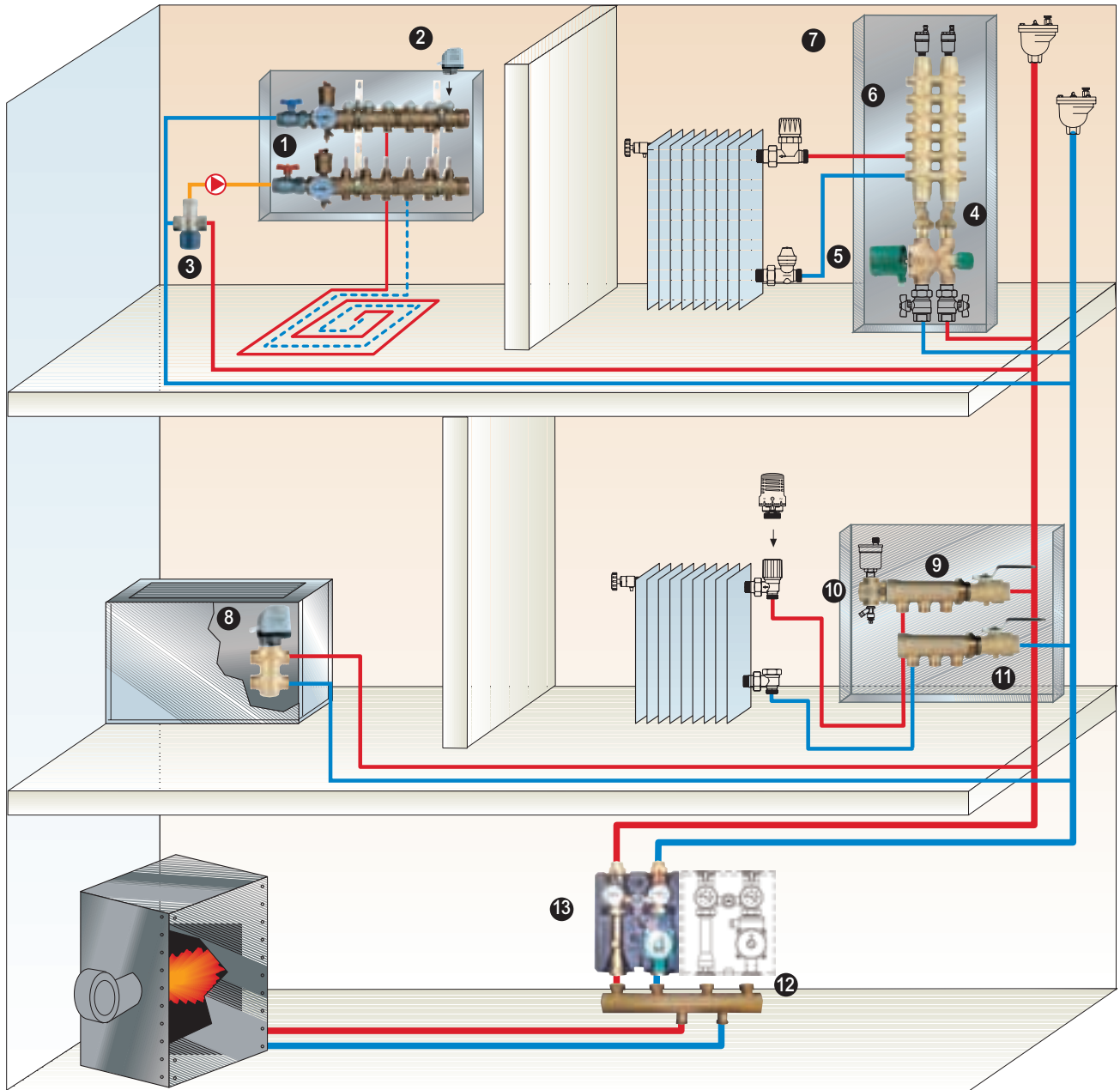
Chrome-plated adapter for connecting fitting T50 to valves and lockshields with iron connection 3/8" and 1/2".

Type	Part number	Size	Min. order	€uro
T48	3700324K	3/8" M24	10	--
T48	3700424K	1/2" M24	10	--
T48	3700427K	1/2" M27	10	--



Zone control and Modul distribution

EXAMPLE OF APPLICATION



- 1 Preassembled manifold series CPRFL
- 2 Electrothermic actuators series 22C
- 3 Thermostatic mixing valves for floor heating system series 63C
- 4 Zone valves series 561T- 560T - 571T and eccentric unions series 565T - 531C
- 5 Electrothermic actuators series 580T
- 6 Flush manifolds series 825M

- 7 Inspection boxes series 824M - 828M - 832M
- 8 Fancoil valves series 2131 - 3131 - 4131 with actuator series 22C
- 9 Single manifolds series 805M
- 10 End-piece for manifolds 823MT
- 11 Butterfly valve series 3800
- 12 Central manifold series HM5000
- 13 Pumping and control module series PM5000


571T

Two-way bronze zone valve, normally closed (NC). ON/OFF operation with an electrothermic actuator (item 580T) which can be fastened to the body through a bayonet coupling. Nominal pressure: 16 bar. Max. differential pressure (item 580T): 1.5 bar. Operating temperature: 4 - 100°C. Disc stroke: 4 mm.

Type	Part number	Size body	Kvs	Min. order	€uro
571T	571T34	3/4" FF	5,5	1	--
571T	571T1	1" FF	6,8	1	--
571T	571T114	1.1/4" FF	7,8	1	--


560T

Three-way bronze zone valve, normally closed (NC). ON/OFF operation with an electrothermic actuator (item 580T) which can be fastened to the body through a bayonet coupling. Nominal pressure: 16 bar. Max. differential pressure (item 580T): 1.5 bar. Operating temperature: 4 - 100°C. Disc stroke: 4 mm. Designed for mounting on by-pass calibration valve series 566T. Use eccentric unions series 565T for connecting zone valve and calibration valve to flush manifolds Modul.

Type	Part number	Size body	Kvs	Kvs By-bass	Min. order	€uro
560T	560T34	3/4" FF	5,5	3,6	1	--
560T	560T1	1" FF	6,8	3,6	1	--


561T

Three-way bronze zone valve, 4 bronze connections, normally closed (NC) with built-in by-pass calibration. ON/OFF operation with an electrothermic actuator (item 580T) which can be fastened to the body through a bayonet coupling. Nominal pressure: 16 bar. Max. differential pressure (item 580T): 1.5 bar. Operating temperature: 4 - 100°C. Disc stroke: 4 mm. Use eccentric unions series 531C for connecting zone valve and calibration valve to flush manifolds Modul.

Type	Part number	Size body	Kvs	Kvs By-bass	Min. order	€uro
561T	561T34	3/4" FF	5,5	3,6	1	--
561T	561T1	1" FF	6,8	3,6	1	--


580T

Two-position electrothermic actuator for zone valve series 561T, 560T, 571T.

Auxiliary normally open (NO) microswitch for supplementary commands

(e.g. pump, metering). Sealable tamper-proof device. Bayonet coupling for fastening to valve body. External manual opening control. Positioning time: 4 - 5 min.

Power consumption: 20W (230V), 18W (24V). **24 month warranty.**

According to EEC 89/336, EEC 73/23, Italian Act 10/91.

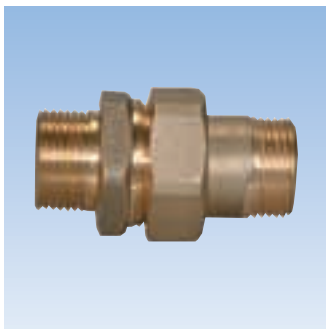
Type	Part number	Power supply	Protection	Min. order	€uro
580T	580T220VX	230V	IP20	1	--
580T	580T24VX	24V	IP20	1	--


566T

By-pass calibration valve. Designed for mounting on zone valves series 560T.

Type	Part number	Size body	Min. order	€uro
566T	566T34X	3/4" FF	1	--
566T	566T1X	1" FF	1	--

ZONE VALVES



567T

Straight union for connection between zone valves and distribution manifolds.

Type	Part number	Size body	Min. order	€uro
567T	567T3434	3/4" x 3/4"	2	--
567T	567T134	1" x 3/4"	2	--
567T	567T11	1" x 1"	2	--



565T

Eccentric unions with 16 mm centre distance for connection between three-way zone valves series 560T to by-pass calibration valves series 566T and Modul flush manifolds.

Unit price quoted.

Type	Part number	Size body	Min. order	€uro
565T	565T3434	3/4" x 3/4"	2	--
565T	565T134	1" x 3/4"	2	--
565T	565T11	1" x 1"	2	--



531C

Eccentric unions with 6 mm centre distance for connection between three-way zone valves with four connections series 561T to and Modul flush manifolds.

Unit price quoted.

Type	Part number	Size body	Min. order	€uro
531C	5310C	3/4" x 3/4"	2	--
531C	5311C	1" x 3/4"	2	--
531C	5312C	1" x 1"	2	--



58T

Insert for zone valves : series 571T (item 581T), series 560T and 561T (item 582T).

Type	Part number	Description	Min. order	€uro
58T	581TX	for 571T	1	--
58T	582TX	for 560T, 561T	1	--

Installation Notes for zone valves series 571T-560T-561T

Install the zone valves according to the direction of flow stamped on the body (actuator mounted on the return pipe side).

Avoid installing the actuator facing down solely to avoid any drips caused by leaks or condensates from causing short circuits.

The zone valve is provided with a manual opening device (fig. 1): it is important to switch back to automatic opening position before electrically actuating the valve. Before removing the head, interrupt the power supply circuit (fig. 2) and wait for the valve to close (4-5 min.).

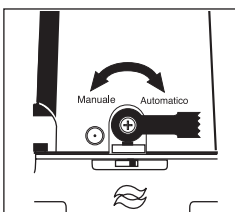


Fig. 1
External lever for converting from manual to automatic operation.

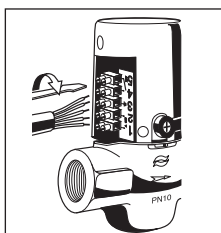


Fig. 2
Connection to terminal board.

Table 3

- 1-2. Fuse for primary circuit.
- 3. Transformer 230/24 V, 50 Hz (20 VA for each valve).
- 4. Fuse for secondary circuit (0.8A for each valve).
- 5. Thermostat.
- 6. Zone valve.
- 7. Auxiliary command for pump, metering.

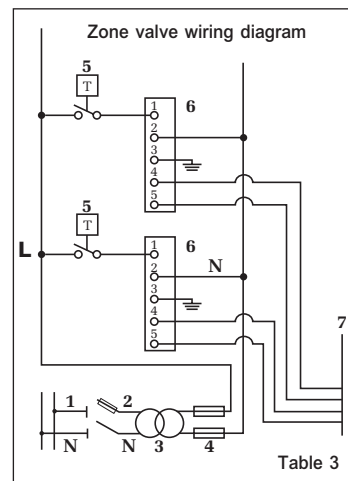


Table 3


VU02F

Two-way brass zone valve, normally closed (NC).
 ON/OFF operation with actuators series ETE. Nominal pressure: 16 bar.
 Max. differential pressure (item ETE): 1.7 bar. Operating temperature: 4 - 110°C.
 Disc stroke: 4 mm.

Type	Part number	Size body	Kvs	Min. order	€uro
VU02F	VU0220	3/4" FF	4,3	1	--
VU02F	VU0225	1" FF	6,5	1	--


VU3F

Three-way brass zone valve, normally closed (NC).
 ON/OFF operation with actuators series ETE. Nominal pressure: 16 bar.
 Max. differential pressure (item ETE): 1.7 bar. Operating temperature: 4 - 110°C.
 Disc stroke: 4 mm.

Type	Part number	Size body	Kvs	Kvs By-bass	Min. order	€uro
VU3F	VU320	3/4" FF	4,3	2,8	1	--
VU3F	VU325	1" FF	6,5	3,3	1	--


VU4

Tee fitting for creating by-pass in valves VU3F.

Type	Part number	Size body	Min. order	€uro
VU4	VU400	3/4" FF	10	--
VU4	VU401	1" FF	10	--


V2BMXE

Bronze 2-way diverter globe valve. Normally closed (NC). Flow rate: equal percentage
 Nominal pressure: 16 bar. Max operating temperature: 110°C.

Type	Part number	Size body	Kvs	Actuator	Min. order	€uro
V2BMXE	V2BM15XET-EF	1/2"	4,0	ETE/ETM	1	--
V2BMXE	V2BM20XET-EF	3/4"	6,3	ETE/ETM	1	--
V2BMXE	V2BM25XET-EF	1"	10	ETE/ETM	1	--
V2BMXE	V2BM32XET-EF	1.1/4"	16	ETE/ETM	1	--
V2BMXE	V2BM20XEA	3/4"	6,3	EA	1	--
V2BMXE	V2BM25XEA	1"	10	EA	1	--


V3BMXE

Bronze 3-way diverter globe valve. Normally closed. (NC). Flow rate: equal percentage
 Nominal pressure: 16 bar. Max operating temperature: 110°C.

Type	Part number	Size body	Kvs	Actuator	Min. order	€uro
V3BMXE	V3BM20XET-EF	3/4"	6,3 / 4,0	ETE/ETM		--
V3BMXE	V3BM25XET-EF	1"	10 / 6,0	ETE/ETM		--
V3BMXE	V3BM32XET-EF	1.1/4"	16 / 12	ETE/ETM		--
V3BMXE	V3BM20XEA	3/4"	6,3 / 4,0	EA		--
V3BMXE	V3BM25XEA	1"	10 / 6,0	EA		--

ELECTROTHERMIC ACTUATORS



ETE

ON/OFF electrothermic actuator for zone valve series VU and V2/3BMXE. Auxiliary normally open (NO) microswitch for supplementary commands (e.g. pump, metering). Bayonet coupling for fastening to valve body. Manual control device. Power consumption: 18W. Stroke: 4 mm. Plug thrust: 250N. Positioning time: 4 min.
 BO = With auxiliary switch normally open
 B1 = With auxiliary switch normally close
 UL1 = Approved UL cable 1m
 UL14 = Approved UL cable 1,4m

According to EEC 89/336, EEC 73/23, Italian Act 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
ETE	ETE24	24V	IP20	1	--
ETE	ETE24BO	24V	IP20	1	--
ETE	ETE110	110V	IP20	1	--
ETE	ETE220BO	230V	IP20	1	--
ETE	ETE220B1	230V	IP20	1	--
ETE	ETE230UL1	230V	IP20	1	--
ETE	ETE230UL14	230V	IP20	1	--



ETM

Modulating electrothermic actuator. Device for manual control. Power rating : 18W. Power consumption in operation : 3 W.
 - ETM24 to be coupled with regulators running on 16 Vdc powered by servomotor; supplied complete with cable 6 x 0.75 sq.mm, L 1mt.
 - ETM24-12 to be coupled with regulators running on 24 Vac; supplied complete with cable 4 x 0.75 sq.mm, L 1mt.

Type	Part number	Power supply	Protection	Min. order	€uro
ETM	ETM24	24V	IP44	1	--
ETM	ETM24-12	24V	IP44	1	--



EA

ON/OFF electric gear driven actuator. Used for 2, 3, and 3-way 4 connections valves Series VU and VBM..XEA. Bayonet fixing to valve body. Manual valve control device. Supply : 24/110/230/240V. Power consumption: 6W. Stroke: 4mm. Positioning time: 20s. Plug thrust: 90N. Protection class: IP 42.
 UB0 = Auxiliary switch normally

Type	Part number	Power supply	Min. order	€uro
EA	EA24	24V	1	--
EA	EA24UB0	24V	1	--
EA	EA24UB1	24V	1	--
EA	EA110	110V	1	--
EA	EA110UB1	110V	1	--
EA	EA220	230V	1	--
EA	EA220UB0	230V	1	--
EA	EA220UB1	230V	1	--
EA	EA240	240V	1	--

Brass zone valves/fan-coils



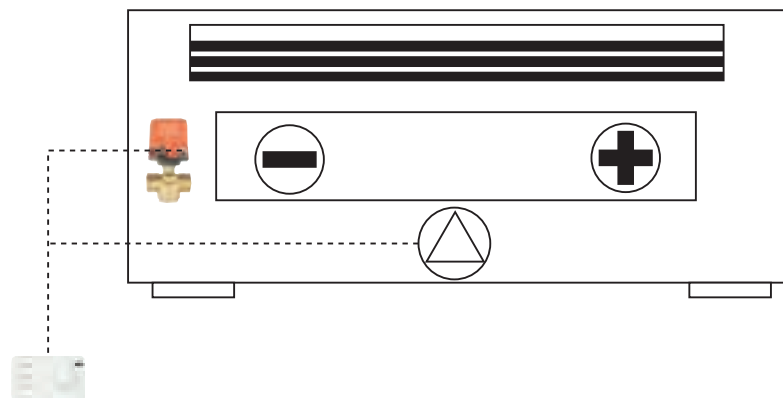
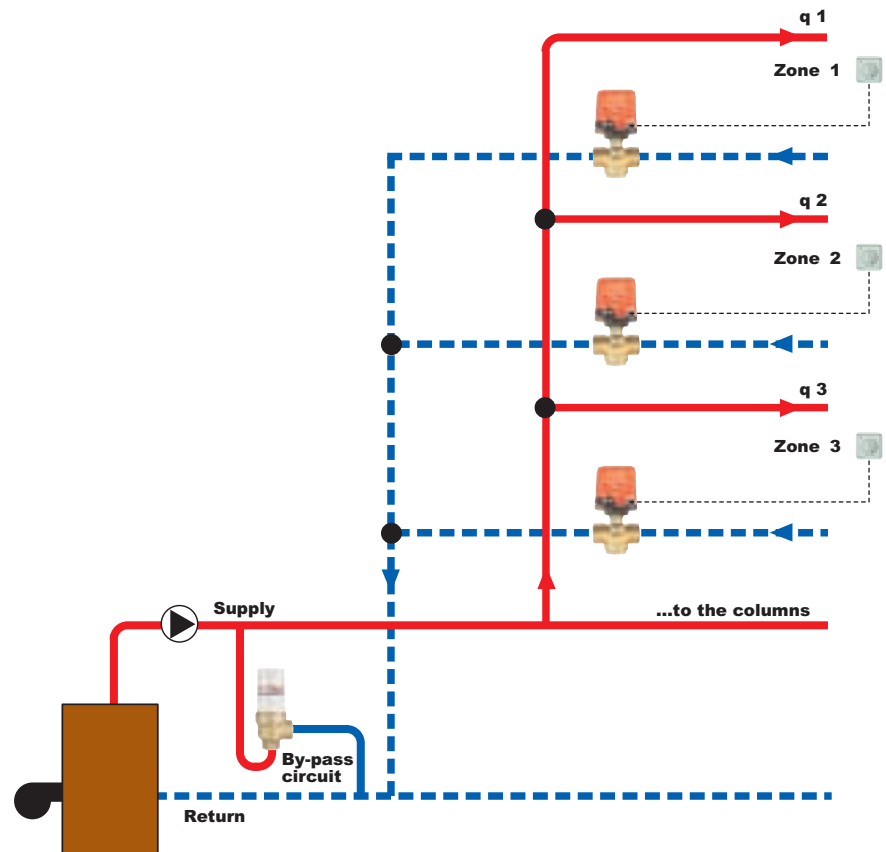
The Series VU zone valves are automatic devices (NC) normally used for controlling flows of hot and cold water from heating and/or air conditioning systems, depending on an on/off control (designed also for modulating actuators ETM).

The electric actuator of thermal expansion servocontrol ETE with automatic limit switch, stands out for ultra silent and reliable operation; assembly to the valve body is simply through a bayonet coupling.

A special device allows direct manual actuation of the Series VU valve.

Avoid installing the valve with servomotor facing down (infiltrations, condensate).

ZONE SYSTEM WITH 2-WAY VALVES



FAN-COIL VALVES



2131

Two-way brass valve for fan-coils. ON/OFF operation with actuators series 22C, 10C, 20C. Max. operating temperature: 100°C. Disc stroke: 2.5 mm. Nominal pressure: 16 bar.

Type	Part number	Size body	Kvs	Min. order	€uro
2131	213112	1/2" MM	1,7	1	--
2131	213134	3/4" MM	2,8	1	--
2131	21311	1" MM	5,2	1	--



3131

Three-way brass valve for fan-coils. ON/OFF operation with actuators series 22C, 10C, 20C. Max. operating temperature: 100°C. Disc stroke: 2.5 mm. Can be used both as mixing and diverting valve, except for version 31311 which can only be used as diverting valve. Nominal pressure: 16 bar.

The Kvs and by-pass Kvs values given in the table alongside refer to the valve used for diverting service.

Type	Part number	Size body	Kvs	Kvs By-pass	Min. order	€uro
3131	313112	1/2" MM	1,7	1,3	1	--
3131	313134	3/4" MM	2,8	1,8	1	--
3131	31311	1" MM	5,2	3,3	1	--



4131

Three-way brass valve with 4 connections for fan-coils. ON/OFF operation with actuators series 22C, 10C, 20C. Max. operating temperature: 100°C. Disc stroke: 2.5 mm. Can be used both as mixing and diverting valve. Nominal pressure: 16 bar.

The Kvs and by-pass Kvs values given in the table alongside refer to the valve used for diverting service.

Type	Part number	Size body	Kvs	Kvs By-pass	Min. order	€uro
4131	413112	1/2" MM	1,7	1,3	1	--
4131	413134	3/4" MM	2,8	1,8	1	--



840

Soft sealed union with nut for zone valves series 2131, 3131, 4131.

Type	Part number	Size body	Min. order	€uro
840	8401212GAS	1/2" x 1/2"	50	--
840	8403434GAS	3/4" x 3/4"	50	--
840	84011GAS	1" x 1"	50	--



841

Weld unions with nut for fan coil valves 2131,3131,4131. * with o-ring on the tailpiece. Remove o-ring temporarily during the welding. ** without o-ring.

Type	Part number	Size body	Min. order	€uro
* 841	8411214C	1/2" x 14	50	--
* 841	8411215C	1/2" x 15	50	--
* 841	8411216C	1/2" x 16	50	--
* 841	8413812C	3/8" x 12	50	--
**841	8411216SOL	1/2" x 16	50	--
**841	841128SOL	1/2" x 8	50	--
**841	8413422SOL	3/4" x 22	50	--


22C
NEW TELESTAT.

Electrothermic actuator compact design with on/off action, compatible with thermostat adaptable radiator valves, valve for fan-coils and manifolds Series 822MM.

Cap made of flame retardant plastic. Chrome-plated brass threaded ring nut M30 x 1.5. Normally Closed (N.C.). Normally Open (N.O.). Stroke : 3.5mm.

Power cable : 1 m dia. 7.2 mm.

* With power cable : dia. 5.5 mm Exempt from ENEC marking

Opening time : Version 230V 90 sec (start).- 3 Min (end) - Version 24V 3 Min (start) - 5 Min (end)

Plug thrust : 140N (NC version) - 80N (NO version). Power consumption : 2,5W

Inalterability range: 0°C / +50°C. 4-wire version (NO4 - NC4) complete with auxiliary Microswitch. Auxiliary contact load capacity : 700mA. Available with cable length 2m.

According to EEC 89/336, EEC 73/23, Italian Law 10/91. CEI-EN 55104/95 CEI-EN 55014/93C. Marking CE EN 60730- 214.

ENEC marking pending.

Type	Part number	Power supply	Protection	Min. order	€uro
22C	22C230NC2	230V	IP44	10	--
22C	22C24NC2	24V	IP44	10	--
22C	22C230NC4	230V	IP44	10	--
22C	22C24NC4	24V	IP44	10	--
22C	22C230NA2	230V	IP44	10	--
22C	22C24NA2	24V	IP44	10	--
22C	22C230NA4	230V	IP44	10	--
22C	22C24NA4	24V	IP44	10	--
*22C	22C230NC2-5	230V	IP44	10	--
*22C	22C24NC2-5	24V	IP44	10	--
*22C	22C230NA2-5	230V	IP44	10	--
*22C	22C24NA2-5	24V	IP44	10	--


10C
TELESAT.

Electrothermic actuator with auxiliary. Microswitch (only for version NC4 and NA4).

Insert thrust : 110 N. 1 m power cable. Normally Open (N.O.). Normally Closed (N.C.)

Wax thermostat element. Positioning time: Opening / Closing : 120 / 180 seconds

Power consumption: 5W. Auxiliary contact load capacity: 700 Ma.

Inalterability range: 0°C / + 50°C

According to EEC 89/336, EEC 73/23, Italian Law 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
10C	10C220NC2	230V	IP42	10	--
10C	10C24NC2	24V	IP42	10	--
10C	10C220NC4	230V	IP42	10	--
10C	10C24NC4	24V	IP42	10	--
10C	10C220NA2	230V	IP44	10	--
10C	10C24NA2	24V	IP44	10	--
10C	10C220NA4	230V	IP44	10	--
10C	10C24NA4	24V	IP44	10	--

UNTIL SOLD OUT


20C
TELESAT

Compact electrothermic actuator, normally closed. Provided with varistor for protection against surges. Insert thrust: 180N. Stroke: 2,5. 1 m power cable. Wax thermostat element. Positioning time: Opening / Closing: 120 / 180 seconds.

Power consumption: 5W. Inalterability range: 0°C / + 50°C.

According to EEC 89/336, EEC 73/23, Italian Law 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
20C	20C-220V	230V	IP44	10	--
					--

UNTIL SOLD OUT

FAN-COIL VALVES



VU02D

2-way brass valve for fan coil, normally closed (NC). Connections : 1/2" M
 Nominal pressure : 16 bar. Max differential pressure (item ETE) : 2 bar.
 Max working temperature : 110°C. Plug stroke : 4mm.

Type	Part number	Kvs	Actuator	Min. order	€uro
VU02D	VU02D.04	0,6	PA	1	--
VU02D	VU02D.05	1,0	PA	1	--
VU02D	VU02D.06	1,6	PA	1	--
VU02D	VU02D.07	2,5	PA	1	--
VU02D	VU02D.04XET	0,6	ET / PA	1	--
VU02D	VU02D.05XET	1,0	ET / PA	1	--
VU02D	VU02D.06XET	1,6	ET / PA	1	--
VU02D	VU02D.07XET	2,5	ET / PA	1	--
VU02D	VU02DXEA	2,0	EA	1	--



VU20D

2-way brass valve for fan coil, normally open (NO). Connections : 1/2" M
 Nominal pressure : 16 bar. Max differential pressure (item ETE) : 2 bar.
 Max working temperature : 110°C. Plug stroke : 4mm.

Type	Part number	Kvs	Actuator	Min. order	€uro
VU20D	VU20D.04	2,0	PA	1	--
VU20D	VU20D.05	1,0	PA	1	--
VU20D	VU20D.06	1,6	PA	1	--
VU20D	VU20D.07	2,5	PA	1	--
VU20D	VU20D.04XET	2,0	ET / PA	1	--
VU20D	VU20D.05XET	1,0	ET / PA	1	--
VU20D	VU20D.06XET	1,6	ET / PA	1	--
VU20D	VU20D.07XET	2,5	ET / PA	1	--
VU20D	VU20DXEA	2,0	EA	1	--



VU3T

3-way brass valve for fan coil, normally closed (NC). Connections : 1/2" M.
 Nominal pressure : 16 bar. Max differential pressure (item ETE) : 2 bar.
 Max working temperature : 110°C. Plug stroke : 4mm.

Type	Part number	Kvs By-pass	Actuator	Min. order	€uro
VU3T	VU3T.28	0,6 / 0,6	PA	1	--
VU3T	VU3T.37	1,0 / 1,0	PA	1	--
VU3T	VU3T.45	1,6 / 1,0	PA	1	--
VU3T	VU3T.46	1,6 / 1,6	PA	1	--
VU3T	VU3T.54	2,5 / 1,6	PA	1	--
VU3T	VU3T.55	2,5 / 2,5	PA	1	--
VU3T	VU3T.28XET	0,6 / 0,6	ET / PA	1	--
VU3T	VU3T.37XET	1,0 / 1,0	ET / PA	1	--
VU3T	VU3T.46XET	1,6 / 1,6	ET / PA	1	--
VU3T	VU3T.55XET	2,5 / 2,5	ET / PA	1	--
VU3T	VU3TXEA	2,0 / 2,0	EA	1	--


VU04

Brass 3-way 4 port valve for fan coil, normally closed (NC). Connections : 1/2" M.
 Nominal pressure : 16 bar. Max differential pressure (item ETE) : 2 bar.
 Max working temperature : 110°C. Plug stroke : 4mm.

Type	Part number	Kvs By-pass	Actuator	Min. order	€uro
VU04	VU04.28	0,6 / 0,6	PA	1	--
VU04	VU04.36	1,0 / 1,6	PA	1	--
VU04	VU04.37	1,0 / 1,0	PA	1	--
VU04	VU04.44	1,6 / 0,6	PA	1	--
VU04	VU04.45	1,6 / 1,0	PA	1	--
VU04	VU04.46	1,6 / 1,6	PA	1	--
VU04	VU04.54	2,5 / 1,6	PA	1	--
VU04	VU04.55	2,5 / 2,5	PA	1	--
VU04	VU04.28XET	0,6 / 0,6	ET / PA	1	--
VU04	VU04.36XET	1,0 / 0,6	ET / PA	1	--
VU04	VU04.37XET	1,0 / 1,0	ET / PA	1	--
VU04	VU04.44XET	1,6 / 0,6	ET / PA	1	--
VU04	VU04.45XET	1,6 / 1,0	ET / PA	1	--
VU04	VU04.46XET	1,6 / 1,6	ET / PA	1	--
VU04	VU04.54XET	2,5 / 1,6	ET / PA	1	--
VU04	VU04.55XET	2,5 / 2,5	ET / PA	1	--
VU04	VU04RXETE	2,0 / 1,6	ETE	1	--
VU04	VU04XEA	2,0 / 1,6	EA	1	--


VU40

Brass 3-way 4 port valve for fan coil, normally open (NO). Connections : 1/2" M.
 Nominal pressure : 16 bar. Max differential pressure (item ETE) : 2 bar.
 Max working temperature : 110°C. Plug stroke : 4mm

Type	Part number	Kvs By-pass	Actuator	Min. order	€uro
VU40	VU40.28	0,6 / 0,6	PA	1	--
VU40	VU40.29	0,6 / 1,0	PA	1	--
VU40	VU40.37	1,0 / 1,0	PA	1	--
VU40	VU40.38	1,0 / 1,6	PA	1	--
VU40	VU40.46	1,6 / 1,6	PA	1	--
VU40	VU40.47	1,6 / 2,5	PA	1	--
VU40	VU40.55	2,5 / 2,5	PA	1	--
VU40	VU40.28XET	0,6 / 0,6	ET/PA	1	--
VU40	VU40.29XET	0,6 / 1,0	ET/PA	1	--
VU40	VU40.37XET	1,0 / 1,0	ET/PA	1	--
VU40	VU40.38XET	1,0 / 1,6	ET/PA	1	--
VU40	VU40.47XET	1,6 / 2,5	ET/PA	1	--
VU40	VU40XEA	2,0 / 1,6	EA	1	--

ELECTROTHERMIC ACTUATORS



ETE

ON/OFF electrothermic actuator for zone valve series VU and V2/3BMXE. Auxiliary normally open (NO) microswitch for supplementary commands (e.g. pump, metering). Bayonet coupling for fastening to valve body. Manual control device. Power consumption: 18W. Stroke: 4 mm. Plug thrust: 250N. Positioning time: 4 min.
 BO = With auxiliary switch normally open
 B1 = With auxiliary switch normally close
 UL1 = Approved UL cable 1m
 UL14 = Approved UL cable 1,4m

According to EEC 89/336, EEC 73/23, Italian Act 10/91.

Type	Part number	Power supply	Protection	Min. order	€uro
ETE	ETE24	24V	IP20	1	--
ETE	ETE24BO	24V	IP20	1	--
ETE	ETE110	110V	IP20	1	--
ETE	ETE220BO	230V	IP20	1	--
ETE	ETE220B1	230V	IP20	1	--
ETE	ETE230UL1	230V	IP20	1	--
ETE	ETE230UL14	230V	IP20	1	--



ETM

Modulating electrothermic actuator. Device for manual control. Power rating : 18W. Power consumption in operation : 3 W.
 - ETM24 to be coupled with regulators running on 16 Vdc powered by servomotor; supplied complete with cable 6 x 0.75 sq.mm, L 1mt.
 - ETM24-12 to be coupled with regulators running on 24 Vac; supplied complete with cable 4 x 0.75 sq.mm, L 1mt.

Type	Part number	Power supply	Protection	Min. order	€uro
ETM	ETM24	24V	IP44	1	--
ETM	ETM24-12	24V	IP44	1	--



EA

ON/OFF electric gear driven actuator. Used for 2, 3, and 3-way 4 connections valves Series VU and VBM..XEA. Bayonet fixing to valve body. Manual valve control device. Supply : 24/110/230/240V. Power consumption: 6W. Stroke: 4mm. Positioning time: 20s. Plug thrust: 90N. Protection class: IP 42.
 UB0 = Auxiliary switch normally

Type	Part number	Power supply	Min. order	€uro
EA	EA24	24V	1	--
EA	EA24UB0	24V	1	--
EA	EA24UB1	24V	1	--
EA	EA110	110V	1	--
EA	EA110UB1	110V	1	--
EA	EA220	230V	1	--
EA	EA220UB0	230V	1	--
EA	EA220UB1	230V	1	--
EA	EA240	240V	1	--


PA

Pneumatic actuator only for VU and VBM valves as follow :

PA7 = Valves VU02D-20D-3T-04-40.

PA7..4 = Valves VU02D-20D-3T-04-40 and VBM...XET.

Type	Part number	Spring range	Min. order	€uro
PA	PA7	0,2 / 0,4 bar	1	--
PA	PA7H	0,6 / 0,7 bar	1	--
PA	PA7C	0,2 / 0,8 bar	1	--
PA	PA7L4	0,2 / 0,4 bar	1	--
PA	PA7H4	0,6 / 0,8 bar	1	--
PA	PA7C4	0,2 / 0,8 bar	1	--

SINGLE MODUL MANIFOLDS



805M

Single modular brass CW617N manifold with prefitted seal and lock nut.
 Side outlet connections: 1/2" M - 3/4" M.
 M/F head connections: 3/4" - 1" - 1.1/4".

Type	Part number	Size body	Outlets	Center Distance	Min. order	€uro
805M	805M34TMN2	3/4"	2-1/2" M	35 mm	10	--
805M	805M34TMN3	3/4"	3-1/2" M	35 mm	10	--
805M	805M34TMN4	3/4"	4-1/2" M	35 mm	10	--
805M	805M1TMN2X	1"	2-1/2" M	35 mm	10	--
805M	805M1TMN3X	1"	3-1/2" M	35 mm	10	--
805M	805M1TMN4X	1"	4-1/2" M	35 mm	10	--
805M	805M54TMN3	1.1/4"	3-1/2" M	50 mm	10	--
805M	805M54TMN4	1.1/4"	4-1/2" M	50 mm	10	--
805M	805M1TN2X	1"	2-1/2" M	50 mm	10	--
805M	805M1TN3X	1"	3-1/2" M	50 mm	10	--
805M	805M1TN4X	1"	4-1/2" M	50 mm	10	--
805M	805M1TM2X	1"	2-3/4" M	50 mm	10	--
805M	805M1TM3X	1"	3-3/4" M	50 mm	10	--
805M	805M1TM4X	1"	4-3/4" M	50 mm	10	--
805M	805M54TM3	1.1/4"	3-3/4" M	50 mm	10	--
805M	805M54TM4	1.1/4"	4-3/4" M	50 mm	10	--



805ME

Single modular brass CW617N manifold with prefitted seal and lock nut.
 Side outlet connections: 3/4" M EUROCONO.
 M/F head connections: 1".

Type	Part number	Size body	Outlets	Min. order	€uro
805ME	805M1TME2X	1"	2-3/4"	10	--
805ME	805M1TME3X	1"	3-3/4"	10	--
805ME	805M1TME4X	1"	4-3/4"	10	--



806M

Single blank end modular brass CW617N manifold.
 Side outlet connections: 1/2" M.
 Female head connections: 3/4" - 1".

Type	Part number	Size body	Outlets	Center Distance	Min. order	€uro
806M	806MOT234	3/4" F	2-1/2" M	35 mm	10	--
806M	806MOT21	1" F	2-1/2" M	35 mm	10	--



807M

Single modular brass CW617N manifold.
 Side outlet connections: 1/2" M.
 Female head connections: 3/4".

Type	Part number	Size body	Outlets	Center Distance	Min. order	€uro
807M	807MT234	3/4" FF	2-1/2" M	35 mm	25	--
807M	807MT334	3/4" FF	3-1/2" M	35 mm	20	--
807M	807MT434	3/4" FF	4-1/2" M	35 mm	10	--


E807M

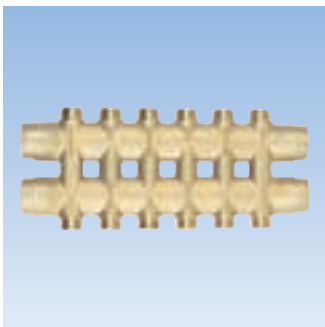
Single modular brass CW617N manifold. Side outlet connections: 1/2" M.
M/F head connections: 3/4".

Type	Part number	Size body	Outlets	Center Distance	Min. order	€uro
E807M	E807M-MF-T2	3/4" MF	2-1/2" M	35 mm	10	--
E807M	E807M-MF-T3	3/4" MF	3-1/2" M	35 mm	10	--
E807M	E807M-MF-T4	3/4" MF	4-1/2" M	35 mm	10	--


E810M

Single modular brass CW617N manifold. Side outlet connections: 1/2" M.
M/F head connections: 1".

Type	Part number	Size body	Outlets	Min. order	€uro
E810M	E810MTM2	1"	2	10	--
E810M	E810MTM3	1"	3	10	--
E810M	E810MTM4	1"	4	10	--


825M

Flush brass CW617N manifold. Outlets on both sides: 1/2" M.
Female head connections: 3/4" - 1". Outlet centre distance: 35 mm.

Type	Part number	Size body	Outlets	Min. order	€uro
825M	825M34DD22	3/4" FF	2 + 2	1	--
825M	825M34DD44	3/4" FF	4 + 4	1	--
825M	825M34DD66	3/4" FF	6 + 6	1	--
825M	825M34DD88	3/4" FF	8 + 8	1	--
825M	825M1DD44	1" FF	4 + 4	1	--
825M	825M1DD66	1" FF	6 + 6	1	--
825M	825M1DD88	1" FF	8 + 8	1	--
825M	825M1DD1010	1" FF	10 + 10	1	--


812M

Flush copper manifold. Brass outlets on just one side: 1/2" M.
Female head connections: 3/4". Outlet centre distance: 36 mm.

Type	Part number	Size body	Outlets	Min. order	€uro
812M	812MD124	3/4" FF	4	1	--
812M	812MD126	3/4" FF	6	1	--
812M	812MD128	3/4" FF	8	1	--
812M	812MD1210	3/4" FF	10	1	--
812M	812MD1212	3/4" FF	12	1	--
812M	812MD1214	3/4" FF	14	1	--
812M	812MD1216	3/4" FF	16	1	--
812M	812MD1218	3/4" FF	18	1	--

FLUSH MODUL MANIFOLDS



814M

Flush copper manifold. Brass outlets on both sides: 1/2" M.
Female head connections: 3/4". Outlet centre distance: 36 mm.

Type	Part number	Size body	Outlets	Min. order	€uro
814M	814MDG22	3/4" FF	2 + 2	1	--
814M	814MDG24	3/4" FF	2 + 4	1	--
814M	814MDG44	3/4" FF	4 + 4	1	--
814M	814MDG46	3/4" FF	4 + 6	1	--
814M	814MDG66	3/4" FF	6 + 6	1	--
814M	814MDG68	3/4" FF	6 + 8	1	--
814M	814MDG88	3/4" FF	8 + 8	1	--
814M	814MDG1010	3/4" FF	10 + 10	1	--



815M

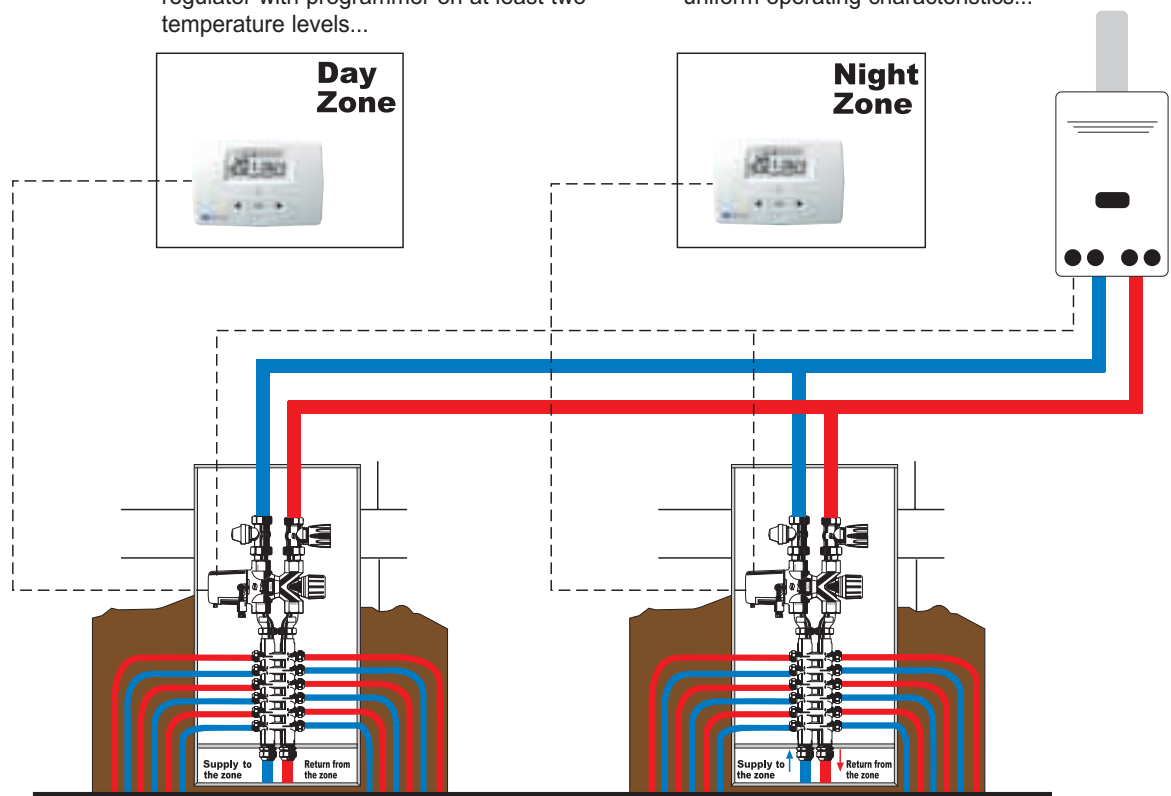
Flush copper manifold. Brass outlets on both sides: 1/2" M.
Female head connections: 1". Outlet centre distance: 36 mm.

Type	Part number	Size body	Outlets	Min. order	€uro
815M	815MDM44	1" FF	4 + 4	1	--
815M	815MDM66	1" FF	6 + 6	1	--
815M	815MDM88	1" FF	8 + 8	1	--
815M	815MDM1010	1" FF	10 + 10	1	--

Modul distribution with zone control

Italian Decree 412/93, Article 7, Subsection 6
Heating systems for individual apartments... shall be provided with... regulator with programmer on at least two temperature levels...

Italian Decree 412/93, Article 7, Subsection 6
It is advisable to install ... devices for control of the single zones having uniform operating characteristics...



MODUL MANIFOLDS FOR FLOOR HEATING SYSTEMS

822MM

Single modular brass return manifold with prefitted seal and lock nut. Built in control valves, thermostat adaptable with electrothermic actuators series 22C. Side outlet connections: 1/2" M - 3/4" M. Male/female head connections: 1" - 1.1/4". Differential pressure: 1.5 bar. Kvs of outlets: 2.28.

Type	Part number	Size body	Outlets	Center Distance	Min. order	€uro
822MM	822MM1TMN2	1" MF	2-1/2" M	50 mm	10	--
822MM	822MM1TMN3	1" MF	3-1/2" M	50 mm	10	--
822MM	822MM1TMN4	1" MF	4-1/2" M	50 mm	10	--
822MM	822MM1TM2	1" MF	2-3/4" M	50 mm	10	--
822MM	822MM1TM3	1" MF	3-3/4" M	50 mm	10	--
822MM	822MM1TM4	1" MF	4-3/4" M	50 mm	10	--
822MM	822MM54TMN3	1.1/4" MF	3-1/2" M	50 mm	5	--
822MM	822MM54TMN4	1.1/4" MF	4-1/2" M	50 mm	5	--
822MM	822MM54TM3	1.1/4" MF	3-3/4" M	50 mm	5	--
822MM	822MM54TM4	1.1/4" MF	4-3/4" M	50 mm	5	--


822MME

Single modular brass **return manifold** with prefitted seal and lock nut. Built in control valves, thermostat adaptable with electrothermic actuators series 22C. Side outlet connections: 3/4" M **EUROCONO**. Male/female head connections: 1" - 1.1/4". Differential pressure: 1.5 bar. Kvs of outlets: 2.28.

Type	Part number	Size body	Outlets	Min. order	€uro
822MME	822MM1TME2	1"	2-3/4"	10	--
822MME	822MM1TME3	1"	3-3/4"	10	--
822MME	822MM1TME4	1"	4-3/4"	10	--
822MME	822MM54TME3	1.1/4"	3-3/4"	10	--
822MME	822MM54TME4	1.1/4"	4-3/4"	10	--


822MR

Single modular brass **delivery manifold** with prefitted seal and lock nut, built-in brass balancer register lockshield. Side outlet connections: 1/2" M - 3/4" M. Male/female head connections: 1" - 1.1/4". Kvs of outlets: 2.61.

Type	Part number	Size body	Outlets	Center Distance	Min. order	€uro
822MR	822MR1TMN2	1" MF	2-1/2" M	50 mm	10	--
822MR	822MR1TMN3	1" MF	3-1/2" M	50 mm	10	--
822MR	822MR1TMN4	1" MF	4-1/2" M	50 mm	10	--
822MR	822MR1TM2	1" MF	2-3/4" M	50 mm	10	--
822MR	822MR1TM3	1" MF	3-3/4" M	50 mm	10	--
822MR	822MR1TM4	1" MF	4-3/4" M	50 mm	10	--
822MR	822MR54TMN3	1.1/4" MF	3-1/2" M	50 mm	5	--
822MR	822MR54TMN4	1.1/4" MF	4-1/2" M	50 mm	5	--
822MR	822MR54TM3	1.1/4" MF	3-3/4" M	50 mm	5	--
822MR	822MR54TM4	1.1/4" MF	4-3/4" M	50 mm	5	--


822MRE

Single modular brass **delivery manifold** with prefitted seal and lock nut, built-in brass balancer register lockshield. Side outlet connections: 3/4" M **EUROCONO**. Male/female head connections: 1" - 1.1/4". Kvs of outlets: 2.61.

Type	Part number	Size body	Outlets	Min. order	€uro
822MRE	822MR1TME2	1"	2-3/4"	10	--
822MRE	822MR1TME3	1"	3-3/4"	10	--
822MRE	822MR1TME4	1"	4-3/4"	10	--
822MRE	822MR54TME3	1.1/4"	3-3/4"	10	--
822MRE	822MR54TME4	1.1/4"	4-3/4"	10	--

MODUL MANIFOLDS FOR FLOOR HEATING SYSTEMS



FLMR

Single modular brass delivery manifold complete with flow meter series FLMR for control and measurement of flow in the circuits, with prefitted seal and lock nut as well as built-in brass balancer register lockshields. Male/female head connections: 1" - 1.1/4". Differential pressure: 1,5 bar. Kvs of outlets: 1,8. Centre distance: 50mm.

Type	Part number	Size body	Outlets	Min. order	€uro
FLMR	FLMR1TM2	1"	2-3/4"	1	--
FLMR	FLMR1TM3	1"	3-3/4"	1	--
FLMR	FLMR1TM4	1"	4-3/4"	1	--
FLMR	FLMR54TM3	1.1/4"	3-3/4"	1	--
FLMR	FLMR54TM4	1.1/4"	4-3/4"	1	--



FLMRE

Single modular brass **delivery manifold**, complete with flowmeter serie FLMR for control and measuring of flow in the circuits, with prefitted seal and lock nut. Male/female head connections : 1" - 1.1/4". Side outlet connections: 3/4"M **EUROCONO**. Flowmeter differential pressure : min 0.1÷ max 0.5 bar. Setting : 0 ÷ 6 l/mim. Kvs outlets : 1.8.

Type	Part number	Size body	Outlets	Min. order	€uro
FLMRE	FLMR1TME2	1"	2-3/4"	1	--
FLMRE	FLMR1TME3	1"	3-3/4"	1	--
FLMRE	FLMR1TME4	1"	4-3/4"	1	--
FLMRE	FLMR54TME3	1.1/4"	3-3/4"	1	--
FLMRE	FLMR54TME4	1.1/4"	4-3/4"	1	--

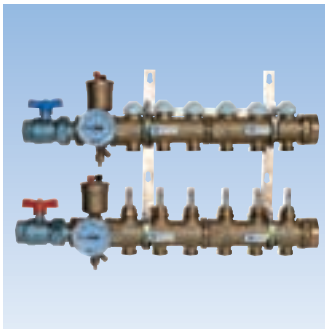


FL

Device for controlling and measuring flow in the individual circuits for manifolds series FLMR.

Type	Part number	Description	Min. order	€uro
FL	FLMR		10	--
FL	226	Control cap	10	--

PREASSEMBLED MANIFOLD AND ACCESSORIES



CPRFL

Preassembled manifold consisting of : delivery manifolds complete with flow meters series FLMR. Return manifolds series 822MM. Two ball shut-off valves series 210. Two end-pieces for manifolds series 823MP complete with drain cocks series 238, air vent valves series MVD and immersion thermometers serie TB. Centre distance between side outlet connections: 50 mm.

N.B.: inspection box not included in the supply.

Type	Part number	Size body	Outlets	Min. order	€uro
CPRFL	CPRFL54TM3	1.1/4" F	3-3/4"M	1	--
CPRFL	CPRFL54TM4	1.1/4" F	4-3/4"M	1	--
CPRFL	CPRFL54TM5	1.1/4" F	5-3/4"M	1	--
CPRFL	CPRFL54TM6	1.1/4" F	6-3/4"M	1	--
CPRFL	CPRFL54TM7	1.1/4" F	7-3/4"M	1	--
CPRFL	CPRFL54TM8	1.1/4" F	8-3/4"M	1	--
CPRFL	CPRFL54TM9	1.1/4" F	9-3/4"M	1	--
CPRFL	CPRFL54TM10	1.1/4" F	10-3/4"M	1	--
CPRFL	CPRFL54TM11	1.1/4" F	11-3/4"M	1	--
CPRFL	CPRFL54TM12	1.1/4" F	12-3/4"M	1	--

Recommended boxes

For manifolds with 3 to 6 outlets	Type 839M6075N
For manifolds with 7 to 10 outlets, up to a max. of 12 outlets	Type 839M8075N Type 839M10075N

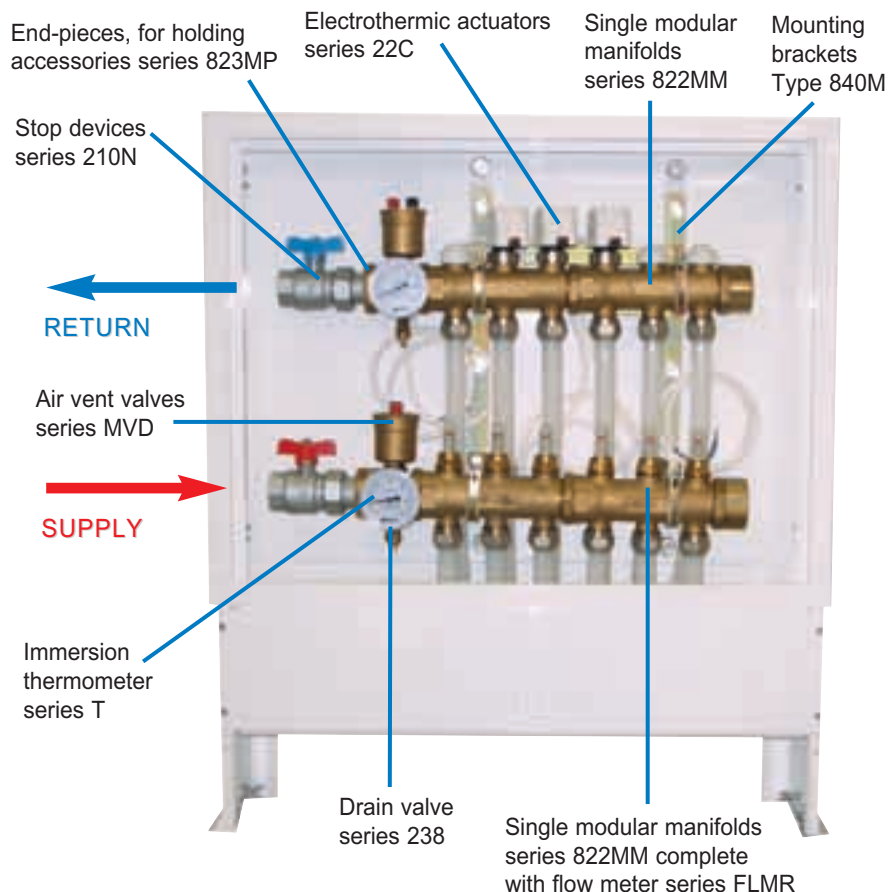
Balancing of circuits branched from manifolds series CPRFL

Reliable readjustment of flow rates from the various branches to the design valve is a performance characteristic which "makes the difference" as regards correct operation of the system, above all in radiant panel systems.

For uniform heat comfort, each circuit should give up the correct quantity of thermal energy, and from this point-of-view the flow rate parameter is a very important factor. The new modular FLMR manifolds, size 1" and 1.1/4" for building up distributors with any number of connections, provide a valid solution : in fact, a real flow meter, incorporated in the setting device, is installed in each delivery branch.

Therefore the use of a measuring instrument is not required nor it is necessary to determine analytically the setting position on diagrams. It is merely necessary to open or close until the flow meter shows the required flow rate.

Automatic temperature control is possible on manifolds of the return line by using silent running electrothermic units (Type. 20C).



PREASSEMBLED MANIFOLD AND ACCESSORIES



823MP

End fitting for manifolds, with preassembled seal and lock nut.
 Provided with : Two 1/2" connections for mounting immersion thermometer series T.
 Two 3/8" connection for mounting drain cock series 238 and the air vent valve.

- Version 823MP112 with only two 1/2" connections.

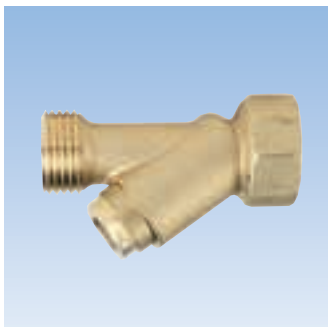
Type	Part number	Size body	Outlets	Min. order	€uro
823MP	823MP13812	1"	1/2" and 3/8"	10	--
823MP	823MP543812	1.1/4"	1/2" and 3/8"	10	--
823MP	823MP112	1"	1/2"	10	--



823MT

End piece for brass manifolds. Connections for air discharge and drain valve 3/8"F.
 Connection for further outlet: 1/2"F.

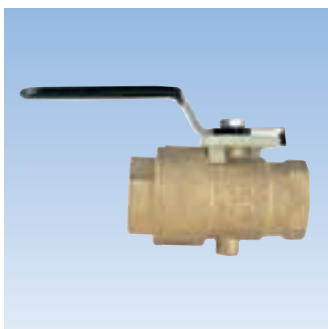
Type	Part number	Size body	Min. order	€uro
823MT	823MT1	1" M	10	--
823MT	823MT114	1.1/4" M	10	--



209

Brass balancer register lockshield valve for side connections of Modul manifolds.

Type	Part number	Size body	Min. order	€uro
209	20911212	1/2" MF	25	--



3800

EUROVALVE.
 Butterfly shut-off valve. Sleeve connections with lever handle and indicator for split flow.
 Nominal pressure: 16 bar.

Type	Part number	Size body	Kvs	Min. order	€uro
3800	380012	1/2" FF	10	6	--
3800	380034	3/4" FF	10	6	--
3800	38001	1" FF	22	6	--
3800	3800114	1.1/4" FF	34	6	--
3800	3800112	1.1/2" FF	46	6	--
3800	38002	2" FF	62	4	--



210

Ball shut-off valve with union for manifold head connections.
 Max. operating pressure :
 - 25 bar up to 95°C.
 - 16 bar up to 120°C.

Type	Part number	Size body	Min. order	€uro
210	2103434	3/4" MF	10	--
210	21011	1" MF	10	--
210	210114114	1.1/4" MF	10	--

PREASSEMBLED MANIFOLD AND ACCESSORIES

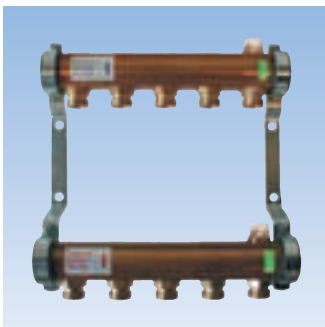
63C
AQUAMIX.

Thermostat mixing valve for radiant panel systems.

With 10 set positions and fixed by-pass against over temperature.

Setting range: 25°C / 50°C. Max. differential pressure: 2 bar.

Type	Part number	Size body	Min. order	€uro
63C	6310C34	3/4" FF	1	--
63C	6311C1	1" FF	1	--


HLV500

Preassembled manifolds designed for radiator systems, consisting of :

Delivery/return manifolds with anti-dezincification brass bar (MS 63).

Head connections: 1" F. Complete with built-in manual air vent valve.

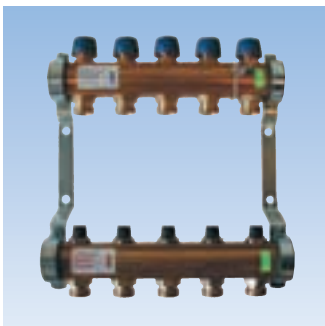
Nickel-plated steel mounting brackets DIN 4109.

 Side outlet connections from 2-12 : **3/4" EURO-CONE with centre distance 50 mm.**

Accessories for head connections: Series BV, BVT, TS, TSS.

Can be assembled with nipples series RNM.

Type	Part number	Size body	Outlets	Min. order	€uro
HLV500	3804702WC	1" F	2-3/4"	1	--
HLV500	3804703WC	1" F	3-3/4"	1	--
HLV500	3804704WC	1" F	4-3/4"	1	--
HLV500	3804705WC	1" F	5-3/4"	1	--
HLV500	3804706WC	1" F	6-3/4"	1	--
HLV500	3804707WC	1" F	7-3/4"	1	--
HLV500	3804708WC	1" F	8-3/4"	1	--
HLV500	3804709WC	1" F	9-3/4"	1	--
HLV500	3804710WC	1" F	10-3/4"	1	--
HLV500	3804711WC	1" F	11-3/4"	1	--
HLV500	3804712WC	1" F	12-3/4"	1	--


HKV510
HKV510

Preassembled manifolds with brass bar for radiant panel heating systems, consisting of :

Delivery manifold with side outlet connections and lockshields: Kvs 1.39.

Return manifold with side outlet connections and thermostat adaptable valves suitable for electrothermic actuator (on request Type 22C 220V or 24V).

Head connections: 1" F. Nickel-plated steel mounting brackets DIN 4109.

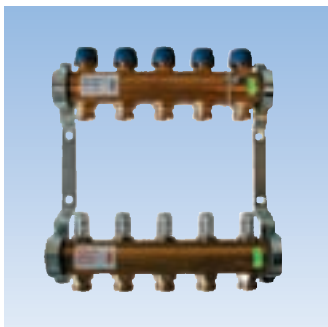
 Side outlet connections: **3/4" EURO-CONE with centre distance 50 mm.**

Accessories for main connections, see : BV, BVT, TS, TSS.

Can be assembled with nipples series RNM.

Type	Part number	Size body	Outlets	Min. order	€uro
HKV510	3803102WC	1" F	2-3/4"	1	--
HKV510	3803103WC	1" F	3-3/4"	1	--
HKV510	3803104WC	1" F	4-3/4"	1	--
HKV510	3803105WC	1" F	5-3/4"	1	--
HKV510	3803106WC	1" F	6-3/4"	1	--
HKV510	3803107WC	1" F	7-3/4"	1	--
HKV510	3803108WC	1" F	8-3/4"	1	--
HKV510	3803109WC	1" F	9-3/4"	1	--
HKV510	3803110WC	1" F	10-3/4"	1	--
HKV510	3803111WC	1" F	11-3/4"	1	--
HKV510	3803112WC	1" F	12-3/4"	1	--

PREASSEMBLED MANIFOLD AND ACCESSORIES



HKV513

HKV513
Like preassembled manifolds Series HKV510 but complete with :
 Flowmeter (0-4 l/min) incorporated in the delivery manifold.
 Accessories for main connections, see : BV, BVT, TS, TSS.
Can be assembled with nipples series RNM.

Type	Part number	Size body	Outlets	Min. order	€uro
HKV513	3803202WC	1" F	2-3/4"	1	--
HKV513	3803203WC	1" F	3-3/4"	1	--
HKV513	3803204WC	1" F	4-3/4"	1	--
HKV513	3803205WC	1" F	5-3/4"	1	--
HKV513	3803206WC	1" F	6-3/4"	1	--
HKV513	3803207WC	1" F	7-3/4"	1	--
HKV513	3803208WC	1" F	8-3/4"	1	--
HKV513	3803209WC	1" F	9-3/4"	1	--
HKV513	3803210WC	1" F	10-3/4"	1	--
HKV513	3803211WC	1" F	11-3/4"	1	--
HKV513	3803212WC	1" F	12-3/4"	1	--

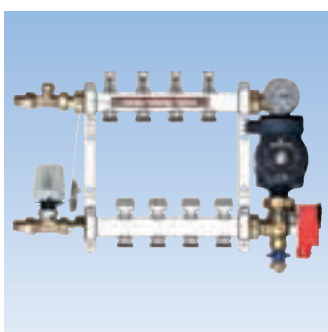


ISOTHERM

Mixing, pumping and set temperature control unit, for radiant panel heating systems.
 The ready-to-use unit is designed for direct connection to preassembled manifolds of the HKV series. The as-built system can be fed at boiler temperature (70-80°C) and provided with controlled low temperature outlets. The unit includes the following tight-sealed devices fitted on the piping : Three-way thermostatic mixing valve with adjustment range 27 to 42 °C. Motor-driven circulating pump Wilo RS 25/6-3. Safety thermostat, pump interlock. Precision thermometer on radiant panel delivery line. Designed for max. power rating of approx. 10 kW. Max. operating temperature: 90°C. Max. operating pressure: 10 bar.

CAUTION : Nipple series RNM required for assembly to the manifolds.

Type	Part number	Size body	Setting range	Min. order	€uro
ISOTHERM	4402070	20	27 - 42 °C	1	--



FWRS2030

Mixing (bleeding), pump and set temperature control unit, for radiant panel heating systems.
 The ready-to-use unit is designed for direct connection to preassembled manifolds of the HKV series by **using nipple fitting series RNM** (not included in the supply).
 The as-built system can be fed at boiler temperature (70-80°C) and provided with controlled low temperature outlets. The unit, in two sections, includes the following components:
 Two-way capillary thermostatic valve with adjustment range 20 to 50 °C.
 Electrically-driven circulating pump, Grundfos UPS 25-40.
 Safety thermostat, pump interlock. Precision thermometer on radiant panel delivery line.
 Designed for max. power rating of approx. 10 kW. Max operating temperature: 90 °C.
 Max operating pressure: 10 bar.

Type	Part number	Size body	Setting range	Min. order	€uro
FWRS2030	4402040	20	20 - 50 °C	1	--



HM5000

Brass central manifold MS63, ready-for installation, to build 2 or 3 independent supply-return circuits designed to be provided with pumping module **PM5000**.
 All connections, with **centre distance 125 mm**, are with swivel nut size 1.1/2" and seals for flat-seat connection. Complete with insulation box with performed lagging.
 Max. operating temperature: 110 °C. Max operating pressure: 6 bar.

Type	Part number	Outlets	Min. order	€uro
HM5000	3500675	2	1	--
HM5000	3500680	3	1	--

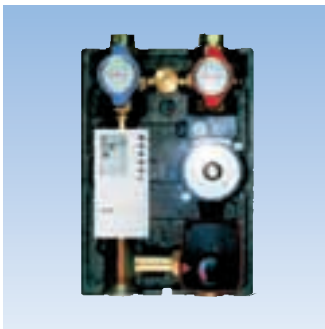
PREASSEMBLED MANIFOLD AND ACCESSORIES


PM5000

Pumping and control module ready-for-installation, designed to be fitted to side outlet connections of central manifold **HM5000**.

The 1.1/4" M connections, with **centre distance 125 mm**, are designed to receive the swivel nut; **the pump connection (pump not included in the supply)** to be placed on the delivery line is, instead, with swivel nut size 1.1/2". The outlets, complete with ball shut-off valves (with red and blue levers) and precision thermometers, are interconnected by a **by-pass valve** for setting and stabilizing the pump head. The ball valve, on the delivery side, is also provided with a **natural anti-circulation device**. Complete with insulation box with preformed lagging. Designed for the most widely used circulating pumps (Grundfos, Wilo, KSB, Biral, etc.). Max. operating temperature: 110 °C. Max. operating pressure: 6 bar.

Type	Part number	Description	Min. order	€uro
PM5000	3500618	With by-pass valve	1	--


FBVT

Pump module with automatic delivery temperature control, ready-for-installation, designed to be fitted either to side outlet connections of central manifold **HM5000**, or to the primary boiler circuit. The module **is provided with electrically-driven pump** Wilo RS 25/6 and three-way servo-controlled mixing valve (Kvs 4.0) piloted by a climate regulator with probe on delivery line and outdoor pump. The system is supplied with max. temperature limiter. All necessary electrical connections have already been made in the factory. The 1.1/4" M connections, with **centre distance 125 mm**, are designed to receive the swivel nut. The outlets, complete with ball shut-off valves (with red and blue levers) and precision thermometers, are interconnected by a **by-pass valve** for setting and stabilizing the pump head. The ball valve, on the delivery side, is also provided with a **natural anti-circulation device**. Complete with insulation box with preformed lagging. Designed for the most widely used circulating pumps (Grundfos, Wilo, KSB, Biral, etc.) Max. operating pressure : 10 bar. Max. operating temperature: 110 °C.

Type	Part number	Size	Min. order	€uro
FBVT	3502500	1.1/4"	1	--


EURO-CONE

3/4" compression unions **EURO-CONE for plastic piping**, designed for side outlet connections of manifolds, series HKV.

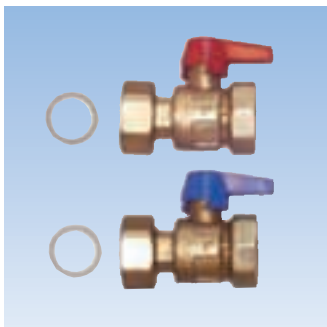
Type	Part number	Size	Pipe diameter	Min. order	€uro
EURO-CONE	EC3057230	3/4"	12 x 2.0	10	--
EURO-CONE	EC3017230	3/4"	14 x 2.0	10	--
EURO-CONE	EC3021230	3/4"	16 x 2.0	10	--
EURO-CONE	EC3025230	3/4"	17 x 2.0	10	--
EURO-CONE	EC3070230	3/4"	18 x 2.0	10	--
EURO-CONE	EC3029230	3/4"	20 x 2.0	10	--


RVPC

3/4" compression unions **EURO-CONE for multilayer piping**, designed for side outlet connections of manifolds, series HKV.

Type	Part number	Size	Pipe diameter	Min. order	€uro
RVPC	1071312RVPC	3/4"	12x2.0	10	--
RVPC	1071314RVPC	3/4"	14x2.0	10	--
RVPC	1071316RVPC	3/4"	16x2.0	10	--
RVPC	1071317RVPC	3/4"	17x2.0	10	--
RVPC	1071318RVPC	3/4"	18x2.0	10	--
RVPC	1071320RVPC	3/4"	20x2.0	10	--

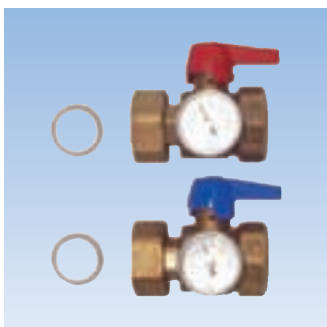
PREASSEMBLED MANIFOLD AND ACCESSORIES



BV

Pair of 1" ball shut-off valves, designed for manifolds of series HKV with 1" swivel nut and flat seal. Red and blue operating levers.

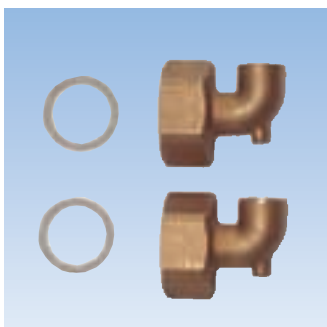
Type	Part number	Size body	Min. order	€uro
BV	3114049	1"	1	--



BVT

Pair of 1" ball shut-off valves with precision thermometer (scale 0-60°C) designed for manifolds of series HKV with 1" swivel nut and flat seal. Red and blue operating levers.

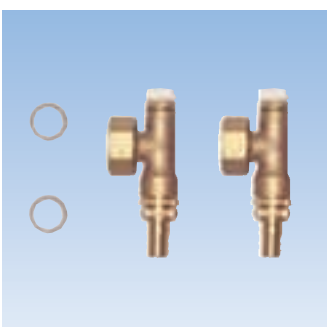
Type	Part number	Size body	Min. order	€uro
BVT	3114065	1"	1	--



TS

Pair of curved end-pieces, size 1", with air vent device, for manifolds of series HKV with 1" swivel nut and flat seal.

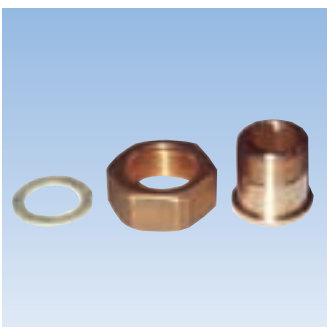
Type	Part number	Size body	Min. order	€uro
TS	3123100	1"	1	--



TSS

Pair of Tee end-pieces with air vent device (3/8") and drain valve (1/2"), for manifolds of series HKV with 1" swivel nut and flat seal.

Type	Part number	Size body	Min. order	€uro
TSS	TSS3036080	1"	1	--

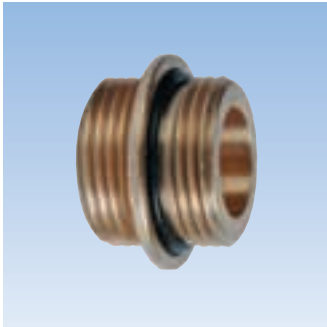


BDG

Male tailpiece, size 1" or 3/4" M, with 1" swivel nut and flat seal for manifolds of series HKV.

Type	Part number	Size body	Min. order	€uro
BDG	BDG2160615	3/4"	10	--
BDG	BDG2160620	1"	10	--

PREASSEMBLED MANIFOLD AND ACCESSORIES


RNM

Male nipple with threaded connections and O-ring.

N.B. Required for connection to the preassembled manifolds, series HLV500 - HKV510 - HKV513.

Type	Part number	Size body	Min. order	€uro
RNM	R3045010	1"MM	10	--

Choice of box by number of side outlet connections
Type A :

MANIFOLD ONLY series HLV500-HKV510-HKV513.

Type B :

Manifold with shut-off valve (series BV or BVT) and pair of end-pieces Model TSS.

Model	Dimensions w x h x d (mm)	Capacity N° side outlet connections	
		Type A	Type B
839M4075N	400 x 720/820 x 140	6	3
839M6075N	600 x 720/820 x 140	10	5
839M8075N	800 x 720/820 x 140	12	10
839M10075N	1000 x 720/820 x 140	12	12

INSPECTION BOXES


824M

Plastic inspection box complete with cover. **Designed for housing flush copper manifolds series 812M - 814M - 815M - 825M.**

Mounting system with plastic brackets sliding in guides located on the edges of the box.

Type	Part number	b x h x d (mm)	Min. order	€uro
824M	824M2540	250 x 400 x 80	5	--
824M	824M2550	250 x 500 x 80	5	--
824M	824M2560	250 x 600 x 80	5	--


824SF

Plastic inspection box for flush and single manifolds complete with cover.

Without base and brackets.

Type	Part number	b x h (mm)	Min. order	€uro
824SF	824SF2440	240 x 400	5	--
824SF	824SF2450	240 x 500	5	--
824SF	824SF2460	240 x 600	5	--

INSPECTION BOXES



828M

Galvanized metal inspection box complete with cover with screw closure.
Designed for housing distribution units consisting of flush manifolds series 812M - 814M - 815M - 825M plus zone valve type 561T. Complete with screws and bracket for mounting the manifold on central guide.

Type	Part number	b x h x d (mm)	Min. order	€uro
828M	828M2933N	290 x 330 x 80	1	--
828M	828M2950N	290 x 500 x 80	1	--
828M	828M2965N	290 x 650 x 80	1	--



832M

Like box **type 828M** but with cover, painted white.

Type	Part number	b x h x d (mm)	Min. order	€uro
832M	832M3370N	330 x 700 x 75	1	--

Choice of box by number of side outlet connections

Type A :
 Manifold only (Type 812M-814M-815M-825M)

Type B :
 Manifold with shut-off valve, fed from top

Type C :
 Like type A but fed from bottom and air vents at head of manifolds (Model 2161C34)

TYPE D :
 Like type A but with zone valve installed (Model 561T-560T-571T)

TYPE E :
 Like type B but with zone valve installed (Model 561T-560T-571T)

Model	Dimensions w x h x d (cm)	Max. capacity				
		Type A	Type B	Type C	Type D	Type E
824M	25 x 40 x 8	6 x 6	4 x 4	2 x 2	--	--
	25 x 50 x 8	8 x 8	6 x 6	4 x 4	--	--
	25 x 60 x 8	10 x 10	10 x 10	8 x 8	--	--
828M	29 x 33 x 8	6 x 6	2 x 2	--	--	--
	29 x 50 x 8	10 x 10	8 x 8	6 x 6	4 x 4	2 x 2
	29 x 65 x 8	10 x 10	10 x 10	8 x 8	8 x 8	6 x 6
832M	33 x 70 x 7,5	--	--	10 x 10	10 x 10	10 x 10



Type D


839M

Galvanized metal inspection box complete with snap-close cover, painted white and lockable. Height adjustable on site. Designed for housing distribution units consisting of modular manifolds **series 822MM-822MR-FLMR-805M** and preassembled manifolds CPRFL and **series HLV and HKV**.

Complete with bracket mounting screws (840M-844M not included) on universal guides.

Type	Part number	w x h x d (mm)	Min. order	€uro
839M	839M4075N	400 x 720/820 x 140	1	--
839M	839M6075N	600 x 720/820 x 140	1	--
839M	839M8075N	800 x 720/820 x 140	1	--
839M	839M10075N	1000 x 720/820 x 140	1	--


840M

Mounting bracket for modular manifolds

series 822MM-822MR ND 1" and ND 1.1/4" and series 805M, ND 1.1/4".

Complete with heat-shrink sheath.

Type	Part number	Min. order	€uro
840M	840M170	1	--


844M

Mounting bracket for modular manifolds **series 805M, ND 1" - 3/4"**.

Complete with heat-shrink sheath.

Type	Part number	Min. order	€uro
844M	844M170	1	--

Choice of box by number of side outlet connections
Type A :

Modular manifold Series 805M, 822MM, 822MR, FLMR with pair of ball valves Model 210 and pair of end pieces 823MT

Type B :

Like type A but with 1 ball valve and 1 balancing valve

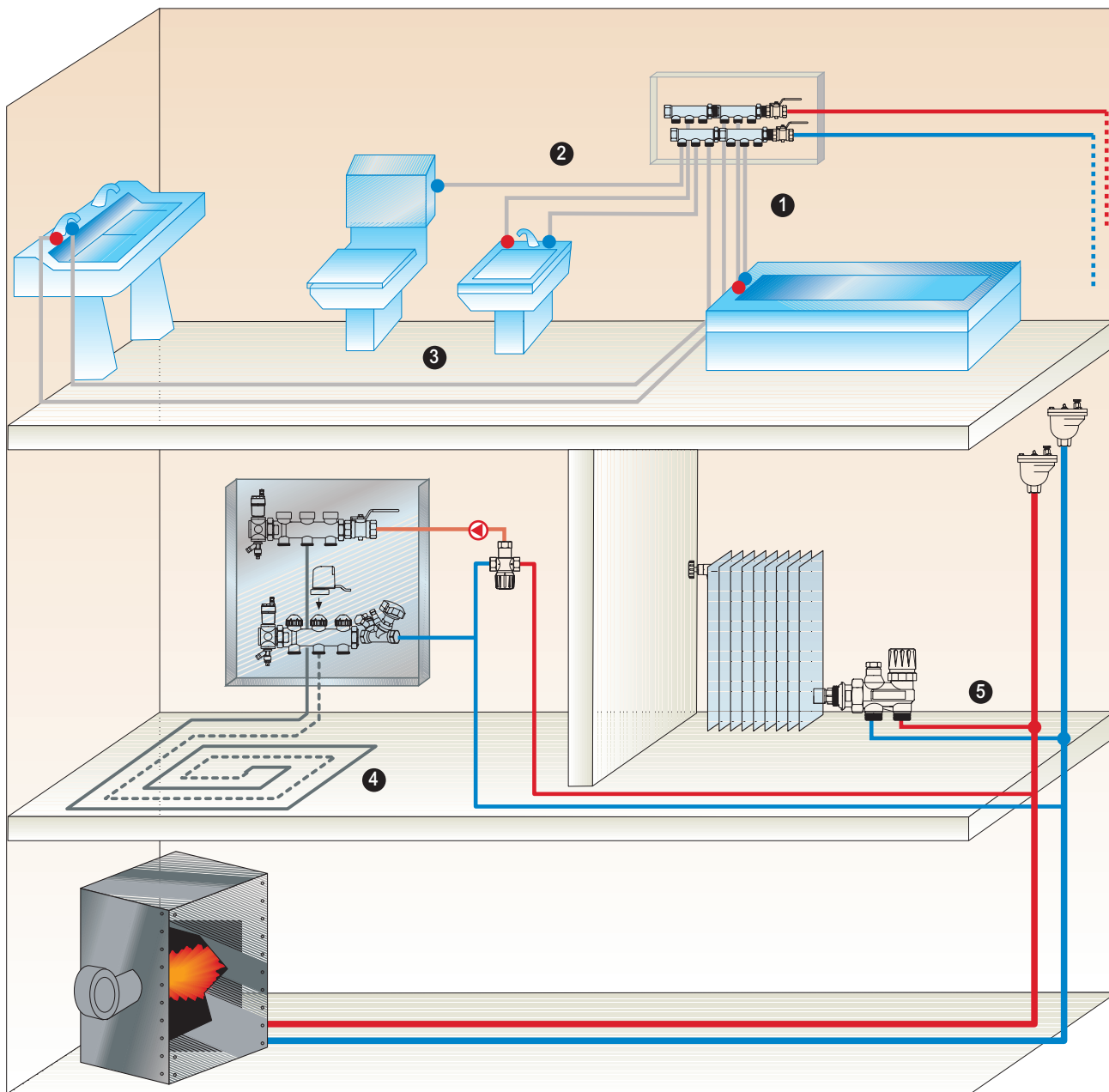
Model	Capacity N° side outlet connections	
	Type A	Type B
839M4075N	3	-
839M6075N	6	5
839M8075N	10	9
839M10075N	12	12





Cross-linked polyethylene pipe

EXAMPLE OF APPLICATION



- 1 Cross-linked polyethylene pipe for heating and sanitary systems series INTERSOL TPR
- 2 Cross-linked polyethylene pipe for heating and sanitary systems with UV barrier series INTERSOL TPRUV
- 3 Cross-linked polyethylene pipe for heating and sanitary systems enclosed in corrugated sheath series INTERSOL VPESR
- 4 Cross-linked polyethylene pipe for floor heating system with anti-oxidant barrier series INTERSOL VPEDD
- 5 Cross-linked polyethylene pipe for heating and sanitary systems sheathed in double wall corrugated pipe series DUOPIPE

CROSS-LINKED POLYETHYLENE PIPES FOR HEATING AND SANITARY SYSTEMS

TPR

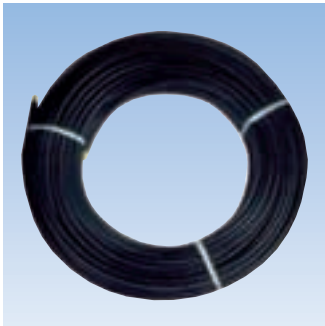
INTERSOL TPR.

Cross-linked polyethylene pipe. Can be used instead of conventional piping (copper - steel - iron). Suitable for heating and sanitary systems as it is non toxic. Easy to install. Low pressure drops. Age and corrosion resistant. Max. temperature: 100°C.

Other size on request.

According to UNI 9338. Approved according to UNI 315 IIP N° 206.

Type	Part number	Size	Min. order	€uro
TPR	1001112	12 x 2,0	100 m	--
TPR	1001115	15 x 2,5	100 m	--
TPR	1001118	18 x 2,5	100 m	--
TPR	1001120	20 x 2,0	120 m	--
TPR	1001122	22 x 3,0	100 m	--
TPR	1001128	28 x 3,0	50 m	--
TPR	1001132	32 x 3,0	50 m	--


TPRUV

INTERSOL TPRUV.

Cross-linked polyethylene pipe resistant to ageing action of UV rays. Characteristics like TPR, but suitable above all for outdoor sections exposed to sunlight.

Other size on request.

According to UNI 9338. Approved according to UNI 315 IIP N° 206.

Type	Part number	Size	Min. order	€uro
TPRUV	1001512	12 x 2,0	100 m	--
TPRUV	1001515	15 x 2,5	100 m	--
TPRUV	1001518	18 x 2,5	100 m	--
TPRUV	1001522	22 x 3,0	100 m	--
TPRUV	1001528	28 x 3,0	50 m	--
TPRUV	1001532	32 x 3,0	50 m	--


VPESR

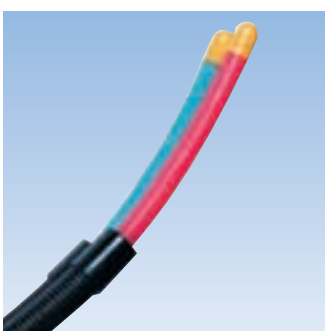
INTERSOL VPESR.

Cross-linked polyethylene pipe enclosed in corrugated polyethylene sheath. Characteristics like TPR. Black sheath.

Other size on request.

According to UNI 9338. Approved according to UNI 315 IIP N° 206 but only pipe, does not comprehend the corrugate.

Type	Part number	Size	Ø Sheath	Min. order	€uro
VPESR	1001905	15 x 2,5	19 mm	150 m	--
VPESR	1001909	18 x 2,5	23 mm	150 m	--


DUOPIPE

Like INTERSOL TPR but sheathed in double wall corrugated pipe joined by spot welding. Installation through one quick and easy operation. Suitable for heating and sanitary systems.

50-metre rolls on request.

According to AVIS TECHNIQUE 14+15/00-568 (only pipe).

Type	Part number	Size	Min. order	€uro
DUOPIPE	1001704	12 x 1,1	75 m	--
DUOPIPE	1001706	16 x 1,5	75 m	--

CROSS-LINKED POLYETHYLENE PIPES FOR HEATING AND SANITARY SYSTEMS



VPEDD

INTERSOL VPEDD.

Cross-linked polyethylene pipe with **anti-oxidant barrier** to prevent oxygen in the air from penetrating inside the water circuit. **Suitable for installation of radiant panel systems.** Other characteristics like TPR.

Other size on request.

According to DIN 16892/16893 - DIN 4726.

Type	Part number	Size	Min. order	€uro
VPEDD	1001165	16 x 2	120 m	--
VPEDD	1001166	16 x 2	200 m	--
VPEDD	1001175	17 x 2	120 m	--
VPEDD	1001176	17 x 2	200 m	--
VPEDD	1001185	18 x 2	120 m	--
VPEDD	1001186	18 x 2	200 m	--
VPEDD	1001205	20 x 2	120 m	--
VPEDD	1001206	20 x 2	200 m	--



TPRR

INTERSOL TPRR.

Like TPR but without anti-oxidant barrier.

Other size on request.

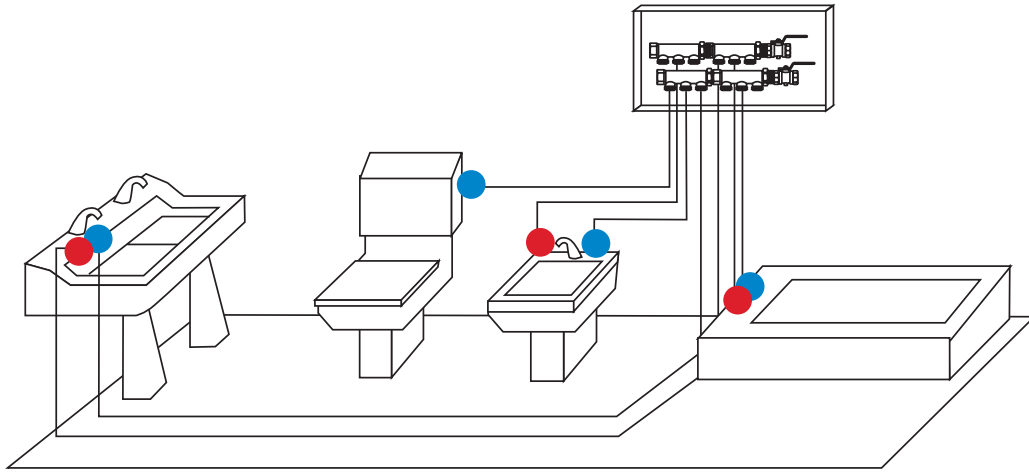
According to DIN 16892/16893 - UNI 9338. According to UNI 9338.

Type	Part number	Size	Min. order	€uro
TPRR	1001160	16 x 2	120 m	--
TPRR	1001161	16 x 2	200 m	--
TPRR	1001170	17 x 2	120 m	--
TPRR	1001171	17 x 2	200 m	--
TPRR	1001180	18 x 2	120 m	--
TPRR	1001181	18 x 2	200 m	--
TPRR	1001200	20 x 2	120 m	--
TPRR	1001201	20 x 2	200 m	--

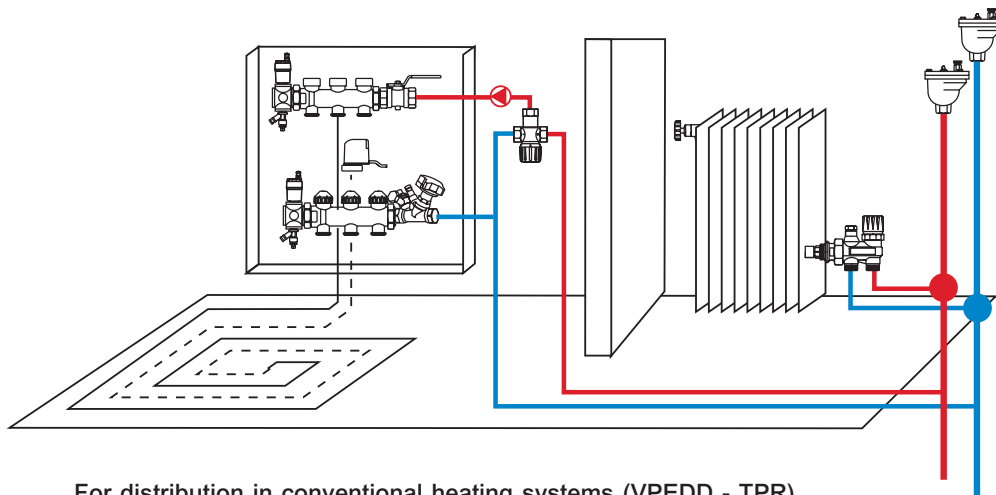
Different Cross-linked polyethylene pipe Certifications

Country	Notified Body	Floor heating	Sanitary	Signatures
ITALY	IIP – Italian Institute Plastic	X	X	UNI 315 IIP 206
GERMANY	SKZ Süddeutsche Kunststoff Zentrum	X (only test physical-chemistry)	X (only test physical-chemistry)	DIN GEPRUEFT DIN 4726 DIN 16892
GERMANY	DVGW - Igiene Institute		X (migration)	DVGW DW 8306 AL 2002
GERMANY	MPA - NRW Materialprüfungsamt Nord-RheinWstfalen	X (hoxigen diffusion)		Diffusionsdicht
FRANCE	C.S.T.B. Centre Scientifique et Technique du Batiment	X	X	
PORTUGAL	LNCE National Laboratory Civil Engineering	X	X	
HUNGARY	EMI – TÜV Hungary section of Deutsch TÜV	X	X	
SPAIN	AENOR – Spain institute Normalization	X	X	
U.S.A.	NSF International Body Certification	X	X	Standard 14 product standard ASTM F876-877, included chlorine (ASTM F2023), CSA 137.5 Standard 61

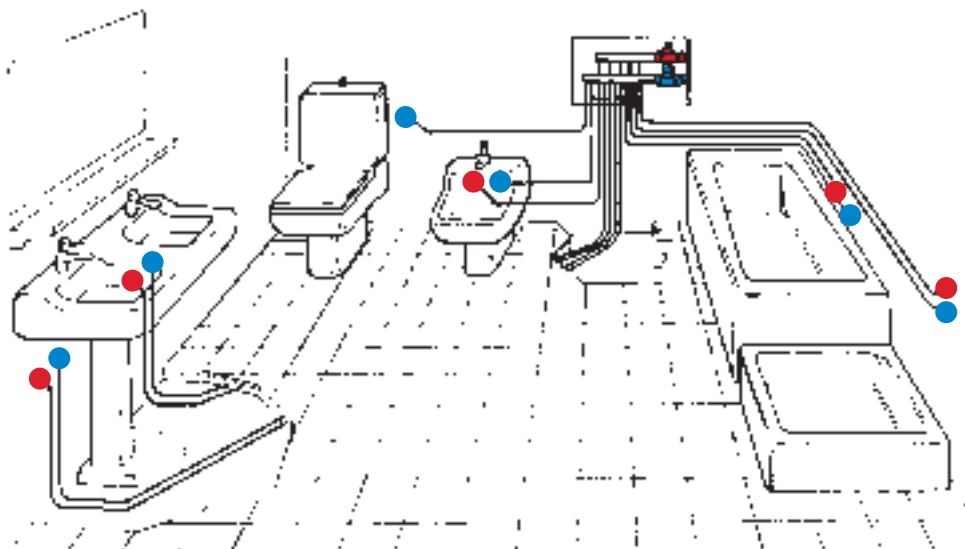
Application examples



For distribution in sanitary systems (TPR - VPESR)



For distribution in conventional heating systems (VPEDD - TPR)

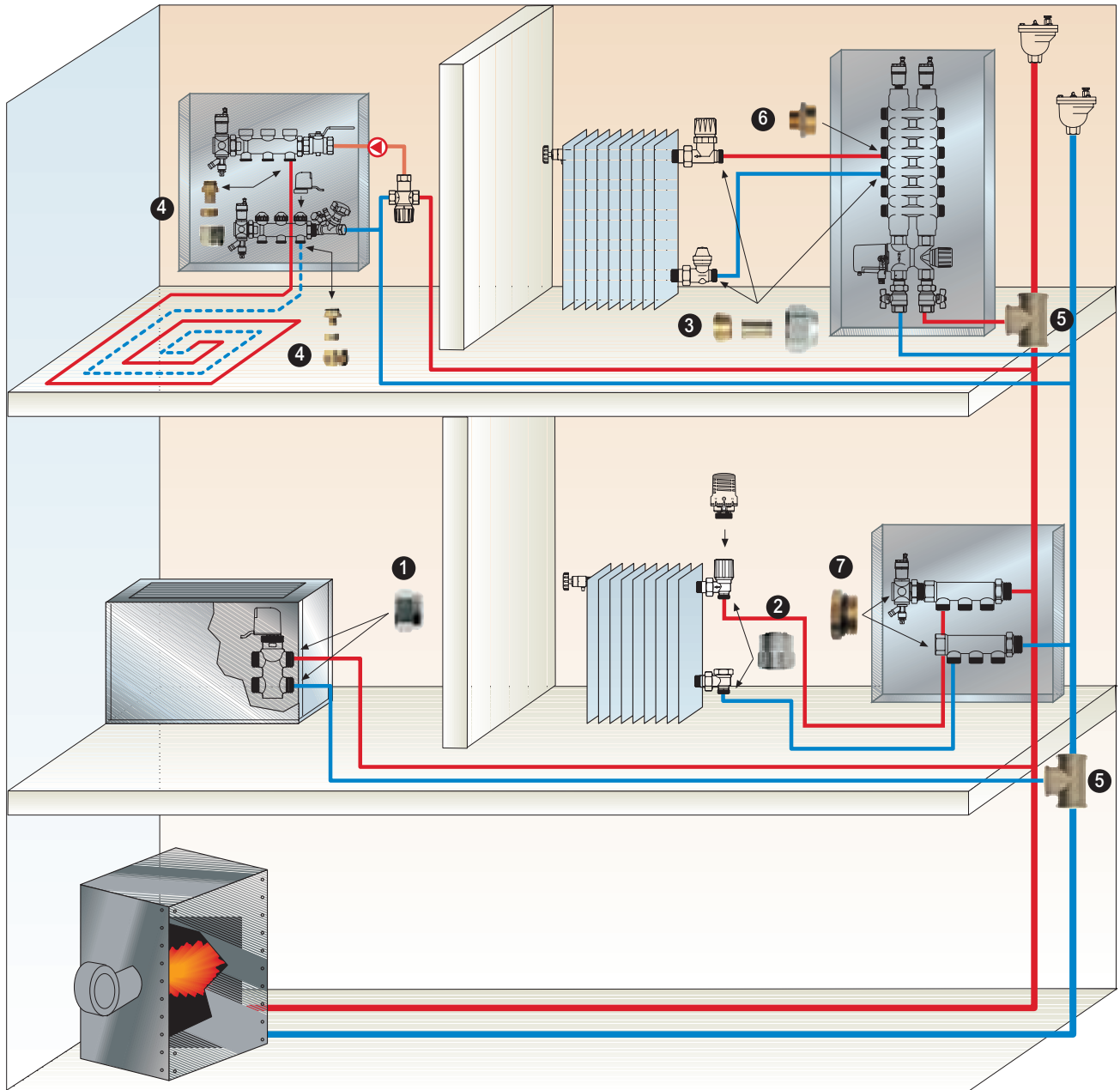


For distribution in sanitary systems (DUOPIPE)



Fittings

EXAMPLE OF APPLICATION



- 1 One-piece fittings for copper VELOFIT series 873M
- 2 One-piece fittings for copper RAFIT series 872M
- 3 Unions for copper series 820R
- 4 Fittings for cross-linked polyethylene pipe series 817M and multi-layer pipe series 817MS
- 5 Tee fittings series E891GL - 819GL
- 6 Reducers series 833M - 821M
- 7 Plug series 841M - 834M

FITTINGS FOR COPPER PIPES



872M

RAFIT+.

One-piece soft seal fitting, patented, for quick copper pipe connections.

Tightening torque with good unthreading resistance (tearing resistant).

ND 3/8" = 16-18 Nm. ND 1/2" = 20/22 Nm.

Type	Part number	Size body	Ø Tube	Min. order	€uro
872M	872M3810	3/8"	10	50	--
872M	872M3812	3/8"	12	50	--
872M	872M1210	1/2"	10	50	--
872M	872M1212	1/2"	12	50	--
872M	872M1214	1/2"	14	50	--
872M	872M1215	1/2"	15	50	--
872M	872M1216	1/2"	16	50	--
872M	872M12S18	1/2"S	18	50	--



873M

VELOFIT.

One-piece compact soft seal fitting, patented, for quick copper pipe connections.

Tightening torque : ND 3/8" = 18 Nm. ND 1/2" = 20 Nm. ND 1" = 40 Nm.

Type	Part number	Size body	Ø Tube	Min. order	€uro
873M	873M3810	3/8"	10	50	--
873M	873M3812	3/8"	12	50	--
873M	873M1210	1/2"	10	50	--
873M	873M1212	1/2"	12	50	--
873M	873M1214	1/2"	14	50	--
873M	873M1215	1/2"	15	50	--
873M	873M1216	1/2"	16	50	--
873M	873M12S18	1/2"S	18	50	--
873M	873M3418	3/4"	18	50	--
873M	873M122	1"	22	50	--

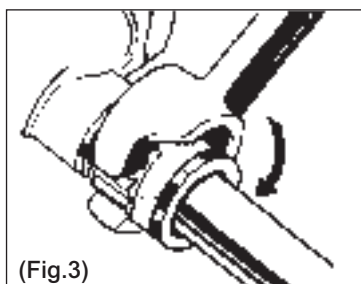
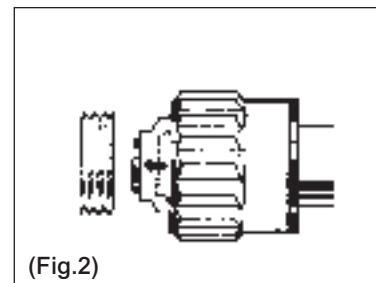
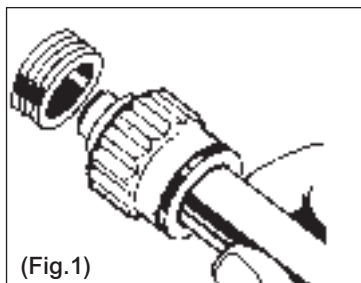
Installation of quick one-piece fittings RAFIT and VELOFIT

1 - When cutting the pipe, be careful to deburr the pipe ends if necessary.

2 - Insert the pipe in the fitting pushing it until butting against the end stop (fig. 1), then keep it still in this position while tightening; hence the seal will be thrust outwards from the fitting body (fig. 2).

3 - Approach the fitting to the threaded end piece until the head of the taper ferrule is engaged inside. Then tighten by hand.

4 - Fully tighten with relative wrench (item 829M) in accordance with recommended tightening torque (fig. 3).



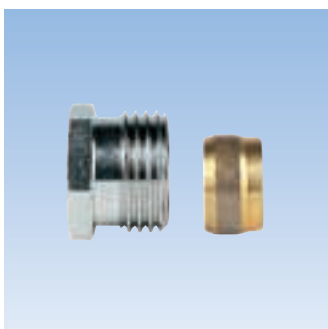
FITTINGS FOR COPPER PIPES



820R

Compression union for copper pipe. Metal seal.

Type	Part number	Size body	Ø Tube	Min. order	€uro
820R	820R3808	3/8"	8	50	--
820R	820R3810	3/8"	10	50	--
820R	820R3812	3/8"	12	50	--
820R	820R1210	1/2"	10	50	--
820R	820R1212	1/2"	12	50	--
820R	820R1214	1/2"	14	50	--
820R	820R1215	1/2"	15	50	--
820R	820R1216	1/2"	16	50	--
820R	820R12S18	1/2"S	18	50	--
820R	820R3418	3/4"	18	50	--
820R	820R3422	3/4"	22	50	--



197

Nickel-plated reducer for metal seal for connection of copper pipe (1mm wall thickness) to valves and lockshields with female connections.

Type	Part number	Size body	Ø Tube	Min. order	€uro
197	197SN3810	3/8"	10	50	--
197	197SN3812	3/8"	12	50	--
197	197SN1214	1/2"	14	50	--
197	197SN1215	1/2"	15	50	--
197	197SN1216	1/2"	16	50	--
197	197SN3418	3/4"	18	50	--



829M

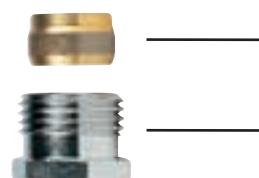
Steel wrench for tightening RAFIT+.

Type	Part number	Size	Min. order	€uro
829M	829M2025	3/8" - 1/2"	1	--
829M	829M2527	1/2" - 1/2"S	1	--

Installation of fittings with metal seal



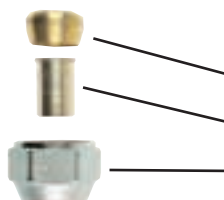
The series 197 adapter allows connection of copper pipes to all valves and lockshields with female connections of the iron series



Nickel-plated brass threaded ring nut
Shot-blasted brass biconical ring



Fitting Article 820R is used for connecting copper pipes to valves and lockshields with male connections. Coupling is by compressing an annealed brass olive between the threaded part and the pipe, which is determined by tightening of the nut. The pipe end should be reinforced by a mandrel in order to avoid squashing the pipe during tightening. The use of the olive prevents the pipe from slipping out but it also allows very easy disassembly.



Olive
Mandrel
Pipe tightening nut

FITTINGS FOR POLYETHYLENE AND MULTI-LAYER PIPES



817M

Nickel-plated compression union for cross-linked polyethylene pipe to **UNI 9338 standard**. EPDM O-ring.

Type	Part number	Size body	Ø Tube	Min. order	€uro
817M	817MC1212	1/2"	12 x 2,0	50	--
817M	817MC1215	1/2"	15 x 2,5	50	--
817M	817MC121612	1/2"	16 x 2,0	50	--
817M	817MC12S18	1/2"S	18 x 2,5	50	--
817M	817MC341612	3/4"	16 x 2,0	50	--
817M	817MC341713	3/4"	17 x 2,0	50	--
817M	817MC341814	3/4"	18 x 2,0	50	--
817M	817MC341813	3/4"	18 x 2,5	50	--
817M	817MC342016	3/4"	20 x 2,0	50	--



817MS

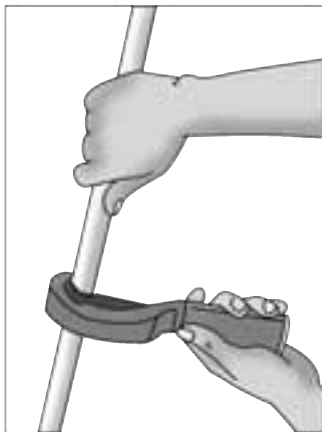
Compression unit for **multi-layer** pipe. Hose fitting with O-ring. Teflon washer to protect against stray currents.

Compression unit for **multi-layer pipe, type REHAU**.

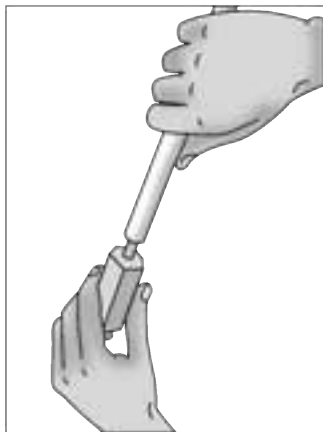


Type	Part number	Size body	Ø Tube	Min. order	€uro
817MS	817MSC121420	1/2"	14 x 2,0	50	--
817MS	817MSC121620	1/2"	16 x 2,0	50	--
817MS	817MSC1216225	1/2"	16 x 2,25	50	--
817MS	817MSC341820	3/4"	18 x 2,0	50	--
817MS	817MSC341620	3/4"	16 x 2,0	50	--
817MS	817MSC3416225	3/4"	16 x 2,25	50	--
817MS	817MSC342020	3/4"	20 x 2,0	50	--
817MS	817MSC342025	3/4"	20 x 2,5	50	--
817MS	817MSC121626R	1/2"	16 x 2,6	50	--
817MS	817MSC342029R	3/4"	20 x 2,9	50	--

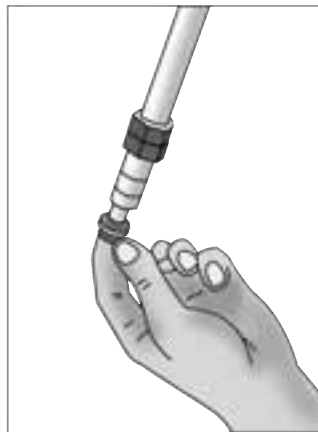
Installation series 817MS for multi-layer pipe



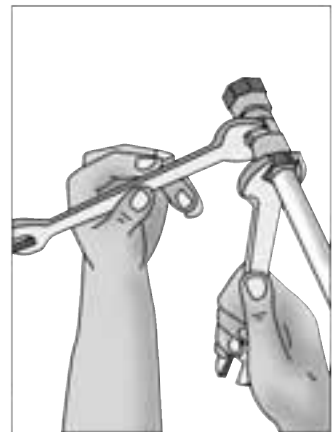
Make an accurate, burr-free, right-angled cut using a special tube cutter.



Leave the pipe with its original cylindrical shape for easier insertion of the hose fitting.



Make sure that there are no traces of burrs inside the pipe. Then mount the fitting.



Tighten fully with the aid of a spanner.

NIPPLES, ELBOW AND TEE UNIONS



220

Chrome-plated union elbow.

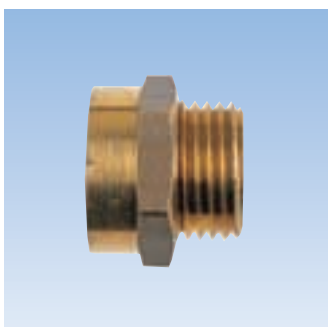
Type	Part number	Size	Min. order	€uro
220	220SN38	3/8"	10	--
220	220SN12	1/2"	10	--
220	220SN34	3/4"	5	--
220	220SN1	1"	5	--



221

Chrome-plated straight connector.

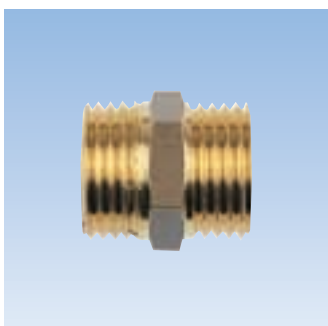
Type	Part number	Size	Min. order	€uro
221	221SN38	3/8"	10	--
221	221SN12	1/2"	10	--
221	221SN34	3/4"	10	--
221	221SN1	1"	5	--



893GL

Nipple with threaded male/female connections (brass extensions).

Type	Part number	Size	Min. order	€uro
893GL	893GL14	1/4" MF	50	--
893GL	893GL38	3/8" MF	50	--
893GL	893GL12	1/2" MF	50	--
893GL	893GL34	3/4" MF	50	--



892GL

Nipple with threaded male connections.

Type	Part number	Size	Min. order	€uro
892GL	892GL14	1/4" MM	50	--
892GL	892GL38	3/8" MM	50	--
892GL	892GL12	1/2" MM	50	--
892GL	892GL34	3/4" MM	50	--
892GL	892GL1	1" MM	25	--



891GL

Tee fitting with threaded male connections.

Type	Part number	Size	Min. order	€uro
891GL	891GL38	3/8" MM	50	--
891GL	891GL12	1/2" MM	50	--
891GL	891GL34	3/4" MM	50	--

NIPPLES, ELBOW AND TEE UNIONS



E891GL

Tee fitting with threaded female connections.

Type	Part number	Size	Min. order	€uro
E891GL	E891GL12F	1/2"	50	--
E891GL	E891GL34F	3/4"	50	--
E891GL	ETEE1F	1"	25	--



890GL

Brass elbow, male connections.

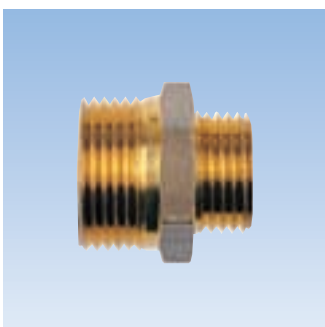
Type	Part number	Size	Min. order	€uro
890GL	890GL38	3/8" MM	50	--
890GL	890GL12	1/2" MM	50	--
890GL	890GL34	3/4" MM	50	--



E890GL

Brass elbow, male/female connections

Type	Part number	Size	Min. order	€uro
E890GL	E890GL12MF	1/2"	50	--
E890GL	E890GL34MF	3/4"	50	--
E890GL	E890GL1MF	1"	25	--

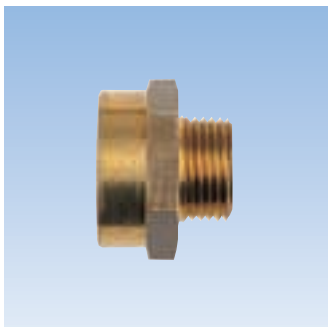


833M

Brass reducer, male/male.

Type	Part number	Size	Min. order	€uro
833M	833M1438	1/4" - 3/8"	50	--
833M	833M3812	3/8" - 1/2"	50	--
833M	833M3834	3/8" - 3/4"	50	--
833M	833M1234	1/2" - 3/4"	50	--
833M	833M121	1/2" - 1"	25	--
833M	833M12S12	1/2"S - 1/2"	50	--
833M	833M12S34	1/2"S - 3/4"	50	--
833M	833M12S1	1/2"S - 1"	25	--
833M	833M341	3/4" - 1"	25	--

NIPPLES, ELBOW AND TEE UNIONS



821M

Brass reducer, male/female.

Type	Part number	Size	Min. order	€uro
821M	821M14M38F	1/4" M x 3/8" F	50	--
821M	821M38M14F	3/8" M x 1/4" F	50	--
821M	821M38M12F	3/8" M x 1/2" F	50	--
821M	821M38F1M	3/8" F x 1" M	25	--
821M	821M12M38F	1/2" M x 3/8" F	50	--
821M	821M12M34F	1/2" M x 3/4" F	50	--
821M	821M12F34M	1/2" F x 3/4" M	50	--
821M	821M12M1F	1/2" M x 1" F	25	--
821M	821M12F12SM	1/2" SM x 1/2" F	50	--
821M	821M34M38F	3/4" M x 3/8" F	50	--
821M	821M34M1F	3/4" M x 1" F	25	--
821M	834M1M18F	1" M x 1/8" F	25	--
821M	843M1M14F	1" M x 1/4" F	25	--
821M	843M54M1F	1.1/4" M x 1" F	25	--



841M

Brass male plugs.

Type	Part number	Size	Min. order	€uro
841M	841M38M	3/8"	50	--
841M	841M12M	1/2"	50	--
841M	841M34M	3/4"	50	--
841M	841M1M	1"	50	--
841M	841M54M	1.1/4"	50	--



834M

Brass female plugs.

Type	Part number	Size	Min. order	€uro
834M	834M38	3/8"	25	--
834M	834M12	1/2"	10	--
834M	834M34	3/4"	10	--
834M	834M1	1"	5	--



842M

Brass reducer, female/female.

Type	Part number	Size	Min. order	€uro
842M	842M1F14F	1" - 1/4"	10	--
842M	842M1F38F	1" - 3/8"	5	--

NIPPLES, ELBOW AND TEE UNIONS FOR POLYETHYLENE PIPES

DMP

Straight male connector for cross-linked polyethylene pipe.
Complete with brass CW617M cap and slotted double taper ferrule.
Max. pressure: 10 bar. Max. temperature: 110°C

Type	Part number	Size body	Ø Tube	Min. order	€uro
DMP	1002312	1/2"	12 x 8	10	--
DMP	1002315	1/2"	15 x 10	10	--
DMP	1002316	1/2"	16 x 12	10	--
DMP	1002318	1/2"	18 x 13	10	--
DMP	1002319	1/2"	18 x 14	10	--
DMP	1002320	1/2"	20 x 16	10	--
DMP	1002422	3/4"	22 x 16	5	--
DMP	1002428	3/4"	28 x 22	5	--
DMP	1002532	1"	32 x 26	5	--
DMP	1002016	1/2"	16 x 11,6	5	--
DMP	1002020	1/2"	20 x 14,4	5	--
DMP	1002322	1/2"	22 x 16	5	--
DMP	1002999	3/4"	18 x 13	5	--
DMP	1002023	3/4"	20 x 16	5	--
DMP	1002021	3/4"	20 x 14,4	5	--
DMP	1002024	3/4"	25 x 20,4	5	--
DMP	1002025	3/4"	25 x 18	5	--


DIP

Straight bulkhead connector for cross-linked polyethylene pipe.
Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
DIP	1003012	1/2"	12 x 8	10	--
DIP	1003015	1/2"	15 x 10	10	--
DIP	1003016	1/2"	16 x 12	10	--
DIP	1003018	1/2"	18 x 13	10	--
DIP	1003019	1/2"	18 x 14	10	--
DIP	1003020	1/2"	20 x 16	10	--
DIP	1003022	3/4"	22 x 16	5	--
DIP	1003028	3/4"	28 x 22	5	--
DIP	1003032	1"	32 x 26	5	--
DIP	1003116	1/2"	16 x 11,6	5	--
DIP	1003120	1/2"	20 x 14,4	5	--
DIP	1003025	3/4"	25 x 20,4	5	--
DIP	1003125	3/4"	25 x 18	5	--

NIPPLES, ELBOW AND TEE UNIONS FOR POLYETHYLENE PIPES



DFP

Straight bulkhead connector, female connection, for cross-linked polyethylene pipe. Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
DFP	1004312	1/2"	12 x 8	10	--
DFP	1004315	1/2"	15 x 10	10	--
DFP	1004316	1/2"	16 x 12	10	--
DFP	1004318	1/2"	18 x 13	10	--
DFP	1004319	1/2"	18 x 14	10	--
DFP	1004320	1/2"	20 x 16	10	--
DFP	1004322	3/4"	22 x 16	5	--
DFP	1004328	3/4"	28 x 22	5	--
DFP	1004332	1"	32 x 26	5	--
DFP	1004016	1/2"	16 x 11,6	5	--
DFP	1004020	1/2"	20 x 14,4	5	--
DFP	1004019	3/4"	16 x 11,6	5	--
DFP	1004999	3/4"	18 x 13	5	--
DFP	1004023	3/4"	20 x 16	5	--
DFP	1004021	3/4"	20 x 14,4	5	--
DFP	1004422	3/4"	22 x 16	5	--
DFP	1004024	3/4"	25 x 20,4	5	--
DFP	1004025	3/4"	25 x 18	5	--



LMP

90° elbow, male connection, for cross-linked polyethylene pipe. Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
LMP	1005212	3/8"	12 x 8	10	--
LMP	1005315	1/2"	15 x 10	10	--
LMP	1005318	1/2"	18 x 13	10	--
LMP	1005422	3/4"	22 x 16	5	--
LMP	1005428	3/4"	28 x 22	5	--
LMP	1005532	1"	32 x 26	5	--
LMP	1005316	1/2"	16 x 12	5	--
LMP	1005016	1/2"	16 x 11,6	5	--
LMP	1005320	1/2"	20 x 16	5	--
LMP	1005020	1/2"	20 x 14,4	5	--
LMP	1005999	3/4"	18 x 13	5	--
LMP	1005023	3/4"	20 x 16	5	--
LMP	1005021	3/4"	20 x 14,4	5	--
LMP	1005024	3/4"	25 x 20,4	5	--
LMP	1005025	3/4"	25 x 18	5	--

NIPPLES, ELBOW AND TEE UNIONS FOR POLYETHYLENE PIPES


LIP

Bulkhead 90° elbow fitting for cross-linked polyethylene pipe. Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
LIP	1006012	3/8"	12 x 8	10	--
LIP	1006015	1/2"	15 x 10	10	--
LIP	1006018	1/2"	18 x 13	10	--
LIP	1006022	3/4"	22 x 16	5	--
LIP	1006028	3/4"	28 x 22	5	--
LIP	1006032	1"	32 x 26	5	--
LIP	1006016	1/2"	16 x 12	5	--
LIP	1006116	1/2"	16 x 11,6	5	--
LIP	1006020	1/2"	20 x 16	5	--
LIP	1006120	1/2"	20 x 14,4	5	--
LIP	1006025	3/4"	25 x 20,4	5	--
LIP	1006125	3/4"	25 x 18	5	--


LFP

90° elbow, female connection, for cross-linked polyethylene pipe. Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
LFP	1007212	3/8"	12 x 8	10	--
LFP	1007315	1/2"	15 x 10	10	--
LFP	1007318	1/2"	18 x 13	10	--
LFP	1007422	3/4"	22 x 16	5	--
LFP	1007428	3/4"	28 x 22	5	--
LFP	1007532	1"	32 x 26	5	--


TIP

Bulkhead Tee fitting for cross-linked polyethylene pipe. Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
TIP	1009012	3/8"	12 x 8	10	--
TIP	1009015	1/2"	15 x 10	10	--
TIP	1009018	1/2"	18 x 13	10	--
TIP	1009022	3/4"	22 x 16	5	--
TIP	1009028	3/4"	28 x 22	5	--
TIP	1009032	1"	32 x 26	5	--
TIP	1009016	1/2"	16 x 12	5	--
TIP	1009116	1/2"	16 x 11,6	5	--
TIP	1009020	1/2"	20 x 16	5	--
TIP	1009120	1/2"	20 x 14,4	5	--
TIP	1009025	3/4"	25 x 20,4	5	--
TIP	1009125	3/4"	25 x 18	5	--

NIPPLES, ELBOW AND TEE UNIONS FOR POLYETHYLENE PIPES



TFP

Tee fitting, female connection, for cross-linked polyethylene pipe. Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
TFP	1010315	1/2"	15 x 10	10	--
TFP	1010318	1/2"	18 x 13	10	--
TFP	1010422	3/4"	22 x 16	5	--
TFP	1010428	3/4"	28 x 22	5	--
TFP	1010532	1"	32 x 26	5	--
TFP	1010316	1/2"	16 x 12	5	--
TFP	1010016	1/2"	16 x 11,6	5	--
TFP	1010720	1/2"	20 x 16	5	--
TFP	1010020	1/2"	20 x 14,4	5	--
TFP	1010322	1/2"	22 x 16	5	--
TFP	1010999	3/4"	18 x 13	5	--
TFP	1010023	3/4"	20 x 16	5	--
TFP	1010021	3/4"	20 x 14,4	5	--
TFP	1010024	3/4"	25 x 20,4	5	--
TFP	1010025	3/4"	25 x 18	5	--



LFSP

90° elbow fitting complete with mounting bracket for cross-linked polyethylene pipe. Characteristics like DMP.

Type	Part number	Size body	Ø Tube	Min. order	€uro
LFSP	1011315	1/2"	15 x 10	10	--
LFSP	1011318	1/2"	18 x 13	10	--
LFSP	1011316	1/2"	16 x 12	10	--
LFSP	1011317	1/2"	16 x 11,6	10	--



4D

Solder wire:
standard (409D) 50% Pb - 50% Sn.
extra (410D) 96.5% Sn - 3.5% Ag.

Type	Part number	Min. order	€uro
4D	409D	1	--
4D	410D	1	--

NIPPLES, ELBOW AND TEE UNIONS FOR POLYETHYLENE PIPES



419D

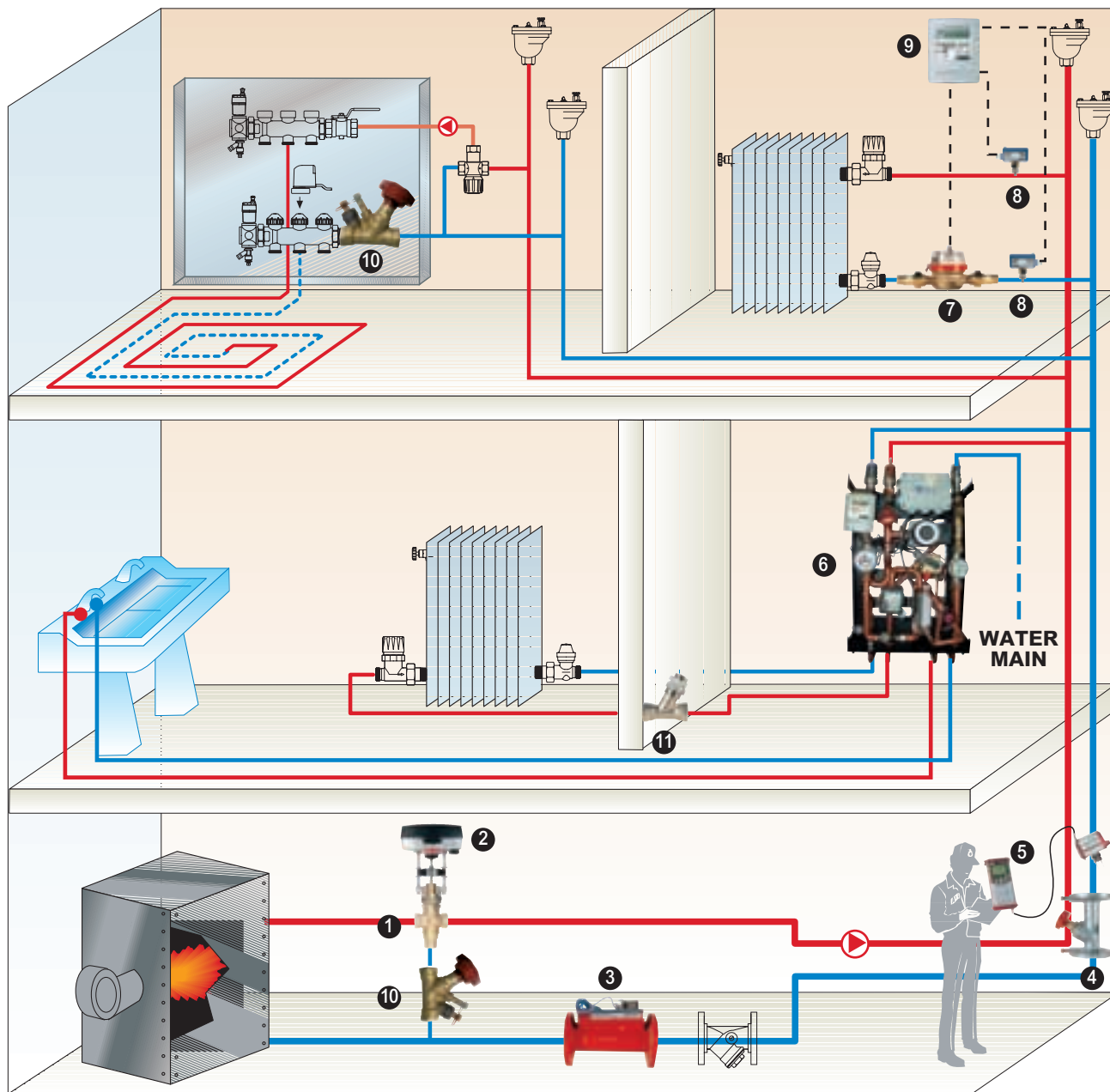
Soldering paste. In 75 g. jars

Type	Part number	Min. order	€uro
419D	419D	1	--



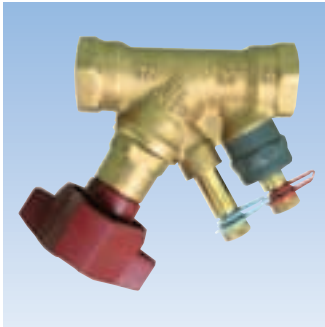
Balancing, heat energy metering and control

EXAMPLE OF APPLICATION



- 1 Globe control valves Series V2BM -V3BM
- 2 Three-point modulating servomotor Series M400-M800
- 3 Static flow gauge VD100
- 4 Flanged balancing valves Series STAF
- 5 Electronic differential pressure gauge CBI2

- 6 DOMOCAL thermal energy meter module
- 7 Single jet meter Series WMT
- 8 Immersion temperature probes Series TF25
- 9 Thermal energy meter M-bus Series CA502M
- 10 Threaded balancing valve Series STAND
- 11 Shut-off lockshield STK

BALANCING VALVES AND ACCESSORIES

STAND

Balancing valve with threaded connections and pressure sockets for heating and cooling (water added with glycol, brine) systems, domestic hot and cold water distribution systems. Suitable for shut-off, pre-setting and measurement of flow rate and differential pressure with pressure gauge (CBI2) connected to the two piezometric sockets with automatic seal. Nominal pressure: 20 bar. Operating temperature: -20 to 20 °C Valve body made of AMETAL®, (anti-dezincification alloy). Red nylon knob complete with digital setting position indicator (40 positions). EPDM seal on seat and valve plug system.

Type	Part number	Size body	Kvs	Min. order	€uro
STAND	STAND10	10	1,47	1	--
STAND	STAND15	15	2,52	1	--
STAND	STAND20	20	5,7	1	--
STAND	STAND25	25	8,7	1	--
STAND	STAND32	32	14,2	1	--
STAND	STAND40	40	19,2	1	--
STAND	STAND50	50	33	1	--


STAF

Balancing valve with flanged connections and pressure sockets for heating and cooling (water added with glycol, brine) systems. Suitable for shut-off, pre-setting and measurement of flow rate and differential pressure with pressure gauge (CBI2) connected to the two piezometric sockets with automatic seal. Nominal pressure: 16 bar. Operating temperature : -10 to 120 °C. Grey cast iron valve body DIN 1691 GG25. Red polyamide or aluminium knob (ND 200 - 300) complete with digital setting position indicator. (from 80 to 160 positions according to the ND). Cover, plug and pin made of AMETAL®, (anti-dezincification alloy) (ND 65 -150). Spheroidal cast iron cap DIN 1693 GGG50 (ND 200-300). EPDM seal on seat and valve plug system. Size from flange to flange ISO 5752 series 1 BS 2080. Epoxy surface finish (ND 65 -150) based on two-component paint (ND 200 - 300).

Type	Part number	Size body	Kvs	Min. order	€uro
STAF	STAF65	65	85	1	--
STAF	STAF80	80	120	1	--
STAF	STAF100	100	190	1	--
STAF	STAF125	125	300	1	--
STAF	STAF150	150	420	1	--
STAF	STAF200	200	765	1	--
STAF	STAF250	250	1185	1	--
STAF	STAF300	300	1450	1	--

Balancing valves STAND and STAF

Perfect closing ensure thanks to soft-sealed plug.

Threaded connections from ND 15 to ND 50.

Long-term smooth handling thanks to a double seal mechanism. Mechanical memory of preset opening value.

Piezometric connections for quick and easy flow rate measurement.

Balanced cone starting from ND65 to ensure perfect handling at maximum operating pressures.

Inner adjustment parts teflon-faced to ensure long-term good performance.

Flanged connections from ND65 to ND300

Piezometric connections for quick and easy flow rate measurement.

BALANCING VALVES AND ACCESSORIES

176

**STAF-SG**

Balancing valve for water circuits, like STAF but with : Nominal pressure : 25 bar.
Operating temperature: -20 to 120 °C Spheroidal cast iron valve body DIN 1693 GGG50.
Setting positions : 40 - 160 according to the ND.

Type	Part number	Size body	Kvs	Min. order	€uro
STAF-SG	STAF-SG20	20	5,7	1	--
STAF-SG	STAF-SG25	25	8,7	1	--
STAF-SG	STAF-SG32	32	14,2	1	--
STAF-SG	STAF-SG40	40	19,2	1	--
STAF-SG	STAF-SG50	50	33	1	--
STAF-SG	STAF-SG65	65	85	1	--
STAF-SG	STAF-SG80	80	120	1	--
STAF-SG	STAF-SG100	100	190	1	--
STAF-SG	STAF-SG125	125	300	1	--
STAF-SG	STAF-SG150	150	420	1	--

**STK**

Shut-off lockshield valve for balancing of terminal units in heating, cooling and domestic water distribution systems. Setting with snap-on wrench by positioning three special insert in the graduated ring. Nominal pressure NP16. Operating temperature: -10 +120 °C. AMETAL® valve body, plug, stem and fittings, with nickel-plated surface finish. Nitrile rubber O-ring. 1/2" FF connections.

Type	Part number	Size body	Kvs	Min. order	€uro
STK	STK15	15	1,8	1	--
STK	STK20	20	4,5	1	--
52187	52187-003	Adjustment spanner		1	--

**WATTFLOW**

Balancing valve with multi-turn valve for easy and accurate flow setting and shut off. Balancing valve with incorporated flowmeters measuring constantly the actual flow. The flowmeter scale can be fully rotated for easy reading in any position. The system medium does not flow through the flowmeter and keeping therefore the flowmeter free from debris. Flowmeter made from impact resisting and temperature stable plastics. Brass housing.

Temperature/pressure range:

100 °C at 10bar.

120 °C at 6bar.

Type	Part number	Size body	Kvs	Flow rate	Min. order	€uro
WATTFLOW	3498355	1"Fx1"F	5,5	5÷50 l/min	1	--
WATTFLOW	3498360	1.1/4"Fx1.1/4"F	9,0	10÷80 l/min	1	--
WATTFLOW	3498365	1.1/2"Fx1.1/2"F	14,0	15÷120 l/min	1	--
WATTFLOW	3498370	2"Fx2"F	23,0	25÷200 l/min	1	--
WATTFLOW	3498305	1"Mx1"M	3,0	2÷16 l/min	1	--
WATTFLOW	3498310	1"Mx1"M	3,5	4÷36 l/min	1	--
WATTFLOW	3498345	1.1/4"Mx1.1/4"M	5,5	5÷50 l/min	1	--
WATTFLOW	3498350	1.1/2"Mx1.1/2"M	9,0	10÷80 l/min	1	--

BALANCING VALVES AND ACCESSORIES

52179

Spare piezometric connections for balancing valves of STAND series.
Max. operating temperature: 120 °C.

Type	Part number	Size body	Dimension	Min. order	€uro
52179	52179-014X2	M14 x 1	44 mm	1	--


52189

Insulating covers for balancing valves:
- series STAND (item 52189-6..).
- series STAF / STAF SG (item 58189-8..).
- Suitable for heating and cooling systems.

Type	Part number	Size body	Min. order	€uro
52189	52189-615	10/15/20	1	--
52189	52189-625	25	1	--
52189	52189-632	32	1	--
52189	52189-640	40	1	--
52189	52189-650	50	1	--
52189	52189-850	50	1	--
52189	52189-865	65	1	--
52189	52189-880	80	1	--
52189	52189-890	100	1	--
52189	52189-891	125	1	--
52189	52189-892	150	1	--


CBI

Electronic pressure gauge for instantaneous different pressure and flow rate measurement, consisting of :

- Microprocessor unit with display and keyboard for reading and presetting of parameters.
- Measuring unit complete with universal pressure sockets for quick connection to the balancing valves.

Preset curves for valves Series STAND, STAF, STAF-SG.

Range of differential pressure measurement: 0-200 kPa. Fluid temperature: -20° + 120 °C

Power supply via rechargeable batteries.

Available also on a rental basis.

Type	Part number	Min. order	€uro
CBI	CBI2	1	--

THERMAL ENERGY METERS

**CA405**

Compact thermal energy meter.

- Multi-function display (totalized thermal energy, instantaneous flow rate, temperature of supply and return lines, diagnostics messages, etc.) for reading of consumption levels and instantaneous operating parameters.
- Annual recording of consumption levels.
- Complete with two temperature probes of which one is already installed in the volumetric counter while the other is supplied with cable L = 1.5 m.
- Threaded connections NP 16. Max. temp. 90 °C
- Designed for horizontal and vertical mounting.
- Model R is provided with 2 pulse outputs for remote reading of consumption (Energy and Volume).
- Power supply : Lithium battery (duration 10 years).

Nuts, sleeves and sheath for supply temperature probe should be ordered separately.

PTB of Berlin approved.

Type	Part number	Size body	Qn (mc/h)	Min. order	€uro
CA405	CA405CL15	1/2"	1,5	1	--
CA405	CA405CL15R	1/2"	1,5	1	--
DC15	DC15	Pair of nuts and sleeves ND 15		1	--
G21.1CU	G21.1CU	Sheath L = 18 mm for temp. probe		1	--
CA405M	CA405M	Accessory for display menu		1	--

**CA502M2**

M-BUS thermal energy meter complete with 2 temperature probes.

- Multi-function display (totalized thermal energy, instantaneous flow rate, temperature of supply and return lines, diagnostics messages, etc.) for reading of consumption levels and instantaneous operating parameters.
- Annual and monthly recording of consumption levels.
- Data transmission with M-bus protocol in accordance with EN1434-4.
- Optical interface with portable terminal.
- Compact design with assembly directly on the body of the following flow meters :
 - WMT single jet, class B
 - BR431 single jet, class C
 - BR471 ultrasonic
- Model P is provided with 2 pulse inputs for reading of 2 external meters, e.g. domestic hot water
- Model R is provided with 2 pulse outputs for remote reading of consumption.
- Power supply : battery (duration 10 years).

Nuts, sleeves and sheath for supply temperature probe should be ordered separately.

PTB of Berlin approved.

Type	Part number	Power supply	Pulse	Min. order	€uro
CA502M2	CA502M2BP	Battery	2 Inlet	1	--
CA502M2	CA502M2BR	Battery	2 Outlet	1	--
CA502M2	CA502M2AP	230 Vac	2 Inlet	1	--
CA502M2	CA502M2AR	230 Vac	2 Outlet	1	--
G21.1CU	G21.1CU	Sheath L = 18 mm for temperature probe		1	--



CA502M2-HC

M-BUS thermal energy meter like CA502M2, but with automatic switching of heating /air conditioning. Complete with temperature probes.

Type	Part number	Power supply	Pulse	Min. order	€uro
CA502M2-HC	CA502M2BPHC	Battery	2 Inlet	1	--
CA502M2-HC	CA502M2BRHC	Battery	2 Outlet	1	--
CA502M2-HC	CA502M2APHC	230 Vac	2 Inlet	1	--
CA502M2-HC	CA502M2ARHC	230 Vac	2 Outlet	1	--



CA502M1

M-BUS thermal energy meter.

- Multi-function display (totalized thermal energy, instantaneous flow rate, temperature of supply and return lines, diagnostics messages, etc.) for reading of consumption levels and instantaneous operating parameters.
- Annual and monthly recording of consumption levels.
- Data transmission with M-bus protocol in accordance with EN1434-4.
- Optical interface with portable terminal.
- Model P is provided with 2 pulse inputs for reading of 2 external meters, e.g. domestic hot water
- Model R is provided with 2 pulse outputs for remote reading (Energy and Volume).
- Power supply : Battery (duration 10 years).

PTB of Berlin approved.

Type	Part number	Power supply	Pulse	Min. order	€uro
CA502M1	CA502M1BP	Battery	2 Inlet	1	--
CA502M1	CA502M1BR	Battery	2 Outlet	1	--
CA502M1	CA502M1AP	230 Vac	2 Inlet	1	--
CA502M1	CA502M1AR	230 Vac	2 Outlet	1	--



CA502M1-HC

M-BUS thermal energy meter like CA502M1, but with automatic switching of heating /air conditioning. Complete with temperature probes.

Type	Part number	Power supply	Pulse	Min. order	€uro
CA502M1-HC	CA502M1BPHC	Battery	2 Inlet	1	--
CA502M1-HC	CA502M1BRHC	Battery	2 Outlet	1	--
CA502M1-HC	CA502M1APHC	230 Vac	2 Inlet	1	--
CA502M1-HC	CA502M1ARHC	230 Vac	2 Outlet	1	--



VF1

Card for seasonal switching of heat meters. To be used in 2-pipe systems with heating and air conditioning, where billing of the amounts of "hot" carrier fluid consumed in the winter and "cold" carrier fluid consumed in the summer is required. In systems with two or more use centralized switching is possible from a single command.

Power supply: 24 Vac. Power consumption : 5,5 VA.

Dimensions b x h x d : 59 x 77 x 59 mm.

Type	Part number	Power supply	Min. order	€uro
VF1	VF1006M	24 Vac	1	--

THERMAL ENERGY METERS



TF25

Immersion temperature probe for piping. Max. fluid temp. 130°C. Complete with sheath. Threaded connection 1/2". 2/4-wire connection. Sensitive element Pt500.

The probes are selected and supplied in pairs, (unit price quoted).

Sheath L = 80 mm up to ND 50. Sheath L = 130 mm above ND 50.

PTB of Berlin approved.

Type	Part number	Description	Min. order	€uro
TF25	TF25.1CU	Copper sheath L = 80 mm	1	--
TF25	TF25.3CU	Copper sheath L = 130 mm	1	--
TF25	TF25.1ST	Steel sheath L = 80 mm	1	--
TF25	TF25.3ST	Steel sheath L = 130 mm	1	--



WGB

Immersion temperature probe for piping.

- Max. fluid temp. 300°C.
- Complete with sheath. Threaded connection 1/2".
- 2-wire connection.
- Sensitive element Pt500.

Type	Part number	Description	Min. order	€uro
WGB	WGB-9HT	Steel sheath L = 160 mm	1	--

Selection diagram - thermal energy meter

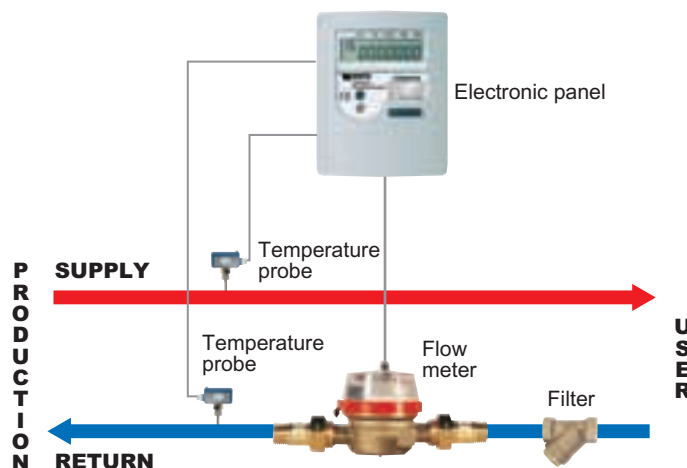
A thermal energy metering system consists of :

- 1 Electronic panel
- 2 Temperature probes
- 1 Flow gauge

When ordering thermal energy meters of Series CA502M2, CA502M2-HC, CA502M1 and CA502M1-HC please state the value of the pulse regarding the counter as given in the table :

l/t Pulse	Part number extension
2,5	2F
10	2C
25	2D
250	2E

Selection diagram - thermal energy meter




WMT

Single jet flow meter Class B. Version NP10. Max. fluid temp. 90°C. Dry-dial direct reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. Suitable for horizontal or vertical mounting. Complete with pulse transmitter. Housing for temperature probe. To be used with thermal energy meter CA502M2.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
WMT	WMT15-15S	15	1,5	2,5	1	--
WMT	WMT20-25S	20	2,5	2,5	1	--


MTW

Hot water multi-jet flow meter. Version NP16. Max. fluid temp. 90°C. Dry-dial direct reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. Suitable for horizontal mounting. Complete with pulse transmitter.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
MTW	MTW15	15	1,5	2,5	1	--
MTW	MTW20	20	2,5	2,5	1	--
MTW	MTW25	25	3,5	2,5	1	--
MTW	MTW32	32	6	25	1	--
MTW	MTW40	40	10	25	1	--
MTW	MTW50	50	15	25	1	--


MTW-V

Hot water multi-jet flow meter. Design NP16. Max. fluid temp. 90°C. Dry-dial direct reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. Suitable for vertical mounting with fluid inlet from the bottom. Complete with pulse transmitter.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
MTW-V	MTW-V20	20	2,5	2,5	1	--
MTW-V	MTW-V25	25	3,5	2,5	1	--
MTW-V	MTW-V32	32	6	25	1	--
MTW-V	MTW-V40	40	10	25	1	--


MTW-VA

Multi-jet hot water flow meter. Design NP16. Max. fluid temp. 90°C. Dry-dial direct reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. Suitable for vertical mounting with fluid inlet from the top. Complete with pulse transmitter.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
MTW-VA	MTW-VA20	20	2,5	2,5	1	--
MTW-VA	MTW-VA25	25	3,5	2,5	1	--
MTW-VA	MTW-VA32	32	6	25	1	--
MTW-VA	MTW-VA40	40	10	25	1	--

FLOW METERS

**MTH**

Hot water multi-jet flow meter. Design NP16. Max. fluid temp. 130°C. Dry-dial direct reading with magnetic transmission. Flanged fittings. Suitable for horizontal mounting. Complete with pulse transmitter.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
MTH	MTH20	20	2,5	2,5	1	--
MTH	MTH25	25	3,5	2,5	1	--
MTH	MTH32	32	6	25	1	--
MTH	MTH40	40	10	25	1	--
MTH	MTH50	50	15	25	1	--

**WSH**

Woltman hot water turbine flow meter. Design NP16. Max. fluid temp. 130°C. Dry-dial direct reading with magnetic transmission. Cast iron body. Flanged fittings. Suitable for horizontal mounting. Complete with pulse transmitter.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
WSH	WSH50	50	15	250	1	--
WSH	WSH65	65	25	250	1	--
WSH	WSH80	80	40	250	1	--
WSH	WSH100	100	60	250	1	--
WSH	WSH150	150	150	250	1	--

**WSHK**

Woltman hot water turbine flow meter. Design NP16. Max. fluid temp. 180°C. Dry-dial direct reading with magnetic transmission. Cast iron body. Flanged fittings. Suitable for horizontal mounting. Complete with pulse transmitter.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
WSHK	WSHK50	50	15	250	1	--
WSHK	WSHK65	65	25	250	1	--
WSHK	WSHK80	80	40	250	1	--
WSHK	WSHK100	100	60	250	1	--

**WPM**

Woltman hot water turbine flow meter. Design NP16. Max. fluid temp. 130°C. Dry-dial direct reading with magnetic transmission. Cast iron body. Suitable for horizontal or vertical mounting. Complete with pulse transmitter.

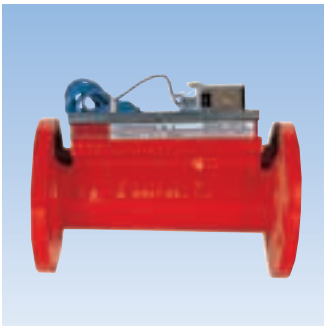
Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
WPM	WPM50	50	15	250	1	--
WPM	WPM65	65	25	250	1	--
WPM	WPM80	80	45	250	1	--
WPM	WPM100	100	70	250	1	--
WPM	WPM125	125	100	250	1	--
WPM	WPM150	150	150	2500	1	--
WPM	WPM200	200	250	2500	1	--
WPM	WPM250	250	400	2500	1	--
WPM	WPM300	300	600	2500	1	--


BR471

Static ultrasonic flow meter. Design NP16. Max. fluid temperature 90°C. Suitable for horizontal or vertical mounting. Housing for temperature probe. To be used with thermal energy meter CA502M2.

Nuts and sleeves to be ordered separately.

Type	Part number	Size body	Qn (mc/h)	Min. order	€uro
BR471	BR471-15-06	15	0,6	1	--
BR471	BR471-15-10	15	1,0	1	--
BR471	BR471-20-25	20	2,5	1	--
DC15	DC15	Pair of nuts and sleeves ND 15		1	--
DC20	DC20	Pair of nuts and sleeves ND 20		1	--


VD100

Static flow meter model FLUIDISTOR. Design NP16. Max. fluid temp. 130°C. Cast iron body. Flanged fittings. Suitable for horizontal mounting. To be used with converter CA05-40.

Type	Part number	Size body	Qn (mc/h)	l/t pulse	Min. order	€uro
VD100	VD100/25/II	25	6,5	1		--
VD100	VD100/32	32	8	1		--
VD100	VD100/40/II	40	14	1		--
VD100	VD100/50/II	50	28	1		--
VD100	VD100/65	65	40	1		--
VD100	VD100/80/II	80	65	1		--
VD100	VD100/100/II	100	100	1		--
VD100	VD100/125	125	130	1		--
VD100	VD100/150/II	150	200	1		--
VD100	VD100/200/II	200	330	1		--
VD100	VD100/250/II	250	530	1		--
VD100	VD100/300/II	300	780	1		--
VD100	VD100/350/II	350	970	1		--
VD100	VD100/400/II	400	1300	1		--


CA05

Signal converter for Fluidistor. Pulse output for panel connection of thermal energy meter (model CA502M1A). Analog output 2-10Vdc (4-20mA) proportional to the instantaneous flow rate. Complete with volume totalizer. Power supply: 230Vac. Dimensions b x h x d : 144 x 144 x 87 mm.

Type	Part number	Min. order	€uro
CA05	CA05-40	1	--


ARW22

Reading repeater panel for remote reading of thermal energy meters model R with pulse outputs (model CA405R-CA502M...R). Power supply: 230Vac. Dimensions b x h x d : 144 x 144 x 87 mm.

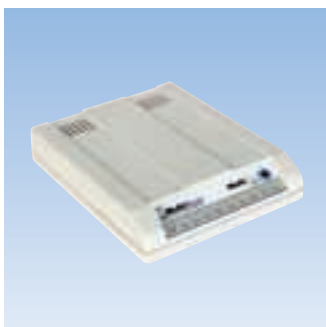
Type	Part number	Description	Min. order	€uro
ARW22	ARW22/2	2 Channels	1	--
ARW22	ARW22/4	4 Channels	1	--

M-BUS CONCENTRATORS AND CENTRALIZED READING SOFTWARE

**DR000**

Concentrator for centralized reading of thermal energy meters M-Bus EN1434. Serial output RS232 for connection to local Operator Position or to modem for connection to remote Operator Position. Multi-function display for local reading of levels of consumption and operating data. Power supply 230Vac.

Type	Part number	Description	Min. order	€uro
DR000	DR001	max 250 Meters	1	--
DR000	DR002	max 120 Meters	1	--

**GSM**

Telephonic modem, full-duplex type. Supplied with operative setting. AT protocol. Power supply 230Vac. Dimensions b x h x d : 108 x 25 x 144 mm.

PP.TT Approved.

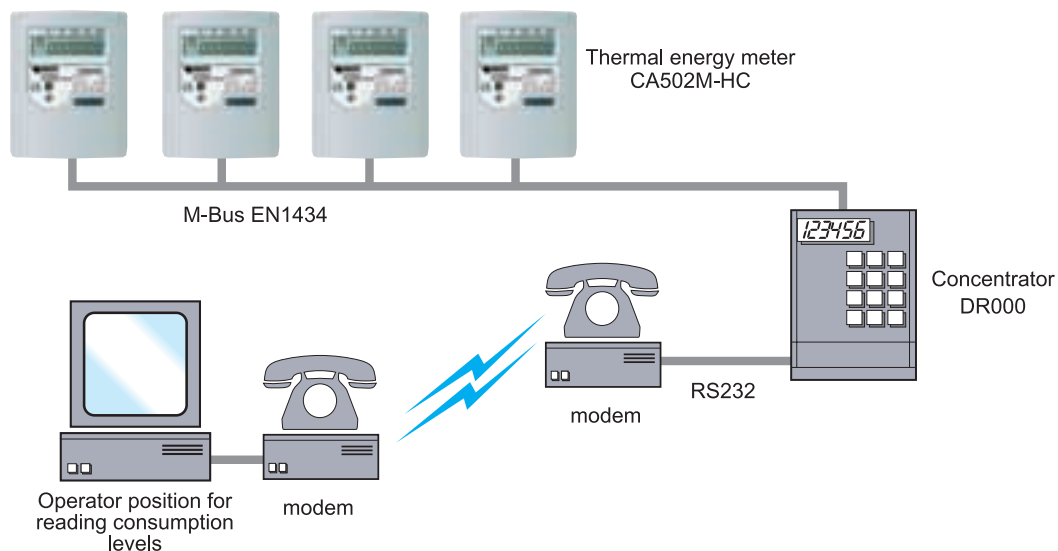
Type	Part number	Min. order	€uro
GSM	ARCA GSM2834M	1	--

**PGM-C**

Software in MS-Windows environment for centralized reading of thermal energy meters. The software allows centralized management of billing the amounts consumed by each user. Database for statistical management of data, consumption, users and reports.

For quotations, consult our Sales Department.

Type	Part number	Description	Min. order	€uro
PGM	PGM-COM25	max 25 Meters	1	--
PGM	PGM-COM50	max 50 Meters	1	--
PGM	PGM-COM100	max 100 Meters	1	--
PGM	PGM-COM300	max 300 Meters	1	--

Centralization of consumption levels



CST-CB

Pre-assembled box for metering/billing consumption and zone regulation.

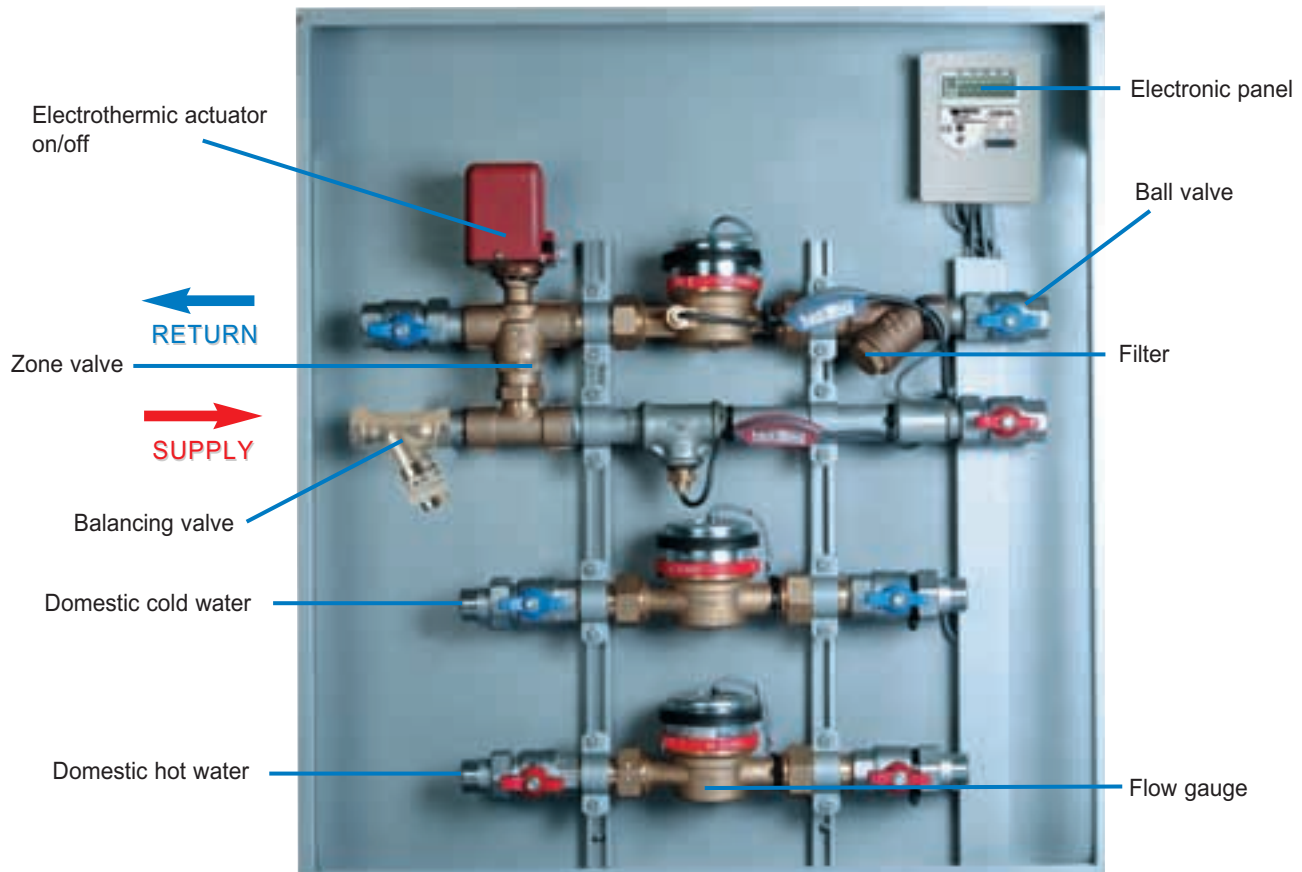
Complete with :

- Flush mounting galvanized sheet steel container plus cover fitted with lock.
- 3-way zone valve 4 connections ND20 - Power 24Vac
- Pair of ball valves for fluid shut-off.
- Y strainer.
- Balancing valve STK20
- Thermal energy meter consisting of :
 - Electronic panel CA502M2, battery-powered
 - 2 temperature probes Pt500
 - Single jet flow meter ND20 Qmax = 2.5 cu.m/h
- Model CST-CB1 - just heating section : Kv 2.7
- Model CST-CB2 - heating section plus one flow meter ND20 for domestic hot water consumption : Kv 4.0
- Model CST-CB3 - heating section plus two flow meters ND20 for hot and cold domestic water consumption : Kv 4.0

The meters are arranged for centralized reading of water consumption via M-Bus EN1434.

Type	Part number	Min. order	€uro
CST-CB	CST-CB1	1	--
CST-CB	CST-CB2	1	--
CST-CB	CST-CB3	1	--

Box model CST-CB3



PREASSEMBLED DISTRIBUTION SYSTEMS

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**CST-CRB**

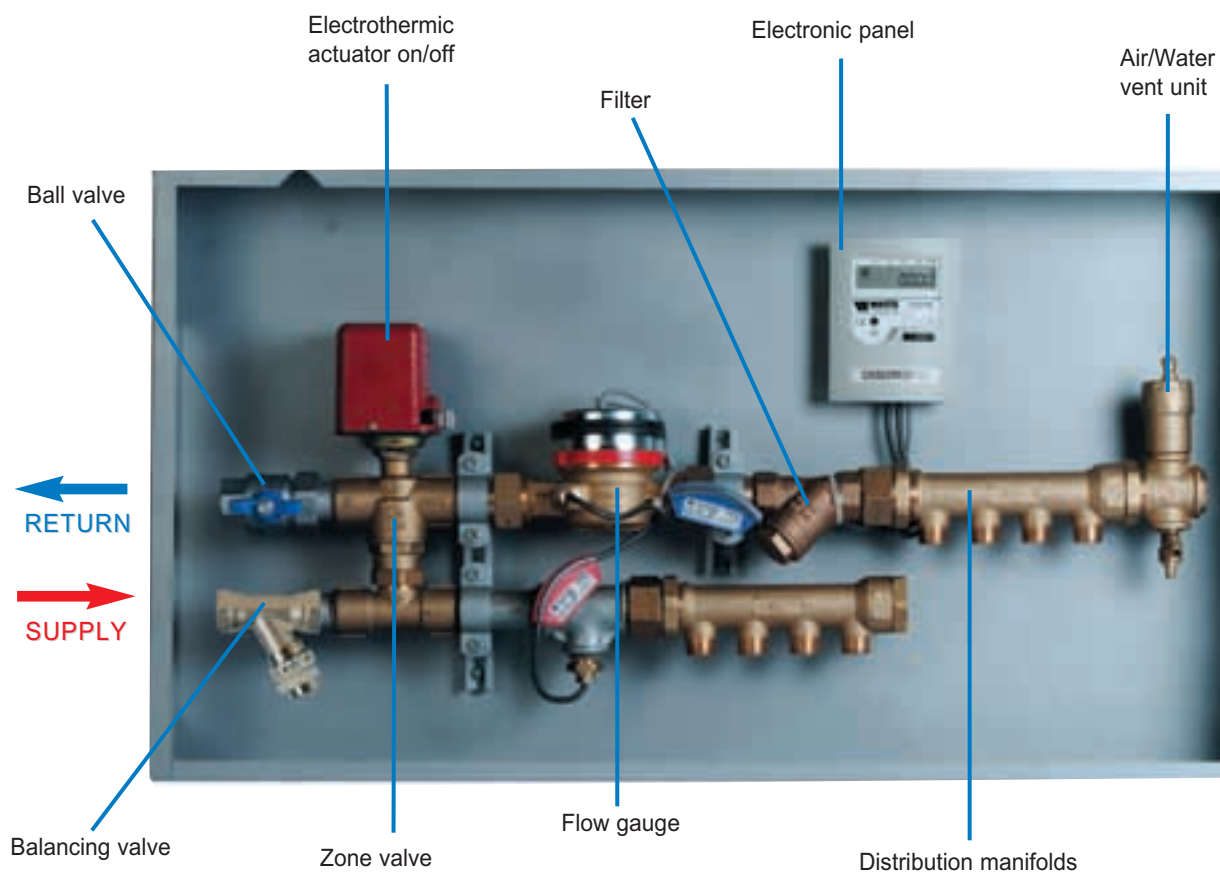
Pre-assembled user box for metering/billing consumption, zone regulation and distribution to heat emitters : Kv 2.7.

Complete with :

- Flush mounting galvanized sheet steel container plus cover fitted with lock.
- 3-way zone valve 4 connections ND20 - Power 24Vac
- Pair of shut-off ball valves
- Y strainer
- Balancing valve STK20
- Modular manifolds with side outlets 1/2"
- Air vent unit
- Thermal energy meter consisting of:
 - Electronic panel CA502M2, battery-powered
 - 2 temperature probes Pt500
 - Single jet flow meter ND20 Qmax = 2,5 cu.m/h

The meters are arranged for centralized reading of water consumption via M-Bus EN1434.

Type	Part number	Outlet	Min. order	€uro
CST-CRB	CST-CRB4	4 + 4	1	--
CST-CRB	CST-CRB6	6 + 6	1	--
CST-CRB	CST-CRB8	8 + 8	1	--

Box model CST-CRB4



CST-CP

Pre-assembled user box for metering/billing consumption panels : Kv 2.7

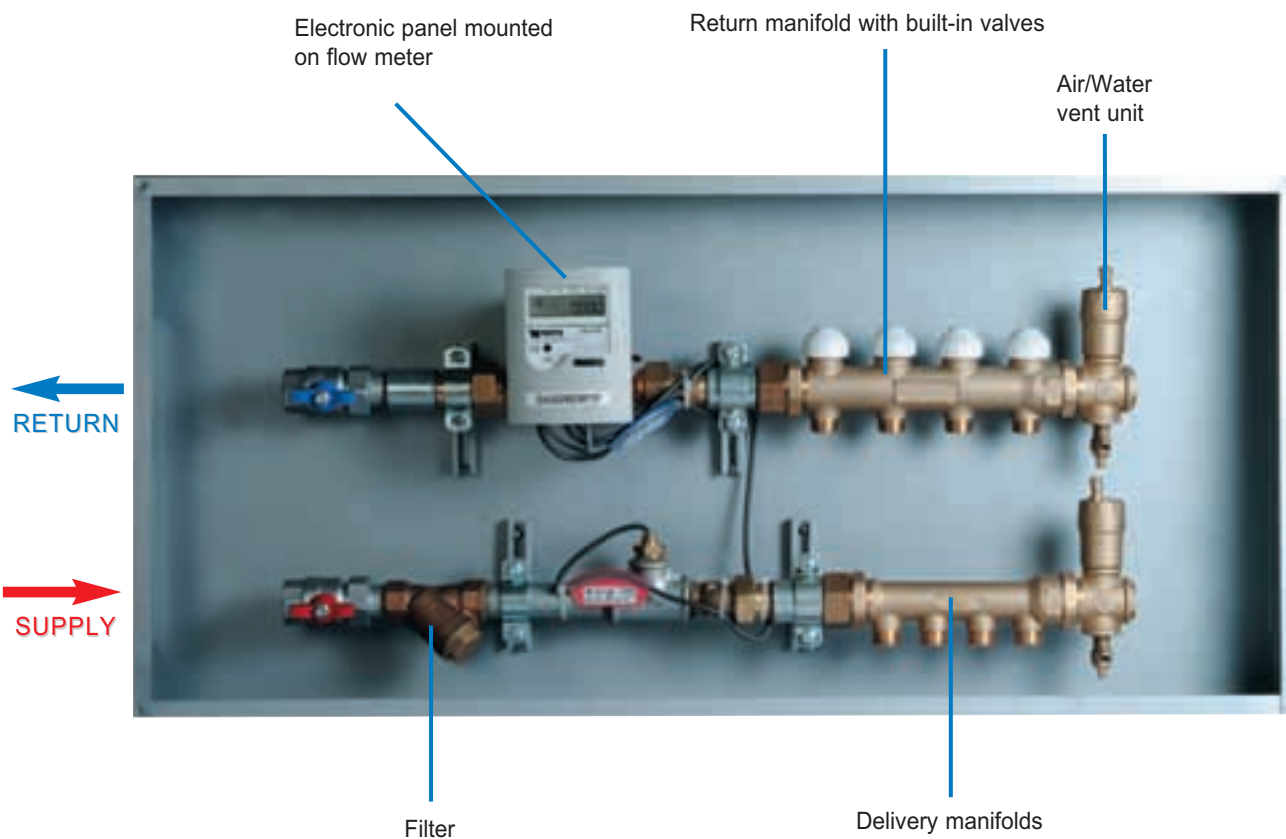
Complete with :

- Flush mounting galvanized sheet steel container plus cover fitted with lock.
- Pair of ball valves for fluid shut-off
- Y strainer
- Manifolds with motorizable shut-off valves and built-in setting lockshields. Side outlets 3/4"
- Double air vent unit
- Thermal energy meter consisting of:
 - Electronic panel CA502M2, battery-powered
 - 2 temperature probes Pt500
 - Single jet flow meter ND20 Qmax = 2,5mc/h

The meters are arranged for centralized reading of the consumption via M-Bus EN1434.

Type	Part number	Outlet	Min. order	€uro
CST-CP	CST-CP4	4 + 4	1	--
CST-CP	CST-CP6	6 + 6	1	--
CST-CP	CST-CP8	8 + 8	1	--
CST-CP	CST-CP10	10 + 10	1	--
CST-CP	CST-CP12	12 + 12	1	--

Box model CST-CP4



THERMAL ENERGY METER MODULE

**DOMOCAL**

Thermal energy meter module for wall mounting, with functions of distribution, monitoring and metering (billing) of heat energy used in each individual apartment for space **heating and for production of domestic hot water**. Management of individual room comfort level.

Guarantee of absolute safety of the apartments because it eliminates the presence of combustion inside the household and installation of chimneys.

- Heating circuit with zone valve
- Domestic hot water circuit with brazed plate heat exchanger (AISI 316) and control of supply line temperature (thermostatic mixer, Type N° 61C, Aquamix ND20)
- Thermal energy meter consisting of:
 - Electronic panel, battery-powered (CA502M), two temperature probes Pt500, single jet volumetric meter class B (WMT ND20)

Pendant version Type N° DCA-1 : Complete with shell Dimensions 410 (L) x 250 (D) x 700 (H).

Pendant version Type N° DCA-BP1 : Complete with pump and hydraulic shut-off device.

Flush version Type N° DCA-CAS3 : Compact design Dimensions : 280 (L) x 205 (B) x 600 (H).

Type	Part number	Description	Min. order	€uro
DOMOCAL	DCA-1	Pendant model	1	--
DOMOCAL	DCA-BP1	Pendant model	1	--
DOMOCAL	DCA-CAS3	Flush model	1	--
DIMA	DIMA-DCA-1	Panel cut-off, pendant model	1	--
DIMA	DIMA-DCA-CAS3	Panel cut-out, flush model	1	--

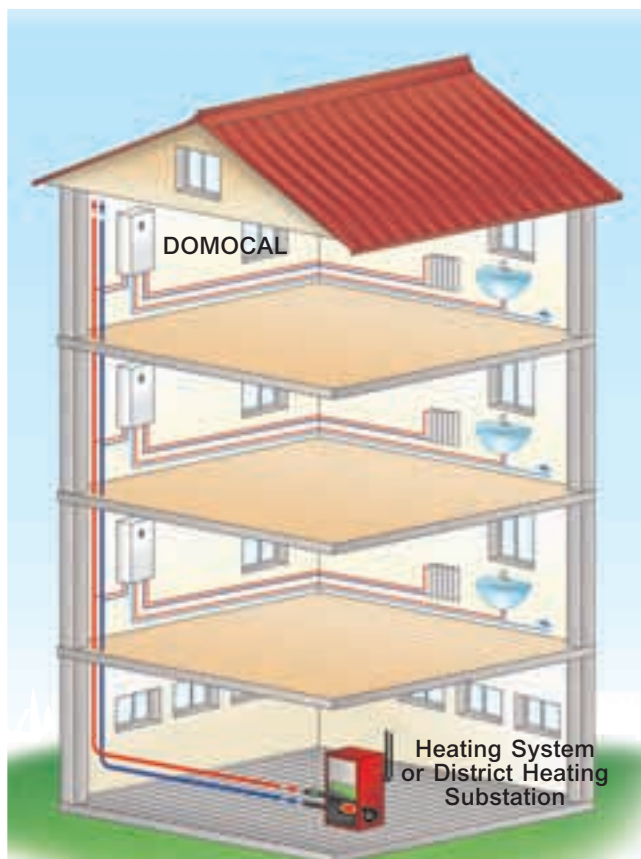
Field of application, thermal energy meter module

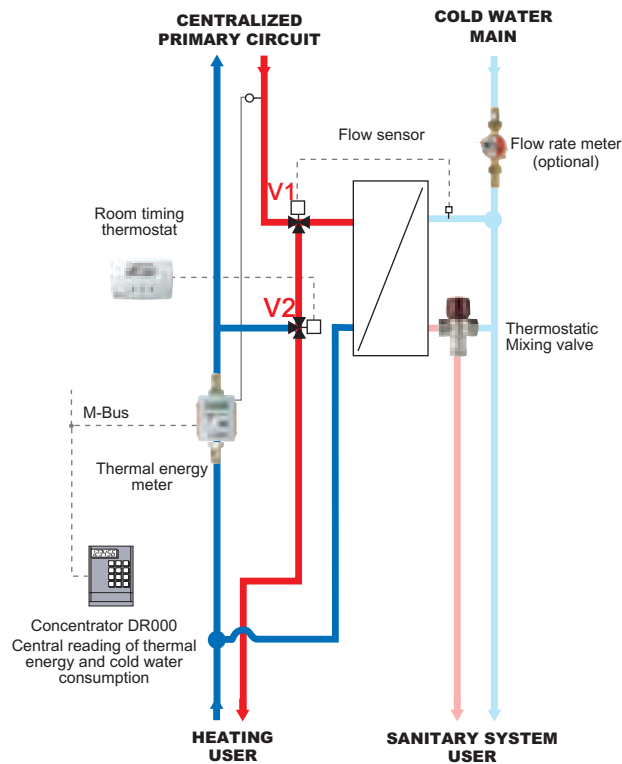
The DOMOCAL thermal energy meter module is a multi-function unit **designed to control the heat supply, coming from a district heating station or produced by a conventional boiler room, to individual apartments** either for space heating or preparation of domestic hot water (DHW). Basically the module acts as hydraulic and thermal interface between a primary main with supply and return lines (at preset temperature and flow rate, substantially constant throughout the entire year) and a dual local distribution system: one for feeding the local space heating system regulated by a temperature programmer and one for the production of DHW, likewise with temperature control.

The thermal energy withdrawn from the primary main (user consumption) is counted with great accuracy by an approved meter whose reading of data/consumption levels can be readily collected, transmitted and processed.

This metering allows distribution of the costs on the basis of actual levels of consumption by the individual apartments, thus encouraging a more careful use of the energy and less abuse which a centralized control can cause. The module can also be provided with a meter for tapping from the cold water main.

Hence DOMOCAL represents a highly advanced solution technologically speaking because, on the one hand, it ensures the necessary heat comfort with fullest possible independent control by the individual user including "pay for what you consume" while on the other hand, it allows reaching high levels of energy efficiency and safety that only centralized production can offer.



Functional diagram DOMOCAL DCA-1/DCA-CAS3

Domocal automatically assumes three modes of operation :
Demand for DHW (domestic hot water)

When the taps for drawing off DHW are open, the module remains activated throughout the entire period of drawing off the hot water, and has priority over any request for space heating. The device determining this state is a differential pressure switch acting as flow sensor, which causes and holds diverter valve (V1) installed on the primary delivery line, to feed, with full flow, the primary circuit of the heat exchanger. The flow rate of this stream is measured by the volumetric flow sensor of the thermal energy meter installed on the return line of the primary fluid.

Demand for heating only

The thermostat (ON) controlling the ambient temperature determines opening of diverter valve (V2) thus allowing the primary flow, which has already passed through diverter valve (V1), to feed the distribution circuit of the various radiators connected to it. The return flow of the system is conveyed directly to the RETURN port of the primary fluid where the flow rate is measured by the volumetric flow sensor of the thermal energy meter.

No demand for heating or DHW

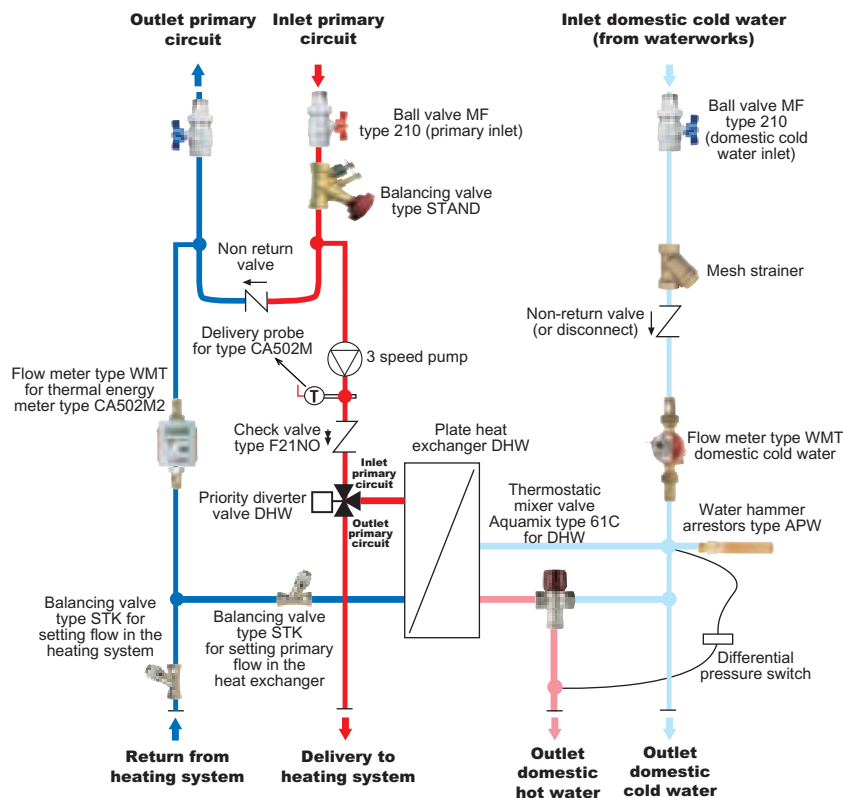
The unit is "at rest" when the room thermostat, not requesting heat (OFF), determines the closing of diverter valve (V2) thus conveying the primary flow, which has already passed through diverter valve (V1), directly to the general RETURN port. This is to avoid flow through the volumetric flow sensor which could otherwise generate an appreciable error in measurement over the long term.

Name plate data

	DCA-BP1	DCA-1
Max. temperature of hot fluid at inlet	95°C	90°C
Max. operating pressure (static)	10 bar	8.0 bar
Nominal temperature of hot fluid at inlet	75°C	75°C
Nominal flow rate of primary fluid	1.0 m ³ /h	1.0 m ³ /h
Nominal head across inlets of primary fluid	5 kPa	30 kPa
Nominal flow rate of hot fluid at outlet (heating)	0.8 m ³ /h	0.7 m ³ /h
Nominal head of hot fluid at outlet (heating)	17 kPa	17 kPa
Nominal heating power with thermal gradient 15k	14 kW	12 kW
Nominal flow rate of DHW	0.26 l/s	0.21 l/s
Nominal temperature of DHW	46°C	46°C
Nominal power for DHW preparation	39 kW	32 kW
Outlet temperature adjustable with mixer AQUAMIX Nd 20	32 - 50 °C	32 - 50 °C
Brazed plate heat exchanger surface	0.33 m ²	0.22 m ²
Power supply	230 Vac-50 Hz	230 Vac-50 Hz
Current drawn	0.4 A	0.1 A

THERMAL ENERGY METER MODULE

Functional diagram DOMOCAL DCA-BP1



Model DCA-BP1 is the most independent, reliable and powerful version of the Domocal series. In fact this unit is able to supply the heat demanded also when the characteristics of the primary distribution network are temporarily insufficient (operating at 50%). The unit makes use of a special **shut-off device** controlled by a balancing valve which ensures essential stability of the primary supply (by limiting the effect of the various Modules connected to it) and considerable freedom in drawing off heat. Hence the use of Domocal does not entail any particular constraints on the conditions of flow rate and residual head of the incoming primary supply except for the minimum necessary ones to feed the shut-off section, while the domestic hot water and heating circuits are fed by a **three-speed electrically driven pump**, therefore adaptable to widely differing needs. The presence of a DHW heat exchanger with large surface ensure good performance even in the presence of very low temperatures on the primary delivery side (55-60°C).

Mode of operation in the presence of DHW demand

When taps are open for drawing off DHW the module remains activated throughout the entire period of drawing off the hot water. It has priority over any demand for space heating. The device determining this state consists of a differential pressure switch **18**), acting as flow sensor, which activates the pump and at the same time it holds open **port A** of diverter valve **6**) installed on the supply line, for full flow feeding of primary heat exchanger **7**), thus excluding any circulation in the heating system. The fluid flowing out from the primary heat exchanger is conveyed directly to the RETURN inlet of the primary fluid: such flow rate is measured by the volumetric sensor of the thermal energy meter **9**). It should be checked and calibrated in the initial stage to the design values with balancing valve **8**).

Mode of operation with demand for heating but no DHW demand. The thermostat controlling the room temperature determines, in the ON position, whether to start the pump or to **open port B** of valve **6**) in order to allow supplying the distribution circuit of the various radiators connected to the module. Circulation in the heat exchanger primary circuit remains shut-off (**port A closed**). The return fluid of the heating system is conveyed directly to the RETURN inlet of the primary fluid: likewise the flow rate for heating is measured by the volumetric sensor of thermal energy meter **9**). It should be checked and calibrated in the initial stage to the design values with balancing valve **10**) located at **port E**.

Mode of operation with no demand for heating or DHW

This mode with unit "at rest" is activated when the thermostat controlling the ambient temperature and differential pressure switch **18**) are in OFF position. Hence the pump is disactivated and all secondary circulation is shut-off; the thermal energy meter does not detect any consumption. The primary flow continues to circulate between A and B at the preset flow rate.

Nameplate data : see previous page (column DCA-BP1).

CONTROL VALVES FOR BOILERS

V2BM

2-way globe control valve. Bronze body. Stainless steel stem.
Equal percentage characteristic. Threaded connections NP 16.
Suitable for water from 2 °C to 110 °C.

Compatible with servomotors Series M400 with coupling included. (model 2" use M800).

Type	Part number	Size body	Kvs	Min. order	€uro
V2BM	V2BM15	1/2" F	4,0	1	--
V2BM	V2BM20	3/4" F	6,3	1	--
V2BM	V2BM25	1" F	10	1	--
V2BM	V2BM32	1.14" F	16	1	--
V2BM	V2BM40	1.1/2" F	25	1	--
V2BM	V2BM50	2" F	40	1	--


V3BM

3-way globe control valve. Bronze body. Stainless steel stem.
Equal percentage characteristic. Threaded connections NP 16.
Suitable for water from 2 °C to 110 °C.

Compatible with servomotors Series M400 with coupling included.

Type	Part number	Size body	Kvs by-pass	Min. order	€uro
V3BM	V3BM15	1/2" F	4,0/2,7	1	--
V3BM	V3BM20	3/4" F	6,3/4,0	1	--
V3BM	V3BM25	1" F	10/6,0	1	--
V3BM	V3BM32	1.14" F	16/12	1	--
V3BM	V3BM40	1.1/2" F	25/19	1	--
V3BM	V3BM50	2" F	40/33	1	--


V3GNF

3-way globe control valve. Cast iron body. Stainless steel stem.
Equal percentage characteristic. Flanged fittings NP16. Suitable for water up to 120 °C.
Compatible with servomotor : M400 from ND 15 - 50. M800 from ND 65 - 150

Coupling included.

Type	Part number	Size body	Kvs	Min. order	€uro
V3GNF	V3GNF15	15	4,0	1	--
V3GNF	V3GNF20	20	6,3	1	--
V3GNF	V3GNF25	25	10	1	--
V3GNF	V3GNF32	32	16	1	--
V3GNF	V3GNF40	40	25	1	--
V3GNF	V3GNF50	50	40	1	--
V3GNF	V3GNF65	65	63	1	--
V3GNF	V3GNF80	80	100	1	--
V3GNF	V3GNF100	100	160	1	--
V3GNF	V3LNF125	125	250	1	--
V3GNF	V3LNF150	150	380	1	--

CONTROL VALVES FOR BOILERS

**V3GS**

3-way sector valve. Threaded connections. Cast iron body.
Stem seal with double EPDM O-ring. Nominal pressure: 6 bar
Suitable for water up to 110 °C. Compatible with servomotors Series M20.

Type	Part number	Size body	Kvs	Min. order	€uro
V3GS	V3GS20	3/4" F	20	1	--
V3GS	V3GS25	1" F	30	1	--
V3GS	V3GS32	1.14" F	37	1	--
V3GS	V3GS40	1.1/2" F	38	1	--
V3GS	V3GS50	2" F	45	1	--

**V4GF**

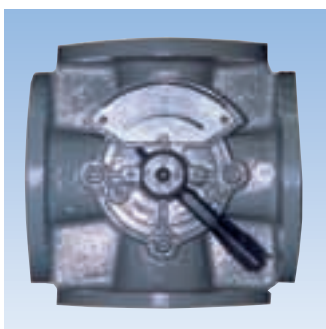
4-way butterfly valve. Threaded connections. Cast iron body.
Stem seal with double EPDM O-ring. Nominal pressure: 6 bar
Suitable for water up to 110 °C. Compatible with servomotors Series M20.

Type	Part number	Size body	Kvs	Min. order	€uro
V4GF	V4GF20	3/4" F	20	1	--
V4GF	V4GF25	1" F	30	1	--
V4GF	V4GF32	1.14" F	37	1	--
V4GF	V4GF40	1.1/2" F	38	1	--
V4GF	V4GF50	2" F	45	1	--

**V3FS**

3-way sector valve. Flanged fittings. Cast iron body. Stem seal with double EPDM O-ring.
Nominal pressure : 6 bar. Suitable for water up to 110 °C.
Compatible with servomotors Series M100.

Type	Part number	Size body	Kvs	Min. order	€uro
V3FS	V3FS32	32	60	1	--
V3FS	V3FS40	40	--	1	--
V3FS	V3FS50	50	80	1	--
V3FS	V3FS65	65	90	1	--
V3FS	V3FS80	80	100	1	--
V3FS	V3FS100	100	125	1	--
V3FS	V3FS125	125	150	1	--

**V4FF**

4-way butterfly valve. Flanged fittings. Cast iron body. Stem seal with double EPDM O-ring.
Nominal pressure: 6 bar. Suitable for water up to 110 °C.
Compatible with servomotors Series M100.

Type	Part number	Size body	Kvs	Min. order	€uro
V4FF	V4FF32	32	50	1	--
V4FF	V4FF40	40	60	1	--
V4FF	V4FF50	50	70	1	--
V4FF	V4FF65	65	80	1	--
V4FF	V4FF80	80	90	1	--
V4FF	V4FF100	100	110	1	--
V4FF	V4FF125	125	120	1	--


M20

3-point bidirectional modulating servomotor for threaded control valves Series V3GS, V4GF and flanged valves Series V3FS, V4FF up to ND 50. Positioning through microswitches with setting fixed at 90°. Rotation time 240 sec. for 90°. Provided with manual control and auxiliary microswitch.

Type	Part number	Power supply	Min. order	€uro
M20	M201	230 Vac	1	--
M20	M202	24 Vac	1	--


M100

3-point bidirectional modulating servomotor for flanged control valves Series V3FS and V4FF from ND 65 to 125. Positioning through microswitches with setting fixed at 90°. Rotation time 240 sec. for 90°. Provided with manual control and auxiliary microswitch.

Type	Part number	Power supply	Min. order	€uro
M100	M1001	230 Vac	1	--
M100	M1002	24 Vac	1	--


M400

3-point bidirectional/modulating servomotor.
Automatic positioning through increase in torque.
Rotation time:
- Modulating 60 s
- Bidirectional 300s /60 s
Stroke 10-32 mm. Force 400 N. Power supply 24VAC-50Hz.
Coupling with globe valves Series V2BM-V3BM and V3GNF, ND 15-50.
Degree of protection : IP54. Weight 1.8 kg

Accessories on request : S2FORTA= auxiliary limit switch.

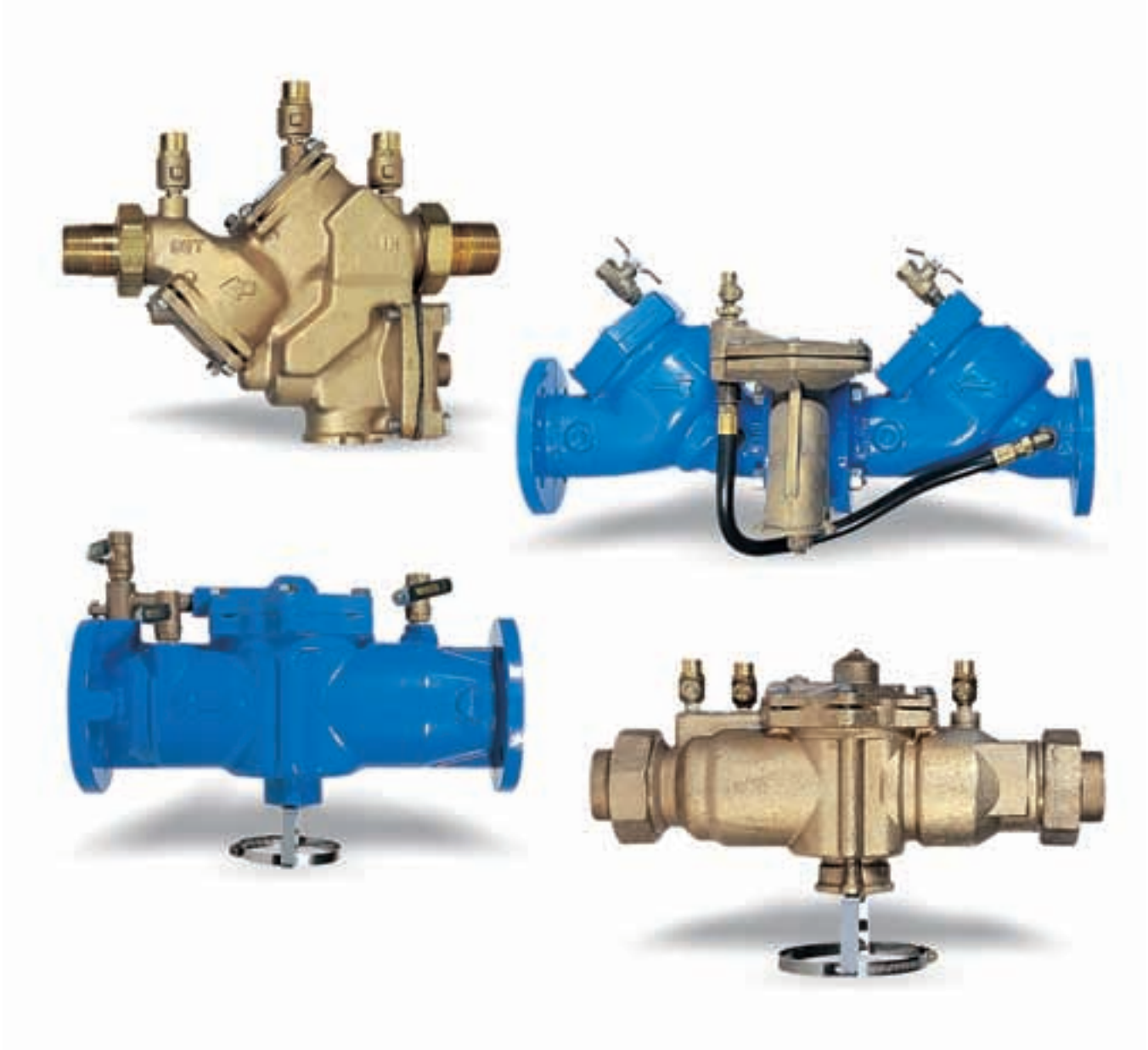
Type	Part number	Description	Min. order	€uro
M400	M400	0/2 – 10Vcc /3 points	1	--
S2FORTA	S2FORTA	Micro limit switch	1	--


M800

3-point bidirectional/modulating servomotor.
Automatic positioning through increase in torque.
Rotation time:
- Modulating 15s / 30 s
- Bidirectional 300s / 60 s
Stroke 10-52 mm. Force 800 N. Power supply 24VAC-50Hz.
Coupling with globe valves Series V2BM-V3BM and V3GNF, ND 65-150
Degree of protection: IP54. Weight 1.8 kg

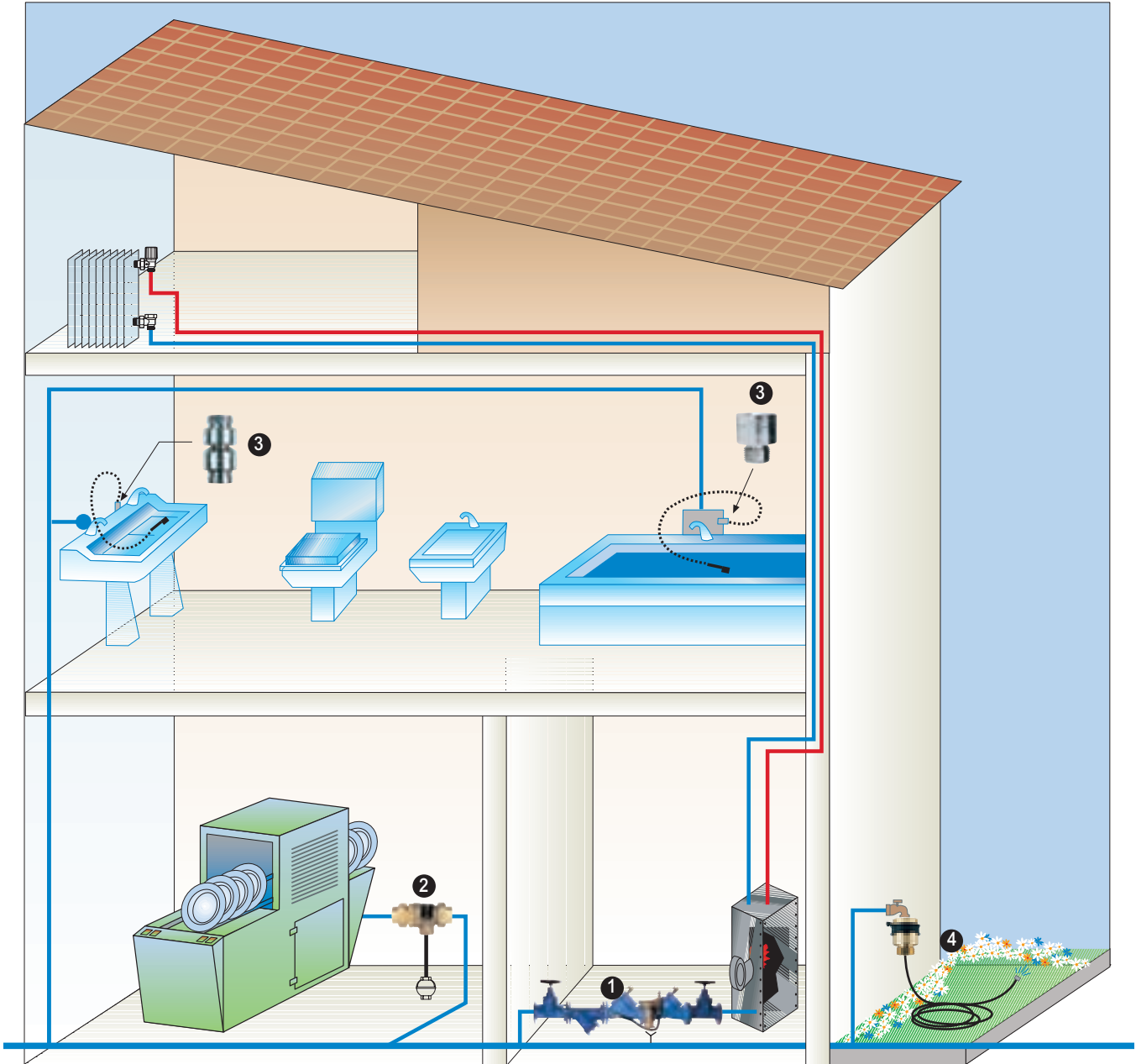
Accessories on request: S2FORTA= auxiliary limit switch.

Type	Part number	Description	Min. order	€uro
M800	M800	0/2 – 10Vcc /3 punti	1	--
M800	M800STS	With emergency closing devices	1	--
S2FORTA	S2FORTA	Micro limit switch	1	--



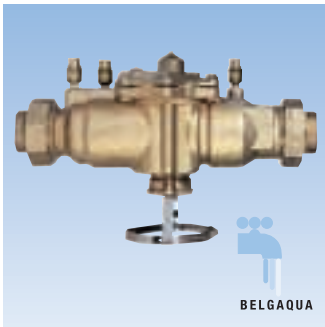
Antipollution devices

EXAMPLE OF APPLICATION



- 1 Back flow preventer unit series DIW009 - DIW909
- 2 Back flow preventers with unregulated pressure zone series DNW
- 3 Anti siphon devices series DAWS - DAWN
- 4 Anti siphon devices for watering taps series DAWNF

THREADED AND FLANGED BACK FLOW PREVENTERS ACCORDING TO UNI 9157



DIW009

Compact threaded back flow preventer, with regulated reduced pressure zone, to UNI 9157 standards. Bronze body and cover. Stainless steel springs, seats and screws.

Max. operating temperature: 65°C. Max. operating pressure: 10 bar.

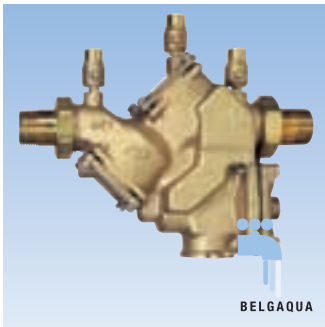
Complete with inspection system and stainless steel connection to discharge pipe.

Protection : BA

UNI 9157 approval.

According to NF, KIWA, UPC, ANSEAU, ASSE, AWWA, IAPMO, Belgaqua.

Type	Part number	Size body	Min. order	€uro
DIW009	1505115	1/2" MF	1	--
DIW009	1505120	3/4" MM	1	--
DIW009	1505125	1" MM	1	--
DIW009	1505132	1.1/4" FF	1	--
DIW009	1505140	1.1/2" FF	1	--
DIW009	1505150	2" FF	1	--



DIW909

Threaded back flow preventer, with regulated reduced pressure zone, to UNI 9157 standards. WATTS patented high protection series "AIR IN - WATER OUT". Bronze body.

Max. operating temperature: 65°C. Max. operating pressure: 10 bar. Male union fittings.

Complete with inspection system and stainless steel connection to discharge pipe.

Back flow preventers with max. temperature 90°C available on request.

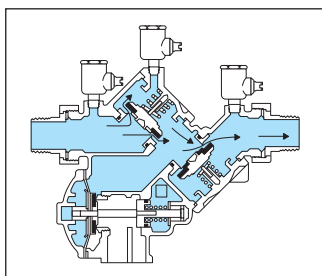
Protection : BA

UNI 9157 approval.

According to NF, KIWA, UPC, ANSEAU, ASSE, AWWA, IAPMO, Belgaqua.

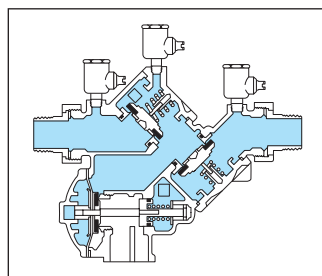
Type	Part number	Size body	Min. order	€uro
DIW909	1505001	3/4" MM	1	--
DIW909	1505002	1" MM	1	--
DIW909	1505003	1.1/4" MM	1	--
DIW909	1505004	1.1/2" MM	1	--
DIW909	1505005	2" MM	1	--

Principle of operation



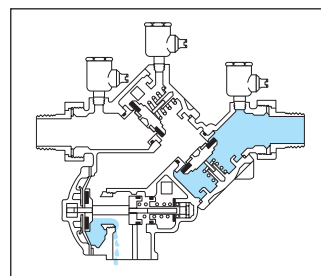
1 - WATER FLOW UNDER NORMAL OPERATING CONDITIONS

The first and second check valves are opened in order to allow flow through the back flow preventer.



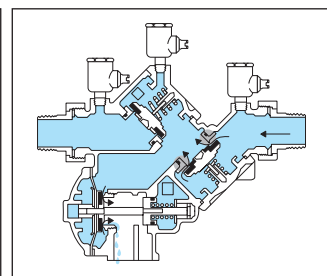
2 - STATIC SITUATION (NO FLOW)

Both check valves are now closed.



3 - BACK SIPHON DEVICE

When there is no upstream pressure, both check valves are fully closed. Owing to effect of the decreased upstream pressure, the drain valve opens and discharges water from the central zone.



4 - PRESSURE REVERSE (RETURN OF FLOW)

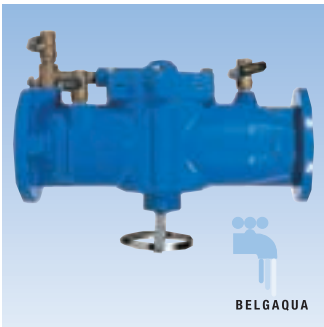
When pressure is reversed, the first check valve protects the water mains from possible contamination. The drain valve opens and discharges the contaminated water.

Cold and hot water supply and distribution systems UNI 9182/87

Precautions against contamination (Section 8 subparagraph 8.2.2)

During operation, all the necessary measures shall be taken so that contamination of the water by external agents shall never occur... omissis... **it is forbidden** to add water to sanitary appliances, tanks, expansion vessels when open ... to supply make-up water to heating systems or the like ... to feed users directly, where said users could contaminate drinking water from which they are derived **unless through the installation of back flow preventers with regulated reduced pressure zone.**

THREADED AND FLANGED BACK FLOW PREVENTERS ACCORDING TO UNI 9157



DIW009F

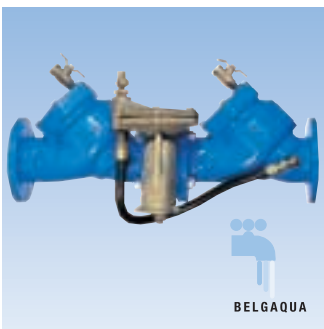
Compact flanged back flow preventer, with regulated reduced pressure zone, to UNI 9157 standards. Cast iron body lined on inside and outside with 2 coats of epoxy resin. Stainless steel springs. **Complete with inspection system and stainless steel connection to discharge pipe.** Max. operating temperature: 65°C. Max. operating pressure: 10 bar. Flanged fittings: NP 10.

Protection : BA

UNI 9157 approval.

According to NF, KIWA, UPC, ANSEAU, ASSE, AWWA, IAPMO, Belgaqua.

Type	Part number	Size body	Min. order	€uro
DIW009F	1505165	65	1	--
DIW009F	1505180	80	1	--



DIW909F

Flanged back flow preventer, with regulated reduced pressure zone, to UNI 9157 standards. **WATTS patented high protection series "AIR IN - WATER OUT"**. Cast iron body lined on inside and outside with 2 coats of epoxy resin. Stainless steel discharge valve guides and springs. Max. operating temperature: 65°C. Max. operating pressure: 10 bar. Flanged fittings: NP 10. Complete with inspection system and stainless steel connection to discharge pipe for ND 65 and 80. With drain funnel from ND 100 to ND 250.

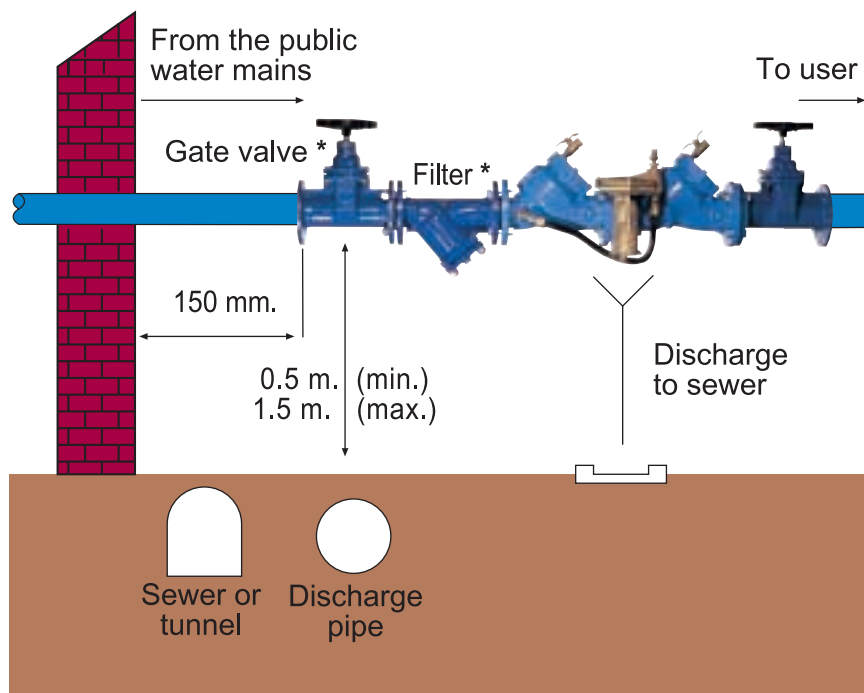
Protection : BA

UNI 9157 approval.

According to NF, KIWA, UPC, ANSEAU, ASSE, AWWA, IAPMO, Belgaqua.

Type	Part number	Size body	Min. order	€uro
DIW909F	1505006	65	1	--
DIW909F	1505008	80	1	--
DIW909F	1505010	100	1	--
DIW909F	1505015	150	1	--
DIW909F	1505020	200	1	--
DIW909F	1505025	250	1	--

Installation example



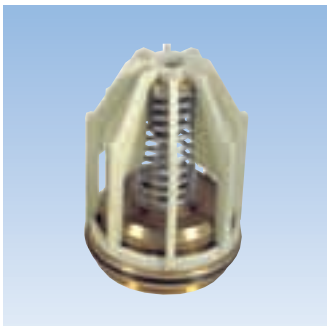
*See Chapter E

THREADED AND FLANGED BACK FLOW PREVENTERS SPARE PARTS


RMR009

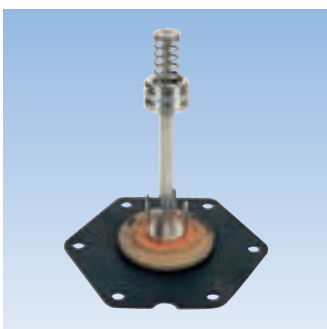
Upstream check valve for back flow preventers series DIW009.

Type	Part number	Size body	Min. order	€uro
RMR009	1599080	1/2"	1	--
RMR009	1599081	3/4" - 1"	1	--
RMR009	1599082	from 1.1/4" to 2"	1	--
RMR009	1599083	65 - 80	1	--


RVR009

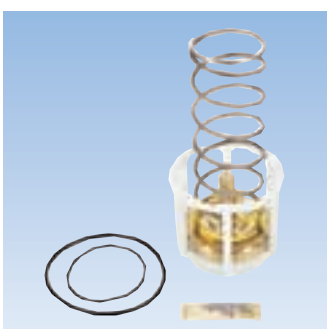
Downstream check valve for back flow preventers series DIW009.

Type	Part number	Size body	Min. order	€uro
RVR009	1599085	1/2"	1	--
RVR009	1599086	3/4" - 1"	1	--
RVR009	1599087	from 1.1/4" to 2"	1	--
RVR009	1599088	65 - 80	1	--


GSR009

Safety unit for back flow preventers series DIW009.

Type	Part number	Size body	Min. order	€uro
GSR009	1599075	1/2"	1	--
GSR009	1599076	3/4" - 1"	1	--
GSR009	1599077	from 1.1/4" to 2"	1	--
GSR009	1599078	65 - 80	1	--

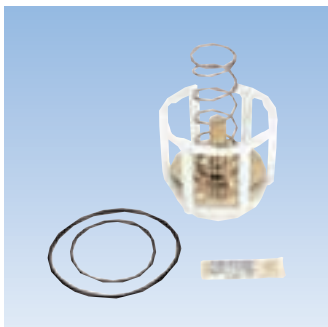

RMR909

Upstream check valve for back flow preventers series DIW909.

Type	Part number	Size body	Min. order	€uro
RMR909	1599055	3/4" - 1"	1	--
RMR909	1599056	from 1.1/4" to 2"	1	--
RMR909	1599057	65 - 80	1	--
RMR909	1599058	100	1	--
RMR909	1599059	150	1	--
RMR909	1599060	200	1	--
RMR909	1599061	250	1	--

THREADED AND FLANGED BACK FLOW PREVENTERS SPARE PARTS

200


RVR909

Downstream check valve for back flow preventers series DIW909.

Type	Part number	Size body	Min. order	€uro
RVR909	1599065	3/4" - 1"	1	--
RVR909	1599066	from 1.1/4" to 2"	1	--
RVR909	1599067	65 - 80	1	--
RVR909	1599068	100	1	--
RVR909	1599069	150	1	--
RVR909	1599070	200	1	--
RVR909	1599071	250	1	--


GSR909

Safety unit for back flow preventers series DIW909.

Type	Part number	Size body	Min. order	€uro
GSR909	1599050	3/4" - 1"	1	--
GSR909	1599051	from 1.1/4" to 2"	1	--
GSR909	1599052	65 - 80	1	--
GSR909	1599053	100 - 150	1	--
GSR909	1599054	200 - 250	1	--

BACK FLOW PREVENTERS ACCESSORIES

ICW

Elbow for connection to drain line.

Required for vertical installation of back flow preventers series DIW009 and DIW909.

Type	Part number	Size body	Min. order	€uro
ICW	1505901	3/4" and 1"	1	--
ICW	1505902	from 1.1/4" to 2"	1	--


TK99D

Differential electronic pressure gauge for monitoring differential pressures and checking for correct operation of back flow preventers Series DIW909 and DIW009 during normal yearly maintenance. Compact and practical device, easy to use.

Maximum accuracy in measurement (error 0.25%) with reading of data on liquid crystal display. Indicator of battery consumption and automatic stop of the gauge after 15 minutes of non use. High impact and water-tight ABS case. Corrosion-resistant stainless steel needle valves, with interchangeable seats. Stainless steel (316) protection strainer (100µ).

Max. pressure: 14 bar. Max. temperature: 99°C.

Complete with brass fittings and adapters.

Three Flexible pipes, size 91 cm, in different colours and with FF fittings.

Supplied with two alkaline batteries type C to ensure a back-up time of 400 running hours.

Type	Part number	Min. order	€uro
TK99D	1505307	1	--

BACK FLOW PREVENTER , ANTI-SIPHON VACUUM BREAKER DEVICES

DNW

Back flow preventer with different not controlled pressure zones, built-in filter. Designed for heating and air conditioning systems with capacity <70 kW and for supplying dish washers and washing machines. Bronze body. Stainless steel inside parts. Female unions.

Max. operating pressure: 10 bar. Max. operating temperature: 65°C. Peak temperature: 90°C.

Protection : CA.

According to KIWA, ANSEAU, ASSE, CSA.

Type	Part number	Size body	Min. order	€uro
DNW	1505265	1/2" FF	1	--
DNW	1505270	3/4" FF	1	--


DAWS

Anti-siphon vacuum breaker device for sanitary appliances. Recommended whenever there is risk of flowback when immersing a flexible hose in a bath or sink. Chrome-plated brass body. Stainless steel spring. Max. temperature: 60°C. Max. pressure: 10 bar.

Protection : HA.

According to ASSE, CSA, ANSI.

Type	Part number	Size body	Min. order	€uro
DAWS	1505315	1/2" MF	1	--


DAWNF

Anti-siphon vacuum breaker device for washing and watering taps outside the home. Installed between the tap and flexible hose. Provided with anti-freeze device to allow emptying the valve. Brass body. Stainless steel spring. Max. temperature: 60°C. Max. pressure: 10 bar.

Protection : HA.

According to ASSE, CSA, ANSI.

Type	Part number	Size body	Min. order	€uro
DAWNF	1505320	3/4" MF	1	--


DAWN

Anti-siphon vacuum breaker device for constant pressure applications. To be installed on the tap end-piece at the water outlet. As it is provided with direct safety drain it is installed above the service pipework. Brass body (item ...330 is chrome-plated). Stainless steel inside parts. Max. pressure: 10 bar. Max. temperature: 60°C.

Protection : HA.

According to ASSE, CSA, ANSI.

Type	Part number	Size body	Min. order	€uro
DAWN	1505329	3/8" FF	1	--
DAWN	1505330	3/8" FF	1	--


VAS288AC

Anti-siphon vacuum breaker device to prevent backsiphonage of contaminated water into a potable water supply. Body : Chrome-plated brass. Max working pressure: 8 bar. Max working temperature: 80 °C. Installed 6" (152 mm) above the highest point on the downstream piping.

Protection : DA.

According to ASSE Std. 1001, CSA Std. B64.

Type	Part number	Size body	Min. order	€uro
VAS288AC	1505331	1/4"FF	1	--
VAS288AC	1505332	3/8"FF	1	--
VAS288AC	1505333	1/2"FF	1	--
VAS288AC	1505334	3/4"FF	1	--
VAS288AC	1505335	1"FF	1	--

BRASS CHECK VALVES

202

**S**

Male - male threaded check valve with two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug.

Replaceable insert check valve. Body: Brass. Insert: polymer P.O.M.

Seal: Rubber NBR. Spring: Stainless steel. Max working pressure: 16 bar.

Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION : EA

According to KIWA - DVGW - NF.

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
S	220015162	15	3/4"M x 3/4"M	35 mm	1	--
S	220020162	20	1"M x 1"M	47 mm	1	--
S	220025160	25	1.1/4"M x 1.1/4"M	80 mm	1	--
S	220032162	32	1.1/2"M x 1.1/2"M	90 mm	1	--
S	220040162	40	2"M x 2"M	100 mm	1	--
S	220050162	50	2.1/2"M x 2.1/2"M	115 mm	1	--
S	220065160	65	3"M x 3"M	125 mm	1	--

**PS**

Soldering check valve with two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug.

Replaceable insert check valve. Body: Brass. Insert: polymer POM. Seal: Rubber NBR.

Spring: Stainless steel. Max working pressure: 16 bar. Max working temperature: 90°C.

Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA

According to KIWA - DVGW.

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
PS	221015162	15	Ø 15mm	97 mm	1	--
PS	221020162	20	Ø 22mm	120 mm	1	--
PS	221025160	25	Ø 28mm	128 mm	1	--
PS	221032162	32	Ø 35mm	148 mm	1	--
PS	221040162	40	Ø 42mm	166 mm	1	--
PS	221050162	50	Ø 54mm	199 mm	1	--
PS	221065162	65	Ø 67mm	225 mm	1	--

**PU**

Check valve with nut and tailpiece male-male threaded and two pressure plugs.

Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug. Replaceable insert check valve. Body: Brass.

Insert: polymer POM. Seal: Rubber NBR. Spring: Stainless steel.

Max working pressure: 10 bar. Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA

According to KIWA - DVGW.

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
PU	223015162	15	1/2"M x 1/2"M	137 mm	1	--
PU	223020162	20	3/4"M x 3/4"M	156 mm	1	--
PU	223025160	25	1"M x 1"M	169 mm	1	--
PU	223032162	32	1.1/4"M x 1.1/4"M	185 mm	1	--
PU	223040162	40	1.1/2"M x 1.1/2"M	202 mm	1	--
PU	223050162	50	2"M x 2"M	241 mm	1	--

BRASS CHECK VALVES

PI

Check valve without nut and tailpiece female-female threaded and two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug. Replaceable insert check valve. Body: Brass. Insert: polymer POM. Seal: Rubber NBR. Spring: Stainless steel. Max working pressure: 16 bar. Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA
According to KIWA - DVGW.

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
PI	222010162	10	3/8"F x 3/8"F	101 mm	1	--
PI	222015162	15	1/2"F x 1/2"F	120 mm	1	--
PI	222020162	20	3/4"F x 3/4"F	120 mm	1	--
PI	222025160	25	1"F x 1"F	124 mm	1	--
PI	222032162	32	1.1/4"F x 1.1/4"F	160 mm	1	--
PI	222040162	40	1.1/2"F x 1.1/2"F	187 mm	1	--
PI	222050162	50	2"F x 2"F	187 mm	1	--

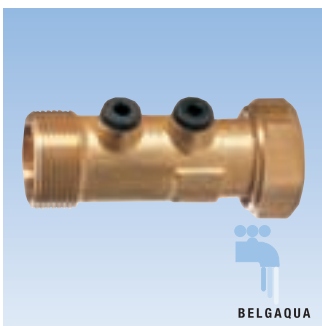

W

Female - Male threaded check valve with two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug. Replaceable insert check valve. Body: Brass. Insert: polymer POM. Seal: Rubber NBR. Spring: Stainless steel. Max working pressure: 16 bar. Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA
According to :
KIWA - DVGW (25)
KIWA - DVGW - NF (32)
KIWA - DVGW - NF (40)

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
W	210025161	25	1.1/4"F x 1.1/4"M	90 mm		--
W	210032162	32	1.1/2"F x 1.1/2"M	95 mm		--
W	210040162	40	2"F x 2"M	105 mm		--


WF

Female - Male threaded check valve with two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug. Replaceable insert check valve. Body: Brass. Insert: polymer POM. Seal: Rubber NBR. Spring: Stainless steel. Max working pressure: 16 bar. Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA
According to KIWA - NF. Approvals: Belgaqua.

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
WF	250015160	15	3/4"F x 3/4"M	120 mm		--
WF	250020160	20	1"F x 1"M	120 mm		--
WF	250025160	25	1.1/4"F x 1.1/4"M	124 mm		--
WF	250032160	32	1.1/2"F x 1.1/2"M	160 mm		--
WF	250040161	40	2"F x 2"M	187 mm		--
WF	250050161	50	2.1/2"F x 2.1/2"M	187 mm		--



BELGAQUA

BRASS CHECK VALVES



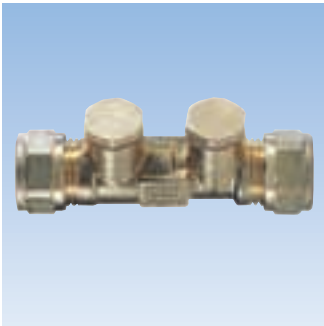
WH

Angle female-male threaded check valve with two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug. Replaceable insert check valve. Body: Brass. Insert: polymer POM. Seal: Rubber NBR. Spring: Stainless steel. Max working pressure: 16 bar. Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA
According to KIWA - NF

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
WH	251015160	15	3/4"F x 3/4"M	60x40 mm	1	--
WH	251020160	20	1"F x 1"M	68x48 mm	1	--



KF

Compression fittings check valve with two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug. Replaceable insert check valve. Body: Brass. Insert: polymer POM. Seal: Rubber NBR. Spring: Stainless steel. Max working pressure: 16 bar. Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA
According to KIWA

Type	Part number	Size body	Size Inlet/Outlet	Dimension	Min. order	€uro
KF	226015160	15	Ø 15mm	90 mm	1	--
KF	226020160	20	Ø 22mm	91 mm	1	--
KF	226025160	25	Ø 28mm	92 mm	1	--



VRBB

Female - female threaded check valve with two pressure plugs. Low opening pressure and water hammer protection. Silent operation thanks to the special double guide pin-plug. Replaceable insert check valve. Body: Brass. Insert: polymer POM. Seal: Rubber NBR. Spring: Stainless steel. Max working pressure: 16 bar. Max working temperature: 90°C. Two female cap 8 x 13.

Can be installed in any position.

PROTECTION: EA. According to KIWA. Approvals: Belgaqua.

Type	Part number	Size body	Dimension	Min. order	€uro
VRBB	1516015	1/2" FF	66 mm	25	--
VRBB	1516020	3/4" FF	76 mm	25	--
VRBB	1516025	1" FF	91 mm	10	--
VRBB	1516032	1.1/4" FF	111 mm	5	--
VRBB	1516040	1.1/2" FF	121 mm	5	--
VRBB	1516050	2" FF	152 mm	1	--



VRNN

Check valve with low opening pressure and protection against water hammer. Silent operation thanks to double guide pin-plug. Replaceable internal check. Chrome-plated brass MF connections and body. Plastic check insert. NBR seals. Stainless steel spring. Max. operating pressure: 16 bar. Max. operating temperature: 100°C.

*Direction of flow from M to F.

According to with KIWA.

Type	Part number	Size body	Dimension	Min. order	€uro
VRBB	1516015	1/2" FF	66 mm	25	--
VRBB	1516020	3/4" FF	76 mm	25	--

CAST IRON CHECK VALVES



FC

Spheroidal cast iron check valve with flanged connections.
Check function controllable according to EN 13959.

Field of application :

- as anti-pollution device in drinking water supply with EA protection according to EN1717
- as non return (check) valve in all hot and cold domestic water supply circuits, in distribution networks of fluid operating in the systems, in pumping stations, etc.

Operating pressure : 16 bar.

Max. temperature : 70°C.

Min. temperature : 4°C.

Spheroidal cast iron body.

Pull-out polymeric functional device (Check).

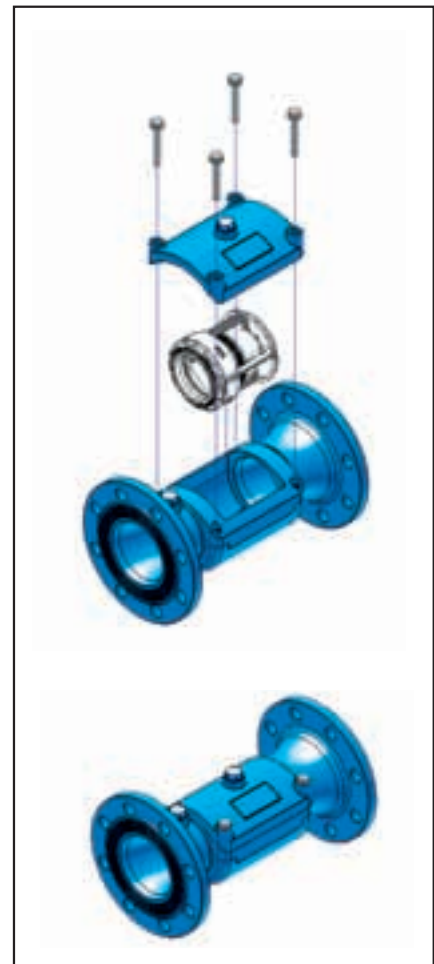
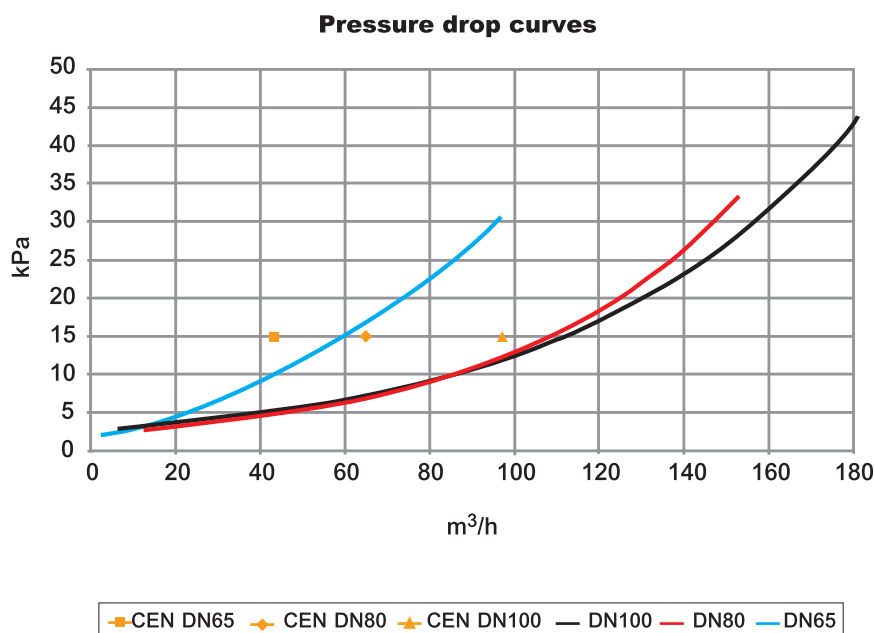
Elastomeric parts : NBR.

Other components: stainless steel.

Approvals : Belgaqua.

Type	Part number	Size body	Min. order	€uro
FC	1513065	65	1	--
FC	1513080	80	1	--
FC	1513100	100	1	--
FC	1513125	125	1	--
FC	1513150	150	1	--
FC	1513200	200	1	--
FC	1513250	250	1	--

FC hydraulic characteristic



PLASTIC CHECK VALVES



CO

Plastic check valve. Designed for easy assembly into faucets, fittings, pumps, filtration equipment, and other type of water handling or processing equipment. Same as type IN but with reduced dimensions. and without “snap-in-cams” Can be used where the IO series and IN series cannot be. Body: POM polymer. Seat: SBR Buna-S. O-ring: NBR Buna-N. Spring: Stainless steel. Working pressure: 10 bar Max working pressure: 16 bar. Max working temperature: 90°C

Approvals: KIWA - DVGW - Belgauqa - NF- WRC - NSF - ETA - SITAC.

Type	Part number	Description	Size body	Min. order	€uro
CO	1514210	CO010	8	1	--
CO	1514210	CO013	8	1	--
CO	1514210	CO014	8	1	--
CO	1514210	CO015	8	1	--
CO	1514210	CO020	8	1	--



CS

Plastic check valve. Body: PPO polymer. O-ring: NBR. Buna-N. Spring: Stainless steel Max working pressure: 16 bar (CS015) – 25bar (others). Max working temperature: 90°C

Approvals: KIWA - DVGW - NF - IFB - WRAS - NSF - ETA - SITAC.

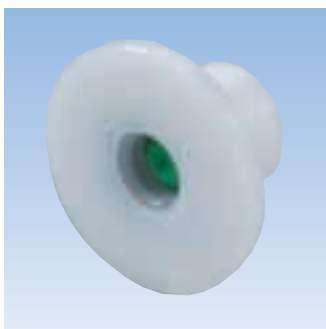
Type	Part number	Description	Size body	Min. order	€uro
CS	149015685	CS 015	10	1	--
CS	149100635	CS 100	100	1	--
CS	149150635	CS 150	150	1	--
CS	149250635	CS 250	250	1	--



FK

Plastic flanged check valve. Usable in various water meters and in a wide variety fittings. Can be used in different inlet combinations and in a number of different water faucets and other devices. No external o-ring. Simple assembly. Low opening pressure. No metal components. Body: POM polymer. Seat: SBR Buna-S. O-ring: NBR Buna-N. Spring: Stainless steel Working pressure: 10 bar. Max working pressure: 16 bar. Max working temperature: 90°C

Type	Part number	Description	Size body	Min. order	€uro
FK	1515315	FK 015	15	1	--
FK	1515320	FK 020	20	1	--



FI

Plastic flanged check valve. Same as FK but with different drawing.

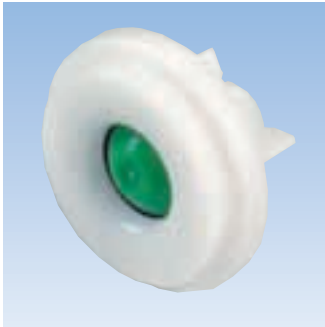
Type	Part number	Description	Size body	Min. order	€uro
FI	149010670	FI 010	8	1	--
FI	149015670	FI 015	15	1	--



FO

Plastic flanged check valve. Same as FK but with different drawing.

Type	Part number	Description	Size body	Min. order	€uro
FO	149015665	FO 015	15	1	--
FO	149020665	FO 020	20	1	--

PLASTIC CHECK VALVES

FW

Plastic check valve. Designed for easy assembly into faucets, fittings, pumps, filtration equipment, and other type of water handling or processing equipment. Simple assembly. Low opening pressure. Low pressure loss. Body: POM polymer. Diaphragm: SBR Buna-S. O-ring: NBR Buna-N. Spring: Stainless steel. Working pressure: 10 bar. Max working pressure: 16 bar. Max working temperature: 90°C

Approvals : KIWA - DVGW - NF - IFB.

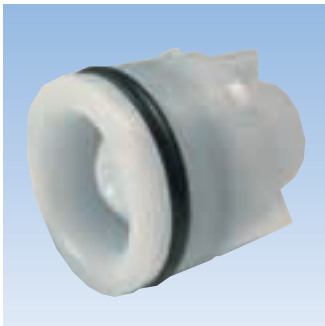
Type	Part number	Description	Size body	Min. order	€uro
FW	149010060	FW 010	10	1	--
FW	149015675	FW 015	15	1	--


IN

Plastic check valve. Designed for easy assembly into faucets, fittings, pumps, filtration equipment, and other type of water handling or processing equipment. Simple assembly. Short overall length. Low opening pressure. Low pressure loss. Body: POM polymer. Seat: SBR Buna-S. O-ring: NBR Buna-N. Spring: Stainless steel. Working pressure: 10 bar. Max working pressure: 16 bar. Max working temperature: 90°C

Approvals : KIWA - DVGW - NF - WRC - NSF - ETA - SITAC.

Type	Part number	Description	Size body	Min. order	€uro
IN	1515015	IN 015	15		--
IN	1515020	IN 020	20		--
IN	1515025	IN 025	25		--
IN	1515032	IN 032	32		--
IN	1515040	IN 040	40		--
IN	1515050	IN 050	50		--


IO

Plastic check valve. Designed for easy assembly into faucets, fittings, pumps, filtration equipment, and other type of water handling or processing equipment. Simple assembly. Short overall length. Low opening pressure. Low pressure loss. Body: POM polymer. Seat: SBR Buna-S. O-ring: NBR Buna-N. Spring: Stainless steel. Working pressure: 10 bar. Max working pressure: 16 bar. Max working temperature: 90°C

Approvals : KIWA - DVGW - SVGW - NF - WRC - NSF - ETA - SITAC.

Type	Part number	Description	Size body	Min. order	€uro
IO	1515115	IO 015	15	1	--
IO	1515120	IO 020	20	1	--
IO	1515125	IO 025	25	1	--
IO	1515132	IO 032	32	1	--
IO	1515140	IO 040	40	1	--
IO	1515150	IO 050	50	1	--


WM

Plastic check valve. Designed for easy assembly into faucets, fittings, pumps, filtration equipment, and other type of water handling or processing equipment. Low opening pressure. Low pressure loss. For use in water meter boxes. For use in German type water meter. Body: POM polymer. Seat: SBR Buna-S. O-ring: NBR Buna-N. Spring: Stainless steel. Working pressure: 10 bar. Max working pressure: 16 bar. Max working temperature: 90°C.

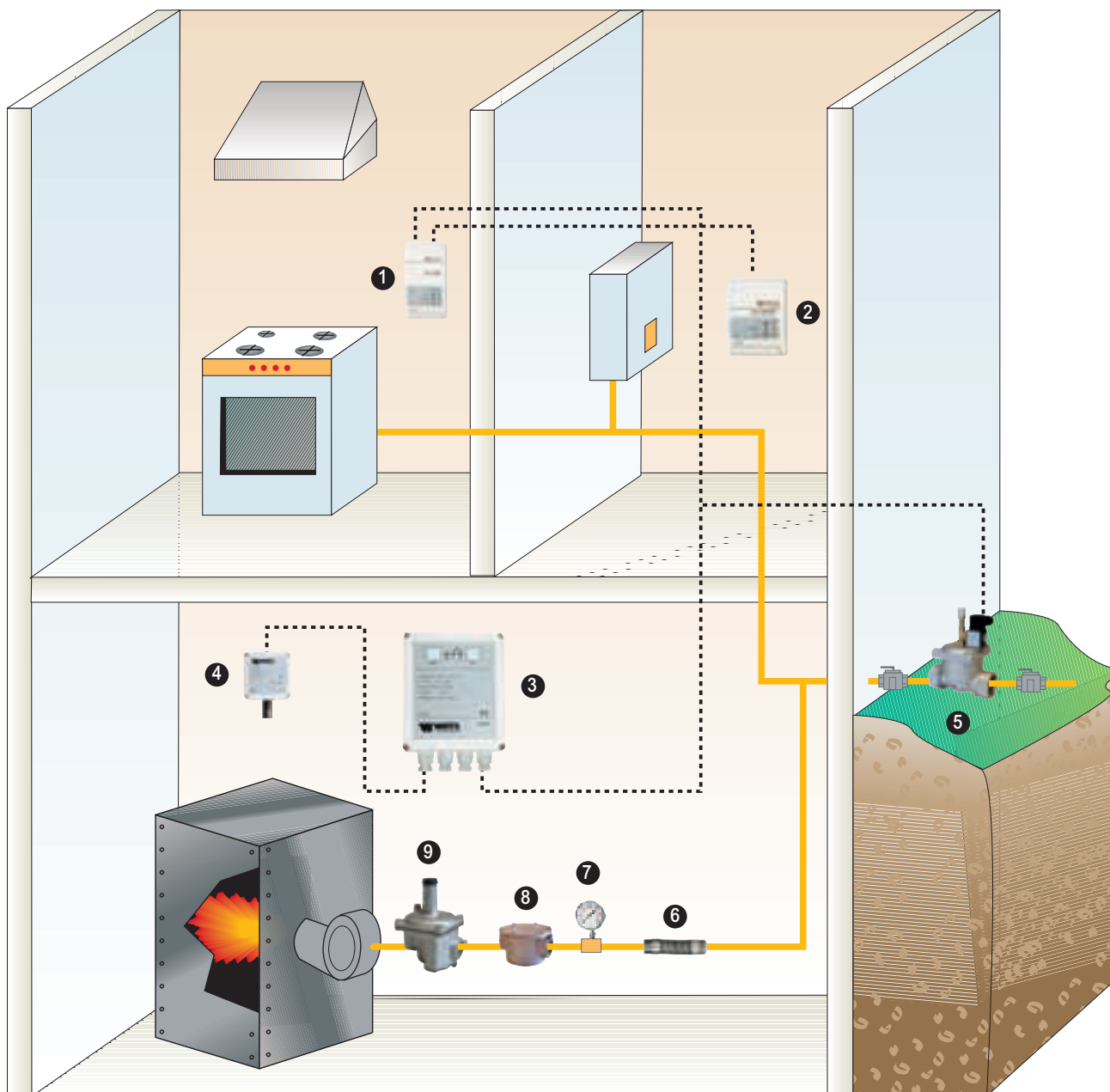
Approvals : KIWA - DVGW - NF - WRC - NSF - ETA - SITAC.

Type	Part number	Description	Size body	Min. order	€uro
WM	1515215	WM 015	15	1	--
WM	1515220	WM 020	20	1	--
WM	1515225	WM 025	25	1	--
WM	1515240	WM 040	40	1	--



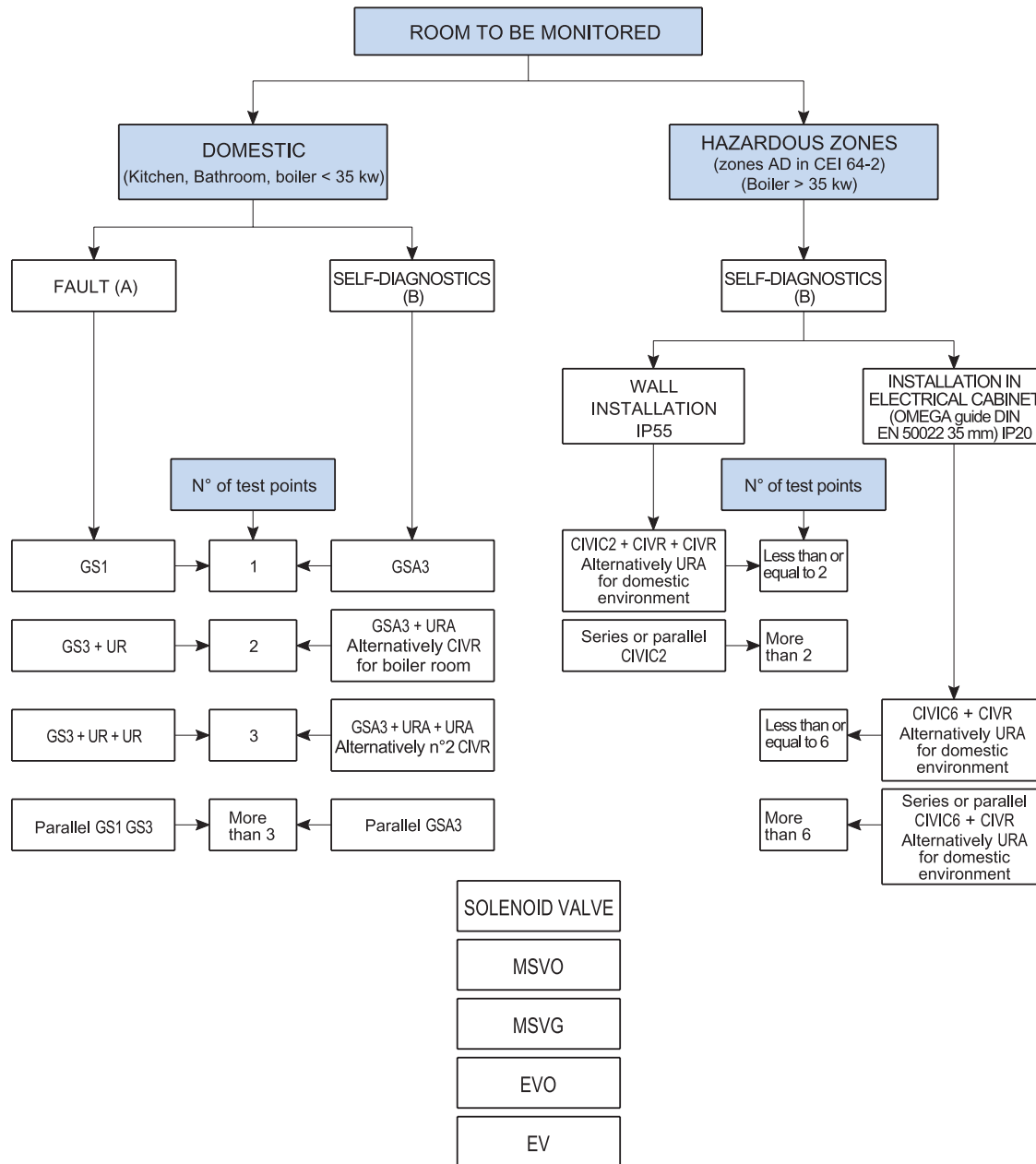
Components for gas installation

EXEMPLE OF APPLICATION



- 1 Gas leak detector unit series GSA3
- 2 Remote gas leak detector series URA
- 3 Central unit series CIVIC2
- 4 Remote gas leak detector series CIVIR
- 5 Normally closed gas solenoid valve with manual resetting series EV

- 6 Vibration-damping expansion joint series GDA
- 7 Gas pressure gauge series MG
- 8 Gas filter series 706
- 9 Gas stabilizer series FSD



NOTES :

MSVO/MSVG : NORMALLY OPEN gas solenoid valve with manual resetting

EVO/EV : NORMALLY CLOSED gas solenoid valve with MANUAL RESETTING

A) **FAULT** : function of the electronic circuit which, in case of critical fault to the sensor or main components, is actuated giving luminous signal (yellow LED) and commands closing of solenoid valve.

B) **SELF-DIAGNOSTICS** : function of the electronic circuit continuously monitoring correct operation of the entire equipment (including remote sensor); in case of fault, it gives a luminous signal and commands closing of solenoid valve.

	GS1	GS3	UR	GSA3	URA	CIVIC2	CIVIC6	CIVR
Protection class	IP42	IP42	IP42	IP42	IP42	IP55	IP20	IP54
Installation	Wall mounted	Wall mounted	Wall mounted	Wall mounted	Wall mounted	Wall mounted	On Omega guides 35 mm	Wall mounted

GAS LEAK DETECTOR DEVICES



GS1

GAS SENTINEL.

Electronic gas leak detector unit (sensor inside the unit) with acoustic and luminous alarm, **to be connected to one or more normally closed gas solenoid valves with manual resetting (EVO, EV) or normally open (MSVO, MSVG).**

Power consumption: 4 W.

Relay contact load capacity: 550 VA. Calibration in the range 5-20% LIE.

Operating temperature: - 10°C / + 50°C. Spray- and dust-proof transformer and relays: IP67.

Protection class of the detector unit: IP42. Thermal compensation for the sensor.

Fault: when a critical fault occurs on the sensor or main components, a luminous signal is given.

IMQ approved (only GS1 for natural gas).

According to EEC 89/336, EEC 73/23, Min. Circular 27/7/1994 N° 161892.



Type	Part number	Description	Power supply	Min. order	€uro
GS1	0940200	Natural gas	230V	1	--
GS1	0945200	LPG	230V	1	--



GS3

GAS SENTINEL.

Electronic gas leak detector unit (sensor inside the unit) with acoustic and luminous alarm, **to be connected to one or more normally closed gas solenoid valves (EVO, EV) or normally open (MSVO, MSVG).** The gas detector can function as a single unit or with 2 remote units UR (2 units for natural gas or 2 units for LPG).

Other technical characteristics like GS1.

According to EEC 89/336, EEC 73/23, Min. Circular 27/7/1994 N° 161892.

Type	Part number	Description	Power supply	Min. order	€uro
GS3	0940300	Natural gas	230V	1	--
GS3	0945300	LPG	230V	1	--



UR

GAS SENTINEL.

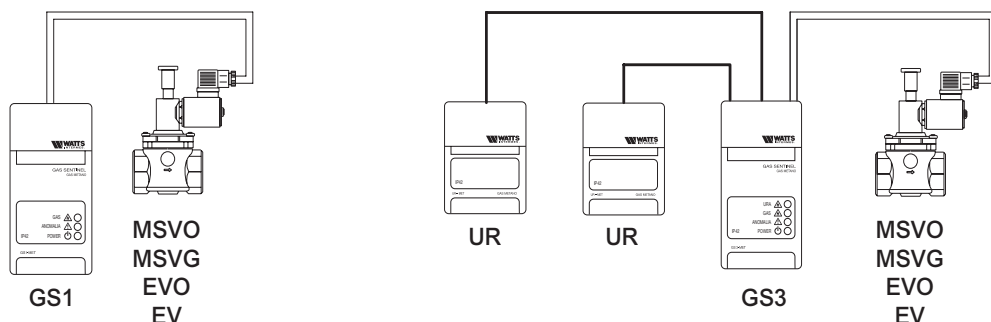
Gas leak detector unit to be connected to unit GS3. Power supply taken from unit GS3: 12Vcc. Calibration in the range; 5-20% LIE. Power consumption: 0.5 W.

Operating temperature: - 10°C / + 50°C. Protection class: IP42.

According to EEC 89/336, EEC 73/23.

Type	Part number	Description	Min. order	€uro
UR	0940350	Natural gas	1	--
UR	0945350	LPG	1	--

Basic system with normally open solenoid valve or normally closed and system with central unit with n° 2 remote units





GSA3

GAS SENTINEL.

Electronic gas leak detector unit (sensor inside the unit) with acoustic and luminous alarm, plus relay for commanding one or more **gas solenoid valves normally closed (EVO, EV) or normally open (MSVO, MSVG)**. The gas detector can function as a single unit or with 2 remote units URA or CIVR.

Power consumption: 4 W + 0.5 W for URA, CIVR.

Calibration in the range: 5-20% LIE. Relay contact load capacity: 550 VA.

Operating temperature: - 10°C / + 50°C. Spray- and dust-proof transformer and relays: IP67.

System reset button. Protection class: IP42. Thermal compensation for the sensor.

GENERAL SAFETY GUARANTEE

The GSA units are provided with an electronic self-diagnostics circuit continuously monitoring the unit for correct operation. Any fault is warned through an acoustic and light (yellow LED) signal while the gas line solenoid valve is closed automatically.

According to EEC 89/336, EEC 73/23.

Type	Part number	Description	Power supply	Min. order	€uro
GSA3	0940400	Natural gas	230V	1	--
GSA3	0945400	LPG	230V	1	--



URA

GAS SENTINEL.

Gas leak detector unit for connection to **units GSA3, CIVIC2, CIVIC6**.

Power supply from unit GSA3: 12 Vcc. Power consumption: 0.5 W.

Calibration in the range: 5-20% LIE. Operating temperature: - 10°C / + 50°C.

Protection class: IP42. Thermal compensation for the sensor.

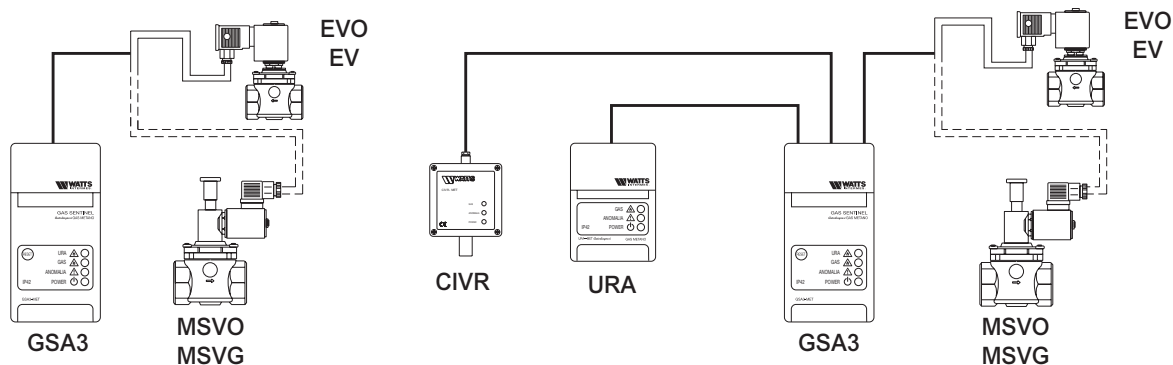
GENERAL SAFETY GUARANTEE

The remote URA units are provided with an electronic self-diagnostics circuit which, when interfaced with detector GSA3, CIVIC2 and CIVIC6, continuously monitors the unit for correct operation. Any fault is warned through an acoustic and light (yellow LED) signal while gas line solenoid valve is closed automatically.

According to EEC 89/336, EEC 73/23.

Type	Part number	Description	Min. order	€uro
URA	0940450	Natural gas	1	--
URA	0945450	LPG	1	--

Basic system with normally open solenoid valve or closed and system with central unit with n° 2 remote units



GAS LEAK DETECTOR DEVICES

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**CIVIC2**

Central unit for installation in zones with explosion risk (e.g. boilers > 35 kw) with alarm and command for **solenoid valve normally closed (EVO, EV) or normally open (MSVO or MSVG)** and remote alarm (siren, telephone dialler, etc.).

Provision for connecting up to 2 remote sensors CIVR or URA for natural gas or LPG, also of different type (CIVR for natural gas and LPG or URA for natural gas and LPG).

Relay contact load capacity: 550 VA. Operating temperature: - 10°C / + 50°C.

Spray- and dust-proof transformer and relays: IP67. Protection class (unit): IP55.

Temperature class T3 (max. surface temperature less than 200°C).

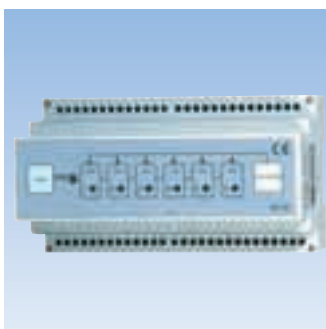
Unit with intrinsic safety. Buzzer 85 db (A) at 1 m.

Indicators :

- Green POWER LED signals correct power supply and running.
- Red GAS LED + buzzer signals, for each remote unit CIVR connected, a gas leak or fault on the electronic circuits (**self-diagnostics function**).

According to EEC 73/23, EEC 89/336.

Type	Part number	Power supply	Min. order	€uro
CIVIC2	0940502	230V	1	--

**CIVIC6**

Central unit for installation in electrical cabinet (omega guide DIN EN50022 35 mm), with alarm and command for **solenoid valve normally closed (EVO, EV) or normally open (MSVO or MSVG)** and remote alarm (siren, telephone dialler, etc.).

Provision for connecting up to 6 remote sensors CIVR or URA for natural gas or LPG, also of different type (CIVR for natural gas and LPG or URA for natural gas and LPG).

Relay contact load capacity: 550 VA. Operating temperature: - 10°C / + 50°C.

Spray- and dust-proof transformer and relays: IP67. Protection class (unit): IP20.

System reset button. Buzzer 85 db (A) at 1 m.

Indicators :

- Green POWER LED signals correct power supply and running.
- Red GAS LED + buzzer signals, for each remote unit CIVR connected, a gas leak or fault on the electronic circuits (self-diagnostics function).

According to EEC 73/23, EEC 89/336.

Type	Part number	Power supply	Min. order	€uro
CIVIC6	0940506	230V	1	--

**CIVR**

Central unit for installation in zones with explosion risk (e.g. boilers > 35 kw), **to be connected to CIVIC2, CIVIC6 or GSA3** for detecting presence of gas. The sensor, housed in an ex-proof metal case, with sintered drain, allows installation of remote unit CIVR in zones classified as hazardous (CEI64/2). Power supply from CIVIC2 or CIVIC6 or GSA3 (12V). Protection class (unit): IP54. Unit with intrinsic safety. Calibration in the range: 5/20% LIE.

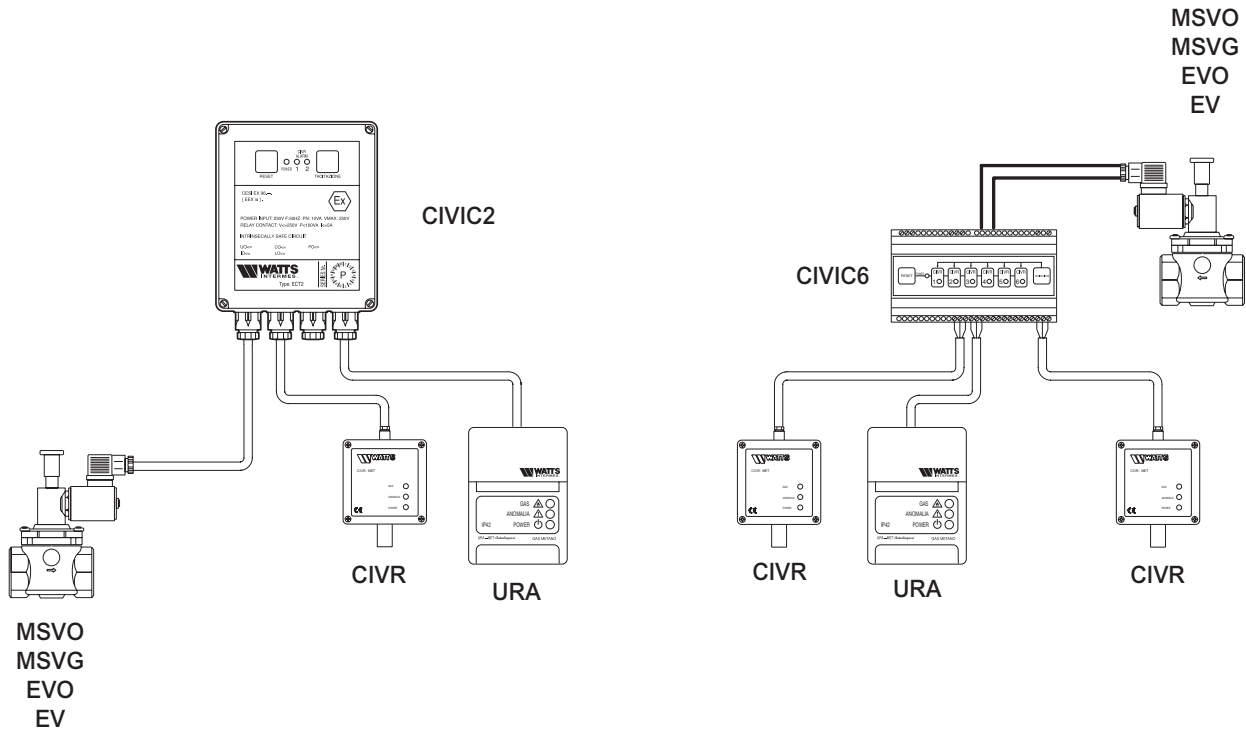
Operating temperature: - 10°C / + 50°C. Humidity: 0 - 80% (appreciable variation of calibration could occur at higher percentage humidity).

Temperature class T3 (max. surface temperature less than 200°C).

According to EEC 89/336, EEC 73/23.

Type	Part number	Description	Min. order	€uro
CIVR	0940550	Natural gas	1	--
CIVR	0945550	LPG	1	--

Self-diagnostic systems for installation in zones with explosion risk (e.g. Boiler > 35 kw) and domestic environments



FUNCTION OF SELF-DIAGNOSTICS SAFETY

The gas leak detectors manufactured by INTERMES (GSA3, CIVIC2, CIVIC6 and CIVR) are provided with electronic SELF-DIAGNOSTICS safety function: an electronic circuit continuously monitoring the entire gas detection system for correct operation (central units GSA3, CIVIC2 or CIVIC 6 and remote units URA and CIVR plus electrical connections between them).

When a fault occurs, the yellow FAULT LED lights up on the remote unit (CIVR or URA), while an acoustic and optical signal is given on the central unit as well as command to close the solenoid valve (EVO and EV).

GAS SOLENOID VALVES

**MSVO**

Normally open gas solenoid valve with manual resetting.
 Brass body.
 Stainless steel internal parts and spring Nitrile-butadiene rubber gaskets and O-ring.
 Environmental temperature range : -10°C + 60°C.
 Protection standard : IP65.
 Coil : class F in compliance with VDE 0580.
 Power consumption: 11W.
 Connections : threaded UNI-ISO 7/1.

Fuel: all three families of gas (city gas, methane, LPG); non aggressive gas.

Can be supplied also at 12 Vdc and 24 Vac

According to standard 97/23/CEE (only for 6 bar model).
Identification number CE 0497.

Type	Part number	Size body	Voltage supply	Max inlet pressure	Min. order	€uro
MSVO	1100020001	1/2"	230 Vca	0,5 bar	1	--
MSVO	1100030001	1/2"	230 Vca	6 bar	1	--
MSVO	1100021001	3/4"	230 Vca	0,5 bar	1	--
MSVO	1100031001	3/4"	230 Vca	6 bar	1	--

**MSVG**

Normally open gas solenoid valve with manual resetting. Aluminium body.
 Stainless steel internal parts and spring Nitrile-butadiene rubber gaskets and O-ring.
 Environmental temperature range : -10°C + 60°C. Protection standard : IP65
 Coil : class F in compliance with VDE 0580.
 Power consumption : • threaded 11W • flanged (DN65 ÷ 100) 28W. • flanged (DN125 ÷ 150) 45W.
 Connections : • threaded UNI-ISO 7/1. • flanged ISO 7005/2.
 Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.
 Threaded model can be supplied also at 12 Vdc and 24 Vac
 Flanged model can be supplied also at 12 Vdc, 24 Vac and 24Vdc.

According to standard 97/23/CEE (only for 6 bar model).
Identification number CE 0497.

Type	Part number	Size body	Voltage supply	Max inlet pressure	Min. order	€uro
MSVG	1100080001	1/2"	230 Vca	0,5 bar	1	--
MSVG	1100120001	1/2"	230 Vca	6 bar	1	--
MSVG	1100081001	3/4"	230 Vca	0,5 bar	1	--
MSVG	1100121001	3/4"	230 Vca	6 bar	1	--
MSVG	1100082001	1"	230 Vca	0,5 bar	1	--
MSVG	1100122001	1"	230 Vca	6 bar	1	--
MSVG	1100083001	1.1/4"	230 Vca	0,5 bar	1	--
MSVG	1100123001	1.1/4"	230 Vca	6 bar	1	--
MSVG	1100084001	1.1/2"	230 Vca	0,5 bar	1	--
MSVG	1100124001	1.1/2"	230 Vca	6 bar	1	--
MSVG	1100085001	2"	230 Vca	0,5 bar	1	--
MSVG	1100125001	2"	230 Vca	6 bar	1	--
MSVG	1100086001	65	230 Vca	0,5 bar	1	--
MSVG	1100126001	65	230 Vca	6 bar	1	--
MSVG	1100087001	80	230 Vca	0,5 bar	1	--
MSVG	1100127001	80	230 Vca	6 bar	1	--
MSVG	1100088001	100	230 Vca	0,5 bar	1	--
MSVG	1100128001	100	230 Vca	6 bar	1	--
MSVG	1100089001	125	230 Vca	0,5 bar	1	--
MSVG	1100129001	125	230 Vca	6 bar	1	--
MSVG	1100090001	150	230 Vca	0,5 bar	1	--
MSVG	1100130001	150	230 Vca	6 bar	1	--


EVO

Normally closed gas solenoid valve with manual resetting.
 Brass body.
 Stainless steel internal parts and spring Nitrile-butadiene rubber gaskets and O-ring.
 Environmental temperature range : -10°C + 60°C.
 Protection standard : IP65.
 Coil : class F in compliance with VDE 0580.
 Power consumption : 11W.
 Connections: threaded UNI-ISO 7/1

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Can be supplied also at 12 Vdc and 24 Vac

**According to standard 97/23/CEE (only for 6 bar model).
 Identification number CE 0497.**

Type	Part number	Size body	Voltage supply	Max inlet pressure	Min. order	€uro
EVO	1100040001	1/2"	230 Vca	0,5 bar	1	--
EVO	1100050001	3/4"	230 Vca	6 bar	1	--
EVO	1100041001	1/2"	230 Vca	0,5 bar	1	--
EVO	1100051001	3/4"	230 Vca	6 bar	1	--


EV

Normally closed gas solenoid valve with manual resetting. Aluminium body.
 Stainless steel internal parts and spring Nitrile-butadiene rubber gaskets and O-ring.
 Environmental temperature range: -10°C + 60°C. Protection standard : IP65.
 Coil : class F in compliance with VDE 0580.
 Power consumption : • threaded 11W. • flanged (DN65 ÷ 100) 28W. • flanged (DN125 ÷ 150) 45W.
 Connections : • threaded UNI-ISO 7/1. • flanged ISO 7005/2 PN16
 Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.
 Threaded model can be supplied also at 12 Vdc and 24 Vac.
 Flanged model can be supplied also at 12 Vdc, 24 Vac and 24Vdc.

**According to standard 97/23/CEE (only for 6 bar model).
 Identification number CE 0497.**

Type	Part number	Size body	Voltage supply	Max inlet pressure	Min. order	€uro
EV	1100180001	1/2"	230 Vca	0,5 bar	1	--
EV	1100220001	1/2"	230 Vca	6 bar	1	--
EV	1100181001	3/4"	230 Vca	0,5 bar	1	--
EV	1100221001	3/4"	230 Vca	6 bar	1	--
EV	1100182001	1"	230 Vca	0,5 bar	1	--
EV	1100222001	1"	230 Vca	6 bar	1	--
EV	1100183001	1.1/4"	230 Vca	0,5 bar	1	--
EV	1100223001	1.1/4"	230 Vca	6 bar	1	--
EV	1100184001	1.1/2"	230 Vca	0,5 bar	1	--
EV	1100224001	1.1/2"	230 Vca	6 bar	1	--
EV	1100185001	2"	230 Vca	0,5 bar	1	--
EV	1100225001	2"	230 Vca	6 bar	1	--
EV	1100186001	65	230 Vca	0,5 bar	1	--
EV	1100226001	65	230 Vca	6 bar	1	--
EV	1100187001	80	230 Vca	0,5 bar	1	--
EV	1100227001	80	230 Vca	6 bar	1	--
EV	1100188001	100	230 Vca	0,5 bar	1	--
EV	1100228001	100	230 Vca	6 bar	1	--
EV	1100189001	125	230 Vca	0,5 bar	1	--
EV	1100229001	125	230 Vca	6 bar	1	--
EV	1100190001	150	230 Vca	0,5 bar	1	--
EV	1100230001	150	230 Vca	6 bar	1	--

GAS SOLENOID VALVES

Spare coil for gas solenoid valves

Type of Solenoid Valve	Size body	230Vac	24Vac	24Vdc	12Vdc	€uro
EV	1/2" - 2"	2041	2042	N.S.	2116	--
	65 - 80 - 100	2102/A	2109/A	2109/A	2177/A	--
	125 - 150	216	218	218	217	--
EVO	1/2" - 3/4"	2041	2042	N.S.	2116	--
MSVG	1/2" - 2"	2103	1729	N.S.	2116	--
	65 - 80 - 100	2102/A	2109/A	2109/A	2177/A	--
	125 - 150	216	218	218	217	--
MSVO	1/2" - 3/4"	3426	2042	N.S.	2116	--

Spare connectors for gas solenoid valves

Type of Solenoid Valve	Size body	230Vac	24Vac	24Vdc	12Vdc	€uro
EV	1/2" - 2"	2104	2108	N.S.	2105	--
	65 - 80 - 100	2045	2108	2105	2105	--
	125 - 150	2104	226	226	2105	--
EVO	1/2" - 3/4"	2104	2108	N.S.	2105	--
MSVG	1/2" - 2"	2105	2105	N.S.	2105	--
	65 - 80 - 100	2045	2108	2105	2105	--
	125 - 150	2104	226	226	2105	--
MSVO	1/2" - 3/4"	2105	2105	N.S.	2105	--


MSVEEXD

Normally open gas solenoid valve with manual resetting and with explosion proof coil. Aluminium body. Stainless steel internal parts and spring Nitrile-butadiene rubber gaskets and O-ring.

Connections :

- threaded UNI-ISO 7/1
- flanged ISO 7005/2 PN16

Eex d IIC T5 protection

Coil :

- nickel-plated stainless steel
- class F according to VDE 0580
- complete with one three-pole electrical cable (HT 105°) 1,5 m length

Explosion proof nickel-plated core hitch (ADF).

Wire insulation class "H" (200°C)

Power consumption: 11VA in AC.

Electrical insulation: IP67

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Threaded model can be supplied also at 12 Vdc and 24 Vac.

Flanged model can be supplied also at 12 Vdc, 24 Vac and 24Vdc.

According to standard 97/23/CEE (only for 6 bar model)

Identification number CE 0497

According to standard IEC 144

CESI certificate of the coil EX-90.C.077

CESI certificate of the core hitch AD-85.B.172X.

According to standard EN50014 and EN50018

(CEI 318 and 311).

Type	Part number	Size body	Voltage supply	Max inlet pressure	Min. order	€uro
MSVEEXD	1100280001	1/2"	230 Vca	0,5 bar	1	--
MSVEEXD	1100320001	1/2"	230 Vca	6 bar	1	--
MSVEEXD	1100281001	3/4"	230 Vca	0,5 bar	1	--
MSVEEXD	1100321001	3/4"	230 Vca	6 bar	1	--
MSVEEXD	1100282001	1"	230 Vca	0,5 bar	1	--
MSVEEXD	1100322001	1"	230 Vca	6 bar	1	--
MSVEEXD	1100283001	1.1/4"	230 Vca	0,5 bar	1	--
MSVEEXD	1100323001	1.1/4"	230 Vca	6 bar	1	--
MSVEEXD	1100284001	1.1/2"	230 Vca	0,5 bar	1	--
MSVEEXD	1100324001	1.1/2"	230 Vca	6 bar	1	--
MSVEEXD	1100285001	2"	230 Vca	0,5 bar	1	--
MSVEEXD	1100325001	2"	230 Vca	6 bar	1	--
MSVEEXD	1100286001	65	230 Vca	0,5 bar	1	--
MSVEEXD	1100326001	65	230 Vca	6 bar	1	--
MSVEEXD	1100287001	80	230 Vca	0,5 bar	1	--
MSVEEXD	1100327001	80	230 Vca	6 bar	1	--
MSVEEXD	1100288001	100	230 Vca	0,5 bar	1	--
MSVEEXD	1100328001	100	230 Vca	6 bar	1	--
MSVEEXD	1100289001	125	230 Vca	0,5 bar	1	--
MSVEEXD	1100329001	125	230 Vca	6 bar	1	--
MSVEEXD	1100290001	150	230 Vca	0,5 bar	1	--
MSVEEXD	1100330001	150	230 Vca	6 bar	1	--

GAS SOLENOID VALVES

**EVEEXD**

Normally closed gas solenoid valve with manual resetting and with explosion proof coil. Aluminium body.

Stainless steel internal parts and spring Nitrile-butadiene rubber gaskets and O-ring.

Connections :

- threaded UNI-ISO 7/1
- flanged ISO 7005/2

Eex d IIC T5 protection

Coil :

- nickel-plated stainless steel
- class F according to VDE 0580
- complete with one three-pole electrical cable (HT 105°) 1,5 m length

Explosion proof nickel-plated core hitch (ADF).

Wire insulation class "H" (200°C)

Power consumption: 11VA in AC.

Electrical insulation: IP67

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Threaded model can be supplied also at 12 Vdc and 24 Vac

Flanged model can be supplied also at 12 Vdc, 24 Vac and 24Vdc.

According to standard 97/23/CEE (only for 6 bar model)
Identification number CE 0497

According to standard IEC 144
CESI certificate of the coil EX-90.C.077
CESI certificate of the core hitch AD-85.B.172X.

Type	Part number	Size body	Voltage supply	Max inlet pressure	Min. order	€uro
EVEEXD	1100380001	1/2"	230 Vca	0,5 bar	1	--
EVEEXD	1100420001	1/2"	230 Vca	6 bar	1	--
EVEEXD	1100381001	3/4"	230 Vca	0,5 bar	1	--
EVEEXD	1100421001	3/4"	230 Vca	6 bar	1	--
EVEEXD	1100382001	1"	230 Vca	0,5 bar	1	--
EVEEXD	1100422001	1"	230 Vca	6 bar	1	--
EVEEXD	1100383001	1.1/4"	230 Vca	0,5 bar	1	--
EVEEXD	1100423001	1.1/4"	230 Vca	6 bar	1	--
EVEEXD	1100384001	1.1/2"	230 Vca	0,5 bar	1	--
EVEEXD	1100424001	1.1/2"	230 Vca	6 bar	1	--
EVEEXD	1100385001	2"	230 Vca	0,5 bar	1	--
EVEEXD	1100425001	2"	230 Vca	6 bar	1	--
EVEEXD	1100386001	65	230 Vca	0,5 bar	1	--
EVEEXD	1100426001	65	230 Vca	6 bar	1	--
EVEEXD	1100387001	80	230 Vca	0,5 bar	1	--
EVEEXD	1100427001	80	230 Vca	6 bar	1	--
EVEEXD	1100388001	100	230 Vca	0,5 bar	1	--
EVEEXD	1100428001	100	230 Vca	6 bar	1	--
EVEEXD	1100389001	125	230 Vca	0,5 bar	1	--
EVEEXD	1100429001	125	230 Vca	6 bar	1	--
EVEEXD	1100390001	150	230 Vca	0,5 bar	1	--
EVEEXD	1100430001	150	230 Vca	6 bar	1	--

Spare coil for gas solenoid valves

Type of Solenoid Valve	Size body	230Vac	24Vac	24Vdc	12Vdc	€uro
MSVEEXD - EVEEXD	1/2" - 2"	3046	3049	3036	3037	--
	65 - 80 - 100	3046	3049	3036	3037	--
	125 - 150	3046	3049	3036	3037	--

DIELECTRIC, EXTENSIBLE AND EXPANSION JOINTS

GDWMF

Dielectric joints for joining pipes of different metals thus eliminating corrosion risks due to stray currents or electrolytic phenomena. For use with water, combustible gases, petrol, kerosene, mineral and vegetable oils. Galvanized steel body, female connection and brass male connection. Max. pressure: 12 bar. Max. temperature: 110°C at 10 bar. Electrical insulation up to 600 V with dry piping. Exclusive insulator, Watts GA1425.

According to **UNI-CIG 9860**.

Type	Part number	Size body	Min. order	€uro
GDWMF	1505501	1/2" MF	10	--
GDWMF	1505502	3/4" MF	10	--


GDWFF

Dielectric joints like GDWMF but with female connections.

According to **UNI-CIG 9860**.

Type	Part number	Size body	Min. order	€uro
GDWFF	1505515	1/2" FF	10	--
GDWFF	1505520	3/4" FF	10	--
GDWFF	1505525	1" FF	1	--
GDWFF	1505532	1.1/4" FF	1	--
GDWFF	1505540	1.1/2" FF	1	--
GDWFF	1505550	2" FF	1	--


GD3

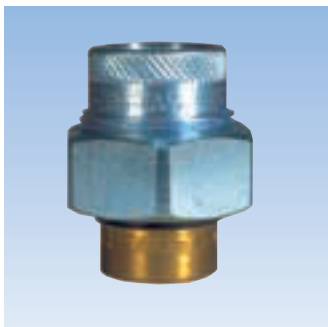
Dielectric joints for joining steel/steel pipes. All galvanized steel body. Coupling between the two joint parts is threaded for ND 1/2" to 2" and flanged for ND 65 to 100.

According to **UNI-CIG 9860**.

Type	Part number	Size body	Min. order	€uro
GD3	1505601	1/2" FF	10	--
GD3	1505602	3/4" FF	10	--
GD3	1505603	1" FF	1	--
GD3	1505604	1.1/4" FF	1	--
GD3	1505605	1.1/2" FF	1	--
GD3	1505606	2" FF	1	--
GD3	1505565	65	1	--
GD3	1505580	80	1	--
GD3	1505600	100	1	--

DIELECTRIC, EXTENSIBLE AND EXPANSION JOINTS

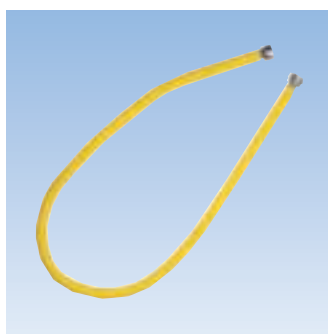
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**GDWFS**

Dielectric joints like GDWMF but with brass weld and female connection.

According to UNI-CIG 9860.

Type	Part number	Size body	Min. order	€uro
GDWFS	1505555	1/2" F x 14	10	--
GDWFS	1505556	1/2" F x 16	10	--
GDWFS	1505557	3/4" F x 16	10	--
GDWFS	1505558	3/4" F x 22	10	--
GDWFS	1505559	1" F x 28	10	--

**TMIGFF**

Extensible stainless steel tube protected by cross-linked polyolefin sheath applied on the tube, for domestic gas appliances. Flexible part of stainless steel AISI 316L, guaranteed min. wall thickness of 0.22 mm at any point. Tube submitted to solution heat treatment for improved forming and corrosion resistance. Connections with 1/2" female swivel nut UNI-ISO 228/1, with hexagon on tube close to the F swivel nut for easier installation.

Max. pressure: 10 bar.



IMQ approved.

According to UNI-CIG 9891.

Type	Part number	Tube	Min. order	€uro
TMIGFF	0914505	50/100 cm	10	--
TMIGFF	0914507	75/150 cm	10	--
TMIGFF	0914510	100/200 cm	10	--

**TMIGMF**

Like TMIGFF but with 1/2" male/female connections.



IMQ approved.

According to UNI-CIG 9891.

Type	Part number	Tube	Min. order	€uro
TMIGMF	0914605	50/100 cm	10	--
TMIGMF	0914607	75/150 cm	10	--
TMIGMF	0914610	100/200 cm	10	--

M

DIELECTRIC, EXTENSIBLE AND EXPANSION JOINTS

TMIGR

Extensible tube with 1/2" angle gas cock to be fitted to the tube.



IMQ approved.
According to UNI-CIG 9891.

Type	Part number	Tube	Min. order	€uro
TMIGMF	0914705	50/100 cm	10	--
TMIGMF	0914707	75/150 cm	10	--
TMIGMF	0914710	100/200 cm	10	--


RPTMG

Adapter for hose fitting in domestic gas appliances; can be fitted to the female connection of tubes TMIG. The adapter is complete with 2 seals, hose fitting and nut for connection to natural gas or LPG pipes. Nickel-plated body. Elastomeric seals.

Type	Part number	Size	Min. order	€uro
RPTMG	0914015	1/2"	1	--


GE

Extensible stainless steel tube with continuous coating of the outer surface, designed to protect against aggression of the surrounding environment, suitable for gas, domestic water and heating systems. Stainless steel sleeve and nut.

Fixed stainless steel male threaded fitting UNI ISO 7/1. Female fitting with swivel nut, and hexagon on tube close to the female nut for easier installation.

T.I.G. welding.

Performance :

Forming with radius of curvature equal to the inner diameter.

Axial elongation approx. double the initial size. Max. operating pressure: 10 bar.

According to UNI-CIG 8042 Italian DM 28/2/1996.

According to UNI-CIG 9891.

Type	Part number	Size	L min. (mm)	L max. (mm)	Min. order	€uro
GE	0916015	1/2"M x 1/2"F	90	140	10	--
GE	0916016	1/2"M x 3/4"F	90	140	10	--
GE	0916020	3/4"M x 3/4"F	90	140	10	--
GE	0916025	1"M x 1"F	90	140	10	--
GE	0916115	1/2"M x 1/2"F	130	220	10	--
GE	0916116	1/2"M x 3/4"F	130	220	10	--
GE	0916120	3/4"M x 3/4"F	130	220	10	--
GE	0916125	1"M x 1"F	130	220	10	--
GE	0916215	1/2"M x 1/2"F	220	420	10	--
GE	0916216	1/2"M x 3/4"F	220	420	10	--
GE	0916220	3/4"M x 3/4"F	220	420	10	--
GE	0916225	1"M x 1"F	220	420	10	--

DIELECTRIC, EXTENSIBLE AND EXPANSION JOINTS

224

**GDA**

Vibration-damping expansion joint for gas systems. Stainless steel body except for the flanges which are of carbon steel. Connections with taper pipe thread ISO 7/1 from 1/2" M to 2" M; flanged NP16 - UNI2223 from ND 65 to ND100.

Max. operating pressure: 1000 mbar (10,000 mm W.G.). Max. pressure: 10 bar.

According to UNI-CIG 8042 Italian DM 28/2/1996.

Type	Part number	Size	Min. order	€uro
GDA	0915015	1/2"	10	--
GDA	0915020	3/4"	10	--
GDA	0915025	1"	10	--
GDA	0915032	1.1/4"	10	--
GDA	0915040	1.1/2"	10	--
GDA	0915050	2"	10	--
GDA	0915065	65	10	--
GDA	0915080	80	10	--
GDA	0915100	100	10	--

**GC**

Stainless steel flexible fitting for connection between gas meter and piping to the user.

Stainless steel AISI 316 bellows . Painted steel 3/4" female connection.

Fitting with 1" F brass swivel nut. T.I.G. welding. Max. operating pressure: 10 bar.

According to DIN 3376.

Type	Part number	Size	Min. order	€uro
GC	0913020	1/2" x 1"	10	--

GAS GOVERNOR AND GAS LINE FILTER

FSD

Gas governor with filter unit inside. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber.

Operating temperature : -10°C + 60°C. Governor class and group: class B; group 2 (B2).

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Max inlet pressure: 200mbar. Max outlet pressure: 150mbar

Outlet pressure (spring standard)

DN 15 - 20 10 ÷ 25 mbar

DN 25 12 ÷ 24 mbar

DN 32 - 40 14 ÷ 30 mbar

DN 50 12 ÷ 30 mbar

Connections: threaded UNI-ISO 7/1.

UNI-EN88 and EN334 approved.

Type	Part number	Size body	Min. order	€uro
FSD	1090020001	1/2"	1	--
FSD	1090021001	3/4"	1	--
FSD	1090022001	1"	1	--
FSD	1090023001	1.1/4"	1	--
FSD	1090024001	1.1/2"	1	--
FSD	1090025001	2"	1	--


FSDC

Gas governor with filter unit inside. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber. **Closure control.**

Operating temperature: -10°C + 60°C. Governor class and group: class B; group 2 (B2).

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Max inlet pressure: 200mbar. Max outlet pressure: 150mbar

Outlet pressure (spring standard)

DN 15 - 20 10 ÷ 25 mbar

DN 25 12 ÷ 24 mbar

DN 32 - 40 14 ÷ 30 mbar

DN 50 12 ÷ 30 mbar

DN 65 - 80 9 ÷ 25 mbar

Connections:

- threaded UNI-ISO 7/1
- flanged ISO 7005/2 PN 16

UNI-EN88 and EN334 approved.

Type	Part number	Size body	Min. order	€uro
FSDC	1090120001	1/2"	1	--
FSDC	1090121001	3/4"	1	--
FSDC	1090122001	1"	1	--
FSDC	1090123001	1.1/4"	1	--
FSDC	1090124001	1.1/2"	1	--
FSDC	1090125001	2"	1	--
FSDC	1090126001	65	1	--
FSDC	1090127001	80	1	--

GAS GOVERNOR AND GAS LINE FILTER

**ST**

Gas governor without filter. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber. **Closure control.**

Operating temperature : -10°C + 60°C.

Governor class and group : class B; group 2 (B2).

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Max inlet pressure : 200mbar.

Max outlet pressure : 150mbar

Outlet pressure (spring standard)

DN 65 - 80 9 ÷ 25 mbar

DN 100 15 ÷ 45 mbar

Connections : flanged ISO 7005/2 PN 16.

UNI-EN88 and EN334 approved.

Type	Part number	Size body	Min. order	€uro
ST	1090150001	65		--
ST	1090151001	80		--
ST	1090152001	100		

**FSDR**

Gas governor with filter unit inside. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber. **Closure control.**

Operating temperature : -10°C + 60°C. Governor class and group : class B; group 2 (B2)

Fuel: all three families of gas (city gas, methane, LPG); non aggressive gas.

Max inlet pressure : 500mbar. Max outlet pressure : 150mbar

Outlet pressure (spring standard)

DN 15 - 20 10 ÷ 25 mbar

DN 25 12 ÷ 24 mbar

DN 32 - 40 14 ÷ 30 mbar

DN 50 12 ÷ 30 mbar

DN 65 - 80 9 ÷ 25 mbar

Connections :

- threaded UNI-ISO 7/1
- flanged ISO 7005/2 PN 16

UNI-EN88 and EN334 approved.

Type	Part number	Size body	Min. order	€uro
FSDR	1090220001	1/2"	1	--
FSDR	1090221001	3/4"	1	--
FSDR	1090222001	1"	1	--
FSDR	1090223001	1.1/4"	1	--
FSDR	1090224001	1.1/2"	1	--
FSDR	1090225001	2"	1	--
FSDR	1090226001	65	1	--
FSDR	1090227001	80	1	--

GAS GOVERNOR AND GAS LINE FILTER

STR

Gas pressure governor without filter. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber. **Closure control.**

Operating temperature : -10°C + 60°C.

Governor class and group : class B; group 2 (B2).

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Max inlet pressure: 500 mbar.

Max outlet pressure: 150mbar

Outlet pressure (spring standard)

DN 15 - 20 10 ÷ 25 mbar

DN 25 12 ÷ 24 mbar

DN 32 - 40 14 ÷ 30 mbar

DN 50 12 ÷ 30 mbar

DN 65 - 80 9 ÷ 25 mbar

Connections: flanged ISO 7005/2 PN 16

UNI-EN88 and EN334 approved.

Type	Part number	Size body	Min. order	€uro
STR	1090240001	65	1	--
STR	1090241001	80	1	--
STR	1090242001	100	1	--


FS1B

Industrial gas governor with filter unit inside. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber. **Closure control.**

Operating temperature: -10°C + 60°C.

Governor class and group: class A; group 2 (A2).

Fuel: all three families of gas (city gas, methane, LPG); non aggressive gas.

Max inlet pressure: 1 bar.

Max outlet pressure: 450mbar.

Outlet pressure (spring standard)

DN 32 - 40 14 ÷ 30 mbar

DN 50 12 ÷ 30 mbar

DN 65 - 80 9 ÷ 25 mbar

Connections :

- threaded UNI-ISO 7/1
- flanged ISO 7005/2 PN 16

According to UNI-EN88, UNI-EN 161.

Type	Part number	Size body	Min. order	€uro
FS1B	1090253001	1.1/4"	1	--
FS1B	1090254001	1.1/2"	1	--
FS1B	1090255001	2"	1	--
FS1B	1090256001	65	1	--
FS1B	1090257001	80	1	--

GAS GOVERNOR AND GAS LINE FILTER

**ST1B**

Industrial gas governor without filter. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber.

Operating temperature : -10°C + 60°C.

Governor class and group : class A; group 2 (A2).

Fuel: all three families of gas (city gas, methane, LPG); non aggressive gas.

Max inlet pressure: 1 bar.

Max outlet pressure: 450mbar.

Outlet pressure (spring standard):

DN 65 - 80 9 ÷ 25 mbar

DN 100 15 ÷ 45 mbar

Connections : flanged ISO 7005/2 PN 16.

According to UNI-EN88, UNI-EN 161.

Type	Part number	Size body	Min. order	€uro
ST1B	1090270001	65	1	--
ST1B	1090271001	80	1	--
ST1B	1090272001	100	1	--

**STLF**

Low flow gas governor without filter. Aluminium body. Inner parts in aluminium, steel, brass and syntetic materials; diaphragm and gaskets in NBR rubber.

Operating temperature : -10°C + 60°C.

Governor class and group : class A; group 2 (A2).

Fuel: all three families of gas (city gas, methane, LPG); non aggressive gas.

inlet pressure :

* 50 mbar

** 70 /100 mbar

Max outlet pressure : 450mbar.

Outlet pressure (spring standard) : 9 ÷ 25 mbar.

Connections :

• threaded UNI-ISO 7/1.

Type	Part number	Size body	Min. order	€uro
* STL F	1090010001	3/8"	1	--
** STL F	1090011001	3/8"	1	--

Gas governor spare

the governors FSD - FSDC - FSDR - FS1B - ST - STR - ST1B series, are equipped with the neutral spring inside. Upon request, could be supply with coloured springs according to the different pressure ranges.

GAS GOVERNOR AND GAS LINE FILTER
Gas governor spare

Article	Code	Description	Range
FSD 15 / 20	E711	Green spring (not used for FSDR)	6 - 12 mbar
FSDC 15 / 20	E714	Neutral spring	10 - 25 mbar
FSDR 15 / 20	E720	Red spring	23 - 70 mbar
	E722	Yellow spring	60 - 110 mbar
	E737	Blue spring	100 - 150 mbar
	380	Spacer	**
FSD 25	E1209	Green spring (not used for FSDR)	6 - 13 mbar
FSDC 25	E1210D	Neutral spring	12 - 24 mbar
FSDR 25	E1211D	Red spring	23 - 80 mbar
	E1213D	Yellow spring	70 - 150 mbar
	381	Spacer	**
FSD 32 / 40	E816D	Green spring (not used for FSDR and FS1B)	6 - 15 mbar
FSDC 32 / 40	E812D	Neutral spring	14 - 30 mbar
FSDR 32 / 40	E815D	Violet spring	28 - 80 mbar
FS1B 32 / 40	E836D	Brown spring	70 - 120 mbar
	E837	Blue spring	100 - 150 mbar
	E835	White spring (only used for FS1B)	150 - 350 mbar
	382	Spacer	**
FSD 50	E641	Green spring (not used for FSDR and FS1B)	6 - 15 mbar
FSDC 50	E620	Neutral spring	12 - 30 mbar
FSDR 50	E619D	Violet spring	28 - 70 mbar
FS1B 50	E631D	Brown spring	60 - 150 mbar
	E630	Blue spring (only used for FS1B)	150 - 350 mbar
	383	Spacer	**
ST 65/80	E395	Green spring (not used for FSDR, STR, ST1B and FS1B)	6 - 10 mbar
STR 65/80	E405	Neutral spring	9 - 25 mbar
FSDC 65/80	E406	Red spring	24 - 70 mbar
FSDR 65/80	E417D	Violet spring	60 - 110 mbar
ST1B 65/80	E424D	Brown spring	100 - 150 mbar
FS1B 65/80	E473	Blue spring (only used for FS1B - ST1B)	150 - 270 mbar
	E486	White spring (only used for FS1B - ST1B)	250 - 450 mbar
	384	Spacer	**
ST 100	E534	Green spring (not used for STR and ST1B)	6 - 18 mbar
STR 100	E466D	Neutral spring	15 - 45 mbar
ST1B 100	E535	Red spring	35 - 75 mbar
	E468	Violet spring	70 - 110 mbar
	E475	Brown spring	100 - 150 mbar
	E476	Blue spring (used only for ST1B)	150 - 270 mbar
	E487	White spring (only used for ST1B)	250 - 450 mbar
	385	Spacer	**

** = To put out of service, replace the spring with the suitable spacer.

GAS GOVERNOR AND GAS LINE FILTER

230

**706WB**

Gas filter for wall boilers. Aluminium body. Galvanized steel plate cover.
Filter element with long-life Viledon P15/500S panels with remarkable dust absorption in according to DIN EN 779 specifications; cage for filter in synthetic material.

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.
Working temperature : -10°C + 80°C.
Max operating pressure : 0,5 bar.
Testing pressure : 1bar.
Filtration degree : ≤ 50 µm.

Connections:

- threaded UNI-ISO 7/1

According to UNI-EN 161.

UNI-EN 126 approved.

Identification number CE0051.

Type	Part number	Size body	Min. order	€uro
706WB	1070030000	1/2"	36	--
706WB	1070031000	3/4"	36	--

**706**

Threaded gas filter. Body and cover in aluminium.

Filter element with two long-life Viledon P15/500S panels with remarkable dust absorption in according to DIN EN 779 specifications; cage for filter in synthetic material.

Fuel: all three families of gas (city gas, methane, LPG); non aggressive gas.
Working temperature : -10°C + 80°C.
Max operating pressure : 1 bar.
Testing pressure : 2bar
Filtration degree : ≤ 50 µm

Connections :

- threaded UNI-ISO 7/1

According to UNI-EN 161.

UNI-EN 126 approved

Identification number CE0051.

Type	Part number	Size body	Min. order	€uro
706	1070040000	1/2"	1	--
706	1070041000	3/4"	1	--
706	1070042000	1"	1	--
706	1070043000	1.1/4"	1	--
706	1070044000	1.1/2"	1	--
706	1070045000	2"	1	--

GAS GOVERNOR AND GAS LINE FILTER

706F

Flanged gas filter. Body and cover in aluminium. Filter element with two long-life Viledon P15/500S panels with remarkable dust absorption in according to DIN EN 779 specifications; galvanized steel reinforcements for flanged filters.

All flanged filters are fitted with connections for inlet or outlet pressure taps.

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Working temperature : -10°C + 80°C.

Max operating pressure : 4 bar.

Testing pressure : 6 bar

Filtration degree : ≤ 50 µm

Connections :

- flanged ISO 7005/2 PN 16

According to UNI-EN 161.

UNI-EN 126 approved.

Identification number CE0051.

According to 97/23/CEE. Forseen for the DN 150 model.

Type	Part number	Size body	Min. order	€uro
706F	1070050000	40	1	--
706F	1070051000	50	1	--
706F	1070052000	65	1	--
706F	1070053000	80	1	--
706F	1070054000	100	1	--
706F	1070055000	125	1	--
706F	1070056000	150	1	--


7066B

Threaded gas filter for high pressure.

Body and cover in aluminium. Filter element with two long-life Viledon P15/500S panels with remarkable dust absorption in according to DIN EN 779 specifications; cage in synthetic material with galvanized steel reinforcements.

All filters are fitted with two pressure plugs.

Fuel : all three families of gas (city gas, methane, LPG); non aggressive gas.

Working temperature : -10°C + 80°C

Max operating pressure : 6 bar

Testing pressure : 9 bar

Filtration degree : ≤ 50 µm

Connections :

- threaded UNI-ISO 7/1

According to UNI-EN 161.

According to 97/23/CEE, 30/396/CEE.

Type	Part number	Size body	Min. order	€uro
7066B	1070060000	1/2"	1	--
7066B	1070061000	3/4"	1	--
7066B	1070062000	1"	1	--
7066B	1070063000	1.1/4"	1	--
7066B	1070064000	1.1/2"	1	--
7066B	1070065000	2"	1	--

PROTECTION AND MEASURE DEVICE

232

**GUA**

Yellow, spiral-reinforced flexible sheath, flame-retardant, smooth internal surface, for protection of gas pipes, specified by UNI-CIG 7129 and UNI-CIG 7131 standards.

PVC sheath.

Resistance to squashing: A 320 N.

Resistance to temperature: -10°C ÷ 70°C.

Flame retardant according to UL 94 class VO.

Minimum radius of curvature less than

3 times the diameter (empty sheath).

Absolute electrical insulation against stray currents.

Absorbs the thermal expansion of the gas supply pipes thereby avoiding formation of cracks in the walls, ceilings or floors.

Type	Part number	External Ø	Internal Ø	Roll	Min. order	€uro
GUA	0917020	24,7 mm	20 mm	25 m	1	--
GUA	0917022	27 mm	22 mm	25 m	1	--
GUA	0917025	30,3 mm	25 mm	25 m	1	--
GUA	0917028	33,3 mm	28 mm	25 m	1	--
GUA	0917030	35,5 mm	30 mm	25 m	1	--
GUA	0917032	37,8 mm	32 mm	25 m	1	--
GUA	0917035	40,7 mm	35 mm	25 m	1	--
GUA	0917040	46,2 mm	40 mm	25 m	1	--
GUA	0917050	57 mm	50 mm	25 m	1	--
GUA	0917060	68 mm	60 mm	25 m	1	--

**MP1-63**

Gas pressure gauge, dia. 60, precision diaphragm sensitive element.

Chrome-plated steel case. Brass bottom entry connection.

Type	Part number	Size	Dimension	bar	Min. order	€uro
MP1-63	PP35441003	1/4" M	63	0/60 mbar	1	--
MP1-63	PP35481001	1/4" M	63	0/100 mbar	1	--

**MP1-80**

Gas pressure gauge, dia. 80, precision diaphragm sensitive element.

Chrome-plated steel case. Brass bottom entry connection.

Type	Part number	Size	Dimension	bar	Min. order	€uro
MP1-80	PP45441100	3/8" M	80	0/60 mbar	1	--
MP1-80	PP45481101	3/8" M	80	0/100 mbar	1	--

Application

Protection of gas supply pipes :

- When passing through cavities.
- When passing through walls of perforated bricks, cement, prefabricated panels.
- Floors and ceilings
- Crossed or parallel water supply pipes.
- Wherever necessary to insulate metal pipes from stray currents.

Standards

Italian standards UNI 7129 and UNI 7131-72 concerning gas supply systems for domestic use, fed by distribution main (UNI 7129) or for LPG (UNI 7131) which prescribe that the gas supply pipes be inserted in a protective sheath.

UNI 7129-92, 2.3.1.4".... omissis

The above sheaths shall have an inner diameter of at least 10 mm greater than the outer diameter of the pipe.

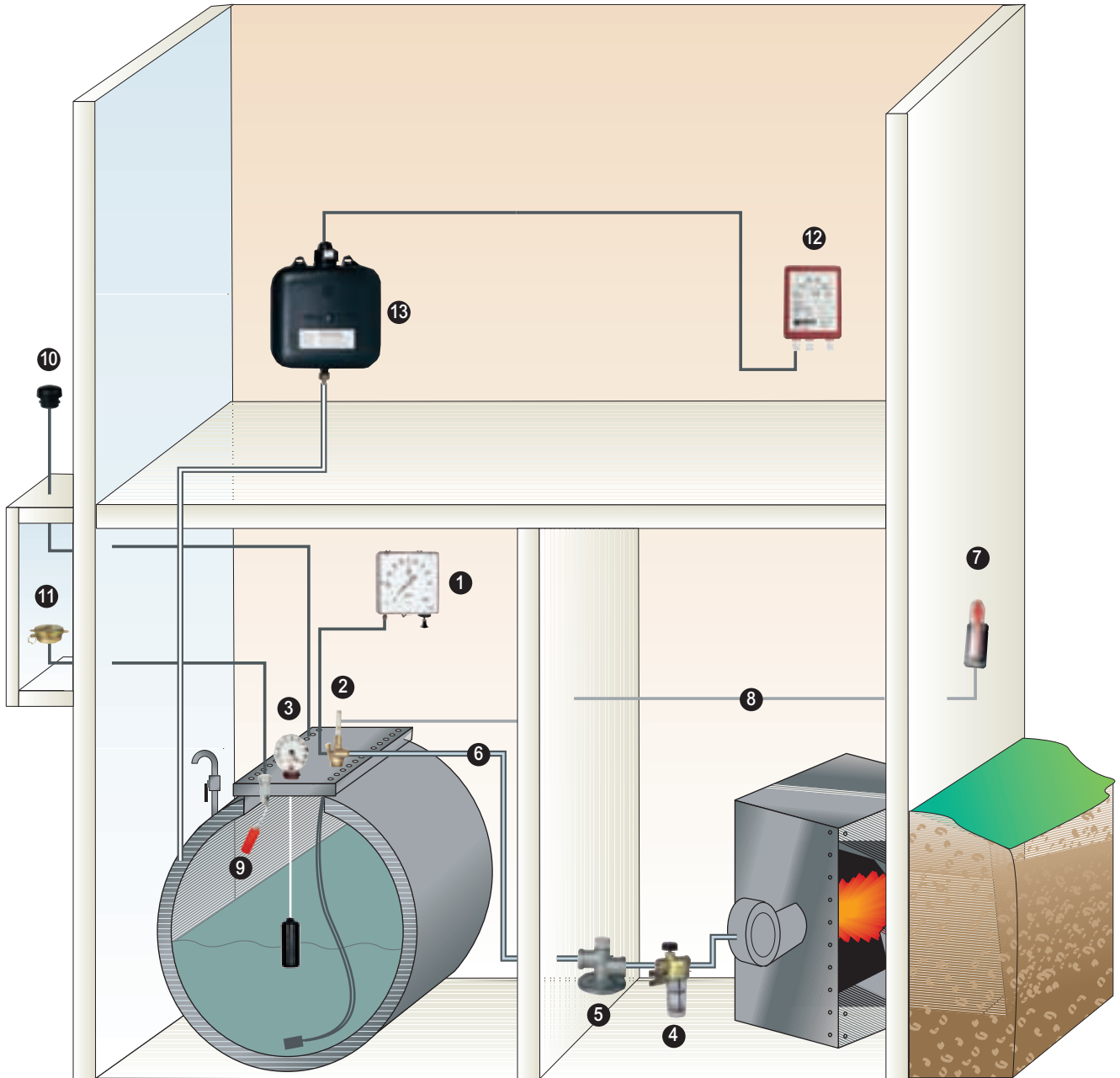
FLEXIBLE SHEATH WITH SPIRAL REINFORCED OUTER SURFACE AND SMOOTH INNER SURFACE, FLAME-RETARDANT, FOR PROTECTION OF GAS SUPPLY PIPES

	Inner sheath diameter	Max. outer diameter of supply pipes		Weight g/m
		mm	inches	
SHEAT	mm	mm	inches	
0917020	20	10	3/8"	100
0917022	22	12		107
0917025	25	15	1/2"	114
0917028	28	18		140
0917030	30	20	3/4"	177
0917032	32	22		220
0917035	35	25	1"	274
0917040	40	30		350
0917050	50	40	1.1/2"	420
0917060	60	50	2"	517



Components for oil-fired heating

EXAMPLE OF APPLICATION



- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Remote pneumatic tank level indicator series TLM 2 Dip unit series MB 3 Mechanical level indicator series MECAH 4 Fuel oil filters series RG2-RV2-RV1-RZ-V1AP 5 Diaphragm shut-off valve series SIC10 6 PVC clad aluminium pipe series TECAL 7 Fire-fighting lever series LACPT | <ul style="list-style-type: none"> 8 Steel cable series CL50 for LACPT connection 9 Load relief valve series SW90 10 Vent cap series CTS 11 Tank filter plug series TC 12 Leak indicator systems for double-wall tanks storing inflammable liquids series LAGN 13 Tank for test liquid LAGN series BAE10 |
|---|--|

LEVEL INDICATOR, PROBE AND ACCESSORIES

TLM

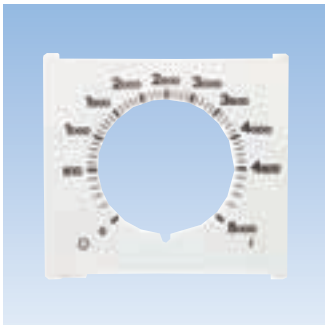
TELEVAR.

Universal remote pneumatic level indicator. For tanks of any shape and height between 900 and 3000 mm (item ...103), or between 3000 and 5000 mm (for item ...105).

Basic dial in percentage volume for cylindrical tanks.

Tank connection suitable for pipe with O.D. 6 mm. Case with 3 external mounting slots.

Type	Part number	Tank	Min. order	€uro
TLM	0101103	h = 3 m	1	--
TLM	0101105	h = 5 m	1	--


SL

Scale graduated in litres for cylindrical or parallelepiped tanks, which can be placed on top of the basic dial of the TELEVAR remote level indicator.

Please state tank capacity in your order.

Type	Part number	Tank	Min. order	€uro
SL	0102100	Cylindrical	1	--
SL	0102200	Parallelepiped	1	--


PE50

Flexible polyethylene tube for connection of the TELEVAR remote level indicator to fuel oil probe series G20. Lay the polyethylene tubing carefully to ensure correct level reading (avoid kinks and holes). Tube dia. 4 x 6 mm. Length of roll: 50 metres.

Type	Part number	Min. order	€uro
PE50	0105150	10	--


G20

Fuel oil probe. Mounted on tank for connection to the TELEVAR remote level indicator.

1" metal fitting with pipe connection O.D. 6 mm.

Perbunan dip element with bottom spacer.

Type	Part number	Size	Dip unit	Min. order	€uro
G20	0104120	1"	L = 220 cm	10	--
G20	0104130	1"	L = 320 cm	5	--
G20	0104150	1"	L = 520 cm	5	--

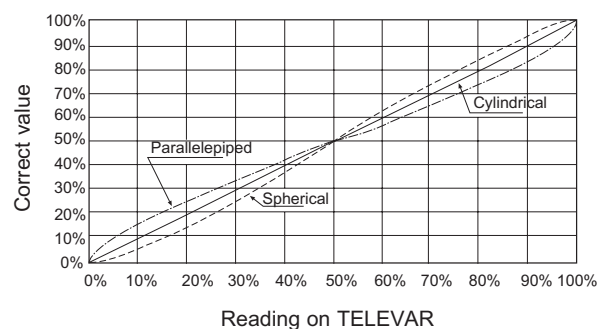
The products whose non metal parts are in direct contact with the fuel are not suitable for installation in systems with "VEGETABLE FUEL OIL" or "BIODIESEL" of vegetable origin.

Televar

Calculation of contents for tanks of various shapes

It is possible to deduce from the graph to which percentage volume of the parallelepiped and spherical tanks does the value indicated on the standard unit (cylindrical tank) correspond.

Conversion for parallelepiped and spherical tanks



LEVEL INDICATOR, PROBE AND ACCESSORIES

**MECAV**

Universal mechanical level indicator, vertical reading, complete with seal for tight tank connection. Very easy to set through external screw. High impact plastic case and cover. Measuring range: 0 - 2000 mm.

Type	Part number	Size	Min. order	€uro
MECAV	0103100	1.1/2"	5	--

**MECAH**

Like MECAV but with horizontal reading.

Type	Part number	Size	Min. order	€uro
MECAH	0103200	1.1/2"	5	--

**RDA**

Double angle fitting for tanks, complete with kit of fittings for connection to pipe dia. 6 x 8, .8 x 10, 10 x 12 mm. Brass CW617N body. 1" male tank connection. 3/8" female suction/return fitting.

Type	Part number	Size	Min. order	€uro
RDA	0120120	1" M x 3/8" F	20	--

**VRU**

Check valve for fuel oil piping, complete with kit of fittings for connection to pipe dia. 6 x 8, 8 x 10, 10 x 12 mm. Brass CW617N body. Pressure drop at 50 litres/h: 11 mbar. Pressure drop at 100 litres/h: 18 mbar.

Type	Part number	Size	Min. order	€uro
VRU	0120140	3/8" F	10	--

**VFU**

Foot valve for fuel oil tanks, complete with kit of fittings for connection to pipe dia. 6 x 8, 8 x 10, 10 x 12 mm. Brass CW617N body. Plastic bottom spacer.

Type	Part number	Size	Min. order	€uro
VFU	0120160	3/8" F	10	--


MB
MULTIBLOC.

Multi-function dip unit with counterweight for connection between the fuel tank and burner. Combines 5 functions: burner suction and return, check valve, quick shut-off lever and connection for remote level indicator TELEVAR, complete with kit of fittings. Brass body CW617N. Perbunan dip elements. 1" male tank connection. 3/8" female suction and return connections. TELEVAR level indicator, pipe dia. 4 x 6 mm.

Interior department approved.


* Valve with surface suction (approx. 8 cm from the surface of the liquid) and with connection for remote level indicator Televar, provided with float and ballast.

TO AVOID CLOGGING OF THE BURNER OWING TO IMPURITIES IN THE FUEL OIL DRAWN FROM THE BOTTOM OF THE TANK.

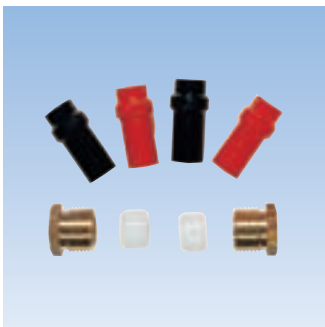
** Without Televar connection and with only one float.

Type	Part number	Size	Dip unit	Min. order	€uro
MB	0108100	1" M x 3/8" F	L = 220 cm	10	--
MB	0108500	1" M x 3/8" F	L = 320 cm	10	--
* MB	0108110	1" M x 3/8" F	L = 220 cm	10	--
** MB	0108310	1" M x 3/8" F	L = 220 cm	10	--


MKF200
MULTIBLOC.

Multi-function dip unit like MB but with overlapping 3/8" male connections and metal bushes for pipe 8 x 10 mm. The body is provided with an extra 3/8" male connection of suction from a second bank-mounted tank. The return pipe from the burner is conveyed to the tank bottom.

Type	Part number	Size	Dip unit	Min. order	€uro
MKF200	0108100	1"	L = 200 cm	10	--


S2

Kit with 2 sets of fittings.

Includes 2 brass nuts with 3/8" male connection and bushes for pipe dia. 6 x 8, 8 x 10, 10 x 12. Can be used for all products with 3/8" female connection.

Type	Part number	Min. order	€uro
S2	0199005	1	--

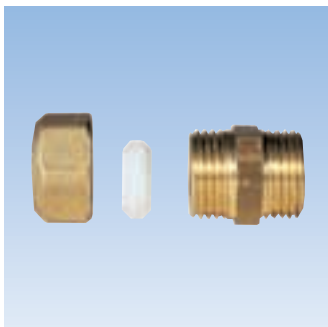

TECAL

PVC clad aluminium pipe. Finds application above all as connecting pipe between the fuel tank (fuel oil) and burner. The cladding serves to protect the pipe from chemicals and humidity of the outdoor environment. Seal test at 30 bar (before cladding with the PVC sheath). PVC cladding (0.75 mm thick).

Type	Part number	External Ø	Internal Ø	Roll	Min. order	€uro
TECAL	0701208	6	8	50	1	--
TECAL	0701210	8	10	50	1	--
TECAL	0701212	10	12	50	1	--

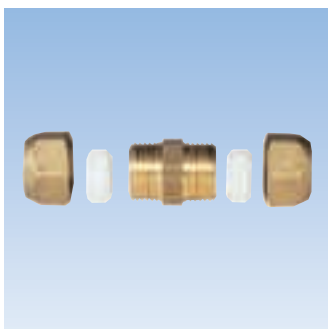
DIP UNITS

240

**DM**

Straight male connector - double taper. Complete with cap and teflon ferrule.
Brass OT58 body and cap. Double taper teflon seal ferrule.
Max. pressure: 10 bar. Max. temperature: 110°C.

Type	Part number	Size	Min. order	€uro
DM	0702210	3/8" x 10	10	--
DM	0702212	3/8" x 12	10	--
DM	0702310	1/2" x 10	10	--
DM	0702312	1/2" x 12	10	--
DM	0702314	1/2" x 14	10	--

**DI**

Straight bulkhead fitting, double taper-double taper.
Complete with 2 caps and 2 teflon ferrules. Characteristics like fitting DM.

Type	Part number	Size	Min. order	€uro
DI	0703010	10 x 10	10	--
DI	0703012	12 x 12	10	--
DI	0703014	14 x 14	10	--

**DF**

Straight female connector, double taper.
Complete with cap and teflon ferrule. Characteristics like fitting DM.

Type	Part number	Size	Min. order	€uro
DF	0704210	3/8" x 10	10	--
DF	0704212	3/8" x 12	10	--
DF	0704310	1/2" x 10	10	--
DF	0704312	1/2" x 12	10	--
DF	0704314	1/2" x 14	10	--


RG2

Two-way line filter for fuel oil, with large filter surface, bowl locked by ring nut. Screw valve on delivery side and check valve on return, complete with mounting bracket. Brass CW617N body and ring nut. Transparent plastic bowl. 3/8" female connections with pipe bushes dia. 6 x 8, 8 x 10, 10 x 12 mm. Degree of filtration: 260 micron.

Type	Part number	Size	Min. order	€uro
RG2	0130100	3/8" F	10	--


RV2

Two-way line filter for fuel oil, with screw valve on delivery side and check valve on return, complete with mounting bracket. Brass CW617N body and ring nut. Transparent plastic bowl. 3/8" female connections with pipe bushes dia. 6 x 8, 8 x 10, 10 x 12 mm. Connections, burner side: 3/8" female. Degree of filtration: 200 micron.

Type	Part number	Size	Min. order	€uro
RV2	0133100	3/8" F	10	--


RV2M

Like RV2 but with metal bowl.

Type	Part number	Size	Min. order	€uro
RV2M	0133200	3/8" F	10	--


RV1

One-way line filter for fuel oil, with screw valve and mounting bracket. Brass CW617N body. Transparent plastic bowl. 3/8" female connections on burner side, with pipe bushes dia. 6 x 8, 8 x 10, 10 x 12 mm. 3/8" female connections, tank side. Degree of filtration: 140 micron.

Type	Part number	Size	Min. order	€uro
RV1	0135100	3/8" F	10	--


V1

One-way line filter for fuel oil like RV1 but without shut-off valve.

Type	Part number	Size	Min. order	€uro
V1	0138100	3/8" F	10	--

FILTERS

**RZ**

Recirculation line filter for fuel oil, which allows eliminating the return pipe to the tank, with screw valve on the suction side and by-pass valve on return. Complete with mounting bracket. Brass CW617N body. Transparent plastic bowl.

2 x 3/8" female connections on burner side, with pipe bushes dia. 4 x 6, 6 x 8, 8 x 10, 10 x 12 mm. 3/8" female connections, tank side. Degree of filtration: 140 micron.

Type	Part number	Size	Min. order	€uro
RZ	0137100	3/8" F	10	--

**V1AP**

One-way filter for fuel oil, without shut-off valve. Aluminium body.

Stainless steel filter cartridge. 3/8" female connections.

Without mounting bracket and fittings. Degree of filtration: 100 micron.

Type	Part number	Size	Min. order	€uro
V1AP	0138300	3/8" F	10	--

**SS**

Spare cartridge for fuel oil filters.

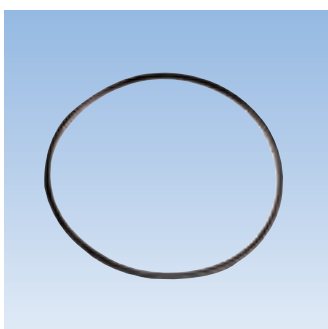
Type	Part number	Type of filter	Min. order	€uro
SS	0199010	RG2	10	--
SS	0199016	RV2-RV1-RZ-V1	10	--

**TK**

Plastic bowl for fuel oil filters.

* Metal bowl.

Type	Part number	Type of filter	Min. order	€uro
* TK	0199012	RG2	10	--
* TK	0199017	RV2-RV1-RZ-V1	10	--
TK	0199024	RV2-RV1-RZ-V1	10	--

**OR**

O-ring seal for fuel oil filter bowls.

Type	Part number	Type of filter	Min. order	€uro
OR	0199013	RG2	10	--
OR	0199022	RV2-RV1-RZ-V1	10	--


SIC10
SICUREX.

Diaphragm valve for automatic shut-off of fuel oil in the supply piping of the burners.

Replaces solenoid valve M10M15.

Die-cast aluminium body.

3/8" female connections, with pipe bushes dia. 6 x 8, 8 x 10, 10 x 12 mm.

Opening negative pressure: 50 mbar.

Pressure drop at 50 litres/h: 55 mbar.

Pressure drop at 100 litres/h: 68 mbar.

Interior department approved.

Type	Part number	Min. order	€uro
SIC10	0150110	10	--


M10M15

Normally closed (NC) solenoid valve for automatic shut-off of fuel oil in the supply piping of the burners. Used for fuel oil, hydraulic oil with pressures up to 2 bar and max. viscosity 2 °E.

Power supply 230Vac/dc 50Hz.

Room temperature. -5 to 60°C.

Orifice diameter: 5.6 mm.

Operating pressure: 4 bar.

Protection class: IP65

According to EEC 89/336 - EEC 73/23.
CE approval according to Directive 97/23/CE
Interior department approved.

The following power supplies on request : 12 Vac/dc 24 Vac/dc 110 Vac/dc.

Type	Part number	Size	Power supply	Min. order	€uro
M10M15	0150210	3/8" FF	230V	1	--
M10M15	0150215	1/2" FF	230V	1	--


SVD

Solenoid valve normally closed, for diesel oil and heavy oil.

Aluminium body.

Brass, aluminium and magnetic stainless steel internal components, stainless steel springs; viton seals and o-rings.

Max operating pressure : 8 bar.

Environment temperature range : -10°C/ +60°C.

Max fuel temperature : 80°C.

On request supply voltage: 24Vac/dc, 12Vdc.

Electrical insulation : IP 65. Coil: class F.

Absorbed power : 45W.

Connections : female threaded UNI-ISO 7/1.

According to standard 97/23/CEE (only for 6 bar model).
Identification number CE 0497

Type	Part number	Size	Power supply	Min. order	€uro
SVD	0050140001	3/4"	230 Vca	1	--
SVD	0050141001	1"	230 Vca	1	--
SVD	0050142001	1.1/4"	230 Vca	1	--
SVD	0050143001	1.1/2"	230 Vca	1	--
SVD	0050144001	2"	230 Vca	1	--

SAFETY DEVICES

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**M15**

Coils for solenoid valve M10M15.
 N.B. 24V coil, specify whether dc or ac.
 12V coil, dc only.

Type	Part number	Power supply	Min. order	€uro
M15	0199035	230V	1	--
M15	0199048	24V	1	--
M15	0199049	12V	1	--

**SW90**

Load limiting valve for fuel oil tank. Die-cast aluminium body. Oil-proof plastic float.
 Bottom connection 2" male - top 2" female.

Interior department approved.

Type	Part number	Size	Min. order	€uro
SW90	0152100	2" MF	10	--

Spare coil for diesel oil, heavy oil solenoid valves

Type of Solenoid Valve	Size body	230Vac	24Vac	24Vdc	12Vdc	€uro
SVD	3/4" - 2"	216	218	218	217	--

Spare connectors for diesel oil, heavy oil solenoid valves

Type of Solenoid Valve	Size body	230Vac	24Vac	24Vdc	12Vdc	€uro
SVD	3/4" - 2"	2104	226	226	2105	--


LA

Fire-fighting lever for cable-operation of shut-off valves (MULTIBLOC, RIS). Base plate and red lever of special plastic. Box containing 4 screws and wall mounting plugs. The lever must be located outside the boiler room.

Type	Part number	Min. order	€uro
LA	0153100	10	--


LACP

Fire-fighting lever for cable-operation of shut-off valves (MULTIBLOC, RIS). Complete with transparent protective cover. Base plate and red lever of special plastic. Box containing 4 screws and wall mounting plugs.

Type	Part number	Min. order	€uro
LACP	0153120	10	--


LACPT

Like LACP but also includes 10 m of PVC cladded flexible steel cable, 3 intermediate slots and 3 cable clamps for connection of ends.

Type	Part number	Min. order	€uro
LACPT	0153130	10	--


JH

Jerk handle on/off valve remotely controlled by cable and fire-fighting lever series LA-LACP-LACPT. Aluminium valve body. Stainless steel operating lever. Max. operating pressure: 6 bar. Ambient temperature range : -10° to + 60 °C. Max. fuel temperature : 80 °C. Fuels: natural gas, town gas, lpg, diesel oil and fuel oil. Connections: threaded UNI-ISO 7/1, flanged ISO 7005/2.

According to directive PED 97/23/CE - CE 0497 (ND 125-150).

Type	Part number	Size body	Min. order	€uro
JH	JH15	1/2"	1	--
JH	JH20	3/4"	1	--
JH	JH25	1"	1	--
JH	JH32	1.1/4"	1	--
JH	JH40	1.1/2"	1	--
JH	JH50	2"	1	--
JH	JH65	65	1	--
JH	JH80	80	1	--
JH	JH100	100	1	--
JH	JH125	125	1	--
JH	JH150	150	1	--

SAFETY DEVICES

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**RIS**

Fuel oil shut-off with pull-out lever remotely controlled by cable and fire-fighting lever LAC, complete with kit of fittings for pipe dia. 6 x 8, 8 x 10, 10 x 12 mm. Brass CW617N body. Pressure drop at 50 litres/h: 11 mbar. Pressure drop at 100 litres/h: 18 mbar.

Type	Part number	Size body	Min. order	€uro
RIS	0120100	3/8" F	10	--

**CL50**

PVC clad, braided flexible steel cable, for operating the shut-off elements through the fire-fighting lever. Box of 50 m rolls, with 10 cable clamps.

Type	Part number	Min. order	€uro
CL50	0154050	1 (50 meters)	--

**TCS**

Tank drain plug with slots for padlock and chain. Tropicalized mazak body and cover. 2" female tank connection. 2.1/2" male connection for fill hose.

Type	Part number	Size body	Min. order	€uro
TCS	0155100	1/2" F x 2.1/2" M	10	--

**CTS**

Guard cap for tank vent pipe, threadless, with fixed spacers for adaptation to pressure mounted pipes, with lock screws. High impact plastic body, metal mesh.

Type	Part number	Size body	Min. order	€uro
CTS	0160125	1" - 1.1/4"	10	--
CTS	0160140	1.1/2" - 2"	10	--


LAG

Leak indicator systems for double chamber tanks for storage of inflammable liquids. Complete with electronic indicator unit LAGN, lever indicator BAE10.

Power consumption: 10VA.

Extra alarm relay: 5A - 250 V.

Standard front plate written in English.

For mounting the installation system use the complete set of accessories series LAGMS.

According to DIN6608, EEC 89/336, EEC 73/23.

Interior department approved.

Approval ATEX 94/9/EEC.

Type	Part number	Power supply	Min. order	€uro
LAG	0190100	230V	1	--


AK

Front plate for electronic indicator unit LAGN, written in Italian.

Self-adhesive, can be placed on top of the standard one.

Type	Part number	Min. order	€uro
AK	0190302	1	--

Operation of the leak detector

The LAG leak detector monitors the intermediate chamber (control chamber) of the storage tank, filled with the detector liquid, and signals any leakage on the outer or inner wall. The device consists of an indicator instrument (electronic control unit) able to activate an optical and acoustic alarm, plus a reservoir containing the detector liquid with transducer (probe) connected to the control chamber of the storage tank via special piping. To fill the reservoir with liquid up to the max. level mark (see transparent sight window), remove the transducer: the liquid to be used must always be the same as the liquid in the control chamber of the main tank. A BAM certificate should be issued for such liquid.

Liquids with BAM certification :

Glyco Shell 1	(Deutsche Shell AG - Amburgo -D)
Antifrogen N	(Hoechst AG - Gendorf - D)
Glymin NF	(BASF Ludwigshafen - D)
Ilexan	(Hüls AG - Marl -D)

and other similar liquids with min. electric conductivity of 0.05 µS/cm.

LEAK INDICATOR SYSTEMS

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**LAGMS**

Full set of accessories for mounting leak indicator system LAG and LAGN.
Bottom fitting VM with seal. 1" tank connecting sleeves. 3/8" vent valve.
PVC connecting tube with fastening dia. 14 x 19. 1" F x 3/8" F elbow reducer for valve.

Various fastening accessories.

Type	Part number	Min. order	€uro
LAGMS	0196100	1	--

**LAGN**

Electronic indicator unit for tank leak indicator systems.
Standard front plate written in English.

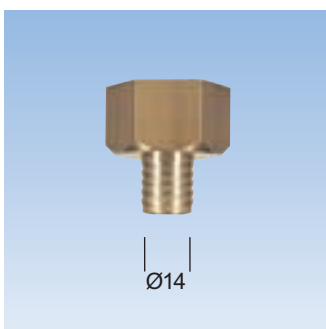
According to DIN6608, EEC 89/336, EEC 73/23.

Type	Part number	Power supply	Min. order	€uro
LAGN	0190200	230V	1	--

**BAE10**

Auxiliary tank for test liquid, complete with probe, level indicator and bottom fitting.

Type	Part number	Min. order	€uro
BAE10	0191011	1	--

**VM**

Brass bottom fitting for test liquid tank.

Type	Part number	Size body	Min. order	€uro
VM	0194120	3/8" F	1	--



SK

Complete probe for test liquid tank.

Type	Part number	Tank	Min. order	€uro
SK	0192001	Standard	1	--
SK	0192002	Auxiliary	1	--



SGL

Level indicator for test liquid tank. Complete with seal.

Type	Part number	Size body	Min. order	€uro
SGL	0193010	1/4" M	1	--



Overall dimensions

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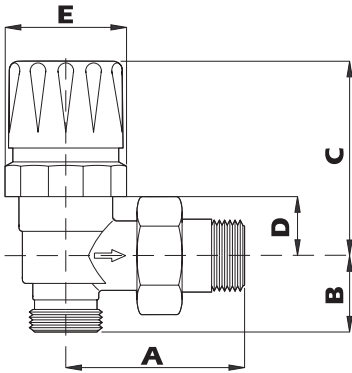
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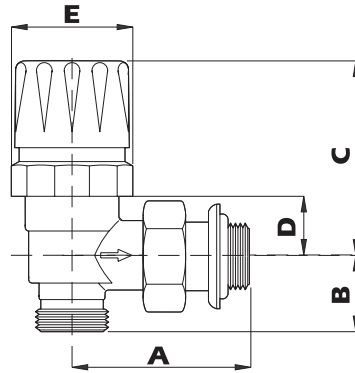
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1178SN



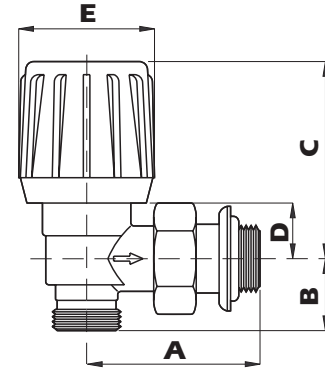
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1/2" x 1/2"	53	20,5	56	18	35

1178UM



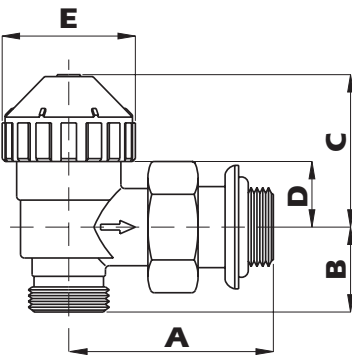
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1/2" x 1/2"	53	20,5	56	18	35

1188UM



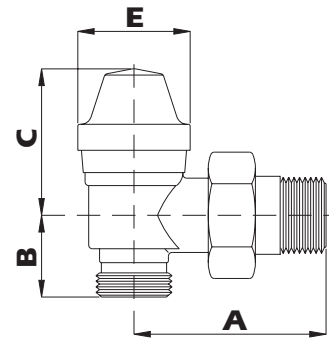
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1130UM



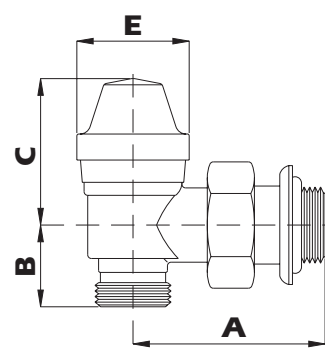
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1/2"	53	20,5	40	18	35

1195SN



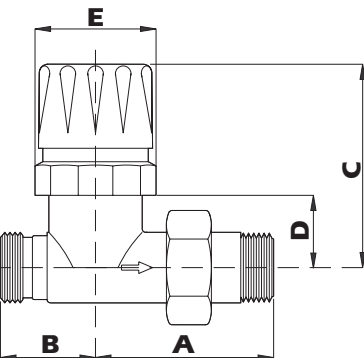
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1/2"	52	19	40	31

1195UM



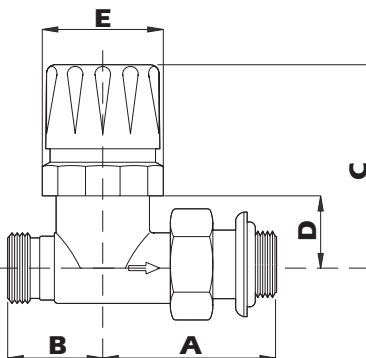
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1/2"	52	19	40	31

1179SN



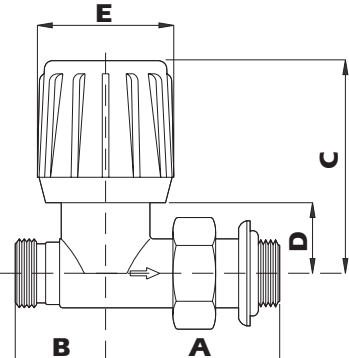
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3/8"	49	26	62	24,5	35
1/2"	53	26	62	24,5	35

1179UM



ND	A	B	C	D	E
3/8"	49	26	62	24,5	35
1/2"	53	26	62	24,5	35

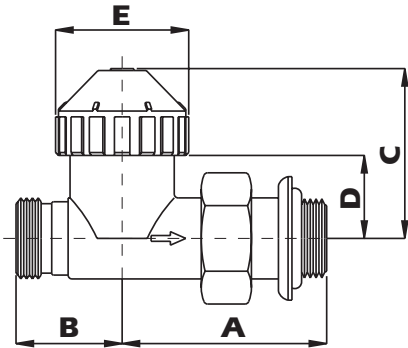
1189UM



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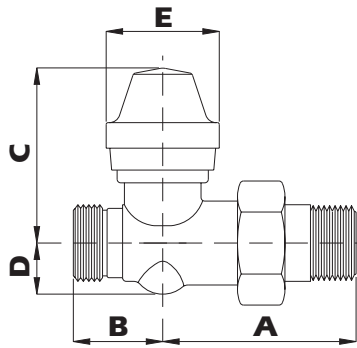
CHAPTER A

1131UM



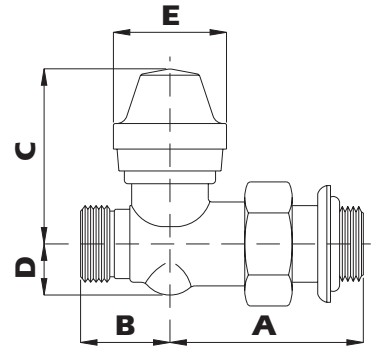
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1196SN



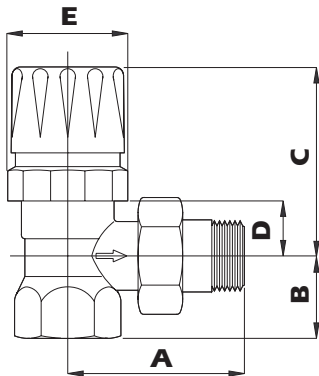
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1196UM



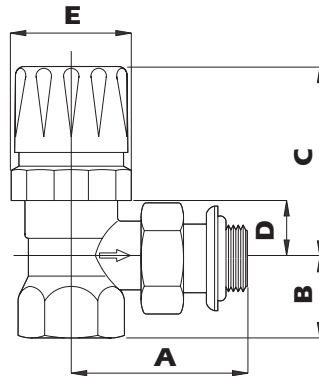
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1/2"	52	23	45	13	31

178SN



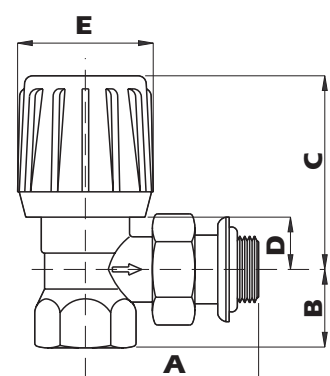
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1/2"	53	23	56	18	35
3/4"	61	28	56	18	35

178UM



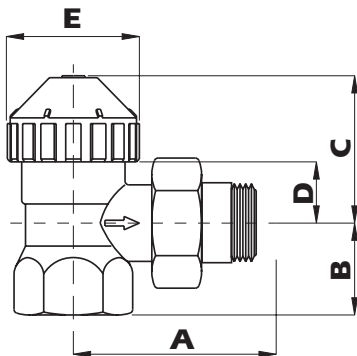
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3/4"	61	28	56	18	35

188UM



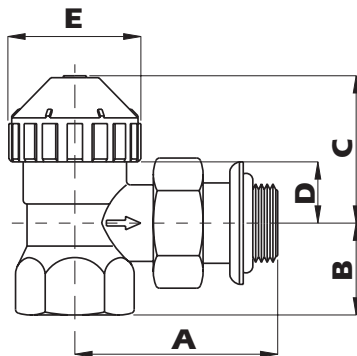
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3/4"	61	28	62	18	40

130SN



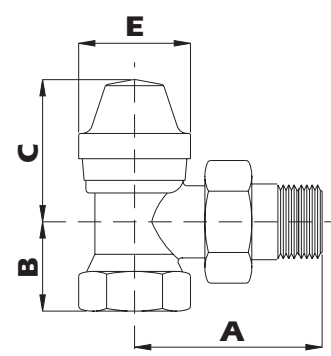
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3/4"	61	28	40	18	35

130UM



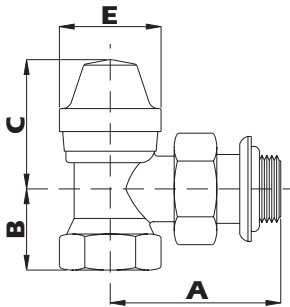
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1/2"	53	23	40	18	35
3/4"	61	28	40	18	35

195SN



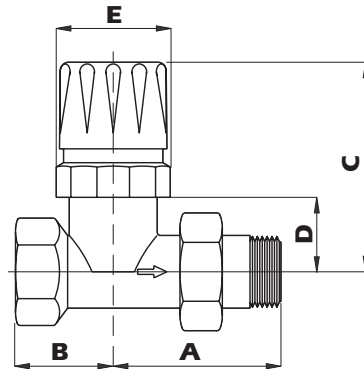
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1/2"	52	25	40	31
3/4"	60	29	50	41

195UM



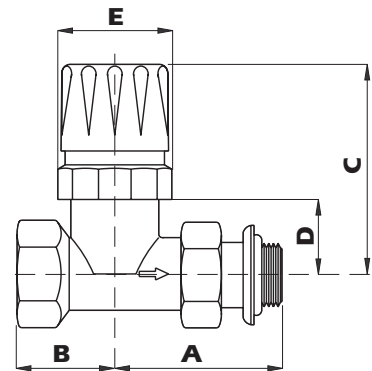
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1/2"	52	25	40	31	
3/4"	60	29	50	41	

179SN



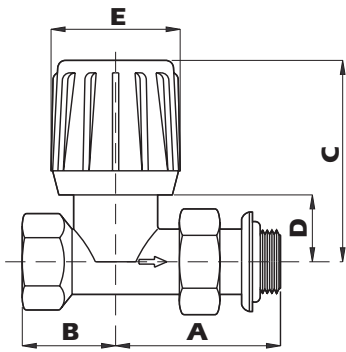
ND	A	B	C	D	E
3/8"	49	26	62	24.5	35
1/2"	53	29	62	24.5	35
3/4"	61	34	62	24.5	35

179UM



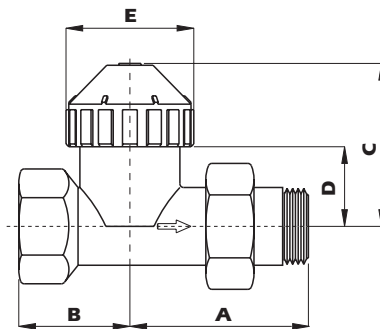
ND	A	B	C	D	E
3/8"	49	26	62	24.5	35
1/2"	53	29	62	24.5	35
3/4"	61	34	62	24.5	35

189UM



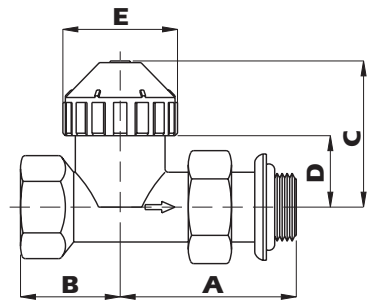
ND	A	B	C	D	E
3/8"	49	26	68	24.5	40
1/2"	53	29	68	24.5	40
3/4"	61	34	68	24.5	40

131SN



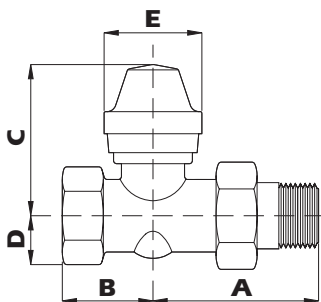
ND	A	B	C	D	E
3/8"	49	26	46.5	24.5	35
1/2"	53	29	46.5	24.5	35
3/4"	61	34	46.5	24.5	35

131UM



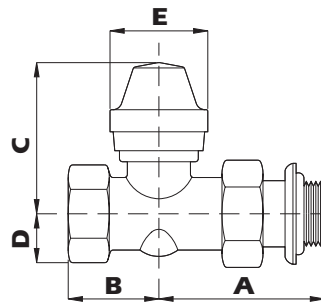
ND	A	B	C	D	E
3/8"	49	26	46.5	24.5	35
1/2"	53	29	46.5	24.5	35
3/4"	61	34	46.5	24.5	35

196SN



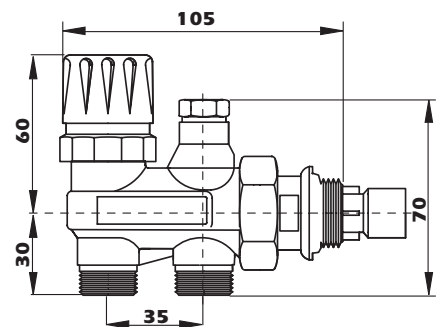
ND	A	B	C	D	E
3/8"	48	25	42	12	31
1/2"	52	28	45	14	31
3/4"	60	33	60	18	41

196UM



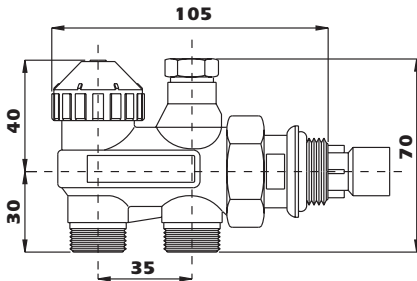
ND	A	B	C	D	E
3/8"	48	25	42	12	31
1/2"	52	28	45	14	31
3/4"	60	33	60	18	41

120B/102M

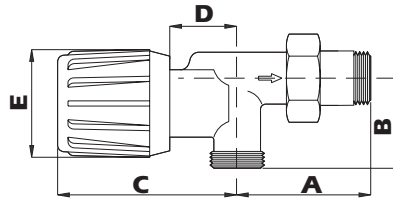


CHAPTER A

100M

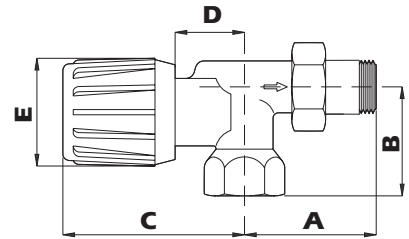


1180M



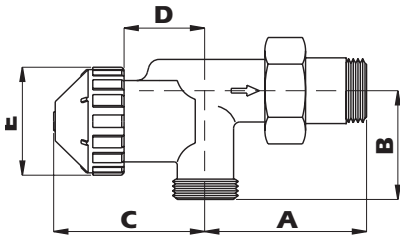
ND	A	B	C	D	E
1/2"	53	34	72	31	40

180M



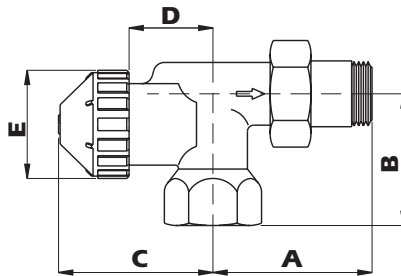
ND	A	B	C	D	E
1/2"	53	37	72	31	40

1134M



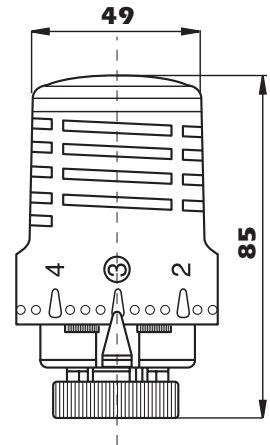
ND	A	B	C	D	E
1/2"	53	34	50	31	35

134M

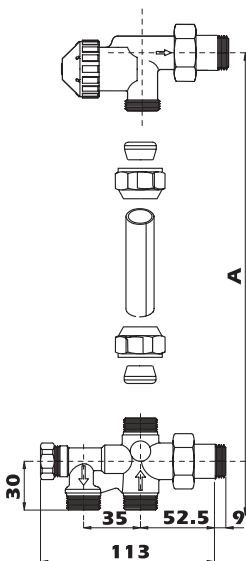


ND	A	B	C	D	E
1/2"	53	37	50	31	35

148

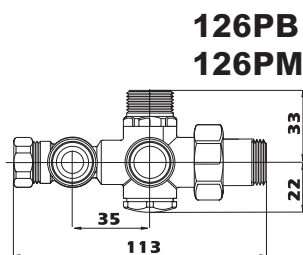


1134M

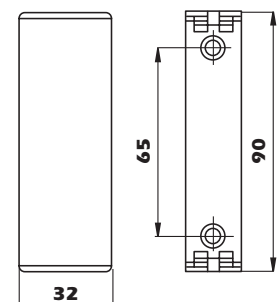
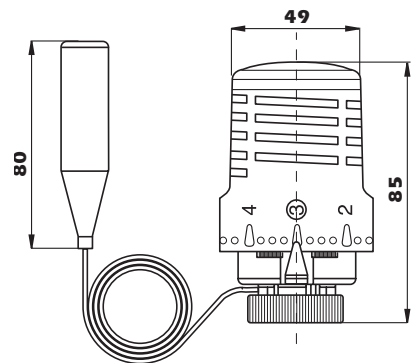


Joint tube longness with reverse valve (A - 63 mm)

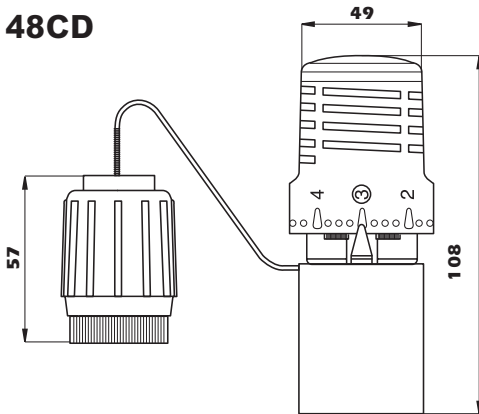
126CB
126CM



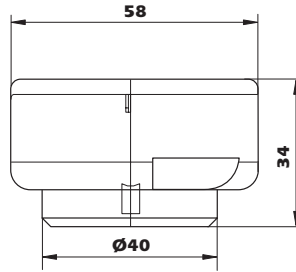
148SD



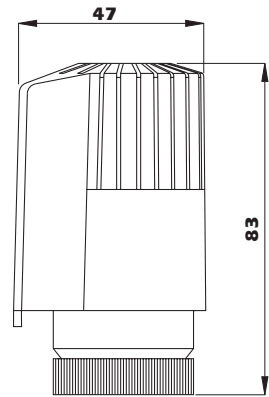
148CD



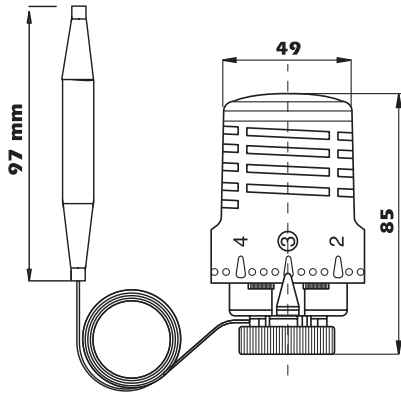
148GA



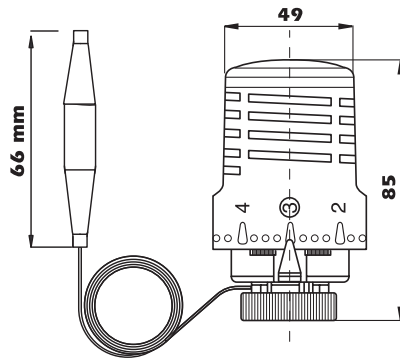
10C



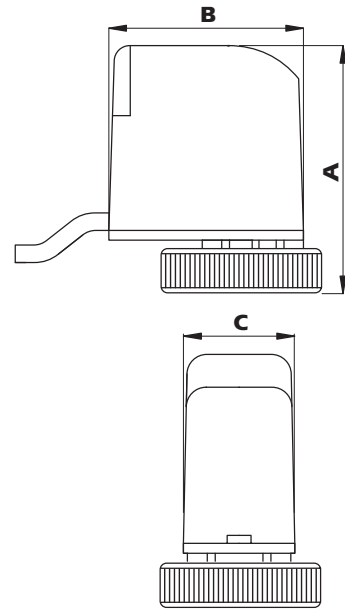
148SD2050



148SD2070

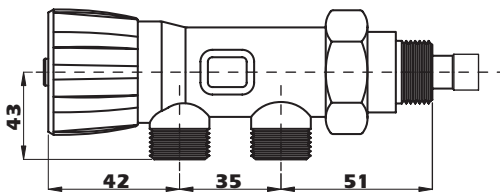


20C/22C

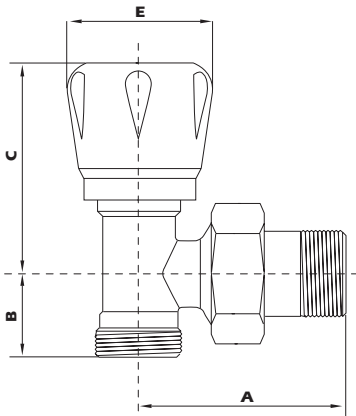


Type	A	B	C
20C	62	50	27
22C	51	50	38

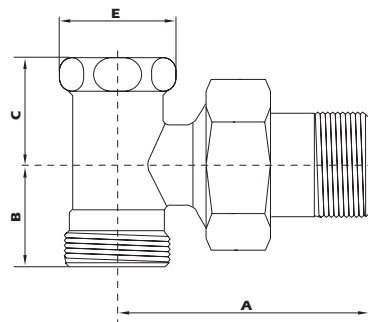
119SX



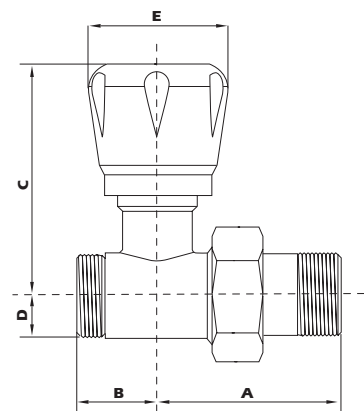
1163R



1193R



1164R



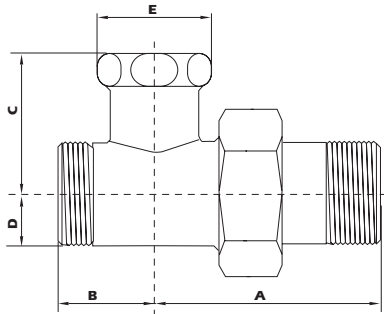
ND	A	B	C	E
3/8"	47.5	20	48.5	34.1
1/2"	51	20	48.5	34.1

ND	A	B	C	E
3/8"	48	20	21	23
1/2"	50.5	20	21	23

ND	A	B	C	D	E
3/8"	44	22	56	10.4	34.1
1/2"	46	20	56	10.4	34.1

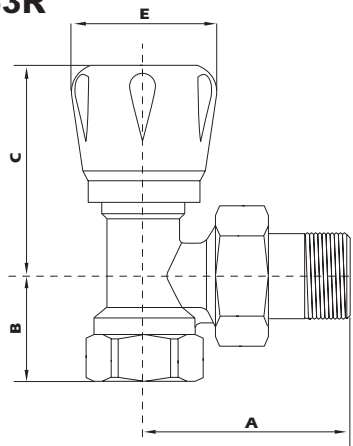
CHAPTER A

1194R



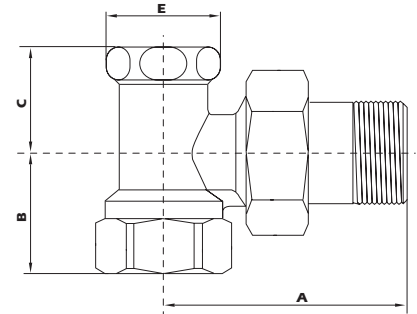
ND	A	B	C	D	E
3/8"	44	22	29	10.4	23
1/2"	46	20	29	10.4	23

163R



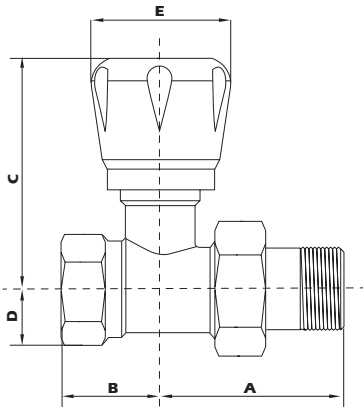
ND	A	B	C	E
3/8"	47.5	22	48.5	34.1
1/2"	51	25	48.5	34.1

193R



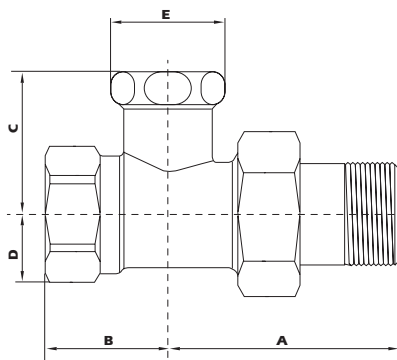
ND	A	B	C	E
3/8"	48	22	21	23
1/2"	50.5	25	21	23

164R



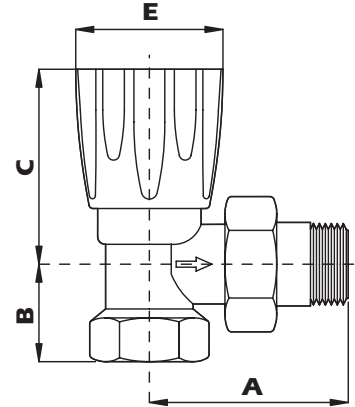
ND	A	B	C	D	E
3/8"	44	22	56	11	34.1
1/2"	46	25	56	14	34.1

194R



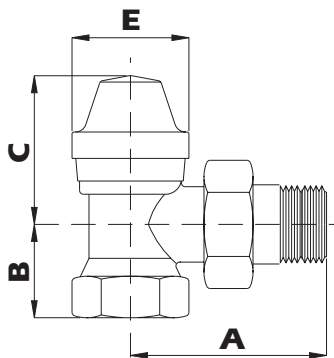
ND	A	B	C	D	E
3/8"	44	22	29	11	23
1/2"	46	25	29	14	23

190



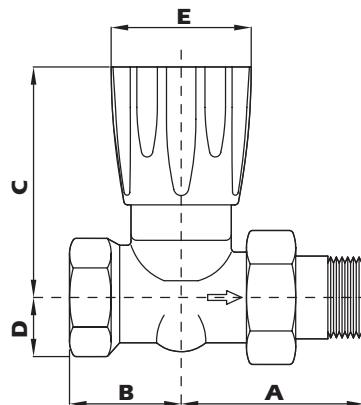
ND	A	B	C	E
1"	70	30	62	50
1.1/4"	90	34	85	58

195S



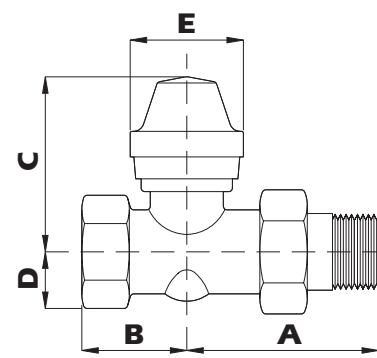
ND	A	B	C	E
1"	70	29	57	46
1.1/4"	90	35	68	62

191



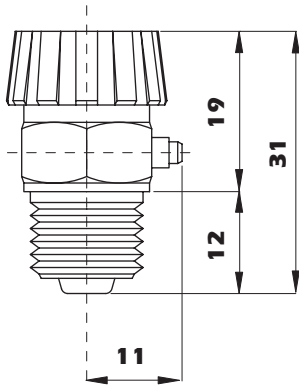
ND	A	B	C	D	E
1"	66	35	75	23	50
1.1/4"	82	42	100	28	58

196S

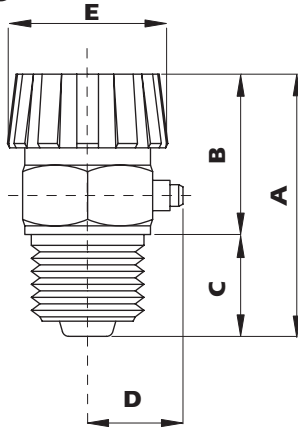


ND	A	B	C	D	E
1"	70	34	67	22	46
1.1/4"	90	40	80	28	62

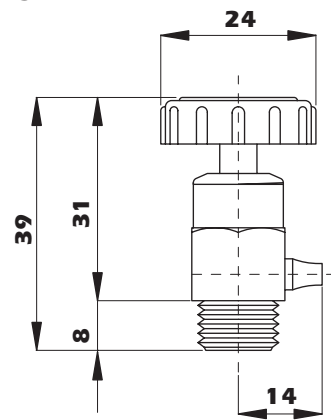
228C



238C

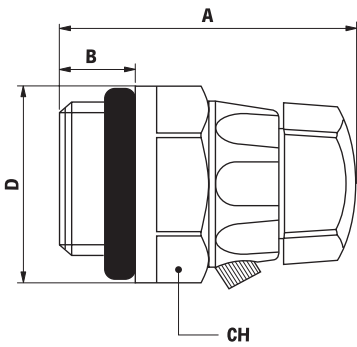


231C

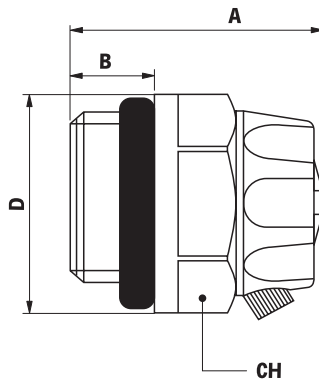


ND	A	B	C	D	E
1/8"	29	17	12	11	17
1/4"	29	17	12	11	17
3/8"	29	19	10	11	17

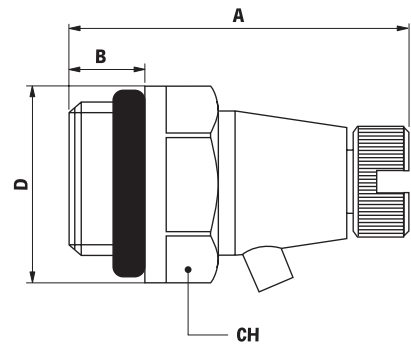
VMM



PMC



SMM

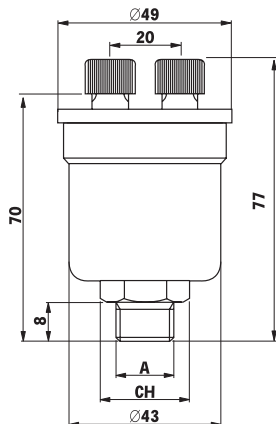


ND	A	B	CH
1/8"	24	5.5	14
1/4"	24	6	14
3/8"	26	7	17

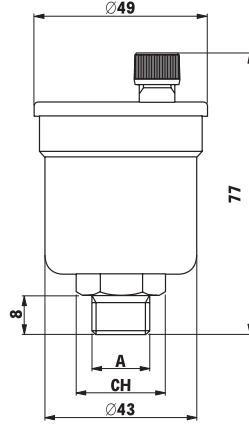
ND	A	B	D	CH
1/8"	18	5.5	16	14
1/4"	18	5.5	16	14
3/8"	20	6	20	17
1/2"	22	7	24	22

ND	A	B	D	CH
1/8"	26	5.5	16	14
1/4"	26	6	16	14
3/8"	28	6.54	21	19
1/2"	28	7.3	25	22

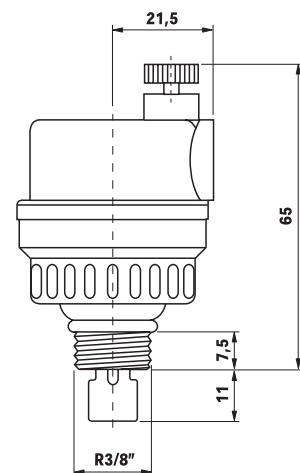
MVD



MV



MKV

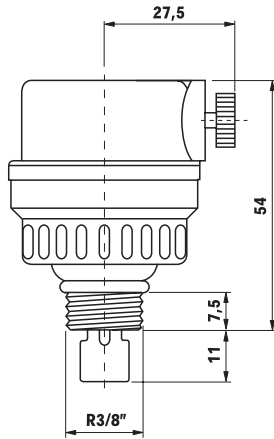


ND	CH
1/4"	19
3/8"	19
1/2"	22

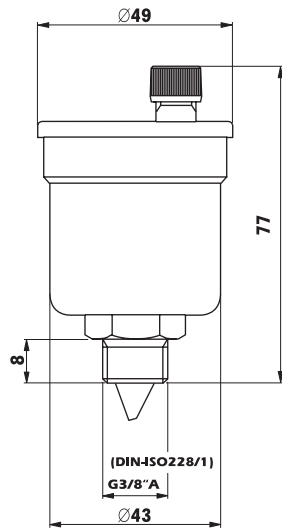
ND	CH
1/4"	19
3/8"	19
1/2"	22

CHAPTER B

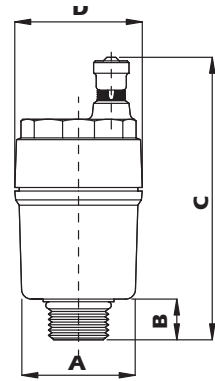
MKL



MV-SOL

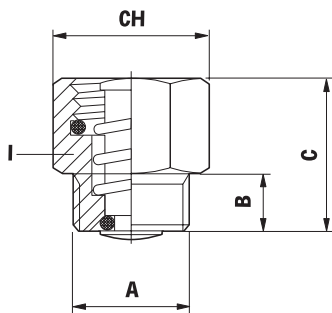


2161C



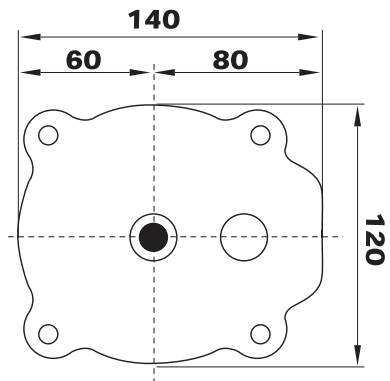
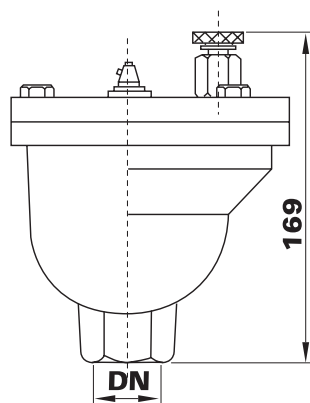
ND	A	B	C	D
3/8"	30	10	77	36
1/2"	30	10	77	36
3/4"	32	12	79	36
1"	37	12	79	36

RIA

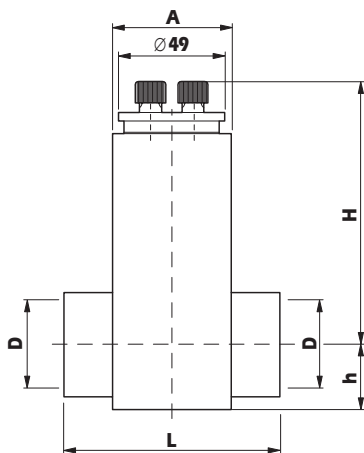


ND	B	C	CH
1/4"	8	11	19
3/8"	8	11	19
1/2"	8	11	24

MXV - 3/4" - 1" - 1.1/4"

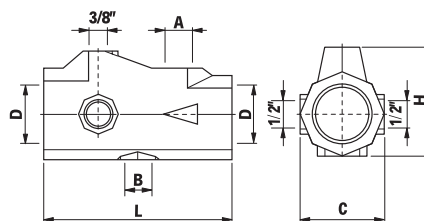


ERD



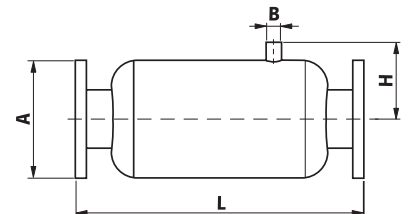
ND	A	L	H	h
1"	60x50	94	153	26
1.1/2"	60x60	104	191	32

SA



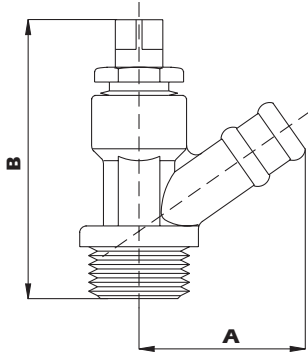
ND	A	B	C	L	H
1"	1/2"	3/4"	70	152	87
1.1/4"	1/2"	3/4"	70	152	87
1.1/2"	1/2"	3/4"	70	152	87
2"	3/4"	1"	87	189	115
1.1/2"	1"	1"	128	300	203
3"	1"	1"	128	300	203

SAF



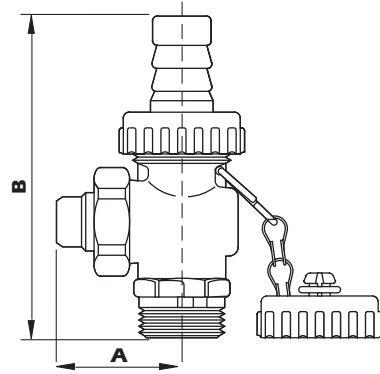
ND	A	B	L	H
100	PN6	3/4"	600	156
125	PN10	1"	700	168
200	PN10	1"	800	--

238



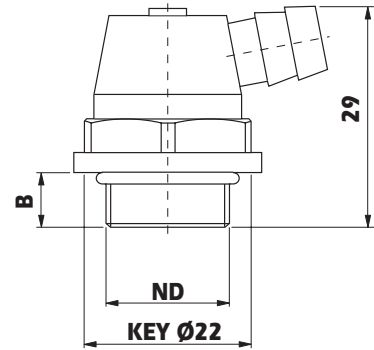
ND	A	B
1/4"	28	47
3/8"	28	47

290



ND	A	B
1/8"	25	60
1/2"	30	75
3/4"	40	90

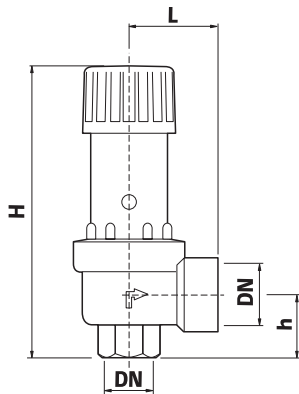
RSR



ND	B
1/4"	6
3/8"	7
1/2"	7

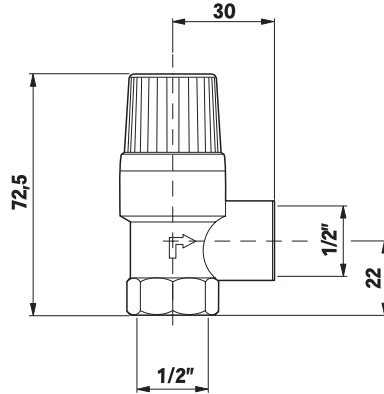
CHAPTER C

VST

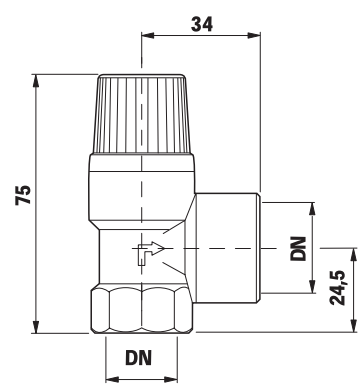


ND	L	H	h
1/2" x 3/4"	37	119	25
3/4" x 1"	48	165	29
1" x 1.1/4"	54	173	34.5

MSL/MSV

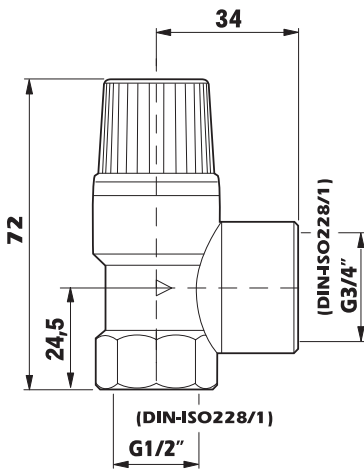


SV

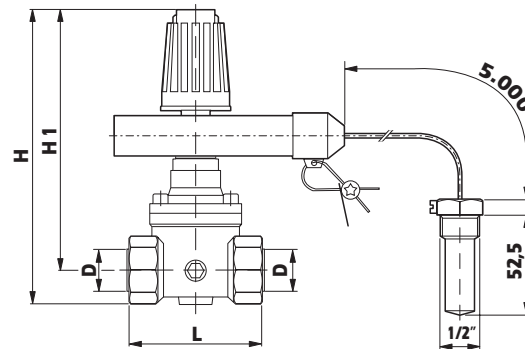


ND	L	H	h
1/2" x 3/4"	34	75	24.5
3/4" x 1"	37	86.5	34
1" x 1.1/4"	55	189	40
1" x 1.1/4"	60	204	43

SVE/SOL

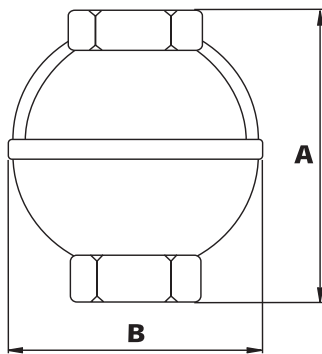


NVFN



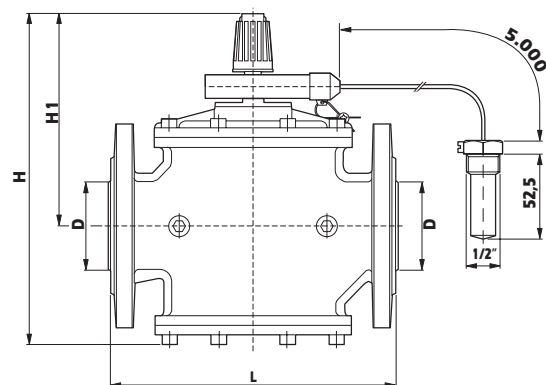
ND	L	H	H1
1/2"	70	155	138
3/4"	70	163	141
1"	90	196	169
1.1/4"	150	204	169
1.1/2"	150	204	169
2"	170	222	179

IS



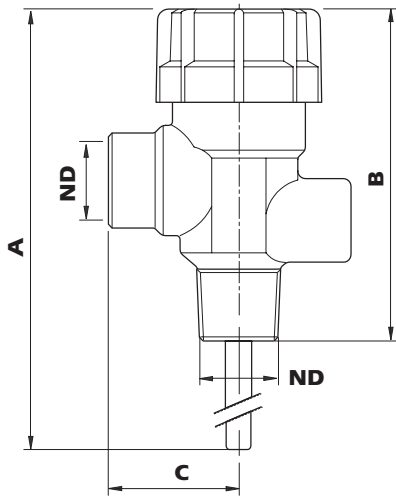
ND	A	B
1/2"	61	45
3/4"	65	57
1"	78	68
1.1/4"	113	97

NVFN

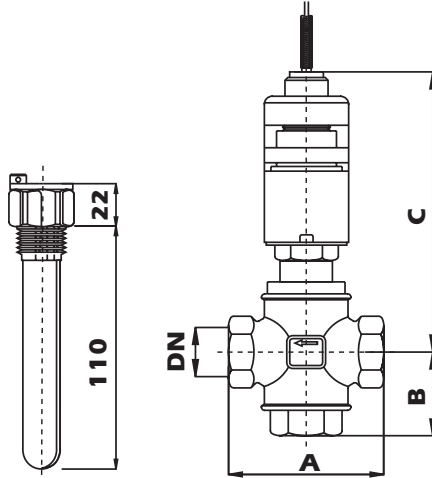


ND	L	H	H1
65	260	310	200
80	310	351	234

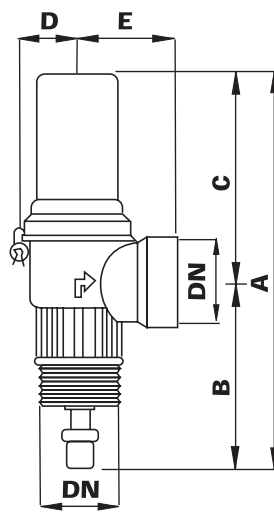
PT



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VTFN

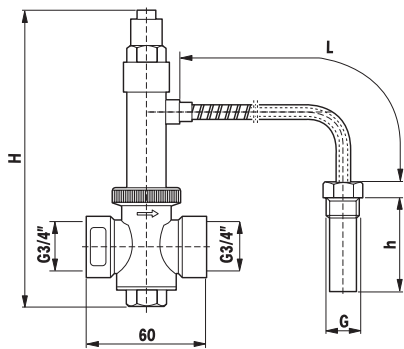


ND	A	B	C
3/4"	172	90	36

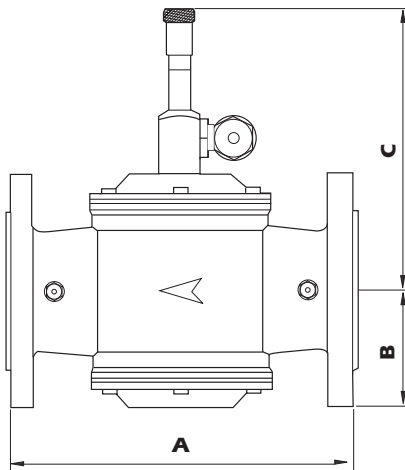
ND	A	B	C
1/2"M	50	27	142
3/4"F	85	40	200
1"F	105	50	207
1.1/4"F	120	55	215
1.1/2"F	145	63	245
2"F	175	72	262
65	290	90	280
80	310	100	285

ND	A	B	C	D	E
1.1/4"	222	99	123	35	52
1.1/2"	242	114	128	38	60

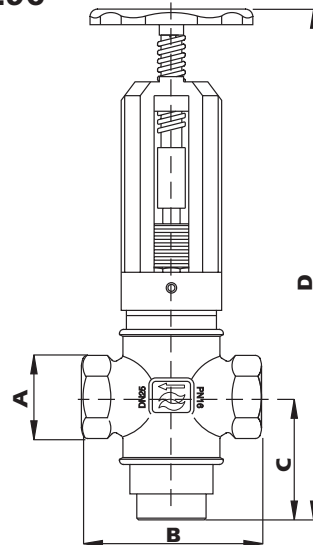
STS/STSR



VIC100



296



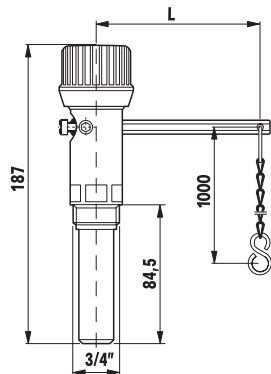
Type	G	h	H	L
STS	1/2"	145	133	1300
STS	1/2"	145	133	2000
STSR	3/8"	108	131	1300

Type	A	B	C
VIC100	360	105	227

ND	B	C	D
1"F	105	72	320
1.1/4"F	120	75	330
1.1/2"F	145	80	335
2"F	165	90	360
65	290	170	500
80	310	185	490
100	350	200	520
125	400	240	600
150	480	280	680
200	600	360	750

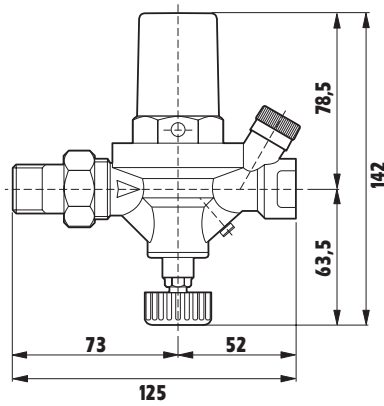
CHAPTER C

RT

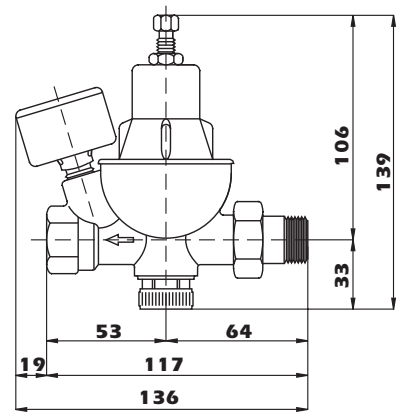


Stroke	L
60	100
80	187.5

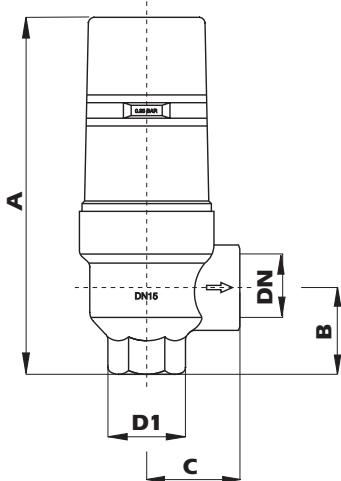
AL/ALM/ALOM



3110C

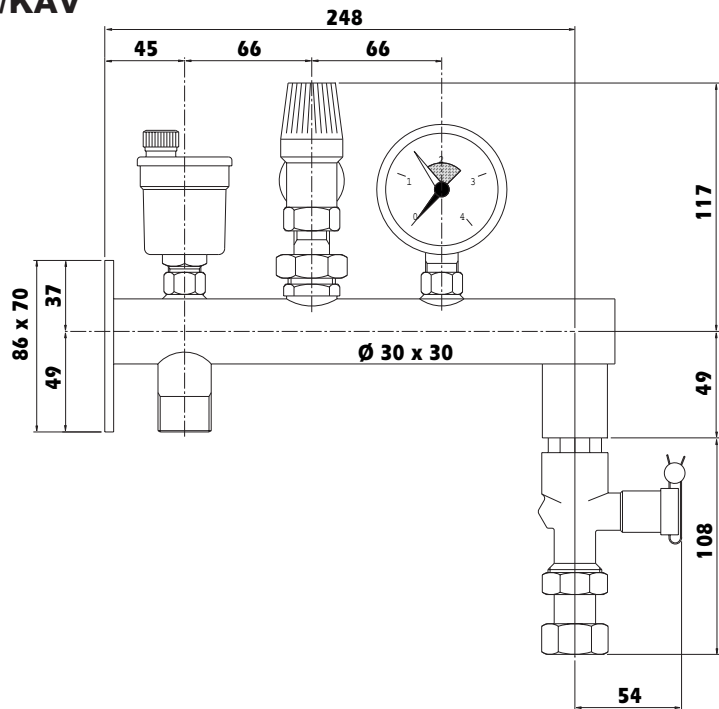


466

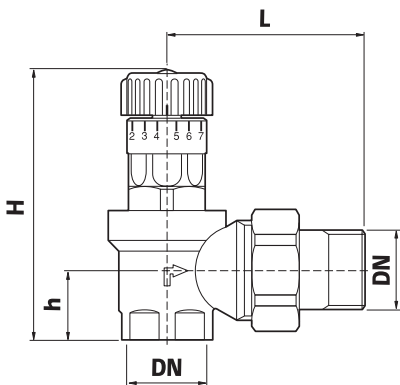


ND	A	B	C
1/2"x1/2"	135	32	36
3/4"x1"	141	35	41
1"x1.1/4"	195	41	46

GAG/KAV

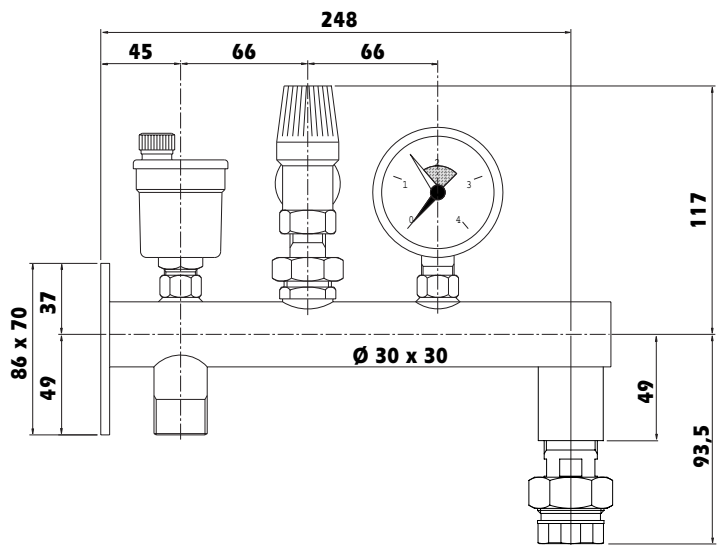


USVR

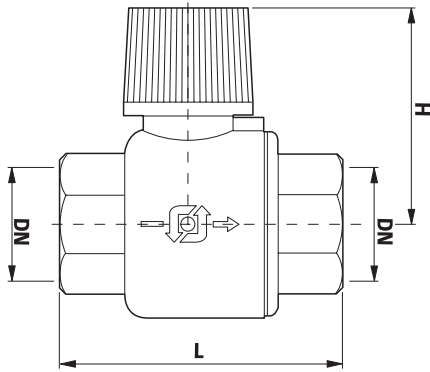


ND	L	H	h
3/4"	62.5	88	23
3/4"	70	120	26
1"	83.5	138	33
1.1/4"	100	148	39

GAG/MR20

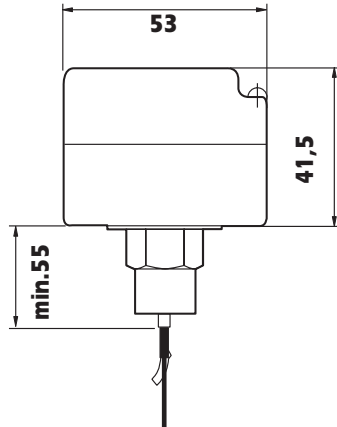


RDF

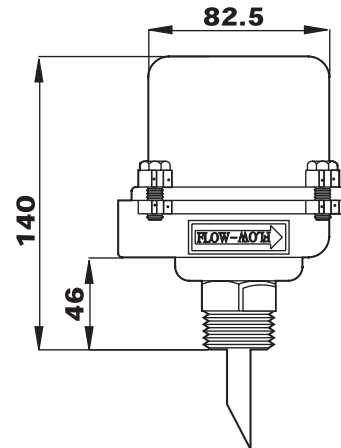


ND	L	H
1"	83.5	59
1.1/4"	83.5	59
1.1/2"	116.5	67

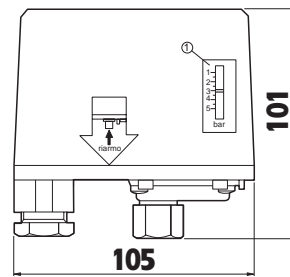
FLU



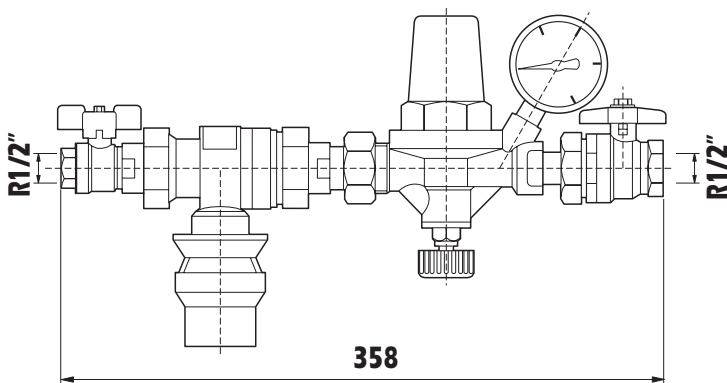
FS25



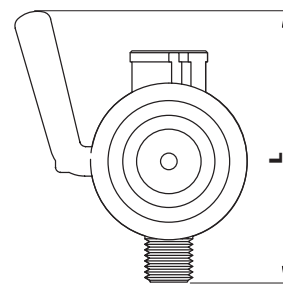
PRM



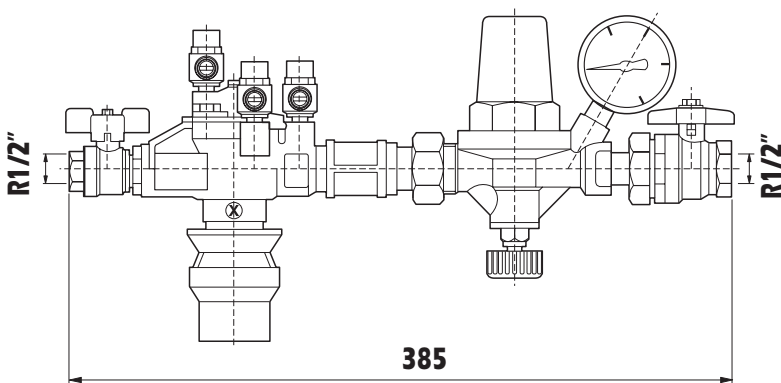
ALOMDNW



403R

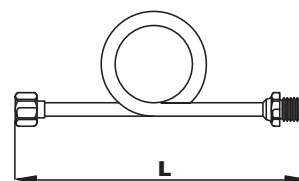


ALOMDIW



ND	L
1/4"	60
3/8"	67
1/2"	75

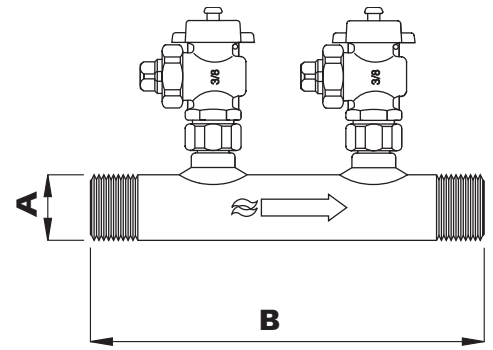
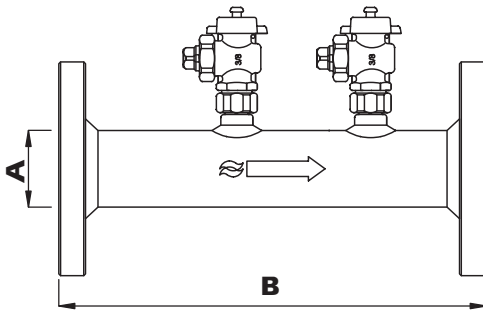
407D



ND	L
1/4"	150
3/8"	150
1/2"	150

CHAPTER C

MT

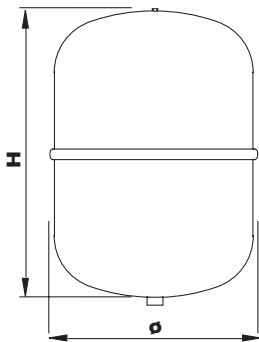


ND	A	B
32	42.40	245
40	48.30	270
32	60.30	345
40	76.10	430
32	88.90	510

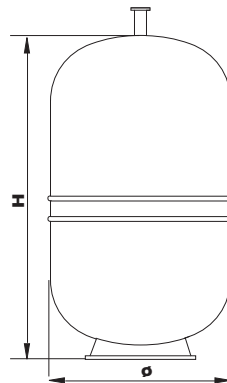
ND	A	B
100	114.3	600
125	139.7	250
150	165	285
200	219	340

ND	A	B
3/4"	26.90	160
1"	33.70	210

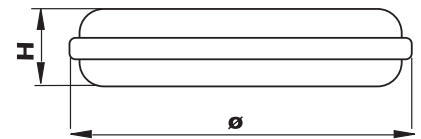
VEIS



VEN



VEP



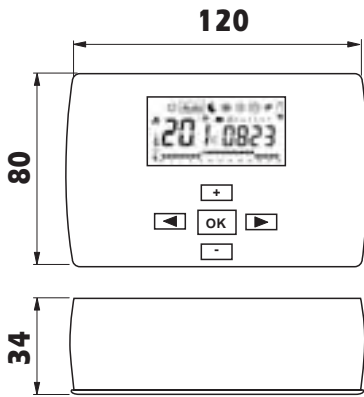
Capacity (L)	Ø	H
2	140	228
5	160	301
8	200	298
12	274	328
18	274	361
24	300	441

Capacity (L)	Ø	H
35	380	402
50	380	537
80	450	614
105	500	668
150	500	891
200	600	860
250	630	969
300	630	1131
500	750	1350

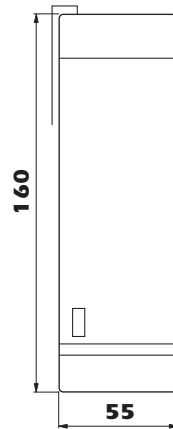
Capacity (L)	Ø	H
8	387	105
10	387	120
12	387	140
14	387	155
18	387	205



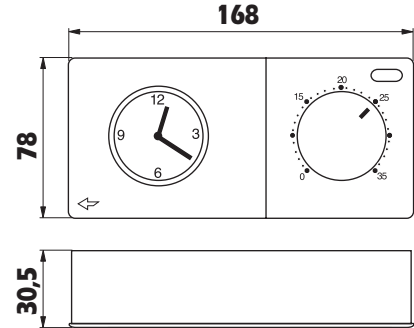
MILUX/MILUX-RF



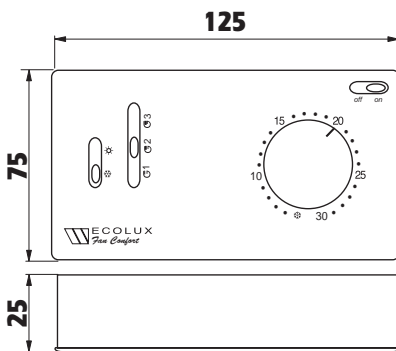
RF



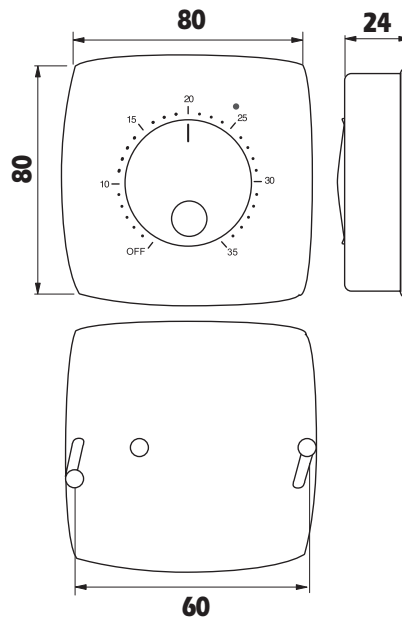
**BATTERYEL
BATTERY**



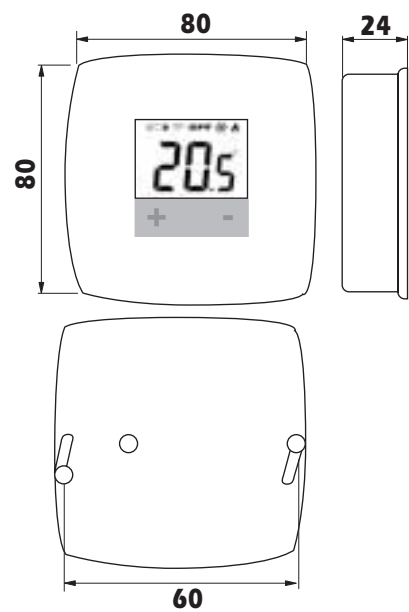
**FAN OPEN
FAN COMFORT 2T
FAN COMFORT 4T**



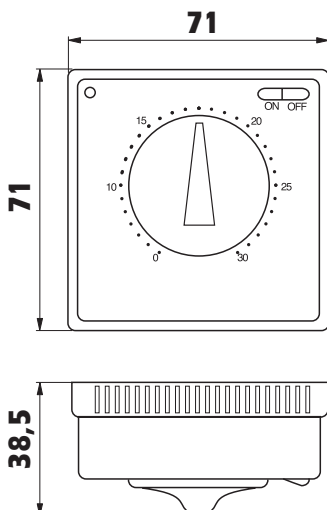
BELUX-RF



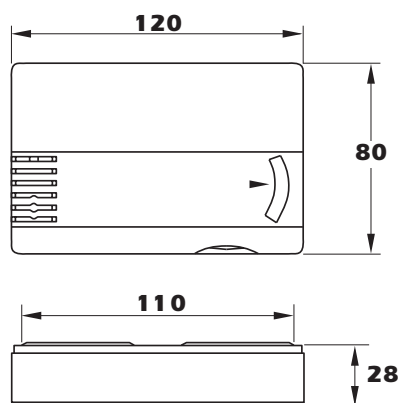
BELUX Digital



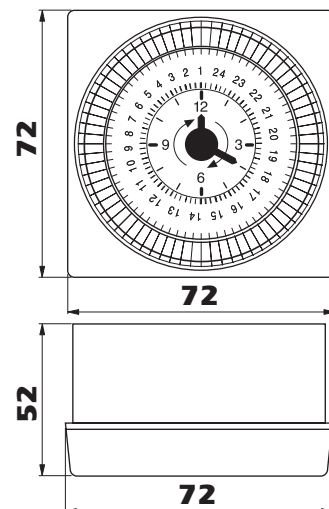
BELUXTI/TIC/TOF/FAN



228R

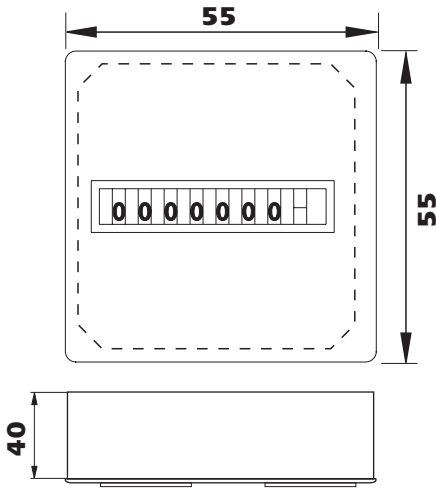


ORLUXGM

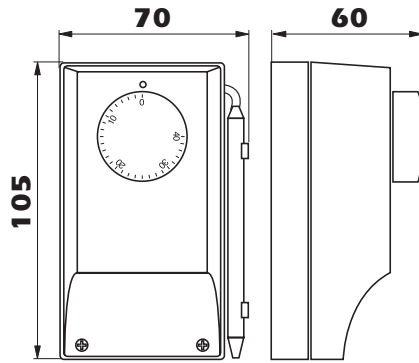


CHAPTER D

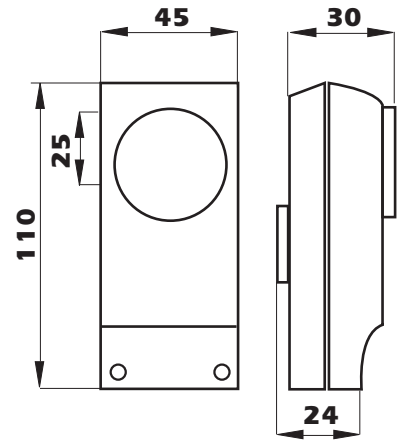
OH6



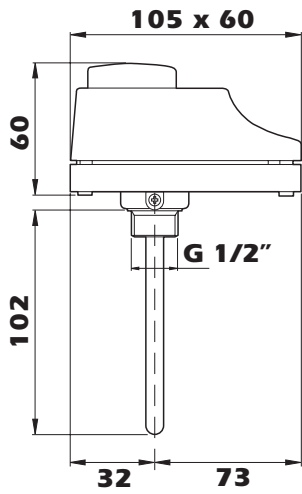
TAS



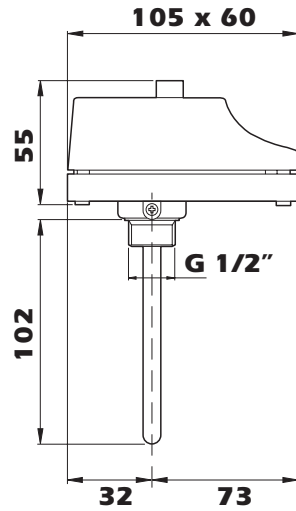
TCN



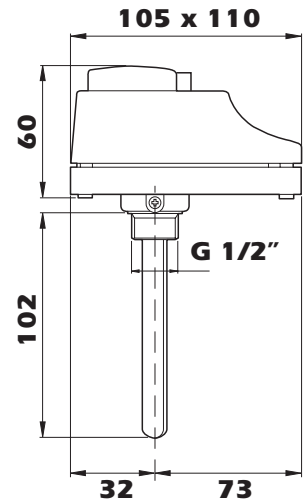
TRE100



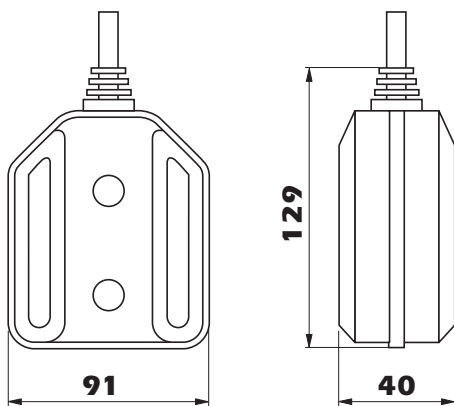
TS100



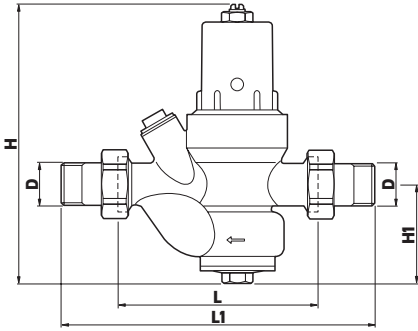
TRS100



IGD

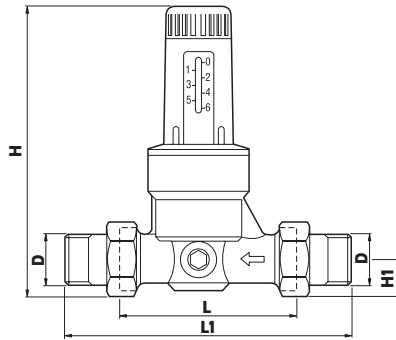


DRV/DRVM



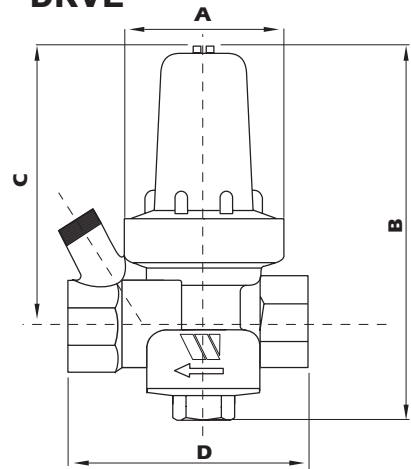
ND	L	L1	H	H1
1/2"	97	152	135	48
3/4"	110	171	155	58
1"	120	191	182	66
1.1/4"	140	211	227	75
1.1/2"	160	246	255	82
2"	175	261	262	88

DRVN/DRVMN



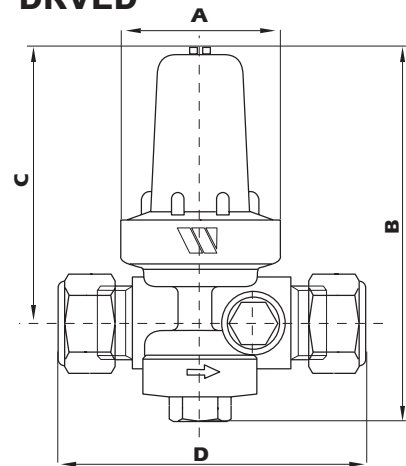
ND	L	L1	H	H1
1/2"	84	135	113	48
3/4"	94	151	133	58
1"	104	170	140	66
1.1/4"	109	175	192	75
1.1/2"	134	214	200	82
2"	144	224	205	88

DRVE



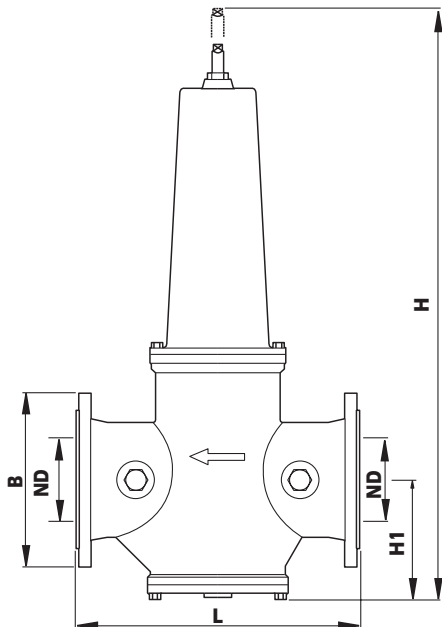
ND	A	B	C	D
1/2"	Ø 45	93	77,5	64
3/4"	Ø 45	112	77,5	75

DRVED



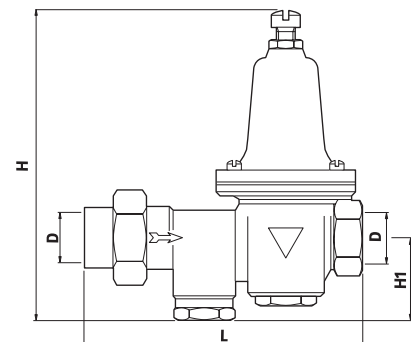
ND	A	B	C	D
15	Ø 45	105	77,5	86,5
22	Ø 45	105	77,5	92

DRVD16 - DRVD25 - DRVD40



ND	L	H	H1	BPN16	BPN25	BPN40
50	230	383	83	165	165	165
65	290	440	90	185	185	185
80	310	490	100	200	200	200
100	350	561	121	220	235	235
125	400	712	152	250	270	270
150	450	839	169	285	300	300
150	550	1684	234	340	360	--

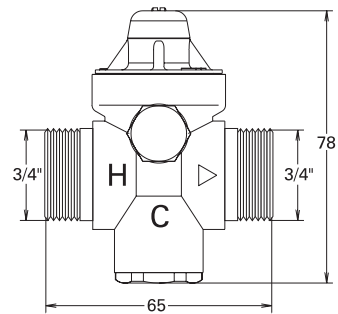
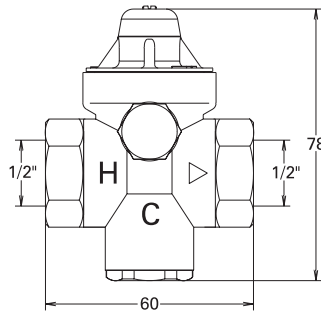
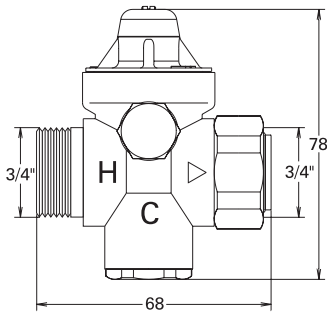
U5B



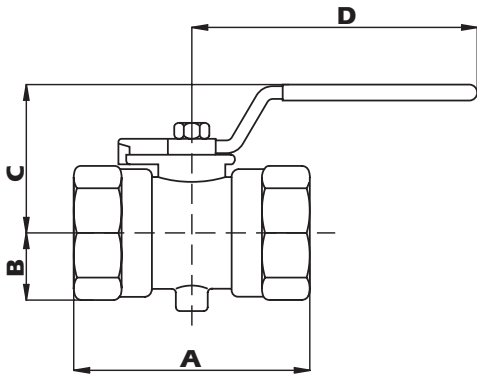
ND	L	H	H1
1/2"	146	175	48
3/4"	162	784	48
1"	171	203	51
1.1/4"	203	213	57
1.1/2"	241	248	76
2"	279	311	83

CHAPTER E

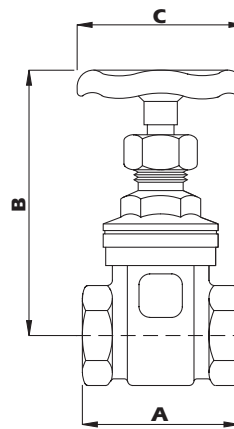
REDUFIX



3800



240

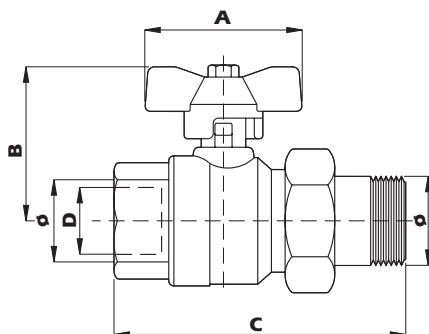


ND	A	B	C	D	Key
1/2"	60	24	45	85	26
3/4"	60	24	45	85	32
1"	74	24	45	85	40
1.1/4"	80	28	50	85	50
1.1/2"	92	31	56	100	58
2"	100	38	62	100	70

ND	A	B	D
1/2"	38	68	45
3/4"	45	78	50
1"	48	92	55
1.1/4"	51	108	60

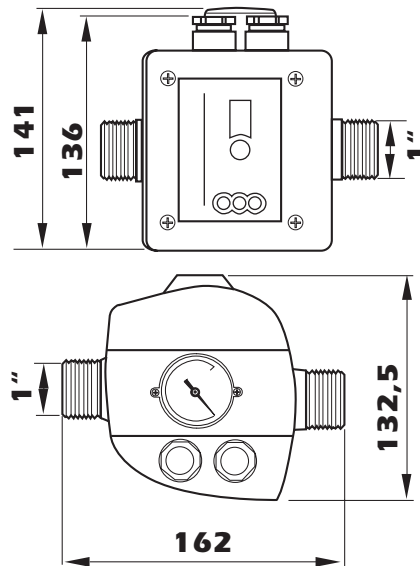
ND	A	B	D
2"	62	145	80
2.1/2"	78	175	100
3"	80	200	100
4"	96	240	120

210

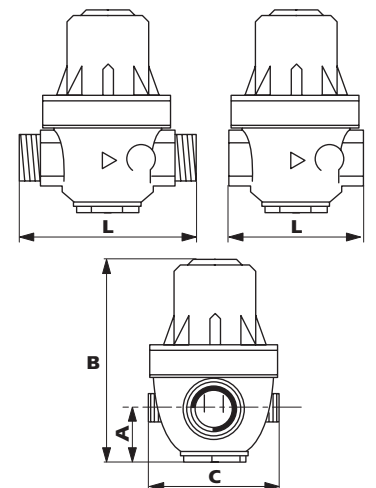


ND	A	B	C	D	E
3/4"	46	53	94	20	15
1"	46	65	109	25	17
1.1/4"	60	62	117	32	18

COMPACT2RM

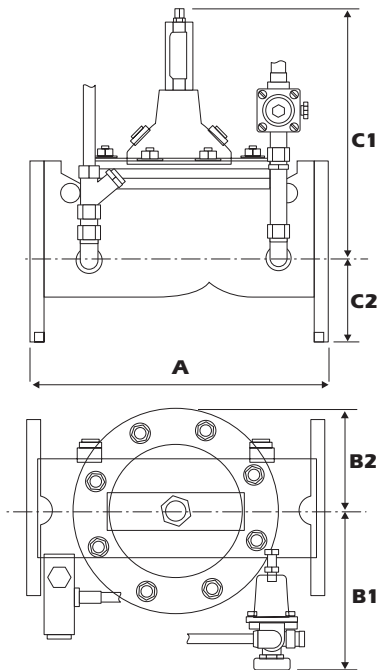


PRECISIO

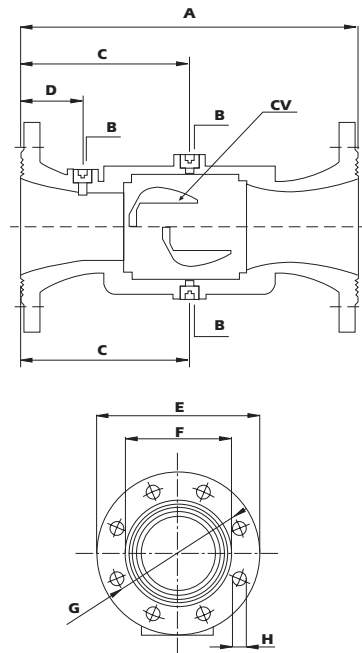


ND	L	A	B	C
1/2"FF	76	30,5	115	72
3/4"FF	76	30,5	115	72
3/4"MM	100	30,5	115	72

EU100



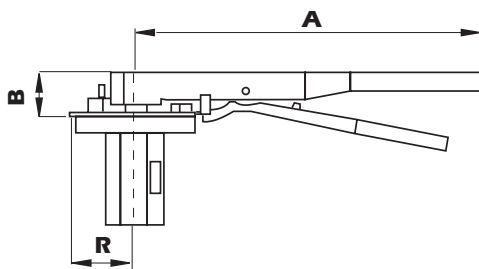
FC



ND	NP	A	B1	B2	C1	C2
50	10/16	230	160	85	265	85
60	10/16	290	170	85	265	95
65	10/16	290	170	85	265	95
80	10/16	310	175	85	265	100
100	10/16	350	190	120	310	110
125	10/16	400	200	150	385	125
150	10/16	480	210	150	385	145
200	10/16	600	235	200	460	170
250	10/16	730	280	255	570	200
300	10/16	850	305	300	650	230
350	10	980	330	300	650	255
350	16	980	330	300	650	260
400	10	1100	355	360	800	285
400	16	1100	355	360	800	290
500	10	1250	405	420	900	335
500	16	1250	405	420	900	360
600	10	1450	455	460	950	390
600	16	1450	455	460	950	420

ND	CV	A	B	C	D	E	F	G	H
60	CS100	290	G1/2	145	37.5	185	118	135	4x9
65	CS100	290	G1/2	145	37.5	185	118	145	4x9
80	CS100	310	G1/2	155	44	200	132	160	8x19
100	CS100	350	G1/2	175	64	220	156	180	8x19
125	CS100	400	G1/2	200	58	250	184	210	8x19
150	CS100	480	G1/2	240	70	258	211	240	8x19
200	CS100	600	G1/2	300	58	340	266	295	12x23
250	CS100	730	G1/2	365	70	405	319	355	12x28

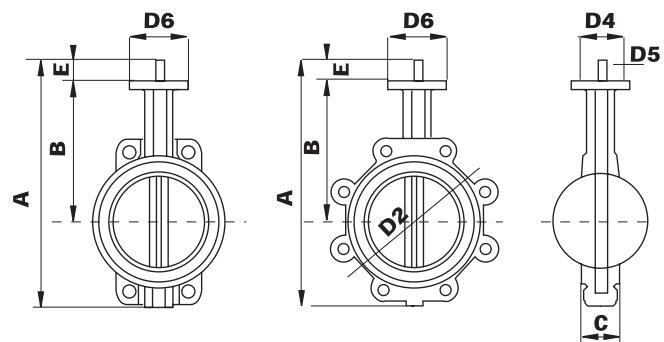
WAFEPDM-LUGEPM



ND	A	B	R
50 - 100	267	32	51
125 - 150	345	35	51
200 - 300	353	45	76

WAFEPDM

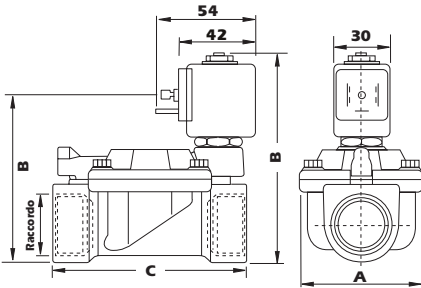
LUGEPM



ND	A	B	C	E	D2	Oles	D4	D5	D6	D7
50	273	161	43	32	125	4	50	7	77	100
65	293	175	46	32	145	4	50	7	77	120
80	308	181	46	32	160	8	50	7	77	127
100	346	200	52	32	180	8	70	10	92	156
125	372	213	56	32	210	8	70	10	92	190
150	397	226	56	32	240	8	70	10	92	212
200	480	260	60	45	295	12	102	12	125	268
250	540	292	68	45	355	12	102	12	125	325
300	624	337	78	45	410	12	102	12	140	403

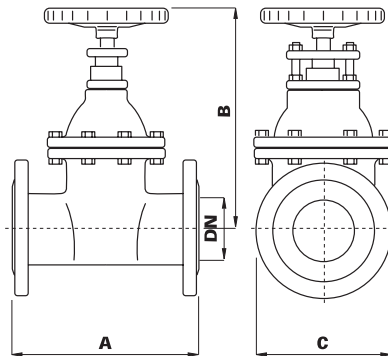
CHAPTER E

850T



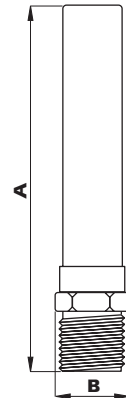
ND	A	B	C
3/8"	40	103	72
1/2"	40	103	72
3/4"	65	105	104
1"	65	112	104

W20



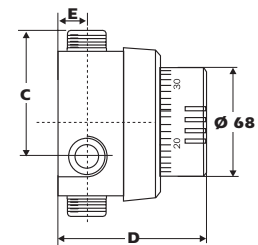
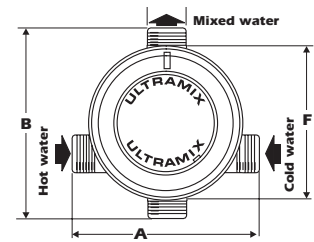
ND	A	B	C
65	270	300	185
80	280	340	200
100	300	370	220
150	350	460	285
200	400	555	340
250	450	665	395

APW

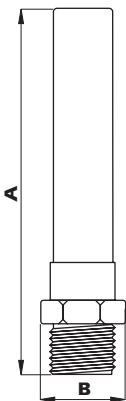


ND	A	B
1/2"	133.3	23.5

T9B/C - TX90

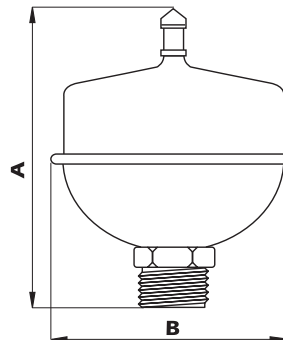


CAW



ND	A	B
1/2"	152	37
3/4"	200	48
1"	216	56
1.1/4"	275	68
1.1/2"	292	84
2"	378	84

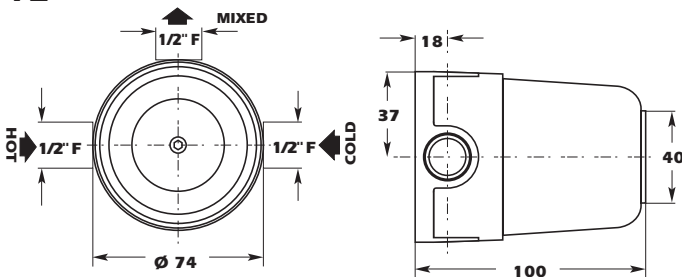
WAM



ND	A	B
1/2"	110	87

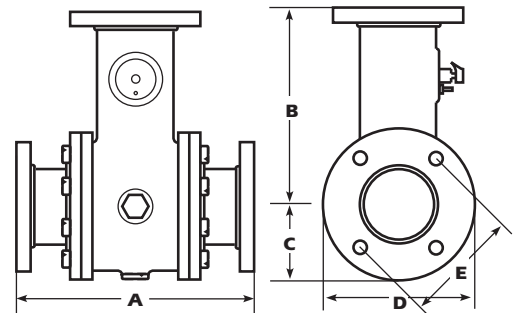
ND	A	B	C	D	E	F
3/4"M	117	120	81	93	18	98
1"M	144	142	95	101	23	116
1.1/4"M	182	166	107	116	24	145
1.1/2"M	218	199	129	127	32	175
2"M	242	224	144	141	36	198

TL

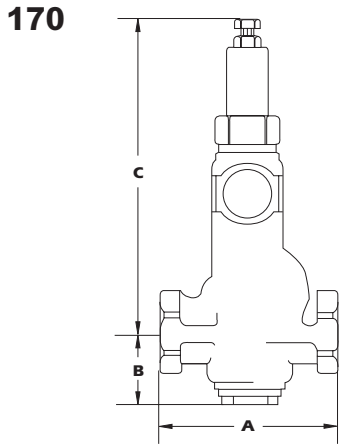


ND	A	B	C	D	E	F
1/2"M	100	90	50	100	17.5	80
3/4"M	100	90	50	100	17.5	80

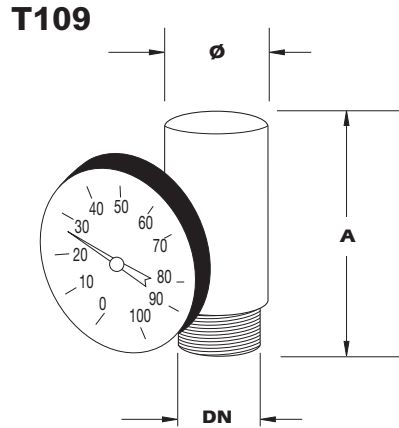
T70



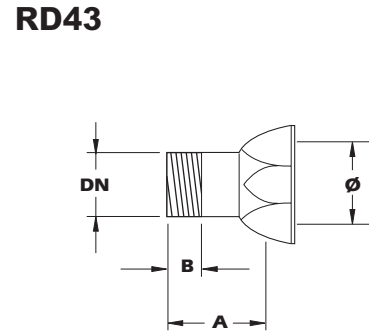
ND	A	B	C	D	E
2.1/2"	294	215	90	185	145
3"	336	270	105	200	160
4"	404	270	125	220	180



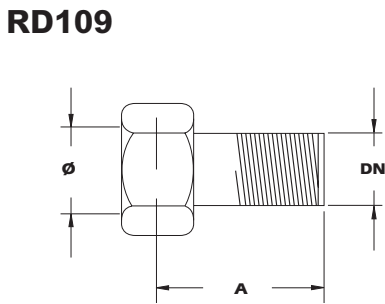
ND	A	B	C
3/4" F	105	51	143
1" F	114	51	143
1.1/4" F	152	51	152
1.1/2" F	152	54	152
2" F	162	54	152



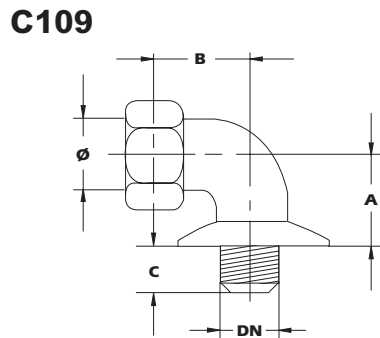
ND	Ø	A
3/4"	3/4"	64
1"	1"	64
1.1/4"	1.1/4"	80
1.1/2"	1.1/2"	80
2"	2"	80



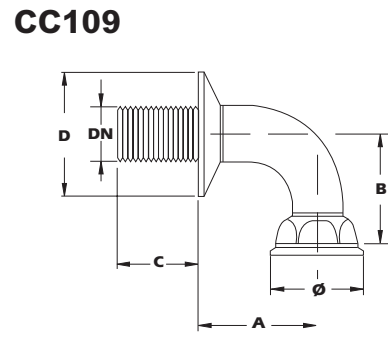
ND	Ø	A	B
1/2"	3/4"	35	13
3/4"	1"	40	15
1"	1.1/4"	45	17
1.1/4"	1.1/2"	65	29
1.1/2"	2"	62	25
2"	2.1/2"	72	30



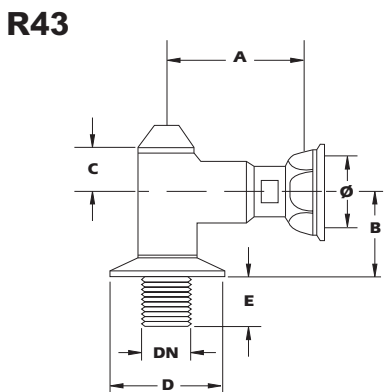
ND	Ø	A
1/2"	3/4"	25
3/4"	1"	35
1"	1.1/4"	35
1.1/4"	1.1/2"	45



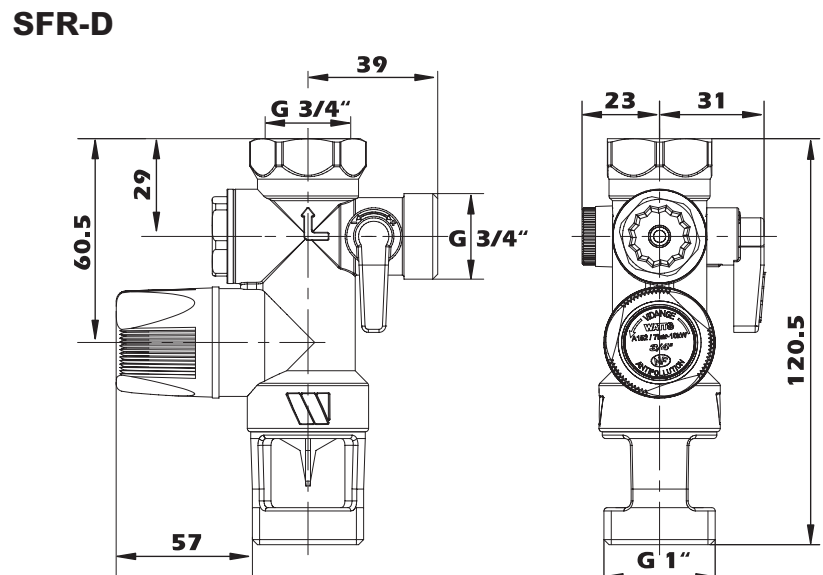
ND	Ø	A	B	C
1/2"	3/4"	30	30	15
3/4"	1"	40	40	15
1"	1.1/4"	55	65	45



ND	Ø	A	B	C	D
1/2"	3/4"	45	42	40	55
3/4"	1"	45	42	40	60
1"	1.1/4"	50	65	50	70
1.1/4"	1.1/2"	70	70	40	85
1.1/2"	2"	90	70	50	85

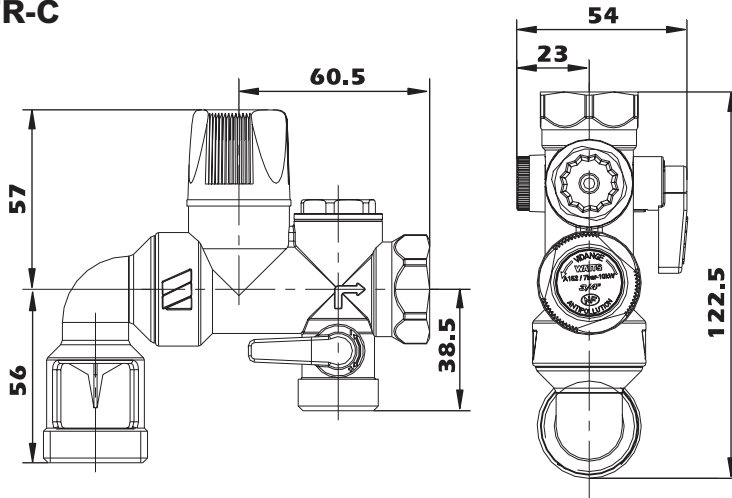


ND	Ø	A	B	C	D	E
1/2"	3/4"	165	45	55	20	25
3/4"	1"	177	45	60	23	30
1"	1.1/4"	186	50	70	28	30
1.1/4"	1.1/2"	114	70	85	85	50
1.1/2"	2"	134	90	85	85	50

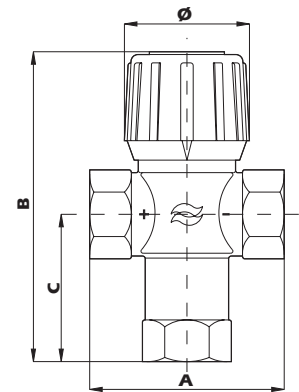


CHAPTER E

SFR-C

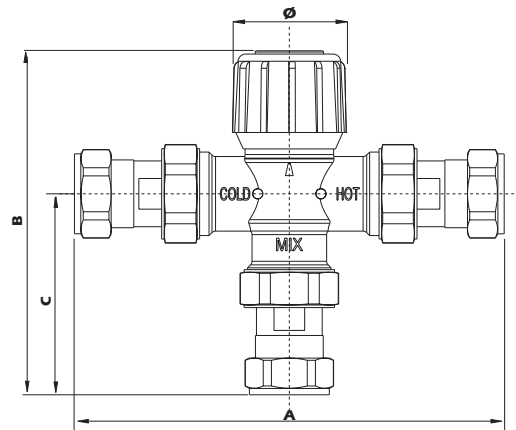
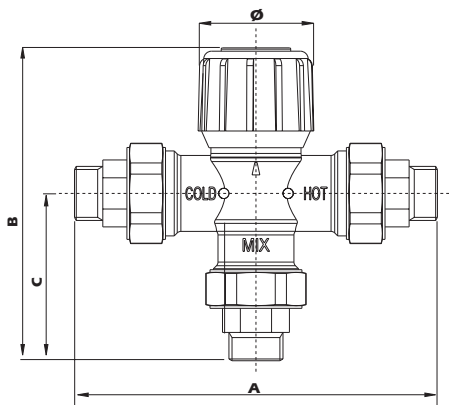


61C/62C



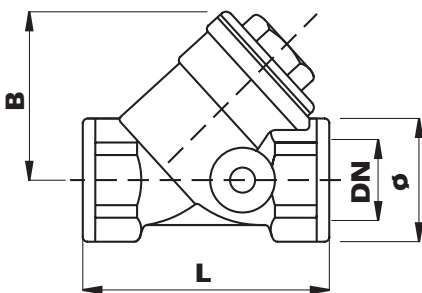
ND	A	B	C	Ø
15 mm	158	133	73	45
22 mm	170	139	79	45

61CMTMV2

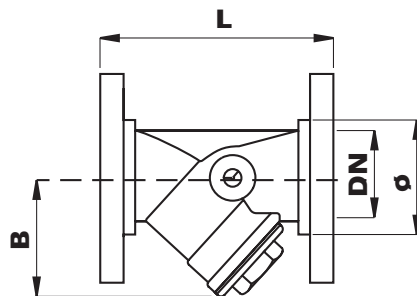


ND	A	B	C	Ø
1/2"	141	125	65	45
3/4"	145	127	67	45
15 mm	158	133	73	45
22 mm	170	139	79	45

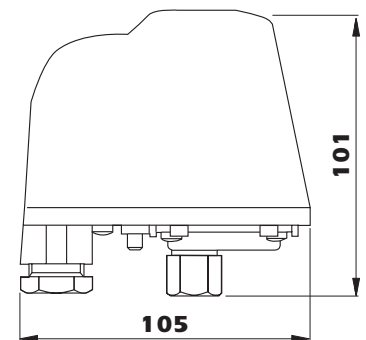
F21NO



F21N



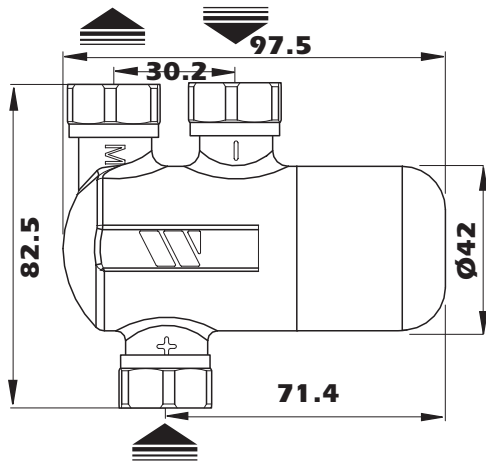
PA5/PA12



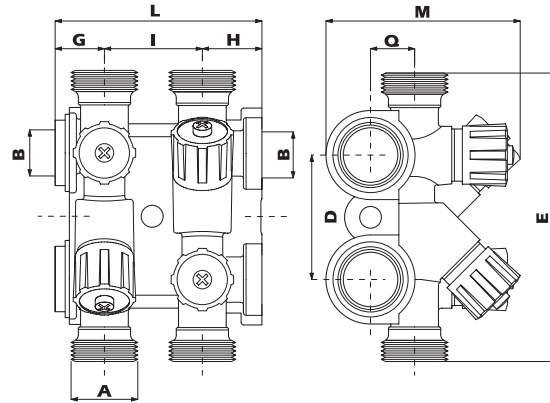
Type	ND	L	B	Key
F21N-15	1/2"	58	40	26
F21N-20	3/4"	70	50	32
F21N-25	1"	87	60	38
F21N-32	1.1/4"	96	68	48
F21N-40	1.1/2"	105	75	52
F21N-50	2"M	126	90	--

Type	ND	L	B	Key
F21N-65	2.1/2"-65	290	193	26
F21N-80	3"-80	310	205	32
F21N-100	4"-100	350	245	38
F21N-125	5"-125	400	295	48
F21N-150	6"-150	480	325	52

MINIMIX

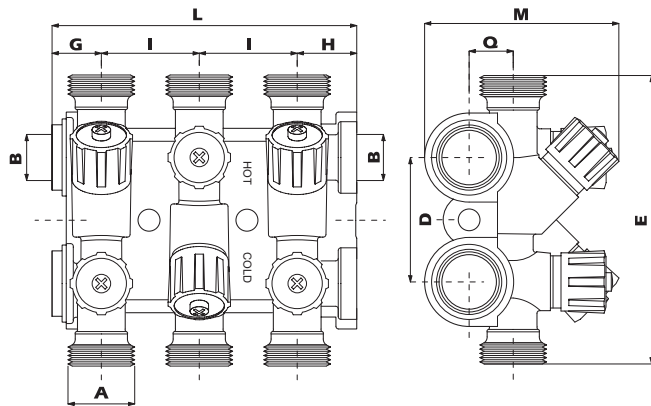


T02



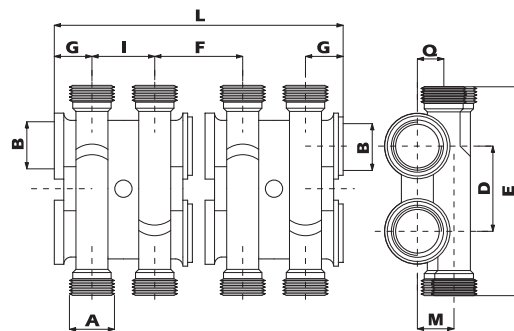
A	B	D	E	G	H	I	L	M	Q
M24	1/2"	45	110	38.5	20.5	18.5	36	72	22.5

T04



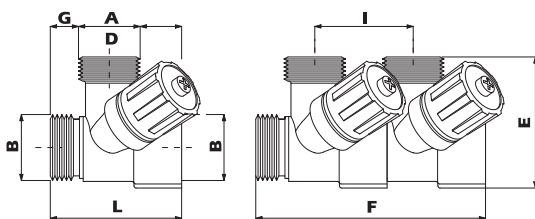
A	B	D	E	G	H	I	L	M	Q
M24	1/2"	45	110	38.5	20.5	18.5	111	72	22.5

T06



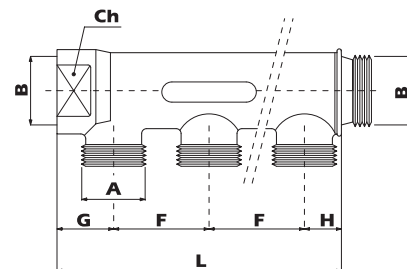
A	B	D	E	F	G	I	L	M	Q
M24x1.5	3/4"	49.6	119	38.5	19.5	36	148	21	15

T08



A	B	D	E	F	G	I	L
M24x1.5	3/4"	18.5	53	96	13	41.5	55.5

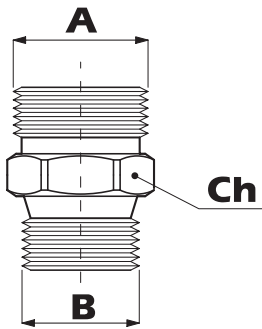
T14



Outlets	A	B	F	G	H	L	Ch
2	M24x1.5	3/4"	36	22	14	72	32
3	M24x1.5	3/4"	36	22	14	108	32
4	M24x1.5	3/4"	36	22	14	144	32

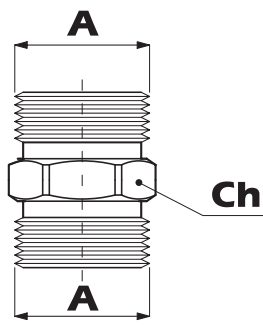
CHAPTER E

T20



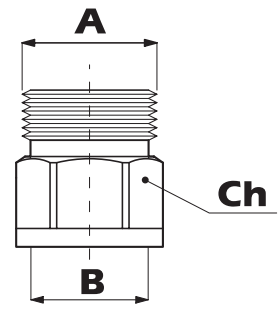
A	B	Ch
M24 x 1,5	1/2"	24
M27 x 1,5	1/2"	27
M24 x 1,5	3/4"	27
M27 x 1,5	3/4"	27

T22



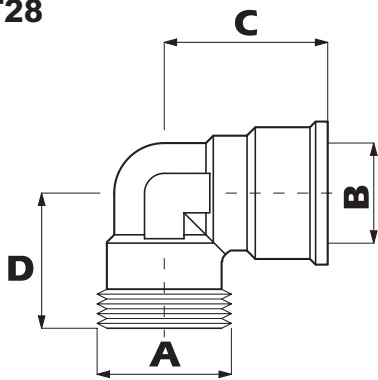
A	Ch
M24 x 1,5	24
M27 x 1,5	27

T24



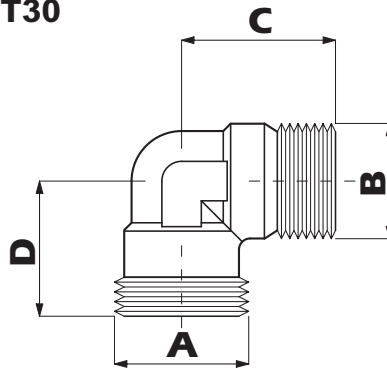
A	B	Ch
M24 x 1,5	1/2"	25
M27 x 1,5	1/2"	25
M24 x 1,5	3/4"	30
M27 x 1,5	3/4"	30

T28



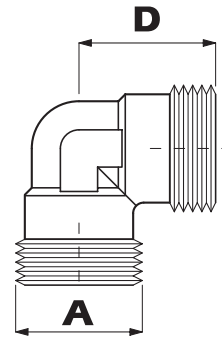
A	B	C	D
M24 x 1,5	1/2"	30	28
M24 x 1,5	3/4"	32	28
M27 x 1,5	1/2"	30	28
M27 x 1,5	3/4"	32	28

T30



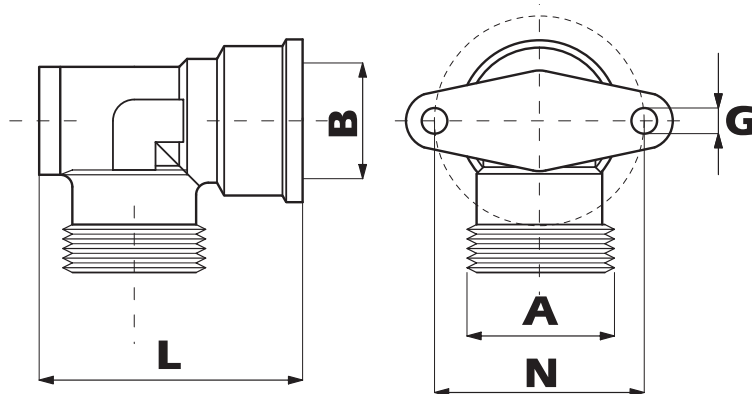
A	B	C	D
M24 x 1,5	1/2"	25.5	25.5
M24 x 1,5	3/4"	33	28
M27 x 1,5	1/2"	25.5	28
M27 x 1,5	3/4"	30	28
M27 x 1,5	3/4"	33	28

T32



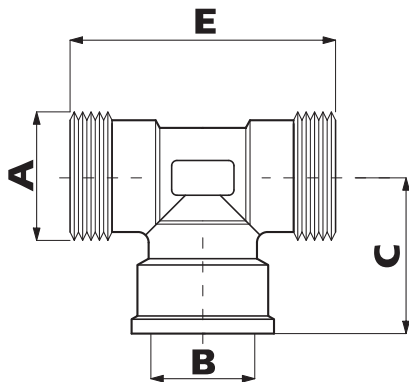
A	D
M24 x 1,5	25.5
M27 x 1,5	28

T36



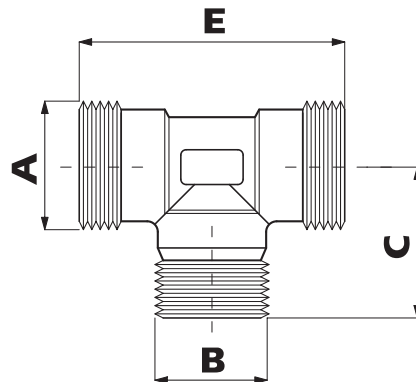
A	B	G	L	N
M24 x 1,5	1/2"	4.5	47	35
M27 x 1,5	1/2"	4.5	47	35

T38



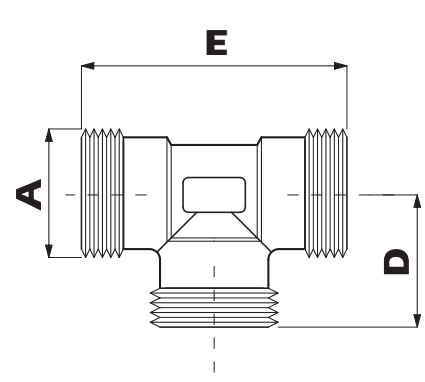
A	B	C	E
M24 x 1,5	1/2"	30	50.5
M27 x 1,5	1/2"	30	58

T40



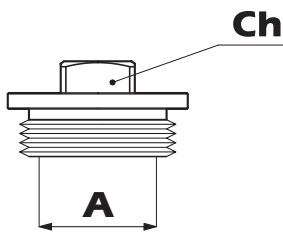
A	B	C	E
M24 x 1,5	1/2"	29	50.5
M27 x 1,5	1/2"	29	58
M27 x 1,5	3/4"	29	58

T42



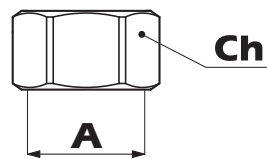
A	D	E
M24 x 1,5	29	50.5
M27 x 1,5	29	58
M27 x 1,5	31	58

T44



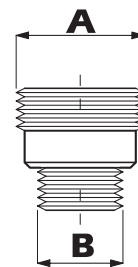
A	Ch
1/2"	12
3/4"	14

T46



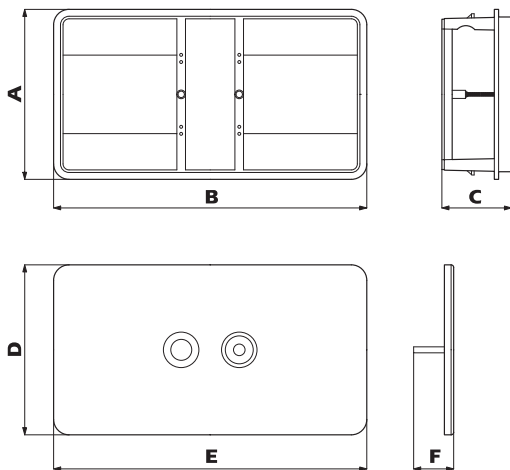
A	Ch
M24 x 1.5	28
3/4"	30

T48



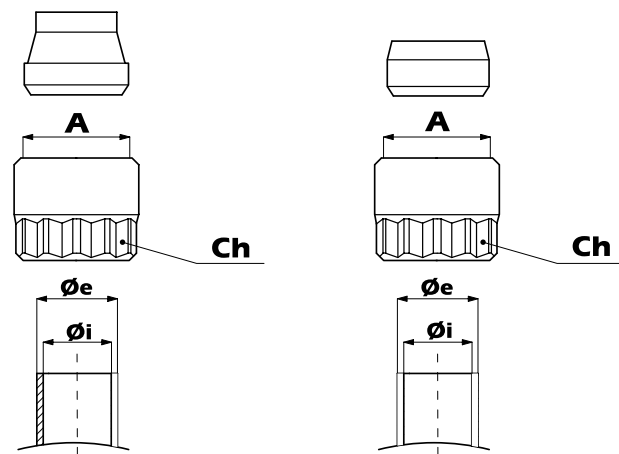
A	Ch
M24 x 1.5	3/8"
M24 x 1,5	1/2"
M27 x 1,5	1/2"

T68



A	B	C	D	E	F
200	380	91	223	400	36

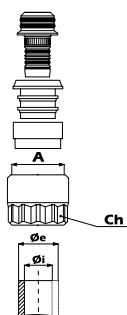
T54



A	Øe	Øi	Ch
M24 x 1.5	10	8	24
M24 x 1.5	12	10	24
M24 x 1.5	14	12	24
M24 x 1.5	16	14	24

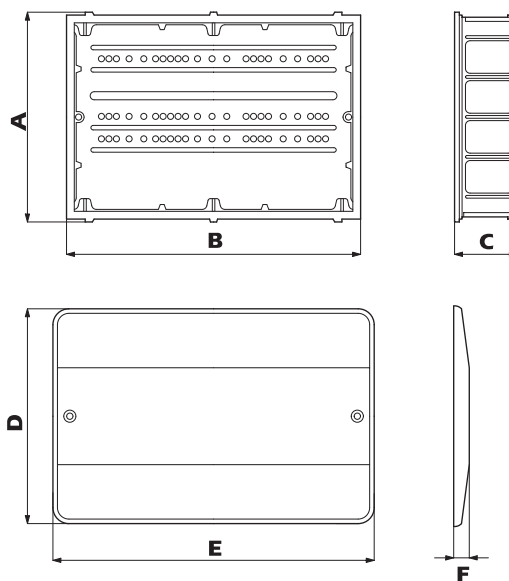
CHAPTER E

T50



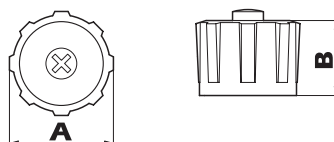
A	Øe	Øi	Ch
COPPER			
M24x1,5	10	8	24
M24x1,5	12	10	24
M24x1,5	14	12	24
M24x1,5	15	13	24
M24x1,5	16	14	24
M27x1,5	18	16	27
MULTILAYER			
M24x1,5	14	10	24
M24x1,5	16	11,5	24
M24x1,5	16	12	24
M24x1,5	18	14	24
M27x1,5	18	14	27
M27x1,5	20	15	27
M27x1,5	20	15,5	27
M27x1,5	20	16	27
PLASTIC			
M24x1,5	12	8	24
M24x1,5	15	10	24
M24x1,5	16	12	24
M24x1,5	17	13	24
M24x1,5	18	13	24
M24x1,5	18	14	24
M27x1,5	18	14	27
M27x1,5	20	15	27
M27x1,5	20	16	27

T74



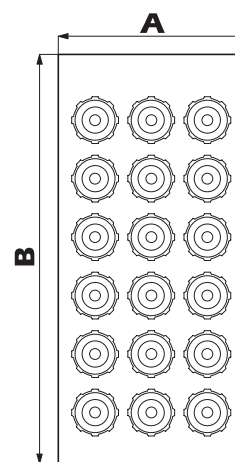
A	B	C	D	E	G	Size
272	332	86	290	350	15	32
272	421	86	290	430	15	40
272	512	86	290	530	15	50

T62



A	D	Colour
24	17	BLUE
24	17	RED

T66



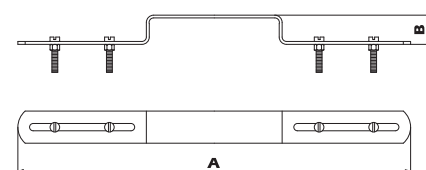
A	B
79	175
79	175
79	175

T92



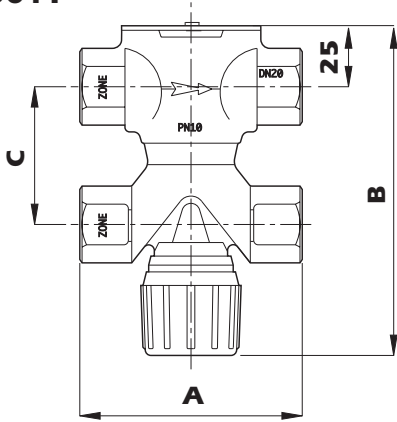
A	Ch1	Ch2
250	24	27

T82



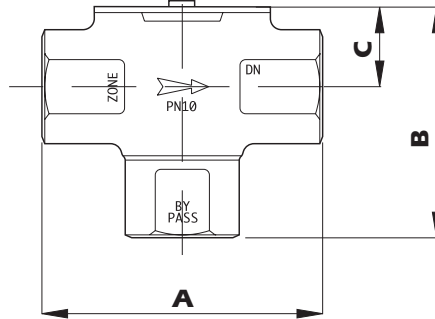
A	B
265	20

561T



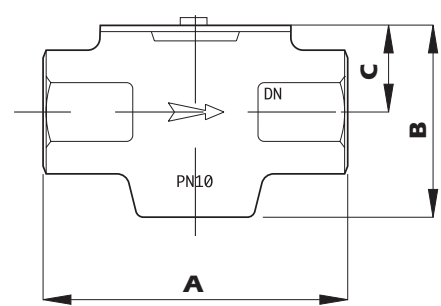
ND	A	B	C
3/4"	90	130	50
1"	100	140	60

560T



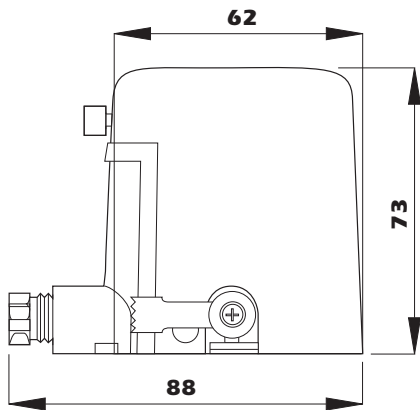
ND	A	B	C
3/4"	90	78	25
1"	100	78	25

571T

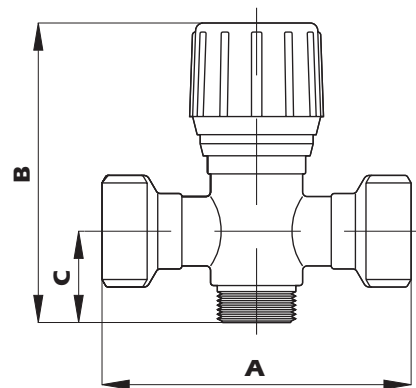


ND	A	B	C
3/4"	90	61	25
1"	100	61	25
1.1/4"	103	59	25

580T

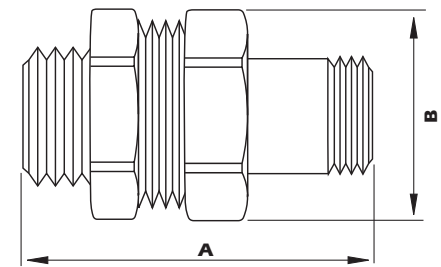


566T



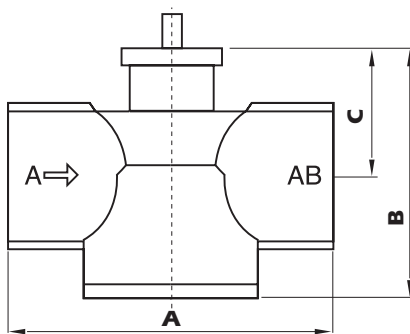
ND	A	B	C
3/4"	90	100	34
1"	100	104	34

567T



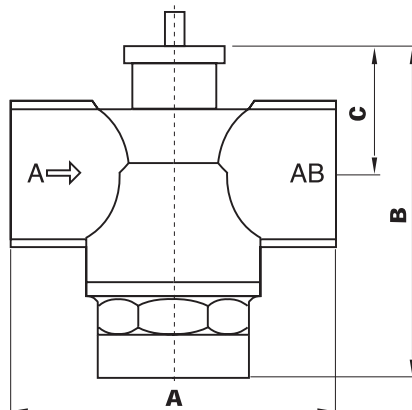
ND	A	B
3/4"	66	37
1"	77	46

VU02F



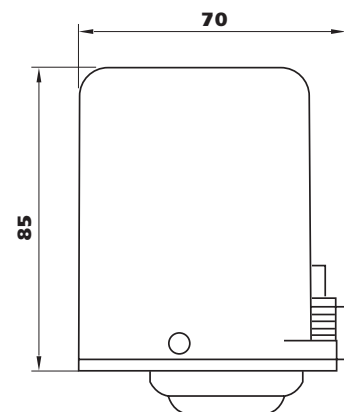
ND	A	B
3/4"	78	61
1"	83	61

VU3F



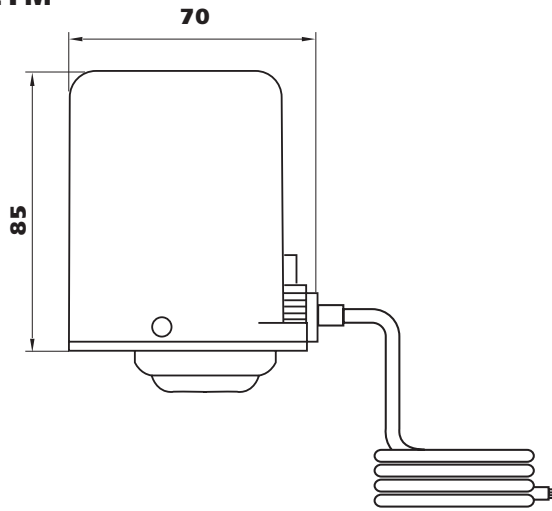
ND	A	B	C
3/4"	78	77	30
1"	83	77	30

ETE

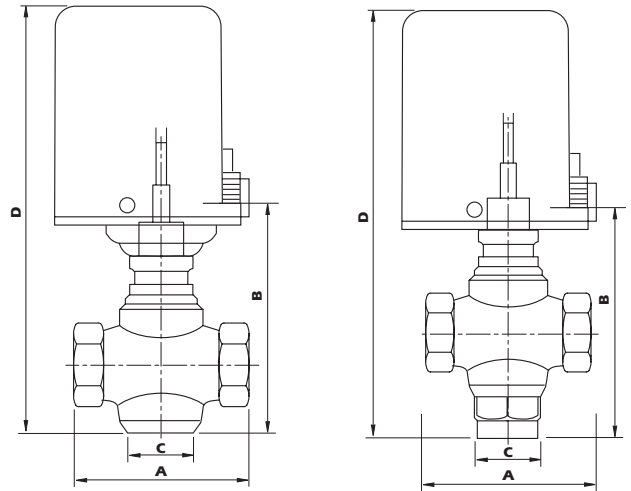


CHAPTER F

ETM

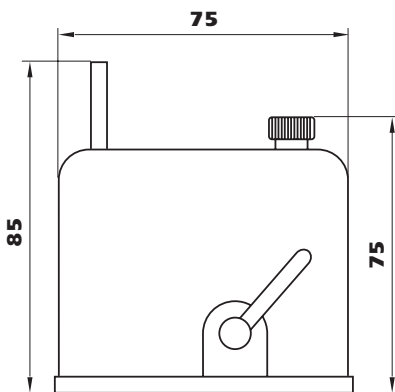


V2BMXE / V3BMXE

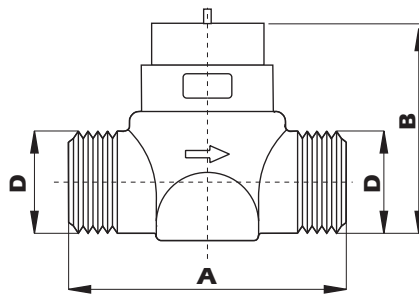


ND	A	B	C	D
15	85	121	15	192
20	85	121	20	192
25	105	121	25	192
32	120	131	32	202

EA

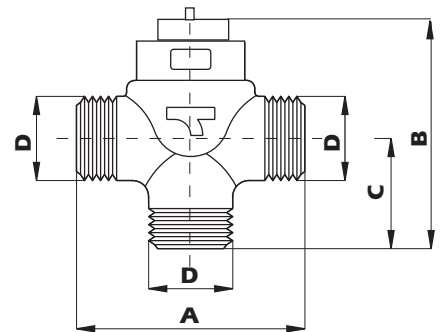


2131



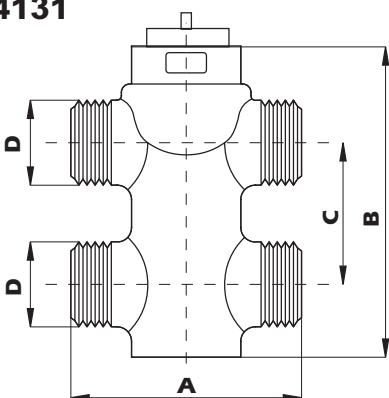
ND	A	B
1/2"	52	43
3/4"	56	43
1"	83	70

3131



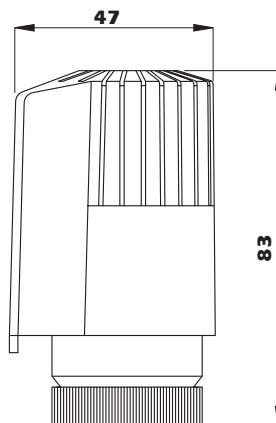
ND	A	B	C
1/2"	52	56	25
3/4"	56	58	34
1"	82	93	41

4131

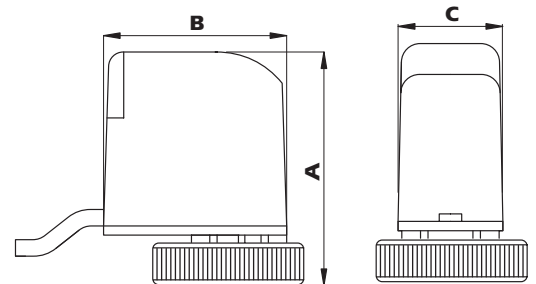


ND	A	B	C
1/2"	52	83	35
3/4"	56	96	50

10C

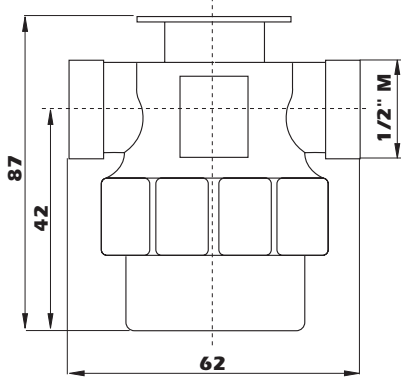


20C/22C

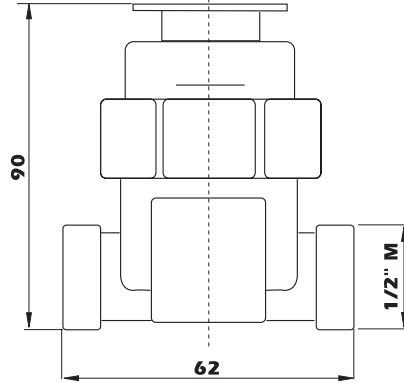


Type	A	B	C
20C	62	50	27
22C	51	50	38

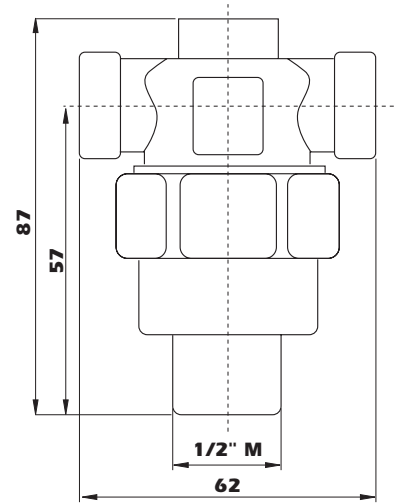
VU02D



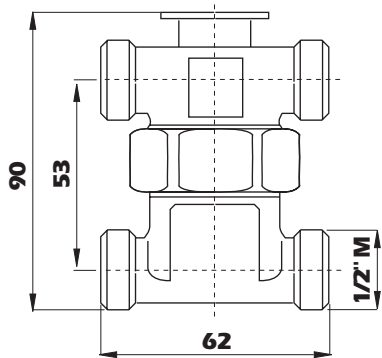
VU20D



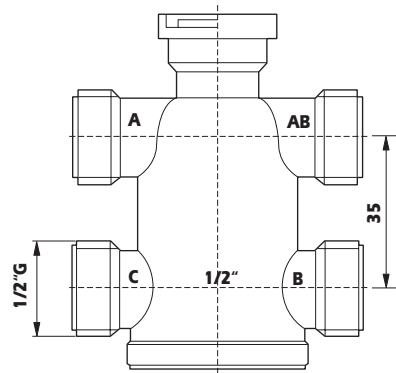
VU3T



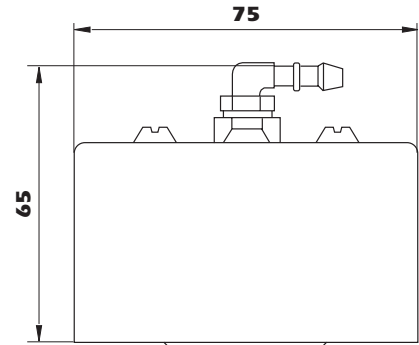
VU04 / VU40



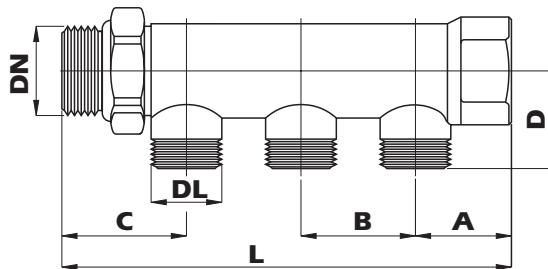
VU04R



PA



805M / 805ME

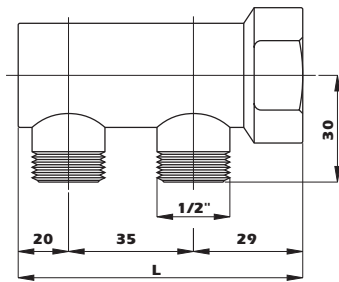


ND	DL	L	A	B	C	D
3/4"	2x1/2"	98	28.5	35	34.5	28
3/4"	3x1/2"	133	28.5	35	34.5	28
3/4"	4x1/2"	168	28.5	35	34.5	28
1"	2x1/2"	97	24	35	38	33
1"	3x1/2"	132	24	35	38	33
1"	4x1/2"	167	24	35	38	33
1"	2x1/2"	114.5	24.5	50	41	33
1"	3x1/2"	164.5	24.5	50	41	33
1"	4x1/2"	214.5	24.5	50	41	33
1.1/4"	3x1/2"	168.5	27.5	50	41	36
1.1/4"	4x1/2"	218.5	27.5	50	41	36

ND	DL	L	A	B	C	D
1"	2x3/4"	114.5	24.5	50	41	33
1"	3x3/4"	164.5	24.5	50	41	33
1"	4x3/4"	214.5	24.5	50	41	33
1.1/4"	3x3/4"	168.5	27.5	50	41	36
1.1/4"	4x3/4"	218.5	27.5	50	41	36

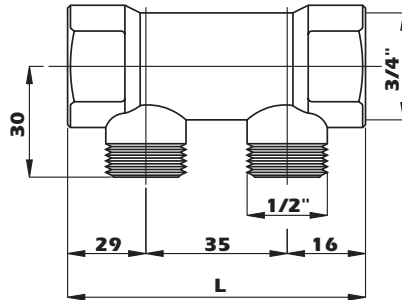
CHAPTER F

806M



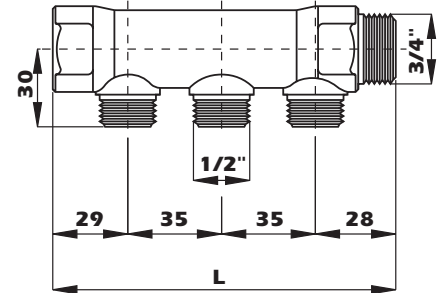
ND	L
3/4"	84
1"	119

807M



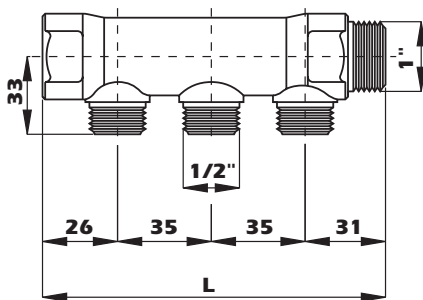
ND	Side outlet connections	L
3/4"	2	80
3/4"	3	115
3/4"	4	150

E807M



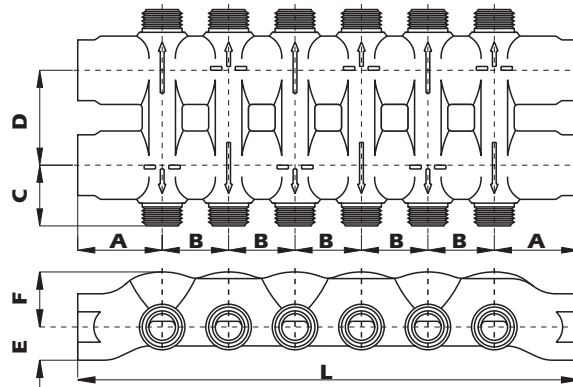
ND	Side outlet connections	L
3/4"	2	92
3/4"	3	127
3/4"	4	162

E810M



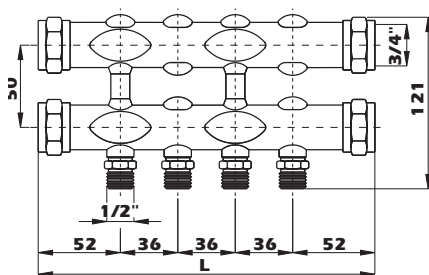
ND	Side outlet connections	L
1"	2	93
1"	3	129
1"	4	164

825M



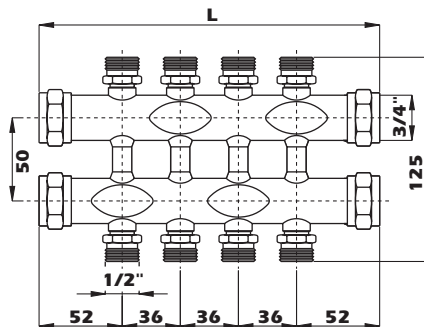
ND	Side outlet connections	L	A	B	C	D	E	F
3/4"	2 x 2	125	45	35	31	50	18	28.5
3/4"	4 x 4	195	45	35	31	50	18	28.5
3/4"	6 x 6	265	45	35	31	50	18	28.5
3/4"	8 x 8	335	45	35	31	50	18	28.5
1"	4 x 4	215	55	35	34	60	21	35.5
1"	6 x 6	285	55	35	34	60	21	35.5
1"	8 x 8	355	55	35	34	60	21	35.5
1"	10 x 10	425	55	35	34	60	21	35.5

812M



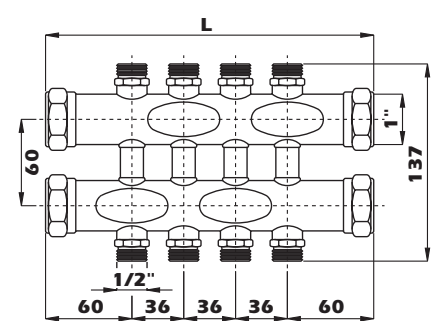
Side outlet connections	L
4	212
6	284
8	356
10	428
12	500
14	572
16	644
18	716

814M



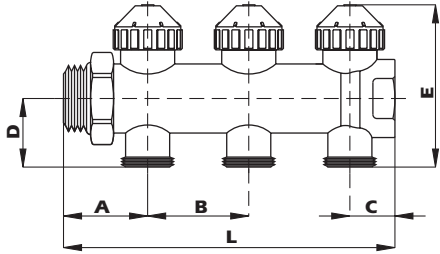
Side outlet connections	L
2 x 2	140
2 x 4	212
4 x 4	212
6 x 6	284
8 x 8	356
10 x 10	428

815M



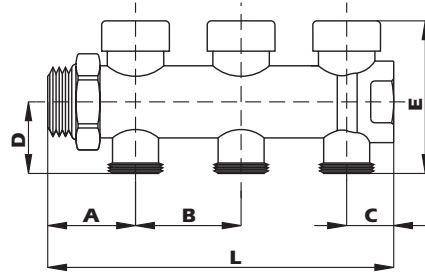
Side outlet connections	L
4 x 4	228
6 x 6	300
8 x 8	372
10 x 10	444

822MM / 822MME



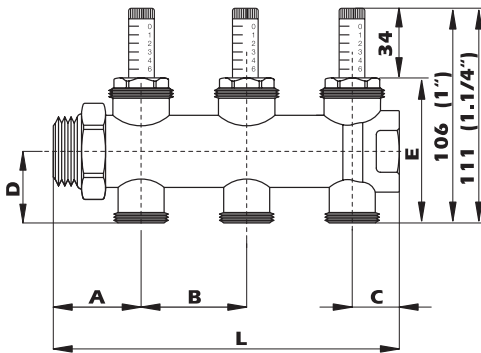
ND	L		A	B	C	D	E
	2 Outlets	3 Outlets	4 Outlets				
1"	114	164	214	40	50	24.5	33
1.1/4"	-	168	218	41	50	24.5	33

822MR / 822MRE



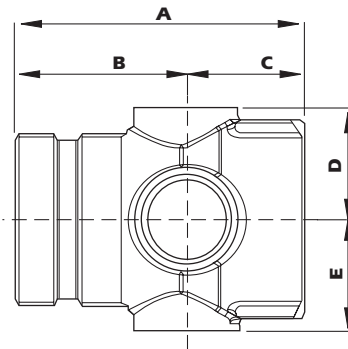
ND	L		A	B	C	D	E
	2 Outlets	3 Outlets	4 Outlets				
1"	114	164	214	40	50	24.5	33
1.1/4"	-	168	218	41	50	27.5	36

FLMR/FLMRE/FL



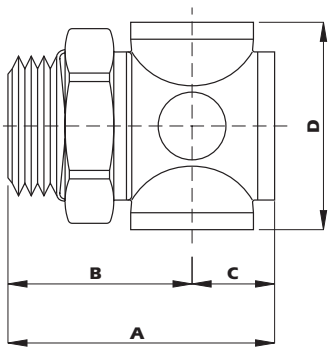
ND	L		A	B	C	D	E
	2 Outlets	3 Outlets	4 Outlets				
1"	114	164	214	40	50	24.5	33
1.1/4"	-	168	218	41	50	27.5	36

823MP



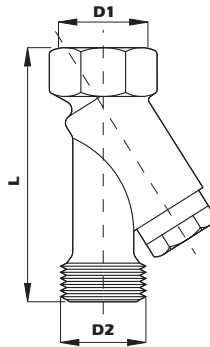
ND	A	B	C	D	E
1"G	69.5	40	25.5	27	27
1.1/4"G	69.5	41	28.5	27	27

823MT



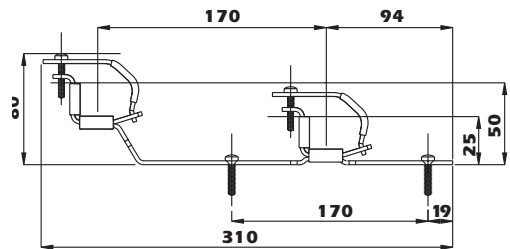
ND	A	B	C	D
1"	61.5	42	19.5	49
1.1/4"	63.5	42	19.5	49

209

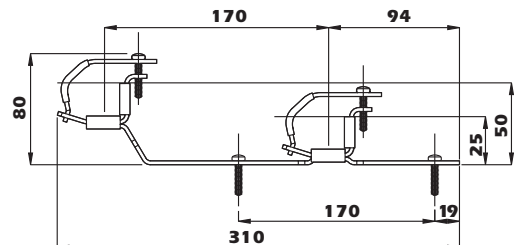


ND	D1	D2	L
1/2"	1/2"F	1/2"M	58

840M

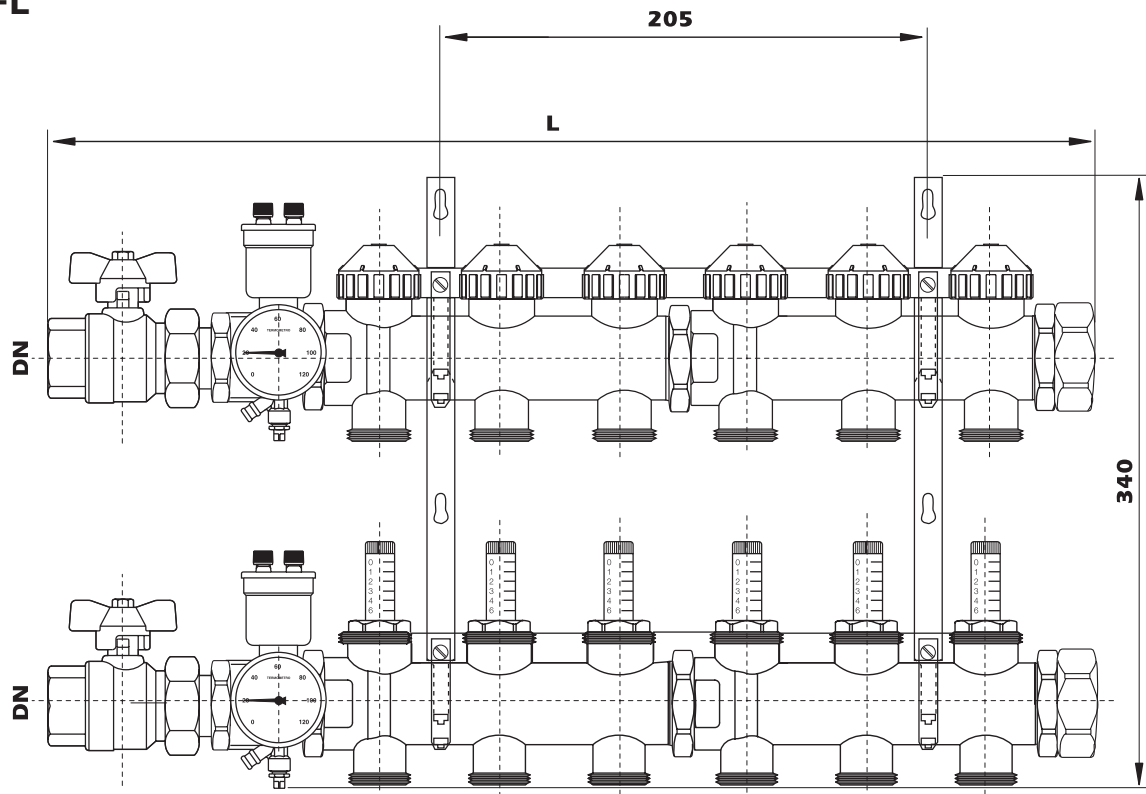


844M



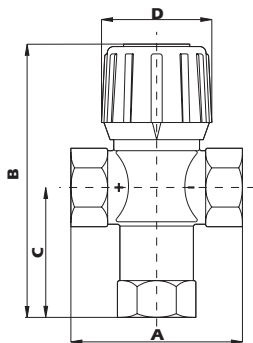
CHAPTER F

CPRFL



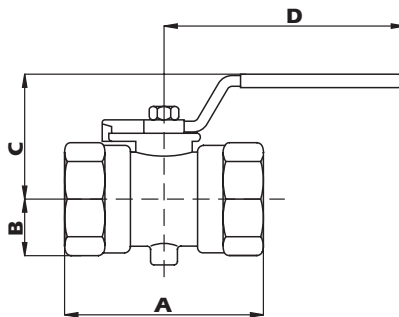
Outlets No.	L - 1.1/4"
3	350
4	400
5	500
6	500
7	550
8	600
9	650
10	700
11	750
12	800

63C



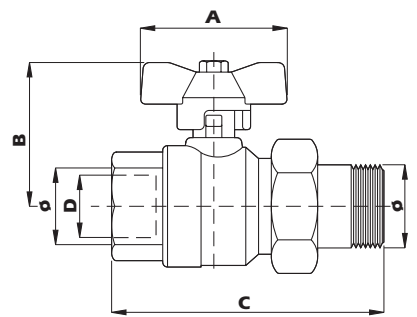
ND	A	B	C	D
3/4"	70	107	52	45
1"	80	110	55	45

3800



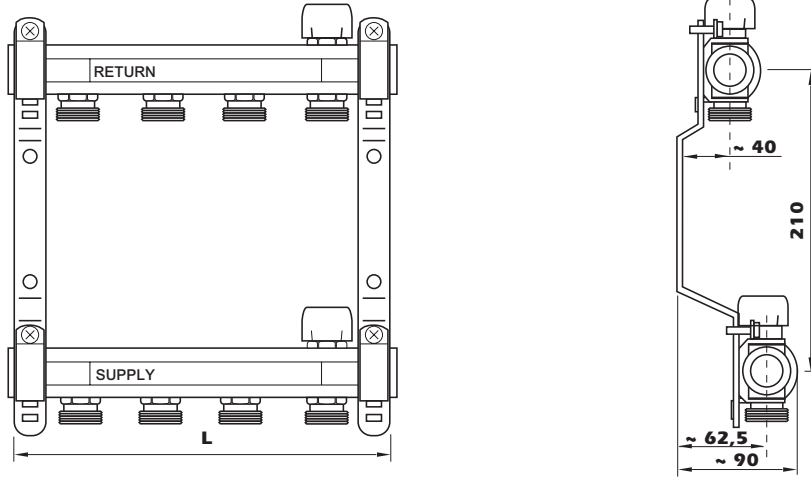
ND	A	B	C	D	Key
1/2"	60	24	45	85	26
3/4"	60	24	45	85	32
1"	74	24	45	85	40
1.1/4"	80	28	50	85	50
1.1/2"	92	31	56	100	58
2"	100	38	62	100	70

210



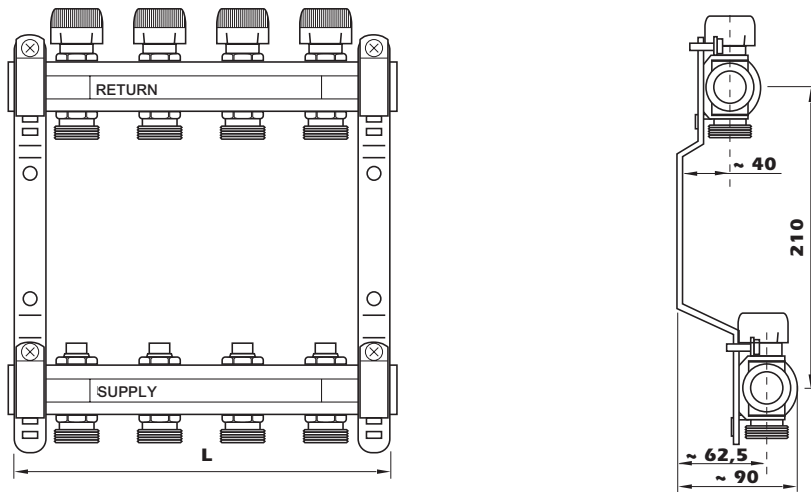
ND	A	B	C	D	E
1/2"	46	50	76	15	14
3/4"	46	53	94	20	15
1"	46	65	109	25	17
1.1/4"	60	62	117	32	18

HLV500



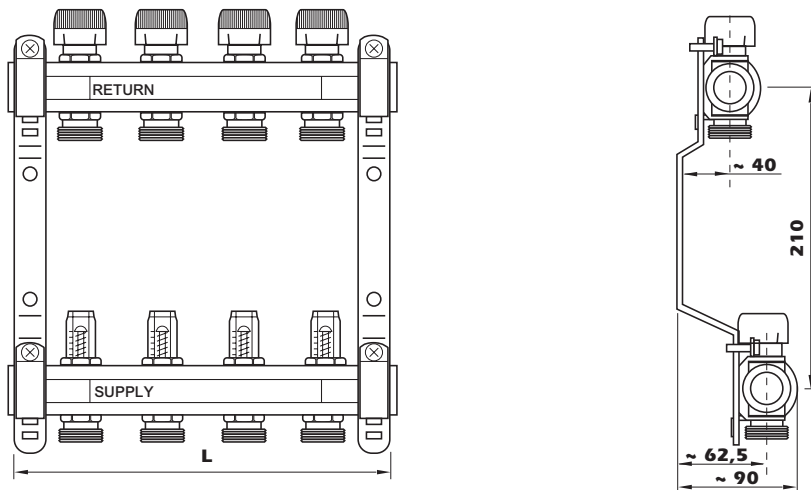
Outlets No.	2	3	4	5	6	7	8	9	10	11	12
L (mm)	125	175	225	275	325	375	425	475	525	575	625

HKV510



Outlets No.	2	3	4	5	6	7	8	9	10	11	12
L (mm)	125	175	225	275	325	375	425	475	525	575	625

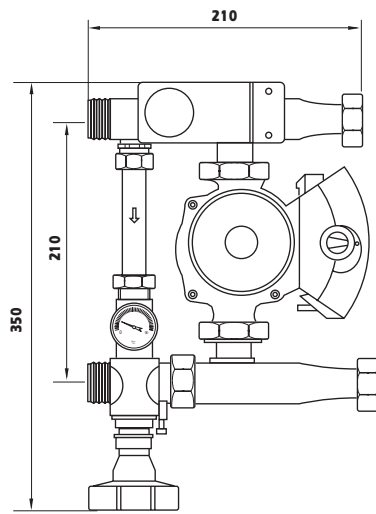
HKV513



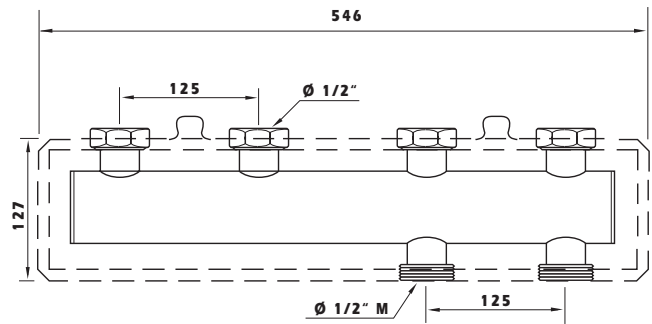
Outlets No.	2	3	4	5	6	7	8	9	10	11	12
L (mm)	125	175	225	275	325	375	425	475	525	575	625

CHAPTER F

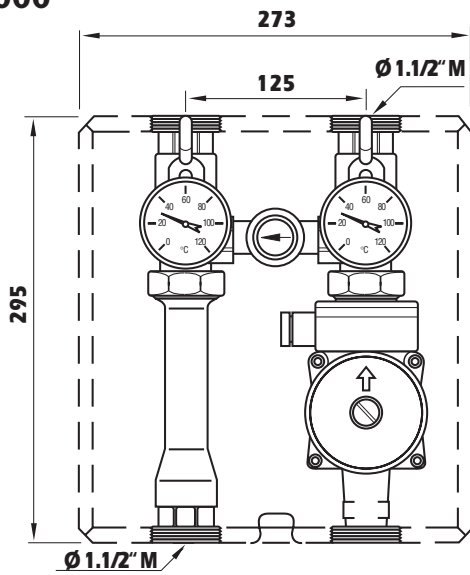
ISOTHERM



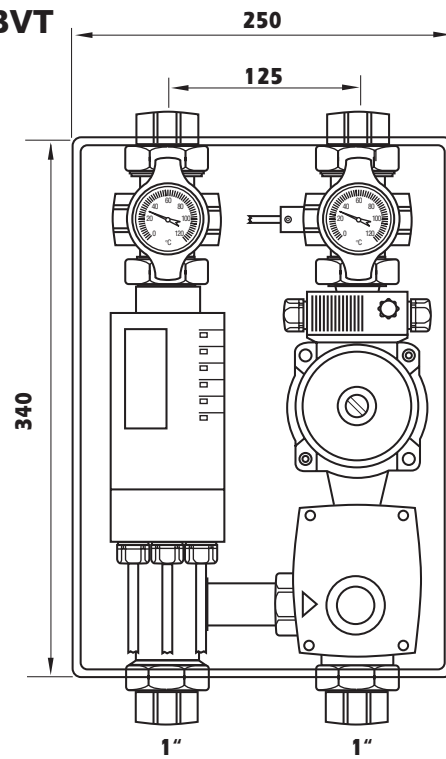
HM5000



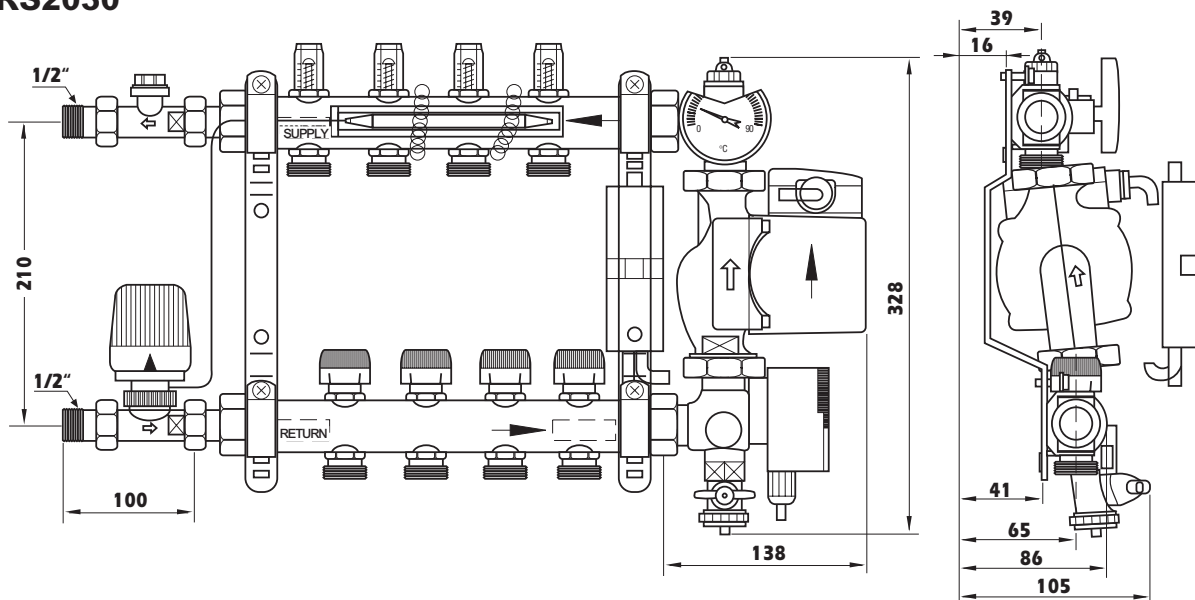
PM5000



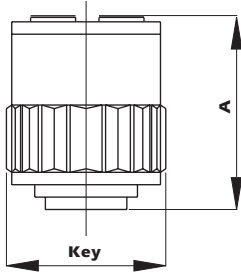
FBVT



FWRS2030

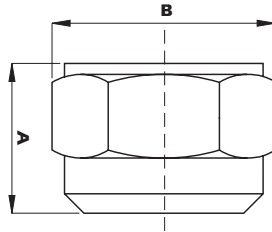


872M



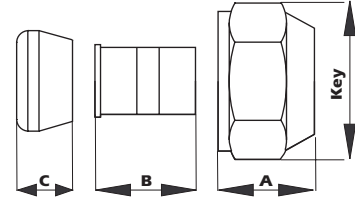
ND	A	Rafit key
3/8"	25	20
1/2"	27	25
1/2"S	29	27

873M



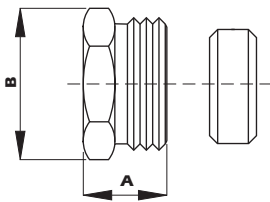
ND	A	B	Exagon Key
3/8" x 10	17.5	24	21
3/8" x 12	17	24	21
1/2" x 12	18.5	28	25
1/2" x 14	18.5	28	25
1/2" x 15	18.5	28	25
1/2" x 16	18	30	27
1/2"S x 18	17.5	30	27
3/4" x 18	18	30	--

820R



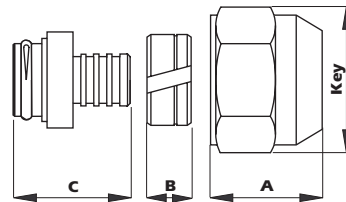
ND	A	B	C	Key
3/8"	17	24	9	20
1/2"	19	24	10	25
1/2"S	20	24	11	25
3/4"	20	24	11	32

197



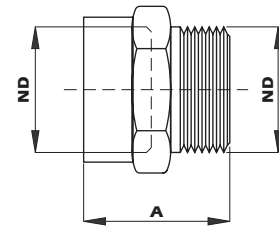
ND	A	B
3/8"	11	20
1/2"	14	24
3/4"	18	31

817M - 817MS



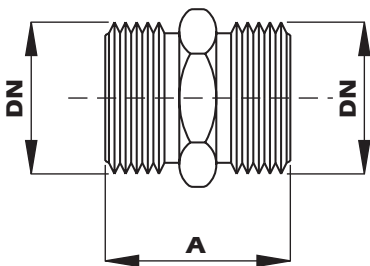
ND	A	B	C	Key
1/2"	23	8	21	20
1/2"S	26	8	22	25
3/4"	24	8	22	32

893GL



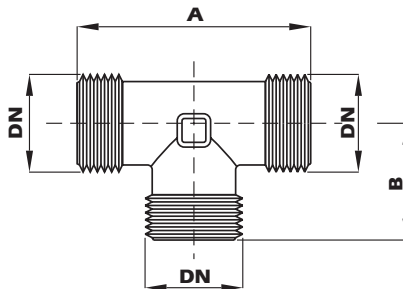
ND	A
1/4"	18
3/8"	20
1/2"	23
3/4"	32

892GL



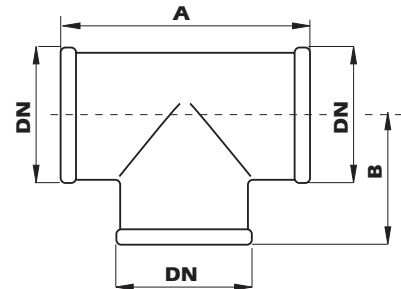
ND	A
1/4"	18
3/8"	22
1/2"	25
3/4"	28
1"	32

891GL



ND	A	B
3/8"	45	23
1/2"	51	27
3/4"	60	30

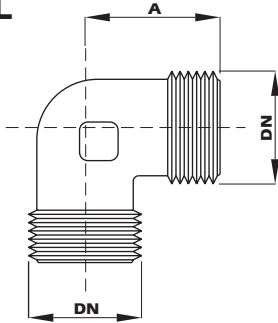
E891GL



ND	A	B
3/8"	52	25
1/2"	62	29
3/4"	70	32

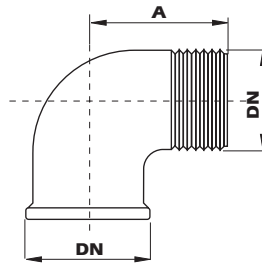
CHAPTER H

890GL



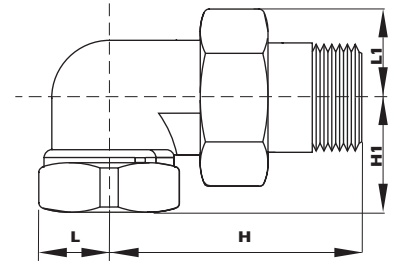
ND	A
3/8"	23
1/2"	26
3/4"	30

E890GL



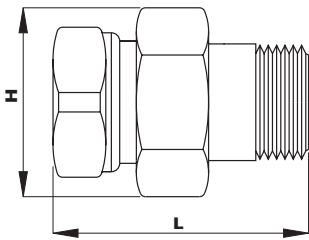
ND	A
1/2"	28
3/4"	31
1"	34

220



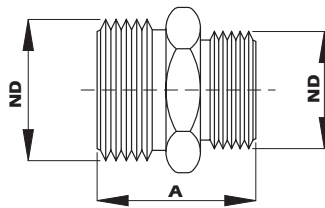
ND	H	H1	L	L1
3/8"MF	47	27	14	14
1/2"MF	53	34	16	18
3/4"MF	60	37	19	21
1"MF	77	46	23	27

221



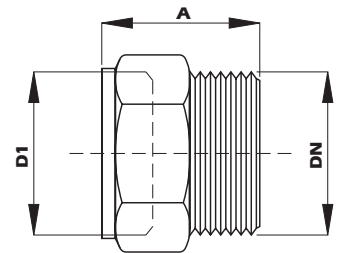
ND	H	L
3/8"MF	28	43
1/2"MF	35	51
3/4"MF	42	58
1"MF	54	62

833M



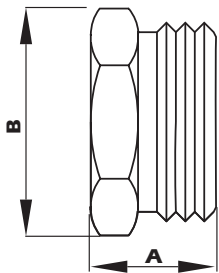
ND	A	ND	A
1/4" x 3/8"	20	1/2"S x 3/4"	30
3/8" x 1/2"	24	1/2" x 1"	34
3/8" x 3/4"	28	1/2"S x 1"	35
1/2"S x 1/2"	29	3/4" x 1"	35
1/2" x 3/4"	30		

821M



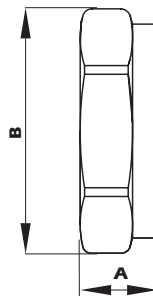
ND	D1	A	ND	D1	A
1/4"M	3/8"F	21	1/2"M	1"F	21
3/8"M	1/4"F	21	3/4"M	1"F	21
3/8"M	1/2"F	21	1"M	1/8"F	21
1/2"M	3/8"F	22	1"M	1/4"F	22
1/2"SM	1/2"F	24	1"M	3/8"F	24
1/2"M	3/4"F	25	1.1/4"M	1"F	25

841M



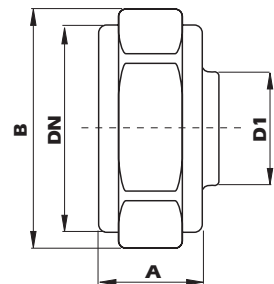
ND	A	B
3/8"	13	21
1/2"	15	27
3/4"	16	30
1"	22	37
1.1/4"	23	50

834M



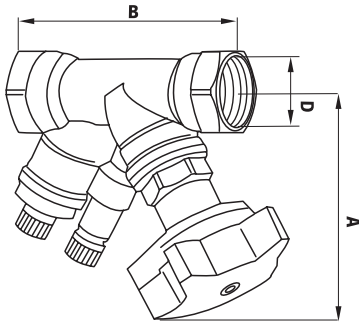
ND	A	B
3/8"	7	19
1/2"	9	25
3/4"	18	32
1"	18	38

842M



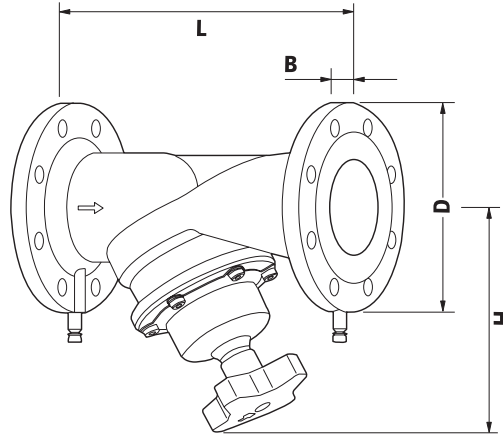
ND	D1	A	B
1"F	1/4"F	26	38
1"F	3/8"F	21	38

STAND



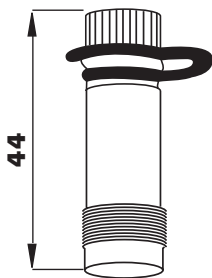
ND	A	B
10	100	83
15	100	90
20	100	97
25	105	110
32	110	124
40	120	130
50	120	155

STAF/STAF-SG

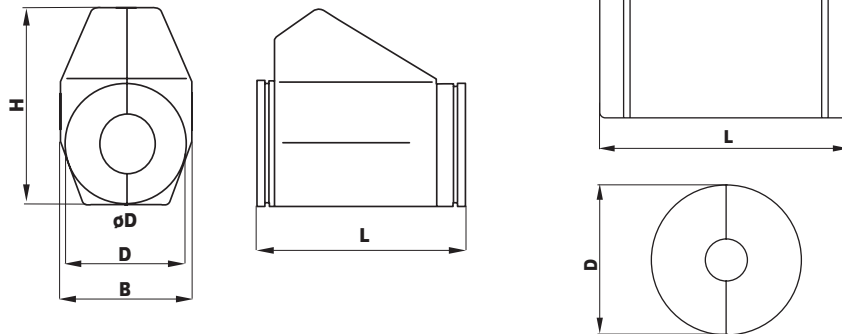


ND	L	H	D	B
20	150	100	105	16
25	160	109	115	16
32	180	111	140	18
40	200	122	150	19
50	230	122	165	19
65	290	205	185	19
80	310	220	200	19
100	350	240	235	19
125	400	275	270	19
150	480	285	300	19
200	600	430	360	21
250	730	420	425	23.5
300	850	480	485	24.6

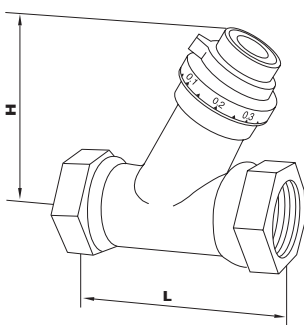
52179



52189



STK



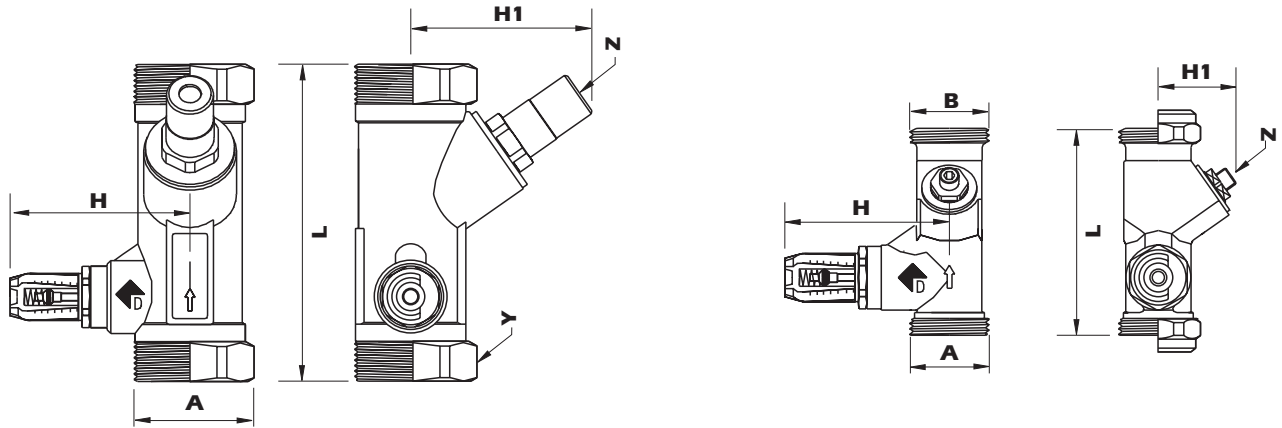
ND	L	H
15	63	55
20	80	69

ND	H	D	B	L
10	135	90	103	155
15	135	90	103	155
20	135	90	103	155
25	142	94	103	175
32	156	106	103	195
40	169	108	113	214
50	178	108	114	245

ND	L	D	C
50	390	250	252
65	450	270	272
80	480	290	292
100	520	320	322
125	570	350	352
150	660	380	382

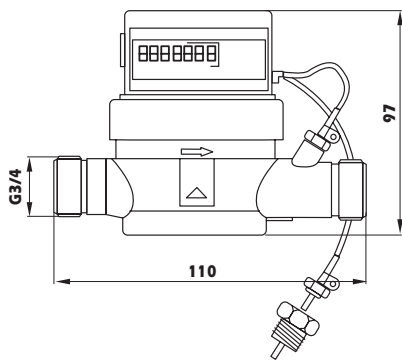
CHAPTER I

WATTFLOW

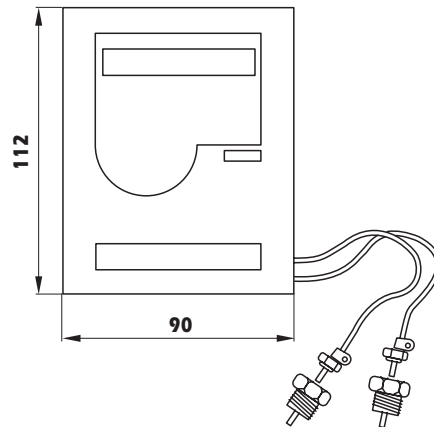


Part Number	ND	A	L	H	H1	Y	Z
3498355	25	1" F	120	73	69	SW43	SW6
3498360	32	1.1/4" F	135	77	77	SW49	SW6
3498365	40	1.1/2" F	153	80	78	SW61	SW6
3498370	50	2" F	176	85	87	SW70	SW6
3498305	15	1" M	86	68	37	---	SW4
3498310	20	1" M	86	68	37	---	SW4
3498345	25	1.1/4" M	120	73	69	---	SW6
3498350	32	1.1/2" M	135	77	77	---	SW6

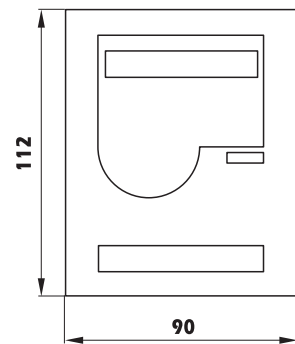
CA405



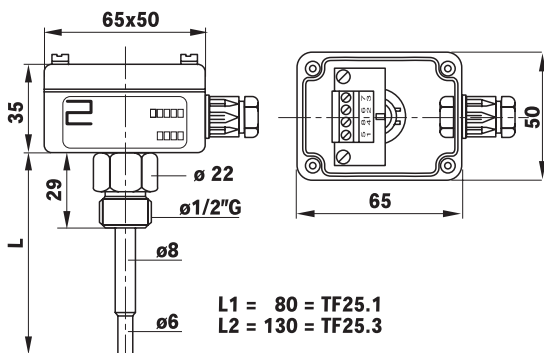
CA502M2/CA502M2-HC



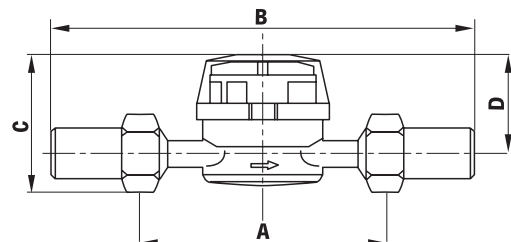
CA502M1
CA502M1-HC



TF25

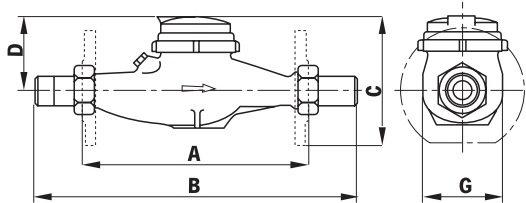


WMT



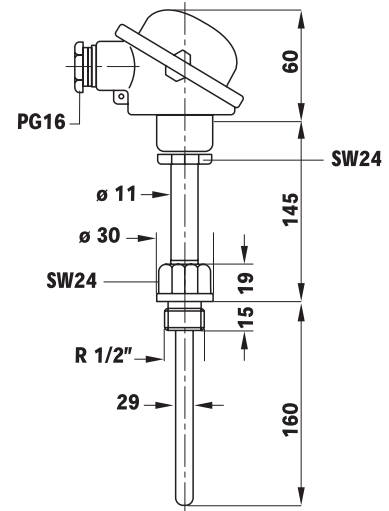
ND	A	B	C	D	Base
15	110	205	72	54	80
20	130	225	75	54	80

MTW/MTH

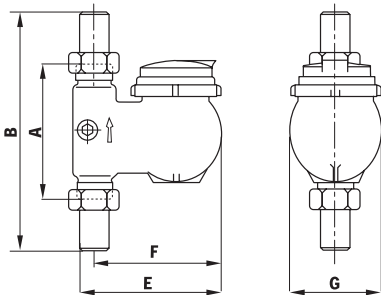


ND	A	B	C	D	G
15	165	260	105	70	88
20	190	285	111	71	88
25	260	375	114	74	97
32	260	375	118	76	101
40	300	440	141	87	136
50	300	460	156	99	151

WGB

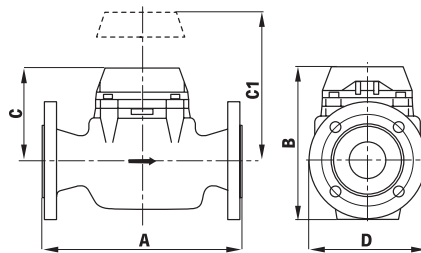


MTW-V/MTW-VA



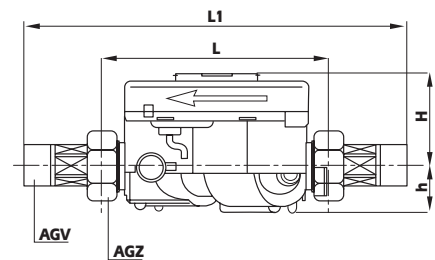
ND	A	B	E	F	G
15	105	200	150	129	86
20	105	200	150	129	86
25	150	265	172	139	102
32	150	265	175	146	103
40	260	400	210	172	133

WSH/WSHK



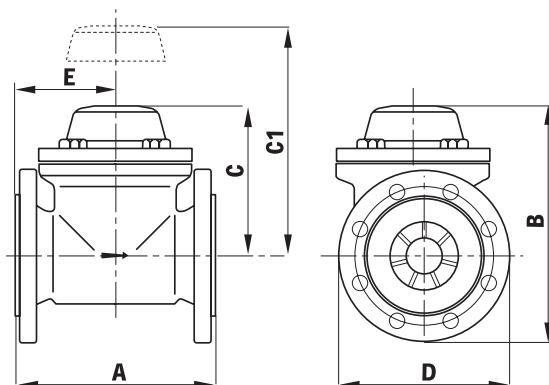
ND	A	B	C	C1	D
50	270	220	140	270	170
65	300	250	150	290	200
80	300	250	150	290	200
100	360	290	180	330	260
150	500	470	290	570	320

BR471



ND-m ³ h	L	L1	H	H1
15-0,6	110	190	47	23
15-1,5	110	190	47	23
20-2,5	130	228	47	23

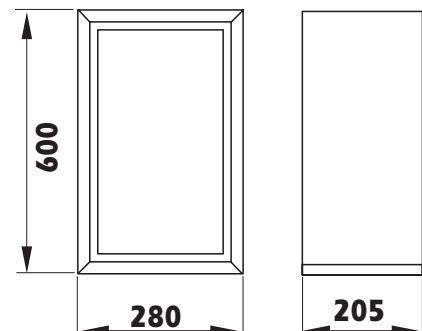
WPM



ND	A	B	C	C1	D
50	200	258	175	360	182
65	200	268	175	360	192
80	225	275	175	360	200
100	250	285	175	360	220
125	250	300	175	360	250
150	300	368	225	470	285

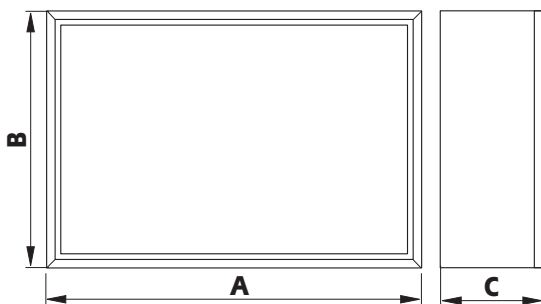
ND	A	B	C	C1	D
200	350	395	225	470	340
250	450	515	313	680	405
300	500	540	313	680	460
400	500	660	370	770	580
500	500	765	408	860	715

DCA-CAS3



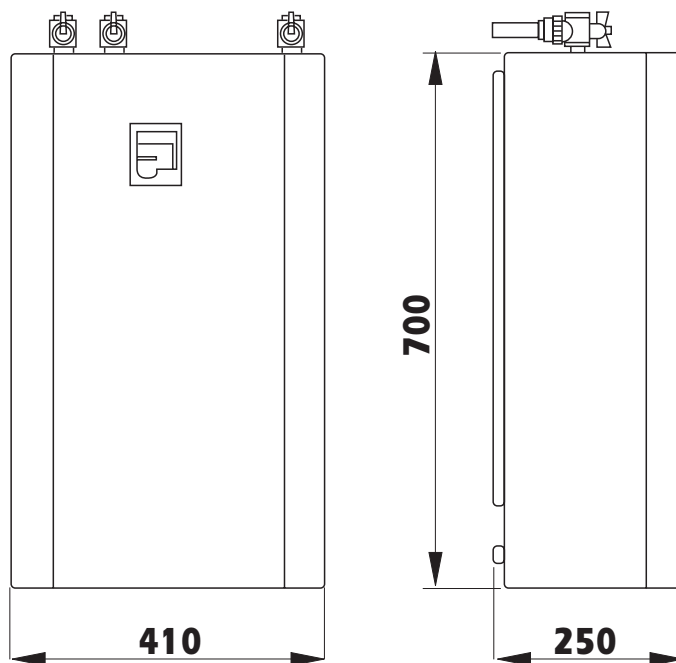
CHAPTER I

CST

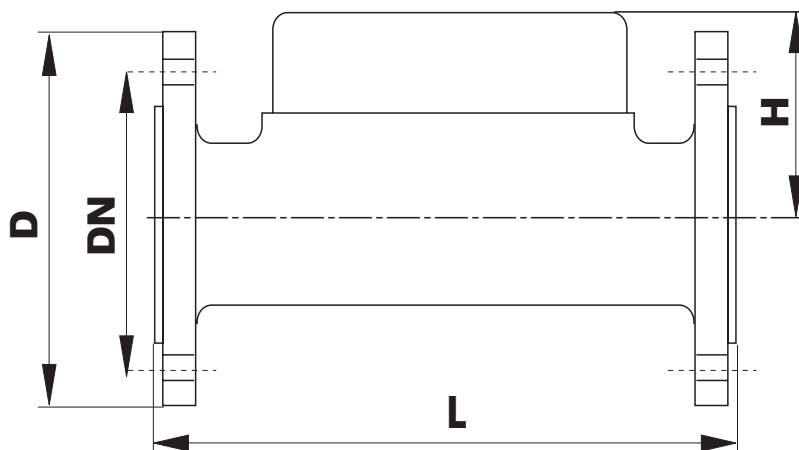


Part No.	A	B	C
CST-CB1	600	600	100
CST-CB2	600	650	100
CST-CB3	600	750	100
CST-CRB4	750	400	100
CST-CRB6	850	400	100
CST-CRB8	950	400	100
CST-CP4	650	450	150
CST-CP6	760	450	150
CST-CP8	870	450	150
CST-CP10	980	450	150
CST-CP12	1000	450	150

DCA-1



VD100

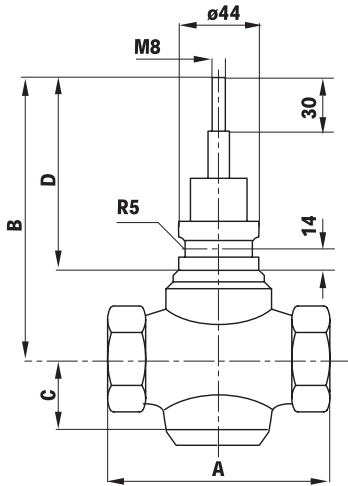


ND	L	D	H
25/I	260	115	110
25/II	260	115	110
32	260	140	115
40/I	300	150	120
40/II	300	150	120
40/III	300	150	120
50/I	270	165	125
50/II	270	165	125
65	300	185	135
80/I	300	200	140
80/II	300	200	140
80/III	300	200	140

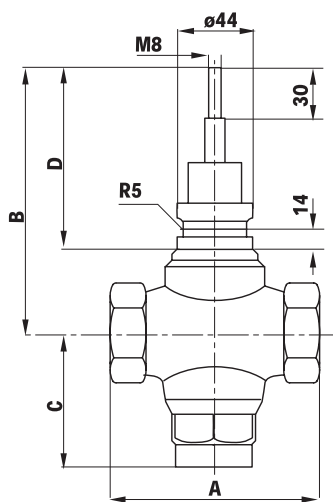
ND	L	D	H
100/I	360	220	180
100/II	360	220	180
100/III	360	220	180
125	300	250	215
150/I	500	285	235
150/II	500	285	235
150/III	500	285	235
200/I	350	340	260
200/II	350	340	260
200/III	350	340	260
250/I	450	405	285
250/II	450	405	285

ND	L	D	H
250/III	450	405	285
300/I	500	460	310
300/II	500	460	310
300/III	500	460	310
350/I	600	520	470
350/II	600	520	470
350/III	600	520	470
400/I	800	580	360
400/II	800	580	360
400/III	800	580	360

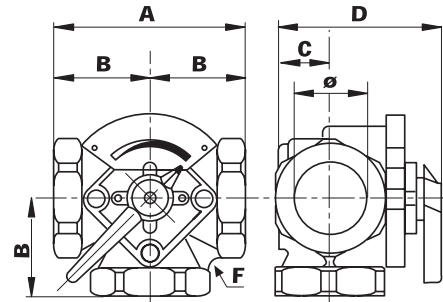
V2BM



V3BM



V3GS

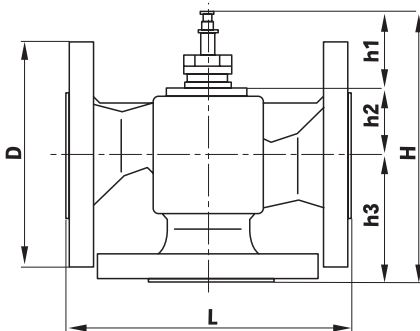


Part. No.	A	B	C	D
V2BM15	85	153	30	112
V2BM20	85	153	30	112
V2BM25	105	151	35	105
V2BM32	120	153	38	104
V2BM40	145	167	45	111
V2BM50	165	167	54	103

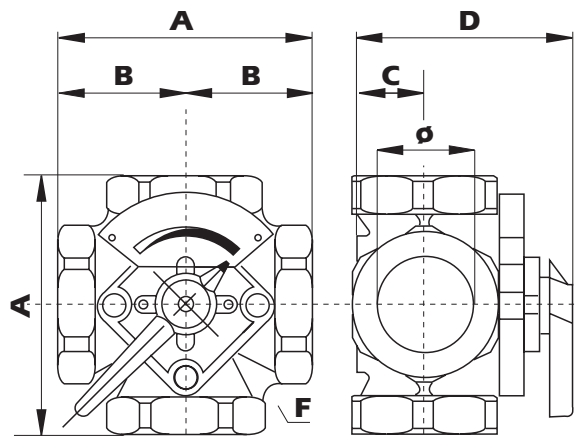
Part. No.	A	B	C	D
V3BM15	85	153	69	112
V3BM20	85	153	69	112
V3BM25	105	151	71	105
V3BM32	120	153	75	104
V3BM40	145	167	79	111
V3BM50	165	167	90	103

ND	Ø	A	B	C	D	F
		mm	mm	mm	mm	mm
20	G3/4"	130	65	40	128	45
25	G1"	130	65	40	128	50
32	G1/4"	140	70	40	128	60
40	G1/2"	156	78	40	128	70
50	G2"	150	75	40	128	85
65	G2.1/2"	200	100	56	158	105

V3GNF



V4GF

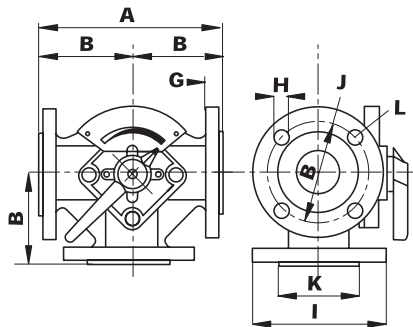


ND	L	H	D	h1	h2	h3
15	130	154	95	49	40	65
20	150	159	105	49	40	70
25	160	164	115	49	40	75
32	180	169	140	49	40	80
40	200	189	150	49	50	90
50	230	199	165	49	50	100
65	290	219	185	49	50	120
80	310	322	200	90	77	155
100	350	342	220	90	77	175

ND	Ø	A	B	C	D	F
		mm	mm	mm	mm	mm
20	G3/4"	130	65	40	128	45
25	G1"	130	65	40	128	50
32	G1/4"	140	70	40	128	60
40	G1/2"	156	78	40	128	70
50	G2"	150	75	40	128	85
65	G2.1/2"	200	100	56	158	105

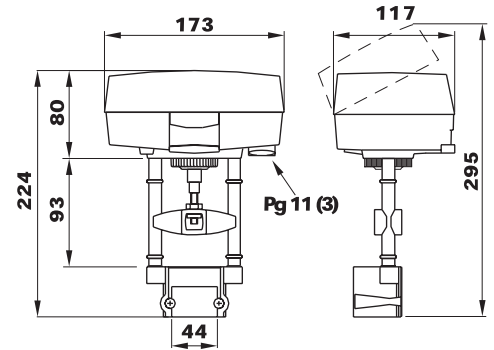
CHAPTER I

V3FS

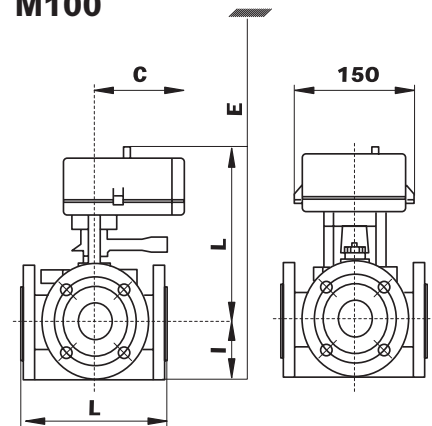


ND	Ø UNI228	A mm	B mm	G mm	H mm	I mm	J mm	K mm	L N° x mm
32	32	170	85	15	11	120	90	70	4x11
40	40	170	90	16	14	130	100	80	4x14
50	50	180	90	16	14	140	110	90	4x14
65	65	200	100	16	14	160	130	110	4x14
80	80	230	115	19	18	190	150	128	4x18
100	100	260	130	20	18	210	170	148	4x18
125	125	290	145	20	18	240	200	178	4x18

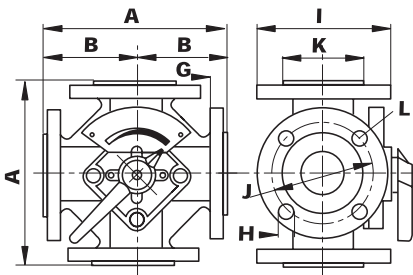
M400-M800



M100



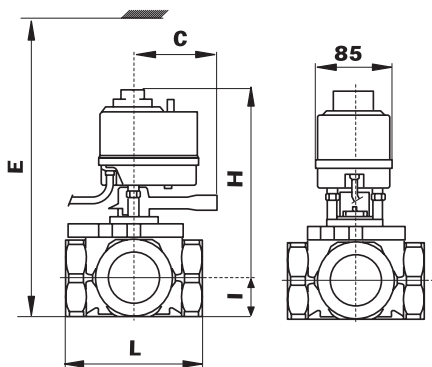
V4FF



ND	Ø UNI228	A mm	B mm	G mm	H mm	I mm	J mm	K mm	L N° x mm
32	32	170	85	15	11	120	90	70	4x11
40	40	170	90	16	14	130	100	80	4x14
50	50	180	90	16	14	140	110	90	4x14
65	65	200	100	16	14	160	130	110	4x14
80	80	230	115	19	18	190	150	128	4x18
100	100	260	130	20	18	210	170	148	4x18
125	125	290	145	20	18	240	200	178	4x18

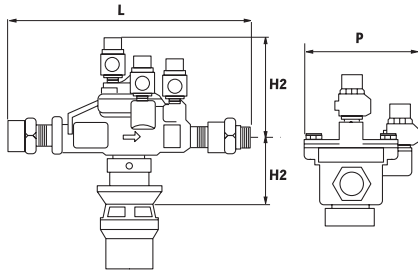
DN	V3FS - V4FF			
	65	80	100	125
L	200	230	260	250
H	220	220	225	225
I	80	95	105	120
C	92	92	92	92
E	400	415	430	445

M20



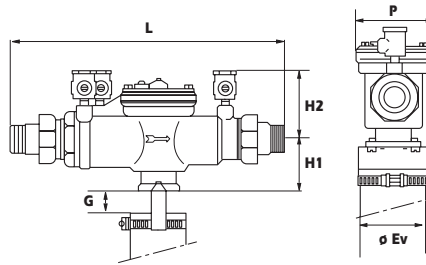
DN	V3GS - V4GF					V3FS - V4FF		
	20	25	32	40	50	32	40	50
L	130	130	140	156	150	170	180	180
H			210				210	
I	40	40	40	40	40	60	65	70
C			92				92	
E			350			370	375	380

DIW009



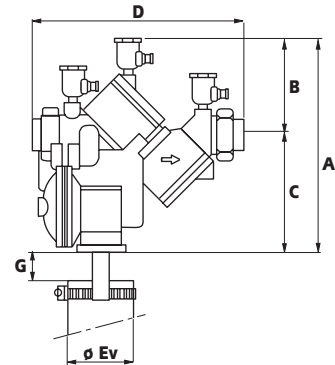
ND	L	H1	H2	P
1/2"	210	97	30	87

DIW009



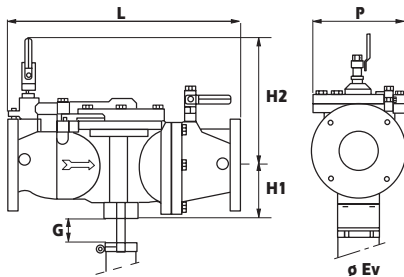
ND	L	H1	H2	P	G	øEv
3/4"	310	62	76	88	25	63-75
1"	310	62	76	88	25	63-75
1.1/4"	410	85	110	150	37	90-110
1.1/2"	410	85	110	150	37	91-110
2"	430	85	110	150	37	91-110

DIW909



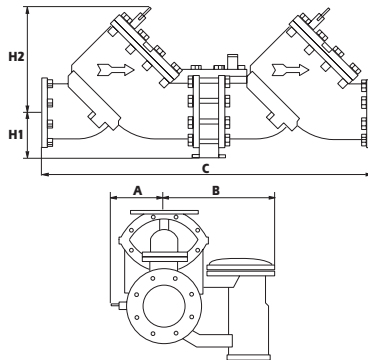
ND	L	H1	H2	P	G	øEv
3/4"	221	102	119	270	25	63-75
1"	221	102	119	270	25	63-75
1.1/4"	295	127	168	320	37	90-110
1.1/2"	295	127	168	320	37	90-110
2"	295	127	168	320	37	90-110

DIW009F



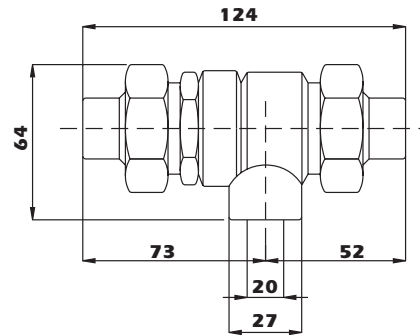
ND	L	H1	H2	P	G	øEv
65	460	151	270	202	37	90-100
80	460	151	270	202	37	90-100

DIW909F

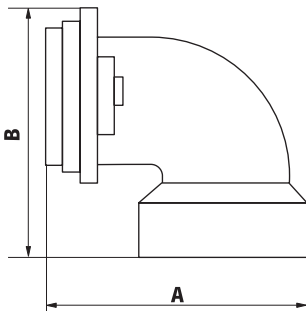


ND	A	B	C	H1	H2
65	102	229	664	133	178
80	127	229	664	133	178
100	152	346	940	152	241
150	241	346	1130	152	368
200	267	470	1403	248	470
250	298	470	1715	248	546

DNW

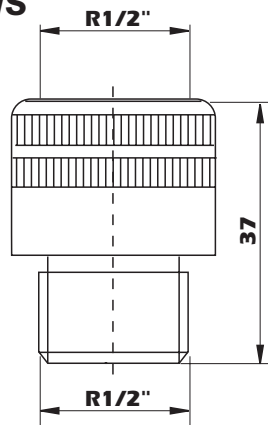


ICW

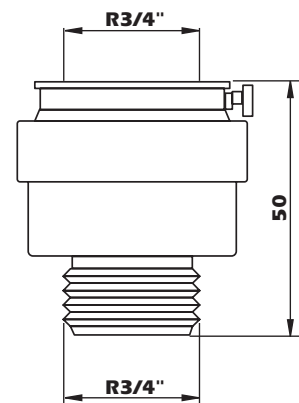


ND	A	B
3/4" - 1"	60	60
1.1/4" - 1.1/2" - 2"	102	102

DAWS

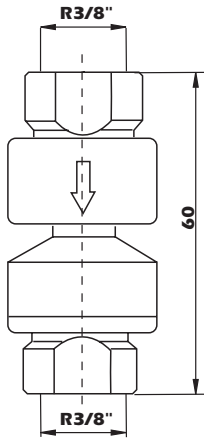


DAWNF

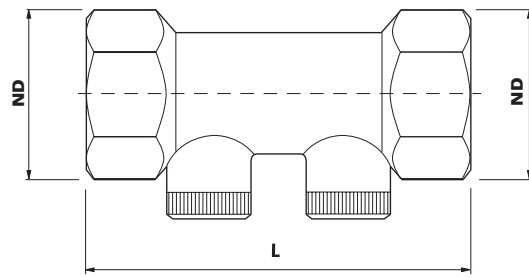


CHAPTER L

DAWN

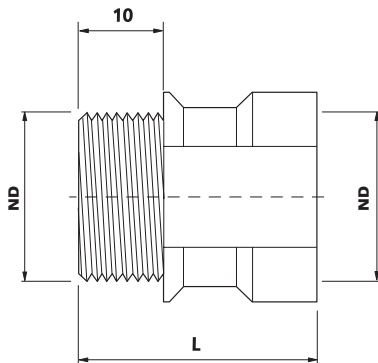


VRBB



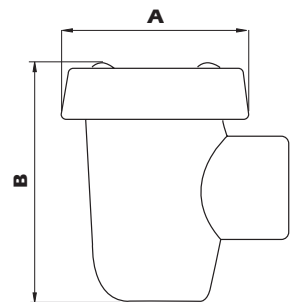
DN	L
1/2"	66
3/4"	76
1"	91
1.1/4"	111
1.1/2"	121
2"	152

VRNN



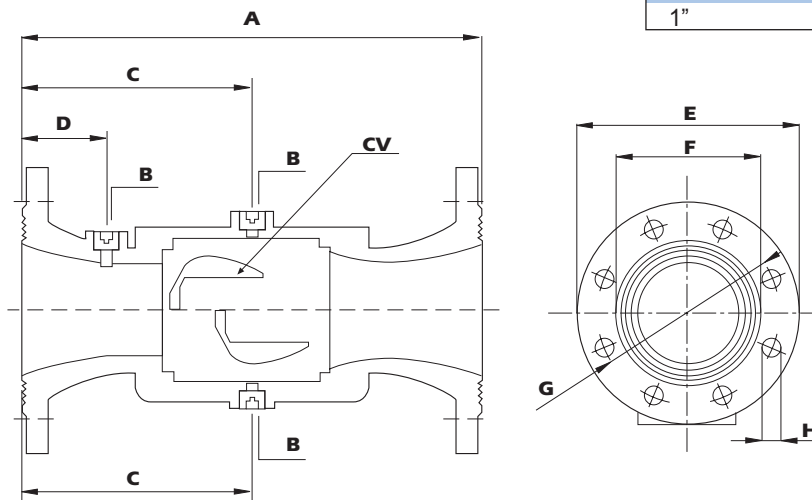
DN	L
1/2"	66
3/4"	76

VAS228AC



ND	A	B
1/4"	47	62
3/8"	47	62
1/2"	47	62
3/4"	52	79
1"	74	107

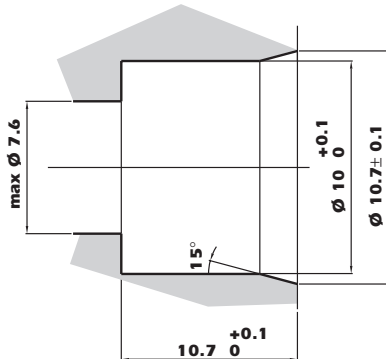
FC



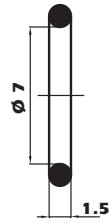
DN	CV	A	B	C	D	E	F	G	H
60	CS100	290	G1/2	145	37,5	185	118	135	4x9
65	CS100	290	G1/2	145	37,5	185	118	145	4x9
80	CS100	310	G1/2	155	44	200	132	160	8x19
100	CS100	350	G1/2	175	64	220	156	180	8x19
125	CS150	400	G1/2	200	47	250	184	210	8x19
150	CS150	480	G1/2	240	87	258	211	240	8x19
200	CS200	600	G1/2	300	71	340	266	295	12x23
250	CS250	730	G1/2	365	102	405	319	355	12x28

CO 010 ND8

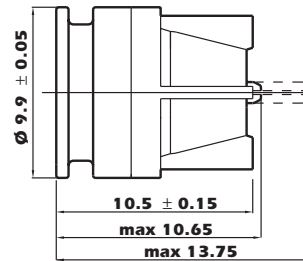
Mounting dimensions



O-ring

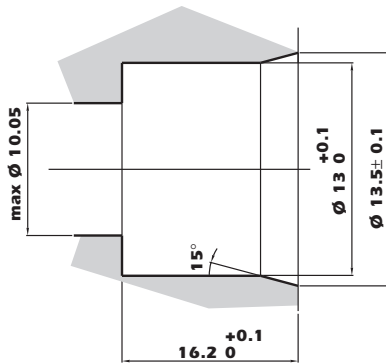


Product dimensions

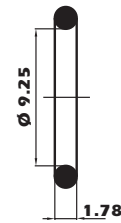


CO 013 ND10

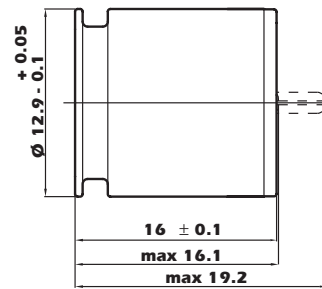
Mounting dimensions



O-ring

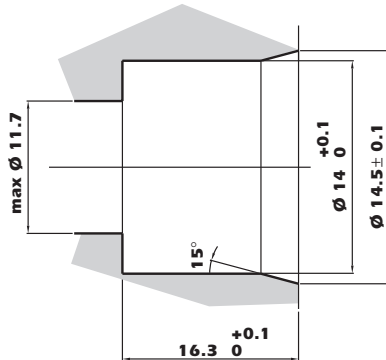


Product dimensions

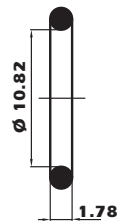


CO 014 ND10

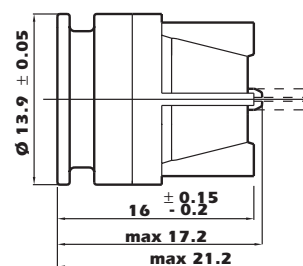
Mounting dimensions



O-ring

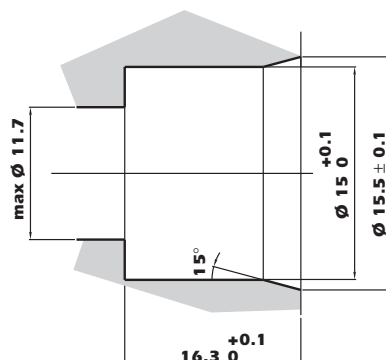


Product dimensions

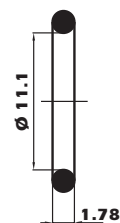


CO 015 ND10

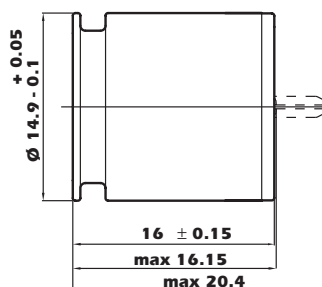
Mounting dimensions



O-ring



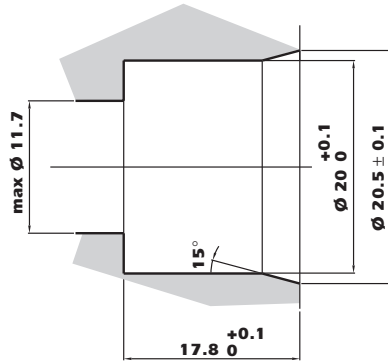
Product dimensions



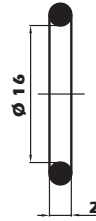
CHAPTER L

CO 020 ND15

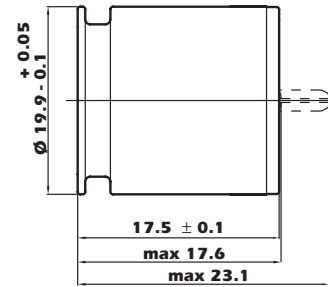
Mounting dimensions



O-ring

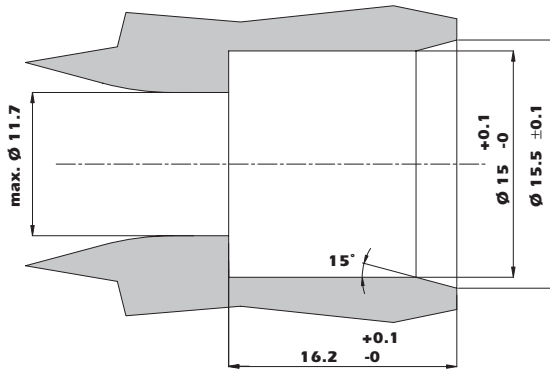


Product dimensions

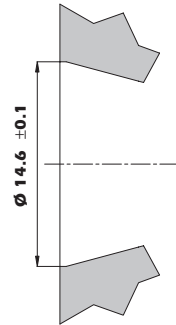


CS 015 ND10

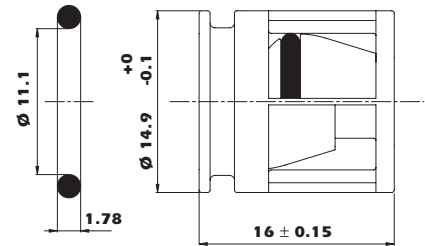
Mounting dimensions



O-ring

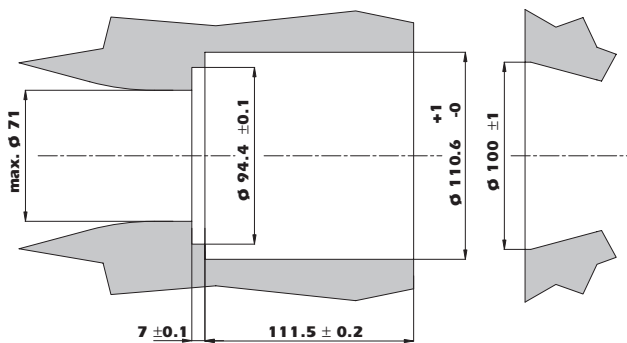


Product dimensions

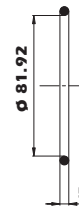


CS 100 ND100

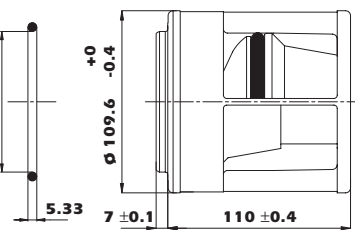
Mounting dimensions



O-ring

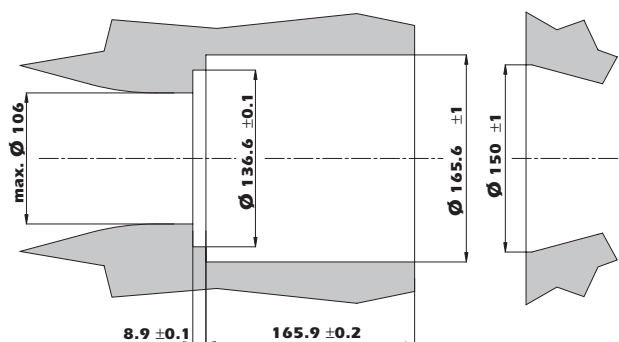


Product dimensions

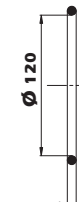


CS 150 ND150

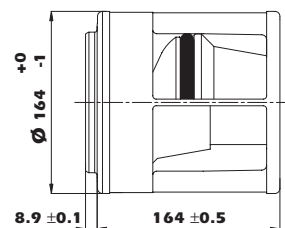
Mounting dimensions



O-ring

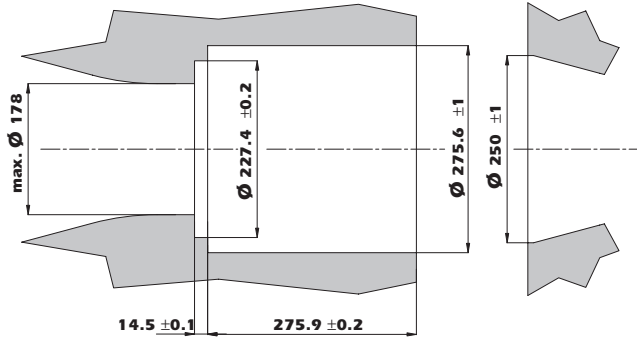


Product dimensions



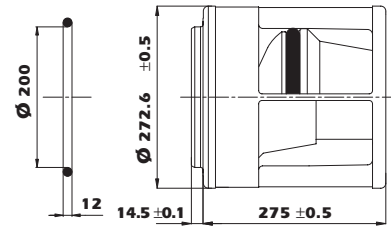
CS 250 ND250

Mounting dimensions



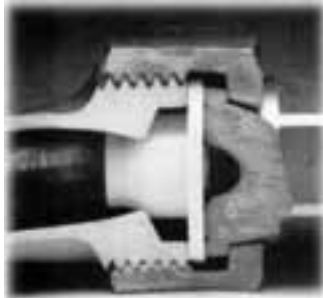
O-ring

Product dimensions

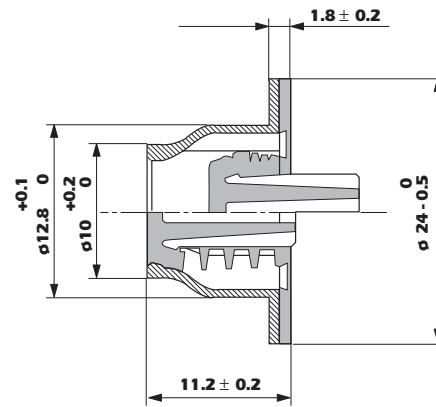


FK15

Mounting example

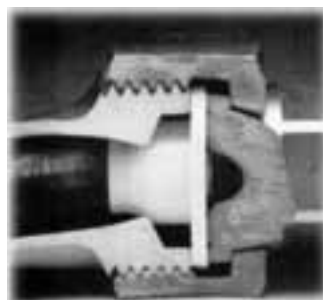


Product dimensions

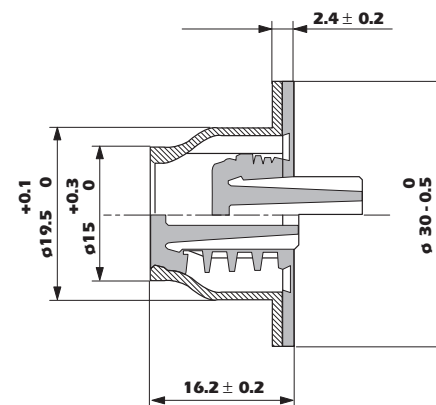


FK20

Mounting example

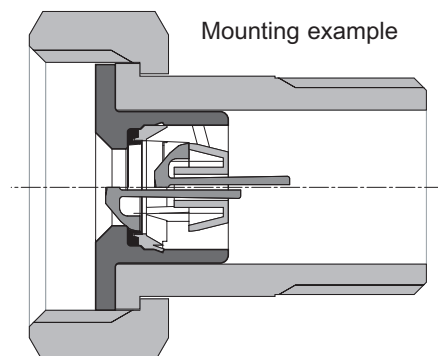


Product dimensions

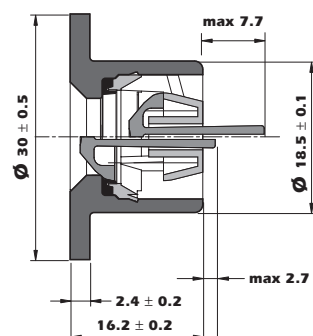


FI 010 ND8

Mounting example

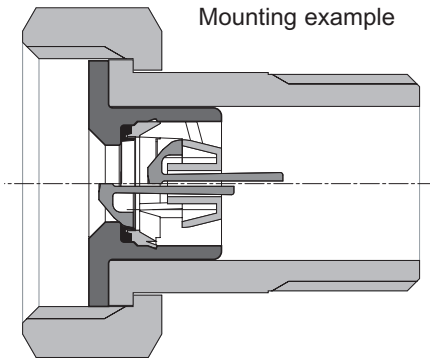


Product dimensions

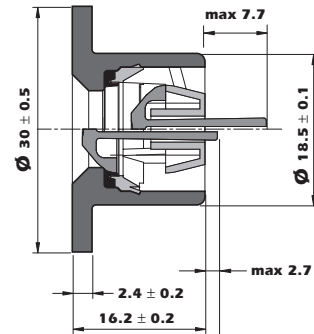


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FI 015 ND15

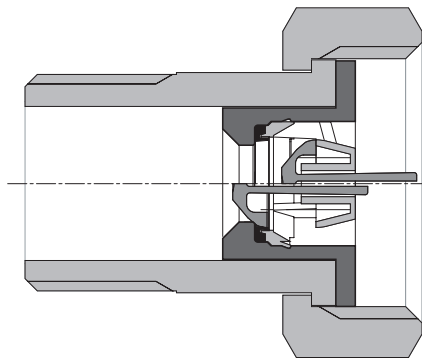


Product dimensions

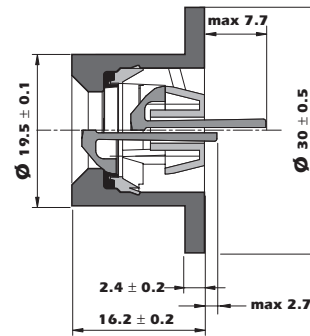


FO 015 ND15

Mounting example

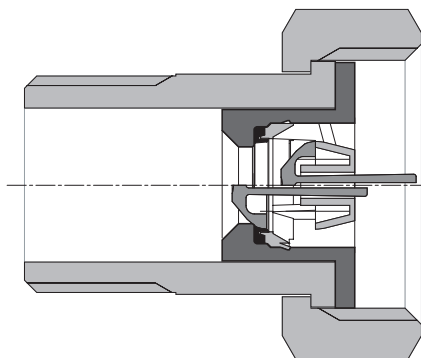


Product dimensions

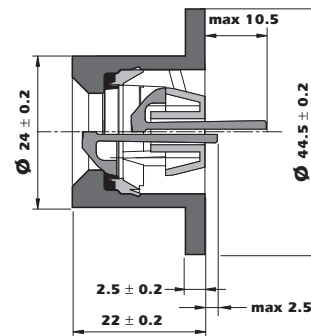


FO 020 ND20

Mounting example

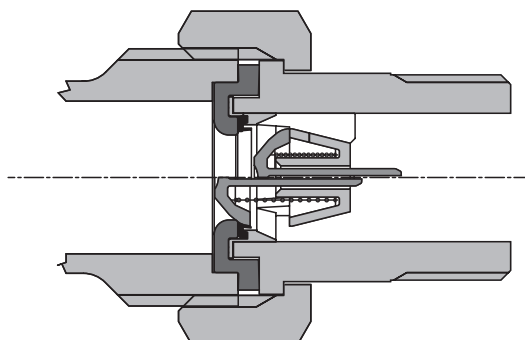


Product dimensions

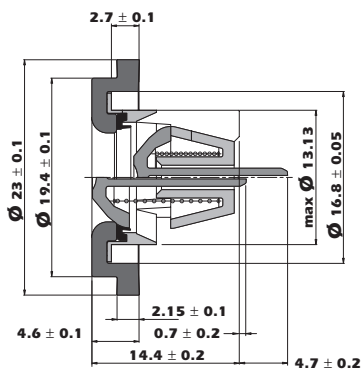


FW 010 ND10

Mounting example

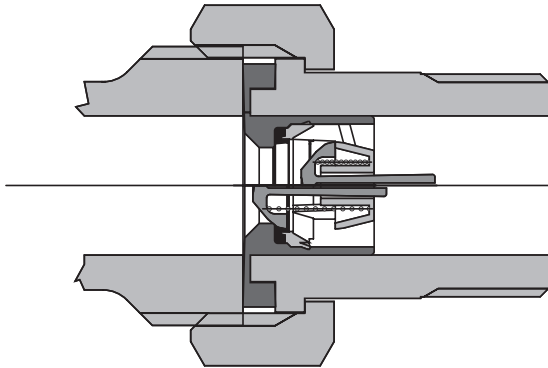


Product dimensions

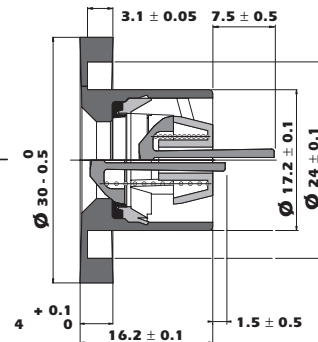


FW 015 ND15

Mounting example

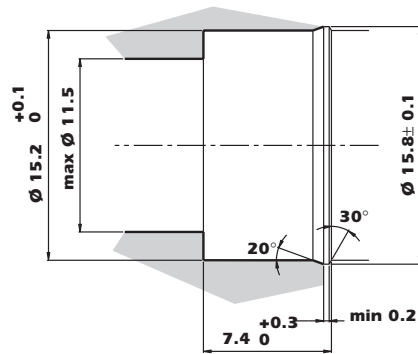


Product dimensions

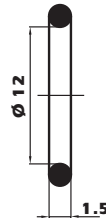


IN 015 ND15

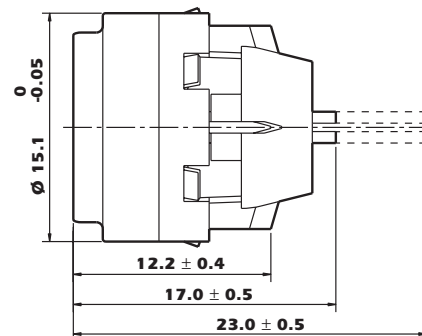
Mounting dimensions



O-ring

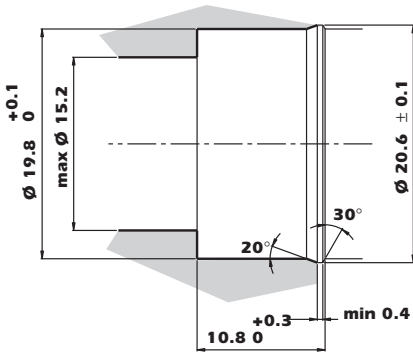


Product dimensions

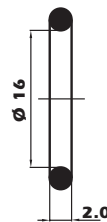


IN 020 ND20

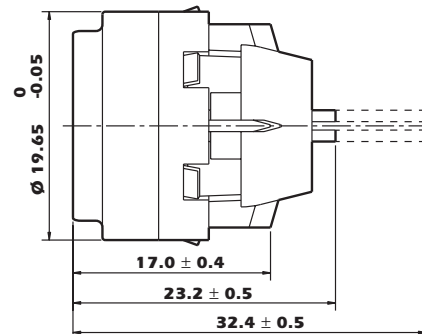
Mounting dimensions



O-ring

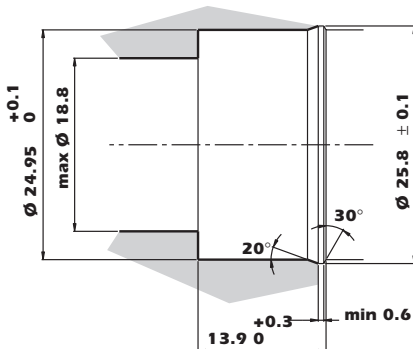


Product dimensions

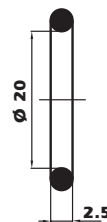


IN 025 ND25

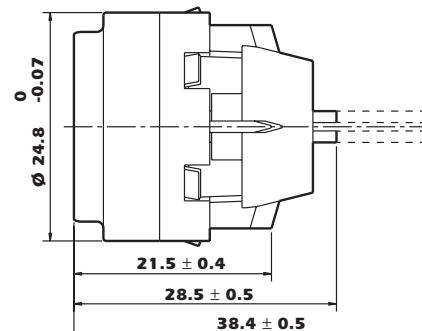
Mounting dimensions



O-ring

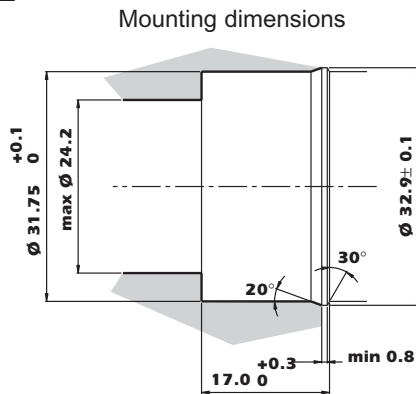


Product dimensions

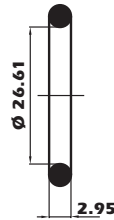


CHAPTER L

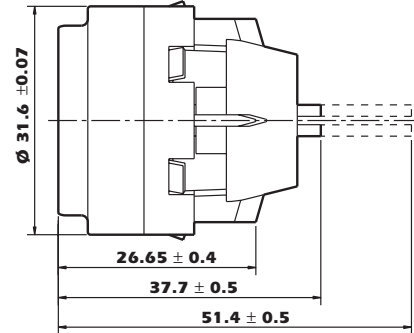
IN 032 ND32



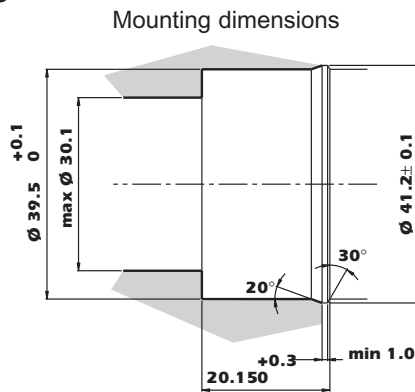
O-ring



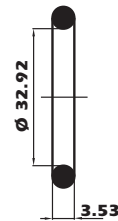
Product dimensions



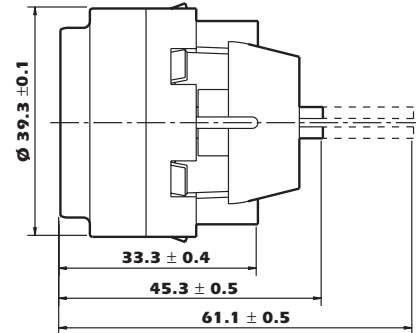
IN 040 ND40



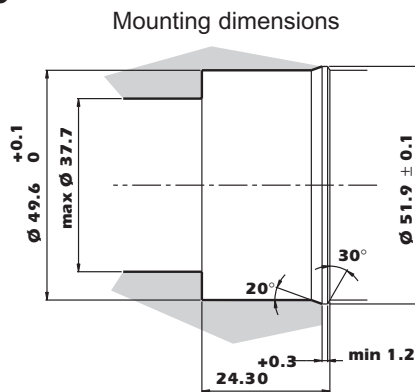
O-ring



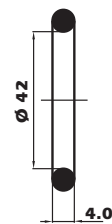
Product dimensions



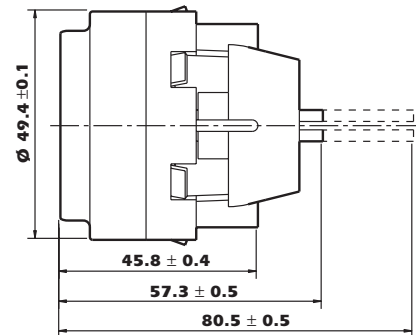
IN 050 ND50



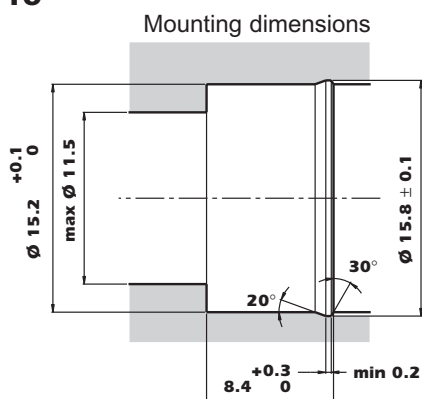
O-ring



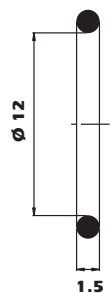
Product dimensions



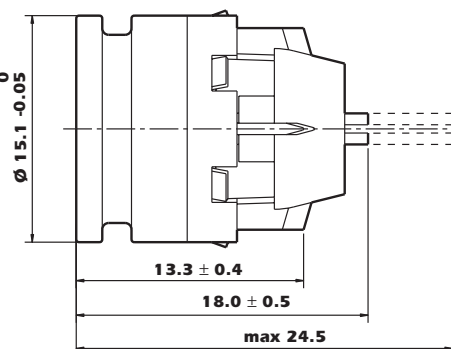
IO 015 ND15



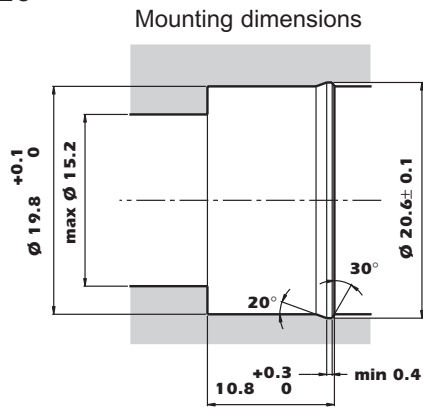
O-ring



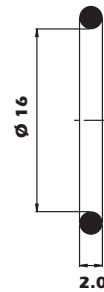
Product dimensions



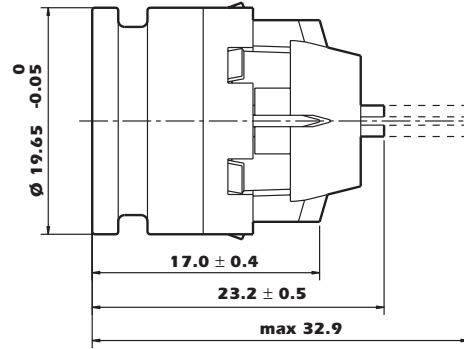
IO 020 ND20



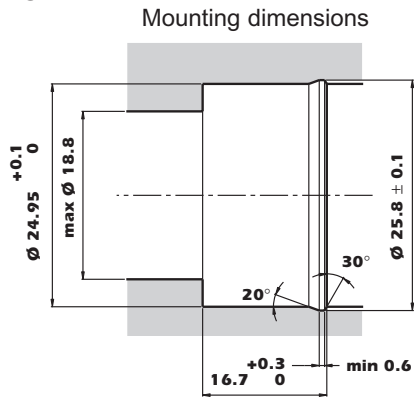
O-ring



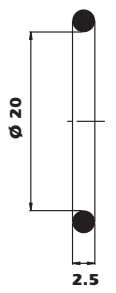
Product dimensions



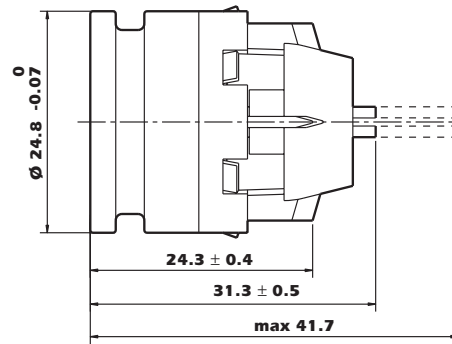
IO 025 ND25



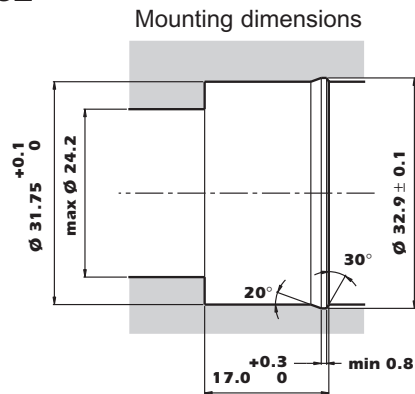
O-ring



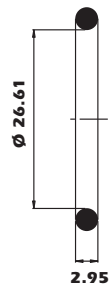
Product dimensions



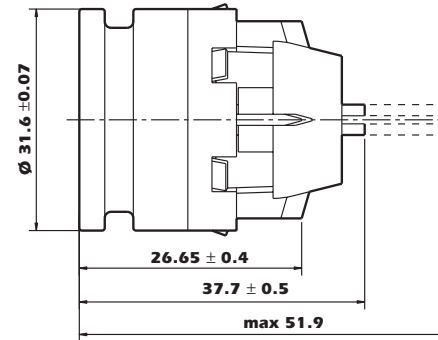
IO 032 ND32



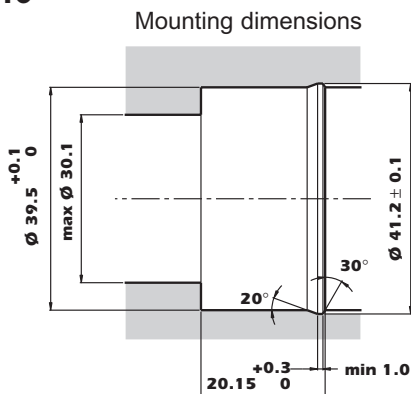
O-ring



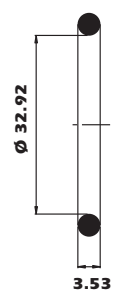
Product dimensions



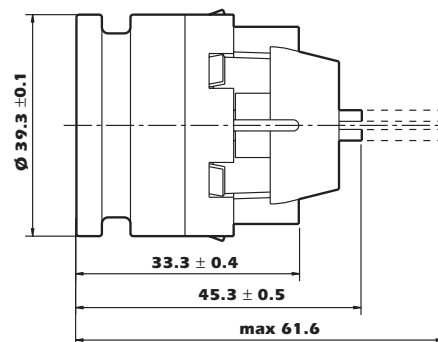
IO 040 ND40



O-ring

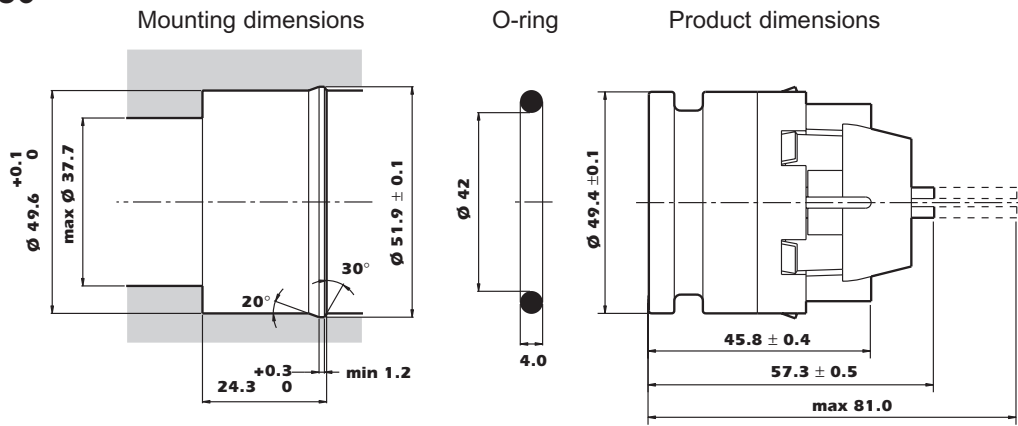


Product dimensions

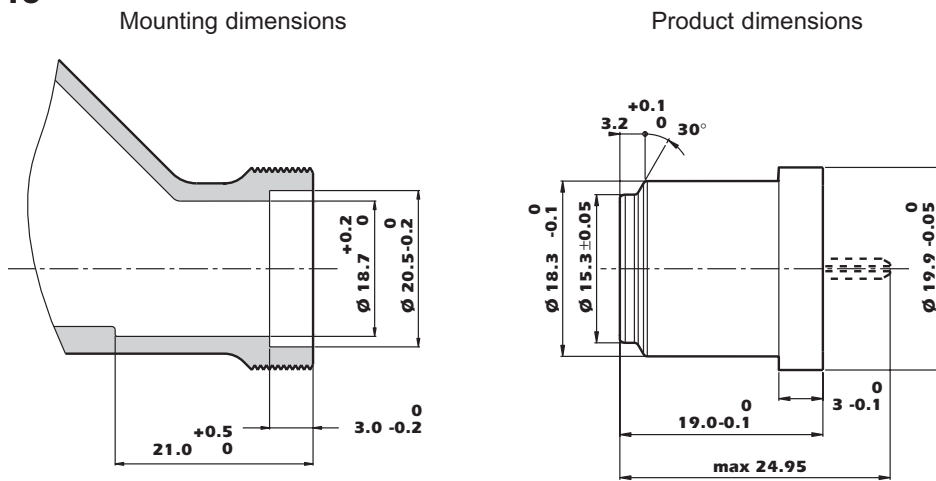


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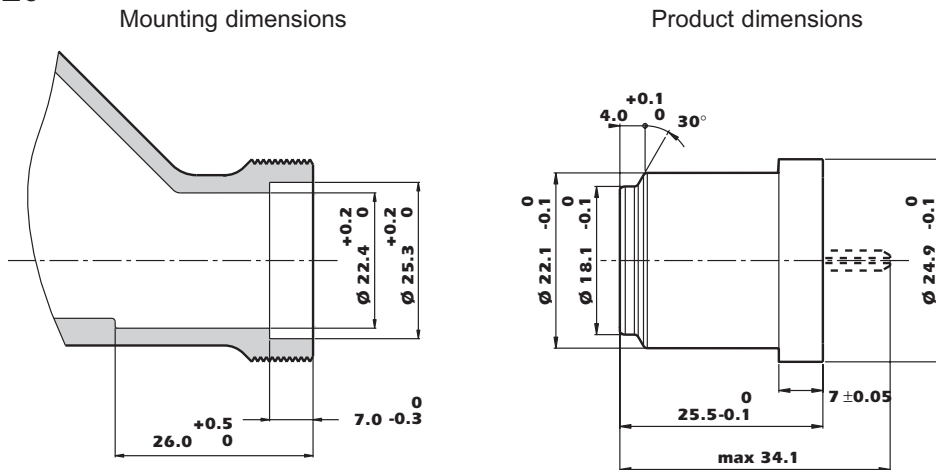
IO 050 ND50



WM 015 ND15

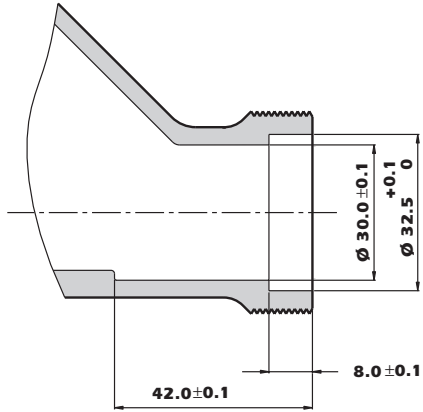


WM 020 ND20

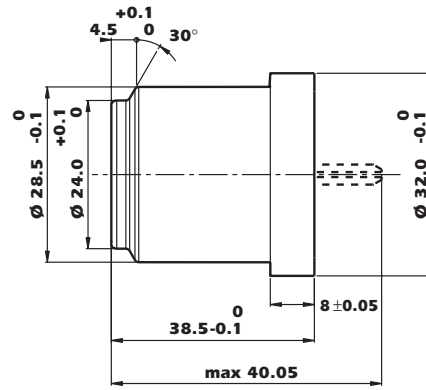


WM 025 ND25

Mounting dimensions

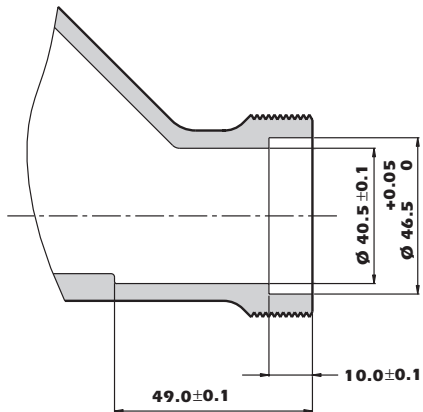


Product dimensions

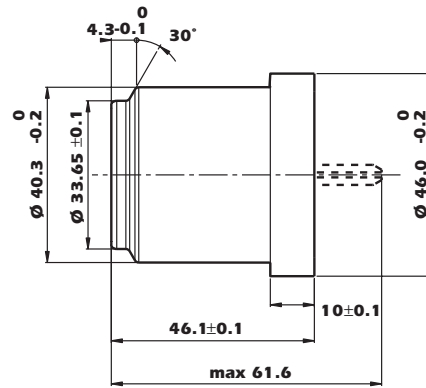


WM 040 ND40

Mounting dimensions

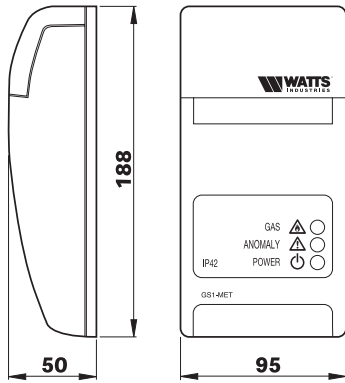


Product dimensions

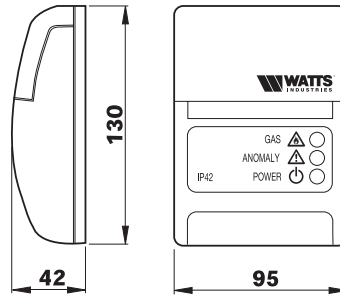


CHAPTER M

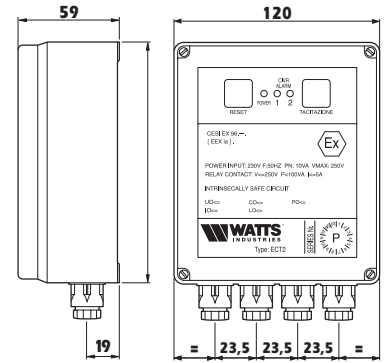
GS1 - GS3 - GSA3



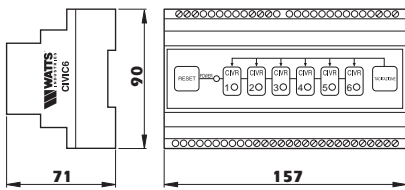
UR - URA



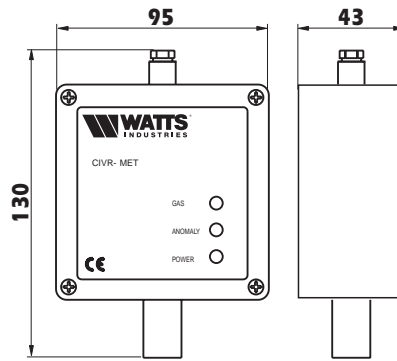
CIVIC2



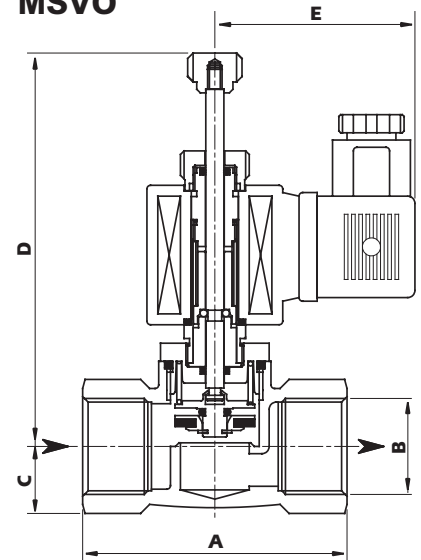
CIVIC6



CIVR

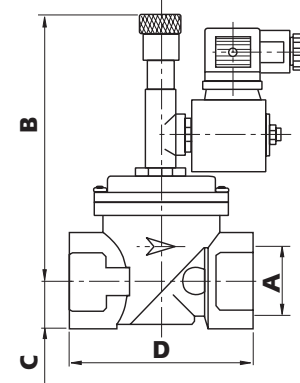
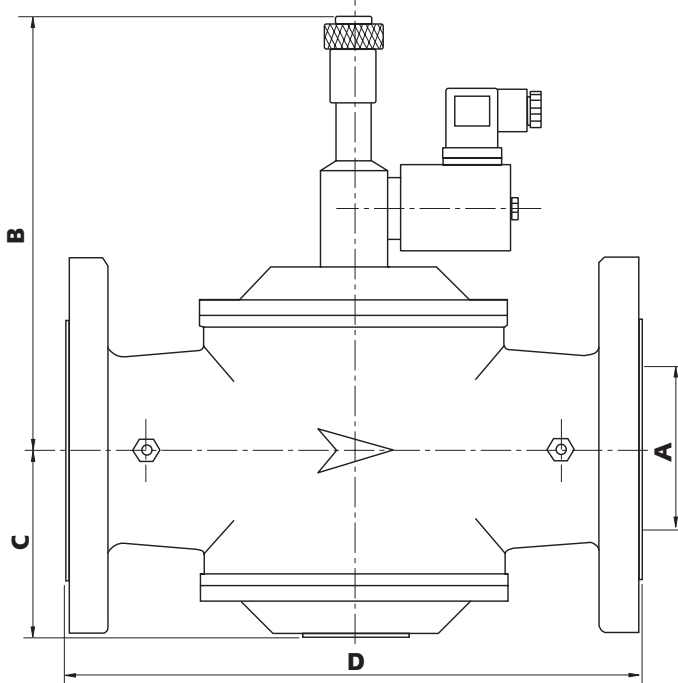


MSVO



ND	A	B	C	D	E
15	64	1/2"	15	112	63
20	73	3/4"	17	112	63

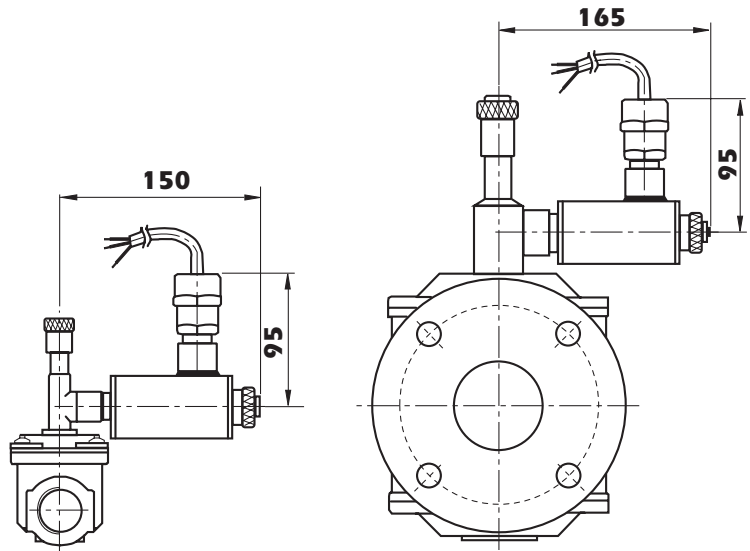
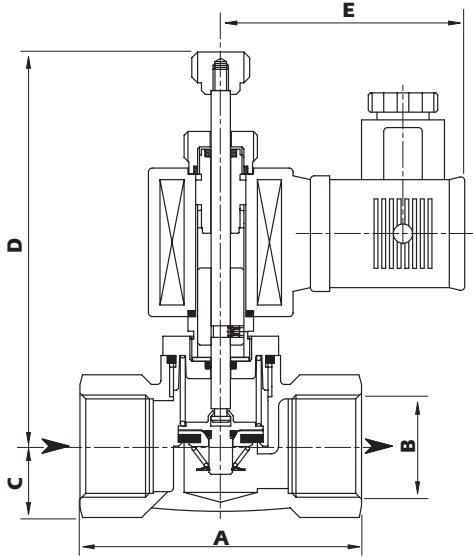
MSVG



Type	MSVG 12	MSVG 34	MSVG 100	MSVG 114	MSVG 112	MSVG 200	MSVG 212	MSVG 300	MSVG 400	MSVG 500	MSVG 600
A	1/2"	3/4"	1"	1.1/4"	1.1/2"	2"	ND65	ND80	ND100	ND125	ND150
B	120	140	140	170	170	170	230	230	230	390	390
C	15	25	25	31	31	39	100	100	115	170	170
D	76	96	96	154	154	173	300	300	360	480	480

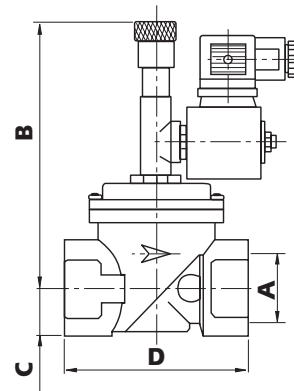
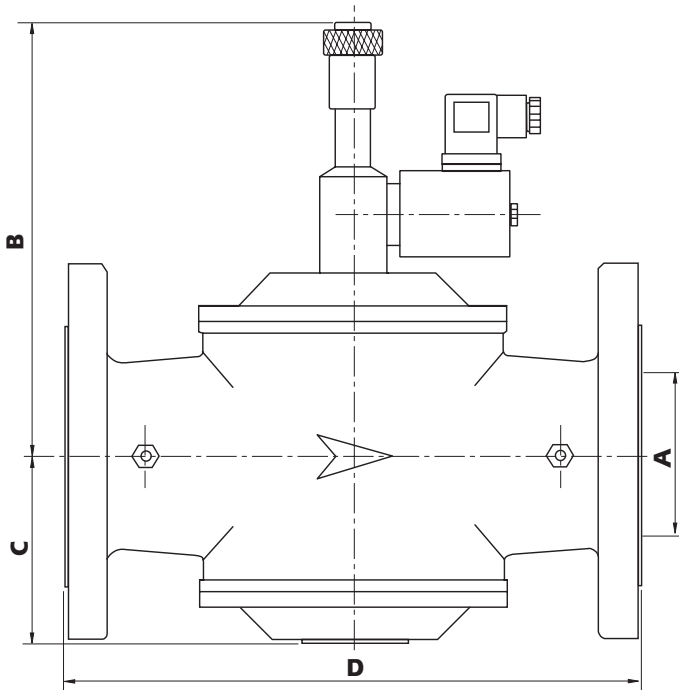
EVO

MSVEEXD/EVEEXD



ND	A	B	C	D	E
15	64	1/2"	15	112	63
20	73	3/4"	17	112	63

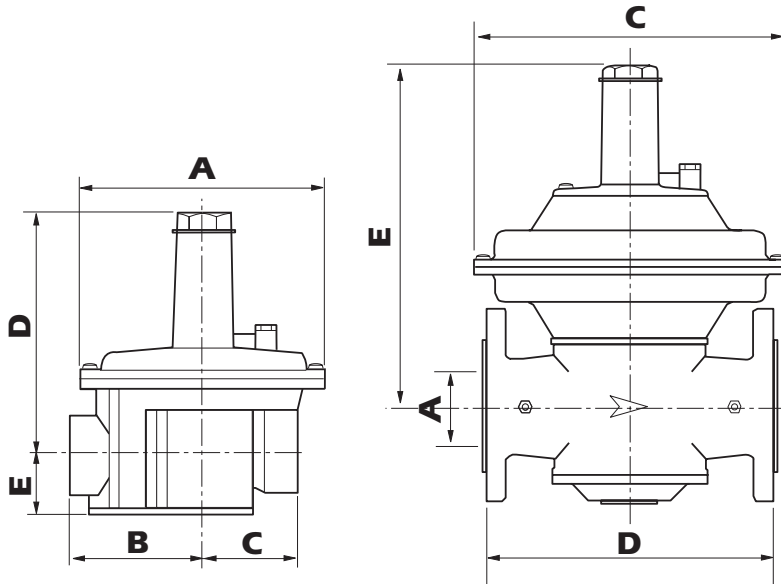
EV



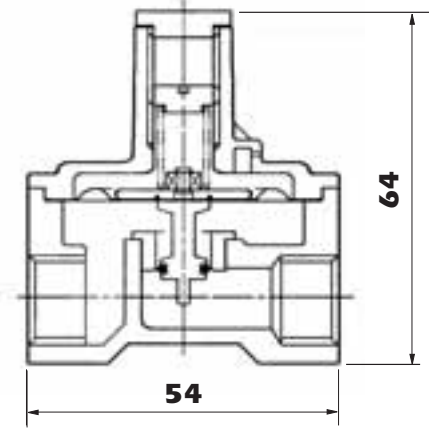
Type	EV 15	EV 20	EV 25	EV 32	EV 40	EV 50	EV 65	EV 80	EV 100	EV 125	EV 150
A	1/2"	3/4"	1"	1.1/4"	1.1/2"	2"	ND65	ND80	ND100	ND125	ND150
B	120	140	140	170	170	170	230	230	230	390	390
C	15	25	25	31	31	39	100	100	115	170	170
D	76	96	96	154	154	173	300	300	360	480	480

CHAPTER M

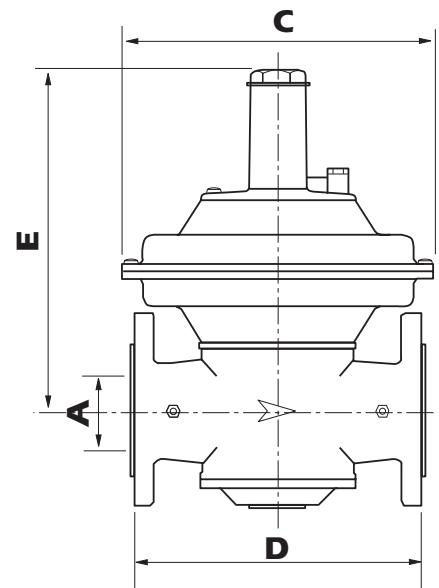
FSD/FSDC/FSDR/ST/STR



STLF

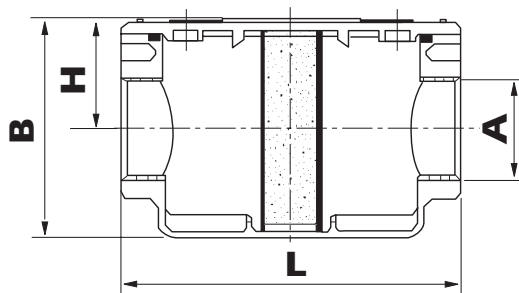


FS1B/ST1B



Model	ND	A	B	C	D	E
FSD-FSDC-FSDR 15/CE	1/2"	90	55	45	105	35
FSD-FSDC-FSDR 20/CE	3/4"	90	55	45	105	35
FSD-FSDC-FSDR 25/CE	1"	105	65	50	125	40
FSD-FSDC-FSDR 32/CE	1.1/4"	185	100	75	170	50
FSD-FSDC-FSDR 40/CE	1.1/2"	185	100	75	170	50
FSD-FSDC-FSDR 50/CE	2"	260	135	85	250	65
FSDC-FSDR 65/CE	65 PN16	65	185	320	315	340
FSDC-FSDR 80/CE	80 PN16	80	200	320	315	340
ST-STR 65/CE	65 PN16	65	185	320	300	340
ST-STR 80/CE	80 PN16	80	200	320	300	340
ST-STR 100/CE	100 PN16	100	220	370	360	410

706

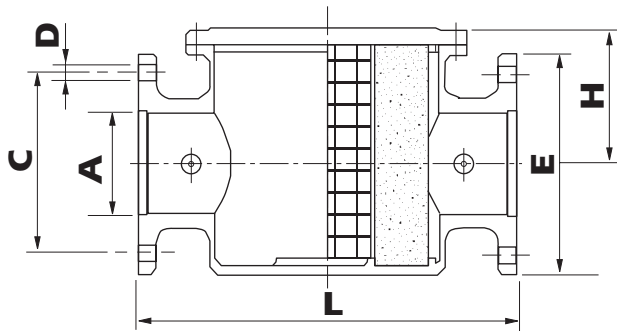


A	B	H	L
1/2"	92	37	120
3/4"	92	37	120
1"	103	50	160
1.1/4"	103	50	160
1.1/2"	103	50	160
2"	140	73	186

Model	ND	A	B	C	D	E
FS1B32	1.1/4"	185	100	75	170	50
FS1B40	1.1/2"	185	100	75	170	50
FS1B50	2"	260	135	85	250	65
FS1B65	65	65	185	320	315	340
FS1B80	80	80	200	320	315	340

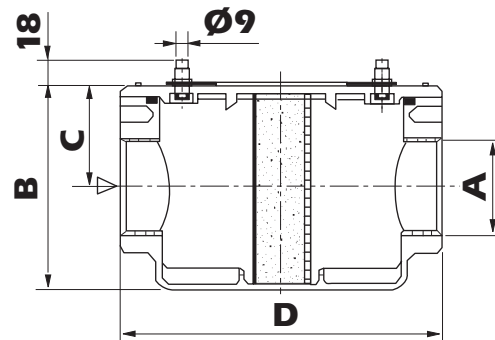
Model	ND	A	B	C	D	E
ST1B65	65	65	185	320	300	340
ST1B80	80	80	200	320	300	340
ST1B100	100	100	220	370	360	410

706F



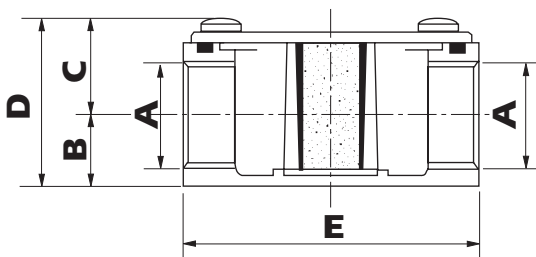
A	C	D	E	H	L
40	110	18	150	60	200
50	125	18	165	70	230
65	145	18	185	91	290
80	160	18	200	106	320
100	180	18	220	126	380
150	240	22	288	151	450

7066B



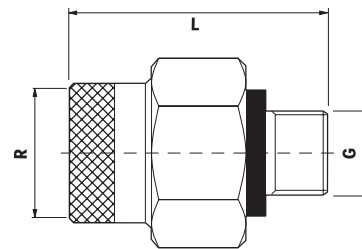
Type	A	B	C	D
70611	1/2"	92	37	120
70612	3/4"	92	37	120
70602	1"	103	50	160
70604	1.1/4"	103	50	160
70603	1.1/2"	103	50	160
70631	2"	140	73	186

706WB



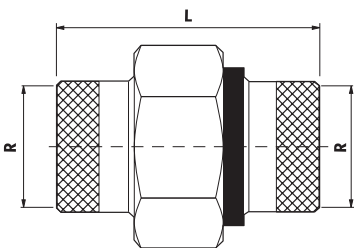
A	B	C	D	E
1/2"	17	22	39	70
3/4"	17	22	39	70

GDWMF



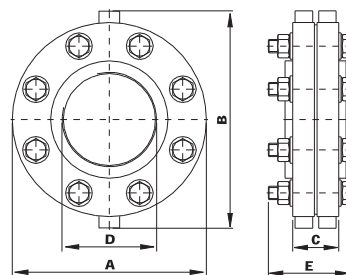
R	G	L
1/2"	1/2"	55
3/4"	3/4"	61

GD3 - GDWFF



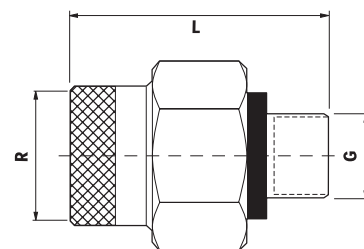
R	L
1/2"	53
3/4"	57
1"	65
1.1/4"	70
1.1/2"	70
2"	79

GD3



ND	A	B	C	D	E	Weight Kg
65	150	150	75	2.1/2"	118	6,2
80	172	172	75	3"	118	7,2
100	232	260	65	4"	98	14

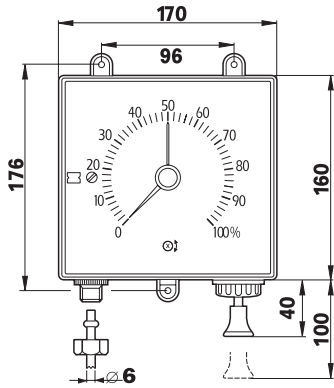
GDWFS



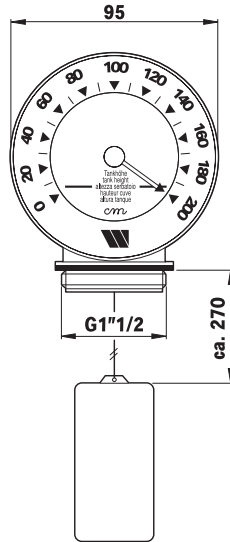
R	G	L
1/2"	14	46
1/2"	16	46
3/4"	16	48
3/4"	22	53
1"	28	57

CHAPTER N

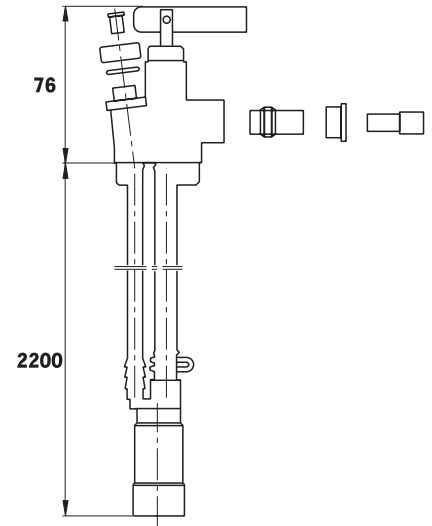
TLM



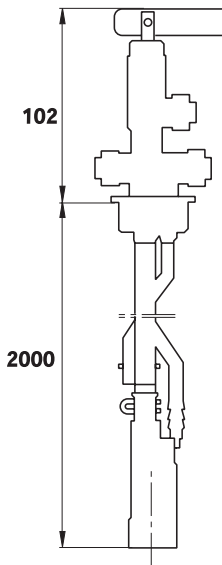
MECAV - MECAH



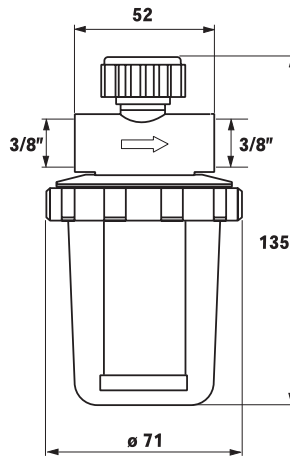
MB



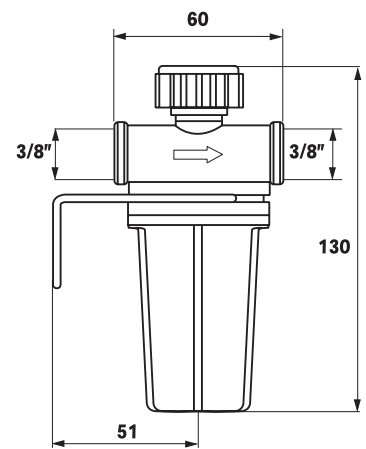
MKF200



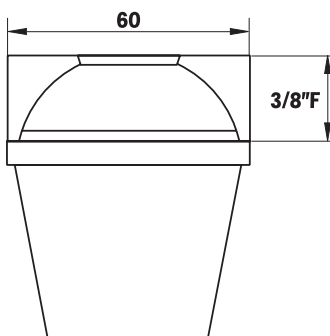
RG2



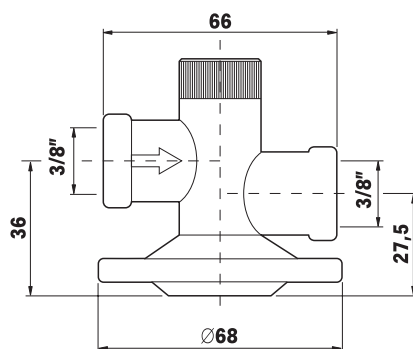
RV2/RV2M/RV1/RZ



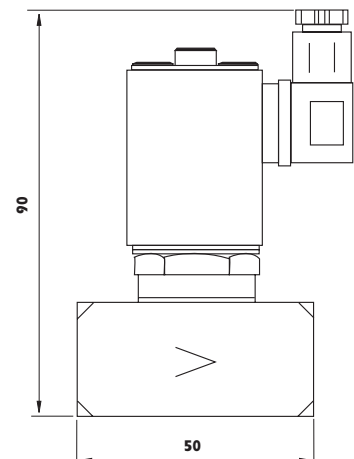
V1AP



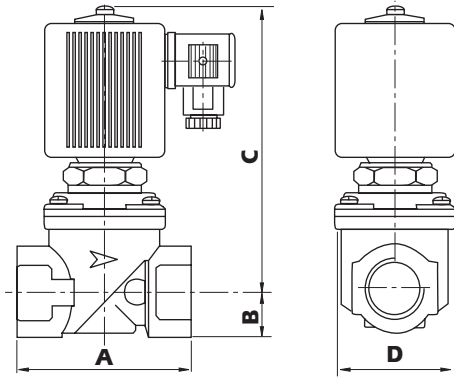
SIC10



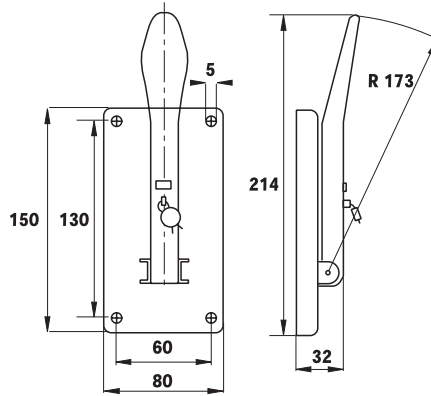
M10 M15



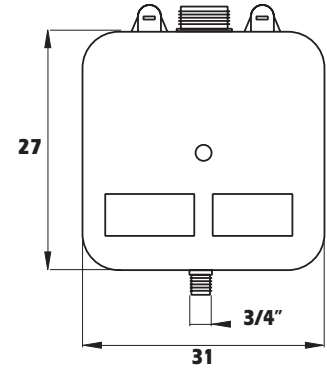
SVD



LA/LACP/LACPT

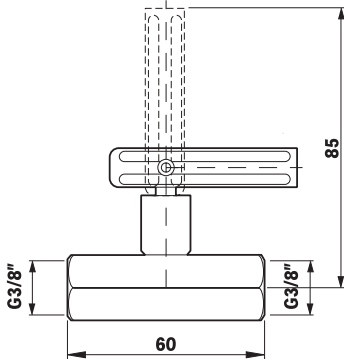


BAE10



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20	3/4"	96	25	160	70
25	1"	96	25	160	70
32	1.1/4"	154	31	188	105
40	1.1/2"	154	31	188	105
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1178UM	14	253
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130UM	15	254
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INSIDE THE COMPANY

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ORDER HANDLING	039.4986.213 039.4986.218 039.4986.245	039.4986.285 039.4986.285 039.4986.285	redaelli.m@wattscazzaniga.it barra.c@wattscazzaniga.it mussi.m@wattscazzaniga.it
CREDIT CONTROL	039.4986.258	039.4986.222	citterio.s@wattscazzaniga.it
TECHNICAL SERVICE	039.4986.266	039.4986.306	scuratti.c@wattscazzaniga.it
QUALITY SERVICE	039.4986.216	039.4986.285	rossini.a@wattscazzaniga.it

WATTS CAZZANIGA S.P.A.

1. An order only constitutes a booking and does not commit the company to make total or partial delivery. The order shall only be accepted and the contract for sale deemed to take effect when WATTS Cazzaniga receives a copy of the proposed order confirmation, containing the general conditions applicable to the sale, duly signed by the purchaser. Order confirmation will not be issued in the case of orders with a delivery date within 2 working days; in such case, the contract for sale shall be deemed to take effect on delivery of the goods.
2. We shall be entitled to modify the prices quoted by us, even after issue of the proposed order confirmation, until the time of delivery of the goods, in the event of increases in cost of raw materials, labour, energy sources and costs of production.
3. The delivery dates are purely approximate; any delay in delivery not exceeding 120 days after the specified date shall not entitle the purchaser to any compensation.
4. The goods will normally be delivered COD, unless otherwise agreed and expressly stated in the order.
5. Orders for a net amount of less than 200,00 Euro cannot be fulfilled. Transport costs will automatically be charged on orders for a net amount of less than 400,00 Euro.
6. The goods will be delivered ex WATTS Cazzaniga. Our liability ceases on delivery to the purchaser or the carrier. The goods travel at the purchaser's risk, even if sold free at destination, and no claims for any breakage or interference can therefore be accepted. Any agreements with shipping agents, including the amount and payment of the cost of transport, shall always be deemed to be entered into on behalf of the purchaser, which hereby accepts and ratifies our actions.
7. The cost of transport of the goods will be charged on the invoice in the fixed amount of 4%. Transport of the pipe and expansion vessels and transport to the Italian islands will be charged in the invoice at the fixed rate of 6%.
8. All payments shall be made at our offices within the stated period. If the prices are expressed in euros, in the event of delay in payment the purchaser shall pay delay interest from the due date at the ABI prime rate plus two percentage points. If the prices are expressed in a foreign currency, in the event of delay in payment the purchaser shall pay delay interest from the due date at the interbank rate for that currency plus two percentage points. Invoices shall be paid in the currency indicated in the invoice. If the currency indicated in the invoice should cease to exist, payment shall be made in the currency which replaced the one indicated in the invoice. This situation shall have no effect on the terms of contract; the continuity of the contract shall be unaffected, and neither party shall be entitled to call for any amendment or unilateral termination of the general conditions of sale.
9. In the event of failure to comply with the terms of payment, WATTS Cazzaniga shall be entitled to suspend all or part of the delivery of the goods, even if it relates to proposed order confirmations duly accepted under the terms of these general conditions of sale.
10. The goods are sold subject to reservation of title, and therefore continue to be owned by WATTS Cazzaniga until the price thereof has been paid in full.
11. Any claims relating to the goods shall be made within eight days of their arrival at the purchaser's premises. The purchaser shall return the allegedly defective product free WATTS Cazzaniga.
12. All WATTS Cazzaniga products are thoroughly tested at the works; they are consequently guaranteed for two years from the date of issue of the invoice. The said guarantee covers replacement or repair, free of charge, of those components of the goods supplied which present manufacturing defects. I.I.P. brand products may be collected by I.I.P. for the conduct of tests, either directly from the market or from users, customers, retailers, sites, etc. The purchaser shall allow I.I.P.'s representatives access to perform tests and inspections to establish whether the products conform to the applicable standards.
13. Any damage or injury caused by incorrect operation of the product shall be notified within 24 hours, giving the name of the claimant and the approximate amount of the claim. Photographs of the damage or injury, together with the product allegedly responsible, shall subsequently be sent for laboratory examination. All evidence demonstrating the extent of the damage or injury (goods, etc.) shall be held at the disposal of WATTS Cazzaniga until the claim has been settled.
14. WATTS Cazzaniga declines all liability for injury to persons or animals or damage to property deriving from use of equipment without observing the safety instructions, or the use of equipment installed incorrectly and/or without performing the usual checks.
15. Any claims or disputes shall not entitle the purchaser to refuse to pay for the goods or to delay payment thereof.
16. The purchaser may not return the goods for any reason without our express written authorisation. In the event of strikes or lock-outs, total lack or reduced supply of raw materials, transport problems, wars, riots, interruptions in communications for any reason, malfunctions of plant or any other unforeseeable event, we reserve the right to suspend deliveries or to cancel duly accepted orders, in which case the purchaser shall not be entitled to compensation.
17. Every contract revokes and replaces any previous agreement between the parties on the same subject.
18. Any amendment to the contract shall be made in writing and signed by both parties.
19. The descriptions and photographs contained in the WATTS Cazzaniga price list are provided by way of information only, and are not binding. WATTS Cazzaniga reserves the right to make any technical modifications to its products or changes in their appearance without prior notice.
20. INFORMATION NOTICE REQUIRED BY STATUTE 675/96, s. 10. For the purpose of entering into and performing contracts with you, we hold data relating to you, acquired in writing or verbally, directly or through third parties, which are classed as personal data by Italian law. With reference to these data, we hereby inform you that:
 - the data are handled in relation to contractual requirements and consequent compliance with legal and contractual obligations deriving therefrom, including standards in the ISO 9000 series
 - the data will be handled in written form and/or on magnetic, electronic or electronic data transfer media by means of consultation, processing, comparison, interconnection, communication and all other suitable methods of handling
 - the provision of the said data is mandatory in order to comply with legal and contractual obligations, and refusal to supply the said data or to allow their subsequent handling may make it impossible for the writer to enter into the contract
 - failure to supply data not required by legal or contractual obligations will be evaluated on each occasion by the writer, whose decisions will depend on the importance of the said data for management of the business dealings
 - in addition to data communication and circulation performed in compliance with legal obligations, the data may be communicated in Italy and/or abroad to:
 - our network of agents
 - factoring companies
 - buying associations
 - banks
 - debt collection companies
 - credit insurance companies
 - credit rating companies
 - professionals and consultants
 - the data will be handled throughout the duration of the contract, and thereafter insofar as necessary to comply with all legal requirements
 - in relation to the said data, your firm/company has the rights specified in s. 13 of Statute no. 675 of 1996, including the right of access, rectification, updating, objection to handling and cancellation
 - the data controller is WATTS Cazzaniga SpA of 20046 Biassono (Milan).
21. All contracts shall be governed by Italian law.
22. The prices shown in the trade list below are quoted net of VAT.
23. If any dispute should arise, the Bolzano courts shall have sole jurisdiction thereover.



WATTS Cazzaniga S.p.A.

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