CALEFFI 519 Series Differential By-Pass Valve Instruction Manual

519 Series Differential By-Pass Valve
Instruction Manual

Contents

Function

The bypass valve is used in systems where widely varying flow rates may operate. It ensures a flow recirculation proportional to the number of valves being closed while restricting the maximum differential pressure value generated by the pump.

Product range

519

519500 *3/4”* *10–60 kPa*
519504 *3/4”* *100–400 kPa*

519

519700 *1 1/4”* *10–60 kPa*
519703 *1 1/4”* *50–250 kPa*

Technical specifications

Materials:

– Body:	brass EN 12165 CW617N
– Obturator:	brass EN 12164 CW614N
– Obturator seal:	EPDM
– O-Ring seals:	EPDM
– Union gasket:	asbestos free NBR
– Knob:	ABS
– Spring:	stainless steel

Medium:

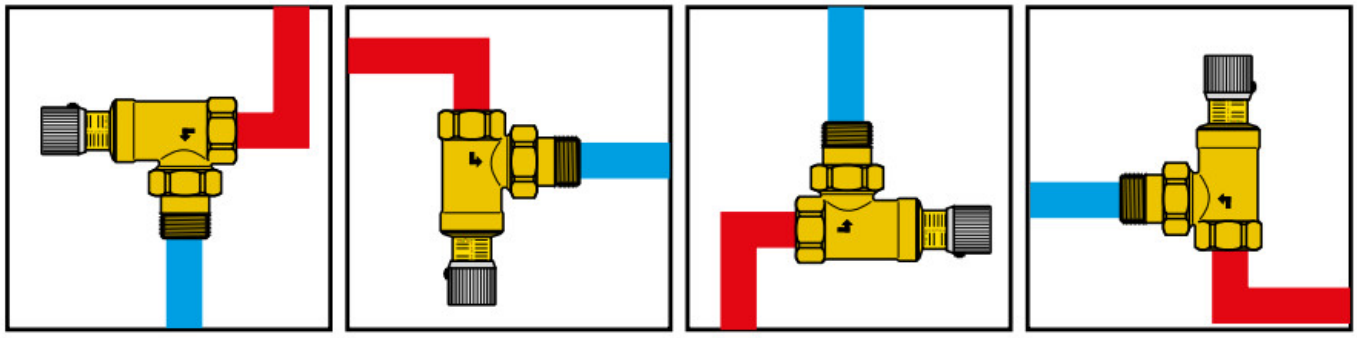
Medium:	water, glycol solutions
Max. percentage of glycol:	30%
Temperature range:	0–110 °C
Max. pressure:	10 bar

Setting range:

– cod. 519500 and 519700:	10–60 kPa (1–6 m w.g.)
– cod. 519504:	100–400 kPa (10–40 m w.g.)
– cod. 519703:	50–250 kPa (5–25 m w.g.)

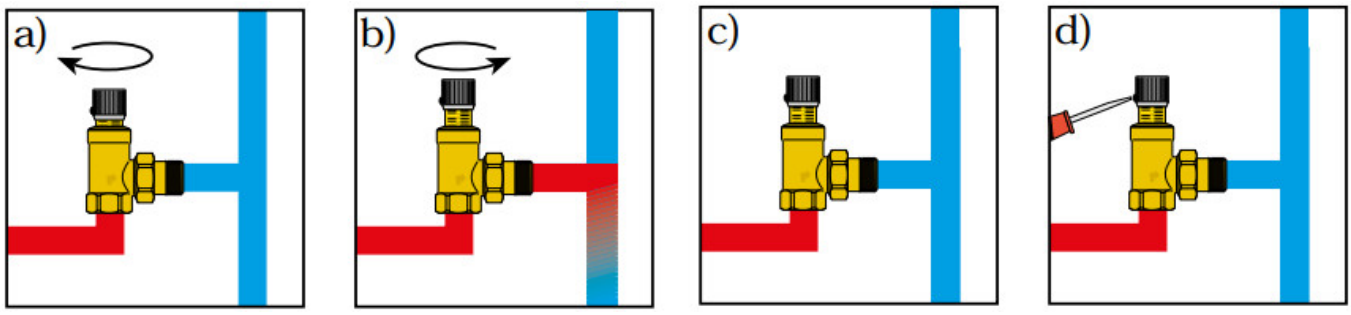
Connections:	3/4” F x 3/4” M with the union, 1 1/4” F x 1 1/4” M with the u nion

Fitting the switch



The differential by-pass valve can be fitted in any position, by respecting the flow direction indicated by the arrow on the valve body.
In systems with a traditional boiler, it is normally fitted between the system flow and return ends, which allows controlling the pressure and the passage of a minimum flow through the heat generator. In the event of high by-pass levels, it is recommended that the valve be fitted between the flow and return ends of each column, rather than fitting a number of parallel valves at the main boiler.

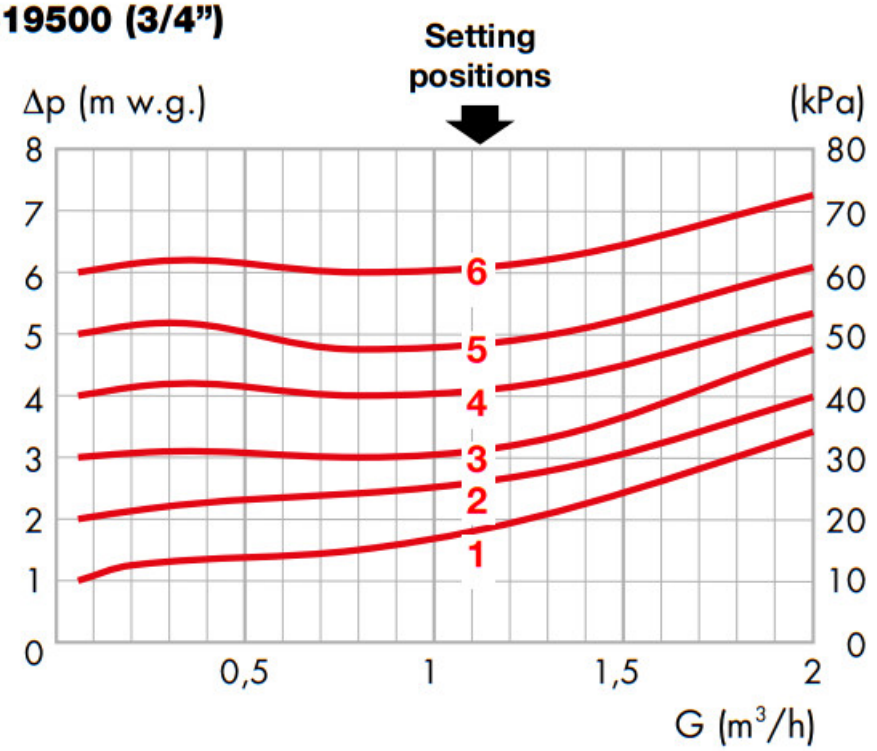
Calibration



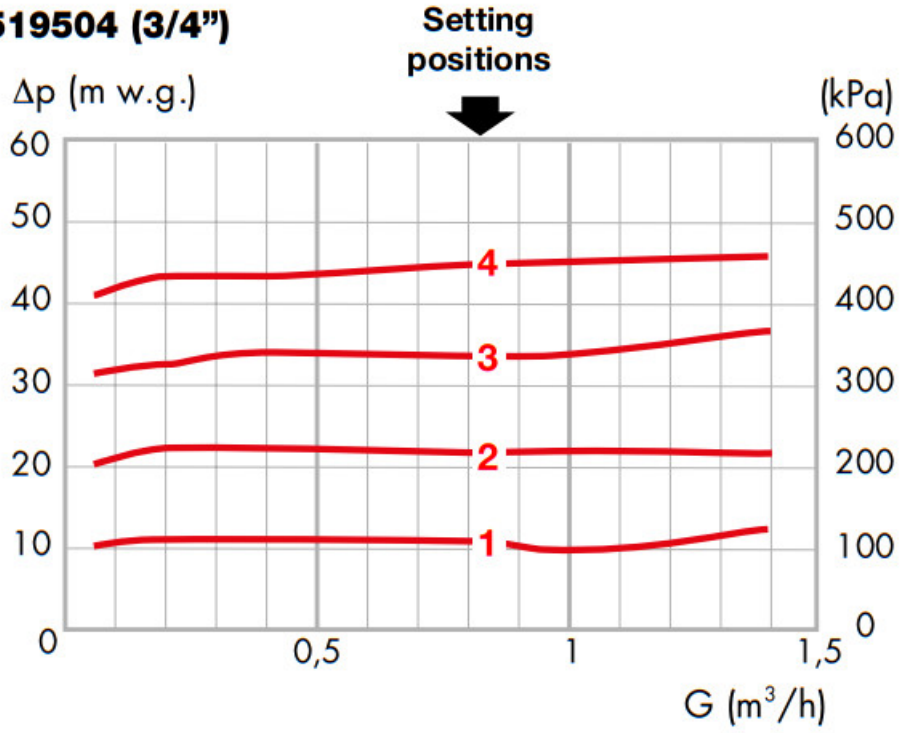
To regulate the valve, turn the knob to the value required on the graduated scale: the values correspond to the differential pressure at which the by-pass is opened.
To carry out rapid adjustment of the by-pass valve it is possible to use the following practical method, which can be applied, for example, to the system in an apartment fitted with thermostatic valves: the system must be operating, the regulating valves must be fully open and the by-pass valve must be set to its maximum value (a). Fully close approximately 30 % of the total number of thermostatic valves. Gradually open the valve using the control knob.
Use a thermometer, or simply your hand, to check that the hot water is flowing into the bypass circuit (b). As soon as a rise in the temperature is noted, open the thermostatic valves again and check that the hot water stops flowing into the by-pass (c). Secure the knob in this position with the fixing screw (d).

Hydraulic characteristics

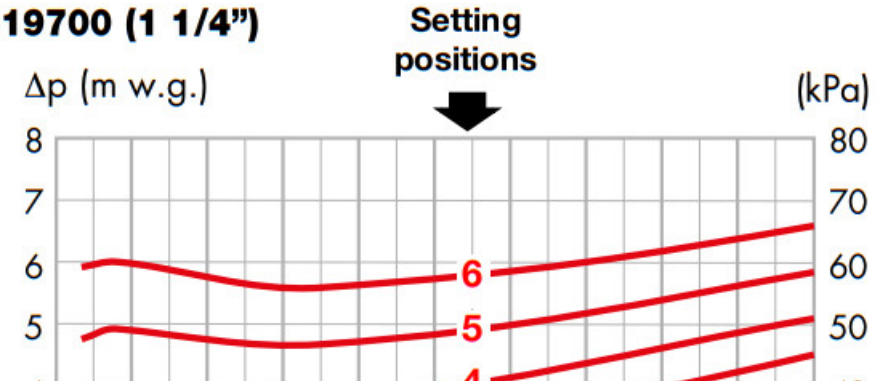
cod. 519500 (3/4")

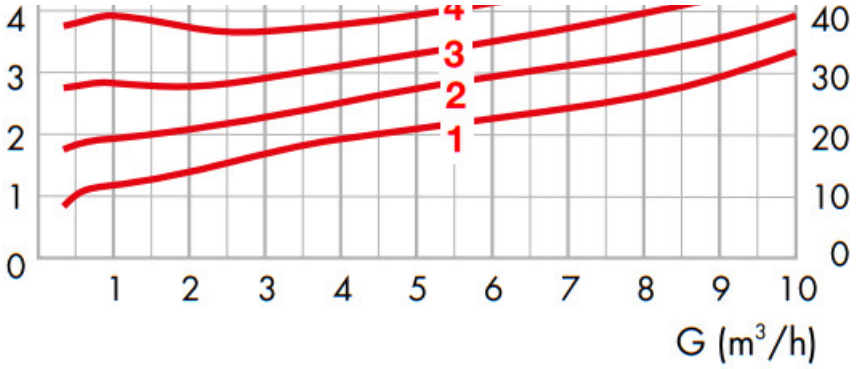


cod. 519504 (3/4")

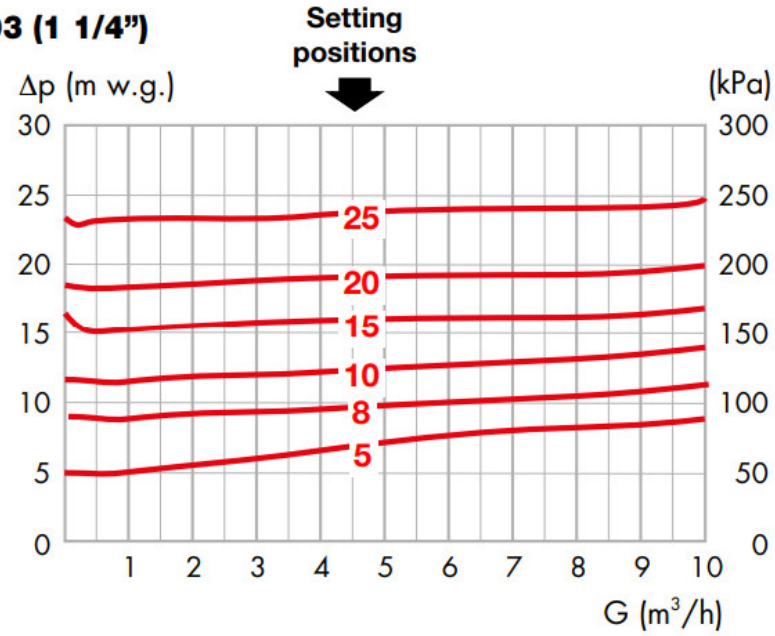


cod. 519700 (1 1/4")

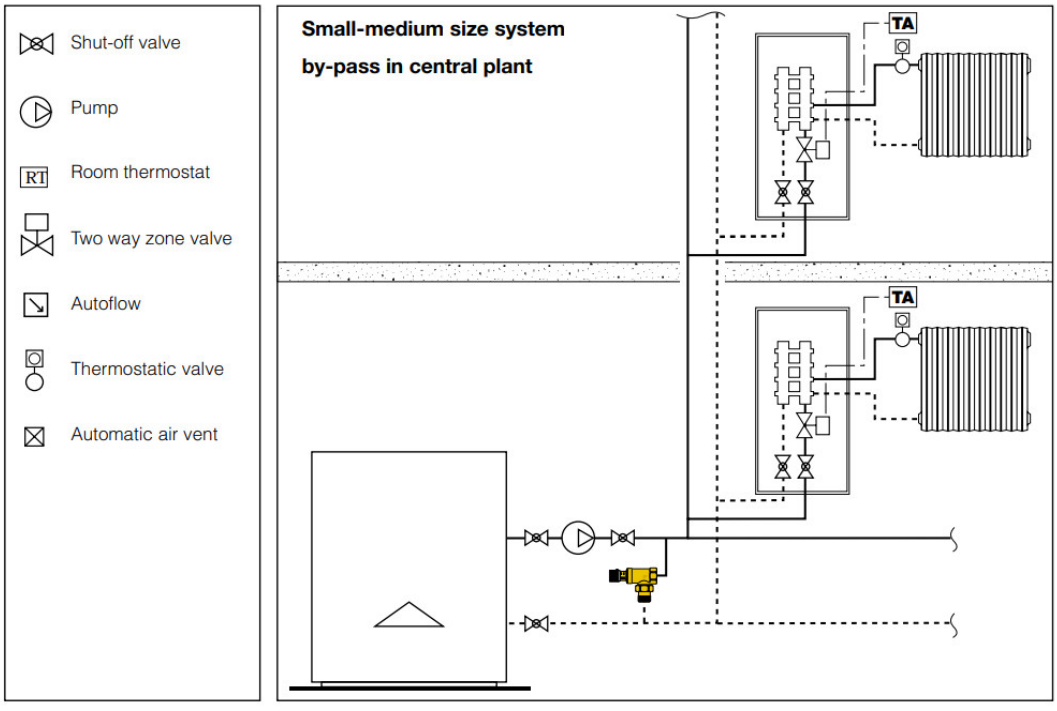


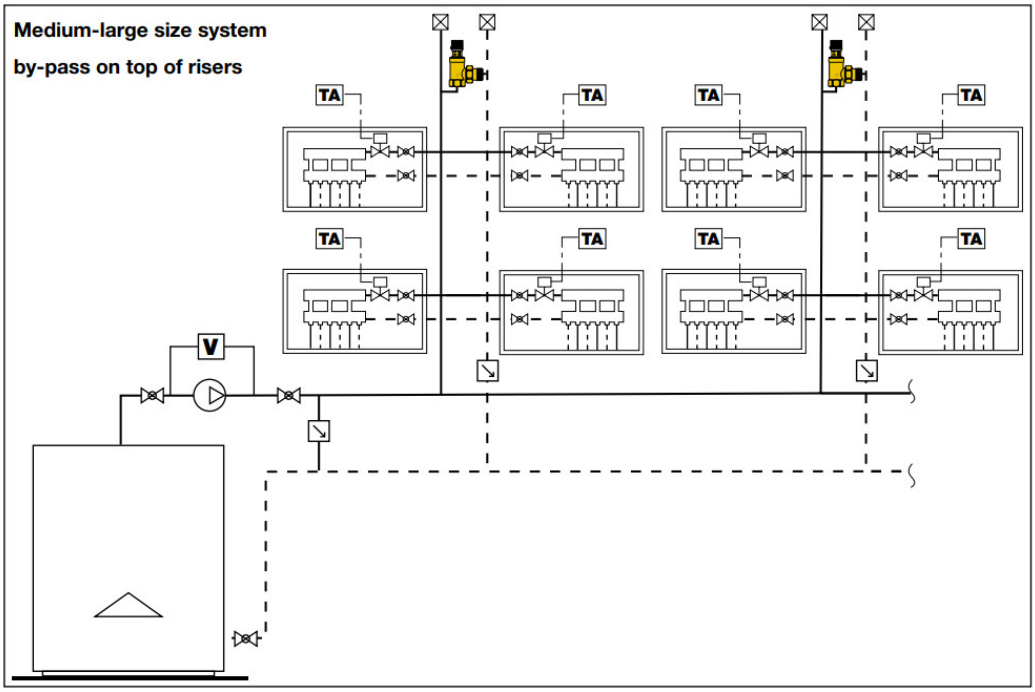


cod. 519703 (1 1/4")



Application diagrams





Safety

The device must be installed by trained technicians in accordance with current regulations.
If the device is not installed, put into operation, and serviced correctly in accordance with the instructions in this manual, then it might not work properly and might endanger the user.
Clean pipes to remove any dirt, rust, scale, welding waste, or other sources of contamination. As in all hydraulic circuits, it is important to ensure that the entire system is kept clean.
Make sure that all connection pipes are watertight. When connecting water pipes, make sure that threaded connections on the valve body are not subjected to excessive mechanical stress. Over time this may result in breakage, with loss of water and damage to persons and/ or property.
Water temperatures exceeding 50 °C may cause severe burns. During installation and setup, take all the precautions necessary to ensure that the temperatures involved do not represent a danger to persons.

Leave this operating manual with the user

Documents / Resources

	CALEFFI 519 Series Differential By-Pass Valve [pdf] Instruction Manual 519 Series Differential By-Pass Valve, 519 Series, Differential By-Pass Valve, By-Pass Valve, Valve

References

- Caleffi Hydronic Solutions

Manuals+,