DIFFERENTIAL BYPASS VALVE

20MM & 32MM

CALEFFI Hydronic Solutions

CONTROLS DIFFERENTIAL PRESSURE IN RECIRCULATING SYSTEMS

FUNCTION AND FEATURES

- Available in 20mm & 32mm
- Ensures proportional flow in circulating system
- Limits max differential pressure from pump
- Easily adjustable with graded stem
- Suitable for non-potable water
- 10-60kPa or 100-400kPa range

PRODUCT SPECIFICATIONS

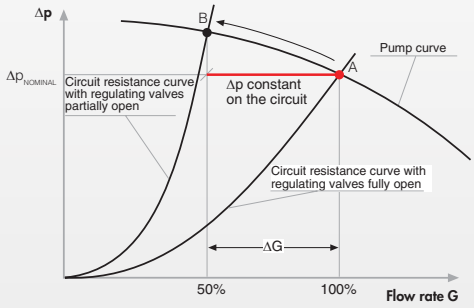
The differential by-pass valve is used in systems working with variable flow rates, for example in those making widespread use of thermostatic valves or 2-way motorised valves. It ensures a flow recirculation proportional to the number of valves being closed, while limiting the maximum differential pressure value generated by the pump. In chilled water systems with high head pumps, installation of the version with a setting range between 100 and 400 kPa is advisable.

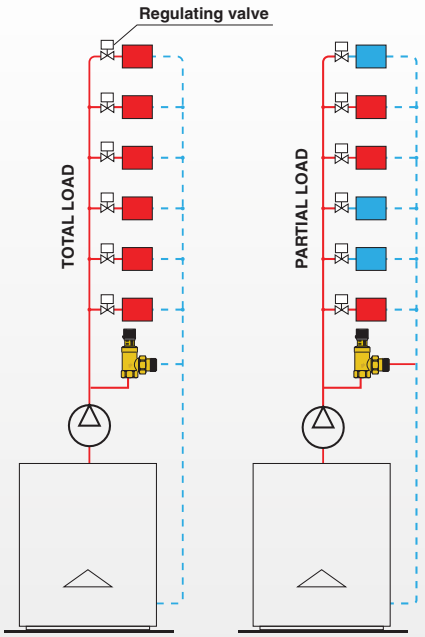
SYSTEM OPERATION

The job of the by-pass valve is to maintain the pump operating point as close as possible to its nominal value (point A on the graph shown below). If the by-pass valve is not used, when the flow rate in the circuit decreases due to partial closure of the two-way valves, the head loss in the circuit increases, point B.

The by-pass valve, set to the nominal head value of the pump, enables to limit the pressure increase, by-passing the flow rate ΔG. This behaviour is guaranteed at any closing condition of the system regulating valves. In fact, once the position of the valve control knob has been established, the trigger pressure value is more or less constant as the discharge flow rate varies (see hydraulic characteristic diagrams).

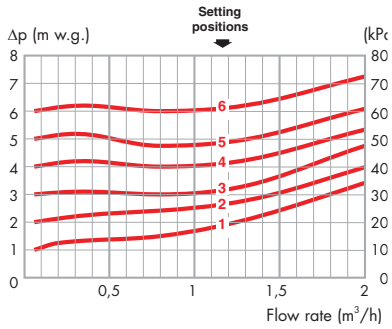
A proper valve sizing must guarantee a sufficient flow rate by-pass to keep the pump at its nominal operating point in all system operating conditions, for example when the first thermostatic valves are closed.





PRESSURE LOSS CHART

code 519500 (3/4")



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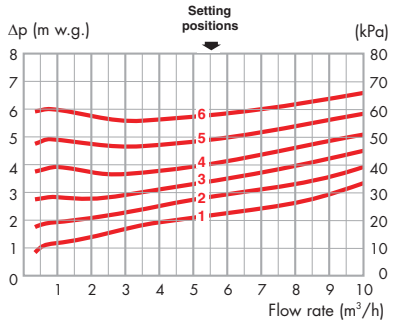

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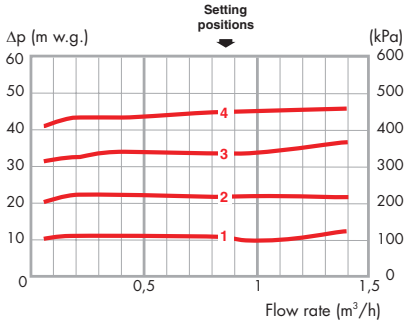
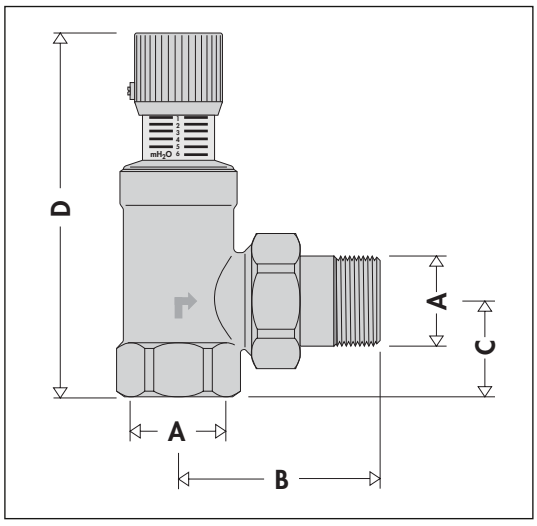


DIAGRAM



CODE	519500	519504	519700
A	20mm	20mm	32mm
B	59	59	88.5
C	26	26	41
D	104	104	158
PRESSURE	10 - 60kPa	100 - 400kPa	10 - 60kPa
WEIGHT	0.45kg	1.19kg	0.45kg

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