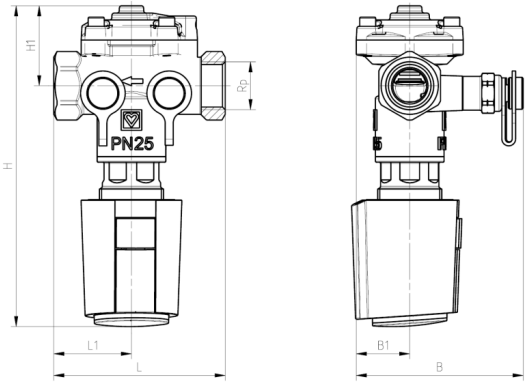
HERZ-Motorised flow controler

Pressure Independent Balancing Control valve

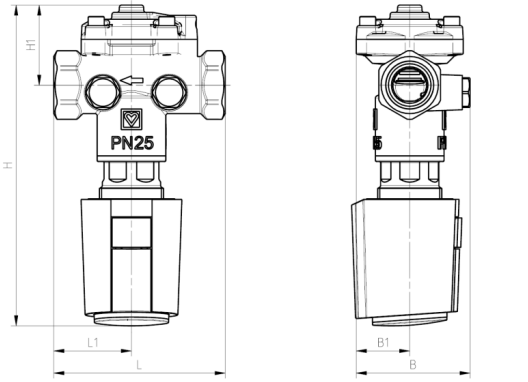
Data sheet 4206 **SMART**, Issue 0717

Dimensions in mm

4206 M



4206 R



Type		Order number	DN L	G	L	L1	B	B1	$H_{without\ actuator}$	$H_{with\ actuator}$	H1
with test points.	M	1 4206 20	15 LF	½	75 mm	41 mm	85 mm	24 mm	104 mm	154 mm	36 mm
		1 4206 21	15	½	75 mm	41 mm	85 mm	24 mm	104 mm	154 mm	36 mm
		1 4206 22	20	¾	75 mm	41 mm	85 mm	24 mm	105 mm	155 mm	33 mm
		1 4206 29	15 MF	½	75 mm	41 mm	85 mm	24 mm	104 mm	154 mm	36 mm
without test points.	R	1 4206 60	15 LF	½	75 mm	41 mm	50 mm	24 mm	104 mm	154 mm	36 mm
		1 4206 61	15	½	75 mm	41 mm	50 mm	24 mm	104 mm	154 mm	36 mm
		1 4206 62	20	¾	75 mm	41 mm	50 mm	24 mm	105 mm	155 mm	33 mm
		1 4206 69	15 MF	½	75 mm	41 mm	50 mm	24 mm	104 mm	154 mm	36 mm

Materials

Body: dezincification-resistant brass
Membranes and O-rings: EPDM
Water purity in accordance with the ÖNORM H 5195 and VDI 2035 standards
Ethylene and propylene glycol can be mixed to a ratio of 25 - 50 vol. [%].

Technical data

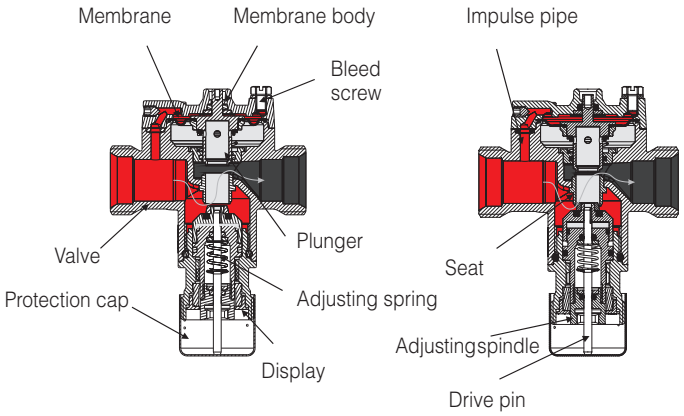
Max. operating pressure	25 bar
Max. differential pressure on the body	6 bar
Min. operating temperature	2 °C (pure water)
Min. operating temperature	- 20 °C (frost protection)
Max. operating temperature	130 °C
Lift	4 mm

The integrated control unit together with the actuating drive is responsible for modular control. Various actuating drives might be used (see also chapter: Accessories and spare parts).

Application.

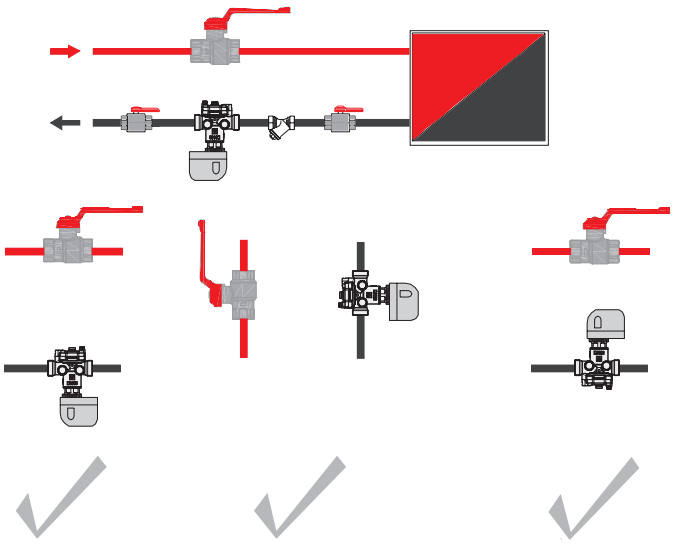
The Pressure Independent Balancing Control Valve (PIBCV) is used in all heating and cooling systems with circulation pumps. The valve automatically maintains flow to the required part of the system at the set rate by measuring and immediately adjusting to any variation in pressure. No additional measurements are necessary and the correct flow rate is achieved at all operating conditions. The diaphragm responds to the pressure upstream and downstream of the regulating valve (via an internal impulse line). The valve settings directly affect the volumetric flow through the valve. It is thus possible to set the maximum flow rate based on the flow chart when the valve is fitted. This allows for the balancing of heating circuits, cooling water systems, ceiling cooling and heating panels, air heaters, etc. without any need to first assess the pressure variations in the system. The valve's principal application is as a control valve for terminal units. As it is pressure independent, it maximizes energy efficiency and negates the requirement for DP control valves. In addition to the PIBCV, HERZ Ball Valves (2190) can be fitted in the corresponding flow pipe. If control measurements of the flow rate are required, then Herz metering stations (4000) or STRÃ–MAX-M valves (4017 M, 4117 M, 4217 GM) must be fitted instead.

Function



The HERZ-4206 SMART PIBCV has a pressure compensated upper part, so the maximum force required by the thermal drive is 100 Nm for all sizes of valve.

Installation



The valve is fitted in the return in any orientation.
The arrow on the valve body should align with the direction of flow.
It is recommended that an isolation valve is fitted both upstream and downstream of the PIBCV.
The PIBCV may be isolated using the HERZ pre-setting key (1 4006 02).
For pre-setting, turn the key right (clockwise) up to the stop. The setting should then read < 0%.

kv values

DN 15LF	0.27 m³/h
DN 15MF	0.47 m³/h
DN 15	0.94 m³/h
DN 20	1.71 m³/h

Accessoried and Spare Parts

1 4117 .. HERZ-STRÖMAX circuit control valves, angle version
1 4217 .. HERZ- STRÖMAX circuit control valves, straight version
1 4017 .. HERZ- STRÖMAX circuit control valves with integrated metering orifice plate
1 4125 .. HERZ shut-off valves, angle version
1 4115 .. HERZ shut-off valves, angle version
1 4215 .. HERZ shut-off valves, straight version, also variants with male threads. For details please refer to the corresponding data sheets.
1 0284 01 test point for HERZ circuit control valve, blue cap (return)
1 0284 02 test point for HERZ circuit control valve, red cap (flow)
1 0284 11 test point for HERZ circuit control valve, extended model, blue cap (return) 1 0284 12 test point for HERZ circuit control valve, extended model, red cap (flow) 1 0284 21 HERZ test point with draining function, blue cap (return)
1 0284 22 HERZ test point with draining function, red cap (flow)
1 0284 00 test point adapter set
1 7708 .. HERZ actuating drive for two-point or pulse control
1 7990 .. HERZ actuating drive for continuous control
1 0273 09 screw plug 1/4

Tips

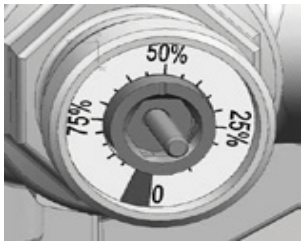
The valves must be installed for the correct application using clean fittings. A HERZ strainer (4111) should be fitted to prevent impurities.

Test points

Two test points are fitted on the same side of the valve and factory sealed. Thanks to this arrangement they are easily accessible and measurement devices can be quickly fitted, no matter in what position the valve has been installed.

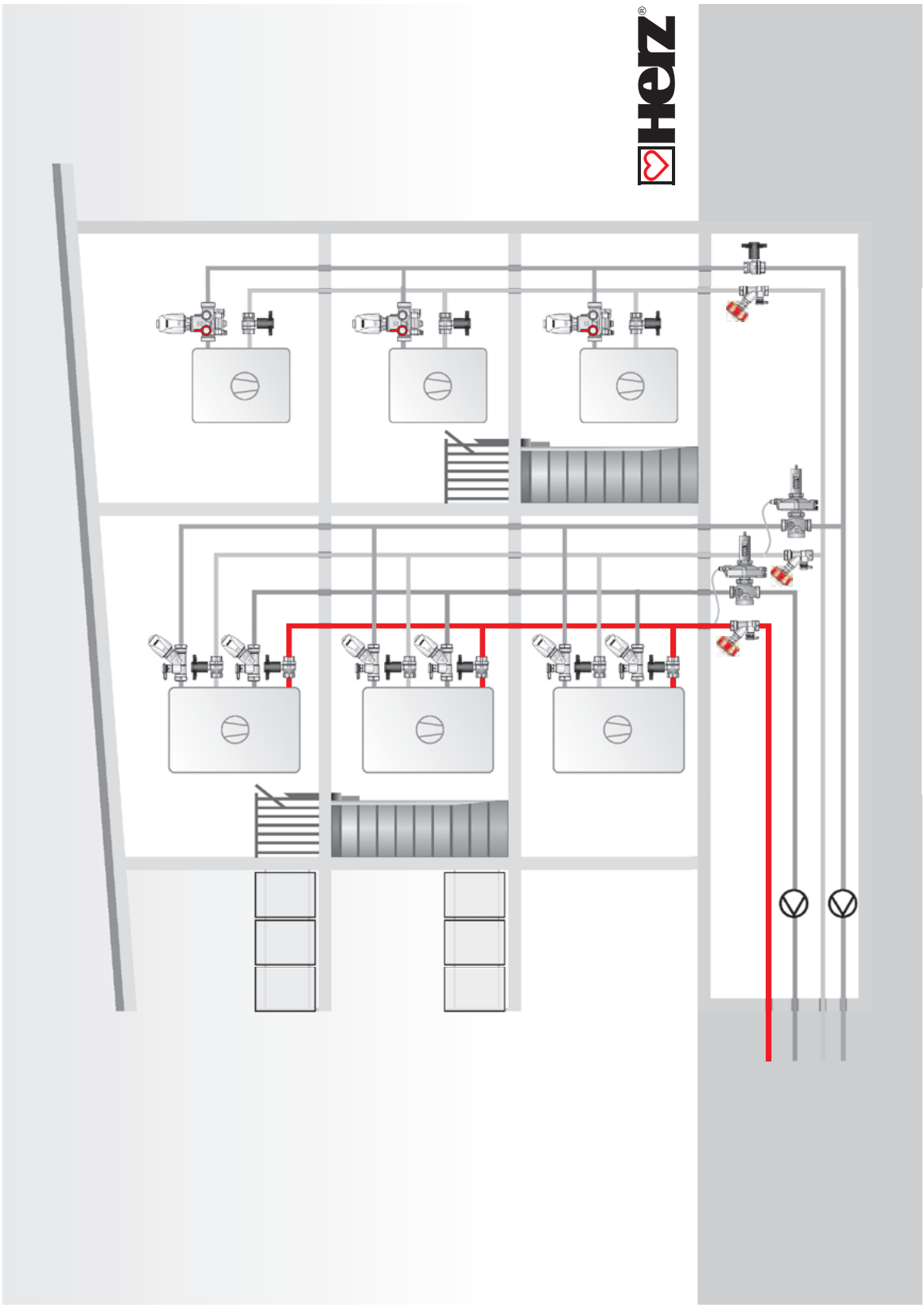
Pre-setting

The valve setting is clearly shown in percent. The pre-set value can be easily adjusted. The pre-set PIBCV can be isolated at any time or adjusted to the required flow rate.

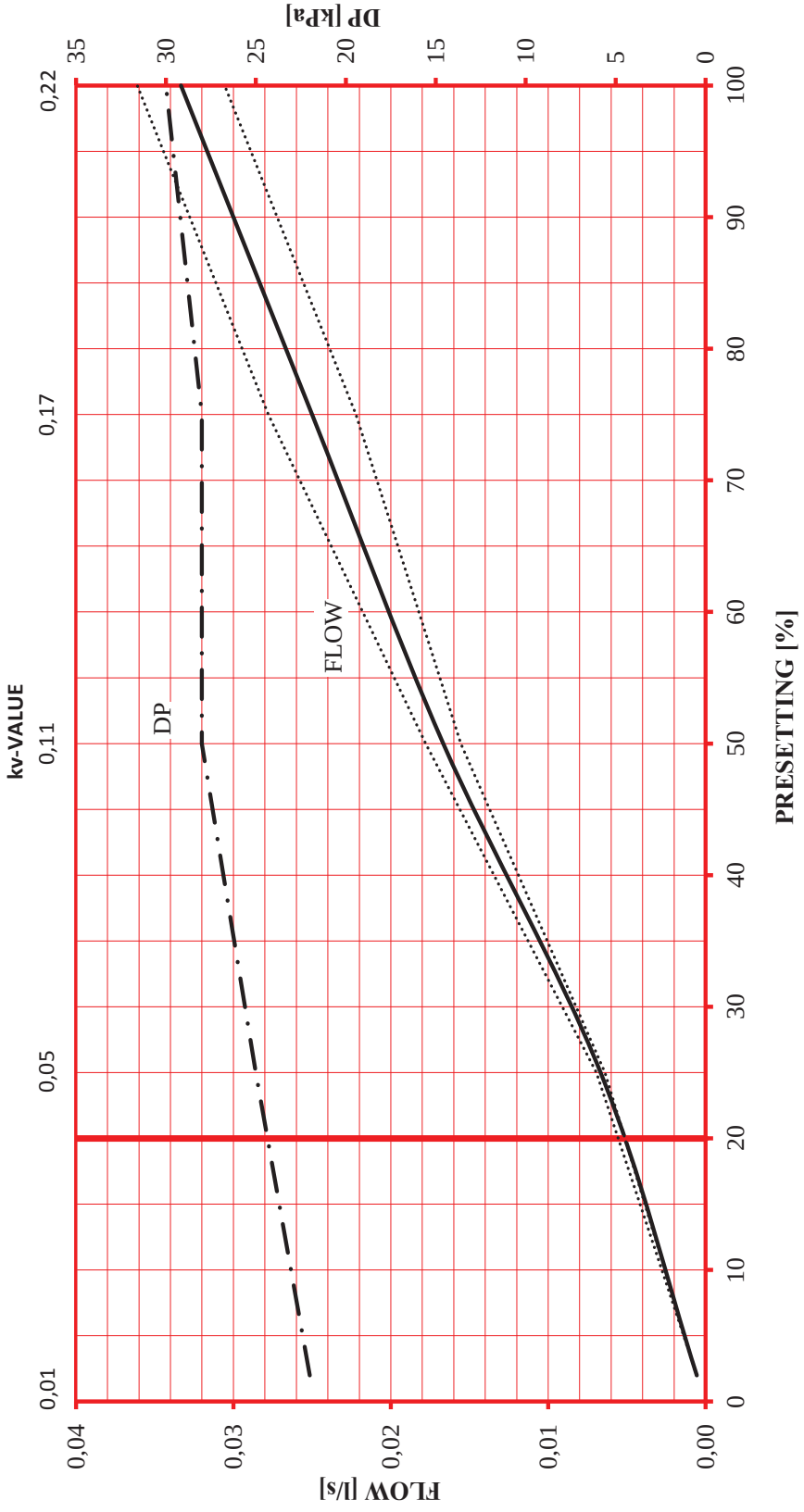


1 4006 02

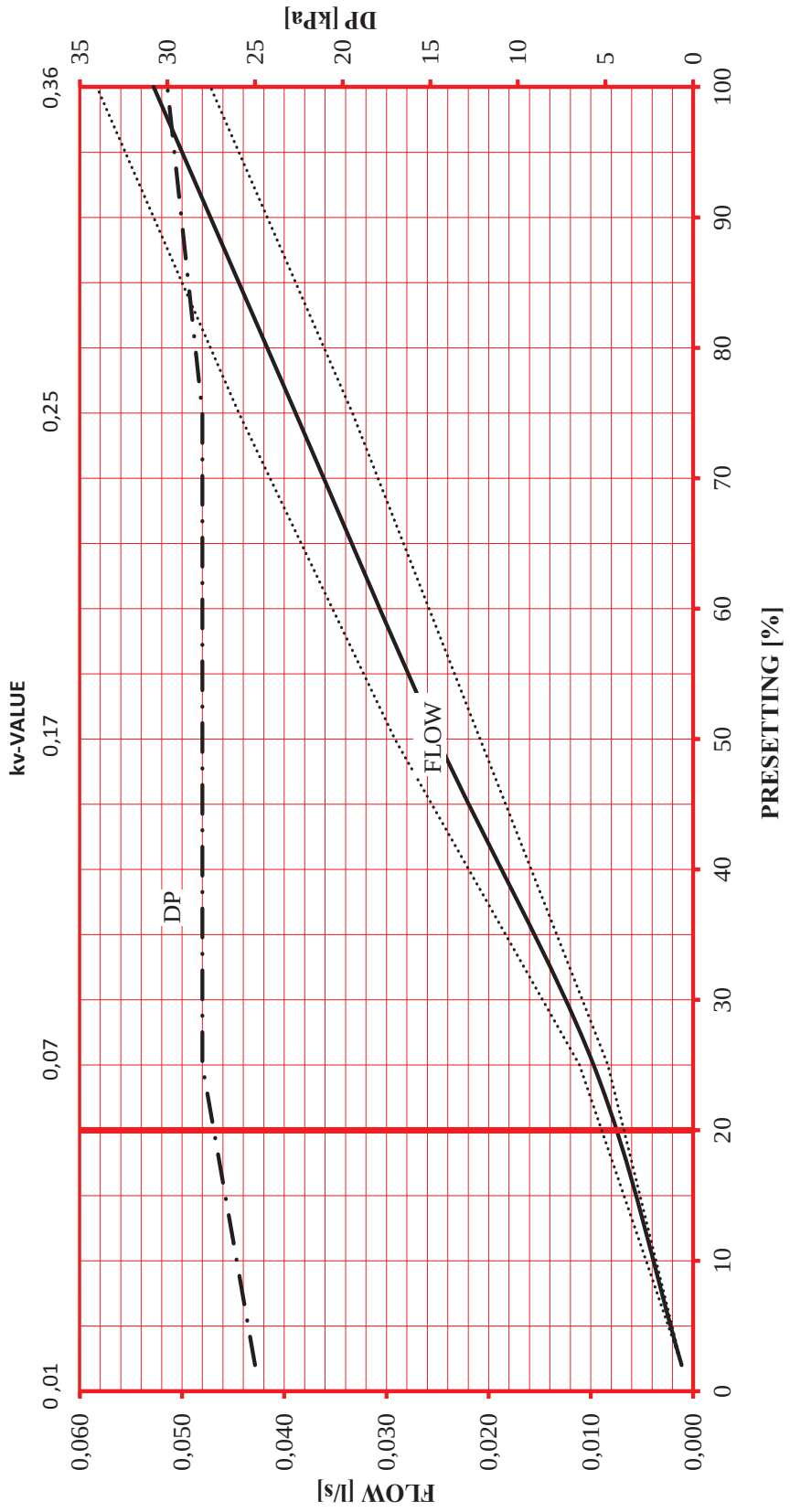
Application examples.



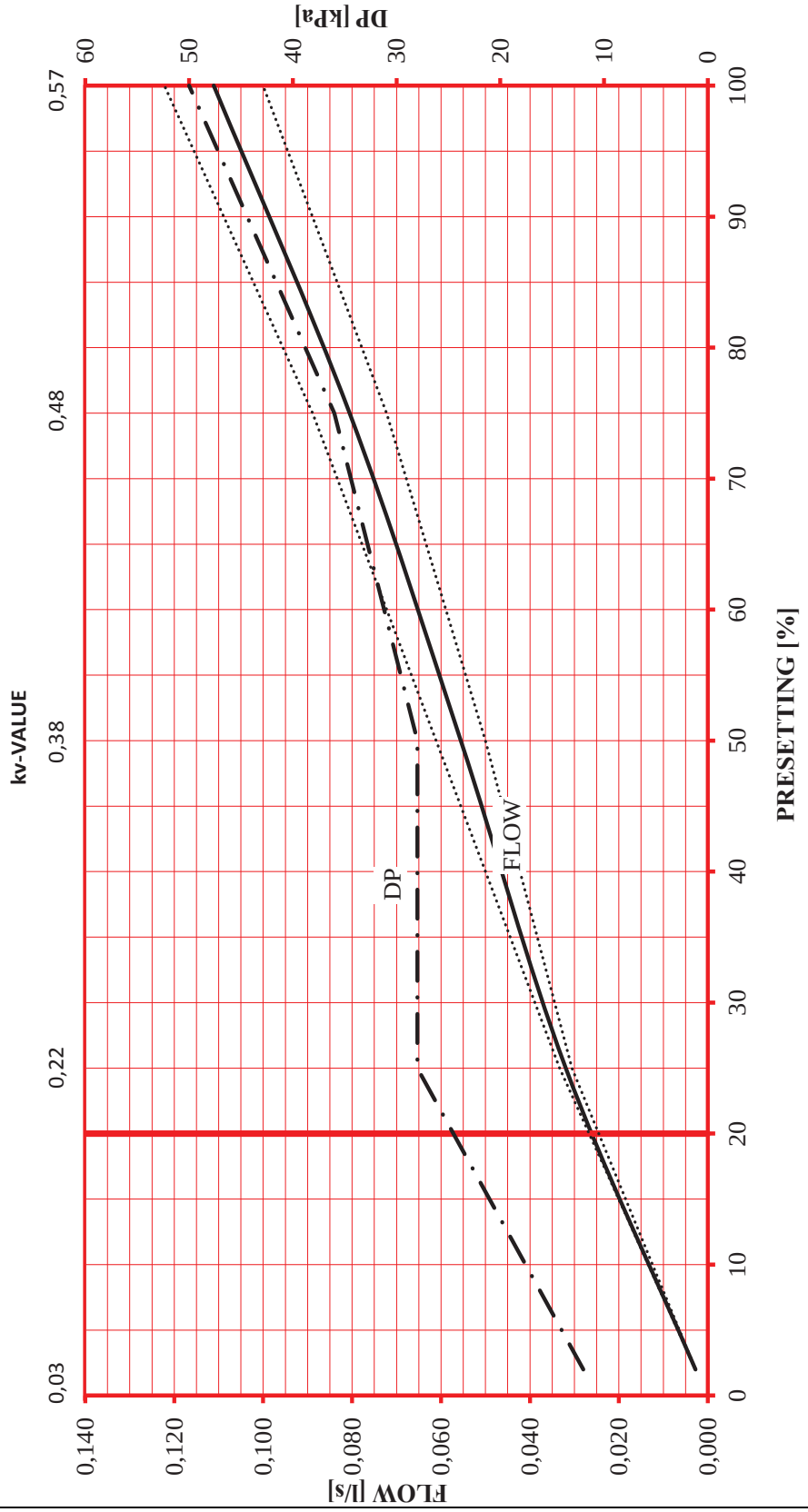
HERZ standard diagram	HERZ - 4206 SMART
Art. Nr. 1 4206 20, 1 4206 60	DN 15 LF



HERZ standard diagram	HERZ - 4206 SMART
Art. Nr. 1 4206 29, 1 4206 69	DN 15 MF



HERZ standard diagram	HERZ - 4206 SMART
Art. Nr. 1 4206 21, 1 4206 61	DN 15



HERZ standard diagram	HERZ - 4206 SMART
Art. Nr. 1 4206 22, 1 4206 62	DN 20