Pressure independent control valves with three test points

Datasheet **HERZ PICV,** Issue 0626

General information

This product is only intended for the purpose intended by the manufacturer. This also includes compliance with all associated product regulations. Changes or conversions are not permitted.

Disposal

Local and currently applicable legislation must be observed for disposal. The disposal of HERZ pressure independent control valves must not endanger the health or the enviroment.

Material note

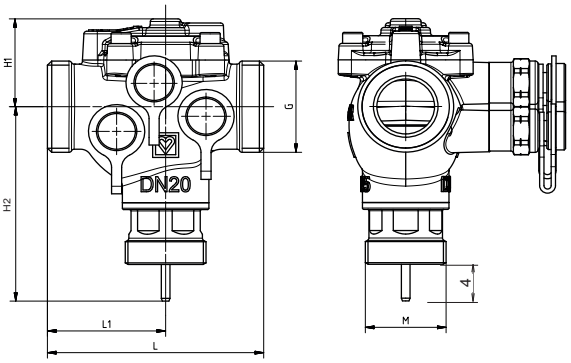
Pursuant to Article 33 of the REACH Regulation (EC No. 1907/2006), we are obliged to point out that the material lead is listed on the SVHC list and that all brass components manufactured in our products exceed 0.1% (w / w) lead (CAS: 7439-92-1 / EINECS: 231-100-4). Since lead is a component part of an alloy, actual exposure is not possible and therefore no additional information on safe use is necessary.

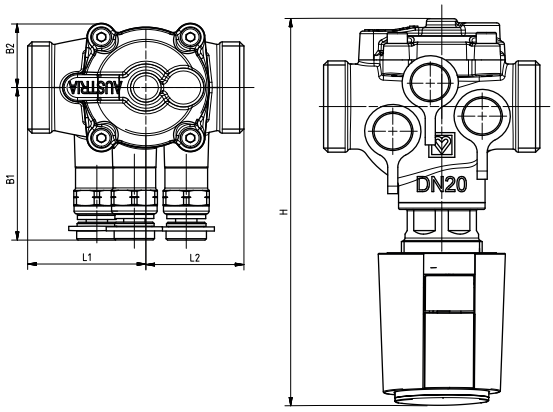
HERZ Pressure independent control valves with three test points

Datasheet for 1 **4006** 4X, 5X, 7X / 1 **4206** 4X, 0X, 7X SMART; 1 **4406** 3X / 1 **4206** 5X

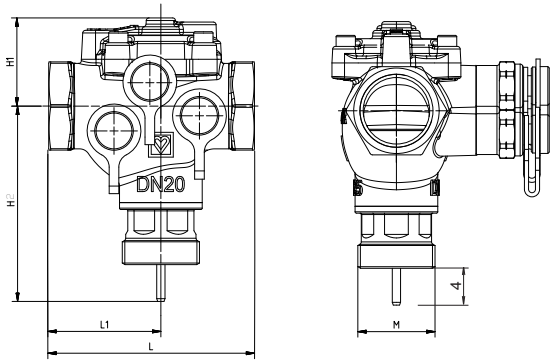
Dimensions in mm

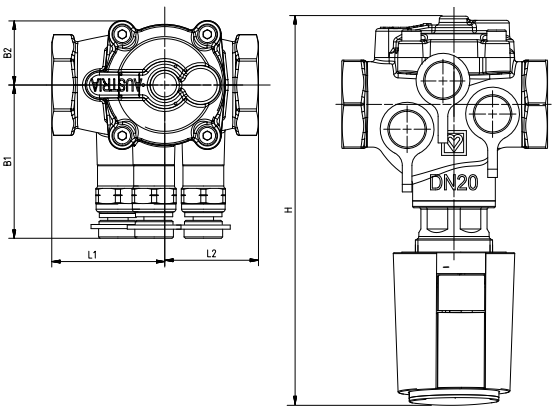
1 **4006** XX M SMART





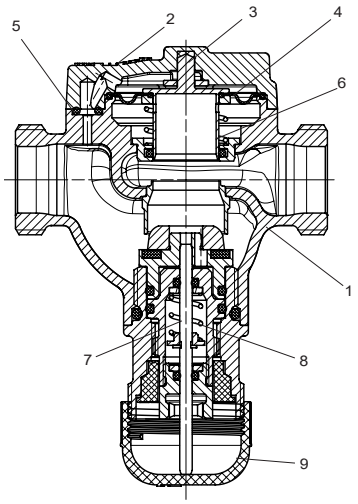
1 **4206** XX M SMART



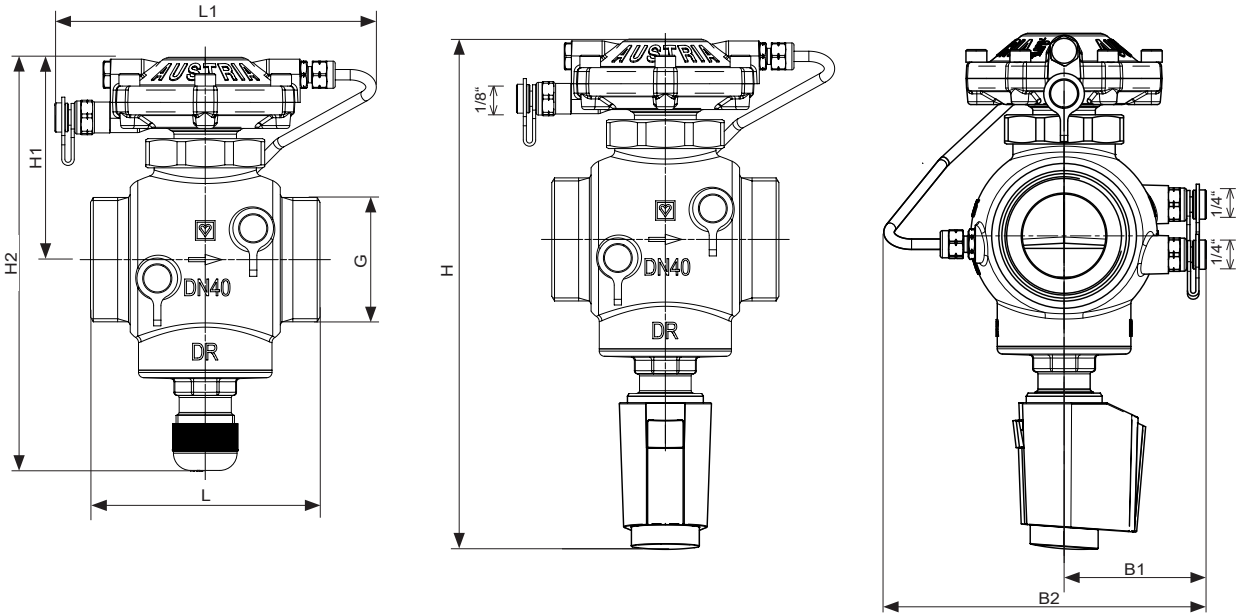


Materials 4X06 SMART

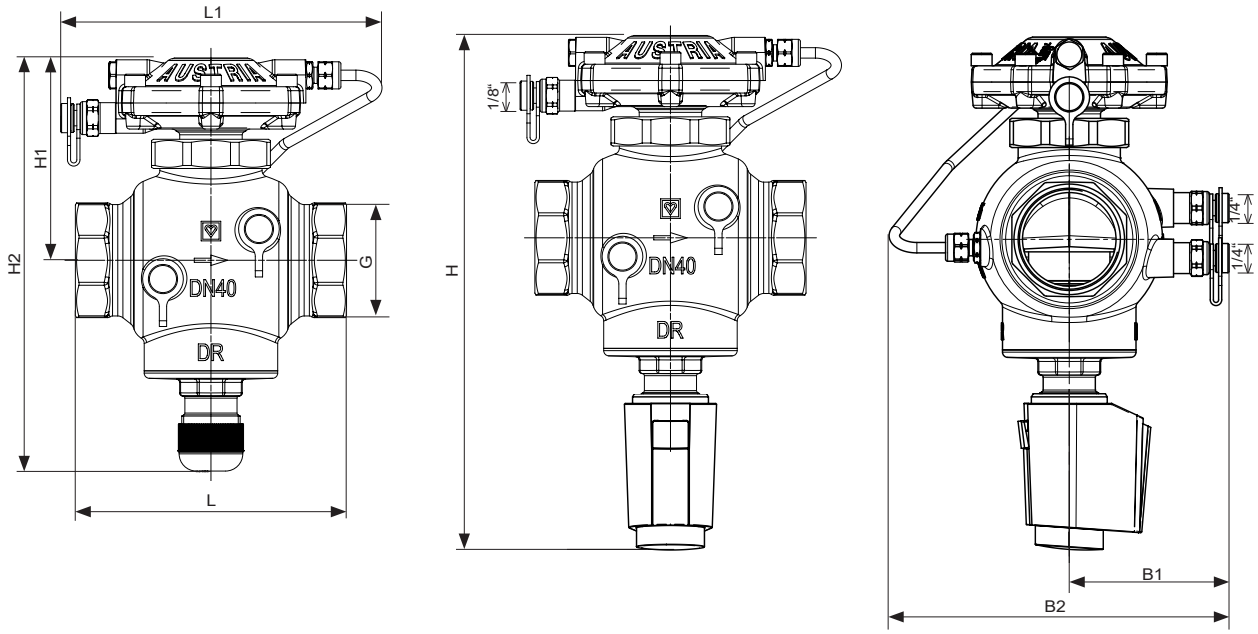
N	Description	Materials
1	Housing	DZR brass
2	Membrane housing	brass
3	Membrane piston unit	chrome-nickel steel
4	Membrane	EPDM
5	O-Rings	EPDM
6	Spring	spring steel
7	Pin	stainless steel
8	Spring	spring steel
9	Protective cap	plastic, red



1 **4406** 3X - AG



1 **4206** 5X - AG



Installation dimensions mm

Models			Order number	DN	Thread, inch	L, mm	H1, mm	H2, mm	H*, mm	B1, mm	B2, mm	L1, mm	L2, mm	M, mm
AG - Außengewinde flachdichtend	**4006** SMART	**M** - mit Messventilen	1 **4006** 40	15 LF	G ¾“	75	32	70,9	157,7	56,6	23,3	41	34	28
			1 **4006** 56	15 SF	G ¾“	75	32	70,9	157,7	54,6	23,3	41	34	28
			1 **4006** 76	15 HF	G ¾“	75	32	70,9	157,7	54,6	23,3	41	34	28
			1 **4006** 57	20 SF	G 1“	75	32	70,9	157,7	55,6	23,2	41	34	28
			1 **4006** 77	20 HF	G 1“	75	32	70,9	157,7	55,6	23,2	41	34	28
	4406	**M** - mit Messventilen	1 **4406** 33	25	G 1 ¼“	75	80	174	222	61	138	161	-	28
			1 **4406** 34	32	G 1 ¾“	100	98	198	246	69	151	162	-	28
			1 **4406** 35	40	G 2“	110	97	198	246	68	154	154	-	28
			1 **4406** 36	50	G 2 ½“	130	102	203	251	77	162	154	-	28
IG - Gewindemuffe	**4206** SMART	**M** - mit Messventilen	1 **4206** 40	15 LF	Rp ½“	75	32	70,9	157,7	55,2	23,2	41	34	28
			1 **4206** 06	15 SF	Rp ½“	75	32	70,9	157,7	55,2	23,2	41	34	28
			1 **4206** 76	15 HF	Rp ½“	75	32	70,9	157,7	55,2	23,2	41	34	28
			1 **4206** 07	20 SF	Rp ¾“	75	32	70,9	157,7	55,6	23,3	41	34	28
			1 **4206** 77	20 HF	Rp ¾“	75	32	70,9	157,7	55,6	23,3	41	34	28
	4206	**M** - mit Messventilen	1 **4206** 53	25	Rp 1“	90	80	174	222	61	138	161	-	28
			1 **4206** 54	32	Rp 1 ¼“	110	98	198	246	69	151	152	-	28
			1 **4206** 55	40	Rp 1 ½“	130	97	198	247	77	163	154	-	28
			1 **4206** 56	50	Rp 2“	150	102	203	251	77	165	154	-	28

* with 1 **7990** 3X actuator

Technical Data

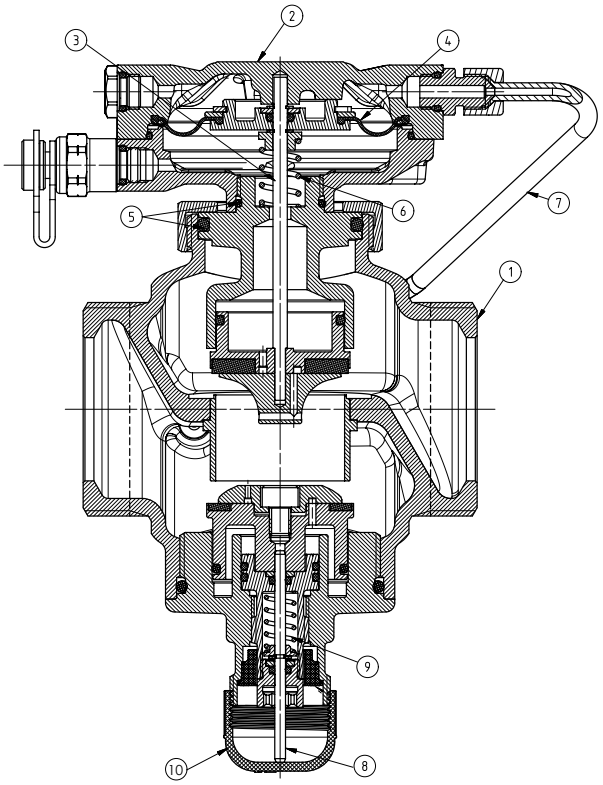
		4006 / **4206** SMART					**4406** / **4206**			
		15LF	15SF	15HF	DN20SF	20HF	DN25	DN32	DN40	DN50
Max flow l/h	6,5 mm actuator*	200	800	1200	1200	2000	3300	6000	7500	12000
	5 mm actuator*						2480	4500	5650	9050
k_{VS}- values		0,52	1,75	2,62	2,62	3,54	5,6	10,1	13,7	19,0
Flow setting range		10 - 100%	20 - 100 %							
Diff. pressure across valve, kPa	Δp_{min}	15-18	20	20	20	20-30	35	35	30	40
	Δp_{max}	600	600	600	600	600	600	600	600	600
PN		25 bar								
Min. operating temperature		2 °C (water); - 20 °C (non-freezing)								
Max. operating temperature		130 °C							110 °C	
Stroke		4 mm					6 mm			
Actuator connection		M 28 x 1,5								
Water quality		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. %.								

* The integrated control unit together with the actuating drive is responsible for modular control. The max. flow with 6.5 drive is achieved with the 1 **7990** 32, 1 **7708** 27 and 1 **7708** 48 actuating drives or with the 1 **7708** 4X geared motors. When using the 1 **7990** 31 and 1 **7708** 52/53 actuators with a 5 mm stroke, the maximum flow rate is reduced. The **4006** / **4206** SMART valves with a 4 mm stroke can be driven with all linear

Materials 4X06

N	Description	Materials
1	Body	DZR brass
2	Membrane body	brass
3	Pin	stainless steel
4	Membrane	EPDM
5	O-rings	EPDM
6	Spring	stainless steel
7	capillary pipe	copper Cu-DHP
8	Pin	stainless steel
9	Spring	stainless steel
10	Protective cap	plastic

The use of ethylene and propylene glycol in a mixture ratio of 25 - 50% by volume [%] is permitted. No hemp should be used for thread sealing because the ammonia contained in hemp can damage the brass. It is recommended to use sealing strip. EPDM seals are swollen by mineral oils or lubricants containing mineral oil and thus lead to failure of the EPDM seals. For frost and corrosion protection agents based on ethylene and propylene glycol can be found in the manufacturer's documentation.



Field of application

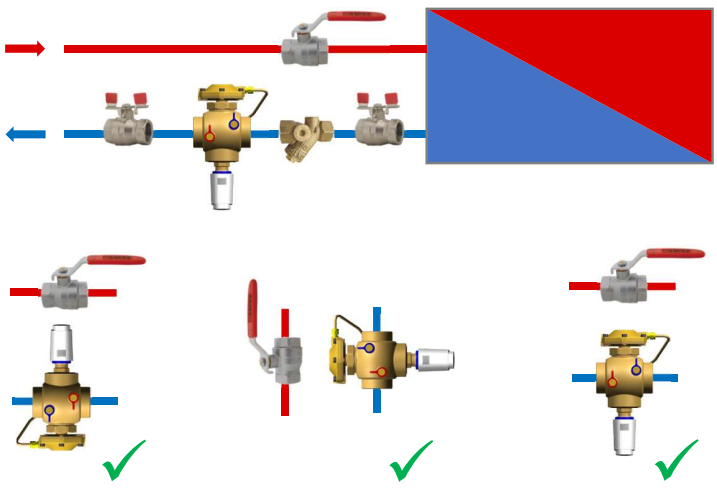
The Pressure Independent Balancing Control Valve (PIBCV) is used in all heating and cooling systems with circulation pumps. The valve automatically maintains flow to the required part of the system constant at the set rate by measuring and immediately adjusting to any variation in pressure.
The valve 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.

System flushing

If it is necessary to flush the system in the direction opposite to the direction of valve´s operation, it is important to take into account the maximum allowed differential pressure on the valve for backflushing, equal to 300 kPa. The volume flow during backflushing should be a maximum of three times the nominal flow rate.

Installation

The installation takes place in the return or the supply, the installation position does not matter. The direction of flow is indicated in the direction of the arrow on the housing. It is recommended to install a shut-off valve before and after the combination valve. The combination valve is shut off with the HERZ setting tool (1 **4006** 02). The desired flow rate is set in % of the maximum flow rate. Shut off by turning to the right to the stop (display < 0% red area).



Application field

It is assumed that a consumer needs a volume flow of 2300 l/h. The setting value is searched for the HERZ combination valve DN 25 (1 4406 33, 1 4206 53). The maximum flow at valve DN 25 is 3300 l / h, that corresponds to the setting 100%:

$$\frac{2300\ \mathrm{l/h}}{3300\ \mathrm{l/h}}\ \mathrm{x}\ 100\ \%\ =\ 70\ \%$$

The 2300 l/h is required thus presetting is 70%, which must be set on the valve. A control measurement is then to be carried out. Please note that a minimum differential pressure according to the data sheet must be available for correct operation on the valve.

The HERZ combi valve 1 **4006** 5X, 7X / 1 **4206** 0X, 7X SMART; 1 **4406** 3X / 1 **4206** 5X are operated with 2-point or continuously acting actuators. However, continuous control is always recommended. The reason for this is that constant and energy-saving control is essential for fast-working systems such as cooling systems or air heaters. Maximum energy savings can only be achieved with regulating valves.

With continuous control, the volume flow is controlled continuously with the slightest fluctuations between minimum and maximum flow. The continuous control also protects all other system-specific components, right down to the pump. The 2-point control is recommended for slow systems such as underfloor heating.

HERZ 4X06/4X06 SMART PICVs have several advantages over conventional series connection of volume flow controller and differential pressure controller, since the volume flow controller limits the flow depending on the differential pressure of the system, while the differential pressure is variable. If the amount of water is reduced when the room temperature is reached, the differential pressure increases. The resulting operating point is completely different from that of hydraulic balancing. This means that valves connected in series interfere with themselves.

The valve authority for the HERZ combination valve is ideally “1”. A valve authority below 0.3 is an ON / OFF control. In order to ensure the efficiency of your system and proper operation, modular control with an authority greater than 0.5 should be aimed for. Since the HERZ valve 4406/4206 compensates for the different differential pressures, the volume flow to the consumer is kept constant. An over or under supply of the individual consumers is therefore excluded.
Hydraulic balancing is always a relevant topic in building technology. The combination valves 4406 and 4206 enable the construction of a technical building system with reduced planning effort.

For systems with a large number of PICVs installed, the use of differential pressure control valves 4002 is recommended to avoid noise problems, the occurrence of water hammer and an unstable system operation.

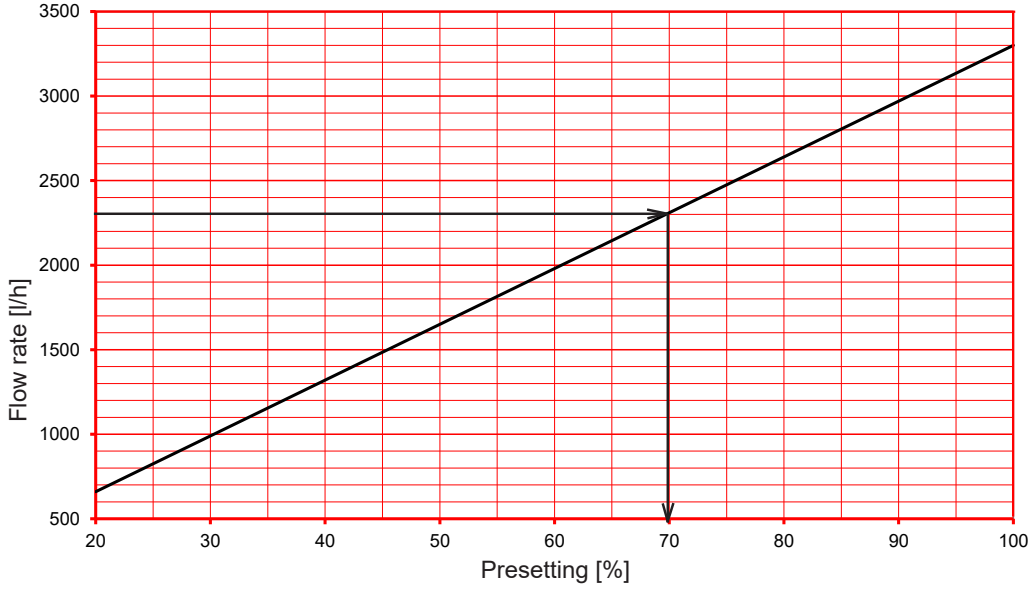
Valve selection

Select the valve with the smallest dimension that guarantees the necessary nominal flow with an additional safety surcharge. The setting should be as open as possible.
The flow rate calculation is based on the following formula:

$$\mathrm{V} = \frac{3600 \times \mathrm{Q}}{\mathrm{c} \times \rho \times \Delta\mathrm{T}} \times 1000, [\mathrm{l/h}]$$

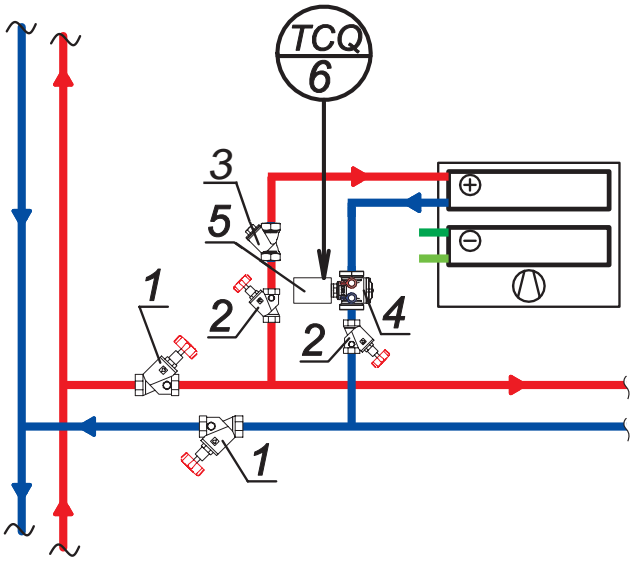
V ... volume flow [l/h]
Q ... heat output [kW]
c ... specific heat capacity 4.19 [kJ/kgK]
ρ ... density of water [kg/m^3]
ΔT ... temperature difference flow and return [K]

With the help of the kv diagram, the respective minimum differential pressure [kPa] can be determined depending on the flow [l/h] and the default setting [%].



Application example

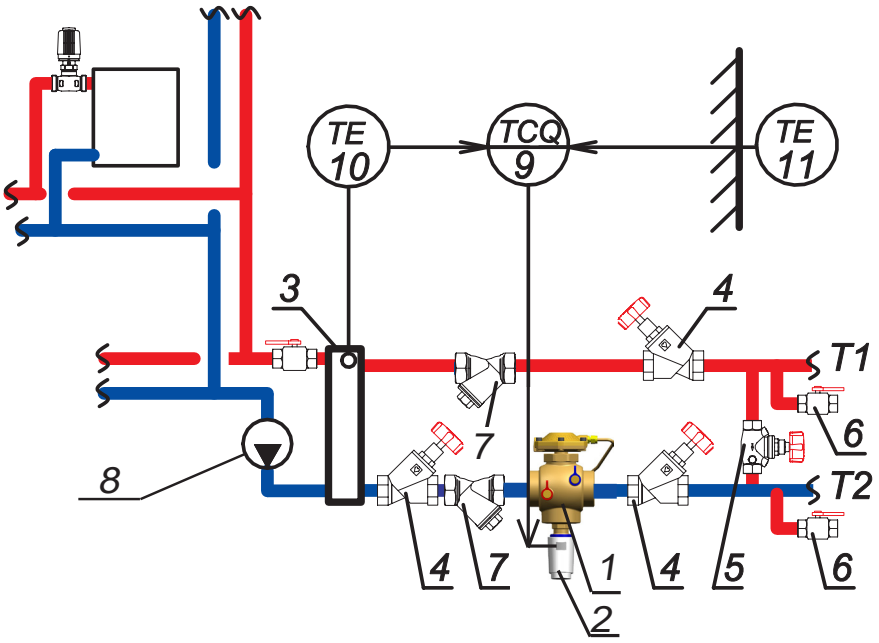
Combi valves are used in fan coil heat supply systems. A combination valve is installed in the return of each fan coil and acts as regulating valve.



Shema of a four-pipes fan coil heat supply system (extract)

1 2	**4115** shut-off valve STRÖMAX-A
3	**4111** strainer
4	**4006** PICV SMART
5	**7990** actuating drive
6	**7793** electronic continuous controller

PICVs in use with a hydraulic distributor



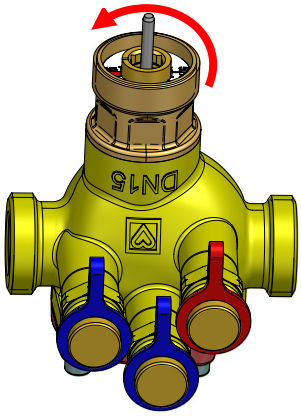
1	**4406** PICV
2	**7990** actuating drive
3	**4513** hydraulic switch
4	**4115** shut-off valve STRÖMAX-A
5	**4217** commissioning valve STRÖMAX-GM
6	**4119** Boiler filling and draining valve THERMOFLEX
7	**4111** strainer
8	circulation pump
9	**7793** electronic continuous controller
10	**7793** heating water temperature sensor
11	Outside temperature sensor

Pressetting

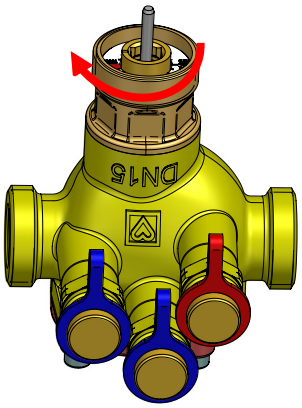
The respective setting of the control unit is clearly shown in percentages. The valve is preset with the HERZ setting key (1 4006 02). The desired flow is set in% of the maximum flow. To shut off, turn to the right to <0% (red area).

VE [%] = (Desired flow / maximum flow)*100

open = anticlockwise



close = clockwise



1 **4006** 02

How to perform a flow measurement:

- Connect the measuring computer to the test points
- Enter the dimensions, valve type and setting -> display flow

Warning notices

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

Test points

Three 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.

Disposal

Local and currently applicable legislation must be observed for disposal.

Functional principle of a PICV combination valve 4006/4206 SMART

A Pressure Independent Balancing and Control Valve (PIBCV or PICV) combines a regulating and control valve with a differential pressure controller.

Balancing and control valve

The valve has a linear characteristic. The adjustment of the required flow volume is done at the valve spindle, where the maximum stroke is adjusted. Settings between 20 % and 80 % of the nominal flow are recommended. The adjustment of the maximum stroke allows actuators with stroke detection to utilise their full control bandwidth (e.g. 0-10 V).

Differential pressure controller

The differential pressure controller keeps the differential pressure constant across the balancing and control valve. As the valve is independent from the system differential pressure, the preset flow volume will remain constant at all times despite any change in the system conditions..

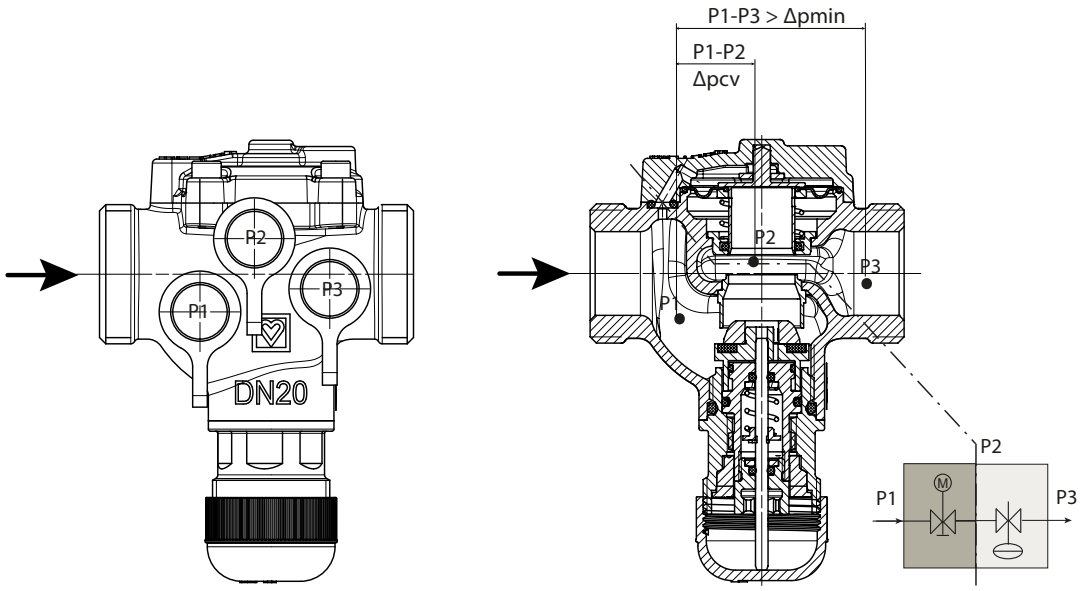
Test points

The dimensions DN15SF, DN15HF, DN20SF and DN20HF have 3 test points P1, P2 and P3. The valve requires a minimum differential pressure in order to operate correctly.

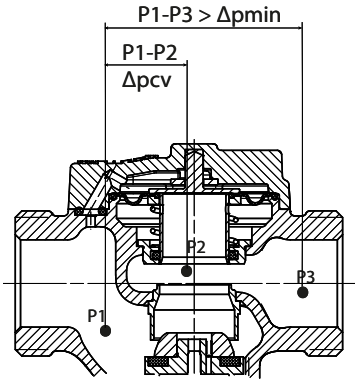
Measuring across P1-P3 will determine the minimum differential pressure that the valve requires to operate correctly.

Measuring across P1-P2 determines the differential pressure required to calculate the valve flow volume from the kv values (shown in the table) for each % preset position.

The differential pressure can be checked with the HERZ measuring computer 1 **8900** 05.



k_V - values of the control valve in the PIBCV (test points P1 - P2)



Presetting	DN 15 LF	DN 15 SF	DN 15 HF	DN 20 SF	DN 20 HF
[%]	[m³/h]	[m³/h]	[m³/h]	[m³/h]	[m³/h]
10	0.060	-	-	-	-
11	0.064	-	-	-	-
12	0.068	-	-	-	-
13	0.072	-	-	-	-
14	0.076	-	-	-	-
15	0.080	-	-	-	-
16	0.084	-	-	-	-
17	0.088	-	-	-	-
18	0.092	-	-	-	-
19	0.096	-	-	-	-
20	0.100	0.352	0.530	0.548	0.983
21	0.106	0.370	0.557	0.579	1.040
22	0.112	0.389	0.585	0.611	1.097
23	0.118	0.407	0.613	0.643	1.154
24	0.124	0.425	0.641	0.674	1.211
25	0.130	0.443	0.669	0.706	1.268
26	0.136	0.462	0.697	0.738	1.325
27	0.142	0.480	0.724	0.769	1.382
28	0.148	0.498	0.752	0.801	1.439
29	0.154	0.517	0.780	0.832	1.496
30	0.160	0.535	0.808	0.864	1.553
31	0.166	0.554	0.837	0.898	1.616
32	0.172	0.573	0.867	0.932	1.679
33	0.178	0.592	0.896	0.965	1.742
34	0.184	0.610	0.926	0.999	1.805
35	0.190	0.629	0.955	1.033	1.867
36	0.196	0.648	0.985	1.067	1.930
37	0.202	0.667	1.014	1.100	1.993
38	0.208	0.686	1.044	1.134	2.056
39	0.214	0.705	1.073	1.168	2.119
40	0.220	0.724	1.103	1.202	2.182
41	0.226	0.742	1.142	1.238	2.246
42	0.232	0.760	1.181	1.274	2.311
43	0.238	0.778	1.220	1.310	2.376
44	0.244	0.796	1.260	1.347	2.441
45	0.250	0.814	1.299	1.383	2.506
46	0.256	0.833	1.338	1.419	2.571
47	0.262	0.851	1.377	1.455	2.636
48	0.268	0.869	1.417	1.492	2.700
49	0.274	0.887	1.456	1.528	2.765

50	0.280	0.905	1.495	1.564	2.830
51	0.285	0.924	1.531	1.598	2.893
52	0.290	0.942	1.566	1.632	2.957
53	0.295	0.961	1.602	1.665	3.020
54	0.300	0.979	1.637	1.699	3.083
55	0.305	0.998	1.672	1.733	3.146
56	0.310	1.016	1.708	1.767	3.210
57	0.315	1.035	1.743	1.800	3.273
58	0.320	1.053	1.779	1.834	3.336
59	0.325	1.072	1.814	1.868	3.399
60	0.330	1.090	1.850	1.902	3.463
61	0.339	1.112	1.883	1.937	3.536
62	0.348	1.134	1.915	1.972	3.609
63	0.357	1.156	1.948	2.007	3.683
64	0.366	1.178	1.980	2.042	3.756
65	0.375	1.199	2.013	2.077	3.829
66	0.384	1.221	2.046	2.113	3.903
67	0.393	1.243	2.078	2.148	3.976
68	0.402	1.265	2.111	2.183	4.050
69	0.411	1.286	2.144	2.218	4.123
70	0.420	1.308	2.176	2.253	4.196
71	0.426	1.332	2.212	2.292	4.271
72	0.432	1.355	2.248	2.331	4.346
73	0.438	1.379	2.284	2.369	4.421
74	0.444	1.402	2.320	2.408	4.496
75	0.450	1.425	2.356	2.447	4.571
76	0.456	1.449	2.392	2.485	4.646
77	0.462	1.472	2.428	2.524	4.721
78	0.468	1.496	2.464	2.562	4.796
79	0.474	1.519	2.500	2.601	4.871
80	0.480	1.543	2.536	2.640	4.946
81	0.490	1.568	2.574	2.683	4.990
82	0.500	1.594	2.612	2.726	5.035
83	0.510	1.620	2.651	2.769	5.080
84	0.520	1.646	2.689	2.812	5.125
85	0.530	1.672	2.728	2.855	5.169
86	0.540	1.698	2.766	2.898	5.214
87	0.550	1.723	2.804	2.941	5.259
88	0.560	1.749	2.843	2.985	5.304
89	0.570	1.775	2.881	3.028	5.348
90	0.580	1.801	2.919	3.071	5.393
91	0.589	1.824	2.963	3.106	5.538
92	0.598	1.847	3.007	3.142	5.682
93	0.607	1.871	3.050	3.177	5.827
94	0.616	1.894	3.094	3.213	5.971
95	0.625	1.917	3.138	3.248	6.116
96	0.634	1.940	3.181	3.284	6.261
97	0.643	1.963	3.225	3.319	6.405
98	0.652	1.987	3.269	3.355	6.550
99	0.661	2.010	3.312	3.390	6.694
100	0.670	2.033	3.356	3.426	6.839

Functional principle of a PICV combination valve 4406/4206

A Pressure Independent Balancing and Control Valve (PIBCV or PICV) combines a regulating and control valve with a differential pressure controller.

Balancing and control valve

The valve has a linear characteristic. The adjustment of the required flow volume is done at the valve spindle, where the maximum stroke is adjusted. Settings between 20 % and 80 % of the nominal flow are recommended. The adjustment of the maximum stroke allows actuators with stroke detection to utilise their full control bandwidth (e.g. 0-10 V).

Differential pressure controller

The differential pressure controller keeps the differential pressure constant across the balancing and control valve. As the valve is independent from the system differential pressure, the preset flow volume will remain constant at all times despite any change in the system conditions.

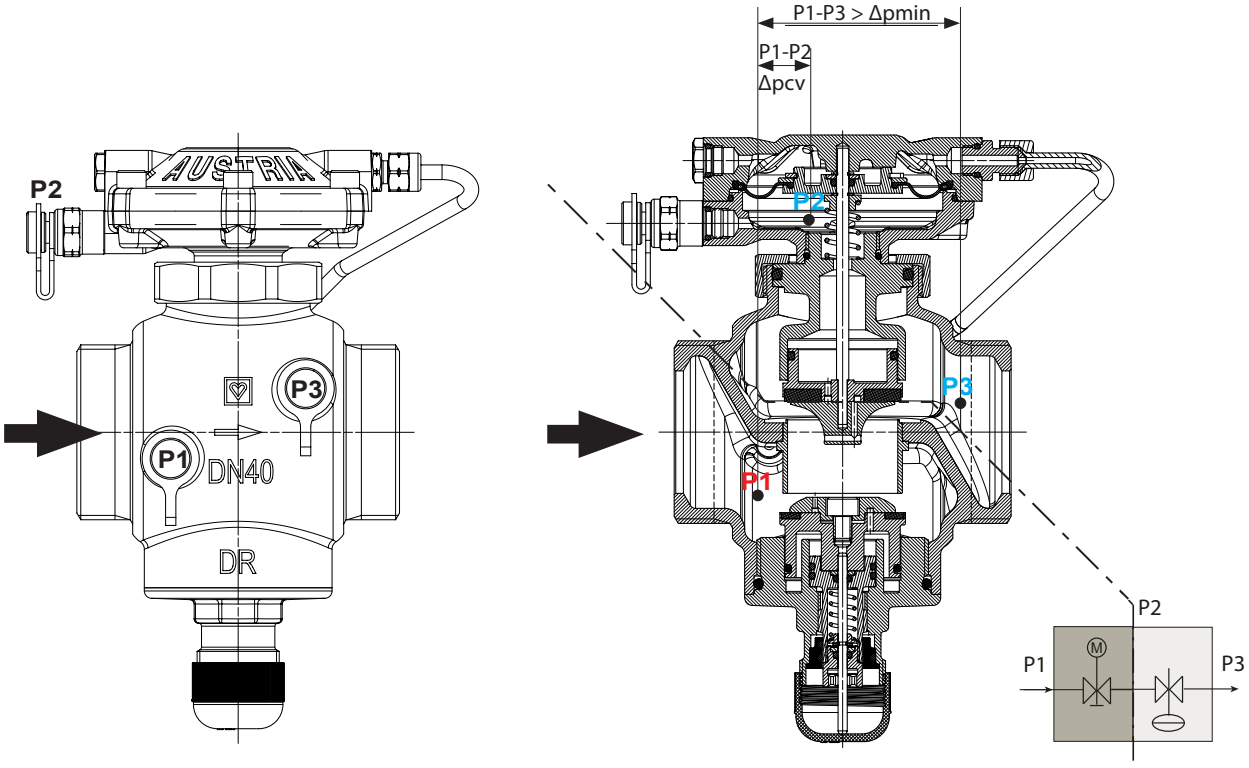
Test points

The 1 4406 3X has 3 test points P1, P2 and P3. The valve requires a minimum differential pressure in order to operate correctly.

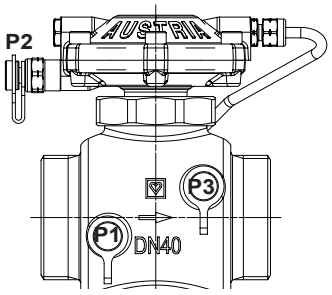
Measuring across P1-P3 will determine the minimum differential pressure that the valve requires to operate correctly.

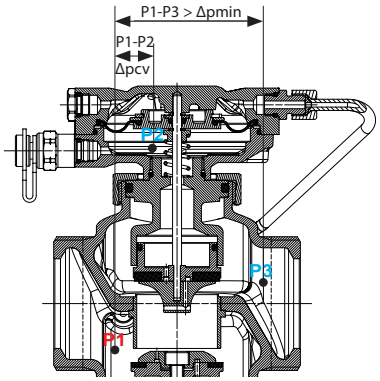
Measuring across P1-P2 determines the differential pressure required to calculate the valve flow volume from the kv values (shown in the table) for each % preset position.

The differential pressure can be checked with the HERZ measuring computer 1 **8900** 05.



k_v - values of the control valve in the PIBCV (test points P1 - P2)



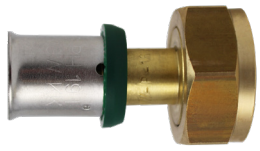


Presetting	DN 25	DN32	DN 40	DN 50
[%]	[m³/h]	[m³/h]	[m³/h]	[m³/h]
10	0.558	1.014	1.268	2.000
11	0.614	1.119	1.395	2.212
12	0.669	1.223	1.521	2.423
13	0.725	1.327	1.648	2.635
14	0.781	1.432	1.775	2.846
15	0.837	1.536	1.902	3.058
16	0.892	1.640	2.028	3.270
17	0.948	1.745	2.155	3.481
18	1.004	1.849	2.282	3.693
19	1.060	1.954	2.409	3.904
20	1.116	2.058	2.535	4.116
21	1.171	2.161	2.668	4.322
22	1.227	2.264	2.800	4.528
23	1.283	2.367	2.932	4.733
24	1.339	2.470	3.065	4.939
25	1.395	2.572	3.197	5.145
26	1.450	2.675	3.329	5.351
27	1.506	2.778	3.462	5.557
28	1.562	2.881	3.594	5.762
29	1.618	2.984	3.726	5.968
30	1.673	3.087	3.859	6.174
31	1.729	3.190	3.987	6.380
32	1.785	3.293	4.116	6.586
33	1.841	3.396	4.245	6.791
34	1.897	3.499	4.373	6.997
35	1.952	3.601	4.502	7.203
36	2.008	3.704	4.630	7.409
37	2.064	3.807	4.759	7.615
38	2.120	3.910	4.888	7.820
39	2.175	4.013	5.016	8.026
40	2.231	4.116	5.145	8.232
41	2.287	4.227	5.293	8.453
42	2.343	4.337	5.442	8.674
43	2.399	4.448	5.590	8.896
44	2.454	4.559	5.739	9.117

45	2.510	4.669	5.887	9.338
46	2.566	4.780	6.035	9.560
47	2.622	4.890	6.184	9.781
48	2.677	5.001	6.332	10.002
49	2.733	5.112	6.481	10.223
50	2.789	5.222	6.629	10.445
51	2.845	5.327	6.762	10.654
52	2.901	5.431	6.894	10.862
53	2.956	5.536	7.027	11.071
54	3.012	5.640	7.159	11.280
55	3.068	5.745	7.292	11.489
56	3.124	5.849	7.425	11.698
57	3.179	5.953	7.557	11.907
58	3.235	6.058	7.690	12.116
59	3.291	6.162	7.822	12.325
60	3.347	6.267	7.955	12.534
61	3.403	6.371	8.102	12.742
62	3.458	6.476	8.250	12.951
63	3.514	6.580	8.397	13.160
64	3.570	6.685	8.545	13.369
65	3.626	6.789	8.692	13.578
66	3.681	6.893	8.840	13.787
67	3.737	6.998	8.987	13.996
68	3.793	7.102	9.134	14.205
69	3.849	7.207	9.282	14.414
70	3.905	7.311	9.429	14.623
71	3.960	7.429	9.564	14.857
72	4.016	7.546	9.699	15.092
73	4.072	7.663	9.833	15.327
74	4.128	7.781	9.968	15.562
75	4.184	7.898	10.103	15.797
76	4.239	8.016	10.238	16.031
77	4.295	8.133	10.372	16.266
78	4.351	8.250	10.507	16.501
79	4.407	8.368	10.642	16.736
80	4.462	8.485	10.776	16.971
81	4.518	8.607	10.931	17.213
82	4.574	8.728	11.086	17.456
83	4.630	8.849	11.241	17.699
84	4.686	8.971	11.395	17.941
85	4.741	9.092	11.550	18.184
86	4.797	9.213	11.705	18.427
87	4.853	9.335	11.860	18.669
88	4.909	9.456	12.014	18.912
89	4.964	9.577	12.169	19.155
90	5.020	9.699	12.324	19.397
91	5.076	9.806	12.461	19.613
92	5.132	9.914	12.598	19.828
93	5.188	10.022	12.735	20.044
94	5.243	10.130	12.871	20.259
95	5.299	10.238	13.008	20.475
96	5.355	10.345	13.145	20.691
97	5.411	10.453	13.282	20.906
98	5.466	10.561	13.419	21.122
99	5.522	10.669	13.556	21.337
100	5.578	10.776	13.693	21.553

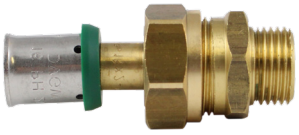
Press fitting screw connection

T 70XX Junction press fitting screw connection for composite pipes PE-RT for valve with male thread, flat-sealing



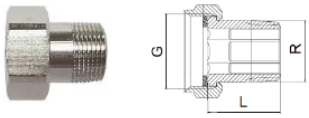
Order number	Valve dimension	G	Pipe
T **7016** 41	DN 15	G ¾"	16 x 2
T **7020** 41	DN 15	G ¾"	20 x 2
T **7016** 42	DN 20	G 1"	16 x 2
T **7020** 42	DN 20	G 1"	20 x 2
T **7026** 42	DN 20	G 1"	26 x 3
T **7026** 43	DN 25	G 1 ¼"	26 x 3
T **7032** 43	DN 25	G 1 ¼"	32 x 3
T **7040** 43	DN 25	G 1 ¼"	40 x 3,5
T **7040** 45	DN 40	G 2"	40 x 3,5
T **7050** 45	DN 40	G 2"	50 x 4

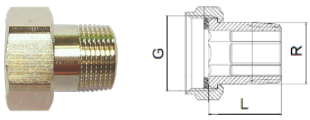
T 70XX Press fitting screw connection for composite pipes PE-RT for valve with female thread, flat-sealing



Order number	Valve dimension	R	Pipe
T **7016** 61	DN 15	R ½"	16 x 2
T **7020** 61	DN 15	R ½"	20 x 2
T **7016** 62	DN 20	R ¾"	16 x 2
T **7020** 62	DN 20	R ¾"	20 x 2
T **7026** 62	DN 20	R ¾"	26 x 3

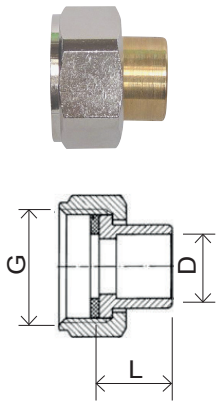
6220 Iron pipe connection flat seal with nut and seal





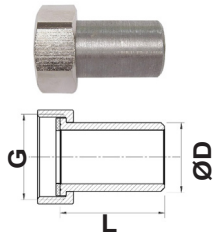
Order number	Valve dimension	G	R	L, mm
1 **6220** 21	DN 15	G ¾"	R ½"	26,3
1 **6220** 12	DN 20	G 1"	R ¾"	31,4
1 **6220** 63	DN 25	G 1 ¼"	R 1"	35,3
1 **6220** 65	DN 32	G 1 ¾"	R 1 1/2"	49
1 **6220** 94	DN32	G 1 ¾"	R 1 1/4"	37,7
1 **6220** 95	DN40	G 2"	R 1 1/2"	49
1 **6220** 96	DN50	G 2 1/2"	R 2"	56

6236 Solder connection



Order number	Valve dimension	G	Ø D, mm	L, mm
1 **6236** 01	DN 15	G ¾"	Ø 12	14
1 **6236** 11	DN 15	G ¾"	Ø 15	17
1 **6236** 21	DN 15	G ¾"	Ø 18	19
1 **6236** 02	DN 20	G 1"	Ø 15	18
1 **6236** 12	DN 20	G 1"	Ø 18	19
1 **6236** 22	DN 20	G 1"	Ø 22	23
1 **6236** 63	DN 25	G 1 ¼"	Ø 28	24
1 **6236** 65	DN 32	G 1 ¾"	Ø 42	31
1 **6240** 74	DN 40	G 2"	Ø 35	27

6240 Welding connection flat seal



Order number	Valve dimension	G	Ø D, mm	L, mm
1 **6240** 01	DN 15	G ¾”	Ø 21,3	45
1 **6240** 02	DN 20	G 1”	Ø 26,8	45
1 **6240** 63	DN 25	G 1 ¼”	Ø 33,7	51
1 **6240** 65	DN 32	G 1 ¾”	Ø 47,5	57

Accessories

Order number	Description	Image
1 **7990** 32	**HERZ actuating drive for continuous control, NC** M 28 x 1.5, 0..10 V, 6.5 mm stroke, adapter M 28 x 1.5 colour blue integrated, male connector, cable loose, without limit switch. Closing force 125 N, 1.2 watt with valve stroke detection.	
1 **7990** 31	**HERZ actuating drive for continuous control, NC** M 28 x 1.5, 0..10 V, 5 mm stroke, adapter M 28 x 1.5 colour blue integrated, male connector, cable loose, without limit switch. Closing force 100 N, 1.2 watt.	
1 **7708** 53	**HERZ actuating drive for 2-point control forfloor heating circuit distributors and valves, NC, 230 V/AC,** M 28 x 1.5, 2-point, also suitable for pulse-pause operation, 5 mm stroke, adapter M 28 x 1.5 colour red integrated, cable fixed, without limit switch. Closing force 100 N. Power consumption 1 watt.	
1 **7708** 52	**HERZ actuating drive for 2-point control for floor heating circuit distributors and valves, NC, 24 V/AC/DC,** M 28 x 1.5, 2-point,also suitable for pulse-pause operation, 5 mm stroke, adapter M 28 x 1.5 colour red integrated, cable fixed, without limit switch. Closing force 100 N. Power consumption 1 watt	
1 **7708** 27	**HERZ actuating drive for 2-point control forfloor heating circuit distributors and valves, NC, 230 V/AC,** M 28 x 1.5, 2-point, also suitable for pulse-pause operation, 6.5 mm stroke, adapter M 28 x 1.5 colour blue integrated, cable fixed, without limit switch. Closing force 125 N. Power consumption 1.2 watt.	
1 **7708** 48	**HERZ actuating drive for 2-point control forfloor heating circuit distributors and valves, NC, 24 V/AC/DC,** M 28 x 1.5, 2-point, also suitable for pulse-pause operation, 6.5 mm stroke, adapter M 28 x 1.5 colour blue integrated, cable fixed, without limit switch. Closing force 125 N. Power consumption 1.2 watt.	
1 **7708** 40	**HERZ geared motor 3-point, 24V/AC/DC** Adapter M 28 x 1.5 colour red integrated, 24 V, stroke distance max. 8.5 mm, max. actuation force 200 N.	
1 **7708** 41	**HERZ geared motor 3-point, 230V/AC** Adapter M 28 x 1.5 colour red integrated, 230 V, stroke distance max. 8.5 mm, max. actuation force 200 N.	
1 **7708** 42	**HERZ geared motor DDC 0–10 V** Adapter M 28 x 1.5 colour red integrated, 24 V, stroke distance max. 8.5 mm, max. actuation force 200 N. Operating voltage 24V/AC/DC.	
1 **7708** 46	**HERZ geared motor DDC 0–10 V** Adapter M 28 x 1.5 colour red integrated, 24 V, stroke distance max. 8.5 mm, max. actuation force 200 N. With valve port detection and feedback channel. Operating voltage 24V/AC/DC.	

Accessories and spare parts

Order number	Dim.	Description	Model
1 **0284** 05	1/8”	Quick test point for combi valve - pressure-independent control valve SMART, brass version, blue cap (return) for pressure transducer	
1 **0284** 01	1/4”	Quick test point for combi valve - pressure-independent control valve, brass version, blue cap (return) for pressure transducer	
1 **0284** 06	1/8”	Quick test point for combi valve - pressure-independent control valve SMART, brass version, red cap (supply) for pressure transducer	
1 **0284** 02	1/4”	Quick test point for combi valve - pressure-independent control valve, brass version, red cap (supply) for pressure transducer	
1 **0284** 11	1/4”	Quick test point for combi valve - pressure-independent control valve. brass version, blue cap (return) for pressure transducer, extended design for valves with an insulation thickness up to 40 mm	
1 **0284** 12	1/4”	Quick test point for combi valve - pressure- independent control valve. brass version, red cap (supply) for pressure transducer, extended design for valves with an insulation thickness up to 40 mm	
1 **4006** 02		Pre-setting key HERZ Combi valve pressure-independent control valve for 4006/4206	

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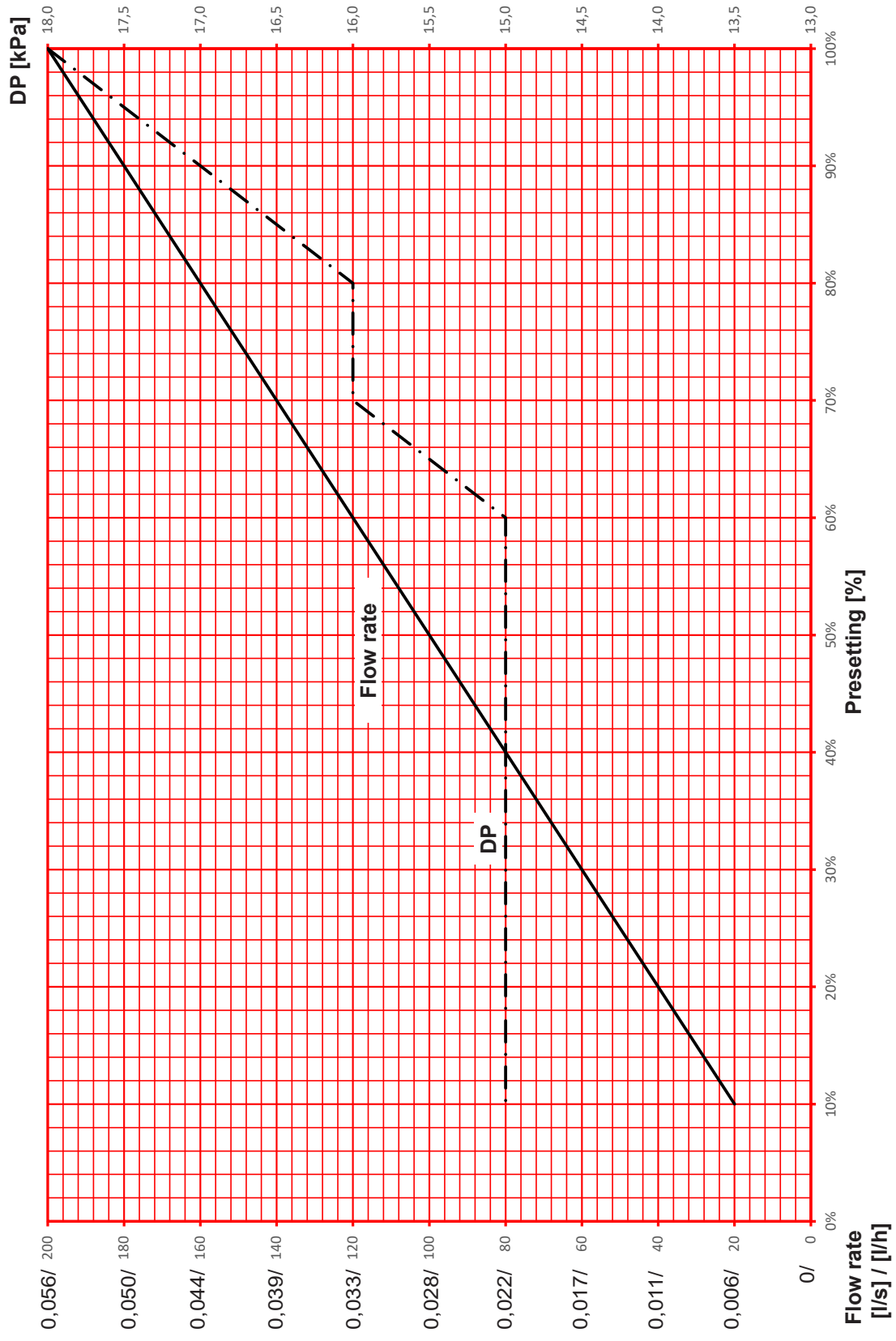
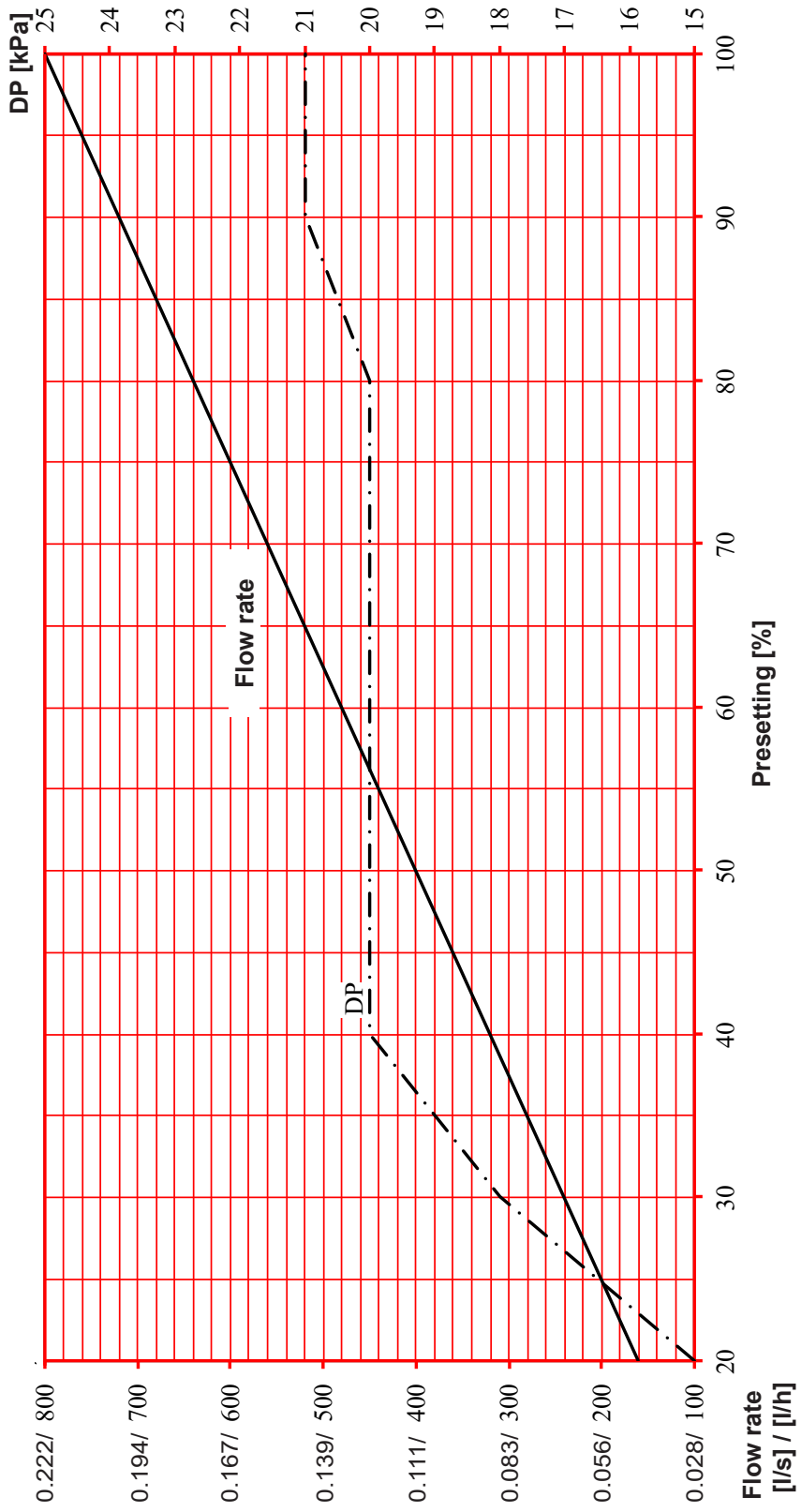
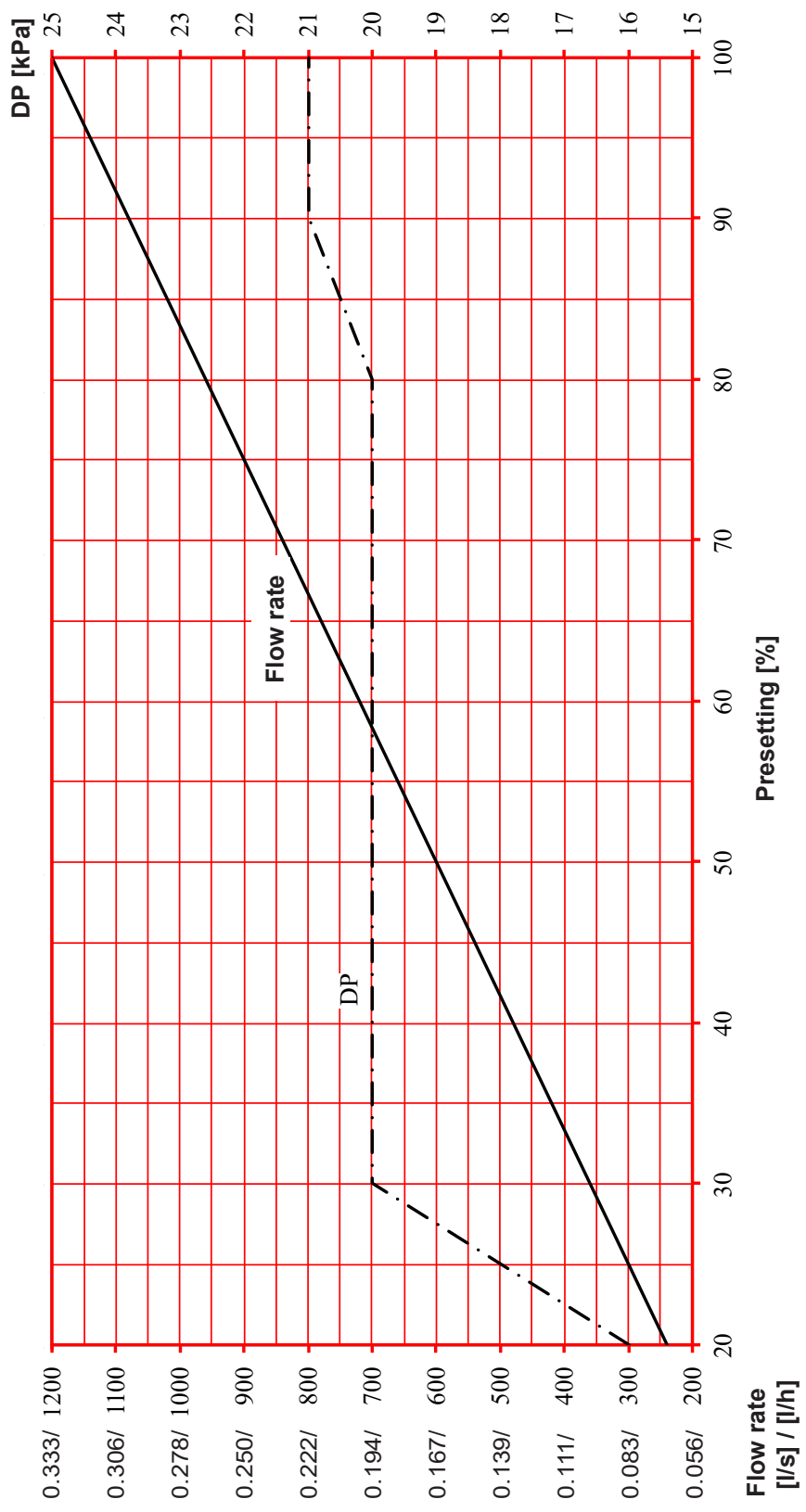
HERZ standard diagram	HERZ - PICV SMART
1 **4006** 40 / 1 **4206** 40	DN 15 LF



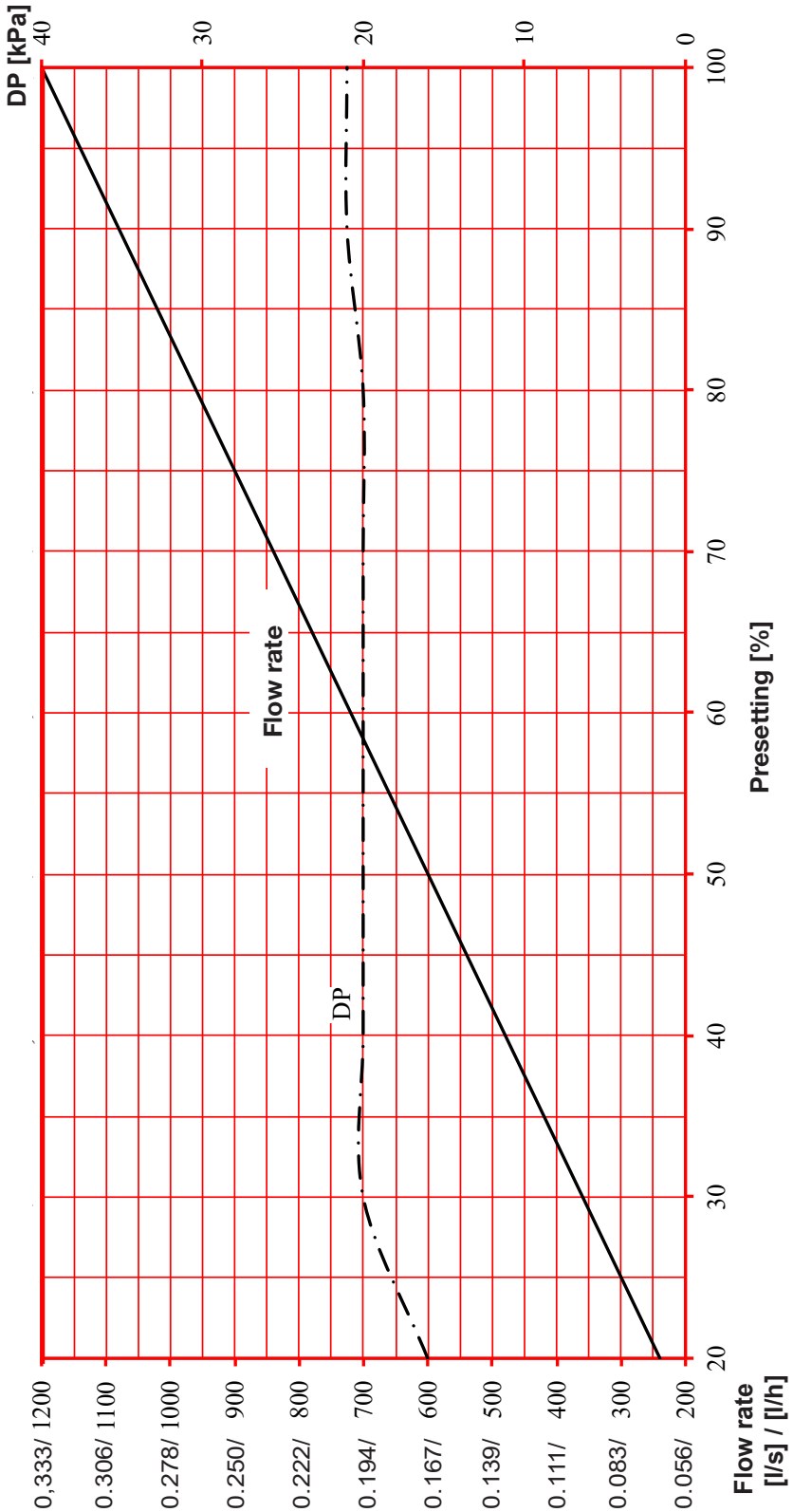
HERZ standard diagram	HERZ - PICV SMART
1 **4206** 06 / 1 **4006** 56	DN 15 SF



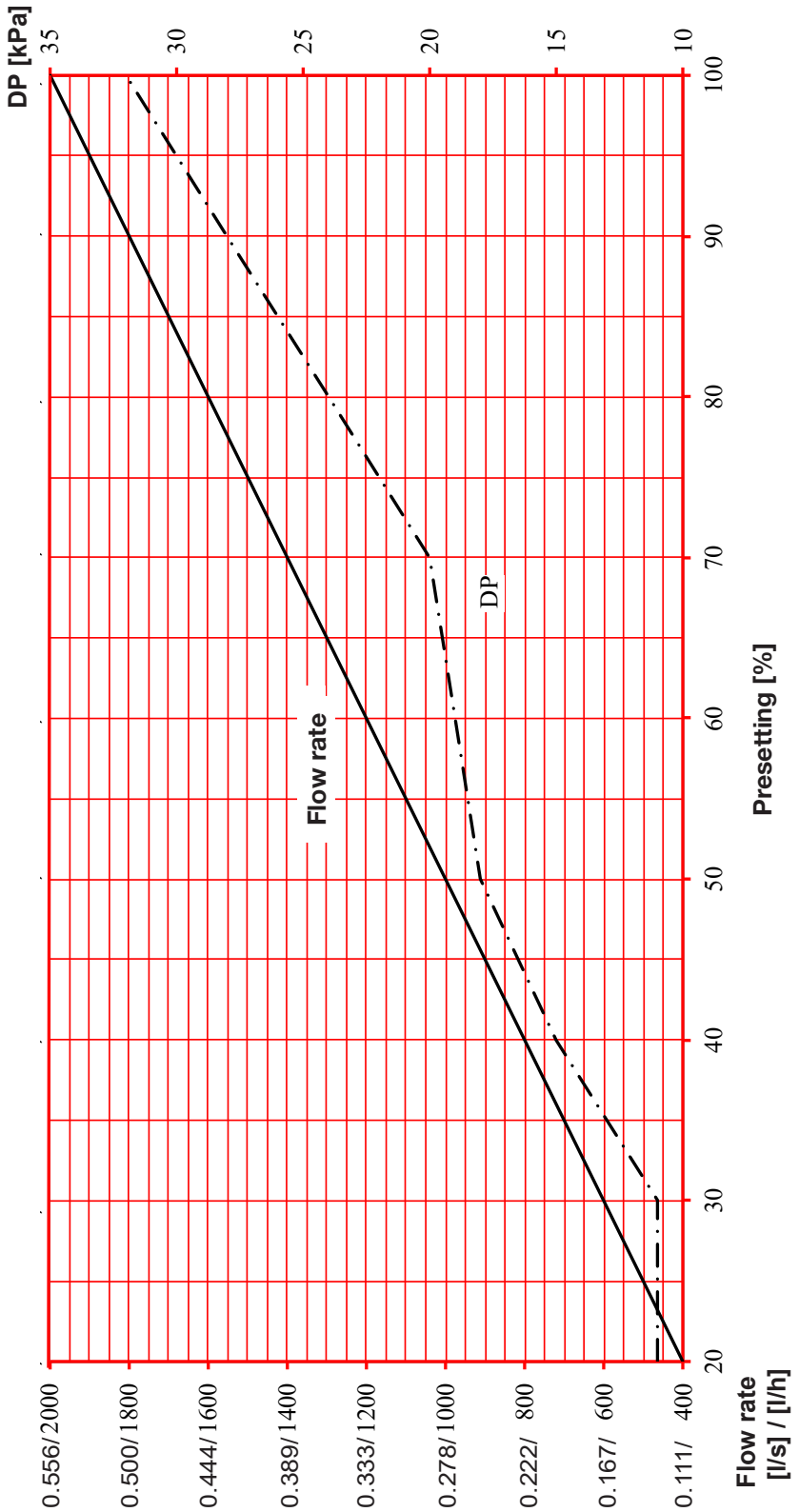
HERZ standard diagram	HERZ - PICV SMART
1 **4206** 76 / 1 **4006** 76	DN 15 HF



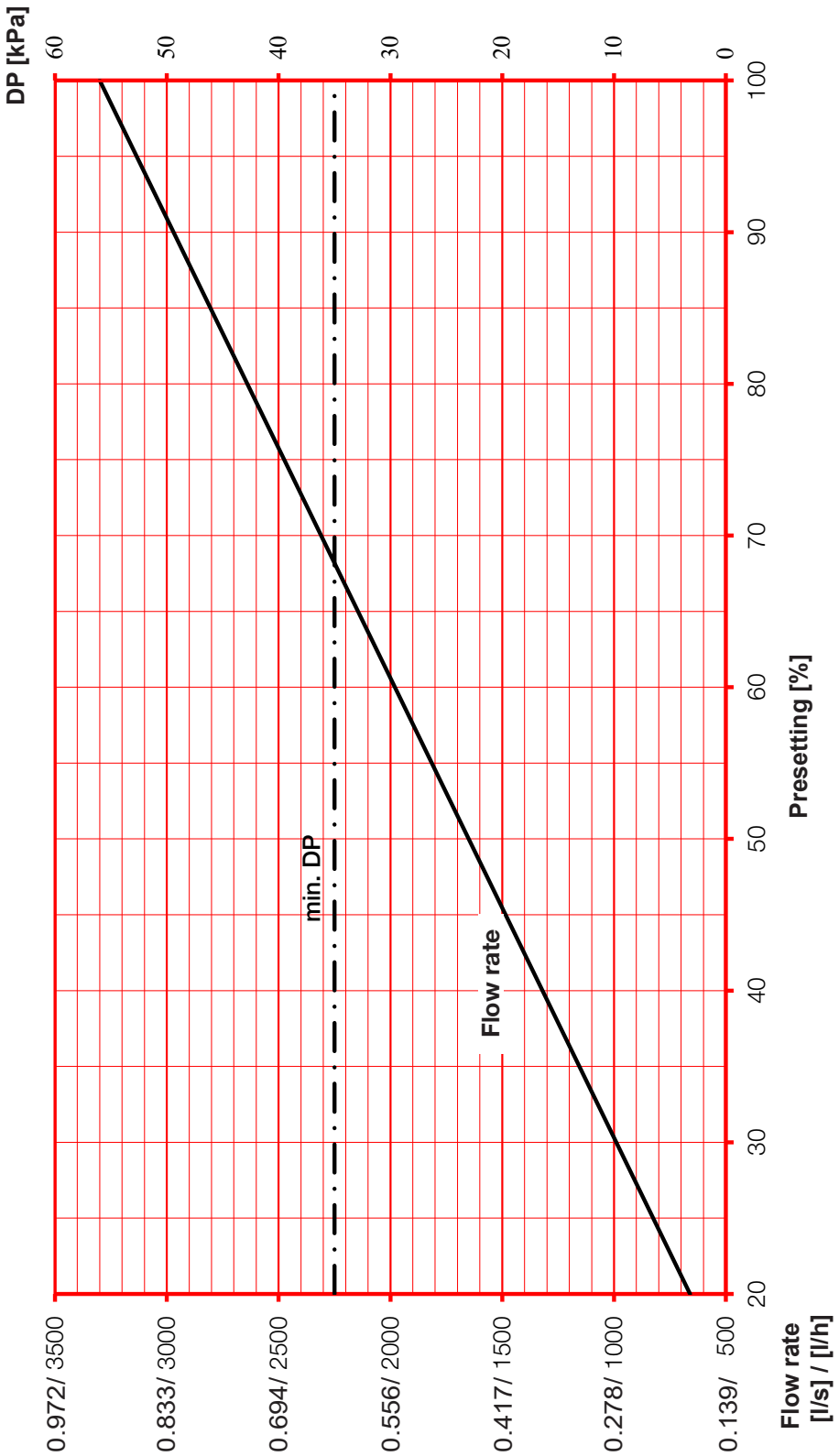
HERZ - Standard diagram	HERZ - PICV SMART
1 **4206** 07 / 1 **4006** 57	DN 20 SF



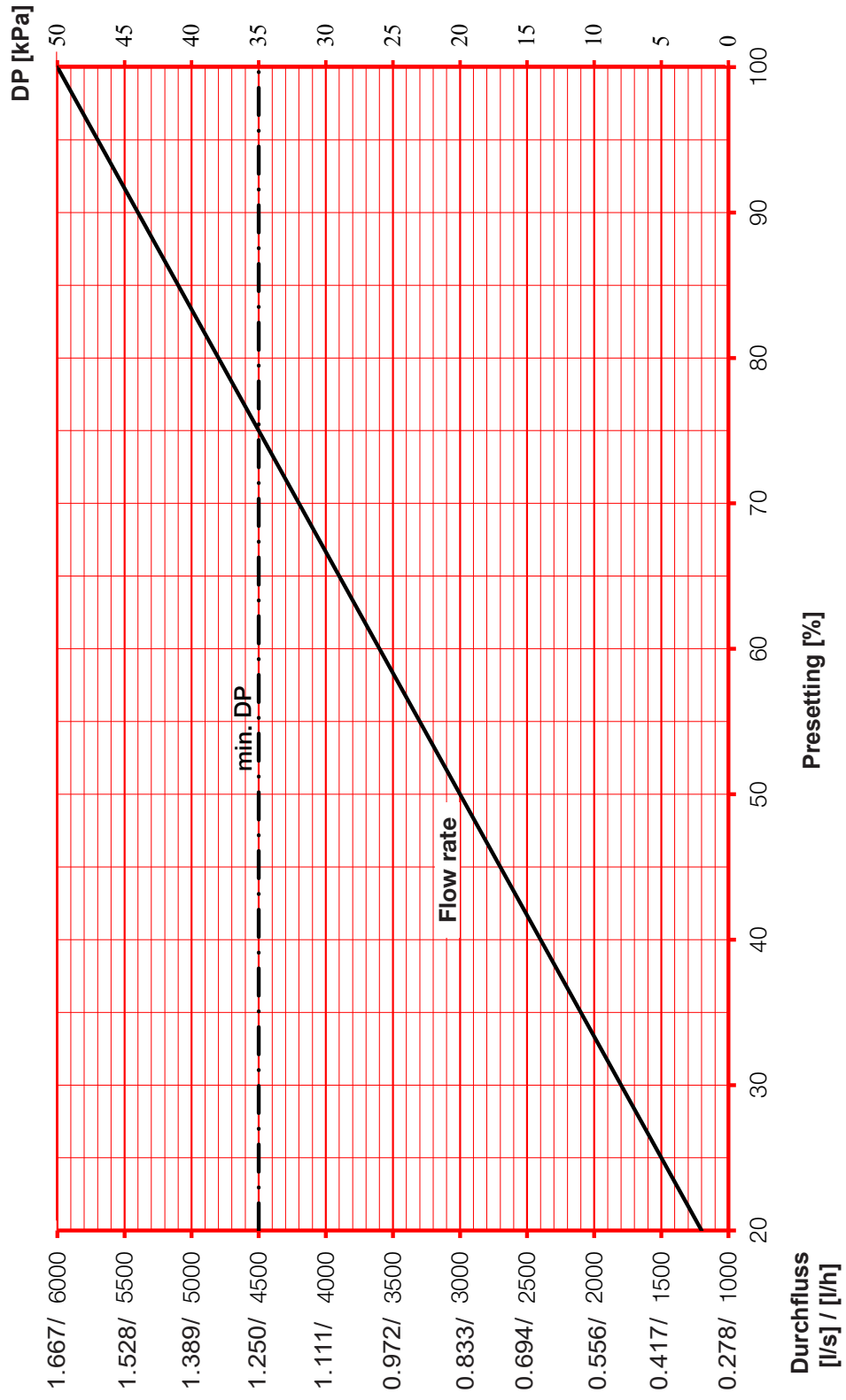
HERZ - Standard diagram	HERZ - PICV SMART
1 **4206** 77 / 1 **4006** 77	DN 20HF



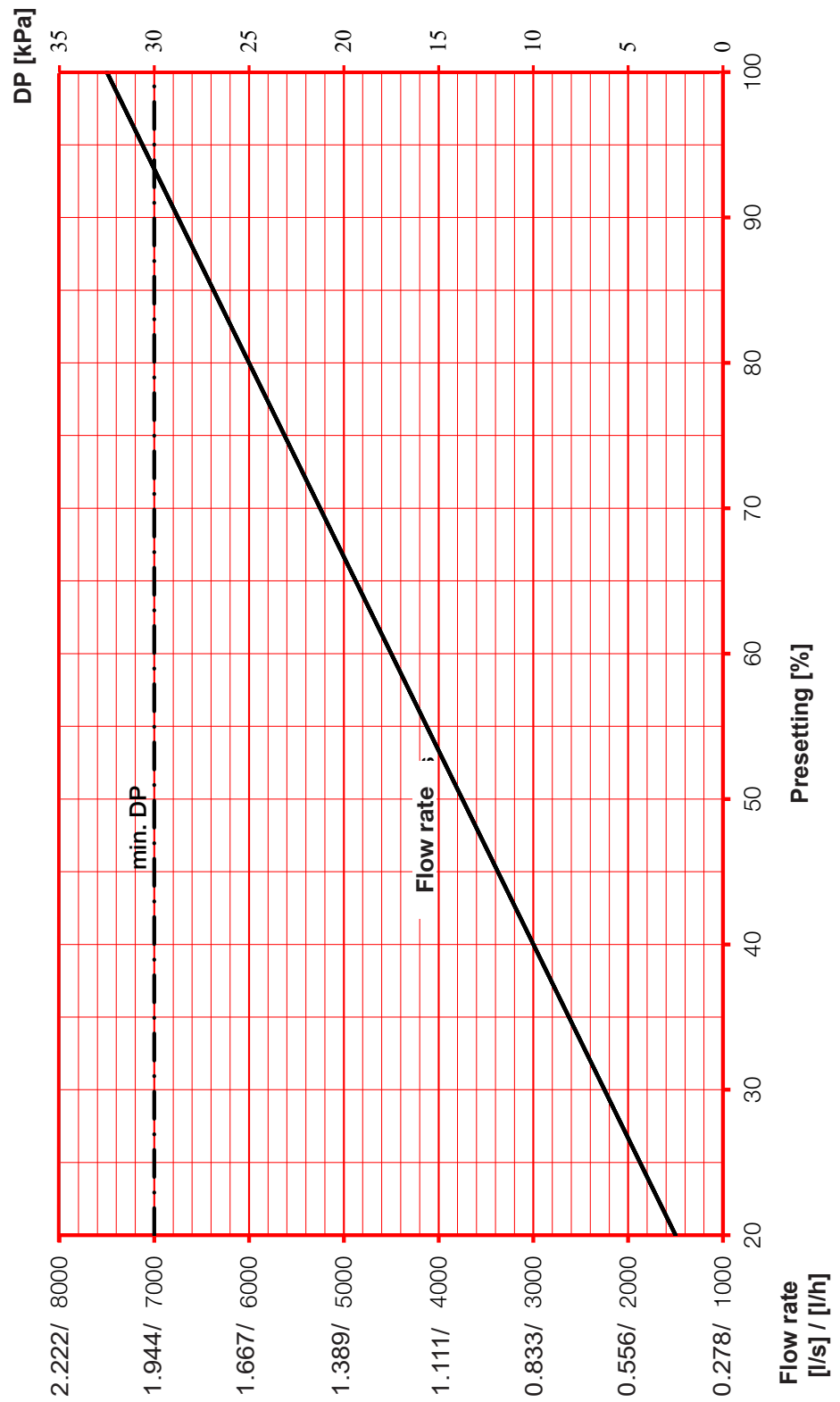
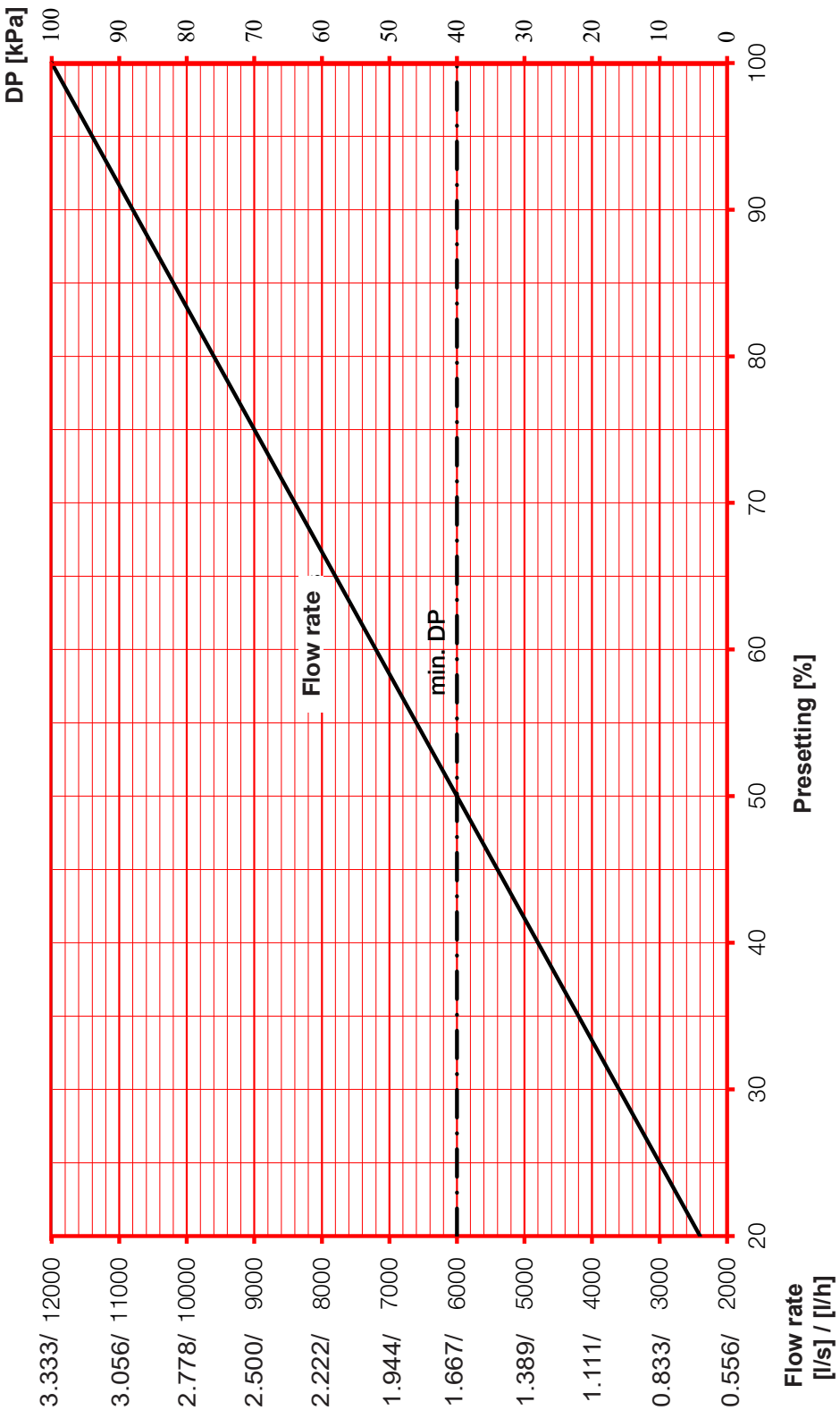
HERZ - Standard diagram	HERZ - PICV
1 **4406** 33 / 1 **4206** 53	DN 25



HERZ - Standard diagram	HERZ - PICV
1 **4406** 34 / 1 **4206** 54	DN 32



HERZ - Standard diagram	HERZ - PICV
1 **4406** 35 / 1 **4206** 55	DN 40



HERZ - Standard diagram	HERZ - PICV
1 **4406** 36 / 1 **4206** 56	DN 50