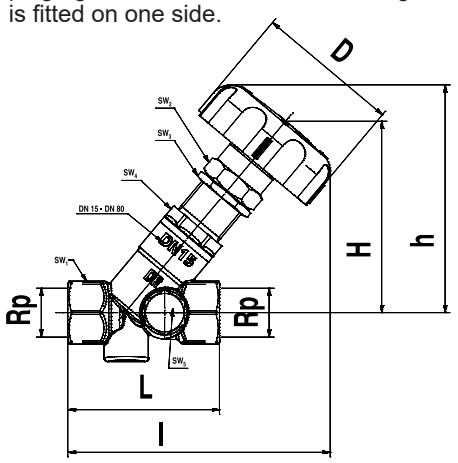
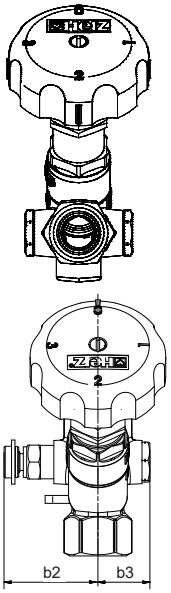
Commissioning valves for heating or drinking water

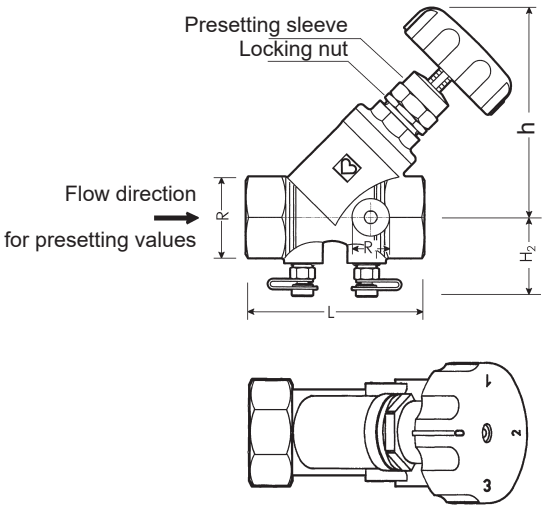
Data sheet for 4117, Issue 0222

4117 M

Dimensions 1/2 and 3/4 without threaded plug right bottom side, one measuring valve is fitted on one side.







Order number and dimensions in mm

Heating, cooling with measuring nipple 4117M	Heating, cooling without measuring nipple 4117MR	Heating, cooling without measuring nipple 4117R	Drinking water, service with measuring nipple	Drinking water, service without measuring nipple					
Art. Nr.	**Art. Nr.**	**Art. Nr.**	**Art. Nr.**	**Art. Nr.**	**DN**	**Rp**	**kvs**	**h max**	**L**
1 **4117** 39					15 LF	1/2	0,12	105	65
1 **4117** 51	1 **4117** 21	1 **4117** 61	2 **4117** 51	2 **4117** 61	15	1/2	4,75	105	65
1 **4117** 52	1 **4117** 22	1 **4117** 62	2 **4117** 52	2 **4117** 62	20	3/4	6,12	107	75
1 **4117** 53	1 **4117** 23	1 **4117** 63	2 **4117** 53	2 **4117** 63	25	1	10,4	113	90
1 **4117** 54	1 **4117** 24	1 **4117** 64	2 **4117** 54	2 **4117** 64	32	5/4	15,97	124	110
1 **4117** 55	1 **4117** 25	1 **4117** 65	2 **4117** 55	2 **4117** 65	40	6/4	23,5	133	120
1 **4117** 56	1 **4117** 26	1 **4117** 66	2 **4117** 56	2 **4117** 66	50	2	47,89	173	150
1 **4117** 57	–	1 **4117** 67	–	–	65	2½	84,2	182	180
1 **4117** 58	–	1 **4117** 68	–	–	80	3	133,2	195	220

DN	SW1	SW2	SW3	SW4	SW5	SW6	D	l max	H 2	b2	b3
15	27	24	24	24	17	15	60	119	45	42	23
20	32	24	24	24	17	15	60	131	44	42	24
25	41	24	24	24	17	15	60	141	54	48,2	29
32	50	24	24	27	17	15	60	159	58	50,4	31
40	55	24	24	27	17	15	60	171	60	53	34,5
50	70	30	30	32	17	15	60	217	65	58,5	40
65	85	30	30	32	24	15	60	238	79	71	48
80	100	30	30	32	24	15	60	262	88	73,5	55

Models

4117 M/R	Commissioning valve for heating and cooling applications, equipped with measuring nipple.
4117	Commissioning valve for heating and cooling applications, but without measuring nipple.
4117 TW	Commissioning valve for drinking and process water, equipped with measuring nipple.

Technical data

Model	Heating valve 1 4117 xx	Drinking water valve 2 4117 xx
Body	dezincification resistant brass	dezincification resistant brass
Upper part		
Hand wheel	plastic, red	plastic, green
Threaded connection	ISO 7-1, Rp	ISO 7-1, Rp
Upper part seal	O-Ring, EPDM	O-Ring drinking water resistant
Spindle seal	O-Ring, EPDM	O-Ring drinking water resistant
Valve seal	O-Ring, EPDM	O-Ring drinking water resistant
Nominal pressure	PN 16	PN 10
Temperature	up to DN 32: 130 °C	85 °C
	from DN 40: 110 °C	–

Application

Model 4117 heating valve
For non-aggressive media in household, industry and trade. Suitable for hot and cold water for heating and air conditioning applications. Water purity in accordance with the OENORM H5195 and VDI 2035 standards.

HERZ Compression adapter

Model 4117 drinking water valve
Suitable for hot and cold water in drinking water systems.
When using HERZ-compression unions for copper and steel pipes, observe the permissible temperatures and pressures as specified in EN 1254-2:1998 Table 5. A maximum operating temperature of 95 °C and maximum operating pressure of 10 bar applies for plastic pipe connections, if permitted by the pipe manufacturer.

Accessories

1 0273 xx	Sealing plug with allen key
1 0276 xx	Drain valve with pivotal tube connection
1 0284 xx	Test point for heating
2 0284 xx	Test point for drinking water
1 0284 xx	Test point, extended version for insulation thicknesses up to 40 mm
1 4095 xx	Insulation blanket for valve
1 6388 xx	Replacement upper part for heating valve
2 6388 xx	Replacement upper part for drinking water valve
1 6518 xx	Replacement hand wheel for heating valve
2 6518 xx	Replacement hand wheel for drinking water valve

Details can be found in the current delivery program.

Pipe connection with compression adapters

The commissioning valves R = 1/2 (DN 15) are equipped with special sleeves for threaded pipe or direct compression set connection. Compression adapters must be ordered separately.
The dimensions DN 20 and DN 25 can be equipped with an adapter for a compression adapter connection.

Pipe mm		8	10	12	14	15	16	18
Valve	DN	15						
Adapter	Order No.	1 6266 01	1 6266 01	–	–	–	1 6266 01	1 6266 01
Comp. union	Order No.	1 6274 18	1 6274 00	1 6292 12	1 6292 14	1 6292 01	1 6274 04	1 6274 04
Comp. union soft sealing Order No.	optional	–	–	–	–	–	1 6275 04	1 6276 18

Pipe mm		8	10	12	14	15	16	18
Valve	DN	20						
Adapter	Order No.	1 6266 20	1 6266 20	1 6266 20	1 6266 20	1 6266 20	1 6266 20	1 6266 20
Comp. union	Order No.	1 6274 18	1 6274 00	1 6274 01	1 6274 02	1 6274 03	1 6274 04	1 6274 04
Comp. union soft sealing Order No.	optional	–	–	1 6276 12	–	1 6276 15	–	1 6276 18

Pipe mm		8	10	12	14	15	16	18	22
Valve	DN	25							
Adapter	Order No.	P 1928 05	P 1928 05	P 1928 05	P 1928 05	P 1928 05	P 1928 05	P 1928 05	1 6266 03
Comp. union	Order No.	1 6274 18	1 6274 00	1 6274 01	1 6274 02	1 6274 03	1 6274 04	1 6276 18	1 6273 01

When assembling soft steel or copper pipes with compression fittings, we recommend using support sleeves. The thread of the locking nut (male or female thread) as well as the olive must be lubricated with silicone oil. We draw attention to our instructions for installation.

Plastic pipe connection

The balancing valves R=1/2 (DN 15) can be used in systems with plastic pipes. Adapter and plastic pipe connections can be fitted to the special sockets. For models and dimensions please refer to the HERZ-catalogue.

Pipe mm		14 x 2	16 x 2	16 x 2,2	17 x 2	17 x 2,5
Valve	DN	15				
Adapter	Order no.	–	–	1 6266 01	1 6266 01	1 6266 01
Plastic pipe connection „K“	Order no.	1 6092 02	1 6092 01	1 6097 12	1 6097 04	1 6097 05
Plastic pipe connection Order no.	Optional	–	–	1 6098 12	1 6098 04	1 6098 05

Pipe mm		18 x 2	18 x 2,5	20 x 2	20 x 2,5	20 x 3,5
Valve	DN	15				
Adapter	Order no.	1 6266 01	1 6266 01	1 6266 01	1 6266 01	1 6266 01
Plastic pipe connection Order no.	Optional	1 6098 07	1 6098 06	1 6098 08	1 6098 11	1 6098 10

Pipe mm		14 x 2	16 x 2	16 x 2,2	17 x 2	17 x 2,5
Valve	DN	20				
Adapter	Order no.	1 6266 20	1 6266 20	1 6266 20	1 6266 20	1 6266 20
Plastic pipe connection Order no.	Optional	1 6098 02	1 6098 03	1 6098 12	1 6098 04	1 6098 05

Pipe mm		18 x 2	18 x 2,5	20 x 2	20 x 2,5	20 x 3,5
Valve	DN	20				
Adapter	Order no.	1 6266 20	1 6266 20	1 6266 20	1 6266 20	1 6266 20
Plastic pipe connection Order no.	Optional	1 6098 07	1 6098 06	1 6098 08	1 6098 11	1 6098 10

Pipe mm		14 x 2	16 x 2	16 x 2,2	17 x 2	17 x 2,5
Valve	DN	25				
Adapter	Order no.	P 1928 05	P 1928 05	P 1928 05	P 1928 05	P 1928 05
Plastic pipe connection Order no.	Optional	1 6098 02	1 6098 03	1 6098 12	1 6098 04	1 6098 05

Pipe mm		18 x 2	18 x 2,5	20 x 2	20 x 2,5	20 x 3,5	25 x 3,5	26 x 3
Valve	DN	25						
Adapter	Order no.	P 1928 05	P 1928 05	P 1928 05	P 1928 05	P 1928 05	1 6266 03	1 6266 03
Plastic pipe connection Order no.	Optional	1 6098 07	1 6098 06	1 6098 08	1 6098 11	1 6098 10	–	–

Material

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.

Disposal

Local and currently applicable legislation must be observed for disposal.

Special Design Features

Flow directions
The valve is suitable for flow in either direction thanks to the pivoting, non-removable cone. The flow diagrams are applicable for the flow direction indicated on the drawing.

Seat seal
The temperature-resistant and permanently elastic soft seal is corrosion-resistant, permits operation with low shutting forces.

Spindle seal
The O-ring seal ensures lasting tightness and ease of valve operation. The O-ring chamber can be replaced. Order number 1 6705 00.

Pre-setting
To avoid leakage of water presetting is carried out by limitation of valve lift outside the water chamber.

Pre-setting marker
The pre-setting marker (1 **6517** 05) is fastened as a tag above the valve or pipe. By removing the pin at the digits for full and partial revolutions (break off, cut off), the setting made for the respective valve is marked. This permits checking and/or restoration of the original pre-setting made on the occasion of system set-up after servicing without having to rely on documentation.

Thermal Insulation Shells order. No. 4095

For insulation purposes and to avoid loss of heat we recommend the fitting of thermal insulation shells.
These consist of two interlocking half shells and the spindle seal. The parts are closed by overlapping and held together by means of tightening straps. The thermal insulation shells can be removed and reused at any time (e.g. pre-setting at a later date).
Thermal insulation shells can be used for max. 120 °C operating temperature. For models and dimensions please refer to HERZ-catalogue.

Differential Pressure Measurement

The STRÖMAX-M circuit control valve is equipped with two measuring valves, one before and one after the valve seat. The differential pressure can be measured using a suitable measuring instrument which permits calculation of the flow rate as a function of the respective presenting step. The HERZ-measuring computer (8900 or 8903) permits direct flow rate reading (consult the equipment manual).

Measuring Valve Operation

The two measuring valves installed are equipped with a soft seal:
The HERZ measuring computers are equipped with suitable pressure sensor sets. Before the measurement, the dust caps are to be unscrewed and the pressure sensor sets are to be inserted into the measuring valves until they are scaffolded. The pressure transducer sets are equipped with a spring that holds the set in position. After measuring, first shut the measuring valve and only then remove the couplings from the measuring valve.

Pre-setting, adjustment and fixing with measuring instrument

1. The STRÖMAX-M valve is delivered with fully opened presetting (max. flow).
2. After connecting the HERZ manometer and adjusting to the correct regulating step (see equipment manual) loosen the locking nut and without adjusting the spindle turn the presetting sleeve to the right by hand to its limit.
3. Fix the presetting sleeve with locking nut.
4. Remove the measuring instrument according to the operating instructions.

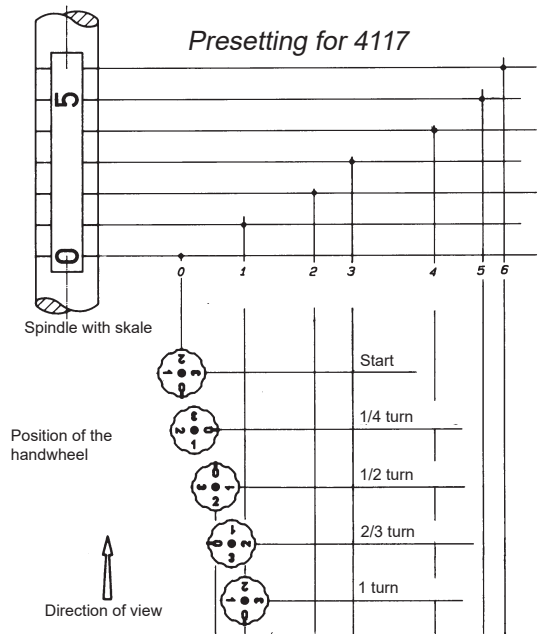
When the valve is closed the adjusted presetting step can now be seen.

Presetting by means of the presetting sleeve

1. Close the valve.
2. Unscrew the locking nut (below the presetting sleeve).
3. Turn the presetting sleeve to the desired position on the spindle scale. The presetting value should be determined from the diagram overleaf.
4. Fix the presetting sleeve at the desired value by means of the locking nut.

CAUTION: The valve must be closed during the setting!

Presetting by means of the handwheel

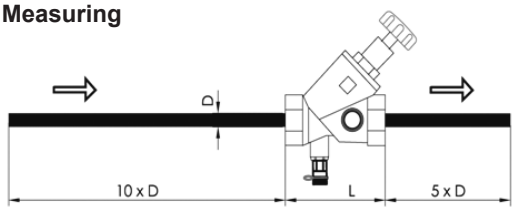


The presetting steps match the turns of the handwheel. One turn corresponds to one presetting step. If you cannot see the presetting steps on the scale you can adjust by counting the turns (starting from the closed value). Numbers and markings are attached to the hand wheel, which allow adjustments in quarter steps.

Handling

1. Close the valve.
2. Unscrew the locking nut.
3. By counting the turns of the handwheel preset to the desired position.
4. Fix the presetting sleeve with the locking nut.

Measuring



In order to obtain meaningful measurement results, it is important to ensure that the calming sections in the inlet and outlet are observed.
The calming section should be 10 x pipe diameter in the inlet and 5 x pipe diameter in the outlet.

Correction factors must be used for systems with frost protection. The water-glycol mixture has a different viscosity than pure water and is also dependent on the temperature. When measuring with the measuring computer, the displayed measured value is therefore incorrect.

Correction factors for glycol mixtures for measurements with the HERZ-Flowplus

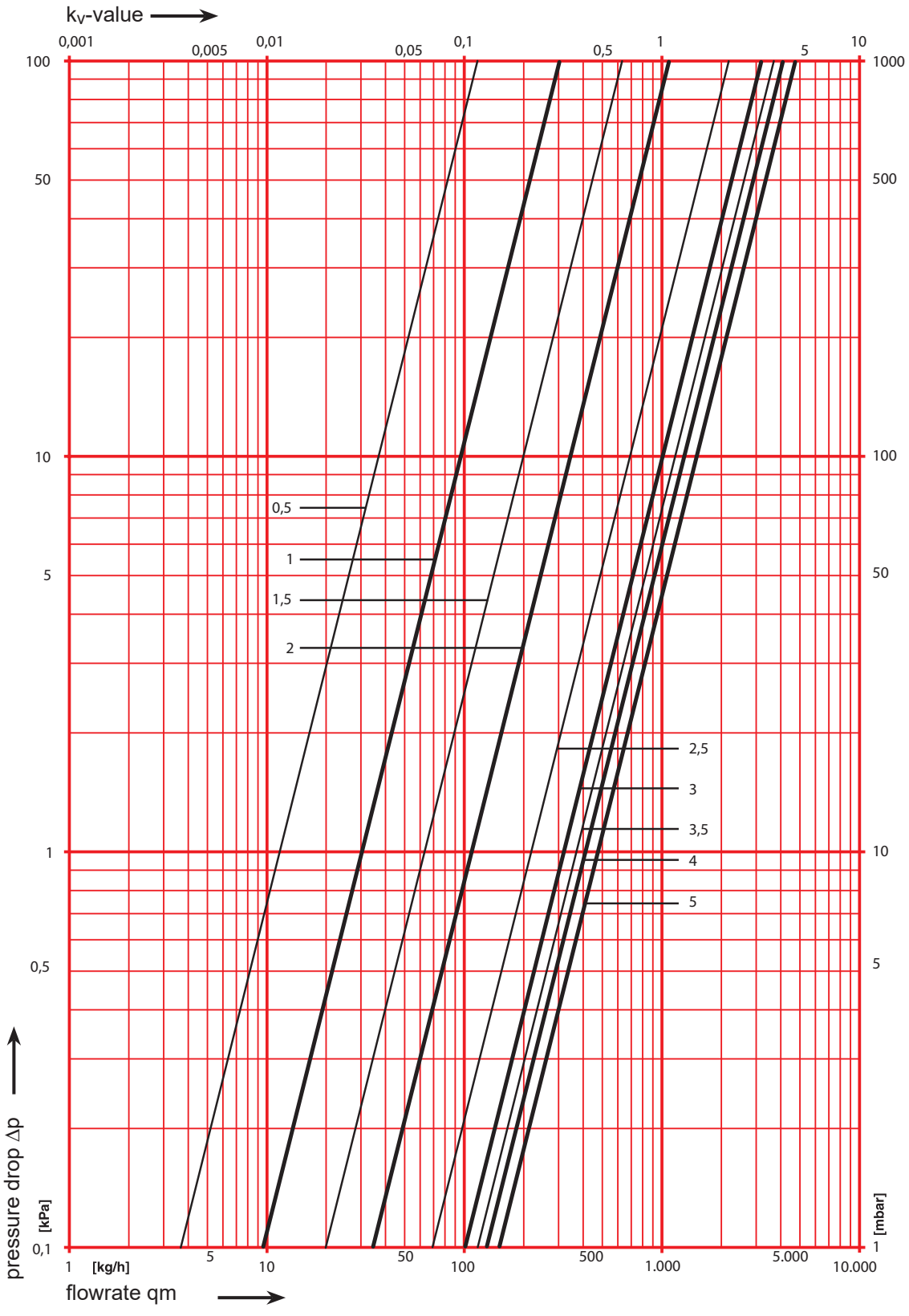
Temperature, °C	Ethylene glycol 34%, (factor)	Ethylene glycol 40%, (factor)	Ethylene glycol 44%, (factor)
-20	1,98	2,133	2,235
-15	1,833	1,9908	2,096
-10	1,737	1,8738	1,965
-5	1,649	1,7702	1,851
0	1,567	1,6744	1,746
5	1,482	1,5876	1,658
10	1,412	1,505	1,567
15	1,342	1,4254	1,481
20	1,281	1,3554	1,405
25	1,226	1,2956	1,342
30	1,163	1,2284	1,272
35	1,123	1,1848	1,226
40	1,079	1,136	1,174
45	1,04	1,0928	1,128
50	1	1,0528	1,088
55	0,974	1,0214	1,053
60	0,947	0,9938	1,025
65	0,926	0,9714	1
70	0,912	0,9528	0,98
75	0,893	0,9332	0,96
80	0,884	0,9242	0,951

$$dP_R / f = dP_{Display}$$

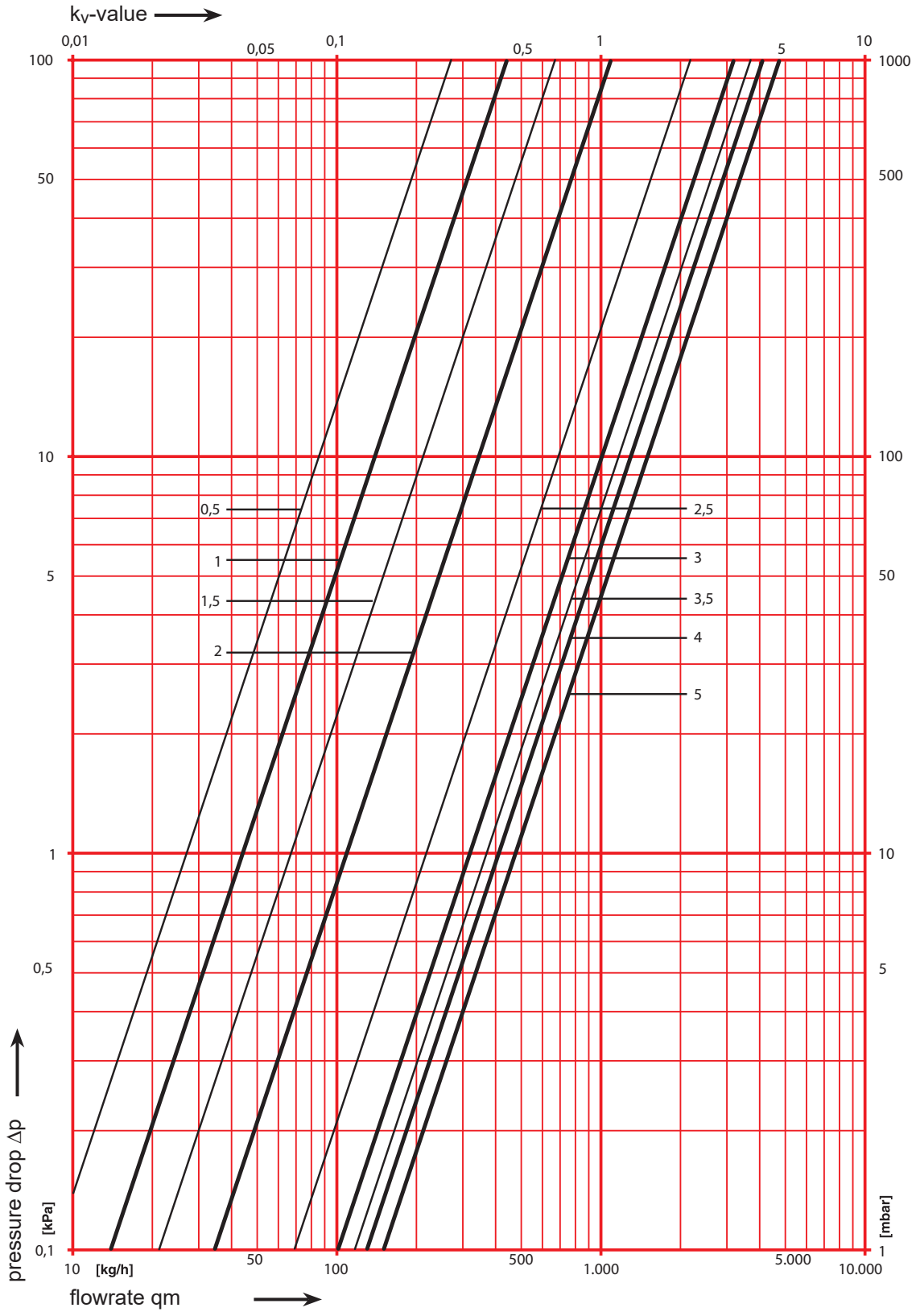
$$Q_R / \sqrt{f} = Q_{Display}$$

dPR	Actual differential pressure
dPDisplay	differential pressure on the display
QR	Actual amount of water
QDisplay	amount of water on the display
f	Factor from the table above

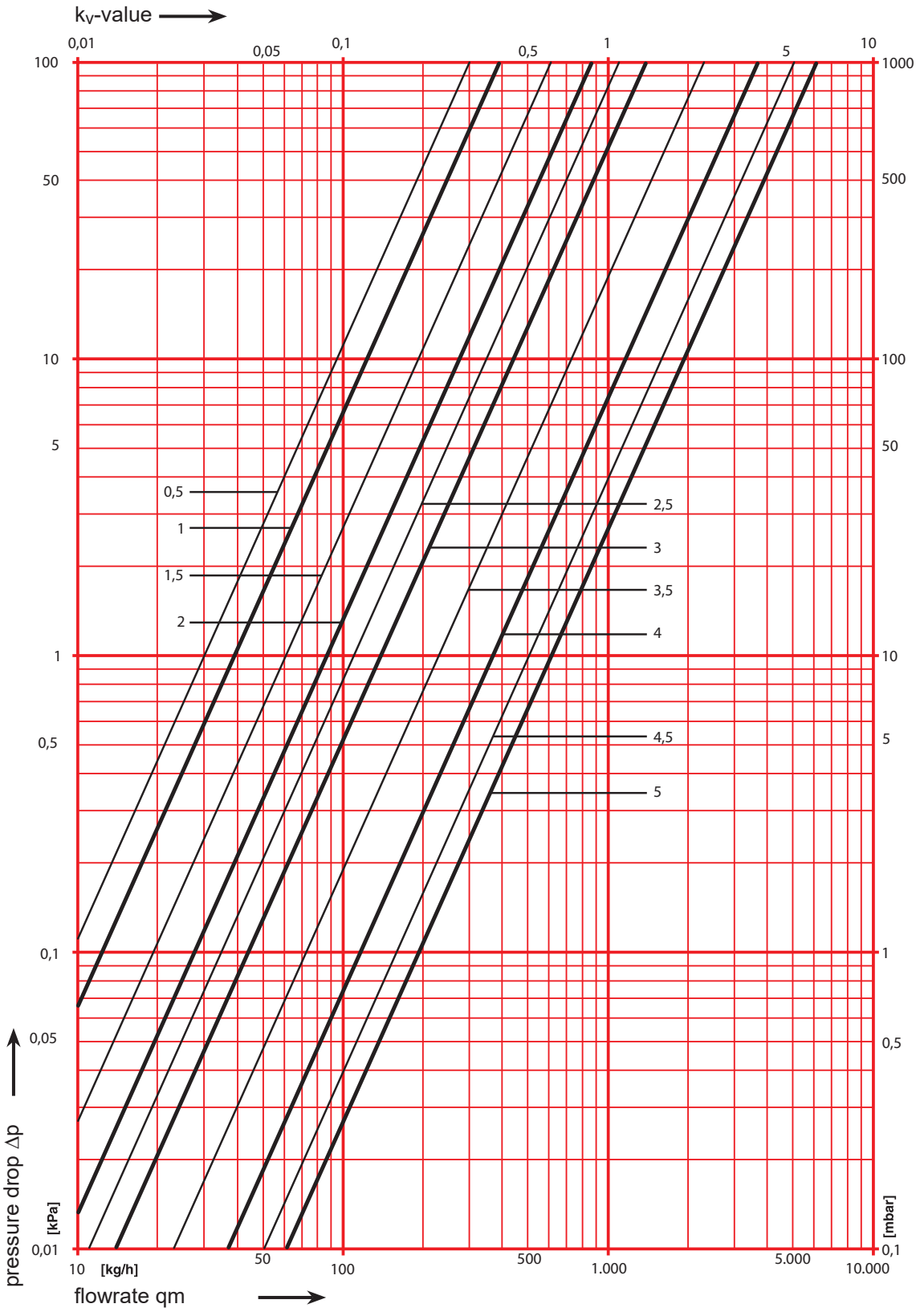
HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 15 LF



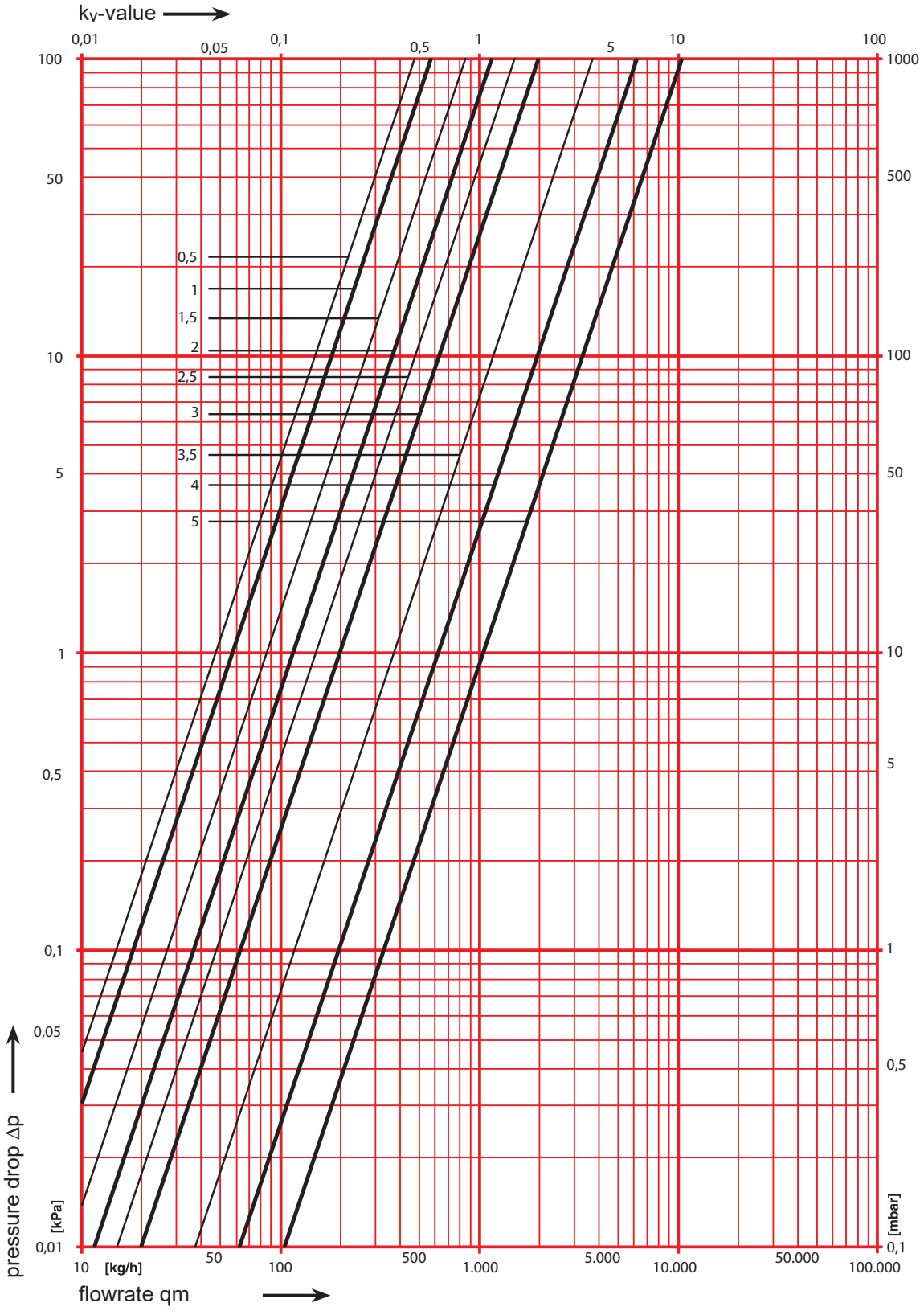
HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 15



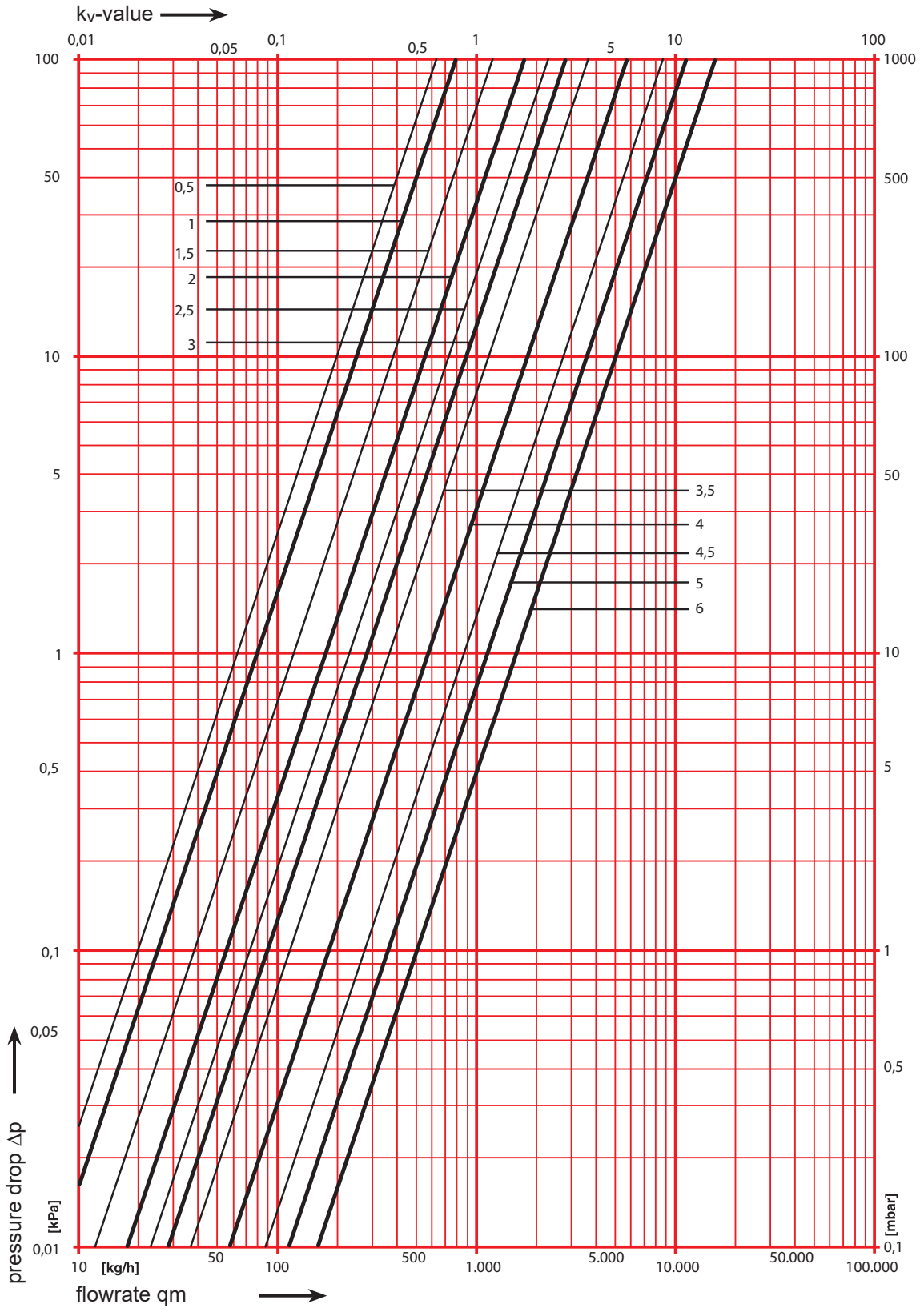
HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 20



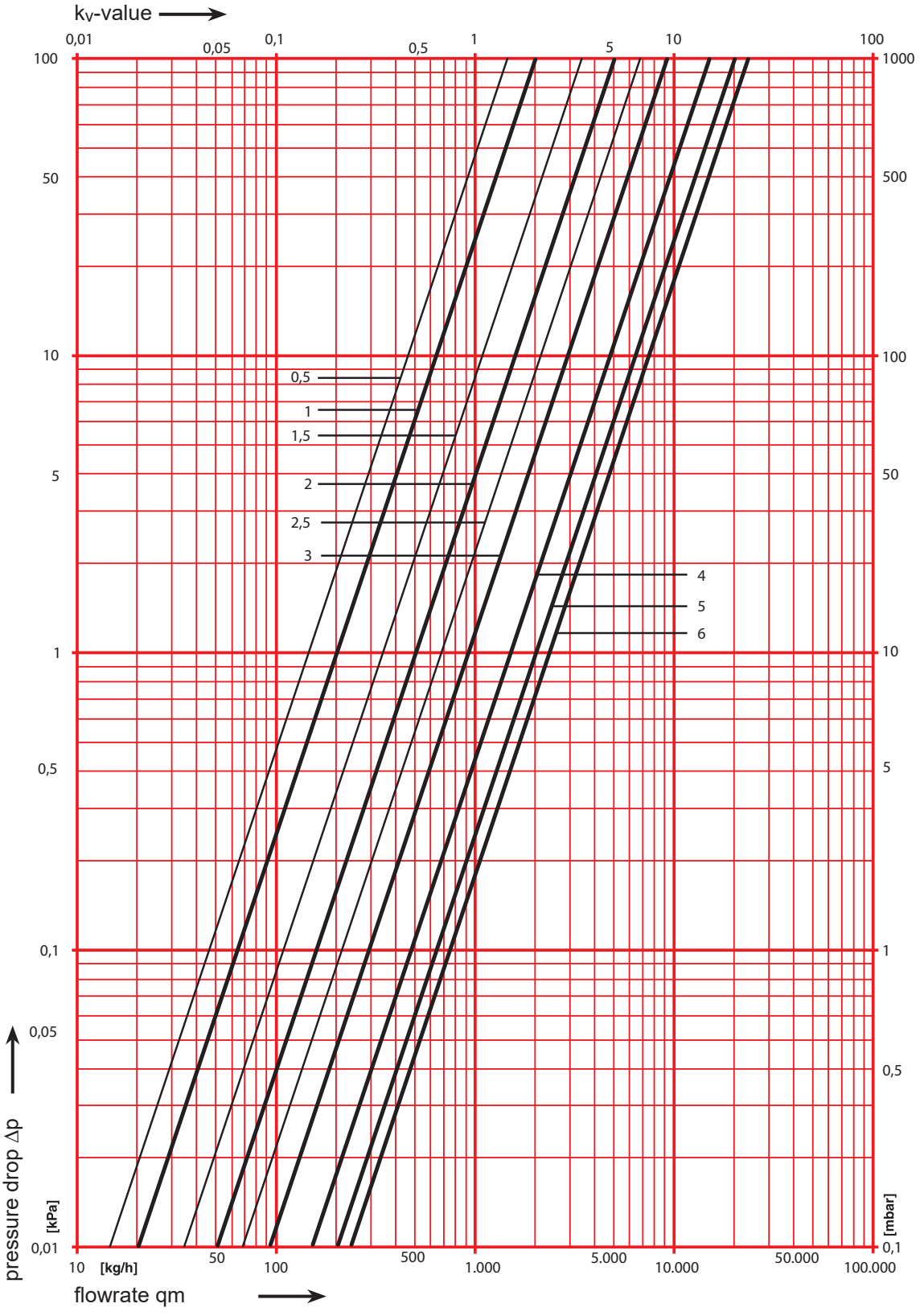
HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 25



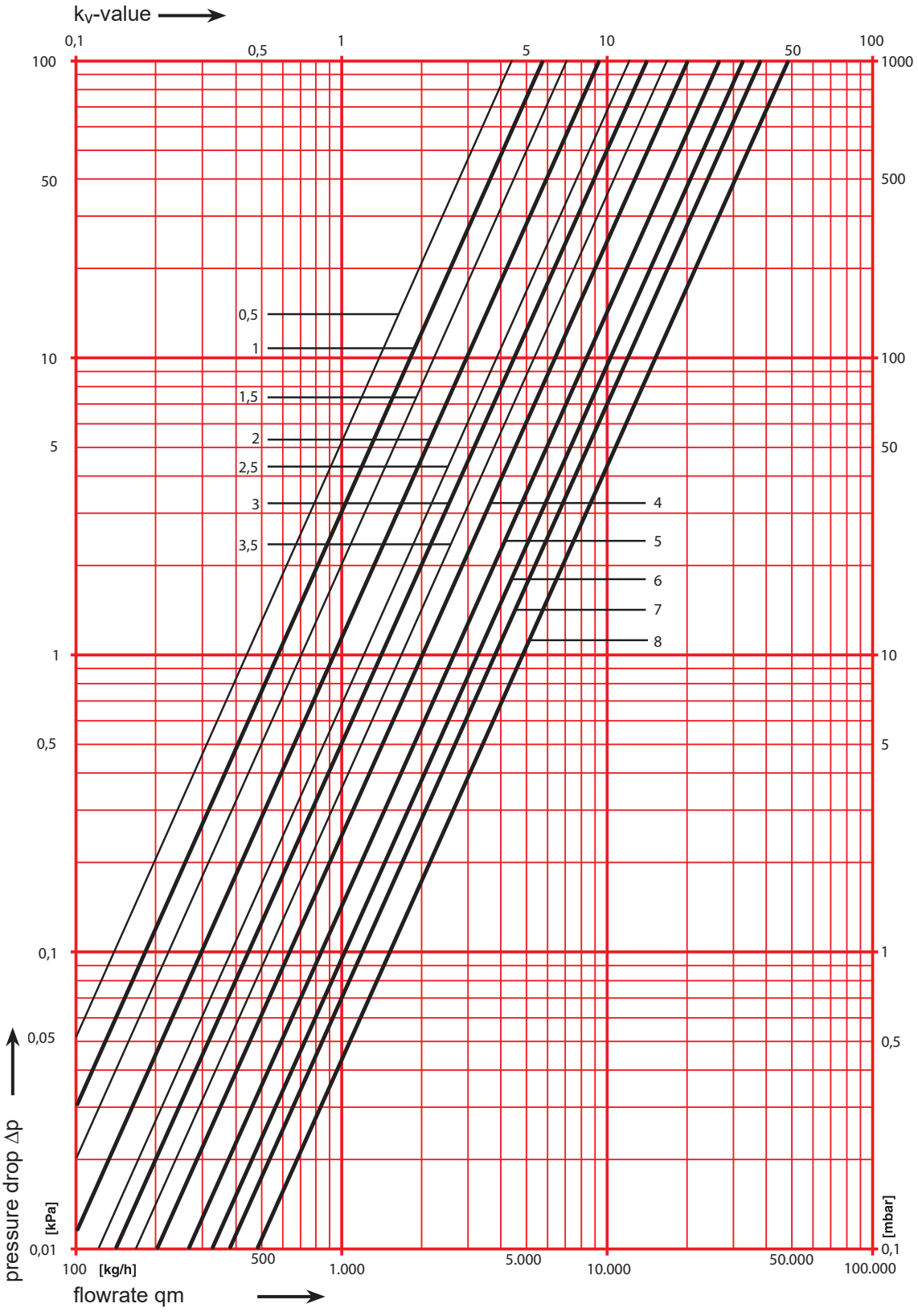
HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 32



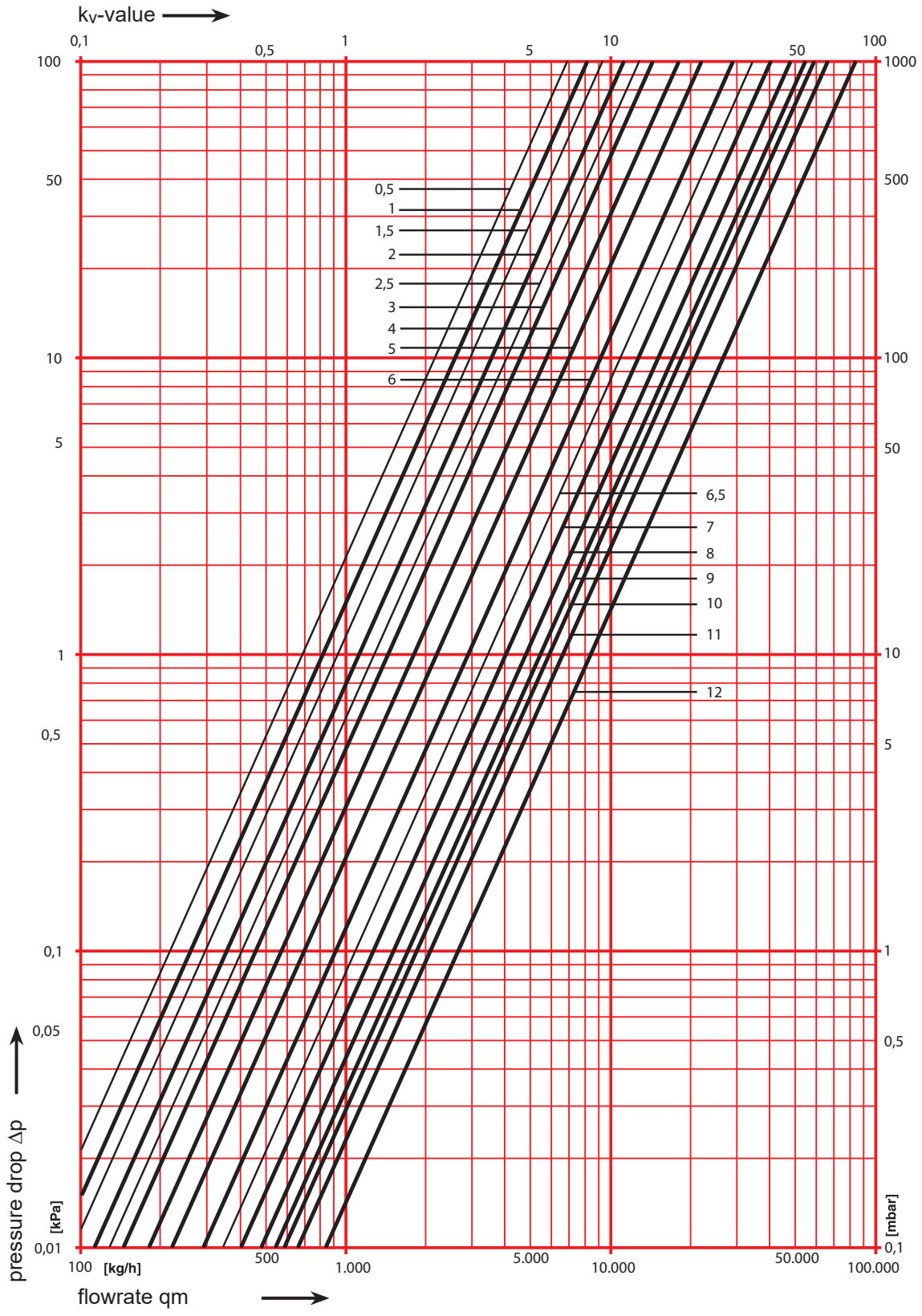
HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 40



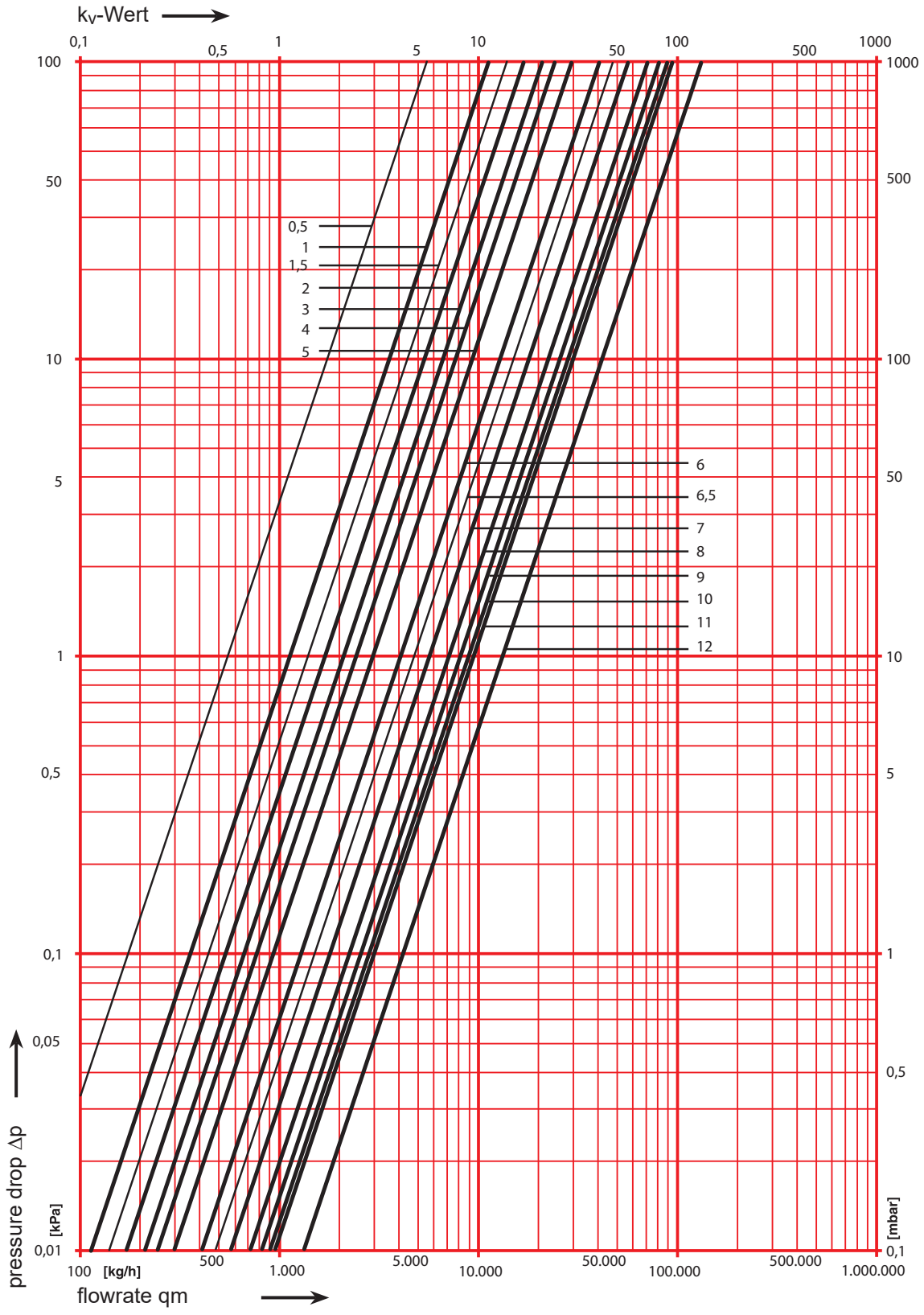
HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 50

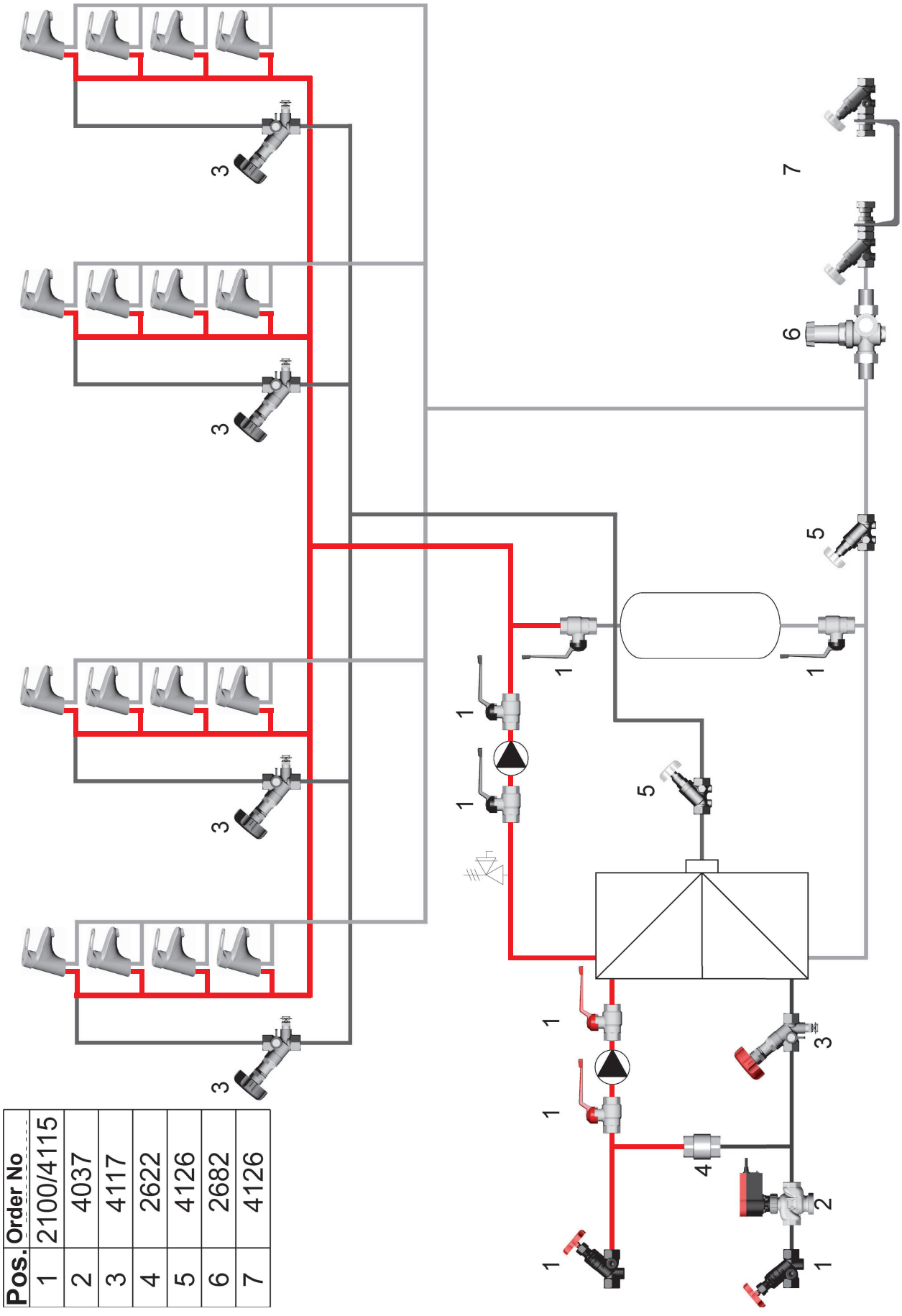


HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 65



HERZ-Standard diagram	STRÖMAX 4117
	Dim. DN 80





Pos.	Order No
1	2100/4115
2	4037
3	4117
4	2622
5	4126
6	2682
7	4126