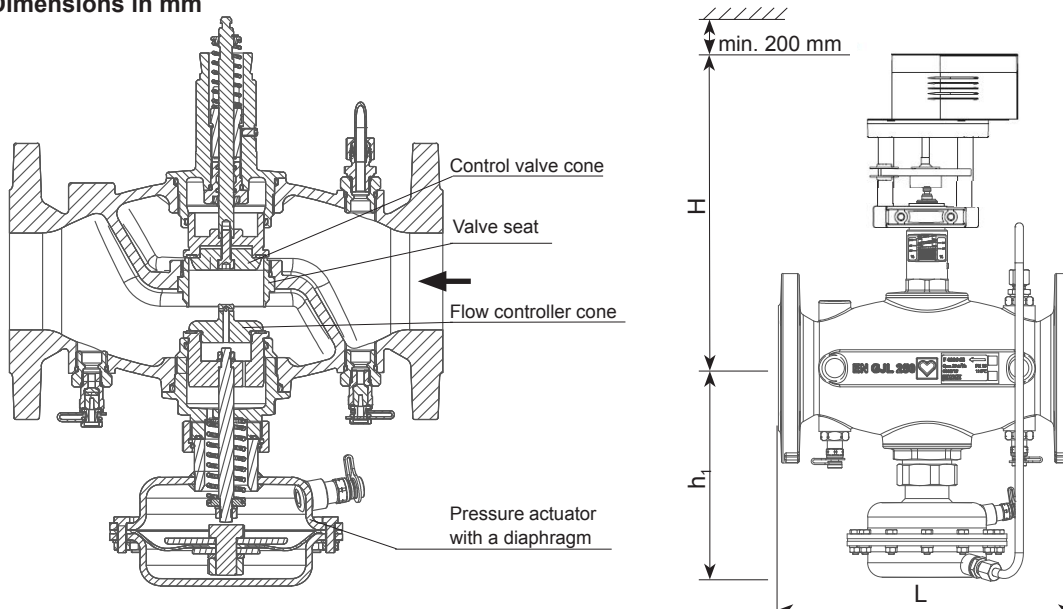


HERZ - Pressure-independent control valve in flanged design

Data sheet F 4006 6X, 5X, 4X, Issue 1221

☑ Dimensions in mm



Order Nr. PN 16	DN	Stroke [mm]	min. Flowrate @ 25% [m³/h]	max. Flowrate @ 100% [m³/h]	min. dp [kPa]	kvs combi valve	H	h1	L
F 4006 62	50	15	3,75	15	40	23,7	310	210	230
F 4006 63	65	15	5,00	20	40	31,6	310	210	290
F 4006 64	80	20	9,00	36	40	56,9	395	230	310
F 4006 65	100	20	10,75	43	40	68,0	395	232	350
F 4006 66	125	40	25,00	100	40	158,1	590	410	400
F 4006 56	125 HF	40	37,50	150	70	179,3	590	410	400
F 4006 67	150	40	36,25	145	40	229,3	595	425	480
F 4006 57	150 HF	40	50,00	200	70	239,0	595	425	480
F 4006 68	200	40	52,50	210	40	332,0	630	585	600
F 4006 58	200 HF	40	75,00	300	70	358,6	630	585	600
F 4006 48	200 UHF	40	87,50	350	85	379,6	630	585	600
F 4006 69	250SF	40	87,50	350	50	495,0	665	620	730
F 4006 59	250HF	40	102,50	410	70	490,0	665	620	730

☑ Technical data

Max. operating pressure	16 bar
Max. differential pressure	4 bar
Diff. pressure across the restrictor	0,2 bar
Min. operating temperature	2 °C (pure water)
Min. operating temperature	- 20 °C (frost protection)
Max. operating temperature	110 °C (liquid, not steam)
Valve characteristic	linear
Type of connection	Flanged (EN 1092-2)
Valve body material	EN-GJL-250
Gasket material	EPDM
Cones, stem, seat material	CW617N-R320-S, WN1.4305, WN1.4305
Impulse tube	WN1.4301
Diaphragm material	EPDM

Water purity in accordance with the OENORM H 5195 and VDI 2035 standards.

Ethylene and propylene glycol can be mixed to a ratio of 25 - 50 vol.-%.

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.

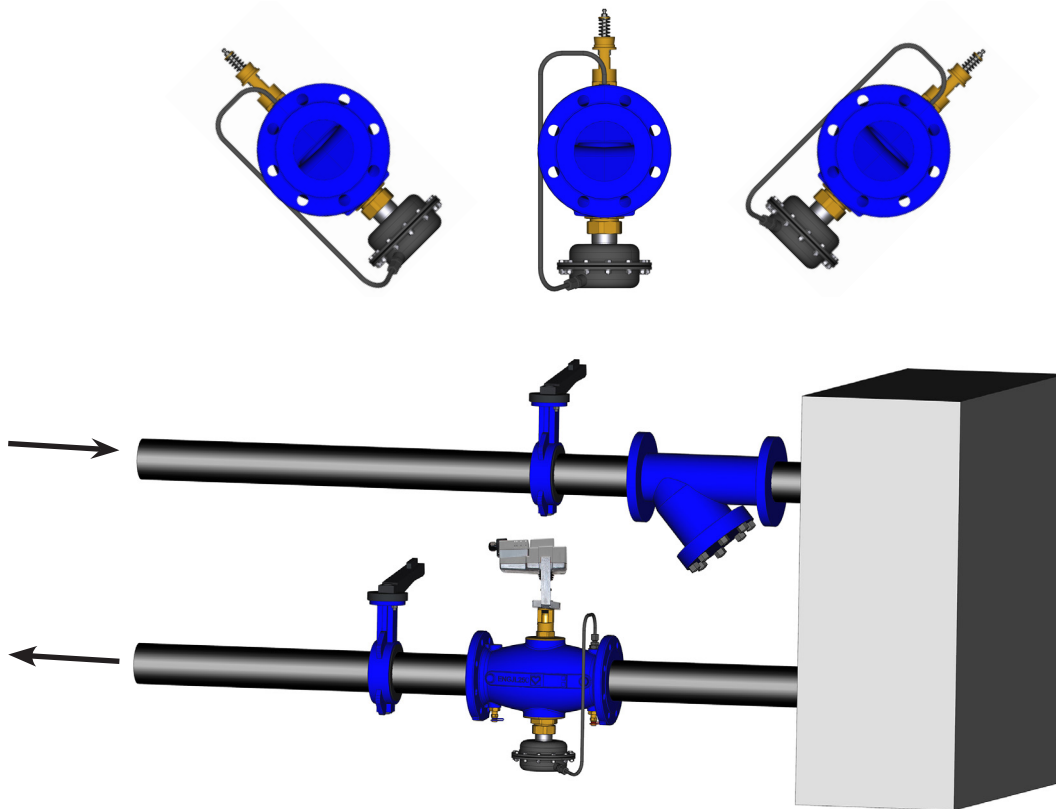
Installation

Recommended installation: Install the valve in the return flow pipe of the system. Electric actuator should be placed in upward position, at $\pm 45^\circ$ angle to the vertical pipe axis.

Permissible installation: The valve should be installed in horizontal supply flow pipes of the system.

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

For installation, the local and international rules and standards have to be followed.



Functional principle of a PICV combination valve

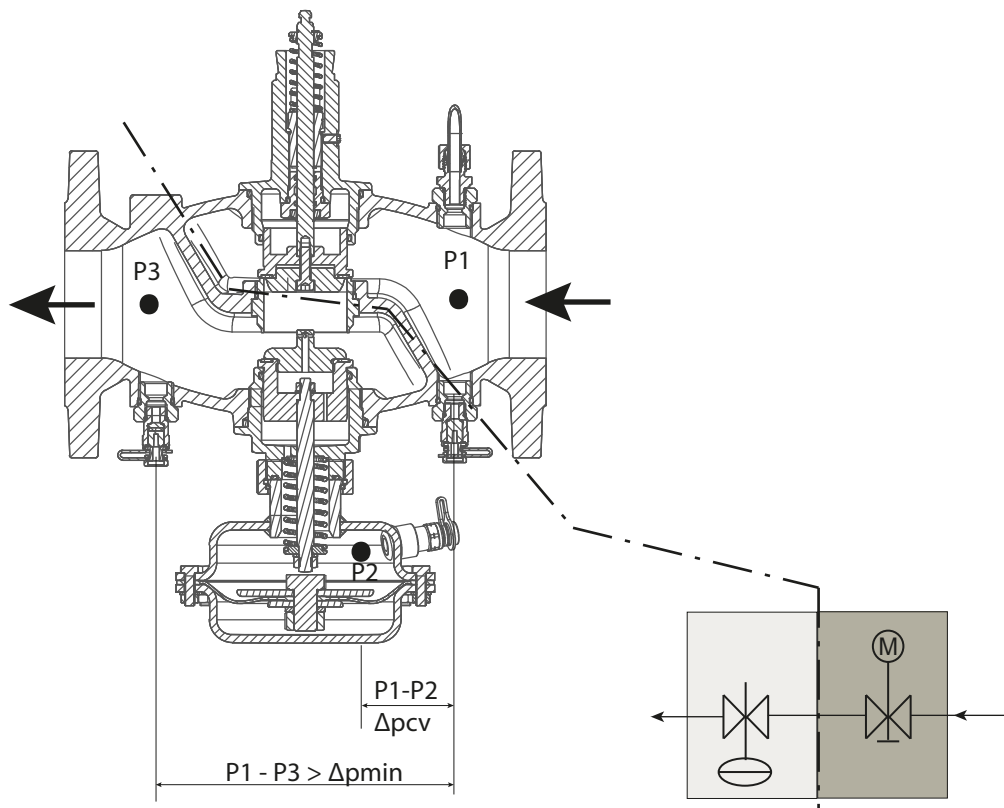
A Pressure Independent Balancing and Control Valve (PIBCV or PICV) combines a regulating and control valve with a differential pressure controller.

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

Every PIBCV has 3 test points.

Measuring across P1-P3 enables the setting of the valve and the minimum differential pressure to be checked. The valve requires a minimum differential pressure in order 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.

☑ Flow adjustment

The adjustment of the flow rate is carried out by limiting the valve stroke. The set point for the valve flow limitation can be adjusted by a flow meter or by using the flow charts.

The set point for the flow limitation can be adjusted by turning the adjustable nut.

For the valves from DN 50 to DN 100 the brass nut is used where adjustment is done along the middle line on the nut.

For the valves from DN 125 to DN 250 the stainless steel nut is used where adjustment is made according to upper surface of the nut.

☑ Safety instructions and disposal

Prior to the assembly, maintenance and disassembly, the system must be depressurized, cooled down and emptied. Only authorized, trained and qualified personnel may perform activities of assembly, start-up, operation and disassembly of the equipment.

Before disposal the valve must be dismantled into groups of structural components and delivered to authorized waste recycling organizations in order to preserve the environment. Local legislations must be obeyed when disposing of the components.

Actuator Selection

Order number	DN	Hub [mm]	1 7712 29 24 V; 0-10 V, 2-3 Pkt, 500 N, 20 mm	1 7712 28 230 V, 2-3 Pkt, 500 N, 20 mm	1 7712 31 24 V; 0-10V, 2-3 Pkt, 1000 N, 20 mm	1 7712 30 230 V, 2-3 Pkt, 1000 N, 20 mm	1 7712 21 24 V; 2-3 Pkt, 2500 N, 49 mm
F 4006 62	50	15	+ Adapter 1 7712 20	+ Adapter 1 7712 20			
F 4006 63	65	15	+ Adapter 1 7712 20	+ Adapter 1 7712 20			
F 4006 64	80	20			+ Adapter 1 7712 17	+ Adapter 1 7712 17	
F 4006 65	100	20			+ Adapter 1 7712 17	+ Adapter 1 7712 17	
F 4006 66	125	40					Direct Mounting
F 4006 56	125 HF	40					Direct Mounting
F 4006 67	150	40					Direct Mounting
F 4006 57	150 HF	40					Direct Mounting
F 4006 68	200	40					Direct Mounting
F 4006 58	200 HF	40					Direct Mounting
F 4006 48	200 UHF	40					Direct Mounting
F 4006 69	250 SF	40					Direct Mounting
F 4006 59	250 HF	40					Direct Mounting

General information

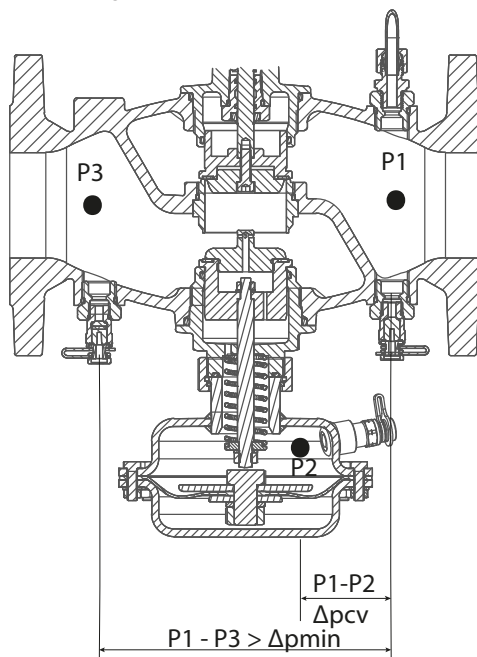
Intended Use

This product is intended to be used as specified by the manufacturer, described in the „Functional Description“ section. Local product regulations must be taken into consideration. Changes are not permitted.

Please note: all diagrams are indicative in nature and do not claim to be complete.

All specifications and statements within this brochure are according to information available at the time of printing and meant for informational purpose only. Herz Armaturen reserves the right to modify and change products as well as its technical specifications and/or its functioning according to technological progress and requirements. It is understood that all images of Herz products are symbolic representations and therefore may visually differ from the actual product. Colours may differ due to printing technology used. In case of any further questions don't hesitate to contact your closest HERZ Branch-office.

☑ k_v - values of the control valve in the flanged PIBCV (quick test point P1 - P2)



Presetting	DN 50	DN 65	DN 80	DN 100	DN 250SF
[%]	[m³/h]	[m³/h]	[m³/h]	[m³/h]	[m³/h]
25	13,0	13,3	12,7	19,9	108
30	14,7	15,3	14	23,2	137
35	16,3	17,3	15,8	27,6	165
40	17,8	19,3	17,6	32,0	193
45	19,7	21,5	19,7	37,65	216
50	21,5	23,7	21,8	43,3	239
55	23,6	26,7	24,85	47,9	263,5
60	25,6	29,7	27,9	52,5	288
65	28,0	33,2	33	56,0	316
70	30,3	36,7	38,1	59,5	344
75	32,7	40,3	43,1	62,25	369
80	35,1	43,9	48	65,0	394
85	37,3	47,9	53,1	67,25	417
90	39,5	51,8	58,2	69,5	440
95	39	54,4	62	71,3	474
100	38,5	57,0	65,8	73,1	508

☑ Technical data - flow characteristic, test point P1-P3

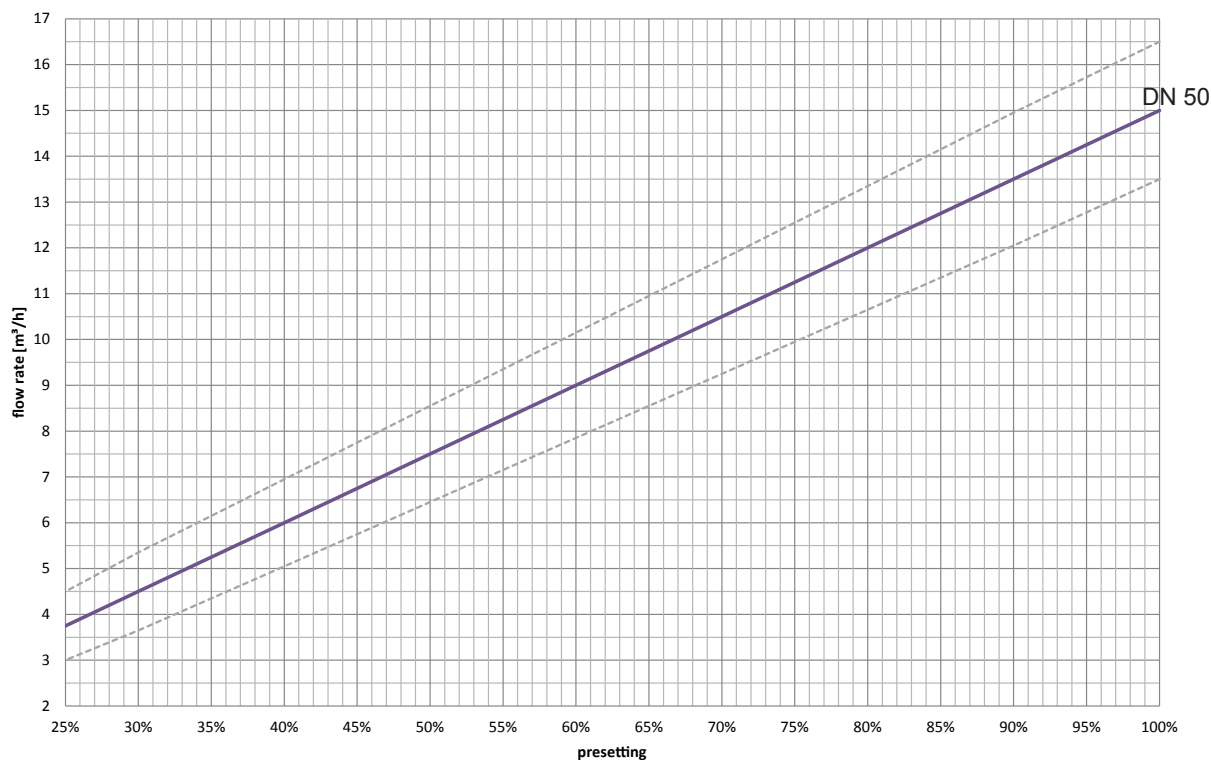
F 4006 62				F 4006 63				F 4006 64			
DN50	min dp	40kPa		DN65	min dp	40kPa		DN80	min dp	40kPa	
l/h	m³/h	kv	VE	l/h	m³/h	kv	VE	l/h	m³/h	kv	VE
15000	15	23,7	100%	20000	20	31,6	100%	36000	36	56,9	100%
13500	13,5	21,3	90%	18000	18	28,5	90%	32400	32,4	51,2	90%
12000	12	19,0	80%	16000	16	25,3	80%	28800	28,8	45,5	80%
10500	10,5	16,6	70%	14000	14	22,1	70%	25200	25,2	39,8	70%
9000	9	14,2	60%	12000	12	19,0	60%	21600	21,6	34,2	60%
7500	7,5	11,9	50%	10000	10	15,8	50%	18000	18	28,5	50%
6000	6	9,5	40%	8000	8	12,6	40%	14400	14,4	22,8	40%
4500	4,5	7,1	30%	6000	6	9,5	30%	10800	10,8	17,1	30%
3750	3,75	5,9	25%	5000	5	7,9	25%	9000	9	14,2	25%
F 4006 65				F 4006 66				F 4006 56			
DN100	min dp	40kPa		DN125	min dp	40kPa		DN125HF	min dp	70kPa	
l/h	m³/h	kv	VE	l/h	m³/h	kv	VE	l/h	m³/h	kv	VE
43000	43,0	68,0	100%	100000	100	158,1	100%	150000	150	179,3	100%
38700	38,7	61,2	90%	90000	90	142,3	90%	135000	135	161,4	90%
34400	34,4	54,4	80%	80000	80	126,5	80%	120000	120	143,4	80%
30100	30,1	47,6	70%	70000	70	110,7	70%	105000	105	125,5	70%
25800	25,8	40,8	60%	60000	60	94,9	60%	90000	90	107,6	60%
21500	21,5	34	50%	50000	50	79,1	50%	75000	75	89,6	50%
17200	17,2	27,2	40%	40000	40	63,2	40%	60000	60	71,7	40%
12900	12,9	20,4	30%	30000	30	47,4	30%	45000	45	53,8	30%
10750	10,75	17,0	25%	25000	25	39,5	25%	37500	37,5	44,8	25%
F 4006 67				F 4006 57				F 4006 68			
DN150	min dp	40kPa		DN150HF	min dp	70kPa		DN200	min dp	40kPa	
l/h	m³/h	kv	VE	l/h	m³/h	kv	VE	l/h	m³/h	kv	VE
145000	145	229,3	100%	200000	200	239,0	100%	210000	210	332,0	100%
130500	130,5	206,3	90%	180000	180	215,1	90%	189000	189	298,8	90%
116000	116	183,4	80%	160000	160	191,2	80%	168000	168	265,6	80%
101500	101,5	160,5	70%	140000	140	167,3	70%	147000	147	232,4	70%
87000	87	137,6	60%	120000	120	143,4	60%	126000	126	199,2	60%
72500	72,5	114,6	50%	100000	100	119,5	50%	105000	105	166,0	50%
58000	58	91,7	40%	80000	80	95,6	40%	84000	84	132,8	40%
43500	43,5	68,8	30%	60000	60	71,7	30%	63000	63	99,6	30%
36250	36,25	57,3	25%	50000	50	59,8	25%	52500	52,5	83,0	25%
F 4006 58				F 4006 48				F 4006 59			
DN200HF	min dp	70kPa		200UHF	min dp	85kPa		250HF	min dp	70kPa	
l/h	m³/h	kv	VE	l/h	m³/h	kv	VE	l/h	m³/h	kv	VE
300000	300	358,6	100%	350000	350	379,6	100%	410000	410	490	100%
270000	270	322,7	90%	315000	315	341,7	90%	369000	369	441	90%
240000	240	286,9	80%	280000	280	303,7	80%	328000	328	392	80%
210000	210	251,0	70%	245000	245	265,7	70%	287000	287	343	70%
180000	180	215,1	60%	210000	210	227,8	60%	246000	246	294	60%
150000	150	179,3	50%	175000	175	189,8	50%	205000	205	245	50%
120000	120	143,4	40%	140000	140	151,9	40%	164000	164	196	40%
90000	90	107,6	30%	105000	105	113,9	30%	123000	123	147	30%
75000	75	89,6	25%	87500	87,5	94,9	25%	102500	102,5	123	25%
F 4006 69											
250SF	min dp	50kPa									
l/h	m³/h	kv	VE								
350000	350	495	100%								
315000	315	445,5	90%								
280000	280	396	80%								
245000	245	347	70%								
210000	210	297	60%								
175000	175	248	50%								
140000	140	198	40%								
105000	105	148,5	30%								
87500	87,5	123,7	25%								

HERZ standard diagram

Order no.: F 4006 62

F 4006 6x

DN50

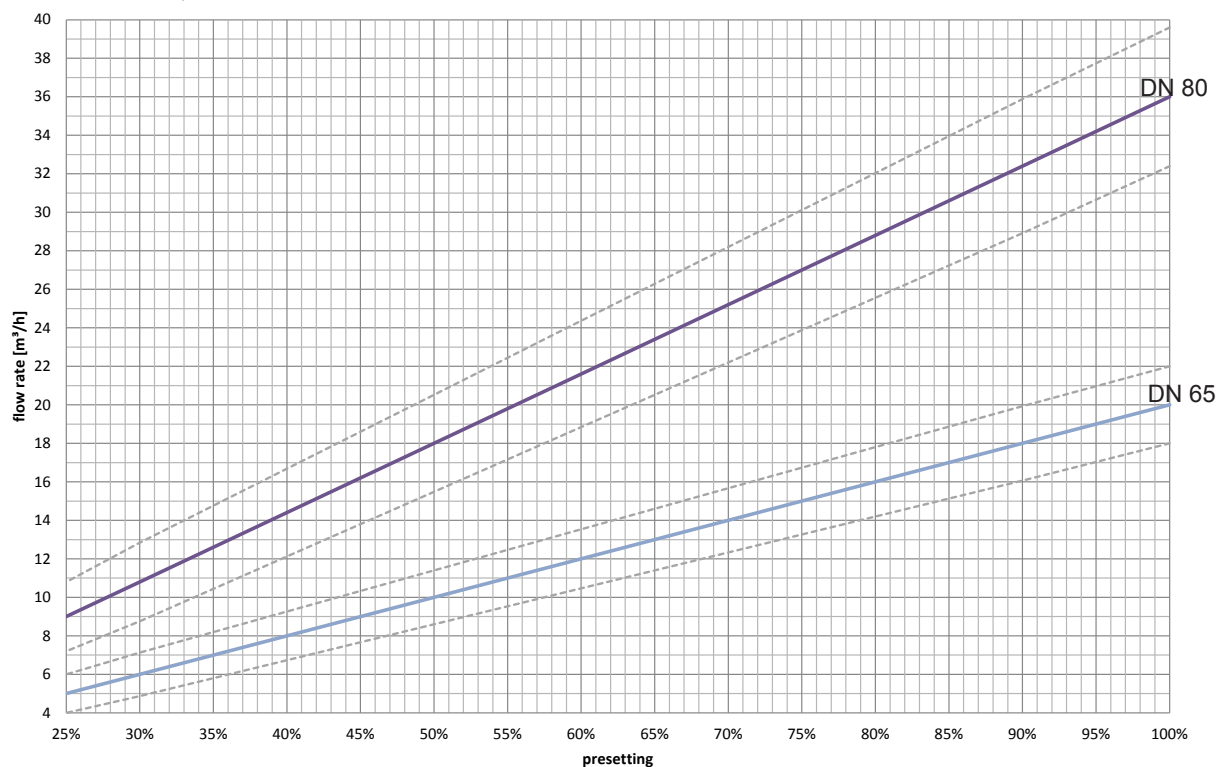


HERZ standard diagram

Order no.: F 4006 63, 64

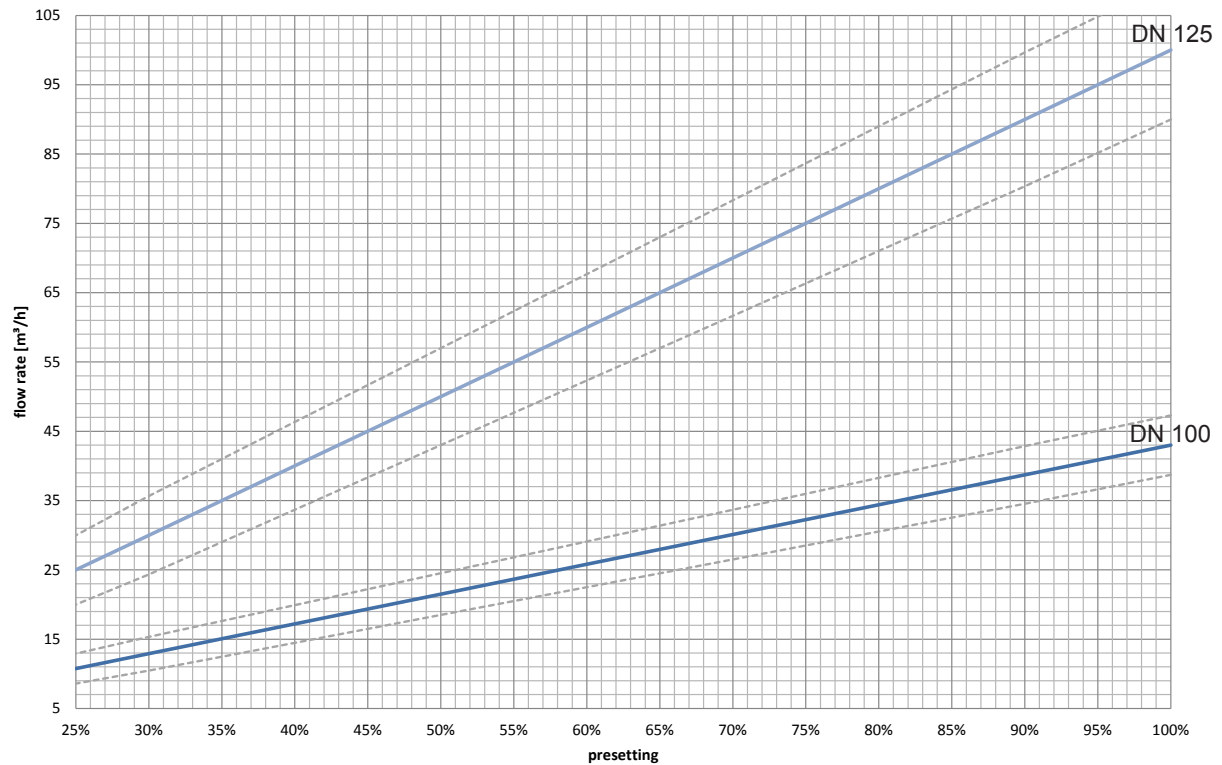
F 4006 6x

DN65 and DN80



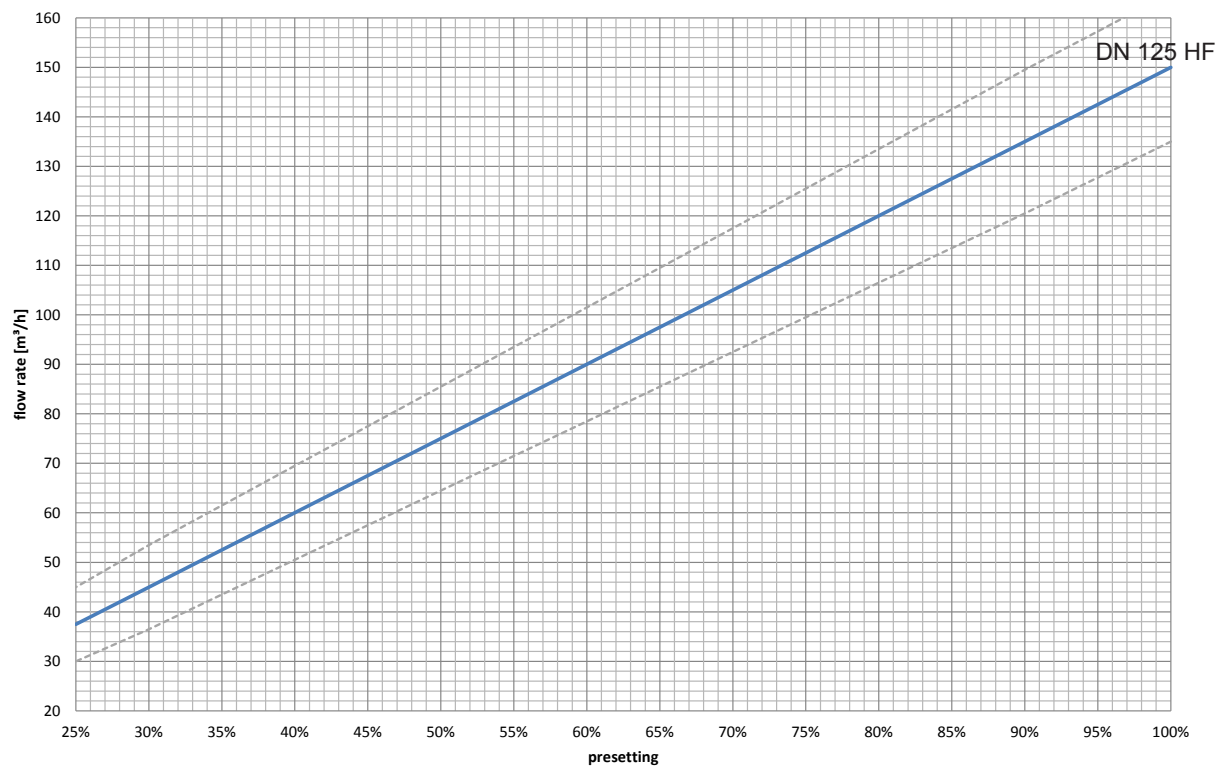
HERZ standard diagram
Order no.: F 4006 65, 66

F 4006 6x
DN100 and DN125



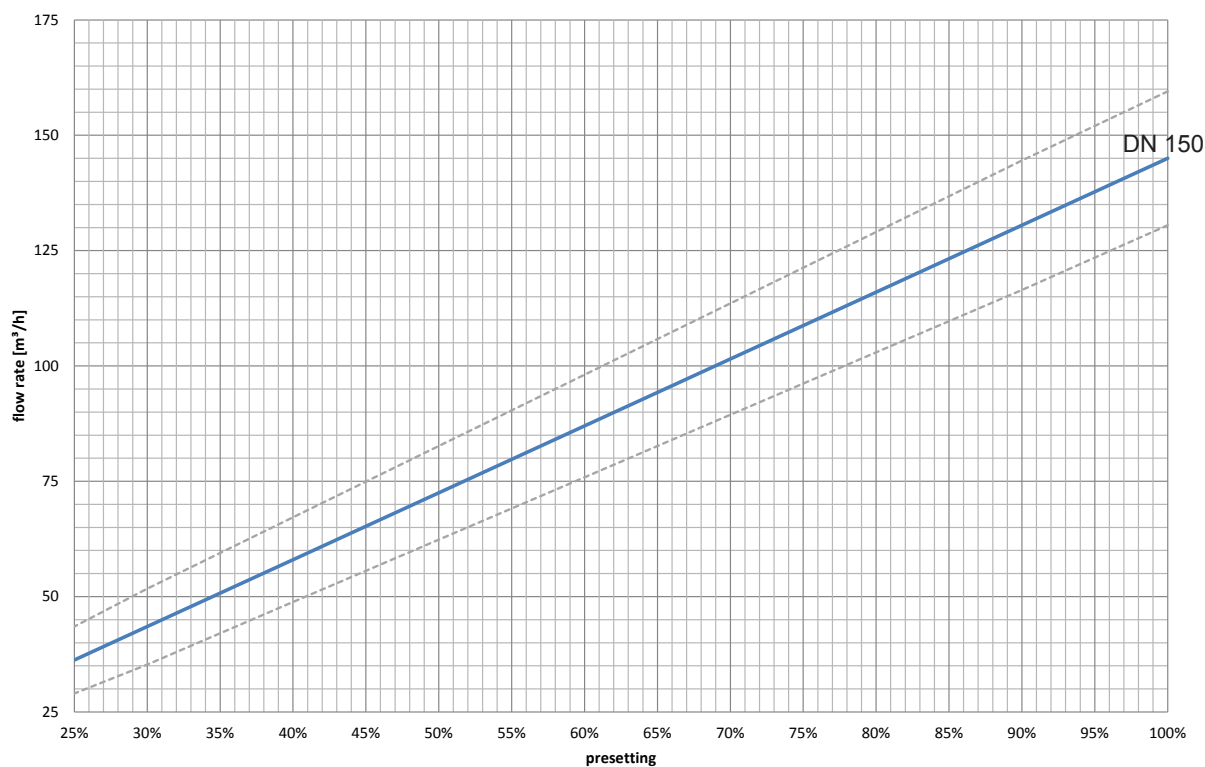
HERZ standard diagram
Order no.: F 4006 56

DN125 HF



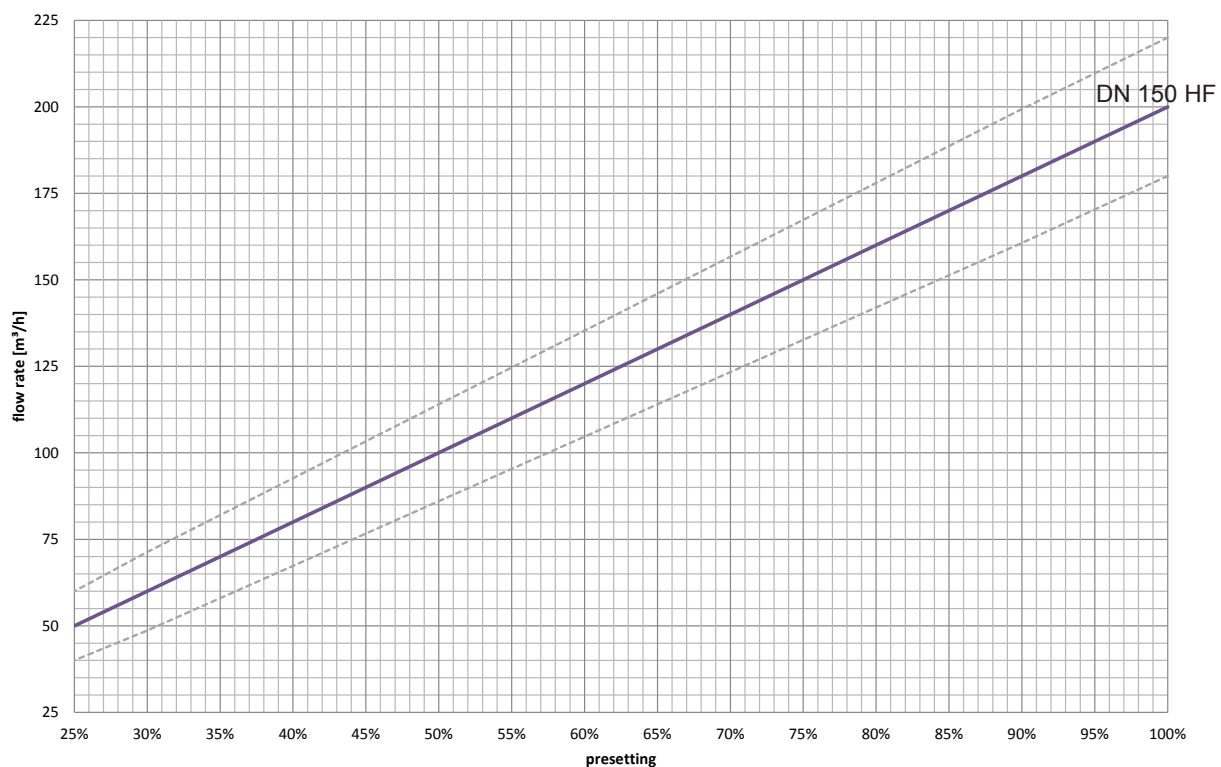
HERZ standard diagram
Order no.: F 4006 67

F 4006 6x
DN150



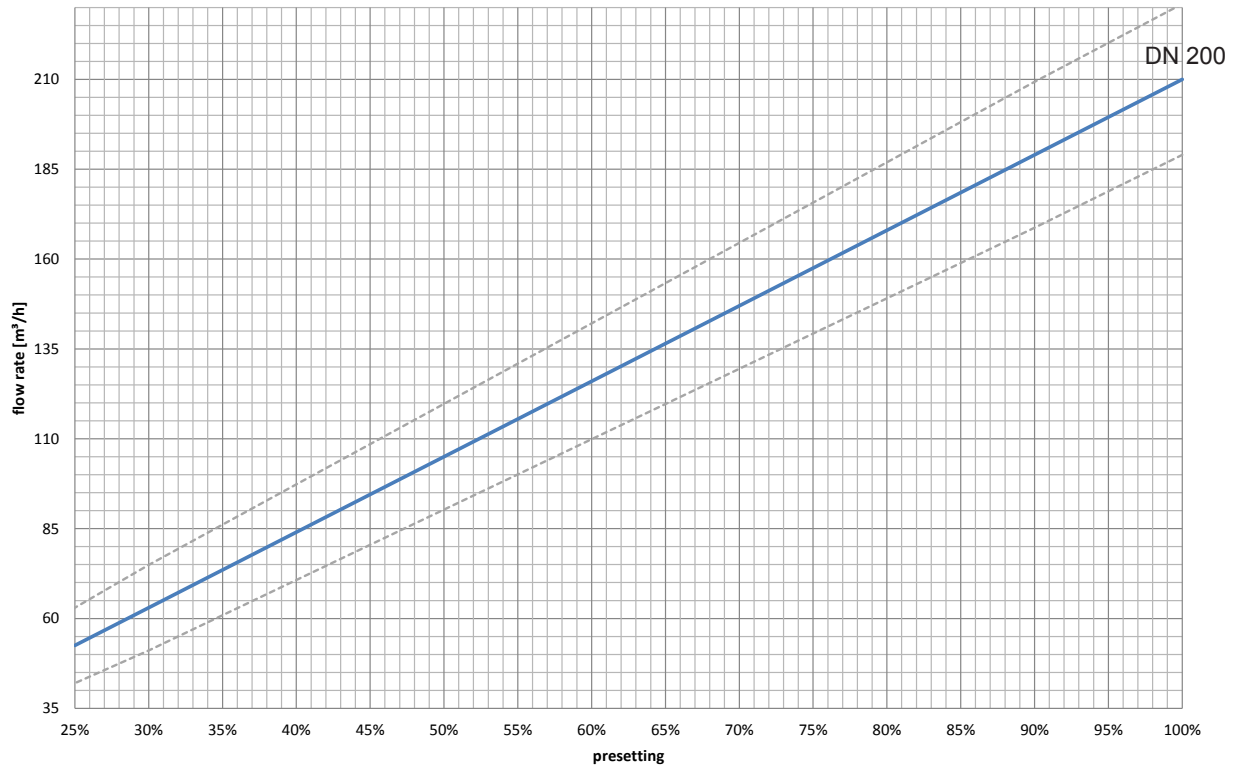
HERZ standard diagram
Order no.: F 4006 57

DN150 HF



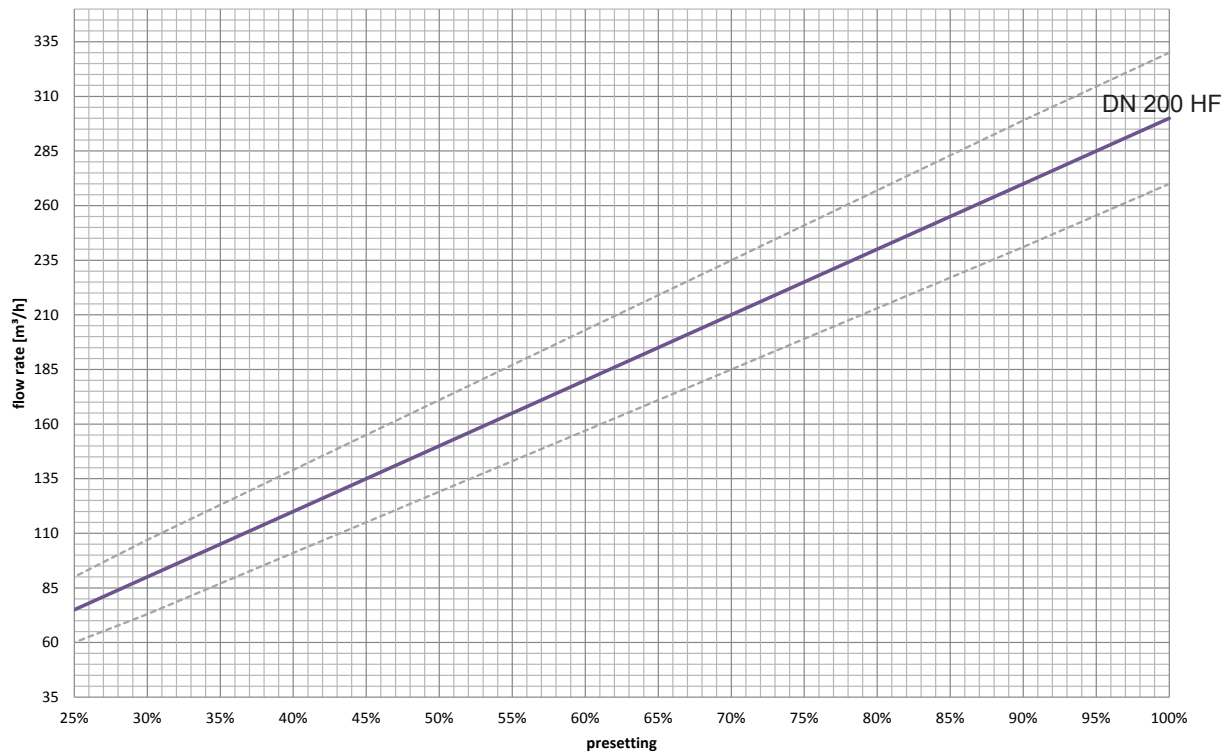
HERZ standard diagram
Order no.: F 4006 68

F 4006 6x
DN200



HERZ standard diagram
Order no.: F 4006 58

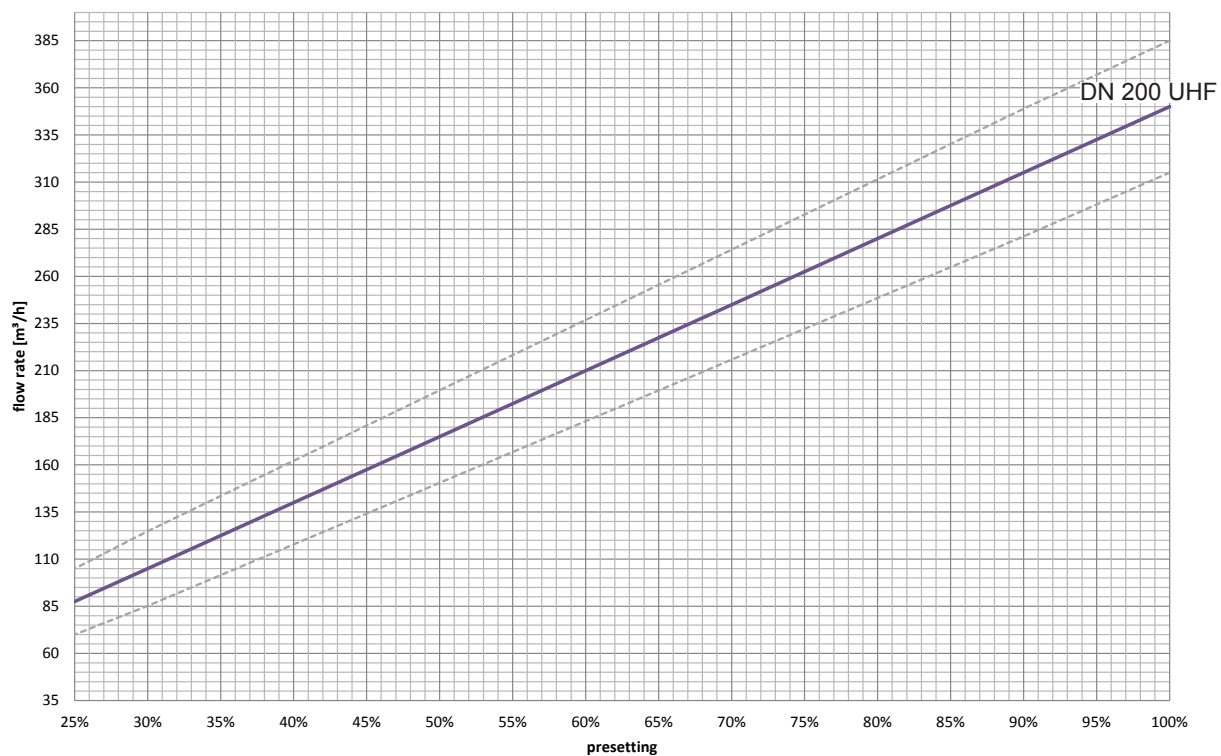
DN200 HF



HERZ standard diagram

Order no.: F 4006 48

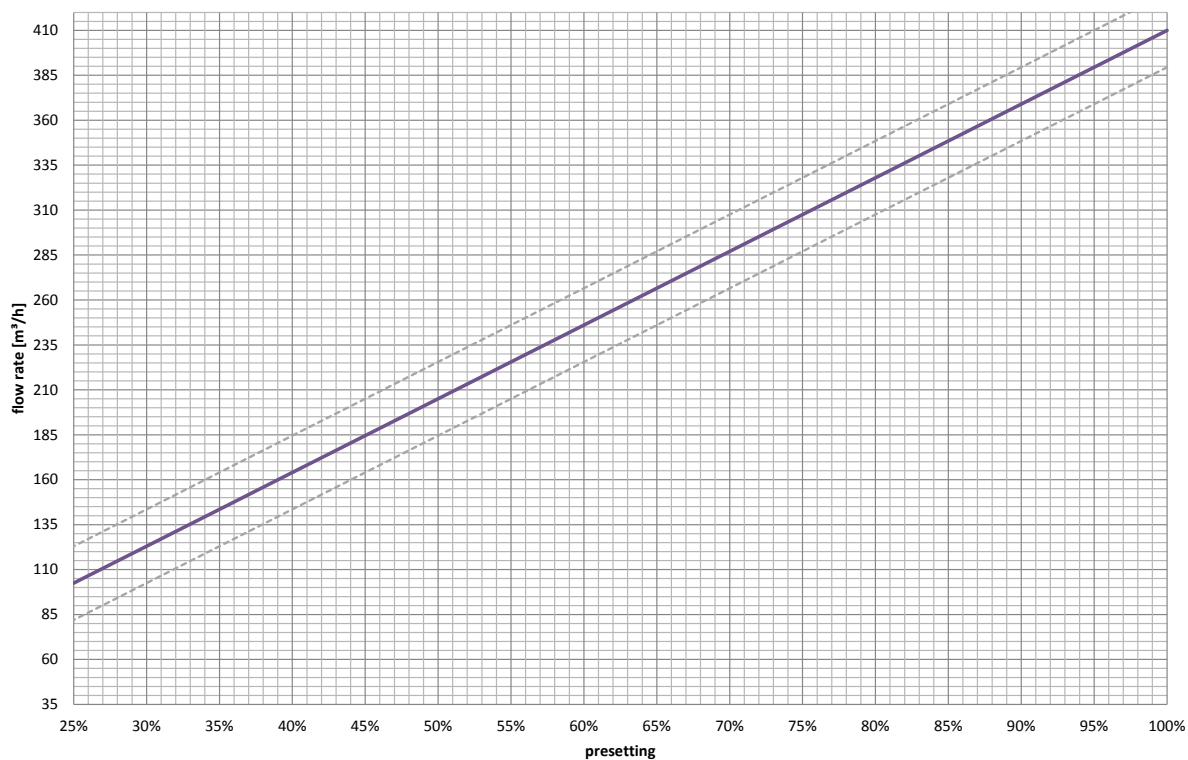
DN 200 UHF



HERZ standard diagram

Order no.: F 4006 59

DN 250 HF



HERZ standard diagram

Order no.: F 4006 69

DN 250 SF

