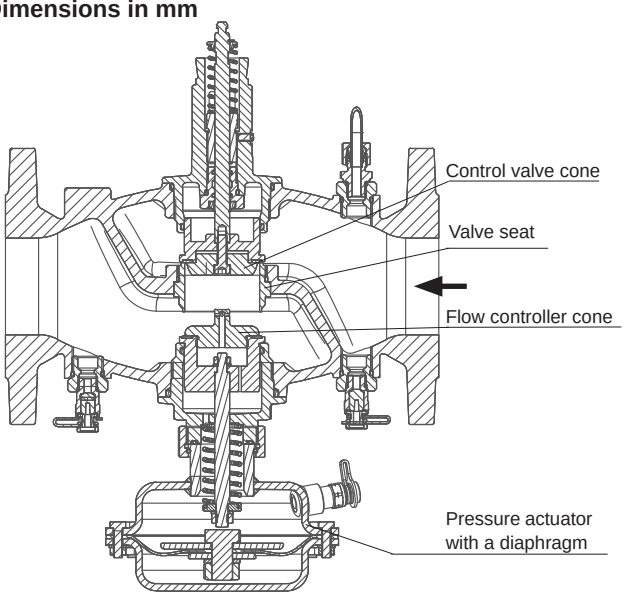
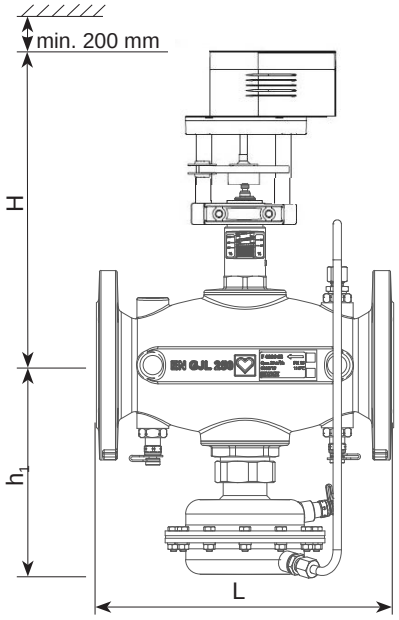
HERZ - Pressure-independent control valve in flanged design

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	6 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

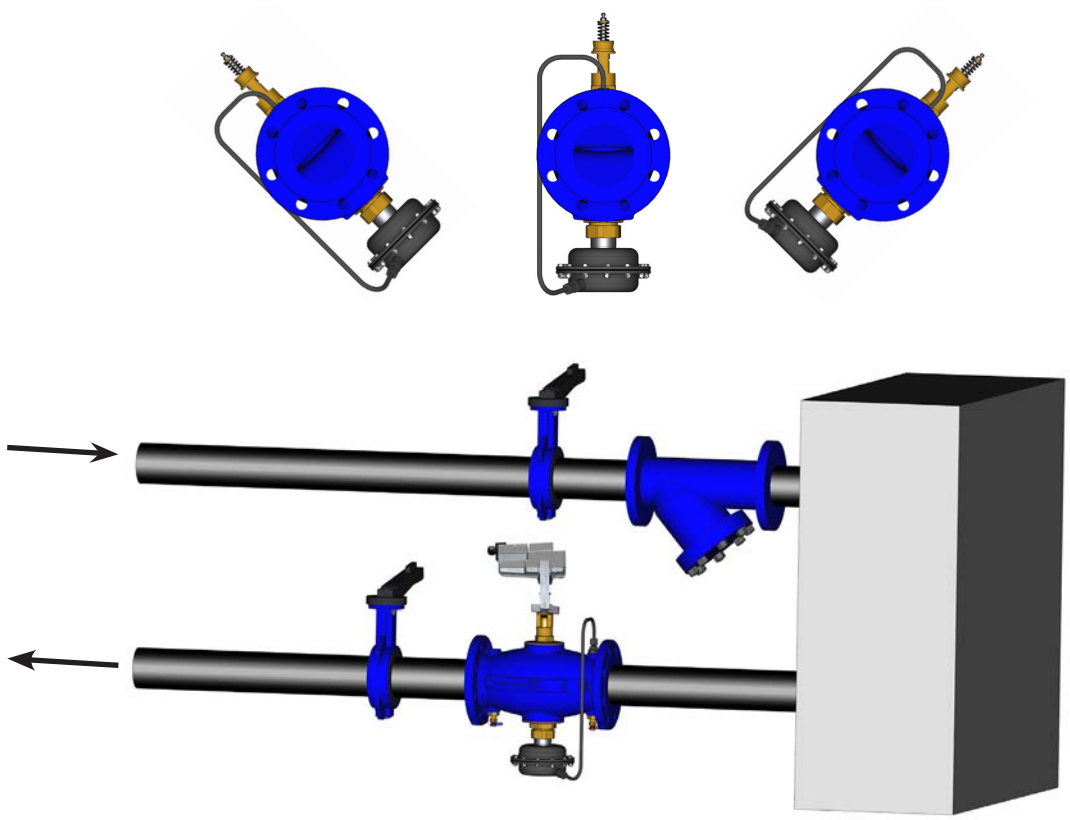
Water purity in accordance with the OENORM H 5195 and VDI 2035 standards.
Ethylene and propylene glycol can be mixed to a ratio of 25 - 50 vol.-%.
Pursuant to Article 33 of the REACH Regulation (EC No. 1907/2006), we are obliged to point out that the material lead is listed on the SVHC list and that 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 ± 45° 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

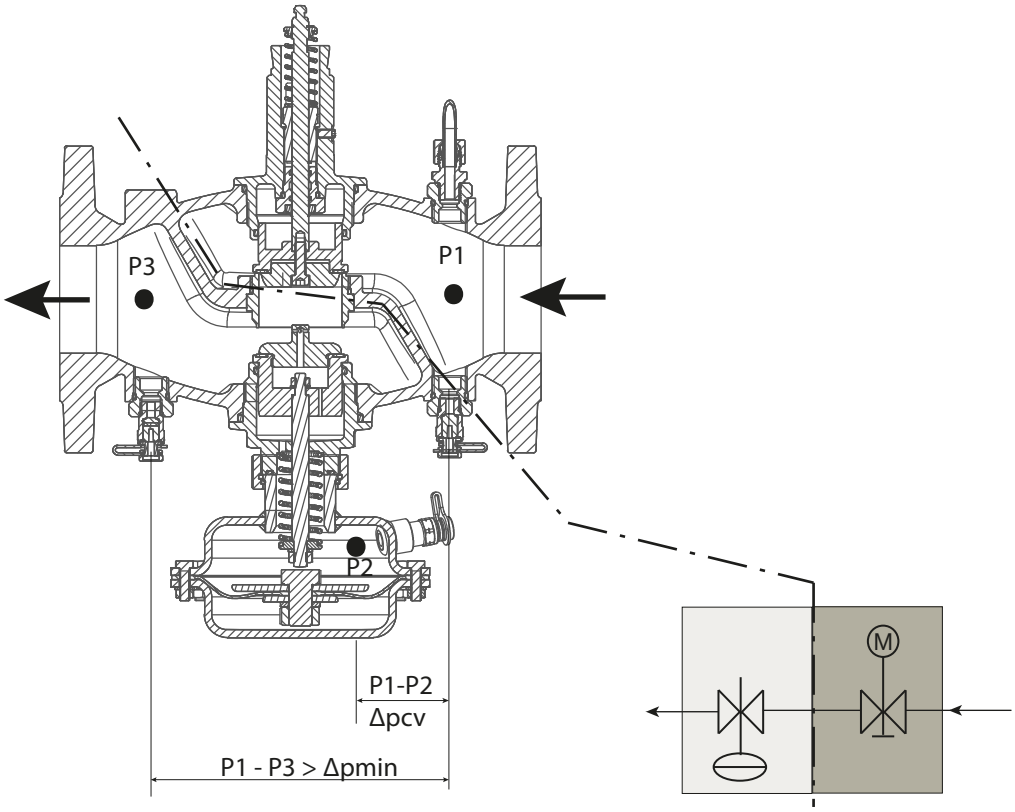
A Pressure Independent Balancing and Control Valve (PIBCV or PICV) combines a regulating and control valve with a differential pressure controller.

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 PICV 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

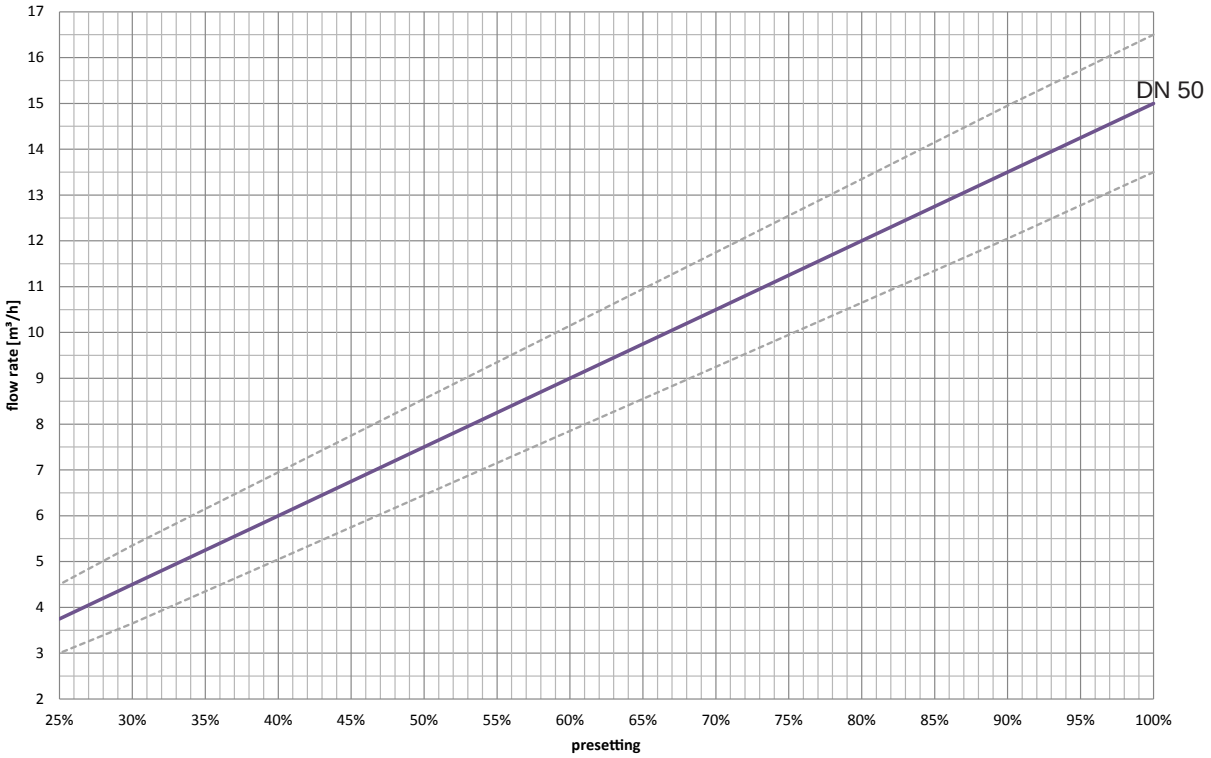
General information

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.

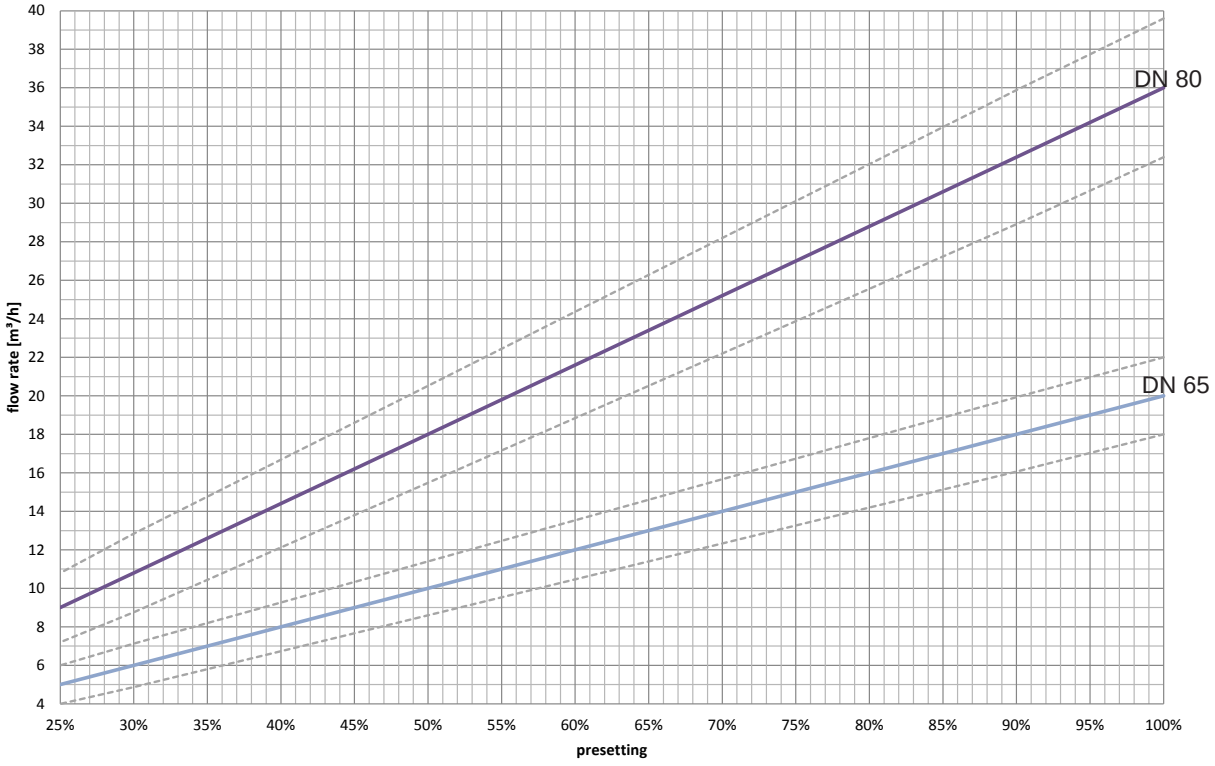
HERZ standard diagram
Order no.: F **4006** 62

F 4006 6x
DN50



HERZ standard diagram
Order no.: F **4006** 63, 64

F 4006 6x
DN65 and DN80

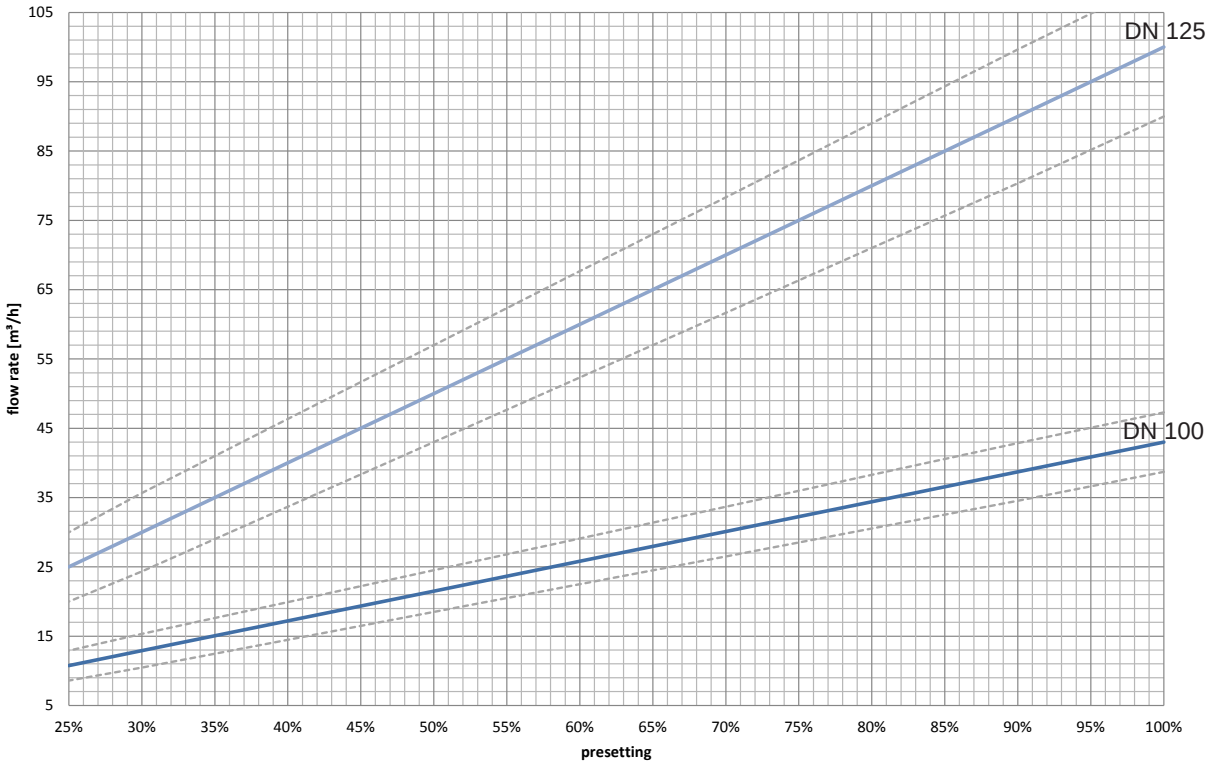


HERZ standard diagram

Order no.: F **4006** 65, 66

F 4006 6x

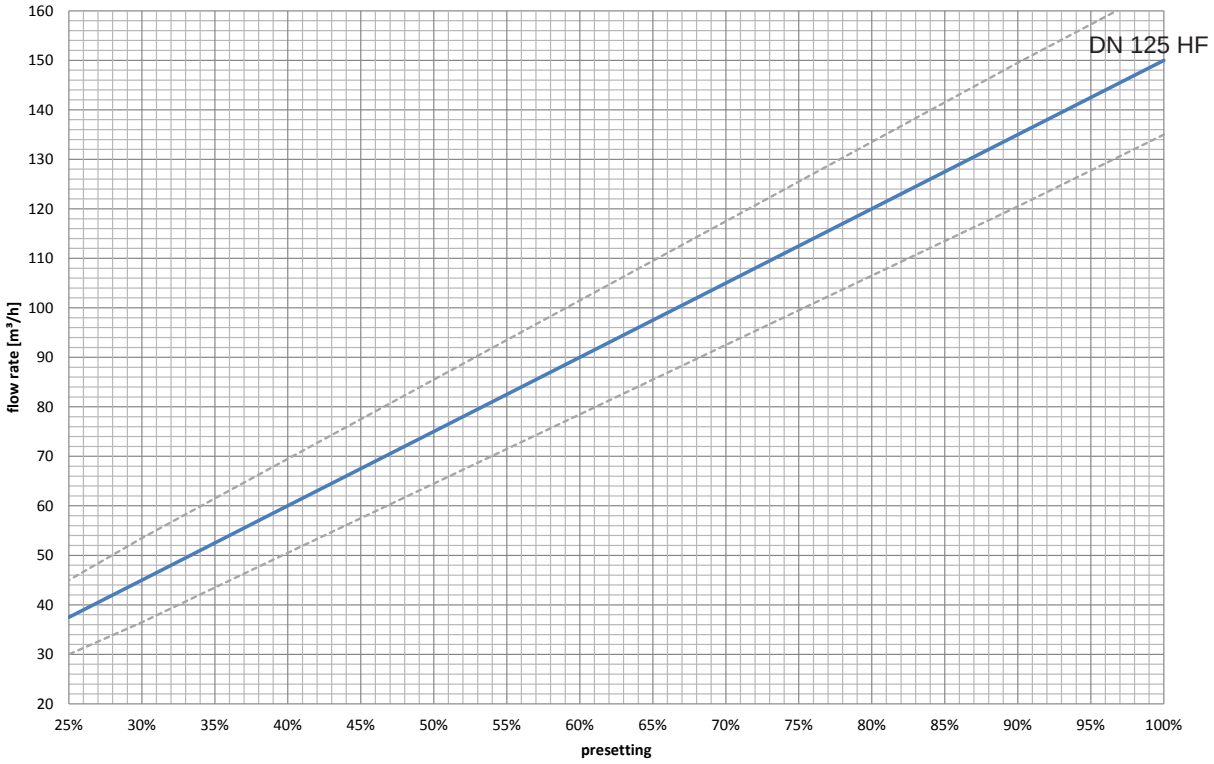
DN100 and DN125



HERZ standard diagram

Order no.: F **4006** 56

DN125 HF

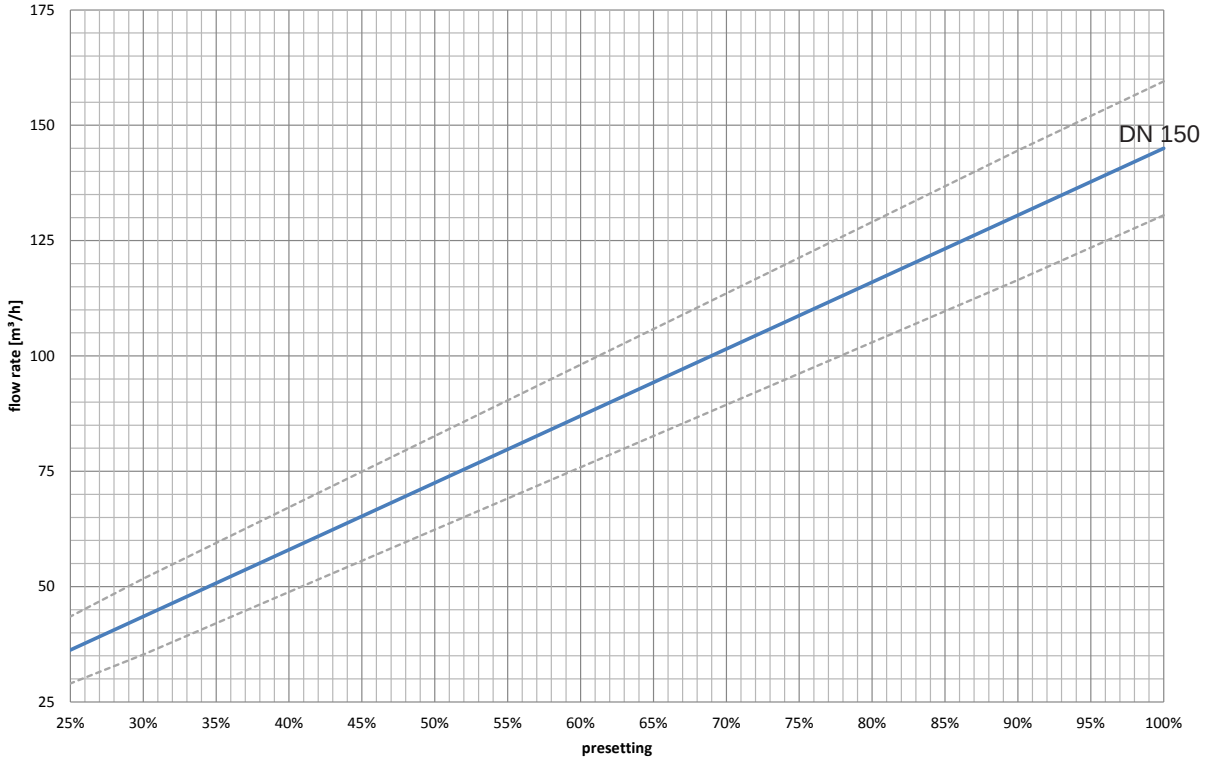


HERZ standard diagram

F 4006 6x

Order no.: F **4006** 67

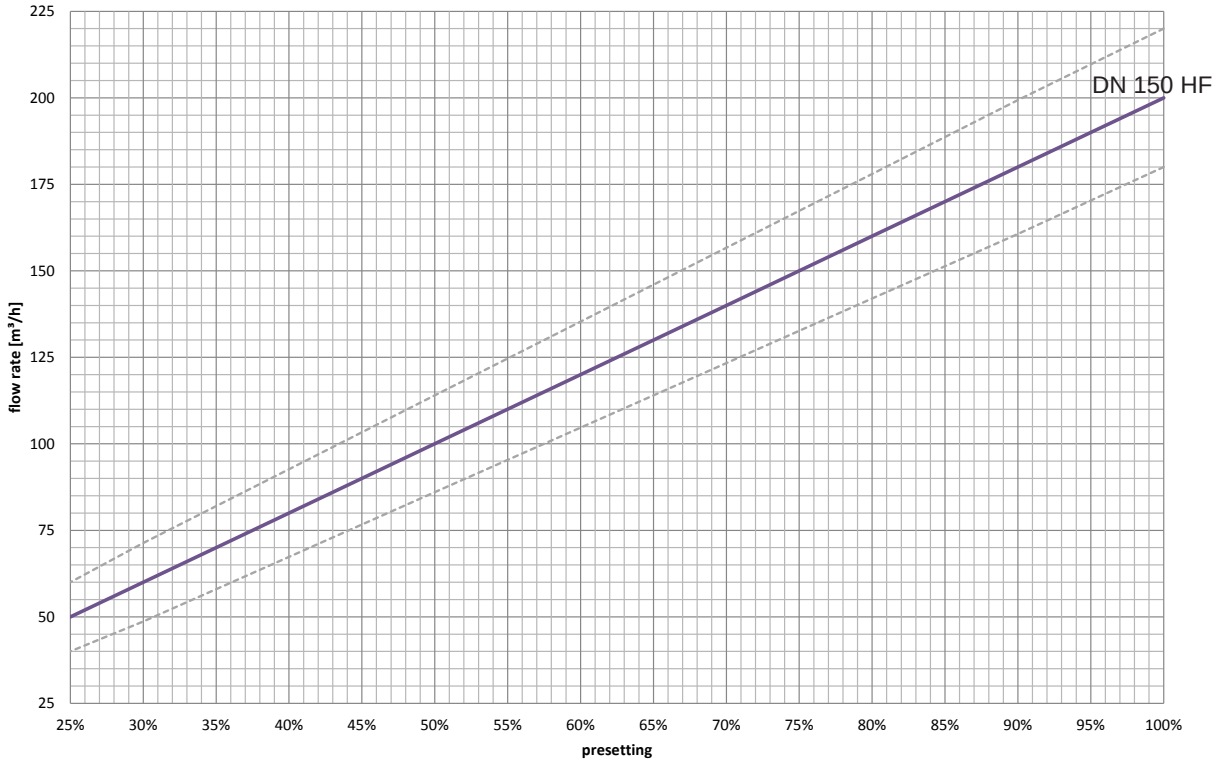
DN150



HERZ standard diagram

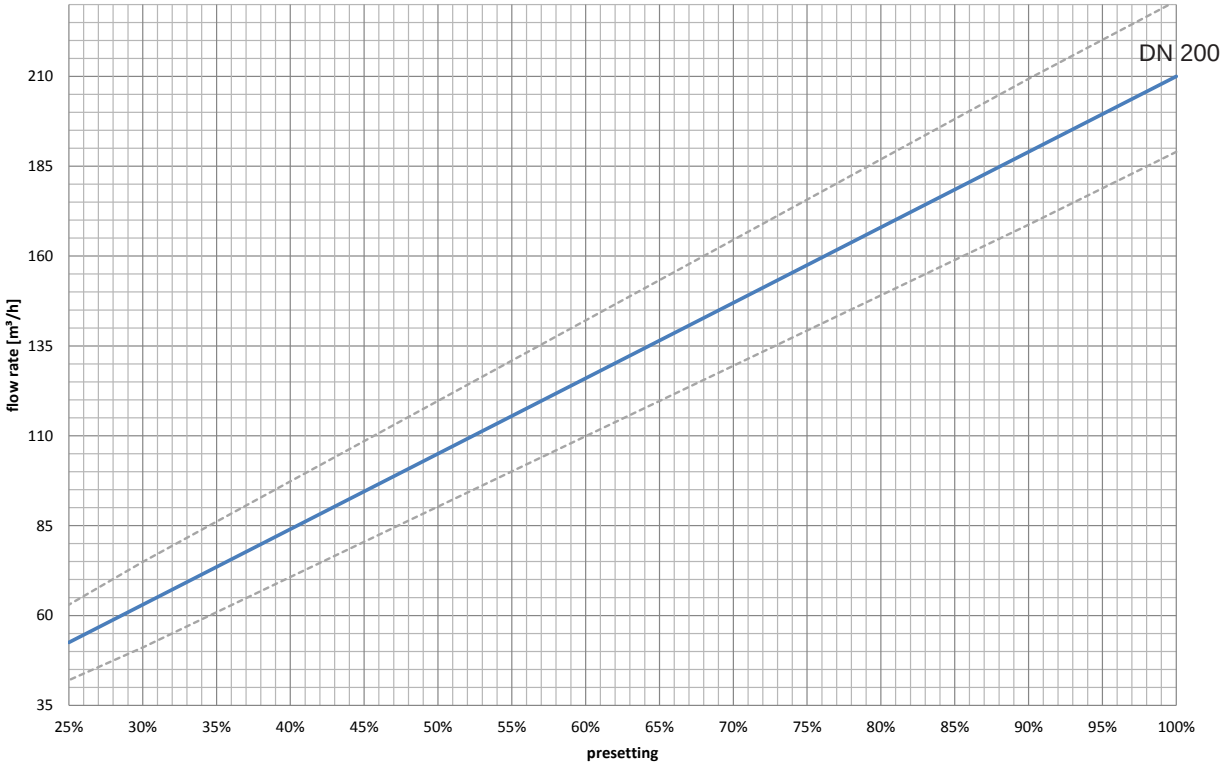
Order no.: F **4006** 57

DN150 HF



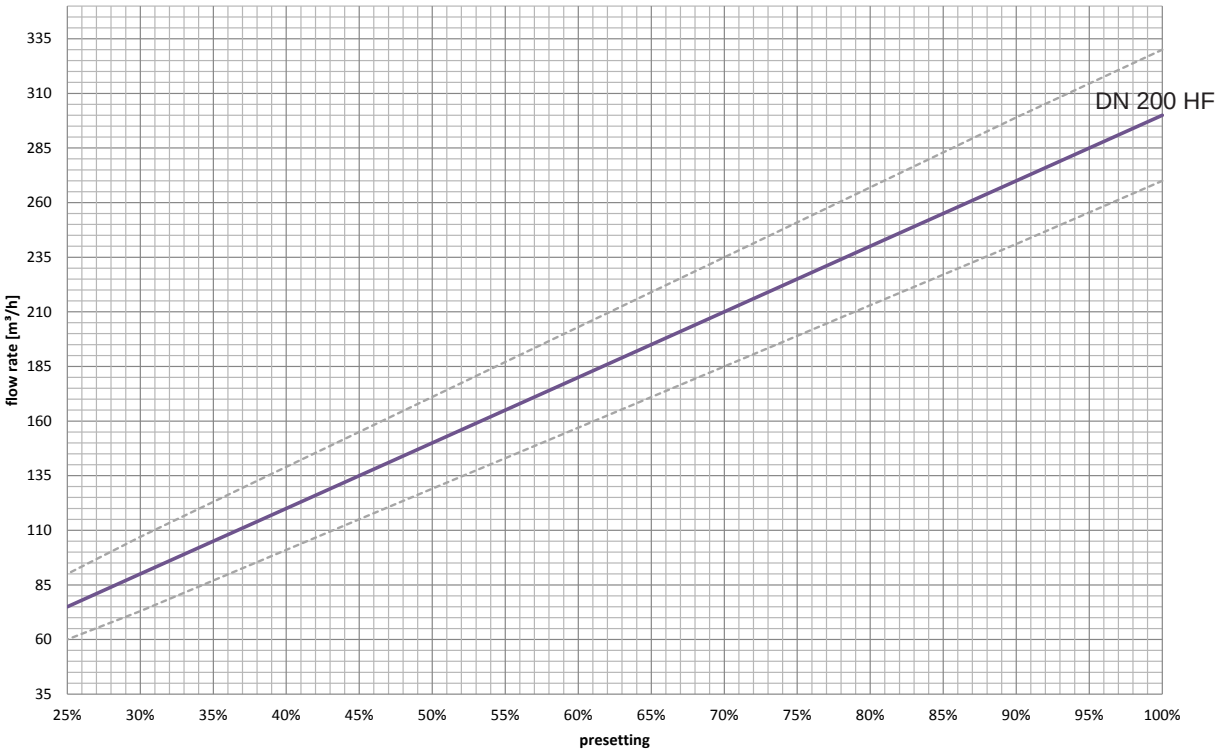
HERZ standard diagram
Order no.: F **4006** 68

F 4006 6x
DN200



HERZ standard diagram
Order no.: F **4006** 58

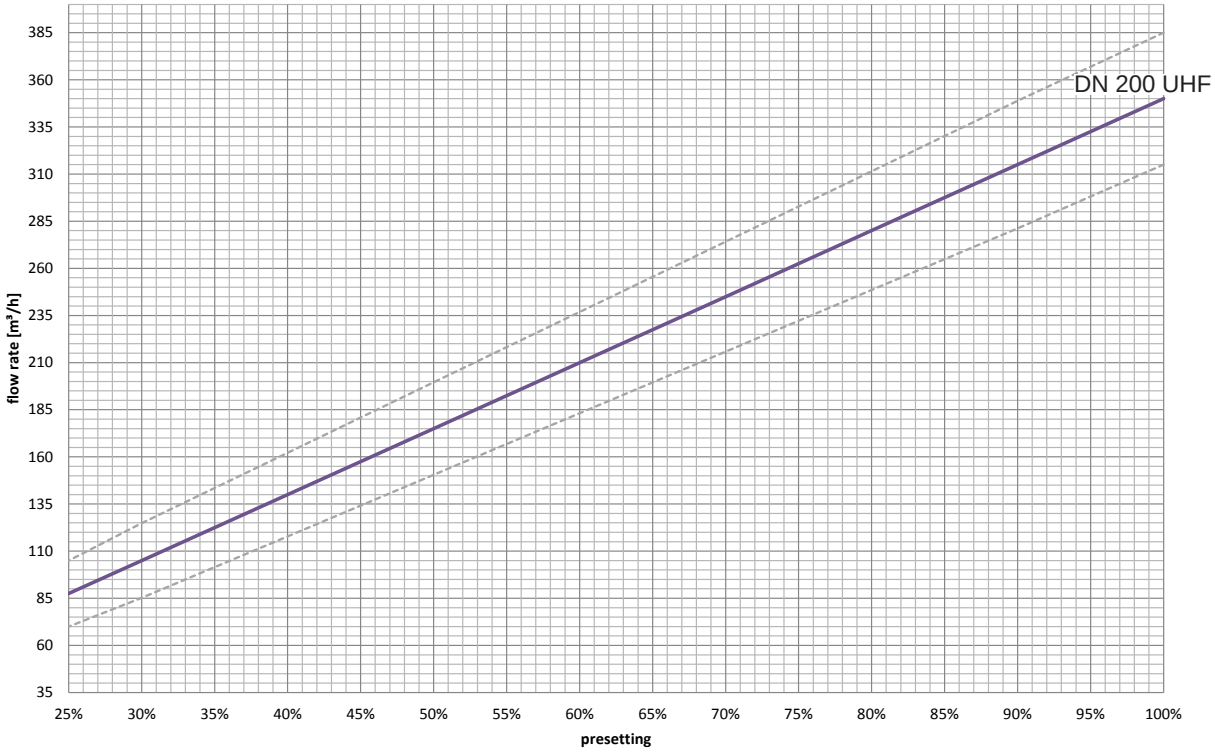
DN200 HF



HERZ standard diagram

Order no.: F **4006** 48

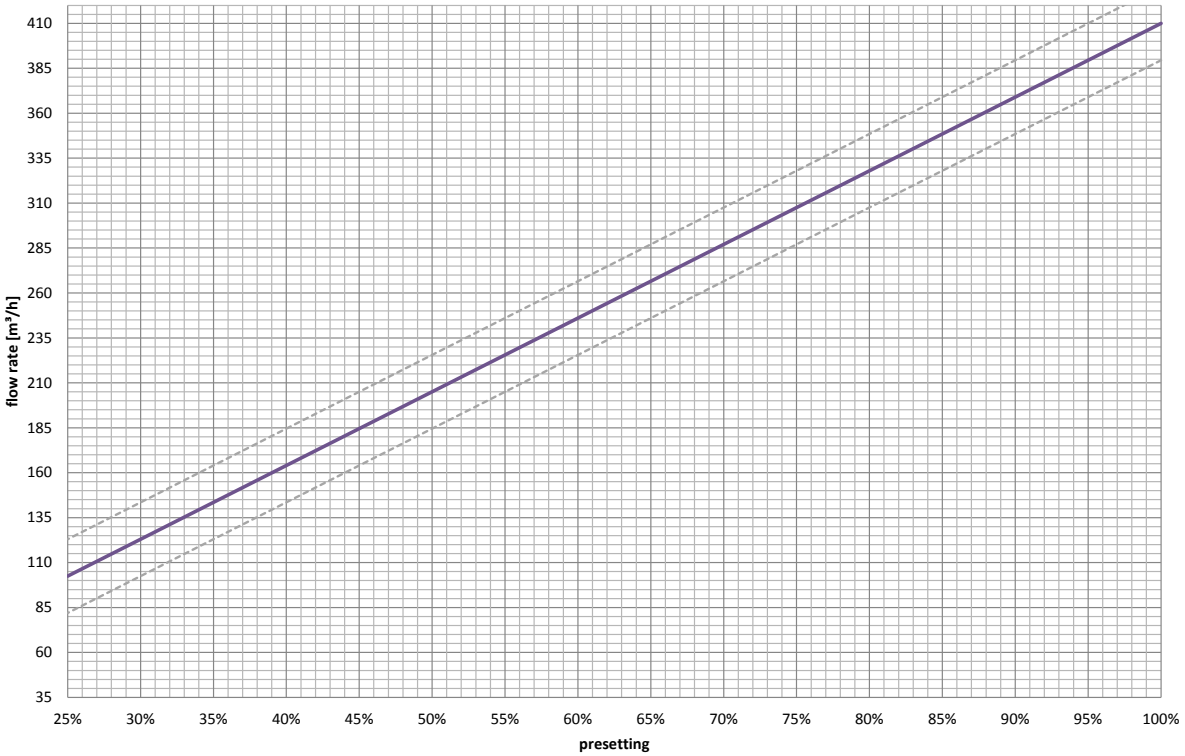
DN 200 UHF



HERZ standard diagram

Order no.: F **4006** 59

DN 250 HF



HERZ standard diagram

Order no.: F **4006** 69

DN 250 SF