

COD.	DESCRIPTION	PN	MAX FLOW RATE [m ³ /h]	DIFFERENTIAL PRESSURE RANGE
BV65P	DN65 flanged pipe connections	16	24,1	30-400 kPa
BV80P	DN80 flanged pipe connections	16	37,3	30-400 kPa
BV100P	DN100 flanged pipe connections	25	50,6	80-1600 kPa
BV125P	DN125 flanged pipe connections	25	66,8	80-1600 kPa



APPLICATION AND USE

Pressure Independent Control Valve with diaphragm structure and adjustable flow rate combines the advantages of dynamic balancing valve and two-way control valve. Maximum flow rate can flexibly be set which shows obvious advantages in changeable flow system when load fluctuates greatly. They are used to solve the problem of hydraulic balancing in heating and air conditioning systems. It has a strong anti-jamming ability and a high degree of control accuracy, which makes it work well in the frequent fluctuating flow system.

BV..P flanged valves can be coupled with **MVE C2A** actuators (no MVExxxS/SR short yoke).

FUNCTIONAL CHARACTERISTICS

BV valves can be considered as 3 valves in one:

- static balancing valve able to adjust the max operating flow; the PICV and their actuator can be precalibrated to a maximum flow rate depending on the application;
- control valve operated by modulating actuator (normally open-stem down closed) for a higher control accuracy;
- differential pressure controller aiming to compensate the differential pressure fluctuation in order to make the flow control only dependent from the valve actuator position; the balancing cavity with built-in capillary connection allow a wide balancing differential pressure range and easy to install solution;

BV..P are equipped with pressure plugs, useful to measure the real differential pressure across the valve.

TECHNICAL CHARACTERISTICS

BV65P - BV80P

Construction:	PN16
Leakage:	0,01% of Kvs
Fluids:	Water or neutral fluids, water-glycol mixtures (0-57%).
Lift:	20 mm
Working temperature:	-20T120°C
Differential pressure range:	30-400 kPa
Connection:	Flanges according to EN-1092-2, type 21; face to face length according to EN 558, series 1

BV100P - BV125P

Construction:	PN25
Leakage:	0,01% del Kvs
Fluids:	Water or neutral fluids, water-glycol mixtures
Lift:	20 mm
Working temperature:	-10T120°C
Differential pressure range:	80 -1600 kPa
Connection:	Flanges according to EN-1092-2, type 21

MANUFACTURING CHARACTERISTICS

BV65P - BV80P

Valve body:	Ductile iron EN-GJS-400
Valve plug:	Stainless steel
Diaphragms:	Reinforced EPDM
O-ring:	EPDM

BV100P - BV125P

Valve body:	Ductile iron EN-GJS-400
Diaphragms and gaskets:	EPDM
Valve plug:	EPDM/Stainless steel

COMMISSIONING

BV65P - BV80P

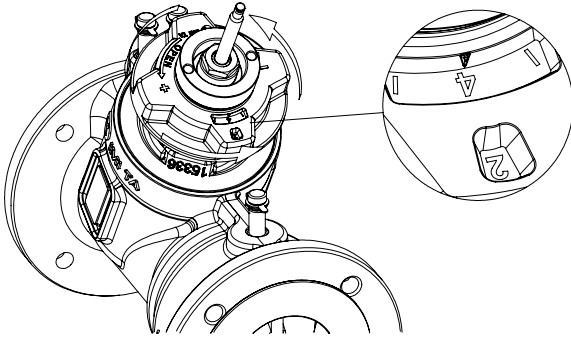
Sizing

1. Choose the smallest valve size that can obtain the design flow with some safety margin, see "q_{max} values". The setting should be as open as possible.
2. Check that the available ΔPV is within the working range 30-400 kPa.

DN	POSITION										
	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
65	4200	5100	6200	7700	9500	11500	13500	16100	19000	21800	24100
80	5900	7300	9200	12200	15500	19100	22800	26300	30000	33600	37300

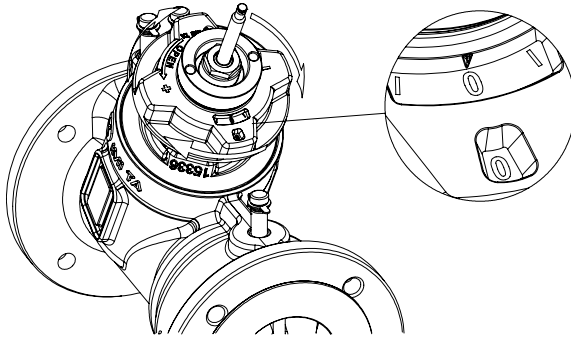
q_{MAX}=l/h at each setting and fully open valve plug.

Setting



1. Disengage the actuator from the valve spindle.
2. Turn the setting wheel to desired value, e.g. 2.4.

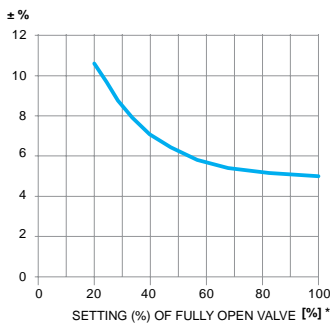
Isolation



1. Disengage the actuator from the valve spindle.
2. Turn the setting wheel clockwise to stop (position 0 ± 0,5).

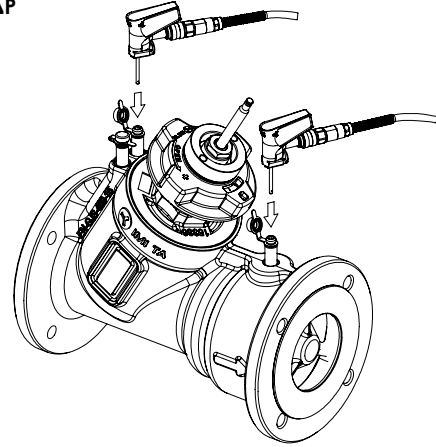
Flow measurement*

1. Disengage the actuator from the valve spindle.
2. Connect the balancing instrument to the red and blue measuring points.
3. Input the valve type, size and setting and the actual flow is displayed.



* specific measurement equipment is required

Measuring ΔP



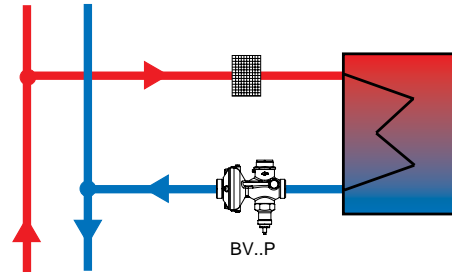
1. Disengage the actuator from the valve spindle.
 2. Close the valve according to "Isolation".
 3. Connect the balancing instrument to the red and black measuring points and measure.
 4. Reopen the valve to previous setting.
- Important!** After the measurement is completed;

BV100P - BV125P

Installation

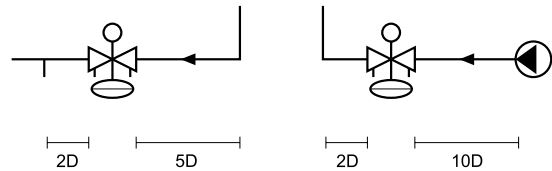
Install the valve in the return pipe, downstream the consumer, or in the inlet pipe, upstream the consumer. Flow direction is shown by the arrow on the valve body.

Install the valve so that venting is possible and the flow adjustment scale is visible. Check allowed positions of the actuator. Installation of a strainer upstream of the valve is recommended. When filling, vent the body by using the venting screws.

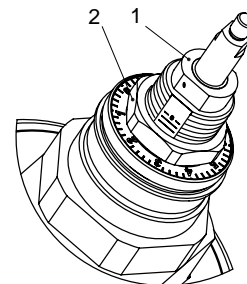


Normal pipe fittings

Try to avoid mounting taps and pumps immediately before the valve. Installation recommendation for accurate measurement due to distortion of fully developed turbulent flow profile.



Setting

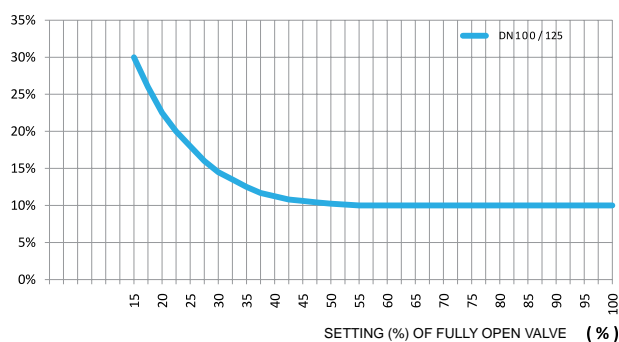


Release the fixing nut (2). Turn the flow setting screw (1) clockwise to

the position of 0,0 turns. Turn the flow setting screw anticlockwise corresponding to the number of revolutions on the flow chart. Tighten the fixing nut.

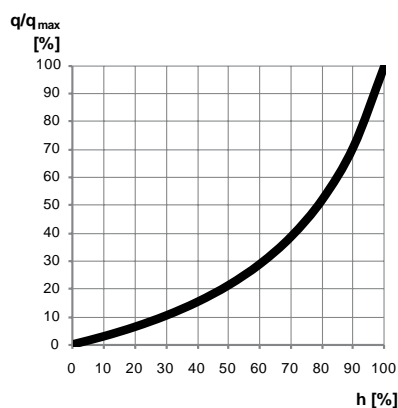
NUMBER OF REVOLUTIONS	MAX FLOW RATE [l/h]	
	DN 100	DN 125
0	0	0
0.5	1620	2804
1	2148	5566
1.5	2686	7826
2	3190	10690
2.5	3726	14191
3	4464	18392
3.5	5688	22622
4	7801	27133
4.5	10069	31763
5	13586	36374
5.5	16880	40554
6	21092	44762
6.5	25034	48553
7	29560	52182
7.5	33581	55292
8	37667	58280
8.5	41155	60847
9	44771	63126
9.5	47452	65142
10	50630	66841

KV DEVIATION AT DIFFERENT SETTINGS

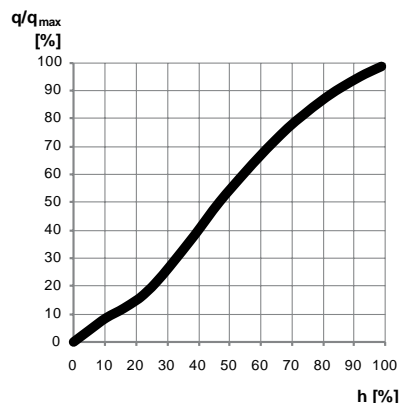


FLOW CURVE

BV65P - BV80P



BV100P - BV125P

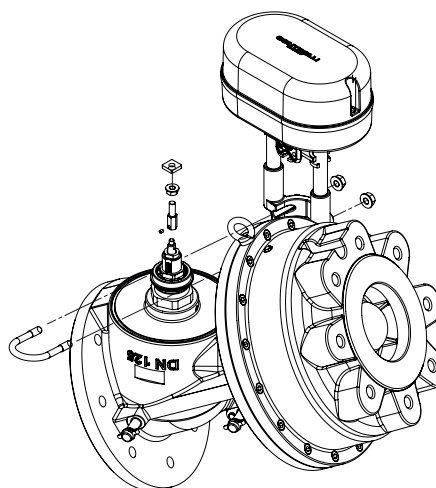


MAXIMUM DIFFERENTIAL CLOSE OFF [kPa]

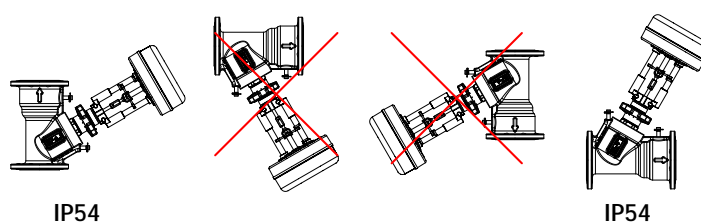
MODEL	CLOSE OFF [kPa]	
	MVE.10/R	MVE.15/R
BV50P	400	-
BV65P	400	-
BV100P	-	1600
BV125P	-	1600

ACTUATOR ASSEMBLING

BV..P flanged valves can be coupled with MVE C2AI actuators (no MVExxxS/SR short yoke). To mount the actuator on to a valve, position the valve stem to the bottom of its travel, slide the actuator onto the valve neck, adjusting with the manual override the screw jack position so the square nut on the valve spindle fits into the groove on the cross bar. Then slide the brace into the groove on the valve neck and secure the nuts. See mounting instructions for full details (MVE2xx_DIM205).

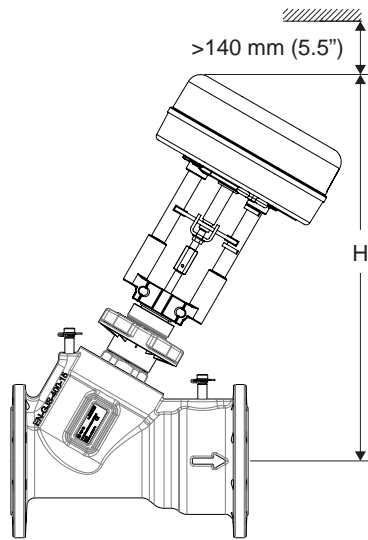


MOUNTING POSITION



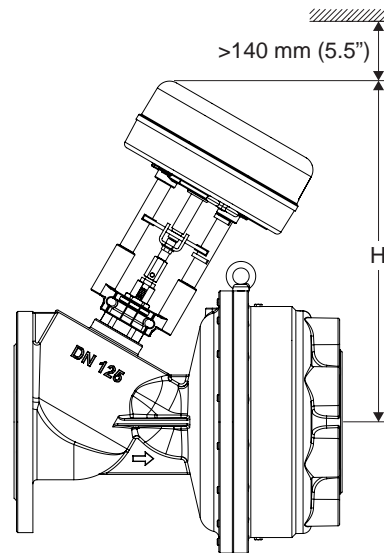
Flow direction is shown by the arrow on the valve body.

Free space is required above the actuator for easy mounting/dismounting.



BV65P - BV80P

DN	H [mm]
65	437
80	449

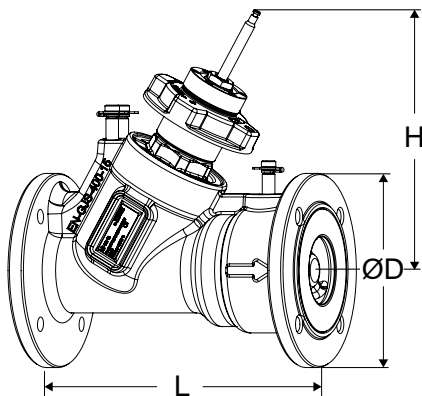


BV100P - BV125P

DN	H [mm]
100	375
125	377

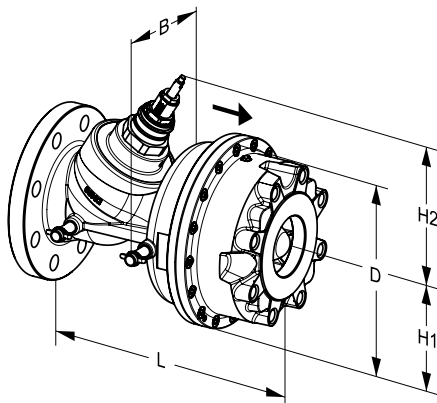
DIMENSION [mm]

BV65P - BV80P



DN	D	L	H	VALVE BODY WEIGHT [Kg]
65	185	290	249	18,1
80	200	310	260	21,7

BV100P - BV125P



DN	D	L	H1	H2	B	VALVE BODY WEIGHT [kg]
100	320	350	160	196	179	54
125	320	400	160	196	178	58

The performances stated in this sheet can be modified without any prior notice