



Automatic balancing

ASV-P

DN 15-40

Description

ASV-P valves are automatic balancing valves with fixed setting (10 kPa) for creating optimal hydronic balance in residential heating systems.

The setting can be increased to 20 or 30 kPa by spring replacement. Spring can be replaced under pressure.

ASV valves (DN 15-40) are packaged in styropore (EPS) which can be used for insulation at temperatures up to 80 °C. An insulation cap is available as an accessory for insulation at higher temperatures (up to 120 °C).

ASV-P valves are to be mounted in return pipe, in combination with partner valves mounted in flow pipe. As a partner valve ASV-M/I/BD are recommended.

Features & benefits

- ASV balancing valves are designed to guarantee high quality of the automatic balancing by:
 - A pressure released cone and an adapted membrane for every valve dimension which provide constant quality performance for all sizes
- A 90° angle between all service features (shut-off, draining, measuring) allows an easy access under any installing condition

Applications

There are two basic configurations when using ASV partner valves (ASV-BD, ASV-I, ASV-M, MSV-F2):

- partner valve outside the control loop (Fig. 1). Recommended configuration: it results in best performance since whole controlled pressure range is available to the riser. Flow limitation is done on each terminal unit in the riser (for example, RA-N with presetting on radiator, etc).
- partner valve inside control loop (Fig. 2). Offers flow limitation on the riser however part of the controlled pressure range is used by pressure drop on partner valve (Δp_v). It is recommended when flow limitation on each terminal units is not possible.

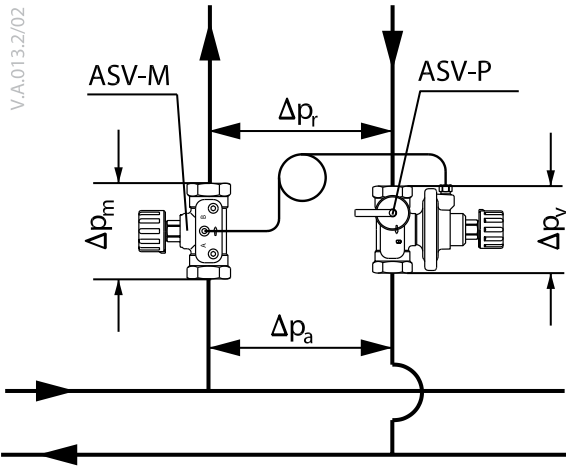


Fig. 1 Setting of ASV-P = Δp_{riser}

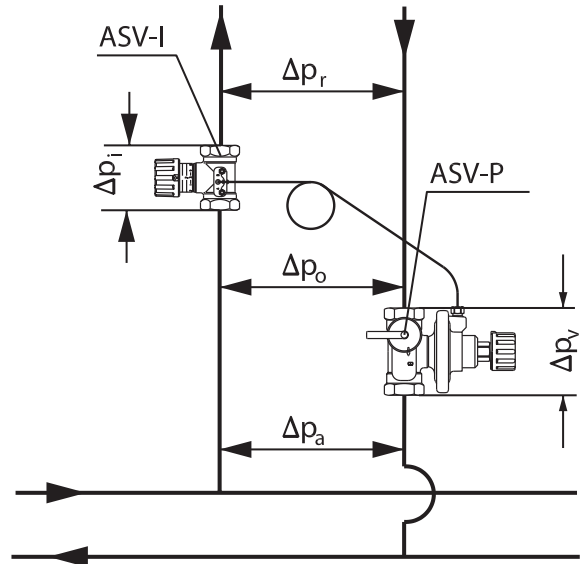


Fig. 2 Setting of ASV-P = $\Delta p_{riser} + \Delta p$

ASV-BD can be used outside or inside control loop by choice of which measuring nipple is open. To be used outside control loop, blue measuring nipple needs to be open. In this position, flow verification can be done (default position). To be used inside control loop, red measuring nipple needs to be open. In this position, flow verification & flow verification can be done.

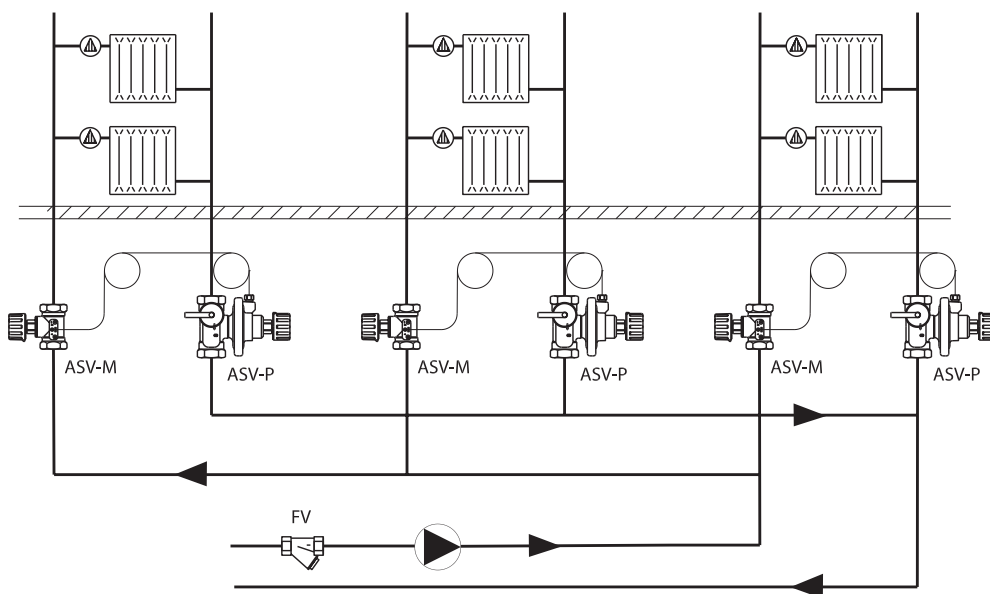


Fig. 3 ASV in riser / typical heating application (general example)

Ordering









Product code numbers

ASV-P balancing valve, inclusive in the box: 1.5 m impulse tube (G 1/16 A) and drain cock (G 3/4 A) Constant differential pressure 10 kPa ; **can be upgraded to 20 or 30 kPa setting respectively**

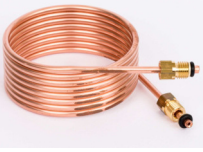


Description	Valve size	Kvs values [m ³ /h]	Connection types	Code number
ASV-P DN 15, internal thread, automatic balancing valve	DN 15	1.60	Internal thread	003L7621
ASV-P DN 20, internal thread, automatic balancing valve	DN 20	2.50	Internal thread	003L7622
ASV-P DN 25, internal thread, automatic balancing valve	DN 25	4.00	Internal thread	003L7623
ASV-P DN 32, internal thread, automatic balancing valve	DN 32	6.30	Internal thread	003L7624
ASV-P DN 40, internal thread, automatic balancing valve	DN 40	10.00	Internal thread	003L7625
ASV-P DN 15, external thread, automatic balancing valve	DN 15	1.60	External Thread	003L7626
ASV-P DN 20, external thread, automatic balancing valve	DN 20	2.50	External Thread	003L7627
ASV-P DN 25, external thread, automatic balancing valve	DN 25	4.00	External Thread	003L7628
ASV-P DN 32, external thread, automatic balancing valve	DN 32	6.30	External Thread	003L7629
ASV-P DN 40, external thread, automatic balancing valve	DN 40	10.00	External Thread	003L7630

Note: for whole range of ASV partner valves, spare parts and accessories please refer to ASV datasheet.

Accessories code numbers

 <p>003L8182</p> <p>ASV-P 20 kPa spring (yellow)</p> <p>ASV-P 20 kPa spring (yellow)</p>	 <p>003L8192</p> <p>ASV-P 30 kPa spring (green)</p> <p>ASV-P 30 kPa spring (green)</p>	 <p>003L8185</p> <p>ASV-P 20 kPa spring (yellow)</p> <p>ASV-P 20 kPa spring (yellow)</p>	 <p>003L8195</p> <p>ASV-P 30 kPa spring (green)</p> <p>ASV-P 30 kPa spring (green)</p>
 <p>003L8194</p> <p>ASV-P 30 kPa spring (green)</p> <p>ASV-P 30 kPa spring (green)</p>	 <p>003L8184</p> <p>ASV-P 20 kPa spring (yellow)</p> <p>ASV-P 20 kPa spring (yellow)</p>	 <p>003L8183</p> <p>ASV-P 20 kPa spring (yellow)</p> <p>ASV-P 20 kPa spring (yellow)</p>	 <p>003L8193</p> <p>ASV-P 30 kPa spring (green)</p> <p>ASV-P 30 kPa spring (green)</p>

Spare parts code numbers

 <p>003L8153</p> <p>Impulse tube with O-rings, 5 m</p> <p>Impulse tube with O-rings, 5 m</p>	 <p>003Z0690</p> <p>Impulse tube with O-rings, 2,5 m</p> <p>Impulse tube with O-rings, 2,5 m</p>
 <p>003L8152</p> <p>Impulse tube with O-rings, 1,5 m</p> <p>Impulse tube with O-rings, 1,5 m</p>	

Functions

Operation

Starting

During system start – opening the shut-off on ASV and partner valve-please secure that there is the same static pressure on both sides or higher pressure on upper side of the membrane.

If filling is done by opening ASV-P and partner valve, please make sure there is a pressure on the upper side of the membrane by opening partner valve first before ASV-P is opened.

Product details

General data

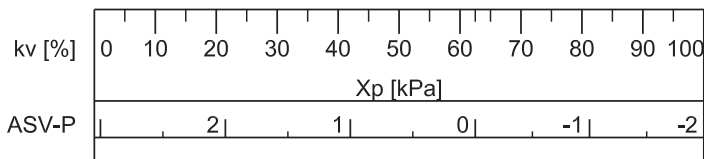
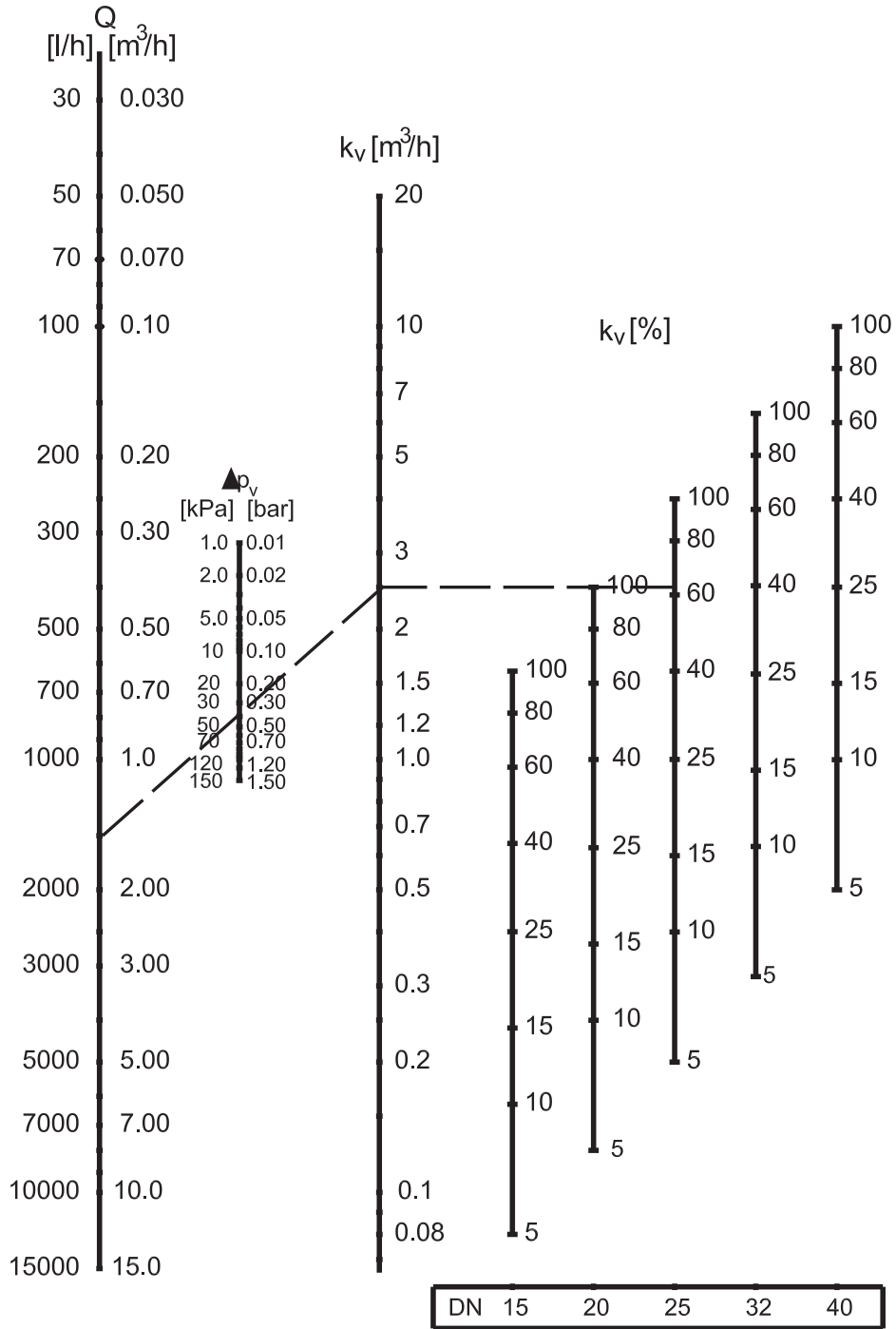
Technical data

Nominal diameter	DN	15-40
Max. pressure	bar	16 (PN 16)
Test pressure		25
Differential pressure over the valve	kPa	10-150 ¹⁾
Temperature	°C	-20 ... 120

¹⁾ Please note that the maximum admissible differential pressure across the valve 150 kPa should also not be exceeded at partial load.



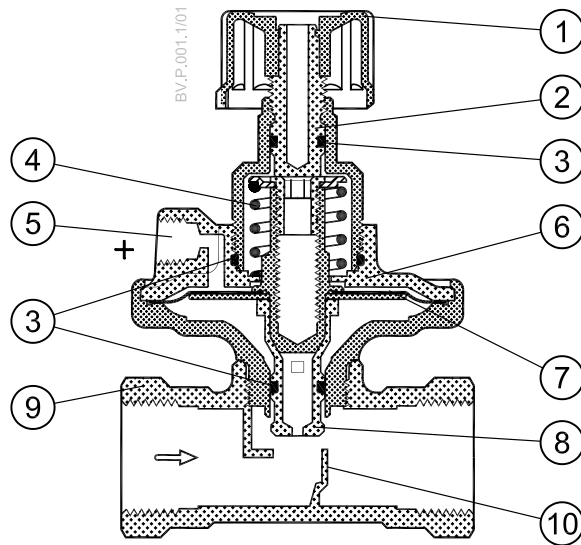
Appendix A Sizing diagram



V.G.007.4/01

Design

1. Shut-off knob
2. Shut-off spindle
3. O-ring
4. Reference spring
5. Impulse tube connection
6. Diaphragm element
7. Control diaphragm
8. Pressure-relieved valve cone
9. Valve body
10. Seat



The ASV-P is designed to maintain constant differential pressure across a riser. Via an internal connection and together with the reference spring, pressure in the return pipe acts on the underside of the control diaphragm (7) while via an impulse tube (5), pressure in the flow pipe acts on the top of the diaphragm. In this way the balancing valve maintains a fixed differential pressure of 10 kPa.

The setting can be increased to 20 or 30 kPa by spring replacement. Spring can be replaced under pressure. The ability to increase the setting is especially useful in case of trouble shooting. It gives insurance that design flow can be achieved even if calculation doesn't match actual installation.

Materials

Material of parts in contact with water

Valve body	Brass
Cone ASV-P	DZR brass
Membrane / O-rings	EPDM
Spring	Stainless steel

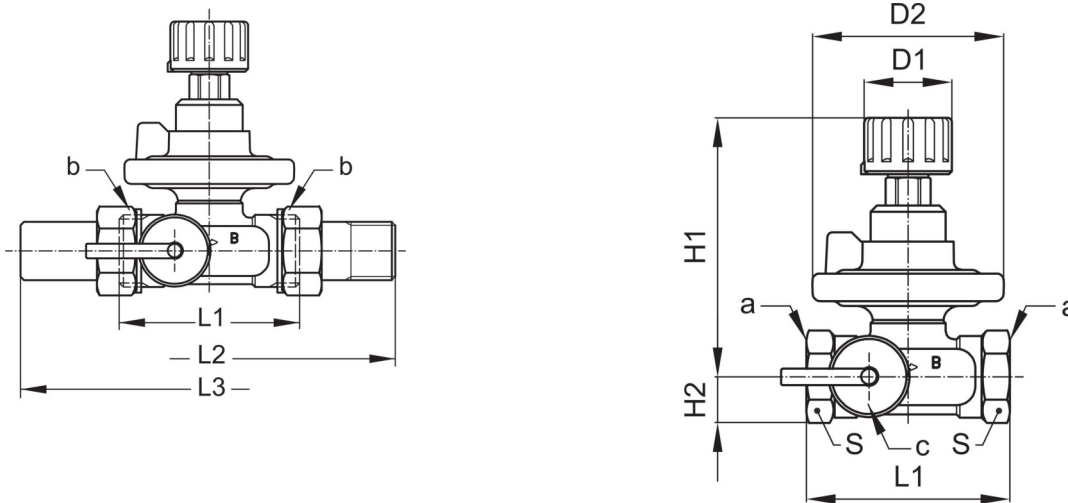
Pressure and temperature data

Pressure testing

Max. test pressure is 25 bar. When pressure testing the system you must secure that both sides of the membrane have the same static pressure to prevent damage of the pressure controller. That means the impulse tube must be connected and any needle valves must be open.

If ASV-P is installed in combination with ASV-M both valves must be open or closed (both valves must be in the same position!). If ASV-P is installed in combination with ASV-I /ASV-BD both valves must be open. During this operation (closing or opening the valves) please make sure that there is never lower pressure on upper side of the membrane to prevent damaging it.

Dimensions

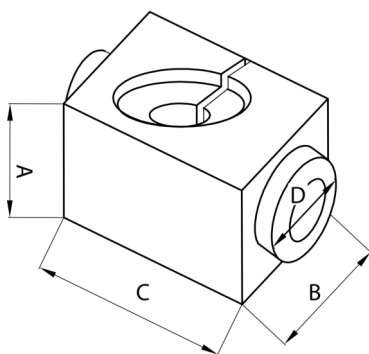


DN	L ₁	L ₂	L ₃	H ₁	H ₂	D ₁	D ₂	S	a		b	c
									mm			
									ISO 7/1	ISO 228/1		
15	65	120	139	82	15	28	61	27	Rp ½	G ¾ A	G ¾ A	
20	75	136	159	103	18	35	76	32	Rp ¾	G 1 A		
25	85	155	169	132	23	45	98	41	Rp 1	G 1 ¼ A		
32	95	172	179	165	29	55	122	50	Rp 1 ¼	G 1 ½ A		
40	100	206	184	170	31	55	122	55	Rp 1 ½	G 1 ¾ A		

Dimensions - insulation

ASV-P must be installed in the return pipe with flow in the direction of the arrow on the valve body. Partner valves (ASV-M/I/BD, MSV-F2) must be installed in the flow pipe, with flow in the direction of the arrow on the valve body. The impulse tube must be installed between partner valve and ASV-P. The impulse tube must be flushed through before installation.

Insulation



DN	A	B	C	D
15	61	110	111	37
20	76	120	136	45
25	100	135	155	55
32	118	148	160	70
40	118	148	180	70

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
UA Declaration	Danfoss UA 2023-01-23 MTC ASV RA FH RAX PL03 PL28	Danfoss	PED, Pressure
Pressure Safety Certificate	LLC CDC EURO-TYSK UA.TR.089.1011.01-22	LLC CDC EURO TYSK - Ukraine	PED, Pressure
Export Control Declaration	Automatic balancing and Pressure independent control valves	Danfoss	
Manufacturer's Declaration	Danfoss MD BF20072023- en02.01	Danfoss	PED, Pressure, EU RoHS
EAC Declaration	EAC KZ 7100841.13.12.02339	EAC - Eurasian Customs Union	MD

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