

Back Pressure/Relief Valve

DHV 715-SL and DHV 716-SL



Advantages

- screwless version for aggressive environmental effects »even more corrosion resistant«
- optimal monitoring valves
- high reproducibility of setting pressure
- great operating security and long service life
- steady, low vibration controlling
- low maintenance
- pressure settings at any time, also during operation
- can be easily connected to the pipework by proven technologies - solvent welding or fusion welding
- radial demountability even after mounting
- short face-to-face dimension
- direct mounting on any valve support due to self-tapping inserts in the body, the movability of the union nuts is not affected

Application

- chemical plants
- water treatment
- electroplating

Utilisation

- Directly controlled by the fluid, the back pressure/relief valve serves for maintaining constant working or system pressures on the primary side and avoiding inadmissible pressure increases in process technology plants.

The ASV back pressure/relief valve can also be used as an overflow valve. For this, the back pressure/relief valve is fitted in bypass pipeworks.

Flow media

- Technically clean neutral or aggressive fluids provided that the components coming into contact with the medium are resistant at the operating temperature according to the ASV resistance guide

Media temperature

- see pressure/temperature diagram

Nominal pressure (H₂O, 20°C)

- PN 10

Operating pressure

- see pressure/temperature diagram

Set range

- DHV 715-SL 0.2 to 4.0 bar
- DHV 716-SL 0.5 to 10.0 bar

Working pressure

- set pressure plus flow dependent pressure increase (see characteristic curves): approx. 0.3 to 10.0 bar

Opening pressure difference

- DHV 715-SL approx. 0.2 bar
- DHV 716-SL approx. 0.4 bar

Hysteresis

- difference between opening and closing pressure approx. 0.3 bar

Size

- DN 10 to DN 25

Valve body, piston and separation disc

- PVC-U (polyvinyl chloride)
- PP (polypropylene)
- PVDF (polyvinylidene fluoride)

Valve bonnet

- PP-GFR

Moulded diaphragm

- EPDM, PTFE-coated on the medium side

Valve seat seal

- EPDM
- FPM

Back Pressure/Relief Valve, Series DHV-SL

O-rings at unions

- EPDM
- FPM

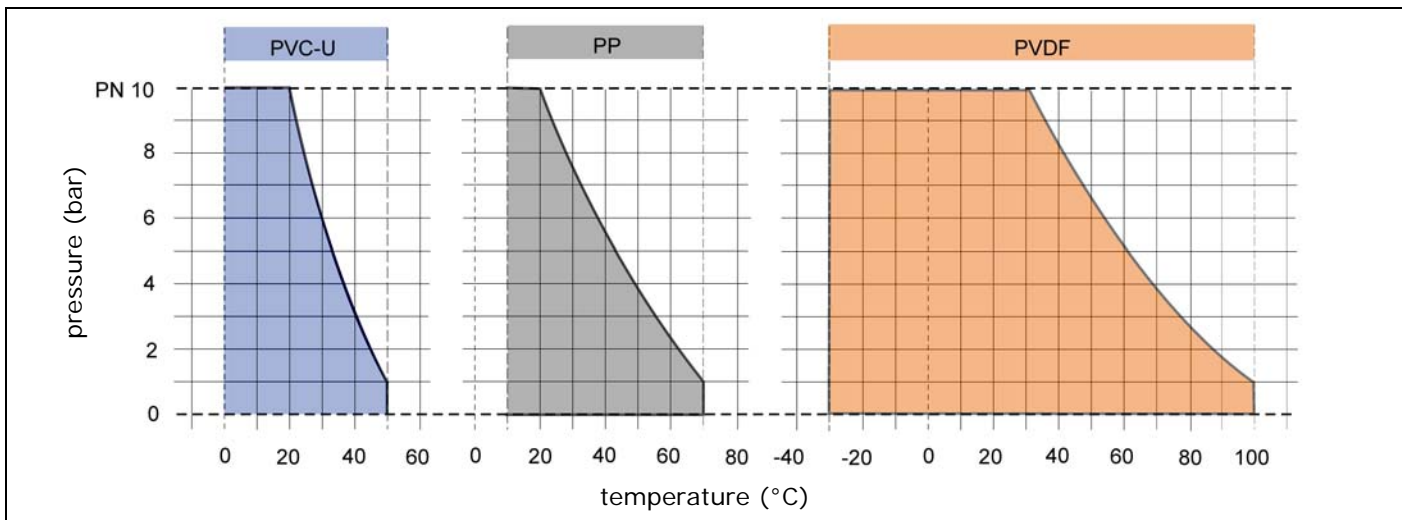
Connection

- body with moulded on threaded necks acc. to DIN 8063 complete with:
 - union nut made of PVC-U, PP or PVDF
 - insert with socket end made of PVC-U, PP or PVDF
 - O-ring made of EPDM or FPM
- On request we supply:
 - insert with spigot end for fusion welding made of PP or PE
 - dimensions acc. to BS, ANSI and JIS on request
- body with moulded on spigot end acc. to DIN/ISO

Mounting

- variable

Pressure/temperature diagram



Valve function and design

- When closed in the rest position, the piston or valve seat is only impinged with secondary pressure if provided. If the working pressure or inlet pressure (primary side) rises above the set value, the diaphragm is lifted against spring force. The valve opens and the secondary pipework is depressurised.
- The moulded diaphragm, dimensioned for full valve lift, separates the medium in the valve bottom section from the top section and/or atmosphere. The hermetical seal - especially in the higher temperature range - is ensured by moulded sealing rings.

Flow direction

- always in the direction of the arrow

Colour

- body
 - PVC-U: grey, RAL 7011
 - PP: grey, RAL 7032
 - PVDF: opaque (yellowish white)
- bonnet PP-GFR: orange, RAL 2004

Pressure/temperature diagram

The pressure/temperature limits are applicable for the stated nominal pressures and a computed operating life factor of 25 years.

The values are a guide for harmless media (DIN 2403), to which the material of the valve is resistant.

For other media see the ASV resistance guide.

The durability of wear and tear parts depends on the operating conditions of the application.

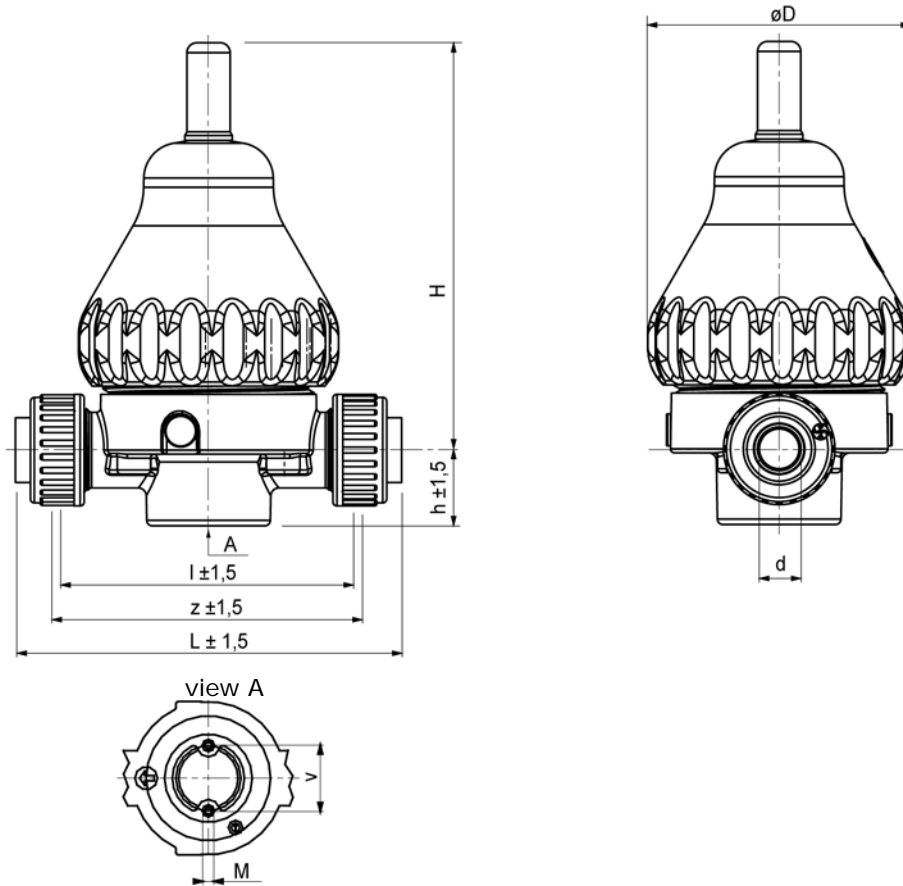
For temperatures below 0°C (PP < +10°C) please specify the precise operating conditions of the application.

Valve setting and adjustment

- The required or permissible working pressure is set or readjusted by removing the protection cap at the adjustment screw with the aid of pressure gauges (ASV diaphragm pressure gauge guard, type MDM 902) in the pipework. The adjustment screw is secured with a counter nut and can be leaded against unauthorised adjustment, if necessary.

Back Pressure/Relief Valve, Series DHV-SL

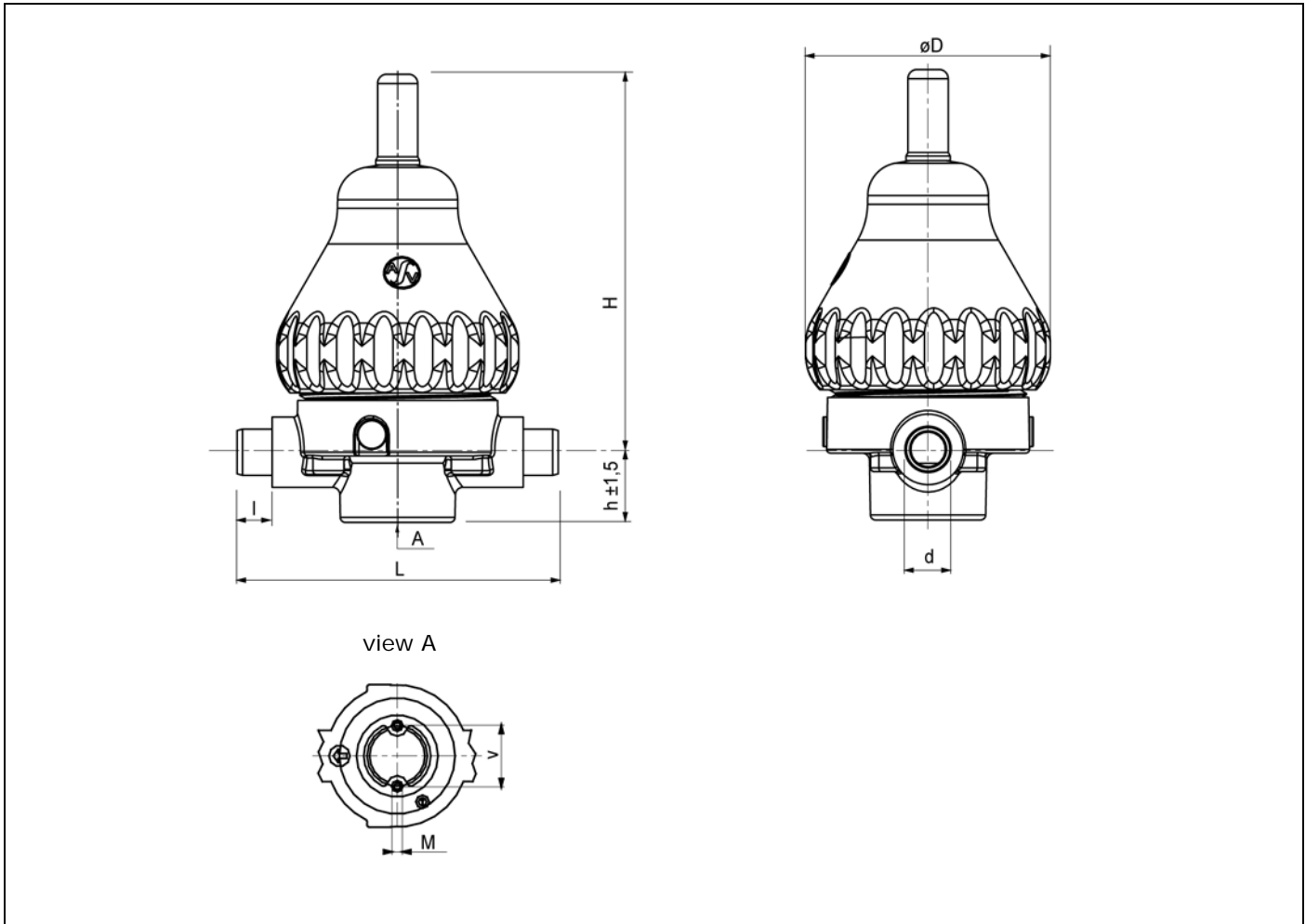
Dimension, DHV 715-SL / DHV 716-SL with union



dimension	d (mm)	16	20	25	32
	DN (mm)	10	15	20	25
	DN (inch)	3/8	1/2	3/4	1
	D	104,0	104,0	132,0	132,0
PP/PVC	h	25,0	25,0	37,0	37,0
PVDF	h	24,0	24,0	36,0	36,0
	H	173,0	173,0	204,5	204,5
PP/PVC	l	120,0	120,0	150,0	150,0
PVDF	l	118,0	118,0	147,0	147,0
PP	L	155,0	154,0	188,0	192,0
PVC	L	154,0	159,0	195,0	201,0
PVDF	L	154,0	156,0	189,0	193,0
	M	M6	M6	M6	M6
	v	40,0	40,0	46,0	46,0
PP/PVC	z	126,0	126,0	156,0	156,0
PVDF	z	124,0	124,0	153,0	153,0
weight	kg (reference value)				
PP		0,8	0,9	1,7	1,7
PVC		0,9	1,0	2,0	2,0
PVDF		1,1	1,2	2,2	2,3

Back Pressure/Relief Valve, Series DHV-SL

Dimension, DHV 715-SL / DHV 716-SL with spigot



dimension	d (mm)	16	20	25	32
	DN (mm)	10	15	20	25
	DN (inch)	3/8	1/2	3/4	1
	D	104,0	104,0	132,0	132,0
PP/PVC	h	25,0	25,0	37,0	37,0
PVDF	h	24,0	24,0	36,0	36,0
	H	173,0	173,0	204,5	204,5
	I	14,0	16,0	19,0	22,0
PP	L	144±2,1	144±2,1	174±2,6	174±2,6
PVC	L	144±1,0	144±1,0	174±1,0	174±1,0
PVDF	L	144±2,1	144±2,1	174±2,6	174±2,6
	M	M6	M6	M6	M6
	v	40,0	40,0	46,0	46,0
weight	kg (reference value)				
PP		0,8	0,9	1,7	1,7
PVC		0,9	1,0	2,0	2,0
PVDF		1,1	1,2	2,2	2,3



Back Pressure/Relief Valve, Series DHV-SL

Ident number for DHV 715-SL with union

body PP	d (mm)	16	20	25	32
0,2 - 4,0 bar	sealing				
	FPM	138298	138299	138300	138301
	EPDM	138282	138283	138284	138285
body PVC	d (mm)	16	20	25	32
0,2 - 4,0 bar	sealing				
	FPM	138266	138267	138268	138269
	EPDM	138114	138115	138116	138117
body PVDF	d (mm)	16	20	25	32
0,2 - 4,0 bar	sealing				
	FPM	138314	138315	138316	138317
	EPDM	-	-	-	-

Ident number for DHV 716-SL with union

body PP	d (mm)	16	20	25	32
0,5 - 10,0 bar	sealing				
	FPM	138306	138307	138308	138309
	EPDM	138290	138291	138292	138293
body PVC	d (mm)	16	20	25	32
0,5 - 10,0 bar	sealing				
	FPM	138274	138275	138276	138277
	EPDM	138162	138163	138164	138165
body PVDF	d (mm)	16	20	25	32
0,5 - 10,0 bar	sealing				
	FPM	138322	138323	138324	138325
	EPDM	-	-	-	-

Ident number for DHV 715-SL with spigot

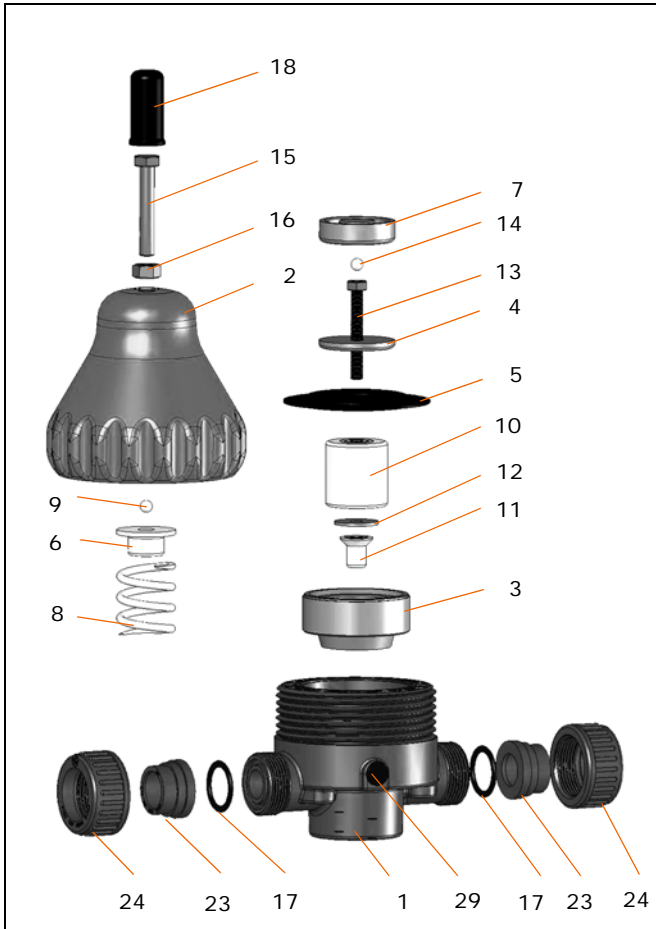
body PP	d (mm)	16	20	25	32
0,2 - 4,0 bar	sealing				
	FPM	138302	138303	138304	138305
	EPDM	138286	138287	138288	138289
body PVC	d (mm)	16	20	25	32
0,2 - 4,0 bar	sealing				
	FPM	138270	138271	138272	138273
	EPDM	138107	138108	138109	138110
body PVDF	d (mm)	16	20	25	32
0,2 - 4,0 bar	sealing				
	FPM	138318	138319	138320	138321
	EPDM	-	-	-	-

Ident number for DHV 716-SL with spigot

body PP	d (mm)	16	20	25	32
0,5 - 10,0 bar	sealing				
	FPM	138310	138311	138312	138313
	EPDM	138294	138295	138296	138297
body PVC	d (mm)	16	20	25	32
0,5 - 10,0 bar	sealing				
	FPM	138278	138279	138280	138281
	EPDM	138158	138159	138160	138161
body PVDF	d (mm)	16	20	25	32
0,5 - 10,0 bar	sealing				
	FPM	138326	138327	138328	138329
	EPDM	-	-	-	-

Back Pressure/Relief Valve, Series DHV-SL

Spare parts list and designation



item	designation	qty.
1	body	1
2	spring dome	1
3	separation disc	1
4	thrust washer	1
5	sealing diaphragm*	1
6	pressure plate	1
7	spring plate	1
8	pressure spring	1
9	steel ball	1
10	piston*	1
11	piston tip*	1
12	flat sealing disc*	1
13	hexagonal screw*	1
14	steel ball	1
15	hexagonal screw	1
16	hexagonal nut	1
17	O-ring*	2
18	protection cap	1
23	insert	2
24	union nut	2
29	plug	2

All parts marked with * are included in the respective wear and tear part set. When ordering spare parts, please state the complete valve ident number and serial number.

Back Pressure/Relief Valve, Series DHV-SL

Characteristic curves

The valve curves show the primary pressure or working pressure p_A in bar in relation to flow Q in l/h. Parameter is the set pressure p_E at $Q = 0$ l/h. The curve shows the opening pressure progression.

The curves are valid for water at +20°C.

Example: DHV-SL 716, size DN 10

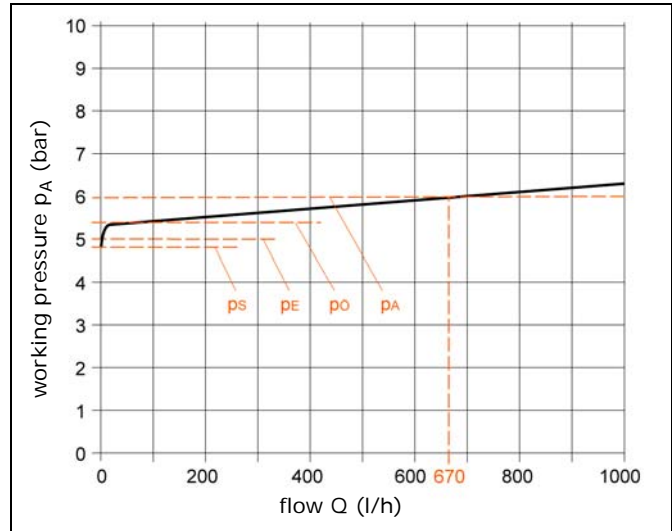
The valve is set tight at 5 bar.

At a pressure increase of 1 bar a flow of approx. 670 l/h is reached.

According to the curve following values arise:

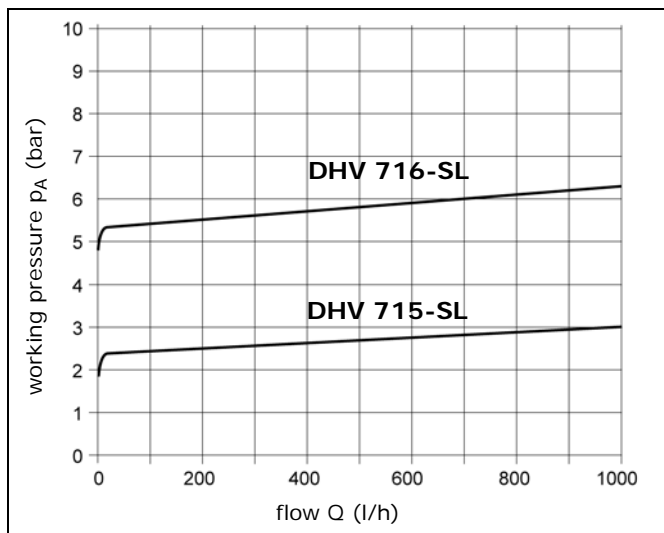
- working pressure p_A approx. 6.0 bar
- closing pressure p_S approx. 4.8 bar
- opening pressure p_O approx. 5.4 bar
- set pressure p_E approx. 5.0 bar

Example

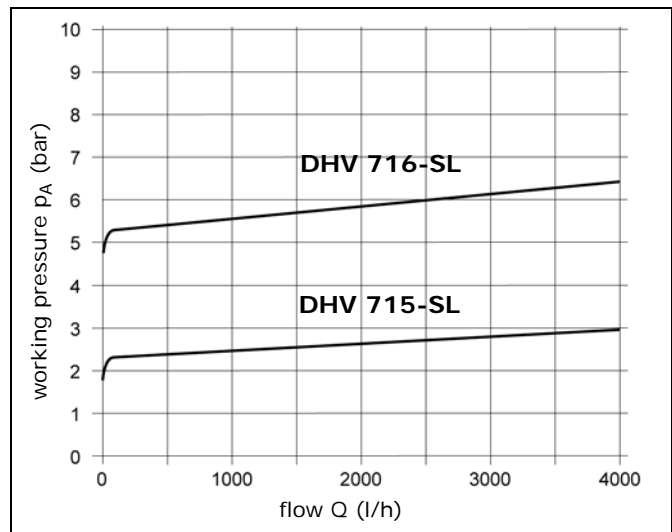


DN 20

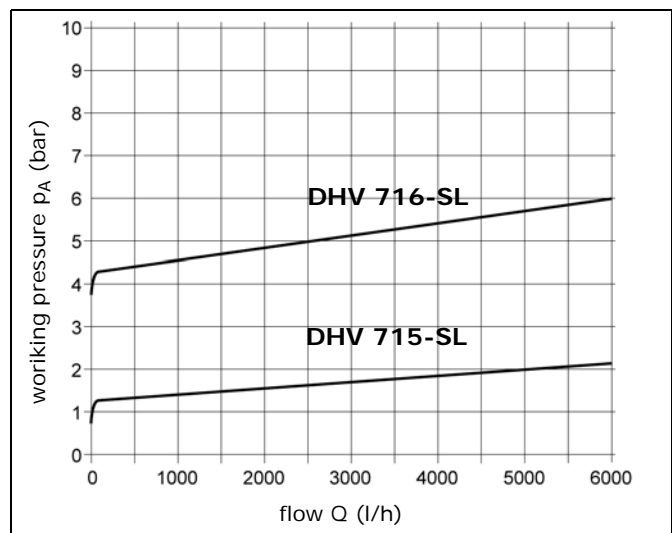
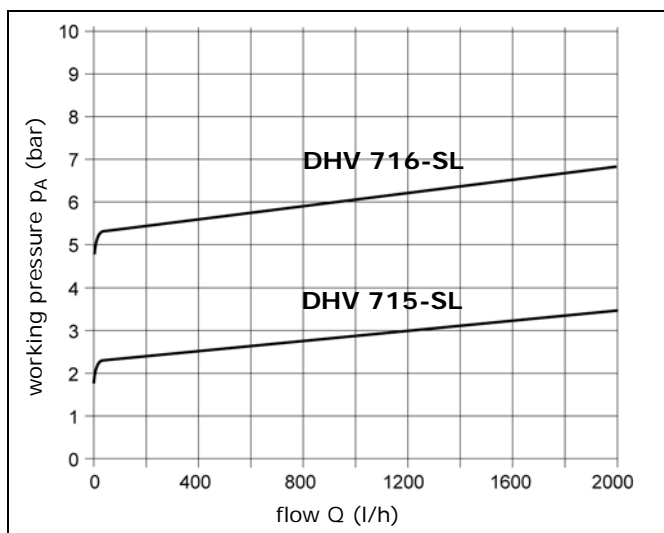
DN 10



DN 15

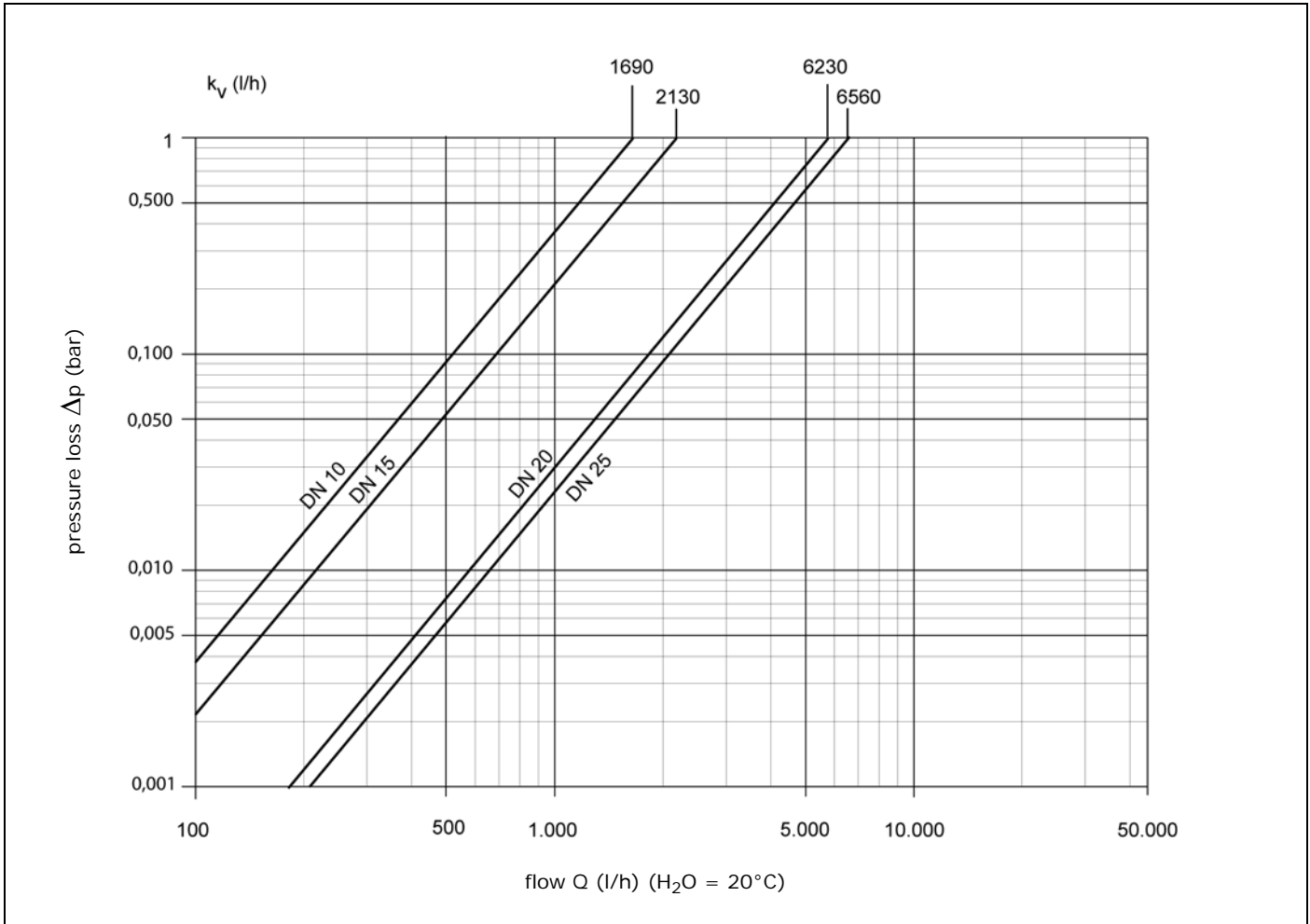


DN 25



Back Pressure/Relief Valve, Series DHV-SL

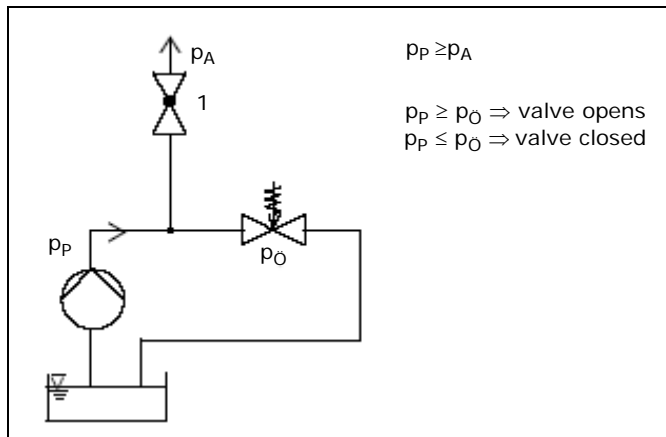
Pressure loss curves , series DHV-SL



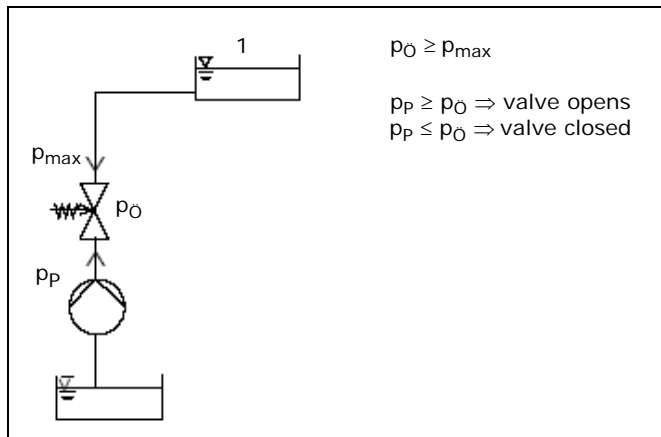
Back Pressure /Relief Valve, Series DHV-SL

Applications of back pressure/relief valves

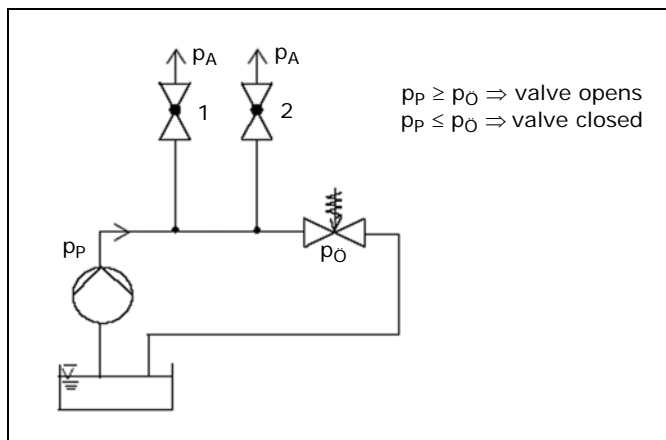
Example 1: Constant system pressure



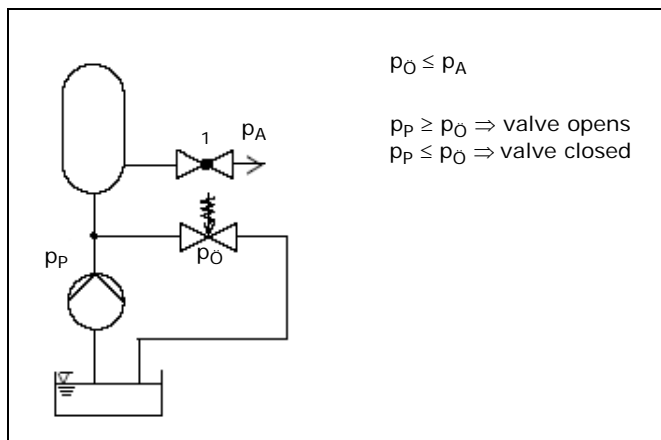
Example 3: Back pressure/relief valve as check valve
Container 1 is above the level of the pump sump.



Example 2: Consumer 1 and/or 2 opens, pressure relief valve closes.



Example 4: Back pressure/relief valve as overflow valve
Pressure of container or plant system must not exceed the max. pressure value.



p_A = working pressure p_p = pump pressure p_o = opening pressure

Failures, possible causes and repair

Failure	Cause	Repair
Valve is leaking at diaphragm.	Diaphragm clamping pressure too low.	Retighten spring dome (item 2).
Pressure drops below set pressure.	Piston guide or valve seat is leaking. Diaphragm (item 5) is leaking.	Check piston and/or seat seal, renew, if necessary. Replace diaphragm.
Pressure rises above set value.	Piston guide is jammed, possibly soiled.	Clean valve.
Valve is leaking at adjustment screw.	Diaphragm damaged. Thrust washer contact pressure too low.	Replace diaphragm. Retighten spring dome (item 2).

Subject to technical modifications

