

# Pressure relief valve DHV 712-R

## INSTRUCTIONS MANUAL

### Safety Precautions

- Installation, initial start-up and maintenance may only be performed by trained personnel.
- Device must be connected and only to a power supply in conformity with features mentioned on the device.
- Device must be disconnected from all sources of power during installation and maintenance work
- Device may only be operated under the conditions specified in the operating instructions

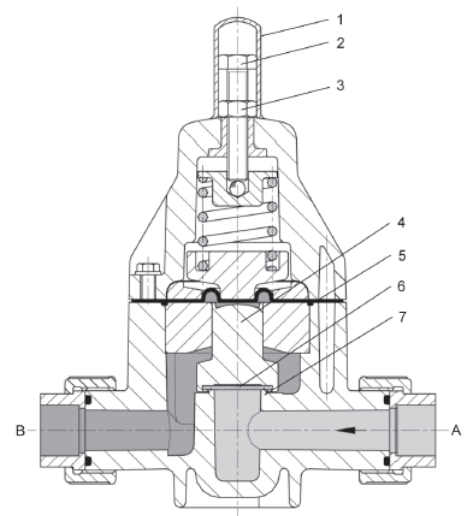
### Description

The device is a pressure relief valve controlled by medium. It is used to keep preset operating pressures constant.

It can also be used as an overflow valve to prevent pressure peaks.

- Optional installation position
- Fastening via threaded inserts (metal inserts) in the valve body

- A Primary side
- B Secondary side
- 1 Protection cap
- 2 Adjustment screw
- 3 Counter nut
- 4 Piston
- 5 Membrane
- 6 Flat sealing ring
- 7 Valve seat

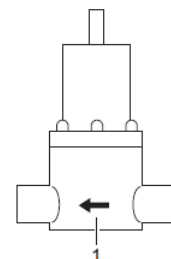


### Mounting

- Valves must be connected to pressure-free piping, if possible with a removable connection.
- Follow the direction of flow indicated by the arrow on the valve body.
- Mounting should be done as close as possible to the pressure-generating component (pump).  
(An end-of-line installation may result in a pipe vibration)
- In the case of liquids with suspended particles, we recommend a filter before the valve to avoid possible fouling of the valve.
- Mounting can be done in all positions.
- Valves can also be attached to a support using the inserts located below them.

### Direction of flow

The direction of flow can be identified by the arrow



1 Directional arrow

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22, Rue de la Voie des Bans - 95 100 ARGENTEUIL - FRANCE  
Phone +33 (0)1 30 25 83 20 - E-mail: [info@bamo.fr](mailto:info@bamo.fr)  
Fax: +33 (0)1 34 10 16 05 - <http://www.bamo.eu>

**Pressure relief valve  
DHV 712-R**

21-02-08

M1

**MSA  
911-05**

## Adjustment

To adjust the trigger pressure, remove the protection cap (1).

Unscrew the lock nut (3) and then:

- Screw in the adjustment screw (2) to increase the trigger pressure value.
- Unscrew the adjustment screw (2) to decrease the trigger pressure value.

**Use a pressure gauge to adjust the trigger pressure value.  
Excessive tightening of the threading screw can damage the membrane or piston.**

## Chemical compatibility

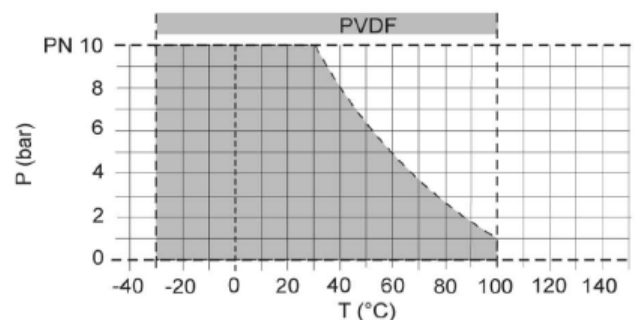
Always check the chemical compatibility between valve materials (body, seat seal, o-rings external seals) and fluid in contact with.

## Troubleshooting

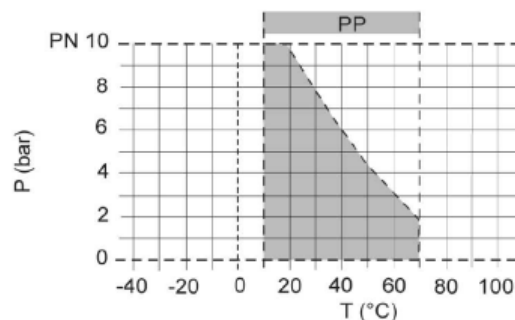
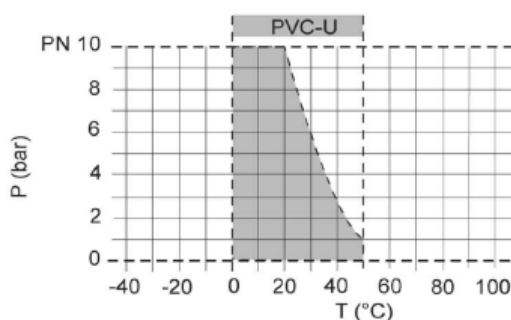
Error	Possible cause	Corrective action
Device leaky at diaphragm	Insufficient contact pressure (diaphragm fastening)	Retighten screws
Pressure falls below the set value	Piston guidance or valve seat leaking	Check piston / seat seal, replace if necessary
	Diaphragms leaky	Renew diaphragms
Pressure rises above permissible value	Device installed in backwards	Install device in correct direction
	Piston guide jammed, piston guide possibly dirty	Clean valve
Medium leaks out at adjustment screw	Diaphragms defective	Renew diaphragms

## TECHNICAL FEATURES

Body PVC-U, PP, PVDF  
 Options: PTFE or stainless steel (on request)  
 Diaphragm EPDM, coated with PTFE  
 Seals EPDM or FPM (According body material)  
 Fittings Unions or male spigot ends (Flanges on request)  
 Pressure adjustment range 0.3 ... 10 bar  
 Override pressure excess 0.3 ... 0.5 bar  
 Hysteresis About 0.3 bar



### Pressure vs. Temperature diagrams:



## CODE NUMBERS AND REFERENCES

### Fittings: Unions

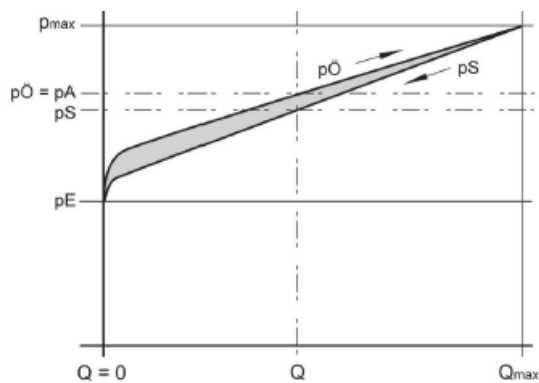
ND	PVC-U / EPDM	PVC-U / FPM	PP / EPDM	PP / FPM	PVDF / FPM
10	P 146 350	P 146 366	P 146 582	P 146 590	P 146 670
15	P 146 351	P 146 367	P 146 583	P 146 591	P 146 671
20	P 146 352	P 146 368	P 146 584	P 146 592	P 146 672
25	P 146 353	P 146 369	P 146 585	P 146 593	P 146 673
32	P 146 354	P 146 370	P 146 586	P 146 594	P 146 674
40	P 146 355	P 146 371	P 146 587	P 146 595	P 146 675
50	P 146 356	P 146 372	P 146 588	P 146 596	P 146 676

### Fittings: Male spigot ends

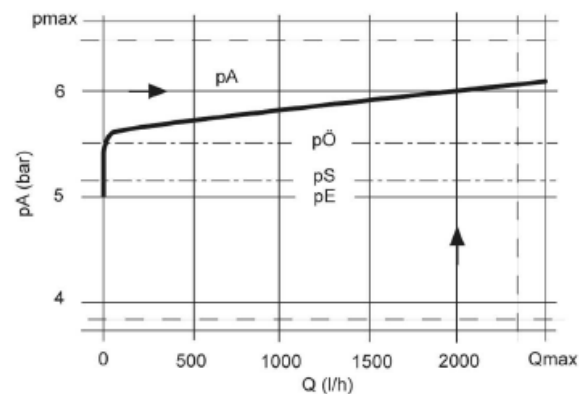
ND	PVC-U / EPDM	PVC-U / FPM	PVC-U / FPM	PP / EPDM	PVDF / FPM
10	P 146 494	P 146 510	P 146 626	P 146 634	P 146 700
15	P 146 495	P 146 511	P 146 627	P 146 635	P 146 701
20	P 146 496	P 146 512	P 146 628	P 146 636	P 146 702
25	P 146 497	P 146 513	P 146 629	P 146 637	P 146 703
32	P 146 498	P 146 514	P 146 630	P 146 638	P 146 704
40	P 146 499	P 146 515	P 146 631	P 146 639	P 146 705
50	P 146 500	P 146 516	P 146 632	P 146 640	P 146 706

## Operation:

### Operating diagram



### Example: Operating on piping



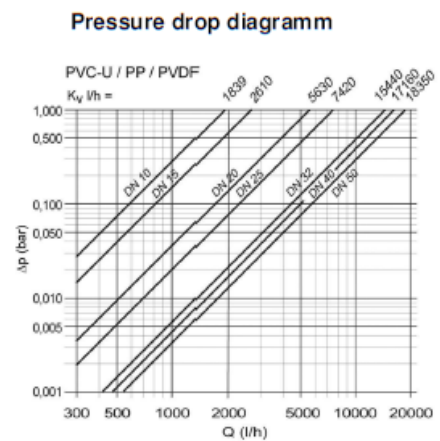
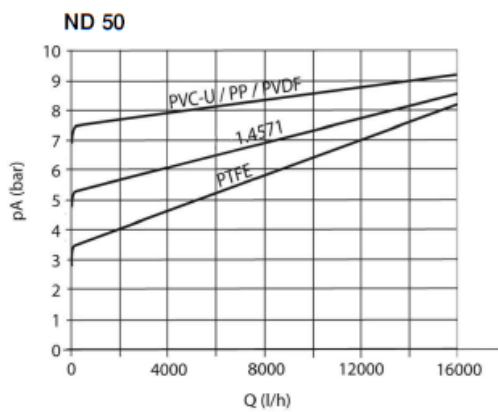
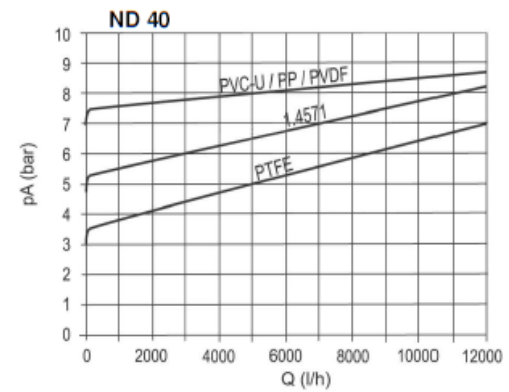
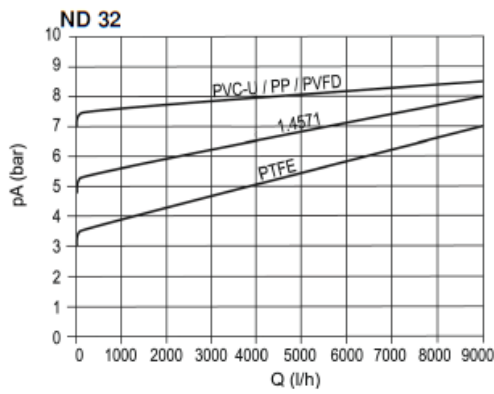
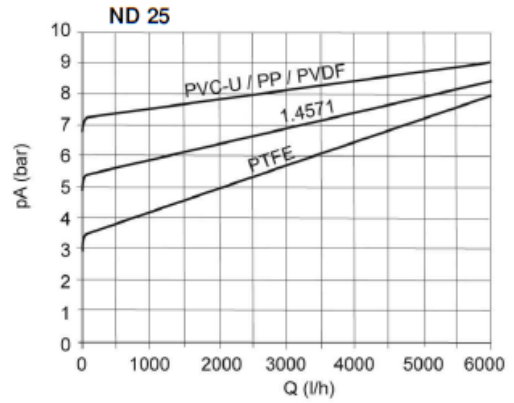
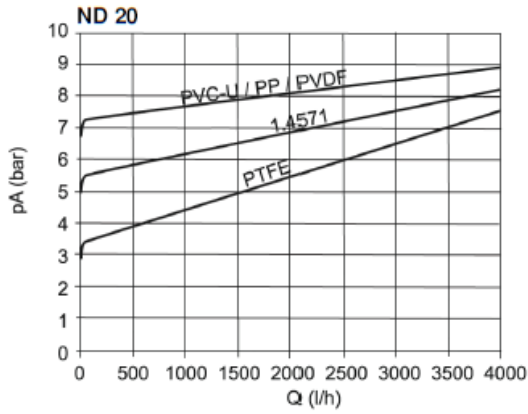
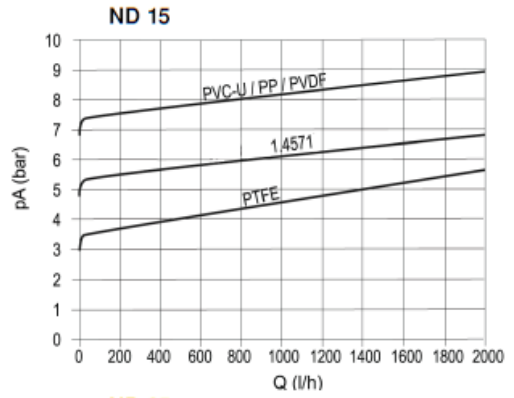
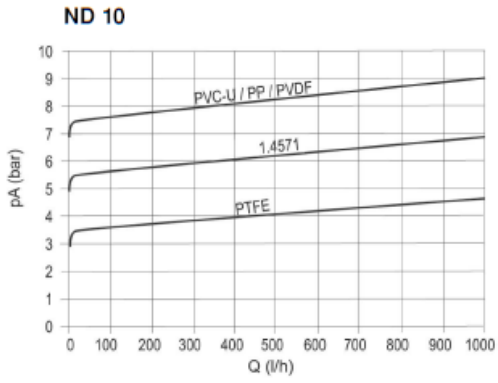
	Description	Example
pmax	Pressure, max.	-
pA	Working pressure (adjustable from 0.3 to 10 bar)	6 bar
pE	Set relief pressure	5 bar
pA-pE	Rising pressure according flow rate	1 bar
pO	Opening pressure (between 0.3 and 0.5 bar)	5.5 bar
pS	Closing pressure	5.2 bar
pO-pS	Hysteresis (about 0.3 bar)	0.3 bar
Q	Flow rate	2,000 l/h
Qmax	Max. flow rate	-

*This example shows a valve pre-set at 5 bar (opens over 5 bar)*

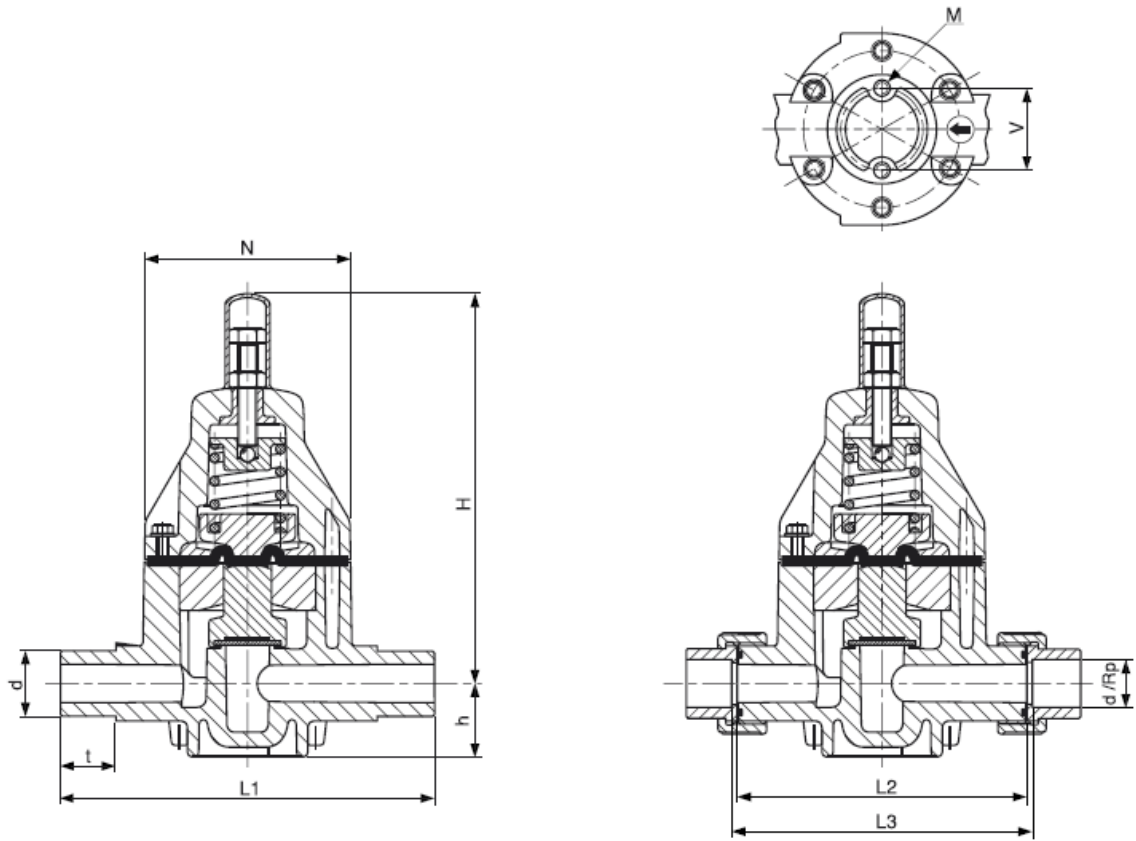
*With 1 bar in excess, the draining flow-rate is about 2,000 l/h*

*Resulting pressure values are listed on the table.*

Operating diagrams and pressure drop:



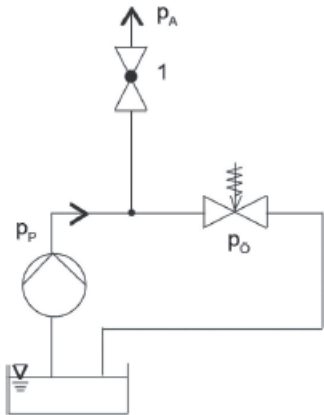
## DIMENSIONS



NB	d	Rp	V	M	N	H	h	t	PVC-U			PP			PVDF			Mass [ kg ]		
									L1	L2	L3	L1	L2	L3	L1	L2	L3	PVC-U	PP	PVDF
10	16	3/8"	40	6	81	174	25	14	144	120	126	144	120	128	144	120	127	0.80	0.67	1.02
15	20	1/2"	40	6	81	174	25	16	144	120	126	144	120	126	144	120	125	0.85	0.72	1.07
20	25	3/4"	46	6	107	202	38	19	174	150	156	174	150	156	174	150	156	1.86	1.57	2.11
25	32	1"	46	6	107	202	38	22	174	150	156	174	150	156	174	150	156	1.90	1.61	2.15
32	40	1 1/4"	65	8	147	262	56	26	224	205	211	224	205	211	244	200	206	5.00	4.10	5.45
40	50	1 1/2"	65	8	147	262	56	31	224	205	211	224	205	211	244	201	207	5.10	4.18	5.55
50	63	2"	65	8	147	262	56	38	224	205	211	224	205	211	224	200	206	5.20	4.28	5.65

# INSTALLATIO EXAMPLES - APPLICATIONS

- 1, 2 Consumer
- X Valve opens
- Y Valve closes
- $P_A$  Working pressure
- $P_P$  Pump pressure
- $P_O$  Opening pressure
- $P_{max}$  Maximum pressure

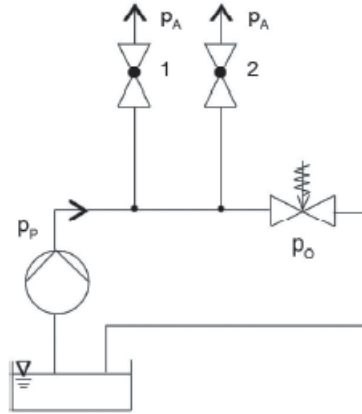


$$P_p \geq P_A$$

$$P_p \geq P_O \Rightarrow X$$

$$P_p \leq P_O \Rightarrow Y$$

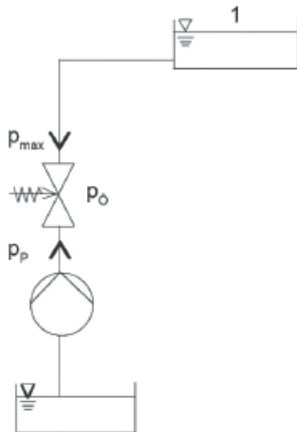
Example 1: Constant system pressure



$$P_p \geq P_O \Rightarrow X$$

$$P_p \leq P_O \Rightarrow Y$$

Example 3: Consumer 1 and/or consumer 2 opens, pressure relief valve closes

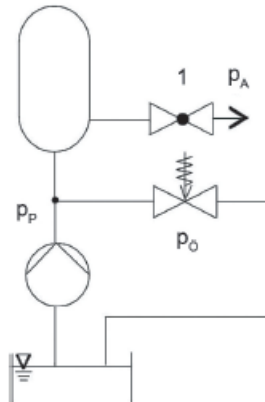


$$P_O \geq P_{max}$$

$$P_p \geq P_O \Rightarrow X$$

$$P_p \leq P_O \Rightarrow Y$$

Example 2: Pressure relief valve (DHV) as backflow preventer



$$P_p \geq P_O \Rightarrow X$$

$$P_p \leq P_O \Rightarrow Y$$

Example 4: Pressure relief valve as overflow valve; container pressure must not exceed the max. pressure