

Pressure Relief Valve



ISO 9002 CERTIFIED

Body Material:	PVC, PP, PVDF
Bonnet Material:	Glass Filled PP
Size:	1/2" - 2"
Pressure Rating:	150 psi
Set Pressure:	4 to 150psi
Seals:	EPDM, FPM,
Piston:	PVC, PP, PVDF, PTFE
Diaphragm:	PTFE/EPDM, PTFE/ECTFE
Connections:	True Union & Non-Union Design
	Socket
	Spigot
	Threaded
	Flanged: ANSI

Materials of Construction:

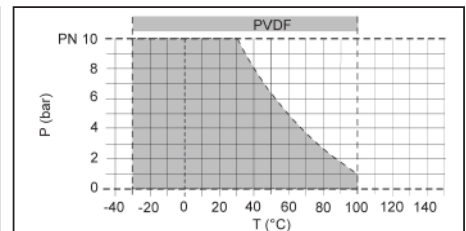
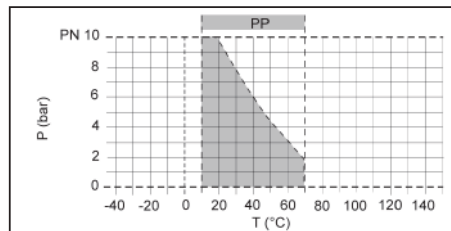
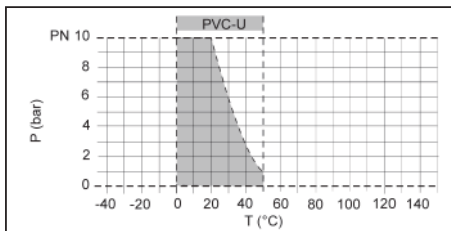
PVC:	Type 1, Class 12454B, ASTM D1784
PP:	Class PP 110B76383, ASTM D4101
PVDF:	Type 1, ASTM D3222
PTFE:	Type 1, D3294
Seals:	EPDM, FPM

The SIMTECH DHV712 series pressure relief valve is directly controlled by the medium, is used in technical processing plants for keeping preset working pressures constant on the primary side. The DHV712 Series is, specially designed for dosing technology, is used for ensuring constant dosing quantities in conjunction with oscillating pumps. In the event of any counterpressure on the secondary side, the admission pressure and thus the dosing quantity remain constant.

Features

- Differential Pressure: < 75psi, ± 4psi, > 75psi, ± 7psi
- The most powerful thermoplastic pressure relief valve with patented piston control
- For constant working pressures even in systems with back pressure
- Constant, low vibration control behavior
- Simple pressure setting possible at any time, also during operation
- 100% back pressure free in the position of rest
- Directly fitted to mounting sets, the movability of the union nuts on the valves made of PVC, PP and PVDF remains unaffected
- Suitable for oscillating pumps

Pressure/Temperature Graph



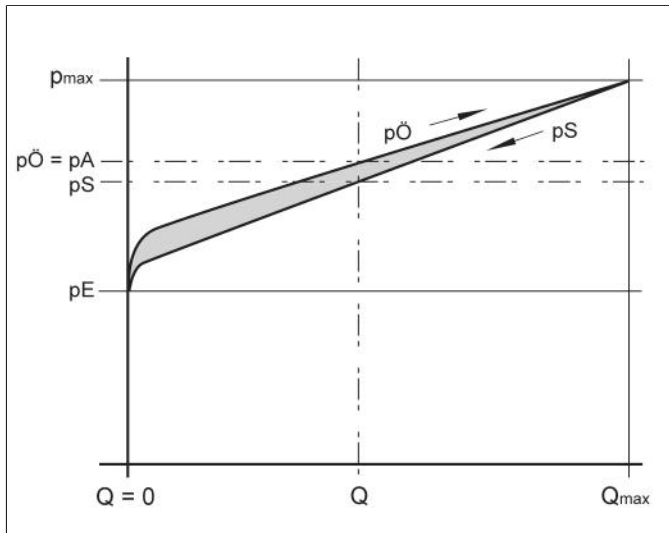
P = operating pressure
T = temperature

The pressure/temperature limits are applicable for the stated nominal pressures and a computed operating life factor of 25 years. These are standard values for harmless media (DIN 2403), to which the valve material is resistant. For other media please refer to the Simtech resistance guide. The durability of wear 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. The rated pressure depends on the valve size and material.



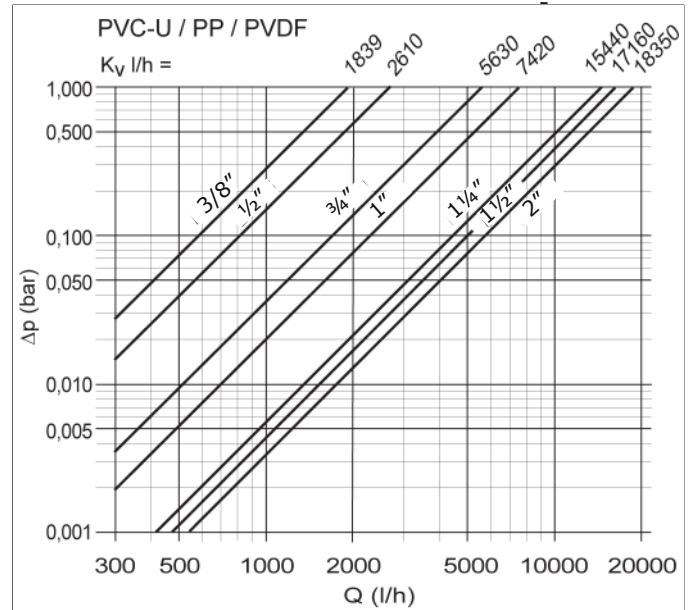
Operating Behavior

Operating Behavior



pE = set Pressure
pA = working pressure
pO = opening pressure
pS = closing pressure
pO - pS = hysteresis
pE - pA = flow dependent pressure reduction
Q = flow

Pressure Loss Curves



ΔP = Pressure Loss
Q = Flow

Pressure loss and k_v value

The diagram shows the pressure loss ΔP in relation to the flow Q.

Conversion aid:

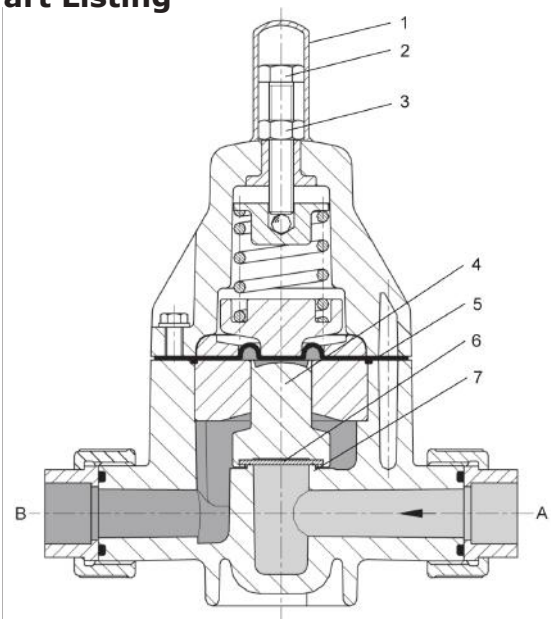
$$c_v = k_v * 0.07$$

$$f_v = k_v * 0.0585$$

Units:

k_v (l/min)
 c_v (gal/min) US
 f_v (gal/min) GB

Part Listing



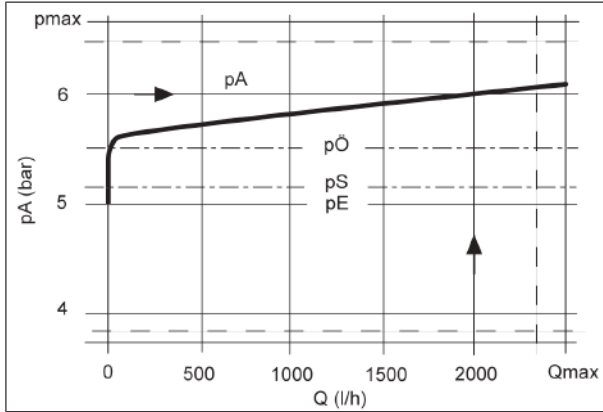
A = primary side
B = secondary side
1 = protection cap
2 = adjustment screw
3 = counter nut
4 = piston
5 = diaphragm
6 = flat sealing ring
7 = valve seat



Characteristic Curves

Characteristic curves

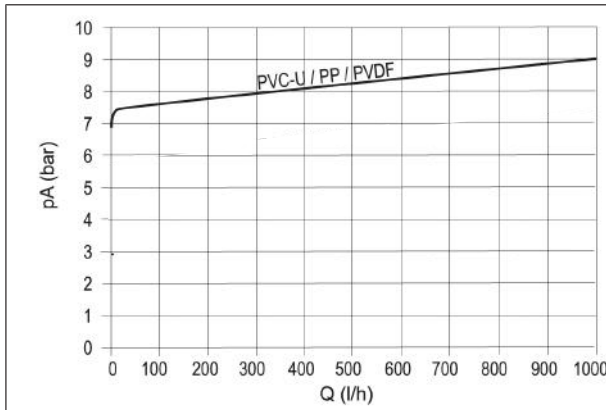
Configuration example



The valve is set tight at 5 bar.

A flow of approx. 2000 l/h is reached at a pressure increase of 1 bar. According to the curve, this results in the following values:
set pressure pE: 5 bar; working pressure pA: 6 bar; opening pressure pO: 5.5 bar; closing pressure pS: 5.2 bar

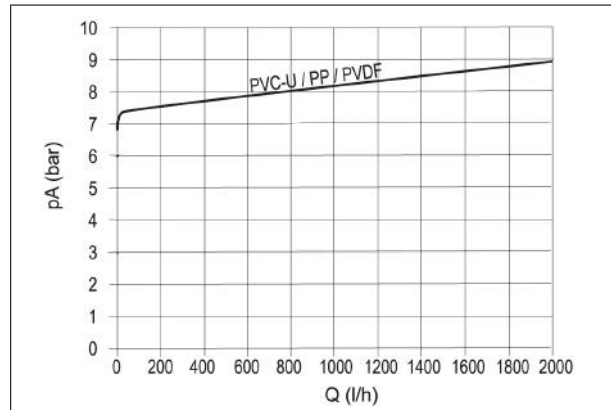
3/8"



pA = working pressure

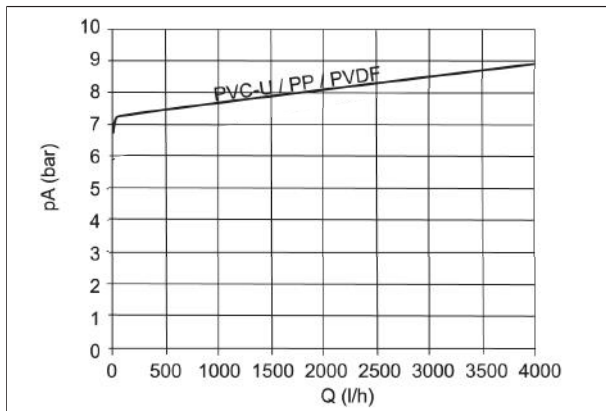
Q = flow

1/2"



Q = flow

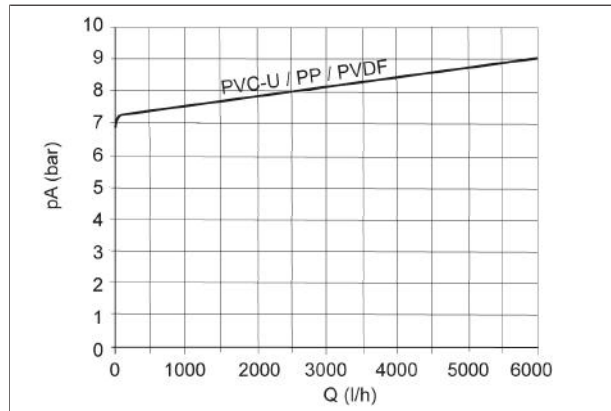
3/4"



pA = working pressure

Q = flow

1"



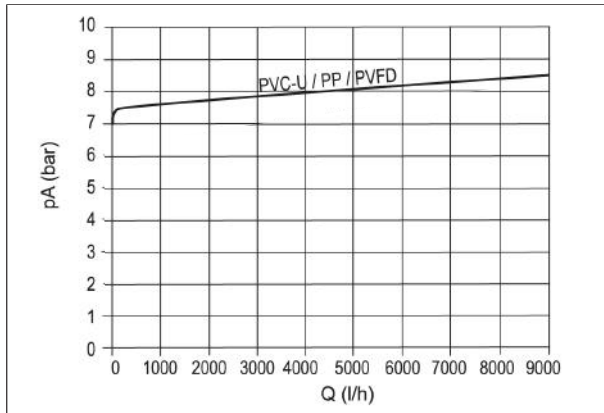
pA = working pressure

Q = flow



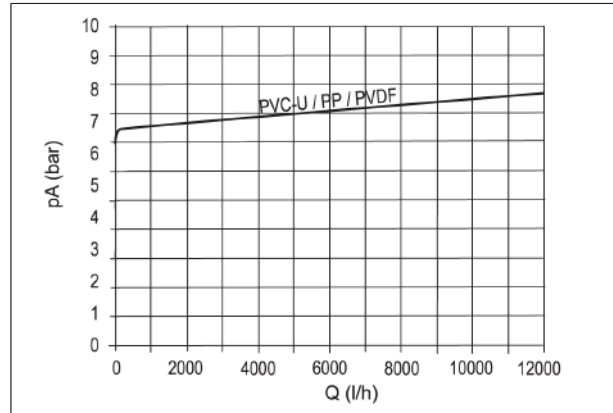
Characteristic Curves

1 1/2"



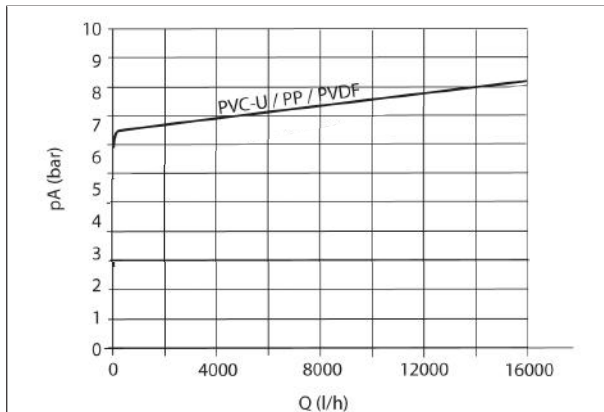
pA = working pressure
Q = flow

1 1/2"



pA = working pressure
Q = flow

2"

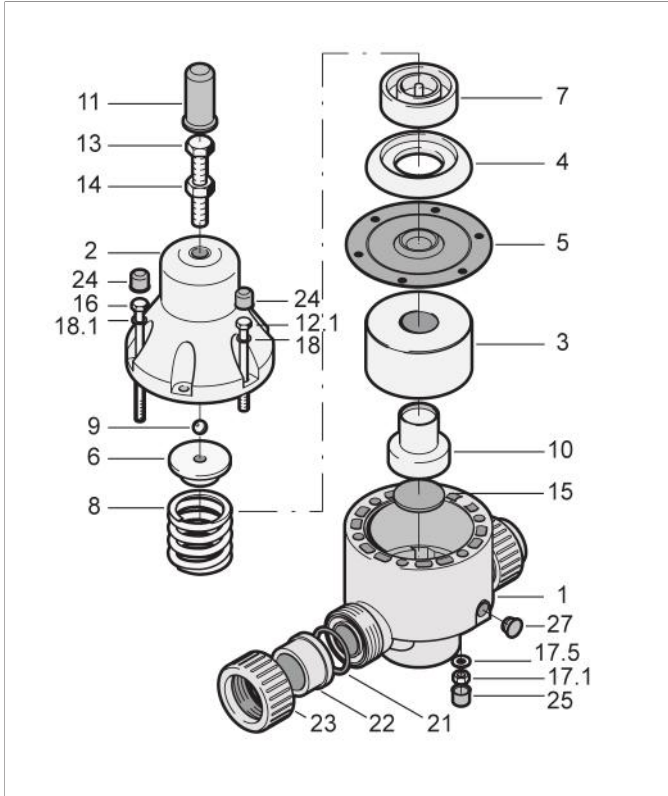


pA = working pressure
Q = flow



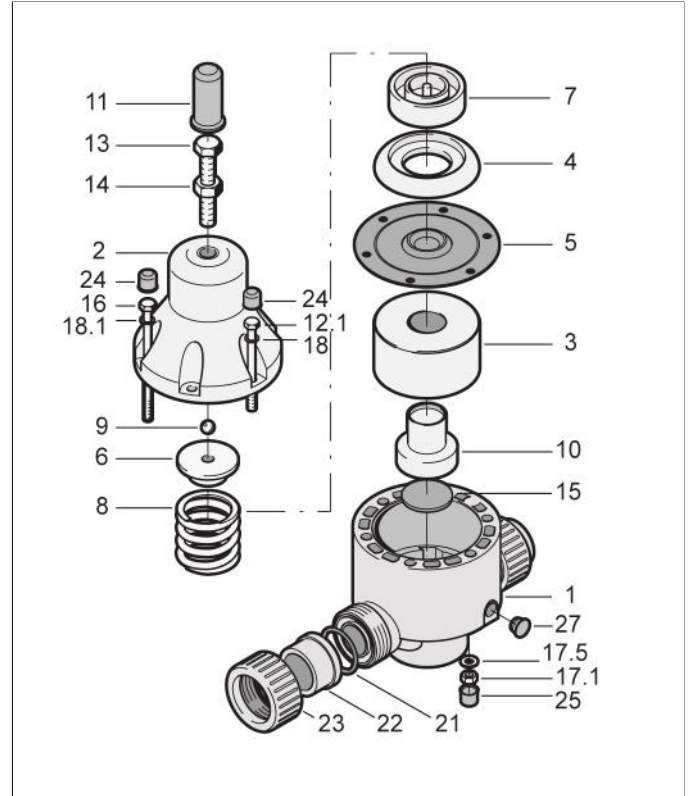
Exploded View

3/8" to 1/2"



position	quantity	designation
1	1	valve body
2	1	bonnet
3	1	separating disc
4	1	pressure disc
5	1	diaphragm
6	1	pressure plate
7	1	spring plate
8	1	pressure spring
9	1	steel ball
10	1	piston, complete
11	1	protection cap
12.1	4	hexagon bolt
13	1	hexagon bolt
14	1	counter nut
15	1	flat sealing ring
17	4	hexagon nut
17.5	4	washer
18	4	washer
21	2	O-ring
22	2	union end
23	2	union nut
24	4	protection cap
25	4	protection cap
27	2	Plug

3/4" to 2"

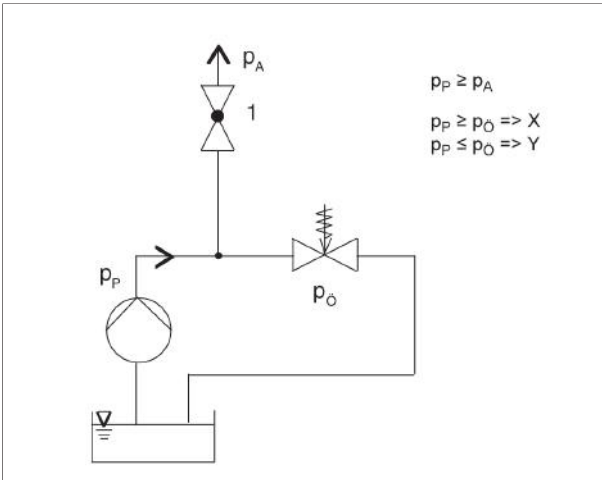


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11	1	protection cap
12.1	2	hexagon bolt
13	1	hexagon bolt
14	1	counter nut
15	1	flat sealing ring
16	4	hexagon bolt
17	6	hexagon nut
17.5	6	washer
18	6	washer
21	2	O-ring
22	2	union end
23	2	union nut
24	4	protection cap
25	4	protection cap



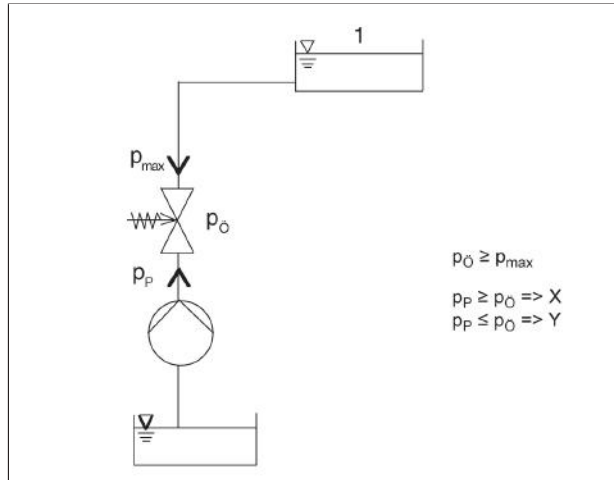
Installation Examples

Example 1: Constant system pressure



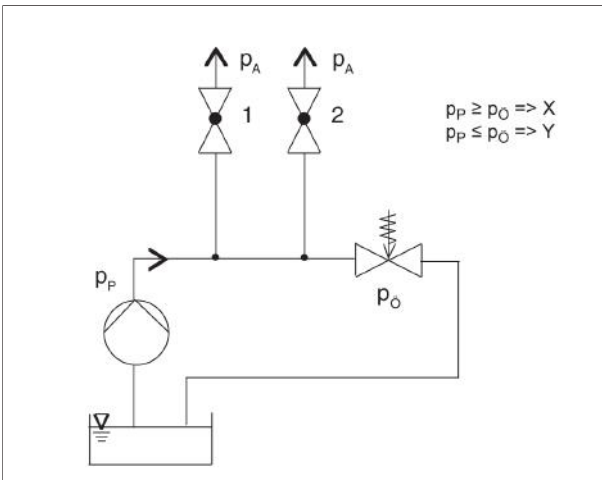
X = valve opens
Y = valve closed
pA = working pressure
pP = pump pressure
pO = opening pressure

Example 3: Pressure reliefvalve as backflow preventer



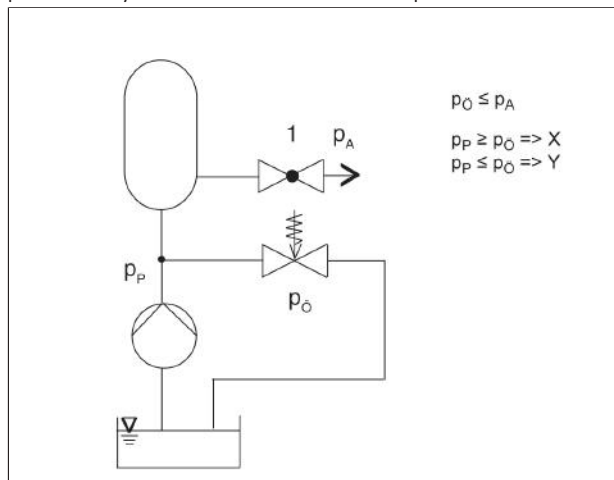
X = valve opens
Y = valve closed
pmax = max. pressure
pP = pump pressure
pO = opening pressure

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



X = valve opens
Y = valve closed
pA = working pressure
pP = pump pressure
pO = opening pressure

Example 4: Pressure reliefvalve as overflow valve: The container pressure or system must not exceed the max. pressure value

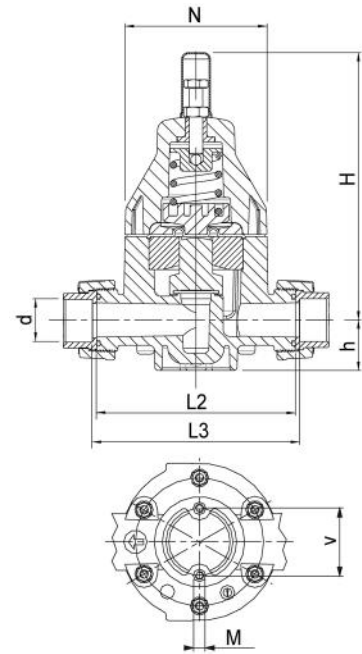


X = valve opens
Y = valve closed
pA = working pressure
pP = pump pressure
pO = opening pressure



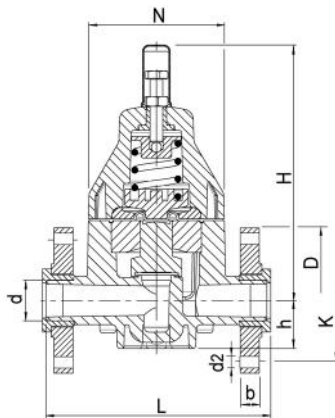
Dimensional Data - Socket

Nom. Size	d	h	H	L2	L3	M	N
½"	0.79	0.98	6.85	4.72	4.96	0.24	3.19
¾"	0.98	1.50	7.95	5.91	6.14	0.24	4.21
1"	1.26	1.50	7.95	5.91	6.14	0.24	4.21
1¼"	1.57	2.20	10.31	8.03	8.31	0.31	5.79
1½"	1.97	2.20	10.31	8.03	8.31	0.31	5.79
2"	2.48	2.20	10.31	8.03	8.31	0.31	5.79



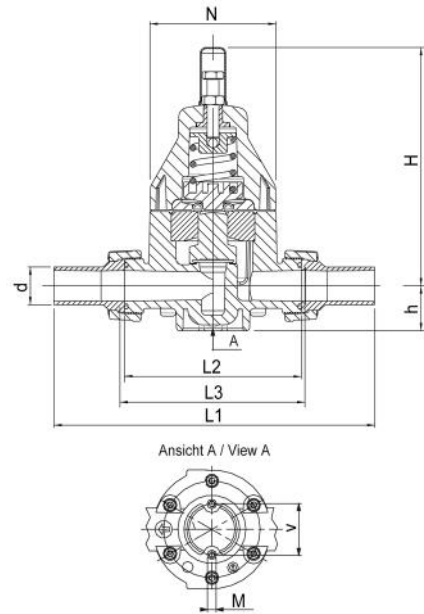
Dimensional Data - Flanged

Nom. Size	b	d	d2	D	h	H	K	L	M	N	V
½"	0.51	0.79	0.63	3.74	0.98	6.85	2.36	5.91	0.24	3.19	1.57
¾"	0.51	0.98	0.63	4.13	1.50	7.95	2.76	7.09	0.24	4.21	1.81
1"	0.63	1.26	0.63	4.45	1.50	7.95	3.15	7.09	0.24	4.21	1.81
1¼"	0.63	1.57	0.63	5.12	2.20	10.31	3.50	9.06	0.31	5.79	2.56
1½"	0.71	1.97	0.63	5.24	2.20	10.31	3.86	9.06	0.31	5.79	2.56
2"	0.71	2.48	0.79	6.30	2.20	10.31	4.76	9.84	0.31	5.79	2.56



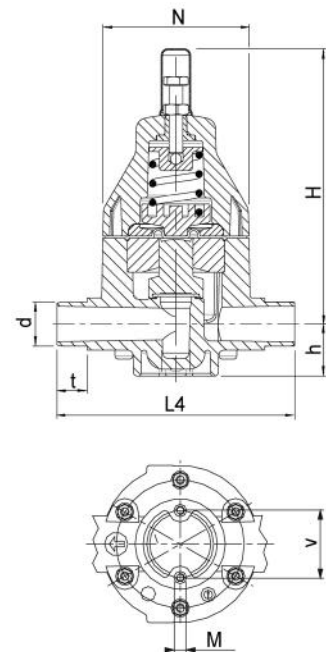
Dimensional Data - True Union Spigot

Nom. Size	d	h	H	L1	L2	M	N
½"	0.79	0.98	6.85	8.98	4.72	0.24	3.19
¾"	0.98	1.50	7.95	10.39	5.91	0.24	4.21
1"	1.26	1.50	7.95	10.63	5.91	0.24	4.21
1¼"	1.57	2.20	10.31	13.03	8.03	0.31	5.79
1½"	1.97	2.20	10.31	13.31	8.03	0.31	5.79
2"	2.48	2.20	10.31	13.50	8.03	0.31	5.79



Dimensional Data - Spigot

Nom. Size	d	h	H	L4	M	N	t
½"	0.79	0.98	6.85	5.67	0.24	3.19	0.63
¾"	0.98	1.50	7.95	6.85	0.24	4.21	0.75
1"	1.26	1.50	7.95	6.85	0.24	4.21	0.87
1¼"	1.57	2.20	10.31	8.82	0.31	5.79	1.02
1½"	1.97	2.20	10.31	8.82	0.31	5.79	1.22
2"	2.48	2.20	10.31	9.61	0.31	5.79	1.50



Solenoid Valve - Direct Action



ISO 9002 CERTIFIED

Material:	PVC, PP, PTFE
Size:	3/8" - 3/4"
Seals:	EPDM, FPM
Diaphragm:	PTFE
Operating Pressure:	0-29psi
Voltage:	230V 50 Hz, 24VDC
Coil Capacity:	8 Watts
Enclosure:	IP65 / NEMA 4x
Operation:	Normally Closed, Normally Open
Electrical Plug:	DIN EN 175301-803
Connections:	Socket Threaded

Materials of Construction:

- PVC:** Type 1, Class 12454B, ASTM D1784
- PP:** Class PP 110B76383, ASTM D4101
- PTFE:** Type 1, D3294
- Seals:** EPDM, FPM

Valve is available in two positions:

Switching function NC: In the position of rest, the valve is closed by the spring force. When energized (magnetic force) the plunger moves upwards, raising the diaphragm connected to it and allowing the medium to flow.

Switching function NO: In the position of rest, the valve is opened by the spring force. When energized (magnetic force) the plunger moves down, closing the valve.

Flow Rate in Gallons per minute

SIZE	3/8"	1/2"	3/4"
Cv	38.1	52.0	61.3

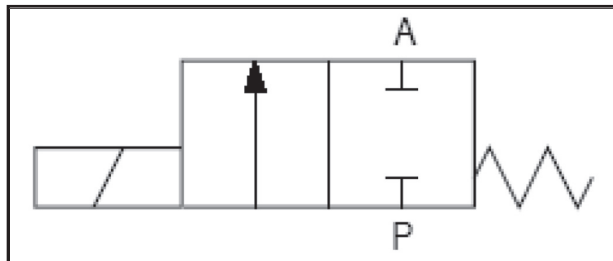
Cv is the number of gallons per minute of water at a temperature of 68°F that will flow through a valve with a 1 psi pressure differential at a specified travel.

Operating Pressure

SIZE	3/8"	1/2"	3/4"
psi	29.0	14.5	7.3

Wiring Diagram

Normally Closed



Normally Open

