

Type SUL

Pump protection valve for centrifugal pumps



> Type SUL, front view



> Type SUL, sectional view

Product features

- Automatically modulating bypass function
- Cast material, carbon steel, stainless steel
- Single-stage pressure reduction (up to 20 bar)
- Internal operation (no external energy source required)
- Easy to install
- Low maintenance
- Suitable for all liquids

Applications

- Boiler feed water
- Condensate
- Chemical processes
- Extinguishing water

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Technical data

Nominal diameter	DN 25–250 / NPS 1-10
Pressure class	PN 10–63 / Class 150–300
Temperature (max.)	Up to 230 °C / 446 °F (other temperatures on request)
Housing material	1.0619 / A216WCB 1.4408 / A351CF8M 1.4410 / A9955A 1.4501 / A9956A
Housing type	Cast
Media	Liquids of all kinds (water, oils, chemicals and others)
Flanges	EN 1092-1, ASME B16.5, ISO 7005, JIS, JPI
Designs	vertical installation, horizontal installation, drain hole, optional non-return, design for particals (with wiper)
Number of stages (max.)	1
Number of controlled stages (max.)	1
Operating range (max.)	Delta p up to max. 20 bar (water)

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Function

The SUL valve design is a further development of the SCHROEDAHL SU valve, an automatic recirculation valve that has been used in ships since 1960.

In addition to the well-known TD series, the SUL series offers effective and cost-effective protection for pumps used in the energy, chemical and petrochemical industries.

The SUL consists of two housing parts (items 01, 02) made of cast steel or stainless steel, a non-return check-valve (item 07) with guide (item 04) and closing spring (item 06) as well as the bypass-inserts (items 10-13) and the damping device (items 14, 15).

Based on long series of tests and operating experience, these parts are matched to each other in such a way that stable operation is guaranteed, even with a slight tendency for the system to vibrate.

The automatic bypass section comprises the vortex bushing (item 10), in which a bushing/stem assembly (item 11/12) follows the movement of the non-return valve plug and the adjustment bolt (item 13).

Special features

- Reliable operation with only a few moving parts
- Easy to install – in a vertical or horizontal position, directly on the pump outlet
- Easy to change flow characteristics (change of one part - item 13 - only).
- Can be used for a wide range of liquids such as water, oil, hydrocarbonates, liquid gas and many other types of chemical media.
- Temperature range -200 °C to +230 °C

Installation information

SUL valves should be installed as close as possible to the pump, preferably at the discharge port of the pump, in a vertical position. Horizontal installation is also possible.

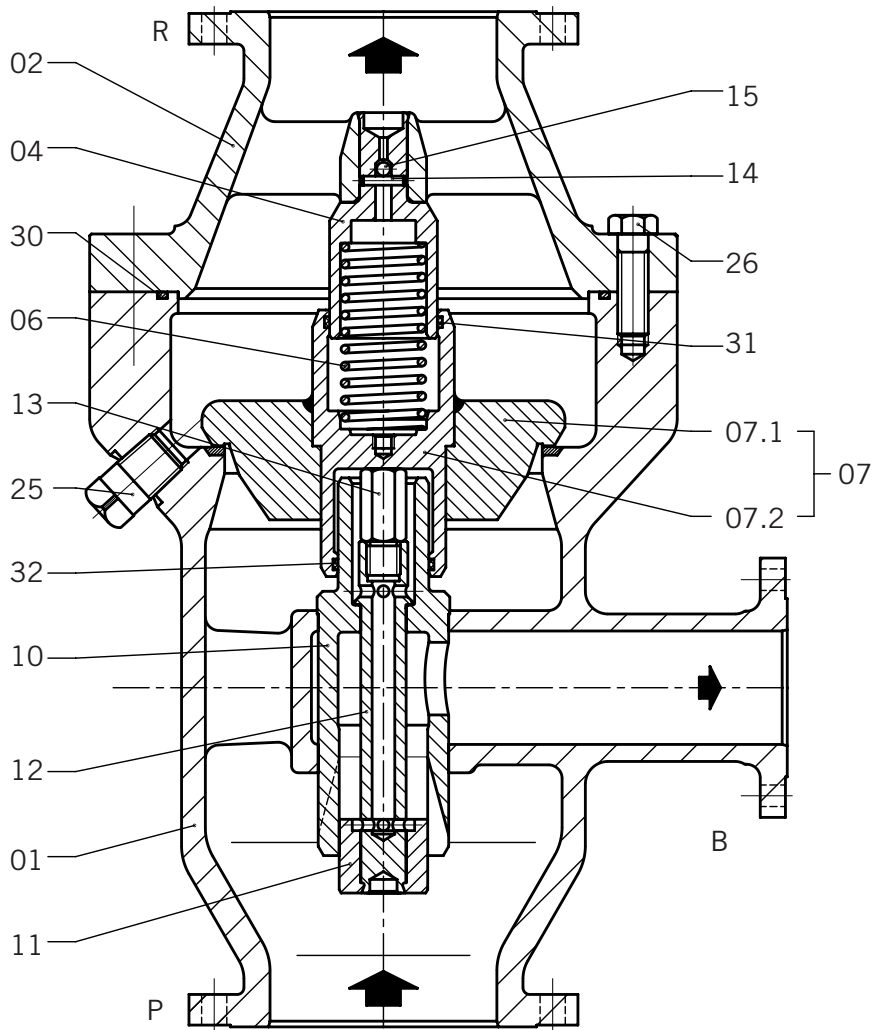
The distance between valve inlet and pump outlet should not exceed 3 m to prevent pressure pulsations caused by the elasticity of the medium.

Ensure that the drain screw (if provided) is at the bottom of the valve in case of horizontal installation.

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Sectional drawing



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Parts list

Pos.	Item	Material
01	Lower body	*
02	Upper body	*
04	Guide bolt	1.4301
06	Spring	1.4310
07	Check valve cpl.	1.4404
10	Vortex bushing	1.4542
11	Control bushing	1.4122
12	Stem	1.4122
13	Adjustment bolt	1.4301
14	Pin	1.4301
15	Ball	1.4401
25	Drain screw	***
26	Hexagon screw	**
30	O-Ring	*
31	Guiding ring	PTFE/Carbon
32	Guiding ring	PTFE/Carbon

 Recommended spare/wear parts

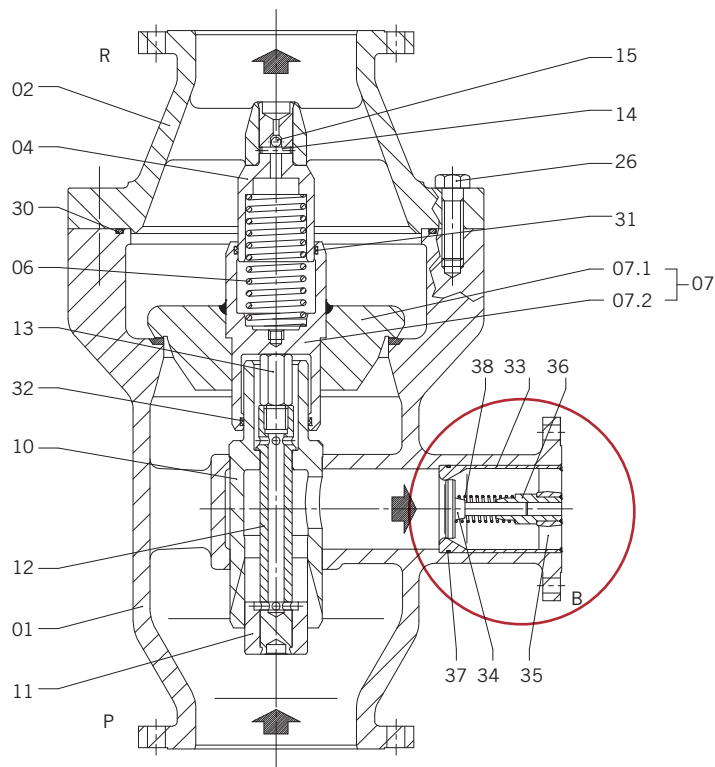
- * Depending on customer requirements
- ** Depending on size and pressure rating
- *** Depending on housing material

Parts list as an example of the standard configuration

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Sectional drawing (non-return function)



Parts list (non-return function)

Pos.	Item	Material
33	Check valve housing	1.4404
34	Reaction piston	1.4122
35	Stemguide	1.4408
36	Slide bushing	1.4404
37	O-Ring	*
38	Spring	1.4310

* Depending on customer requirements

Parts list as an example of the standard configuration

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Dimensions EN

DN _R / DN _P	PN	DN _B	Type	L (mm)	S (mm)	H (mm)	Weight (kg) PN10/16	Weight (kg) PN25/40/63
25	10-63	15	051-055	267	115	102	12	18
32	10-40	20	061-064	267	115	102	15	20
32	63	15	065	267	115	102	15	20
40	10-40	20	071-074	267	115	102	15	20
40	63	15	075	267	115	102	15	20
50	10-63	25	081-085	305	130	108	22	25
65	10-63	40	091-095	406	165	136	45	50
80	10-63	40	101-105	406	165	136	45	50
100	10-63	50	111-115	495	209	159	105	118
125	10-63	80	121-125	679	267	228	220	240
150	10-63	80	131-135	679	267	228	220	240
200	10-63	100	151-155	902	356	305	525	550
250	10-63	100	161-165	902	356	305	530	560

Dimensions ASME

DN _R / DN _P	PN	DN _B	Type	L (mm)	S (mm)	H (mm)	Weight (kg) 150 lbs	Weight (kg) 300 lbs
NPS 1	150-300	NPS 0,5	054-055	267	115	102	12	18
NPS 1,25	150-300	NPS 0,75	064-065	267	115	102	15	20
NPS 1,5	150-300	NPS 0,75	074-075	267	115	102	15	20
NPS 2	150-300	NPS 1	084-085	305	130	108	22	25
NPS 2,5	150-300	NPS 1,5	094-095	406	165	136	45	50
NPS 3	150-300	NPS 1,5	104-105	406	165	136	45	50
NPS 4	150-300	NPS 2	114-115	495	209	159	105	118
NPS 5	150-300	NPS 3	124-125	679	267	228	220	240
NPS 6	150-300	NPS 3	134-135	679	267	228	220	240
NPS 8	150-300	NPS 4	154-155	902	356	305	525	550
NPS 10	150-300	NPS 4	163-165	902	356	305	530	560