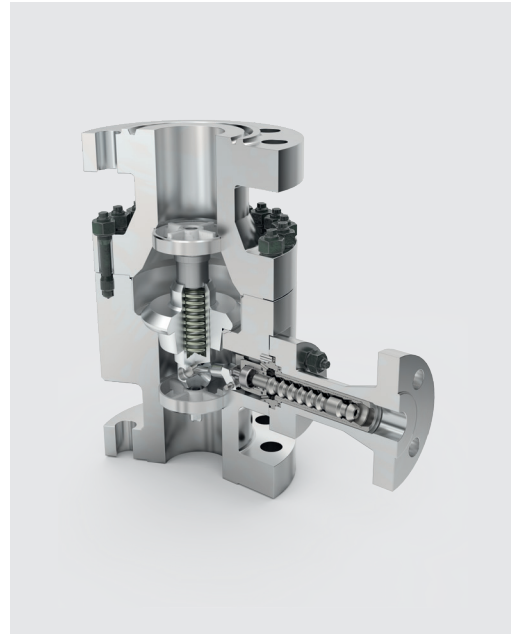


Type TDC

Pump protection valve for centrifugal pumps
used in descaling applications



> Type TDC, front view



> Type TDC, sectional view

Product features

- Particularly robust design for descaling applications
- Automatically modulating bypass function
- Forged housing material, carbon steel or stainless steel
- Special material possible
- Internal operation (no external energy source required)
- Easy to install
- Low maintenance
- Design optimised for frequent switching cycles

Applications

- Descaling applications

Type TDC

Pump protection valve for centrifugal pumps
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Technical data

Nominal diameter	DN 80–250 / NPS 3–10
Pressure class	PN 100–400 / Class 600–2500
Temperature (max.)	Up to 230 °C / 446 °F (other temperatures on request)
Housing material	1.0460 / A105 1.0571 / LF2 1.4404 / F316L 1.4462 / F51 1.4501 / F55
Housing type	Forged
Media	Descaling water (other liquids possible)
Flanges	EN 1092-1, ASME B16.5, ISO 7005, JIS, JPI, welding ends on request
Designs	Vertical installation, horizontal installation, manual start-up, enlarged nominal width of the bypass
Number of stages (max.)	8
Number of controlled stages (max.)	8
Operating range (max.)	Delta p up to max. 230 bar
Other	Bypass differential pressure 20–250 bar

Type TDC

Pump protection valve for centrifugal pumps used in descaling applications

Function

The outlet main flow controls the non-return valve and positions it in proportion to the flow. The stem of the non-return valve transmits the motion via a lever to the bypass. The bypass system regulates the bypass flow in a modulating way and reduces the pressure to the bypass outlet pressure level without cavitation.

When the non-return valve is completely closed, the entire minimum flow is routed through the bypass. The bypass is fully closed when the non-return valve is in its upper position, thereby allowing full pump flow to the system.

Flow sensitive modulating bypass control

The non-return valve moves upwards with increasing main flow and downwards with decreasing flow. The non-return valve transmits this movement to the control lever.

The movement of the lever is transmitted via a piston to the multi-stage vortex plug. The minimum flow is then bypassed in a modulating way over several pressure reduction stages.

The TDC can be used for differential pressures above 20 bar up to 250 bar for drainage.

Installation information

The TDC valve should be installed as close as possible to the discharge port of the centrifugal pump, preferably directly on the pump discharge port of the pump.

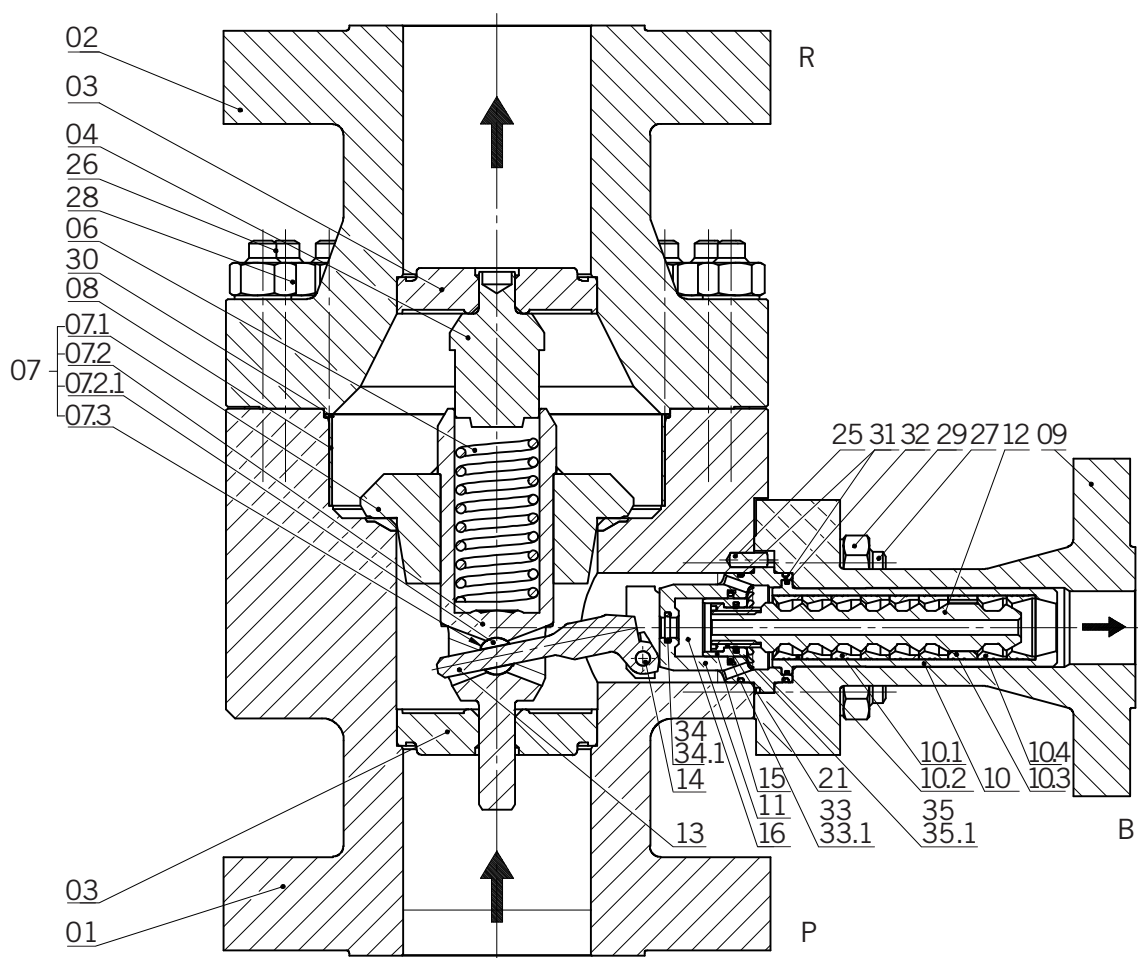
To avoid frequency interference due to pressure oscillations in the medium, the distance between the pump outlet and the valve inlet should not exceed 3 m. Take care to ensure a straight inlet section. Exceptions have to be confirmed to SCHROEDAHL.

Vertical installation is preferred, but horizontal installation is also possible upon request. TDC valves operate at a low noise level and ensure a high reliability due to their sturdy design.

Type TDC

Pump protection valve for centrifugal pumps
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Sectional drawing (housing)



Type TDC

Pump protection valve for centrifugal pumps
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Parts list (housing)

Pos.	Item	Material
01	Lower body	*
02	Upper body	*
03	Stemguide	1.4408
03.1	Stemguide	1.4408
04	Guide bushing	1.4021
06	Spring	1.4310
07	Check valve cpl.	1.4404
07.1	Check valve	1.4404
07.2	Stem	1.4404
07.2.1	Bushing	1.4122
07.3	Snap ring	1.4122
08	Liner	1.4300
09	Bypass branch	*
25	Guide pin	A2
26	Bolt	**
27	Bolt	**
28	Hexagon nut	**
29	Hexagon nut	**
30	O-Ring	*

 Recommended spare/wear parts

* Depending on customer requirements

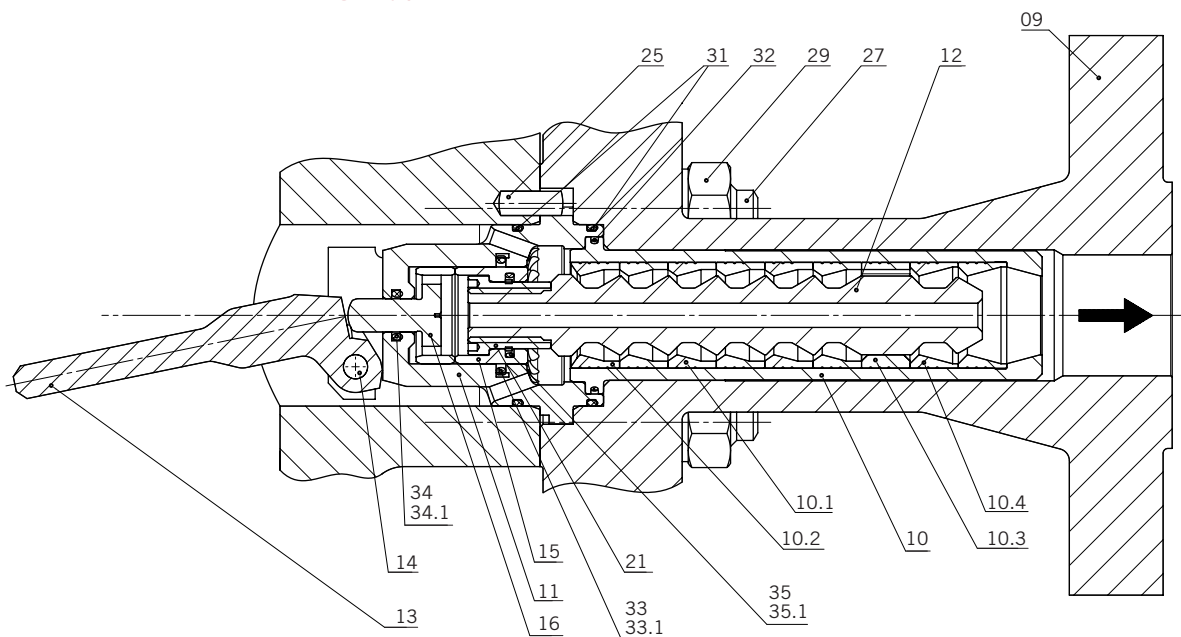
** Depending on size and pressure rating

Parts list as an example of the standard configuration

Type TDC

Pump protection valve for centrifugal pumps
used in descaling applications

Sectional drawing (bypass)



Dimensions: on request

Type TDC

Pump protection valve for centrifugal pumps
used in descaling applications

Parts list (bypass)

Pos.	Item	Material
10	Bushing	1.4122
10.1	Control bushing	1.4122
10.2	Seat bushing	1.4122
10.3	Control bushing	1.4122
10.4	Control bushing	1.4122
11	Control head	1.4122
12	Vortex plug	1.4122
13	Lever	1.4313
14	Pivot pin	1.4122
15	Relief bushing	1.4122
16	Relief piston	1.4122
21	Threaded ring	1.4122
31	O-Ring	*
32	O-Ring	*
33	O-Ring	*
33.1	Glyd ring	PTFE/Carbon
34	O-Ring	*
34.1	Glyd ring	PTFE/Carbon
35	O-Ring	*
35.1	Glyd ring	PTFE/Carbon
41	Guide ring	PTFE/Carbon
42	Guide ring	PTFE/Carbon

 Recommended spare/wear parts

* Depending on customer requirements

Parts list as an example of the standard configuration