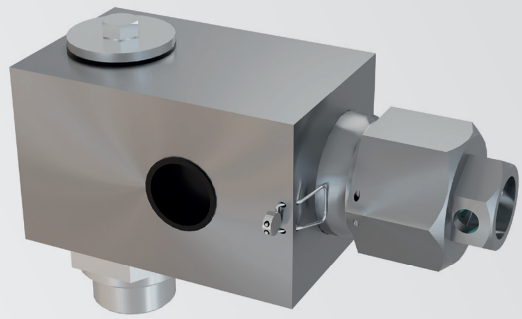
Safety valve S301



Description of operation

The S301 safety valve is designed as a direct-action normal safety valve which is loaded by a spring assembly (disc springs).

The safety valve meets the requirements of European Parliament Directive 2014/68/EC (pressure vessels). The safety valve is used for pressure safeguarding hydraulic systems (e.g. pressure vessels). The valve is made of stainless steel and thus resistant to corrosion and suitable for use with the specified media. The valve data is included in the chapter „Range of application“.

The required valve function „to trigger reliably and within the set tolerances in case of overpressure“ requires a precise and linear valve seat surface. I.e. as soon as the valve has responded due to over-pressure, the valve seat may be damaged and can thus a leak-free seal can no longer be guaranteed.

Leaking or damaged safety valves must be replaced as a complete unit.
Repairs must only be made by the manufacturer or by the manufacturer‘s certified subsidiaries

Range of application

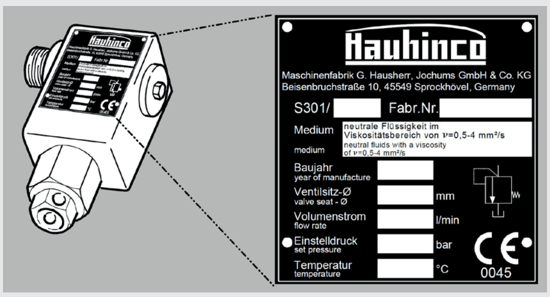
The specified range of application can be found on the valve label and in the table 1 below.

Typ = valve model
Ser.-Nr. = serial number / year of manufacture
d0 = diameter of valve seat [mm]
Medium = pressure medium
G = flow rate [l/min]
p = set pressure [Bar]
T = fluid temperature 0 – 50 °C

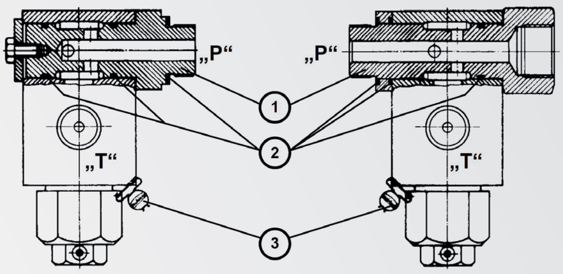
A safety valve must be engineered and installed in line with the existing directives and the manufac-turer‘s specifications.

To prevent unintentional opening of the safety valve, allow for system pressure peaks (pulsation) when selecting the set pressure.

The safety valve S301 reacts to intermittent pressure peaks that are too short in duration to even register on a pressure gauge.



Installation / Mounting



The safety valve must only be installed by authorised and qualified specialist staff.

The S301 safety valve must only be installed on the P-port with the corresponding hollow bolt (1).

Connecting thread: G 1“ – DIN2999-1
Tightening torque: 300 Nm

No other fastening facility is provided for the safety valve. The supply line (P-port) must have a minimum inner diameter of Di ≥ 13 mm. Expelled medium must be able to flow freely into the open air at connection „T“.

If a return line is installed at the outlet (T) of the safety valve for system reasons, the following rules must be observed.

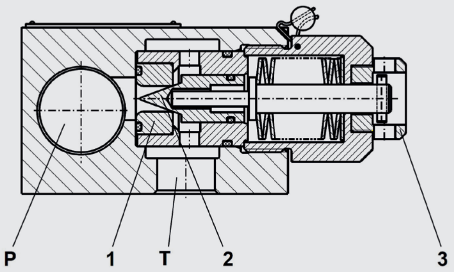
- A safety valve with a threaded connection must be used (see table 1).
- The return line must have a minimum inner diameter of Di ≥ 17 mm.
- The return line must be no longer than a maximum of 1.5 m and have a bend of ≤ 90°.
- The return line must be installed with an inclination so that it runs to empty automatically.
- The return line must be fastened properly so that the reaction forces do not cause a hazard when the safety valve discharges.

Before installation the sealing plug has to be removed from port „T“ and the valve has to be checked for damage.

The valve has to be installed so that personnel are not put at risk from discharging pressure medium. The discharged pressure medium must not be directed at sensitive, unprotected plant parts.

Put up a clearly visible information sign: „Caution: Safety valve – Beware of pressure medium discharged suddenly into the open air!“

Function testing



The functional checks to be performed on the valve are set out by the user or in accordance with the regulations for plant inspection. To perform a functional check on the S301 safety valve, the venting nut (3) is unfastened and turned anti-clockwise by hand until there is a noticeable resistance. Then turn the venting nut (3) half a turn further. The valve cone (2) is raised from the valve seat (1) and the pressure medium is expelled from the outlet (T).

After the functional check the venting nut has to be re-fastened properly.

Designation	d_0 [mm]	Q* [l/min]	P [bar]	Article number
S301/162	16,2	110	100	6414893 (5123240)**
		120	110	
		130	120	
		140	130	
		150	140	
S301/152	15,2	162	150	6402194 (6353495)**
		171	160	
		180	170	
		189	180	
		198	190	
		208	200	
S301/128	12,8	200	200	6414885 (5124638)**
		205	210	
		210	220	
		215	230	
		220	240	
		224	250	
S301/120	12,0	212	250	6402178 (5128005)**
		216	260	
		220	270	
		225	280	
		229	290	
		233	300	

Storage

The safety valve can be stored up to five years. After this time the valve must be checked by the manu-facturer. Before the safety val-ve is taken into operation for the first time, its correct function must be tested.

During storage all ports (P and T) must be sealed and the safety val-ve must be protected against dirt, mois-ture, frost and corrosion.

Designation	d_0 [mm]	Q* [l/min]	P [bar]	Article number
S301/108	10,8	192	310	1720007 (5127939)**
		195	320	
		198	330	
		201	340	
		204	350	
		206	360	
		209	370	
		212	380	
S301/197	9,7	175	400	1720031 (5133432)**
		178	410	
		180	420	
		182	430	
		184	440	
		186	450	
S301/95	9,5	178	450	1720023 (6541631)**
		180	460	
		182	470	
		184	480	
		186	480	
		188	500	
S301/90	9,0	180	500	6414877 (5124182)**
		182	510	
		184	520	
		186	530	
		188	540	
		190	550	

* The flow rates Q were measured with HFA-medium ($v \approx 1\ mm^2/s$).

** (Part no.) These part numbers are for safety valves with G ¾“ – DIN2999-1 threaded connection in the port „T“.

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