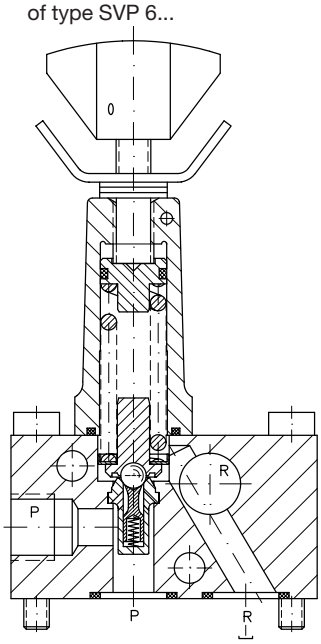
Pressure limiting valves type SVP 6 and SVP..30(34)

preferably for mounting on to hydraulic power packs type R (acc. to D 6010 H) and type Z (acc. to D 6820)
Supplement to pamphlet D 7000 E/1

Pressur p_{max} = 700 bar
Flow Q_{max} = 80 lpm

Cross sectional drawing of type SVP 6...



1. General

Pressure limiting valves are used in hydraulic systems to protect them against exceeding the permitted max. pressure or to limit the operation pressures.
The pressure limiting valves type SVP 6 and SVP..30(34) are intended and designed for direct mounting onto hydraulic power packs type R (D 6010 H) and Z (D 6820). They may be used as well for direct mounting onto customer furnished manifolds enabling direct lateral connection of directional seated or spool valve banks.

2. Available versions, main data

Order examples:

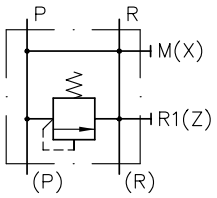
SVP 6 C - 280 Version with assembly kit type MVF 6.. acc. to D 7000 E/1
SVP 6 B R Version with welded on spring dome

Note: Type coding applies to the single device. A different coding is used, when part of the order coding for a complete power pack, see the respective pamphlet.

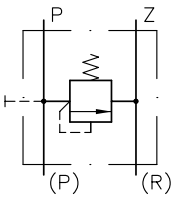
SVP R 30 A
- Pressure setting (see also sect. 5)
- **Table 1:** Basic type, size

Flow pattern symbols
Illustration represents tool adjustable versions. (for manually adjustable vers., see table 3)

Type SVP 6..



Type SVP..30
SVP..34



Coding	Flow Q_{max} (lpm)	Ports conf. DIN ISO 228/1 (BSPP)	bottom side	Direct mounting on to hydraulic power packs (D 6010 H, D 6820)	Directional valve banks suitable for lateral mounting
SVP 6	75	P, R = G 1/2 M(X) = G 1/4 R1(Z) = G 1/4	See dimensional drawings in sect. 4 ++	Tank: B 50 and B 75 Cover plate: D 50	Directional seated valves: BWH 2(3) D-.. D 7470 B/1 VB 11(21, 31) -.. D 7302 Directional spool valve: SKP(H) 27(37)-.. D 7230 SWR(P) 1 D-.. D 7450 SWR 2 D-.. D 7451
SVP..30	60	P, R = G 3/4 X, Z = G 1/2		Tank: B 100 to B 400 Cover plate: D 100 and D 250	Directional spool valve: SKP(H) 28(38)-.. D 7230
SVP..34	80				

- **Table 2:** Pressure ranges

Coding		A	B	C	D	E	F
(0) ... ... p_{max} (bar)	SVP 6	700	500	315	---	160	80
	SVP..30	300	---	---	---	---	---
	SVP..34	---	200	---	150	---	---

Note:
Settings < 0.1 ... 0.15 of $p_{max.}$ do not make sense. The lowest pressure that can be achieved also depends on the apparent flow (see Δp-Q curves).

- **Table 3:** Adjustability during operation

no coding	Standard, tool adjustable	Symbols
R	Manually adjustable	Coding R and V
V	Turn knob (self locking)	Coding H
H	Lockable turn knob (BKS-lock) Suited for keys conforming to the standards of the motor industry. Key is not scope of delivery (Key is only in the possession of the authorized operators)	Only available for type SVP 6 !

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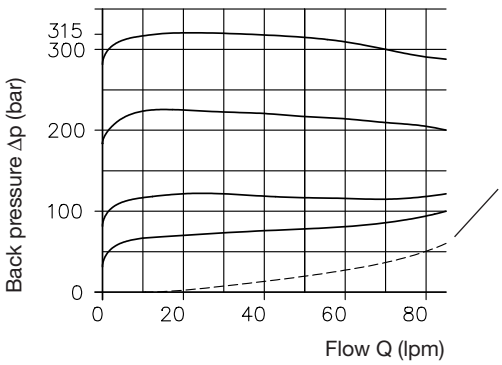
3. Further parameters

Nomenclature and design	Pressure valves directly actuated, ball seated type
Installed position	Any
Surface	Steel parts zinc galvanized; spring dome from zinc pressure die-cast (type SVP 6)
Mass (weight)	SVP 6 = approx. 2 kg SVP..30(34) = approx. 3 kg
Pressure fluid	Hydraulic oil conforming DIN 51514 part 1 to 3: ISO VG 10 to 68 conforming DIN 51519. Viscosity limits: min. approx. 4, max. approx. 1500 mm^2/s; opt. operation approx. 10... 500 mm^2/s. Also suitable are biologically degradable pressure fluids types HEPG (Polyalkylenglycol) and HEES (Synth. Ester) at service temperatures up to approx. +70 °C.
Temperature	Ambient: approx. -40 ... +80 °C Fluid: -25 ... +80°C, Note the viscosity range ! Permissible temperature during start: -40°C (observe start-viscosity!), as long as the service temperature is at least 20K higher for the following operation. Biologically degradable pressure fluids: Observe manufacturer's specifications. By consideration of the compatibility with seal material not over +70 °C.

△p-Q curves

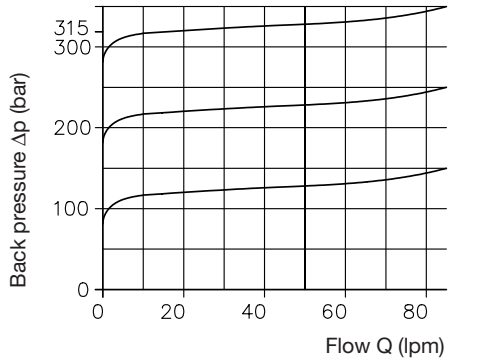
Type SVP 6



The curves shown at the example SVP 6 C (Guideline, slight differences depending on pressure).
Any pressure apparent at R will raise these Δp-figures.

Δp-curve for the valve body, spring decompressed (static pressure 0 bar). No pressure setting can be achieved below this line, see also note in table 2, sect. 2.

Type SVP ..30(34)

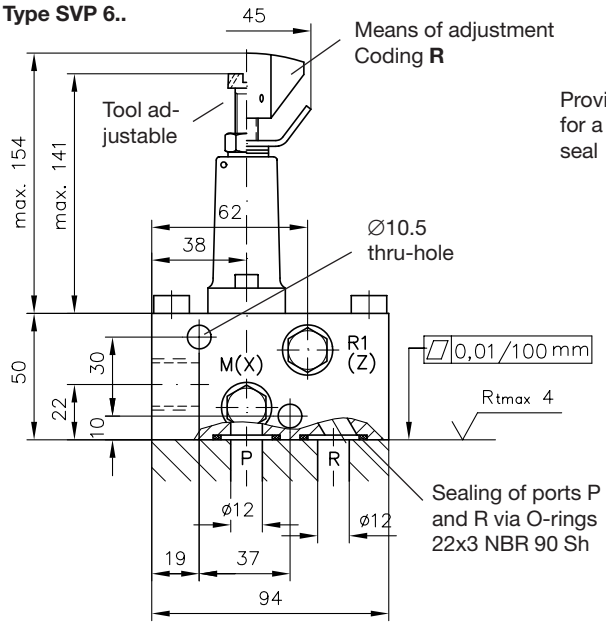


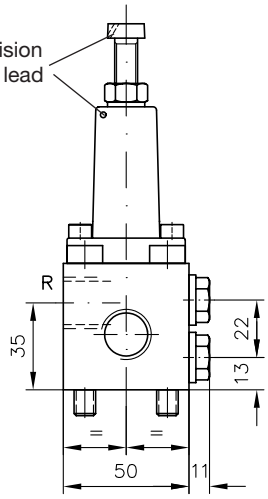
Viscosity during measurements approx. 50 mm^2/s

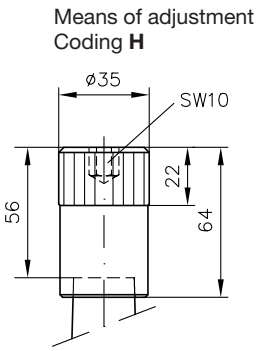
4. Unit dimensions

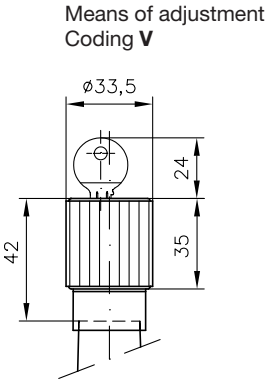
All dimension in mm and subject to change without notice!

Type SVP 6..

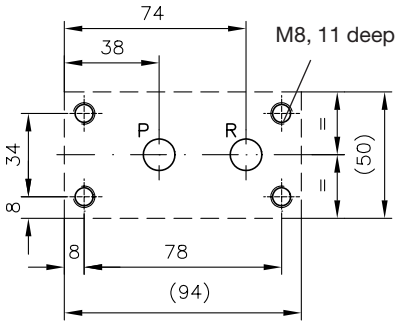






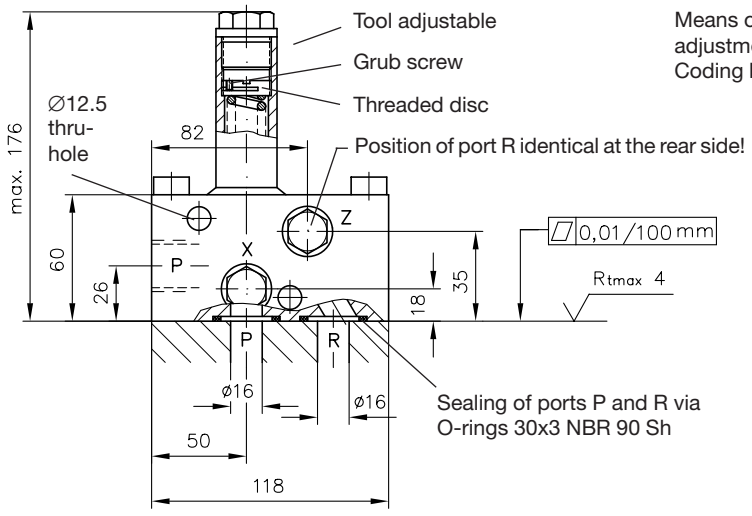


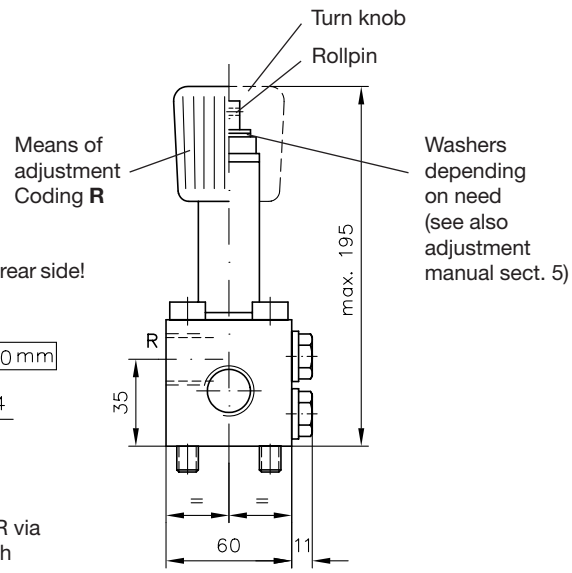
Hole pattern of the manifold (top view)



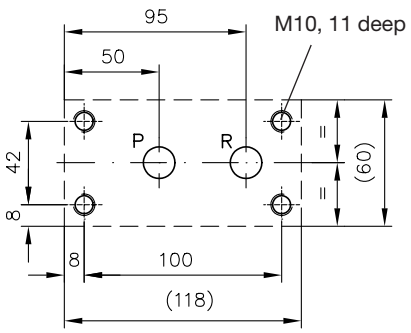
Ports acc. to DIN ISO 228/1: (BSPP)
P and R = G 1/2
M(X) and R1(Z) = G 1/4

Type SVP(R) 30 and SVP(R) 34





Hole pattern of the manifold (top view)



Ports acc. to DIN ISO 228/1: (BSPP)
P and R = G 3/4
X and Z = G 1/2

5. Adjustment manual

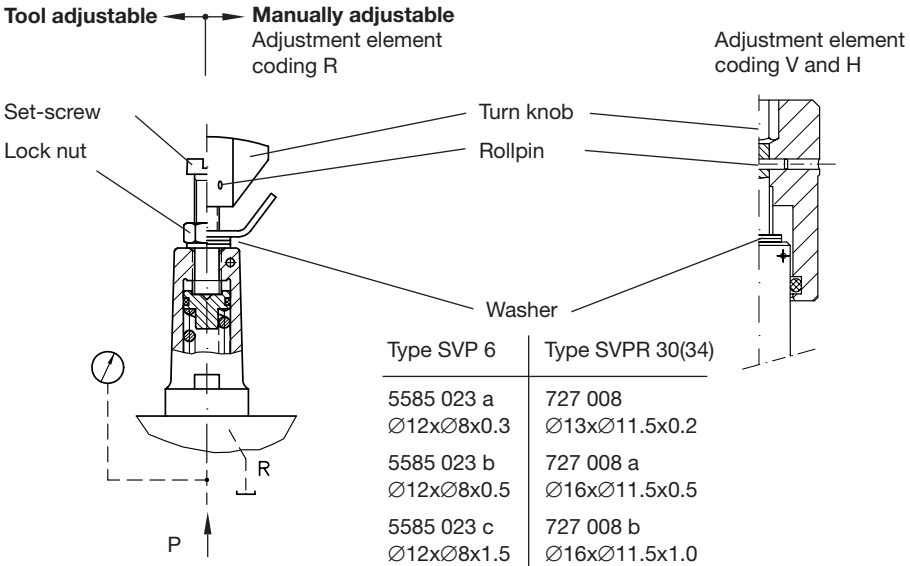
These valve are pre-set at HAWE when a pressure is specified in the order coding (e.g. SVP 6 C-250). Unauthorized raising of the pressure is prevented by washers. When a pressure specification is missing, these valves are set at the specified max. pressure for the respective spring (see table 2 in sect. 2).
Any modification of the presssure setting on site should be performed while the pump is running and should be monitored by a pressure gauge.

- **Reduction of the pressure setting (for tool adjustable versions)**
  1. Connect a pressure gauge to the P-line
  2. Type SVP 6: Loosen the lock nut (remove the lead seal when apparent)
     Type SVP 30(34): Remove the tapped plug and loosen the grub screw
  3. Turn the adjustment element (slotted head screw / threaded disc) counter clockwise, while monitoring the effect on the pressure gauge (running pump)
  4. Retighten the lock nut / grub screw after the adjustment is finished.
     Type SVP 30(34): Reinstall the tapped plug.

- **Raise of the pressure setting (for manually adjustable version)**

  Observe pressure rating p_{max} acc. to table 2, in sect. 2!
  Basically proceed as above. Raise of the setting is by turning the adjustment element clockwise. The washers which usuall prevent that the pressure is increased can be removed after the rollpin is driven out and the turn knob / winged nut are removed. Remove only as much washers as required to achieve the desired pressure setting. Use always a pressure gauge while changing the setting. Reinstall winged nut, turn knob, and rollpin.

Illustration type SVP 6
(type SVP(R) 30 and SVP(R) 34 are similar, see dimensional drawings in sect. 4)



Type SVP 6	Type SVPR 30(34)
5585 023 a ∅12x∅8x0.3	727 008 ∅13x∅11.5x0.2
5585 023 b ∅12x∅8x0.5	727 008 a ∅16x∅11.5x0.5
5585 023 c ∅12x∅8x1.5	727 008 b ∅16x∅11.5x1.0
5585 023 f ∅12x∅8x2	

Note: The pressure read at the pressure gauge while the pump is running is always dependant on the respective flow. There is a slight flow dependance for some of these valve (see curve in sect. 3).
(Exteme case: Manual pump, flow ≈ 0 lpm).

- **Pressure variation**

Rough guideline (valve closed)
per turn of the set screw

Type	Pressure range (bar)	Travel f_{max} (mm)	Pressure raise per 1 turn (bar)
SVP 6..	A 0 ... 700	7.4	120
	B 0 ... 500	7.9	80
	C 0 ... 315	10.2	35
	E 0 ... 160	11.5	17.5
	F 0 ... 80	12.5	8
SVP.. 30 SVP.. 34	A 0 ... 300	19	30
	B 0 ... 200	24	16.2
	D 0 ... 150	20	17.5