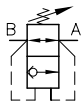
Pressure controlled shut-off valves type DSV

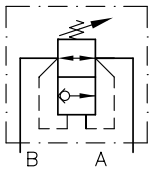
Pressure p_{max} = 600 bar
Flow Q_{max} = 60 lpm

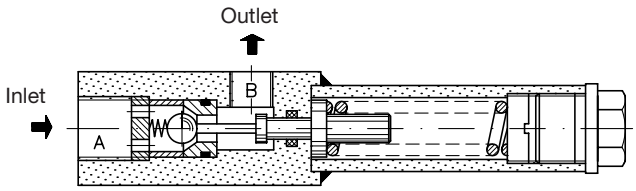
For screw-in versions to be installed in simple tapped holes, see type CDSV (D 7876)

Version for pipe connection (manually adjustable) type DSV 2-..



Version for manifold mounting type DSVP 21-1





1. General information

Shut-off valves block the flow to the consumers downstream as soon as the set pressure is achieved or exceeded in the consumer line.

They are utilized in all hydraulic applications, where a further pressure rise in the consumer circuit has to be prevented by blocking the inflow.

A ball seated valve is maintained open against the flow from inlet (port A) to the outlet (port B) by means of a piston. This piston is pre-loaded by a spring and subjected to the system pressure on the consumer side.
The ball seated valve will close, when the forces acting on the piston, induced by the spring and the system pressure, are even. Any further pressure rise will press the ball into its seat, thereby blocking the passage (zero-leakage). The valve will open again as soon as the pressure (inlet side) drops again under the set pressure (spring force).
All parts of the valve are made of steel. Valve seat, piston and spring rod are hardened. The valve shows zero-leakage.

2. Available versions, main data

Order example: **DSV 21-1 C - 80**
DSV 2-3 BR

Pressure setting in bar
without specification it will be set to 400 bar or to the resp. max. rating of the valve if this is lower

Basic type		Size			Flow Q_{max}	Coding for pressure range p_{max} adjustable from .. to.. (bar) (pressure at port B for closing) [1]				Mass (weight)
						Tool adjustable [2]				
Coding	Connetion mode	Coding	Ports ISO 228/1 (BSPP) A	Ports ISO 228/1 (BSPP) B	(lpm)	**A**	**B**	**C**	**D**	approx. (kg)
						Manually adjustable [3]				
						AR	**BR**	**CR**	**DR**	
DSV	Pipe connection	**21-1**	G 3/8	G 1/4	20	200 ... 600	60 ... 220	30 ... 100	(0) ... 40	0.7
		2-2	G 3/8	G 3/8	40	(0) ... 400	(0) ... 120	(0) ... 60	(0) ... 20	0.9
		2-3	G 1/2	G 1/2	60					1.1
DSVP	Manifold mounting	**21-1**	See unit dimensions		20	200 ... 600	60 ... 220	30 ... 100	(0) ... 40	1.1

[1] The pre-load force of the spring may be set to 0 but with no real effect. This is, because ball and piston require a certain amount of travel until the valve is blocked, which will compress the spring again. It is recommended to adjust the set pressure above approx. 25% of the permissible. pressure p_{max} because of the spring length L_0 and the friction of the seal.

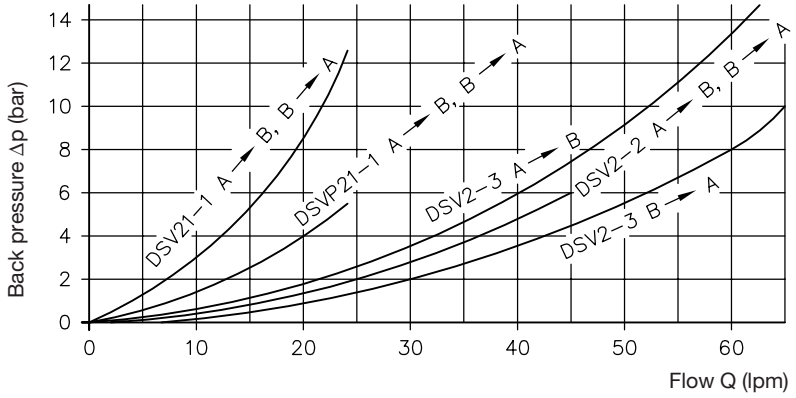
[2] The valve can be adjusted after removing the tapped plug and slackening the lock screw by means of a screw driver

[3] Type DSV 21-1 and DSVP 21-1 are also available as version AV, BV, CV, and DV with manually adjustable turnknob. For dimensions, see page 2.

3. Additional characteristic data

Nomenclature	Pressure controlled shut-off valve
Design	Seated ball valve
Installation position	Any
Direction of flow	Pipe thread conforming ISO 228/1 (BSPP) or manifold mounting Ports: A = Inlet port B = Outlet port
Direction of flow	Main direction A → B Reflow B → A
Pressure fluid	Hydraulic oil conforming DIN 51524 part 1 to 3: ISO VG 10 to 68 conforming DIN 51519. Viscosity limits: min. approx. 4, max. approx. 1500 mm²/s; opt. operation approx. 10... 500 mm²/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.

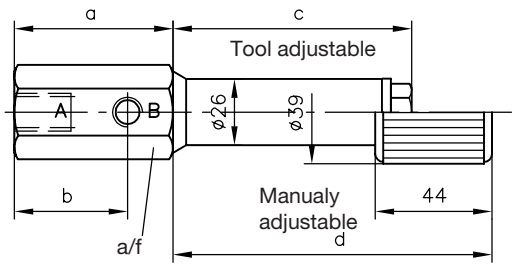
Δp-Q curves



Oil viscosity during measurement approx. 60 m²/s

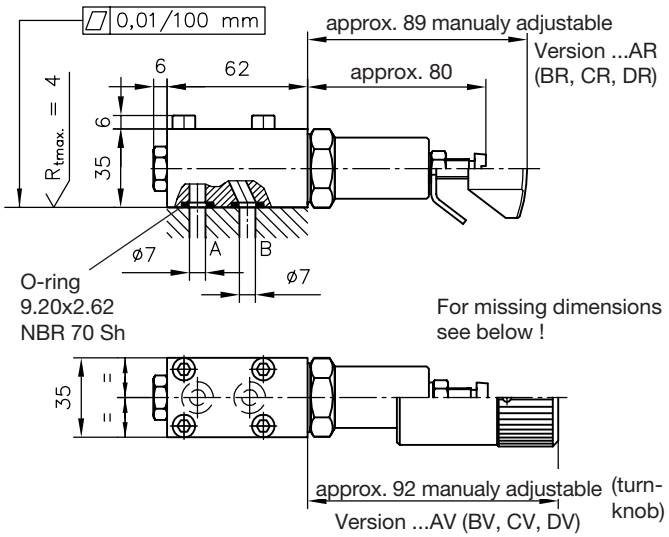
4. Unit dimensions

Version for pipe connection type DSV 2-.



All dimensions are in mm, subject to change without notice!

Version for manifold mounting type DSVP 21-1



Type	a	b	c	d_{max}	a/f	Ports ISO 228/1 (BSPP) A	B
DSV 21-1 [1]	72	39.5	80 [1]	92 [1]	36	G 3/8	G 1/4
DSV 2-2	78	52	88	115	36	G 3/8	G 3/8
DSV 2-3	78	52	88	115	46	G 1/2	G 1/2

[1] For actuation , see type DSVP 21-1

Hole pattern at the manifold (top view)