

Shut-off valve type AVT and AVM

Product documentation



Operating pressure p_{\max} : 630 bar
Flow rate Q_{\max} : 50 lpm



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Contents

1	Overview of shut-off valve type AVT and AVM.....	4
2	Available versions, main data.....	5
3	Parameters.....	6
3.1	General.....	6
4	Dimensions.....	8
5	Assembly, operation and maintenance recommendations.....	9
5.1	Intended use.....	9
5.2	Assembly information.....	9
5.3	Operating instructions.....	10
5.4	Maintenance information.....	10

Throttle and shut-off valves are a type of metering valve. With the aid of these valves a pressure drop can be established between the inlet and outlet side. In this way the velocity of cylinders in accumulator circuits and the flow rate in control circuits can be regulated or a consumer line completely shut-off (e.g. to protect a pressure gauge).

The throttle and shut-off valve type AVT produces a throttle effect by means of an annular gap. It is mounted in a T-housing. Commercially available pipe screw connections enable a direct pipe connection.

Features and benefits:

- Various configurations
- Sensitive adjustment and complete shut off possible

Intended applications:

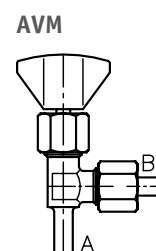
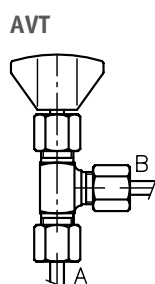
- General hydraulic systems



Shut-off valve type AVT and AVM

2 Available versions, main data

Circuit symbol:



Marking	Description	Connection pipe \varnothing_A (mm)	Pressure range p_{max} (bar)	
			Output B	Input A
AVT 6	With pipe connection at both ends	6	630	630
AVT 8		8		
AVT 10		10		
AVT 12		12		
AVM 8	With pipe bracket at one end	8	500	315
AVM 8 L			315	

3 Parameters

3.1 General

General information

Description	Shut-off valve
Design	Cone valve
Model	Pipe screw connection
Material and surface protection	Steel, seat and cone hardened and ground
Mounting	Freely suspended in pipe
Installation position	As desired
Flow direction	Recommended A → B: A - inflow side, delivery side to be shut off B - continuing pressure line, return line, element that is shut off (pressure gauge, pressure switch) tight at both ends when closed
Hydraulic fluid	Hydraulic oil: according to Part 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448 Viscosity limits: min. approx. 4, max. approx. 1500 mm ² /s opt. operation approx. 10... 500 mm ² /s. Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.
Cleanliness level	ISO 4406 <hr/> 21/18/15...19/17/13
Temperatures	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.

Pressure and flow rate

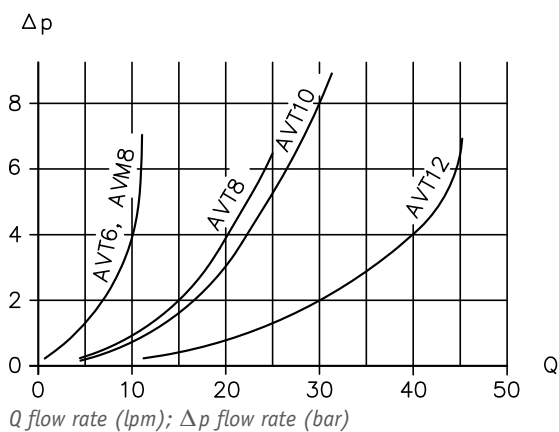
Operating pressure	p_{\max} (Chapter 2, "Available versions, main data"); corresponds to nominal pressure with 4x protection against bursting Pressure at B: Permissible system pressure with valve open Pressure at A: Permissible overload capacity at input A with valve closed
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Characteristic curves

Oil viscosity approx. 60 mm²/s

Δp -Q characteristics

Apply to a fully open valve



Weight

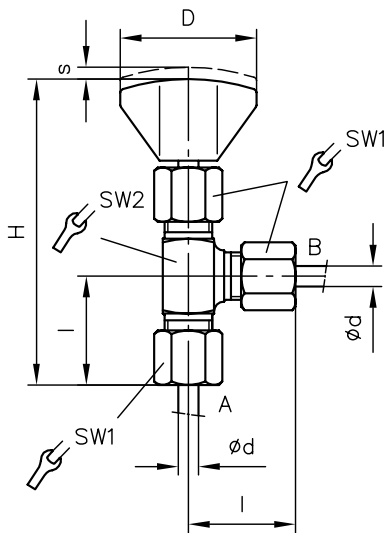
Type

AVT 6	= 140 g
AVT 8	= 175 g
AVT 10	= 230 g
AVT 12	= 315 g
AVM 8	= 110 g
AVM 8 L	= 100 g

4 Dimensions

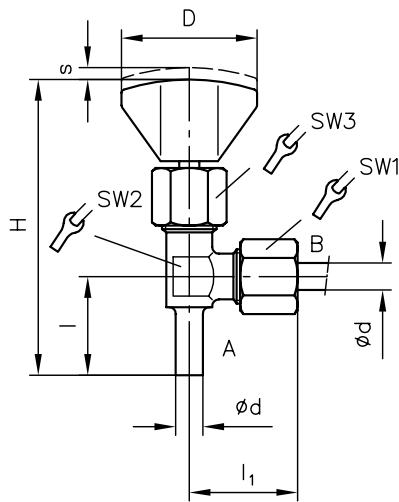
All dimensions in mm, subject to change.

AVT



s Adjustment travel

AVM



s Adjustment travel

Type	H	D	Ød	l	l ₁	s	SW1	SW2	SW3
AVT 6	91	40	6	31	--	3	17	14	--
AVT 8	94	40	8	32	--	3.5	19	17	--
AVT 10	94	40	10	34	--	4.5	22	19	--
AVT 12	114	50	12	38	--	5	24	22	--
AVM 8	91	40	8	29	32	3.5	19	14	19
AVM 8 L	92	40	8	30.5	30	3.5	17	17	19

5 Assembly, operation and maintenance recommendations

5.1 Intended use

This valve is exclusively intended for hydraulic applications (fluid engineering).

The valve demands high technical safety standards and regulations for fluid engineering.

The user must observe the safety measures and warnings in this documentation.

Essential requirements for the product to function correctly and safely:

- All information in this documentation must be observed. This applies in particular to all safety measures and warnings.
- The product must only be assembled and put into operation by qualified personnel.
- The product must only be operated within the specified technical parameters. The technical parameters are described in detail in this documentation.
- The operating and maintenance manual of the specific complete system must also always be observed.

If the product can no longer be operated safely:

1. Remove the product from operation and mark it accordingly
- ✓ It is then not permissible to continue using or operating the product

5.2 Assembly information

The product must only be installed in the complete system with standard and compliant connection components (screw fittings, hoses, pipes, etc.).

The hydraulic power pack must be shut down correctly prior to dismantling; this applies in particular to power packs with hydraulic accumulators.



Danger

Risk to life caused by sudden movement of the hydraulic drives when dismantled incorrectly!

Risk of serious injury or death.

- Depressurise the hydraulic system.
- Perform safety measures in preparation for maintenance.

5.3 Operating instructions

Product configuration and setting the pressure and flow rate

The statements and technical parameters in this documentation must be strictly observed.
The instructions for the complete technical system must also always be followed.

Note

- Read the documentation carefully before usage.
- The documentation must be accessible to the operating and maintenance staff at all times.
- Keep documentation up to date after every addition or update.



Caution

Risk of injury due to unexpected movement processes in the machine due to incorrect flow setting!

Risk of minor injury

- Be prepared for unexpected, fast movements. On changing the flow settings, consumers will move more slowly or more quickly.
- Always monitor the pressure gauge when setting or changing the flow.

Purity and filtering of the hydraulic fluid

Fine contamination can significantly impair the function of the hydraulic component. Contamination can cause irreparable damage.

Examples of fine contamination include:

- Metal chips
- Rubber particles from hoses and seals
- Dirt due to assembly and maintenance
- Mechanical debris
- Chemical ageing of the hydraulic fluid

Note

Fresh hydraulic fluid from the drum does not always have the highest degree of purity. Under some circumstances the fresh hydraulic fluid must be filtered before use.

Pay attention to the cleanliness level of the hydraulic fluid in order to maintain faultless operation.
(Also see cleanliness level in [Chapter 3, "Parameters"](#)).

5.4 Maintenance information

This product is largely maintenance-free.

Conduct a visual inspection at regular intervals, but at least once per year, to check if the hydraulic connections are damaged. If external leakages are found, shut down and repair the system.

Clean the device surface of dust deposits and dirt at regular intervals, but at least once per year.

Further information

Additional versions

- Throttle valve and shut-off valve type AV: D 4583
- Throttle valve and shut-off valve CAV: D 7711
- Pressure-dependent shut-off valve type DSV: D 3990
- Pressure-dependent shut-off valve type CDSV: D 7876

Application

- Fitting type X 84: D 7077