Type AK

High pressure control valve with axial throttle body

› Type AK, front view

› Type AK, sectional view

Product features

- Cavitation-free, low-noise, multi-stage throttle body in a cascade design with axial flow direction under high pressure
- Identical procedural characteristic or according to valve sizing
- Screwed-on housing cover
- Designed for extreme high pressure control and to avoid cavitation damage and to be suitable for a wide range of applications
- The multi stage throttle body is designed as a cascade with an axial flow direction permits an extremely wide application range of up to 50:1 at constant high pressure loss without cavitation problems

Applications

High-pressure control, high-pressure injection for power plant and process technology applications

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Technical data

Nominal diameter	DN 15–100 / NPS ½-4
Pressure class	PN 16–640 / Class 150–2500
Temperature (max.)	280 °C / 536 °F
Housing material	1.0460 / A105 1.5415 1.7335 / A182F12Cl.2 1.7383 / A182F22Cl.3 1.4903 / A182F91 1.6368 1.4404 / A182F316L
Housing type	Forged
Medium	Water
Flanges	EN 1092-1, ASME B16.5, ISO 7005, JIS, JPI, welding ends on request
Designs	Angle type, globe type
Actuators	Electric, pneumatic, hydraulic
Number of stages (max.)	6
Number of controlled stages (max.)	6
Operating range (max.)	1:50

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Function

The AK series pressure reducing control valves enable reliable controllability even with high pressure differences and with the necessary broad rangeability. The multi-stage design of the throttle body makes possible the reduction of even very high pressures with low wear.

The AK series is characterised by the special design of the valve plug. These are designed with milled chambers on the cylindrical body that are specially tailored to the respective application. This means that even very small Kv values can be reliably controlled. The special arrangement of the chambers on the throttle unit also results in the flow being deflected, which reduces speed and further minimizes resulting wear. This ensures that the valve operates reliably over a long period of time.

Optional perforated throttle plates can be used to reduce noise and homogenise flow ensuring that the control valve operates quietly under all conditions.

The parts of the throttle body are perfectly matched to each other so that best sealing properties are guaranteed even without the use of additional elastomers.

On moving away from the closed position the chambers create an opening for the process medium. As the stroke increases, more medium can flow through the chambers axially over the valve plug. Stringing together several chambers one behind the other allows the pressure to be brought to the required level in several stages.

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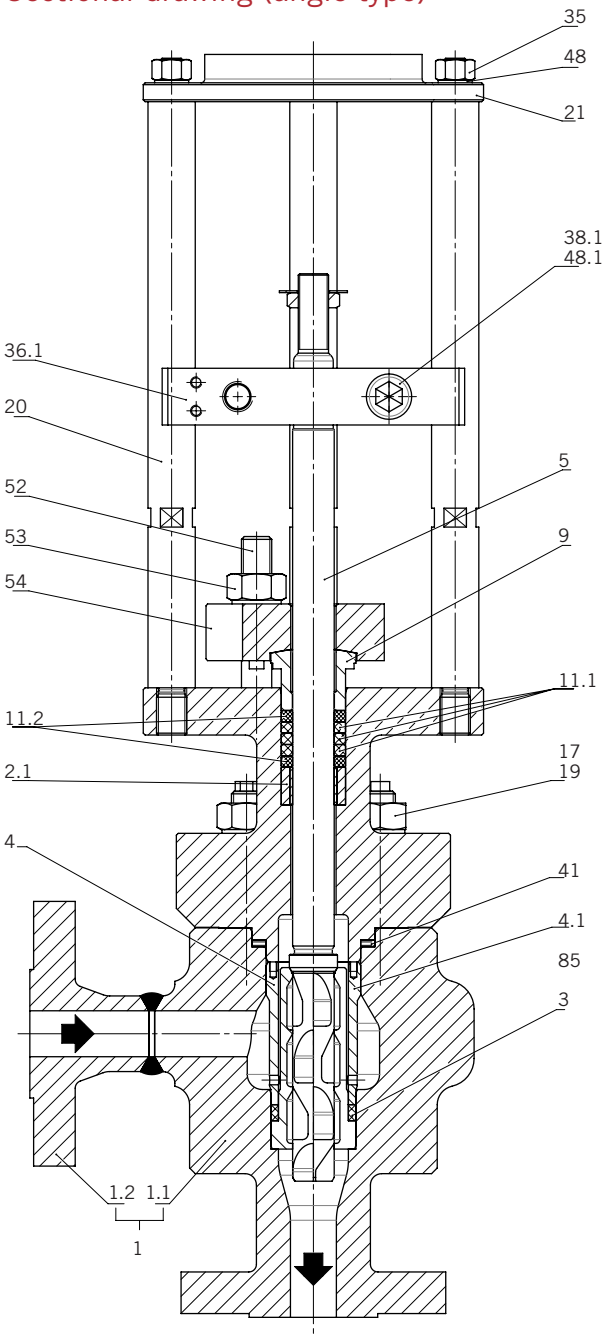
Sectional drawing (angle type)



Dimensions: on request

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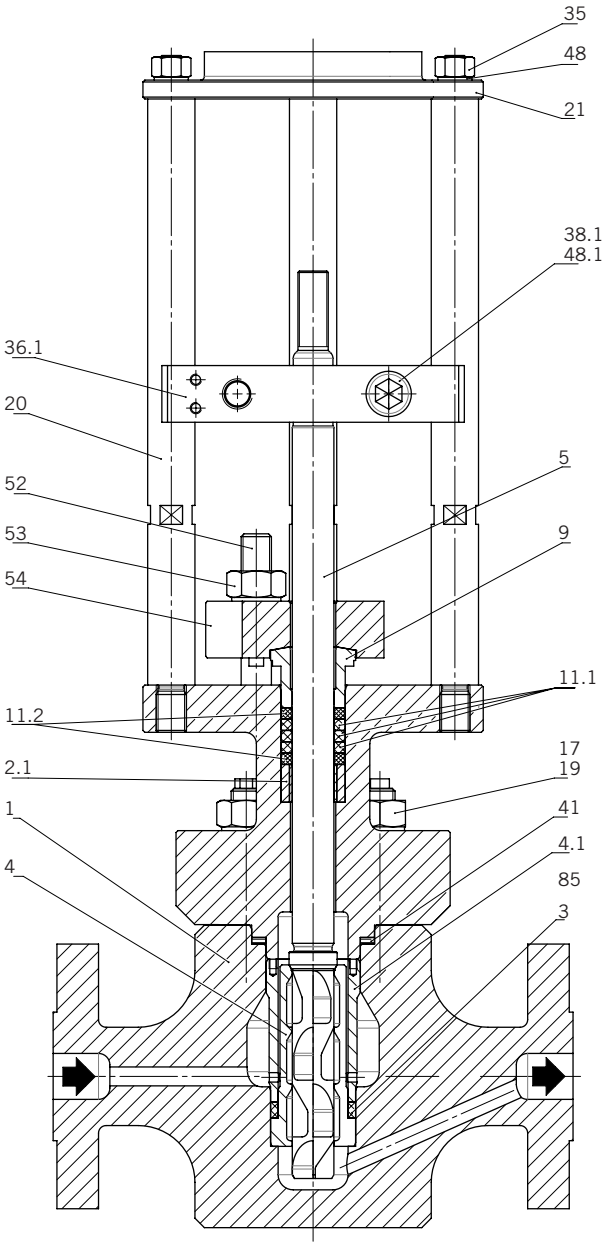
Sectional drawing (globe type)



Dimensions: on request

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Parts list (globe type)

Pos.	Item	Material
1	Housing	*
2	Cap	*
2.1	Bushing	1.4404
3	Profile ring	Grafit
4	Cascade bushing	1.4122
4.1	Shuck	1.4122
5	Valve spindle	1.4122
9	Packing follower	1.4122
11.1	Packing	PTFE
11.2	Packing	PTFE/Grafit
17	Hexagon nut	1.7218
19	Stud bolt	1.7709
20	Spacer bolt	1.1181
21	Flange	1.0460/A105
35	Hexagon nut	8
36.1	Bridge	1.4571
38.1	Socket head screw	8.8
41	Spiral gasket	1.4541/Grafit
48	Lock washer	1.1211
48.1	Lock washer	1.1211
52	Stud bolt	**
53	Gland plate	*
54	Hexagon nut	**

* See table “Technical data”

** Depending on customer requirements

Parts list as an example of the standard configuation