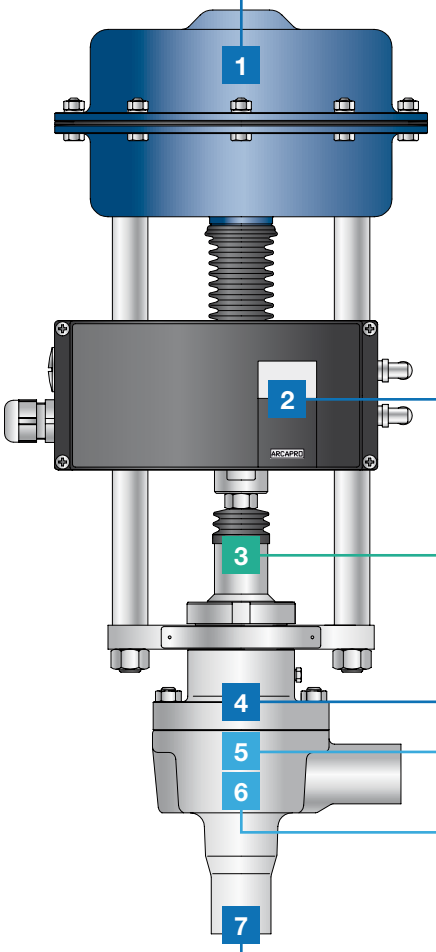
von Rohr
Armaturen AG

Series 9

Every component precisely matched



Powerful valve actuator

Most commonly used is the pneumatic multi-spring actuator series MA as shown here. It is robust, ex-proof, features low actuating times, provides a constant seating force and is cost effective. Different sizes, strokes and materials can be manufactured according to your requirements. von Rohr control valves are optional also available with electric actuators. For more details, see the von Rohr brochures MA actuators or SHE actuators.

Multi-functional positioner

The ARCAPRO® digital positioner is a multi-functional interface with the controller or process control system and operates as standard with 4 to 20 mA. HART, Profibus (PA), and Foundation Fieldbus (FF) communication are used to establish a digital interface with bidirectional data exchange (including status messages). It can be parameterized on site or via the communications system. An open mechanical interface concept that our mother company ARCA helped elaborate complies with VDI/VDE 3847 and is used for mounting and mechanically connecting the positioner to the actuator. For more details about this see the von Rohr brochure ARCAPRO® positioner.

Reliable stem seal

Depending on the process fluid, pressure and temperature, we can advise you on the most suitable stem seal – from the o-ring to the hermetically-sealed bellows – so that your system remains completely leak proof. Stem surface and design are finely matched so that neither friction, corrosion nor emission limit values will cause you any issues.

Removable bonnet

The bolted bonnet enables an easy dismounting of the wetted internal parts. The stainless steel bonnet and the stainless steel stem ensure longevity of the critical parts. This design allows the conversion to bellows in a few steps.

Diaphragm

The diaphragm hermetically seals the valve bonnet.

Robust, high-precision trims

The von Rohr control valves are equipped with inner parts specially designed for the prevailing flow conditions in your plant. The control is provided by an exchangeable stainless steel parabolic plug.

Body

The one-piece body is made of electro polished stainless steel has a low ferrite content. The minimum dead-space corner construction is also capable of flow-optimized and CIP (Cleaning in Place) and SIP (Sterilization in Place). As standard, the sterile valve is available with welding ends. Other connections such as clamp, flange or milk pipe connection are possible.

Valve design

In order to fulfill its function properly within an installation, the valve has to be designed to the particular operating conditions such as flow rate, operating pressure difference, tightness and noise requirements. This is realised thanks to the numerous combinations that the modular design allows.

Valve stem seals

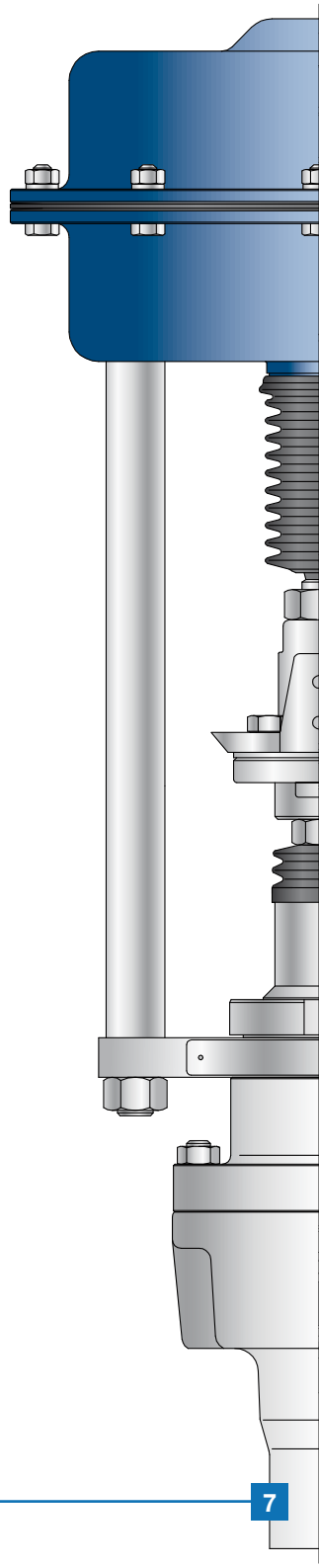
The type of valve stem seal depends on the fluid as well as the operating conditions such as temperature and pressure. It also, however, has decisive influence on the operational safety, the maintenance and, last not least, on the availability of the valve.

Valve trims

A number of different valve trims are available for the series 9 in order to fulfill the specific valve requirements in terms of kvs-value, valve characteristic, Z-value, permissible leakage rate as well as allowed noise level.

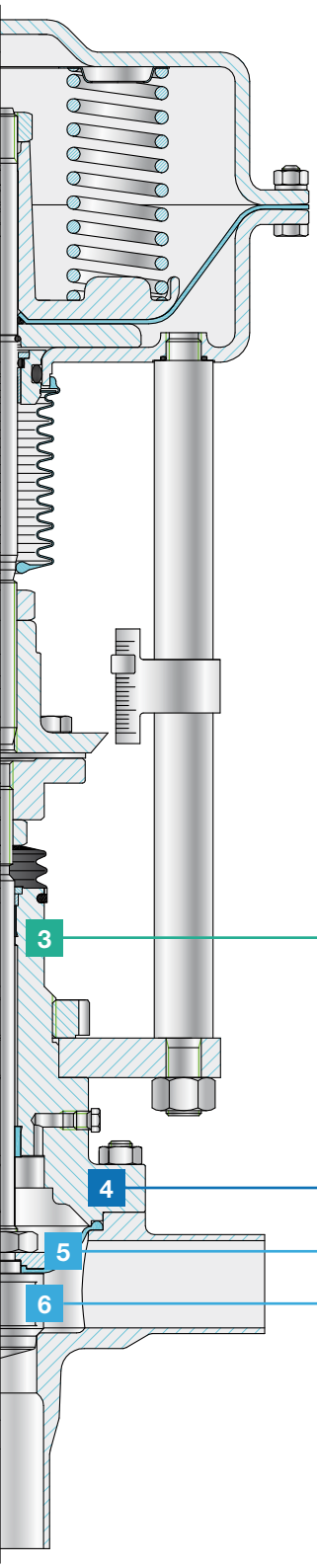
Special trim designs

In order to avoid cavitation related damages and noise, multistage plug variants have been proven for liquid and compressible media. This increases the service life and, in turn, the cost-effectiveness of control valves which are designed for high differential pressures and subject to harsh conditions. The noise emission levels are effectively reduced.



Body

- Stainless steel 1.4435 electropolished
- Optionally, other materials available
- Minimum dead-space construction
- As standard with welding ends, clamp, flange or milk pipe connections are possible



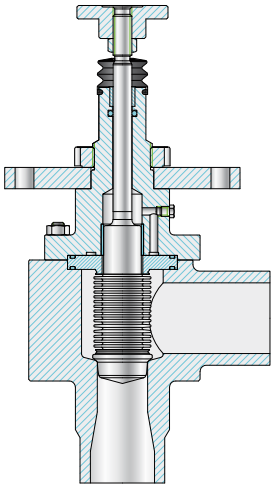
Reliable stem seal

- No stuffing box as a bacteria lift

Removable bonnet

- Allows easy and quick maintenance of the inner parts
- Optionally available with monitoring connection

Bellows seal version



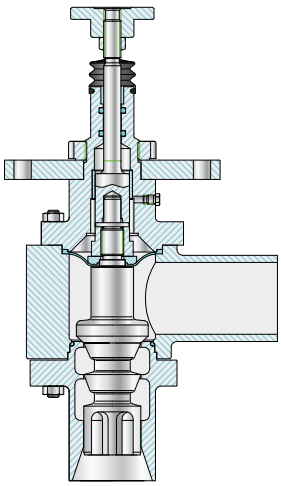
Diaphragm

- FDA compliant
- USP Class VI
- Exchangeable
- Good cleaning and sterilization properties through overtstroke

Robust, high-precision trims

- Basic characteristic equal percentage, linear or On/Off available
- Leakage rate ≤ 0.01% of kvs-value

Multiple-stage plug variant



Series 9

Mediumcontrolled version

Features	Advantages
Body designed to meet flow path criteria	● When draining the system, the valve empties ● Well sterilizable with steam (3 bar, 135° C) through overstroke, and when the valve is closed
Minimum dead-space construction	● Minimized cleaning cycle ● Suitable for CIP and SIP
Diaphragm seal **Bellows seal**	● No stuffing box as a bacteria lift ● Leakage from inside to outside and from outside to inside ● Minimum dead-space, FDA compliant
As standard with welding ends	● Wide range of choice
Body and the inner part made of W 1.4435 (316L)	● Ferrite content ≤ 0.5% ● By electrolytic polishing Ra ≤ 0.8 µm (optional ≤ 0.6 µm) ● Forged
Emergency seal with monitoring connection	● Leakage safety and signalling option in case of diaphragm breaking
High level of control accuracy	● By a high rangeability, the process is continuously controlled and doesn't need to be clocked On/Off
Optionally available with manual, pneumatic or electric actuator	● Wide range of choice
Pillars comply with NAMUR	● Simple mounting of positioners, limit switches etc.
Integrated pipeless mounting of position regulators possible	● High availability ● Retrofitting possible

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Series 9

General data

Series	9
Nominal bore DN / NPS	8 to 50 / ¼“ to 2“
Nominal pressure PN / ANSI	10 / class 100
Characteristics	equal percentage, linear, On/Off
Rangeability	50:1 (kvs-value > 4 to ≤ 40), 30:1 (kvs-value ≤ 4)
Plug guide	stem guided, optional: seat guided
Leakage rate	metallic sealing: IEC 50534-4 leakage IV (0.01% of kvs-value); further on request possible
Connection types	welding ends, clamp, flange or milk pipe connections
Diaphragm	compliant with FDA, USP Class VI (50° C)
Bellows seal bonnet	made from 1.4571
Range of application	maximum operating temperature of 135° C

Materials

Body material	**EN**	**for temperatures**	**ASTM**	**for temperatures**
	1.4435 X2CrNiMo18-14-3	– 60 to 500° C	–	–
	Hastelloy and other materials possible on request			
Bonnet material	according to body material			

Trim materials

Var.	**Parabolic plug**	**Seat**	**Sealing**	**Max. permissible medium temperatur °C**
1	1.4435	acc. to body	metallic	acc. to diaphragm
Hastelloy and other materials possible on request				

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