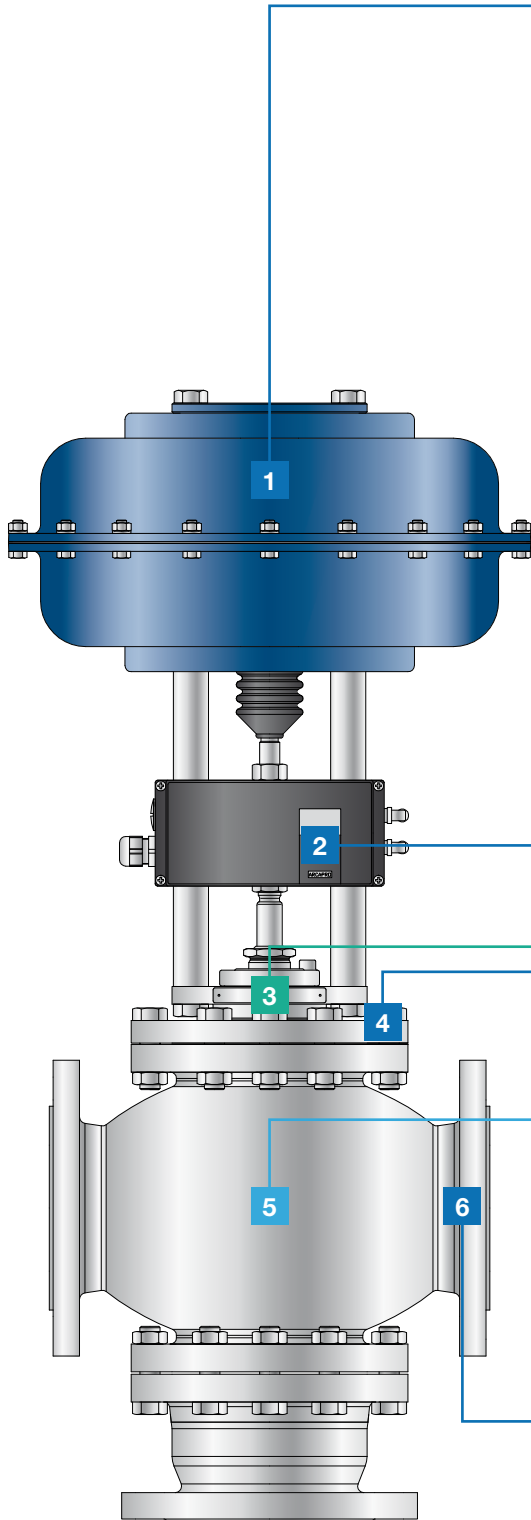


## Series 200



# 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 stuffing box to the hermetically-tight bellows sealing – so that your system remains completely leak proof. Stem surface, packing material and design are finely matched so that neither friction, corrosion nor emission limit values will cause you any issues.

## Variable bonnet

The standard construction allows with a few working steps the modification to bellows or extension 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 replaceable seat and plug allow an easy exchange-service of the inner parts and simple modification to flow mixing or flow dividing. So, seat and plug can be optimally adapted to changes in the operating data. The metal or compressible seal of the plug ensures with the metallic seat long-life seat tightness.

## Modular body

The von Rohr three-way valve is designed so that it can be used, depending on the application, as dividing or mixing valve. At the dividing function the medium is divided into two separate streams. With a mixing valve on the other hand, two to be blended media are brought together and leave the three-way valve in the desired new state. The lower flanged end is variable and can be manufactured to a desired extent.

# 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

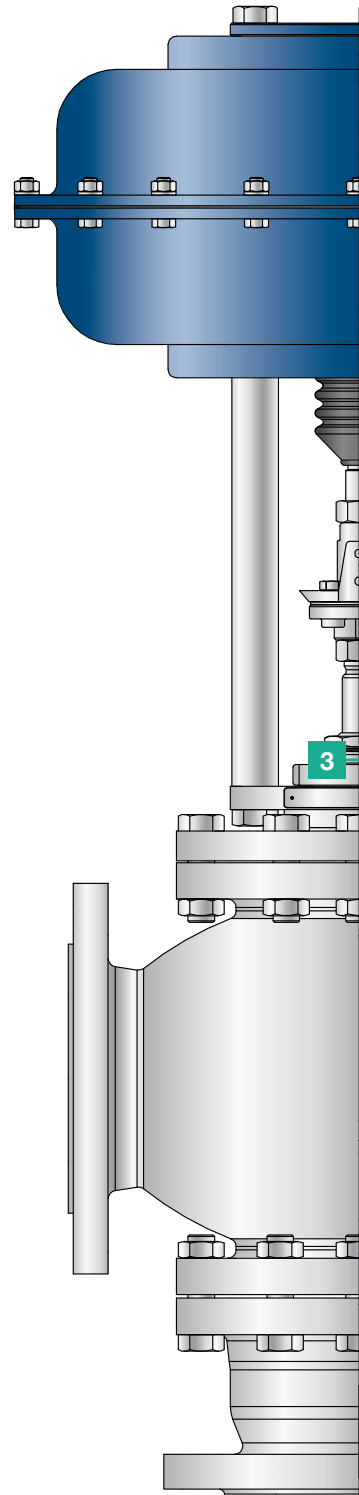
The type of valve stem seal depends on the fluid as well as the operating conditions such as temperature and pressure. It also, however, has decisive influence on the operational safety, the maintenance and, last not least, on the availability of the valve.

## Valve trims

A number of different valve trims are available for series 200 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.

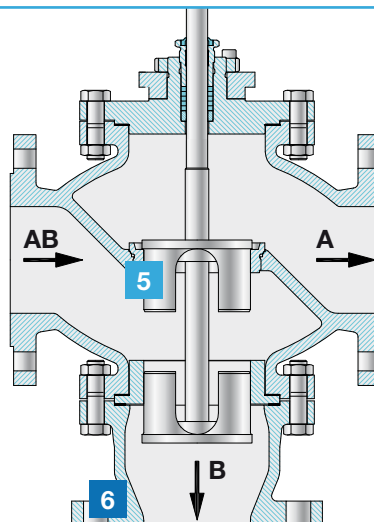
## Special trim designs

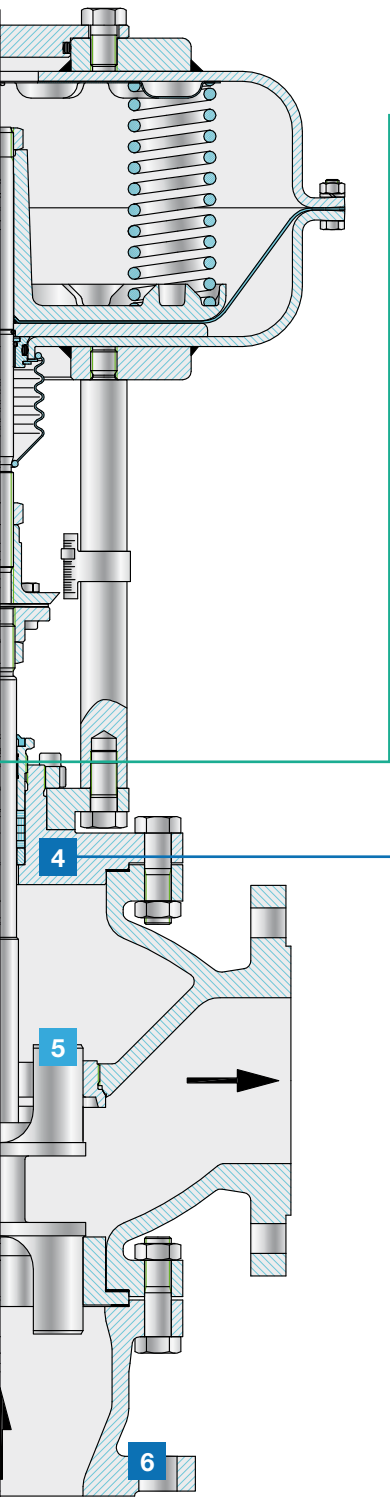
Plugs with special designs enable the control of high and low differential pressures at the same time. In addition the perforated plug ensures the lower guiding.



### Flow dividing

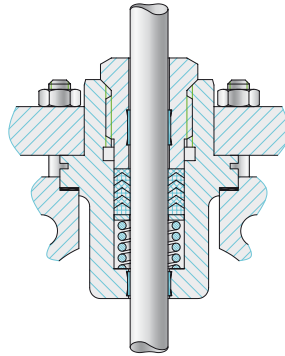
The medium enters laterally (AB) into the valve body and is there divided into two (A + B) separate streams. The two opposing plugs have the same seat diameter and are thus, from static point of view, pressure balanced. The von Rohr design always attaches importance to a double guiding in order to master even the most demanding applications. The actuator therefore has only to be dimensioned for the forces resulting from the pressure difference, the weight and friction of the packing.





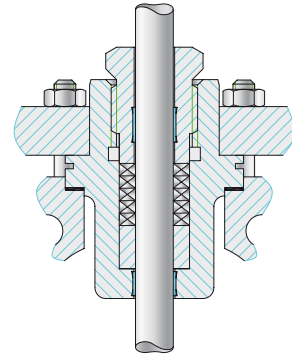
### Maintenance-free stuffing box

- Standard version with PTFE V-ring
- Temperature range  $-196^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$



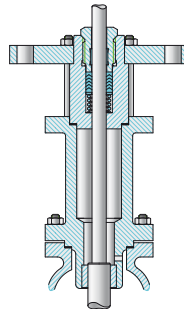
### Adjustable stuffing box

- Standard version with graphite packing
- Temperature range  $-196^{\circ}\text{C}$  to  $+530^{\circ}\text{C}$



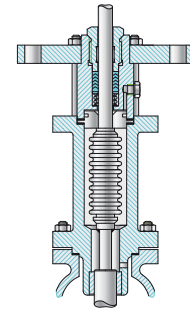
### Extension bonnet

- Stuffing box maintenance-free or adjustable
- Temperature range  $-196^{\circ}\text{C}$  to  $+530^{\circ}\text{C}$



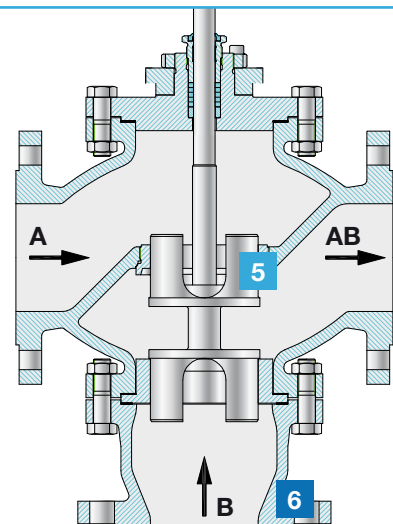
### Bellows seal bonnet

- Stuffing box maintenance-free or adjustable
- Temperature range  $-196^{\circ}\text{C}$  to  $+530^{\circ}\text{C}$
- Bellows seal gives a hermetic sealing
- The stainless steel bellows is welded on the bottom with the valve stem, which is locked against rotation, and on the top with the bellows plate so that it is hermetically tight



### Flow mixing

The medium enters laterally (A) and from below around the corner (B) into the valve body and is mixed before it leaves sideways (AB) again. This is a typical application for temperature control. The von Rohr three-way control valve construction kit covers temperatures up to  $+530^{\circ}\text{C}$  and at pressures up to 160 bar.



# Series 200

## Standard version



Features	Advantages
<b>Body designed to meet flow path criteria</b>	<ul style="list-style-type: none"> <li>● Less noise</li> <li>● Less wear</li> <li>● Less maintenance</li> </ul>
<b>Modular Design</b>	<ul style="list-style-type: none"> <li>● Many different combinations of valves and actuators possible</li> <li>● Plug/seat combinations               <ul style="list-style-type: none"> <li>– Metallic</li> <li>– Soft</li> <li>– Stellite</li> <li>– Grinded-in</li> </ul> </li> <li>● Stem/seal combinations               <ul style="list-style-type: none"> <li>– Maintenance-free PTFE glads</li> <li>– Adjustable stuffing box</li> <li>– Complying with TA-air according to VDI2441</li> </ul> </li> </ul>
<b>Highly accurate stem guiding</b>	<ul style="list-style-type: none"> <li>● Precise plug guiding</li> <li>● Guided stuffing box</li> <li>● Minimum wear of packing</li> </ul>
<b>Compact and robust design</b>	<ul style="list-style-type: none"> <li>● Saves installation space</li> </ul>
<b>Easy interchangeability of components</b>	<ul style="list-style-type: none"> <li>● Low operating expenses</li> <li>● Conversion from dividing to mixing possible</li> </ul>
<b>Stainless steel internal parts</b>	<ul style="list-style-type: none"> <li>● No corrosion</li> </ul>
<b>Optionally available with manual, pneumatic or electric actuator</b>	<ul style="list-style-type: none"> <li>● Wide range of choice</li> </ul>
<b>Pillars comply with NAMUR</b>	<ul style="list-style-type: none"> <li>● Simple mounting of positioners, limit switches etc.</li> </ul>
<b>Integrated pipeless mounting of position regulators possible</b>	<ul style="list-style-type: none"> <li>● High availability</li> <li>● Retrofitting possible</li> </ul>
<b>Interchangeable trim</b>	<ul style="list-style-type: none"> <li>● Changes in kv-value possible</li> </ul>

## Series 200

General data	
Series	200 / 220
Nominal bore DN	25 to 600
Nominal pressure PN	16 to 160 (250)
Characteristics	linear or On/Off
Rangeability	50:1
Function	dividing or mixing
Plug guide	stem and seat guided
Leakage rate	metallic sealing: IEC 50534-4 leakage rate class IV (0.01% of kvs-value); soft sealing: IEC 50534-4 leakage rate class VI, others on request
Flanges	according to DIN EN 1092-1, form A to H
Cooling fins/bellows	up to +530° C
Bellows	seamless, double-walled made of material 1.4571 or equivalent optional Hastelloy and other materials optionally available
Low temperature design	up to -196° C

Materials					
Body material	EN	for temperatures	ASTM	for temperatures	
	1.0619 GP240GH	- 10 to 400° C	A216WCB	- 29 to 400° C	
	1.4581 GX5CrNiMoNb 19-11-2	- 10 to 500° C	-	-	
	1.7357 G17CrMo5-5	- 10 to 530° C	A217WC6	- 29 to 530° C	
	2.1050.01 G-CuSn 10	-196 to 300° C	-	-	
Bonnet material	according to body material				
Trim materials					
Var.	Parabolic plug	On/Off plug	Seat	Sealing	Max. permissible medium temperatur ° C
1	1.4021	-	acc. to plug	metallic	acc. to stem sealing
2	1.4571	-	acc. to plug	metallic	acc. to stem sealing
3	1.4922	-	acc. to plug	metallic	acc. to stem sealing
4	2.0966	-	acc. to plug	metallic	acc. to stem sealing
5	-	1.4021	acc. to plug	soft	- 45 to 120° C
Hastelloy and other materials possible on request					