

Series 6



Every component precisely matched

Powerful valve actuator

Most commonly used is the pneumatic multi-spring actuator series 812 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 valves are optional also available with electric 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 top flange

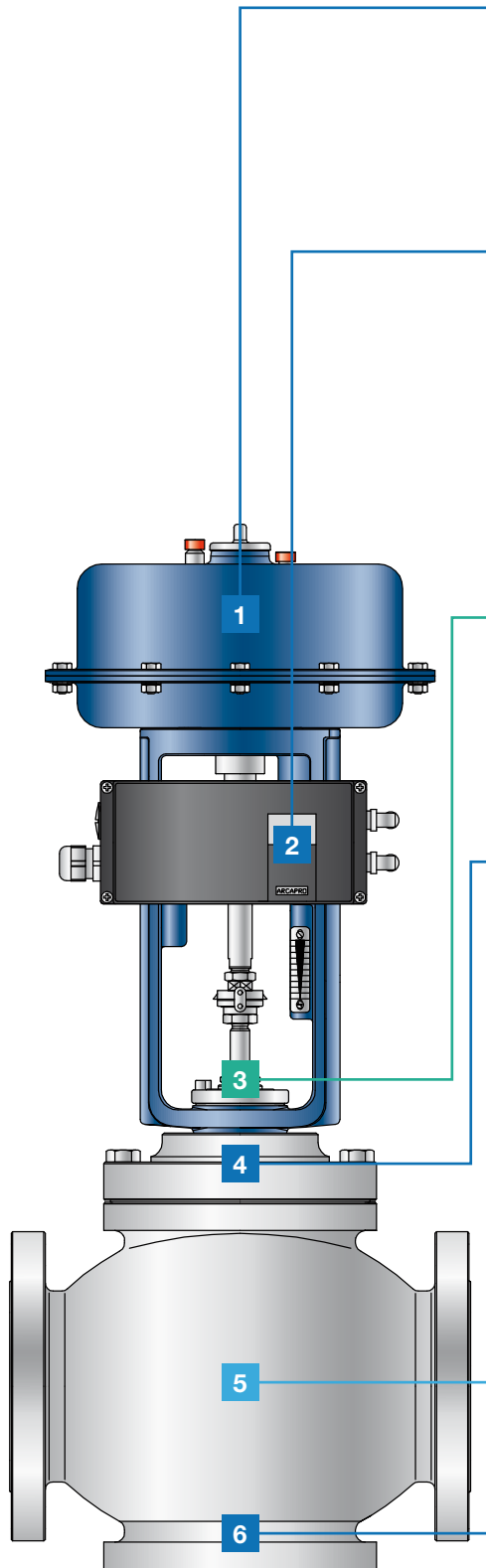
The bolted top flange allows an easy removal of the internal parts. The stainless steel stem ensures a long service life at a critical part of the valve. The standard design allows the conversion to bellows or cooling fins in just a few steps.

Robust precision inner parts and pressure balance

The von Rohr control valves are equipped with inner parts specially designed for the prevailing flow conditions in your plant. The clamped seat allows an easy exchange-service of the inner parts. So, seat and plug can be optimally adapted to changes in the operating data. The metallic or soft seal of the seat along with the metallic plug ensures a lasting internal tightness. Pressure balanced trims are optimized for the lowest possible positioning forces of the actuator. The surface of the plug facing away from the valve seat is taken out of the flow by a plug relief, thus, exposed to the same pressure as on the valve seat side, and thereby pressure balanced. The plug relief is, depending on the process conditions, sealed with metallic piston- or elastomer rings.

Body

The one-piece body is available in cast steel, heat resisting cast steel or stainless steel. The nominal pressure rating goes from PN 10 to PN 250 and reaches temperatures up to 500° C.



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

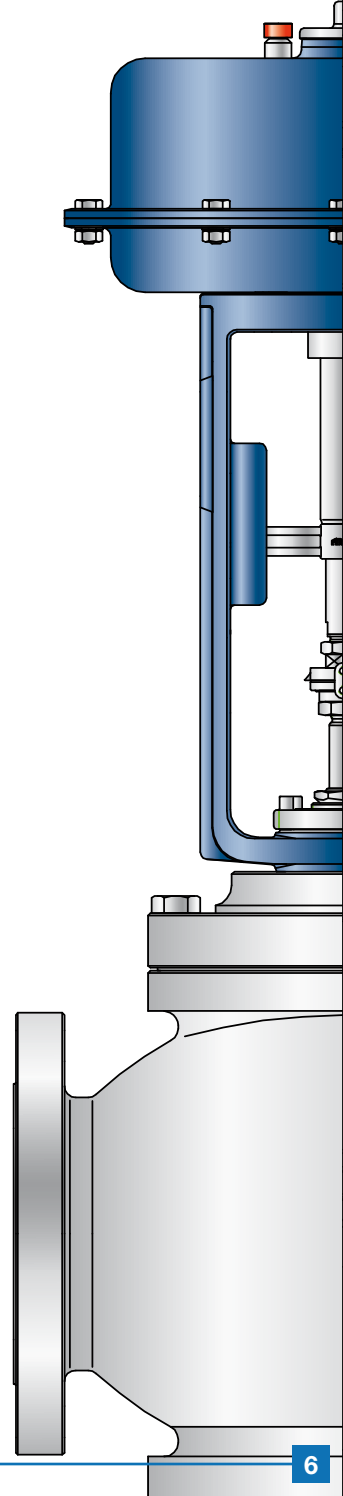
A number of different valve trims are available for series 6 in order to fulfill the specific valve requirements in terms of kvs-value, valve characteristic, Z-value, permissible leakage rate as well as allowed noise level.

Special trim designs

For liquid and compressible media, perforated plugs and cages have proved to be the ideal solution for preventing noise and cavitation damage. Cavitation downstream of the perforation caused by gas bubbles imploding occurs in the center of the perforated plug without damaging the trim or housing. 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. This also results in lower noise emissions, which can be reduced even further by means of a low noise perforated cage.

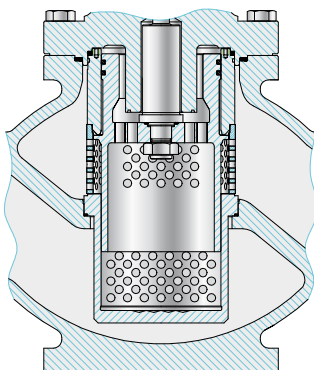
Body

- Cast steel, heat resisting cast steel or stainless steel
- As standard available with flanges, weld ends or welded ends with extension
- Nominal pressure ratings from PN 10 to PN 250 available
- Application range up to 500° C



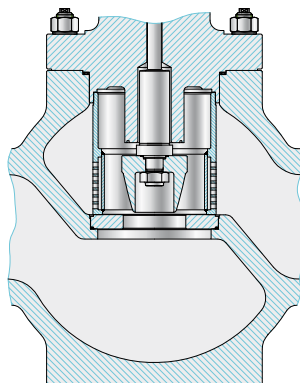
Three stage perforated plug with pressure balance

- Valve characteristic equal percentage or linear
- Leakage rate 0.01% of kvs-value
- Pressure balance with piston- or elastomer rings



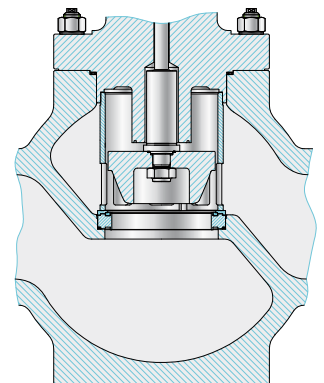
Metallic sealing parabolic plug

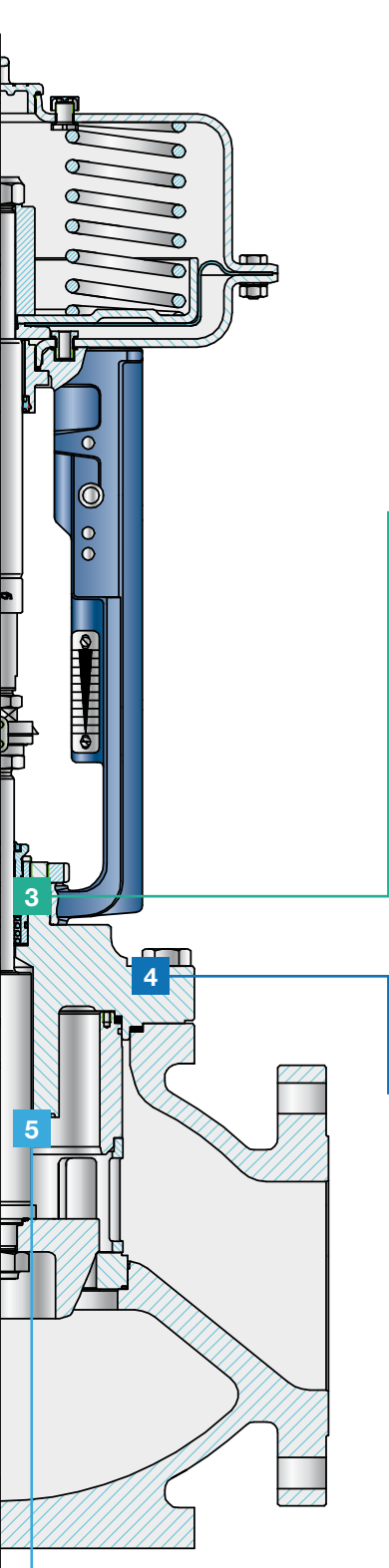
- Valve characteristic equal percentage or linear
- Leakage rate 0.01% of kvs-value



Soft sealing (seat) parabolic plug

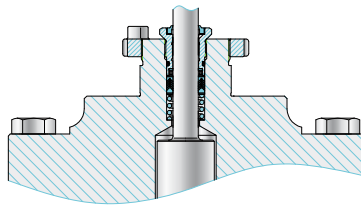
- Valve characteristic equal percentage or linear
- Leakage rate bubble-tight
- Temperature range -196° C to +200° C





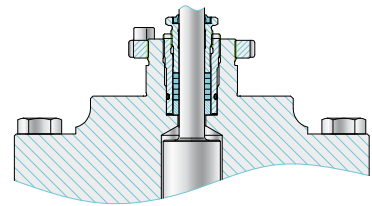
Maintenance-free PTFE V-rings

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



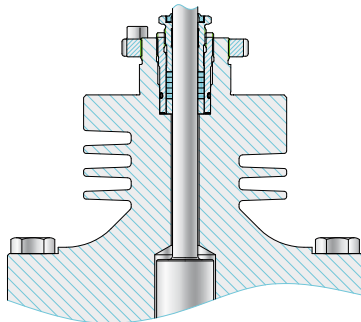
Adjustable stuffing box

- Standard version with graphite packing
- Temperature range -200°C to $+450^{\circ}\text{C}$



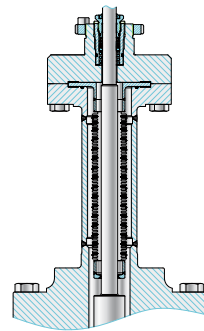
Cooling fins

- Adjustable stuffing box or maintenance-free
- Temperature range -200°C to $+500^{\circ}\text{C}$

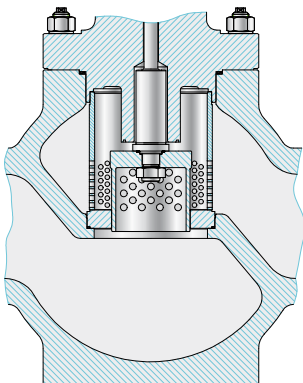


Bellows seal bonnet

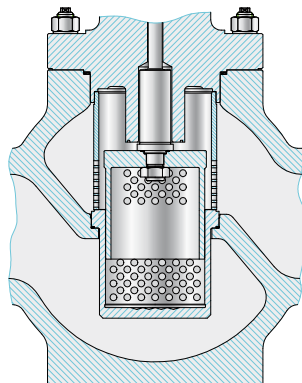
- Adjustable stuffing box or maintenance-free
- Temperature range -200°C to $+450^{\circ}\text{C}$
- Bellows ensures an absolute external tightness
- Bellows made of stainless steel, welded at both ends and helium tested



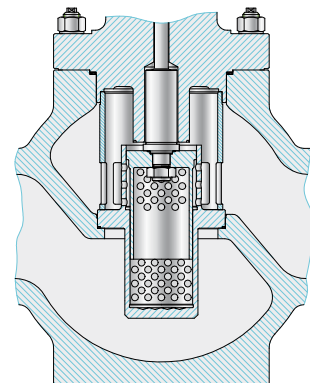
Single stage perforated plug



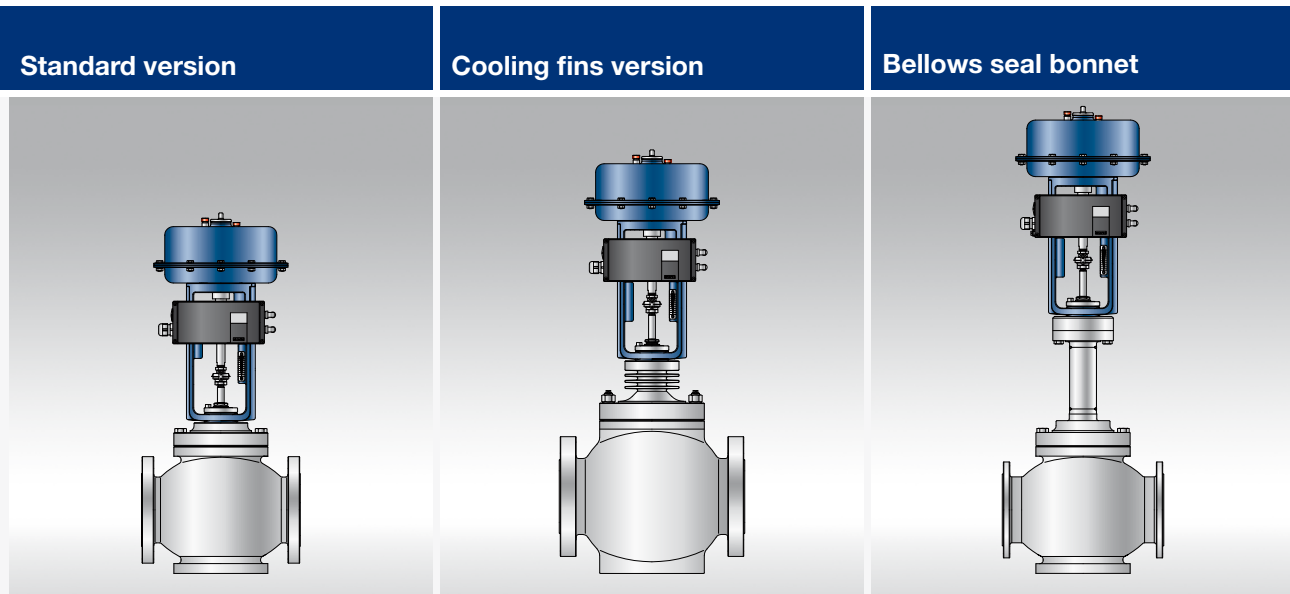
Two stage perforated plug



Three stage perforated plug



Series 6



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

Series 6

General data	
Series	6
Nominal bore DN	6N 150 to 600 / 6H 15 to 250
Nominal pressure PN	6N 10 to 40 / 6H 63 to 250
Characteristics	equal percentage or linear optional: linear modified
Rangeability	perforated plug 25:1 / parabolic plug 50:1
Plug guide	stem guided optional: seat guided (perforated plug)
Leakage rate	metallic sealing: IEC 50534-4 leakage rate IV (0.01% of kvs-value); soft sealing: IEC 50534-4 leakage rate class VI, further on request
Flanges	according to DIN EN 1092-1, form A to H, ANSI, welded ends with extension
Cooling fins	up to +500° C
Bellows	seamless, double-walled made of material 1.4571 or of equal value Hastelloy and other materials optionally available
Heating jacket	internal thread and flange connections available on request
Perforated plug	single- (L1), two- (L2), or three stage (L3) perforated plugs
Pressure balance	piston- or elastomer rings

Materials					
Body material	EN	for temperatures	ASTM	for temperatures	
	1.0619 GP240GH	-10 to 400° C	A216WCB	-29 to 400° C	
	1.4408 G-X5CrNiMo 19-11-2	-196 to 400° C	A351CF8M	-196 to 400° C	
	1.4581 GX5CrNiMoNb 19-11-2	-10 to 500° C	-	-	
	1.7357 G17CrMo5-5	-10 to 500° C	A217WC6	-29 to 500° C	
Bonnet material	acc. to body material				
Trim materials					
Var	Contoured plug	Perforated plug (L1 to L3)	Seat	Seat seal	Max. permissible medium temperature ° C
1	1.4021	-	1.4021	metallic	acc. stem sealing
2	1.4021	-	1.4021	soft	-196 to 200° C
3	1.4571	-	1.4571	metallic	acc. stem sealing
4	-	1.4122 nitr.	1.4021	metallic	acc. stem sealing
5	-	1.4922 nitr.	1.4922	metallic	acc. stem sealing
Other materials available on request					