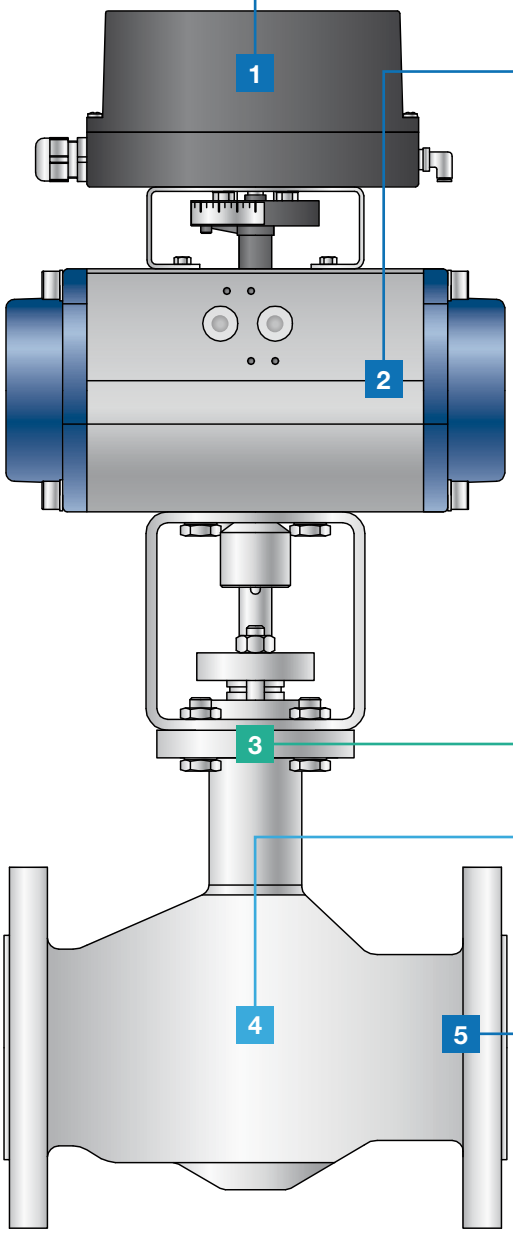
von Rohr
Armaturen AG

Series DKV

Every component precisely matched



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 3845 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.

Powerful piston actuator

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

Reliable stem seal

Towards the outside, the stem is sealed by a double gland packing. The stem surfaces, packing material, and design are finely matched so that neither friction, high torques, corrosion, nor emission limit values will cause you any issues. The valve design is also TA-Luft (Clean Air Act) compliant.

Robust, high-precision trims

The von Rohr rotary plug valves are equipped with inner parts specially designed for the prevailing flow conditions in your plant. The replaceable 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 sealing of the seat, along with the metallic plug, ensures a lasting internal tightness.

Body

The rotary plug body is available in cast steel or stainless steel. The simple design as well as the short overall length of the rotary plug valves results in less weight and thus simplifies installation into the pipe. The rotary plug valves are available in flanged- or sandwich version. Optionally, the body flanges can be supplied with groove or female face.

Valve application and design

Application

The rotary plug valve has been designed in terms of universal use. The good properties, each of control valves, butterfly valves and ball valves have been united in this rotary plug valve. None of the mentioned valves achieves the overall properties of the rotary plug valve. Particularly noteworthy is the large flow rate at maximum seat width. Furthermore there is an option to install smaller seat widths. The high rangeability of this series solves even the most difficult control tasks exceptionally well.

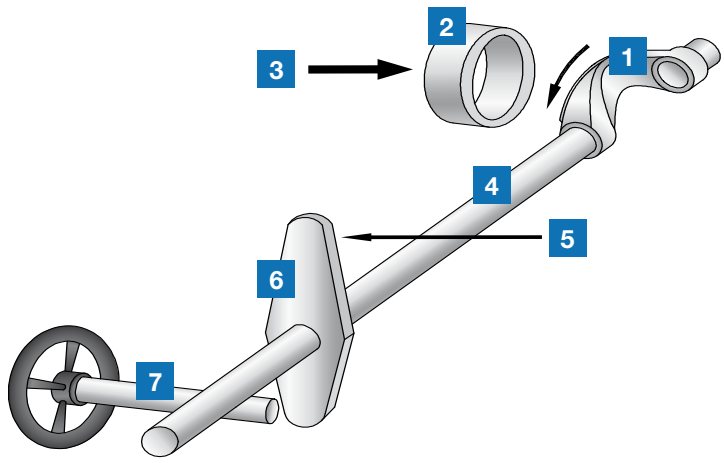
Rotary plug design

The valves are available for nominal pressure ranging from PN 16 to PN 63 and ANSI 150 to ANSI 400. Suitable casting materials allow the use of a variety of media and temperatures from – 40° C to +250° C.

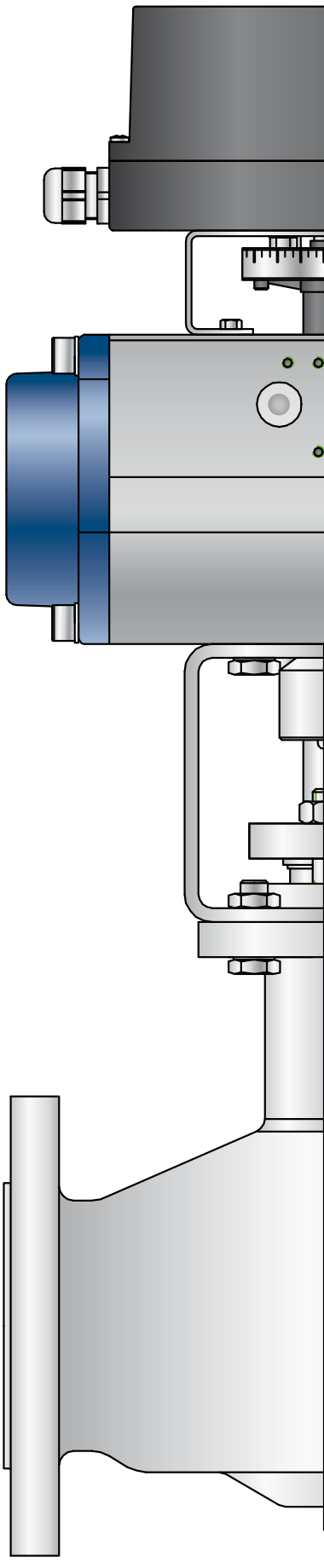
Operating principle

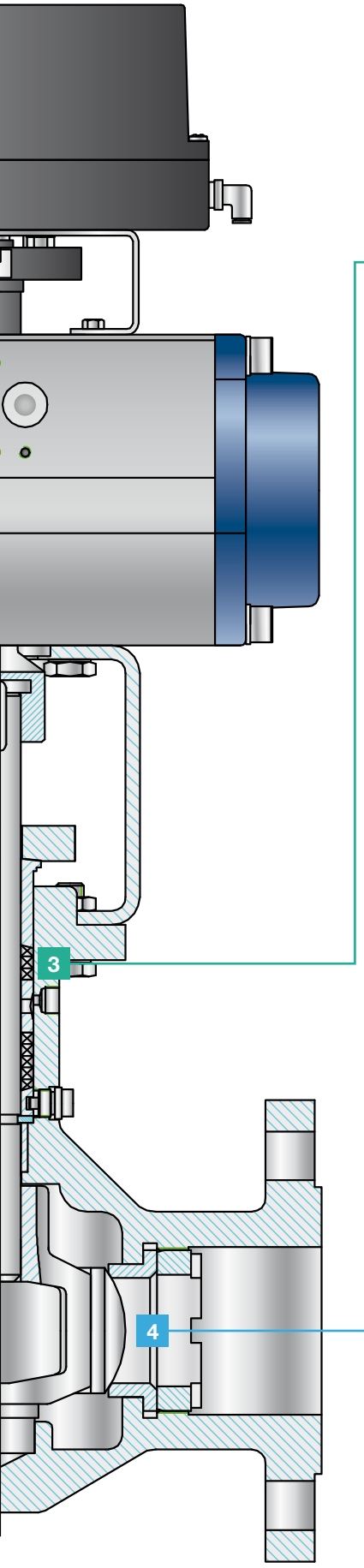
The robust designed plug has the shape of a spherical segment and sits with one side on a shaft, while the other side rotates on a hardened bearing journal. The bearing of the shaft is placed in a double eccentric position. This eccentric bearing causes, when rotating the shaft from closed to opened position, an immediate lifting of the plug away from the seat. Thus, friction between seat and plug can be avoided.

Operating principle



1 Plug
2 Seat ring
3 Flow direction
4 Shaft
5 Actuator
6 Lever
7 Handwheel spindle





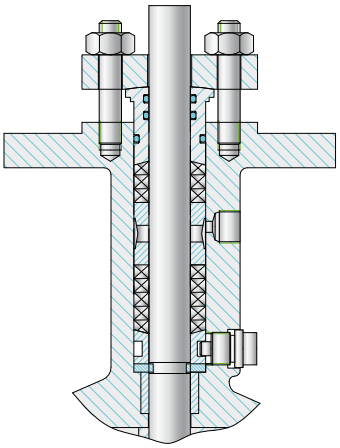
Stuffing box PTFE

- PTFE V-rings or PTFE braiding
- Temperature range –200° C to +200° C

Stuffing box graphite

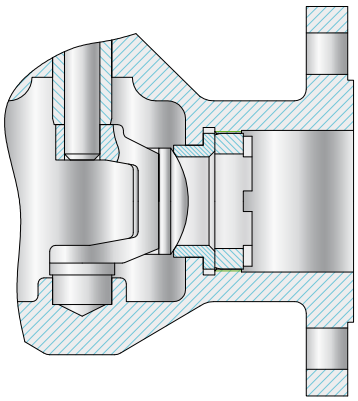
- Graphite
- Temperature range –200° C to +450° C

TA-Luft (Clean Air Act) compliant packing



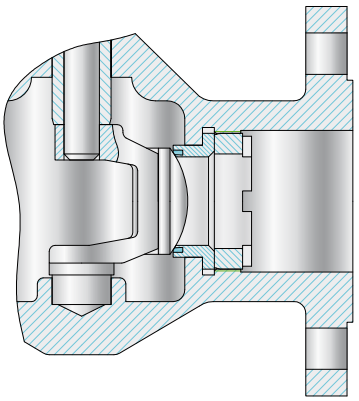
Metallic sealing seat

- Valve characteristics linear
- Leakage rate ≤0.01% of kvs-value

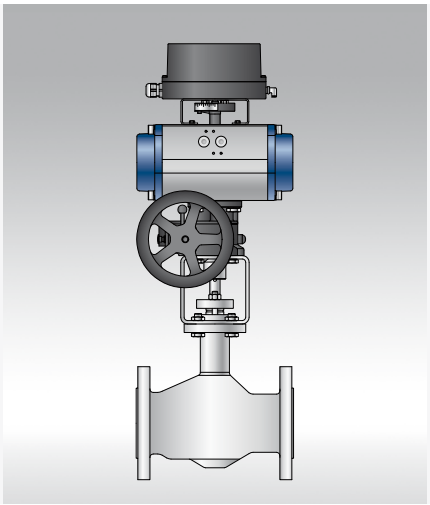
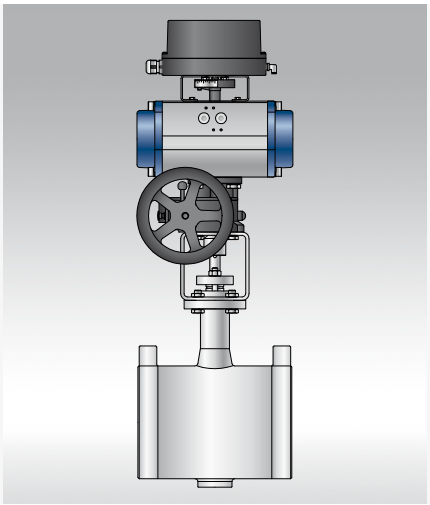
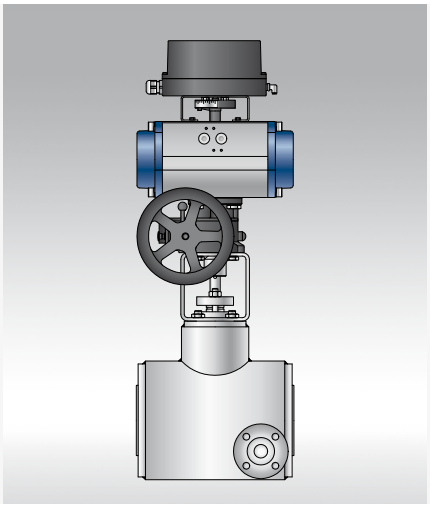


Soft sealing seat

- Valve characteristics linear
- Leakage rate bubble-tight
- Temperature range –196° C to +200° C



Series DKV

Standard version	Sandwich version	Heating jacket version
		

Features	Advantages
Body designed to meet flow path criteria	● Less noise ● Less wear ● Less maintenance
Modular design	● Many different combinations of valves and actuators possible ● Plug / seat combinations – Metallic sealing – Soft sealing – Stellite ● Stem / seal combinations – Maintenance-free PTFE glands – Adjustable stuffing box – Complying with TA-air
Highly accurate stem guiding	● Precise plug guiding ● Guided stuffing box ● Minimum wear of packing ● Less torque necessary
Compact and robust design	● Saves installation space
High interchangeability of components	● Low operating expenses
Stainless steel internal parts	● No corrosion
Optionally available with pneumatic or electric actuator	● Wide range of choice
Interchangeable trim	● Exchange of seat and plug possible

von Rohr Armaturen AG

Series DKV

General data

Series	DKV
Nominal bore DN / NPS	25 to 300 / 1“ to 12“
Nominal pressure PN / ANSI	16 to 63 / class 150 to 400
Characteristics	linear
Rangeability	200 : 1
Leakage rate	metallic sealing: EN 60534-4 leakage rate class IV soft sealing: EN 60534-4 leakage rate class VI
Flanges	according to DIN EN 1092-1, form B, F, D or ANSI
Heating jacket	with flanges
Temperature range	– 40° C to + 250° C

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	–	–

Hastelloy and other materials available on request

Trim materials

Var	**Contoured plug**	**Seat**	**Seat seal**	**Max. permissible medium temperature ° C**
1	1.4571	1.4571	metallic	acc. stem sealing
2	1.4571	1.4571	soft	– 196 to 200° C

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