

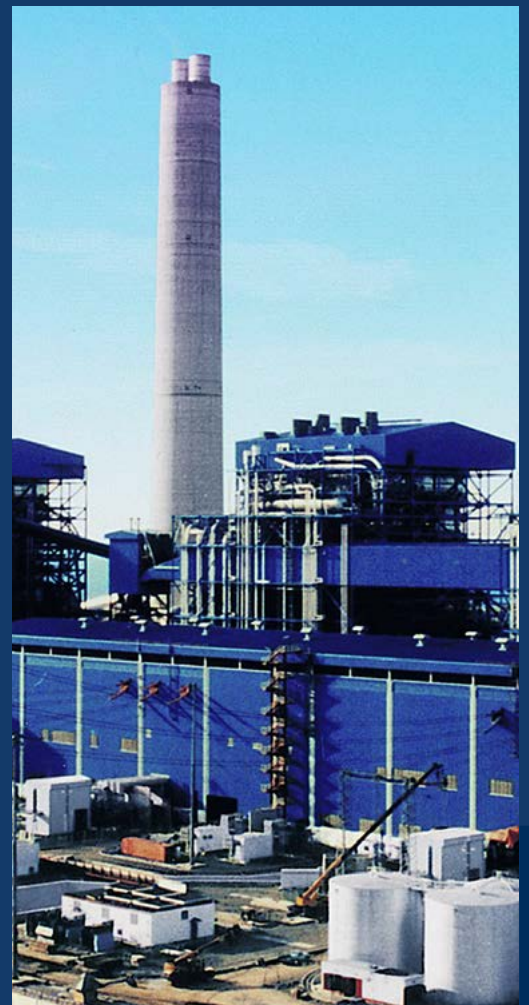


SCHROEDAHL

A subsidiary of **CIRCOR** International Inc.

Control Valves

for power plants and process plants



SCHROEDAHL international

The expert for developing and manufacturing individual high-quality valves for a wide range of power plant and industrial applications.



SCHROEDAHL is one of the leading international suppliers of high class specialty valves for industrial plants and processing systems, as well as power plants in the nuclear and fossil segments.

With our know-how- and decades of experience we provide reliable engineering solutions, which in each case are precisely adapted to the individual technical requirements. In doing so, we as a manufacturer of specialty valves insist on a strict quality management system from the development and planning up to the manufacturing, installation and service.

Due to the fact that our experienced engineers and technicians plan, calculate and configure valve solutions for the most different applications, we contribute to impeccable processes and with that also to the success of our customers.

Through the use of special materials in combination with our CNC precision manufacturing, you can trust in the SCHROEDAHL products which protect processes in a durable and efficient way. Because we file all planing and manufacturing details of every SCHROEDAHL product, we can provide you with the appropriate wear and spare parts even after decades.

High technology at its best

Developing solutions beyond the standards belongs to one of the challenges SCHROEDAHL manages day by day.



The SCHROEDAHL Control Valves are customer specifically developed to create the control processes as effectively and efficiently as possible.

Thanks to decades of development we have pressure-, temperature-, level- and volume - control devices for a wide range of products. Through detailed engineering and manufacturing, these products are precisely designed to meet the required tasks. The spectrum reaches from small applications like biogas plants up to major projects like power plants with a capacity of 1600 MW. In those cases, a considerable amount of processing applications are used: steam converting, steam cooling, cooling water injection, feed water control, pump protection and level control.

The entire production and processing is based on the most important national and international regulations and standards (EN 1092-1 and special customer specifications).

We also use only high quality materials from high temperature resistant material up to high alloyed duplex steel to ensure reliability by durable efficient functioning.

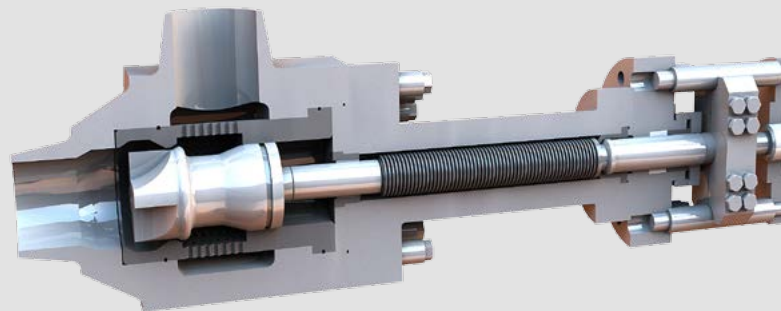


Fig. 1: Type EK
Special valve for nuclear power plants, see page 16

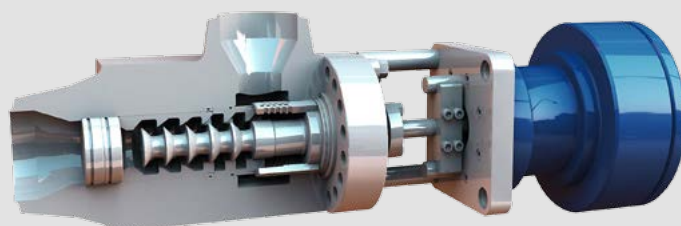


Fig. 2: Type AC
High pressure Control Valve, see page 13

Leading the field of steam converting technology

SCHROEDAHL belongs to the internationally leading suppliers of innovative, modern steam converting technology.

Thanks to intensive development, we are consistently able to overcome boundaries, providing our customers with new, groundbreaking solutions in the field of steam converting and steam cooling valves. In addition, we develop our own mathematical models through a sophisticated engineering, analyse different loads and stresses and detect potential weak spots.

For the manufacturing, we have an extensive amount of CNC-machines. Based on our considerable material know-how, we use selective material characteristics and construct high-quality welding connections.

Thus, we are able consistently to expand the limits of what is technically possible. Even within the scope of extremely challenging, highly complex processes and tasks, we will find the technically appropriate solution.

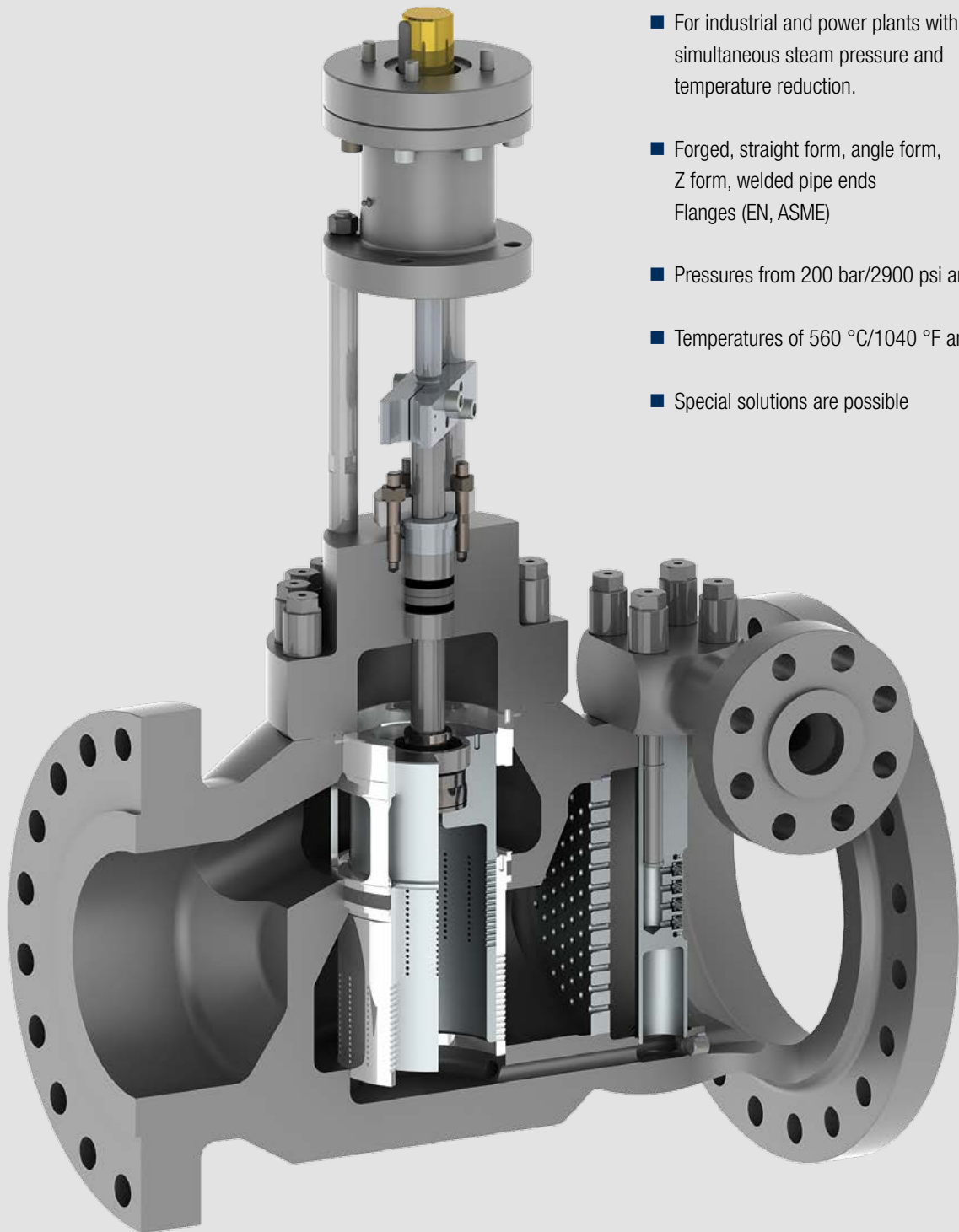
We were, for instance, the first supplier in the market to develop a steam converting valve with a nominal size of just one inch. We have exceeded a temperature range limit of 560° C/1040° F. Some of the SCHROEDAHL products can also resist a pressure of up to 500 bar/7250 psi.



Fig. 3: Type DU
Steam converting Control Valve, see page 6



Fig. 4: Type DK
Desuperheater spray unit, see page 8



- For industrial and power plants with simultaneous steam pressure and temperature reduction.
- Forged, straight form, angle form, Z form, welded pipe ends
Flanges (EN, ASME)
- Pressures from 200 bar/2900 psi and higher
- Temperatures of 560 °C/1040 °F and higher
- Special solutions are possible

Fig. 5: Type DU
Steam converting Control Valve, see page 7

Steam converting valves

Typical designs

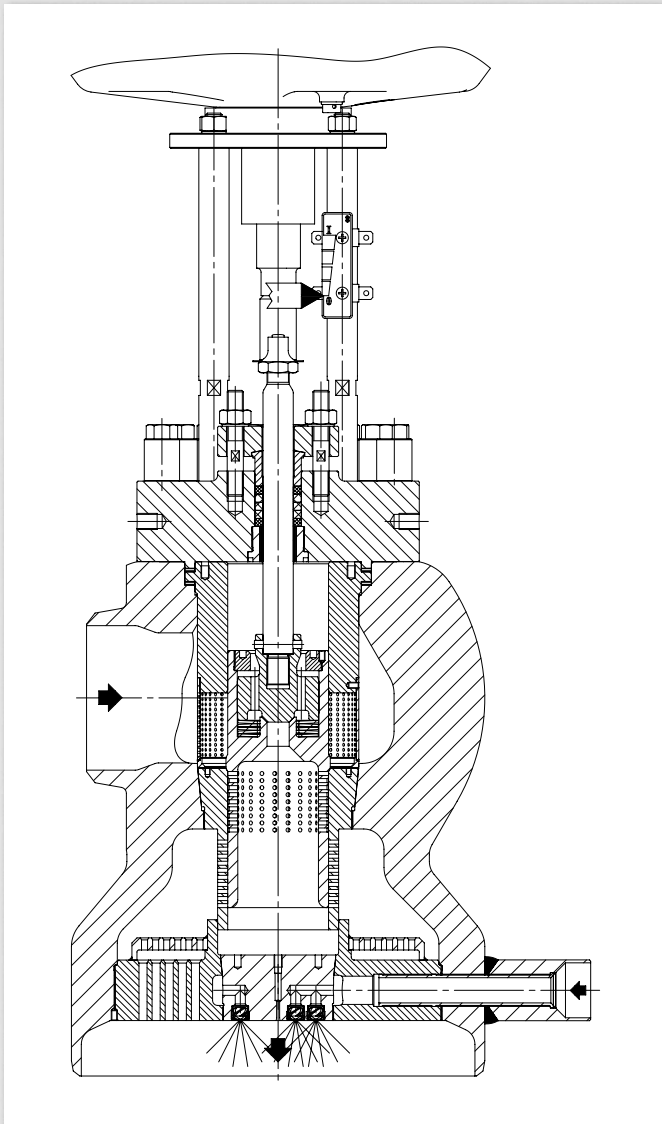


Fig. 6: Type DU
Steam converting Control Valve in steam atomizing design, angle valve

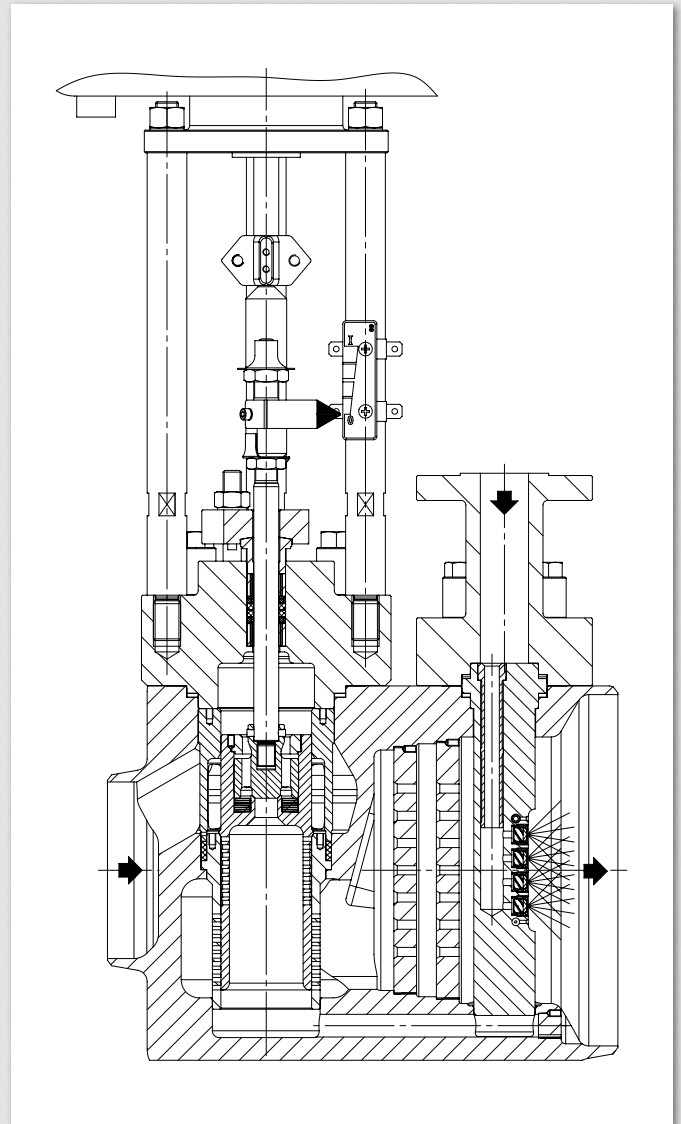


Fig. 7: Type DU
Steam converting Control Valve in steam atomizing design, globe valve

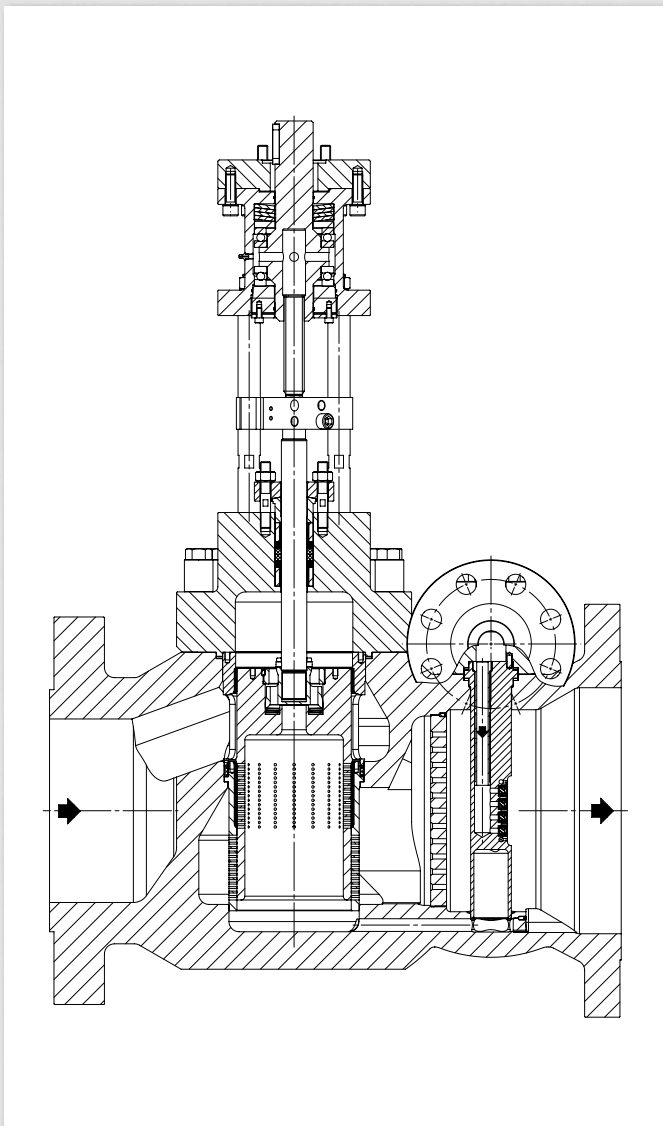


Fig. 8: Type DU
 Steam converting Control Valve in steam atomizing design, globe valve

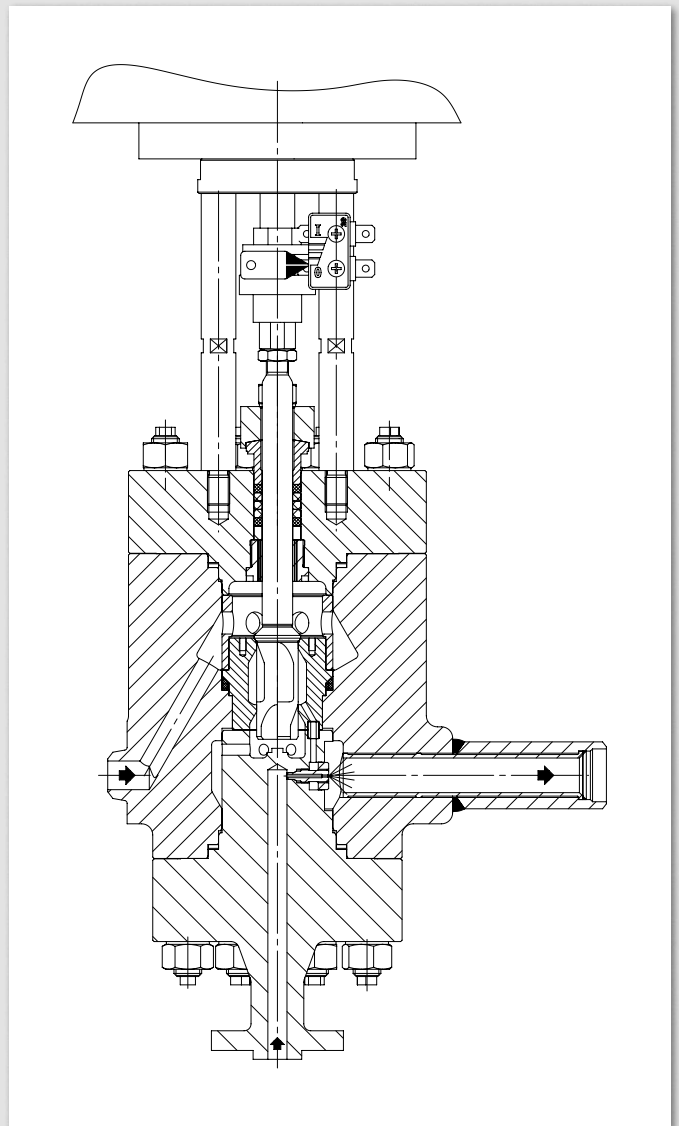


Fig. 9: Type DU
 Micro design of a steam converting Control Valve for very small amounts of steam and water.

Steam cooling



Fig. 10: Type DKM
Mini steam cooler for small steam lines and small amounts of cooling water



Fig. 11: Type DKV
Steam cooler with large range of use



Fig. 12: Type DKH
Steam cooler for special requirements

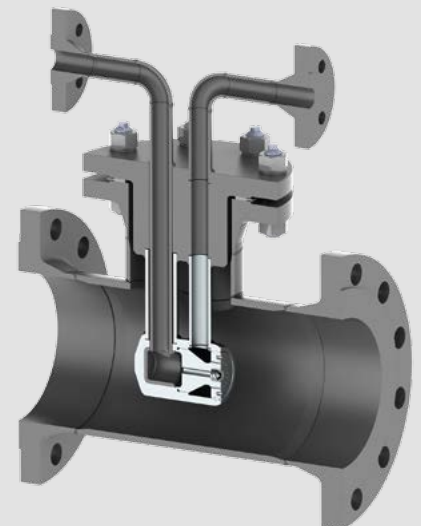


Fig. 13: Type DKT
Desuperheater for the most demanding requirements

- For specific requirements of temperature control in industrial power plants and in the processing industry
- Spray head with integrated high performance injection nozzles. Special characteristics. Tight shut-off
- Easy installation in every pipeline \geq DN 50 / NPS 2
- Special solutions are possible

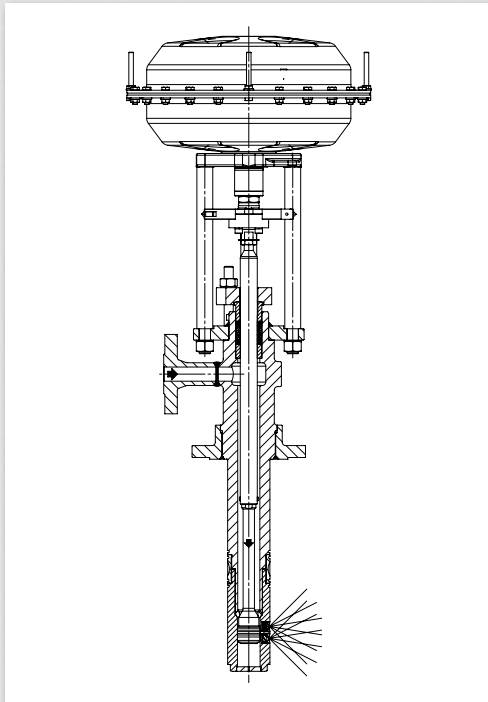


Fig. 14: Type DKV
 Steam atomizer in standard design (<_ PN 400 / Class 2500)

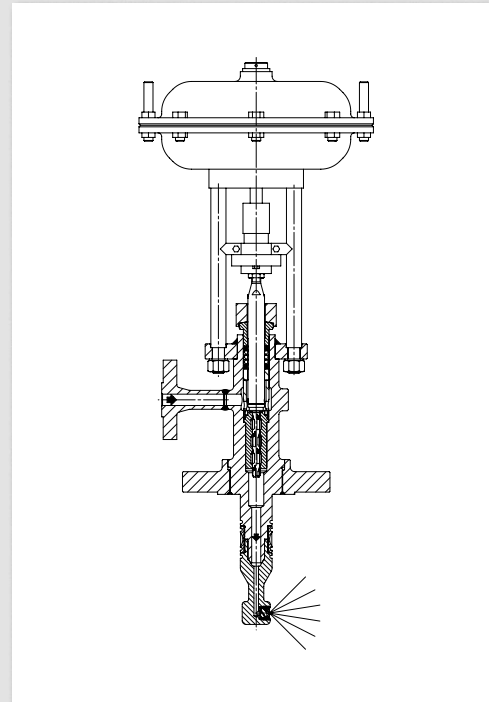


Fig. 15: Type DKM
 Steam atomizer in micro design

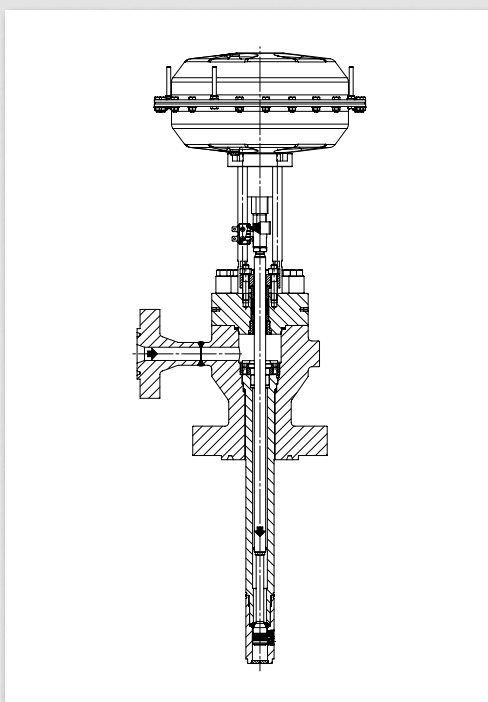


Fig. 16: Type DKH
 Desuperheater, special solution

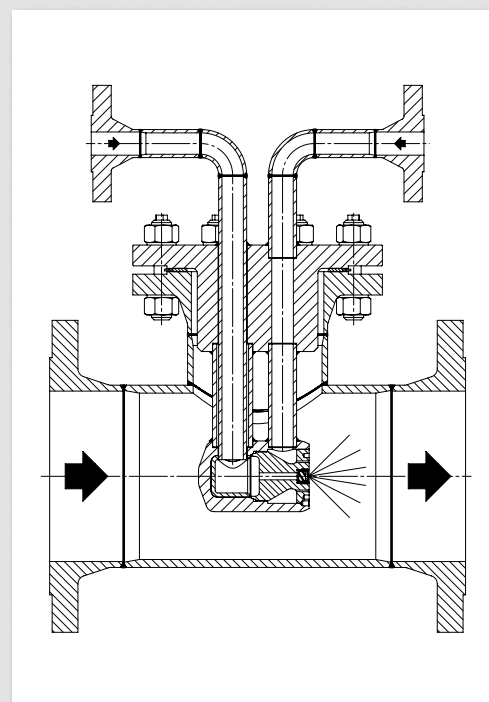


Fig. 17: Type DKT
 Steam atomizer with steam atomizing system

Control Valves for feed water, cooling water and pump protection control

SCHROEDAHL cooling water and feed water Control Valves represent high precision work.

SCHROEDAHL offers various high-quality cooling water and feed water valves for clean water applications in industrial or power plant processes. The forged housings as globe-, z-, or angle valves are configurable in various nominal sizes and pressure ratings.

Besides the feed water valve with single operation, SCHROEDAHL has an innovative feed water combined valve, which has two functions in one system – for example the control of the start-up and the main load case. Thereby, the time and effort of installing a plant and mainly the costs can be reduced.

The SCHROEDAHL cooling water Control Valves are conceived as space saving, compact valves for injection and temperature control. The optimised mechanics reduce the necessary operating forces to a minimum, thereby, smaller, cost-saving actuators can be used. Even here SCHROEDAHL adds to a higher economic efficiency.

As a result of the construction style of the SCHROEDAHL Control Valves, they can also operate as high-quality pump protection Control Valves.

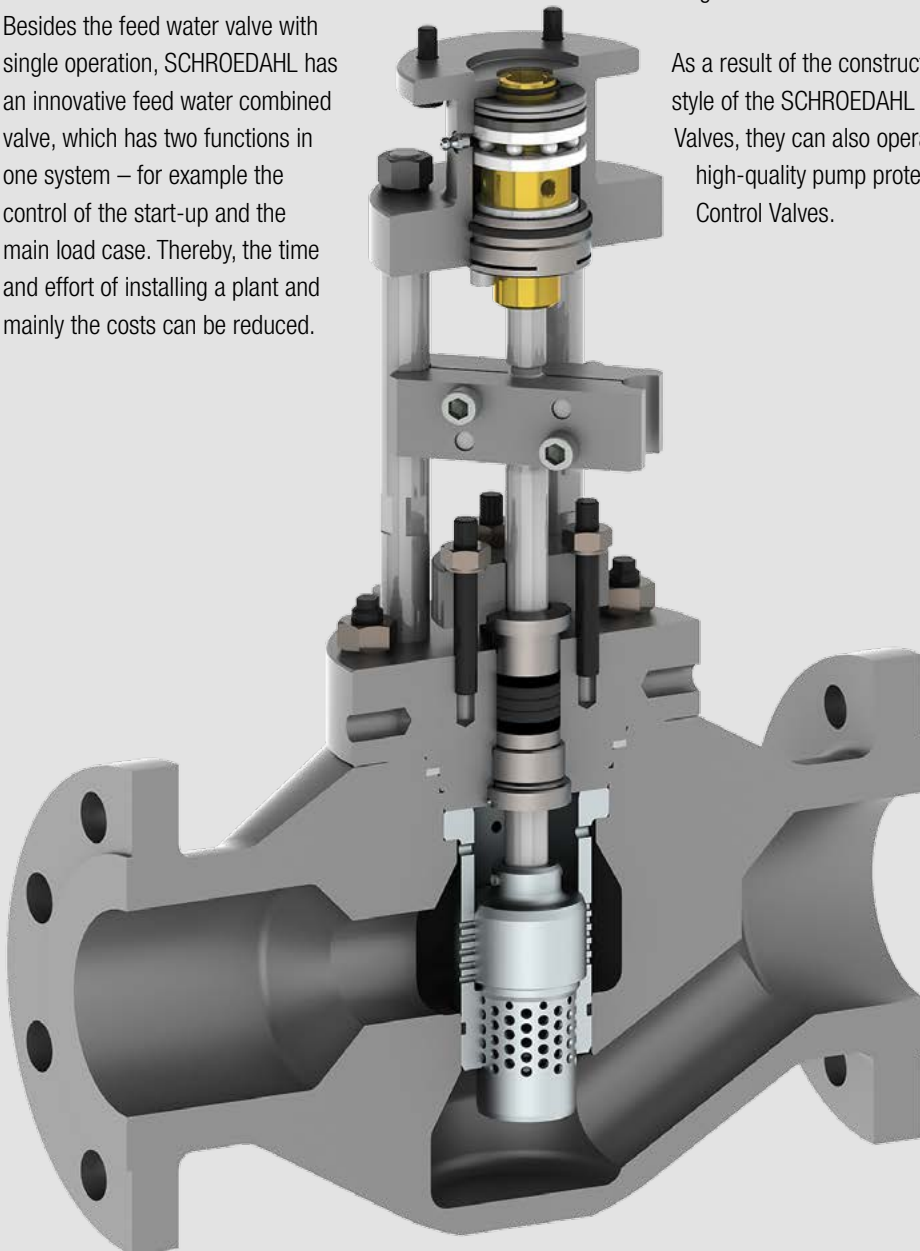


Fig. 18: Type BV
Feed water valve in straight form

- For regulating minimum and main feed water volumes. A special design can also be used as a start-up valve.
- Forged, straight, angle and Z form, welded pipe ends
Flanges (EN, ASME)
- Perforated flow restrictor, single and multi-stage, or vortex reduction relieved and not relieved, DN 15-500/ NPS 3-20, all pressure ratings

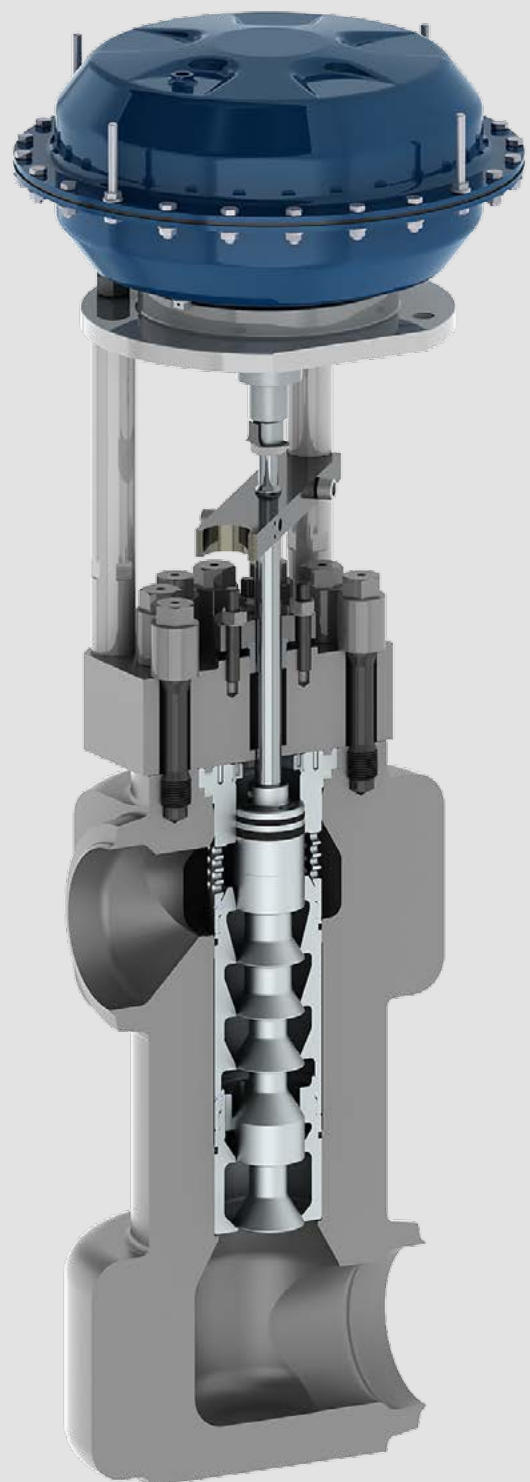


Fig. 19: Type AC
High pressure injection valve in Z form, see page 13

Feed water-, cooling water- and pump protection Control Valves

Typical designs

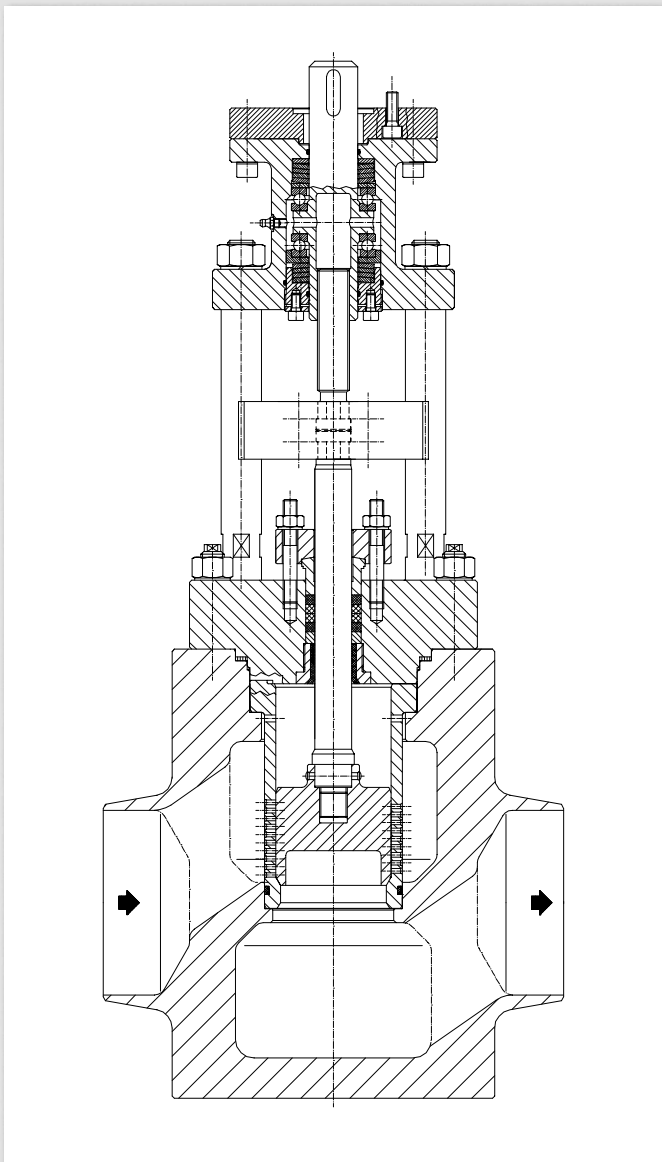


Fig. 20: Type BV
Feed water Control Valve, globe valve

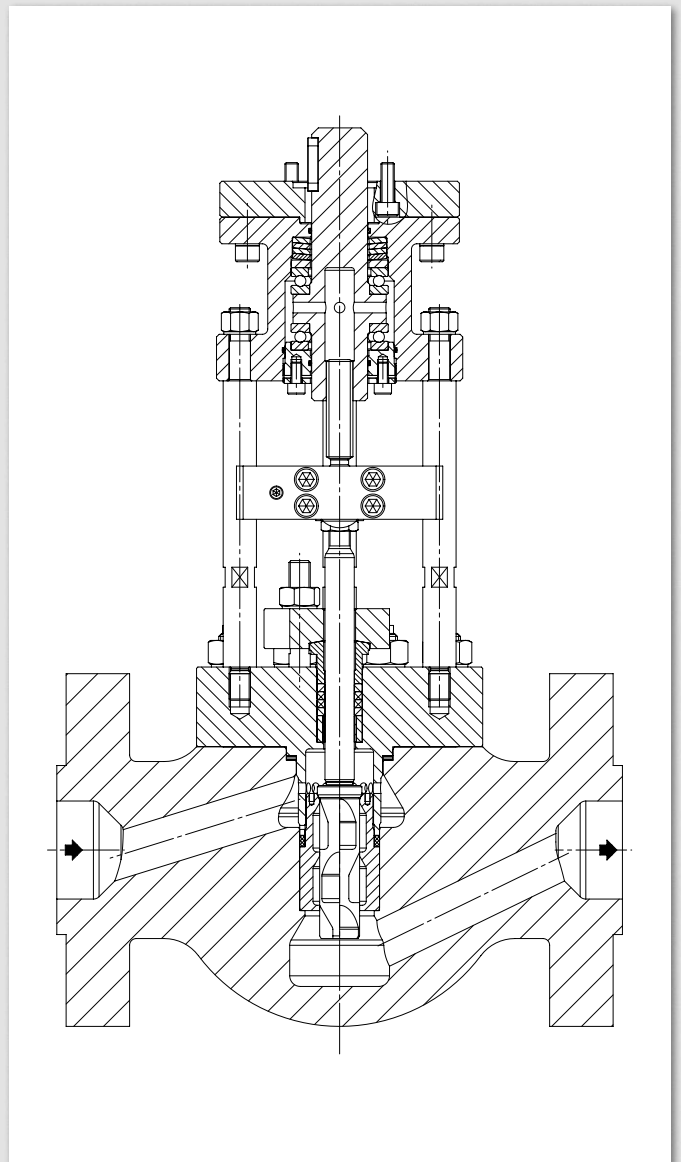


Fig. 21: Type BK
Cooling water Control Valve, globe valve

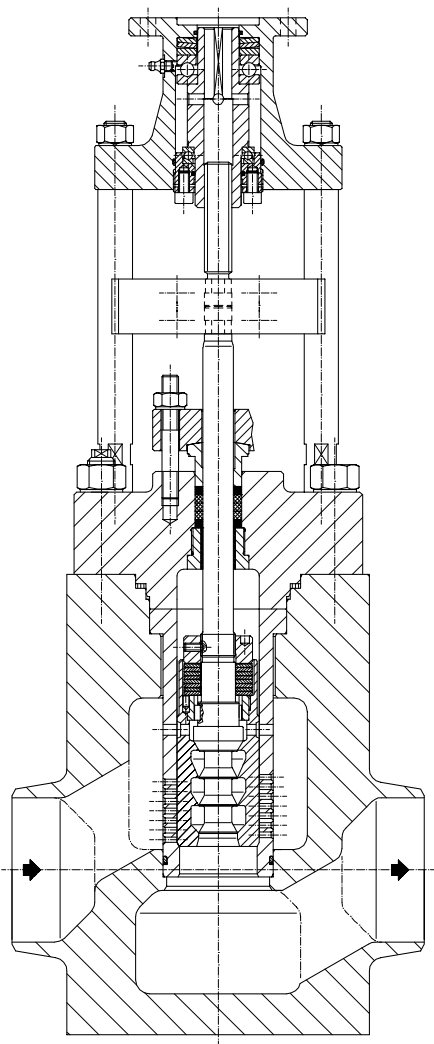


Fig. 22: Type C0
 Feed water combined Control Valve for start-up and full load operation

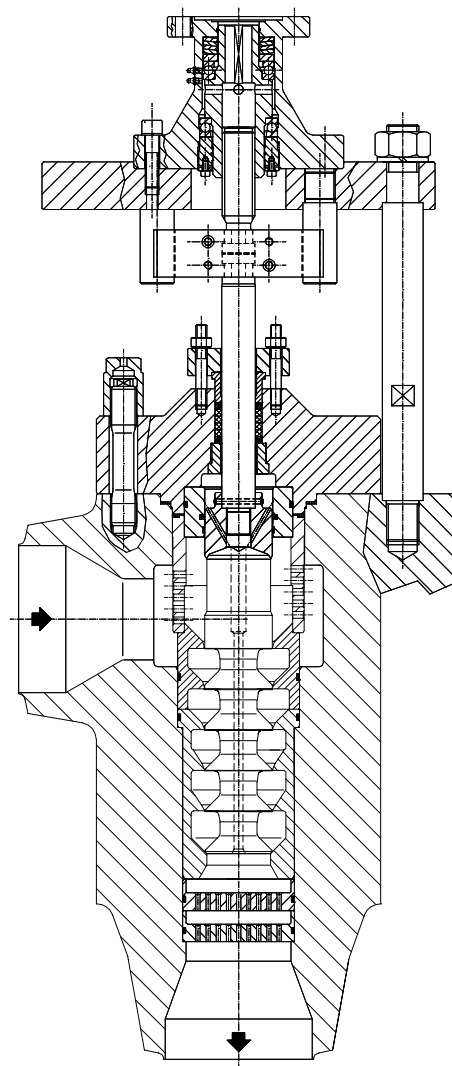


Fig. 23: Type AC
 Feed water start-up Control Valve can also be used as a minimum flow Control Valve for pump protection

State-of-the-art steam pressure reduction

SCHROEDAHL develops, manufactures and supplies high quality and individually configured steam pressure reduction valves.

We develop steam pressure reduction valves, which are precisely adapted to the requirements in power plant- or industrial processes. The single or multistage solutions SCHROEDAHL provides cover all pressure ranges (high, medium, low), all installations (globe valve, angle valve, or z-valve), as well as all nominal sizes (up to DN 1000/40" and higher).

Thereby, we are able to supply you - on the basis of your process data - with customised Control Valves for an optimised operation of your system. You can benefit from our extensive experience and engineering at the highest level.

The SCHROEDAHL steam pressure reduction valves are high-quality products, which are completely optimised in their operation through a continuous development. It was possible to minimize the actuator forces even during high pressure applications, which in turn leads to the use of smaller and cost-saving actuators.

The internal construction is designed for low noise operation, which guarantees environmentally-friendly handling. Forged housings combined with a consistent, well thought-out engineering ensures a strong, durable and resistant quality.

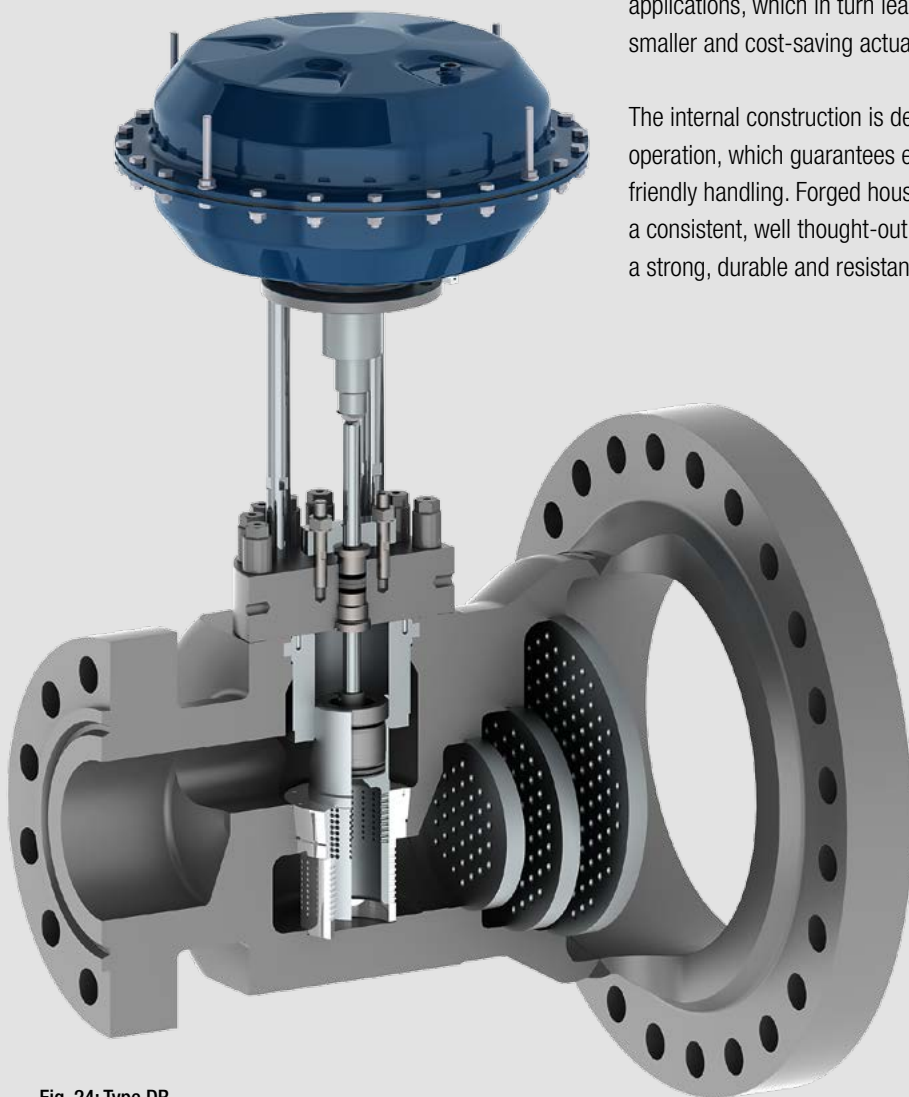


Fig. 24: Type DR
Steam pressure reduction valve, globe valve see page 15

Typical designs

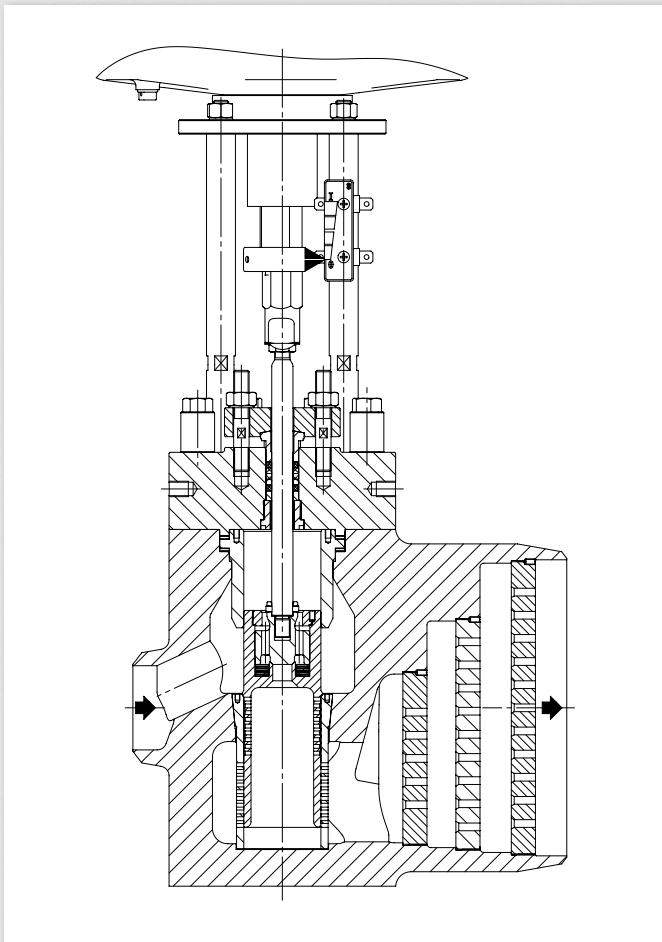


Fig. 25: Type DR
Steam pressure reduction valve, globe valve

- For industrial plants and power plants, where medium flows such as water and steam must be controlled
- Forged, casted or welded housings, globe valve or angle valve, butt weld ends or flanges (EN 1092-1, ASME and other standards)
- Possibilities from DN 25-1400 / NPS 1-56
- Special solutions are possible

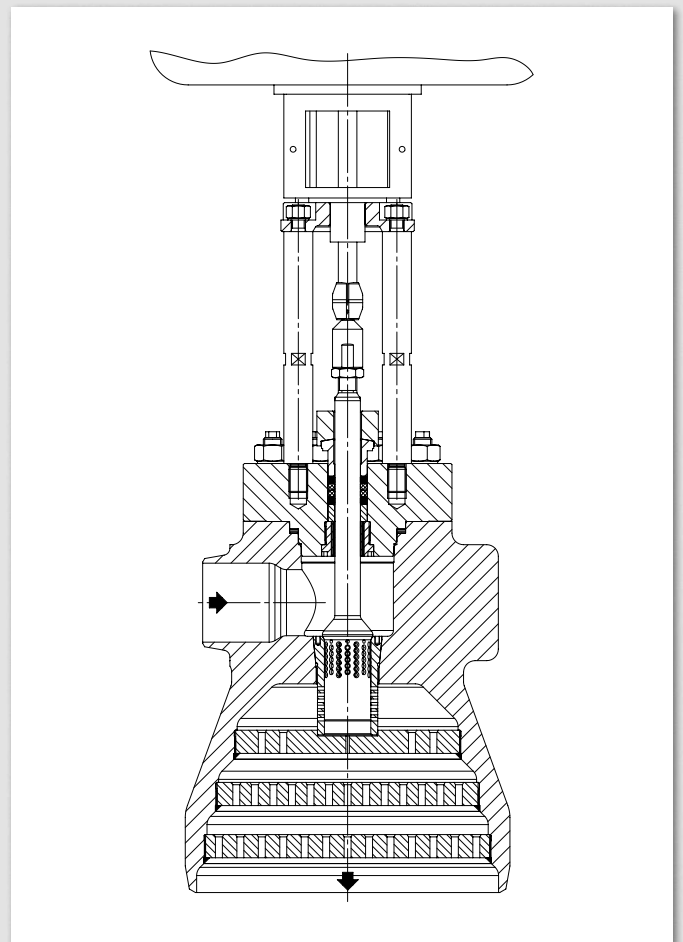


Fig. 26: Type DR
Steam pressure reduction valve, angle valve

Customised solutions for special applications

SCHROEDAHL develops Control Valves for every application – even if the requirements are far beyond the standards.

Special requirements demand special solutions. On the basis of decades of development, SCHROEDAHL has various products for various special applications. Specific safety requirements often come first, especially in nuclear power plants or in the chemical industry.

We are responsible for detailed engineering, the processing of special materials and certified, high-quality manufacturing. We add to the realization of the highest safety standards.

- For all plants, where additional safety requirements for environmental protection must be considered (nuclear standards or other specifications)
- All types of housing designs are possible, butt weld ends Flanges (conforming to EN 1092-1, ASME)
- Bellow sealed with additional downstream stuffing box. Single and multistage trim. Suitable for gases and liquids.

Typical designs

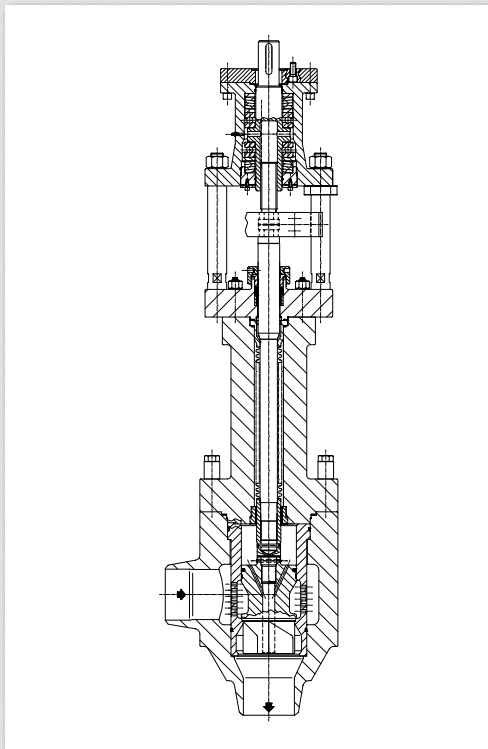


Fig. 27: Type EK
Specialty valve with bellow sealed technology

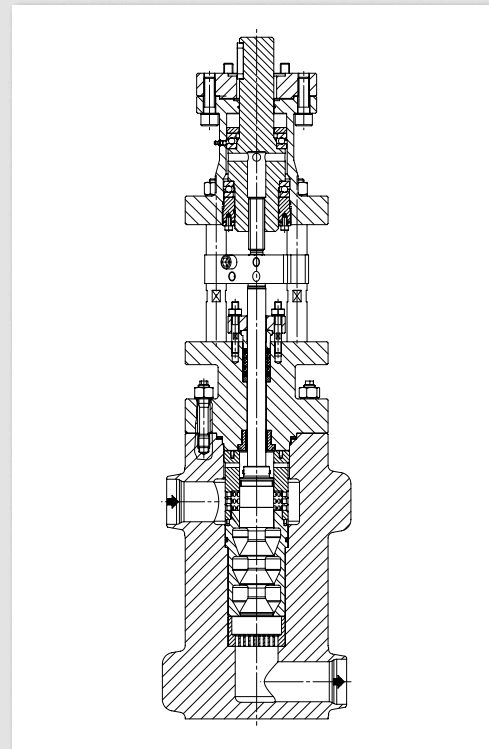


Fig. 28: Type AC
Minimum flow Control Valve with safety function for electrical actuators

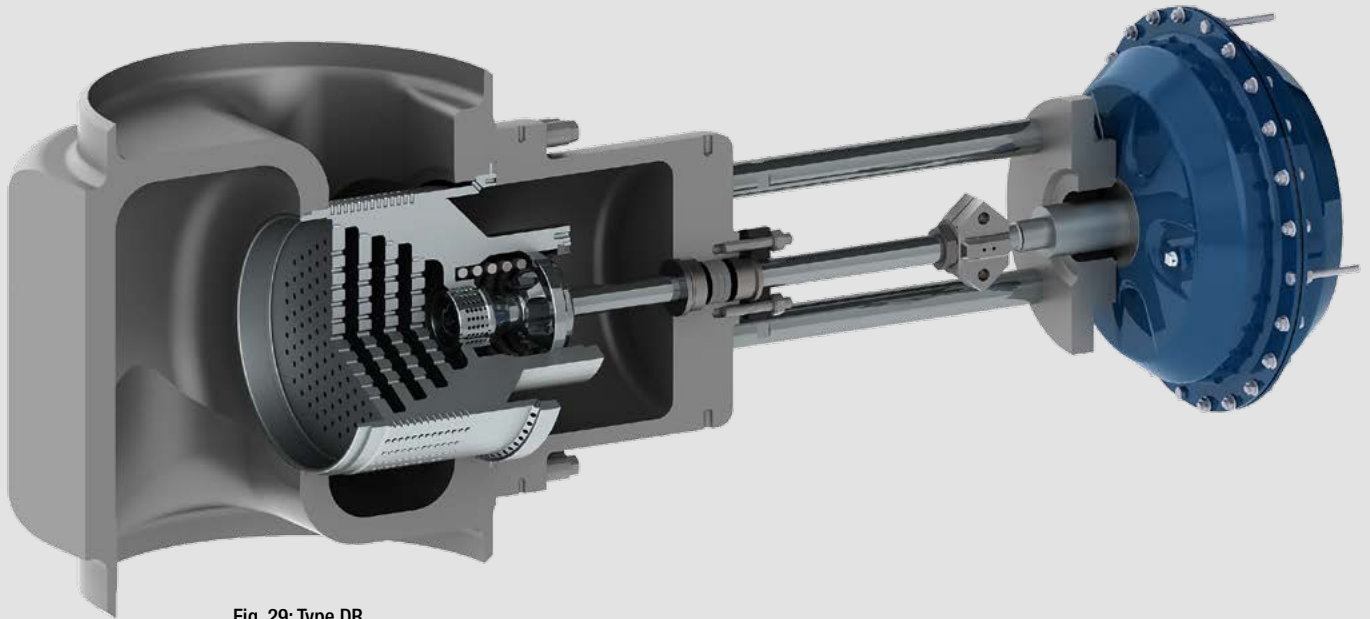


Fig. 29: Type DR
Special solution, vapour pressure reduction valve with five as well as single stage pressure reduction

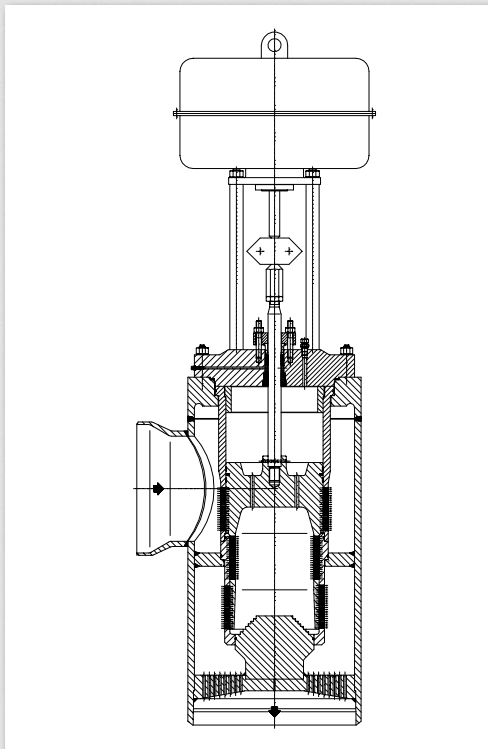


Fig. 30: Type AV
Condensation Control Valve, welding construction

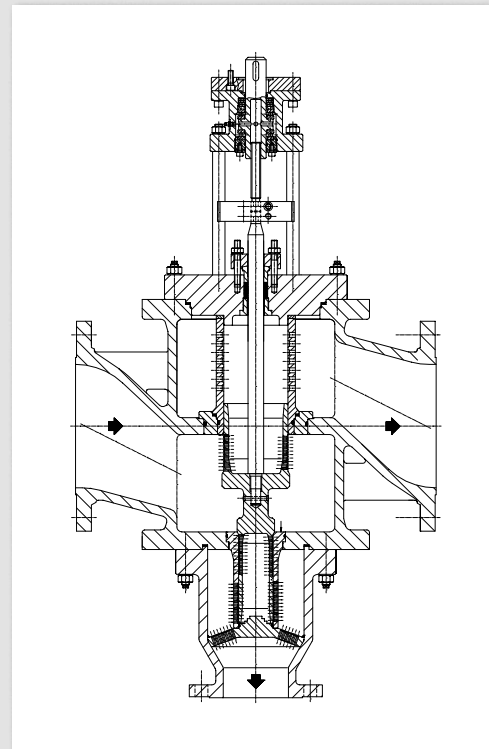


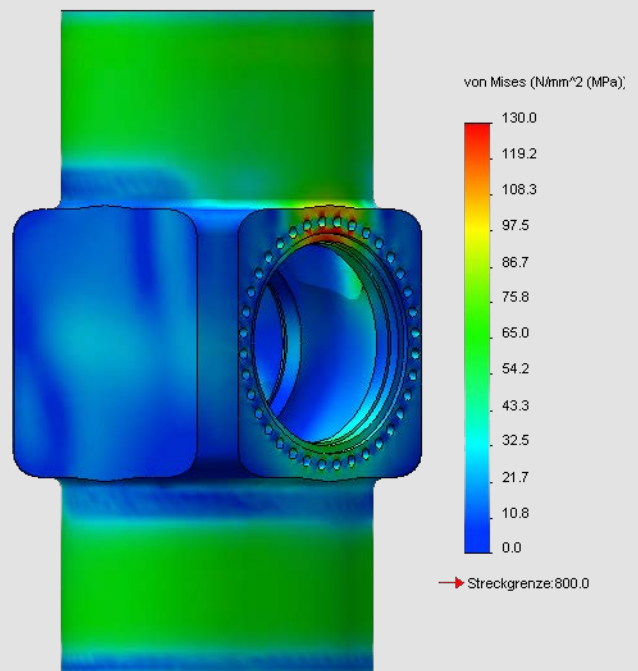
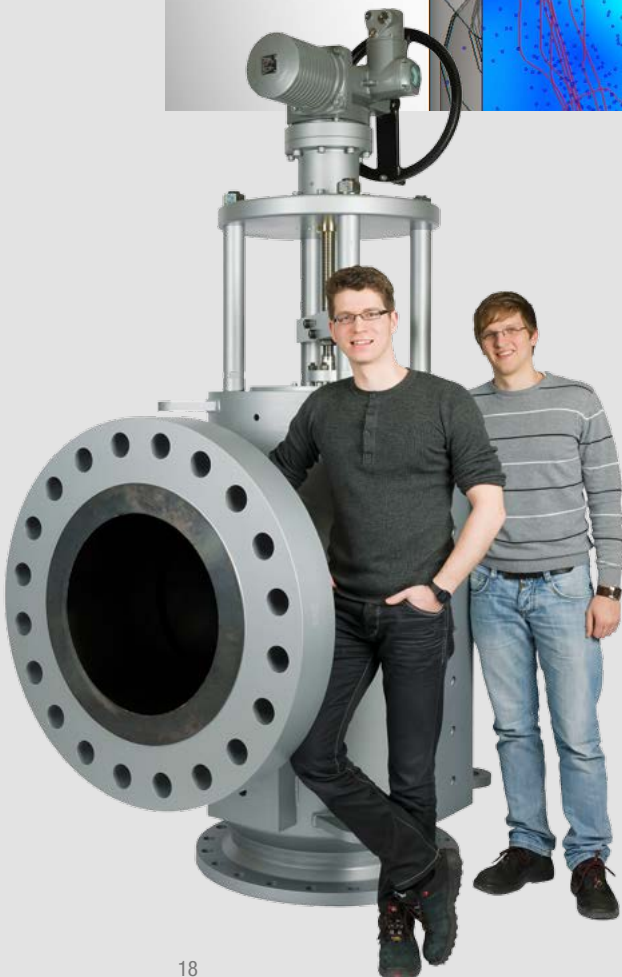
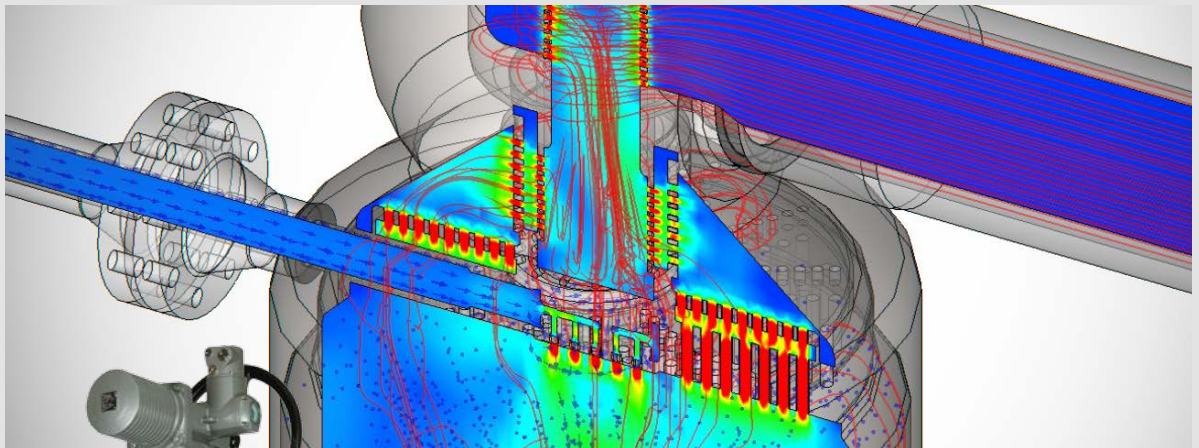
Fig. 31: Type DK
3-way Control Valve,
special construction with multistage bypass trim

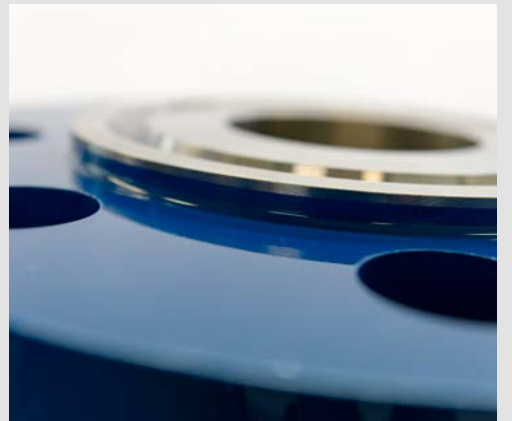
Quality, Quality, Quality

SCHROEDAHL defines itself as a strictly customer-oriented manufacturer of Control Valves working at the highest level of quality.

As a globally operating company, SCHROEDAHL continuously meets the most important international quality and safety regulations and standards: DGR 97/23/EG, GOST EAC, DIN, UVV, Vd TÜV, AD data sheets, TRD, ASME, ANSI as well as DIN ISO 9001/ EN 29001 and ISO 14001.

Our experienced sales force is the central quality factor for especially high quality products. Nowadays, our engineering is done by finite elements calculation (FEM) and Computational Fluid Dynamics (CFD) to develop new, innovative, customer-oriented valves and precise solutions. We add to the success of our customers and set a trend in the market.







SCHROEDAHL

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