ARTES
VALVE & SERVICE

Control Ball Valve Type W

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Purpose & Advantages

The ARTES control ball valve W is a control valve that has been specially designed for pressure and quantity regulation. The design makes it possible to securely shut off the medium in addition to its regulating function. The valve has been designed for use with liquid and gaseous media, for example water and steam. The valve is primarily intended for use in power plants.

Typical places of use include:

- Feed water control valve
- Start-up control valve
- Fill level regulation (feed water container, drums)

By nature of its design and the rotary movement of the ARTES control ball valve W, it offers the user many crucial advantages:

- The purely metal seal of ball and seat ring ensures the seal in the ball passage.
- The valve is permanently leak-tight to the outside.
- The straight flow-through of the valve permits a permanent pressure loss of 0.2 bar whilst guaranteeing constant control performance.
- Fast adaptation of the valve to changes in operational requirements by replacing the control discs.
- Multi-stage pressure reduction is possible.
- The valve is highly resistant to wear due to its tungsten or chromium carbide coating.
- Simple installation and removal, also for welded version.

Waste incineration plant Pfaffenau, Vienna
Source: Zeman & Co GmbH

Function

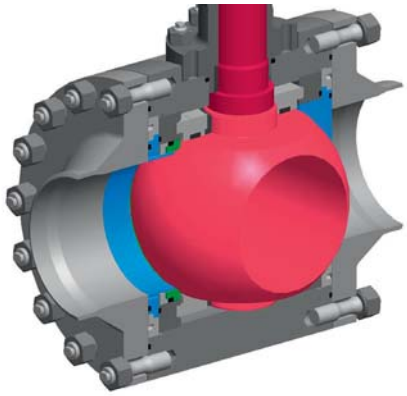
Control function

The ARTES control ball valve W performs two functions: Control and sealing.

The two functions are separate from one another. The control function of an ARTES control ball valve W does not fundamentally differ from the control function of conventional control valves. Due to the 90° rotary movement of the ball, a defined portion of the control contour of the control disc is opened.

The process corresponds to the releasing of a control cross-section in the perforated cone of a globe valve. The type of control contour in the control disc determines the characteristic control curve of the valve. The control discs make it possible to reproduce any conceivable characteristic control curve with very high setting ranges of up to 1:200.

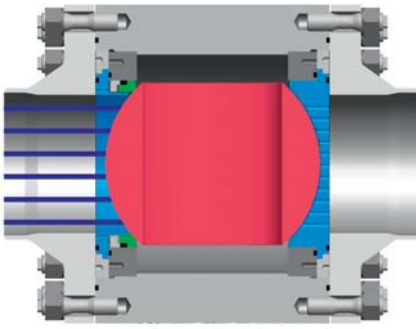
Compared to conventional control valves with a stroke movement, flow through the control ball valve is straight. This makes it possible to maintain a constant pressure loss of 0.2 bar whilst guaranteeing constant control performance. For very high pressure differences between the inlet and outlet side of the valve, 2 controlled stages are available for pressure reduction. This makes it possible to



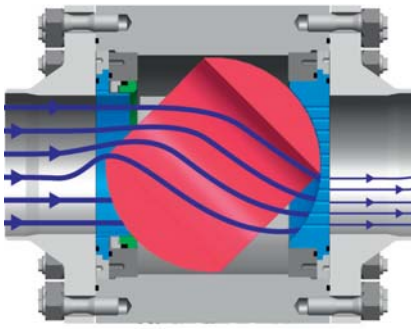
achieve sub-critical pressure reduction. Further-reaching requirements for a multi-stage pressure reduction can be achieved with additional fixed perforated discs. If bi-directionality of flow and seal is needed, a version with 2 seat rings is available.

Seal function

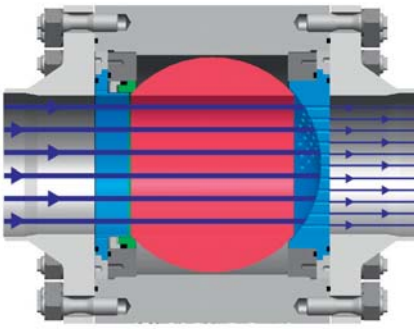
Ball and seat ring perform the seal function. They are ground to match one another, making possible the purely metal seal of the closure of the pipe. Ball and seat ring are coated with highly wear-resistant tungsten or chromium carbide.



1. Control ball valve closed



2. Control ball valve 45° open



3. Control ball valve fully open

Design

The design of the ARTES control ball valve W makes it possible to adapt the Kv value and the control characteristics to changing operating parameters by replacing the control discs. This work can be performed on site.

Version with flange ends or weld ends

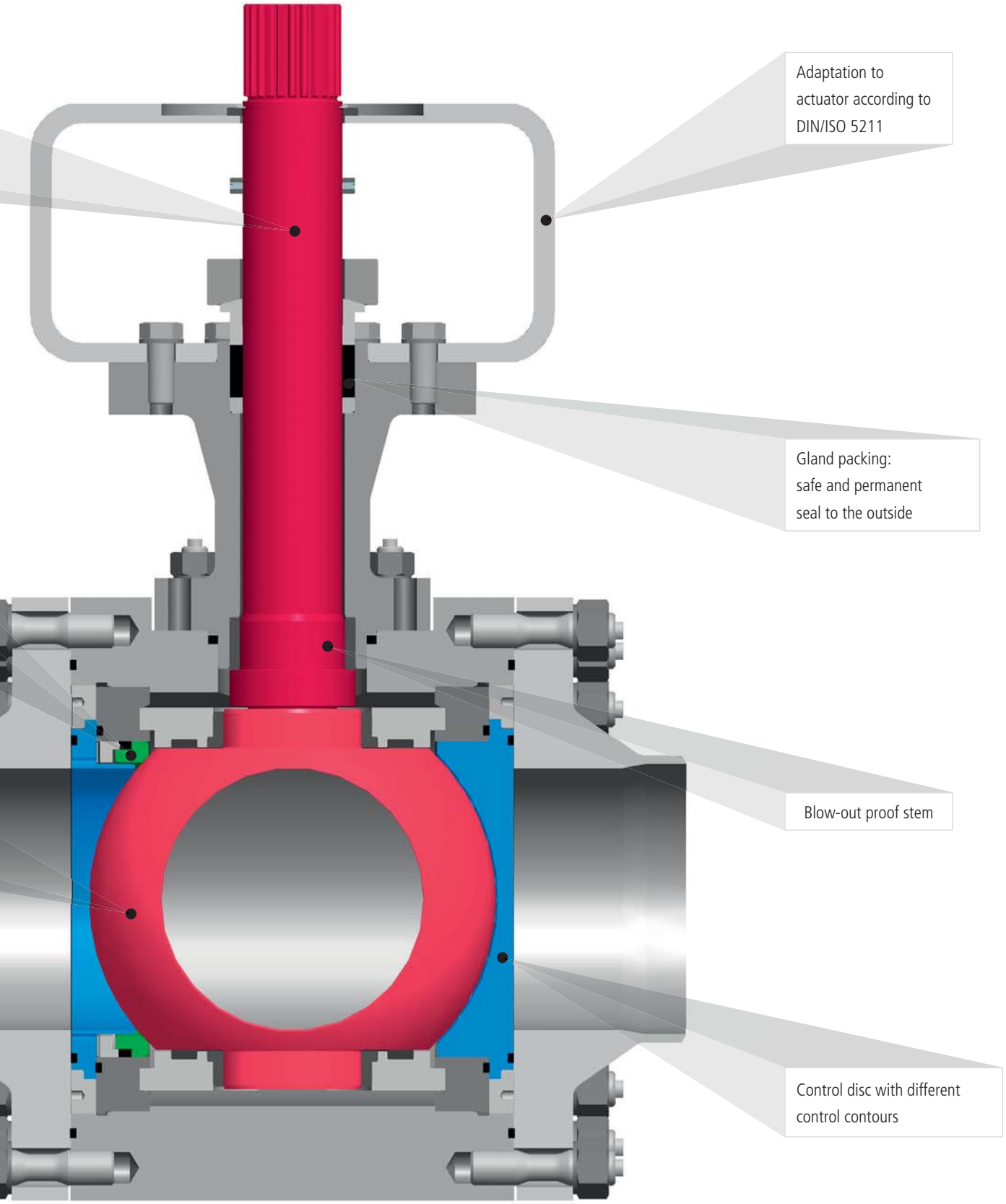
After positioning, the double-mounted switching shaft is free of forces and torques

Highly wear-resistant seat ring, hard-coated

Highly wear-resistant trunnion-mounted ball, hard-coated

Housing connections with flange or weld ends

Design


Adaptation to actuator according to DIN/ISO 5211
Gland packing: safe and permanent seal to the outside
Blow-out proof stem
Control disc with different control contours

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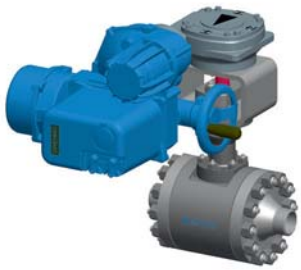
Examples / Applications

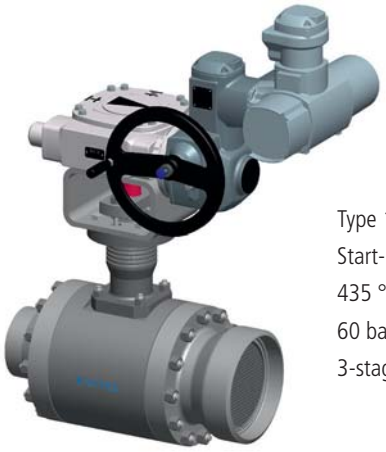
The valves shown here are representative of the diverse range of applications for the ARTES control ball valve W.



Type 50-W
Saturated steam
before air preheater
310 °C
98 bar

Type 65-W
Pressure reduction
370 °C
43 bar

Type 65-W
Feed water control
180 °C
110 bar

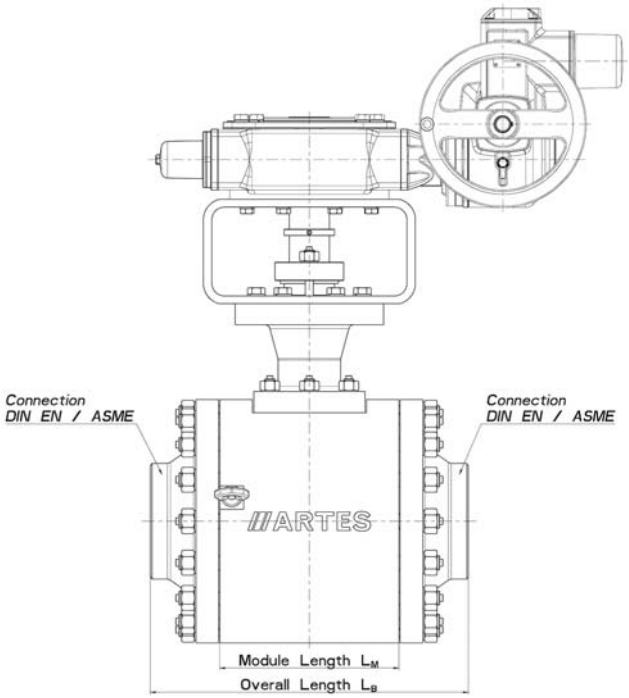


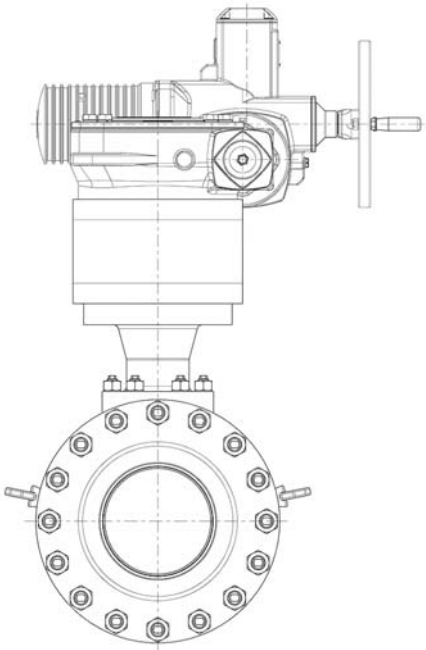
Type 150-W
Start-up control valve
435 °C
60 bar
3-stage pressure drop

Type 200-W
Steam blow-off valve
400 °C
21 bar

Facts

Nominal pipe size:	DN25...DN800 or 1"...32"
Nominal pressure class:	PN16...PN420 or ANSI class 300…2500
Temperatures:	up to 600 °C
Body materials:	1.0460, 1.5415, 1.7335. 1.7380, 1.4571, 1.4462 or equivalent international materials
Sealing material:	Pure graphite
Connection to pipe:	Flange (EN1092-1, ASME B16.5 and others) weld ends
Rangeability:	1:50...200





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