



Valbart Rising Stem Ball Valve

Friction-free open and close for low maintenance and extended life



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Flowserve is one of the world's leading providers of fluid motion and control products and services. Globally, we produce engineered and industrial pumps, valves, seals, systems, and automation equipment, and provide a range of related flow management services. Our solutions move even the most volatile and corrosive fluids safely and securely through some of the most extreme temperatures, terrain, and challenging operating environments on the planet.

Flowserve products and services are specified for use in a vast range of industries, including oil and gas, chemical, power generation, and various general industries.



Rising Stem Friction-Free Ball Valve

The Valbart Rising Stem Ball Valve (RSBV) is the oil and gas industry's choice for applications requiring a mechanically energized metal seat or soft-seat to safeguard against losses from process contamination or leakage of material.

The RSBV uses a unique helix system that opens and closes the valve without rotation. The linear only operation of the stem makes it an excellent choice for frequent cycling. Each linear operation, from opening to closing and back again, is a friction-free movement between seat and ball that significantly reduces valve wear and keeps routine maintenance to a bare minimum. The outside yoke and screw, with stuffing box-type gland packing, including gland and gland flange, eliminates the need for special tools when adjusting or repacking the stem seal. Top entry convenience allows visual inspection inside the valve without removing the valve from the pipeline. The stem also has a backseat to prevent possible blowout and repacking stem seals under pressure when the valve is fully open. A special lapping technique applied to the Stellite® ball and seat sealing areas allows for zero seat leakage. Heavy wall thickness provides extra corrosion allowance to reduce wear and extend the valve lifetime.

Whether your needs call for molecular sieve switching, isomerization, thermal oil, high/low temperatures or critical services, the RSBV provides an unmatched level of robustness, reliability, and convenience. From the Persian Gulf to Norway, across Russia, and south to Australia, oil and gas leaders rely on the RSBV for cost-effective, low maintenance safeguard in process and transportation of industrial fluids and gasses.





Features / Benefits

- *Helix coil stem ensures friction-free open and close*
- *Linear stem operation without rotation for optimal actuation*
- *Metal seat tightness up to ANSI Class VI and zero leak*
- *Heavy wall thickness in excess to ASME/ANSI B16.34*
- *Outside screw and yoke design, no special tools for stem packing adjustment needed*

What makes the Rising Stem Friction-Free Ball Valve unique?

Helix coil stem

Helix coil stem ensures absolutely no stem rotation.

Low maintenance

No contact, friction-free opening and closing is excellent for frequent cycling.

Non-rotating linear stem operation

Ensures trouble free linear actuation.

Blowout proof stem

Meets international standards of API 600 and API 6D.

Zero leakage

Seat tightness up to ANSI FCI-70-2 Class VI with the use of special lapping on the Stellite6 ball and seat sealing area, ensures zero seat leakage.

Extended life

High quality materials significantly reduce wear and corrosion, extend product life.

Backseat

Allows stem to be repacked when valve is under pressure and in fully open position.

Gland packing

Outside screw and yoke design. Low emission stuffing box integrates normal gland flange and follower (no lubricated seal) for easy adjusting of stem packing without special tools.

Critical / lethal services

Bellow seal construction is possible for critical and lethal services.

Heavy wall thickness

Minimum heavy valve wall thickness to API 600 / API 6D provides extra corrosion allowance.

Top entry design

Allows easy in-line inspection and maintenance.



Integrated special features

The Valbart Rising Stem Ball Valve is easy to operate and very low maintenance.

Stem packing is readily accessible and adjustable using standard tools and keys. There is no complex sealant injection system to slow you down. Because stem movement is linear only, packing wear is limited, helping to significantly extend the lifetime of the valve. Similarly, the sealing area remains free of wear because there is no contact between the seat and ball during the 90-degree rotation of the ball when opening and closing the valve.

Periodic maintenance of the stem is limited to greasing the anti-rotation stem guide based on the number of valve cycles.

For complete maintenance information, please refer to the *Installation Operation & Maintenance Manual* that is supplied with each RSBV valve.

Helix coil stem

The unique helix-shaped coil stem ensures low maintenance and no wear:

- Friction-free linear operation – no pin and cam in the stem construction
- Eliminates rubbing – no contact between the seat and ball during 90-degree operation
- Easy open – retract the ball from the seat
- Easy close – push the ball toward the seat

Area 2

The flat, angle-shaped part at the top of the helix coil stem achieves the fully closed position

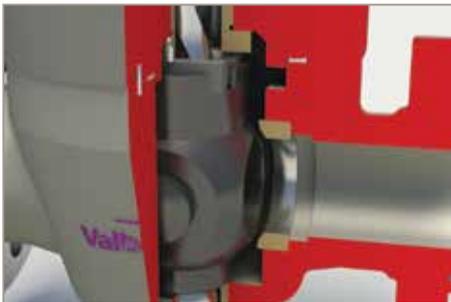
Area 1

The helix shape achieves the 90-degree friction-free rotation of the ball



Figure 1: RSBV Helix Stem

The RSBV helix coil stem provides friction-free open and close.



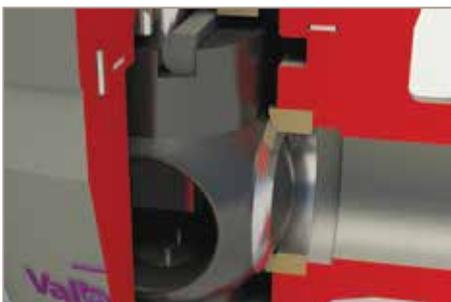
Open

In the fully open position, the stem is raised to its maximum limit with no contact between the ball and the seat. The valve in its fully open position provides a clear through flow.



Open to close position

The downwards linear movement of the helix passing through the roller bars on the top of the ball cause the ball to rotate 90 degrees (see Figure 1, Area 1). There is still no contact between the ball and the seat during this movement which highlights the friction free /non-rubbing feature of the valve.



Closed position

In the fully close position, the ball turned 90 degrees and is mechanically wedged toward the seat by the upper part of the helix shaped stem which is flat and angled (see Figure 1, Area 2). The movement of the ball towards the seat achieves the positive metal-to-metal sealing when the valve is fully closed.



Rising Stem Friction-Free Ball Valve at a glance

RSBV specifications

Sizes	1" through 24"
Pressure Ratings	ANSI Classes 150 through 2500, DIN PN 10 through PN 320
End Connections	Flanged RF/RJ, Butt weld, Socket weld, Hub end, Screwed
Face to Face	To B16.10, Manufacturer Std. or at special request
Trim Area	Full bore or Reduced bore to API 6D dimensions or at special request
Packing Options	Graphite or PTFE or combination composition at request
Flow Direction	Preferred flow toward seat or Bi Directional at request
Leakage Rates	To API 598 or BS 6755 or ANSI FCI-70-2 Class V or VI
Flow Coefficients	Cv Value as per the enclosed tables pages 6 through 11
Temperature Range	From minus 196 °C to 600 °C

Product range

ANSI Pressure Class	Size Range
150	1" – 24"
300	1" – 24"
600	1" – 24"
900	1" – 20"
1500	1" – 16"
2500	1" – 8"



Certifications

Qualification Certifications and Approvals	
ISO-9001	API to ISO TS-29001
API-6A	SIL-2
API-6D	ISO-15848 1 & 2
API-6DSS	PED 97/23/EC



Unparalleled service: day or night, worldwide

Flowserve services precision quality pumps, control valves, seals, and automation equipment for a diverse range of industries worldwide.

Our Quick Response Centers (QRC) are equipped with thousands of parts, including OEM and Flowserve custom-built products. And each has the manpower and equipment to expedite time-sensitive repairs of any size.

Flowserve service technicians can restore all types of control, manual-operated, or pressure relief valves to original quality. Should any valve prove unrepairable, we can usually replace it with a new valve within the same time frame.

Service when and where you need it most

Flowserve QRCs are strategically located around the world to ensure rapid response to your time-critical repair needs. They serve as a local, single point of contact for the full inventory of Flowserve products and services, including the machinery to manufacture custom-built units. We offer better than 95% on-time performance for all repairs and can turnaround new and custom-built units within 72 hours.

Time-critical repairs

Flowserve offers 24-hour emergency repair, free pick-up and delivery within QRC service areas, mobile, and on-site repair. When a service technician is needed, we can have one on-site within 24 hours anywhere in North America, and 48 hours outside of North America.





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