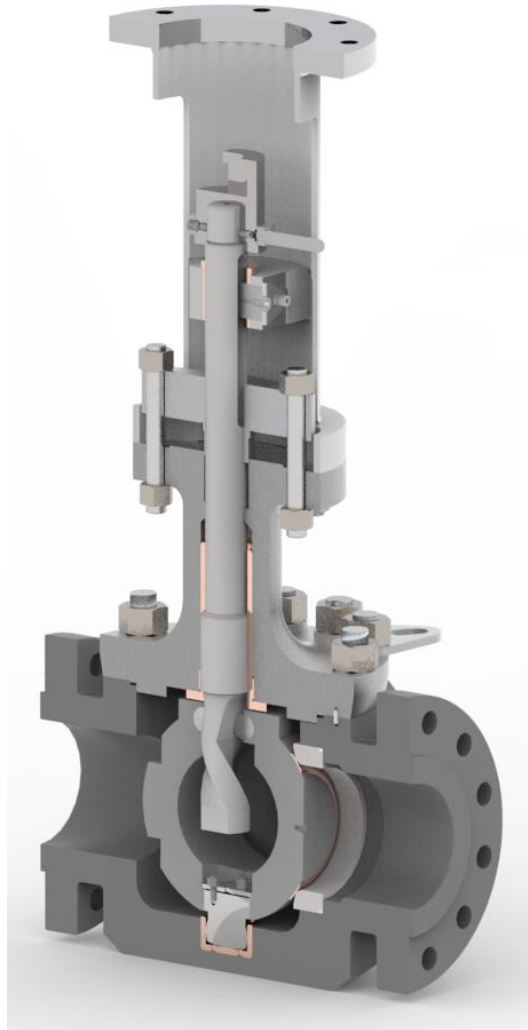


LCM ITALIA

Rising Stem Ball Valve



L.C.M. Italia SpA
con Socio Unico

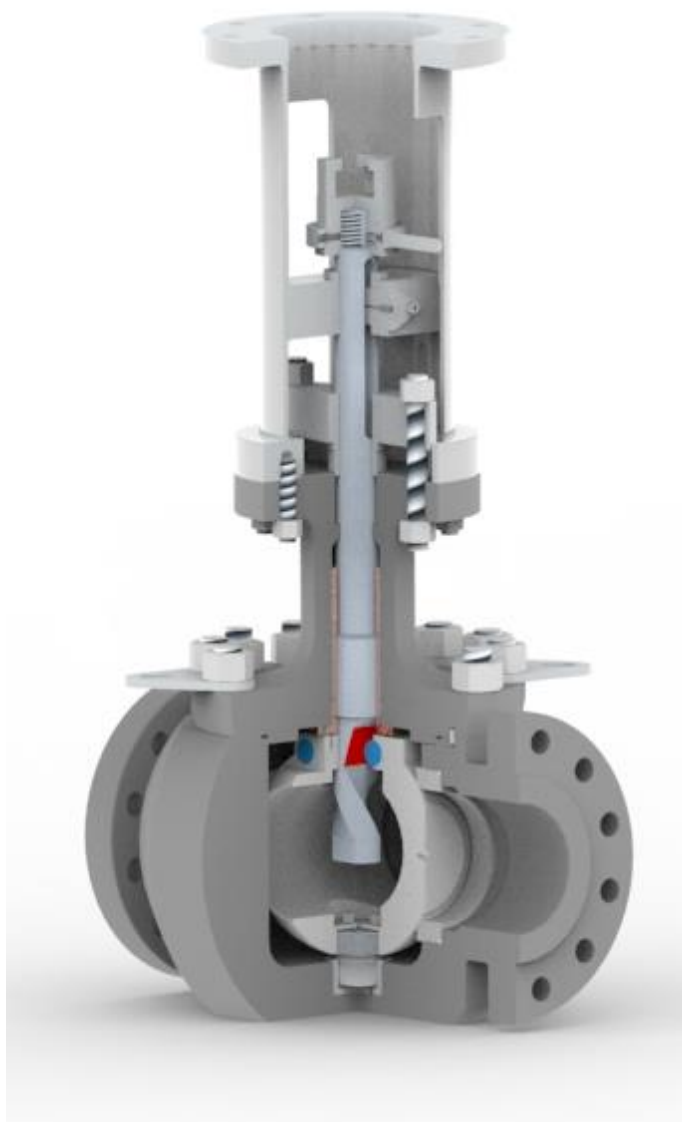
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LANCKER PLC

Application

LCM Rising Stem Ball Valves (RSBV) are an excellent choice for applications where frequent cycling or tight shut-off are mandatory requirements or when service conditions are extreme such as low or high temperatures and high pressures. The LCM RSBV is designed for a long lifetime service and minimized maintenance. The LCM RSBV is typically used in zero leakage applications, in Hydrogen or Hydrocarbon processing plants or for dirty and high temperature service. The LCM RSBV is the proven design for gas processing plants using molecular sieve systems (in switching service).



LCM Rising Stem Ball Valve design

All LCM RSBV are executed in top entry design in order to keep maintenance to a minimum and ease of internal inspections with the valve installed in the pipeline. The standard design is suitable for low and high temperature application. The basis of the design is the friction free movement between ball and the single seat. This ensures a smooth and low torque valve operation. The non-contact movement avoids abrasion of the sealing area which guarantees a high performance during the entire valve lifetime.

The sealing is guaranteed by a linear stem movement that pushes the ball/core towards the seat during the closure operation to

achieve a zero leakage mechanical seal. There is no rubbing or sliding contact between ball and seat, this allows frequent cycling without wearing off the sealing areas.

The specially lapped weld overlay on the sealing area in Stellite6 ensures a long life service minimizing maintenance activities and grants zero leakage.

The LCM RSBV with outside screw and yoke, anti-blowout stem, backseat and stuffing box gland packing design is the valve of choice for standard low emission.

A self-cleaning and flushing effect is obtained by the ball tilting movement during the first stages of the opening sequence in which a flow passes all around the ball, removing any dirty particles from the sealing area.

All LCM RSBV meet the requirements for pressure vs temperature ratings as per ASME B16.34 with optional heavy wall thickness for corrosion allowance.

LCM RSBV can be executed bi-directional upon request, standard design has a positive seal in preferred flow toward seat direction.

RSBV are available with hand wheel gearbox operator as well as electric, pneumatic or hydraulic actuators.

Operating principle

The linear movement of stem ensures open and close cycling of the valve. Regardless of line pressure, the ball is mechanically seated by the helix shaped stem. A friction free open/close operation is achieved by the helix shaped stem. A low torque valve operation, long life and reliable valve performance is thereby achieved.

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1) Valve in Fully Closed Position (figure 1.1 – 1.2):

In closed position, the ball is mechanically wedged toward the seat by the flat part of the stem just above the helix. The stem is moved to the lowest position.

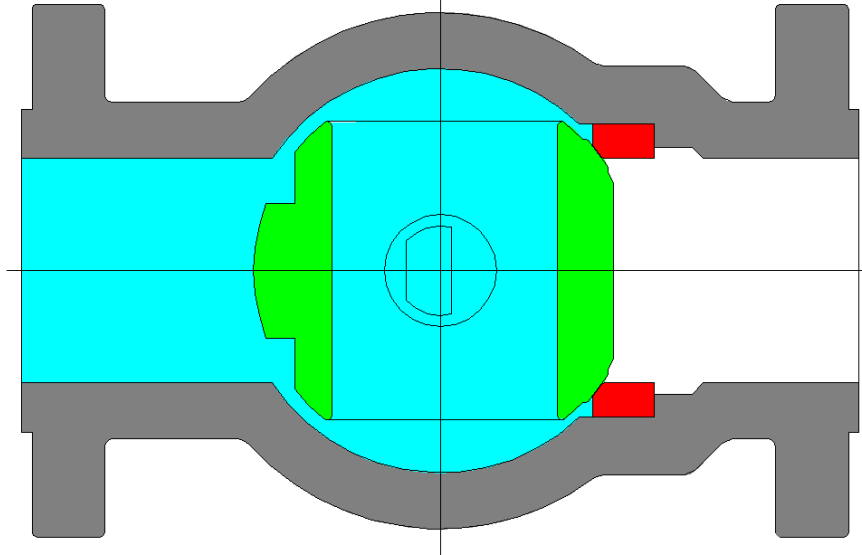


Figure 1.1

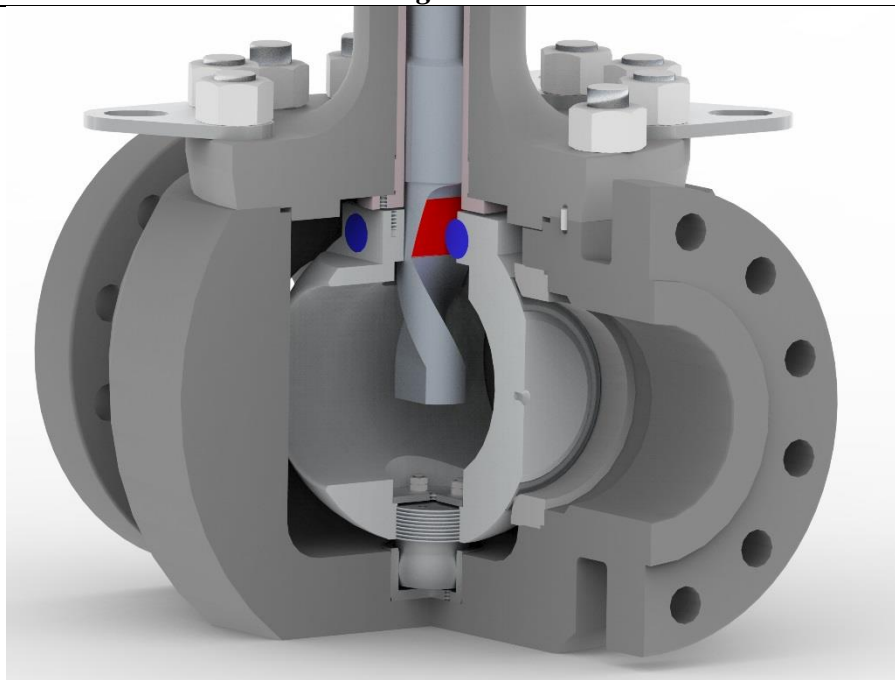


Figure 1.2

2) Start to open (figure 2.1 – 2.2):

At first stage of opening the valve, the upward linear movement of the stem passes through the roller pins of the ball, tilting it from the seat. There is no ball rotation yet. A flow line passes around the ball, cleaning the sealing area removing any dirty particles.

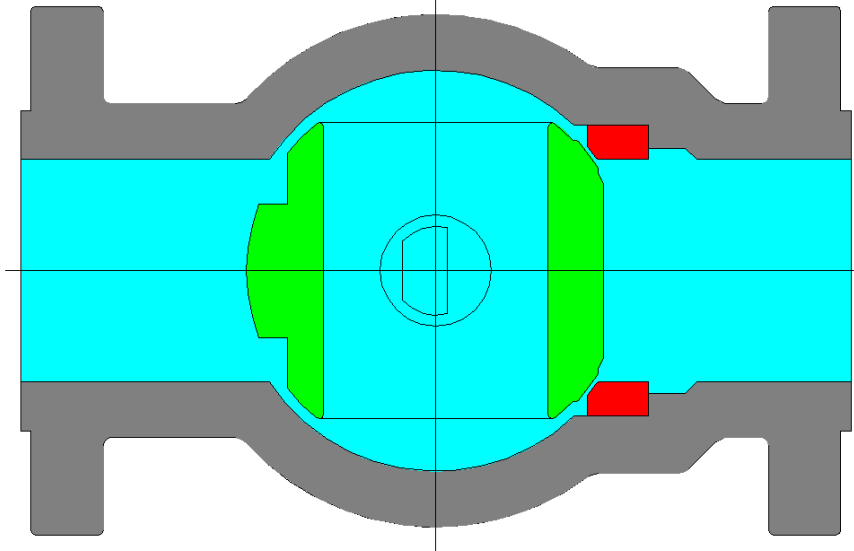


Figure 2.1

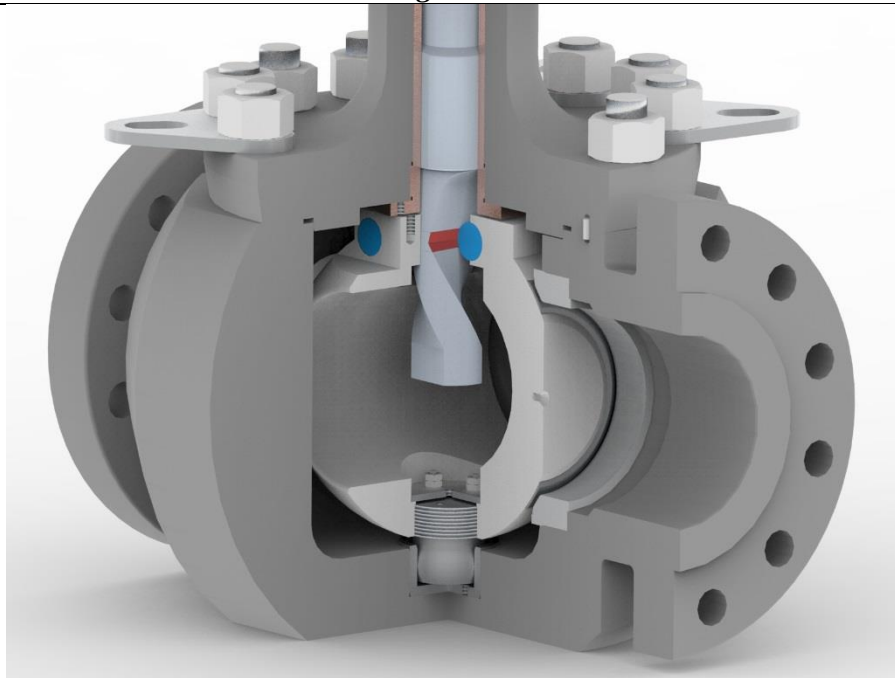


Figure 2.2

3) Ball Rotation (figure 3.1 – 3.2):

When the helix part of the stem engage the ball's roller pins, the ball starts to rotate. During rotation there is no contact between ball and seat. When the stem is raised to its maximum upper limit, the ball has turned a full 90 degrees.

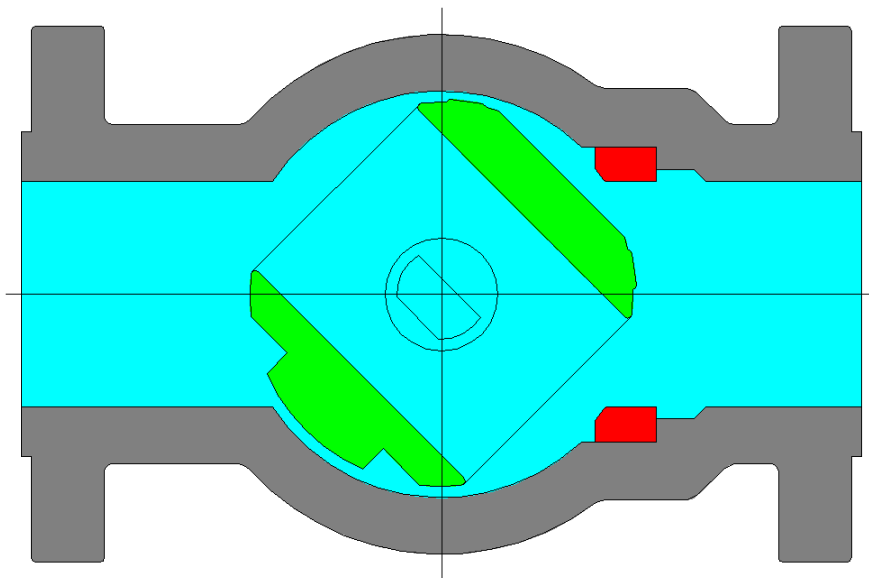


Figure 3.1

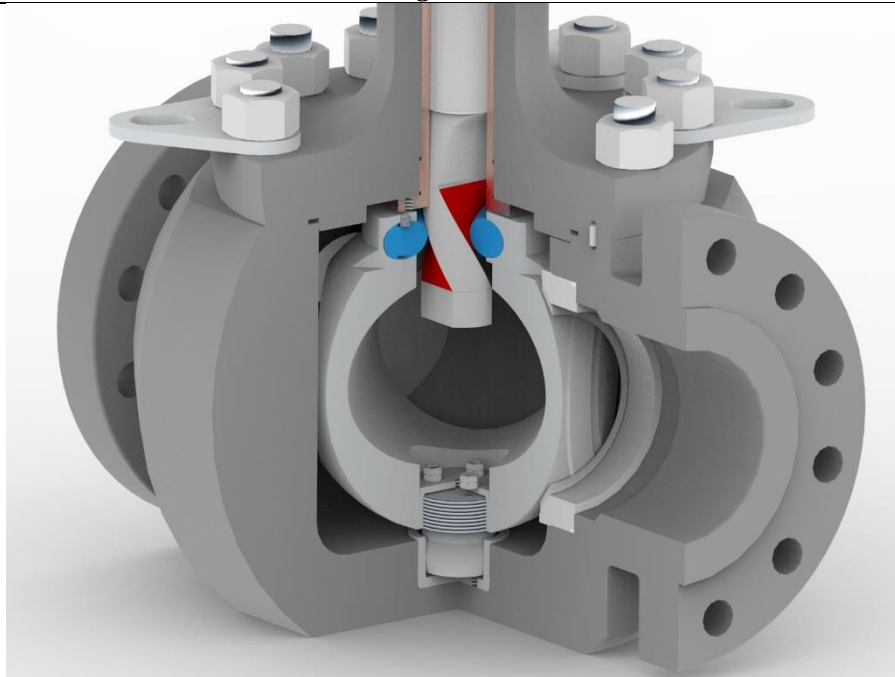


Figure 3.2

4) Valve in Fully Open Position:

In the fully open position there is no contact between ball and seat. The pressure across the entire valve body is equalized with the pipe. Stem is raised to its maximum upper limit

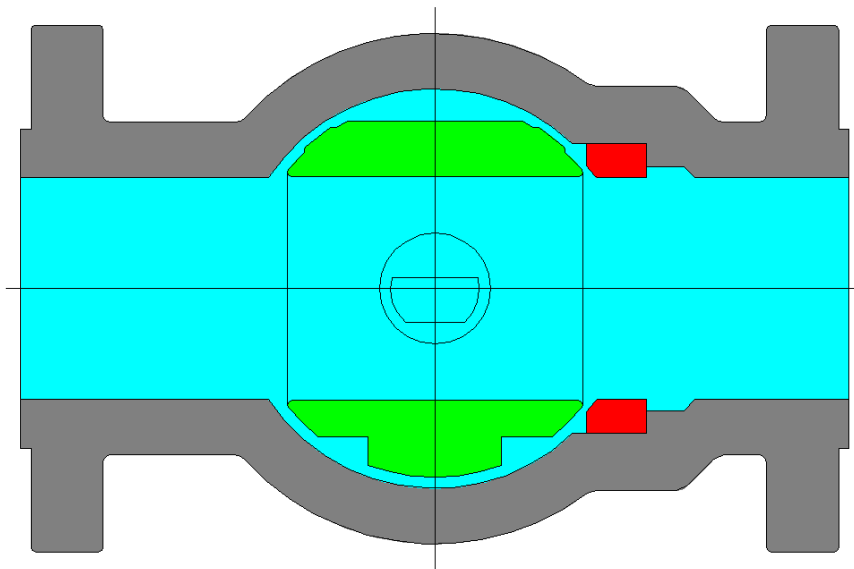


Figure 4.1

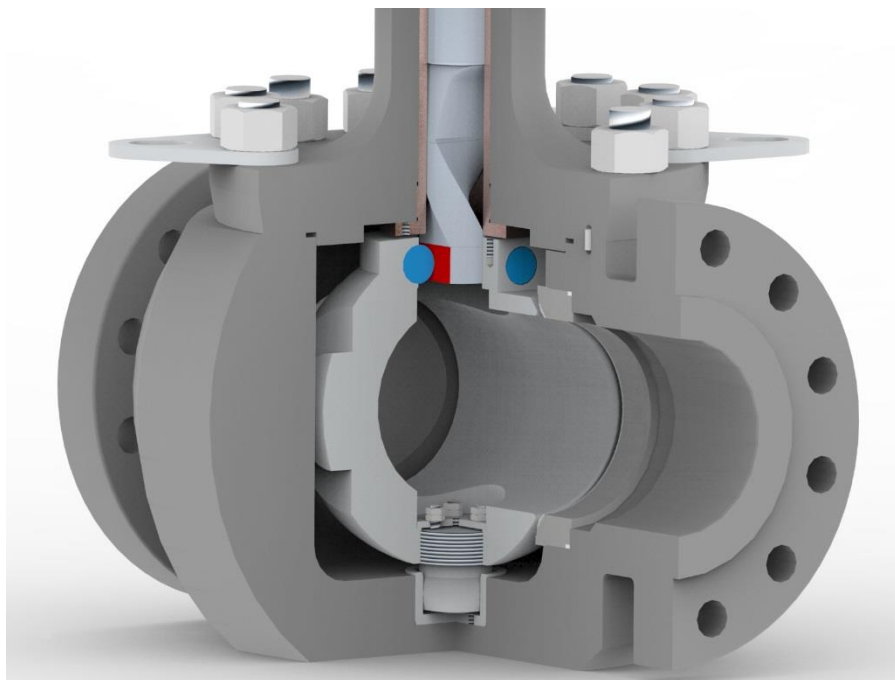


Figure 4.2

Technical specification

Size range	1" to 24"
Pressure Rating	ASME 150lbs to ASME 2500lbs
Temperature Range	- 196 °C to + 600 °C
End Connection	Flanged RF/RJ - Butt weld – Hub End - Socketweld - Threaded
Face to Face dimension	API 6D, Manufacturer standard or at special request
Port	Full Bore / Reduced bore
Body Wall Thickness	ASME B16.34 - ASME VII Div.1
Bolting	ASME B16.34 - ASME VII Div.1
Stem Packing Options	Adjustable Graphite Packing – Self Energized PTFE Packing
Flow Direction	Unidirectional or Bidirectional
Material Construction	Low temperature and low alloy carbon steel; Stainless Steel; Duplex and super duplex stainless steel; Nickel alloy
Operation	Hand wheel - Gear operator - Actuator

Design Features

<i>Low maintenance, top entry</i>	✓
<i>Outside screw & yoke</i>	✓
<i>Heavy wall thickness</i>	✓
<i>Anti-blowout stem API 6D</i>	✓
<i>Linear rotation-free operation</i>	✓
<i>Tight shut-off ANSI FCI-70-2 Class VI</i>	✓
<i>Adjustable stem packing</i>	✓
<i>No "sticking" effect</i>	✓
<i>High CV Values</i>	✓
<i>No cavity</i>	✓
<i>Helix shaped stem</i>	✓
<i>Standard suitable for low temperatures</i>	✓
<i>Extended lower bushing for dirty service</i>	✓
<i>Low torque/thrust</i>	✓
<i>Bi-directional upon request</i>	✓
<i>Fire safe by design</i>	✓

Certification

API 6A / ISO 10423



API 6D / ISO 14313



ISO 9001



ISO 14001



BS OHSAS



PED 2014/68 EU



ATEX 94/9 EC



FOR ANY INQUIRY PLS CONTACT OUR SALES DEPARTMENT

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