

VELAN TRUNNION-MOUNTED

Velan's standard trunnion-mounted ball valves offer increased value by incorporating advanced design features.

TRUNNION-MOUNTED BALL

The ball is fixed and the seat rings are floating, free to move along the valve axis.

Side load generated by the pressure acting on the ball is absorbed by bearings.

At low pressure the seat sealing action is achieved by the thrust of the springs acting on the seat rings.

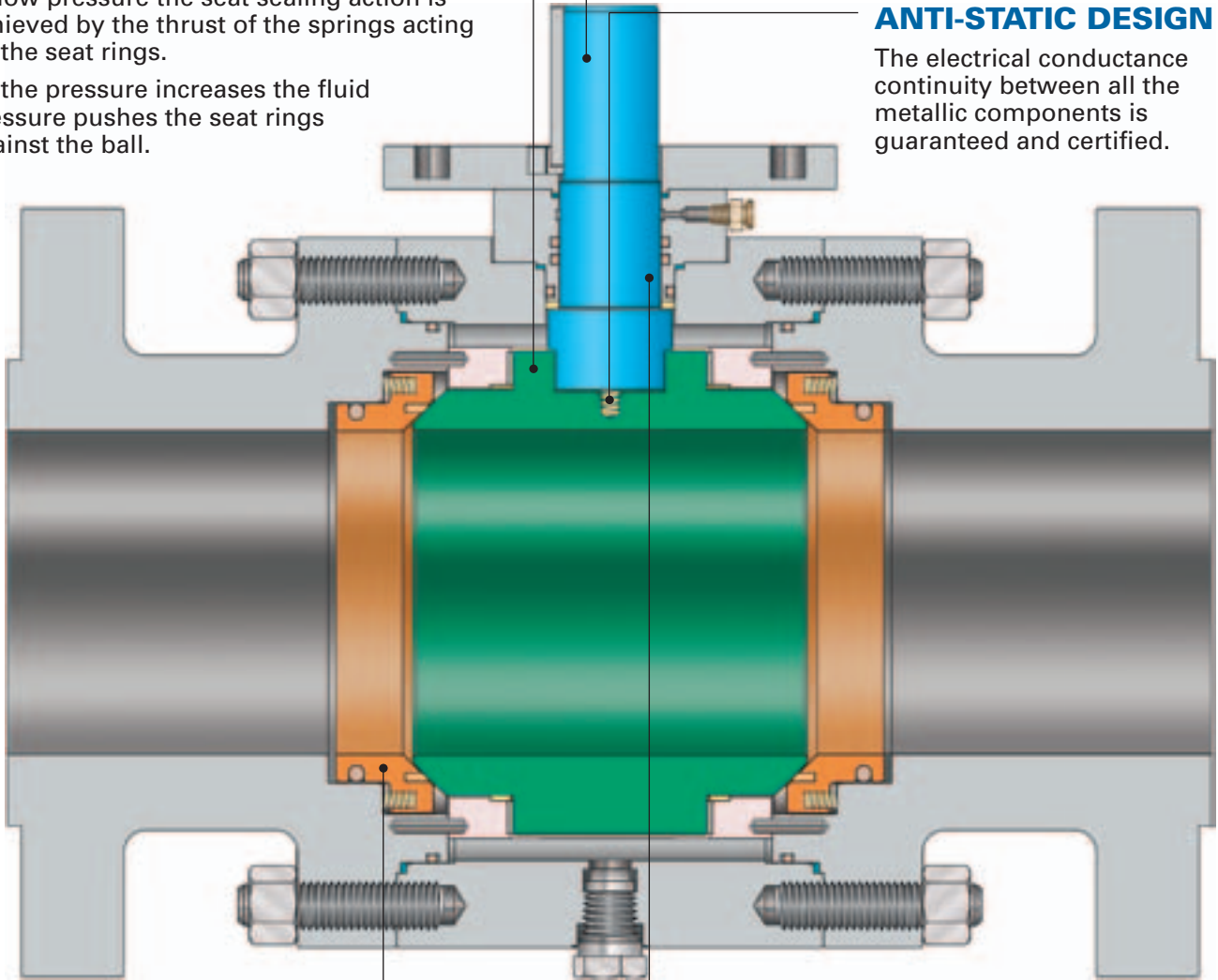
As the pressure increases the fluid pressure pushes the seat rings against the ball.

INDEPENDENT BALL AND STEM

The ball and stem are independent to minimize the effect of the side thrust generated by the pressure acting on the ball.

ANTI-STATIC DESIGN

The electrical conductance continuity between all the metallic components is guaranteed and certified.



FLOATING SEAT RINGS

Two independent floating seat rings assure the bi-directional tightness of the valve. The seats are carefully designed to minimize the torque required to operate the valves without losing sealing power, which is assured from zero differential pressure to the valve's maximum rated pressure.

LOW EMISSION VALVES

Accurate machining of stem and bonnet sealing surfaces ensures compliance with the most severe pollution control regulations.

Special "live" seals are available on request.

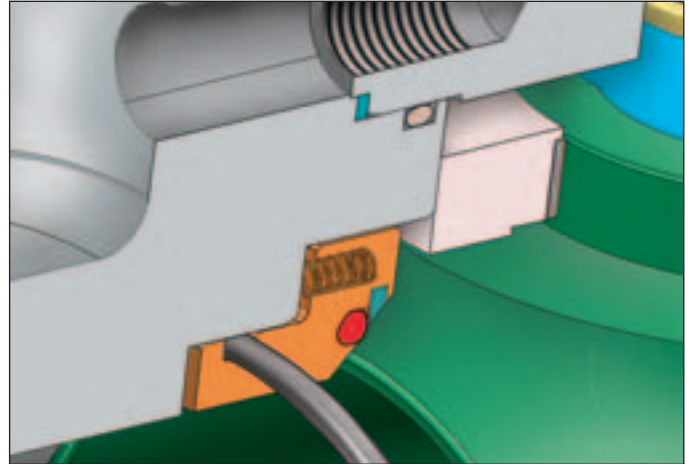
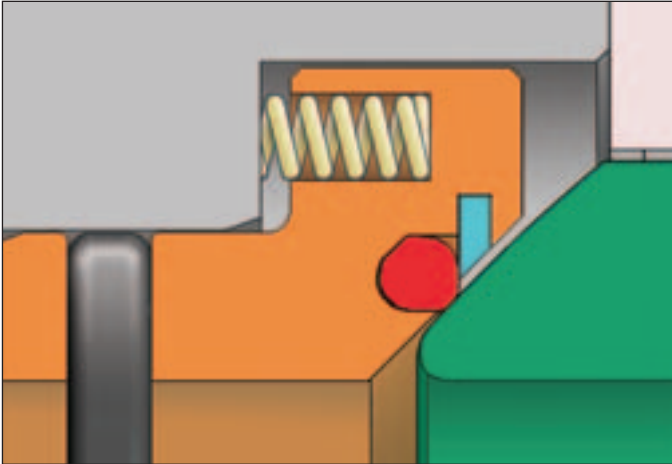
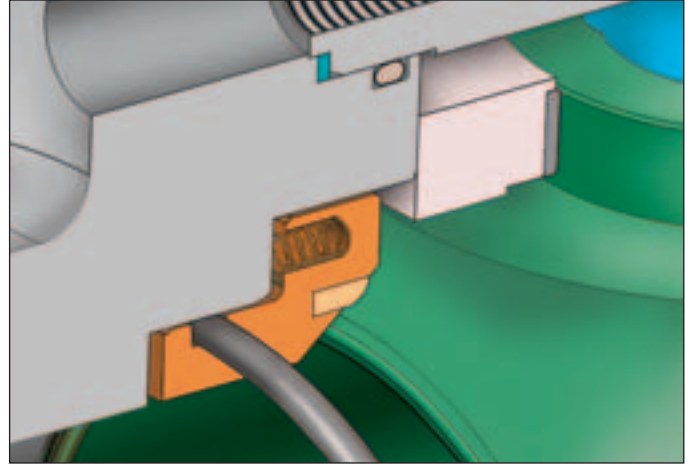
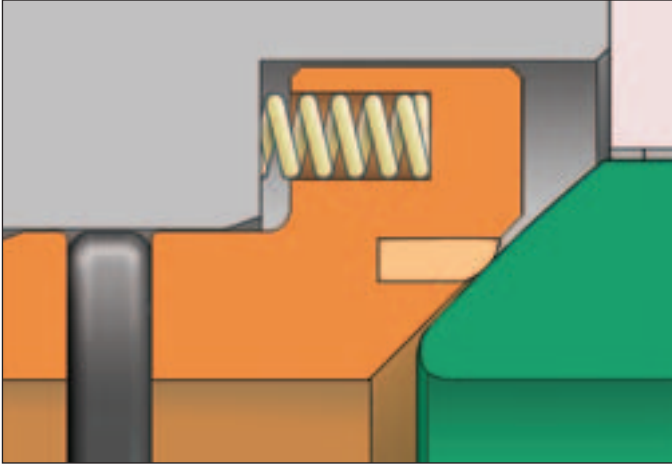
DOUBLE BLOCK & BLEED

The double block and bleed feature, both with the ball in the fully closed or fully open position, is a standard feature.

BALL VALVE DESIGN FEATURES

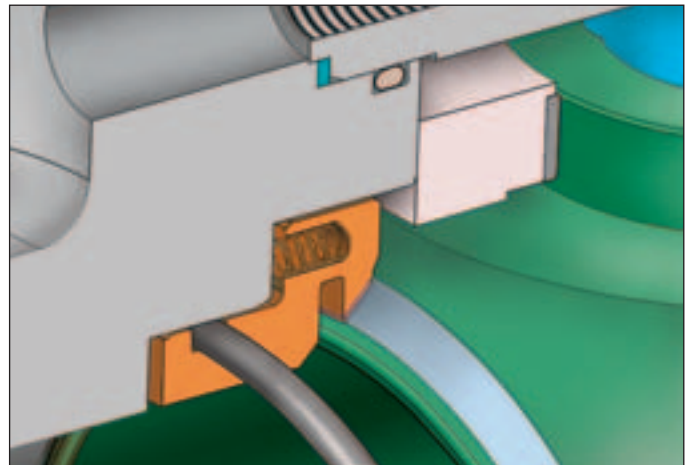
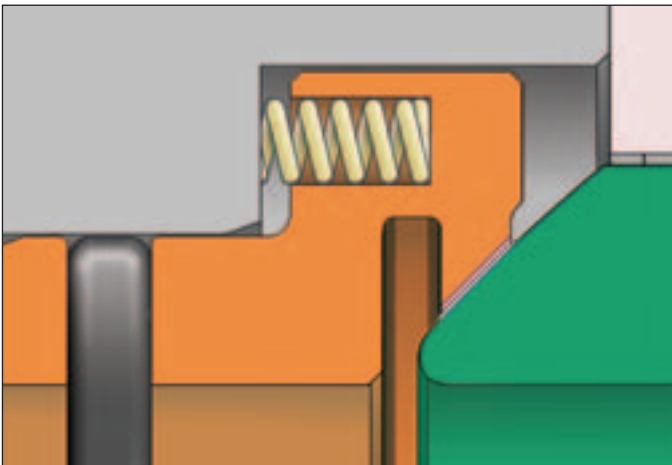
SOFT-SEATED VALVES

In valves designed for standard service, a resilient material is inserted into the metal seat holder to provide a soft seating action in addition to the metal to metal seating between the ball and the seat rings.



METAL-SEATED VALVES

Valves designed for abrasive service or for operation in temperatures that prohibit the use of a resilient material have seating action provided by the metal to metal contact between the ball and the seat rings. Seating faces are hardfaced.



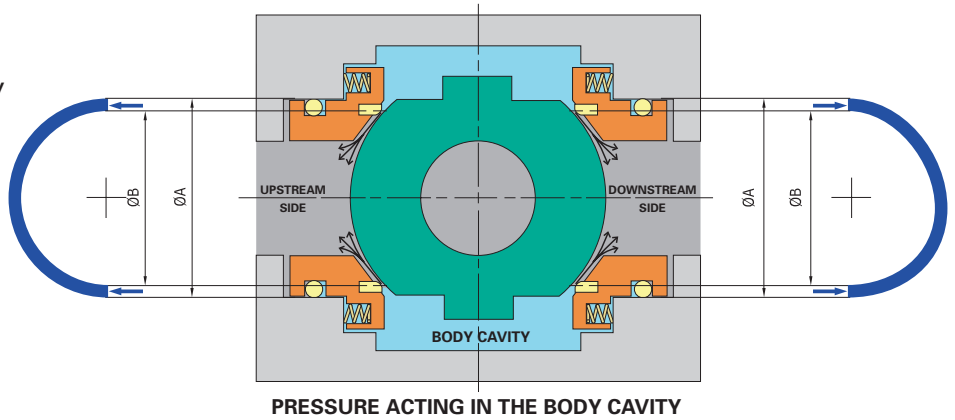
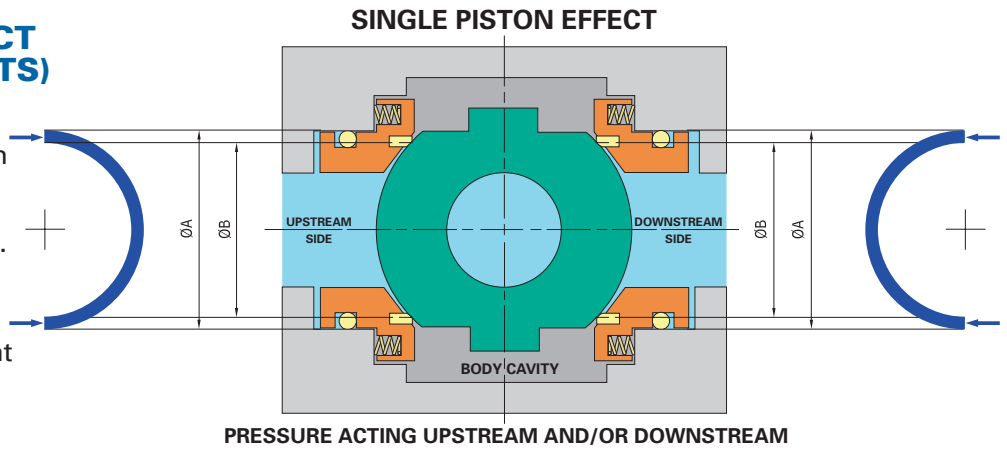
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STANDARD SINGLE PISTON EFFECT (SELF-RELIEVING SEATS)

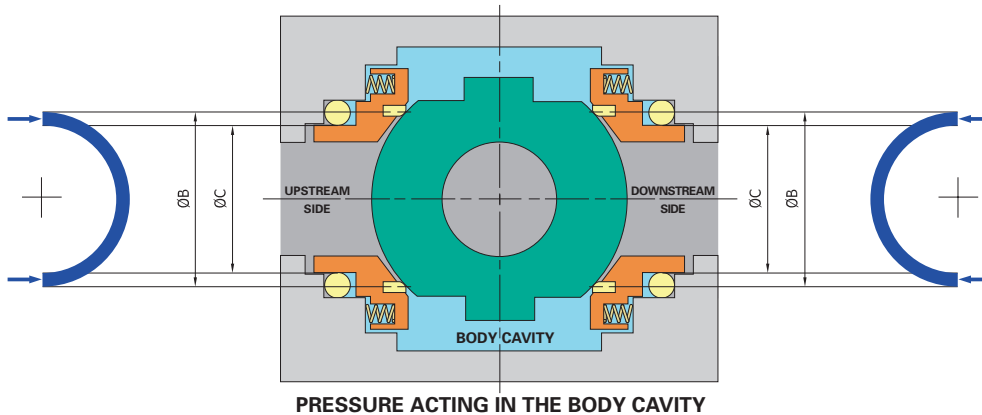
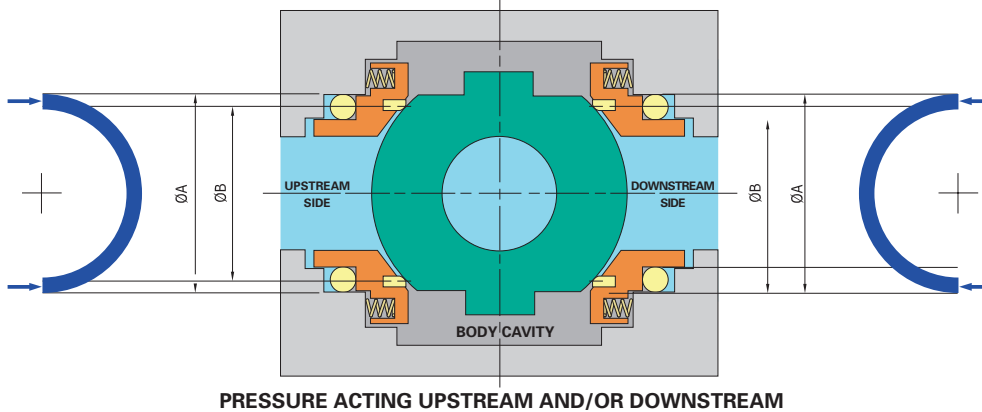
Fluid pressure, both upstream and downstream, creates a resultant thrust that pushes the seat rings against the ball.

Fluid pressure acting in the body cavity creates a resultant thrust that pushes the seat rings away from the ball.

The single piston design permits the automatic release of any overpressure in the body cavity when the valve is in the fully open or fully closed position, therefore the seat rings are "self-relieving".



DOUBLE PISTON EFFECT



OPTIONAL DOUBLE PISTON EFFECT

Fluid pressure, both upstream and downstream, as well as in the body cavity creates a resultant thrust that pushes the seat rings towards the ball.

Valves with double piston effect seat rings may require a relief valve in order to reduce the build-up of overpressure in the body cavity.

BALL VALVE DESIGN FEATURES

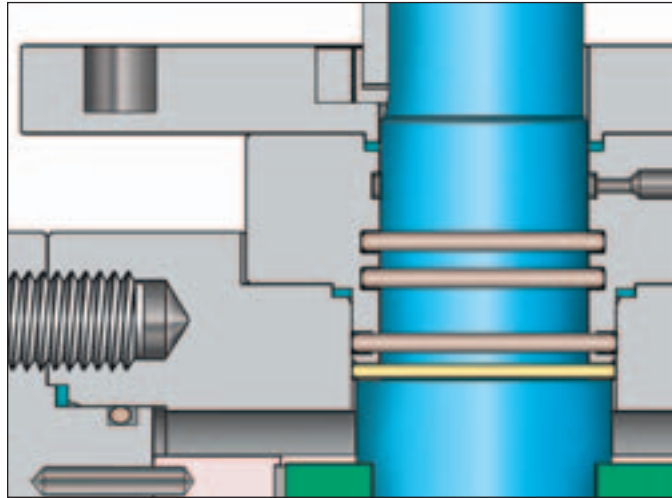
STEM SEALING

Two O-rings and one graphite gasket, retained by the gland bushing, ensure the stem seal.

An emergency sealant injection port is located between the upper O-rings and the graphite gasket.

The graphite gasket can be replaced while the valve is under pressure and with the ball in any position. This is done by removing the gland plate, after having released through the grease-injection fitting hole, any pressure that may exist between upper O-ring and the graphite gasket.

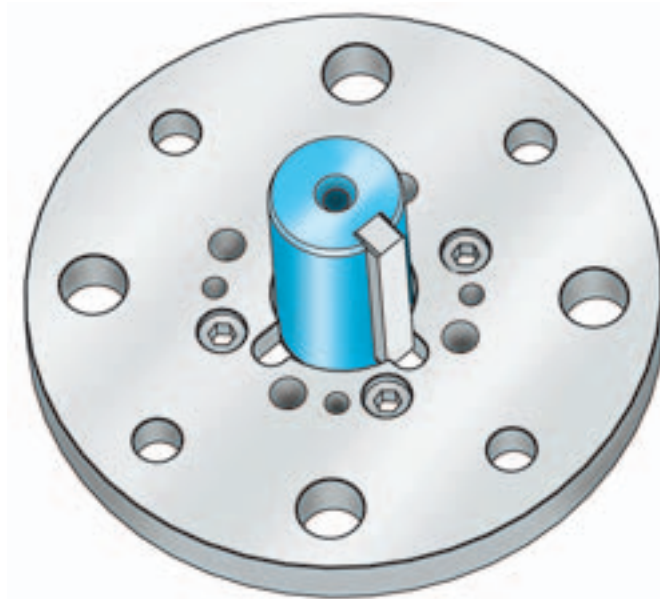
The stem seals can be replaced with the valve under pressure, when the ball is in the fully open or fully closed position, and the body cavity overpressure has been released to the atmosphere.



BODY SEALING

The double sealing action of O-rings and graphite gaskets in all the static joints of the body components ensures zero leakage.

O-rings can be replaced by lip-seal rings and/or graphite gaskets for special services.



BALL SEAT ALIGNMENT

Mechanical stops ensure control over ball rotation and permit accurate mounting of actuators on valves in-line.

ACTUATION

Hand operated valves are supplied either with a lever or gear operator.

The use of wrench is limited to valves equal or smaller than:

- 4" – Class 150
- 4" – Class 300
- 3" – Class 600
- 3" – Class 900
- 2" – Class 1500
- 1" – Class 2500

Actuated valves can be supplied with:

- Electric Actuators
- Pneumatic Actuators
- Hydraulic Actuators
- Gas over Oil Actuators

Gear operators can be easily removed in-service and replaced with actuators.

FIRE SAFE

Velan trunnion-mounted ball valves are designed and certified Fire Safe to API 6FA, API 607, BS 6755 Part 2.



DESIGN FEATURES

EMERGENCY SEALANT INJECTION

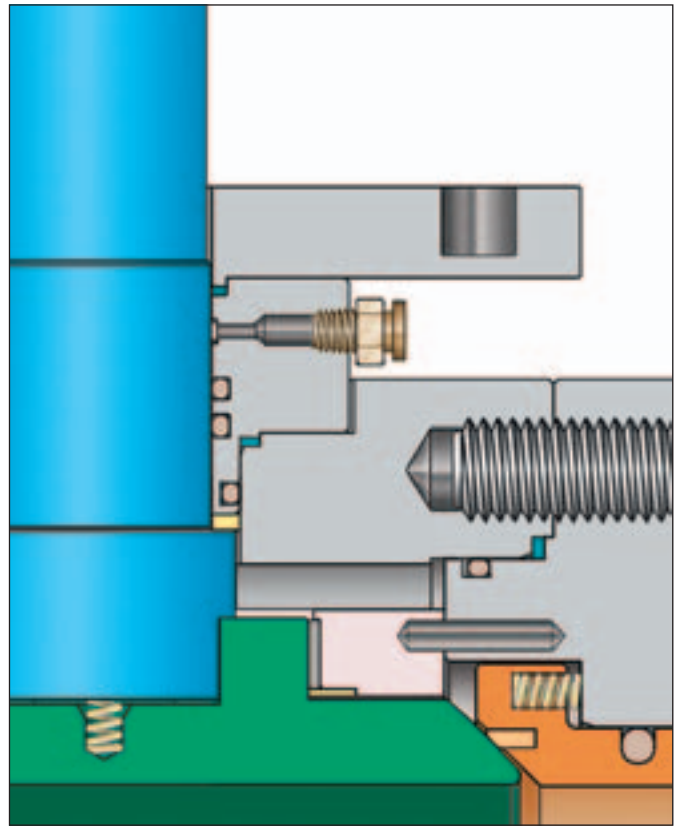
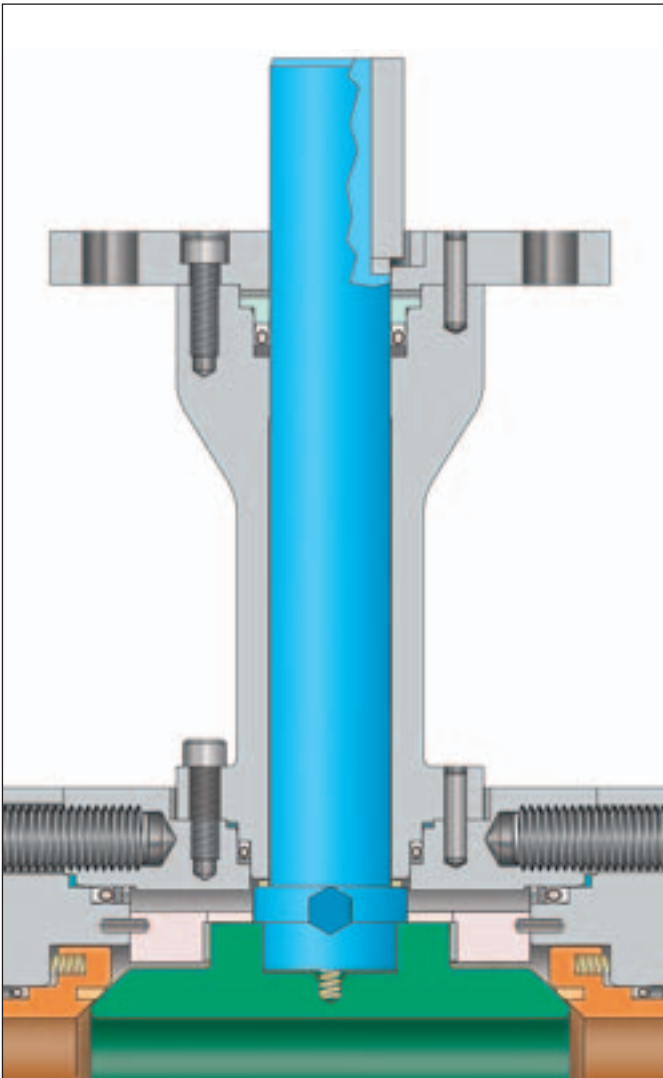
Each valve has a port for sealant injection in the stem seals area and an option for an emergency sealant injection feature in the seating area.

The emergency sealant injection feature in the seating area is available on request for valves of at least 6" nominal size.

EXTENDED BONNET

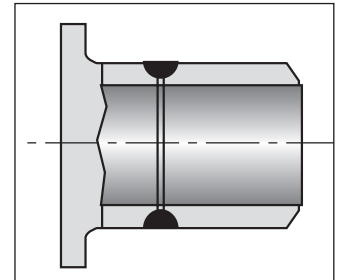
Valve designs are available with extended bonnets for applications in extreme temperature service.

Extended bonnets are recommended for service at temperatures below -50°C or above 220°C.



TRANSITION PUPS

Transition pups are supplied on request for welded end valves.



EXTENDED STEM

Valves installed underground or in remote locations can be operated with an optional extended stem.

All the drain, vent and emergency sealant connections can be operated using extended connecting pipes firmly attached to the stem protective cover.

