Bi-directional Tracking Seat Design

Equal Sealing Performance in Either Direction

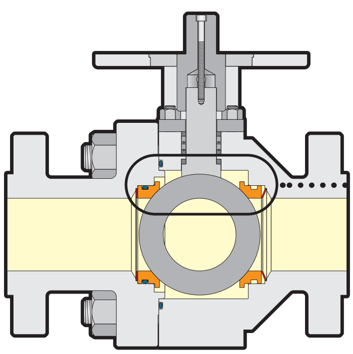
Only the MOGAS tracking seat design provides true bi-directional shutoff without using a check valve.

MOGAS CST Bi-directional Seat Design

In a **bi-directional** ball valve application, pressure reversal will cause the ball to shift within the body. If a gap forms between the ball and seat sealing surfaces, particles could enter and quickly develop into **severe erosion** due to the high pressure of slurry transport applications.

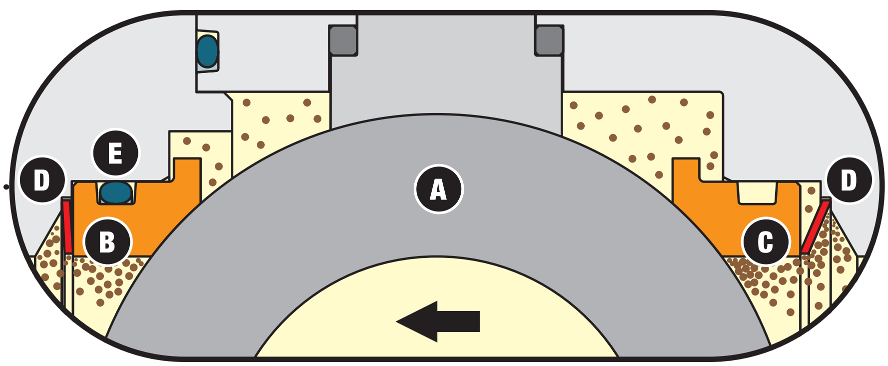
The MOGAS CST bi-directional seat design is engineered to maintain **constant contact** between the ball and seats during this shift, ensuring **continuous wiping** action that leaves the sealing surfaces free of solids.

Tracking Seat Design



CST Valve Design

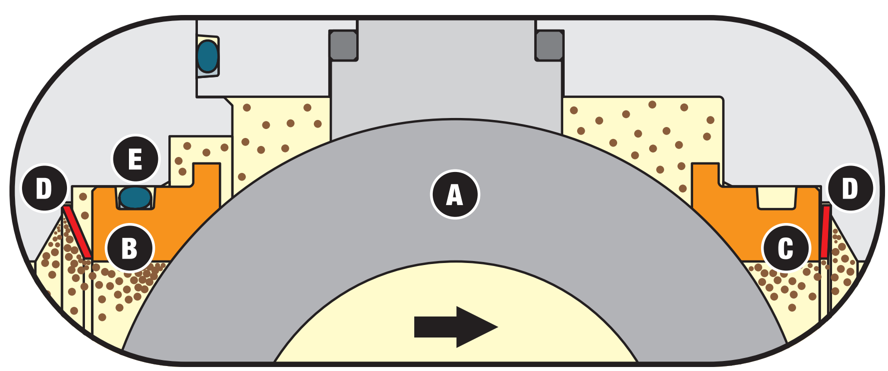
See page 2 for comparisons of typical seat designs used in Slurry Transport.



Normal Pressure

During **normal pressure**, the ball shifts toward the **primary sealing seat** (normally oriented downstream). The **seat springs** behind each seat apply the needed force to maintain **constant contact** with the ball. In addition, the primary sealing seat employs an **o-ring** to provide a **secure seal** between the seat and body.

- **A** Ball (in closed position)
- **B** Primary Sealing Seat
- **C** Secondary Seat
- **D** Belleville Spring
- **E** O-ring Seal



Reverse Pressure

During **reverse pressure**, the ball shifts toward the **secondary seat**. Again, the **seat springs** behind each seat apply the needed force to maintain **constant contact** with the ball, while the **o-ring** provides a **secure seal** between the seat and body.

SEVERE SERVICE BALL VALVES

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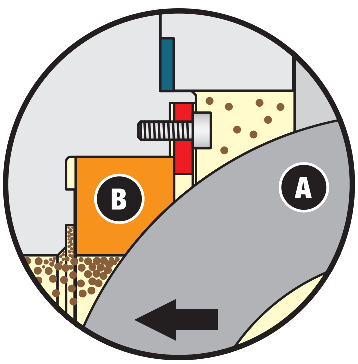
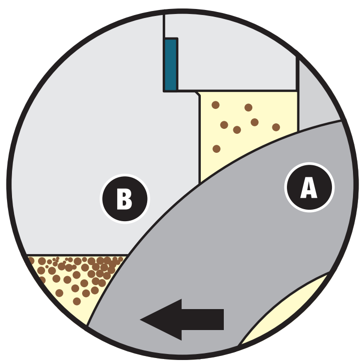
Typical Seat Designs Used for Slurry Transport

Slurry transport operating challenges are similar—but the engineered designs to handle them are not. Below are some comparisons of different sealing designs that are used in severe service ball valve applications.

Locked-in Seat Design



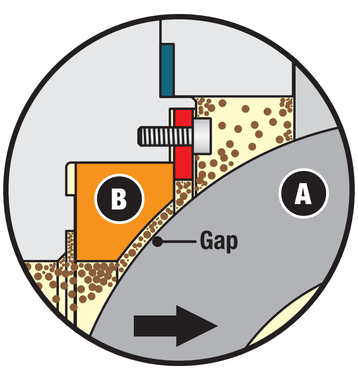
Integral Seat Design

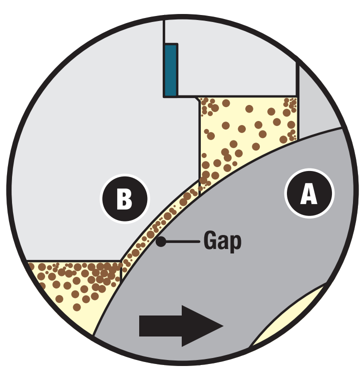


Integral seat designs do not allow bi-directional shutoff without a downstream check valve to prevent back pressure.

Normal Pressure

Uni-directional **locked-in** seat designs or **integral** seat designs are sometimes incorrectly used in bi-directional applications.





A Ball (in closed position)
B Primary Sealing Seat

Reverse Pressure

With reverse pressure, locked-in seat designs or integral seat designs will form a **gap** between ball and seat, allowing **particles** to enter the sealing area and create **leak paths** and / or **severe erosion**.

MOGAS®
SEVERE SERVICE BALL VALVES