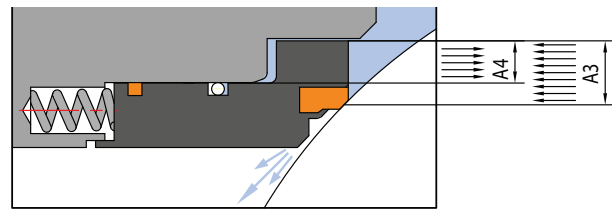
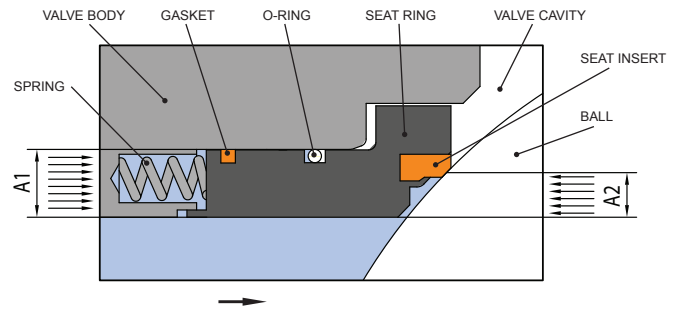


DBB vs. DIB

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How Do Single Piston Effect Seats Work?

1. During normal operation, upstream or downstream pressure in combination with force created by the seat springs pushes the seat ring against the ball creating positive shutoff ($A1 > A2$).



Pressure acting in the body cavity allows "self relieving" of the seat

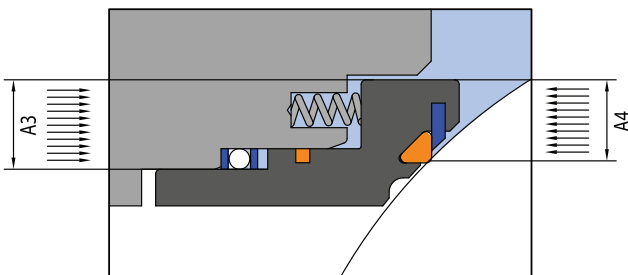
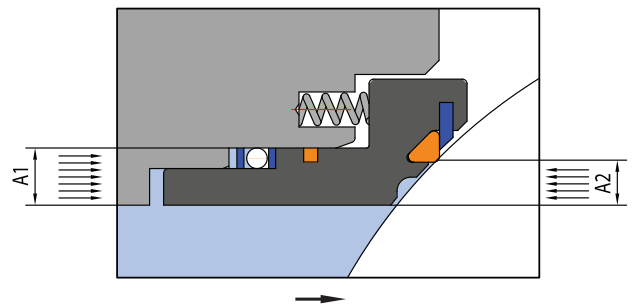
2. With media trapped in the body cavity any increase in media pressure attempts to push the seat ring away from the ball ($A3$). As pressure in the cavity continues to increase a point is reached where the pressure in the cavity can now overcome the spring force and any other forces ($A4$).

The resultant force pushes the seat assembly away from the ball ($A3 > A4$). Seat assemblies with this feature are referred to as "self relieving".

A valve with two single piston effect seats has a double block and bleed (DBB) design.

How Do Double Piston Effect Seats Work?

1. During normal operation, upstream or downstream pressure in combination with force created by the seat springs pushes the seat ring against the ball creating positive shutoff ($A1 > A2$).



Resultant pressure acting in the body cavity pushes seat against the ball.

2. With media trapped in the body cavity any increase in media pressure acts to push the seat ring against the ball ($A3$). As a result, regardless of whether the pressure is from upstream, downstream or within the body cavity, the seat ring is always pushed against the ball.

The movement of the seat ring against the ball is created due to differences in the effective pressure influenced area of the upstream and downstream side of the seat assembly ($A3 > A4$). Seat assemblies with this feature are not self relieving.

A valve with two double piston effect seats has a double isolation and bleed (DIB-1) design.