

Standard Features of DSI® Stainless Steel Valves

Low Fugitive Emission Service

DSI® Stainless Steel Gate, Globe and Check Valves are designed and manufactured to ensure leakage of less than 100 ppm (parts per million) of volatile organic compounds.

Base line laboratory testing (static and cycle testing) has been performed establishing critical design parameters necessary to achieve low emission sealing in the DSI® stem packing seal area

for Gate and Globe Valves and in the bonnet gasket sealing area (cover gasket for Check Valves).

In-house testing procedures have been developed and are periodically performed to ensure that standard product design and manufacturing criteria consistently result in the DSI® Gate, Globe and Check Valve meeting a maximum of 100 ppm VOC leakage prior to shipment.

Critical Design and Manufacturing Controls Applied To Produce Low Emission Service Valves In DSI® Standard Products.

- Stem Straightness and Roundness
- Stem Surface Finish To Maximum 32 Ra
- Stuffing Box Surface Finish To Maximum 125 Ra
- Stuffing Box and Gland Cylindricity
- Self Centering Gland Design
- Gland Packing: Die-formed Graphite Rings with Braided Graphite Top and Bottom Wiper Rings, or Braided PTFE.
- Bonnet Gaskets:
 - Class 150 Gate, Globe & Check Valves: 316 SS Tanged Clad Graphite or PTFE
 - Class 300 & 600 Valves: 316 SS Spiral Wound or PTFE

Low Emission Design Options

Live Load Packing

For valves in service that require frequent cycling or high pressure/temperature variations (Graphite only), live loading can extend the service life between maintenance periods by requiring less frequent packing gland adjustments. Belleville springs are employed to provide constant packing gland stress.

Durable Bonnet Gasket Design

DSI® Stainless Steel valves are furnished with an encapsulated (tongue and groove) body-to-bonnet joint design on class 150, 300 and 600 gate, globe and check valves. Additionally, the relatively narrow ASME standard face to face dimension of class 150 flanged end gate valves presents a challenge in typical bonnet gasket designs normally resulting in the utilization of oval style bonnet gaskets.

Oval style gaskets, while typically used industry wide, are less durable due to differentiating radii.

DSI® Stainless Steel valves have been designed to overcome this problem by providing a body design that facilitates a fully symmetrical, round body-to-bonnet gasket contact surface area. This round bonnet gasket design, in pressure classes 150, 300 and 600, is an inherently stronger gasket than a typical oval gasket.

Packing System

DSI® Stainless Steel Gate and Globe valves use a combination of die-formed flexible graphite and inter-braided graphite in a predetermined arrangement to ensure an effective seal. Graphite packing achieves its maximum ability to isolate the atmosphere when it is contained within a chamber that is precise

in finish and dimension. DSI® Gate and Globe valves are manufactured with stem finishes better than 32 Ra and stuffing box wall finishes for 125 Ra. In addition, stem straightness and taper are closely controlled. Braided PTFE packing is also available as a DSI® standard valve packing - please specify at time of order.

