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PRESSURE SEAL BONNET VALVES

1. <u>SCOPE</u>

1.1 This Standard Practice covers construction requirements for steel and alloy valves having pressure seal bonnets in the size range of NPS 2 (DN 50) through NPS 50 (DN 1250) and Pressure Classes 600, 900, 1500, 2500, and 4500. This Standard Practice applies to gate, globe, and check valves and may be used in conjunction with other valve-specific standards; including the following identified in this Standard Practice as parent valve standards:

API 594, Check Valves; Flanged, Lug, Wafer, and Butt-welding

API 600, Steel Gate Valves – Flanged and Butt-welding Ends, Bolted Bonnets

API 603, Corrosion-resistant, Bolted Bonnet Gate Valves – Flanged and Butt-welding Ends

API 623, Steel Globe Valves – Flanged and Butt-welding Ends, Bolted Bonnets

ASME B16.34, Valves-Flanged, Threaded, and Welded End

1.2 For parent valve standard, API 600, this Standard Practice covers two styles of pressure seal bonnet valves as follows:

- a. Style A valves in accordance with API 600, except modified with ASME B16.34 minimum wall thicknesses, smaller diameter seats and stems, and pressure seal bonnet requirements of this Standard Practice.
- b. Style B valves in accordance with API 600, except as modified for pressure seal bonnet requirements of this Standard Practice.

1.3 Except for the requirements for modification to pressure seal bonnets and Style A gate valve modifications, and Style B gate valve specific details, the requirements of this Standard Practice are not intended to replace requirements of the parent valve standard. In the event of a discrepancy between this Standard Practice and a governing normative standard affecting valve construction besides the pressure seal, then the governing normative standard shall take precedence. 1.4 Stop check valves shall be constructed to the requirements of a globe valve parent valve standard except as modified for pressure seal bonnet requirements of this Standard Practice.

1.5 This Standard Practice includes additional construction detail requirements specifically related to parent standard valves modified with pressure seal bonnets.

1.6 Annex A illustrates pressure seal bonnet gate valves and a typical pressure seal bonnet detail for the purposes of identifying nomenclature used in this Standard Practice for valve parts.

2. **DEFINITIONS**

2.1 *General* Definitions given in MSS SP-96 apply to this Standard Practice.

2.2 *Construction* An all-inclusive term comprising materials, design, fabrication, examination, testing, inspection, and certification required in the manufacture and installation of a valve.

2.3 **Parent Valve Standard** This Standard Practice endorses the referenced valve standard construction requirements but has additional construction detail requirements not addressed by the referenced parent valve standard.

2.4 *Pressure Seal Gasket* The pressure sealing part of a pressure seal joint.

2.5 **Pressure Seal Bonnet** A valve bonnet closure assembly in which internal fluid pressure-force on the bonnet increases the compressive loading on the sealing gasket creating a self-sealing closure.

2.6 *Segmental Retaining Ring* A sectioned metallic ring (two or more parts) used in a pressure seal valve bonnet design to retain the valve bonnet/gasket structure from disengaging from the valve body (see Annex A).