Steel Globe Valves—Flanged and Butt-welding Ends, Bolted Bonnets

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1 Scope

This API standard specifies the requirements for a heavy-duty series of bolted bonnet steel globe valves for petroleum refinery and related applications where corrosion, erosion and other service conditions would indicate a need for heavy wall sections and large stem diameters.

This standard sets forth the requirements for the following globe valve features:

— bolted bonnet,

— outside screw and yoke,

— rotating rising stems, and nonrotating rising stems,

— rising handwheels and nonrising handwheels,

— conventional, y-pattern, right-angle,

— stop-check (nonreturn type globe valves in which the disc may be positioned against the seat by action of the stem, but is free to rise as a check valve due to flow from under the disc, when the stem is in a full or partially open position),

— plug, narrow, conical, ball, or guided disc,

— metallic seating surfaces,

— flanged or butt-welding ends.

It covers valves of the nominal pipe sizes NPS:

— 2, $2^1/_2$, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 24;

corresponding to nominal pipe sizes DN:

— 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600;

applies for pressure class designations:

— 150, 300, 600, 900, 1500, 2500.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Standard 598, *Valve Inspection and Testing*

ASME B1.1 [1], *Unified Inch Screw Threads (UN and UNR Thread Form)*

[1] ASME International, 3 Park Avenue, New York, New York 10016-5990, www.asme.org.

ASME B1.5, *Acme Screw Threads*

ASME B1.8, *Stub Acme Screw Threads*

ASME B1.12, *Class 5 Interference—Fit Thread*

ASME B1.20.1, *Pipe Threads, General Purpose (Inch)*

ASME B16.5, *Pipe Flanges and Flanged Fittings NPS 1/2 through NPS 24 Metric/Inch*

ASME B16.10, *Face-to Face and End-to-End Dimensions of Valves*

ASME B16.11, *Forged Steel Fittings, Socket-Welding and Threaded*

ASME B16.25, *Buttwelding Ends*

ASME B16.34, *Valves—Flanged, Threaded and Welding End*

ASME B18.2.2, *Square and Hex Nuts (Inch Series)*

ASME B18.2.4.6M, *Metric Heavy Hex Nuts*

ASME B31.3, *Process Piping*

ASTM A307 [2], *Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength*

ISO 5210 [3], *Industrial valves—Multi-turn valve actuator attachments*

ISO 5752, *Metal valves for use in flanged pipe systems—Face-to-face and centre-to-face dimensions*

ISO 15649, *Petroleum and natural gas industries—Piping*

MSS SP-55 [4], *Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components — Visual Method for Evaluation of Surface Irregularities*

MSS SP-102*, Multi-turn Valve Actuator Attachment - Flange and Driving Component Dimensions and Performance Characteristics*

NACE MR 0103 [5], *Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments*

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2 ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, www.astm.org.

3 International Organization for Standardization, 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, www.iso.org.

4 Manufacturers Standard Society of the Valve and Fittings Industry, Inc., 127 Park Street, N.E., Vienna, Virginia 22180-4602, www.mss-hq.com.

5 NACE International (formerly the National Association of Corrosion Engineers), 1440 South Creek Drive, Houston, Texas 77218-8340, www.nace.org.