Metal Ball Valves—Flanged, Threaded, and Welding Ends

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Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

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Introduction

In the seventh edition, the following significant changes were made:

— Limitations on pressure classes were increased for valve sizes DN 50 (NPS 2) and smaller.

— Double reduced bore was removed, but bore sizes smaller than standard reduced bore are permitted when specified by the purchaser.

— Seat ratings for PTFE and R-PTFE in Table 1 and Table 2 were increased.

— An informative annex (Annex D) was added to provide a method for validation testing of pressure temperature rating of non-metallic seats.

— Table 3 for bore sizes was revised to include the higher-pressure classes and remove the double reduced bore.

— Dimensional limitations were introduced for lever handle length and handwheel diameter of manually operated valves.

— Design of stem extension assemblies was addressed.

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1 Scope

1.1 This standard specifies the requirements for metal ball valves suitable for petroleum, petrochemical, and industrial applications—corresponding to the nominal pipe sizes in ASME B36.10—that have:

— flanged ends in sizes DN 15 through DN 600 (NPS $^1/_2$ through NPS 24);

— butt-welding ends in sizes DN 15 through DN 600 (NPS $^1/_2$ through NPS 24);

— socket-welding ends in sizes DN 8 through DN 50 (NPS $^1/_4$ through NPS 2); and

— threaded ends in sizes DN 8 through DN 50 (NPS $^1/_4$ through NPS 2).

1.2 This standard applies to metal ball valves with pressure classes as follows:

— flanged ends in Classes 150, 300, and 600;

— flanged ends in Classes 900, 1500, and 2500 in sizes DN 15 through DN 50 (NPS $^1/_2$ through NPS 2) only;

— butt-welding ends in Classes 150, 300, and 600;

— butt-welding ends in Classes 800, 900, 1500, and 2500 in sizes DN 15 through DN 50 (NPS $^1/_2$ through NPS 2) only;

— socket-welding ends and socket-welding by threaded ends in Classes 150, 300, 600, 800, 900, 1500, and 2500;

— threaded ends in Classes 150, 300, 600, and 800.

1.3 This standard establishes requirements for bore sizes described as:

— full bore;

— reduced bore.

1.4 This standard applies to floating (seat-supported) ball (Figure C.1a and Figure C.1b) and trunnion ball valve designs (Figure C.2). These figures are to be used only for the purpose of establishing standard nomenclature for valve components; other floating and trunnion designs also exist.

1.5 This standard establishes additional requirements for ball valves that are otherwise in full conformance to the requirements of ASME B16.34 (Standard Class).

1.6 Trunnion ball valves equipped with double piston effect seats are outside of the scope of this standard.

1.7 Users of this standard should refer to API RP 615 for background and further guidance and definitions on API 608 valves.

2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any addenda) applies.