Metal Plug Valves—Flanged, Threaded, and Welding Ends

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Contents

Page

1 Scope 1

2 Normative References 2

3 Terms and Definitions 3

4 Pressure/Temperature Ratings 4
4.1 Valve Rating 4
4.2 Shell Rating 4
4.3 Seat and Seal Rating 4

5 Design 5
5.1 General 5
5.2 Body 5
5.3 Bonnet/Cover 7
5.4 Stem and Plug 7
5.5 Stem Seals, Packing, and Packing Glands 8
5.6 Bolting 8
5.7 Operation 9
5.8 Electrical Continuity 11

6 Materials 11
6.1 General 11
6.2 Shell 12
6.3 Body-to-Cover Seals, Diaphragms, or Gaskets 12
6.4 Trim 12
6.5 Operating Mechanisms 12
6.6 Glands, Gland Followers, Lantern Rings, and Spacers 12
6.7 Packing and Seals 12
6.8 Bolting 13
6.9 NACE Requirements 14
6.10 Identification Plate 14
6.11 Lining 14

7 Sealing System 14
7.1 Lubricated Plug Valves 14
7.2 Nonlubricated Plug Valves 15

8 Inspection, Examination, and Testing 15
8.1 Inspection and Examination 15
8.2 Testing 15
8.3 Repair of Defects 16
8.4 Special Services 16
8.5 Valve Qualifications 16

9 Marking 16

10 Shipment 16
10.1 Cleanliness 16
10.2 Coatings 17
10.3 Openings 17

Contents

Page

10.4 Plug Position 17
10.5 Packing 17
10.6 Packaging 17
10.7 Purchase Order Information 17

11 Recommended Spare Parts 17

Annex A (normative) Information to Be Specified by the Purchaser 18

Annex B (informative) Standard Nomenclature for Valve Parts 20

Annex C (informative) Additional Evaluations for API RP 591 26

Bibliography 28

Figures

1 Acceptable Method for Attaching Mounting Bracket 10
2 Nonconforming Method for Attaching Mounting Bracket 11
B.1 Parts Identification for Lubricated Plug Valve 20
B.2 Parts Identification for Nonlubricated Fully-lined Plug Valve 21
B.3 Parts Identification for Nonlubricated Sleeve-lined Standard Plug Valve 22
B.4 Parts Identification for Nonlubricated Sleeve-lined Low Emissions Plug Valve 23
B.5 Parts Identification for Nonlubricated Lift Plug Valve 24
B.6 Parts Identification for Inverted Plug Valve 25

Tables

1 Heavy-wall Minimum Body Thickness Millimeters (Inches) 6
2a Bolting Materials (High-strength Bolting Materials) 13
2b Bolting Materials (Intermediate-strength Bolting Materials) 14
C.1 Pre-disassembly Evaluations 26
C.2 Post-disassembly Evaluations 26
C.3 Destructive Evaluations 27

Metal Plug Valves—Flanged, Threaded, and Welding Ends

1 Scope

1.1 This standard specifies the requirements for quarter-turn metal plug valves, including the lift plug type, for petroleum, petrochemical, and industrial applications.

1.2 This standard is applicable to:

— steel, nickel base, and other alloy plug valves with flanged or butt-welding ends and ductile iron plug valves with flanged ends in sizes 15 ≤ DN ≤ 900 ($^1/_2$ ≤ NPS ≤ 36);

— threaded or socket-welding end plug valves in sizes 15 ≤ DN ≤ 50 ($^1/_2$ ≤ NPS ≤ 2);

— plug valve bodies conforming to ASME B16.34, which may have any combination of flanged, threaded, socket welding, or butt-welding ends;

— lubricated and non-lubricated plug valves that have two-way coaxial ports;

NOTE Three-way and four-way plug valves do not fall under the scope of this standard.

— tandem plug valves that have two independently operating plugs in a single body.

1.3 This standard covers plug valves of the nominal diameter sizes DN:

— 15, 20, 25, 32, 40, 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 650, 700, 750, 800, 850, 900;

corresponding to nominal pipe sizes NPS:

— $^1/_2$, $^3/_4$, 1, 1 $^1/_4$, 1 $^1/_2$, 2, 2 $^1/_2$, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 24, 26, 28, 30, 32, 34, 36;

and applies to pressure class designations:

— 150, 300, 600, 800, 900, 1500, 2500.

1.4 This standard includes requirements for plug valves fitted with internal body, plug, and port linings or applied hard facings on the body, body ports, plug, and plug port.

1.5 This standard also provides additional requirements for plug valves that are in full conformance with the requirements of ASME B16.34 for Standard Class 150 through 2500. Ductile iron valves, Class 150 and 300, shall follow the additional requirements of ASME B16.42 for pressure/temperature ratings, wall thickness, flange dimensions, and material grade.

1.6 Plug valves covered in this standard belong to one of four general design groups that, in many cases, have different face-to-face and end-to-end dimensions. Some types of plug valves are not made to all patterns. The four groups of valve design are described below:

— short pattern design found only in Class 150 and 300 where flanged plug valves match the ASME B16.10 face-to-face dimensions of steel-flanged gate valves in sizes 40 ≤ DN ≤ 300 (1 $^1/_2$ ≤ NPS ≤ 12);

— regular pattern design with a plug port area that is greater than the venturi pattern;

— venturi pattern designed for minimum pressure loss consistent with the reduced port area used in this type of valve. Venturi valves have a configuration of body and plug ports that approximate a venturi throat.