



PDHonline Course M163 (1 PDH)

The Function of Check Valves Used in the Oil & Gas Industry

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Appendix C

STANDARDS PERTAINING TO VALVES

This chapter lists common USA and British standards pertaining to valves, as published in the standard indexes of the various standard organizations for 2003. Because new standards are continually issued and old standards revised or withdrawn, the validity of these standards should be verified prior to application.

STANDARD ORGANIZATIONS

- ANSI American National Standards Institute
1819 L Street, N.W.
New York, New York 10018
Telephone: +1-202-293-8020, Fax: +1-202-293-9287
email: info@asme.org, website: www.asme.org
- API American Petroleum Institute
1220 L Street, N.W.
Washington, D.C. 20005-4070
Telephone: +1-202-682-8000, Fax: +1-202-682-8408
email: info@api.org, website: www.api.org
- ASME The American Society of Mechanical Engineers
Three Park Avenue
New York, New York 10016-5990
Telephone: +1-973-882-1167
email: infocentral@asme.org, website: www.asme.org

- ASTM ASTM International
100 Barr Harbour Drive
West Conshohocken, PA 19428-2959
Telephone: +1-610-832-9585, Fax: +1-610-832-9555
email: info@astm.org, website: www.astm.org
- AWWA American Water Works Association
6666 West Quincy Avenue
Denver, CO 80235
Telephone: +1-303-794-7711, Fax: +1-303-347-0804
email: info@awwa.org, website: www.awwa.org
- MSS Manufacturers Standardization Society
127 Park Street N.E.
Vienna, VA 22180-4602
Telephone: +1-703-281-6613, Fax: +1-703-281-6671
email: info@mss-hq.com, website: www.mss-hq.com
- AFNOR Association Francaise de Normalisation
11, avenue Francis de Pressense
FR-93571 Saint Denis la Plaine Cedex
France
Telephone: +33-1-41-62-80-00, Fax: +33-1-49-17-90-00
email: uari@afnor.fr, website: www.afnor.fr
- BSI British Standards Institute
389 Chiswick High Road
London W4 4AL
United Kingdom
Telephone: +44-(0)208-996-9000, Fax: +44-(0)208-996-7001
email: info@bsi-global.com, website: www.bsi-co.uk
- DIN Deutsches Institut für Normung eV
Burggrafenstrasse 6
10787 Berlin
Germany
Telephone: +49-30-2601-0, Fax: +49-30-2601-1260
email: postmaster@din.de, website: www.din.de

STANDARDS PERTAINING TO VALVE ENDS AND GENERAL VALVE STANDARDS

- MSS SP-6 Standard finishes for contact faces of pipe flanges
and connecting-end flanges of valves and fittings.

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| MSS SP-9 | Spot facing for bronze, iron, and steel flanges. |
| MSS SP-44 | Steel pipeline flanges. |
| MSS SP-51 | Class 150 LW corrosion-resistant cast flanges and flanged fittings. |
| MSS SP-65 | High-pressure chemical industry flanges and threaded stubs for use with lens gaskets. |
| MSS SP-91 | Guidelines for manual operation of valves. |
| MSS SP-92 | MSS valve user guide. |
| MSS SP-96 | Guidelines on terminology for valves and fittings. |
| MSS SP-98 | Protective coatings for the interior of valves, hydrants, and fittings. |
| MSS SP-99 | Instrument valves. |
| MSS SP 120 | Flexible graphite packing systems for rising stem steel valves. |
| API Spec 6A | Wellhead and Christmas tree equipment. |
| API Std 605 | Large diameter carbon steel flanges. |
| ASME B1.20.1 | Pipe threads, general purpose (inch). |
| ASME B1.20.3 | Dryseal pipe threads (inch). |
| ASME B16.1 | Cast iron pipe flanges and flanged fittings. |
| ASME B16.5 | Pipe flanges and flanged fittings. |
| ASME B16.20 | Metallic gaskets for pipe flanges. |
| ASME B16.21 | Non-metallic flat gaskets for pipe flanges. |
| ASME B16.24 | Cast copper pipe flanges and flanged fittings. |
| ASME B16.25 | Butt-welding ends. |
| ASME/AWWA C207-78 | Flanges for water-works service, 4 in. through 144 in. steel. |
| ASME/AWWA C606-78 | Joints, grooved and shouldered type. |
| BS 21 | Pipe threads for tubes and fittings where pressure-tight joints are made on the threads (metric dimensions). |
| BS 1560 | Steel pipe flanges and flanged fittings (nominal sizes $\frac{1}{2}$ in. to 24 in.) for the petroleum industry. Part 2 (1970), metric dimensions. |
| BS 3293 | Carbon steel flanges (over 24 in. nominal size) for the petroleum industry. |
| BS 4504 | Flanges and bolting for pipes, valves, and fittings, metric series. Part 1 (1969), ferrous. Part 2 (1974), copper alloy and composite flanges. |

STANDARDS PERTAINING TO GLOBE VALVES

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| MSS SP-42 | Class 150 corrosion-resistant gate, globe, angle, and check valves with flanged and butt-weld ends. |
| MSS SP-61 | Pressure testing of steel valves. |
| MSS SP-80 | Bronze gate, globe, angle, and check valves. |
| MSS SP-85 | Gray iron globe and angle valves, flanged and threaded ends. |
| MSS SP-117 | Bellows seals for globe and gate valves. |
| MSS SP-118 | Compact steel globe and check valves—flanged, flangeless, threaded and welding ends. |
| API RP 6FA | Fire test for valves. |
| ASME B16.10 | Face-to face and end-to-end dimension of ferrous valves. |
| ASME B16.34 | Steel valves, flanged and butt-welding end. |
| BS 1873 | Steel globe valves and stop and check valves (flanged and butt-welding ends), for the petroleum, petrochemical, and allied industries. |
| BS 5352 | Cast and forged steel wedge gate, globe, check, and plug valves, screwed and socket welding, sizes 50 mm and smaller, for the petroleum, petrochemical, and allied industries. |
| BS 5152 | Cast iron globe and globe stop and check valves, for general purposes. |
| BS 5154 | Copper alloy globe, globe stop and check, check, and gate valves (including parallel slide type), for general purposes. |
| BS 5160 | Specification for flanged steel globe valves, globe stop and check valves, and lift-type check valves for general purposes. |

STANDARDS PERTAINING TO PARALLEL AND WEDGE GATE VALVES

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| MSS SP-42 | Class 150 corrosion-resistant gate, globe, angle, and check valves with flanged and butt-weld ends. |
| MSS SP-45 | Bypass and drain connection standard. |
| MSS SP-61 | Pressure testing of valves. |
| MSS SP-70 | Cast iron gate valves, flanged and threaded ends. |

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| MSS SP-80 | Bronze gate, globe, angle, and check valves. |
| MSS SP-81 | Stainless steel, bonnetless, flanged, wafer, knife gate valves. |
| MSS SP-117 | Bellows seals for globe and gate valves. |
| API Spec 6D | Specification for pipeline valves, end closures, connectors and swivels. |
| API RP 6FA | Fire test for valves. |
| API Std 595 | Cast iron gate valves, flanged ends. |
| API Std 597 | Steel venturi gate valves, flanged or butt-welding ends. |
| API Std 598 | Valve inspection and test. |
| API Std 600 | Bolted bonnet steel gate valves for petroleum and natural gas industries. |
| API Std 602 | Compact carbon steel gate valves. |
| API Std 603 | Corrosion-resistant, bolted bonnet gate valves—flanged and butt-welding ends. |
| ASME B16.10 | Face-to-face and end-to-end dimensions of ferrous valves. |
| ASME B16.34 | Steel valves, flanged and butt-welding end. |
| BS 1414 | Steel wedge gate valves (flanged and butt-welding ends) for the petroleum, petrochemical and allied industries. |
| BS 5150 | Cast iron wedge and double-disc gate valves, for general purposes. |
| BS 5154 | Copper alloy globe, globe stop and check, check, and gate valves (including parallel slide type), for general purposes. |
| BS 5163 | Double-flanged cast iron wedge gate valves for water works purposes. |
| BS 5352 | Cast and forged steel wedge gate, globe, check, and plug valves, screwed and socket welding, sizes 50 mm and smaller, for the petroleum, petrochemical, and allied industries. |

STANDARDS PERTAINING TO PLUG VALVES

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| MSS SP-61 | Pressure testing of steel valves. |
| MSS SP-78 | Cast iron plug valves, flanged and threaded ends. |

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| MSS SP-108 | Resilient-seated cast iron-eccentric plug valves. |
| API Spec 6A | Wellhead and Christmas tree equipment. |
| API Spec 6D | Pipeline valves (gate, plug, ball, and check valves). |
| API RP 6FA | Fire test for valves. |
| API Std 599 | Metal plug valve—flanged and welding ends. |
| ASME B16.10 | Face-to-face and end-to-end dimensions of ferrous valves. |
| ASME B16.34 | Steel valves, flanged and butt-welding end. |
| BS 5158 | Cast iron and cast steel plug valves for general purposes. |
| BS 5353 | Specification for plug valves. |

STANDARDS PERTAINING TO BALL VALVES

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| MSS SP-61 | Pressure testing of steel valves. |
| MSS SP-68 | High pressure butterfly valves with offset design. |
| MSS SP-72 | Ball valves with flanged or butt-welding ends for general service. |
| MSS SP-110 | Ball valves threaded, socket-welding, solder joint, grooved and flared ends. |
| MSS SP-122 | Plastic industrial ball valves. |
| API Spec 6D | Pipeline valves (gate, plug, ball, and check valves). |
| API Std 598 | Valve inspection and test. |
| API Std 607 | Fire test for soft-seated quarter-turn valves. |
| ASME B16.10 | Face-to-face and end-to-end dimensions of ferrous valves. |
| ASME B16.34 | Steel valves, flanged and butt-welding end. |
| BS 5159 | Cast iron carbon steel ball valves for general purposes. |
| BS 5351 | Steel ball valves for the petroleum, petrochemical, and allied industries. |

STANDARDS PERTAINING TO BUTTERFLY VALVES

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| MSS SP-67 | Butterfly valves. |
| API Std 598 | Valve inspection and test. |
| API Std 609 | Butterfly valves, “double flanged” lug-type and wafer-type. |
| ANSI/AWWA C504-80 | Rubber-seated butterfly valves. |

STANDARDS PERTAINING TO DIAPHRAGM VALVES

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| MSS SP-88 | Diaphragm-type valves. |
| BS 5156 | Screwdown diaphragm valves for general purposes. |
| BS 5418 | Marking of general purpose industrial valves. |
| ISO 5209 | Marking of general purpose industrial valves. |
| DIN 3359 | <i>Membran-Absperrarmaturen aus metallischen Werkstoffen.</i> |

STANDARDS PERTAINING TO STAINLESS STEEL VALVES

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| MSS SP-42 | Class 150 corrosion-resistant gate, globe, angle, and check valves with flanged and butt-weld ends. |
| API Std 603 | Corrosion-resistant, bolted bonnet gate valves. |

STANDARDS PERTAINING TO CHECK VALVES

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| MSS SP-42 | Class 150 corrosion-resistant gate, globe, angle, and check valves with flanged and butt-weld ends. |
| MSS SP-61 | Pressure testing of steel valves. |
| MSS SP-71 | Gray iron swing check valves, flanged and threaded ends. |
| MSS SP-80 | Bronze gate, globe, angle, and check valves. |
| MSS SP-118 | Compact steel globe and check valves—flanged, flangless, threaded and welding ends. |
| MSS SP-126 | Steel in-line spring assisted center guided check valves. |
| API Spec 6D | Pipeline valves (gate, plug, ball and check valves). |
| API RP 6FA | Fire test for valves. |
| API Std 594 | Check valves: wafer, wafer-lug and double flanged type. |
| ASME B16.10 | Face-to-face and end-to-end dimensions of ferrous valves. |
| ASME B16.34 | Steel valves, flanged and butt-welding end. |
| BS 1868 | Steel check valves (flanged and butt-welding ends) for the petroleum, petrochemical, and allied industries. |

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| BS 1873 | Steel globe and globe stop and check valves (flanged and butt-welding ends) for the petroleum, petrochemical, and allied industries. |
| BS 5152 | Cast iron globe and globe stop and check valves for general purposes. |
| BS 5154 | Copper alloy globe, globe stop and check, check, and gate valves. |
| BS 5160 | Specification for flanged steel globe valves, globe stop and check valves, and lift-type check valves for general purposes. |
| BS 5352 | Cast and forged steel wedge gate, globe, check, and plug valves, screwed and socket-welding, sizes 50 mm and smaller, for the petroleum, petrochemical, and allied industries. |

STANDARDS PERTAINING TO PRESSURE VALVES

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| API RP 520 | Recommended practice for the design and installation of pressure relieving systems in refineries. Part I (1976)—Design Part-II (1973)—Installation. |
| API RP 521 | Guide for pressure relief and depressurizing systems. |
| ASME/API 526 | Flanged-steel safety relief valves. |
| ASME/API 527 | Commercial seat tightness of safety relief valves with metal-to-metal seats. |
| BS 6759 | Safety valves. |
| Part 1 | Safety valves for steam and hot water. |
| Part 2 | Safety valves for compressed air or inert gases. |
| Part 3 | Safety valves for process fluids. |
| ISO 4126 | Safety valves. |

STANDARDS FOR THE INSPECTION AND TESTING OF VALVES

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| MSS SP-25 | Standard marking system for valves, fittings, flanges, and unions. |
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| MSS SP-53 | Quality standard for steel castings and forgings for valves, flanges and fittings, and other piping components—magnetic particle examination method. |
| MSS SP-54 | Quality standard for steel castings for valves, flanges and fittings, and other piping components—radiographic examination method. |
| MSS SP-55 | Quality standard for steel castings for valves, flanges and fittings, and other piping components—visual method for evaluation of surface irregularities. |
| MSS SP-61 | Pressure testing of steel valves. |
| MSS SP-82 | Valve-pressure testing methods. |
| MSS SP-93 | Quality standard for steel castings for valves, flanges and fittings, and other piping components—liquid penetrant examination method. |
| MSS SP-94 | Quality standard for steel castings and forgings for valves, flanges and fittings, and other piping components—ultrasonic examination method. |
| MSS SP-111 | Quality standard for evaluation of cast steel surface finishes—visual and tactile method. |
| MSS SP-121 | Qualification testing methods for stem packing for rising stem valves. |
| API Spec. 6FA | Fire test for valves. |
| API Spec. 6FC | Fire test for valves with automatic backseats. |
| API Std. 607 | Fire test for soft-seated quarter turn valves. |
| ASME/API 527 | Commercial seat tightness of safety relief valves with metal-to-metal seats. |
| API Std 598 | Valve inspection and test. |
| BS 6755-1 | Testing of valves; Part 1: Specification for production pressure testing requirements. |
| BS 6755-2 | Testing of valves; Part 2: Specification for fire type testing requirements. |

MISCELLANEOUS STANDARDS PERTAINING TO VALVES

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| BS 4371 | Fibrous gland packings. |
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**STANDARDS PERTAINING TO RUPTURE
DISCS**

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| ASME Code, Section VIII, Division, 1, UG 125 through 136 | |
| BS 2915 | Bursting discs and bursting-disc devices. |
| ISO 6718 | Bursting discs and bursting-disc devices. |
| ANSI/NFPA 68 | Explosion venting. |
| VDI 3673 | Pressure release of dust explosions. |