ASME B16.38-2007
[Revision of ANSI/ASME B16.38-1985 (R2005)]

Large Metallic Valves for Gas Distribution

Manually Operated, NPS $2^1/_2$ (DN 65) to NPS 12 (DN 300), 125 psig (8.6 bar) Maximum

AN AMERICAN NATIONAL STANDARD

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AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

Three Park Avenue • New York, NY 10016

Date of Issuance: February 4, 2008

The next edition of this Standard is scheduled for publication in 2012. There will be no addenda issued to this edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the ASME Web site under the Committee Pages at http://cstools.asme.org as they are issued.

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016-5990

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FOREWORD

The B16 Standards Committee was organized in the spring of 1920 and held its organizational meeting on November 21 of that year. The group operated as a Sectional Committee (later redesignated as a Standards Committee) under the authorization of the American Engineering Standards Committee [subsequently named American Standards Association, United States of America Standards Institute, and now American National Standards Institute (ANSI)]. Sponsors for the group were the American Society of Mechanical Engineers, Manufacturers Standardization Society of the Valve and Fittings Industry, and the Heating and Piping Contractors National Association (later the Mechanical Contractors Association of America). In 1982, the B16 Committee was reorganized as an ASME Committee operating under procedures accredited by ANSI.

The American Gas Association determined that standardization of gas valves used in distribution systems was desirable and needed. The A.G.A. Task Committee on Standards for Valves and Shutoffs was formed and development work commenced in 1958. In 1968, it was determined that a more acceptable document would result if approval was gained from ANSI, and to facilitate such action, the A.G.A. Committee became Subcommittee 13 of the B16 activity. This B16 group was later renamed Subcommittee L, which is its current designation.

The first standard developed by Subcommittee L was ANSI B16.33, which was published in 1973. As a follow-up, ANSI B16.38 was subsequently developed to cover larger sizes of gas valves and shutoffs and was first published in 1978.

ANSI/ASME B16.38-1985 offered more performance requirements than had been customary in many B16 standards. It was expected that this would permit both manufacturers and users greater latitude in producing and using products made to that standard.

Editorial changes were made throughout the text and tables to bring the format in line with the rest of the B16 series of standards and to clarify the intent of that standard. Revisions included changes to the qualification requirements and to requirements for construction and valve ends, updating of reference standards, and editorial changes to the text and tables. The cover, headings, and designation of the standard had also been revised to reflect reorganization of the B16 Committee as an ASME Committee.

Following approval by the B16 Committee and its ASME Supervisory Board, this Standard was approved as an American National Standard by ANSI on November 9, 1985.

This edition of ASME B16.38 updates the 1985 edition. All requirements are metricated, and the references are updated to the current revision. The paragraph on minimum levels of performance has been expanded to describe valve types and their relevant standards. The section on "Lubrication (Sealant)" has been renamed Injection Sealant and the paragraph edited for clarity. Paragraphs 2.6 ("Pressure-Containing Materials"), 2.7 ("Gas Resistance"), and 2.8 ("Temperature Resistance") have been added. The section covering Elastomer Components is new. Paragraph 3.2 ("Number of Tests") has been expanded to require that any material or design change that could affect qualification test results is reason to repeat all qualification tests. Wording throughout this edition has been expanded for clarity.

All requests for interpretations or suggestions for revisions should be sent to the Administrative Secretary, B16 Committee, The American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990.

Following approval by B16 Subcommittee L, the Standards Committee, and ASME, ANSI approved this American National Standard on December 4, 2007.

ASME B16 COMMITTEE
Standardization of Valves, Flanges, Fittings, and Gaskets

(The following is the roster of the Committee at the time of approval of this Standard.)

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General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions, and attending Committee meetings. Correspondence should be addressed to:

Secretary, B16 Standards Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

As an alternative, inquiries may be submitted via e-mail to: SecretaryB16@asme.org.

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Interpretations. Upon request, the B16 Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the B16 Standards Committee.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his/her request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings, which are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format will be rewritten in this format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

Attending Committee Meetings. The B16 Standards Committee regularly holds meetings that are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B16 Standards Committee.

LARGE METALLIC VALVES FOR GAS DISTRIBUTION

MANUALLY OPERATED, NPS 2½ (DN 65) TO NPS 12 (DN 300), 125 psig (8.6 bar) MAXIMUM

1 SCOPE

1.1 Valve Types

This Standard covers requirements for manually operated metallic valves in nominal sizes 2½ (DN 65) through 12 (DN 300) having the inlet and outlet on a common centerline. These valves are intended for controlling the flow of gas from open to fully closed positions, for use in distribution and service lines where the maximum gage pressure does not exceed 125 psig (8.6 bar). Valve seats, seals, and stem packing may be nonmetallic.

1.2 Application

This Standard sets forth the minimum capabilities, characteristics, and properties that a newly manufactured metallic valve must possess in order to be considered suitable for use in piping systems indicated above, carrying natural gas, manufactured gas [includes synthetic natural gas (SNG)], and liquefied petroleum gases (distributed as a vapor, with or without the admixture of air) or mixtures thereof.

1.3 Referenced Standards

Standards and specifications adopted by reference in this Standard and the names and addresses of the sponsoring organizations are shown in Mandatory Appendix I. It is not considered practical to refer to a specific edition of each of the standards and specifications in the individual references. Instead, the specific edition references are included in Mandatory Appendix I. A product made in conformance with a prior edition of reference standards will be considered to be in conformance, even though the edition reference may be changed in a subsequent revision of the standard.

1.4 Quality Systems

Nonmandatory requirements relating to the product manufacturer's Quality System Program are described in Nonmandatory Appendix A.

1.5 Convention

For the purpose of determining conformance with this Standard, the convention for fixing significant digits where limits, maximum or minimum values, shall be "rounded off" as defined in ASTM Practice E 29. This requires that an observed or calculated value shall be rounded off to the nearest unit in the last right-hand digit used for expressing the limit. Decimal values and tolerances do not imply a particular method of measurement.

1.6 Codes and Regulations

A valve used under the jurisdiction of a Federal Regulation, such as CFR Title 49, Part 192; the ASME Code for Pressure Piping, such as ASME B31.8; or the National Fuel Gas Code, Z223.1, is subject to any limitation of that code or regulation.

1.7 Definitions

NPS: nominal pipe size

NVS: nominal valve size

one bar: 100 kPa

PTFE: materials that comply with ASTM D 4894, Specification for Polytetrafluoroethylene (PTFE) Granular Molding and Extrusion Materials

All pressures, unless otherwise stated, are gage pressures.

2 CONSTRUCTION

2.1 Conformance

2.1.1 Each completed and assembled valve at the time of manufacture and marked with the designation B16.38 shall be capable of meeting the requirements set forth in this Standard.

2.1.2 Classes 125 and 150 valves (depending upon their design) shall meet the requirements of one of the following standards: MSS SP-67, MSS SP-70, MSS SP-72, MSS SP-78, MSS SP-80, MSS SP-84, ASME B16.34, and ASME B16.42 (see Mandatory Appendix I).

2.2 Tamperproof Features

Where valves are specified to be tamperproof, they shall be designed and constructed to minimize the possible removal of the core of the valve with other-than-specialized tools, e.g., tools other than common wrenches, pliers, etc.

2.3 Configuration

2.3.1 Closure Indication

2.3.1.1 Valves designed for one-quarter turn operation shall be designed to visually show the open and closed position of the valve. A rectangular stem head or a position indicator shall indicate the closed position of the valve port when the longitudinal axis of the stem head or indicator is perpendicular to the axis of the connecting pipe. If a separate indicator is employed, it shall be designed such that it cannot be assembled to incorrectly indicate the position of the valve.

2.3.1.2 Valves shall close by clockwise stem rotation unless otherwise specified by the purchaser or by the reference standard in para. 2.1.2. The direction for closing shall be indicated.

2.3.2 Valve Ends. Valve ends shall conform to the following standards where applicable:

(a) for threaded valve ends, ANSI/ASME B1.20.1

(b) for flanged gray cast iron valve ends, ASME B16.1

(c) for flanged ductile cast iron valve ends, ASME B16.42

(d) for flanged steel valve ends, ASME B16.5

(e) for flanged, butt-welding, and socket-welding valve ends, ASME B16.34

2.3.3 Dimensions. Face-to-face and end-to-end dimensions of valves (other than ball, butterfly, or diaphragm valves) with flanged ends or butt-welding ends shall conform to the dimensions contained in MSS SP-72. Face-to-face dimensions for butterfly valves shall be in accordance with dimensions contained in MSS SP-67. End-to-end dimensions of threaded end valves shall be in accordance with the manufacturer's standard dimensions.

2.4 Marking

Each valve, in addition to the markings required by the applicable valve standard of para. 2.1.2, shall bear the marking "B16.38" or "B16.38T" if tamperproof features are included according to para. 2.2. Alternative to the latter, the marking "T" may be shown on the operating head or stem.

2.5 Injection Sealant

A valve that utilizes injection of sealant through a fitting that leads to the sealing surfaces shall be capable of having sealant injected in both the full-open and -closed positions at an inlet pressure of 125 psig (8.6 bar).

2.6 Pressure-Containing Materials

Materials for valve bodies, plugs, bonnets, unions, and other pressure-containing parts shall be in accordance with the applicable standards of para. 2.1.2.

2.7 Gas Resistance

All materials, including lubricants and sealants, shall be resistant to deterioration when exposed to fuel gases such as listed in para. 1.2.

2.8 Temperature Resistance

The materials used for valve bodies, plugs, bonnets, unions, and other pressure-containing parts, excluding handles, shall have a solidus temperature in excess of 600°F (427°C).

2.9 Elastomer Components

2.9.1 Air Aging Tests. Elastomer parts that are exposed to fuel gas shall be made of materials that [following 70-hr air aging at 212°F (100°C) in accordance with ASTM D 573] meet elongation, tensile, and hardness property requirements as specified in paras. 2.9.1.1 and 2.9.1.2.

2.9.1.1 Tensile tests shall be conducted in accordance with ASTM D 412. Three dumbbells shall be air aged 70 hr at 212°F (100°C) in accordance with ASTM D 573. The dumbbells shall have a thickness of 0.08 in. ± 0.008 in. (2 mm ± 0.2 mm). The average of the three individual tests for the aged dumbbells shall exceed 60% retention of ultimate elongation and 60% retention of tensile strength at break. The average of the three individual tests for the nonaged dumbbells shall be the basis for the percent calculation.

2.9.1.2 Hardness tests shall be conducted using specimens in accordance with ASTM D 395, Type 2. Three specimens shall be air aged 70 hr at 212°F (100°C) in accordance with ASTM D 573. The average of the three individual tests for the aged specimens shall not show a hardness change of more than ±10 Shore A hardness points relative to the average hardness of the nonaged specimens.

2.9.2 Swell Tests. Elastomer parts that are exposed to fuel gas shall be made from materials that after 70-hr exposure to *N*-hexane at 74°F (23°C), in accordance with ASTM D 471, meet the volume change, elongation, and tensile property requirements as specified in paras. 2.9.2.1 and 2.9.2.2.

2.9.2.1 Volume change tests shall be conducted using six specimens in accordance with ASTM D 471, Section 8. Three specimens shall be exposed for 70 hr at 74°F (23°C) in *N*-hexane in accordance with ASTM D 471. The average of the three *N*-hexane tests shall not show an increase in volume of more than 1%. The average of the three tests for nonaged specimens shall be the basis for the percent retention calculation.

2.9.2.2 Tensile tests shall be conducted on six dumbbells in accordance with ASTM D 412. Three of the tensile tests shall be conducted on dumbbells exposed in *N*-hexane for 70 hr at 74°F (23°C) in accordance with

ASTM D 471. The dumbbells shall have a thickness of 0.08 in. ± 0.008 in. (2 mm ± 0.02 mm). The average of the three individual *N*-hexane tests shall exceed 60% retention of tensile strength at break. The average of the three tests for the nonaged specimens shall be the basis for the percent retention calculation.

2.9.3 Compression Set Tests. Elastomer parts that may be exposed to fuel gas shall be made from materials having a compression set of not more than 25% after 22 hr at 212°F (100°C), in accordance with ASTM D 395, Method b, using standard test specimens in accordance with ASTM D 395, para. 5.2.

3 QUALIFICATION REQUIREMENTS

3.1 Qualification Tests

In a range of sizes of valves that use the same materials and are proportionally designed, qualification tests consisting of tests for gas tightness, temperature resistance, bending, and flow capacity shall be conducted on at least one sample of the two largest sizes in the following ranges:

(a) Range #1 — NPS 5 (DN 125) and smaller valves

(b) Range #2 — NPS 6 to NPS 12 (DN 300) valves

If the sizes regularly manufactured do not span the ranges shown, then the largest size manufactured in each range shall be tested.

Valves that require pressure lubrication as described in para. 2.5 may not be relubricated during the qualification tests.

3.2 Number of Tests

Qualification tests shall be conducted on an initial basis, provided the valve was manufactured under a quality control system, which provides assurance that each item manufactured is of comparable quality and capable of performances equivalent to that of the tested unit. Material or design changes to the product that could affect qualification test results require that all qualification tests be repeated.

3.3 Method of Test for Gas Tightness

A valve shall provide a shutoff when in the closed position and shall not leak to atmosphere in the open, closed, or any intermediate position(s).

3.3.1 Shell Test. With the valve in the partially open position and the outlet capped, air or gas pressure of first 4 psig ± 2 psig (0.3 bar ± 0.13 bar) and then 200 psig (13.8 bar) shall be applied to the inlet of the valve with the valve immersed in a bath of water at a temperature of 74°F ± 15°F (23°C ± 8°C). Leakage (as evidenced by the breaking away of bubbles) shall not be permitted. The minimum duration of each portion of the test shall be as specified in Table 1.

Table 1 Duration of Test

Valve Size, NPS (DN)	Minimum Duration, min
2½–5 (65–125)	2
6–10 (150–250)	5
12 (300)	10

3.3.2 Seat Test. Following the shell test, and after removing the outlet cap, with the valve in the full-closed position, air or gas pressure of first 4 psig ± 2 psig (0.3 bar ± 0.13 bar) and then 200 psig (13.8 bar) shall be applied to one end of the valve with the valve immersed in a bath of water at a temperature of 74°F ± 15°F (23°C ± 8°C). Leakage (as evidenced by the breaking away of bubbles) shall not be permitted over the time periods specified in Table 1.

The test pressures shall then be applied to the other valve end and under the same test conditions and acceptance criteria.

3.4 Operational Test

The test valve shall provide a shutoff as determined in para. 3.3 after having been operated for ten cycles between the limits of full closed to full open and back to full closed when subjected to an internal air or gas pressure of 125 psig (8.6 bar) with the outlet capped.

3.5 Temperature Resistance

All test valves shall be operable at metal temperatures ranging from −20°F (−29°C) to 150°F (66°C) without affecting the capability of the valve to control the flow of gas and without leakage to atmosphere.

3.5.1 Method of Test

3.5.1.1 The valve shall be maintained at a temperature of −20°F (−29°C) for a period long enough to allow all parts to come to an equilibrium temperature. With the valve subjected to an internal air or gas pressure of 125 psig (8.6 bar) and the outlet side sealed, the valve shall be closed and opened 10 times to establish that it can be opened and closed in a normal manner, i.e., within 15% of the valve manufacturer's specified operating torque.

3.5.1.2 The test valve shall then be maintained at a temperature of 150°F (66°C) for a period long enough to allow all parts to come to equilibrium temperature. With the valve subjected to an internal air or gas pressure of 125 psig (8.6 bar) and the outlet sealed, the valve shall be closed and opened 10 times to establish that it can be opened and closed in a normal manner, i.e., within 15% of the manufacturer's specified operating torque.

3.5.1.3 The test valve shall then be allowed to return to a temperature of 74°F ± 15°F (23°C ± 8°C) and subjected to the tests outlined in paras. 3.3.1 and 3.3.2.

Table 2 Bending Moment Values

Nominal Pipe Size [Note (1)]	Test Bending Moment		Wall Thickness	
	lbf-in.	N·m	in.	mm
$2\frac{1}{2}$	31,000	3 500	0.188	4.78
3	44,000	4 975	0.188	4.78
$3\frac{1}{2}$	59,000	6 675	0.188	4.78
4	75,000	8 475	0.188	4.78
5	116,000	13 100	0.188	4.78
6	164,000	18 525	0.188	4.78
8	335,000	37 850	0.219	5.56
10	512,000	57 850	0.219	5.56
12	812,000	91 750	0.250	6.35

GENERAL NOTE: Values are calculated bending moments using 35,000 psig SMYS steel pipe with wall thicknesses shown in this Table.

NOTE:

(1) For valves having different size inlet and outlet, the smaller size shall determine the bending value.

3.6 Structural Provisions: Bending

All test valves shall pass the bending test described herein.

3.6.1 Method of Test for Bending

3.6.1.1 The test valve shall withstand the bending moment specified in Table 2 adjusted by the appropriate ratio in the following:

(a) for ductile materials

$$\frac{\text{actual yield strength of body material}}{\text{specified minimum yield strength of body material}}$$

(b) for nonductile materials

$$\frac{\text{actual tensile strength of body material}}{\text{specified minimum tensile strength of body material}}$$

Strength values shall be determined in accordance with the appropriate material specification.

3.6.1.2 Two bending tests shall be conducted, one with the test bending moments applied parallel to the valve stem and one with the load applied perpendicular to the valve stem. The valve shall be in the half-open position and pressurized internally to a pressure of 125 psig (8.6 bar) for the period of time specified in Table 1 with no visible leakage to atmosphere. The cover (from which protrudes the stem or equivalent) shall be placed in tension when loaded in the parallel-to-the-stem position. While subjected to the test bending moment, the valve shall operate through ten full closing and opening cycles. The test fixture shall apply essentially uniform bending load with zero shear load (neglecting fixture pipe and valve weight) throughout the valve length, as provided by the arrangement in Fig. 1.

3.6.1.3 After the bending load is removed, there shall be no permanent deformation evidenced by binding, when the test valve is operated through one full closing and opening cycle. The valve shall then be tested as specified in paras. 3.3.1 and 3.3.2 and shall not leak.

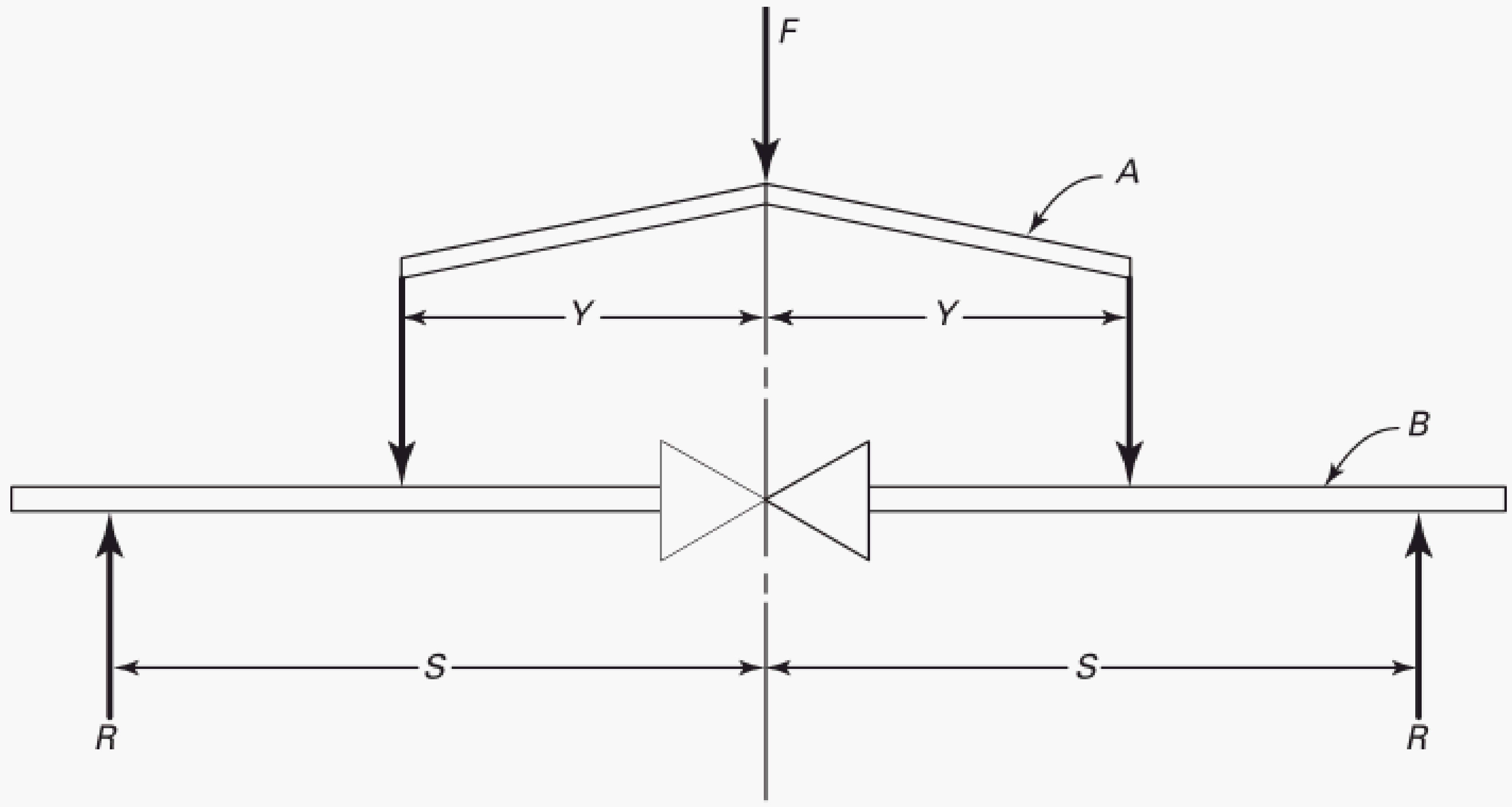
3.7 Flow Capacity

The shape, size, and configuration of the flow passage in fully open valves shall be designed to provide flow and head loss coefficients specified in Table 3. Qualification tests shall be conducted using technically competent procedures such as that contained in ANSI/ISA SP-75.02. The test fluid and type of test facility and instrumentation are at the discretion of the manufacturer and shall be fully described in his records.

4 PRODUCTION TESTING

Gas tightness of production valves shall be demonstrated by subjecting each valve first to a shell test and then a seat test using air or gas pressure to at least 200 psig (13.8 bar). Leakage (as evidenced by the breaking away of bubbles) shall not be permitted over a time period of at least 15 sec.

Fig. 1 Bend Test Assembly



A = load application yoke
B = connecting pipe, Schedule 80 of a size to match the valve nominal size
F = applied load
R = reaction force = $F/2$
S = distance from valve centerline to reaction point
Y = distance from valve centerline to the applied load

Equation for bending moment, M_b

$$M_b = \frac{F}{2}(S - Y)$$

Table 3 Flow and Head Loss Coefficients

Nominal Valve Size [Note (1)]	Minimum Gas Flow at Reference Conditions [Note (2)]		Alternate Coefficients: Minimum Valve Coefficient, C_v [Note (3)]	Alternate Coefficients: Maximum Head Loss in Pipe Velocity Heads, K [Note (4)]	Alternate Coefficients: Maximum Equivalent Length of Standard Weight or Schedule 40 Pipe	
	ft^3/hr	m^3/h			ft	m
$2\frac{1}{2}$	4,400	125	150	1.5	17	5.2
3	6,000	170	200	2.0	30	9.1
$3\frac{1}{2}$	8,000	227	270	2.0	35	10.7
4	9,900	280	330	2.1	43	13.1
5	15,000	425	490	2.4	65	19.8
6	19,000	538	630	3.0	100	30.5
8	30,000	850	990	3.7	180	54.9
10	47,000	1 330	1,560	3.7	230	70.1
12	66,000	1 870	2,200	3.7	280	85.3

NOTES:

(1) For valves having different size inlet and outlet, the smaller size shall determine the coefficient.

(2) Minimum gas flow in standard cubic feet per hour (cubic meters per hour) with the valve in the fully open position at an inlet gage pressure of 0.5 psig (0.035 bar), 70°F (21.1°C), 0.64 specific gravity, and 0.3 in. (7.6 mm) water column net valve pressure drop, assuming valve in Schedule 40 pipe.

(3) C_v = flow of water at 60°F (16°C) in U.S. gallons per minute, which a valve will pass at a pressure drop of 1.0 psig (0.07 bar).

(4) K = head loss coefficient consistent with the following equation:

$$h_1 = K\left(\frac{V^2}{2g}\right)$$

where

g = acceleration due to gravity, ft/sec^2 (m/s^2)

h_1 = head loss produced by valve, ft (m)

V = fluid velocity in pipe, ft/sec (m/s)

MANDATORY APPENDIX I
REFERENCES

The following is a list of publications referenced in this Standard.

ANSI/ASME B1.20.1–1983 (R2006), Pipe Threads, General Purpose (Inch)
ASME B16.1–2005, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250
ASME B16.5–2003, Pipe Flanges and Flanged Fittings
ASME B16.10–2000 (R2003), Face-to-Face and End-to-End Dimensions of Ferrous Valves
ASME B16.11–2005, Forged Steel Fittings, Socket-Welding and Threaded
ASME B16.25–2003, Buttwelding Ends
ASME B16.34–2004, Valves — Flanged and Buttwelding End
Publisher: The American Society of Mechanical Engineers (ASME), 3 Park Avenue, New York, NY 10016-5990; Order Department: 22 Law Drive, P.O. Box 2300, Fairfield, NJ 07007-2300

ANSI/ISA SP–75.02–1996, Standard Control Valve Capacity Test Procedure
Publisher: Instrument Society of America (ISA), 67 Alexander Drive, Research Triangle Park, NC 27709

ASTM B 16.42-1998, Ductile Iron Pipe Flanges and Flanged Fittings, Classes 150 and 300
ASTM D 395-2003, Standard Test Methods for Rubber Property; Compression Set
ASTM D 412-2006a, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers, Tension
ASTM D 471-2006, Standard Test Method for Rubber Property Effect of Liquids
ASTM D 573-2004, Standard Test Method for Rubber-Deterioration in an Air Oven
ASTM D 4894-2004, Standard Specification for Polytetrafluorethylene (PTFE) Granular Molding and Ram Extrusion Materials
ASTM E 29-2006b, Standard Practice for Using Significant Digits in Test Data to Determine Conformance With Specifications
Publisher: ASTM International (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959

ISO 9001-2000, Quality Systems – Model for Quality Assurance in Design, Development, Production, Installation, and Servicing
Publisher: International Organization for Standardization (ISO), 1 ch. de la Voie-Creuse, Case postal 56, CH-1211 Genève 20, Switzerland/Suisse

MSS SP-25-1998, Standard Marking System for Valves, Fittings, Flanges, and Unions
MSS SP-67-2002a, Butterfly Valves
MSS SP-70-1999, Cast Iron Gate Valves, Flanged and Threaded Ends
MSS SP-72-1999, Ball Valves with Flanged or Butt-Welding Ends for General Service
MSS SP-78-2005a, Cast Iron Plug Valves, Flanged and Threaded Ends
MSS SP-80-2003, Bronze Gate, Globe, Angle, and Check Valves
Publisher: Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS), 127 Park Street, NE, Vienna, VA 22180-4602

NONMANDATORY APPENDIX A
QUALITY SYSTEM PROGRAM

The products manufactured in accordance with this Standard shall be produced under a quality system program following the principles of an appropriate standard from the ISO 9000 series.[1] A determination of the need for registration and/or certification of the product manufacturer's quality system program by an independent organization shall be the responsibility of the manufacturer. The detailed documentation demonstrating program compliance shall be available to the purchaser at the manufacturer's facility. A written summary description of the program utilized by the product manufacturer shall be available to the purchaser upon request. The product manufacturer is defined as the entity whose name or trademark appears on the product in accordance with the marking or identification requirements of this Standard.

[1] The series is also available from the American National Standards Institute (ANSI) and the American Society for Quality (ASQ) as American National Standards that are identified by a prefix "Q" in place of the prefix "ISO." Each standard of the series is listed under Mandatory Appendix I, References.

B16 AMERICAN NATIONAL STANDARDS FOR PIPING, PIPE FLANGES, FITTINGS, AND VALVES

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Manually Operated Thermoplastic Gas Shutoffs and Valves in Gas Distribution Systems B16.40-2002
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Manually Operated Metallic Gas Valves for Use in Aboveground Piping Systems Up To 5 PSI B16.44-2002
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Refrigeration Piping and Heat Transfer Components B31.5-2001
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Slurry Transportation Piping Systems B31.11-2002
Manual for Determining the Remaining Strength of Corroded Pipelines B31G-1991 (R2004)
Welded and Seamless Wrought Steel Pipe B36.10M-2004
Stainless Steel Pipe B36.19M-2004
Self-Operated and Power-Operated Safety-Related Valves Functional Specification Standard N278.1-1975 (R1992)

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