ASME B16.44-2012

[Revision of ASME B16.44-2002 (R2007)]

Manually Operated Metallic Gas Valves for Use in Aboveground Piping Systems Up to 5 psi

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

INTENTIONALLY LEFT BLANK

ASME B16.44-2012

[Revision of ASME B16.44-2002 (R2007)]

Manually Operated Metallic Gas Valves for Use in Aboveground Piping Systems Up to 5 psi

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

Three Park Avenue • New York, NY • 10016 USA

Date of Issuance: November 19, 2012

The next edition of this Standard is scheduled for publication in 2017.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Periodically certain actions of the ASME B16 Committee may be published as Cases. Cases and interpretations are published on the ASME Web site under the Committee Pages at http://cstools.asme.org/ as they are issued.

Errata to codes and standards may be posted on the ASME Web site under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The Committee Pages can be found at http://cstools.asme.org/. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting "Errata" in the "Publication Information" section.

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

CONTENTS

Foreword iv
Committee Roster v
Correspondence With the B16 Committee vi

1 Scope 1

2 General Construction and Assembly 1

3 Materials 2

4 Marking 4

5 Design Qualifications 4

6 Manufacturing and Production Tests 7

Figure
1 Test Device 6

Tables
1 Flare Fitting Dimensions 2
2 Materials for Valve Bodies, Plugs, Bonnets, Unions, and Other External Parts Excluding Handles 3
3 Operating Torque Values 4
4 Minimum Flow Capacity 5
5 Installation Torque 5
6 Impact Load 5
7 Static Load for Bending Test 6

Mandatory Appendix
I References 9

Nonmandatory Appendix
A Quality System Program 11

FOREWORD

The B16 Standards Committee was organized in the spring of 1920 and held its organizational meeting on November 21st 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 (ASA), then the United States of America Standards Institute, and now, the American National Standards Institute (ANSI)]. Sponsors for the group were The American Society of Mechanical Engineers (ASME), Manufacturers Standardization Society of the Valve and Fitting Industry, and the Heating and Piping Contractors National Association (later the Mechanical Contractors Association of America).

The American Gas Association (AGA) determined that standardization of gas valves used in distribution systems was desirable and needed. The AGA Task Committee on Standards for Valves and Shut-Offs was formed and development work commenced in 1958. In 1968, it was determined that a more acceptable document would result if approval were gained from ANSI and to facilitate such action, the AGA Committee became B16 Subcommittee No. 13, later renamed Subcommittee L, which is its current designation. In 1982, the B16 Committee was reorganized as an ASME committee operating under procedures accredited by ANSI. The first standard developed by the Subcommittee was ANSI B16.33.

As a follow-up, the B16.38 standard was subsequently developed to cover larger sizes of gas valves and shut-offs. Starting in about 1965, there was a major increase in the use of plastic piping in gas distribution systems, which made it desirable to have valves and shut-offs of a compatible material. To fill this need, the B16.40 standard was developed.

In 1985, the lack of standards for gas valves for use in gas piping systems downstream from the point of delivery (meter outlet) and upstream of the inlet to gas utilization equipment was brought to the attention of the subcommittee. To fill this need, this Standard was developed.

This Standard has been developed so that users and manufacturers have a common basis valve specification, one that can be readily used to qualify valve designs. Usage by certifying bodies would make it possible for building codes to reference the Standard.

In 2002, the title was changed to clearly match the updated scope and several other revisions were incorporated to bring the standard up to date with the current practices.

In 2012, a new edition was released to introduce a new Mandatory Appendix for the referenced standards. This Mandatory Appendix has also been updated to keep the references relevant and up to date.

Following its approval by the B16 Standards Committee, this Standard was approved as an American National Standard by ANSI on August 21, 2012.

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.)

STANDARDS COMMITTEE OFFICERS

W. B. Bedesem, *Chair*
G. A. Jolly, *Vice Chair*
C. E. O'Brien, *Secretary*

STANDARDS COMMITTEE PERSONNEL

A. Appleton, Alloy Stainless Products Co., Inc.
R. W. Barnes, ANRIC Enterprises, Inc.
W. B. Bedesem, Consultant
R. M. Bojarczuk, ExxonMobil Research and Engineering Co.
D. F. Buccicone, Elkhart Products Corp.
A. M. Cheta, Shell Exploration & Production Co.
M. A. Clark, NIBCO, Inc.
G. A. Cuccio, Capitol Manufacturing Co.
C. E. Davila, Crane Energy
D. R. Frikken, Becht Engineering Co.
R. P. Griffiths, U.S. Coast Guard
G. A. Jolly, Vogt Valves/Flowserve Corp.
M. Katcher, Haynes International, Inc.
W. N. McLean, B&L Engineering
T. A. McMahon, Emerson Process Management
M. L. Nayyar, Consultant
C. E. O'Brien, The American Society of Mechanical Engineers
W. H. Patrick, Dow Chemical Co.
R. A. Schmidt, Canadoil
H. R. Sonderegger, FluoroSeal, Inc.
W. M. Stephan, Flexitallic L.P.
F. R. Volgstadt, Volgstadt & Associates, Inc.
D. A. Williams, Southern Co. Generation

SUBCOMMITTEE L — GAS SHUTOFFS AND VALVES

F. R. Volgstadt, *Chair,* Volgstadt & Associates, Inc.
T. Perera, *Vice Chair,* CSA International
F. Huang, *Secretary,* The American Society of Mechanical Engineers
R. W. Conley, Kerotest Manufacturing Corp.
P. V. Craig, Jomar Group
K. Duex, A. Y. McDonald Manufacturing Co.
R. B. Hai, RBH Associates, Inc.
D. Hunt, Jr., Fastenal
J. K. Maupin, Integrys
A. M. Pietramale, Consultant

CORRESPONDENCE WITH THE B16 COMMITTEE

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.

Proposing a Case. Cases may be issued for the purpose of providing alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee Web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Standard, the paragraph, figure or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the standard to which the proposed Case applies.

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 that 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, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B16 Standards Committee.

MANUALLY OPERATED METALLIC GAS VALVES FOR USE IN ABOVEGROUND PIPING SYSTEMS UP TO 5 psi

1 SCOPE

1.1 General

This Standard applies to new valve construction and covers quarter turn manually operated metallic valves in sizes NPS 4¼ and tubing sizes 1¼ O.D. These valves are intended for indoor installation as gas shutoff valves when installed in aboveground fuel gas piping downstream of the gas meter outlet and upstream of the inlet connection to a gas appliance. The valves covered by this Standard are intended for service at temperatures between 32°F (0°C) and 125°F (52°C) at pressure ratings not to exceed 5 psi (0.34 bar). When so designated by the manufacturer, these valves may be installed for service outdoors and/or at temperatures below 32°F (0°C) and/or above 125°F (52°C).

1.2 Applicability

This Standard sets requirements, including qualification requirements, for metallic gas valves for use in gas piping systems. Details of design, materials, and testing in addition to those stated in this Standard that are necessary to meet the qualification and production testing requirements of this Standard remain the responsibility of the manufacturer. A valve used under a code jurisdiction or governmental regulation is subject to any limitation of such code regulations.

1.3 Limitations

This Standard does not apply to manually operated gas valves that are an integral part of a gas appliance. Manually operated gas valves intended for use in a particular appliance are covered in ANSI Z21.15/CGA 9.1.

1.4 Convention

For determining conformance with this Standard, the convention for fixing significant digits where limits (maximum and minimum values) are specified shall be as defined in ASTM E29. This requires that an observed or calculated value 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.

1.5 Quality Systems

Requirements relating to the product manufacturer's quality system programs are described in Nonmandatory Appendix A.

1.6 Relevant Units

This Standard states values in both SI (Metric) and U.S. Customary units. These systems of units are to be regarded separately as standard. Within the text, the SI units are shown in parentheses. The values stated in each system are not exact equivalents; therefore, it is required that each system of units be used independently of the other. Combining values from the two systems constitutes nonconformance with the Standard.

All pressures, unless otherwise specified, are gauge pressures.

2 GENERAL CONSTRUCTION AND ASSEMBLY

2.1 General

Each valve at the time of manufacture shall be capable of meeting the requirements set forth in this Standard. The workmanship employed in the manufacture and assembly of each valve shall provide for the specified gas tightness, reliability of performance, freedom from injurious imperfections, and defects as specified herein.

2.2 End Connections

The valve body shall be provided with wrench flats at ends with tapered pipe threads.

2.3 Pipe and Tubing Connections

2.3.1 Taper Pipe Threads. Taper pipe threads, when provided, shall be in accordance with ASME B1.20.1.

2.3.2 Flare Tubing Connection. Valves with an inlet and/or outlet for ⅜, ½, or ⅝ O.D. tube shall be in accordance with the flare fitting dimensions shown in Table 1. Other flare sizes shall be made per manufacturer's standards.

2.4 Operating Head

The operating head of the valve shall be a lever, tee, flat, or square head type. Separately attached handles, if provided, shall be securely attached to the valve by