



Standard Specification for Hand-Operated, Globe-Style Valves for Gas (Except Oxygen Gas) and Hydraulic Systems¹

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ε¹ NOTE—Keywords were added editorially in September 2016.

1. Scope

1.1 This specification covers the design, construction, testing, and operating requirements for hand-operated, quick-change cartridge trim, in-line body and angle-body, globe-style valves for use in gas (except oxygen gas) and hydraulic systems. These valves may be used for on-off, or throttling applications, or both.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

2. Referenced Documents

2.1 ASTM Standards:²

F992 Specification for Valve Label Plates

2.2 ANSI Standards:³

ANSI B1.1 Unified Screw Threads (UN and UNR Thread Form)

ANSI B1.20.1 Pipe Threads, General Purpose (Inch)

ANSI B16.11 Forged Steel Fittings, Socket-Welding and Threaded

ANSI B16.25 Buttwelding Ends

ANSI B16.34 Valves—Flanged, Threaded, and Welded End

2.3 Military Standards and Specifications:⁴

MIL-STD-167-1 Mechanical Vibrations of Shipboard Equipment (Type I—Environmental and Type II—Internally Excited)

MIL-STD-740-1 Airborne Noise Measurements and Acceptance Criteria of Shipboard Equipment

MIL-S-901 Shock Tests, H.I. (High-Impact); Shipboard Machinery, Equipment and Systems, Requirements for

MIL-F-1183 Fittings, Pipe, Cast Bronze, Silver-Brazing, General Specification for

2.4 Government Drawings:⁴

Naval Sea Systems Command (NAVSEA)

NAVSEA 803-1385884 Unions, Fittings and Adapters Butt and Socket Welding 6000 PSI, WOG, NPS

NAVSEA 803-1385943 Unions, Silver Brazing 3000 PSI, WOG, NPS, for UT Inspection

NAVSEA 803-1385946 Unions, Bronze Silver Brazing, WOG for UT Inspection

3. Terminology

3.1 Definitions:

3.1.1 *bubble-tight*—no visible leakage over a 3-min period using either water submersion or the application of bubble fluid for detection.

3.1.2 *external leakage*—leakage from the valve that escapes to atmosphere.

3.1.3 *flow capacity*—the ability of a valve to pass flow under any given set of pressure conditions. The flow capacity of a valve is directly related to its Flow Coefficient (C_v). The Flow coefficient is the quantity of water passing through a valve, expressed in gallons/minute (litres/minute), when 1 psi (6.895 kPa) pressure drop at 60°F (16°C) is applied across the valve.

3.1.4 *globe-style valves*—a basic control valve type that gets its name from the globular shape of its body with an internal bridgewall construction. It normally uses a basic rising stem/plug for the closure member.

3.1.5 *hydrostatic shell test pressures*—the hydrostatic test pressures that the valve is required to withstand without damage. Valve operation is not required during application of shell test pressure, but the valve must meet all performance requirements after the shell test pressure has been removed.

3.1.6 *internal leakage*—leakage from higher pressure to lower pressure portions of the valve.

¹ This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.11 on Machinery and Piping Systems.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.