



Standard Specification for Valve Locking Devices¹

This standard is issued under the fixed designation F993; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification² covers the application, design, and materials for valve locking devices.

1.2 Locking devices Types I and II described in this specification are designed to secure the valve in a fully opened or completely closed position.

1.3 This specification does not apply to valves equipped with locking devices from the valve manufacturer, unless this standard is invoked in the procurement ordering data for the valve or its locking device, or both.

1.4 This specification is intended to supersede NASEA drawing S4824-1385509. However, cancellation of that drawing and adoption of this specification can only be effected by the navy.

2. Referenced Documents

2.1 *ASTM Standards:*³

[A36/A36M Specification for Carbon Structural Steel](#)

[A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip \(Withdrawn 2014\)](#)⁴

[A492 Specification for Stainless Steel Rope Wire](#)

[A668/A668M Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use](#)

[B209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate](#)

[B580 Specification for Anodic Oxide Coatings on Aluminum](#)

[F708 Practice for Design and Installation of Rigid Pipe Hangers](#)

2.2 *Other Documents:*

[ANSI B18.1 Small Solid Rivets](#)⁵

[American Welding Society D1.1 on Steel](#)⁶

3. Classification

3.1 Valve locking devices shall be classified by the following types and grades in accordance with the method of locking and material used.

3.2 *Types:*

3.2.1 *Type I*—Wire rope assembly (see [Fig. 1](#) and [Fig. 2](#)).

3.2.2 *Type II*—Handwheel latch (see [Fig. 3](#) and [Fig. 4](#)).

3.2.3 *Type III*—Locking shield (see [Fig. 5](#)).

3.3 *Grades:*

3.3.1 *Grade A*—Stainless steel, Specification [A167](#), Type 316.

3.3.2 *Grade B*—Anodized aluminum, Specification [B209](#), Alloy 5052.

3.3.3 *Grade C*—Carbon steel, commercial quality steel (see Specification [A36/A36M](#)).

4. Ordering Information

4.1 Orders for material under this specification shall include the following:

4.2 ASTM Designation and year of issue.

4.3 *Type*.

4.4 *Grade*.

4.5 *Padlock Size* (if necessary).

4.6 *Rubber Coating* (if necessary).

4.7 *Necessary Dimensions:*

4.7.1 *Type I:*

4.7.1.1 Length of wire strand.

4.7.1.2 Diameter of pipe.

4.7.2 *Type II:*

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.

Current edition approved April 1, 2011. Published April 2011. Originally approved in 1986. Last previous edition approved in 2006 as F993 – 86(2006). DOI: 10.1520/F0993-86R11.

² This specification is intended to supersede NAVSEA Drawing S4824-1385509. However, cancellation of that drawing and adoption of this specification can only be effected by the Navy.

³ 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.

⁴ The last approved version of this historical standard is referenced on www.astm.org.

⁵ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁶ Available from American Welding Society (AWS), 550 NW LeJeune Rd., Miami, FL 33126, <http://www.aws.org>.

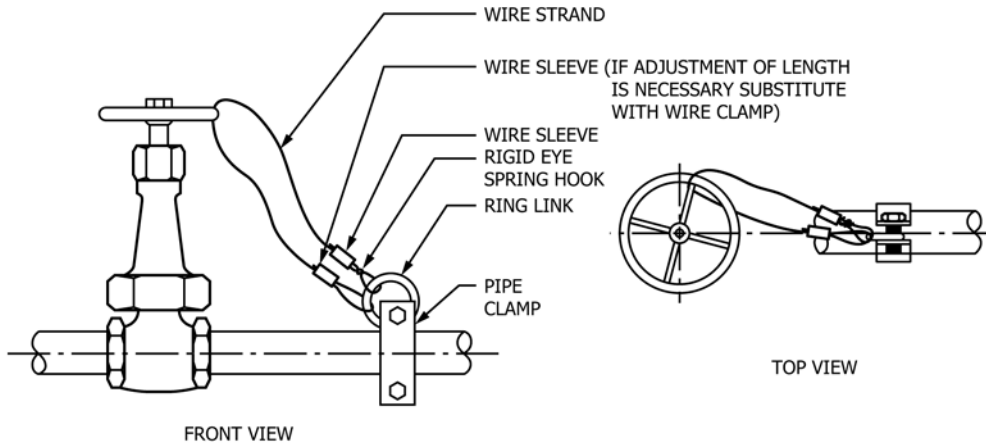
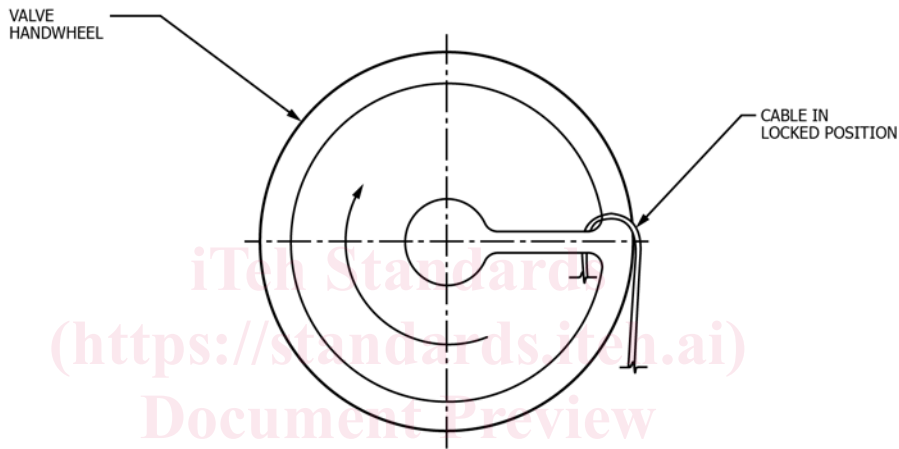


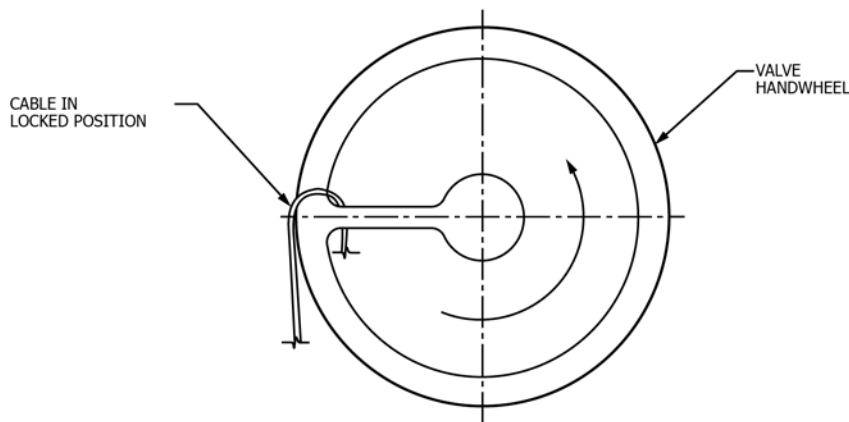
FIG. 1 Type I—Wire Rope Assembly



(a) Handwheel locked in maximum position clockwise rotation

[ASTM F993-86\(2011\)](https://standards.iteh.ai/ASTM-F993-86(2011))

<https://standards.iteh.ai/catalog/standards/sist/0d93e1a7-e262-4541-baab-f107aeeb8cf/astm-f993-862011>



(b) Handwheel locked in maximum position counterclockwise rotation

FIG. 2 Miscellaneous Type I Details

- 4.7.2.1 Maximum height (fully opened).
- 4.7.2.2 Minimum height (fully closed).
- 4.7.2.3 Handwheel thickness.
- 4.7.2.4 Handwheel depth.

- 4.7.2.5 Diameter at location of attachment.
- 4.7.3 Type III:
- 4.7.3.1 Depth.
- 4.7.3.2 Height.