



Standard Specification for Manually Operated Fueling Hose Reels¹

This standard is issued under the fixed designation F 1347; 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.

1. Scope

1.1 This specification covers manually operated fueling hose reels for use with collapsible and noncollapsible hose.

1.2 The values stated in inch-pound units are to be regarded as standard. The SI units given in parentheses are for information only.

1.3 The following precautionary caveat pertains only to the test methods portion, Section 12 of this specification: *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

B 148 Specification for Aluminum-Bronze Sand Castings²

D 3006 Specification for Polyethylene Plastic Pressure-Sensitive Electrical Insulating Tape³

D 3951 Practice for Commercial Packaging⁴

2.2 Military Specifications:⁵

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

MIL-T-16366 Terminals, Electric Lug and Conductor Splices, Crimp Style

MIL-H-17902 Hose, End Fittings and Hose Assemblies, Synthetic Rubber, Aircraft Fuels

MIL-F-20042 Flanges, Pipe and Bulkhead, Bronze (Silver Brazing)

MIL-P-24441 Epoxy-Polyamide Primer

2.3 Military Standard:⁵

MIL-STD-130 Identification Marking of U.S. Military Property

3. Classification

3.1 Fueling hose reels shall be of one of the following types as specified:

3.1.1 *Type 1*—For 150 ft (46 m) of collapsible 2½-in. (65-mm) hose.

3.1.2 *Type 2*—For 150 ft (46 m) of noncollapsible 1½-in. (38-mm) hose or 100 ft (30 m) of noncollapsible 2-in. (50-mm) hose.

3.1.3 *Type 3*—For 150 ft (46 m) of noncollapsible 1½-in. (38-mm) hose or for 150 ft (46 m) of collapsible 2½-in. (65-mm) hose.

3.1.4 *Type 4*—Capacity as specified by purchaser.

4. Ordering Information

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

4.1.1 Title, number, and year of issue of this specification,

4.1.2 Type of hose reel including hose size and type (see 3.1), (length of hose for Type 4),

4.1.3 Whether right- or left-hand reels are required (see 6.5),

4.1.4 Flange inlet thickness and bolt hole dimensions (see 6.7),

4.1.5 Drawings required (see 9.1),

4.1.6 The number of samples to be inspected and tested (see 11.2),

4.1.7 Certification, if required (see 15.1),

4.1.8 Test report, if required (see 15.1), and

4.1.9 Applicability of supplementary requirements.

5. Materials and Manufacture

5.1 Except as otherwise specified herein, the hose reels shall be constructed of aluminum, aluminum bronze, or other suitable nonsparking materials. All fittings conveying aromatic fuels through the hose reel shall be made of aluminum bronze in accordance with Specification B 148, copper alloy UNS No. C95300. To prevent deterioration in sea atmosphere, aluminum parts should not contact brass or bronze; however, where such aluminum parts come in contact with brass or bronze, they shall be protected by adhesive-backed insulating tape, Specification D 3006. All aluminum parts shall be given a coat of epoxy-polyamide primer.

6. Construction

6.1 *Reel and Drum Assembly*—The hose reel shall be of a durable, rigid construction, as light in weight and compact as practicable. The drum assembly (drum, reel sides, and its reinforcements) shall withstand the hose pull without distortion or collapse and shall be capable of withstanding some sideways hose pull without undue distortions. The construction of the

¹ This specification is under the jurisdiction of ASTM Committee F-25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.07 on General Requirements.

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² *Annual Book of ASTM Standards*, Vol 02.01.

³ *Annual Book of ASTM Standards*, Vol 10.02.

⁴ *Annual Book of ASTM Standards*, Vol 15.09.

⁵ Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

completed drum assembly shall be such that disassembly can be readily accomplished with standard tools. When bolted down to a true flat surface, the shaft and rotating seal centerlines shall be in true alignment and the drum assembly shall turn without binding under a rim pull not to exceed 7 lb (198 kg) with the reel unpressurized. Both ends of the drum shaft shall be supported on ball or roller bearings that shall have provision for easy lubrication. Reels shall be designed so that all bearings, and other corrodible parts, are adequately protected from the weather. Provision shall be made for lubrication of working parts such as bearings or other mating surfaces, and all such parts shall be lubricated before delivery with a lubricant soluble in aromatic fuels. Bearing seals shall be such that the pressure caused by forced lubrication will not bind the shaft.

6.2 *Reel Drum*—The reel drum may have either smoothly formed flat sides or suitable spoke ribs, so formed as not to damage the hose. The rims of the drum shall provide a good grip for hand rewind.

6.3 *Holding Brake*—Reels shall be provided with a holding brake to lock the reel in any position.

6.4 *Nozzle Clamp*—The reel shall be fitted with a device for clamping the hose nozzle securely to the reel to prevent unwinding of the hose and damage to the nozzle.

6.5 *Reel Hub Discharge*—The reel hub discharge shall be angled to provide a smooth tangential contact of the hose with the reel drum as shown on Fig. 1 and Fig. 2, so that the hose will not kink at the discharge connection. The hub discharge

fitting and adapter shall be in accordance with Fig. 2 and Fig. 3 for Types 1, 2, and 3, respectively. Reels shall be right- or left-hand operation and top or bottom wind, as specified. A right-hand, top-wind reel is defined as one that, when looking into the flanged adapter on the discharge fitting when it is at the top of the drum, has its inlet connection on the right-hand side. (Note that a top-wind, right-hand reel and a bottom-wind, left-hand reel are identical.) It shall be possible by turning the discharge fitting around, or by other simple means, to enable the hose to unreel from the bottom of the reel drum to either side of the reel (that is, to make the reel either right hand or left hand) without rotating the reel drum.

6.6 *Aromatic Fuels Tight Rotating Joint*—The reel shall have an aromatic fuels tight rotating joint between reel inlet connection and the rotating hub on the reel drum. The rotating joint shall not bind under loading (shall be supported to prevent a bending load being applied), shall have provision for lubrication of moving parts, and shall be capable of easy disassembly for maintenance purposes. The rotating joint shall be tight under the pressure specified in 7.1.

6.7 *Inlet Connection*—The reel inlet connection shall be flanged, the flange being part of the rotating swivel joint. The flange thickness and bolt hole drilling shall be as specified in the contract or purchase order.

7. Performance Requirements

7.1 *Fluid Handling*—Reels shall be capable of passing 300 gal/min (0.0189 m³/s) of aviation fuel at a pressure of 150 psi

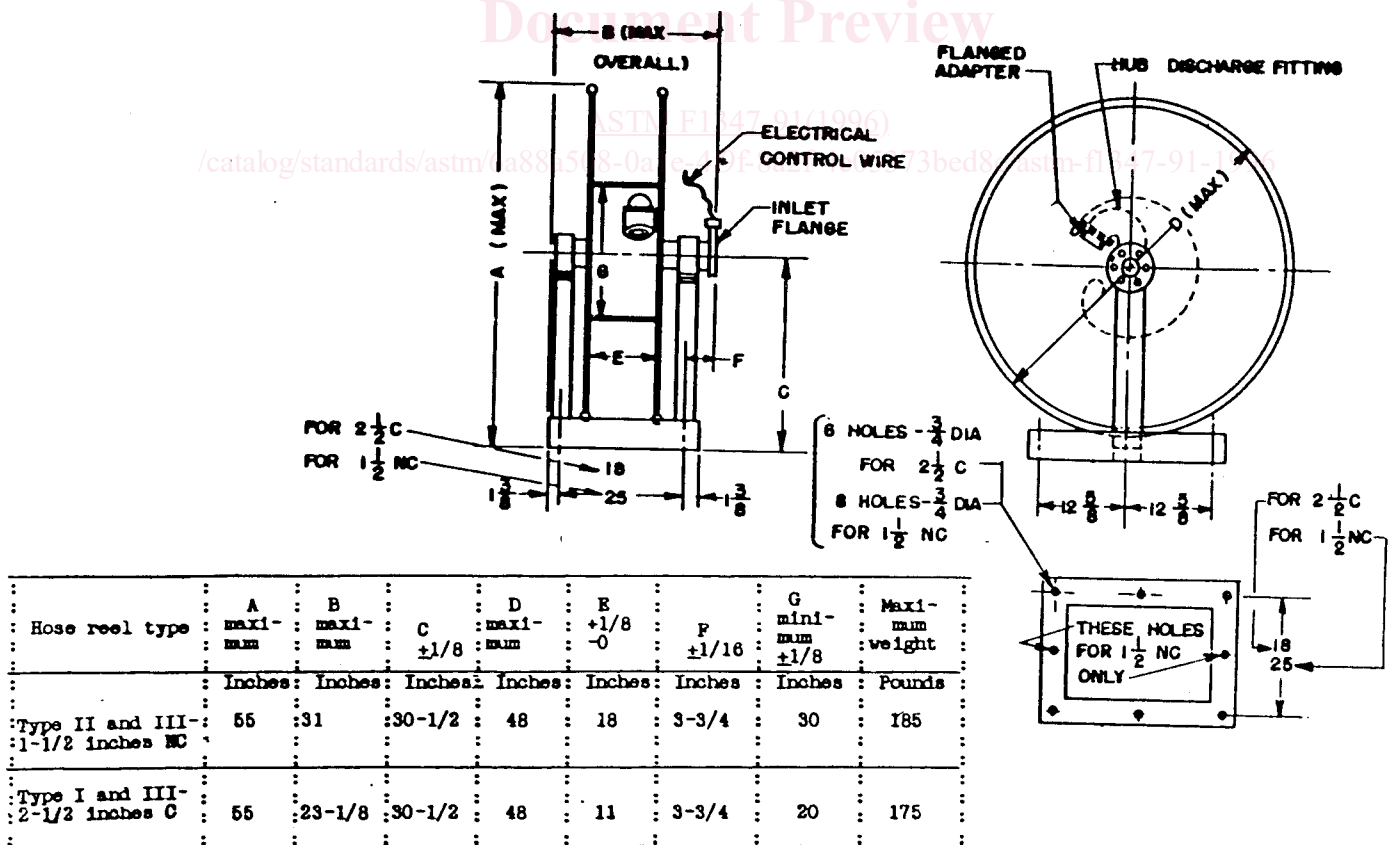


FIG. 1 Hose Reel Dimensions