

MIL-F-17280D(SH)
13 October 1987
SUPERSEDING
MIL-F-17280C(SHIPS)
11 July 1966
(See 6.4)

MILITARY SPECIFICATION

FITTINGS, MARINE, MINESWEEPING, NONMAGNETIC

This specification is approved for use within the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers miscellaneous nonmagnetic fittings used in minesweeping.

1.2 Classification. The fittings shall be of the following types and styles, as specified (see 6.2):

- Type I - Screw pin anchor shackles.
- Type II - Thimbles.
 - Style a - Wire-rope.
 - Style b - Fiber-rope.
- Type III - Swivels.
 - Style a - Eye and eye.
 - Style b - Jaw and eye.
- Type IV - Clips (wire rope).
- Type V - Turnbuckles.
 - Style a - Jaw and jaw.
 - Style b - Eye and eye.
- Type VI - Tripping (cat) hooks.
- Type VII - Pelican hooks.
- Type VIII - Rings.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 5523, Department of the Navy, Washington, DC 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 1075

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2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standard. The following specifications and standard form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

- QQ-N-286 - Nickel-Copper-Aluminum Alloy, Wrought (UNS N05500).
- QQ-S-763 - Steel Bars, Wire, Shapes, and Forgings, Corrosion-Resisting.
- PPP-B-566 - Boxes, Folding, Paperboard.
- PPP-B-585 - Boxes, Wood, Wirebound.
- PPP-B-591 - Boxes, Shipping, Fiberboard, Wood-Cleated.
- PPP-B-601 - Boxes, Wood, Cleated-Plywood.
- PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner.
- PPP-B-636 - Boxes, Shipping, Fiberboard.
- PPP-B-676 - Boxes, Setup.

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- MIL-P-116 - Preservation, Methods of.
- MIL-I-17214 - Indicator, Permeability; Low-Mu (Go-No Go).
- DOD-F-24669/4 - Forgings and Forging Stock, Steel Bars and Billets, Nickel and Nickel-Molybdenum Modified Hadfield; Low Magnetic Permeability. (Metric)
- DOD-F-24669/5 - Forgings and Forging Stock, Steel Bars, Billets and Wire (Chromium-Nickel-Phosphorus and Chromium-Nickel-Manganese-Phosphorus) Low Magnetic Permeability. (Metric)

STANDARD

MILITARY

- MIL-STD-129 - Marking for Shipment and Storage.

2.1.1 Other Government drawings. The following other Government drawings form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

DRAWINGS

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- 518783 - Tripping (Cat) Hook, NM.
- 1,464,409 - Pelican Hook - Links, Shackles and Swivels, "O" Type Mine Sweep Gear, NM.
- 1,723,674 - Turnbuckle, 3/8 Inch by 3 Inch, Jaw and Jaw, NM.
- 1,723,677 - Turnbuckle, 3/8 Inch by 6 Inch, Eye and Eye, NM.

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- 3,274,753 - Turnbuckle, 7/8 Inch by 6 Inch, Jaw and Jaw, NM.
- 3,274,756 - Turnbuckle, 7/8 Inch by 12 Inch, Eye and Eye, NM.
- 3,274,759 - Turnbuckle, 3/4 Inch by 6 Inch, Eye and Eye, NM.
- 3,274,762 - Turnbuckle, 3/4 Inch by 3 Inch, Jaw and Jaw, NM.

(Copies of specifications, standards and other Government drawings required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DoDISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 484 - Standard Specification for General Requirements for Stainless and Heat-Resisting Bars, Billets and Forgings. (DoD adopted)
- A 582 - Standard Specification for Free-Machining Stainless and Heat-Resisting Steel Bars, Hot-Rolled or Cold-Finished. (DoD adopted)
- A 555 - Standard Specification for General Requirements for Stainless and Heat-Resisting Steel Wire and Wire Rods. (DoD adopted)
- A 581 - Standard Specification for Free Machining Stainless and Heat-Resisting Steel Wire. (DoD adopted)

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

UNIFORM CLASSIFICATION COMMITTEE AGENT

Uniform Freight Classification Ratings, Rules and Regulations

(Application for copies should be addressed to the Uniform Classification Committee Agent, Tariff Publication Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

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3. REQUIREMENTS

3.1 Materials. Fittings shall be forgings from the materials specified in table I. All fittings made of modified Hadfield steel in accordance with DOD-F-24669/4 shall be painted. Fittings shall have a magnetic permeability less than 2.0 after all fabrication processes are completed (see 4.4.2).

TABLE I. Materials.

Types	Applicable documents
I	DOD-F-24669/5, composition I
II, IV	QQ-S-763, class 304, condition A
III, VI, VIII	DOD-F-24669/4 (alloy 1 or 2) or DOD-F-24669/5 (composition I) (Pins for swivels - QQ-N-286; ASTM A 484, A 582, A 555, A 581, type 303; or DOD-F-24669/5, composition I)
V	DOD-F-24669/5, composition I and as specified on the applicable drawings
VII	DOD-F-24669/4 (alloy 1 or 2) or DOD-F-24669/5 (composition I) and as specified on the applicable drawings.

3.1.1 Recovered materials. Unless otherwise specified herein, all material and articles incorporated in the products covered by this specification shall be new and may be fabricated using materials produced from recovered materials to the maximum extent practicable without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specifically specified.

3.2 Type I, screw pin anchor shackles.

3.2.1 Threads. Shackles shall be threaded after fabrication to final size and shape. Threads shall be of the coarse thread series class 2 fit.

3.2.2 Ductility. Shackles shall be sufficiently ductile so that the fractured member shall show a permanent distortion before breaking. If the pin fractures, it shall show a permanent bend of not less than 20 degrees. If the body fractures, it shall show a permanent midshackle set of not less than 15 percent of the original spread between bows.

3.2.3 Dimensions and physical requirements. Shackles shall be as shown on figure 1 and shall conform to the dimensions and physical requirements of table II, as specified (see 6.2).

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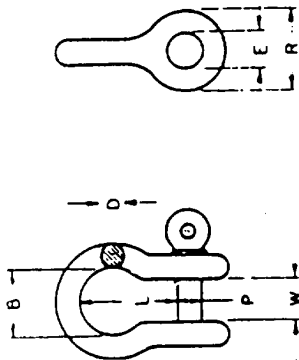


FIGURE 1. Type I, shackles.

TABLE II. Dimensions and physical requirements, type I.

Size D	Diameter of pin (P) minimum	Diameter unthreaded eye (E) maximum	Width between eyes (W)	Toler- ance in width between eyes (W)	Length inside (L)	Toler- ance in inside length (L)	Width bow B (min- imum)	Diameter threaded eye	Outside diameter of eye (R) maximum	Weight per 100 shackles approx.	Proof loads (min- imum)	Break- ing loads (min- imum)
Inch	Inches	Inches	Inches	Inch	Inches	Inch(+)	Inches	Inches	Inches	Pounds	Pounds	Pounds
1/4	5/16	13/32	15/32	-1/32+3/32	1- 1/8	1/16	3/4	11/32	7/8	12	1,300	3,55
3/8	7/16	17/32	21/32	-1/32+3/32	1- 7/16	1/16	15/16	15/32	1-1/8	32	3,200	7,95
7/16	1/2	19/32	23/32	-1/32+3/32	1-11/16	1/16	1- 1/16	17/32	1-1/4	49	4,400	10,85
1/2	5/8	23/32	13/16	-1/16+3/32	1-15/16	1/16	1- 3/16	21/32	1-3/8	73	5,600	14,15
5/8	3/4	27/32	1-1/16	-1/16+3/32	2- 1/2	1/8	1- 1/2	25/32	1-7/8	151	8,800	22,10
3/4	7/8	31/32	1-1/4	-1/16+3/32	3	1/4	1- 3/4	29/32	2-1/4	226	12,800	31,80
7/8	1	1-3/32	1-7/16	-1/16+3/32	3- 1/4	1/4	2	1-1/32	2-3/8	340	17,600	43,25
1	1-1/8	1-7/32	1-11/16	-1/16+1/8	3- 3/4	1/4	2 -5/16	1-5/32	2-5/8	495	31,000	70,00

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3.2.4 Loading conditions. Shackles shall be subjected to the loading conditions shown in table II. The shackles shall withstand the proof loads without developing surface rupture or defects which would interfere with serviceability or prevent disassembly of the pin. After proof loading, the shackles shall be disassembled by hand after the first half turn. The shackles shall also withstand the breaking load.

3.3 Type II, thimbles.

3.3.1 Type II, style a. Type II, style a thimbles are heavy duty thimbles for wire-rope. Thimbles shall be semicircular at the closed ends with the sides tapering together at the free ends. The free ends shall have a rounded shape and shall conform to the configuration shown on figure 2 and to the dimensions and weight specified in table III (see 6.2).

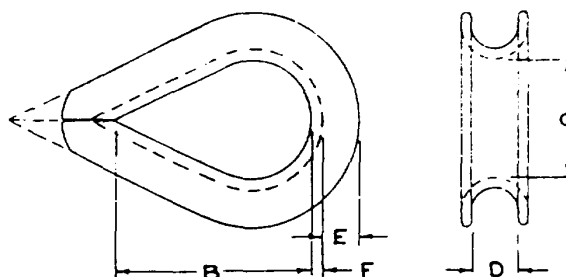


FIGURE 2. Dimensions and weight, type II, style a.

TABLE III. Dimensions and weight, type II, style a.

Thimble size (nominal) wire- rope diameter	B Minimum	C Minimum	D		E Minimum	F Minimum	Approximate weight per 100 thimbles
			Minimum	Maximum			
Inch	Inches	Inches	Inches	Inches	Inch	Inch	Pounds
3/16	1-1/4	11/16	7/32	1/4	1/8	3/64	3.25
1/4	1-5/8	3/4	9/32	5/16	3/16	1/16	7.50
5/16	1-7/8	1	11/32	3/8	9/32	5/64	14
3/8	2-1/8	1-1/8	13/32	7/16	17/64	7/64	25
1/2	2-5/8	1-1/2	17/32	5/8	3/8	9/64	51
5/8	3-1/4	1-3/4	21/32	11/16	13/32	5/32	75
3/4	3-3/4	2	25/32	13/16	1/2	7/32	147
1	4-1/2	2-1/2	1-1/16	1-5/32	23/32	1/4	300
1	3-5/16	2-1/8	1-1/16	1-1/8	13/32	1/8	105

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3.3.2 Type II, style b. Type II, style b thimbles are for fiber-rope. Thimbles shall be circular and shall conform to the configuration shown on figure 3 and to the dimensions and weights specified in table IV (see 6.2). The width of score shall be greater than the nominal size by 1/16 inch for sizes 1/2 inch and larger, and 1/32 inch for sizes smaller than 1/2 inch.

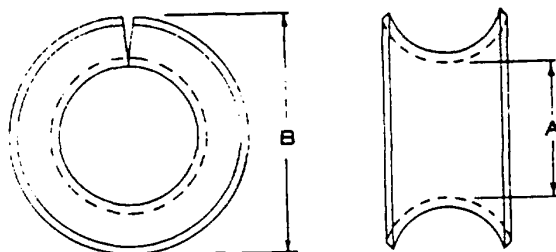


FIGURE 3. Type II, style b, fiber-rope thimbles.

TABLE IV. Dimensions and weight, type II, style b.

Thimble size		Diameter, minimum		Weight of 10 thimbles minimum
Nominal diameter	Circumference	A inside	B outside	
Inch	Inches	Inches	Inches	Pounds
7/16	1-1/4	5/8	1	0.35
1/2	1-1/2	3/4	1-1/4	.58
11/16	2	15/16	1-1/2	1.10
7/8	2-1/2	1-3/16	2	2.00

3.4 Type III, swivels.

3.4.1 Type III, style a. Type III, style a swivels shall be similar to figure 4 and shall conform to the dimensions and physical requirements specified in table V (see 6.2).

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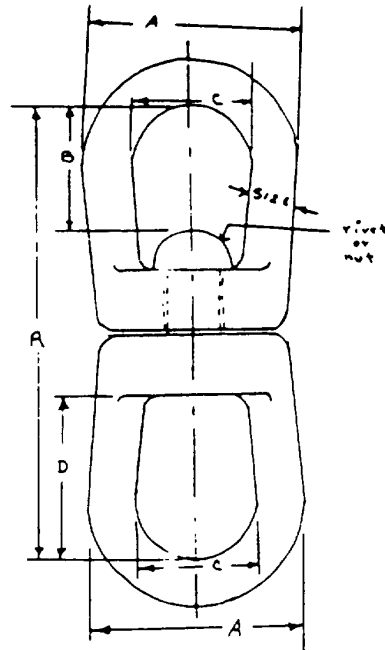


FIGURE 4. Type III, style a, eye and eye swivel.

TABLE V. Dimensions and weight, type III, style a.

Size of swivel	Dimensions					Proof load
	A +1/16	B Minimum	C +1/16	D +1/16	R Maximum	
Inch	Inches	Inches	Inches	Inches	Inches	Pounds
1/4	1-1/4	11/16	3/4	1-1/8	3-3/16	1,300
3/8	2	1-3/16	1-1/4	1-11/16	4-9/16	3,200
7/16	2-3/8	1-1/4	1-1/2	1-11/16	4-13/16	4,400
5/8	3	1-11/16	1-3/4	2-3/8	6-9/16	8,200
3/4	3-1/2	2-3/16	2	2-3/4	7-9/16	12,500
7/8	4	2-3/16	2-1/4	3-1/16	8-9/16	17,600
1	4-1/2	2-1/2	2-1/2	3-7/16	9-9/16	31,000

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3.4.2 Type III, style b. Type III, style b swivels shall be as shown on figure 5 and shall conform to the dimensions and physical requirements specified in table VI (see 6.2).

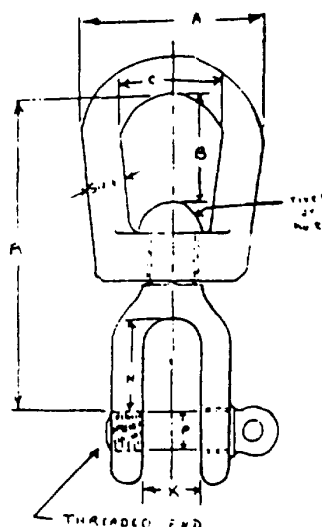


FIGURE 5. Type III, style b.

TABLE VI. Dimensions and physical requirements, type III, style b.

Size	Dimensions							Proof load
	A $\pm 1/16$	B Minimum	C $\pm 1/16$	K $\pm 1/16$	N $\pm 1/16$	P	R Maximum	
Inch	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Pounds
1/4	1-1/4	11/16	3/4	1/2	7/8	1/4	2-3/4	1,300
1/2	2-1/2	1-7/8	1-1/2	3/4	1-11/16	1/2	5-3/8	4,700
5/8	3	2	1-3/4	1	1-3/4	5/8	5-3/4	8,800
3/4	3-1/2	2-3/16	2	1-1/4	1-13/16	3/4	6-3/8	12,500
7/8	4	2-3/16	2-1/4	1-1/2	2-1/4	7/8	7-1/4	17,600
1	4-1/2	2-1/2	2-1/2	1-3/4	2-13/16	1-1/8	8-11/16	31,000

3.4.3 Threads. Swivels shall be threaded after fabrication to final size and shape. Threads shall be of the coarse thread series class 2 fit.

3.4.4 Loading conditions. The swivels shall be subjected to the loading conditions shown in tables V and VI. The swivels shall withstand the proof loads without visible sign of defect and shall be free turning after load is released.

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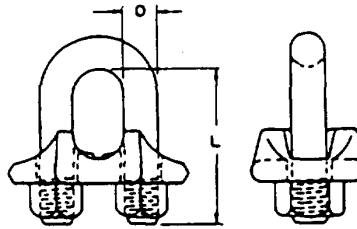
3.5 Type IV, clips (wire-rope).

3.5.1 Nuts. Nuts shall be heavy hexagonal, unfinished or semi-finished grades.

3.5.2 Threads. Nuts and bolts shall be threaded with a coarse thread series class 2 fit.

3.5.3 Saddles. Saddles shall have a curved groove sided by four ridges for guiding the V-bolt and nesting the wire rope. The rope groove shall be formed to give maximum grip in the longitudinal direction with the rope remaining straight. The two eyes for the V-bolt prongs shall be dimensioned and spaced to fit without binding or more than necessary play.

3.5.4 Configuration. Clip sizes shall be designated by the diameter of the wire rope on which they are intended to be used. Configuration details of clip components shall be to the contractor's design; however, the clips assembled shall conform to figure 6 and the dimensions and weight specified in table VII (see 6.2). The width between the parallel prongs shall be at least 1/16 inch greater than the nominal wire-rope diameter. The thread length on prongs shall be sufficient to permit proper gripping of a rope doubled over.

FIGURE 6. Type IV, clips (wire-rope).TABLE VII. Dimensions and weight, type IV, clips (wire-rope).

Size	D + 1/64 minimum	L + 1/64 minimum	Weight minimum
Inch	Inch	Inches	Pounds
3/16	3/16	15/16	0.09
1/4	1/4	1-1/32	.18
5/16	1/4	1-5/16	.25
3/8	5/16	1-1/2	.42
1/2	7/16	1-7/8	.73
5/8	7/16	2-3/8	.90
3/4	7/16	2-3/4	1.5
7/8	1/2	3-1/8	2.0

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3.5.5 Rope lay. The clips shall be constructed for 6 by 19 Warrington construction wire rope or equal, either right or left hand lay, as specified (see 6.2).

3.5.6 Assembly. Clips of the same size shall assemble readily with random selection of component parts.

3.6 Type V, turnbuckles (see 6.2).

3.6.1 Type V, style a, turnbuckles. Type V, style a turnbuckles shall be in accordance with Drawings 1,723,674; 3,274,753; and 3,274,762.

3.6.2 Type V, style b, turnbuckles. Type V, style b turnbuckles shall be in accordance with Drawings 1,723,677; 3,274,756; and 3,274,759.

3.6.3 Loading conditions. Turnbuckles shall be subjected to the loading conditions shown in table VIII. The turnbuckles shall withstand the proof loads without visible sign of defect and shall be free turning after load is released.

TABLE VIII. Loading conditions.

Size	Style	Proof load
Inches		Pounds
3/8 x 3	a	3,200
3/8 x 6	b	3,200
3/4 x 3	a	12,500
3/4 x 6	b	12,500
7/8 x 6	a	17,600
7/8 x 12	b	17,600

3.7 Type VI, tripping (cat) hooks. Type VI, tripping (cat) hooks shall be as shown on Drawing 518783. The hooks shall withstand a proof load of 3000 pounds (see 4.4.3).

3.8 Type VII, pelican hooks. The hooks shall be as shown on Drawing 1,464,409 (see 6.2) and shall be subjected to the following loading conditions:

<u>Size</u>	<u>Proof load</u>
Inch	Pounds
5/8	8,800
7/8	14,500

3.9 Type VIII, rings. The rings shall be either of a welded or weldless construction with an outside diameter of 6 inches and internal diameter of 4 inches. If rings are welded, flash butt type welding shall be used. Rings shall meet the following loading conditions.

- (a) Proof load - 9000 pounds.
- (b) Breaking load - 16,300 pounds.

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3.10 Marking. All fittings size 1/2 inch and larger shall be marked with the letters "NM". The size of the markings shall be proportional to size of the fittings. The letters shall appear on the eyes of the shackles and on the main body of the swivels, hooks, clips and turnbuckles.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Material certification. The contractor shall certify in writing that the materials used in the construction of the fittings conform to the material requirements specified herein. Certification shall contain actual tests, examination or other verifiable quality data.

4.3 Sampling for quality conformance inspection.

4.3.1 Lot. For purposes of inspection, a lot shall consist of all fittings of the same type, style, size and material offered for delivery at one time.

4.3.2 Sampling for examination and permeability. A random sample of fittings shall be selected from each lot, in accordance with table IX for the examination specified in 4.4.1 and the permeability specified in 4.4.2.

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TABLE IX. Sampling for examination and permeability.

Number of fittings in lot	Number of fittings in sample	Acceptance number defective	Rejection number defective
2 through 8	3	0	1
9 through 15	5	0	1
16 through 25	8	0	1
26 through 50	13	0	1
51 through 90	20	0	1
91 through 150	32	1	2
151 through 280	50	2	3
281 through 500	80	3	4
501 through 1200	125	5	6
1201 through 3200	200	7	8
3201 through 10,000	315	10	11

4.3.3 Sampling for proof tests (except types II and IV). A random sample of fittings shall be selected from each lot in accordance with table X for the proof tests specified in 4.4.3.

TABLE X. Sampling for proof tests (except types II and IV).

Number of fittings in lot	Number of fittings in sample	Acceptance number defective	Rejection number defective
2 through 15	2	0	1
16 through 25	3	0	1
26 through 90	5	0	1
91 through 150	8	1	2
151 through 280	13	1	2
281 through 500	20	1	2
501 through 1200	32	2	3
1201 through 3200	50	3	4
3201 through 10,000	80	5	6

4.3.4 Sampling for breaking tests (types I and VIII). A random sample of type I (shackles) and type VIII (rings) shall be selected from each lot in accordance with table XI for the breaking tests specified in 4.4.4. If any sample fails in the test, the entire lot shall be rejected.

TABLE XI. Sampling for breaking tests (types I and VIII).

Number of shackles and rings in lot	Number of shackles and rings in sample
2 through 25	2
26 through 150	3
151 through 1200	5
1201 through 10,000	8

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4.4 Inspection.

4.4.1 Visual and dimensional examination. Each sample fitting selected in accordance with table IX shall be visually and dimensionally examined to determine conformance to all the requirements of this specification not involving tests.

4.4.2 Permeability. Each sample selected in accordance with table IX and examined as specified in 4.4.1 shall be checked with a permeability indicator conforming to MIL-I-17214 to verify that the requirements specified in 3.1 have been met.

4.4.3 Proof tests (except types II and IV). All fittings (except types II and IV) selected in accordance with 4.3.3 shall be proof tested to verify conformance to the requirements specified in 3.2.3, 3.4.1, 3.4.2, 3.6.3, 3.7, 3.8 and 3.9.

4.4.4 Breaking tests.

4.4.4.1 Type I, shackles. Type I shackles selected in accordance with 4.3.4 and which have satisfactorily passed the proof tests (see 4.4.3) shall be subjected to the breaking loads specified in table II. The diameter of the attachment used in the breaking test shall be not greater than the pin diameter of the shackle being tested; the application of the load shall be at the center of the pin. After breaking, the sample shall be examined and measured to determine conformance to 3.2.2.

4.4.4.2 Type VIII, rings. Type VIII rings selected in accordance with 4.3.4 and which have satisfactorily passed the proof test (see 4.4.3) shall be subjected to the breaking loads specified in 3.9.

4.5 Inspection of packaging. Sample packages and packs, and the inspection of the preservation-packaging, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition.)

5.1 Domestic shipment and early equipment installation.

5.1.1 Preservation and packaging. Preservation and packaging which may be the contractor's commercial practice, shall afford adequate protection against corrosion, deterioration and physical damage during shipment from the supply source to the using activity and until early installation.

5.1.2 Packing. Packing shall be accomplished in a manner which will insure acceptance by common carrier at the lowest rate and will afford protection against physical or mechanical damage during direct shipment from the supply source to the

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using activity for early installation. The shipping containers or method of packing shall conform to the Uniform Freight Classification Ratings, Rules and Regulations or other carrier regulations as applicable to the mode of transportation and may conform to the contractor's commercial practice.

5.1.3 Marking. Shipment marking information shall be provided on interior packages and exterior shipping containers in accordance with the contractor's commercial practice. The information shall include nomenclature, Federal stock number or manufacturer's part number, contract or order number, contractor's name and destination.

5.2 Domestic shipment and storage or overseas shipment. The requirements and levels of preservation, packaging, packing and marking for shipment shall be as specified by the contracting activity (see 6.2).

5.2.1 The following provides requirements for protection during domestic shipment and storage or overseas shipment.

5.2.1.1 Preservation and packaging.

5.2.1.1.1 Level A. Fittings shall be packaged in accordance with method III of MIL-P-116. Intermediate packaging, when required, shall be as specified (see 6.2). Intermediate containers shall conform to PPP-B-566, PPP-B-636, or PPP-B-676, at the option of the contractor. Box closures shall conform to the applicable box specification and the appendix thereto. The gross weight of paperboard boxes shall not exceed 10 pounds; fiberboard boxes shall not exceed 20 pounds.

5.2.1.1.2 Level C. Packaging shall be sufficient to afford adequate protection against deterioration and physical damage and may conform to the contractor's commercial practice.

5.2.1.2 Packing.

5.2.1.2.1 Level A. Fittings shall be packed in overseas type boxes conforming to any one of the following, as applicable, at the option of the contractor.

<u>Specification</u>	<u>Type or class</u>
PPP-B-585	Class 3
PPP-B-591	Weather-resistant
PPP-B-601	Overseas type
PPP-B-621	Class 2
PPP-B-636	Weather-resistant

Box closures shall be as specified in the applicable box specification or appendix thereto. The gross weight of wood boxes shall not exceed 200 pounds; fiberboard boxes shall not exceed the weight limitations of the applicable box specification.

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5.2.1.2.2 Level B. Fittings shall be packed in domestic type boxes conforming to any one of the following, as applicable, at the option of the contractor.

<u>Specification</u>	<u>Type or class</u>
PPP-B-585	Class 1
PPP-B-591	Domestic
PPP-B-601	Domestic
PPP-B-621	Class 1
PPP-B-636	Domestic

Box closures shall be as specified in the applicable box specification or appendix thereto. The gross weight of wood boxes shall not exceed 200 pounds; fiberboard boxes shall not exceed the weight limitations of the applicable box specification.

5.2.1.3 Marking. Marking for shipment shall be in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. The fittings covered by this specification are intended for nonmagnetic applications for minesweeping.

6.2 Ordering data. Acquisition documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Type and style required (see 1.2).
- (c) Dimensions, physical requirements and weight (see 3.2.3, 3.3.1, 3.3.2, 3.4.1, 3.4.2, 3.5.4, 3.6 and 3.8).
- (d) Whether right or left hand lay clips are required (see 3.5.5).
- (e) Preservation, packaging, packing and marking requirements, if other than specified in 5.1 (see 5.2).
- (f) When intermediate packaging is required (see 5.2.1.1.1).

6.3 Subject term (key word) listing.

Clips
Hooks, pelican
Hooks, tripping
Shackles
Swivels
Turnbuckles

6.4 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Preparing activity:
Navy - SH
(Project 1075-N045)

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I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-F-17280D

2. DOCUMENT DATE (YYMMDD)
871013

3. DOCUMENT TITLE FITTINGS, MARINE, MINESWEEPING, NONMAGNETIC

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)

(1) Commercial

(2) AUTOVON
(if applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME

b. TELEPHONE (Include Area Code)

(1) Commercial

(703) 602-6020

(2) AUTOVON

332-6020

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