

MIL-H-13220C
 4 April 1963
 SUPERSEDING
 MIL-H-13220B
 16 May 1958

MILITARY SPECIFICATION

HOOKS, SLIDING CHOKER (FOR USE WITH WIRE ROPE)

This specification has been approved by the Department of Defense and is mandatory for use of the Departments of the Army, the Navy and the Air Force.

1. SCOPE

1.1 Scope. - This specification covers commercially available cast steel or drop forged sliding choker hooks for use with wire rope plain end loop and thimble slings.

1.2 Classification. - Choker hooks shall be of the following sizes, as specified (see 6.2):

Hook size
 (wire rope diameter)
 (Inch)

1/2
 5/8
 3/4
 7/8 and 1

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein.

SPECIFICATIONS

MILITARY

MIL-H-15424 - Hand Tools, Packaging of.

MIL-S-17249 - Steel Castings, Hadfield Manganese (Low Magnetic Permeability).

(Copies of specifications, standards, drawings and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. - The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated the issue in effect on date of invitation for bids or request for approval shall apply.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A-128 - Austenitic Manganese-Steel Castings.

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

AMERICAN IRON AND STEEL INSTITUTE (AISI)

Steel Products Manual.

(Application for copies should be addressed to the American Iron and Steel Institute, 350 5th Avenue, New York 1, New York.)

FSC 4030

MIL-H-13220C

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

3. REQUIREMENTS

3.1 General requirements. - Sliding choker hooks shall conform to the dimensional limitations and general shape shown on figure 1 or 2. All surfaces over which the wire rope will pass shall be smooth, curved and rounded to prevent damage to the rope. The eye of the stock shall accommodate the size of wire rope specified (see 6.2). Figure 1 or 2 shows principal limiting dimensions, but responsibility for the design shall rest with the contractor.

3.2 Material. -

3.2.1 Cast steel hooks (figure 1). - Material shall be cast steel, heat treated, clean and sound conforming to type A of MIL-S-17249 (except for low magnetic permeability requirements) or in accordance with ASTM A-128.

3.2.2 Forged steel hooks (figure 2). - Material shall be heat treated, drop forged steel in accordance with AISI 4130.

3.3 Strength. - Strength requirements of the hooks shall be as shown in table I.

Table I - Strength requirements.

Hook (wire rope diameter)	Safe working load
(Inch)	(Pounds)
1/2	3,300
5/8	5,000
3/4	8,000
7/8 and 1	15,000

3.4 Identification. - The choker hooks shall bear the manufacturer's identification mark and hook size. The identification shall be stamped, or applied by any other method of permanent marking, on the hooks in a clearly visible location.

3.5 Workmanship. - Workmanship shall conform to accepted commercial standard practice for this type of equipment.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to 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.

4.2 Sampling. -

4.2.1 Lots. -

4.2.1.1 Cast choker hooks. - A lot shall consist of all choker hooks castings of one size made from the same melt, or the same pouring of a ladle containing a number of crucible melts, heat-treated in the same furnace charge and offered for delivery at one time.

MIL-H-13220C

4.2.1.2 Forged choker hooks. - A lot shall consist of all choker hook forgings of one size made from the same lot of bar stock and after forging, the same heat-treatment in the same furnace charge and offered for delivery at one time.

4.2.2 Sampling for examination. - Sample hooks shall be selected at random from each lot in accordance with table II for the examination specified in 4.3. Any hook having one or more defects shall not be offered for delivery. If the number of defective hooks exceeds the acceptance number for that sample, this shall be cause for rejection of the lot represented by the sample. Table II shall be applied separately to major and minor defects for purposes of lot acceptance and rejection.

Table II - Sampling for examination.

Lot size (number of hooks)	Sample size (number of hooks)	Defective hooks	
		Acceptance number (defectives)	Rejection number (defectives)
2 to 8	5	0	1
9 to 15	7	0	1
16 to 25	10	0	1
26 to 40	15	0	1
41 to 65	25	0	1
66 to 110	35	1	2
111 to 180	50	2	3
181 to 300	75	3	4
301 to 500	110	4	5
501 to 800	150	5	6

4.2.3 Sampling for tests. - Sample hooks shall be selected from each lot at random in accordance with table III for the tests of 4.4. If any sample fails any test this shall be cause for rejection of the lot represented by the sample.

Table III - Sampling for tests.

Lot size	Sample size	
	Proof test	Ultimate strength test
Up to 15	5	1
16 to 40	7	2
41 to 110	10	3
111 to 180	15	5
181 to 300	25	7
301 to 500	35	10
501 to 800	50	15

4.3 Examination. - Each sample hook selected in accordance with 4.2.2 shall be examined to verify conformance to all the requirements of this specification not involving tests. Defects shall be classified in accordance with table IV.

4.4 Tests. -

4.4.1 Proof test. - Each sample hook selected in accordance with 4.2.3 shall be proof tested to twice the safe working load. The pull shall be in direct alignment with the centerline of the hook.

4.4.2 Minimum ultimate strength test. - Each sample hook selected in accordance with 4.2.3 shall be tested to four times the safe working load specified in table I.

MIL-H-13220C

Table IV - Classification of defects.

Categories	Inspect for	Defects
Critical:		None defined.
Major:		
101	Hook dimensions and shape (see figure 1).	Variation from specified requirements.
102	Cleanliness of castings (see 3.2).	Fins, sprues, scale, or other extraneous material.
103	Quality of castings (see 3.2).	Shrinkage, cracks, porosity, sand inclusions, blowholes and rough edges or surfaces.
104	Identification marking (see 3.4).	Missing or illegible.

4.4.3 Possible test failures. -

- (a) Proof test load. - Evidence of deformation, distortion or permanent set, or sign of incipient cracks after subjecting hook to stipulated proof test load.
- (b) Minimum ultimate strength test. - Ultimate strength of hook less than four times the safe working load.

4.5 Inspection of preparation for delivery. - The preservation, packaging, packing, and marking of the hooks shall be inspected to determine compliance with the requirements of section 5.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, packing and marking. - Hooks shall be preserved and packaged level A or C, packed level A, B or C and marked in accordance with MIL-H-15424, as specified (see 6.2). Quantities shall be packed as specified in table V.

Table V - Packing.

Hook size (Inch)	Quantity per container
1/2	48
5/8	24
3/4	24
7/8 and 1	12

6. NOTES

6.1 Intended use. - Sliding choker hooks are intended for use with single leg plain end loop and thimble slings.

6.2 Ordering data. - Procurement documents should specify the following:

- (a) Title, number and date of this specification.
- (b) Size of choker hook required (see 1.2).
- (c) Whether plane of eye shall be parallel or perpendicular to hook opening (see 3.1).
- (d) Selection of applicable level of preservation, packaging and packing required (see 5.1).

MIL-H-13220C

Notice. - When Government drawings, specifications or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished or in any way supplied the said drawings, specification or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

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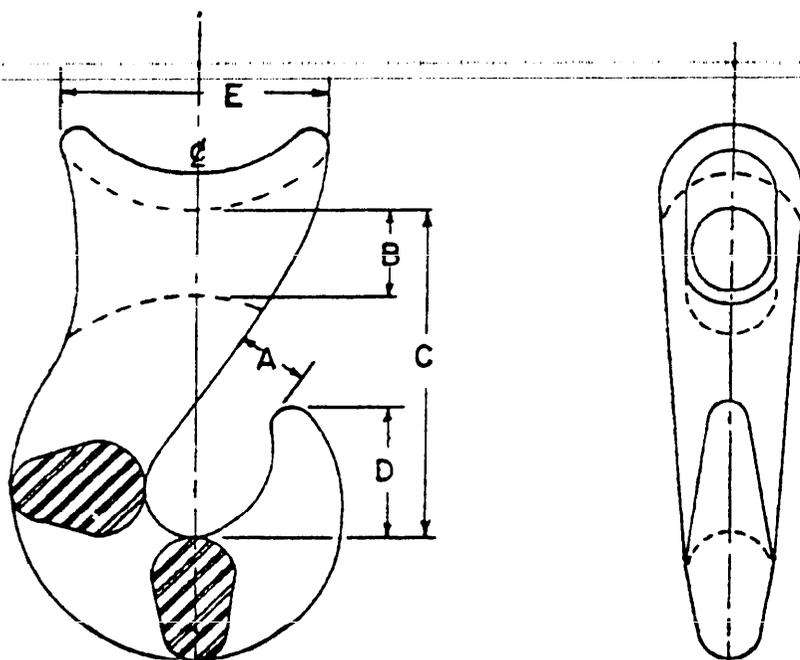


Figure 1 - Hook, sliding choker

Dimension (inches)

Hook size No. wire rope diameter	A		B		C Max.	D Min.	E Min.
	Min.	Max.	Min.	Max.			
1/2	3/4	7/8	1-1/16	15/16	3- 1/4	1	2- 1/16
5/8	15/16	1-1/8	3/4	1- 1/8	3-15/16	1-1/8	2-11/16
3/4	1- 1/16	1-3/8	1	1- 7/16	4- 1/4	1-1/2	3
7/8 and 1	1- 5/16	1-7/16	1-1/4	1- 7/8	5- 1/2	1-7/8	4- 1/8

MIL-H-13220C

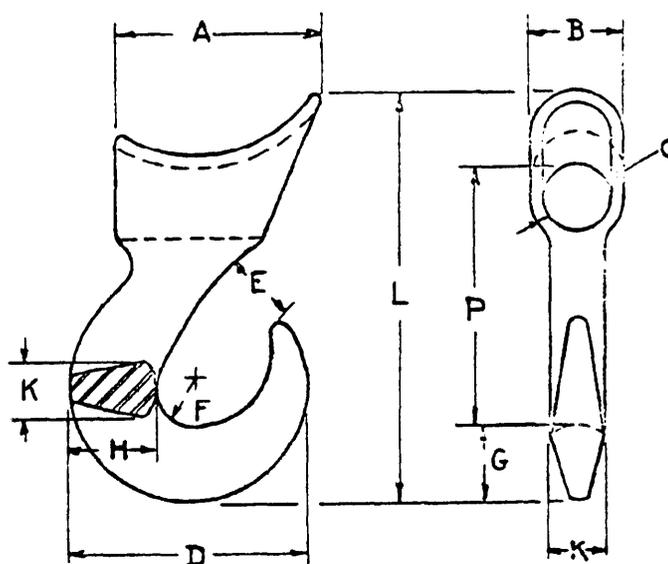


Figure 2 - Hook, sliding choker (drop forged)

Hook size No. wire rope dia.	Safe working load	A	B	C	D	E	F	G	H	K	L	P
1/2	3300	2-1/4	1-1/16	3/4	2-61/64	25/32	1/2	31/32	1-1/16	11/16	4-5/8	2-15/16
5/8	5000	3-1/16	1-3/8	1	3-9/16	29/32	9/16	1-1/8	1-5/16	55/64	6-1/8	3-9/16
3/4	8000	3-3/8	1-7/8	1-7/16	4-1/4	1-5/32	5/8	1-7/16	1-5/8	1-1/16	7-1/4	4-19/32
7/8 - 1	16000											

SPECIFICATION ANALYSIS SHEET
AVSHIPS-4863 (8-61)
INSTRUCTIONS
BUDGET BU. NO. 45-8309

This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Bureau of Ships

This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured

with a minimum amount of delay and at the least cost.

Comments and the return of this form will be appreciated.

Fold on dotted lines on reverse side, staple in corner, and send to Bureau of Ships, Specifications and Standardization Branch, Washington 25, D.C.

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OR A SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?
a. GIVE PARAGRAPH NUMBER AND WORDING
d. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID
3. IS THE SPECIFICATION RESTRICTIVE?
IF THE ANSWER IS "YES" IN WHAT WAY?

YES

NO
4. REMARKS (Attach any pertinent data which may be of use in improving this specification.) PLACE THIS FORM AND PAPERS IN AN ENVELOPE AND SEND TO THE BUREAU
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