

MIL-B-24220(SHIPS)
28 July 1966MILITARY SPECIFICATION
BLOCKS, TACKLE, SYNTHETIC ROPE

1. SCOPE

1.1 Scope. - This specification covers single- and multiple-sheave tackle block and snatch blocks for use with synthetic rope.

1.2 Classification. - Synthetic rope tackle blocks shall be of the following types and classes, as specified (see 6.1):

Type I - Blocks, steel or malleable iron, ordinary.

Class 1 - Single sheave.

Class 2 - Double sheave.

Class 3 - Triple sheave.

Type II - Blocks, snatch, steel or malleable iron, safety-locking.

Type III - Blocks, wood, nontoppling.

Class 1 - Double loose, swivel hook.

Class 2 - Triple, loose, swivel hook.

Class 3 - Double, loose, swivel releasing hook.

Type IV - Blocks, steel or malleable iron, nontoppling.

Class 1 - Double, loose, swivel hook.

Class 2 - Triple, loose, swivel hook.

Class 3 - Double, loose, swivel releasing hook.

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 this specification to the extent specified herein:

SPECIFICATIONS

FEDERAL

QQ-S-633 - Steel Bars, Carbon, Cold Finished and Hot Rolled, (General Purpose).

QQ-S-681 - Steel Castings.

RR-C-271 - Chains and Attachments, Welded, Weldless, and Roller Chain.

MILITARY

MIL-S-890 - Steel: Forgings and Bars for Hulls, Engine, and Ordnance (Heat Treated).

MIL-S-15083 - Steel Castings.

MIL-Z-17871 - Zinc-Coating (Hot Dip Galvanizing).

MIL-S-22698 - Steel Plate, Carbon, Structural, for Ships.

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

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

(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 proposal shall apply.

NATIONAL BUREAU OF STANDARDS

Handbook H28 - Screw-Thread Standards for Federal Services.

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(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
A47 - Malleable Iron Castings.

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

OFFICIAL CLASSIFICATION COMMITTEE
Uniform Freight Classification Rules.

(Application for copies should be addressed to the Official Classification Committee, 1 Park Avenue at 33rd Street, New York, N. Y. 10016.)

(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 **Standard product.** - Blocks covered by this specification shall be the current standard product of the manufacturer. Prompt delivery, continuing service, and availability of spare parts shall be expected. The component parts of each block need not be the product of the same manufacturer.

3.2 **Material.** - Material shall be as specified herein. Material not definitely specified shall be of the best quality used for the purpose in commercial practice.

3.3 **Design.** - Block design shall be generally as shown in Tables I and II and on figures 2 through 5, as applicable, as to type, class, style, size and rig specified (see 6.1).

Table I - Shell length, working load and sheave size for types I, III, and IV blocks.

Shell length minimum	Safe working load			For rope size		Sheave size		
	Single sheave	Double sheave	Triple sheave	Diameter approximate	Circumference nominal	Outside diameter minimum	Thickness at rim, minimum	Center pin diameter minimum
Inches	Pounds	Pounds	Pounds	Inches	Inches	Inches	Inches	Inch
4	2,600	4,100	5,200	1/2	1-1/2	2-1/4	5/8	3/8
6	6,500	10,400	13,000	3/4	2-1/4	3-1/2	1	1/2
8	10,100	15,600	20,800	1	3	4-1/2	1-3/8	5/8
10	16,700	25,700	33,400	1-1/4	3-3/4	6-1/4	1-1/2	3/4
12	21,100	33,000	43,500	1-1/2	4-1/2	8	1-5/8	3/4
14	30,800	48,200	64,200	1-3/4	5-1/2	9-1/2	1-7/8	7/8

Table II - Shell length, working load and sheave size for type II blocks

Shell length minimum	Safe working load	Rope size		Sheave size		
		Diameter approximate	Circumference nominal	Outside diameter minimum	Thickness at rim, minimum	Center pin diameter minimum
Inches	Pounds	Inches	Inches	Inches	Inches	Inch
6	7,700	3/4-7/8	2-1/4-2-3/4	3	1-1/8	1/2
8	13,800	1	3	4-1/2	1-3/8	5/8
10	23,400	1-1/4	3-3/4	5-3/4	1-7/8	3/4
12	28,000	1-1/2	4-1/2	6-3/4	2-1/8	3/4
14	35,400	1-3/4	5-1/2	8	2-1/4	7/8
16	45,700	2	6	9	2-5/8	1

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3.3.1 Capacities. - The minimum safe working load (SWL) of each block assembly, including the fittings, but excluding the hooks, shall be based on a minimum factor of safety of 5 in the ultimate strength of the material used in its weakest component. The hooks shall have a minimum factor of safety of 4. If a commercially available block is inadequate because a component (hook, shackle, or other fitting) limits its strength, the component may be replaced with one that will satisfy strength requirements to comply with this specification. Blocks shall be stable and provide distribution of load to the various components. The SWL, rope, and sheave size shall be as shown in tables I and II as applicable for the type of block specified.

3.4 Construction. - Each block shall be free from any characteristics, deficiencies, or defects that may render it unsuitable for the purpose intended. It shall be convenient to operate and all parts subject to wear shall be readily accessible for replacement, adjustment or repair.

3.4.1 Castings. - All castings shall be of uniform quality, free of blowholes, porosity, hard spots, shrinkage defects, cracks, or other injurious defects. Strength and other essential physical properties of the castings shall be adequate throughout for the purpose intended, and shall conform to MIL-S-15083.

3.4.2 Forgings. - All forgings shall be of uniform quality, free of flash, scale, cracks, hard spots, cold shuts, and excessive cooling stresses. Strength and other essential physical properties of the forgings shall be adequate throughout for the purpose intended, and shall conform to MIL-S-890.

3.4.3 Welding. - Welding (if necessary) shall be performed in accordance with the best commercial practice. In no event shall such operations be used as a repair measure.

3.4.4 Fastening devices. - Screws, pins, bolts, and similar parts subject to removal, tightening or adjustment shall not be swaged, peened, staked or otherwise permanently deformed.

3.4.5 Threads. - All threaded parts shall be in accordance with the applicable requirements of Handbook H28.

3.4.6 Interchangeability. - Replaceable parts shall be manufactured to standard tolerances to permit replacement without requiring modification.

3.4.7 Surface. - All castings, forgings, stampings and welded parts shall be thoroughly cleaned and free of sand, dirt, fins, sprues, scale, flux, or other harmful or extraneous materials. External surfaces shall be smooth, and all edges shall be rounded or beveled. All bearing surfaces between matching parts shall be finished to the necessary tolerances to provide the required stability in operation. Surface roughness of bearing surfaces shall be such as to not reduce bearing areas appreciably or detract from appearance.

3.4.8 Coatings. -

3.4.8.1 Lacquering. - Completed wood shells for type III blocks shall, after having been thoroughly and properly sanded, be dipped in high-grade, clear dipping varnish or lacquer, allowed to air dry, and then covered with quick drying varnish or lacquer as a final coat before shipment.

3.4.8.2 Galvanizing. - All ferrous metal surfaces of blocks except bearings surfaces shall be not dip galvanized in accordance with MIL-Z-17871. The weight of zinc coating shall be 2 to 3 ounces per square foot. The basic metal shall be clean and substantially free from defects that will impair appearance or protective value of the coating. The zinc coating shall have a reasonably bright appearance and shall be smooth, continuous, adherent, substantially free from injurious blisters, lumps, gritting areas, acid spots, dross warts, flux and excess zinc on edges or other locations. Galvanizing shall be done prior to assembly of component parts.

3.5 Rigs. -

3.5.1 Assembly. - Blocks and fittings of corresponding size and strength shall be assembled into rigs and identified by rig numbers (see figure 1 and 3.6). Special blocks and rigs not designated on figure 1 shall be assembled as specified in the contract or order.

3.6 Identification markings. - Each block assembly shall be permanently and legibly marked with the manufacturer's name or trade-mark, the safe working load, the rig number, the sheave diameter, and the corresponding rope circumference as specified in 3.3 (table I). The markings shall be applied to the shell by the most practicable methods and abbreviations may be used. Identification marking shall be in accordance with MIL-STD-130, as practicable.

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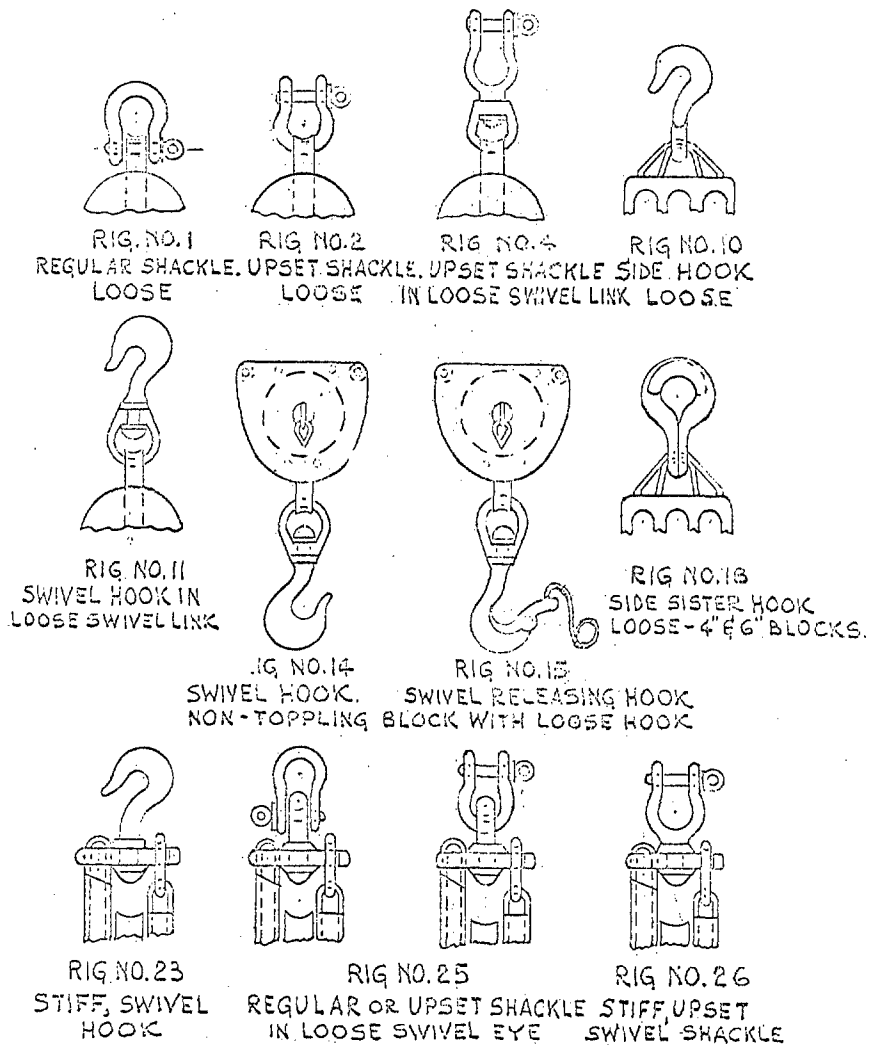


Figure 1 - Rigs and fittings for wood and metal synthetic rope blocks. (Rigs are identified by number only. Each rig consists of a block with fittings assembled as shown.)

3.7 Detail requirements. -

3.7.1 Type I blocks, steel or malleable iron, ordinary. - Type I, ordinary steel or malleable iron blocks, shall be in accordance with 3.3, 3.3.1, figure 2, and as specified in 3.1.2.1 through 3.7.1.7 in the class, size and rig specified (see 6.1).

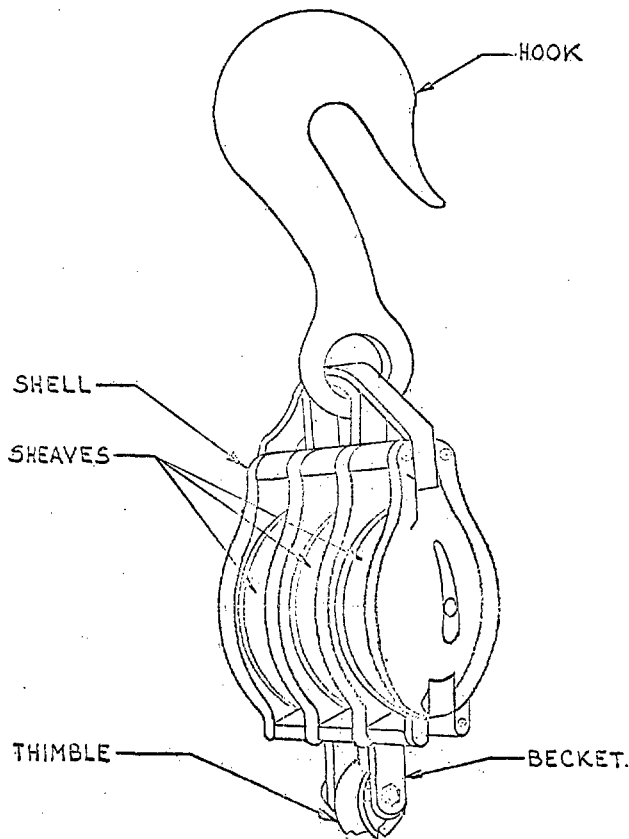


Figure 2 - Type I block, steel or malleable iron ordinary (rig 10, with becket, shown).

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3.7.1.1 Shells. - Shells shall be made of malleable iron, steel, cast steel, forged carbon steel, as required, conforming to ASTM A47, QQ-S-633, QQ-S-681, or MIL-S-22698. The edges shall be well rounded or flanged to protect the rope and to provide additional stiffness so that they will not spring or bind under extreme lateral rope pulls. The sheaves shall bear against the shells at the hubs only and not wear against other portions of shells. Shells shall be secured at the bottom with three bolts and tubing spacers. Center bolts shall pass through the straps.

3.7.1.2 Straps. - Straps shall be of steel conforming to QQ-S-633 or MIL-S-22698. Outer straps shall be flush with the inner surface of outer cheeks. Inner straps shall be flush with center pieces. Straps shall extend sufficiently beyond the center pin to insure strength and rigidity for the block. Straps shall provide adequate bearing support for the center pin for sheave loads to be transmitted to the fitting, and shall be finished to provide a bearing surface for sheave hub ends.

3.7.1.3 Sheaves. - Unless otherwise specified, sheaves shall be of malleable or ductile cast iron, cast steel, nylon, aluminum bronze, teflon, or other suitable bearing materials that will increase the life of the block and decrease maintenance requirements, and shall be designed to prevent cutting action on the rope. The rim and tread section of each sheave shall be properly grooved to fit the contour of the rope under load conditions. Overall side play shall not exceed 1/16 inch. Sheaves shall have a smooth-running action. Sheaves shall conform to 3.3 (table I).

3.7.1.4 Bushings. - Each sheave shall be furnished with a one-piece graphite self-lubricating high-grade bronze, nylon or teflon bushing which shall be pressed into the sheave with sufficient tightness to prevent slippage under extreme loads. The bushing shall be equal in length to the sheave thickness at the hub and shall have a minimum wall thickness of 3/16 inch.

3.7.1.4.1 Roller Bearings. - Roller bearings shall be Timken, or equal, which can take both load and side thrust, and hold the sheave centrally so it cannot chafe or wear on the sides. The bearings shall be locked in a grease packed chamber with felt washers to retain the grease and exclude dirt.

3.7.1.5 Center pin. - The center pin shall be designed to transmit the sheave load to the straps without rotating. The pin shall be made of open hearth quality, fully killed, fine grain practice AISI 1040 steel (80,000 p. s. i. minimum ultimate tensile strength and 45,000 p. s. i. yield, normalized after machining). (See tables I and II for minimum pin diameters).

3.7.1.6 Becket. - The becket shall be formed by the extension of two strap ends below the under side of the block. A becket pin of sufficient strength to permit the block to carry the loads specified in 3.3 (table I) and a heavy thimble designed to prevent chafing of the rope strands shall be furnished. Unless otherwise specified, type I blocks shall be furnished with a becket.

3.7.1.7 Fittings. - Each block shall be combined with a shackle, swivel shackle, hook, swivel hook or sister hooks as specified (see 6.1) by a rig number shown on figure 1. Fittings safety factors shall be as specified in 3.3.1.

3.7.1.7.1 Hook. - The hook shall be drop forged of forging-grade steel and shall be the flattened type, with substantially heavier sections at the areas which take the maximum stress. Hook safety factors shall be as specified in 3.3.1.

3.7.1.7.2 Screw pin anchor shackle. - Anchor shackle shall conform to type IV, class 1 of RR-C-271.

3.7.1.7.3 Swivel shackle. - Swivel shackle shall be forged from carbon steel. The shackle shall be fitted to the block by means of a swivel as shown on figure 1, rig 4. Shackle shall be free to travel through 360 degrees, independent of the position of the block. The yield point of the swivel shackle shall be greater than the proof load of the block.

3.7.1.7.4 Swivel hook. - Swivel hook shall be forged from carbon steel and with substantially heavier sections at the areas which take the maximum stress. The hook shall be fitted to the block by means of a loose swivel link, as shown on figure 1. The shaft of swivel hook shall be provided with a radial grease groove. Swivel body shall be provided with a recessed hydraulic grease fitting, 1/8-inch National pipe thread (NPT), straight, hydraulic, ball-check type. The hook shall be free to travel through 360 degrees independent of the position of the block. The yield point of swivel hook shall be more than the proof test load of the block.

3.7.1.7.5 Sister hooks. - Sister hooks shall be forged from carbon steel. Hooks shall be fitted to the blocks by means of loose side eyes as shown on figure 1, rig 18.

3.7.1.8 Spacers and roller guides. - Spacers shall be provided as required to make the block a strong, rugged unit with the required sheave clearances. Roller guides shall be provided as required to prevent the rope from coming out of the sheaves when the block is overhauled.

3.7.2 Type II blocks, snatch, steel or malleable iron safety-locking. - Type II snatch blocks shall be in accordance with 3.3, 3.3.1, table II, figure 2, and as specified in 3.7.2.1 through 3.7.2.7 in the class and rig specified (see 6.1).

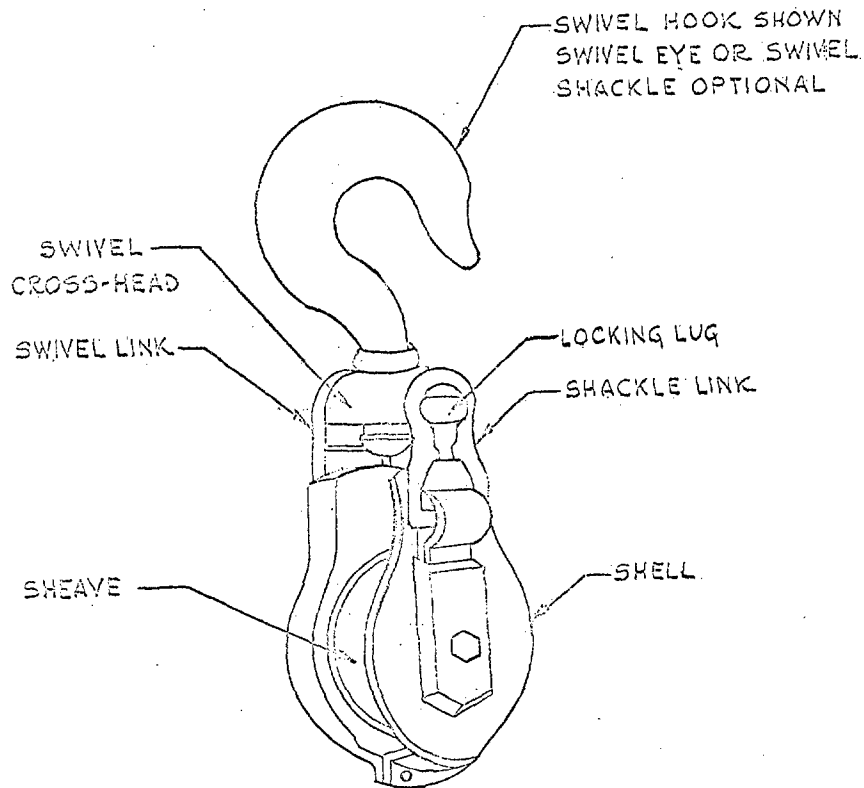


Figure 3 - Type II block, snatch, steel or malleable iron, safety-locking (rig 23 shown).

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3.7.2.1 Shells. - The shells shall be formed from steel or malleable iron and shall be flanged to provide additional stiffness so that they will not spring or bend under extreme lateral rope pulls and to protect the rope. Shell pieces shall be secured together at bottom.

3.7.2.2 Straps. - Straps shall be of steel. Each strap shall be of rugged one-piece construction and shall extend the full length of the shell pieces. Straps shall be securely welded, riveted, or bolted to the shell pieces, and shall furnish bearing support for the center pin and connections to transmit extreme loads from the sheave to the fittings.

3.7.2.3 Sheaves. - Sheaves shall be as specified in 3.7.1.3 except that dimensions shall be in accordance with table II.

3.7.2.4 Bushings. - Bushings shall be as specified in 3.7.1.4.

3.7.2.5 Center pin. - The center pin shall be as specified in 3.7.1.5.

3.7.2.6 Shell separators. - A solid one-piece, steel separator, or three metal tubing spacers, shall be used to separate the shells. When a separator is used, three substantial rivets, each passing through the separator, shall hold the shell pieces in place. The center rivet shall pass through the straps. Separators shall bear on the shell plates over the entire area between the rivets. When tubing spacers are used, bolts secured by nuts shall be used to fasten the shells together.

3.7.2.7 Fittings. - Each snatch block shall be combined with a swivel hook, swivel eye, or swivel shackle, as specified by rig number shown on figure 1. The fittings shall be attached to the block by a cross-head in which it is free to travel through 360 degrees. With the block closed, the fittings shall be positioned so that the block is symmetrically loaded. Fittings shall be forged of steel and shall meet the strength requirements specified in table II.

3.7.3 Type III blocks, wood, nontoppling. - Type III nontoppling blocks shall be in accordance with 3.3, figure 4, and as specified in 3.7.3.1 through 3.7.3.6.3 in the class, size and rig specified (see 6.1).

3.7.3.1 Shells. - Select grade, kiln or air dried birch, beech, or hard maple shall be used for wood shells. Cheeks, centerpieces, and spreaders comprising the shell shall be fastened securely together to form a strong rigid unit. Shells of heavy wide mortise wood blocks shall be cross bolted. The design shall be such that the shells carry no part of the load.

3.7.3.2 Straps. - Straps shall be as specified in 3.7.1.2.

3.7.3.3 Sheaves. - Sheaves shall be as specified in 3.7.1.3.

3.7.3.4 Bushings. - Bushings shall be as specified in 3.7.1.4.

3.7.3.5 Center pin. - The center pin shall be as specified in 3.7.1.5. In addition, one end of the pin shall have an eye, and be provided with a thimble.

3.7.3.6 Fittings. - Each block shall be fitted as ordered with a swivel hook or swivel release hook.

3.7.3.6.1 Hook. - The hook shall be drop forged of forging-grade steel and shall be the flattened type, with substantially heavier sections at the areas which take the maximum stress.

3.7.3.6.2 Swivel. - Swivel hooks shall be free to swivel through 360 degrees. The swivel body shall be provided with recessed hydraulic grease fitting, 1/8 inch N. P. T., straight, hydraulic, ball check type. Grease grooves shall be provided to lubricate all friction parts of the swivel. The bearing washer shall be provided with radial grease grooves on the horizontal bearing surface.

3.7.3.6.3 Rollers. - Guide rollers shall be provided in the upper corners of the block as specified in figure 4 for rigs 14 and 15.

3.7.4 Type IV - Blocks, steel or malleable iron, nontoppling. - Type IV nontoppling blocks shall be as shown on figure 5 and as specified in 3.7.3 except that shells shall be as specified in 3.7.1.1.

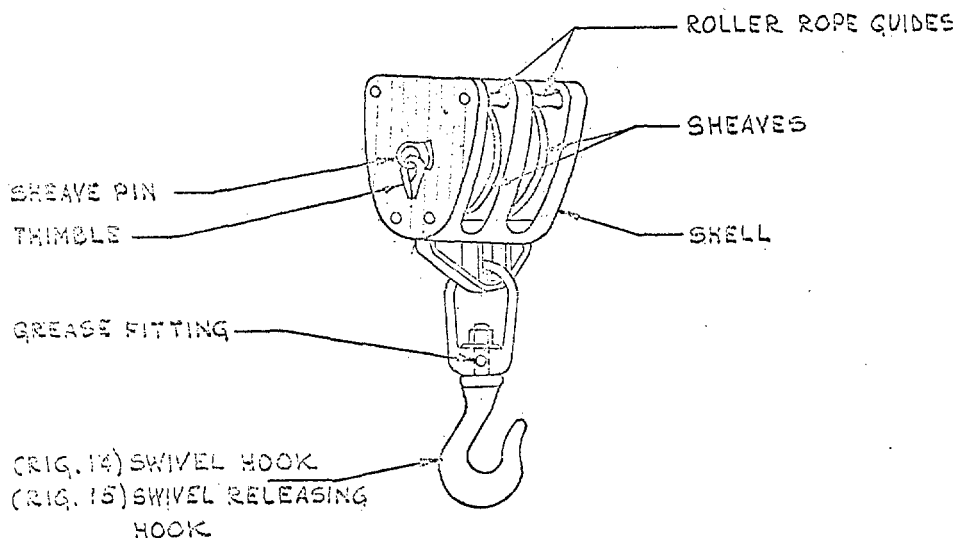


Figure 4 - Type III nontoppling block, wood (rig 14 and 15).

3.8 Workmanship. - Workmanship shall be of the highest quality throughout and in conformance with 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 Lot. - A lot shall consist of blocks of the same size, type, class and rig of blocks offered for delivery at one time under one contract or order.

4.2.2 Sampling for examination. - Sample blocks shall be selected at random from each lot in accordance with table III and examined as specified in 4.3. Any block having one or more defects shall be rejected. Lots shall be rejected when the number of defective blocks equals or exceeds the rejection number shown in table III.

4.2.3 Sampling for proof test. - Sample blocks shall be selected from each lot in accordance with table IV for the test of 4.4.1. If any block fails in this test under a test load in excess of 4.0 percent below the specified test load, this shall be cause for rejection of the entire lot.

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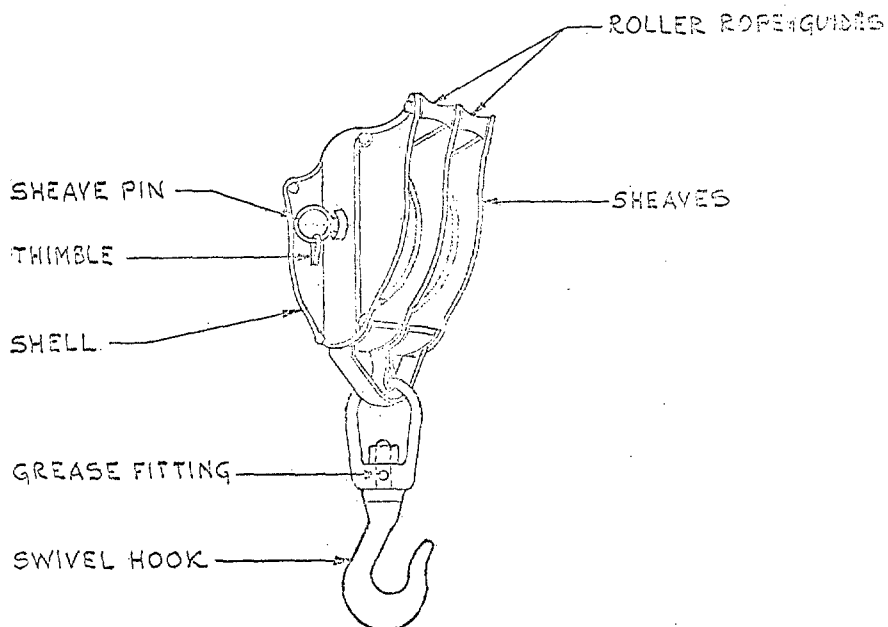


Figure 5 - Type non-toppling block, steel or malleable iron (rig 14 and 15).

Table III - Sampling for examination.

Lot size	Sample size	Acceptance number (defective)	Rejection number (defective)
2 to 8	All	--	--
9 to 15	All	--	--
16 to 40	15	0	1
41 to 180	25	1	2
181 to 300	35	2	3
301 to 500	50	3	4
501 to 800	75	4	5
801 to 1,300	110	6	7

Table IV - Sampling for tests.

Lot size	Sample size	
	Proof test	Ultimate strength test
2 to 15	2	1
16 to 40	3	1
41 to 65	5	1
66 to 110	7	1
111 to 180	10	1
181 to 300	10	2
301 to 500	15	2
501 to 800	25	3
801 to 1,300	35	5

4.2.4 Sampling for minimum ultimate strength test. - Sample blocks shall be selected from each lot in accordance with table IV for the test of 4.4.2. If any block fails in this test under a test load in excess of 4.0 percent below the specified test load, this shall be cause for rejection of the entire lot (see 4.4.2.1 for blocks assembled with hooks).

4.3 Examination. - Each sample block 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 V.

Table V - Classification of defects in accordance with MIL-STD-105.

Categories	Defects
Critical: 1	Not defined
Major 101	Block type and class nonconforming; not for specified size of rope.
102	Material nonconforming; evidence of cracks, blowholes, excessive porosity, hard spots, shrinkage defects, foreign inclusions, cold shuts, sprues, fins, flash, and scale.
103	Incomplete; component parts missing, not secured, not positioned, fitted or assembled as specified.
104	Rigs and fittings nonconforming; inoperative, evidence of binding, misalignment of components or excessive looseness.
105	Welding nonconforming; evidence of cracks, nonfusion, deep undercut, slag inclusions, porosity, and incomplete or undersize welds.
106	Galvanizing nonconforming, evidence of uncoated areas, not smooth, not free from blisters, lumps, sharp projections or excess coating.
107	Evidence of unauthorized welding.
108	Evidence of permanent deformation of fastening devices subject to removal; evidence of swaging, peening or staking.
109	Fastening devices subject to removal not in alignment, inoperative; excessive looseness.
110	Threads nonconforming; size, length and fit not as required; not matching threads with components; stripped, crossed, cracked and incomplete.
111	Shell material not as specified; components not fastened securely; not cross bolted as specified.
112	Straps malformed; fails to support center pin as specified.
113	Sheave outside diameter and thickness less than the minimum specified.
114	Sheave fails to turn freely by hand; loose or wobbly on pin, side play exceeds specified tolerance.
115	Sheave rim and tread section not grooved to fit specified size of rope; surfaces not smooth, evidence of sharp edges, burrs or projections.
116	Sheave rim not concentric with bore.
117	Bushing nonconforming; loose in sheave, length not as specified, wall thickness less than the minimum specified.
118	Bushing bore nonconforming for center pin.

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Table V - Classification of defects in accordance with MIL-STD-105 (cont'd).

Categories	Defects
Major (cont'd)	
119	Bushing not grooved for self-lubricating as specified.
120	Center pin diameter less than specified, surfaces not smooth; evidence that pin rotates in shell or strap.
121	Lock device nonconforming, inoperative, fails to lock shackle link in position, prevents opening of block for quick entry of rope.
122	Hook, eye or shackle fails to swivel as specified.
123	Swivel crosshead and link nonconforming.
124	Identical parts not interchangeable.
125	Surfaces not free of sharp edges, or burrs, not clean.
Minor:	
201	Marking; manufacturer's name or trade-mark not permanent, missing or not legible.

4.4 Test procedures. - Each sample block shall be subjected to the tests specified in 4.4.1 and 4.4.2, and in addition such blocks and their component parts may be subjected to any additional tests deemed necessary to determine compliance with the requirements of this specification. Sample blocks and their components shall show no mechanical defects or operate ineffectively, and shall not fail, fracture, take permanent set, or show evidence of instability, deformation, or excessive wear when subjected to tests other than the ultimate strength test. When blocks are furnished which are identical to blocks previously furnished which passed the tests of 4.4.1 and 4.4.2, certification may be accepted in lieu of retesting provided such certification contains actual test inspection on other verifiable quality data which is acceptable to the bureau or agency concerned.

4.4.1 Proof load test. - Each sample block shall be proof tested to twice the safe working load specified in 3.3 (tables I and II). At the conclusion of the test, the block and its components shall be carefully examined and measured for signs of deformation or failure. The sheaves and center pins shall be removed and examined for defects after the test has been conducted (see 4.4 for acceptance and rejection criteria).

4.4.2 Minimum ultimate strength test. - Each sample block shall be tested to destruction. The method of testing shall be the same as in 4.4.1. The block assembly when tested to destruction shall not fail at loads less than five times the safe working load specified in 3.3 (tables I and II).

4.4.2.1 Blocks assembled with hooks. - Blocks assembled with hooks shall have the hook and the remainder of the block tested separately. This may be done either before or after assembly. The hook shall be tested to four times the rated working load. The remainder of the block, including the swivel connection, shall be tested to five times the working load.

4.4.3 Possible test failures. -

(a) Proof test load:

(1) Evidence of deformation, distortion or permanent set, or signs of failure in the form of incipient cracks in block or any component part after subjecting block assembly to stipulated proof test load.

(b) Minimum ultimate strength test:

(1) Ultimate strength of block assembly less than minimum value.

4.5 Inspection of preparation for delivery. - Preservation, packaging, packing, and marking shall be inspected to assure compliance with section 5 of this specification.

5. PREPARATION FOR DELIVERY

5.1 Domestic shipment and early material use. -

5.1.1 Preservation and packaging. - Preservation and packaging shall be sufficient to afford adequate protection against corrosion, deterioration and physical damage during shipment from the supply source to the using activity and until early installation.

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5.1.2 Packing. - Packing shall be accomplished in a manner which will insure acceptance by common carrier and will afford protection against physical or mechanical damage during direct shipment from the supply source to the using activity for early installation. The shipping containers or method of packing shall conform to the Uniform Freight Classification Rules and Regulations or other carrier regulations as applicable to the mode of transportation.

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 specified by the procuring activity (see 6.1).

(5.2.1 The following provides various levels of protection during domestic shipment and storage or overseas shipment, which may be required when procurement is made.

5.2.1.1 Preservation and packaging. -

5.2.1.1.1 Level A. - Blocks shall be preserved and packaged in accordance with MIL-P-3865.

5.2.1.1.2 Level C. - Blocks shall be preserved and packaged as specified in 5.1.1.

5.2.1.2 Packing. -

5.2.1.2.1 Level A. - Blocks shall be packed in accordance with MIL-P-3865, except nailed wood boxes shall be overseas type and gross weight of 200 pounds shall apply.

5.2.1.2.2 Level B. - Blocks shall be packed in accordance with MIL-P-3865, except nailed wood boxes shall be domestic type and gross weight of 200 pounds shall apply.

5.2.1.3 Marking. - In addition to any special marking required, interior packages and exterior shipping containers shall be marked in accordance with MIL-STD-129.)

6. NOTES

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

- (a) Title, number and date of this specification.
- (b) Type, class, size and rig (see 1.2, 3.7.1, 3.7.2, 3.7.3 and 3.7.4).
- (c) Shell length, sheave and rope size (see 3.3 and 3.3.1).
- (d) Fittings required (see 3.7.1.7 and 3.7.3.6).
- (e) Locking connections required (see 3.7.3).
- (f) Preservation, packaging, packing and marking requirements if other than those required by 5.1 (see 5.2).

Preparing activity:
Navy - SH
(Project 3940-N009Sh)