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INCH-POUND

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FEDERAL SPECIFICATION

BLOCKS, TACKLE (MANILA AND NYLON ROPE)

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers single, double, and multiple sheave tackle blocks for use with manila and nylon rope.

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

Type I - Nontoppling blocks.
Type II - Ordinary blocks.
Type IIa - Blocks, tackle (awning pulley).
Type III - Snatch blocks, safety locking.
Type IV - Safety blocks.

Style 1 - Single sheave (applicable to types II, III, V).
Style 2 - Double sheave (applicable to types I, II, IV, V).
Style 3 - Triple sheave (applicable to types I, II).

Beneficial comments, recommendations, additions, deletions, clarifications, and any data which may improve this document should be sent to: USA Belvoir Research, Development and Engineering Center, ATTN: STRBE-TSE, Fort Belvoir, VA 22060-5606.

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2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

Federal Specifications:

RR-C-271	- Chains and attachments, Welded and Weldless.
TT-V-109	- Varnish, Interior, Alkyd-Resin.

Federal Standards:

FED-STD-H28	- Screw-Thread Standards for Federal Services.
FED-STD-123	- Marking for Shipment (Civil Agencies).

(Activities outside the Federal Government may obtain copies of Federal specifications, and standards, and commercial item descriptions, as outlined under General Information in the Index of Federal Specifications, Standards, and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of documents, US Government Printing Office, Washington, DC 20402.

(Single copies of this specification, other Federal Specifications, and Commercial Item Descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Seattle, WA.

(Federal Government activities may obtain copies of Federal specifications, standards, commercial item descriptions, and the Index of Federal Specifications, Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

Military Specifications:

MIL-B-3865	- Blocks, Rope, Tackle: Packaging of.

Military Standards:

MIL-STD-22	- Welded-Joint Design.
MIL-STD-105	- Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129	- Marking for Shipment and Storage.
MIL-STD-130	- Identification Marking for US Military Property.

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MIL-STD-889 - Dissimilar Metals.
MS15003 - Fittings, Lubrication (Hydraulic) Surface Check, 1/8 Pipe Threads, Steel, Type III.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094).

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the elicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2].

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A 108 - Steel Bars, Carbon, Cold-Finish, standard Quality.
A 153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.
A 449 - Quenched and Tempered Steel Bolts and Studs.
A 576 - Steel Bars Carbon, Hot-Wrought, Special Quality.
B 695 - Coatings of Zinc Mechanically Deposited on Iron and Steel.

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

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

3. REQUIREMENTS

3.1 Description. The block shall consist of one or more sheaves, a center pin, shells with or without straps, and a rig assembly as shown in figures 1 through 6 {see 6.4).

3.1.1 Standard product. The block shall be the manufacturer's current commercial product. The block shall be complete with all components that are standard with the contractor's products, whether stipulated herein or not, together with such accessories as may be specified herein.

3.2 First article. Unless otherwise specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3), in accordance with 4.3.

3.3 Material. Material shall be as specified herein. Material not specified shall be selected by the contractor and shall be subject to all provisions of this specification. Materials shall be new and unused.

3.3.1 Material deterioration and control. The blocks shall be fabricated from compatible materials, inherently corrosion and deterioration resistant or treated

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to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable storage and operating environment to which the item may be exposed.

3.3.1.1 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion. Dissimilar metals and methods of protection are defined and detailed in MIL-STD-889.

3.3.1.2 Identification of materials and finishes. The contractor shall identify the specific material, material finish or treatment for use with components and sub-components, and shall make information available, upon request, to the contracting officer or designated representative.

3.3.2 Recovered materials. For the purpose of this requirement, recovered materials are those materials which have been collected from solid waste and reprocessed to become a source of raw materials, as distinguished from virgin raw materials. The components, pieces, and parts incorporated in the blocks may be newly fabricated from recovered materials to the maximum extent practicable provided the block produced meets all other requirements of this specification. Used, rebuilt, or remanufactured components, pieces, and parts shall not be incorporated in the blocks.

3.4 Strenth. The working load limit (WLL) shall be the maximum lead that may be imposed on the complete block, including the rig assemblies (except the hooks), while maintaining a safety factor of 5. Hooks shall have a minimum safety factor of 4. Blocks shall be stable and shall distribute the load to the various components.

3.4.1 Proof load. When subjected to a proof load of twice the WLL specified in the applicable table, the block and fittings shall show no evidence of deformation, distortion, cracks, or permanent set.

3.4.2 Ultimate Strenth. When tested for ultimate strength, the hook shall not fail at less than 4 times the applicable WLL of the block. The block and fittings shall not fail at less than 5 times the applicable WLL. When tested as specified in 4.5.2, the hook shall fail before failure of the block or the fittings.

3.5 Threaded Parts. Threaded parts shall conform to FED-STD-H28.

3.6 Sheaves. Sheaves shall be gray iron, malleable or ductile cast iron, or steel and shall be designed to prevent cutting action on the rope. Sheaves shall be designed so that only the hubs bear against the shells or straps. Sheave rims shall be grooved to fit the specified rope size. Overall sideplay shall be not more than 1/16 inch. Dimensions of the sheaves shall be as specified in the applicable table.

3.6.1 Bushings. Each sheave shall be furnished with a one-piece, oil-self-lubricating, high-grade bronze bushing which shall be pressed into the sheave with sufficient tightness to prevent slippage at loads of four times the WLL. The bushing shall be equal in length to the sheave thickness at the hub.

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3.7 Center pin. The center pin shall not rotate and shall transmit the sheave load to the straps. The pin shall be made of steel conforming to ASTM A 108 or A 576, UNS G10400 steel or A 449 (80,000 pounds per square inch (psi) minimum ultimate tensile strength and 45,000 psi yield).

3.8 Fastening devices. All pins, bolts, and similar parts shall be adjustable. Such parts shall not be swaged, peened, staked or otherwise permanently deformed.

3.9 Rig assemblies. Blocks shall be fitted with rig assemblies conforming to the rig assemblies shown in figure 1 and shall be as specified herein. All rig assemblies shall be of forged steel.

3.10 Finish. All metal surfaces of the block assemblies, except bearing surfaces and bushings, shall be hot-dipped galvanized in accordance with ASTM A 153, or zinc coated in accordance with ASTM B 695. Runny surfaces and guide surfaces shall be free of irregular coating distribution.

3.11 Identification marking. The block assembly shall be permanently and legibly marked with the manufacturer,s name or trademark. In addition, the WLL shall be permanently marked or stamped on the block. For military agencies, the block assembly shall be identified in accordance with MIL-STD-130.

3.12 Type I blocks. Type I blocks shall be as shown in figure 2 and shall conform to the requirements specified in table I. The shell length shall be as specified (see 6.2).

TABLE I. Type I blocks.

Shell length, nominal	WLL		Rope size	Sheave size		
	Double sheave	Triple sheave	Diameter (approx)	Outside diameter, nominal	Thickness at rim, nominal	Center Pin diameter, nominal
Inches	Pounds	Pounds	Inches	Inches	Inches	Inch
4	1,600	2,000	1/2	2-1/4	5/8	3/8
6	3,300	4,000	3/4	3-1/2	1	1/2
8	5,100	6,800	1	4-1/2	1-3/8	5/8
10	7,700	10,000	1-1/4	6-1/4	1-1/2	3/4
12	10,600	14,000	1-1/2	8	1-5/8	3/4
14	15,000	20,000	1-3/4	9-1/2	1-7/8	7/8

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3.12.1 Shells. Shells shall be select grade, kiln or air dried birch, beech, or hard maple. Cheeks, centerpieces, and spreaders comprising the shell shall be fastened together to form a strong, rigid unit. Shells of heavy, wide, mortised wood blocks shall be cross bolted. The shells shall carry no part of the load, but shall be designed to protect the sheaves.

3.12.2 Finish. Completed shells shall be thoroughly cleaned and sanded; dipped in high-grade clear lacquer or varnish, provided it is at least equivalent in water resistance to TT-V-109; and when dry, redipped to insure thorough sealing and protection of exposed surfaces against moisture and weather.

3.12.3 Straps. Straps shall support the center pin on both sides of each sheave and shall transmit sheave loads 50 the fitting (hook, shackle, or other like fitting). Inner and outer straps shall be made of one piece each.

3.12.4 Center Pin. The center pin shall be as specified in 3.7, except one end shall have an eve with a thimble through the eye.

3.12.5 Rig assemblies. The block shall be equipped with a swivel hook (rig No. 14) or a swivel releasing hook (rig No. 15), see figure 1, as specified (see 6.2). The body of the hook swivel shall be provided with a recessed hydraulic grease fitting 1/8 inch N.P.T. conforming to MS15003, (see figure 2).

3.12.6 Rollers aides. Roller guides shall be provided in the upper four corners as shown in figure 2.

3.13 Type II blocks. Type II blocks shall be as shown in figure 3 and shall conform to the requirements specified in table II. The shell length shall be as specified (see 6.2).

TABLE II. Type II blocks.

Shell length nominal	WLL			Rope size	Sheave size		
	Single sheave	Double sheave	Triple sheave	Diameter (approx)	Outside diameter, nominal	Thickness at rim, nominal	Center pin diameter, nominal
Inches	Pounds	Pounds	Pounds	Inches	Inches	Inches	Inch
4	1,000	1,600	2,000	1/2	2-1/4	5/8	3/8
6	2,000	3,300	4,000	3/4	3-1/2	1	1/2
8	3,300	5,100	6,800	1	4-1/2	1-3/8	5/8
10	5,000	7,700	10,000	1-1/4	6-1/4	1-1/2	3/4
12	6,800	10,600	14,000	1-1/2	8	1-5/8	3/4
14	9,600	15,000	20,000	1-3/4	9-1/2	1-7/8	7/8

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3.13.1. Shells. Shells shall be formed from steel or malleable iron and shall be flanged to provide additional stiffness and reduce wear and chafing of the rope. Shell pieces shall be securely held in position and shall be designed to prevent distortion or spreading under extreme lateral rope pulls.

3.13.2 Strains. Straps shall be as specified in 3.12.3. Straps and shells shall be assembled by means of the sheave pin.

3.13.3 Rig assemblies. Each block shall be fitted with a regular shackle (rig No. 1), and upset shackle (rig No. 2), and upset shackle in loose swivel link (rig No. 4), a loose side hook (rig No. 10), loose sister hooks (rig No. 18), or a swivel hook in loose swivel link (rig No. 11), as shown in figure 1 and as specified (see 6.2).

3.13.3.1 Regular and upset shackles. Regular and upset shackles (figure 1, rigs No. 1 and 2) shall be of the screw-pin type conforming to RR-C-271, type IV class 1.

3.13.3.2 Upset shackle in loose swivel link. The shackle shall be fitted to the block by means of a swivel as shown in figure 1, rig No. 4. The shackle shall be free to rotate through 360 degrees, independent of the position of the block. The yield point of the swivel shackle shall be greater than twice the WLL of the block.

3.13.3.3 Loose side hook. The loose side hook shall be as shown in figure 1, rig No. 10, and shall be designed so that the hook will fail by gradual straightening as the ultimate strength of the block is reached.

3.13.3.4 Swivel hook-in loose swivel link. The swivel hook shall be fitted to the block by means of a loose swivel link as shown in figure 1, rig No. 11. The hook shall be free to rotate through 360 degrees independent of the position of the block.

3.13.4 Becket. Type II blocks shall be fitted with a becket. The becket shall be formed by the extension of the straps and shall show no distortion with the rope dead-ended at the becket and the loads specified in table II with a safety factor of 5. A steel thimble of the size specified (see 6.2) shall be fitted over the becket pin.

3.14 Type III blocks. Type III blocks shall be as shown in figure 5 and as specified herein. A locking lug on one end of the crosshead shall serve to lock the shackle link in position. The opposite end of the crosshead shall be permanently attached to the swivel link in a manner requiring that the crosshead be rotated 90 degrees from the locked position before releasing the shackle link and opening the block. The connections and fittings shall swing out of position to allow quick entry of rope into the sheave groove without reeving. The crosshead and links shall be forged steel. The blocks shall conform to table III. The shell length shall be as specified (see 6.2).

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TABLE III. Type III blocks.

Shell length, nominal	WLL	Rope size		Sheave size	
	Single sheaves	Diameter (approx)	Outside diameter, nominal	Thickness at rim nominal	Center pin diameter, nominal
Inches	Pounds	Inches	Inches	Inches	Inch
6	3,000	3/4	3	1-1/8	1/2
8	4,800	1	4-1/2	1-3/8	5/8
10	8,000	1-1/4	5-3/4	1-7/8	3/4
12	10,000	1-1/2	6-3/4	2-1/8	3/4
14	12,000	1-3/4	8	2-1/4	7/8
16	16,000	2	9	2-5/8	1

3.14.1 Shells. Shells shall be as specified in 3.13.1.

3.14.2 Strain. Each strap shall be heavy one-piece construction and shall extend the full length of the shell pieces. Straps shall furnish correct bearing support for the center pin and connections to transmit loads from the sheave to the fitting.

3.14.3 Rig assemblies. Each block shall be equipped with a swivel hook (rig No. 23), a stiff swivel eye (rig No. 25), or a stiff upset swivel shackle (rig No. 26) as shown in figure 1 and as specified (see 6.2). The rig assemblies shall be attached to the block by a crosshead in which it is free to rotate through 360 degrees. When the block is closed, the rig assembly shall be positioned so that the block is symmetrically loaded.

3.15 Type IV (safety) blocks. Type IV blocks shall be as shown on figure 6 and as specified herein. Unless otherwise specified (see 6.2), blocks shall be provided with a locking mechanism that will grip the rope immediately upon removal of the hoisting strain. The locking mechanism shall cause minimum rope wear and shall securely lock the rope under maximum WLL applicable to the size of the block. The blocks shall be as specified by block number (see 6.2), and shall conform to the requirements specified in table IV.

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TABLE IV. Type IV blocks.

Block size	WLL	Rope size	Sheave size		
	Double sheave	Diameter (approx)	Outside diameter, nominal	Thickness at rim, nominal	Center pin diameter, nominal
	Pounds	Inches	Inches	Inches	Inch
1	600	1/4	1-1/2	3/4	1/4
2	1,250	1/2	2-1/4	5/8	3/8
3	2,500	3/4	3-1/2	1	1/2
4	5,000	1	4-1/2	1-3/8	5/8
5	7,700	1-1/4	6-1/4	1-1/2	3/4

3.15.1 Shells. Shells shall be as specified in 3.13.1, except that for strapless-style blocks the shells shall provide the bearing support for the loads specified in table IV. If straps are furnished, the straps shall carry the load and the shells shall carry no part of the load.

3.15.1.1 Shell spacers. Shells shall be spaced at their lower extremities by means of tubing spaces and held in position by rivets or bolts.

3.15.2 Straps. Straps, if used, shall be as specified in 3.13.2.

3.15.3 Center pin. The center pin shall be as specified in 3.7, except that one end shall be hexagon headed and the other end shall have a hexagon locknut or a castellated nut with cotter pin to prevent the nut from loosening.

3.15.4 Becket. Type IV blocks shall be equipped with a becket as specified in 3.13.4, except that for strapless blocks the becket shall be formed by the extension of the shells.

3.15.5 Rig assemblies. Each block shall be equipped with a loose side hook, figure 1, rig No. 10.

3.16 Type V blocks. Each tackle block shall consist of one or two sheaves as specified, sheave pin, and a 360-degree rotation swivel eye. The blocks shall be as shown in figure 4, rig. No. 20, and shall conform to the requirements specified in table V. Sheave size shall be as specified (see 6.2).

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TABLE V. Type V blocks.

Shell length	WLL		Rope size	Sheave size	
	Single sheave	Double sheave	Diameter (Nominal)	Diameter (Nominal)	Width (Nominal)
(Inches)	(Pounds)	(Pounds)	(Inches)	(Inches)	(Inches)
3/4	100	150	3/16	3/4	1/4
1	150	200	1/4	1	3/8
1-3/4	250	300	3/8	1-3/4	1/2

3.16.1 Swivel eye. The swivel eye shall be malleable iron or forged steel, and shall be free to swivel. Swivel eye opening shall be the size to accept a shackle or hook of comparable size and strength.

3.16.2 Shells. Shells shall be as specified in 3.13.1.

3.17 Workmanship. The blocks shall be free from defects which could affect serviceability.

3.17.1 Castings. Castings shall be uniform quality and free from blow holes, porosity, hard spots, shrinkage defects, cracks, or other injurious defects.

3.17.2 For goings. Forgings shall be of uniform quality and free from flash, scale, cracks, hard spots, cold shuts, and excessive cooling stresses.

3.17.3 Welding. Welded joint design shall conform to MIL-STD-22. Weld areas shall be free from rust, scale, paint, grease, porosity, splatter, slag, overlap, undercut, nonfusion, cracks, and foreign matter. Welding shall not be used to repair the blocks.

3.17.4 Fastening devices. Screws, pins, bolts, and rivets shall be tight. Parts subject to removal or adjustment shall not be swaged, peened, staked, or otherwise deformed.

4. QUALITY ASSURANCE PREVISIONS

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 (examinations and tests) 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

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in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspections, as part of manufcturing operations, is an acceptable practice to ascertain conformance to requirements, however, this 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 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.3).

b. Quality conformance inspection (see 4.4).

c. Inspection comparison (see 4.6).

d. Inspection of packaging (see 4.7).

4.3 First article inspection. First article inspection shall be performed on one complete block and tackle assembly when a first article sample is required (see 3.2 and 6.2). The block and tackle shall be compared with this document, published literature, calculations, and test data to verify compliance with this specification. The block shall then be subjected to the tests specified in 4.5 and examinations specified in table VI. When the contractor can provide verifiable data demonstrating compliance to any or all parts of the specified testiing and inspection, these tests and inspections may be waived by the Government.

4.3.1 First article examination. Prior to testing, the block shall be examined for the defects listed in table VI. Presence of one or more defects shall be cause for rejection.

4.3.2 First article tests. Upon successful completion of examinations specified in 4.3.1, the block shall be tested as specified in 4.5. Failure of either test shall be cause for rejection. Acceptance of a first-produced block shall not exclude the remaining blocks from the qualify conformance inspections and acceptance provisions specified in section 4.

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4.4 Quality conformance inspection.

4.4.1 Sampling. Sampling for Quality Conformance examination and test shall be in accordance with MIL-STD-105. Sample size shall be determined by using MIL-STD-105, table I and table IIa.

4.4.2 Quality conformance tests. Each block shall be tested as specified in 4.5.1. Failure of this test shall be cause for rejection.

4.4.3 Quality conformance examination. After successful completion of all tests specified in 4.5.1, each block shall be examined for the defects listed in table VI. Presence of one or more defects shall be cause for rejection.

TABLE VI. Examination schedule.

Defect	Requirements Paragraphs
101. Material not as specified.	3.3
102. Materials are not resistant to corrosion or deterioration	3.3.1
103. Dissimilar metals not effectively insulated from each other.	3.3.1.1
104. Specific material, material finish, or treatment for use with components and subcomponents, not identified.	3.3.1.2
105. Threaded parts not as specified.	3.5
106. Sheaves not as specified.	3.6
107. Bushing not as specified.	3.6.1
108. Center pin not as specified.	3.7, 3.12.4, 3.15.3
109. Fastening devices not as specified.	3.8, 3.16.4
110. Rig assemblies not as specified.	3.9, 3.12.5, 3.13.3, 3.14.3, 3.15.5
111. Finish not as specified.	3.10, 3.12.2
112. Identification marking not as specified.	3.11
113. Block not as specified.	3.12, 3.13, 3.14, 3.15, 3.16

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TABLE VI. Examination schedule.

Defect	Requirements Paragraphs
114. Shells not as specified.	3.12.1, 3.13.1, 3.14.1, 3.15.1, 3.16.2
115. Straps not as specified.	3.12.3, 3.13.2, 3.14.2, 3.15.2
116. Roller guides of type I blocks not as specified.	3.12.6
117. Regular and upset shackles not as specified.	3.13.3.1
118. Upset shackle in loose swivel link not as specified.	3.13.3.2
119. Loose side hook not as specified.	3.13.3.3
120. Swivel hook in loose swivel link not as specified.	3.13.3.4
121. Beckets not as specified.	3.13.4, 3.15.4
122. Shell spacers not as specified.	3.15.1.1
123. Swivel eye not as specified.	3.16.1
124. Workmanship not as specified.	3.17
125. Castings not as specified.	3.17.1
126. Forgings not as specified.	3.17.2
127. Welding not as specified.	3.17.3
128. Fastening devices not as specified.	3.17.4

4.5 Tests.

4.5.1 Proof load. Blocks shall be tested in a testing machine equipped with dial gage which will indicate the test load. Pass wire rope or round steel bar loops around the sheave or sheaves and attach to the fixed head of the testing machine. Attach block fitting to the moving head of the machine. Steadily apply load to the block until the applicable proof load specified in 3.4.1 is reached. Nonconformance to 3.4.2 shall constitute failure of this test.

4.5.2 Ultimate load. The first article block, with the applicable hook and fittings shall be installed in a testing machine. A steadily increasing load shall be applied until failure of the hook occurs. The hook shall be removed and the block and fittings shall be further tested to destruction. Any of the following shall constitute failure of this test:

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a. The hook fails at less than 4 times the WLL of the block.
b. The block or the fittings fail at less than 5 times the applicable WLL.
c. The block or the fittings fail before the hook fails.

4.6 Inspection comparison. The Government may select blocks at any time during the contract production period and subject the blocks to the examination specified in table VI and to the tests specified in 4.5, to determine conformance to the requirements of this specification. The inspection will be performed by the Government, at a site selected by the Government, on units selected at random from those which have been accepted by the Government and will not include the previously inspected first article blocks.

4.6.1 Inspection failure. Failure of an inspection comparison block to meet any requirement specified herein during and as a result of the examination and tests specified in 4.7 shall be cause for rejection of the inspection comparison block(s) and shall be cause for refusal by the Government to continue acceptance of production blocks until evidence has been provided by the contractor that corrective action has been taken to eliminate the deficiencies. Correction of such deficiencies shall be accomplished by the contractor at no cost to the Government on blocks previously accepted and produced under the contract. Any deficiencies found as a result of the inspection comparison will be considered prima facie evidence that all blocks accepted prior to the completion of inspection comparison are similarly deficient unless evidence to the contrary is furnished by the contractor and such evidence is acceptable to the contracting officer.

4.7 Inspection of packaging. The preservation, packing and marking shall be examined and tested in accordance with the Quality Assurance Provisions of MIL-B-3865. Marking shall be examined for conformance to the quality assurance provisions of MIL-STD-129.

5. PACKAGING

5.1 Preservation and packing. Blocks shall be preserved and packed in accordance with MIL-B-3865. The level of preservation shall be level A or C and the level of packing shall be level A, level B, or level C as specified (see 6.2).

5.2 Marking.

5.2.1 Civil agencies. Packages and shipping containers shall be marked in accordance with FED-STD-123.

5.2.2 Military activities. In addition to any special marking specified in the contract or purchase order (see 6.2), marking for level A, level B, or level C shall be in accordance with MIL-STD-129.

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6. NOTES

6.1 Intended use. Blocks are intended for use in hoisting and hauling operations. They are general-purpose blocks recognized as a standard product by the tackle industry.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

a. Title, number, and date of this specification.
b. Type of block and number of sheaves required (see 1.2).
c. Issue of DODISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
d. When a first article is not required for inspection and approval (see 3.2).
e. Number of units required for first article inspection (see 3.2).
f. Shell length, block number, or sheave size required (see 3.12, 3.13, 3.14, 3.15, and 3.16).
g. Rig assembly required for type I blocks (see 3.12.5).
h. Rig assembly required for type II blocks (see 3.13.3).
i. Size of thimble required (see 3.13.4),
j. Rig assembly required for type III blocks (see 3.14.3).
k. When a locking mechanism is not required on type XV blocks (see 3.15).
l. Level of preservation and level of packing required (see 5.1).
m. Any special marking (see 5.2.2)

6.3 First article. When a first article inspection is required, the item(s) should be a preproduction block. The first article should consist of one or more units. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of the first article test results and disposition of the first articles. Invitation for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.4 Figures. The figures show types of blocks which have been found acceptable; however, the figures are included for illustration only and are not intended to preclude the furnishing of other blocks which conform to this specification.

6.5 Part or identification number. The following specification-based part identification numbering procedure shall be used to identify the items covered by this document. The purpose of this procedure is to assist Government catalogers in developing correct equipment/material PINs. This procedure does not constitute a requirement for the contractor.

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```
GGGB490 - # #
   |      | |
   |      | └── Style (1, 2, or 3; see 1.2)
   |      |
   |      └──── Type I = 1
   |                 II = 2
   |                III = 3
   |                 IV = 4
   |                  V = 5
   |
   └──────────── Specification identifier
```

6.6 Classification cross-reference. The following is a type number cross--reference between classification in this document (Revision F) and the CLassificatiion in Revision E:

Revision F	Revision E
Type I	Type I
Type II	Type II
Type III	Type III
Type Iv	Type IV
Type V	Type IIa

6.7 Subject term (key word) listing.

Awning pulley
Becket
Hook
Pulley
Rig assembly
Shackle
Sheave
Shell
Side hook
Sister hook
Strap
Swivel hook
Swivel link

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

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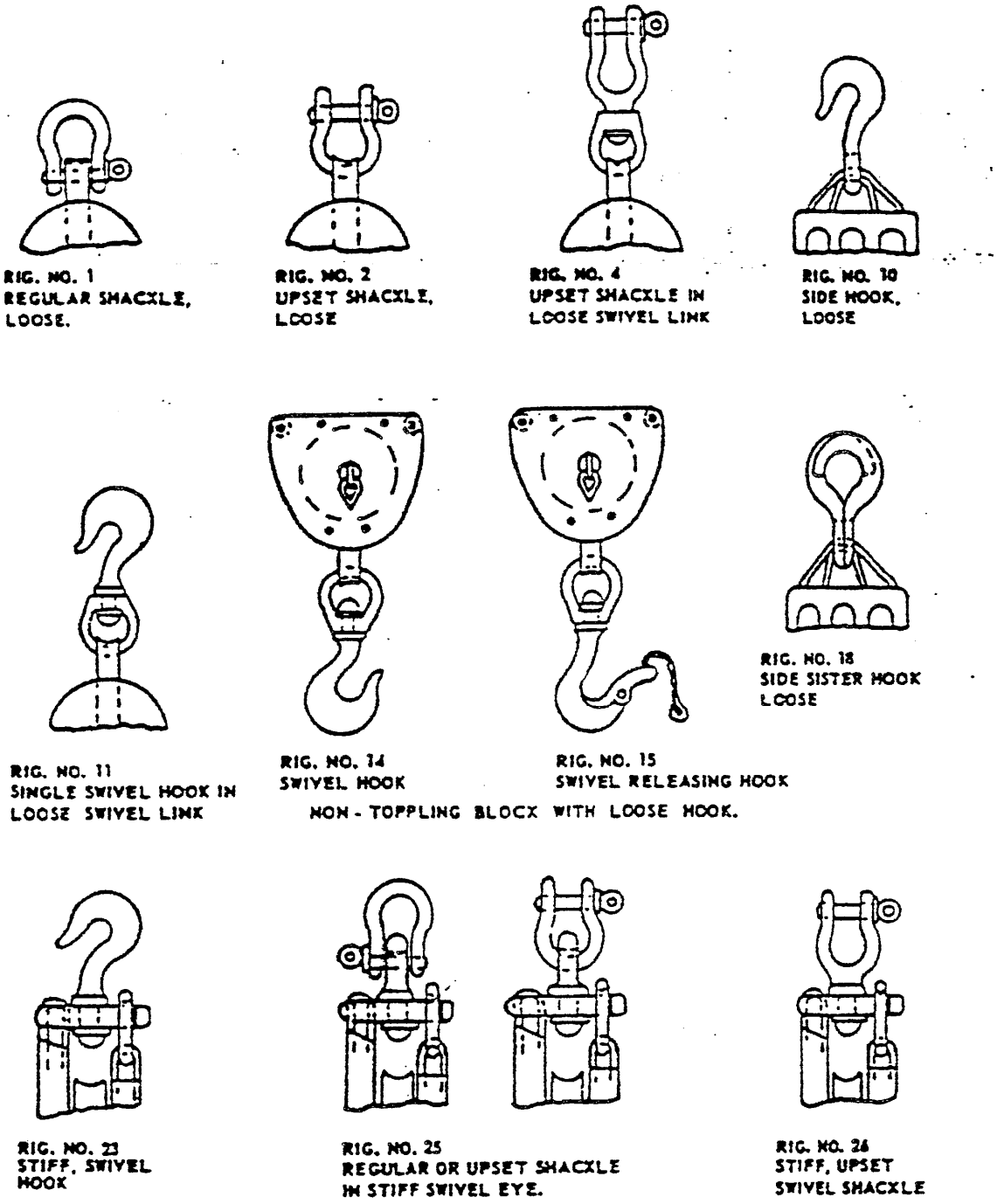

FIGURE 1. Rigs and fittings for wood and metal rope blocks. (Rigs are identified by numbers only. Each rig consists of a block with fittings assembled as shown.)

X-4113

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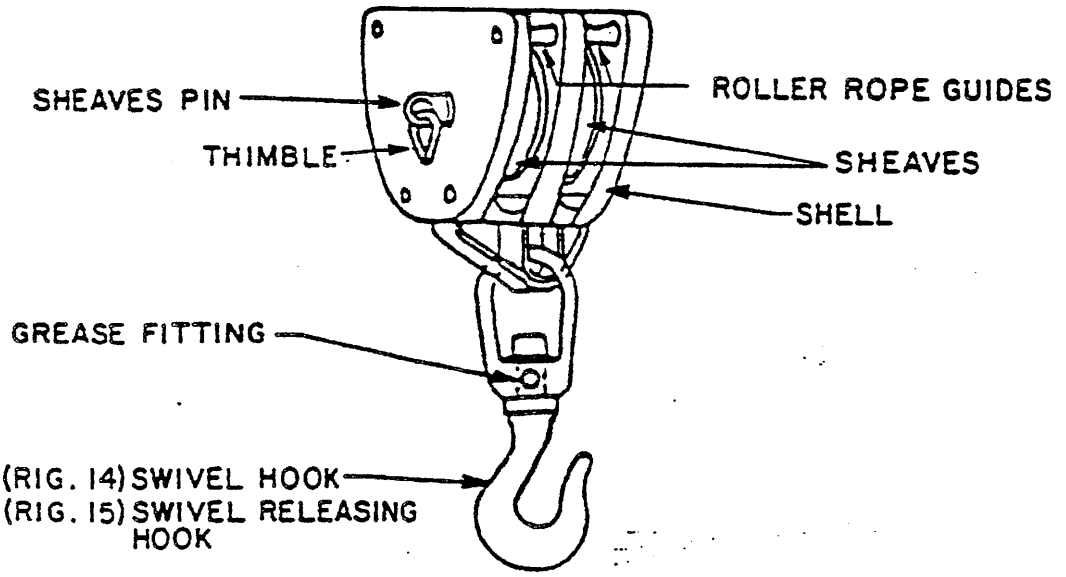

FIGURE 2. Type I, nontoppling block, wood (rig 14 and 15).

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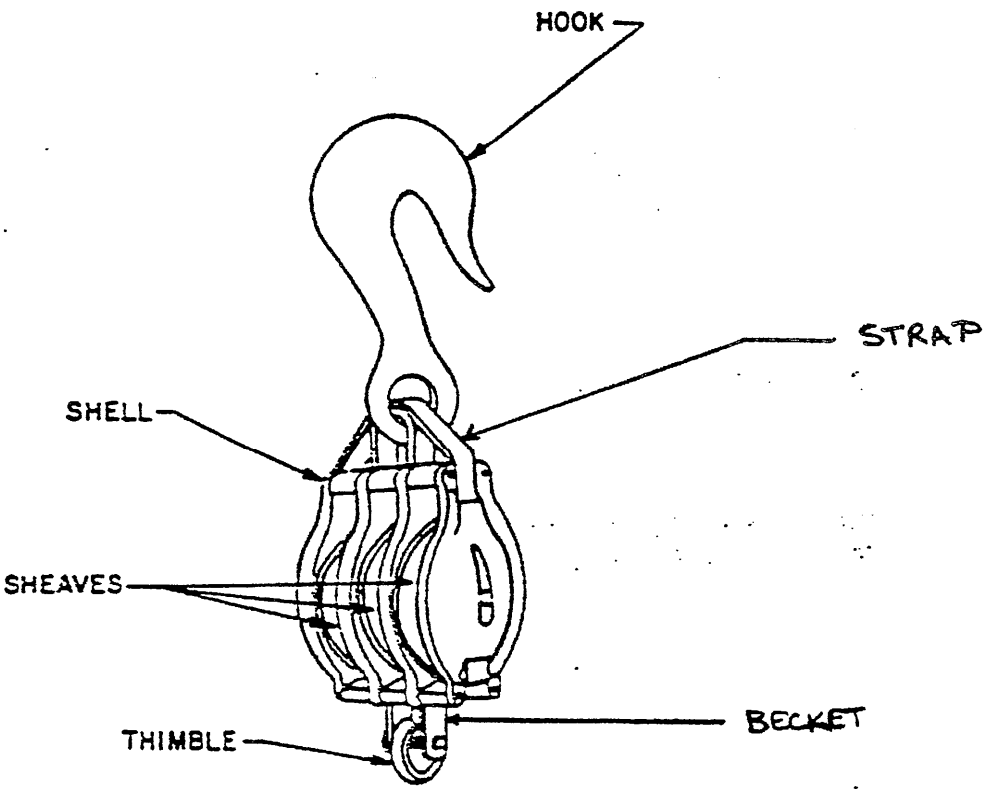

FIGURE 3. Type II, block, steel or malleable iron, ordinary (rig. 10, with bracket shown).

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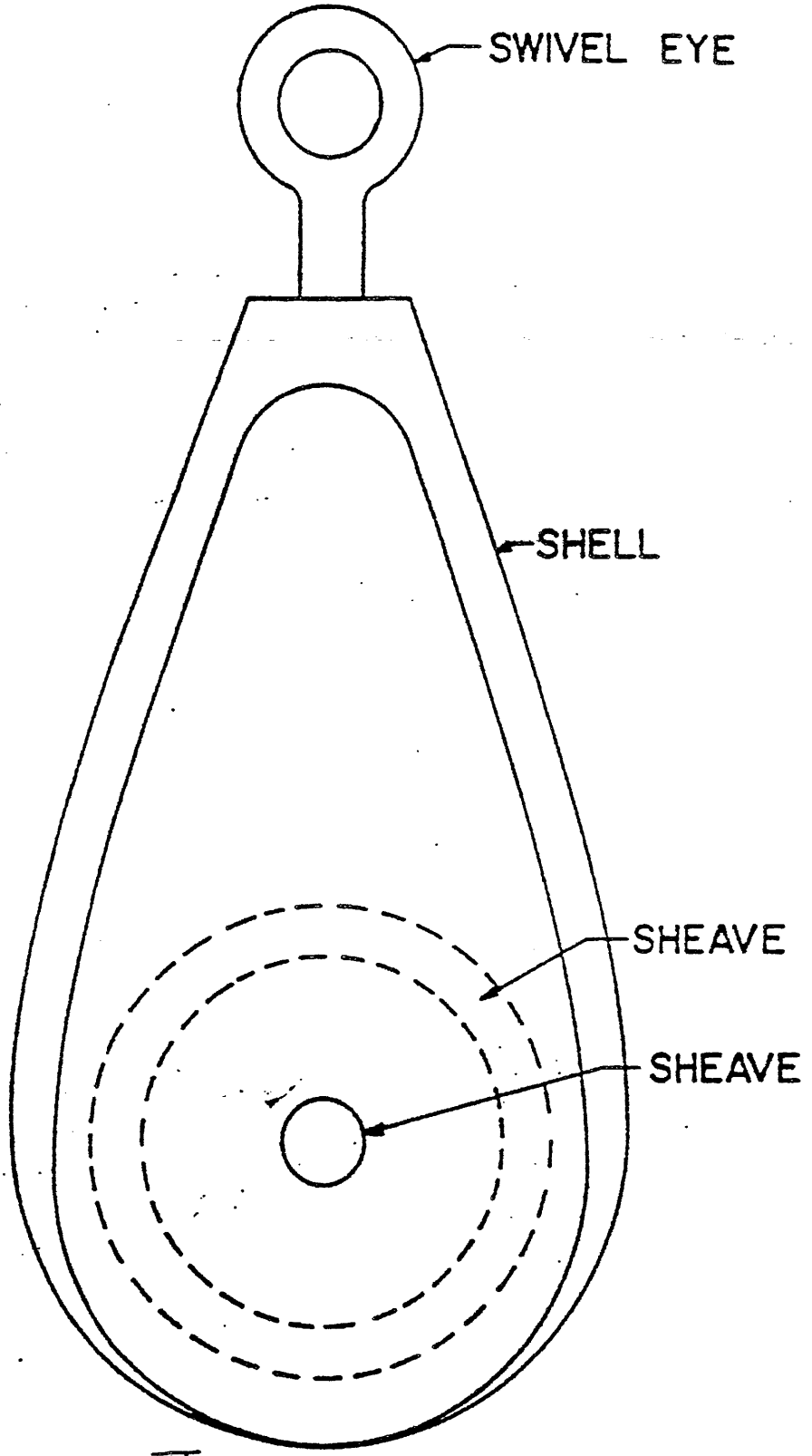

FIGURE 4. Type ~~II-c~~ V, block, tackle (awning pulley).
(rig. no. 20)

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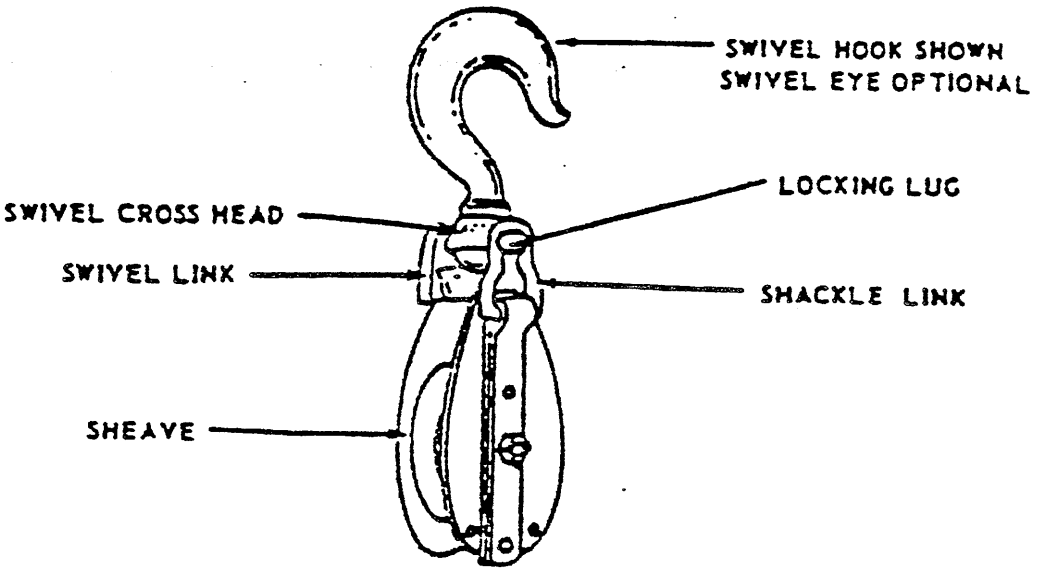

FIGURE 5. Type III, snatch block, safety - locking.

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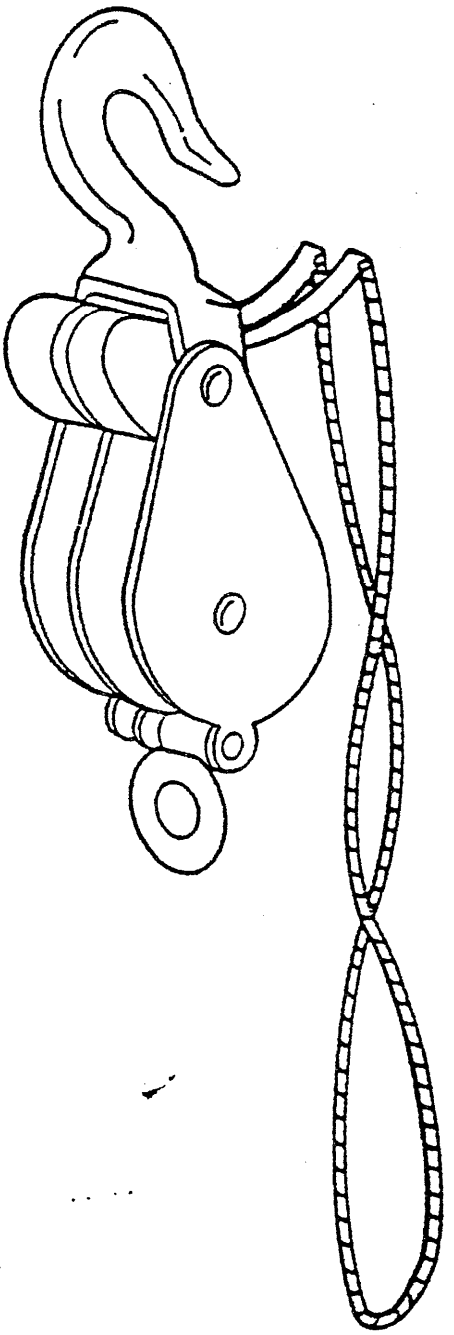

FIGURE 6. Type IV, block with load locking device.

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I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER GGG-B-490F	2. DOCUMENT DATE (YYMMDD) 920412

3. DOCUMENT TITLE Blocks, Tackle (Manila and Nylon Rope)

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)

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