Technical Manual

OPERATOR, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)

INSERT JIB AND HEADACHE BALL
NSN 3815-01-153-1847
NSN 3815-01-153-1853
NSN 3815-01-202-4063

HEADQUARTERS, DEPARTMENT OF THE ARMY
12 SEPTEMBER 1990

List of Warnings

Dry cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use in a well ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100°F 138°F (38°C 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

Compressed air, used for cleaning purposes will not exceed 30psi. Use only with effective chip guarding and personnel protective equipment (goggles/shield/gloves, etc.).

Do not stand under the boom or inside the boom structure when removing pins. The boom could fall if improperly supported and could cause serious injury.

Do not cantilever more than 50 feet of inserts. The attachments or guy lines could be damaged if more than 50 feet of inserts are cantilevered.

Consult the load rating chart (TM 5-3810-303-14) regarding the boom lengths which require intermediate suspension.

Never allow a loaded boom to compress the backstop springs. If this minimum clearance is not maintained, tension within the boom hoist may collapse the gantry over the backstops.

Keep hands and clothing clear of the rotating drum.

The live end of the rope must be in a straight line through the socket.

Make sure the rope is not kinked at the point where it leaves the socket

Wear approved leather gloves when working with wire rope.

CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., *7 October 1992*

OPERATOR, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)

INSERT JIB AND HEADACHE BALL
NSN 3815-01-153-1847
NSN 3815-01-153-1853

Current as of 22 May 1992

TM 5-3815-224-14&P, dated 12 September 1990, is changed as follows:

1. The manual title is changed to read as shown above.
2. Remove old pages and insert new pages.
3. New or changed material is indicated by an asterisk or by a vertical bar in the margin of the page and a vertical bar adjacent to the TA number.

Remove Pages	Insert Pages
C-3 through 1-2	*C-3 through 1-2*
2-1 through Bulk-1	*2-1 through Bulk-1*
I-1 through Authority Page	*I-1 through Authority Page*

4. File this change sheet in front of the publication for reference purposes.

Approved for public release; distribution is unlimited.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Official: Chief of Staff

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
02896

Distribution:

To be distributed in accordance with DA form 12-25-E, Block 5080, Operator, Unit, Direct Support and General Support maintenance requirements for TM 5-3815-224-14&P.

TECHNICAL MANUAL

NO. 5-3815-224-14&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., *12 September 1990*

OPERATOR, UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

INSERT JIB AND HEADACHE BALL
NSN 3815-01-153-1847
NSN 3815-01-153-1853
NSN 3815-01-202-4063

Current as of 14 March 1990

REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

This technical manual is an authentication of the manufacturers commercial literature and does not conform with the format and contents specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

Distribution: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE - Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

TABLE OF CONTENTS

INSERTS AND JIB

GENERAL INFORMATION

Figure 1 illustrates the jib for the Model 5060 crane. This manual is confined to lubrication, installation, removal, adjustment and general information concerning operation and maintenance of the boom inserts , jib and headache ball. It also contains repair parts information.

BOOM AND JIB WORKING RANGE

The working range and other pertinent specifications are shown in Figure 2.

LIFTCRANE ATTACHMENT

GENERAL. The following paragraphs describe procedures for: increasing boom length, adding jib, and erecting and lowering the jib. The procedures given are for attaching items, whenever possible, without the use of an assisting machine. If an assisting crane is required it is noted that it is required. It is important that the machine operators manual is read before proceeding further.

INCREASING BOOM LENGTH. To increase the boom length beyond the basic boom (base plus tip), proceed as follows:

CAUTION

This machine is not to exceed 70' of boom. DO NOT add inserts beyond a total boom length of 70'.

1. Using the basic boom, arrange the required inserts, on blocking in a line. See Figure 3 for the boom and guy line arrangement at the particular length of boom required. Do not pin the inserts together at this time. Also arrange and assemble the jib and jib strut, if using, on a minimum of 6 inches of blocking. This is done at this time so that when the main boom is assembled the machine can be moved up to the jib base and be pinned to the tip section of the main boom.

NOTE

See Figure 3, for the required insert arrangement.

2. When the required inserts are laid out, lower the basic boom. Provide a minimum of 6 inches of blocking under the base and tip section (see Figure 2, View A). Pin the upper spreader to the boom base and remove the guy lines connecting the tip section to the upper spreader. Engage the boom hoist to remove all slack in the hoist lines.

3. Remove the bottom connecting pins of the boom base and tip section.

WARNING

Do not stand under the boom or inside the boom structure when removing pins. The boom could fall if improperly supported and could cause serious injury.

4. Allow the attachment to hinge about the top connecting pins and lower the base and tip until they rest on the blocking. Remove the top connecting pins (see Figure 2, View B).

5. Engage the boom hoist and slowly raise the base (insert) off of the blocking. Reposition the machine behind the next insert to be added and align the top connectors. Insert the top connecting pins(Fig. 2, View C).

6. Engage the boom hoist and raise the attachment until the bottom connecting pins can be inserted.

7. Lower the attachment and provide blocking under the end of the insert. Install the guy lines from the end on the insert to the spreader (see Figure 2, View C).). Unpin the upper spreader from the boom base.

8. Repeat steps 5 and 6 until a total of 50 feet of inserts have been connected. When a total of 50 feet of inserts have been connected it will be necessary to install additional guy lines (see Figure 2, View D).

WARNING

Do not cantilever more than 50 feet of inserts. The attachment or guy lines could be damaged if more than 50 feet of inserts are cantilevered.

9. Continue adding inserts, as explained in steps 5, 6 and 8, until the required inserts and tip section have been added.

WARNING

Consult the load rating chart (TM 5-3810-303-14) regarding the boom lengths which require intermediate suspension.

JIB. To attach the jib, proceed as follows:

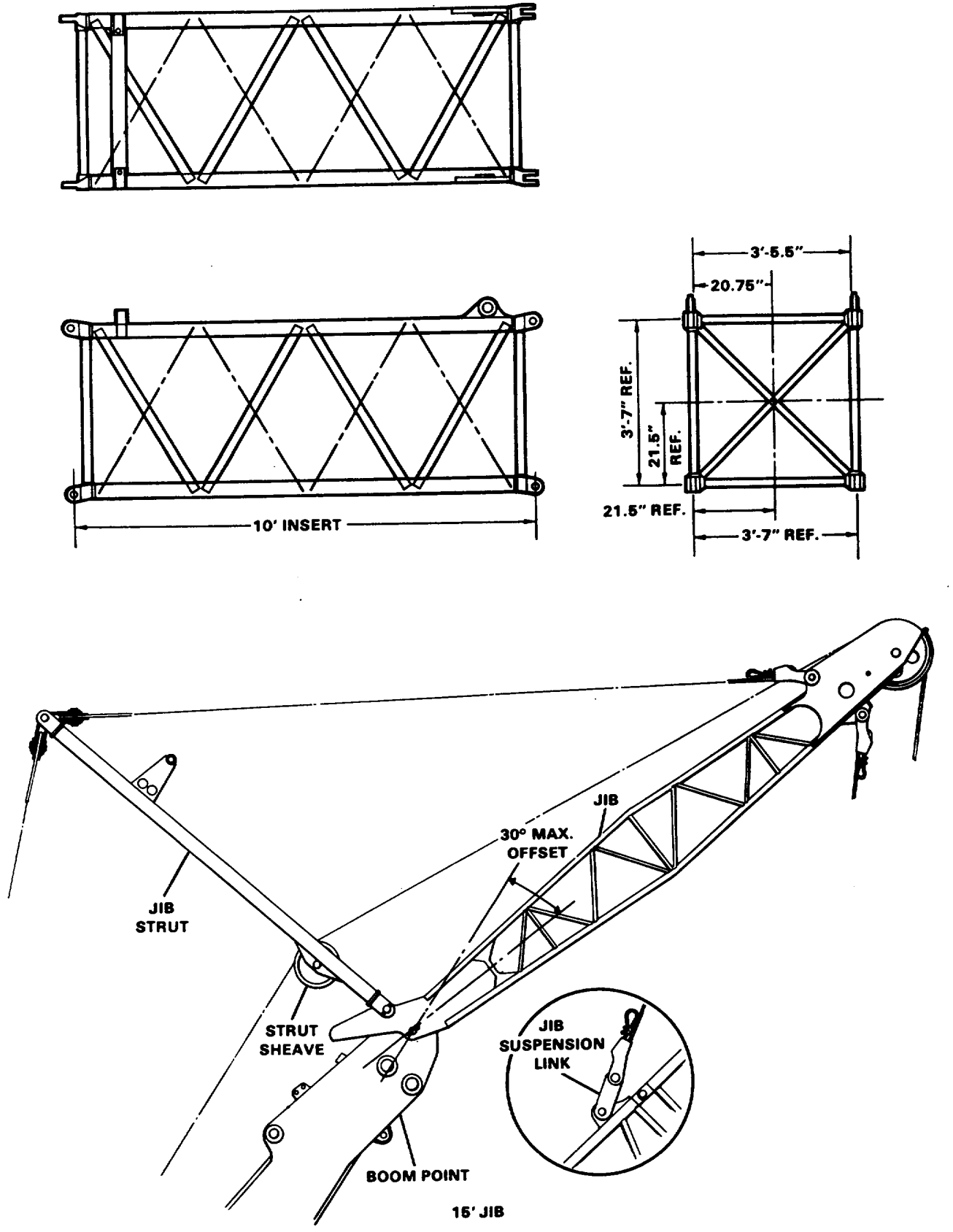


Figure 1. Boom Insert and Jib

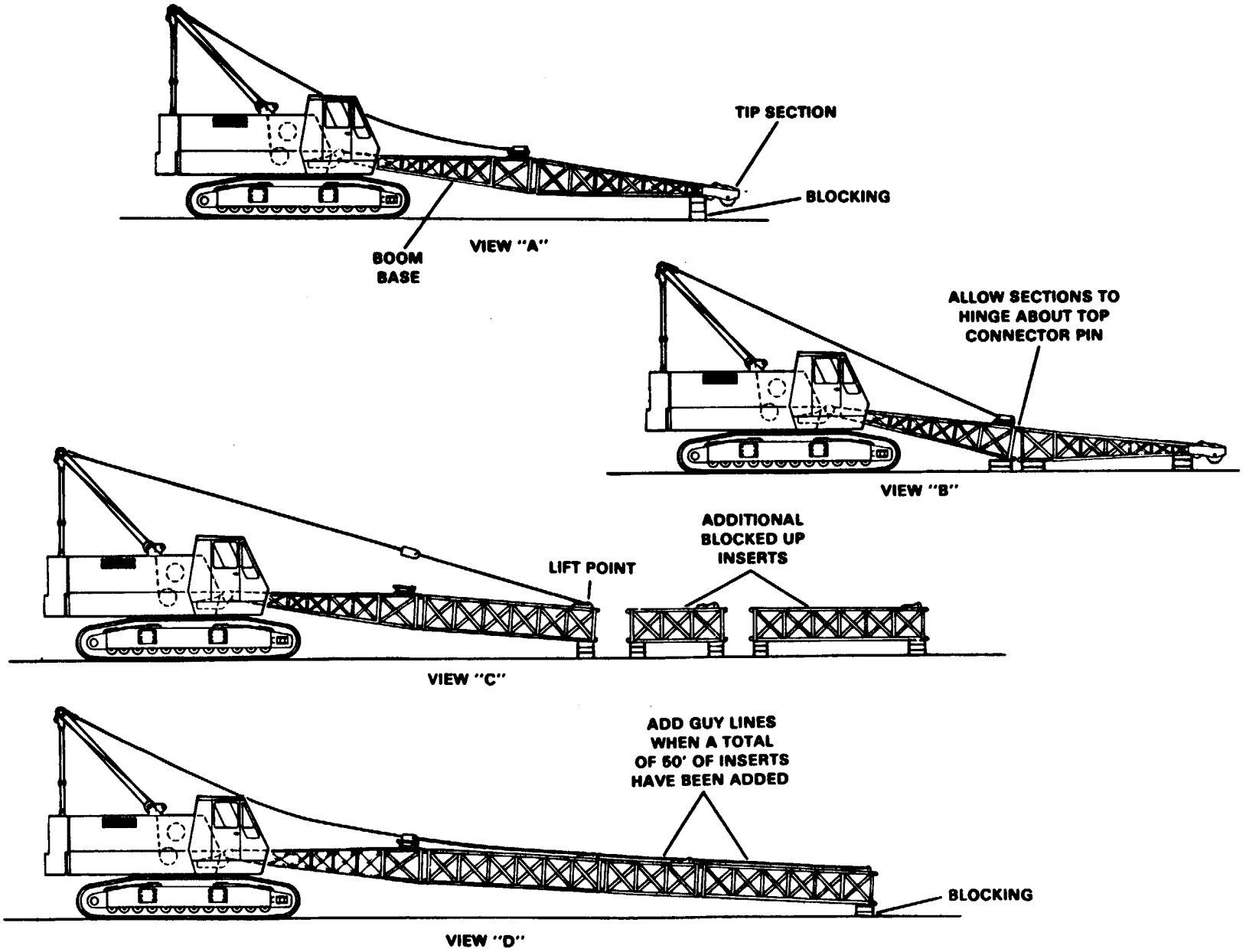


Figure 2. Increasing Boom Length

1. Raise the boom and move the machine up to the cribbed up jib. Secure the jib to the boom point. See Figure 3.

2. Install the jib guy lines from the jib point to the strut and from the strut to the jib backstay anchor. See Figure 3 for information on the jib backstay anchor. The jib suspension line should be adjusted so that the offset angle of the jib to the boom, under load, does not exceed the limitations shown on the rating plate. The maximum jib offset angle is 300 as shown in Figure 1.

ERECTING THE CRANE BOOM. To erect the crane attachment, proceed as follows:

NOTE

Consult the load rating chart for maximum boom (or boom plus jib) that can be erected and required conditions during erection.

1. Check all reeving and inspect the complete crane to be sure that everything is in order before attempting to hoist the attachment. Inspect all connections to be sure pins are locked. Since the boom hoist lines are very heavily loaded while erecting a crane boom, they must be in good condition.

2. The boom must be raised from a horizontal position. Support the boom in this position with the blocking used during assembly.

3. Erect the crane boom, being careful to take up slack in the load lines as the boom goes up to prevent any possibility of fouling lines.

LOWERING THE CRANE BOOM. To lower the crane attachment, move the boom hoist lever forward and slowly lower the boom onto blocking.

CAUTION

If machine is equipped with a fairlead, swing it out of the way to fully lower the boom. See FAIRLEAD and LAGGING Manual. (TM 5-3815-223-14&P).

The load hoist lines must have adequate slack when lowering the crane attachment to prevent any possibility of these lines becoming taut. These lines will tend to tighten as the attachment is lowered, and if adequate slack is not allowed, the attachment cannot be lowered completely. Damage to the attachment may also result.

REEVING

JIB LOAD LINE REEVING. The reeving on the jib hoist line depends on the load to be lifted and the speed at which the load is to be lifted or lowered. Consult the rating plate for a particular load. Typical reeving diagrams recommended for the jib line is shown in Table 1. The drum is over-spooled when using the jib line. On the 5060 crane the left drum is the jib load line. Table 1 gives rope size and length information.

INSTALLING ROPE ON DRUMS. The manner in which a new or replacement wire rope is installed on the drums will, to a large measure, determine the service life of that rope. Improperly wound ropes will cause undue crushing of the rope, doglegs, kinks, excessive abrasion and cutting of the individual wires. Bad spooling also causes uneven application of force and motion. *This results in fast fatiguing of the rope from the hook block, or spreader, to the drum.*

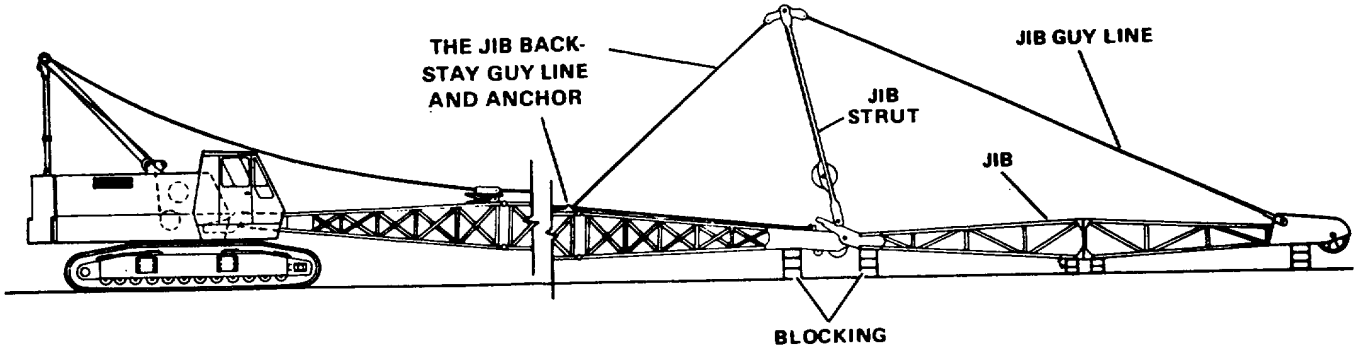
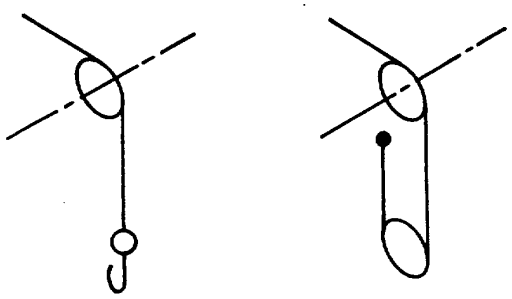


Figure 3. Attaching Jib

Table 1. Rope Size and Length

Boom Length	Left Hand Load Hoist Drum Jibline 15′ Jib Rope Size	Rope Type	1 Part
25′			
50′			150′
60′			170′
70′			190′
80′			210′
90′			230′
100′	3/4″	25	250′
110′			270′
120′			290′
130′			310′
140′			330′
150′			350′

Jib Pendants				
Location	Boom Length	Rope Size	Rope Type	Length
Jib to Strut	50′ to 150′	3/4″	25	45′
Boom to Strut	50′ to 150′	3/4″	25	62′



1 PART 2 PARTS

CAUTION

The following five precautionary steps should be taken, particularly with a replacement wire rope, before starting the actual installation of the rope.

1. A check should be made of the drum to determine the condition, size and shape of the drum grooves, if so equipped.

2. Drum flanges should be checked to determine the extent, if any, of undercutting at the base of the flange.

3. Dirt, grit or any other type of debris should be cleaned off the drum.

4. Bearings should be checked.

5. Cracks or breaks in the drum should be reported.

Whenever any of these conditions are observed, the drum should be removed from service and properly cleaned, repaired or replaced. This recommendation is made not only to improve or maintain good rope life, but to eliminate a potential hazard.

After establishing the satisfactory condition of the drum, mount the reel of wire rope on suitable jacks. Reeve the boom hoist or load line and attach the rope to the drum as shown in Figure 4.

NOTE

A tension should be induced into the rope by providing some means of braking the shipping reel while installing the rope on the drum. A tight winding is imperative.

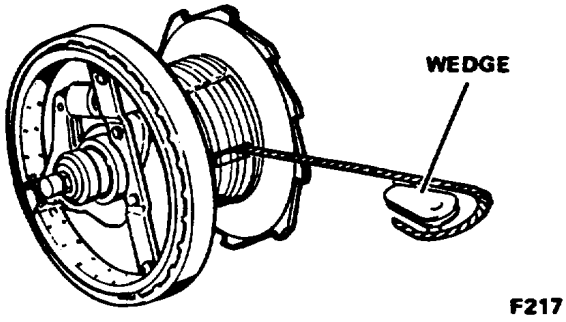


Figure 4. Securing Rope to Drum

WARNING

Keep hands and clothing clear of the rotating drum.

Establish a means of communicating with the operator and have him slowly wind the rope on to the drum by moving the appropriate drum lever to the raise position. A lead or brass hammer may be useful in tapping the rope over as it is being wound on the drum. *Do not use a steel hammer or pinch bar. These can readily cause damage to the rope.*

USE OF WEDGES. The dead end of the rope is attached with a wedge type rope socket. The rope socket should be installed on the boom as follows (see Figure 5):

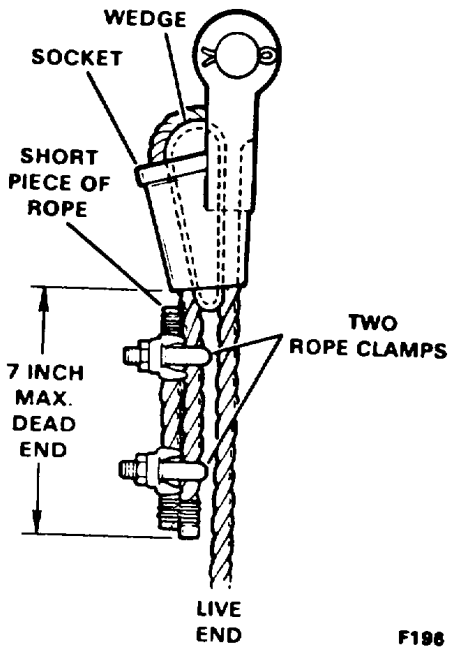


Figure 5. Installing a Rope Socket

WARNING

Wear approved leather gloves when working with wire rope.

1. Thread the rope through the socket and bring it around in an easy to handle loop. Allow the rope to assume its natural lay; do not twist the rope.

WARNING

The live end of the rope must be in a straight line through the socket.

2. The dead end of the rope must not extend more than 7 inches past the end of the socket. Insert the wedge in the rope loop and pull the wedge and rope loop tight enough to hold the wedge in position during handling. Final wedge positioning will take place under full operating loads.

WARNING

Make sure the live end of the rope is not kinked at the point where it leaves the socket.

3. After the socket is pinned to the boom point or hook block, apply gradually increasing loads until the wedge is seated in the socket. Avoid any sudden shock loads before the wedge is in its final position. When seated properly, the wedge will just protrude beyond the end of the socket.

4. Cut a piece of rope and secure it to the dead end of the rope with two clamps as shown in Figure 5.

DISMANTLING

UNREEVING

WARNING

Keep hands and clothing clear of rotating drums.

Carefully lower the boom and jib to a horizontal position and install suitable cribbing under each section of the boom and jib. Lower the boom and jib onto the cribbing. Disconnect the hoist lines at the dead end and unreeve the hook block(s) and boom point. Slowly wind the rope onto the drum by moving the appropriate drum lever to the raise position. A lead or brass hammer may be useful in tapping the rope over as it is being wound on the drum. Do not use a steel hammer or pinch bar. These can readily cause damage to the rope. After the boom and jib hoist lines have been unreeved from the boom point, wind the hoist lines onto their respective drum.

NOTE

A tension should be induced into the rope by providing some means of braking the wire rope. A tight winding is imperative.

CRANE BOOM. To remove the crane boom and jib, proceed as follows:

WARNING

Do not stand under the boom or inside the boom structure when removing pins. The boom could fall if improperly supported and could cause serious injury.

CAUTION

If machine is equipped with a fairlead, swing it out of the way to fully lower the boom. See FAIRLEAD and LAGGING Manual (TM 5-3815-223 -1 4&P).

1. Support the jib with suitable cribbing (see Figure 3): Remove the jib suspension cables and jib strut.

2. Remove the pins which secure the jib to the boom, and remove the jib.

3. Disconnect any electrical cables that are attached to the boom. Coil the cables and securely fasten them to the machine cab.

4. Relax the boom suspension and connect the guy lines at the first insert adjacent to the tip section. Remove the extra guy lines from the boom point.

5. Engage the boom hoist and lift the boom just enough to remove the bottom connecting pins from the tip and insert.

6. Lower the attachment allowing the boom to hinge about the top connecting pins. Provide blocking under the tip section and insert. Remove the top connecting pins.

7. Relax the boom suspension and connect the guy lines at a point 50 feet back from the insert just removed. Remove the extra guy lines.

CAUTION

Do not cantilever more than 50 feet of inserts. The attachment or guy lines could be damaged if more than 50 feet of inserts are cantilevered.

8. Engage the boom hoist and lift the boom just enough to remove the bottom connecting pins.

9. Lower the attachment allowing the boom to hinge about the top connecting pins. Provide blocking under the inserts. Remove the top connecting pins.

10. Continue removing inserts, as explained in steps 6, 7 and 8.

APPENDIX A

REFERENCES

A-1. SCOPE

This appendix lists Army regulations, forms, field manuals, technical manuals and other publications referenced in this manual and which apply to Operator, Unit, DS and GS maintenance of the Backhoe.

A-2. ARMY REGULATIONS

Reporting of Transportation Discrepancies in Shipments ..... AR 55-38
Department of the Army Information Security Program ..... AR 380-5

A-3. DEPARTMENT OF THE ARMY PAMPHLETS

Consolidated Index of Army Publications and Blank Forms..... DA Pam 25-30
The Army Maintenance Management System (TAMMS)..... DA Pam 738-750
U.S. Army Equipment Index of Modification Work Orders..... DA Pam 750-10

A-4. FORMS

U.S. Army Accident Investigation Report ..... DA Form 285
Equipment Operator's Qualifications Record (Except Aircraft) ..... DA Form 348
Recommended Changes to Publications and Blank Forms..... DA Form 2028
Recommended Changes to Equipment Technical Manual..... DA Form 2028-2
Organizational Control Record for Equipment ..... DA Form 2401
Equipment Inspection and Maintenance Worksheet ..... DA From 2404
Maintenance Request ..... DA Form 2407
Preventive Maintenance Schedule and Record ..... DD Form 314
Processing and Deprocessing Record for Shipment, Storage, and Issue
of Vehicles and Spare Engines ..... DD Form 1397
DOD Fire Incident Report ..... DD Form 2324
U.S. Government Motor Vehicle Operator's Identification Card ..... OF Form 346
Operator's Report on Motor Vehicle Accident ..... SF Form 91
Transportation Discrepancy Report ..... SF Form 361
Report of Discrepancy (ROD) ..... SF Form 364
Product Quality Deficiency Report (7540-00-105-0078) ..... SF Form 368

A-5. FIELD MANUALS

Camouflage ..... FM 5-20
Vehicle Recovery Operations ..... FM 20-22
First Aid for Soldiers ..... FM 21-11
Visual Signals ..... FM 21-60
Basic Cold Weather Manual ..... FM 31-70
Northern Operations ..... FM 31-71
Desert Operations ..... FM 90-3

A-6. TECHNICAL BULLETINS

Occupational and Environmental Health: Hearing Conversation ..... TB MED 501
Solder and Soldering ..... TB SIG 222
Equipment Improvement Report and Maintenance Digest (U.S. Army
Tank-Automotive Command) Tank-Automotive Equipment ..... TB 43-0001-39 series
Color, Marking, and Camouflage Painting of Military Vehicles, Construction
Equipment, and Materiels Handling Equipment ..... TB 43-0209
Maintenance in the Desert ..... TB 43-0239
Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems ..... TB 750-651

A-7. TECHNICAL MANUALS

Operator, Unit, Direct Support and General Support Maintenance Manual
(Including Repair Parts and Special Tools List): Shovel Front,
2 Yards Capacity (3815-01-153-1855) ..... TM 5-3815-222-14&P
Operator, Unit, Direct Support and General Support Maintenance Manual
(Including Repair Parts and Special Tools List):
Fairlead And Laggings (3815-01-153-1861) ..... TM 5-3815-223-14&P
Operator, Unit, Direct Support and General Support Maintenance Manual
(Including Repair Parts and Special Tools List):
Inserts and Jib (3815-01-153-1847) and (3815-01-153-1853) ..... TM 5-3815-224-14&P
Operator Maintenance Manual for 40 Ton Crane Crawler, Model 5060 ..... TM 5-3810-303-10
Unit, Direct Support and General Support Maintenance Manual for
40 Ton Crane, Crawler. Model 5060 ..... TM 5-3810-303-24
Repair Parts and Special Tools List (Including Depot) for 40 Ton Crane Crawler, Model 5060 ..... TM 5-381 0-303-24P
Organizational Maintenance Manual: Night Vision Goggles, AN/PVS-5
and AN/PVS-5A (5855-00-150-1820) ..... TM 11-5855-238-20
Organizational, Direct support and General Support Maintenance Manual,
Including Depot Maintenance Repair Parts And Special Tools),
Night Vision Goggles AN/PVS-5 and AN-PVS-5A (5855-00-150-1820) ..... TM 11-5855-238-24&P
Operator's, Organizational, Direct Support and General Support Maintenance
Manual, Multimeter, Digital AN/PSM-45 (6625-01-139-2512) ..... TM 11-6625-3052-14
Army Equipment Data Sheets: Chemical Defense Equipment (Reprinted with Basic INCL-1) ..... TM 43-0001-26-1
Painting Instructions for Field Use ..... TM 43-0139
Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use ..... TM 750-244-6
Cooling Systems: Tactical Vehicles ..... TM 750-254

A-8. OTHER PUBLICATIONS

Army Medical Department Expendable/Durable Items ..... CTA 8-100
Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)..... CTA 50-970
Catalog of Audiovisual Productions, Army Productions, Volume I (PA) DOD5040.2-C-1

APPENDIX B. - SUPPLEMENTAL OPERATING AND MAINTENANCE INSTRUCTIONS

MAINTENANCE

1. MAINTENANCE CONCEPT: Operators shall possess an MOS of 6'2F and maintenance will be performed by a 62B MOS. This is a Non-Developmental Item (NDI) and as such, there is no maintenance engineering effort on the part of the Army. However, consistent with maintenance policy and procedures of Preventive Maintenance Checks and Services (PMCS) and Maintenance Allocation Charts (MAC), the level of repair assigned to maintenance and associated tasks identified in the MAC should be reflective of training and repair part support for similar items of equipment in the inventory for unit through depot maintenance. Maintenance will be performed at the level authorized by the MAC and TOE/MTOE mission statements.

2. MAINTENANCE PLAN: Maintenance capabilities will be governed by the MAC and will be tailored to accommodate the complexity of the maintenance requirement.

a. UNIT MAINTENANCE: Unit Maintenance is performed by the operator, a crew or unit maintenance personnel as shown in the MAC of the appropriate TM, commercial manual or this publication. Unit Maintenance normally includes inspection by sight and touch of easily accessible components including; lubrication, cleaning, preserving, tightening, repair/replacement of parts (generally within two hours) and fault isolation using Built in Test/Built in Test Equipment (BIT/BITE), modularity and discard of components and selected items.

b. DIRECT SUPPORT (DS): Direct Support Maintenance is characterized by highly mobile forward orientation to remove, repair/replace unserviceable major assemblies and components. Direct support will provide contact maintenance teams for local support of unit maintenance support. DS personnel shall be capable of diagnosing causes of equipment failures, repairing specified components and repair parts, and returning the serviceable asset to the supply or reparable exchange (RX) system. DS may maintain a supply support system which allows unit maintenance to obtain repair parts through Reparable Exchange (RX) or requisitions. DS may operate an Operational Readiness Float system (ORF) for support units.

3. MAINTENANCE ALLOCATION CHART (MAC): Maintenance will be performed by the category (level) indicated on the Maintenance Allocation Chart to restore equipment to a fully mission capable serviceable condition. Higher levels of maintenance will perform lower level maintenance functions when required by appropriate commanders. Using/support maintenance activities may exceed their authorized level of maintenance when authorized by higher maintenance level commanders.

4. MODIFICATION: Modifications will be accomplished by the end item manufacturer after TACOM approves the field campaign or modification plan. Modification Work Orders (MWOs) will be complied with IAW AR 750-1, Paragraph 3-6.

5. EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR), AND QUALITY DEFICIENCY REPORT (QDR): An EIR or QDR will be submitted IAW AR 750-1, Paragraph 3-42, and DA PAM 738-750, Chapter 12, Paragraph 12-1.

6. SHIPMENT AND STORAGE: Refer to the manufacturer's operating instructions, service manual and TB 740-97-2.

7. DESTRUCTION TO PREVENT ENEMY USE. Refer to TM 750-244-3, for instructions governing destruction of equipment to prevent enemy use.

8. SPECIAL TOOLS, BASIC ISSUE ITEMS, ADDITIONAL AUTHORIZED ITEMS AND MAINTENANCE AND OPERATING SUPPLIES LISTS MAY BE FOUND IN THE APPENDIXES.

9. MAINTENANCE FORMS AND RECORDS:

a. Equipment Record Folder, NSN 7510-01-065-0166

b. SF 91 and DD 518, Accident Forms

c. DD 1970, Motor Equipment Utilization Record (Dispatch)

d. DA 2401, Organizational Control Record for Equipment

e. DA 2402, Exchange Tag

f. DD 314, Preventive Maintenance Schedule and Record

g. DA 2404, Equipment Inspection and Maintenance Worksheet.

h. DA 2405, Maintenance Request Register

i. DA 2407 and DA 5504, Maintenance Request

j. DA 2407-1, Maintenance Request Extension Sheet

k. DA 2408-14, Uncorrected Fault Record

l. DA 3999-4, Maintenance Work Request Envelope

m. DA 5409, Inoperative Equipment Report

n. DA 5410, Unit Level Deadlining Parts Report

o. DA 5504, Maintenance Request

p. DA 5504-1, Maintenance Request continuation sheet

10. HISTORICAL RECORDS:

a. DA 2408-5, Equipment Modification Record

b. DA 2408-9, Equipment Control Record

c. DA 2408-20, Oil Analysis Log

d. DA 2409, Equipment Maintenance Log

e. Equipment Log Book Binder, NSN 7510-00-889-3494

11. LUBRICATION: To insure proper operation of this equipment, all points requiring lubrication must be serviced with correct lubrication, at the time interval specified on the Lubrication Chart.

12. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS): Perform PMCS IAW Appendix B.

13. MIXTURE OF INCH AND METRIC FASTENERS:

a. The use of world wide sources for components has made it possible to have a mixture of inch and metric fasteners. For example, metric fasteners may be used on some parts of a component, while not used on other parts of a component. It is possible that the internal bolts on a component may be metric, while the mounting bolts may be inch size.

b. To help mechanics know when metric fasteners are used on a product, future service publications such as parts books and operation/maintenance manuals will use a notice similar to the one that follows:

NOTICE

CAUTION MUST BE TAKEN TO AVOID MIXING METRIC AND INCH (CUSTOMARY) FASTENERS. MISMATCHED OR INCORRECT FASTENERS CAN RESULT IN EQUIPMENT DAMAGE OR MALFUNCTION, OR POSSIBLE PERSONAL INJURY. ORIGINAL FASTENERS REMOVED FROM THE VEHICLE SHOULD BE SAVED FOR ASSEMBLY WHEN POSSIBLE. IF NEW FASTENERS ARE REQUIRED, CAUTION

MUST BE TAKEN TO REPLACE THE FASTENER WITH ONE THAT IS OF THE SAME SPECIFICATIONS (SIZE/GRADE) AS THE ORIGINAL.

c. To convert inches to millimeters, or millimeters to inches, see The Metric System And Equilavents (inside back cover).

MAINTENANCE ALLOCATION CHART FOR INSERT JIB AND HEADACHE BALL
NSN 3815-01-153-1847
NSN 3815-01-153-1853
NSN 3815-01-153-4063

1. General: This Maintenance Allocation Chart designates responsibility for performance of Maintenance functions to specific Maintenance categories.

2. Maintenance Functions:

a. Inspect: To determine the serviceability of an item by comparing its physical, mechanical and/or electrical characteristics with established standards through examination.

b. Test: To verify serviceability and detect incipient failures by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service: Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust: To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. Align: To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate: To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install: The act of emplacing, seating, or fixing into position an item, part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. Replace: The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair: The application of maintenance services or other maintenance actions to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

3. Column Entries: Columns used in the Maintenance Allocation Chart are explained below:

a. Column 1, Group Number: Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly: Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions: Column 3 lists the functions to be performed on the item listed in Column 2.

d. Column 4, Maintenance Category: Column 4 specifies, by the listing of a "work time" figure in the appropriate sub-column(s), the lowest level of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. - If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate' "work time" figures will be shown for each category. The number of man-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the Maintenance Allocation Chart.

e. Column 5, Tools and Equipment: Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks: Column 6 contains an alphabetic code which leads to the remark in Section IV, Remarks, which is pertinent to the item opposite the particular code.

SECTION II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL UNIT C	UNIT O	INTMED F	INTMED H	D	(5) TOOLS/ EQUIP	(6) REMARKS
75	Cranes, Shovels and Earth Moving Equipment Components								
7411	Crane Dragline or Clamshell Attachments								
	Jib Assembly	Inspect	0.2						Welding the
		Replace		2.0				1	Jib is
		Repair					8.0	8	Limited to Depot Maint. Only
	Sheaves	Inspect	0.1						
		Replace		2.0				1	
		Repair		0.5				1 & 2	
	Wire Rope and Sockets/Wedges	Inspect	0.1						
		Replace		2.0				1	
	Headache Ball Assy.								
	Headache Ball	Inspect	0.1						
		Replace		1.5				1,2&3	
		Repair		1.0				1,2&3	
	Hook Block & Tackle	Inspect	0.1						
		Replace		1.0				1,2&3	
		Repair		1.0				1,2&3	
	Boom Insert Assemble								
	Boom Insert	Inspect	0.1						Welding the
		Replace		1.0				1	Insert is
		Repair					8.0	4	limited to Depot Maint. Only

☆ MAINTENANCE LEVELS:
C - OPERATOR/CREW
O - ORGANIZATIONAL
F - INTERMEDIATE DIREST SUPPORT
H - INTERMEDIATE GENERAL SUPPORT
D - DEPOT

= UNIT

STA FORM 668-1 PREVIOUS EDITION IS OBSOLETE.

MAINTENANCE ALLOCATION CHART FOR JIB ASSEMBLY 40 TON CRANE, P&H 5060

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS

Tool or Test Equipment REF Code	Maintenance Level	Nomenclature	National Stock Number	Tool Number	FSCM
1.	O	Tool Kit, General Mechanics	5180-00-699-5273	W45060	
2.	O	Shop Equipment, Automotive Maint. and Repair, Org. Maint. Common #1	4910-00-754-0654	W32593	
3.	O	Shop Equipment Auto Maint. and Repair, Org Maint. Supply #1	4910-00-754-0643	W32867	
4.	D	Shop Equip, Contact Maint. Trk MTD	4940-00-294-9518	T10138	

STA FORM 668
1 NOV 83

OPERATOR/CREW
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

Your Preventive Maintenance Checks and Service table lists the inspection and care of your equipment required to keep it in good operating condition.

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

1. The number column of your PMCS is the source for the number used on the TM number column on DA Form 2404.

2. The interval column of your PMCS table tells you when to do a certain check or service.

   a. Before you operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.

   b. While you operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.

   c. After you operate. Be sure to perform your after (A) PMCS.

   d. Do your weekly (W) PMCS once a month.

3. The procedure column of your PMCS table tells you how to do the required checks and services. Carefully follow these instructions. If you do not have the tools, or if the procedure tells you to, contact unit maintenance.

4. If your equipment does not perform as required, refer to the manual troubleshooting section for possible problems. Report any malfunctions or failures on the proper DA Form 2404 or refer to DA Pamphlet 738-750.

NOTE

The terms ready/available and mission capable refer to the same status: Equipment is on hand and is able to perform all its combat missions without further endangering the lives of crew or operators in a combat environment (See DA Pamphlet 738-750.

5. Equipment is not ready/available if: column. This column tells you when and why your equipment cannot be used.

6. Always do your PMCS in the same order so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry.

7. When you do your PMCS, take along a rag or two.

8. While performing PMCS, observe WARNING and CAUTIONS preceding those operations 'which could endanger your safety or result in damage to the equipment.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in well ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100°F 138°F (38°C 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash you eyes with water and get medical aid immediately.

a. Keep it clean; dirt, grease, oil and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (P-D-680) to clean metal surfaces. Use soap and water when you clean rubber or plastic material.

b. Bolts, nuts, and screws: check that they are not loose, missing, bent or broken. You can't try them all with a tool, of course, but look for chipped paint, bare metal or rust around bolt heads. Tighten any bolt, nut, or screw that you find loose.

c. Welds: Look for loose or chipped paint, rust or gaps where parts are welded together. If you find a bad weld, report it to unit maintenance.

d. Electric wires and connectors: Look for cracked or broken insulation, bare wires and loose or broken connectors. Report damaged or loose wiring to unit maintenance.

e. Hoses and fluid lines: Look for wear, damage and leaks. Make sure clamps and fittings are tight. Wet spots show leaks but a stain around a fitting or connector can also mean a leak. If leakage comes from a loose fitting or connector, tighten the fitting or connector. If something is broken or worn out, report it to unit maintenance.

f. Vehicle must be on level ground in order to get correct fluid level measurement.

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY

ITEM NO	INTERVAL					ITEM TO BE INSPECTED PROCEDURE:CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
	B	D	A	W	M		
						NOTES **Perform weekly as well as before PMCS if:** a. You are the assigned operator, but have not operated the equipment in the last week. b. You are operating the equipment for the first time. **WARNING** **To avoid injury/death to personnel, or damage to equipment, do not run the equipment engine when performing before operations PMCS.** **WARNING** **Your safety, and the safety of those around you, depends upon YOU using care and good judgment in operation of equipment. Know the positions and functions of ALL CONTROLS before operating this equipment. Do not operate the equipment in an enclosed area unless exhaust gases are piped outside. Exhaust fumes can cause serious illness or death. Read and observe all warnings and cautions in the front of the operators manual before performing your PMCS.** **GENERAL** **Perform all daily and/or weekly lubrication of the equipment prior to operation. Check for loose/missing nuts, bolts/pins and cotter keys. Walk around the equipment. Check for obvious damage and rust.'**	

STA FORM 666

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES
B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY

ITEM NO	INTERVAL					ITEM TO BE INSPECTED PROCEDURE:CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
	B	D	A	W	M		
1	X					BOOM JIB: Check for bent chord angles, broken, bent or missing lattice (Boom cross bracing) **WARNING** **Do not touch sheave edges. Sharp edges may insure personnel. Visually check the sheaves.**	Bent chord angle. Bent, broken or missing lattice.
2	X					SHEAVES: Visually check for sharp edges and wear on the sheaves. Cut, frayed, worn or damaged cable indicates possible sharp edges on the sheaves. **WARNING** **Use leather gloves when handling wire rope.**	Sharp edge on a sheave.
3	X					WIRE ROPE, SOCKETS/WEDGES: Check for damaged wire rope. Broken strands, rusted wire, cuts or bird caging. Check for split sockets. **NOTE:** a. In running ropes, there are six randomly distributed broken wires in one rope lay, or three broken wires in one strand in one rope lay. b. In pendant or standing ropes, there is more than one broken wire in one rope lay. c. A loss of 1/3 of the original diameter of outside wires by abrasion, scrubbing or peening is found. d. There is rope damage from rust, corrosion or heat damage. e. There is kinking, crushing or evidence of bird caging.	Reference: TM5-725 See **Note:** **Socket split.** Any condition in the note to the left exist.

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES
B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY

ITEM NO	INTERVAL					ITEM TO BE INSPECTED PROCEDURE:CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED		EQUIPMENT IS NOT READY/AVAILABLE IF:
	B	D	A	W	M			
4	X					**HEADACHE BALL**:	Check for loose/missing hardward, or cracked ball.	Ball cracked.
5	X					**BOOM INSERT**:	Check for bent chord or lattice. Check for broken/damaged welds.	Any bend in the chord. Any bent lattice. Any broken weld.

UNIT
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

To make sure that your vehicle is ready for operation at all times, inspect it systematically so you can discover any defects and have them corrected before they result in serious damage or failure. The charts on the next few pages contain your unit PMCS. The item numbers indicate the sequence of minimum inspection requirements. If you're operating the vehicle and notice something wrong which could damage the equipment if you continue operation, stop operation immediately.

Record all deficiencies and shortcomings, along with the corrective action taken on a DA Form 2404. The Item Number column is the source for the numbers used on the TM Number column on DA Form 2404.

UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES

1. The item numbers of the table indicate the sequence of the PMCS. Perform at the intervals shown below:

    a. Do your (Q) PREVENTIVE MAINTENANCE quarterly (every three months) .

    b. Do your (S) PREVENTIVE MAINTENANCE semiannually (every six months) .

    c. Do your (A) PREVENTIVE MAINTENANCE annually (once every year) .

    d. Do your (B) PREVENTIVE MAINTENANCE biennially (one every two years) .

    e. Do your (H) PREVENTIVE MAINTENANCE at the hour interval listed.

    f. Do your (MI) PREVENTIVE MAINTENANCE at the mile interval listed.

2. If something doesn't work, troubleshoot it according to the instructions in this manual or the commercial manual or notify your supervisor.

3. Always do your preventive maintenance in the same order so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry.

4. If anything looks wrong and you can't fix it, write it down on your DA Form 2404. If you find something seriously wrong, report it to direct support as soon as possible.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in well ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

WARNING

Compressed air, used for cleaning purposes will not exceed 30 psi. Use only with effective chip guarding and personnel protective equipment (goggles/shield/gloves, etc.).

a. Keep it clean: dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (P-D-680) to clean metal surfaces. Use soap and water when you clean rubber or plastic material.

b. Bolts, nuts and screws: check that they are not loose, missing, bent, or broken. You can't try them all with a tool, of course, but look for chipped paint, bare metal or rust around bolt heads. Tighten any bolt, nut, or screw that you find loose.

c. Welds: look for loose or chipped paint, rust or gaps where parts are welded together. If you find a bad weld, report it to intermediate direct support.

d. Electric wires and connectors: look for cracked or broken insulation, bare wires and loose or broken connectors. Tighten loose connections and make sure the wires are in good condition.

e. Hoses and fluid lines: look for wear, damage and leaks. Make sure clamps and fittings are tight. Wet spots show leaks, but a stain around a fitting or connector can also mean a leak. If leakage comes from a loose fitting or connector, tighten the fitting or connector. If something is broken or worn out, either correct it or report it to intermediate direct support (refer to the Maintenance Allocation Chart).

5. It is necessary for you to know how fluid leaks affect the status of your equipment. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of your equipment. Learn and be familiar with them and REMEMBER when in doubt, notify your supervisor.

LEAKAGE DEFINITIONS FOR UNIT PMCS

CLASS I	Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
CLASS II	Leakage of fluid great enough to form drops, but not enough to cause drops to drip from the item being checked/inspected.
CLASS III	Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

CAUTION

Equipment operation is allowable with minor leakage (Class I or II). Of course consideration must be given to the fluid capacity in the item/system being check/inspected. When operating with Class I or II leaks, continue to check fluid levels as required on your PMCS. Class II leaks should be reported to your supervisor or unit maintenance.

UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES

M - MONTHLY Q - QUARTERLY S - SEMIANNUALLY A - ANNUALLY B - BIENNIALLY H - HOURS MI - MILES

ITEM NO.	INTERVAL							ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED **PERFORM ALL OPERATOR PMCS FIRST**
	M	**Q**	**S**	**A**	**B**	**H**	**MI**	
	1			X				BOOM JIB AND INSERT: Check for bent chord and lattice IAW the instructions and standards in appendix. **WARNING!!** **Use leather gloves when handling wire rope.**
	2			X				WIRE ROPE: Check for wire rope for wear IAW the instructions and standards in appendix.

STA FORM 667
1 JULY 86

PREVIOUS EDITION IS OBSOLETE

THIS PAGE MISSING NOT AVAILABLE FOR DIGITIZATION.

APPENDIX C. - REPAIR PARTS AND SPECIAL TOOLS LIST

OPERATOR, UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST (INCLUDING DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST)

SECTION I. INTRODUCTION

1. Scope.

This RPSTL lists and authorizes spares and repair parts, special tools, special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of Operator, Unit Maintenance, Direct Support and General Support Maintenance of the Insert Jib and Headache Ball. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

2. General.

In addition to Section I. Introduction, this Repair Parts and Special Tools List is divided into the following sections:

a. *Section II. Repair Parts List.* A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed in item name sequence. Repair kits are listed separately in their own functional group within Section II. Repair parts for repairable special tools are also listed in the section. Items listed are shown on the associated illustration(s)/figure(s).

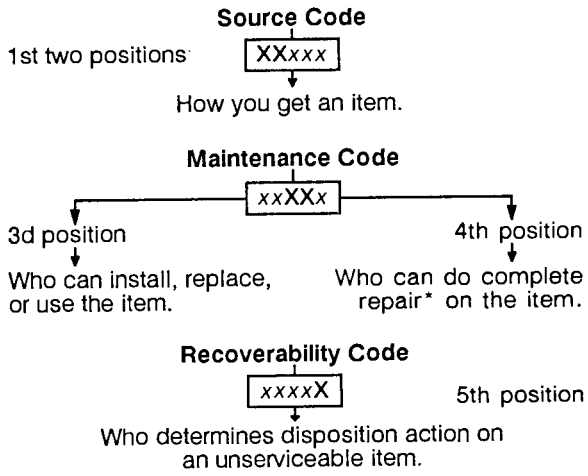
b. *Section III. Special Tools List.* A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE column) for the performance of maintenance.

c. *Section IV. Cross-reference Index.* A list, in National Item Identification Number (NIIN) sequence, of all National stock numbered items appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance. The figure and item number index lists figure and item numbers in alphanumeric sequence and cross-references NSN, CAGE, and part numbers.

3. Explanation of Columns (Sections II and III).

a. *ITEM NO. (Column (1)).* Indicates the number used to identify items called out in the illustration.

b. *SMR CODE (Column (2)).* The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instructions, as shown in the following breakout:



**Complete Repair.* Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

(1) *Source Code.* The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follows:

Code	Application/Explanation
PA *PB* *PC*** *PD* *PE* *PF* *PG*	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3d position of the SMR code. **Items coded PC are subject to deterioration.
KD *KF* *KB*	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.
M -(Made at UM/ AVUM Level) *MF-(Made at DSI AVUM Level)* *MH-(Made at GS Level)* *ML-(Made at Specialized Repair Activity (SRA))* *MD-(Made at Depot)*	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the Bulk Material group of the repair parts list in this RPSTL. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AO-(Assembled by UMI AVUM Level) *AF-(Assembled by DS/AVIM Level)* *AH-(Assembled by GS Category)* *AL-(Assembled by SRA)* *AD-(Assembled by Depot)*	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicted by the source code. If the 3d position code of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA -	Do not requisition an "XA"-coded item. Order its next higher assembly. (Also, refer to the NOTE following.)
XB -	If an "XB" item is not available from salvage, order it using the CAGE and part number given.
XC -	Installation drawing, diagram, Instruction sheet, field service drawing, that Is Identified by the manufacturer's part number.
XD -	Item is not stocked. Order an "XD"-coded item through normal supply channels using the CAGE and part number given, if no NSN is available.

NOTE : **Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 700-42.**

(2) *Maintenance Code*. Maintenance codes tell you the level(s) of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following levels of maintenance.

Code	Application/Explanation
C -	Crew or operator maintenance done within unit maintenance or aviation unit maintenance.
O -	Unit maintenance or aviation unit category can remove, replace, and use the item.
F -	Direct support or aviation intermediate level can remove, replace, and use the item.
H -	General support level can remove, replace, and use the item.
L -	Specialized repair activity can remove, replace, and use the item.
D -	Depot level can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (i.e., perform all authorized repair functions). (NOTE: Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.) This position will contain one of the following maintenance codes:

Code	Application/Explanation
O -	Unit maintenance or aviation unit is the lowest level that can do complete repair of the item.
F -	Direct support or aviation Intermediate is the lowest level than can do complete repair of the item.
H -	General support is the lowest level that can do complete repair of the item.
L -	Specialized repair activity Is the lowest level that can do complete repair of the item.
D -	Depot is the lowest level that can do complete repair of the item.
Z -	Nonreparable. No repair is authorized.
B -	No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B"-coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

(3) *Recoverability Code.* Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR code as follows:

Code	Application/Explanation
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the 3d position of the SMR code.
O -	Reparable Item. When uneconomically reparable, condemn and dispose of the item at unit maintenance or aviation unit level.
F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support or aviation intermediate level.
H -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support level.
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item not authorized below depot level.
L -	Reparable item. Condemnation and disposal of item not authorized below specialized repair activity (SRA).
A -	Item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. *CAGEC (Column (3)).* The Commercial and Government Entity (CAGE) Code (C) is a 5-digit alphanumeric code which Is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

d. *PART NUMBER (Column (4)).* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

NOTE: When you use an NSN to requisition an Item, the item you receive may have a different part number from the part ordered.

e. *DESCRIPTION AND USABLE ON CODE (UOC) (Column (5)).* This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) Physical security classification. Not Applicable.

(3) Items that are included in kits and sets are listed below the name of the kit or set on Figure KIT.

(4) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(5) Part numbers for bulk materials are referenced in this column in the line item entry for the item to be manufactured/fabricated.

(6) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line(s) of the description (before UOC). Not Applicable.

(7) The usable on code, when applicable (see paragraph 5, Special Information).

(8) In the Special Tools List section, the basis of issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is increased proportionately.

(9) The statement "END OF FIGURE" appears just below the last item description in Column 5 for a given figure in both Section II and Section III.

f. *QTY (Column (6)).* The QTY (quantity per figure column) Indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

4. Explanation of Columns (Section IV).

a. *NATIONAL STOCK NUMBER (NSN) INDEX.*

(1) *STOCK NUMBER column*. This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN (i.e., 5305-01-674-1467). When using this column to locate an item, ignore the first 4 digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

NSN
NIIN

(2) *FIG. column*. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II and Section III.

(3) *ITEM column*. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. PARTNUMBER INDEX. Part numbers in this index are listed by part number in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

(1) *CAGEC column.* The Commercial and Government Entity (CAGE) Code (C) is a 5-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(2) *PART NUMBER column*. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

(3) *STOCK NUMBER column*. This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGE columns to the left.

(4) *FIG. column*. This column lists the number of the figure where the item is identified/located in Sections II and 111.

(5) *ITEM column*. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

c. *FIGURE AND ITEM NUMBER INDEX.*

(1) *FIG. column.* This column lists the number of the figure where the item is identified/located in Sections II and III.

(2) *ITEM column*. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

(3) *STOCK NUMBER column*. This column lists the NSN for the item.

(4) *CAGEC column.* The Commercial and Government Entity (CAGE) Code (C) is a 5-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(5) *PART NUMBER column*. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards and inspection requirements to identify an item or range of items.

5. Special Information.

a. *USABLE ON CODE*. The usable on code appears in the lower left corner of the Description column heading. Usable on codes are shown as "UOC:

" in the Description column (justified left) on the first line following applicable item description/ nomenclature. Uncoded items are applicable to all models. Identification of the usable on codes used in the RPSTL are:

Code	Used On
CCN	Boom Extension (10 ft)
CCQ	Boom Jib (15 ft)

b. *FABRICATION INSTRUCTIONS*. Bulk materials required to manufacture items are listed in the Bulk Material Functional Group of this RPSTL. Part numbers for bulk materials are also referenced in the Description column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in *TM 5-3810-303-24*.

c. *KITS*. Line item entries for repair parts kits appear in group 9401 in Section II. Not Applicable.

d. *INDEX NUMBERS*. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the National Stock Number/Part Number Index and the bulk material list in Section II.

e. *ASSOCIATED PUBLICATIONS.* The publications listed below pertain to the Insert Jib and Headache Ball:

Publication	Short Title
TM 5-3810-303-10	40 Ton Crane Crawler
TM 5-3810-303-24	40 Ton Crane Crawler
TM 5-3810-303-24P	40 Ton Crane Crawler
TM 5-3815-221-14&P	Backhoe
TM 5-3815-222-14&P	Shovel
TM 5-3815-223-14&P	Fairlead and Laggings

6. How to Locate Repair Parts.

a. *When National Stock Number or Part Number is Not Known:*

(1) *First.* Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) *Second.* Find the figure covering the assembly group or subassembly group to which the item belongs.

(3) *Third.* Identify the Item on the figure and use the Figure and Item Number Index to find the NSN.

b. When National Stock Number or Part Number is Known:

(1) *First.* Using the National Stock Number or Part Number Index, find the pertinent National Stock Number or Part Number. The NSN index is in National Item Identification Number (NIIN) sequence (see 4.a.(1)). The part numbers in the Part Number index are listed in ascending alphanumeric sequence (see 4.b). Both indexes cross-reference you to the illustration/figure and item number of the item you are looking for.

(2) *Second.* Turn to the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

7. Abbreviations.

For standard abbreviations see MIL-STD-12D, Military Standard Abbreviations for Use on Drawings, Specifications, Standards, and in Technical Documents.

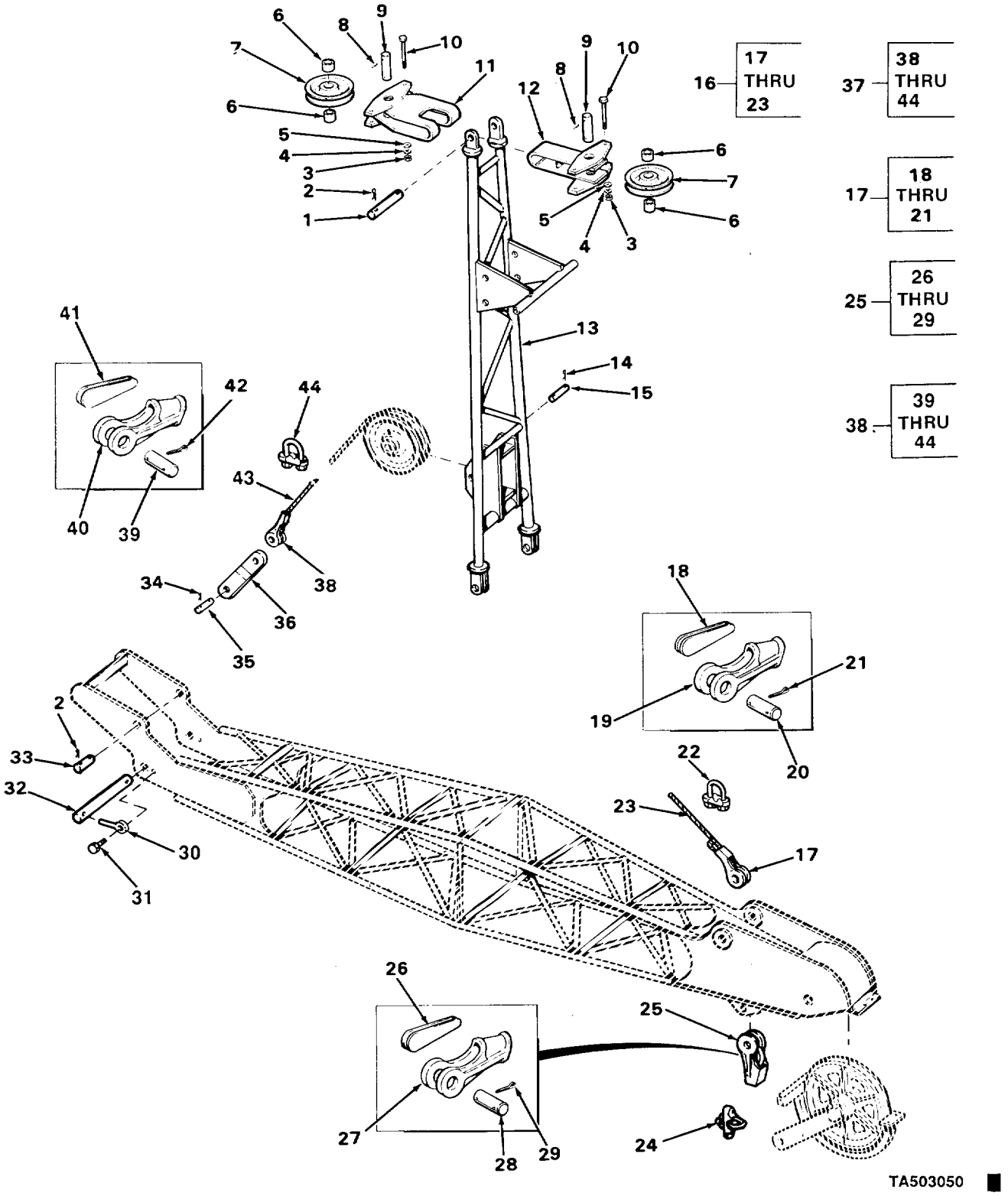


Figure 1. Jib assembly.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 74 CRANE ATTACHMENTS	
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 1 JIB ASSEMBLY	
1	PFOZZ	27315	19F69D40	ROD,STRAIGHT,HEADLE UOC:CCQ	1
2	PAOZZ	96906	MS24665-752	PIN,COTTER UOC:CCQ	6
3	PAOZZ	96906	MS51967-14	NUT,PLAIN,HEXAGON UOC:CCQ	4
4	PAOZZ	96906	MS35340-48	WASHER,LOCK UOC:CCQ	6
5	PAOZZ	96906	MS27183-18	WASHER,FLAT UOC:CCQ	4
6	PFOZZ	27315	18P931D90	SPACER,SLEEVE UOC:CCQ	4
7	PFOZZ	27315	7P558	PULLEY,GROOVE UOC:CCQ	2
8	PAOZZ	96906	MS24665-687	PIN,COTTER UOC:CCQ	2
9	PFOZZ	27315	219T596	PIN,STRAIGHT,HEADED UOC:CCQ	2
10	PAOZZ	96906	MS90728-125	SCREW,CAP,HEXAGON H UOC:CCQ	4
11	PFOZZ	27315	208N61	BRACKET,EYE,ROTATIN UOC:CCQ	1
12	PFOZZ	27315	208N60	BRACKET,EYE,NONROTA UOC:CCQ	1
13	PFOZZ	27315	211J477	BOOM JIM,CRANE UOC:CCQ	1
14	PAOZZ	96906	MS24665-623	PIN,COTTER UOC:CCQ	2
15	PFOZZ	27315	19F57D20	PIN,STRAIGHT,HEADLE UOC:CCQ	1
16	PFOZZ	27315	230P24D1	WIRE ROPE ASSEMBLY UOC:CCQ	1
17	PFOZZ	27315	908P39-9	.SOCKET,WIRE ROPE UOC:CCQ	1
18	PFOZZ	27315	8T89C2	..WEDGE,WIRE ROPE SOC UOC:CCQ	1
19	PFOZZ	27315	8P304	..SOCKET,WIRE ROPE UOC:CCQ	1
20	PFOZZ	27315	19F66D58	..PIN,STRAIGHT,HEADLE UOC:CCQ	1
21	PFOZZ	96906	MS24665-687	..PIN,COTTER UOC:CCQ	2
22	PFOZZ	02280	G450-3/4	.CLIP UOC:CCQ	2
23	MFOZZ	80967	12401-46	.WIRE ROPE MAKE FROM WIRE ROPE P/N	V

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				12401-500, 46-FEET LONG ..... UOC:CCQ	
* 24	PFOZZ	02280	G450-3/4	CLIP ..... UOC:CCQ	1
* 25	PFOZZ	27315	908P39-9	SOCKET,WIRE ROPE ..... UOC:CCQ	1
* 26	PFOZZ	27315	8T89C2	.WEDGE,WIRE ROCK SOC ..... UOC:CCQ	1
* 27	PFOZZ	27315	8P304	.SOCKET,WIRE ROPE ..... UOC:CCQ	1
* 28	PFOZZ	27315	19F66D58	.PIN,STRAIGHT,HEADLE ..... UOC:CCQ	1
* 29	PAOZZ	96906	MS24665-687	.PIN,COTTER ..... UOC:CCQ	2
* 30	PFOZZ	27315	220T19	CONNECTOR,ROD END ..... UOC:CCQ	2
* 31	PAFZZ	96906	MS18154-113	SCREW,CAP,HEXAGON H ..... UOC:CCQ	2
* 32	PFOZZ	27315	19T4067	ROD,STRAIGHT,HEADLE ..... UOC:CCQ	1
* 33	PFOZZ	27315	19F69D3	PIN,STRAIGHT,HEADLE ..... UOC:CCQ	2
* 34	PAOZZ	96906	MS24665-753	PIN,COTTER ..... UOC:CCQ	4
* 35	PFOZZ	27315	19F73D11	PIN,STRAIGHT,HEADLE ..... UOC:CCQ	2
* 36	PFOZZ	27315	6P1988D2	CONNECTING LINK,RIG ..... UOC:CCQ	2
* 37	PFOZZ	27315	230P24D2	WIRE ROPE ASSEMBLY ..... UOC:CCQ	1
* 38	PFOZZ	27315	908P39-9	.SOCKET,WIRE ROPE ..... UOC:CCQ	1
* 39	PFOZZ	27315	19F66D58	..PIN,STRAIGHT,HEADLE ..... UOC:CCQ	1
* 40	PFOZZ	27315	8P304	..SOCKET,WIRE ROPE ..... UOC:CCQ	1
* 41	PFOZZ	27315	8T89C2	..WEDGE,WIRE ROPE SOC ..... UOC:CCQ	1
* 42	PAOZZ	96906	MS24665-687	..PIN,COTTER ..... UOC:CCQ	2
* 43	MFOZZ	80967	12401-61	..WIRE ROPE MAKE FROM WIRE ROPE P/N 12401-500, 61-FEET LONG ..... UOC:CCQ	V
* 44	PFOZZ	02280	G450-3/4	..CLIP ..... UOC:CCQ	1

END OF FIGURE

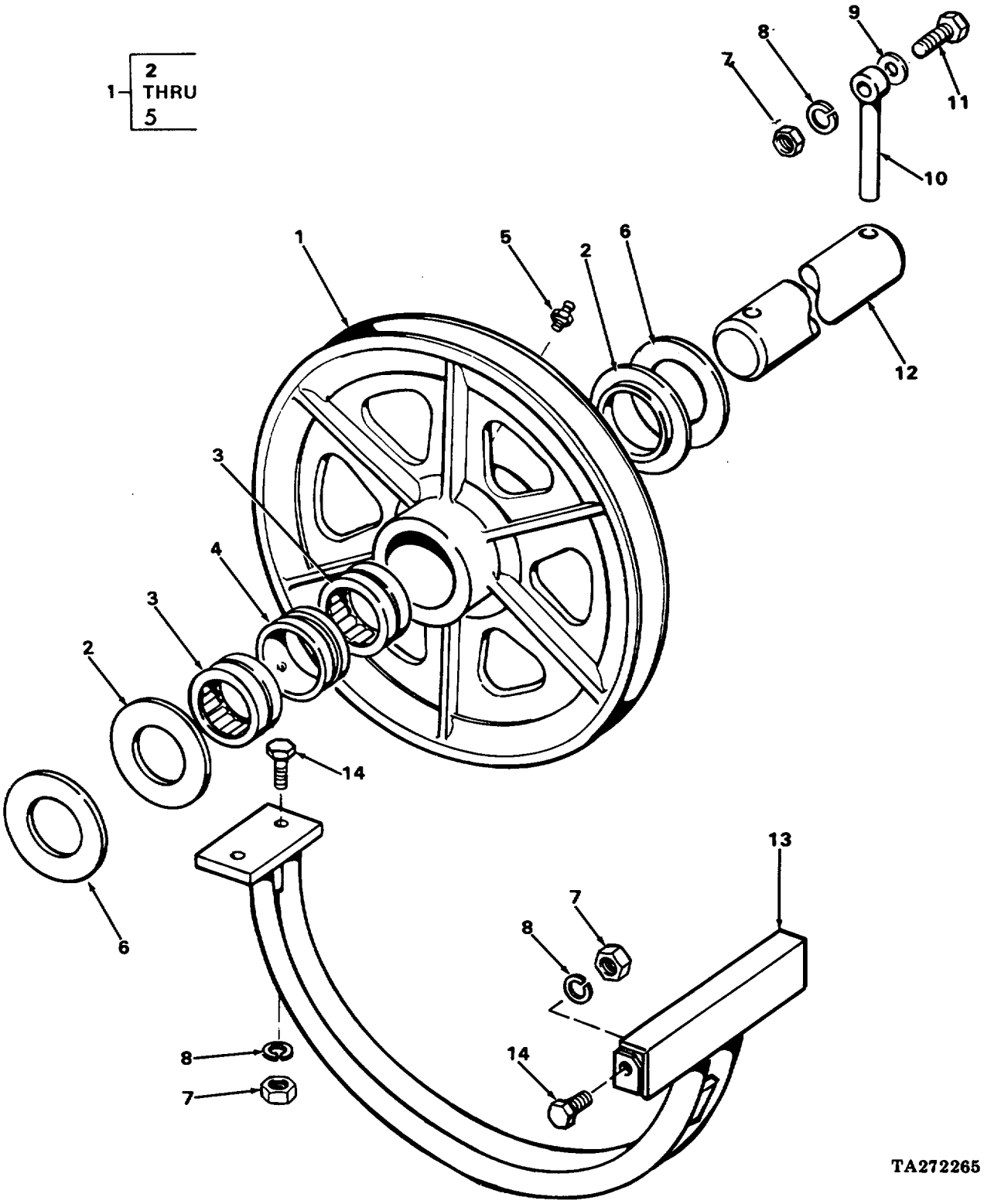


Figure 2. Jib point sheave.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
					GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
					FIG. 2 JIB POINT SHEAVE	
*	1	PFOOO	27315	7N64C1F2	PULLEY,GROOVE UOC:CCQ	1
	2	PFOZZ	27315	25T896	.HOUSING,BEARING UNI UOC:CCQ	2
	3	PFOZZ	96906	MS51961-33	.BEARING,ROLLER,NEED UOC:CCQ	2
	4	PFOZZ	27319	18T5593	.BEARING,SLEEVE UOC:CCQ	1
	5	PFOZZ	96906	MS15003-1	.FITTING,LUBRICATION UOC:CCQ	1
	6	PFOZZ	27315	18T5594	WASHER,FLAT UOC:CCQ	2
	7	PAOZZ	96906	MS51967-14	NUT,PLAIN,HEXAGON UOC:CCQ	6
	8	PAOZZ	96906	MS35340-48	WASHER,LOCK UOC:CCQ	6
	9	PAOZZ	96906	MS27183-19	WASHER,FLAT UOC:CCQ	2
	10	PFOZZ	27315	20T551	PIN,STRAIGHT,HEADED UOC:CCQ	2
	11	PAOZZ	96906	MS51095-416	SCREW,CAP,HEXAGON H UOC:CCQ	2
	12	PFOZZ	27315	19T3803	ROD,STRAIGHT,HEADLE UOC:CCQ	1
*	13	XDOZZ	27315	8P506	GUARD,MECHANICAL DR UOC:CC’	1
	14	PAOZZ	96906	MS90728-113	SCREW,CAP,HEXAGON H UOC:CCQ	4
					END OF FIGURE	

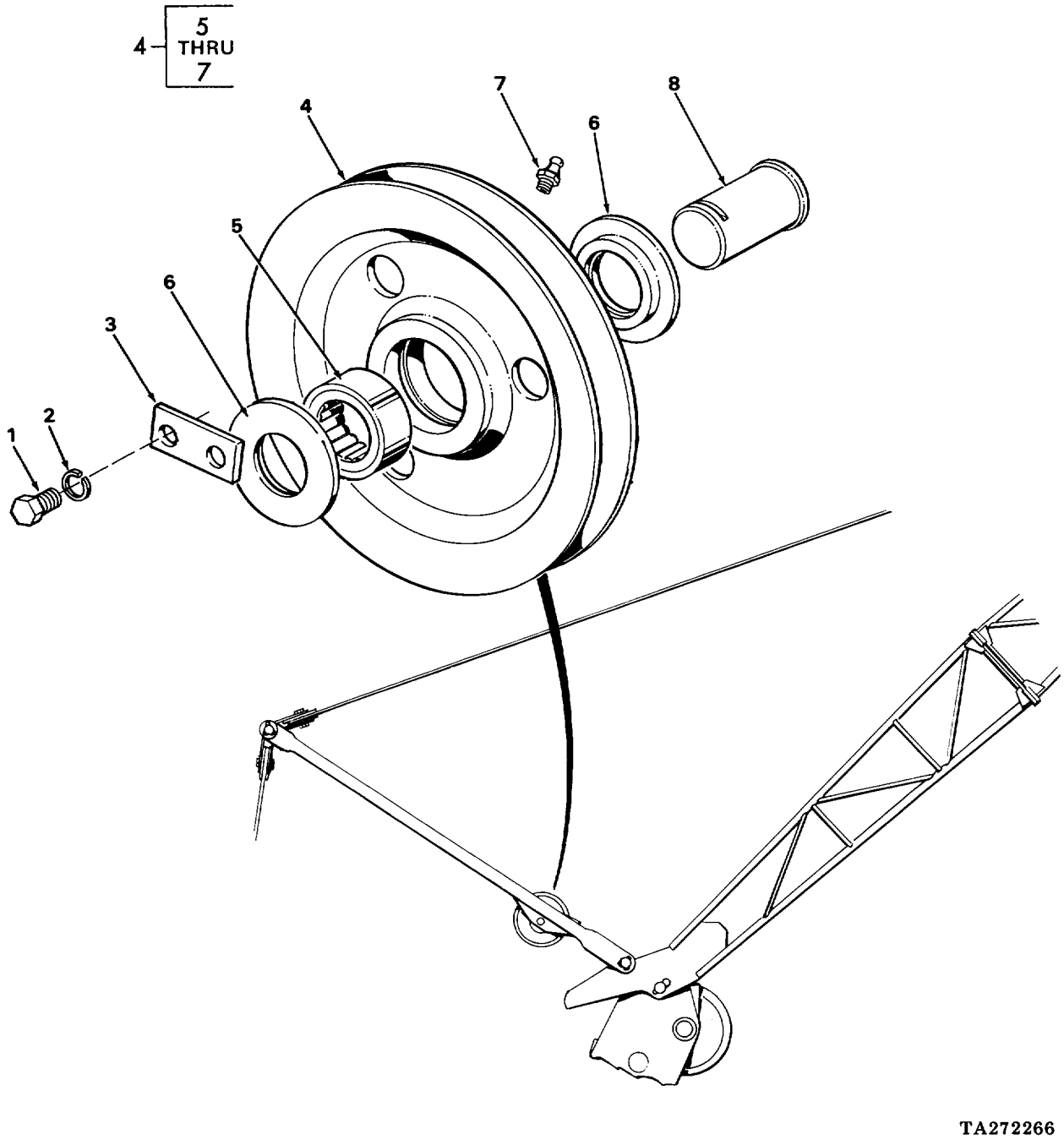


Figure 3. Jib strut sheave.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
					GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
					FIG. 3 JIB STRUT SHEAVE	
	1	PAOZZ	96906	MS90728-158	SCREW,CAP,HEXAGON H UOC:CCQ	2
	2	PAOZZ	96906	MS35340-50	WASHER,LOCK UOC:CCQ	2
	3	PFOZZ	27315	18T145	SPACER,PLATE UOC:CCQ	1
*	4	PFOOO	27315	7N190F2	PULLEY,GROOVE UOC:CCQ	1
	5	PFOZZ	43334	CW-99209	.BEARING,ROLLER,JOUR UOC:CCQ	1
	6	PFOZZ	27315	25T895	.PLATE,RETAINING,BEA UOC:CCQ	2
	7	PAOZZ	96906	MS15003-1	.FITTING,LUBRICATION UOC:CCQ	1
	8	PFOZZ	27315	19T4492	PIN,STRAIGHT,HEADED UOC:CCQ	1

END OF FIGURE

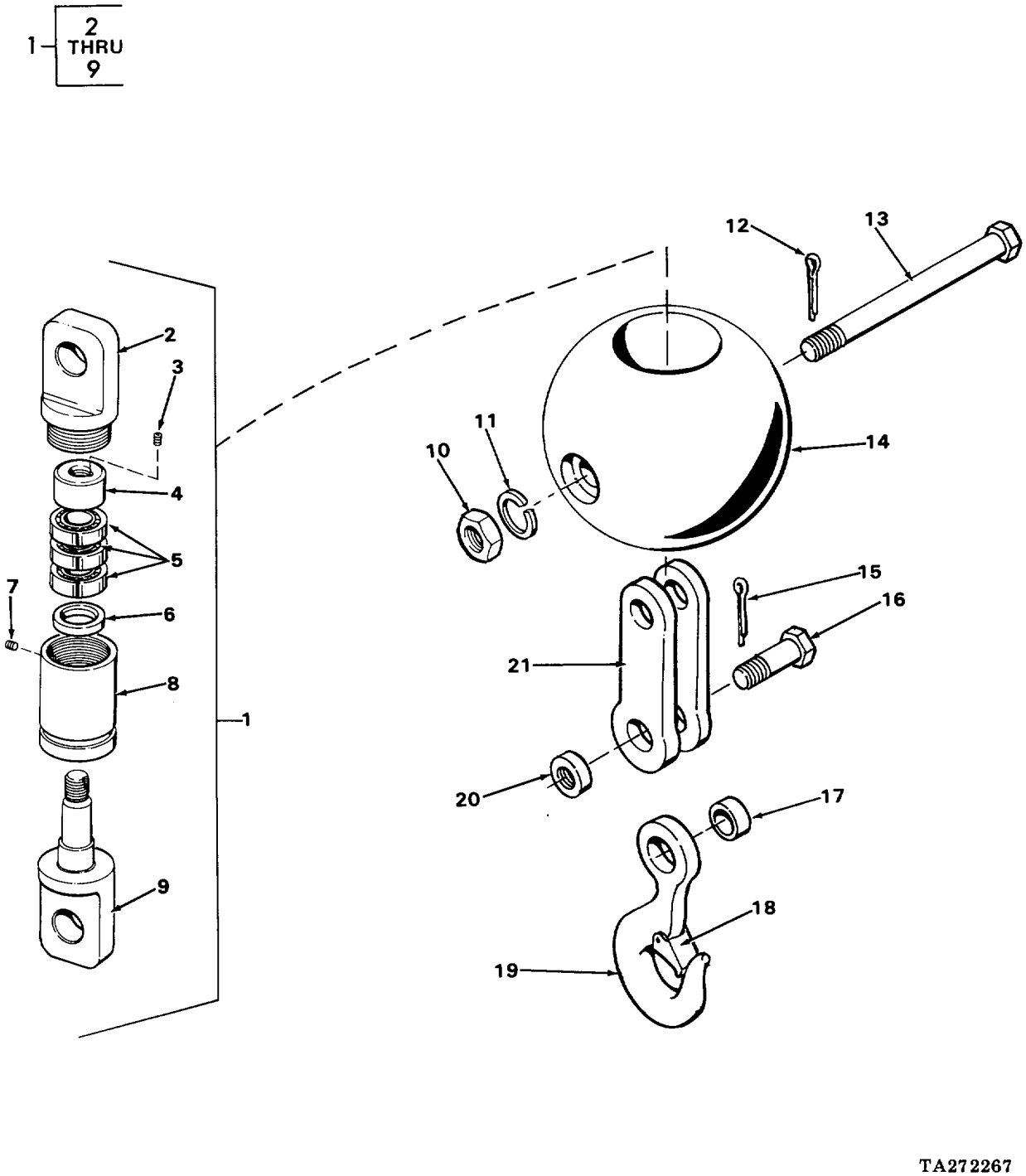
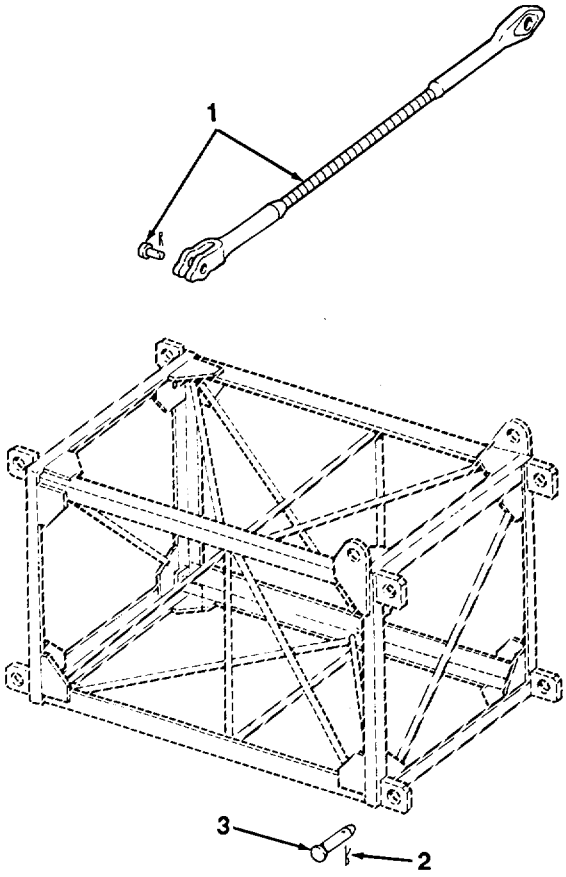


Figure 4. Headache ball assembly.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
					GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
					FIG. 4 HEADACHE BALL ASSEMBLY	
*	1	PFOOO	96509	EE-3-3-PH	BLOCK AND TACKLE.....1 UOC:CCQ	
	2	PFOZZ	96509	E-503A	.CAP,BLOCK,SWIVEL .....1 UOC:CCQ	
	3	PFOZZ	96509	E-507	.SETSCREW.....1 UOC:CCQ	
	4	PFOZZ	96509	E-506	.NUT .....1 UOC:CCQ	
	5	PFOZZ	96509	E-504	.BEARING .....3 UOC:CCQ	
	6	PFOZZ	96509	E-505	.PACKING,PREFORMED .....1 UOC:CCQ	
	7	PFOZZ	96509	E-508	.SETSCREW.....1 UOC:CCQ	
	8	PFOZZ	96509	E-502	.BARREL,SWIVEL .....1 UOC:CCQ	
	9	PFOZZ	96509	E-501A	.EYE HOOK.....1 UOC:CCQ	
	10	PAOZZ	96509	X3093	NUT,PLAIN,HEXAGON .....1 UOC:CCQ	
	11	PFOZZ	96509	X409BA	WASHER,LOCK.....1 UOC:CCQ	
	12	XDOZZ	96509	X509B	PIN,COTTER .....1 UOC:CCQ	
	13	PFOZZ	96509	X-211B	SCREW.....1 UOC:CCQ	
	14	PFOZZ	96509	X-11	BALL,WRECKING,HALF .....2 UOC:CCQ	
	15	XDOZZ	96509	X1209B	PIN,COTTER .....1 UOC:CCQ	
	16	PFOZZ	96509	X1009B	PIN .....1 UOC:CCQ	
	17	PFOZZ	96509	X-910C	HOOK,WASHER.....1 UOC:CCQ	
	18	PFOZZ	96509	X810CL	LEVER,LOCK-RELEASE.....1 UOC:CCQ	
	19	PFOZZ	96509	X810C	HOOK.HOIST.....1 UOC:CCQ	
	20	PFOZZ	96509	X1109B	NUT,PLAIN,HEXAGON .....1 UOC:CCQ	
	21	PFOZZ	96509	X113B	BAR STRAP,HOOK END,.....2 UOC:CCQ	

END OF FIGURE



TA503051

Figure 5. Boom insert.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 5 BOOM INSERT	
* 1	PFOZZ	27315	30U163D1	WIRE ROPE ASSEMBLY ..... UOC:CCN	2
* 2	PFOZZ	96906	MS24665-687	PIN,COTTER ..... UOC:CCN	4
* 3	PFOZZ	27315	19T4395	PIN,STRAIGHT,HEADED ..... UOC:CCN	4
				END OF FIGURE	

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 95 GENERAL USE STANDARDIZED PARTS	
				GROUP 9501 BULK MATERIEL	
				FIG. BULK	
* 1	PAOZZ	80967	12401-500	ROPE,WIRE.....V UOC:CCQ	

END OF FIGURE

CROSS- REFERENCE-INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
5310-00-045-5001	3	2
4730-00-050-4208	2	5
	3	7
5315-00-059-0238	1	34
5305-00-071-2069	2	14
5305-00-071-2081	1	10
3110-00-115-6094	3	5
5315-00-187-9589	1	8
	1	21
	1	29
	1	42
	5	2
3110-00-227-3256	2	3
5315-00-297-2444	1	14
5340-00-439-4894	1	30
5305-00-724-7219	3	1
5310-00-768-0318	1	3
	2	7
5340-00-786-1663	1	22
	1	24
	1	44
5310-00-809-3079	2	9
5310-00-809-5999	1	5
5310-00-634-7606	1	4
	2	8
5315-00-846-4297	1	2
5305-00-915-6087	1	31
5305-00-964-0589	2	11
4010-01-168-5554	5	1
4030-01-168-9303	1	18
	1	26
	1	41
5365-01-169-2128	1	6
5315-01-169-2175	1	20
	1	28
	1	39
5310-01-169-2927	2	6
3120-01-169-4444	2	4
5315-01-169-4459	5	3
3130-01-169-9446	2	2
5315-01-169-9687	3	8
5315-01-170-0793	1	33
5315-01-170-0794	1	35
5340-01-170-3879	1	1
5315-01-170-6450	1	15
5315-01-171-0749	1	9
5340-01-171-1093	4	18
5340-01-171-4046	1	32
4030-01-171-5985	4	19
5305-01-171-6102	4	13
5310-01-171-6255	4	20
5310-01-171-6399	4	11
5340-01-171-8222	2	12
5315-01-172-0623	2	10
3040-01-172-0860	1	11
4030-01-180-4885	1	19
	1	27
	1	40
3815-01-182-6883	4	14
3815-01-183-0013	4	8
3040-01-183-0427	1	12
3815-01-183-0459	1	13
3040-01-183-4805	1	36
3020-01-183-4838	1	7
3110-01-183-5532	4	5
5310-01-183-5533	4	4
5330-01-183-6923	4	6
5340-01-183-8627	4	17
4010-01-184-0947	BULK	1
3020-01-184-4713	2	1
3020-01-184-7130	3	4
5315-01-185-0093	4	16
5305-01-185-3478	4	3
2590-01-185-6719	4	21
4030-01-185-7401	1	17
	1	25
	1	38
5365-01-185-7801	3	3
5305-01-187-0486	4	7
5340-01-187-4720	4	9
5310-01-188-1154	4	10
3940-01-192-2143	4	1
3815-01-192-4509	4	2
4010-01-1Q3-7037	1	37
4010-01-205-2968	1	16
3110-01-214-7823	3	6

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
43334	CW-99209	3110-00-115-6094	3	5
96509	E-501A	5340-01-187-4720	4	9
96509	E-502	3815-01-183-0018	4	8
96509	E-503A	3815-01-192-4509	4	2
96509	E-504	3110-01-183-5532	4	5
96509	E-505	5330-01-183-6923	4	6
96509	E-506	5310-01-183-5533	4	4
96509	E-507	5305-01-185-3478	4	3
96509	E-508	5305-01-187-0486	4	7
96509	EE-3-3-PH	3940-01-192-2143	4	1
02280	G450-3/4	5340-00-786-1663	1	22
			1	24
			1	44
96906	MS15003-1	4730-00-050-4208	2	5
			3	7
96906	MS18154-113	5305-00-915-8087	1	31
96906	MS24665-623	5315-00-297-2444	1	14
96906	MS24665-687	5315-00-187-9589	1	8
			1	21
			1	29
			1	42
			5	2
96906	MS24665-752	5315-00-846-4297	1	2
96906	MS24665-753	5315-00-059-0238	1	34
96906	MS27183-18	5310-00-809-5998	1	5
96906	MS27183-19	5310-00-809-3079	2	9
96906	MS35340-48	5310-00-834-7606	1	4
			2	8
96906	MS35340-50	5310-00-045-5001	3	2
96906	MS51095-416	5305-00-964-0589	2	11
96906	MS51961-33	3110-00-227-3256	2	3
96906	MS51967-14	5310-00-768-0318	1	3
			2	7
96906	MS90728-113	5305-00-071-2069	Z	14
96906	MS90728-125	5305-00-071-2081	1	10
96906	MS90728-158	5305-00-724-7218	3	1
96509	X-11	3815-01-182-6883	4	14
96509	X-211S	5305-01-171-6102	4	13
96509	X-910C	5340-01-183-8627	4	17
96509	X1009B	5315-01-185-0093	4	16
96509	X1109B	5310-01-171-6255	4	20
96509	X113B	2590-01-185-6719	4	21
96509	X12098		4	15
96509	X3098	5310-01-188-1154	4	10
96509	X4098A	5310-01-171-6399	4	11
96509	X509B		4	12
96509	XB10C	4030-01-171-59d5	4	19
96509	X810CL	5340-01-171-1093	4	18
80967	12401-46		1	23
80967	12401-500	4010-01-184-0847	BULK	1
80967	12401-61		1	43

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
27315	18P931D90	5365-01-169-2128	1	6
27315	18T145	5365-01-185-7801	3	3
27315	18T5593	3120-01-169-4444	2	4
27315	18T5594	5310-01-169-2927	2	6
27315	19F57D20	5315-01-170-6450	1	15
27315	19F66D58	5315-01-169-2175	1	20
			1	28
			1	39
27315	19F6903	5315-01-170-0793	1	33
27315	19F69D40	5340-01-170-3879	1	1
27315	19F73D11	5315-01-170-0794	1	35
27315	19T3803	5340-01-171-8222	2	12
27315	19T4067	5340-01-171-4046	1	32
27315	19T4395	5315-01-169-4459	5	3
27315	19T4492	5315-01-169-9687	3	8
27315	20T551	5315-01-172-0623	2	10
27315	208N60	3040-01-183-0427	1	12
27315	208N61	3040-01-172-0860	1	11
27315	211J477	3315-01-183-0459	1	13
27315	219T596	5315-01-171-0749	1	9
27315	220T19	5340-00-439-4894	1	30
27315	230P2401	4010-01-205-2968	1	16
27315	230P2402	4010-01-193-7037	1	37
27315	25T895	3110-01-214-7823	3	6
27315	25T896	3130-01-169-9446	2	2
27315	30U16301	4010-01-168-5554	5	1
27315	6P1988D2	3040-01-183-4805	1	36
27315	7N190F2	3020-01-184-7130	3	4
27315	7N64C1F2	3020-01-184-4713	2	1
27315	7P558	3020-01-183-4838	1	7
27315	8P304	4030-01-180-4885	1	19
			1	27
			1	40
27315	8P506		2	13
27315	8T89C2	4030-01-168-9303	1	18
			1	26
			1	41
27315	908P39-9	4030-01-185-7401	1	17
			1	25
			1	38

CROSS REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
BULK	1	4010-01-184-0847	80967	12401-500
1	1	5340-01-170-3879	27315	19F69040
1	2	5315-00-846-4297	96906	MS24665-752
1	3	5310-00-768-0318	96906	MS51967-14
1	4	5310-00-834-7605	96906	MS35340-48
1	5	5310-00-809-5998	96906	MS27183-18
1	6	5365-01-169-2128	27315	18P931090
1	7	3020-01-183-4838	27315	7P558
1	8	5315-00-187-9589	96906	MS24665-687
1	9	5315-01-171-0749	27315	219T596
1	10	5305-00-071-2081	96906	MS90728-125
1	11	3040-01-172-0860	27315	208N61
1	12	3040-01-183-0427	27315	208N60
1	13	3815-01-183-0459	27315	211J477
1	14	5315-00-297-2444	96906	MS24665-623
1	15	5315-01-170-6450	27315	19F57020
1	16	4010-01-205-2968	27315	230P2401
1	17	4030-01-185-7401	27315	908P39-9
1	1q	4030-01-168-9303	27315	8T89C2
1	19	4030-01-180-4885	27315	8P304
1	20	5315-01-169-2175	27315	19F66D58
1	21	5315-00-187-9589	96906	M524665-687
1	22	5340-00-786-1663	02280	G450-3/4
1	23		80967	12401-46
1	24	5340-00-786-1663	02280	G450-3/4
1	25	4030-01-185-7401	27315	908P39-9
1	26	4030-01-168-9303	27315	8T89C2
1	27	4030-01-180-4885	27315	8P304
1	23	5315-01-169-2175	27315	19F66D58
1	29	5315-00-187-9589	96906	MS24665-687
1	30	5340-00-439-4894	27315	220T19
1	31	5305-00-915-8087	96906	MS18154-113
1	32	5340-01-171-4046	27315	19T4067
1	33	5315-01-170-0793	27315	19F69D3
1	34	5315-00-059-0238	96906	MS24665-753
1	35	5315-01-170-0794	27315	19F73D11
1	36	3040-01-183-4805	27315	6P1988D2
1	37	4010-01-193-7037	27315	230P24D2
1	33	4030-01-185-7401	27315	908P39-9
1	39	5315-01-169-2175	27315	19F66D58
1	40	4030-01-180-4885	27315	8P304
1	41	4030-01-168-9303	27315	8T89C2
1	42	5315-00-187-9589	96906	MS24665-687
1	43		80967	12401-61
1	44	5340-00-786-1663	02280	G450-3/4
2	1	3020-01-184-4713	27315	7N64C1F2
2	2	3130-01-169-9446	27315	25T896
2	3	3110-00-227-3256	96906	MS51961-33
2	4	3120-01-169-4444	27315	18T5593
2	5	4730-00-050-4208	96906	MS15003-1
2	6	5310-01-169-2927	27315	18T5594

CROSS REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
2	7	5310-00-768-0318	96906	MS51967-14
2	8	5310-00-834-7606	96906	MS35340-48
2	9	5310-00-809-3079	96906	MS27183-19
2	10	5315-01-172-0623	27315	20T551
2	11	5305-00-964-0589	96906	MS51095-416
2	12	5340-01-171-8222	27315	19T3803
2	13		27315	8P506
2	14	5305-00-071-2069	96906	MS90728-113
3	1	5305-00-724-7218	96906	MS90728-158
3	2	5310-00-045-5001	96906	MS35340-50
3	3	5365-01-185-7801	27315	18T145
3	4	3020-01-184-7130	27315	7N190F2
3	5	3110-00-115-6094	43334	CW-99209
3	6	3110-01-214-7823	27315	25T895
3	7	4730-00-050-4208	96906	MS15003-1
3	8	5315-01-169-9687	27315	19T4492
4	1	3940-01-192-2143	96509	EE-3-3-PH
4	2	3815-01-192-4509	96509	E-503A
4	3	5305-01-185-3478	96509	E-507
4	4	5310-01-183-5533	96509	E-506
4	5	3110-01-183-5532	96509	E-504
4	6	5330-01-183-6923	96509	E-505
4	7	5305-01-187-0486	96509	E-508
4	8	3815-01-183-0018	96509	E-502
4	9	5340-01-187-4720	96509	E-501A
4	10	5310-01-188-1154	96509	X3098
4	11	5310-01-171-6399	96509	X409BA
4	12		96509	X509B
4	13	5305-01-171-6102	96509	X-211B
4	14	3815-01-182-6883	96509	X-11
4	15		96509	X1209B
4	16	5315-01-185-0093	96509	X1009B
4	17	5340-01-183-8627	96509	X-910C
4	18	5340-01-171-1093	96509	X810CL
4	19	4030-01-171-5985	96509	X810C
4	20	5310-01-171-6255	96509	X11098
4	21	2590-01-185-6719	96509	X113B
5	1	4010-01-168-5554	27315	30U163D1
5	2	5315-00-187-9589	96906	MS24665-687
5	3	5315-01-169-4459	27315	19T4395

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

THOMAS F. SIKORA
Brigadier General, United States Army
The Adjutant General

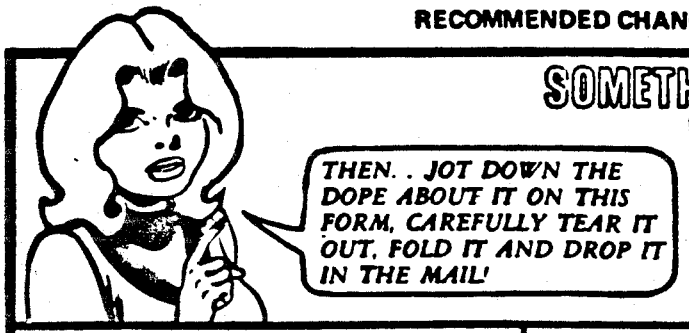
Distribution:

To be distributed in accordance with DA form 12-25-E, Block 5080, Operator, Unit, Direct Support and General Support maintenance requirements for TM 5-3815-224-14&P.

☆U.S. GOVERNMENT PRINTING OFFICE; 1993 - 746 -017/80040

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO	TABLE NO.

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.—IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

THE METRIC SYSTEM AND EQUIVALENTS

NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

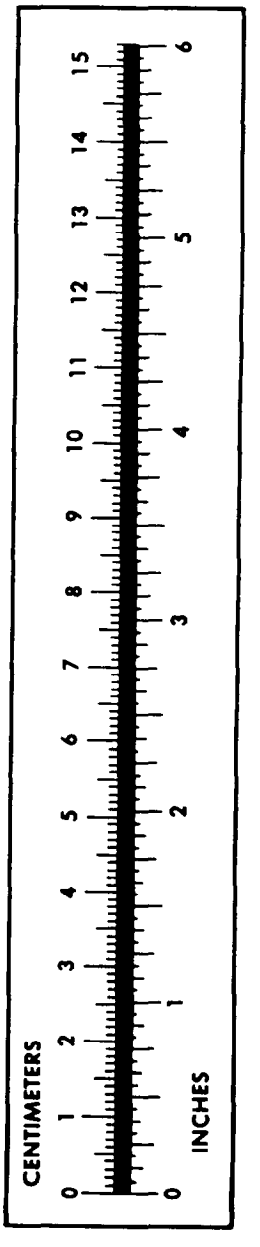
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



PIN: 074883-001

This fine document...

Was brought to you by me:

Liberated Manuals -- free army and government manuals

Why do I do it? I am tired of sleazy CD-ROM sellers, who take publicly available information, slap “watermarks” and other junk on it, and sell it. Those masters of search engine manipulation make sure that their sites that sell free information, come up first in search engines. They did not create it... They did not even scan it... Why should they get your money? Why are not letting you give those free manuals to your friends?

I am setting this document FREE. This document was made by the US Government and is NOT protected by Copyright. Feel free to share, republish, sell and so on.

I am not asking you for donations, fees or handouts. If you can, please provide a link to liberatedmanuals.com, so that free manuals come up first in search engines:

<A HREF=http://www.liberatedmanuals.com/>Free Military and Government Manuals</A>

- Sincerely
  Igor Chudov
  http://igor.chudov.com/
- Chicago Machinery Movers