TM 9-1015-215-23&P

SUPERSEDES COPIES DATED SEPTEMBER 1984
AND OCTOBER 1984. SEE PAGE i FOR DETAILS.

TECHNICAL MANUAL

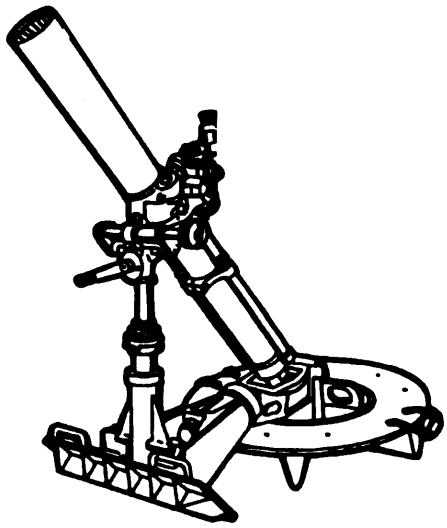
UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL WITH REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) (INCLUDING DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS)

FOR

MORTAR, 4.2-INCH: M30
(BARREL M30 ON MOUNT M24A1)
(1015-00-840-1840) (EIC:4SH)

AND

TRAINER, SUBCALIBER, 60-MM: M31
(8429878) (EIC:4SH)



HEADQUARTERS, DEPARTMENT OF THE ARMY

DECEMBER 1993

WARNING

Do not move the rotator assembly and the mortar basplate as a unit; move the rotator assembly by its handles and use two soldiers to move the mortar baseplate by the rope handles.

Before performing maintenance procedures, inspect the barrel to make sure it is empty. Keep live ammunition out of the area during maintenance operations.

Do not stand in front of sleeve nut when removing it. The shock absorber may contain broken parts that would allow the compressed spring to fly out.

Dry cleaning solvents (SD) and paint thinners (TPM) are flammable. Do not clean parts near an open flame or in a smoking area. Dry cleaning solvents and paint thinners evaporate quickly and have a drying effect on the skin. When used without protective gloves, these chemicals may irritate or crack the skin.

Melted nylon rope can cause a severe bum.

For first aid, see FM 21-11.

TECHNICAL MANUAL

No. 9-1015-215-23&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC 8 DECEMBER 1993

Unit and Direct Support Maintenance Manual with Repair Parts and Special Tools List (RPSTL) (including Depot Maintenance Repair Parts and Special Tools) for MORTAR, 4.2-INCH: M30 (BARREL M30 ON MOUNT M24A1) (1015-00-840-1840) (EIC:4SH) AND TRAINER, SUBCALIBER, 60-MM: M31 (8429878) (EIC:4SH)

Current as of 30 June 1993 for Appendix C

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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 **Armament, Munitions and Chemical Command, ATTN: AMSMC-MAS** (R), Rock Island, IL 61299-6000. A reply will be furnished to you.

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Table of Contents

*This manual supersedes TM 9-1015-215-20&P, dated 11 September 1984, TM 9-1015-215-30, dated 9 October 1984, and TM 9-1015-215-30P, dated 26 October 1984, including all changes.

HOW TO USE THIS MANUAL

GENERAL

Knowing how to use this manual is very important to you.

a. References are to pages in this manual or to other publications.

b. Throughout this manual, text is keyed to the illustrations by use of numbered callouts. When an item is called out in a procedure, a number in parentheses in the text corresponds with a number on the illustration.

c. Each task begins with a setup sheet. It tells you what you need to do the task: tools, materials, parts, and other publications. It tells you what must be done to the equipment before you begin the task and provides general safety instructions.

INDEXES

This manual is organized to help you quickly find the information you need. There are several useful indexes.

a. Front Cover Index. This is a margin index of often used portions of the manual. To use, bend manual in half and follow the black marker on the front cover to the black marker on the page.

b. *Tab/e of Contents.* The table of contents lists, in the order of presentation, all chapters, sections, appendixes, and alphabetical index and gives the page numbers where they begin.

c. Alphabetical Index. This index, located at the back of the book, is an extensive subject index for the entire manual. The page numbers following each entry tell you where in the manual to find a particular subject.

d. *Chapter Index.* This index, located at the beginning of a chapter, lists the paragraphs in the chapter by name and page number.

LISTS

a. *Metric/U.S. Customary Measurement Chart.* Measurements in this manual are given in both metric and U.S. customary units. The table inside the back cover compares metric measurements to their equivalent U.S. customary units. Also provided are conversion factors to convert metric units to U.S. customary units.

b. *Nomenclature Cross-Reference List.* Throughout this manual, most items are referred to by their official nomenclature. In the list, the items referred to by their common names are listed alphabetically, followed by their official nomenclature.

MAINTENANCE PROCEDURES

a. Initial Setup. Initial Setup is a list of everything needed in order to do maintenance on one part of the weapon.

1. Tools and Special Tools--Lists tools needed to perform maintenance.

2. Materials/Parts--Lists expendable/durable materials, manufactured items, and mandatory replacement parts. Each entry is followed by an appendix reference. If more than one part is needed, the quantity needed precedes the reference.

3. *Personnel Required-Lists* the number of personnel needed when more than one person is required.

4. References--Lists other publications containing necessary information.

5. *Equipment Conditions--Lists* conditions to be met before starting the procedure. The reference on the left of the condition is a page reference to instructions for setting up the condition.

b. *Step-By-Step Procedures.* Step-by-step procedures are illustrated procedures for maintenance authorized in the maintenance allocation chart (MAC) (appx B). For replacement of parts, see appendix C.

c. WARNINGS and CAUTIONS. Throughout the manual, you will see WARNING and CAUTION data which must be followed.

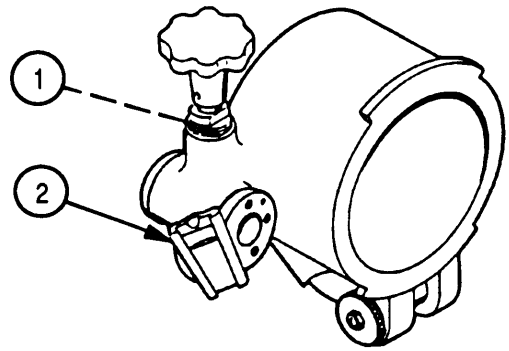
1. *WARNING.* A warning is used to alert the user of hazardous operating and maintenance procedures, practices, conditions, statements, etc., that may result in injury or death of personnel if not strictly observed.

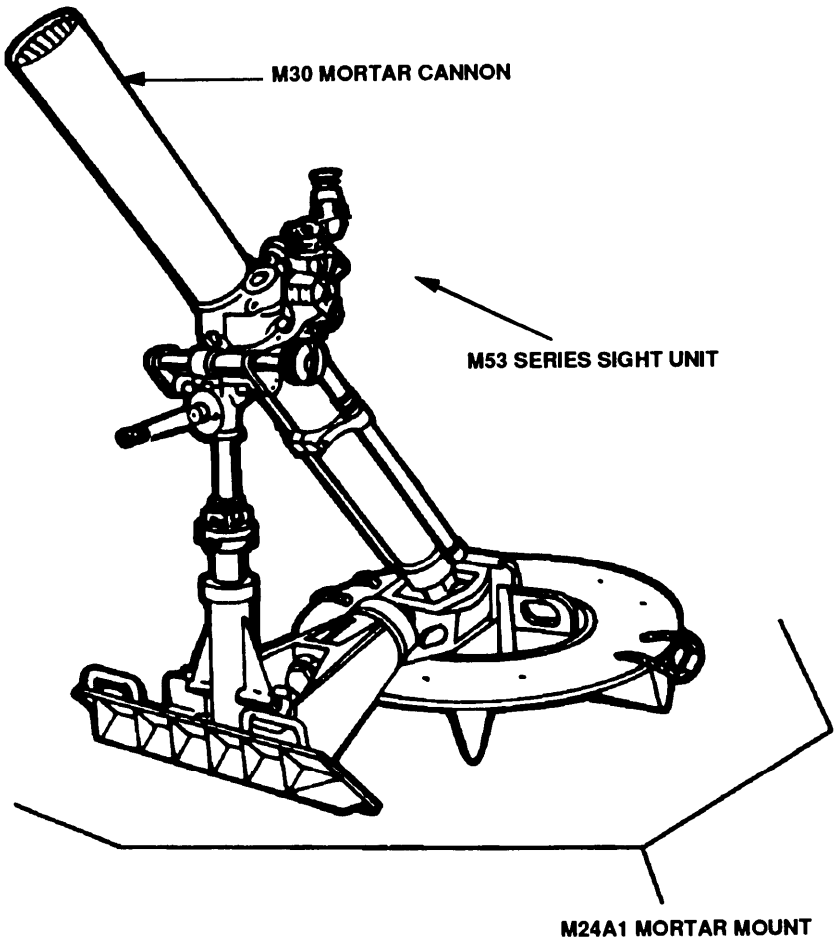
2. *CAUTION.* A caution is used to alert the user of hazardous operating or maintenance procedures, practices, conditions, statements, etc., that may result in damage or destruction of equipment or of mission effectiveness if not strictly observed.

d. *Callouts.* A dashed callout arrow in the procedures means the part being called out is hidden, i.e., you can't see it on the illustration. For example:

1. Callout 1 is the worm.

2. Callout 2 is the sight socket.





M30 4.2-INCH MORTAR—LEFT FRONT VIEW (FIRING POSITION)

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. Type *of Manua/*. Unit and Direct Support Maintenance, including Repair Parts and Special Tools List.

b. *Model Number and Equipment* Name. M30 4.2-inch Mortar.

c. *Purpose of Equipment.* Provides a high-angle fire support system to use against a variety of ground targets.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System.

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Procedures and materials for the destruction of the mortar to prevent enemy use are found in TM 750-244-7.

1-4. PREPARATION FOR STORAGE OR SHIPMENT.

Requirements for storage or shipment are listed on page 2-22.

1-5. OFFICIAL NOMENCLATURE, NAMES, AND DESIGNATIONS.

NOMENCLATURE CROSS REFERENCE LIST

This listing includes nomenclature cross-references used in this manual.

Common Name	*Official Nomenclature*
Barrel	Tube
Barrel assembly	4.2-inch mortar cannon
Felt washer	Nonmetallic flat washer
Locking pin	Mount sight pin
Standard assembly	Mortar mount assembly standard

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your mortar needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to us at Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAD (R), Rock Island, IL 61299-6000. We'll send you a reply.

1-7. SAFETY, CARE, AND HANDLING.

a. All of the major mortar components are heavy and must be handled carefully.

WARNING

Do not move the rotator assembly and the mortar baseplate as a unit; move the rotator assembly by its handles and use two soldiers to move the mortar baseplate by the rope handles.

b. Do not drop the barrel, as this will likely:

(1) Dent the barrel or cause it to be out-of-round.

(2) Damage the shock absorber assemblies.

(3) Damage or break the coupling and sight mount assembly.

c. Keep standard assembly in the low range position when not in use.

(1) Fold the handle of the traversing wheel body in the stowed position.

(2) Be careful of the elevating handle.

d. Lift the bridge assembly by the handles. Watch for twisting between the body and bridge cup assembly.

1-8. CORROSION PREVENTION AND CONTROL (CPC).

a. Corrosion prevention and control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

b. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

c. If a corrosion problem is identified, it can be reported using SF 368 (Product Quality Deficiency Report). Use of keywords such as "corrosion," "rest," "deterioration ," or "cracking" will ensure that the information is identified as a CPC problem.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-9. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

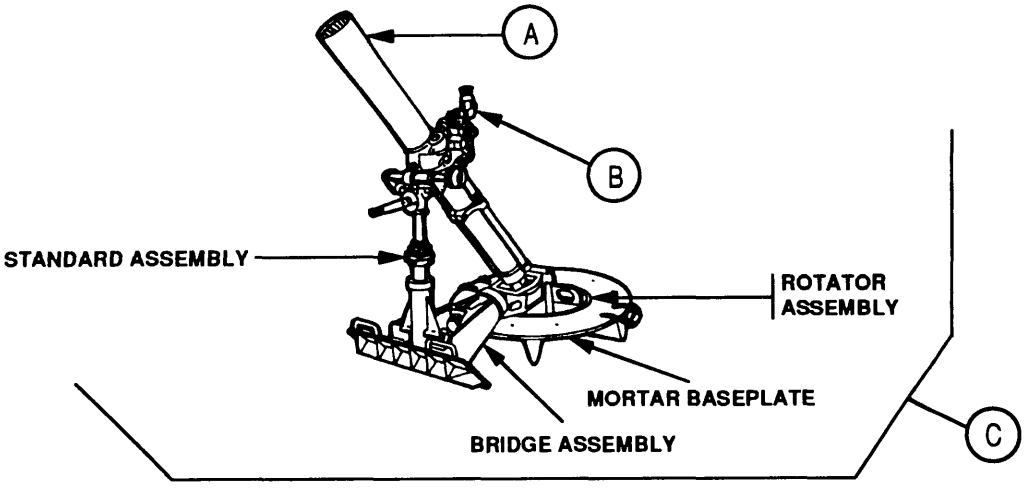
a. Characteristics.

(1) A heavy mortar that is transported by vehicle.
(2) Can be emplaced on the ground or mounted in a special vehicle,

b. Capabilities and Features.

(1) Rifled bore cannon is muzzle loaded.
(2) Capable of delivering various types of ammunition with a variety of fuze settings at a rapid rate of fire.
(3) Breaks down into sections that one or two soldiers can handle.
(4) M53 series sightunit provides indirect fire capability.

1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.



(A) M30 MORTAR BARREL. Fires ammunition and controls the direction of the projectile flight path.

(B) M53 SERIES SIGHTUNIT. Sighting device used to lay the mortar.

(C) M24A1 MORTAR MOUNT. Composed of standard assembly, bridge assembly, mortar baseplate, and rotator assembly, which assists in absorbing the forces of recoil and provides the mechanisms for elevating and traversing the weapon.

1-11. EQUIPMENT DATA.

TOTAL ASSEMBLED WEIGHT	672.3 lb (305.0 kg)
Barrel	156.5 lb (71.0 kg)
Standard Assembly	59.5 lb (27.0 kg)
Bridge Assembly	169.0 lb (76.7 kg)
Rotator Assembly	89.0 lb (40.4 kg)
Mortar Baseplate	193.0 lb (87.5 kg)
Sighting Equipment	5.25 lb (2.83 kg)

ELEVATION

High range		Low range	
Minimum	919 mils	Minimum	706 mils
Maximum	1156 mils	Maximum	933 mils

One turn of elevating handle= 13 mils (approximate)

TRAVERSE

Maximum right or left of center, using traversing wheel	125 mils

One turn of traversing wheel= 10 mils (approximate)

RANGE

Minimum	920 meters
Maximum	6600 meters

RATE OF FIRE

Maximum (RPM) (for one minute)	18
Immediately followed by (RPM) (for five minutes)	9
Immediately followed by (RPM) (sustained indefinitely)	3

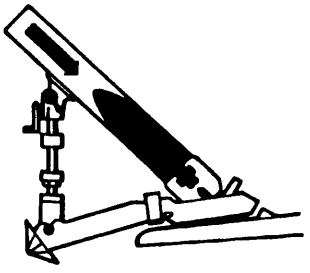
Section III. PRINCIPLES OF OPERATION

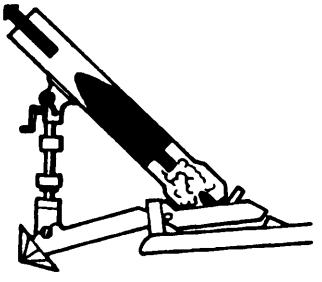
1-12. OPERATION OF M30 MORTAR.

1 Shell is fired by dropping a complete cartridge down the mortar barrel.

2 As striker nut hits firing pin, primer fires cartridge, which ignites propellant.

3 Gas from burning propellant pushes projectile and expands pressure plate so that rotating disk engages rifling, which causes shell to rotate.





CHAPTER 2
UNIT MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

2-1. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit. For tools and test equipment used to maintain mortars, refer to appendix B, section III.

2-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Special tools needed to maintain the 4.2-inch mortar are listed and illustrated in appendix C, section III. Instructions for fabricated tools are in appendix E.

2-3. REPAIR PARTS. Spare and repair pads are listed and illustrated in appendix C of this manual.

Section II. SERVICE UPON RECEIPT

2-4. GENERAL. When a new or reconditioned weapon is first received, it is the responsibility of the officer-in-charge to determine whether the weapon has been properly prepared for service by the supplying organization and whether it is in proper condition to perform its mission.

2-5. INSPECTING AND SERVICING THE MATERIAL.

WARNING

Inspect the cannon barrel to make sure it is empty. Keep live ammunition out of the area during maintenance operations.

Table 2-1. SERVICE UPON RECEIPT — M30 4.2-INCH MORTAR

LOCATION	ITEM	ACTION	REMARKS
1. Container	Mortar	Remove from container.	
2. Cannon	Barrel	Check to make sure the barrel is clear of obstructions.	
3. Container	Basic issue items	Check for missing items.	See appendix B, TM 9-1015-215-10.

2-5. INSPECTING AND SERVICING THE MATERIAL (CONT).

Table 2-1. SERVICE UPON RECEIPT— M30 4.2-INCH MORTAR (CONT)

LOCATION	ITEM	ACTION	REMARKS
4. Mortar	All items	a. Clean and lubricate.	See TM 9-1015-215-10.
		NOTE	
		Wipe excess oil or preservatives from barrel.	
		b. Assemble major subassemblies to assure proper assembly and operation.	See TM 9-1015-215-10.
5. Container	M53 series sight-unit.	Check for damaged or missing parts.	See TM 9-1015-215-10.

2-6. CHECKING UNPACKED EQUIPMENT (M30 4.2-INCH MORTAR).

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 384, Report of Discrepancy (ROD).

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with DA PAM 738-750.

c. Check to see whether the equipment has been modified. Refer to the authorized equipment confguration changes listed in AR 25-30.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-7. GENERAL. Your PMCS table (table 2-2) has been provided so you can keep your equipment in good operating condition and ready for its primary mission.

2-8. WARNINGS AND CAUTIONS. Always observe the WARNINGS and CAUTIONS appearing in your PMCS table BEFORE, DURING, and AFTER you operate the equipment. The warnings and cautions appear before certain procedures. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others or to prevent your equipment from being damaged.

2-9. EXPLANATION OF TABLE ENTRIES.

a. *Item number column.* Numbers in this column are for reference. When completing DA Form 2404, Equipment Inspection and Maintenance Worksheet, include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

b. Interval column. This column tells you when you must do the procedure in the procedure column. BEFORE procedures must be done before you operate or use the equipment for its intended mission. DURING procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

c. *Item to be checked or serviced column.* This column provides the location and the item to be checked or serviced. The item location is underlined.

d. *Procedure column.* This column gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready *or* available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

e. Not fully mission capable if: column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

2-10. **OTHER TABLE ENTRIES.** Information other than warnings, cautions, and notes appears in the PMCS table. Be sure to observe all special information appearing in your table.

Table 2-2. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M30 4.2-INCH MORTAR

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
1	Quarterly	Barrel assembly	a. Check barrel assembly (1) for unusual wear and damage in bore or corrosion and damage to external surface.	Barrel has cracks, dents, bulges, or unusual wear.
			b. Test function shock absorber assembly (2).	Shock absorber assembly is inoperative or binding.
			c. Check barrel assembly (1) and shock absorber assembly (2) for loose or missing screws or setscrews. Tighten any loose screws.	Screws or setscrews missing.

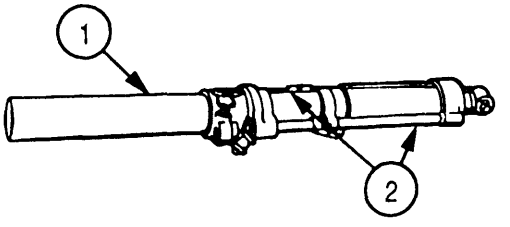
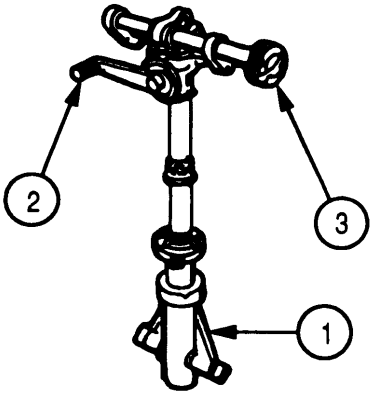


Table 2-2. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
FOR M30 4.2-INCH MORTAR (CONT)

TEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
2	Quarterly	Standard assembly	a Check standard assembly (1) for cracks, broken welds, rust, and loose, missing, or damaged parts.	Standard assembly has cracks, broken welds, or loose, missing, or damaged parts.
			b. Elevating (2) and traversing (3) mechanism assemblies must operate smoothly and without binding through the entire range of travel.	Elevating and/or traversing mechanism assemblies are inoperative or binding.
			c. Check standard assembly (1) and elevating (2) and traversing (3) mechanism assemblies for loose or missing screws or setscrews. Tighten any loose screws.	Screws or setscrews are missing.
3	**Quarterly**	Bridge assembly	a. Check bridge assembly for cracks, broken welds, rust, and loose, missing, or damaged parts.	Bridge assembly has cracks, broken welds, or loose, missing, or damaged parts.
			b. Check that bridge assembly rotates freely.	Bridge assembly does not rotate freely.



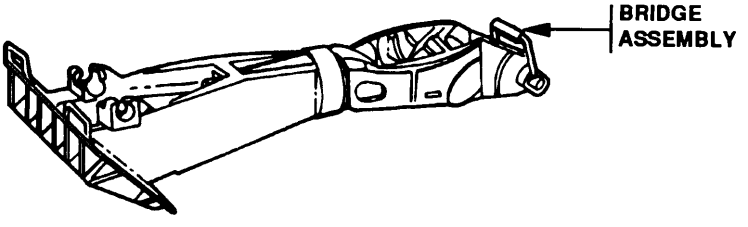
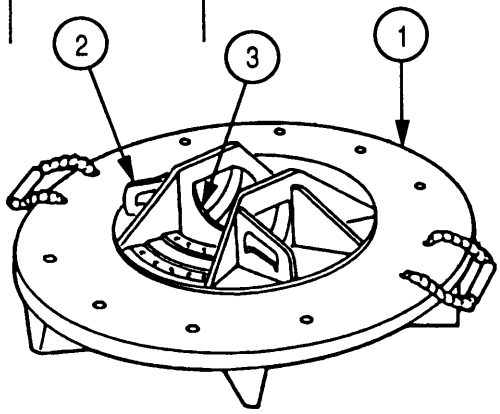
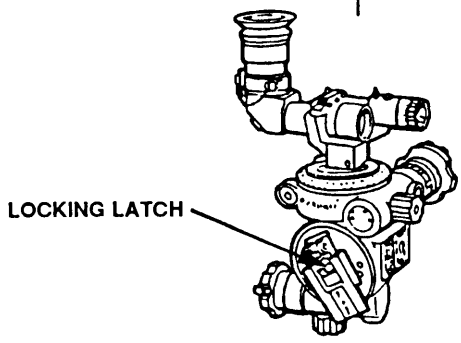


Table 2-2. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M30 4.2-INCH MORTAR (CONT)

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
4	Quarterly	Mortar baseplate and rotator assembly	a. Check mortar baseplate (1) for cracks, broken welds, and loose, missing, or damaged parts.	Mortar baseplate has cracks, broken welds, or loose, missing, or damaged parts.
			b. Check for cracked or warped bearing surfaces of rotator assembly (2) or mortar baseplate (1).	Bearing surfaces warped or cracked.
			c. Rotator assembly (2) must turn freely within mortar baseplate (1).	Rotator assembly does not turn freely.
			d. Check for cracked bridge trunnion socket (3).	Bridge trunnion socket is cracked.
5	Quarterly	M53 series sightunit	Check that locking latch secures sightunit to mortar.	Locking latch does not secure sightunit to mortar.





Section IV. UNIT TROUBLESHOOTING

2-11. GENERAL.

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in your mortar. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you to determine corrective actions to take. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all possible malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed (except when malfunction and cause are obvious) or is not corrected by listed corrective actions, notify your supervisor.

2-12. TROUBLESHOOTING PROCEDURES.

a. Refer to the troubleshooting table (table 2-3) on page 2-7.

b. Use the symptom index for a quick reference to systems covered in the chart.

SYMPTOM INDEX

Table 2-3. TROUBLESHOOTING

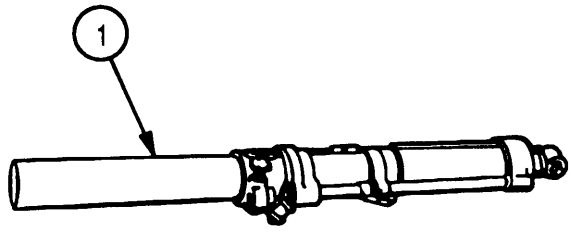
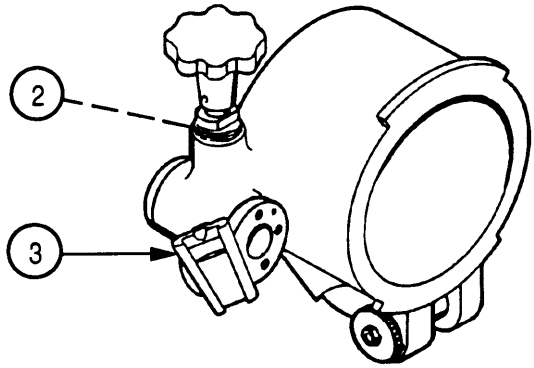
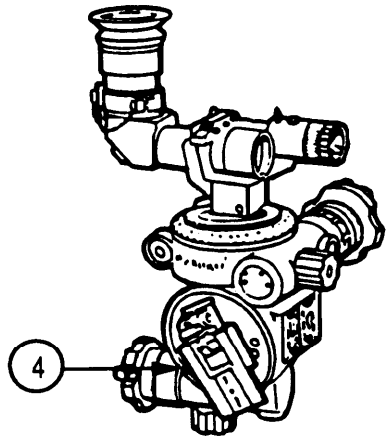
MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	
BARREL	
1. FAILURE TO FIRE. Check for propellant holders or foreign matter in base of barrel (1). Remove propellant holders or foreign matter.	
2. FAILURE OF COUPLING AND SIGHT MOUNT ASSEMBLY TO ROTATE. Step 1. Check worm (2) for backlash or binding. Evacuate to direct support maintenance. Step 2. Check for loose or missing screws or setscrews. Tighten any loose screws. Evacuate to direct support maintenance if screws are missing.	
3. INABILITY TO SEAT SIGHTUNIT IN SOCKET. Step 1. Check for broken or bent sight socket (3). Evacuate to direct support maintenance. Step 2. Check for damaged dovetail (4) on M53 series sightunit. Evacuate to direct support maintenance.	

Table 2-3. TROUBLESHOOTING (CONT)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
MOUNT
1. DIFFICULTY IN TRAVERSING WEAPON.
Step 1. Check for bent traversing slide assembly supports (1). Evacuate to direct support maintenance.
Step 2. Check for damaged traversing sleeve housing (2). Evacuate to direct support maintenance.
Step **3.** Check for loose or missing screws (3) or setscrews. Tighten any loose screws. Evacuate to direct support maintenance if screws are missing.
2. DIFFICULTY IN ELEVATING OR DEPRESSING WEAPON.
Check for difficulty in elevating or depressing weapon. Evacuate to direct support maintenance.

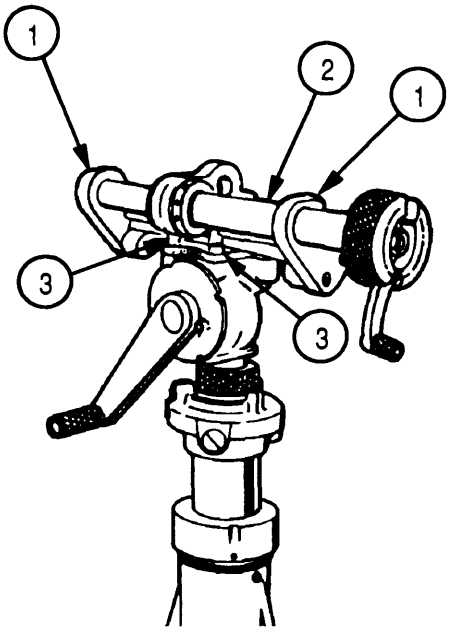


Table 2-3. TROUBLESHOOTING (CONT)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
MOUNT (CONT)
3. INABILITY TO LOCK STANDARD ASSEMBLY IN LOW OR HIGH RANGE POSITION.
Step 1. Check that elevating mechanism (4) can be locked in low or high range position.
Evacuate to direct support maintenance.
Step 2. Check for missing screws (5), springs, or plungers.
Evacuate to direct support maintenance.
4. IMPROPER RECOIL.
Step 1. Check for cracked or deformed standard base (6).
Evacuate to direct support maintenance.
Step 2. Check for bent or dented shock absorber assemblies (7).
Evacuate to direct support maintenance.
Step 3. Check for loose or missing screws or setscrews.
Tighten any loose screws. Evacuate to direct support maintenance if screws are missing.

Table 2-3. TROUBLESHOOTING (CONT)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

MOUNT (CONT)

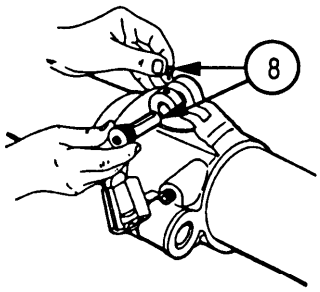
5. INSECURE STANDARD ASSEMBLY.

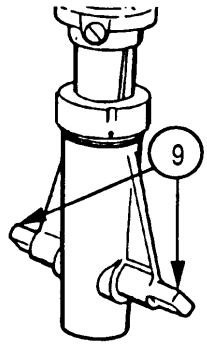
Step 1. Check for broken mortar locking pin assembly (8).

Replace pin (p 2-12).

Step 2. Check for broken or bent standard base trunnions (9).

Evacuate to support maintenance.





6. FAILURE OF ROTATOR TO TURN FREELY.

Step 1. Check for foreign matter between major components.

Clean and lubricate.

Step 2. Check for cracked or warped bearing surface of rotator assembly (10) or mortar baseplate (11).

Evacuate to direct support maintenance.

Step 3. Check for cracked bridge trunnion socket (12).

Evacuate to direct support maintenance.

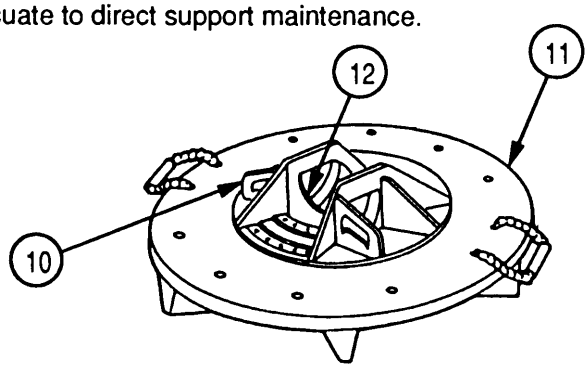


Table 2-3. TROUBLESHOOTING (CONT)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

7. FAILURE OF BRIDGE ASSEMBLY TO ROTATE.

Step 1. Check that bridge body (13) rotates freely on bridge cup assembly (14).

Evacuate to direct support maintenance.

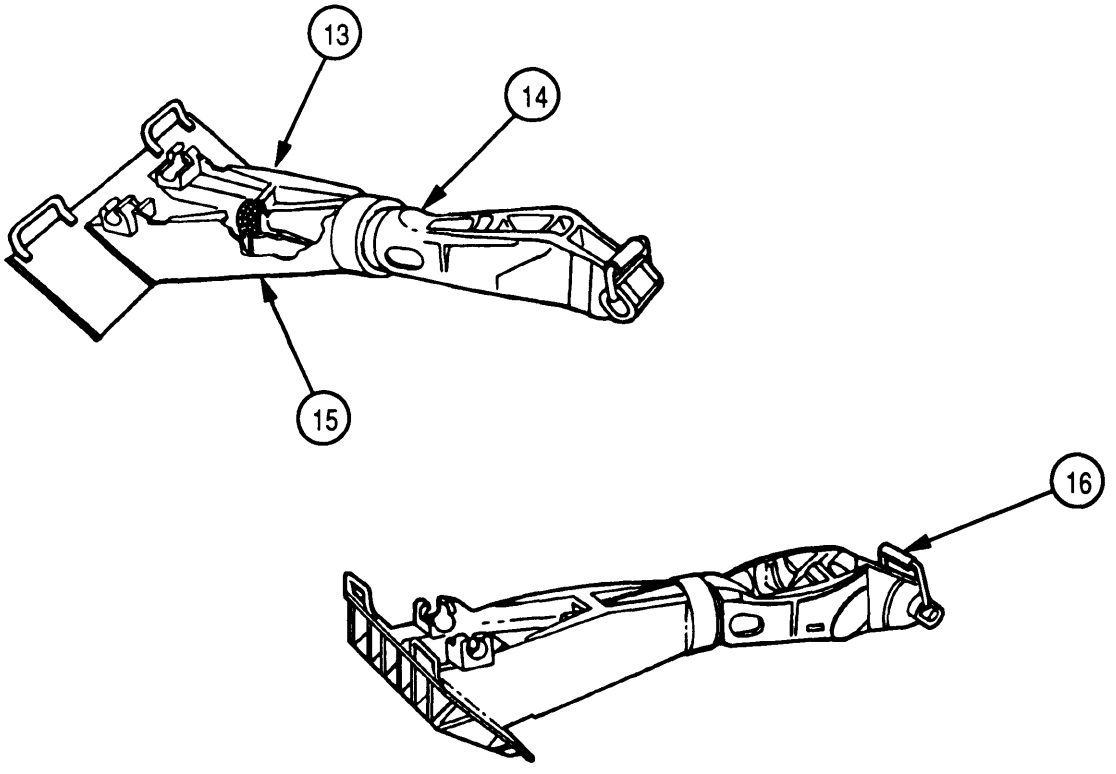
Step 2. Check for dents or cracks in bridge assembly (15).

Evacuate to direct support maintenance.

8. FAILURE OF BRIDGE ASSEMBLY TO ENGAGE ROTATOR ASSEMBLY.

Check for bent handle (16) on bridge cup assembly.

Evacuate to direct support maintenance.



Section V. UNIT MAINTENANCE PROCEDURES

2-13. COUPLING AND SIGHT MOUNT ASSEMBLY--MAINTENANCE INSTRUCTIONS.

This task covers disassembly/repair/reassembly.

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit (item 2, app B)

References
TM 9-1015-215-10

Equipment Conditions
M30 4.2-inch mortar cannon separated from M24A1 mount

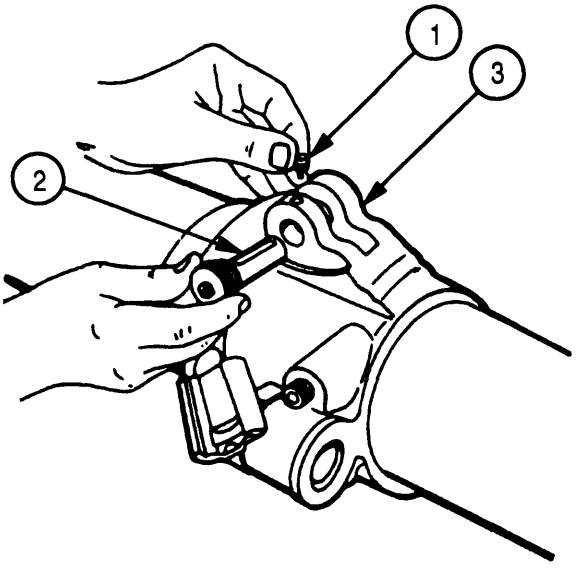
DISASSEMBLY/REPAIR/REASSEMBLY

a. Remove setscrew (1) and pin assembly (2) from coupling and sight mount assembly (3).

b. Replace authorized parts as required. Refer to appendix C.

c. Install pin assembly (2) and aline the slot with setscrew hole in coupling and sight mount assembly (3).

d. Install setscrew (1).



2-14. MORTAR BASEPLATE--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly b. Repair c. Reassembly

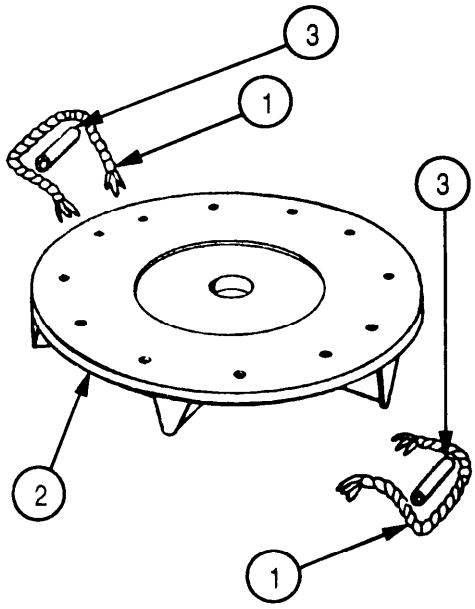
INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit (item 2, app B)

References
TM 9-1015-215-10

Equipment Conditions
Mortar baseplate separated from M24A1 mount

DISASSEMBLY



a. Remove rope (1) from baseplate (2).

b. Remove handle (3).

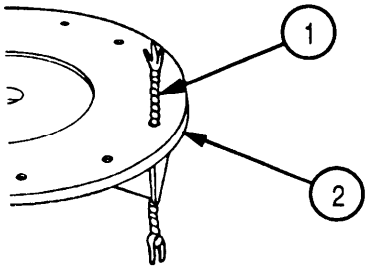
REPAIR

Replace authorized parts as required. Refer to appendix C.

2-14. MORTAR BASEPLATE--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY

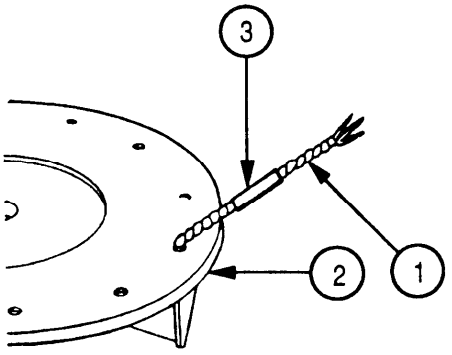
1



a. Insert unknotted end of rope (1) up through hole in baseplate (2).

b. Pull up on rope (1) until knot is against baseplate (2).

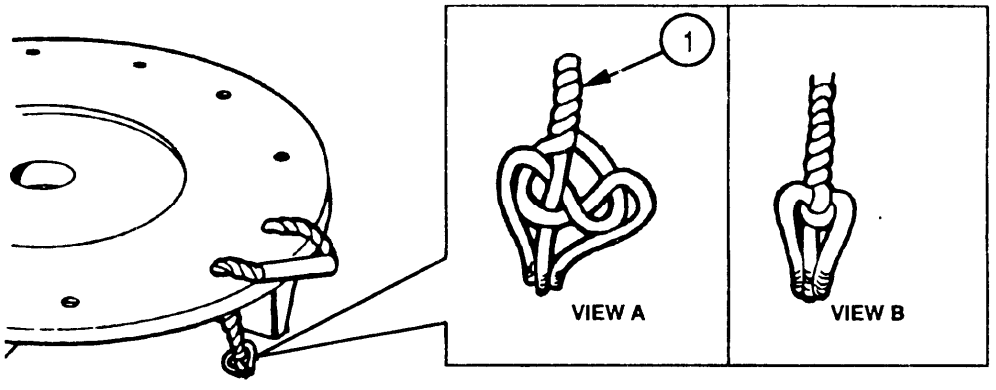
2



a. Install handle (3) on rope (1).

b. Insert unknotted end of rope (1) down through hole in baseplate (2).

3



a. Tie knot in rope (1) as shown in view A.

WARNING

Melted nylon rope can cause a severe burn.

NOTE

Use only enough heat to melt the rope strands together.

b. After tying knot, pull it tight and fuse the ends together as shown in view B.

c. To install the other handle, repeat steps 1 thru 3.

2-15. M53 SERIES SIGHTUNIT--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning
c. Repair
d. Reassembly

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Cleaning compound (item 8, app D)
Lens paper (item 21, app D)

References
TM 9-1015-215-10
TM 9-254

Equipment Conditions
M53 series sightunit removed from M30 mortar

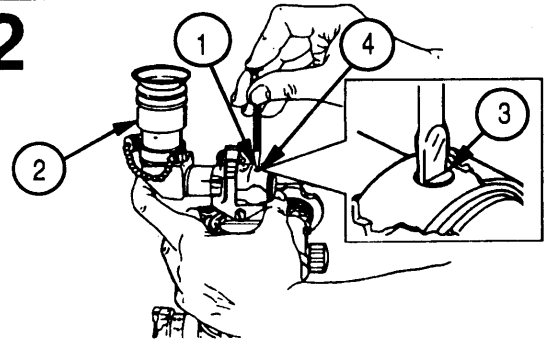
DISASSEMBLY

1

NOTE

- A collar with three setscrews spaced 120 degrees apart secures elbow telescope in the telescope mount.
- M53 sights use straight slot setscrews, which require jeweler's screwdriver (illustrated). M53A1 sights use socket head setscrews, which require hex key wrench (not illustrated).

2

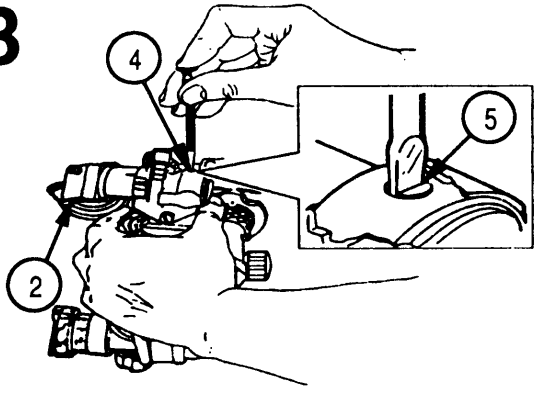


a. Release telescope locking clamp (1).

b. Turn elbow telescope (2) to the vertical position until setscrew (3) can be reached through hole (4).

c. Loosen setscrew (3).

3



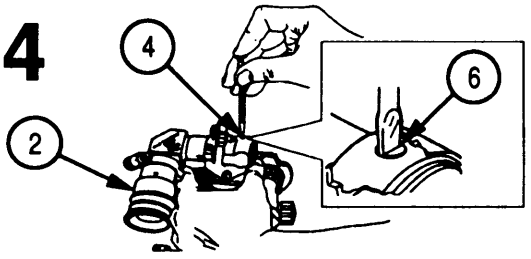
a. Turn elbow telescope (2) to the right until setscrew (5) can be reached through hole (4).

b. Loosen setscrew (5).

2-15. M53 SERIES SIGHTUNIT–MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

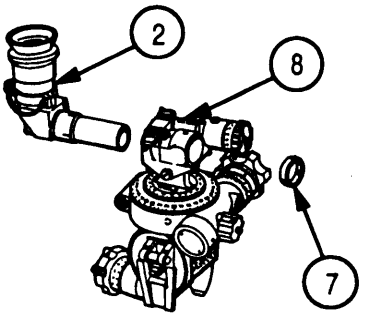
4



a. Turn elbow telescope (2) to the left until setscrew (6) can be reached through hole (4).

b. Loosen setscrew (6).

5



Remove elbow telescope (2) and collar (7) from telescope mount (8).

CLEANING

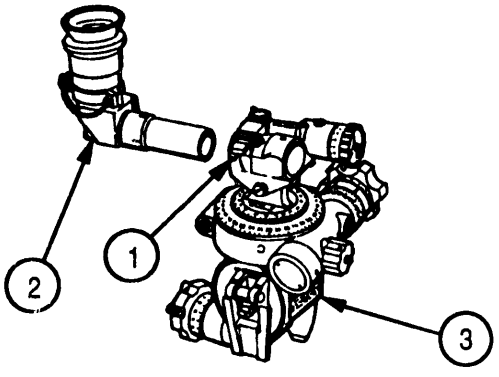
Refer to TM 9-254.

REPAIR

Replace authorized parts as required. Refer to appendix C.

REASSEMBLY

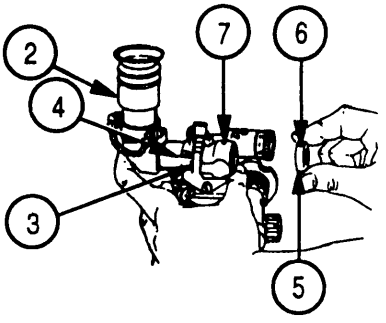
1



a. Release telescope locking clamp (1).

b. Insert elbow telescope (2) in telescope mount (3).

2

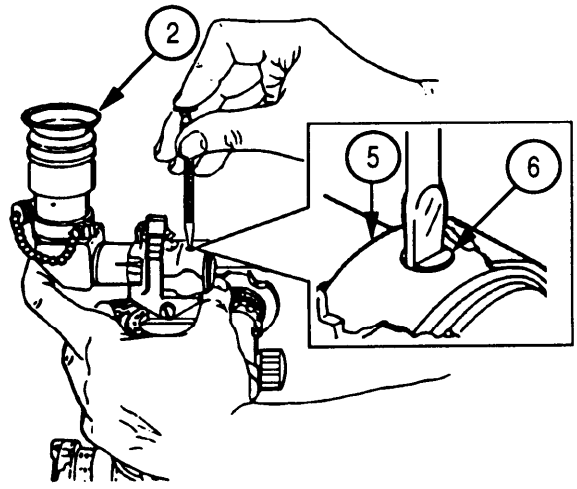


a. Turn elbow telescope (2) to the vertical position.

b. Aline reference mark (4) with indexing line on telescope mount (3). Hold elbow telescope in this position.

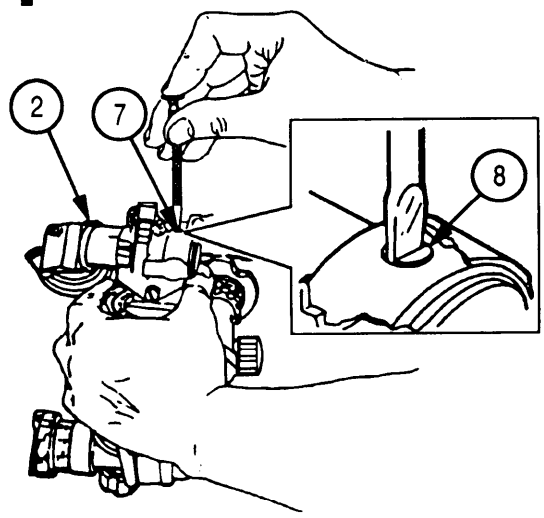
c. Start collar (5) on end of elbow telescope (2), then turn collar to aline setscrew (6) with hole (7).

3



Push collar (5) and elbow telescope (2) together and tighten setscrew (6).

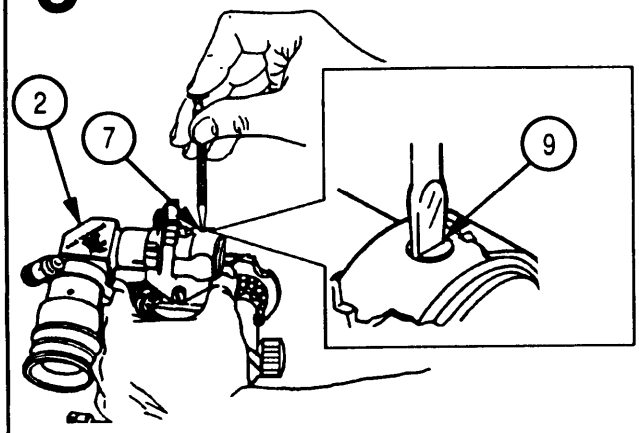
4



a. Turn elbow telescope (2) to the right until setscrew (8) can be reached through hole (7).

b. Tighten setscrew (8).

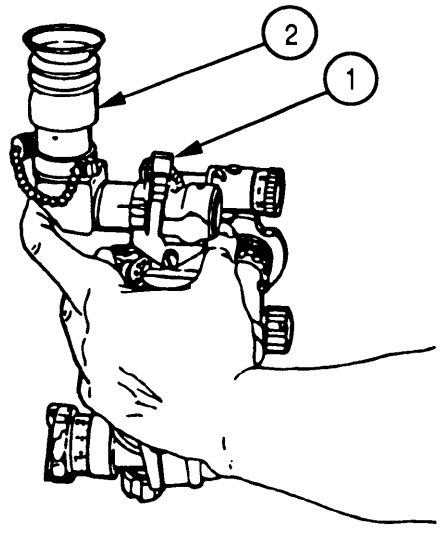
5



a. Turn elbow telescope (2) to the left until setscrew (9) can be reached through hole (7).

b. Tighten setscrew (9).

6



Turn elbow telescope (2) to the vertical position and secure telescope locking clamp (1).

2-16. M109 ELBOW TELESCOPE--MAINTENANCE INSTRUCTIONS.

This task covers disassembly/cleaning/repair/reassembly.

INITIAL SETUP

Materials/Parts
Cleaning compound (item 8, app D)
Lens paper (item 21, app D)

Equipment Conditions
M53 series sightunit removed from M30 mortar

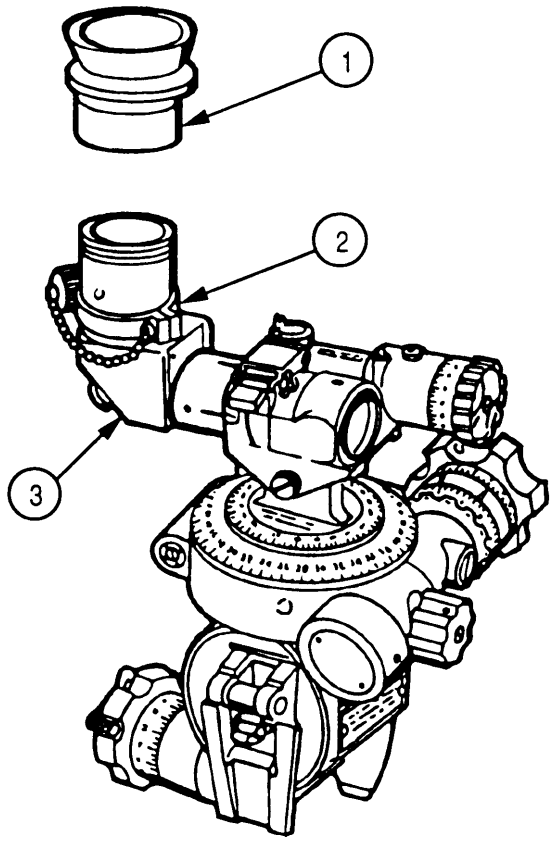
References
TM 9-254
TM 9-1015-215-10

DISASSEMBLY/CLEANING/REPAIR/REASSEMBLY

a. Remove eyeshield (1) and clamp assembly (2) from elbow telescope (3).

b. Refer to TM 9-254 for cleaning.

c. Replace eyeshield and assemblies. Refer to appendix C.



2-17. SPECIAL TOOLS (REPAIR PARTS)-MAINTENANCE INSTRUCTIONS.

This task covers disassembly/repair/reassembly of the:
a. M53E1 instrument light
b. M14 aiming post light
c. Artillery cleaning brush

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit (item 2, app B)

References
TM 9-1015-215-10

Materials/Parts
Incandescent lamp (item 16, app D)

a. M53E1 INSTRUMENT LIGHT

DISASSEMBLY/REPAIR/REASSEMBLY

a. Unscrew cap assembly (1) from reticle light (2).

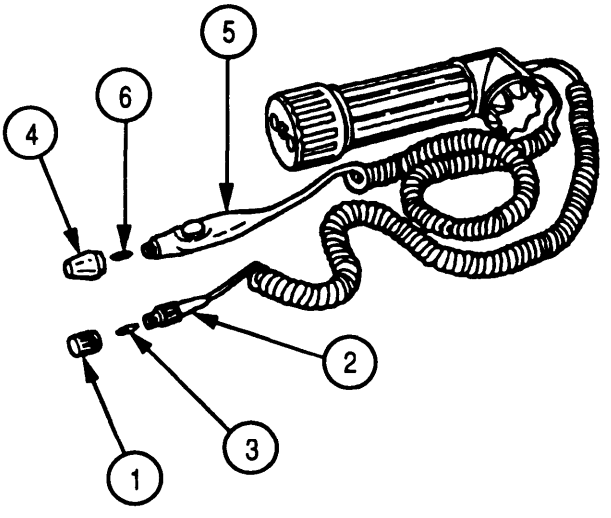
b. Remove lamp (3).

c. Replace lamp (3) and install cap assembly (1). Replace cap assembly (1) only if unserviceable.

d. Unscrew light lens (4) from hand light (5).

e. Remove lamp (6).

f. Replace lamp (6) and install light lens (4). Replace light lens (4) only if unserviceable.



2-17. SPECIAL TOOLS (REPAIR PARTS)--MAINTENANCE INSTRUCTIONS (CONT).

b. M14 AIMING POST LIGHT

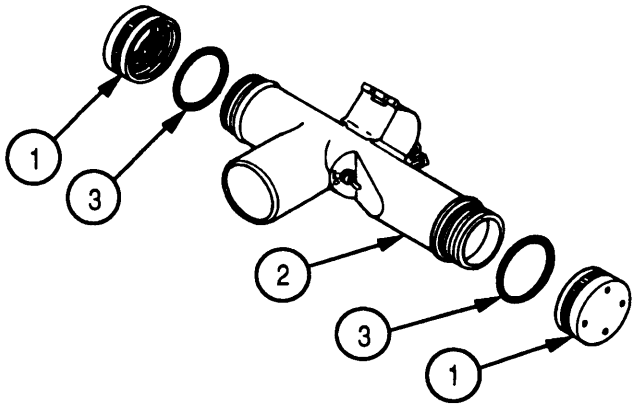
DISASSEMBLY/REPAIR/REASSEMBLY

a. Unscrew cap plug (1) from case assembly (2).

b. Remove preformed packing (3) from case assembly (2).

c. Replace authorized parts. Refer to appendix **C.**

d. Place preformed packing (3) in case assembly (2) and screw cap plug (1) on case assembly (2).



c. ARTILLERY CLEANING BRUSH

DISASSEMBLY/REPAIR/REASSEMBLY

a. Drive spring pin (1) from adapter (2).

b. Remove adapter (2), washer (3), end cap (4), and artillery cleaning brush section (5).

c. Remove end cap (6) and washer (7) from pin (8).

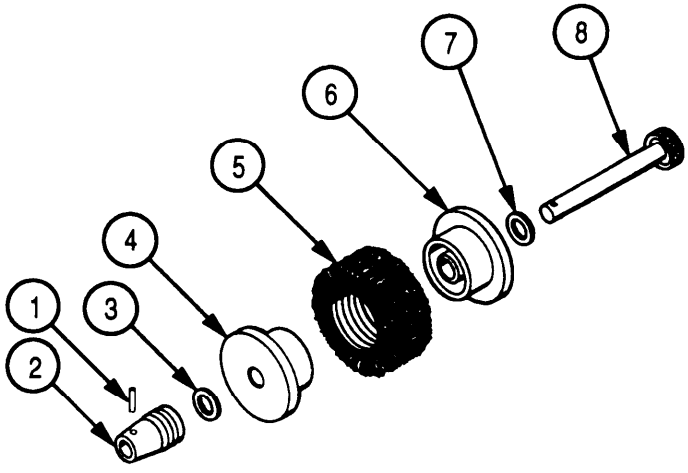
d. Replace authorized parts. Refer to appendix C.

e. Install washer (7), end cap (6), and new brush section (5) on pin (8).

f. Install second end cap (4), washer (3), and adapter (2) on pin (8).

g. Aline spring pin holes in adapter (2) and pin (8).

h. Drive spring pin (1) into adapter (2) and pin (8). Pin should be below flush at both ends.



2-18. M2 60-MM MORTAR CANNON--MAINTENANCE INSTRUCTIONS.

This task covers disassembly/repair/reassembly.

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit
(item 2, app B)

References
FM 23-92

DISASSEMBLY/REPAIR/REASSEMBLY

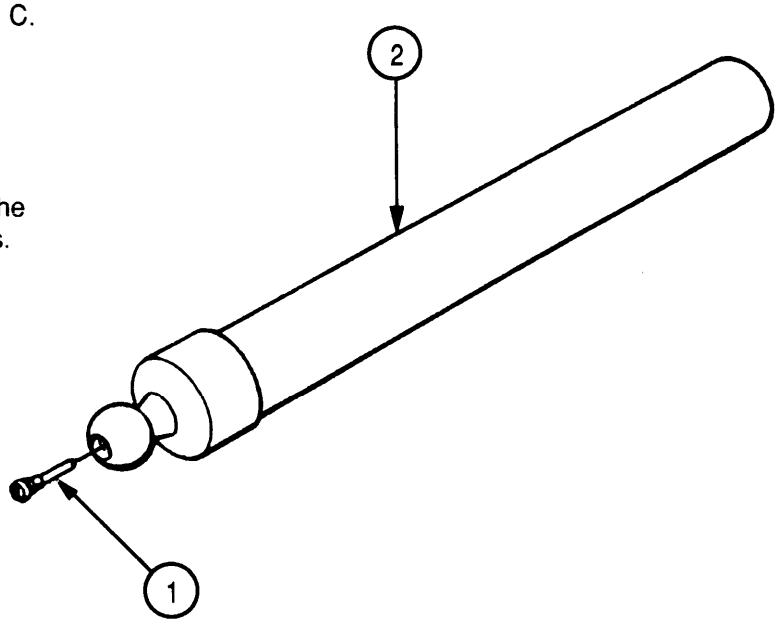
a. Unscrew and remove firing pin (1) from cannon (2).

b. Replace firing pin. Refer to appendix C.

c. Install firing pin (1) in cannon (2).

NOTE

Fully seat the firing pin after cleaning the M2 cannon to avoid excessive misfires.



Section VI. PREPARATION FOR STORAGE OR SHIPMENT

2-19. ADMINISTRATIVE STORAGE. Refer to TM 740-90-1.

2-20. INTERMEDIATE STORAGE. Store the weapon u rider cover or in open sheds or warehouses whenever possible and prepare it for storage as follows:

a. *General.*

(1) Package the mortar and equipment according to Packaging Data Sheet P11578503. If this is not possible, follow the instructions below as a minimum.

(2) Remove components and disassemble weapon prior to cleaning and packaging.

b. *Cleaning and Drying.* Clean the weapon, including the bore, with dry cleaning solvent (item 12, app D). Wipe dry using clean cloths.

c. *Preservation.* Coat the barrel bore liberally with lubricating oil (item 17, app D). Coat the other painted and unpainted surfaces of the barrel and mount assembly with grease (item 15, app D).

d. *Packaging.*

(1) Wrap the mortar barrel and the mount assembly separately in greaseproof barrier material (item 2, app D) and close securely with 1-inch tape (item 25, app D).

(2) Preserve and wrap the Bll and other small items in cushioning material (item 11, app D) and place in fiberboard boxes. Close with 2-inch tape (item 24, app D).

(3) Inclose a copy of DA Form 2408-4, Weapon Record Data, and, when applicable, DA Form 2408-9, Proof Acceptance Record, in a plastic bag and secure to the wrapped mortar barrel with tape.

(4) Include the following information on the inside packaging sheet:

NATIONAL STOCK NUMBER
PART NUMBER
FEDERAL ITEM NAME
WEIGHT AND CUBE
SERIAL NUMBER

e. *Packing.* Pack in original shipping container (item 4, app D). Nail the box closed.

f. *Marking.* Mark shipping container with the following information:

DESTINATION
WEIGHT AND CUBE

g. *Preparation for Shipment of Small Component Items.*

(1) If a small breakable component such as a sight unit is the only thing being shipped, use fast pack containers. These are available in a wide range of sizes through the GSA catalog.

(2) If the small item is durable metal, apply lubricating oil (item 17, app D) and wrap in barrier material (item 2, app D). Wrap in cushioning material (item itt11, app D), mark, and place in a fiberboard box of appropriate size.

CHAPTER 3
DIRECT SUPPORT
MAINTENANCE INSTRUCTIONS

Section I. DIRECT SUPPORT TROUBLESHOOTING

3-1. GENERAL. General troubleshooting instructions are on page 2-6.

3-2. TROUBLESHOOTING PROCEDURES.

a. Refer to the troubleshooting symptom index on page 3-1.

b. Use the symptom index for a quick reference to symptoms covered in the chart.

SYMPTOM INDEX

TROUBLESHOOTING

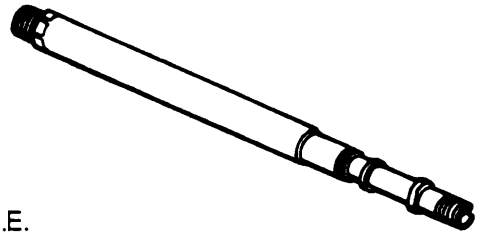
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

BARREL

1. IMPROPER RECOIL AND COUNTERRECOIL.

Check for damaged or broken shock absorber parts.

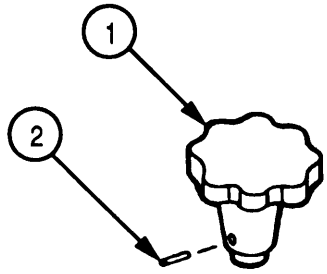
Repair (p 3-14) or replace (p 3-34) shock absorbers.



2. COUPLING AND SIGHT MOUNT ASSEMBLY WON'T ROTATE.E.

Step 1. Check for broken sight mount knob (1).

Replace sight mount knob (p 3-24).

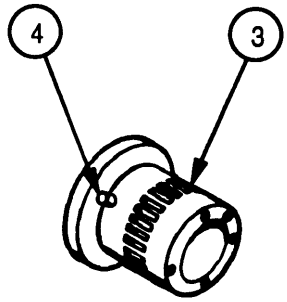


Step 2. Check for pin (2) in sight mount knob (1).

Replace pin (p 3-24).

Step 3. Check for broken or chipped worm assembly gear (3).

Replace worm assembly gear (p 3-24).

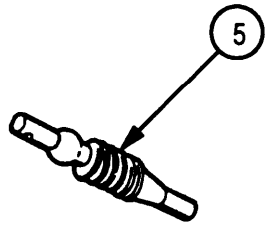


Step 4. Check pin (4) protrusion (p 3-27').

Replace pin (p 3-24).

Step 5. Remove sight mount worm (5) and check for cracks or breaks.

Replace sight mount worm (p 3-24).

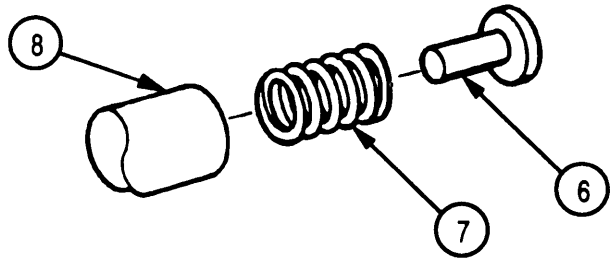


TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

Step 6. Check for jammed spring guide (6), helical compression spring (7), and yoke (8) due to dirt and grit.

Remove and clean (p 3-24).



Step 7. Check for broken helical compression spring (7).

Replace helical compression spring (p 3-24).

3. SIGHTUNIT WON'T SEAT IN SIGHT SOCKET.

Check for broken or bent sight socket.

Replace sight socket (p 3-24).

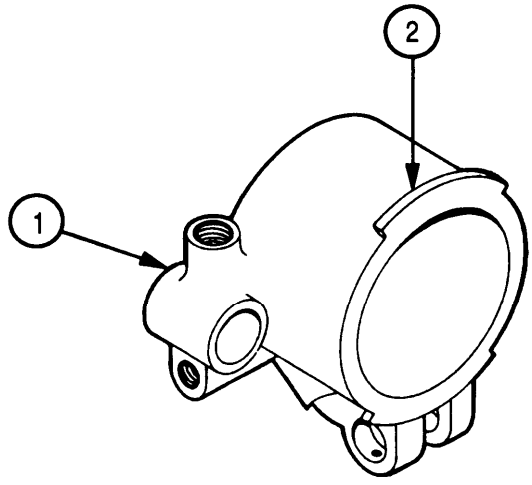
4. SIGHT MOUNT COUPLING BODY DOES NOT LINE UP WITH COUPLING BASE.

Step 1. Check for cracked or warped sight mount coupling body (1).

Replace sight mount coupling body (p 3-24).

Step 2. Check for broken bayonet-type locking lugs (2).

Replace sight mount coupling body (p 3-24).



TROUBLESHOOTING (CONT)

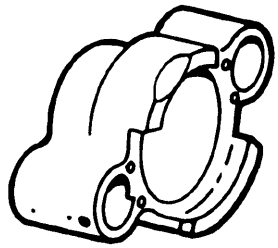
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

BARREL (CONT)

5. COUPLING BASE DOES NOT LINE UP WITH SHOCK ABSORBERS AND SIGHT MOUNT COUPLING BODY.

Check for broken or out-of-round coupling base.

Replace coupling base (p 3-14).

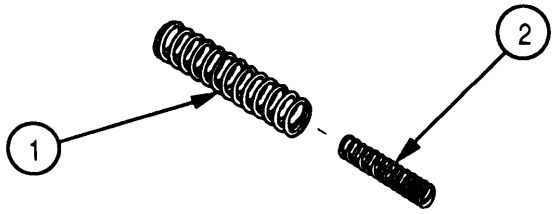


MOUNT

1. IMPROPER RECOIL.

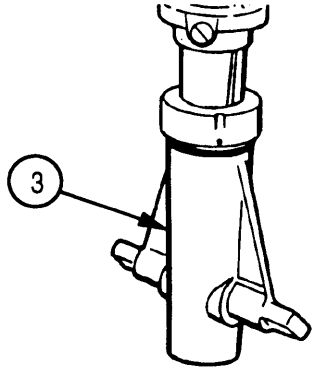
Step 1. Check for distorted or broken compression springs (1 and 2).

Replace compression springs (p 3-46).



Step 2. Check for cracked or deformed standard base (3).

Replace standard base (p 3-46).



TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

2. DIFFICULTY IN TRAVERSING WEAPON.

Step 1. Check for burrs or bent traversing slide support body (1).

Remove burrs or replace traversing slide Support body (p 3-66).

Step 2. Check for bent traversing sleeve housing (2).

Replace traversing sleeve housing (p 3-66).

Step 3. Check for bent or burred traversing screw (3) and sleeve assembly (4).

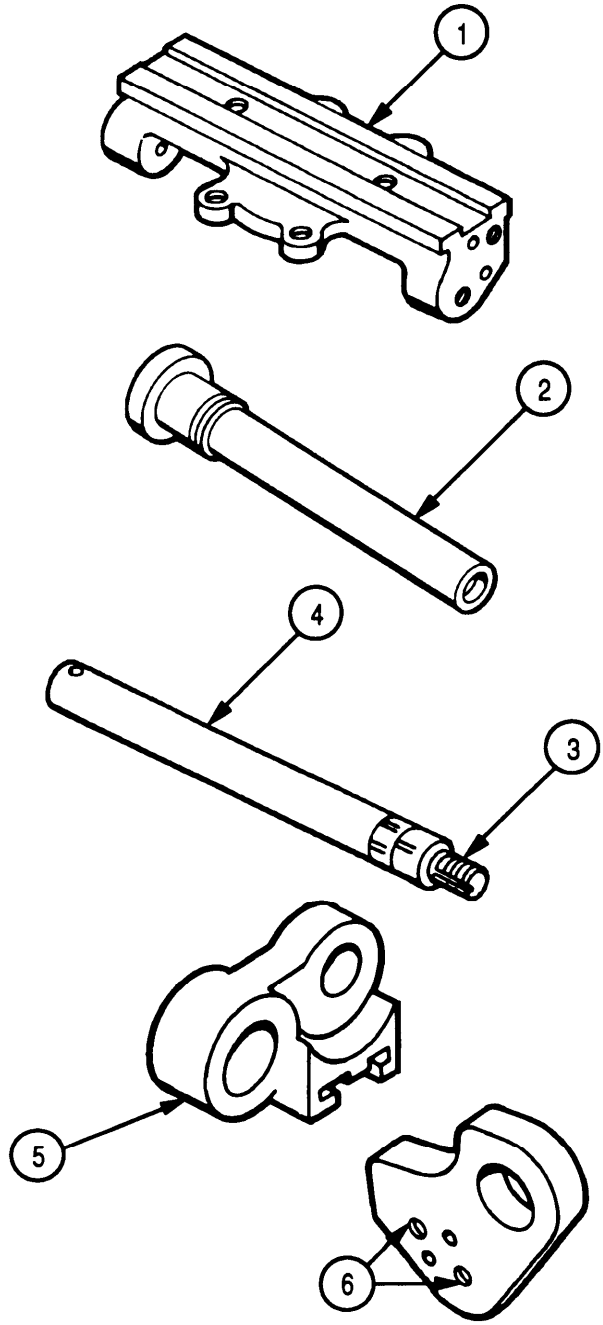
Remove burrs or replace traversing screw and sleeve assembly (p 3-66).

Step 4. Check for broken or burred traversing nut (5).

Remove burrs or replace traversing nut (p 3-66).

Step 5. Check for loose socket head capscrews (6) in the supports.

Tighten and stake all capscrews (p 3-66).



TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MOUNT (CONT)

3. DIFFICULTY IN ELEVATING OR DEPRESSING WEAPON.

Step 1. Check for jammed miter gears due to dirt and grit fouling.

Clean elevating screw miter gear (1). Clean miter gear (2) in gear and handle assembly.

Step 2. Check for broken or worn elevating screw miter gear (1).

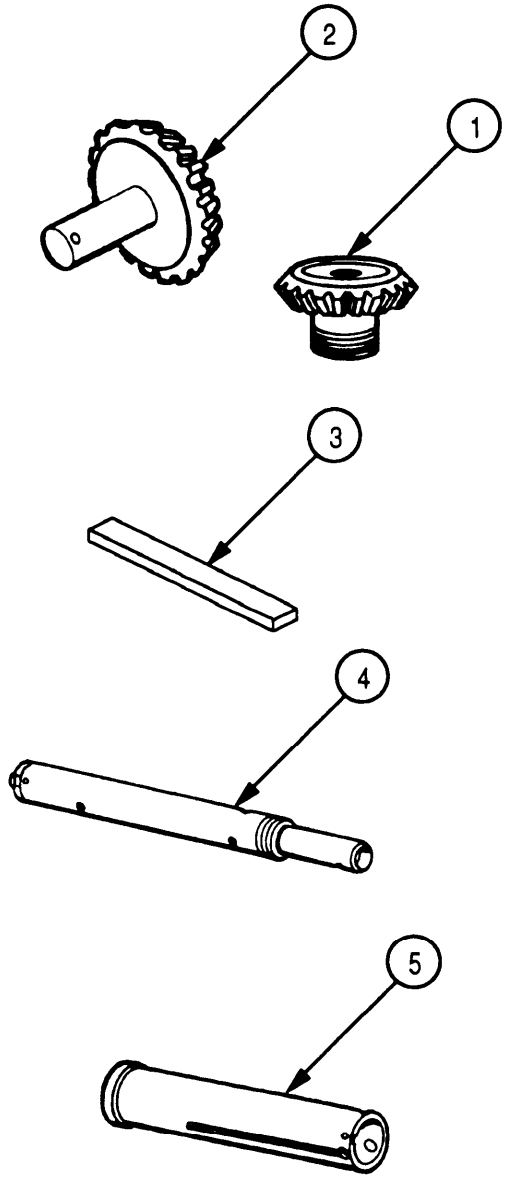
Replace miter gear (p 3-46).

Step 3. Check for broken or worn miter gear (2).

Replace gear and handle assembly (p 3-66).

Step 4. Check for broken or damaged key (3) between elevating screw housing assembly (4) and elevating screw support (5).

Replace key if necessary (p 3-46).

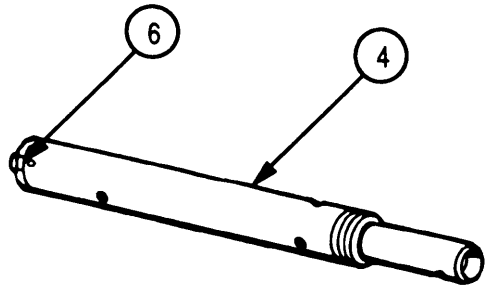


TROUBLESHOOTING (CONT)

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION

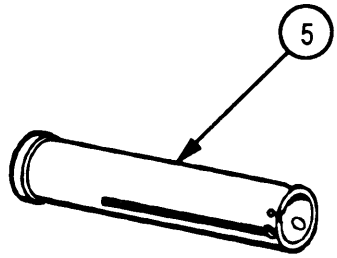
Step 5. Check for broken or damaged key (6) on elevating screw housing (4).

Replace elevating screw housing assembly (p 3-46).



Step 6. Check for bent, warped, or nicked elevating screw housing assembly (4).

Replace elevating screw housing assembly (p 3-46).



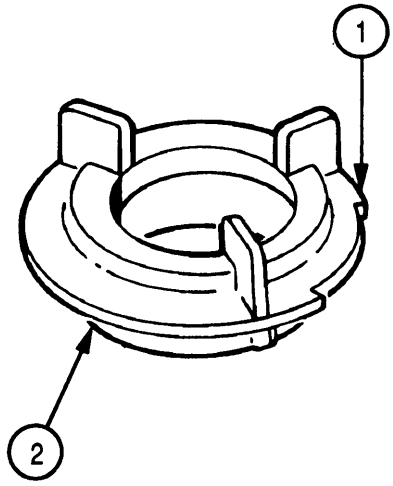
Step 7. Check for bent or warped elevating support (5).

Replace elevating **Support (p** 3-46).

4. STANDARD ASSEMBLY DOES NOT LOCK IN ITS LOW OR HIGH RANGE POSITION.

Step 1. Check for jammed elevating mechanism cam (1) due to dirt and grit.

Remove and clean elevating mechanism cam (p 3-46).



Step 2. Check for damaged cams (2).

Replace elevating mechanism cam (p 3-46).

TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MOUNT (CONT)

4. STANDARD ASSEMBLY DOES NOT LOCK IN ITS LOW OR HIGH RANGE POSITION (CONT).

Step 3. Check for broken elevating mechanism housing plunger (3).

Replace plunger (p 3-46).

Step 4. Check for distorted or broken plunger spring (4).

Replace spring (p 3-46).

5. ELEVATING MECHANISM BINDS ON ELEVATING SCREW HOUSING.

Check for broken cam stop (1).

Replace cam stop (p 3-46).

Step 2. Check for missing rivets (2).

Replace rivets (p 3-46).

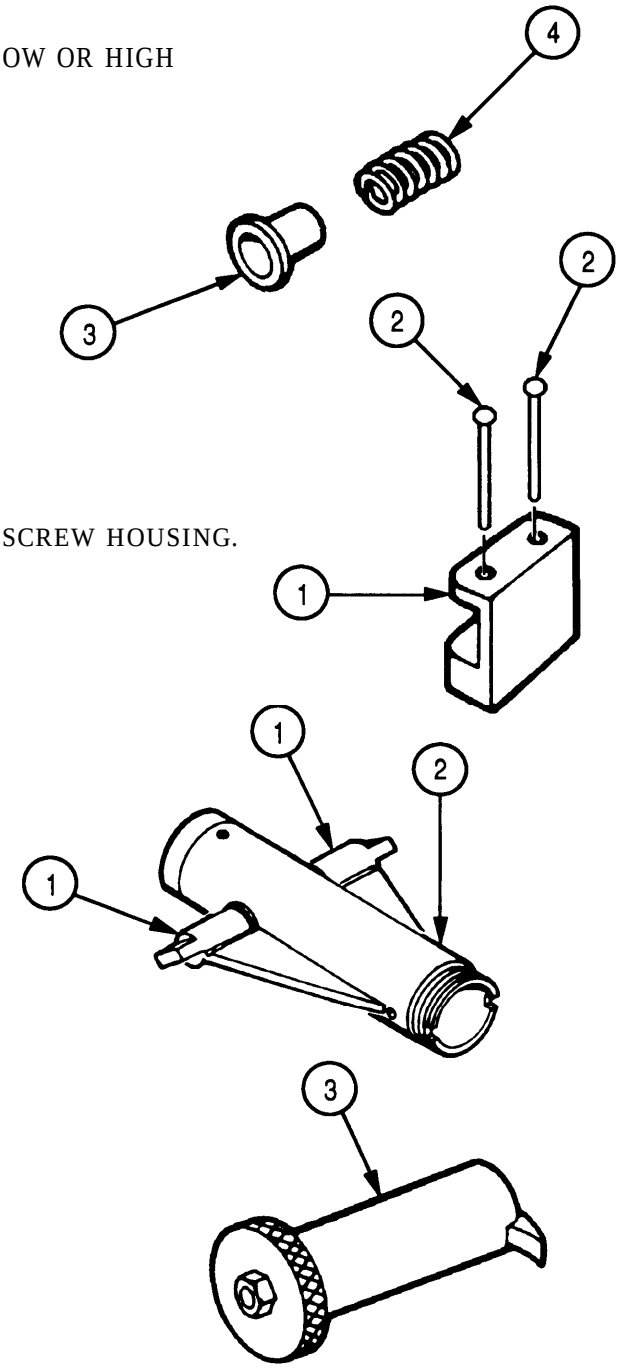
6. STANDARD ASSEMBLY WILL NOT SECURE.

Step 1. Check for broken or bent trunnions (1) on standard base (2).

Repair or replace standard base (p 3-46).

Step 2. Check for broken mortar pin assembly (3).

Repair or replace pin assembly (p 3-31).



TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

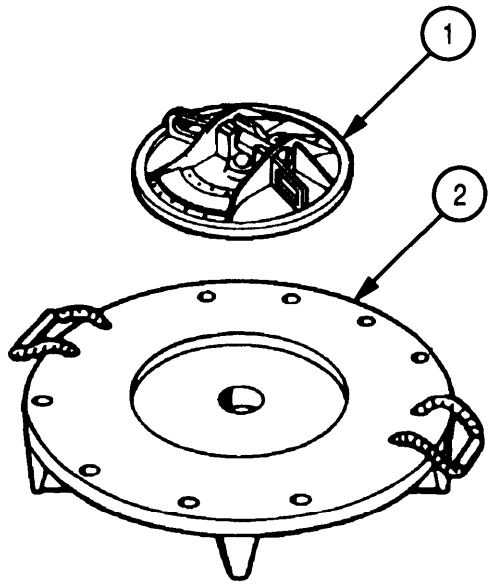
7. ROTATOR ASSEMBLY DOES NOT TURN FREELY.

Step 1. Check for cracked or warped bearing surface of rotator assembly (1).

Replace rotator assembly (p 3-45).

Step 2. Check for cracks in baseplate bearing surface (2).

Replace baseplate (p 3-45).



8. BRIDGE ASSEMBLY TRUNNIONS SOCKETS ON ROTATOR ASSEMBLY.

Step 1. Check for burred bridge trunnion socket (1).

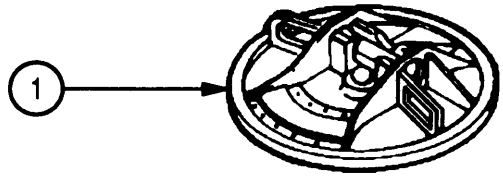
Remove burrs.

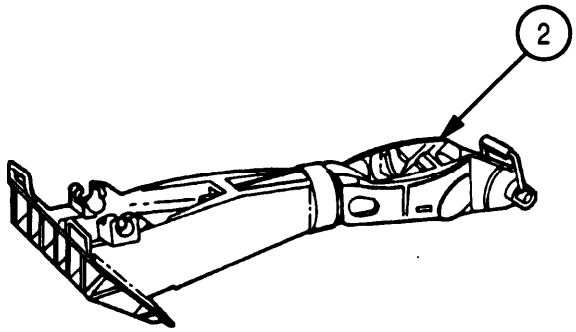
Step 2. Check for cracked bridge trunnion socket (1).

Replace rotator assembly (p 3-45).

Step 3. Check for cracks in bridge trunnions (2).

Replace bridge assembly (p 3-45).





TROUBLESHOOTING (CONT)

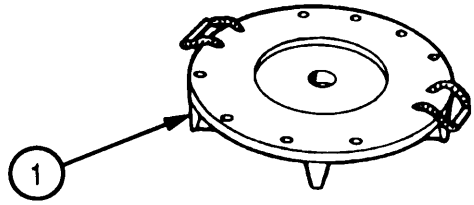
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MOUNT (CONT)

9. ROTATOR ASSEMBLY WON'T LOCK IN BASEPLATE.

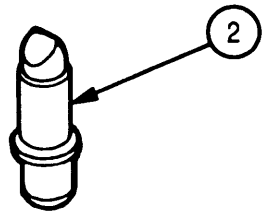
Step 1. Check for dirt or grit in slide lock recess of mortar baseplate (1).

Remove and clean rotator assembly. Clean recesses of mortar baseplate (p 3-92).



Step 2. Check for broken or damaged headless shoulder pin (2).

Replace pin (p 3-85).

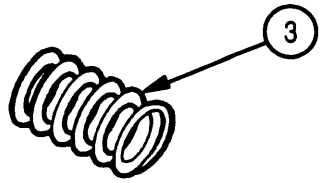


Step 3. Check for broken or weak spring (3).

Replace spring (p 3-85).

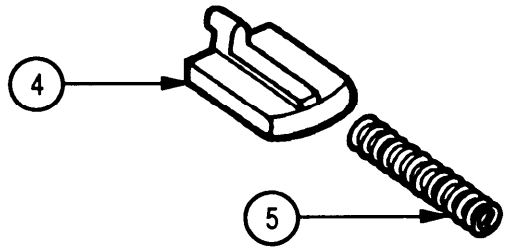
Step *4*. Check for broken slide locks (4).

Replace slide locks (p 3-85).



Step 5. Check for broken or weak springs (5) for slide locks.

Replace springs (p 3-85).



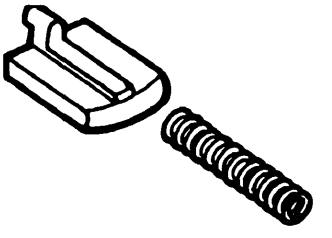
TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

10. ROTATOR ASSEMBLY WON'T UNLOCK FROM MORTAR BASEPLATE.

Step 1. Check for dirt and grit in slide lock releases of the rotator assembly.

Remove and clean rotator assembly (p 3-85).



Step 2. Check for broken or weak springs.

Replace springs (p 3-85).

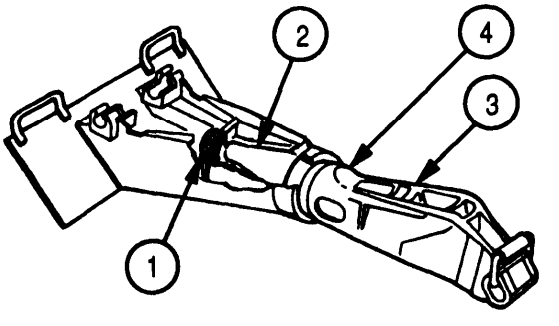
11. BRIDGE ASSEMBLY DOES NOT ROTATE.

Step 1. Check that lock nut (1) is not screwed on too tight.

Adjust lock nut (p 3-85).

Step 2. Check for bent or warped shank (2) on bridge cup assembly (3).

Replace bridge cup assembly (p 3-82).



Step 3. Check for cracked bridge cup (4).

Replace bridge cup assembly (p 3-82).

TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MOUNT (CONT)

11. BRIDGE ASSEMBLY DOES NOT ROTATE (CONT).

Step 4. Check for damaged preformed packing (5).

Replace preformed packing (p 3-82).

12. STANDARD ASSEMBLY TRUNNIONS WON'T GO INTO BRIDGE ASSEMBLY SOCKETS.

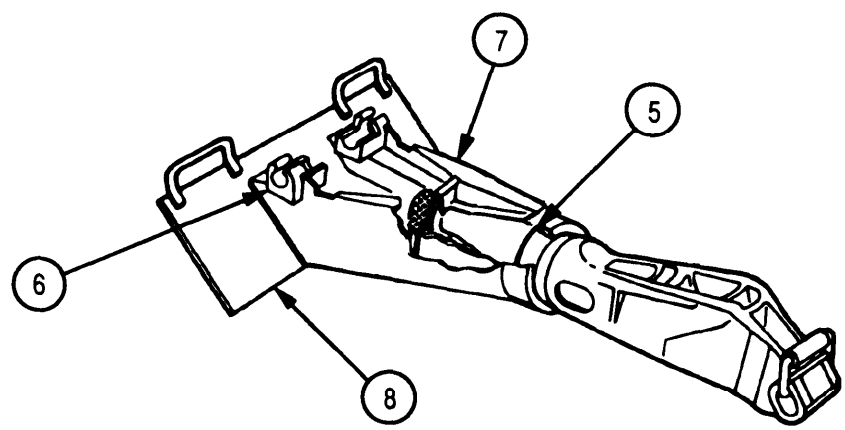
Check for cracked socket (6) on bridge base body (7).

Replace bridge base body (p 3-82).

13. POOR STABILIZATION OF WEAPON DURING FIRING.

Check for cracked bridge base body (7) or spade (8).

Replace bridge base body (p 3-82).



Section II. DIRECT SUPPORT MAINTENANCE PROCEDURES

3-3. GENERAL.

a. Before beginning maintenance operations, check to see that the following manual is available in the maintenance shop:

TM 9-1015-215-10, Operator's Manual.

b. Disassemble the mortar only to remove bad parts or components and to perform semi-annual lubrication which includes disassembling, cleaning, and lubricating the internal components of the shock absorber assemblies, elevating screw housing assembly, standard assembly, and traverse slide assembly. Clean and lubricate with GAA (item 15, app D) for all temperatures.

WARNING

Dry cleaning solvents (SD) and paint thinners (TPM) are flammable. Do not clean parts near an open flame or in a smoking area. Dry cleaning solvents and paint thinners evaporate quickly and have a drying effect on the skin. When used without protective gloves, these chemicals may cause irritation to or cracking of the skin.

CAUTION

Do not weld objects until you know the physical characteristics of the metal.

c. Refer to TM 9-237 when welding is necessary.

3-4. INITIAL SETUP.

a. Tools and Special Tools lists tools needed for the procedures.

b. Materials/Parts refers to expendable materials and mandatory replaceable parts.

c. Personnel Required is listed only if the task requires more than one person. If Personnel Required is not listed, it means one person can do the job.

d. References lists other publications containing necessary information.

e. Equipment Conditions lists conditions to be met before starting the procedure.

MAINTENANCE INDEX

3-5. M30 4.2-INCH MORTAR BARREL-MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning/Inspection
c. Repair
d. Reassembly

INITIAL SETUP

Tools and Special Tools
Accessory Outfit for Pullover Gages (item 4, app B)
Barrel Bore Inspecting M2 or M3 Borescope (item 3, app B)
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)
4.2-inch Mortar Barrel M30 and 4.2-inch Mortar Mount M24 Series Field Maintenance Tool Set (item 5, app B)

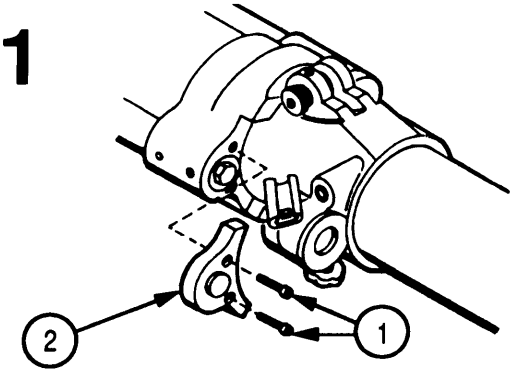
Materials/Parts
Dry cleaning solvent (item 12, app D)
General purpose lubricating oil (item 17, app D)
Preformed packing (item 8, app E)
Wiping rag (item 23, app D)

References
TM 9-1000-202-14
TM 9-1015-215-10
TM 9-6650-235-13&P

Equipment Conditions
Mortar barrel removed from M30 4.2-inch mortar (TM 9-1015-215-10)

DISASSEMBLY

1

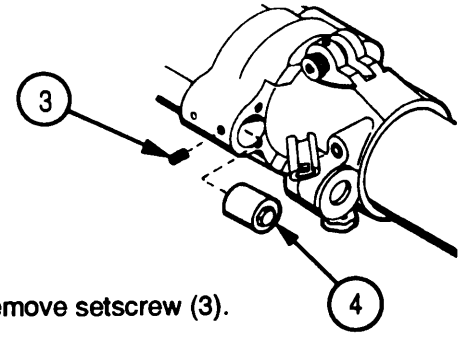


a. Remove two socket head cap screws (1).

b. Remove mortar coupling lug (2).

c. Repeat steps a and b to remove mortar coupling lug on the other side.

2



a. Remove setscrew (3).

WARNING

Do not stand in front of sleeve tube nut (4) when removing it. The compressed spring may fly out of the shock absorber.

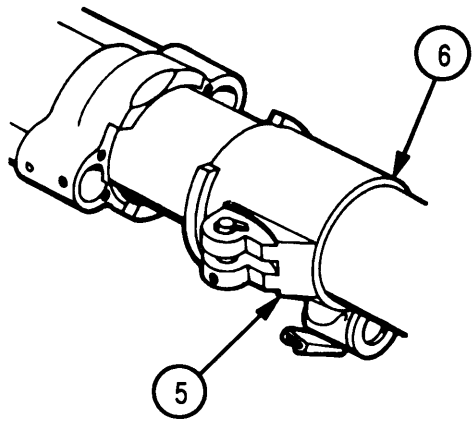
b. Unscrew and remove sleeve tube nut (4).

c. Repeat steps a and b to remove sleeve nut on other side.

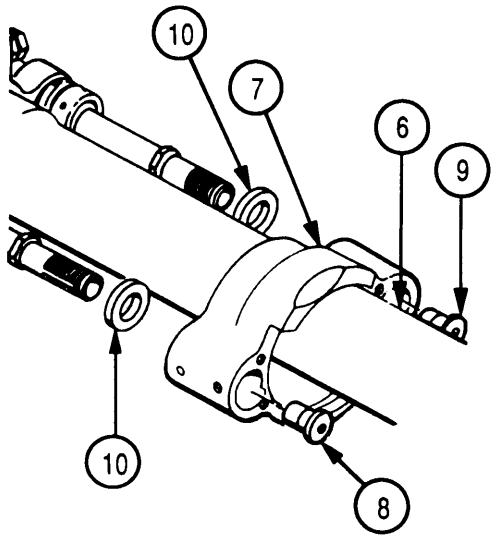
3

a. Rotate coupling and sight mount assembly (5) a quarter turn, either way, to unlock.

b. Remove coupling and sight mount assembly (5) by sliding it over muzzle of mortar barrel tube (6).



4



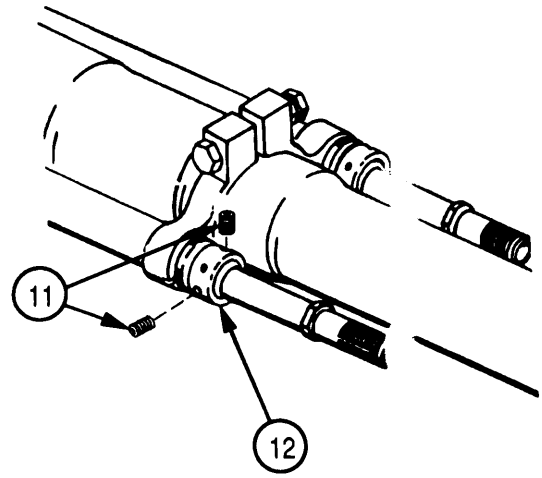
NOTE

Removing the coupling assembly base (7) may pop out the cushion assemblies (8 and 9). They are actually parts of the shock absorber.

a. Remove coupling assembly base (7) by sliding it over muzzle of mortar cannon tube (6).

b. Remove two flat washers (10).

5



NOTE

Some seal caps may have only one setscrew.

a. Remove two setscrews (11) from seal cap (12).

b. Using spanner wrench, unscrew seal cap (12).

c. Repeat steps a and b to unscrew seal cap on the other side.

3-5. M30 4.2-INCH MORTAR BARREL--MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

6

a. Slide seal cap (12) against flange of shock absorber.

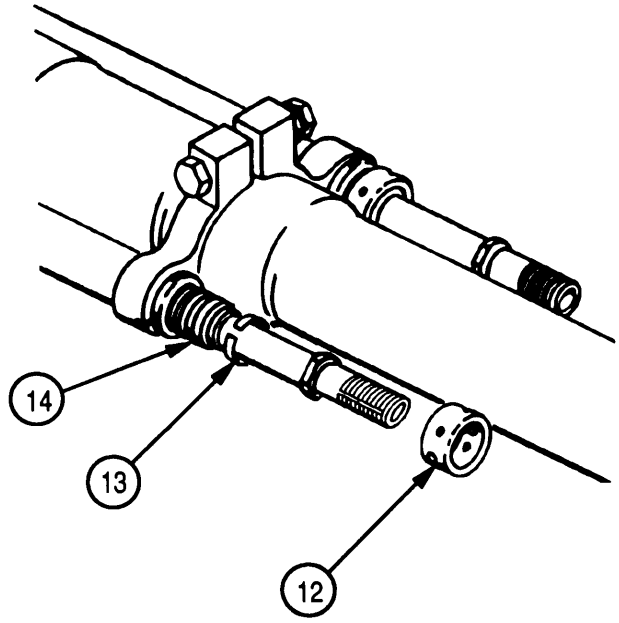
b. Tap seal cap (12) to remove. The seal cap will separate from the preformed packing (13) and packing retainer (14).

c. Remove preformed packing (13).

NOTE

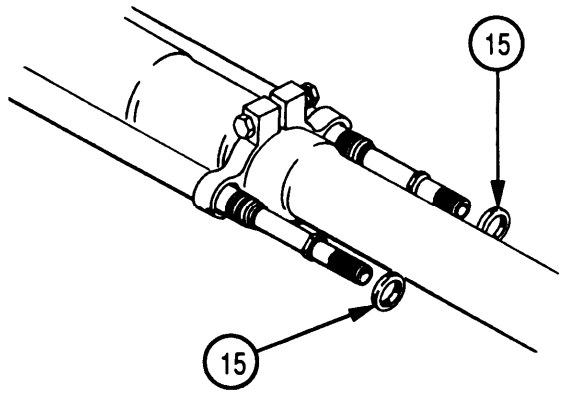
The packing retainer (14) is part of the shock absorber. It cannot be removed at this time.

d. Repeat steps a, b, and c to remove seal cap and preformed packing on the other side.



7

Using spanner wrench, unscrew and remove two round nuts (15).

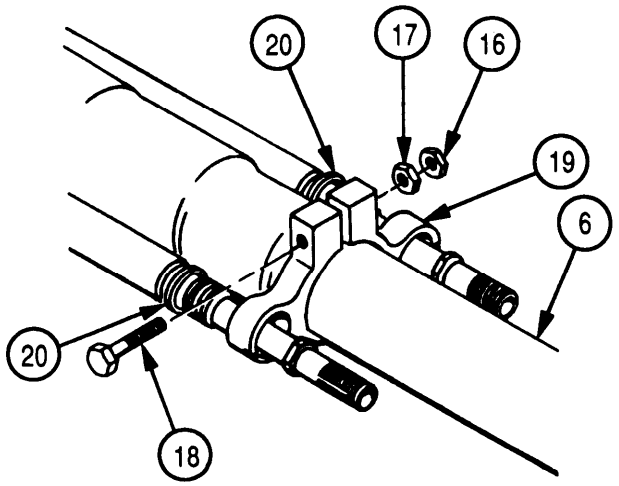


8

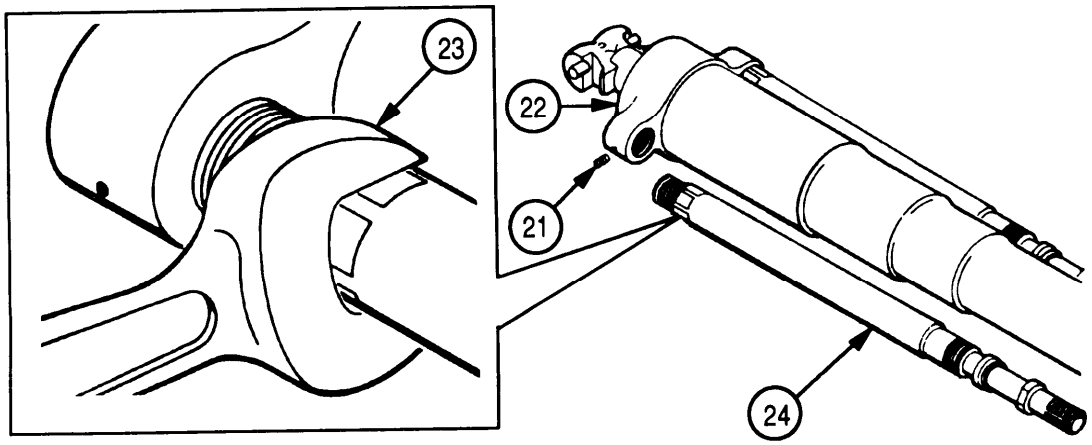
a. Remove nuts (16 and 17) and screw (18) to free barrel flange (19) on mortar barrel tube (6).

b. Remove barrel flange (19) by sliding it over muzzle of mortar barrel tube.

c. Remove two ring spacers (20).



9



a. Remove setscrew (21) from barrel assembly (22).

b. Using wrench (23), unscrew and remove shock absorber (24).

c. Repeat steps a and b to remove shock absorber from the other side.

3-5. M30 4.2-INCH MORTAR BARREL--MAINTENANCE INSTRUCTIONS (CONT).

CLEANING/INSPECTION

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

b. Coupling and sight mount assembly (5).
(1) Inspect body, sight socket, and knob for cracks, nicks, and burrs.
(2) Inspect worm assembly gear for turning action and wear.

c. Shock absorber (24).
(1) Inspect inner tube and outer tube for bends, dents, cracks, heavy scoring, and mutilation.
(2) Inspect all threaded parts for burrs, wear, and damage.

d. Mortar barrel tube (6).
(1) Inspect bore for wear, deformed lands and grooves, powder fouling, and rust.
(2) Inspect tube cap for signs of gas leakage around the barrel and for loose, bent, or burred pins.
(3) Borescope and use pullover gage on barrel according to instructions in TM 9-1000-202-14. See TM 9-6650-235-13&P for operation of the M3 borescope.

REPAIR

a. Replace authorized parts as required. Refer to appendix C.

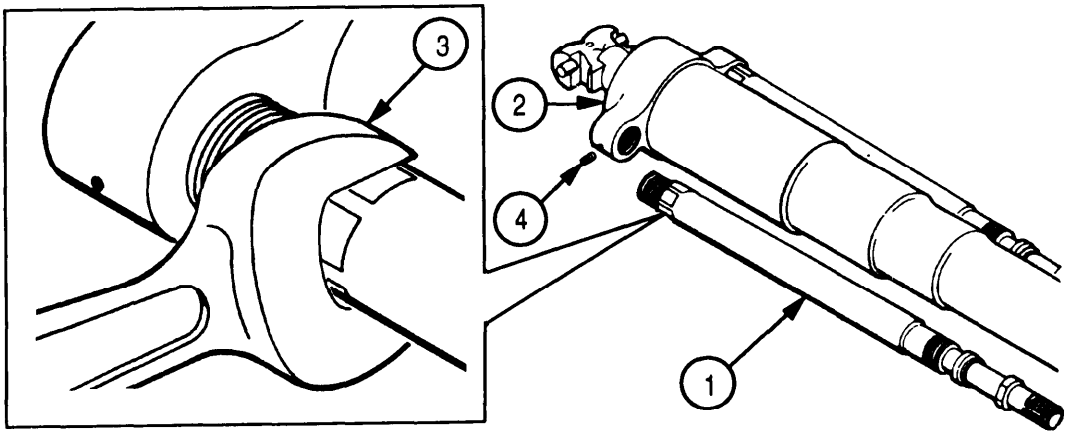
NOTE

Always replace shock absorbers in pairs.

b. Use stone or file to smooth out any nicks or burrs.

REASSEMBLY

1



NOTE

New barrel tubes have gunner's quadrant flat spots on end of muzzle.

a. Place barrel on work bench with the gunner's quadrant flat spot facing down.

b. Install shock absorber (1) in barrel assembly (2). Use wrench (3) to tighten securely.

c. Install setscrew (4) in barrel assembly (2). Tighten securely.

d. Repeat steps b and c to install shock absorber on the other side.

2

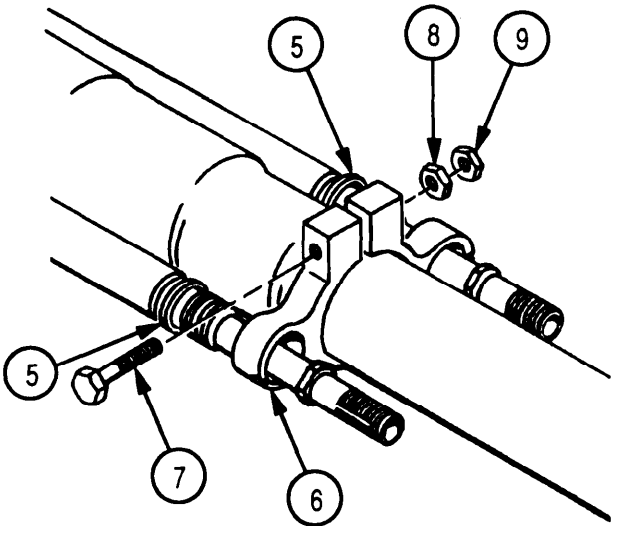
a. Install two ring spacers (5). Slide them back against the shoulders on shock absorbers.

NOTE

Face notches on barrel flange toward muzzle of mortar tube.

b. Install barrel flange (6). Slide it back against two ring spacers (5).

c. Install screw (7) and nuts (8 and 9). Do not tighten at this time.



3-5. M30 4.2-INCH MORTAR BARREL--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

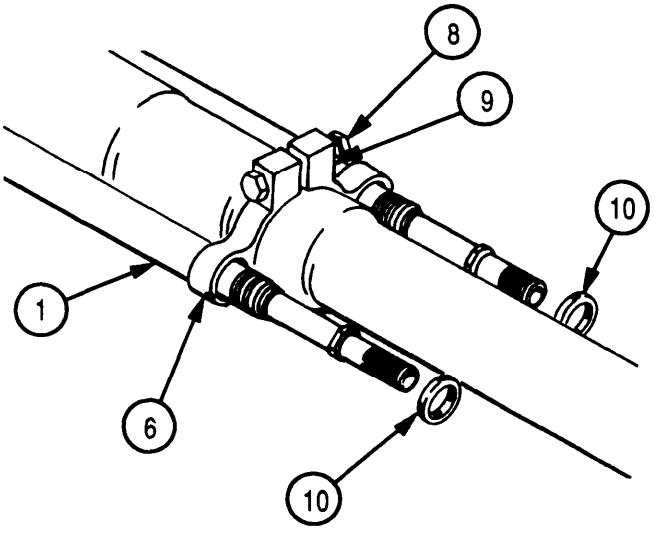
3

a. Install round nut (10) on shock absorber (1). Tighten securely against barrel flange (6).

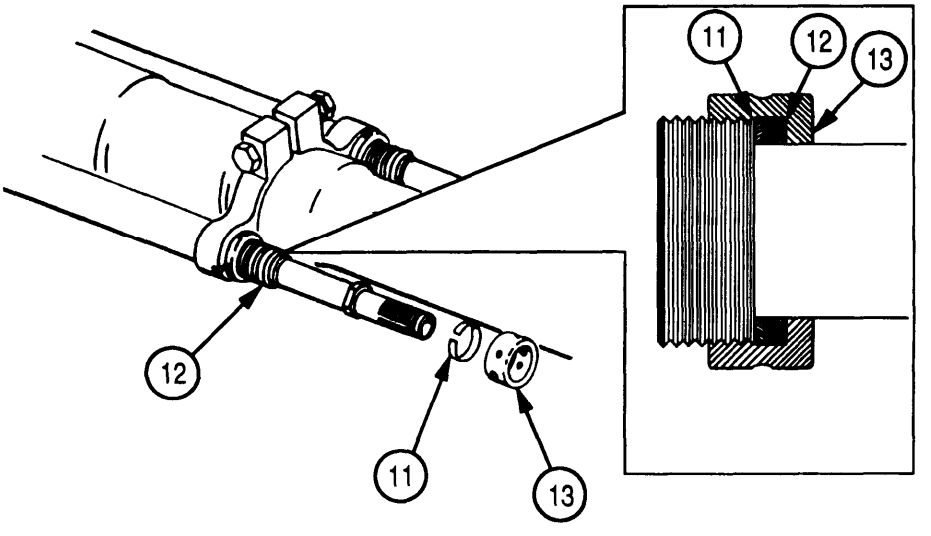
b. Stake out round nut (10) into the notch in barrel flange (6).

c. Repeat steps a and b to install round nut on the other side.

d. Tighten nuts (8 and 9).



4



a. Slide new preformed packing (11) against shoulder of shock absorber.

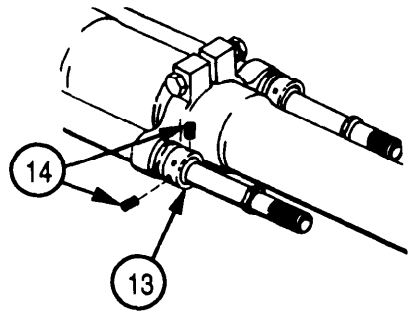
b. Position packing retainer (12) against new preformed packing (11).

c. Install seal cap (13) over preformed packing (11) and packing retainer (12).

d. Push seal cap (13) against shock absorber. Screw on and tighten securely with spanner wrench.

e. Repeat steps a thru d to install preformed packing and seal on other side.

5



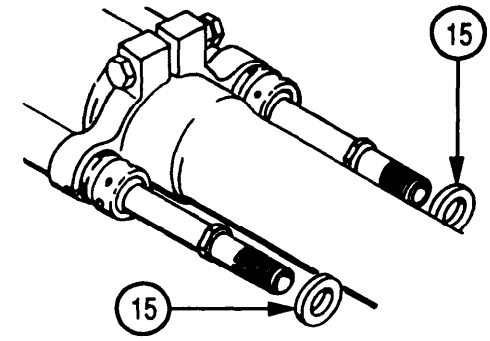
NOTE

If positioning does not permit access to install two setscrews, install only one.

a. Install two setscrews (14) in seal cap (13). Tighten securely.

b. Repeat step a to install two setscrews on the seal cap on the other side.

6



Install two flat washers (15). Slide them back against flanges on the shock absorber.

7

NOTE

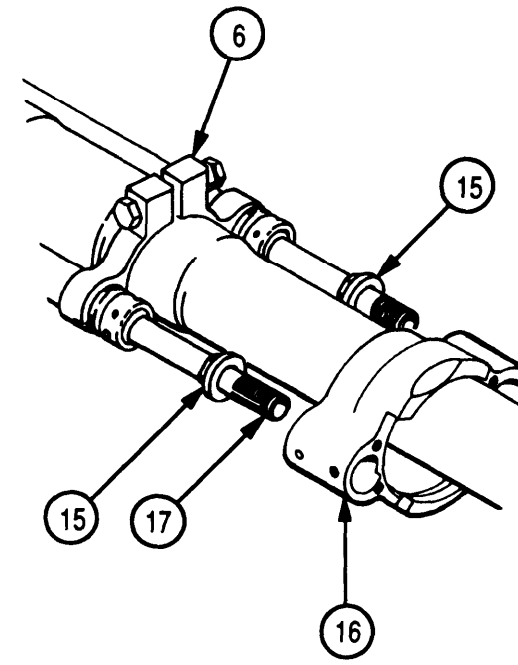
Bevel on coupling assembly base (16) must face the same direction as the split in the barrel flange (6).

a. Slide coupling assembly base (16) over muzzle of mortar barrel tube.

b. Aline holes in coupling assembly base (16) with shock absorbers.

c. Aline the grooves (17) of the shock absorber inner tubes with locking pins in coupling assembly base (16).

d. Push coupling assembly base (16) against two flat washers (15).



3-5. M30 4.2-INCH MORTAR BARREL--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

8

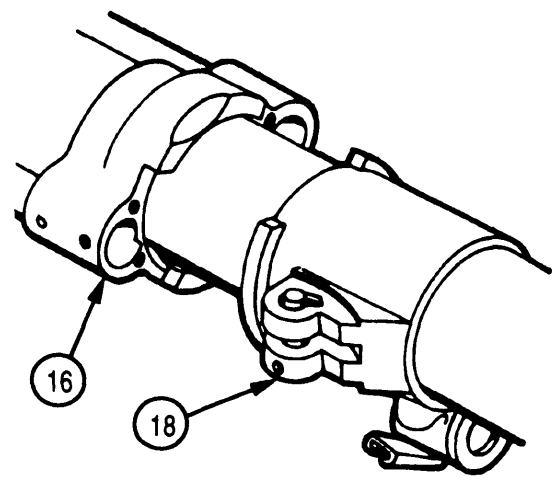
NOTE

The eye on the coupling and sight mount assembly (18) must face the same direction as the bevel on the coupling assembly base (16).

a. Install coupling and sight mount assembly (18) by sliding it over muzzle of mortar barrel tube.

b. Mate locking lugs on coupling and sight mount assembly (18) with recesses on coupling assembly base (16).

c. Turn coupling and sight mount assembly a quarter turn to lock into position.

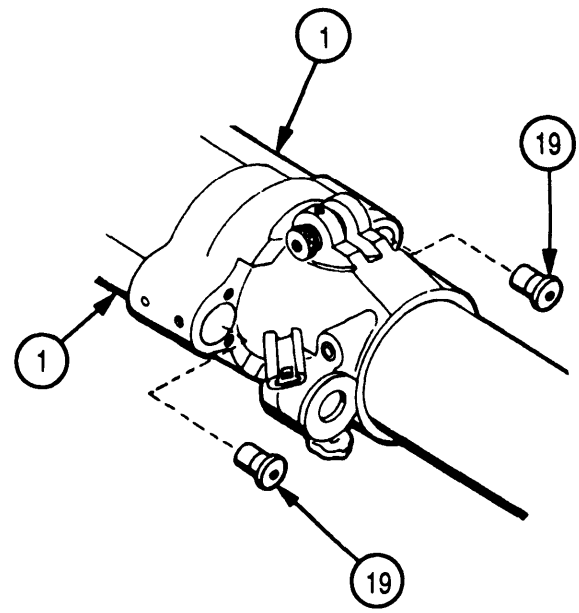


9

Install two cushion assemblies (19) into open end of shock absorbers (1).

NOTE

Be sure cushion assemblies are fully seated in shock absorbers.



10

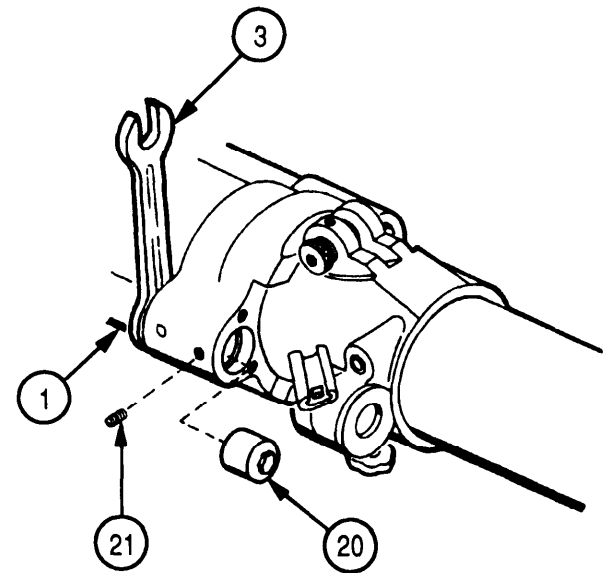
a. Install sleeve tube nut (20) on shock absorber (1). Tighten securely.

NOTE

Use wrench (3) to hold shock absorber while sleeve nut is being tightened.

b. Install setscrew (21). Tighten securely.

c. Repeat steps a and b to install sleeve nut and setscrew on the other side.

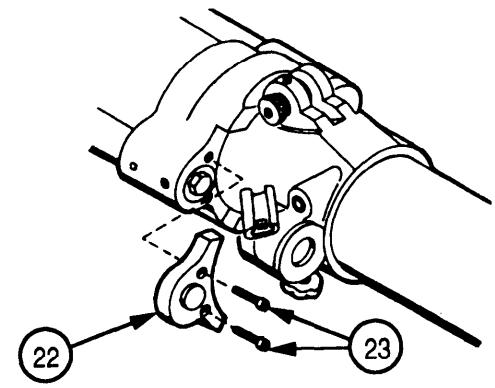


11

a. Install mortar coupling lug (22).

b. Install two socket head cap screws (23).

c. Repeat steps a and b to install mortar coupling lug on the other side.



12

Stake all setscrews securely when reassembly has been completed.

13

Lubricate cannon with general purpose lubricating oil. Refer to TM 9-1015-215-10.

3-6. COUPLING AND SIGHT MOUNT ASSEMBLY--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning/Inspection
c. Repair
d. Reassembly

INITIAL SETUP

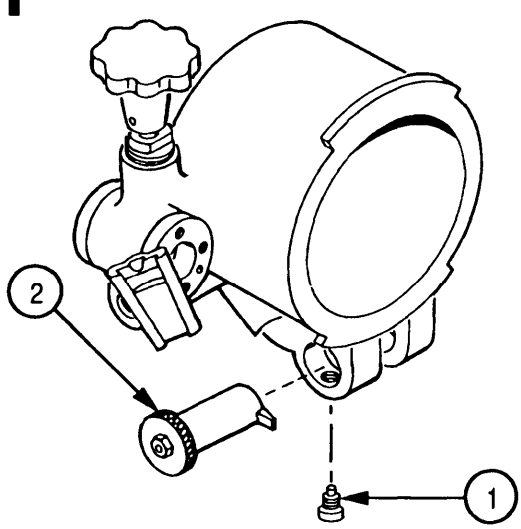
Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Wiping rag (item 23, app D)
Gasket (item 3, app E)

Equipment Conditions
Coupling and sight mount assembly removed from cannon (p 3-14)

DISASSEMBLY

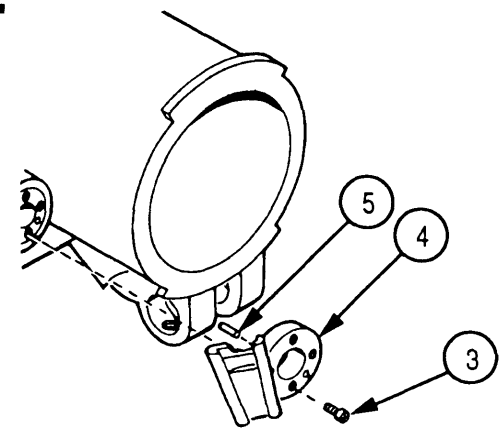
1



a. Remove setscrew (1).

b. Remove pin assembly (2).

2

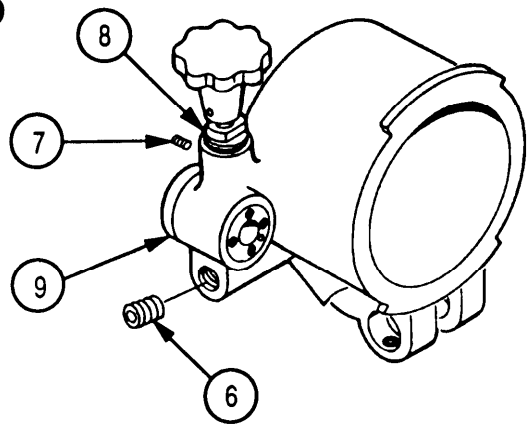


a. Remove four socket head cap screws (3).

b. Carefully pry off sight socket (4).

c. Remove pin (5) only if it's damaged.

3

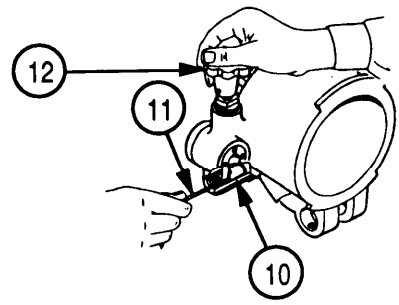


a. Remove pipe plug (6).

b. Remove setscrew (7).

c. Unscrew ball seat (8) until it is free of coupling body (9).

4



a. Push in on yoke (10) with a small diameter brass rod (11).

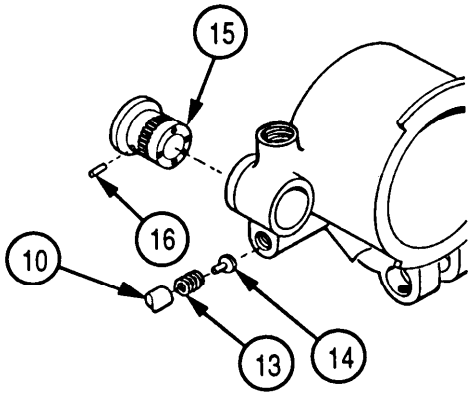
b. Turn knob (12) counterclockwise until the knob and worm assembly can be removed as a unit.

NOTE

Be careful that the sleeve worm bearings do not drop away.

c. Remove brass rod (11).

5

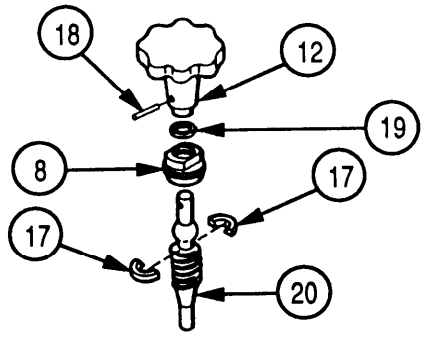


a. Remove yoke (10), spring (13), and spring guide (14).

b. Remove worm assembly gear (15).

c. Remove pin (16) only if pin or gear are damaged.

6



a. Remove two sleeve bearings (17).

b. Remove spring pin (18).

c. Remove knob (12), gasket (19), and ball seat (8) from sight mount worm (20).

3-6. COUPLING AND SIGHT MOUNT ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

CLEANING/INSPECTION

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

b. Inspect for locking action, wear, damage, rust, and burrs.

c. Sight mount worm (20):
(1) Inspect for cracks and breaks, especially between ball bearing and gear threads,
(2) Inspect two sleeve bearings (17) for wear, damage, and burrs.

d. Inspect worm assembly gear (15) for wear, damage, and burrs.

e. Inspect spring (13) for cracks, breaks, and deformities.

REPAIR

a. Replace authorized parts as required. Refer to appendix C.

b. Use stone or file to smooth out any nicks or burrs.

REASSEMBLY

1

Apply automotive and artillery grease to all bearing surfaces, springs, and gears during reassembly.

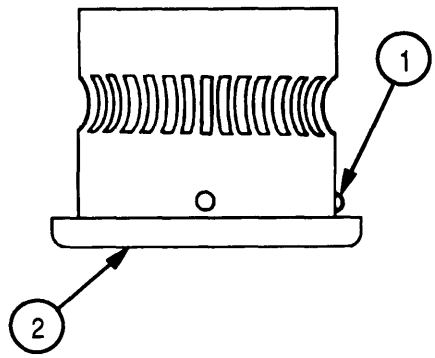
2

a. To install a new pin in a serviceable worm gear, go to step 3.

b. To install a new pin in a different segment of the worm gear, go to step 4.

c. To install a serviceable or a new worm assembly gear, go to step 5.

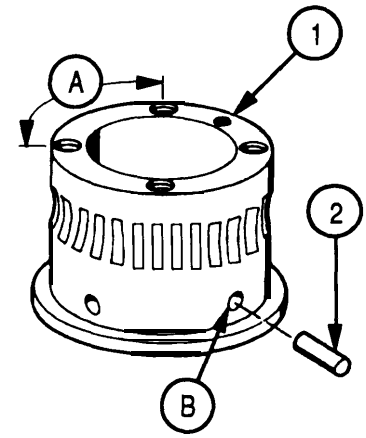
3



a. Install pin (1) in worm gear (2). Pin should project 5/64 inch ±1/64 inch.

b. Go to step 5.

4

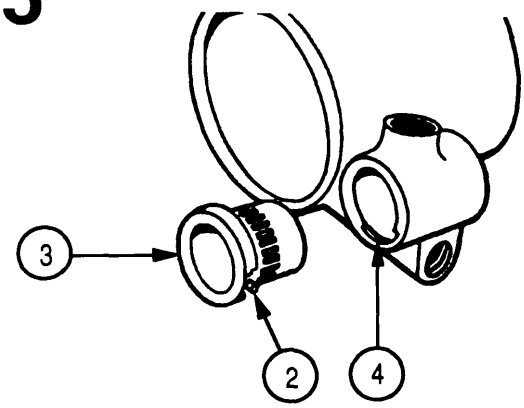


a. Check that the old pin has been removed.

b. Examine worm gear (1) and select a good segment of gear teeth (A).

c. Install pin (2) at (B) opposite good segment (A). Pin should project 5/64 inch ±1/64 inch above geared surface.

5



a. Aline pin (2) in worm assembly gear (3) with notch in coupling body (4).

b. Install worm shaft assembly gear (3).

c. Check that pin does not bind in its travel.

6

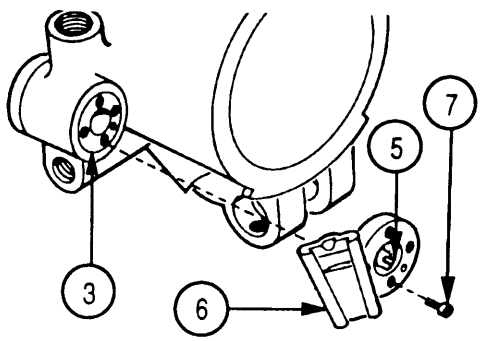
a. To install the sight socket in original worm assembly gear, go to step 7.

b. To install the sight socket in a new or repaired worm assembly gear, go to step 8.

3-6. COUPLING AND SIGHT MOUNT ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

7



a. Install pin (5) in sight socket (6) if it has been removed.

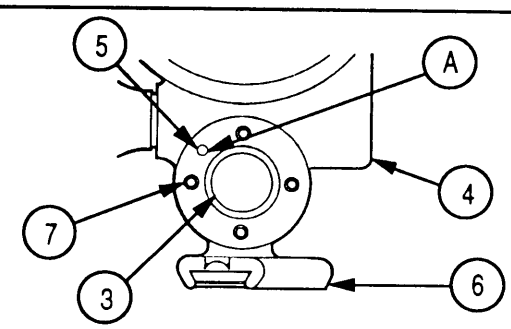
b. Aline pin (5) with pin hole in worm assembly gear (3).

c. Install sight socket (6). Press or tap sight socket into worm assembly gear (3).

d. Install four socket head cap screws (7). Tighten securely.

e. Go to step 9.

8



a. If sight socket (6) has pin (5) installed, remove pin.

b. Position sight socket (6) on coupling body (4) as shown.

c. Turn worm assembly gear (3) until its screw holes line up with sight socket screw holes.

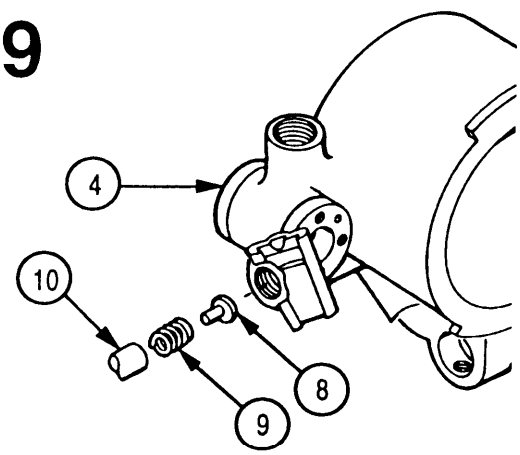
d. Install four cap screws (7). Tighten securely.

e. Using hole (A) as a guide, drill 11/64-inch hole, 15/16 inch deep. Ream 3/16 inch in worm assembly gear (3).

f. Install pin (5) below flush in sight socket (6).

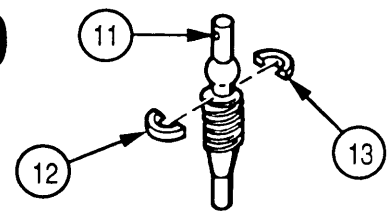
g. Go to step 9.

9



Install spring guide (8), spring (9), and yoke (10) in coupling body (4).

10



a. Apply grease to ball section of sight mount worm (11).

b. Grease sleeve bearings (12 and 13) enough to stick in place.

c. Position two sleeve bearings (12 and 13) on ball section of sight mount worm (11). Press in place.

11

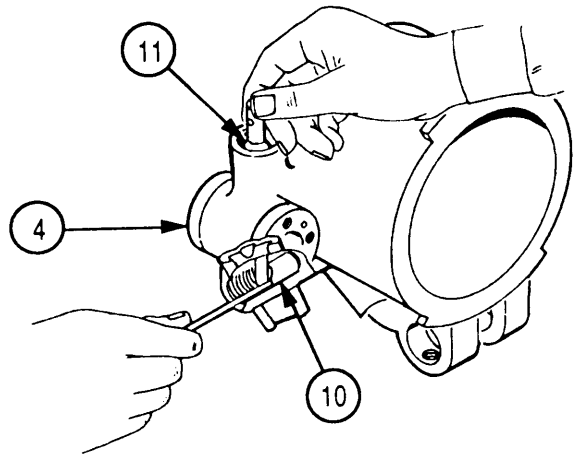
a. Install sight mount worm (11) in coupling body (4).

b. Push in and turn until shaft touches yoke (10) to engage the worm assembly gear.

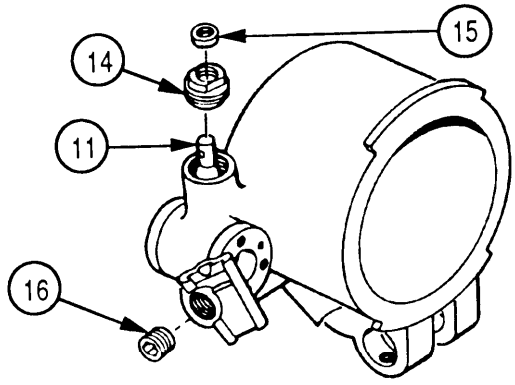
c. Press in on yoke (10) with a brass rod to provide clearance for the worm assembly gear shaft.

d. Continue pushing in and turning sight mount worm (11) until it and sleeve bearings are seated.

e. Remove brass rod.



12

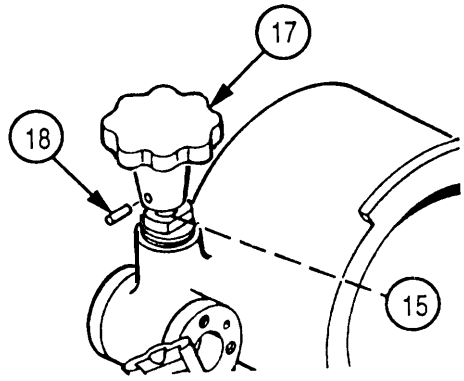


a. Install ball seat (14). Tighten just enough to allow the sight mount worm (11) to turn smoothly.

b. Install new gasket (15).

c. Install pipe plug (16).

13



a. Install knob (17) on shaft of sight mount worm.

b. Press and turn knob (17) to aline pin holes.

c. If the old sight mount worm is installed, go to step e below. If a new sight mount worm is installed, go to step d below.

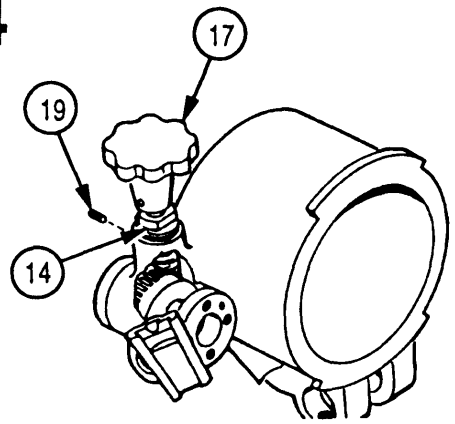
d. Press knob (17) against gasket (15) and, using the pin hole in knob as a guide, drill a l/8-inch hole through shaft.

e. install pin (18).

3-6. COUPLING AND SIGHT MOUNT ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

14

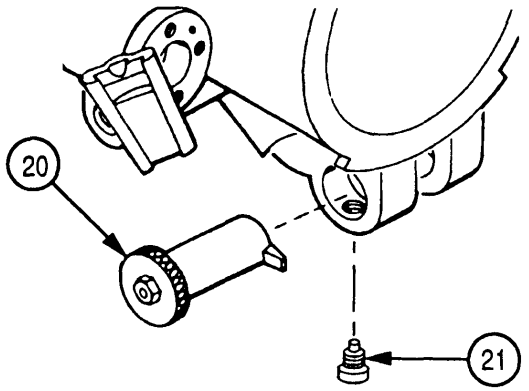


a. Recheck for smoothness or binding in sight mount worm shaft by turning knob (17).

b. Readjust tightness of ball seat (14) until knob turns smoothly.

c. Install setscrew (19). Tighten securely.

15



a. Install pin assembly (20) and aline setscrew slot in pin assembly with setscrew hole.

b. Install setscrew (21). Tighten securely.

3-7. PIN ASSEMBLY--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly/Cleaning/Inspection
b. Repair
c. Reassembly

INITIAL SETUP

Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Dry cleaning solvent (item 12, app D)
General purpose lubricating oil (item 17, app D)
Wiping rag (item 23, app D)

Equipment Conditions
Pin assembly removed from coupling and sight mount assembly (p 3-24)

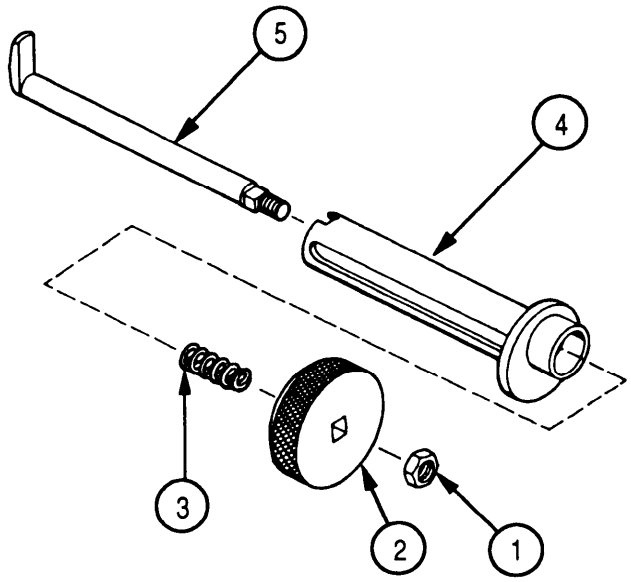
DISASSEMBLY/CLEANING/INSPECTION

a. Remove nut (l), knob (2), and spring (3) from locking pin (4).

b. Remove latch (5).

c. Clean parts with dry cleaning solvent and wipe dry with wiping rag. Inspect knob (2), locking pin (4), and latch (5) for wear, nicks, and burrs.

d. Inspect spring (3) for cracks, breaks, and deformities.



REPAIR

a. Replace authorized parts as required. Refer to appendix C.

b. Use stone or file to smooth out any nicks or burrs.

REASSEMBLY

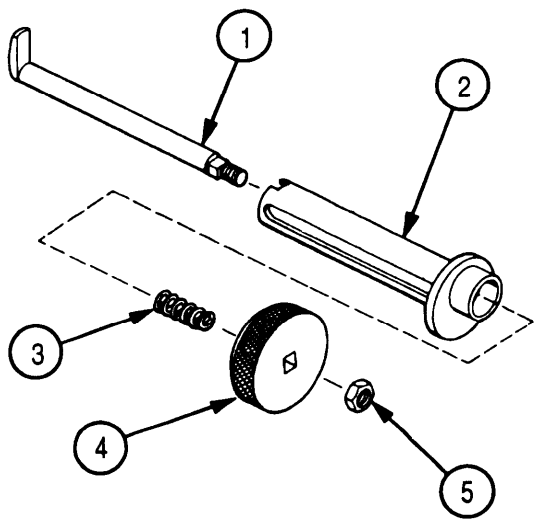
a. Install latch (1) in locking pin (2).

b. Install spring (3) in locking pin (2).

c. Install knob (4) on latch (1). Aline the square hole with the square end of latch.

d. Install nut (5). Tighten securely and stake.

e. Lubricate pin assembly with general purpose lubricating oil.



3-8. COUPLING ASSEMBLY BASE-MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly/Cleaning/Inspection
b. Repair
c. Reassembly

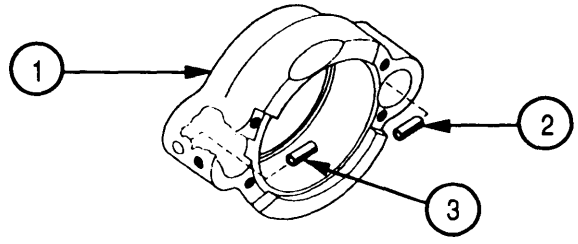
INITIAL SETUP

Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Dry cleaning solvent (item 12, app D)
Wiping rag (item 23, app D)

Equipment Conditions
Coupling assembly base removed from barrel (p 3-14)

DISASSEMBLY/CLEANING/INSPECTION



a. Inspect coupling assembly base (1) for cracks, burrs, and nicks.

b. If damaged, remove pins (2 and 3) from coupling assembly base (1).

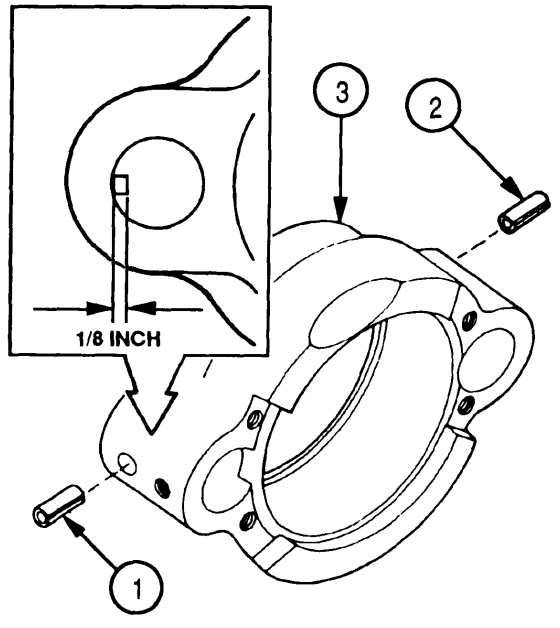
c. Clean coupling assembly base (1) with dry cleaning solvent and wipe dry with rag.

REPAIR

a. Replace authorized parts as required. Refer to appendix C.

b. Use stone or file to smooth out any nicks or burrs.

REASSEMBLY



a. If removed, insert pins (1 and 2) in coupling assembly base (3).

b. Drive pins in until they project 1/8 inch above the inner surface.

3-9. SHOCK ABSORBER ASSEMBLY-MAINTENANCE INSTRUCTIONS.

This task covers:

a. Disassembly
b. Cleaning/Inspection
c. Repair
d. Reassembly

INITIAL SETUP

Took and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Fish Scale
0 to 50 lb (NSN 6670-00-020-1365)
0 to 100 lb (NSN 6670-00-020-1366)
Small Arms Repairman Tool Kit (item 2, app B)
Special screwdriver (fig F-1, app F)

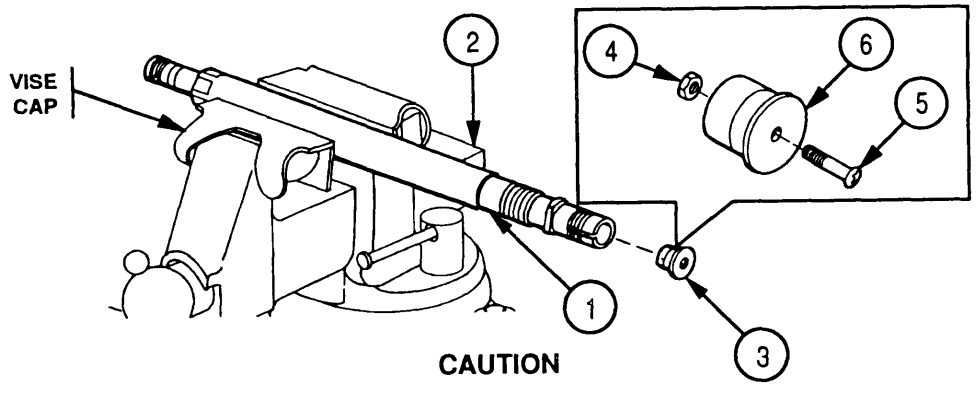
Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Wiping rag (item 23, app D)

Personnel Required
2

Equipment Conditions
Shock absorber assembly removed from barrel (p 3-14)

DISASSEMBLY

1



CAUTION

Install vise caps to prevent damage to shock absorber.

a. Place shock absorber assembly (1) in vise (2).

b. Remove cushion assembly (3).

NOTE

Disassemble cushion assembly (3) only if damaged.

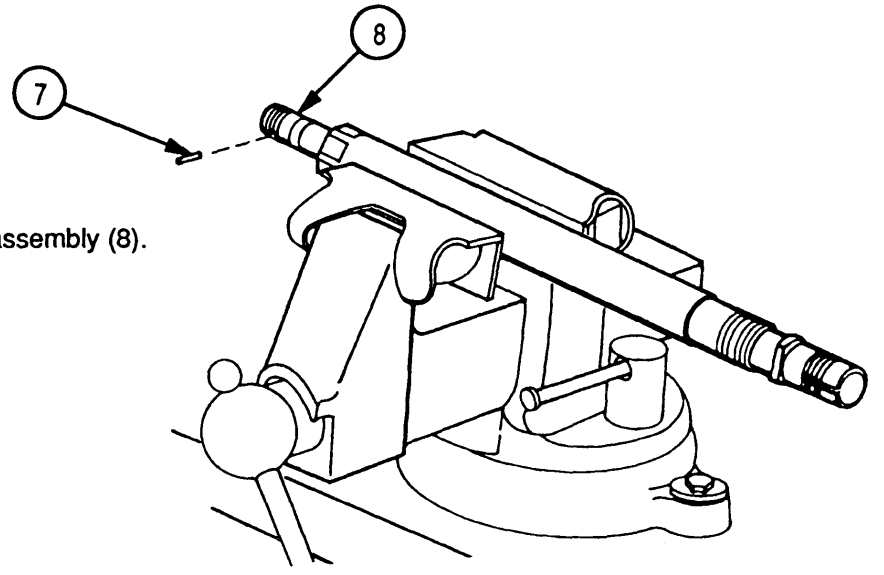
Remove nut (4) and screw (5) from cushion (6).

3-9. SHOCK ABSORBER ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

2

Remove pin (7) from outer tube assembly (8).



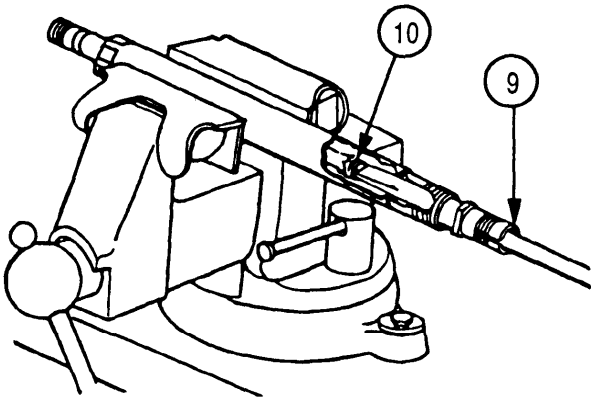
3

a. Insert special screwdriver (fig F-1, app F) into inner tube assembly (9) until contact is made with slot in connecting rod (10).

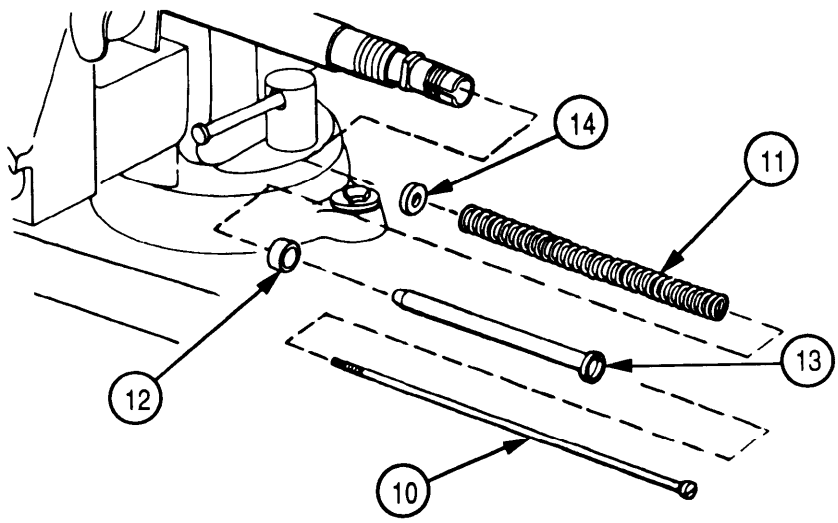
WARNING

The recoil spring, which is telescoped by the spring retainer sleeve and connecting rod, is compressed. When removing the connecting rod, do not let the spring fly out.

b. Release connecting rod (10) by unscrewing it counterclockwise.



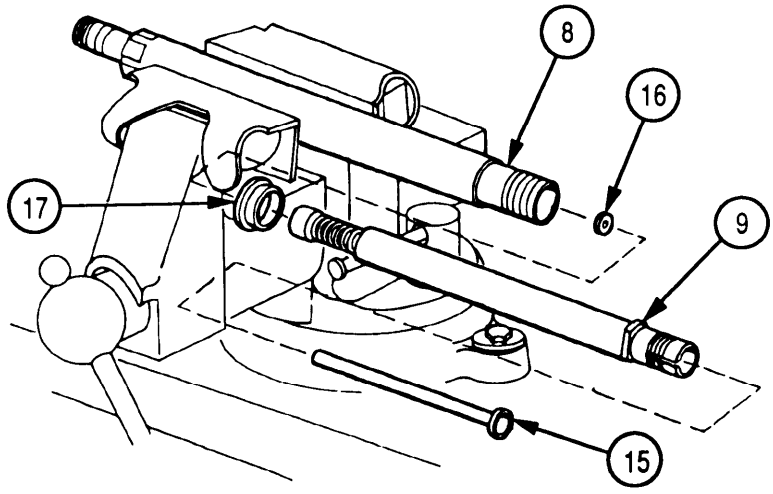
4



a. Remove spring (11), upper sleeve guide (12), spring retainer sleeve (13), connecting rod guide (14), and connecting rod (10) as a unit.

b. Separate all the parts in step a.

5



a. Remove inner tube assembly (9), retainer (15), flat washer (16), and packing retainer (17) as a unit from outer tube assembly (8).

b. Separate all the parts in step a.

NOTE

Do not disassemble inner tube assembly (9).It is replaced as an assembly. Refer to appendix C .

3-9. SHOCK ABSORBER ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

CLEANING/INSPECTION

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag. Inspect all threaded parts for damage burrs, and wear.

b. Inspect cushion assembly (3) for wear and correct compression length. See page 3-42.

c. Inspect outer tube assembly (8) and inner tube assembly (9) for bends, dents, heavy scoring, burrs, nicks and mutilation.

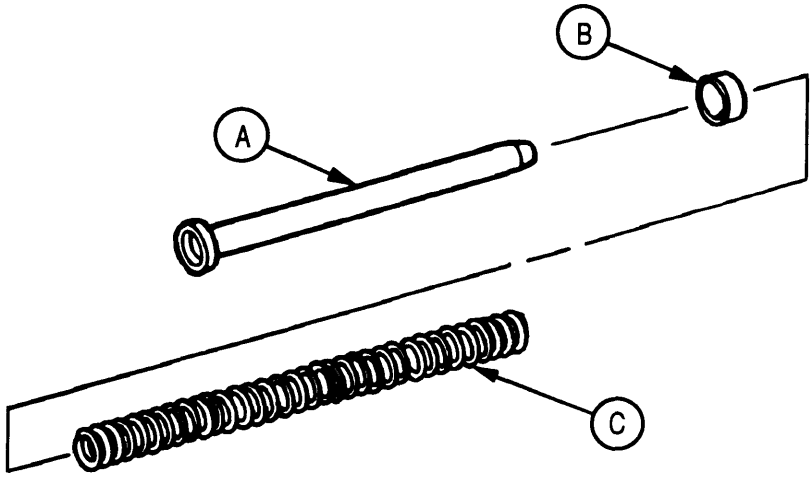
d. Inspect connecting rod (10) for bends, wear, and damage.

e. Inspect spring retainer sleeve (13) and retainer (15) for dents, cracks, and breaks.

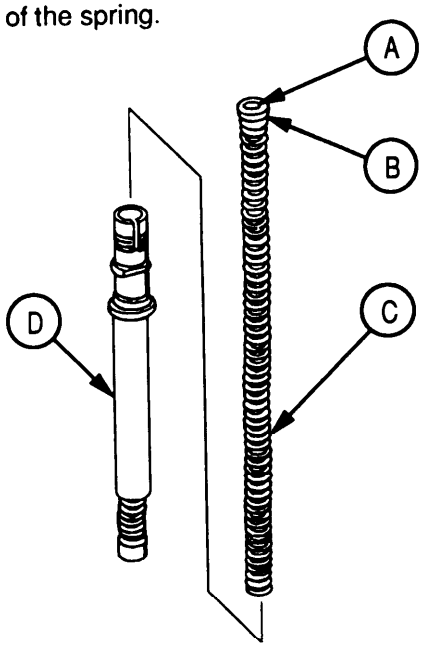
f. Inspect spring (11) for cracks, breaks, and deformities. Use inspection procedure in step g to ensure springs are within specified tolerance for compression test. This spring should have 97-1 /2 working coils.

g. To check the tension of the shock absorber spring (part No. 7144094), use the following procedure:

(1) Insert spring retainer sleeve (A) into upper sleeve guide (B). Then insert this assembly into the spring (C).



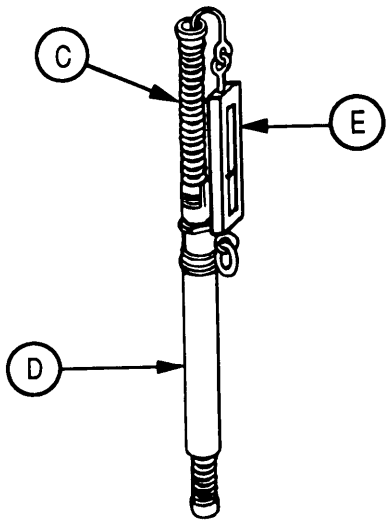
(2) Stand inner tube assembly (D) upright and insert spring assembly (C) into inner tube assembly (D) with items (A) and (B) on exposed end of the spring.



NOTE

Two people are required for the next procedure.

(3) One person grasps inner tube assembly (D) with two hands in an upright position and the bottom end resting on a solid surface. The second person will place the hook of a 0 to 50 lb or 0 to 100 lb fish scale (E) on the top end of the spring assembly (C) and pull down on the scale until the top of the spring is flush with top of tube (D). The reading on scale should be 40 to 48 lb for a good spring.



3-9. SHOCK ABSORBER ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

REPAIR

a. Replace authorized parts as required. Refer to appendix C.

b. Use stone or file to smooth out any nicks or burrs.

c. If one shock absorber spring (part No. 7144094) is replaced, the spring in the shock absorber on the other side must be replaced only if it tests outside of tolerance as listed in procedure on page 3-37 or has incorrect number of working coils.

d. Discard entire shock absorber assembly (part No. 7144220) if the connecting rod, inner tube assembly, or outer tube assembly require replacing.

e. Refer to appendix C for the interchangeability of parts between shock absorber assembly, part No. 7144220, and shock absorber assembly, part No. 11578073.

REASSEMBLY

1

Apply automotive and artillery grease to all bearing surfaces and springs before reassembly.

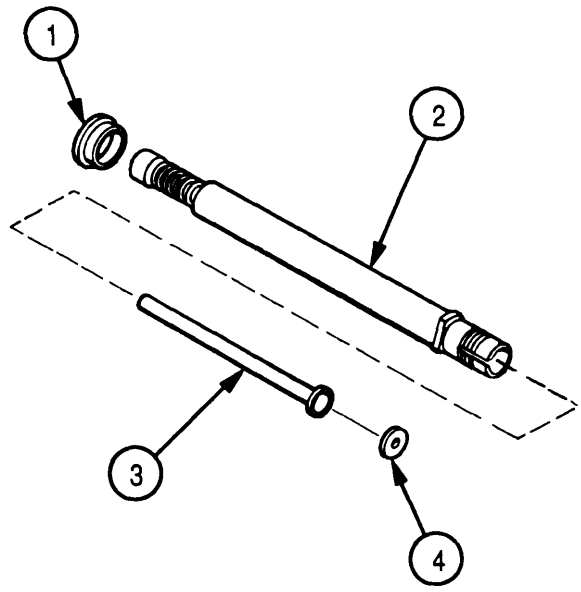
2

a. Install packing retainer (1) on inner tube assembly (2) making sure that the small diameter of packing retainer (1) is facing the flange on inner tube assembly (2).

b. Install retainer (3) in inner tube assembly (2).

c. Seat flange of retainer (3) in the bottom of inner tube assembly (2).

d. Install connecting rod guide (4) in inner tube assembly (2).



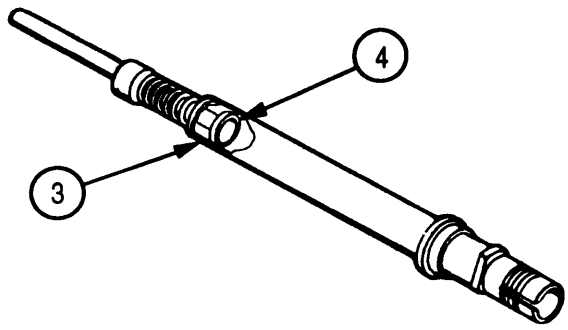
3

a. Seat connecting rod guide (4) down against flange of retainer (3).

NOTE

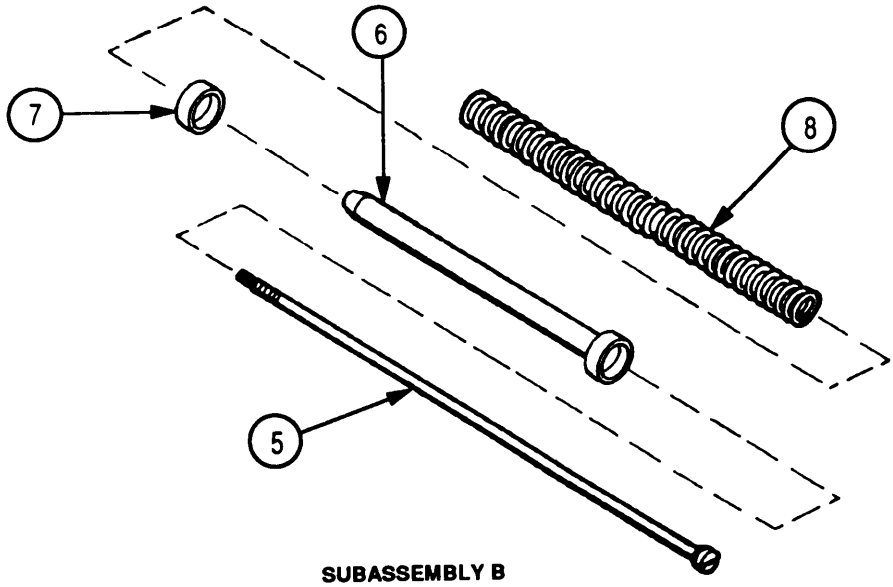
The guide and retainer will be referred to as SUBASSEMBLY A.

b. Temporarily set SUBASSEMBLY A aside and continue with step 4.



SUBASSEMBLY A

4



SUBASSEMBLY B

a. Install connecting rod (5) in spring retainer sleeve (6).

b. Install upper sleeve guide (7) on spring retainer sleeve (6).

c. Seat beveled side of guide (7) against flange of sleeve (6).

d. Install spring (8) on spring retainer sleeve (6).

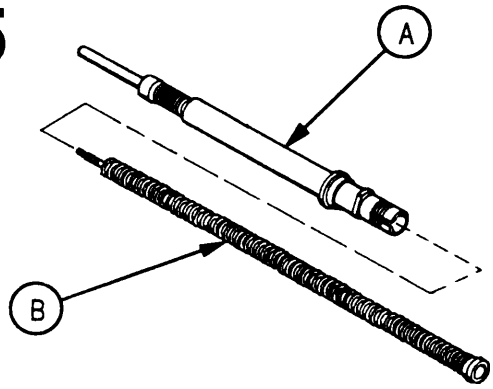
NOTE

The above group of parts will be referred to as SUBASSEMBLY B.

3-9. SHOCK ABSORBER ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

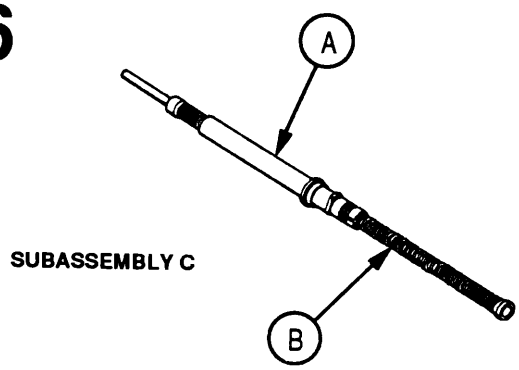
REASSEMBLY (CONT)

5



Install SUBASSEMBLY B from step 4 into SUBASSEMBLY A from step 3.

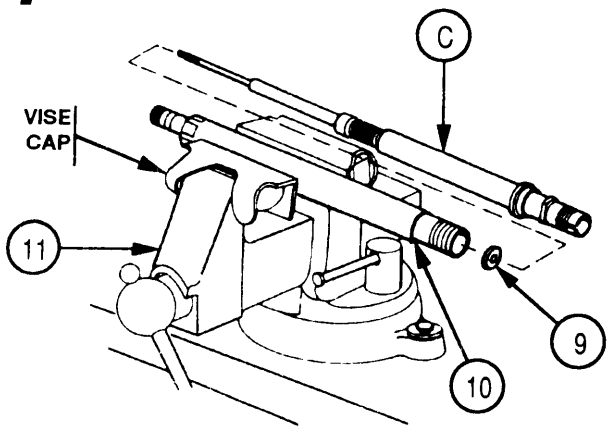
6



NOTE

The above group of parts will referred to as SUBASSEMBLY C.

7

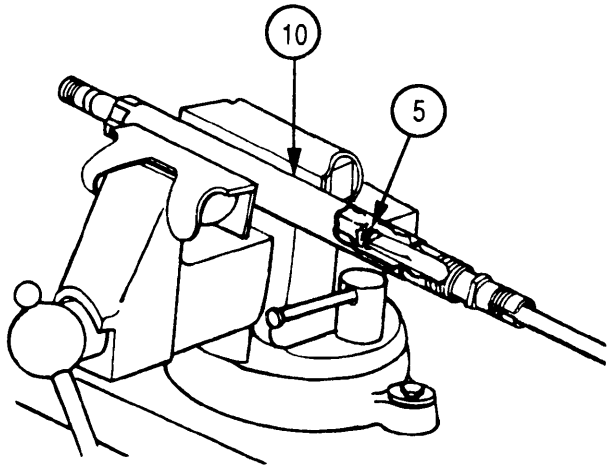


a. Coat flat washer (9) with automotive and artillery grease and position over hole in bottom of outer tube assembly (10).

b. Place outer tube assembly (10) in vise (11).

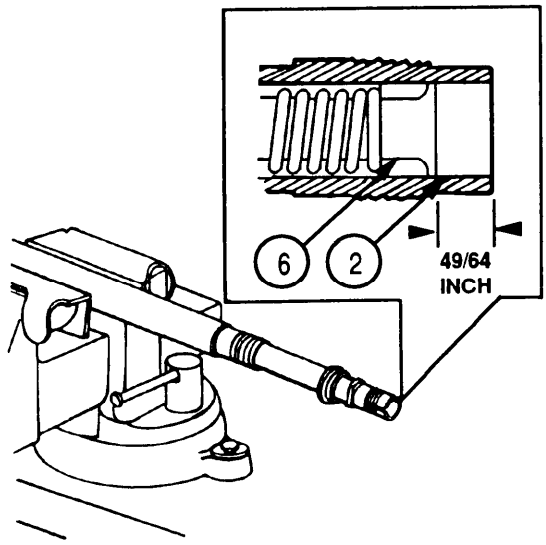
c. Insert SUBASSEMBLY C from step 6 into outer tube assembly (10).

8



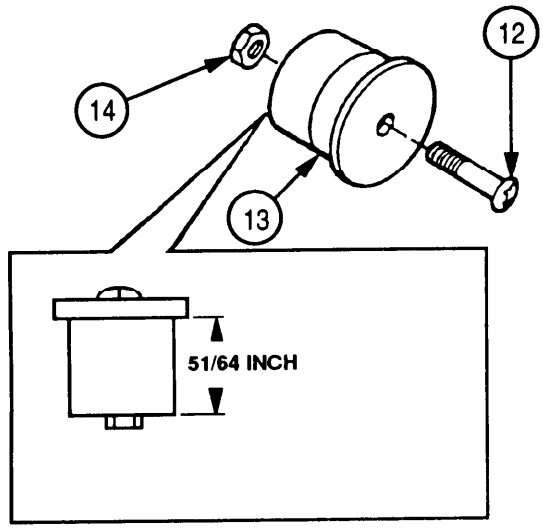
Screw connecting rod (5) part way into outer tube assembly (10) using the special screwdriver (fig F-1, app F).

9



Turn connecting rod to obtain 49/64 inch distance from end of inner tube assembly (2) and end of spring retainer sleeve (6).

10



a. Install screw (12) through cushion (13).

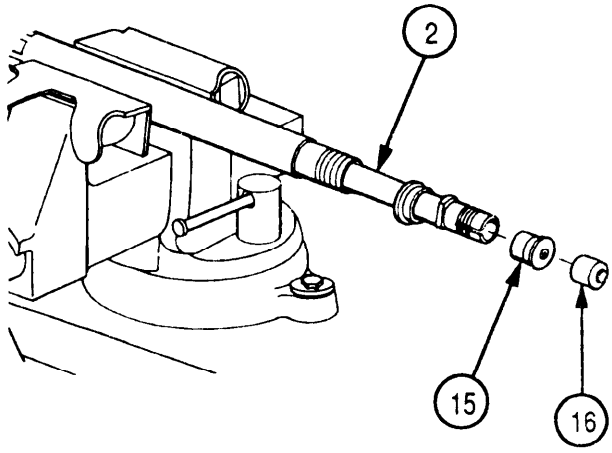
b. Install nut (14) on screw (12).

c. Tighten nut (14) to compress the length on the cushion assembly (under shoulder washer) 51/64 inch. Stake nut to screw.

11

a. Install cushion assembly (15) in inner tube assembly (2).

b. Install sleeve tube nut (16) on shock absorber. Tighten until stopped by cushion assembly washer against end of inner tube assembly (2). This will force the cushion assembly (15) into the inner tube assembly (2).

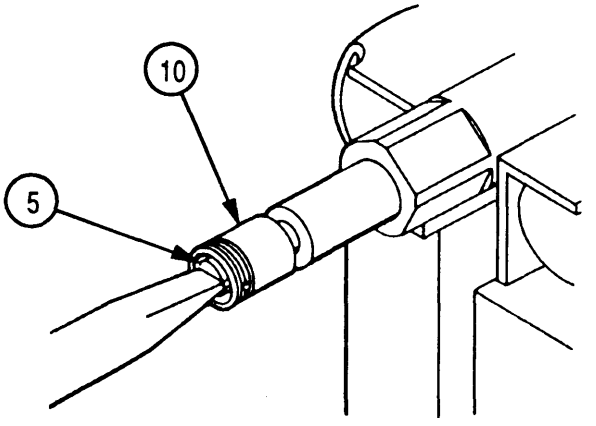


3-9. SHOCK ABSORBER ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

12

At breech end of outer tube assembly (10), tighten connecting rod (5) clockwise or counterclockwise to eliminate freeplay movement of the inner tube assembly (2) inside the outer tube assembly.



13

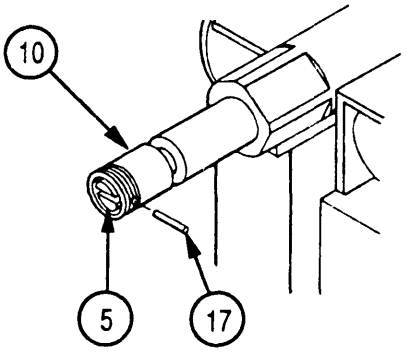
a. Using special screwdriver (fig F-1, app F), aline slot in connecting rod (5) with pin holes in outer tube assembly (10).

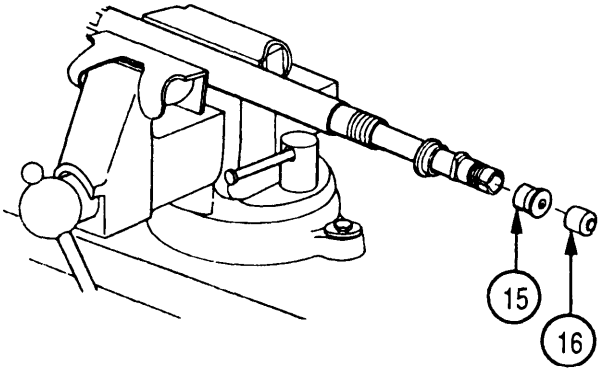
CAUTION

Be careful not to damage threads on outer tube assembly (10) when installing pin (17).

b. install pin (17). Drive to centered position in outer tube assembly (10).

c. Remove sleeve tube nut (16) and cushion assembly (15) from the inner tube assembly (2) prior to installing the shock absorber on the cannon.





3-10. 4.2-INCH MORTAR BARREL ASSEMBLY--MAINTENANCE INSTRUCTIONS.

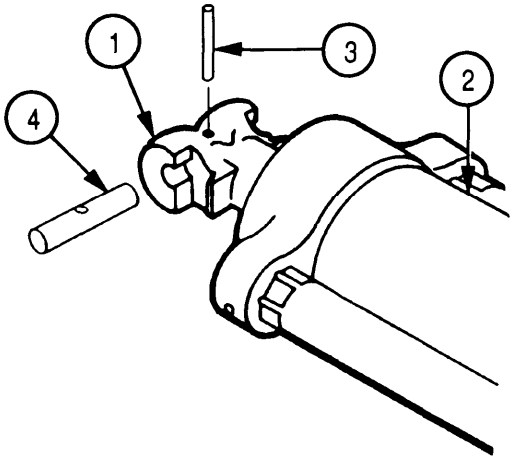
This task covers:
a. Disassembly/Repair
b. Reassembly

INITIAL SETUP

Tools and Special Tools
Accessory Outfit for Pullover Gages (item 4, app B)
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Equipment Conditions
4.2-inch mortar barrel assembly removed from M30 4.2-inch mortar (p 3-14)

DISASSEMBLY/REPAIR



NOTE

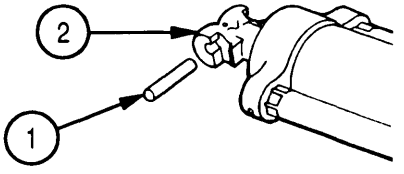
Disassembly of tube cap (1) and tube (2) is not authorized below depot level.

a. If damaged, drive spring pin (3) and headless straight pin (4) from tube cap (1).

b. Replace authorized parts as required. Refer to appendix C.

REASSEMBLY

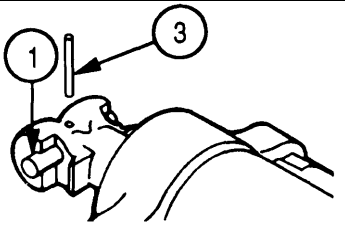
1



a. Install headless straight pin (1) in tube cap (2).

b. Drive pin until centered in tube cap (2).

2



a. Drill 3/8-inch hole in headless straight pin (1). Use hole in tube cap as a guide.

b. Install spring pin (3). Drive pin until centered in tube cap.

3-11. M24A1 4.2-INCH MOUNT--MAINTENANCE INSTRUCTIONS.

This task covers repair/replacement.

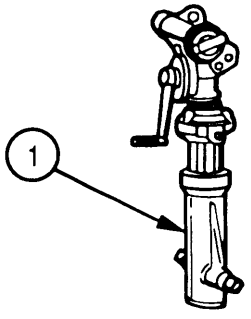
INITIAL SETUP

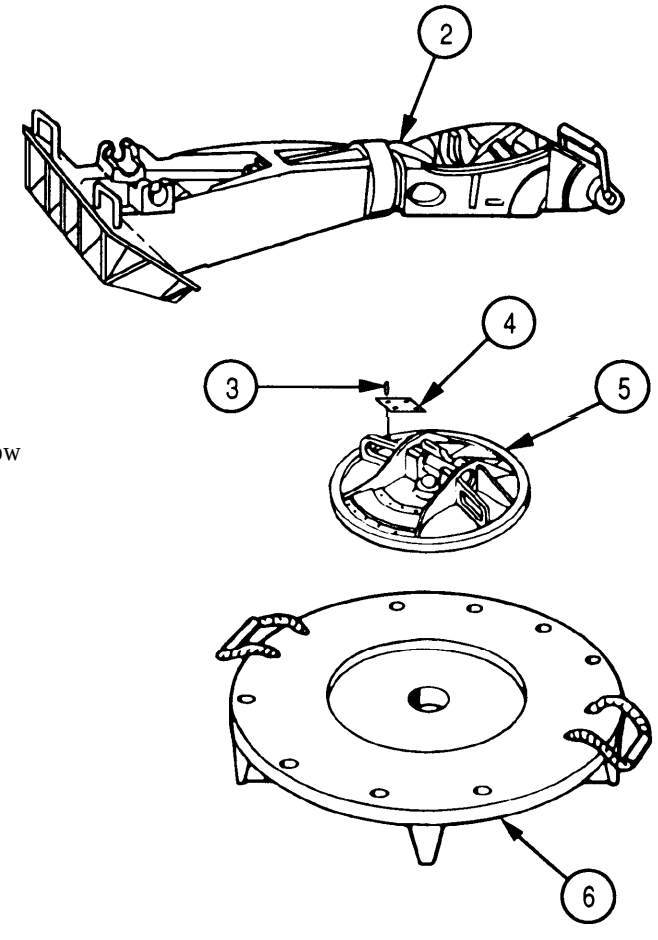
Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B

References
TM 9-1015-215-10

Equipment Conditions
M24A1 4.2-inch mount removed from M30 4.2-inch mortar (see TM 9-1015-215-10)

REPAIR/REPLACEMENT





Repair is made by replacing the items listed below (refer to appendix C):

Mortar mount assembly standard (1).

Bridge assembly (2).

Four screws (3).

Identification plate (4).

Rotator assembly (5).

Mortar baseplate (6).

3-12. MORTAR MOUNT ASSEMBLY STANDARD-MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning/Inspection
c. Repair
d. Reassembly

INITIAL SETUP

Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)
M30 4.2-inch Mortar Barrel and M24 4.2-inch Mortar Mount Series Field Maintenance Tool Set (item 5, app B)
Torque Adaper (fig. F-2, app F)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Gasket (item 4, app E)
General purpose lubricating oil (item 17, app D)
Preformed gasket (item 6, app E)
Preformed packing (item 9, app E)
Shim (item 10, app E)
Wiping rag (item 23, app D)

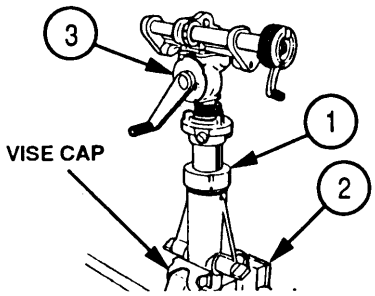
Personnel Required
2

References
TM 9-1015-215-10

Equipment Conditions
Mortar mount assembly standard removed from M30 4.2-inch mortar (TM 9-1015-215-10)

DISASSEMBLY

1



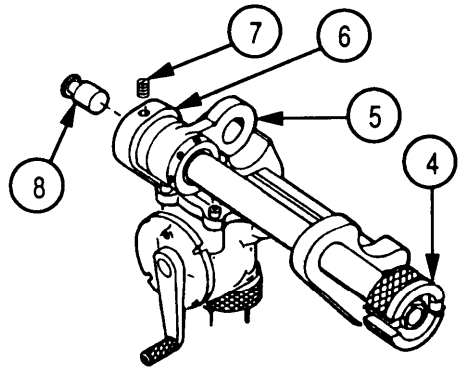
CAUTION

Install vise caps to prevent damage to standard assembly.

a. Secure standard assembly (1) in vise (2).

b. Place elevating gear (3) in the fully lowered position.

2



a. Turn traversing assembly wheel (4) to move traversing nut (5) against support (6).

b. Remove setscrew (7) and headless grooved pin (8).

3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

3

a. Pull traversing assembly wheel (4) to move traversing nut (5) against support (9),

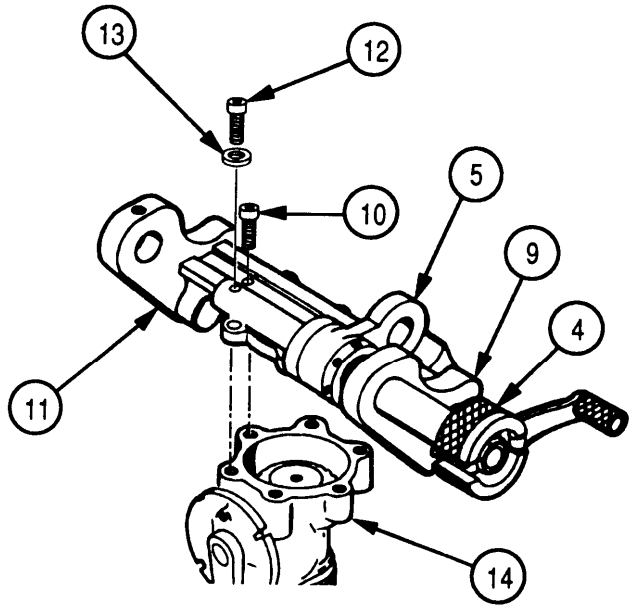
b. Remove two socket head cap screws (10) in groove of traversing assembly slide (11).

c. Remove four socket head cap screws (12) and four washers (13).

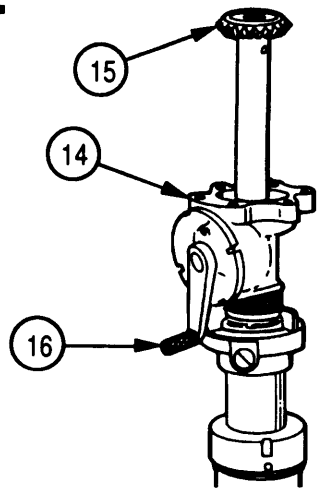
NOTE

Hold traversing assembly slide (11) when removing the last screw.

d. Remove traversing assembly slide (11) from gear case (14.

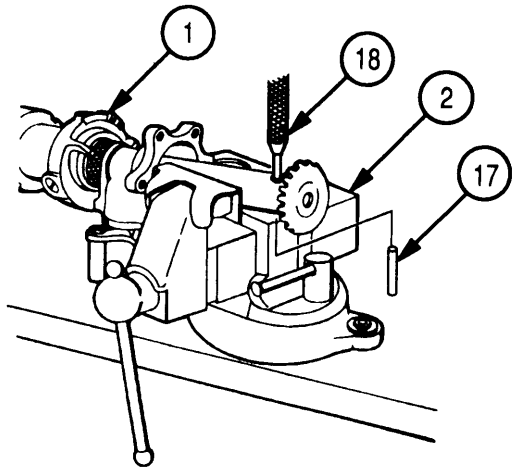


4



Elevate miter gear (15) completely by lifting upon gear case (14) and turning handle (16).

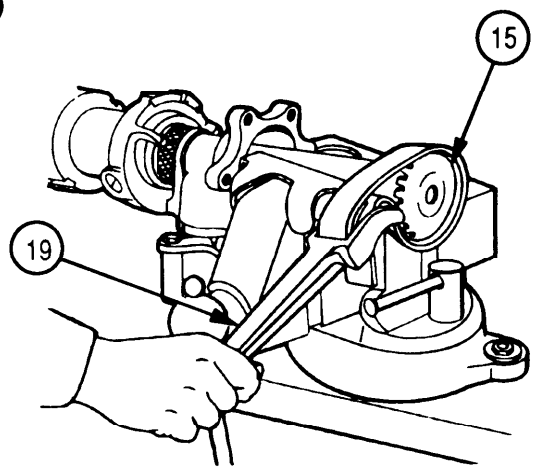
5



a. Reposition standard assembly (1) in vise (2) as shown.

b. Drive out spring pin (17) using punch (18).

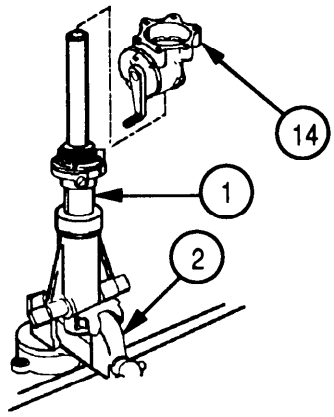
6



a. Install strap wrench (19) on miter gear (15).

b. Unscrew and remove miter gear (15).

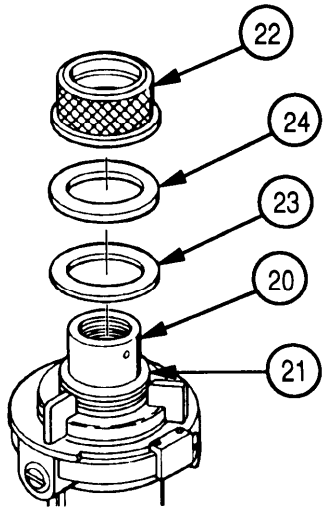
7



a. Reposition standard assembly (1) vertically in vise (2).

b. Remove gear case (14) by lifting it up and off standard assembly (1).

8

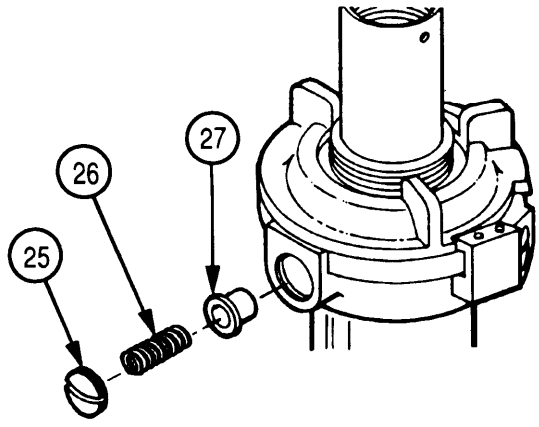


a. By hand, turn elevating screw assembly sleeve (20) down into elevating assembly screw (21).

b. Unscrew and remove cap (22).

c. Remove thrust washer (23) and gasket (24) from cap (22).

9



Remove three setscrews (25), three springs (26), and three plungers (27).

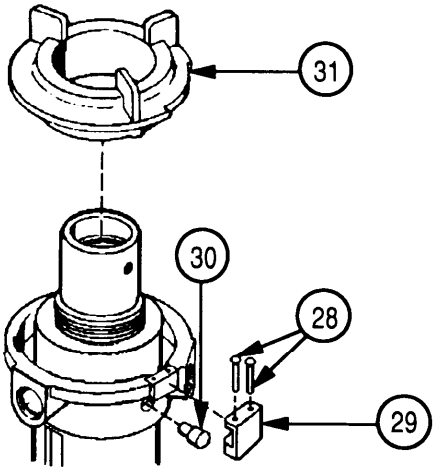
3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

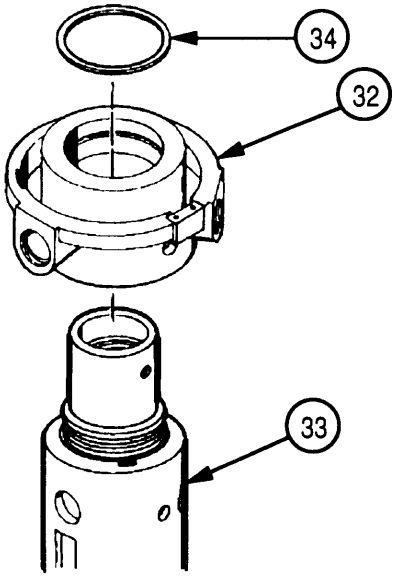
10

a. Remove two rivets (28), cam stop (29), and headless shoulder pin (30).

b. Rotate elevating mechanism cam (31) one-eighth turn counterclockwise and lift out.



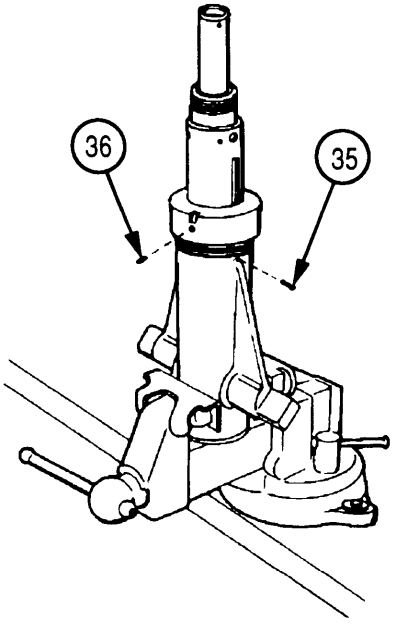
11



a. Remove housing (32) from elevating screw support (33).

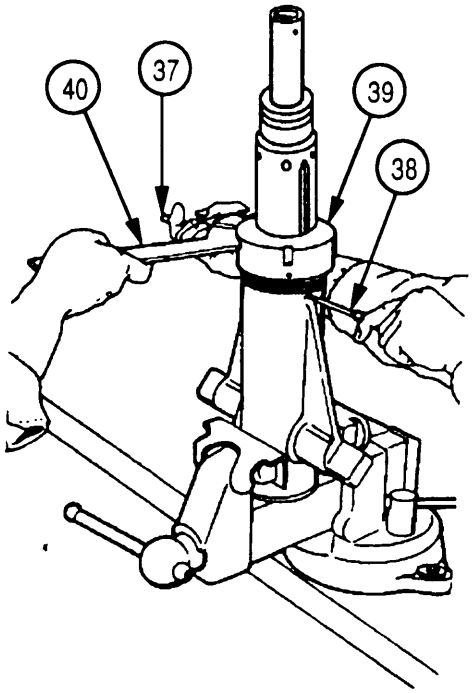
b. Remove preformed gasket (34).

12



Remove two screws (35) and two setscrews (36).

13



NOTE

Step 13 is a two-person task.

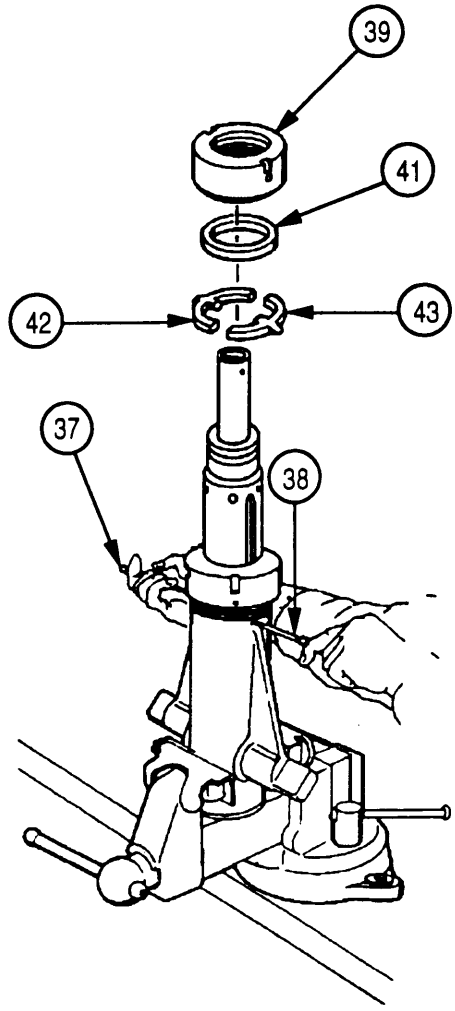
a. Insert two drive pin punches (37 and 38) through screw holes to retain the inner spring.

WARNING

Round nut (39) pops up about 2 inches when unscrewed. Be sure to keep inward pressure on the two drive pin punches (37 and 38).

b. Using spanner wrench (40), unscrew round nut (39).

14



NOTE

Step 14 is a two-person task.

Remove round nut (39), preformed packing (41), and two keyed lock rings (42 and 43).

3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

15

NOTE

Step 15 is a two-person task.

a. Place spring compressor (44) on top of spring (45). Aline slots with drive pin punches (37 and 38) and push down.

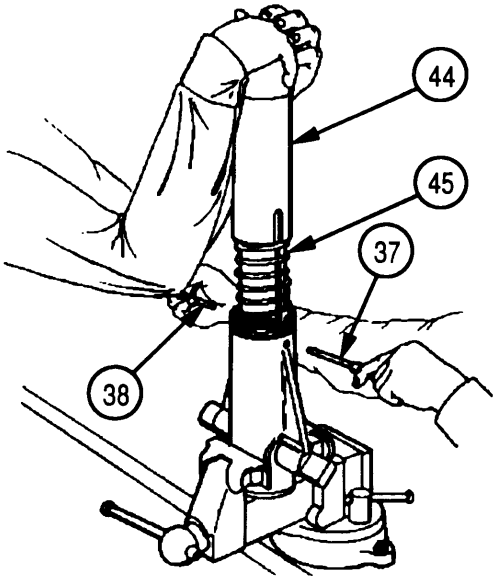
WARNING

Keep pressure on spring as punches are removed.

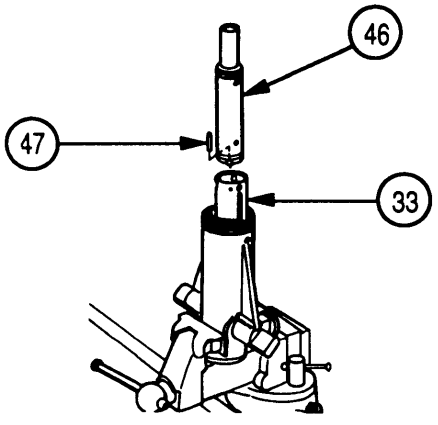
b. Continue pushing down on spring compressor (44) until drive pin punches (37 and 38) can be removed.

c. Let spring compressor (44) rise slowly until all spring pressure is gone.

d. Remove spring compressor (44) and spring (45).



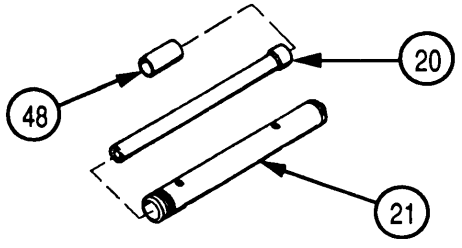
16



a. Lift elevating screw housing assembly (46) out of elevating support (33).

b. Remove key (47).

17



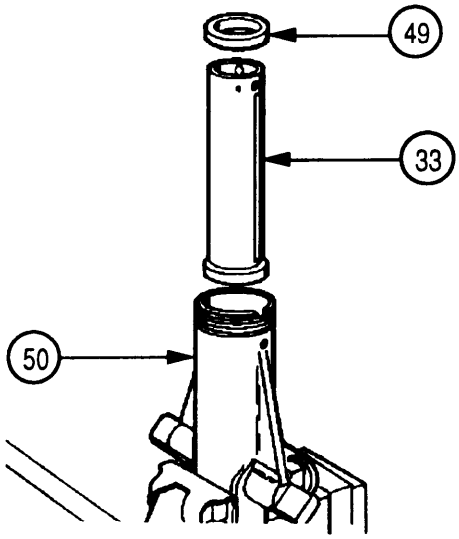
NOTE

Disassemble the following parts only if sleeve bushing (48) is worn or binding.

a. Unscrew elevating screw assembly sleeve (20) from elevating assembly screw (21).

b. Remove sleeve bushing (48) from elevating screw assembly sleeve (20).

18

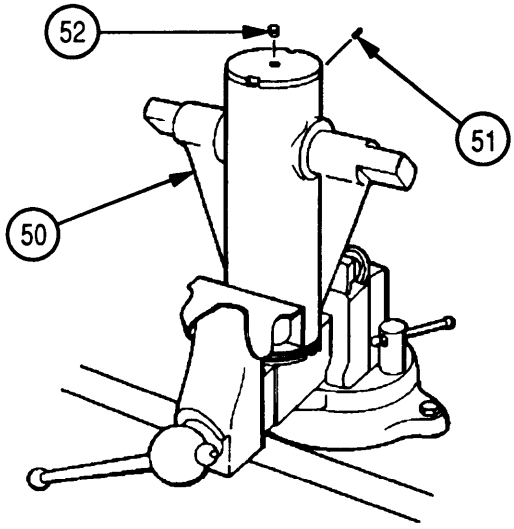


a. Lift out elevating support (33).

b. Remove sleeve spacer (49) from elevating support (33).

c. Remove standard base (50) from vise.

19



a. Secure standard base (50) in vise as shown.

b. Remove setscrew (51).

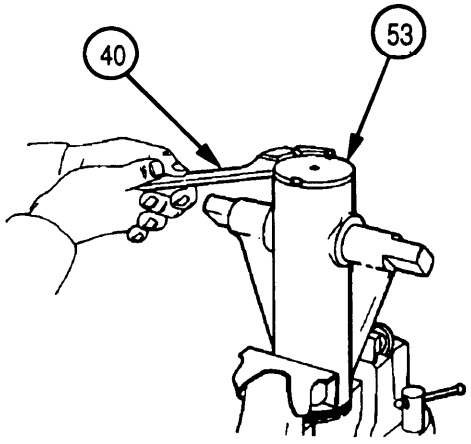
c. Remove pipe plug (52).

20

WARNING

Do not remove plug (53) in step below. The internal springs are under high compression.

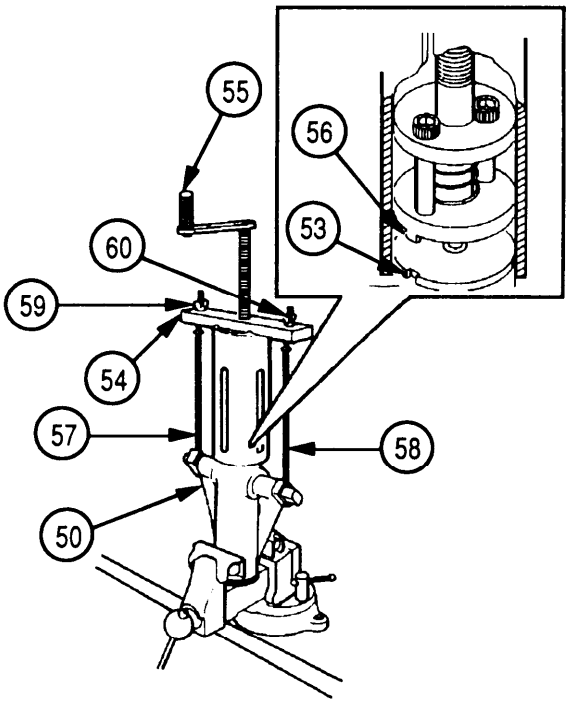
Using spanner wrench (40), turn plug (53) just enough to loosen the threads.



3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

21



a. Position spring compression tool (54) over standard base (50).

b. Turn handle (55) to fully engage tool projection (56) in slot of plug (53).

c. Attach the loops of outriggers (57 and 58) to standard base (50) trunnions.

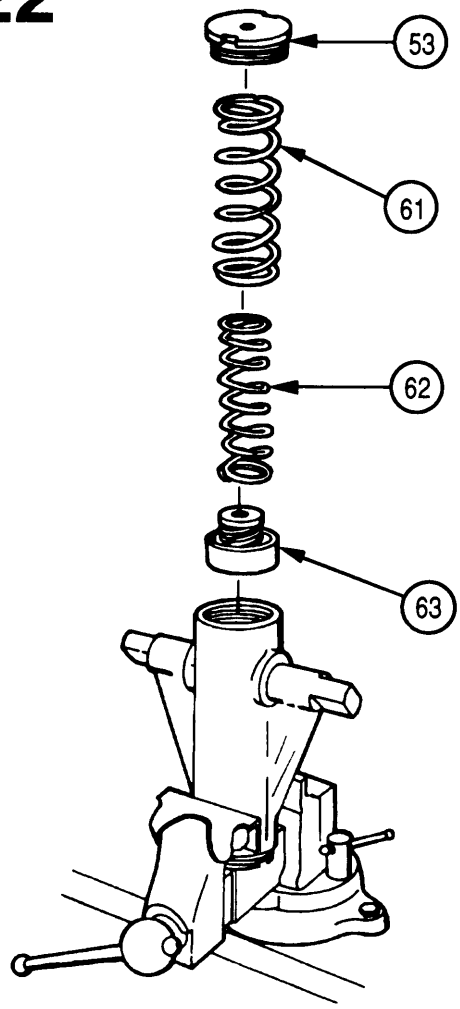
d. Tighten wing nuts (59 and 60) securely.

e. Turn handle (55) counterclockwise to unscrew plug (53).

f. Continue turning handle (55) until spring pressure is gone.

g. Remove spring compression tool (54).

22



a. Remove plug (53) and springs (61 and 62).

b. Lift out snubber spring assembly (63).

NOTE

Item 63 will be referred to as the snubber spring assembly, although it cannot be ordered as an assembly.

23

a. Using spanner wrench (64), unscrew and remove nut (65).

b. Remove coil helical retainer (66), lock washer (67), and spring (68) from spring retainer (69).

CLEANING/INSPECTION

1

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

b. Elevating mechanism
   (1) Inspect miter gear (15) for worn, cracked, and broken teeth.
   (2) Inspect elevating mechanism cam (31) for wear and nicks.
   (3) Inspect three springs (26) for cracks, breaks, and deformities.
   (4) Inspect elevating assembly screw (21) for broken key, deformed plunger holes, and bent or broken screw.
   (5) Inspect key (47) for bends, breaks, and nicks.
   (6) Inspect elevating screw assembly sleeve (20) for bends and damaged threads.
   (7) Inspect sleeve bushing (48) for damaged threads.
   (8) Inspect sleeve spacer (49) and elevating support (33) for cracks, burrs, nicks, and mutilation.
   (9) Inspect two keyed lock rings (42 and 43) for cracks and breaks.
   (10) Inspect spring (45) for cracks, breaks, and deformities.

3-12. MORTAR MOUNT ASSEMBLY STANDARD-MAINTENANCE INSTRUCTIONS (cont).

CLEANING/INSPECTION (cont)

2

c. Recoil mechanism
(1) Inspect plug (53) and nut (65) for stripped threads, nicks, and burrs.
(2) Inspect spring retainer (69) for cracks, breaks, and damage to threaded stud.
(3) Inspect all springs for cracks, breaks, and deformities.
(4) Inspect standard base (50) for cracks, burrs, nicks, and mutilation.

d. Traversing mechanism. Inspect traversing assembly slide (11) for wear of sliding contact surfaces. Traversing nut (5) should slide on traversing assembly slide (11) without binding.

REPAIR

a. Replace authorized parts as required. Refer to appendix C.

b. Use stone or file to smooth out any nicks or burrs.

REASSEMBLY

1

Apply automotive and artillery grease to all bearing surfaces and springs during reassembly.

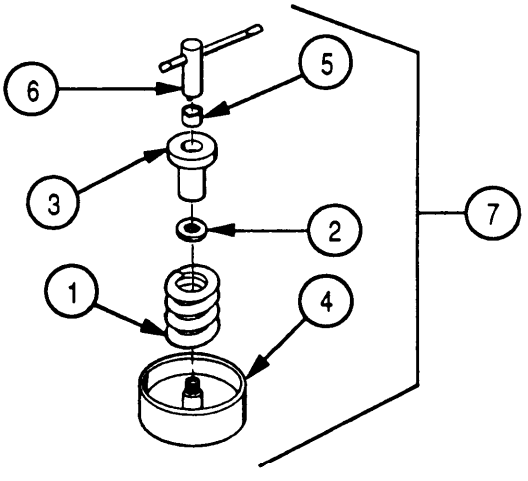
2

a. Install spring (1), lock washer (2), and coil spring retainer (3) in spring retainer (4).

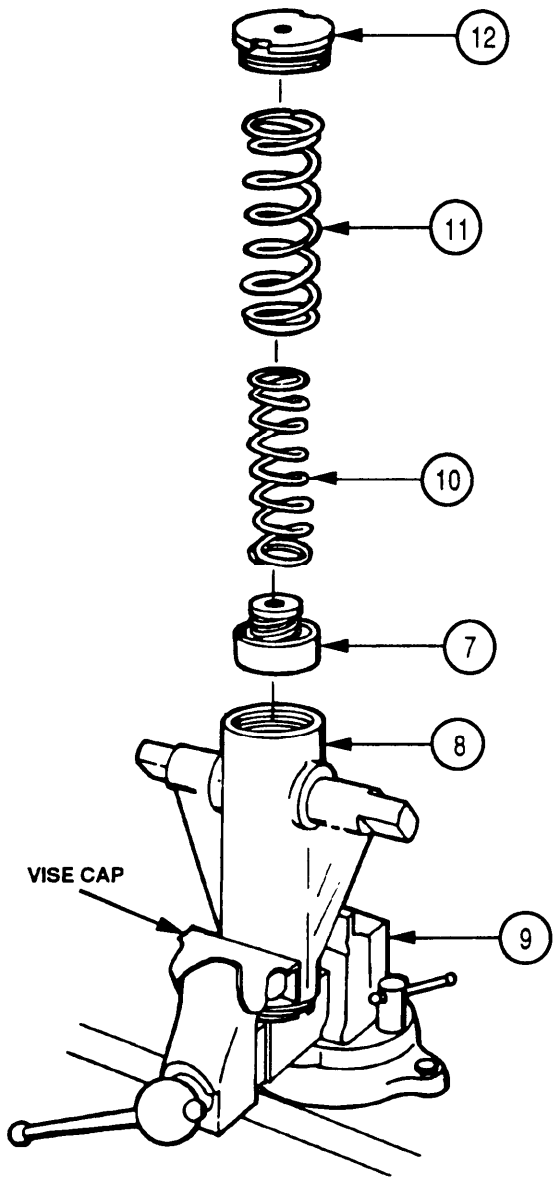
b. Press down on coil helical retainer (3) and install nut (5). Tighten securely with spanner wrench (6) to 35 foot-pounds.

NOTE

This unit will be referred to as the snubber spring assembly (7).



3

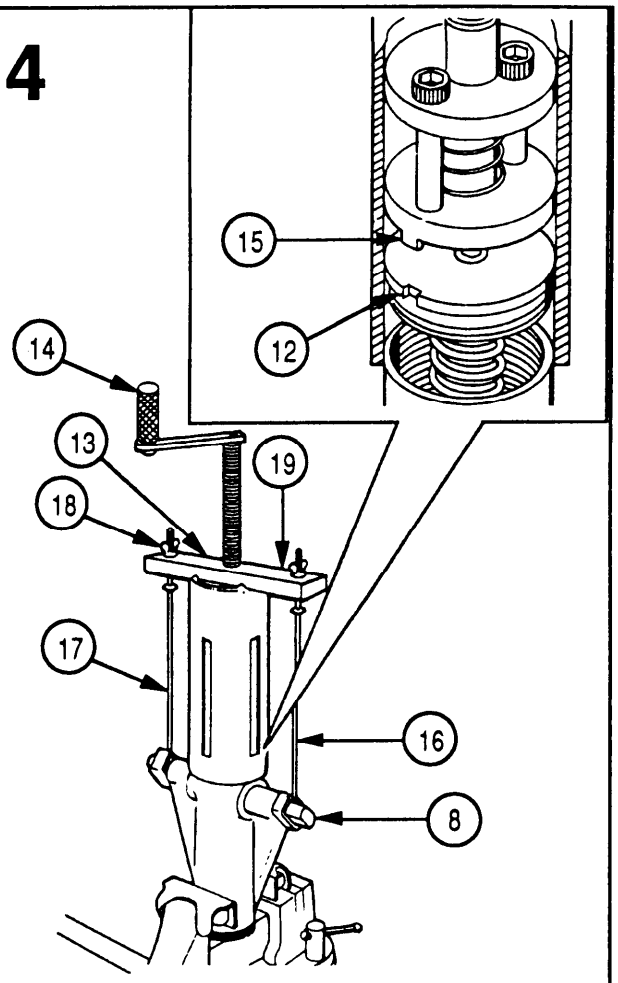


a. Place standard base (8) in vise (9).

b. Install snubber spring assembly (7) and springs (10 and 11) in standard base (8).

c. Position plug (12) on top of springs (10 and 11).

4



a. Position spring compression tool (13) over standard base (8).

b. Turn handle (14) to engage tool projection (15) in slot of plug (12).

c. Attach the loops of outrigger (16 and 17) to standard base (8) trunnions.

d. Tighten wing nuts (18 and 19) securely.

3-12. MORTAR MOUNT ASSEMBLY STANDARD-MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

5

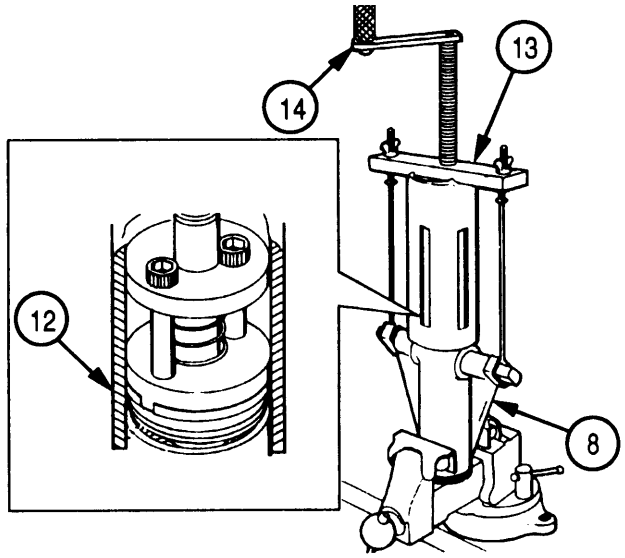
a. Turn handle (14) clockwise to compress springs and install plug (12).

NOTE

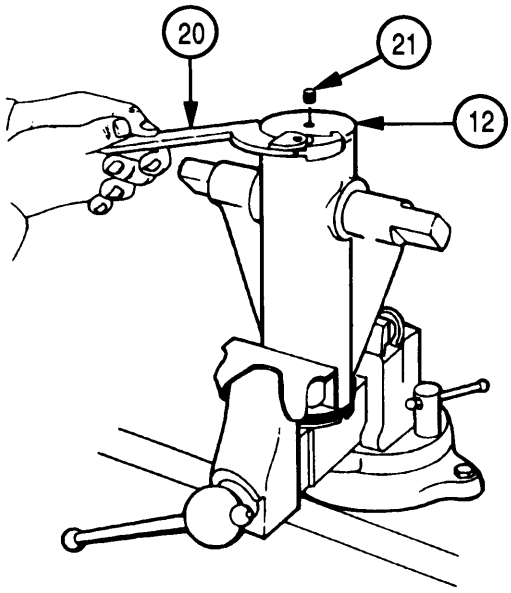
Be sure plug (12) doesn't become cross-threaded into standard base (8). Slots in the side of spring compression tool are provided to watch the assembly procedure.

b. Continue turning handle until plug (12) is seated.

c. Remove spring compression tool (13).



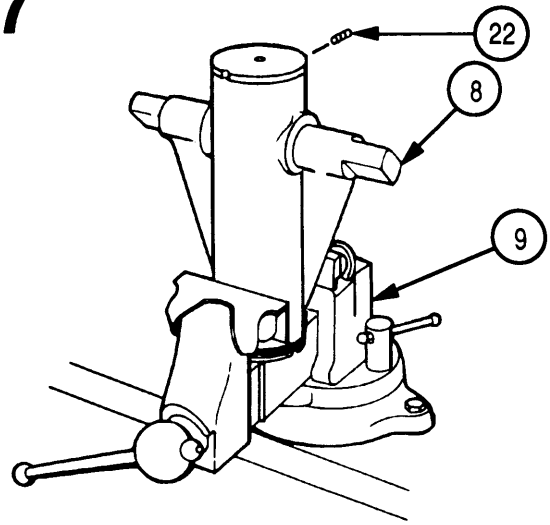
6



a. Using spanner wrench (20), tighten plug (12) securely.

b. Install pipe plug (21). Tighten securely.

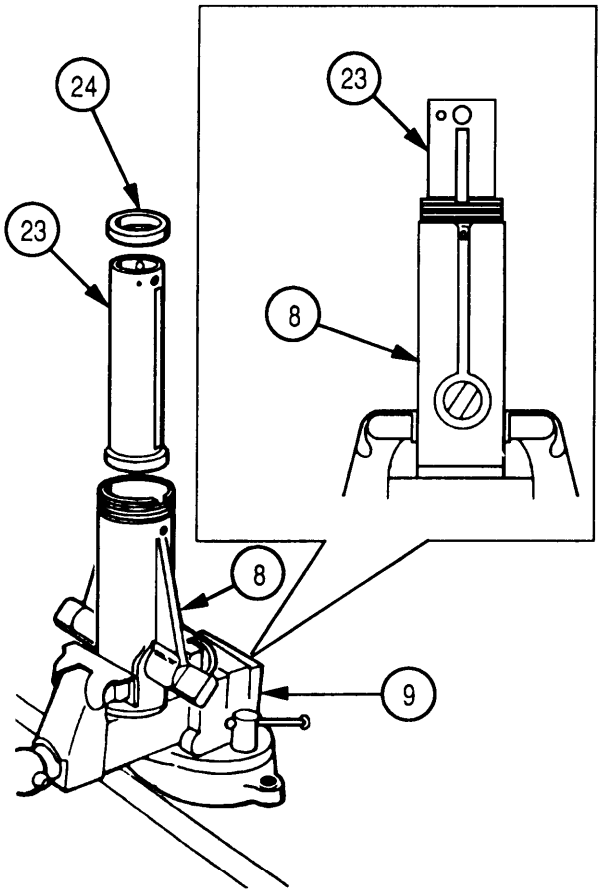
7



a. Install setscrew (22). Tighten securely.

b. Remove standard base (8) from vise (9).

8

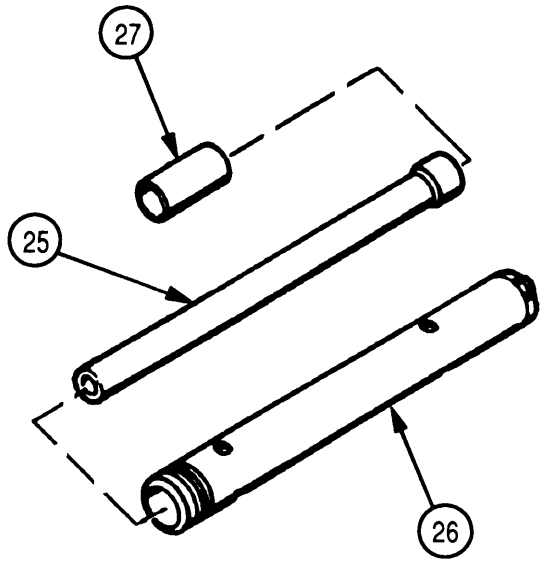


a. Place standard base (8) in vise (9) as shown.

b. Aline elevating support (23) with standard base (8) as shown. Install.

c. Slide sleeve spacer (24) down over elevating support (23).

9



NOTE

Perform this procedure only if the parts were disassembled.

a. Screw elevating screw assembly sleeve (25) into elevating assembly screw (26).

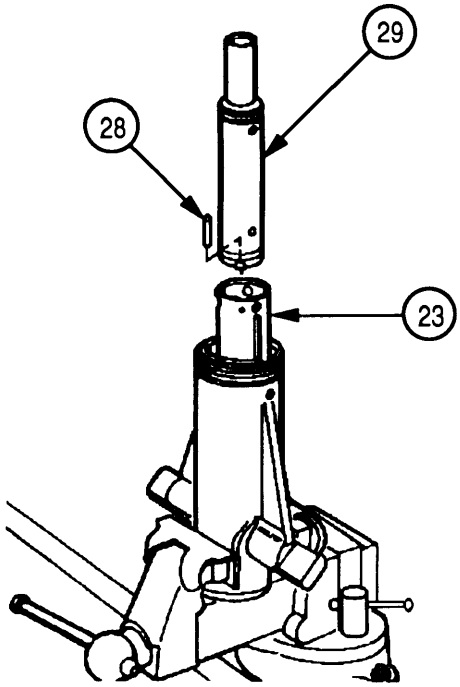
b. Slide sleeve bushing (27) over elevating screw assembly sleeve (25).

c. Press sleeve bushing (27) into recess inside of elevating assembly screw (26).

3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

10



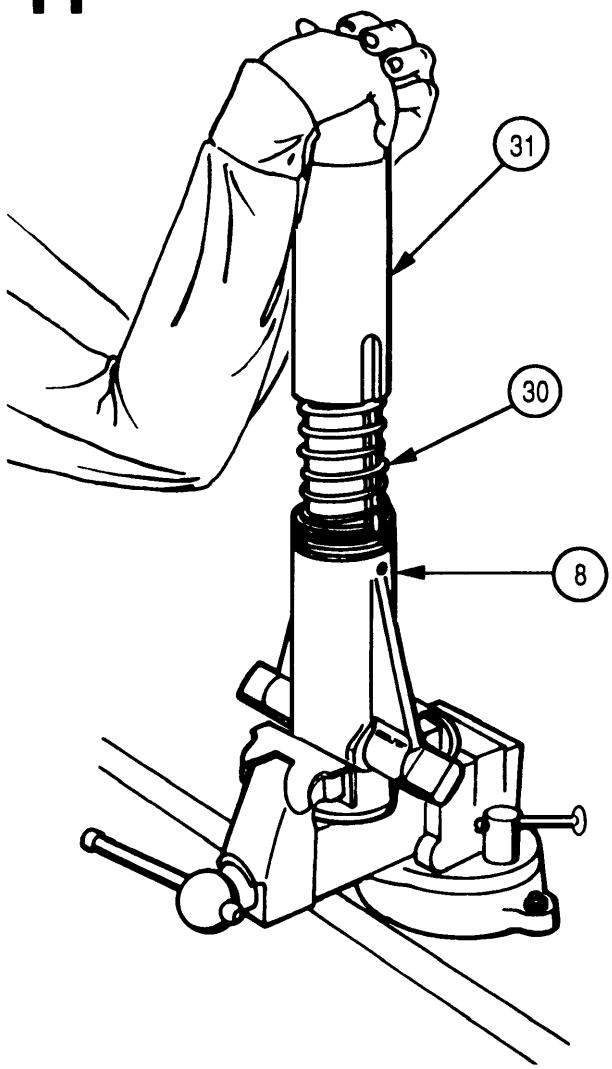
a. Aline key (28) on elevating screw housing assembly (29) with key slot in elevating support (23).

b. Install elevating screw housing assembly (29) part way.

c. Position key (28) against elevating screw housing (29) and in key slot of elevating support (23).

d. Push elevating screw housing assembly (29) and key (28) all the way down into elevating support (23).

11

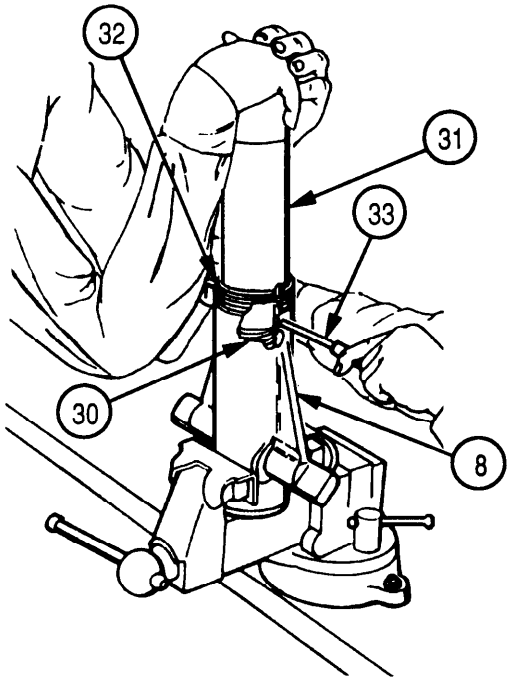


a. Install spring (30).

b. Position spring compressor (31) down against spring (30).

c. Aline slots in spring compressor (31) with screw holes in standard base (8).

12



NOTE

Step 12 is a two-person task.

a. Push down on spring compressor (31) until the top coil of spring (30) is below the screw holes in standard base.

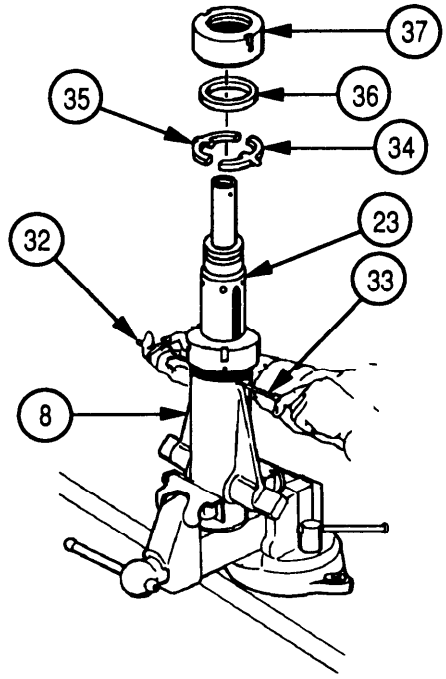
b. Insert two drive pin punches (32 and 33) through screw holes and into spring compressor (31) slots. Hold drive pin punches in place.

WARNING

Keep inward pressure on the two drive pin punches (32 and 33).

c. Remove spring compressor (30).

13



NOTE

Step 13 is a two-person task.

a. Aline two keyed lock rings (34 and 35) with slots in elevating support (23) and standard base (18). Install keyed lock rings on shoulder at standard base.

b. Install new preformed packing (36) in round nut (37).

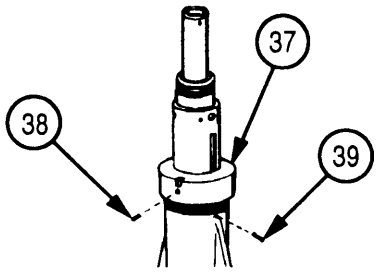
c. Install round nut (37) on standard base (8). Screw down handtight.

d. Remove two drive pin punches (32 and 33).

3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

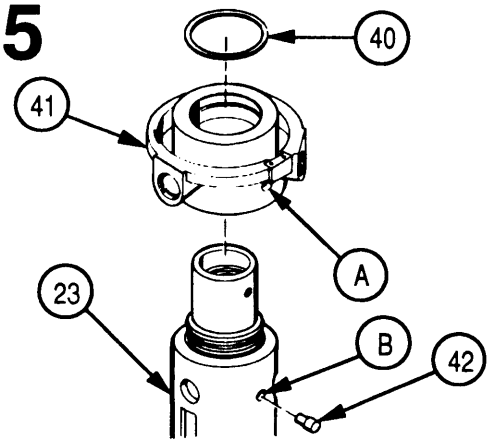
14



a. Tighten remaining nut (37) securely.

b. Install two setscrews (38) and two screws (39). Tighten securely.

15

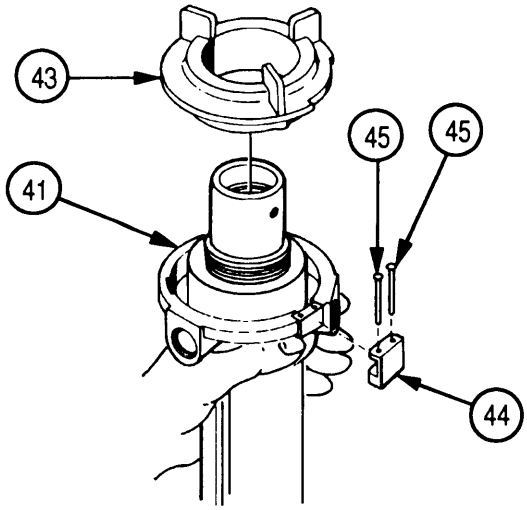


a. Install new gasket (40) in housing (41).

b. Position housing (41) on elevating support (23) and aline pin hole (A) with pin hole (B).

c. Install headless shoulder pin (42). Hold pin in place.

16

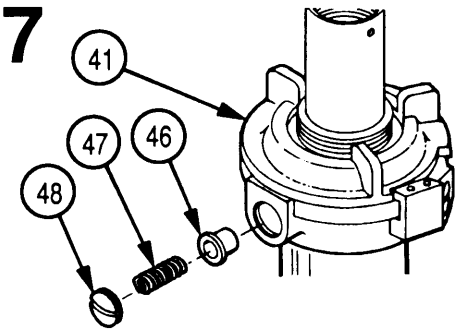


a. Position elevating mechanism cam (43) in housing (41). Aline notch in cam (43) with two pin holes in housing (41).

b. Position cam stop (44), thick rim down, on housing (41) and aline pin holes.

c. Install two solid rivets (45).

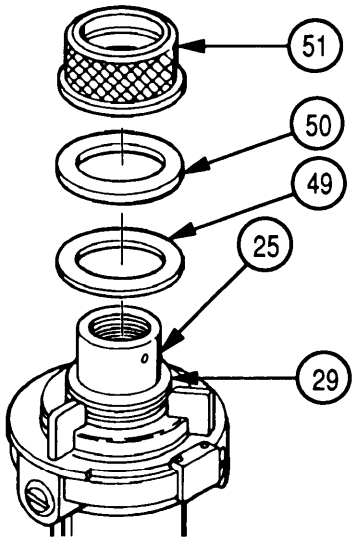
17



a. Install three plungers (46), three springs (47), and three setscrews (48) in housing (41).

b. Tighten three setscrews (48) securely.

18



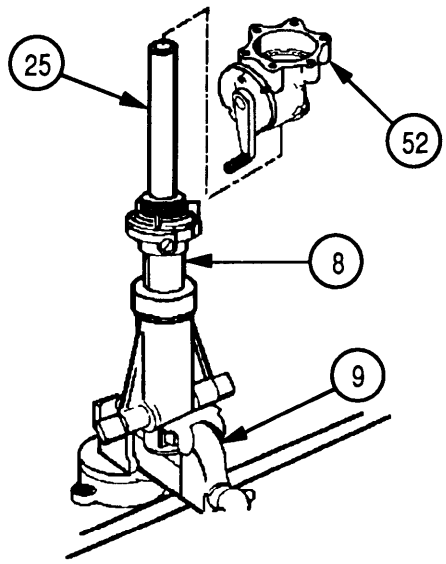
a. Position thrust washer (49) on shoulder of elevating screw housing assembly (29).

b. Install new gasket (50) in cap (51).

c. Install cap (51) handtight.

d. Turn elevating screw assembly sleeve (25) by hand to check for binding. Adjust cap (51), as necessary.

19



a. By hand, turn elevating screw assembly sleeve (25) all the way out.

b. Install gear case (52) on elevating screw assembly sleeve (25).

c. Remove standard base (8) from vise (9).

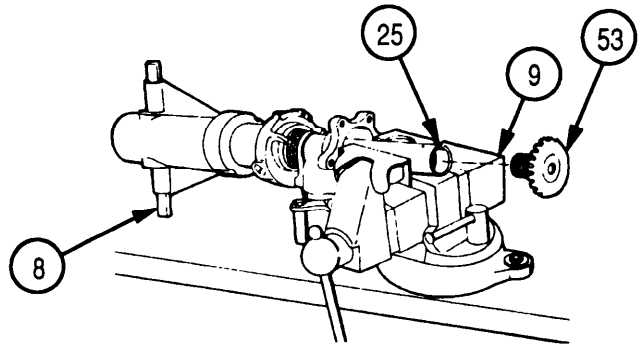
CAUTION

Be sure gear case does not fall off the elevating screw assembly sleeve.

20

a. Place elevating screw assembly sleeve (25) in vise (9). Standard base (8) must rest on bench.

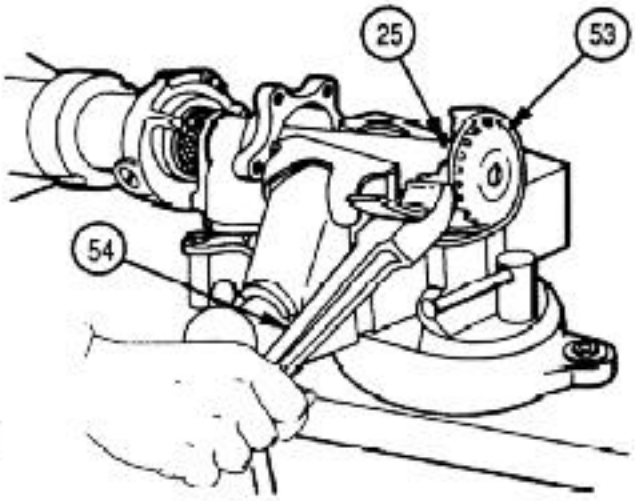
b. Install miter gear (53).



3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

21



a. Tighten miter gear (53), using strap wrench (54).

b. If the old gear is installed, go to step e.

c. If the new gear is installed, go to step f.

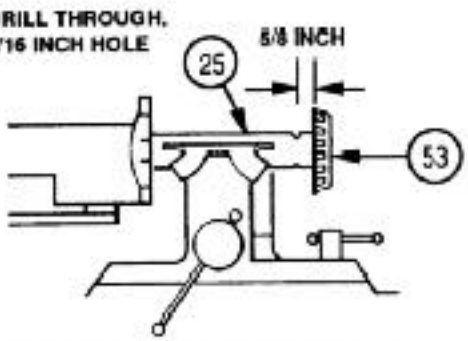
d. If a new gear and a new elevating screw assembly sleeve are installed, go to step 22.

e. Aline pin holes in miter gear (53) and elevating screw assembly sleeve (25) and then go to step 23.

NEW PARTS ONLY

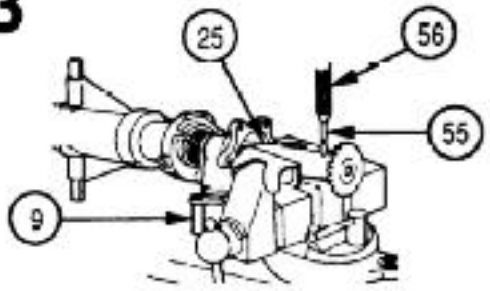
f. Using elevating screw assembly sleeve (25) pin hole as a guide, drill 3/16-inch hole through shaft of miter gear (53). Then go to step 23.

22



Drill 3/16-inch hole through elevating screw assembly sleeve (25) and shaft of miter gear (53) 5/8-inch down from the underside of miter gear. Then go to step 23.

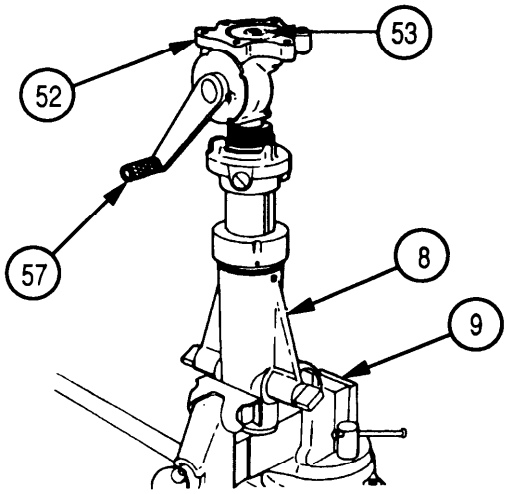
23



a. Install spring pin (55) using punch (56). Drive spring pin flush and file off burrs.

b. Remove elevating screw assembly sleeve (25) from vise (9).

24

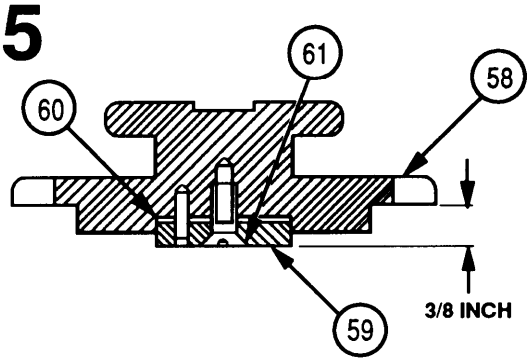


a. Place standard base (8) in vise (9).

b. Turn miter gear (53) down into gear case (52).

c. Turn handle (57) to completely mesh the gears.

25



NOTE

Be sure to make the following check before placing the traversing assembly slide on top of the gear case.

a. Check for 3/8-inch clearance between bottom surface of traversing slide body mounting flange (58) and face of thrust washer (59). Add or delete shims (60) as nec sary.

b. After clearance adjustment, stake rew (61) in four places.

26

a. Pull traversing assembly wheel (62) to move traversing nut (63) against support (64).

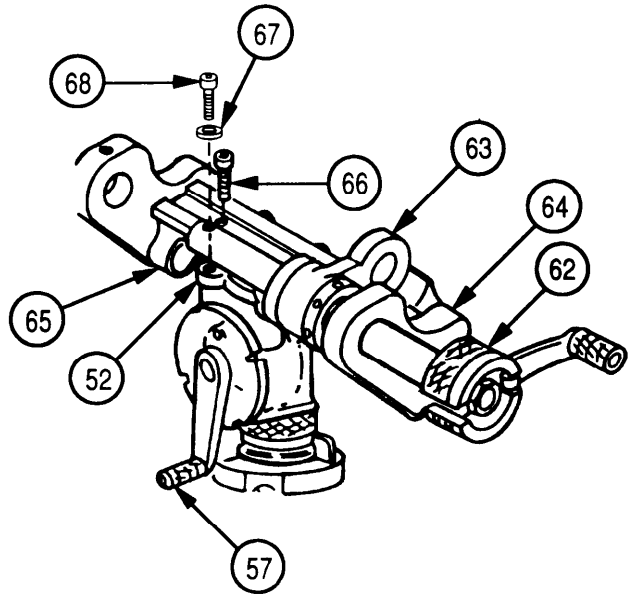
b. Position traversing assembly slide (65) on gear case (52) and aline screw holes.

NOTE

Traversing nut (63) must face away from handle (57).

c. Install two socket head cap screws (66) located in groove of traversing assembly slide. Tighten securely.

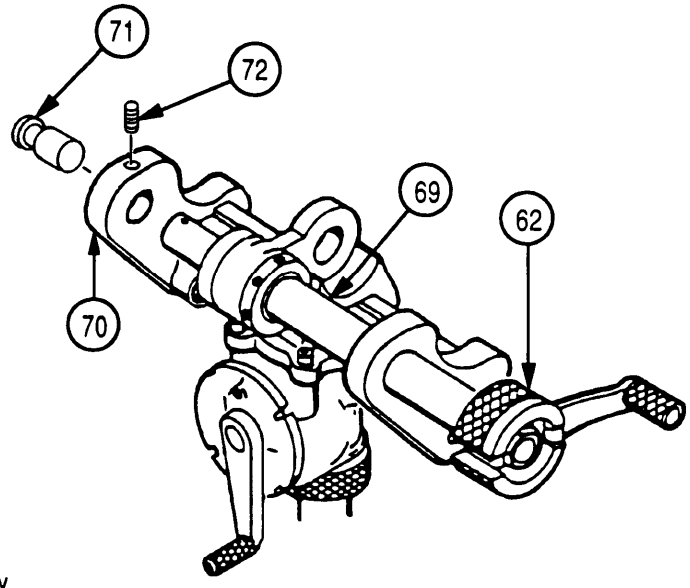
d. Install four washers (67) and four socket head cap screws (68). Tighten securely.



3-12. MORTAR MOUNT ASSEMBLY STANDARD--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

27



a. Push traversing assembly wheel (62) to move screw and sleeve assembly (69) toward support (70).

b. Aline pin holes in screw and sleeve assembly (69) and support (70).

c. Push traversing assembly wheel (62) to position screw and sleeve assembly (69) in support (70). Check alinement of pin holes.

d. Install headless grooved pin (71) and setscrew (72). Tighten setscrew securely.

28

Lubricate standard with general purpose lubricating oil in accordance with TM 9-1015-215-10.

3-13. TRAVERSING ASSEMBLY SLIDE--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning/Inspection
c. Repair
d. Reassembly

INITIAL SETUP

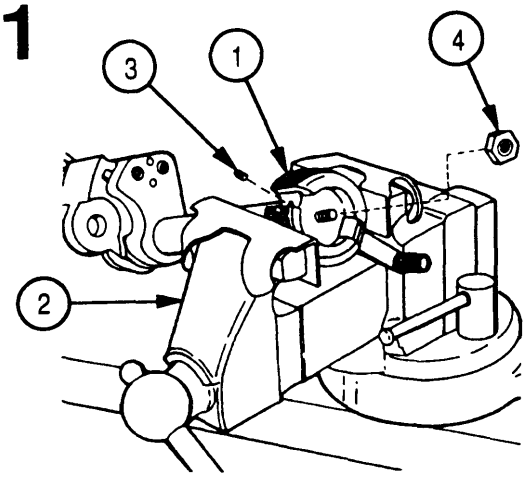
Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Felt washer (item 1, app E)
General purpose lubricating oil (item 17, app D)
Plain solid disc (item 5, app E)
Wiping rag (item 23, app D)

Equipment Conditions
Traversing assembly slide removed from standard assembly (p 3-46)

DISASSEMBLY

1

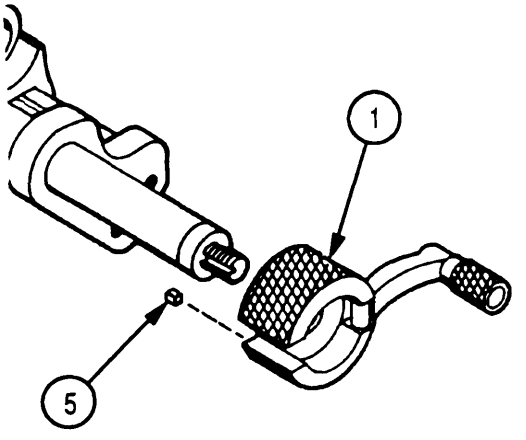


a. Place traversing assembly wheel (1) in vise (2) with other end of traversing assembly slide resting on work bench.

b. Remove setscrew (3) and nut (4).

c. Release traversing assembly wheel (1) from vise (2).

2



NOTE

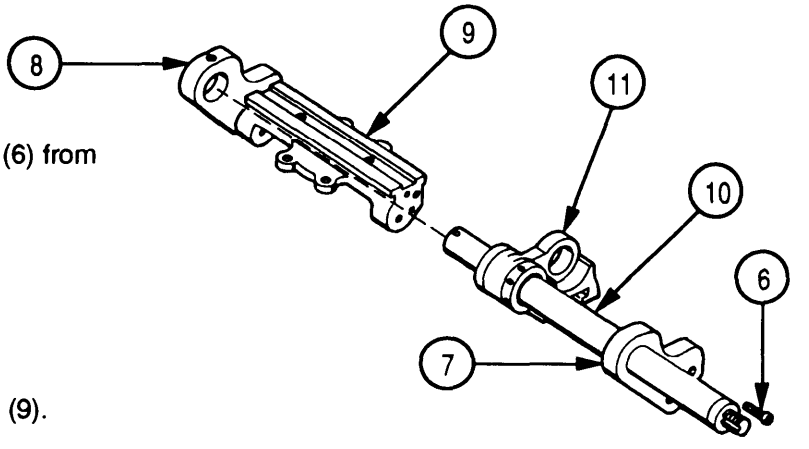
Don't lose the key.

Remove traversing assembly wheel (1) and key (5).

3-13. TRAVERSING ASSEMBLY SLIDE-MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

3



a. Remove two socket head cap screws (6) from support (7).

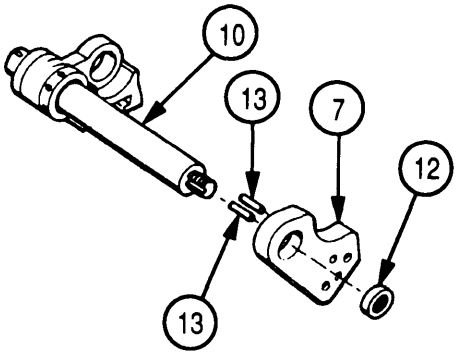
NOTE

Be sure setscrew on support (8) has been removed.

b. Gently pry support (7) from slide body (9).

c. Remove support (7), traversing sleeve housing (10), and traversing nut (11) as a unit.

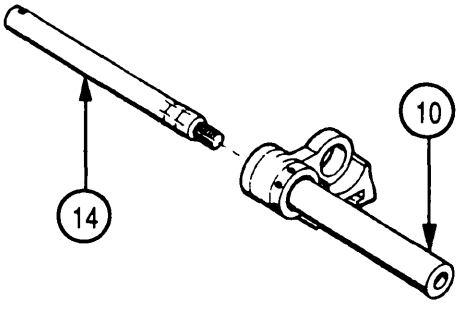
4



a. Remove nut (12) and slide support (7) from traversing sleeve housing (10).

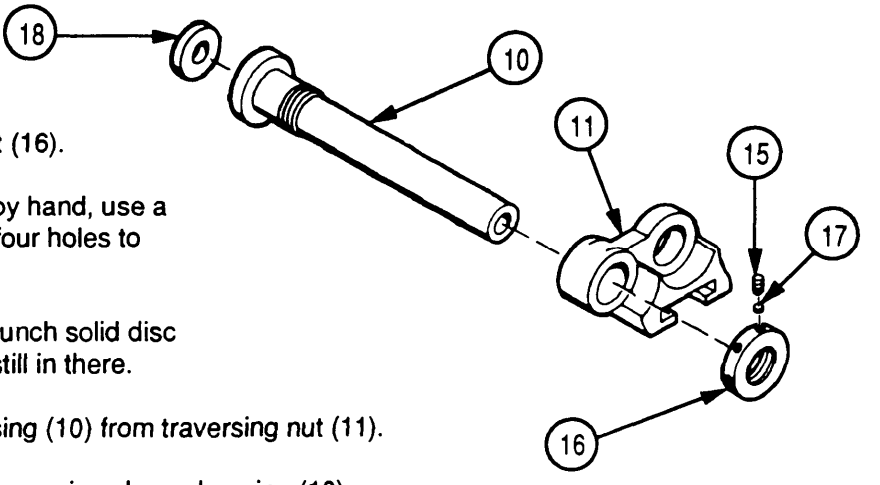
b. Remove two pins (13) only if damaged.

5



Remove screw and sleeve assembly (14) from traversing sleeve housing (10).

6



a. Remove setscrew (15) from nut (16).

b. If nut (16) cannot be loosened by hand, use a drive pin inserted in one of the four holes to remove nut.

c. Check nut (16) for solid disc. Punch solid disc (17) out of setscrew hole if it's still in there.

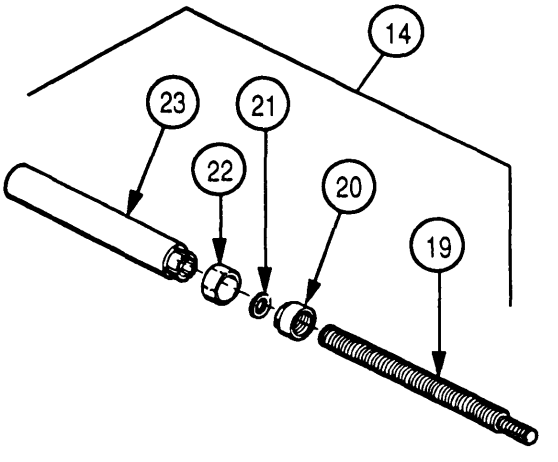
d. Remove traversing sleeve housing (10) from traversing nut (11).

e. Remove felt washer (18) from traversing sleeve housing (10).

7

NOTE

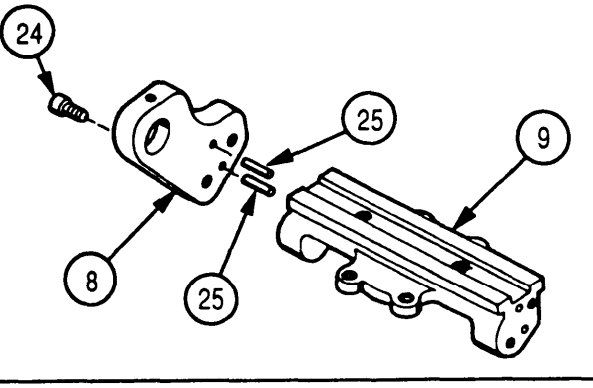
Do not disassemble screw and sleeve assembly (14) unless it is damaged or backlash of traversing screw (19) is more than 30 degrees of a turn in sleeve (23).



a. Remove traversing screw (19).

b. Remove nut (20), spacer (21), and sleeve locking spacer (22) from sleeve (23).

8



a. Remove two socket head cap screws (24) and gently pry support (8) from slide body (9).

b. Remove two pins (25) from support (8) only if damaged.

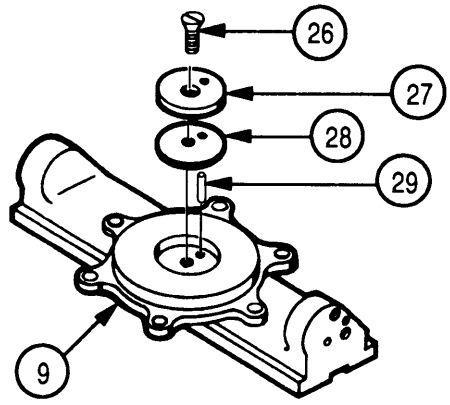
3-13. TRAVERSING ASSEMBLY SLIDE--MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

9

a. Remove screw (26), thrust washer (27), and shim (28) from slide body (9).

b. Remove pin (29) only if damaged.



CLEANING/INSPECTION

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

b. Inspect traversing assembly wheel (1) for nicks, burrs, and damaged key way.

c. Inspect traversing sleeve housing (10) for bends and dents.

d. Inspect traversing screw (19) for bends, dents, and worn or deformed threads.

e. Inspect supports (7 and 8) for nicks, burrs, and out-of-round bearing holes.

REPAIR

a. Replace authorized parts as required. Refer to appendix C.

b. Use stone or file to smooth out any nicks or burrs.

REASSEMBLY

1

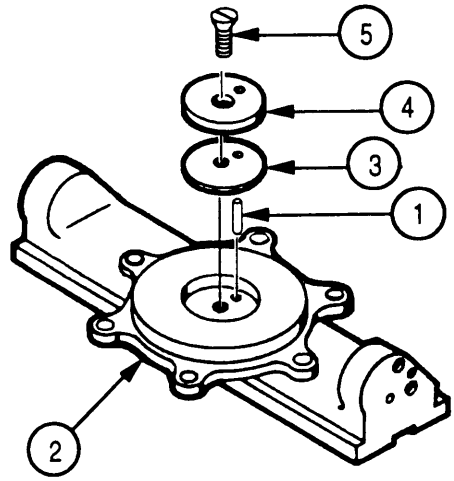
Apply automotive and artillery grease to all threads and bearing surfaces during reassembly.

2

a. Install pin (1) in slide body (2) if it was removed.

b. Install shim (3) and thrust washer (4). Secure with screw (5).

c. See page 3-64, step 25, to check and adjust clearance from top of thrust washer (4) to slide body (2).



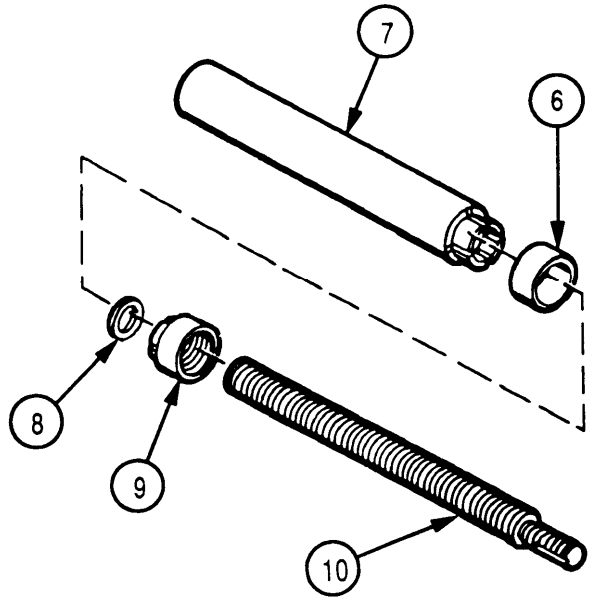
3

a. Place sleeve locking spacer (6) on end of sleeve (7).

b. Insert spacer (8) in locking spacer (6). Push it back until it touches end of sleeve (7).

c. Place nut (9) against sleeve locking spacer (6). Hold in place.

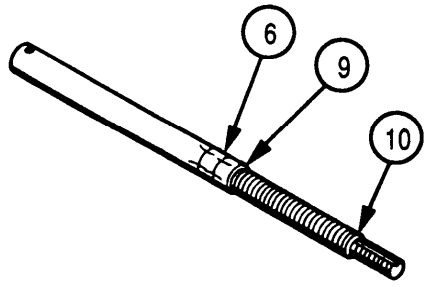
d. Insert and turn traversing screw (10) into nut (9) and sleeve (7).



3-13. TRAVERSING ASSEMBLY SLIDE-MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

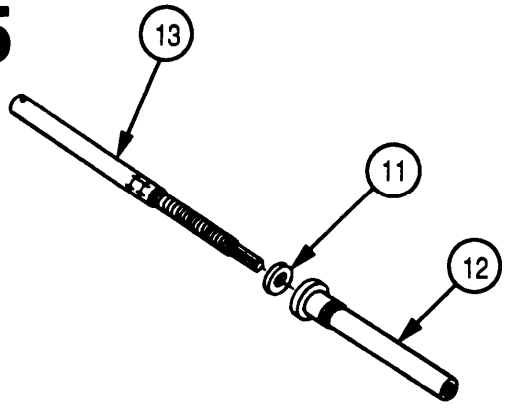
4



a. Turn nut (9) against sleeve locking spacer (6) in a manner that will limit backlash to 30 degrees turn of traversing screw (10).

b. Secure nut (9) by staking locking spacer into 8 slots in nut and sleeve. Staking depth should be approximately 1/16 inch.

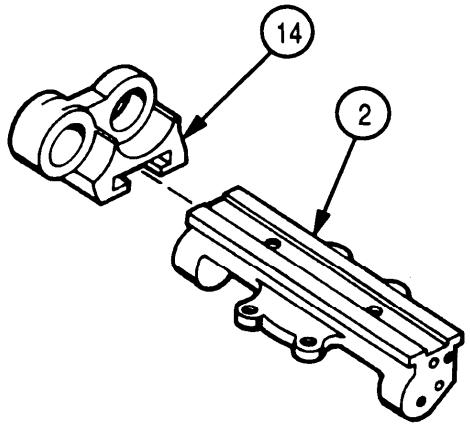
5



a. Install new felt washer (11) in traversing sleeve housing (12).

b. Install screw and sleeve assembly (13) into traversing sleeve housing (12).

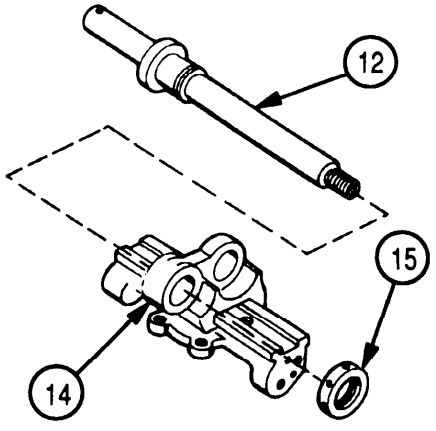
6



a. Install traversing nut (14) on slide body (2).

b. Slide traversing nut (14) the full length of slide body (2) to check for binding.

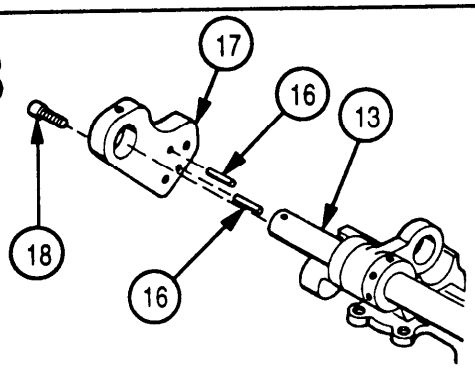
7



a. Install traversing sleeve housing (12) through traversing nut (14).

b. Install nut (15) handtight on traversing sleeve housing (12).

8



a. Install two new pins (16) in support (17) if they were removed.

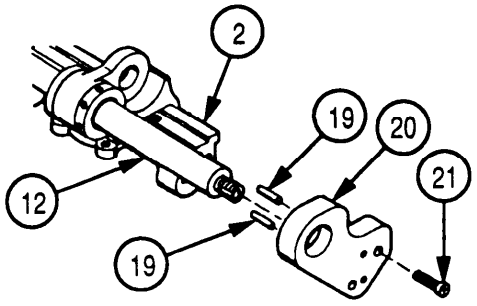
b. Aline pins in support (17) with pin holes in slide body.

c. Gently tap support (17) in place.

d. Guide end of screw and sleeve assembly (13) through hole in support (17).

e. Install two socket head cap screws (18).

9



a. Install two pins (19) in support (20) if they were removed.

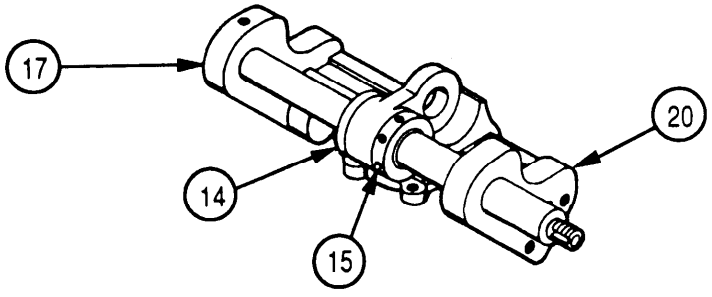
b. Aline hole in support (20) with traversing sleeve housing (12) and slide support over traversing sleeve housing.

c. Aline pins in support (20) with pin holes in slide body (2).

d. Gently tap support (20) in place.

e. Install two socket head cap screws (21).

10



a. Push traversing nut (14) back and forth between supports (17 and 20) to check for binding.

b. If binding is present:
   (1) Loosen screws and tap supports.
   (2) Tighten screws and repeat step a.

NOTE

Adjusting tightness of nut (15) against traversing nut (14) may aid sliding.

c. If binding cannot be removed by tapping:
   (1) Remove supports (17 and 20) and the four pins.
   (2) Replace the four pins with new ones and reinstall supports (17 and 20).
   (3) Repeat steps a thru c until sliding is smooth.

3-13. TRAVERSING ASSEMBLY SLIDE-MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

11

NEW PARTS ONLY

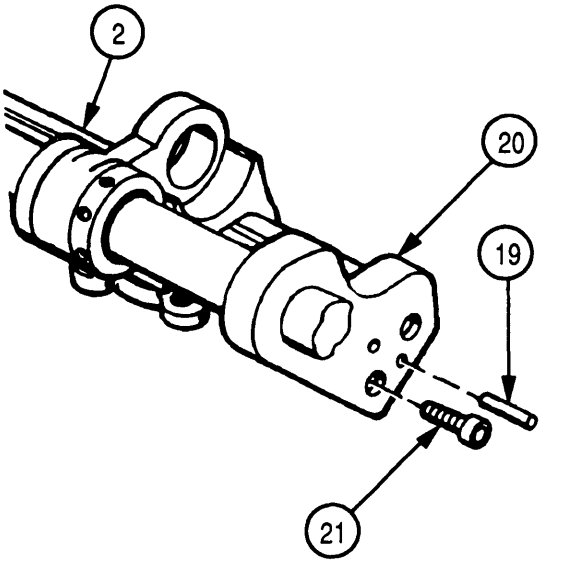
a. To install a new slide body, follow steps b thru e below.

b. Install supports (17 and 20). Secure with four socket head cap screws (18 and 21).

c. Check for binding. See step 10.

d. Using pin holes in supports (17 and 20) asguides, drill four 1/4-inch holes, 3/4-inch deep in slide body (2).

e. Install four new pins (16 and 19).



12

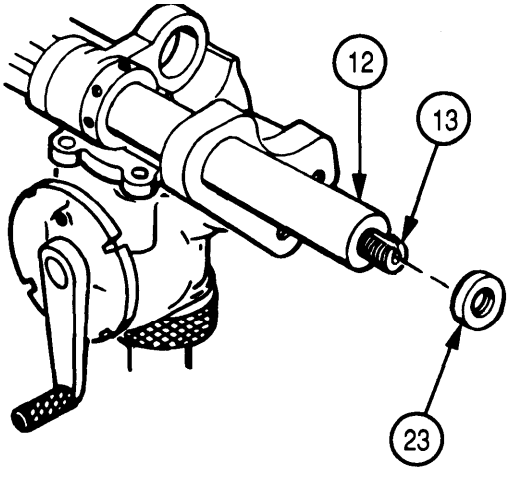
a. Reassemble traversing assembly slide on standard assembly (p 3-64, step 26, and p 3-65, step 27).

b. Install nut (23) part way on screw and sleeve assembly (13).

c. Slowly turn screw and sleeve assembly (13) counterclockwise until small end is fully extended and traversing begins.

d. While turning screw and sleeve assembly (13), run nut (23) up against traversing sleeve housing (12).

e. Back nut (23) off just enough to keep end play to a minimum, but also enough to allow the screw and sleeve assembly (13) to rotate easily.



13

Install traversing assembly wheel (24) on screw and sleeve assembly (13). Push it against nut (23).

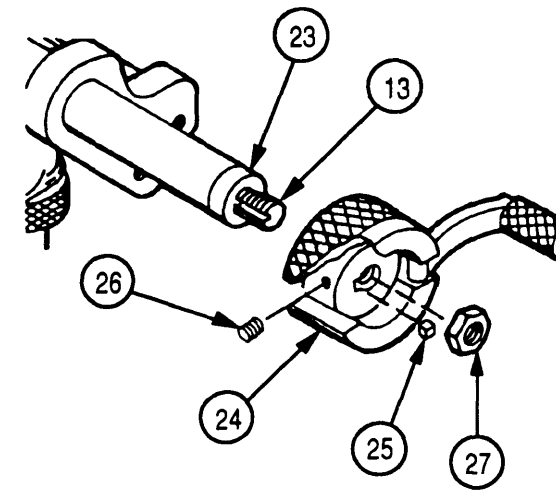
Aline key ways in traversing assembly wheel (24) and screw and sleeve assembly (13).

Install key (25) in alined key ways.

Install setscrew (26). Tighten securely.

Install nut (27). Tighten securely. Stake it in two places.

Check traversing wheel full length for maximum backlash of 30 degrees and for smooth and easy action.

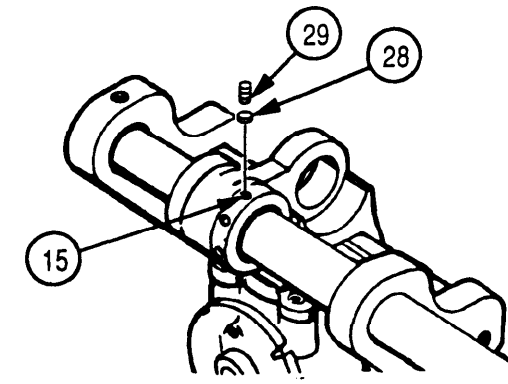


14

a. Place new solid disc (28) in setscrew hole of nut (15).

b. Using a punch, tap solid disc (28) into place.

c. Install setscrew (29). Tighten securely.



15

a. Stake all setscrews and socket head cap screws securely when reassembly and adjustments are complete.

b. Wipe all unpainted exposed surfaces with general purpose lubricating oil.

3-14. TRAVERSING ASSEMBLY WHEEL--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly/Cleaning/Inspection
b. Repair
c. Reassembly

INITIAL SETUP

Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Wiping rag (item 23, app D)

Equipment Conditions
Traversing assembly wheel removed from traversing assembly slide (p 3-66)

DISASSEMBLY/CLEANING/INSPECTION

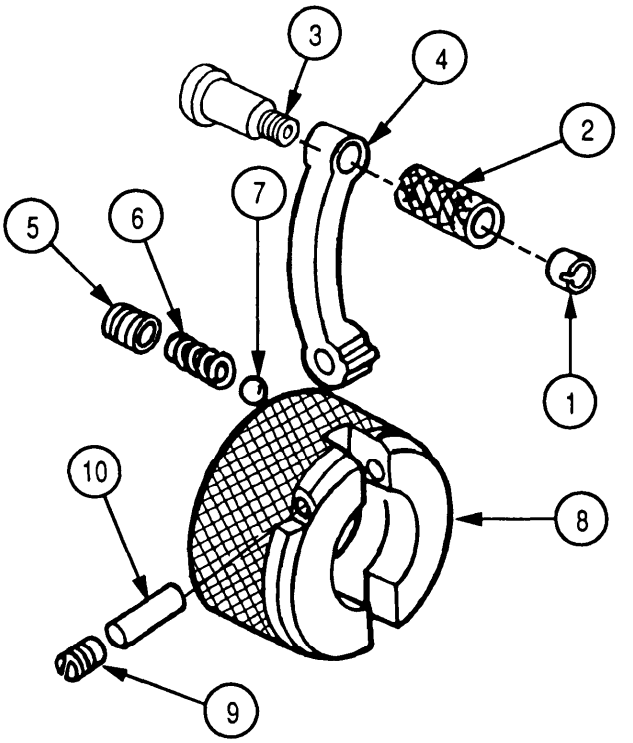
a. Remove nut (1), handle (2), and shoulder screw (3) from crank (4).

b. Remove plug (5), spring (6), and bearing ball (7) from traversing wheel body (8).

c. Remove setscrew (9), headless straight pin (10), and crank (4) from body (8).

d. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

e. Inspect spring (6) for cracks, breaks, and deformities.



REPAIR

Replace authorized parts as required. Refer to appendix C.

REASSEMBLY

a. Apply automotive and artillery grease to bearing and spring during reassembly.

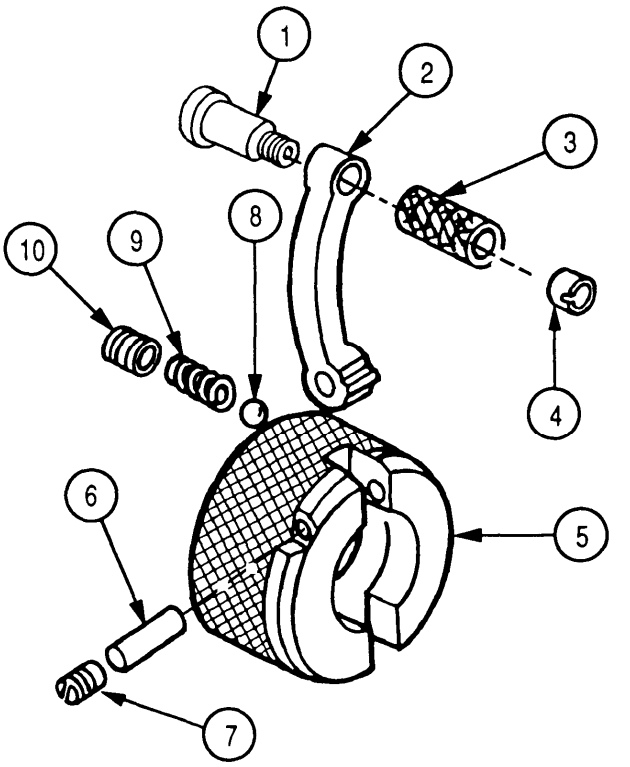
b. Install shoulder screw (1) in crank (2).

c. Install handle (3) and nut (4) on crank (2). Tighten nut (4) securely.

d. Position crank (2) assembly in traversing wheel body (5) in the closed position and aline pin holes.

e. Install headless straight pin (6) and setscrew (7). Tighten setscrew (7) securely.

f. Install bearing ball (8), spring (9), and plug (10) in traversing wheel body (5). Tighten plug (10) securely.



3-15. GEAR AND HANDLE ASSEMBLY--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning/Inspection
c. Repair
d. Reassembly

INITIAL SETUP

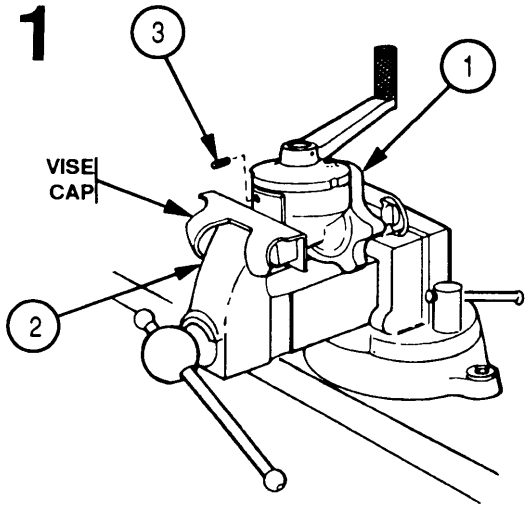
Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)
Tool Set, Field Maintenance M30 4.2-inch Mortar Cannon and M24 4.2-inch Mortar Mount series (item 5, app B)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Gasket (item 4, app E)
Shims (item 11, app E)
Wiping rag (item 25, app D)

Equipment Conditions
Gear case with gear and handle assembly removed from standard assembly (p 3-47)

DISASSEMBLY

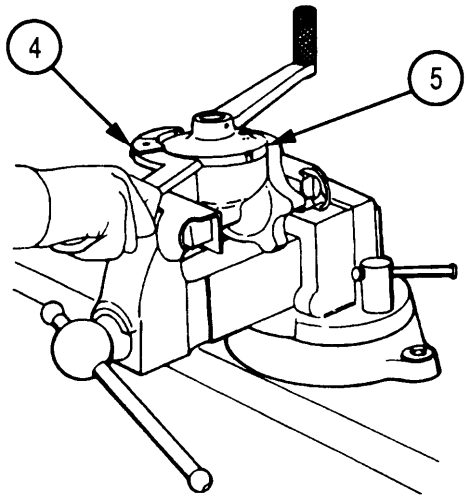
1



a. Place gear case (1) in vise (2).

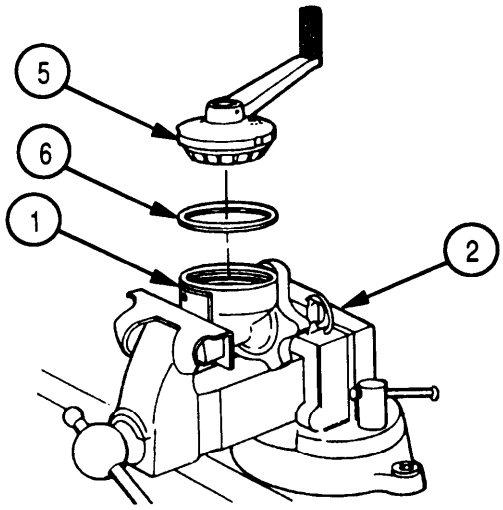
b. Remove setscrew (3).

2



Using spanner wrench (4), loosen cover of gear and handle assembly (5).

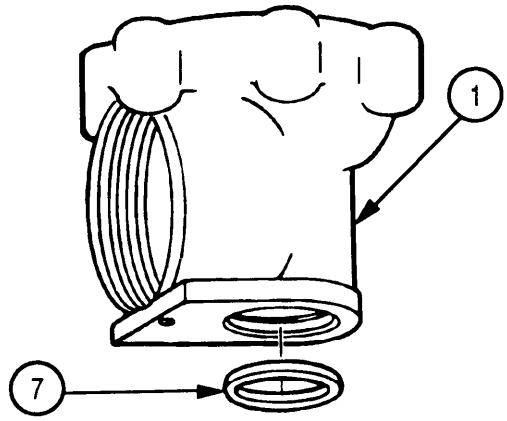
3



a. Remove gear and handle assembly (5) and shim (6) from gear case (1).

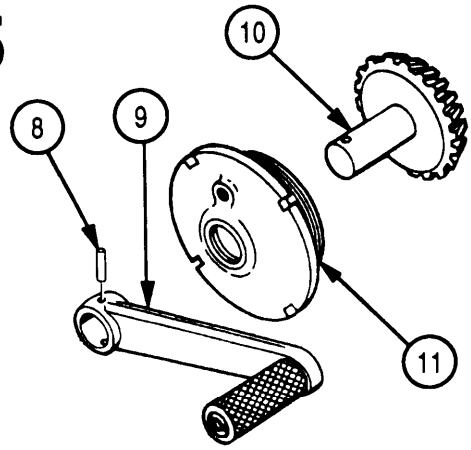
b. Remove gear case (1) from vise (2).

4



Remove gasket (7) from gear case (1).

5

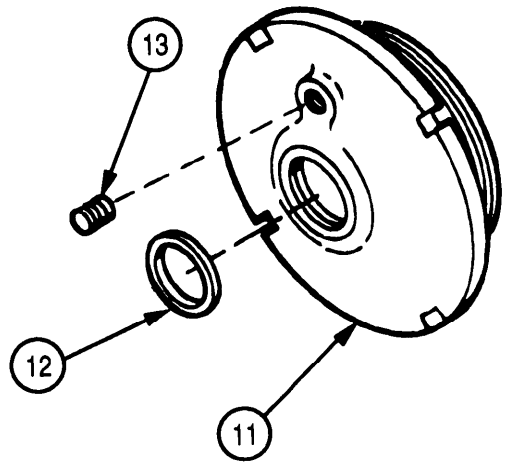


a. Remove spring pin (8).

b. Remove crank (9) from shaft of miter gear (10).

c. Remove miter gear (10) from gear case cover (11).

6



a. If damaged, remove preformed packing (12) from gear case cover (11).

b. Remove pipe plug (13) only if damaged.

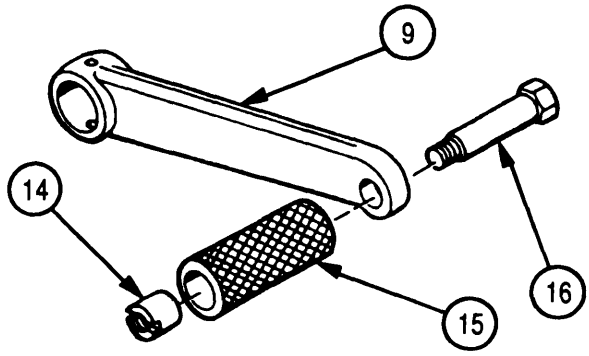
3-15. GEAR AND HANDLE ASSEMBLY-MAINTENANCE INSTRUCTIONS (CONT).

DISASSEMBLY (CONT)

7

a. Remove nut (14) and handle (15) from shoulder bolt (16).

b. Remove shoulder bolt (16) from crank (9).



CLEANING/INSPECTION

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

b. Inspect gear case cover (11) for nicks and burrs.

c. Inspect miter gear (10) for worn, cracked, and broken teeth.

d. Inspect all threaded parts for damage, burrs, and wear.

REPAIR

a. Replace authorized parts as required. Refer to appendix C.

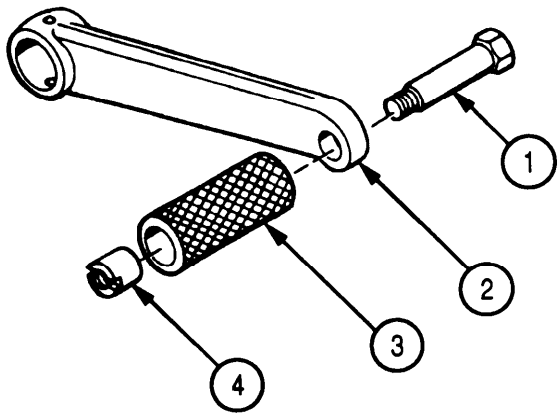
b. Use a stone or file to smooth out any nicks or burrs.

REASSEMBLY

1

Apply automotive and artillery grease to all bearing surfaces and gears during reassembly.

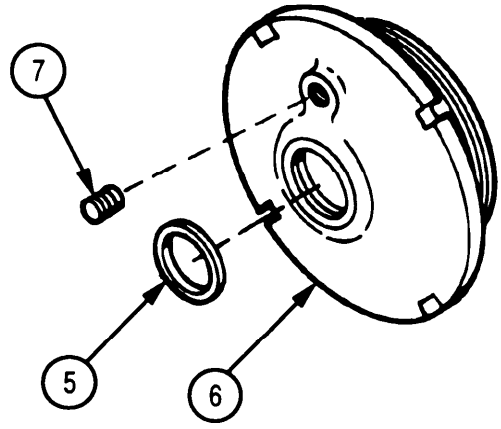
2



a. Install shoulder bolt (1) in crank (2).

b. Install handle (3) and nut (4) on shoulder bolt (1). Tighten nut securely.

3



a. If removed, install new preformed packing (5) in gear case cover (6).

b. Install pipe plug (7) if it was removed.

4

a. Install miter gear (8) in gear case cover (6).

b. Install crank (2) on shaft of miter gear (8).

c. If all old parts are being assembled, go to step d below. If a new miter gear is being installed, go to step e thru step g below.

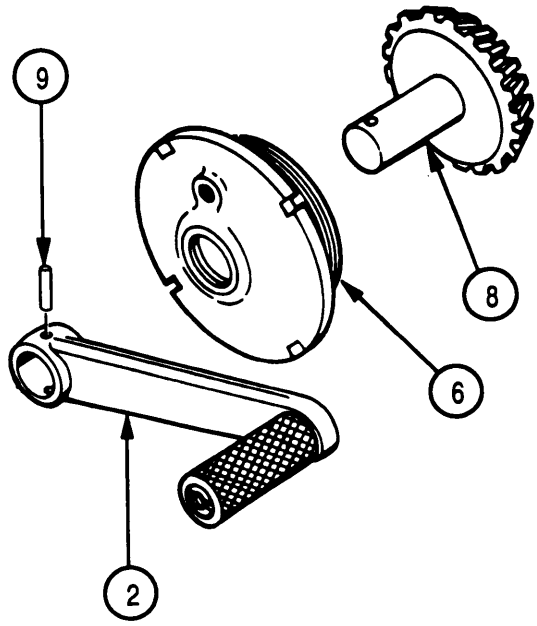
d. Aline pin holes and install spring pin (9). Go to step 5.

NEW PARTS ONLY

e. Using pin hole in crank (2) as a guide, drill 3/16-inch hole in shaft of miter gear (8).

f. Install spring pin (9).

g. Check that miter gear (8) and crank (2) turn smoothly in gear case cover (6).

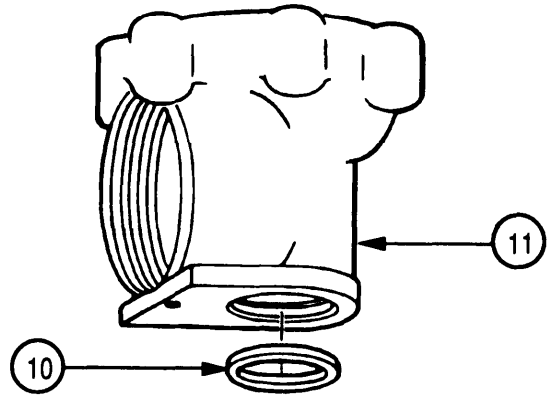


3-15. GEAR AND HANDLE ASSEMBLY-MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

5

Install new gasket (10) in gear case (11).



6

a. Place gear case (11) in vise (12).

b. If all the old parts are being installed, go to step c thru step g below. If a new gear and handle assembly is being installed, go to steps 7 and 8.

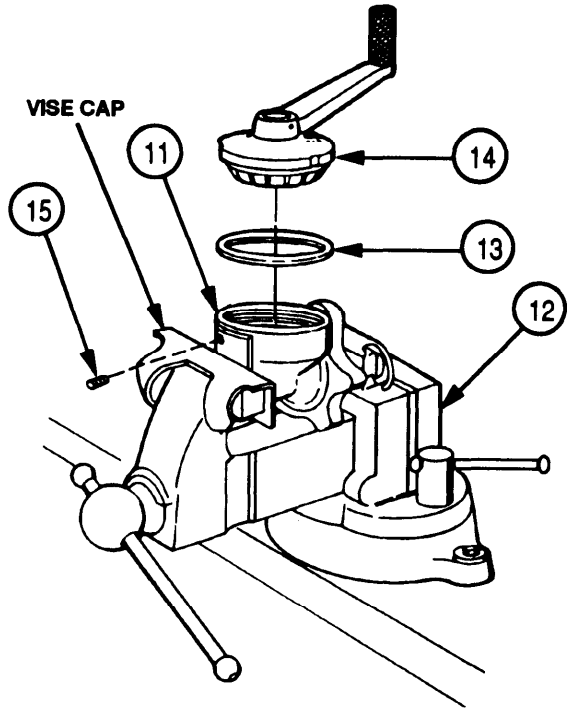
c. Position shim (13) on lip of gear case (11).

d. Install gear and handle assembly (14) in gear case (11).

e. Tighten cover of gear and handle assembly (14) until the setscrew holes are alined.

f. Install setscrew (15). Tighten securely.

g. Remove gear case (11) from vise (12).



7

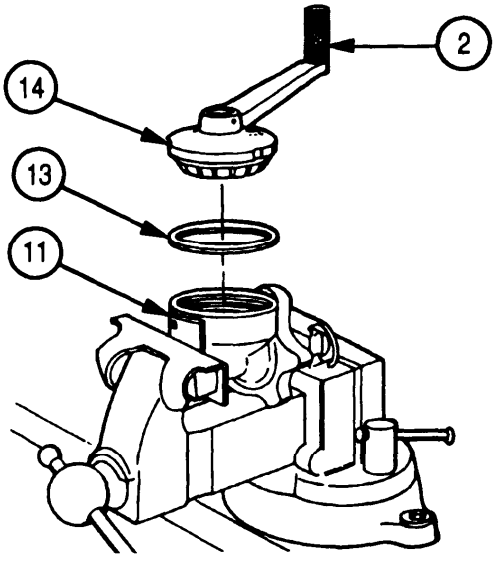
NEW PARTS ONLY

a. Screw gear and handle assembly (14) into gear case (11). Tighten securely.

b. Turn crank (2) to check for binding.

c. If binding occurs, remove gear and handle assembly (14) and install one or more shims (13) as required.

d. Repeat steps a thru c until elevating crank turns smoothly and without binding.



8

NEW PARTS ONLY

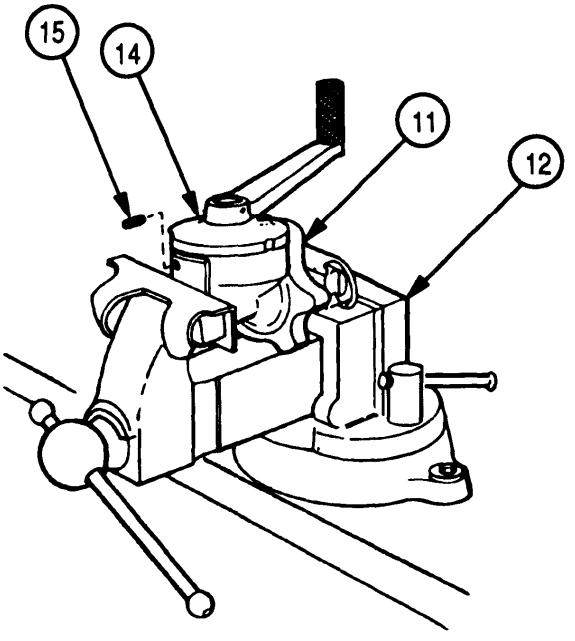
a. Using setscrew hole in gear case (11) as a guide, drill a No. 33 (0.113-inch) hole in cover of gear and handle assembly (14).

NOTE

Drill the hole just deep enough so that the setscrew will be flush with gear case. Avoid drilling through the cover of gear and handle assembly to prevent metallic chips from entering the gear case.

b. Install setscrew (15). Tighten securely.

c. Remove gear case (11) from vise (12).



3-16. BRIDGE ASSEMBLY--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning/Inspection/Repair
c. Reassembly

INITIAL SETUP

Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
General purpose lubricating oil (item 17, app D)
Preformed packing (item 7, app E)
Wiping rag (item 23, app D)

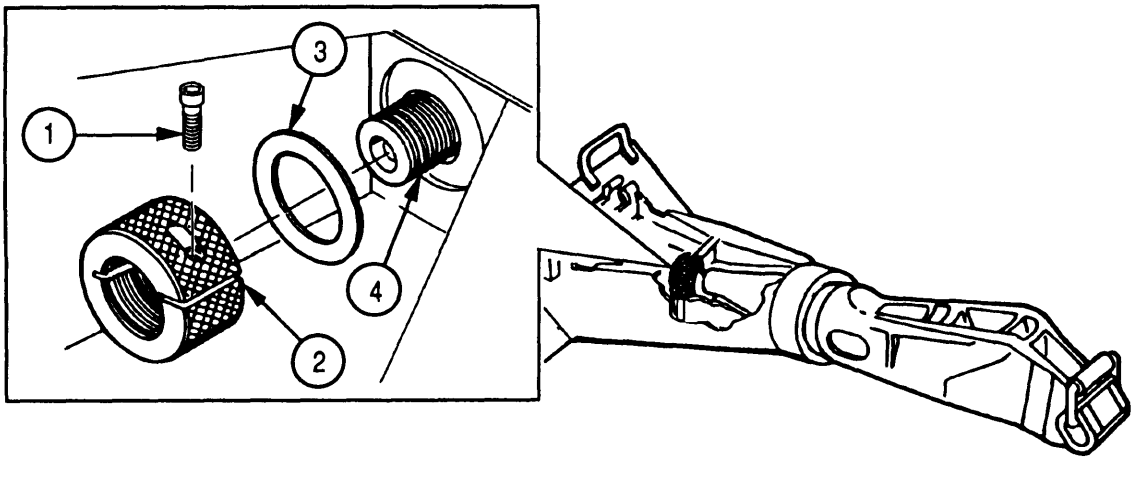
Personnel Required
MOS 44B Metal Worker (Welder)
MOS 45B Small Arms Repairer

References
TM 9-237
TM 9-1015-215-10

Equipment Conditions
Bridge assembly removed from M30 4.2-inch mortar (TM 9-1015-215-10)

DISASSEMBLY

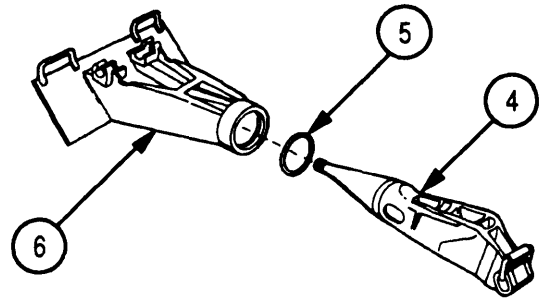
1



Remove socket head cap screw (1), lock nut (2), and thrust washer (3) from bridge cup body (4).

2

Remove bridge cup body (4) and preformed packing (5) from bridge base body (6).

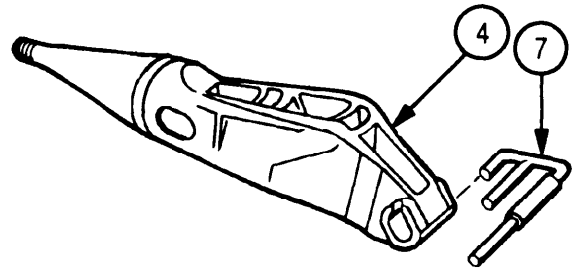


3

NOTE

Do not remove handle (7) unless it is unserviceable.

Remove handle (7) from bridge cup body (4) by cutting or bending as necessary.



CLEANING/INSPECTION/REPAIR

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

b. Inspect all threaded parts for damage, burrs, and wear. Use stone or file to smooth out any burrs or sharp corners. Inspect bridge cup body (4) and bridge base body (6) castings for cracks.

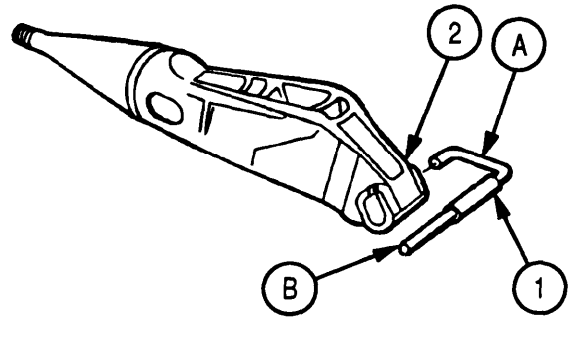
c. Replace authorized parts as required. Refer to appendix C.

REASSEMBLY

1

a. Insert hook (A) of handle (1) in bridge cup body (2) socket.

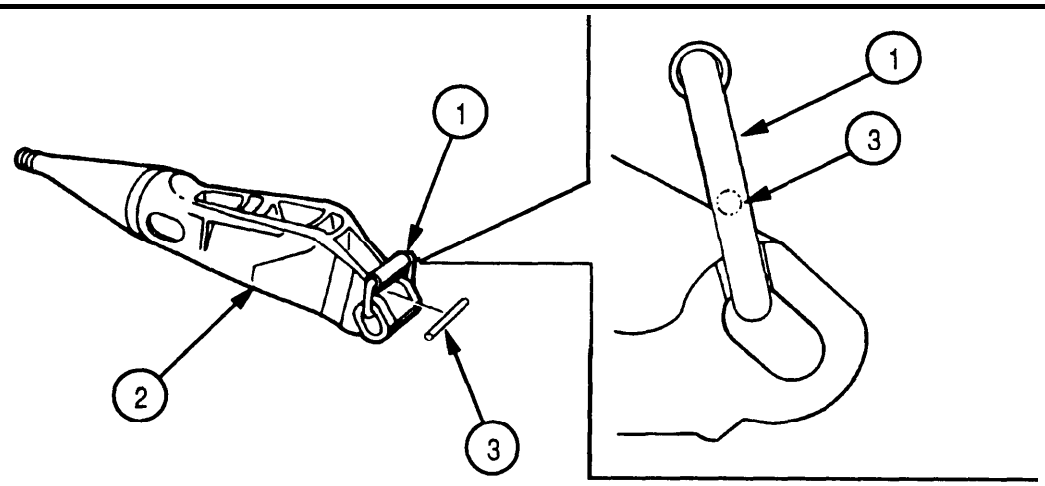
b. Bend end (B) of handle (1) to hook it in bridge cup body (2) socket.



3-16. BRIDGE ASSEMBLY--MAINTENANCE INSTRUCTIONS (CONT).

REASSEMBLY (CONT)

2



a. Lift handle (1) to its extreme upward and forward position and temporarily block in place.

b. Insert headless straight pin (3) between the handle uprights, rest it on sloping surface of bridge cup body (2), and temporarily block in place.

c. Weld each end of headless straight pin (3) to handle assembly (1) with a continuous 360 degree bead around the rod (refer to TM 9-237).

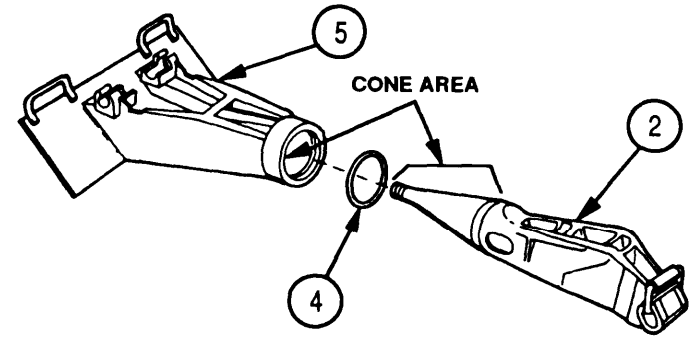
d. Remove blocking,

3

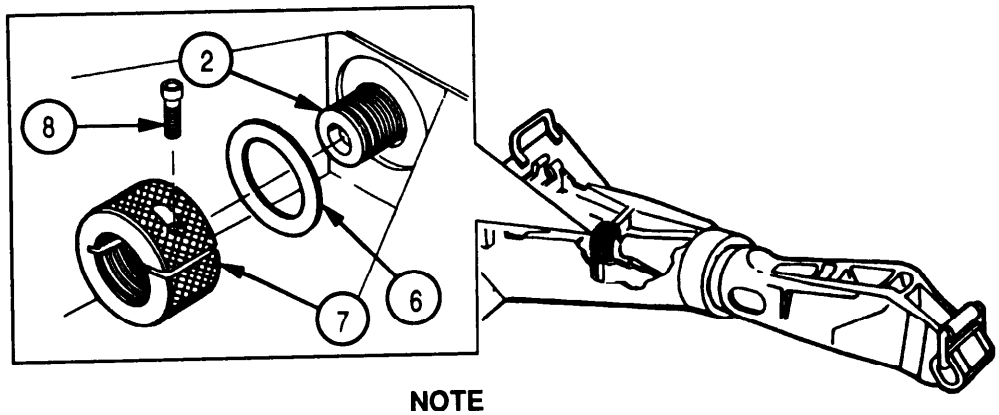
a. Coat cone areas of bridge cup body (2) and bridge base body (5) with general purpose lubricating oil.

b. Install new preformed packing (4) in bridge base body (5).

c. Install bridge cup body (2) in bridge base body (5).



4



NOTE

Coat face of thrust washer (6) with automotive and artillery grease to make it stick to lock nut (7).

a. Place thrust washer (6) over small diameter of shoulder of lock nut (7).

b. Install lock nut (7) on threaded end of bridge cup body (2).

c. Tighten lock nut (7) until bridge assembly pivots slowly when lifted by one handle on the spade.

d. Install socket head cap screw (8) in lock nut (7). Tighten socket head cap screw (8) securely.

3-17. ROTATOR ASSEMBLY--MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning/Inspection
c. Repair
d. Reassembly

INITIAL SETUP

Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Felt washer (item 2, app E)
Wiping rag (item 23, app D)

Personnel Required
2 (for special procedure only)

References
TM 9-1015-215-10

Equipment Conditions
Rotator removed from M30 4.2-inch mortar (TM 9-1015-215-10)

3-17. ROTATOR ASSEMBLY-MAINTENANCE INSTRUCTIONS(CONT).

DISASSEMBLY

1

SPECIAL PROCEDURE

a. If rotator cannot be removed from baseplate, perform the following procedure.

WARNING

Rotator assembly may fall out of baseplate assembly during this procedure if not restrained by additional repairman.

b. Stand baseplate (1) on edge with pipe plug hole (2) up.

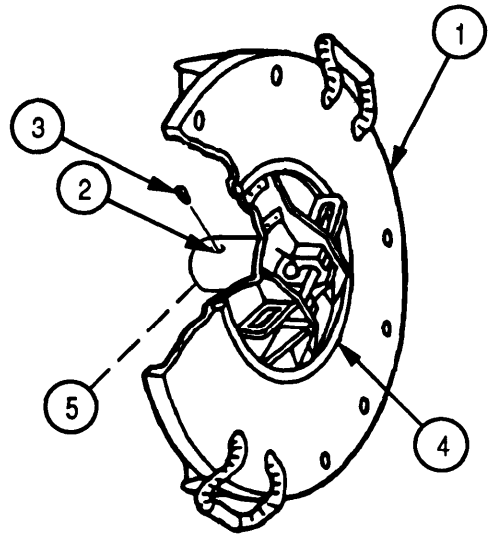
c. Remove pipe plug (3) from baseplate assembly.

d. Rotate the rotator assembly (4) until one of the slide locks (5) is visible through the pipe plug hole.

e. Using an appropriate punch and hammer, tap the slide lock back into its rotator housing.

f. Rotate the rotator assembly 180 degrees until the other slide lock is visible through the pipe plug and repeat step a.

g. Proceed with disassembly.

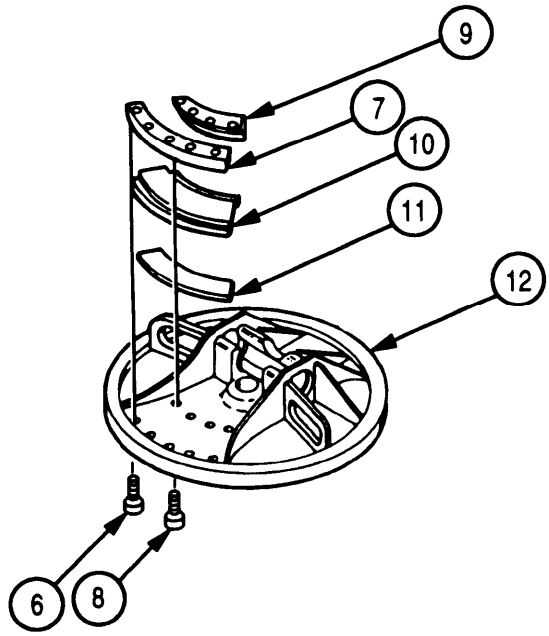


2

a. Remove five socket head cap screws (6) and outer retainer (7).

b. Remove four socket head cap screws (8) and inner retainer (9).

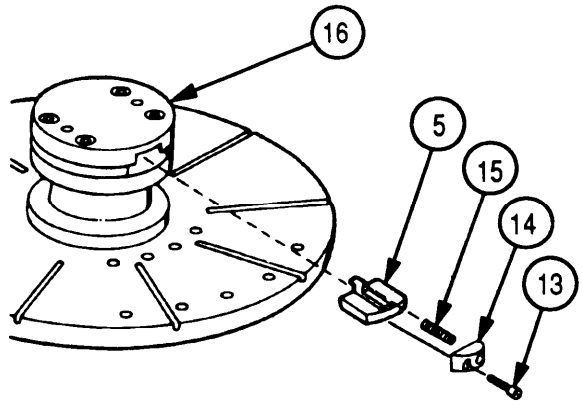
c. Remove rest pad (10) and cushion (11) from rotator body (12).



3

a. Remove two socket head cap screws (13), retainer (14), spring (15), and slide lock (5) from slide lock retainer (16).

b. Repeat step a to remove similiar items from other side.



3-17. ROTATOR ASSEMBLY-MAINTENANCE INSTRUCTIONS (CONT).

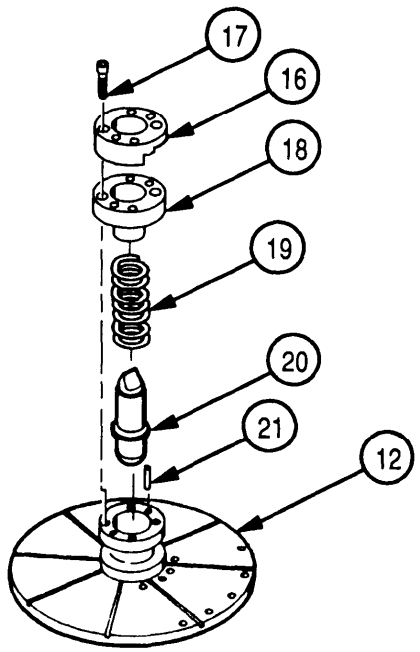
DISASSEMBLY (CONT)

4

a. Remove four socket head cap screws (17).

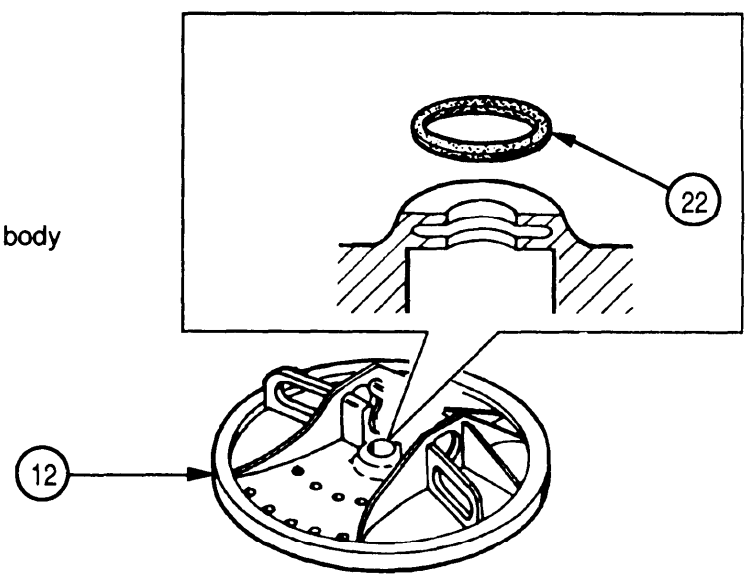
b. Remove slide lock retainer (16), expanding pin guide (18), spring (19), and headless shoulder pin (20) from rotator body (12).

c. Remove two spring pins (21) only if they are damaged.



5

Remove felt washer (22) from slot in rotator body (12).



CLEANING/INSPECTION

a. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

b. Inspect steel rotator body (12) for cracks in the body and in the welds.

c. Inspect slide lock retainer (16) and retainer parts for breaks, cracks, nicks and burrs, and deformed parts.

d. Inspect all springs for cracks, breaks, and deformities.

REPAIR

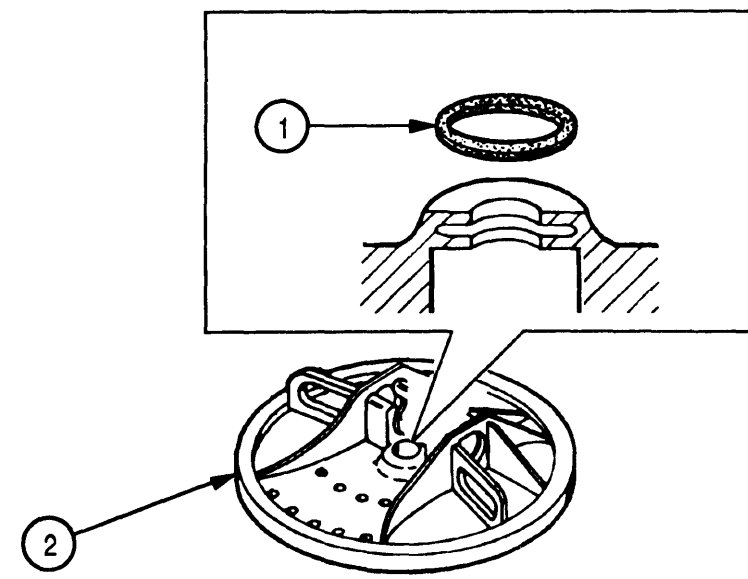
a. Replace authorized parts as required. Refer to appendix C.

b. Use stone or file to smooth out any nicks or burrs.

REASSEMBLY

1

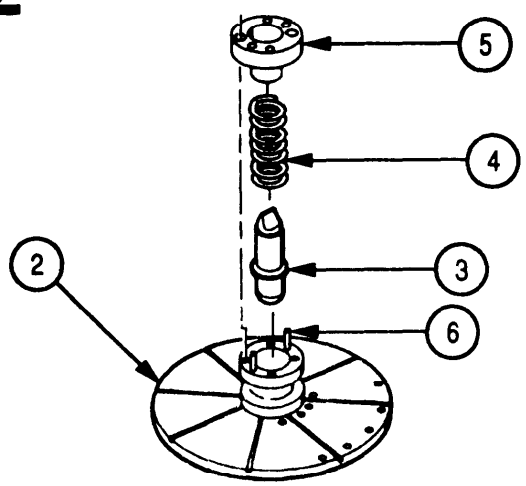
Install new felt washer (1) in slot in rotator body (2).



3-17. ROTATOR ASSEMBLY-MAINTENANCE INSTRUCTIONS (CONT).

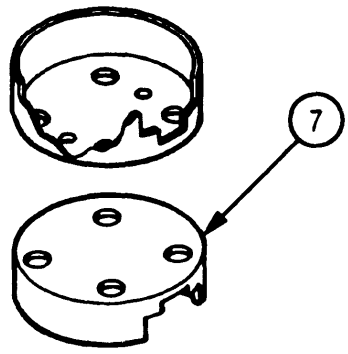
REASSEMBLY (CONT)

2



Install headless shoulder pin (3), spring (4), and expanding pin guide (5) in rotator body (2). If pins (6) were not removed, aline pin holes in guide (5) over pins (6) and install guide (5).

3



NEW PARTS ONLY

a. If a new slide lock retainer (7) is installed, use the old retainer as a guide to drill holes for pins.

b. Drill two 3/8-inch holes through the new slide lock retainer (7).

4

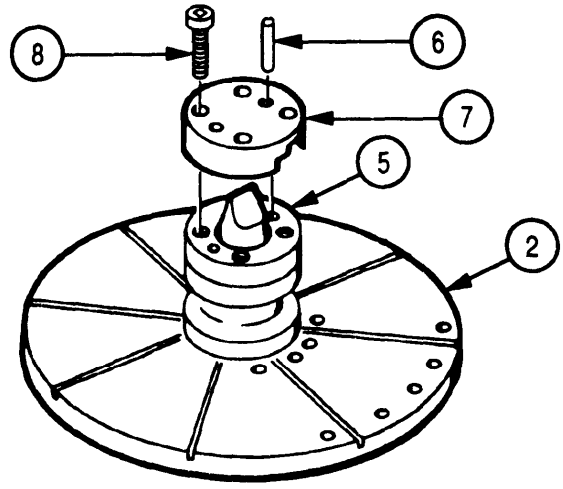
a. Position retainer (7) on expanding pin guide (5).

b. Aline pin holes with screw holes in retainer (7), guide (5), and rotator body (2).

c. Install four socket head cap screws (8) loosely.

d. If removed, install two new spring pins (6).

e. Tighten four socket head cap screws (8) securely.

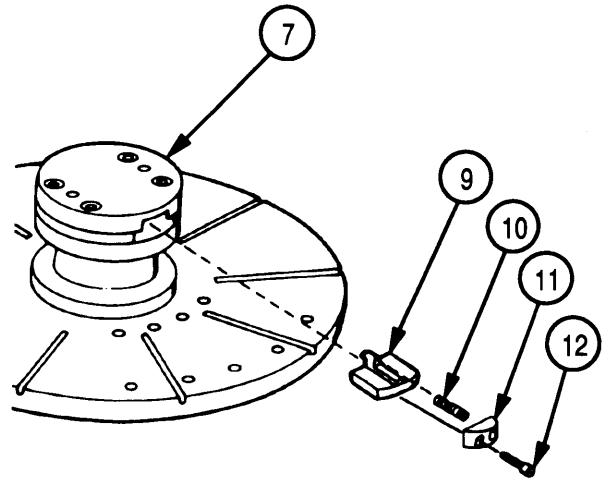


5

a. Install slide lock (9), spring (10), and retainer (11) in slide lock retainer (7).

b. Install two socket head cap screws (12). Tighten securely.

c. Repeat steps a and b to install similar items on the other side.



6

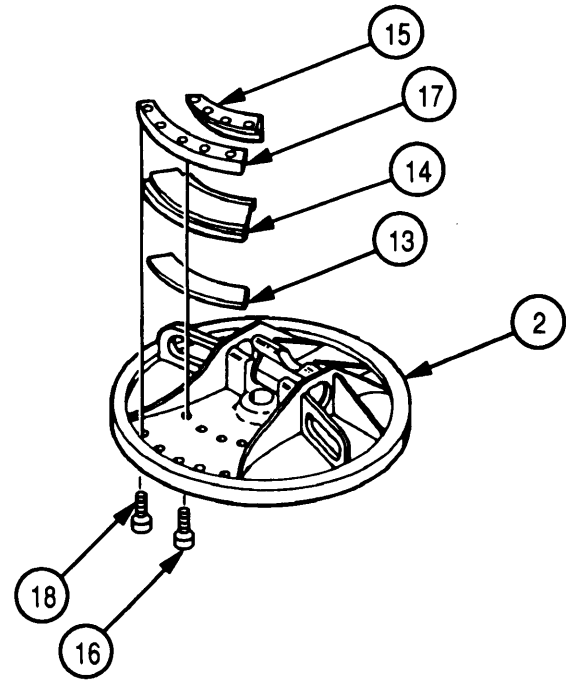
a. Install cushion (13) and rest pad (14) on rotator body (2).

b. Position inner retainer (15) over rest pad (14). Aline screw holes and secure with five socket head cap screws (18).

c. Position outer retainer (17) over rest pad (14). Aline screw holes and secure with four socket head cap screws (16).

d. Tighten and stake nine socket head cap screws (16 and 18).

e. Apply automotive and artillery grease to the entire underside of bearing surface.



3-18. MORTAR BASEPLATE--MAINTENANCE INSTRUCTIONS.

This task covers disassembly/cleaning/inspection/repair/reassembly.

INITIAL SETUP

Tools and Special Tools
Basic Field Maintenance Small Arms Shop Set, Less Power (item 1, app B)
Small Arms Repairman Tool Kit (item 2, app B)

Materials/Parts
Automotive and artillery grease (item 15, app D)
Dry cleaning solvent (item 12, app D)
Wiping rag (item 23, app D)

References
TM 9-1015-215-10

Equipment Conditions
Mortar baseplate removed from M30 4.2-inch mortar (TM 9-1015-215-10)

DISASSEMBLY/CLEANING/INSPECTION/REPAIR/REASSEMBLY

a. Unscrew and remove pipe plug (1) from baseplate (2) only if the pipe plug is damaged.

b. Clean parts with dry cleaning solvent and wipe dry with wiping rag.

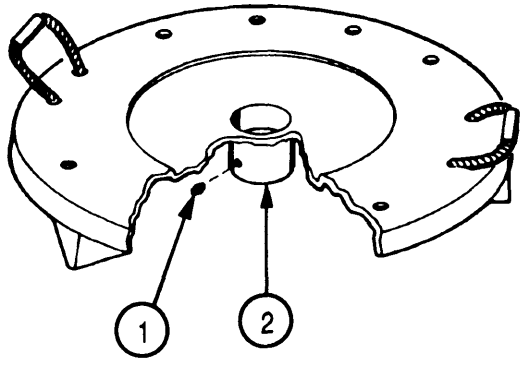
c. Inspect bearing surface of baseplate (2) for warping.

d. Inspect baseplate (2) for cracks and broken gussets or spades.

e. Replace pipe plug (1) as required. Refer to appendix C.

f. If removed, install pipe plug (1) in baseplate (2). Tighten securely.

g. Apply automotive and artillery grease to entire bearing surface.



3-19. M31 60-MM SUBCALIBER TRAINER--MAINTENANCE INSTRUCTIONS.

This task covers inspection/repair.

INITIAL SETUP

Tools and Special Tools
Accessory Outfit for Pullover Gages (item 4, app B)
M3 Borescope or M2 Borescope (item 3, app B)
Pullover Gage (7243022)

References
TM 9-10000-202-14
TM 9-6650 -235-13&P

INSPECTION/REPAIR

a. Inspect M2 60-mm mortar barrel in accordance with TM 9-1000-202-14. Refer to TM 9-6650-235-13&P for operation of the M3 borescope.

b. If necessary, replace M2 60-mm mortar barrel. Refer to appendix C.

3-20. FINAL INSPECTION--MAINTENANCE INSTRUCTIONS.

This task covers Final Inspection.

INITIAL SETUP

Materials/Parts
Enamel (item 13, app D)
Paint brush (item 6, app D)
Synthetic thinner (item 26, app D)

References
TM 9-1015-215-10
TM 43-0139

Equipment Conditions
M30 4.2-inch mortar assembled in accordance with TM 9-1015-215-10

3-20. FINAL INSPECTION-MAINTENANCE INSTRUCTIONS (CONT).

FINAL INSPECTION

Perform the final inspection below after maintenance procedures have been completed.

Point To Be Inspected	Final Inspection
Tube Cap	Gastight seal on tube. Cap pin intact.
Mortar tube	Bore diameter 4.221 inches. Tube is free of dirt, grit, rust, and deformation of lands and grooves. Shell drops freely.
Coupling and sight mount assembly	Tight fit with coupling base. Functions smoothly.
Shock absorbers	Function smoothly.
Traversing mechanism	Does not bind. Crank undamaged. Backlash must not exceed 30 degree turn of wheel body.
Elevating mechanism	Backlash must not exceed 10 degrees. Functions smoothly.
Recoil mechanism	Functions smoothly.
Bridge assembly	Smooth swivel action. Lock nut secure. Trunnion bearings not damaged. Handles intact.
Rotator assembly	Functions smoothly. Proper locking action. Handles intact.
Mortar baseplate	Handles intact.
Paint	Inspect painted surfaces. Touch up bare spots and scratches with green enamel. Refer to TM 43-0139.

Section III. PREEMBARKATION inspection OF MATERIEL IN UNITS ALERTED FOR OVERSEAS MOVEMENT

3-21. PREEMBARKATION INSPECTION. For preembarkation inspection of materiel in units alerted for overseas movement, refer to TB 9-1000-247-34.

APPENDIX A
REFERENCES

A-1. SCOPE. This appendix lists all technical bulletins, technical manuals, field manuals, and miscellaneous publications referenced in this manual.

A-2. TECHNICAL BULLETINS.

TB MED 502 ..... Occupational and Environmental Health Respiratory Protection Program

TB 9-1000-247-34 ..... Standards for Overseas Shipment or Domestic Issue of Small Arms, Aircraft Armament, Towed Howitzers, Mortars, Recoilless Rifles, Rocket Launchers, and Associated Fire Control Equipment

TB 43-0213 ..... Corrosion Prevention and Control

TB 746-95-1 ..... Color, Marking, and Camouflage Patterns used on Military Equipment

A-3. TECHNICAL MANUALS.

TM 9-237 ..... Operator's Manual: Welding Theory and Application (T034W4-1 -5)

TM 9-254 ..... General Maintenance Procedures for Fire Control Materiel

TM 9-1000-202-14 ..... Operator's, Organizational, Direct Support, and General Support Maintenance Manual For Evaluation of Cannon Tubes

TM 9-1015-215-10 ..... Operator's Manual for 4.2-inch Mortar, M30

TM 9-1240 -278-12 ..... Operator's and Organizational Maintenance Manual for Optical Boresight, M45 and M45A1

TM 9-1240-287-34 ..... Direct Support and General Support Maintenance Manual for Sightunit, M53 and M53A1

TM 9-6650-235-13&P ..... Operator's, Organizational, and Direct Support Maintenance, Including Repair Parts and Special Tools List, including Depot Maintenance Repair Parts and Special Tools List For Borescope M3

TM 9-6920-212-14 ..... Operator's Manual for Subcaliber Mortar Trainer M32 with 25-mm Training Projectile M379

TM 9-6920 -212 -24 P ..... Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Subcaliber Mortar Trainer M32 with 25-mm Training Projectile M379

A-3. TECHNICAL MANUALS (CONT).

TM 43-0139 ..... Painting Instructions for Field Use

TM 740-90-1 ..... Administrative Storage of Equipment

TM 750-244-7 ..... Procedures for Destruction of Equipment in Federal Supply Classifications 1000, 1005, 1010, 1020, 1025, 1030, 1055, 1090, and 1095 to Prevent Enemy Use

A-4. FIELD MANUALS.

FM 7-90 ..... Tactical Employment of Mortars

FM 21-11 ..... First Aid for Soldiers

FM 23-90 ..... Mortars

FM 23-92 ..... Mortar, 4.2-inch

A-5. MISCELLANEOUS PUBLICATIONS.

AR 25-30 ..... Consolidated Index of Army Publications and Blank Forms

CTA 8-100 ..... Army Medical Equipment Expendable/Durable Supplies

CTA 50-970 ..... Expendable/Durable Items (except: Medical, Class V Repair Parts and Heraldic Items)

DA Form 2028 ..... Recommended Changes to Publications and Blank Forms

DA Form 2028-2 ..... Recommended Changes to Equipment Technical Publications

DA Form 2404 ..... Equipment Inspection and Maintenance Worksheet

DA Form 2408-4 ..... Weapon Record Data

DA Form 2408-9 ..... Proof Acceptance Record

DA PAM 738-750 ..... The Army Maintenance Management System

SC 4933-95-CL-A11 ..... Shop Set, Small Arms: Field Maintenance, Basic, Less Power

SC 4933 -95-CL-E09 ..... Accessory Outfit for Pullover Gages

SC 5180-95-CL-A07 ..... Tool Kit, Small Arms Repairman

SC 6650-95-CL-E01 ..... BoresCope: Cannon Bore Inspecting, M2 or BoresCope M3

SF 364 ..... Report of Discrepancy (ROD)

SSF 368 ..... Product Quality Deficiency Report

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1 . GENERAL.

a. This introduction (section I) provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

b. The Maintenance Allocation Chart (MAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit-includes two subcolumns, C (operator/crew) and O (unit) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

Depot - includes a D subcolumn.

c. Section II 1 lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS. Maintenance functions will be limited to and defined as follows: (except for ammunition MAC[1]).

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

b. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, 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; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

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

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

f. Calibate. 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. *Remove/Install. To* remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. *Replace.* To remove an unserviceable item and install a serviceable counterpart in its place. “Replace” is authorized by the MAC and assigned maintenance level is shown as the 3d position code of the SMR code.

[1] Exception is authorized for ammunition MACs to permit use of maintenance function headings that better describe or identify ammunition peculiar maintenance functions. The headings used and their definitions shall be included in the appropriate ammunition technical manuals.

B-2. MAINTENANCE FUNCTIONS (CONT).

i. Repair The application of maintenance services[2], including fault location/troubleshooting[3], removal/installation, and disassembly/assembly[4] procedures, and maintenance actions[5] to identify troubles and 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.

j. *Overhaul.* That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. *Rebuild.* Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

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

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

c. Column 3, Maintenance Function. Column 3 lists the functions to be performed on the item listed in column 2. (For detailed explanation of these functions, see paragraph B-2.)

d. *Column 4, Maintenance Level* Column *4* specifies each level of maintenance authorized to perform each function listed in column 3, by indicating work time required (expressed as manhours in whole hours or decimals) in the appropriate subcolumn. This work-time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate work-time figures will be shown for each level. 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 (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

C ..... Operator or crew maintenance
O ..... Unit maintenance
F ..... Direct support maintenance
L ..... Specialized Repair Activity (SRA)[6]
H ..... General support maintenance
D ..... Depot maintenance

[2]Services - inspect, test, service, adjust, aline, calibrate, and/or replace.

[3]Fault location/troubleshooting - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

[4]Disassembly/assembly - The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

[5]Actions - welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

[6]This maintenance level is not included in section 11, column (4) of the Maintenance Allocation Chart. Functions to this level of maintenance are identified by a work-time figure in the "H" column of section 11, column (4), and an associated reference code is used in the Remarks column (6). This code is keyed to section IV, Remarks, and the SRA complete repair application is explained there.

e. Column 5, Tools and Equipment. Column 5 specifies, by code, those common tool sets (not individual tools), common TM DE, and special tools, special TM DE, and special support equipment required to perform the designated function. Codes are keyed to tools and test equipment in section III.

f. *Column 6, Remarks.* When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks contained in section IV.

B-4. **EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.**

a. *Column 1, Reference Code.* The tool and test equipment reference code correlates with a code used in the MAC, section II, column 5.

b. *Column 2, Maintenance Level.* The lowest level of maintenance authorized to use the tool or test equipment.

c. *Column* **3,** *Nomenclature.* Name or identification of the tool or test equipment.

d. *Column* **4,** *National Stock Number.* The National stock number of the tool or test equipment.

e. *Column* **5,** *Too/ Number.* The manufacturer's part number, model number, or type number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. *Column 7, Remarks Code.* The code recorded in column 6, section II.

b. *Column 2, Remarks.* This column lists information pertinent to the maintenance function being performed as indicated in the MAC, section II.

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL UNIT C	UNIT O	DS F	GS H	Depot D	(5) TOOLS AND EQPT	(6) REMARKS CODE
00	MORTAR, 4.2-INCH, M30	Inspect	0.2	0.2					
		Service	1.0	1.0	16.0				
		Repair				0.5			
01	CANNON, 4.2-INCH MORTAR, M30	Inspect	0.1						
		Service	0.4	0.2					
		Replace			0.1				
		Repair			0.8			1,2	
		Overhaul					13.0		
0101	Coupling and Sight Mount Assembly	Replace			0.1				B
		Repair		0.1	1.0			1,2	C
010101	Gear, Worm Assembly	Replace			0.3			1,2	
		Repair			0.1				
010102	Pin Assembly	Replace		0.1	0.1			1	
		Repair			0.2			2	
0102	Base, Coupling Assembly	Replace			0.1				
		Repair			0.1			1,2	
0103	Shock Absorber Assembly	Service	0.1						
		Adjust			0.3			1,2	
		Replace			1.0			1,2	
		Repair			2.0			1,2	
010301	Cushion Assembly	Replace			0.2			1,2	A
		Repair			0.2			1,2	
0104	Cannon 4.2-inch Barrel Assembly	Inspect			0.5			3,4	B or I
		Replace			1.0			1,2	
		Repair			0.2		1.0	1	
010401	Cap Assembly	Repair			0.2		0.5	1	
02	MOUNT M24A1, 4.2-INCH	Replace			0.2				
		Repair			0.8			1,2	
		Overhaul					21.0		
0201	Standard, Mortar Mount Assembly	Inspect	0.1						
		Service	0.2	0.2					
		Replace			0.1				
		Repair			3.0			1,2,5	

Section II. MAINTENANCE ALLOCATION CHART (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQPT	(6) REMARKS CODE
			UNIT		DS	GS	Depot		
			C	O	F	H	D		
020101	Slide, Traversing Assembly	Replace			0.5				
		Repair			1.0			1,2	
02010101	Wheel, Traversing Assembly	Replace			0.2				
		Repair			0.5			1,2	
02010102	Support, Traversing Slide Assembly	Replace			0.3				
		Repair			1.0			1,2	
020101-0201	Screw and Sleeve Assembly	Replace			0.5				
		Repair			1.0			1,2	
020102	Gear and Handle Assembly	Replace			0.5				
		Repair			1.0			1,2	
020103	Elevating Screw and Housing Assembly	Replace			0.5				
		Repair			1.0			1,2	
0202	Bridge Assembly	Inspect	0.1						
		Replace			0.1				
		Repair			1.0			1,2	
020201	Nut Assembly	Replace			0.2				
		Repair			0.2			1,2	
020202	Bridge Cup Assembly	Replace			0.1				
		Repair			0.5			1,2	
0203	Rotator Assembly	Inspect	0.1						
		Replace			0.1				
		Repair			1.0		3.0	1,2	
0204	Mortar Baseplate	Inspect	0.1						
		Replace			0.1				
		Repair		0.2	0.1		3.0	2	
03	SIGHTUNIT M53 SERIES	Inspect		0.1					
		Replace		0.1					
		Repair		0.1				2	D
0301	Elbow Telescope M109	Inspect	0.1						
		Service	0.1						D
		Replace		0.1					
		Repair		0.1					

Section II. MAINTENANCE ALLOCATION CHART (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL UNIT C	UNIT O	DS F	GS H	Depot D	(5) TOOLS AND EQPT	(6) REMARKS CODE
0302	Mount, Telescope M128/M128A1	Inspect	0.1						
		Adjust				1.0			C
		Service	0.1	0.1					
		Replace							
		Repair				10.0			
04	SPECIAL TOOLS (REPAIR PARTS)								
0401	Light, Instrument M53E1	Inspect	0.1						
		Replace	0.1						
		Repair	0.1	0.1					
0402	Light, Aiming Post: M14	Inspect	0.1						
		Adjust			1.0				
		Service	0.1						
		Replace	0.1		1.0				
		Repair		0.1	1.0			2	
0403	Optical Boresight M45A1								E
0404	Brush, Cleaning, Artillery	Inspect	0.1						
		Replace		0.1					
		Repair		0.2				2	
05	TRAINER, SUB-CALIBER, 60-MM, M31	Inspect	0.1						H
		Service	0.2						
		Replace		0.1					
		Repair			0.1			1,2	
0501	Barrel, 60-mm Mortar, M2	Inspect	0.1		0.5			3,4	B or I
		Service	0.1						
		Replace			0.1				
		Repair		0.1				1,2	
06	TRAINER, MORTAR, PNEUMATIC, M32A1								F or G

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) TOOL OR TEST EQUIPMENT REF CODE	(2) MAINTENANCE LEVEL	(3) NOMENCLATURE	(4) NATIONAL STOCK NUMBER	(5) TOOL NUMBER
1	F	SHOP SET, SMALL ARMS: FIELD MAINTENANCE, BASIC, LESS POWER	4933-00-754-0664	SC 4933-95-CL-A11
2	O	TOOL KIT, SMALL ARMS REPAIRMAN	5180-00-357-7770	SC 5180-95-CL-A07
3	F	BORESCOPE: CANNON BORE INSPECTING, M2 OR BORESCOPE M3	6650-00-587-0986 6650-01-063-0035	SC 6650-95-CL-E01 11584701
4	F	ACCESSORY OUTFIT FOR PULLOVER GAGES	4933-00-348-8652	SC 4933-95-CL-E09
5	F	TOOL SET, FIELD MAINTENANCE 4.2-INCH MORTAR BARREL M30, AND 4.2-INCH MORTAR MOUNT M24 SERIES	5180-00-713-2546	5910503

SECTION IV. REMARKS

REMARKS CODE	REMARKS
A	USABLE ON SHOCK ABSORBER ASSEMBLY 11578073 ONLY.
B	REFER TO TM 9-1000-202-14.
C	REFER TO TM 9-1240-287-34.
D	REFER TO TM 9-254.
E	REFER TO TM 9-1240-278-12.
F	REFER TO TM 9-6920-212-14.
G	REFER TO TM 9-6920-212-24P.
H	REFER TO TM 23-92.
I	REFER TO TM 9-6650-235-13&P.

APPENDIX C
UNIT AND DIRECT SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

SECTION I. INTRODUCTION

C-1. SCOPE. This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TM DE); and other special support equipment required for performance of unit and direct support maintenance of the M30 4.2-inch mortar. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the Source, Maintenance, and Recoverability (SMR) codes.

C-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 parts kits are listed separately in their own functional group within Section II. Repair parts for repairable special tools are also listed in this section. Items listed are shown on the associated illustration(s)/ figure(s).

b. Section III. Special *Tools List.* A list of special tools, special TM DE, 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.

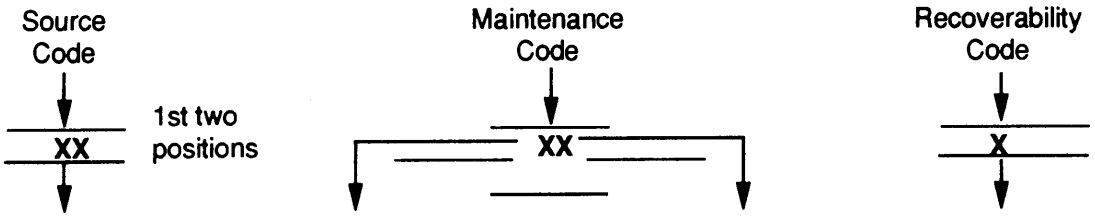
c. *Section IV. Cross-reference Indexes.* A list, in National Item Identification Number (NIIN) sequence, of all National stock numbered items appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing in the listing. National stock numbers and part numbers are 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, CAGEC, and part numbers.

C-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 SMR code is a 5-position code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout:

EXPLANATION OF COLUMNS (SECTIONS II AND III) (CONT).



How you get an item	3d position Who can install, replace, or use the item	4th position Who can do complete repair* on the item	Who determines disposition action on an unserviceable item

*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 follow:

Code	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 level indecated by the code entered in the 3d position of the SMR code. **NOTE: 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 level indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.

Code	Explanation
MO- (Made at unit level) MF- (Made at DS level) MH- (Made at GS level) ML- (Made at Specialized Repair Act (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.

Code	Explanation
AO- (Assembled by unit level) AF- (Assembled by DS level) AH- (Assembled by GS level) 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 indicated 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 below.)
XB - If an "XB" item is not available from salvage, order it using the CAGEC and part number given.
XC - Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD - Item is not stocked. Order an 'XD"-coded item through normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, maybe 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 750-1.

(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.
O	-Unit level can remove, replace, and use the item.
F	-Direct support 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.

C-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (CONT).

(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 is the lowest level that can do complete repair of the item.
F	-Direct support is the lowest level that 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	-Nonrepairable. 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 maybe 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:

Recoverability Codes	Application/Explanation
Z	-Nonrepairable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in 3d position of SMR code.
O	-Repairable item. When uneconomically repairable, condemn and dispose of the item at unit level.
F	-Repairable item. When uneconomically repairable, condemn and dispose of the item at direct support level.
H	-Repairable item. When uneconomically repairable, condemn and dispose of the item at general support level.
D	-Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item not authorized below depot level.
L	-Repairable item. Condemnation and disposal 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). Refer to appropriate manuals/directives for specific instructions.

c. CAGEC (Column (3)). The Contractor and Government Entity Code (CAGEC) 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.

C-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (CONT).

(2) The physical security classification of the item is indicated by the parenthetical entry which is a physical security classification abbreviation (e.g., Phy Sec Cl (C) - Confidential, Phy Sec Cl (S) - Secret, Phy Sec Cl (T) - Top Secret).

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

(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).

(7) The usable on code, when applicable (see paragraph C-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 TM DE, and other special support equipment. When density of equipment 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.

C-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
NSN (i.e., 5305-01 -674-1467). When using this column to locate an item, ignore the first 4 digits of the NSN.
NIIN
However, the complete NSN should be used when ordering items by stock number.

(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 columm.* 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. *PART NUMBER 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 thru Z, followed by the numbers 0 thru 9 and each following letter or digit in like order).

(1) CAGEC column. The Contractor and Government Entity Code (CAGEC) 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 CAGEC columns to the left.

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

(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* Section II and Section 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 Contractor and Government Entity Code (CAGEC) 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.

C-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 of applicable item description/nomenclature. Uncoded items are applicable to all models.

b. *FABRICATION INSTRUCTIONS.* Bulk materials required to manufacture items are listed in the Bulk Material Function 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 appendix G.

C-5. SPECIAL INFORMATION (CONT).

c. KITS. Line item entries for repair parts kits appear in a group in Section II (see table of contents).

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. ASSOCIA TED PUBLICATIONS. The publications listed below pertain to the mortar and its components:

Publication	Short Title
TM 9-1015-215-10	Mortar, 4.2-inch, M30 and trainer, subcaliber 60-mm, M31

C-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 the Part Number Index, find the pertinent National Stock Number or Part Number. The NSN index is in National Item Identification Number (NIIN) sequence (see para C-4.1(1)). The part numbers in the Part Number Index are listed in ascending alphanumeric sequence (see para C-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.

C-7. ABBREVIATIONS.

Not applicable.

Section II. REPAIR PARTS LIST

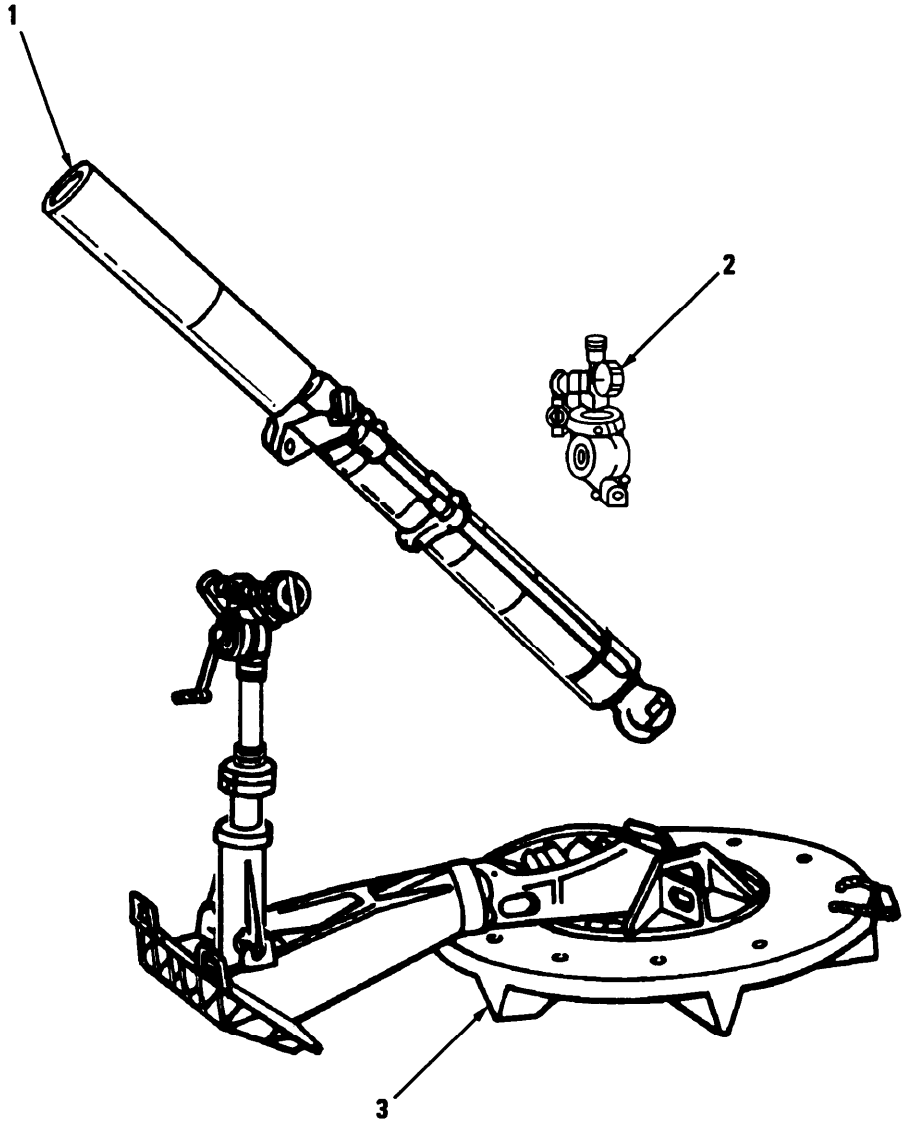


Figure C-1. Mortar, 4.2-inch, M30 8401840.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 00 MORTAR, 4.2-INCH, M30 8401840	
				FIG. C-1 MORTAR, 4.2-INCH, M30 840140	
1	XAFFF	19206	11577220	CANNON, 4.2-INCH MORTAR,M30 UOC:005	1
2	AOOOO	19200	10559698	SIGHTUNIT M53A1 UOC:005	1
2	AOOOO	19200	8245971	SIGHTUNIT M53 UOC:005	1
3	XAFFF	19204	8401603	MOUNT,M24A1,4.2 IN UOC:005	1
				END OF FIGURE	

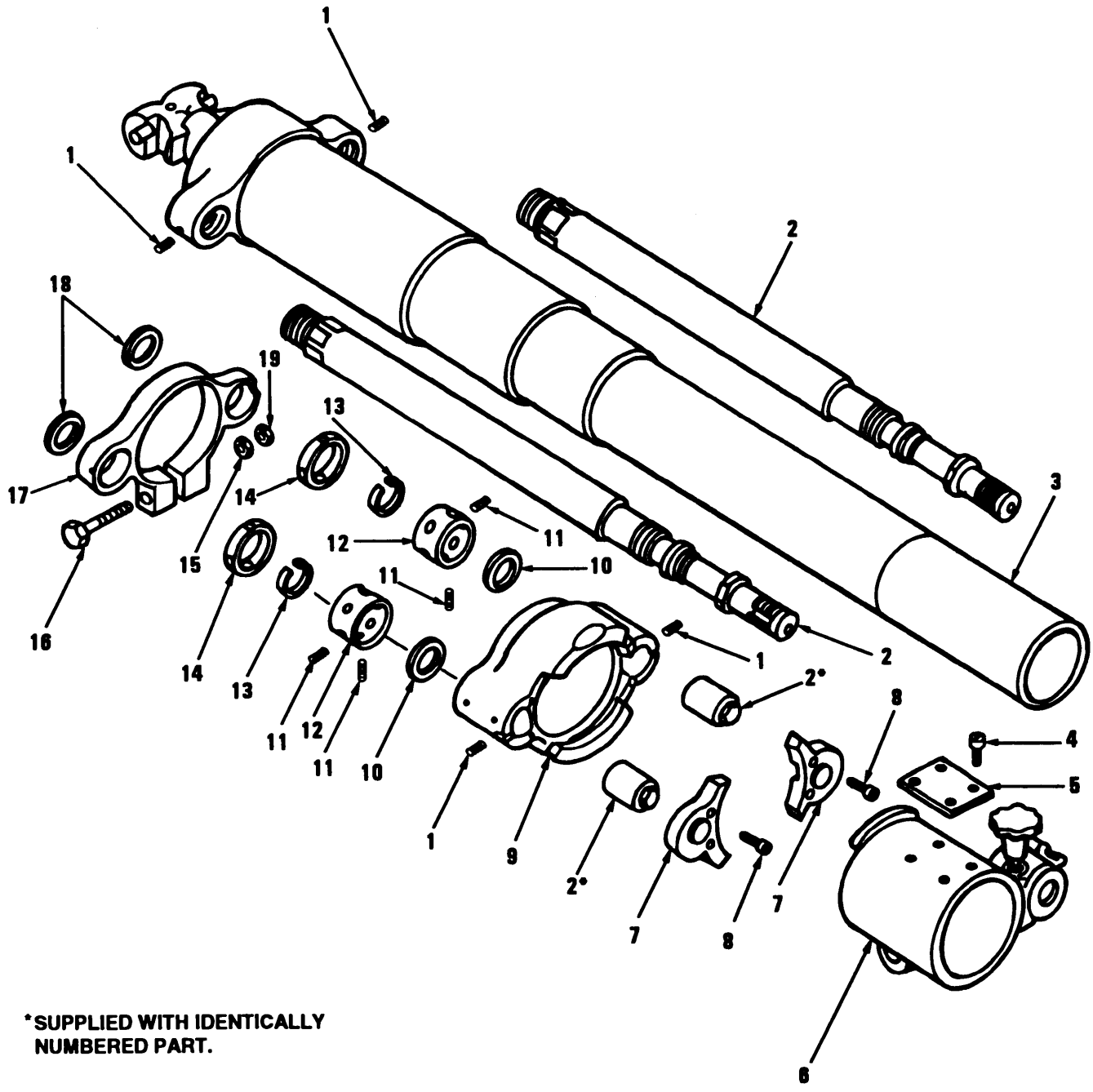


Figure C-2. Cannon, 4.2-inch Mortar *M30 11577220.*

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 01 CANNON, 4.2-INCH MORTAR, M30 11577220	
				FIG. C-2 CANNON, 4.2-INCH MORTAR, M30 11577220	
1	PAFZZ	96906	MS51963-65	SETSCREW UOC:005	4
2	AFFFF	19206	11578073	SHOCK ABSORBER ASSE UOC:005	2
3	PAFDD	19206	11577216	CANNON,4.2 INCH MOR UOC:005	1
4	PAFZZ	96906	MS35206-227	SCREW,MACHINE UOC:005	4
5	PAFZZ	19206	11577222	PLATE,IDENTIFICATIO UOC:005	1
6	AFFFF	19206	7144218	COUPLING AND SIGHT MT ASSY UOC:005	1
7	PAFZZ	19206	7144100	LUG COUPLING MORTAR UOC:005	2
8	PAFZZ	96906	MS16997-78	SCREW,CAP,SOCKET HE UOC:005	4
9	PAFFF	19206	7309693	BASE,COUPLING ASSEM UOC:005	1
10	PAFZZ	19204	7144024	WASHER,FLAT UOC:005	2
11	PAFZZ	96906	MS51963-20	SETSCREW UOC:005	2
12	PAFZZ	19206	7144104	CAP,SEAL UOC:005	2
13	PAFZZ	19206	7144006	PACKING,PREFORMED UOC:005	2
14	PAFZZ	19206	7144085	NUT,PLAIN,ROUND UOC:005	2
15	PAFZZ	96906	MS51967-8	NUT,PLAIN,HEXAGON UOC:005	1
16	PAFZZ	96906	MS90728-71	SCREW,CAP,HEXAGON H UOC:005	1
17	PAFZZ	19206	7144168	CLAMP,HUB UOC:005	1
18	PAFZZ	19206	7144005	SPACER,RING UOC:005	2
19	PAFZZ	96906	MS35691-17	NUT,PLAIN,HEXAGON UOC:005	1
				END OF FIGURE	

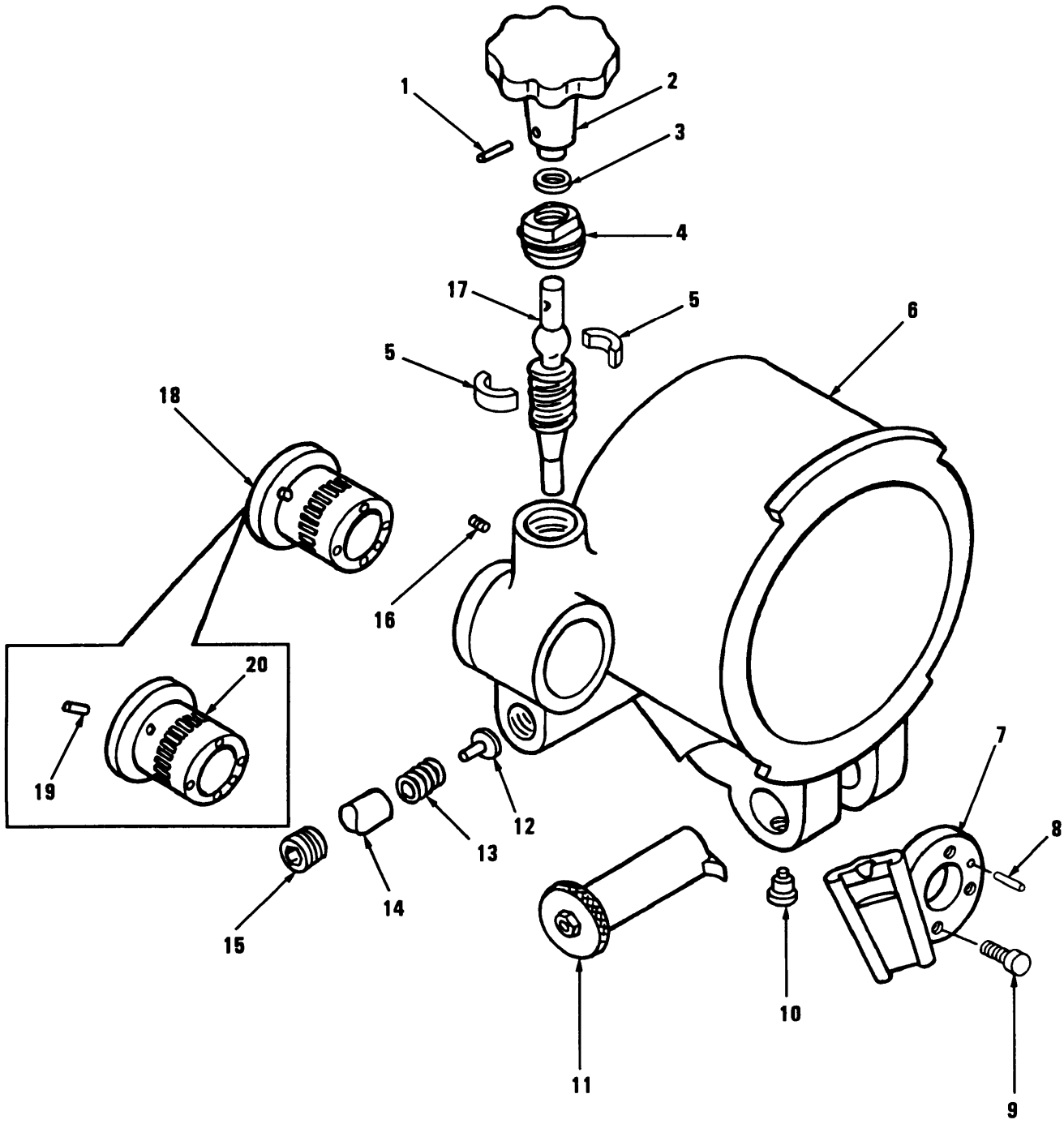


Figure C-3. Coupling and Sight Mount Assembly 7144218 and Gear Worm Assembly 7145424.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0101 COUPLING AND SIGHT MOUNT ASSEMBLY 7144218 AND GROUP 010101 GEAR, WORM ASSEMBLY 7145424	
				FIG. C-3 COUPLING AND SIGHT MOUNT ASSEMBLY 7144218 AND GEAR, WORM ASSEMBLY 7145424	
1	PAFZZ	96906	MS171531	PIN,SPRING UOC:005	1
2	PAFZZ	19206	8768922	KNOB UOC:005	1
3	PAFZZ	19206	7144012	GASKET UOC:005	1
4	PAFZZ	19206	7144101	SEAT,BALL SOCKET UOC:005	1
5	PAFZZ	19206	7144016	BEARING,SLEEVE UOC:005	2
6	PAFZZ	19206	7144219	BODY,COUPLING UOC:005	1
7	PAFZZ	19206	7144172	ADAPTER,SIGHT UNIT UOC:005	1
8	PAFZZ	96906	MS9105-88	PIN,STRAIGHT,HEADLE UOC:005	1
9	PAFZZ	96906	MS16998-28	SCREW,CAP,SOCKET HE UOC:005	4
10	PAOZZ	19206	7134364	SETSCREW UOC:005	1
11	PAOFF	19206	7136051	LOCKING PIN ASSEMBL UOC:005	1
12	PAFZZ	19206	7144020	PIN,STRAIGHT,HEADED UOC:005	1
13	PAFZZ	19206	7144099	SPRING,HELICAL,COMP UOC:005	1
14	PAFZZ	19206	7144013	RETAINER,HELICAL CO UOC:005	1
15	PAFZZ	96906	MS49005-6	PLUG,PIPE UOC:005	1
16	PAFZZ	96906	MS51963-21	SETSCREW UOC:005	2
17	PAFZZ	19206	7144097	WORM,SIGHT,MOUNT BALL UOC:005	1
18	PAFFF	19206	7145424	GEAR ASSY,WORM UOC:005	1
19	PAFZZ	80205	NAS561P4-6	..PIN,SPRING UOC:005	1
20	XAFZZ	19206	7144098	..GEAR UOC:005	1
				END OF FIGURE	

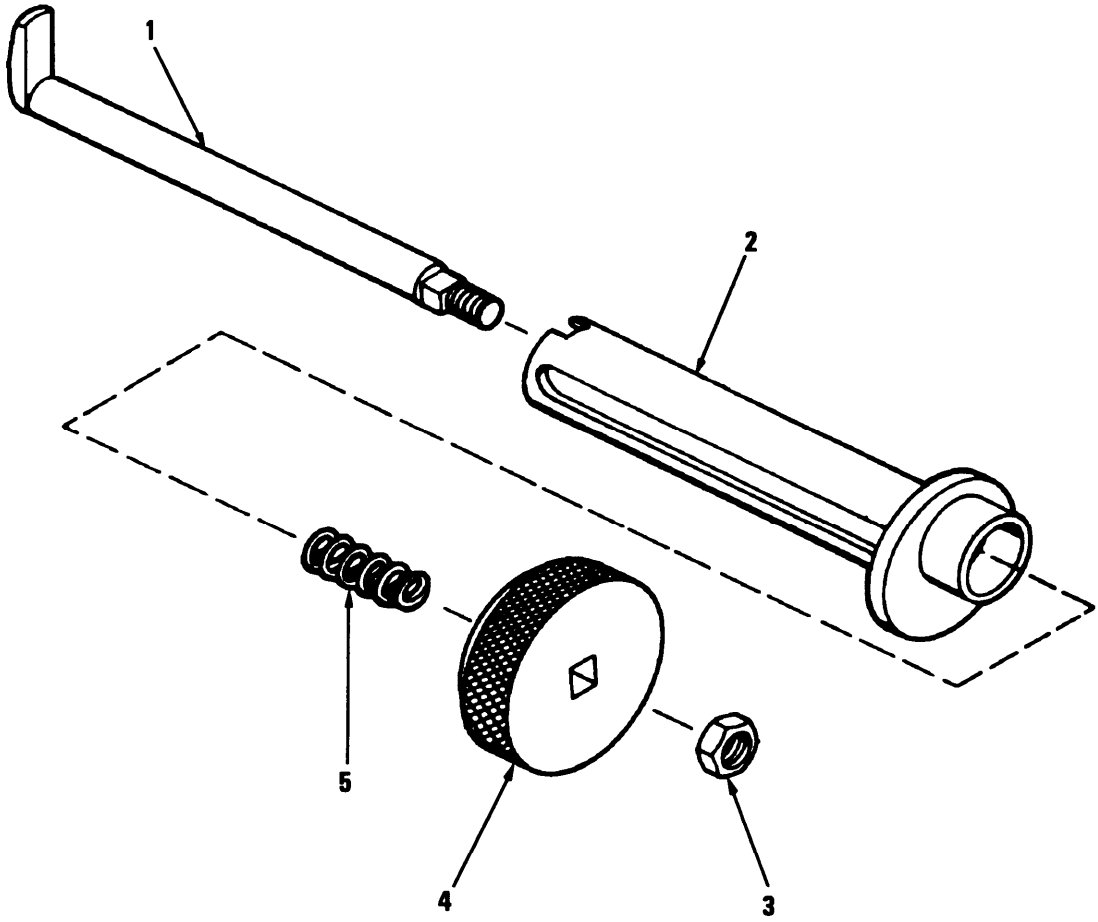


Figure C-4. Pin Assembly 7136051.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 010102 PIN ASSEMBLY 7136051	
				FIG. C-4 PIN ASSEMBLY 7136051	
1	PAFZZ	19206	7134399	LEVER,LOCK-RELEASE UOC:005	1
2	XAFZZ	19204	7134410	PIN,SIGHT,MOUNT UOC:005	1
3	PAFZZ	96906	MS35649-202	NUT,PLAIN,HEXAGON UOC:005	1
4	XAFZZ	19206	7134391	KNOB UOC:005	1
5	PAFZZ	19206	7134392	SPRING,HELICAL,COMP UOC:005	1
				END OF FIGURE	

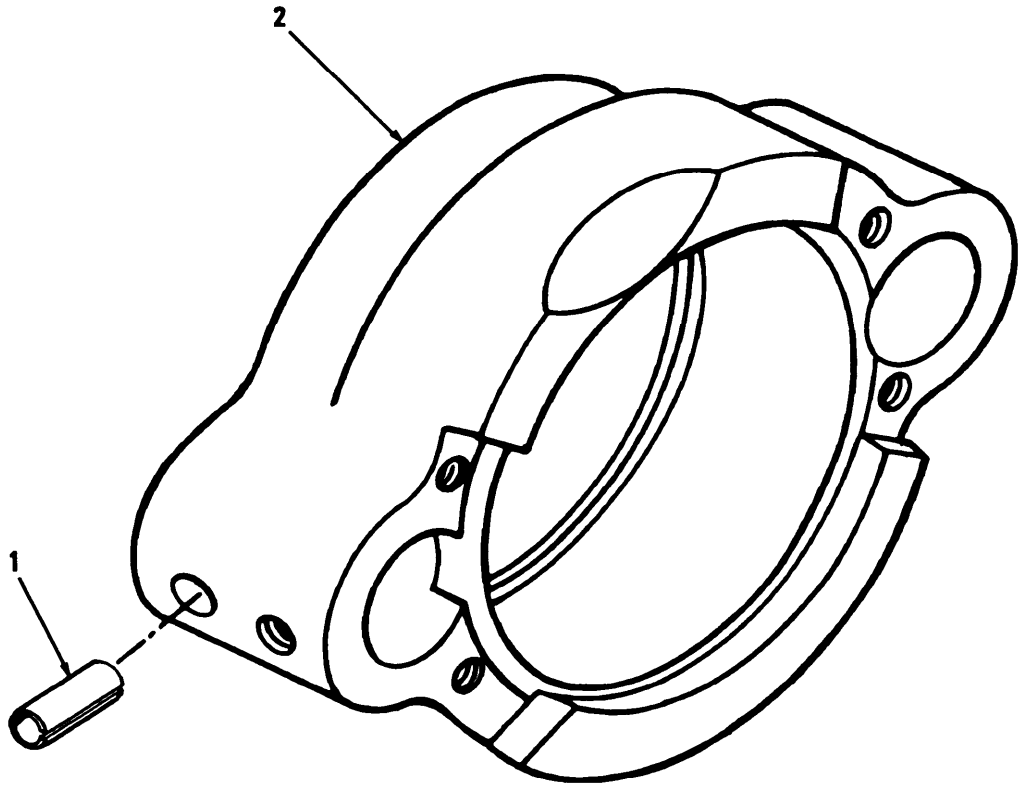
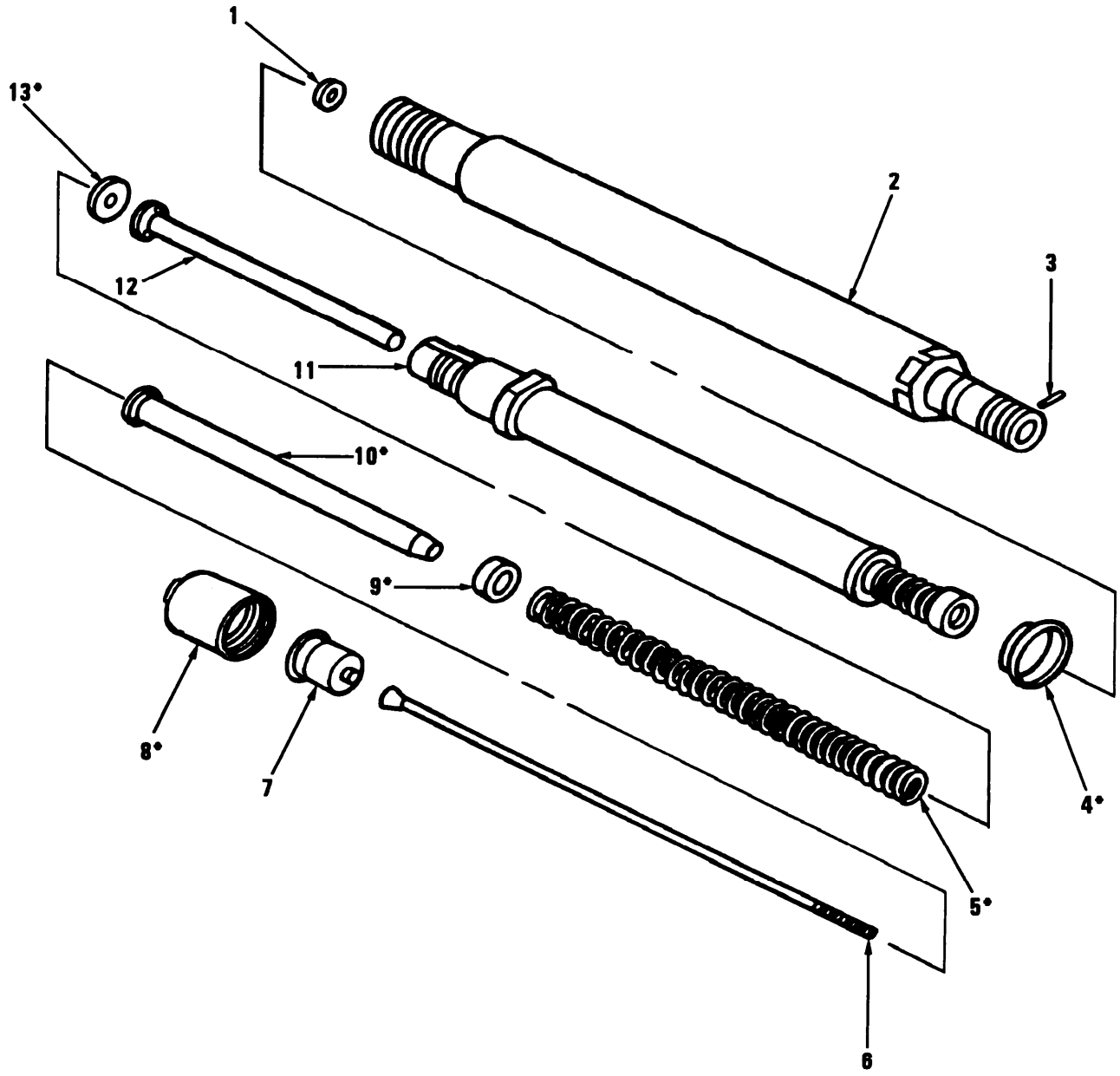


Figure C-5. Base, Coupling Assembly 7309693.

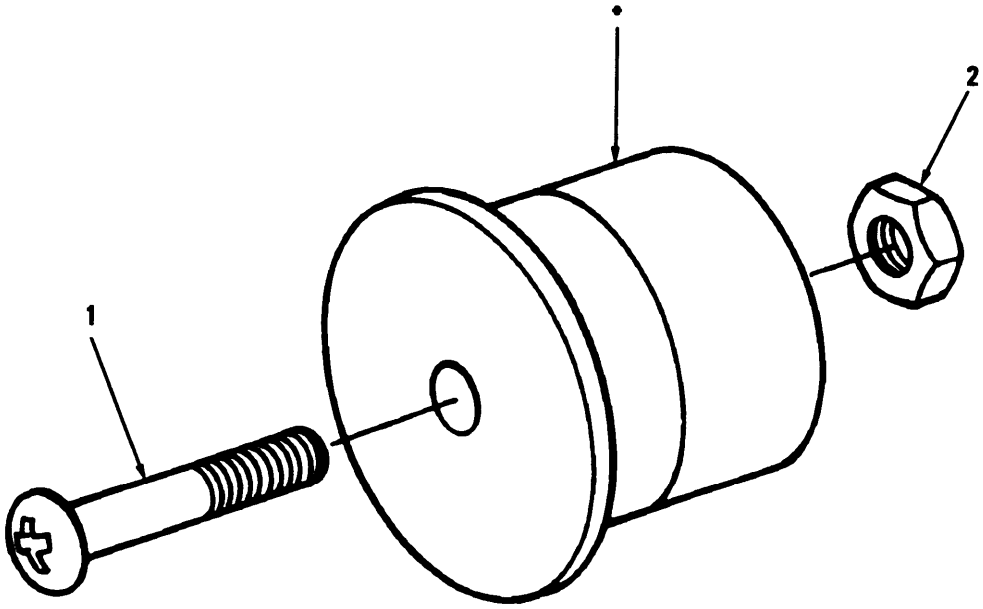
(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0102 BASE, COUPLING ASSEMBLY 7309693	
				FIG. C-5 BASE, COUPLING ASSEMBLY 7309693	
1	PAFZZ	96906	MS16562-47	PIN,SPRING UOC:005	2
2	XAFZZ	19206	7144217	BASE,COUPLING UOC:005	1
				END OF FIGURE	



*THESE PARTS ARE INTERCHANGEABLE WITH THE OLD SHOCK ABSORBER ASSEMBLY, PN 7144220.

Figure C-6. Shock Absorber Assembly 11578073.

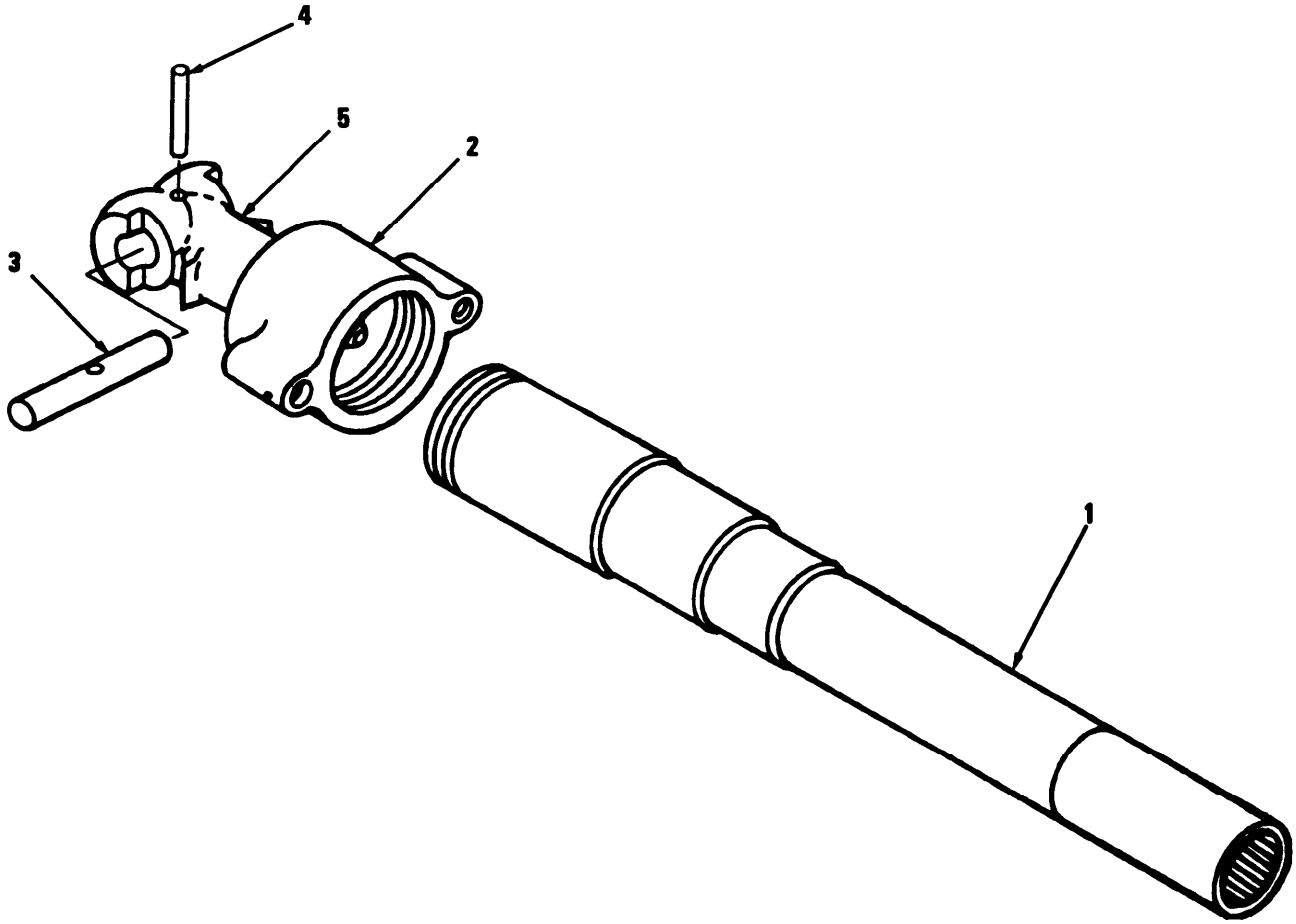
(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0103 SHOCK ABSORBER ASSEMBLY 11578073	
				FIG. C-6 SHOCK ABSORBER ASSEMBLY 11578073	
1	PAFZZ	19206	11578079	WASHER,FLAT UOC:005	1
2	PAFZZ	19206	11578077	TUBE,METALLIC UOC:005	1
3	PAFZZ	96906	MS16562-10	PIN,SPRING UOC:005	1
4	PAFZZ	19206	7144026	RETAINER,PACKING UOC:005	1
5	PAFZZ	19206	7144094	SPRING,HELICAL,COMP UOC:005	1
6	PAFZZ	19206	11578075	ROD,CONNECTING UOC:005	1
7	PAFFF	19206	11578078	CUSHION ASSEMBLY UOC:001	1
8	PAFZZ	19204	7144103	NUT,SLEEVE TUBE UOC:005	1
9	PAFZZ	19206	7144004	GUIDE,SLEEVE,UPPER UOC:005	1
10	PAFZZ	19206	7144087	SLEEVE,SPRING RETAI UOC:005	1
11	PAFZZ	19206	11578298	BUFFER SPRING ASSEM UOC:005	1
12	PAFZZ	19206	11578076	RETAINER,HELICAL CO UOC:005	1
13	PAFZZ	19206	7144010	GUIDE,CONNECTING ROD,LOWER UOC:005	1
				END OF FIGURE	



*NO FURTHER DISASSEMBLY AUTHORIZED.

Figure C-7. Cushion Assembly 11578078.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 010301 CUSHION ASSEMBLY 11578078	
				FIG. C-7 CUSHION ASSEMBLY 11578078	
1	PAFZZ	96906	MS35206-267	SCREW,MACHINE UOC:005	1
2	PAFZZ	96906	MS35649-202	NUT,PLAIN,HEXAGON UOC:005	1
				END OF FIGURE	



NOTE: CAP ASSEMBLY AND TUBE ARE NOT DISASSEMBLED BELOW DEPOT LEVEL.

Figure C-8. Cannon, 4.2-inch (Barrel Assembly) 11577216 and Cap Assembly 11577215.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0104 CANNON, 4.2-INCH (BARREL ASSEMBLY) 11577216 AND GROUP 010401 CAP ASSEMBLY 11577215	
				FIG. C-8 CANNON, 4.2-INCH (BARREL ASSEMBLY) 11577216 AND CAP ASSEMBLY 11577215	
1	XADZZ	19206	11577219	TUBE UOC:005	1
2	XAFDD	19206	11577215	CAP ASSEMBLY UOC:005	1
3	PAFZZ	19206	7144093	..PIN,STRAIGHT,HEADLE UOC:005	1
4	PAFZZ	96906	MS171725	..PIN,SPRING UOC:005	1
5	XADZZ	19206	11577221	..CAP MORTAR BARREL UOC:005	1
				END OF FIGURE	

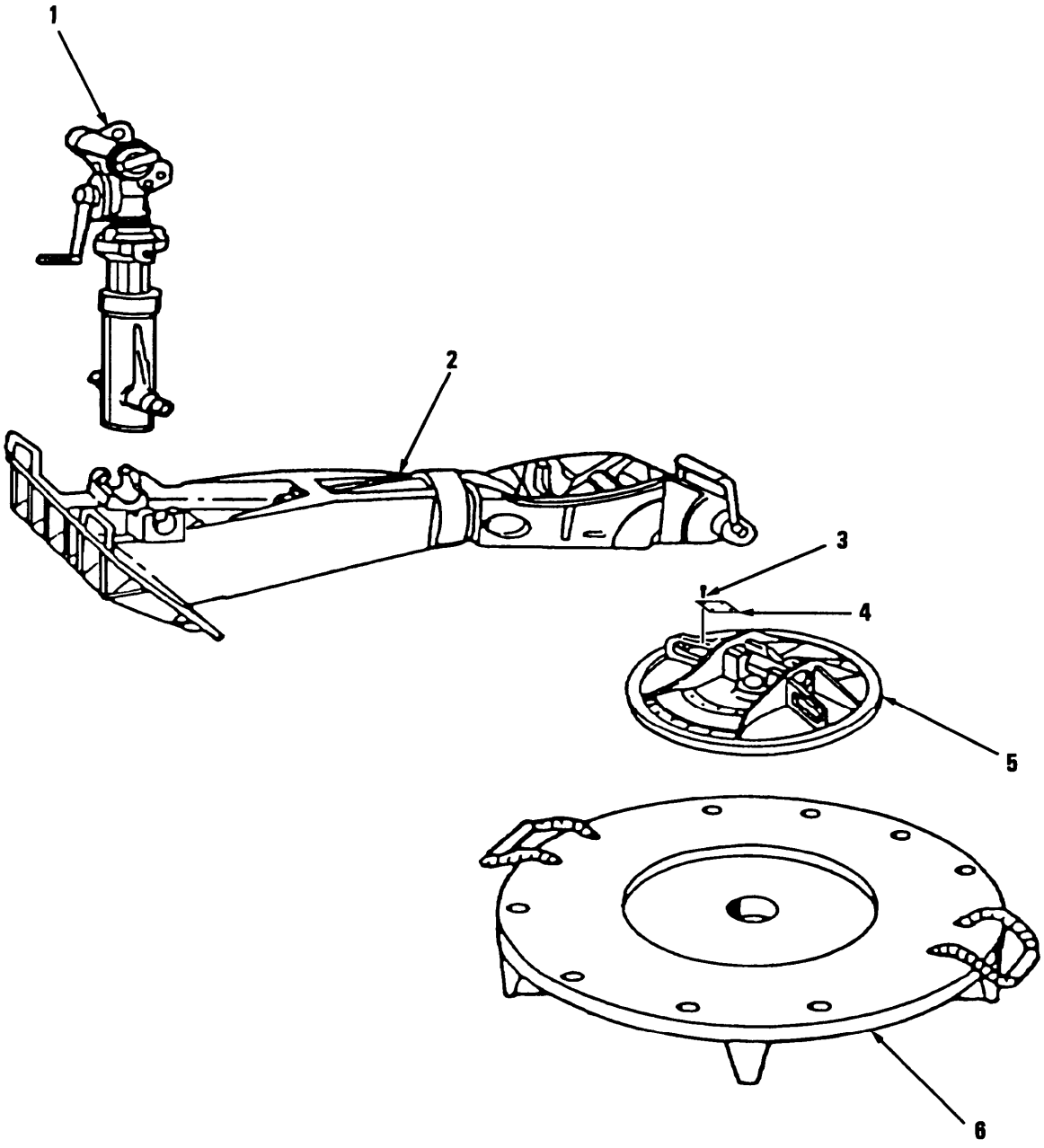


Figure C-9. Mount M24A1, 4.2-inch 8401603.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 02 MOUNT M24A1, 4.2-INCH 8401603	
				FIG. C-9 MOUNT M24A1, 4.2-INCH 8401603	
1	AFFFF	19206	7144256	STANDARD,MORTAR UOC:005	1
2	AFFFF	19204	7144260	BRIDGE ASSEMBLY UOC:005	1
3	PAFZZ	96906	MS35206-227	SCREW,MACHINE UOC:005	4
4	PAFZZ	19206	11577223	PLATE,IDENTIFICATIO UOC:005	1
5	PAFDD	19206	7148120	ROTATOR ASSEMBLY UOC:005	1
6	PAFDD	19204	8401561	BASEPLATE,MORTAR UOC:005	1
				END OF FIGURE	

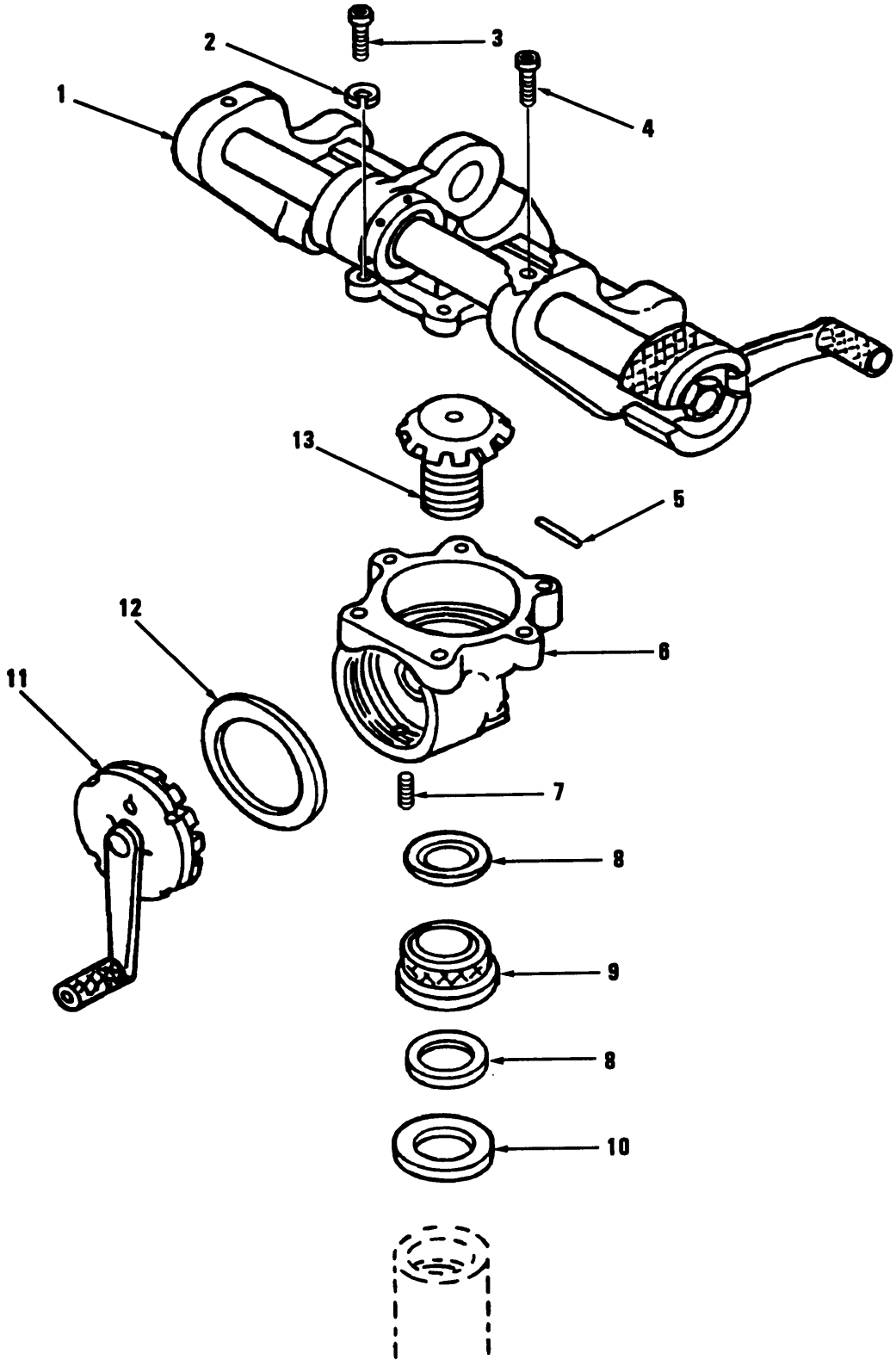


Figure C-10. Standard, Mortar Mount Assembly 7144256 (sheet 1 of 4).

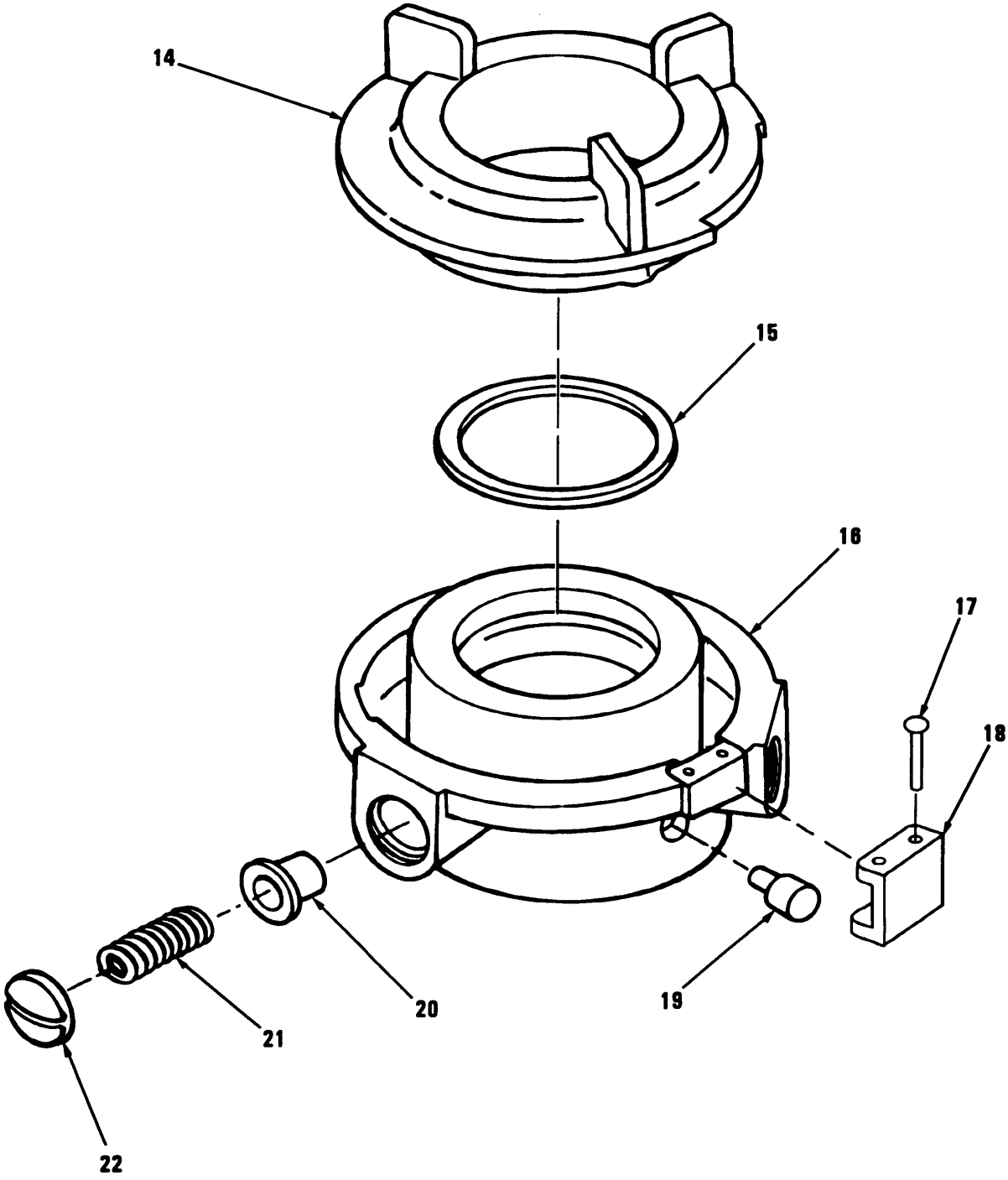


Figure C-10. Standard, Mortar Mount Assembly 7144256 (sheet 2 of 4).

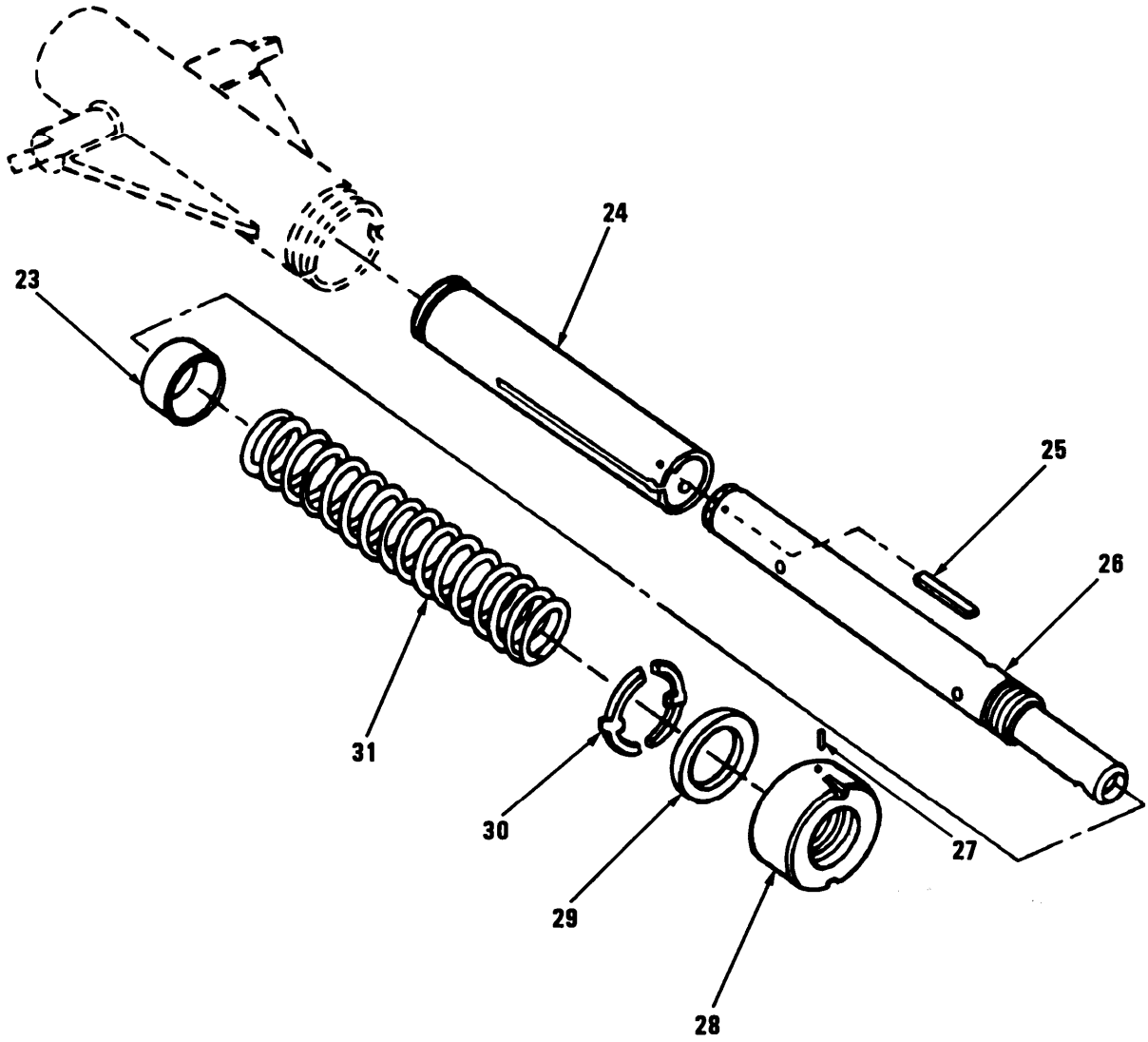


Figure C-10. Standard, Mortar Mount Assembly 7144256 (sheet 3 of 4).

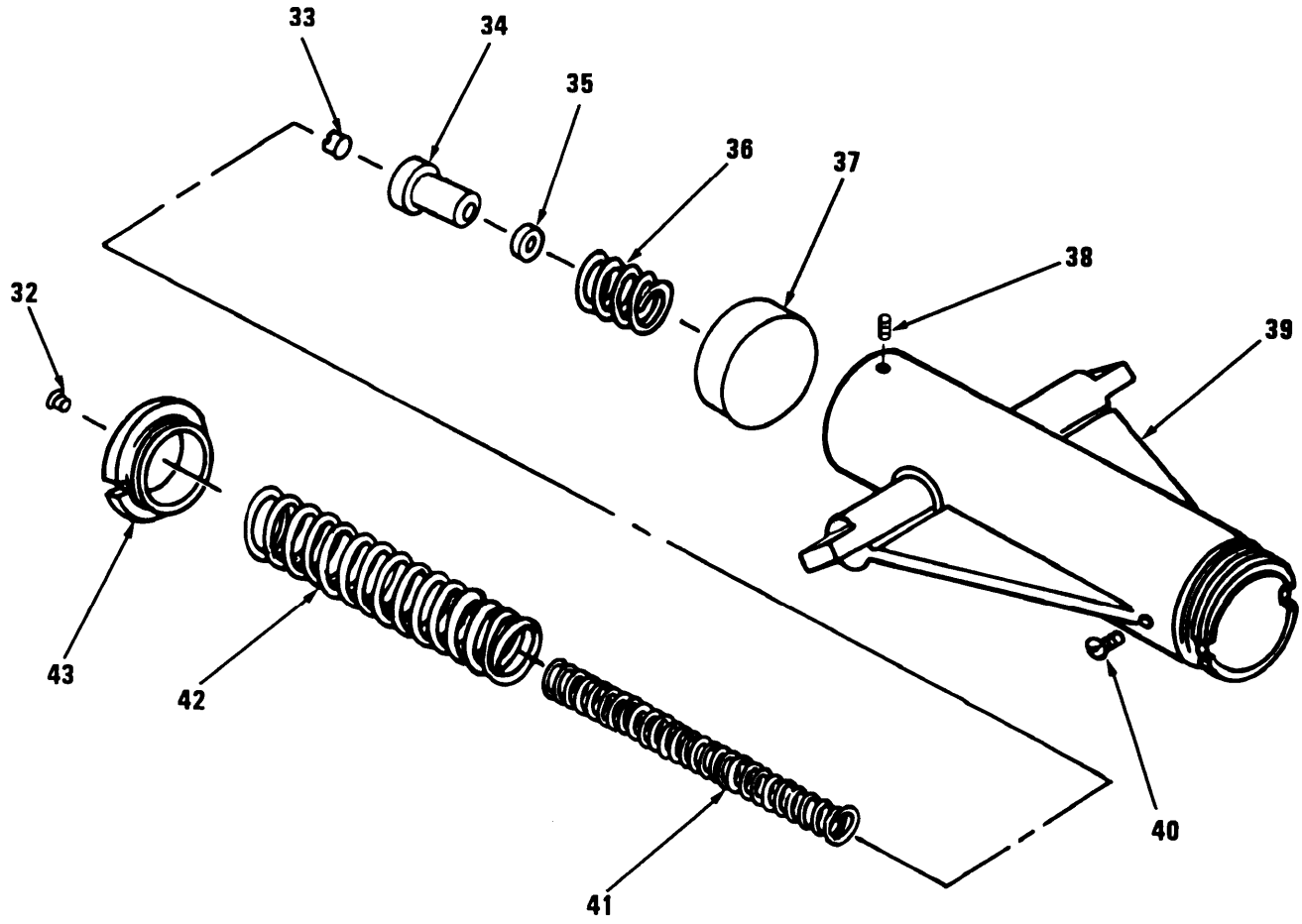


Figure C-10. Standard, Mortar Mount Assembly 7144256 (sheet 4 of 4).

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0201 STANDARD, MORTAR MOUNT ASSEMBLY 7144256	
				FIG. C-10 STANDARD, MORTAR MOUNT ASSEMBLY 7144256	
1	AFFFF	19206	7144232	SLIDE,TRAVERSING UOC:005	1
2	PAFZZ	96906	MS35333-41	WASHER,LOCK UOC:005	4
3	PAFZZ	96906	MS16997-78	SCREW,CAP,SOCKET HE UOC:005	4
4	PAFZZ	96906	MS16997-80	SCREW,CAP,SOCKET HE UOC:005	2
5	PAFZZ	96906	MS16562-146	PIN,SPRING UOC:005	1
6	PAFZZ	19206	7144224	HOUSING,MECHANICAL UOC:005	1
7	PAFZZ	96906	MS51977-32	SETSCREW UOC:005	1
8	PAFZZ	19204	7144043	GASKET UOC:005	2
9	PAFZZ	19206	7144111	CAP UOC:005	1
10	PAFZZ	19206	7144070	BEARING,WASHER,THRU UOC:005	1
11	PAFFF	19206	7144173	GEAR AND HANDLE ASSY UOC:005	1
12	PAFZZ	19206	7144051	SHIM UOC:005	1
13	PAFZZ	19206	7144135	GEAR,MITER UOC:005	1
14	PAFZZ	19206	7144191	CAM,CONTROL UOC:005	1
15	PAFZZ	19206	7144055	GASKET UOC:005	1
16	PAFZZ	19206	7144192	HOUSING,MECHANICAL UOC:005	1
17	PAFZZ	81343	SAEJ492	RIVET,SOLID UOC:005	2
18	PAFZZ	19206	7144139	STOP,MECHANICAL UOC:005	1
19	PAFZZ	19204	7144074	PIN,SHOULDER,HEADLE UOC:005	1
20	PAFZZ	19206	7144073	PLUNGER UOC:005	3
21	PAFZZ	19206	7144137	SPRING,HELICAL,COMP UOC:005	3
22	PAFZZ	19206	7144072	SETSCREW UOC:005	3
23	PAFZZ	19206	7144067	SPACER,SLEEVE	1

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				UOC:005	
24	PAFZZ	19206	7144185	SUPPORT,ELEVATING A UOC:005	1
25	PAFZZ	19204	7144069	KEY,MACHINE UOC:005	1
26	PAFFF	19206	7144189	ELEVATING SCREW ASS UOC:005	1
27	PAFZZ	96906	MS51963-62	SETSCREW UOC:005	2
28	PAFZZ	19206	7144128	NUT,PLAIN,ROUND UOC:005	1
29	PCFZZ	19206	7144064	PACKING,PREFORMED UOC:005	1
30	PAFZZ	19206	7144065	RING,LOCK,KEYED UOC:005	2
31	PAFZZ	19206	11580278	SPRING,HELICAL COMP UOC:005	1
32	PAFZZ	81348	WWP471-ACAAAA	PLUG,PIPE UOC:005	1
33	PAFZZ	19206	7309158	NUT,PLAIN,ROUND UOC:005	1
34	PAFZZ	19206	7144132	RETAINER,HELICAL CO UOC:005	1
35	PAFZZ	96906	MS35333-42	WASHER,LOCK UOC:005	1
36	PAFZZ	19206	11580275	SPRING,HELICAL COMP UOC:005	1
37	PAFZZ	19206	7309159	RETAINER,SPRING UOC:005	1
38	PAFZZ	96906	MS51023-28	SETSCREW UOC:005	1
39	PAFZZ	19206	7144229	HOUSING,RECOIL UOC:005	1
40	PAFZZ	24617	132960	SCREW,MACHINE UOC:005	2
41	PAFZZ	19206	11580277	SPRING,HELICAL COMP UOC:005	1
42	PAFZZ	19206	11580276	SPRING,HELICAL COMP UOC:005	1
43	PAFZZ	19207	7144129	PLUG,MACHINE THREAD UOC:005	1
				END OF FIGURE	

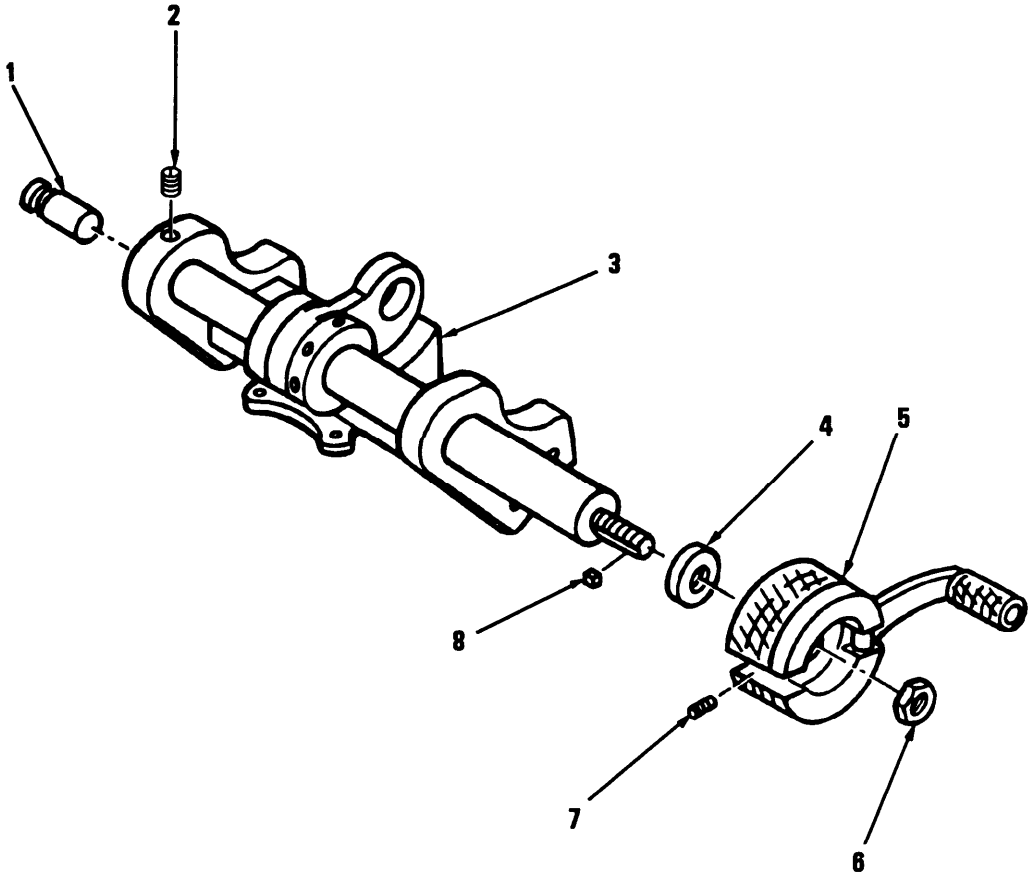


Figure C-11. Slide, Traversing Assembly 7144232.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 020101 SLIDE, TRAVERSING ASSEMBLY 7144232	
				FIG. C-11 SLIDE, TRAVERSING ASSEMBLY 7144232	
1	PAFZZ	19204	7144052	PIN,GROOVED,HEADLES UOC:005	1
2	PAFZZ	96906	MS51977-64	SETSCREW:HEX-SOCKET UOC:005	1
3	AFFFF	19204	7144231	SUPPORT UOC:005	1
4	PAFZZ	19204	7144050	NUT,PLAIN,ROUND UOC:005	1
5	PAFFF	19206	7144174	CRANK,HAND UOC:005	1
6	PAFZZ	96906	MS35691-37	NUT,PLAIN,HEXAGON UOC:005	1
7	PAFZZ	96906	MS51963-62	SETSCREW UOC:005	1
8	PAFZZ	19204	7144049	KEY,MACHINE UOC:005	1
				END OF FIGURE	

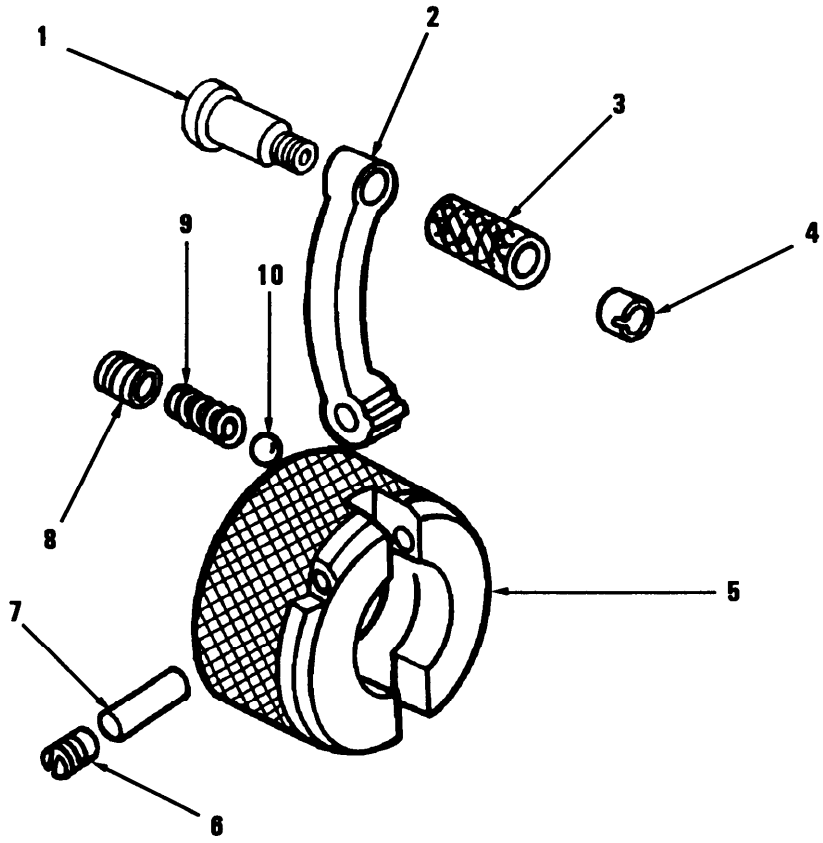


Figure C-12. Wheel, Traversing Assembly 7144174.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 02010101 WHEEL, TRAVERSING ASSEMBLY 7144174	
				FIG. C-12 WHEEL, TRAVERSING ASSEMBLY 7144174	
1	PAFZZ	19206	7144041	SCREW,SHOULDER UOC:005	1
2	PAFZZ	19206	7144109	ARM,HAND CRANK UOC:005	1
3	PAFZZ	19206	7144038	HANDLE,MANUAL CONTR UOC:005	1
4	PAFZZ	19204	7144040	NUT,PLAIN,ROUND UOC:005	1
5	XAFZZ	19204	7144175	BODY UOC:005	1
6	PAFZZ	96906	MS51965-64	SETSCREW UOC:005	1
7	PAFZZ	19204	7144042	PIN,STRAIGHT,HEADLE UOC:005	1
8	PAFZZ	19206	7144039	PLUG,MACHINE THREAD UOC:005	1
9	PAFZZ	19206	8769347	SPRING,HELICAL,COMP UOC:005	1
10	PAFZZ	96906	MS19060-4814	BALL,BEARING UOC:005	1
				END OF FIGURE	

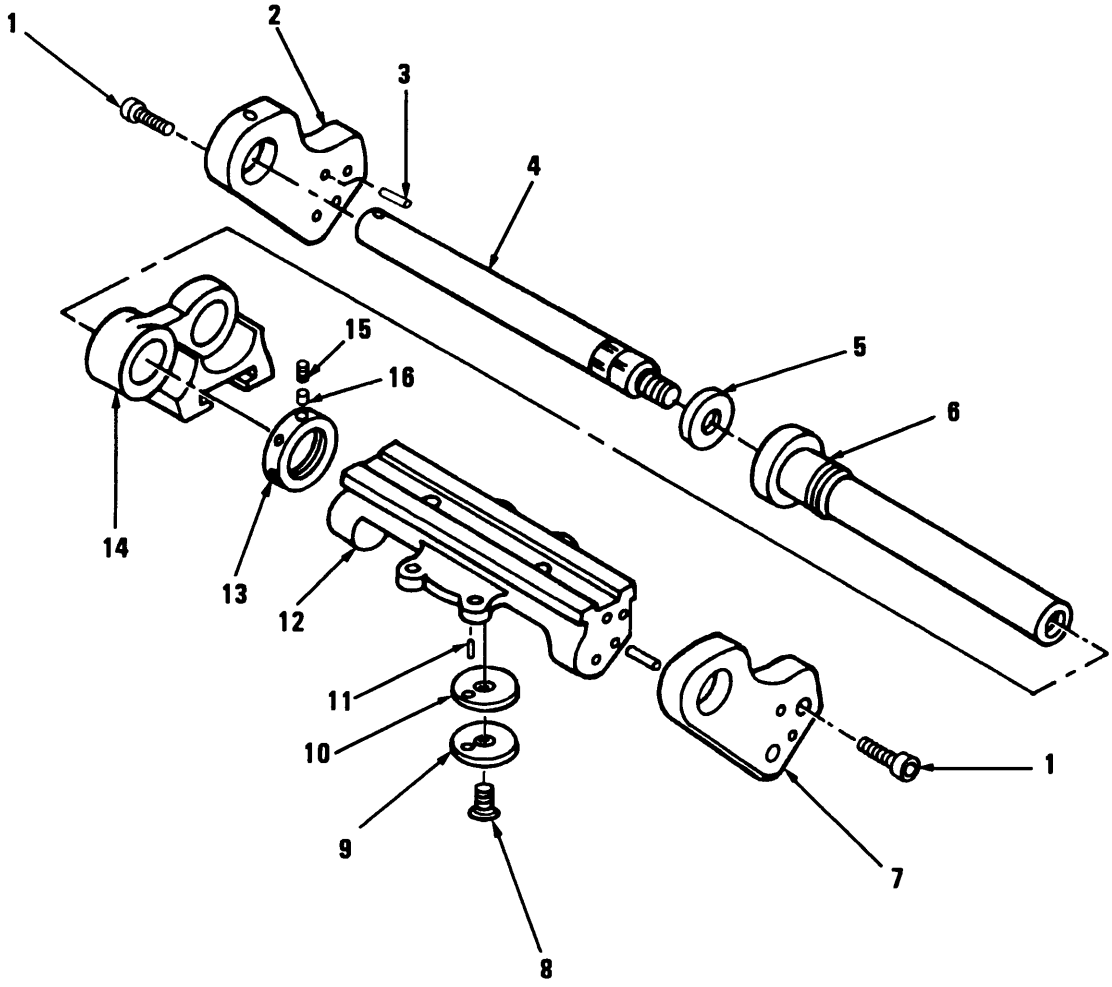


Figure C-13. Support, Traversing Slide Assembly 7144231.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 02010102 SUPPORT, TRAVERSING SLIDE ASSEMBLY 7144231	
				FIG. C-13 SUPPORT, TRAVERSING SLIDE ASSEMBLY 7144232	
1	PAFZZ	96906	MS16997-78	SCREW,CAP,SOCKET HE UOC:005	4
2	PAFZZ	19206	7144138	BRACKET,EYE,NONROTA UOC:005	1
3	PAFZZ	96906	MS16555-49	PIN,STRAIGHT,HEADLE UOC:005	4
4	PAFFF	19206	7144190	TRAVERSING SCREW AS UOC:005	1
5	PAFZZ	19204	7144063	WASHER,FLAT UOC:005	1
6	PAFZZ	19206	7144184	HOUSING,MECHANICAL UOC:005	1
7	PAFZZ	19206	7144136	BRACKET,EYE,NONROTA UOC:005	1
8	PAFZZ	96906	MS35190-288	SCREW,MACHINE UOC:005	1
9	PAFZZ	19206	7144044	WASHER,RECESSED UOC:005	1
10	PAFZZ	19206	7144045	SHIM UOC:005	1
11	PAFZZ	96906	MS16562-33	PIN,SPRING UOC:005	1
12	PAFZZ	19206	7144227	MOUNTING BASE,TRAVE UOC:005	1
13	PAFZZ	19204	7144062	NUT,PLAIN,ROUND UOC:005	1
14	PAFZZ	19206	7144183	BRACKET,EYE,ROTATIN UOC:005	1
15	PAFZZ	96906	MS51966-48	SETSCREW UOC:005	1
16	PAFZZ	19206	8765630	DISK,SOLID,PLAIN UOC:005	1
				END OF FIGURE	

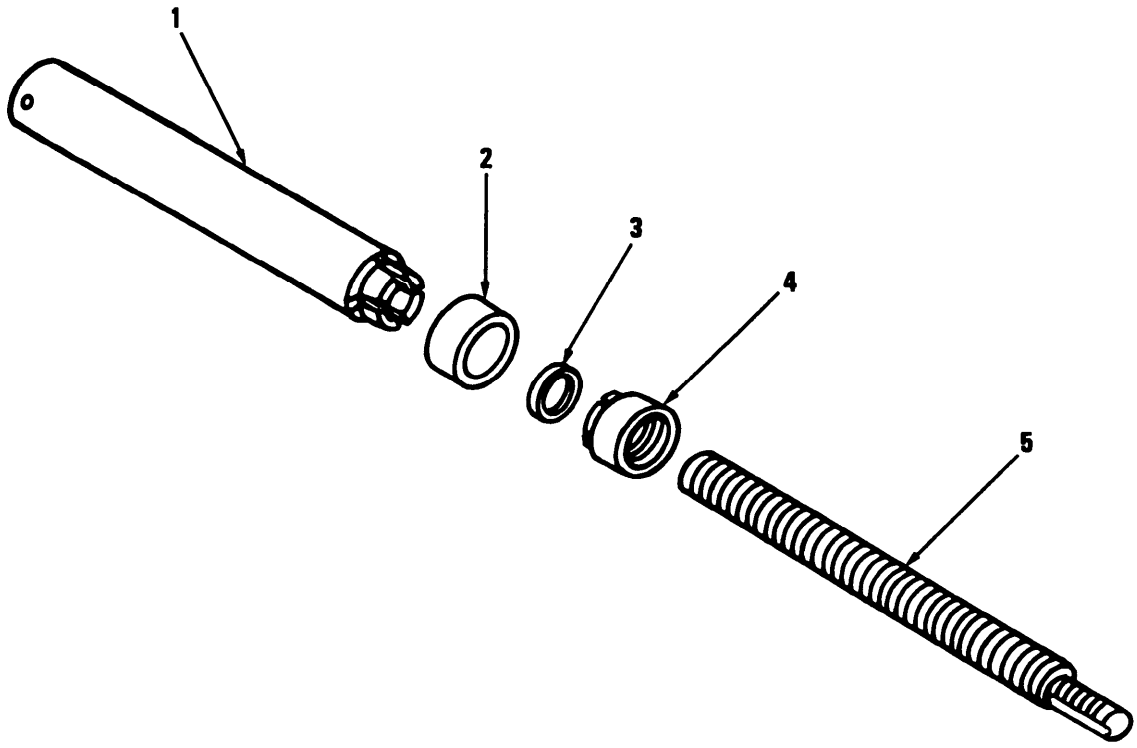


Figure C-14. Screw and Sleeve Assembly 7144190.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0201010201 SCREW AND SLEEVE ASSEMBLY 7144190	
				FIG. C-14 SCREW AND SLEEVE ASSEMBLY 7144190	
1	XAFZZ	19204	7144126	SLEEVE UOC:005	1
2	PAFZZ	19206	7144060	SPACER,SLEEVE UOC:005	1
3	PAFZZ	19206	7144061	SPACER,RING UOC:005	1
4	PAFZZ	19204	7144127	NUT,PLAIN,ROUND UOC:005	1
5	XAFZZ	19204	7144114	SCREW UOC:005	1
				END OF FIGURE	

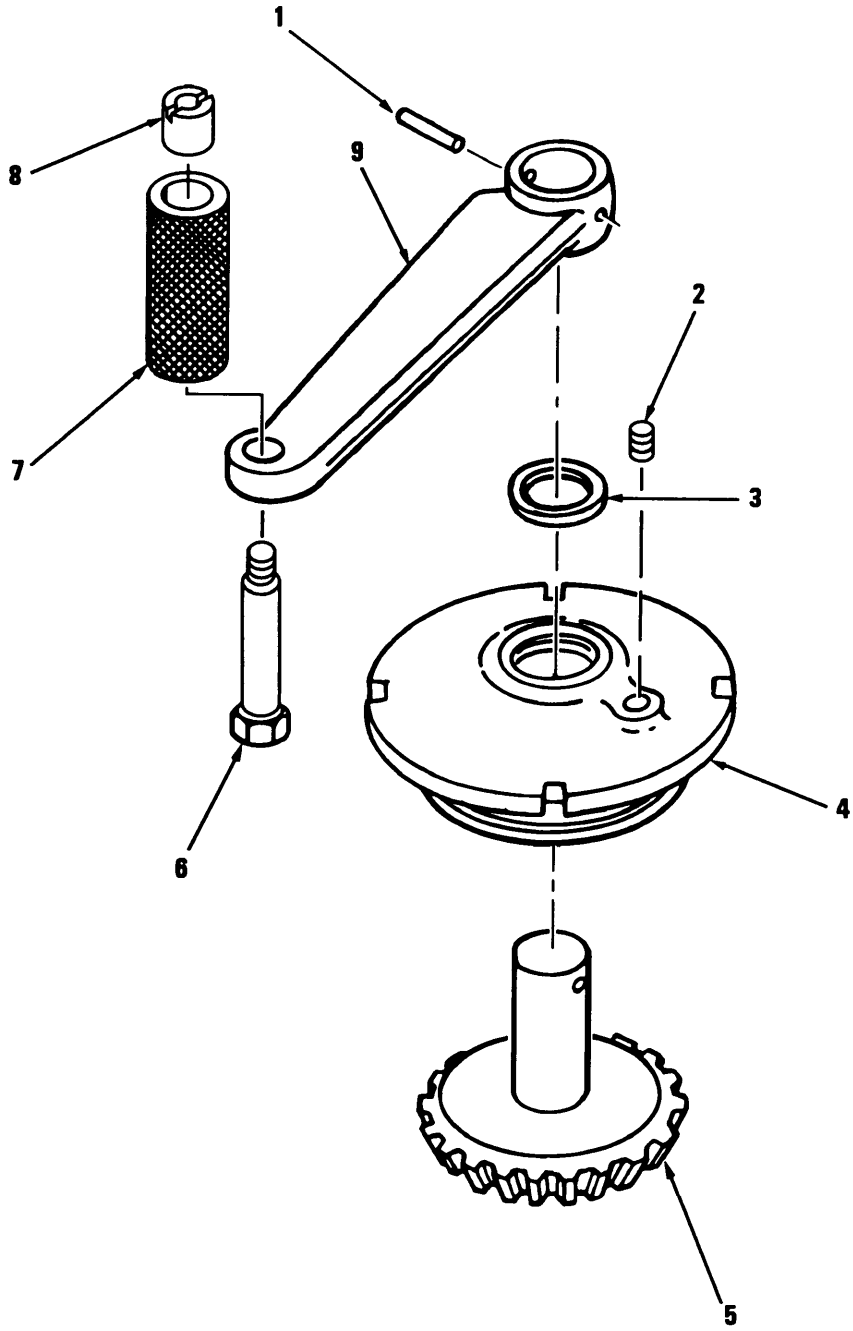


Figure C-15. Gear and Handle Assembly 7144173.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 020102 GEAR AND HANDLE ASSEMBLY 7144173	
				FIG. C-15 GEAR AND HANDLE ASSEMBLY 7144173	
1	PAFZZ	96906	MS16562-145	PIN,SPRING UOC:005	1
2	PAFZZ	81348	WWP471-ACAAAA	PLUG,PIPE UOC:005	1
3	PAFZZ	19206	7144034	PACKING,PREFORMED UOC:005	1
4	XAFZZ	19206	7144107	COVER GEAR CASE UOC:005	1
5	XAFZZ	19206	7144108	GEAR,MITER UOC:005	1
6	PAFZZ	19206	7144036	BOLT,SHOULDER UOC:005	1
7	PAFZZ	19206	7144035	HANDLE,ELEVATING UOC:005	1
8	PAFZZ	19206	7144037	NUT,PLAIN,ROUND UOC:005	1
9	XAFZZ	19204	7148538	CRANK UOC:005	1
				END OF FIGURE	

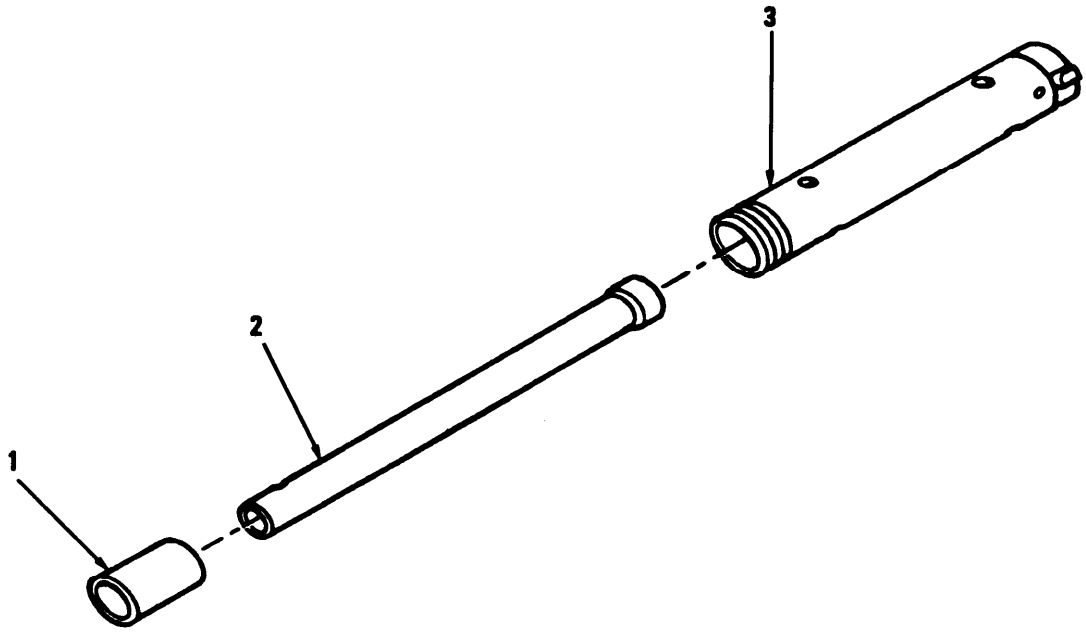


Figure C-16. Elevating Screw and Housing Assembly 7144189.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 020103 ELEVATING SCREW AND HOUSING ASSEMBLY 7144189	
				FIG. C-16 ELEVATING SCREW AND HOUSING ASSEMBLY 7144189	
1	PAFZZ	19206	7144068	BUSHING,SLEEVE UOC:005	1
2	PAFZZ	19206	7144187	SLEEVE,ELEVATING UOC:005	1
3	XAFZZ	19204	7144186	SCREW UOC:005	1
				END OF FIGURE	

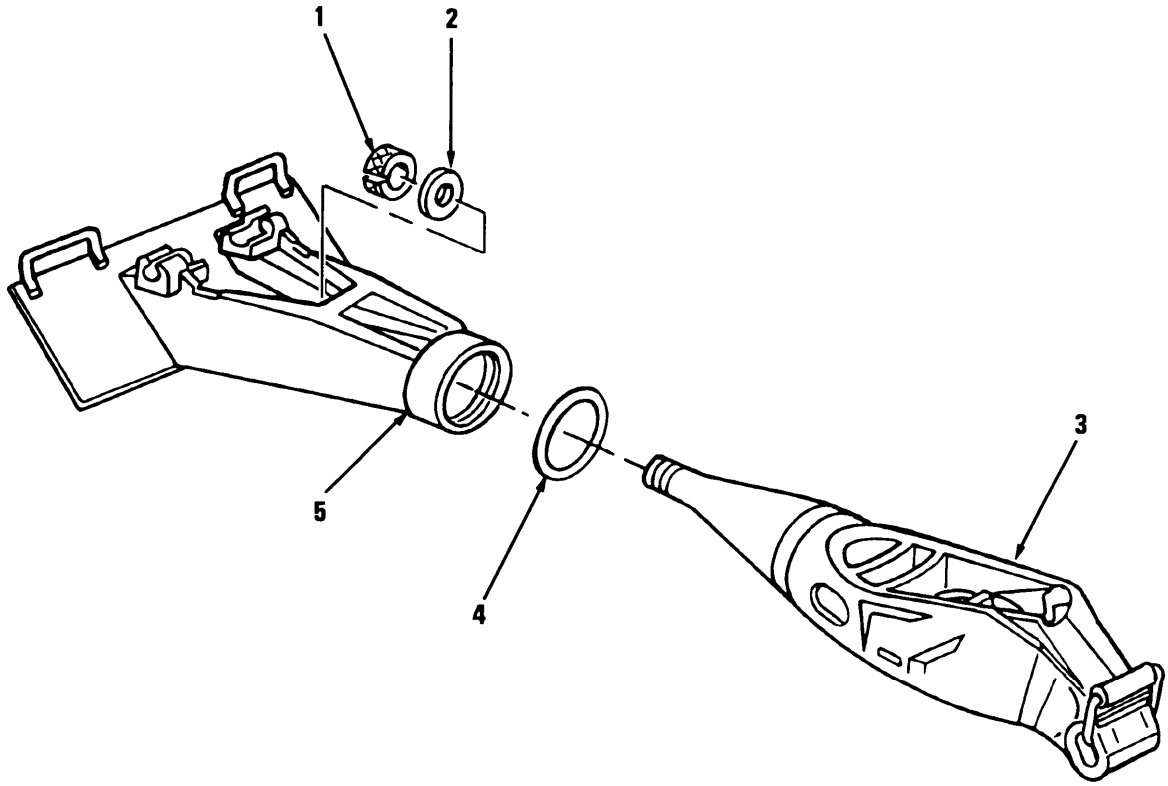


Figure C-17. Bridge Assembly 7144260.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0202 BRIDGE ASSEMBLY 7144260	
				FIG. C-17 BRIDGE ASSEMBLY 7144260	
1	PAFFF	19206	11578492	NUT,SELF-LOCKING,KN UOC:005	1
2	PAFZZ	19206	7144078	WASHER,FLAT UOC:005	1
3	PAFFF	19206	7191546	BODY BRIDGE ASSEMBL UOC:005	1
4	PAFZZ	81349	M83461/1-429	PACKING,PREFORMED UOC:005	1
5	PAFZZ	19206	7146406	BASE SUPPORT,BRIDGE UOC:005	1
				END OF FIGURE	

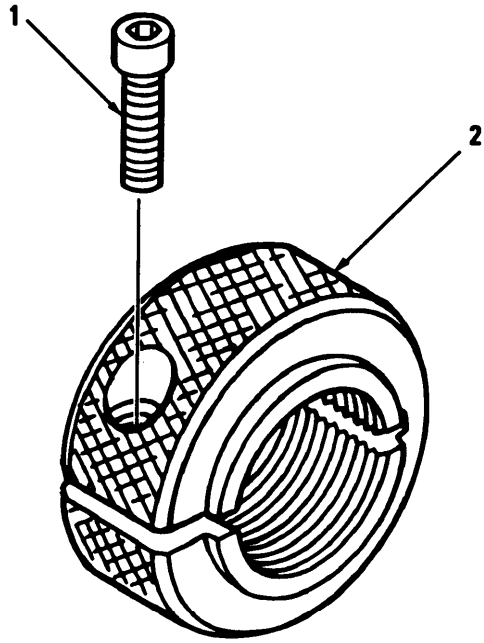


Figure C-18. Nut Assembly 11578492.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 020201 NUT ASSEMBLY 11578492	
				FIG. C-18 NUT ASSEMBLY 11578492	
1	PAFZZ	96906	MS16998-59	SCREW,CAP,SOCKET HE UOC:005	1
2	XAFZZ	19206	11578491	LOCK NUT UOC:005	1
				END OF FIGURE	

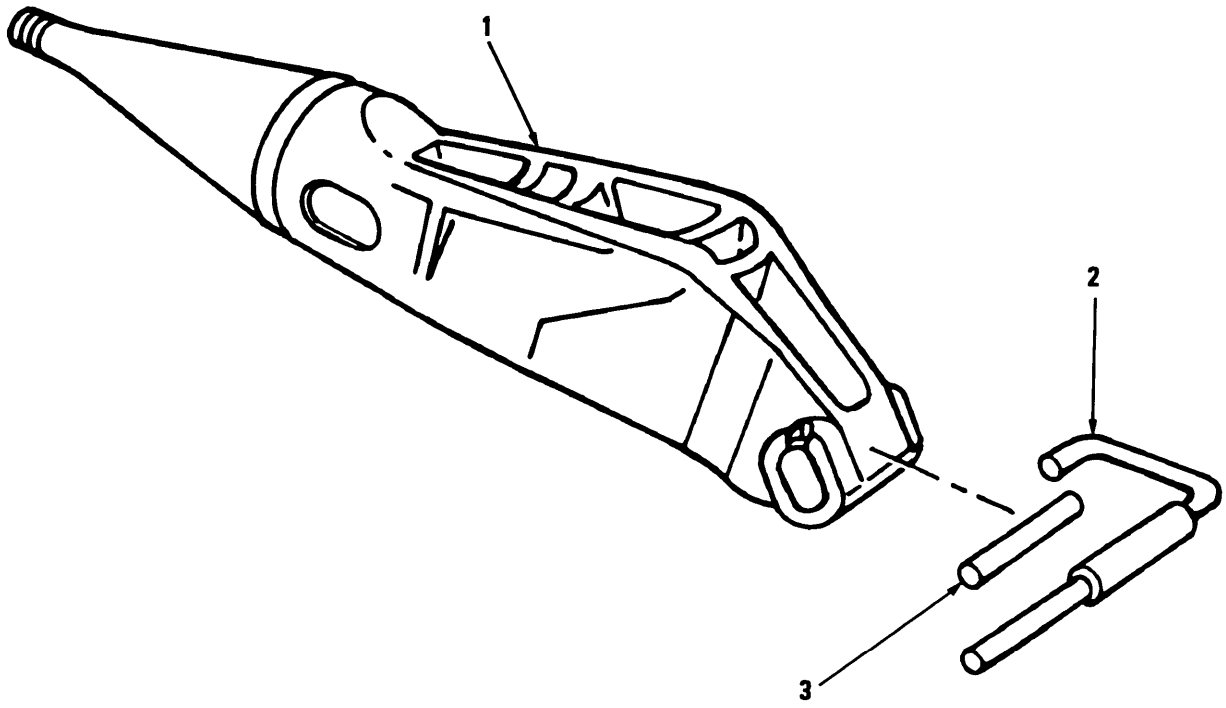


Figure C-19. Bridge Cup Assembly 7191546.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 020202 BRIDGE CUP ASSEMBLY 7191546	
				FIG. C-19 BRIDGE CUP ASSEMBLY 7191546	
1	XAFZZ	19204	7144259	BODY BRIDGE CUP UOC:005	1
2	PAFZZ	19206	7148044	HANDLE, BOW UOC:005	1
3	PAFZZ	19206	7185938	PIN, STRAIGHT, HEADLE UOC:005	1
				END OF FIGURE	

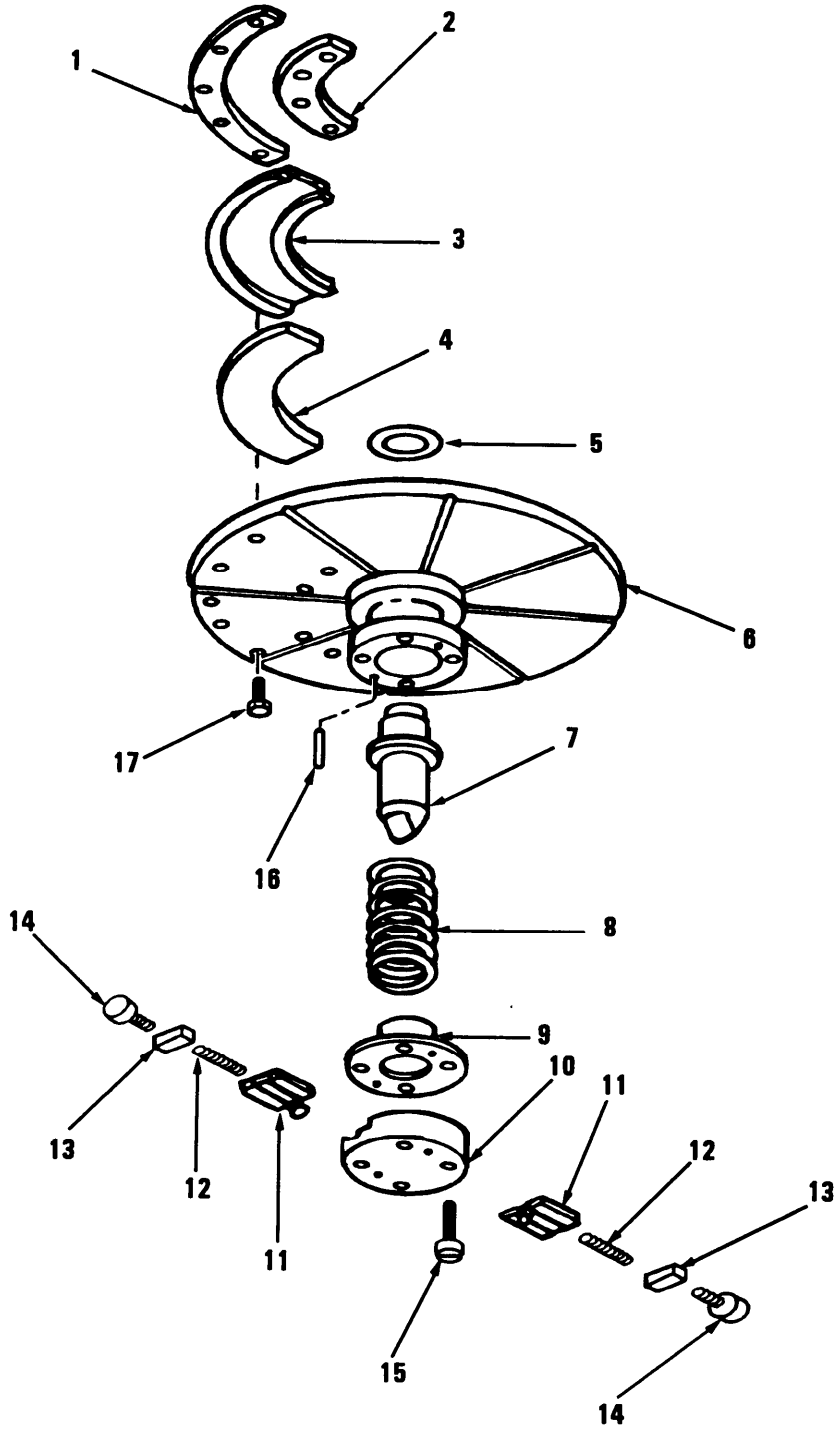


Figure C-20. Rotator Assembly 7148120.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0203 ROTATOR ASSEMBLY 7148120	
				FIG. C-20 ROTATOR ASSEMBLY 7148120	
1	PAFZZ	19206	7144207	PLATE, POSITIONING UOC:005	1
2	PAFZZ	19206	7144208	RETAINER, INNER, MORT UOC:005	1
3	PAFZZ	19206	7144205	BASEPLATE,MORTAR UOC:005	1
4	PAFZZ	19206	7144206	PAD,CUSHIONING UOC:005	1
5	PAFZZ	19204	7144082	WASHER, FLAT UOC:005	1
6	XADDD	19204	7145418	BODY UOC:005	1
7	PAFZZ	19206	7144155	PIN, SHOULDER, HEADLE UOC:005	1
8	PAFZZ	19206	7144150	SPRING, HELICAL, COMP UOC:005	1
9	PAFZZ	19206	7144210	SEAT, HELICAL COMPRE UOC:005	1
10	PAFZZ	19206	7144209	RETAINER, SLIDE LOCK UOC:005	1
11	PAFZZ	19206	7144152	LOCK, SLIDE UOC:005	2
12	PAFZZ	19206	7144149	SPRING, HELICAL, COMP UOC:005	2
13	PAFZZ	19206	7144153	HOLDER, SPRING UOC:005	2
14	PAFZZ	96906	MS16997-44	SCREW, CAP, SOCKET HE UOC:005	4
15	PAFZZ	96906	MS16997-101	SCREW, CAP, SOCKET HE UOC:005	4
16	PAFZZ	96906	MS16562-80	PIN, SPRING UOC:005	2
17	PAFZZ	96906	MS16997-99	SCREW, CAP, SOCKET HE UOC:005	9
				END OF FIGURE	

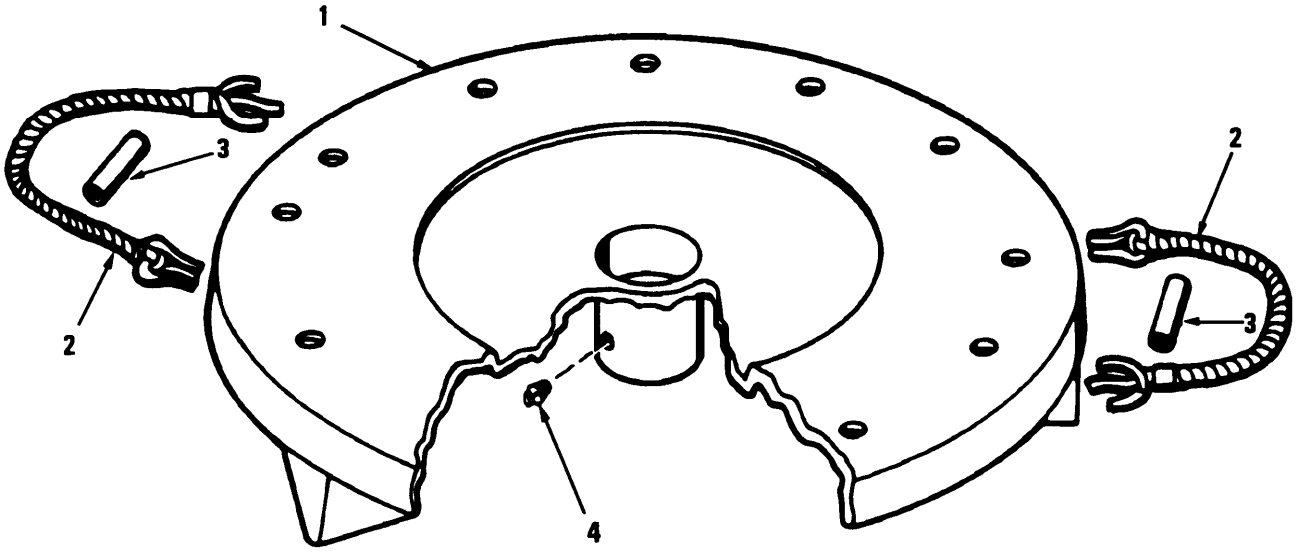
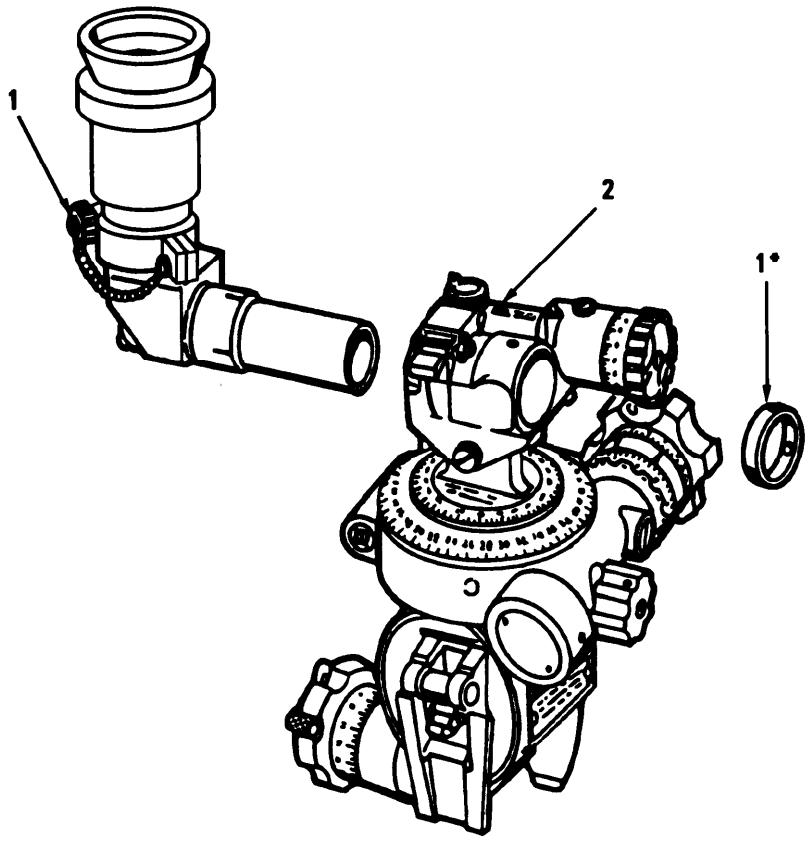


Figure C-21. Baseplate, Mortar 8401561.

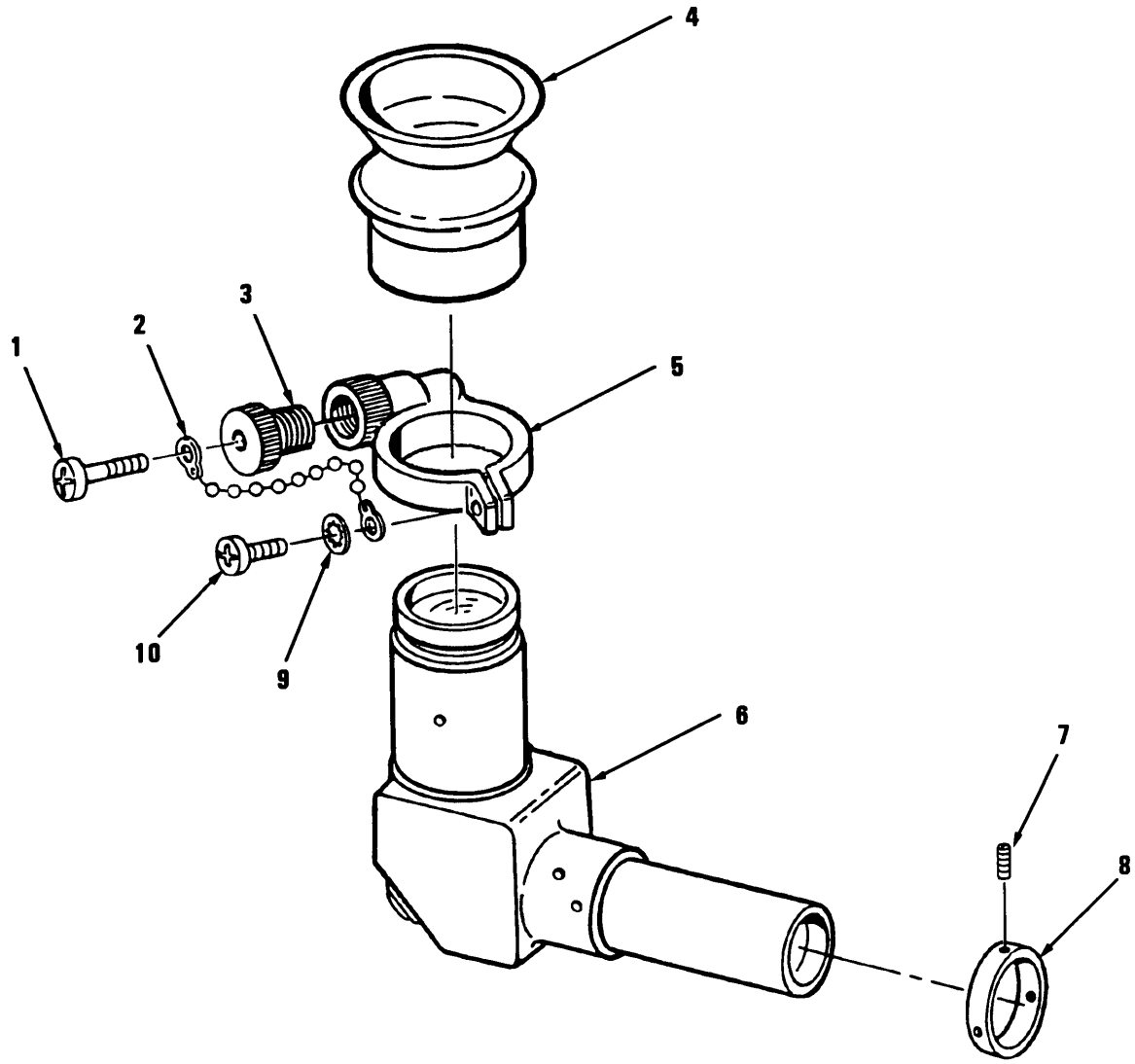
(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0204 BASEPLATE, MORTAR 8401561	
				FIG. C-21 BASEPLATE, MORTAR 8401561	
1	XADDD	19204	7148581	BODY UOC:005	1
2	PAOZZ	19206	7144266	ROPE, FIBROUS UOC:005	2
3	PAOZZ	19206	7235790	HANDLE,MANUAL CONTR UOC:005	2
4	PAFZZ	96906	MS20913-1S	PLUG, PIPE UOC:005	1
				END OF FIGURE	



*SUPPLIED WITH IDENTICALLY NUMBERED PART.

Figure C-22. Sightunit M53 Series 8245971 and 10559698.

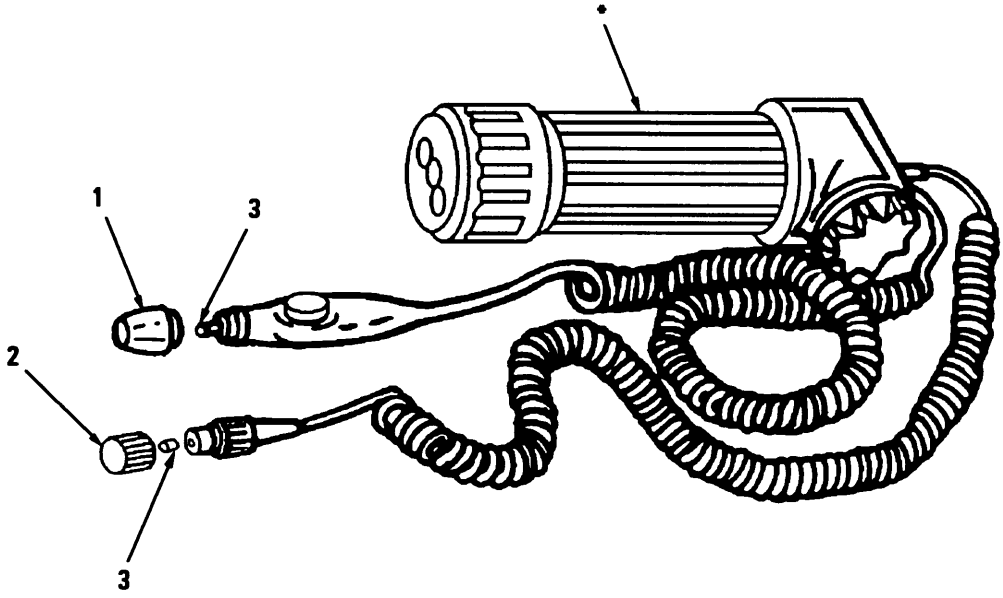
(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 03 SIGHTUNIT M53 SERIES 8245971 AND 10559698	
				FIG. C-22 SIGHTUNIT M53 SERIES 8245971 AND 10559698	
1	PAOOO	19200	8588780	TELESCOPE, ELBOW UOC:005	1
2	PAOHH	19200	10559699	MOUNT, TELESCOPE UOC:005	1
				END OF FIGURE	



*NO FURTHER DISASSEMBLY AUTHORIZED.

Figure C-23. Elbow Telescope M109 8588780.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0301 ELBOW TELESCOPE M109 8588780	
				FIG. C-23 ELBOW TELESCOPE M109 8588780	
1	PAOZZ	96906	MS51957-12	SCREW,MACHINE UOC:005	1
2	PAOZZ	19200	10512999	CHAIN,ASSEMBLY BEAD UOC:005	1
3	PAOZZ	19200	8587298	PLUG, DUST COVER MA CHINE THREAD UOC:005	1
4	PAOZZ	19200	8588791	EYESHIELD, OPTICAL UOC:005	1
5	XAOZZ	19200	8588806	CLAMP UOC:005	1
6	XAOZZ	19200	10548042-1	TELESCOPE,ELBOW ASS EMBLY UOC:005	1
7	PAOZZ	96906	MS51974-1	SETSCREW CP,ALY STL ,CD PL,NO 2/ 64UNF-3A,11-L UOC:005	3
8	PAOZZ	19200	5206438	COLLAR,SHAFT UOC:005	1
9	PAOZZ	96906	MS35333-71	WASHER, LOCK UOC:005	1
10	PAOZZ	96906	MS51957-29	SCREW,MACHINE UOC:005	1
				END OF FIGURE	



*NO FURTHER
DISASSEMBLY AUTHORIZED.

Figure C-24. Light, Instrument M53E1 10553463.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0401 LIGHT INSTRUMENT M53E1 10553463	
				FIG. C-24 LIGHT INSTRUMENT M53E1 10553463	
1	PAOZZ	19200	8579669	LENS, LIGHT UOC:005	1
2	PAOZZ	19200	11731197	CAP ASSEMBLY UOC:005	1
3	PAOZZ	19200	MS51608-3	LAMP, INCANDESCANT UOC:005	1
				END OF FIGURE	

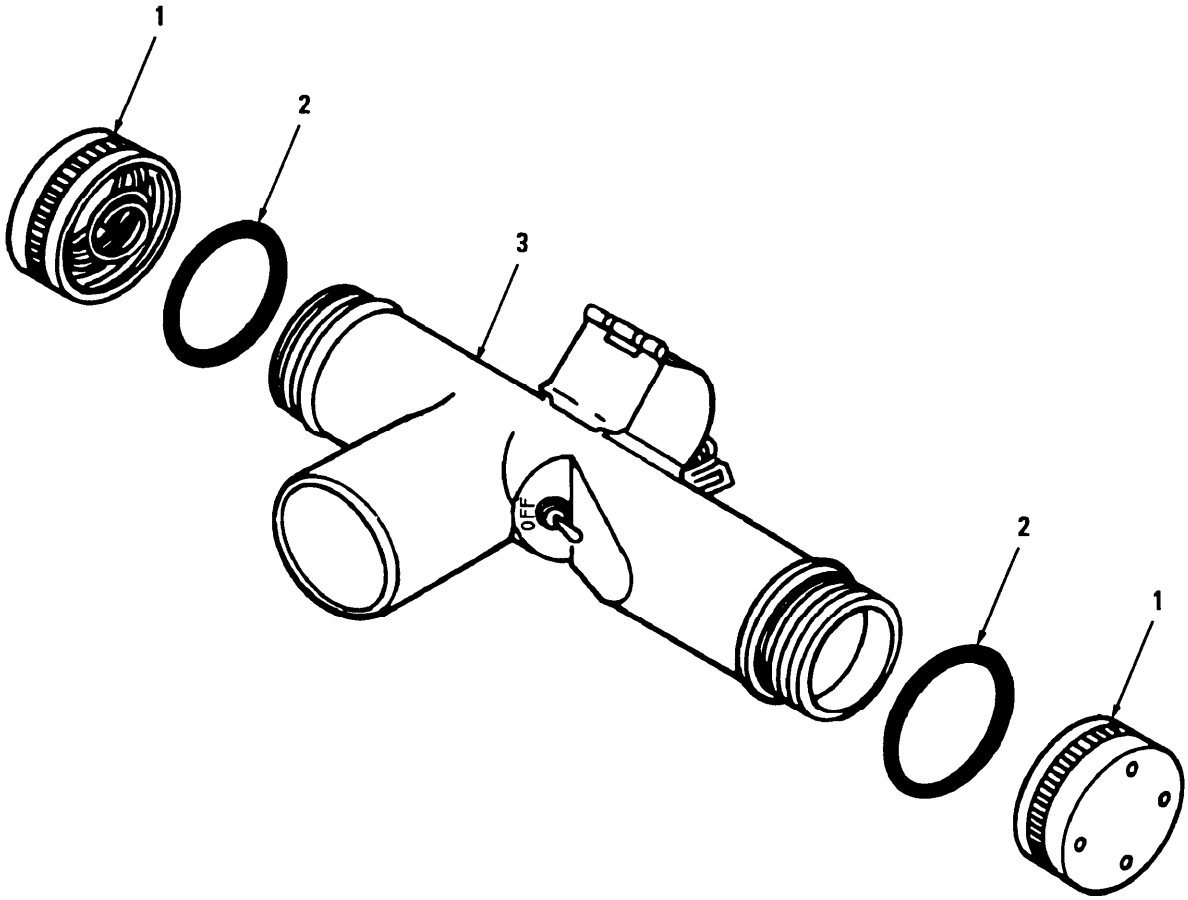


Figure C-25. Light, Aiming Post: M14 11785401.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0402 LIGHT, AIMING POST: M14 11785401	
				FIG. C-25 LIGHT, AIMING POST: M14 11785401	
1	PAOZZ	19200	11785403	CAP, PLUG PROTECTIVE UOC:005	2
2	PAOZZ	96906	MS29513-020	PACKING,PERFORMED UOC:005	2
3	XAOZZ	19200	11785406	CASE ASSEMBLY UOC:005	1
				END OF FIGURE	

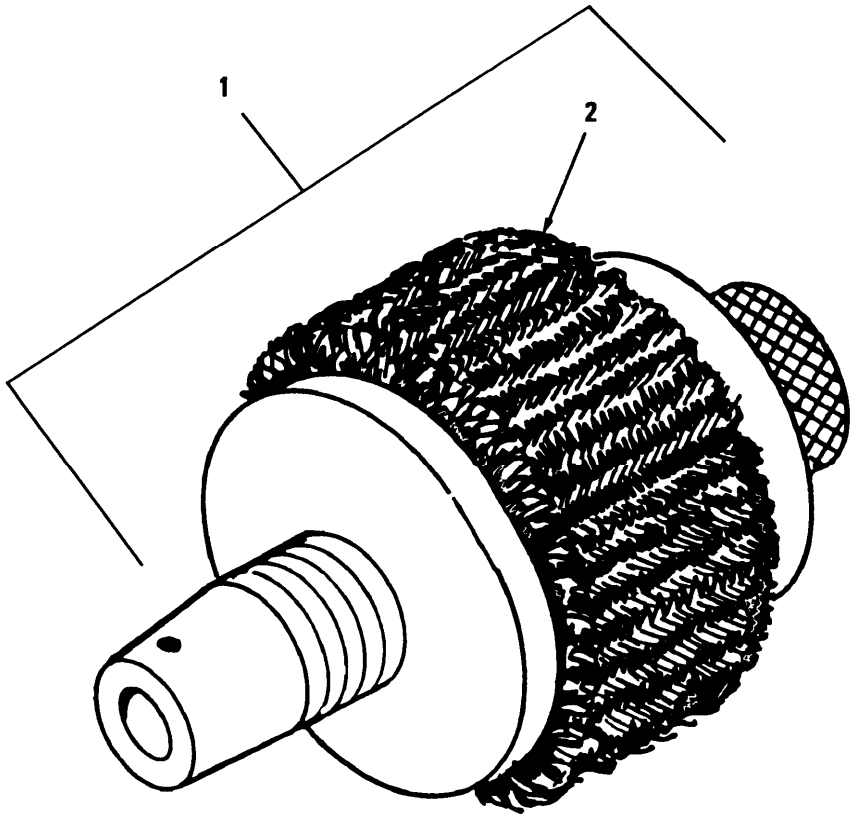


Figure C-26. Brush, Cleaning, Artillery 11838768.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0404 BRUSH, CLEANING, ARTILLERY 11838768	
				FIG. C-26 BRUSH, CLEANING, ARTILLERY 11838768	
1	PACOO	19206	8768698	BRUSH, CLEANING,ARTI W/COVER UOC:005	1
2	PAOZZ	19207	6157208	BRUSH SECTION UOC:005	1
				END OF FIGURE	

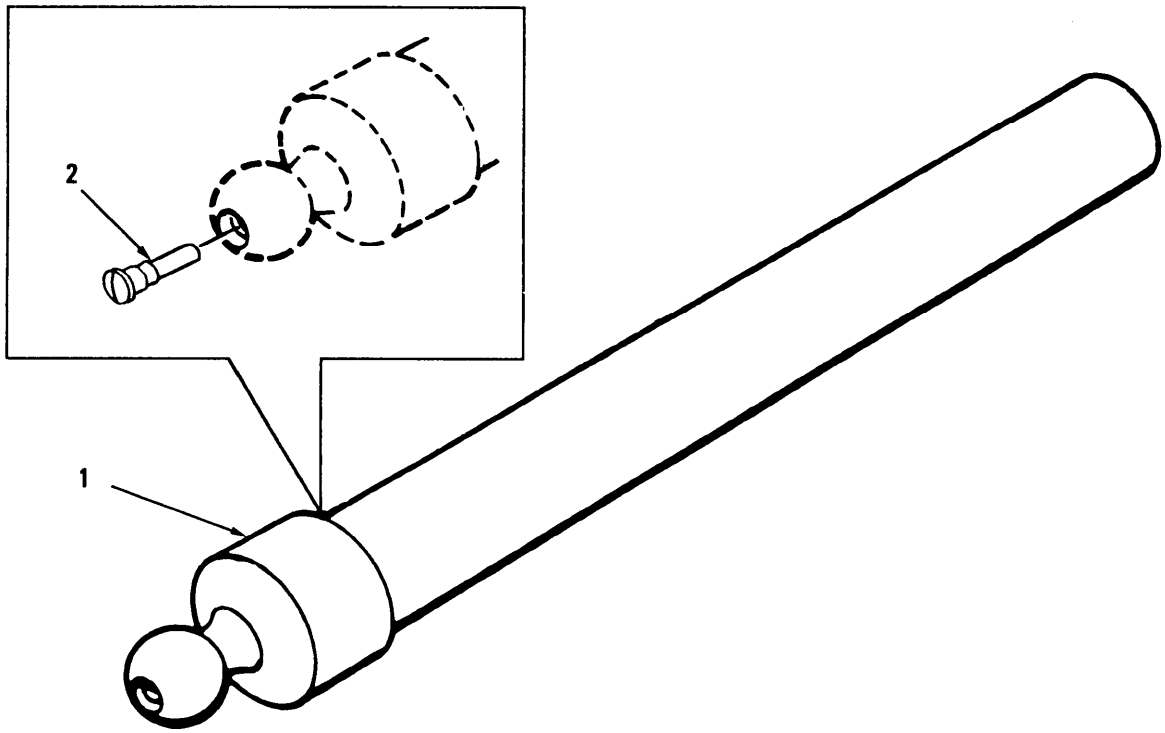


Figure C-27. Trainer, Subcaliber, 60-mm M31 8429878 and Cannon, 60-mm Mortar, M2 7238501.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 05 TRAINER, SUBCALIBER, 60-MM, M31 8429878 AND GROUP 0501 CANNON, 60-MM MORTAR, M2 7238501	
				FIG. C-27 TRAINER, SUBCALIBER, 60-MM M31 8429878 AND CANNON, 60-MM MORTAR M2 7238501	
	MFCZZ	19206	8429878	SUBCALIBER MORTAR, 60MM, M31, UOC:005	1
1	PAOFF	19206	7238501	CANNON, 60MM M2 UOC:005	1
2	PAOZZ	19206	5025272	..PIN,FIRING UOC:005	1
				END OF FIGURE	

Section III. SPECIAL TOOLS LIST

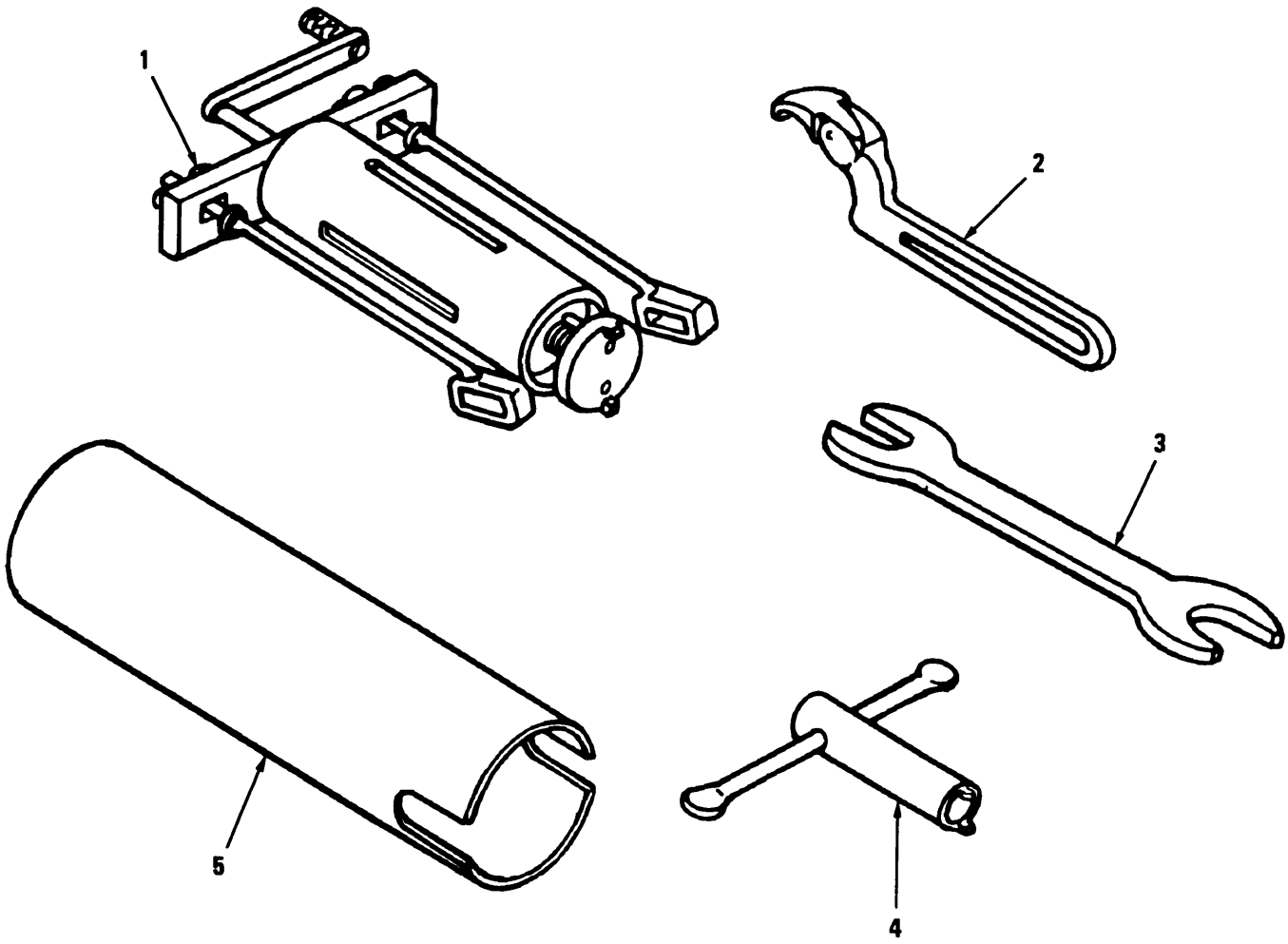


Figure C-28. Special Tools.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 9500 SPECIAL TOOLS	
				FIG. C-28 SPECIAL TOOLS	
	PEFFF	19204	5910503	TOOL KIT,MORTAR UOC:005	
1	PAFZZ	19206	7309790	..CORMPRESSING TOOL,RE UOC:005	
2	PAFZZ	19207	5218469	..WRENCH,SPANNER UOC:005	
3	PAFZZ	19204	7144741	..WRENCH, OPEN END UOC:005	
4	PAFZZ	19206	7309236	..WRENCH, SPANNER UOC:005	
5	PAFZZ	19206	8768214	..COMPRESSOR,SPRING UOC:005	
				END OF FIGURE	

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STOCK NUMBER	FIG	ITEM	STOCK NUMBER	FIG	ITEM
5305-00-013-2960	C-10	40	3120-00-714-4016	C-3	5
5320-00-013-4648	C-10	17	5315-00-714-4020	C-3	12
5315-00-052-6634	C-3	8	5310-00-714-4024	C-2	10
5305-00-054-5646	C-23	1	5330-00-714-4034	C-15	3
5305-00-054-6653	C-23	10	5340-00-714-4038	C-12	3
5360-00-055-2830	C-12	9	5365-00-714-4039	C-12	8
4730-00-057-5555	C-3	15	5310-00-714-4040	C-12	4
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5305-00-059-4845	C-11	2	5315-00-714-4042	C-12	7
5310-00-096-6649	C-17	1	5330-00-714-4043	C-10	8
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4710-00-127-2980	C-6	2	5365-00-714-4045	C-13	10
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1240-00-181-4806	C-22	2	5365-00-714-4051	C-10	12
5306-00-182-5196	C-15	6	5315-00-714-4052	C-11	1
5999-00-186-0058	C-24	2	5330-00-714-4055	C-10	15
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4730-00-221-2136	C-21	4	5365-00-714-4061	C-14	3
5315-00-238-1584	C-3	19	5310-00-714-4062	C-13	13
5330-00-250-0224	C-25	2	5310-00-714-4063	C-13	5
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5310-00-402-4437	C-15	8	5365-00-714-4067	C-10	23
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5310-00-453-6514	C-6	1	3120-00-714-4070	C-10	10
5340-00-455-2680	C-6	12	5305-00-714-4072	C-10	22
6230-00-460-4715	C-24	1	1015-00-714-4073	C-10	20
5340-00-465-5965	C-15	7	5315-00-714-4074	C-10	19
5355-00-498-2428	C-3	2	5310-00-714-4078	C-17	2
1010-00-502-5272	C-27	2	5310-00-714-4082	C-20	5
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1015-00-561-2002	C-10	37	3040-00-714-4097	C-3	17
5310-00-595-7237	C-10	35	5360-00-714-4099	C-3	13
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5360-00-713-4392	C-4	5	5310-00-714-4128	C-10	28
5340-00-713-4399	C-4	1	5365-00-714-4129	C-10	43
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5365-00-714-4005	C-2	18	3020-00-714-4135	C-10	13
5330-00-714-4006	C-2	13	3040-00-714-4136	C-13	7
5330-00-714-4012	C-3	3	5360-00-714-4137	C-10	21
5340-00-714-4013	C-3	14	3040-00-714-4138	C-13	2

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STOCK NUMBER	FIG	ITEM	STOCK NUMBER	FIG	ITEM
5340-00-714-4139	C-10	18	3120-00-824-4495	C-16	1
5360-00-714-4149	C-20	12	5310-00-834-8734	C-11	6
5360-00-714-4150	C-20	8	1015-00-840-1561	C-9	6
1015-00-714-4152	C-20	11	5315-00-843-7986	C-13	11
5340-00-714-4153	C-20	13	5315-00-844-3943	C-6	3
5315-00-714-4155	C-20	7	5315-00-844-3964	C-5	1
3040-00-714-4168	C-2	17	5310-00-851-2682	C-2	19
1015-00-714-4172	C-3	7	5305-00-852-3731	C-10	38
1015-00-714-4173	C-10	11	5315-00-853-3814	C-10	5
5340-00-714-4174	C-11	5	1015-00-857-0421	C-26	1
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1015-00-714-4187	C-16	2	1015-00-869-7978	C-6	13
1015-00-714-4189	C-10	26	5330-00-869-7982	C-6	4
1015-00-714-4190	C-13	4	1015-00-869-7983	C-6	10
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3040-00-714-4192	C-10	16	5365-00-893-5885	C-23	3
1015-00-714-4205	C-20	3	4933-00-896-9039	C-28	5
5340-00-714-4206	C-20	4	5310-00-934-9758	C-4	3
1015-00-714-4207	C-20	1		C-7	2
1015-00-714-4208	C-20	2	5305-00-958-5245	C-13	8
1015-00-714-4209	C-20	10	5305-00-978-9354	C-20	14
5340-00-714-4210	C-20	9	5305-00-978-9394	C-20	17
1015-00-714-4219	C-3	6	5305-00-978-9396	C-20	15
3040-00-714-4224	C-10	6	5305-00-983-5346	C-2	8
1015-00-714-4227	C-13	12		C-10	3
1015-00-714-4229	C-10	39		C-13	1
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1015-00-714-6406	C-17	5	5305-00-983-7429	C-3	9
5340-00-714-8044	C-19	2	5305-00-984-4984	C-2	4
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5305-00-716-8035	C-23	7	5305-00-984-6214	C-7	1
1015-00-719-1546	C-17	3	5315-00-993-4169	C-8	4
5305-00-719-5329	C-2	11	5315-01-057-0011	C-19	3
5305-00-719-5330	C-3	16	5330-01-160-4329	C-17	4
5340-00-723-5790	C-21	3	5340-01-177-9217	C-25	1
1010-00-723-8501	C-27	1	9905-01-275-8088	C-2	5
5305-00-723-9385	C-2	1	4010-01-291-9341	C-23	2
5305-00-723-9388	C-10	27	5360-01-321-3848	C-10	36
	C-11	7	5360-01-321-3849	C-10	42
5305-00-724-6816	C-12	6	5360-01-321-3850	C-10	31
5305-00-728-6308	C-13	15	5360-01-322-0078	C-10	41
5310-00-732-0558	C-2	15			
5340-00-767-3160	C-13	16			
5305-00-808-0864	C-2	16			
5315-00-810-3704	C-20	16			
6650-00-823-5612	C-22	1			
5315-00-823-8735	C-13	3			

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CAGEC	PART NUMBER	STOCK NUMBER	FIG	ITEM
96906	MS16555-49	5315-00-823-8735	C-13	3
96906	MS16562-10	5315-00-844-3943	C-6	3
96906	MS16562-145	5315-00-857-3258	C-15	1
96906	MS16562-146	5315-00-853-3814	C-10	5
96906	MS16562-33	5315-00-843-7986	C-13	11
96906	MS16562-47	5315-00-844-3964	C-5	1
96906	MS16562-80	5315-00-810-3704	C-20	16
96906	MS16997-101	5305-00-978-9396	C-20	15
96906	MS16997-44	5305-00-978-9354	C-20	14
96906	MS16997-78	5305-00-983-5346	C-2	8
			C-10	3
			C-13	1
96906	MS16997-80	5305-00-983-6621	C-10	4
96906	MS16997-99	5305-00-978-9394	C-20	17
96906	MS16998-28	5305-00-983-7429	C-3	9
96906	MS16998-59	5305-00-983-6671	C-18	1
96906	MS171531	5315-00-616-3839	C-3	1
96906	MS171725	5315-00-993-4169	C-8	4
96906	MS19060-4814	3110-00-198-1050	C-12	10
96906	MS20913-1S	4730-00-221-2136	C-21	4
96906	MS29513-020	5330-00-250-0224	C-25	2
96906	MS35190-288	5305-00-958-5245	C-13	8
96906	MS35206-227	5305-00-984-4984	C-2	4
			C-9	3
96906	MS35206-267	5305-00-984-6214	C-7	1
96906	MS35333-41	5310-00-167-0721	C-10	2
96906	MS35333-42	5310-00-595-7237	C-10	35
96906	MS35333-71	5310-00-616-3555	C-23	9
96906	MS35649-202	5310-00-934-9758	C-4	3
			C-7	2
96906	MS35691-17	5310-00-851-2682	C-2	19
96906	MS35691-37	5310-00-834-8734	C-11	6
96906	MS49005-6	4730-00-057-5555	C-3	15
96906	MS51023-28	5305-00-852-3731	C-10	38
19200	MS51608-3		C-24	3
96906	MS51957-12	5305-00-054-5646	C-23	1
96906	MS51957-29	5305-00-054-6653	C-23	10
96906	MS51963-20	5305-00-719-5329	C-2	11
96906	MS51963-21	5305-00-719-5330	C-3	16
96906	MS51963-62	5305-00-723-9388	C-10	27
			C-11	7
96906	MS51963-65	5305-00-723-9385	C-2	1
96906	MS51965-64	5305-00-724-6816	C-12	6
96906	MS51966-48	5305-00-728-6308	C-13	15
96906	MS51967-8	5310-00-732-0558	C-2	15
96906	MS51974-1	5305-00-716-8035	C-23	7
96906	MS51977-32	5305-00-058-9370	C-10	7
96906	MS51977-64	5305-00-059-4845	C-11	2
96906	MS90728-71	5305-00-808-0864	C-2	16
96906	MS9105-88	5315-00-052-6634	C-3	8
81349	M83461/1-429	5330-01-160-4329	C-17	4

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CAGEC	PART NUMBER	STOCK NUMBER	FIG	ITEM
80205	NAS561P4-6	5315-00-238-1584	C-3	19
81343	SAEJ492	5320-00-013-4648	C-10	17
81348	WWP471-ACAAAA		C-10	32
			C-15	2
19200	10512999	4010-01-291-9341	C-23	2
19200	10548042-1		C-23	6
19200	10559698		C-1	2
19200	10559699	1240-00-181-4806	C-22	2
19206	11577215		C-8	2
19206	11577216	1015-00-857-2822	C-2	3
19206	11577219		C-8	1
19206	11577220		C-1	1
19206	11577221		C-8	5
19206	11577222	9905-01-275-8088	C-2	5
19206	11577223	9905-00-178-4810	C-9	4
19206	11578073		C-2	2
19206	11578075	5340-00-127-2978	C-6	6
19206	11578076	5340-00-455-2680	C-6	12
19206	11578077	4710-00-127-2980	C-6	2
19206	11578078	1015-00-252-2132	C-6	7
19206	11578079	5310-00-453-6514	C-6	1
19206	11578298	1015-00-421-1696	C-6	11
19206	11578491		C-18	2
19206	11578492	5310-00-096-6649	C-17	1
19206	11580275	5360-01-321-3848	C-10	36
19206	11580276	5360-01-321-3849	C-10	42
19206	11580277	5360-01-322-0078	C-10	41
19206	11580278	5360-01-321-3850	C-10	31
19200	11731197	5999-00-186-0058	C-24	2
19200	11785403	5340-01-177-9217	C-25	1
19200	11785406		C-25	3
24617	132960	5305-00-013-2960	C-10	40
19206	5025272	1010-00-502-5272	C-27	2
19200	5206438	3040-00-520-6438	C-23	8
19207	5218469	5120-00-277-9076	C-28	2
19204	5910503	5180-00-713-2546	C-28	
19207	6157208	1015-00-615-7208	C-26	2
19206	7134364	5305-00-713-4364	C-3	10
19206	7134391		C-4	4
19206	7134392	5360-00-713-4392	C-4	5
19206	7134399	5340-00-713-4399	C-4	1
19204	7134410		C-4	2
19206	7136051	1015-00-713-6051	C-3	11
19206	7144004	5365-00-869-7976	C-6	9
19206	7144005	5365-00-714-4005	C-2	18
19206	7144006	5330-00-714-4006	C-2	13
19206	7144010	1015-00-869-7978	C-6	13
19206	7144012	5330-00-714-4012	C-3	3
19206	7144013	5340-00-714-4013	C-3	14
19206	7144016	3120-00-714-4016	C-3	5
19206	7144020	5315-00-714-4020	C-3	12

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CAGEC	PART NUMBER	STOCK NUMBER	FIG	ITEM
19204	7144024	5310-00-714-4024	C-2	10
19206	7144026	5330-00-869-7982	C-6	4
19206	7144034	5330-00-714-4034	C-15	3
19206	7144035	5340-00-465-5965	C-15	7
19206	7144036	5306-00-182-5196	C-15	6
19206	7144037	5310-00-402-4437	C-15	8
19206	7144038	5340-00-714-4038	C-12	3
19206	7144039	5365-00-714-4039	C-12	8
19204	7144040	5310-00-714-4040	C-12	4
19206	7144041	5305-00-714-4041	C-12	1
19204	7144042	5315-00-714-4042	C-12	7
19204	7144043	5330-00-714-4043	C-10	8
19206	7144044	5310-00-714-4044	C-13	9
19206	7144045	5365-00-714-4045	C-13	10
19204	7144049	5315-00-714-4049	C-11	8
19204	7144050	5310-00-714-4050	C-11	4
19206	7144051	5365-00-714-4051	C-10	12
19204	7144052	5315-00-714-4052	C-11	1
19206	7144055	5330-00-714-4055	C-10	15
19206	7144060	5365-00-714-4060	C-14	2
19206	7144061	5365-00-714-4061	C-14	3
19204	7144062	5310-00-714-4062	C-13	13
19204	7144063	5310-00-714-4063	C-13	5
19206	7144064	5330-00-714-4064	C-10	29
19206	7144065	5365-00-714-4065	C-10	30
19206	7144067	5365-00-714-4067	C-10	23
19206	7144068	3120-00-824-4495	C-16	1
19204	7144069	5315-00-714-4069	C-10	25
19206	7144070	3120-00-714-4070	C-10	10
19206	7144072	5305-00-714-4072	C-10	22
19206	7144073	1015-00-714-4073	C-10	20
19204	7144074	5315-00-714-4074	C-10	19
19206	7144078	5310-00-714-4078	C-17	2
19204	7144082	5310-00-714-4082	C-20	5
19206	7144085	5310-00-714-4085	C-2	14
19206	7144087	1015-00-869-7983	C-6	10
19206	7144093	5315-00-714-4093	C-8	3
19206	7144094	5360-00-714-4094	C-6	5
19206	7144097	3040-00-714-4097	C-3	17
19206	7144098		C-3	20
19206	7144099	5360-00-714-4099	C-3	13
19206	7144100	1015-00-714-4100	C-2	7
19206	7144101	5340-00-714-4101	C-3	4
19204	7144103	5310-00-714-4103	C-6	8
19206	7144104	5310-00-714-4104	C-2	12
19206	7144107		C-15	4
19206	7144108		C-15	5
19206	7144109	5340-00-714-4109	C-12	2
19206	7144111	5310-00-714-4111	C-10	9
19204	7144114		C-14	5
19204	7144126		C-14	1

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CAGEC	PART NUMBER	STOCK NUMBER	FIG	ITEM
19204	7144127	5310-00-714-4127	C-14	4
19206	7144128	5310-00-714-4128	C-10	28
19207	7144129	5365-00-714-4129	C-10	43
19206	7144132	1015-00-714-4132	C-10	34
19206	7144135	3020-00-714-4135	C-10	13
19206	7144136	3040-00-714-4136	C-13	7
19206	7144137	5360-00-714-4137	C-10	21
19206	7144138	3040-00-714-4138	C-13	2
19206	7144139	5340-00-714-4139	C-10	18
19206	7144149	5360-00-714-4149	C-20	12
19206	7144150	5360-00-714-4150	C-20	8
19206	7144152	1015-00-714-4152	C-20	11
19206	7144153	5340-00-714-4153	C-20	13
19206	7144155	5315-00-714-4155	C-20	7
19206	7144168	3040-00-714-4168	C-2	17
19206	7144172	1015-00-714-4172	C-3	7
19206	7144173	1015-00-714-4173	C-10	11
19206	7144174	5340-00-714-4174	C-11	5
19204	7144175		C-12	5
19206	7144183	3040-00-714-4183	C-13	14
19206	7144184	3040-00-714-4184	C-13	6
19206	7144185	1015-00-714-4185	C-10	24
19204	7144186		C-16	3
19206	7144187	1015-00-714-4187	C-16	2
19206	7144189	1015-00-714-4189	C-10	26
19206	7144190	1015-00-714-4190	C-13	4
19206	7144191	3040-00-714-4191	C-10	14
19206	7144192	3040-00-714-4192	C-10	16
19206	7144205	1015-00-714-4205	C-20	3
19206	7144206	5340-00-714-4206	C-20	4
19206	7144207	1015-00-714-4207	C-20	1
19206	7144208	1015-00-714-4208	C-20	2
19206	7144209	1015-00-714-4209	C-20	10
19206	7144210	5340-00-714-4210	C-20	9
19206	7144217		C-5	2
19206	7144218		C-2	6
19206	7144219	1015-00-714-4219	C-3	6
19206	7144224	3040-00-714-4224	C-10	6
19206	7144227	1015-00-714-4227	C-13	12
19206	7144229	1015-00-714-4229	C-10	39
19204	7144231		C-11	3
19206	7144232		C-10	1
19206	7144256		C-9	1
19204	7144259		C-19	1
19204	7144260		C-9	2
19206	7144266	4020-00-714-4266	C-21	2
19204	7144741		C-28	3
19204	7145418		C-20	6
19206	7145424	3020-00-714-5424	C-3	18
19206	7146406	1015-00-714-6406	C-17	5
19206	7148044	5340-00-714-8044	C-19	2

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CAGEC	PART NUMBER	STOCK NUMBER	FIG	ITEM
19206	7148120	1015-00-714-8120	C-9	5
19204	7148538		C-15	9
19204	7148581		C-21	1
19206	7185938	5315-01-057-0011	C-19	3
19206	7191546	1015-00-719-1546	C-17	3
19206	7235790	5340-00-723-5790	C-21	3
19206	7238501	1010-00-723-8501	C-27	1
19206	7309158	5310-00-561-2001	C-10	33
19206	7309159	1015-00-561-2002	C-10	37
19206	7309236	5120-00-546-5934	C-28	4
19206	7309693	1015-00-690-3114	C-2	9
19206	7309790	4933-00-633-1388	C-28	1
19200	8245971		C-1	2
19204	8401561	1015-00-840-1561	C-9	6
19204	8401603		C-1	3
19206	8429878		C-27	
19200	8579669	6230-00-460-4715	C-24	1
19200	8587298	5365-00-893-5885	C-23	3
19200	8588780	6650-00-823-5612	C-22	1
19200	8588791	1240-00-892-5517	C-23	4
19200	8588806		C-23	5
19206	8765630	5340-00-767-3160	C-13	16
19206	8768214	4933-00-896-9039	C-28	5
19206	8768698	1015-00-857-0421	C-26	1
19206	8768922	5355-00-498-2428	C-3	2
19206	8769347	5360-00-055-2830	C-12	9

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FIG	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
C-1	1		19206	11577220
C-1	2		19200	10559698
C-1	2		19200	8245971
C-1	3		19204	8401603
C-2	1	5305-00-723-9385	96906	MS51963-65
C-2	2		19206	11578073
C-2	3	1015-00-857-2822	19206	11577216
C-2	4	5305-00-984-4984	96906	MS35206-227
C-2	5	9905-01-275-8088	19206	11577222
C-2	6		19206	7144218
C-2	7	1015-00-714-4100	19206	7144100
C-2	8	5305-00-983-5346	96906	MS16997-78
C-2	9	1015-00-690-3114	19206	7309693
C-2	10	5310-00-714-4024	19204	7144024
C-2	11	5305-00-719-5329	96906	MS51963-20
C-2	12	5310-00-714-4104	19206	7144104
C-2	13	5330-00-714-4006	19206	7144006
C-2	14	5310-00-714-4085	19206	7144085
C-2	15	5310-00-732-0558	96906	MS51967-8
C-2	16	5305-00-808-0864	96906	MS90728-71
C-2	17	3040-00-714-4168	19206	7144168
C-2	18	5365-00-714-4005	19206	7144005
C-2	19	5310-00-851-2682	96906	MS35691-17
C-3	1	5315-00-616-3839	96906	MS171531
C-3	2	5355-00-498-2428	19206	8768922
C-3	3	5330-00-714-4012	19206	7144012
C-3	4	5340-00-714-4101	19206	7144101
C-3	5	3120-00-714-4016	19206	7144016
C-3	6	1015-00-714-4219	19206	7144219
C-3	7	1015-00-714-4172	19206	7144172
C-3	8	5315-00-052-6634	96906	MS9105-88
C-3	9	5305-00-983-7429	96906	MS16998-28
C-3	10	5305-00-713-4364	19206	7134364
C-3	11	1015-00-713-6051	19206	7136051
C-3	12	5315-00-714-4020	19206	7144020
C-3	13	5360-00-714-4099	19206	7144099
C-3	14	5340-00-714-4013	19206	7144013
C-3	15	4730-00-057-5555	96906	MS49005-6
C-3	16	5305-00-719-5330	96906	MS51963-21
C-3	17	3040-00-714-4097	19206	7144097
C-3	18	3020-00-714-5424	19206	7145424
C-3	19	5315-00-238-1584	80205	NAS561P4-6
C-3	20		19206	7144098
C-4	1	5340-00-713-4399	19206	7134399
C-4	2		19204	7134410
C-4	3	5310-00-934-9758	96906	MS35649-202
C-4	4		19206	7134391
C-4	5	5360-00-713-4392	19206	7134392
C-5	1	5315-00-844-3964	96906	MS16562-47
C-5	2		19206	7144217
C-6	1	5310-00-453-6514	19206	11578079

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FIG	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
C-6	2	4710-00-127-2980	19206	11578077
C-6	3	5315-00-844-3943	96906	MS16562-10
C-6	4	5330-00-869-7982	19206	7144026
C-6	5	5360-00-714-4094	19206	7144094
C-6	6	5340-00-127-2978	19206	11578075
C-6	7	1015-00-252-2132	19206	11578078
C-6	8	5310-00-714-4103	19204	7144103
C-6	9	5365-00-869-7976	19206	7144004
C-6	10	1015-00-869-7983	19206	7144087
C-6	11	1015-00-421-1696	19206	11578298
C-6	12	5340-00-455-2680	19206	11578076
C-6	13	1015-00-869-7978	19206	7144010
C-7	1	5305-00-984-6214	96906	MS35206-267
C-7	2	5310-00-934-9758	96906	MS35649-202
C-8	1		19206	11577219
C-8	2		19206	11577215
C-8	3	5315-00-714-4093	19206	7144093
C-8	4	5315-00-993-4169	96906	MS171725
C-8	5		19206	11577221
C-9	1		19206	7144256
C-9	2		19204	7144260
C-9	3	5305-00-984-4984	96906	MS35206-227
C-9	4	9905-00-178-4810	19206	11577223
C-9	5	1015-00-714-8120	19206	7148120
C-9	6	1015-00-840-1561	19204	8401561
C-10	1		19206	7144232
C-10	2	5310-00-167-0721	96906	MS35333-41
C-10	3	5305-00-983-5346	96906	MS16997-78
C-10	4	5305-00-983-6621	96906	MS16997-80
C-10	5	5315-00-853-3814	96906	MS16562-146
C-10	6	3040-00-714-4224	19206	7144224
C-10	7	5305-00-058-9370	96906	MS51977-32
C-10	8	5330-00-714-4043	19204	7144043
C-10	9	5310-00-714-4111	19206	7144111
C-10	10	3120-00-714-4070	19206	7144070
C-10	11	1015-00-714-4173	19206	7144173
C-10	12	5365-00-714-4051	19206	7144051
C-10	13	3020-00-714-4135	19206	7144135
C-10	14	3040-00-714-4191	19206	7144191
C-10	15	5330-00-714-4055	19206	7144055
C-10	16	3040-00-714-4192	19206	7144192
C-10	17	5320-00-013-4648	81343	SAEJ492
C-10	18	5340-00-714-4139	19206	7144139
C-10	19	5315-00-714-4074	19204	7144074
C-10	20	1015-00-714-4073	19206	7144073
C-10	21	5360-00-714-4137	19206	7144137
C-10	22	5305-00-714-4072	19206	7144072
C-10	23	5365-00-714-4067	19206	7144067
C-10	24	1015-00-714-4185	19206	7144185
C-10	25	5315-00-714-4069	19204	7144069
C-10	26	1015-00-714-4189	19206	7144189

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
C-10	27	5305-00-723-9388	96906	MS51963-62
C-10	28	5310-00-714-4128	19206	7144128
C-10	29	5330-00-714-4064	19206	7144064
C-10	30	5365-00-714-4065	19206	7144065
C-10	31	5360-01-321-3850	19206	11580278
C-10	32		81348	WWP471-ACAAAA
C-10	33	5310-00-561-2001	19206	7309158
C-10	34	1015-00-714-4132	19206	7144132
C-10	35	5310-00-595-7237	96906	MS35333-42
C-10	36	5360-01-321-3848	19206	11580275
C-10	37	1015-00-561-2002	19206	7309159
C-10	38	5305-00-852-3731	96906	MS51023-28
C-10	39	1015-00-714-4229	19206	7144229
C-10	40	5305-00-013-2960	24617	132960
C-10	41	5360-01-322-0078	19206	11580277
C-10	42	5360-01-321-3849	19206	11580276
C-10	43	5365-00-714-4129	19207	7144129
C-11	1	5315-00-714-4052	19204	7144052
C-11	2	5305-00-059-4845	96906	MS51977-64
C-11	3		19204	7144231
C-11	4	5310-00-714-4050	19204	7144050
C-11	5	5340-00-714-4174	19206	7144174
C-11	6	5310-00-834-8734	96906	MS35691-37
C-11	7	5305-00-723-9388	96906	MS51963-62
C-11	8	5315-00-714-4049	19204	7144049
C-12	1	5305-00-714-4041	19206	7144041
C-12	2	5340-00-714-4109	19206	7144109
C-12	3	5340-00-714-4038	19206	7144038
C-12	4	5310-00-714-4040	19204	7144040
C-12	5		19204	7144175
C-12	6	5305-00-724-6816	96906	MS51965-64
C-12	7	5315-00-714-4042	19204	7144042
C-12	8	5365-00-714-4039	19206	7144039
C-12	9	5360-00-055-2830	19206	8769347
C-12	10	3110-00-198-1050	96906	MS19060-4814
C-13	1	5305-00-983-5346	96906	MS16997-78
C-13	2	3040-00-714-4138	19206	7144138
C-13	3	5315-00-823-8735	96906	MS16555-49
C-13	4	1015-00-714-4190	19206	7144190
C-13	5	5310-00-714-4063	19204	7144063
C-13	6	3040-00-714-4184	19206	7144184
C-13	7	3040-00-714-4136	19206	7144136
C-13	8	5305-00-958-5245	96906	MS35190-288
C-13	9	5310-00-714-4044	19206	7144044
C-13	10	5365-00-714-4045	19206	7144045
C-13	11	5315-00-843-7986	96906	MS16562-33
C-13	12	1015-00-714-4227	19206	7144227
C-13	13	5310-00-714-4062	19204	7144062
C-13	14	3040-00-714-4183	19206	7144183
C-13	15	5305-00-728-6308	96906	MS51966-48
C-13	16	5340-00-767-3160	19206	8765630

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
C-14	1		19204	7144126
C-14	2	5365-00-714-4060	19206	7144060
C-14	3	5365-00-714-4061	19206	7144061
C-14	4	5310-00-714-4127	19204	7144127
C-14	5		19204	7144114
C-15	1	5315-00-857-3258	96906	MS16562-145
C-15	2		81348	WWP471-ACAAAA
C-15	3	5330-00-714-4034	19206	7144034
C-15	4		19206	7144107
C-15	5		19206	7144108
C-15	6	5306-00-182-5196	19206	7144036
C-15	7	5340-00-465-5965	19206	7144035
C-15	8	5310-00-402-4437	19206	7144037
C-15	9		19204	7148538
C-16	1	3120-00-824-4495	19206	7144068
C-16	2	1015-00-714-4187	19206	7144187
C-16	3		19204	7144186
C-17	1	5310-00-096-6649	19206	11578492
C-17	2	5310-00-714-4078	19206	7144078
C-17	3	1015-00-719-1546	19206	7191546
C-17	4	5330-01-160-4329	81349	M83461/1-429
C-17	5	1015-00-714-6406	19206	7146406
C-18	1	5305-00-983-6671	96906	MS16998-59
C-18	2		19206	11578491
C-19	1		19204	7144259
C-19	2	5340-00-714-8044	19206	7148044
C-19	3	5315-01-057-0011	19206	7185938
C-20	1	1015-00-714-4207	19206	7144207
C-20	2	1015-00-714-4208	19206	7144208
C-20	3	1015-00-714-4205	19206	7144205
C-20	4	5340-00-714-4206	19206	7144206
C-20	5	5310-00-714-4082	19204	7144082
C-20	6		19204	7145418
C-20	7	5315-00-714-4155	19206	7144155
C-20	8	5360-00-714-4150	19206	7144150
C-20	9	5340-00-714-4210	19206	7144210
C-20	10	1015-00-714-4209	19206	7144209
C-20	11	1015-00-714-4152	19206	7144152
C-20	12	5360-00-714-4149	19206	7144149
C-20	13	5340-00-714-4153	19206	7144153
C-20	14	5305-00-978-9354	96906	MS16997-44
C-20	15	5305-00-978-9396	96906	MS16997-101
C-20	16	5315-00-810-3704	96906	MS16562-80
C-20	17	5305-00-978-9394	96906	MS16997-99
C-21	1		19204	7148581
C-21	2	4020-00-714-4266	19206	7144266
C-21	3	5340-00-723-5790	19206	7235790
C-21	4	4730-00-221-2136	96906	MS20913-1S
C-22	1	6650-00-823-5612	19200	8588780
C-22	2	1240-00-181-4806	19200	10559699
C-23	1	5305-00-054-5646	96906	MS51957-12

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
C-23	2	4010-01-291-9341	19200	10512999
C-23	3	5365-00-893-5885	19200	8587298
C-23	4	1240-00-892-5517	19200	8588791
C-23	5		19200	8588806
C-23	6		19200	10548042-1
C-23	7	5305-00-716-8035	96906	MS51974-1
C-23	8	3040-00-520-6438	19200	5206438
C-23	9	5310-00-616-3555	96906	MS35333-71
C-23	10	5305-00-054-6653	96906	MS51957-29
C-24	1	6230-00-460-4715	19200	8579669
C-24	2	5999-00-186-0058	19200	11731197
C-24	3		19200	MS51608-3
C-25	1	5340-01-177-9217	19200	11785403
C-25	2	5330-00-250-0224	96906	MS29513-020
C-25	3		19200	11785406
C-26	1	1015-00-857-0421	19206	8768698
C-26	2	1015-00-615-7208	19207	6157208
C-27			19206	8429878
C-27	1	1010-00-723-8501	19206	7238501
C-27	2	1010-00-502-5272	19206	5025272
C-28		5180-00-713-2546	19204	5910503
C-28	1	4933-00-633-1388	19206	7309790
C-28	2	5120-00-277-9076	19207	5218469
C-28	3		19204	7144741
C-28	4	5120-00-546-5934	19206	7309236
C-28	5	4933-00-896-9039	19206	8768214

APPENDIX D
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE. This appendix lists expendable and durable items you will need to maintain the M30 4.2-inch mortar. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

D-2. EXPLANATION OF COLUMNS.

a. *Column (1) - Item Number.* This number is assigned to the entry in the listing for referencing when required (e.g., "Use cleaning compound, item 10, app D").

b. *Column (2) - Level* This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew
0- Unit Maintenance
F - Direct Support Maintenance

c. Column (3) - National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. *Column (4) - Description.* Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Contractor and Government Entity Code (CAGEC) in parenthesis followed by the part number.

e. *Column (5) - Unit of Measure (U/M)/Unit of Issue (U/I).* This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue as shown in the Army Master Data File (AMDF), requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) (U/M)/ (u/l)
1	C	6810-00-201-0906	ALCOHOL, DENATURED (81348) OE-760	PT
2	O	8135-00-292-9719	BARRIER MATERIAL: greaseproofed, waterproofed, flexible (81349) MIL-B-121 36 in. x 100 yd	RO

SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (CONT)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) (U/M)/ (U/I)
3	C	6135-00-120-1020	BATTERY, DRY TYPE BA-30 (96906)MS75059	EA
4	C	6135-00-930-0030	BATTERY, DRY TYPE BA-3030U (81349) MIL-B-18	EA
5	O	N/A (SMR CODED XB)	BOX, WOOD: NAILED AND LOCKCORNERED (81348) PPP-B-621 7.40 X 4.00 X 1/5 FT	EA
6	C	7920-00-205-2401	BRUSH, CLEANING, TOOL AND PARTS: CHINESE BRISTLE, RD (81349) MILS43871	EA
7	C	8020-00-242-7266	BRUSH, PAINT: 3 IN. SIZE (96906) MS16866	EA
8			CLEANING COMPOUND, OPTICAL LENS: LIQUID (81349) MIL-C-43454	
	C	6850-00-227-1887	1-QT BOTTLE	QT
	C	6850-00-392-9751	2-OZ BOTTLE	OZ
9			CLEANING COMPOUND, RIFLE BORE: (RBC)SOLUTION TYPE (81349) MIL-C-372	
	C	6850-00-224-6657	8-OZ CAN	OZ
	C	6850-00-224-6663	1 GAL. CAN	GL
10	C	5350-00-221-0872	CLOTH, ABRSIVE: CROCUS (81349) P-C-458 50-SHEET PACKAGE	SH
11	O	8135-00-989-9889	CUSHIONING MATERIAL: CELLULOSE (81348) PPP-C-483 20 IN. X 50 FT	RO

SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (CONT)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) (U/M)/ (U/I)
12	C	6850-00-281-1985	DRY CLEANING SOLVENT (SD) (81348) P-D-680 1-GAL. CAN	GL
13	C	8010-00-297-2124	ENAMEL: OLIVE DRAB (96906)MS35530-2 1-GAL. CAN	GL
14	C	8415-00-823-7457	GLOVES, CHEMICAL AND SOLVENT RESISTANT (TYPE 3) (81348) ZZ-G-381	PR
15	C	9150-01-197-7689	GREASE, AUTOMOTIVE AND ARTILLERY (GAA) (81349) MIL-G-10924 6.5-LB CAN	LB
16	C	6240-00-635-9800	LAMP, INCANDESCENT (96906) MS510608-3	EA
17	C	9150-00-231-2361	LUBRICATING OIL, GENERAL PURPOSE (81349) MIL-L-3150	QT
18	C	9150-00-292-9689	LUBRICATING OIL, WEAPONS (LAW) (81349) MILL14107 1-QT CAN	QT
19	C	8010-01-229-7540	PAINT, BLACK (CARC) (81349) MIL-C-53039	QT
20	C	8010-01-229-7546	PAINT, GREEN (CARC) (81349) MIL-C-53039	QT
21	C	6640-00-663-0832	PAPER, LENS: TISSUE, SHEET FORM (81348) NNNP40	EA
22	C	8010-01-193-0516	PRIMER, COATING (CARC) (81349) MIL-P-53022	KT

SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (CONT)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) (U/M)/ (U/I)
23	C	7920-00-205-1711	RAG, WIPING (58536) A-A-531 50-LB BALE	LB
24	O	7510-00-297-6655	TAPE, PRESSURE SENSITIVE ADHESIVE: PAPERBACK, WATER RESISTANT (81348) PPP-T-76 2-IN. WIDE X 120-YD ROLL	YD
25	O	7510-00-266-6712	TAPE, PRESSURE SENSITIVE ADHESIVE (81348) PPP-T-42 1-IN. WIDE X 60-YD ROLL	YD
26	C	8010-00-181-8080	THINNER (CARC) (81349) MIL-T-81772	GL

APPENDIX E
MANDATORY REPLACEMENT PARTS LIST

Section I. INTRODUCTION

E-1. SCOPE. This appendix lists mandatory replacement parts you will need to operate and maintain the mortar.

E-2. EXPLANATION OF COLUMNS.

a. *Column (1) - /tern Number.* This number is assigned to the entry in the listing and is referenced in the maintenance initial setup instructions to identify the item (e.g., Gasket (item 4, app E)).

b. *Column (2) - Description.* Indicates the Federal item number and, if required, a description to identify the item.

c. *Column* (3) - Part *Number.* Indicates the part number assigned to the item.

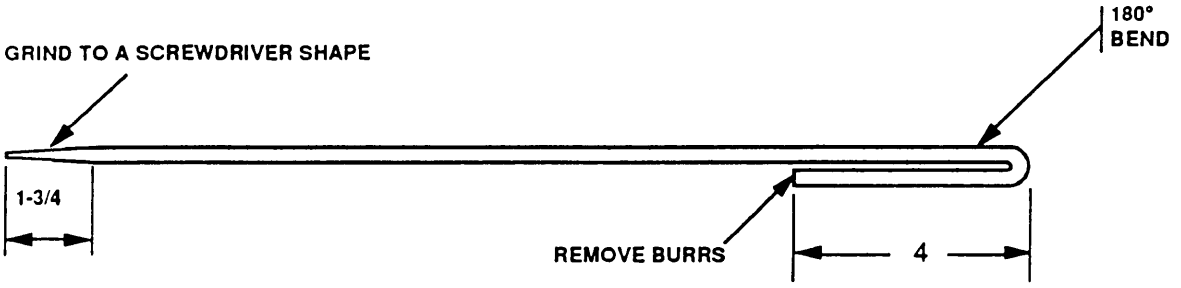
Section II MANDATORY REPLACEMENT PARTS LIST

(1) ITEM NUMBER	(2) DESCRIPTION	(3) PART NUMBER
1	Felt washer	7144063
2	Felt washer	7144082
3	Gasket	7144012
4	Gasket	7144043
5	Plain solid disc	8765630
6	Preformed gasket	7144055
7	Preformed packing	MS28775-429
8	Preformed packing	7144006
9	Preformed packing	7144064
10	Shim	7144045
11	Shim	7144051

APPENDIX F
ILLUSTRATED LIST OF MANUFACTURED ITEMS

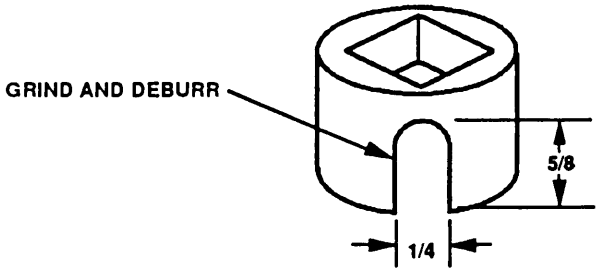
F-1. INTRODUCTION. This appendix includes complete instructions for making items authorized to be manufactured at direct support maintenance.

F-2. MATERIAL. All bulk materials needed for manufacture of an item are listed on the illustration.



NOTE:
1 FABRICATE FROM 28 INCHES LONG X 3/8 INCHES DIAMETER MILD STEEL ROD NSN 9510-00-596-2068 OR EQUIVALENT.

Figure F-1. Special screwdriver.



NOTE:
1 FABRICATE FROM 9/16 SOCKET, 1/2 DRIVE, NSN 5120-00-189-7932.

2 ALL DIMENSIONS ARE IN INCHES.

Figure F-2. Torque Adapter

ALPHABETICAL INDEX

ALPHABETICAL INDEX (CONT)

By Order of the Secretary of the Army:

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

Official:

MILTON H. HAMILTON
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TEAR ALONG PERFORATED LINE

METRIC CHART

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 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

1 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 Centimerers = 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 Farenheit is equivalent to 100 Celsius
90 Farenhiet is equivalent to 32.2 Celsius
9/5 C +32 = F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centermiters	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	
Cubic Yards	Cubic Meters	
Fluid Ounces	Milliliters	
Pints	Liters	
Quarts	Liters	
Gallons	Liters	
Ounces	Grams	
Pounds	Kilograms	
Short Tons	Metric Tons	
Pound-Feet	Newton-Meters	
Pounds Per Square Inch	Kilopascals	
Miles per Gallon	Kilometers per Liter	
Miles per Hour	Kilometers per Hour	

TO CHANGE	TO	MULTIPLY BY
Centemiters	Inches	
Meters	Feet	
Meters	Yards	
Kilometers	Miles	
Squarae Centimeters	Square Inches	
Square Meters	Square Feet	
Square Meters	Square Yards	
Square Kilometers	Square Miles	
Square Hectometers	Acres	
Cubic Meters	Cubic Feet	
Cubic Meters	Cubic Yards	
Millileters	Fluid Ounces	
Liters	Pints	
Liters	Quarts	
Liters	Gallons	
Grams	Ounces	
Kilograms	Pounds	
Metric Tons	Short Tons	
Newton-Meters	Pound-Feet	
Kilopascals	Pounds per Square Inch	
Kilometers per Liter	Miles per Gallon	
Kilometers per Hour	Miles per Hour