

**TECHNICAL MANUAL**

**OPERATOR, ORGANIZATIONAL, DIRECT  
SUPPORT AND GENERAL SUPPORT  
MAINTENANCE MANUAL**

**TOPOGRAPHIC SUPPORT SYSTEM  
DISTRIBUTION SECTION  
MODEL ADC-TSS-3  
NSN: 6675-01-105-5733**

**This manual supersedes TM 5-6675-315-14, 30 June 1983.**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**29 MARCH 1985**



**WARNING**

HIGH VOLTAGE is used in this equipment. DEATH ON CONTACT or severe injury may result if personnel fail to observe safety precautions.

Do not be misled by the term LOW VOLTAGE. Low voltage can cause serious injury or death.

Test procedures requiring the operator or maintenance personnel to investigate equipment or restore casualties with interlocks disconnected or covers removed may result in DEATH ON CONTACT if personnel fail to observe safety precautions.

Voltages in switches and circuit breaker panels may result in DEATH ON CONTACT if personnel fail to observe safety precautions.

Failure to ground the Section or equipment may result in DEATH ON CONTACT if personnel fail to observe safety procedures.

For Artificial Respiration refer to FM 21-11.

**WARNING**

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C).

For Artificial Respiration refer to FM 21-11.

**WARNING**

Rotating and spinning equipment may snag loose clothing, hair or jewelry resulting in SEVERE PERSONNEL INJURY.

**WARNING**

Attempting to move overweight or top-heavy equipment that is unsecured may result in SEVERE PERSONNEL INJURY. Always have sufficient personnel and equipment to accomplish the task.

**WARNING**

Ensure power switch for equipment is OFF prior to turning any circuit breaker ON or OFF.

Change

No. 4

**Operator's, Unit, Direct Support and General Support  
Maintenance Manual  
Topographic Support System  
Distribution Section, Model ADC-TSS-3  
(NSN 6675-01-064-1941) (EIC: YTL)**

**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. We'd prefer that you submit your recommended changes electronically, either by e-mail (AMSEL-LC-LEO-PUBS-CHG@mail1.monmouth.army.mil) or online (<http://edm.monmouth.army.mil/pubs/2028.html>). Alternatively, you may mail or fax your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in back of this manual to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LEO-E-ED, Fort Monmouth, NJ 07703-5006. The fax number is 732-532-3421, DSN 992-3421.

In any case, we will send you a reply.

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TM 5-6675-315-14, dated 29 March 1985, is changed as follows:

1. Title of manual is changed as shown above.
2. Appendix B., Maintenance Allocation Chart, has been revised to implement Army Maintenance Transformation and changes the Maintenance Allocation Chart (MAC) to support Field and Sustainment Maintenance. Because the entire Appendix is revised, no change bars/hands are used.

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NO. 3

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Operator, Organizational, Direct Support and  
General Support Maintenance Manual

**TOPOGRAPHIC SUPPORT SYSTEM  
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MODEL ADC-TSS3  
NSN: 6675-01-105-5753**

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Operator, Organizational, Direct  
Support and General Support  
Maintenance Manual

TOPOGRAPHIC SUPPORT SYSTEM  
DISTRIBUTION SECTION  
MODEL ADC-TSS-3  
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WASHINGTON, D.C., 27 August 1986

Operator, Organizational, Direct  
Support and General Support  
Maintenance Manual

TOPOGRAPHIC SUPPORT SYSTEM  
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**Operator, Organizational, Direct Support  
and General Support Maintenance Manual**

**TOPOGRAPHIC SUPPORT SYSTEM  
DISTRIBUTION SECTION  
MODEL ADC-TSS-3  
NSN: 6675-01-105-5753**

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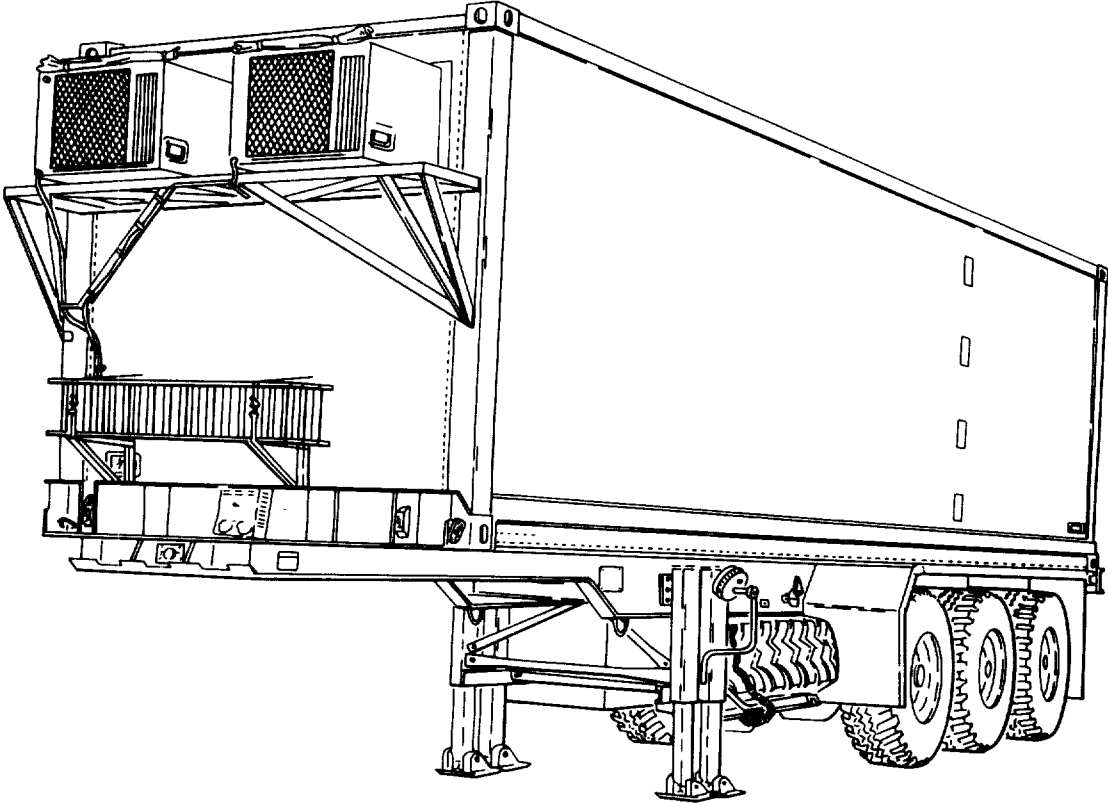
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## CHAPTER 1

## DISTRIBUTION SECTION

## Section I INTRODUCTION

**1-1. GENERAL INFORMATION.**

1-1.1 Scope. This manual contains operating and maintenance instructions for the ADC-TSS-03, Distribution Section, Topographic Support System (TSS). The purpose of the Distribution Section is to maintain and issue standard map products from a limited stock and to dispose of obsolete map products. The trailer chassis is covered in TM 5-2330-305-14, Operator, Organizational, Direct Support and General Support Maintenance Manual, Topographic Support System, Chassis, Semitrailer, ISO Container Transporter. Repair parts and special tools are listed in TM 5-6675-31524P, Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List, Distribution Section, Topographic Support System. Lubrication instructions are contained in LO 5-6675-315-12, Lubrication Order, Distribution Section, Topographic Support System. All authorized equipment, supplies, and their locations for transport are shown in Location and Description of Major Components.

1-1.2 Purpose of Equipment. To provide a transportable facility for maintenance and issue of standard map products from limited stock and disposal of obsolete map products.

1-1.3 Maintenance Forms and Records. 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 (TAMMS).

1-1.4 Reporting Equipment Improvements (EIR's). If the Distribution Section needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at: U.S. Army Troop Support Command, ATTN: ARSTR-QX, 4300 Goodfellow Blvd, St Louis, MO 63120. We will send you a reply.

1-1.5 Destruction of Material to Prevent Enemy Use. For information on destruction of materiel to prevent enemy use, refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use.

1-1.6 Preparation for Storage or Shipment.

- a. Perform your preparation for movement procedures.
- b. For administrative storage of equipment, refer to TM 740-90-1.
- c. The chapters of this manual describe special shipping instructions for major components located in this section.
- d. In the event individual items of equipment must be removed for repair or replacement, contact your battalion for packing and shipping instructions.

1-1.7 Hand Receipt (-HR) Manual. This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). TM 5-6675-315-14-HR consists of preprinted hand receipts (DA Form 2062) that list end item-related equipment (i.e., Components of End Item, Basic Issue Items, and Additional Authorization Lists) for which you must account. As an aid to property accountability, additional -HR manuals may be requisitioned from the following source in accordance with procedures in Chapter 3, AR 310-2: The US Army Adjutant General Publications Center, 2800 Eastern Blvd, Baltimore, MD 21220.

## **1-2. EQUIPMENT DESCRIPTION.**

### 1-2.1 Equipment Characteristics, Capabilities, and Features.

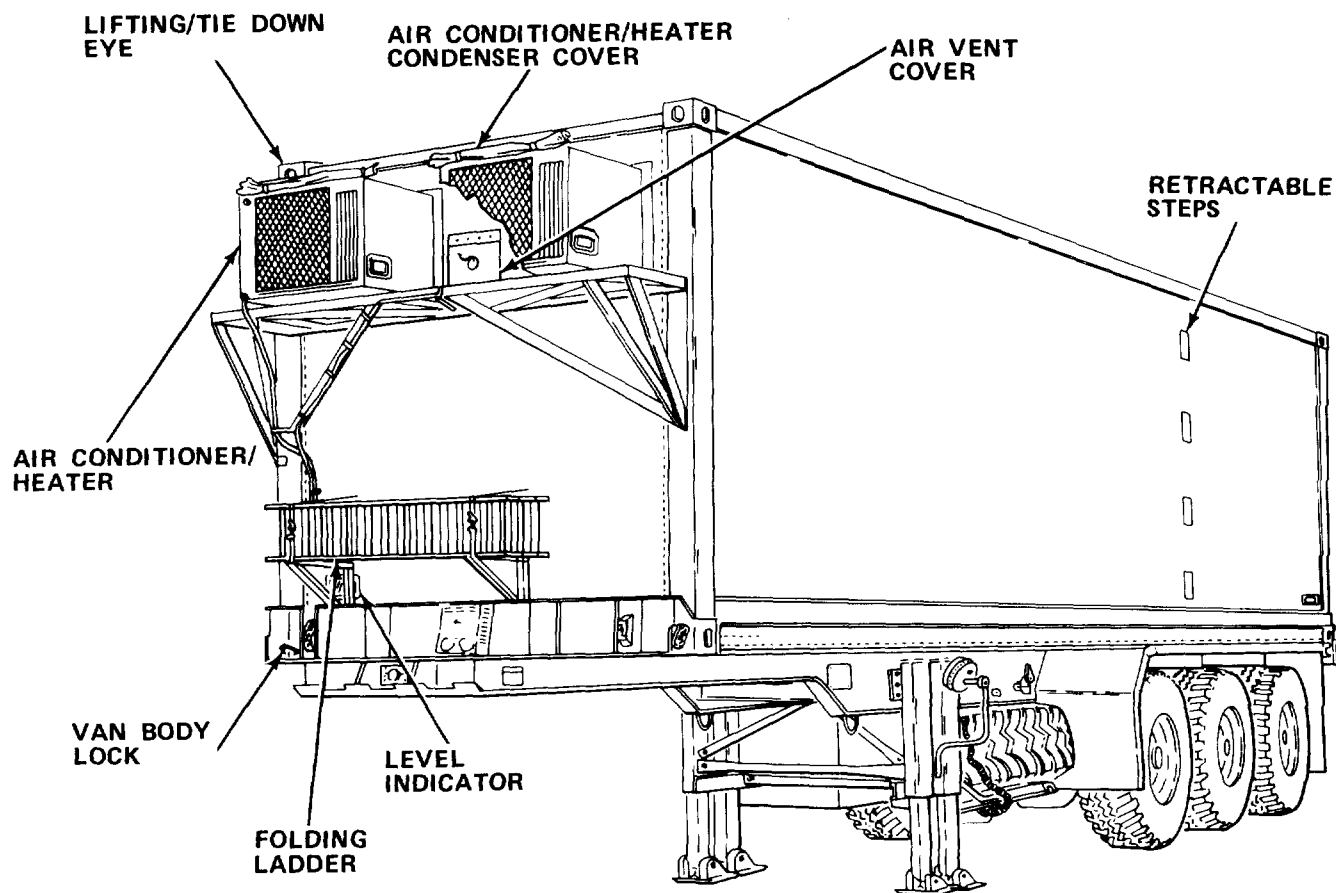
- a. Air and sea transportable.
- b. Transportable cross-country capability when mounted on chassis.
- c. Controlled internal environment.

### 1-2.2 Special Considerations.

- a. Site must permit section to be leveled within +2°, be well drained, and provide adequate overhead concealment. Wooded areas and other obstacles must not impede movement of tractor/transporters.
- b. Dispersal of topographic sections is limited to the length of electric power transmission cable available for unit generators.
- c. During site selection, avoid overhead power transmission lines to prevent danger from electric shock or electromagnetic interference.
- d. Power is normally supplied by 60 kW generators. Commercial electric power should be used if it is compatible and available.
- e. Cross-country capability of sections and transporters is limited. Relocation should be accomplished over hard-surfaced, all-weather roads whenever possible.

1-2.3 Location and Description of Major Components.

a. Roadside exterior.



VAN BODY LOCK. Locks van body to trailer chassis.

AIR CONDITIONERS/HEATERS. Two air conditioner/heater units for internal environmental control.

LIFTING/TIE-DOWN EYE. Attachment point for lifting or tying down section.

AIR CONDITIONER/HEATER CONDENSER COVER. Covers air conditioner/heater condenser to prevent water/air entering air conditioner/heater unit when in transport or storage.

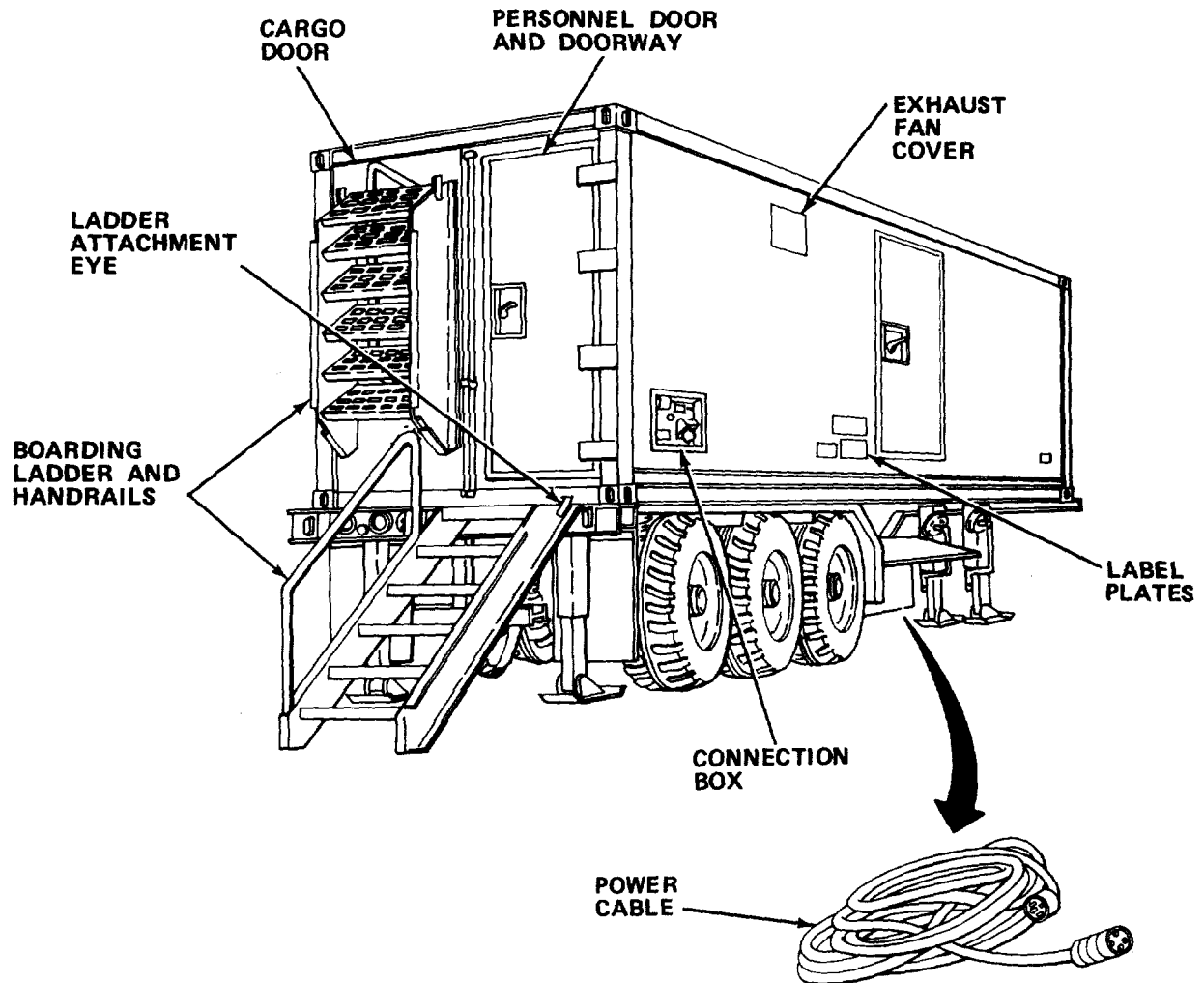
AIR VENT COVER. Covers air vent opening.

RETRACTABLE STEPS. Provide access to roof.

LEVEL INDICATOR. Indicates section inclination.

FOLDING LADDER. Allows access to air conditioners and top of section.

b. Curbside exterior.



**CARGO DOOR.** Access for equipment removal/installation.

**PERSONNEL DOORS.** Door is 35.75 in.(90.8 cm) wide by 86 in.(218.4 cm) high.

**LADDER ATTACHMENT EYES.** Attachment points for boarding ladder.

**EXHAUST FAN COVER.** Covers exhaust fan opening.

**LABEL PLATES.** Weight/moment data.

**POWER CABLE.** Power cable is in 50 ft (15.2 m) sections. (Stored in trailer chassis storage box.)



CONNECTION BOX. Contains terminals for grounding cable, power cables, and telephone lines.

PERSONNEL DOORWAYS. Doorway is 30.75 in.(90.8 cm) wide by 78.5 in.(199.4 cm) high.

BOARDING LADDERS AND HANDRAILS. Provide access to section.

c. Interior.

PERSONNEL DOOR. Weatherproof door fitted with blackout switch.

BLACKOUT SWITCH. Turns ceiling lights off when activated.

FIRST AID KIT. Limited first aid supplies.

CARGO DOOR. Access for equipment installation/removal.

SHELF. Storage.

FOLDING CHAIR. Additional seating.

BLACKOUT LIGHT. Red-lensed, 12 V ac light actuated when blackout switch operates.

DOMELIGHT. White-lensed, 12 V dc light powered from external power source.

FLUORESCENT CEILING LAMP. White, two-level (high/low) overhead light.

TELEPHONE. Communication terminal.

DESK. Work station.

CHAIR. Used at desk work station.

EMERGENCY LIGHTS. Battery-powered lighting actuated by power failure.

AIR CONDITIONERS/HEATERS. Internal environmental control.

AIR VENT. Permits filtered make-up air to enter van body.

WALL STORAGE CABINET. Storage.

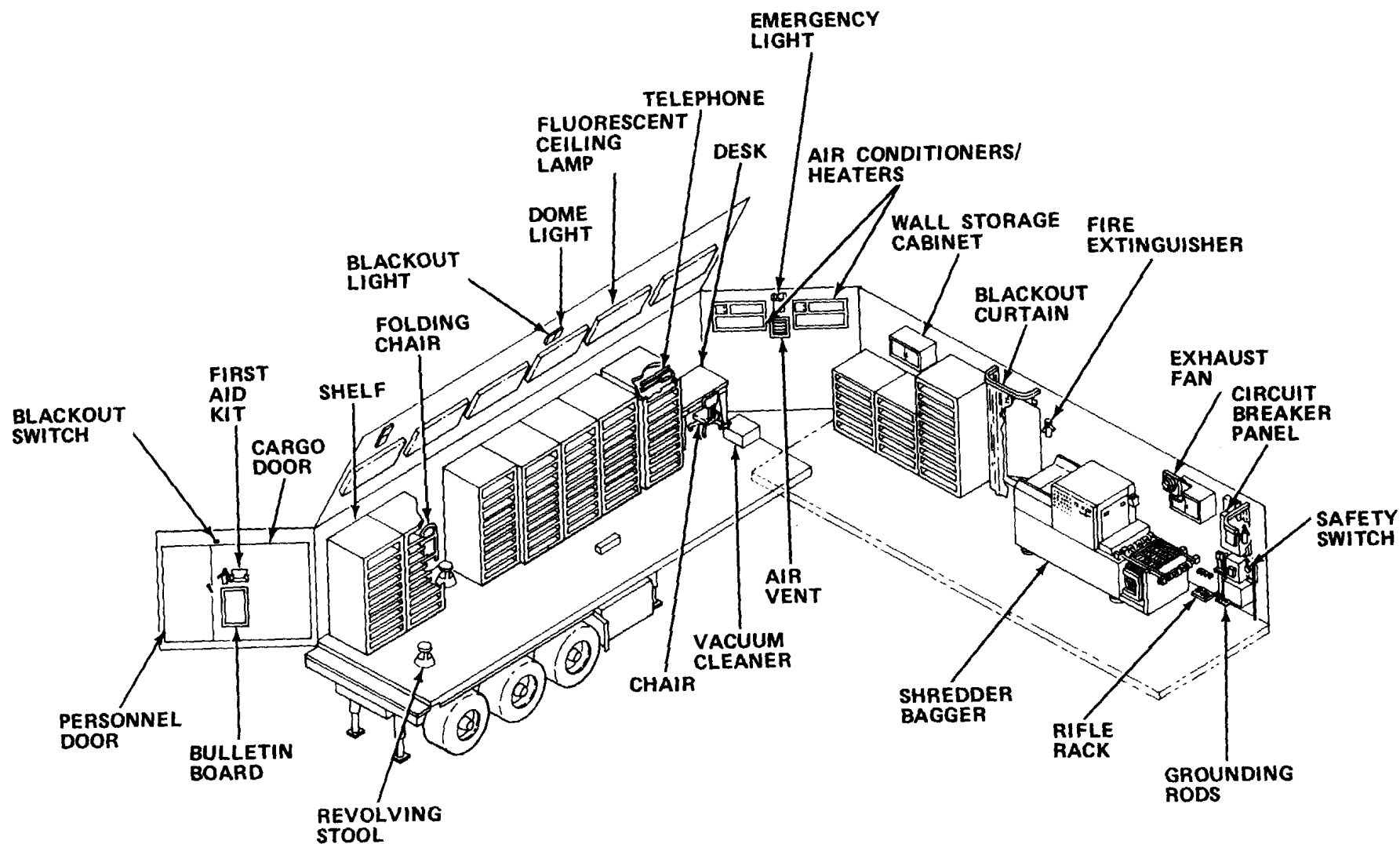
BLACKOUT CURTAIN. Lightproof cover for personnel door.

FIRE EXTINGUISHER. Dry-chemical fire extinguisher.

EXHAUST FAN. Provides ventilation. Fitted with lightproof louvers and weatherproof cover.

CIRCUIT BREAKER PANEL. Circuit breakers with phase test indicator.

SAFETY SWITCH. Main power safety disconnect switch.



GROUNDING ROD. Electrical ground for van body.

RIFLE RACK. Weapon storage.

SHREDDER-BAGGER. Shreds paper products and bags waste.

VACUUM CLEANER. Cleaning equipment.

REVOLVING STOOL. Adjustable height.

BULLETIN BOARD. Notice posting.

1-2.4 Equipment Data - ISO Container (Unmounted).

Dimensions

Length	33.66 ft (10.26 m)
Width	8 ft (2.44 m)
Height	8 ft (2.44 m)

Cubage	2154 cu ft (61.1 cu m)
--------	------------------------

Connections

Telephones	One Telephone (Three-Post) Connection
------------	---------------------------------------

Dimensions

Power	20.8 kW. One 120/208 V, Three-phase, Four-Wire Connection and One 12 V dc Tractor to Container Connector
-------	--

Ground	Ground Lug
--------	------------

Air Conditioner/Heater (Two Units)

Cooling	18,000 Btu/hr (5274 W) Each
---------	--------------------------------

Heating	14,300 Btu/hr (4190 W) (Max) Each
---------	--------------------------------------

Power Requirements	208 V, 60 Hz, Three-Phase
--------------------	---------------------------

Exhaust Fan

289 ft <sup>3</sup> /mjn (8.18 M <sup>3</sup> /min)
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Air Vent

289 ft <sup>3</sup> /min (8.18 M <sup>3</sup> /min)
--

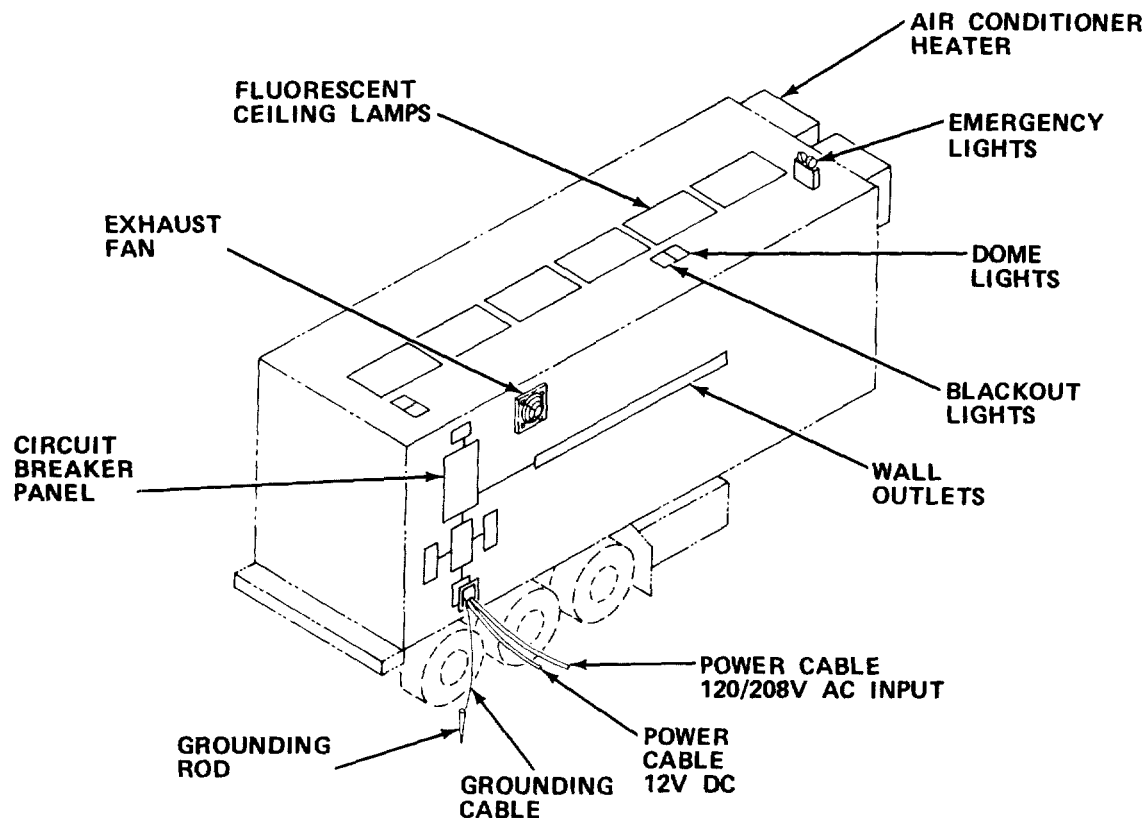
Weight

Gross (Container and Chassis)	30,330 lbs (13,754.66 kg)
Tare (Container Only)	18,890 lbs (8566.62 kg)

**1-3. TECHNICAL PRINCIPLES OF OPERATION.**

1-3.1 General. The operation of major components located within the section is explained in the appropriate chapter.

1-3.2 Electrical System.



GROUNDING ROD. Used to ground van body.

GROUNDING CABLE. Used with grounding rod.

CIRCUIT BREAKER PANEL. Contains voltage indicator, phase monitor, and circuit breakers.

WALL OUTLETS. Provide grounded outlets for portable or plug-in equipment.

EXHAUST FAN. Plug-in. Separately fused.

DOME LIGHTS. White-lensed, 12 V dc lights powered from external source. Plug in to operate. Separately switched and fused.

FLUORESCENT CEILING LAMPS. Two-level (high/low) overhead lights with blackout override switches.

EMERGENCY LIGHTS. Battery-powered. Activated by power loss.

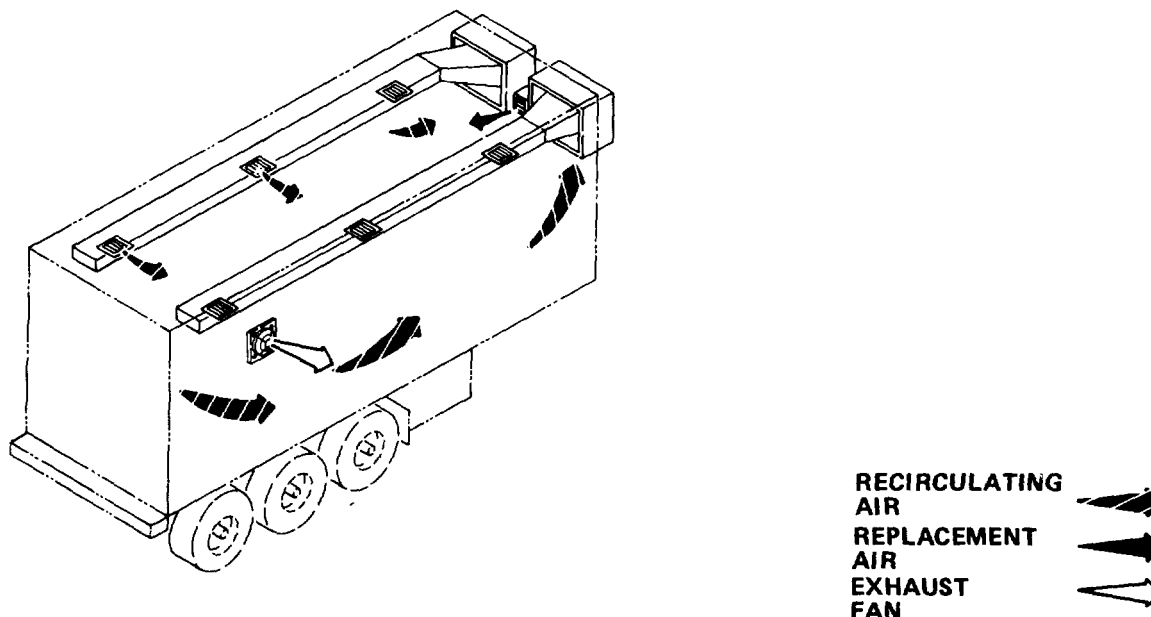
AIR CONDITIONER/HEATER. Air conditioner and electrical heater powered by three-phase, 208 V, 30 amp current.

BLACKOUT LIGHTS. Red-lensed, 12 V ac lights actuated when blackout switch operates.

POWER CABLES. (120/208 V ac and 12 V dc). Power input.

1-3.3 Wiring Diagram. A foldout wiring diagram is provided at the end of this manual.

1-3.4 Ventilation System.



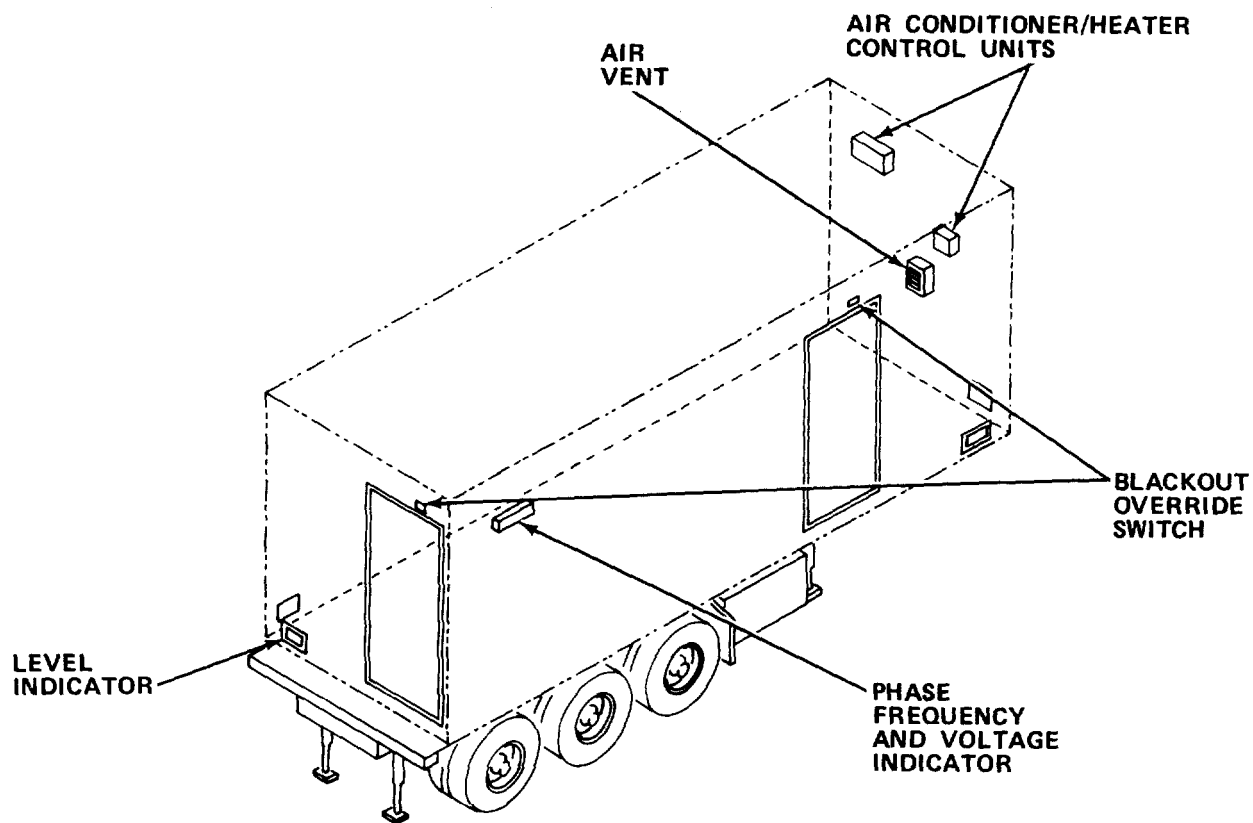
Exhaust fan exhausts air. Replacement air flows into the van body through the air vent filter. Recirculating air is filtered as it enters the air conditioners/heaters. From the air conditioners/heaters, it flows through the ceiling vents and into the van body.

**NOTE**

Detailed description of air conditioner/heater operation is contained in TM 5-4120-367-14, Operator, Organizational, Direct Support, and General Support Maintenance Manual, Air Conditioner, Horizontal, Compact, 18,000 Btu/hr Cooling, and TM 5-4120-367-24P, Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair) for Air Conditioner, Horizontal, Compact, 18,000 Btu/hr.

Section II OPERATING INSTRUCTIONS

1-4. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS.



Control or Indicator	Function
Air Vent	Permits make-up air to enter as required.
Air Conditioner/Heater Control Unit	Permits selection of air conditioner or heater mode of operation and temperature.
Blackout Override Switch	Turns off illumination when door is opened.

Control or Indicator	Function
Phase, Frequency, and Voltage Indicator	Monitors electrical power, phase, frequency, and voltage.
Level Indicators	Used to level van body.

**1-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.**

- a. Before You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.
- b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.
- c. After You Operate. Be sure to perform your after (A) PMCS.
- d. If Your Equipment Fails to Operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

**1-5.1 PMCS Procedures.**

- a. PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.
- b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.
- c. The "Equipment is Not Ready/Available If" column is used for identification ( conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.
- d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.
- e. Perform weekly as well as before operation if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.

f. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet in recording results of PMCS.

g. Interval columns. This column determines the time period designated to perform your PMCS.

h. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and sub-assemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

i. Equipment is not ready/available if: column. This column indicates the reason or cause why your equipment is not ready/available to perform its primary mission.

j. List of tools and materials required for PMCS is as follows:

<u>Item</u>	<u>Quantity</u>
Wire Brush	1 ea
6 in. Adjustable Wrench	1 ea
Flat Tip Screwdriver	1 ea
Vacuum Cleaner	1 ea
Cheesecloth (Item 3, Appendix E)	ar
General Purpose Detergent (Item 4, Appendix E)	ar
Paint (Items 10, 10A and 10B, Appendix E)	ar
Paint Brushes	ar

**Change 1 1-12**



Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

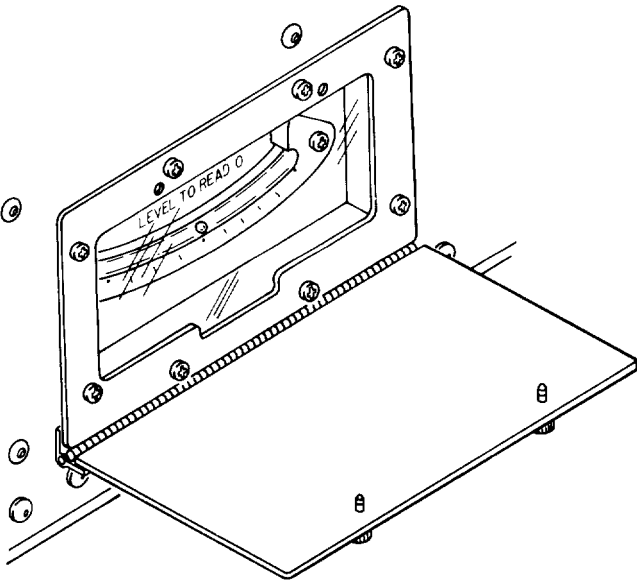
If the equipment must be kept in continuous operation, check and service only those items that can safely be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.'

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
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AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B/W	<p><b><u>VAN BODY</u></b></p> <p><u>Inspect Exterior.</u></p> <p>1. Inspect surfaces for punctures, cracks, or open seams that could permit moisture to enter wall.</p>  <p>2. Inspect four level indicators for damage and to be sure section is level.</p>	<p>Punctures, cracks, or open seams are present.</p> <p>Indicators are broken.</p>

**Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

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ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B	<p><b><u>VAN BODY - Cont</u></b></p> <p><b><u>Inspect Exterior - Cont</u></b></p> <p style="text-align: center;"><b><u>WARNING</u></b></p> <p style="text-align: center;">To prevent death or serious injury, do not handle or clean power cable or connectors when cable is connected to power source.</p> <p>3. Inspect power cable assembly for dirt, or damaged connectors.</p> <p>(a) Wipe cable insulation with clean, dry cloth to remove dirt.</p> <p>(b) Clean corrosion from terminals.</p> <div style="text-align: center;"> </div>	Connector damaged.

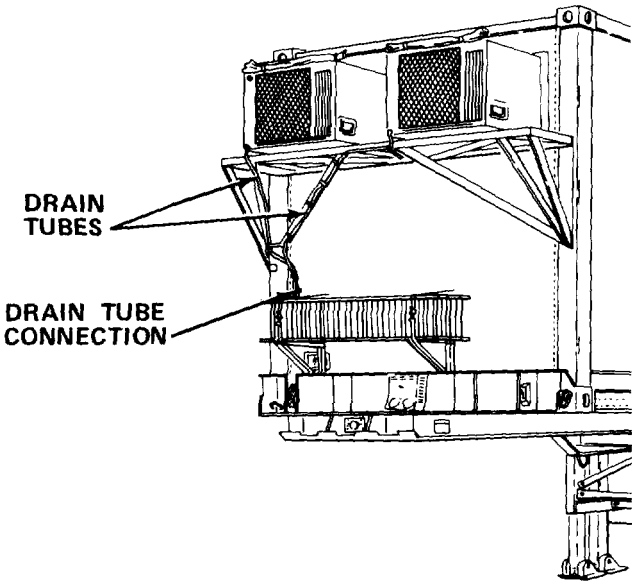
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ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B/W	<p><b><u>VAN BODY - Cont</u></b></p> <p><b><u>Inspect Exterior - Cont</u></b></p> <p>4. Inspect power entry panel for accumulated dirt, water, or corrosion.</p> <p style="padding-left: 40px;">Clean power entry panel.</p> <p>5. Inspect power entry panel to be sure any unused receptacles are covered.</p> <div style="text-align: center;">  </div> <p>6. Inspect air conditioner/heater drain tube to be sure tube is positioned as shown. Check for breaks and crimps in hose and check connections for damage or leakage.</p>	Missing covers.

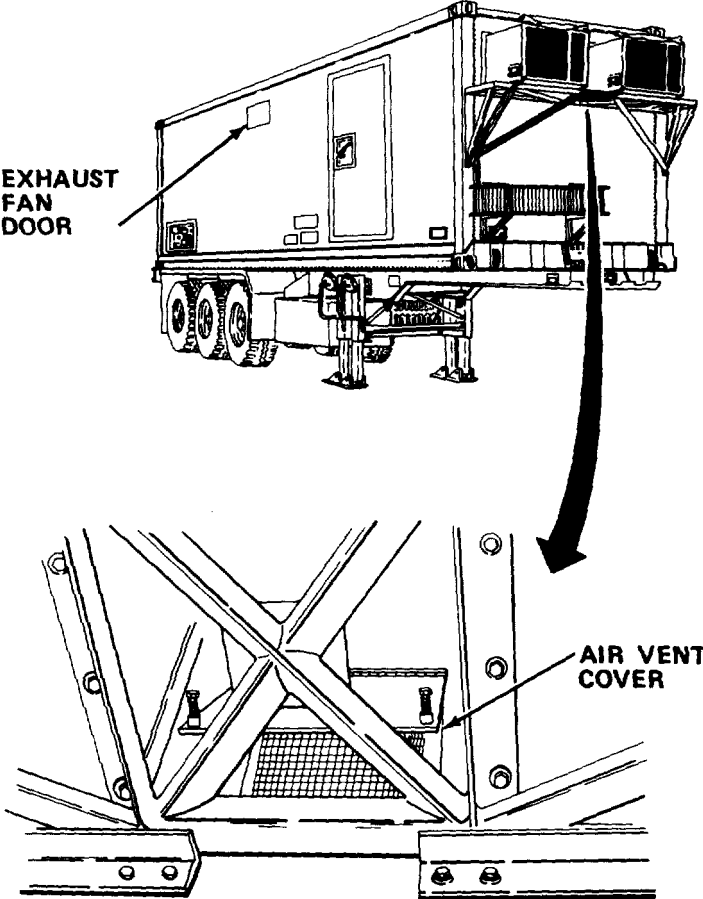
**Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

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ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B/W	<p><b><u>VAN BODY - Cont</u></b></p> <p><u>Inspect Exterior - Cont</u></p>  <p>7. Inspect exhaust fan door and air vent covers to be sure they are not blocked or clogged. Clean as required. Clean screen with vacuum cleaner as necessary.</p> <p>8. Visually inspect ground connections to be sure grounding cable is connected to terminal lug and grounding rod. If necessary, clean.</p>	Grounding connections are broken or missing.

**Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICE - Cont**

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 D - During  
 A - After

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 M - Monthly  
 Q - Quarterly

AN - Annually  
 S - Semiannually  
 BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1		<p><b><u>VAN BODY - Cont</u></b></p> <p><u>Inspect Exterior - Cont</u></p> <p style="text-align: center;"><u>WARNING</u></p> <p>Electrical shock hazard. Power cable must be de-energized before servicing entry panel connections. Death can result from failure to observe these safety precautions.</p> <ul style="list-style-type: none"> <li>a Turn power off to cable. Disconnect from power source.</li> <li>b Disconnect ground lug from grounding rod.</li> <li>c Clean lug, cable end, and rod with wire brush.</li> <li>d Reconnect grounding cable lug to rod.</li> <li>e Disconnect grounding cable end from entry panel.</li> <li>f Clean terminal and cable end with wire brush.</li> <li>g Reconnect grounding cable to entry panel.</li> <li>h Reconnect cable to power source. Turn power on.</li> </ul> <ul style="list-style-type: none"> <li>9. Inspect boarding ladders for:                             <ul style="list-style-type: none"> <li>a Secure attachment of handrails.</li> <li>b Steps not broken.</li> <li>c Locking pins in place.</li> </ul> </li> <li>10. Inspect front and rear van body locks to be sure locks are fully engaged.</li> </ul>	<p>Steps broken or will not lock in place.</p> <p>Lock dis-engaged.</p>

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ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	Q	<p><b><u>VAN BODY - Cont</u></b></p> <p><b><u>Inspect Exterior - Cont</u></b></p> <p>11. Inspect personnel door gaskets for leaks or <b>damage.</b></p>	
	W	<p>11.1 Inspect hinges for proper placement of hinge pins.</p> <p>12. Clean and paint blistered, pitted, or flaking areas and bare metal spots in accordance with instructions contained in TM 43-0139, Painting Instructions for Field Use.</p>	Missing hinge pins.
2	B/D	<p><b><u>Inspect Interior.</u></b></p> <p>1. Test emergency lights by pressing test button.</p>	Emergency lights do not light.
	W	<p>2. Inspect power cords and cables to be sure wires are not kinked, cut, or cracked.</p>	Wires or cables are cracked or cut.
	W	<p>3. Inspect plug connectors to be sure all plug connectors are tight and firmly seated. Tighten if necessary.</p>	
	D	<p>4. Inspect for burned out light bulbs and fluorescent tubes. Replace as required.</p>	
	W	<p>5. Inspect walls, ceilings, and floor for holes, open seams, or signs of seepage or leaks.</p>	Leaks are present.
	D	<p>6. Check storage cabinets for broken hinges, latches, and locks.</p>	Broken hinge/ latch/lock.
	B/M/A	<p>7. Inspect fire extinguishers. Be sure security seals are not broken.</p>	Fire extinguisher is missing or seals are broken.

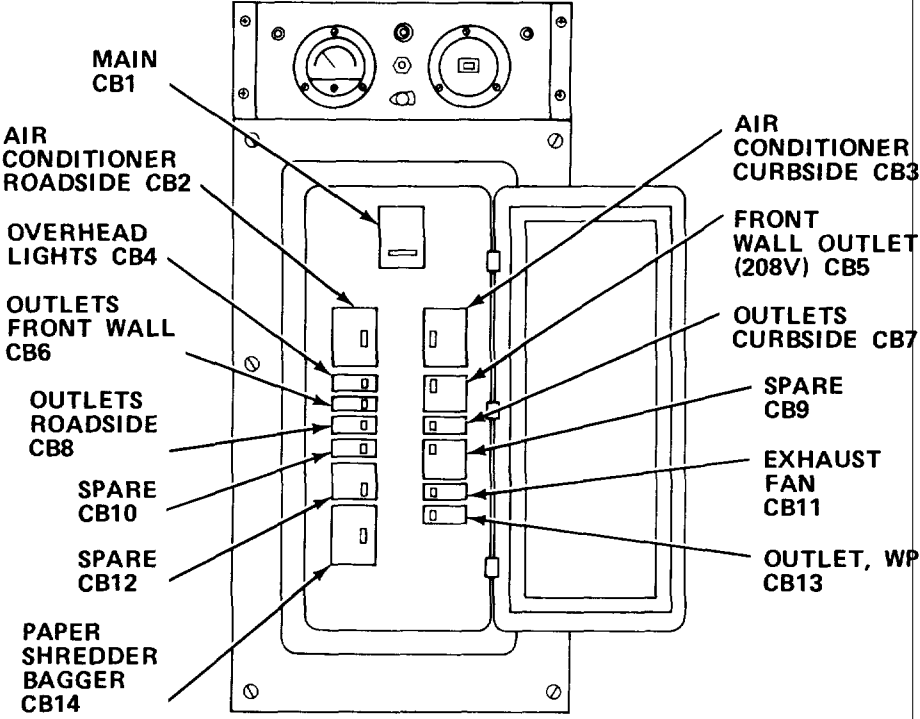
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ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
2	Q	<p><b><u>VAN BODY - Cont</u></b></p> <p><b><u>Inspect Interior - Cont</u></b></p> <p>8. Inspect circuit breaker panel.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Inspection is to be conducted on a not-to-interfere basis with work being conducted. Individual equipment will be inspected as directed by the appropriate chapter of this manual.</p> 	Circuit breaker is defective.

- Q a Set main circuit breaker to ON.
- b Set each circuit breaker to OFF, then ON.

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2	Q	<p><b><u>VAN BODY - Cont</u></b></p> <p><u>Inspect Interior - Cont</u></p> <p>9. Inspect light traps. a Turn on fluorescent lamps (high level).</p> <p>b Close entrance doors. Have exhaust fan and air vent open. Inspect for light leakage through vents.</p> <p>c Place light switches ON; blackout override switches OFF.</p> <p>d Open door and make sure internal lights go off.</p> <p>10. Inspect/Clean interior.</p> <p style="text-align: center;"><u>WARNING</u></p> <p style="text-align: center;">Death or serious injury may occur if wet or damp cloth is used to wipe or clean energized equipment, power cords, or cables.</p> <p style="text-align: center;"><u>CAUTION</u></p> <p style="text-align: center;">Do not sweep interior. Dislodged dirt or dust will ruin optical, electronic, and photographic equipment and supplies.</p> <p>a Wipe vertical and horizontal painted surfaces with cleaning cloth moistened with solution of general purpose detergent and fresh water until soil is removed from painted surfaces.</p>	<p>Light leaks are present.</p> <p>Blackout system inoperable.</p>



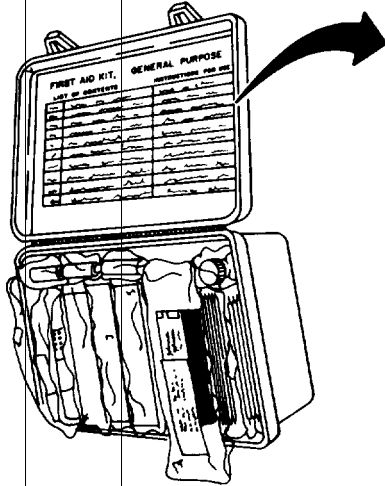
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	2	<p><b><u>VAN BODY - Cont</u></b></p> <p><b><u>Inspect Interior - Cont</u></b></p> <p>b Dry vertical and horizontal painted surfaces with clean cloth.</p> <p>c Vacuum interior of Section to remove dirt and waste. Pay particular attention to work stations.</p> <p>11. Inspect first aid kit.</p> <div style="display: flex; align-items: center; margin-top: 20px;">  <table border="1"> <thead> <tr> <th colspan="3" style="text-align: center;">FIRST AID KIT, GENERAL PURPOSE</th> </tr> <tr> <th style="text-align: center;">LIST OF CONTENTS</th> <th colspan="2" style="text-align: center;">INSTRUCTIONS FOR USE</th> </tr> </thead> <tbody> <tr> <td>3 ROLLS</td> <td>ADHESIVE TAPE, SURGICAL, 1"X1 1/2" YARDS</td> <td>USE FOR MINOR CUTS AND COLTWHING REPAIR</td> </tr> <tr> <td>18 EACH</td> <td>BANDAGE, ADHESIVE, 1"X3"</td> <td>MINOR CUTS, AS REQUIRED</td> </tr> <tr> <td>2 EACH</td> <td>BANDAGE, GAUZE, COMPRESSED, CAMOUFLAGED, 3"X6 YARDS</td> <td>CUT IN LENGTHS AS REQUIRED FOR BANDAGE INJURIES</td> </tr> <tr> <td>1 EACH</td> <td>BANDAGE, MUSLIN, COMPRESSED, CAMOUFLAGED, 3"X37/8" INCH</td> <td>USE FOR SLING</td> </tr> <tr> <td>1 PKG</td> <td>BLADE, SURGICAL PREPARATION RAZOR, STRAIGHT, SINGLE EDGE, 5/8"</td> <td>SHAVING HAIR AND OPENING WOUNDS AS REQUIRED</td> </tr> <tr> <td>1 PKG</td> <td>COMPRESS AND BANDAGE, CAMOUFLAGED, 2"X2", 1/4"</td> <td>FOR WOUNDS</td> </tr> <tr> <td>3 EACH</td> <td>DRESSING, FIRST AID, FIELD, 4X7 INCHES</td> <td>FOR LARGE WOUNDS, EXCESSIVE BLEEDING</td> </tr> <tr> <td>1 EACH</td> <td>FIRST AID KIT, EYE DRESSING</td> <td>FOR EYE WOUNDS, SEE INSTRUCTIONS</td> </tr> <tr> <td>1 PKG</td> <td>GAUZE, PETROLATUM, 3"X3", 3/8"</td> <td>FOR BURNS, APPLY PAD OVER BURN</td> </tr> <tr> <td>1 BTL</td> <td>POVIDONE, IODINE SOLUTION, 1/2 OUNCE</td> <td>AS DISINFECTANT AND CLEANSER OF CUTS AND WOUNDS, APPLY BEFORE BANDAGING</td> </tr> <tr> <td>1 EACH</td> <td>AMMONIA INHALANTS</td> <td>CRUSH INHALANT BETWEEN FINGERS. HOLD A FEW INCHES FROM NOSE, HOLD CLOSER AS AMMONIA GETS WEAKER. WHEN TOO WEAK, USE FRESH INHALANT.</td> </tr> <tr> <td>1 EACH</td> <td colspan="2">INSTRUCTION BOOKLET AND FIRST AID EXPLANATIONS</td> </tr> </tbody> </table> </div>	FIRST AID KIT, GENERAL PURPOSE			LIST OF CONTENTS	INSTRUCTIONS FOR USE		3 ROLLS	ADHESIVE TAPE, SURGICAL, 1"X1 1/2" YARDS	USE FOR MINOR CUTS AND COLTWHING REPAIR	18 EACH	BANDAGE, ADHESIVE, 1"X3"	MINOR CUTS, AS REQUIRED	2 EACH	BANDAGE, GAUZE, COMPRESSED, CAMOUFLAGED, 3"X6 YARDS	CUT IN LENGTHS AS REQUIRED FOR BANDAGE INJURIES	1 EACH	BANDAGE, MUSLIN, COMPRESSED, CAMOUFLAGED, 3"X37/8" INCH	USE FOR SLING	1 PKG	BLADE, SURGICAL PREPARATION RAZOR, STRAIGHT, SINGLE EDGE, 5/8"	SHAVING HAIR AND OPENING WOUNDS AS REQUIRED	1 PKG	COMPRESS AND BANDAGE, CAMOUFLAGED, 2"X2", 1/4"	FOR WOUNDS	3 EACH	DRESSING, FIRST AID, FIELD, 4X7 INCHES	FOR LARGE WOUNDS, EXCESSIVE BLEEDING	1 EACH	FIRST AID KIT, EYE DRESSING	FOR EYE WOUNDS, SEE INSTRUCTIONS	1 PKG	GAUZE, PETROLATUM, 3"X3", 3/8"	FOR BURNS, APPLY PAD OVER BURN	1 BTL	POVIDONE, IODINE SOLUTION, 1/2 OUNCE	AS DISINFECTANT AND CLEANSER OF CUTS AND WOUNDS, APPLY BEFORE BANDAGING	1 EACH	AMMONIA INHALANTS	CRUSH INHALANT BETWEEN FINGERS. HOLD A FEW INCHES FROM NOSE, HOLD CLOSER AS AMMONIA GETS WEAKER. WHEN TOO WEAK, USE FRESH INHALANT.	1 EACH	INSTRUCTION BOOKLET AND FIRST AID EXPLANATIONS		
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		<p>a Remove first aid kit from bracket.</p> <p>b Remove contents.</p> <p>c Inspect container for damage.</p> <p>d Inspect contents for damage. Then use checklist to inventory contents.</p> <p>e Replace damaged or missing items.</p> <p>f Repack kit.</p> <p>g Reinstall kit.</p>																																											

**Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

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ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
2	B/W	<p><b><u>VAN BODY - Cont</u></b></p> <p><u>Inspect Interior - Cont</u></p> <p>12. Inspect blackout curtains.</p> <p>a Inspect blackout curtains and valances for tears, missing hooks, or broken eyelets.</p> <p>b Inspect nylon hook and pile tape on curtain and wall for security of attachment.</p>	Curtains damaged.
3	B	<p><u>Inspect Air Conditioner/Heater.</u> Refer to TM 5-4120-367-14 for preventive maintenance checks and services.</p>	
4	M	<p><u>Service Power Cable.</u></p> <p style="text-align: center;"><b><u>WARNING</u></b></p> <p>Electrical shock hazard. Power cable must be deenergized before servicing. Death or serious injury can result from failure to observe this safety precaution.</p> <p>1. Turn off safety switch.</p> <p>2. Disconnect cable from power entry panel.</p> <p>3. Wrap any cuts or abrasions in cable with electrical insulation tape.</p> <p style="text-align: center;"><b><u>NOTE</u></b></p> <p>Check to be sure cable does not endanger personnel.</p> <p>4. Reconnect power cable to entry panel.</p>	

**1-6. OPERATION UNDER USUAL CONDITIONS.** Operation of the Distribution Section consists of activation of power after the Section has been located at the operation site and 12 V dc power disconnected.

1-6.1 Preparation for Use.

- a. Procedures for leveling.

**CAUTION**

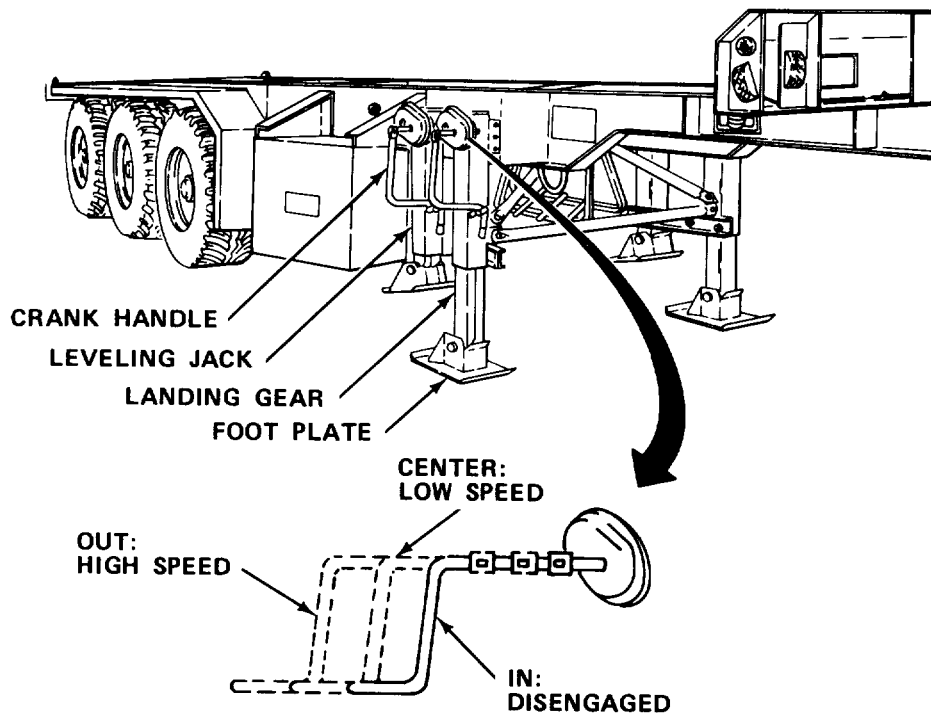
Trailer-mounted section must be on surface that is approximately level to avoid unnecessary stress or twisting of chassis when section is leveled.

**NOTE**

Snow or ice should be removed from under leveling foot plate before attempting to level section.

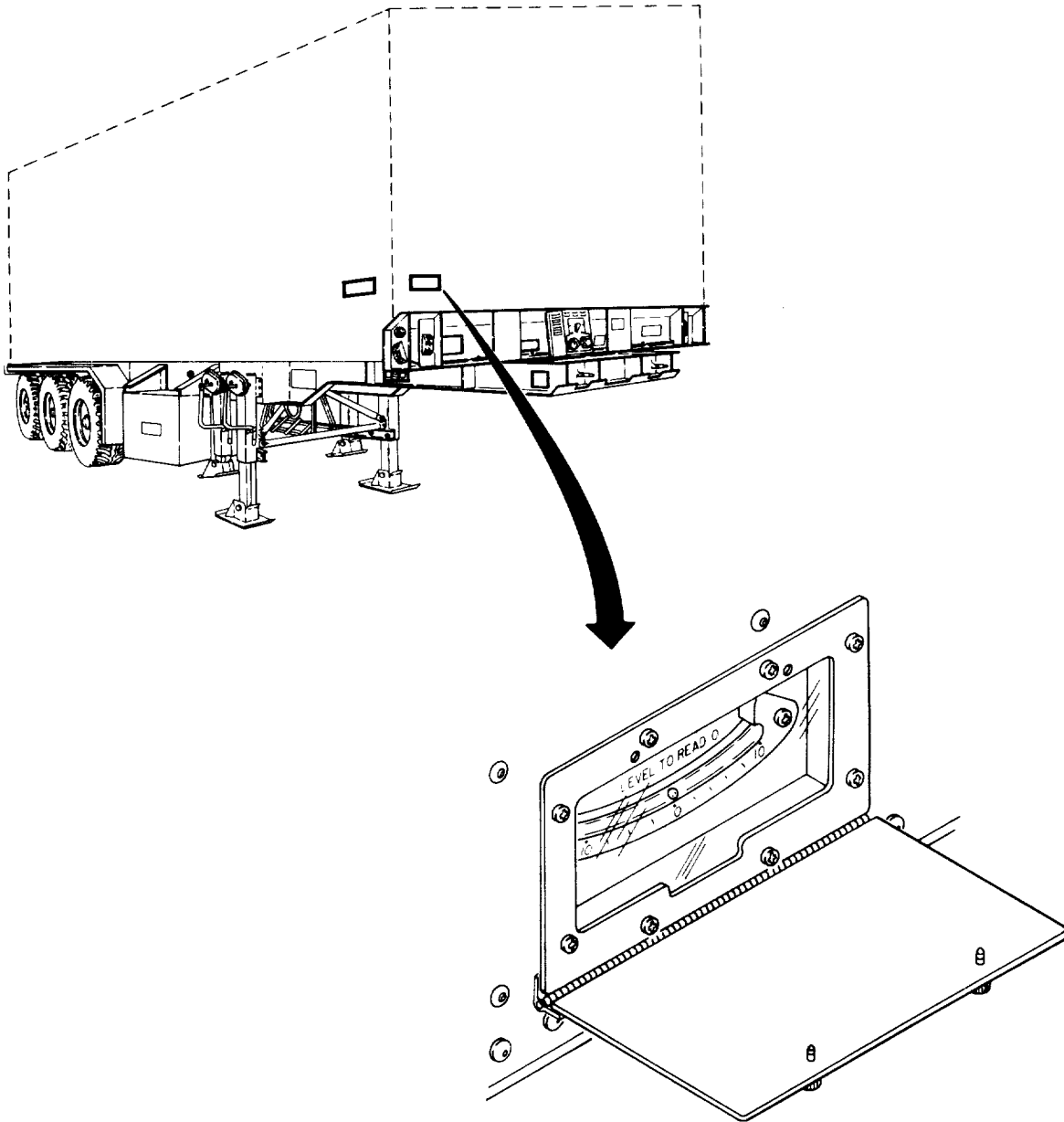
Sand, soft ground, or mud requires that shoring or scrap material be placed under leveling foot plate to increase surface area and prevent mud shoes from sinking into surface.

Be sure that air suspension is deflated as indicated in TM 5-2330-305-14.



- (1) Deflate air suspension in accordance with TM 5-2330-305-14.
- (2) Approximately level trailer chassis by raising or lowering landing gear.

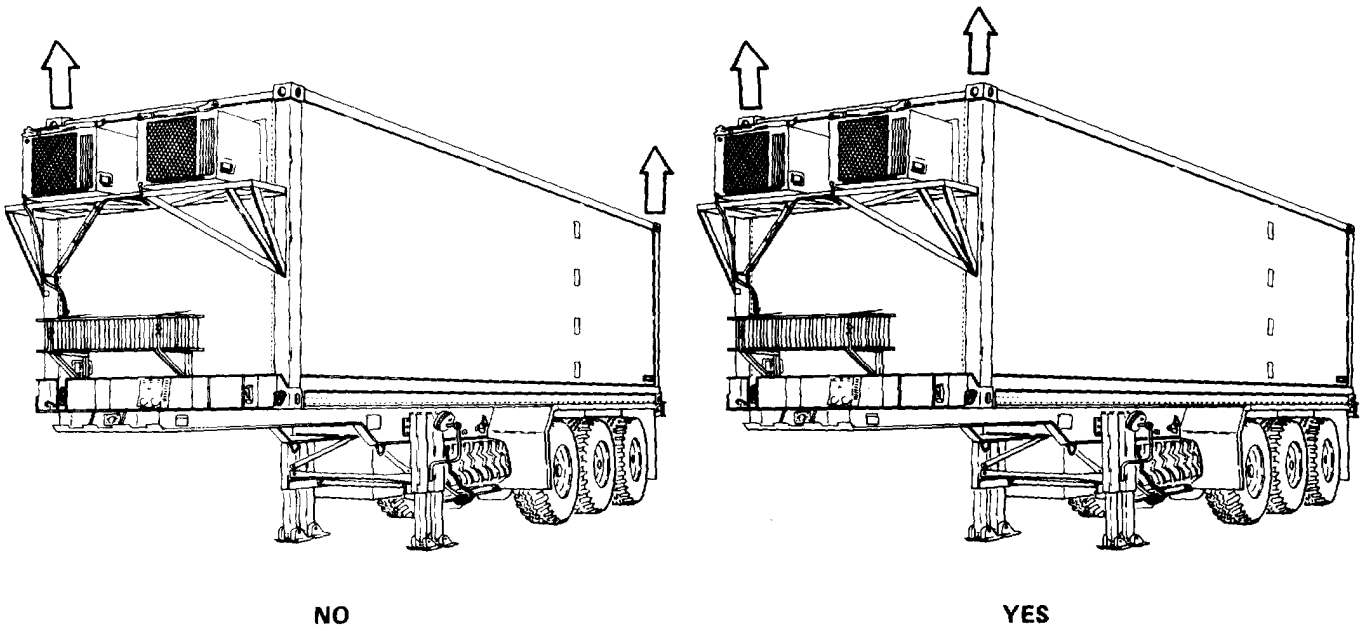
- (3) Move handle from secured location and swing out.
- (4) Pull crank handle on each leveling jack all the way out and engage. There are two positions when handle is engaged. Fully out is high speed. Partially out is low speed.
- (5) Lower each leveling jack by turning crank to right at high speed until foot plate just contacts ground.



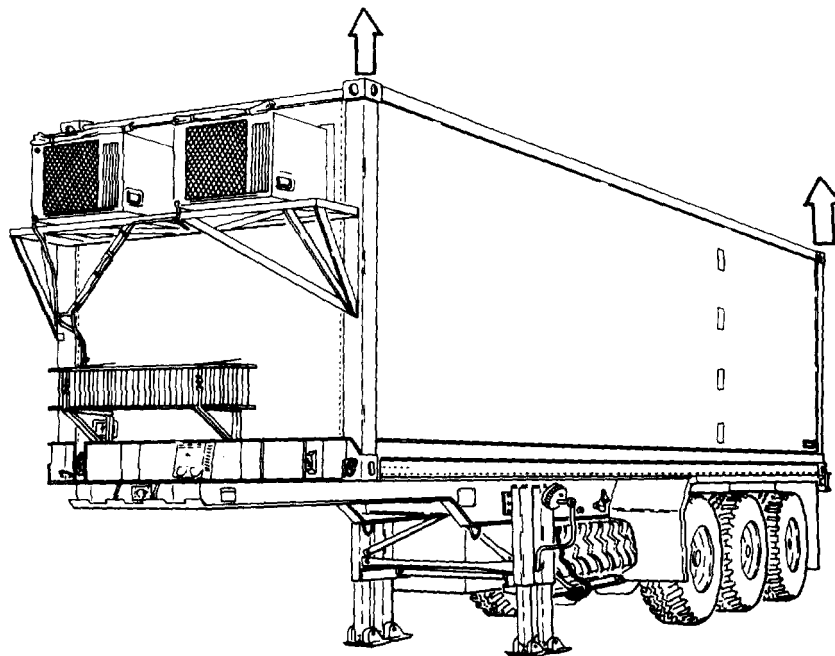
- (6) Station personnel to have a clear view of level indicators at both front and rear of van body.
- (7) Observe level indicators to determine which end and side must be raised.

**CAUTION**

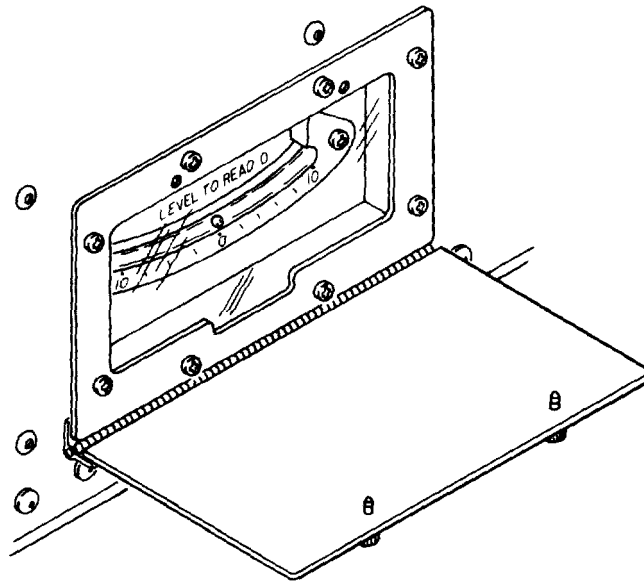
Do not attempt to level section by lifting at diagonal corners, or frame will be twisted.



(8) Raise low end by extending both leveling jacks at low end. Use low speed.



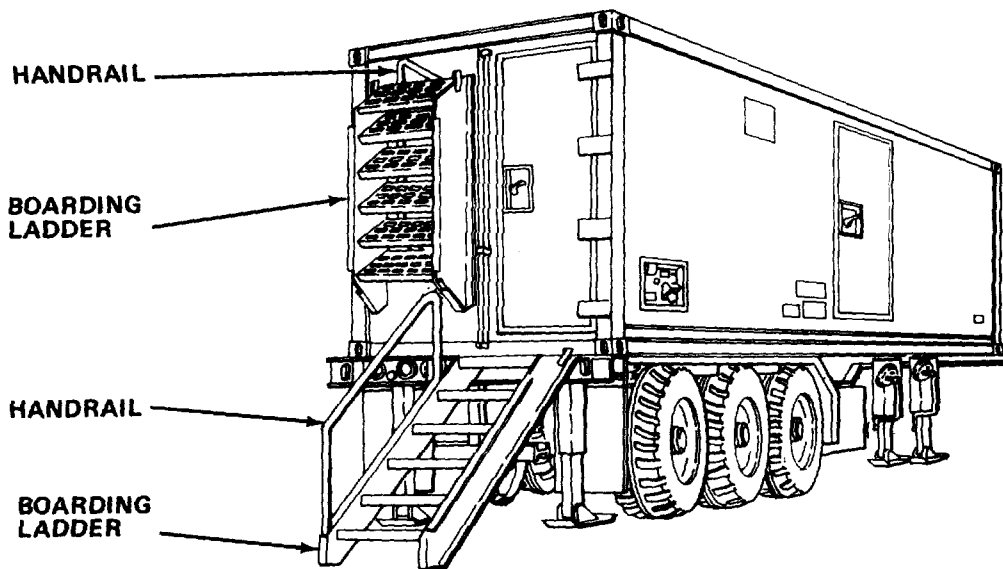
(9) Raise low side by extending both leveling jacks at low side.



(10) Be sure ball is centered on all four level indicators +2°

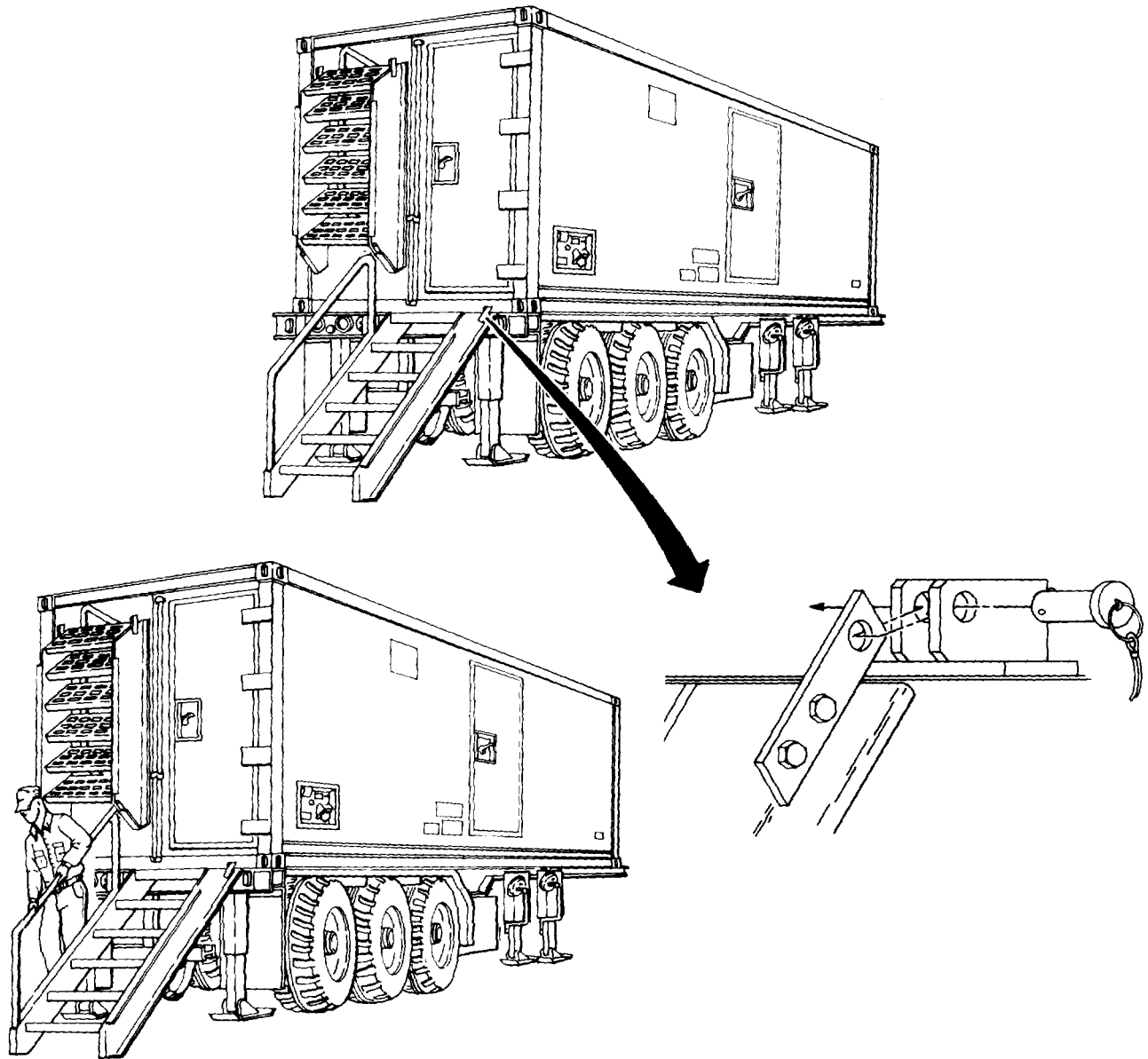
(11) Pull leveling crank handles away from trailer chassis, and lower crank handle to stowed position.

b. Procedures To activate section.



(1) Remove boarding ladders and handrails from rear of Section.

(2) Remove handrails from ladders.



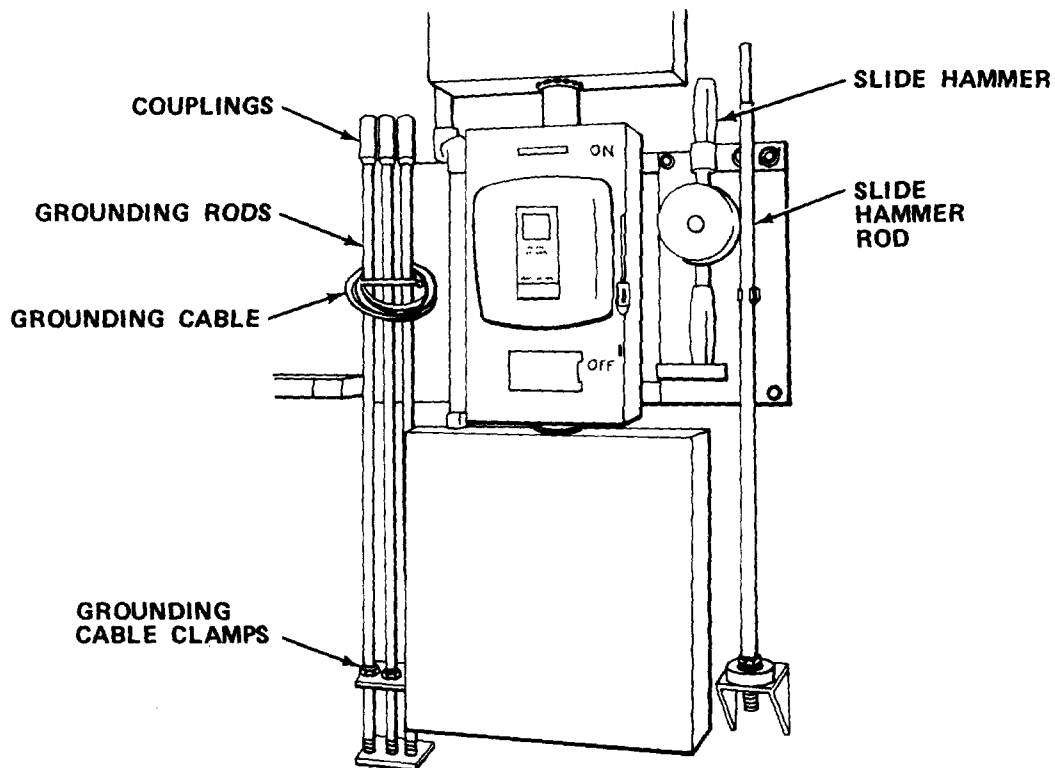
(3) Mount ladders at personnel doors and secure with locking pins.

(4) Mount one handrail on each ladder.

(5) Enter van body and be sure safety switch, main circuit breaker, and all equipment power supply switches are off.

**WARNING**

Death or serious injury may result from connecting power cable to section before grounding.

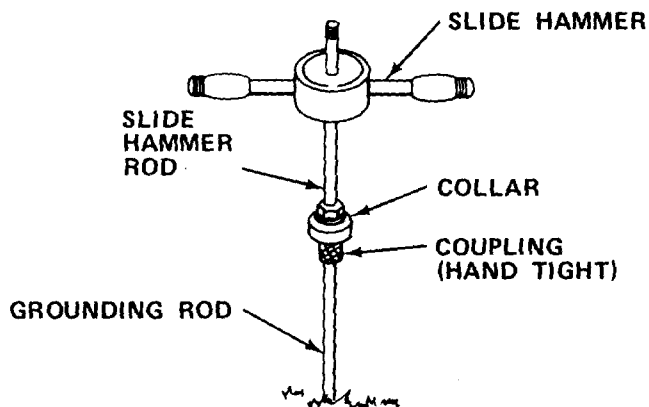


(6) Remove grounding rod, slide hammer, and grounding cable from section.

**NOTE**

- Apply a thin film of grease to threaded ends of rods before driving into ground. This will permit easy disassembly upon removal from ground.
- Bottom grounding rod must be numbered or identified so that it will always be the first rod driven into the ground.
- These instructions supplement TC 11-6, Grounding Techniques.





(7) Select an area as close to power entry panel as possible to install grounding rod. Then assemble the first grounding rod and coupling to the slide hammer rod.

**CAUTION**

**Do not allow grounding rod to rotate when removing the slide hammer rod. Rods must be kept screwed together to make a good electrical ground.**

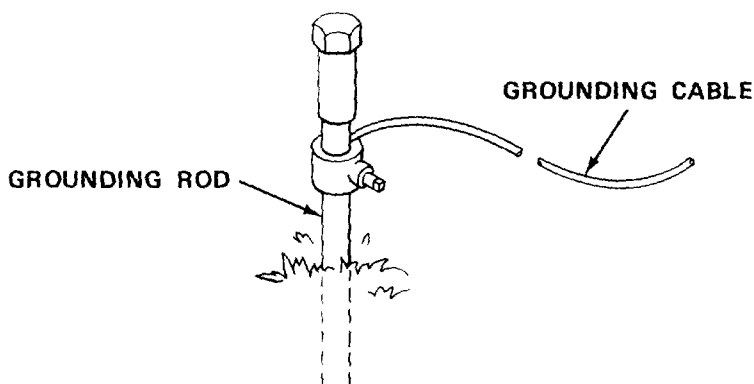
**NOTE**

**Before driving grounding rod be certain that rods meet inside coupling. Be sure collar is handtight against coupling.**

(8) Place slide hammer on hammer rod end, and drive grounding rod into ground. Remove slide hammer rod. Attach slide hammer to a new section of grounding rod, and repeat procedure until only 12 in.(30.5 cm) of the third rod is above ground.

(9) Remove slide hammer and hammer rod, and place in section.

(10) Mount grounding cable clamp and grounding cable to grounding rod.

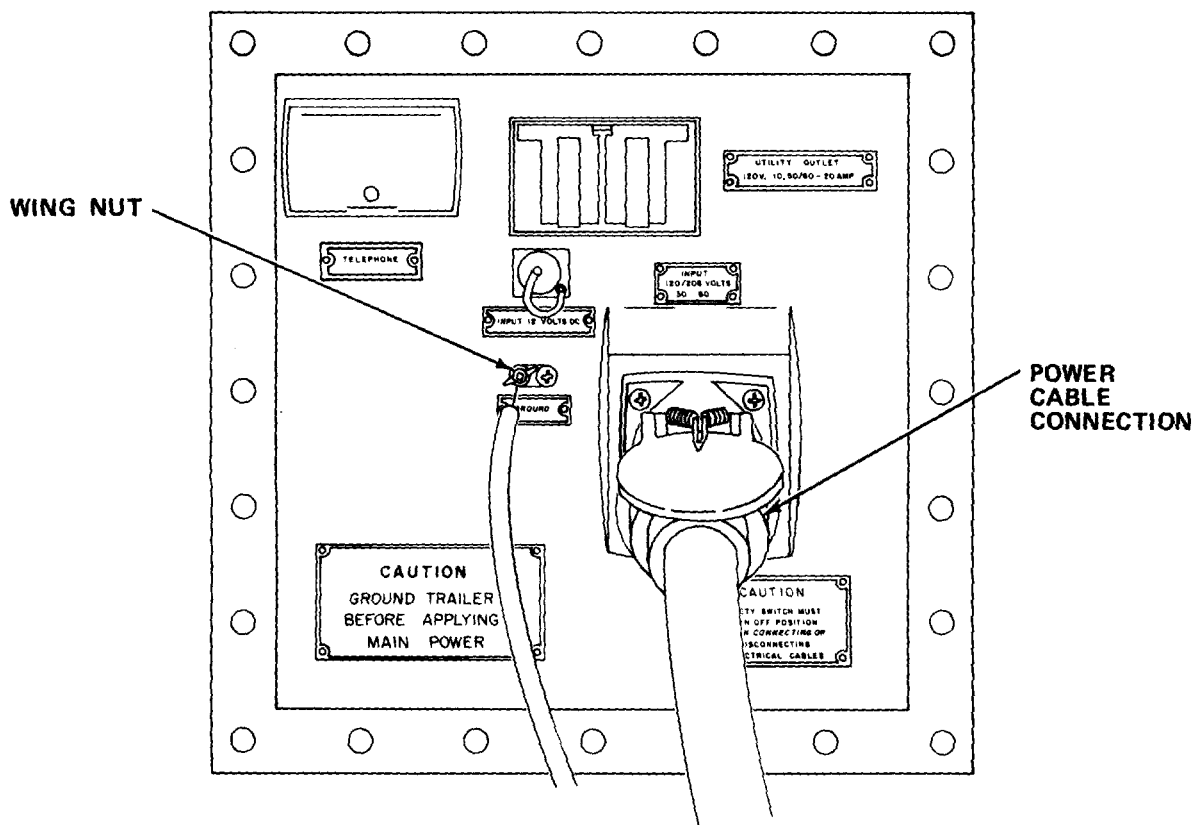


**WARNING**

To prevent death or serious injury, do not handle or clean power cable or connectors when cable is connected to power source.

**NOTE**

The section must be properly grounded before power is connected. If it is not possible to drive the three sections of grounding rod fully into ground, the rods may each be driven into the ground separately and connected in series. If it is impossible to drive a grounding rod, a suitable alternative ground must be found, such as a buried metal water pipe. See TC 11-6, Grounding Techniques for additional instructions.

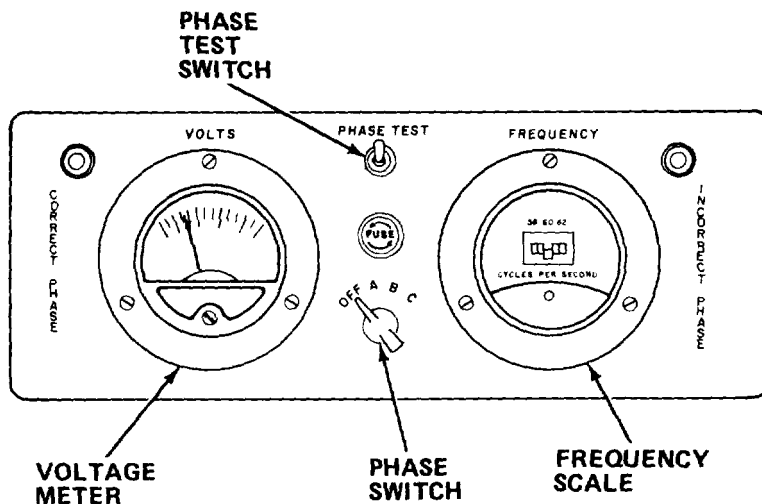


(11) Connect grounding cable to grounding lug with wing nut.

**CAUTION**

Be sure safety switch is off before connecting power cable to avoid equipment damage.

(12) Firmly connect the power cable to the power receptacle.



(13) Turn on safety switch.

#### CAUTION

**Do not energize section if incorrect phase lamp lights. Damage to equipment may result.**

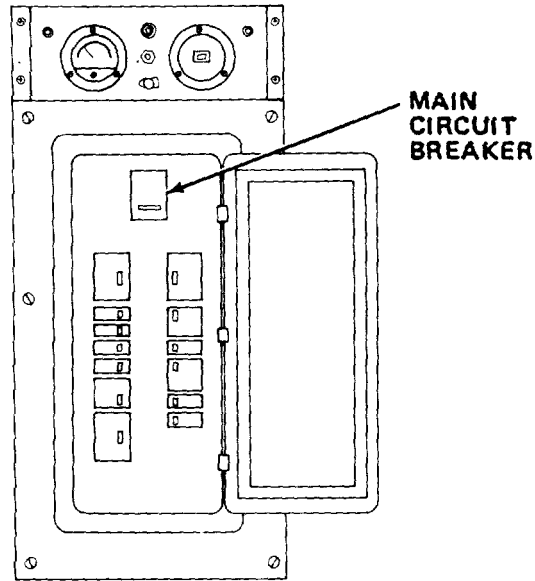
(14) Check voltage and frequency as follows:

- (a) Push phase test switch. Observe correct phase lamp lights.
- (b) Turn phase switch to A.

#### CAUTION

**Voltage must be between 110 and 120, and frequency must be at  $60 \pm 1$  Hz on each leg before turning on main circuit breaker or damage to equipment may result.**

- (c) Read voltage on meter.
- (d) Read frequency on scale.
- (e) Repeat for positions B and C on phase switch.



(15) Set main circuit breaker ON.

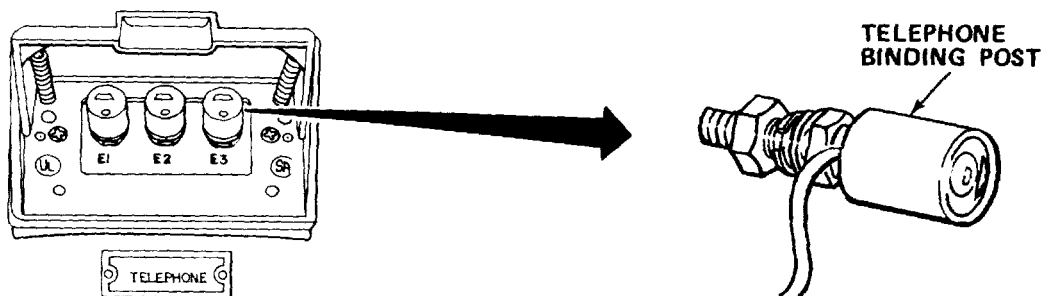
**NOTE**

**This step must be accomplished if section is placed into operation in darkness, fog, mist, or under blackout conditions.**

(16) Close blackout curtains, if required.

(17) Turn on circuit breakers in following order:

- (a) Individual lighting.
- (b) Curbside and roadside air conditioners/heaters.
- (c) Curbside and roadside receptacles.



(18) Connect telephone lines to corresponding interior binding posts.

- (19) Check blackout switches.
- (20) Plug in emergency lighting and turn switch to ready.
- (21) Fully deflate air shocks until shredder-bagger rests on top of air shocks.

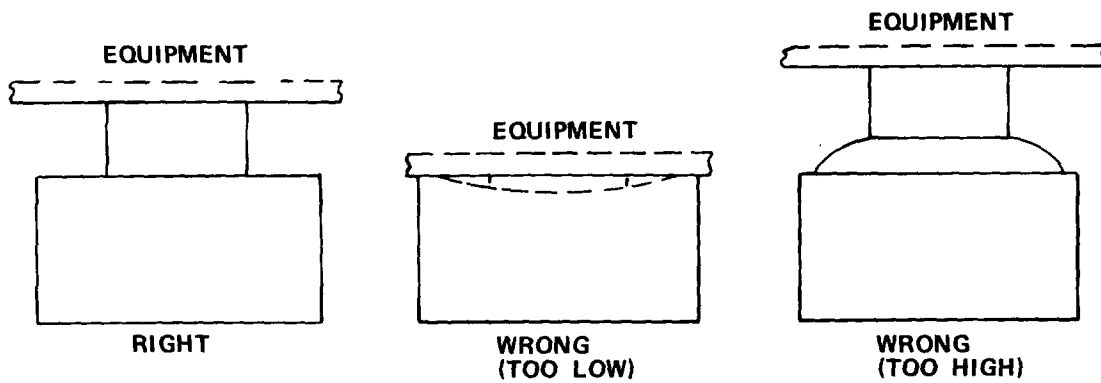
1-6.2 Preparation for Movement.

- a. Inventory equipment and supplies.
- b. Inflate shock absorbers.
  - (1) Remove all valve caps.

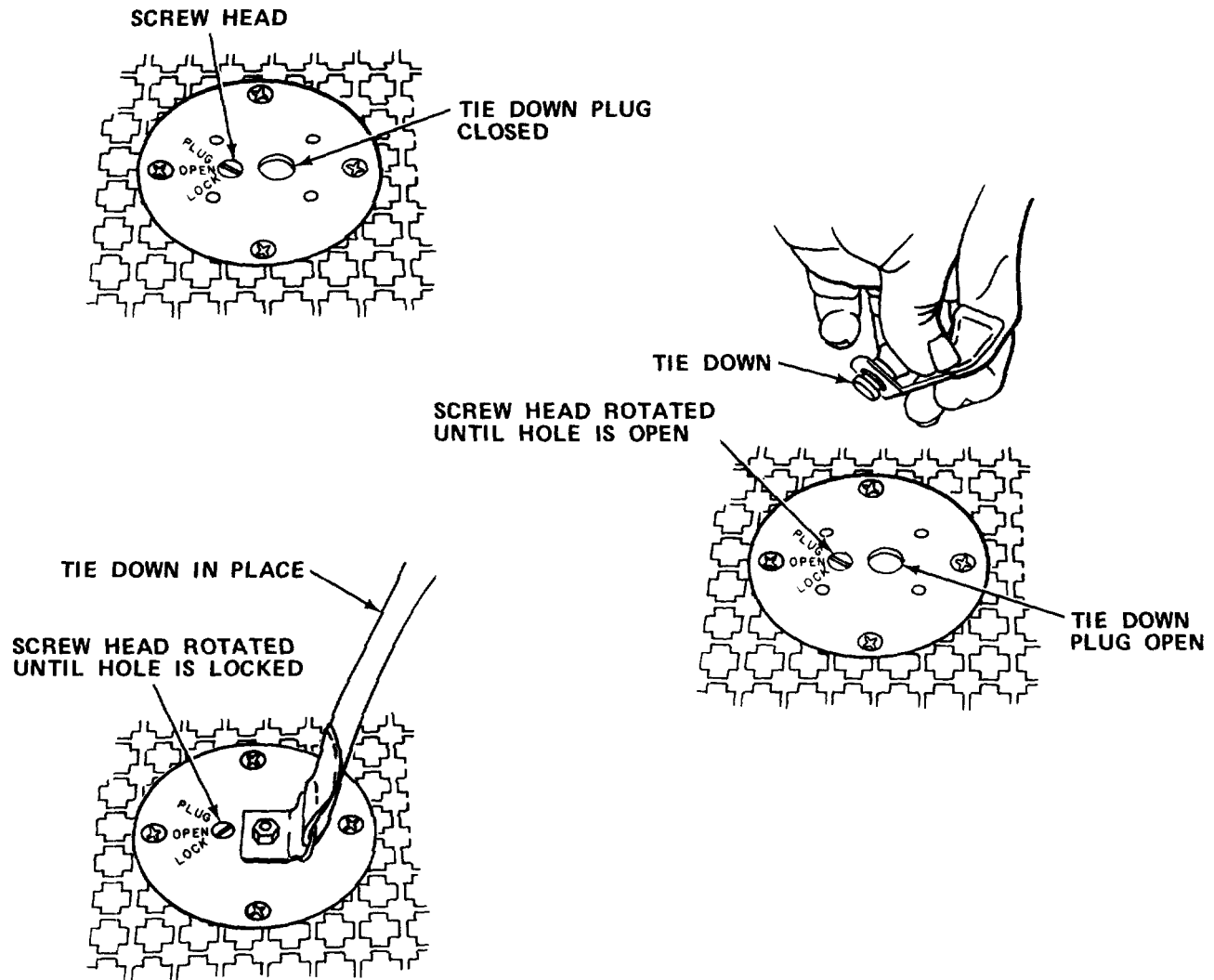
**CAUTION**

**To prevent damage to equipment or air shocks during transportation, inflate air shocks correctly. Do not exceed 90 psi (620 kPa).**

- (2) Connect air hose to valve.



- (3) Inflate each mount until top of diaphragm is level as shown.
- (4) Reinstall valve caps.



- c. Install tiedowns in tiedown sockets.
- d. Secure authorized equipment in proper containers or as specified by appropriate chapters.
- e. Secure straps and remove slack from tiedowns.

**WARNING**

**Death or serious injury may occur if power cable is disconnected while power is on.**

- f. Turn equipment switches off.
- g. Turn main circuit breaker off.

- h. Turn safety switch OFF.
- i. Have power cable disconnected at power supply end. Then disconnect power cable from receptacle. Put cable in storage box on trailer chassis.
- j. Turn emergency light switch OFF.
- k. Disconnect telephone cables from power entry panel.
- l.

**CAUTION**

**To prevent loss of rod or thread damage, do not allow grounding rod to rotate and unscrew when removing the slide hammer rod.**

1. Remove grounding rod with slide hammer, and put grounding rods, couplings, and slide hammer inside van body. Clean threads on each grounding rod before storing.

**NOTE**

**Be certain exhaust fan and air vent doors are securely closed.**

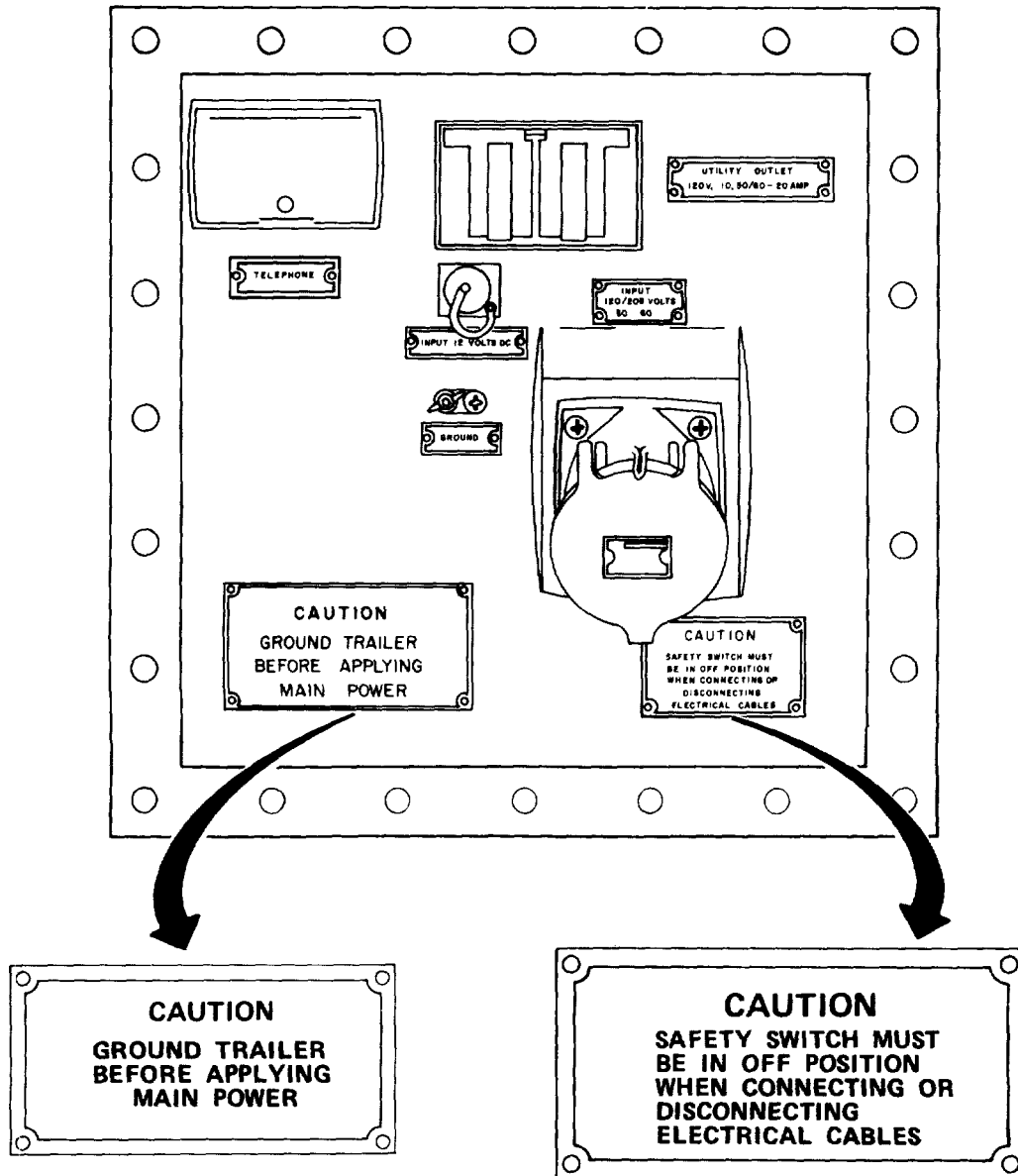
- m. Reinspect section interior for loose equipment and close all vent doors.
- n. Close section. Secure and lock all doors and cargo door.

**NOTE**

**Be sure air conditioner/heater covers are down and secured.**

- o. Remove handrails from boarding ladders.
- p. Remove boarding ladders and insert rails into back of ladders.
- q. Secure ladders to back of section.
- r. Fully extend landing gear.
- s. Retract leveling jacks.
- t. Visually inspect section exterior to be sure all equipment and covers are secured.

1-6.3 Operating Instructions on Decals and Instruction Plates.

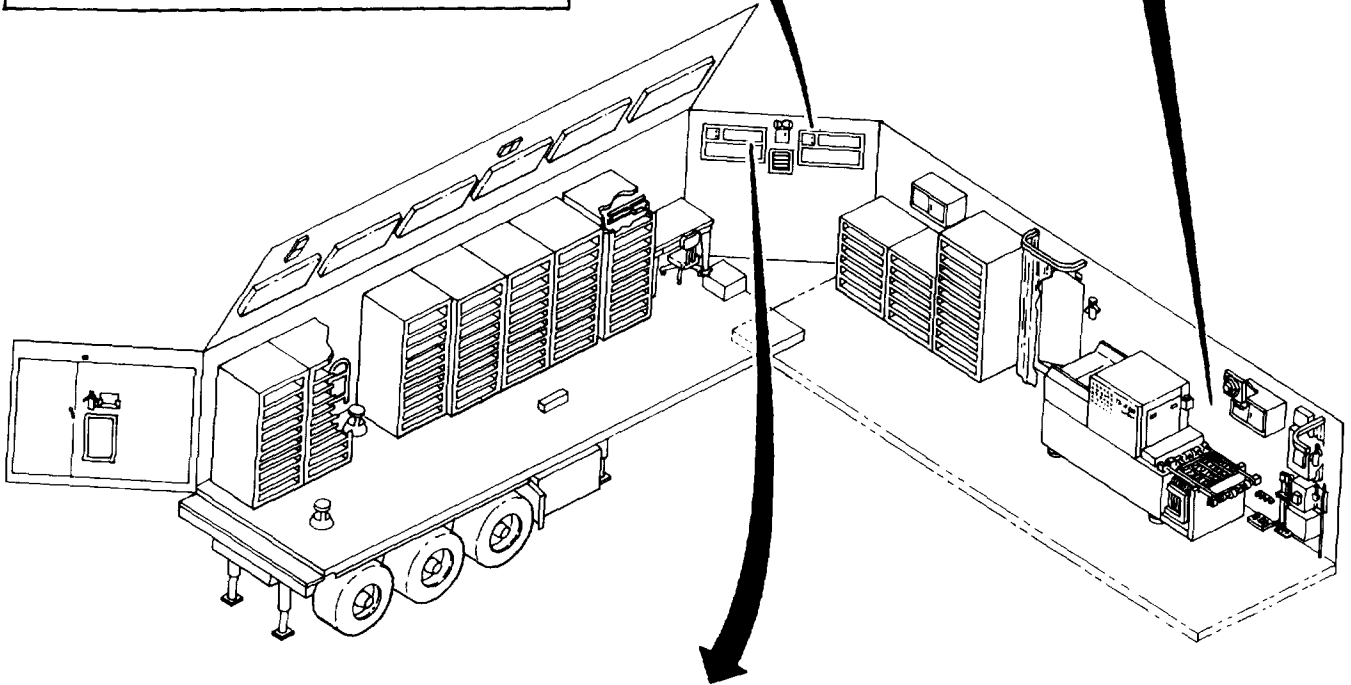




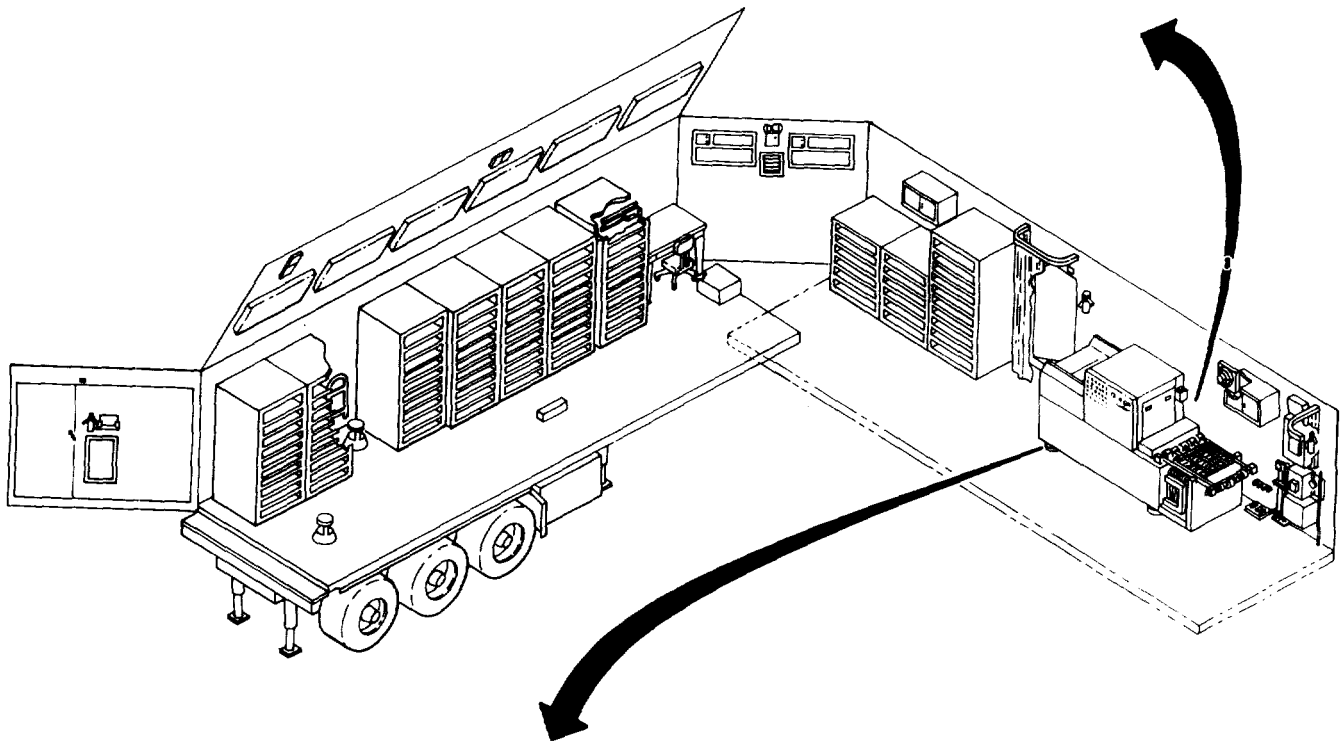
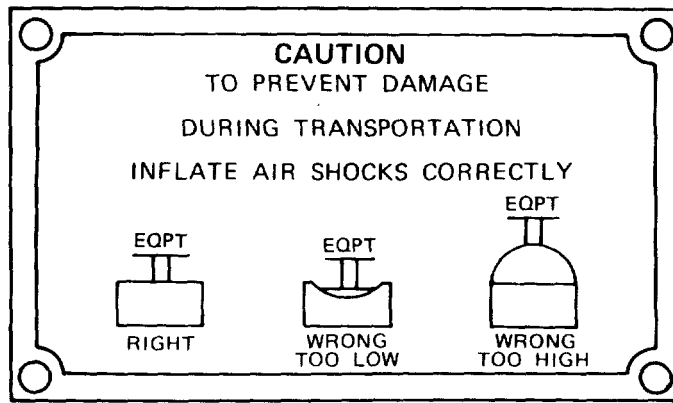
**CAUTION**  
OPEN OUTSIDE VENT BEFORE  
OPERATING FAN

**CAUTION**  
FOR SAFE OPERATION  
SEE TM FOR PROPER  
INTERNAL AND EXTERNAL  
GROUNDING

**CAUTION TO START UNIT ON "COOL"  
MODE AT 0°F AMBIENT  
JUMPER LACO SWITCH (S-5)**



**CAUTION**  
OPEN OUTSIDE FLAPS  
PRIOR  
TO OPERATING AIR COND



LOAD MUST BE PLACED ATOP MOUNT BEFORE INFLATING.  
MAXIMUM INFLATION PRESSURES MUST NOT BE EXCEEDED.  
MOUNT MUST BE DEFLATED BEFORE REMOVAL OF LOAD.

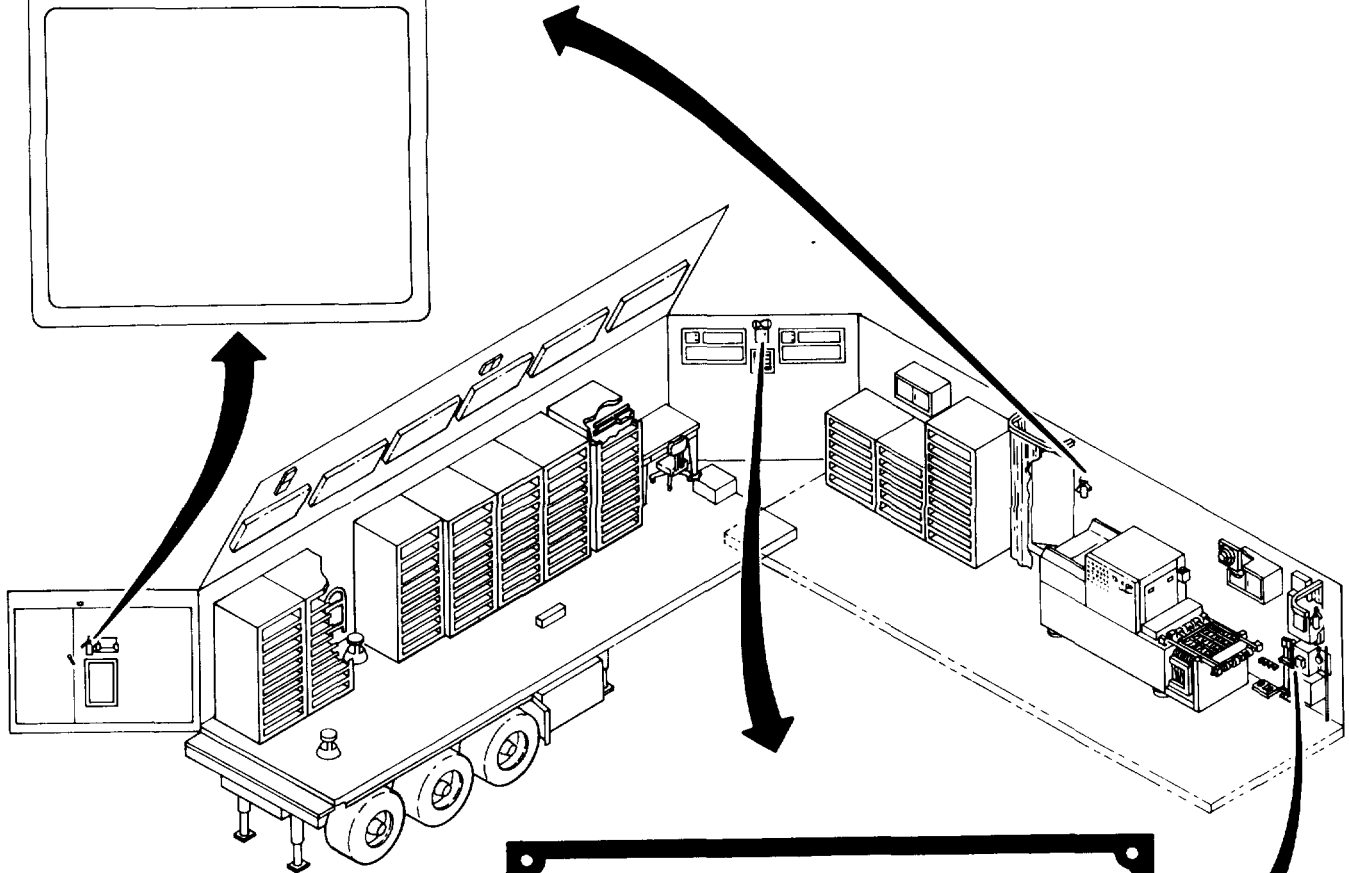
BARRY STABL-LEVL SLM-24  
LOAD RATING: 600 to 2400 PSI LBS.  
MAX. INFLATION 90 P.S.I.

EQUIPMENT LOAD ON MOUNT MUST BE WITHIN LOAD RATING.  
EQUIPMENT MOUNTING SURFACE MUST BE, OR ADAPTED TO BE FLAT  
AND OF SIZE TO COVER ENTIRE OUTSIDE DIAMETER OF MOUNT.

**TO OPERATE**

1. PULL RING PIN
2. POINT HORN CLOSE TO BASE OF FIRE
3. DEPRESS TRIGGER FOR DISCHARGE AND KEEP BASE OF FLAMES COVERED
4. AVOID BREATHING OF SMOKE
5. REMOVE VALVE AND HORN ASSEMBLY AND DISCARD USED CYLINDER

EXTINGUISHER, FIRE, CF<sub>3</sub>BR, 2 3/4 LB



**CAUTION**

EMERGENCY LIGHT SWITCH  
MUST BE IN THE OFF POSITION  
WHEN ELECTRICAL POWER  
IS INTENTIONALLY DISCONNECTED

SWITCH MUST BE IN THE READY  
POSITION FOR NORMAL EMERGENCY  
LIGHT OPERATION

**1-7. OPERATION UNDER UNUSUAL CONDITIONS.**

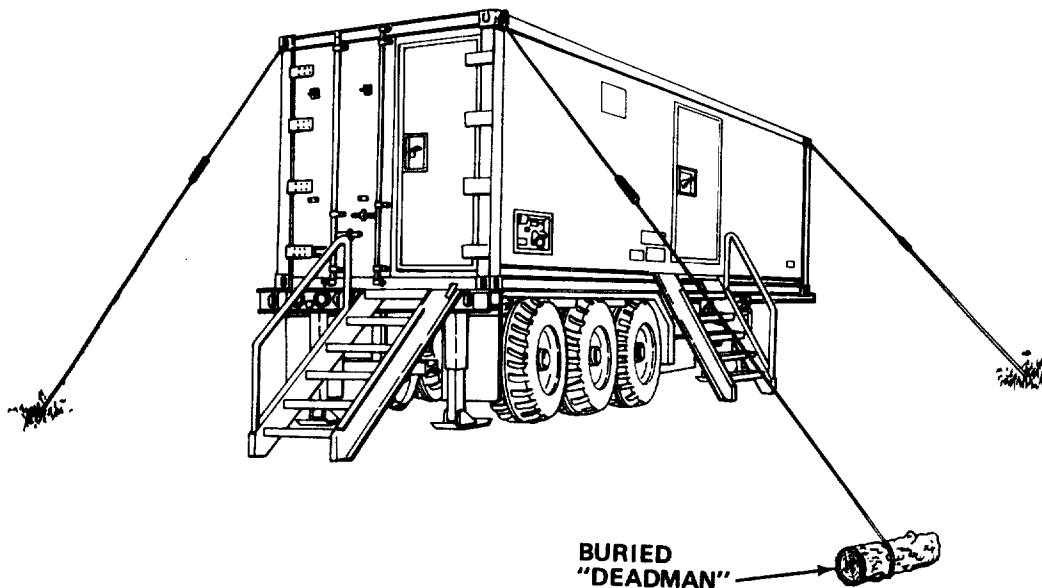
**NOTE**

Damage to container permitting light leaks, water, or dirt entry must be temporarily repaired using available material on hand. Maintenance personnel will conduct permanent repairs; however, crew must maintain operational capability of section.

**1-7.1 Operation in High Wind or Storm Conditions.**

- a. Relocate section if trees or structures present hazard.

**SUGGESTED METHOD OF ANCHORING THE SECTION IN HIGH WINDS**



- b. Secure section corners at lifting eyes to deadmen or substantial objects.
- c. Remove all loose objects from area.

**1-7.2 Operation in Cold Weather.**

- a. The operation of the internal equipment is performed within environmentally controlled conditions; however, in extreme cold, the main power supply cable and ground cable, will become hard, brittle, and difficult to handle. Be careful when handling the cables when connecting or disconnecting them so that kinks and unnecessary loops will not result in permanent damage.

b. Make certain that connections and cable receptacles on the outside of the section are free of frost, snow, and ice.

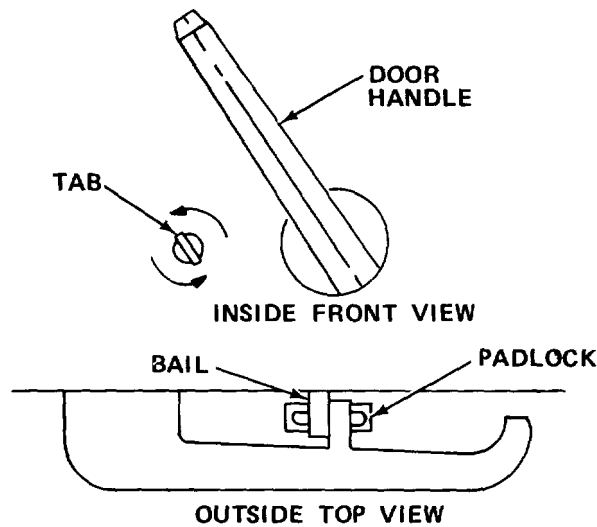
c. When section heaters are not operating or when the section is being transported, liquid consumable supplies may freeze, break their containers, then melt, and ruin equipment or documents. Store those items in an area to prevent equipment or document damage.

1-7.3 Operation in Extreme Heat. The operation of the internal equipment is performed within environmentally controlled conditions; however, during transportation or when air-conditioning units are not operating, consumable supplies may suffer reduced shelf life, and internal components may have accelerated deterioration of gaskets, seals, or insulation.

1-7.4 Operation in Tropical Conditions. Fungi, mildew, or mold will form on and in equipment, documents, and supplies if internal environmental control equipment is not operating and outside heat and humidity are allowed to enter the section.

1-7.5 Operation in Desert Conditions. Dust, grit, and sand will ruin supplies, equipment, and documents. Extreme care must be taken to prevent dust, grit, and sand from entering into the section. Air filters will be changed whenever airflow is restricted, and cleaning of section interior must be conducted more frequently than specified by PMCS schedules.

1-7.6 Emergency Procedures. There are no specific emergency procedures for operation of the section.



1-7.7 Emergency Means of Exit. In the event personnel are locked in the section, the tab may be turned to the left until the bail on the padlock falls free. The door handle is now free to turn.

### Section III OPERATOR MAINTENANCE

#### 1-8. LUBRICATION INSTRUCTIONS.

a. Lubrication instructions for the Distribution Section are contained in LO 5-6675-315-12, Lubrication Order, Distribution Section, Topographic Support System.

The intervals and manhours specified in the Lubrication Order are based on normal operations. During inactive periods, lubrication periods may be extended with adequate preservation.

b. Topographic equipment and all optical equipment require special care in lubrication. When a specified lubricant is called for, substitutions are not authorized. Minimum amounts of lubricant are to be used and all excess lubricant is to be immediately removed. Spray lubricants must not be used in the vicinity of optical equipment unless optics are completely protected. No lubricant is to be applied unless a thorough cleaning is conducted first to remove dirt, dust, or abrasive material.

c. Be sure that you refer to the appropriate chapter before any equipment is stored after use, that the temperature has stabilized, and that required lubrication after use is accomplished.

#### 1-9. TROUBLESHOOTING PROCEDURES.

a. The table lists the common malfunctions which you may find during operation or maintenance of the Distribution Section or its components. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

Table 1-2. TROUBLESHOOTING

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

1. NO ELECTRICAL POWER TO SECTION.

**WARNING**

**Death or serious injury may result. Do not perform any electrical maintenance or make electrical connections or disconnections at main power receptacle when power cable is energized.**

Step 1. Observe voltage and frequency for A, B, and C. Read  $115 \pm 5$  V,  $60 \pm 1$  Hz.

- a. If voltage and frequency are correct, proceed to step 2.
- b. If voltage and frequency are incorrect, notify power supply supervisor.

**CAUTION**

**Do not energize section if voltage or frequency is not correct. Damage to equipment may result.**

Step 2. Press phase test button on power panel for A, B, and C.

- (a) If phases A, B, and C are correct, proceed to step 3.
- (b) If incorrect phase lamp lights, notify power supply supervisor.

**CAUTION**

Do not energize Section if incorrect phase lamp lights. Damage to equipment may result.

Step 3. Check safety switch position.

- (a) If safety switch is on, proceed to step 4.
- (b) If safety switch is off, turn on.

Table 1-2. TROUBLESHOOTING - Cont

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

## 1. NO ELECTRICAL POWER TO SECTION - Cont

Step 4. Check main circuit breaker position.

- (a) If circuit breaker is on, refer to direct/general support maintenance.
- (b) If circuit breaker is off, turn on.
- (c) If circuit breaker trips repeatedly, notify power supply supervisor.

## 2. NO ELECTRICAL POWER TO EQUIPMENT.

Step 1. Check equipment power switch.

- (a) If power switch is on, proceed to step 2.
- (b) If power switch is off, turn on.

Step 2. Check power plug.

- (a) If power cord is plugged in, proceed to step 3.
- (b) If power cord is unplugged, plug in.

Step 3. Inspect circuit breaker panel for breakers in OFF position.

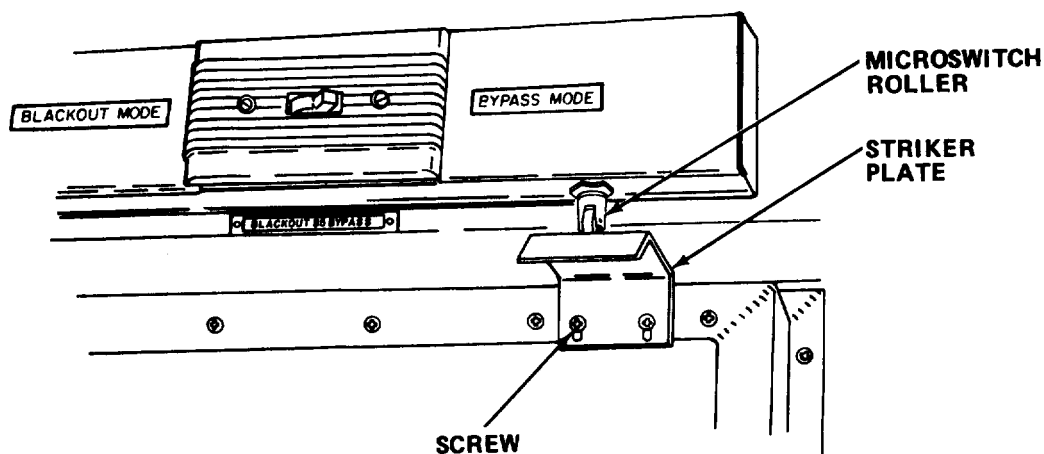
- (a) If all circuit breakers are on, refer to organizational maintenance.
- (b) If any circuit breakers are off, turn on.



Table 1-2. TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

## 3. BLACKOUT SWITCH DOES NOT OPERATE.



Step 1. Check blackout switch position.

- (a) If switch is on, proceed to step 2.
- (b) If switch is off, reset switch to BLACKOUT.

Step 2. Check to see that striker plate contacts roller on microswitch.

- (a) Loosen screws, and move plate up or down until microswitch operates.
- (b) If blackout switch still fails to operate, refer to organizational maintenance.

**1-10. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering operator maintenance functions for the Distribution Section. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

**INDEX**

PROCEDURE	PARAGRAPH
Replace Fluorescent Lamp.....	1-10.1
Service Ventilation Ducts ..	1-10.2
Replace Blackout/Dome Light .....	1-10.3

**1-10.1 Replace Fluorescent Lamp**

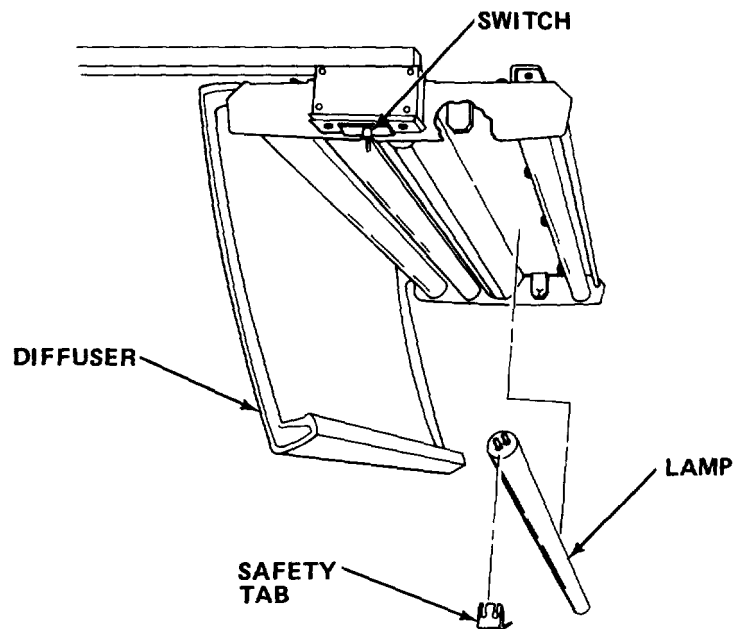
MOS: 81C, Cartographer

TOOLS: None

SUPPLIES: Fluorescent Lamp

**WARNING****Death or serious injury may result if power is left on while servicing lamp. Turn switch OFF.**

- a. Turn switch off.



- b. Gently pull diffuser from light bracket, and place diffuser out of the way to prevent damage.
- c. Remove safety tab from lamp socket.
- d. Rotate defective lamp until prongs are free from slot and remove lamp.
- e. Insert new lamp prongs into slot and rotate lamp 90 degrees.
- f. Reinstall safety tab into lamp socket.
- g. Reinstall diffuser.
- h. Turn power on.

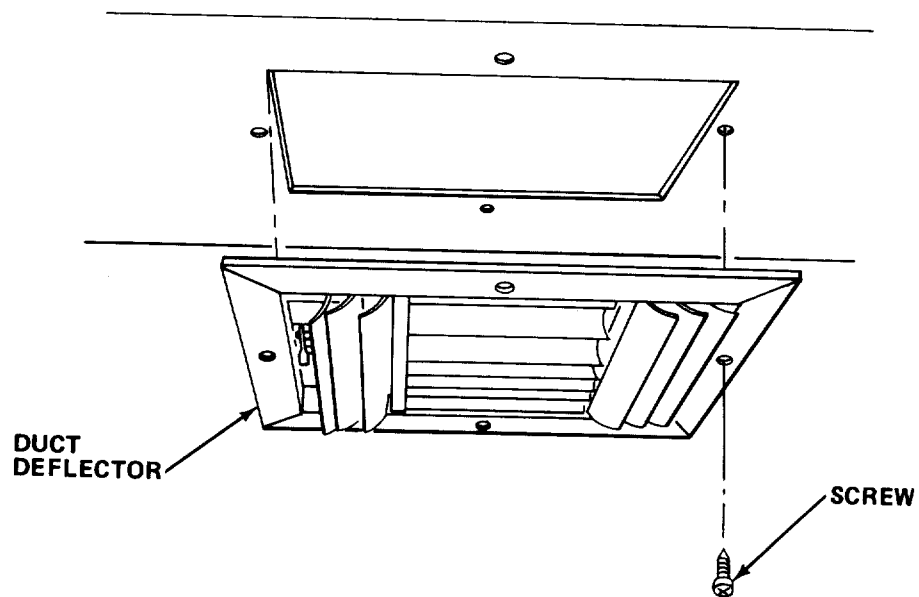
**1-10.2 Service Ventilation Ducts.**

MOS: 81C, Cartographer

TOOLS: Vacuum Cleaner  
Flat Tip Screwdriver

SUPPLIES: None

- a. Cover equipment to prevent dust from entering equipment.
- b. Close all doors and cabinets.
- c. Remove any documents or other work that may be damaged by dirt/dust.
- d. Turn off air conditioner/heater.

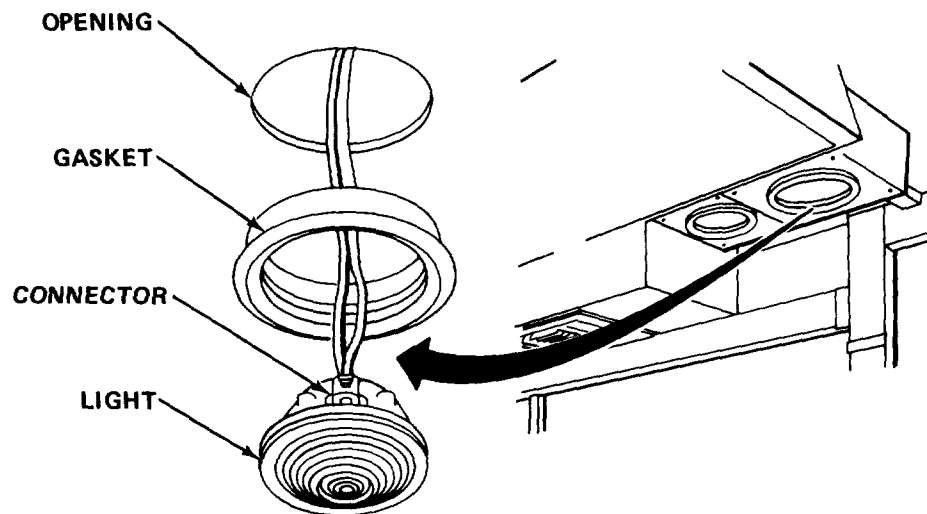


- e. Remove four screws from each ventilation duct deflector.
- f. Remove all duct deflectors.
- g. Vacuum dirt or dust from deflector louvers.
- h. Insert vacuum cleaner probe into ventilation duct at each deflector hole, and vacuum as far as probe will reach.
- i. Reinstall deflectors and secure with four screws.
- j. Turn on air conditioner/heater.
- k. Vacuum any dislodged dirt or dust from interior of section.
- l. Remove covers for operation.

**1-10.3 Replace Blackout/Dome Light.**

MOS: 81C, Cartographer

TOOLS: None

SUPPLIES: Lamp (12 V)  
Silicone Spray (Item 18, Appendix E)**NOTE****Blackout light and dome light are sealed units. No bulb replacement is possible. Complete light must be replaced.**

- a. Push light and gasket up into opening.
- b. Tilt and remove light and gasket from opening.
- c. Disconnect defective light from connector.
- d. Connect new light to connector.
- e. Reinstall gasket in opening.

**NOTE****The use of silicon spray on the gasket will help to position light.**

- f. Position light in gasket and push in.

**Section IV ORGANIZATIONAL MAINTENANCE**

**1-11. LUBRICATION INSTRUCTIONS.** This equipment does not require lubrication.

**1-12. REPAIR PARTS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT**

1-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

1-12.2 Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

1-12.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-6675-315-24P covering organizational maintenance for this equipment.

**1-13. SERVICE UPON RECEIPT.**

**NOTE**

**The section may be received mounted on a chassis or as a van body for mounting on an available trailer/transporter or on site. Inspection of the chassis is covered in TM 5-2330-305-14. Inspection of the air conditioner/heater is covered in TM 5-4120-367-14.**

1-13.1 Checking Unpacked Equipment.

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

(1) Visually inspect the section exterior starting at the rear to cover rear, curbside, roadside, front, top, and bottom. Inspect for damage, tears, breaks, or corrosion.

(2) Enter section and inspect for broken equipment, tool boxes, chairs, or equipment loose and not secured.

(3) Close doors and vents to determine if light leaks exist.

(4) Inspect doors for damage, torn or rotted seals, and tightness of closure.

(5) Inspect interior for evidence of water damage, fungi, mildew or corrosion.

(6) Report damage or discrepancies in accordance with AR 735-11 and AR 735-11-2.

b. Check the equipment against the packing list to see if shipment is complete.

Report all discrepancies in accordance with the instructions of DA Pam 738-750.

(1) Inventory sections against Components of End Item and Basic Issue Items Lists (Appendix C).

(2) Inventory expendable supplies contained in section as shown in Appendix E.

(3) Conduct operational checks on equipment in accordance with the chapters in this manual when operators are available and power can be safely provided to the section.

c. Check to see whether the equipment has been modified.

#### **1-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES.**

a. PMCS are designed to keep the equipment in good working condition by performing certain tests, inspections, and services. The intervals provide you, the organizational technician, with time schedules that determine when to perform specified tasks.

b. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording the results of PMCS.

c. Interval columns. This column determines the time period designated to perform your PMCS.

d. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

e. Preventive maintenance checks and services for the air conditioners/heaters are contained in TM 5-4120-367-14.

f. List of tools and materials required for PMCS is as follows:

<u>Item</u>	<u>Quantity</u>
Vacuum Cleaner	1 ea
8 in. Adjustable Wrench	1 ea
Cross Tip Screwdriver	1 ea
Flat Tip Screwdriver	1 ea
Spring Scale	1 ea
Padlock	1 ea
Flashlight	1 ea



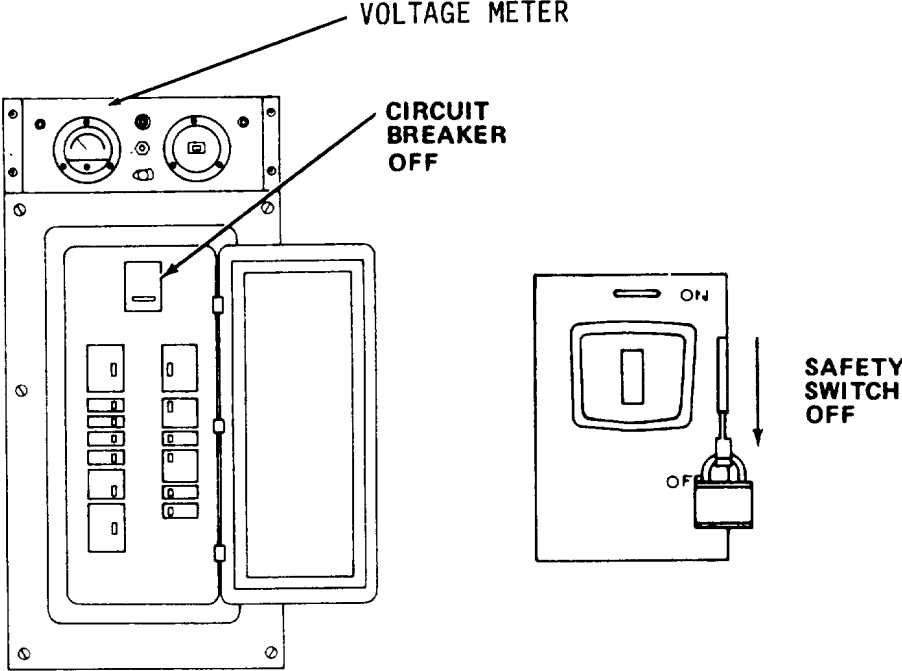
**Table 1-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	M	<p><u>VAN BODY</u></p> <p><u>Service Air Conditioner/Heater.</u> Refer to TM 5-4120-367-14 for preventive maintenance checks and services.</p>
2	M	<p><u>Service Lighting System.</u></p> <div style="text-align: center;">  <p>The diagram shows two electrical components. On the left is a control panel with a circular gauge labeled 'VOLTAGE METER' and a switch labeled 'CIRCUIT BREAKER OFF'. On the right is a safety switch with 'ON' and 'OFF' positions, and a padlock is shown locking it in the 'OFF' position, labeled 'SAFETY SWITCH OFF'.</p> </div> <p style="text-align: center;"><b><u>WARNING</u></b></p> <p><b>Do not open or service electrical connections, cables or switches until main power is off, and voltage meter confirms circuit is not energized. Death may result from failure to observe these safety precautions.</b></p> <p>1. Turn off main circuit breaker. Turn safety switch OFF.</p>

**Table 1-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

B - Before  
D - During  
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W - Weekly  
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S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
2	M	<p><u>VAN BODY</u></p> <p><u>Service Lighting System - Cont 2.</u></p> <ol style="list-style-type: none"> <li>2. Padlock safety switch.</li> <li>3. Tighten all loose screws, bolts, and clamps.</li> <li>4. Check which switches, switch plate outlets, receptacles, and posts require repair.</li> <li>5. Check for loose screws and nuts on ceiling, console lights, circuit breaker panels, and conduits.</li> <li>6. Remove padlock from safety switch.</li> <li>7. Turn on main circuit breaker and safety switch.</li> </ol>

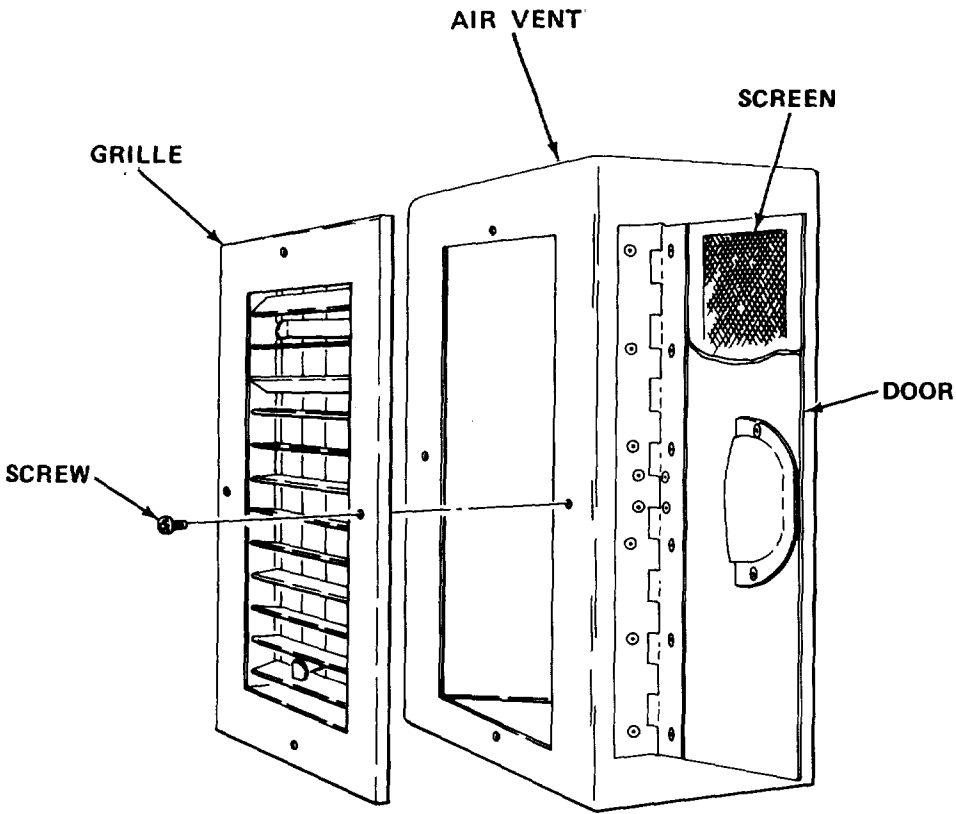
**Table 1-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

B - Before  
D - During  
A - After

W - Weekly  
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Q - Quarterly

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(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
3	M	<p><u>VAN BODY</u></p> <p><u>Service Air Vent.</u></p>  <hr/> <ol style="list-style-type: none"> <li>1. Remove screws from front of grille.</li> <li>2. Remove front grille.</li> <li>3. Using vacuum cleaner, clean screens on side doors. Vacuum inside of air vent.</li> <li>4. Reinstall grille and secure with screws.</li> </ol>



**1-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES.**

a. Organizational troubleshooting procedures cover the most common malfunctions that may be repaired at the organizational level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used by the operator should be conducted in addition to the organizational troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/ inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions, use the facing schematic or the foldout located at the end of this manual for further fault analysis.

d. If any component of the Distribution Section does not power up when turned on, verify that 120 V ac is present at the receptacle. If voltage is not present, plug equipment into receptacle with power available and proceed with equipment troubleshooting. Perform no-power troubleshooting procedures for dead receptacle (Table 1-4).

**Table 1-4. ORGANIZATIONAL TROUBLESHOOTING**

<b>MALFUNCTION</b>
<b>TEST OR INSPECTION</b>
<b>CORRECTIVE ACTION</b>

**WARNING**

**Electrical shock hazard. Be sure power is off when checking continuity at troubleshooting points. Death or serious injury could result from failure to do so.**

1. FLUORESCENT CEILING LAMP IS INOPERATIVE.

Step 1. Check for continuity of fluorescent lamp switch.

(a) If continuity exists, proceed to step 2.

(b) If continuity does not exist, replace switch (paragraph 1-16.3).

Table 1-4. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

## 1. FLUORESCENT CEILING LAMP IS INOPERATIVE - Cont

Step 2. Check for continuity of lamp ballast.

- (a) If continuity exists, proceed to step 3.
- (b) If continuity does not exist, replace lamp ballast (paragraph 1-16.1).

Step 3. Check for shorts in RF filter.

Replace RF filter (paragraph 1-16.2).

## 2. VENTILATION FAN IS INOPERATIVE.

Check ON/OFF switch for continuity.

- (a) If continuity exists, replace fan (paragraph 1-16.8).
- (b) If continuity does not exist, replace switch (paragraph 1-16.4).

## 3. EMERGENCY LIGHTS ARE INOPERATIVE.

Press in test indicator.

If lamps do not light, replace emergency light assembly (paragraph 1-16.10).

## 4. NO POWER TO EQUIPMENT.

Step 1. Check circuit breaker ON/OFF position.

- (a) If circuit breaker is on, proceed to step 2.
- (b) If circuit breaker is off, turn on.
- (c) If circuit breaker trips repeatedly, notify power supply supervisor.

Table 1-4. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
4. NO POWER TO EQUIPMENT - Cont		
Step 2. Check circuit breaker input for 120 V ac.		
(a) If input voltage is present, proceed to step 3.		
(b) If input voltage is not present, refer to direct/general support maintenance for repair or replacement of defective wiring.		
Step 3. Check circuit breaker output for 120 V ac.		
(a) If output voltage is present, proceed to step 4.		
(b) If output voltage is not present, refer to direct/general support maintenance for circuit breaker replacement (paragraph 1-20.5).		
Step 4. Remove receptacle and check for 120 V ac input.		
(a) If present, replace receptacle (paragraph 1-16.5).		
(b) If not present, refer to direct/general support maintenance for repair or replacement of defective wiring.		

**1-16. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering organizational maintenance functions for the Distribution Section. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

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1-16.1 Replace Fluorescent Lamp Ballast.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver

1/4 in. Wrench

1/4 in. Drive Socket Set

Scribe

SUPPLIES: Lamp Ballast

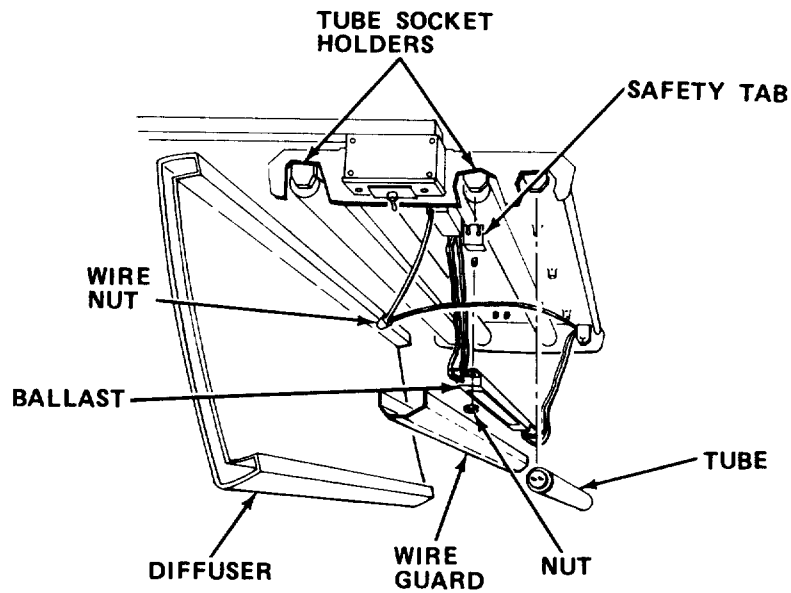
Wire Ties

**WARNING**

**Death or serious injury may result unless overhead light switch is turned off before working on light fixture.**

- a. Turn overhead light switch off.
- b. Remove diffuser from light fixture.
- c. Remove safety tabs and lamps. Place in diffuser.
- d. Squeeze light wiring guard and remove.
- e. Remove wire ties as required.

Change 1 1-61



- f. Tag wires from ballast for reference.
- g. Disconnect ballast wire from wire nut connection.
- h. Pry out lamp socket holder with flat tip screwdriver.
- i. Using scribe, depress wire clips and disconnect ballast wiring.
- j. Remove nut and defective ballast.
- k. Install new ballast and connect wires to corresponding lamp socket holders.
- l. Secure with nut.
- m. Reconnect ballast wire to wire nut connection.
- n. Remove tags.
- o. Install new wire ties.

**NOTE**

**Be sure wires are free of kinks and do not interfere with placement of wire guard.**

- p. Reinstall wire guard.
- q. Reinstall lamp and safety tabs.
- r. Reinstall diffuser.
- s. Turn on light switch.

1-16.2 Replace Radio Frequency (RF) Filter.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver

1/4 in. Wrench

1/4 in. Drive Socket Set

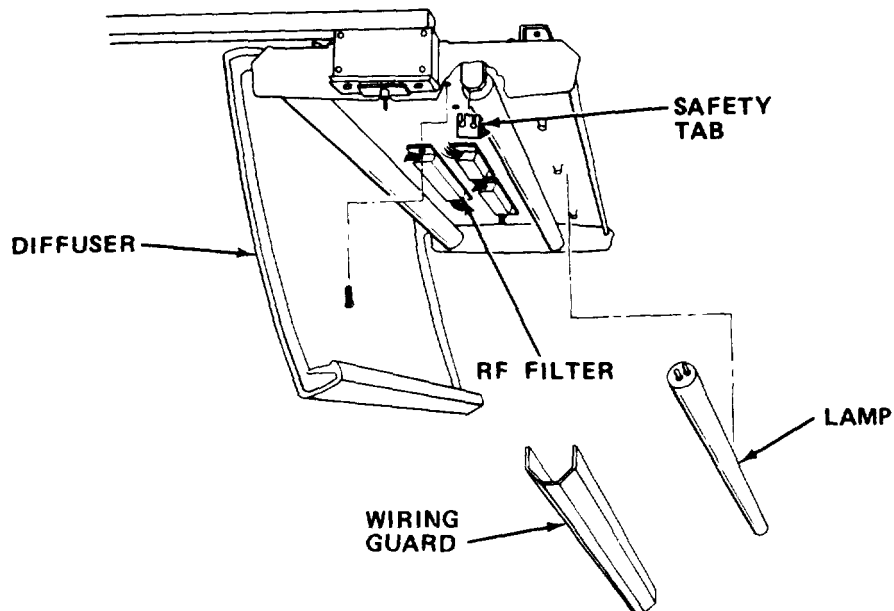
SUPPLIES: RF Filter

Wire Ties

**WARNING**

**Death or serious injury may result unless overhead light switch is turned OFF before working on light fixture.**

- a. Turn overhead light switch off.
- b. Remove diffuser from light fixture.
- c. Remove safety tabs and lamps. Place in diffuser.
- d. Squeeze light wiring guard and remove.
- e. Remove wire ties as required.



- f. Tag wires to filter.
- g. Remove wire nuts and disconnect filter wires.

- h. Remove nuts and defective filter.
- i. Install new filter. Secure with nuts.
- j. Reconnect filter wires and secure with wire nuts.
- k. Remove tags.
- 1. Install new wire ties.

**NOTE**

**Be sure wires are free of kinks and do not interfere with placement of wire guard.**

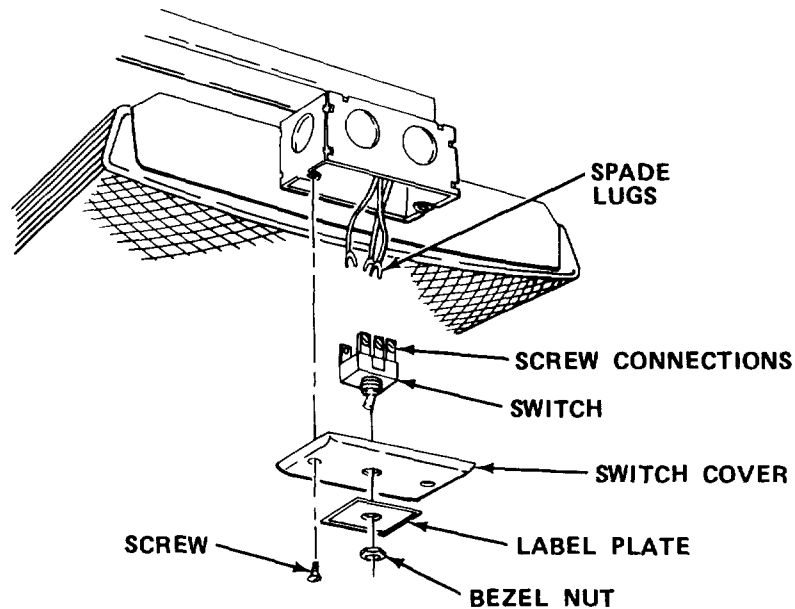
- m. Reinstall wire guard.
- n. Reinstall lamps and safety tabs.
- o. Reinstall diffuser.
- p. Turn on light switch.

1-16.3 Replace Fluorescent Light Switch.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver  
Needle Nose Pliers  
Flashlight

SUPPLIES: Switch Assembly

**WARNING**

Death or serious injury may occur if lighting circuit breaker is not turned off before working on light assembly.

**NOTE**

Alternate lighting is required to perform this task.

- a. Turn circuit breaker OFF.
- b. Remove bezel nut.
- c. Note notch on label plate and remove label plate.
- d. Loosen screws.
- e. Remove cover plate.

- f. Tag and disconnect wires from defective switch.
- g. Install new switch and connect wires.
- h. Insert switch through cover plate and label plate.

**NOTE**

**Be sure label plate is in same direction as when removed. Secure with bezel nut.**

- i. Align cover plate with holes and secure with screws.
- j. Turn circuit breaker ON.

1-16.4 Replace On/Off Switch.

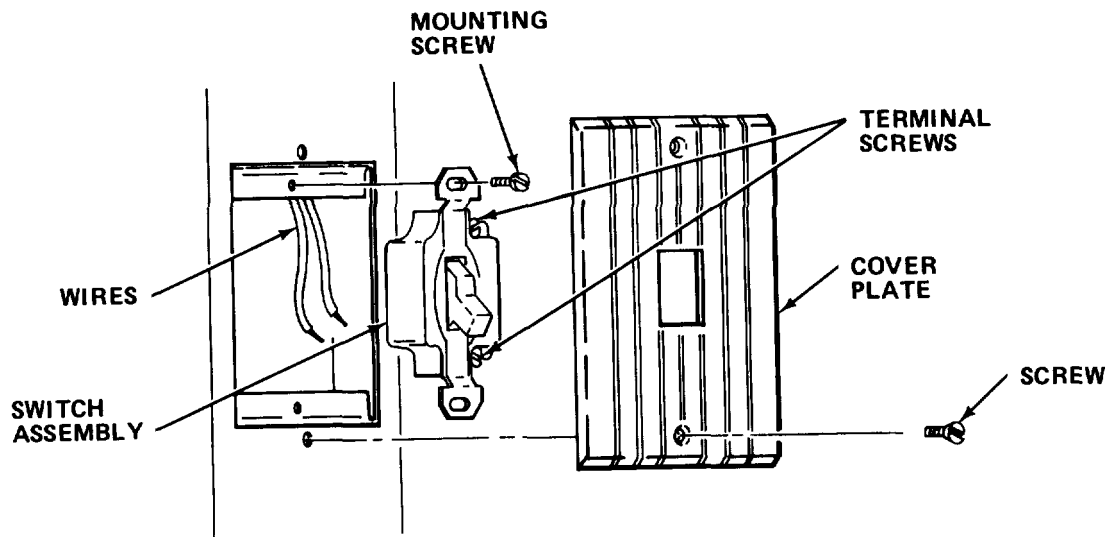
MOS: 83FJ6, Reproduction Equipment Repairer  
TOOLS: Flat Tip Screwdriver

SUPPLIES: Switch

**WARNING**

**Death or serious injury may occur if switch circuit breaker is not turned off before working on switch.**

- a. Turn off appropriate circuit breaker.



- b. Remove screws.
- c. Remove cover plate.
- d. Remove mounting screws.
- e. Pull switch assembly from wire guide to gain access to wires.
- f. Loosen terminal screws. Then disconnect wires.
- g. Install new switch.
- h. Reconnect wires.
- i. Guide switch into wire guide, alining holes.

**NOTE**

**Be sure wires are not kinked or strained.**

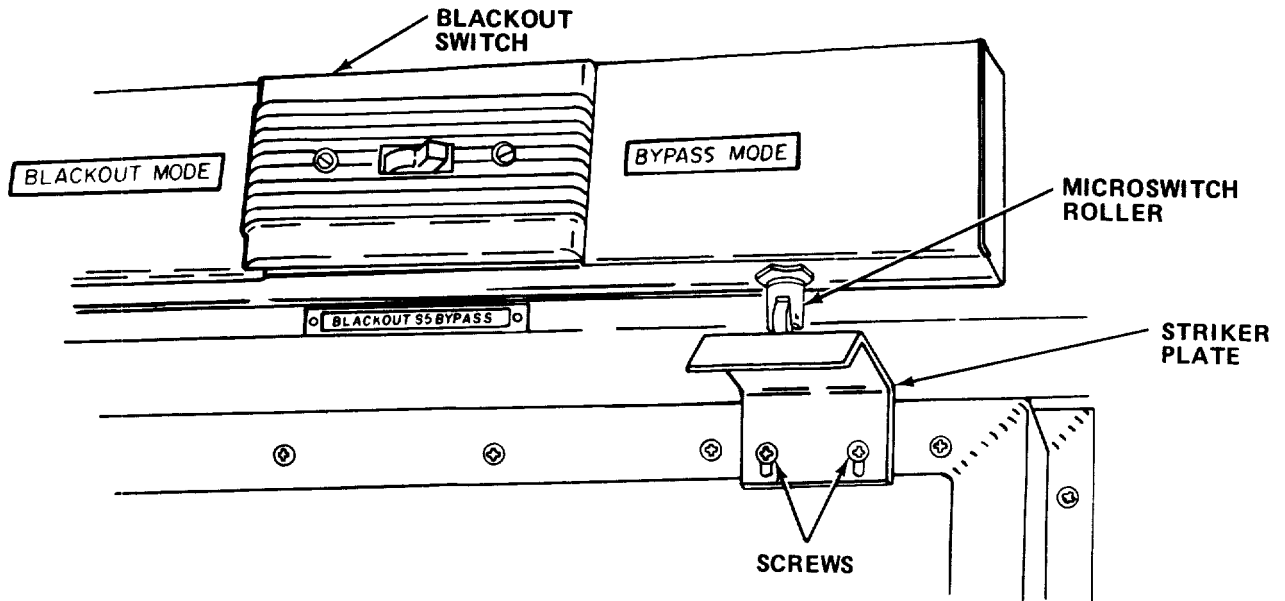
- j. Reinstall mounting screws.
- k. Reinstall cover plate and secure with screws.
  - 1. Turn on switch circuit breaker.

1-16.5 Replace Blackout/Dome Light Microswitch.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver  
6 in. Adjustable Wrench

SUPPLIES: Microswitch

**WARNING**

Death or serious injury may occur from electrical shock unless power is secured before servicing.

- a. Turn off blackout/dome light circuit breaker.
- b. Remove conduit cover.
- c. Remove nut and pull out switch to expose wiring.
- d. Disconnect wires from defective switch.
- e. Connect wires to new switch.
- f. Install switch and secure with nut.
- g. Adjust striker plate until plate contacts rollers.
- h. Reinstall conduit cover.
- i. Turn on circuit breaker.



1-16.6 Replace Receptacle.

MOS: 83FJ6, Reproduction Equipment Repairer

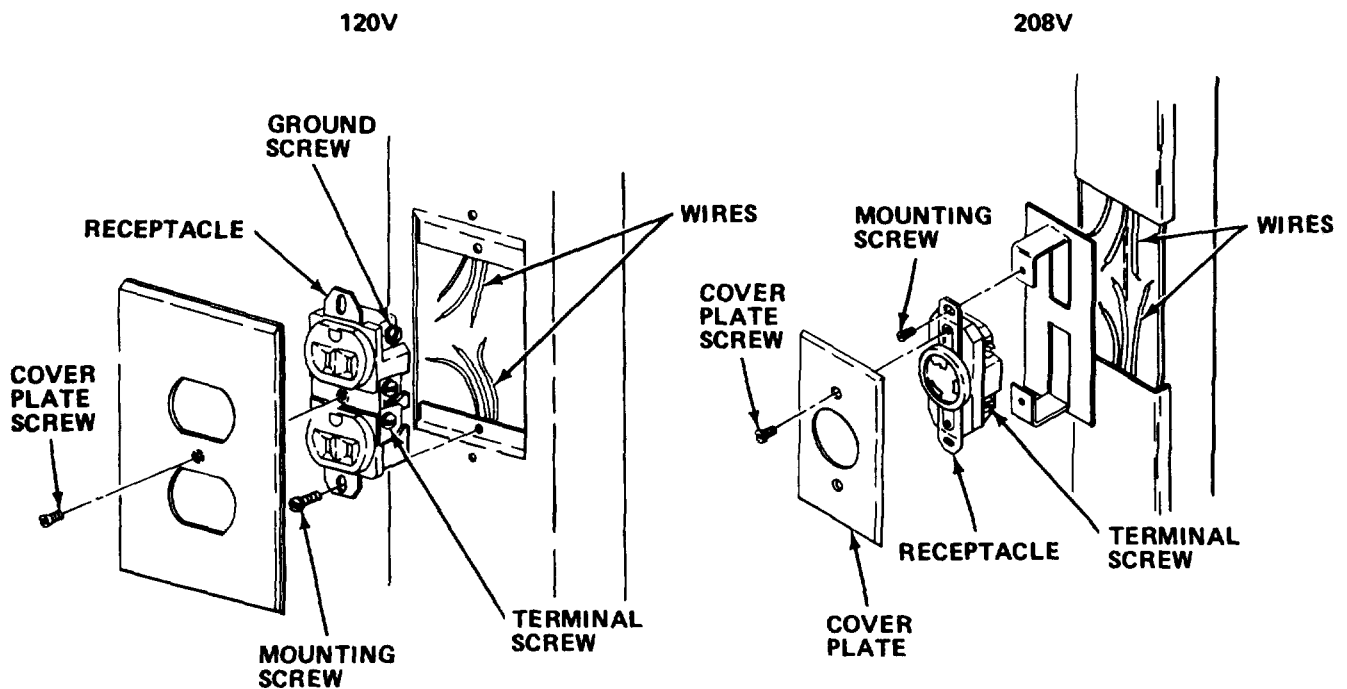
TOOLS: Flat Tip Screwdriver

SUPPLIES: Receptacle

**WARNING**

Death or serious injury may result if receptacle circuit breaker is not turned off before working on receptacle.

- a. Turn off receptacle circuit breaker.



- b. Remove cover plate screws.
- c. Remove cover plate.
- d. Remove mounting screws.
- e. Withdraw receptacle to gain access to wires.
- f. Loosen terminal screws and ground screw. Then disconnect wires.
- g. Install new receptacle.

- h. Reconnect wires. Connect green (ground) wire first.
- i. Guide receptacle into wire guide.

**NOTE**

**Be sure wires are not kinked or strained.**

- j. Secure receptacle with screws.
- k. Reinstall cover plate. Secure with screws.
- l. Turn on receptacle circuit breaker.

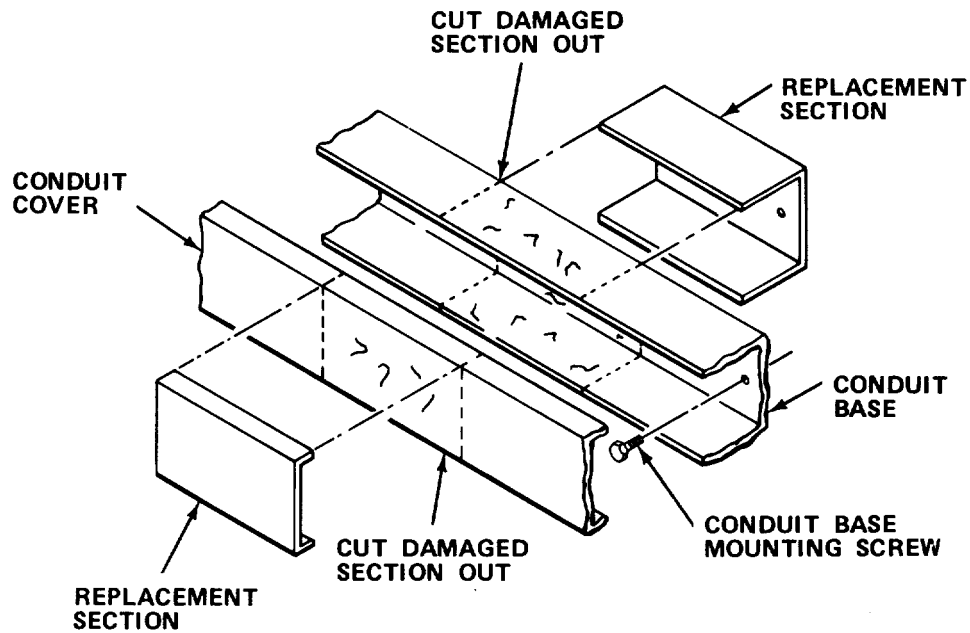
1-16.7 Replace Wire Molding.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver

- Hacksaw
- Flashlight
- Paint Brush
- Multimeter
- Drill and Bits
- File
- Machinist Rule

SUPPLIES: Paint (Item 11, Appendix E)  
Cheesecloth (Item 3, Appendix E)  
Conduit Base  
Conduit Cover  
Padlock



**WARNING**

Death or serious injury may result from failure to turn off and padlock safety switch before repairing molding.

**NOTE**

Alternate lighting is required to perform this task.

- a. Turn off and padlock safety switch.
- b. Remove conduit cover.
- c. Inspect wires for damage.

**NOTE**

Refer to direct support maintenance for wiring repair if necessary.

- d. Loosen wiring and carefully pull it from the entire base section.
- e. Remove screws and conduit base from wall.

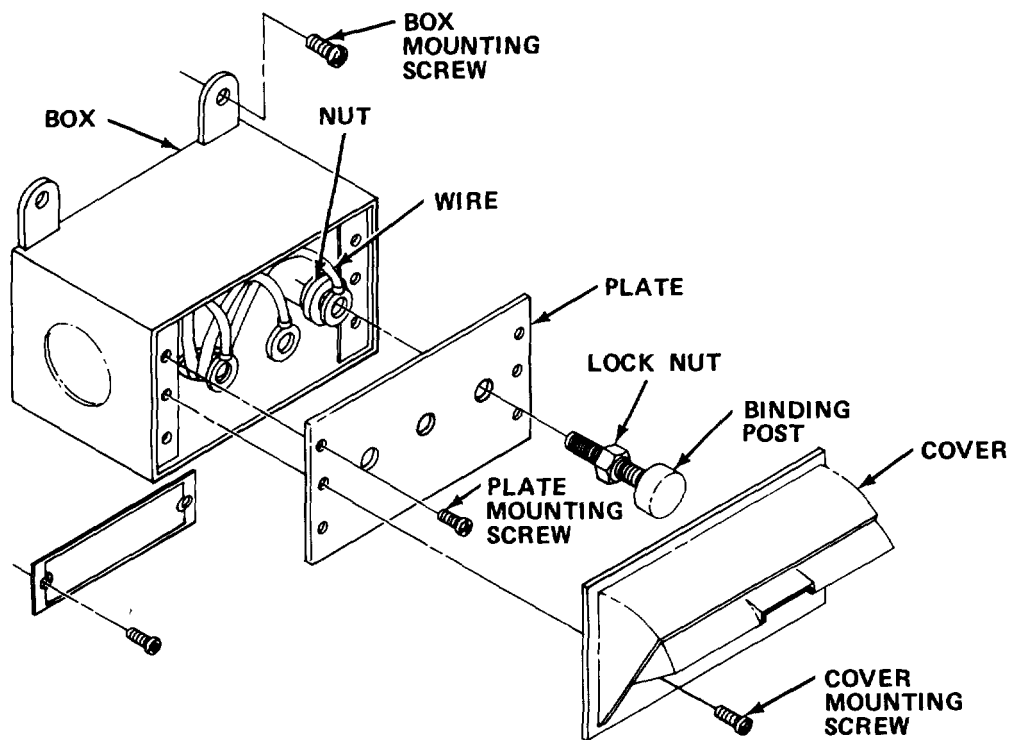
- f. Mark and measure damaged area on molding. Record measurement.
- g. Cut damaged area from molding.
- h. Cut section from new molding to the length recorded in step f.
- i. Using damaged area as a template, mark mounting holes on new piece.
- j. With a number 25 drill bit, drill holes in new molding.
- k. With file, remove all burred edges.
- l. Paint base section as required.
- m. Reinstall conduit base on wall with screws.
- n. Carefully place wiring back in conduit base.
- o. Reinstall cover on base.
- p. Test wiring for continuity between power wires and conduit. If there is continuity, determine and correct grounding fault.
- q. Test wiring with power on.

1-16.8 Replace Telephone Binding Post Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver  
1/2 in. Combination Wrench

SUPPLIES: Binding Post Box  
Binding Posts



- a. Remove cover mounting screws. Remove cover.
- b. Remove plate mounting screws to gain access to back of plate.
- c. Tag wires for identification.
- d. Remove nuts and wires from binding posts.
- e. If required, remove box mounting screws and replace box.
- f. Replace any defective binding posts. Secure wires to new posts and remove tags.
- g. Reinstall box assembly and plate, and secure plate with screws.
- h. Secure cover with screws.

1-16.9 Replace Ventilation Fan.

MOS: 83FJ6, Reproduction Equipment Repairer

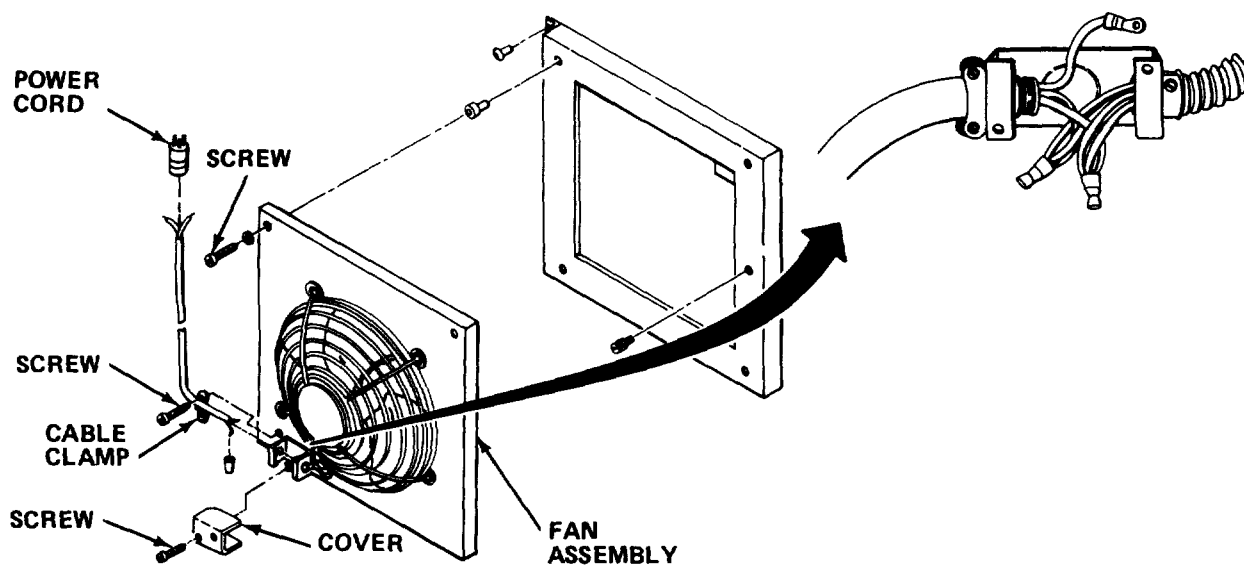
TOOLS: Flat Tip Screwdriver  
 Cross Tip Screwdriver  
 Wire Cutters

SUPPLIES: Fan Assembly  
 Wire Nuts  
 Power Cord

**WARNING**

Death or serious injury could result if power is left on. Turn fan switch off and unplug power cord before working on ventilation fan.

- a. Unplug power cord.



- b. Remove screws and place fan assembly on work surface.  
 c. Loosen screws on cable clamp.  
 d. Remove screws and cover.  
 e. Tag wires and cut connectors from wires.  
 f. Remove power cord from defective fan assembly.  
 g. Install new fan.  
 h. Install new power cord.

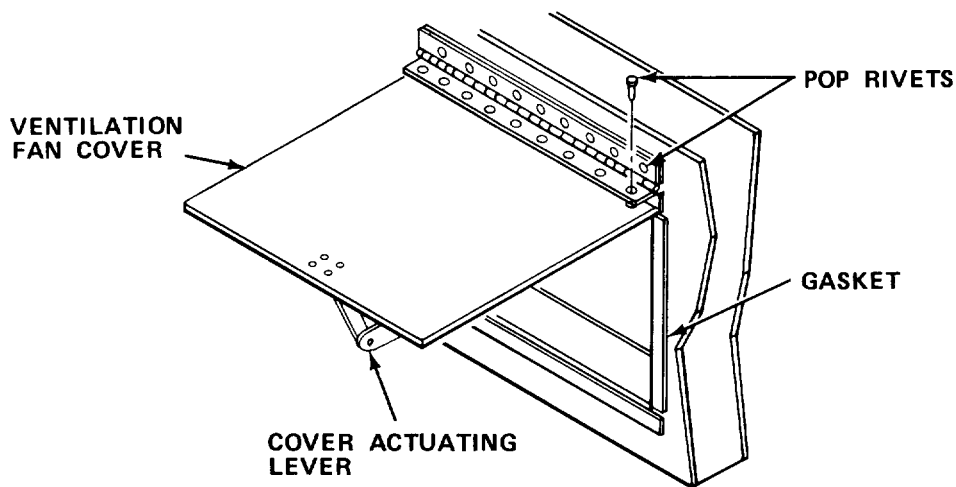
- i. Connect wires with wire nuts and remove tags.
- j. Tighten cable clamp screws.
- k. Reinstall cover. Secure with screws.
- l. Reinstall fan assembly. Secure with screws.
- m. Plug in power cord.

1-16.10 Replace Ventilation Fan Cover.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Drill and Bits  
 Pop Rivet Gun  
 Scraper

SUPPLIES: Pop Rivets  
 Ventilation Fan Cover  
 Gasket  
 Solvent P-D-680 (Item 17, Appendix E)  
 Adhesive (Item 1, Appendix E)  
 Rags (Item 13, Appendix E)  
 Hinge  
 Impermeable Gloves  
 Goggles



- a. Drill pop rivets from hinged cover to remove vent cover.
- b. Remove defective vent cover and transfer mounted hardware to new cover.

**WARNING**

Dry cleaning solvent, P-D-680 used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C). Fumes and chemicals used may result in death or blindness if personnel do not use proper ventilation.

- c. Scrape gasket off van body and clean area with solvent, P-D-680.
- d. Secure new gasket to van body with adhesive.
- e. Aline ventilation fan vent cover and pop rivet to hinge.
- f. Test cover for tightness of closure.

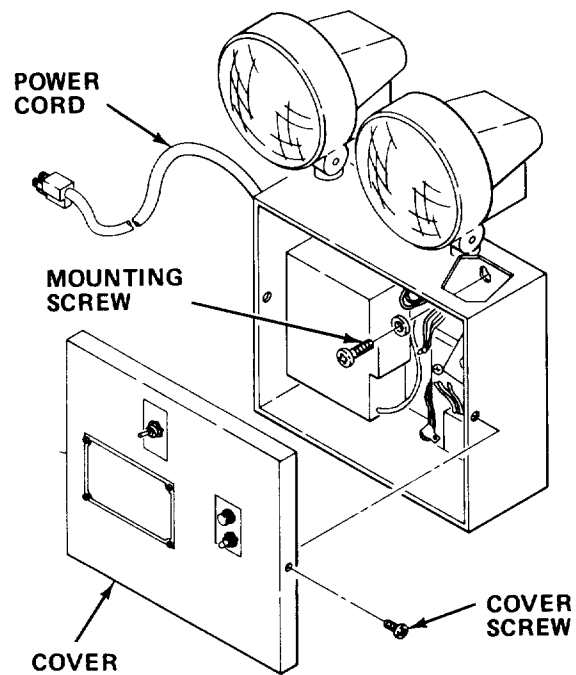


1-16.11 Replace Emergency Light Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver  
Flat Tip Screwdriver

SUPPLIES: Emergency Light Assembly

**WARNING****Death or serious injury may occur if power cord is not unplugged before servicing light.**

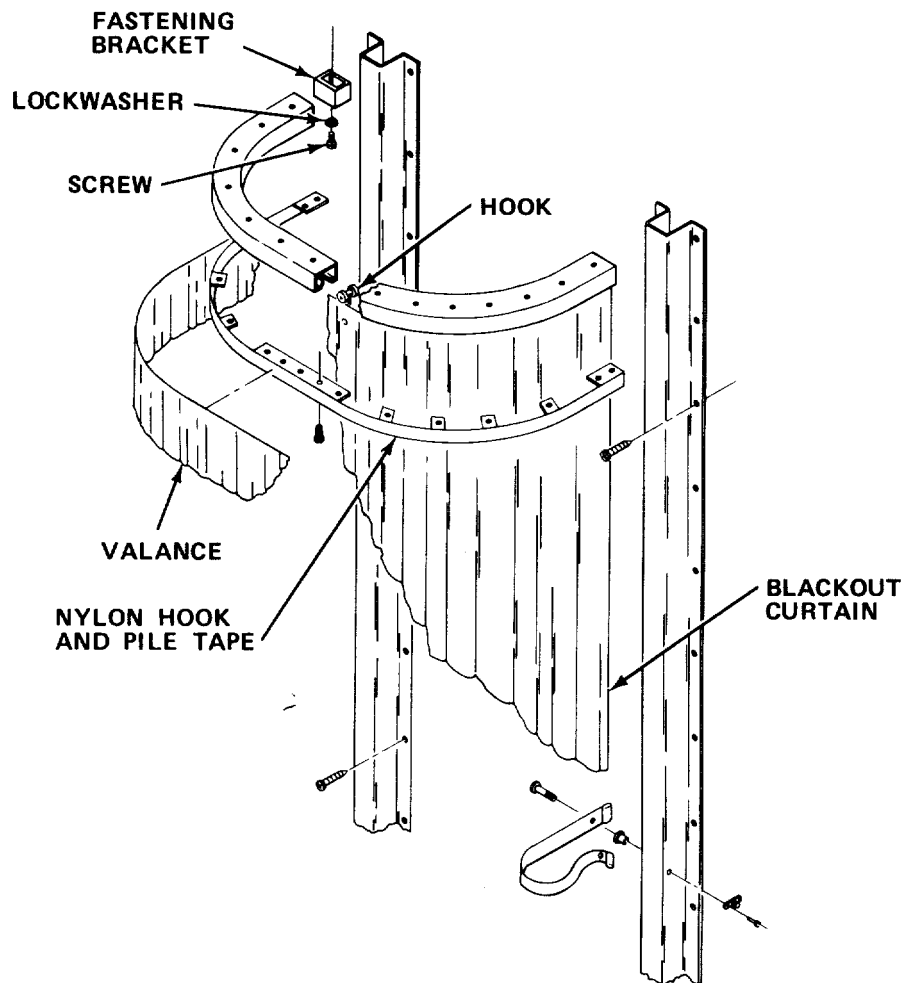
- a. Unplug power cord.
- b. Remove cover screws. Move cover out of way.
- c. Remove mounting screws.
- d. Remove emergency light assembly.
- e. Install new emergency light assembly. Secure with screws.
- f. Secure cover with screws.
- g. Plug in power cord.

1-16.12 Repair Blackout Curtain.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver

SUPPLIES: Hooks  
 Valance  
 Curtain  
 Nylon Hook and Pile Tape  
 Adhesive (Item 1, Appendix E)



- a. Remove curtain from hooks.
- b. Pull curtain and valance from nylon hook and pile tape.
- c. Remove end screw, lockwasher, and fastening bracket from ceiling.
- d. Replace damaged hooks.

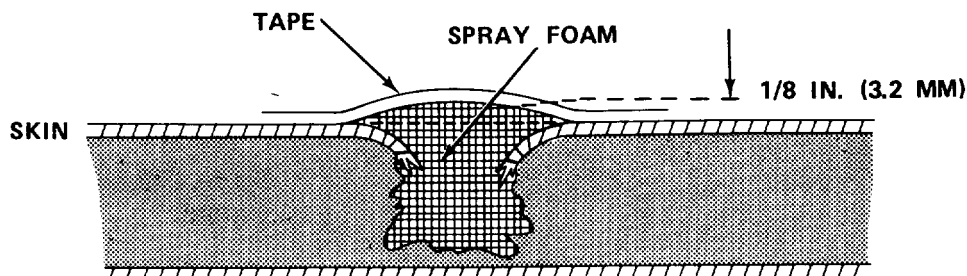
- e. Reinstall fastening bracket with hooks. Fasten with end screw and lockwasher.
- f. Glue loose nylon hook and pile tape to wall or bracket. Replace tape if worn out.
- g. Hook curtain to bracket.
- h. Attach valance.
- i. Check curtain for free movement.

1-16.13 Repair Van Body Skin (Temporary).

MOS: 52C, Utilities Equipment Repairer

TOOLS: Pliers  
 Ball Peen Hammer  
 Scissors or Utility Knife

SUPPLIES: Cloth Duct Sealing Tape (Item 20, Appendix E)  
 Silicone Sealant (Item 16, Appendix E)  
 Sprayfoam (Item 19, Appendix E)  
 Cheesecloth (Item 3, Appendix E)



- a. Bend broken edges of punctured skin inward into puncture hole. Do not attempt to remove fragments of skin by bending or pulling outward. Bend skin inward only enough to put broken edges below surface of unbroken skin.
- b. Remove any loose fragments of foam which are not now held in place by bent broken skin. Removing small pieces of foam or dust is more important than removing chunks.
- c. Using cloth slightly dampened with water, wipe area around puncture to remove any dirt or mud and wipe dry.

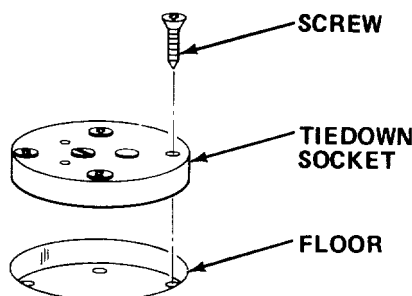
- d. Inject sprayfoam into puncture. Mound sprayfoam to about 1/8 in. (3.2 mm) above surface of unbroken skin. Apply bead of sealant about 1/4 in. (6.4 mm) wide over all cuts in skin leading out from puncture. Do not smooth out sealant.
- e. Plan how puncture is to be covered with tape before applying any tape. Length and width of tape, number of tape strips, overlapping, and how tape is applied will affect sealing capability of repair. Each piece of tape should extend about 1-1/2 in. (38.1 mm) beyond sealant it will cover. If this will require more than one strip of tape, tape should overlap about 1/2 in. (12.7 mm). If three or more strips of tape are required, center strip should be applied first.
- f. Apply tape, holding it taut, and apply it perpendicular to panel skin. Do not apply with rolling motion either end-to-end or center-to-ends. Do not rub each strip in place individually. Apply all strips lightly with proper overlap and rub into place.
- g. If necessary, damaged tape can be replaced; however, it should be removed with careful peeling motion to avoid damage to sealant. If sealant also peels back, new sealant should be applied. Complete removal of old sealant is not necessary. Permanent repair by direct support, or higher category of maintenance, should be made as soon as possible.

1-16.14 Replace Tiedown Socket.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver  
Flat Tip Screwdriver

SUPPLIES: Tiedown Socket



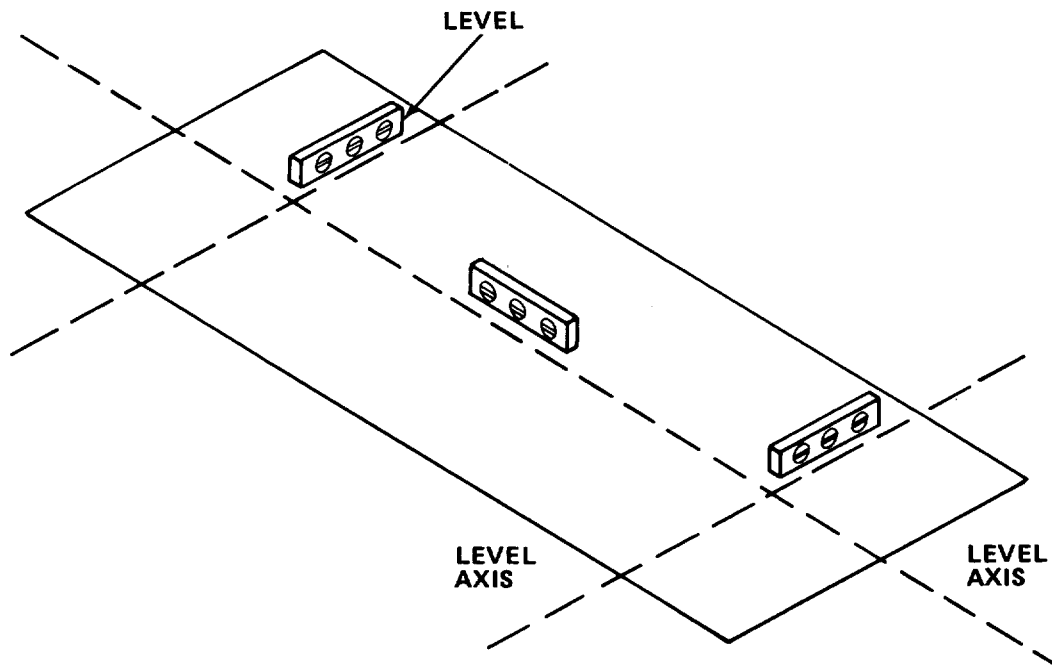
- a. Remove screws from tiedown socket.
- b. Pry defective socket from floor.
- c. Install new tiedown socket. Rotate new tiedown socket enough to avoid installing screws in old screw holes.
- d. Reinstall screws.

1-16.15 Replace Level Indicator.

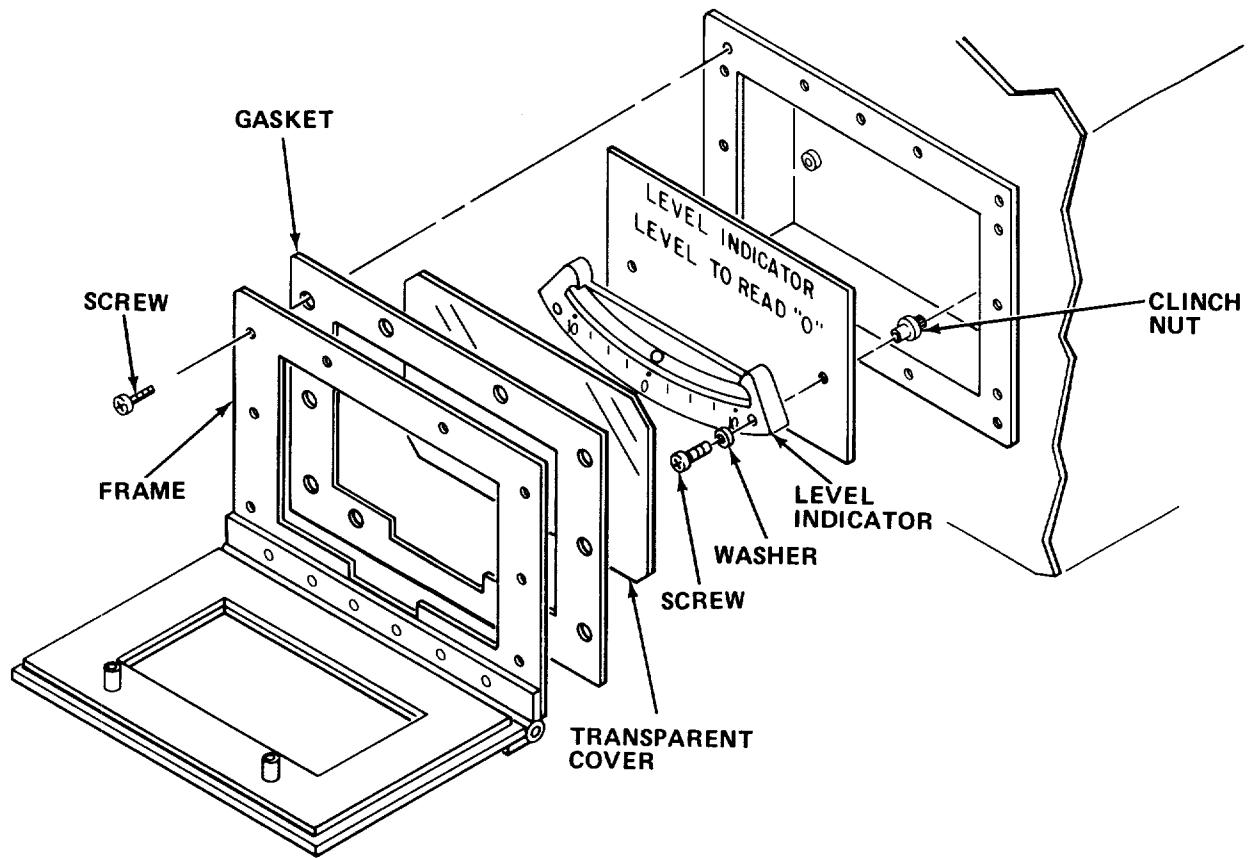
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Carpenter's Level  
 Cross Tip Screwdriver  
 Knife, TL-29

SUPPLIES: Level Indicator  
 Gasket



- a. Level section using level indicators. Then confirm section is level by using carpenter's level on floor inside section.
- b. Adjust section leveling jacks until section is level as indicated by carpenter's level alinement at front-rear and left-right at each end as shown in illustration.



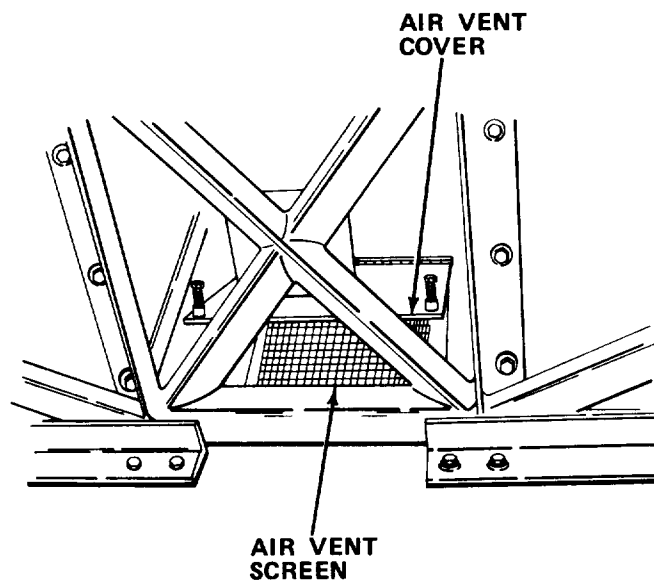
- c. Loosen knurled screws and move cover away from level assembly.
- d. Remove screws and washers to release frame and gasket.
- e. Remove transparent cover.
- f. Remove screws and washers to remove level indicator.
- g. Replace level assembly and secure with screws and washers.
- h. Reinstall transparent cover.
- i. Install new gasket.
- j. Reinstall frame and secure with screws and washers.

1-16.16 Replace Air Vent Screen.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver  
Scissors

SUPPLIES: Rubber Adhesive (Item 1, Appendix E)  
Screen Nylon (Item 15, Appendix E)



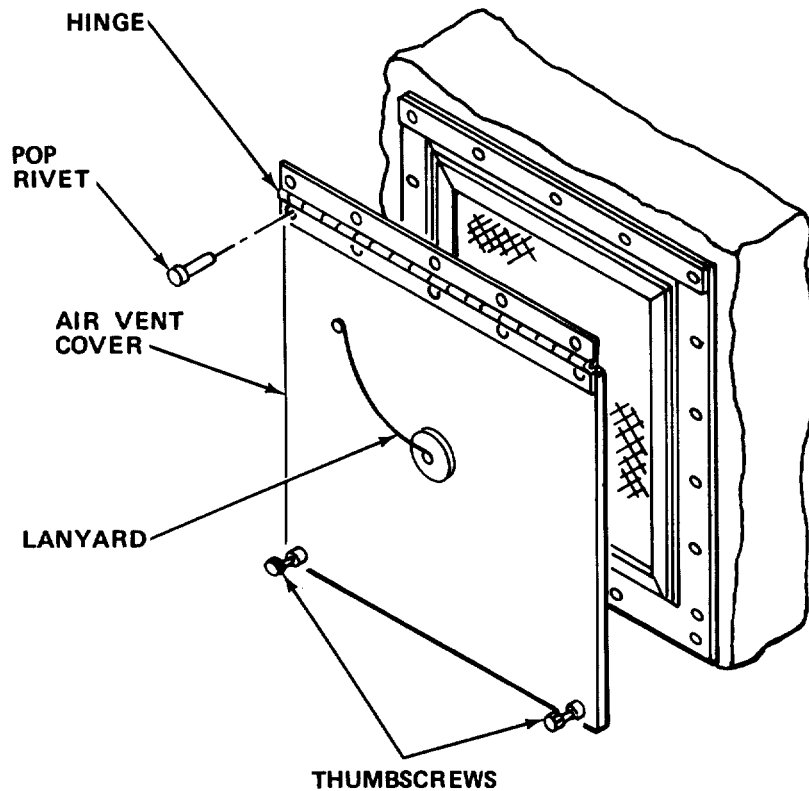
- a. Raise access cover and remove screws holding screen frame to section.
- b. Remove screen and frame.
- c. Clean all old screen material and adhesive from frame.
- d. Cut new screen material to size and attach to frame with adhesive.
- e. Reinstall frame to section and secure with screws. Lower cover.

1-16.17 Replace Air Vent Cover.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Drill and Bits  
Pop Rivet gun

SUPPLIES: Vent Cover  
Pop Rivets



- a. Loosen thumbscrews.
- b. Drill pop rivets from hinge. Remove cover.
- c. Aline holes and pop rivet new cover to section.
- d. Tighten thumbscrews.

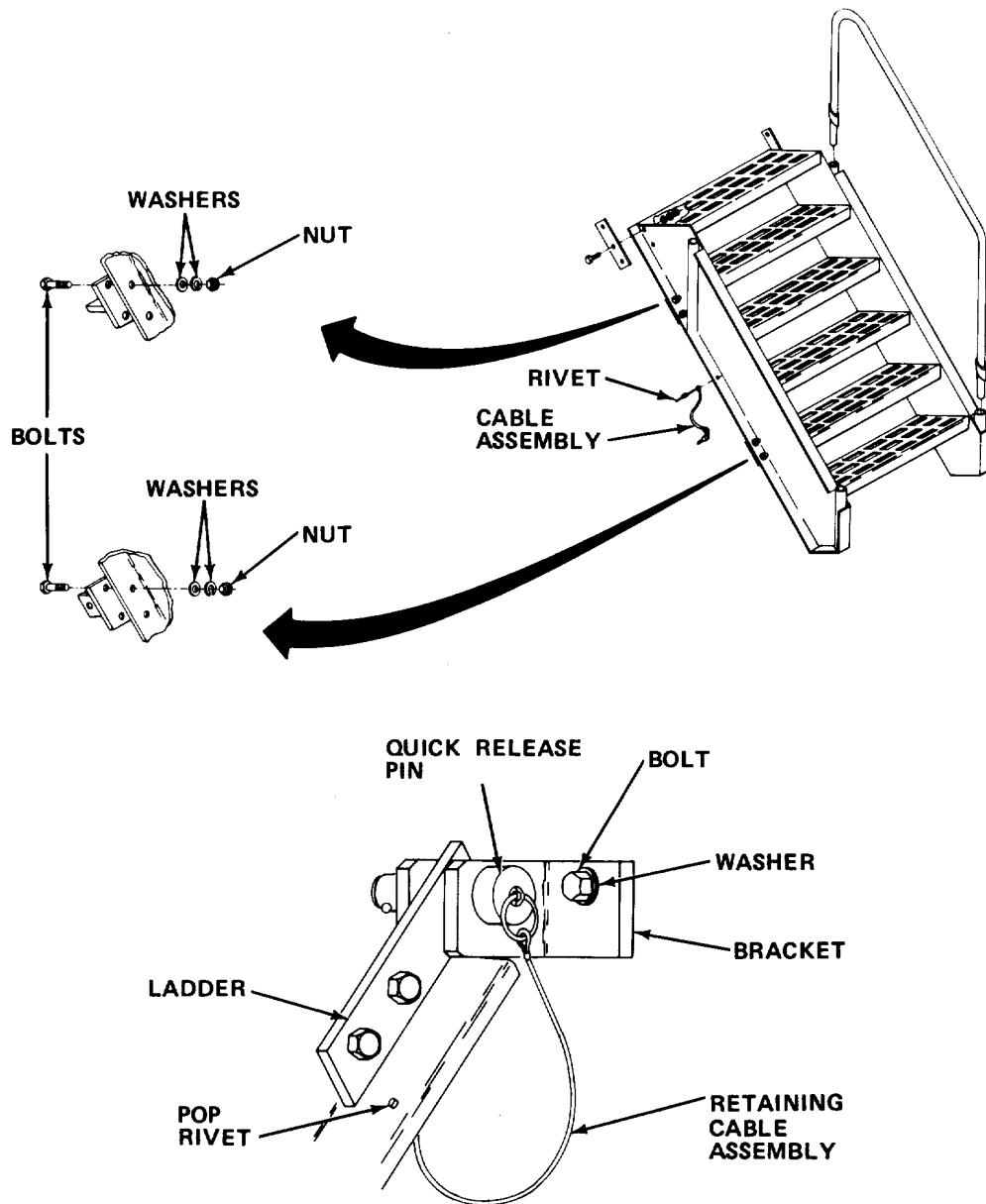


1-16.18 Repair Personnel Ladder.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Drill and Bits  
 Pop Rivet Gun  
 9/16 in Combination Wrench  
 8 in Adjustable Wrench

SUPPLIES: Cable Assembly  
 Quick Release Pins  
 Pop Rivets  
 Mounting Brackets



- a. Remove ladder from mounting bracket.
- b. Remove bolts, washers, and nuts securing damaged mounting brackets to ladder.

- c. Remove damaged cable assembly from ladder by drilling out pop rivets.
- d. Reinstall or install new mounting brackets. Secure with bolts, washers, and nuts.
- e. Rivet new cable assembly to ladder.

**NOTE**

**Be sure ladder mounting brackets fit van body on rear door and under personnel doors.**

- f. Reinstall ladder on mounting bracket.

**1-17. PREPARATION FOR STORAGE OR SHIPMENT.**

a. Van body may be stored or shipped either mounted on trailer chassis or unmounted. Preparation of trailer chassis is covered in TM 5-2330-305-14 and should be referred to when trailer-mounted section is prepared for storage and shipment. TM 5-4120-367-14 must be reviewed for instructions covering air conditioner/heater.

b. Inventory equipment and consumable supplies against Hand Receipt Manual to be sure accountable material is contained in section. Remove consumable supplies that have limited shelf life or broken seals. Replace missing items and be sure that all remaining consumable supplies are at authorized levels. Be sure all major components are operational.

c. Remove all unauthorized or personal equipment from section.

d. Move all classified material or sensitive data to proper storage. Complete all accountability and/or transfer of documents.

e. Refer to Preparation for Movement (Paragraph 1-6.2) and follow applicable steps and any additional steps directed by area authorities.

**Section V DIRECT/GENERAL SUPPORT MAINTENANCE****1-18. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.**

1-18.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

1-18.2 Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment. Special Tools, TMDE and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

1-18.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-6675-315-24P covering direct/general support maintenance for this equipment.

1-18.4 Electrical System. Direct/general support level of maintenance for the repair of the section's electrical system will consist of electrical wiring repair using standard electrical wiring repair procedures.

**1-19. DIRECT/GENERAL SUPPORT TROUBLESHOOTING PROCEDURES.**

a. Direct/general troubleshooting procedures cover the most common malfunctions that may be repaired at the direct/general level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used at lower levels should be conducted in addition to the direct/general support troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/ inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions, use the facing schematic or the foldout located at the end of this manual for further fault analysis.

Table 1-5. DIRECT/GENERAL SUPPORT TROUBLESHOOTING

---

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

---

1. PERSONNEL/CARGO DOORS DO NOT CLOSE COMPLETELY.
  - Step 1. Check that latch rollers rotate freely.

Replace latches (paragraph 1-20.2).
  - Step 2. Check to see if latch rods are bent.

Replace latch rods (paragraph 1-20.2).
  - Step 3. Check to see if door gasket is torn or broken.

Replace door gasket (paragraph 1-20.2).
2. PERSONNEL/CARGO DOORS DO NOT LATCH PROPERLY.

Check door latch for missing or damaged components.

Replace door latch (paragraph 1-20.2)
3. AIR OR WATER ENTERS VAN BODY AROUND DOOR.

Check to see if door gasket is worn or broken.

Replace door gasket (paragraph 1-20.3).

## Table 1-5. DIRECT/GENERAL SUPPORT TROUBLESHOOTING - Cont

---

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

---

4. RECEPTACLES DO NOT OPERATE BUT CIRCUIT BREAKERS ARE ON.

**WARNING**

**Turn off main circuit breaker before inspecting or servicing circuit breakers or receptacles. Failure to do so may result in death or serious injury.**

Step 1. Check to see if power cable is firmly connected to power entry panel.

Connect power cable.

Step 2. Check to see if voltage meter and frequency scale and INCORRECT PHASE or CORRECT PHASE lamp indicate necessary power.

Notify your supervisor for service of power supply at source.

5. CIRCUIT BREAKERS TRIP CONTINUALLY.

**WARNING**

**Turn off and padlock safety switch before inspecting or servicing circuit breakers or receptacles. Failure to do so may result in death or serious injury.**

Step 1. Check to see if receptacles are overloaded.

Reconnect equipment to different receptacles.

Step 2. Check to see if receptacles are damaged.

Replace receptacles (paragraph 1-16.5).

**1-20. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering direct/general support maintenance functions for the Distribution Section. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

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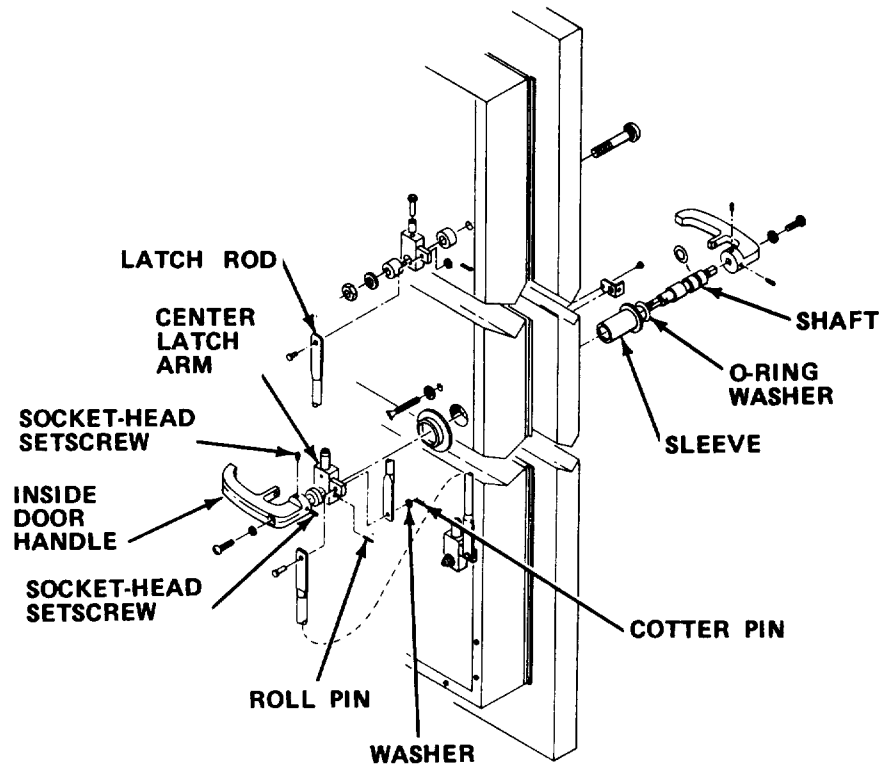
PROCEDURE	PARAGRAPH
Repair Personnel Door Handle .....	1-20.1
Replace Cargo Door Latch .....	1-20.2
Replace Personnel/Cargo Door Gasket .....	1-20.3
Replace Personnel/Cargo Door .....	1-20.4
Replace Circuit Breaker .....	1-20.5
Repair Floor Covering .....	1-20.6
Repair Van Body Skin (Permanent) .....	1-20.7
Replace Air Conditioner/Heater .....	1-20.8
Replace Air Conditioner Support Bracket .....	1-20.9
Replace Ventilation Duct .....	1-20.10

1-20.1 Repair Personnel Door Handle.

MOS: 63W, Wheel Vehicle Repairer

TOOLS: Cross Tip Screwdriver  
 Needle Nose Pliers  
 15/16 in. Combination Wrench  
 Hammer  
 Center Punch  
 1/8" Hex Head Key Wrench

SUPPLIES: O-Ring Washer  
 Sleeve  
 Roll Pin  
 Personnel Door Handle  
 Cheesecloth (Item 3, Appendix E)  
 Oil General Purpose (Item 7, Appendix E)  
 Hand Oiler  
 Cotter Pin



- a. Loosen screw and two socket-head setscrews. Remove defective inside door handle.
- b. Remove cotter pin and pins from center latch arm assembly.
- c. Move latch rods out of way.

- d. Punch roll pin from center latch arm and pull latch arm assembly from shaft.
- e. Withdraw latch and defective outside door handle.
- f. Inspect all components for wear.
- g. Replace worn O-ring washer and sleeve.
- h. Replace other worn components as needed.
- i. Reinstall shaft and new outside door handle.
- j. Aline center latch arm assembly on shaft. Secure with new roll pin.
- k. Aline latch rods. Attach to latch arms with pins, washers, and new cotter pin.
- l. Reinstall new inside door handle.
- m. Lightly oil all moving parts. Wipe up surplus oil.

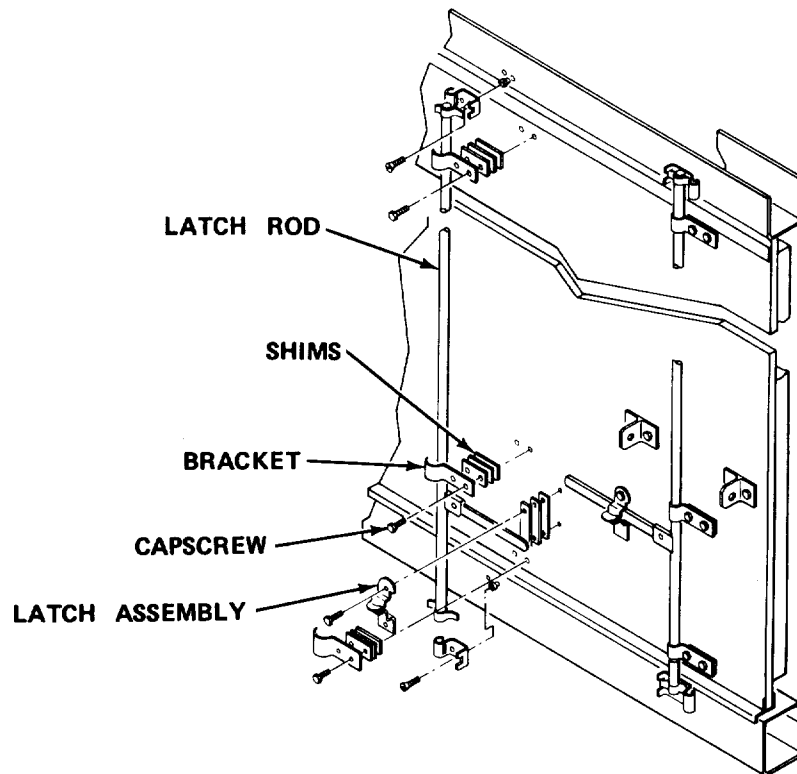


1-20.2 Replace Cargo Door Latch Assembly.

MOS: 63W, Wheel Vehicle Repairer

TOOLS: 9/16 in. Combination Wrench

SUPPLIES: Cargo Door Latch Assembly



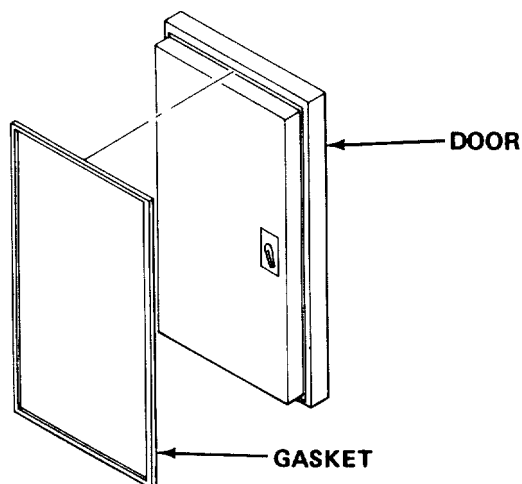
- a. Unlock latch.
- b. Remove capscrews and washers from brackets. Remove brackets and shims.
- c. Remove defective latch assembly and latch rod.
- d. Install new latch assembly and latch rod.
- e. Reinstall shims, brackets, washers, and capscrews.
- f. Check movement at latch rod and latch assembly. Lock latch.

1-20.3 Replace Personnel/Cargo Door Gasket.

MOS: 63W, Wheel Vehicle Repairer

TOOLS: Knife

SUPPLIES: Vinyl Gasket  
Adhesive (Item 1, Appendix E)  
Solvent P-D-680 (Item 17, Appendix E)  
Impermeable Gloves  
Goggles



- a. Open door completely and secure in open position.

**WARNING**

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 1380F (380C to 590C).

- b. Remove defective gasket by prying gasket from door. Scrape traces of gasket and adhesive from door. Wash with solvent P-D-680.
- c. Coat gasket area on door with adhesive.
- d. Firmly press new gasket onto door.
- e. Wipe excess adhesive from gasket.
- f. Close door and wipe excess adhesive from door and frame.
- g. Allow adhesive to dry before using door.

1-20.4 Replace Personnel/Cargo Doors.

MOS: 63W, Wheel Vehicle Repairer

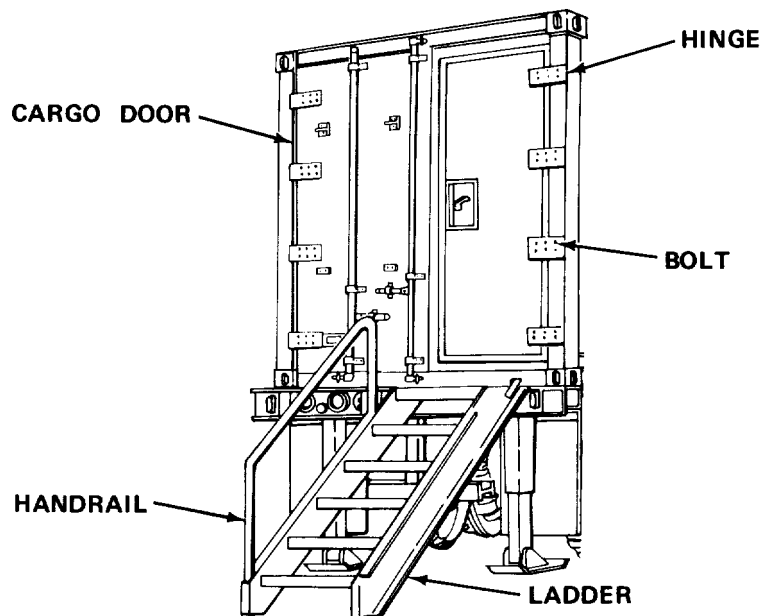
PERSONNEL: Two are required to perform this procedure.

TOOLS: Pop Rivet Gun  
Electric Drill and Bits  
Hoist  
3/4 in. Combination Wrench  
Paint Brush

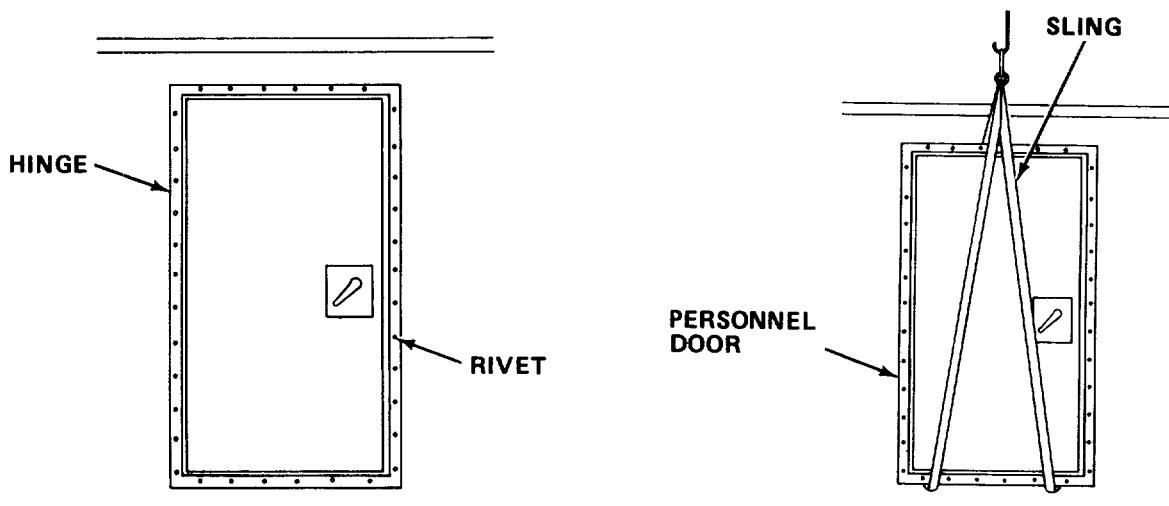
SUPPLIES: Personnel/Cargo Door  
Pop Rivets  
Vinyl Gasket  
Paint (Item 10, Appendix E)  
Paint (Item 11, Appendix E)  
Adhesive (Item 1, Appendix E)  
Cheesecloth (Item 3, Appendix E)

**WARNING**

To prevent personal injury or equipment damage, do not attempt to remove doors unless suitable lifting equipment and hoist are available.



- a. Remove handrails and ladders if rear cargo door is to be replaced.
- b. Unlock and open door to be replaced.



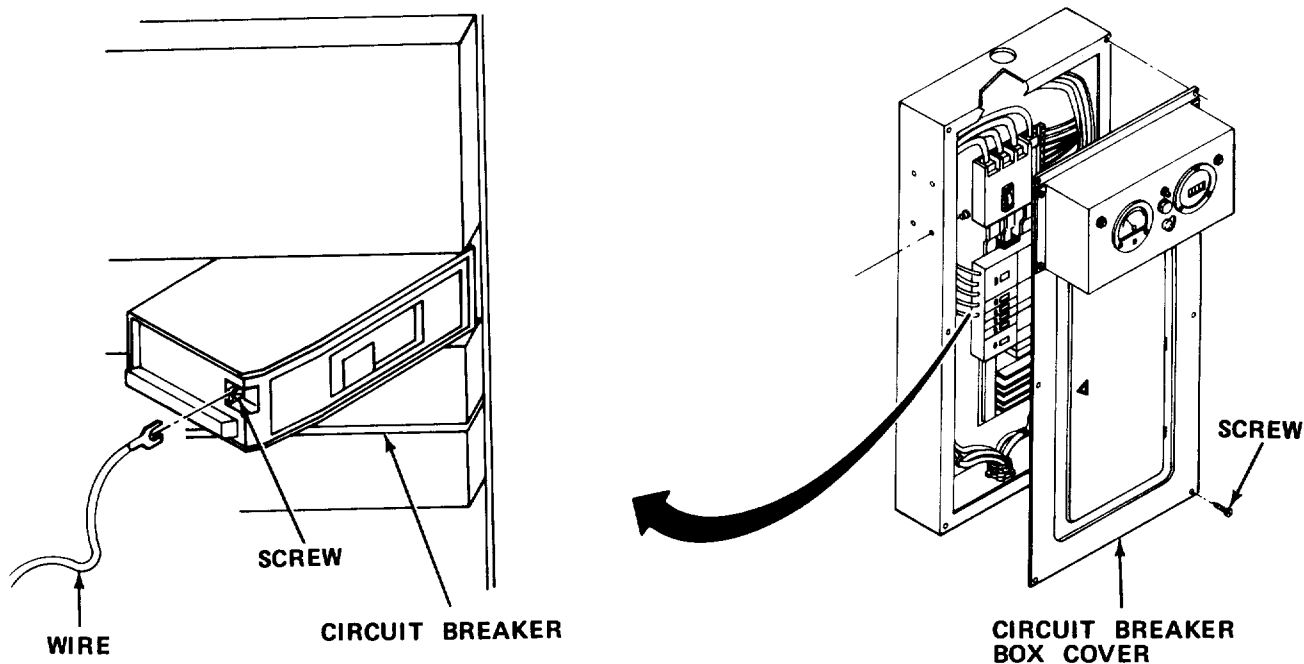
- c. Place sling around door and put a slight strain on hoist to remove weight from hinges.
- d. Remove bolts from hinges on rear personnel door. On side personnel door, drill out pop rivets from hinges. Remove hinges from door.
- e. Remove damaged door using hoist.
- f. Install new door using hoist.
- g. Reinstall hinges on rear personnel door. Secure with bolts. Reinstall hinges on side personnel door. Secure with pop rivets.
- h. Remove sling from door.
- i. Install new gasket on door after it is mounted (paragraph 1-20.3).
- j. Repaint as needed.
- k. Close and lock door.

1-20.5 Replace Circuit Breaker.

MOS: 35E, Special Electronic Devices Repairer

TOOLS: Flat Tip Screwdriver  
Multimeter

SUPPLIES: Circuit Breaker



**WARNING**

**Turn off and padlock safety switch. Turn off all individual circuit breakers before inspecting or servicing circuit breakers. Failure to do so may result in death or serious injury.**

- a. Turn off and padlock safety switch. Turn off individual circuit breakers.
- b. Remove circuit breaker box cover.
- c. Use multimeter to make sure voltage is not present.
- d. Remove defective circuit breaker by pushing and snapping out of place.
- e. Tag and remove wires from defective circuit breaker.
- f. Pull circuit breaker from panel.

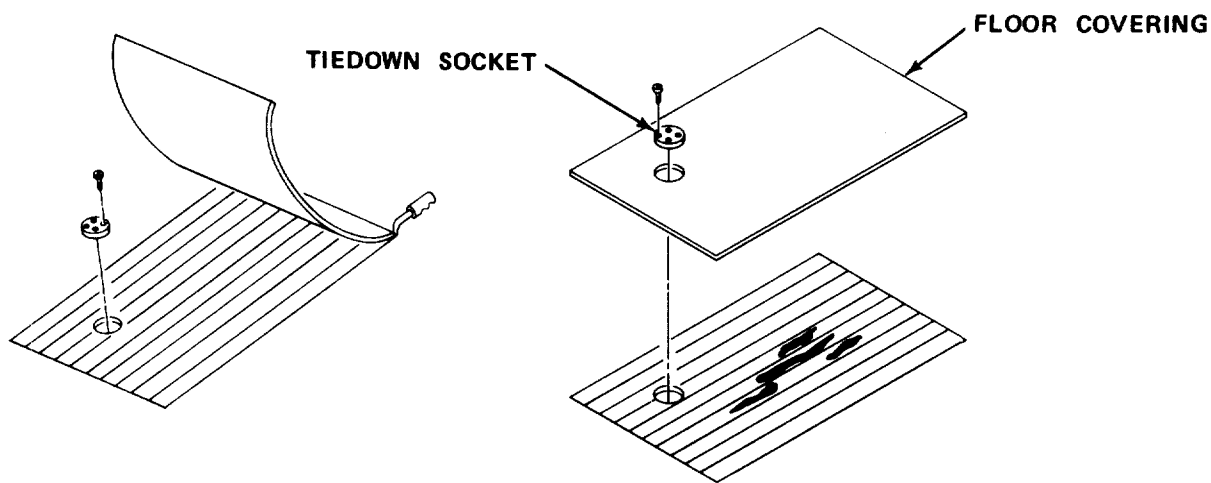
- g. Reconnect wires to new circuit breaker. Secure wires with screws.
- h. Install new circuit breaker by pushing and snapping into place.
- i. Reinstall circuit breaker box cover.
- j. Remove padlock and turn on safety switch and individual circuit breakers.

1-20.6 Repair Floor Covering.

MOS: 52C, Utilities Equipment Repairer

TOOLS: Utility Knife  
 Cross Tip Screwdriver  
 Scraper  
 Straightedge

SUPPLIES: Vinyl Floor Covering  
 Epoxy Resin (Item 14, Appendix E)  
 Floor Patch (Item 5, Appendix E)  
 Cheesecloth (Item 3, Appendix E)  
 Adhesive (Item 2, Appendix E)



- a. Cut a rectangular area from damaged floor covering.
- b. Remove tiedown socket. Remove damaged floor covering.
- c. Cut new floor covering to fit. Apply adhesive to floor. Press down new floor covering.
- d. Reinstall tiedown socket.

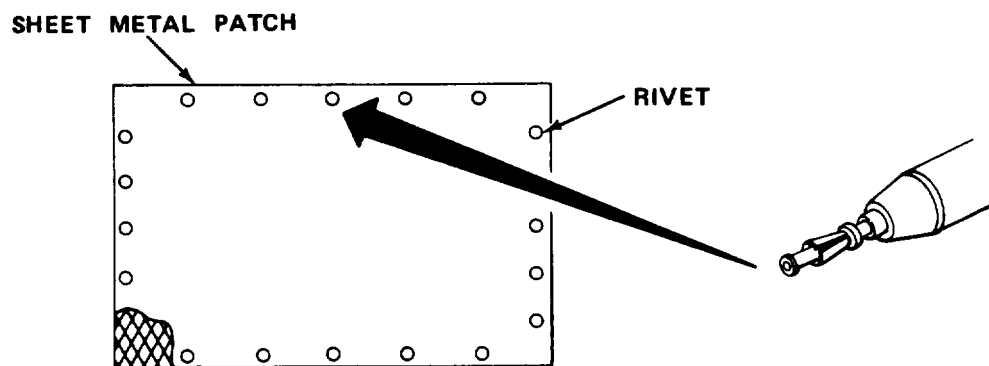
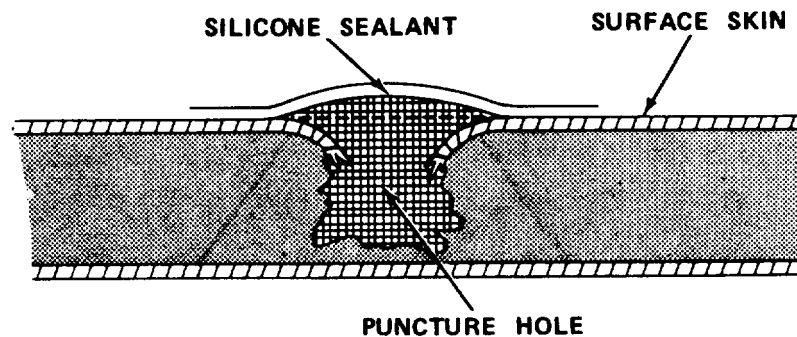
1-20.7 Repair Van Body Skin (Permanent).

MOS: 63W, Wheel Vehicle Repairer

TOOLS: Pop Rivet Gun  
Electric Drill and Bits  
Paint Brush

SUPPLIES: Pop Rivets  
Sprayfoam (Item 19, Appendix E)  
Silicone Sealant (Item 16, Appendix E)  
Paint (Items 10, 10A, and 10B, Appendix E)  
Cheesecloth (Item 3, Appendix E)

- a. Bend broken edges of skin inward into puncture hole. Do not attempt to remove fragments of skin by bending or pulling out.
- b. Remove any loose fragments of foam.
- c. Use cloth dampened with water to clean area around puncture. Wipe dry.
- d. Inject sprayfoam into puncture. Fill to 1/8 in. (3.2 mm) above surface of unbroken skin. Apply sealant to cracks leading to puncture.



- e. Prepare sheet metal patch large enough to cover damaged area with overlap.

- f. Place patch over damaged area and mark all around edges of patch.
- g. Drill holes 1 in. (25.4 mm) apart.
- h. Apply sealant to edges of patch.
- i. Apply patch to van body.
- j. Install pop rivets beginning at center of each side. Rivets should be placed 1 in. (25.4 mm) apart.
- k. Paint as needed.

1-20.8 Replace Air Conditioner/Heater.

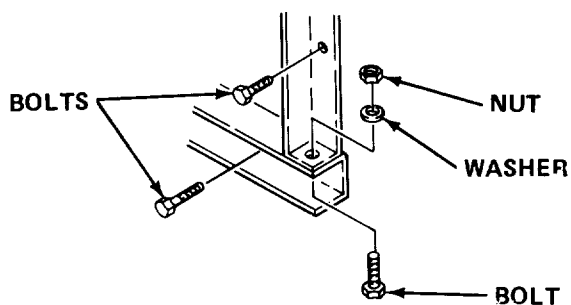
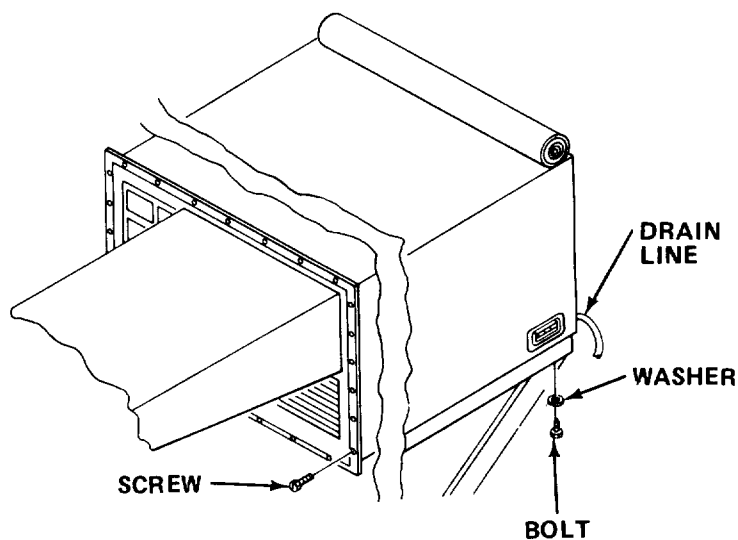
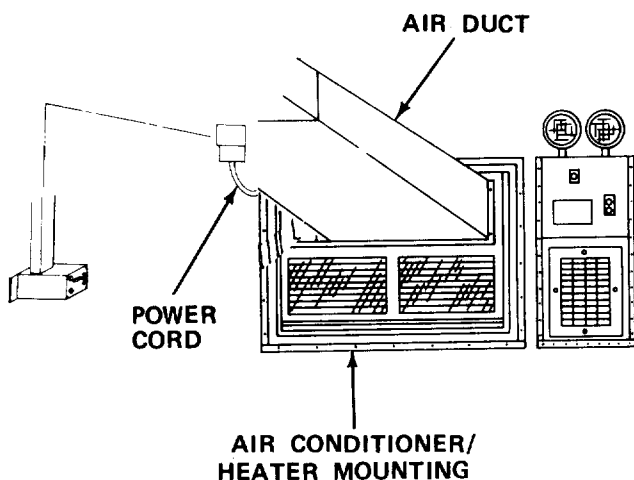
MOS: 63W, Wheel Vehicle Repairer

PERSONNEL: Two are required to perform this procedure.

TOOLS:           Cross Tip Screwdriver  
                      Lifting Equipment  
                      8 in. Adjustable Wrench  
                      7/16 in. Combination Wrench

SUPPLIES: Air Conditioner/Heater  
              Solvent P-D-680 (Item 17, Appendix E)  
              Gasket  
              Sealant (Item 16, Appendix E)  
              Adhesive (Item 1, Appendix E)





**WARNING**

- Use hoist or proper lifting equipment to replace air conditioner/heater. Failure to do so may result in death or serious injury.
  - Turn off air conditioner/heater circuit breaker and unplug power cord. Failure to do so may result in death or serious injury.
- a. Turn off air conditioner/heater circuit breaker. Unplug or disconnect power cord as appropriate.
  - b. Remove screws holding air duct to air conditioner/heater.
  - c. Remove nut, washer, and screw from each corner of air conditioner/heater mounting. Remove screws securing mounting to van wall.
  - d. Disconnect drain line from air conditioner/heater.
  - e. Attach sling to lifting handles. Raise hoist enough to remove slack from sling.

- f. Remove mounting bolts and washers.
- g. Slide out air conditioner until other lifting handles are free. Attach sling to handles.
- h. Raise defective air conditioner/heater with hoist until unit is free from brackets and van body.
- i. Place air conditioner/heater on flat-bed truck or pallet.

**WARNING**

**Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100° to 138° (38°C to 59°C).**

- j. Clean sealant from opening using dry cleaning solvent P-D-680.
- k. Remove damaged gasket and replace with new gasket.
- l. Raise air conditioner/heater until it rests on air conditioner/heater brackets.
- m. Remove two sling hooks as unit is eased into hole until grille touches duct.
- n. Remove remaining sling.
- o. Reinstall washers and mounting bolts.
- p. Reconnect drain lines.
- q. Reinstall screws securing air conditioner/heater mounting to section wall. Reinstall screw, washer, and nut to each corner of mounting.
- r. Reinstall screws securing air duct to air conditioner/heater.
- s. Reconnect or plug in power cord. Turn on air conditioner/heater circuit breaker.

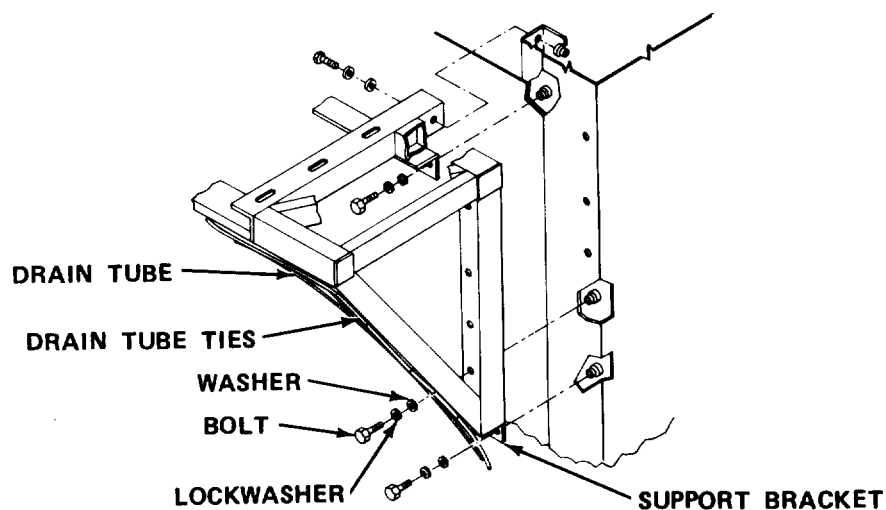
1-20.9 Replace Air Conditioner Support Bracket.

MOS: 63W, Wheel Vehicle Repairer

PERSONNEL: Two are required to perform this procedure.

TOOLS: 9/16 in. Combination Wrench  
Lifting Equipment  
Knife, TL-29

SUPPLIES: Air Conditioner Support Bracket  
Drain Tube Ties

**WARNING**

**Serious injury to personnel or damage to equipment may occur unless two or more personnel are used to remove and replace air conditioner/heater because of weight and balance of air conditioner/heater.**

- a. Remove air conditioner/heater (paragraph 1-20.8).
- b. Cut drain tube ties, and remove drain tube from support bracket.
- c. Remove bolts, lockwashers, and washers securing support bracket.
- d. Remove defective support bracket.
- e. Install new support bracket. Secure to van with bolt, lockwashers, and washers.
- f. Reinstall drain tube on support bracket, and secure with new ties.
- g. Reinstall air conditioner/heater (paragraph 1-20.8).

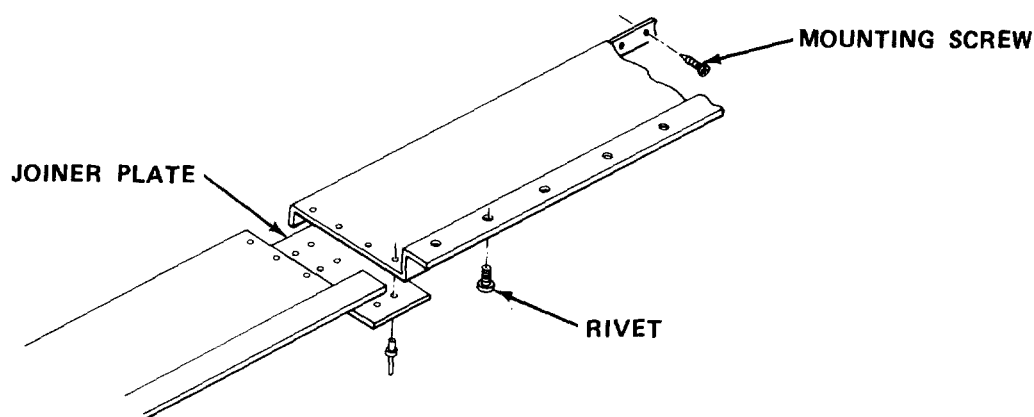
1-20.10 Replace Ventilation Duct.

MOS: 52C, Utilities Equipment Repairer

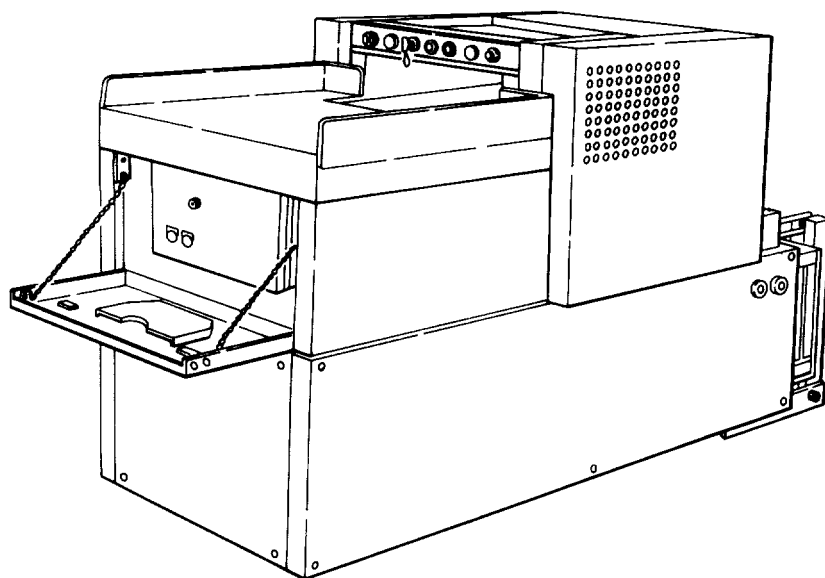
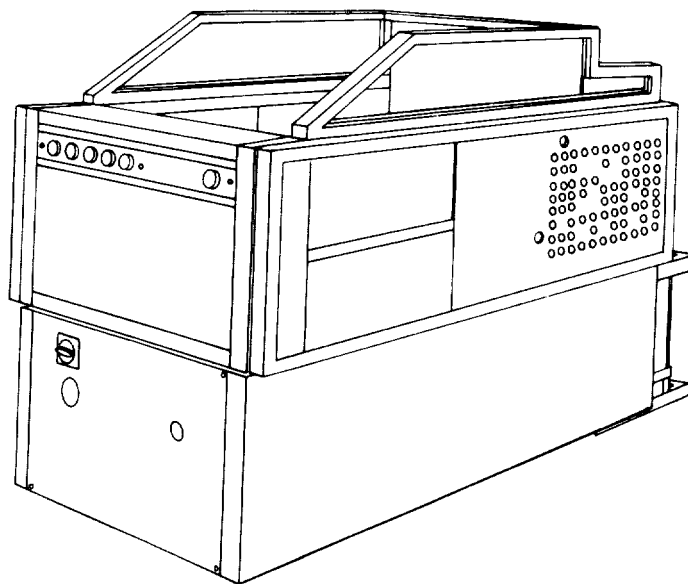
TOOLS: Hacksaw  
Electric Drill and Bits  
Ball Peen Hammer  
Pop Rivet Gun  
Cross Tip Screwdriver  
Paint Brush

SUPPLIES: Sealant (Item 16, Appendix E)  
Wood Block  
Pop Rivets  
Paint (Item 11, Appendix E)  
Cheesecloth (Item 3, Appendix E)  
Salvaged Ventilation Duct

- a. Turn off air conditioner/heater so air will not blow through duct.



- b. Drill rivets from damaged section of duct. Remove joiner plates.
- c. Remove mounting screws to remove damaged sections of duct.
- d. Straighten remaining sections of duct at edges using hammer and wood block.
- e. Place sealant on mounting edges.
- f. Install new duct section cut from salvaged duct. Secure to van body with screws.
- g. Replace joiner plates. Install rivets to secure.
- h. Turn on air conditioner/heater.



**CHAPTER 2****1410/1420 SHREDDER-BAGGER****Section I INTRODUCTION****2-1. GENERAL INFORMATION.**2-1.1 Scope.

- a. Model Number and Equipment Name. Model 1410 and Model 1420 Shredder-Bagger.

(1) Operation and maintenance procedures for the Model 1410 Shredder-Bagger are contained in Sections I through V of this chapter.

(2) Operation and maintenance procedures for the Model 1420 Shredder-Bagger are contained in Sections VI through X of this chapter.

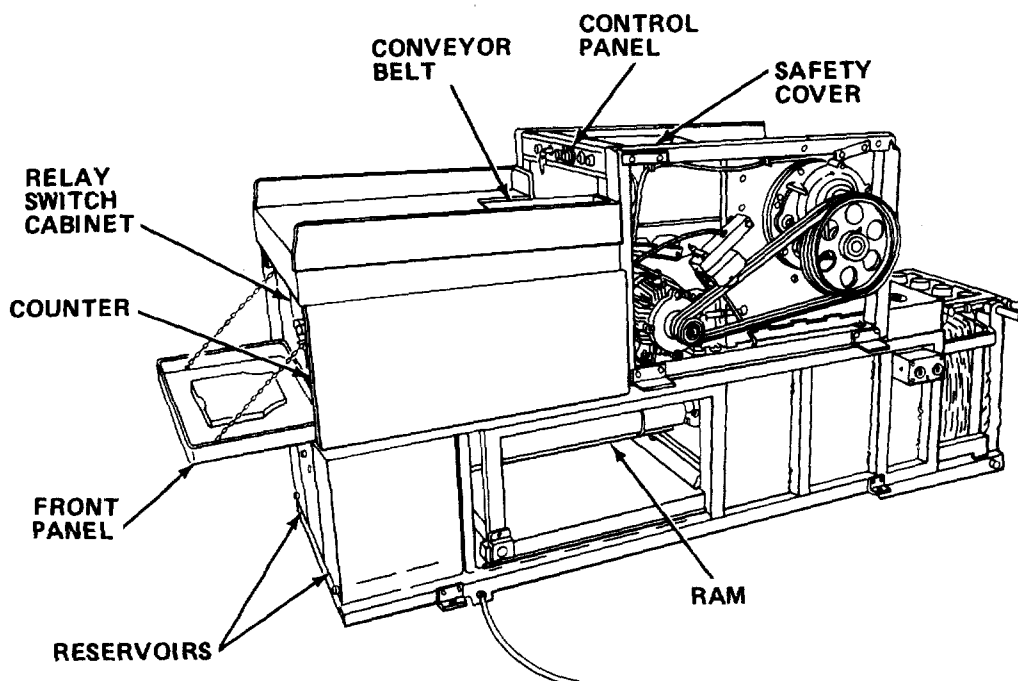
- b. Purpose of Equipment. To shred paper products.

**2-2. EQUIPMENT DESCRIPTION.**2-2.1 Equipment Characteristics, Capabilities, and Features.

- a. Destroys paper products at rate of 2000 lbs/hr.
- b. Will destroy metal paper clips and staples without damage.
- c. Oil- and air-cooled cutting blades.
- d. Compresses and bags shredded matter into compact bales.
- e. Electrically controlled.
- f. Capable of shredding up to 1/4 in.(6.35 mm) thickness of standard map stock or equal thickness of other paper products at one time.
- g. Electrical overload protection shuts down drive motor if unit is overfed and prevents overextension of hydraulic ram.
- h. Will accept material up to 20 in. (50.8 cm) wide.
- i. Key-controlled ON/OFF switch provides protection against unauthorized use.
- j. Cutter REVERSE switch enables reversal of cutting blades for cleaning of blades and ejection of jammed material.

- k. Limit switch prevents oversized bales.
- l. Emergency switches enable drive motor and hydraulic system to be quickly shut-down.
- m. Indicator lights inform operator when shredder-bagger is running and when bale is ready for removal.

2-2.2 Location and Description of Major Components.



**CONVEYOR BELT.** Conveys material to be shredded.

**CONTROL PANEL.** Metal panel houses ON/OFF switch, indicator lights, and control switches for cutting blade drive motor.

**SAFETY COVER.** Clear plastic cover allows observation of material as it enters cutting blades but prevents access.

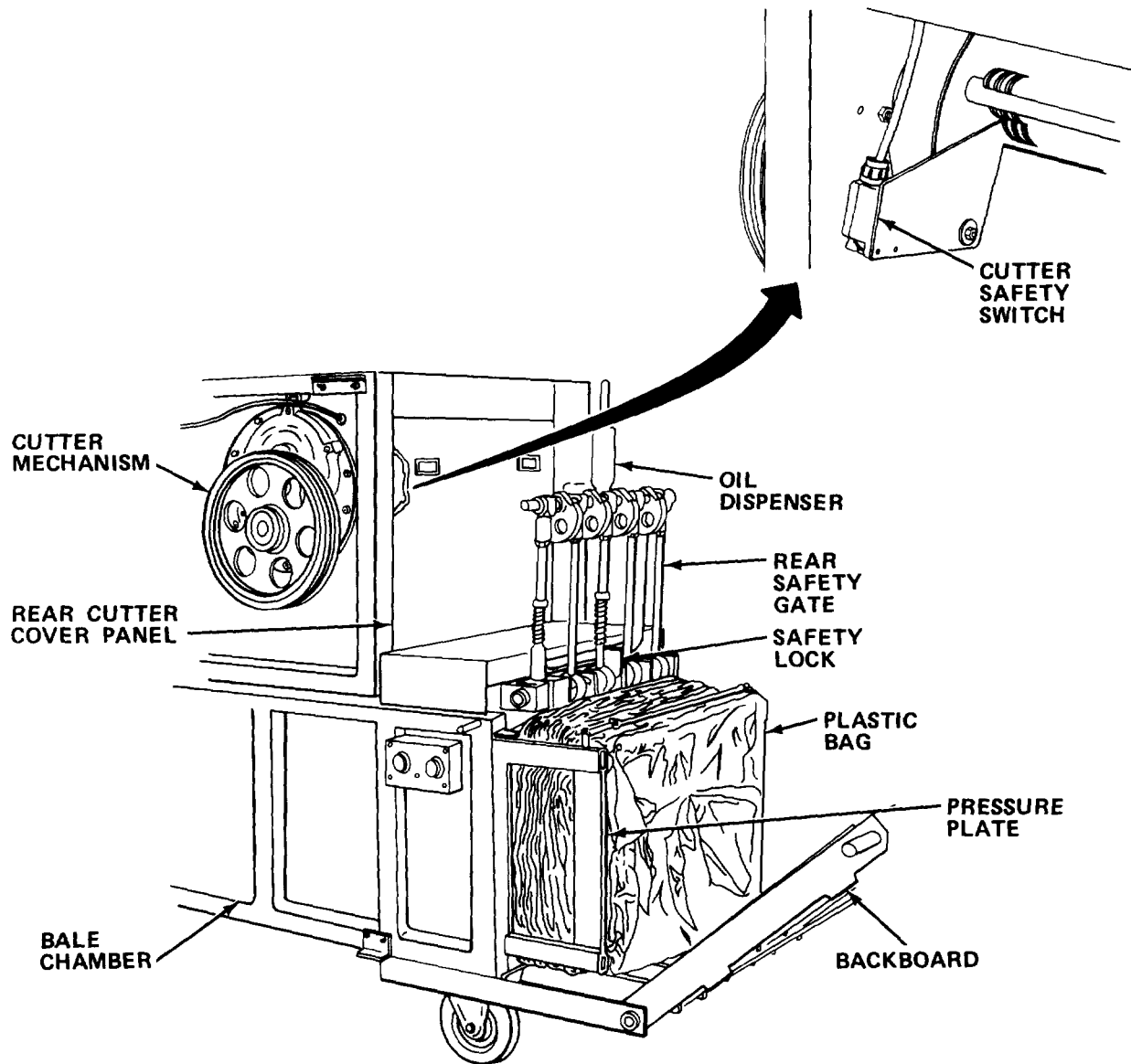
**RAM.** Hydraulically actuated ram compresses shredded products into bales.

**RESERVOIRS.** Contain oil for hydraulic system.

**FRONT PANEL.** Folds down to provide operator access to relay box, tools, and counter.

RELAY SWITCH CABINET. Houses relays, timers, and reset switches for electrical system.

COUNTER. Records total running time.



**CUTTER MECHANISM.** Contains metal blades that cut paper products into shreds.

**CUTTER SAFETY SWITCH.** Shuts down drive motor if material jams cutter mechanism.

**OIL DISPENSER.** Manual pump distributes oil over blades of the cutter mechanism to cool them during extended operation.

**REAR SAFETY GATE.** Attaches to top of backboard, when backboard is raised, to hold backboard in place.



SAFETY LOCK. Secures rear safety gate.

PLASTIC BAG. Used to store or dispose of bale of shredded material.

PRESSURE PLATES. Metal frames help hold bag in place when backboard is in lowered position.

BACKBOARD. Spring-mounted metal plate provides, when raised, back-board for ram to press shred against. When lowered, provides work surface for removing full bale.

BALE CHAMBER. Provides storage space and restrains material during compression. Plastic storage bag is placed over this shell.

REAR CUTTER COVER PANEL. Covers exposed cutter blades at rear of shredder-bagger.

2-2.3 Equipment Data.

Manufacturer	Cummins-Allison Corp.
Weight	1980 lbs (898.12 kg)
Shredder-Bagger:	
Height	52 in. (132.08 cm)
Length	91 in. (231.14 cm)
Width	38 in. (96.52 cm)
Bale Chamber:	
Height	15 in. (38.1 cm)
Length	32 in. (81.28 cm)
Width	26 in. (66.04 cm)
Feed Capacity	20 in. (50.8 cm) Width Up to 1/4 in. (6 mm) thickness
Shred Width	1/4 in. (6 mm)
Power Requirements	220 V, 60 Hz, Three- Phase, 32.6 amp, 8.25 kW
Hydraulic Operating Pressure	2610 psi (17,996 kPa)
Cutter Mechanism Oil Capacity	0.53 qt (0.5 l)
Hydraulic System Fluid Capacity	7.63 gal (29 l)

2-2.3 Equipment Data - Cont

Pump Motor

Power Output 6.43 hp (4.8 kW)

Speed 1710 rpm

Cutter Motor

Power Output 4.62 hp (3.45 kW)

Speed 16.95 rpm

Gear Pump Output

0.67 in. 3/rev  
(11 cm<sup>3</sup>/rev)

Solenoid Valve

Plunger Travel 0.26 in. (6.5 mm)

Plunger Force 8.76 lbs (39 N)

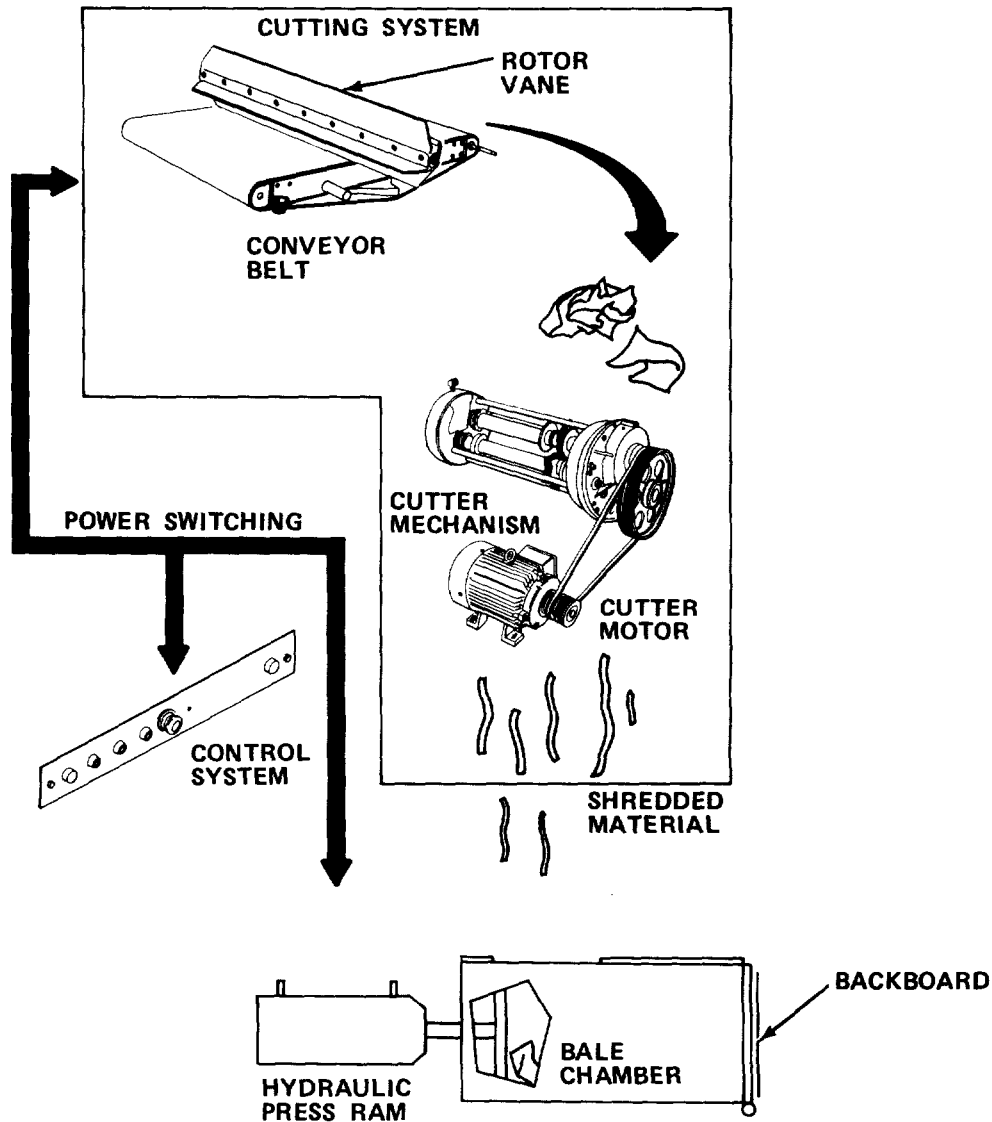
Cycle Limit 3600 cycles/hr

**2-3. TECHNICAL PRINCIPLES OF OPERATION.** The shredder-bagger shreds paper products, collects and compresses the shreds into compact bales and ejects the bales into plastic bags for storage or disposal. It is composed of three functional systems:

Cutting System

Press System

Control System



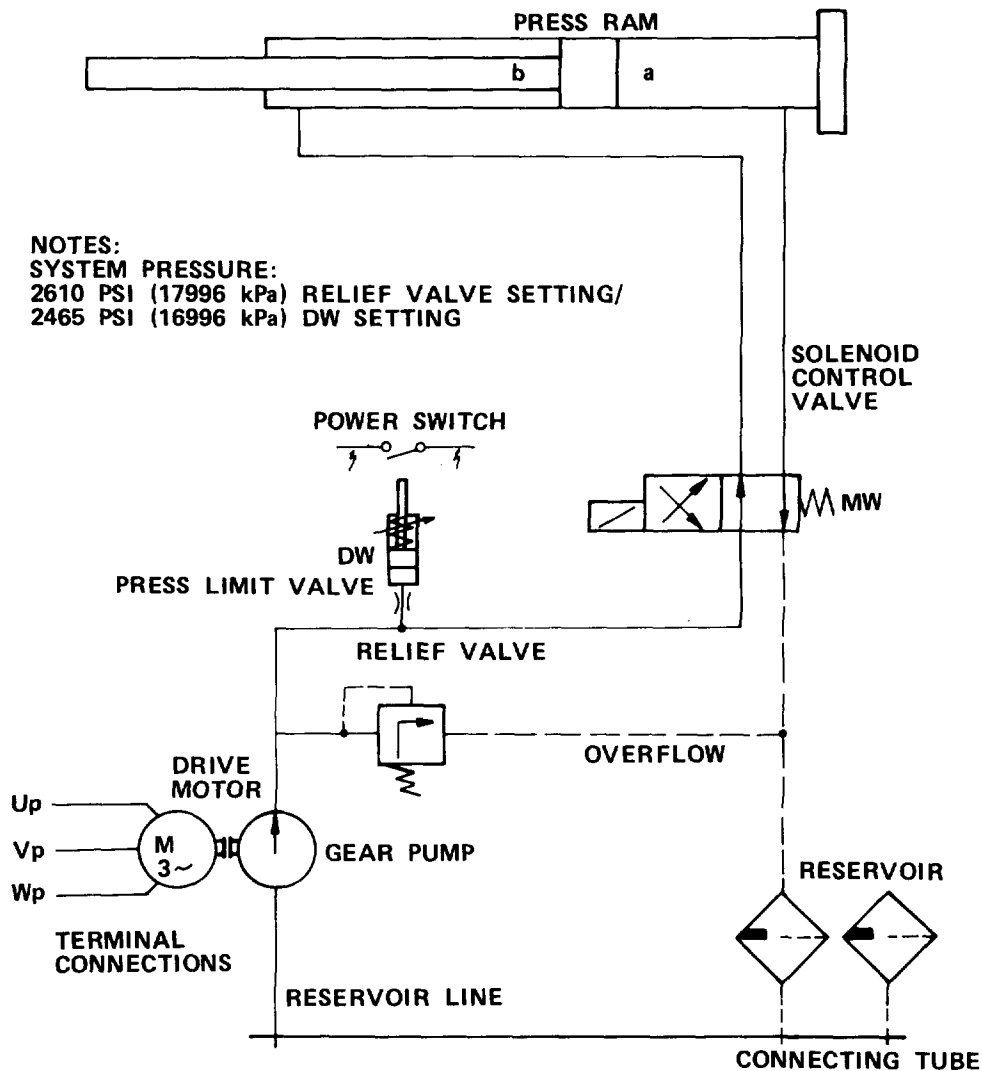
2-3.1 Cutting System. Shreds the paper products. It is composed of the following components:

- a. Conveyor belt. Conveys the material on a rubber belt into the cutting blades.
- b. Rotor vane. Controls the flow of material into the blades. Each vane pushes a certain amount of material into the blades and prevents too much from being fed. Also binds excessive material against cutter.
- c. Cutter mechanism. Cuts the material into long, thin shreds, and drops the shreds into a collecting (baling) chamber.
- d. Cutter motor. Provides power through a belt-and-gear drive arrangement to turn the conveyor belt, rotor vane, and cutter mechanism. The conveyor belt and rotor vane are driven by gears within the cutter mechanism.

2-3.2 Press System. Compresses the shredded material into bales and ejects them out of the shredder-bagger into plastic bags. Consists of the following:

- a. Bale chamber. Provides a steel-walled space for collecting and compressing shredded material as it falls from the cutter mechanism.
- b. Hydraulic press ram. Presses the front wall of the bale chamber toward the rear wall to compress the shredded material into a bale.
- c. Backboard. Forms the back wall of the bale chamber. It folds down to provide an outlet and platform for the ejection of a bale. Holds plastic bag in position so bale can be ejected into it.

HUB SURFACE AREA 15.75/33.46 in. (40/85 cm)



d. Hydraulic system. Provides hydraulic power to ram. Consists of hydraulic pump, pipes, connections, and valves. See illustration above for electrically controlled hydraulic flow chart of system.

2-3.3 Control System. Controls and directs operation of the press and cutting systems. Uses pressure, solenoid, limit, and relay switches. It consists of the following:

Operation Switches VT, RT, AT, ST, HTP and HT

Trip Dog Switches HE0, HE1, HE2, P1, VE1 and VE2

Relays ZR, SR, SV, MP, MW, X and SS

Safety Switches eBA, KS, SSP, SSS and DW

Indicating Lamps KLS and KLP

Protective Fuse Switches eMP, eSV, e1 and e2

Refer to Table 2-2 for a detailed description of the operation of the control system switches. (Refer to FO-2 and FO-3 for wiring diagrams.)

**NOTE**

**See Table 2-1 for identification of switches and relays mentioned in the following paragraphs and on wiring diagrams.**

Table 2-1. SHREDDER-BAGGER SWITCHES AND RELAYS

Component	Identification
<b><u>Relays</u></b>	
MP	Pump Motor Relay
SV	Cutter Forward Relay
SR	Cutter Reverse Relay
eSV	Cutter (Motor-Protection) Overload Relay
eMP	Pump (Motor Protection) Overload Relay
ZR	Timer Relay
SS	Control Contactor Relay
X	Timer Control Relay
<b><u>Switches, Lamps, and Fuses</u></b>	
FL	Centrifugal Switch
KLS	Cutter On Lamp
KLP	Pressure On Lamp
RT	Cutter REVERSE Switch
VT	Cutter FORWARD Switch
AT	Cutter OFF Switch
ST	ON/OFF Switch
SSP	Press Safety Switch

Table 2-1. SHREDDER-BAGGER SWITCHES AND RELAYS - Cont

COMPONENT	IDENTIFICATION
<b>Switches, Lamps, and Fuses - Cont</b>	
SSS	Cutter Safety Switch
HE0	Stroke Control Switch
HE1	Pump Motor Switch
HE2	Cutter Off Limit Switch
P1	Pressure Switch
VE1	Stroke Limit Switch
VE2	Ram Reverse Limit Switch
HTP	Ram Forward (Pushbutton) Switch
HT	Ram Reverse (Pushbutton) Switch
DW	Pressure Control Switch
KS	Baling Safety Switch
eBA	(Cover) Safety Switch
e1	Fuse 1
e2	Fuse 2
MW	Solenoid Valve Relay

a. Operation switches. Used by the operator to activate or deactivate the cutting blades or press ram. Key switch ST controls power to the entire shredder-bagger. Cutter FORWARD and REVERSE switches VT and RT and cutter OFF switch AT direct power to the relays that control the cutter motor. Ram FORWARD and REVERSE switches HTP and HT control the press ram during ejection of a bale.

b. Trip dog switches. Direct power flow for energizing and deenergizing the relays. These switches are opened and closed as the press ram moves. Switch HE0 and part of HE1 control power to cutter forward relay SV and timer relay ZR. Switches VE1, VE2 and HE2 control power to control relay. Switch P1 and part of HE2 control power to the motor relay MP.

c. Relays. Direct power flow to the cutter motor, pump motor, and other branches and switches of the control system.

(1) Cutter forward relay SV directs power to drive the cutter mechanism forward. Cutter reverse relay SR drives the cutter mechanism in reverse.

(2) Timer relay ZR directs power to the motor relay MP.

(3) Motor relay MP and solenoid valve relay MW control the pump motor and the press ram's direction of travel.

(4) Control relay SS and timer relay X enable the operation of other relays and switches in the control system by directing power through its internal contacts.

d. Safety switches. Interrupt or change the normal flow of power through the control system to prevent operation of the shredder-bagger under conditions which could damage it or harm the operators.

e. Indicating lamps. Light to indicate the operational condition of the Shredder-Bagger. Operation lamp KLS lights when the control system has power. Pressure lamp KLP lights to indicate when the bale is under pressure (being compressed) and when the bale is ready for ejection.

f. Protective fuse switches. Provide overcurrent protection for the motors and the control system. Fuses e1 and e2 prevent overcurrent conditions in the control system. Protective fuse switches eSV and eMP prevent overcurrent from reaching the cutter and pump motors.



**Table 2-2. CONTROL SYSTEM CIRCUIT SWITCHING SEQUENCE**

**NOTE**

Refer to wiring diagram, FO-2 and FO-3, when reading this description.

**OPERATOR ACTION**

**STEP CIRCUIT OPERATION**

TURNING KEY SWITCH ST ON.

Power is input to control system through safety switch eBA. Cutter on lamp KLS lights. No relays energize because controlling switches are open.

TURNING CUTTER FORWARD SWITCH VT ON.

1. Power flows through closed leg of cutter REVERSE switch RT and rear safety switch SSS to energize cutter forward relay SV. Power also flows through HE0 to energize timer relay ZR.

**NOTE**

**HE0 is kept closed by trip dogs on press ram when ram is in start position. This enables operation of ZR.**

2. Energized SV closes holding contacts 54-53. Power now has two paths to SV through centrifugal switch FL and HE1-A limit switch.
3. After preset time delay (to allow bale chamber to fill with material), ZR energizes, closing contacts 67-68. Timer X contacts 32-31 are closed, so solenoid valve MW and pump motor relay MP energize.
4. MW controls four-way spool valve directing fluid flow to ram. MP starts hydraulic pump motor, closes contacts 14-13. Press ram moves forward.
5. Trip dog pressing HE1 clears. HE1-B limit switch and MP 13-14 provide holding circuit for MP and MW. NC side of HE1 opens, reducing flow paths to relay SV to one.

**NOTE**

**Opening one side of HE1 enables operation of FL. Closing NO side enables operation of press safety switch SSP.**

Table 2-2. CONTROL SYSTEM CIRCUIT SWITCHING SEQUENCE - Cont

**OPERATOR ACTION****STEP CIRCUIT OPERATION**

## TURNING CUTTER FORWARD SWITCH VT ON - Cont

6. Trip dog pressing HE0 clears. Power to ZR is cut. ZR contacts 68-67 open. All power to MP and MW flows through HE1.
7. Trip dog presses HE2 closed. Activation of control contactor relay SS is enabled.
8. Trip dog pressing HE2 clears. Activation of SS is disabled.

**NOTE**

**If bale chamber is full, pressure control switch DW will close and press ram will stop before step 8 is initiated.**

9. Trip dog closes VE1. Timer X is powered.
10. Timer X, after delay, energizes. SS operation is disabled. Power to MW is cut. Solenoid valve plunger retracts, reversing fluid flow.
11. Press RAM starts back. VE1 clears. Timer X de-energizes. Trip dog presses HE2 again (step 7).
12. Trip dog pressing HE2 clears.
13. Trip dog presses HE0. ZR energizes.
14. Trip dog presses HE1. Two flow paths to SV are established. Power to MP is cut. Press RAM stops.
15. After preset delay, ZR energizes. Power flows to MP and MW. Press cycle begins again.

## PRESSING PRESSURE SAFETY SWITCH (SSP) DURING ADVANCE OF PRESS RAM.

1. If HE1-B is closed power flows to timer X.
2. SS and MW are deenergized. The press ram reverses direction and returns to start position.

Table 2-2. CONTROL SYSTEM CIRCUIT SWITCHING SEQUENCE - Cont

---

**OPERATOR ACTION****STEP CIRCUIT OPERATION**

---

**EJECTING BALE.**

1. When bale chamber is sufficiently full, resistance to compression will prevent rear trip dog from closing VE1 and will create enough pressure in press ram to activate DW. HE2 is closed by forward trip dog. DW energizes timer X and relay SS.
2. Power to SV is cut and pressure on lamp KLP is lit by SS. Timer X cuts power to MW. Closing of SS contacts enables ram forward HTP. Relay cuts power to MP and SV, shutting down cutter blades and press ram.
3. To prepare for bale ejection, rear gate is opened. This closes baling safety switch KS.
4. HTP is depressed by operator. HTP was enabled by closing of SS contacts. HTP bypasses normal effect of timer X and directs power to move press ram forward. It is kept depressed until bale is ejected and VE2 and P1 are tripped by rear trip dogs.
5. P1 cuts power to MP and energizes timer X. Timer X contacts 31-32 open, cutting power to MW. SS remains energized as long as VE2 is tripped. P1 interrupts power to MP so press ram will stop. P1 enables operation of switch HT.
6. HT is depressed by operator. Power is inputted via HE1-B and HT to energize MP. MW remains de-energized, so press ram moves in reverse. As press ram moves back to start position, trip dogs clear HE2, VE2, and P1. When VE2 opens, power to SS will be cut, disabling HTP and shutting off KLP.
7. Press ram returns to start position, ready for new cycle.

**PRESSING CUTTER REVERSE SWITCH (RT).**

Power flows through cutter forward switch AT and the NC side of cutter OFF switch VT to the cutter reverse relay SR. As long as RT is pressed, cutter motor turns in reverse. SR contacts 31-32 open to prevent any activation of SV while SR is energized.

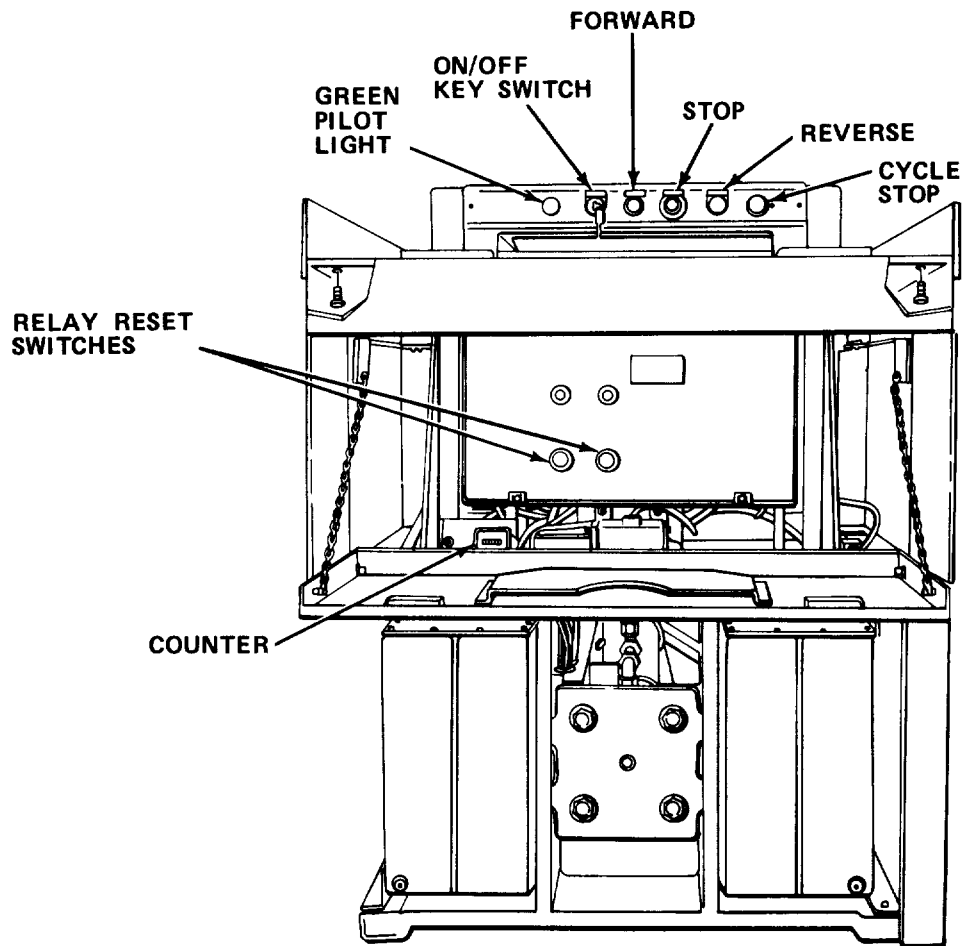
**PRESSING ON/OFF SWITCH (AT).**

Cuts all power to portion of circuit with cutter motor relays.

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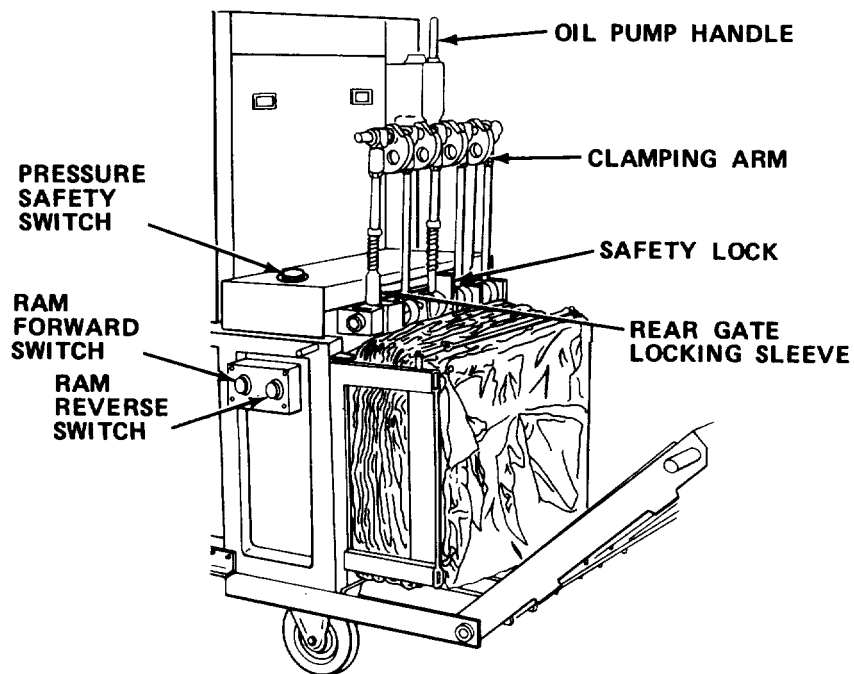
Section II OPERATING INSTRUCTIONS

2-4. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS.



Control Or Indicator	Function
Green Pilot Light (KLS)	Indicates when shredder-bagger has power.
ON/OFF Key Switch (ST)	Controls power to shredder-bagger.
Cutter FORWARD Switch (VT)	Activates cutter mechanism in forward direction.

Control Or Indicator	Function
Cutter STOP Switch (AT)	Deactivates cutter mechanism.
Cutter REVERSE Switch (RT)	Activates cutter mechanism in reverse direction.
Cycle Stop (KLP)	Indicates when bale is being compressed or when bale is ready for ejection.
Relay Reset Switches	Reset the relay to initial conditions.



Rear Gate Locking Sleeve

Holds rear gate in up position. Activates rear gate safety switch KS.

Safety Lock

Holds rear gate clamping arm in down position.

Control or Indicator	Function
Clamping Arm	Clamps rear gate to top of backboard.
Oil Pump Handle	Pumps oil into hoses over cutter mechanism to oil blades.
Pressure Safety Switch (SSP)	Stops forward motion of press ram and returns ram to start position.
Green Ram Forward Switch (HTP)	Causes press ram to move forward to eject bale.
Yellow Ram Reverse Switch (HT)	Causes press ram to retract after bale has been ejected.

## 2-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

- a. Before You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.
- b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.
- c. After You Operate. Be sure to perform your after (A) PMCS.
- d. If Your Equipment Fails to Operate. Troubleshoot with the proper equipment Report any deficiencies using the proper forms. See DA Pam 738-750

### 2-5.1 PMCS Procedures.

- a. PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.
- b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.
- c. The "Equipment is Not Ready/Available If: column is used for identification of conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.
- d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.

e. Perform weekly as well as before operations if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.

f. Leakage definitions for operator PMCS shall be classified as follows:

Class I Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

Class II Leakage of fluid great enough to form drops but not enough to cause drops to drip from the item being checked/inspected.

Class III Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

**CAUTION**

- **Equipment operation is allowable with minor leakages (Class I or II). Of course, you must consider the fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor.**
- **When operating with Class I or Class II leaks, continue to check fluid levels as required in your PMCS.**
- **Class III leaks should be reported to your supervisor or organizational maintenance.**

g. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet in recording results of PMCS.

h. Interval column. This column determines the time period designed to perform your PMCS.

i. Item to be inspected column. This column list functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart, (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

j. Equipment is Not Ready/Available If: column. This column indicates the reason or cause why your equipment is not ready/available to perform its primary mission.

k. List of tools and materials required for PMCS is as follows:

<u>Item</u>	<u>Quantity</u>
Cross Tip Screwdriver	1 ea
Dusting Brush (Item 2A, Appendix E)	1 ea
Parts Brush (Item 2B, Appendix E)	1 ea
Cheesecloth (Item 3, Appendix E)	ar
General Purpose Detergent (Item 4, Appendix E)	1 qt
SAE 30W Gear Oil (Item 7, Appendix E)	1 qt
6 mm Hex Head Key Wrench	1 ea

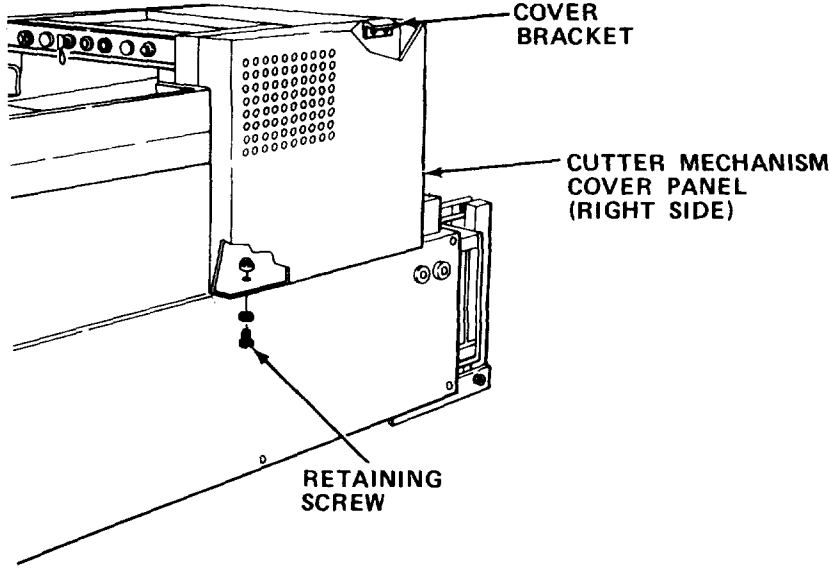


**Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

**NOTE**

**If the equipment must be kept in continuous operation, check and service only those items that can safely be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.**

B - Before                      W - Weekly                      AN - Annually                      (Number) - Hundreds of Hours  
 D - During                      M - Monthly                      S - Semiannually  
 A - After                      Q - Quarterly                      BI - Biennially

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger.</u></p> <ol style="list-style-type: none"> <li>Press stop switch. When press ram has returned to start position, turn key switch to OFF.</li> </ol>  <ol style="list-style-type: none"> <li>Remove screws at bottom of right side cutter mechanism cover.</li> <li>Grasp cutter mechanism cover at bottom and top. Remove cover by lifting straight up several inches and then pulling away.</li> </ol>	

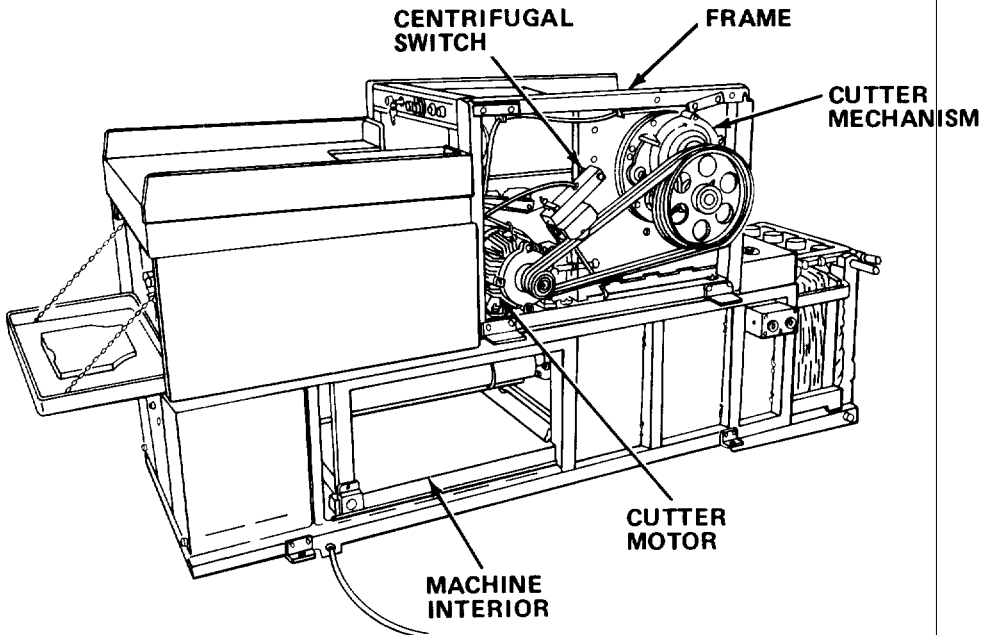
**Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;"><b>Top of cutter mechanism covers hang from pairs of brackets.</b></p>  <p>4. Brush away any dust accumulated on cutter motor, centrifugal switch, cutter mechanism, or Shredder-Bagger frame. Remove any dirt with detergent and cheesecloth.</p> <p>5. Inspect for visible signs of damage.</p> <p>6. Reinstall cutter mechanism cover.</p>	

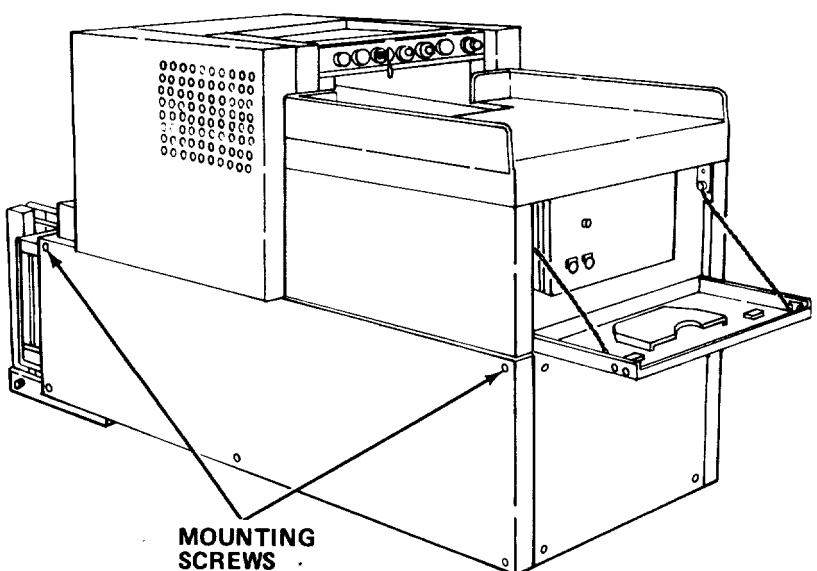
**Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
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AN - Annually  
S - Semiannually  
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(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p>  <p><b>MOUNTING SCREWS</b></p> <p>7. Refer to paragraph 2-16.21 for procedure for moving machine away from wall. Remove screws holding bottom side panel on operator's left-hand side of shredder-bagger.</p>	

**Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

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(Number) - Hundreds of Hours

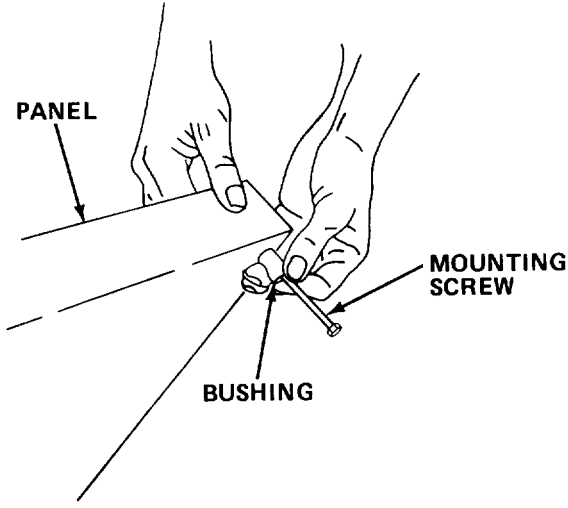
ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p>  <p style="text-align: center;"><b>NOTE</b></p> <p><b>Screws for bottom side panel are mounted through spacer bushings placed between outside of panel and frame of shredder-bagger. Do not lose these bushings. They must be reinstalled for panel to be remounted.</b></p>	

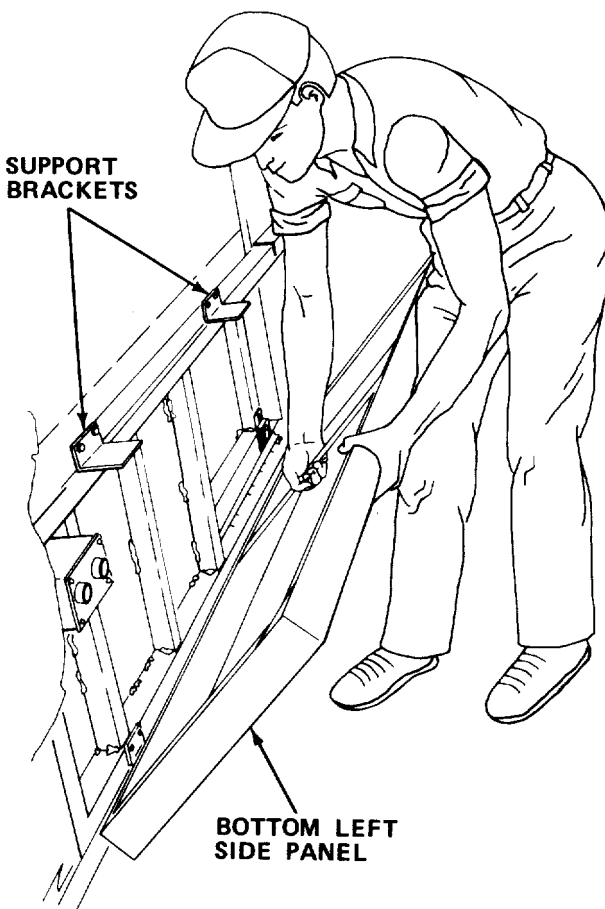
Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before  
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(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p>  <p>8. Lift bottom side panel off of support brackets and set panel to one side, away from immediate work area.</p>	

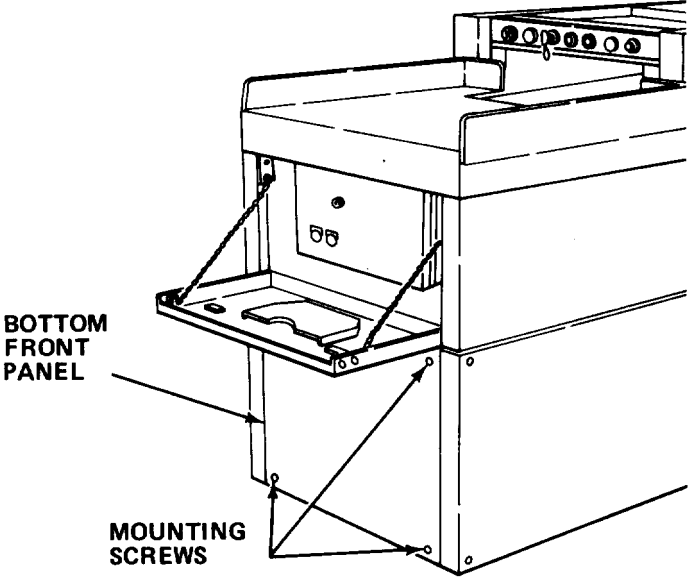
**Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
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(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p>  <p style="text-align: center;"><b><u>CAUTION</u></b></p> <p><b>Bottom front panel has no undersupport brackets. Failure to hold panel when screws are removed may result in damage to equipment.</b></p> <ol style="list-style-type: none"> <li>9. Remove screws holding bottom front panel.</li> <li>10. Lay panel to one side, away from immediate work area.</li> <li>11. Brush out any dust, dirt or bits of shredded material on base or frame.</li> </ol>	

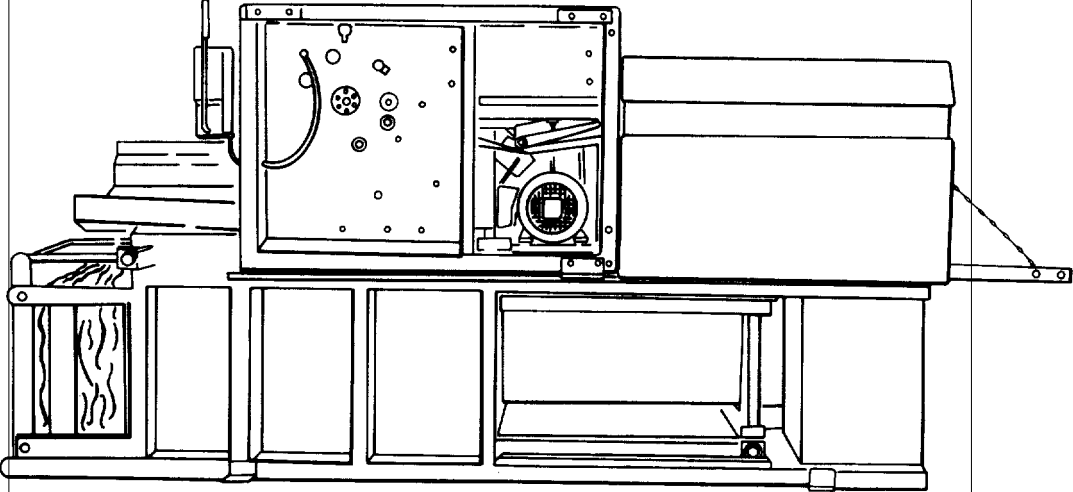
**Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

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ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p>  <ol style="list-style-type: none"> <li>12. Inspect interior for signs of damage or fluid deposits. Wipe up any fluid or oil deposits with cloth.</li> <li>13. Reinstall bottom front panel.</li> <li>14. Reinstall bottom side panel.</li> </ol>	

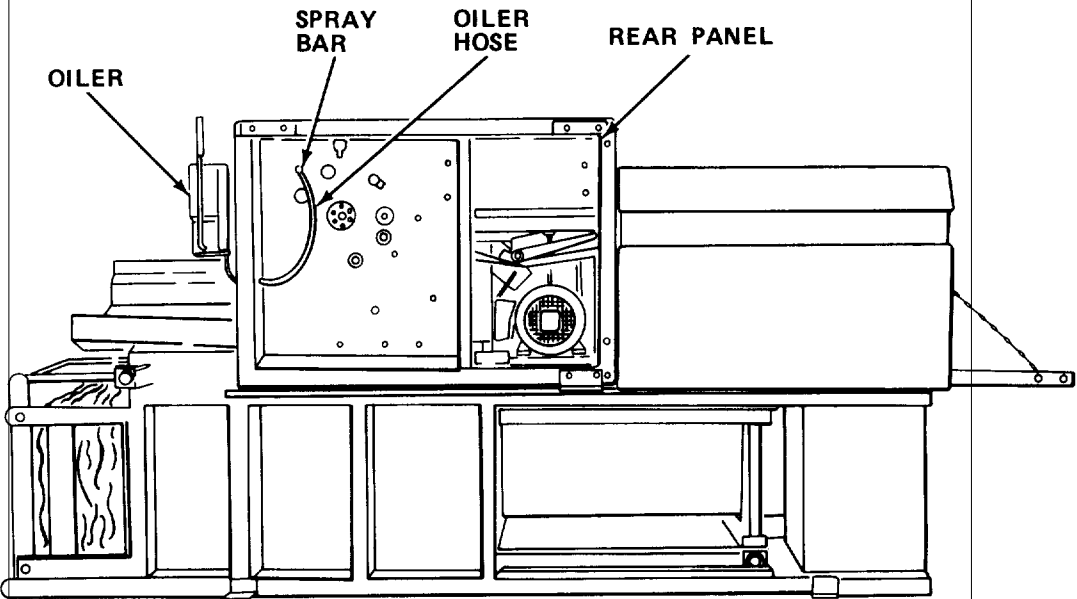
**Table 2-3. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

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A - After

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M - Monthly  
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AN - Annually  
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(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	A	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p>  <p>15. Remove cutter mechanism rear panel.</p> <p>16. Check oiler hoses and spray bar for leaks.</p>	



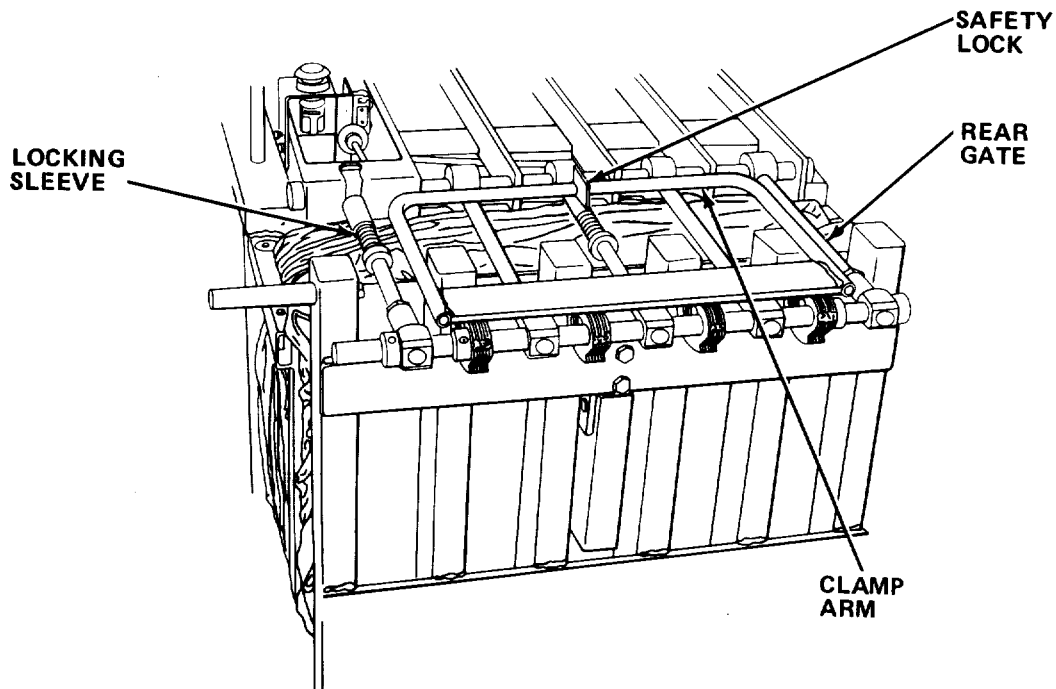
**2-6. OPERATION UNDER USUAL CONDITIONS.**

**2-6.1 Assembly and Preparation For Use.**

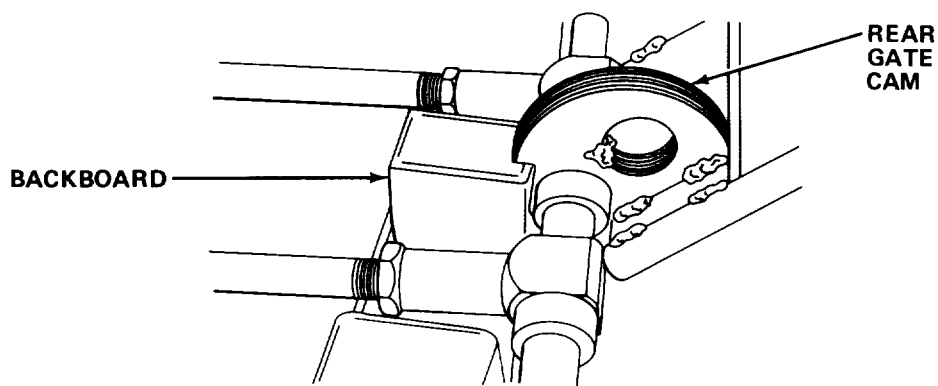
- a. Install plastic bale bag.

**WARNING**

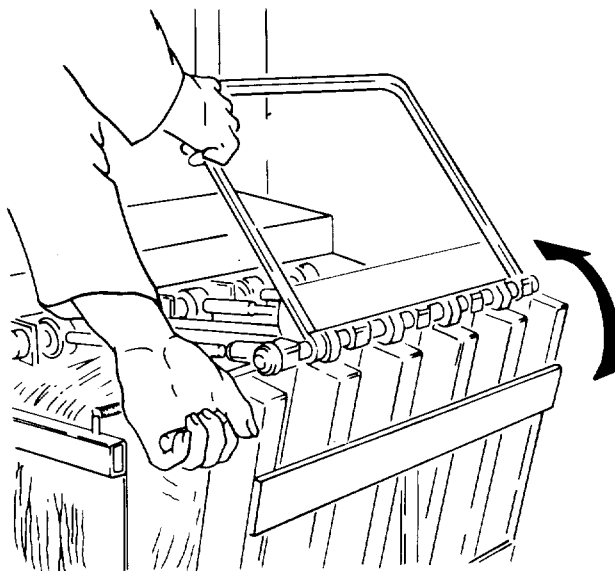
**Death or serious injury may result if ON/OFF switch is not turned off before mounting bag.**



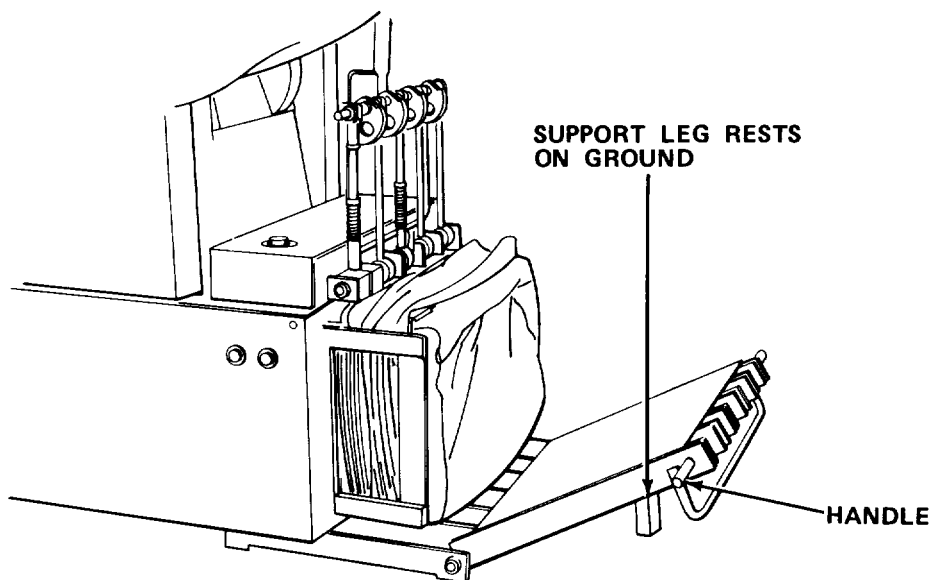
- (1) Pull back on safety lock that holds clamp arm in position.



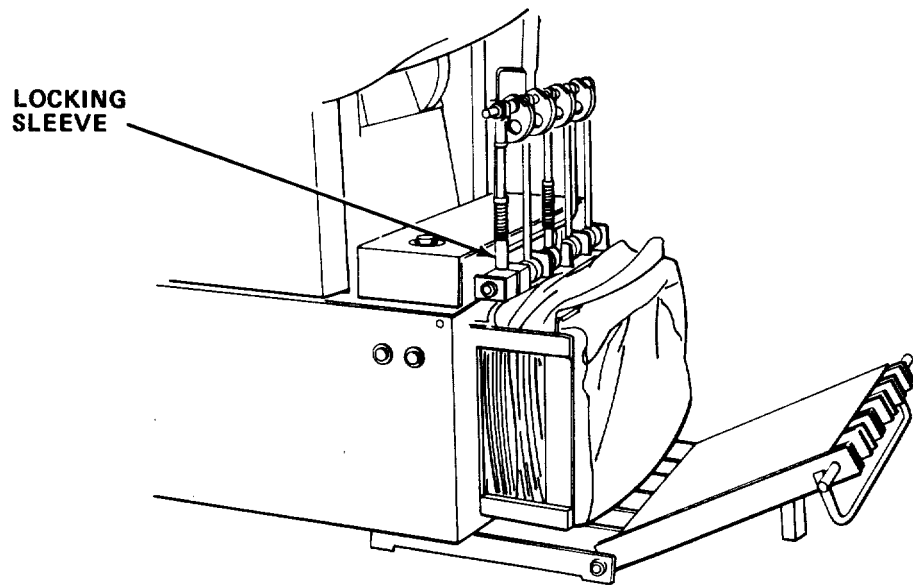
- (2) Lift clamp arm of rear gate and pull back (away from shredder-bagger) until backboard slips into notches in rear gate cams.



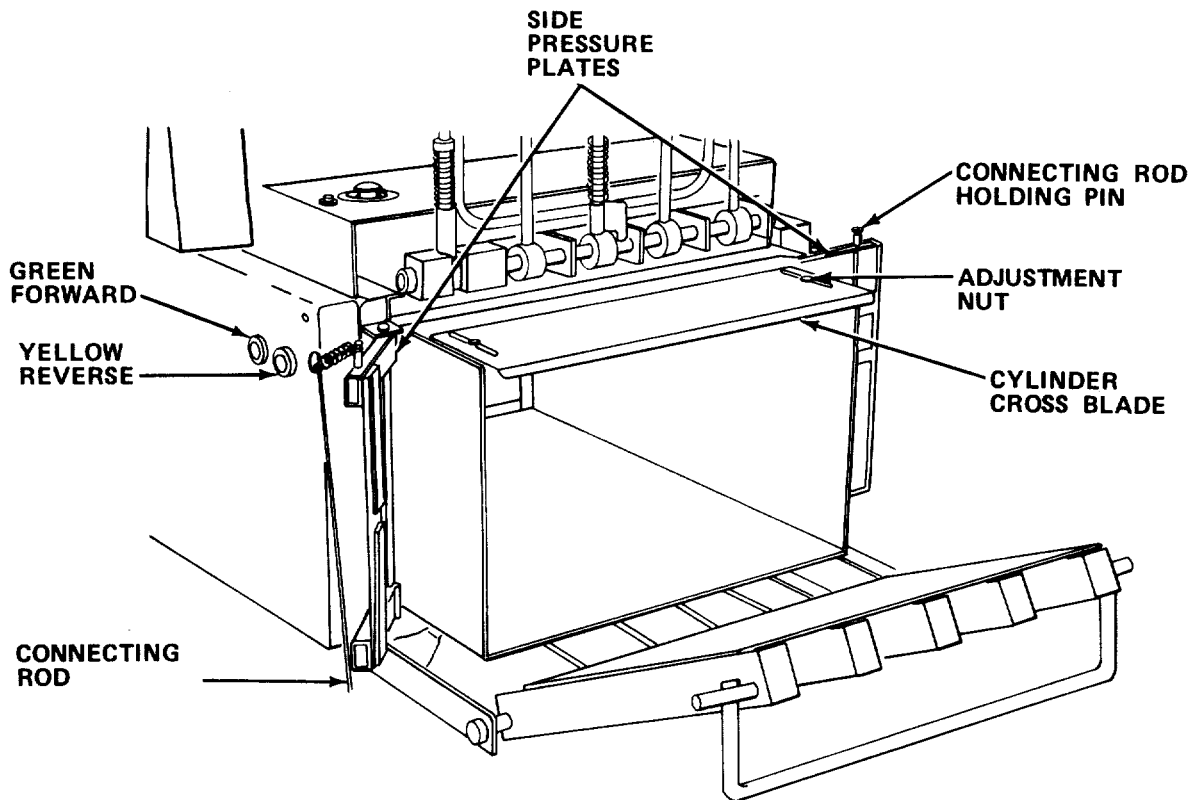
(3) Grasp handle on side of backboard and return clamping arm to initial position.



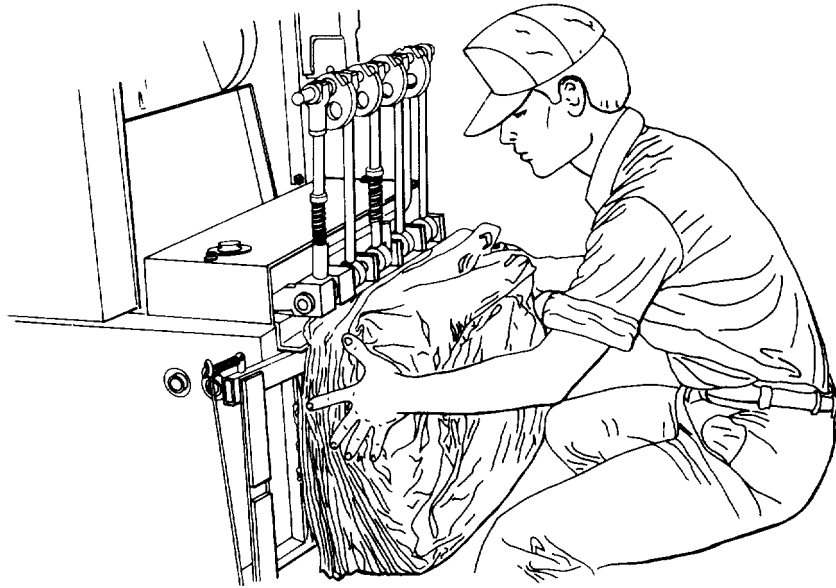
(4) While retaining hold on rear gate, lower backboard to horizontal position until support leg touches ground.



(5) Lift entire rear gate until locking sleeve engages to hold gate in vertical position.



(6) Disconnect connecting rod and swing back side pressure plates.



- (7) Slide bag over bale chamber until bale chamber rests against bottom of bag.

**NOTE**

**Be sure that bag is free of entanglements so it will come off smoothly and not catch when bale is ejected.**

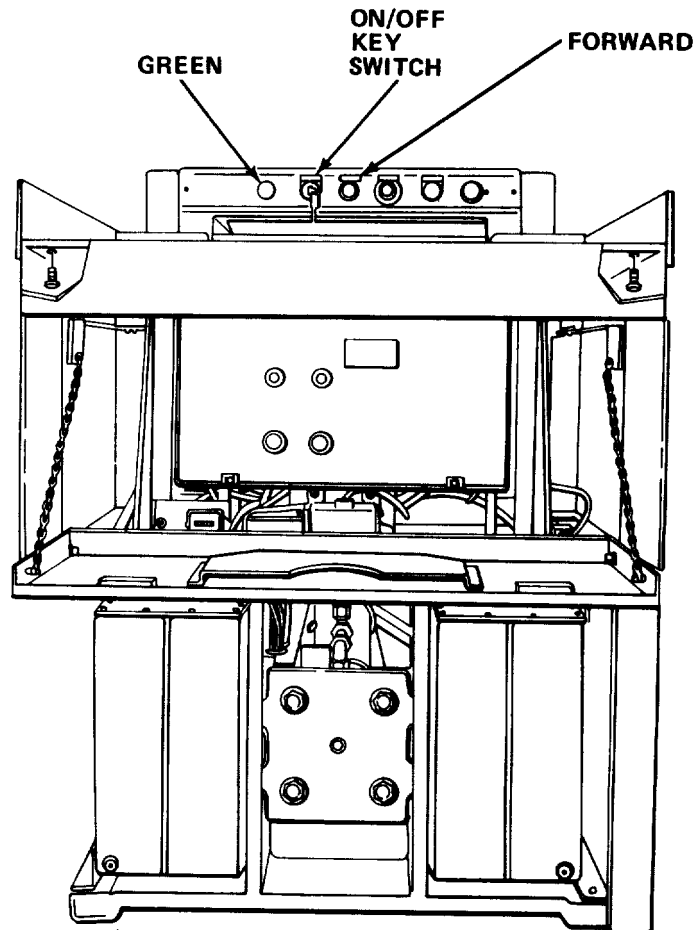
- (8) Reinstall side pressure plates and reconnect connecting rod.
- (9) Lift backboard and attach rear gate.

2-6.2 Operating Procedures.

- a. Shred and compress.

**WARNING**

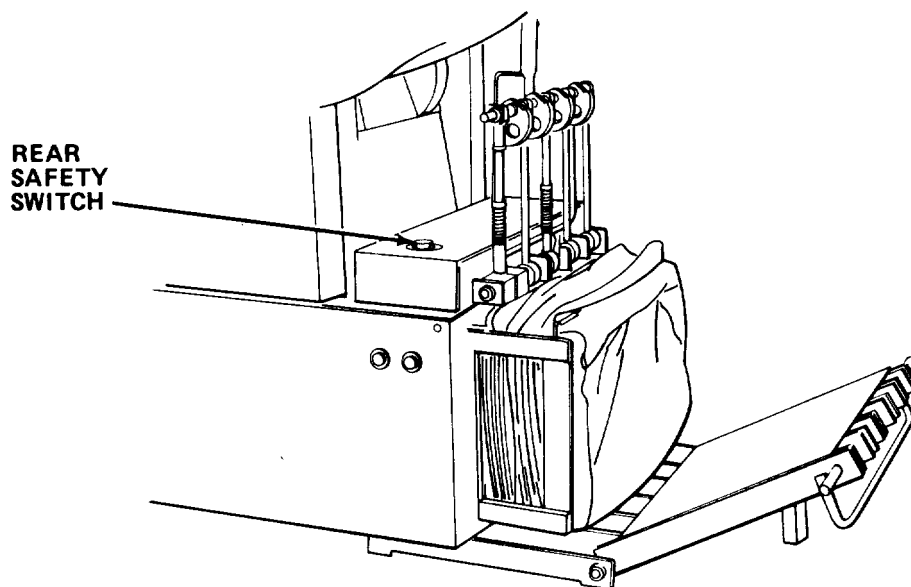
Do not put hands or feet anywhere near cutting blades during shredding operations or serious injury could result.



- (1) Turn key to right until green pilot lamp lights.
- (2) Press cutter FORWARD switch to start cutter mechanism.
- (3) Be sure that conveyor belt and rotor vane are moving smoothly. Feed material at uniform rate from front.

**NOTE**

The press ram cycles automatically when cutter FORWARD switch is activated. If only small portion of material is to be shredded, be sure that press ram has cycled at least once before stopping blades. If cutter mechanism is shut off or power is lost while press ram is moving, ram can only be reactivated by pressing rear safety switch SSP with power on.

**NOTE**

Timer relay in relay box determines cycle time of press ram. This relay is adjusted between 10 and 180 sec and sets amount of time available to shred material before press ram begins to move forward.

(4) Feed material until cycle time is up and the press ram begins to compress material. Wait until press ram has made one cycle and returned to start position. Then feed material again.

**NOTE**

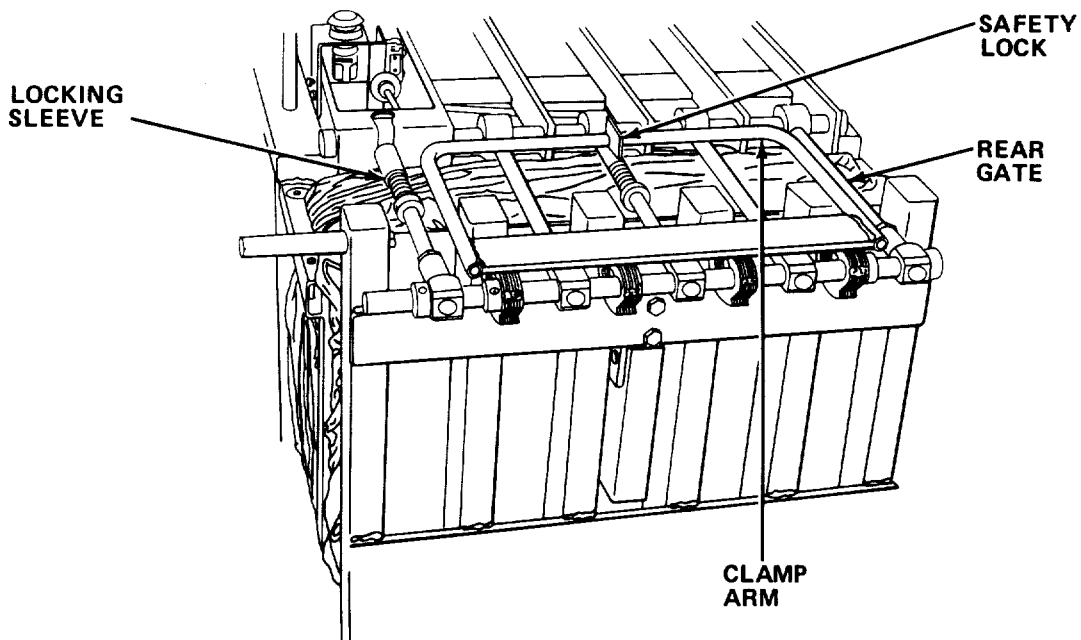
- If cutter mechanism is overloaded with material, cutter safety switch on back of shredder-bagger will trip and stop blades. To restart, go to rear of shredder-bagger, clear away as much material as possible, and then press cutter REVERSE switch.
- If cutter is to be operated for extended period of time, apply oil to gears once an hour by pulling on oiler handle.

(5) When cycle stop lamp lights, bale compartment is full. Eject bale and install new bag.

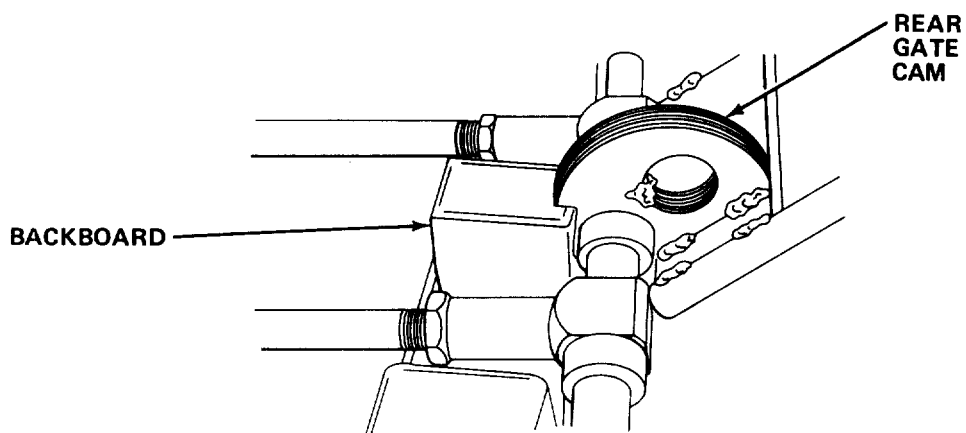
- b. Eject bale.

**WARNING**

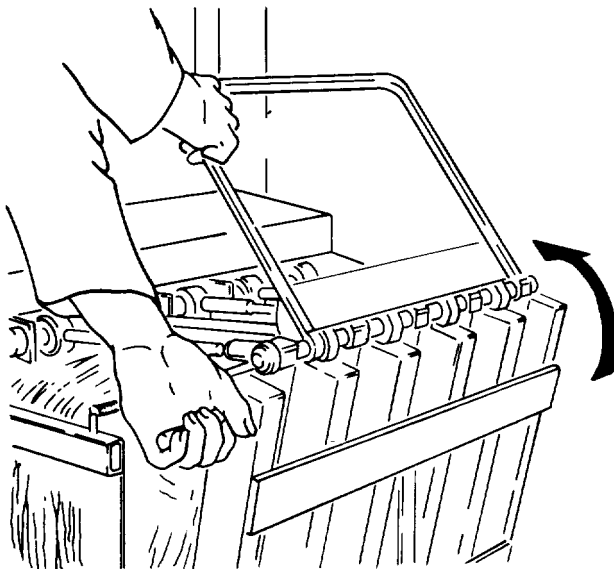
Keep fingers and hands away from bale chamber while press ram is moving, or serious injury can result.



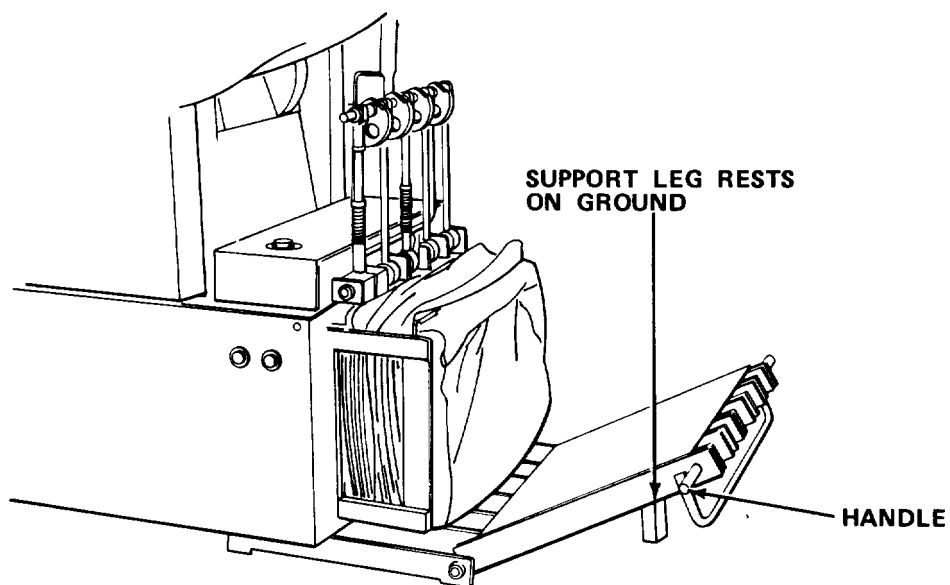
- (1) Pull back on safety lock holding clamp arm in position.



- (2) Lift clamp arm of rear gate and pull back until backboard slips into notches in rear gate cams.

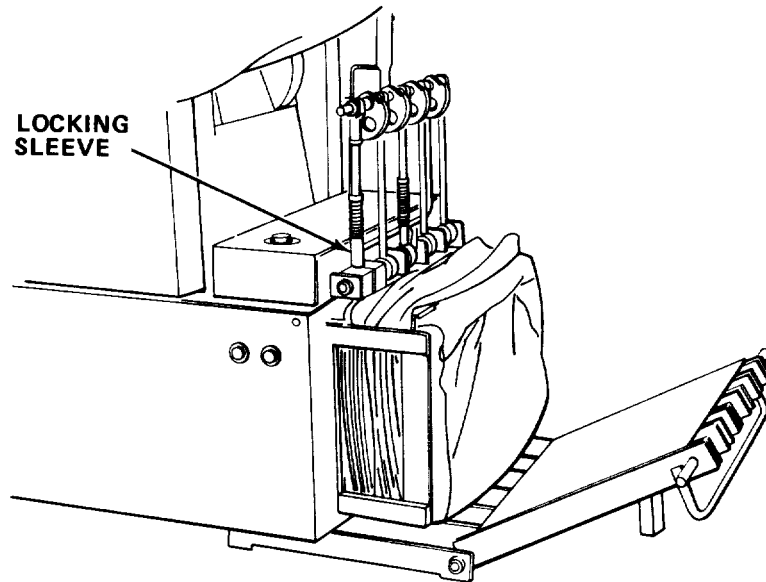


(3) Grasp handle on side of backboard and return rear gate clamping arm to initial position.

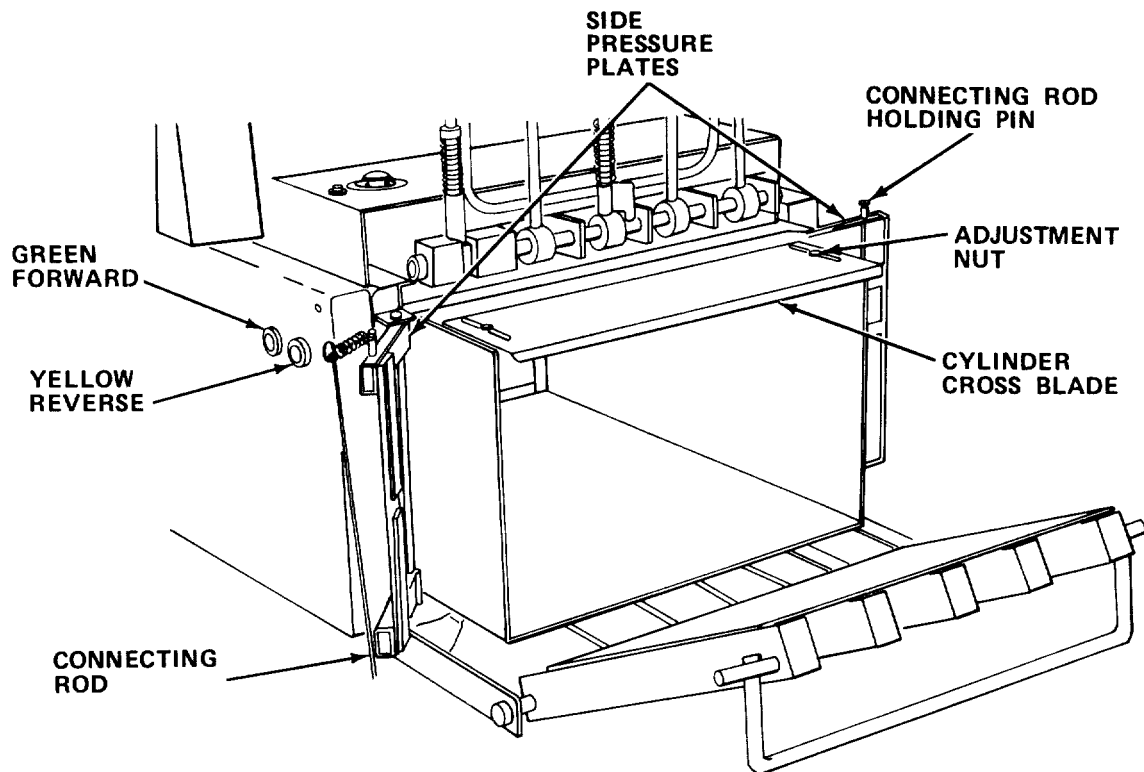


(4) While retaining hold on rear gate, lower backboard to horizontal position. Be sure that support leg is down.



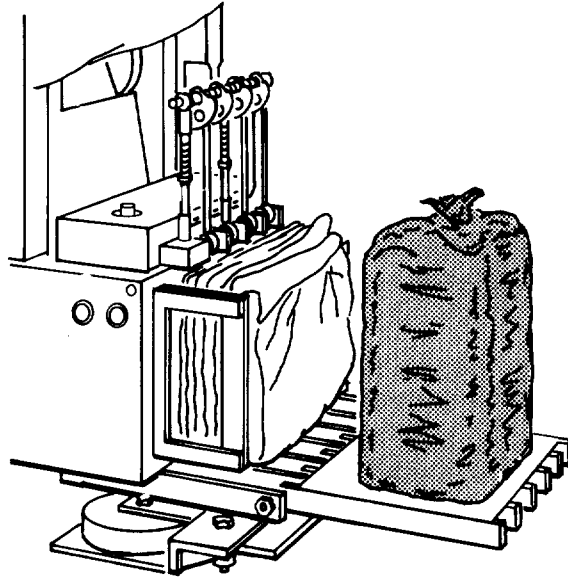


- (5) Lift entire rear gate until locking sleeve engages to hold gate in vertical position.
- (6) Press green ram forward switch and hold until press ram has extended its full length and stopped.



- (7) Disconnect connecting rod holding side pressure plates in place.

- (8) Be sure that cylinder crossblade is visible.



- (9) Slide bale down backboard. Tie or band up top of bale.
- (10) Press yellow ram reverse switch until press ram begins to move rearward.

**NOTE**

**If power is lost while press ram is moving, yellow return switch must be pressed to get ram to move after power is restored.**

- (11) When press ram has returned to start position, push any shreds that fell out of bale back in chamber.
- (12) Install a new plastic bag and reconnect backboard, pressure plates, and rear gate (paragraph 2-6.1).

2-6.3 Preparation for Movement. Inflate air shocks in accordance with paragraph 1-6.2.

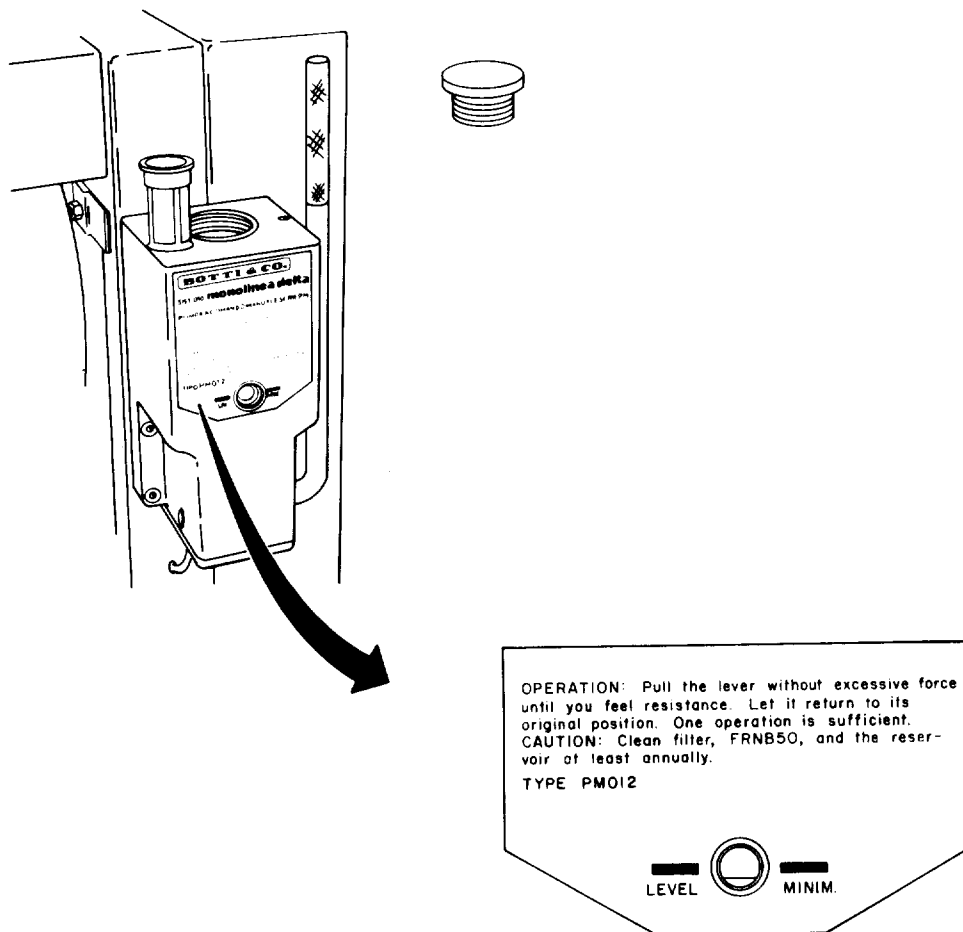
2-6.4 Operating Instructions on Decals and Instruction Plates.

- a. Operating instructions located on outside of front panel.

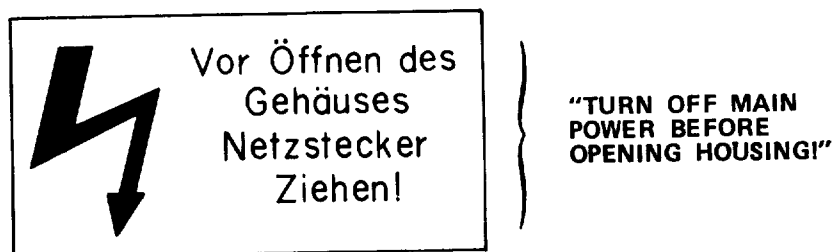
**PLEASE NOTE - IMPORTANT**

1. Operating instructions must be carefully read before operating machine.
2. Line voltage and fuse specifications must be according to model tag or machine cord.
3. When connecting the machine to electric power, correct direction of rotation of the motors must be observed - see operating instructions.
4. The machine will function properly when regularly maintained (cleaning-lubrication) see operating instructions.
5. Continuous overloading of the machine should be avoided.
6. In cases of malfunction check main- and machine fuses first.
7. Service and maintenance should only be performed by experienced personnel.
8. When ordering spare parts it is necessary to indicate model, machine number, and spare part number.

b. Oiler operating instructions.



c. Main power disconnect warning.



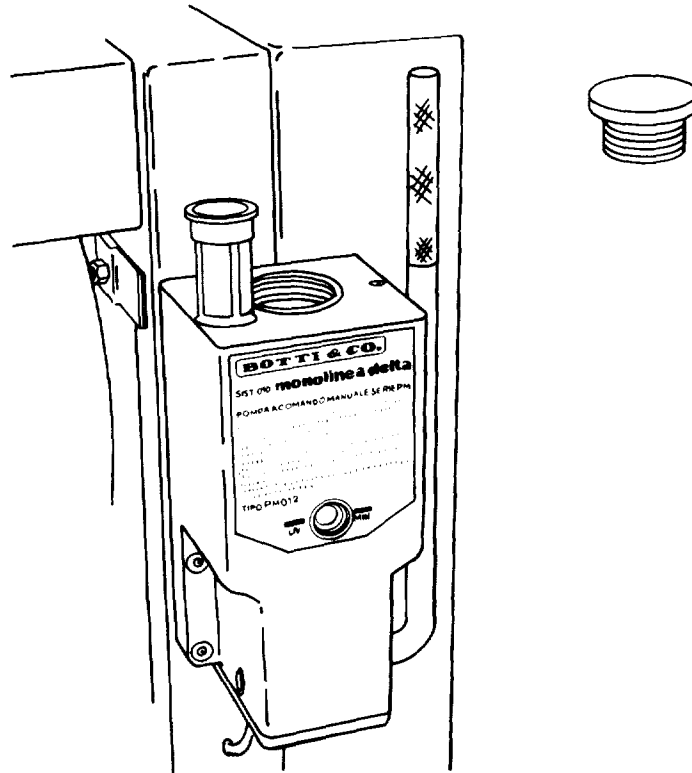
**2-7. OPERATION UNDER UNUSUAL CONDITIONS.** This equipment is designed for operation only in a controlled environment.

## Section III OPERATOR MAINTENANCE

## 2-8. LUBRICATION INSTRUCTIONS.

## NOTE

These lubrication instructions are mandatory.



2-8.1 Prior to and after operating this equipment, check fluid level in oiler. If fluid level can be seen in level indicator, add SAE 30 gear oil with filter in place until full.

**2-9. TROUBLESHOOTING PROCEDURES.** There are no operator troubleshooting procedures assigned for this equipment.

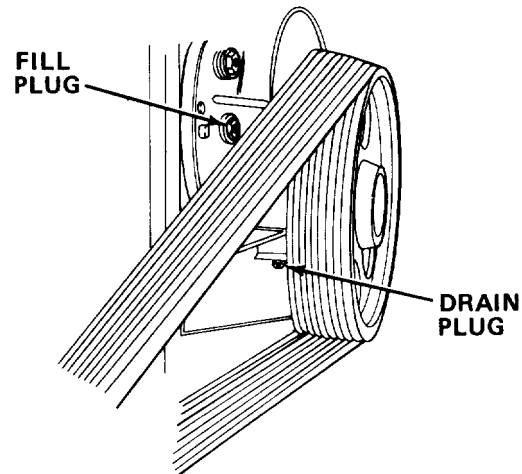
**2-10. MAINTENANCE PROCEDURES.** There are no operator maintenance procedures assigned for this equipment.

Section IV ORGANIZATIONAL MAINTENANCE

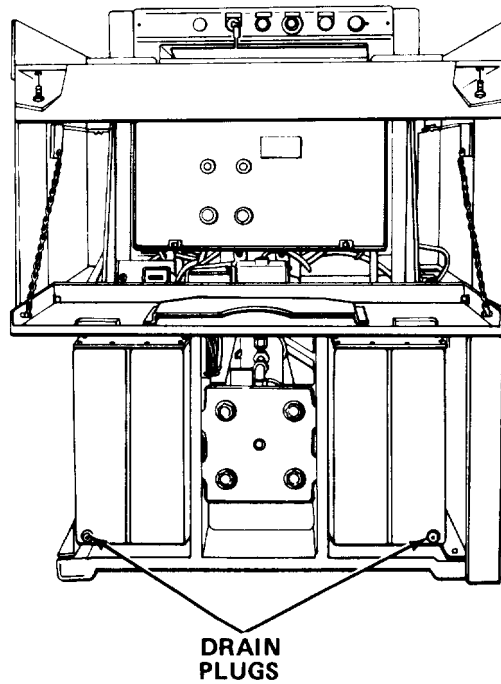
2-11. LUBRICATION INSTRUCTIONS.

NOTE

These lubrication instructions are mandatory.



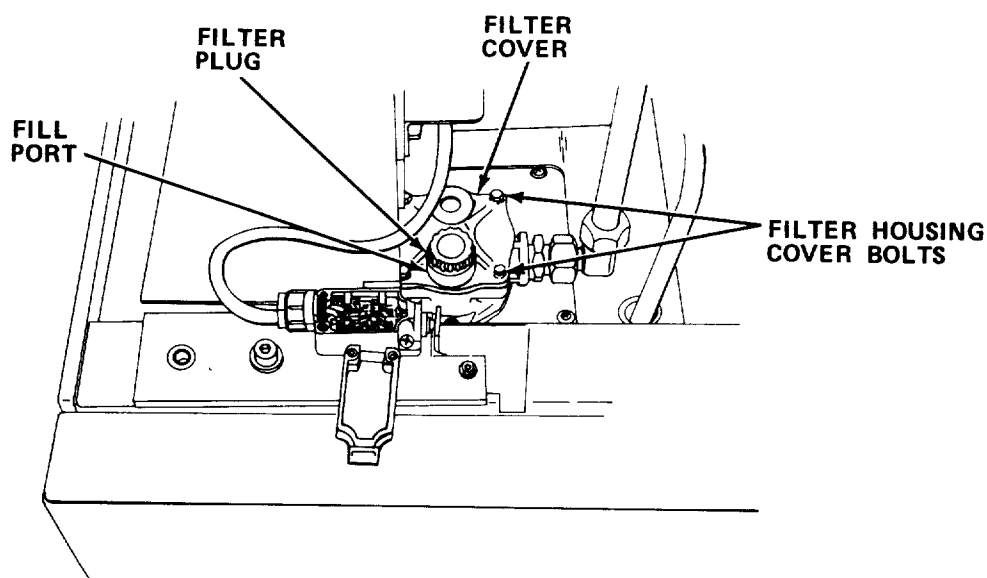
2-11.1 Cutter Mechanism. Prior to use, drain cutter mechanism and refill with one pint of SAE 30 (Item 7, Appendix E) oil.



**WARNING**

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C).

2-11.2 Hydraulics. Annually drain both reservoirs. Clean filters with solvent P-D-680 (Item 17, Appendix E).



Fill system with MIL-W-6083D Hydraulic Oil (Item 9, Appendix E) until level is 9 1/2 in.(24.13 cm) from bottom of tank.

## **2-12. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; (TMDE) AND SUPPORT EQUIPMENT.**

2-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-12.2 Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment. Special Tools, (TMDE) and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

2-12.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-6675-315-24P, covering organizational maintenance for this equipment.

**2-13. SERVICE UPON RECEIPT.**

2-13.1 Checking Unpacked Equipment.

- a. Inspect the equipment for damage incurred during shipment. If equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.
- b. Check the equipment against the packing list to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.
- c. Check to see whether the equipment has been modified.

**2-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES.**

- a. PMCS are designed to keep the equipment in good working condition by performing certain tests, inspections, and services. The intervals provide you, the organizational technician, with time schedules that determine when to perform specified tasks.
- b. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording the results of PMCS.
- c. Interval columns. This column determines the time period designated to perform your PMCS.
- d. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.
- e. List of tools and materials required for PMCS is as follows:

<u>Item</u>	<u>Quantity</u>
Cross Tip Screwdriver	1 ea
Multimeter	1 ea
Socket Head Key Set (with 6, 5, and 10 mm)	1 ea
Flat Tip Screwdriver	1 ea
Metric Combination Wrench Set	1 ea
General Purpose Detergent (Item 4, Appendix E)	1 pt
Cheesecloth (Item 3, Appendix E)	ar
Plastic Utility Pail	1 ea
Solvent, Cleaning, P-D-680 (Item 17, Appendix E)	ar



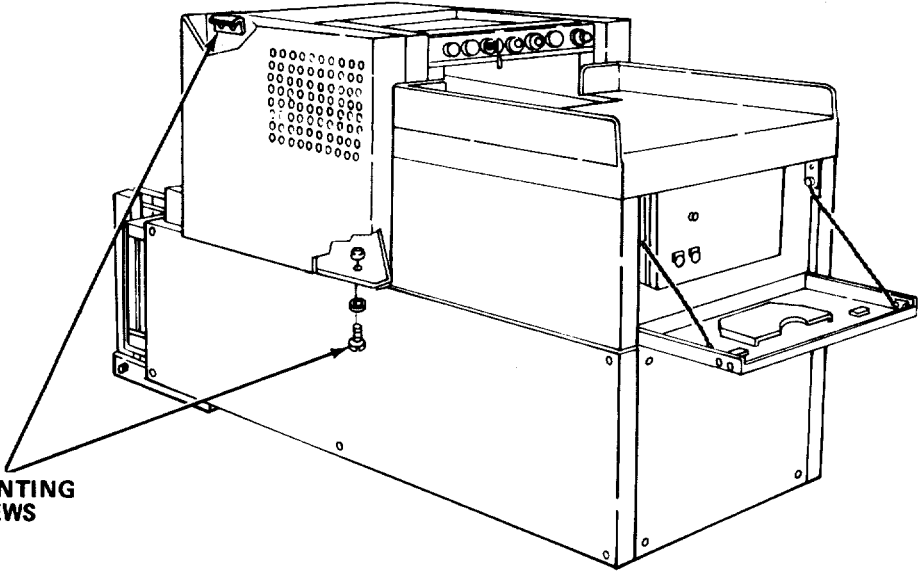
**Table 2-4. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Control Switch Rail.</u></p>  <p><b>MOUNTING SCREWS</b></p> <ol style="list-style-type: none"> <li>1. Turn off power to machine at circuit breaker.</li> <li>2. Move machine from wall to gain access to left side (paragraph 2-16.21).</li> <li>3. Remove screws holding bottom side panel on left-hand side from operator's end of machine.</li> </ol>

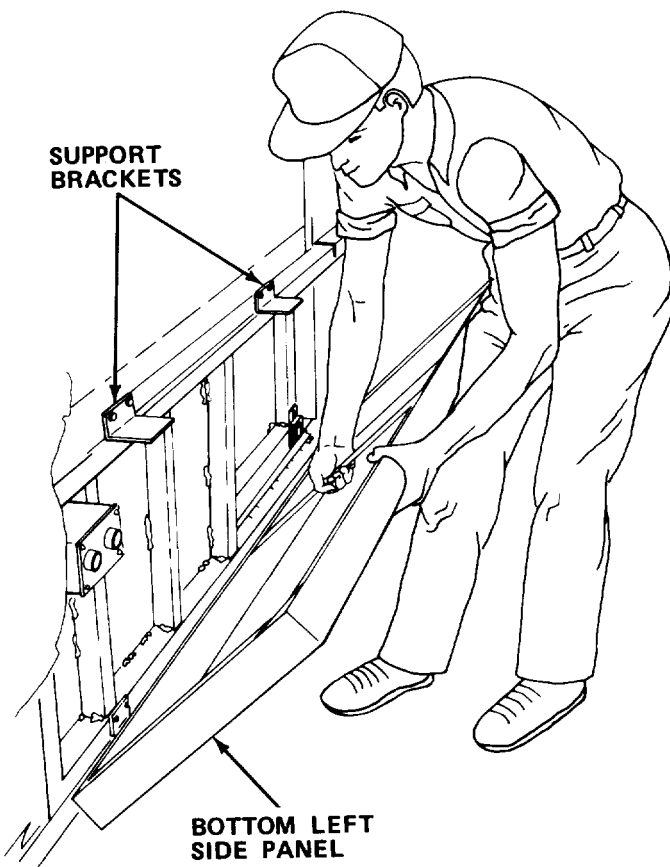
**Table 2-4. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Control Switch Rail - Cont</u></p> 

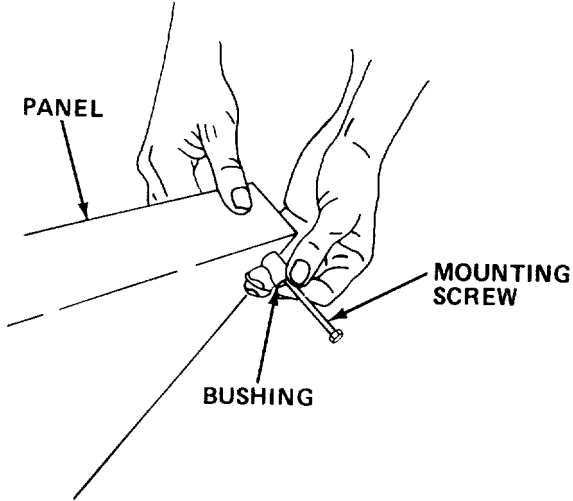
**Table 2-4. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p>Service Control Switch Rail - Cont</p> <p style="text-align: center;"><b>NOTE</b></p> <p><b>Screws for bottom side panel are mounted through spacer bushings placed between outside of panel and frame of shredder-bagger. Do not lose these bushings. They must be reinstalled for bottom side panel to be remounted.</b></p> <div style="text-align: center;">  <p>The diagram illustrates the assembly of a mounting screw through a bushing into a panel. A hand is shown holding the panel from the left, another hand is holding the mounting screw from the right, and a third hand is holding the bushing in the center. Arrows point from the labels 'PANEL', 'BUSHING', and 'MOUNTING SCREW' to their respective parts in the assembly.</p> </div> <p>4. Lift bottom side panel off of support brackets and set panel to one side, away from immediate work area.</p>

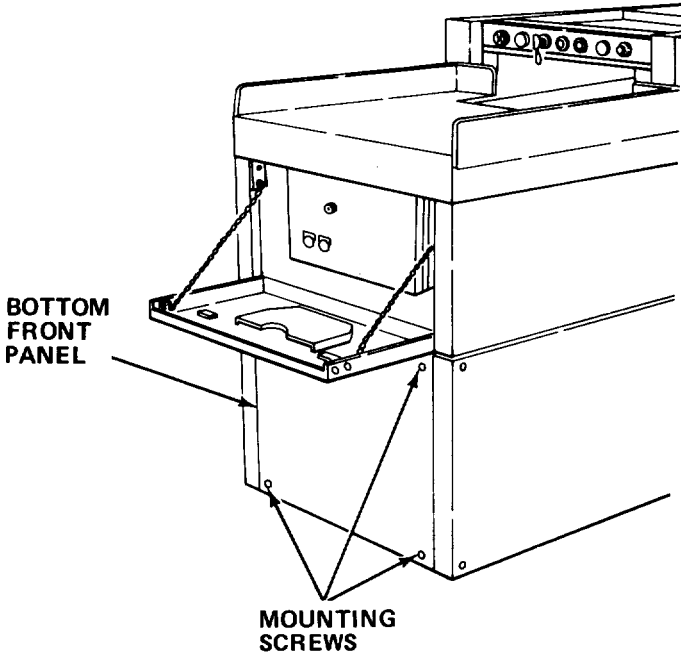
**Table 2-4. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Control Switch Rail - Cont</u></p>  <p>The diagram shows a side view of a shredder-bagger machine. A rectangular panel at the bottom front is hinged and shown in an open position. Two screws are indicated by arrows and labeled 'MOUNTING SCREWS'. The panel itself is labeled 'BOTTOM FRONT PANEL'.</p> <p>5. Remove screws holding bottom front panel at front of machine.</p> <p style="text-align: center;"><b>CAUTION</b> The bottom front panel has no undersupport brackets. It will fall when screws are removed.</p> <p>6. Lay bottom front panel to one side, away from immediate work area.</p>

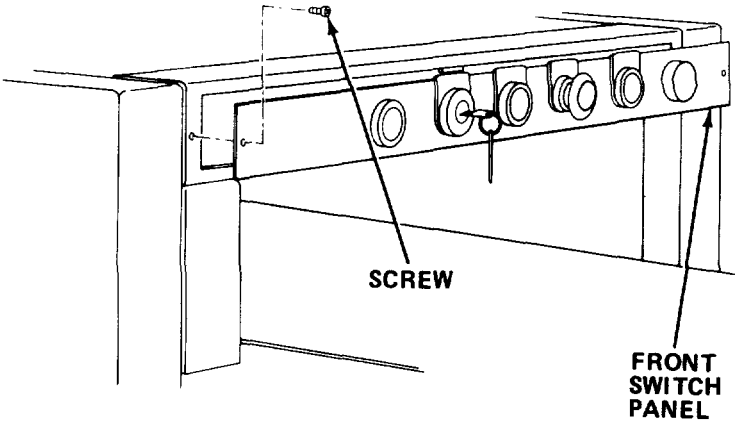
**Table 2-4. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b>SHREDDER-BAGGER</b></p> <p><u>Service Control Switch Rail - Cont</u></p>  <p>7. Remove screws securing control switch rail cover plate.</p> <p>8. Remove control switch rail cover plate by lifting it slightly, sliding cover plate toward front of Shredder-Bagger and pulling it clear.</p>

**Table 2-4. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

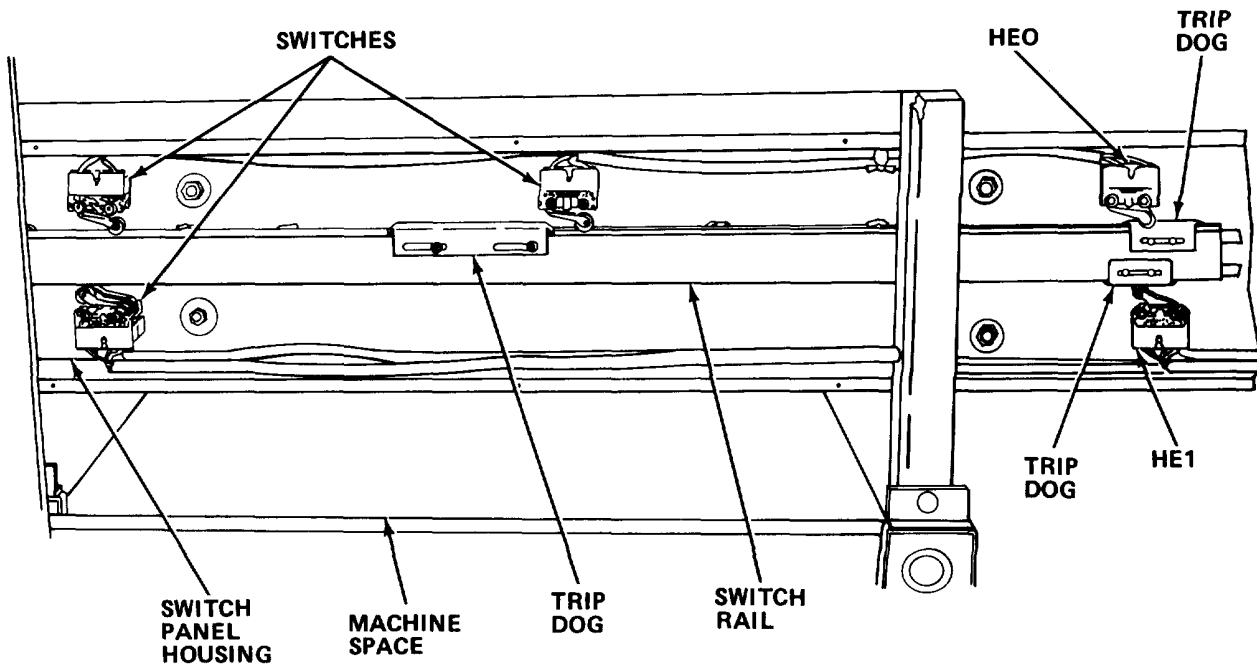
B - Before  
 D - During  
 A - After

W - Weekly  
 M - Monthly  
 Q - Quarterly

AN - Annually  
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(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b>SHREDDER-BAGGER</b></p> <p><u>Service Control Switch Rail - Cont</u></p>



9. Inspect switches, trip dogs, and interior for signs of damage.

**WARNING**

**Be sure that shredder-bagger is off before using liquids in vicinity of wiring or electrical shock can result.**

10. Brush away any dust, dirt, or foreign particles that have accumulated on component and frame surfaces. Remove any stubborn deposits with solvent and cloth.

**Table 2-4. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

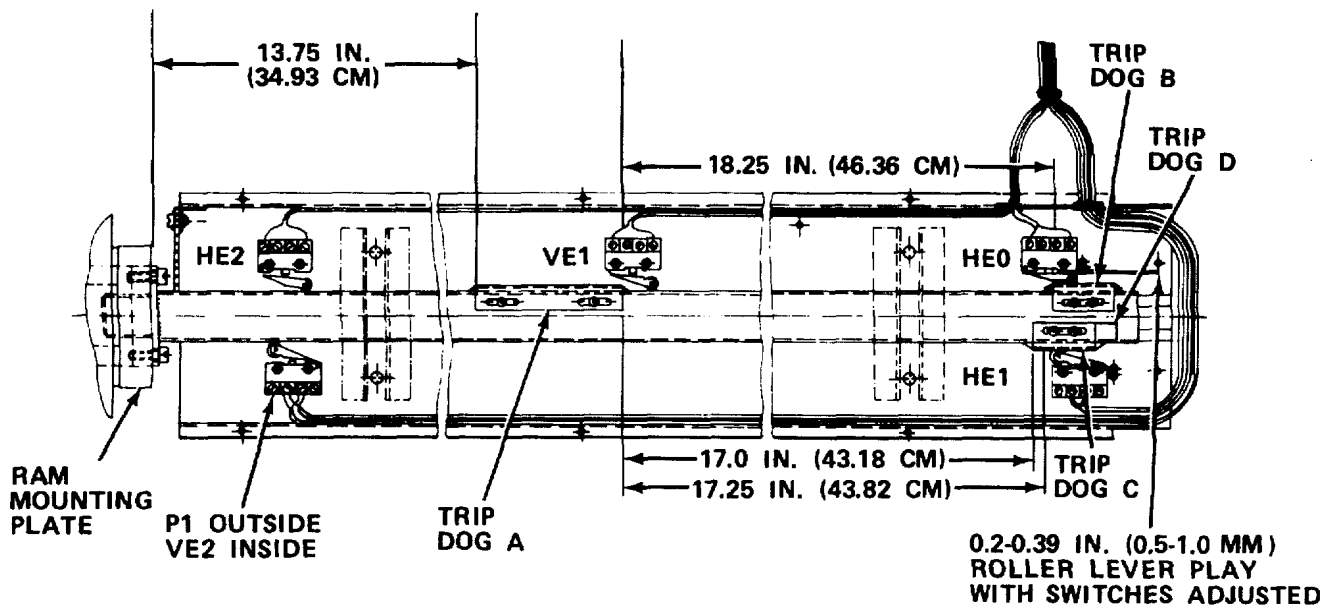
B - Before  
 D - During  
 A - After

W - Weekly  
 M - Monthly  
 Q - Quarterly

AN - Annually  
 S - Semiannually  
 BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b>SHREDDER-BAGGER</b></p> <p><u>Service Control Switch Rail - Cont</u></p> <p>11. Check that activating levers of limit switches are clean and free of obstructions.</p>



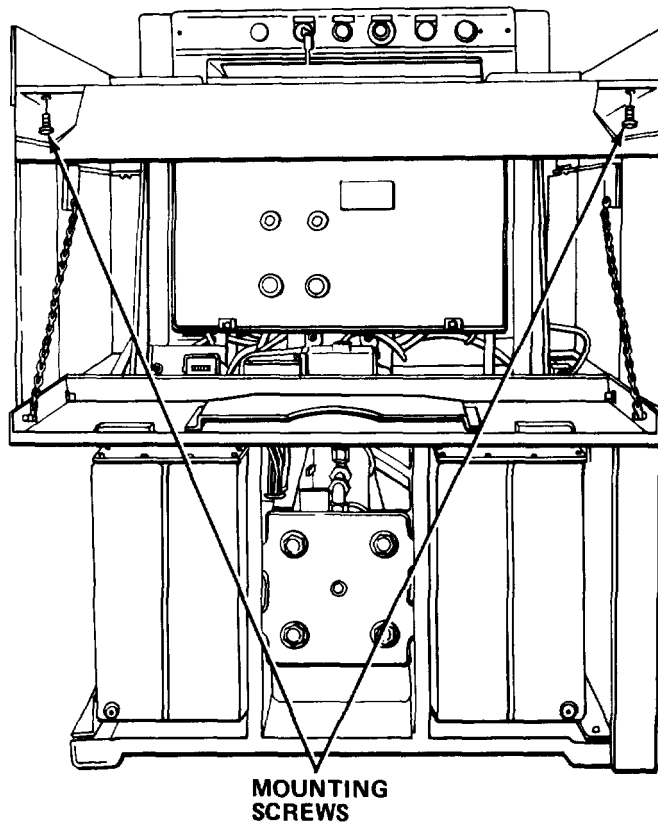
12. Check that trip dogs are in correct position and holding bolts are tight. Trip dog A should be 13.75 in. (34.9 cm) from the ram mounting plate. Trip dog B should be 18.25 in. (46.35 cm) from the end of trip dog A. Trip dog C should be 17.25 in. (43.81 cm) from the end of trip dog A. Trip dog D should be 17 in. (43.18 cm) from the end of trip dog A.
13. Reinstall control switch rail cover plate, bottom front panel, and bottom side panel.

**2-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES.****2-15.1 Preliminary Procedures.**

a. Before troubleshooting the machine, perform the following tasks:

(1) Remove feed table as follows:

(a) Open front panel.

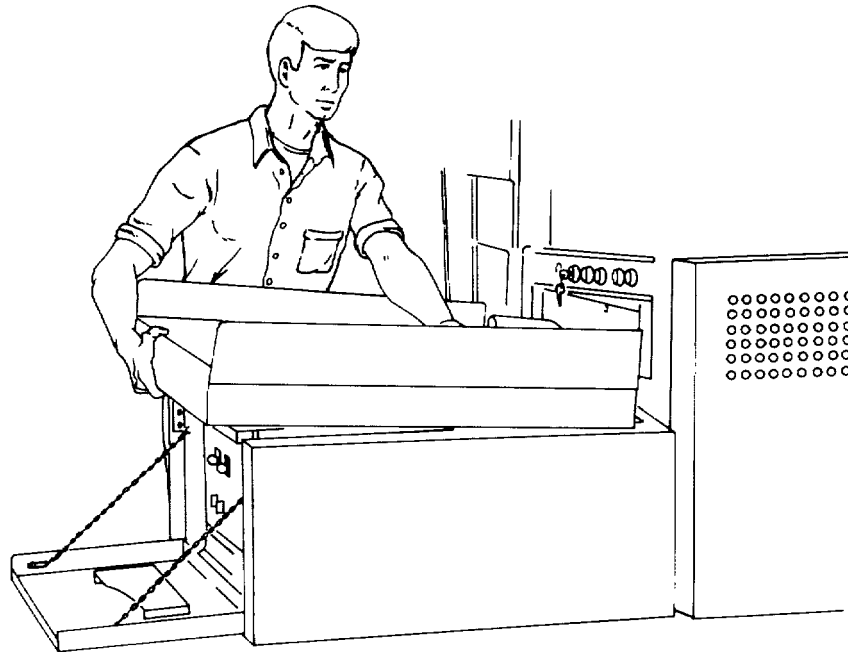


(b) Remove mounting screws beneath each forward corner of feed table.

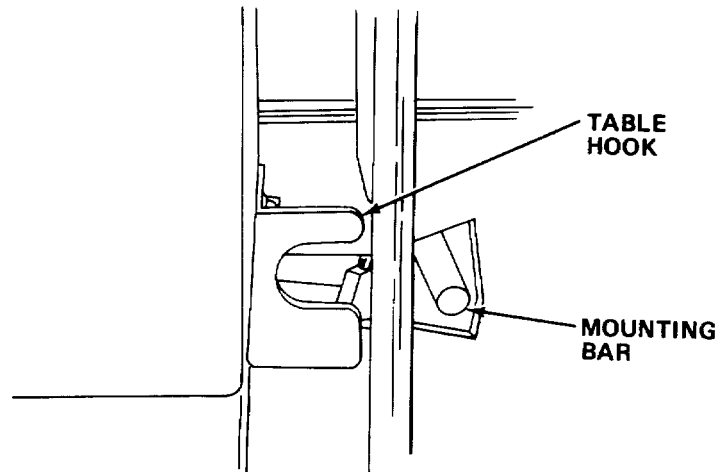


**NOTE**

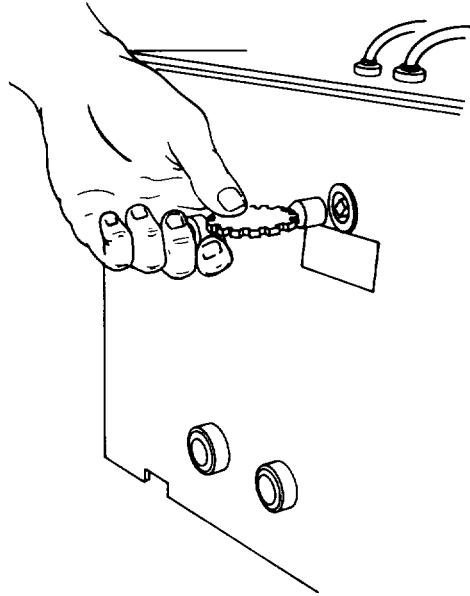
**Washers are located at each corner between side panels and feed table. Do not lose these washers.**



(c) Grasp feed table on both sides. Lift front end of feed table until it forms approximate 30-degree angle to the shredder-bagger.



(d) Lift front of feed table straight up until table hooks and table inside edge clears conveyor belt guide pulleys and mounting bar.



(2) Open switch (relay) cabinet using special key.

b. Troubleshooting will be performed using the functional electrical schematic, wiring diagram, and Table 2-5.

#### 2-15.2 Troubleshooting Procedures.

##### **CAUTION**

**When performing continuity tests, be sure that machine power is off or damage to test equipment can result.**

a. Organizational troubleshooting procedures cover the most common malfunctions that may be repaired at the organizational level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used by the operator should be conducted in addition to the organizational troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions, use the facing schematic or the foldout located at the end of this manual.

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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1. SHREDDER-BAGGER CONTROLS AND INDICATORS DO NOT RESPOND.

Step 1. Check to see if circuit breaker is tripped.

- (a) If circuit breaker is on, proceed to step 2.
- (b) Reset circuit breaker.

Step 2. Check for any loose wire connections.

- (a) Tighten connections.
- (b) Refer to direct/general support maintenance.

2. CUTTER MECHANISM WILL RUN IN REVERSE BUT NOT FORWARD.

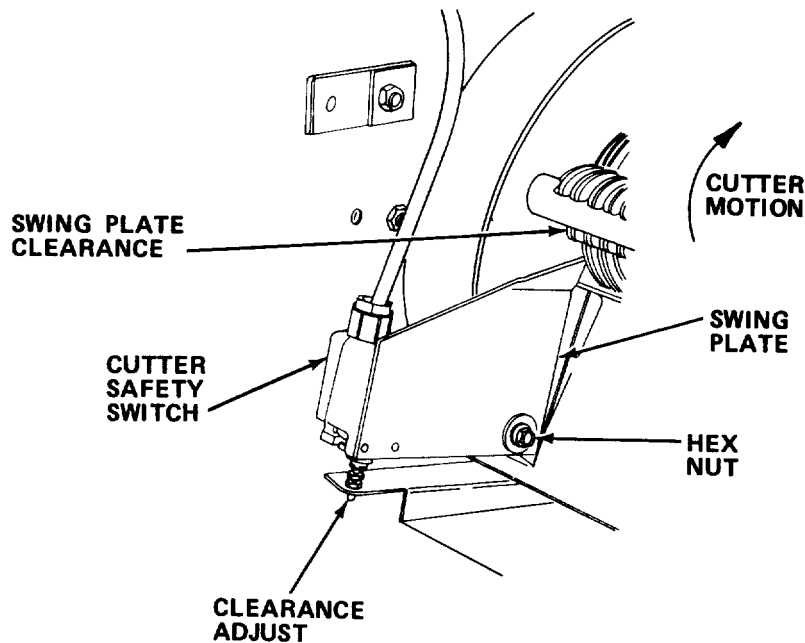


Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

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MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

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2. CUTTER MECHANISM WILL RUN IN REVERSE BUT NOT FORWARD - Cont

Step 1. Check safety switch swing plate for free movement.

- (a) If swing plate moves freely, proceed to step 2.
- (b) Remove cutter mechanism rear cover. Be sure that safety switch swing plate moves freely and is not being held closed by material from cutting blade.
- (c) Remove any material jammed between swing plate and blades.
- (d) If swing plate does not move freely, loosen hex bolt one-half turn.

Step 2. Check rear safety switch SSS for continuity.

- (a) If continuity is present, proceed to step 3.
- (b) Replace rear safety switch (paragraph 2-16.16).

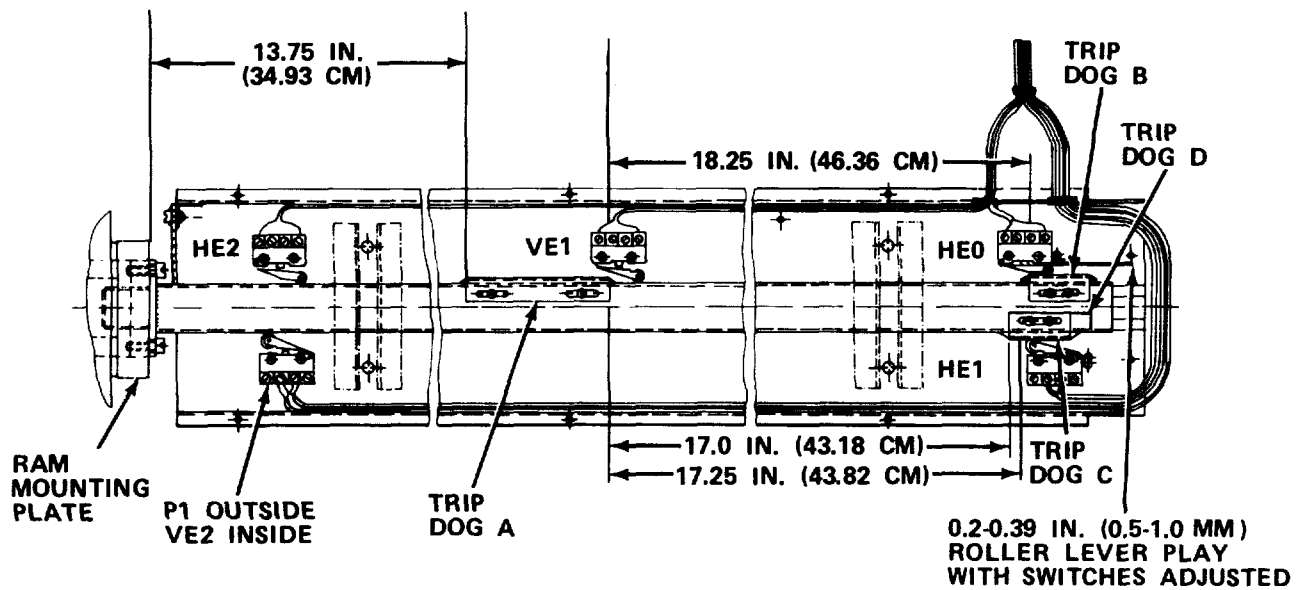
Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

2. CUTTER MECHANISM WILL RUN IN REVERSE BUT NOT FORWARD - Cont



Step 3. Check position of trip dog for switch HE1.

- (a) Adjust trip dog if out of position.
- (b) If trip dog is in position, run continuity check across switch HE1 and replace as required (paragraph 2-16.11).
- (c) If switch is good and trip dog is in position, proceed to step 4.

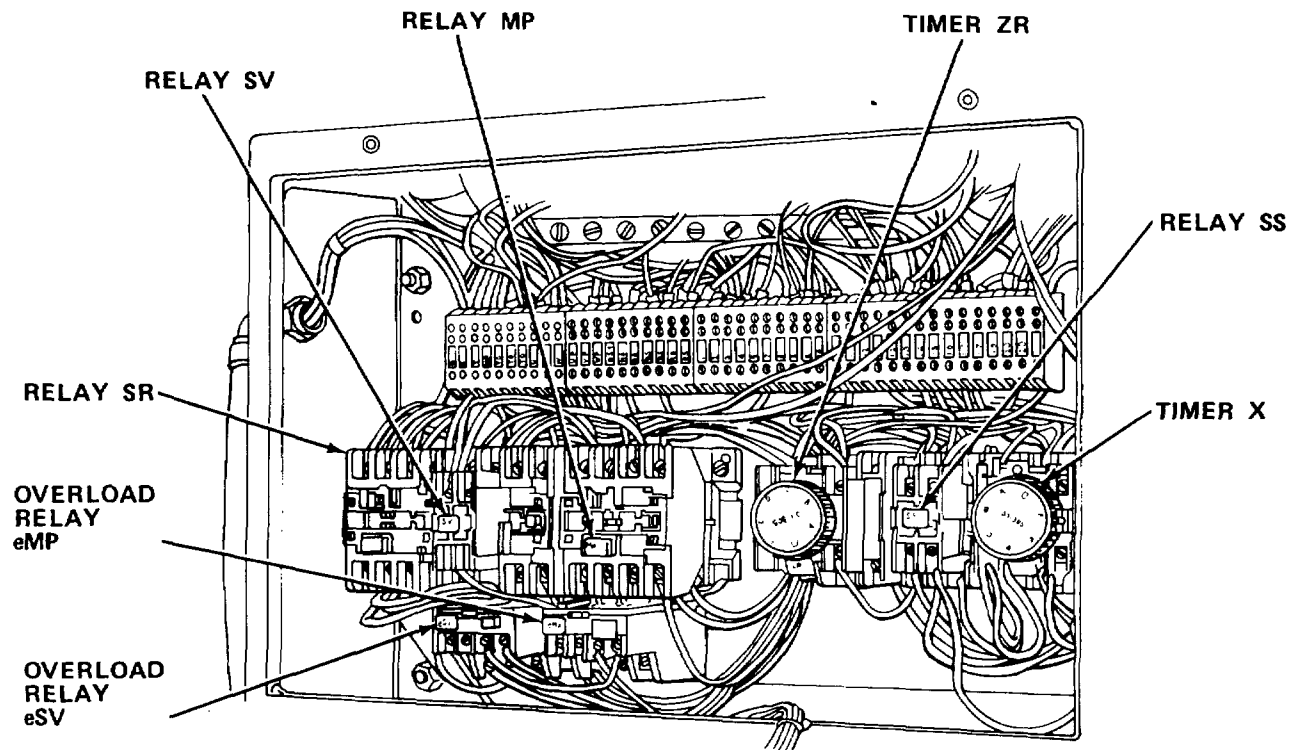
Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

## 2. CUTTER MECHANISM WILL RUN IN REVERSE BUT NOT FORWARD - Cont



Step 4. Check the continuity of cutter reverse relay SR.

- (a) If present, proceed to step 5.
- (b) If not present, replace cutter reverse relay (paragraph 2-16.10).

Step 5. Check control relay SS for continuity.

- (a) If present, proceed to step 6.
- (b) If not present, replace control relay (paragraph 2-16.10).

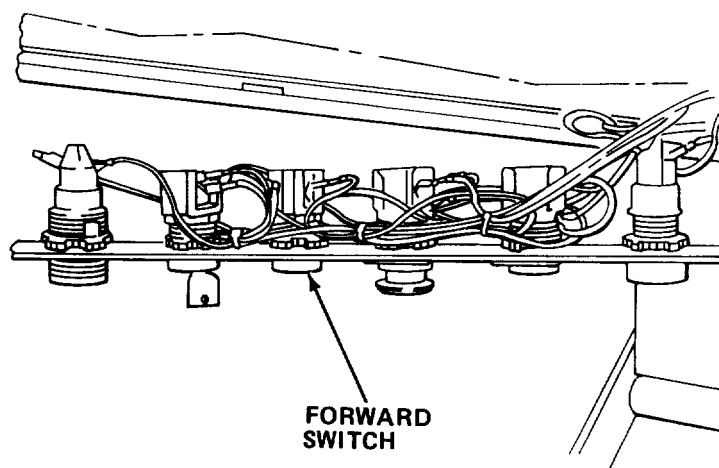
Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

## 2. CUTTER MECHANISM WILL RUN IN REVERSE BUT NOT FORWARD - Cont



Step 6. Check cutter FORWARD switch VT for continuity.

If not present, replace switch (paragraph 2-16.11).

## 3. CUTTER RUNS FORWARD BUT NOT IN REVERSE.

**WARNING**

**Death or serious injury may occur from electrical shock unless power is secured before servicing.**

Step 1. Check for any loose wires in switch cabinet.

- (a) If all wires are connected properly, proceed to step 2.
- (b) Reconnect wires according to wiring diagram.

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

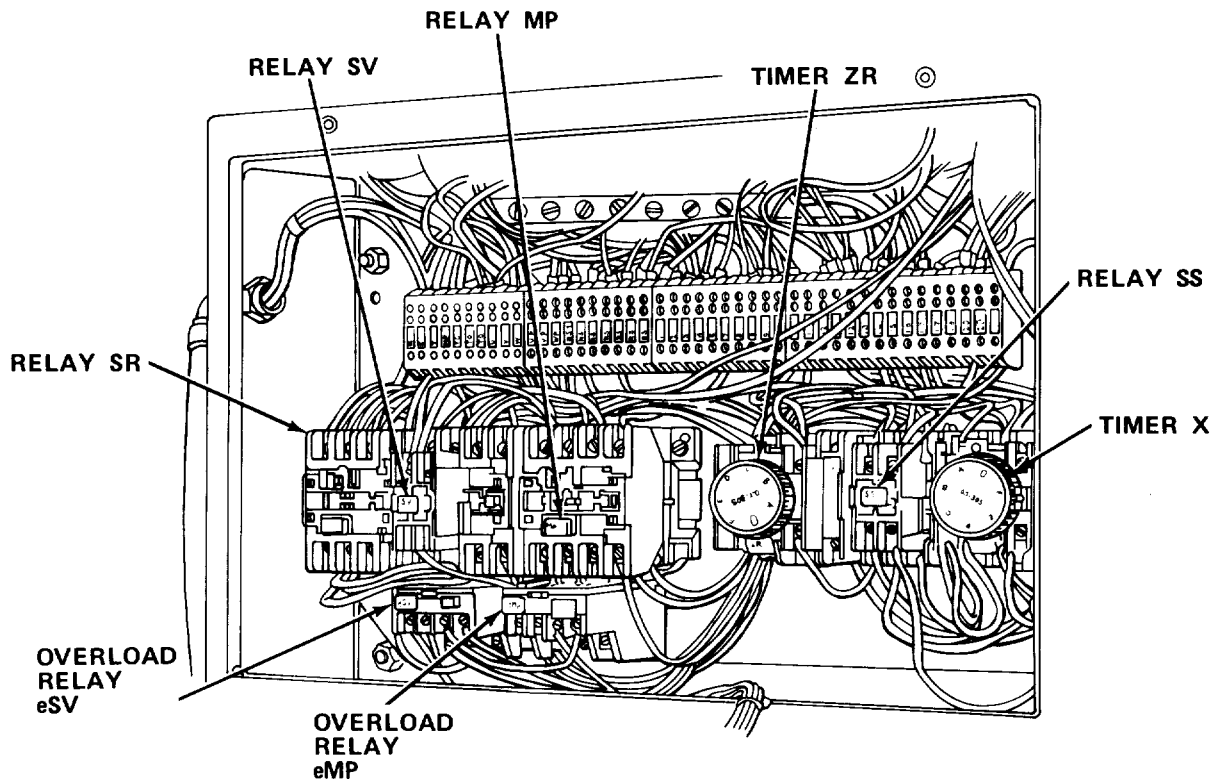
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

3. CUTTER RUNS FORWARD BUT NOT IN REVERSE - Cont

Step 2. Check continuity of cutter reverse relay SR.



- (a) If present, proceed to step 3.
- (b) If not present, replace relay (paragraph 2-16.10).



Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

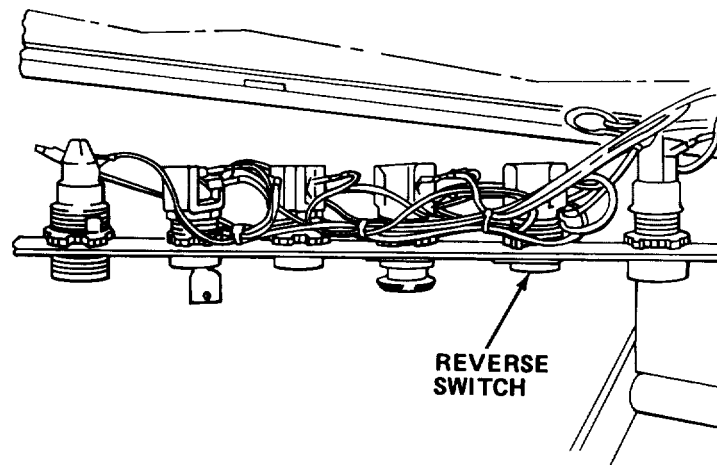
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

## 3. CUTTER RUNS FORWARD BUT NOT IN REVERSE - Cont'

Step 3. Check cutter REVERSE switch RT for continuity.



If not present, replace switch (paragraph 2-16.12).

## 4. LEFT-HAND CUTTER ON LAMP (KLS) LIGHTS, BUT CUTTER DOES NOT OPERATE.

Step 1. Check cutter FORWARD switch for continuity.

- (a) If present, proceed to step 2.
- (b) If not, replace switch (paragraph 2-16.12).

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

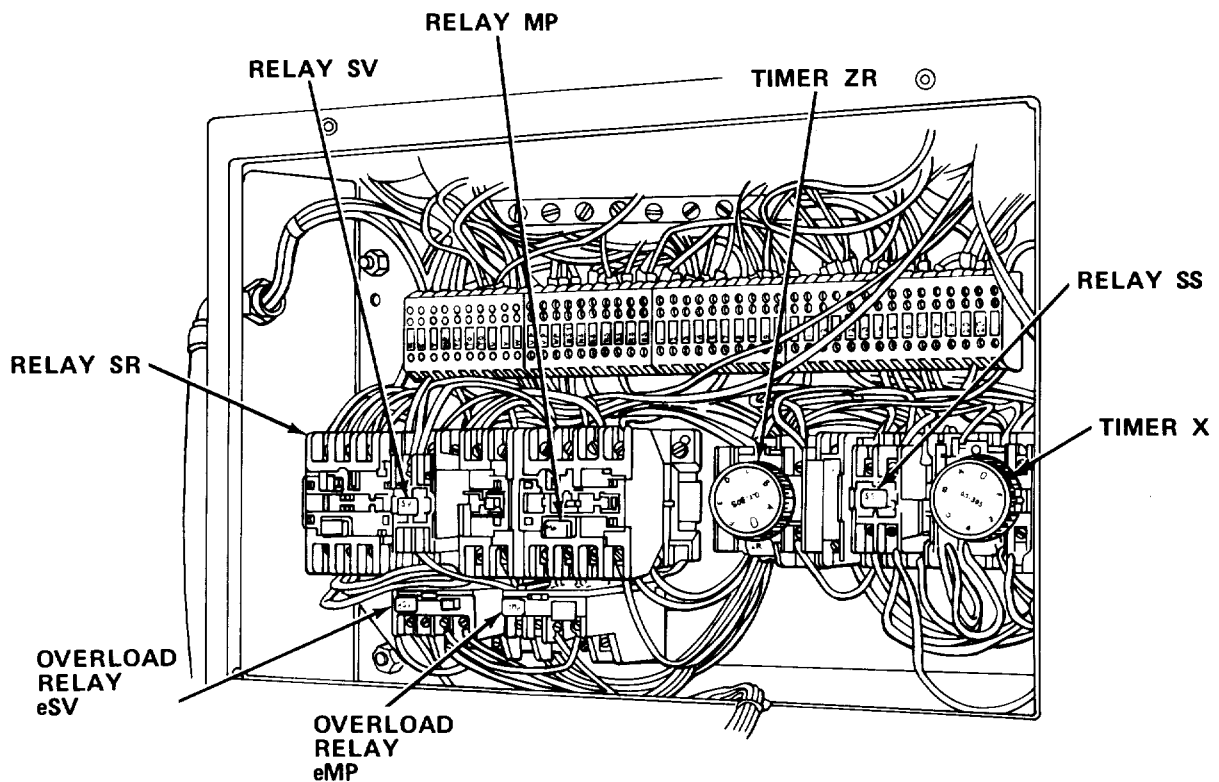
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

4. LEFT-HAND CUTTER ON LAMP (KLS) LIGHTS, BUT CUTTER DOES NOT OPERATE - Cont

Step 2. Check motor overload relay eSV for continuity.



- (a) If present, proceed to step 3.
- (b) If not, replace overload relay eSV (paragraph 2-16.10).

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

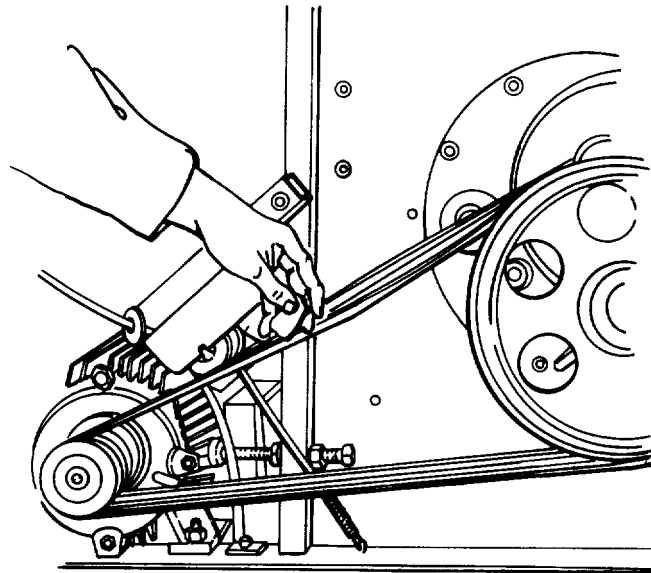
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

4. LEFT-HAND CUTTER ON LAMP (KLS) LIGHTS, BUT CUTTER DOES NOT OPERATE - Cont

Step 3. Check cutter drive V-belts for tightness.



Adjust V-belts as necessary.

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

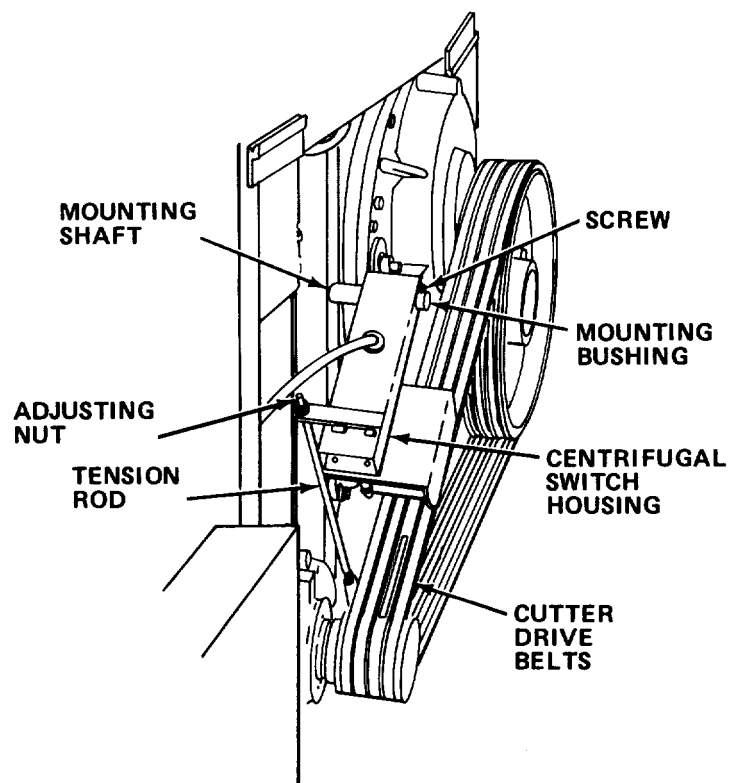
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

## 5. CUTTER RUNS FORWARD MOMENTARILY AND THEN SHUTS DOWN.

Step 1. Check adjustment of centrifugal switch FL.



(a) If properly adjusted, proceed to step 2.

(b) Adjust switch (paragraph 2-16.2).

Step 2. Check centrifugal switch FL for continuity.

(a) If present, proceed to step 3.

(b) If not present, replace switch (paragraph 2-16.7).

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

5. CUTTER RUNS FORWARD MOMENTARILY AND THEN SHUTS DOWN - Cont

Step 3. Check cutter forward relay SV for continuity.

- (a) If present, proceed to step 4.
- (b) If not, replace relay SV (paragraph 2-16.10).

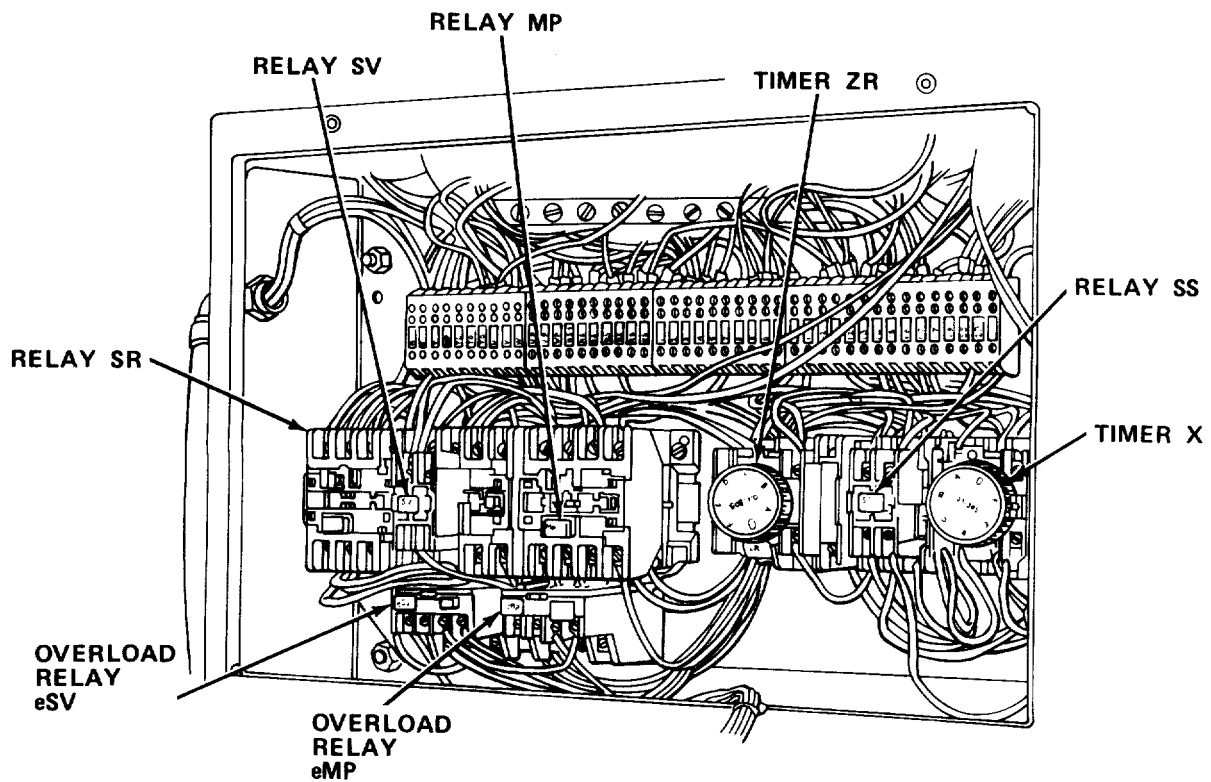


Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

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MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

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5. CUTTER RUNS FORWARD MOMENTARILY AND THEN SHUTS DOWN - Cont

Step 4. Check rear safety switch SSS for continuity.

- (a) If present, proceed to step 5.
- (b) If not present, replace rear safety switch (paragraph 2-16.16).

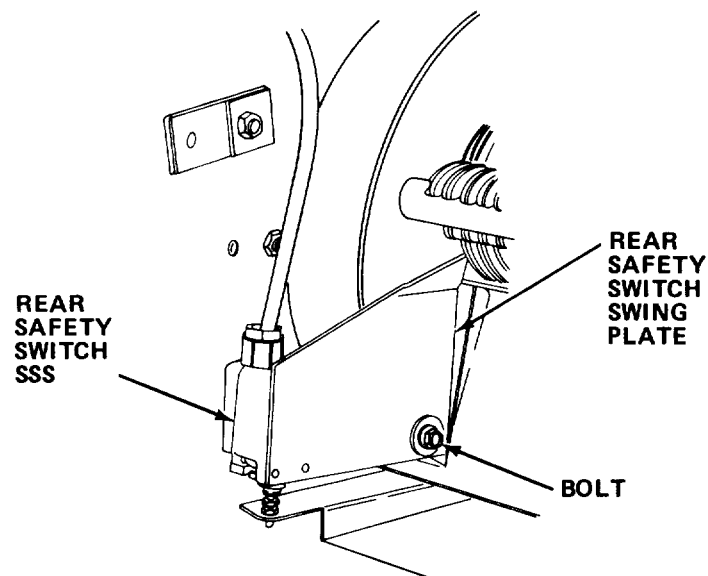


Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

5. CUTTER RUNS FORWARD MOMENTARILY AND THEN SHUTS DOWN - Cont

Step 5. Check position of trip dog for switch HE1.

- (a) If correctly adjusted, proceed to step 6.
- (b) Adjust trip dog (paragraph 2-16.3).

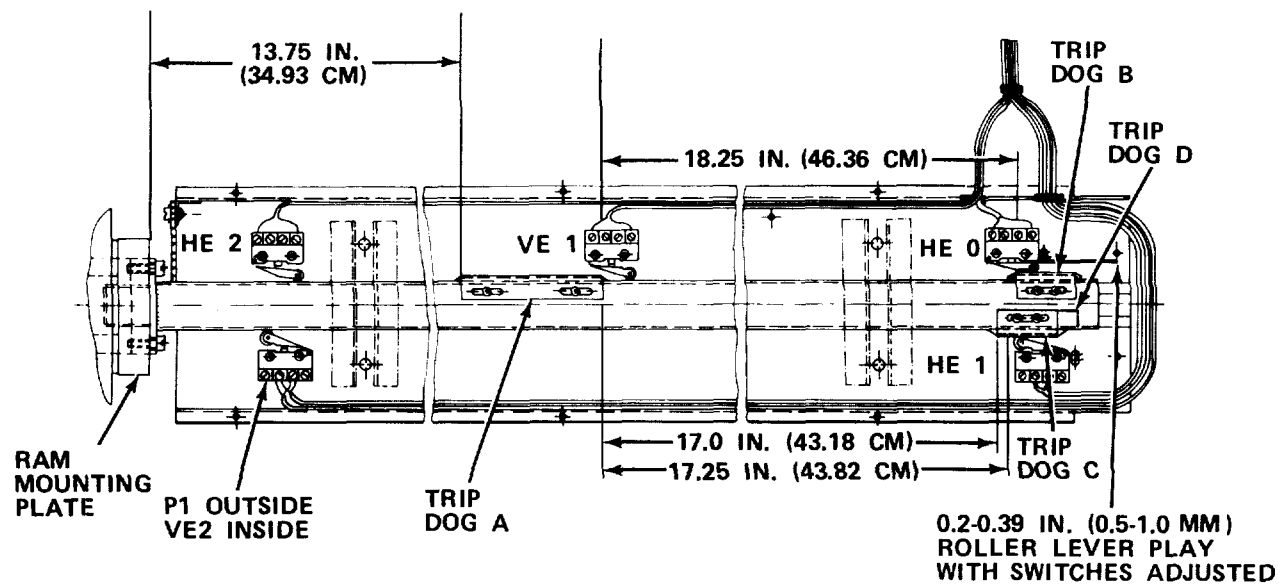


Table 2-5. ORGANIZATIONAL TROUBLESHOOTING

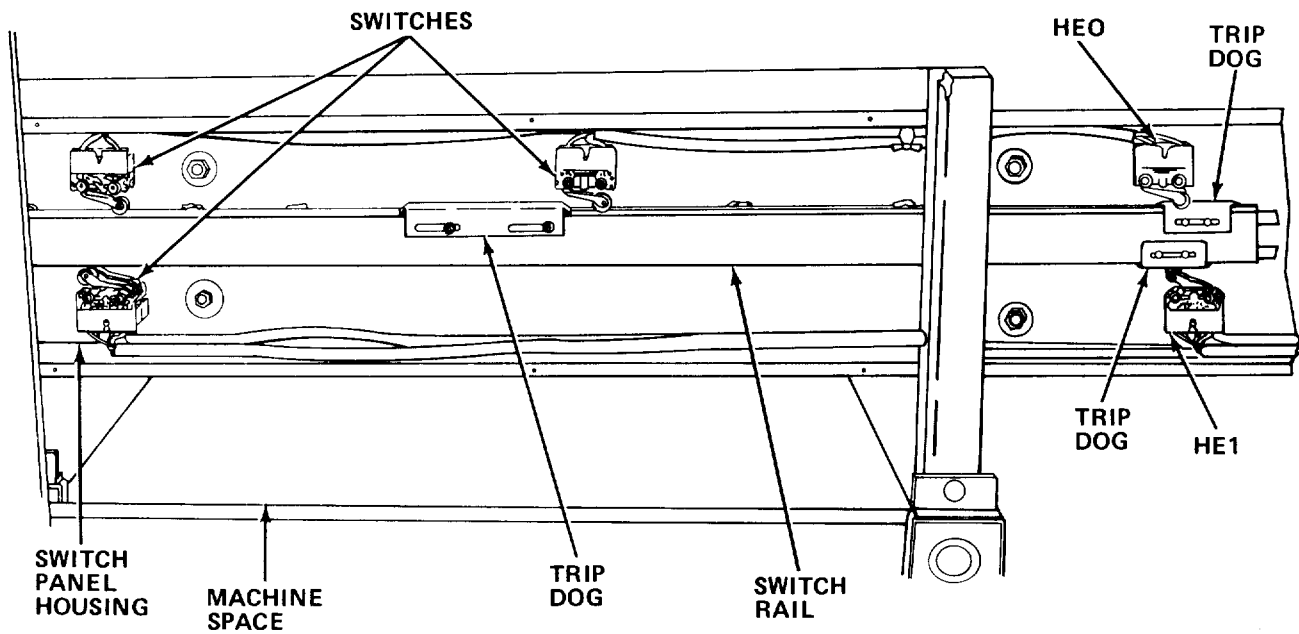
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

5. CUTTER RUNS FORWARD MOMENTARILY AND THEN SHUTS DOWN - Cont

Step 6. Check switch HE1 for continuity.



- (a) If present, proceed to step 7.
- (b) If not present, replace switch HE1 (paragraph 2-16.11).



Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

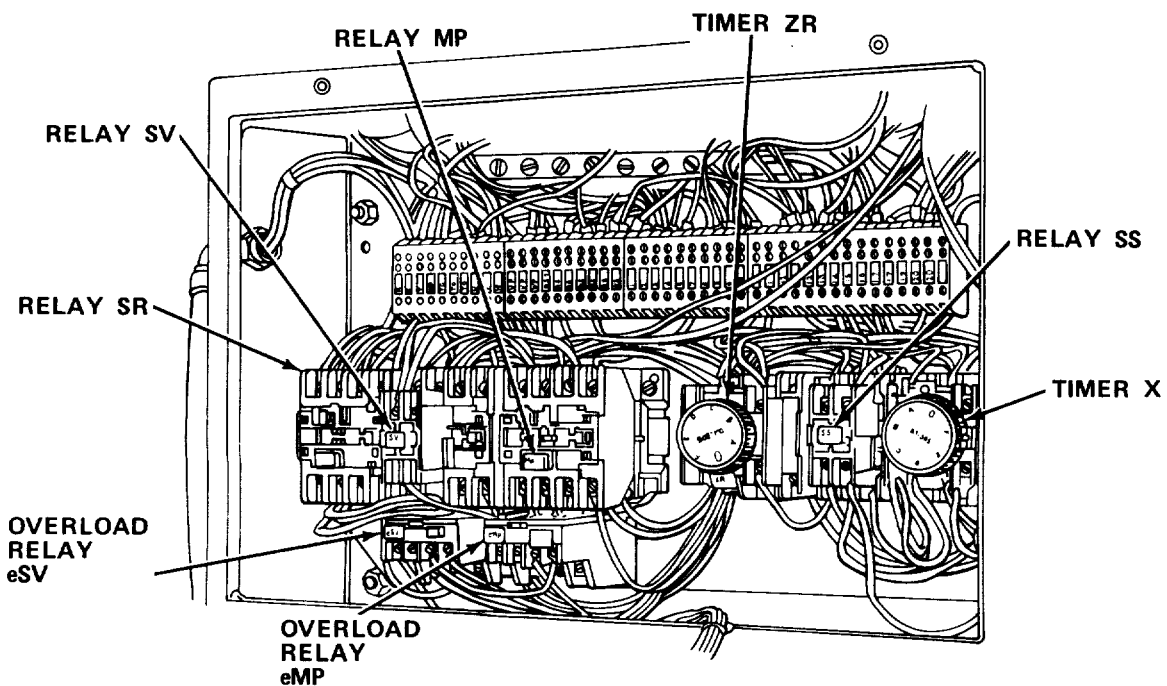
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

## 5. CUTTER RUNS FORWARD MOMENTARILY AND THEN SHUTS DOWN - Cont

Step 7. Check cutter reverse relay SR for continuity.



If not present, replace relay SR (paragraph 2-16.10).

## 6. CUTTER BLADES MOVE SLOWLY, SLUGGISHLY, OR INTERMITTENTLY.

Step 1. Check for jammed material in cutter blades.

- (a) If blades are clear, proceed to step 2.
- (b) Remove jammed material.

Step 2. Inspect cutter drive V-belts.

- (a) Adjust loose belts as necessary (paragraph 2-16.1).
- (b) Replace any worn or broken belts (paragraph 2-16.8).

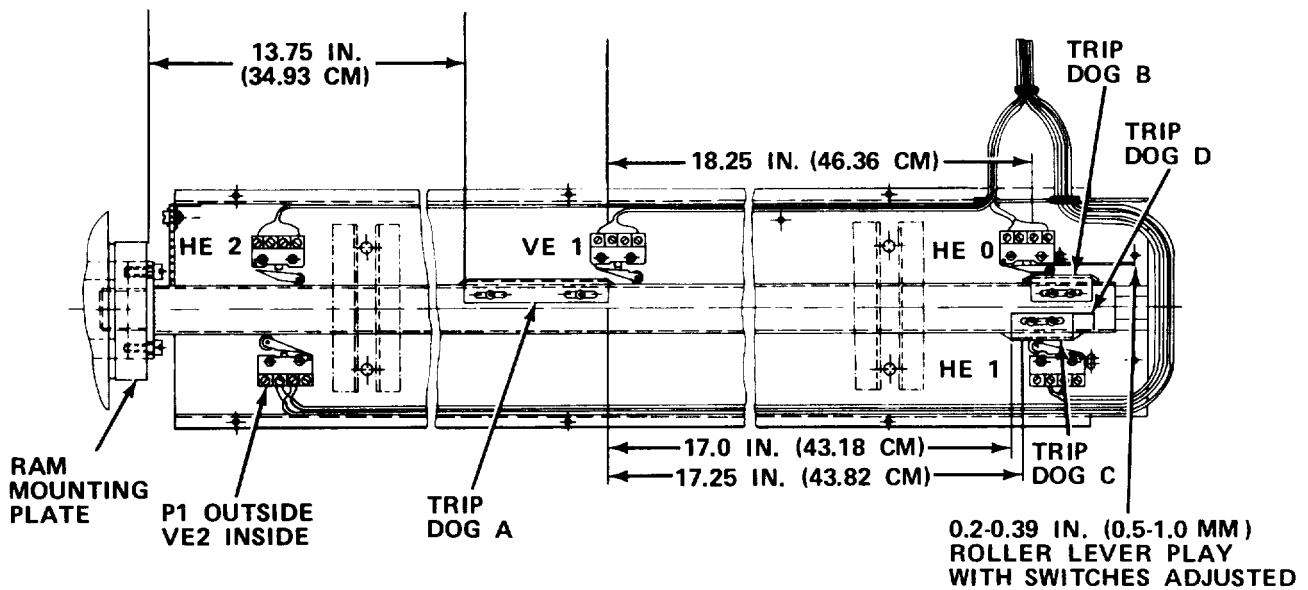
Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

7. PRESSURE ON LAMP (KLP) COMES ON WHEN BALE CHAMBER IS ONLY PARTIALLY FULL.



Step 1. Check that trip dog is correctly positioned to activate switch HE2.

- (a) If trip dog is adjusted correctly, proceed to step 2.
- (b) Adjust trip dog (paragraph 2-16.3).

Step 2. Check continuity of switch HE2.

- (a) If continuity is present, proceed to step 3.
- (b) If not present, adjust switch HE2 (paragraph 2-16.11).

Step 3. Check switch VE1 for continuity.

- (a) If present, proceed to step 4.
- (b) If not present, replace switch VE1 (paragraph 2-16.11).

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

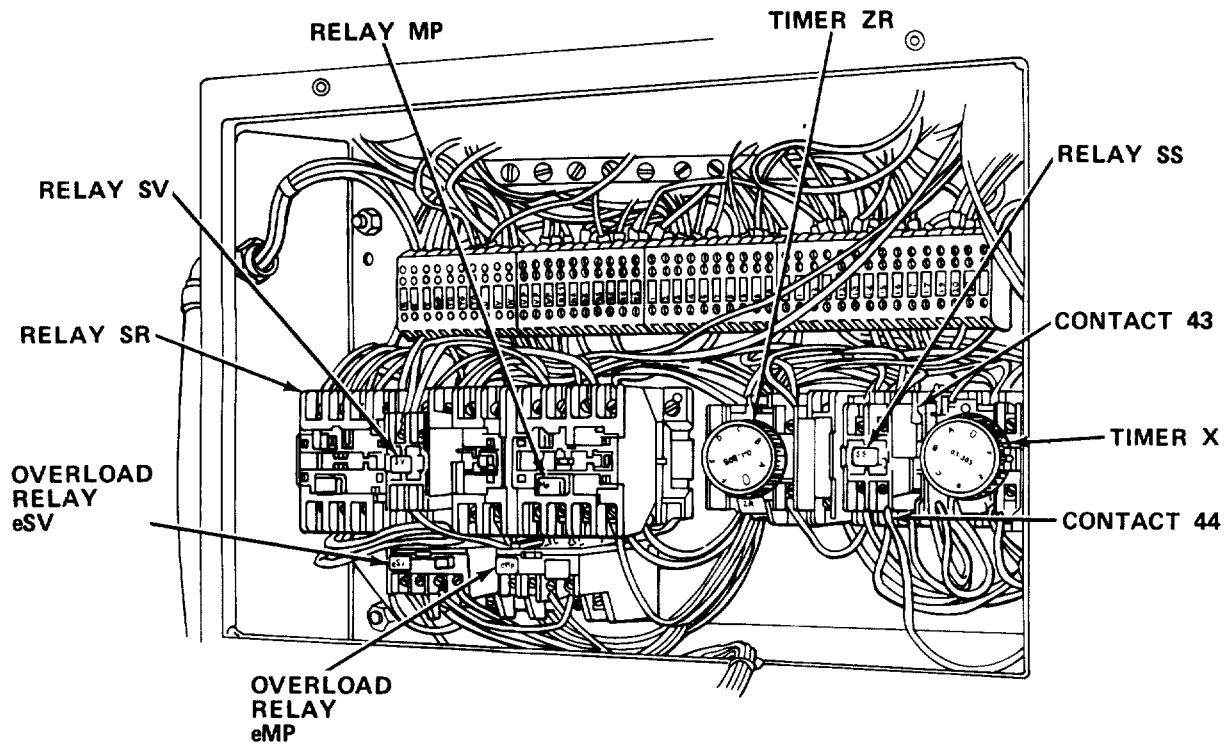
TEST OR INSPECTION

CORRECTIVE ACTION

7. PRESSURE ON LAMP (KLP) COMES ON WHEN BALE CHAMBER IS ONLY PARTIALLY FULL -  
Cont

Step 4. Check for continuity across contacts 43 and 44 of control relay SS.

If continuity is present, replace relay (paragraph 2-16.10).



Step 5. Check for failure of pressure switch SSP.

- (a) Replace defective switch (paragraph 2-16.20).
- (b) Refer to direct/general support maintenance.

Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

## 8. RAM WILL NOT EJECT BALE.

Step 1. Raise rear gate and check to be sure that activator is pressing folding safety switch KS.

- (a) If working properly, proceed to step 2.
- (b) Adjust switch KS activator (paragraph 2-16.17).

Step 2. Check safety switch KS for continuity.

- (a) If present, proceed to step 3.
- (b) If not present, replace switch KS (paragraph 2-16.18).

Step 3. Check control relay SS for continuity.

- (a) If present, proceed to step 4.
- (b) If not present, replace relay (paragraph 2-16.10).

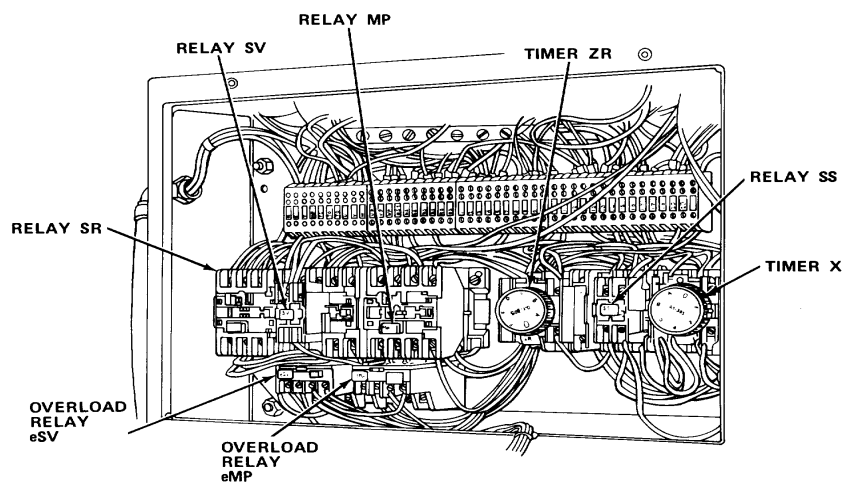


Table 2-5. ORGANIZATIONAL TROUBLESHOOTING - Cont

---

MALFUNCTION

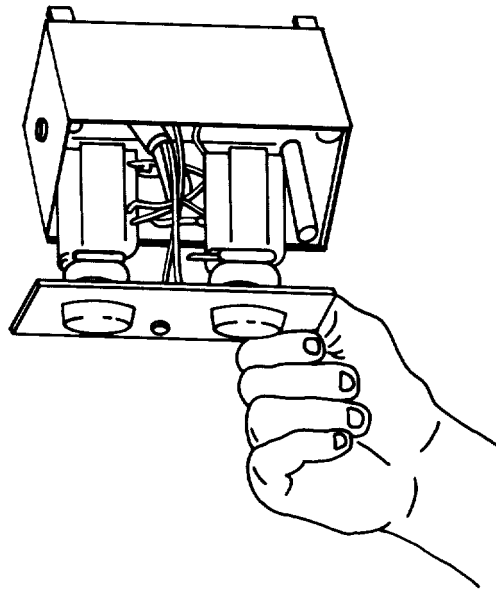
TEST OR INSPECTION

CORRECTIVE ACTION

---

8. RAM WILL NOT EJECT BALE - Cont

Step 4. Check ram forward switch HTP for continuity.



If not present, replace switch HTP (paragraph 2-16.19).

---

**2-16. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering organizational maintenance functions for the shredder-bagger. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure equipment is properly functioning.

INDEX

PROCEDURES	PARAGRAPH
Adjust V-Belt Tension.....	2-16.1
Adjust Centrifugal Switch FL .....	2-16.2
Adjust Control Switch Rail Trip Dogs.....	2-16.3
Adjust Shaft Driver.....	2-16.4
Adjust Conveyor Clutch Drive .....	2-16.5
Adjust Conveyor Belt Tension .....	2-16.6
Replace Centrifugal Switch FL .....	2-16.7
Replace V-Belts .....	2-16.8
Replace Hydraulic Tank Connecting Tube.....	2-16.9
Replace Relays.....	2-16.10
Replace Control Rail Switches .....	2-16.11
Replace Switches on Front Switch Panel.....	2-16.12
Replace Front Switch Panel Lamp .....	2-16.13
Replace Vane Rotor Assembly.....	2-16.14
Replace Safety Switch eBA.....	2-16.15
Replace Rear Safety Switch SSS.....	2-16.16
Adjust Switch KS Activator.....	2-16.17
Replace Folding Safety Switch KS .....	2-16.18
Replace Ram Forward Switch HTP .....	2-16.19
Replace Pressure Safety Switch.....	2-16.20
Remove/Install Shredder-Bagger .....	2-16.21

2-16.1 Adjust V-Belt Tension.

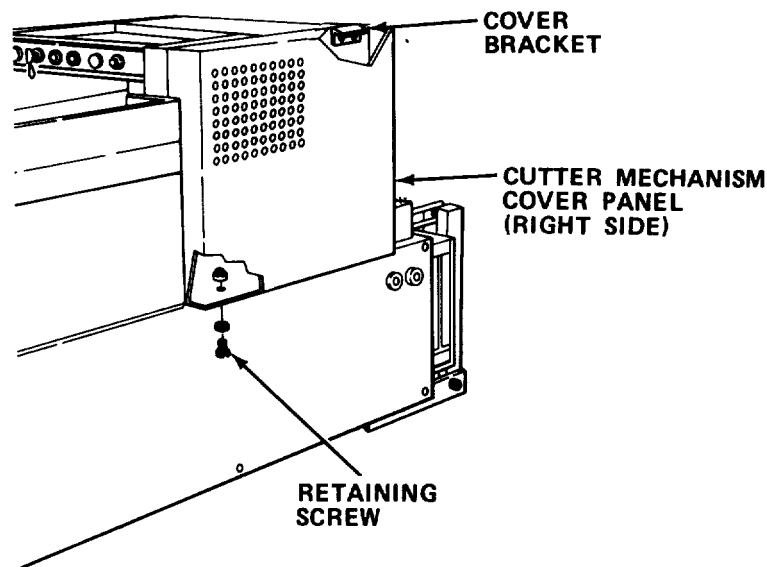
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 6 in. Adjustable Wrench  
 8 in. Adjustable Wrench  
 No. 2 Cross Tip Screwdriver  
 5 mm Hex Head Key Wrench  
 19 mm Combination Wrench

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.

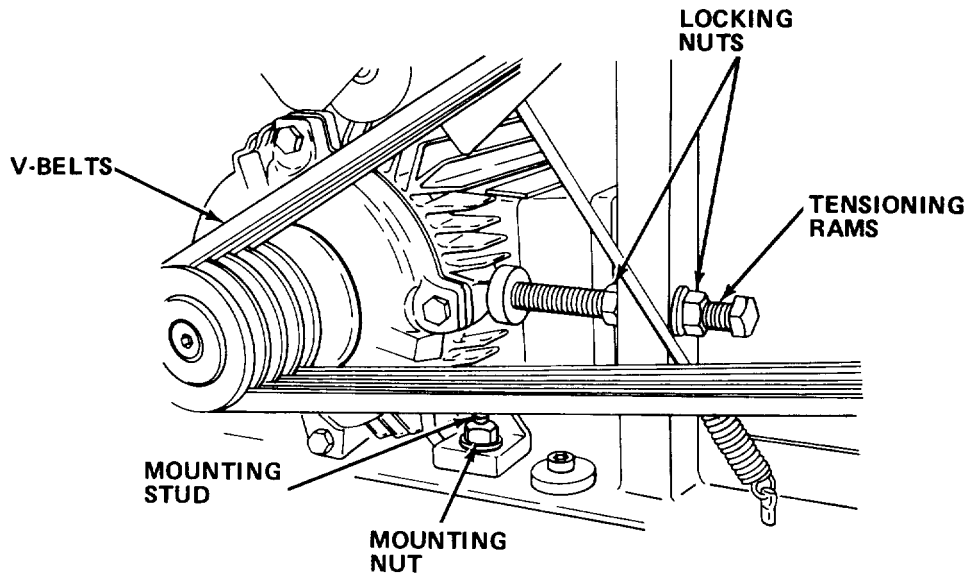


- c. Remove screws and washers attaching bottom right side panel.

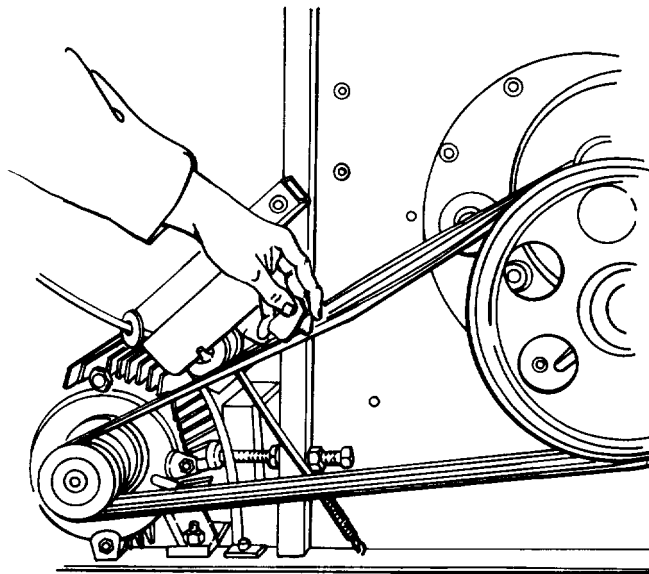
**NOTE**

**Top of cutter side panel hangs from brackets.**

- d. Grasp top and bottom of side panel, lift up and pull away from machine.



- e. Back tensioning rod away from motor.
- f. Remove top left mechanism cover side panel to gain access to inner motor mounting studs and loosen mounting studs.



- g. Turn tensioning rod until it contacts motor. Continue turning tensioning rod until correct tension is achieved. Test tension by pressing down on V-belts. Tension is properly adjusted when firm hand pressure will not depress belts more than 1/2 in. (12.7 mm).



**CAUTION**

Be sure motor pulley is alined with cutter pulley. Misalignment of motor pulleys will cause belts to bind.

- h. Tighten all four mounting nuts.
- i. Reinstall panels.
- j. Turn on circuit breaker.
- k. Turn main power switch ON.

2-16.2 Adjust Centrifugal Switch FL.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 6 in. Adjustable Wrench

Flat Tip Screwdriver

No. 2 Cross Tip Screwdriver

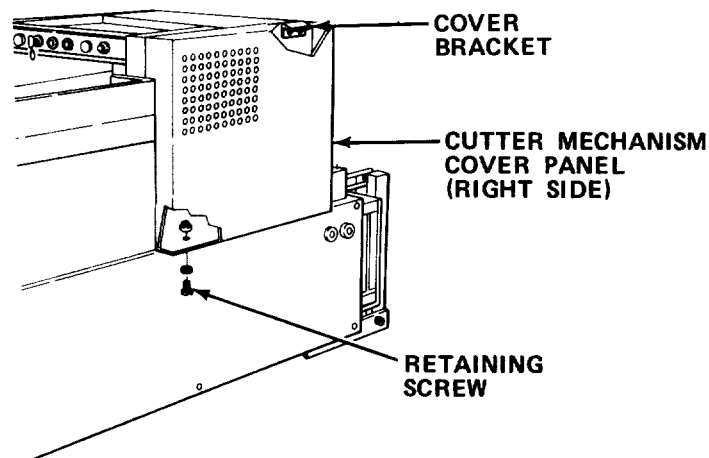
10 mm Combination Wrench

SUPPLIES: Washer(s) 6 mm (0.32 in.)

**WARNING**

Death or serious injury may occur from electrical shock unless power is turned off before servicing.

- a. Turn off circuit breaker.
- b. Turn off main power switch.

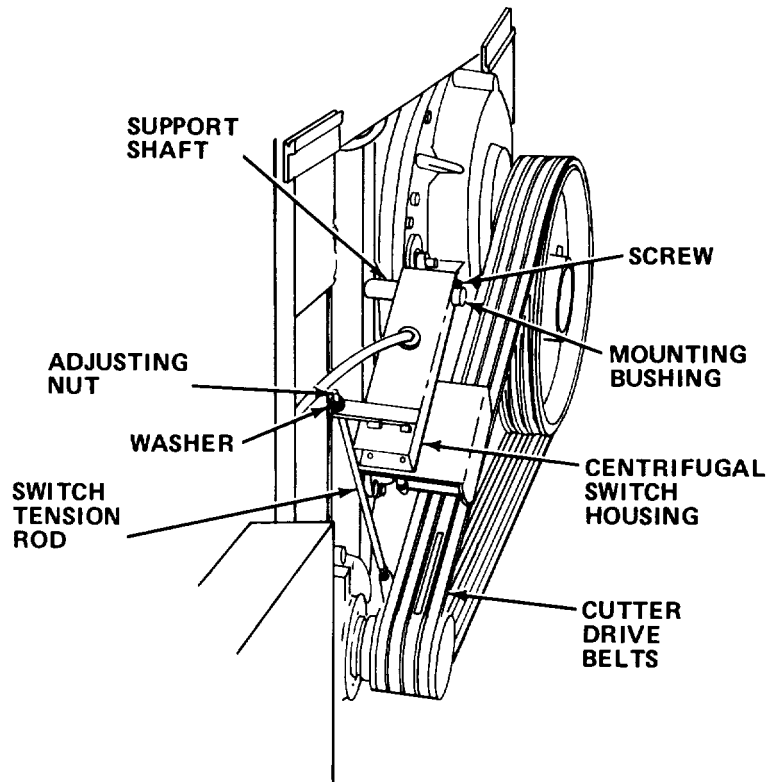


- c. Remove screws attaching top right cutter mechanism side panel.

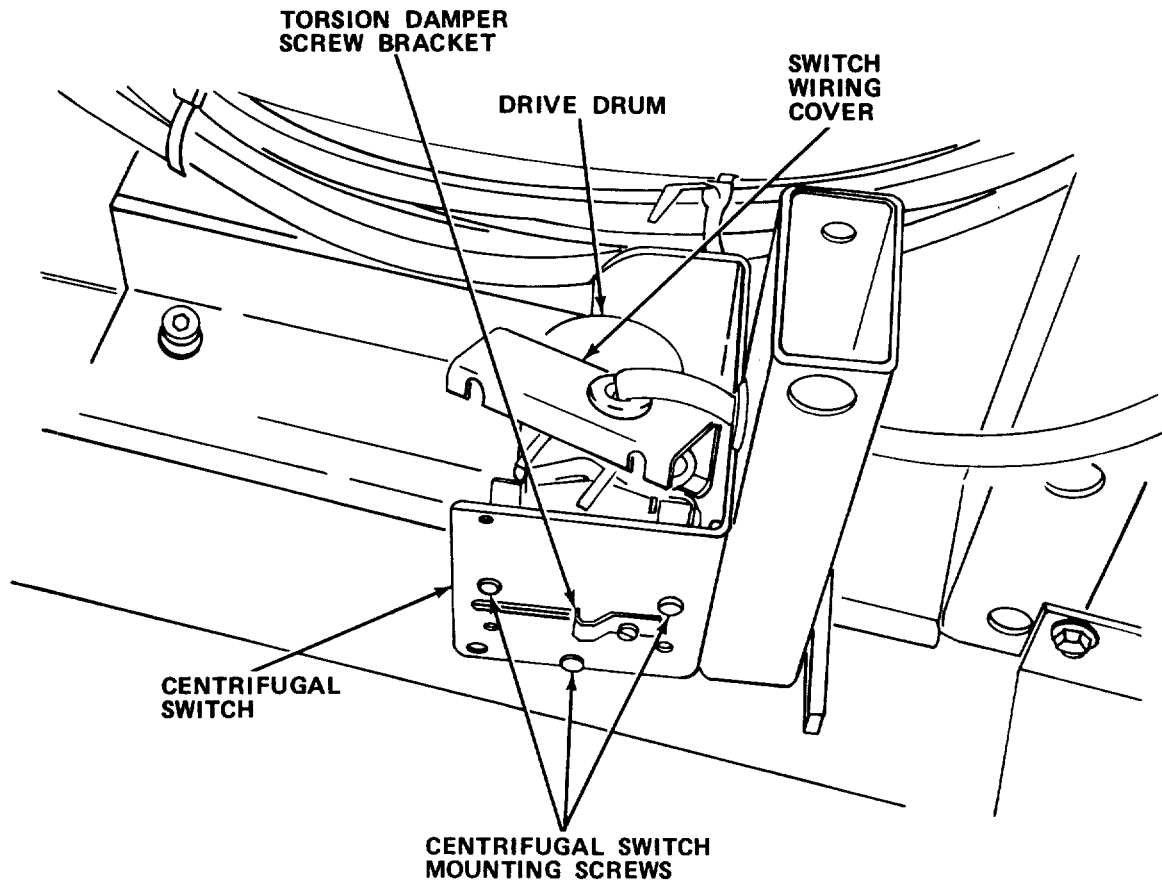
**NOTE**

**Top of cutter side panel hangs from brackets.**

- d. Grasp top and bottom of side panel, lift up several inches and pull away from machine.



- e. Remove adjustment nuts and washer on switch tension rod.
- f. Loosen screw on support shaft bushing, remove bushing and switch housing.
- g. Remove screws holding centrifugal switch wiring cover and remove cover.
- h. Tag and disconnect wires from centrifugal switch.



- i. Remove torsion damper screw bracket and screws holding centrifugal switch in place.
- j. Turn drum axle of roller 90 degrees. Remove centrifugal switch, drive drum, and washers.
- k. Reinstall drive drum. Place sufficient washers between drum and centrifugal switch to prevent belts from rubbing against switch.

**NOTE**

**Shaft takes 6 mm (0.31 in.) ID washers.**

- l. Reinstall centrifugal switch FL on drum axle.
- m. Turn drum axle back 90 degrees.
- n. Reinstall torsion damper screw bracket and switch holding screws.

- o. Reconnect wiring to switch.
- p. Reinstall switch wiring cover.
- q. Slide switch assembly back on support shaft. Reinstall bushing and tighten screw.
- r. Reinstall tensioning rod, washer and nuts. Tighten adjustment nuts until centrifugal switch FL rests firmly on belts and tighten lock nut.

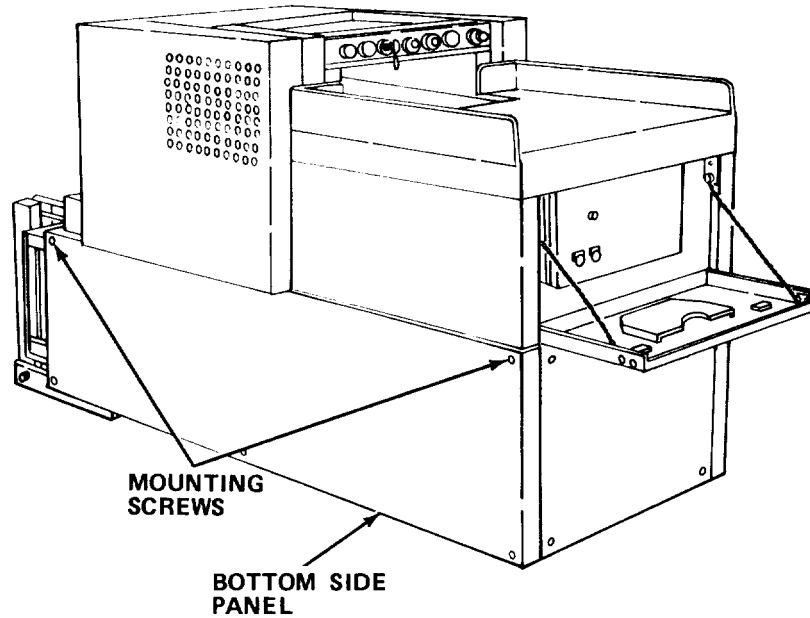
**WARNING**

**To test switch, housing must be lifted with machine running. Do not lift housing from underneath or place hands near belts. Personnel injury may result.**

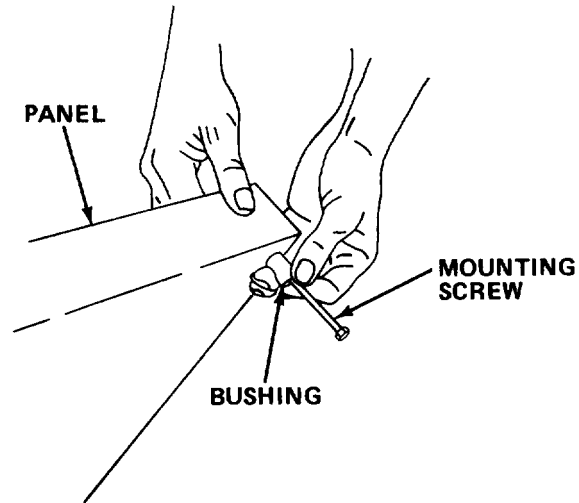
- s. Turn on circuit breaker.
- t. Turn on main power switch.
- u. Check operation of switch.
- v. Tension is correct if motor stops when centrifugal switch drum is lifted from belt.
- w. Reinstall cutter mechanism side panel.

**2-16.3 Adjust Control Switch Rail Trip Dogs.**

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: No. 2 Cross Tip Screwdriver  
5 mm Hex Head Key Wrench  
4 mm Hex Head Key Wrench  
3 mm Hex Head Key Wrench  
Tape Measure**WARNING****Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

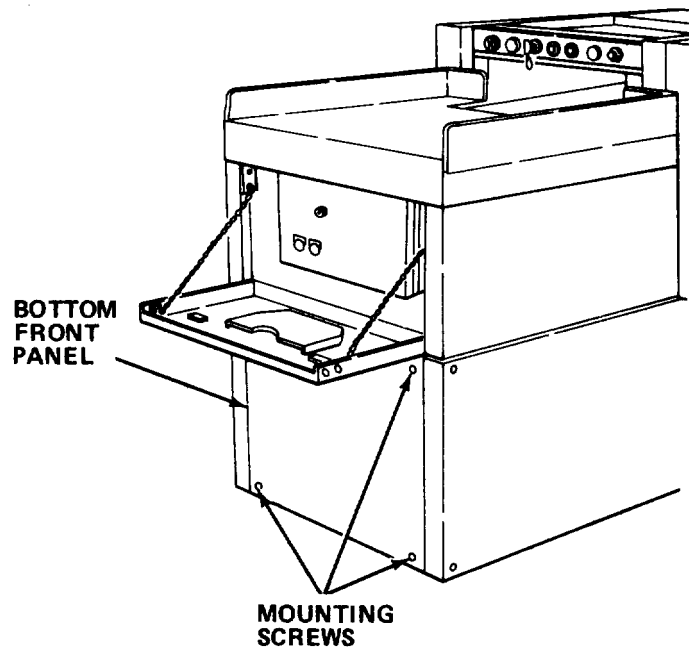
- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).
- d. Remove screws holding bottom left side panel.



**NOTE**

Screws for bottom side panel are mounted through bushings placed between outside of panel and frame of shredder-bagger. Do not lose these bushings. They must be reinstalled.

- e. Lift bottom side panel from support brackets and set panel to one side, away from immediate work area.

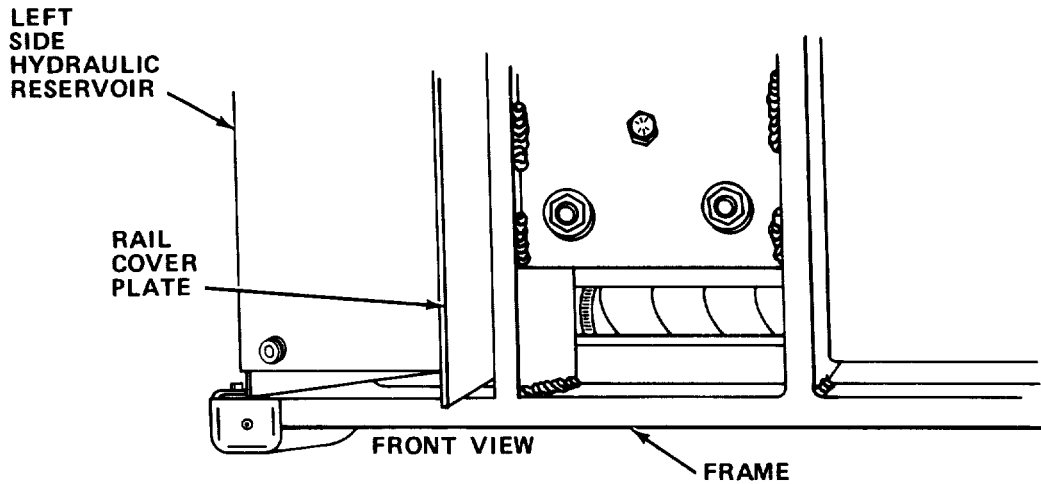


- f. Remove screws holding bottom front panel at front of shredder-bagger.

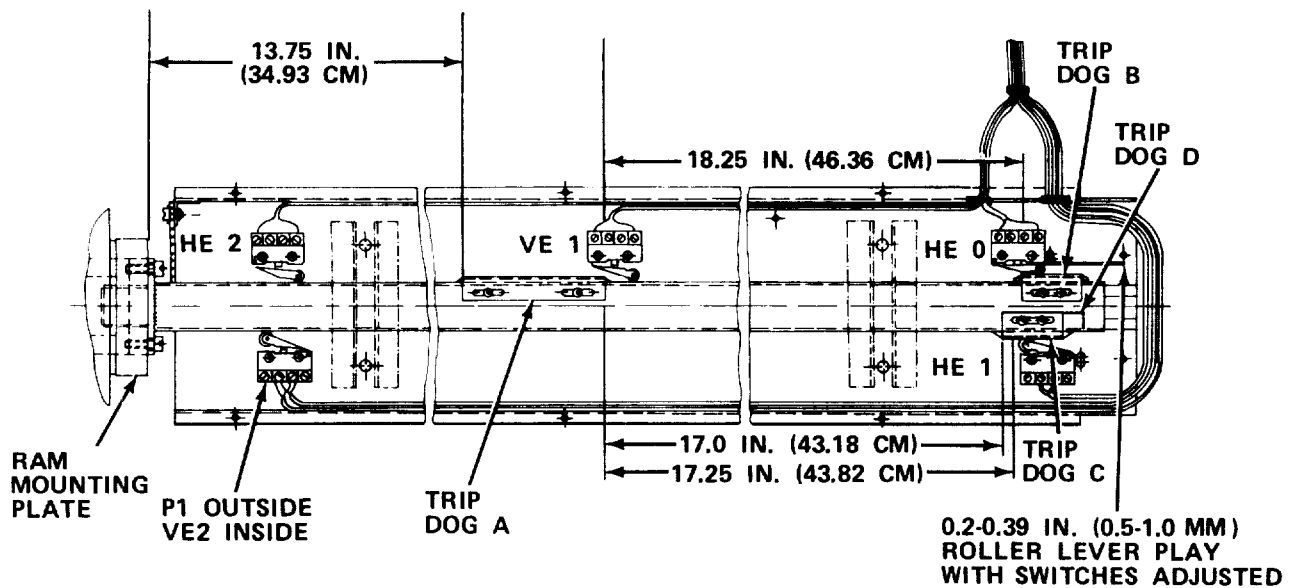
**CAUTION**

Bottom front cover has no undersupport brackets. It will fall when screws are removed.

- g. Lay bottom front panel to one side, away from immediate work area.



- h. Remove screws securing control switch rail cover plate.
- i. Remove control switch rail cover plate by lifting it slightly and sliding plate toward front of shredder-bagger. Grasp cover plate at front of machine and pull it clear.



j. Loosen screws holding trip dog A in place.

• **NOTE**

- **The position and length of trip dogs determine timing of control system operation. A trip dog out of position could adversely affect operation of machine.**
- **Initial measurement for positioning of trip dog A should be made from ram.**

k. Slide trip dog A until front of trip dog A is 13.75 in. (34.9 cm) from ram mounting plate. Tighten screws.

l. Turn circuit breaker on.

m. Turn on main power switch.

**WARNING**

**Death or serious injury may occur from electrical shock unless power is off before adjusting.**

n. Cycle ram until trip dogs B, C, and D are accessible. Then turn off power.

o. Loosen screws on trip dog B. Slide trip dog B until the front of the trip dog is 18.25 in. (46.3 cm) from the rear of trip dog A. Tighten screws.

p. Loosen screws which secure both trip dog C and trip dog D. Slide trip dog C until the front of the trip dog is 17.25 in. (43.8 cm) from the rear of trip dog A. Slide trip dog D until the front of the trip dog is 17 in. (43.1 cm) from the rear of trip dog A. Tighten screws.

q. Reinstall control switch rail cover plate, bottom front panel and bottom side panel.

r. Turn power on and press rear safety switch. Press ram reverse switch until ram is at its fully retracted position.



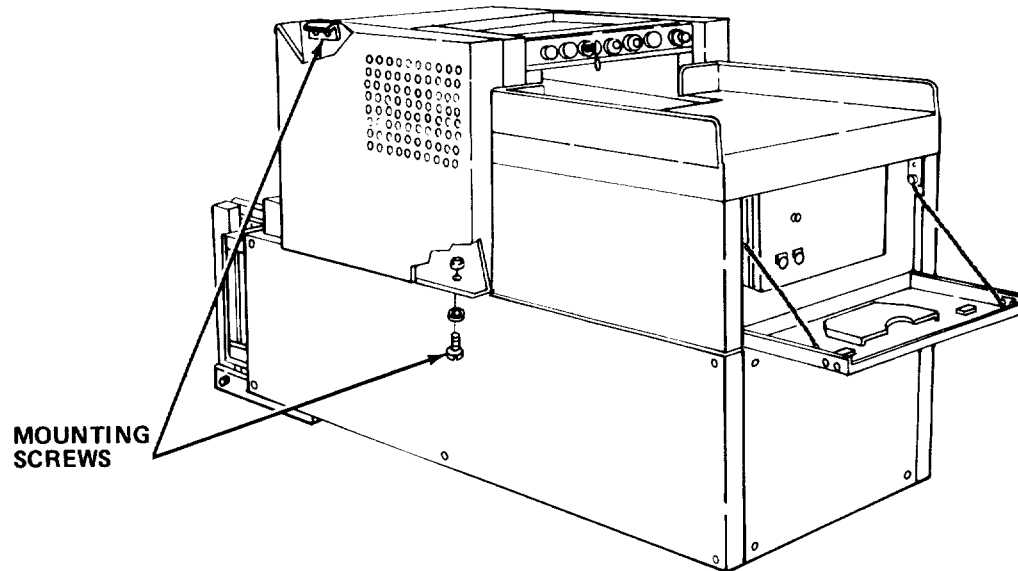
2-16.4 Adjust Shaft Driver.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 8 in. Adjustable Wrench

Flat Tip Screwdriver

No. 2 Cross Tip Screwdriver

**WARNING**

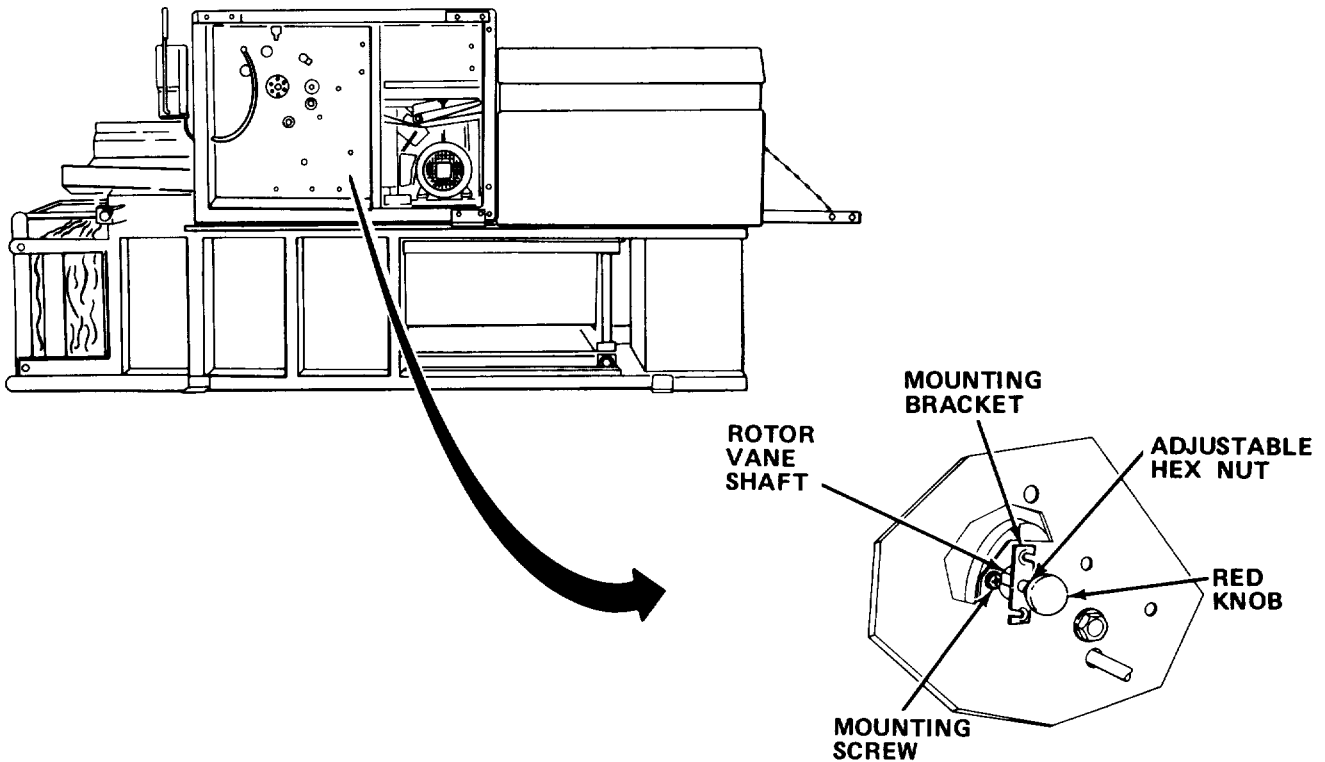
Death or serious injury can result from electrical shock unless power is turned off before servicing.

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).
- d. Remove screws at bottom of left cutter mechanism side panel.
- e. Grasp cutter mechanism side panel at bottom and top. Remove cutter side panel by lifting straight up several inches and then pulling away.

**NOTE**

**Top of cutter mechanism side panel hangs from pair of brackets.**

- f. Loosen two screws on rotor vane shaft mounting bracket. Turn bracket left until bracket is clear of screws.
- g. Grasp red knob and draw shaft out.
- h. Adjust hex nut on shaft approximately one-tenth turn.

**NOTE**

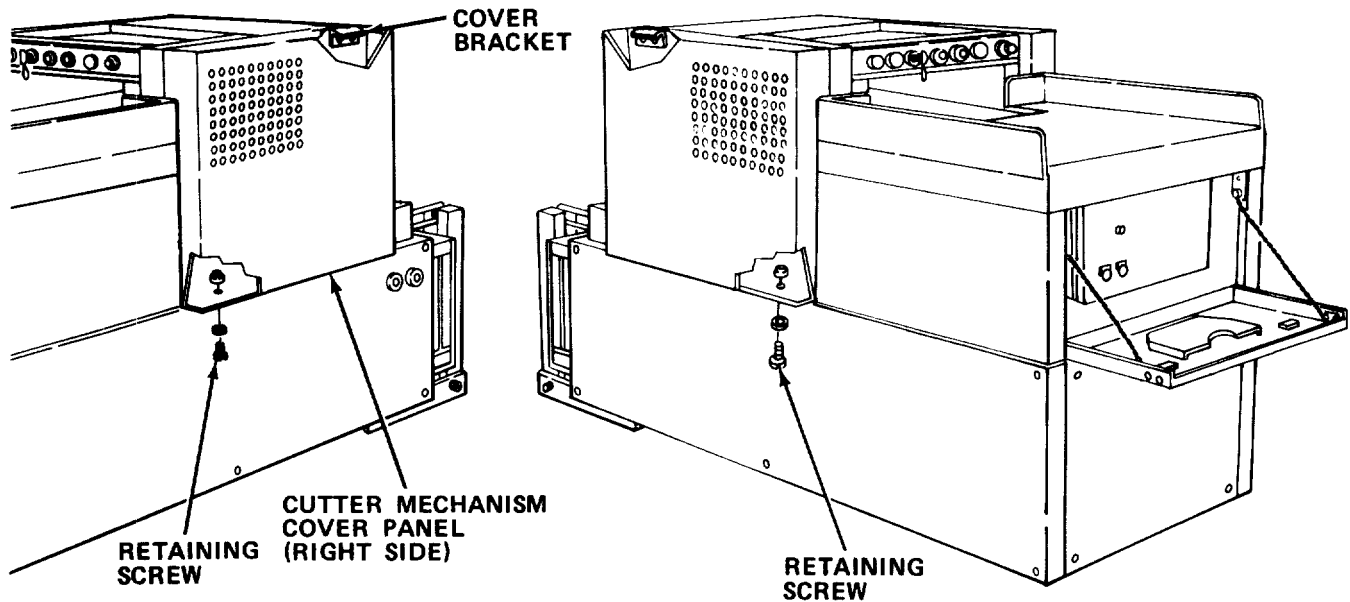
**Rotor vane is driven by safety clutch. It is properly adjusted when shaft can still be turned by hand when shredder-bagger is off.**

- i. Push shaft in and turn mounting bracket right. Do not tighten screws.
- j. Test adjustment by trying to turn shaft with knob by hand. If shaft cannot be turned or it slips, repeat steps f. through h. until shaft can just barely be turned by hand. Tighten mounting bracket screws.
- k. Reinstall cover panel.
- l. Turn on circuit breaker.
- m. Turn on main power switch.

2-16.5 Adjust Conveyor Clutch Drive.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: No. 2 Cross Tip Screwdriver  
5 mm Hex Head Key Wrench  
22 mm Combination Wrench



**WARNING**

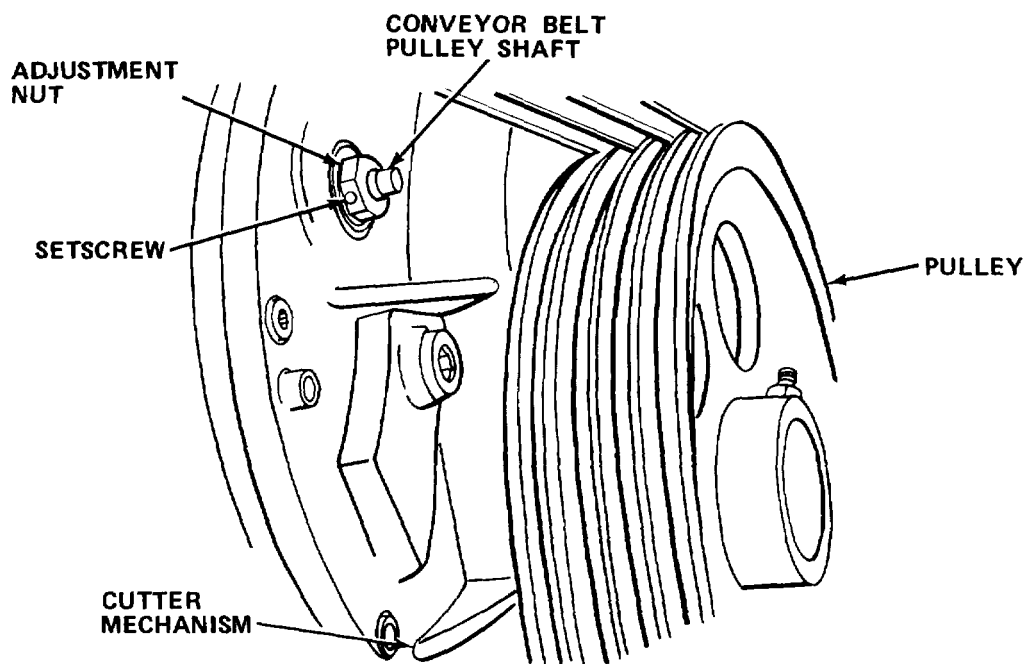
Death or serious injury may occur from electrical shock unless power is turned off before servicing.

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Remove screws holding bottom of right cutter side panels.

**NOTE**

Top of cutter mechanism side panels hang from a pair of brackets.

- d. Grasp cutter mechanism side panels at bottom and top. Remove cutter side panels by lifting straight up several inches and then pulling away from machine.



- e. On right side of machine, locate adjustment nut behind V-belt pulley where conveyor belt shaft extends through cutter mechanism gearbox.

**WARNING**

**Keep hands away from cutter blades and drive pulley. Personnel injury may result.**

**NOTE**

- Conveyor is driven by slip clutch. If belt pulley turns, adjustment nut for clutch turns with it.
- Turning adjustment nut to right tightens clutch.

- f. Turn on circuit breaker.
- g. Turn on main power switch.
- h. Test tightness by turning on machine and trying to stop conveyor belt with hand pressure. Clutch is properly adjusted when belt moves smoothly without slipping but stops when firm hand pressure is applied. Loosen setscrew and adjust nut until belt responds to test correctly.
- i. Tighten setscrew.
- j. Reinstall side panel.

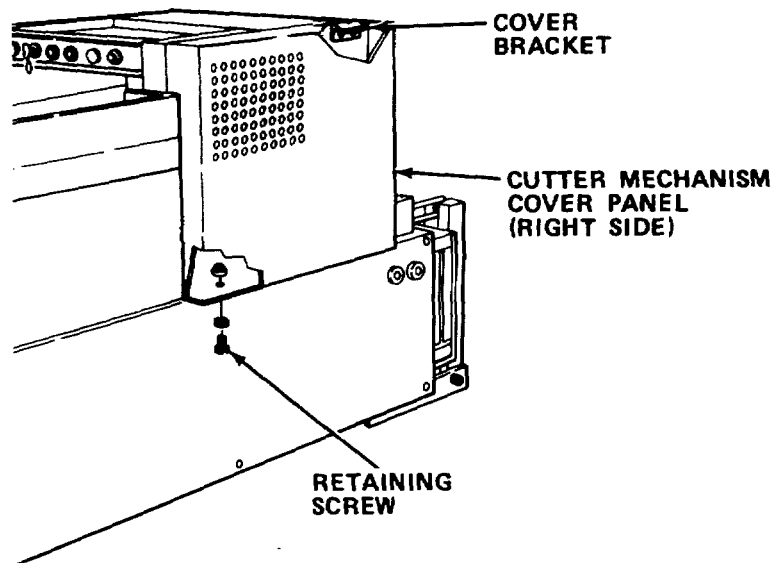
2-16.6 Adjust Conveyor Belt Tension.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: No. 2 Cross Tip Screwdriver  
 Machinist Rule  
 4 mm Hex Head Key Wrench  
 13 mm Combination Wrench

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before adjusting conveyor belt.**



- a. Turn circuit breaker off.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).
- d. Remove screws holding bottom of both cutter mechanism side panels.

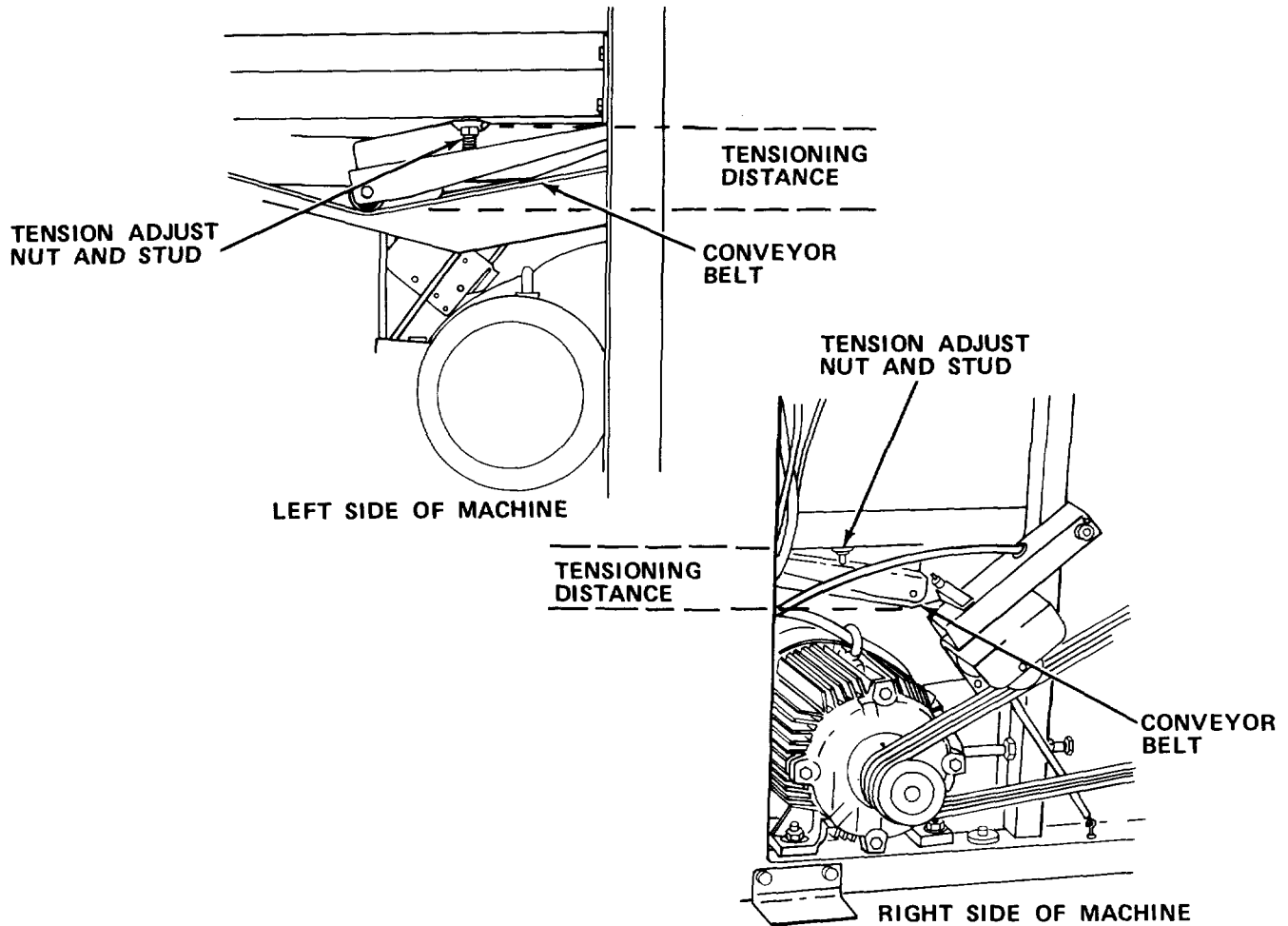
**NOTE**

**Top of cutter side panel hangs from brackets.**

- e. Grasp cutter mechanism side panel at bottom and top. Remove cutter side panel by lifting straight up several inches and then pulling away from machine. Repeat for second panel.

**NOTE**

Amount of tension applied must be identical on both sides of belt or belt will try to ride off chassis. Normal range is 4.92-5.31 in. (12.5 - 13.5 cm).



- f. Measure tensioning distance from bottom of chassis rail to bottom of belt below on each side.
- g. Adjust tension evenly on both sides by turning tensioning screws until belt no longer has tendency to ride off chassis.
- h. Check that tensioning distance on both sides of belt is identical.
- i. Lock tensioning nuts in place.
- j. Reinstall cutter side panels.
- k. Turn on circuit breaker.
- l. Turn on main power switch.

2-16.7 Replace Centrifugal Switch FL.

MOS: 83FJ6, Reproduction Equipment Repairer

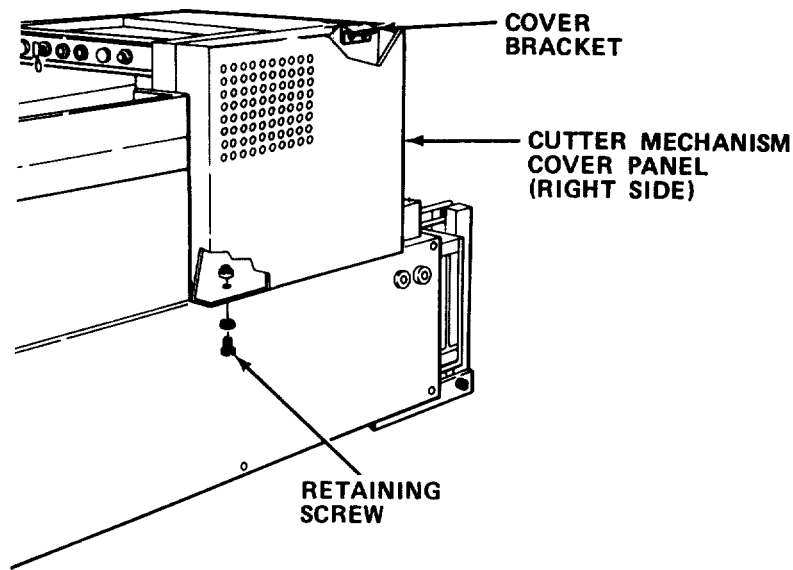
TOOLS: Flat Tip Screwdriver  
 No. 2 Cross Tip Screwdriver  
 5 mm Hex Head Key Wrench  
 1 mm Combination Wrench  
 6 in. Adjustable Wrench

SUPPLIES: Centrifugal Switch  
 Washer(s) 6mm ID

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.

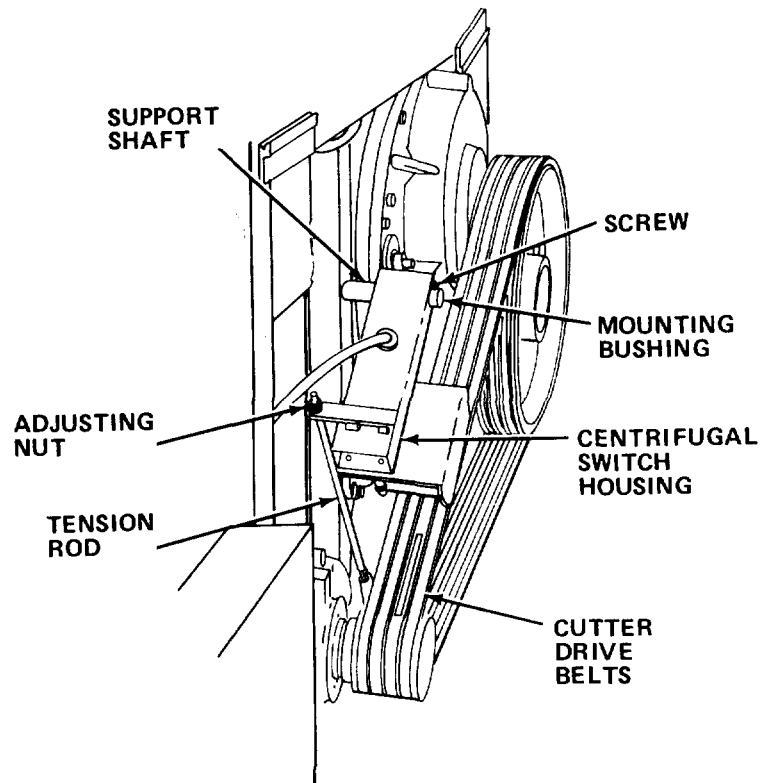


- c. Remove screws attaching bottom of cutter side panel.

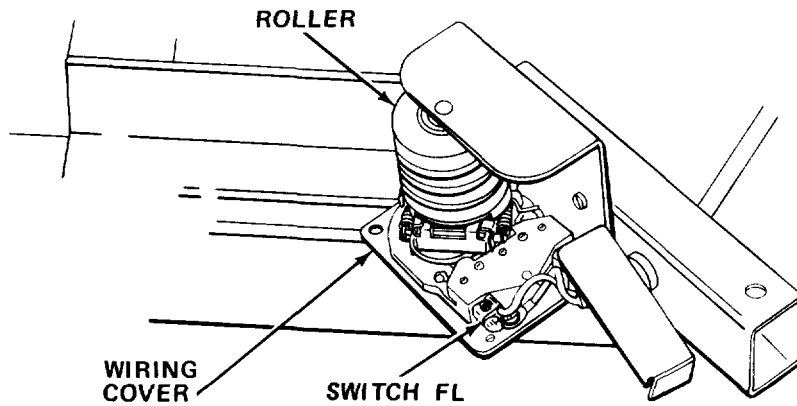
**NOTE**

**Top of cutter mechanism side panel hangs unsecured from pair of brackets.**

- d. Grasp cutter side panel at bottom and top. Remove cutter side panel by lifting straight up several inches and then pulling away.

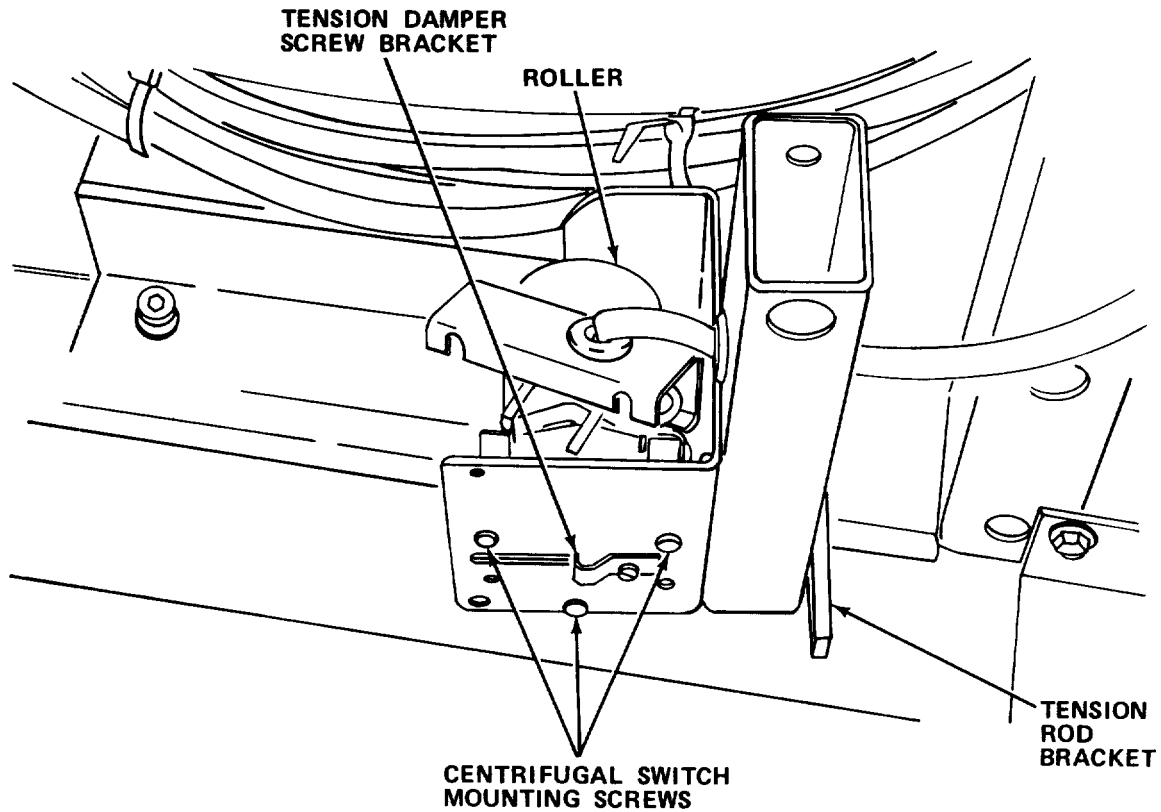


- e. Remove adjustment nut on tensioning rod.
- f. Remove screw on support shaft and remove switch assembly.
- g. Remove screws holding switch wiring cover and remove cover.



- h. Tag and disconnect cable wires from switch.





- i. Remove torsion damper screw bracket and screws holding switch in place.
- j. Turn drum axle of roller 90 degrees. Remove drive drum and washers.
- k. Replace switch.

**NOTE**

**Shaft takes 6 mm (0.31 in.) ID washers.**

- l. Reinstall drive drum. Place sufficient washers between drum and centrifugal switch FL to prevent belts from rubbing against switch.
- m. Turn drum axle back 90 degrees.
- n. Reinstall torsion damper screw bracket and switch holding screws.
- o. Reconnect wiring to new switch.
- p. Reinstall switch wiring cover.

- q. Slide switch assembly back on support shaft. Reinstall bushing and tighten screw.

**WARNING**

**To test switch, housing must be lifted with shredder-bagger running. Do not lift housing from underneath or place hands near belts. Serious injury may result.**

- r. Reinstall tensioning rod, washer, and nut. Tighten adjustment nut. Test operation of centrifugal switch FL. Tension is correct when lifting housing and drum shuts down motor and motor stops.
- s. Reinstall cutter side panel.
- t. Turn on circuit breaker.
- u. Turn on main power switch.

2-16.8 Replace V-Belts.

MOS: 83FJ6, Reproduction Equipment Repairer

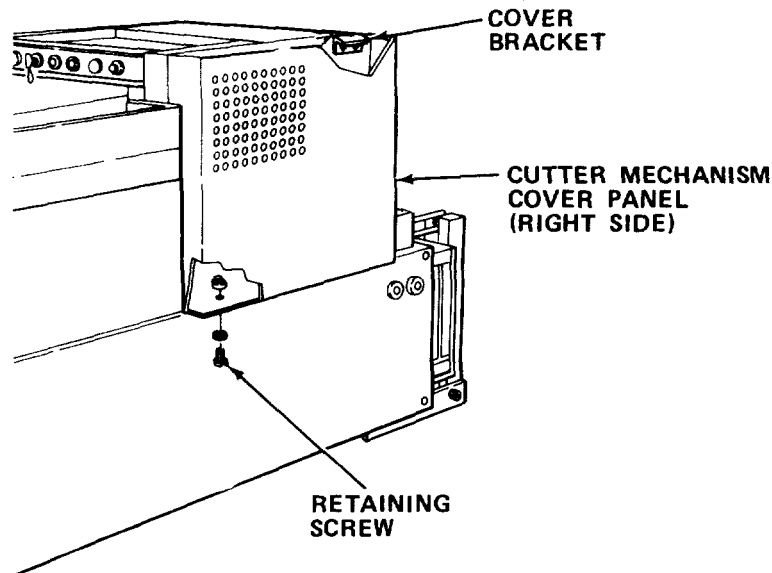
TOOLS: Flat Tip Screwdriver  
 No. 2 Cross Tip Screwdriver  
 8 in. Adjustable Wrench  
 1 mm Combination Wrench

SUPPLIES: V-Belts

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.

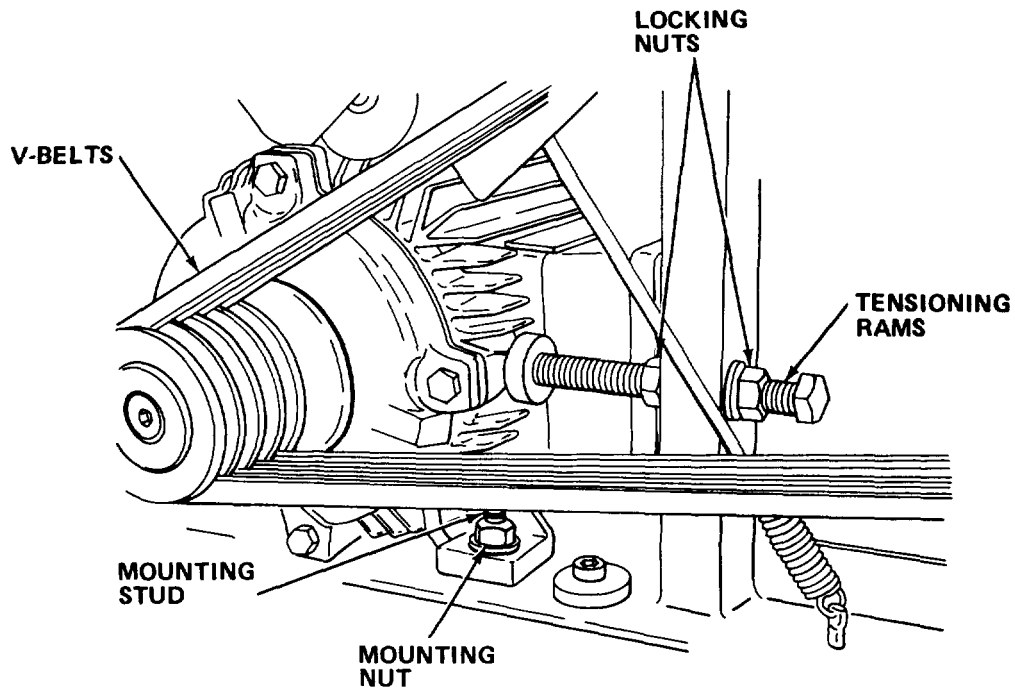


- c. Remove screws attaching bottom of top right cutter mechanism side panel.

**NOTE**

**Top of cutter side panel hangs unsecured from pair of brackets.**

- d. Grasp cutter side panel at bottom and top. Remove cutter side panel by lifting straight up several inches and then pulling away.



- e. Back tensioning rod away from motor.
- f. Loosen two motor mounting bolts.
- g. Remove top left mechanism cover side panel to gain access to inner motor mounting bolts and loosen remaining two bolts.
- h. Slide motor toward cutter until V-belts are loose enough to slide off pulley.

**NOTE**

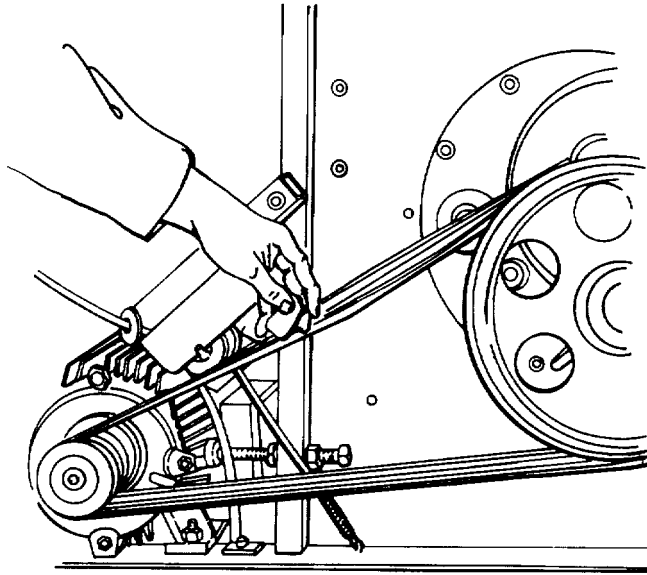
**Replace all V-belts.**

- i. Replace defective V-belts. Be sure that centrifugal switch FL rests on top of all V-belts.
- j. Slide motor away from cutter until V-belts appear tight. Be sure that axis of motor forms 90 degree angle to V-belts.

**NOTE**

**Misalignment of motor would cause belts to bind.**

- k. Tighten all four bolts hand tight.



- l. Turn tensioning rod until it contacts motor. Tighten rod several more turns to apply tension to belts. Test belt tension by pressing down on belts. Tension is adjusted properly when firm pressure does not depress belts more than 1/2 in.
- m. Tighten all four mounting bolts. Check alignment of motor.
- n. Reinstall cutter side panels.
- o. Turn on circuit breaker.
- p. Turn on main power switch.

2-16.9 Replace Hydraulic Tank Connecting Tube.

MOS: 83FJ6, Reproduction Equipment Repairer

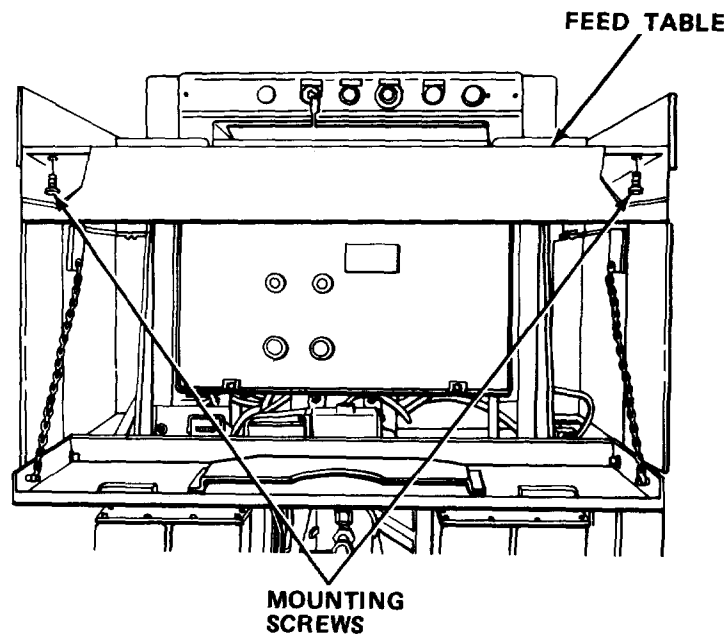
TOOLS: Flat Tip Screwdriver  
 Funnel  
 Container  
 5 mm Hex Head Key Wrench  
 6 mm Hex Head Key Wrench  
 Hose Clamp Pliers  
 8 mm Combination Wrench

SUPPLIES: Connecting Tube  
 Hose Clamp  
 Rags(Item 13, Appendix E)

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

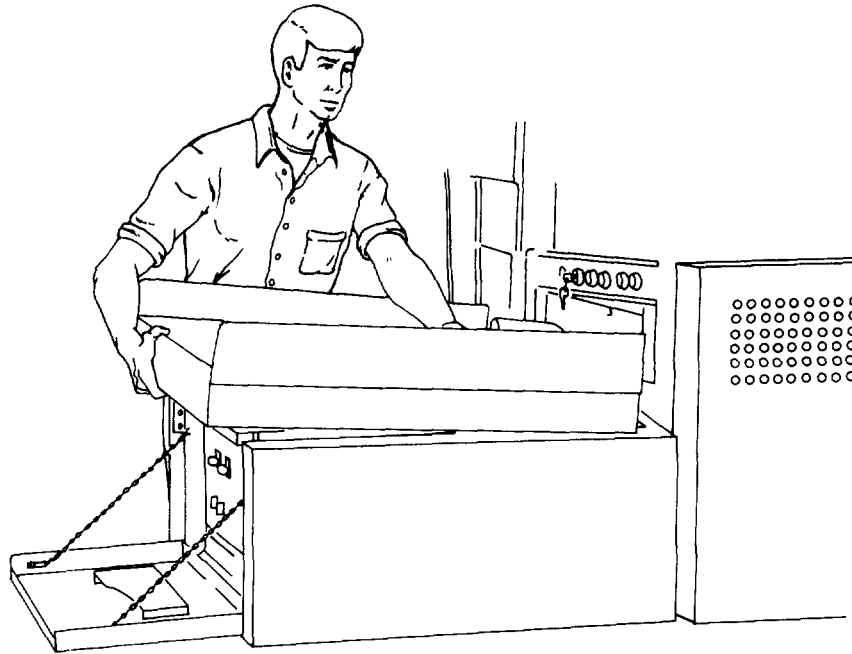
- a. Turn circuit breaker off.
- b. Turn off main power switch.
- c. Lower front panel.



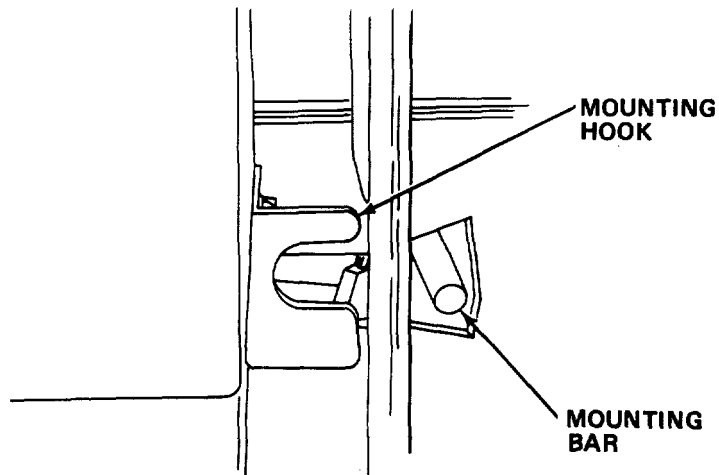
- d. Remove mounting screws located beneath each forward corner of feed table.

**NOTE**

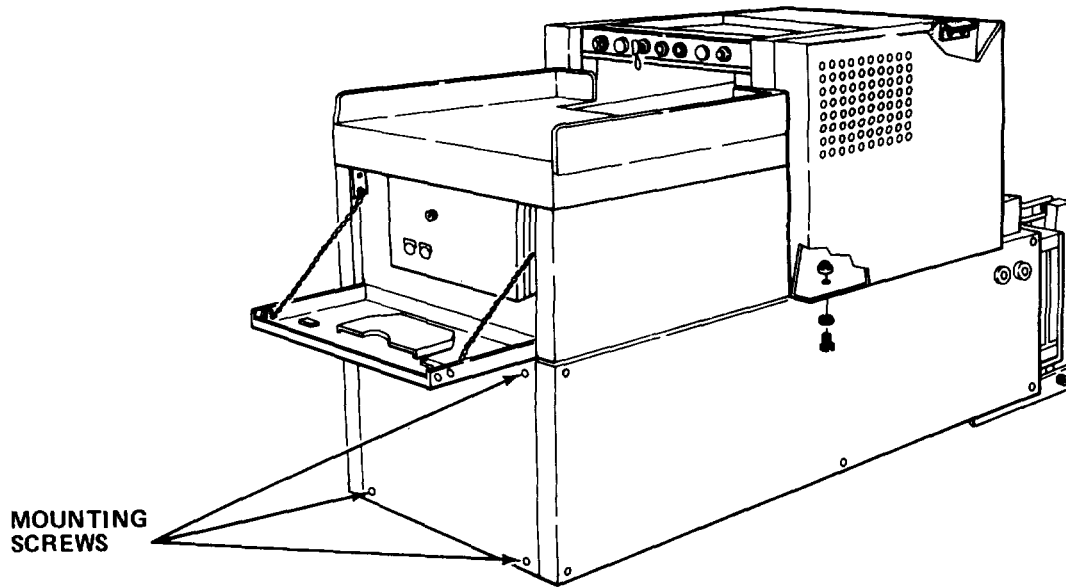
Washer is located at each corner between feed table and side panels. Do not lose these washers.



- e. Grasp table on both sides. Lift front end of table until it forms 30 degree angle with machine.



- f. Lift feed table straight up until table hooks and inside edge of table clear conveyor belt guide pulleys and mounting bar.
- g. Place feed table to one side, away from immediate work area.

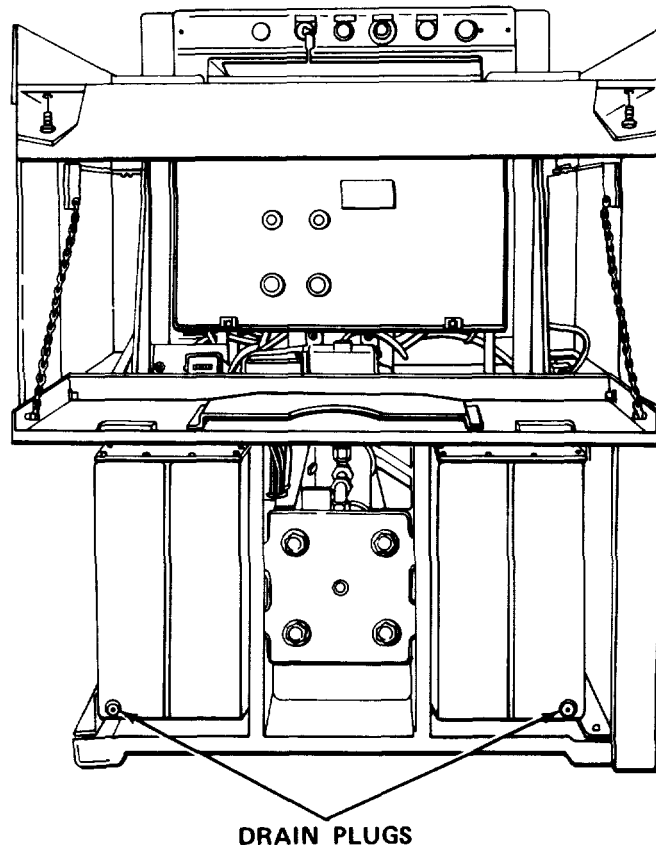


**CAUTION**

**Bottom front panel does not rest on support. Panel will fall when screws are removed.**

- h. Remove screws and bottom front panel.



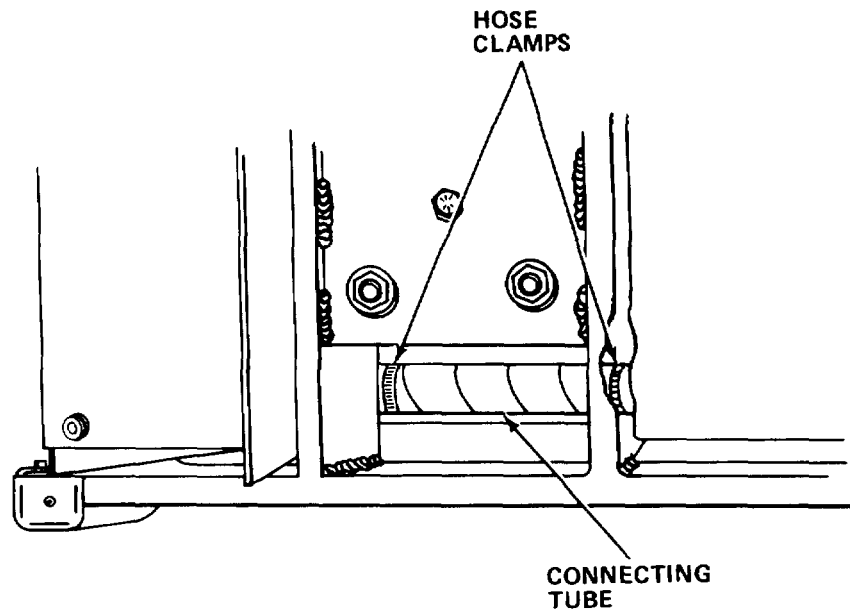


- i. Place rags under hydraulic drain plug on one side.
- j. Remove hydraulic drain plug and drain oil from tank into clean container.

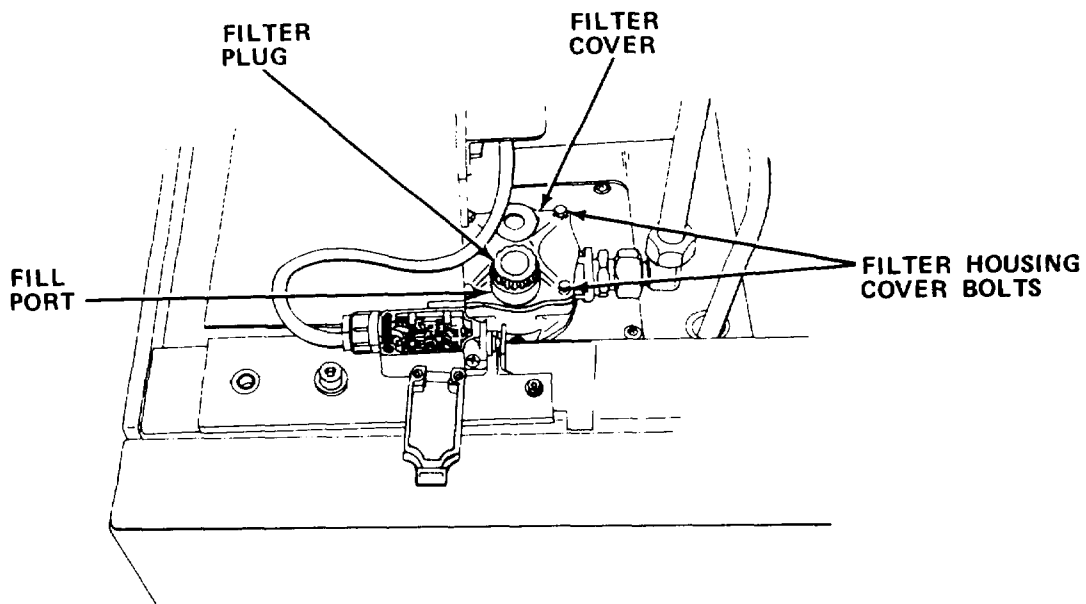
**NOTE**

**Do not discard oil.**

- k. Reinstall hydraulic drain plug.
- l. Remove lower right bottom cover for access to hose.
- m. Place rags under connecting tube to collect any spilled oil.



- n. Loosen hose clamps.
- o. Remove defective connecting tube. Remove hose clamps for reuse.
- p. Slide hose clamps onto new connecting tube and insert between tanks.
- q. Tighten hose clamps.



- r. Pour oil back into tank through oil filter in fill cap.

- s. Remove filter housing cover bolts and remove filter cover, clean filter, and then top off oil.
- t. Turn on circuit breaker.
- u. Turn on main power switch and cycle ram.
- v. Check connecting tube for leaks.
- w. Reinstall panels.
- x. Reinstall feed table.

2-16.10 Replace Relays.

MOS: 83FJ6, Reproduction Equipment Repairer

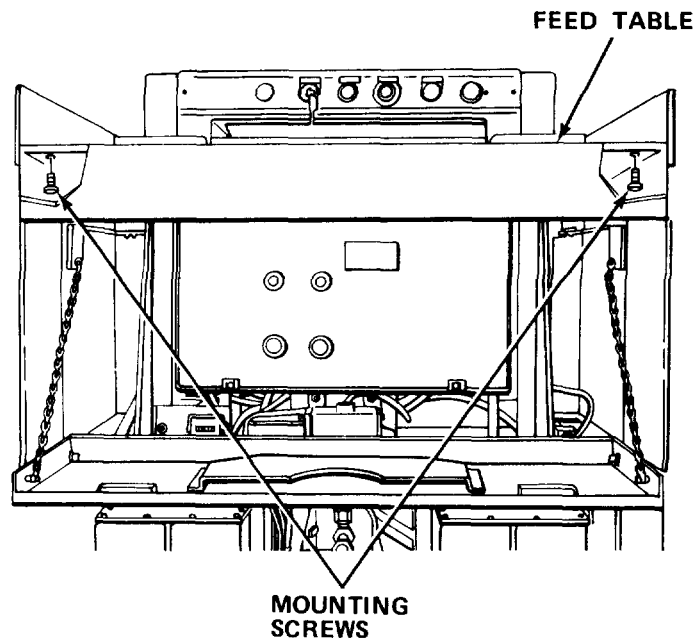
TOOLS: Flat Tip Screwdriver  
Wire-Stripping Pliers (AWG 10-22)  
5 mm Hex Head Key Wrench

SUPPLIES: Relay SS  
Relay SV  
Relay MP  
Relay SR  
Overload Relay eMP  
Overload Relay eSV  
Timer 2R  
Timer X  
Electrical Connectors

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

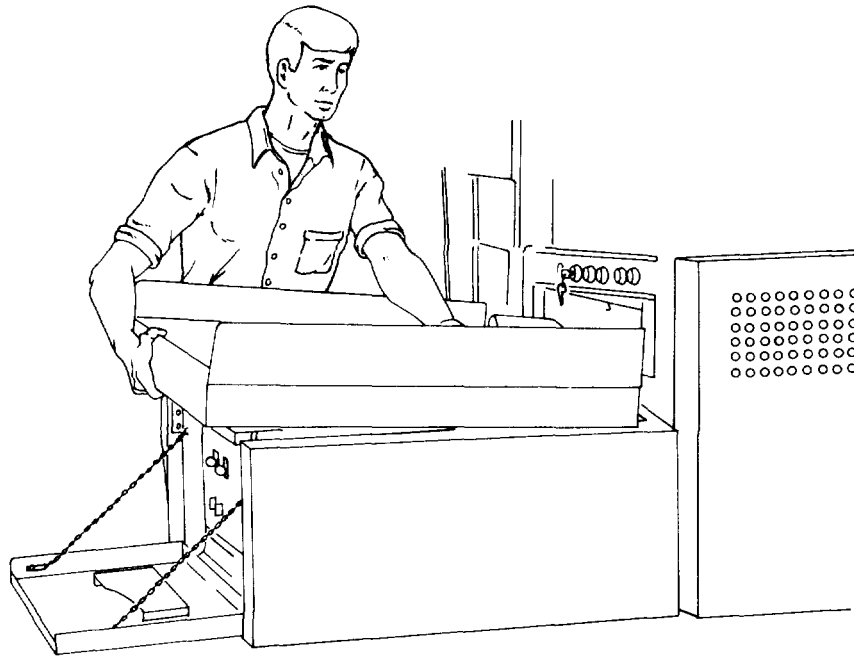
- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Lower front panel.



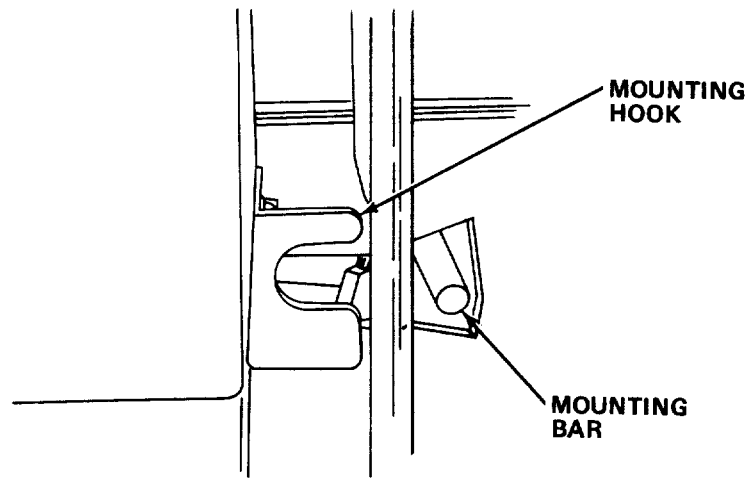
- d. Remove mounting screws located beneath each forward corner of feed table.

**NOTE**

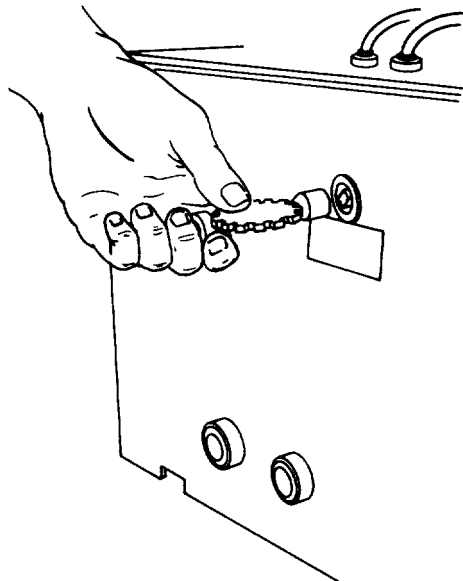
**Washer is located at each corner between feed table and side panels. Do not lose these washers.**



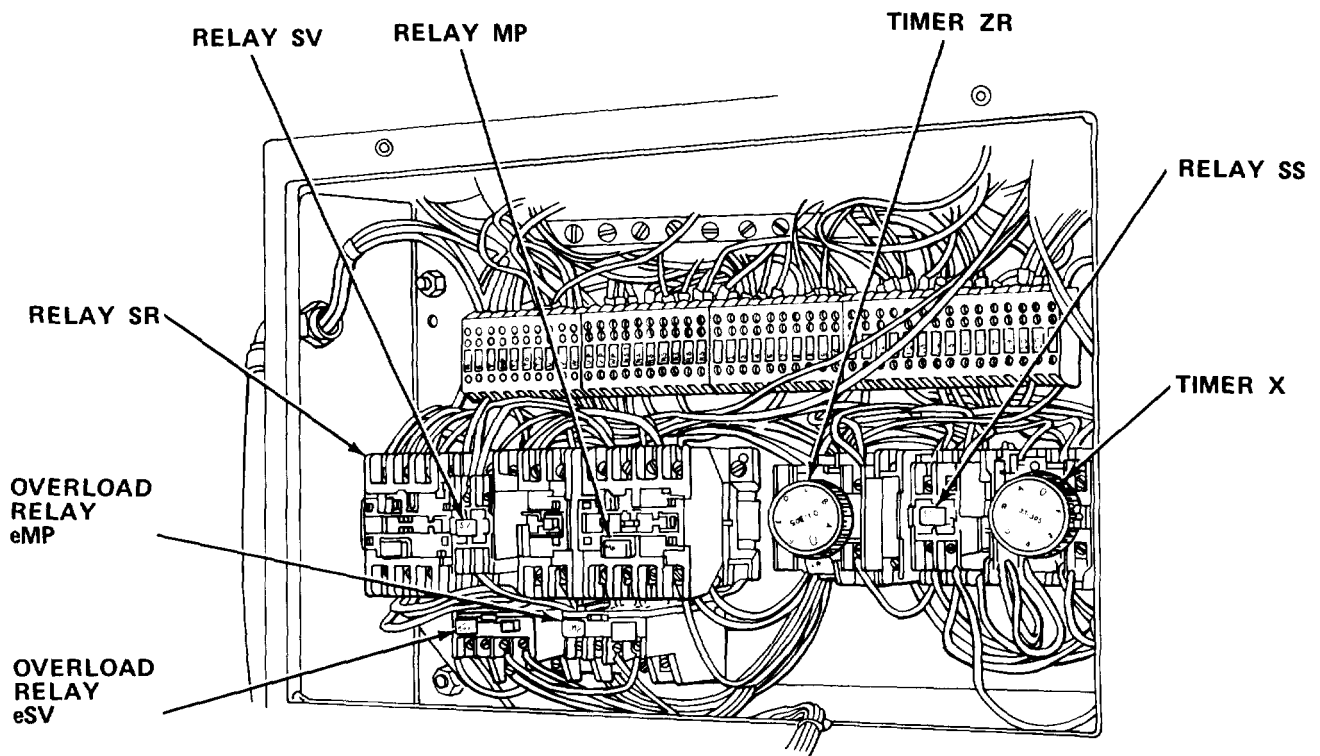
- e. Grasp feed table on both sides. Lift front end of feed table until it forms 30 degree angle with machine.



- f. Lift feed table straight up until table hooks and inside edge of table clear conveyor belt guide pulleys and mounting bar.
- g. Place feed table to one side, away from immediate work area.



- h. Open switch (relay) cabinet with special key.



- i. Locate relay or timer to be replaced. Tag and disconnect wiring.
- j. Remove screws holding relay in place.

**NOTE**

**Inner panel that relay is mounted on has threaded holes approximately 1/8 in. deep.**

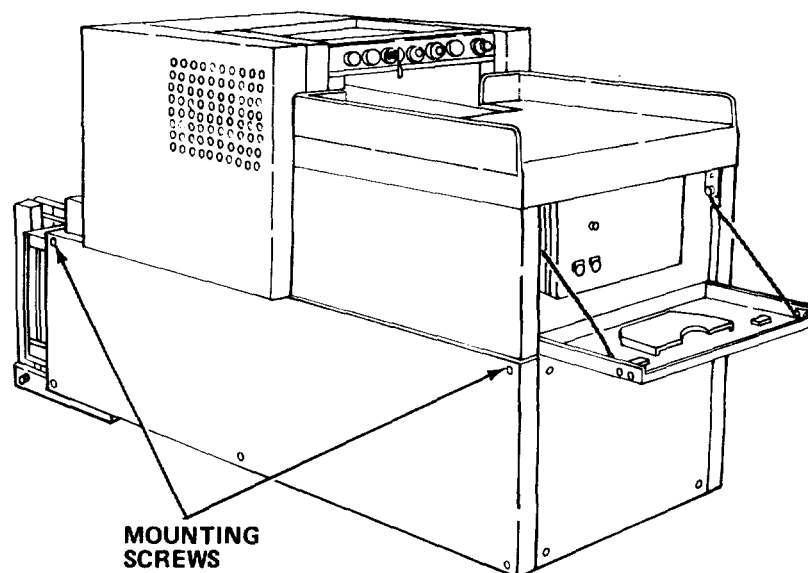
- k. Replace defective relay.
- l. Reinstall mounting screws.
- m. Reconnect wiring.
- n. Close switch cabinet and reinstall feed table.
- o. Turn on circuit breaker.
- p. Turn on main power switch.

2-16.11 Replace Control Rail Switches.

MOS: 83FJ6, Reproduction Equipment Repairer

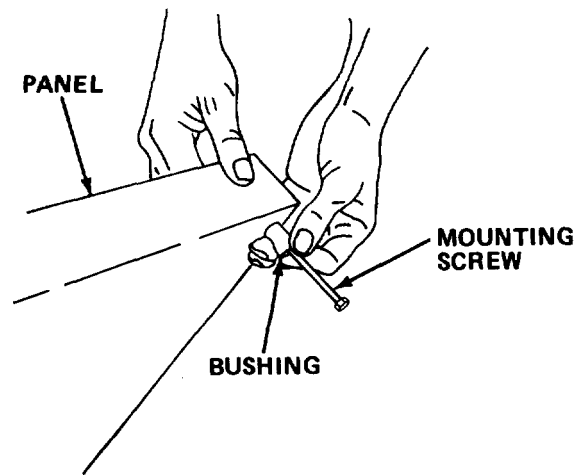
TOOLS: No. 2 Cross Tip Screwdriver  
Flat Tip Screwdriver  
1 mm Combination Wrench  
3 mm Hex Head Key Wrench  
5 mm Hex Head Key Wrench  
Diagonal Cutting Pliers  
Wire-Stripping Pliers (AWG 10-22)

SUPPLIES: Limit Switch(es)

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

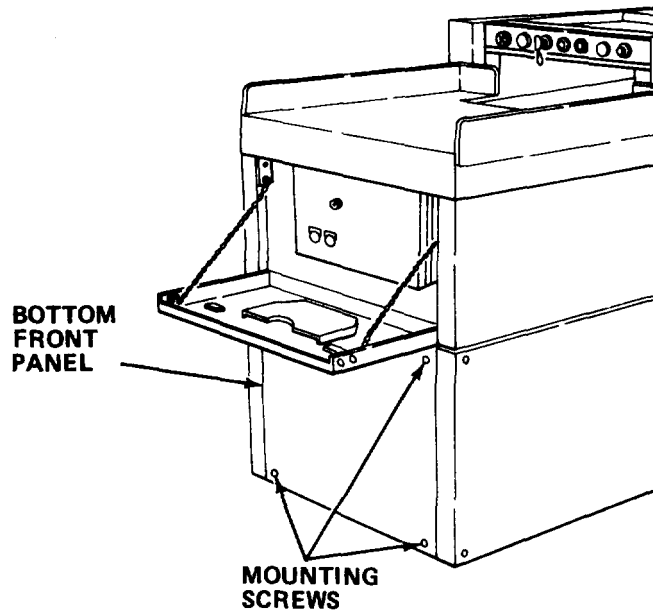
- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).
- d. Remove screws holding bottom side panel on left side of shredder-bagger.



**NOTE**

Screws for bottom side panel are mounted through spacer bushing placed between outside of panel and frame of shredder-bagger. Do not lose this bushing. It must be replaced for bottom side panel to be remounted.

- e. Lift bottom side panel from support brackets and set panel to one side, away from immediate work area.



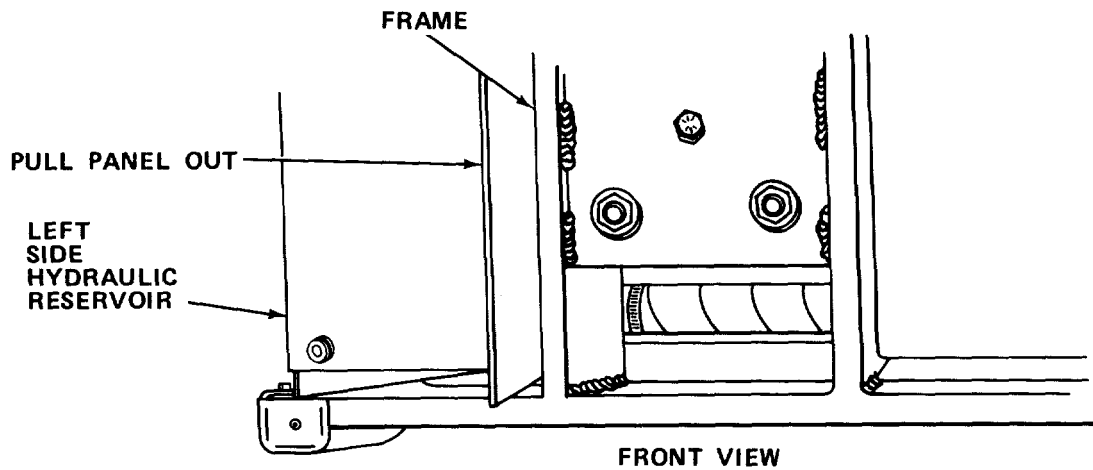
- f. Remove screws holding bottom front cover at front of shredder-bagger.



**CAUTION**

**Bottom front panel has no undersupport brackets. It will fall when screws are removed.**

- g. Lay bottom front panel to one side, away from immediate work area.
- h. Remove screws securing control switch rail cover plate.



- i. Remove control switch rail cover plate by lifting it slightly and sliding cover plate toward front of shredder-bagger. Grasp cover plate at front of shredder-bagger and pull it clear.

**NOTE**

**Note position of switch before removal.**

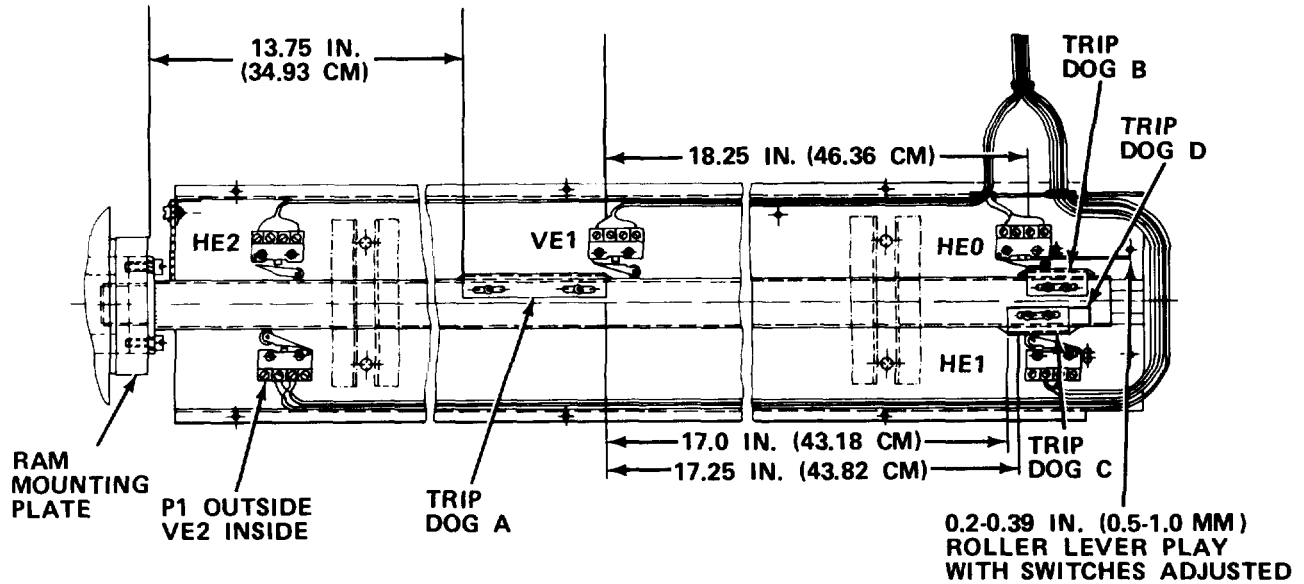
- j. Remove screws holding switch to frame.

**WARNING**

Do not handle electrical wiring unless shredder-bagger circuit breaker is off. Death or serious injury could result.

**CAUTION**

Do not apply excessive amount of force to mounting screws or switch housing may crack.

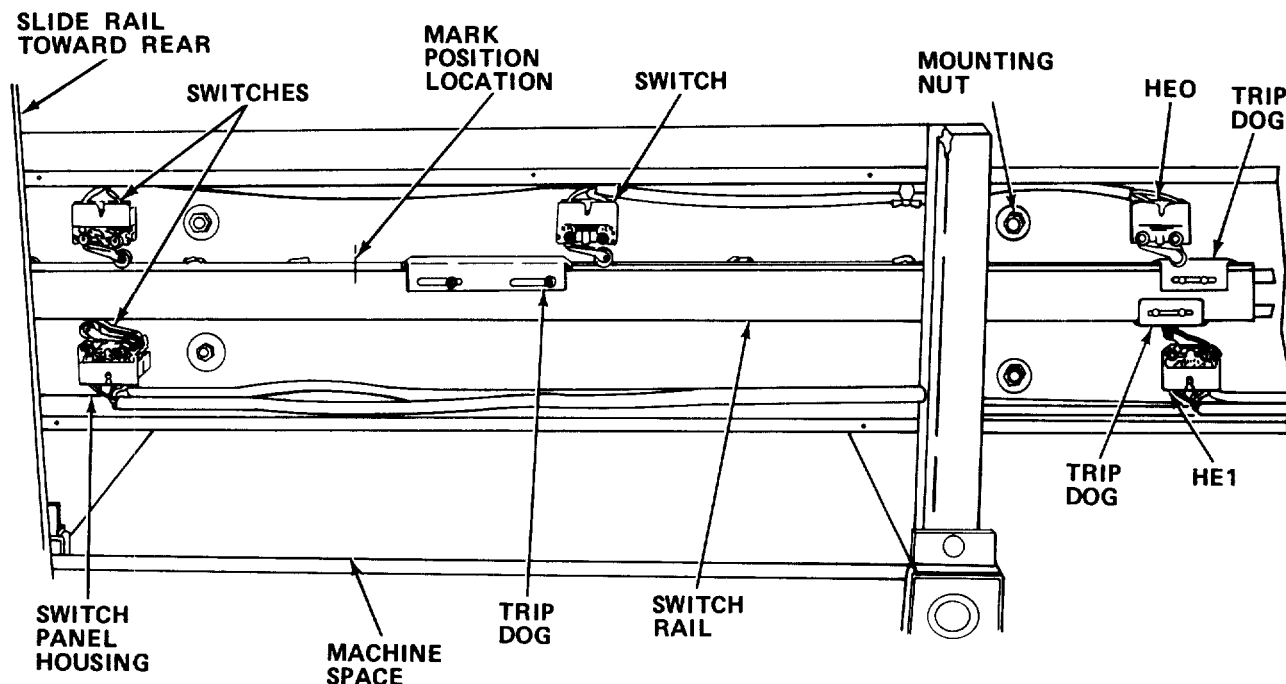


- k. Tag and disconnect wires from HE2, P1, VE1, and VE switches, then replace switch.

**NOTE**

Switches HE0 and HE1 are not accessible unless the following steps are accomplished.

- l. Turn on circuit breaker.
- m. Turn on main power switch.



- n. Cycle ram to extended position.
- o. Turn off circuit breaker and main power switch; then mark position of switch rail panel on ram cylinder.
- p. Remove U-clamps and switch rail from ram cylinder.
- q. Slide switch rail towards rear of machine until switches can be reached; then remove switch.
- r. Tag and disconnect wires.
- s. Replace switch. Be sure wires are firmly connected.
- t. Reposition switch rail on ram cylinder and secure with U clamps.
- u. Reinstall control switch rail cover plate.
- v. Reinstall bottom front cover and bottom side panel.
- w. Turn on circuit breaker.
- x. Turn on main power switch.
- y. Push rear red safety switch and return switch.

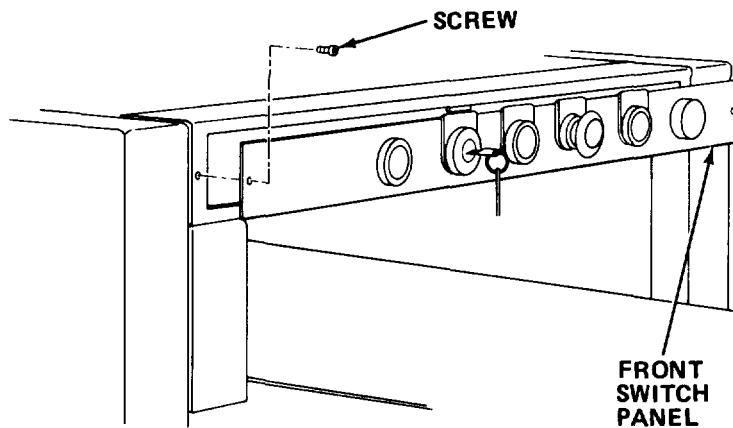
2-16.12 Replace Switches on Front Switch Panel.

MOS: 83FJ6, Reproduction Equipment Repairer

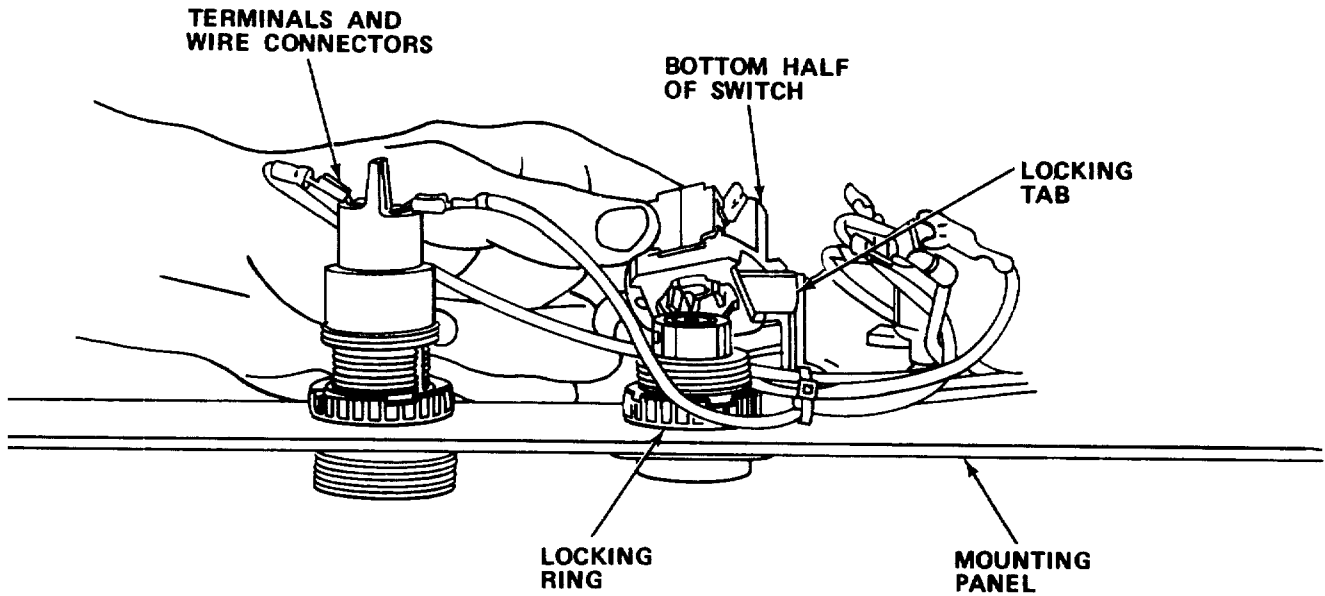
TOOLS: No. 2 Cross Tip Screwdriver

SUPPLIES: Key Switch  
Yellow BTN Switch  
Red Mushroom BTN Switch  
Green BTN Switch**WARNING****Death or serious injury may occur from electrical shock if power is not secured before servicing equipment.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.



- c. Remove mounting screws holding front switch panel.
- d. Pull front switch panel forward several inches, away from machine. Lay front switch panel on conveyor belt.



- e. Locate switch or indicator lamp housing to be removed.
- f. Tag and disconnect wire connectors from switch terminals.
- g. Rotate locking tab to one side and lift off bottom half of switch.
- h. Unscrew locking ring and lift out top half of switch.
- i. Insert top half of new switch and secure with locking ring.
- j. Install bottom half of new switch and secure with locking tab.
- k. Reinstall wire connectors.

**CAUTION**

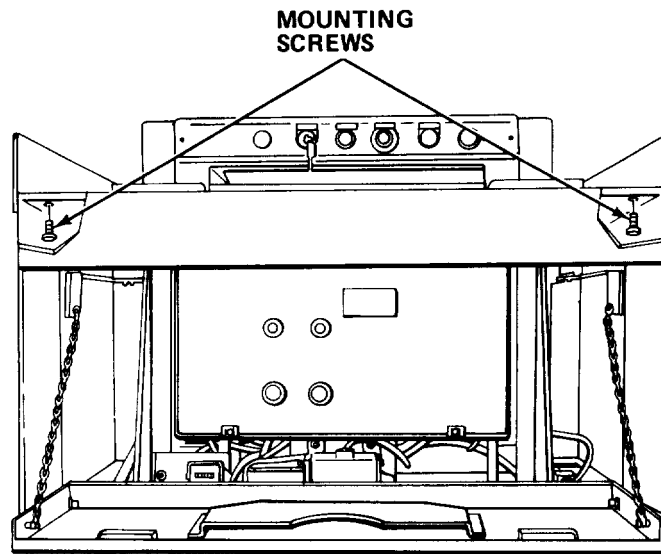
**Be sure wiring is not caught or pinched when reinstalling front switch panel.**

- l. Reinstall front switch panel.
- m. Turn on circuit breaker.
- n. Turn on main power switch.

2-16.13 Replace Front Switch Panel Lamp.

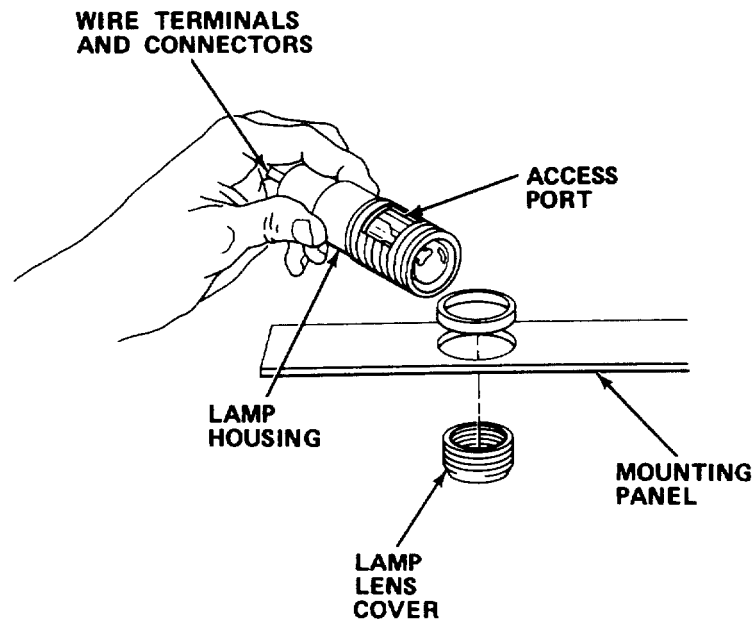
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: No. 2 Cross Tip Screwdriver

SUPPLIES: Green Lens  
Red Lens  
Indicator Bulb**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Remove front switch panel screws.
- d. Pull front switch panel forward slowly and lay on conveyor belt.



- e. Unscrew lamp lens cover.
- f. Unscrew bulb using access ports on sides of lamp housing.

**CAUTION**

**Do not use excessive force in inserting or removing bulbs, or bulbs may break.**

- g. Screw in new bulb using access ports.
- h. Reinstall lamp lens.

**CAUTION**

**Be sure panel wiring is not caught or pinched when replacing front switch panel.**

- i. Reinstall front switch panel.
- j. Turn on circuit breaker.
- k. Turn on main power switch.

2-16.14 Replace Vane Rotor Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

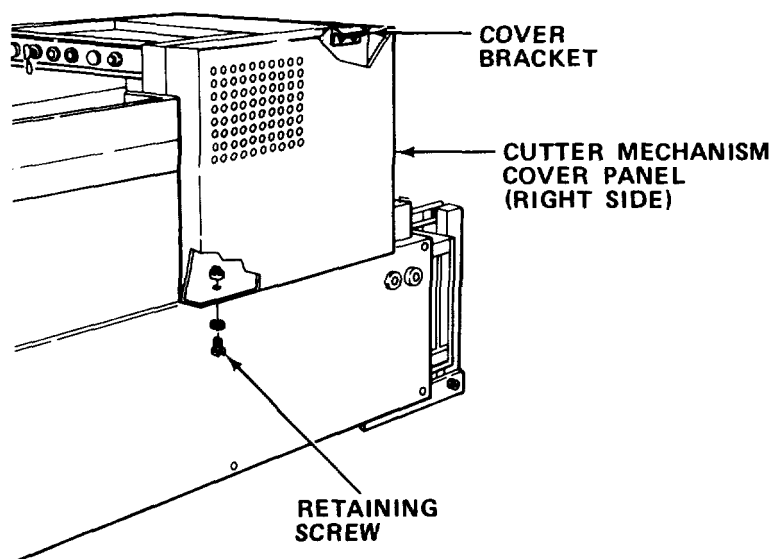
TOOLS: 5 mm Hex Head Key Wrench  
Flat Tip Screwdriver  
No. 2 Cross Tip Screwdriver

SUPPLIES: Vane Rotor Assembly

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).

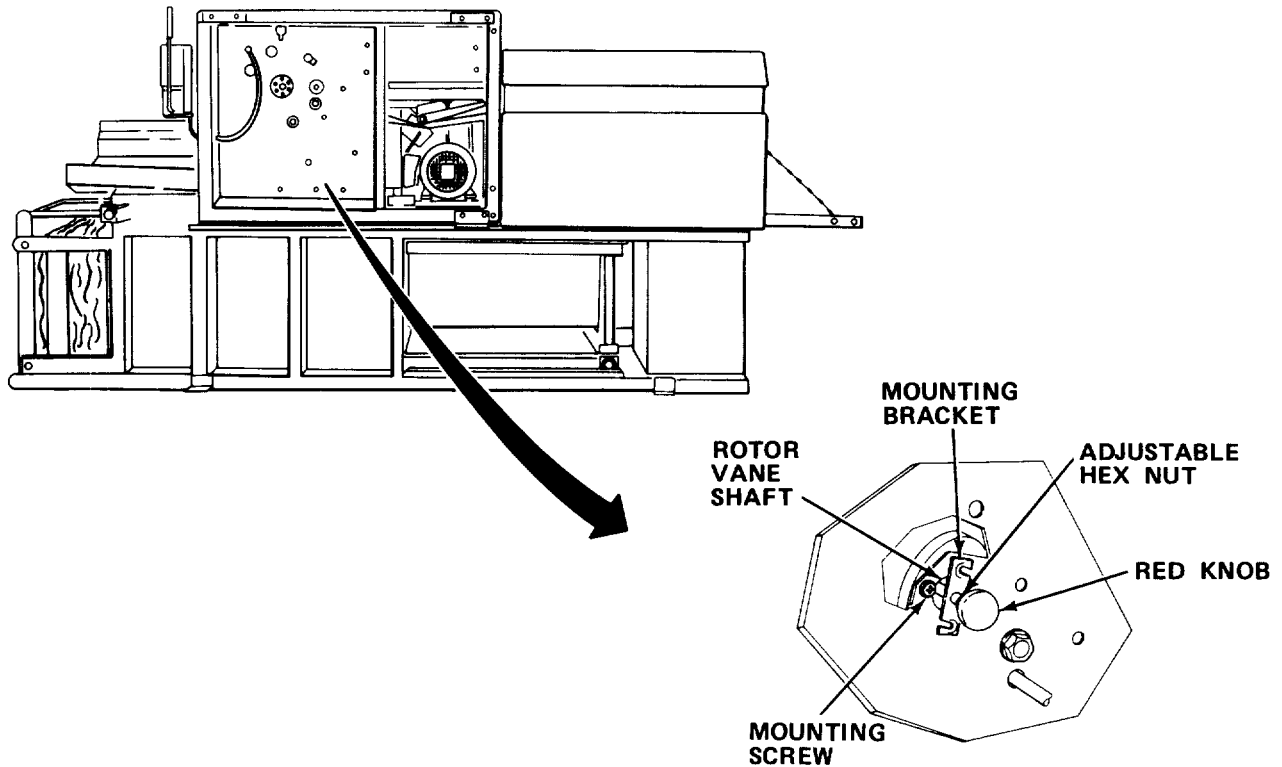


- d. Remove screws at bottom of left cutter mechanism side panel.
- e. Grasp cutter side panel at bottom and top. Remove cutter side panel by lifting straight up several inches and then pulling away.



## NOTE

Top of cutter mechanism side panel hangs from pair of brackets.



- f. Loosen two screws on rotor vane shaft mounting bracket. Turn bracket left until bracket is clear of screws.
- g. Grasp red knob and draw rotor vane shaft out.
- h. Slide vanes off right drive support. Pull rotor vanes out front of machine.
- i. Position new rotor vanes on right drive support shaft, reinstall knob, and insert through side of machine into new rotor vanes.
- j. Reinstall mounting bracket and tighten screws.
- k. Reinstall left cutter mechanism side panel.
- l. Turn on circuit breaker.
- m. Turn on main power switch.

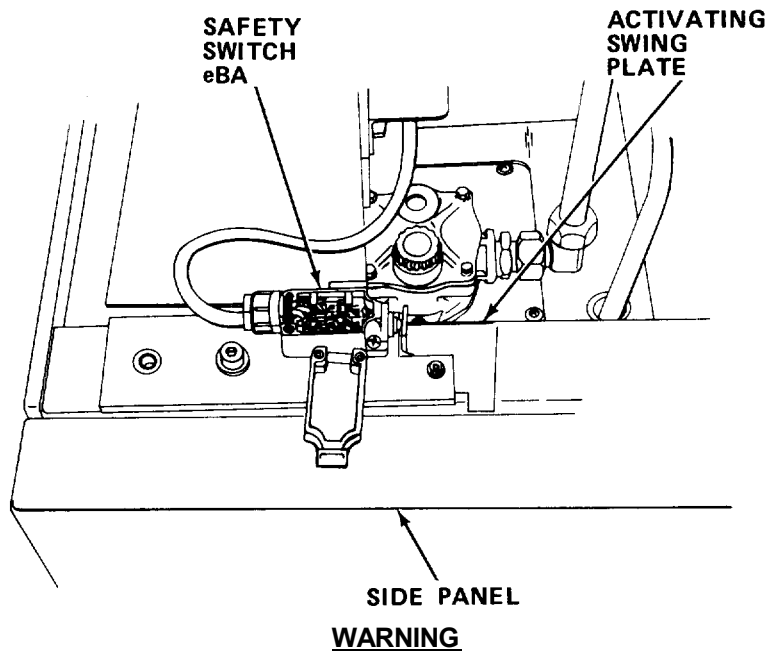
2-16.15 Replace Safety Switch eBA.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver

No. 2 Cross Tip Screwdriver

SUPPLIES: Safety Switch eBA



**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Lower control panel cover.
- d. Remove switch wiring cover.
- e. Disconnect cable wires and remove cable.
- f. Remove screws mounting safety switch eBA to frame.
- g. Install new safety switch eBA. Replace and tighten screws.

**NOTE**

**Be sure safety switch eBA is positioned to be pressed by swing plate when right side panel is in place.**

- h. Reconnect cable wires.
- i. Replace switch wiring cover.
- j. Turn on circuit breaker.
- k. Turn on main power switch.

**2-16.16 Replace Rear Safety Switch SSS.**

MOS: 83FJ6, Reproduction Equipment Repairer

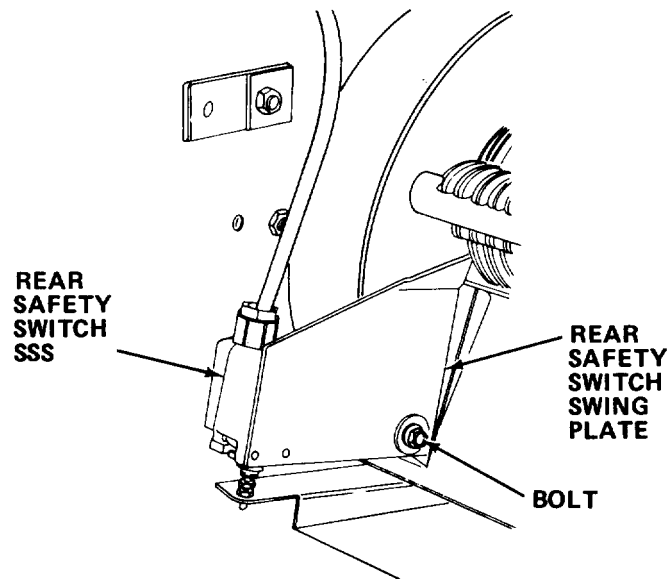
TOOLS: Flat Tip Screwdriver  
No. 2 Cross Tip Screwdriver  
1 mm Combination Wrench

SUPPLIES: Rear Safety Switch SSS

**WARNING**

**Death or serious injury may occur from electrical shock unless power is off before replacing switch.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Remove cutter rear door.



- d. Remove bolt holding rear safety switch SSS swing plate.
- e. Pull out rear safety switch SSS swing plate. Remove screws attaching rear safety switch top plate.
- f. Remove rear safety switch SSS wiring cover. Tag and disconnect cable wires and cable.
- g. Screw new rear safety switch SSS on swing plate.
- h. Reconnect cable and cable wires according to wiring diagram.
- i. Reinstall rear safety switch SSS wiring cover.
- j. Reinstall rear safety switch SSS swing plate.

**NOTE**

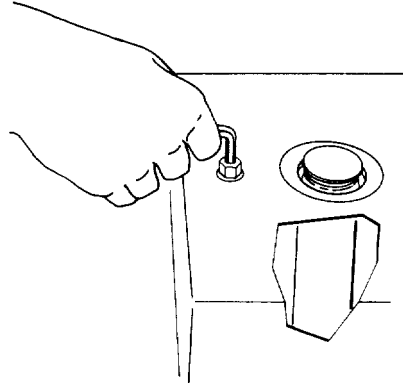
**Be sure that plate is free to move radically.**

- k. Turn on circuit breaker.
- l. Turn on main power switch.

2-16.17 Adjust Baling Safety Switch KS Activator.

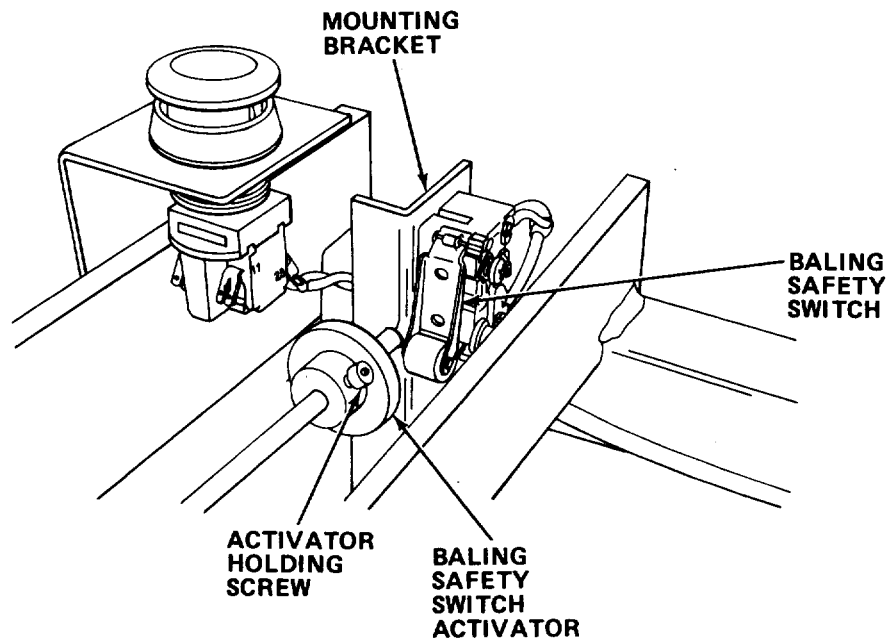
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 6 mm Hex Head Key Wrench  
3 mm Hex Head Key Wrench

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Remove rear cover panel mounting screws, washers, and spacer bushings.
- d. Lift off rear cover panel.



- e. Loosen holding screw on side of baling safety switch KS activator.
- f. Lift rear gate.

**CAUTION**

**If activator is not adjusted with gate up or pressed too close to switch housing, damage to switch can result.**

- g. Slide activator against baling safety switch KS until switch closes.
- h. Retighten activator holding screw.
- i. Remount spacer bushings and rear cover.
- j. Drop mounting screw through rear cover and spacer bushing. Retighten screws.
- k. Turn on circuit breaker.
- l. Turn on main power switch.

2-16.18 Replace Baling Safety Switch KS.

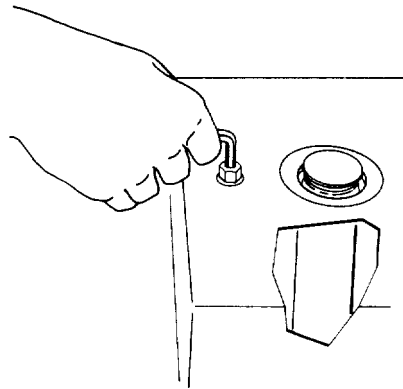
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 6 mm Hex Head Key Wrench  
Flat Tip Screwdriver  
No. 2 Cross Tip Screwdriver

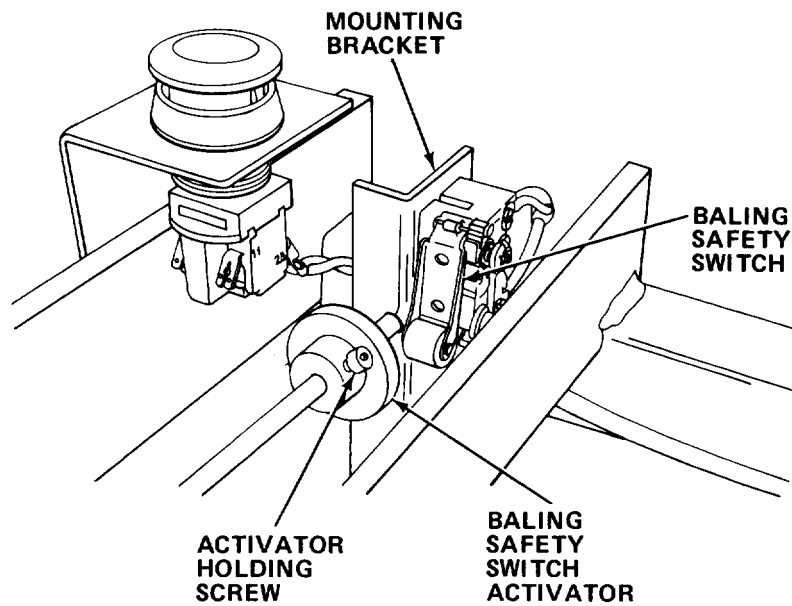
SUPPLIES: Baling Safety Switch

**WARNING**

Death or serious injury may occur from electrical shock unless power is turned off before servicing.



- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Remove rear cover mounting screws and spacer bushings.
- d. Lift off rear cover.



- e. Disconnect wires from baling safety switch KS.
- f. Remove screws holding baling safety switch and lift out switch.
- g. Insert new baling safety switch KS and replace screws.
- h. Test position of baling safety switch KS and activator by lifting rear gate to vertical position. Check to be sure activator closes switch without moving or pressing against switch housing.
- i. Reconnect wiring to baling safety switch KS according to wiring diagram.
- j. Remount spacer bushings and rear cover.
- k. Insert mounting screw through rear cover and spacer bushing. Retighten screws.
- l. Turn on circuit breaker.
- m. Turn on main power switch.



2-16.19 Replace Ram Forward/Reverse Switch HTP/HT.

MOS: 83FJ6, Reproduction Equipment Repairer

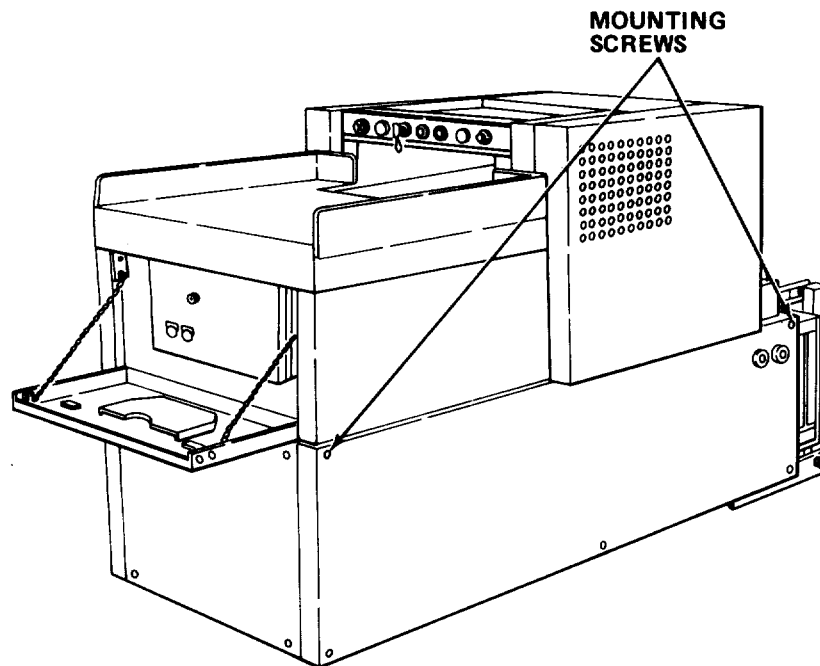
TOOLS: 5 mm Hex Head Key Wrench  
No. 2 Cross Tip Screwdriver

SUPPLIES: Ram Forward/Reverse Switch(es)

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.



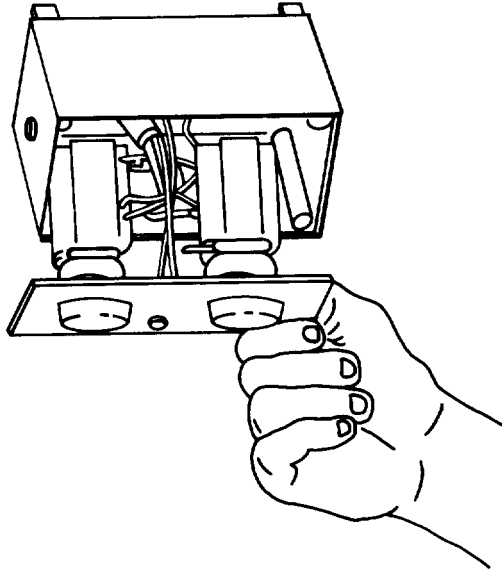
- c. Remove screws and spacer bushing holding bottom right side panel.

**NOTE**

**Bottom center screw holds ground wires in place. Wires are secured with retaining nut. Do not remove this screw.**

- d. Lift bottom right side panel off support brackets and remove.

- e. Remove screws holding cover to ram forward/reverse switch HTP/HT.
- f. Pull switch panel and wiring out of enclosure.
- g. Tag and slide wire terminal connectors from switch terminals.
- h. Remove ram forward/reverse switch HTP/HT by unscrewing entire housing from switch panel.



- i. Screw in new ram forward/reverse switch HTP/HT and reconnect wiring.
- j. Reinstall switch panel and bottom right side panel.
- k. Turn on circuit breaker.
- l. Turn on main power switch.

2-16.20 Replace Pressure Safety Switch.

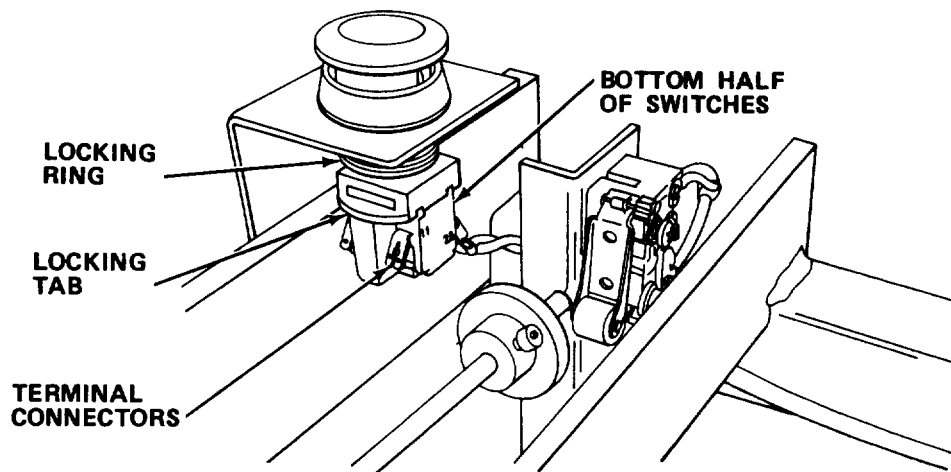
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 6 mm Hex Head Key Wrench

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Remove rear switch cover panel.



- d. Tag and disconnect switch wiring.
- e. Rotate slide locking tab cover and pull off bottom half of switch.
- f. Unscrew mounting ring from top half of switch and lift out.
- g. Insert top half of new switch and screw on mounting ring.
- h. Attach bottom half of switch and rotate locking tab in place.
- i. Reconnect switch wiring.
- j. Reinstall cover panel.
- k. Turn on circuit breaker.
- l. Turn on main power switch.

2-16.21 Remove/Install Shredder-Bagger.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Two persons are required to perform this procedure.

TOOLS: Flat Tip Screwdriver  
15/16 in. Combination Wrench  
Flat Tip Screwdriver, 1/64 in., 2 in. lg.  
1/2 in. Combination Wrench  
12 in. Adjustable Wrench

SUPPLIES: Electrical Tape (Item 21, Appendix E)  
Shredder Bagger

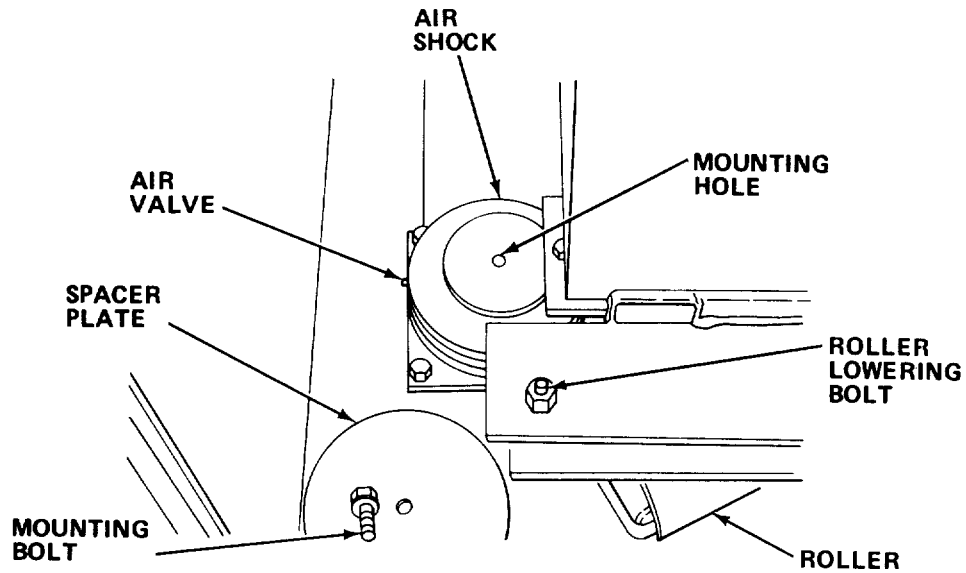
**WARNING**

**Death or serious injury may result from electrical shock unless shredder-bagger is turned off and circuit breaker to shredder-bagger is off before removing equipment.**

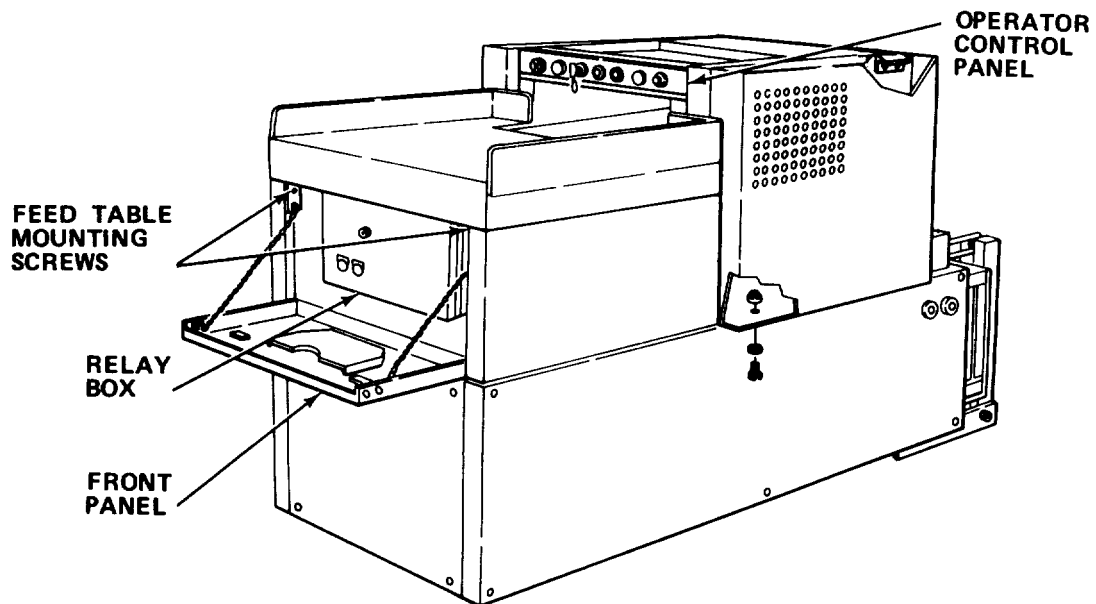
- a. Turn key switch off.
- b. Turn off circuit breaker for shredder-bagger.
- c. Lower roller on all four corners of machine by turning roller lowering bolts until rollers contact floor.

**CAUTION**

**To prevent equipment damage, be sure that all four corner rollers contact the floor before removing mounting bolts from air shocks.**

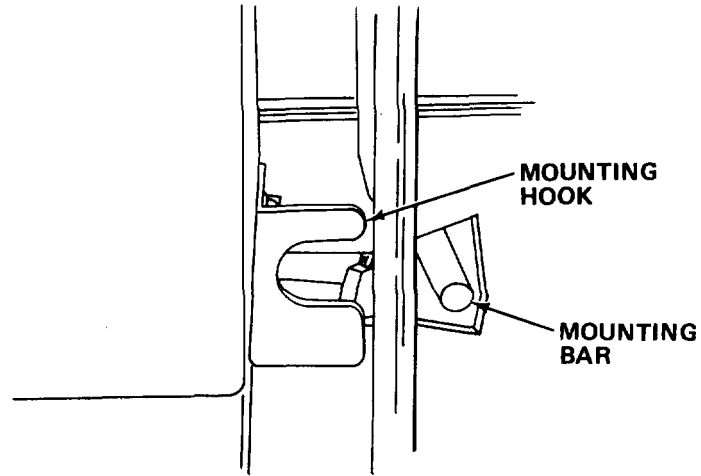


- d. Remove mounting bolts from air shocks.
- e. Deflate air shocks. When air shocks have been deflated, reinstall valve caps on air shock valve stems so they do not get lost.
- f. Remove spacer plates and keep all spacer plates, mounting bolts, and washers together for reinstalling equipment.

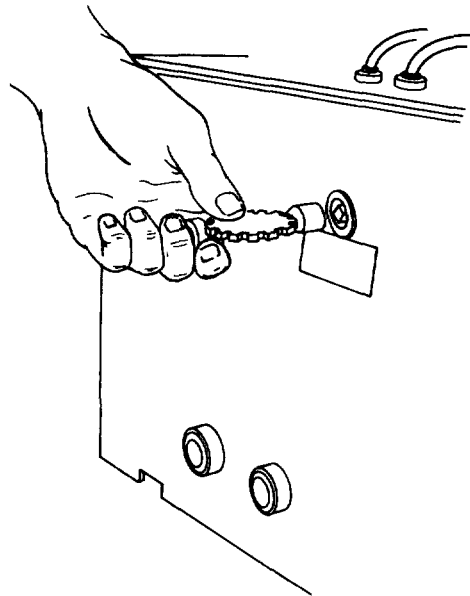


- g. Open front panel.

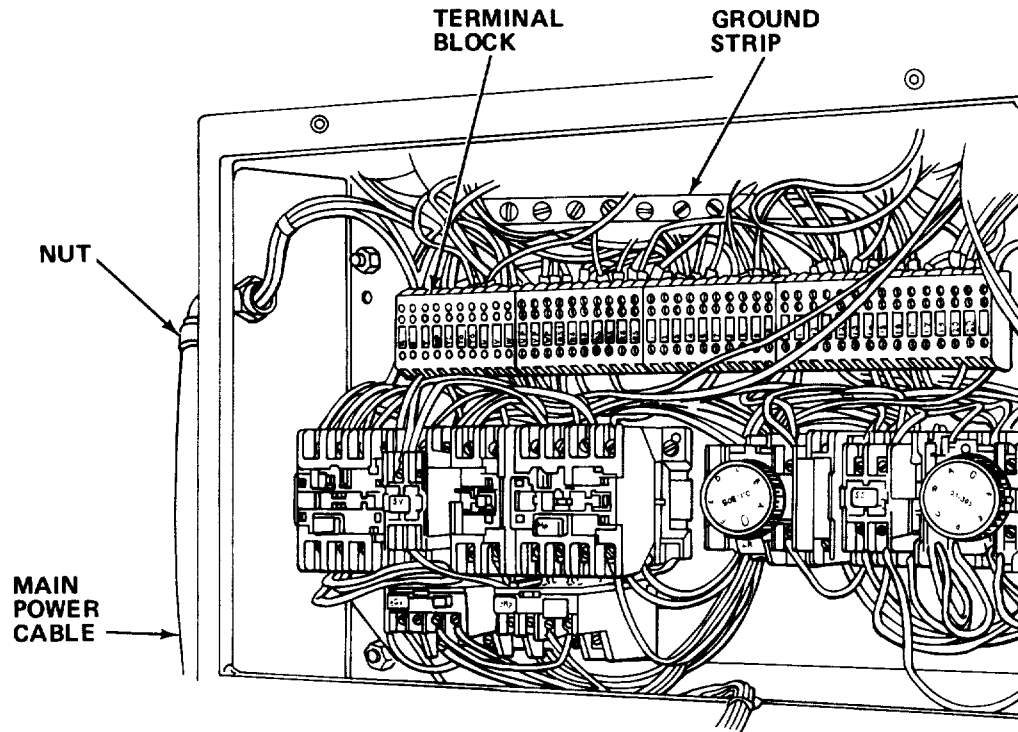
- h. Remove feed table mounting screws.



- i. Pick front end of feed table up and slide toward front of machine until mounting hook is clear of mounting bar, and remove.
- j. Place feed table to one side, away from immediate work area.



- k. Using special machine key, open relay box cover.



**NOTE**

Tag each wire, when removed, with the letter or number of the terminal it came from. This will aid in reconnecting proper wire to correct terminal on reinstallation.

- l. Locate main power cable input to relay box.
- m. Disconnect wires from terminals R, S, T, and GROUND, tagging each wire as removed with its location.
- n. Using electrical tape, tape each exposed wire end so no bare wire is showing.
- o. Tape the four taped wires together with a few tape wraps so they do not separate.
- p. Remove outside nut on main power cable.
- q. Remove main power cable from relay box.
- r. Remove power cable from bottom of machine.

- s. Close relay box cover.
- t. Reinstall feed table and close front cover.
- u. Roll machine to rear end of van and remove machine from van.
- v. Position new machine at proper location.
- w. Open front cover.
- x. Remove feed table.
- y. Open relay box cover.
- z. Run power cable under machine and up to main power cable insert hole in relay box.
- aa. Run wires through relay box power cable hole and reinstall nut on fitting tightly.
- ab. Remove tape on wires and hook up wires to terminals indicated by tags on each wire.

**NOTE**

**Be sure all connections are tight and no bare wires are showing.**

- ac. Close relay box.
- ad. Reinstall feed table and close front cover.
- ae. Move machine over shock mounts.
- af. Aline mounting holes on machine over bolt holes on air shocks.
- ag. Insert spacer plates over air shocks.

**CAUTION**

**When inserting mounting bolts, be sure bolts are not cross threaded.**

- ah. Insert mounting bolts on all four corners into air shocks and tighten.
- ai. Raise rollers on all four corners.
- aj. Tighten all mounting bolts.
- al. Inflate air shocks if preparing for transport mode.



**2-17. PREPARATION FOR STORAGE AND SHIPMENT.** Contact your battalion for packing and shipping instructions.

## **Section V DIRECT/GENERAL SUPPORT MAINTENANCE**

### **2-18. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT.**

2-18.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-18.2 Special Tools; Test Measurement, and Diagnostic Equipment; and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

2-18.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-6675-315-24P covering direct/general support maintenance for this equipment.

### **2-19. DIRECT/GENERAL SUPPORT TROUBLESHOOTING PROCEDURES.**

a. Direct/general support troubleshooting procedures cover the most common malfunctions that may be repaired at the direct/general support level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used at lower levels should be conducted in addition to the direct/general support troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions use the facing schematic or the foldout located at the end of this manual for further fault analysis.

Table 2-6. DIRECT/GENERAL SUPPORT TROUBLESHOOTING

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. CUTTER MECHANISM DOES NOT MOVE.	Check cutter drive motor for continuity.	Replace cutter drive motor (paragraph 2-20.3).
2. OPERATION OF PRESS RAM IS INTERMITTENT IN BOTH DIRECTIONS.	Step 1. Check gear pump pipe connectors for air leaks.	(a) If no air leaks are present, proceed to step 2. (b) Tighten pipe connections. (c) Replace o-ring
	Step 2. Check for sticking solenoid valve.	(a) If valve is operating properly, proceed to step 3. (b) Replace solenoid valve (paragraph 2-20.4).
	Step 3. Check for defective solenoid valve coil.	(a) If coil is good, proceed to step 4. (b) Replace solenoid valve (paragraph 2-20.4).
	Step 4. Check for defective pump motor.	Replace pump motor (paragraph 2-20.6).

Table 2-6. DIRECT/GENERAL SUPPORT TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

## 3. CUTTER MECHANISM RUNS FORWARD BUT RAM DOES NOT MOVE.

Step 1. Check for air leaks in gear pump pipe connectors.

- (a) If no leaks are present, proceed to step 2.
- (b) Tighten pipe connections.
- (c) Replace o-ring

Step 2. Check for sticking solenoid valve.

- (a) If valve operates freely, proceed to step 3.
- (b) Replace solenoid valve (paragraph 2-20.4).

Step 3. Check for defective solenoid valve coil.

- (a) If coil is good, proceed to step 4.
- (b) Replace solenoid valve (paragraph 2-20.4).

Step 4. Check for defective pump motor.

Replace pump motor (paragraph 2-20.6).

## 4. CYCLE STOP (KLP) LIGHTS BUT BALE CHAMBERS ARE ONLY PARTIALLY FILLED.

Check for proper operation of pressure activated switch DW.

If out of adjustment, replace switch (paragraph 2-20.5).

Table 2-6. DIRECT/GENERAL SUPPORT TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
5. CYCLE STOP (KLP) DOES NOT LIGHT WHEN CHAMBER IS FULL. RAM DOES NOT RETURN.	Step 1. Check for sticking solenoid valve.	<ul style="list-style-type: none"> <li>(a) If valve is operating properly, proceed to step 2.</li> <li>(b) If sticking, replace valve (paragraph 2-20.4).</li> </ul>
	Step 2. Check pressure activated switch DW for proper adjustment.	<ul style="list-style-type: none"> <li>(a) If properly adjusted, proceed to step 3.</li> <li>(b) If out of adjustment, replace switch DW (paragraph 2-20.5).</li> </ul>
6. BALE CHAMBER IS PARTIALLY FULL. RAM DOES NOT REVERSE.	Step 1. Check for sticking solenoid valve.	<ul style="list-style-type: none"> <li>(a) If valve is operating freely, proceed to step 2.</li> <li>(b) If sticking, replace valve (paragraph 2-20.4).</li> </ul>
	Step 2. Check for defective solenoid valve.	Replace valve (paragraph 2-20.4).

**2-20. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering direct/general support maintenance functions for the shredder-bagger. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

PROCEDURES	INDEX	PARAGRAPH
Replace Conveyor Belt .....		2-20.1
Repair Cutter Assembly .....		2-20.2
Replace Cutter Drive Motor.....		2-20.3
Replace Solenoid Valve.....		2-20.4
Replace Pressure-Activated Switch.....		2-20.5
Replace Pump Motor Assembly .....		2-20.6

2-20.1 Replace Conveyor Belt.

MOS: 83FJ6, Reproduction Equipment Repairer

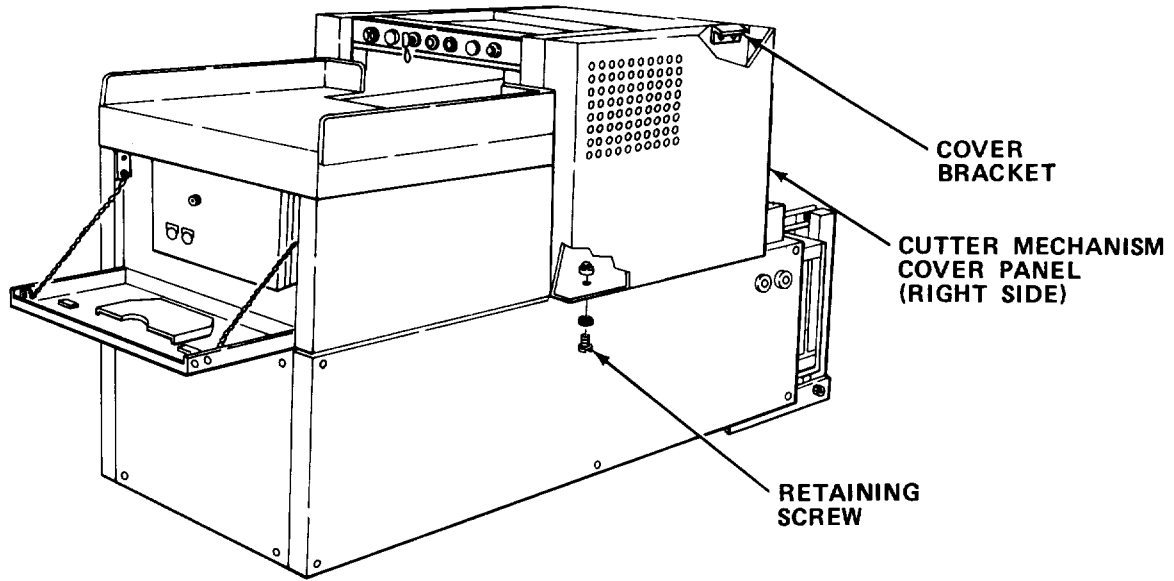
TOOLS: Flat Tip Screwdriver  
 No. 2 Cross Tip Screwdriver  
 5 mm Hex Head Key Wrench  
 6 in. Adjustable Wrench  
 22 mm Combination Wrench

SUPPLIES: Conveyor Belt

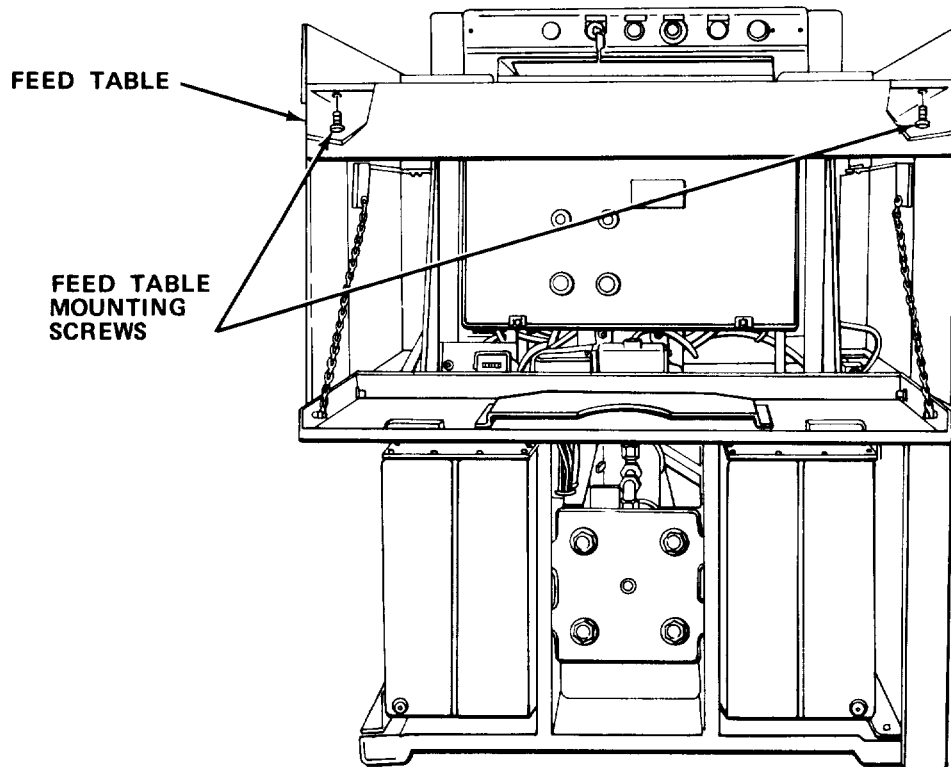
**WARNING**

**Death or serious injury can occur from electrical shock unless power is turned off before servicing.**

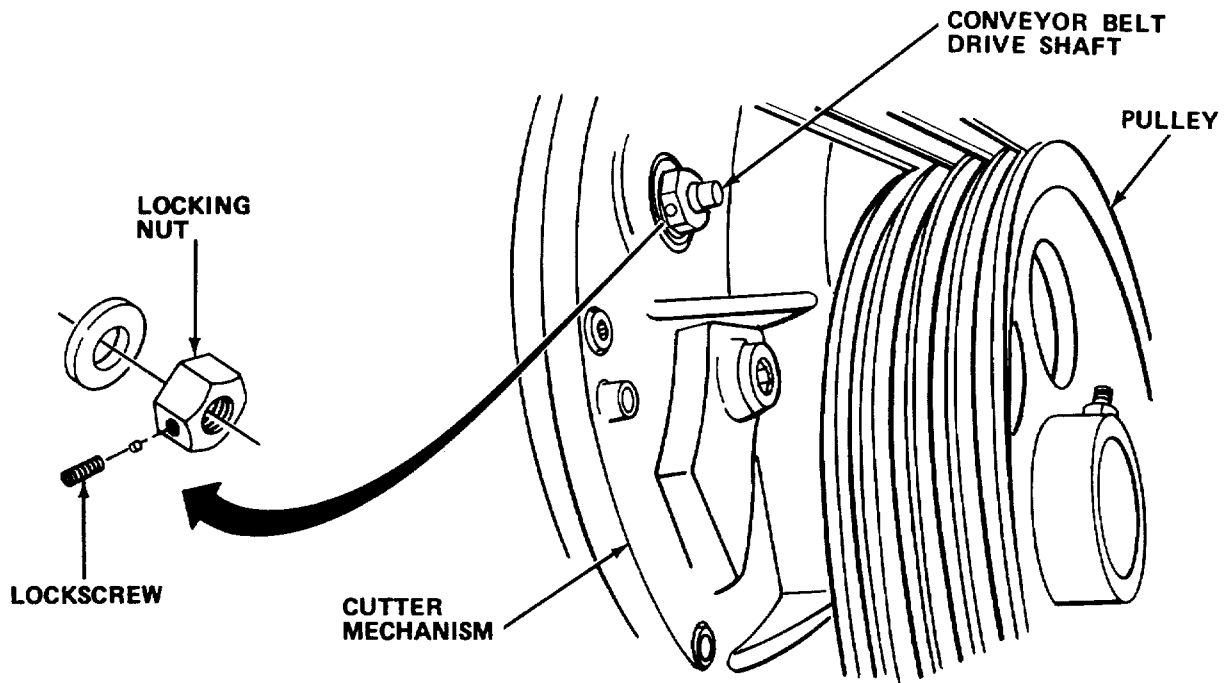
- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).



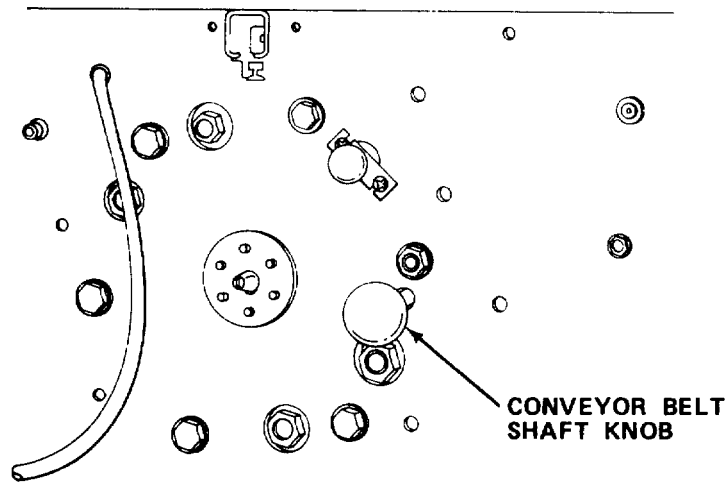
- d. Remove both cutter mechanism side panels.
- e. Lower front panel.



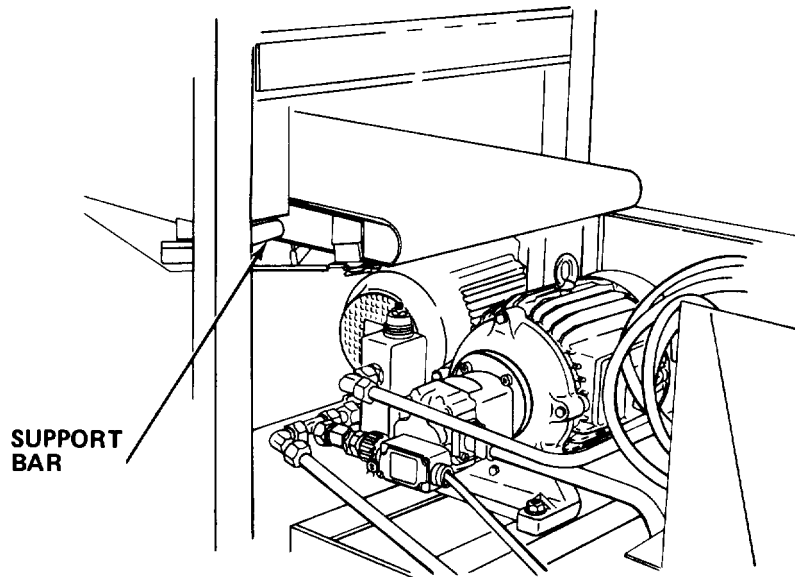
- f. Remove feed table.



- g. Loosen lock screw and remove locking nut from end of drive shaft.



- h. Remove drive shaft by pulling black knob from machine.



- i. Lift support bar up out of holding bracket. Pull conveyor belt assembly out front of machine.
- j. Remove conveyor belt from assembly and install new belt.
- k. Reinstall conveyor belt assembly.
- l. Reinstall drive shaft.

**NOTE**

**Be sure that drive key at end of shaft engages cutter gears and shaft is seated.**

- m. Reinstall locking nut, perform drive adjustment procedure (paragraph 2-35.2), and tighten lockscrew.
- n. Reinstall feed table.
- o. Reinstall cutter mechanism side panels.
- p. Turn on circuit breaker.
- q. Turn on main power switch.



**2-20.2 REPAIR CUTTER ASSEMBLY.**

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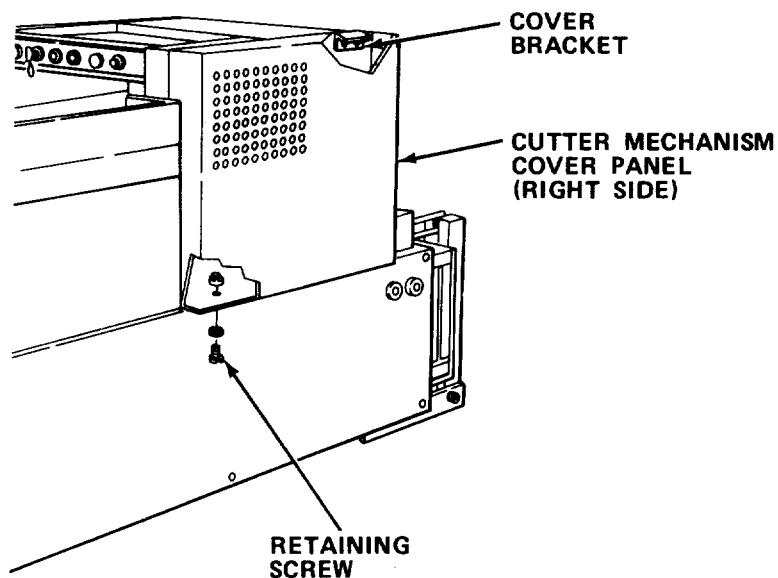
PERSONNEL: Two persons are required to perform this procedure

TOOLS: Flat Tip Screwdriver  
 No. 2 Cross Tip Screwdriver  
 4 mm Hex Head Key Wrench  
 5 mm Hex Head Key Wrench  
 6 mm Hex Head Key Wrench  
 8 in. Adjustable Wrench  
 13 mm Combination Wrench  
 13 mm Socket, 3/8 in. Drive  
 Ratchet, 3/8 in. Drive  
 6 in. Extension, 3/8 in. Drive  
 Pliers  
 Grease Gun  
 Gear Puller (2 Arm)

SUPPLIES: Cutting and Comber Assemblies  
 GAA Grease (Item 6, Appendix E)

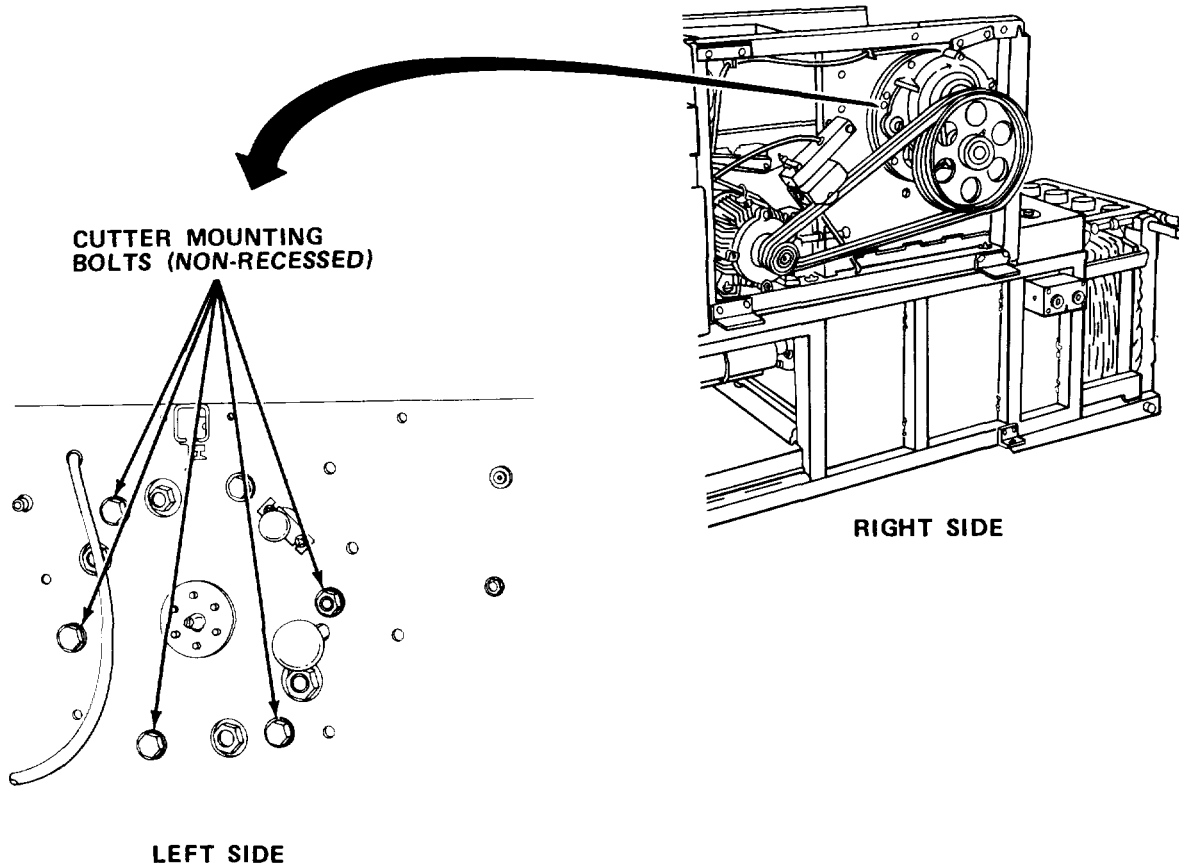
**WARNING**

Death or serious injury may occur from electrical shock unless power is off before repairing cutter assembly.



- a. Turn off circuit breaker.

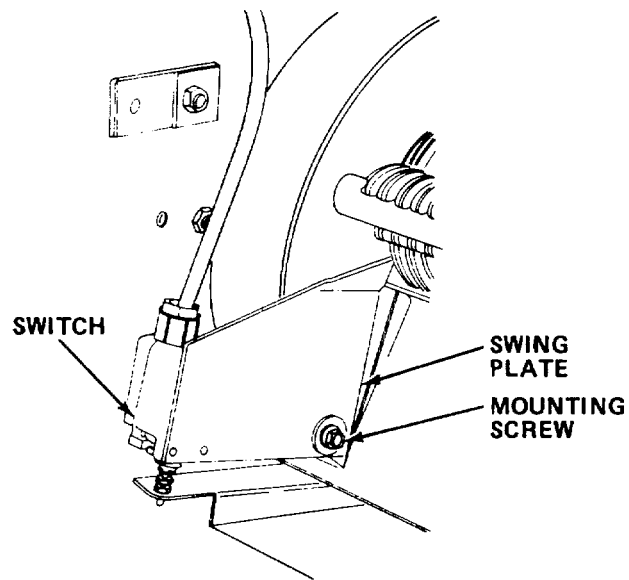
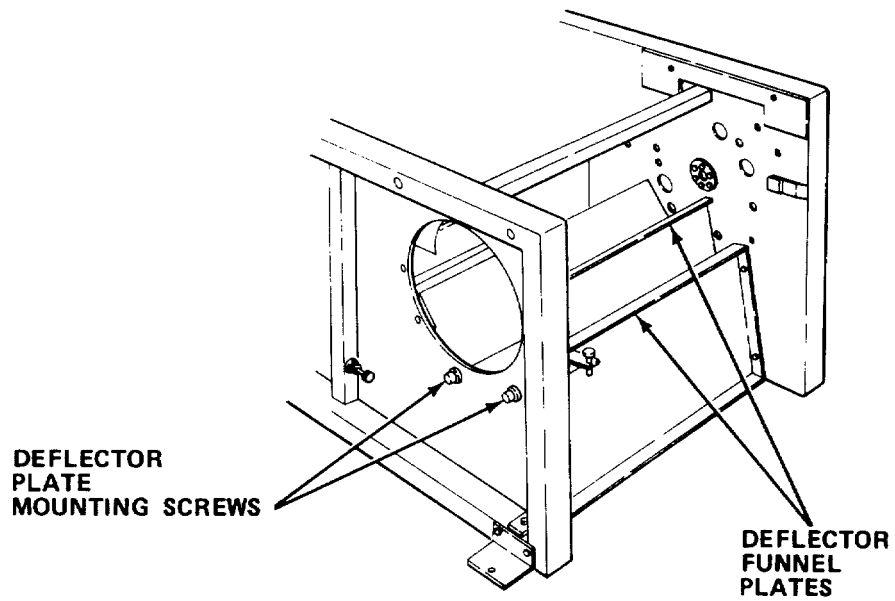
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).
- d. Remove both cutter mechanism side panels.



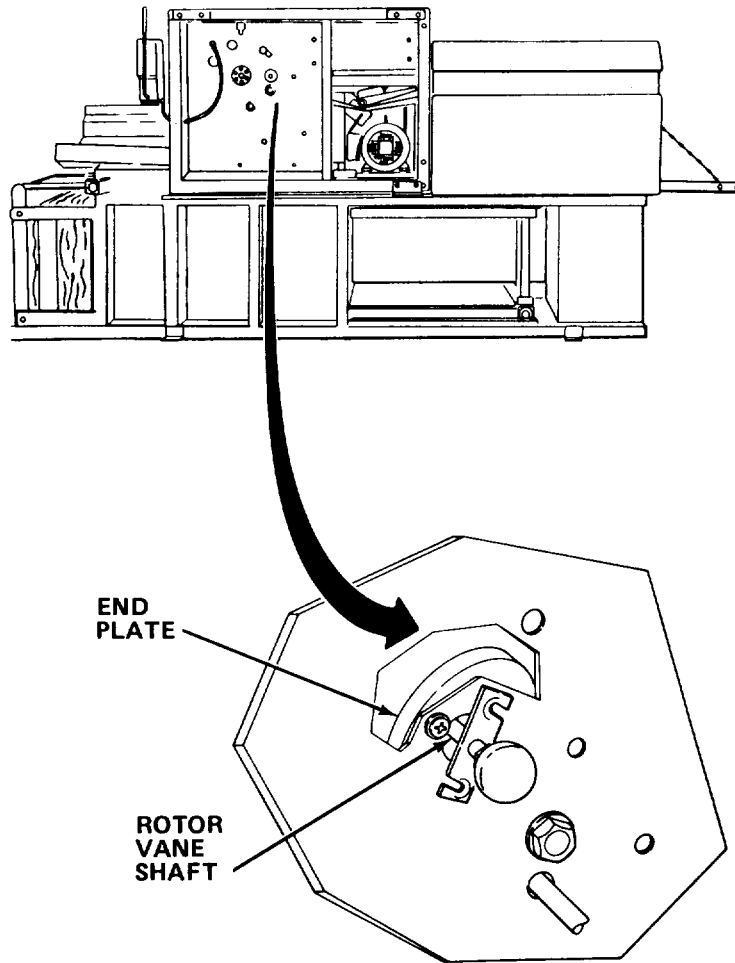
**CAUTION**

**Do not remove recessed bolts on cutter mechanism.**

- e. Remove screws holding funnel plates in place. Remove cutter mechanism mounting bolts.



- f. Remove cutter safety switch and swing plate.
- g. Pull funnel plates from rear of machine.
- h. Remove conveyor belt (paragraph 2-20.1).
- i. Remove V-belts (paragraph 2-16.8).
- j. Remove vane rotor assembly (paragraph 2-16.14).

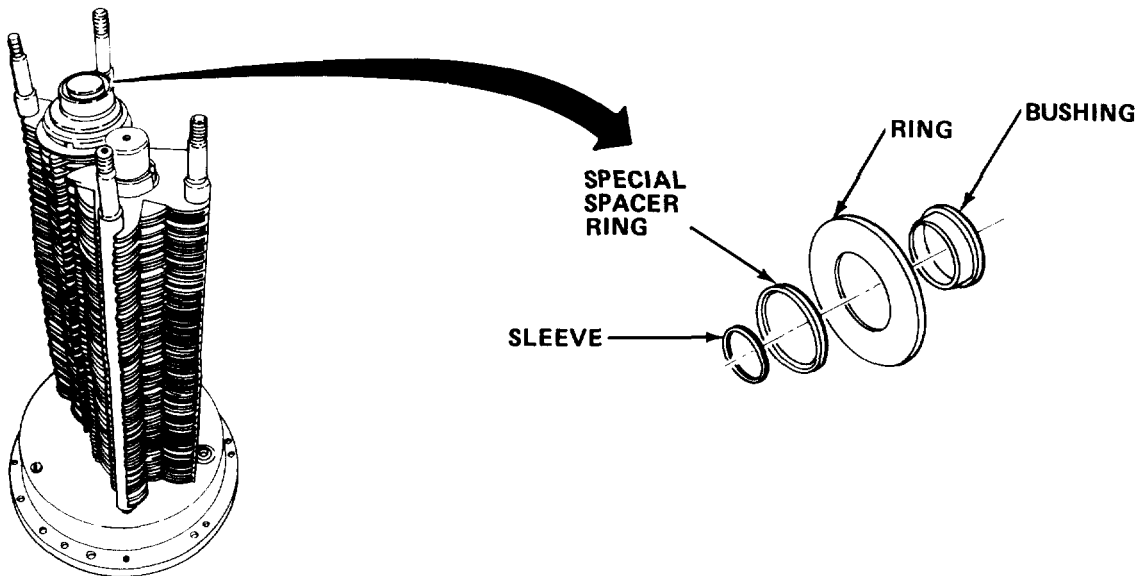


- k. Loosen keyway screws and pull V-belt pulley from cutter mechanism shaft.

**WARNING**

**Cutter mechanism is heavy and blades are sharp. Removal will require more than one person. Keep hands and fingers away from blades and from beneath cutter.**

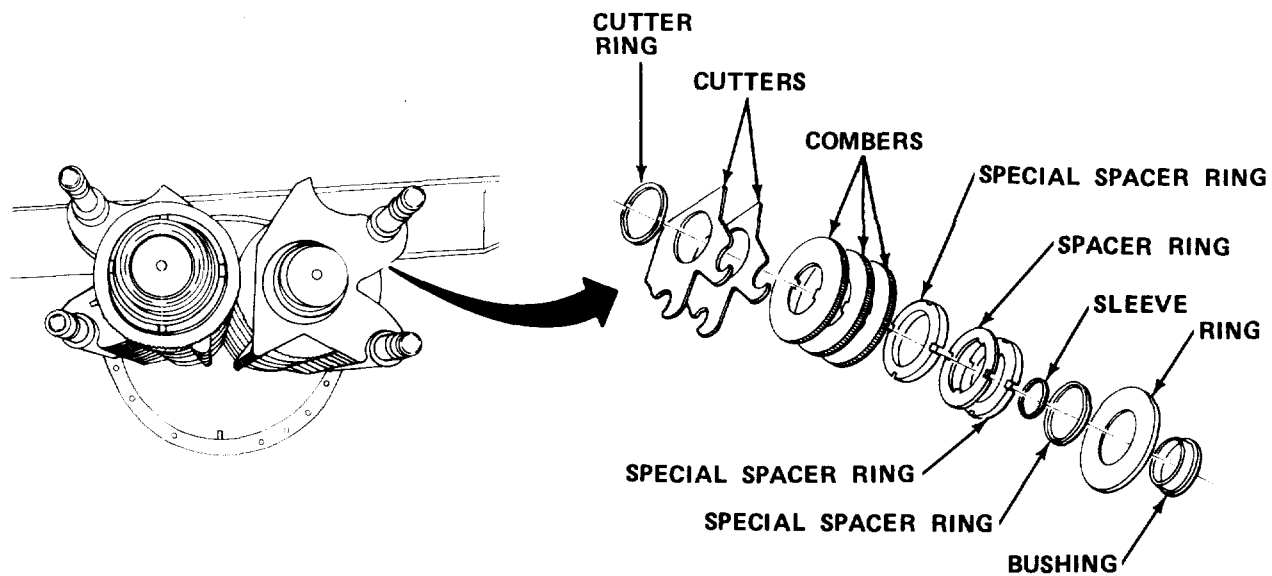
- l. Remove mounting bolts that secure cutter assembly to machine housing.
- m. Slide cutter assembly out of right side of shredder-bagger.
- n. Remove end plate from cutter assembly.



- o. Using gear puller, remove bushing, ring, special spacer ring, and sleeve from both cutter and comber shafts.

**NOTE**

All cutter and comber assemblies consist of two combers except the last installed assembly, which consists of three combers. Remaining components consist of one cutter ring, special spacer ring, ring, and bushing. Two cutter blades are contained in each assembly, except the last installed assembly which consists of four cutters.



**NOTE**

**Cutter and comber assemblies are removed in the following sequence: bushing, ring, special spacer ring, combers, cutters, and cutter ring.**

- p. Remove cutter and comber assemblies.
- q. Inspect all components for wear or damage. Replace combers and cutters as required.

**NOTE**

- **If blades become dull, new cutting edges may be obtained by simply reversing cutter assemblies on upper and lower shafts.**
- **Cutter and comber assemblies are reinstalled in the following sequence: cutter ring, cutters, combers, special spacer ring, ring, and bushing.**

- r. Reinstall cutter and comber assemblies.
- s. Reinstall sleeve, special spacer ring, ring, and bushing on both cutter and comber shafts.
- t. Reinstall end plate on cutter assembly.
- u. Reinstall cutter assembly into shredder-bagger.
- v. Reinstall mounting bolts that secure cutter assembly to machine housing.
- w. Reinstall conveyor belt assembly.
- x. Lubricate cutter assembly with GAA Grease (Item 6, Appendix E).
- y. Reinstall vane rotor assembly.
- z. Reinstall funnel plates.
- aa. Reinstall cutter safety switch and swing plate.
- ab. Reinstall V-belt pulley, V-belts, and adjust belt tension (paragraph 2-16.1).
- ac. Reinstall panels.
- ad. Turn on circuit breaker.
- ae. Turn on main power switch.

**2-20.3 Replace Cutter Drive Motor.**

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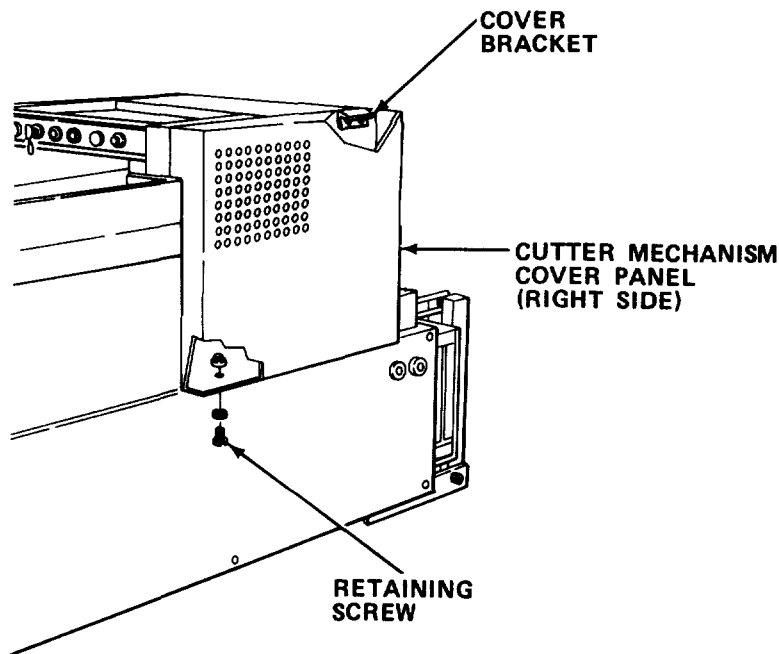
TOOLS: No. 2 Cross Tip Screwdriver  
 Flat Tip Screwdriver  
 8 in. Adjustable Wrench  
 19 mm Combination Wrench  
 5 mm Hex Head Key Wrench  
 6 mm Hex Head Key Wrench  
 Pliers  
 0-8 in. Mechanical Puller

SUPPLIES: Drive Motor

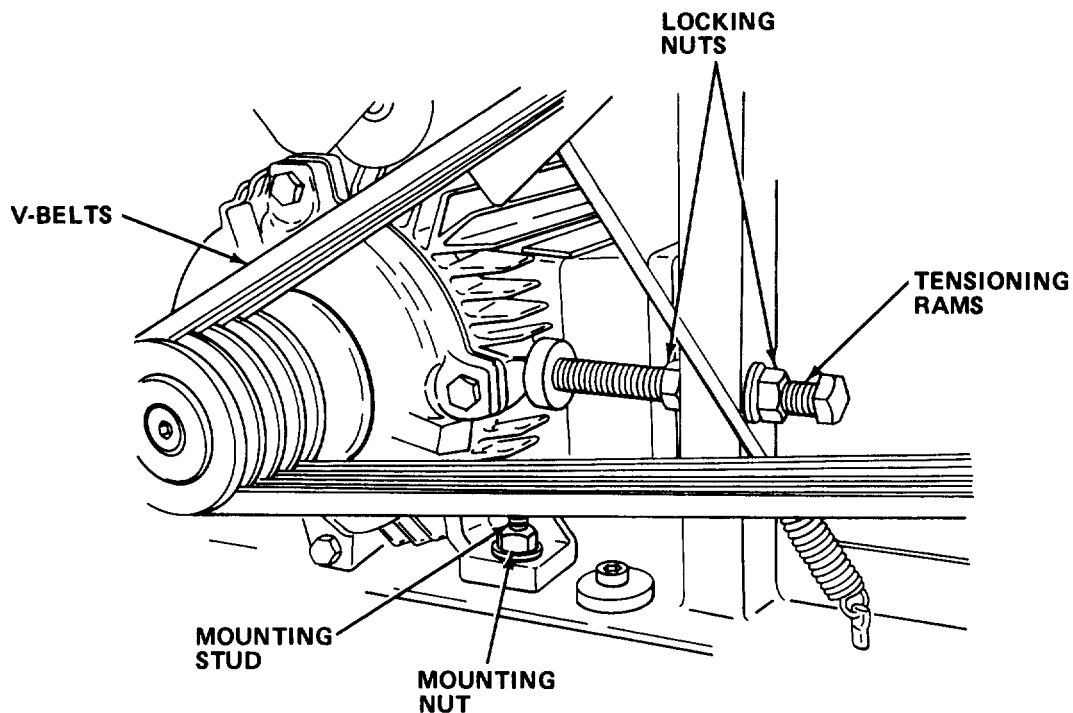
**WARNING**

Death or serious injury may occur from electrical shock unless power is turned off before servicing.

- a. Turn off circuit breaker.
- b. Turn off main power switch.



- c. Remove screws and both side panels.



- d. Remove centrifugal switch assembly (paragraph 2-16.7).
- e. Back tensioning rod away from motor.
- f. Remove motor mounting bolts.
- g. Remove V-belts (paragraph 2-16.8).
- h. Pull V-belt pulley from motor shaft and install on new motor.
- i. Rotate motor for access to wiring cover. Tag and disconnect wiring.

**WARNING**

**Motor is heavy and awkward to handle. Do not drop.**

- j. Replace motor.
- k. Reconnect wiring to motor.
- l. Reinstall V-belts and centrifugal switch FL; then adjust belt tension (paragraph 2-16.1).
- m. Reinstall panels.
- n. Turn on circuit breaker.
- o. Turn on main power switch.



**2-20.4 Replace Solenoid Valve.**

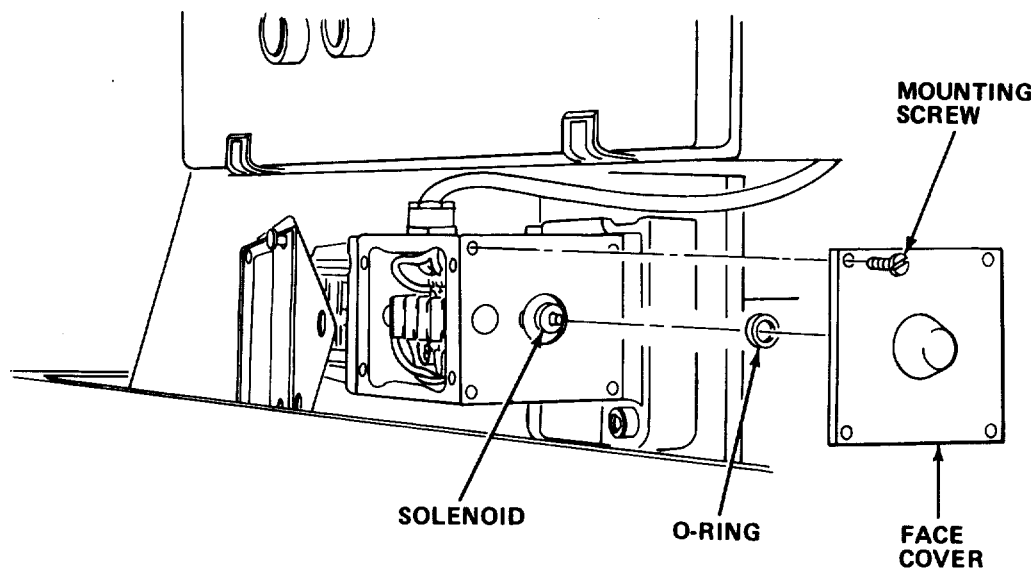
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 5 mm Hex Head Key Wrench  
6 mm Hex Head Key Wrench  
8 in. Adjustable Wrench  
Flat Tip Screwdriver

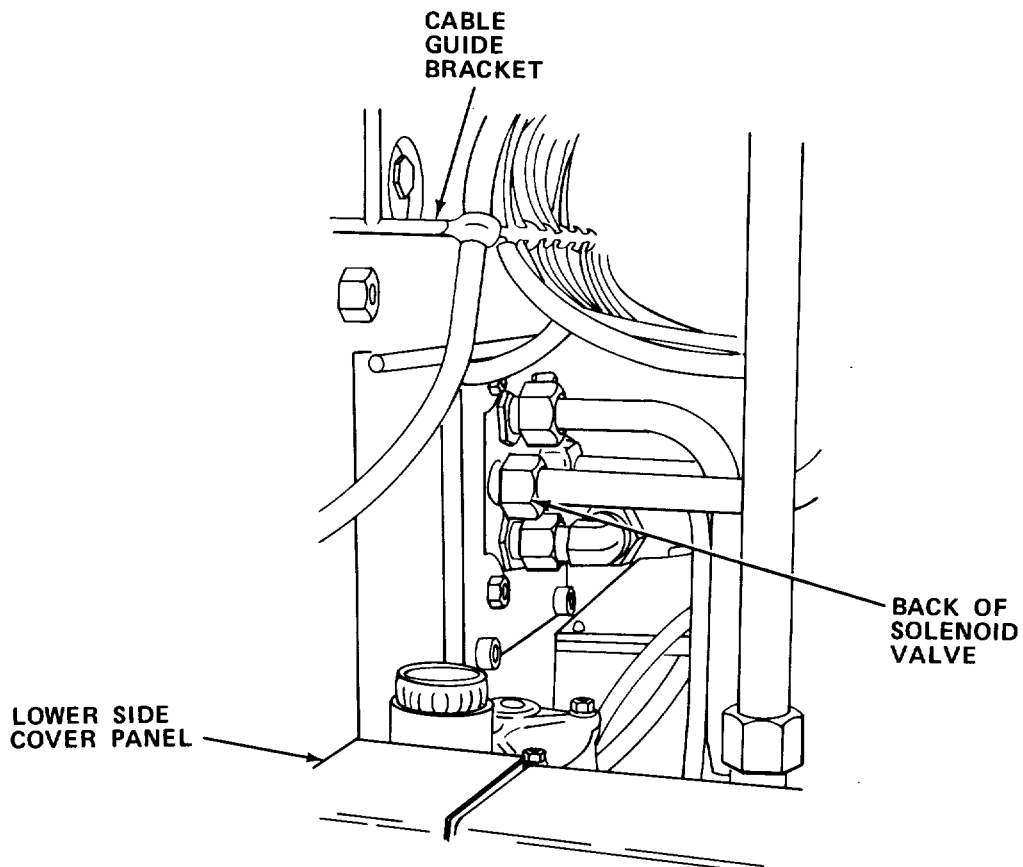
SUPPLIES: Four-Way Spool Valve  
O-Ring  
Hydraulic Fluid (Item 9, Appendix E)  
Cheesecloth (Item 3, Appendix E)  
Lubrication Oil (SAE 30) (Item 7, Appendix E)  
Drain Pan  
Funnel

**WARNING**

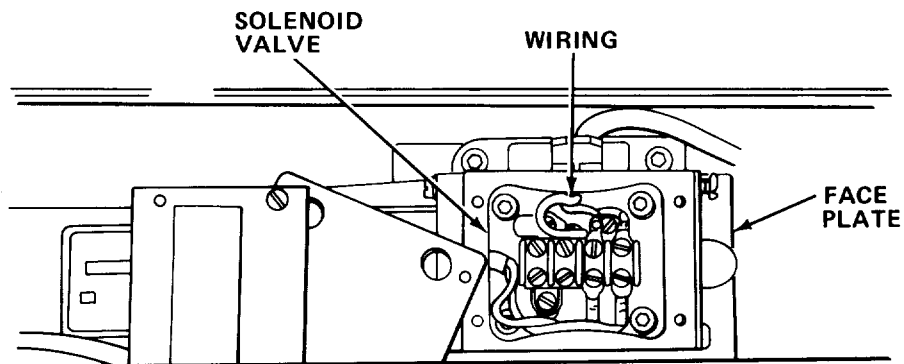
- Death or serious injury may occur from electrical shock unless power is turned off before replacing valve.
- System is under high pressure. Do not attempt work unless hydraulic system is drained and machine power is off.
  - a. Turn off circuit breaker.
  - b. Turn off main power switch.



- c. Remove cover plates and feed table.
- d. Drain hydraulic system (paragraph 2-16.9).



- e. Remove bolts holding switch cabinet (relays). Lift cabinet and cables out of way.



- f. Remove cover from solenoid valve.
- g. Tag and disconnect wiring.
- h. Remove solenoid valve.
- i. Remove O-ring between solenoid valve and face plate.

- j. O-ring and solenoid valve.
- k. Reconnect wires.
- l. Reinstall switch cabinet, panels, and feed table.
- m. Turn on circuit breaker.
- n. Turn on main power switch.

2-20.5 Replace Pressure-Activated Switch.

MOS: 83FJ6, Reproduction Equipment Repairer

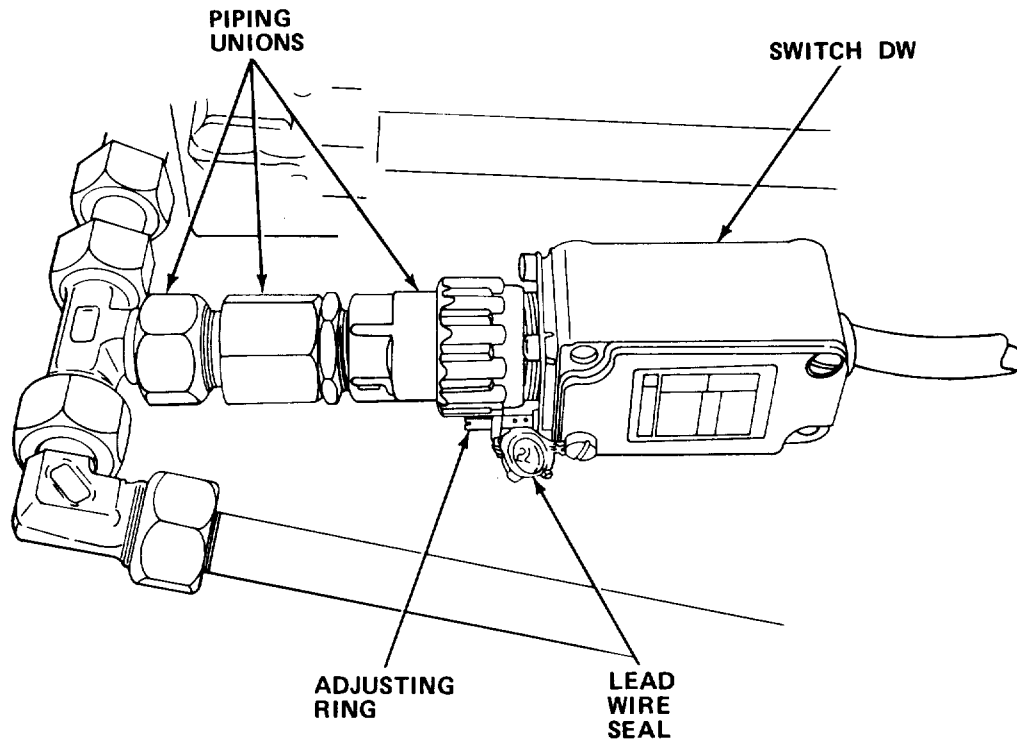
TOOLS: 5 mm Hex Head Key Wrench  
 6 mm Hex Head Key Wrench  
 6 in. Pipe Wrench  
 8 in. Adjustable Wrench  
 Flat Tip Screwdriver

SUPPLIES: Pressure Switch  
 Lubrication Oil (SAE 30) (Item 7, Appendix E)  
 Cheesecloth (Item 3, Appendix E)  
 Drain Pan  
 Funnel

**WARNING**

**Death or serious injury can occur from electrical shock if power is not turned off before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).
- d. Remove panels and feed tray.
- e. Drain hydraulic system.



- f. Remove lead wire seal.
- g. Remove pressure-activated switch wiring cover.
- h. Tag and disconnect wires.
- i. Disconnect pipe and unions from switch; then remove defective switch.
- j. Replace switch, connect hydraulic piping and wires.
- k. Refill hydraulic system.
- l. Adjust switch (paragraph 2-16.20).
- m. Reinstall panels and feed tray.
- n. Turn on circuit breaker.
- o. Turn on main power switch.

2-20.6 Replace Pump Motor Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Two persons are required to perform this procedure.

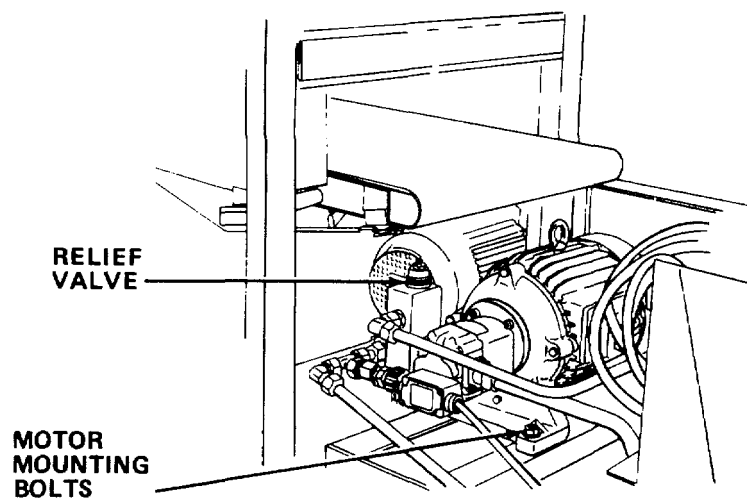
TOOLS: 5 mm Hex Head Key Wrench  
 6 mm Hex Head Key Wrench  
 6 in. Pipe Wrench  
 8 in. Adjustable Wrench  
 Torque Wrench  
 Flat Tip Screwdriver

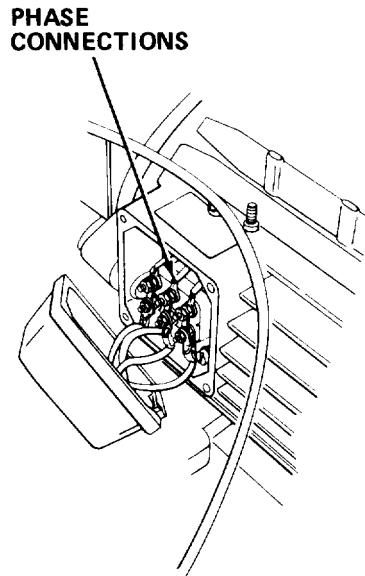
SUPPLIES: Pump Motor Assembly  
 Lubrication Oil (SAE 30) (Item 7, Appendix E)  
 Cheesecloth (Item 3, Appendix E)  
 Drain Pan  
 Funnel

**WARNING**

**Death or serious injury may occur from electrical shock unless power is turned off before replacing pump motor.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Move shredder-bagger away from wall (paragraph 2-16.21).
- d. Remove feed table and panels, then drain hydraulic system.
- e. Remove bolts attaching motor to frame.



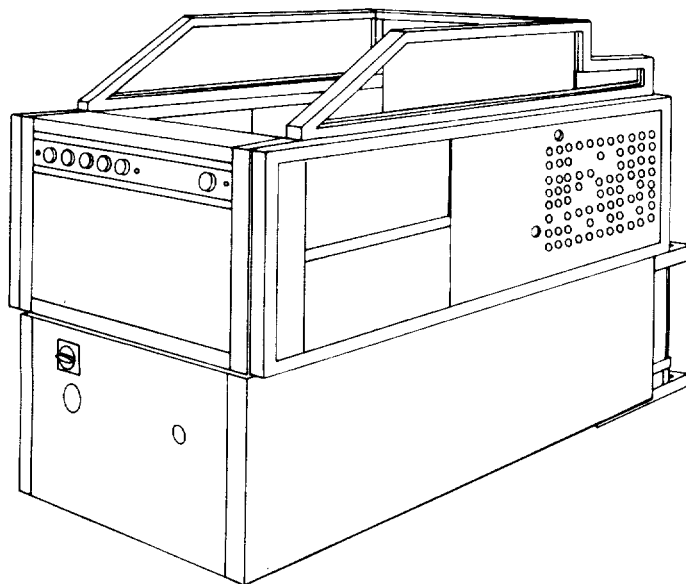


- f. Tag and disconnect wires.

**WARNING**

**Motor is heavy and awkward to handle. Do not drop. Use lifting bar and two personnel to raise or move motor.**

- g. Remove defective pump motor assembly and relief valve. Remove relief valve from old motor and install on new motor. Insert new O-ring and sealing washer.
- h. Install new pump motor.
- i. Bolt motor assembly to frame.
- j. Reconnect wiring.
- k. Refill hydraulic system.
- l. Turn on circuit breaker.
- m. Turn main power switch on and cycle ram to determine if hydraulic system leaks.
- n. Reinstall panels and feed tray.



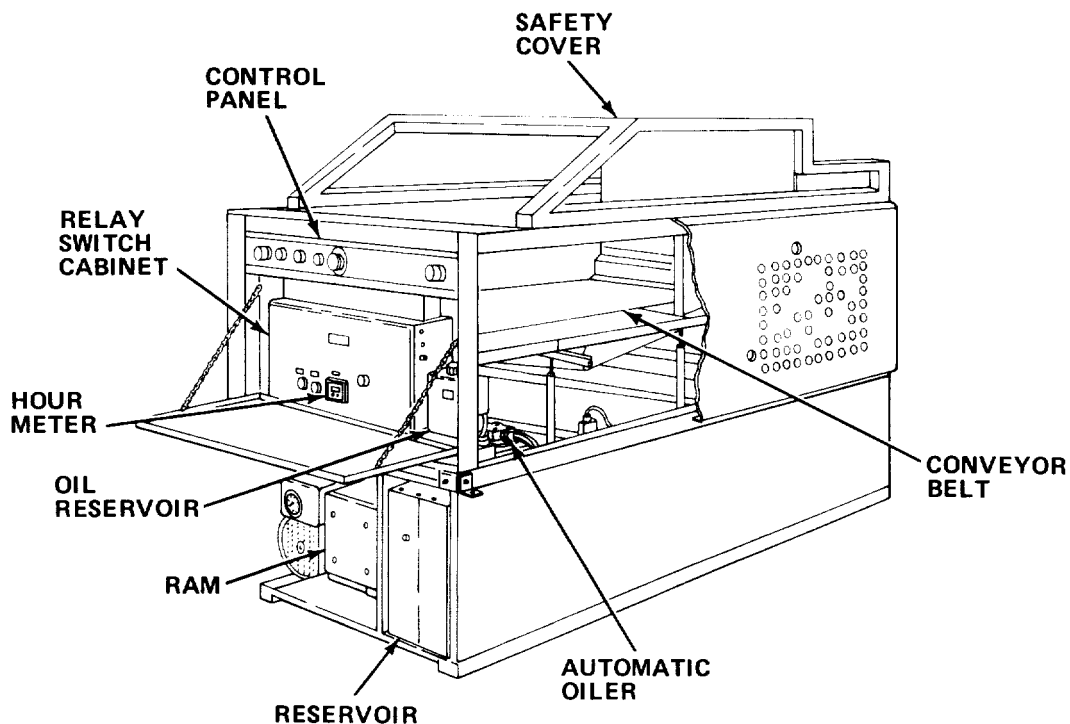
2-154

**1420 SHREDDER-BAGGER****Section VI INTRODUCTION****2-21. EQUIPMENT DESCRIPTION.**2-21.1 Equipment Characteristics, Capabilities, and Features.

- a. Destroys paper products at a rate of 2000 lbs/hr (908 kg/hr).
- b. Air cooled and oil lubricated cutting blades.
- c. Compresses and bags shredded material into compact bales.
- d. Capable of shredding up to 1/4 in. (6.35 mm) thickness of standard map stock or equal thickness of other paper products at one time.
- e. Electrical protection circuits shut down the drive motor if the unit is overfed and prevents over-extension of the hydraulic ram.
- f. Will accept material up to 20 in. (50.8 cm) wide.
- g. Cutter REVERSE switch enables reversal of cutter blades for ejection of jammed material.
- h. Indicator light informs operator when bale is ready for removal.



2-21.2 Location and Description of Major Components.



CONTROL PANEL. Metal panel which houses control switches.

SAFETY COVER. Clear plastic cover which allows observation of material as it enters cutting blades but prevents access.

CONVEYOR BELT. Carries material into cutting blades.

AUTOMATIC OILER. Pumps oil to various parts of the machine every time the ram cycles.

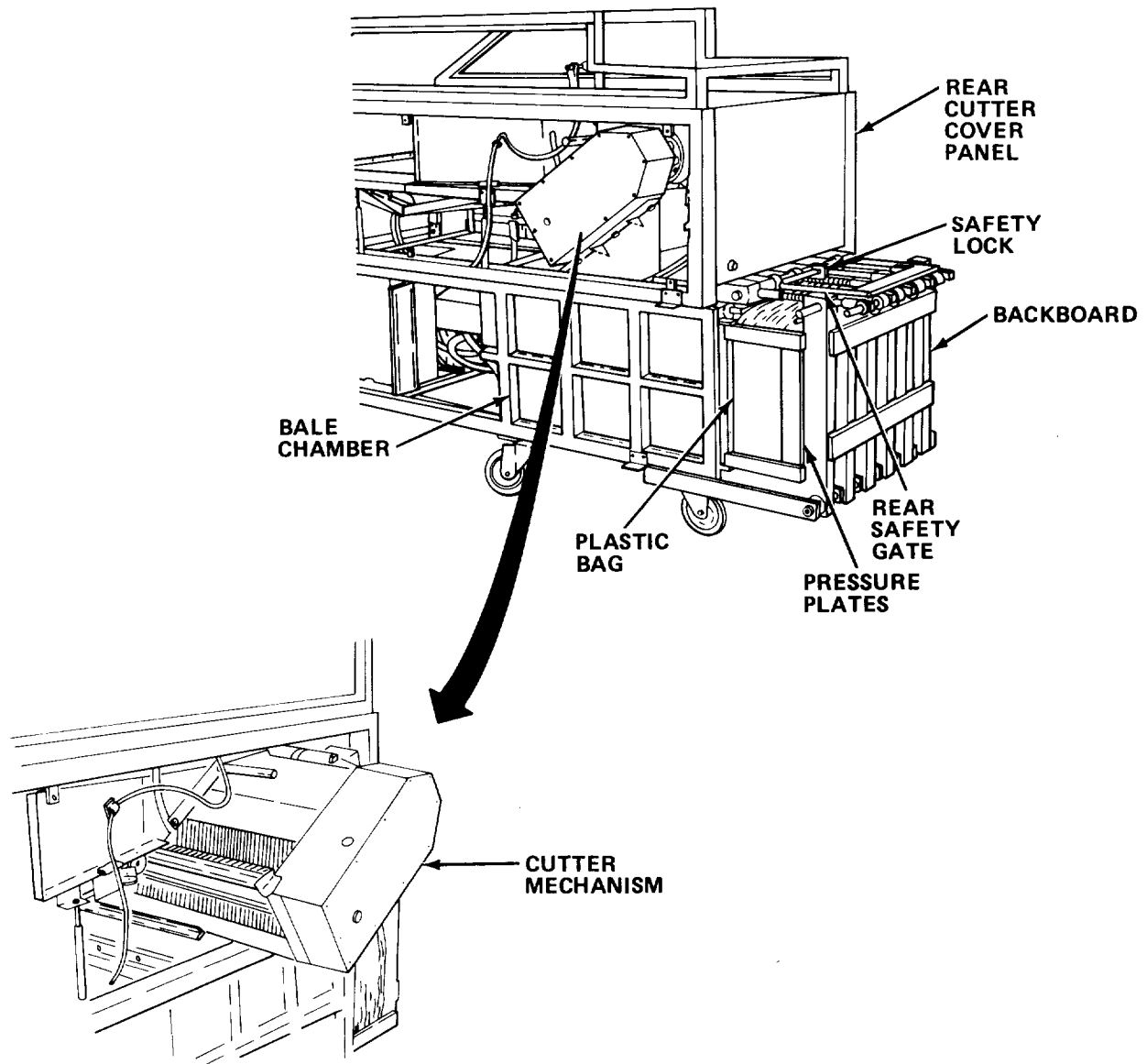
HYDRAULIC RESERVOIR. Contains fluid for hydraulic system.

HYDRAULIC RAM. Compresses shredded material into bales.

OIL RESERVOIR. Holds oil for lubrication system.

HOUR METER. Records total running time.

RELAY SWITCH CABINET. Houses relays, timers, and reset switches for electrical system.



**CUTTER MECHANISM.** Contains metal blades that cut paper products into shredded material.

**REAR CUTTER COVER PANEL.** Covers exposed cutter blades at rear of machine.

**SAFETY LOCK.** Prevents rear safety gate from falling when machine is operating.

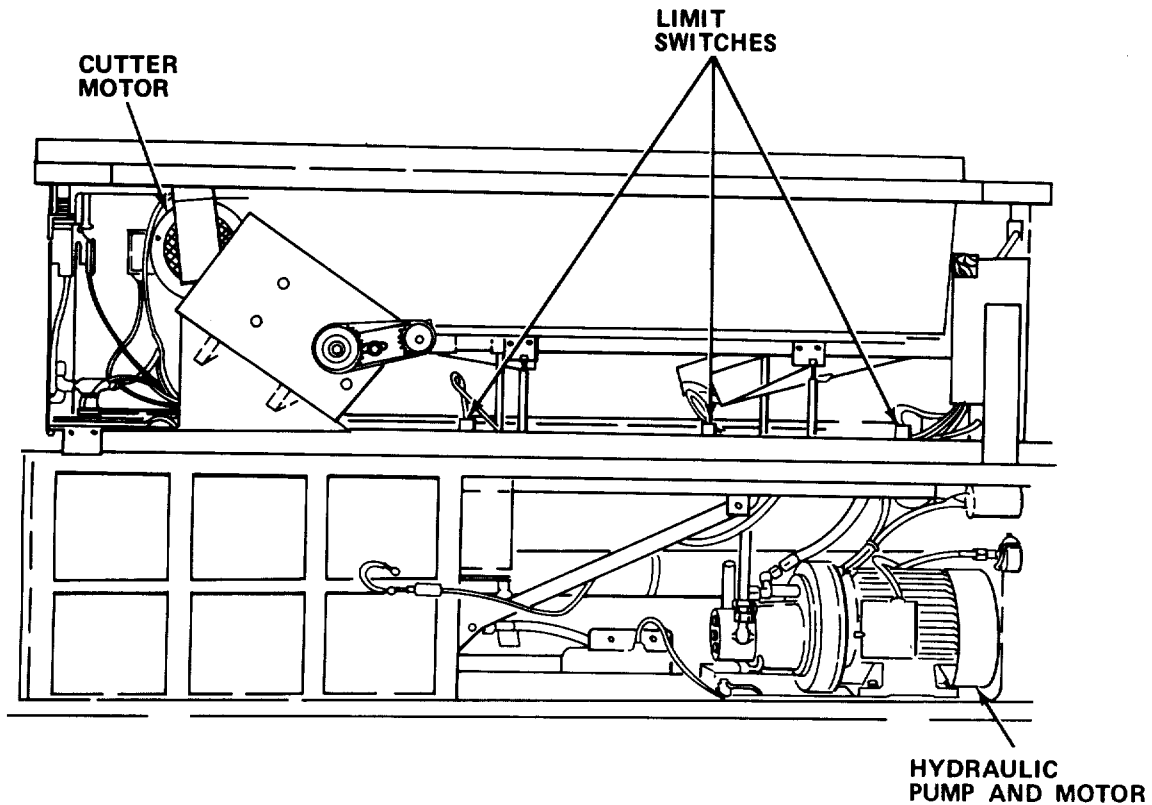
**REAR SAFETY GATE.** Attaches to top of backboard when raised. Secures backboard in place.

**BACKBOARD.** Metal plate that forms back wall of bale chamber when raised, and provides work surface for removing full bale when lowered.

PRESSURE PLATES. Metal frames hold bag in place when backboard is in lowered position.

PLASTIC BAG. Used to bale shredded material.

BALE CHAMBER. Provides storage space for shreds and restrains shredded material during compression.



HYDRAULIC PUMP AND MOTOR. Provides hydraulic pressure to operate ram.

CUTTER MOTOR. Provides power to operate cutter mechanism, paddle, and conveyor belt.

LIMIT SWITCHES. Control machine operation during ram cycle.

2-21.3 Equipment Data.

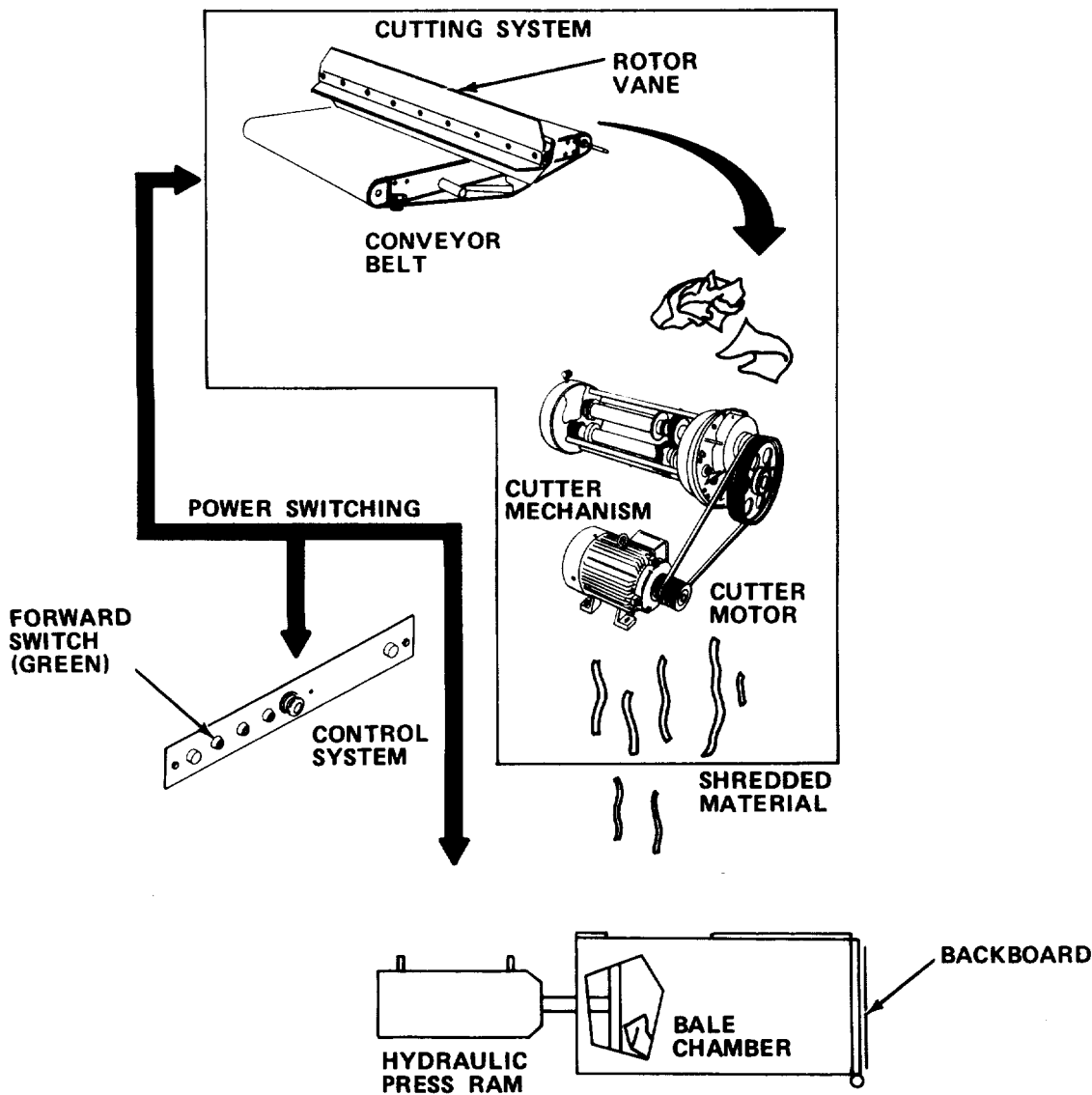
Manufacturer	Cummins-Allison Corp.
Weight	2050 lbs (929.87 kg)
Shredder-Bagger	
Height	57.5 in. (146.1 cm)
Length	92.5 in. (235 cm)
Width	37.5 in. (95.25 cm)
Bale Chamber	
Height	15 in. (38.1 cm)
Length	32 in. (81.3 cm)
Width	26 in. (66 cm)
Feed Capacity	20 in. (50.8 cm) width Up to 1/4 in. (6.35 mm) thickness
Shred Width	1/4 in. (6.35 mm)
Power Requirements	220 V, 60 Hz, 3 phase, 22.5 amp
Motors	
Cutter	4.1 hp, 3 phase
Hydraulic Unit	5.5 hp, 3 phase
Hydraulic Pressure	
Maximum	2431 psi (170 bar)
Minimum	715 psi (50 bar)

**2-22. TECHNICAL PRINCIPLES OF OPERATION.** The shredder-bagger shreds paper products, collects, and compresses the shreds into compact bales and ejects the bales into plastic bags for storage or disposal. It is composed of three functional systems:

Cutting System

Press System

Control System

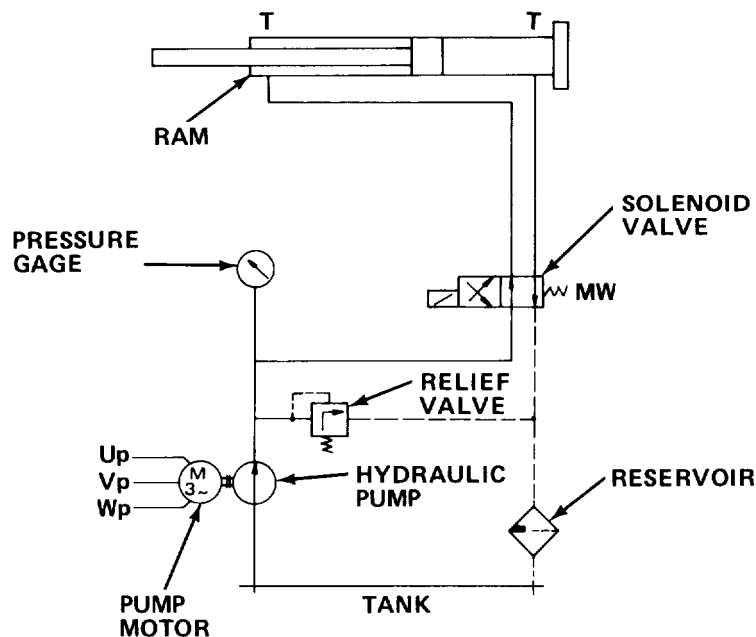


2-22.1 Cutting System. Shreds the paper products. It is composed of the following components:

- a. Conveyor belt. Carries the material on a rubber belt into the cutting blades.
- b. Paddle. Controls the flow of material into the blades. Each vane pushes a certain amount of material into the blades and prevents too much from being fed into the machine.
- c. Cutter mechanism. Cuts the material into long, thin shreds and drops the shreds into a collecting (baling) chamber.
- d. Cutter motor. Provides power through a gear drive arrangement to turn the conveyor belt, paddle, and cutter mechanism.

2-22.2 Press System. Compresses the shredded material into bales and ejects them out of the machine into plastic bags. Consists of the following:

- a. Bale chamber. Provides a steel-walled space for collecting and compressing the shredded material as it falls from the cutter mechanism.
- b. Hydraulic press ram. Presses the front wall of the bale chamber toward the rear wall to compress the shredded material into a bale.
- c. Backboard. Forms the rear wall of the bale chamber. It folds down to provide an outlet and a platform for the ejection of a bale.



d. Hydraulic system. Provides hydraulic power to the ram. Consists of hydraulic pump, pipes, connections, and valves. See schematic above for operational diagram.

2-22.3 Control System. Controls and directs operation of the press and cutting systems. Uses pressure, solenoid, limit, and relay switches. It consists of the following:

Operation Switches S2, S3, S4, S11 and Q

Limit Switches S9, S10 and S12

Relays K1, K2, K3, K4, and K5

Safety Switches S5/S6, S7, and S8

Indicating Lamps H1 and H2

Protective Fuses and Switches F1, F2, and F3

**NOTE**

**Table 2-6 provides identification of the control system components mentioned in the following paragraphs and on the schematics.**

**Table 2-6. SHREDDER-BAGGER CONTROL SYSTEM COMPONENTS**

Component	Identification
Q	Main Power Switch
S2	Cutter Forward Switch
S3	Cutter Stop Switch
S4	Cutter Reverse Switch
S11	Bale Ejection Switch
S9	Pump Motor Control Limit Switch
S10	Ram Stroke Limit Switch
S12	Solenoid Valve Control Limit Switch
K1	Cutter Forward Relay
K2	Cutter Reverse Relay

Table 2-6. SHREDDER-BAGGER CONTROL SYSTEM COMPONENTS - Cont

Component	Identification
K3	Pump Motor Relay
K4	Timer Relay
K5	Control Contactor Relay
S5/S6	Safety Connector Switch
S7	Folding Switch
S8	Centrifugal Switch
H1	Power On Lamp
H2	Bale Chamber Full Lamp
F1	Fuse
F2	Cutter Motor Circuit Breaker
F3	Pump Motor Circuit Breaker
M1	Cutter Motor
M2	Pump Motor
T	Transformer
h	Hour Meter
Y	Solenoid
S1	Emergency Stop Switch



a. Operation switches. Used by the operator to activate or deactivate the cutting blades and/or press ram. Main power switch (Q) controls power to the entire machine. Cutter FORWARD (S2), REVERSE (S4), and STOP (S3) switches direct power to the relays that control the cutter motor. Bale ejection switch (S11) controls the ram during the ejection of a bale.

b. Limit switches. Direct power flow for energizing and deenergizing the relays. These switches are opened and closed as the ram moves. Pump motor control limit switch (S9) controls power to the pump motor relay (K3). Ram stroke limit switch (S10) controls power to timer relay (K4). Solenoid valve control limit switch (S12) controls power to control contactor relay (K5) which positions the solenoid valve.

c. Relays. Direct power as follows:

Cutter forward relay (K1) directs power to drive the cutter mechanism forward.  
Cutter reverse relay (K2) drives the cutter mechanism in reverse.

Pump motor relay (K3) directs power to the pump motor.

Timer relay (K4) directs power to the solenoid valve and to the control contactor relay (K5).

Control contactor relay (K5) directs power to the solenoid valve and timer relay (K4).

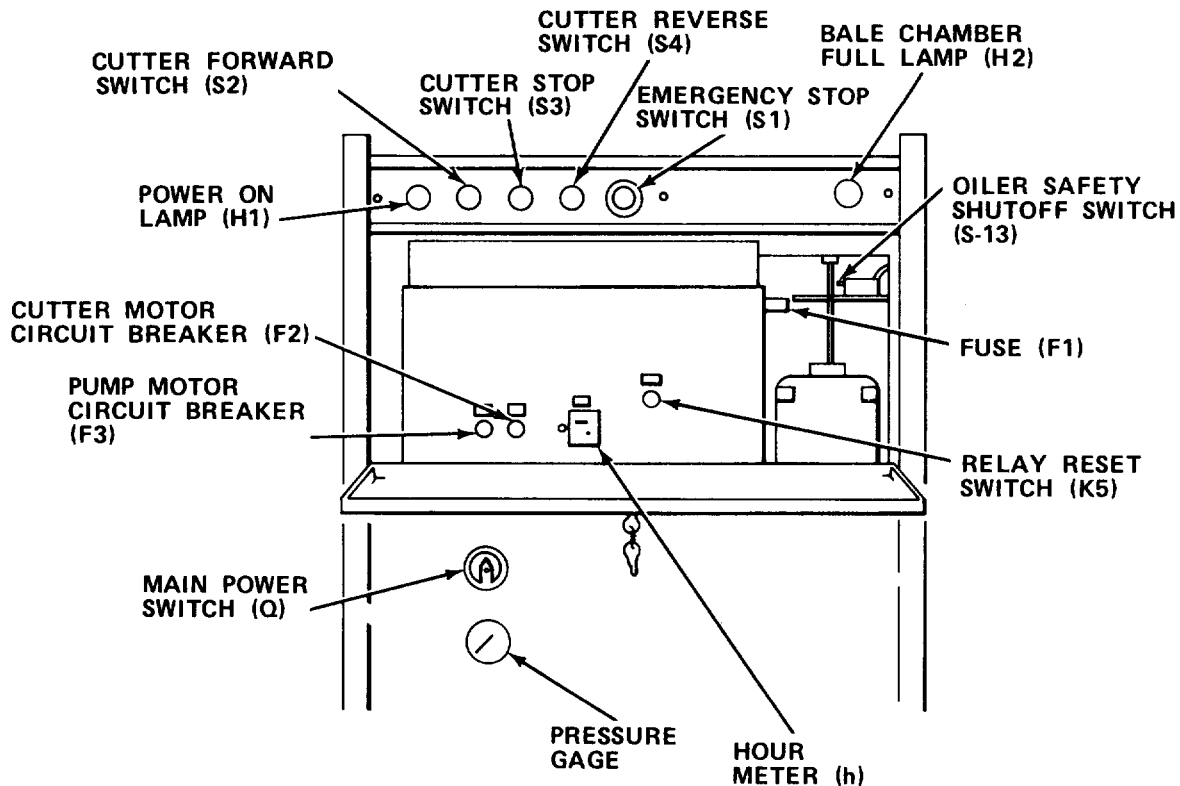
d. Safety switches (safety connector switch, folding switch, and emergency stop switch). Interrupt or change the normal flow of power through the control system to prevent operation of the shredder-bagger under conditions which could damage it or harm the operator.

e. Indicating lamps. Light to indicate the operational condition of the shredder-bagger. Power on lamp (Hi) lights when the control system has power. Bale chamber full lamp (H2) lights when the bale being compressed is under pressure and when the bale is ready for ejection.

f. Protective fuses and circuit breakers. Provide overcurrent protection for the motors and the control system. Fuse F1 will blow to prevent overcurrent conditions to the control system. Protective circuit breakers F2 and F3 will trip to protect the cutter and pump motors.

Section VII OPERATING INSTRUCTIONS

2-23. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS.

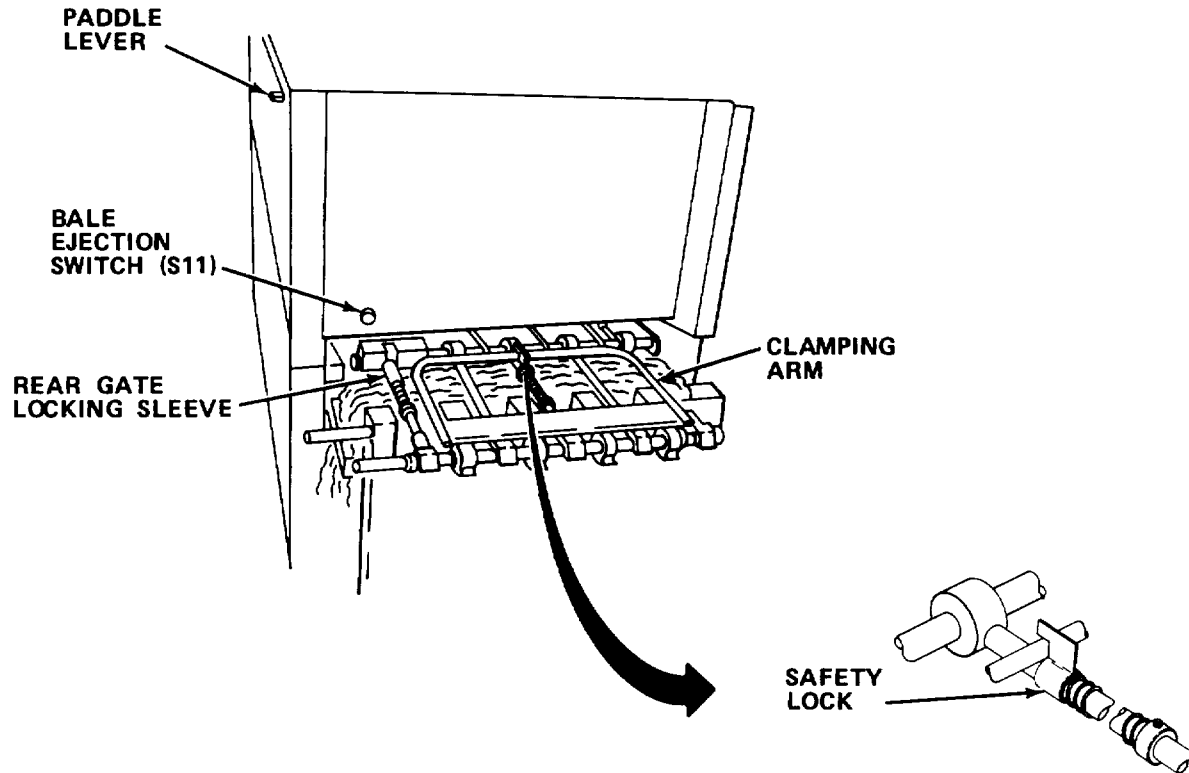


Control or Indicator	Function
Power On Lamp (H1)	Indicates when shredder-bagger has power.
Cutter FORWARD Switch (S2)	Activates cutter mechanism in forward direction.
Cutter Stop Switch (S3) mechanism.	Deactivates cutter
Cutter REVERSE Switch (S4)	Activates cutter mechanism in reverse direction.

Control or Indicator	Function
EMERGENCY STOP Switch (S1)	Shuts off all power to shredder-bagger.
Bale Chamber Full Lamp (H2)	Indicates when bale is being compressed and when bale is ready to be ejected.
Oiler Safety Shutoff Switch (S-13)	Automatically shuts down system when oil reservoir is low.
Cutter Motor Circuit Breaker (F2)	Provides overcurrent protection for the cutter motor.
Pump Motor Circuit Breaker (F3)	Provides overcurrent protection for the pump motor.
Relay Reset Switch (K5)	Resets relay to initial conditions.
Hour Meter (h)	Provides a running total of operating hours.
Fuse (F1)	Provides overcurrent protection for the control system
Main Power Switch (Q)	Controls all power to the shredder-bagger.
Pressure Gage	Provides indication of hydraulic system pressure.

Control Or Indicator

Function



Paddle Lever

Lifts paddle up so large material can be fed into the cutter.

Bale Ejection Switch (S11)

Activates ram for ejection of bale.

Rear Gate Locking Sleeve

Holds rear gate in up position.

Safety Lock

Holds rear gate clamping arm in down position.

Clamping Arm

Clamps rear gate to top of backboard.

**2-24. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.**

- a. Before You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.
- b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.
- c. After You Operate. Be sure to perform your after (A) PMCS.
- d. If Your Equipment Fails to Operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

**2-24.1 PMCS Procedures.**

- a. PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.
- b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.
- c. The "Equipment is Not Ready/Available If" column is used for identification of conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.
- d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.
- e. Perform weekly as well as before operation if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.
- f. Leakage definitions for operator PMCS shall be classified as follows:
  - Class I Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
  - Class II Leakage of fluid great enough to form drops but not enough to cause drops to drip from the item being checked/inspected.
  - Class III Leakage of fluid great enough to form drops that fall from the item being checked/inspected.
- g. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" Column on DA Form 2404, Equipment Inspection and Maintenance Worksheet in recording results of PMCS.
- h. Interval columns. This column determines the time period designated to perform your PMCS.

i. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

j. Equipment is not ready/available if: column. This column indicates the reason or cause why your equipment is not ready/available to perform its primary mission.

k. List of tools and materials required for PMCS is as follows:

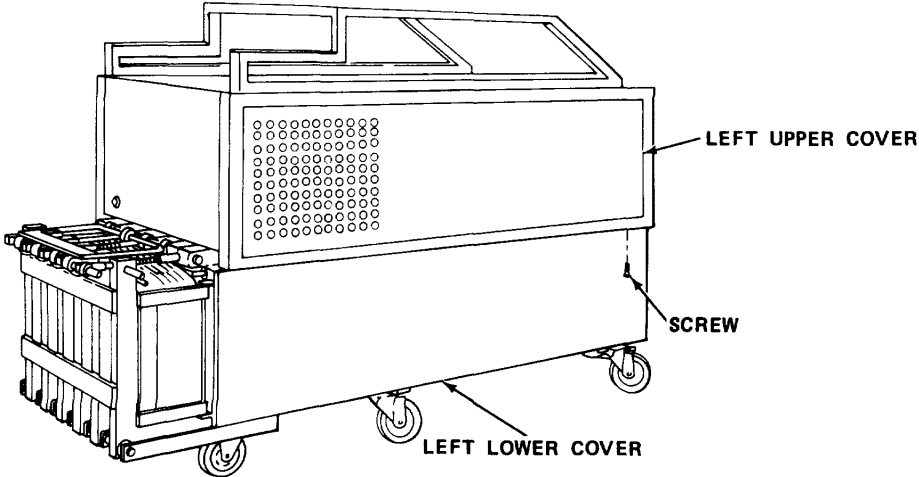
<u>Item</u>	<u>Quantity</u>
Flat Tip Screwdriver	1 ea
Parts Brush	1 ea
Cheesecloth (Item 3, Appendix E)	ar
General Purpose Detergent (Item 4, Appendix E)	1 qt
SAE 30 Lubrication Oil (Item 7, Appendix E)	1 qt
5 mm Hex Head Key Wrench	1 ea
5/16 in. Combination Wrench	1 ea
Vacuum Cleaner	1 ea

Table 2-7. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can safely be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

B - Before                      W - Weekly                      AN - Annually                      (Number) - Hundreds of Hours  
 D - During                      M - Monthly                      S - Semiannually  
 A - After                      Q - Quarterly                      BI - Biennially

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B	<p><b>SHREDDER-BAGGER</b></p> <p><u>Service and Inspect Shredder-Bagger.</u></p> <p>1. Press stop switch. When press ram has returned to start position, turn main power switch to OFF.</p> <p style="text-align: center;"><b>WARNING</b></p> <p><b>Bottom front panel has no undersupport brackets. It will fall when screws are removed, causing possible personal injury.</b></p> 	

**Table 2-7. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

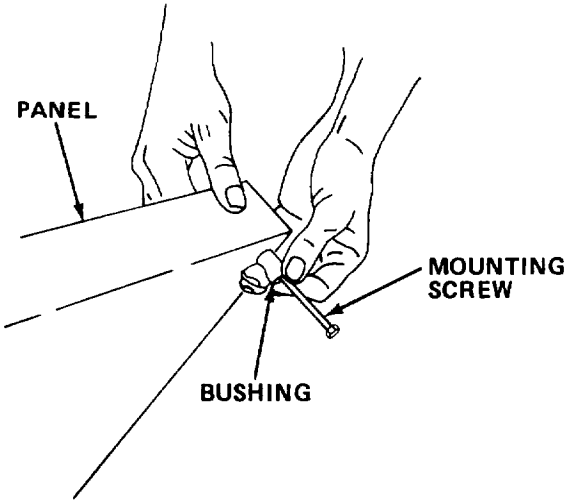
ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B	<p><b><u>SHREDDER-BAGGER - Cont</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p> <p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Machine must be moved away from wall to perform the following PMCS procedures (paragraph 2-35.11).</li> <li>• Screws for bottom side panel are mounted through spacer bushings placed between outside of panel and frame of shredder-bagger. Do not lose these bushings. They must be reinstalled for panel to be mounted.</li> <li>• Place all covers in area away from working space.</li> </ul> <div style="text-align: center;">  </div> <p>2. Remove screws and left lower cover.</p>	



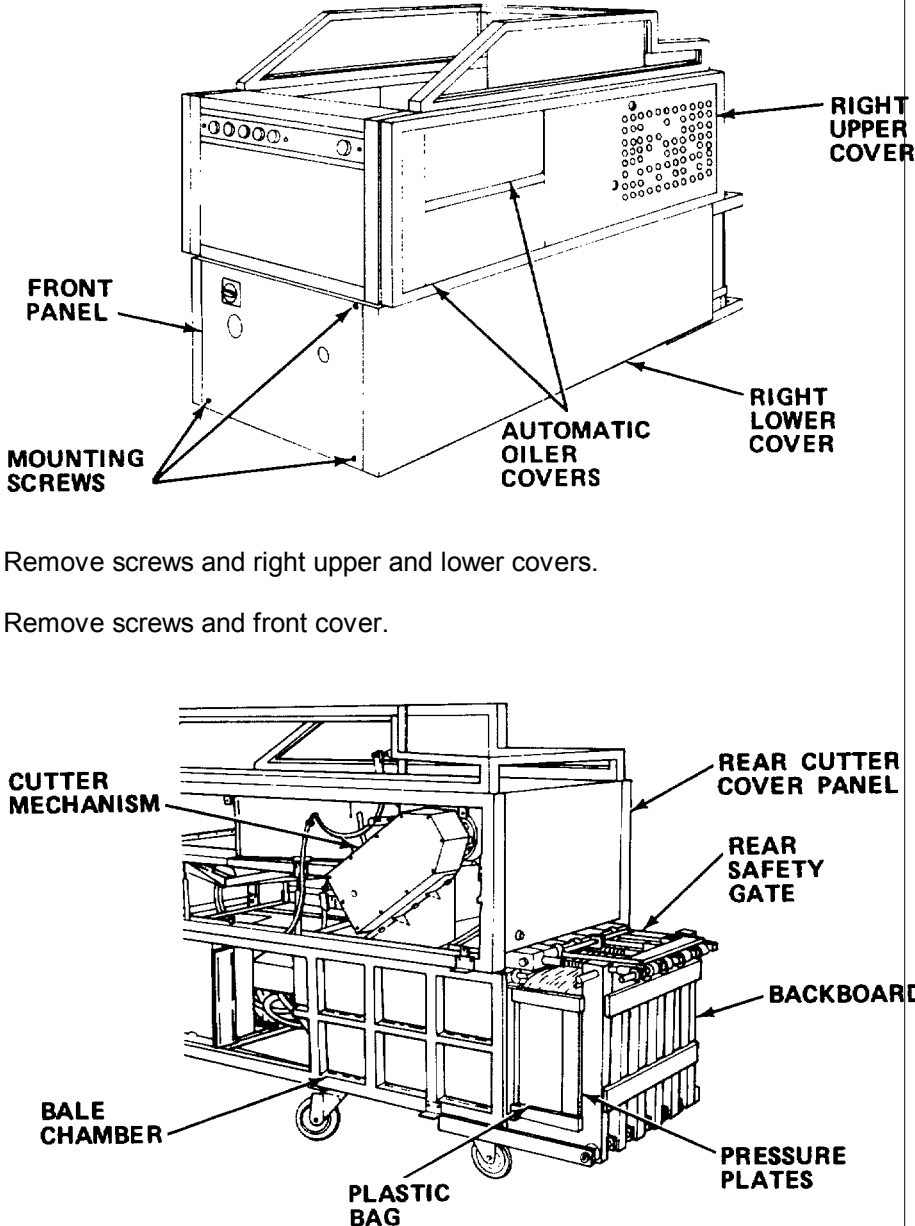
Table 2-7. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B	<p><b><u>SHREDDER-BAGGER - Cont</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p>  <p>3. Remove screws and right upper and lower covers.</p> <p>4. Remove screws and front cover.</p>	

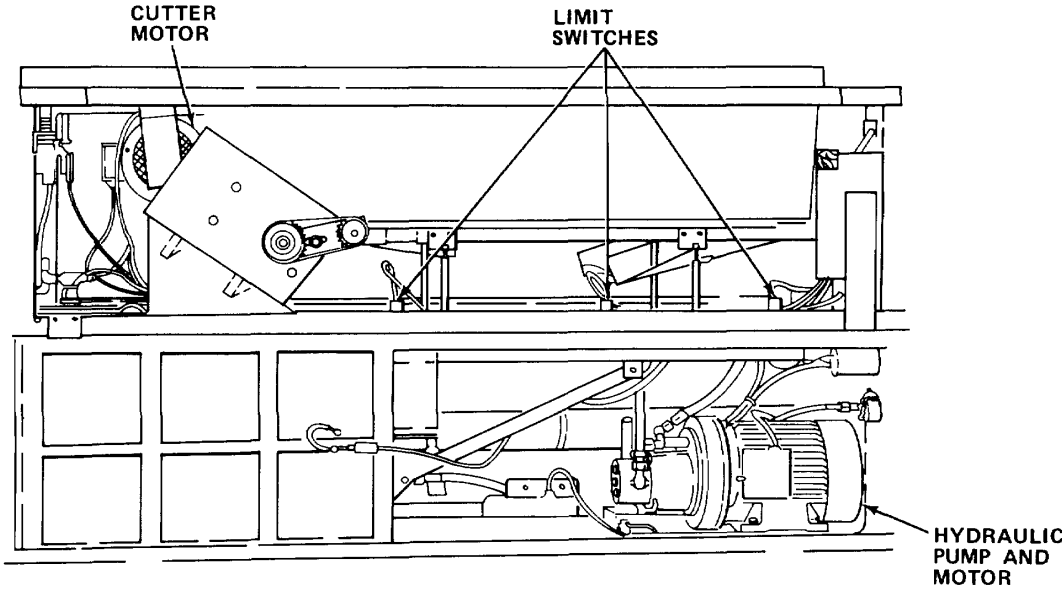
**Table 2-7. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting Equipment Is Not Ready/ Available If:
1	B	<p><b><u>SHREDDER-BAGGER - Cont</u></b></p> <p><u>Service and Inspect Shredder-Bagger - Cont</u></p> <ol style="list-style-type: none"> <li>5. Remove screws and automatic oiler covers.</li> <li>6. Vacuum away any dust accumulated on cutter motor, centrifugal switch, cutter mechanism, or shredder-bagger frame. Remove any dirt with mild detergent solution and cheesecloth.</li> <li>7. Inspect for visible signs of damage.</li> <li>8. Reinstall cutter mechanism covers.</li> </ol>  <ol style="list-style-type: none"> <li>9. Inspect interior for signs of damage or fluid deposits. Wipe up any fluid or oil deposits with cloth.</li> <li>10. Reinstall all remaining shredder-bagger covers.</li> </ol>	

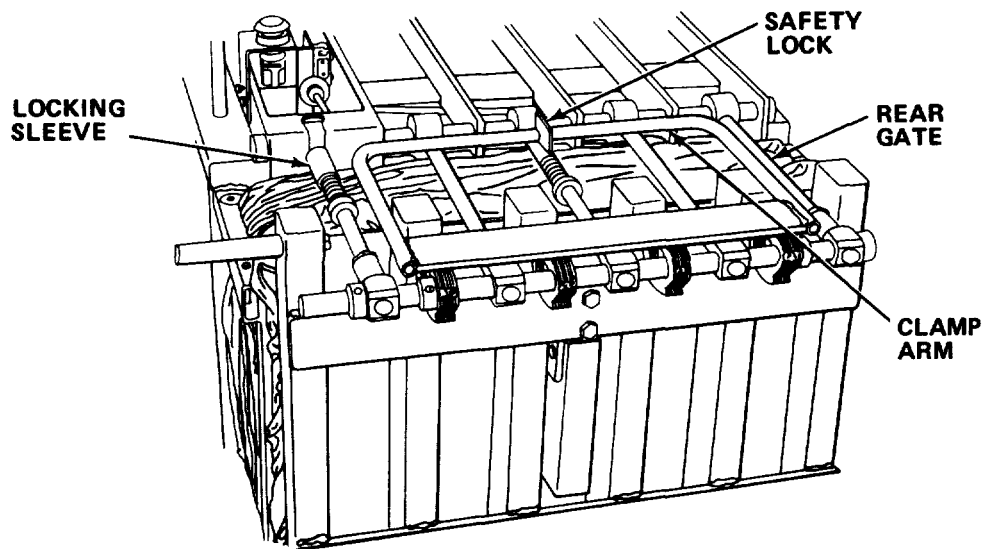
**2-25. OPERATION UNDER USUAL CONDITIONS.****2-25.1 Operating Procedures.**

- a. Install plastic bag.

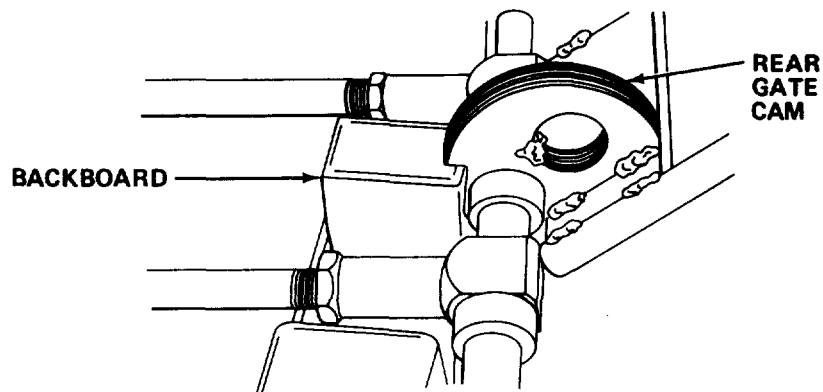
**WARNING**

**Death or serious injury may result if main power switch is not turned off before mounting bag.**

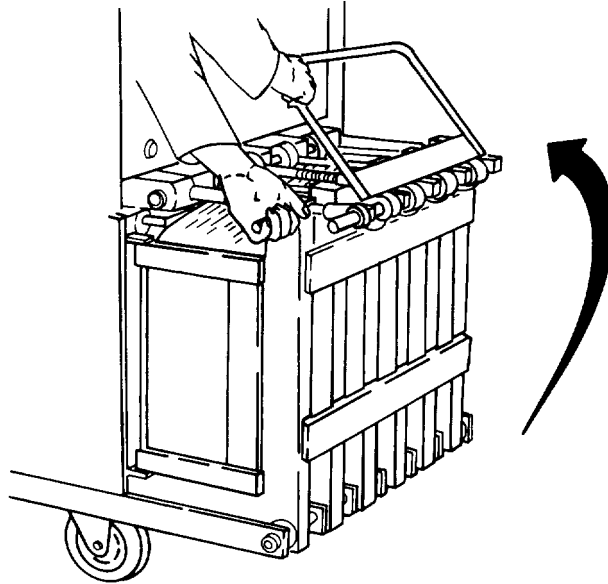
- (1) Place main power switch off.
- (2) Turn off circuit breaker.



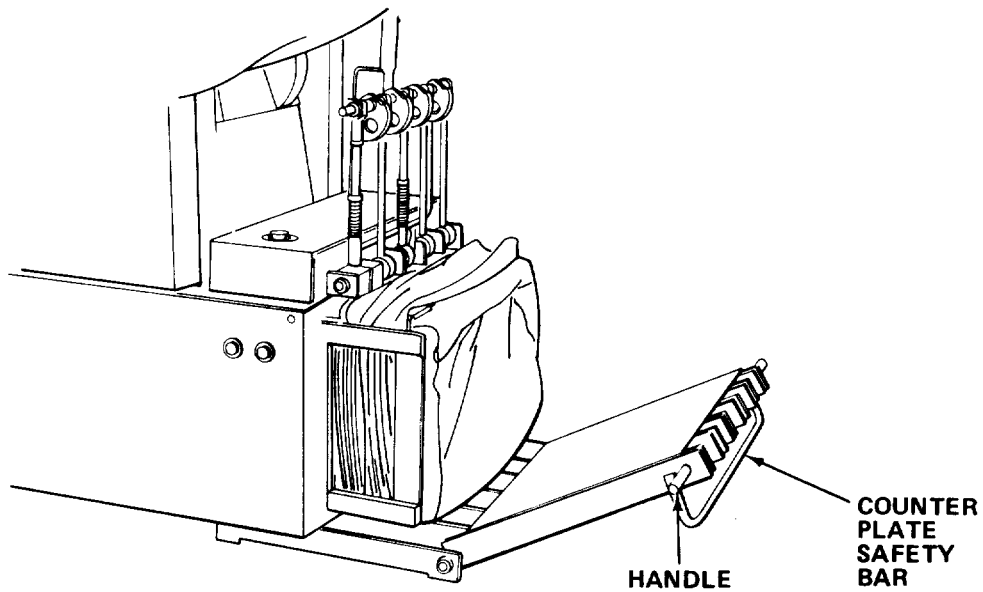
- (3) Pull back on safety lock that holds clamp arm in position.



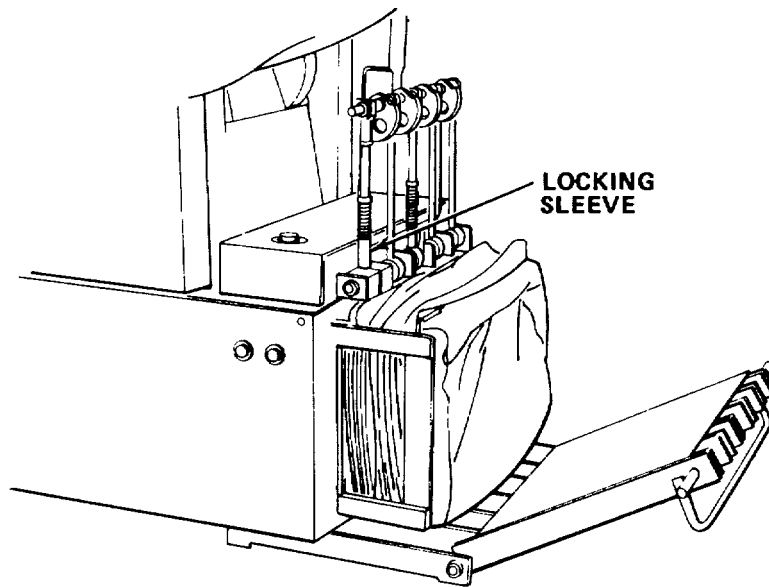
(4) Lift clamp arm of rear gate and pull backboard back away from shredder-bagger until backboard slips into notches in rear gate cams.



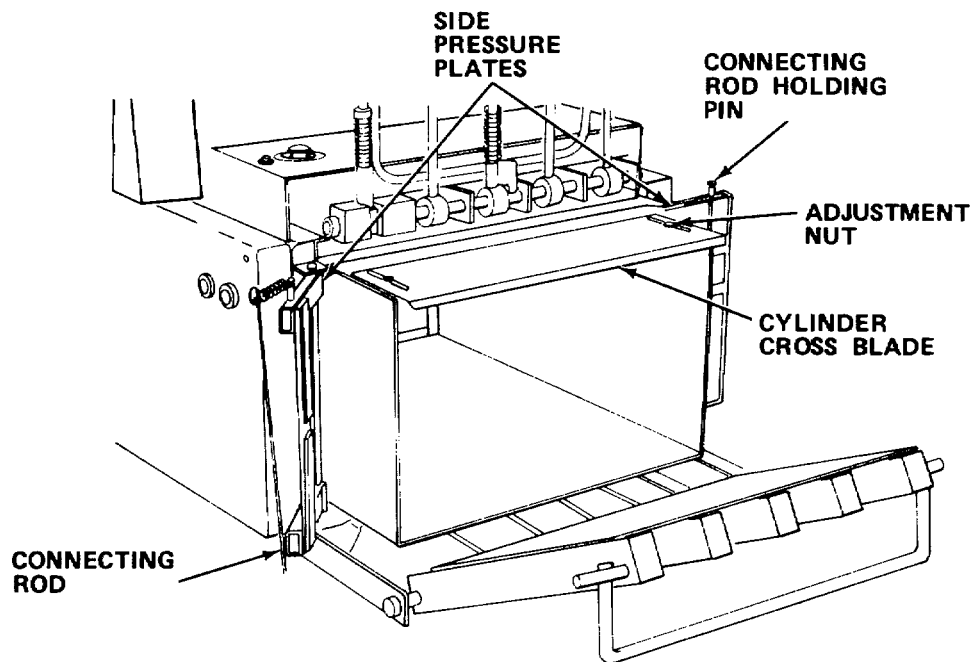
(5) Grasp handle on side of backboard and return clamping arm to original position.



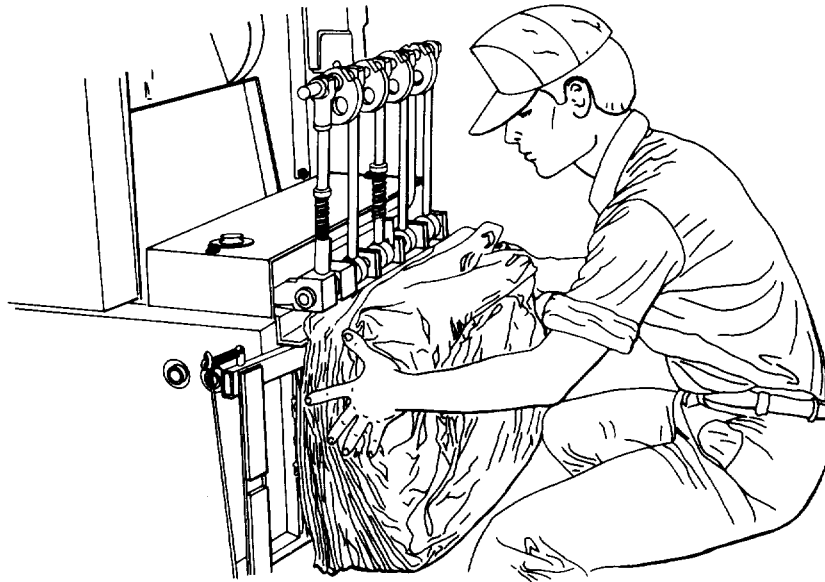
(6) While holding rear gate, lower backboard to horizontal position until counter plate safety bar touches ground.



(7) Lift entire rear gate until locking sleeve engages. This retains gate in vertical position.



(8) Disconnect connecting rod and swing back side pressure plates.



- (9) Slide bag over bale chamber until bale chamber rests against bottom of bag.

**NOTE**

**Be sure that bag is free of entanglements so it will come off smoothly and not catch when bale is ejected.**

- (10) Reinstall side pressure plates and reconnect connecting rod.
- (11) Lift backboard into position against bale chamber.
- (12) Lift spring-loaded locking sleeve and lower rear gate to engage backboard.

**WARNING**

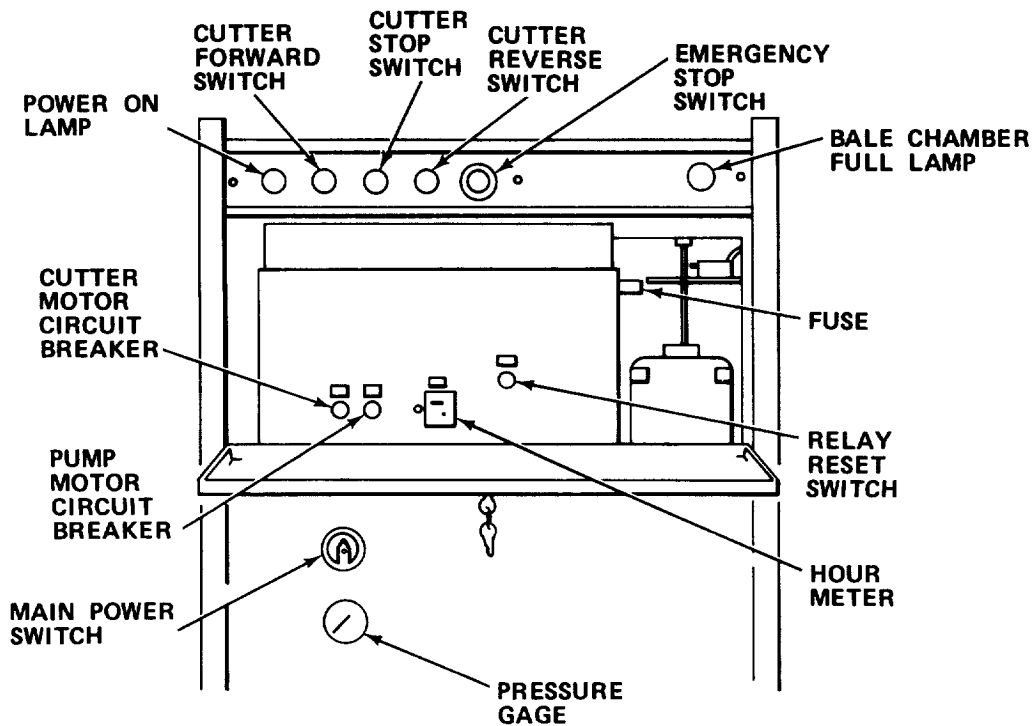
**Be sure safety lock is engaged over rear gate handle. Serious personnel injury could occur from failure to observe this safety precaution.**

- (13) Engage safety lock to secure rear gate handle in place.

- b. Shred and compress.

**WARNING**

Dangerous equipment hazard. Do not put hands or feet anywhere near cutting blades. During shredding operations, remove all rings, watches, ID tags, or any other jewelry. Serious personnel injury could result from failure to observe this safety precaution.



- (1) Turn main power switch on.
- (2) Turn on circuit breaker.
- (3) Press cutter FORWARD switch to start cutter mechanism.
- (4) Feed material at uniform rate from front.

**NOTE**

Timer relay in relay box determines cycle time of press ram. This relay is factory preset between 10 and 180 seconds and sets amount of time available to shred material before press ram begins to move forward.

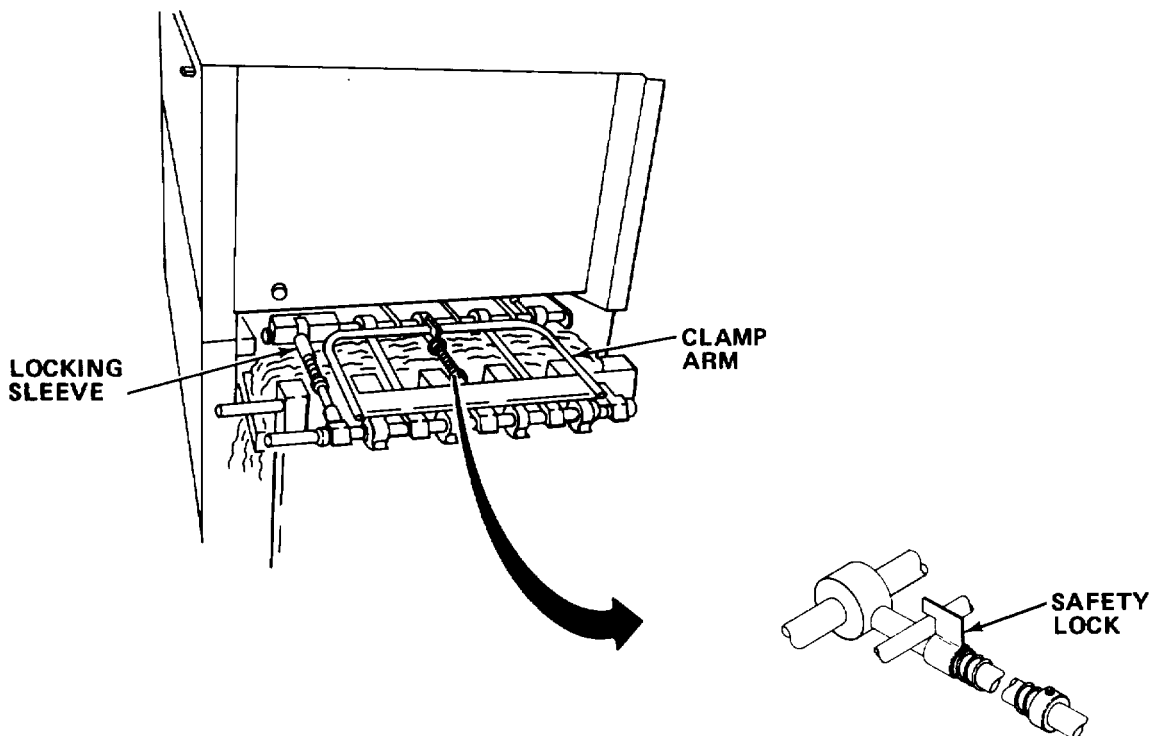
(5) Feed material until ram cycle time is up and the press ram begins to compress material. Wait until press ram has made one cycle and returns to start position. Then feed material again.

(6) When bale chamber full lamp lights, bale compartment is full. Eject bale and install new bag.

c. Eject bale.

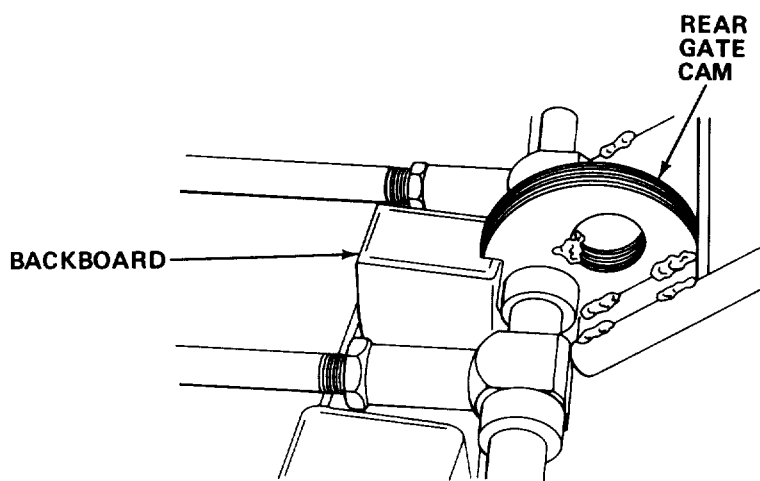
**WARNING**

Dangerous equipment hazard. Keep fingers and hands away from bale chamber while press ram is moving. Remove all rings, watches, ID tags, or any other jewelry. Serious personnel injury could result from failure to observe this safety precaution.

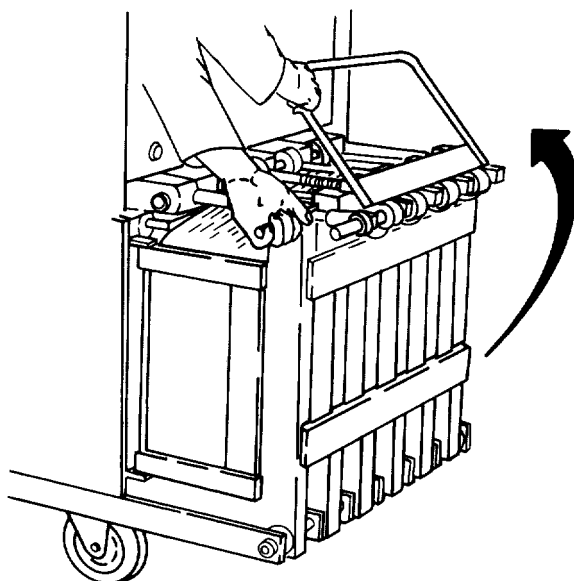


(1) Pull back on safety lock holding clamp arm in position.

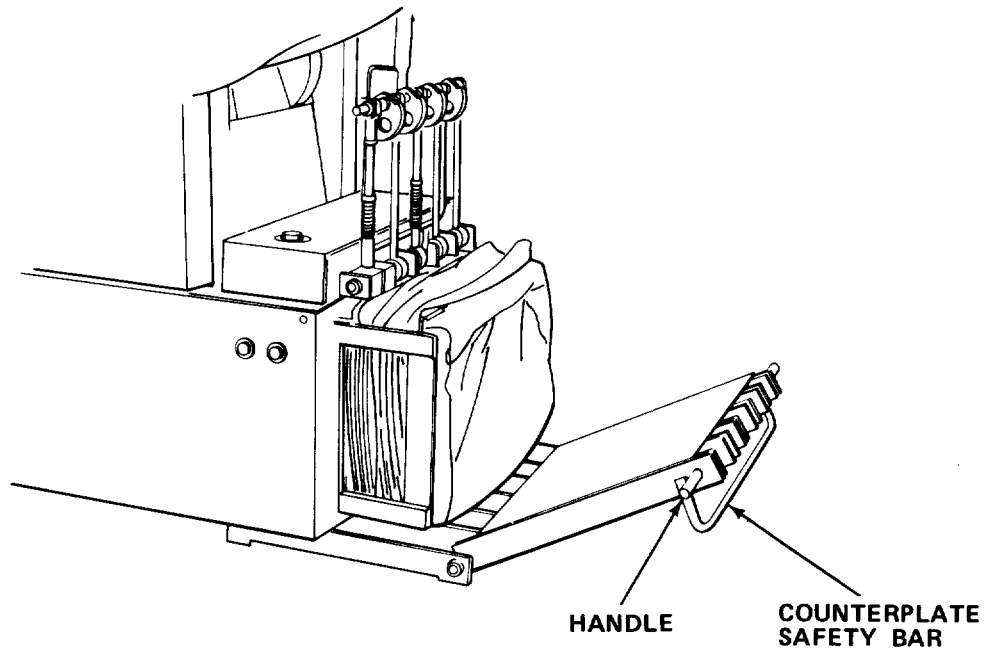




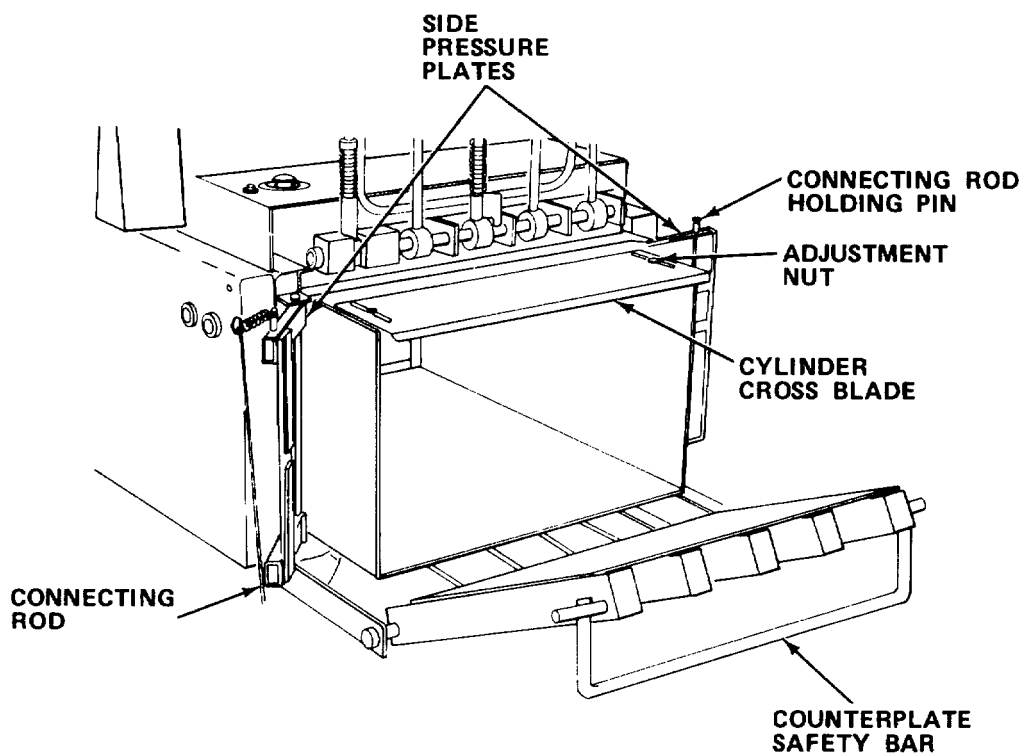
- (2) Lift clamp arm from rear gate and pull back until backboard slips into notches in rear gate cams.



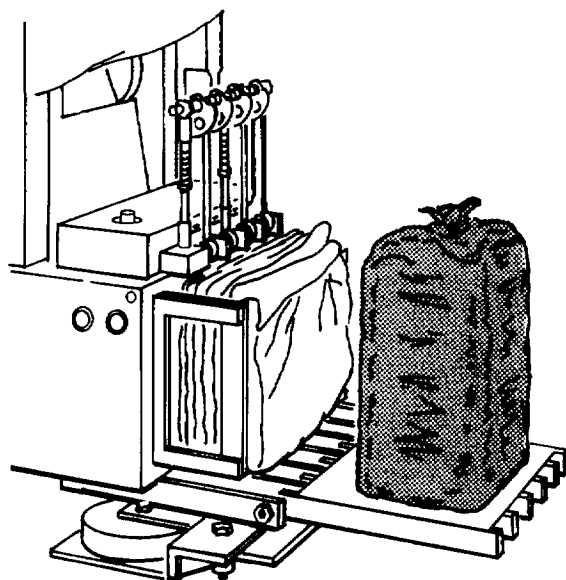
- (3) Grasp handle on side of backboard and return rear gate clamping arm to original position.



- (4) While holding rear gate, lower backboard to horizontal position. Be sure that counter plate safety bar is down.
- (5) Lift entire rear gate until locking sleeve engages to hold gate in vertical position.
- (6) Press bale ejection switch and hold until press ram has extended its full length.



- (7) Disconnect connecting rod holding side pressure plates in place.



- (8) Slide bale down backboard. Tie or band up top of bale.

- (9) Press bale ejection switch until press ram begins to retreat.

**NOTE**

**If power is lost or cut while press ram is moving, after power is restored. yellow return switch must be pressed to get ram to move**

- (10) When press ram has returned to start position, push any shreds that fell out of bale back into chamber.

- (11) Install a new plastic bag and reconnect backboard, pressure plates, and rear gate (paragraph 2-25.1).

2-25.2 Preparation for Movement. Inflate air shocks (paragraph 1-6.2).

2-25.3 Operating Instructions on Decals and Instruction Plates.

**PLEASE NOTE - IMPORTANT**

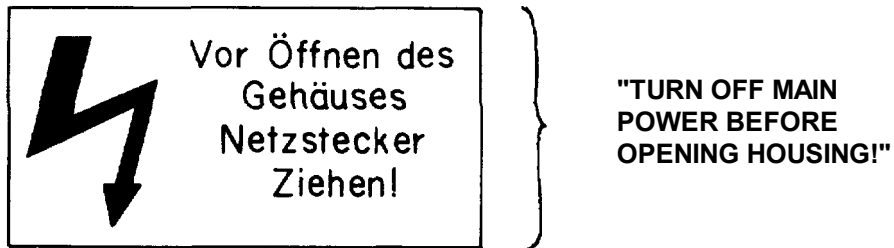
1. Operating instructions must be carefully read before operating machine.
2. Line voltage and fuse specifications must be according to model tag or machine cord.
3. When connecting the machine to electric power, correct direction of rotation of the motors must be observed - see operating instructions.
4. The machine will function properly when regularly maintained (cleaning-lubrication) see operating instructions.
5. Continuous overloading of the machine should be avoided.
6. In cases of malfunction check main- and machine fuses first.
7. Service and maintenance should only be performed by experienced personnel.
8. When ordering spare parts it is necessary to indicate model, machine number and spare part number.

**Important operating Instructions**

**Summary of the safety prescription for paper shredding machines**

- 6.0 usage.
- 6.1 paper shredding machines should be operated by reliable persons who have been instructed in their use: the basis of the instruction should be familiarization with the operating instructions to be issued as standard with the machines. servicing should only be carried out by qualified maintenance staff.
- 6.2 the operating instructions issued as standard with the machines are to be held available for inspection at all times, and are to be observed.
- 6.3 safety devices which are factory-fitted for the safe operation of the machine must not be removed or modified in such a way that they become functionally inefficient. this applies equally to mechanical devices (such as gates, or hoppers, or attachments which, by their design, function as safety elements) and to electrical circuit elements.
- 6.4 any damage or faults on paper shredding machines which prejudice the safety of the employees are to be rectified immediately. until these hazards are cleared, the paper shredding machines are to be disconnected from the power supply.
- 6.5 material which is prone to forming loops, such as ribbon, or tapes, or cords, must be cut or so pre-treated before feeding into paper shredding machines that the danger of injury by being drawn in is excluded. it is particularly important to ensure that dangling articles of clothing or jewelry cannot be drawn into moving machinery.

- a. Operating instructions. Located on outside of front panel.



b. Power disconnect warning.

**2-26. OPERATION UNDER UNUSUAL CONDITIONS** . This equipment is designed for operation only in a control led environment.

### **Section VIII OPERATOR MAINTENANCE**

**2-27. LUBRICATION INSTRUCTIONS** . This equipment does not require lubrication at this level of maintenance.

**2-28. TROUBLESHOOTING** . There are no operator troubleshooting procedures assigned for this equipment.

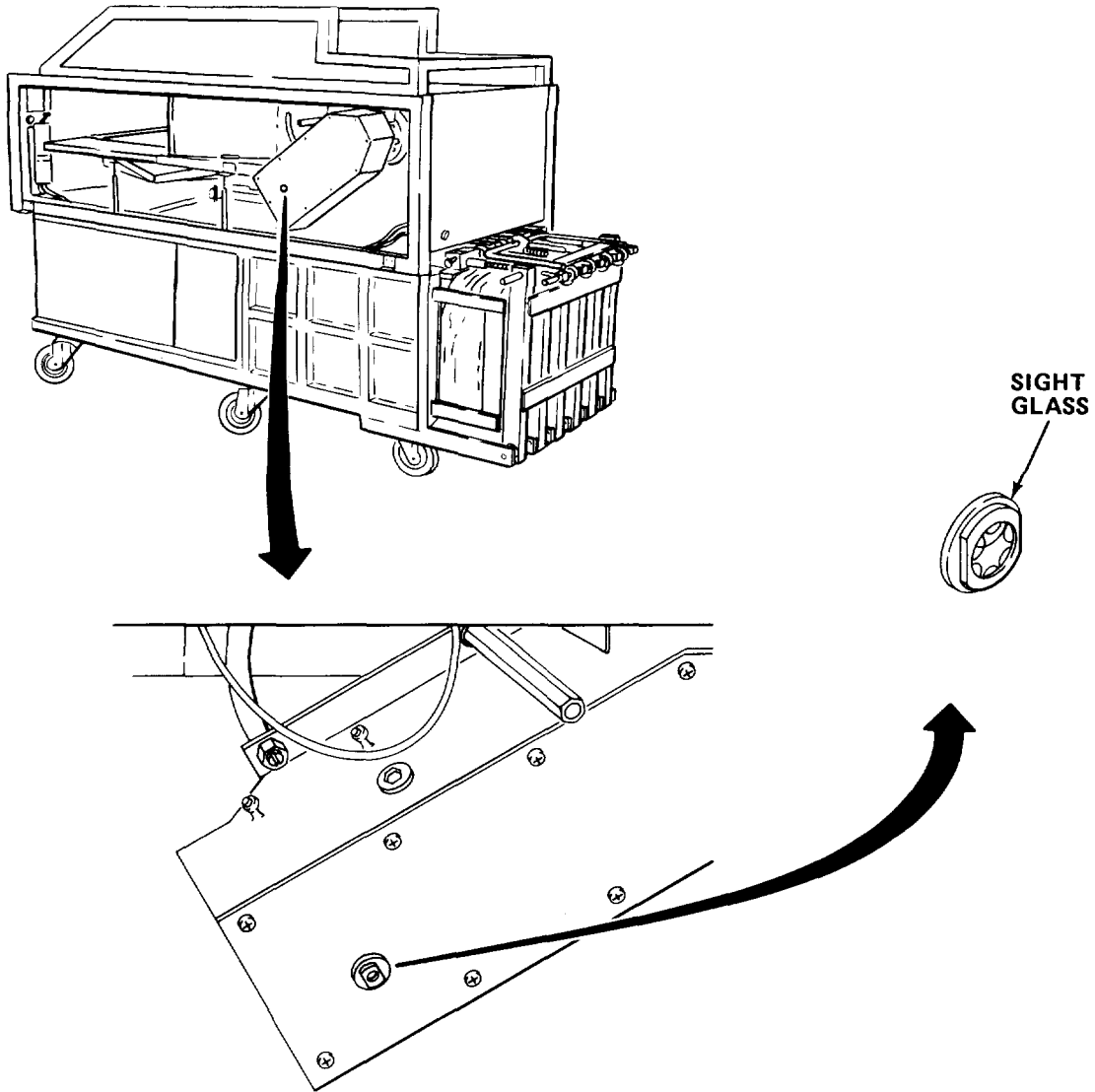
**2-29. MAINTENANCE PROCEDURES** . There are no operator maintenance procedures assigned for this equipment.

Section IX ORGANIZATIONAL MAINTENANCE

2-30. LUBRICATION INSTRUCTIONS .

NOTE

These lubrication instructions are mandatory.



2-30.1 Check sight glass oil level. Semi-annually check cutter mechanism oil level. If oil level is low or no oil is visible, add SAE 90W oil (Item 8, Appendix E) until sight glass indicates oil level between top two points of star.

**2-31. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT.**

2-31.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-31.2 Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment. Special Tools, IMDE, and Support Equipment is listed in the applicable repair parts and special tools list and Appendix B of this manual.

2-31.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-6675-315-24P covering organizational maintenance for this equipment.

**2-32. SERVICE UPON RECEIPT.**

2-32.1 Checking Unpacked Equipment.

a. Inspect the equipment for damage incurred during shipment. If equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

b. Check the equipment against the packing list to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.

c. Check to see whether the equipment has been modified.

**2-33. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES.**

a. PMCS are designed to keep the equipment in good working condition by performing certain tests, inspections, and services. The intervals provide you, the organizational technician, with time schedules that determine when to perform specified tasks.

b. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording the results of PMCS.

c. Interval columns. This column determines the time period designated to perform your PMCS.

d. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

e. List of tools and materials required for PMCS is as follows:

<u>Item</u>	<u>Quantity</u>
Flat Tip Screwdriver	1 ea
Filter Element	1 ea
Vent Filter	1 ea
Cheesecloth (Item 3, Appendix E)	ar
5/16 in. Combination Wrench	1 ea
Oil, SAE 90 W (Item 8, Appendix E)	1 qt

**Table 2-8. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

B - Before                      W - Weekly                      AN - Annually                      (Number) - Hundreds of Hours  
 D - During                      M - Monthly                      S - Semiannually  
 A - After                      Q - Quarterly                      BI - Biennially

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED
		PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Hydraulic Oil Filter.</u></p> <p style="text-align: center;"><b><u>WARNING</u></b></p> <p><b>Death or serious injury may occur from electrical shock unless power is secured before servicing.</b></p> <ol style="list-style-type: none"> <li>1. Turn off main power switch.</li> <li>2. Turn off circuit breaker.</li> </ol>



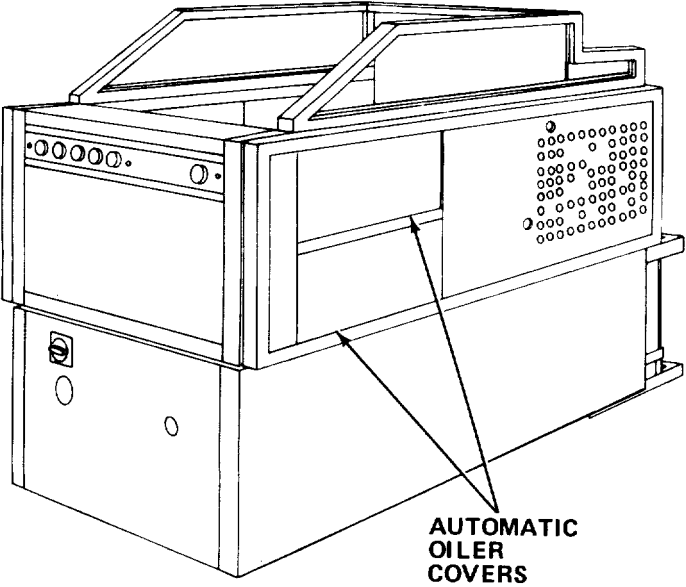
**Table 2-8. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Hydraulic Oil Filter - Cont</u></p>  <p><b>AUTOMATIC OILER COVERS</b></p> <p>3. Remove screws and automatic oiler covers.</p>

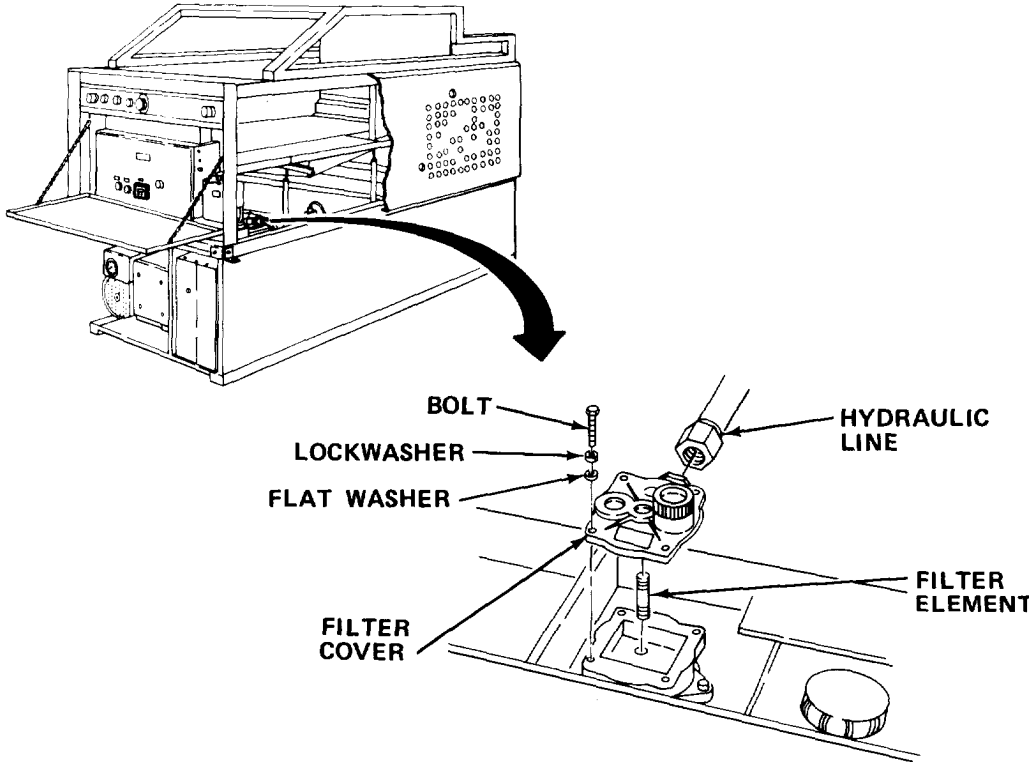
**Table 2-8. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Hydraulic Oil Filter - Cont</u></p>  <p><b>NOTE</b></p> <p>Use care when removing filter cover. Spring-loaded mechanism can cause cover to snap away from housing.</p> <p>4. Remove four bolts, lock washers, and flat washers which attach filter cover and remove cover.</p>

**Table 2-8. ORGNAIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
1	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Hydraulic Oil Filter - Cont</u></p> <ol style="list-style-type: none"> <li>5. Lift out filter element and replace with a new filter element.</li> <li>6. Reinstall filter cover and secure with washers and bolts.</li> <li>7. Reinstall cover panels and secure with screws.</li> </ol>
2	S	<p><u>Service Vent Filter.</u></p> <p style="text-align: center;"><b><u>WARNING</u></b></p> <p><b>Death or serious injury may occur from electrical shock unless power is secured before servicing.</b></p> <ol style="list-style-type: none"> <li>1. Turn main power off.</li> <li>2. Turn off circuit breaker.</li> </ol>

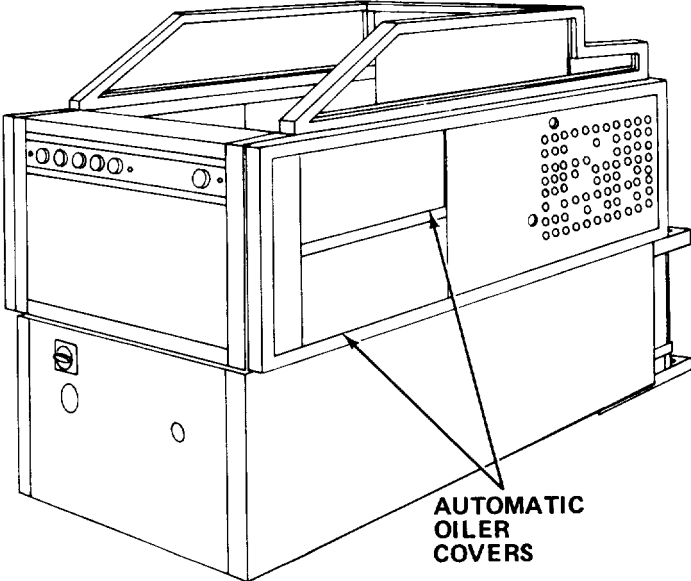
**Table 2-8. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
2	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Service Vent Filter - Cont</u></p>  <p><b>AUTOMATIC OILER COVERS</b></p> <p>3. Remove screws and automatic oiler covers.</p>

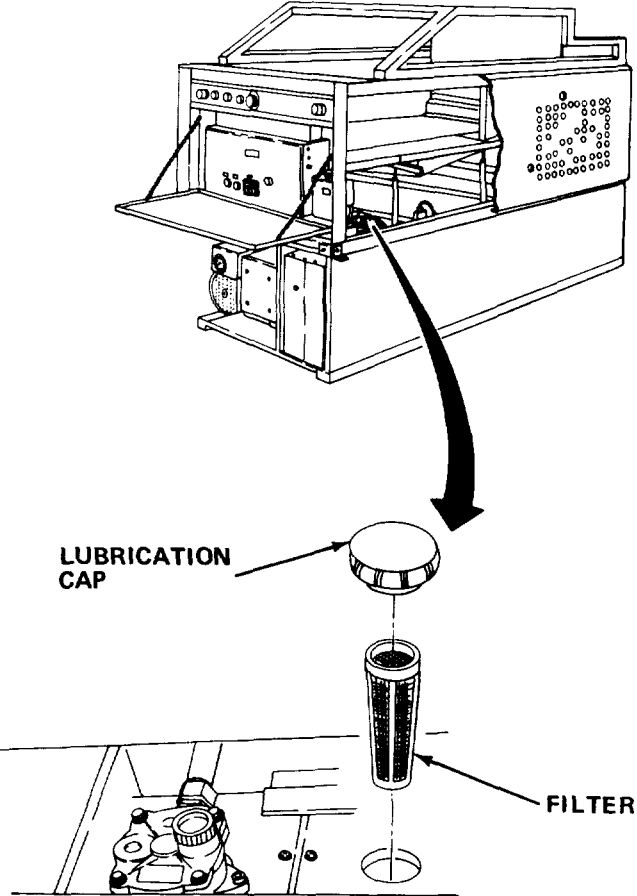
**Table 2-8. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

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A - After

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(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
2	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p>Service Vent Filter - Cont</p>  <ol style="list-style-type: none"> <li>4. Remove lubrication reserve cap.</li> <li>5. Remove vent filter and clean.</li> <li>6. Reinstall vent filter.</li> <li>7. Reinstall covers and secure with screws.</li> </ol>

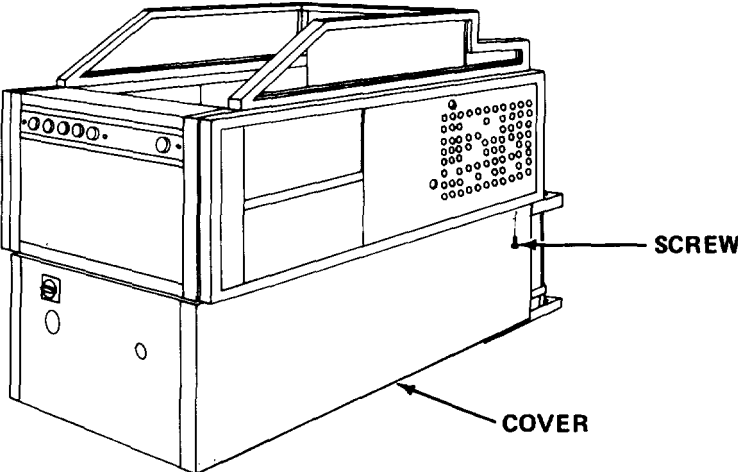
**Table 2-8. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont**

B - Before  
D - During  
A - After

W - Weekly  
M - Monthly  
Q - Quarterly

AN - Annually  
S - Semiannually  
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE
3	S	<p><b><u>SHREDDER-BAGGER</u></b></p> <p><u>Inspect Hydraulic Connections and Hoses.</u></p> <p style="text-align: center;"><b><u>WARNING</u></b></p> <p style="text-align: center;"><b>Death or serious injury may occur from electrical shock unless power is secured before servicing.</b></p> <ol style="list-style-type: none"> <li>1. Turn off main power.</li> <li>2. Turn off circuit breaker.</li> </ol> <div style="text-align: center;">  <p>The diagram shows a side view of a shredder-bagger machine. It has a hopper on top and a large front panel. A screw is indicated on the right side of the front panel, and the entire front panel is labeled as the 'COVER'.</p> </div> <ol style="list-style-type: none"> <li>3. Remove screws, front cover, and lower right cover.</li> <li>4. Inspect all hydraulic connections and hoses for signs of leaks. Inspect interior for signs of hydraulic fluid deposits.</li> <li>5. Tighten any loose connections and replace any damaged hoses.</li> <li>6. Reinstall cover panel and secure with screws.</li> </ol>

**2-34. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES.**

a. Organizational troubleshooting procedures cover the most common malfunctions that may be repaired at the organizational level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used by the operator should be conducted in addition to the organizational troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/ inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions, use the facing schematic or the foldout located at the end of this manual for further fault analysis.

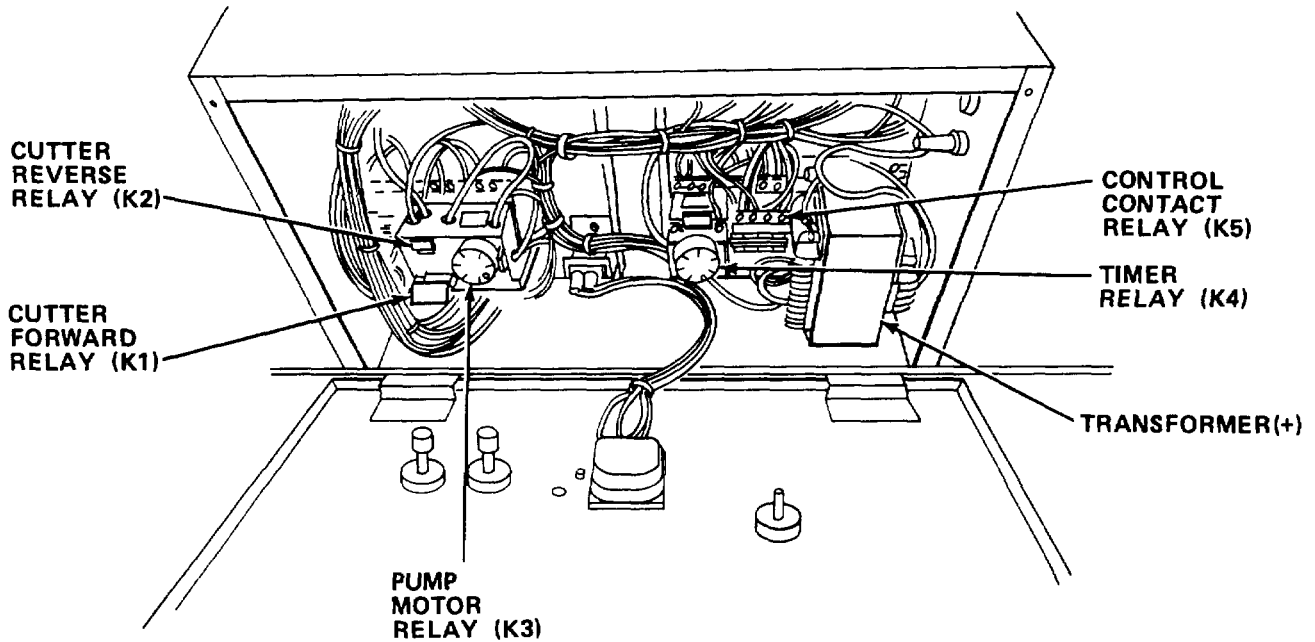
**Table 2-9. ORGANIZATIONAL TROUBLESHOOTING**

<b>MALFUNCTION</b>	<b>TEST OR INSPECTION</b>	<b>CORRECTIVE ACTION</b>
1. SHREDDER-BAGGER CONTROLS AND INDICATORS DO NOT RESPOND.		
Step 1.	Check to see if circuit breaker is tripped.	
	(a) If circuit breaker is on, proceed to step 2.	
	(b) Reset circuit breaker.	
Step 2.	Check for any loose wire connections.	
	(a) If all connections are tight, proceed to step 3.	
	(b) Tighten loose connections.	
Step 3.	Check bale chamber full lamp by performing continuity test.	
	(a) If no continuity exists, replace lamp.	
	(b) Refer to direct/general support maintenance.	

Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

2. CUTTER MECHANISM WILL OPERATE IN REVERSE BUT NOT FORWARD.



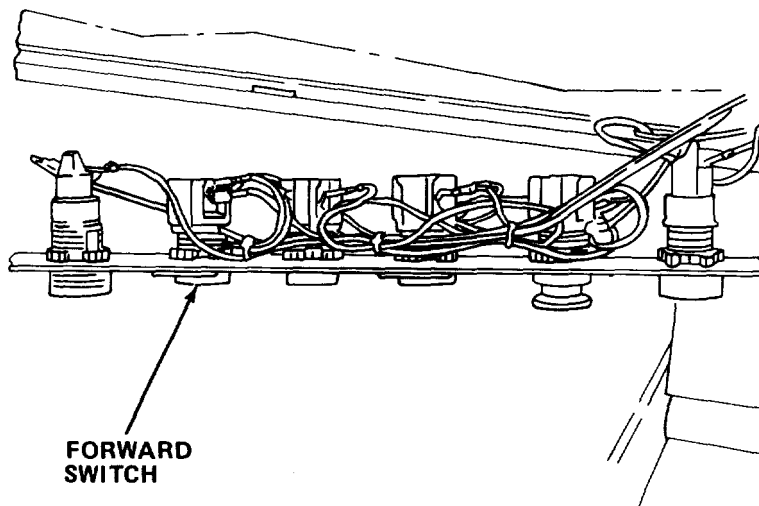
- Step 1. Check cutter forward relay K1 for continuity.
- (a) If present, proceed to step 2.
  - (b) If continuity is not present, replace relay K1 (paragraph 2-35.4).



Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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## 2. CUTTER MECHANISM WILL OPERATE IN REVERSE BUT NOT FORWARD - Cont



Step 2. Check cutter FORWARD switch S2 for continuity.

If continuity is not present, replace switch S2 (paragraph 2-35.7).

## 3. CUTTER OPERATES FORWARD BUT NOT IN REVERSE.

Step 1. Check cutter reverse relay K2 for continuity.

(a) If present, proceed to step 2.

(b) If continuity is not present, replace relay (paragraph 2-35.4).

Step 2. Check cutter REVERSE switch (S4) for continuity.

If continuity is not present, replace switch (paragraph 2-35.7).

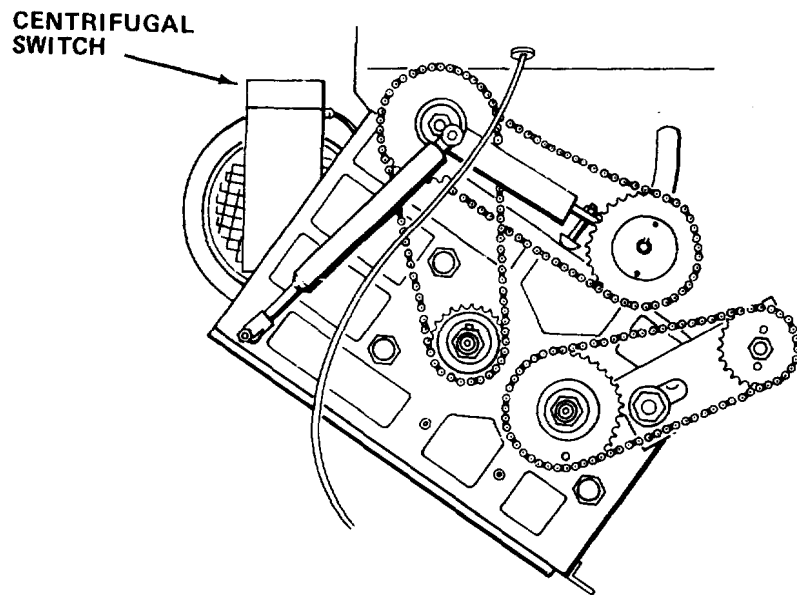
Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

---

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

---

4. CUTTER OPERATES FORWARD MOMENTARILY AND THEN SHUTS DOWN.

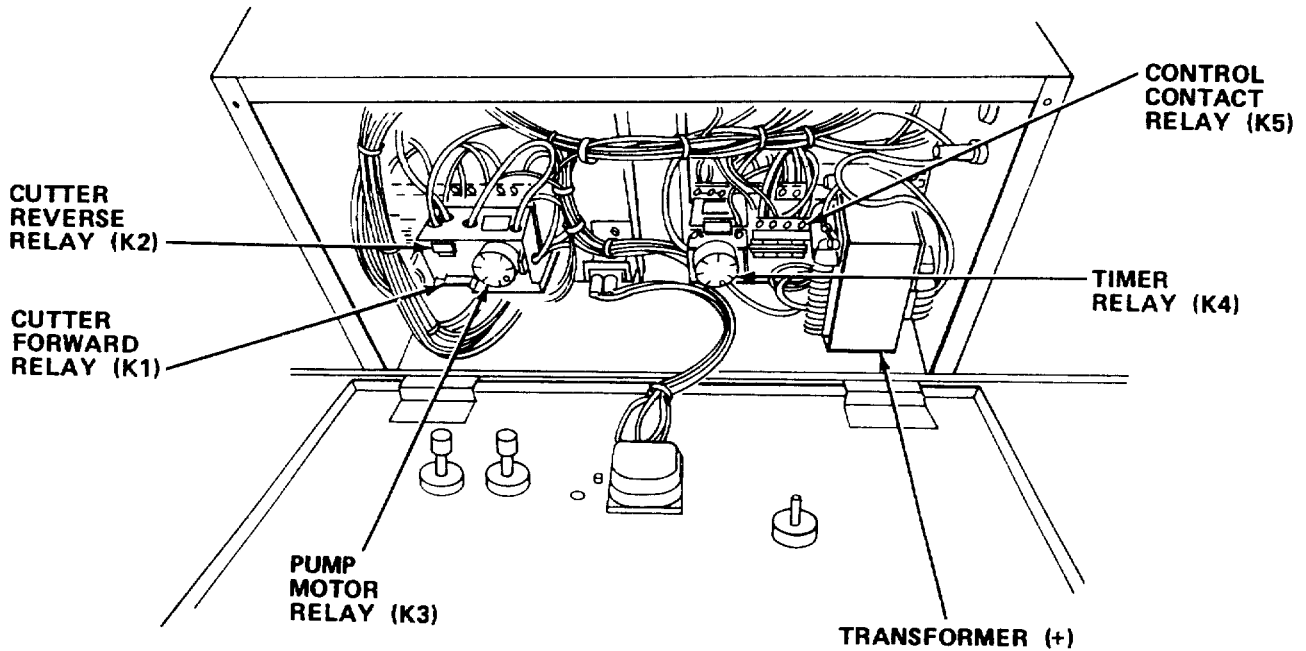


- Step 1. Check centrifugal switch (S8) for continuity.
- (a) If present, proceed to step 2.
  - (b) If continuity is not present, replace switch (paragraph 2-35.3).

Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

4. CUTTER OPERATES FORWARD MOMENTARILY AND THEN SHUTS DOWN - Cont

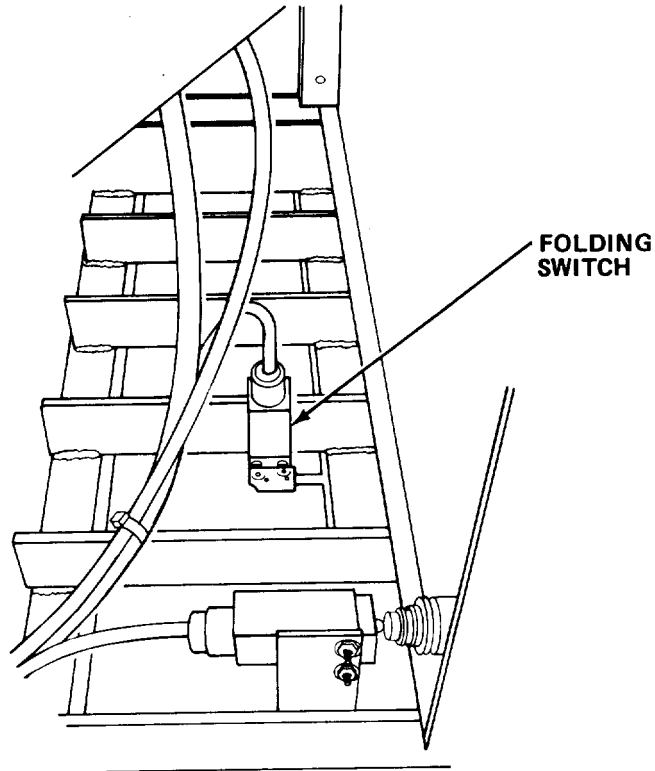


- Step 2. Check cutter forward relay (K1) for continuity.
- (a) If present, proceed to step 3.
  - (b) If continuity is not present, replace (paragraph 2-35.4).

Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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4. CUTTER OPERATES FORWARD MOMENTARILY AND THEN SHUTS DOWN - Cont



Step 3. Check folding switch (S7) for continuity.  
 If continuity is not present, replace switch (paragraph 2-35.8).

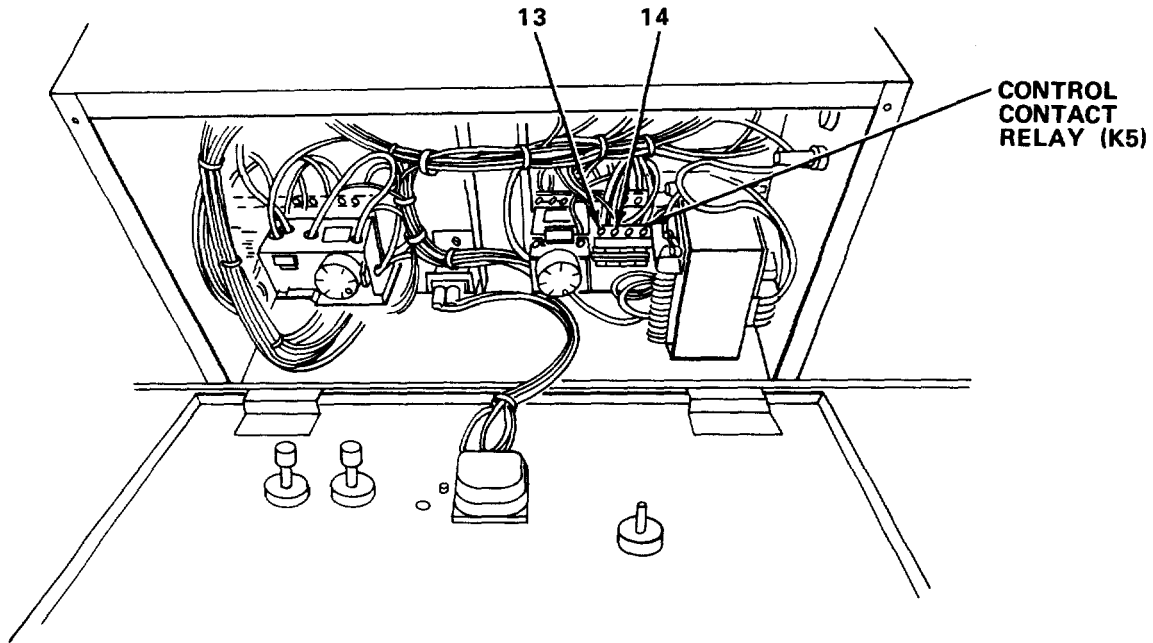
Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

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MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

---

5. BALE CHAMBER FULL LAMP COMES ON WHEN BALE CHAMBER IS ONLY PARTIALLY FULL.

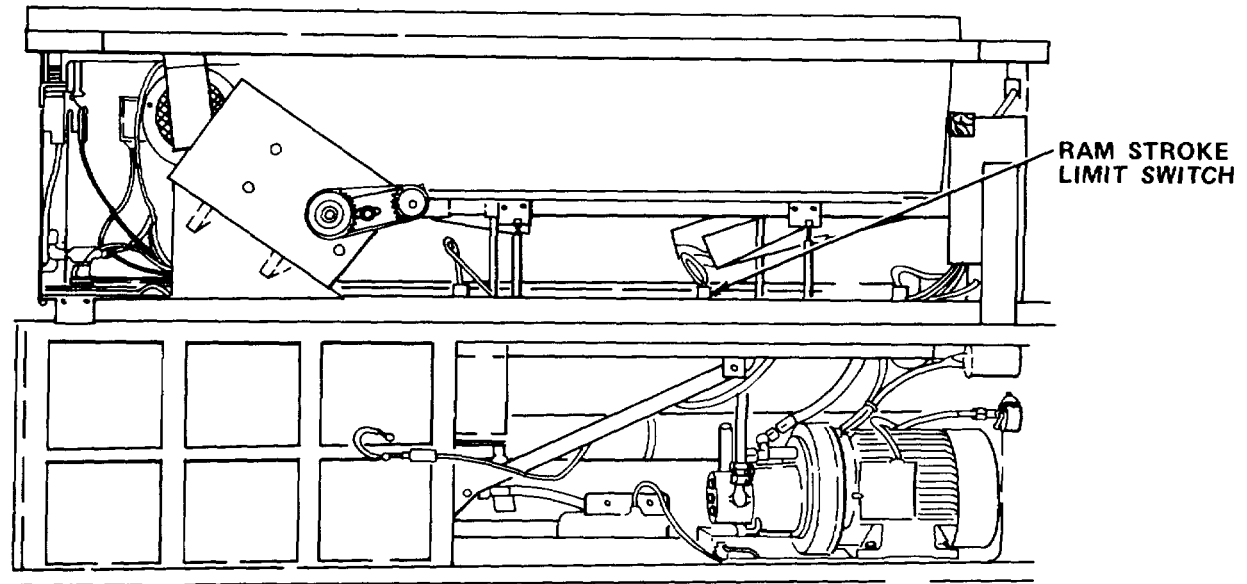


- Step 1. Perform a continuity check across contacts 13 and 14 of relay K5.
- (a) If continuity is not present, proceed to step 2.
  - (b) If contacts show continuity, replace relay (paragraph 2-35.4).

Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

5. BALE CHAMBER FULL LAMP COMES ON WHEN BALE CHAMBER IS ONLY PARTIALLY FULL - Cont



Step 2. Check stroke limit switch S10 for continuity.  
 If continuity is not present, replace switch (paragraph 2-35.6).

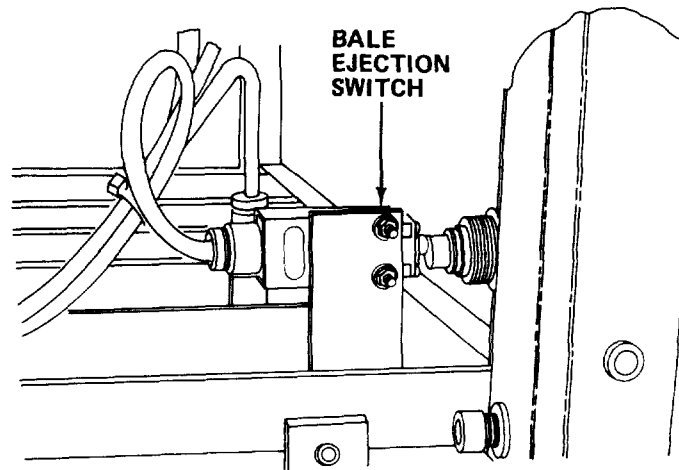
Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

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MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

---

6. RAM WILL NOT EJECT BALE.



- Step 1. Check bale ejection switch (S11) for continuity.
- (a) If present, proceed to step 2.
  - (b) If continuity is not present, replace switch (paragraph 2-35.9).

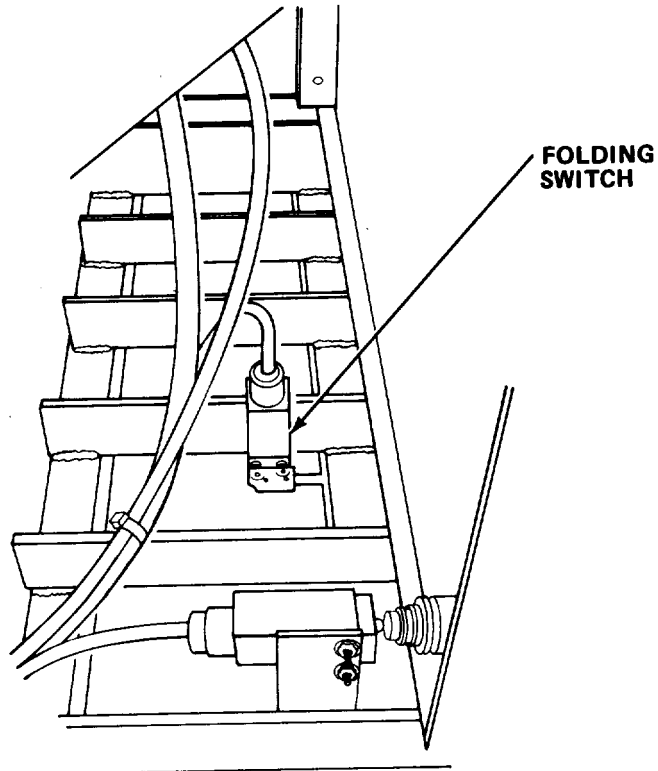
Table 2-9. ORGANIZATIONAL TROUBLESHOOTING - Cont

---

<b>MALFUNCTION</b>
<b>TEST OR INSPECTION</b>
<b>CORRECTIVE ACTION</b>

---

6. RAM WILL NOT EJECT BALE - Cont



Step 2. Check folding switch (S7) for continuity.

Replace switch if it fails continuity test (paragraph 2-35.8).



**2-35. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering organizational maintenance functions for the shredder-bagger. Personnel are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure equipment is properly functioning.

**NOTE**

**Machine must be moved away from wall when performing maintenance on left side. Refer to paragraph 2-35.11 for removal procedures.**

**INDEX**

<b>MAINTENANCE PROCEDURES</b>	<b>PARAGRAPH</b>
Adjust Conveyor Belt.....	2-35.1
Adjust Conveyor Drive Gears and Paddle .....	2-35.2
Replace Centrifugal Switch .....	2-35.3
Replace Relays .....	2-35.4
Replace Transformer .....	2-35.5
Replace Roller Switches.....	2-35.6
Replace Front Panel Switches.....	2-35.7
Replace Folding Switch.....	2-35.8
Replace Bale Ejection Switch.....	2-35.9
Replace Paddle Assembly.....	2-35.10
Remove/Install Shredder-Bagger .....	2-35.11

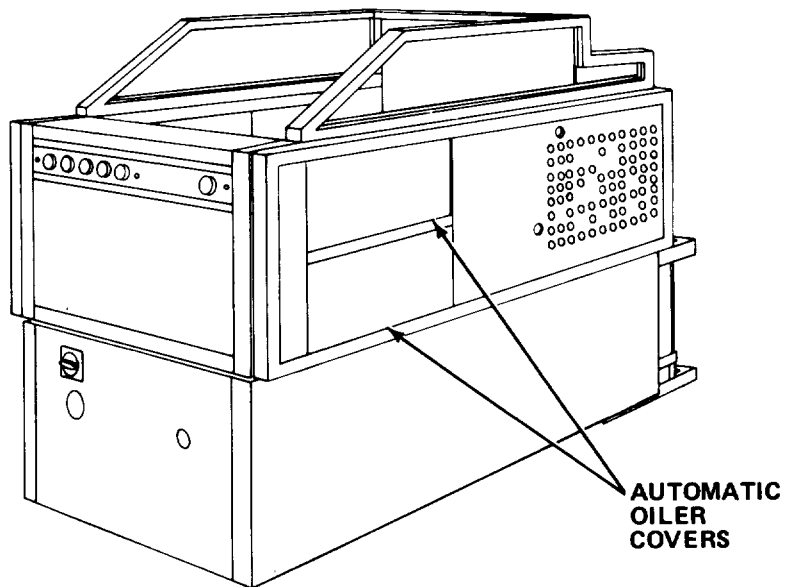
2-35.1 Adjust Conveyor Belt

MOS: 83FJ6, Reproduction Equipment Repairer

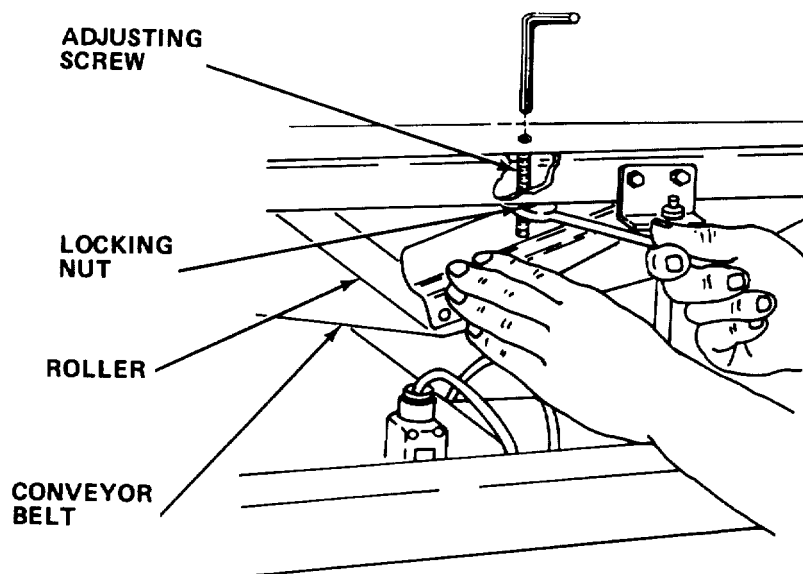
TOOLS: 5/16 in. Combination Wrench  
5 mm Hex Head Key Wrench  
13 mm Open End Wrench  
4 mm Hex Head Key Wrench

**WARNING****Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off main power switch.
- b. Turn off circuit breaker.



- c. Remove screws, automatic oiler covers, upper right cover, and upper left cover.



**NOTE**

**When conveyor belt is tight enough to prevent movement by hand, it is properly adjusted.**

- d. Loosen locking nut and turn adjusting screw until belt is tight and runs evenly on rollers.
- e. Reinstall covers and secure with screws.

**2-35.2 Adjust Conveyor Drive Gears and Paddle.**

MOS: 83FJ6, Reproduction Equipment Repairer

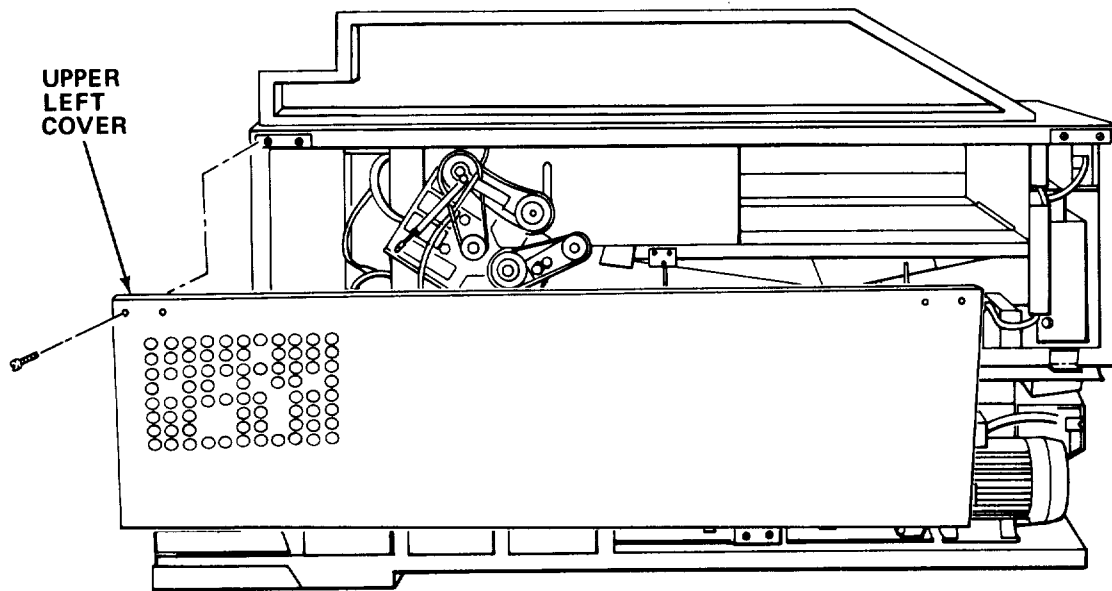
TOOLS: 5/16 in. Combination Wrench  
 4 mm Hex Head Key Wrench  
 24 mm Open End Wrench  
 5 mm Hex Head Key Wrench

**WARNING**

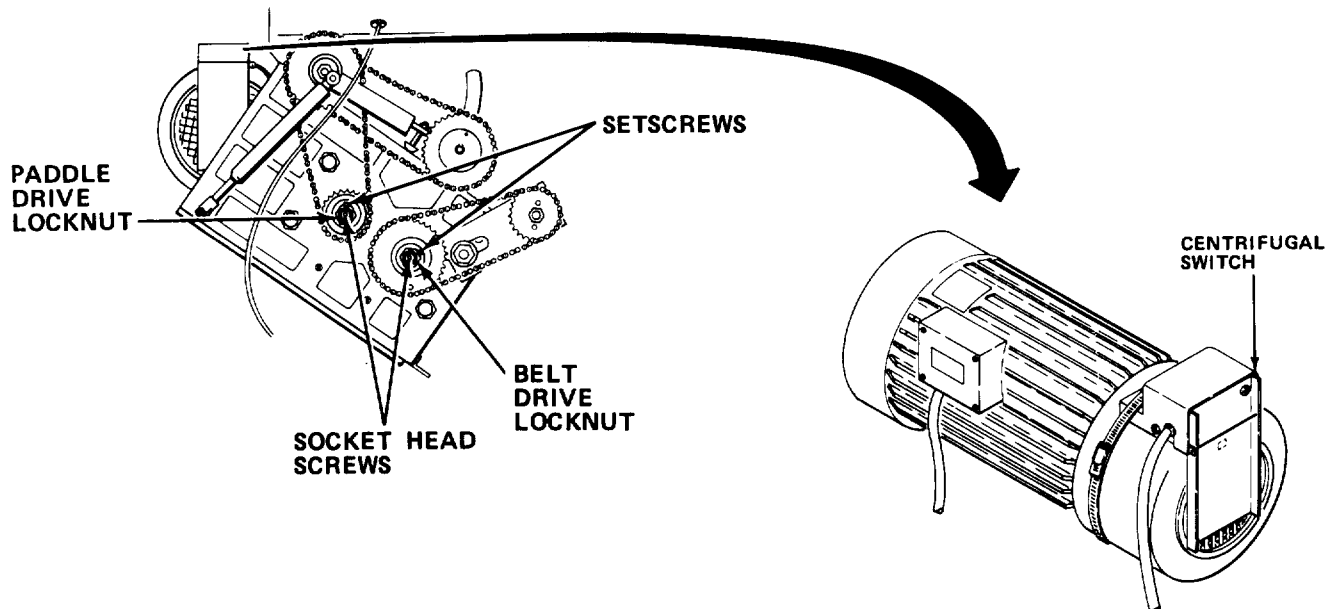
**Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off main power switch.

- b. Turn off circuit breaker.



- c. Remove screws and upper left cover.



- d. Loosen setscrews on locknuts.
- e. Loosen locknuts on drive gears.

- f. Turn socket head screws until:
  - (1) Paddle can be turned by hand when machine is off.
  - (2) Conveyor belt can be stopped by hand when machine is running.
- g. Tighten two locknuts.
- h. Tighten two setscrews.
- i. Reinstall covers and secure with screws.

2-35.3 Replace Centrifugal Switch.

MOS: 83FJ6, Reproduction Equipment Repairer

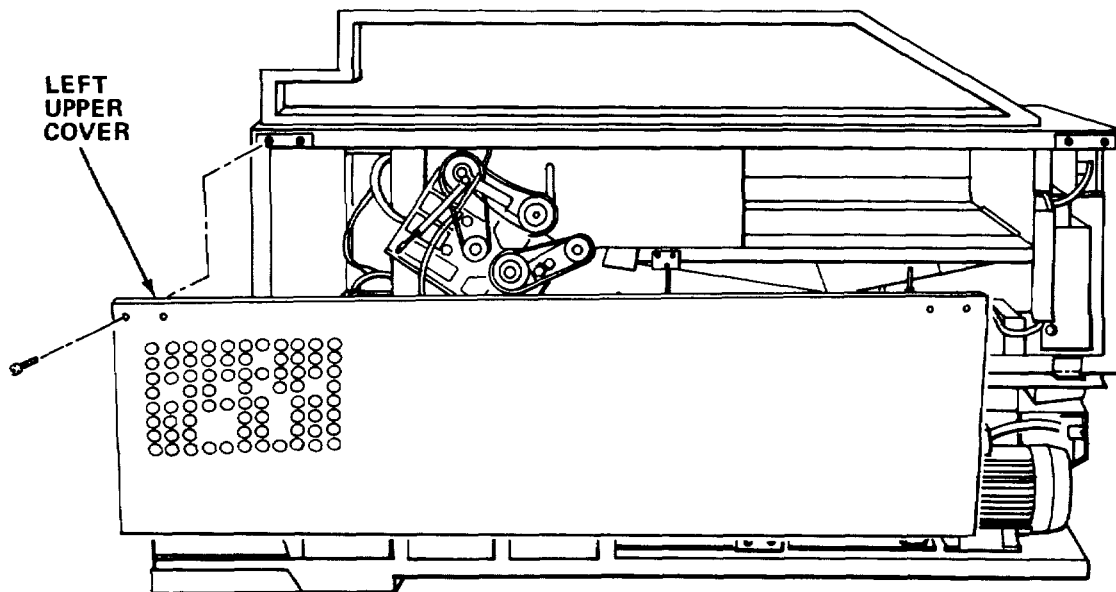
TOOLS: Flat Tip Screwdriver  
 5/16 in. Combination Wrench  
 No. 2 Cross Tip Screwdriver

SUPPLIES: Centrifugal Switch

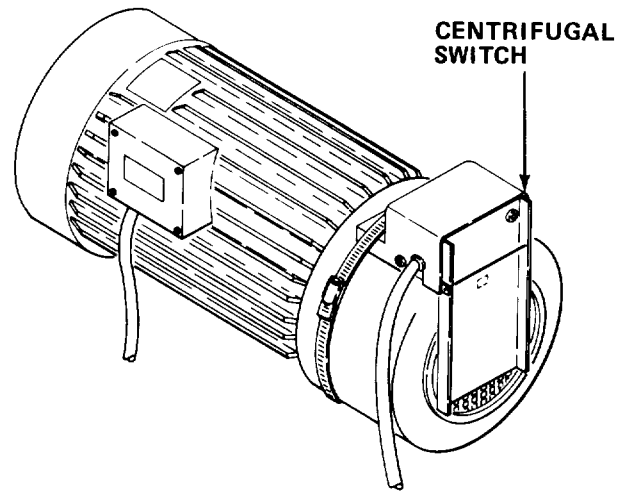
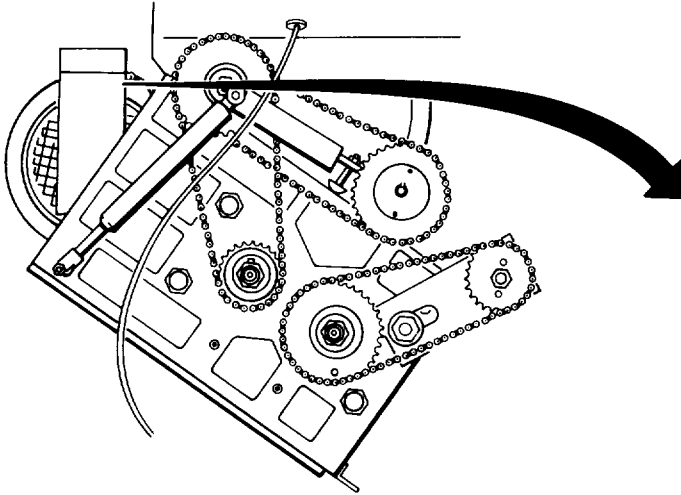
**WARNING**

**Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off main power switch.
- b. Turn off circuit breaker.



- c. Remove screws and upper left cover.



- d. Loosen clamp which secures switch to cutter motor and remove switch assembly.
- e. Remove screws which attach cover to switch and remove cover.
- f. Tag and disconnect wires from switch.
- g. Remove screws and defective switch.
- h. Connect wires to new switch.
- i. Install new switch on housing. Secure with screws.
- j. Reinstall cover on switch and secure with screws.
- k. Reinstall switch assembly on motor and tighten clamp.
- l. Reinstall cover and secure with screws.

2-35.4 Replace Relays.

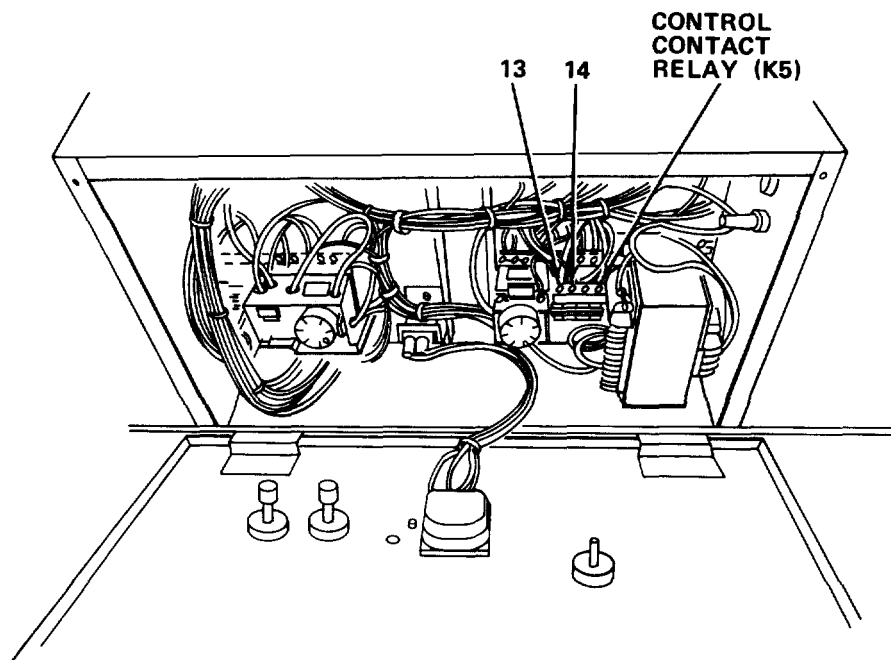
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver  
No. 2 Cross Tip Screwdriver

SUPPLIES: Relay(s)

**WARNING****Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off main power switch.
- b. Turn off circuit breaker.
- c. Open front cover and remove relay box cover.

**NOTE****If K3 or K4 is to be replaced, lift spring-loaded lock before removal.**

- d. Tag and disconnect wires from relay to be replaced.
- e. Remove screws which secure relay to box and remove defective relay.

- f. Install new relay and secure to box with screws.
- g. Reconnect wires to new relay.
- h. Reinstall relay box cover and close front cover.

2-35.5 Replace Transformer.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver  
No. 2 Cross Tip Screwdriver

SUPPLIES: Transformer

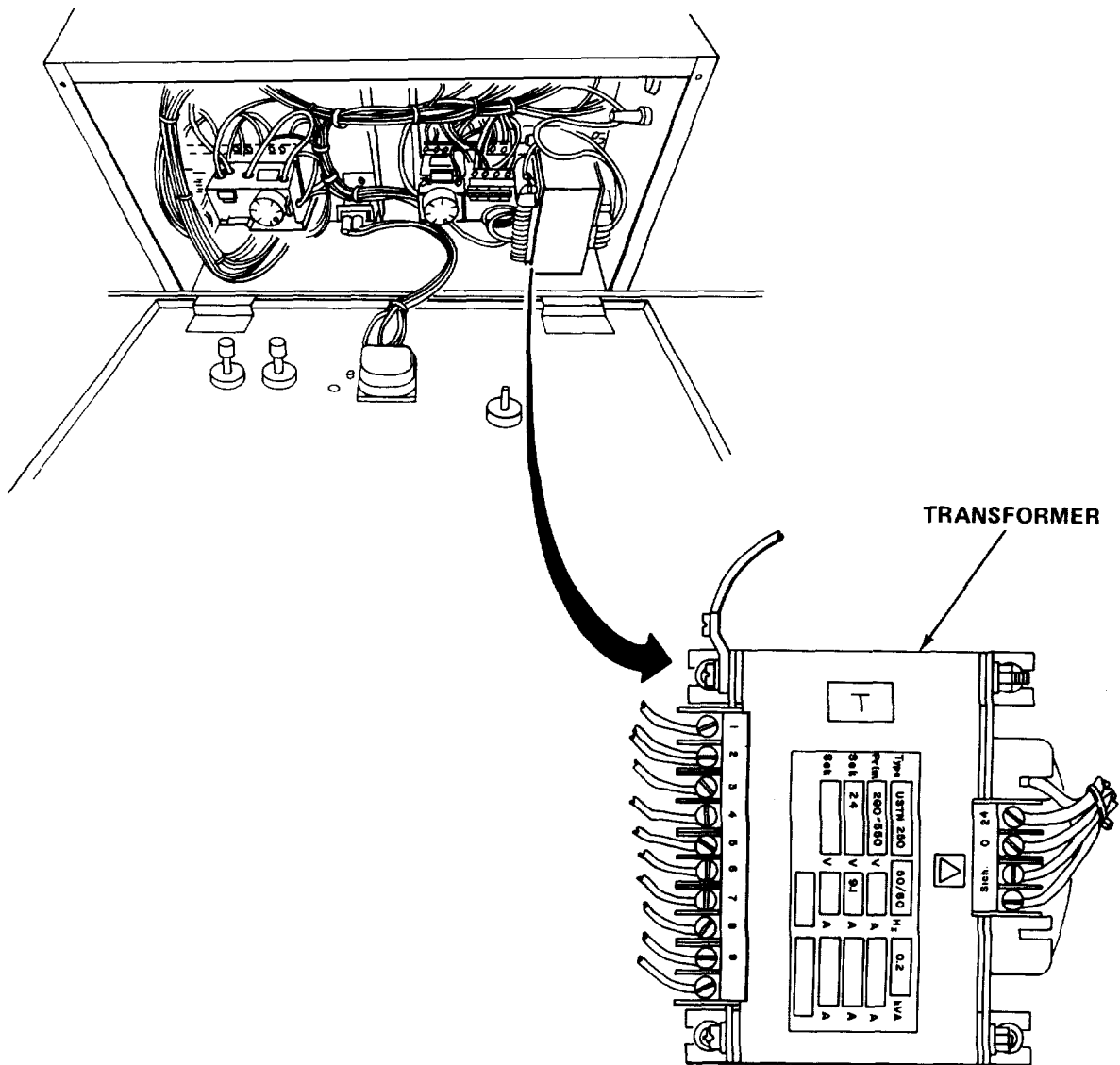
**WARNING**

**Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off circuit breaker.



- b. Open front cover and remove relay box cover.



- c. Remove transformer mounting bracket screws from relay box.
- d. Remove defective transformer from relay box with wiring attached.
- e. Tag and disconnect wiring.
- f. Reconnect wiring to new transformer.
- g. Install new transformer in relay box and secure with mounting screws.
- h. Reinstall relay box cover and close front cover.
- i. Turn on circuit breaker.

2-35.6 Replace Roller Switch(es).

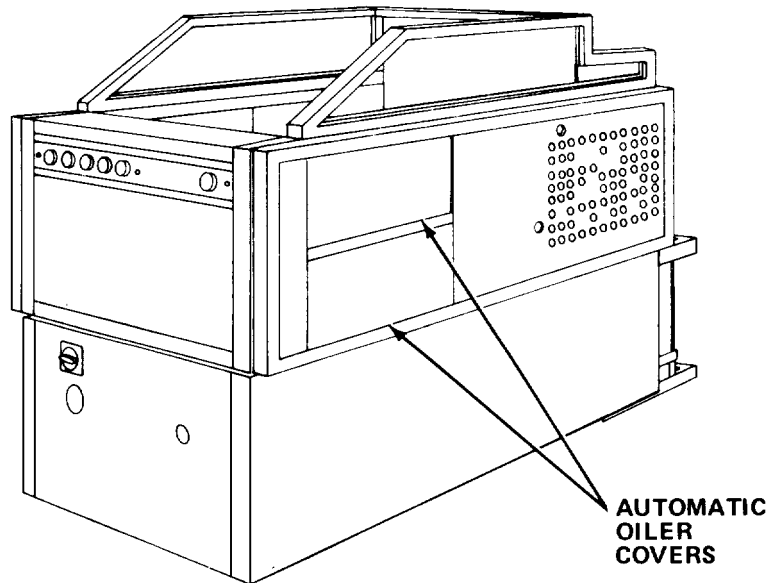
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 5/16 in. Combination Wrench  
No. 2 Cross Tip Screwdriver  
Flat Tip Screwdriver

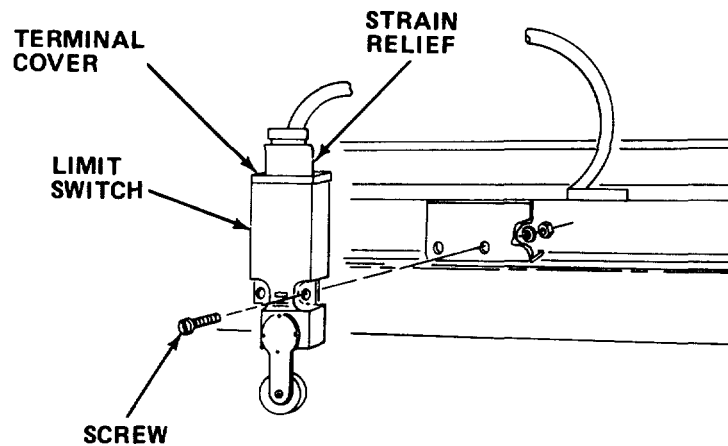
SUPPLIES: Roller Switch(es)

**WARNING****Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.



- c. Remove screws, right upper cover, and automatic oiler cover.



- d. Remove two screws which secure the roller switch to its mounting bracket, and remove switch.
- e. Unscrew strain relief from switch.
- f. Using a flat tip screwdriver, snap off terminal cover from roller switch.
- g. Disconnect wiring from defective roller switch to be replaced.
- h. Reconnect wiring to new switch.
- i. Reinstall terminal cover on switch.
- j. Screw strain relief into switch.
- k. Install the new roller switch assembly in position and secure with two screws.
1. Reinstall cover and secure with screws.
- m. Turn on circuit breaker.

2-35.7 Replace Front Panel Switch(es).

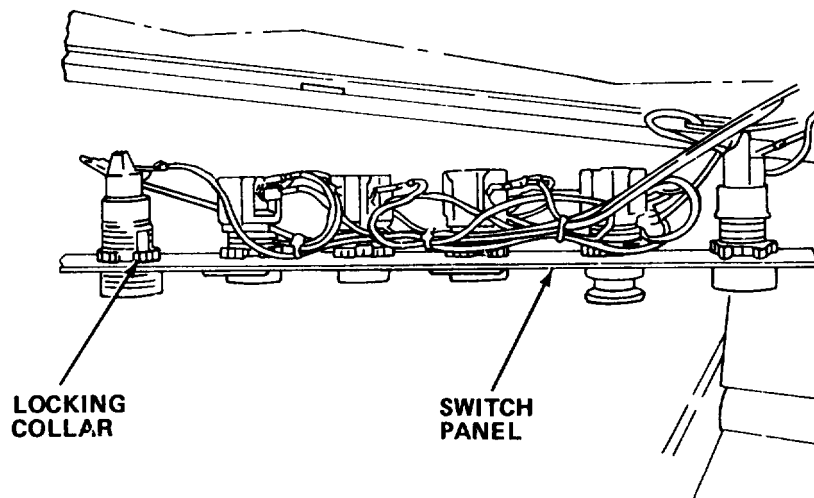
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: No. 2 Cross Tip Screwdriver  
5/16 in. Combination Wrench

SUPPLIES: Front Panel Switch(es)

**WARNING****Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off circuit breaker.
- b. Remove two screws and switch panel.



- c. Tag and disconnect wires from switch to be replaced.
- d. Unscrew locking collar from switch and remove defective switch.
- e. Install the new switch and secure to panel with locking collar.
- f. Reconnect wires to switch.
- g. Reinstall switch panel and secure with screws.

2-35.8 Replace Folding Switch.

MOS: 83FJ6, Reproduction Equipment Repairer

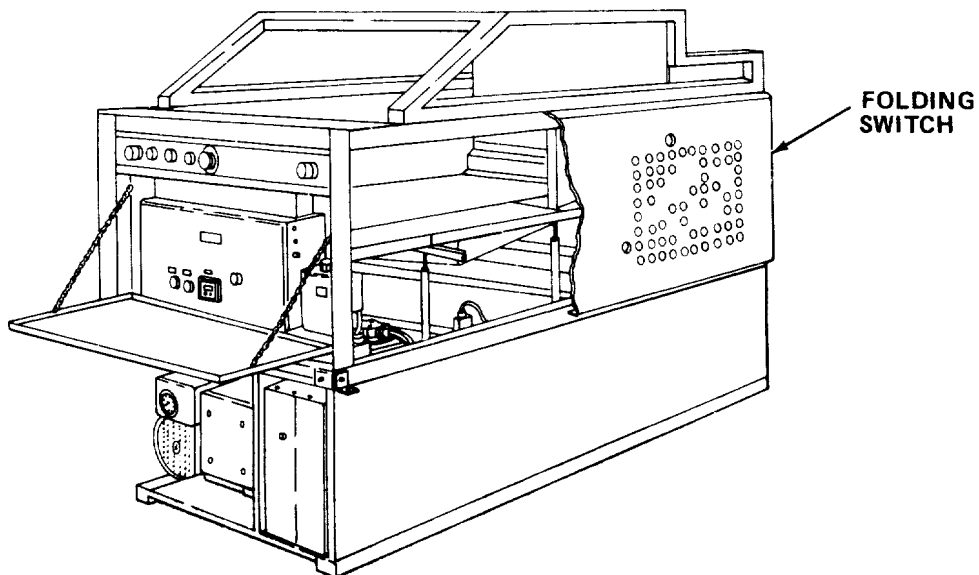
TOOLS: No. 2 Cross Tip Screwdriver  
Flat Tip Screwdriver  
5/16 in. Combination Wrench

SUPPLIES: Folding Switch

**WARNING**

**Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off main power switch.
- b. Turn off circuit breaker.

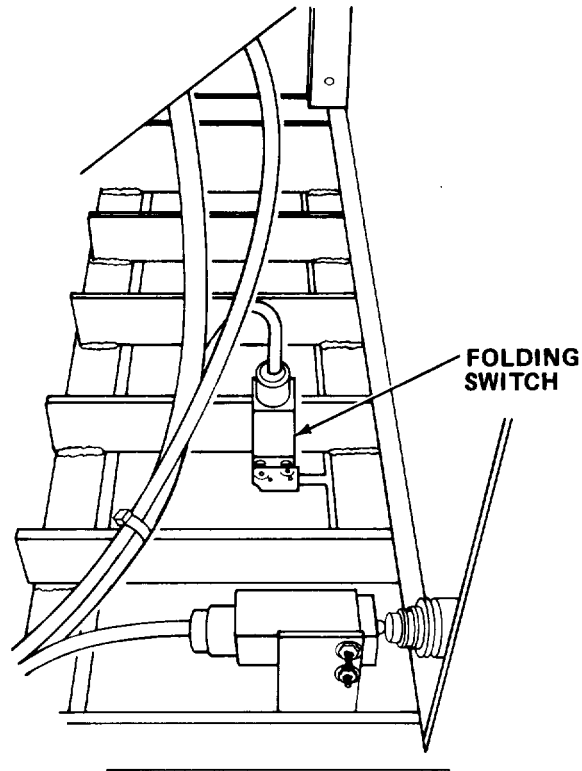


- c. Remove screws and right upper cover.

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PIN: 040769-002

Change 2 2-216



- d. Remove two screws, nuts, and washers which secure folding switch to its mounting bracket and remove switch.
- e. Unscrew strain relief from switch.
- f. Using a flat tip screwdriver, snap off terminal cover from folding switch.
- g. Tag and disconnect wiring from defective switch.
- h. Reconnect wiring to new switch.
- i. Reinstall terminal cover.
- j. Screw strain relief into switch.
- k. Install new switch and secure with two screws, nuts, and washers.
- l. Reinstall cover.
- m. Turn on circuit breaker.

2-35.9 Replace Bale Ejection Switch.

MOS: 83FJ6, Reproduction Equipment Repairer

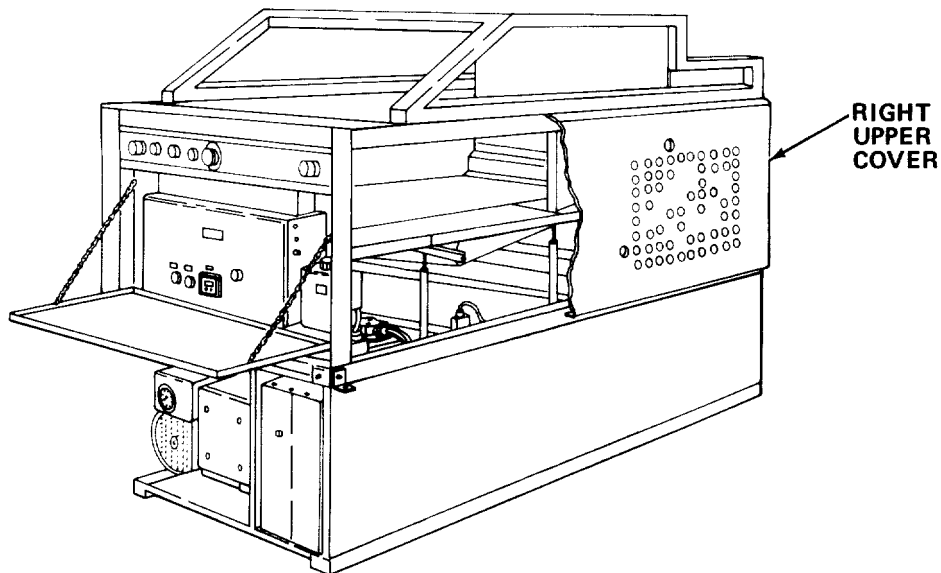
TOOLS: No. 2 Cross Tip Screwdriver  
 Flat Tip Screwdriver  
 5/16 in. Combination Wrench

SUPPLIES: Bale Ejection Switch

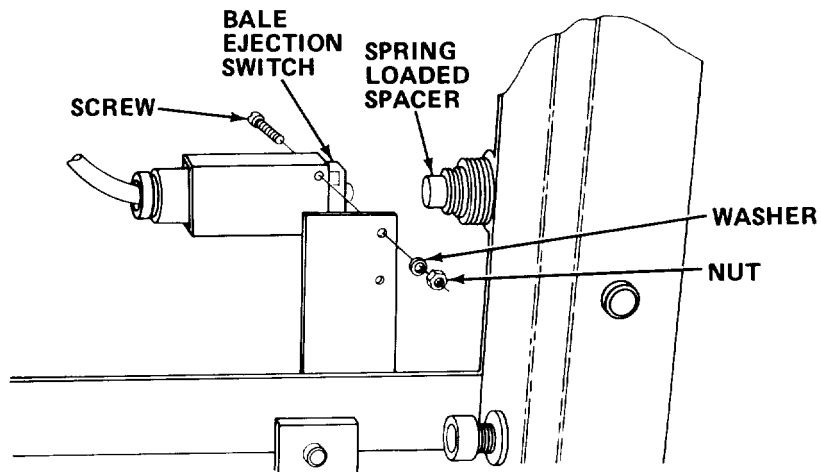
**WARNING**

**Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off main power switch.
- b. Turn off circuit breaker.



- c. Remove screws and right upper cover.



**NOTE**

**When removing switch, be careful to retain spring-loaded spacer in place.**

- d. Remove two screws, nuts, and washers which secure bale ejection switch and remove switch.
- e. Unscrew strain relief from switch.
- f. Using a flat tip screwdriver, snap off terminal cover from switch.
- g. Tag and disconnect wiring from defective switch.
- h. Reconnect wiring to new switch.
- i. Reinstall terminal cover.
- j. Screw strain relief into switch.
- k. Install new switch and secure with two screws, nuts, and washers.
- l. Reinstall cover.
- m. Turn on circuit breaker.



2-35.10 Replace Paddle Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 3 mm Hex Head Key Wrench  
 6 mm Hex Head Key Wrench  
 8 mm Combination Wrench  
 10 mm Combination Wrench  
 17 mm Combination Wrench  
 19 mm Socket, 3/8 in. Drive  
 3/8 in. Drive Ratchet  
 Spring Clip Pliers  
 4 oz. Ball Peen Hammer

SUPPLIES: Paddle Assembly  
 Cotter Key  
 Drive Chain

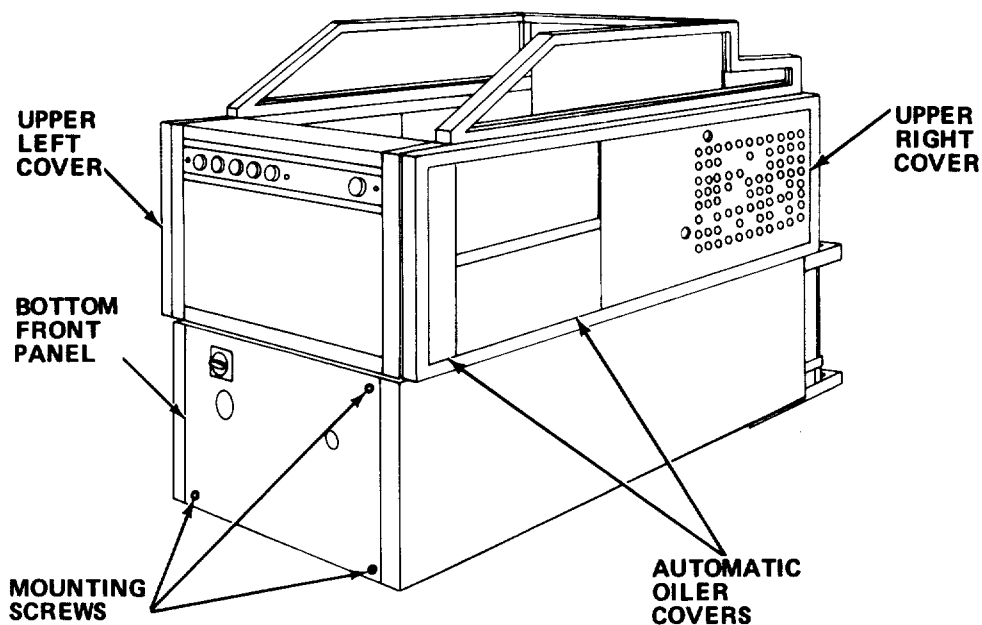
**WARNING**

Death or serious injury may occur from electrical shock unless power is secured before servicing.

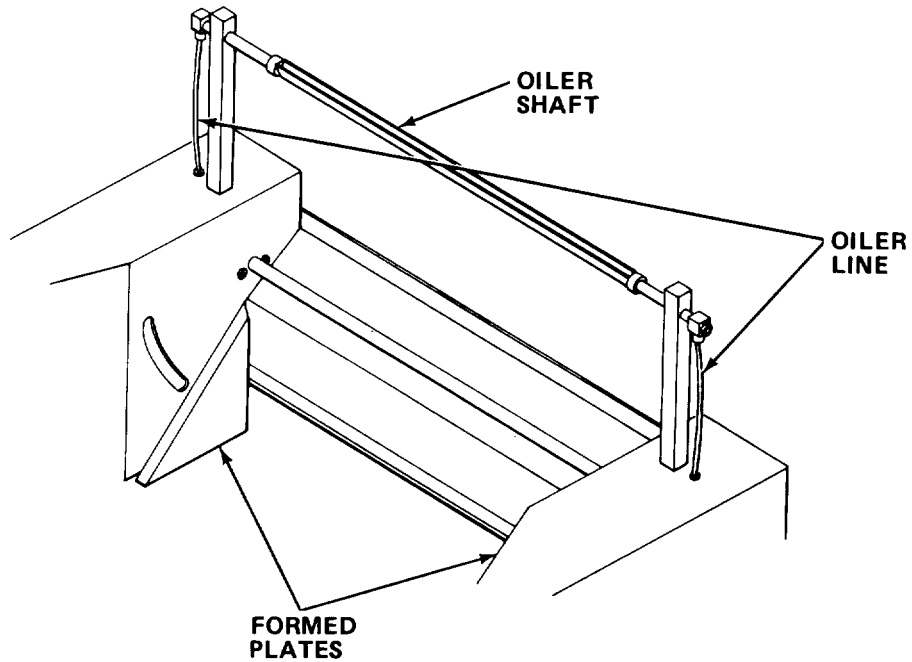
**NOTE**

Shredder-bagger must be moved away from wall for this procedure (paragraph 2-35.11).

- a. Turn off circuit breaker.



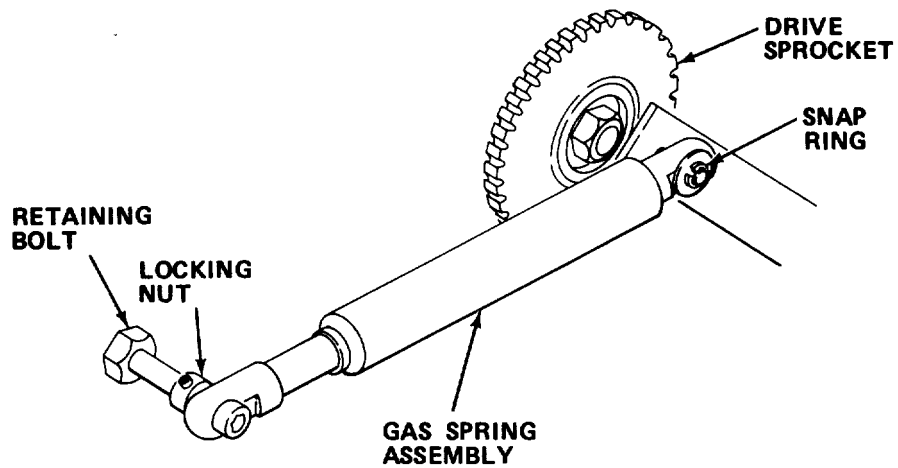
- b. Remove screws, automatic oiler covers, and right and left upper covers.
- c. Remove left and right formed plates.
- d. Remove rear U-cover for better machine access.



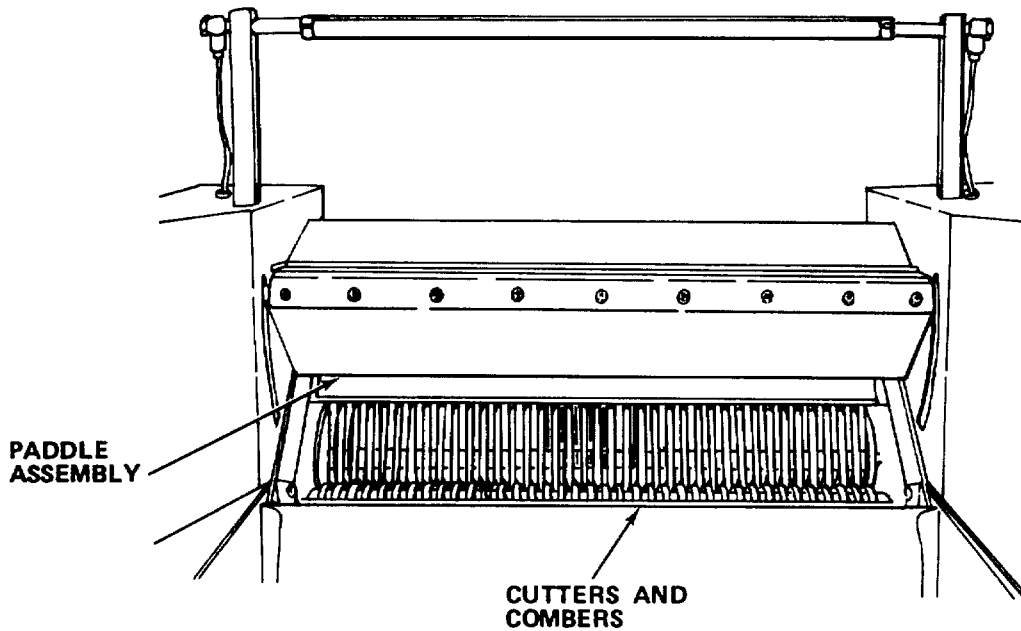
**CAUTION**

**Tape oiler lines in vertical position to prevent oil from leaking on equipment.**

- e. Disconnect automatic oiler lines from both sides of machine.
- f. Remove oiler shaft assembly from paddle assembly.
- g. Remove screws from formed plates that house the paddle assembly.



- h. Loosen locking nut, unscrew retaining bolt, and disconnect gas spring assembly.
- i. Carefully slide plates and paddle assembly forward to clear conveyor belt chain and sprocket assembly.
- j. Remove panel and paddle assembly from machine.



- k. Remove panel adjustment shaft from alinement shaft.

- l. Remove gas spring assembly and mounting plate from paddle drive gear assembly.
- m. Remove paddle drive chain.
- n. Remove nut, washer, and alignment shaft sprocket.
- o. Remove snap ring, nut, and drive sprocket with key.
- p. Remove nuts, washers, and link assembly.
- q. Remove paddle assembly.
- r. Install new assembly between formed plates and paddle shaft.
- s. Reinstall link assembly on paddle assembly and alignment shaft. Secure with nuts and washers.
- t. Reinstall paddle assembly drive sprocket with key and secure with snap ring.
- u. Reinstall alignment shaft sprocket and secure with nut.
- v. Reinstall chain.
- w. Reinstall gas spring assembly and mounting plate on paddle drive gear assembly.
- x. Reinstall paddle adjustment shaft.
- y. Reinstall panel and paddle assembly in the machine
- z. Position paddle assembly panels and secure with screws.
- aa. Reconnect gas spring assembly.
- ab. Reinstall oiler shaft assembly.
- ac. Reconnect automatic oiler lines.
- ad. Reinstall left and right formed plates.
- ae. Reinstall rear U-cover.
- af. Reinstall automatic oil covers and right and left upper covers.
- ag. Turn on circuit breaker.

2-35.11 Remove/Install Shredder-Bagger.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Three persons are required to perform this procedure

TOOLS: Flat Tip Screwdriver  
15/16 in. Combination Wrench  
1/2 in. Combination Wrench  
12 in. Adjustable Wrench  
Jewelers Screwdriver Set

SUPPLIES: Shredder-Bagger  
Electrical Tape (Item 21, Appendix E).

**WARNING**

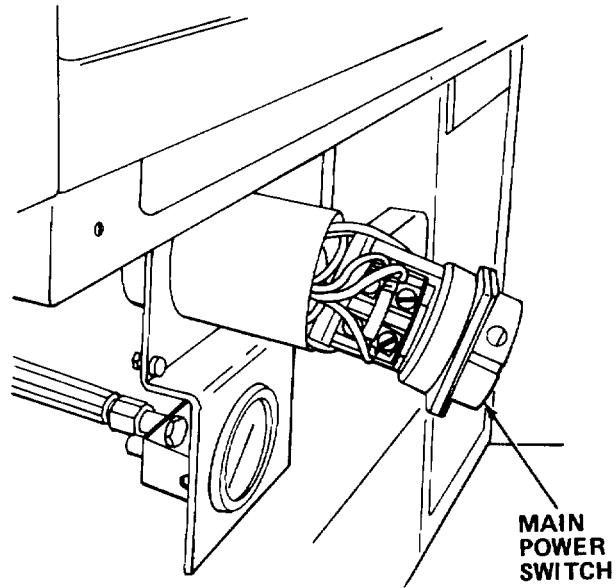
**Death or serious injury may occur from electrical shock unless power is off before servicing.**

- a. Turn off circuit breaker.
- b. Lower rollers on all four corners of machine by turning roller lowering bolts until rollers contact floor.

**CAUTION**

**To prevent equipment damage, be sure that all four corner rollers contact floor before removing mounting bolts from air shocks.**

- c. Remove mounting bolts and washers from air shocks.
- d. Deflate air shocks and remove spacers.
- e. Open front panel.
- f. Remove screw on main power switch knob and cover.
- g. Remove ground wire.
- h. Remove screws and housing retaining cover.
- i. Push main power switch wiring assembly through cabinet to outside of machine.



- j. Tag and disconnect wiring from main power switch.
- k. Tape all exposed wires.
- l. Remove conduit retaining nut.
- m. Thread power cable from machine.
- n. Remove power cable from machine and reinstall retaining nut on conduit fitting.
- o. Reinstall covers.
- p. Roll machine to rear of van and remove.
- q. Position new machine at proper location.
- r. Open front cover.
- s. Remove feed table.
- t. Open relay box cover.
- u. Run power cable under machine and up to main power cable insert hole in relay box.
- v. Run wires through relay box power cable hole and reinstall nut on fitting tightly.

- w. Remove tape on wires and hook up wires to terminals indicated by tags on each wire.
- x. Check that all connections are tight and no bare wires are showing.
- y. Close relay box.
- z. Reinstall feed table and close front cover.
- aa. Move machine over shock mounts.
- ab. Aline mounting holes on machine over bolt holes on air shocks.
- ac. Insert spacer plates over air shocks.

#### **CAUTION**

**When installing mounting bolts, be sure bolts are not cross threaded.**

- ad. Insert mounting bolts and washers on all four corners into air shocks and tighten.
- ae. Raise rollers on all four corners.
- af. Tighten all mounting bolts.
- ag. Inflate air shocks if preparing for transport mode.

**2-36. PREPARATION FOR STORAGE AND SHIPMENT** . Contact your battalion for packing and shipping instructions.

#### **Section X DIRECT/GENERAL SUPPORT MAINTENANCE**

#### **2-37. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT** .

2-37.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-37.2 Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment. Special tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

2-37.3 Repair Parts. Repair parts for this equipment are listed and illustrated in the Repair Parts and Special Tools List, TM 5-6675-315-24P covering direct/general support maintenance for this equipment.

2-38. DIRECT/GENERAL SUPPORT TROUBLESHOOTING PROCEDURES.

a. Direct/general troubleshooting procedures cover the most common malfunctions that may be repaired at the direct/general support level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used at lower levels should be conducted in addition to the direct/general support troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/ inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions, use the facing schematic or the foldout located at the end of this manual for further fault analysis.

**Table 2-10. DIRECT/GENERAL SUPPORT TROUBLESHOOTING**

<b>MALFUNCTION</b>
<b>TEST OR INSPECTION</b>
<b>CORRECTIVE ACTION</b>

1. SHREDDER-BAGGER CONTROLS AND INDICATOR DO NOT RESPOND.

Step 1. Check incoming power for correct voltage, phase and frequency.

(a) If voltage, phase, and frequency are correct, proceed to step 2.

(b) If incorrect, notify power supply supervisor.

Step 2. Check for the presence of proper operating voltage at the input of the shredder-bagger.

(a) If present, troubleshoot equipment.

(b) If not present, proceed to step 3.

Step 3. Check output side of circuit breaker for proper voltage.

(a) If present, repair or replace wiring.

(b) If not present, replace circuit breaker (paragraph 1-20.5).



Table 2-10. DIRECT/GENERAL SUPPORT TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

2. OPERATION OF RAM IS INTERMITTENT IN BOTH DIRECTIONS.

Step 1. Check for air leaks in gear pump line connections.

- (a) If no leaks are present, proceed to step 2.
- (b) Tighten pipe connections.
- (c) Replace O-ring.

Step 2. Check pump motor for continuity.

Replace hydraulic unit (paragraph 2-39.2).

3. CUTTER MECHANISM RUNS FORWARD BUT RAM DOES NOT MOVE.

Step 1. Check for air leaks in gear pump pipe connections.

- (a) If no leaks are present, proceed to step 2.
- (b) Tighten pipe connections.
- (c) Replace O-ring.

Step 2. Check pump motor for continuity.

Replace hydraulic unit (paragraph 2-39.2).

**2-39. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering direct/general support maintenance functions for the shredder-bagger. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

**NOTE**

**Machine must be moved away from wall when performing maintenance on left side. Refer to paragraph 2-35.11 for removal procedures.**

**INDEX**

<b>PROCEDURES</b>	<b>PARAGRAPH</b>
Adjust Hydraulic Pressure .....	2-39.1
Replace Hydraulic Oil Pump Assembly .....	2-39.2
Repair Conveyor Belt Assembly .....	2-39.3
Repair Cutter Assembly .....	2-39.4

2-39.1 Adjust Hydraulic Pressure.

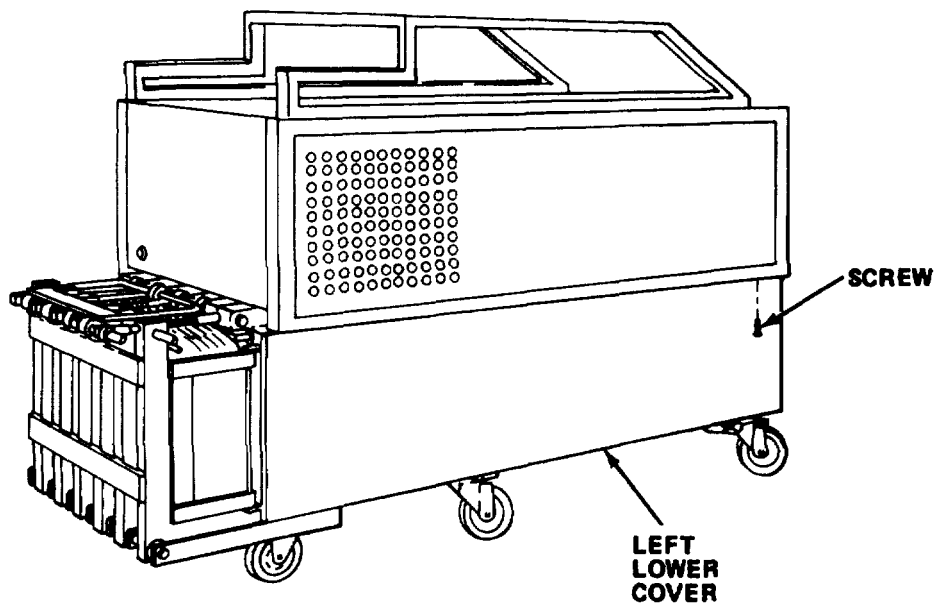
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 5 mm Hex Head Key Wrench  
Flat Tip Screwdriver  
13 mm Combination Wrench

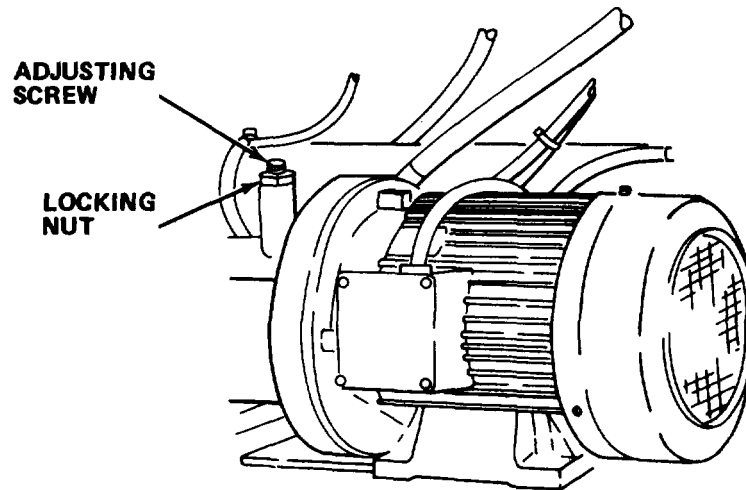
**WARNING**

**Death or serious injury may occur from electrical shock unless power is secured before servicing.**

- a. Turn off main power switch.
- b. Turn off circuit breaker.



- c. Remove screws and left lower cover.

**NOTE**

Maximum pressure should not exceed 170 kPa (2431 psi). Minimum pressure should be greater than 50 kPa (715 psi). As soon as the bale chamber is full, the selected pressure is shown on the gage.

- d. Loosen locking nut and turn adjusting screw to the right to increase pressure or to the left to decrease pressure.
- e. Tighten locking nut.
- f. Reinstall cover and secure with screws.
- g. Turn on circuit breaker.

2-39.2 Replace Hydraulic Oil Pump Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

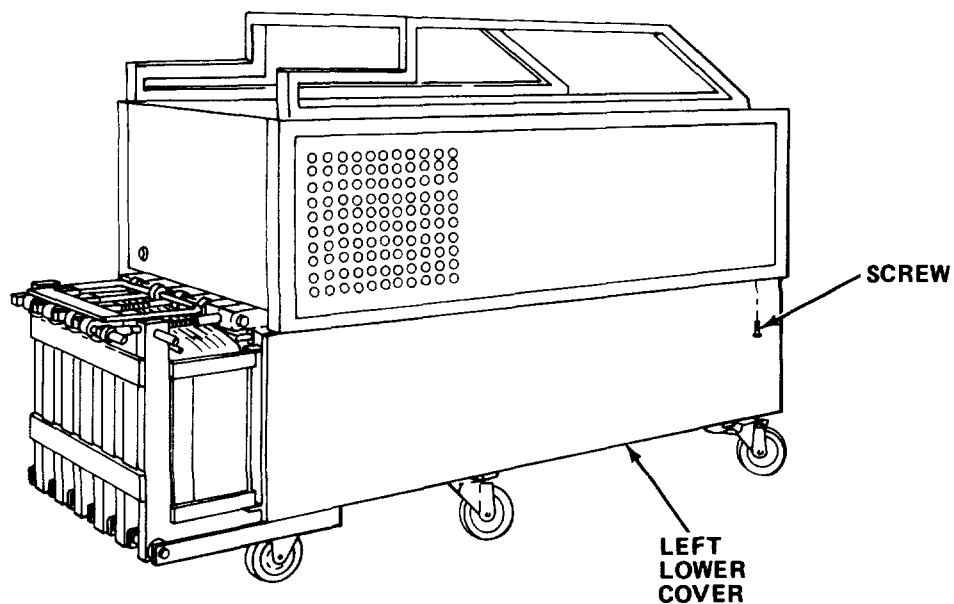
TOOLS: 5 mm Hex Head Key Wrench  
Flat Tip Screwdriver  
Hose Pliers  
17 mm Combination Wrench  
8 mm Combination Wrench

SUPPLIES: Oil Pump Assembly

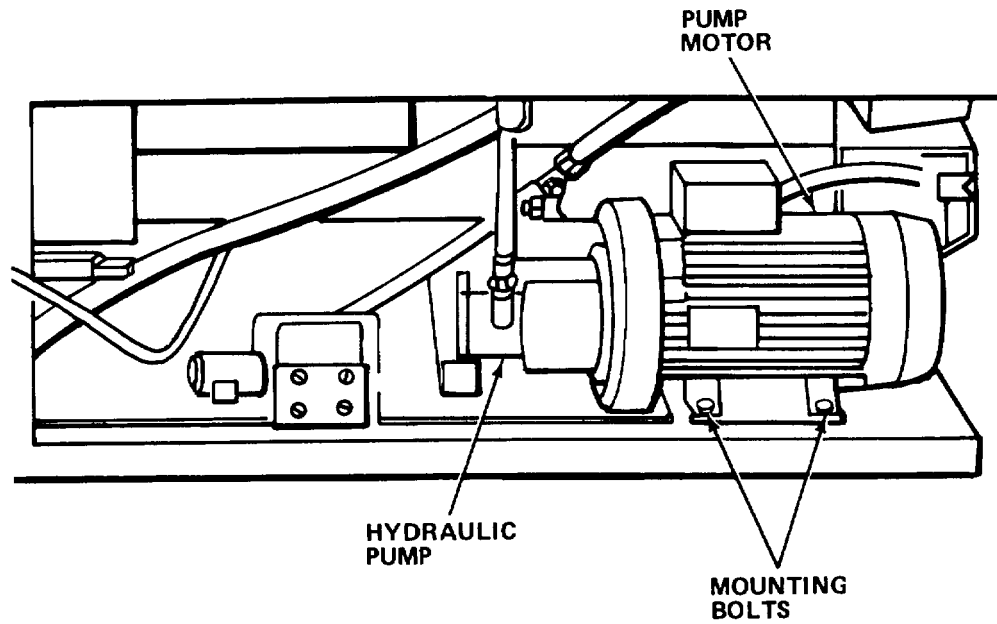
**WARNING**

Death or serious injury may occur from electrical shock unless power is secured before servicing.

- a. Turn off main power switch.
- b. Turn off circuit breaker.



- c. Remove screws and left lower cover.



- d. Disconnect hydraulic lines from pump.
- e. Tag and disconnect wires from motor.
- f. Remove motor mounting bolts and defective hydraulic oil pump assembly.
- g. Install new oil pump assembly in position and secure to frame with mounting bolts.
- h. Reconnect wiring and hydraulic lines to new oil pump assembly.
- i. Adjust hydraulic pressure (paragraph 2-39.1).
- j. Reinstall cover and secure with screws.
- k. Turn circuit breaker on.

2-39.3 Repair Conveyor Belt Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Two persons are required to perform this procedure

TOOLS: Flat Tip Screwdriver  
2.3 mm Hex Head Key Wrench  
4 mm Hex Head Key Wrench  
5 mm Hex Head Key Wrench  
8 mm Hex Head Key Wrench  
24 mm Combination Wrench

SUPPLIES: Conveyor Belt with Rollers

**WARNING**

**Serious injury to personnel may occur if equipment is energized while removing conveyor belt drive gear.**

**NOTE**

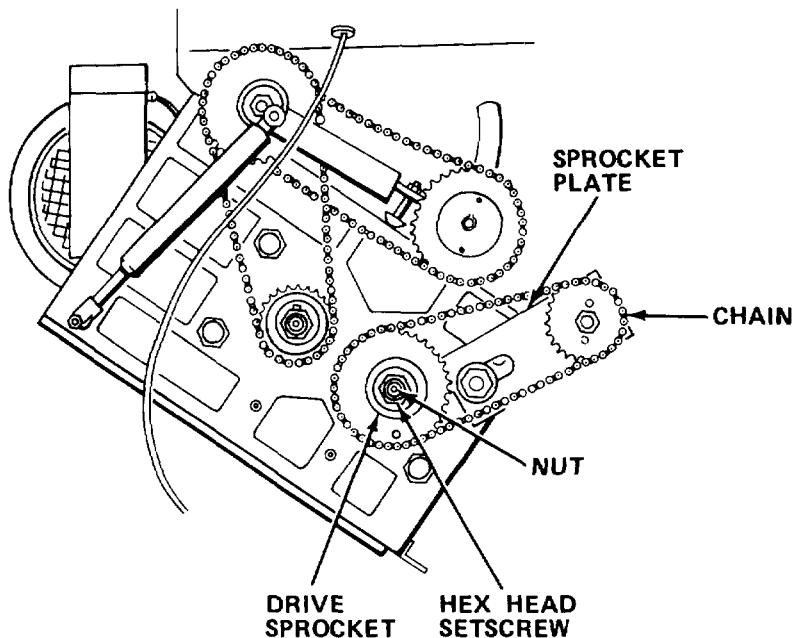
**Shredder-bagger must be moved away from wall for this procedure (paragraph 2-35.11).**

- a. Turn circuit breaker OFF.
- b. Turn main power switch off.

**NOTE**

**Screws for bottom side panels are mounted through spacer bushings placed between panel and frame of shredder-bagger. Do not lose these bushings. They must be reinstalled for panel to be remounted.**

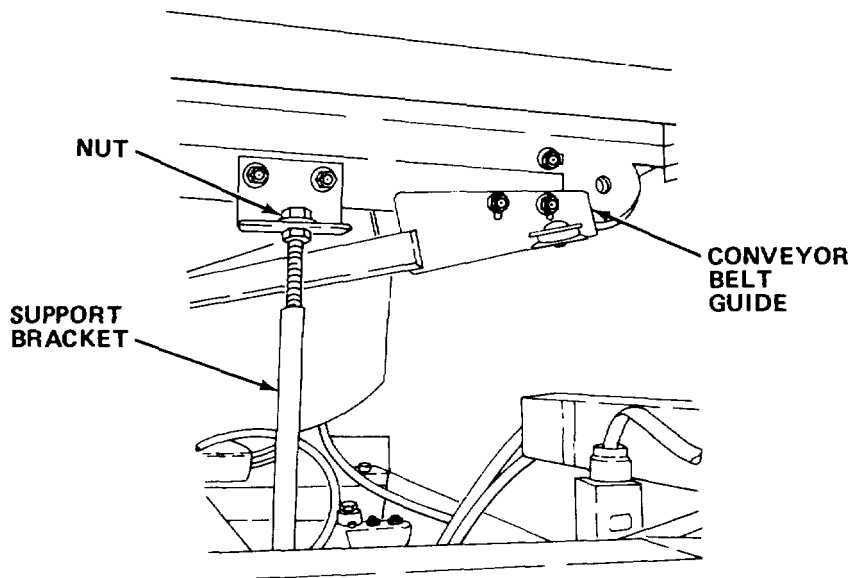
- c. Remove screws and all upper and lower covers.
- d. Remove screws and both right and left conveyor side cover plates.



- e. Remove drive sprocket with chain in place and set aside.
- f. Allow sprocket plate to swing down.

**CAUTION**

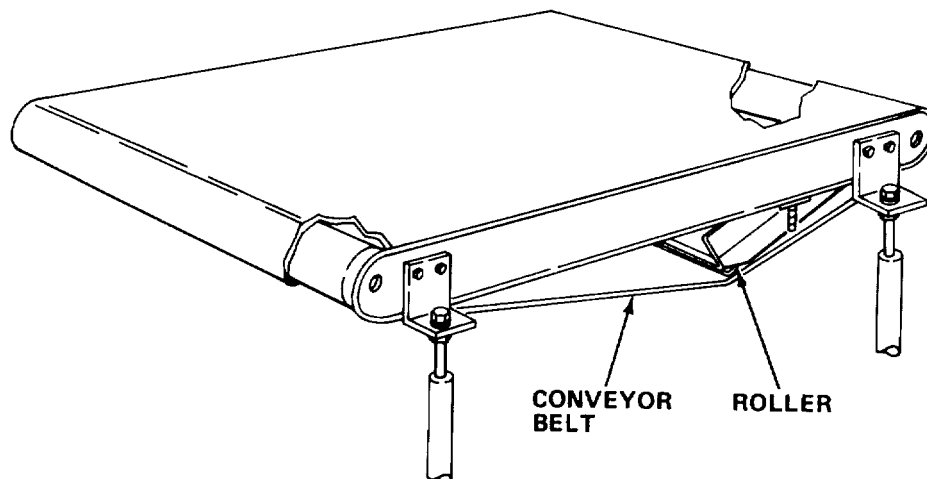
Damage to the conveyor belt assembly may occur if it is not supported when the support brackets are removed.



- g. Remove nuts from support brackets on right and left sides.



- h. Remove conveyor belt guides.
- i. Remove conveyor belt assembly.



- j. Stand conveyor belt assembly on side and slip defective belt and rollers from assembly.
- k. Install new belt with rollers on conveyor belt assembly.

**NOTE**

**The conveyor belt must be squarely aligned with forward edge of cutter head.**

- l. Reinstall conveyor belt assembly in machine.
- m. Reinstall conveyor belt guides.
- n. Reinstall nuts on right and left side support brackets
- o. Reposition sprocket plate.
- p. Reinstall drive sprocket and chain and secure with nut and hex head setscrew.
- q. Reinstall right and left conveyor side cover plates.
- r. Reinstall upper and lower covers.
- s. Adjust conveyor belt (paragraph 2-35.1).
- t. Turn on circuit breaker.
- u. Turn on main power switch.

2-39.4 Repair Cutter Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Three persons are required to perform this procedure

TOOLS: Flat Tip Screwdriver  
Gear Puller  
6 mm Hex Head Key Wrench  
10 mm Combination Wrench  
24 mm Combination Wrench  
8 mm Socket, 3/8 in. Drive  
3/8 in. Drive Ratchet  
Ball Peen Hammer

SUPPLIES: Combers  
Cutters  
Small Block of Wood  
GAA Grease (Item 6, Appendix E)

**WARNING**

**Serious injury to personnel may occur if equipment is energized while removing cutter unit assembly.**

- a. Turn off circuit breaker.
- b. Turn off main power switch.
- c. Remove screws, automatic oil covers, and right and left upper covers.

**NOTE**

**Screws for bottom side panels and U-cover are mounted through spacer bushings placed between panel and frame of shredder-bagger. Do not lose these bushings. They must be reinstalled for panel to be remounted.**

- d. Remove rear U-cover.
- e. Remove paddle assembly (paragraph 2-35.10).
- f. Loosen clamp and remove centrifugal switch from motor.
- g. Tag and disconnect motor wiring. Then remove gasket and cover.
- h. Remove four mounting bolts and washers and cutter assembly from machine.

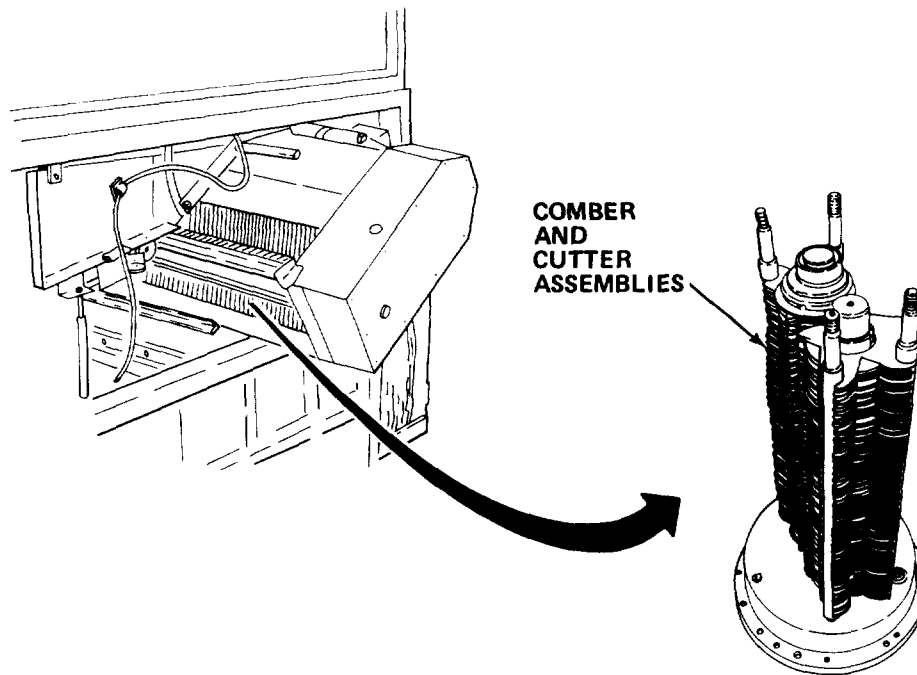
**NOTE**

There are four bolts securing flange, but only three lock washers.

- i. Remove cutter flange.
- j. Remove two funnel screws.
- k. Remove hex head screws, stud bolts, and top plate.
- l. Remove bushing, ring, and special spacer ring from both cutter and comber shafts.

**NOTE**

All cutter and comber assemblies consist of two combers except the last installed assembly, which consists of three combers. Remaining components consist of one cutter ring, special spacer ring, ring, and bushing. Two cutter blades are contained in each assembly, except the last installed assembly on the lower cutters which consists of four blades.



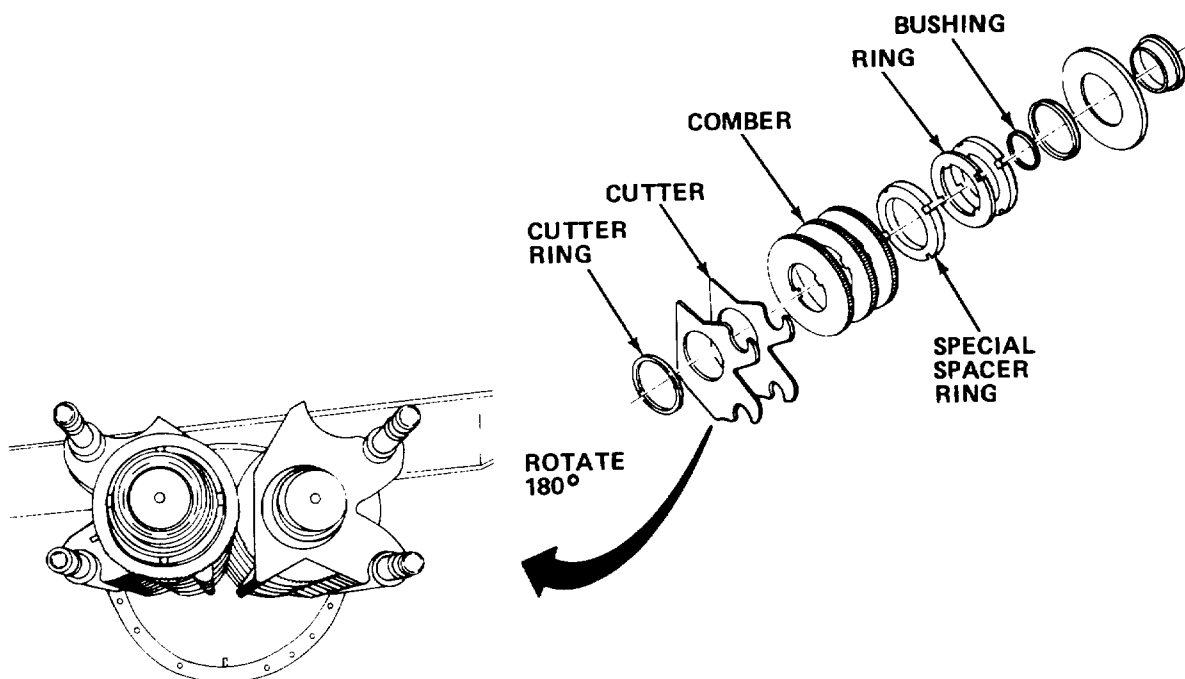
**NOTE**

Cutter and comber assemblies are removed in the following sequence: bushing, ring, special spacer ring, combers, cutters, and cutter ring.

- m. Remove cutter and comber assemblies.
- n. Inspect all components for wear or damage. Replace combers and cutters as required.

**NOTE**

If blades become dull, new cutting edges may be obtained by simply reversing cutter assemblies on upper and lower shafts.

**NOTE**

Cutter and comber assemblies are reinstalled in the following sequence: cutter ring, cutters, combers, special spacer rings, ring, and bushing.

- o. Reinstall cutter and comber assemblies.
- p. Reinstall special spacer ring, ring, and bushing.
- q. Reinstall top plate and stud bolts, and secure with hex head screws.
- r. Reinstall funnel screws.

- s. Reinstall cutter flange.

**NOTE**

**The sequence of sprocket assembly installation is as follows: spring washer, Woodruff Key, brass washer, sprocket, brass washer, spring washer, and locking nut with brass plug and setscrew.**

- t. Reinstall sprocket assembly.
- u. Secure cover plate with nuts and washers.

**NOTE**

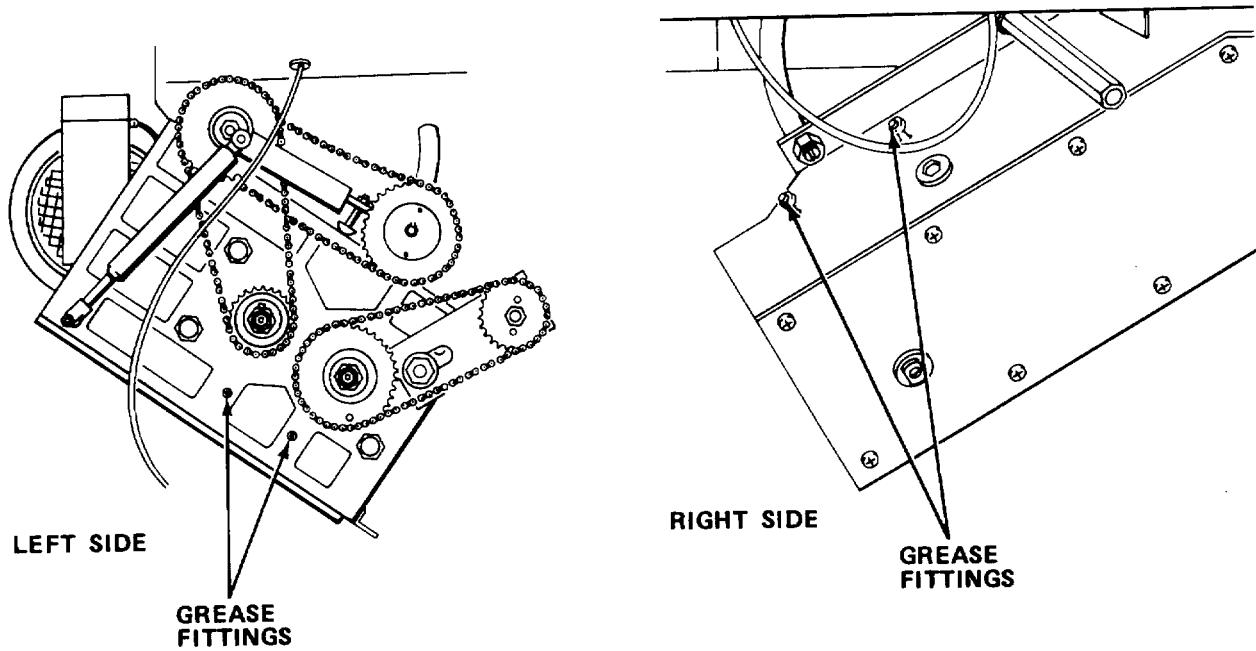
**Tighten nuts until 1-1/2 threads of stud show above nut.**

- v. Reinstall cutter assembly in machine and secure with mounting bolts and washers.
- w. Reconnect motor wiring. Then reinstall gasket and cover.
- x. Reconnect centrifugal switch and tighten clamp.

**NOTE**

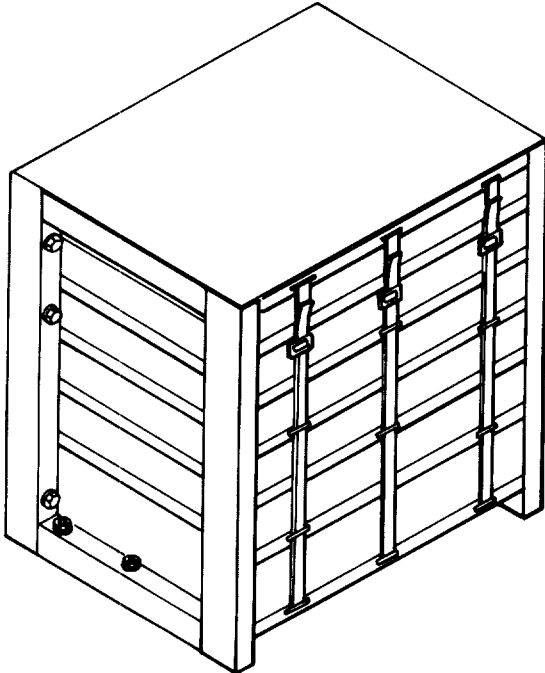
**Be sure bail ejection switch plunger is in place before securing cover.**

- y. Reinstall rear U-cover.
- z. Swing sprocket plate up, position on stud, and secure with washer and nut.
- aa. Reinstall conveyor belt sprocket, conveyor belt drive sprocket, and chain as an assembly.
- ab. Secure cutter drive sprocket with grip ring and tighten setscrews. Then reinstall washer and locking nut.

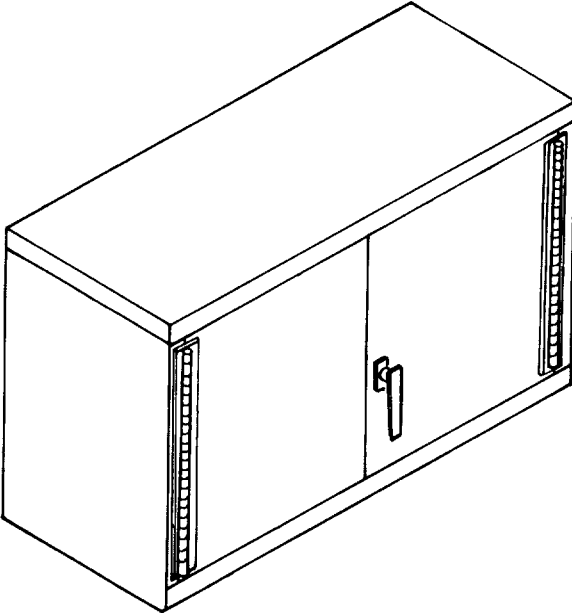


- ac. Lubricate cutter assembly in four places, using GAA Grease (Item 6, Appendix E).
- ad. Reinstall paddle assembly (paragraph 2-35.10).
- ae. Reinstall rear U-cover.
- af. Reinstall automatic oiler covers and right and left upper covers.
- ag. Turn on circuit breaker.

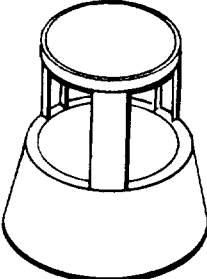
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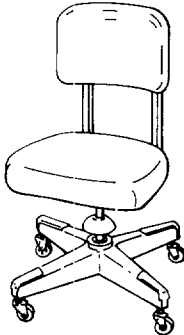
**STORAGE SHELVES**



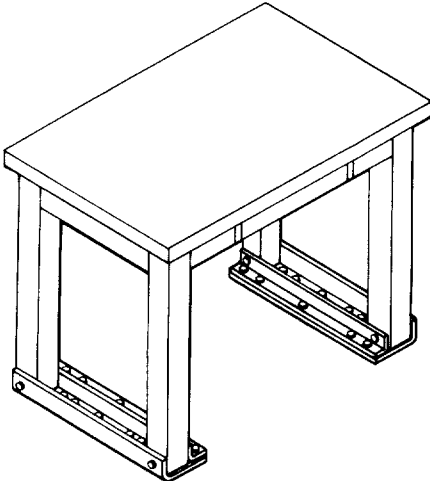
**WALL STORAGE CABINET**



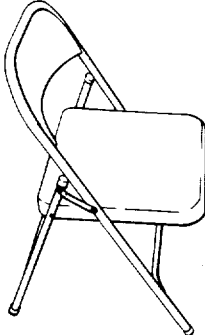
**STEP STOOL**



**ROTARY  
DESK CHAIR**



**OFFICE TABLE**



**FOLDING  
CHAIR**

**CHAPTER 3**  
**FURNITURE AND CABINETS**  
**Section I INTRODUCTION**

**3-1. GENERAL INFORMATION.**

3-1.1 Scope. This chapter contains the description of all furniture and cabinets contained in this section.

**32. EQUIPMENT DESCRIPTION.**

- a. Office table. Provides a general work area. There is one drawer underneath the table top. Dimensions:

Width	36 in. (91.4 cm)
Depth	24 in. (61.0 cm)
Height	30.5 in. (77.5 cm)

- b. Rotary desk chair. Provides seating for personnel working at desk. It has a 3-3/4 in. (9.5 cm) seat height adjustment, ball bearing casters, tilt movement tension adjustment and adjustable back height. Dimensions:

Width	20 in. (50.8 cm)
Depth	21 in. (53.3 cm)
Height	32 in. (81.3 cm)

- c. Folding chair. Provides general seating. Folds flat for storage. Dimensions:

Width	18 in. (45.7 cm)
Depth	20 in. (50.8 cm)
Height	32 in. (81.3 cm)

- d. Step stool. Consists of a caster-mounted frame with two step levels. It will roll freely when unweighted and becomes stationary when a slight weight is applied. Dimensions:

Height	16 in. (40.6 cm)
--------	------------------



e. Storage shelves. Consists of three different sizes. Used for storage of maps.

Width	38 in. (96.5 cm)
Depth	29 in. (73.7 cm)
Height	72 in. (182.9 cm)
Width	38 in. (96.5 cm)
Depth	25 in. (63.5 cm)
Height	72 in. (182.9 cm)
Width	38 in. (96.5 cm)
Depth	29 in. (73.7 cm)
Height	40 in. (101.6 cm)

f. Wall storage cabinet. Provides storage for miscellaneous items. It has double doors with a built-in latch and full-length piano hinges. There are removable retaining rods in front of each shelf. Dimensions:

Width	30 in. (76.2 cm)
Depth	12 in. (30.5 cm)
Height	18 in. (45.7 cm)

**3-3. TECHNICAL PRINCIPLES OF OPERATION .** There are no specific principles of operation for this equipment.

## Section II OPERATING INSTRUCTIONS

**3-4. DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS** . This equipment has no operator controls or indicators.

**35. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES** . There are no operator PMCS procedures assigned for this equipment.

### **36. OPERATION UNDER USUAL CONDITIONS.**

3-6.1 Preparation For Movement. Check that portable equipment is properly secured with provided tiedowns.

**37. OPERATION UNDER UNUSUAL CONDITIONS** . This equipment is designed for operation only in a controlled environment.

## Section III OPERATOR MAINTENANCE

**3-8. LUBRICATION INSTRUCTIONS** . This equipment does not require lubrication.

**3-9. TROUBLESHOOTING PROCEDURES** . There are no operator troubleshooting procedures assigned for this equipment.

### **3-10. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering operator maintenance functions for the cabinets and furniture. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

3-10.1 Inspect Cabinets and Furniture. Inspect cabinets and furniture for structural damage, rust and proper operation of all latches, hinges, drawer slides, and adjustment mechanisms.

## Section IV ORGANIZATIONAL MAINTENANCE

**3-11. LUBRICATION INSTRUCTIONS** . This equipment does not require lubrication.

**3-12. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.**

3-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

3-12.2 Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

3-12.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-6675-315-24P covering organizational maintenance for this equipment.

**3-13. SERVICE UPON RECEIPT.**

3-13.1 Checking Unpacked Equipment.

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

b. Check the equipment against the packing list to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.

c. Check to see whether the equipment has been modified.

**3-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES** . There are no organizational PMCS procedures assigned for this equipment.

**3-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES** . There are no organizational troubleshooting procedures assigned for this equipment.

**3-16. MAINTENANCE PROCEDURES.**

a. This section contains instructions covering organizational maintenance functions for the cabinets and furniture. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

INDEX

PROCEDURE	PARAGRAPH
Replace Door Hinge (Piano Hinge) .....	3-16.1
Replace Door Latch (Wall Storage Cabinet) . .....	3-16.2
Remove/Install Storage Shelves . .....	3-16.3
Remove/Install Office Table . .....	3-16.4
Remove/Install Wall Storage Cabinet . .....	3-16.5

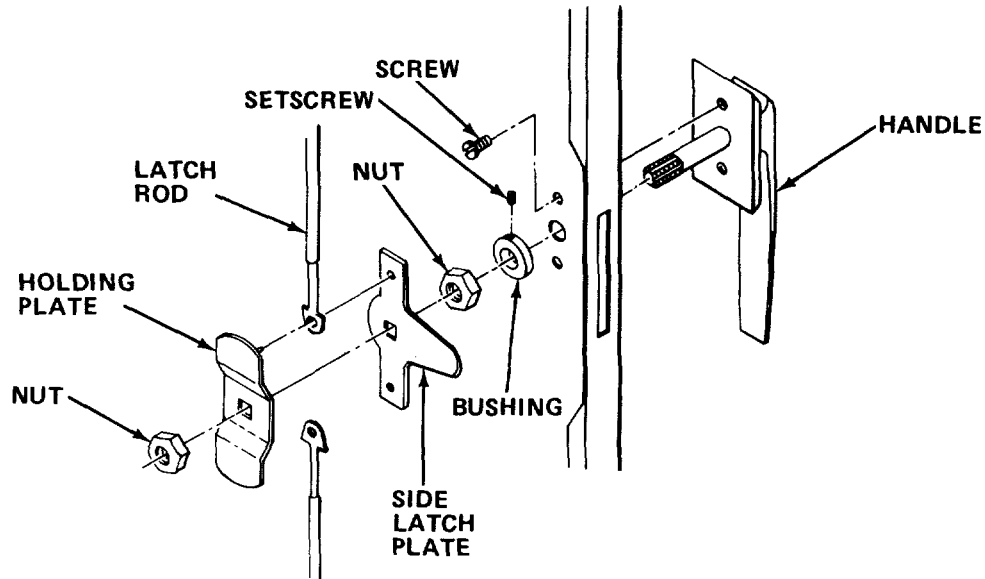
3-16.1 Replace Door Hinge (Piano Hinge).

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 1/4 in. Electric Drill  
5/32 in. Twist Drill  
Pop Rivet Gun

SUPPLIES: Storage Cabinet Hinge  
5/32 in. Pop Rivets  
8-32 x 1/2 in. Screws (4 required)  
8-32 Nuts (4 required)

- a. Drill out rivets holding hinge to cabinet and remove hinge.
- b. Install new hinge and temporarily secure with four screws and nuts.
- c. Close and latch cabinet door and install 12 pop rivets.
- d. Remove temporarily installed screws and nuts, and install remaining pop rivets.



### 3-16.2 Replace Door Latch (Wall Storage Cabinet).

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 9/16 in. Combination Wrench  
Flat Tip Screwdriver

SUPPLIES: Handle-Type Latch

- a. Remove holding plate retaining nut.
- b. Remove holding plate and latch rods.
- c. Remove side latch plate.
- d. Remove handle retaining nut.
- e. Loosen setscrew and remove bushing from handle shaft.
- f. Remove two handle retaining screws and remove handle.
- g. Install new handle and secure with two screws.
- h. Reinstall bushing on handle shaft and tighten setscrew.
- i. Reinstall handle retaining nut.
- j. Reinstall side latch plate.
- k. Reinstall latch rod holding plate and latch rods.
- l. Reinstall holding plate retaining nut.

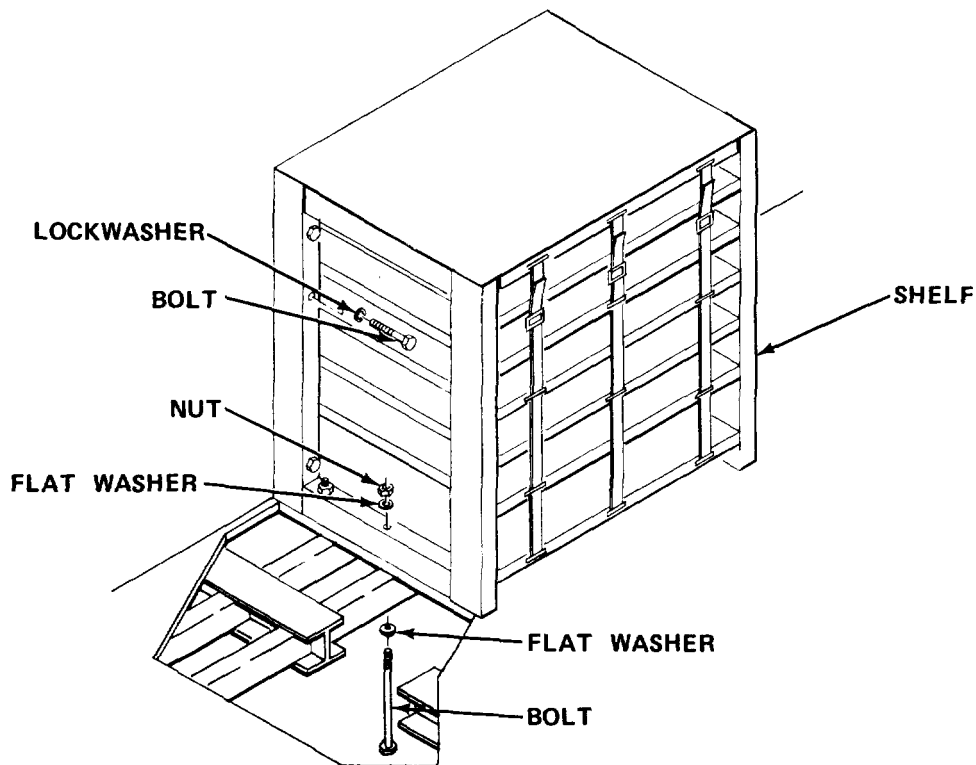
3-16.3 Remove/Install Storage Shelves.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Two are required to perform this procedure.

TOOLS: 1/2 in. Drive Ratchet  
 3/4 in. Socket  
 1/2 in. Socket  
 4 in. Extension

SUPPLIES: Storage Shelf



**NOTE**

Remove other shelving/equipment as required to facilitate removal/ installation of section component.

- a. Remove bolts and lockwashers securing shelf to wall.

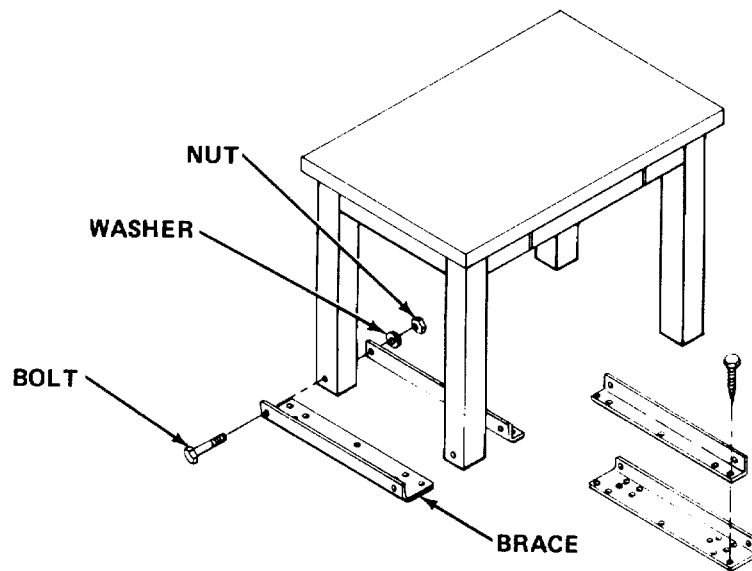
- b. Remove nuts and flat washers securing shelf to floor. Push bolts through base far enough to facilitate removal of defective shelf.
- c. Remove defective shelf.
- d. Position new shelf in place and secure to floor with flat washers and nuts.
- e. Secure new shelf to wall with lockwashers and bolts.

3-16.4 Remove/Install Office Table.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 1/2 in. Drive Ratchet  
 1/2 in. Socket  
 2 in. Socket Extension

SUPPLIES: Office Table



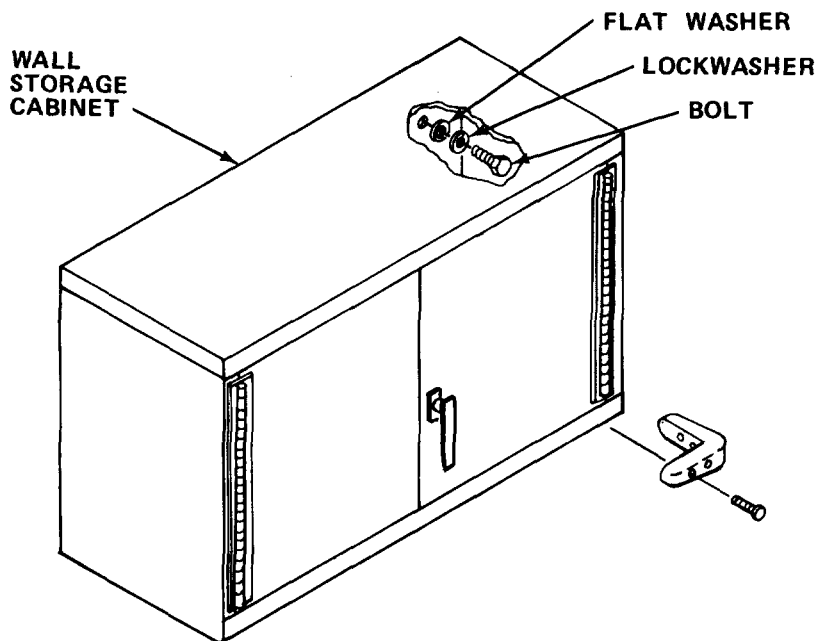
- a. Remove mounting bolts, washers, and nuts.
- b. Remove defective table.
- c. Drill holes in new table legs as necessary to facilitate mounting.
- d. Place new table in position and line up holes with bracket.
- e. Secure with bolts, washers, and nuts.

### 3-16.5 Remove/Install Wall Storage Cabinet.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 1/4 in. Drive Socket Set

SUPPLIES: Wall Storage Cabinet



- a. Remove bolts, flat washers, and lockwashers which secure cabinet to wall.
- b. Remove cabinet.
- c. Install new cabinet and secure to wall with bolts, flat washers, and lockwashers.

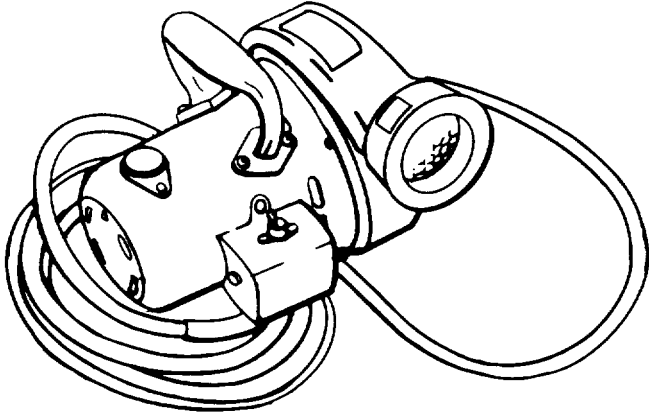
**3-17. PREPARATION FOR STORAGE AND SHIPMENT.** Contact your battalion for packing and shipping instructions.

#### **Section V DIRECT/GENERAL SUPPORT MAINTENANCE**

There are no direct/general support maintenance procedures assigned for this equipment.

**3-9/(3-10 blank)**





## CHAPTER 4

## SUPPORT ITEMS

## Section I INTRODUCTION

**4-1. GENERAL INFORMATION.**

4-1.1 Scope. This chapter covers the support items contained in this section. The support items consists of the Model 3400 Vacuum Cleaner.

**4-2. EQUIPMENT DESCRIPTION.****4-2.1 Equipment Characteristics, Capabilities, and Features.**

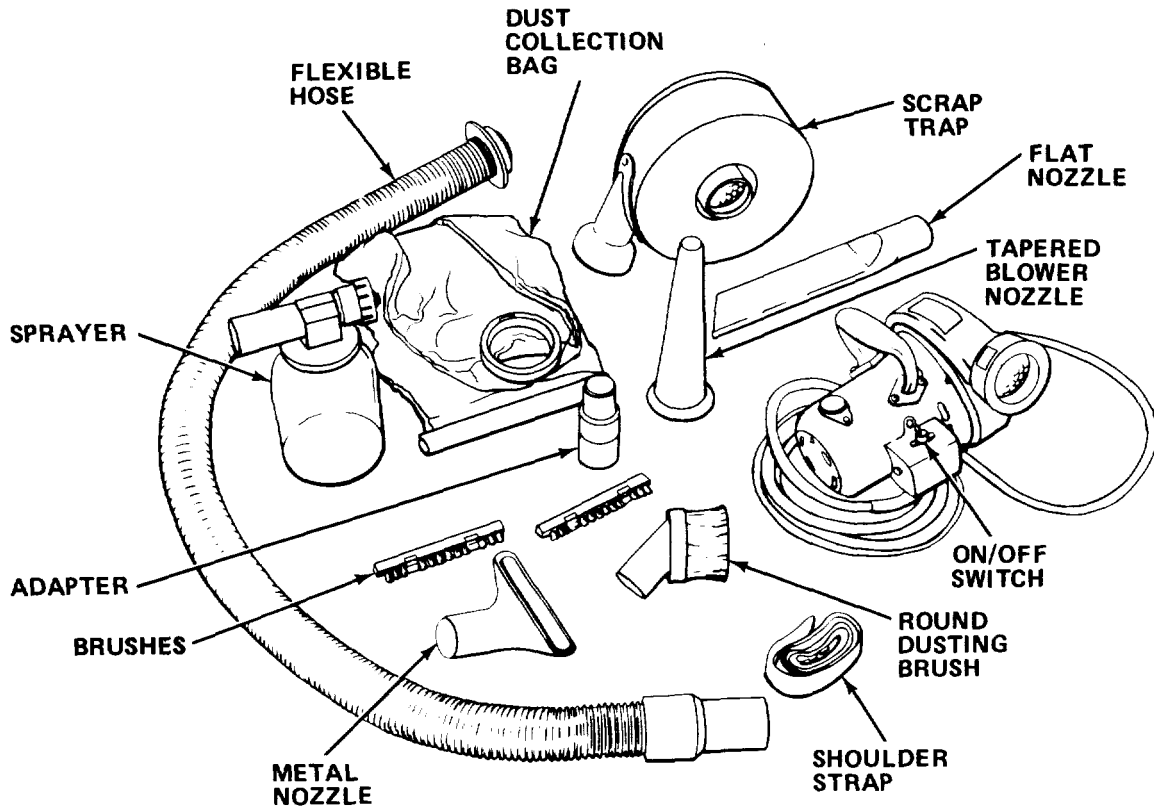
- a. High Speed.
- b. Heavy duty motor.
- c. Used for general cleaning.

4-2.2 Equipment Data. The vacuum cleaner is packed in a storage box containing hose, various vacuum and blowing attachments, liquid spray attachments, and motor repair kit containing motor bearings, brushes, and toggle switch.

**4-3. TECHNICAL PRINCIPLES OF OPERATION.** Technical principles of operation are combined with operator controls and indicators.

Section II OPERATING INSTRUCTIONS

4-4. DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS.



Control or Indicator

Function

Sprayer

Sprays liquids when hooked to blower side of vacuum cleaner.

Flexible Hose

Directs airflow in hard-to-reach areas.

Dust Collection Bag

Collects and holds dust and dirt.

Scrap Trap

Traps large particles before they enter fan.

---

Control or Indicator	Function
Flat Nozzle	Used for hard-to-reach areas.
Tapered Blower Nozzle	Directs airflow.
Switch	Turns power ON or OFF.
Shoulder Strap	Attaches to vacuum cleaner for easier carrying.
Round Dusting Brush	Used for light dust and dirt.
Metal Nozzle	Used for large, flat surfaces.
Brushes	Used on metal nozzle.
Adapter	Connects various attachments to hose.

---

**4-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.**

- a. Before You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.
- b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.
- c. After You Operate. Be sure to perform your after (A) PMCS.
- d. If Your Equipment Fails to Operate. Troubleshoot with the proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

**4-5.1 PMCS Procedures.**

- a. PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.
- b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.
- c. The "Equipment is Not Ready/Available If" column is used for identification of conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.
- d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.
- e. Perform your weekly as well as before operations if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.
- f. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet in recording results of PMCS.
- g. Interval column. This column determines the time period designed to perform your PMCS.
- h. Item to be inspected column. This column lists functional groups and their respective assemblies and sub-assemblies as shown in the Maintenance Allocation Chart, (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.
- i. Equipment is Not Ready/Available If: column. This column indicates the reason or cause why your equipment is not ready/available to perform its primary mission.

Table 4-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

If equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

B - Before  
 D - During  
 A - After

W - Weekly  
 M - Monthly  
 Q - Quarterly

AN - Annually  
 S - Semiannually  
 BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED  PROCEDURE	For Readiness Reporting, Equipment Is Not Ready Available If:
1	B	<p><b><u>VACUUM CLEANER</u></b></p> <p><u>Inspect</u></p> <p>Inspect vacuum cleaner for damage to housing or attachments, frayed or worn power cord, and proper operation of motor.</p>	<p>Cracked or broken housing.                      Frayed, worn, or damaged power cord or plug.                      Noisy or improper motor operation.</p>

#### 4-6. OPERATION UNDER USUAL CONDITIONS.

##### WARNING

**Electric shock could occur if used on wet surfaces. Do not expose to rain; store indoors. Be sure electrical cable is in good condition and properly grounded.**

##### 4-6.1 Operating Procedures.

- a. Using as vacuum.
  - (1) Attach dust collection bag to air discharge opening.
  - (2) Remove protective screen lock from air intake opening, and attach scrap trap to that opening.
  - (3) Attach swivel end of hose to scrap trap by turning lock to right until secure.
  - (4) Attach tool required to other end of hose.
  - (5) Insert plug into 120 V ac wall outlet, and position ON/OFF switch to ON.
- b. Using as blower.

##### NOTE

**If desired, hose may be used with tapered rubber nozzle.**

- (1) Attach tapered rubber nozzle to discharge opening.
  - (2) Attach protective screen lock to air intake opening.
  - (3) Insert plug into 120 V ac wall outlet, and position ON/OFF switch to ON.
- c. Using as sprayer.

##### NOTE

**Pushing syphon tube too far into sprayer cap may block air flow.**

- (1) Push syphon tube firmly into hole in bottom of sprayer cap. Screw cap onto jar and be sure that tube is at last 1/4 inch above bottom of jar. Trim tube if too long.
- (2) Prepare liquid to be sprayed according to instructions on container. Fill sprayer jar not more than 3/4 full.

(3) Attach blower hose to exhaust end of blower and attach the sprayer to the other end of the hose, using adapter.

**NOTE**

**Thick liquids will take a few seconds to start spraying.**

(4) Turn on blower and point sprayer to a waste area for testing. To spray, cover hole at top with finger; to stop spraying, remove finger from hole.

(5) For light liquids, turn sprayhead in direction reading "LESS". For heavier liquids turn in direction reading "MORE".

(6) Regulate spray pattern by turning the fan adjustment on the sprayhead.

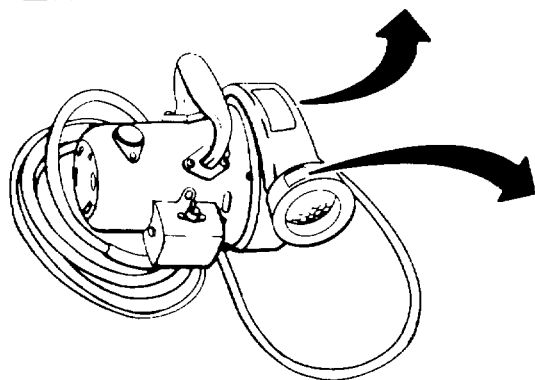
(7) Immediately after using sprayer for painting, clean jar and spraygun thoroughly. To dismantle adjustable spray control nozzle, twist to left, pull off, and clean by running cleaner through all openings. Reinstall nozzle.

4-6.2 Preparation For Movement. Check that the vacuum cleaner is properly stored in the container and securely held with tiedowns.

4-6.3 Operating Instructions on Decals and Instruction Plates.

**WARNING**

THIS DEVICE IS NOT TO BE USED IN "HAZARDOUS LOCATIONS" AS DEFINED BY UNDERWRITERS LABORATORIES. IT SHOULD BE GROUNDED IN ACCORDANCE WITH PROVISIONS OF THE NATIONAL ELECTRICAL CODE, OR ANY APPLICABLE LOCAL CODE, AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



**WARNING**

ELECTRIC SHOCK COULD OCCUR IF USED ON WET SURFACES. DO NOT EXPOSE TO RAIN. STORE INDOORS.

**4-7. OPERATION UNDER UNUSUAL CONDITIONS .** Do not use the vacuum cleaner on wet surfaces, nor expose it to rain.



### Section III OPERATOR MAINTENANCE

**4-8. LUBRICATION INSTRUCTIONS.** This equipment does not require lubrication.

**4-9. TROUBLESHOOTING PROCEDURES.**

a. The table lists the common malfunctions which you may find during operation or maintenance of the vacuum cleaner. You should perform the test/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

**Table 4-2. TROUBLESHOOTING**

---

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

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VACUUM CLEANER MOTOR DOES NOT OPERATE.

Step 1. Check power cord.

- (a) If plugged in, proceed to step 2.
- (b) Plug in power cord.

Step 2. Check position of power switch.

- (a) If turned on, proceed to step 3.
- (b) Turn power switch on.

Step 3. Check circuit breaker position in circuit breaker box.

- (a) If turned off or tripped, turn circuit breaker ON.
  - (b) If turned on, refer to organizational maintenance.
- 

**4-10. MAINTENANCE PROCEDURES.** There are no operator maintenance procedures assigned for this equipment.

## Section IV ORGANIZATIONAL MAINTENANCE

**4-11. LUBRICATION INSTRUCTIONS.** This equipment does not require lubrication.

**4-12. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.** These items are not required at the organizational level.

**4-13. SERVICE UPON RECEIPT.**

4-13.1 Checking Unpacked Equipment.

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

b. Check the equipment against the packing list to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.

c. Check to see whether the equipment has been modified.

**4-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES.** There are no organizational PMCS procedures assigned for this equipment.

**4-15. ORGANIZATIONAL TROUBLESHOOTING.** If the vacuum cleaner does not power up when turned on, verify that 120 V ac is present at the receptacle. If voltage is not present, plug equipment into receptacle with power available and proceed with equipment troubleshooting. Perform no-power procedures for dead receptacle (Table 1-4). If voltage is present, replace vacuum cleaner.

**4-16. MAINTENANCE PROCEDURES.** There are no organizational maintenance procedures assigned for this equipment.

**4-17. PREPARATION FOR STORAGE AND SHIPMENT.** Contact your battalion for packing and shipping instructions.

## Section V DIRECT/GENERAL SUPPORT MAINTENANCE

There are no direct/general support maintenance procedures assigned for this equipment.

**APPENDIX A**  
**REFERENCES**

**A-1. SCOPE.**

This appendix lists all forms, field manuals, technical manuals, and miscellaneous publications referenced in this manual.

**A-2. FORMS.**

Recommended Changes to Publications and Blank Forms ..... DA Form 2028

Recommended Changes to Equipment Technical Publications ..... DA Form 2028-2

Hand Receipt/Annex Number ..... DA Form 2062

Equipment Inspection and Maintenance Worksheet ..... DA Form 2404

The Army Maintenance Management System ..... DA PAM 738-750

Quality Deficiency Report ..... SF 368

**A-3. FIELD MANUALS.**

Camouflage ..... FM5-20

First Aid For Soldiers ..... FM21-11

Nuclear, Biological, and Chemical (NBC)  
Defense (Reprinted w/Basic Incl C1) ..... FM21-40

Basic Cold Weather Manual ..... FM31-70

Northern Operations ..... FM31-71

Metal Body Repair and Related Operations ..... FM3-2

**A-4. TECHNICAL MANUALS.**

Administrative Storage of Equipment ..... TM 740-90-1

Chemical, Biological, and Radiological (CBR)  
Decontamination ..... TM 3-220

Hand Receipt, Covering Contents of Components of  
End Items (COEI), Basic Issue Items, (BII) and  
Additional Authorization List (AAL) for  
Distribution Section ..... TM 5-6675-315-14HR

Operator, Organizational, Direct Support, and General Support Maintenance Manual: Air Conditioner, Horizontal, Compact, 208-Volt, 3-Phase, 18,000 Btu Cooling, 12,000 Btu Heating ..... TM 5-4120-367-14

Operator, Organizational, Direct Support, and General Support Maintenance Manual for Chassis, Semi-Trailer, Container Transporter (ADCOR) ..... TM 5-2330-305-14

Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Air Conditioner/Heater ..... TM 5-4120-367-24P

Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Chassis, Semi-Trailer, Container Transporter (ADCOR) ..... TM 5-2330-305-24P

Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List (RPSTL) (Including Depot Maintenance Repair Parts and Special Tools) for Distribution Section ..... TM 5-6675-315-24P

Painting Instructions for Field Use ..... TM 43-0139

Procedure for the Destruction of Equipment to Prevent Enemy Use ..... TM 750-244-3

Use and Care of Hand Tools and Measuring Tools ..... TM 9-243

**A-5. MISCELLANEOUS PUBLICATIONS.**

Lubrication Order: Topographic Support Distribution Section, Model ADC-TSS-3 ..... LO 5-6675-315-12

Lubrication Order: Chassis, Semi-Trailer, Container Transportation (ADCOR) ..... LO 5-2330-305-12

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**APPENDIX B****MAINTENANCE ALLOCATION CHART (MAC)**

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**INTRODUCTION****The Army Maintenance System MAC**

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

This MAC (immediately following the introduction) 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 levels, which are shown on the MAC in column (4) as:

Field – includes two columns, Unit maintenance and Direct Support maintenance. The Unit maintenance column is divided again into two more subcolumns, C for Operator or Crew and O for Unit maintenance.

Sustainment – includes two subcolumns, General Support (H) and Depot (D)

The tools and test equipment requirements (immediately following the MAC) list the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks (immediately following the tools and test equipment requirements) contain supplemental instructions and explanatory notes for a particular maintenance function.

**Maintenance Functions**

Maintenance functions are limited to and defined as follows:

1. 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). This includes scheduled inspection and gagings and evaluation of cannon tubes.
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
3. 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. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:
  - a. Unpack. To remove from packing box for service or when required for the performance of maintenance operations.
  - b. Repack. To return item to packing box after service and other maintenance operations.
  - c. Clean. To rid the item of contamination.

- d. Touch up. To spot paint scratched or blistered surfaces.
- e. Mark. To restore obliterated identification.
- 4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
- 5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.
- 6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of 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.
- 7. 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.
- 8. Paint. To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.
- 9. 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 third position code of the Source, Maintenance and Recoverability (SMR) code.
- 10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures, and maintenance actions 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.

**NOTE**

The following definitions are applicable to the "repair" maintenance function:  
Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

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).

Disassembly/assembly. The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, and that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

- 11. 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. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

12. 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.

### Explanation of Columns in the MAC

Column (1) Group Number. Column (1) lists FGC numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized. Column (3) Maintenance Function.

Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions refer to "Maintenance Functions" outlined above). 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 varies at different maintenance levels, appropriate work time figures are to 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 MAC. The symbol designations for the various maintenance levels are as follows:

Field: C Operator or Crew maintenance  
O Unit maintenance  
F Direct Support maintenance

Sustainment:

L Specialized Repair Activity  
H General Support maintenance  
D Depot maintenance

### NOTE

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

Table 1. MAC for  
Distribution Section

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINT- ENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE	
			FIELD		SUSTAINMENT					
			UNIT		DIRECT SUPPORT	GENERAL SUPPORT	DEPOT			
			C	O	F	H	D			
00	Distribution Section	Overhaul						**		
01	Van Body	Inspect	0.8							
	(ISO Container)	Service Repair	0.9	0.5 1.0	1.5			2.0	2, 7, 10, 11, 15 1, 2, 5, 12	
	Fluorescent Light Assy	Repair	0.1	0.7					1	
	Blackout/Dome Light Assy	Repair	0.2							
	Exhaust Fan Assembly	Repair		0.5					1	
	Air Conditioner/Heater Assy	Replace						2.0	1	A
	Electrical Assy	Inspect Repair		0.5 0.9	1.0				1 1, 2	
	Telephone Binding Post Assy	Replace Repair		0.5 0.7					1 1	
	Emergency Light Assy	Replace		0.3					1	
	Tiedown Socket Assy	Replace		0.3					5	
	Level Indicator Assy	Replace		0.6					2, 6	
	Blackout Curtain Assy	Repair		1.0					5	
	Personnel Ladder Assy	Repair		0.8					1, 12	
	Personnel/Cargo Door Assy	Replace Repair			1.5 2.0				5 5	
** Depot personnel will determine work times.										



Table 1. MAC for  
Distribution Section  
(Continued)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINT- ENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT				
			UNIT		DIRECT SUPPORT	GENERAL SUPPORT	DEPOT		
			C	O	F	H	D		
02	Shredder-Bagger 1410	Inspect	0.5						
		Service	0.9	1.0				1	
		Remove/ Install		3.5				1	
		Electrical System							
		Switch Assembly	Adjust	0.7				2	
	Replace		0.8	0.8			1, 2, 3, 4		
		Trip Dog Assembly	Adjust	0.7				2, 5	
		Hydraulic System							
		Belt Assembly	Adjust	0.5				2, 5	
	Replace		1.0						
		Conveyor Belt Assembly	Adjust	0.5				2, 5	
			Replace		0.6			1, 5	
		Tubing Assembly	Replace	0.9				1, 2	
		Pump Motor Assembly	Replace			1.0		1, 5, 14	B
	Gear Pump Assembly	Replace			0.7		1, 5		
	Cutter Assembly	Repair			2.0		1, 5, 13	B	
	Cutter Drive Motor Assembly	Replace			1.0		1, 5, 13	B	
	Van Rotor Assembly (Paddle Assembly)	Replace	1.0				1		
02A	Shredder-Bagger 1420	Inspect	0.5	0.8				1	
		Service	0.7	1.5				1	
		Remove/ Install		3.5				1, 2	
		Electrical System							
	Switches	Replace	0.5				1, 2		
	Relays	Replace	0.5				1		

**Table 1. MAC for  
Distribution Section  
(Continued)**

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINT- ENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT				
			UNIT		DIRECT SUPPORT	GENERAL SUPPORT	DEPOT		
			C	O	F	H	D		
	Transformer	Replace		0.5				1	
	Conveyor Belt Assembly	Adjust Repair		0.5	2.0			2, 18, 23 2, 18, 23	
	Cutter Assembly	Service Repair			0.6 3.0			2, 18, 20 21, 23	
	Paddle Assembly	Replace		0.5				1, 2, 4, 17, 18, 23	
	Hydraulic System	Adjust			0.3			2, 18, 23	
	Hydraulic Pump Assembly	Replace			2.0			2, 17, 18, 23	
03	Furniture and Cabinets	Inspect Repair Remove/ Install	0.4	0.9				2	
				2.5				2	
04	Support Items	Inspect Replace Repair	0.5	0.1				1	
				0.4					

**Table 2. Tool and Test Equipment  
for Distribution Section**

Tool or Test Equipment	Maintenance Level	Nomenclature	National Stock Number	Tool Number
1	O	Shop Kit, Automotive Maint and Repair Common # 1 Plus Metric Option	4910-00-754-0654	
2	O, F	Tool Kit, General Mechanic's Automotive Plus Metric Option	5180-00-177-7033	
3	F, D	Tool Kit, Electronic Equipment	5180-00-605-0079	
4	F, D	Tool Kit, Electronic Equipment	5180-00-610-8177	
5	O, F, D	Tool Kit, Light Machine Repair	5180-00-596-1540	
6	O	Tool Kit, Carpenter's Engineer Squad	5180-00-293-2875	
7	C	Brush, Wire	7920-00-291-5815	
8	C, O, F	Key Set, Socket Head Screw (2 to 19 mm)	5120-01-046-5079	
9	C	Screwdriver, Cross-Tip No. 2	5120-00-234-8913	
10	C	Screwdriver, Flat tip, 6 in.	5120-00-234-8910	
11	C	Wrench, Adjustable, 6 in.	5120-00-264-3795	
12	O, F	Rivet Gun	5120-00-017-2849	
13	F, D	Tool Kit, Puller, Gear (3 arm)	5120-00-490-4283	B
14	F, D	Torque Wrench, 0-100 FT/LB		B
15	O	Spring Scale	6670-00-238-9777	B

**Table 3. Remarks for  
Distribution Section**

REFERENCE CODE	REMARKS
A	See TM 9-4120-367-14 for maintenance procedures.
B	Maintenance personnel and TSS Section 7 maintenance van (which carries the required tools) are authorized by HHC TOE 05336 H600.

**APPENDIX C****COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS****Section I. INTRODUCTION****C-1. SCOPE.**

This appendix lists components of end item and basic issue items for the Distribution Section to help you inventory items required for safe and efficient operation.

**C-2. GENERAL.**

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II: Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III: Basic Issue Items. These are the minimum essential items required to place the Distribution Section in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the Distribution Section during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

**C-3. EXPLANATION OF COLUMNS.**

The following provides an explanation of columns found in the tabular listings:

a. COLUMN (1): Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.

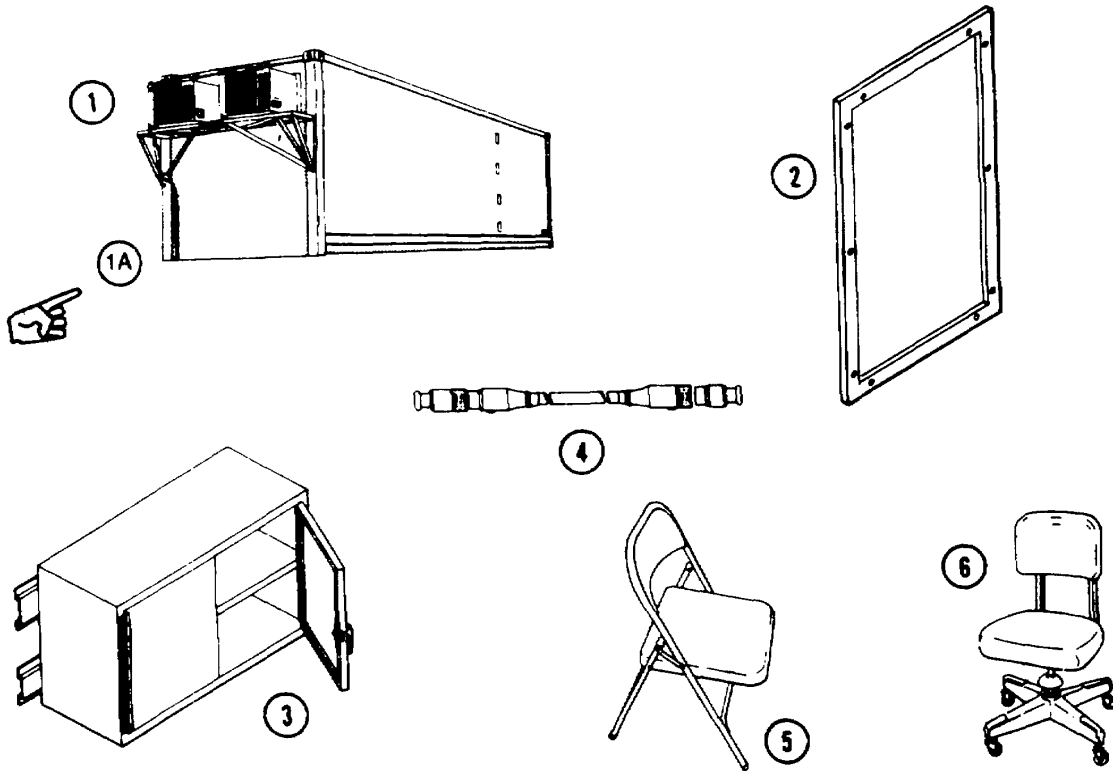
b. COLUMN (2): National Stock Number. Indicates the National Stock Number assigned to the item and will be used for requisitioning purposes.

c. COLUMN (3): Description. Indicates the National item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number.

d. COLUMN (4): Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two character alphabetical abbreviation (e.g., ea, in, pr).

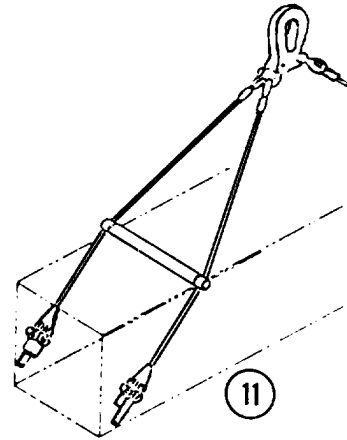
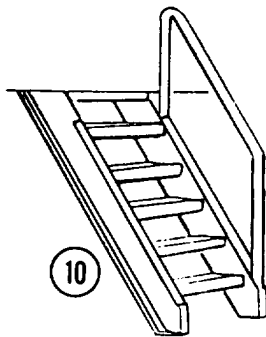
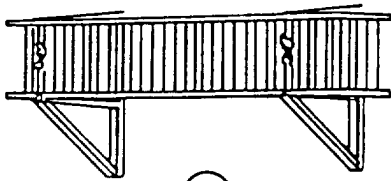
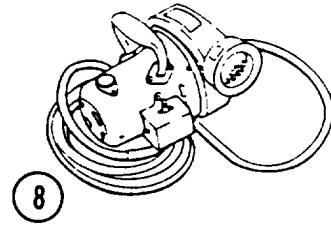
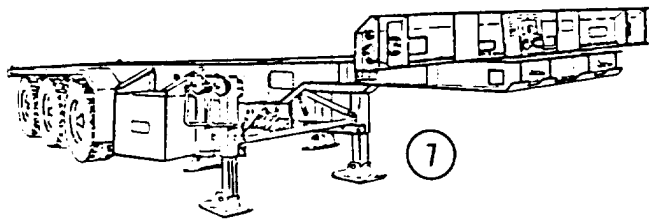
e. COLUMN (5): Quantity Required (QTY rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II COMPONENTS OF END ITEM



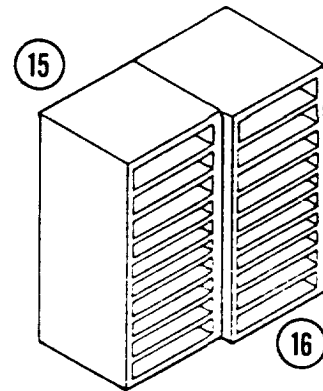
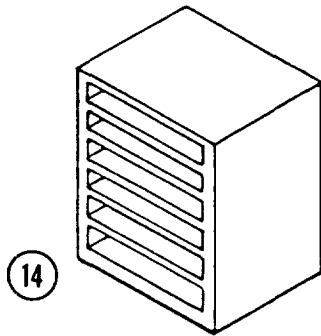
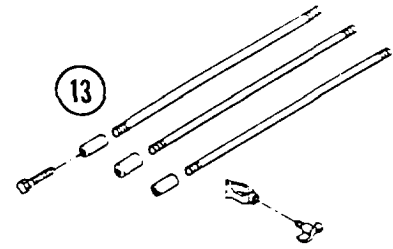
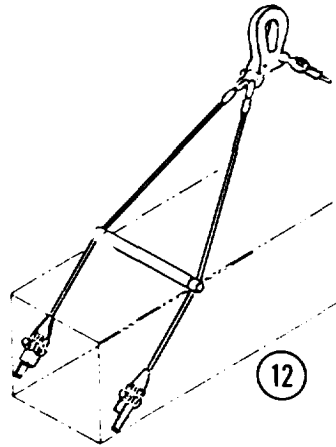
(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
1	4120-00-974-7206	AIR CONDITIONER (81349) MIL-M-52767	EA	2
1A	6675-01-221-6007	VAN ASSEMBLY-MODIFIED (97403)13225E3028	EA	1
2	7195-00-105-7941	BULLETIN BOARD (79819) T5-2303	EA	1
3	7125-00-286-5259	CABINET, STORAGE, WALL (97403) 13225E3150	EA	2
4 2	6150-00-134-0847	CABLE ASSEMBLY, POWER, ELECTRICAL  (90129) RC 1736-5		EA
5	7105-00-269-8463	CHAIR, FOLDING, METAL (04718) 42-6991/9DL	EA	2
6	7110-00-273-8795	CHAIR, DESK, ROTARY (90461) S-17	EA	1

Section II COMPONENTS OF END ITEM - Cont



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
7	2330-01-076-4797	CHASSIS, SEMITRAILER (81349) MIL-B-13207	EA	1
8	7910-00-205-3400	CLEANER, VACUUM, ELECTRIC (51745) MVV 3400	EA	1
9	5440-01-152-7751	LADDER, EXTENSION, FOLDING (39428)8028T16	EA	1
10	2540-01-133-9726	LADDER, VEHICLE-BOARDING (51745) 13225E3074	EA	2
11		LIFTING & TIE-DOWN DEVICE TRANSPORTABLE SHELTER: right-hand (52555) 1390-3	EA	2

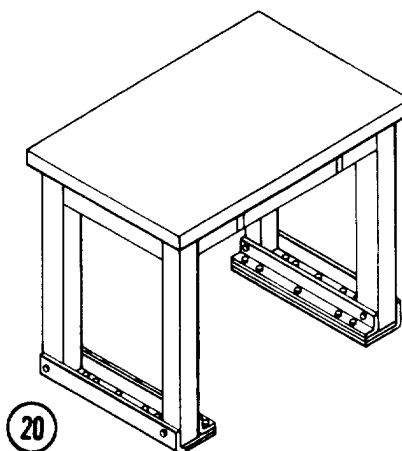
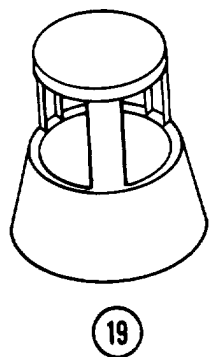
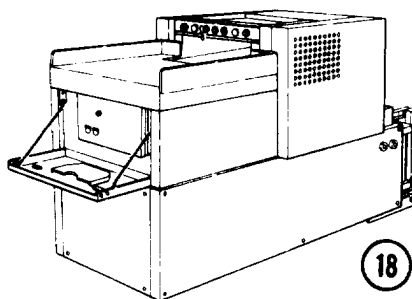
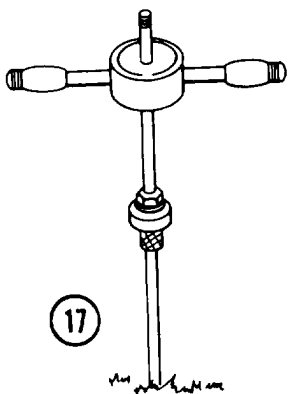
Section II COMPONENTS OF END ITEM - Cont



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
12		LIFTING & TIE-DOWN DEVICE TRANSPORTABLE SHELTER: left-hand (52555) 1390-4	EA	2
		LIGHT, EMERGENCY (97403)13225E3396	EA	1
13		ROD, GROUND (82370) A104	EA	1
14		SHELF, STORAGE (97403)13225E4410	EA	2
15		SHELF, STORAGE (97403)13225E4392	EA	3
16		SHELF, STORAGE (97403)13225E4387	EA	5

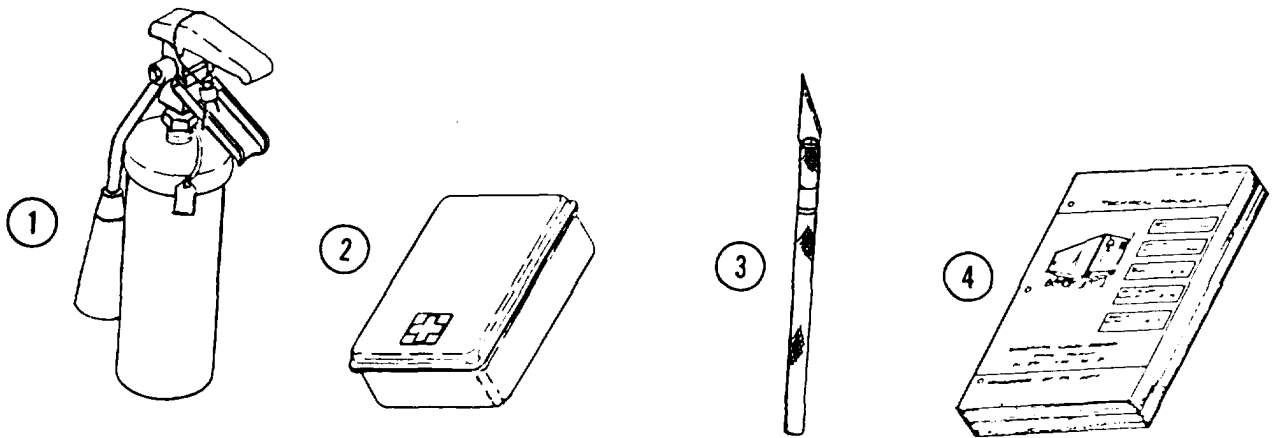


Section II COMPONENTS OF END ITEM - Cont



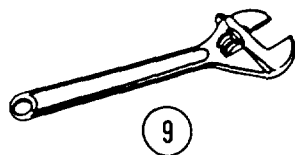
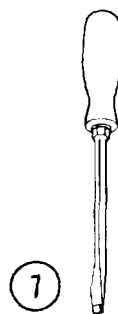
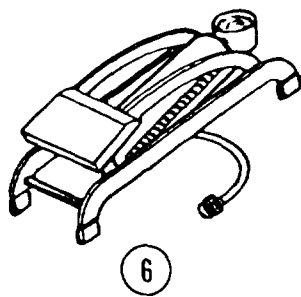
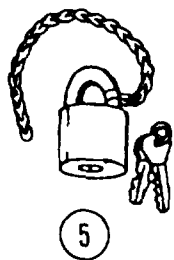
(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
17	5120-01-013-1676	SLIDE HAMMER, GROUND ROD EMPLACEMENT (45225) P74-144	EA	1
18	3615-01-202-4118	SHREADDER-BAGGER (96153)1420	EA	1
19	7105-00-782-3166	STOOL, STEP (81348) AA-S-704	EA	2
20	7110-00-143-0820	TABLE, OFFICE (37296) AA-T-0091	EA	1

Section III BASIC ISSUE ITEMS



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
	7920-00-291-5812	BRUSH, DUSTING, DRAFTSMAN'S (79819) Q6-38NB-010	EA	2
	7920-00-291-5815	BRUSH, WIRE, SCRATCH (39428) 7187T2	EA	1
1	4210-00-555-8837	EXTINGUISHER, FIRE MONOBROMOTRIFLUOROMETHANE (33525) T2	EA	2
2	6545-00-922-1200	FIRST AID KIT, GENERAL PURPOSE (81348) U-A-500	EA	1
	5120-01-046-5079	KEY SET, SOCKET HEAD SCREW (55719) AWM 140CK	SE	1
3	5110-00-595-8400	KNIFE, CRAFTSMAN'S (99941) 3001	EA	2
4		MANUALS, TECHNICAL  LO-5-6675-315-12, Lubrication Order, TSS Distribution Section  TM 5-6675-315-14, Operator's, Organizational, DS and GS Maintenance Manual, TSS Distribution Section	EA	1

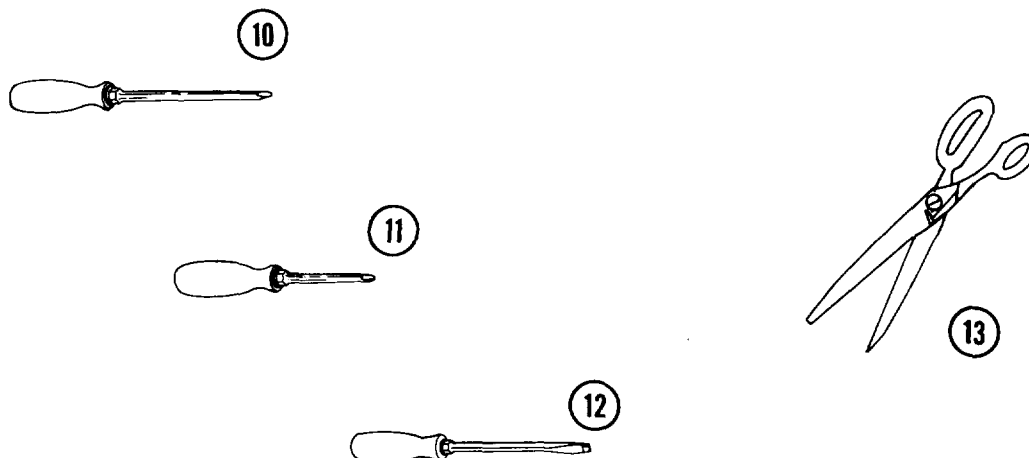
Section III BASIC ISSUE ITEMS - Cont



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
		TM 5-6675-315-24P, Repair Parts and Special Tools List, TSS Distribution Section	EA	1
5	5340-00-682-1505	PADLOCK SET (47765) MS21313	SE	1
6		PUMP, AIR, FOOT OPERATED (53800) 28G 1114	EA	1
7	5120-00-234-8913	SCREWDRIVER, CROSS TIP, SIZE 2 (81348) GGG-S-121	EA	1
8	5120-00-234-8910	SCREWDRIVER, FLAT TIP (78525)1006	EA	1
9	5120-00-264-3795	WRENCH, ADJUSTABLE (80244) GGG-W-631-TY1CL1	EA	1

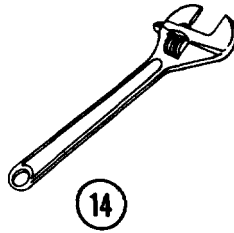
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Section III BASIC ISSUE ITEMS - Cont



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
10	5120-00-764-8080	SCREWDRIVER, CROSS TIP (52346) AA3B077	EA	1
11	5120-00-764-8102	SCREWDRIVER, CROSS TIP (52346) AA3B083	EA	1
12	5120-00-234-8910	SCREWDRIVER, FLAT TIP (78525) 1006	EA	1
13	5110-00-161-6912	SHEARS, STRAIGHT TRIMMER (79819) Q9-3769	EA	2
	7520-00-281-5895	STAPLER, PAPER FASTENING, OFFICE (79819) X8-27	EA	2
	7510-00-272-9662	STAPLES, PAPER FASTENING, OFFICE TYPE (79819) 8-SF4-5M	BX	5
	7510-00-283-0612	TAPE, PRESSURE SENSITIVE ADHESIVE: 9 rolls per package	PK	10
	7510-00-290-2026	TAPE, PRESSURE SENSITIVE ADHESIVE: 5 rolls per package	PK	10

Section III BASIC ISSUE ITEMS - Cont



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
14	7920-00-823-9772	TOWEL, PAPER (81348) UU-T-595	MX	2
	4020-00-242-4074	TWINE, FIBROUS (79819) S9-9	LB	2
	5120-00-240-5328	WRENCH, ADJUSTABLE (93389) 708	EA	1

## APPENDIX D

## ADDITIONAL AUTHORIZATION LIST

## Section I INTRODUCTION

**D-1. SCOPE.**

This appendix lists additional items you are authorized for the support of the Distribution Section.

**D-2. GENERAL.**

This list identifies items that do not have to accompany the Distribution Section and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA or JTA.

**D-3. EXPLANATION OF LISTING.**

National stock numbers, descriptions and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

## Section II ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description  FSCM and Part Number	(3)  U/M	(4)  Qty Auth
<u>TOE AUTHORIZED ITEMS</u>			
6115-00-258-1622	Generator Set, DSL Eng: 60 kW	EA	1
5805-00-543-0012	Telephone, TA 312/PT	EA	1

## APPENDIX E

## EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

## Section I INTRODUCTION

**E-1. SCOPE.** This appendix lists expendable supplies and materials you will need to operate and maintain the Distribution Section. 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.

**E-2. EXPLANATION OF COLUMNS.**

a. Column (1): Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cleaning compound, Item 5, Appendix E.").

b. Column (2): Level. This column identifies the lowest level of maintenance that requires the listed item.

C	Operator/Crew
O	Organizational Maintenance
F	Direct Support Maintenance
H	General 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 Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. Column (5): Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by two-character alphabetical abbreviations (e.g., ea, in, pr ). If the unit of measure differs from the unit of issue, 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
1	O	8040-00-174-2610	Adhesive, Rubber	CN
2	F	8040-00-152-0063	Adhesive, Waterproof	CN
	C	8105-01-115-7075	Bag, Plastic	BX
	C	5110-00-359-6478	Blade, Craftsman's Knife: Beveled	PK
	C	5110-00-542-2043	Blade, Craftsman's Knife: Curved	PK
	C	5110-00-542-2044	Blade, Craftsman's Knife: Square	PK
	C	5110-00-765-4144	Blade, Craftsman's Knife: Stencil	PK
2A	O	7920-00-292-2370	Brush, Cleaning	EA
2B	O	7920-00-205-2401	Brush, Parts	EA
	C	7510-00-161-4291	Clip, Paper	BX
	C	7510-00-958-0743	Clip, Paper, Giant Gem	BX
3	C	8305-00-222-2423	Cloth, Cheesecloth	YD
4	C	7930-00-530-8067	Detergent, General Purpose	GL
	C	7520-00-285-1772	Dispenser, Pressure Sensitive Adhesive Tape	EA
	C	7530-00-268-3994	Envelope, Wallet	BX
	C	7510-01-034-1278	Eraser, Film	BX
5	F	5610-00-618-0258	Floor Patch	GL
6	O	9150-00-190-0904	Grease, GAA	LB



## Section II EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - Cont

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
	C	7510-00-285-5862	Lead, Pencil. Graphite: General Writing, HB	PK
	C	7510-00-285-5847	Lead, Pencil, Graphite: General Writing, 2H	PK
7	C	9150-00-153-0207	Oil, SAE 30 WT	OT
8	O	9150-00-754-2635	Oil, SAE 90 WT	OT
9	O	9150-00-935-9807	Oil, MIL-H-6083	OT
	C	7530-00-285-3083	Pad, Writing Paper	PK
10	O	8010-01-131-6254	Paint, Black	KT
10A	O	8010-01-160-6745	Paint, Brown	KT
10B	O	8010-01-162-5578	Paint, Green	KT
11	O	8010-00-298-3859	Paint, Light Green, Int.	GL
12	C	5350-00-619-9166	Paper, Abrasive	PK
	C	7520-00-935-7136	Pen, Ball Point: retractable, black	DZ
	C	7510-00-240-1526	Pencil, Marking: glazed surface, black, extra thick lead	DZ
	C	7510-00-436-5210	Pencil, Marking, glazed surface, blue, extra thick lead	DZ
	C	7520-00-724-5606	Pencil, Mechanical: automatic	EA
	O	8010-01-193-0520	Primer	KT

## Section II EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - Cont

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
13	O	7920-00-205-1711	Rags	50/LB
	C	7510-00-543-6792	Refill, Pen, Ball-Point	DZ
14	F	8010-01-030-7254	Resin, Epoxy	KT
	C	7510-00-255-4560	Rubber Band Assortment	BX
15	O	FSCM 39428	Screen, Nylon (P/N 1017A31)	RO
16	O	8040-00-851-0211	Sealant, Silicone	TU
	C	5110-00-161-6912	Shears, Straight Trimmer	EA
17	O	6850-00-274-5421	Solvent, P-D-680	CN
18	C	6850-00-880-1013	Spray, Silicone	CN
19	O	FSCM 39428	Spray foam Sealant (P/N 7627T1)	CN
	C	7520-00-281-5895	Stapler, Paper Fastening, Office	EA
	C	7510-00-272-9662	Staples, Paper Fastening, Office Type	BX
20	O	5640-00-103-2254	Tape, Cloth, Duct Sealing, 2 in.	RO
21	C	5970-00-926-7218	Tape, Insulating, Electrical	RO
	C	7510-00-283-0612	Tape, Pressure Sensitive Adhesive: 9 rolls per package	PK
	C	7510-00-290-2026	Tape, Pressure Sensitive Adhesive: 5 rolls per package	PK
	C	7920-00-823-9772	Towel, Paper	MX
	C	4020-00-242-4074	Twine, Fibrous	LB

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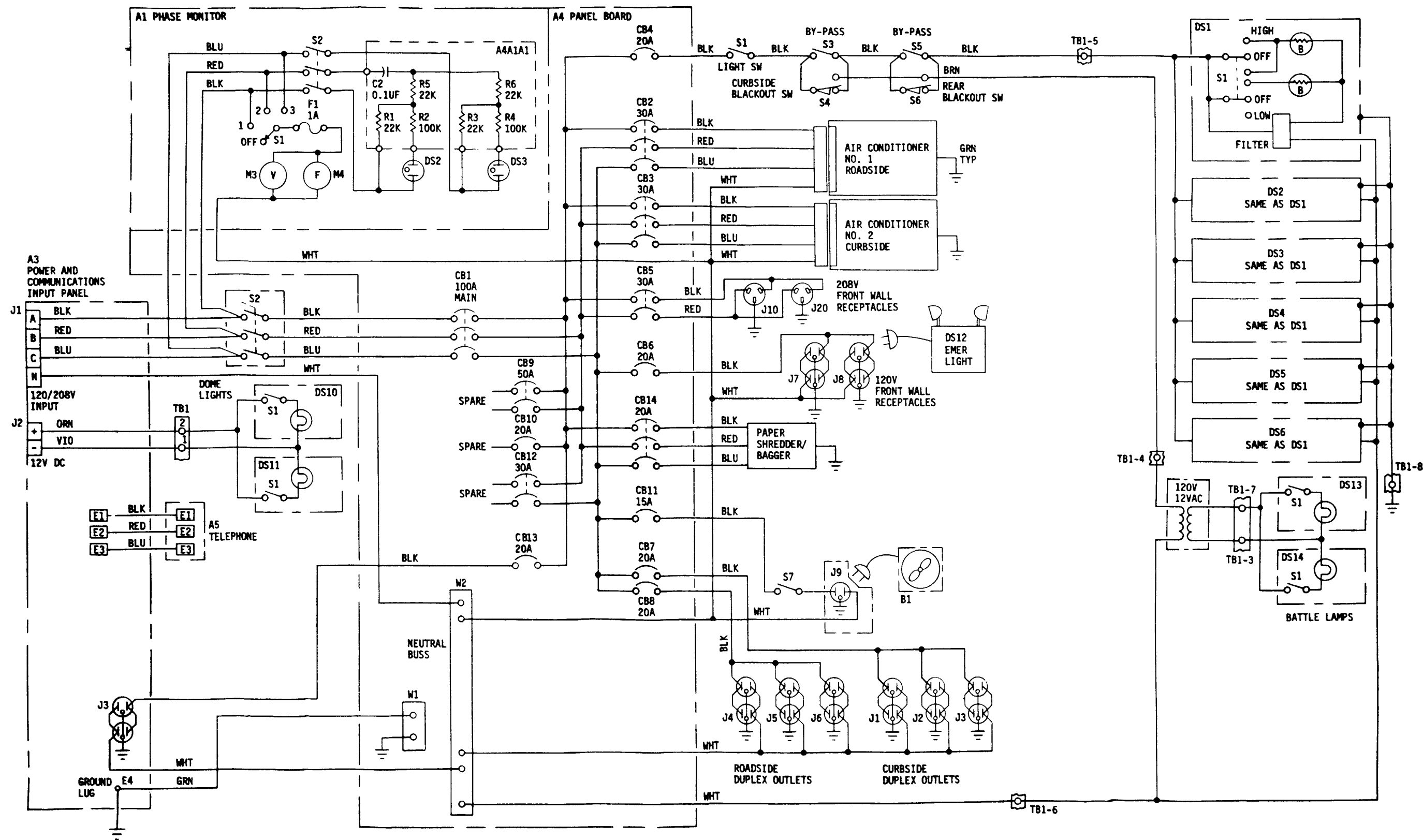
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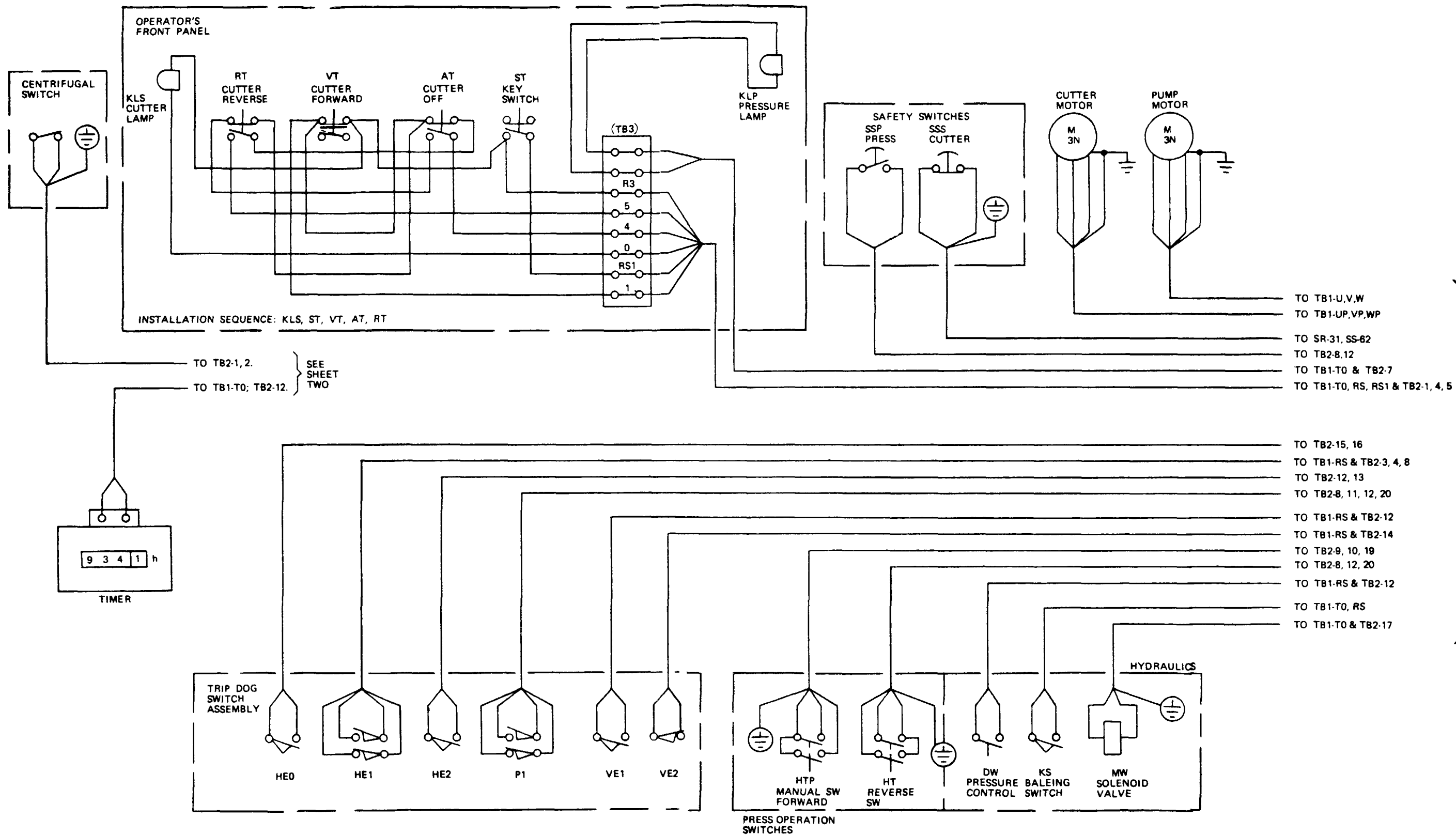
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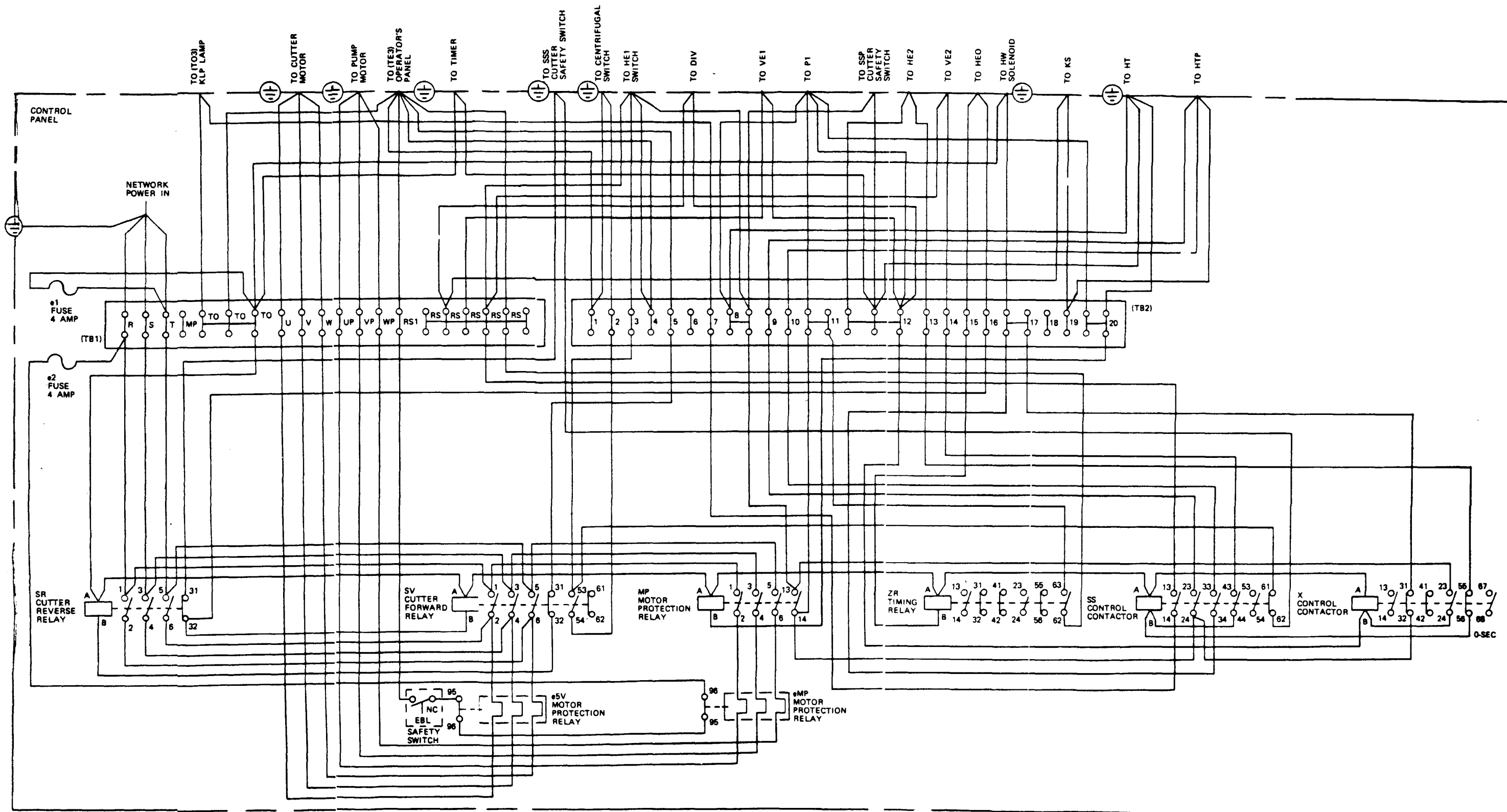
FO-1. Distribution Section Electrical Schematic

FP-1/(FP-2 blank)



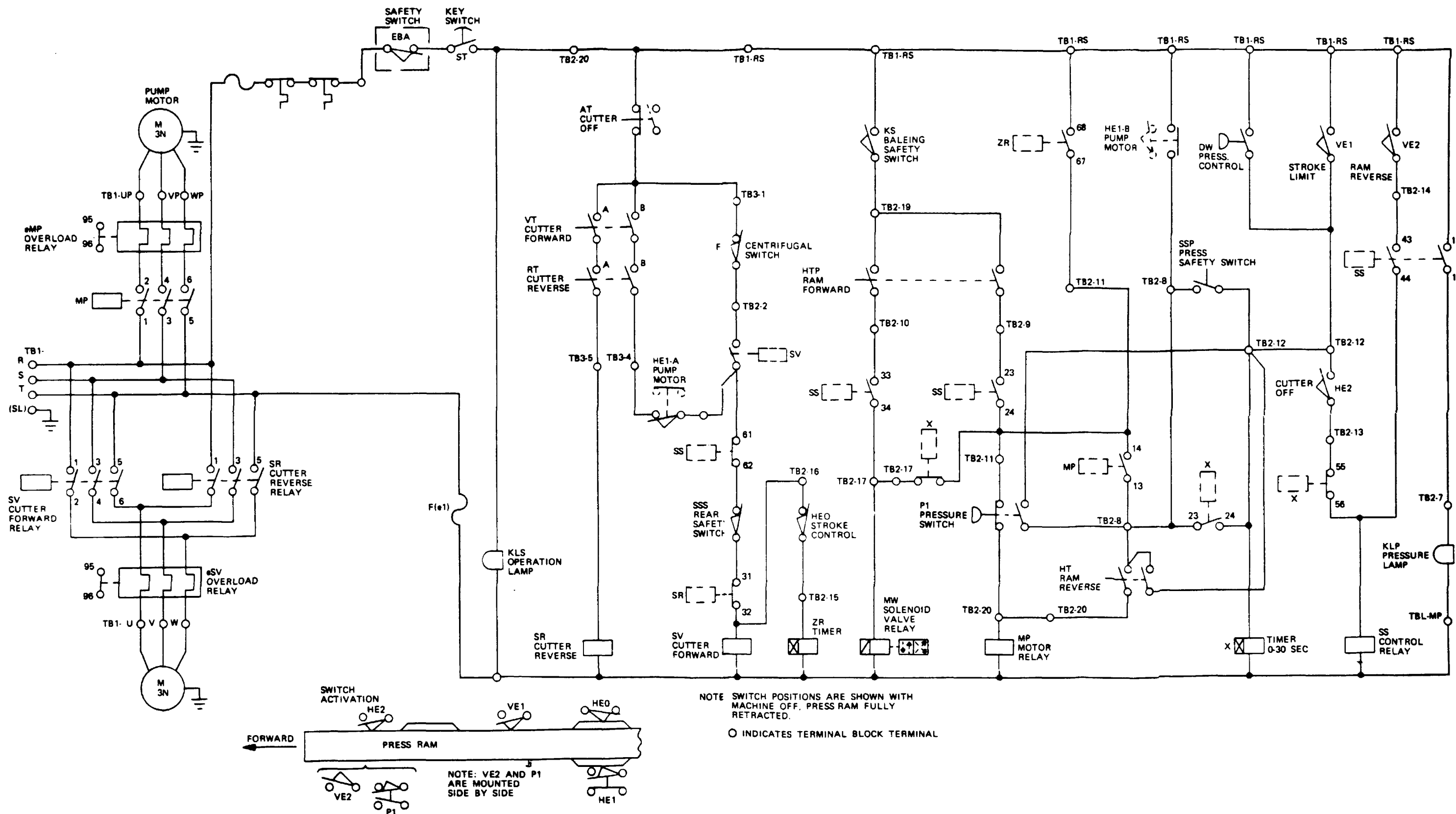
FO-2. Shredder Bagger Wiring (Sheet 1 of 2)

FP-3/(FP-4 blank)



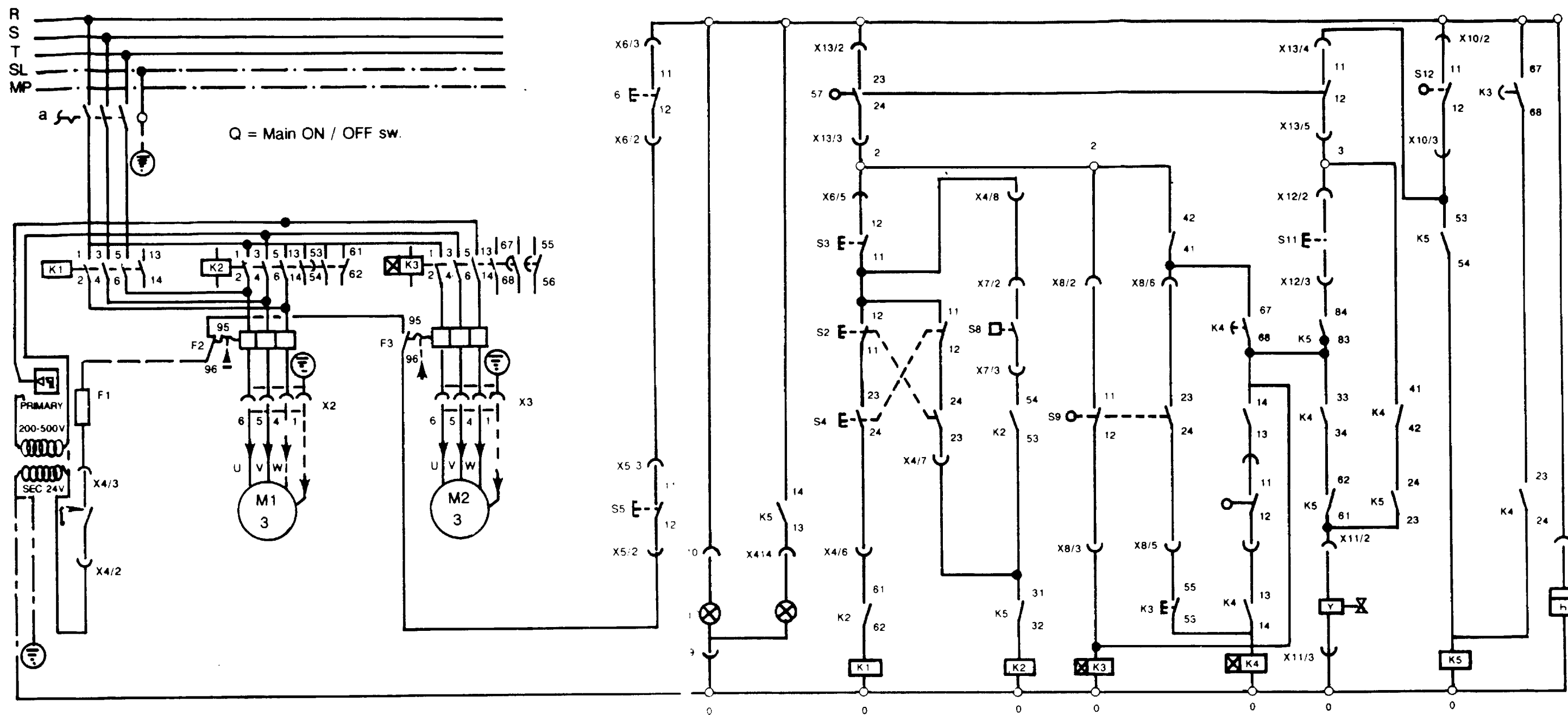
FO-2. Shredder Bagger Wiring (Sheet 2 of 2)

Change 3 FP-5/(FP-6 blank)



FO-3. Shredder Bagger Model 1410 Electrical Diagram

Change 3 FP-7/(FP-8 blank)



S 1= Emergency Off  
 T = Transformer  
 M 1= Cutter Motor  
 M 2= Pump Motor

H 1= Telltale Lamp  
 H 2= T. Lamp press full  
 S 9= Rear terminal sw. piston  
 Y = Solenoid valve

S 12= Front terminal sw. piston  
 h = Hour meter  
 S5/S6= Safety conn. sw.  
 S 7 = Folding sw.  
 S 8 = Centrifugal sw.

S 3= Stop Cutter sw.  
 S 2= Start Cutter sw.  
 S 4= Reverse Cutter sw.  
 S10= Piston stroke limit sw.  
 S11= Bale ejection button sw.

FO-4. Shredder Bagger Model 1420 Electrical Diagram

Change 3 FP-9/(FP-10 blank)

By Order of the Secretary of the Army:

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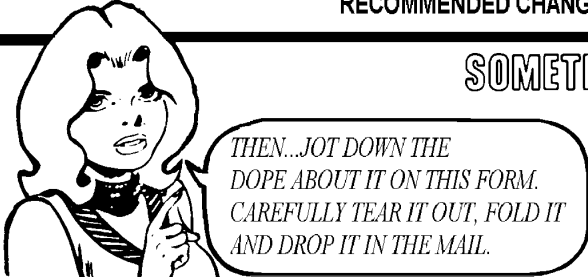
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## The Metric System and Equivalents

### Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

### Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 decagram = 10 grams = .35 ounce  
 1 hectogram = 10 decagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

### Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

### Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

### Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

### Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
----	---------------------------	-------------------------------	------------------------	----

