TM 10-3930-252-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

TRUCK, LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES
4,000 LBS CAPACITY, 144 IN. LIFT, CLARK
MODEL 337450, ARMY MODEL MHE 185,
FSN 3930-086-6677

H E A D Q U A R T E R S , D E P A R T M E N T O F T H E A R M Y
D E C E M B E R 1 9 6 3

SAFETY PRECAUTIONS

Before Operation

Be sure to use a lifting device with a capacity of at least 10,000 pounds when lifting the forklift truck from the carrier. Do not allow the truck to swing or sway. Failure to observe this warning can result in serious injury or death to personnel.

Avoid contact with the battery electrolyte. If the solution comes in contact with the skin, rinse the area immediately with clean water to avoid skin burns. Do not smoke or use an open flame in the vicinity when servicing batteries as they generate hydrogen, an explosive gas.

During Operation

The operator must be alert at all times while operating the forklift truck. Failure to observe this warning can result in serious injury or death to the operator or the personnel.

After Operation

Avoid contact with the battery electrolyte. If the solution comes in contact with the skin, rinse the area immediately with clean water to avoid skin burns. Do not smoke or use an open flame in the vicinity when servicing batteries as they generate hydrogen, an explosive gas.

Changes in force: C 2

CHANGE

No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *29 March 1973*

Operator and Organizational Maintenance Manual

TRUCK, LIFT, FORK; ELECTRIC, SOLID RUBBER TIRES; 4,000-LBS CAPACITY; 144 IN LIFT, CLARK MODEL 337450, ARMY MODEL MHE 185,FSN 3930-086-6677

TM 10-3930-252-12, 27 December 1966, is changed as follows:
Page 2. Paragraph la is superseded as follows:

1. Scope

a. This manual is for your use in operating and maintaining the Truck, Lift, Fork, (Clark Model 337450, Army Model MHE 185).

Paragraph 1*b* lines 3 through 6. The following sentence is rescinded: Appendix III contains the list of Basic Issue Items an(d Maintenance and Operating Supplies authorized the operator of the equipment.

Paragraph 1d is superseded as follows:

d. The reporting of errors, omissions, and recommendations for improving this bulletin by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forward direct to Commander, US Army Mobility Equipment Command, ATTN: AMSME-MPP, St. Louis, MO 63120.

Paragraph 2 is superseded as follows:

2. Forms and Records
Maintenance forms and records that you are required to use are explained in TM 38750.
Page 5. Paragraph 4b(6). Tabulated data is added as follows:

(6) **Battery.**

Military Standard No.....15367
Metallic Rectifier Changer .....Fed. Spec.W-C-260
Motor Generator Charger .....Fed. Spec. W-B-95
Page 70. Appendix I is superseded as follows

APPENDIX I

REFERENCES

1. Fire Protection

TB 5-4200-200-10	Hand Portable Fire Extinguisher Approved for Army Users

2. Maintenance

TM 5331B	Utilization of Engineer Construction Volume B-Lifting, Loading, and Jauling Equipment.
TM 9-6140-200-14	Operator, Organizational, Direct Support, and General Support Maintenance Manual: Storage Batteries: Lead-Acid Type.
TM 11-6140-203-15-1	Operator, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Aircraft and Nonaircraft Nickel-Cadmium Batteries (General).
TM 38-750	The Army Maintenance Management System (TAMMS).

3. Demolition

TM 750-244-3	Procedures for Destruction of Equipment to Prevent Enemy Use.

***This change supersedes C 1, 31 August 1966.**

Page 78. Appendix III is superseded as follows:

APPENDIX III

BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED

Section I. INTRODUCTION

1. Scope

This appendix lists items required by the operator for operation of the fork lift truck.

2. General

This list is divided into the following sections:

a. *Basic Issue Items List -Section II*. Not applicable.

b. *Items Troop Installed or Authorized List Section III*. A list of items in alphabetical sequence, which at the discretion of the unit commander may accompany the fork lift truck. These items are NOT SUBJECT TO TURN-IN with the fork lift truck when evacuated.

3. Explanation of Columns

The following provides an explanation of columns in the tabular list of Basic Issue Items List, Section II, and Items Troop Installed or Authorized, Section III.

a. *Source, Maintenance and Recoverability Code (SMR).* (Not applicable).

b. *Federal Stock Number.* This column indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. *Description*. This column indicates the Federal item name and any additional description of the item required.

d. *Unit of Measure(UIM)*. A two character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

e. *Quality Furnished with Equipment (BIIL).* (Not applicable).

f. *Quantity Authorized (Items Troop Installed or Authorized).* This column indicates the quantity of the item authorized to be used with the equipment.

SECTION III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST

(1) SMR Code	(2) Federal stock Number	(3) Description Ref No & mfr Code	Usable on code	(4) Unit of meas.	(4) Qty Auth.
	752-559-9618	CASE, MAINTENANCE AND OPERATIONAL MANUALS		EA	1
	4210-889-2221	EXTINGUISHER, FIRE		EA	1

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS,
General, United States Army,
Chief of Staff.

Official:
VERNE L. BOWERS,
Major General, United States Army,
The Adjutant General.

Distribution:
To be distributed in accordance with DA Form 12-25A, (qty rqr block No. 893) Operator maintenance requirements for Warehouse.

TECHNICAL MANUAL
No. 10-3930-252-125

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *27 December 1963*

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

TRUCK, LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES, 4,000 LBS CAPACITY, 144 IN.

LIFT, CLARK MODEL 337450, ARMY MODEL MHE 185, FSN 3930-086-6677

TAGO 7309A-January

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for the use of the personnel to whom the Clark Model 337450, Electric Forklift is issued. They provide information on the operation, lubrication, preventive maintenance services, and organizational maintenance of the equipment, accessories, components, and attachments.

b. Appendix I contains a list of publications applicable to this manual. Appendix II contains the Maintenance Allocation Chart. Appendix III contains the list of Basic Issue Items and Maintenance and Operating Supplies authorized the operator of the equipment.

c. Numbers in parentheses on illustrations indicate quantity. Numbers preceding nomenclature callouts on illustrations indicate the preferred maintenance sequence.

d. The direct reporting by the individual user, of errors, omissions and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9) will be used for reporting these improvements. This form will be completed in triplicate, using pencil, pen, or typewriter. The original and one copy will be forwarded direct to the Commanding Officer, U. S. Army Mobility Support Center, ATTN: SMOMS-MM, P. O. Box 119, Columbus, Ohio 43216. One information copy will be provided to the individual's immediate supervisor, (e.g., officer, noncommissioned officer, supervisor, etc.).

e. Report all equipment improvement recommendations as prescribed by TM 38-750.

2. Record and Report Forms

For record and report forms applicable to the operator and organizational maintenance, refer to TM 38-750.

Note. Applicable forms, excluding Standard Form 46, which is carried by the operator shall be kept in a canvas bag mounted on the equipment.

Section II. DESCRIPTION AND DATA

3. Description

The forklift truck is electrically operated by a self-contained battery. The lift and tilt of the fork is hydraulically controlled. The truck is equipped with power steering for ease of operation. The forward and reverse speeds are controlled by a carbon pile through the accelerator. The entire system is designed for safety by means of safety switches attached to the park brake linkage, accelerator, and key switch, there is also a switch connected with the brake pedal at the master cylinder to stop the drive motor when the brake is applied. The carbon pile and hydraulic pump are provided with access doors which swing down, the doors are hinged at the bottom and have screws securing them at the top. When the doors are up they function as sides of the truck frame. The fuses, resistors, contractors, and other electrical components are provided with a heavy steel access panel which is mounted on the rear counterweight 2 with four screws. Figures 1 and 2 give an overall three-quarter view of the forklift truck.

4. Identification and Tabulated Data

a. Identification.

(1) Manufacturers identification plate. Located on the right frame assembly directly above the carbon pile access door, it specifies nomenclature, type tires, capacity, manufacturer, serial number, model number, registration number, contract number or order number, service weight, wheel loading (no load on forks), wheel loading (rated load on forks), and center of gravity.

(2) Hydraulic steering pump drive motor plate. Located on the top center of the motor, specifies manufacturer, model number, and rpm (revolutions per minute).

(3) Power steering pump plate. Located on top

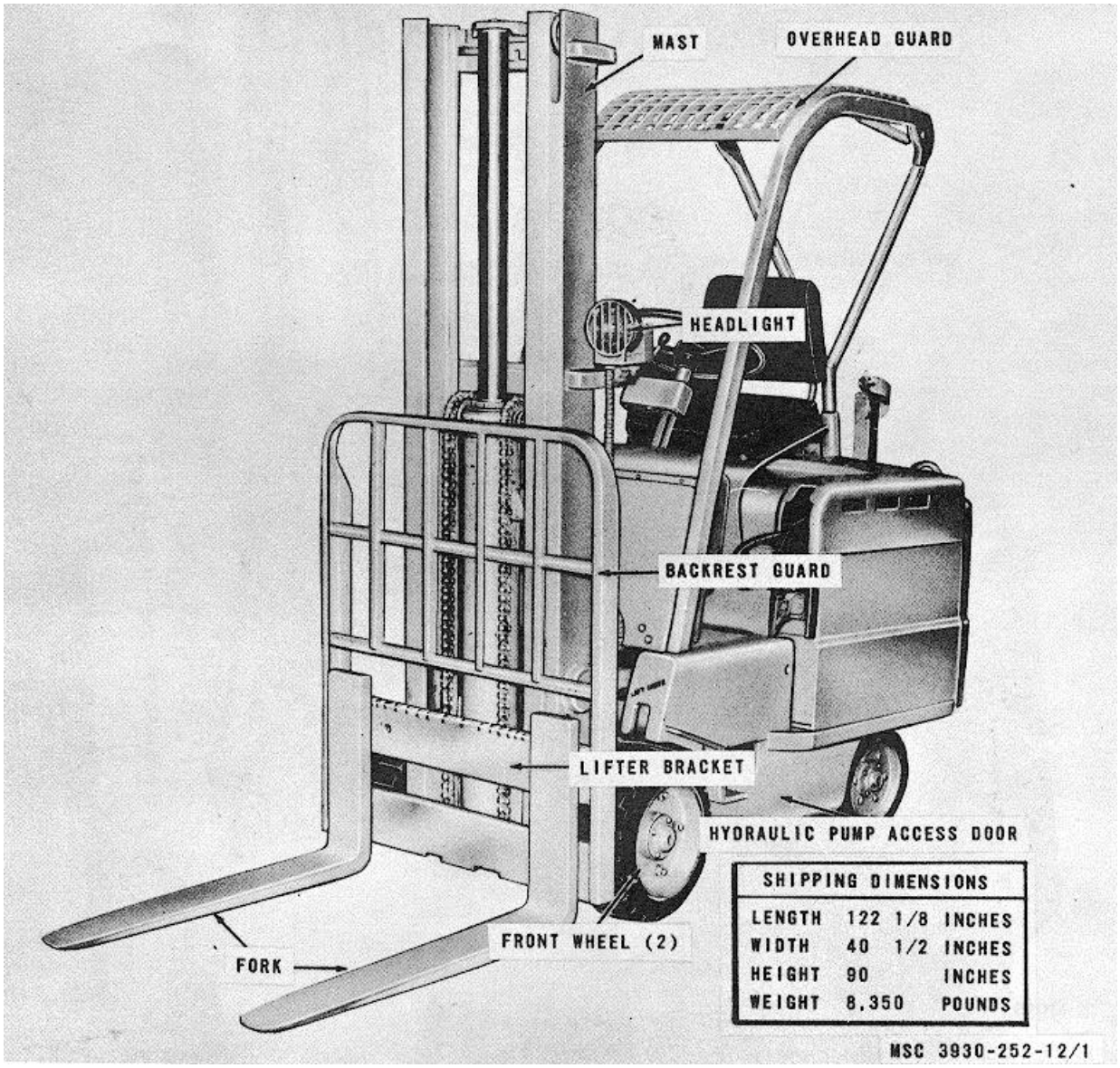


Figure 1. Forklift, left front, three-quarter view, with shipping dimensions

Figure 2. Forklift, right rear, three-quarter view.

of the steering pump, specifies manufacturer and model number.

(4) *Contactor panel plate*. Located on upper right corner of panel, specifies manufacturer, part number, and serial number.

b. *Tabulated Data.*

(1) *Manufacturers identification plate*.

Nomenclature---------- Truck, lift, fork, electric
Type tires---------- Solid rubber tires
Capacity (uprights vertical) 4000 lbs at 24 inches from face of forks.
Manufacturer---------- Clark Equipment Co.
Model No ---------- 337450
Contract or order No ---------- ISA-4-359)
Service weight---------- 8242 lbs
Wheel loading (no load on forks).
  Drive wheels (each) ----- 1494 lbs
  Steer wheels (each) ----- 2627 lbs
Wheel loading (rated load on forks).
  Drive wheels (each) ----- 5049 lbs
  Steer wheels (each) ----- 1072 lbs
Center of gravity (no load on forks).
  Horizontal---------- 30 inches from axle of drive
  Vertical ---------- 17.8 inches above axle of drive wheels.

(2) *Hydraulic steering pump drive motor plate.*

Manufacturer---------- General Electric
Model number ---------- 5BC28AC34
Rpm---------- 1725

(3) *Power steering pump plate.*

Manufacturer---------- John S. Barnes Corp.
Model ---------- PA 7100 A26 DA2
Serial ----------

(4) *Contactor panel plate*.

Manufacturer---------- Allis Chalmers Mfg. Co.
Registration ---------- 2 1476 34089
Serial No----------

(5) *Dimensions and weight.*

Length:
  with forks ---------- 122y8 in. (inches)
  without forks ---------- 82Y in.
  Width ---------- 40/2 in.
  Height (with upright lowered)------- 90 in.
Basic aisle for right angle stacking---------- 142 in.
Free lift ---------- 75 in.
Wheel base ---------- 47 in.
Weight:
  without battery---------- approximately 6400 lbs

(6) *Battery.*

Type ---------- Lead acid---------- .Nickle-iron
Voltage ---------- 36 v (volts)-------- 36
Ampere hour capacity -------- 450 ---------- 640
Number of cells ---------- 18 ---------- 30

Weight ---------- approximately 2200 lbs. approximately 1950 lbs.

(7) *Tires.*

Front:
  size ---------- 18 x 7 x 12 1/8
  type ---------- solid
Rear:
  size ---------- 16 x 5 x 101/2
  type ---------- solid

(8) *Main hydraulic pump.*

Type ---------- Vane
Capacity ---------- 6.5 gpm (gallons per minute)

(9) *Steering pump.*

Type ---------- Gear
Capacity ---------- 120 gph at 1800 rpm revolutions per minute).
Relief valve ---------- 500 psi (pounds per square inch)

(10) *Drive motor.*

Brush spring tensions -------- 4.7 lbs
Voltage---------- 36 v

(11) *Pump motor.*

Brush spring tension---------- 1 lbs
Voltage---------- 36 v

(12) *Steer pump motor.*

Brush spring tension---------- .8 lbs
Voltage---------- 36 v
Revolutions per minute------- 1725
Horsepower---------- .5

(13) *Thermostats (opening temperature).*

Carbon pile thermostat------- 225° F. (Fahrenheit)
Drive motor thermostat ------ 225° F.
Pump motor thermostat------ 225° F.
Steering pump motor --------- 225° F. thermostat.

(14) *Capacities.*

Sump tank ---------- 4 gal (gallons)

(15) *Wiring diagram*. Refer to figure 3 for the practical wiring diagram.

Figure 3 Practical wiring diagram.
(Located in back of manual)

(16) *Nut and bolt torque data.*

Axle end spindle cap screw--------- 68 ft-lbs (foot-pounds)
Brake mounting bolt ---------- 33 ft-lbs
Axle end stud nuts---------- 60 ft-lbs
Adapter to motor screws----- 33 ft-lbs
Differential bearing carrier stud nut.------ 24 ft-lbs
Motor to adapter screw------- 33 ft-lbs

5. Difference in Models

This manual covers only the Clark Model 337450 Forklift Truck. No known unit differences exist for the model covered by this manual.

CHAPTER 2

INSTALLATION AND OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

6. Unloading the Forklift Truck

a. Unloading By Lifting. Remove blocking, strap ping, or cables that secure the forklift to the carrier. Attach a suitable lifting device and remove the forklift from the carrier. Refer to figure 4 for blocking and tiedown removal.

> ***Warning:*** **Be sure to use a lifting device with a capacity of at least 10,000 pounds when lifting the forklift truck from the carrier. Do not allow the truck to swing or sway. Failure to observe this warning can result in serious injury or death to personnel.**

b. Unloading By Towing. Remove the blocking, strapping and cables that secure the forklift to the carrier. Attach a suitable towing device and tow the forklift from the carrier. (Refer to figure 4 for blocking and tiedown removal.)

> **Note. The operator's seat must be depressed to release the park brake before the forklift truck is towed from the carrier.**

7. Unpacking the Forklift Truck

a. General. The forklift is normally shipped as a complete unit, except for the battery, fire extinguisher, and seat cushions. The battery and electrolyte are packed separately and the fire extinguisher and seat cushions are packed in the battery compartment.

b. *Removal of Protective Material*. Remove the protective tape or paper from all openings, remove all protective canvas or paper weatherproofing from over the forklift.

c. Depreservation. Prior to placing the forklift truck in operation, accomplish the depreservation in accordance with the instructions as outlined in DA Form 2258 (Depreservation Guide of Engineer Equipment).

8. Inspecting and Servicing Equipment

a. Inspecting.

(1) Inspect the packing list for missing components.

(2) Inspect exterior surfaces for broken or 6 dented parts, and for damaged painted surfaces.

(3) Inspect visible wiring and hydraulic lines for cuts, breaks, or other damage.

(4) Inspect the lift chain and carriage assembly for damage.

(5) Inspect the controls and instruments for breaks, cracks, bends, or other defects.

b. *Servicing.*

(1) Operator's Service. Perform the daily preventive maintenance services described in paragraph 32.

(2) Lubrication. Lubricate the forklift truck in accordance with the current lubrication order.

9. Installation of Separately Packed Components

a. Seat Cushions.

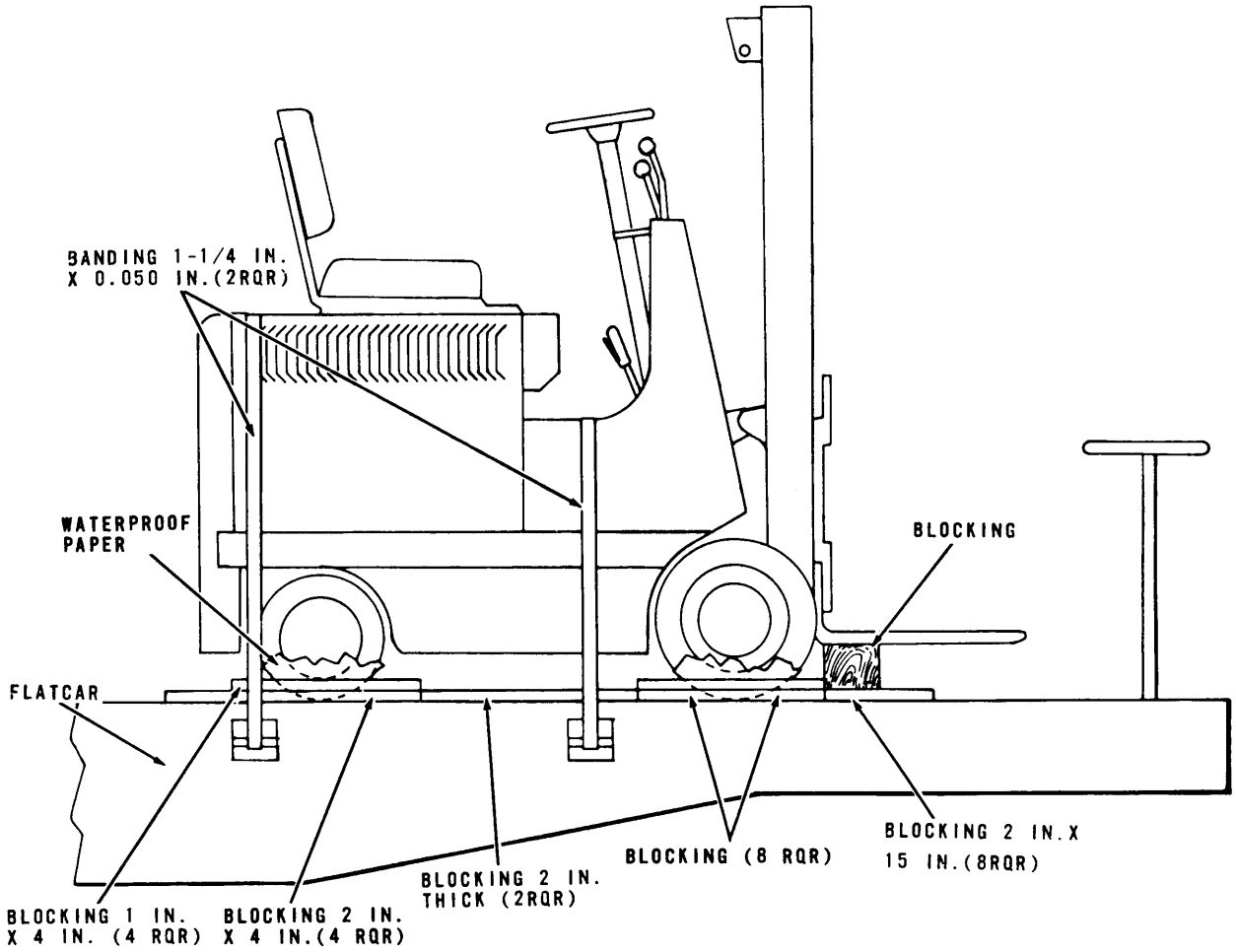
(1) The bottom cushion is secured with spring clamps, by positioning the seat cushion or the seat frame and pushing downward. The cushion will lock in place.

(2) The back rest cushion is mounted to the seat frame with two screws and nuts. Refer to paragraph 54 to install the seat cushions.

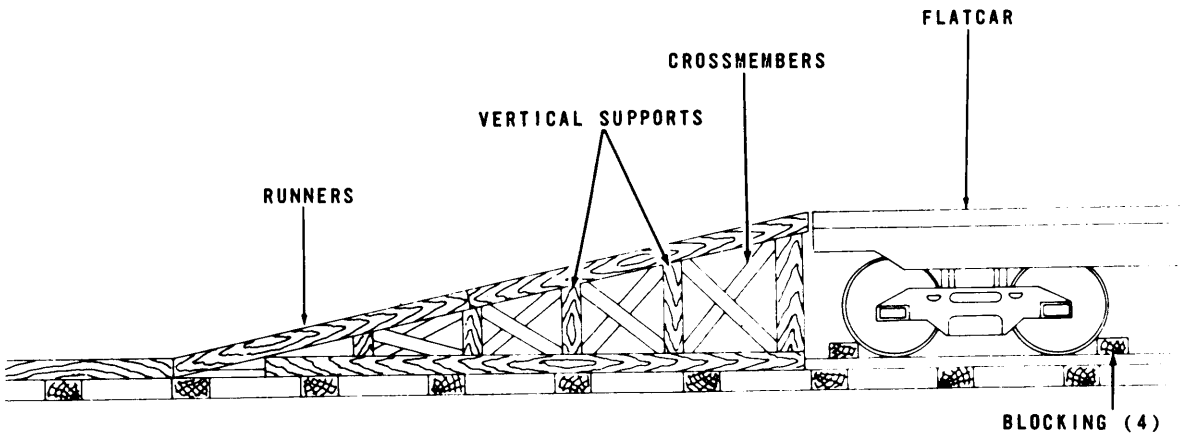
b. Battery. The battery is an 18 cell, 36 volt storage type, it is shipped dry and separately from the equipment. The electrolyte is also packed in a separate container. Fill the battery with electrolyte to the level 3/8 in. above the plates and connect the battery to a charge until it is fully charged. Install the battery as instructed in paragraph 68. Service battery in accordance with TM 10-1690A.

> ***Note.*** **A 30 cell 36 volt nickel iron type battery may also be used when applicable.**

> ***Warning:*** **Avoid contact with the battery electrolyte. If the solution comes in contact with the skin, rinse the area immediately with clean water to avoid skin burns. Do not smoke or use an open flame in the vicinity when servicing batteries as they generate hydrogen, an explosive gas.**



A. BLOCKING, STRAPPING, AND TIEDOWN.



B. LOADING RAMP.

MSC 3930-252-12/4

Figure 4. Blocking, strapping, cables, tiedown removal, and loading ramp.

Section II. MOVEMENT TO A NEW WORKSITE

10. Local Worksite

When the new worksite is near, the forklift truck may be operated under its own power if the area is level. If the ground is rough, sandy, or muddy, the forklift may be loaded into a truck, trailer, or other carrier to be moved.

11. Distant Worksite

When the forklift truck must be moved to a distant worksite, it maybe loaded onto a truck, trailer, or other carrier and secured with blocking, strapping, cables all(I the like. Disconnect the battery cable - connector before transporting the forklift truck.

Section III. CONTROLS AND INSTRUMENTS

12. General

This section describes, locates, illustrates, and furnishes the operator, crew, or organizational maintenance personnel sufficient information about the various controls and instruments for the proper operation of the Clark 337450 Forklift Truck.

13. Controls and Instruments

The purpose, location, and use of the controls, and the normal positions and readings of the controls and instruments are illustrated in figure 5.

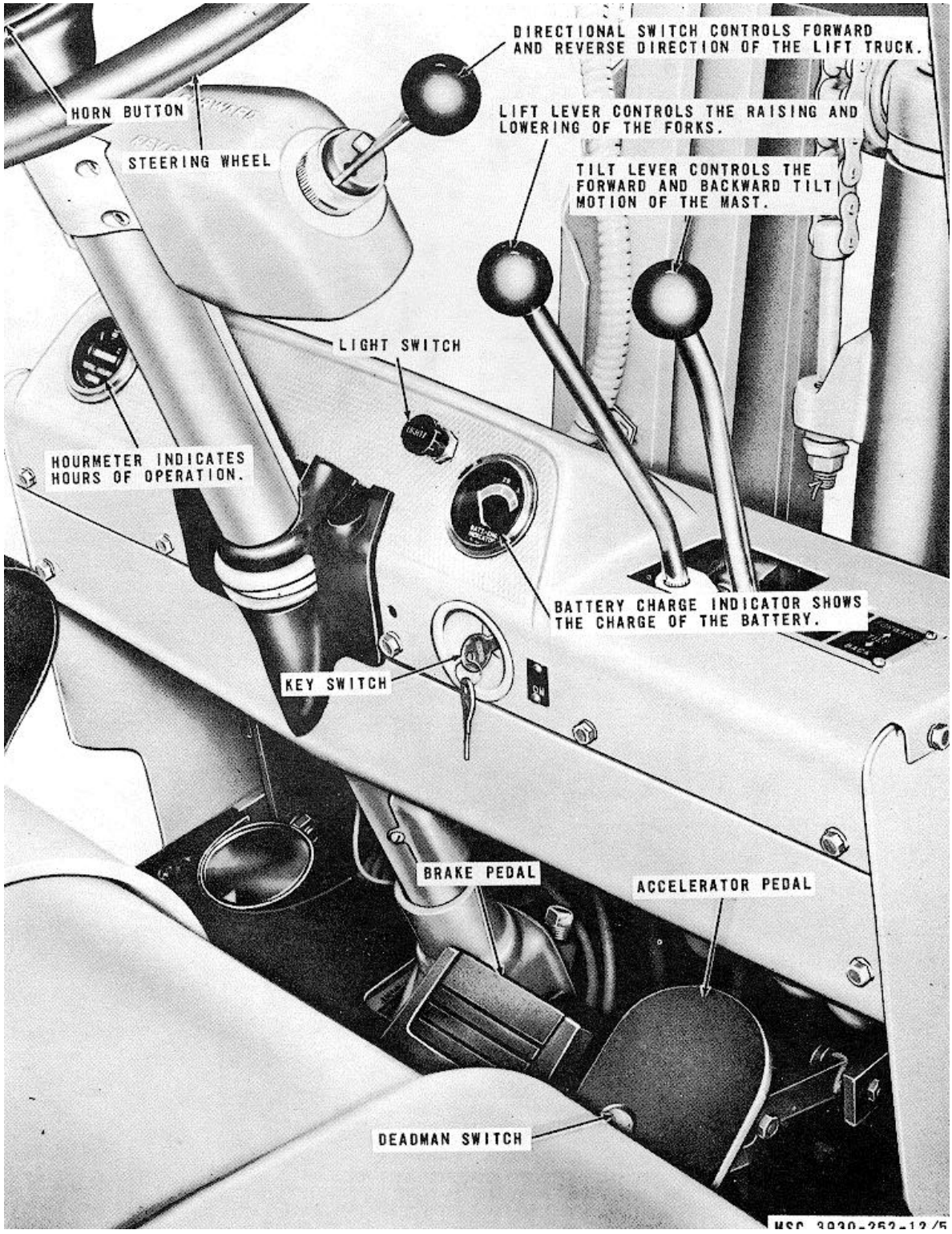
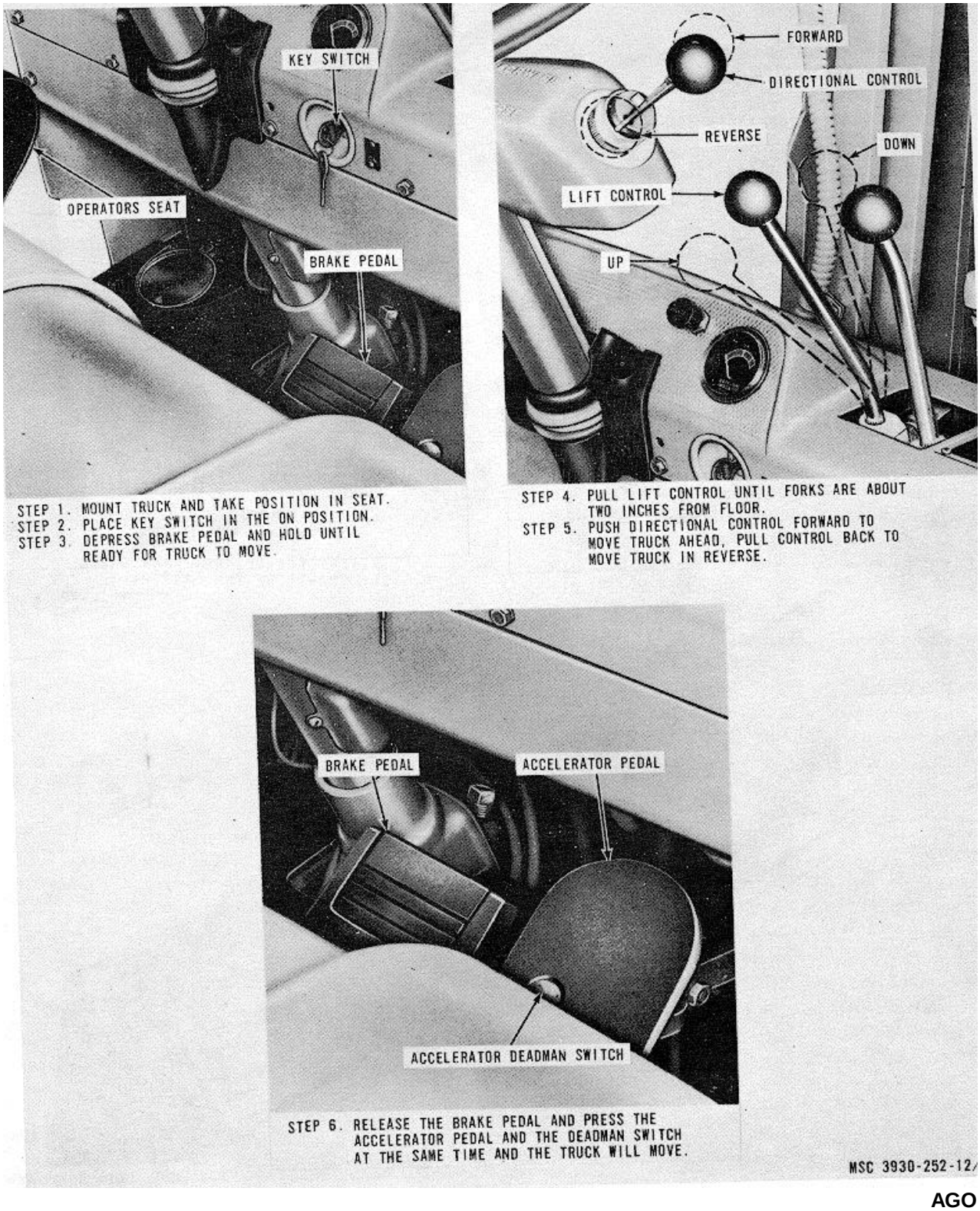


Figure 5. Controls and instruments



AGO 7309A

Figure 6. Starting the fork lift truck.

14. General

a. The instructions in this section are published for the information and guidance of the personnel responsible for the operation of the forklift, truck.

b. The operator must know how to perform every operation of which the forklift truck is capable. This section gives instructions on starting and stopping the forklift. truck, basic motions of the forklift truck and on coordinating the basic motions to perform the specific tasks for which the equipment is designed. Since nearly every job presents a different problem, the operator may have to vary give procedures to fit the individual job.

15. Driving

a. *Starting.*

(1) Perform the daily preventive maintenance services (pars. 32 and 33).

(2) Lubricate the forklift truck as specified in the current lubrication order.

(3) Refer to figure 6 and start the forklift truck.

b. *Stopping*. Refer to figure 7 and stop the forklift truck.

16. Handling Load

Refer to figure 8 for load hauling.

17. Tier Stacking

If load is to. be deposited on tiered stack, pull lift control lever back until load reaches desired height above tier. Drive truck forward until load is above its resting place. Push lift control lever forward and lower load carefully to its resting place. Drop lift forks slightly so they can be withdrawn easily.

Caution: **Accelerate only as needed to overcome machine gravity, release brake pedal, then continue to accelerate. Do not accelerate to the extent that the drive motor must overcome brakes. This is not only detrimental to the drive motor, but also increases brake lining wear.**

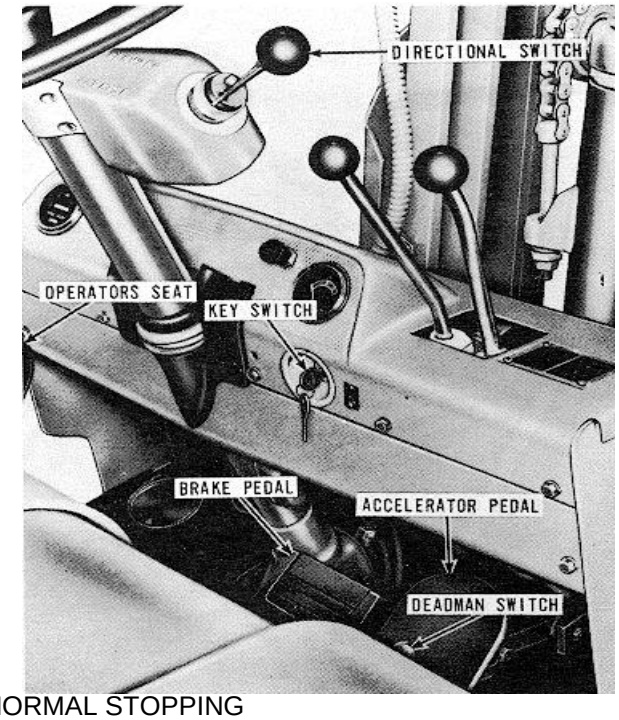
Warning: **The operator must be alert at all times while operating the fork lift truck. Failure to observe this warning can result in serious injury or death to the operator or other personnel.**

18. Operation in Extreme Cold (Below 0° F.)

a. See that hydraulic reservoir is filled to proper level. (Refer to current lubrication order). Inspect for leaks at all accessible lines, hoses and fittings.

b. Inspect brake for proper operation.

c. Keep battery fully charged, if battery indicator



NORMAL STOPPING
STEP 1 REMOVE FOOT FROM ACCELERATOR PEDAL.
STEP2. PRESS BRAKE PEDAL UNTIL TRUCK COMES TO A COMPLETE STOP.
STEP 3. PLACE DIRECTIONAL LEVER IN NEUTRAL POSITION.

EMERGENCY STOPPING:
THE MECHANICAL BRAKE IS AUTOMATICALLY APPLIED WHEN OPERATO0RS WEIGHT IS REMOVED FROM THE SEAT.

NOTE: MAKE SURE THE FORKS ARE LOWERED TO THE FULLEST EXTENT OF TRAVEL BEFORE DISMOUNTING FROM THE TRUCK

Figure 7. Stopping the forklift truck.

shows low charge or is low on electrolyte, report this condition to proper authority.

d. Lubricate as specified(iii the current lubrication order.

e. Be extremely careful when hauling hoses, lines, or wiring to avoid breakage.

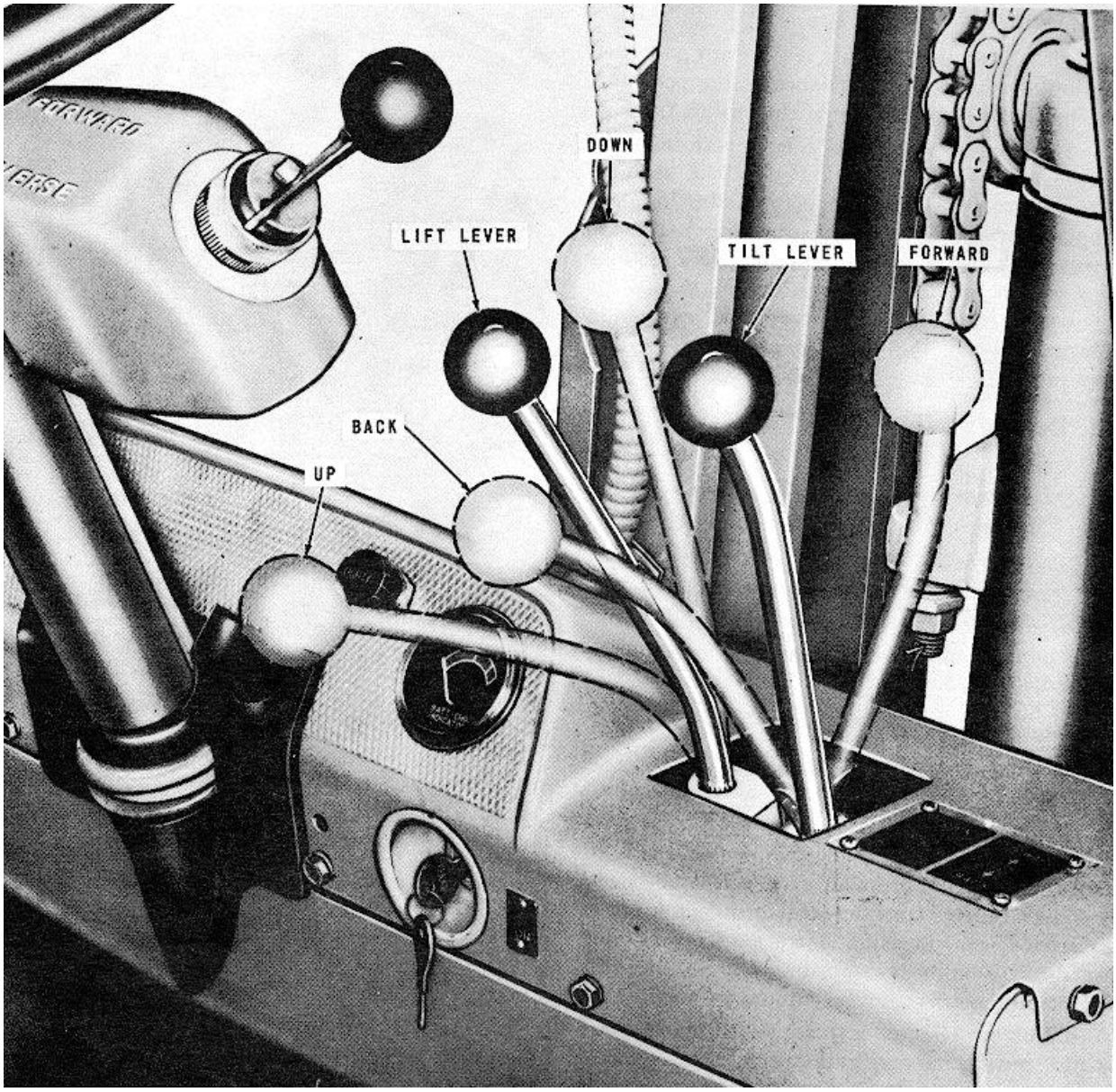
f. Wipe exposed areas dry with a clean cloth.

19. Operation in Extreme Heat

a. Make certain that hydraulic reservoir is filled to proper level.

b. Inspect lines, and fittings for breaks, or leaks.

c. Inspect battery for low electrolyte level.



PICKING UP LOAD:

STEP 1. APPROACH LOAD SQUARELY WITH FORKS AT CORRECT HEIGHT AND SPACED TO DEVIDE LOAD EVENLY.
STEP 2. MOVE FORWARD UNTIL FORKS ARE COMPLETELY UNDER LOAD.
STEP 3. PULL BACK ON LIFT LEVER TO RAISE LOAD.

MOVING LOAD:

STEP 1. PULL TILT LEVER BACK TO TILT LOAD TOWARD TRUCK AND SLOWLY BACK THE TRUCK AWAY FROM AREA.
STEP 2. PUSH LIFT LEVER FORWARD AND LOWER LOAD FOR TRAVEL.

DEPOSITING LOAD:

STEP 1. PUSH TILT LEVER FORWARD TO MOVE UPRIGHTS TO VERTICAL POSITION.
STEP 2. PUSH LIFT LEVER FORWARD TO LOWER LOAD FOR GROUND DEPOSIT.
STEP 3. DROP FORKS A LITTLE SO THEY CAN BE WITHDRAWN EASILY.

MSC 3930-252-12/8

Figure 8. Handling load.

20. Operation in Dusty or Sandy Areas

a. *Protection*. Shield the forklift truck from dust as much as possible when not in use. Take advantage of natural barriers which offer protection from dust and sand.

b. *Hydraulic System*. Check air filter frequently for clogged condition. Wipe dust and dirt from filter area before removing from reservoir. Wipe dust and dirt from cylinders frequently as sand and dust is an abrasive and can damage the lift cylinders.

c. *Lubrication*. Clean all lubrication points before applying lubricants.

d. *Cleaning*. Wipe dust and dirt from all external areas regularly.

21. Operation Under Rainy or Humid Conditions

If unit is outside and not operating, protect it with a canvas or other waterproof covering. Remove cover during dry periods. Keep hydraulic reservoir fill to avoid condensation. Wipe excess moisture from external surfaces.

22. Operation in Salt-Water Areas

a. *General*. Wash the unit frequently with clean, fresh water. Do not contaminate hydraulic system or (damage electrical components.

b. *Protection*. Coat exposed metal surfaces with rustproofilig material. Remove rust immediately an(i apply paint or oil as applicable.

Section V. OPERATION OF AUXILIARY MATERIEL USED IN CONJUNCTION WITH THE EQUIPMENT

23. Fire Extinguisher (Dry Chemical Type)

The dry chemical type fire extinguisher is effective in areas where ambient temperature is -25° F. and above. If winterized (pressurized with nitrogen), the fire extinguisher may be used in temperatures below -25° F. The fire extinguisher is a 212 pound, stored pressure, lever-operated extinguisher.

24. Operation

Remove the fire extinguisher from its location, lift the handle, press lever, and direct the powder at the base of the flame using a side-to-side sweeping motion.

25. Maintenance

Weigh the fire extinguisher every 6 months. Replace the extinguisher if the weight is less than 4 ½ pounds, or the pressure is below 125 pounds. Refer to SB 5-111. The dry chemical type fire extinguisher will be serviced at installation level through Repair and Utilities facilities, with the filling agent supplied by local procurement through Troop Supply Channels.

CHAPTER 3

OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. OPERATOR AND ORGANIZATIONAL MAINTENANCE TOOLS AND EQUIPMENT

26. Special Tools and Equipment

No special tools or equipment are required by the operator or organizational maintenance personnel for the maintenance of the forklift truck.

27. Basic Issue Tools and Equipment

Tools and repair parts issued with or authorized for the forklift truck are listed in Appendix III.

28. Organizational Maintenance Repair Parts

Organization maintenance repair parts are listed and illustrated TM 10-3930-252-25P.

Section II LUBRICATION

29. General Lubrication Information

a. This section contains a reproduction of the lubrication order and lubrication instructions which are supplemental to, and not specifically covered in the lubrication order.

b. The lubrication order shown in figure 9 is an exact reproduction of the approved lubrication order for the forklift truck. For current lubrication order, refer to DA Pam 310-4.

30. Detailed Lubrication Information

a. *Care of Lubricants and Lubrication Equipment.* Keep all lubricants in closed containers and store in a clean, dry area away from heat. Do not allow dirt, dust, water, or other foreign matter to come in contact with the lubricants at any time. Keep all lubrication equipment clean and ready for use.

b. *Cleaning.*

(1) *General*. Keep the forklift truck clean by wit regularly with a cloth dampened lightly in an approved cleaning solvent and 14 dry thoroughly. Clean lubrication points and area around hydraulic reservoir filling tube before lubrication.

(2) *Grease fittings*. Wipe grease fittings with a clean, dry cloth before lubrication. Remove old or hardened lubricants with an approved cleaning solvent. Remove all excess lubricant after lubrication.

(3) *Draincock, drain plug and breather*. Keep the area clean around the draincock, drain plug, and hydraulic reservoir breather. Remove the drain plug only when necessary to remove hydraulic oil.

c. *Air Cleaner*. Refer to figure 9 to service the air cleaner.

d. *Hydraulic Oil Filter.*

(1) General. To service the hydraulic oil filter, the hydraulic pump access door must be opened.

(2) Service. Refer to figure 9 to service the hydraulic oil filter.

LUBRICATION ORDER

LO10-3930-252-12

16 OCTOBER 1963

TRUCK LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES, 4,000 LBS CAPACITY, 144 IN. LIFT, (CLARK MODEL 337450, ARMY MODEL MHE - 185)

Reference: C9100-SL

Intervals are based on normal hours of operation. Reduce to compensate for abnormal operation and severe conditions. During inactive periods, sufficient lubrication must be performed for adequate preservation.

Relubricate after washing.

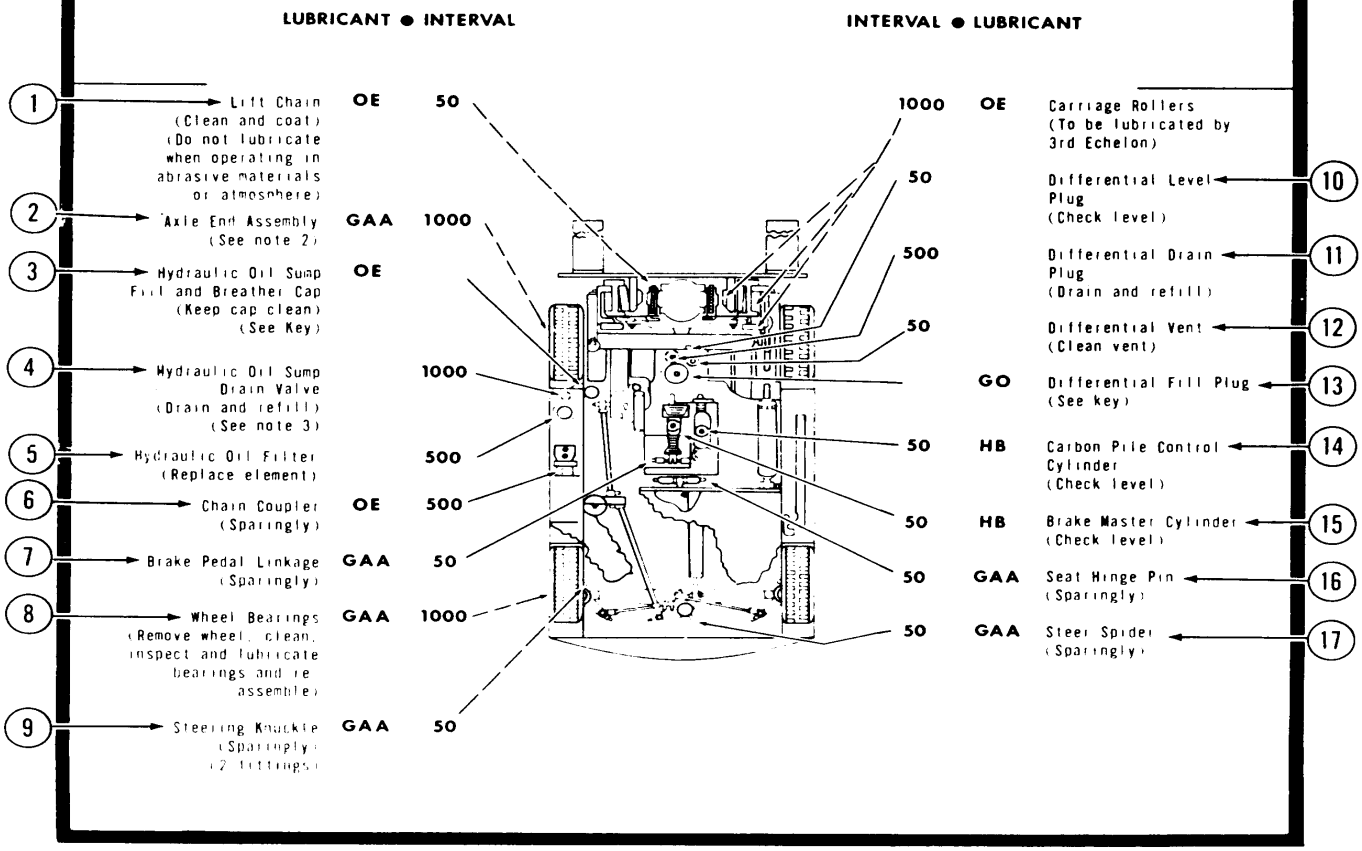
Clean fittings before lubricating.

Lubricate points indicated by dotted arrow shafts on both sides of the equipment.

Clean parts with SOLVENT, dry-cleaning, or with OIL, fuel Diesel. Dry before lubricating.

Drain gearcase when hot. Fill and check level.

A dotted circle indicates a drain below.

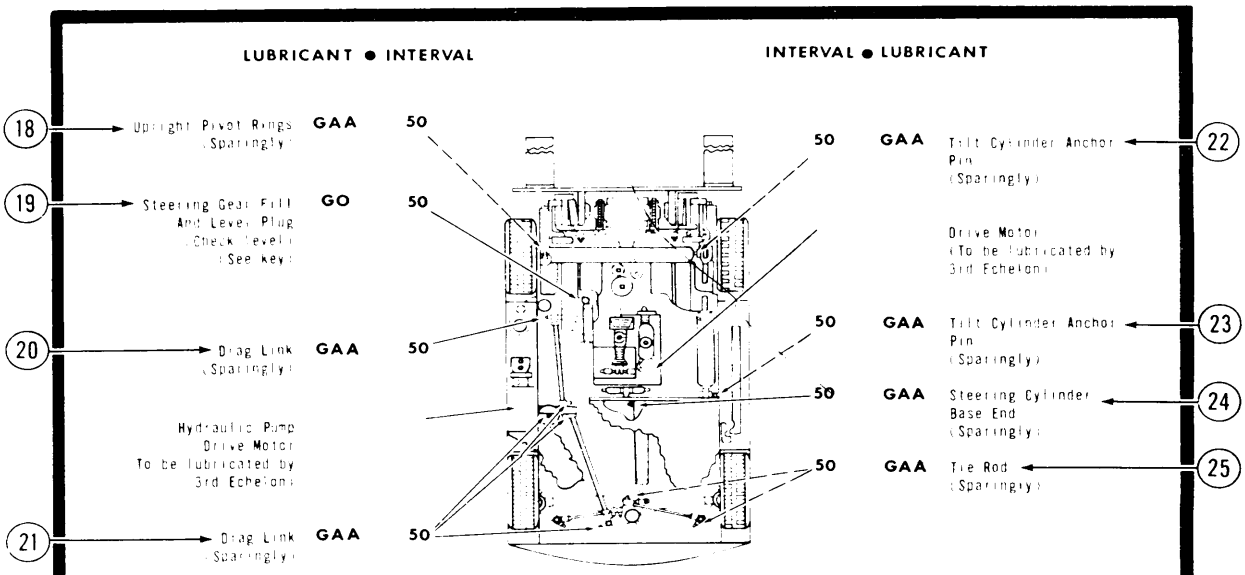


MSC 3930-252-12/9

Front

Figure 9. Lubrication order LO 10-3930-252-12

AGO 7309



KEY

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES			INTERVALS
		Above +32°F.	+40°F. to -10°F.	0°F. to -65°F	
OE- OIL, Engine, Heavy Duty					
Oil Can Points		**OE** 10 or **9110**	**OE** 10 or **9110**	**OES**	Intervals given are in hours of normal operation
Hydraulic Oil Sump	[illegible]				
OES-OIL, Engine, Sub-zero					
GO LUBRICATING OIL, Gear					
Steering Gear		**GO** 90	**GO** 90	**GOS**	
Differential	2 qt				
GOS LUBRICATING OIL, Gear, Sub-zero					
HB HYDRAULIC FLUID, Automotive		All temperatures			
Brake Master Cylinder					
Carbon Pile Control Cylinder					
GAA-GREASE, Automotive and Artillery		All temperatures			

NOTES

1 **FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW -10°F** Remove lubricants prescribed in the key for temperatures above -10°F. Clean parts with **SOLVENT**, dry-cleaning. Relubricate with lubricants specified in the key for temperatures below -10°F.

2 **AXLE END ASSEMBLY** Disassemble, clean, inspect and lubricate bearings and gears and reassemble.

3 **HYDRAULIC SYSTEM** After refilling system, operate lift 5 minutes, check level and bring to full mark.

4 **OIL CAN POINTS** Every 50 hours, clean and lightly coat all linkages and exposed adjusting threads, oil lift chain and chain coupler with OE.

Copy of this Lubrication Order will remain with the equipment at all times. Instructions contained herein are mandatory.

BY ORDER OF THE
SECRETARY OF THE ARMY:

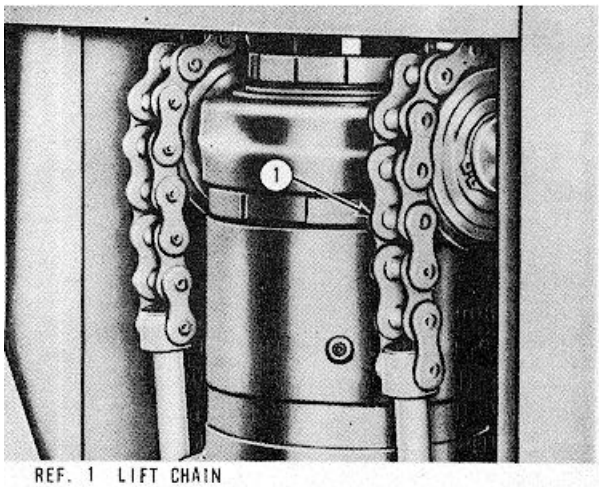
EARLE G. WHEELER
General, United States Army,
Chief of Staff.

OFFICIAL:
J. C. LAMBERT,
Major General, United States Army,
The Adjutant General

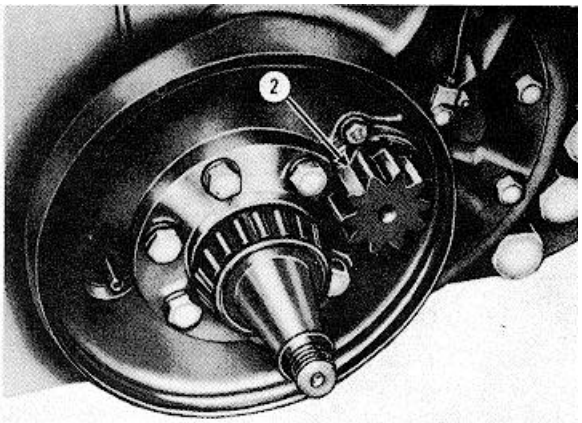
MSC 3930-252-12/9

Back
Figure 9- Continued

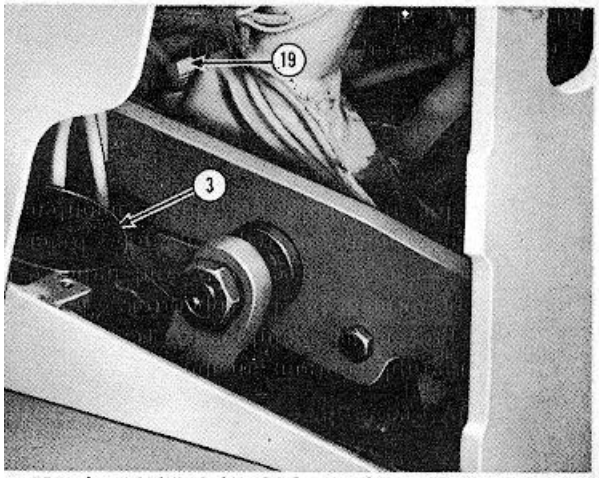
AGO 7309



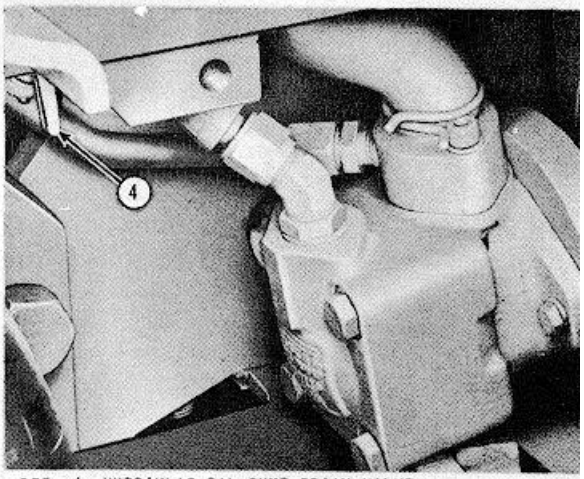
REF. 1 LIFT CHAIN



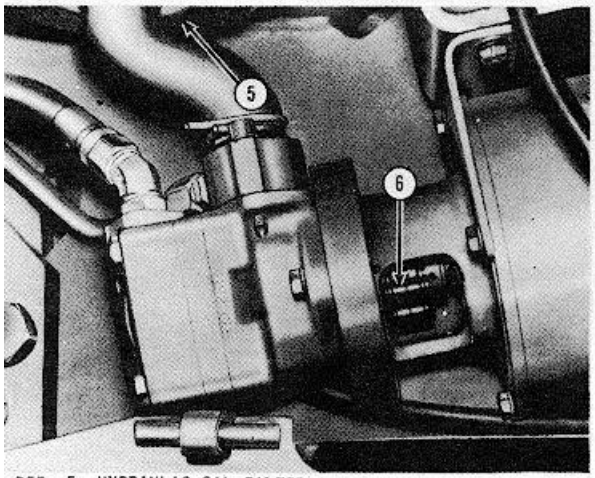
REF. 2 AXLE END ASSEMBLY



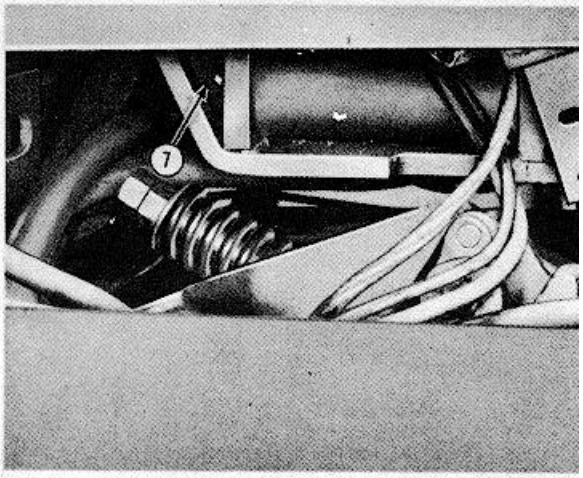
REF. 3 HYDRAULIC OIL SUMP FILL AND BREATHER CAP.
REF. 19 STEERING GEAR FILL AND LEVEL PLUG



REF. 4 HYDRAULIC OIL SUMP DRAIN VALVE.



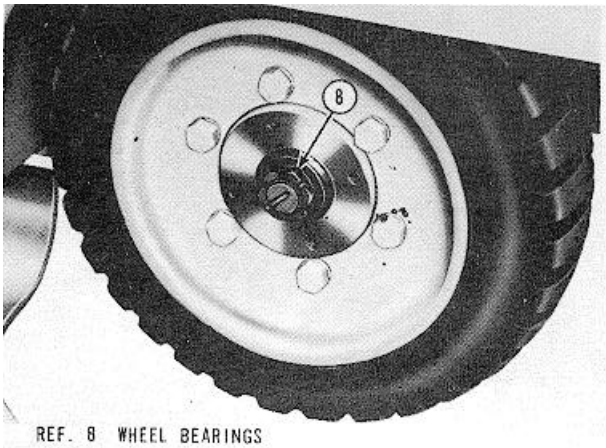
REF. 5 HYDRAULIC OIL FILTER
REF. 6 CHAIN COUPLER



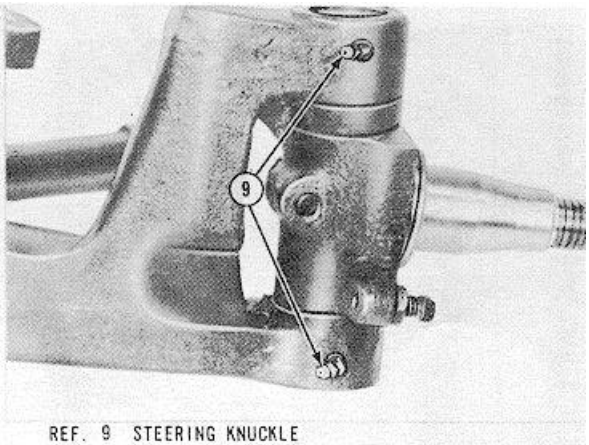
REF. 7 BRAKE PEDAL LINKAGE.

MSC 3930-252-12/9 ③

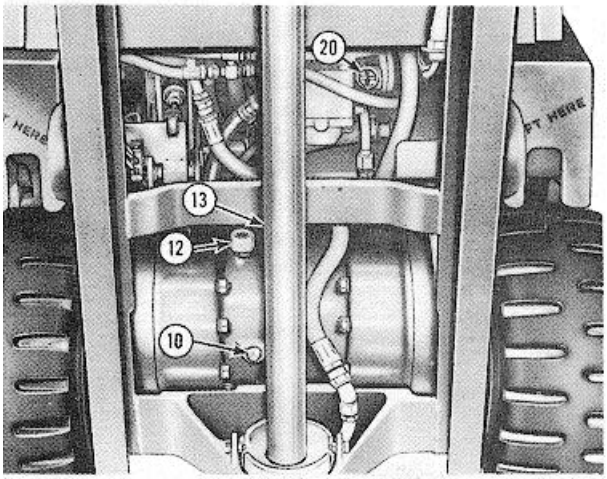
References 1 through 7 and 19
Figure 9--Continued. 17



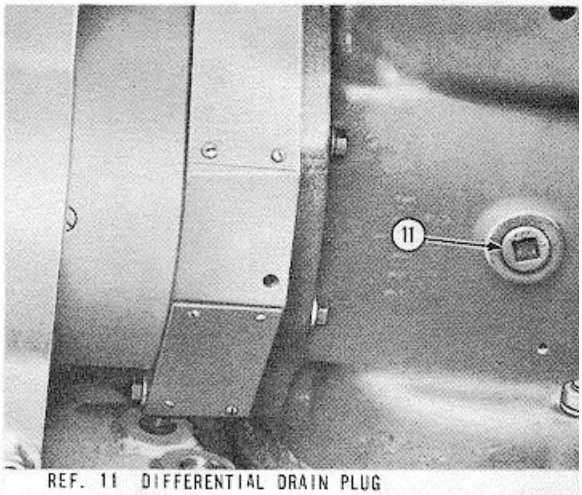
REF. 8 WHEEL BEARINGS



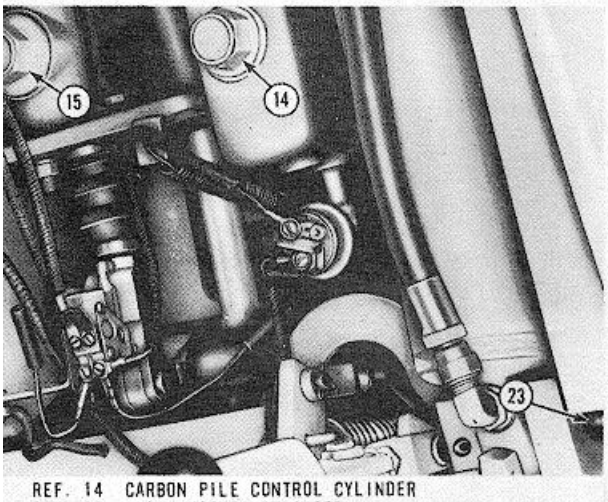
REF. 9 STEERING KNUCKLE



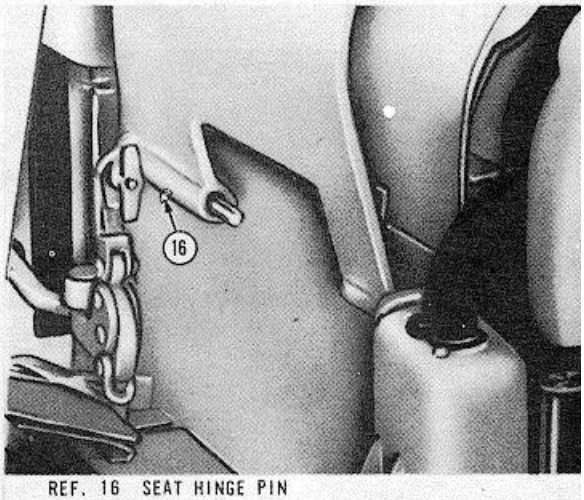
REF. 10 DIFFERENTIAL LEVEL PLUG
REF. 12 DIFFERENTIAL VENT
REF. 13 DIFFERENTIAL FILL PLUG
REF. 20 DRAG LINK



REF. 11 DIFFERENTIAL DRAIN PLUG



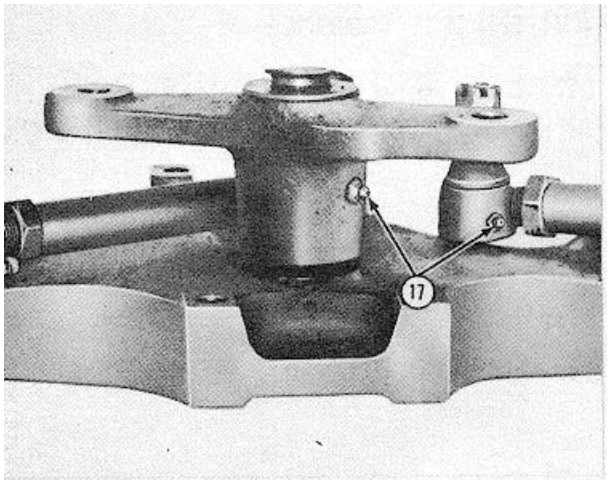
REF. 14 CARBON PILE CONTROL CYLINDER
REF. 15 BRAKE MASTER CYLINDER
REF. 23 TILT CYLINDER ANCHOR PIN



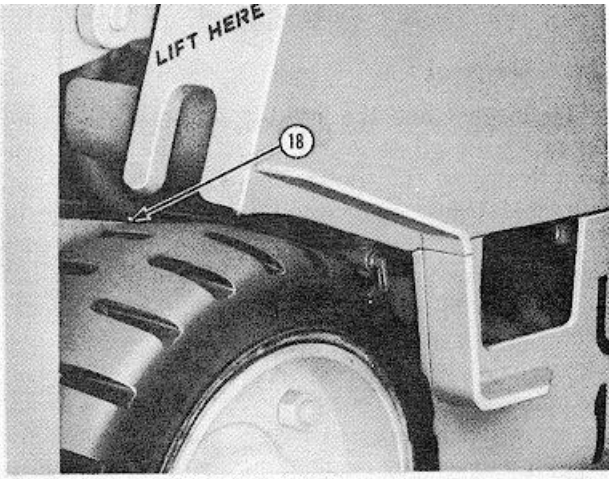
REF. 16 SEAT HINGE PIN

MSC 3930-252-12/9 ④

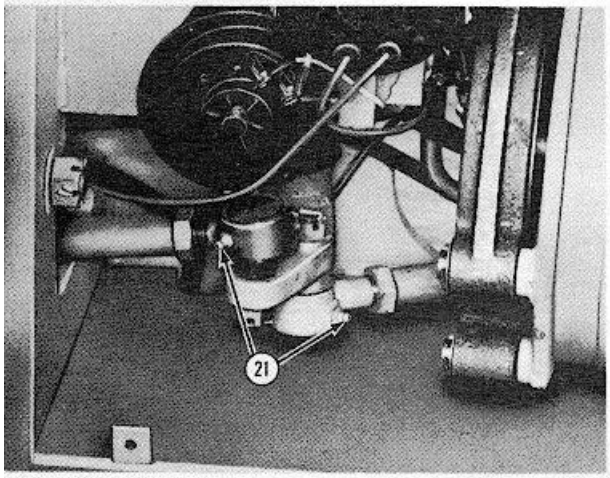
References 8 through 16, and 20 and 23
Figure 9-Continued.



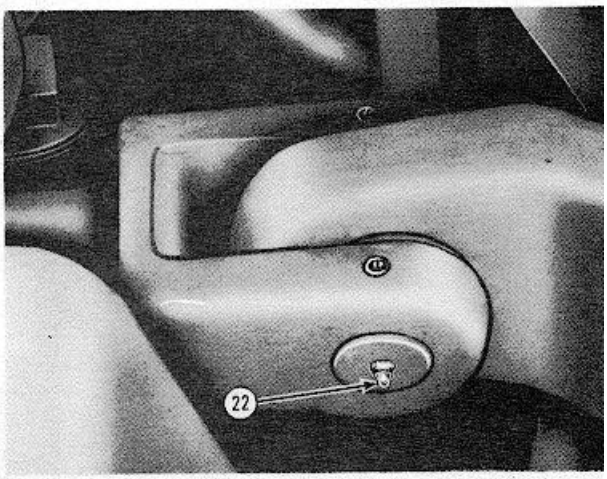
REF. 17 STEER SPIDER



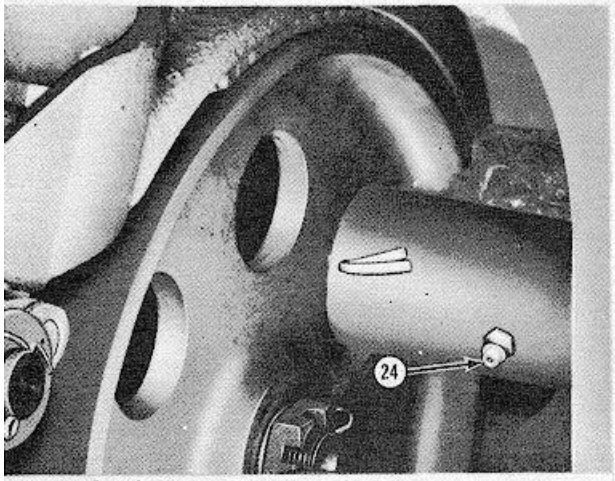
REF. 18 UPRIGHT PIVOT RINGS



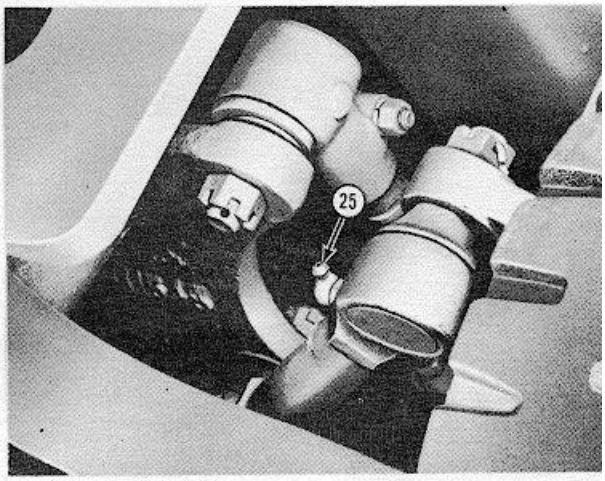
REF. 21 DRAG LINK



REF. 22 TILT CYLINDER ANCHOR PIN



REF. 24 STEERING CYLINDER BASE END



REF. 25 TIE ROD

MSC 3930-252-12/9 ⑤

References 17, 18, 21, 22, 24, and 25
Figure 9-Continuied.

Section III. PREVENTIVE MAINTENANCE SERVICES

31. General

To insure that the forklift truck is ready for operation at all times, it must be inspected systematically, so that defects may be discovered and corrected before they result in serious damage or failure. The necessary Preventive Maintenance Services to be performed are listed and described in paragraphs 32 and 33. The item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the unit shall be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment if operation were continued. All deficiencies and shortcomings will be recorded, together with the corrective action taken, on DA Form 2404 at the earliest possible opportunity.

32. Daily Preventive Maintenance Services

This paragraph contains all illustrated tabulated listing of preventive maintenance services which must be performed by the operator. The item numbers are listed consecutively and indicate the sequence of minimum requirements. Refer to figure 10 for the daily preventive maintenance services.

33. Quarterly Preventive Maintenance Services

a. This paragraph contains an illustrated tabulated listing of preventive maintenance services which must be performed by Organizational Maintenance personnel at quarterly intervals. A quarterly interval is equal to 3 calendar months, or 250 hours of operation, whichever occurs first.

b. The item numbers are listed consecutively and indicate the sequence of minimum requirements. Refer to figure 11 for the quarterly preventive maintenance services.

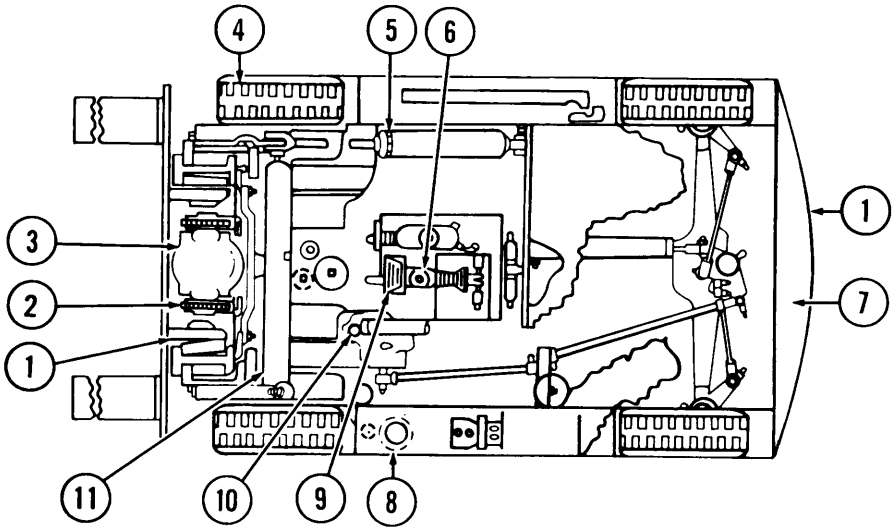
PREVENTIVE MAINTENANCE SERVICES

DAILY

TM10-3930-252-12

CLARK MODEL 337450
ARMY MODEL MHE185

TRUCK, FORK LIFT



LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER

ITEM		PAR REF
1	LIGHTS. Check for defective lamp or lamp unit.	
2	LIFT CHAIN. Check for cracked, broken, or excessively worn links. (Weekly)	
3	LIFT CYLINDER. Check for leaks.	
4	TIRES. Check for cuts. Remove embedded foreign material.	
5	TILT CYLINDER. Check for leaks.	
6	MASTER CYLINDERS. Check master cylinders and lines for leaks and loose connections.	
7	FIRE EXTINGUISHER. Inspect for broken seal.	
8	SUMP TANK. Add fluid as required. Clean or replace a dirty or damaged filler breather.	
9	BRAKE PEDAL. Check for strong pressure when brake pedal is applied.	
10	HORN. Check operation.	

MSC 3930-252-12/10 (1)

Figure 10. Daily preventive maintenance services.

ITEM		PAR REF
11	CONTROLS AND INSTRUMENTS. Check for loose mounting and damage. With unit operating, check for proper operation. Normal operating readings for instruments are as follows: Battery charge indicator — Should read in green portion of scale.	13
	NOTE 1. OPERATION. During operation observe for any unusual noise or vibration.	

MSC 3930-252-12/10 (2)

Figure 10-Continued

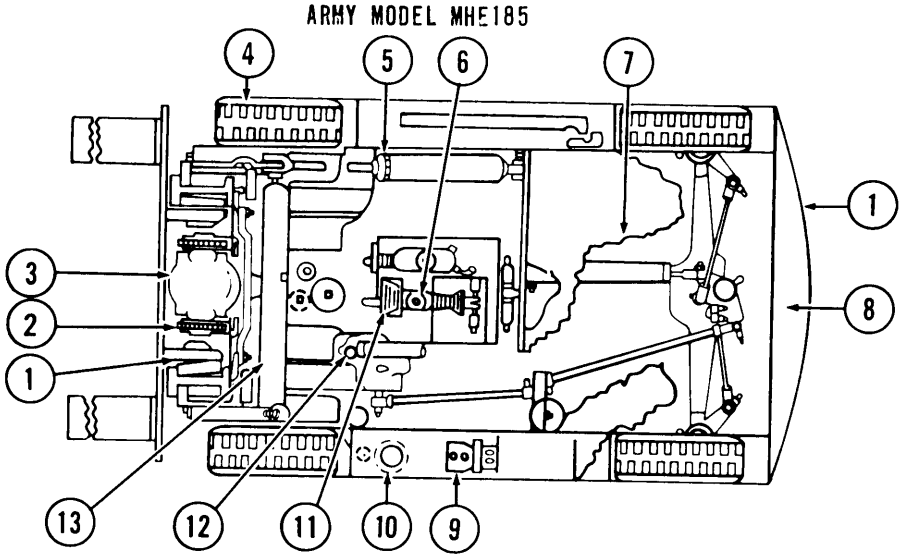
PREVENTIVE MAINTENANCE SERVICES

QUARTERLY

TM10-3930-252-12

CLARK MODEL 337450
ARMY MODEL MHE185

TRUCK, FORK LIFT



LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER

ITEM		PAR REF
1	LIGHTS. Check operation. Replace defective lamp or lamp unit.	34
2	LIFT CHAIN. Check for cracked, broken, or excessively worn links. Replace defective links.	60
3	LIFT CYLINDER. Check for leaks. Tighten loose connections. Tighten gland nuts.	
4	TIRES. Check tires for cuts. Remove foreign material.	
5	TILT CYLINDER. Check for leaks or damage and for proper adjustment. Uprights should extend evenly when cylinders are properly adjusted. Remove shim to tighten leaking seal.	99
6	MASTER CYLINDERS. Check master cylinders and lines for leaks and loose connections. Fill to within 1/4 inch of top. Tighten loose connections. Replace leaking master cylinder.	90
7	BATTERY. Remove corrosion. Add fluid as needed.	
8	FIRE EXTINGUISHER. Inspect for broken seal. The dry chemical type must be weighed every 6 months. If the weight has decreased to less than 4 1 2 pounds or the pressure is below 125 psi, the extinguisher must be replaced.	

MSC 3930-252-12/11 (1)

Figure 11. Quarterly preventive maintenance services.

ITEM		PAR REF
9	PUMP MOTOR BRUSHES. Check for wear.	
10	SUMP TANK. Check fluid level. Add fluid if needed. Clean or replace a dirty or damaged filler breather. Check filter element. Replace if dirty.	101
11	BRAKE PEDAL. Check pedal for travel. Adjust if necessary. Pressure should increase after 3/8 to 5/8 inch travel.	
12	HORN. Check operation. Replace defective horn.	66
13	CONTROLS AND INSTRUMENTS. Replace damaged instruments. Tighten loose mounting. With the unit operating, check for proper operation. Normal operating readings for instruments are as follows: Battery charge indicator Should read in green portion of scale.	64
	NOTE 1. OPERATIONAL TEST. During operation observe for any unusual noise or vibration.	
	NOTE 2. ADJUSTMENTS. Make all necessary adjustments during operational test.	

MSC 3930-252-12/11 (2)

Figure 11--Continued.

Section IV. OPERATOR'S MAINTENANCE

34. Taillight and Spotlight Lamp Removal

Refer to figure 12 and remove the taillight and stoplight lamps.

35. Cleaning and Inspection

a. Wipe the lamp with a clean dry cloth.

b. Inspect for broken envelope, broken element, damaged base or terminals, or corrosion. Replace a damaged or defective lamp.

36. Installation

Refer to figure 12 and install the taillight and stoplight lamps.

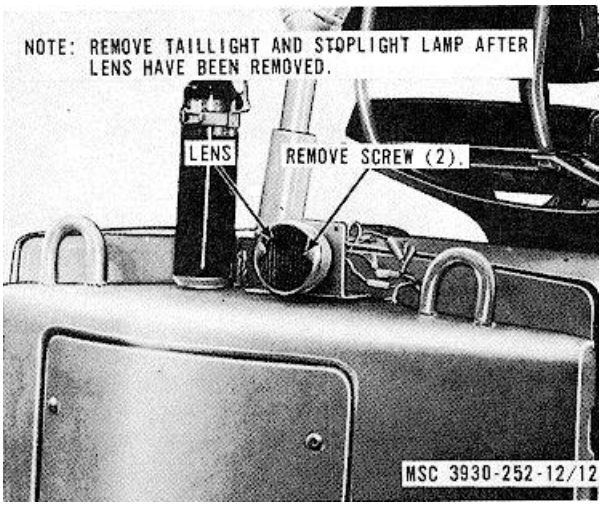


Figure 12. Taillight and stoplight lamp, removal and installation.

Section V. TROUBLESHOOTING

37. General

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the forklift truck and its components. Each trouble symptom stated is followed by a list of probable causes of the trouble. The possible remedy recommended is described opposite the probable cause. Any trouble beyond the scope of organizational maintenance shall be reported to field maintenance, 3d echelon.

38. Brake Pedal Goes to Floorboard

Probable cause	*Possible remedy*
Air in brake system	Bleed brake system (par. 90).
Brake line broken	Replace brake line (par. 90).

39. Both Brakes Drag

Probable cause	*Possible remedy*
Improper type of brake fluid	Replace brake fluid (par. 90).

40. Brake at One Wheel Drags

Probable cause	*Possible remedy*
Brake return spring weak or broken.	Replace spring (par. 90).
Brake line clogged or crimped	Clean or replace line (par. 90).

41. Machine Pulls to One Side

Probable cause	*Possible remedy*
Brake line closed	Open or replace brake line (par. 90)

42. Brake Pedal Spongy

Probable cause	*Possible remedy*
Air in brake system	Bleed brake system (par. 90).

43. Continuous Axle Noise

Probable cause	*Possible remedy*
Axle end assembly, hub ring gear, spindle and wheel mounting bolts loose.	Tighten all bolts that secure assemblies.
Lack of lubricant	Lubricate in accordance with current lubrication order.

44. Truck Will Not Go Into High Speed

Probable cause	*Possible remedy*
Actuator defective	Replace actuator (par. 85).
Carbon pile defective	Replace carbon pile (par. 86)
2-MS switch defective	Replace 2-MS switch (par.75)

45. Insufficient Creep Speed

Probable cause	*Possible remedy*
Improper adjustment of creep spring on actuator.	Adjust creep spring (par. 85).

46. Excessive Creep Speed

Probable cause	*Possible remedy*
Improper' adjustment of creep spring on actuator.	Adjust creep spring (par. 85).
Actuator thrust washer tight against piston rod.	Adjust washer (par. 85).

47. Insufficient Travel Speed

Probable cause	*Possible remedy*
Seat brake dragging	Adjust brake (par. 89).
Battery charge low or defective.	Replace or charge battery (par. 68).

48 .Accelerator Pedal Does Not Return To Full Rest or Up Position

Probable cause	*Possible remedy*
Accumulator spring broken	Replace Accumulator (par 85
Accelerator pedal free play spring broken.	Replace spring (par. 83).

49. Truck Will Not Go Into Forward or Reverse

Probable cause	*Possible remedy*
Directional switch broken	Replace' switch (par. 65)
1-MS switch out of adjustment or damaged.	Adjust or replace switch (par. 75).
Defective fuse	Replace Fuse (par. 78).
Seat brake switch improperly adjusted.	Adjust switch (par. 89)).
Foot brake switch improperly adjusted.	Adjust switch (par. 71).
Contactor points sticking	Replace points (par. 71').

50. Fork Will Not Lift

Probable cause	*Possible remedy*
Selector valve defective	Replace valve (par. 98).
Hydraulic fluid low	Fill hydraulic reservoir to level specified in current lubrication order.
Lift chain broken	Replace chain (par. 60).

51. Fork Will Not Tilt

Probable cause	*Possible remedy*
Selector valve effective	Replace valve (par. 98).
Tilt cylinders defective	Replace cylinders (par. 99)
Hydraulic fluid low	Fill hydraulic reservoir to level specified in current lubrication order.

52. Lift Descends Too Fast With Load

Probable cause	*Possible remedy*
Hydraulic fluid low	Refill hydraulic reservoir to level specified in current lubrication order.
Lift valve defective	Replace valve (par. 98).

Section VI. SEAT, HOUSING, AND OVERHEAD GUARD

53. General

The seat is mounted 'at the front on a spring type mounting so when the seat is depressed the brake is released. The overhead guard is constructed of a heavy tubular frame and is mounted at each frame side on the front and in the center rear with a quick removable type sleeve coupling. The battery compartment is housed with a cover and two side panels which slide in place and are secured with two securing plates. The floorboard is mounted to the frame and supports the accelerator and also serves as a foot rest. The counterweight cover is mounted with four screws and serves as a protective cover for the contactor panel. The instrument panel and lower dash panel houses the various controls and instruments used in the operation of the forklift truck. The towing coupler is mounted to the rear counterweight at the lower edge.

54. Seat Assembly

a. *Removal*. Refer to figure 13 and remove the seat assembly.

b. *Disassembly.* Refer to figure 14 and disassemble the seat assembly.

c. *Cleaning, Inspection, and Repair.*

(1) Clean all metal parts with an approved cleaning solvent and dry thoroughly. Wipe the seat cushion and back rest with a cloth dampened slightly with water.

(2) Inspect cushion and back rest for holes tears, or other damage.

(3) Inspect the frame and adjuster for breaks, cracks, bends, or other defects.

(4) Replace a damaged part as necessary.

d. *Reassembly.* Refer to figure 14 and reassemble the seat assembly.

e. *Installation*. Refer to figure 13 and install the seat.

55. Battery Compartment Hood, Side Panels, Securing Plates, and Front Panel Access Plates

a. *Removal.*

(1) Lift operators seat from the seat frame and tilt seat frame forward to clear battery compartment hood.

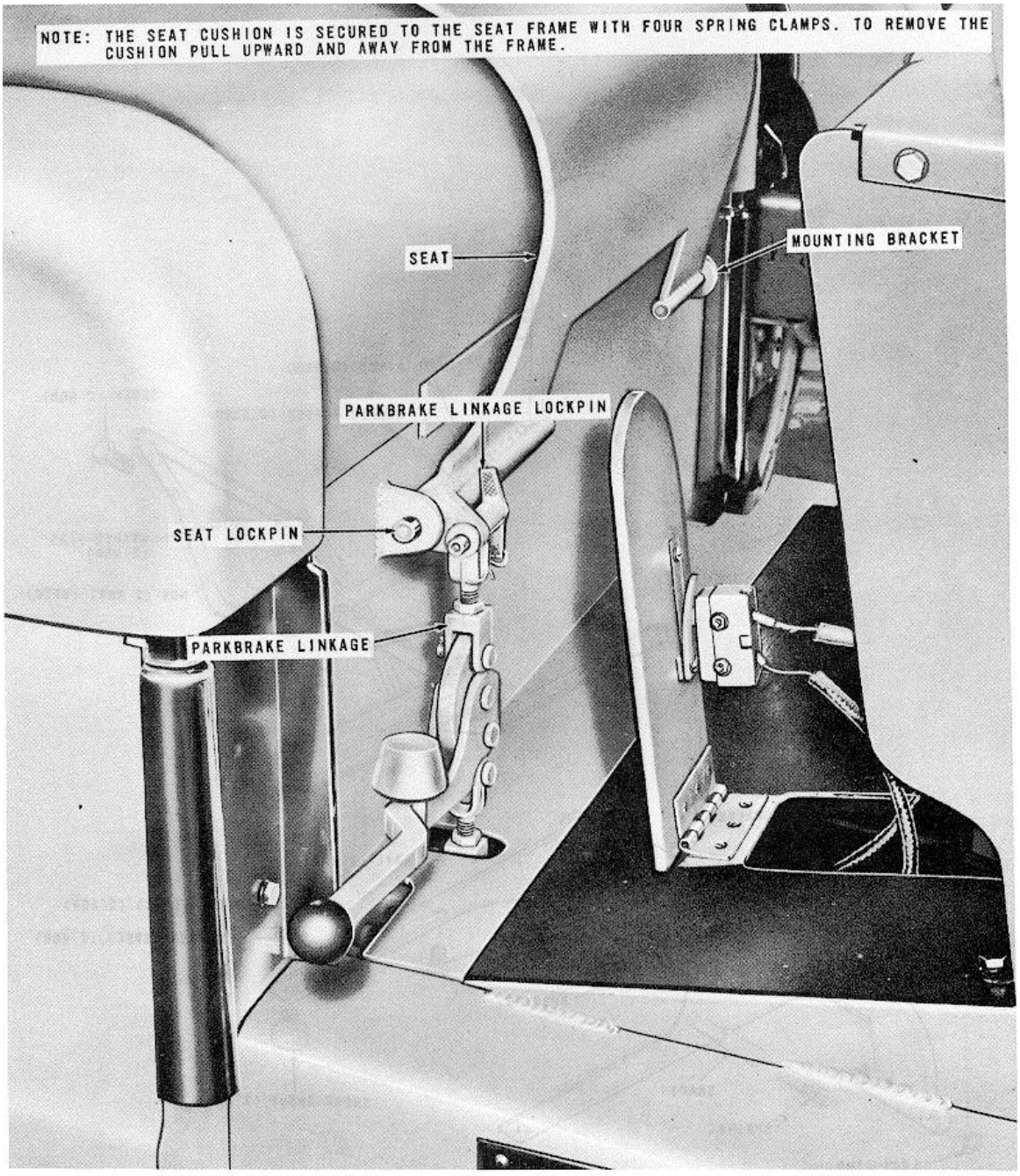
(2) Refer to figure 15 and remove the battery compartment hood and side panels, and front panel access plates.

b. *Cleaning and Inspection.*

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, dents, rust, damaged painted areas, or other defects.

(3) Replace or repair a damaged part as necessary. Repaint rusted or damaged painted areas.



STEP 1. DEPRESS BUTTON ON END OF PARKBRAKE LINKAGE LOCKPIN AND REMOVE THE LOCKPIN.

STEP 2. RELEASE SEAT LOCKPIN.

STEP 3. TILT SEAT FORWARD AND REMOVE REMAINING MOUNTING PIN FROM BRACKET AND REMOVE SEAT.

MSC 3930-252-12/13

Figure 13. Seat assembly, removal and installation.

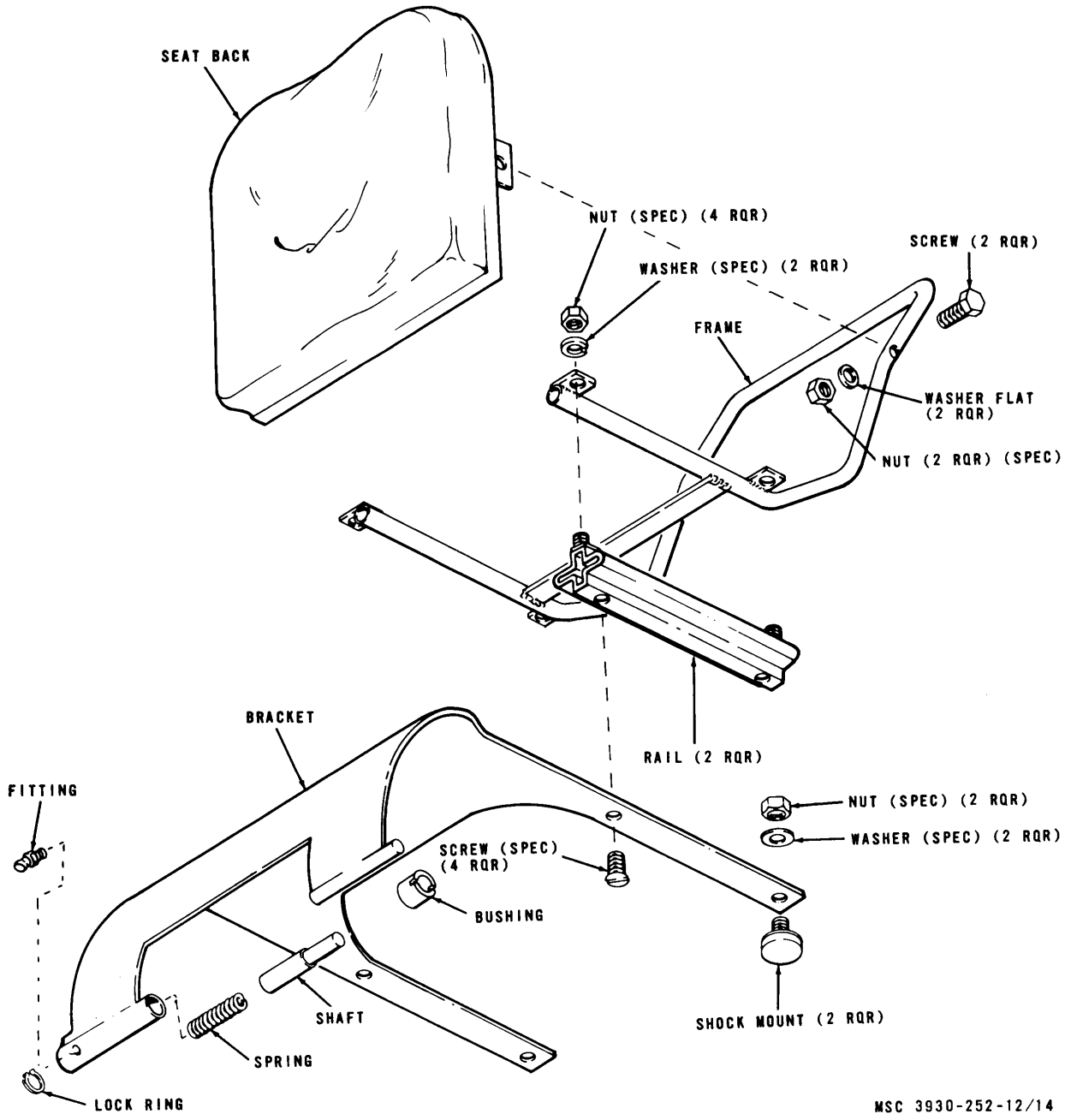
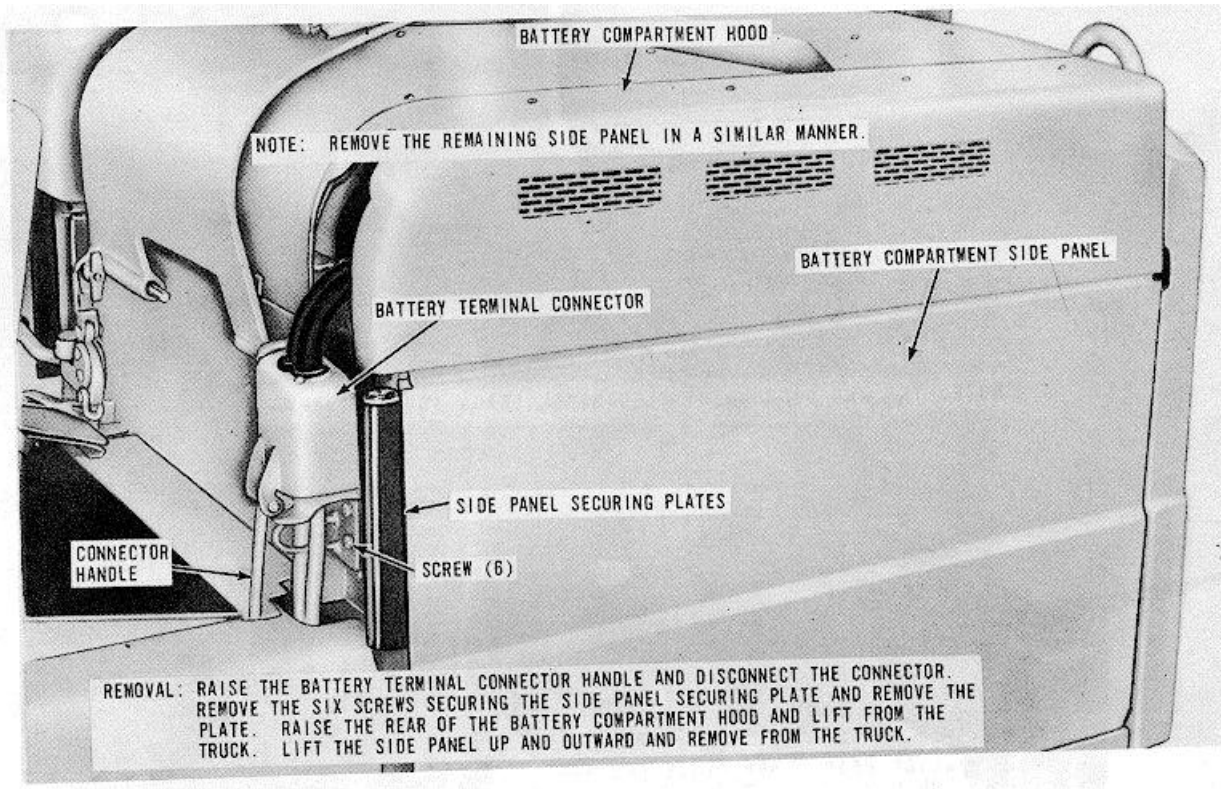
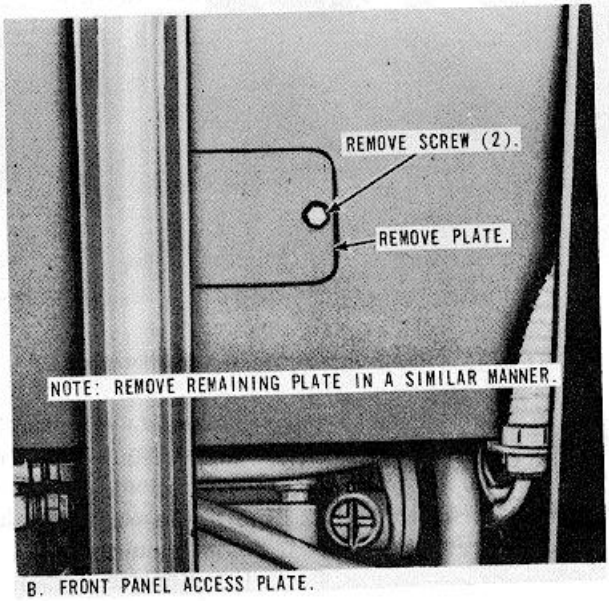


Figure 14. Seat assembly, disassembly and reassembly.



A. HOOD AND SIDE PANEL.



B. FRONT PANEL ACCESS PLATE.

MSC 3930-252-12 15

Figure 15. Battery compartment hood, side panel, and front panel access plates, removal and installation.

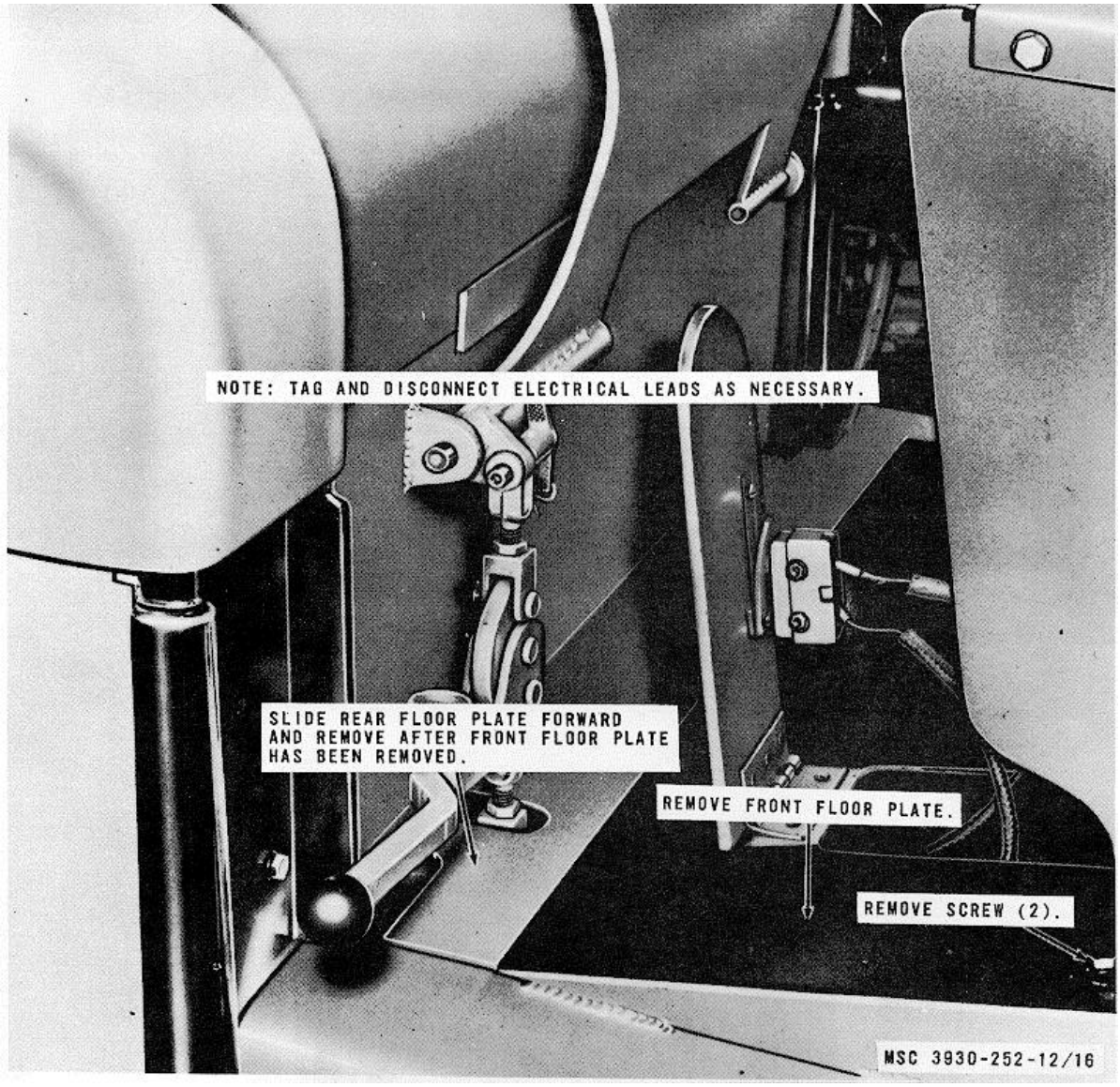


Figure 16. Front floor plate, removal and installation.

c. Installation.

(1) Refer to figure 15 and install the side panels and battery compartment hood.

(2) Lower seat frame to proper position and position operators seat in the frame.

56. Front Floor Plates

a. Removal.

(1) Disconnect the electrical leads from the accelerator pedal.

(2) Refer to figure 16 and remove the front floor plates.

b. Cleaning and Inspection.

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, bends, elongated mounting holes, or other defects.

(3) Replace a damaged or defective part as necessary.

c. Installation.

(1) Refer to figure 16 and install the front floor plates.

(2) Connect the electrical leads to the accelerator pedal.

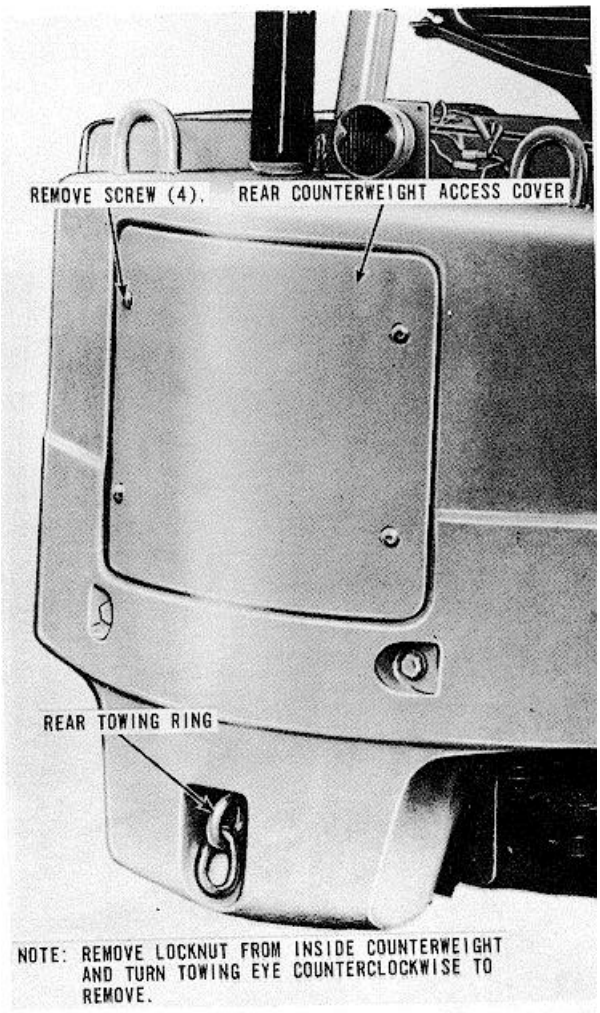


Figure 17. Rear counterweight cover and towing ring, removal and installation.

57. Rear Counterweight Cover and Towing Ring

a. Removal. Refer to figure 17 and remove the counterweight cover and towing ring.

b. Cleaning and Inspection.

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.

(2) Inspect towing eye for damaged threads. Inspect for loose or missing mounting hardware. Inspect for scratched, chipped or worn painted areas. Inspect for bent or broken towing ring. Inspect cover for defects.

(3) Replace a damaged part as necessary. Repaint damaged painted areas. Tighten or replace loose or missing mounting hardware as necessary.

c. Installation. Refer to figure 17 and install the towing ring and rear counterbalance cover.

58. Lower Dash Panel

a. Removal. Refer to figure 18 and remove the lower dash panel.

b. Cleaning and Inspection.

(1) Clean the lower dash panel with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, dents, loose or missing mounting hardware, elongated mounting holes, scratched, chipped or worn painted areas, or other defects.

(3) Tighten or replace loose or missing mounting hardware, repaint damaged painted areas. Replace a damaged panel as necessary.

c. Installation. Refer to figure 18 and install the lower dash panel.

59. Overhead Guard

a. Removal. Refer to figure 19 and remove the overhead guard assembly.

b. Disassembly. Refer to figure 20 and disassemble the overhead guard.

c. Cleaning, Inspection, and Repair.

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, bends, loose or missing mounting hardware, weak or broken springs, or other defects.

(3) Tighten or replace loose or missing mounting hardware, replace a damaged part as necessary.

d. Reassembly. Refer to figure 20 an(I reassemble the overhead guard assembly.

e. Installation. Refer to figure 19 an(d install the overhead guard assembly.

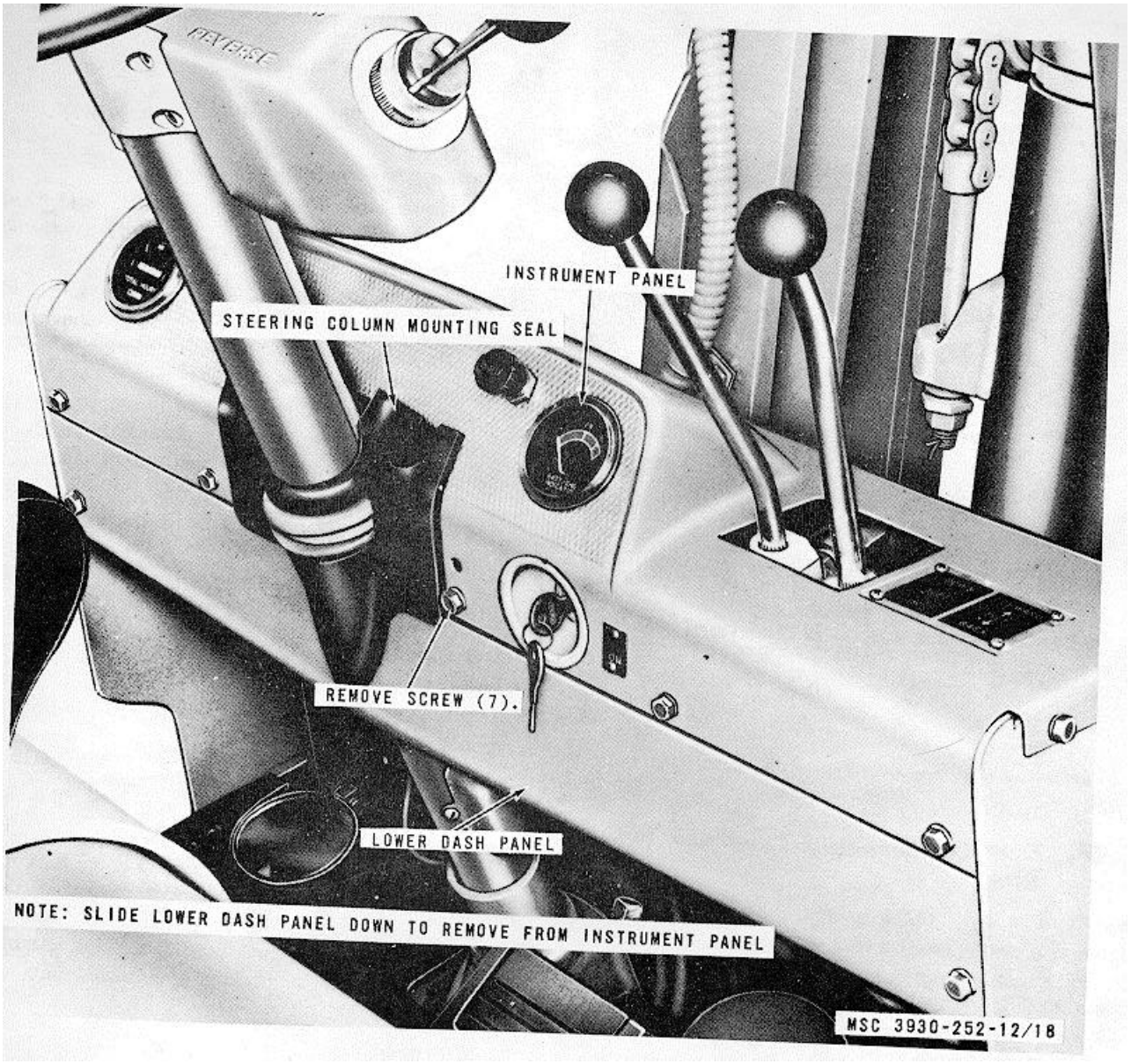


Figure 18. Lower dash panel, removal and installation.

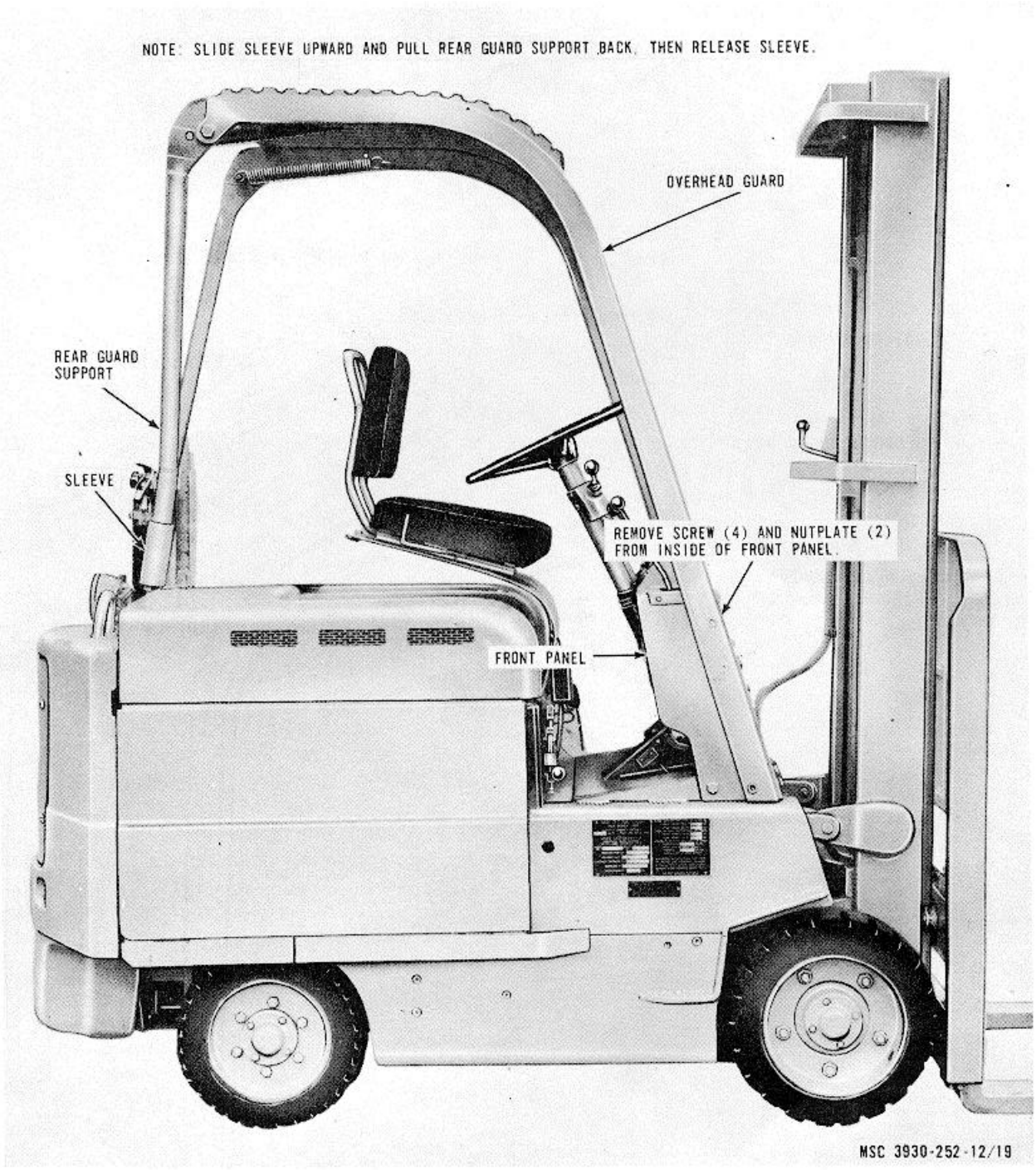


Figure 19. Overhead guard assembly, removal and installation.

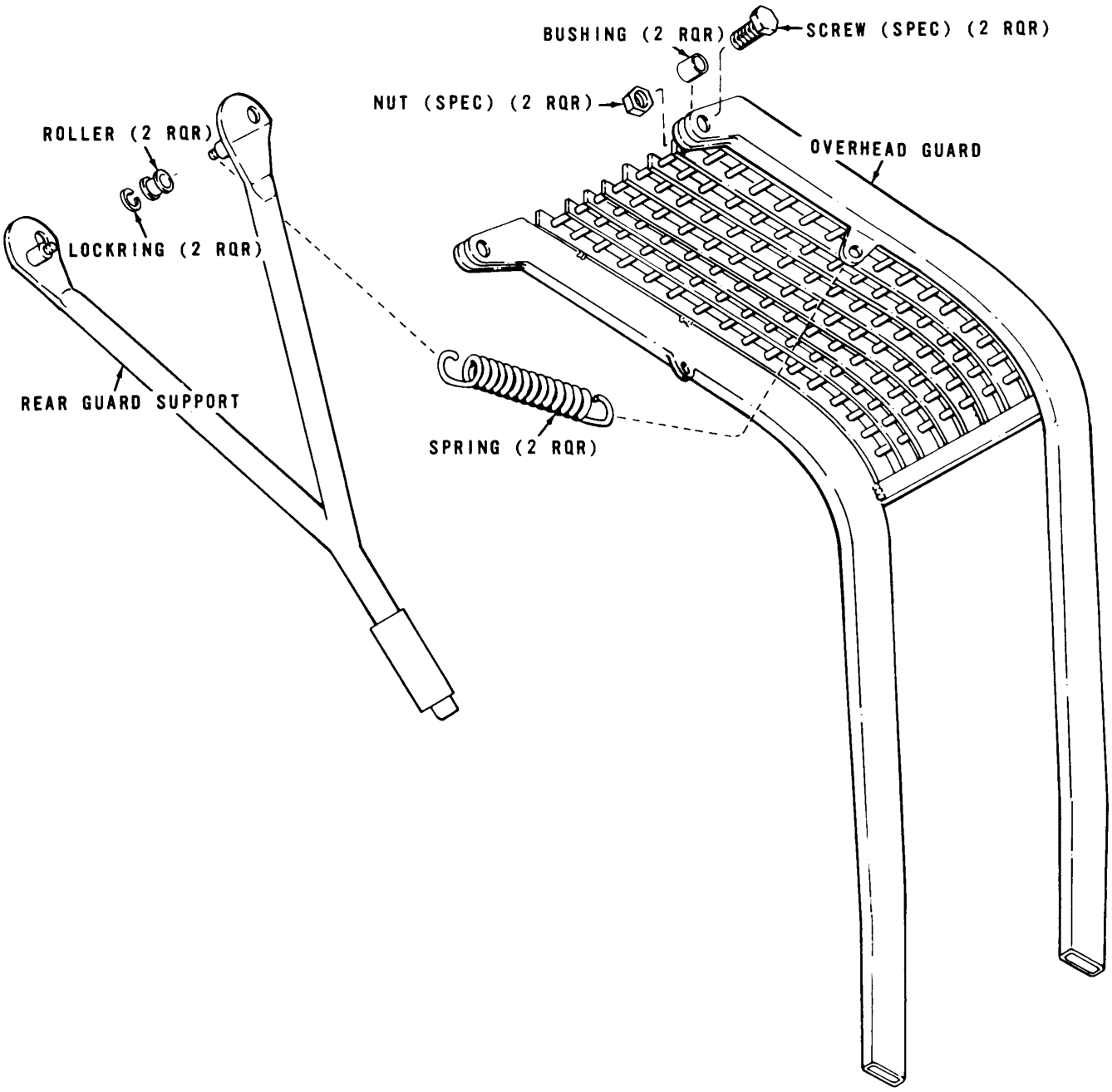


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Figure 20. Overhead guard assembly, disassembly and reassembly.

60. Lift Chain and Sprocket

a. Removal. Refer to figure 21 and remove the lift chain and sprocket.

b. Cleaning, Inspection, and Repair.

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, nicks, damaged threads, defective sprocket, loose chain links, or other damage.

(3) Replace a damaged sprocket, chain link or chain anchor. Replace a chain that is damaged beyond repair.

c. Installation. Refer to figure 21 and install the lift chain and sprocket.

d. Adjustment. Refer to figure 22 and adjust the lift chain.

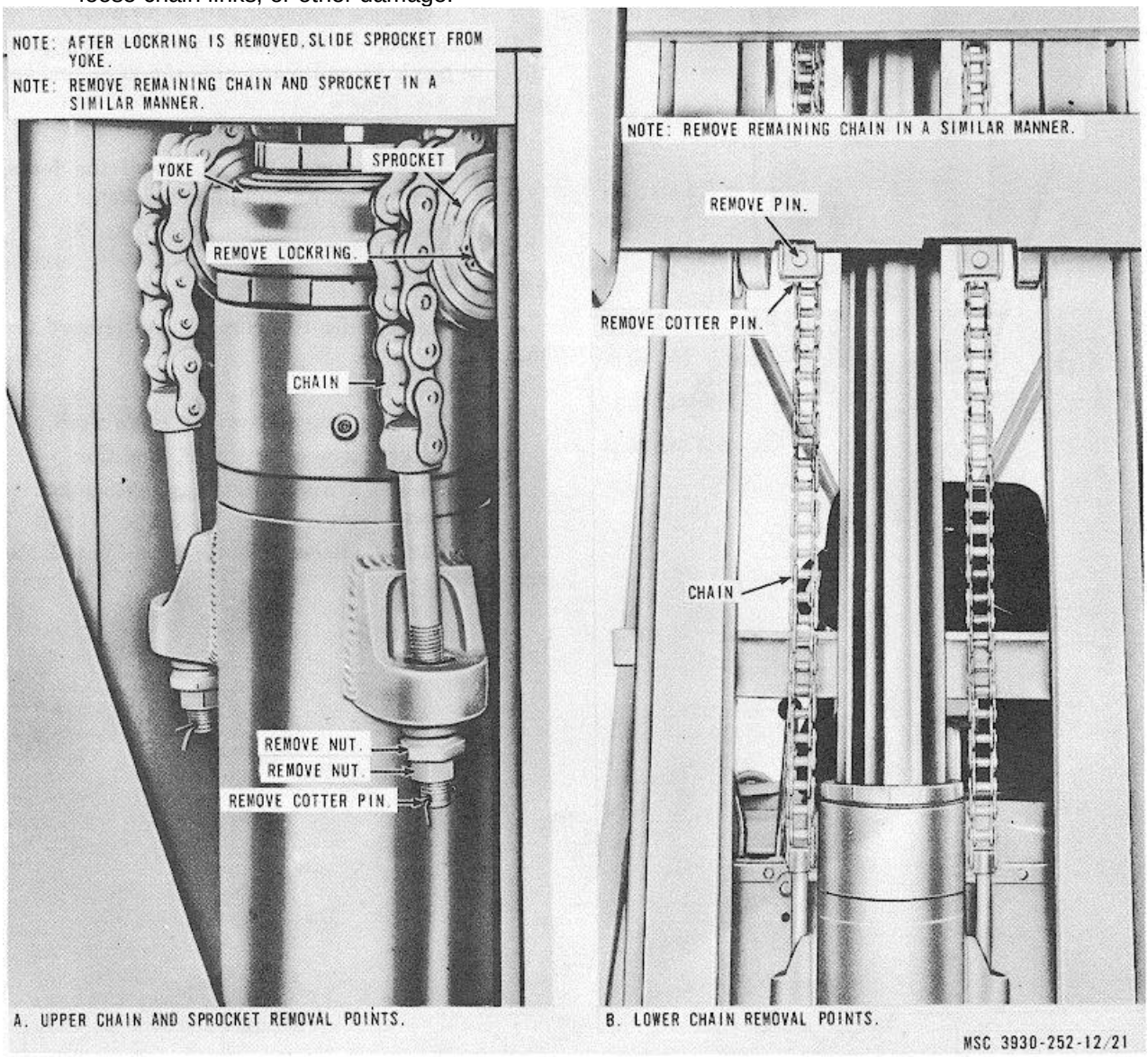


Figure 21. Lift chain and sprocket, removal and installation.

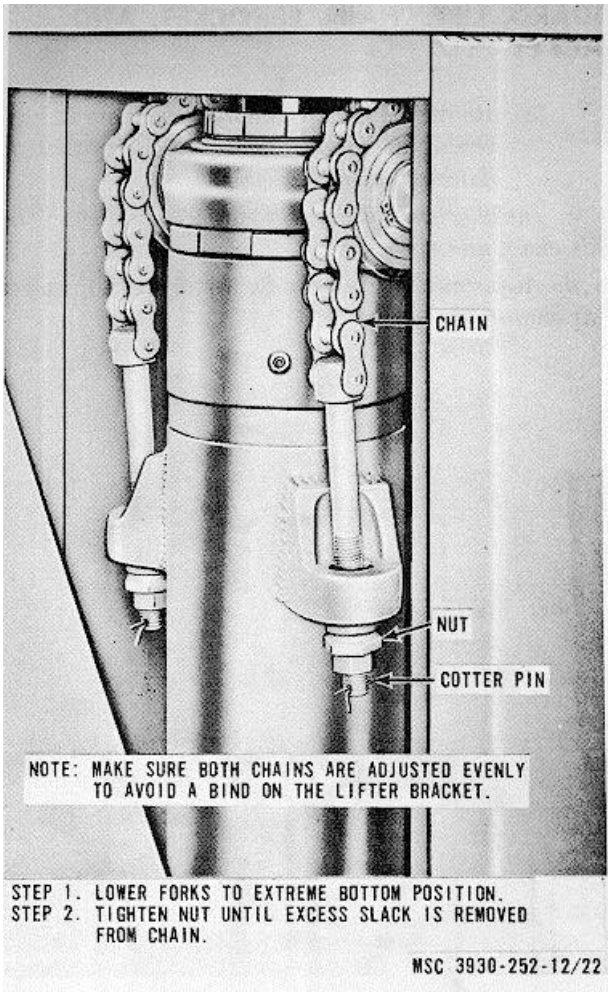


Figure 22. Lift chain adjustment.

61. Forks, Backrest Guard, and Lifter Bracket

a. Removal.
(1) Disconnect the lower lift chain (par. 60).
(2) Refer to figure 23 and remove the forks, backrest guard, and lifter bracket.

b. Disassembly (Lifter bracket and fork stop pin). Refer to figure 24 and disassemble the lifter bracket and fork stop pin.

c. Cleaning, Inspection, and Repair.
(1) Clean all parts with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, dents, bends, or damaged lifting bracket rollers.
(3) Replace a damaged part as necessary.

d. Reassembly (Lifter bracket and fork stop pin). Refer to figure 24 and reassemble the lifter bracket and fork stop pin.

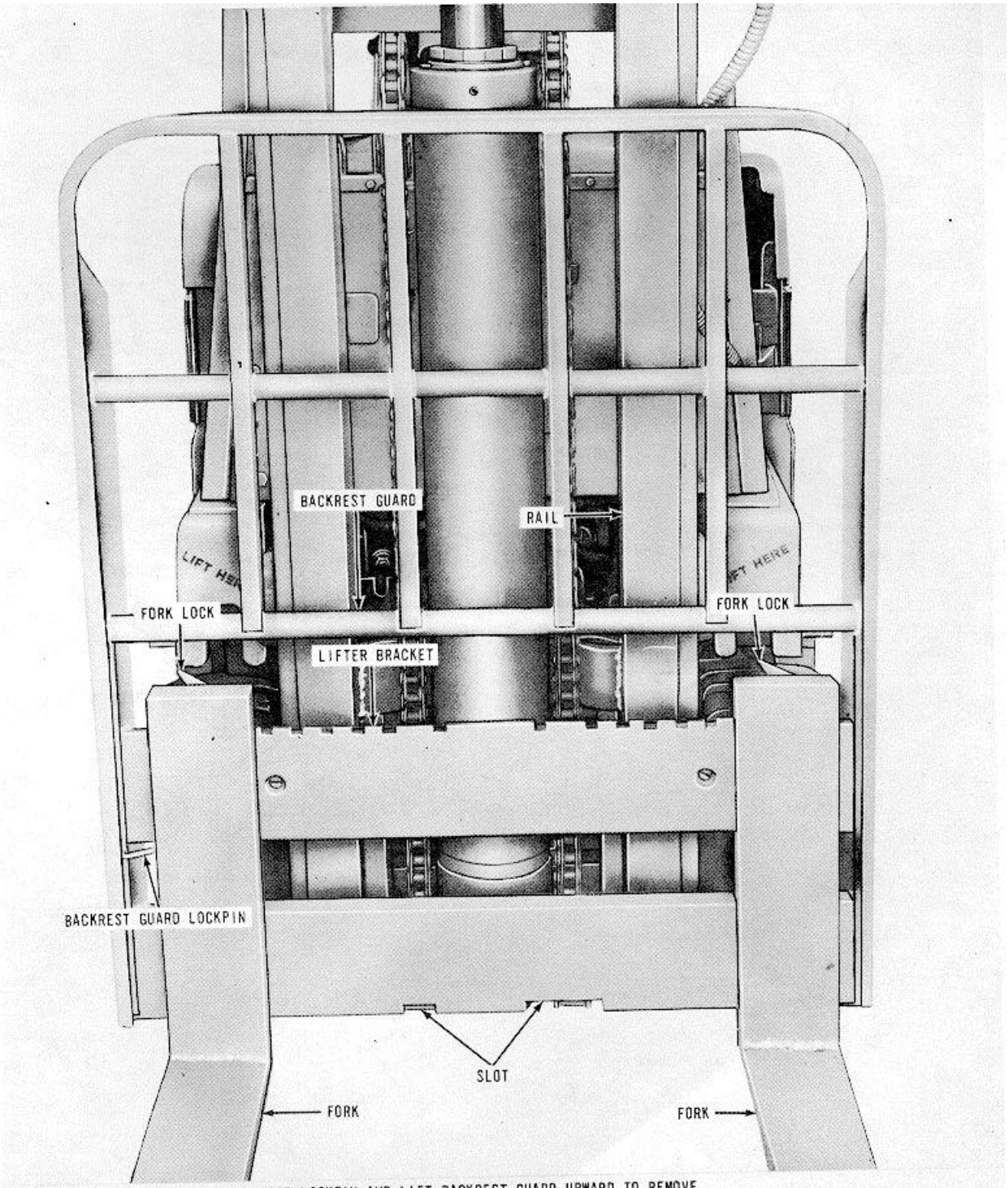
e. Installation.
(1) Refer to figure 23 and install the forks, backrest guard, and lifter bracket.
(2) Install the lower lifter chain (par. 60).

62. Stop Pads

a. Removal. Refer to figure 25 and remove the stop pad.

b. Cleaning and Inspection.
(1) Wipe the stop pads with a clean cloth.
(2) Inspect for wear or frayed condition.
(3) Replace a worn or damaged stop pad as necessary.

c. Installation. Refer to figure 25 and install the stop pads.



STEP 1. PULL OUT ON BACKREST GUARD LOCKPIN AND LIFT BACKREST GUARD UPWARD TO REMOVE.
STEP 2. LIFT UP ON FORK LOCKS AND SLIDE FORKS TO CENTER OF LIFTER BRACKET. ALINE FORK GUIDES WITH SLOTS IN LIFTER BRACKET AND PULL OUT ON BOTTOM OF FORKS THEN LIFT UP TO REMOVE.
STEP 3. ATTACH A SUITABLE LIFTING DEVICE TO FRONT OF TRUCK AND RAISE TRUCK TO A HEIGHT THAT WILL PERMIT THE LIFTER BRACKET TO SLIDE DOWN THE RAILS FAR ENOUGH TO BE REMOVED.

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Figure 23.

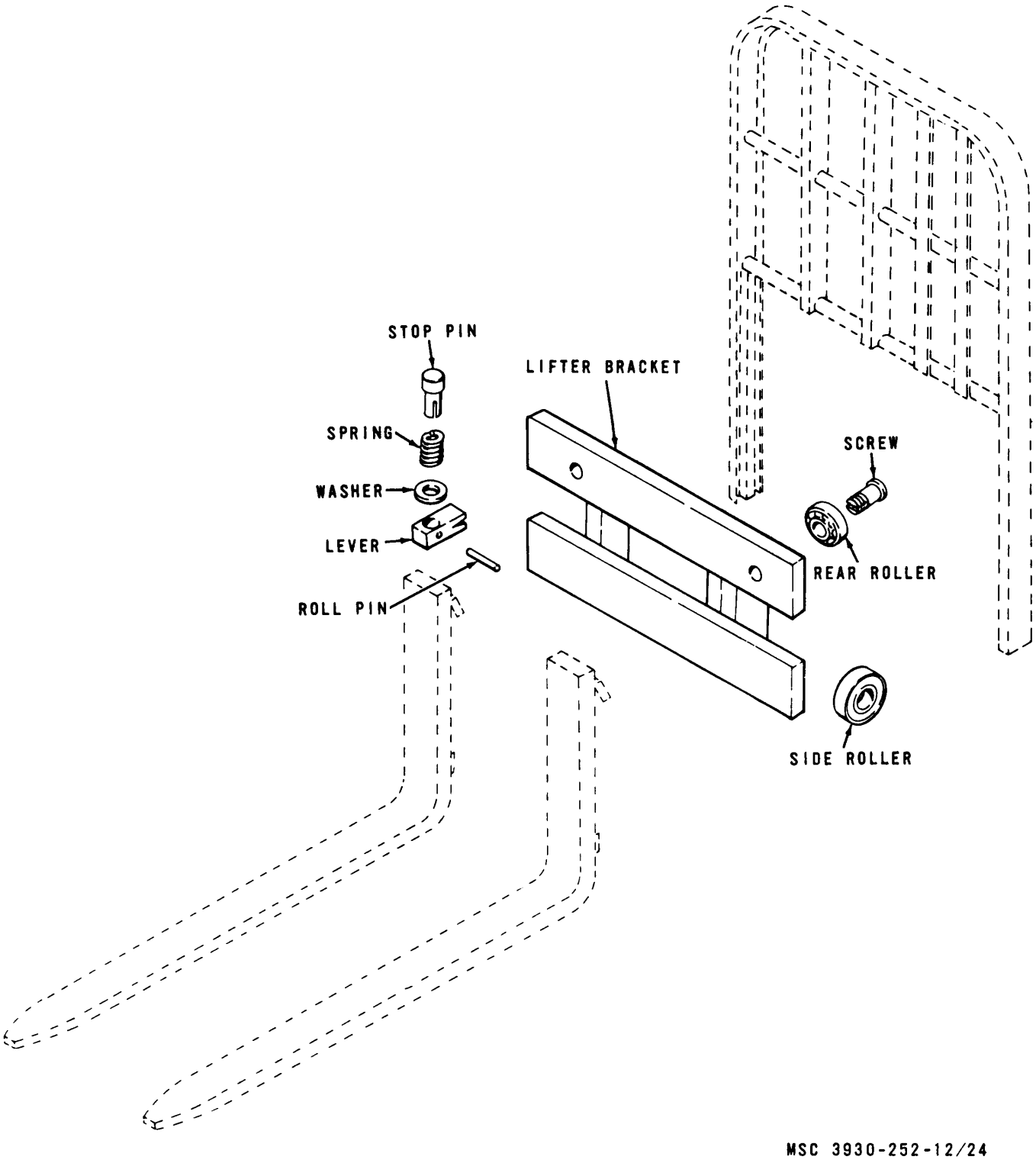

Figure 24. Lifter bracket and fork stop pin, disassembly and reassembly.

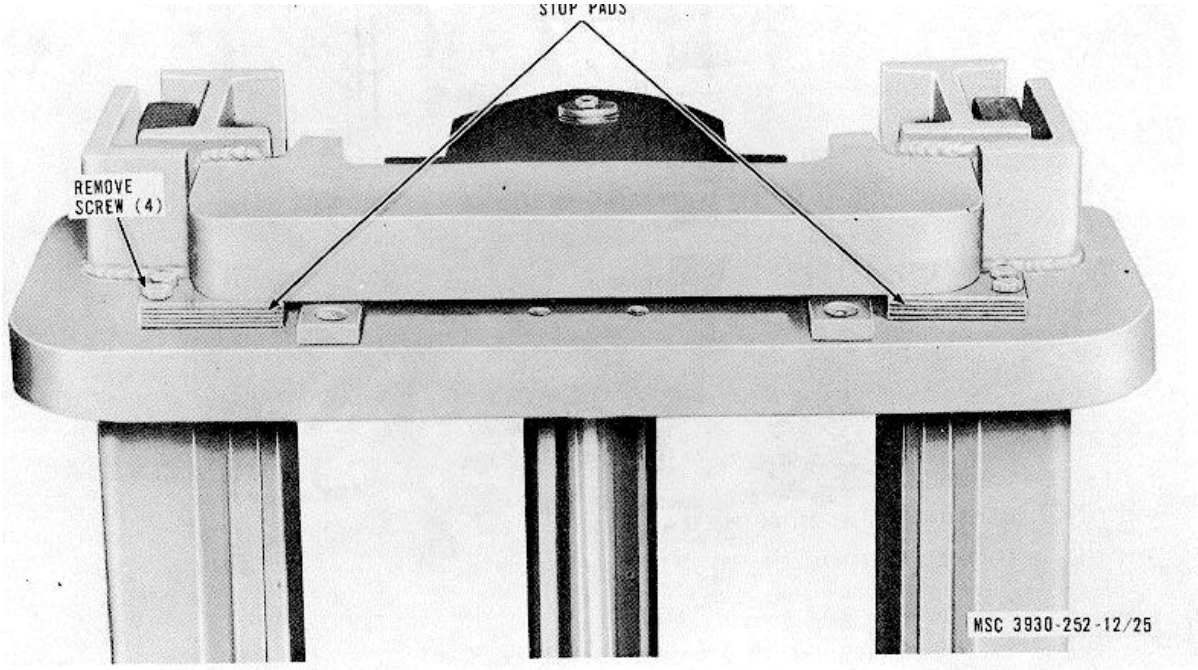

Figure 25. Stop pads, removal and installation.

Section VIII. INSTRUMENTS AND HOUSING

63. General

The various gages, and switches for operation of the forklift truck are housed by the instrument panel. The directional switch is on the steering column and the horn button is on the steering wheel. The horn is mounted under the frame of the lift truck.

64. Battery Charge Indicator, Hourmeter, Light Switch, Key Switch, and Instrument Panel

a. Removal.
- (1) Remove the lower dash panel (par. 58).
- (2) Refer to figure 26 and remove the battery charge indicator, hourmeter, light switch, key switch, and instrument panel.

b. Cleaning and Inspection.
- (1) Wipe the gages and switches with a clean dry cloth, wipe the panel with a clean cloth slightly dampened with an approved cleaning solvent and dry thoroughly.
- (2) Inspect the hourmeter and battery charge indicator for broken glass or damaged indicator hands. Inspect all other parts for breaks, cracks, dents, loose or missing mounting hardware, corrosion, or other defects.
- (3) Tighten or replace loose or missing mounting hardware, replace a damaged part as necessary, clean corrosion from electrical contact posts.

c. Installation.
- (1) Refer to figure 26 and install the instrument panel, key switch, light switch, hourmeter, and battery charge indicator.
- (2) Install the lower dash panel (par. 58).

65. Directional Switch

a. Removal. Refer to figure 27 and remove the directional switch.

b. Disassembly. Refer to figure 28 and disassemble the directional switch.

c. Cleaning, Inspection, and Repair.
- (1) Clean all parts with an approved cleaning solvent and dry thoroughly.
- (2) Inspect for breaks, cracks, dents, loose or missing mounting hardware or other defects.

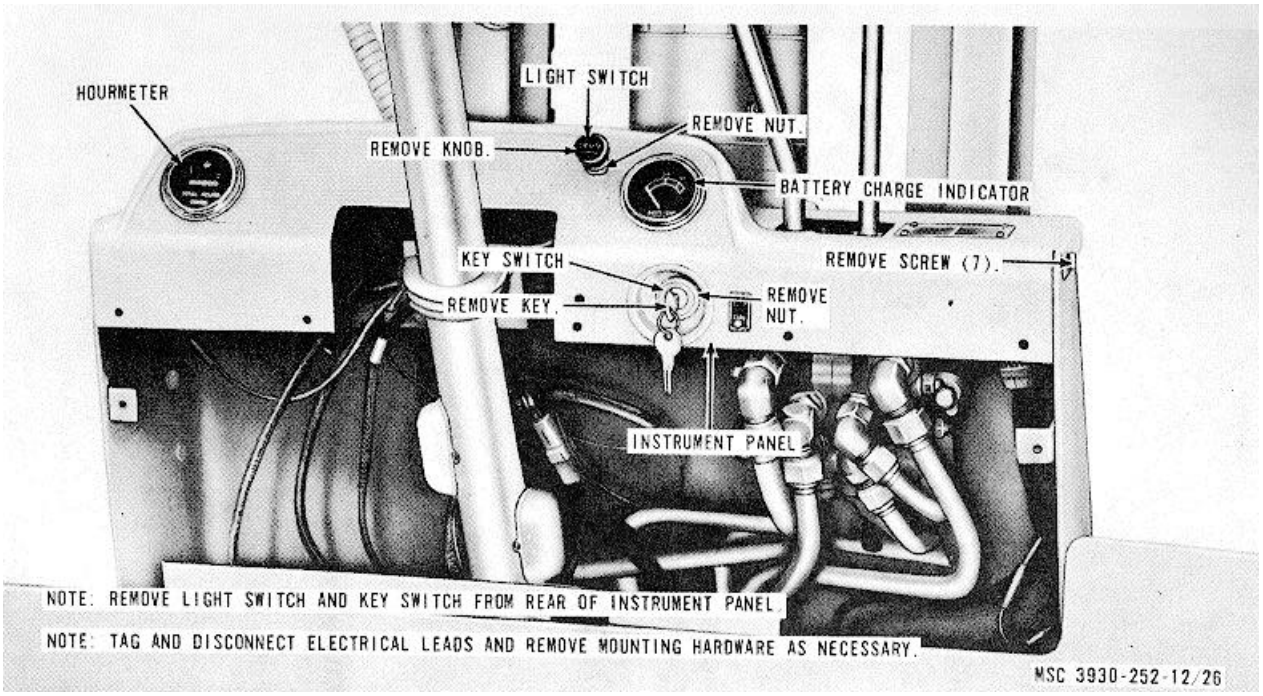

Figure 26. Battery charge indicator, hourmeter, light switch, key switch, and instrument panel, removal and installation.

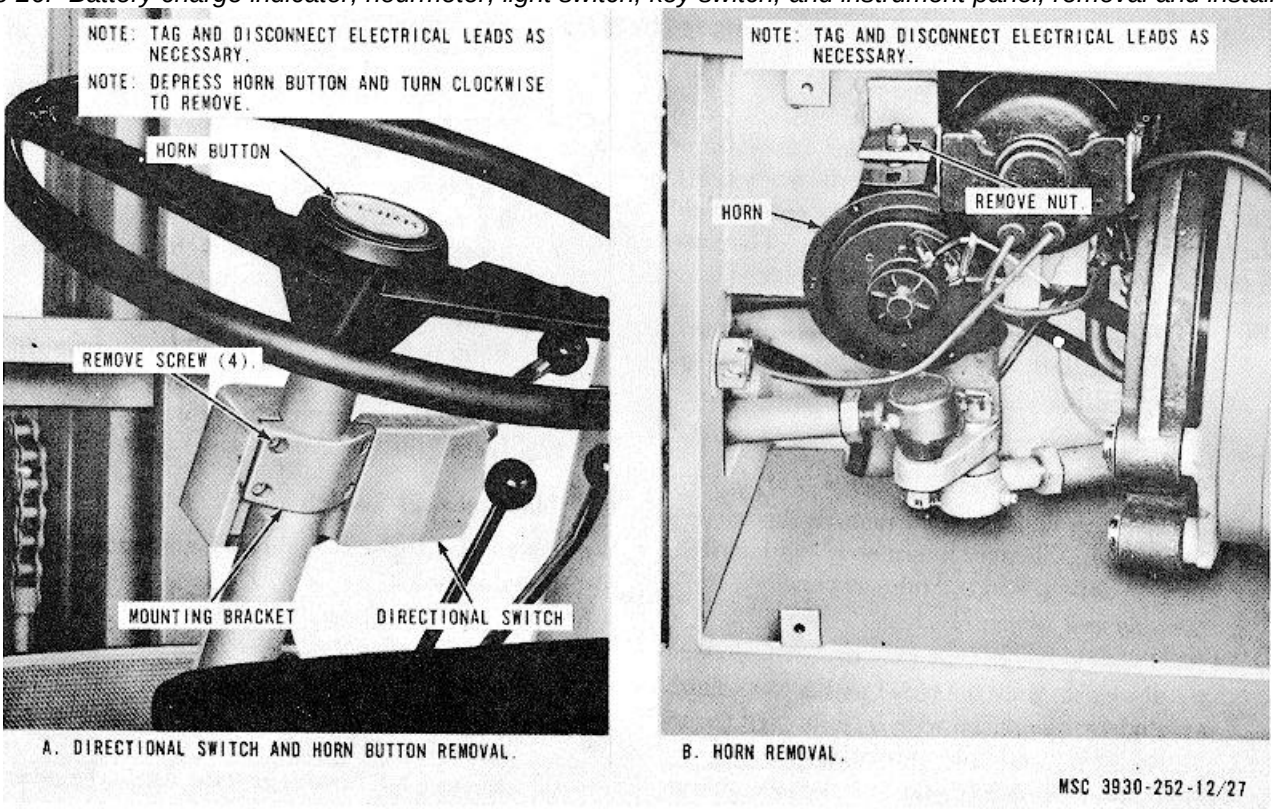

Figure 27. Directional switch, horn button, and horn, removal and installation.

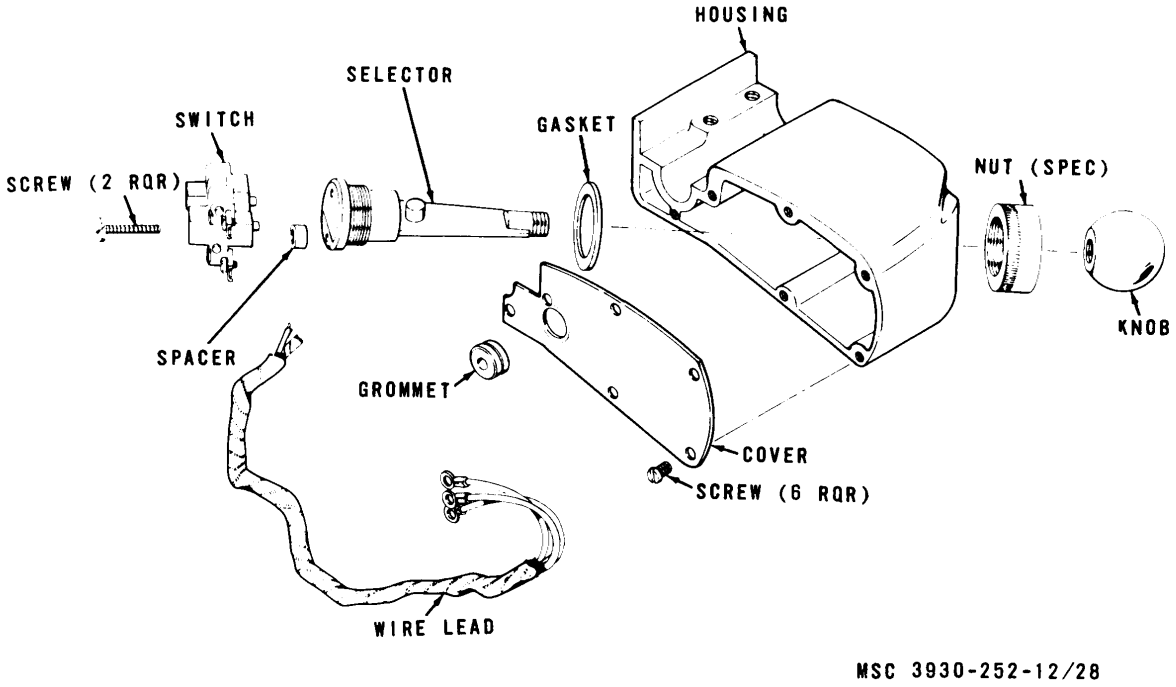

Figure 28. Directional switch, disassembly and reassembly.

(3) Tighten or replace loose or missing mounting hardware, replace a damaged or defective part as necessary.

d. Reassembly. Refer to figure 28 and reassemble the directional switch.

e. Installation. Refer to figure 27 and install the directional switch.

66. Horn Button and Horn

a. Removal.

(1) *Horn button*. Refer to figure 27 and remove the horn button.

(2) *Horn*.

(*a*) Remove the splash pan (par. 102).

(*b*) Refer to figure 27 and remove the horn.

b. Cleaning and Inspection.

(1) Wipe the horn button and horn with a clean cloth dampened slightly with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, dents, corrosion, or other defects.

(3) Replace a damaged horn button or horn as necessary.

c. Installation.

(1) *Horn*.

(*a*) Refer to figure 27 and install the horn.

(*b*) Install the splash pan (par. 101).

(2) *Horn Button*. Refer to figure 27 and install the horn button.

Section IX. ELECTRICAL SYSTEM

67. General

The electrical system consists of a battery, headlight, stop and taillight, capacitors, resistors, and various switches for the operation and safety of the forklift truck. The battery charge receptacle is a quick disconnect type so the battery can be disconnected from the circuit and recharged without being removed from the truck.

68. Battery and Receptacle

a. Removal.

(1) Remove the battery compartment side panels (par. 55).

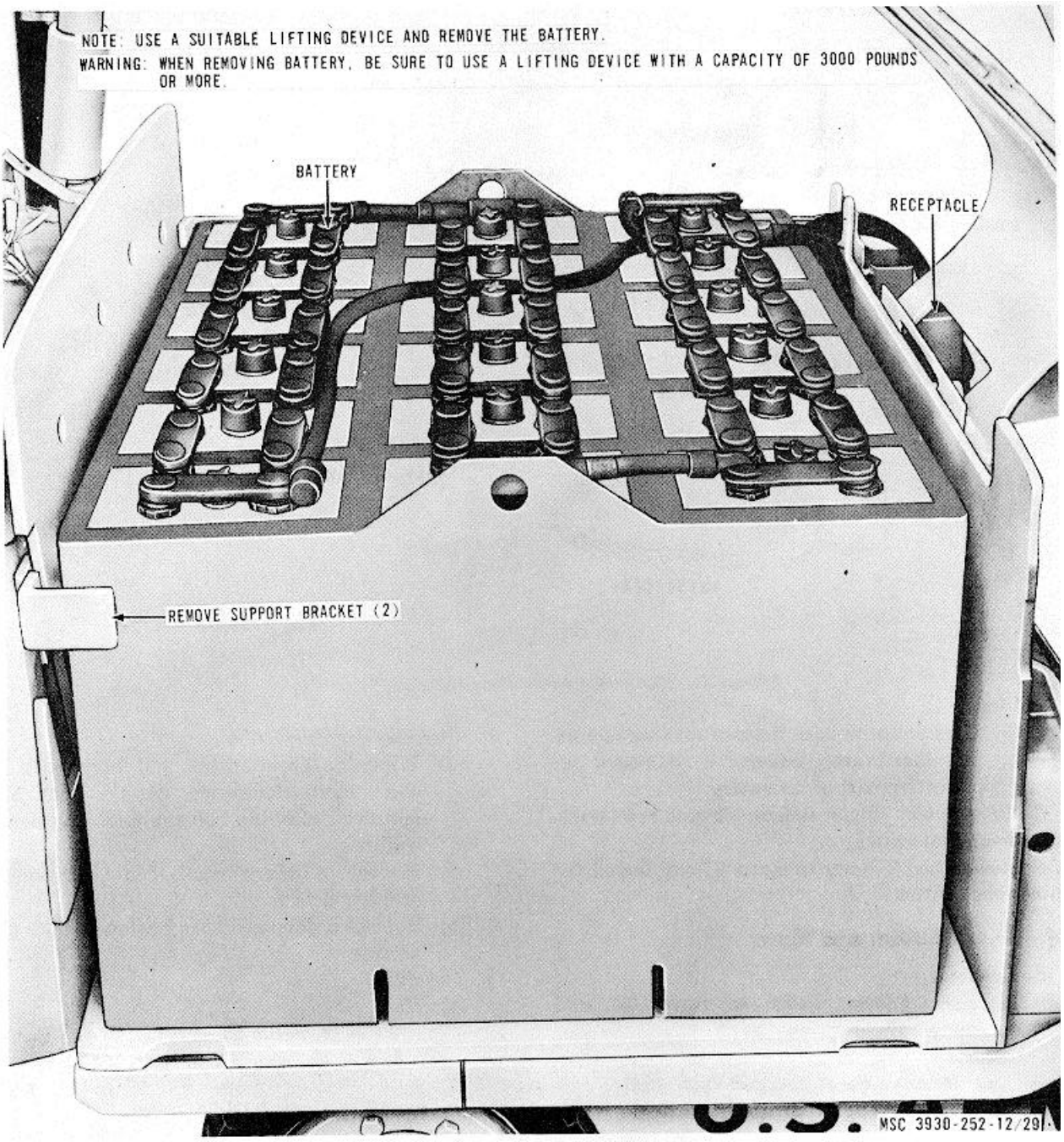

Figure 29. Battery and receptacle, removal and installation.

(2) Refer to figure 29 and remove the battery and receptacle.

b. Cleaning and Inspection.

(1) Clean the corrosion and dirt from the battery with an approved cleaning solution and wipe dry with a clean cloth.

(2) Inspect for breaks, cracks, loose terminal posts, or other defects.

(3) Replace a damaged battery as necessary.

c. Installation.

(1) Refer to figure 29 and install the battery and receptacle.

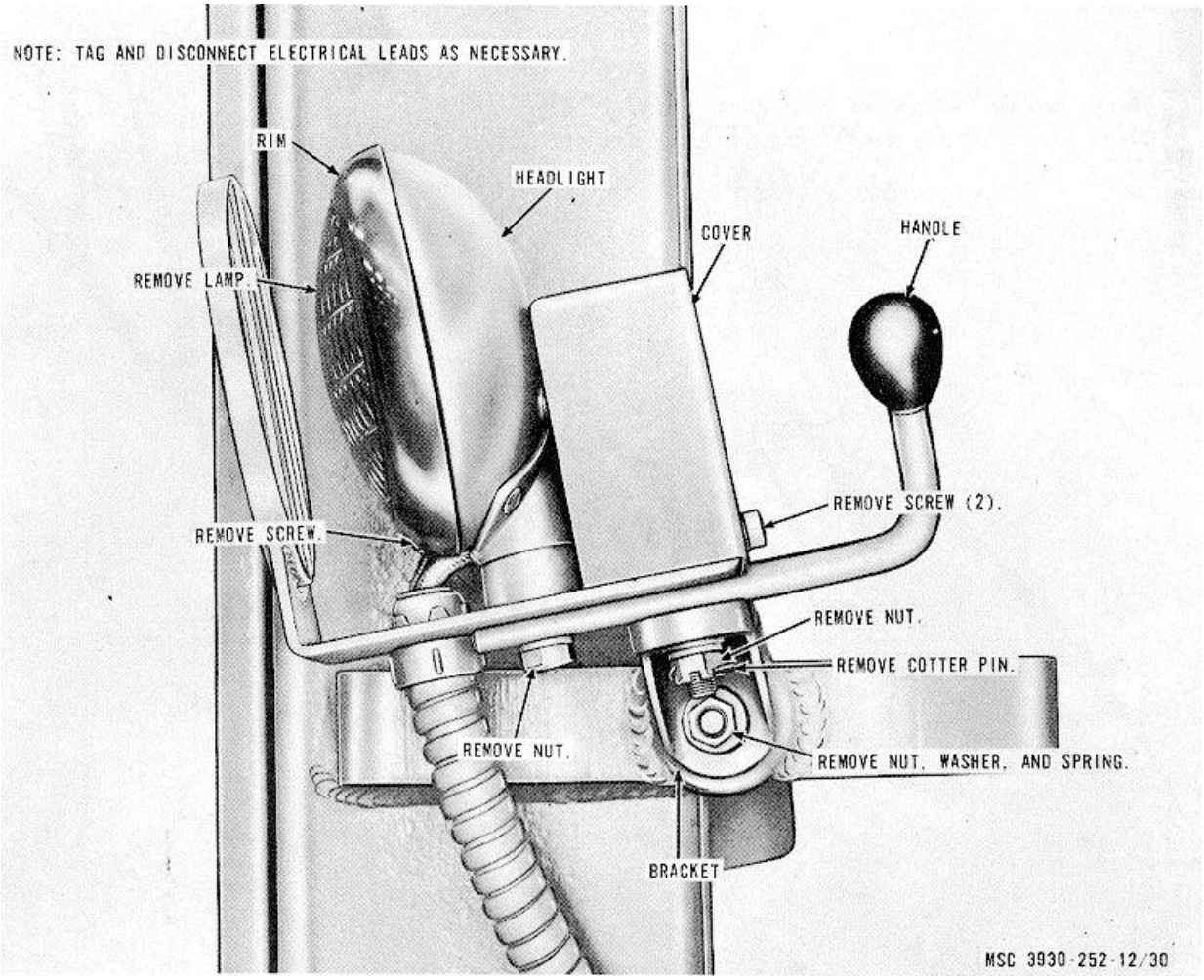

Figure 30. Headlight and lamp, removal and installation.

(2) Install the battery compartment side panels (par. 55).

69. Headlight and Lamp

a. Removal. Refer to figure 30 and remove the headlight, and lamp.

b. Cleaning and Inspection.

(1) Wipe the headlight and lamp with a clean cloth dampened slightly with an approved cleaning solvent.

(2) Inspect for breaks, cracks, dents, loose or missing mounting hardware or other defects.

(3) Replace a defective lamp. Tighten or replace loose or missing mounting hardware. Replace a damaged headlight as necessary.

c. Installation. Refer to figure 30 and install the headlight and lamp.

70. Stop and Taillight and Bracket

a. Removal. Refer to figure 31 and remove the stop and taillight and bracket.

b. Cleaning and Inspection.

(1) Wipe all parts with a clean cloth dampened slightly with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, dents, corrosion, broken lens or lamps, or other defects.

(3) Replace a broken lens or lamp. Replace a damaged taillight as necessary.

c. Installation. Refer to figure 31 and install the stop and taillight and bracket.

71. Deadmen Brake and Stoplight Switch and Accelerator Pressure Switch

a. Removal.

(1) Remove the front floor plate (par. 56).

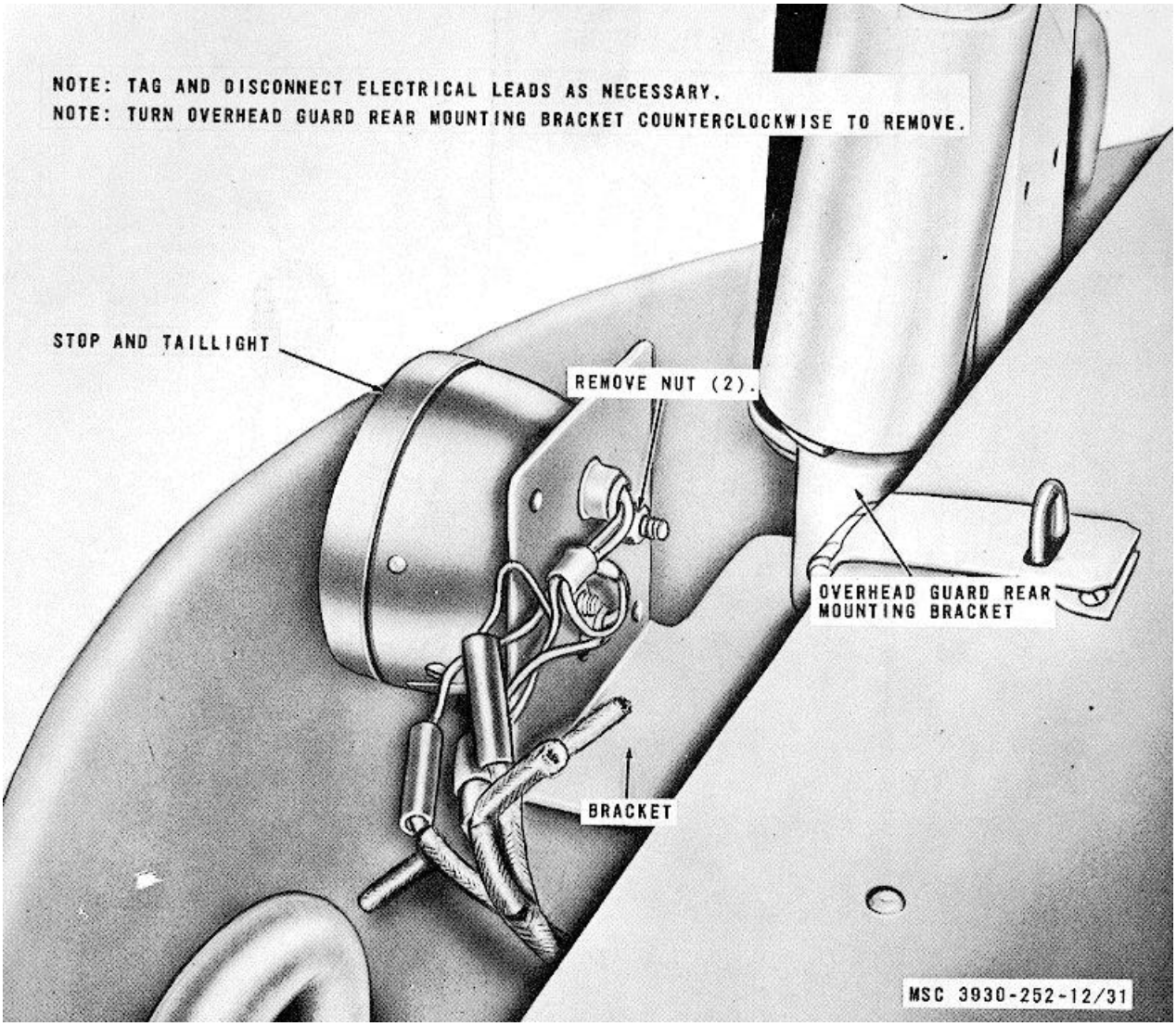

Figure 31. Stop and taillight and bracket, removal and installation.

(2) Refer to figure 32 and remove the deadman brake and stoplight switch and accelerator pressure switch.

b. Cleaning and Inspection.

(1) Wipe all parts with a clean, dry cloth.
(2) Inspect for breaks, cracks, corrosion, or other defects.
(3) Replace a damaged or defective switch as necessary.

c. Installation.

(1) Refer to figure 32 and install the deadman brake and stoplight switch and accelerator pressure switch.
(2) Install the front floor plates (par. 56).

72. Accelerator Deadman Switch

a. Removal. Refer to figure 33 and remove the accelerator deadman switch.

b. Cleaning and Inspection.

(1) Wipe all parts with a clean dry cloth.
(2) Inspect for breaks, cracks, corrosion, or other defects.
(3) Replace a defective switch as necessary.

c. Installation. Refer to figure 33 and install the accelerator deadman switch.

73. Park Brake Switch

a. Removal.

(1) Remove the battery (par. 68).

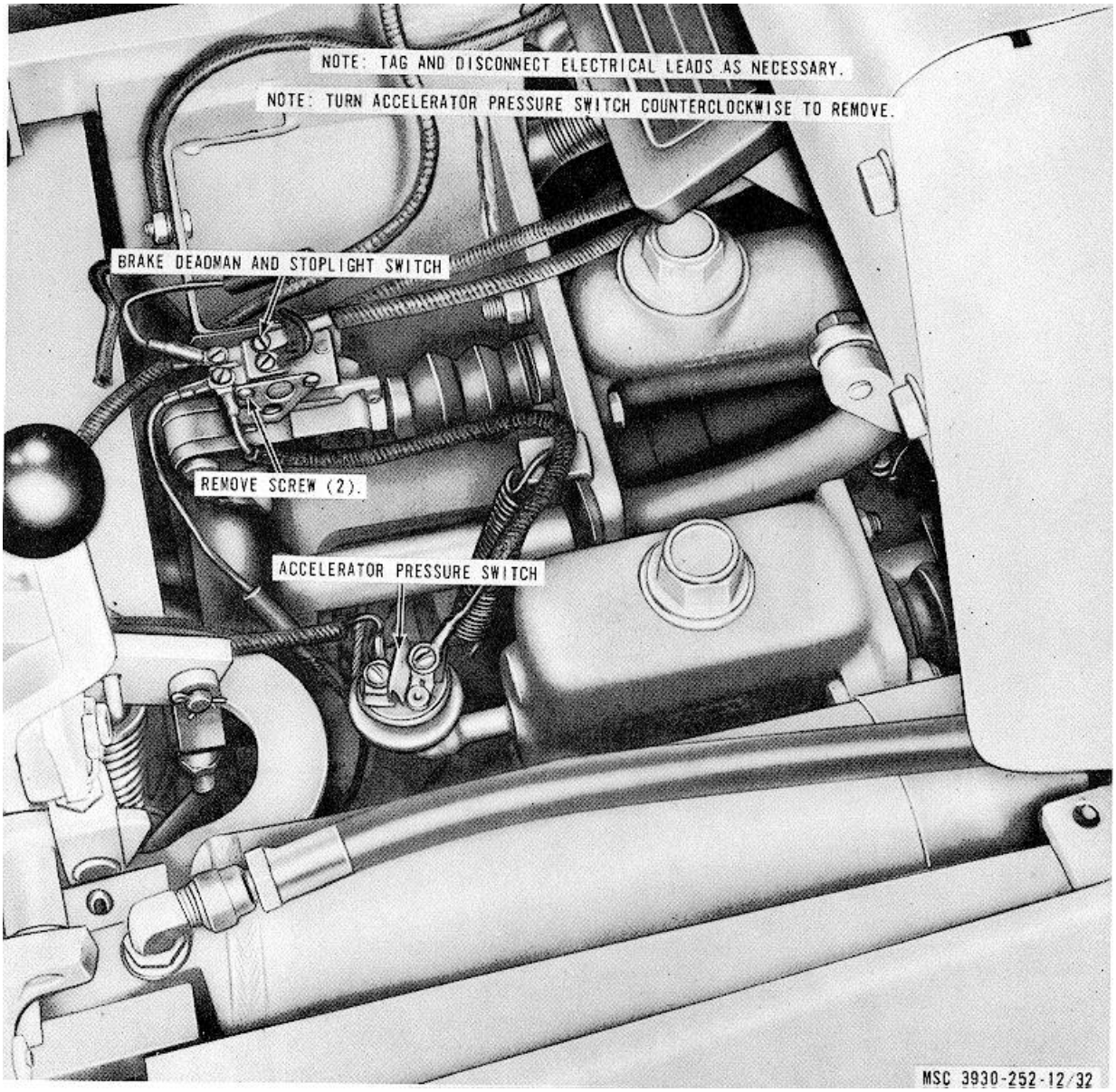

Figure 32. Deadman brake and stoplight switch and accelerator pressure switch, removal and installation.

(2) Refer to figure 34 and remove the park brake switch.

b. Cleaning and Inspection.

(1) Wipe all parts with a clean dry cloth.
(2) Inspect for breaks, cracks, corrosion, or other defects.
(3) Replace a defective switch as necessary.

c. Installation.

(1) Refer to figure 34 and install the park brake switch.
(2) Install the battery (par. 68).

74. Tilt and Lift Valve Switches

a. Removal.

(1) Remove the front panel access plates (par. 55).
(2) Refer to figure 35 and remove the tilt and lift valve switches.

b. Cleaning and Inspection.

(1) Wipe all parts with a clean dry cloth.
(2) Inspect for breaks, cracks, corrosion, or other defects.
(3) Replace a damaged or defective switch as necessary.

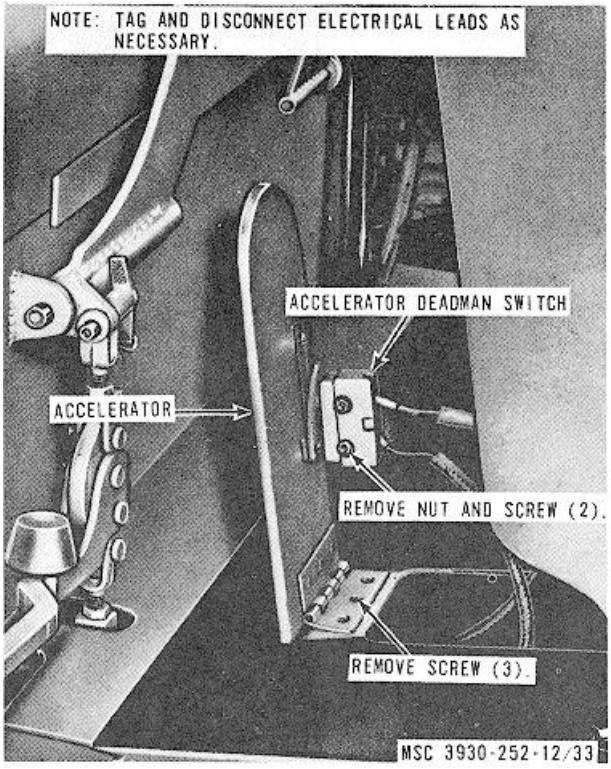

Figure 33. Accelerator and accelerator deadman switch, removal and installation.

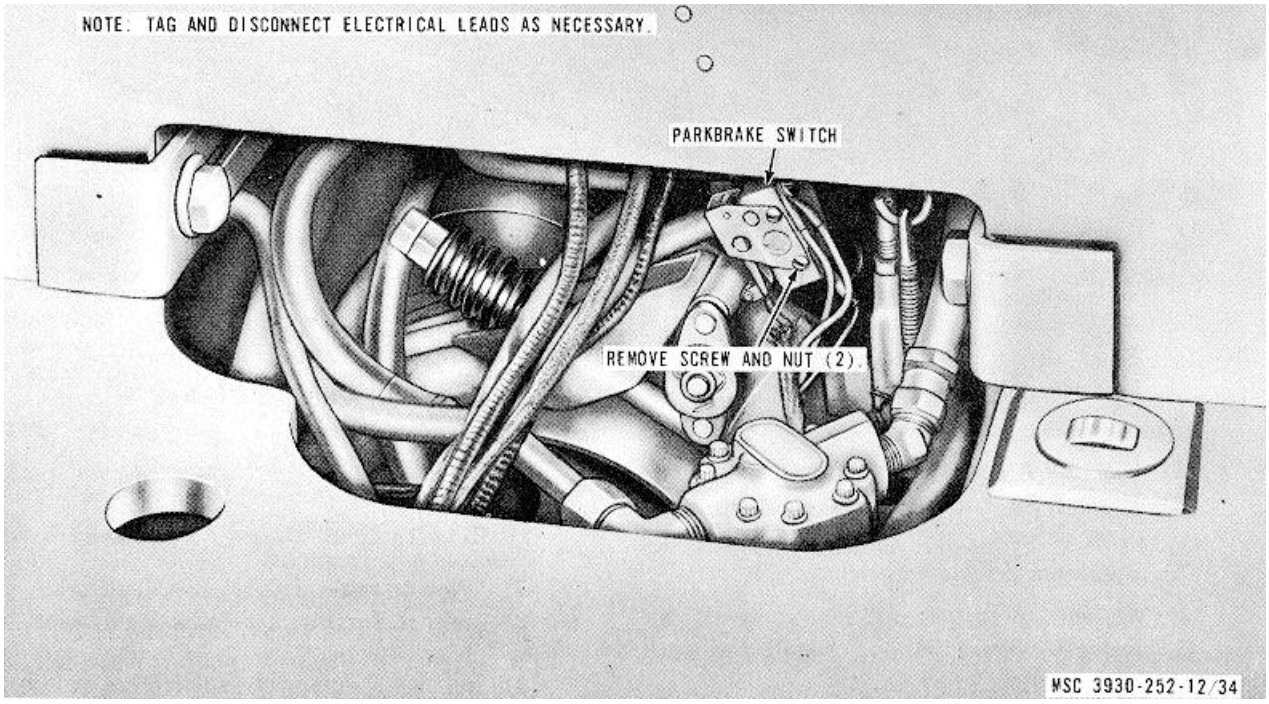

Figure 34. Park brake switch, removal and installation.

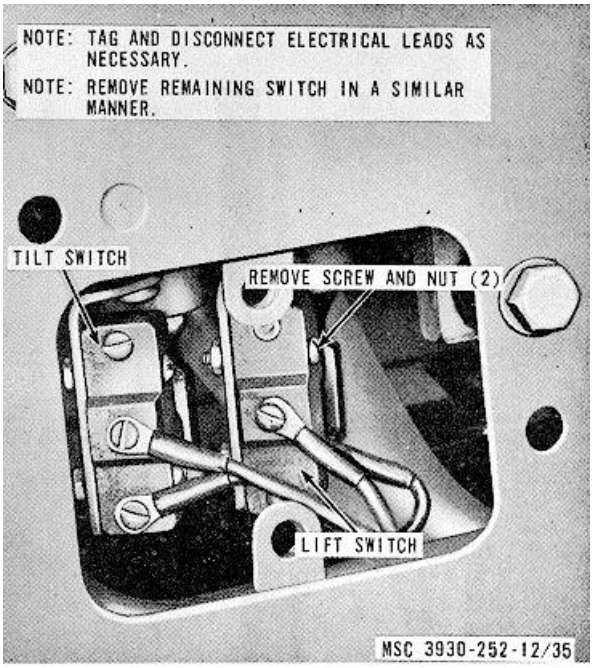

Figure 35. Tilt and lift valve switches, removal and installation.

c. Installation.
(1) Refer to figure 35 and install the tilt and lift valve switches.
(2) Install the front panel access plates (par. 56).

75. Contactor Actuating Switches (1-MS, 2-MS)

a. Removal. Refer to figure 36 and remove the contactor actuating switches.
b. Cleaning and Inspection.
(1) Wipe all parts with a clean dry cloth.
(2) Inspect for breaks, cracks, corrosion, or other defects.
(3) Replace a defective switch as necessary.
c. Installation. Refer to figure 36 and install the contactor actuating switches.
d. Adjustment. Refer to figure 36 and adjust the switches.

76. Capacitors

a. Removal.
(1) Remove the rear counterweight cover (par. 57).
(2) Refer to figure 37 and remove the capacitors.
b. Cleaning, Inspection, and Test.
(1) Wipe the capacitors with a clean dry cloth.
(2) Inspect for damaged covering, corrosion, broken wire leads, loose ends, or other defects.
(3) Test the capacitors with a capacitor tester.
(4) Replace a damaged or defective capacitor as necessary.
c. Installation.
(1) Refer to figure 37 and install the capacitors.
(2) Install the rear counterweight cover (par. 57).

77. Resistors

a. Removal.
(1) Remove the rear counterweight cover (par. 57).
(2) Refer to figure 37 and remove the resistors.
b. Cleaning, Inspection, and Test.
(1) Wipe the resistors with a clean, dry cloth.
(2) Inspect for breaks, cracks, corrosion, discoloration, broken terminals, or evidence of overheating.
(3) Use a multimeter and check the value of the resistor.
(4) Replace a damaged or defective resistor as necessary.
c. Installation.
(1) Refer to figure 37 and install the resistors.
(2) Install the rear counterweight cover (par. 57).

78. Fuses

a. Removal.
(1) Remove the rear counterweight cover (par. 57).
(2) Refer to figure 37 and remove the fuses.
b. Cleaning and Inspection.
(1) Wipe the fuse with a clean dry cloth.
(2) Inspect for breaks, cracks, corrosion, loose connections, or other defects.
(3) Replace a damaged or defective fuse as necessary.
c. Installation.
(1) Refer to figure 37 and install the fuses.
(2) Install the counterweight cover (par. 57).

79. Contactor Points

a. Removal.
(1) Remove the rear counterweight cover (par. 57).
(2) Refer to figure 37 and remove the contactor points.

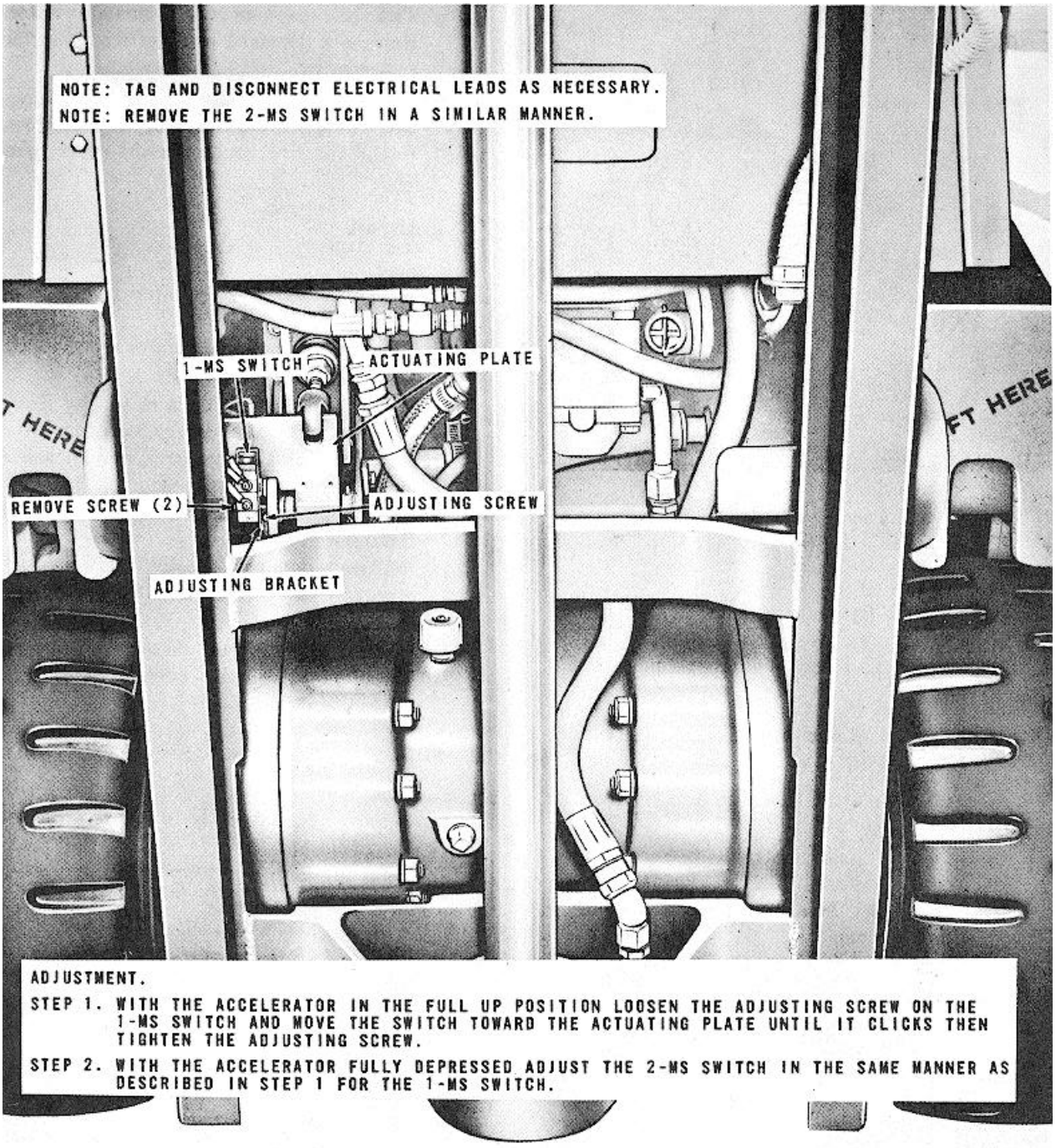

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Figure 36. Contactor actuating switches (1-MS and 2-MS), removal, installation, and adjustment.

NOTE: TAG AND DISCONNECT ELECTRICAL LEADS AS NECESSARY.
NOTE: REMOVE NUT FROM BENEATH DIODES.
NOTE: REMOVE REMAINING RESISTORS AND CONTACTOR POINTS IN A SIMILAR MANNER.

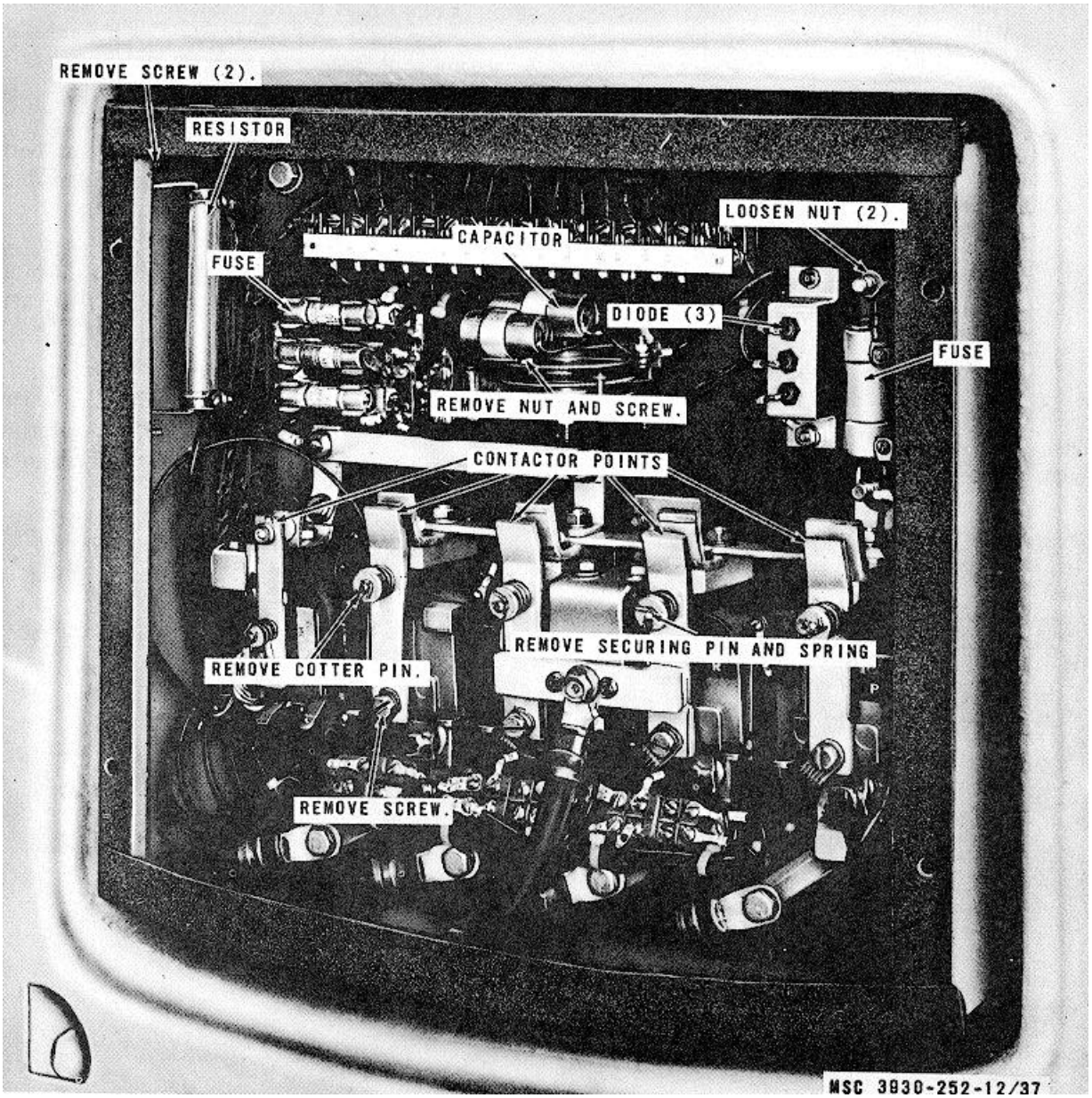


Figure 37. Capacitor, resistor, fuse, (diode, and contactor points, removal and installation.

b. Cleaning and Inspection.

(1) Clean all parts with all approved(cleaning solvent an(d dry thoroughly.
(2) Inspect for breaks, excessively burned condition, or other defects.
(3) Replace contactor points that are damaged or burned beyond repair.

c. Installation.

(1) Refer to figure 37 and install the contactor points.
(2) Install the rear counterweight cover (par. 57).

80. Diodes

a. Removal.

(1) Remove the rear counterweight cover (par. 57).
(2) Refer to figure 37 and remove the diodes.

b. Cleaning and Inspection.

(1) Wipe the diodes with a clean, dry cloth.
(2) Inspect for broken wire leads, corrosion, or other (damage.
(3) Replace a damaged dio(de as necessary.

c. Test.

(1) Use a multimeter and position the selector on R 1 resistance scale.
(2) Touch one test lead(to the positive side of the diode and at the same time touch the other lead to the negative side. Reverse the leads and touch the opposite sides of the diode.
(3) The meter should indicate a read(ing only with the test leads in one position.

(4) If the meter indicates a reading at both sides of the diode or an absence of a reading at both sides, replace the diode.

d. Installation.

(1) Refer to figure 37 and(install the diode.
(2) Install the counterweight cover (par. 57).

Section X. SPEED CONTROL SYSTEM

81. General

The speed of the forklift truck is controlled through the accelerator pedal and linkage as they apply pressure to the accelerator master cylinder. The pressure in the cylinder is then transferred through copper tubing to the actuator and accumu

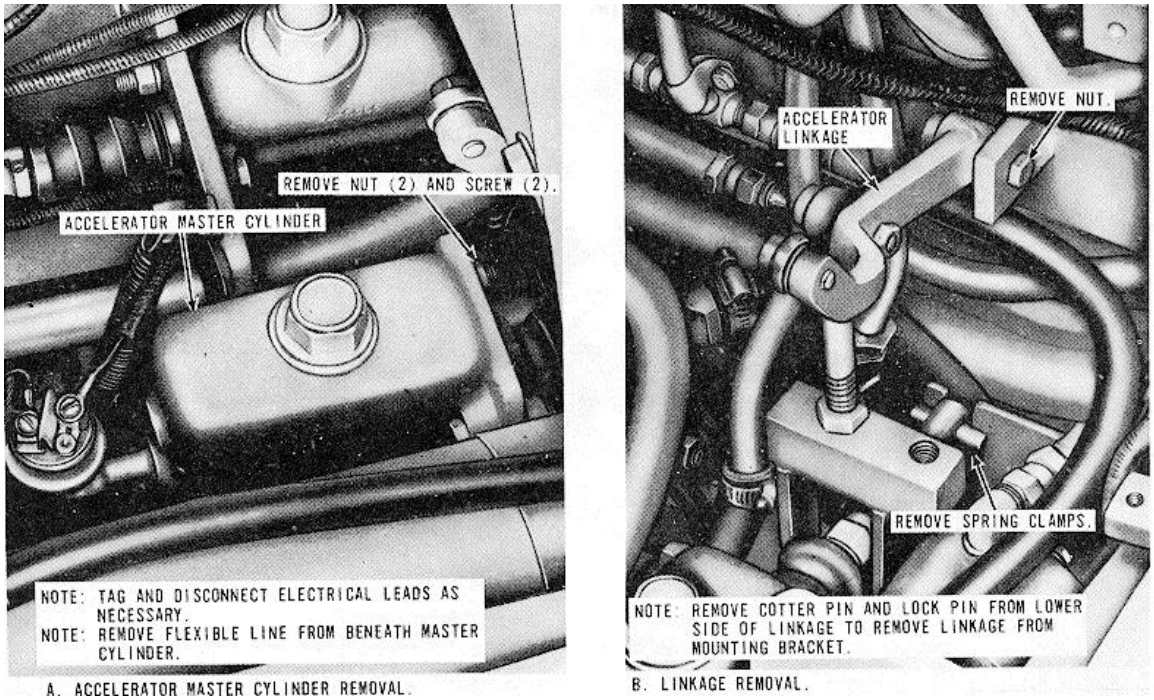


Figure 38. Accelerator linkage and master cylinder, removal and installation.

lator which exert pressure on the rings in the carbon pile and lowers their resistance thus increasing the speed of the truck. The pressure switch limits the current flow to the motor when the accelerator is first depressed. The solenoid controls the current flow in reverse torque braking.

82. Accelerator Pedal

a. Removal. Refer to figure 33 and remove the accelerator pedal.

b. Cleaning and Inspection.

(1) Clean the accelerator with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, bends, wear, loose or missing mounting hardware, or other defects.

(3) Tighten or replace loose or missing mounting hardware. Replace a damaged or defective accelerator pedal as necessary.

c. Installation. Refer to figure 33 and install the accelerator pedal.

83. Accelerator Linkage

a. Removal.

(1) Remove the front floor plate (par. 56).

(2) Refer to figure 38 and remove the accelerator linkage.

b. Cleaning and Inspection.

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, bends, damaged threaded areas, loose or missing mounting hardware, or other defects.

(3) Tighten or replace loose or missing mounting hardware. Replace damaged or defective accelerator linkage as necessary.

c. Installation.

(1) Refer to figure 38 and install the accelerator linkage.

(2) Install the front floor plate (par. 56).

d. Adjustment. Refer to figure 39 and adjust the accelerator linkage.

84. Accelerator Master Cylinder

a. Removal.

(1) Remove the front floor plate (par. 56).

(2) Refer to figure 38 and remove the accelerator master cylinder.

b. Cleaning and Inspection.

(1) Wipe the accelerator master cylinder with a clean cloth dampened with an approved cleaning solvent and dry thoroughly.

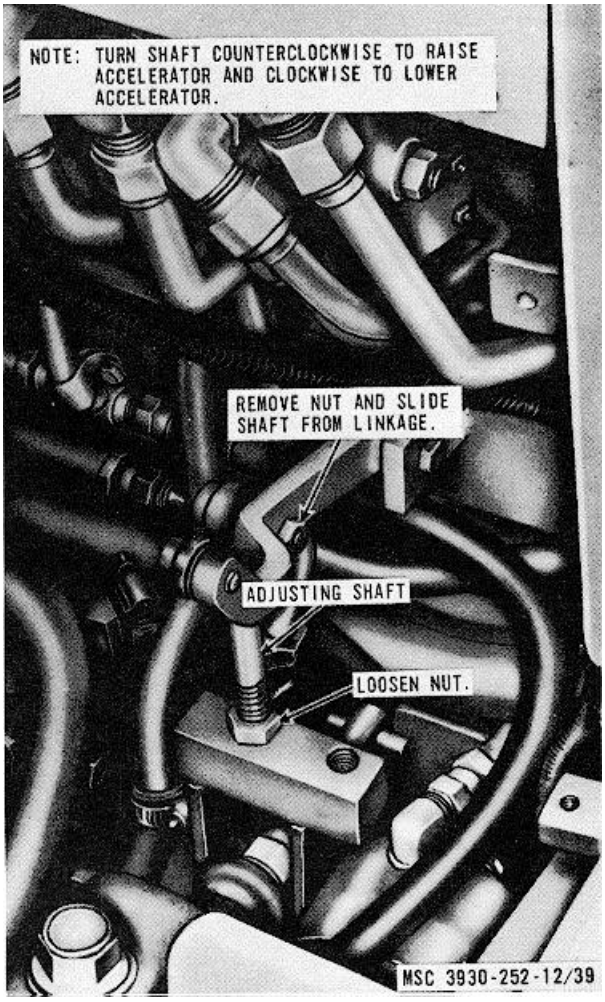


Figure 39. Accelerator linkage, adjustment.

(2) Inspect for breaks, cracks, damaged threaded areas, loose or missing hardware, or other defects.

(3) Tighten or replace loose or missing mounting hardware. Replace a damaged or defective accelerator master cylinder as necessary.

c. Installation.

(1) Refer to figure 38 and install the accelerator master cylinder.

(2) Install the front floor plate (par. 56).

85. Actuator and Accumulator

a. Removal.

(1) Remove the three mounting screws that secure the right side access door and lower the access door.

(2) Refer to figure 40 and remove the actuator and accumulator.

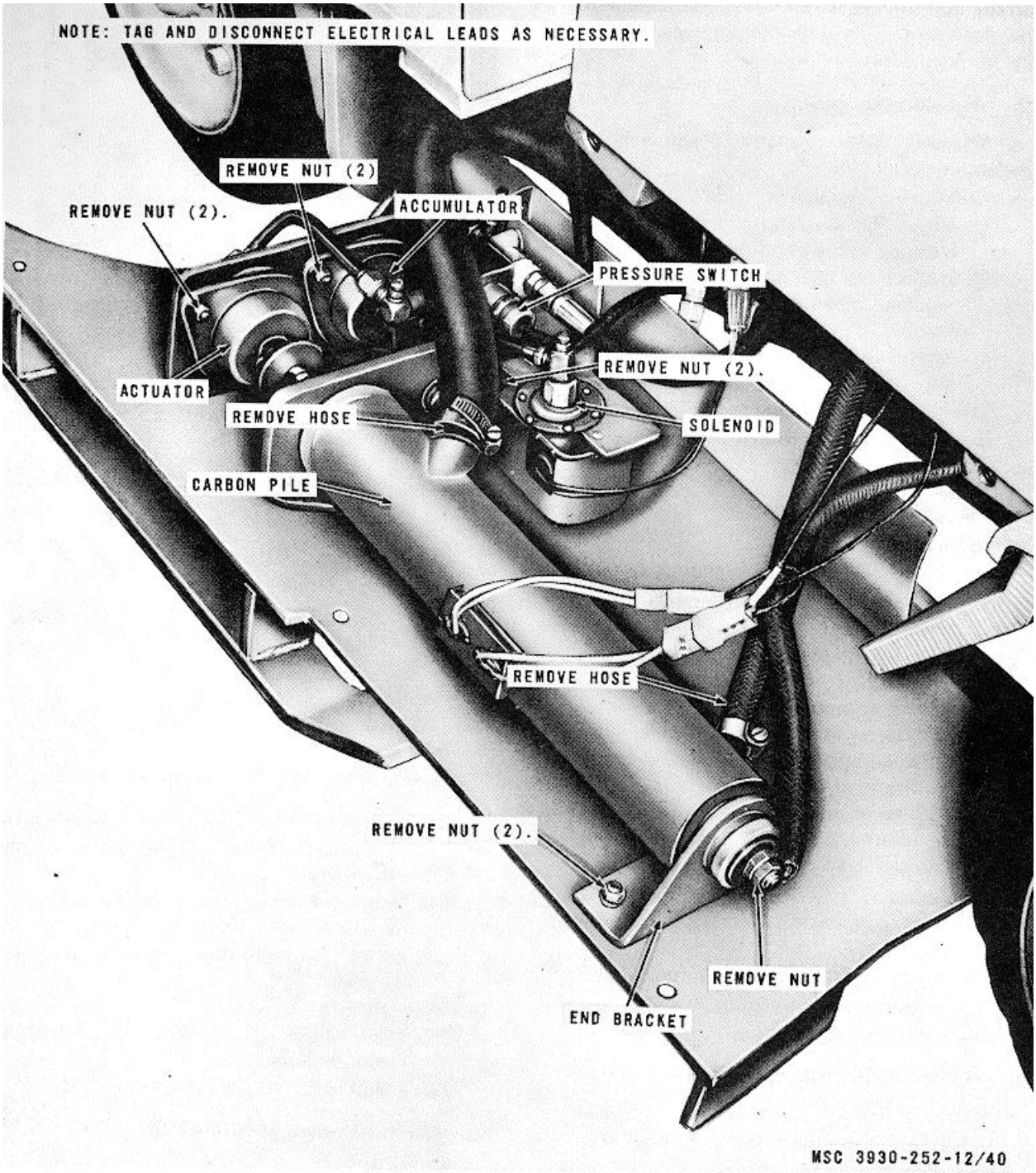


Figure 40. Actuator, accumulator, carbon pile, solenoid, and pressure switch, removal and installations.

b. Cleaning and Inspection.
(1) Wipe all parts with a clean cloth dampened with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, dents, bends, corrosion, loose or missing mounting hardware, or other defects.
(3) Tighten or replace loose or missing mounting hardware. Replace a defective actuator or accumulator as necessary.

c. Installation.
(1) Refer to figure 40 and install the actuator and accumulator.
(2) Position the right side access door and secure with the three mounting screws.

86. Carbon Pile

a. Removal.
(1) Lower the right side access door (par. 85).
(2) Refer to figure 40 and remove the carbon pile.

b. Cleaning and Inspection.
(1) Wipe the carbon pile with a clean cloth dampened with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, dents, corrosion, or other defects.
(3) Replace a damaged or defective carbon pile as necessary.

c. Installation.
(1) Refer to figure 40 and install the carbon pile.
(2) Position and secure the right side access door (par. 85).

87. Solenoid and Pressure Switch

a. Removal.
(1) Lower the right side access door (par. 85).
(2) Refer to figure 40 and remove the solenoid and pressure switch.

b. Cleaning and Inspection.
(1) Wipe all parts with a clean, dry cloth.
(2) Inspect for breaks, cracks, loose hoses and fillings, and other defects.
(3) Replace a damaged or defective solenoid or pressure switch as necessary.

c. Installation.
(1) Refer to figure 40 and install the solenoid and pressure switch.
(2) Close and secure the right side access door (par. 85).

Section XI. BRAKE AND WHEEL ASSEMBLIES

88. General

The park brake is connected by a linkage assembly to the seat assembly at one end and to a disk at the rear of the drive motor so that any time the seat is in the up position the motor will not run. The foot brake is operated through a master cylinder which applies hydraulic pressure to the brake shoes on the wheels to stop the motion of the forklift truck. The wheels have solid rubber tires and run on bearings which are packed in grease.

89. Park Brake Handle and Linkage

a. Removal.
(1) Remove the battery (par. 68).
(2) Remove the front floor plate (par. 56).
(3) Disconnect linkage at seat (par. 54).
(4) Refer to figure 41 and remove the park brake handle and linkage.

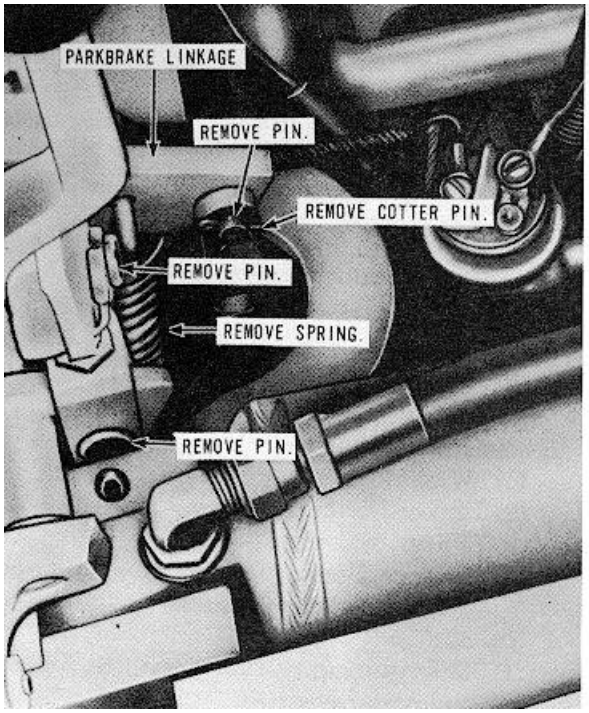
b. Cleaning and Inspection.
(1) Clean all parts with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, bends, defective threaded areas, or other defects.
(3) Replace a defective part as necessary.

c. Installation.
(1) Refer to figure 41 and install the park brake handle and linkage.
(2) Install linkage at seat (par. 54).
(3) Install the front floor plate (par. 56).
(4) Install the battery (par. 68).

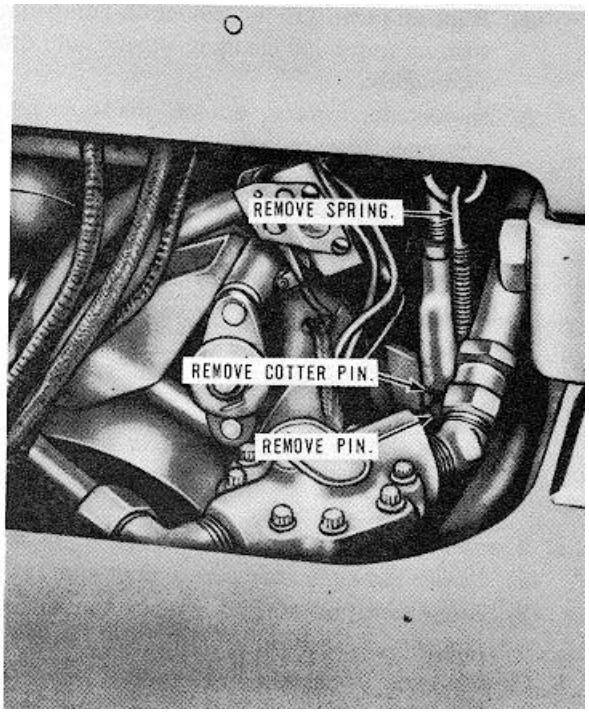
90. Brake Master Cylinder and Return Spring

a. Removal.
(1) Remove the front floor plate (par. 56).
(2) Refer to figure 42 and remove the brake master cylinder and return spring.

b. Cleaning and Inspection.
(1) Wipe the master cylinder with a clean cloth dampened with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, leaks, damaged threaded areas, loose or missing mounting hardware, or other damage. Inspect for weak or broken spring.
(3) Tighten or replace loose or missing mounting hardware. Replace a damaged or



A. PARKBRAKE LINKAGE UPPER REMOVAL POINTS



B PARKBRAKE LINKAGE LOWER REMOVAL POINTS

MSC 3930 252-12 41

Figure 41. Park brake handle and linkage, removal and installation

defective brake master cylinder as necessary. Replace a defective spring.

c. Installation.

(1) Refer to figure 42 and install the brake master cylinder, and return spring.
(2) Install the front floor plates (par. 56).

d. Bleeding.

(1) Remove the front wheels (par. 91).
(2) Remove the front floor plate (par. 56).
(3) Refer to figure 43 and bleed the brake system.
(4) Install the front floor plate (par. 56).
(5) Install the front wheels (par. 91).

91. Front and Rear Wheels

a. Removal. Refer to figure 44 and remove the wheels.

b. Cleaning and Inspection.

(1) Clean all parts with an approved cleaning solvent and(dry thoroughly.
(2) Inspect for breaks, cracks, loose or missing mounting hardware, damaged bearings, or other defects.
(3) Tighten or replace loose or missing mounting hardware. Replace a damaged or defective wheel as necessary. Replace worn or damaged bearings.

c. Installation. Refer to figure 44 and install the front and rear wheels.

92. Drive Wheel Ring Gear and Hub

a. Removal.

(1) Remove the drive wheel (par. 91).
(2) Refer to figure 45 and remove the drive wheel ring gear and hub.

b. Cleaning and Inspection.

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, wear, broken teeth, or other defects.
(3) Replace a damaged or defective part as necessary.

c. Installation.

(1) Refer to figure 45 and install the drive wheel ring gear and hub.
(2) Install the drive wheel (par. 91).

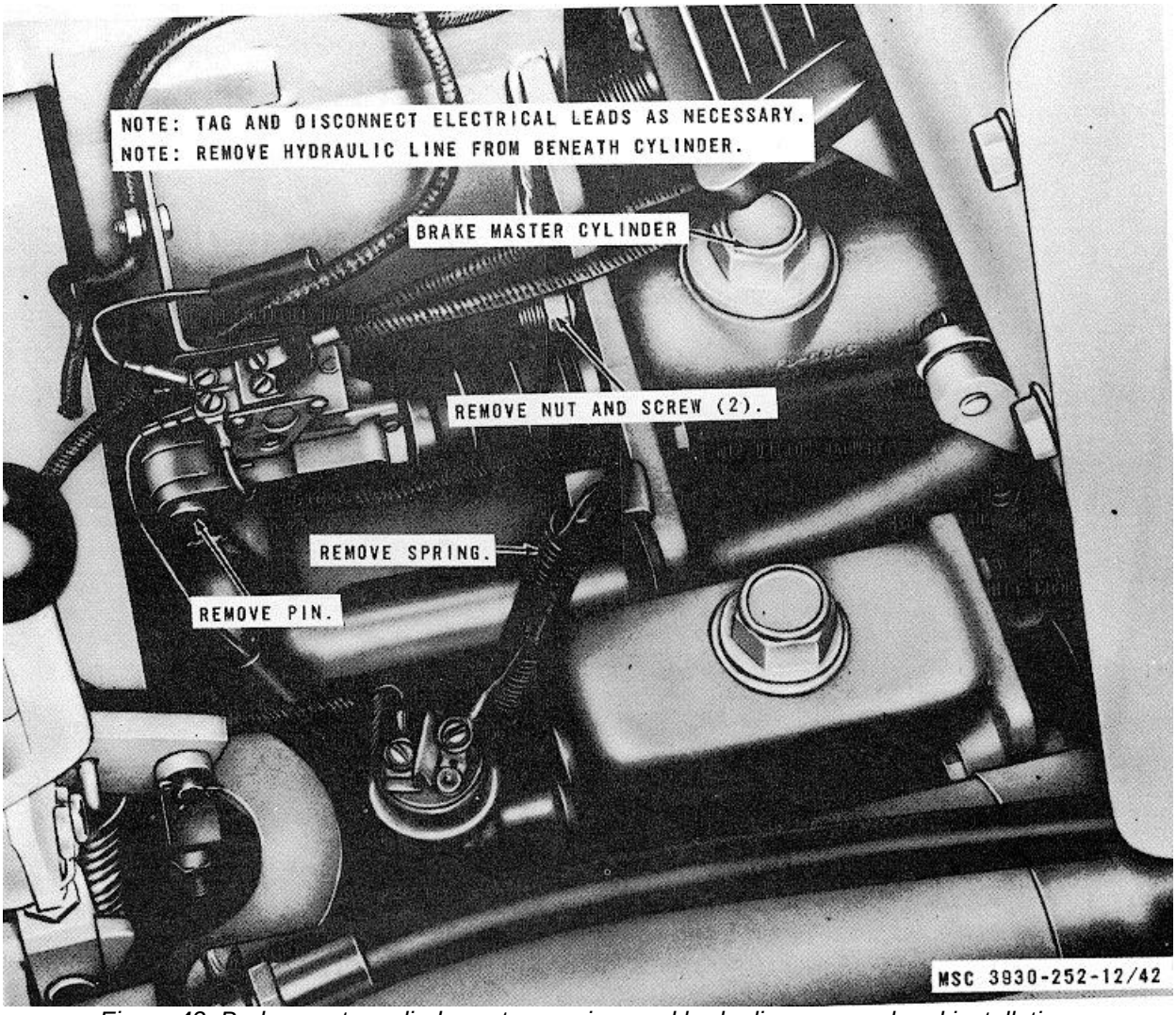


Figure 42. Brake master cylinder, return spring, and brake line, removal and installation.

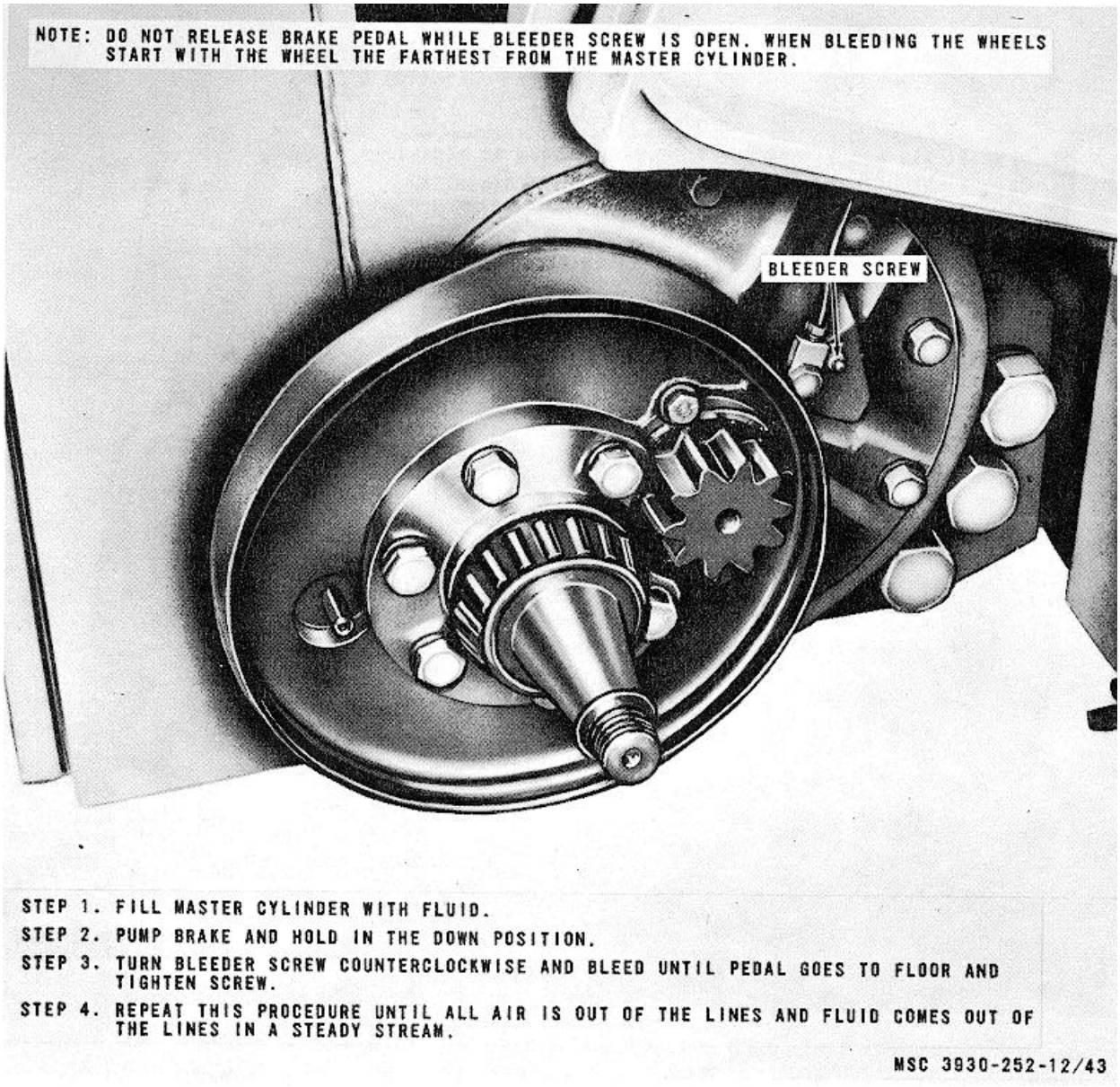


Figure 43. Bleeding brake system.

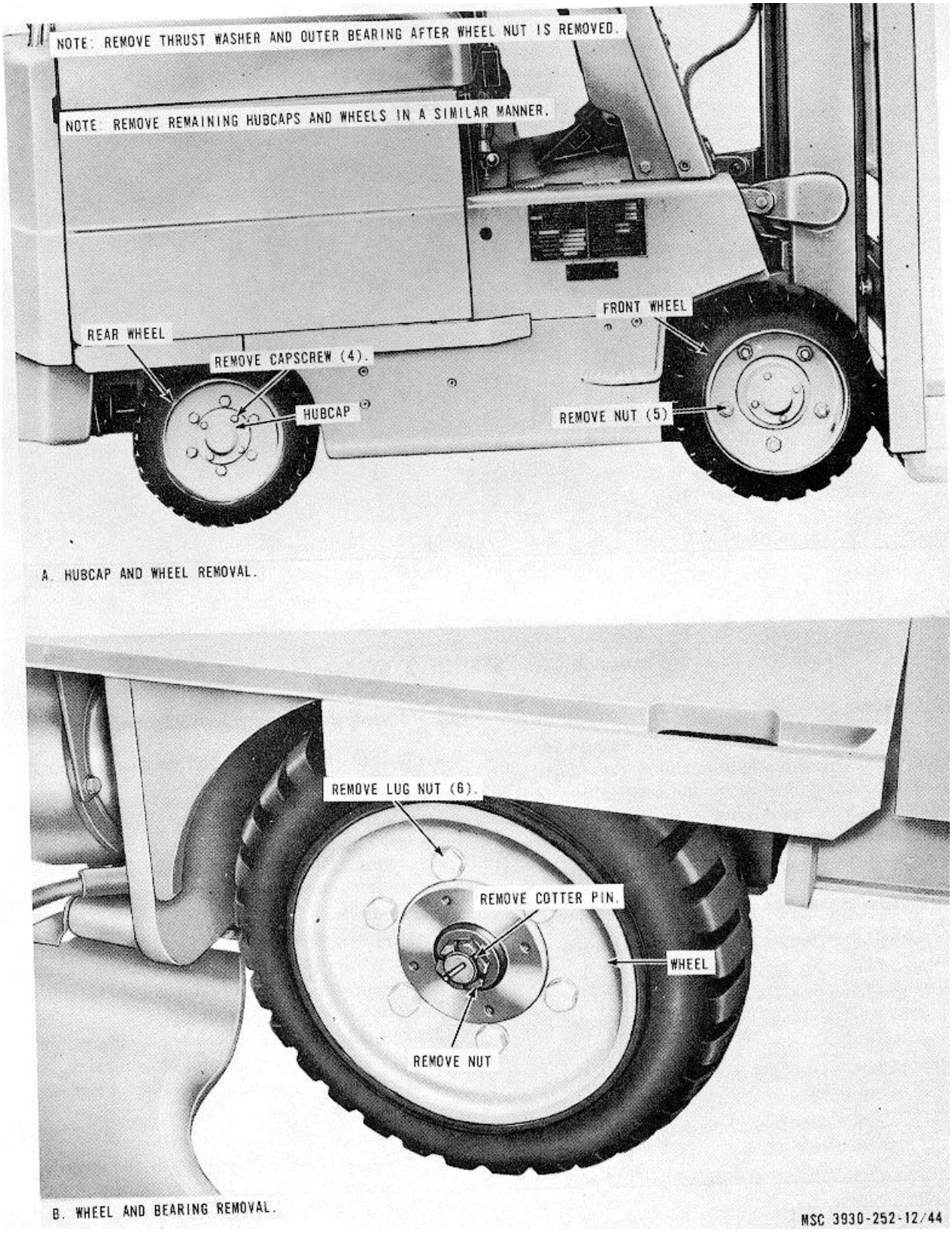


Figure 44. Front and rear wheel, removal and installation.

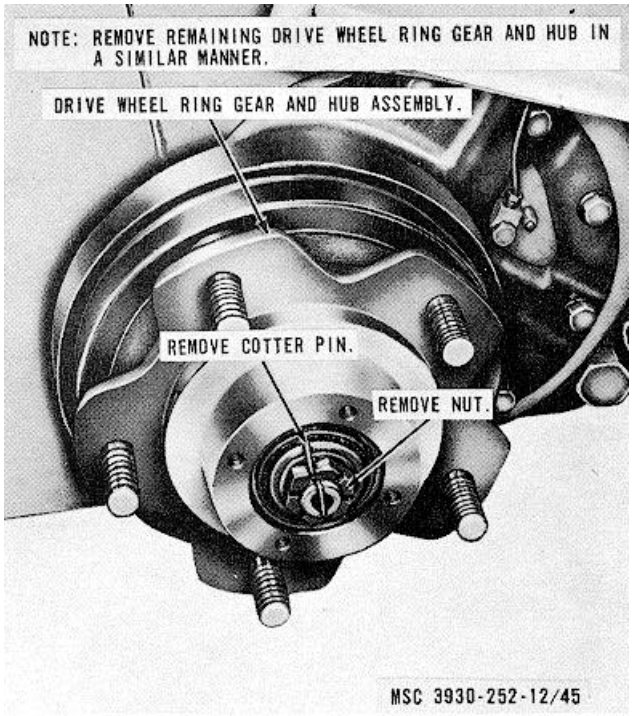


Figure 45. Drive wheel ring gear and hub, removal and installation.

Section XII. STEERING SYSTEM

93. General

The steering system consists of the steering wheel, steering gear assembly, pump, and various hoses, lines, and fittings necessary for the operation of the forklift truck. The pump and steering gear assembly must be adjusted at necessary intervals to insure the proper operation of the steering system.

94. Hoses and Lines

a. Removal. Refer to figure 46 and remove the hoses and lines.

b. Cleaning and Inspection.

(1) Wipe the hoses and lines with a clean, dry cloth.
(2) Inspect for breaks, cracks, wear, leaks, or other defects.
(3) Replace a damaged or defective hose or line as necessary.

c. Installation. Refer to figure 46 and install the hoses and lines.

95. Steering Assembly Adjustment

Refer to figure 46 and adjust the steering assembly.

96. Steering Wheel

a. Removal.

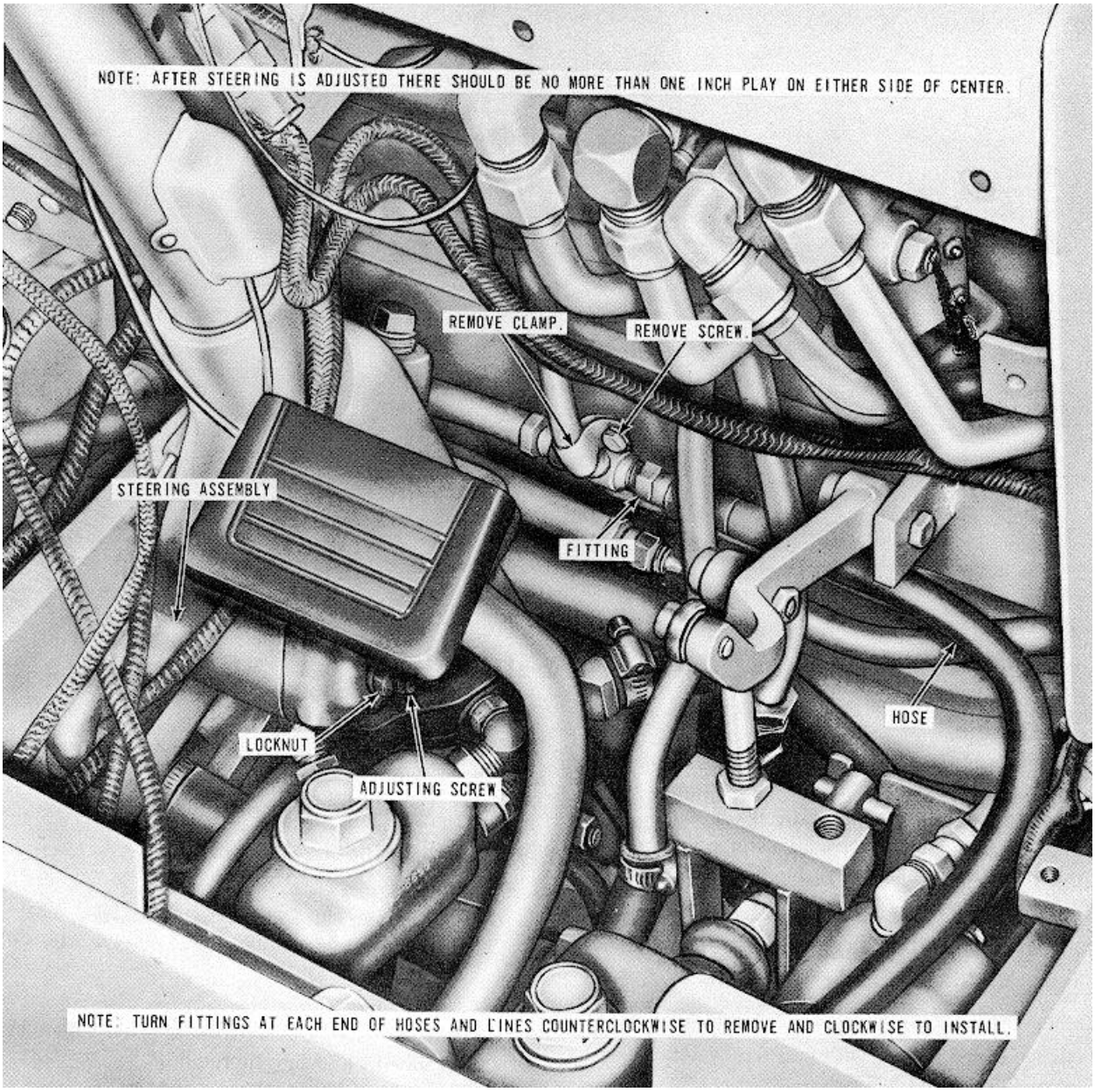
(1) Remove the horn button (par. 66).
(2) Refer to figure 47 and remove the steering wheel.

b. Cleaning and Inspection.

(1) Wipe the steering wheel with a clean cloth dampened with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, bends, nicks, worn or damaged splines, or other defects.
(3) Replace a damaged steering wheel as necessary.

c. Installation.

(1) Refer to figure 47 and install the steering wheel.
(2) Install the horn button (par. 66).



STEP 1. LOOSEN LOCKNUT.
STEP 2. CENTER STEERING WHEEL SO THE WHEELS ARE STRAIGHT AHEAD.
STEP 3. TURN ADJUSTING SCREW CLOCKWISE UNTIL EXCESS PLAY IS REMOVED FROM THE STEERING BUT NOT TO THE POINT WHERE THE STEERING WHEEL BINDS.
STEP 4. AFTER THE ADJUSTMENT IS MADE TIGHTEN THE LOCKNUT.

MSC 3930-252-12/46

Figure 46. Hoses and lines, removal and installation, and steering assembly adjustment.

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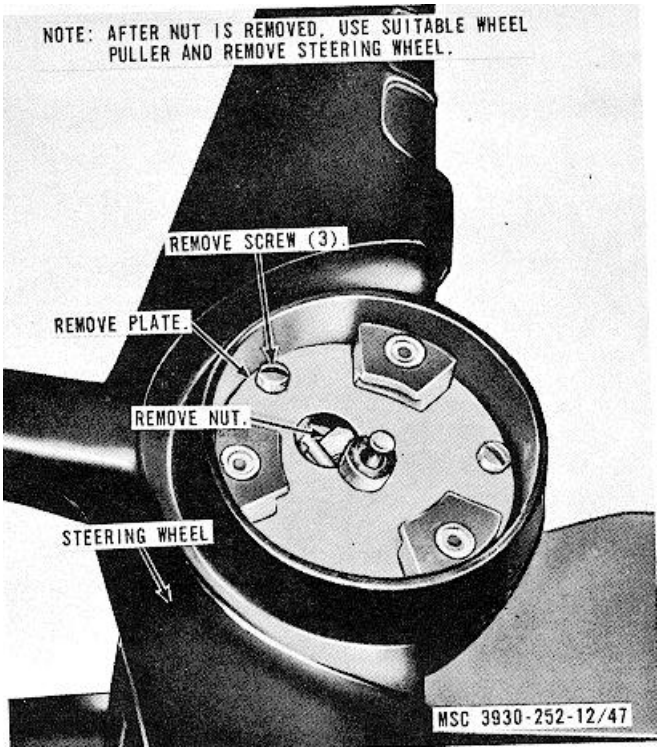


Figure 47. Steering wheel, removal and installation.

Section XIII. HYDRAULIC SYSTEM AND SPLASH PAN

97. General

The hydraulic system consists of a pump and drive motor, control valves, tilt cylinders, filter, hoses and lines for the operation of the tilt and lift functions of the forklift truck. This section provides information useful in the repair of the hydraulic system.

98. Selector Valve and Levers

a. Removal.
- (1) Remove the lower dash panel (par. 58).
- (2) Refer to figure 48 and remove the selector valve and levers.

b. Cleaning and Inspection.
- (1) Wipe all parts with a clean cloth dampened with an approved cleaning solvent and dry thoroughly.
- (2) Inspect for breaks, cracks, defective threaded areas, loose or missing mounting hardware, leaks, or other defects.
- (3) Tighten or replace loose or missing mounting hardware. Replace a defective valve or damaged lever as necessary.

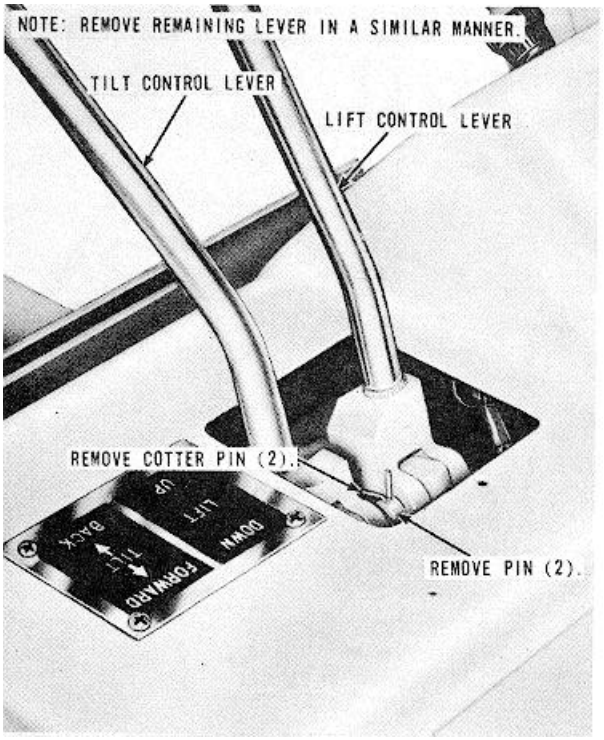
c. Installation.
- (1) Refer to figure 48 and install the selector valve and levers.
- (2) Install the lower dash panel (par. 58).

99. Tilt Cylinder Assembly

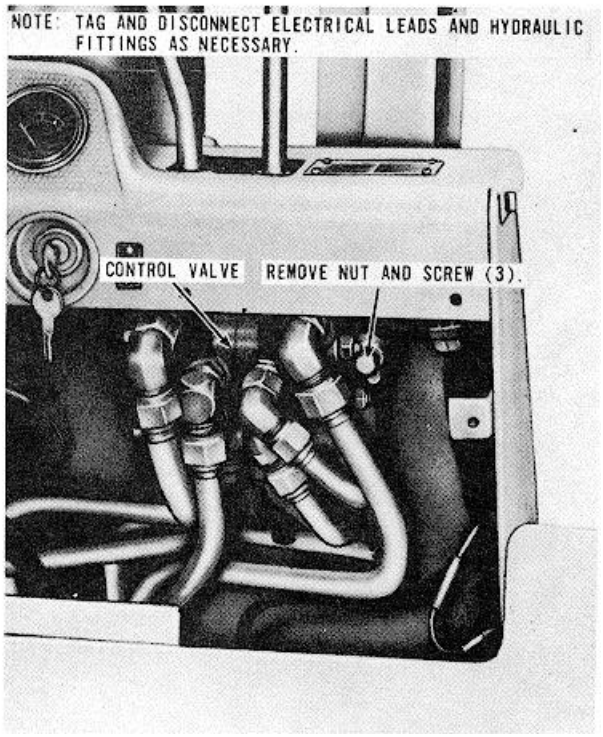
a. *Removal.*
- (1) Remove the front floor plates (par. 56).
- (2) Refer to figure 49 and remove the tilt cylinders.

b. Cleaning and Inspection.
- (1) Clean all parts with an approved cleaning solvent and dry thoroughly.
- (2) Inspect for breaks, cracks, leaks, loose or missing mounting hardware, or other defects.
- (3) Tighten or replace loose or missing mounting hardware. Replace a defective or damaged tilt cylinder assembly as necessary.

c. Installation.
- (1) Refer to figure 49 and install the tilt cylinder.
- (2) Install the front floor plates (par. 56).



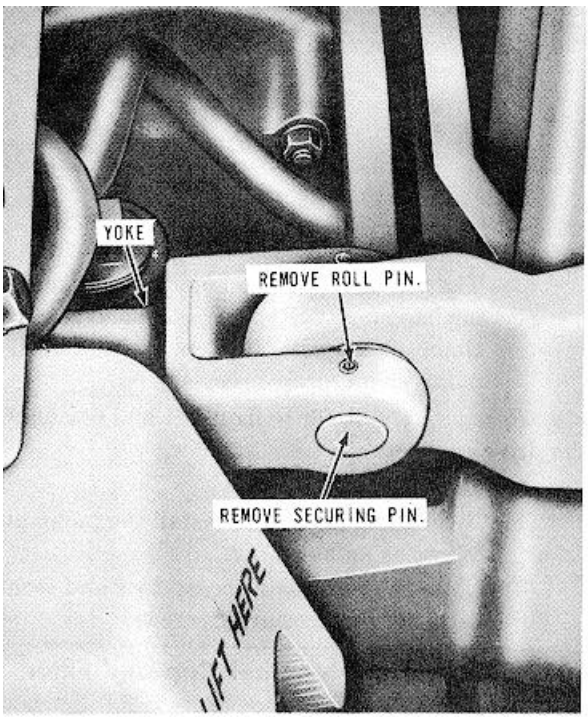
A. LEVER REMOVAL.



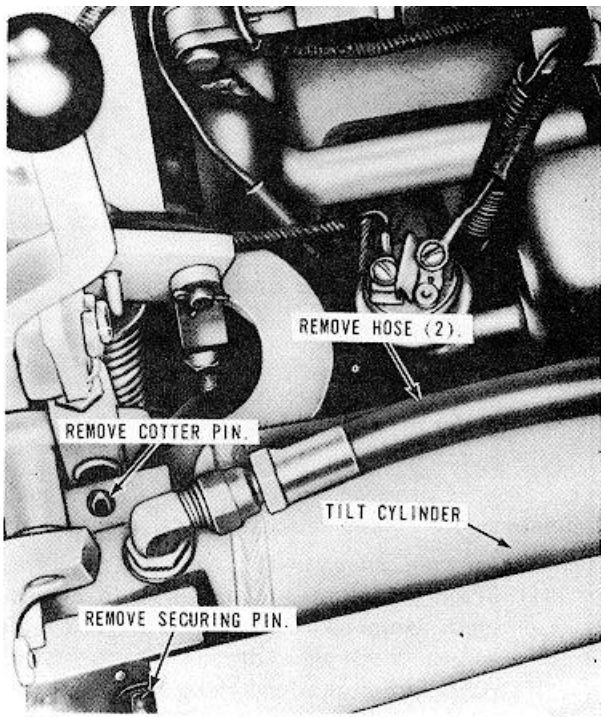
B. VALVE REMOVAL.

MSC 3930-252-12/48

Figure 48. Selector valve and levers, removal and installation.



A. YOKE REMOVAL.



B. CYLINDER REMOVAL.

Figure 49. Tilt cylinder, removal and installation. MSC 3930-252-12/49

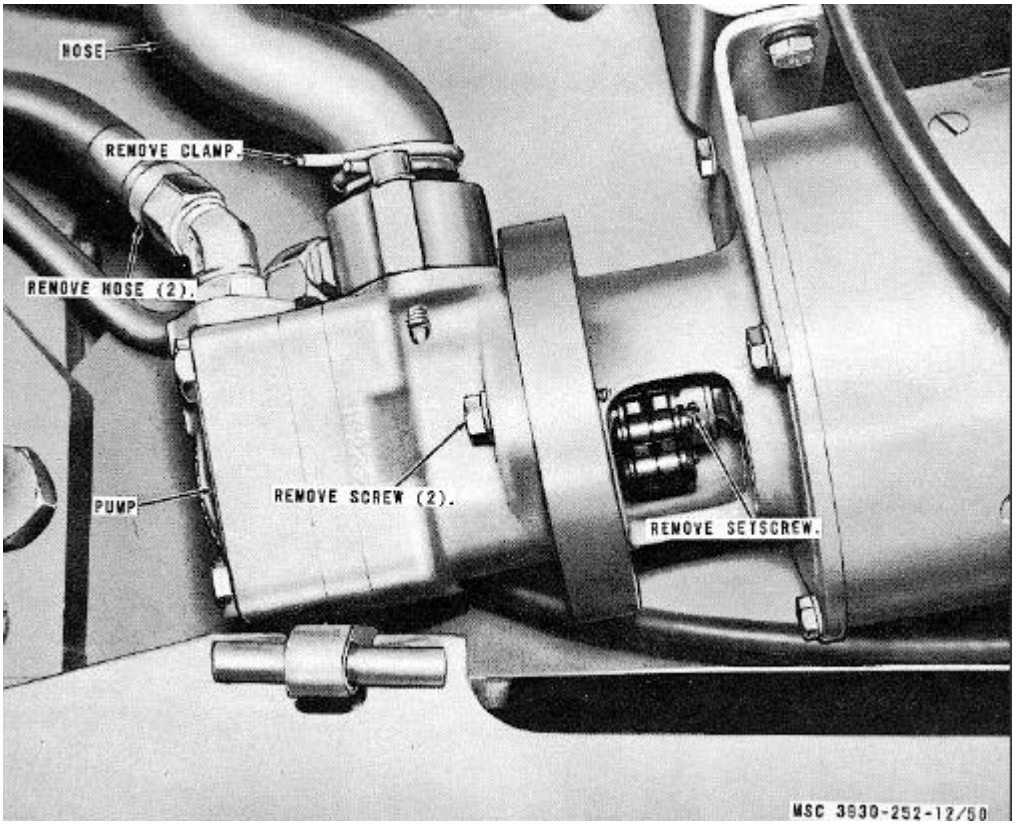


Figure 50. Hydraulic pump and motor, removal and installation.

100. Hydraulic Pump and Motor

a. Removal.

(1) Remove the three securing screws and lower the left side access door.

(2) Refer to figure 50 and remove the hydraulic pump and motor a an assembly.

b. Drive Connector Removal and Disassembly. Refer to figure 51 and remove the drive connector.

c. Cleaning and Inspection.

(1) Wipe the pump and motor with a clean cloth dampened with an approved cleaning solvent and wipe dry. Clean all other parts in an approved cleaning solvent and dry thoroughly.

(2) Inspect for breaks, cracks, leaks, loose or missing mounting hardware, damaged chain or sprocket, or other damage.

(3) Tighten or replace loose or missing mounting hardware. Replace a damaged or worn chain or sprocket. Replace a defective pump or motor as necessary.

d. Reassembly. Refer to figure 51and reassemble the drive connector.

e. Installation.

(1) Refer to figure 50 and install the pump and motor as an assembly.

(2) Close the right side access door and secure with the three securing screws.

101. Sump Tank Breather Cap and Filter

a. Removal.

(1) Remove the three screws and lower the left side access door.

(2) Drain the hydraulic reservoir.

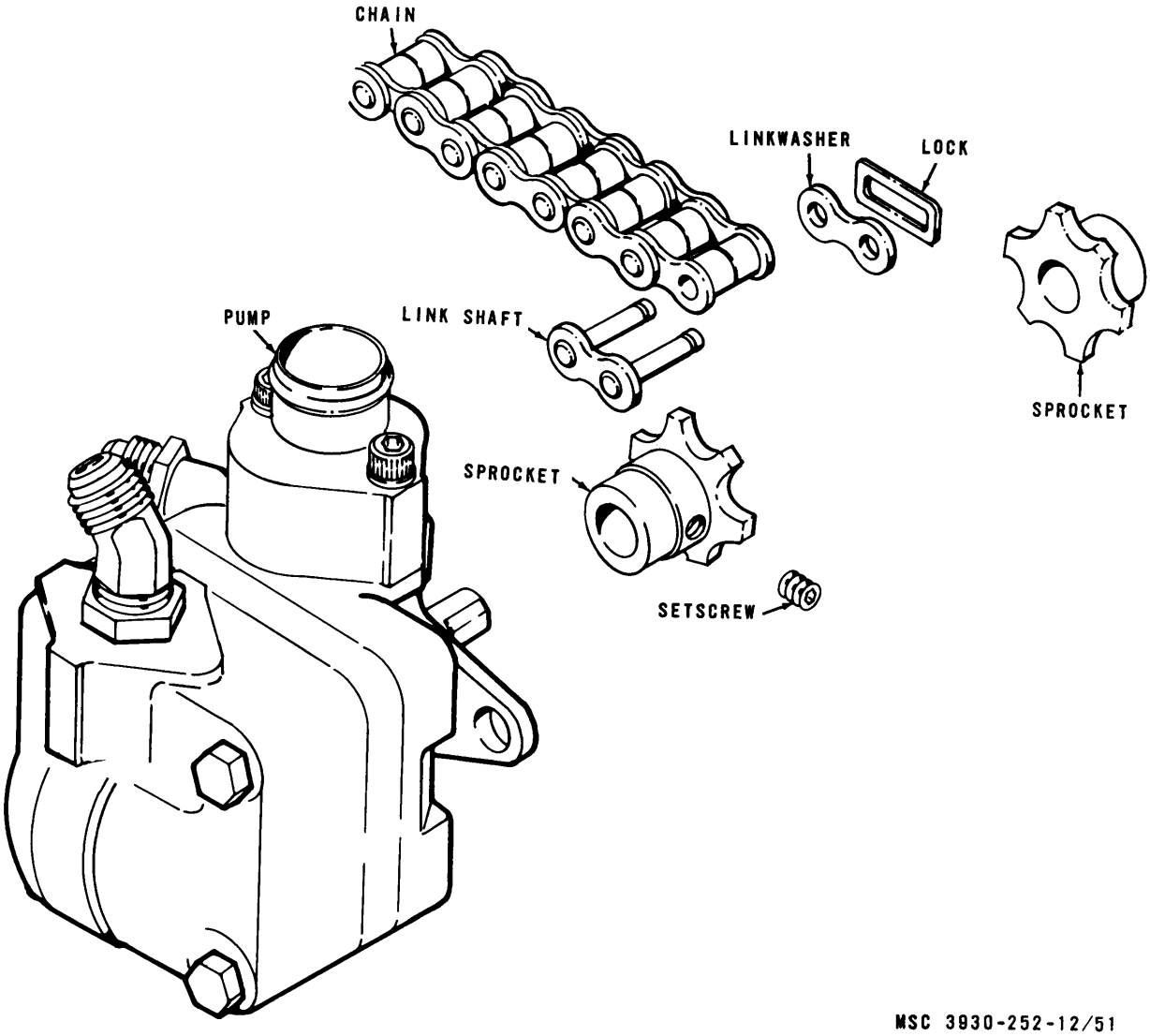
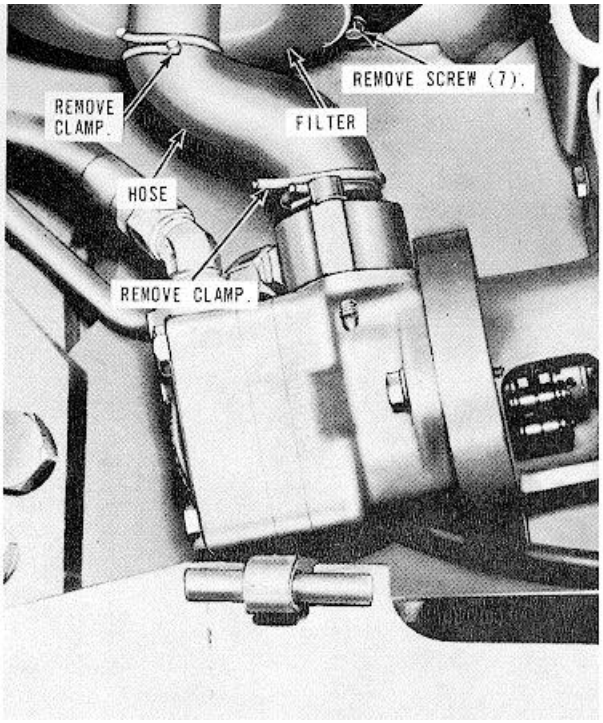
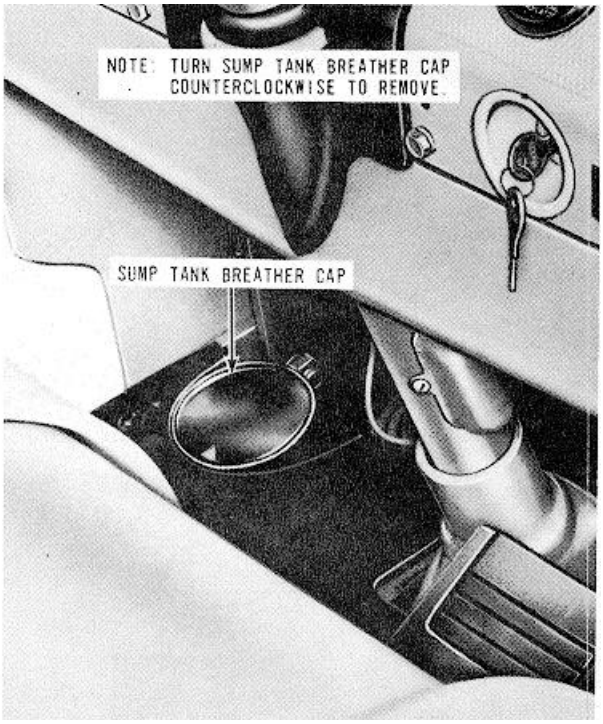


Figure 51. Drive connector, removal, disassembly, reassembly, and installation.



A. FILTER



B. SUMP TANK BREATHER CAP.

Figure 52. Sump tank breather cap and filler, removal and installation.

(3) Refer to figure 52 and remove the sump tank breather cap and filter.

b. Cleaning and Inspection.

(1) Wipe all parts with a clean cloth dampened with an approved cleaning solvent and dry thoroughly.
(2) Inspect for damaged, dirty, or clogged condition.
(3) Replace a defective breather cap or filter as necessary. Replace gasket.

***Caution*: Do not operate pumps while sump tank is empty. To do so will cause damage to the pumps.**

c. Installation.

(1) Refer to figure 52 and install the sump tank breather cap and filter.
(2) Raise the left side access door and secure with the three securing screws.
(3) fill oil reservoir to proper level as prescribed by the current lubrication order.

102. Splash Pan

a. Removal. Refer to figure 53 and remove the splash pan.

b. Cleaning and Inspection.

(1) Clean all parts with an approved cleaning solvent and dry thoroughly.
(2) Inspect for breaks, cracks, dents, elongated mounting holes, loose or missing mounting hardware, or other defects.
(3) Tighten or replace loose or missing mounting hardware. Replace a damaged splash pan as necessary.

c. Installation. Refer to figure 53 and install the splash pan.

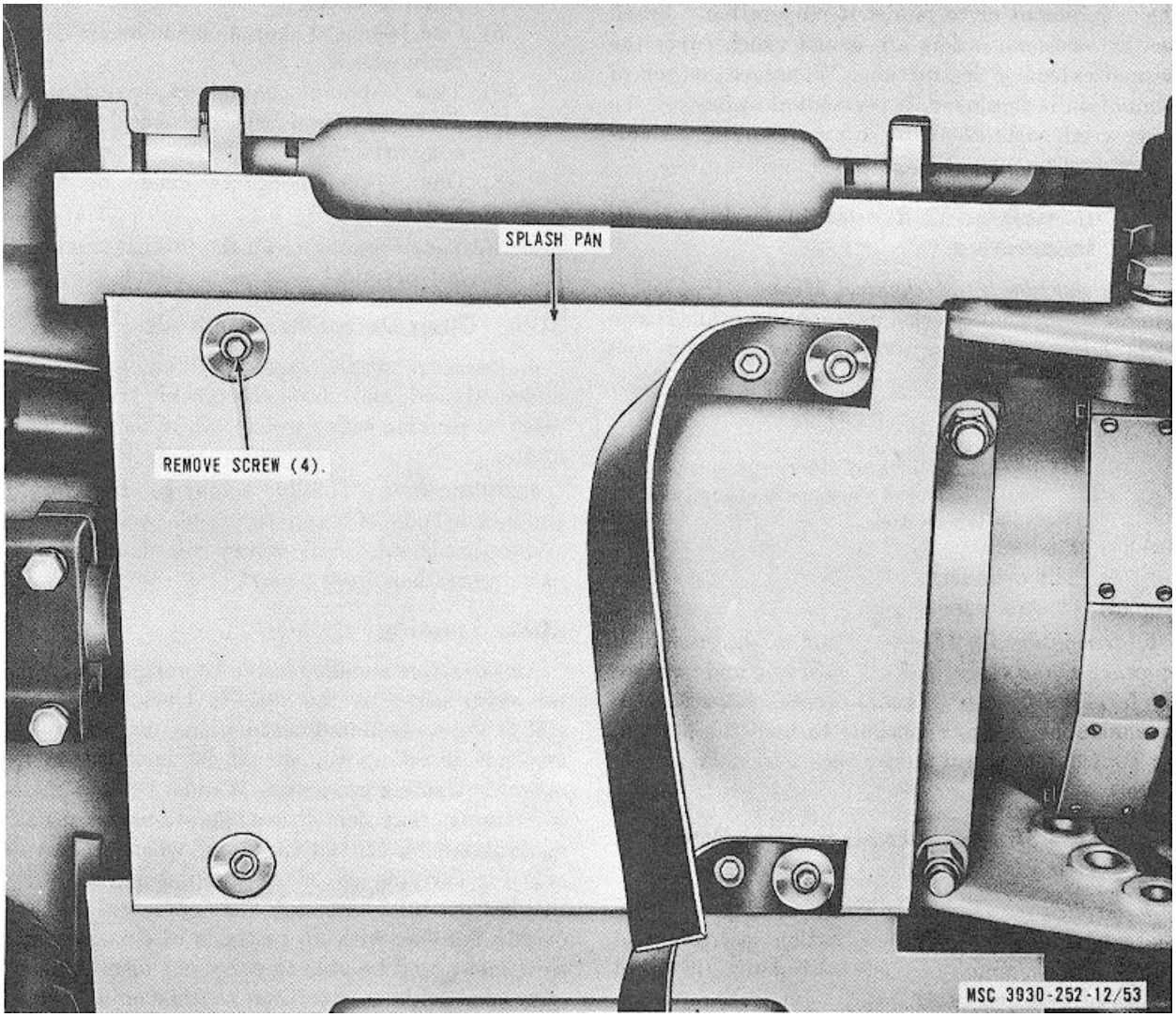


Figure 53. Splash pan, removal and installation.

CHAPTER 4

DEMOLITION OF THE FORKLIFT TRUCK TO PREVENT ENEMY USE

103. General

When capture or abandonment of the forklift truck to an enemy is imminent, the responsible unit commander must make the decision either to destroy the equipment or to render it inoperative. Based on this decision, orders are issued which cover the desired extent of destruction. Whatever method of demolition is employed, it is essential to destroy the same vital parts of all forklift trucks and all corresponding repair parts.

104. -Demolition To Render the Forklift Truck Inoperative

a. Demolition By Mechanical Means. Use sledge hammers, crowbars, picks, axes, or any other heavy tools which may be available to destroy the following:

(1) Contactors.
(2) Battery.
(3) Hydraulic motor and steering motor.

Note. The above steps are minimum requirements for this method.

(4) Pumps.
(5) Tilt cylinders.
(6) Control panel.

b. Demolition By Misuse. Pour sand, dirt, glass, or other abrasives in the oil reservoir and operate the forklift truck until failure occurs. Raise fork to maximum height and continue to hold the lift and tilt control back until failure occurs to the pump or motor.

105. Demolition By Explosives or Weapons Fire

a. Explosives. Place as many of the following charges (fig. 54) as the situation permits and detonate them simultaneously with detonating cord and a suitable detonator.

(1) One 1/2-pound charge on the lift cylinder.
(2) One 1/2-pound charge on the differential.
(3) One 1/2-pound charge on the hydraulic pump motor.
(4) One 1/2-pound charge on the inside of each steering wheel.
(5) One 1/2-pound charge on the inside of each drive wheel.
(6) Two /12-pound charges on drive motor.
(7) Two 1/2-pound charges inside battery compartment.
(8) One 1/2-pound charge inside of control panel.

b. Weapons Fire. Fire on the forklift truck with the heaviest practical weapons available.

106. Other Demolition Methods

a. Burning. Pack rags, clothing, or canvas, under, around, and inside the forklift truck. Saturate this packing with gasoline, oil, or diesel fuel and ignite.

b. Submersion. Totally submerge the forklift truck in a body of water to provide water damage and concealment. Salt water will damage metal parts more than fresh water.

107. Training

All operators should receive thorough training in the destruction of the forklift truck. (Refer to FM 5-25.) Simulated destructions, using all of the methods listed above, should be included in the operator training program. It must be emphasized in training, that demolition operations are usually necessitated by critical situations when time available for carrying out destruction is limited. For this reason, it is necessary that operators be thoroughly familiar with all methods of destruction of equipment, and be able to carry out demolition instructions without reference to this or any other manual.

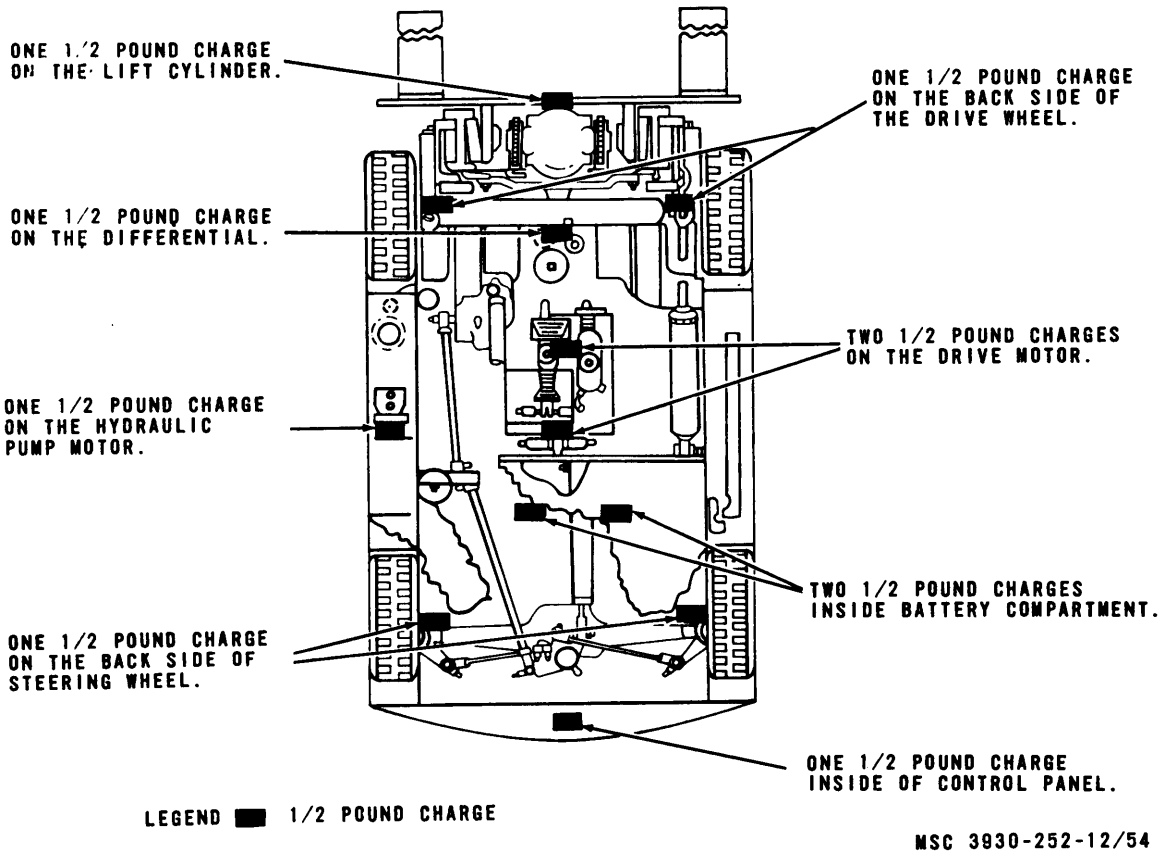


Figure 54. Placement of charges.

CHAPTER 5

SHIPMENT AND LIMITED STORAGE

Section I. SHIPMENT WITHIN THE ZONE OF INTERIOR

108. Preparation of Equipment for Shipment

a. General. Detailed instructions for the preparation for domestic shipment are outlined within this paragraph. Preservation will be accomplished in sequence that will not require the operation of previously preserved components.

b. Inspection. Equipment will be inspected for any unusual conditions such as damage, rusting, accumulation of water, and pilferage. DA Form 2404 (Equipment Inspection and Maintenance Worksheet) will be executed on the equipment by utilizing the procedures outlined on the Quarterly Preventive Services in paragraph 33.

c. Cleaning and Drying. The lift truck shall be cleaned and dried by an approved procedure. Approved methods of cleaning, drying, types of preservatives, and methods of application are described in TM 38-230.

d. Painting. Paint all surfaces when the paint has been removed or damaged. Refer to TB ENG 60 for detailed cleaning and painting instructions.

e. Sealing of Openings. Openings that will permit direct entry of water into the interior of the electric motors shall be sealed with pressure-sensitive tape conforming to specification PPP-T-60, type III, class 1.

f. Hydraulic Control Systems, Except Hydraulic Brakes.

(1) Fully retract the piston as far as the linkage will permit and secure.
(2) Coat exposed portions of the hydraulic piston rods and operating valve controls with type P-6 preservative conforming to Specification MIL-C-11796, class 3.
(3) Wrap with type I, class 2, grade A, barrier material conforming to MIL-B-121B.
(4) Secure the hydraulic operating valve controls in a neutral position.

g. Exterior Surfaces. Coat exposed machined ferrous metal surfaces with preservative (P-6) conforming to Specification MIL-C-11796, class 3. If preservative is not available, Automotive and Artillary (GAA) grease may be used.

h. Marking. Shall conform to MIL-STD-129.

i. Seat Backs and Cushions. Wrap the seat backs and cushions in waterproof barrier material or place in a water resistant fiberborad container and seal the seams with type III, class 1, pressure-sensitive tape conforming to Specification PPP-T-60. Refer to TM 38-230.

j. Batteries and Cables. The battery shall be secured in the battery compartment. The battery shall be filled and fully charged. Cables shall be disconnected, vent holes sealed, and all terminals wrapped and secured with type III, class 1, pressure sensitive tape conforming to Specification PPPT-60.

k. Disassembly, Disassembled Parts, and Basic Issue Items.

(1) Disassembly shall be limited to the removal of parts and projecting components that tend to increase the overall profile of the equipment and that which is subject to pilferage.
(2) Disassembled items shall be packed with the publications in a suitable container and secured to the equipment to prevent loss or pilferage.

Note. Refer to TM 38-23 0 for selection and fabrication of container.

109. Loading Equipment for Shipment

Refer to paragraph 6 and reverse the procedures for loading instructions.

Section II. LIMITED STORAGE

110. Preparation of Equipment for Limited Storage

a. General. Detailed instructions for preserving and maintaining equipment in limited storage are outlined in this paragraph. Limited storage is defined as storage not to exceed 6 months. Refer to AR 743-505.

b. Inspection. Equipment will be inspected for

any unusual conditions such as damage, rusting, accumulation of water, and piferage. DA Form 2404, Equipment Inspection and Maintenance Worksheet, will be executed on the equipment by utilizing the procedures outlined for the quarterly preventive services in paragraph 33.

c. *Cleaning and Drying*. The lift truck shall be cleaned and dried by an approved procedure. Approved methods of cleaning, drying, types of preservatives, and methods of application are described in TM 38-230.

d. *Painting*. Paint all surfaces when the paint has been removed or damaged Refer to TB ENG 60 for detailed cleaning and painting instructions.

e. *Sealing of Openings*. Openings that will permit the direct entry of water into the interior of the electric motor shall be sealed with pressure-sensitive tape conforming to specification PPP-T-60, type III, class 1.

f. *Hydraulic Control Systems, Except Hydraulic Brakes.*

(1) Fully retract the piston as far as the linkage will permit and secure.
(2) Coat exposed portions of the hydraulic piston rods and operating valve controls with type P-6 preservative conforming to specification MIL-C-11796, class 3.
(3) Wrap with type 1, class 2, grade A, barrier material conforming to MIL-B-121B.
(4) Secure the hydraulic operating valve controls in a neutral position.

g. *Exterior Surfaces*. Coat exposed machined ferrous metal surfaces with preservative (P-6) conforming to Specifications MIL-C-11796, class 3. If preservative is not available, Automotive and Artillery (GAA) grease may be used.

h. *Seat Backs and Cushion*. Package the seat back and cushion method 1C-5 and secure to the equipment. Refer to TM 38-230.

i. *Battery and Cable*. The battery shall be secured in the battery compartment. The battery shall be filled and fully charged. Cables shall be disconnected, vent holes sealed, and all terminals wrapped and secured with type III, class 1, pressure sensitive tape conforming to Specification PPP-T-60.

j. *Disassembly, Disassembled Parts, and Basic Issue Items.*

(1) Disassembly shall be limited to the removal of parts and projecting components that tend to increase the overall profile of the equipment and that which is subject to piferage.
(2) Disassembled parts shall be packed with the publications in a suitable container and secured to the equipment to prevent loss of pilferage.

k. *Weatherproofing*. Warehouse storage is preferred for the forklift truck. If it is not available, select a firm, well-drained storage location. Place the lift truck on heavy planking and cover with a tarpanulin or other suitable waterproof material and tie it down securely.

111. Inspection and Maintenance of Equipment in Storage

a. *Inspection.* When equipment has been placed in limited storage, all scheduled preventive maintenance services, including inspection, shall be suspended and preventive maintenance inspection shall be performed as specified herein. Refer to AR 743-505.

b. *Worksheet and Preventive Maintenance*. Applicable forms listed in TM 38-750 shall be prepared for each major item of equipment every 90 days in limited storage, in AR 743-505. Perform the required maintenance promptly to make sure equipment is mechanically sound and ready for immediate use.

c. *Operation* . Operate equipment in limited storage long enough to insure complete lubrication of all bearings, gears, and the like, every 90 days, in accordance with the scheduled interval contained in AR 743-505. Equipment must be serviced an in satisfactory operating condition before it is operated.

APPENDIX I

REFERENCES

1. Dictionaries of Terms and Abbreviations

AR 320-5 Dictionary of United States Army Terms.

AR 320-50 Authorized Abbreviations and Brevity Codes.

2. Fire Protection

SB 5-111 Supply of DA approved fire extinguishers to Army troop users.

3. Lubrication

LO 10-3930-252-12. Truck, Lift, Fork, Electric, Solid Rubber Tires, 4,000 lbs Capacity, 114 in. Lift, Clark Model 337450, Army Model MHE 185, FSN 3930-086-6677.

4. Painting

TB ENG 60 Preservation and Painting of Serviceable Corps of Engineers Equipment.

5. Preventive Maintenance

AR 750-5 Organization, Policies, and Responsibilities for Maintenance Operations.

TM 10-1690A Industrial Motive Power Storage Batteries for Material Handling equipment.

AR 743-505 Limited Storage of Corps of Engineers' Mechanical Equipment.

TM 38-750 The Army Equipment Record System and Procedures.

6. Preservation and Packing

TM 38-320 Preservation, Packaging, and Packing of Military Supplies and Equipment.

7. Publication Indexes

DA Pam 108-1 Index of Army Motion Pictures, film Strisp, Slides, and Phono-Recordings

DA Pam 310-1 Military Publications: Index of Administrative Publications.

DA Pam 310-4 Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 4,6,7,8, and 9,), Supply Bulletins, Lubrication Orders, and Modification Work Orders.

DA Pam 310-2 Index of Blank forms.

8. Supply Publications

TM 10-3930-252-25P. Truck, Lift, Fork, Electric, Solid Rubber Tires, 4,000 lb Capacity, 144 in. Lift, Clark Model 337450, Army Model MHE 185, FSN 3930-086-6677.

9. Training Aids

FM 5-25 Explosives and Demolition.

FM 21-5 Military Training.

FM 21-6 Techniques of Military Instructions.

FM 21-30 Military Symbols.

TM 21-300 Driver Selection and Training.

APPENDIX II

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

This section contains explanations of all maintenance repair functions authorized, the various echelons. Section II contains the maintenance allocation chart.

2. Maintenance

Maintenance is any action taken to keep materiel in a serviceable condition or to restore it to serviceability when it is unserviceable. Maintenance of materiel includes the following:

a. *Service.* To clean, preserve, and replenish fuel and lubricants.

b. *Adjust.* To regulate periodically to prevent malfunction.

c. *Inspect*. To verify serviceability and detect incipient electrical or mechanical failure by scrutiny.

d. *Test*. To verify serviceability and detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, and the like.

e. *Replace*. To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.

f. *Repair*. To restore an item to serviceable con(dition through correction of a specific failure or unserviceable condition. This function includes, but is not limited to, inspecting, cleaning, preserving, adjusting, replacing, welding, riveting, and straightening.

g. ***Aline***. To adjust two or more components of an electrical system so that their functions are properly synchronized.

h. *Calibrate*. To determine, check, or rectify the graduation of an instrument, weapon, or weapons system or components of a weapons system.

i. *Overhaul.* To restore an item to completely serviceable condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

3. Explanation of Columns

a. *Functional Group*. The functional group is a numerical group set up on a functional basis. The applicable Functional Grouping Indexes are listed on the MAC in the appropriate numerical sequence. These indexes are normally set up in accordance with their function and proximity to each other.

b. ***Components*** and Related Operation. This column contains the Functional Grouping Index heading, subgroup headings, and a brief description of the part starting with the noun name. It also designates the operations to be performed such as service, adjust, inspect, test, replace, repair, and overhaul.

c. *Echelons of Maintenance*. This column contains the various echelons of maintenance by number designation. An "X" placed in the appropriate echelon column in line with an indicated maintenance function authorized that echelon to perform the function. The "X" indicates the lowest echelon responsible for performing the function, but does not necessarily indicate repair parts stockage at that level. Higher echelons are authorized to perform the indicated functions of lower echelons.

d. ***Remarks***. This column lists specific maintenance functions, special tools, cross-references, instructions, and the like, pertinent to the operation being performed.

Section II. MAINTENANCE AND ALLOCATION CHART

Functional group	Components and related operation	Echelons of maintenance					Remarks
		1	2	3	4	5	
06	ELECTRICAL SYSTEM						
0607	Instrument Panel						
	Switch, light						
	Replace		X				
	Hourmeter						
	Replace		X				
	Indicator, battery charge						
	Replace		X				
	Panel, instrument						
	Replace		X				
	Wiring						
	Replace		X				
	Repair		X				
0608	Miscellaneous Items						
	Receptacle, battery, charging						
	Replace		X				
0609	Lights						
	Headlight						
	Replace		X				
	Light, tail and stop						
	Replace		X				
	Lamp						
	Replace		X				
	Resistors, light						
	Replace		X				
0611	Horn						
	Button, horn						
	Replace		X				
	Horn						
	Replace		X				
	Wiring, horn						
	Replace			X			
0612	Batteries						
	Battery						
	Service		X				
	Replace		X				
0613	Hull or Chassis Wiring Harness						
	Harness, wiring						
	Replace			X			
10	FRONT AXLE						
1000	Front Axle Assembly						
	Axle adapter and Differential assembly						
	Service		X				
	Replace			X			
	Repair			X			
	Overhaul				X		
	housing						
	Replace				X		
1002	Differential						
	Bearing, differential case						
	Replace				X		
	Gears						
	Replace				X		
	Seal, oil						
	Replace			X			
	Gaskets						
	Replace			X			

Functional group	Components and related operation	Echelons of maintenance					Remarks
		1	2	3	4	5	
	Case, differential						
	Replace				X		
1003	Planatary or Final Drive						
	Axle and assembly						
	Replace			x			
	Repair			X			
	Gear, ring						
	Replace		X				
	Support, spindle						
	Replace			X			
	Seal, oil						
	Replace			X			
	Spindle						
	Replace			X			
11	REAR AXLE						
1100	Rear Axle Assembly						
	Axle assembly, steering						
	Replace			X			
	Repair			X			
1104	Steering						
	Knuckle, steering						
	Service		X				
	Replace			X			
	Pin and bearing, knuckle						
	Replace			X			
12	BRAKES						
1201	Hand Brakes						
	Handle, parking brake						
	Replace		X				
	Linkage, parking brake						
	Replace		X				
	Plate, mounting						
	Replace			X			
	Drum						
	Replace			X			
	Shoe assembly						
	Adjust		X				
	Replace			X			
	Lining, brake shoe						
	Replace			X			
1202	Service Brakes						
	Brake assembly						
	Replace			X			
	Repair			X			
	Shoe and lining assembly						
	Replace			X			
	Repair				X		Replace lining.
	Adjuster						
	Replace			X			
	Disc assembly						
	Replace			X			
1204	Hydraulic Brake System						
	Master cylinder assembly						
	Service		X				
	Replace		X				
	Repair				X		Install kit.
	overhaul					X	

Functional group	Components and related operation	Echelons of maintenance					Remarks
		1	2	3	4	5	
	Wheel cylinder assembly						
	Replace			X			
	Repair			X			Install kit.
	Hose, flexible						
	Replace		X				
	Lines, brake						
	Replace			X			
1206	Mechanical Brake System						
	Pedal, brake						
	Replace			X			
	Pad, brake pedal						
	Replace		X				
13	WHEELS						
1311	Wheel Assembly						
	Wheels						
	Replace		X				
	Hub, wheel						
	Replace		X				
	Bearings, wheel						
	Service		X				
	Replace		X				
	Drum, brake						
	Replace			X			
	Repair			X			Turn.
	Seals, grease						
	Replace			X			
1313	Tires						
	Tires (solid)						
	Replace				X		
14	CONTROLS (STEERING)						
1401	Steering Assembly						
	Steering gear assembly						
	Service		X				
	Adjust		x				
	Replace			X			
	Repair				X		
	Spider, steering						
	Replace			X			
	Tie rod assembly						
	Adjust			X			
	Replace			X			
	Handwheel, steering						
	Replace		X				
1410	Hydraulic Pump						
	pump assembly, steering						
	Replace			X			
	Repair			X			
1411	Hoses, Lines, Fittings						
	Tube assembly						
	Replace-		X				
	Hose assembly						
1412	Hydraulic Cylinders						
	Cylinder, power steering		X				
	Replace			X			
	Repair			X			

Functional group	Components and related operation	Echelons of maintenance					Remarks
		1	2	3	4	5	
1414	Steering System Valves						
	Valve assembly, control						
	Replace			X			
	Repair			X			
	Valve, pressure relief						
	Adjust		X				
	Replace		X				
15	FRAME						
1501	Frame Assembly						
	Frame assembly						
	Replace				X		
1502	Counterweights						
	Counterweight						
	Replace			X			
	Cover, counterweight						
	Replace		X				
1503	Towing Attachments						
	Eyebolt and ring assembly						
	Replace		X				
18	BODY; CAB; HOOD AND HULL,						
1801	Hood						
	Panel, side						
	Replace		X				
	Hood						
	Replace		X				
	Guard, overhead						
	Replace		X				
	Panel, dash						
	Replace		X				
1805	Floors						
	Plate, floor front						
	Replace		X				
1806	Seats						
	Cushion and back rest						
	Replace		X				
	Adjuster, seat						
	Replace		X				
22	MIISCELLANEOUS BODY, CHASSIS OR HULL AND ACCESSORY ITEIMS						
2210	Data Plates						
	Plates, data						
	Replace		X				
	Plate (Q. M.)						
	Replace			X			
24	HYDRAUIC LIFT COMPONENTS						
2101	Hydraulic Pump						
	Pump, hydraulic						
	Replace		X				
	repair			X			
	Connector, pump drive						
	Replace		X				
	Repair		X				
2402	Hydraulic Control Valve						
	Valve, control						
	Replace		X				
	Repair			X			

Functional group	Components and related operation	Echelons of maintenance					Remarks
		1	2	3	4	5	
2403	Hydraulic Control Levers and Linkage						
	Lever, control						
	Replace		X				
	Base, valve linkage						
	Replace		X				
2404	Hydraulic Tilt Cylinders						
	Cylinder assembly, tilt						
	Replace		X				
	Repair			X			
2405	Hydraulic Mast Column						
	Cylinder assembly, lift						
	Replace			X			
	Repair			X			
	Rail assembly, outer						
	Replace			X			
	Rail assembly, inner						
	Replace			X			
	Rollers, inner and outer rail						
	Replace			X			
	Pad, stop						
	Replace		X				
	Head, piston						
	Replace			X			
	Sprocket, piston head						
	Replace		X				
	Chain, lift						
	Adjust		X				
	Replace		X				
	Repair		X				
	Anchor, chain						
	Replace		X				
	Lift bracket assembly						
	Replace		X				
	Repair		X				
	Rollers, lift bracket						
	Replace		X				
	Forks, lift						
	Replace	X					
2406	Hydraulic Lines and Fittings						
	Lines						
	Replace		X				
	Filter assembly, sump						
	Service		X				Clean or replace cartridge.
	Replace		X				
40	ELECTRIC MOTORS						
4000	Motor						
	Motor, drive						
	Test			X			
	Replace			X			
	Repair			X			
	Overhaul				X		
	Motor, steering pump						
	Test			X			
	Replace			X			
	Repair			X			
	Overhaul				X		

Functional group	Components and related operation	Echelons of maintenance					Remarks
		1	2	3	4	5	
	Motor, pump						
	Test		X				
	Replace		X				
	Repair			X			
	Overhaul				X		
4001	Rotor Assemblies						
	Armature, drive motor						
	Test			X			
	Replace			X			
	Repair			X			
	Overhaul					X	Rewind.
	Armature, pump motor						
	Test			X			
	Replace			X			
	Repair			X			
	Overhaul					X	Rewind.
	Armature, steering pump motor						
	Test			X			
	Replace			X			
	Repair			X			
	Overhaul					X	Rewind.
4002	Stator Assemblies						
	Field coil and insulation, Drive motor						
	Test-				X		
	Replace				X		
	Repair				X		
	Overhaul					X	Rewind.
	Field coil, pump motor						
	Test				X		
	Replace				X		
	Repair				X		
	Overhaul					X	Rewind.
	Field coil set, Steering Pump motor						
	Test				X		
	Replace				X		
	Repair				X		
	Overhaul					X	Rewind.
4003	Brush Holders						
	Brush set, drive motor						
	Replace			X			
	Brush kit, pump motor						
	Replace			X			
	Brush assembly, steering pump motor						
	Replace			X			
	Brush holder, drive motor						
	Replace			X			
	Brush holder assembly, pump motor						
	Replace			X			
4005	Frame Support and Housing						
	End frame, drive motor						
	Replace				X		
	Front yoke and bearing support, pump motor						
	Replace			X			
	End shields steering pump motor						
	Replace			X			
	Bearing, ball, drive motor						
	Replace				X		
	Bearing, ball, pump motor and steering pump motor						
	Replace			X			

APPENDIX III

BASIC ISSUE ITEMS LIST AND MAINTENANCE AND OPERATING SUPPLIES

Section I. INTRODUCTION

1. General

Section II lists the accessories, tools, and publications required in 1st echelon maintenance and operation, initially issued with, or authorized for the fork lift truck. Section III lists the maintenance and operating supplies required for initial operation.

2. Explanation of Columns Contained in Section II

a. Source Codes. The information provided in each column is as follows:

(1) *Materiel.* This column lists the basic materiel code number of the supply service assigned responsibility for the part. Blank spaces denote supply responsibility of the preparing agency. General Engineer supply parts are identified by the letters GE in parentheses, following the nomenclature in the description column. Other basic materiel code numbers are:

10-Quartermaster Materiel
12-Adjutant General

(2) *Source*. The selection status and source of supply for each part are indicated by one of the following code symbols:

(a) O-applied to high-mortality repair parts which are stocked in or supplied from the supply service depot system, and authorized for use at indicated maintenance echelons.
(b) P1-applied to repair parts which are low-mortality parts, stocked in or supplied from supply service depots, and authorized for installation at indicated maintenance echelons.
(c) M-applied to repair parts which are not procured or stocked but are to be manufactured at indicated maintenance echelons.
(d) X2-applied to repair parts which are not stocked. The indicated maintenance echelon requiring such repair parts will attempt to obtained them through cannibalization; if not obtainable through cannibalization, such repair parts will be requisitioned with supporting justification through normal supply channels.

(3) Maintenance. The lowest maintenance echelon authorized to use, stock, install, or manufacture the part is indicated by the following code symbol: O-Organizational Maintenance (1st and 2d Echelon).

(4) Recoverability. Repair parts and/or too and equipment items that are recoverable are indicated by one of the following code symbols:

(a) R-applied to repair parts and assemblies which are economically repairable at field maintenance facilities (3d and 4th echelons) and normally are furnished by supply on an exchange basis.
(b) T-applied to high-dollar valve recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts normally are repaired or overhauled at depot maintenance facilities.
(c) U-applied to repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, high-dollar value reusable casings, castings, and the like.

Note. When no code is shown in the recoverability column the part is considered expendable.

b. *Federal Stock Number*. The Federal stock number will be shown in this column, and will able used for requisitioning purposes.

c. *Description.*

(1) The item name and a brief description of the part are shown.
(2) A five-digit Federal Supply Code for manufactures and/or other supply services is shown in parentheses followed by the manufacture's part number. This number will be used for requisitioning purposes when no Federal Stock Number is indicated in the Federal Stock Number Column. Example: (08645) 86453.

(3) The letters "GE", shown in parentheses immediately following the description, indicates General Engineer supply responsibility for the part.

d. *Unit of Issue*. If no abbreviation is shown in this column, the unit of issue is "each."

e. *Quantity Authorized*. This column lists the quantities of repair parts, accessories, tools, or publications authorized for issue to the equipment operator or crew as required.

f. *Quantity Issued with Equipment*. This column lists the quantities of repair parts, accessories, tools, or publications that are initially issued with each item of equipment. Those indicated by an asterisk are to be requisitioned through normal supply channels as required.

g. *Illustrations*. This column is subdivided into two columns which provide the following information:

(1) *Figure Number*. Provides the identifying number of the illustration.

(2) *Item Number*. Provides the referenced number for the parts shown in the illustration.

3. Federal Supply Code for Manufacturers

12603---------- Clark Equipment Company

4. Explanation of Columns Contained in Section III

a. *Item*. This column contains numerical sequenced item numbers, assigned to each component application, to facilitate reference.

b. *Component Application*. This column identifies the component application of each maintenance or operating supply item.

c. *Source of Supply*. This column lists the basic materiel code number of the supply service assigned responsibility for the item. Blank spaces denote supply responsibility of the preparing agency. Other basic materiel code numbers are: 10-Quartermaster Materiel

d. *Federal Stock Number*. The Federal stock number will be shown in this column and will be used for requisitioning purposes.

e. *Description.* The item and a brief description are shown.

f. *Quantity Required for Initial Operation*. This column lists the quantity of each maintenance or operating supply item required for initial operation of the equipment.

g. *Quantity* Required for 8 Hours Operation. Quantities listed represent the estimated requirements for an average eight hours of operation.

h. *Notes.* This column contains informative notes keyed to data appearing in the preceding column.

Section II. BASIC ISSUE ITEMS LIST

Source codes				Federal Stock Stock No.	Description	Unit of issue	Ex-pend ability	Qty Auth-or-ized	Qty Issued with Equip-ment	Illustrations	
Tech-nical Service	Source	Mainte-nance	Re-cover-ability							Fig	Item
					GROUP 26-ACCESSORIES, PUBLICATI()NS, TEST EQUIPMENT, AND TOOLS						
					2602-ACCESSORIES						
P	O			7520-559-9618	CASE MAINTENANCE AND OPERATIONAL MANUALS: cotton duck, water repellent, mildew resistant (GE)			1	1		
10	X2		O		FORK ASSEMBLY (12603) 752044			2	2		
	X2		O		HEADLIGHT ASSEMBLY, w/ sealed beam unit, 12 volt (12603) 746932.			1	1		
					2605-PUBLICATIONS						
12					DEPARTMENT OF THE ARMY LUBRICATION ORDER LO 10-3930-252-12.			1	1		
12					DEPARTMENT OF THE ARMY OPERATOR AND ORGANI-ZATIONAL MAINTENANCE MANUAL TM 10-3930-252-12.			2	2		
12					DEPARTMENT OF THE ARMY ORGANIZATIONAL FIELI) AND DEPOT MAINTE-NANCE REPAIR PARTS AND SPECIAL TOOL LISTS TM 10-3930-252-25P.			2	2		
					GROUP 76-FIRE FIGHTING EQUIPMENT						
					7603-FIRE EXTINGUISHERS						
P1	O			4210-893-1092	EXTINGUISHER, FIRE, DRY CHEMICAL: charged; hand; class 4-B with universal bracket 21/2 lbs (GE).			1	*		

Maintenance and Operating Supplies

Item	Component Application	Source of supply	Federal Stock No.	Description	Quantity required for initial operation	Quantity required for 8 hours operation	Notes
1	1002Differential			Lubricating Oil Gear 5 gal pail as follows: GO 90			(1) See current L() for grade application and replenishment intervals.
		10	9150-577-5844	GO 80	2 qt	(1)	
		10	9150-577-5841	GOS	2 qt	(1)	
		10	9150-257-5440		2 qt	(1)	(2) Use oil as prescribed in item 1.
2	1204 Brake Master Cylinder			Hydraulic Fluid Automotive: 1 qt can HB			(3) Use hydraulic fluid as prescribed in item 2.
		10	9150-190-0933	Lubricating Oil Gear (2)	(1)	(1)	
3	1401 Steering gear (2)			Lubricating Oil Engine: 5 gal pail OE 10	(1)	(1)	
4	2406 Hydraulic Oil Sump						
		10	9150-265-9428	OES			
		10	9150-242-7603	Hydraulic Fluid, Automotive (3)	16 qt	(1)	
6	4010 Carbon Pile Control Cylinder (3) Oil Can Points			Lubricating Oil, Engine: OE 10 1 qt can	(1)	(1)	
		10	9150-265-9425	9110 5 gal pail	(1)	(1)	
		10	9150-231-9037	Grease, Automotive and Artillery: GAA 1 lb can	(1)	(1)	
7	Lubrication Fittings						
		10	9150-190-0904		(1)	(1)	

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NG: State AG (3).
USAR: Units same as Active Army.
For explanation of abbreviations used, see AR :320-50.

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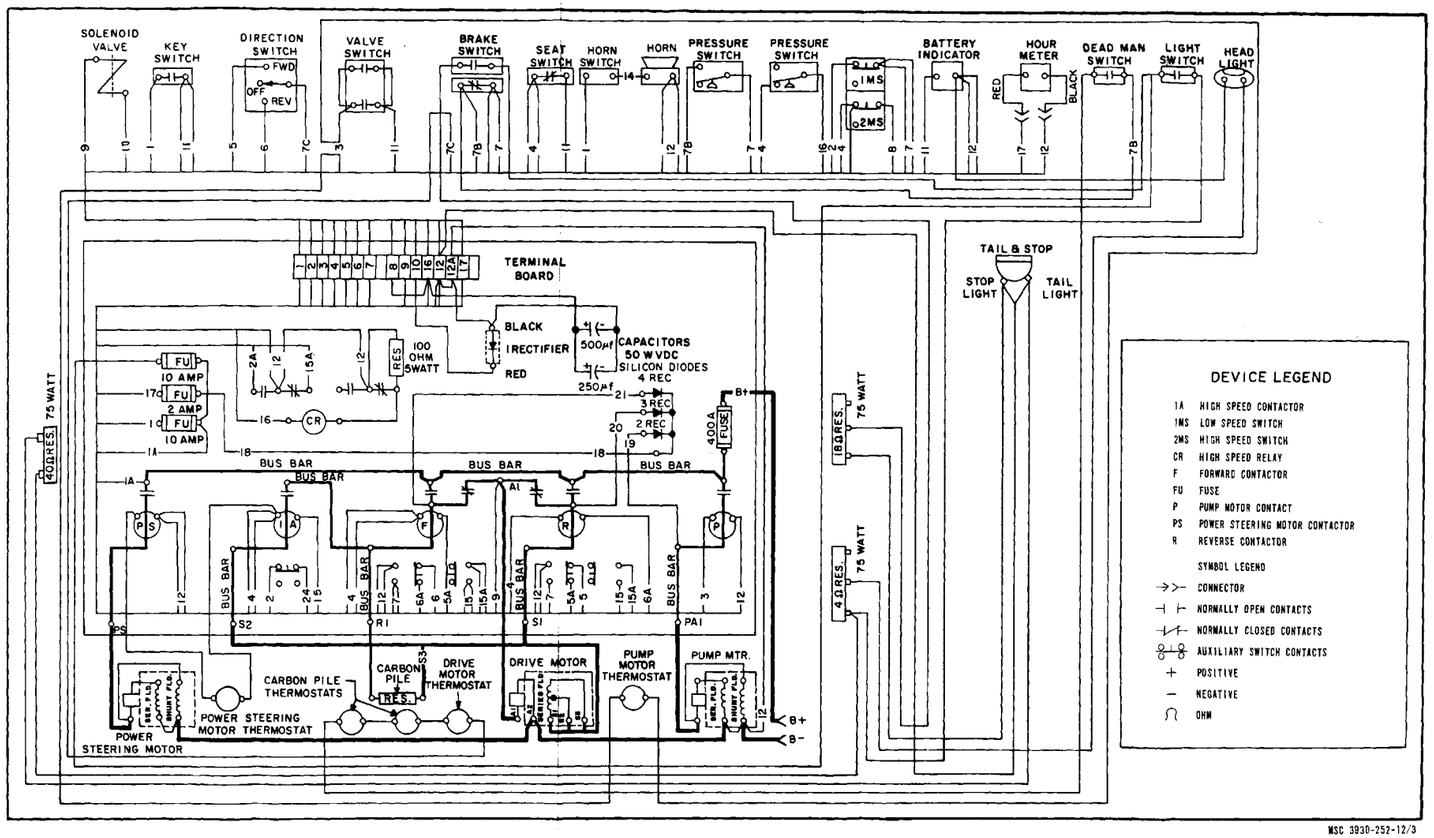

MSC 3930-252-12/3

Figure 3. Practical wiring diagram.

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