**DEPARTMENT OF THE ARMY TECHNICAL MANUAL**

# TECHNICAL MANUAL

# OPERATOR AND ORGANIZATIONAL

# MAINTENANCE MANUAL

## TRUCK, LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES,

## 4,000 LBS CAPACITY, 100 IN. LIFT

## DREXEL DYNAMICS MODEL FL-40-EE-6550

## FSN 3930-403-5661

## 4,000 LBS. CAPACITY, 180 IN. LIFT

## DREXEL DYNAMICS MODEL FL-40-EE-6250

## FSN 3930-403-5662

**This copy is a reprint which includes current pages from Changes 2, 4 and 5.**

**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**APRIL 1971**

**WARNING**

**TRANSPORTING HAZARD**

**SERIOUS INJURY OR DEATH**

**to personnel. 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 no allow the truck to swing or sway.**

**WARNING**

**DANGEROUS CHEMICALS**

**are used in this equipment.**

**SERIOUS INJURY OR DEATH**

**may result if personnel fail to observe these safety precautions. Avoid contact with the battery electrolyte. If the solution comes in contact with the skin, rinse the area immediately with clear water to avoid skin burns. Do not smoke or use an open flame in the vicinity when servicing batteries as hydrogen gas, an explosive, is generated.**

**WARNING**

**OPERATING HAZARD**

**SERIOUS INJURY OR DEATH**

**to the operator or personnel may result if the operator is not alert at all times while operating the forklift truck.**

**WARNING**

**UNINTENTIONAL FAST TRAVELING SPEED**

**may result in failure of the equipment. Failure to observe this warning may result in**

**SERIOUS INJURY OR DEATH**

**to personnel. The speed of the vehicle may be unintentionally accelerated by radio interference if the vehicle is subjected to a strong radio frequency field in the 150 to 174 megahertz range. This may occur when a radio transmitter is used within a few feet of the vehicle or when a radio transmitter is carried on the vehicle.**

CHANGE

No. 5

**HEADQUARTERS**
**DEPARTMENT OF THE ARMY**
**Washington D.C., *13 December 1989***

**Operator and Organizational Maintenance Manual**

**TRUCK, LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES,**
**4,000 LB CAPACITY, 100 IN. LIFT**
**(DREXEL DYNAMICS MODEL FL-40-EE-6550)**
**(ARMY MODEL MHE-218)**
**(NSN 3930-00-403-5661)**
**AND**
**180 IN. LIFT**
**(DREXEL DYNAMICS MODEL FL-40-EE-6250)**
**(NSN 3930-00-403-5662)**

TM 10-3930-625-12, 21 April 1971, is changed as follows:

*Cover.* The manual title is changed to read as shown above.

*Warning Page.* Delete entire warning "UNINTENTIONAL FAST TRAVELING SPEED".

*Page i.*

The manual title is changed to read as shown above.

Table of Contents, add "LIST OF ILLUSTRATIONS" as the first entry.

*Page 1-1.*

Paragraph 1-1d. Change "TM 750-244-3 (Procedures for Destruction of Equipment to Prevent Enemy Use)" to "TM 750-244-6 (Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use)".

Paragraph 1-2 is superseded as follows:

**1-2. Maintenance Forms, Records, and Reports**

Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by DA Pam 738-750.

Paragraph 1-3 is superseded as follows:

**1-3. Reporting Errors and Recommending Improvements**

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

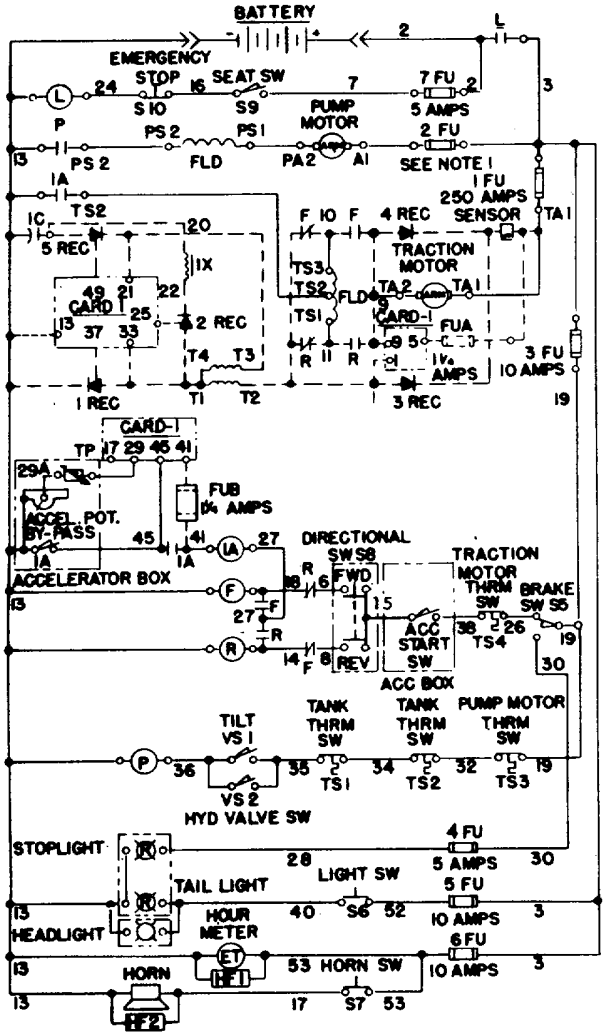
*Page 1-5.* Paragraph 1-6b(11) under *Battery*, add the following:

| | *Lead-Acid* | *Nickel-Iron* |
|---|---|---|
| NSN | 6140-00-789-3725 | 6140-00-901-1054 |

Battery Compartment Size: 39 inches long, 27-1/4 inches wide, 22-3/4 inches high.

*This change supersedes C3, 21 March 1972.

*Page 1-6.* Figure 1-3 is superseded as shown.




**NOTES**

1 **PUMP MOTOR FUSE SIZE FOR I00" MAST INSTALLATION TO BE 175 AMPS.**

2 **PUMP MOTOR FUSE SIZE FOR 180" MAST INSTALLATION TO BE 200 AMPS.**

3 **D.D.C. INDICATES DREXEL DYNAMICS CORP.**

4 **G.E. INDICATES GENERAL ELECTRIC**

**LEGEND**

| | |
|---|---|
| ——— INDICATES | D.D.C. CONTROL WIRING |
| ------- | G.E. CONTROL WIRING |
| ▬▬▬ | D.D.C. POWER WIRING |
| –·–·– | G E. POWER WIRING |
| - - - | MECHANICALLY ENCLOSED |
| HF | HASH FILTER |
| TP | THERMAL PROTECTOR |

**TA501842**

*Figure 1-3. Electrical interconnection diagram.*

*Page 3-2.* Paragraph 3-9 is superseded as follows:

**3-9. Master Cylinder**

Remove cap and check fluid level. Fluid should be within 1/4 inch of top. If fluid level is low, fill. Refer all other maintenance to organizational personnel.

*Page 3-3.* Paragraph 3-14 is superseded as follows:

**3-14. Hydraulic Oil Reservoir**

Unscrew cap and check fluid level. If fluid is needed, add to "FULL" mark. Inspect for dirty breather cap strainer. Refer maintenance to organizational personnel.

*Page 4-1.* Paragraph 4-lb(3)(c). Change "charging device." to "battery charger, NSN 6130-00-500-0069.".

*Page 4-6.*

Paragraph 4-12, Table 4-1. Add the following to columns indicated:

| *Malfunction* | *Probable cause* | *Corrective action* |
|---|---|---|
| 16. Unintentional fast traveling speed. | Radio interference | Refer to direct support maintenance. |

Add paragraph 4-13.1 as follows:

**4-13.1. Control Box and Cover**

*a.* Remove eight screws and lockwashers and pull cover from control box (fig. 4-2).

*b.* Inspect interior of control box, front and rear, for evidence of water intrusion.

c. Perform the following steps to seal the control box against water intrusion:

(1) Apply a continuous bead of gasket forming compound, NSN 8030-00-247-2525, across top and both sides of control box at the area where the control box comes in contact with front of the battery compartment.

**NOTE**

**Since the area at the top of control box where the seat support is located is not accessible, the compound must be applied between the seat support and the box.**

(2) Make a gasket from rubber strip, cellular, NSN 9320-00-935-2036, by cutting strips of 29-1/16 inches and 12-1/16 inches and punching holes in the gasket to accommodate cover mounting screw holes and install gasket.

*d.* Place cover in position on control box and install eight screws and lockwashers.

*Page 4-16.*

Paragraph 4-30a is rescinded.

Change paragraph "4-30*b*" to paragraph "4-30*a*".

*Page 4-17.*

Paragraph 4-30*c* is rescinded.

Paragraph 4-30*d* is rescinded.

*Page 4-23.* Paragraph 4-43c is superseded as follows:

*c.* Tighten or replace loose or missing mounting hardware. If switch bracket is damaged, notify your supervisor.

*Page 4-30.* Add paragraph 4-55 as follows:

**4-55. Name Plates**

Inspect name plates to ensure legibility. Replace by removing screw, lockwasher, nut, and name plate.

*Page A-1.*

Paragraph A-1. Change "TB 5-4200-200-10" and its title Hand Portable Fire Extinguishers Approved for Army Users .

Paragraph A-3. Change "TM 9-213" to "TM 43-0139".

Paragraph A-4.

Change "TM 750-244-3" and its title to "TM 750-244-6, Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use".

Change "TM 38-750" to "DA Pam 738-750".

Change the title of TM 10-3930-625-20P to "Organizational Maintenance Repair Parts and Special Tools Lists, Truck, Lift, Fork, Electric, Solid Rubber Tires, 4,000 LB Capacity, 100 In. Lift (Drexel Dynamics Model FL-40-EE-6550, Army Model MHE-218) (NSN 3930-00-403-5661) and 180 In. Lift (Drexel Dynamics Model FL-40-EE-6250) (NSN 3930-00-403- 5662)".

Change the title of TM 10-3930-625-12 to "Operator and Organizational Maintenance Manual, Truck, Lift, Fork, Electric, Solid Rubber Tires, 4,000 LB Capacity, 100 In. Lift (Drexel Dynamics Model FL-40-EE-6550, Army Model MHE-218) (NSN 3930-00-403-5661) and 180 In. Lift (Drexel Dynamics Model FL-40-EE-6250) (NSN 3930-00- 403-5662)".

Change "TM 9-6140-200-15" and its title to "TM 9-6140-200-14, Operator's, Organizational, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries".

*Page B-1.* Appendix B is superseded as follows:

## APPENDIX B

## MAINTENANCE ALLOCATION CHART

### Section I. INTRODUCTION

**B-1. General**

*a.* This section provides a general explanation of all maintenance and repair functions authorized at the various maintenance levels.

*b.* The Maintenance Allocation Chart (MAC) in Section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the

maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels.

*c.* Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

*d.* Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

**B-2. Maintenance Functions**

Maintenance functions will be limited to and defined as follows:

*a. Inspect.* To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

*b. Test.* To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

*c. Service.* Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

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

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

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

*g. Remove/Install.* To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of placing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

*h. Replace.* To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the third position of the SMR code.

*i. Repair.* The application of maintenance services, including fault location/troubleshooting, removal/installation, and disassembly/assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

*j. Overhaul.* That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

*k. Rebuild.* Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/ miles, etc.) considered in classifying Army equipment/ components.

**B-3. Explanation of Columns in the MAC, Section II**

*a. Column 1, Group Number.* Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. End item group number shall be "00."

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

*c. Column 3, Maintenance Function.* Column 3 lists the functions to be performed on the item listed in Column 2. (For a detailed explanation of these functions, see paragraph B-2.)

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

various maintenance levels are as follows:

C ..... Operator or Crew
O ..... Organizational Maintenance
F ..... Direct Support Maintenance
H ..... General Support Maintenance
D ..... Depot Maintenance

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

*f. Column 6, Remarks.* This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

**B-4. Explanation of Columns in Tool and Test Equipment Requirements, Section III**

*a. Column 1, Reference Code.* The code recorded in Column 6, Section II.

*b. Column 2, Remarks.* This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

**Section II. MAINTENANCE ALLOCATION CHART**

| (1) GROUP NUMBER | (2) COMPONENT ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND TEST EQUIPMENT | (6) REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | C | O | F | H | D | | |
| **06** | **ELECTRICAL SYSTEM** | | | | | | | | |
| *0608* | *Miscellaneous Items* | | | | | | | | |
| | Switch, Sensitive | Test | 0.1 | | | | | | |
| | | Replace | | | 0.5 | | | | |
| *0609* | *Lights* | | | | | | | | |
| | Headlamp Assembly | Test | 0.1 | | | | | | |
| | | Replace | | 0.2 | | | | | |
| | | Repair | | 0.5 | | | | | |
| | Stoplight-Taillight | Test | 0.1 | | | | | | |
| | | Replace | | 0.2 | | | | | |
| | Lamps | Replace | | 0.2 | | | | | |
| *0611* | *Horn, Siren* | | | | | | | | |
| | Button Assembly, Horn | Test | 0.1 | | | | | | |
| | | Replace | | 0.2 | | | | | |
| | Button, Horn | Replace | | 0.1 | | | | | |
| | Horn, Electrical | Replace | | 0.4 | | | | | |
| *0612* | *Batteries, Storage* | Test | 0.4 | | | | | | |
| | | Service | 0.8 | | | | | | |
| | | Replace | | 0.6 | | | | | |
| **10** | **FRONT AXLE** | | | | | | | | |
| *1002* | *Differential* | | | | | | | | |
| | Axle Assembly, | Service | | 0.2 | | | | | |
| | Differential | Replace | | | 5.0 | | | | |
| | | Repair | | | 6.0 | | | | |
| | Drive Assembly | Service | | 0.4 | | | | | |
| | | Replace | | | 6.0 | | | | |
| | | Repair | | | 3.0 | | | | |

## Section II. MAINTENANCE ALLOCATION CHART - Continued

| (1) GROUP NUMBER | (2) COMPONENT ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL C | O | F | H | D | (5) TOOLS AND TEST EQUIPMENT | (6) REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| *1003* | *Planetary or Final Drive* | Service | 0.2 | | | | | | |
| | Drive Axle Assembly | Replace | | 6.0 | | | | | |
| | | Repair | | 3.0 | | | | | |
| **11** | **REAR AXLE** | | | | | | | | |
| *1104* | *Steering, Sideshift and Wheel Leaning Mechanism* | | | | | | | | |
| | Axle Assembly, Steering | Service | 0.3 | | | | | | |
| | | Adjust | 1.0 | | | | | | |
| | | Replace | | 3.5 | | | | | |
| | | Repair | | 5.0 | | | | | |
| **12** | **BRAKES** | | | | | | | | |
| *1201* | *Hand Brakes* | | | | | | | | |
| | Cable Assembly, Brake | Service | 0.2 | | | | | | |
| | | Adjust | 0.5 | | | | | | |
| | | Replace | | 1.0 | | | | | |
| | Brake Shoe Assembly, | Inspect | | 0.5 | | | | | |
| | Motor | Adjust | | 0.5 | | | | | |
| | | Replace | | 1.5 | | | | | |
| | | Repair | | 2.0 | | | | | |
| | Seat Brake | Replace | | 2.0 | | | | | |
| | | Repair | | 1.0 | | | | | |
| | | Adjust | 0.5 | | | | | | |
| *1202* | *Service Brakes* | | | | | | | | |
| | Shoe and Lining | Inspect | 0.5 | | | | | | |
| | Assembly | Adjust | 0.3 | | | | | | |
| | | Replace | 1.0 | | | | | | |
| *1204* | *Hydraulic Brake System* | | | | | | | | |
| | Tube Assembly, Metal | Inspect | 0.2 | | | | | | |
| | | Replace | 0.8 | | | | | | |
| | Cylinder Assembly, | Service | 0.3 | | | | | | |
| | Hydraulic, Master | Replace | 1.0 | | | | | | |
| | Cylinder Assembly, | Inspect | 0.5 | | | | | | |
| | Wheel | Replace | 0.8 | | | | | | |
| *1206* | *Mechanical Brake System* | | | | | | | | |
| | Hydraulic Brake | Replace | | 1.5 | | | | | |
| | | Repair | | 1.0 | | | | | |

## Section II. MAINTENANCE ALLOCATION CHART - Continued

| (1) GROUP NUMBER | (2) COMPONENT ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL C | O | F | H | D | (5) TOOLS AND TEST EQUIPMENT | (6) REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| **13** | **WHEELS AND TRACKS** | | | | | | | | |
| *1311* | *Wheel Assembly* | Replace | 1.0 | | | | | | |
| | Bearing, Roller, Rear | Service | 0.5 | | | | | | |
| | Wheels | Replace | 1.5 | | | | | | |
| | | Repair | 1.0 | | | | | | |
| *1313* | *Tires, Tubes, Tire Chains* | | | | | | | | |
| | Tires, Solid | Inspect | 0.2 | | | | | | |
| | | Replace | | | | 1.0 | | | |
| **14** | **STEERING** | | | | | | | | |
| *1401* | *Mechanical Steering* | Service | | 0.2 | | | | | |
| | Gear Assembly | Adjust | | 0.3 | | | | | |
| | | Replace | | | 1.0 | | | | |
| | | Repair | | | 1.5 | | | | |
| | Steering Wheel | Inspect | 0.1 | | | | | | |
| | | Replace | | 0.5 | | | | | |
| | Crank Assembly, Bell | Inspect | | 0.1 | | | | | |
| | | Service | | 0.1 | | | | | |
| | | Replace | | | 2.0 | | | | |
| | | Repair | | | 3.5 | | | | |
| | Tie Rod Assembly, | Inspect | | 0.1 | | | | | |
| | Steering | Service | | 0.1 | | | | | |
| | | Adjust | | 0.3 | | | | | |
| | | Replace | | | 0.5 | | | | |
| | | Repair | | | 2.0 | | | | |
| | Bearing, Bellcrank | Inspect | | 0.2 | | | | | |
| | | Replace | | | 1.5 | | | | |
| | Drag Link | Inspect | | 0.1 | | | | | |
| | | Service | | 0.2 | | | | | |
| | | Adjust | | | 0.2 | | | | |
| | | Replace | | | 1.0 | | | | |
| **18** | **BODY, CAB, HOOD AND HULL** | | | | | | | | |
| *1801* | *Body, Cab, Hood, and Hull Assemblies* | | | | | | | | |
| | Guard, Overhead | Inspect | 0.1 | | | | | | |
| | | Replace | | 0.5 | | | | | |
| | Floor Plates | Inspect | 0.1 | | | | | | |
| | | Replace | | 0.3 | | | | | |
| *1806* | *Upholstery Seats and* Carpets | | | | | | | | |
| | Seat, Vehicular | Replace | | 0.4 | | | | | |
| | | Repair | | 1.8 | | | | | |

## Section II. MAINTENANCE ALLOCATION CHART - Continued

| (1) GROUP NUMBER | (2) COMPONENT ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL C | O | F | H | D | (5) TOOLS AND TEST EQUIPMENT | (6) REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 22 | **BODY, CHASSIS, AND HULL ACCESSORY ITEMS** | | | | | | | | |
| *2210* | *Data Plates and Instruction Holders* | | | | | | | | |
| | Name Plates | Replace | | 0.2 | | | | | |
| **24** | **HYDRAULIC AND FLUID SYSTEMS** | | | | | | | | |
| *2401* | *Pump and Motor* | | | | | | | | |
| | Pump, Rotary | Replace | | | 1.5 | | | | |
| | | Repair | | | 2.5 | | | | |
| *2402* | *Control Valves* | | | | | | | | |
| | Valve, Linear, Direct | Replace | | | 1.6 | | | | |
| | Control | Repair | | | 2.0 | | | | |
| | Bracket, Switch | Replace | | | 0.5 | | | | |
| *2403* | *Hydraulic Controls* | | | | | | | | |
| | Handle, Lift and Tilt | Replace | | | 1.3 | | | | |
| | | Repair | | | 1.5 | | | | |
| *2404* | *Tilt Cylinders* | Inspect | 0.1 | | | | | | |
| | | Replace | | 1.5 | | | | | |
| | | Repair | | | 1.0 | | | | |
| *2405* | *Mast Column* | | | | | | | | |
| | Cylinder Assembly, | Inspect | 0.1 | | | | | | |
| | Actuating Hoist | Service | | 0.2 | | | | | |
| | | Replace | | | 4.0 | | | | |
| | | Repair | | | 4.0 | | | | |
| | Mast Assembly | Replace | | | 4.5 | | | | |
| | | Repair | | | 5.0 | | | | |
| | Forks | Replace | | 0.2 | | | | | |
| *2406* | *Strainers, Filters, Lines and Fittings* | | | | | | | | |
| | Hydraulic System | Replace | | 1.5 | | | | | |
| | | Repair | | 1.0 | | | | | |
| | Filter, Fluid | Replace | | 0.3 | | | | | |
| | | Repair | | 1.0 | | | | | |
| | Filter Element, Fluid | Service | | 0.2 | | | | | |
| | | Replace | | 0.2 | | | | | |
| *2408* | *Liquid Tanks and Reservoirs* | | | | | | | | |
| | Hydraulic Reservoir | Service | | 0.9 | | | | | |
| | | Replace | | | 0.7 | | | | |
| | | Repair | | | 0.5 | | | | |

## Section II. MAINTENANCE ALLOCATION CHART - Continued

| (1) GROUP NUMBER | (2) COMPONENT ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL C | O | F | H | D | (5) TOOLS AND TEST EQUIPMENT | (6) REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| **40** | **ELECTRIC MOTORS AND GENERATORS** | | | | | | | | |
| *4000* | *Major Assemblage: Motor Generator and Rotating Exciter Assemblies* | | | | | | | | |
| | Motor, Direct Current, Travel | Test | | | 1.0 | | | | |
| | | Replace | | | 8.0 | | | | |
| | | Repair | | | 4.0 | | | | |
| | Motor, Direct Current | Test | | | 1.0 | | | | |
| | | Replace | | | 4.0 | | | | |
| | | Repair | | | 3.0 | | | | |
| | Pump Motor | Replace | | | 4.0 | | | | |
| | | Repair | | | 3.0 | | | | |
| | Brush, Electrical Contact | Inspect | | 2.0 | | | | | |
| | | Replace | | | 1.5 | | | | |
| | Bearing, Ball Annular, Drive Motors | Replace | | | 4.0 | | | | |
| *4007* | *Drive Components* | | | | | | | | |
| | Support, Motor | Replace | | | 4.0 | | | | |
| *4009* | *Control Panels, Housing, Cubicles* | | | | | | | | |
| | Cable Assemblies | Replace | | | 1.0 | | | 2 | |
| | | Repair | | | 1.5 | | | | |
| *4010* | *Master or Auxiliary Control Assembly* | | | | | | | | |
| | Accelerator Switch | Replace | | | 0.5 | | | | |
| | | Repair | | | 2.0 | | | | |
| | Contactor Assembly | Replace | | | 1.0 | | | 1 | |
| | | Repair | | | 3.0 | | | | |
| *4011* | *Circuit Breakers, Cutouts, Fuse and Fuse Holders* | | | | | | | | |
| | Fuse, Cartridge | Replace | | 0.2 | | | | | |
| | Fuse Holder, Block | Replace | | | 0.5 | | | | |
| *4012* | *Switches* | | | | | | | | |
| | Directional Control | Test | 0.1 | | | | | | |
| | | Replace | | | 0.5 | | | | |
| | | Repair | | | 1.5 | | | | |
| | Levers | Inspect | 0.1 | | | | | | |
| | | Replace | | | 0.5 | | | | |

**Section II. MAINTENANCE ALLOCATION CHART - Continued**

| (1) GROUP NUMBER | (2) COMPONENT ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL C | O | F | H | D | (5) TOOLS AND EQUIPMENT | (6) REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| *4017* | *Transformers: Rectifiers* | | | | | | | | |
| | Resister, Fixed | Replace | | | 0.3 | | | | |
| | Semiconductor Device | Test | | | 1.0 | | | | |
| | | Replace | | | 1.5 | | | | |
| | | Repair | | | 4.0 | | | | |

**Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS**

| (1) TOOL OR TEST EQUIPMENT REF CODE | (2 ) MAINTENANCE LEVEL | (3) NOMENCLATURE | (4) NATIONAL/NATO STOCK NUMBER | (5) TOOL NUMBER |
|---|---|---|---|---|
| 1 | F | Key, Socket Head SCR | 5120-00-889-2163 | P84000209 |
| 2 | F | Wrench, Spanner | | GGG-W-665-B-1 |

**Section IV. REMARKS**

Not Applicable.

*Page I-I.* Add "N" and "Name Plates, paragraph 4-55, page 4-30".

By Order of the Secretary of the Army:

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

Official:

WILLIAM J. MEEHAN II
*Brigadier General, United States Army*
*The Adjutant General*

Distribution:
To be distributed in accordance with DA Form 12-25F-R, (Block Nos. 2173, 2174) Operator and Unit maintenance requirements for Fork Lift, 4000 LB Capacity, Solid Tire, Electric, MHE Model 218. (Cumulative).

CHANGE
No. 4

**HEADQUARTERS**
**DEPARTMENT OF THE ARMY**
**WASHINGTON, DC, *7 February 1980***

**Operator and Organizational**
**Maintenance Manual**

**TRUCK, LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES, ARMY MODEL MHE 218.4000 LBS. CAPACITY, 100 IN. LIFT, DREXEL DYNAMICS MODEL FL-40/EE6550, (NSN 3930-00-403-5661), 180 IN. LIFT, DREXEL DYNAMICS MODEL FL-40-EE6250, (NSN 3930-00-403-5662).**

TM 10-3930-625-12, 21 April 1971, is changed as follows:
*Page 3-1*, paragraph 3-3. Add the following before paragraph 3-3.

**WARNING**

**Insure that static electricity discharge straps are installed on the forklift truck and are in good condition. Failure to use the straps could result in the generation of a spark which could ignite explosives or flammables.**

**By Order of the Secretary of the Army:**

**E. C. MEYER**
***General, United States Army***
***Chief of Staff***

Official:

**J. C. PENNINGTON**
***Major General, United States Army***
***The Adjutant General***

Distribution:
To be distributed in accordance with DA Form 12-25A, Operator maintenance requirements for Warehouse Equipment.

CHANGE
No. 3

**HEADQUARTERS**
**DEPARTMENT OF THE ARMY**
**WASHINGTON, DC, *21 March 1972***

**Operator and Organizational Maintenance Manual**

# TRUCK, LIFT, FORK; ELECTRIC; SOLI'D RUBBER TIRES; ARMY MODEL MHE-18; 4000 LBS. CAPACITY; 100 IN. LIFT (DREXEL DYNAMICS MODEL FL-EE-6550) FSN 3930-403-5661; 4000 LBS. CAPACITY; 180 IN. LIFT (DREXEL DYNAMICS MODEL FL-40-EE-.50) FSN 3930 A3-5662

TM 10-3930-625-12, 21 April 1971, is changed as follows:

*Warning Page.* Delete entire warning "UNINTENTIONAL FAST TRAVELIN.G SPEED".

*Page i.* Add "LIST OF ILLUSTRATIONS" as first entry in table of contents.

*Page 1-5.* Paragraph 1-6*b*(11) under "Battery", add the following:

| | *Lead-Acid* | *Nickel-Iron* |
|---|---|---|
| FSN | 6140-789-3725 | 6140-901-1054 |

Battery Compartment Size: 30 inches long, 27¼ inches wide, 22 3/4 inches high.

*Page 4-1.* Paragraph 4-1*b*(3)*(c)*, change "charging device." to read "battery charger, FSN 6130-500-0069".

*Page 4-6.* Paragraph 4-12, table 4-1, add the following to columns indicated:

| | *Malfunction* | *Probable cause* | *Corrective action* |
|---|---|---|---|
| 16. | Unintentional fast traveling speed. | Radio interference | Refer to direct support maintenance. |

Paragraph 4-13.1 is added.

**4-13.1. Control Box and Cover**

*a.* Remove eight screws and lockwashers and pull cover from control box (fig. 4-2).

*b.* Inspect interior of control box, front and rear, for evidence of water intrusion.

*c.* Perform the following steps to seal the control box against water intrusion:

(1) Apply a continuous bead of gasket forming compound, FSN 9030-247-2526, across top and both sides of control box at the area where the control box comes in contact with front of the battery compartment.

**NOTE**

**Since the area at top of control box where the seat support is located is not accessible, the compound must be applied between the seat support and the box.**

(2) Make a gasket from rubber strip, cellular, FSN 9320-935-2906, by cutting strips of 29 1/16 inches and 12 1/16 inches and punching holes in the gasket to accommodate cover mounting screw holes and install gasket.

*d.* Place cover in position on control box and install eight screws and lockwashers.

*Page B-2, Group 02.* In lines 1 and 2, under columns (3) "Repair", change "F" to "H"; under column (3) "Overhaul", change "H" to "D".

*Page B-2, Group 04.* Change "Handbrakes" to read "Seat Brakes".

*Page B-3, Group 08.* In line 4, under column (3) "Repair", change "F" to "H"; under column (3) "Overhaul", change "H" to "D".

*Page B-3, Group 09.* In line 2, change "Motor assembly, travel" to read "Motor assembly, drive". In lines 2 and 3 under Column (3) "Repair", change "F" to "H"; under column, (3) "Overhaul", change "H" to "D".

*Page B-4, Group 11.* Change "Oscillator module" to read "Oscillator card".

*Page B-4, Group 12.* In line 10, under column (3) "Repair", change "F" to "H"; under column (3) "Overhaul", change "H" to "D".

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 1225A (qty rqr block No. 893) operator maintenance requirements for Warehouse Equipment.

CHANGE
No. 2

**HEADQUARTERS**
**DEPARTMENT OF THE ARMY**
**WASHINGTON, DC, *16 May 1972***

**Operator and Organizational Maintenance Manual**

**TRUCK, LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES,**

**ARMY MODEL MHE-218;**

**4000 LBS. CAPACITY, 100 IN. LIFT; DREXEL DYNAMICS**

**MODEL FL-40-EE-550, FSN 3930-403-5661; 4000 LBS. CAPACITY,**

**180 IN. LIFT; DREXEL DYNAMICS MODEL FL-40EE-6250,**

**FSN 3930-403-5662**

TM 10-3930-625-12, 21 April 1971, is changed as follows:

*Page 1-4.* Paragraph 1-6b(20) is added as follows:

(20) Operating speed.

Empty .....MPH (Miles per hour)
5.1 Forward
5.1 Reverse
Loaded.....MPH
4.7 Forward
4.9 Reverse

*Page 2-1.* Paragraph 2-1.1 is added as follows:

**2-1.1. Maintenance and Operating Supplies**

A list of maintenance and operating supplies required for initial operation of the fork lift truck are contained in table 2-1.

*Page 2-3.* Paragraph 2-3i is superseded as follows:

*i. Seat.* The seat is connected to a "dead man" switch that automatically applies a mechanical emergency brake when the operator's weight is removed from the seat. Operator must be seated before forklift will operate.

Paragraph 2-5e is superseded as follows:

*e.* Lift the emergency stop button and ensure battery connector latch is closed.

*Page 2-4.* Paragraph 2-10a is superseded as follows:

*a.* Check fluid level in hydraulic reservoir. Refer to current lubrication order for type of fluid required and frequency of servicing. Inspect all lines, hoses, valves and fittings for leaks, breaks or cracks.

Paragraph 2-10b . In line 1, change "brake" to read "brakes".

Paragraph 2-10c is superseded as follows:

*c.* Maintain battery at full charge before operation and check electrolyte level daily.

Paragraph 2-11a is superseded as follows:

*a.* Insure that hydraulic reservoir is filled to proper level.

Paragraph 2-12b is superseded as follows:

*b. Hydraulic System.* Check hydraulic oil reservoir filler sump strainer and line filter frequently for clogged condition. Area around oil filler access area must be wiped clean before removing sump strainer from reservoir to prevent accidental contamination of oil.

Paragraph 2-12d is superseded as follows:

*d. Cleaning.* Wipe dust and dirt from all external areas. Special care must be taken to keep hydraulic cylinder rods clean as the dust and dirt acts as an abrasive and will damage oil seals, causing the cylinders to leak.

Paragraph 2-13 is superseded as follows:

**2-13. Operation Under Rainy or Humid Conditions**

When unit is not in use it should be parked inside a building, under an overhead cover, or covered with canvas or other waterproof material. If a waterproof cover is used, it should be removed during dry periods to allow any accumulated condensation to evaporate. The hydraulic oil reservoir should be kept at the prescribed "full" level to prevent accumulation of condensation. Under these conditions the hydraulic line filter must be

*This change supersedes Change 1, 2 October 1971.

*Table 2-1. Maintenance and Operating Supplies*

| (1) COMPONENT APPLICATION | (2) MFR PART NO OR NAT'L STOCK NO. | (3) DESCRIPTION | (4) Quantity Required F/Initial Operation | (5) Quantity Required F/8 Hrs Operation | (6) NOTES |
|---|---|---|---|---|---|
| Brake Master Cylinder | | BRAKE FLUID, AUTOMOTIVE: Gal can as follows | | | (1) See C9100-IL for additional data and requisitioning procedure. |
| | 9150-231-9071(1) | HB | 1 pt | (2) | (2) See current LO for grade application and replenishment intervals. |
| Differential Drive Axle- | | LUBRICATING OIL, GEAR: 5 gal drum as follows: | | | |
| | 9150-577-5844(1) | GO 90 | 1 qt | (2) | |
| | 9150-257-5440(1) | GOS | 20 qts | (2) | |
| Hydraulic System | | OIL, LUBRICATING: 5 gal pails as follows: | | | |
| | 9150-266- 9428(1) | OE 10 | 1 qt | (2) | |
| | 9150-242-7603(1) | OES | 20 qts | (2) | |
| Lubricating Fitting | | GREASE, AUTOMOTIVE AND AR. TILLERY: 1 lb. ea as follows: | | | |
| | 9150-190-0904(1) | GAA | 1 lb | (2) | |

serviced frequently. All exposed unpainted metal surfaces must be wiped dry and protected from rust by applying a light coat of oil.

Paragraph 2-14 is superseded as follows:

**2-14. Operation in Salt-Water Areas**

Wash the unit frequently with clean, fresh water. Care must be taken to avoid contaminating the hydraulic oil reservoir and damaging the electrical components. After washing, all electrical components should be wiped dry and protected by spot painting or applying a light coat of oil, whichever is applicable. Tilt and lift cylinder rods must be inspected daily for indications of rust or corrosion.

*Page 4-1*. Paragraphs 4-1a (1) and (2) are superseded as follows:

*a. Inspection.*

(1) Compare packing list against items actually received to insure no shortages exist in Basic Issue Allowances.

(2) Inspect exterior of unit for cracks, breaks, or other damages. Paragraph 4-1b. Immediately after para (2), add the following:

**CAUTION**

**Avoid electrolyte contamination. Do not use the same hydrometer to service both a lead-acid battery and a nickel-iron battery.**

*Page 4-4.* In table 4-1, delete "X" in column B for items 1, 3, 5, 6, 12 and 13.

*Page 4-5.* Table 4-2, Item 1, Probable Cause, para d is superseded as follows:

*d. Defective master cylinder.*

Under Corrective Action, para d is superseded as follows:

*d. Replace master cylinder (para 4-32).*

Table 4-2. Change all reference in Corrective Action Column from "direct and general support maintenance personnel" to read "your supervisor".

*Page 4-15.* Paragraph 4-28 is superseded as follows:

**CAUTION**

**Use care when removing differential filler plug to avoid damage to left cylinder rod.**

**4-28. Differential**

Refer to LO 10-3930-62-12 when servicing the differential.

*Page A-1.* In item A-4, change "TB ORD 651" to read "TB 750-651" and change title of TM 38-7560 to read "The Army Maintenance Management System".

Page B-1. Appendix B is superseded as follows:

## APPENDIX B

## BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED

### Section I. INTRODUCTION

**B-1. Scope**

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

**B-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.

**B-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(s) (SMR):*

(1) Source Code, indicates the source for the listed item. Source codes are:

| Code | Explanation |
|---|---|
| P | Repair parts, special tools and test equipment supplied from GSA/DSA or Army supply system and authorized for use at indicated maintenance levels. |

| Code | Explanation |
|---|---|
| P2 | Repair parts, special tools and test equipment which are procured and stocked for insurance purposes because the combat or military essentiality of the end item dictates that a minimum quantity be available in the supply system. |

(2) Maintenance Code, indicates the lowest level of maintenance authorized to install the listed item. The maintenance level code is:

| Code | Explanation |
|---|---|
| C | Crew/Operator |

(3) Recoverability Code, indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are non-recoverable. Recoverability codes are:

| Code | Explanation |
|---|---|
| R | Applied to repair parts (assemblies and components), special tools and test equipment which are considered economically reparable at direct and general support maintenance levels. |
| S | Repair parts, special tools, test equipment and assemblies which are economically reparable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. |

*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 (U/M).* A 2 character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

*e. Quantity Furnished With Equipment (BIIL only).* This column indicates the quantity of an item furnished with the equipment.

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

*g. Illustration (BIIL only).* This column is divided as follows:

(1) *Figure Number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item Number.* Indicates the callout number used to reference the item in the illustration.

## 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 | (5) Qty Auth |
|---|---|---|---|---|---|
| | 7510-889-3494 | BINDER, LOOSE LEAF | | EA | 1 |
| | 7520-559-9618 | CASE, MAINTENANCE AND OPERATING MANUALS | | EA | 1 |
| | 4210-889-2222 | EXTINGUISHERS, FIRE, 2 1/2 lb., Fed. Spec. 0-E95 | | EA | 1 |

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
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 requirements for Warehouse equipment.

TECHNICAL MANUAL
No. 10-3930-625-12

**HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D. C. *21 April 1971***

# OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

## TRUCK, LIFT, FORK, ELECTRIC, SOLID RUBBER TIRES

## ARMY MODEL MHE 218

## 4000 LBS. CAPACITY, 100 in. LIFT, DREXEL DYNAMICS

## MODEL FL-40-EE6550, FSN 3930-403-5661 180 in. LIFT, DREXEL DYNAMICS,

## MODEL FL-40-EE6250 FSN 3930-403-5662

## LIST OF ILLUSTRATIONS

# CHAPTER 1

# INTRODUCTION

## Section I. GENERAL

### 1-1. Scope

*a.* This manual contains instructions for operator and organizational maintenance personnel maintaining the truck, forklift, Models FL-40- EE6550 and FL-40-EE6250. Also included are descriptions of main units and their function in relation to other components.

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

*c.* Refer to TM 740-90-1 (Administrative Storage of Equipment) for information and instructions on organizational administrative storage.

*d.* Refer to TM 750-244-3 (Procedures for Destruction of Equipment to Prevent Enemy Use) for information and instructions on destruction of equipment to prevent enemy use.

### 1-2. Forms and Records

Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed and prescribed by TM 38-750.

### 1-3. Reporting of Errors

Report of errors, omissions, and recommendations for improving the publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to Commanding General, U.S. Army Mobility Equipment Command, Attn: AMSME-MPP, 4300 Goodfellow Boulevard, St. Louis, Mo. 63120.

## Section II. DESCRIPTION AND DATA

### 1-4. Description

The forklift truck is electrically powered by a self-contained battery. The lift and tilt of the fork are hydraulically controlled. The forward and reverse speeds are controlled by a solid state stepless control called an SCR (Silicon Controlled Rectifier system. The entire system is designed for safety by means of safety switches attached to the seat mechanism and the emergency stop button. An automatic power cut-off of the drive motor is provided when the driver leaves the seat. There is also a switch connected to the brake pedal to stop the drive motor when the brake is applied. The SCR panel, fuses, contactors, and other electrical parts are located in a steel control box. The box is mounted directly in front of and below the operator's seat. Figures 1-1 and 1-2 give overall three-quarter views of the 100 inch and 180 inch forklift trucks.

KEY to fig. 1-1:
1. Load, backrest
2. Overhead guard
3. Bolt, lockwasher and nut (4)
4. Rear wheel
5. Front wheel
6. Bolt and lockwasher (4)

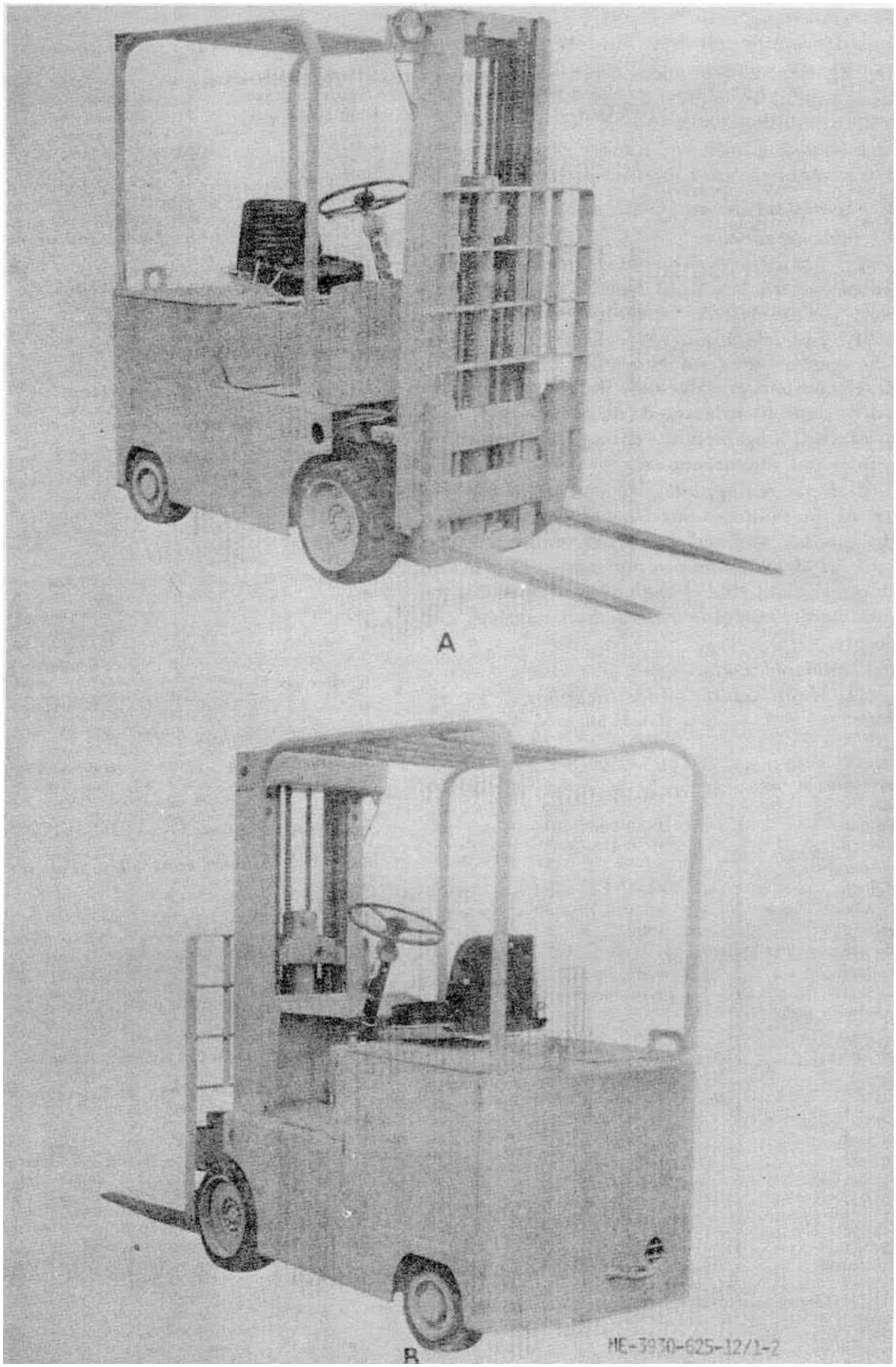



*Figure 1-1. Forklift truck, 100 inch.*

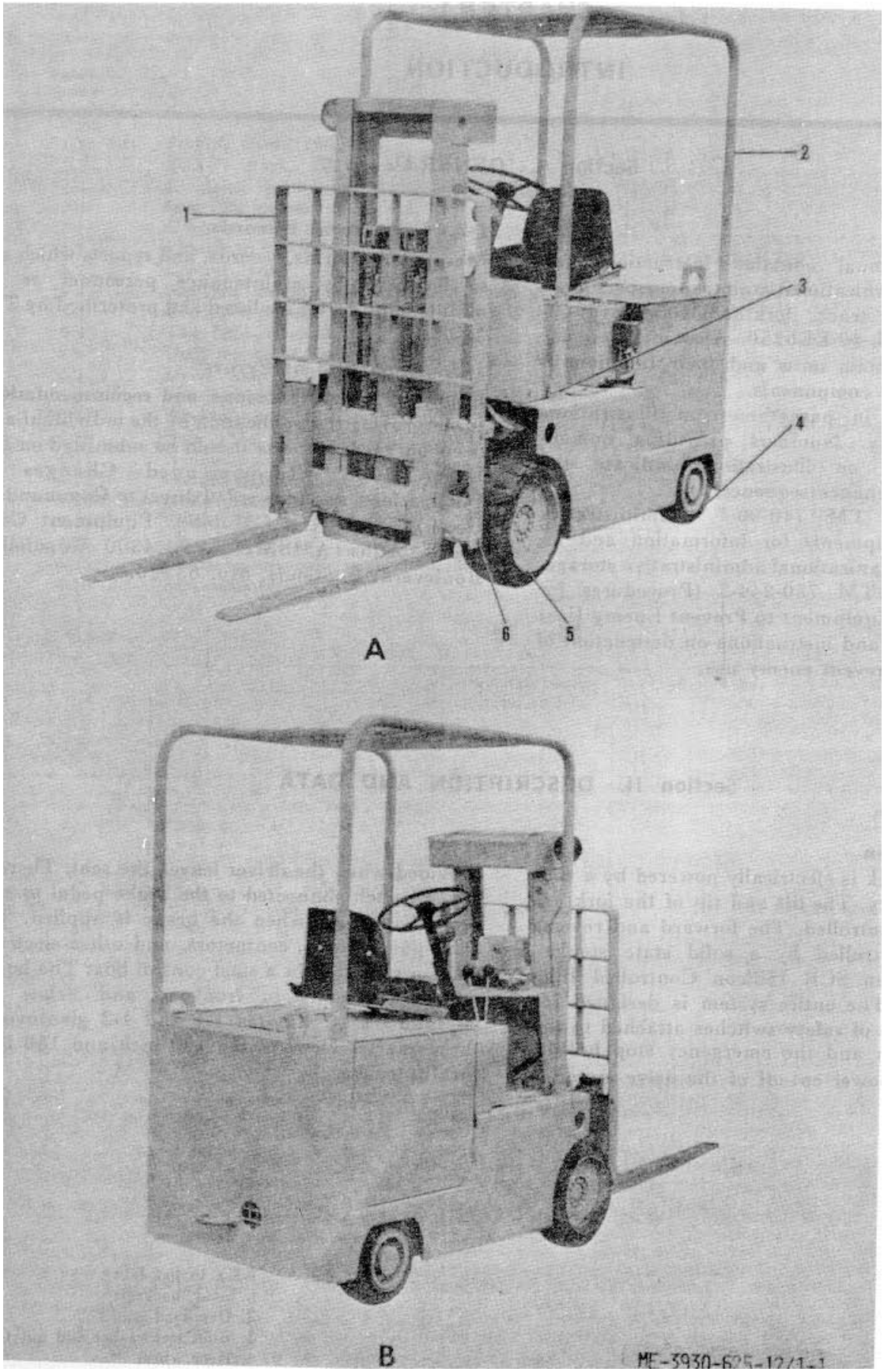



*Figure 1-2. Forklift truck, 180 inch.*

**1-5. Differences between Models**

Model FL-EE 6250 provides the user with a 180 inch lift capability; model FL-40-EE 6550 a 100 inch lift capability. The 180 inch lift results from a taller telescoping mast and a more powerful pump motor assembly.

**1-6. Identification and Tabulated Data**

*a. Identification.*

(1) Manufacturer's identification plate. Located on the left front face of the operator's console assembly, it specifies nomenclature, capacity, model number, registration number, serial number, Federal Stock Number (FSN), contract number, gross vehicle weight, dimensions of truck, date manufactured, date inspected, date shipped, shipping weight, cubic feet, length of warranty and manufacturer.

(2) Drive motor plate. Located on the top rear center of the motor, it specifies the manufacturer, model number and serial' number, and enclosure.

(3) Hydraulic pump motor plate. Located on the top rear right side of the motor, it specifies the manufacturer, model number, serial number, and enclosure.

*b. Tabulated Data.*

(1) *Manufacturer's identification.*

Nomenclature ..... Truck, lift, fork, electric, Type EE
Contract Number ..... LSA 400-70-C-4610
Registration number ..... 1017000 through 1017501
FSN
100-inch..... 3930-403-5661
180-inch..... 3930-403-5662
Model numbers
100-inch..... FL-40-EE 6550
180-inch..... FL-40-EE 6250
Capacity..... 4000 lb.
Service weight (less battery)
100 inch..... 5700 lbs.
180 inch..... 6700 lbs.
Length (with forks)
100 inch..... 120-7/8 in.
180 inch..... 124-7/8 in.
Width ..... 41-3 / 4 in.
Height ..... 83 in.
Ship weight (no battery)
100 inch..... 5700 lb.
180 inch..... 6700 lb.
Cube
100 inch..... 16 cu. ft.
180 inch..... 175 cu. ft.
Warranty ..... 12 months
Manufacturer..... Drexel Dynamics Corp.

(2) *Drive motor.*

Manufacturer..... Drexel Dynamics Corp.
Model number..... 6717
Voltage..... 36
Amperes ..... 255
Horsepower ..... 9.48
Winding..... Series
RPM (revolutions per minute) ..... 1130)

(3) *Hydraulic pump motor (100 inch mast).*

Manufacturer .....Drexel Dynamics Corp.
Model number.....6683
Voltage .....6
Amperes .....150
Horsepower .....5.2
Winding .....Series
RPM.....94

(4) *Hydraulic pump motor (180 inch mast).*

Manufacturer .....Drexel Dynamics Corporation
Model number.....701
Voltage .....36
Amperes .....182
Horsepower .....6.65
Winding .....Series
RPM.....1160

(5) *Contactor (P).*

Manufacturer .....General Electric Company
Amperes .....100
Volts, DC .....36
IC number.....IC2800M250A6A

(6) *Contactor (1A, L).*

Manufacturer .....General Electric Company
Amperes .....200
Volts, D. C .....3
IC number.....IC2800M120K412X,11A Contactor)
IC number.....IC2800M120K4146L Contactor

(7) *Contactor (F, R).*

Manufacturer .....General Electric Company
Amperes .....100
Volts, DC .....36
IC number.....IC28000M254C6B

(8) *Silicon controlled rectifier (SCR).*

Manufacturer .....General Electric Company
Catalog number.....311X100G2

(9) *Drive axle.*

Manufacturer .....Drexel Dynamics Corporation
Model Number.....5619-24
Ratios Differential.....6.67 .....Wheel end 3.100
Total .....20.658

(10) *Dimensions and weight.*

Length (with forks)
100 inch.....120-7/8 in.
180 inch.....124-7/8 in.
Height (with mast lowered) .....83 inches
Width .....41-3 /4 in.
Wheel Base .....49-3 / 4 in.
Base aisle for right angle stacking
100 inch.....142 in. max.
Right turn.....141-3/8 in.
Left turn .....140-1/2 in.
180 inch.....142 in. max.
Right turn.....140-3/ 8 in.
Left turn .....13(-1 /4 in.
Weight (without battery)
100 inch.....5700 Ibs.
180 inch.....6700

(11) *Battery.*

| | | |
|---|---|---|
| Type | Lead-Acid | Nickel-Iron |
| Voltage | 36 | 36 |
| Ampere- hours | 850 | 700 |
| Number of cells | 18 | 30 |
| Weight | approx. 24110 lbs | approx. 1530 lbs. |

(12) *Directional switch.*

| | |
|---|---|
| Manufacturer | Square D Company |
| Class | 8363 |
| Type | CD3A210927BX |
| Voltage | 600 max. |

(13) *Accelerator switch.*

| | |
|---|---|
| Manufacturer | Drexel Dynamics Corp. |
| Model no. | 6686 |

(14) *Tires.*

Front:
- Size: 18 x 8 x 12 1/8
- Type: solid

Rear:
- Size: 13 1/2 x 5 1/2 x 8
- Type: solid

(15) *Hydraulic pump.*

| | |
|---|---|
| Type | Vane |
| Capacity | 9 g.p.m. |

(16) *Thermostats.*

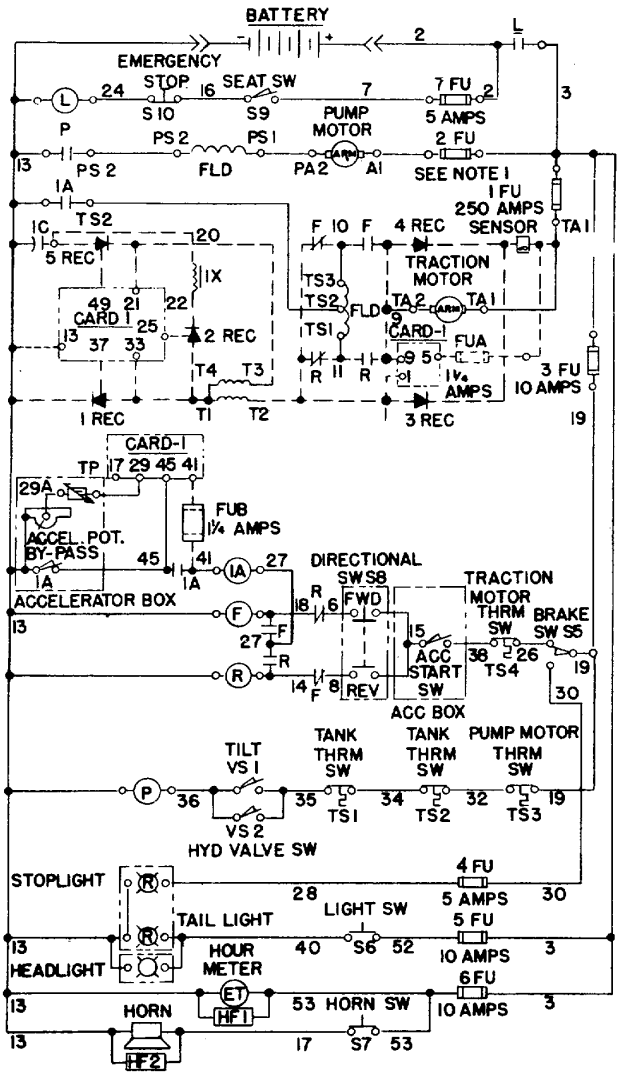
| | | |
|---|---|---|
| | Open | 220° F. ±5° |
| Drive motor thermostat | Closed: | 200° F. ±5° |
| Hydraulic pump motor | Open: | 220° F. ±5° |
| thermostat | Closed: | 200° F. ±5° |
| Hydraulic oil reservoir | Open: | 220° F. ±5° |
| | Closed: | 200° F. ±5° |

(17) *Capacities.*

| | |
|---|---|
| Reservoir, hydraulic oil | 17 gal. |
| Hydraulic system | 2 gal. |
| Steer box | 1 pint |
| Differential | 4 pts. |

(18) *Wiring diagram.* Refer to figure 1-3 for electrical interconnection diagram.

(19) *Hydraulic system diagram.* Refer to figure 1-4.




**NOTES**

1. **PUMP MOTOR FUSE SIZE FOR I00" MAST INSTALLATION TO BE 175 AMPS.**
2. **PUMP MOTOR FUSE SIZE FOR 180" MAST INSTALLATION TO BE 200 AMPS.**
3. **D.D.C. INDICATES DREXEL DYNAMICS CORP.**
4. **G.E. INDICATES GENERAL ELECTRIC**

**LEGEND**

| | |
|---|---|
| ——— INDICATES | D.D.C. CONTROL WIRING |
| ..... | G.E. CONTROL WIRING |
| ▬▬▬ | D.D.C. POWER WIRING |
| - - - | G E. POWER WIRING |
| – - – - | MECHANICALLY ENCLOSED |
| HF | HASH FILTER |
| TP | THERMAL PROTECTOR |

*Figure 1-3. Electrical interconnection diagram.*

KEY to fig. 1-4:

1. Straight connector
2. Pipe reducer
3. Hydraulic filter
4. 90° Elbow
5. Tee
6. 45° Elbow
7. Straight connector
8. 90° Elbow
9. 90° Elbow
10. 90° Elbow
11. 90° Elbow
12. 90° Elbow
13. Orifice
14. Plug
15. Hose clamp
16. Hose coupling
17. Hose coupling
18. Hose coupling
19. Hose
20. Hose
21. Hose
22. Hose assembly
23. Hose assembly
24. Hose assembly
25. Hose assembly
26. Hose assembly
27. Hose assembly
28. Hose assembly
29. Hose assembly
30. Hydraulic pump
31. Pump motor
32. Tilt cylinder (2)
33. Lift cylinder
34. Reservoir
35. Filler cap assembly
36. Directional control valve

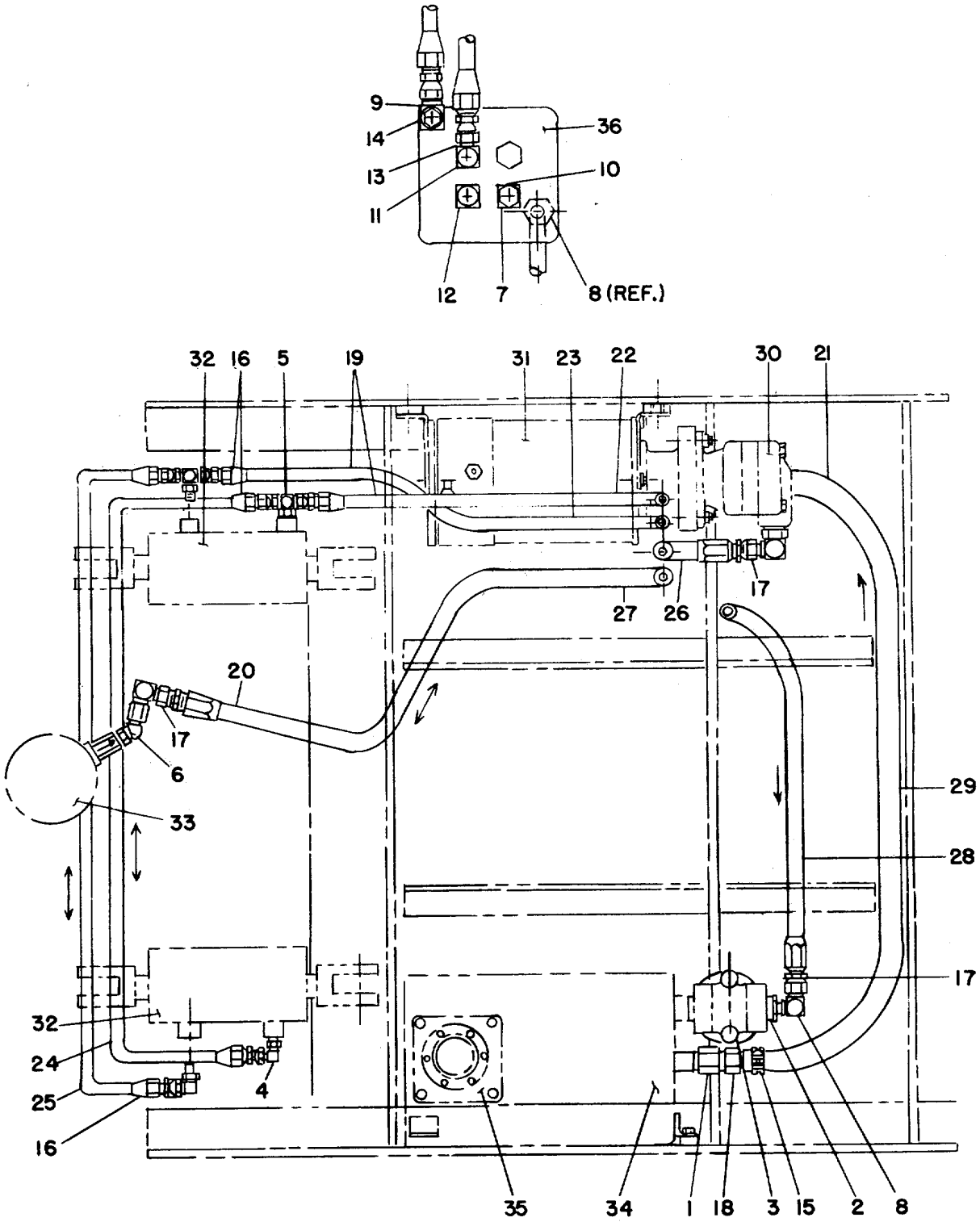



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*Figure 1-4. Hydraulic system*

## CHAPTER 2

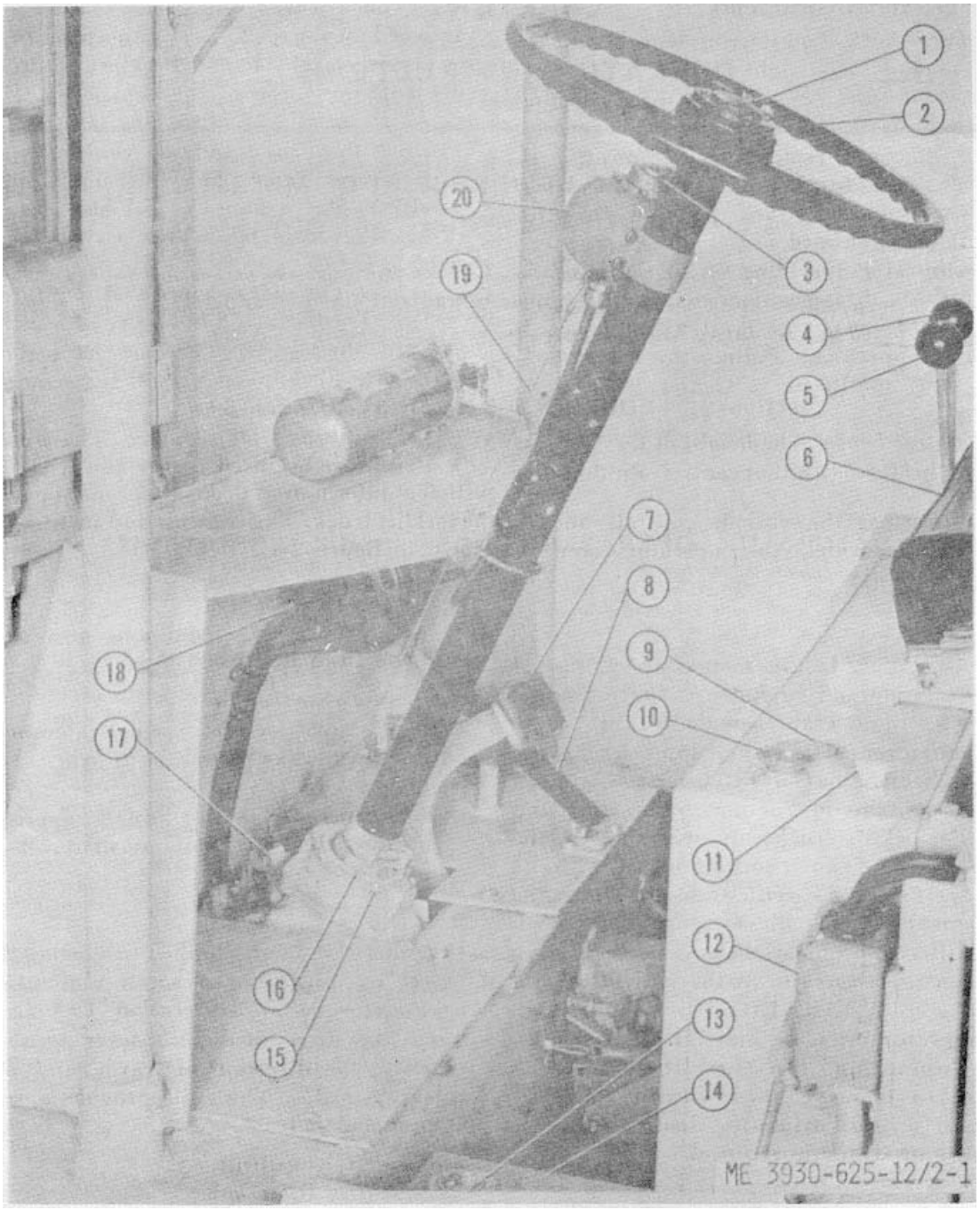
## OPERATING INSTRUCTIONS

### Section I. SERVICE UPON RECEIPT OF MATERIAL

**2-1. Inspecting and Servicing the Equipment**
Instructions for inspecting and servicing the equipment are provided in Preventive Maintenance Checks and Services tables 3-1 (operator) and 4-1 (organizational personnel).

### Section II. CONTROLS AND INSTRUMENTS

**2-2. General**
This section describes the various controls and instruments and provides the operator/crew sufficient information to ensure proper operation of the forklift truck. The controls and instruments are shown in figure 2-1.




1. Horn button
2. Steering wheel
3. Directional shift lever
4. Lift control lever
5. Lift control lever
6. Seat
7. Brake pedal
8. Accelerator pedal
9. Hour meter
10. Emergency- stop switch
11. Light switch
12. Battery cable receptacle
13. Breather cap
14. Oil reservoir
15. Lock nut
16. Adjustment nut
17. Steering gear assembly filler plug
18. Horn
19. Return-to-neutral cable
20. Directional control switch

*Figure 2-1. Controls and instruments.*

**2-3. Controls and Instruments**

*a. Steering Wheel.* The steering wheel controls vehicle movement to the right or left.

*b. Directional Shift Lever* This three-position control determines the forward and reverse direction of vehicle movement. Center position is neutral. Forward position (away from operator) allows forward motion. Back position (toward operator) allows backward movement.

*c. Tilt Control Lever.* The tilt of the mast is controlled by this three-position control. Pushing the lever forward causes the mast to tilt forward (away from the operator). Pulling the lever back causes the mast to tilt back. Center position is neutral.

*d. Lift Control Lever.* The height of the forks is controlled by this three-position control. Pulling the lever back raises the forks. Pushing the lever forward lowers the forks. Center position is neutral.

*e. Accelerator Pedal.* Pressure on this foot pedal controls the speed of the vehicle.

*f. Brake Pedal.* Pressure on this foot pedal controls the braking of the vehicle.

*g. Hour Meter.* This instrument indicates the total number of hours of vehicle operation.

*h. Light Switch.* This switch controls the vehicle lights.

*i. Seat.* The seat is connected to a "dead man's" switch. The truck will not move unless the operator is on the seat. The mechanical brake is automatically applied when the operator's weight is removed from the seat.

*j. Emergency Stop Switch.* The button of this switch must be lifted before the truck will move.

## Section III. OPERATION UNDER USUAL CONDITIONS

**2-4. 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 contains instructions on starting and stopping the forklift truck, on operation 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 given procedures to fit the individual job.

**WARNING**

**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 other personnel.**

**2-5. Starting**

*a.* Check that the daily preventive maintenance services (para 3-4 are completed.

*b.* Check that the forklift truck has been lubricated as specified in the current lubrication order.

*c.* Mount the truck and take position in seat.

*d.* Depress brake pedal and hold until ready to move the truck.

*e.* Check that battery connector latch is closed and lift the emergency stop button.

*f.* Pull lift control until forks are two or more inches above the floor.

*g.* Push directional shift lever forward to move truck ahead; pull back to move truck in reverse.

*h.* Release brake pedal and press accelerator pedal and the truck will move.

**2-6. Stopping**

*a.* Remove foot from accelerator pedal.

*b.* Press brake pedal until truck comes to a complete stop.

*c.* Set directional shift lever in neutral position.

*d.* For emergency stop, push down emergency stop button.

**2-7. Plugging**

Plugging is the term applied to slowing down truck travel by providing a small amount of motor braking torque for deceleration. To plug the truck, move the directional shift lever to the position opposite the direction of travel, and depress accelerator pedal. This will provide a soft reverse stopping action.

**2-8. Load Handling**

*a. Picking Up Load.*

(1) Approach load squarely with forks at correct height and spaced to divide load evenly.

(2) Move forward until forks are completely under the load.

(3) Pull back on the tilt control lever and then the lift control lever to raise load.

*b. Moving Load.*

(1) Pull tilt control lever to tilt load toward truck.

(2) Slowly back the truck away from the area.

(3) Using lift control lever, place load at travel height (about I foot).

(4) Move load to desired location.

*c. Depositing Loads.*

(1) Using tilt control lever, set load parallel to floor.

(2) Push lift control lever forward and lower load to floor.

(3) Tilt mast forward slightly and drop forks a little so they can be withdrawn easily.

(4) Slowly back the truck away from the load.

*d. Tier Stacking.*

(1) Position load in front of tiered stack.

(2) Pull tilt control lever back to tilt load slightly to the rear.

(3) Pull lift control lever back to raise load to the desired height.

(4) Drive truck forward until load is above its resting place.

(5) Push lift control lever forward and carefully lower load.

(16) Push tilt control lever forward to lower forks slightly so they can be withdrawn easily.

(7) Slowly back truck away from the load.

## Section IV. OPERATION UNDER UNUSUAL CONDITIONS

### 2-9. General

The instructions in this section are published for the information and guidance of the personnel responsible for the operation of the forklift truck under unusual conditions.

### 2-10. 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 the battery is low on electrolyte, report this condition to the proper authority.

*d.* Lubricate as specified in the current lubrication order.

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

*f.* Wipe exposed areas dry with a clean cloth.

### 2-11. 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.

### 2-12. Operation in Dusty or Sandy Areas

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

*b. Hydraulic System.* Check reservoir oil filler and sump strainer frequently for clogged condition. Wipe dust and dirt from filler access area before removing the sump strainer from the reservoir. Wipe dirt and dust from the cylinder rods and seals frequently as sand and dust are abrasives and can damage the lift and tilt cylinders.

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

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

### 2-13. 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. Check the hydraulic reservoir frequently for condensation. If water is present, remove and clean the return line, hydraulic line oil filter, hydraulic sump strainer, and the hydraulic oil reservoir. Keep the hydraulic reservoir full to avoid condensation. Wipe excess moisture from all external surfaces of the forklift truck.

### 2-14. 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 rust-proofing material. Remove rust immediately and apply paint or oil as applicable.

## CHAPTER 3

## OPERATOR/CREW MAINTENANCE INSTRUCTIONS

### Section I. BASIC ISSUE ITEMS

**3-1. Basic Issue Tools and Equipment**

Tools, equipment, and repair parts issued with or authorized for the forklift truck are listed in appendix C.

### Section II. LUBRICATION INSTRUCTIONS

**3-2. Detailed Lubrication Information**

*a. Lubrication.* For current lubrication order, refer to Army Lubrication Order LO 10-3930-6250-12.

*b. 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 foreign matters to come into contact with the lubricants at any time. Keep all lubrication equipment clean and ready for use.

*c. Cleaning.*

(1) *General.* Keep the forklift truck clean by wiping it regularly with a cloth dampened slightly with an approved nonflammable cleaning solvent (Federal Specification P-D-680) and dry thoroughly. Clean lubrication points and areas around hydraulic reservoir breather cap and filler before lubricating.

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

### Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

**3-3. General**

Defects discovered during operation of the forklift truck 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 or cause injury to the operator if operation were continued.

**3-4. Preventive Maintenance Checks and Services**

Periodic preventive maintenance checks and services are listed in table 3-1.

*Table 3-1. Preventive Maintenance Checks and Services*

| Item Number | Operator | | | W | B-Before operation D-During operation | A-After operation W-Weekly | |
|---|---|---|---|---|---|---|---|
| | Daily | | | | | | |
| | B | D | A | | Item to be inspected | Procedure | Reference |
| 1 | X | | | | Tires | Check for wear and cuts. Remove foreign material. | Refer to direct support personnel for replacement |
| 2 | X | | | | Lift and Tilt Cylinders. | Check for leaks. | Refer maintenance to direct and general support personnel. |
| 3 | | | | X | Master Cylinder | Check fluid level. Add fluid if needed. | (para 3-9). |

*Table 3-1. Preventive Maintenance Checks and Services - Continued*

| Item Number | Operator Daily B | Operator Daily D | Operator Daily A | W | B-Before operation D-During operation A-After operation W-Weekly<br>Item to be inspected | Procedure | Reference |
|---|---|---|---|---|---|---|---|
| 4 | | | | X | Hydraulic Oil Reservoir | Check fluid level. Add fluid if needed. Check for a dirty breather cap strainer or filter screen. | Fill to cover bottom of strainer with mast down. Refer other maintenance to organizational personnel. |
| 5 | X | | | | Lights | Check operation. | Refer maintenance to organizational personnel. |
| 6 | X | | | | Horn | Check operation. | Refer maintenance to organizational personnel. |
| 7 | X | | | | Brakes | Check for strong pressure when brake pedal is pushed | (para 3-8). |
| 8 | X | | | | Lift and Tilt Control | Check for proper lift and tilt operation. | (para 3-11). |
| 9 | X | | | | Controls and Instruments | Check for loose mounting and damage. With unit operating, check for proper operation. | (para 3-6). |

## Section IV. TROUBLESHOOTING

**3-5. Troubleshooting**
Troubleshooting is performed at organization and higher levels.

## Section V. MAINTENANCE OF ELECTRICAL SYSTEM

**3-6. General**
The operator is responsible for checking the proper operation of the hour meter, light switch, emergency stop switch, stoplight switch, headlight, stop and tail light. and the horn assembly. Any defect in operation must be reported to organizational personnel.

*a. Hour Meter.* During operation of the truck, check that hour meter is recording elapsed operating time.

*b. Light Switch, Headlight and Tail Light.* Pull light switch and check that headlight and tail light operate.

*c. Stoplight Switch, and Stoplight.* Depress brake pedal and check that stoplight operates.

*d. Emergency Stop Switch*. With no load and the truck moving slowly, push the emergency stop switch. The truck should immediately stop and power removed from the truck drive.

*e. Horn Assembly.* Press horn button and listen for horn.

## Section VI. MAINTENANCE OF BRAKE SYSTEM

**3-7. General**
The operator is responsible for testing the brake assembly and servicing the master cylinder.

**3-8. Brake Assembly**
Push the brake pedal to test for strong hydraulic pressure. Refer any needed maintenance to organizational personnel.

**3-9. Master Cylinder**
Remove cap and check fluid level. If needed, fill with brake fluid to within 1/4 inch of top. Replace cap. Refer other maintenance to organizational personnel.

## Section VII. MAINTENANCE OF HYDRAULIC SYSTEM

**3-10. General**

The operator is responsible for testing proper operation of the control lever and the servicing of the tilt cylinder chain assembly, lift cylinder, oil breather cap, and oil reservoir.

**3-11. Control Lever Operation.**

Test for proper tilt and lift operation by actuating the tilt and lift controls. Report any defect to organizational personnel.

**3-12. Chain Assembly**

Refer to Army Lubrication Order LO 10-3930-625-12. Report any damage to organizational personnel.

**3-13. Lift and Tilt Cylinders.**

Refer to Army Lubrication Order LO 10-3930-625-12. Check for leaks. Refer maintenance to direct and general support personnel.

**3-14. Hydraulic Oil Reservoir.**

Unscrew cap and check fluid level, adding fluid if needed. Fill to cover bottom of strainer with mast down. Inspect for dirty breather cap strainer. Refer maintenance to organizational personnel.

## CHAPTER-4

## ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

## Section I. SERVICE UPON RECEIPT OF MATERIAL

**4-1. Inspecting and Servicing the Equipment**

*a. Inspecting.*

(1) Inspect the packing list for missing components.

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

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

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

*b. Servicing.*

(1) Service. Perform the daily preventive maintenance services described in paragraph 4-11.

(2) Lubrication. Lubricate the forklift truck in accordance with the current lubrication order (para 3-2).

(3) Battery Service and testing.

*(a)* Test condition of fluid in battery cells with hydrometer.

*(b)* Add distilled water as required.

(c) Recharge battery as required by connecting battery charging receptacle to charging device.

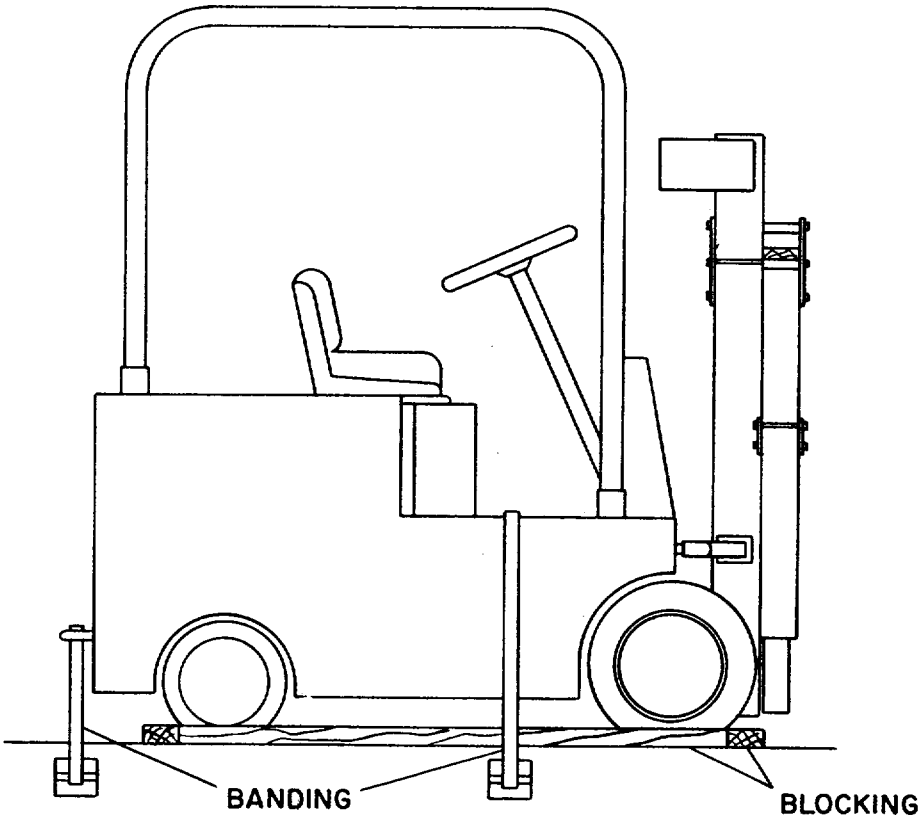
**4-2. Installation**

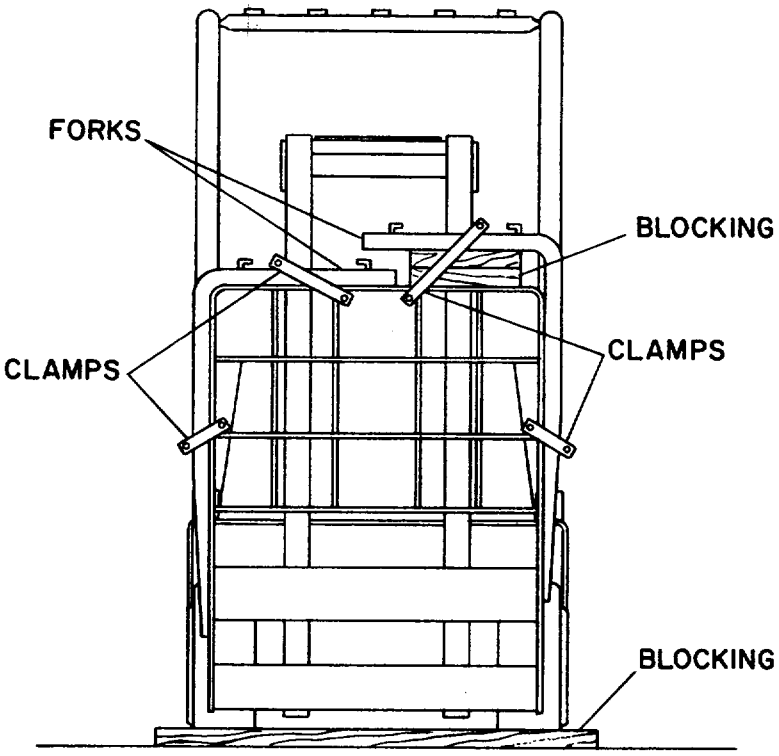
*a. General.* The forklift truck is normally shipped as a complete unit, except for the battery.

*b. Unloading Truck by Lifting.* Remove blocking, strapping, chains and cables that secure the forklift to the carrier. Attach a suitable lifting device and remove the forklift from the carrier. Refer to figure 4-1 for equipment tiedown.

**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. Attach lifting device to lifting eyes only. Failure to observe this warning can result in serious injury or death of personnel.**




ME 3930-625-12/4-1

*Figure 4-1. Equipment tiedown.*

*c. Unloading Truck by Towing.* Remove the blocking, strapping, chains and cables that secure the forklift to the carrier. Attach a suitable towing device and tow the forklift from the carrier. Refer to figure 4-1 for blocking and tiedown removal.

**NOTE**

**The seat brake must be released before the forklift truck is towed from the carrier. If no operator is used release seat brake by placing sufficient weight to depress seat.**

*d. Unpacking the Forklift Truck.*

(1) Removal of protective material. Remove the protective tapes or paper from all openings. Remove all protective canvas or paper weather- proofing from over the forklift.

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

*e. Installing, Servicing and Testing the Battery.*

**WARNING**

**Use a device capable of lifting 3000 pounds or more. Injury to personnel or damage to the battery could result from the use of a weaker lifting device.**

(1) Cover battery with nonconductive material.

(2) Connect a suitable lifting device and lift battery high enough to clear floor of truck.

(3) Push battery as far as possible into battery compartment, then lower battery.

(4) Disconnect lifting device, move it to other side of truck. Then reconnect it to battery.

(5) Lift battery and pull into position.

(6) Remove lifting device.

(7) Connect battery cable connector to connector on truck and lock connector latch.

(8) Test and service battery (para 4-1).

**4-3. Equipment Conversion**

No special conversion procedures are required to adapt the forklift truck to the various designed operations.

## Section II. MOVEMENT TO A NEW WORKSITE

**4-4. Dismantling for Movement**

*a. Local Worksite.* If the worksite is near and the area is level, the forklift truck may be operated under its own power.

*b. Distant Worksite.* Disconnect the battery cable connector before transporting the forklift truck (para 4-2). The forklift truck may then be loaded onto a truck, trailer, or other carrier and secured with blocking, strapping and cables.

**4-5. Reinstallation after Movement**

When the forklift has been transported by truck, trailer, or other carrier, refer to paragraph 4-2 for unloading instructions. After unloading, reconnect the battery cable connector.

## Section III. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

**4-6. Tools and Equipment**

Tools and equipment issued with or authorized for the forklift truck are listed in the basic issue items list, appendix C.

**4-7. Special Tools and Equipment**

No special tools and equipment are required.

**4-8. Maintenance Repair Parts**

Repair parts and equipment are listed and illustrated in the repair parts and special tools list covering organizational maintenance for this equipment (TM 10-3930-625-20P).

## Section IV. LUBRICATION INSTRUCTIONS

**4-9. General**

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

b. For current lubrication order, refer to Army Lubrication Order LO 10-3930-625-12.

**4-10. Bearings**

If dismounted bearings are to be reused, be sure that they are properly lubricated and protected until installation.

## Section V. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

### 4-11. General

*a.* To ensure 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 table 4-1. The item numbers indicate the sequence of minimum inspection requirements. All deficiencies and shortcomings will be recorded, together with the corrective action taken, on DA Form 2404, (Equipment Inspection and Maintenance Worksheet) at the earliest possible opportunity.

*b.* A quarterly interval is equal to three calendar months or 250 hours of operation, whichever occurs first.

*Table 4-1 Preventive Maintenance Checks and Services*

| | Interval | | | | | | B-Before operation D-During operation | -After operation -Weekly | M-Monthly Q-Quarterly |
|---|---|---|---|---|---|---|---|---|---|
| | Operator | | | Org | | | | | |
| | DAILY | | | | | | | | |
| ITEM NUMBER | B | D | A | W | M | Q | ITEM TO BE INSPECTED | PROCEDURE | REFERENCE |
| 1 | X | | | | | X | Lights | Check operation. Replace defective lamp or lamp unit. | (para 4-18). |
| 2 | | | | X | | X | Lift Chain | Check for cracked, broken, or excessive worn links. If any such defects are found replace both chains. | (para 4-44). |
| 3 | X | | | | | X | Lift Cylinder | Check for leaks. | Refer maintenance to direct and general support personnel. |
| 4 | X | | | | | X | Fire Extinguisher | Inspect for broken seal. Check extinguisher for minimum allowable weight and pressure. | |
| 5 | X | | | | | X | Tires | Check for cuts. Remove foreign material. | Refer to direct support personnel for replacement. |
| 6 | X | | | | | X | Tilt Cylinder | Check for leaks or damage. | (para 4-46). |
| 7 | X | | | | | X | Brake Pedal | Check for strong pressure when brake pedal is applied. Check travel. Adjust if necessary. Pressure should increase after 3/8 to 5/8 inch travel. | (para 4-31). |
| 8 | X | | | | | X | Master Cylinder | Check master cylinder and lines for leaks and loose connections. Fill to within ¼ inch of top. Tighten loose connections. Replace leaking master cylinder. | (para 4-32). |
| 9 | X | | | | | X | Pump Motor Brushes | Check for defects. | Refer maintenance to direct and general support personnel. |
| 10 | | | | | X | | Battery | Remove corrosion. Add fluid as needed. Check fluid level.. Add fluid as needed. | (para 4-25). |
| 11 | X | | | | | X | Hydraulic Oil Reservoir | Replace a dirty or damaged breather cap strainer. Clean or replace a dirty or damaged filter screen (Q). | Fill to cover bottom of strainer with mast down. |
| 12 | X | | | | | X | Controls and Instruments | Check for loose mounting and damage. With unit operating, check for proper operation. | (para 4-13). |
| 13 | X | | | | | X | Horn | Check operation. Replace defective horn. | (para 4-19, 4-20). |

**Note. During operation observe for any unusual noise or vibration.**

## Section VI. TROUBLESHOOTING

**4-12. General**

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the forklift truck and its components. Malfunctions which may occur are listed in table 4-2. Each malfunction stated is followed by a list of probable causes of the trouble and the recommended corrective action.

*Table 4-2. Troubleshooting*

| Malfunction | Probable cause | Corrective Action |
|---|---|---|
| 1. Brake pedal goes to floorboard or is spongy. | *a.* No brake fluid. | *a.* Add brake fluid (para 4-32). |
| | *b.* Air in brake system. | *b.* Bleed system (para 4-35). |
| | *c.* Brake line broken. | *c.* Replace line (para 4-34). |
| | *d.* Other causes. | *d.* Refer other causes to direct and general support maintenance personnel. |
| 2. Brakes are dragging (both or one side only). | *a.* Brake line kinked or clogged. | *a.* Replace line (para 4-34). |
| | *b.* Wheel cylinder contaminated. | *b.* Replace wheel cylinder (para 4-33). |
| | c-. Other causes. | *c.* Refer other causes to direct and general support maintenance personnel. |
| 3. Truck pulls to one side when braking. | *a.* Brake lining worn or oily. | *a.* Replace (para 4-31). |
| | *b.* Brake shoes out of adjustment. | *b.* Adjust (para 4-31) |
| | *c.* Brake line kinked or clogged. | *c.* Replace (para 4-34). |
| | *d.* Other causes. | *d.* Refer other causes to direct and general support maintenance personnel. |
| 4. Seat brake does not hold. | *a.* Not enough cable take-up. | *a.* Adjust yoke (para 4-30). |
| | *b.* Other causes. | *b.* Refer other causes to direct and general support maintenance personnel. |
| 5. Failure to drive (forward or reverse). | *a.* Emergency switch not in reset position. | *a.* Reset Switch (para 4-16). |
| | *b.* Seat switch defective. | *b.* Refer to direct and general support personnel. |
| | *c.* Power or control fuses blown. | *c.* Replace fuses (para 4-21). |
| | *d.* Accelerator pedal linkage loose or broken. | *d.* Refer to direct and general support personnel. |
| | *e.* Battery connector not engaged or contacts corroded. | *e.* Clean and engage contacts ( para 4-25). |
| | *f.* Other causes. | *f.* Refer other causes to direct and general support maintenance personnel. |
| 6. Truck will not operate at maximum speed. | *a.* Dragging foot brakes. | *a.* Check brake adjustment (para 4-31 |
| | *b.* Battery low or defective. | *b.* Replace battery (para 4-25). |
| | *c.* Other causes. | *c.* Refer other causes to direct and general support maintenance personnel. |
| Failure to lift and/or tilt. | *a.* Emergency switch not in reset position. | *a.* Reset switch (para 4-16). |
| | *b.* 'Power or control fuses blown. | *b.* Replace fuses (para 4-21). |
| | *c.* Not enough oil in hydraulic oil reservoir. | *c.* Fill oil reservoir (para 4-48). |
| | *d.* Other causes. | *d.* Refer other causes to direct and general support maintenance personnel. |
| 8. Truck does not steer within the within minimum turning radius. | | Refer to direct and general support maintenance personnel. |
| 9. Drive-axle noise on drive. | *a.* Low oil level. | *a.* Add oil (para 4-27). |
| | *b.* Oil too old or wrong type. | *b.* Change oil (para 4-27). |
| | *c.* Other causes. | *c.* Refer other causes to direct and general support maintenance personnel. |

| Malfunction | Probable cause | Corrective Action |
|---|---|---|
| 10. Excessive play in steering wheel. | Loose nut or housing bearing. | Refer to para 4-40. |
| 11. Accelerator pedal does not return. | | Refer to direct and general support maintenance personnel. |
| 12. Stoplight does not work. | *a.* Bulb burned out. | *a.* Replace (para 4-18). |
| | *b.* Other causes. | *b.* Refer other causes to direct and general support maintenance personnel. |
| 13. Lift descends too slowly without load. | *a.* Mast slides dry. | *a.* Lubricate para 3-2. |
| | *b.* Other causes. | 1. Refer other causes to direct and general support maintenance personnel. |
| 14. Lift descends too fast with load. | | Refer to direct and general support maintenance personnel. |
| 15. Horn does not blow. | *a.* No voltage. | *a.* Check that battery connector latch is engaged. Use voltmeter or test lamp to check circuit. |
| | *b.* Fuse blown. | *b.* Replace fuse. |
| | *c.* Defective horn. | *c.* Replace horn. |
| | *d.* Other causes. | *d.* Refer to direct and general support personnel. |

## Section VII. MAINTENANCE OF ELECTRICAL SYSTEM

### 4-13. General

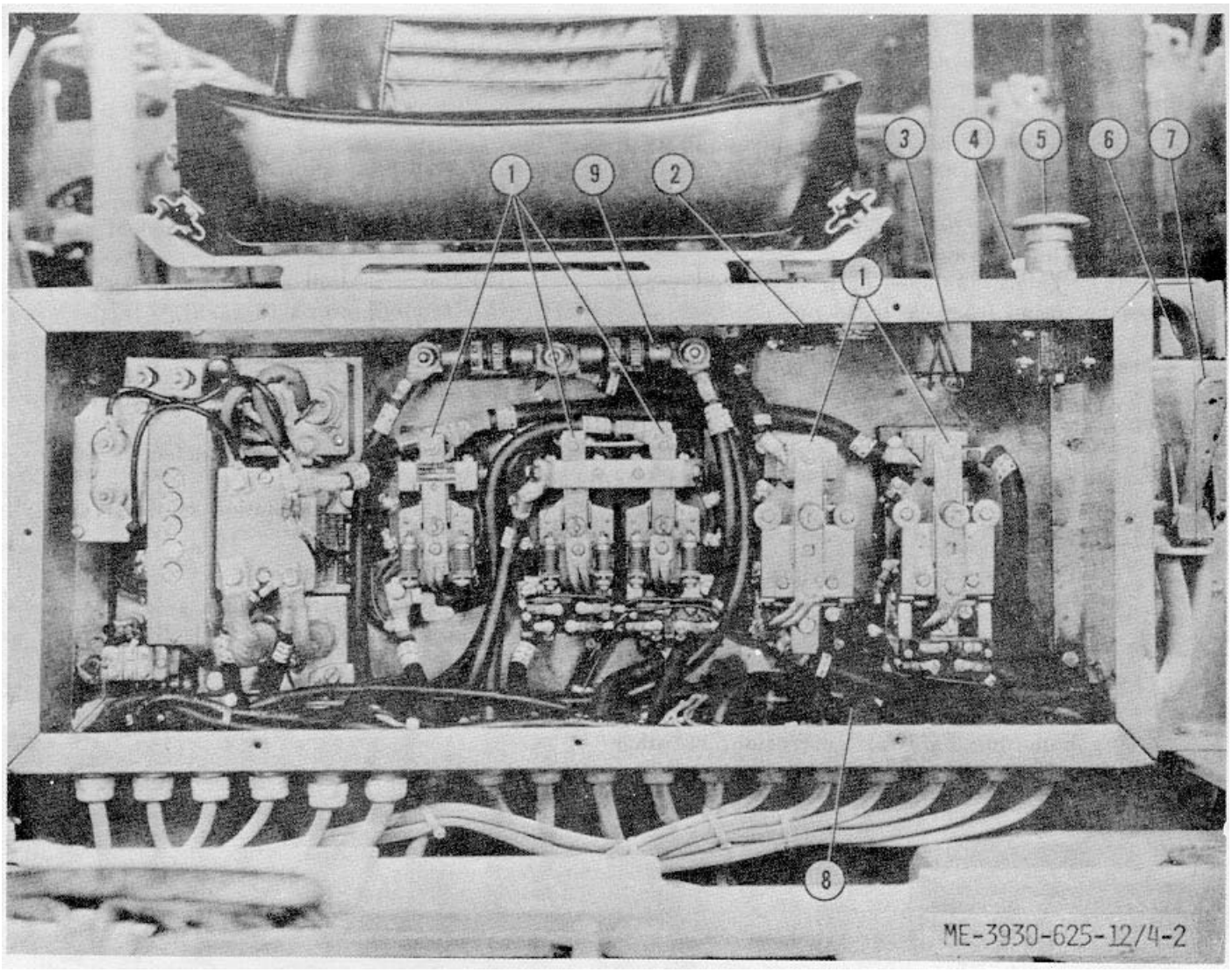
The electrical system contains the hour meter, light switch, emergency stop switch, stoplight switch, lamps, resistors, horn, batteries, wiring harness and their component parts. Paragraphs 4-14 through 4-25 contain adjustment, removal, disassembly, cleaning, inspection, repair, assembly and installation instructions as required for organizational maintenance. Always disconnect the battery connector before working on electrical parts.

### 4-14. Hour Meter

*a.* Removal. Refer to figures 4-2 and 2-1.

(1) Tag and disconnect the electrical leads as necessary.

(2) Remove the three attaching screws, lockwashers and nuts.




1. Relay contacts
2. Seat switch
3. Hour meter
4. Light switch
5. Emergency stop switch
6. Battery connector
7. Latch
8. Fuses, control
9. Fuses, power

*Figure 4-2. Control box.*

*b. Cleaning and Inspection.*

(1) Wipe with a clean dry cloth.

(2) Inspect for broken glass or damaged indicator.

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

(4) Tighten or replace loose or missing mounting hardware.

(5) Replace damaged parts as necessary and clean corrosion from electrical parts.

(6) Replace a damaged or defective meter as necessary.

*c. Installation.* Installation is the reverse of removal.

**4-15. Light Switch**

*a. Removal.* Refer to figures 4-2 and 2-1.

(1) Tag and disconnect electrical leads as necessary.

(2) Unscrew knob from switch.

(3) Remove lock nut located on top of control box.

*b. Cleaning and Inspection.*

(1) Wipe with clean dry cloth.

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

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

*c. Installation.* Installation is the reverse of removal.

**4-16. Emergency Stop Switch**

*a. Removal.* Refer to figures 4-2 and 2-1.

(1) Tag and disconnect electrical leads as necessary.

(2) Remove knob and lock collar.

(3) Remove screws (2 each).

*b. Cleaning and Inspection.*

(1) Wipe with a clean dry cloth.

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

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

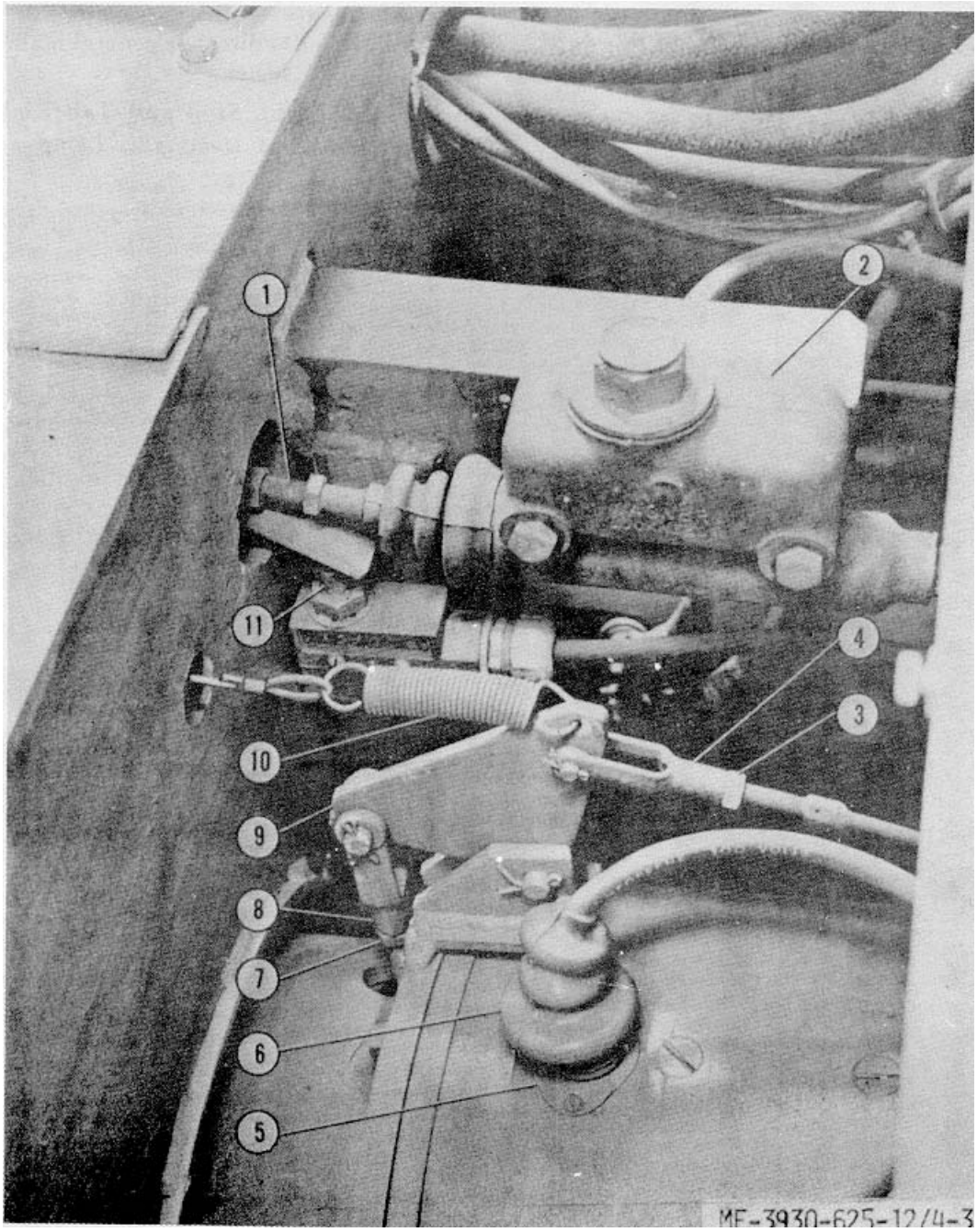
*c. Installation.* Installation is the reverse of removal.

**4-17. Stoplight Switch**

*a. Removal.* Refer to figure 4-3.

(1) Tag and disconnect electrical leads as necessary.

(2) Remove the two attaching bolts, lockwashers, and nuts.




1. Push rod
2. Master cylinder
3. Jam nut
4. Adjustable yoke
5. Thermostat
6. Boot
7. Jam nut
8. Adjustable yoke
9. Brake crank
10. Spring, return to neutral cable
11. Stoplight switch

*Figure 4-3. Stoplight switch, master cylinder, and seat brake linkage.*

*b. Cleaning and Inspection.*

(1) Wipe with a clean dry cloth.

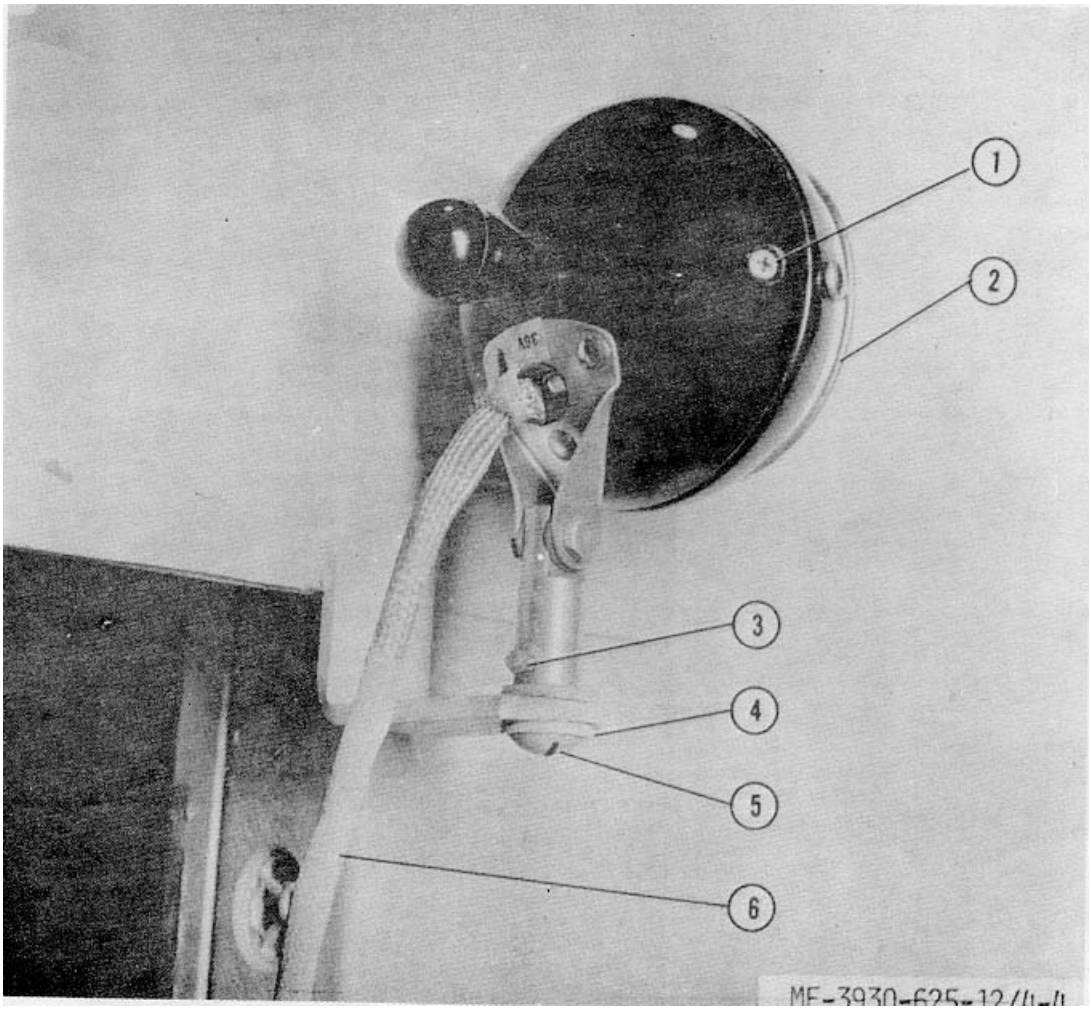
(2) Inspect for breaks, cracks, corrosion or other defects.

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

*c. Installation.* Installation is the reverse of removal. Refer to direct or general maintenance for adjustment of switch.

**4-18. Headlight, Stop and Tail Light**

*a. Removal of Headlight, Lamp and Resistor (fig. 4-4).*




1. Door screw
2. Door and guard
3. Setscrew
4. Washer
5. Screw
6. Cable

*Figure 4-4. Headlight removal.*

(1) Remove door screws (2) and lift off door and guard.

(2) Remove steel spring clip to remove lamp.

(3) Unsolder and remove resistor.

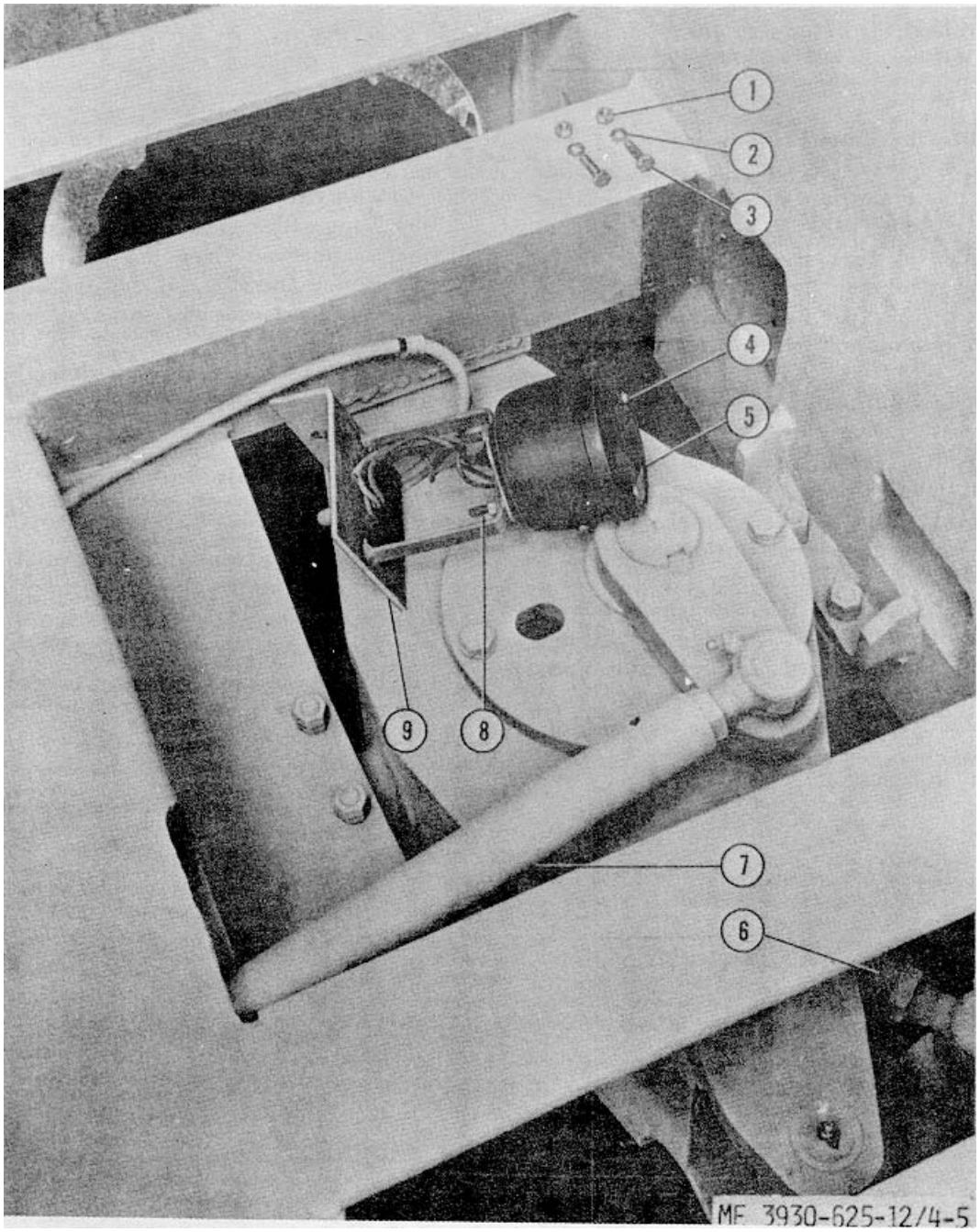
(4) Remove screws, washers, nuts and cable clamps.

(5) Loosen setscrew.

(6) Remove screw and washer and lift headlight back and swivel from bracket.

(7) Tag and remove ends of headlight cable.

*b. Removal of Stop and Tail Light (fig. 4-5).*




1. Nut (2)
2. Washer (2)
3. Screw (2)
4. Screw
5. Lens
6. Tie rod (2)
7. Drag link
8. Nut and lockwasher (2)
9. Mounting plate

*Figure 4-5. Tail light assembly.*

(1) Disconnect the battery connector (para 4-25).

(2) Remove the battery compartment covers (para 4-50).

(3) Remove the battery (para 4-25).

(4) Remove the two screws, lockwashers and nuts holding the mounting plate to the vehicle body.

(5) Remove the two screws and the lens.

(6) Remove the stop light and tail light.

(7) Remove the two nuts and lockwashers holding the stop and tail light to the mounting plate.

*c. Cleaning and Inspection.*

(1) Wipe with a clean cloth dampened slightly with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Replace a broken or defective lens or lamp. Tighten or replace loose or missing mounting hardware. Replace a damaged headlight, stop and tail light as necessary.

*d. Installation.* Installation is the reverse of removal.

*e. Test Resistor.* Check lamp resistor for continuity.

**4-19. Horn Button**

*a. Removal.* (figure 2-1). Remove the four screws. Lift the button from the horn assembly.

*b. Cleaning and Inspection.*

(1) Wipe with a clean cloth dampened slightly with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Replace a damaged or defective button.

*c. Installation.* Installation is the reverse of removal.

**4-20. Horn Assembly and Wiring**

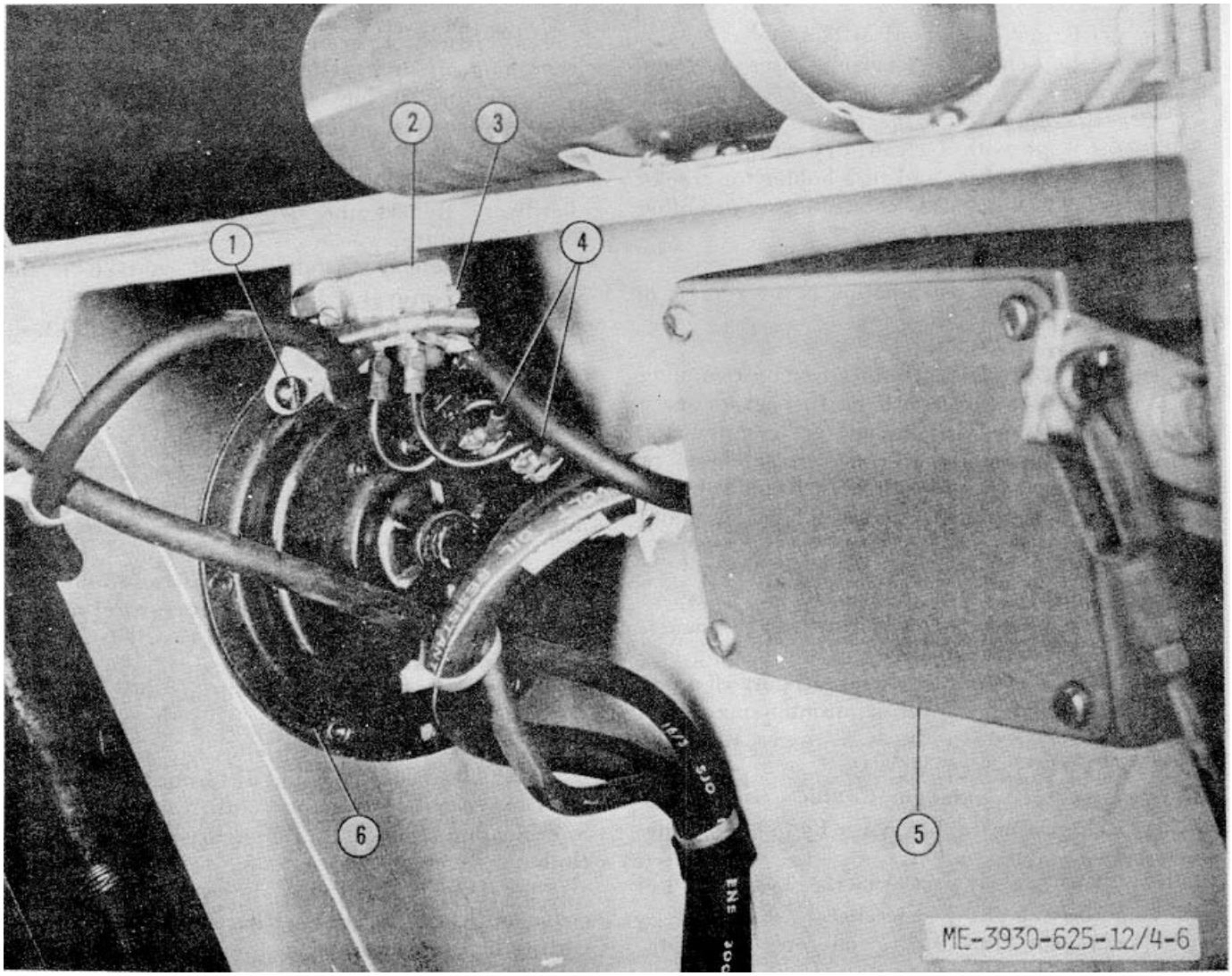
*a. Removal of Horn Assembly and Filter (fig. 4-6).*

(1) Disconnect and tag electrical leads to horn.

(2) Remove the two screws and lift away horn.

(3) Remove cables from filter.

(4) Remove screws and filter.




1. Screw
2. Filter
3. Screw
4. Wire leads
5. Accelerator switch
6. Horn

*Figure 4-6. Horn assembly and accelerator switch.*

*b. Cleaning, Inspection and Test.*

(1) Wipe with a clean dry cloth.

(2) Inspect for frayed wires, worn or torn insulation, corrosion, cracks, dents, loose or missing hardware or other defects.

(3) Test by pressing horn button.

(4) Replace a damaged or defective horn.

(5) Replace defective wiring or filter.

*c. Installation.* Installation is the reverse of removal.

**4-21. Fuses**

*a. Control Fuses.*

(1) *Removal* (fig. 4-2).

*(a)* Remove the control box cover.

*(b)* Pull fuses (8) from holders at bottom of control box.

(2) *Cleaning and inspection.*

*(a)* Wipe with a clean, dry cloth.

*(b)* Inspect fuse and fuse holder for cracks, breaks, corrosion, loose connections, or other defects.

(c) Replace a defective fuse.

(3) *Installation.* Installation is the reverse of removal.

*b. Power Fuses.*

(1) Removal (fig. 4-2).

*(a)* Remove the control box cover.

*(b)* Loosen nuts securing fuses (9) and remove fuses.

(2) *Cleaning and inspection.*

*(a)* Wipe with a clean, dry cloth.

*(b)* Inspect fuse and fuse holder for cracks, breaks, corrosion, loose connections, or other defects.

*(c)* Replace a defective fuse.

(3) *Installation.* Installation is the reverse of removal.

**4-22. Accelerator Switch**

Refer to figure 4-6. Remove the cover by removing the four screws and lockwashers. Inspect for worn or burnt contacts, insulation, or components, corrosion, broken wires or components, loose or missing hardware, or other defects. Replace cover. Report any defects to next higher level of maintenance.

**4-23. Directional Control Switch**

Refer to figure 2-1. Inspect for breaks, dents, cracks, loose or missing hardware, or other defects. Tighten loose mounting hardware. Report all other defects to next higher level of maintenance.

**4-24. Contactors.**

*a. Removal of Contactor Contacts (fig. 4-2).*

(1) Remove control box cover by removing the six screws.

(2) Remove the Contactor contact by removing the nut and lockwasher.

(3) Repeat for each contacts requiring replacement.

*b. Inspection.*

(1) Inspect contacts for wear and pitting.

(2) Inspect armatures for cracks, dents, scorching, or other defects.

(3) Inspect for loose or missing hardware, cracks, dents, scorched areas, frayed wiring, or other defects.

(4) Replace defective contacts. Tighten loose hardware. Report other defects to next higher level of maintenance.

*c. Installation.* Installation of contacts is the reverse of removal.

**4-25. Storage Battery, Connector and Cables**

*a. Removal.*

(1) Remove the battery compartment cover panels (para 4-52).

(2) Release the receptacle latch (fig. 4-2) and remove cable connector.

(3) Cover battery with nonconductive material.

**WARNING**

**Use a device capable of lifting 3000 pounds or more. Injury to personnel or damage to the battery could result from use of a weaker lifting device.**

(4) Connect a suitable lifting device and carefully remove battery.

*b. Cleaning and Inspection.*

(1) Clean corrosion and dirt from battery with an approved cleaning solution (Federal Specification P-D-680). Wipe dry with a clean cloth.

(2) Inspect for cracks, breaks, loose battery posts or interconnecting strips, frayed cables or wiring, or other defects.

(3) Replace defective receptacle or battery.

*c. Test and Service. (para 4-1).*

*d. Installation.* Installation is the reverse of removal.

## Section VIII. MAINTENANCE OF AXLES

**4-26. General**

Maintenance of the axles consists of servicing the differential and inspecting the steering axle assembly.

**4-27. Drive Axle Assembly**

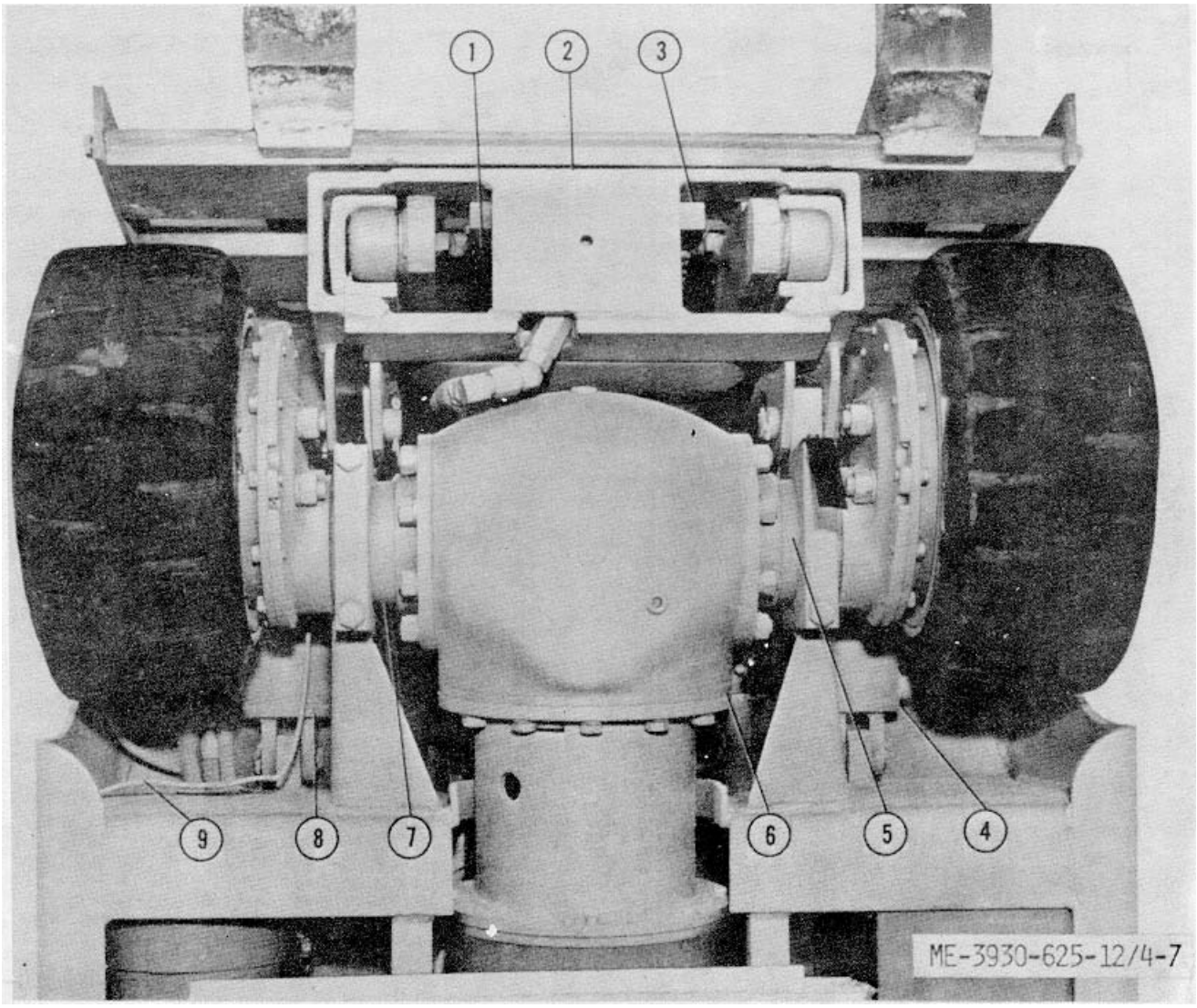
*a. Inspection (fig. 4-7).*

(1) Inspect for cracks, dents, oil or grease leakage, loose or missing hardware, or other defects.

(2) Whenever wheel assemblies are removed, inspect ends of axle for excessive wear, scoring, or other defects.

(3) Report defects to next higher level of maintenance.

*b. Service.* Grease end of axle before replacing wheel assemblies. Refer to Army Lubrication Order LO 10-3930-625-12 for grade and type of lubricant.




1. Lift chain
2. Mast
3. Chain block
4. Tilt cylinder
5. Drive axle
6. Differential
7. Drive axle
8. Tilt cylinder
9. Brake line

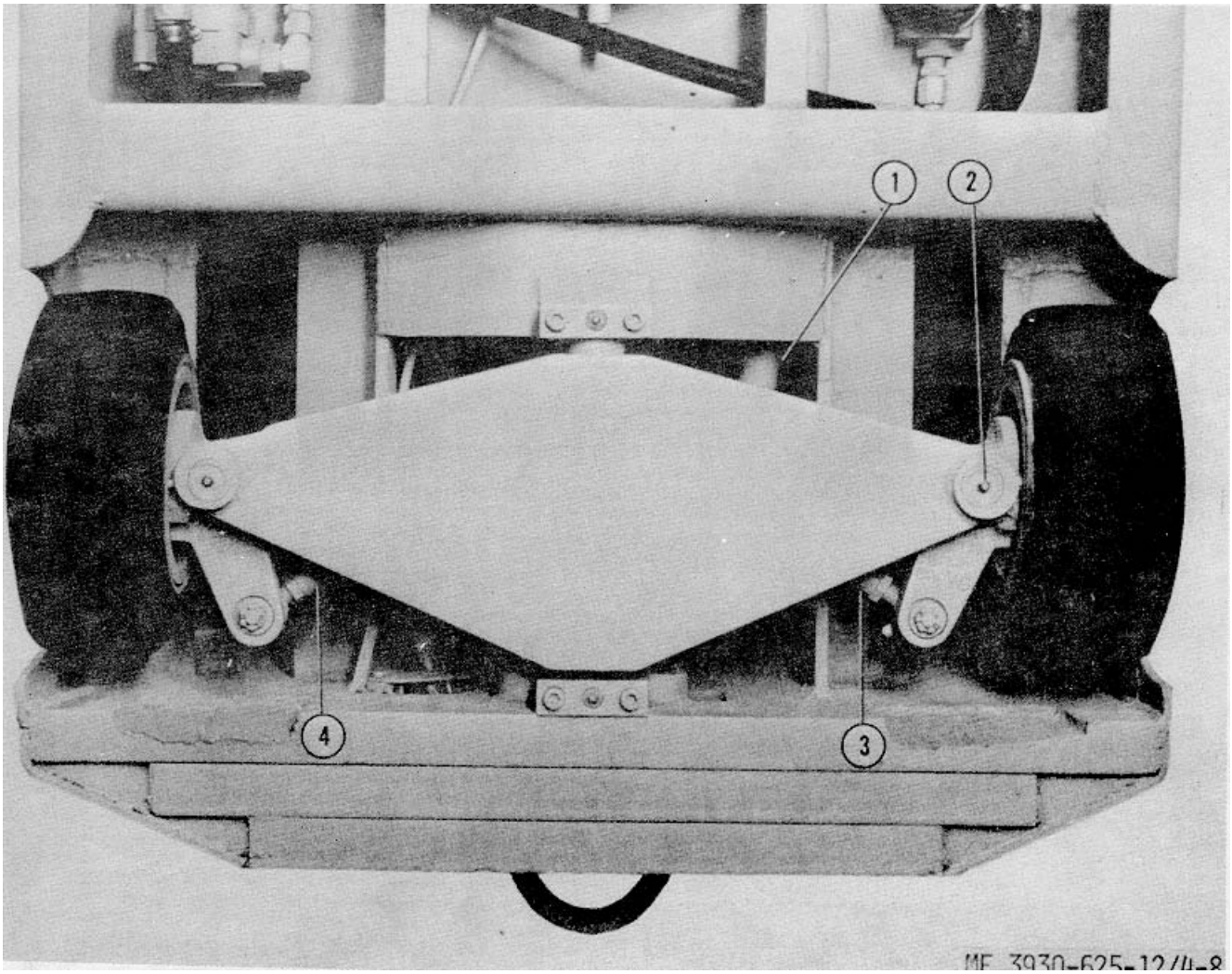
*Figure 4-7. Drive axle and differential.*

**4-28. Differential**

Refer to Army Lubrication Order LO 10-3930-625-12.

**4-29. Steering Axle Assembly**

Refer to figure 4-8 and Army Lubrication Order LO 10-3930-625-12. Inspect for excessive wheel play, up and down and side to side, cracks, dents, loose or missing hardware, missing or defective grease fittings, or other defects. Report defects to next higher level of maintenance.




1. Drag link
2. Fitting
3. Tie rod
4. Tie rod

*Figure 4-8. Steering axle, bottom view.*

## Section IX. MAINTENANCE OF BRAKE SYSTEM

### 4-30. Seat Brake

*a. Removal of Seat Brake Linkage (fig. 4-3).*

(1) Place sufficient weight on seat to release brake.

(2) Remove floor plates (para 4-53).

(3) Remove extension spring (10).

(4) Remove return-to-neutral cable (19 fig. 2-1) from directional control switch (20).

(5) Remove upper adjustable yoke (4 fig. 4-3) from brake crank assembly 19) by removing cotter pin and pin.

(6) Remove yoke from seat actuated rod by removing cotter pin and pin.

*b. Adjustment of Seat Brake Linkage.* Two adjustable yokes (4-8 fig. 4-3) attached to the brake crank assembly permit adjustment of the linkage.

(1) Remove pin and cotter pin, loosen jam nut, and rotate upper yoke (4) to adjust brake operation by the seat. The brake should operate when there is no weight on the seat and release when weight is placed on the seat. With weight on seat and return- to-neutral cable (19 fig. 2-1) removed, there will be just a little slack in the seat brake cable.

(2) Remove pin and cotter pin, loosen the jam nut, and rotate lower yoke (8 fig. 4-3) to adjust brake shoe position.

*c. Cleaning and Inspection.*

(If Clean with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

(2) Inspect for worn cable, breaks, cracks, or other defects.

(3) Replace defective parts as necessary.

*d. Installation.* Installation is the reverse of removal. With seat down and directional control switch in either forward or reverse, there should be very little slack when the spring is attached to the brake crank assembly. Adjust the linkage after installation.

**4-31. Service Brakes**

*a. Removal of Shoe Assembly (fig. 4-9).*

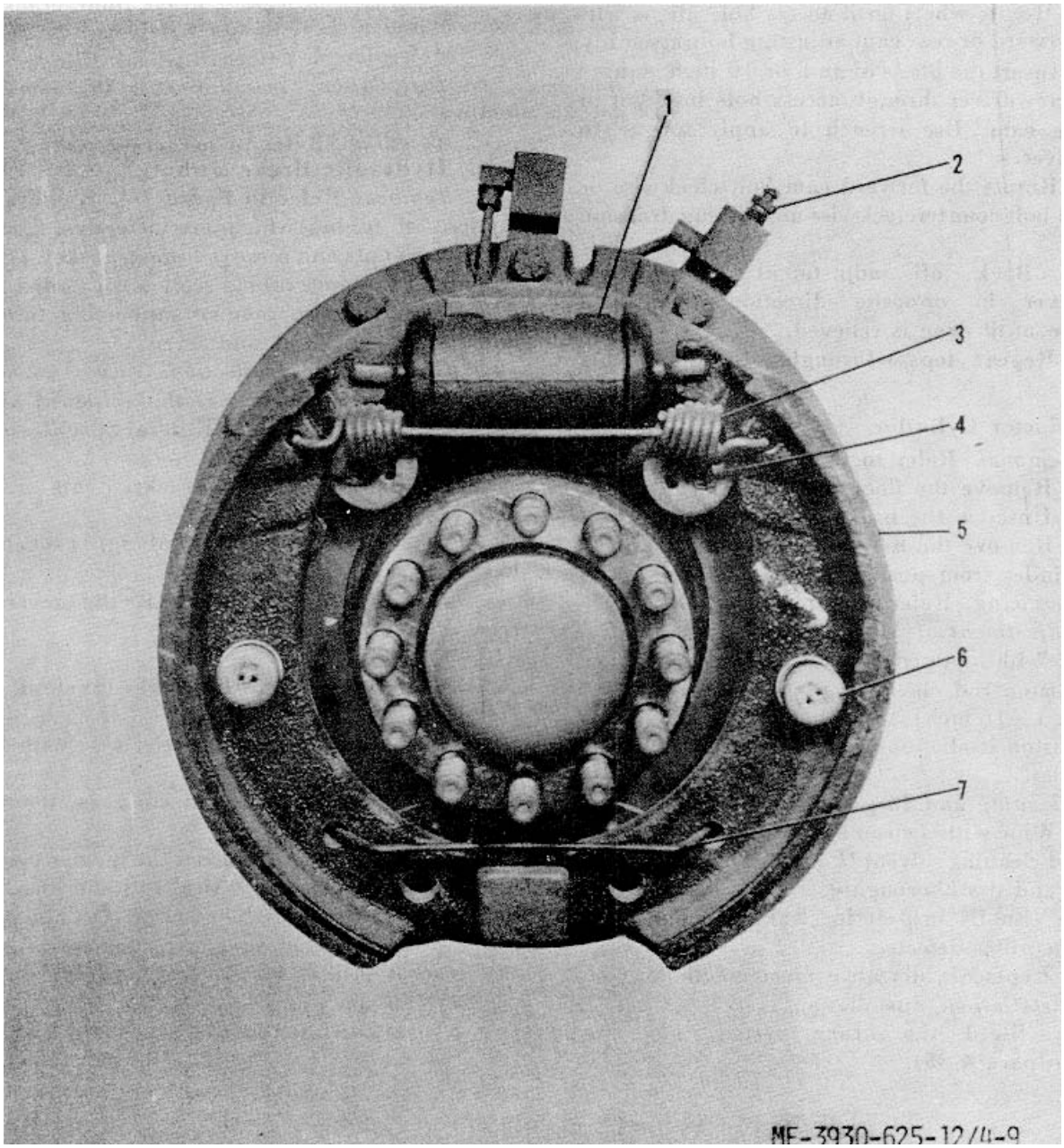
(1) Remove wheel (para 4-37).

(2) Remove return spring.

(3) Remove retainers, springs and washers.

(4) Remove brake shoes.

(5). Remove retainer spring.




1. Wheel cylinder
2. Bleed valve
3. Shoe return spring
4. Cam adjusting bolt assembly
5. Brake shoe
6. Retaining spring and washers
7. Retainer spring

*Figure 4-9. Service brakes.*

*b. Cleaning and Inspection.*

(1) Wipe with clean dry cloth.

(2) Inspect brake drum for scoring.

(3) Inspect shoe assembly for wear. Replace brake shoes if lining is glazed, grease or oil soaked, or if lining thickness is less than 1/8 inch.

*c. Installation. Installation is the reverse of removal.*

*d. Adjustment of Brake Shoe.*

(1) Remove access plug from wheel and drum assembly.

(2) Depress brake pedal, apply pressure to center the brake shoes, then release pedal.

(3) Rotate wheel until access hole aligns with either forward or rear cam adjusting bolt assembly.

(4) Insert the blade of an 8 or 10 inch, square shank screwdriver through access hole into slot in adjusting cam. Use wrench to apply torque to screwdriver.

(5) Rotate the forward cam bolt clockwise or rear cam bolt counterclockwise until lining drags on drum.

(6) Back off adjustment by turning screwdriver in opposite direction, increasing clearance until drag is relieved.

(7) Repeat steps 3 through 6 to adjust other shoe.

**4-32. Master Cylinder**

*a. Removal. Refer to figure 4-3.*

(1) Remove the floor plate (par 4-53).

(2) Unscrew the brake line coupling.

(3) Remove the two bolts, nuts and washers. Pull cylinder from push rod.

*b. Servicing. Refer to paragraph 3-9.*

*c. Adjustment of Master Cylinder Piston Rod Travel.* With foot pedal in fully upward position, adjust piston rod clevis so that slight free travel (approx. 1/16 inch I is possible with no movement of the piston itself. (observe piston travel through filler hole).

*d. Cleaning and Inspection.*

(1) Wipe with a clean cloth dampened with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

(2) Visually inspect for leaking brake fluid, cracks or other defects.

(3) Replace a defective master cylinder.

*e. Installation.* Installation is the reverse of removal. Bleed the brake system after installation(para 4-35).

**4-33. Wheel Cylinder**

*a. Removal. Refer to figure 4-9.*

(1) Remove the brake return spring.

(2) Remove the push rods.

(3) Unscrew the hydraulic line fitting.

(4) Remove the three bolts and washers holding the cylinder to the back plate.

*b. Cleaning and Inspection.*

(1) Wipe metal parts with a clean cloth dampened with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

(2) Inspect for leaking brake fluid, cracked or worn cylinder caps, or other defects.

(3) Replace a defective wheel cylinder.

*c. Installation.* Installation is the reverse of removal.

*d. Bleeding.* Refer to paragraph 4-35.

**4-34. Hydraulic Brake Tubing**

*a. Removal.* Refer to figure 1-4. Remove only sections of tubing which are defective. Unscrew flared tube nuts and remove tubing, gasket, adapter and nut. To remove tubing section connected to left wheel cylinder, also remove supporting tube clip and its attaching nut and screw.

*b. Cleaning and Inspection.*

(1) Wipe with a clean cloth dampened with an approved cleaning solvent (Federal Specification P-D-680)

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

(3) Replace defective tubing, gaskets, or hardware.

*c. Installation.* Installation is the reverse of removal.

**4-35. Bleeding Hydraulic Brake System.**

*a.* Fill the master cylinder (fig. 4-3) with brake fluid.

*b.* Pump foot brake and hold in the down position.

*c.* .At the wheel farthest from the master cylinder, loosen bleeder valve screw (fig. 4-9) and bleed until pedal goes to floor. Tighten screw. Do not release brake pedal while bleeder screw is open.

*d.* Repeat until air is out of line and fluid flows in a steady stream.

*e.* Repeat for other wheel.

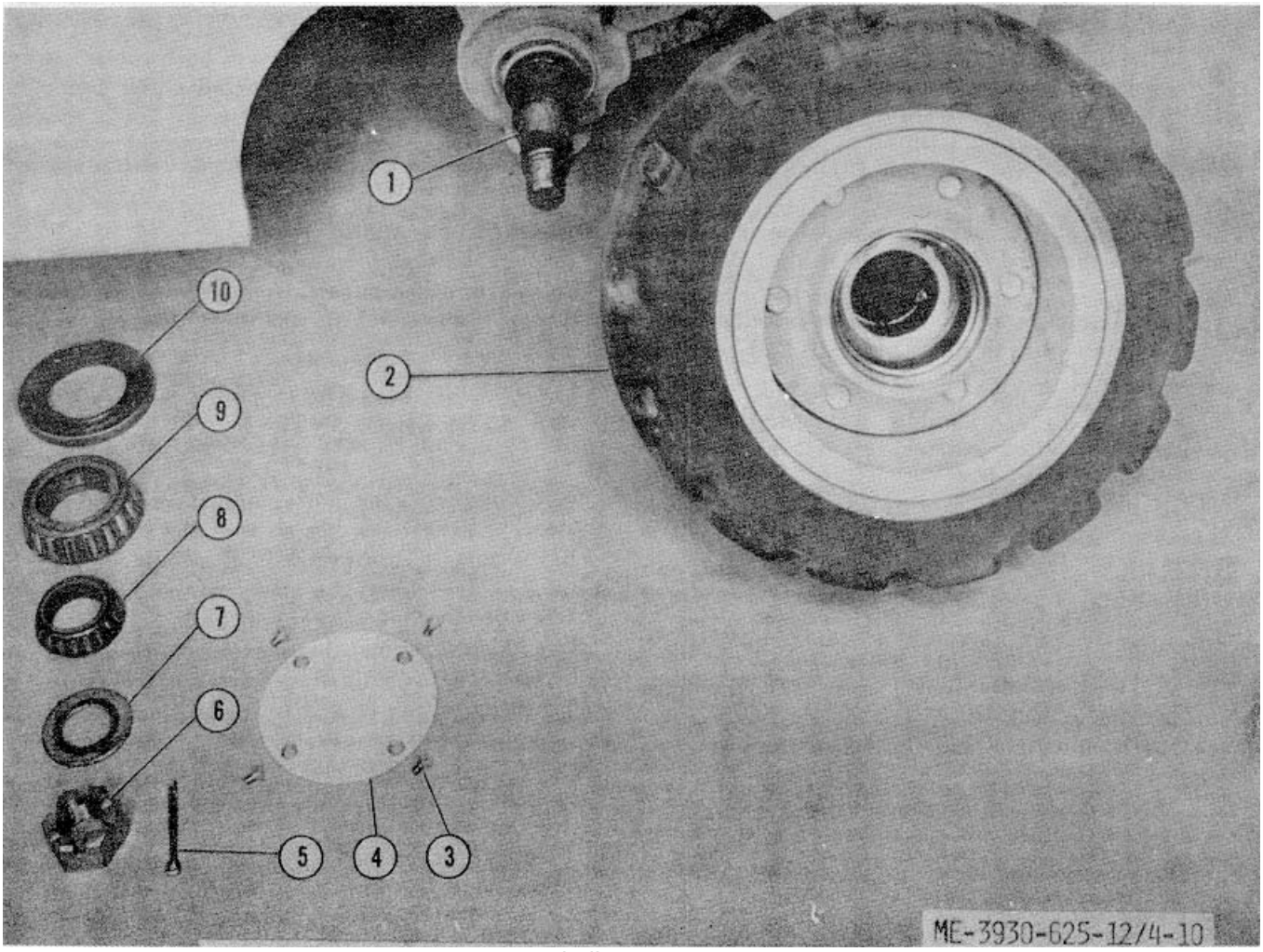
## Section X. MAINTENANCE OF WHEELS

### 4-36. General

The wheel assemblies consist of the wheels, bearings and seals, and the solid tires.

### 4-37. Wheel Assemblies, Bearings, and Seals

*a. Raising of Truck for Wheel Clearance.* To raise the front or rear wheels for wheel or tire replacement, use a jack, a hoist, or another fork lift truck. Place blocking under the frame.




1. Spindle
2. Wheel
3. Screw
4. Hub cover
5. Cotter pin
6. Nut
7. Washer
8. Outer roller bearing
9. Inner roller bearing
10. Seal

*Figure 4-10. Rear wheel assembly, exploded view.*

*b. Removal of Rear Wheel Assembly (fig. 4-10).*

(1) Remove the six wheel bolts and pull wheel from hub.

(2) Remove the four screws and hub cover.

(3) Remove the cotter pin.

(4) Unscrew the slotted nut.

(5) Remove the washer and outer roller bearing.

(6) Remove the hub.

(7) Remove the inner roller bearing, and seal.

*c. Removal of Front Wheel.*

(1) Remove the 12 nuts, washers and dowels.

(2) Pull wheel from hub.

*d. Cleaning and Inspection.*

(1) Clean all parts with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Tighten or replace loose or missing hardware. Replace worn or damaged seals and bearings in rear wheel assembly. Replace damaged or defective wheels as necessary.

*e. Installation.* Installation is the reverse of removal. Lubricate bearings before installation. Torque (lubricated) wheel nuts to 130 ft-lbs.

*f. Adjustment (fig. 4-10).*

(1 Torque steering axle spindle nut 16) to approximately 120 foot pounds then back up counterclockwise to nearest cotter pin slot

(2) Wheel must turn freely without noticeable binding in wheel bearings.

(3) If binding is observed, back off nut (6) one more cotter pin slot and install cotter pin.

**NOTE**

**Procedures for adjustment of drive wheel bearings are the same except for the torque. which is approximately 150) foot pounds.**

**4-38. Tires**

Inspect the tires for cracks, tears, wear, imbedded objects, or other defects. Remove imbedded objects. Report other defects to next higher level of maintenance.

## Section XI. MAINTENANCE OF STEERING SYSTEM

**4-39. General**

The steering system consists of the steering wheel steering gear assembly, drag link, bell crank and housing, and tie rod assemblies.

**4-40. Steering System**

*a. Removal of Steering Wheel (fig. 2-1).*

(1) Remove the four screws and lift horn button from wheel.

(2) Remove nut and lift wheel from steering column.

*b. Service and Adjustment.*

(1) Lubricate in accordance with Army Lubrication Order LO 10-3930-625-12.

(2) Remove plug and add oil to steering gear assembly as required (see fig. 2-1).

(3) Adjust play in steering gear fig. 4-14).

*(a)* The total play in the steering gear assembly should be not less than that indicated by a two-inch total free movement of. the steering wheel. When the total free movement of the steering wheel is three inches or more, adjust the play in the steering gear assembly so that the steering wheel has a total free movement of two inches.

(b) Adjust the play in the steering gear assembly by loosening the locknut (7) and, with a screw driver, adjust the position of the sector gear, by turning the adjusting screw. After setting the adjusting screw, lock it by tightening the nut (7).

*c. Cleaning and Inspection.*

(1) Wipe with clean cloth dampened with an approved solvent (Federal Specification P-D-680) and dry thoroughly.

(2) Inspect for breaks, cracks, nicks, worn or damaged threads or splines, or other defects.

(3) Replace a damaged steering wheel.

*d. Installation.* Installation is the reverse of removal. Torque steering wheel nut to 40-to-50 ft-lbs.

## Section XII. MAINTENANCE OF HYDRAULIC SYSTEM

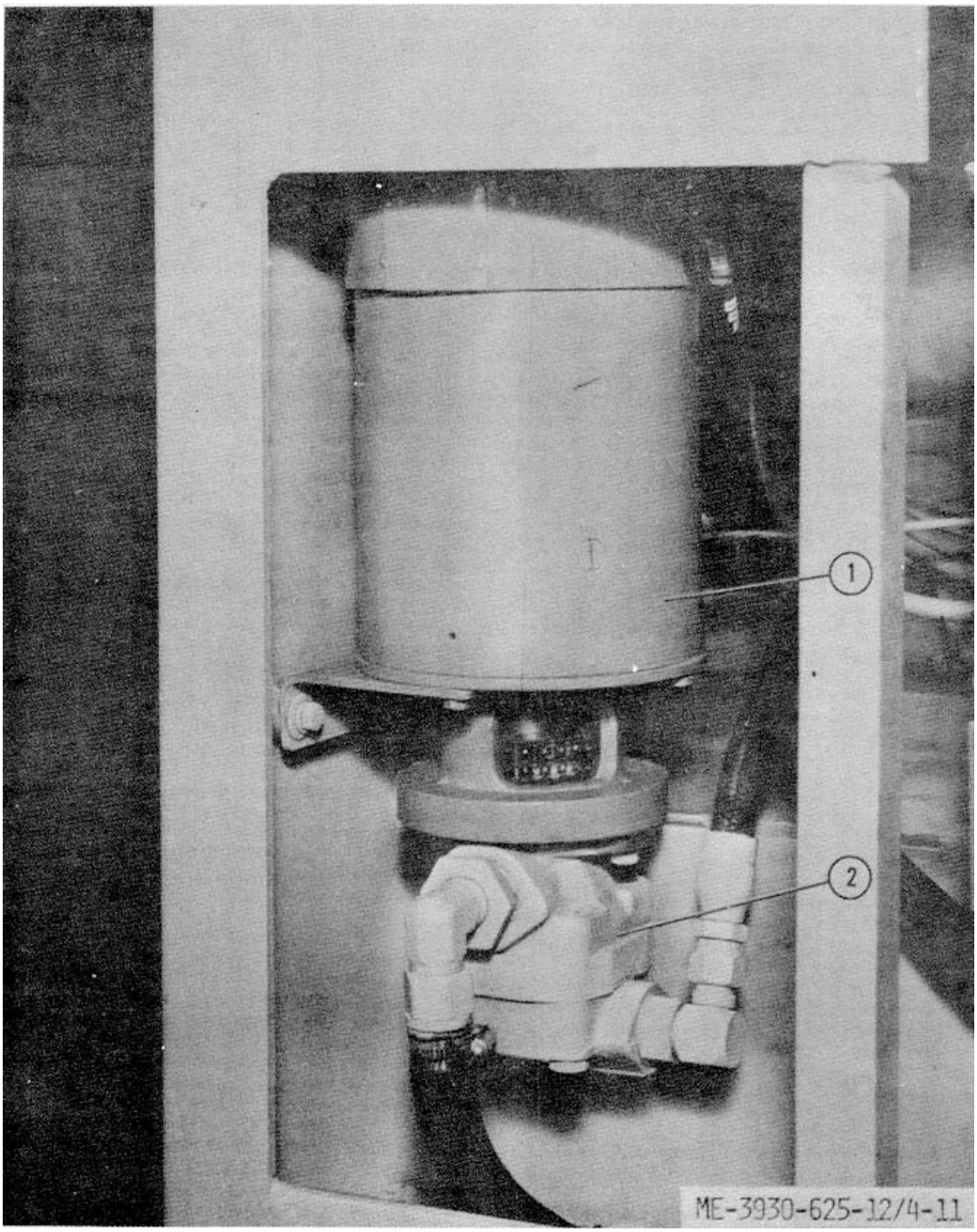
**4-41. General**

The hydraulic system consists of an electric motor, hydraulic pump, directional control valve, lift cylinder, tilt cylinders, hydraulic hoses and lines and the hydraulic fluid reservoir.

**4-42. Hydraulic Pump**

a. Inspect the hydraulic pump (fig. 4-11) for oil leakage, breaks, cracks, dents, loose or missing hardware, or other defects.

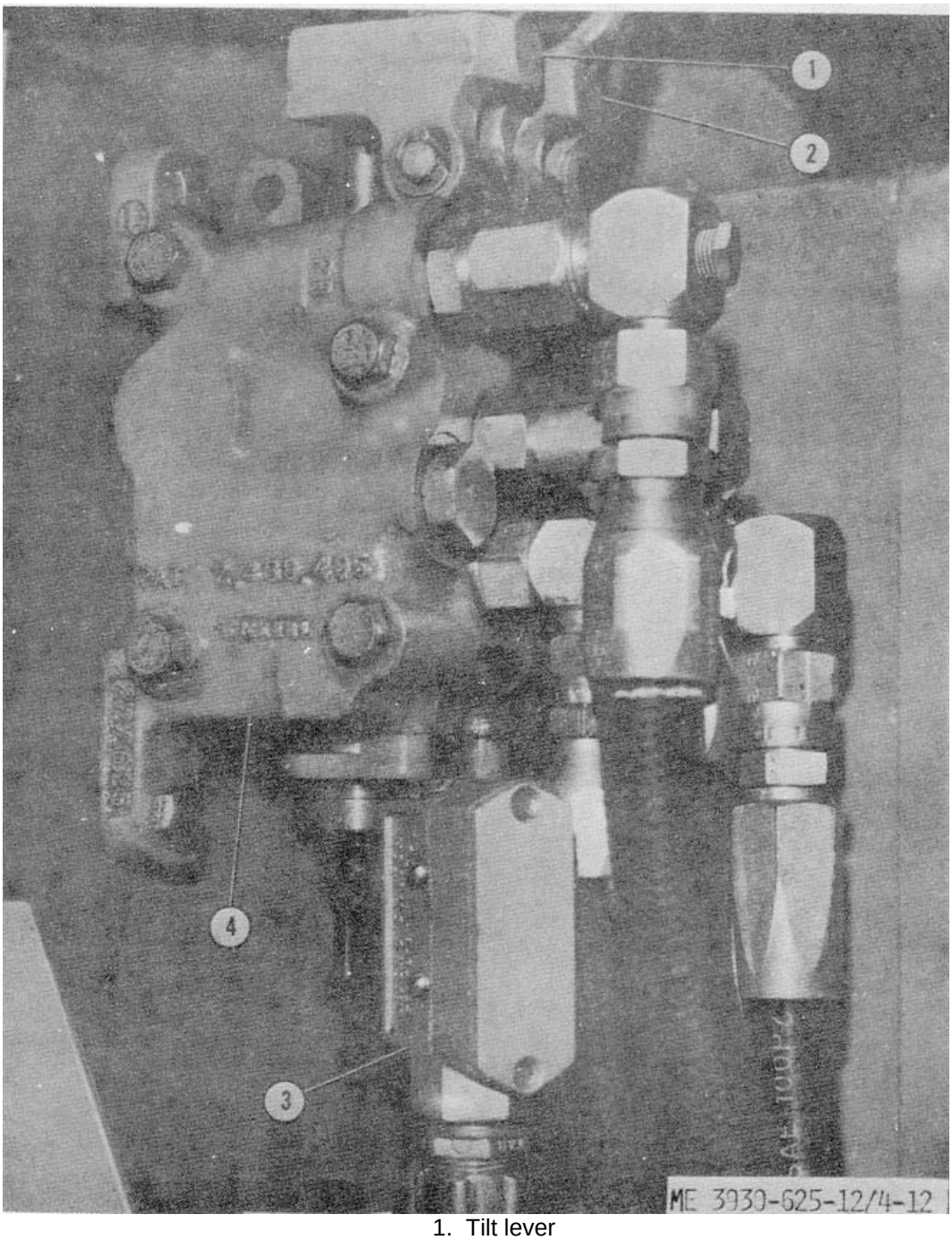
*b.* Wipe with a clean cloth dampened with an approved cleaning solvent (Federal Specification P-D-680).




1. Motor
2. Pump

*Figure 4-11. Hydraulic pump and pump motor.*

**4-43. Control Valve (fig. 4-12).**




1. Tilt lever
2. Lift lever
3. Switch
4. Valve

*Figure 4-12. Control valve.*

*a.* Wipe all parts with a clean cloth dampened with an approved cleaning solvent (Federal Specification P-D-6801 and dry thoroughly.

*b.* Inspect for leaks, breaks, cracks, defective threads, loose or missing mounting hardware, or other defects.

*c.* Tighten or replace loose or missing mounting hardware.

**4-44. Hydraulic Mast**

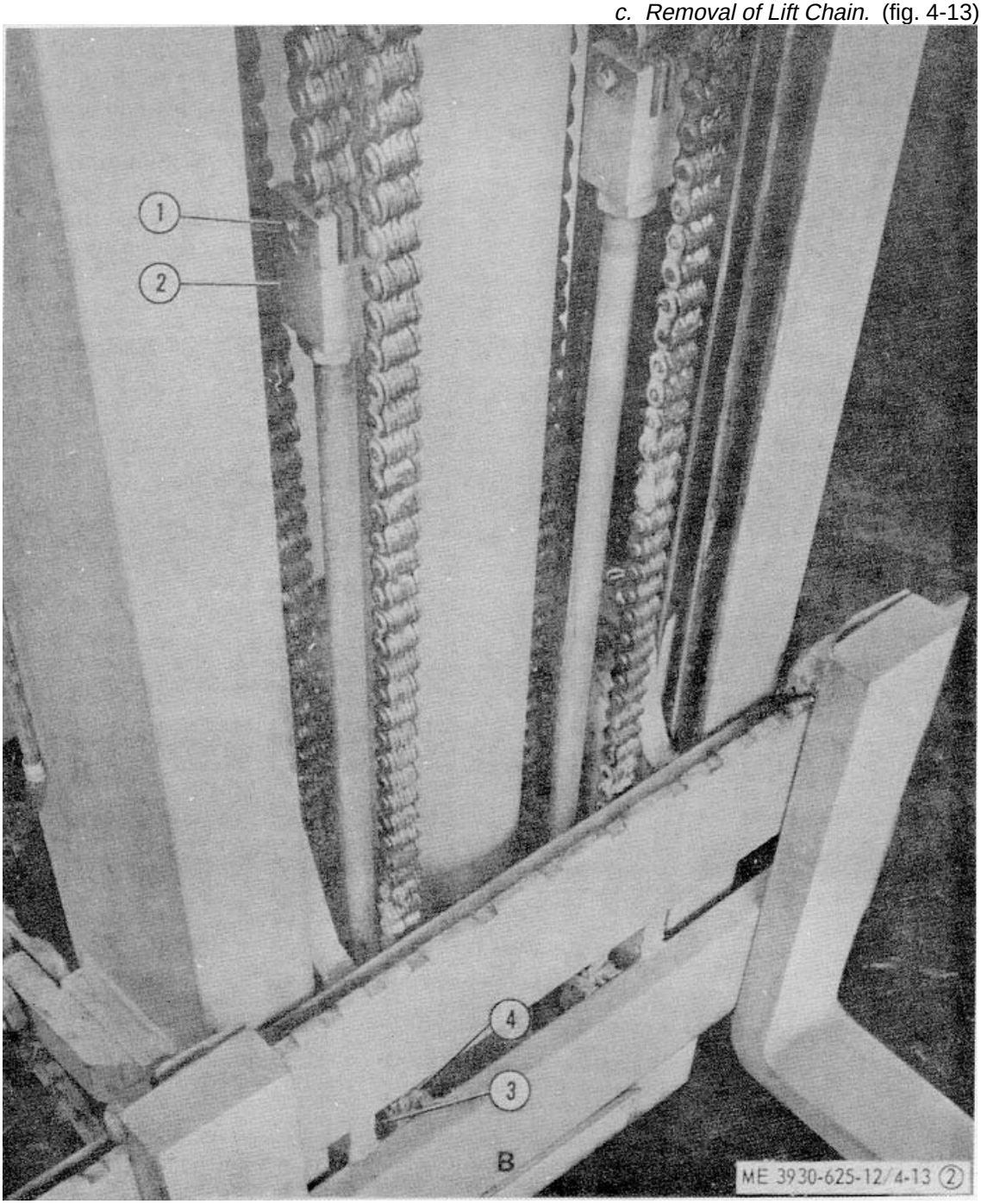
a. Removal of Load Backrest.

(1) Lower backrest to ground.

(2) Remove the upper and lower bolts on each side of the backrest.

*b. Removal of Forks.* Slide forks from carriage assembly.

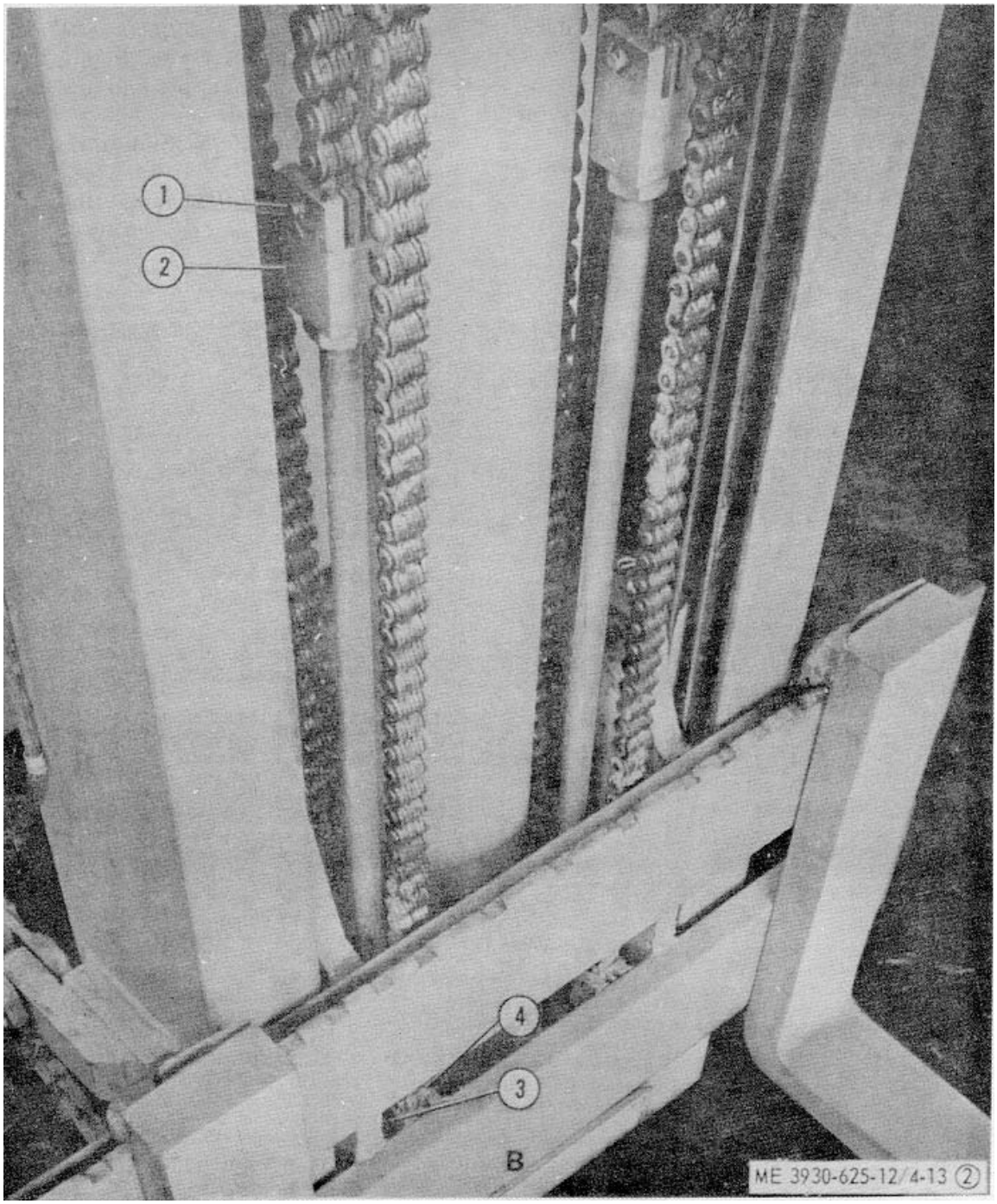
*c. Removal of Lift Chain.* (fig. 4-13).




1. Pin and cotter pin
2. Chain block
3. Pin and cotter pin
4. Chain block

A. 100 inch lift

*Figure 4-13A. Chain removal (sheet 1 of 2).*




1. Pin and cotter pin
2. Chain block
3. Pin and cotter pin
4. Chain block

B. 180 inch lift.

*Figure 4-13B. Chain removal (sheet 2 of 2).*

(1) Lower carriage assembly until forks rest on floor.

(2) Remove cotter pin and pin from upper chain block.

(3) Feed lift chain through roller bearing and lower to ground.

(4) Remove cotter pin and pin from chain block on carriage assembly.

(5) Repeat for second chain.

*d. Cleaning and Inspection.*

(1) Clean with an approved solvent (Federal Specification P-D-680) and dry thoroughly.

(2) Inspect roller assembly for cracks and wear.

(3) Inspect leaf chain for:

*(a) Cracked side plates.* If one cracked plate is found, replace both chains.

**NOTE**

**Checking for cracked plates requires a close visual inspection after carefully cleaning the chain. Most cracks occur at the pitch holes and run out to the edge of the side plates at an angle perpendicular to the pitch line.**

**WARNING**

**Do not attempt any repairs to a lift chain.**

*(b) Elongation due to wear.* Inspect that portion of the chain which flexes over the chain rollers for joint wear. If check indicates elongation due to wear, replace both chains.

**NOTE**

**Elongation due to wear is most easily checked while the chain is on the truck.**

*(c) Tight joints.* Inspect the chain for bent pins, bent plates or peened over plate edges which will result in tight joints. If tight joints are evident, attempt to loosen them by applying cleaning solvent (Federal Specification PD-680) and then flexing the joint. If the tight joint fails to loosen readily, replace both chains.

*e. Installation.* Installation of the chain is the reverse of removal.

*f. Service and Adjustment.*

(1) Lubricate chain and upright assembly as required by Army Lubrication Order LO 10-3930-625-12.

(2) Adjust chain length to equalize the loading on both chains (fig. 4-13).

*(a)* Lower carriage so that forks rest on ground.

*(b)* Loosen jam nut on one upper chain block.

*(c)* Loosen or tighten hex nut as required.

*(d)* Tighten jam nut.

*(e)* Repeat for second chain if necessary.

**4-45. Lift Cylinder**

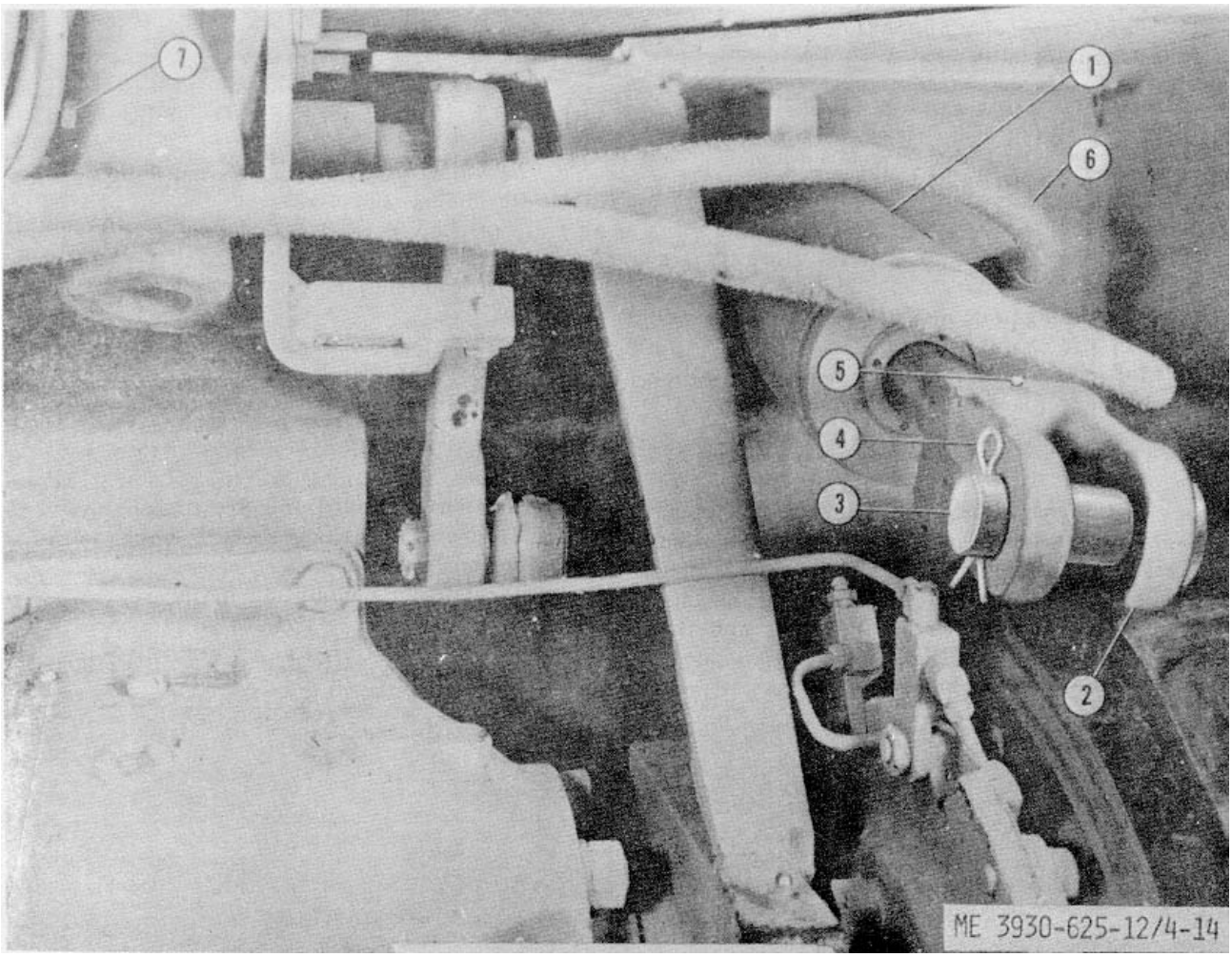
*a.* Clean with an approved solvent (Federal Specification P-D-680) and dry thoroughly.

*b.* Inspect for breaks, cracks, leaks, loose or missing hardware, or other defects.

*c.* Tighten loose mounting hardware.

**4-46. Tilt Cylinder**

*a. Removal* (fig. 4-7 and 4-14).




1. Tilt cylinder (2)
2. Clevis (2)
3. Pivot pin (4)
4. Cotter pin (4)
5. Clevis set screw (2)
6. Hose (4)
7. Steering gear adjustment locknut

*Figure 4-14. Tilt cylinder*

(1) Set mast to vertical position and lower forks to ground.

(2) Disconnect the hydraulic hose assembly.

(3) Remove cotter pin and pin from each end of the tilt cylinder.

*b. Cleaning and Inspection.*

(1) Clean with cloth dampened with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Replace missing hardware.

(4) Replace defective tilt cylinder.

*c. Installation.* Installation is the reverse of removal.

*d. Adjustment* (fig. 4-14).

(1) Adjust tilt cylinder piston rod clevis (2) as required to obtain 3 degrees forward tilt in the mast and 10 degrees rearward tilt on the full rearward tilt.

(2) If excessive twisting of mast is noticed at full forward or rearward position, adjust rod clevis as necessary for correction.

(3) Install pivot pins (3) and tighten set screws (5).

**4-47. Hydraulic Lines and Line Oil Filter**

*a. Hydraulic Lines.* All hydraulic lines on the forklift truck are soft lines, consisting of non-skive hose. The suction hoses are fitted with barb-type couplings and the pressure hoses are fitted with reusable couplings.

(1) *Inspection.* Inspect the hoses for cracks, deterioration, damaged threads, fraying, abrasions and other damage; repair or replace damaged hoses.

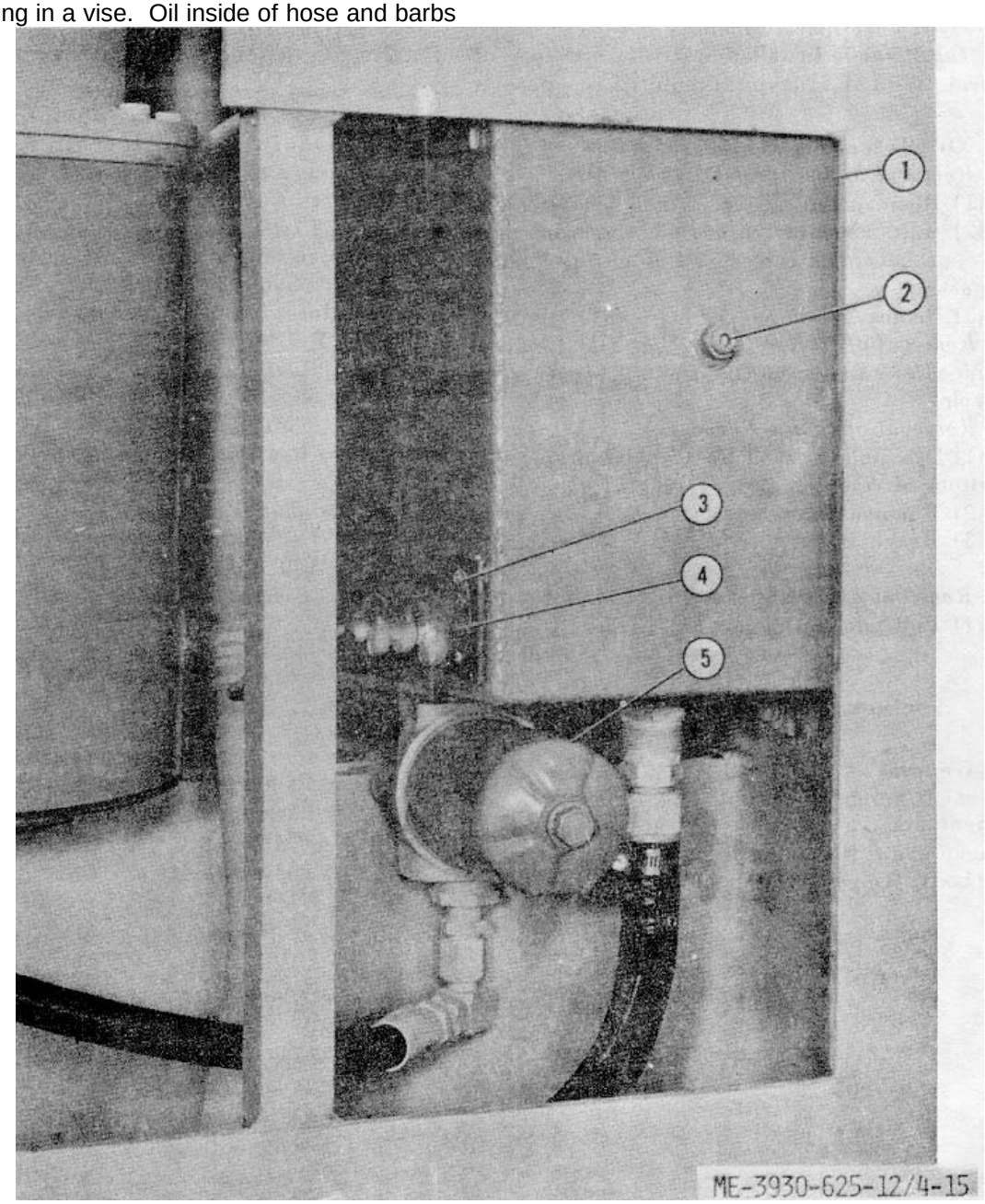
(2) *Repair.*

*(a)* Use old hose to determine length.

*(b)* To assemble barb-type fitting to hose, place fitting in a vise. Oil inside of hose and barbs on outside of nipple. Push hose over barbs as far as it will go and install clamp.

*(c)* To assemble reusable fitting to hose, clamp coupling socket in a vise. Turn hose counter-clockwise into coupling socket until end of hose is seated against bottom of socket, then back off quarter turn. Oil threads on insert and inside of hose. Screw insert clockwise into coupling socket and tighten.

*b. Removal of line oil filter* (fig. 4-15).




1. Oil reservoir
2. Drain plug
3. Thermostat
4. Boot
5. Return Line Filter

*Figure 4-15. Hydraulic reservoir and line filter.*

(1) Remove bolt, washer, cover and spring.
(2) Remove filter element and gasket.

*b. Cleaning and Inspection.*

(1) Wipe with a clean cloth dampened with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

(2) Inspect filter element for dirty, clogged or damaged condition.

(3) Inspect for leaks, breaks, dents, loose or missing mounting hardware, worn, cut or torn tubing, or other defects.

(4) Replace dirty or defective filter element.

(5) Replace defective line.

*c. Installation.* Installation is the reverse of removal. Refill oil reservoir if required (see para 4-48).

**4-48. Oil Reservoir**

*a. Removal of Breather Cap* (fig. 2-1).

(1) Remove the six screws and lockwashers.

(2) Lift assembly from oil reservoir and remove gasket, brass screen and mounting flange, and gasket.

(3) Remove chain connecting cap to adapter.

*b. Removal of Access Cover* (fig. 2-1). Remove the four screws and lockwashers and lift cover from reservoir.

*c. Removal of Sump Filter.*

(1) Drain oil reservoir by removing drain plug at bottom of reservoir. (fig. 4-15).

(2) Remove access cover.

(3) Reach into reservoir and unscrew sump filter.

*d. Removal of Thermostat* (fig. 4-15).

(1) Pull boot away from reservoir.

(2) Unplug the thermostat connector.

(3) Remove the two screws and lockwashers.

(4) Repeat for second thermostat on reservoir.

*e. Cleaning and Inspection.*

(1) Wipe exterior of reservoir with clean cloth dampened with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Inspect brass screen and sump filter for damaged dirty or clogged condition.

(4) Replace defective screen or filter as necessary. Replace gaskets.

**CAUTION**

**Do not operate the pump when the hydraulic oil reservoir is empty. Damage to the pump will result.**

*f. Test of Thermostats.*

(1) Fasten the thermostat and an indicator thermometer to a flat metal surface. The thermometer should be capable of clearly indicating temperatures in the range of 175 degrees F. to 225 degrees F.

(2) Heat the metal surface slowly.

(3) Check that the thermostat opens at 220°F. ±5°F.

(4) Allow the metal surface to cool. Check that the thermostat closes at 200°F ±5°F.

*g. Installation.*

(1) Installation is the reverse of removal.

(2) Fill oil reservoir until bottom of brass screen is covered.

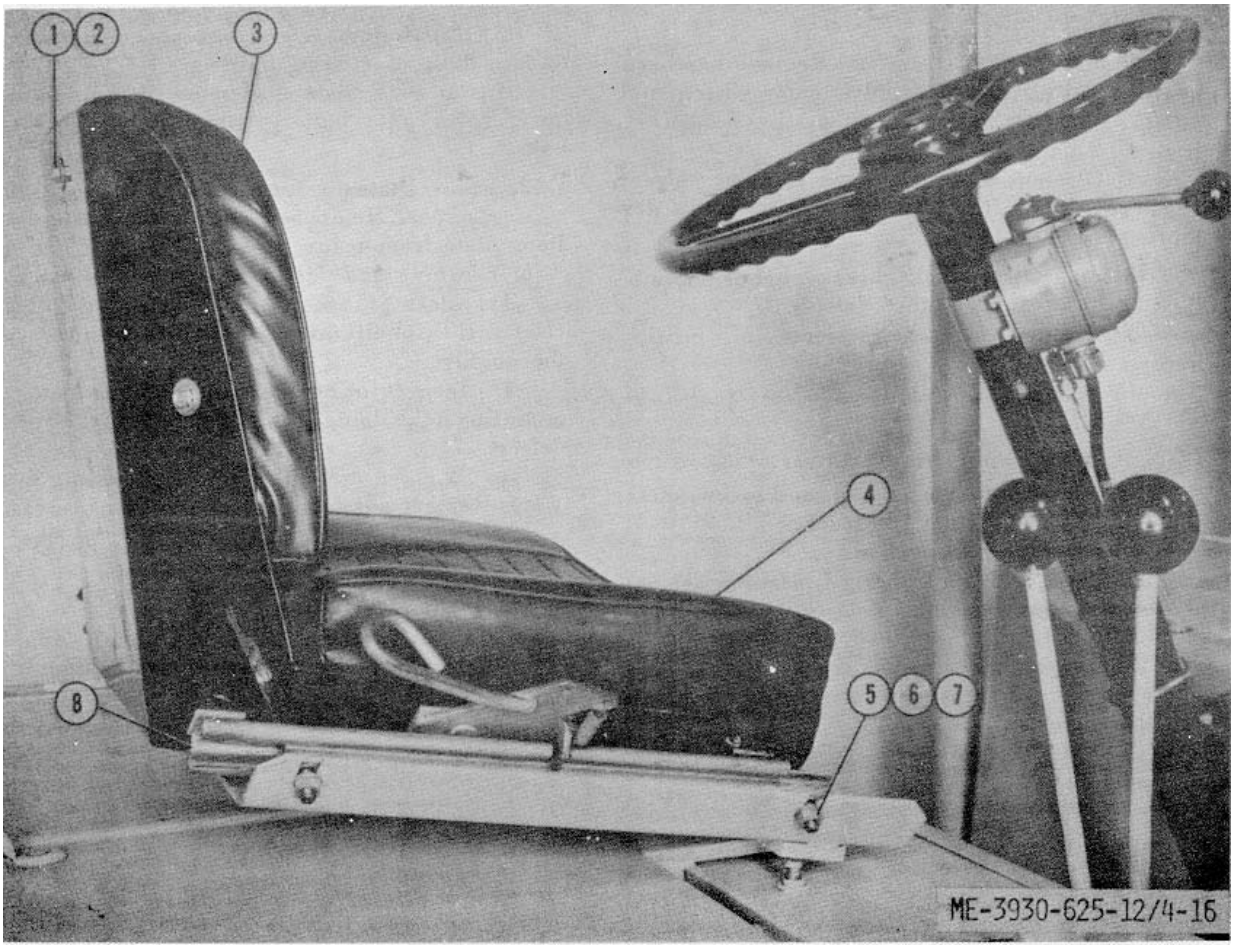
## Section XIII. MAINTENANCE OF BODY, CAB, HOOD, AND HULL

**4-49. General**

The seat is mounted in front of the battery compartment on a spring-type mounting. The overhead guard is a heavy tubular frame mounted to the body. Hinged covers and side panels protect the battery compartment. Floor plates are mounted to the body in the cab compartment.

**4-50. Seat Assembly**

*a. Removal* (fig. 4-16).




1. Screw
2. Lockwasher
3. Back cushion
4. Bottom cushion
5. Screw
6. Washer
7. Nut
8. Slide

*Figure 4-16. Seat assembly*

(1) Remove seat and slides by removing four bolts, lockwashers and nuts.

(2) Remove back seat cushion by removing three screws and lockwashers.

(3) Remove bottom seat cushion by removing four screws and lockwashers.

(4) Remove each slide by removing two screws and nuts.

*b. Cleaning and Inspection.*

(1) Clean metal parts with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

(2) Wipe seat cushions with a clean cloth dampened with water.

(3) Inspect cushions for holes, tears, cracks and wear.

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

(5) Tighten or replace loose or missing hardware. Replace defective slides.

*c. Repair.*

(1) Sew rips or tears in cushions.

(2) Straighten sheet metal bent out of shape.

*d. Installation.* Installation is the reverse of removal.

**4-51. Overhead Guard**

*a. Removal* (fig. 1-1 or 1-2). Remove overhead guard by removing four bolts, lockwashers, and nuts.

*b. Cleaning and Inspection.*

(1) Clean with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Tighten or replace loose or missing hardware.

*c. Installation.* Installation is the reverse of removal.

**4-52. Battery Compartment Cover**

*a. Removal.* Remove bolts (4) and lockwashers, then lift the cover from the truck.

*b. Cleaning and Inspection.*

(1) Clean with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Repair damaged painted areas. Tighten or replace loose or missing hardware.

*c. Installation.* Slide side panel into guide and lower cover onto battery compartment. Tighten bolts.

**4-53. Floor Plates**

*a. Removal.* Remove mounting screws and lift floor plate from truck.

*b. Cleaning and Inspection.*

(1) Clean with an approved cleaning solvent (Federal Specification P-D-680) and dry thoroughly.

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

(3) Tighten or replace loose or missing hardware. Replace a defective floor plate as necessary.

*c. Installation.* Installation is the reverse of removal.

**4-54. Static Drag Strap**

Inspect to verify that strap reaches ground. Replace by removing screw and washer and lifting from bottom of truck.

## APPENDIX A

## REFERENCES

**A-1. Fire Protection**

| | |
|---|---|
| TB 5-4200-200-10 | Hand Portable Fire Extinguishers for Army Users |

**A-2. Lubrication**

| | |
|---|---|
| C91001L | Fuels, Lubricants, Oils and Waxes |
| LO 10-3930-625-12 | Lubrication Order |

**A-3. Painting**

| | |
|---|---|
| TM 9-213 | Painting Instructions for Field Use |

**A-4. Maintenance**

| | |
|---|---|
| TM 750-244-3 | Procedures for Destruction of Equipment to Prevent Enemy Use. (Mobility Equipment Command) |
| TB ORD 651 | Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems |
| TM 38-750 | Army Equipment Record Procedures |
| TM 10-3930-625-20P | Organizational Maintenance Repair Parts |
| TM 10-3930-625-12 | Operator and Organizational Maintenance Manual |
| TM 9-6140-200-15 | Operation and Organizational Field & Depot Maintenance Storage Batteries, Lead Acid Type |
| TM 10-1690A | Industrial Motive Power Storage Batteries for Materials Handling Equipment |

**A-5. Shipment and Storage**

| | |
|---|---|
| TB 740-93-2 | Preservation of USAMEC Mechanical Equipment for Shipment and Storage |
| TM 740-90-1 | Administrative Storage of Equipment |

## APPENDIX B

## MAINTENANCE ALLOCATION CHART

### Section I. INTRODUCTION

**B-1. General**

*a.* This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

*b.* Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

*c.* Section III contains supplemental instructions, explanatory notes and / or illustrations required for a particular maintenance function.

**B-2. Explanation of Columns in Section II**

*a. Group Number. Column (1).* The assembly group is a numerical group assigned to each assembly in a top down breakdown sequence. The applicable assembly groups are listed on the MAC in disassembly sequence beginning with the first assembly removed in a top down disassembly sequence.

b. Functional Group, Column (2). This column contains a brief description of the components of each assembly group.

*c. Maintenance Functions, Column (3).* This column lists the various maintenance functions (A through K) and indicates the lowest maintenance category authorized to perform these functions. The symbol designations for the various maintenance categories are as follows:

C-Operator or crew
O-Organizational maintenance
F-Direct support maintenance
H-General support maintenance
D-Depot maintenance

The maintenance functions are defined as follows:

A -- Inspect. To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.

B -- Test. To verify serviceability and to detect electrical or mechanical failure by use of test equipment.

C -- Service. To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.

D -- Adjust. To rectify to the extent necessary to bring into proper operating range.

E -- Align. To adjust specified variable elements of an item to bring to optimum performance.

F -- Calibrate. To determine the corrections to be made in the readings of instruments or test equipment used in precise measurement. Consists of the comparison of two instruments one which is a certified standard of known accuracy. to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.

G -- Install. To set lip for use in an operational environment such as an emplacement, site, or vehicle.

H -- Replace. To replace unserviceable items with serviceable like items.

I -- Repair. Those maintenance operations necessary to restore an item to serviceable condition through correction of material damage or a specific failure. Repair may be accomplished at each category of maintenance.

J -- Overhaul. Normally the highest degree of maintenance performed by the Army in order to, minimize time work in process is consistent with quality and economy of operation. It consists of that maintenance necessary to restore an item to completely serviceable condition as prescribed by maintenance standards in technical publications for each item of equipment. Overhaul normally does not return an item to like new zero mileage. or zero hour condition.

K -- Rebuild. The highest degree of material maintenance. It consists of restoring equipment as nearly as possible to new condition in accordance with original manufacturing standards. Rebuild is performed only when required by operational considerations or other paramount factors and then only at the depot maintenance category. Rebuild reduces to zero the hours or miles the equipment, or component thereof has been in use.

*d. Tools and Equipment. Column (4).* This column is provided for referencing by code any special tools and test equipment, required to perform the maintenance functions (sec. II)

*e. Remarks. Column (5).* This column is provided for referencing by code the remarks (sec. III) pertinent to the maintenance functions.

**B-3. Explanation of Columns in Section III**

*a. Reference Code.* This column consists of two letters separated by a dash, both of which are references to Section II. The first letter references column (5) and the second letter references a maintenance function, column (3), A through K.

*b. Remarks.* This column lists information pertinent to the maintenance function being performed as indicated on the MAC, section II.

## SECTION II. MAINTENANCE ALLOCATION CHART

| (1) Group No. | (2) Functional Group | (3) Maintenance functions | | | | | | | | | | | (4) Tools and equipment | (5) Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A Inspect | B Test | C Service | D Adjust | E Align | F Calibrate | G Install | H Replace | I Repair | J Overhaul | K Rebuild | | |
| 01 | ELECTRICAL SYSTEM | | | | | | | | | | | | | |
| | Hour meter | O | C | | | | | | O | | | | | |
| | Switch, light | O | C | | | | | | O | | | | | |
| | Switch, emergency stop | O | C | | | | | | O | | | | | |
| | Switch, stoplight | O | C | | | | | | O | | | | | |
| | Lights | | | | | | | | | | | | | |
| | Lamps | O | | | | | | | O | | | | | |
| | Lights Head, stop & tail | O | C | | | | | | O | | | | | |
| | Resistors, light | O | O | | | | | | O | | | | | |
| | Horn | | | | | | | | | | | | | |
| | Button, horn | O | | | | | | | O | O | | | | A |
| | Horn assembly | O | C | | | | | | O | | | | | |
| | Horn wiring | O | | | | | | | O | | | | | |
| | Batteries | | | | | | | | | | | | | |
| | Receptacle, Charging | O | | | | | | | O | F | | | | |
| | Battery, Storage | O | O | O | | | | | O | | | D | | |
| | Cables, battery | O | | | | | | | O | | | | | |
| | Hull or chassis wiring | | | | | | | | | | | | | |
| | Harness, wiring | O | | | | | | | F | O | | | | |
| 02 | FRONT AXLE | | | | | | | | | | | | | |
| | Front axle assembly | | | | | | | | | | | | | |
| | Axle assembly, driving | O | | O | | | | O | F | F | H | | | |
| | Differential | | | | | | | | | | | | | |
| | Differential assembly | F | | O | | | | | F | F | H | | | |
| 03 | REAR AXLE | | | | | | | | | | | | | |
| | Rear axle assembly | | | | | | | | | | | | | |
| | Axle assembly, steering | O | | | O | | | | F | F | H | | | |
| | Steering | | | | | | | | | | | | | |
| | Arm, steering | O | | | F | | | | F | F | | | | |
| | Axle, steering | O | | | | | | | F | F | H | | | |
| 04 | BRAKES | | | | | | | | | | | | | |
| | Handbrakes | | | | | | | | | | | | | |
| | Brake shoe assembly, motor | O | | | | | | | F | F | | | | |
| | Cable, handbrake | O | | O | O | | | | O | | | | | |
| | Control linkage | O | | | O | | | | O | | | | | |
| | Drum brake | O | | | | | | | F | F | | | | |
| | Lever, handbrake | O | | | | | | | O | | | | | |
| | Service Brakes | | | | | | | | | | | | | |
| | Brake assembly | O | C | | O | | | | F | F | | | | |
| | Shoe assembly | O | | | O | | | | O | | | | | |
| | Hydraulic brake system | | | | | | | | | | | | | |
| | Master cylinder | O | | C | | | | | O | F | | | | B |
| | Tube assembly, metal | O | | | | | | | O | | | | | |
| | Wheel, cylinder | O | | | | | | | O | F | | | | C |
| 05 | WHEELS | | | | | | | | | | | | | |
| | Wheel assembly | | | | | | | | | | | | | |
| | Bearing and seals rear wheels | O | | O | O | | | | O | | | | | |
| | Wheel assembly | O | | | | | | | O | F | | | | |

## SECTION II. MAINTENANCE ALLOCATION CHART

| (1) Group No. | (2) Functional Group | (3) Maintenance functions A Inspect | B Test | C Service | D Adjust | E Align | F Calibrate | G Install | H Replace | I Repair | J Overhaul | K Rebuild | (4) Tools and equipment | (5) Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WHEELS - Continued | | | | | | | | | | | | | |
| | Tires | | | | | | | | | | | | | |
| | Tires, solid | C | | | | | | | H | | | | | |
| 06 | STEERING | | | | | | | | | | | | | |
| | Steering assembly | | | | | | | | | | | | | |
| | Bearing, bellcrank | O | | | | | | | F | | | | | |
| | Bellcrank | O | | | | | | | F | | | | | |
| | Drag, link | O | | O | F | | | | F | | | | | |
| | Rod assembly, tie | O | | | O | | | | F | | | | | |
| | Steering gear assembly | O | | O | O | | | F | F | | | | | |
| | Wheel, steering | O | | | | | | | O | | | | | |
| 07 | BODY, CAB, HOOD AND HULL | | | | | | | | | | | | | |
| | Body, cab, hood, hull assemblies | | | | | | | | | | | | | |
| | Covers (Battery compartment) | O | | | | | | | O | | | | | |
| | Overhead guard | O | | | | | | | O | | | | | |
| | Floor | | | | | | | | | | | | | |
| | Plate, floor | O | | | | | | | O | | | | | |
| | Seats | | | | | | | | | | | | | |
| | Seat assembly | O | | | | | | | O | O | | | | |
| 08 | HYDRAULIC LIFT COMPONENTS | | | | | | | | | | | | | |
| | Hydraulic pump | | | | | | | | | | | | | |
| | Pump, rotary, power driven, hydraulic | O | | | | | | | F | F | H | | | |
| | Hydraulic control valve | | | | | | | | | | | | | |
| | Valve, directional control | O | | | | | | | F | F | H | | | |
| | Hydraulic control levers and linkage | | | | | | | | | | | | | |
| | Bracket, control valve | O | | | | | | | O | | | | | |
| | Levers, control | O | C | | | | | | O | | | | | |
| | Hydraulic tilt cylinders | | | | | | | | | | | | | |
| | Cylinder assembly, tilt | O | C | C | | | | | O | F | H | | | |
| | Hydraulic mast column | | | | | | | | | | | | | |
| | Chain assembly | O | | C | O | | | | O | O | | | | |
| | Crosshead | | | | | | | | F | F | | | | |
| | Cylinder assembly, actuating hoist | O | | C | | | | | F | F | H | | | |
| | Forks | O | | | | | | | O | | | | | |
| | Roller assembly | O | | | | | | | F | F | | | | |
| | Upright assembly | O | | O | O | | | | F | F | H | | | |
| | Hydraulic lines & fittings | | | | | | | | | | | | | |
| | Cap, oil breather | O | | C | | | | | O | | | | | |
| | Filter element | O | | C | | | | | O | | | | | |
| | Hoses assembly, rubber | O | | | | | | | O | O | | | | |
| | Tank, oil | O | | C | | | | | F | | | | | |
| | Valve, regulating | O | | | | | | | O | F | F | | | |
| 09 | ELECTRIC MOTORS | | | | | | | | | | | | | |
| | Motor assembly | | | | | | | | | | | | | |
| | Motor assembly travel | F | F | | | | | | F | F | H | | | |
| | Motor assembly, pump | F | F | | | | | | F | F | H | | | |
| | Motor assembly, steering | F | F | | | | | | F | F | H | | | |
| | Brush holders | | | | | | | | | | | | | |
| | Brush, electrical contact | O | | | | | | | F | | | | | |
| | Holder, electrical contact, brush | F | | | | | | | F | | | | | |
| | Endbell | F | | | | | | | F | | | | | |
| | Frame supports & housings | | | | | | | | | | | | | |
| | Bearing, ball anular, drive motors | F | | | | | | | F | | | | | |
| 10 | DRIVE COMPONENTS | | | | | | | | | | | | | |
| | Adapter assembly, gear reduction | O | | O | | | | | F | F | | | | |
| | Accelerator control assembly | | | | | | | | | | | | | |
| | Potentiometer | F | | | | | | | F | | | | | |
| | Control, Accelerator | F | | | | | | | F | F | | | | |

## SECTION II. MAINTENANCE ALLOCATION CHART

| (1) Group No. | (2) Functional Group | (3) Maintenance functions A Inspect | B Test | C Service | D Adjust | E Align | F Calibrate | G Install | H Replace | I Repair | J Overhaul | K Rebuild | (4) Tools and equipment | (5) Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DRIVE COMPONENTS - Continued | | | | | | | | | | | | | |
| | ... Switch, sensitive | O | | | | | | | F | | | | | |
| | ... Contacts electrical | O | | | | | | | F | | | | | |
| | ... Contacts stationary | O | | | | | | | F | | | | | |
| | ... Contacts finger | O | | | | | | | F | | | | | |
| 11 | FUSE AND CIRCUIT BREAKER | | | | | | | | | | | | | |
| | Fuse cartridge | O | | | | | | | O | | | | | |
| | Fuse holder | O | | | | | | | F | | | | | |
| | Link, fuse | O | | | | | | | F | | | | | |
| | Oscillator module | F | F | | | | | | F | | | | | |
| 12 | SWITCHES | | | | | | | | | | | | | |
| | ... Lever, switches | O | | | | | | | F | | | | | |
| | ... Switch, directional control | O | | | | | | | F | F | | | | |
| | Resistor | | | | | | | | | | | | | |
| | ... Resistor, fixed | | O | | | | | | O | | | | | |
| | Relay | | | | | | | | | | | | | |
| | ... Relay, armature | O | F | | | | | F | F | | | | | |
| | ... Contact, relay | O | | | | | | | O | | | | | |
| | ... Relay, thermal | O | O | | | | | | O | | | | | |
| | Rectifier, transformer | | | | | | | | | | | | | |
| | ... SCR assembly | F | F | | | | | F | F | H | | | | |
| | Radio Interference Suppression | | | | | | | | | | | | | |
| | ... Strap, static drag | O | | | | | | O | | | | | | |

## Section III. REMARKS

| Reference code | Remarks |
|---|---|
| A - I | Repair includes installing repair kit. |
| B - I | Repair includes installing repair kit. |
| C - I | Repair includes installing repair kit. |

## APPENDIX C

## BASIC ISSUE ITEMS LIST

## Section I. INTRODUCTION

**C-1. Scope**

This appendix lists items which accompany the forklift truck, or are required for installation, operation, or operator's maintenance.

**C-2. General**

This Basic Issue Items List is divided into the following sections:

*a. Basic Issue Items - Section II.* A list of items which accompany the forklift truck, and are required by the crew/operator for installation, operation, or maintenance.

*b. Maintenance and Operating Supplies-Section III.* A listing of maintenance and (operating supplies required for initial operation.

**C-3. Explanation of Columns**

The following provides an explanation of columns in the tabular list of Basic Issue Items, section II.

*a. Source, Maintenance, and Recoverability Codes (SMR):*

(1) Source code indicates the source for the listed item.

Source codes are:

| Code | Explanation |
|---|---|
| P | Repair parts. Special Tools and Test Equipment supplied from the GSA / DSA, or Army supply system and authorized for use at indicated maintenance categories. |
| P2 | Repair parts. Special Tools and Test Equipment which are procured and stocked for insurance purposes because the combat or military essentialitv of the end item dictates that a minimum quantity be available in the supply system . |
| M | Repair parts. Special Tools and Test Equipment which are not procured or stocked, as such, in the Supply System but are to be manufactured at indicated maintenance levels. |
| A | Assemblies which are not procured or stocked as such, but are made up of two or more units. Such component units carry individual stock numbers and descriptions, are procured and stocked separately and can be assembled to form the required assembly at indicated maintenance categories. |
| X | Parts and assemblies that are not procured or stocked because the failure rate is normally below that of the applicable end item or component. The failure (if such part or assembly should result in retirement of the end item from the supply system. |
| X1 | Repair parts which are not procured or stocked. The requirement for such items will be filled by use of the next higher assembly or component. |
| X2 | Repair parts, Special Tools and Test Equipment which are not stocked and have no foreseen mortality. The indicated maintenance category requiring such repair parts will attempt to obtain the parts through cannibalization or salvage, the item may he requisitioned with exception data, from the end item manager, for immediate use. |
| G | Major assemblies that are procured with PEMA funds for initial issue only as exchange assemblies at DSU and GSU level. These assemblies will not be stocked above DS and GS level or returned to depot supply level. |

(2) Maintenance code indicates the lowest category of maintenance authorized to install the listed item. The maintenance level code is:

| Code | Explanation |
|---|---|
| C | Crew / Operator |

(3) Recoverability code indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are non-recoverable. Recoverability codes are:

| Code | Explanation |
|---|---|
| R | Applied to repair parts, (assemblies and components special tools and test equipment which are considered economically reparable at direct and general support maintenance levels. When the item is no longer economically repairable, it is normally disposed of at the GS level. When supply considerations dictate, some of these repair parts may be listed for automatic return to supply for depot level repair as set forth in AR 710-50. When so listed, they will be replaced by supply on an exchange basis. |
| S | Repair parts, special tools, test equipment and assemblies which are economically reparable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined by a GSU to be uneconomically reparable, they will be evacuated to a depot for evaluation and analysis before final disposition. |
| T | High dollar value recoverable repair parts. special tools and test equipment which are subject to special handling and are issued on an exchange basis. Such items will be repaired or overhauled at depot maintenance activities only. No repair may be accomplished at lower levels. |

| Code | Explanation |
|---|---|
| U | Repair parts. special tools and test equipment Specifically selected for salvage by reclamation units because of precious metal content, critical materials, high dollar value or reusable casings or castings. |

*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. The abbreviation "w/e", when used as a part of the nomenclature, indicates the Federal stock number, includes all armament, equipment, accessories, and repair parts issued with the item. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parenthesis. Repair parts quantities included in kits, sets, and assemblies are shown in front of the repair part name.

*e. Quantity Required for 8 Hours Operation.* This column indicates the estimated quantities required for an average 8 hours of operation.

*f. Notes.* This column indicates informative notes keyed to data appearing in a preceding column.

## Section II. BASIC ISSUES ITEM LIST

| (1) SMR Code | (2) Federal Stock Number | (3) Description Ref no. & mfr Code / Usable on code | (4) Unit of Meas | (5) Qty inc in Unit | (6) Qty furn with equip | (7) Illustration (A) Fig no. | (7) Illustration (B) Item No. |
|---|---|---|---|---|---|---|---|
| PC | 7510-889-3494 | BINDER, Looseleaf..... | ea | | 1 | | |
| PC | 7520-559)-9618 | CASE, Operator and maintenance publication. ..... | ea | | 1 | | |
| PC | 4210-899-2221 | EXTINGUISHER, FIRE..... | ea | | 1 | | |
| | | ARMY TECHNICAL MANUAL TM 10-3930-625-12.. | | | 1 | | |
| | | ARMY LUBRICATION ORDER LO 10-3930-625-12 | | | 1 | | |

## Section III. MAINTENANCE AND OPERATING SUPPLIES

| (1) COMPONENT APPLICATION | (2) MFR PART NO OR NAT'L STOCK NO. | (3) DESCRIPTION | (4) QTY REQ F/INITIAL OPN | (5) QTY REQ F/8 HRS OPN | (6) NOTES |
|---|---|---|---|---|---|
| BRAKE MASTER CYLINDER | | BRAKE FLUID, AUTOMOTIVE: gal can as follows: | | | (1) See C9100-IL for additional data and requisitioning procedure. |
| | 9150-231-9071 (1) | HB | 1 Pt | (2) | (2) See current LO for grade, application and replenishment intervals. |
| DIFFERENTIAL DRIVE AXLE | 9150-577-5844 (1) | LUBRICATING OIL, GEAR: 5 gal drum as follows: GO-90 | 1 qt | (2) | |
| | 9150-257-5440 (1) | GOS | 20 qt | (2) | |
| HYDRAULIC SYSTEM | 9150-265-9428 (1) | OIL, LUBRICATING: 5 gal pails as follows: OE-10 | 1 qt | (2) | |
| | 9150-242-7603 (1) | OES | 20 qts | (2) | |
| LUBRICATION FITTINGS | 9150-190-0904 (1) | GREASE, AUTOMOTIVE AND ARTILLERY: 1 lb. can as follows: GAA | 1 lb | (2) | |

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
*General, United States Army*
*Chief of Staff*

Official:

KENNETH G. WICKHAM,
*Major General, United States Army,*
*The Adjutant General.*

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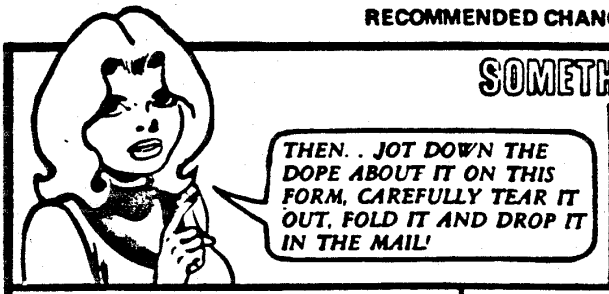


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