TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS LIST FOR STAND, RADIATOR TEST AND REPAIR MODEL E60B NSN 4910-00-505-4786 INLAND MANUFACTURING CO.

HEADQUARTERS, DEPARTMENT OF THE ARMY

JULY 1981

Technical Manual
No. 9-4910-692-14&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 10 July 1981

Operator's, Organizational, Direct Support and General Support Maintenance Manual Including Repair Parts List For STAND, RADIATOR TEST AND REPAIR MODEL E60B (NSN 4910-00-505-4786)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished direct to you.

NOTE

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom this test and repair bench is issued.

Manufactured by: Inland Manufacturing Company
1108 Jackson Street
Omaha, Neb. 68102

Procured under Contract No. DAAA09-78-F-5749

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

INSTRUCTIONS FOR REQUISITIONING PARTS

NOT IDENTIFIED BY NSN

When requisitioning parts not identified by National Stock Number, it is mandatory that the following information be furnished the supply officer.

1 - Manufacturer's Federal Supply Code Number - 92418

2 - Manufacturer's Part Number exactly as listed herein.

3 - Nomenclature exactly as listed herein, including dimensions, if necessary.

4 - Manufacturer's Model Number - Model E60B

5 - Manufacturer's Serial Number (End Item)

6 - Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.

7 - If DD Form 1348 is used, fill in all blocks except 4, 5, 6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

(a) In blocks 4, 5, 6, list manufacturer's Federal Supply Code Number - 92418 followed by a colon and manufacturer's Part Number for the repair part.

(b) Complete Remarks field as follows:
Noun: (nomenclature of repair part)
For: NSN: 4910-00 -505-4786
Manufacturer: Inland Manufacturing Company

Model: E60B
Serial: (of end item)

Any other pertinent information such as Frame Number, Type, Dimensions, etc.

Stand, Radiator Test and Repair

MODELS E60 AND E60B

TABLE OF CONTENTS

Stand, Radiator Test and Repair

MODELS E60 AND E60B

Your new Test and Repair Bench will accommodate radiators and heater cores from automobiles, trucks, tractors and industrial equipment of any size that can be placed on the elevator platform. It is also used to test and repair condensers, and evaporators in automotive and industrial air-conditioning systems.

This equipment is constructed of the highest quality material and is manufactured in accordance with strict quality assurance standards. Developed from vast experience in this field, it is designed to serve you faithfully, economically, and profitably for many years.

Your unit is equipped with an electrically operated drive system for positioning and holding the elevator platform in any vertical position along its point of travel. When the radiator or object to be repaired is placed on the platform, it can be lowered into the tank for testing and raised to a convenient height for repairing with minimum effort.

The information contained in this manual will help you take advantage of all the features built into your machine. Please read the instructions carefully. If you have any questions regarding the installation or operation of this machine, do not hesitate to contact us immediately.

1. SPECIFICATIONS	MODEL E60	MODEL E60B
Overall Dimensions:	68" left to right 38-1/2" front to back 59" high	87" left to right 46-1/2" front to back 59" high
Electrical:	1/4 H.P. Motor 115/60/1 5.2 AMPS	1/3 H.P. Motor 115/60/1 6.2 AMPS
Net Weight:	450 lbs.	600 lbs.

BOTH UNITS

Drain:	2" diameter plug in tank bottom
Gas (Water Column) Pressure:	4"-7" for Natural Gas; 11" for Bottled Gas

NOTE: The following information and procedures apply to both the Model E60 and E60B.

2. INSTALLATION (Refer to Exploded View Drawing)

2.1 To facilitate installation, locate machine near air, gas, water electrical outlets, drain and ventilated area. Place machine approximately one foot from wall and level unit at tank rim with a spirit level.

2.1.1 Connect gas supply line to gas manifold on left side of bench. Connections can be made with 3/8" copper tubing with flare fittings and adapters. Comply with local municipal safety and installation codes.

2.1.1 Connect compressed air to Air Pressure Regulator on left side of bench and to Air Blow Gun connection on right side of bench. All connections can be made using 3/8" copper tubing with flare fittings and adapters.

2.1.3 After completing all gas and air connections, check for leaks by using soap bubble test applied with a soapy brush on all fittings while system is under pressure.

2.1.4 Plug in power cord to 115 volt outlet. The power cord is provided with a third wire for grounding machine in accordance with standard safety practices.

3. INSTALLATION CHECKOUT (Refer to Owner's Manual - Electrically Operated Drive System)

3.1 Operate platform elevator by moving Reversing Switch up or down. Place switch in center position to stop elevator motor. Apply foot brake to stop all elevator platform movement.

3.2 Check drain plug and fill reservoir with fresh water.

4. OPERATION

4.1 Radiator to be repaired may be held in any convenient position by use of the Radiator Back Support Bar, or Adjustable Radiator Bar or Lower Radiator Support.

4.2 When leak testing radiators and heater cores, make sure the inside of these units are completely dry of all moisture. If moisture is present inside radiators and heater cores, the moisture will seal small leaks by surface tension of the moisture molecules. These hidden leaks will cause seepage under operating conditions and result in an unsatisfactory repair. Always apply air pressure to radiator before immersing in tank to keep inside of radiator dry.

4.3 When operating soldering torch, set air pressure regulator to approximately 15 psi when using N-2 type torch tip. Use 40 to 60 psi when using the large N-4 type torch tip.

NOTE: Air pressure regulator controls both soldering torch iar pressure and air test pressure. Most radiators are tested at approximately 15 psi, however, test pressure should be 2 or 3 lbs. above operating pressure. Test heater cores at 30 psi and air-conditioning components at maximum pressure.

5. PREVENTATIVE MAINTENANCE

5.1 Your bench will last indefinitely if given proper maintenance. It is recommended that the tank be drained, cleaned and refilled with fresh water once every week.

5.2 Interior Paint. The inside of the tank has been coated with radiator paint. Once a year or as needed, sand rusted areas and recoat to prevent deterioration and to preserve an attractive appearance.

5.3 Exterior Paint. Exterior surfaces have been coated with Dark Gray Primer Surfacer and finished with abrasive resistant paint. Clean and repaint surfaces as needed to preserve a good finish and an attractive appearance. Always prime bare metal.

5.4 Magnesium Anode

5.4.1 To insure long tank life, equip the Bench with a plug-type magnesium anode. This anode installed in the bottom of the tank retards rust and corrosion by neutralizing Muriatic Acid contamination.

NOTE: Magnesium Anode will dissolve in the process of neutralizing the acid and should be replaced when deteriorated. To replace Magnesium Anode, drain tank and remove 3/4" pipe plug which is attached to anode. Remove and replace anode. Insert plastic support on opposite end.

PARTS LIST

MODELS E60 AND E60B TEST AND REPAIR BENCHES

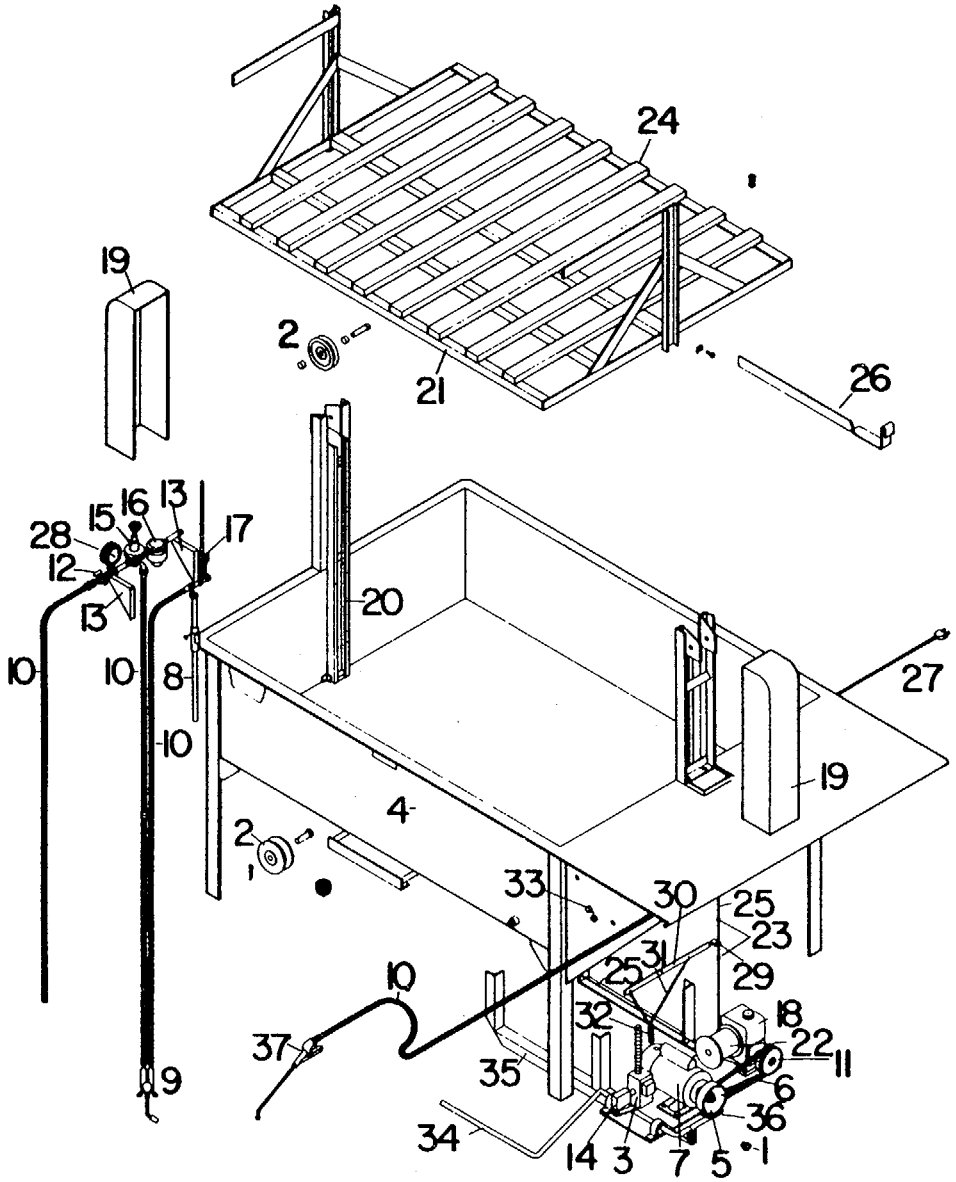
REF. NO.	PART NO	NO. REQ.	DESCRIPTION
1	E-60 – E-0147 E-60-B -- E-0146	1	FUSETRON
2	W-0554	3	CABLE PULLEY
3	E-0102-40	1	HANDY BOX W/FUSETRON COVER
4	E-60-S - 0081 E-60-B -- S-0078	1	TANK BODY
5	E-60 -- W-0557 E-60-B-W-0558	1	DRIVER PULLEY M - 0468- 918 - 92 E
6	E-60 -- R-0583 E-60-B -- R-0581	1	DRIVE BELT
7	E-60B – E-0159 E-60B -- E-0156	1	MOTOR
8	S-0012	1	TORCH HANGER ROD
9	N-1105	1	TORCH
10	R-0635	4	RUBBER AIR HOSE
11	E-60 -- W-0557 F-60-B -- W-0558	1	DRIVEN PULLEY
12	P-0382	1	SELF-RELIEVING VALVE
13	N-1067	2	MANIFOLD BRACKET W/ FITTINGS
14	E-0213	1	LIMIT SWITCH
15	N-1076	1	AIR PRESSURE REGUIATOR
16	N-1075	1	AIR FILTER
17	P-0381	1	SHUT-OFF COCK
18	E-60 -- M-0514 E-60-B-M -- 0513	1	SPEED REDUCER
19	N-1096	2	CABLE COVER
20	S-0020	2	ELEVATOR GUIDES
21	N-1305	1	ELEVATOR
22	N-1219	1	CABLE DRUM
23	M-0476	2	CABLE STOP COLLARS
24	E-60 -- R-0592 E-60-B -- R-0593	E-60 -- 6 E-60-B -- 8	OAK SLATS
25	H-0962	2	STAINLESS STEEL CABLE
26	N-1310	1	ADJUSTABLE RADIATOR BAR
27	E-0125	1	POWER CORD
28	N-1102	1	PRESSURE GAUGE
29	H-0986	1	CABLE SWIVEL
30	N-1313	1	CABLE LEVER ARM
31	H-0896	1	PIVOT CHAIN
32	H-0933	1	LEVER ARM SPRING
33	E-0216	1	REVERSING SWITCH
34	N-1303	1	FOOT BRAKE ASSEMBLY
35	N-1302	1	DRIVE HANGER ASSEMBLY

PARTS LIST

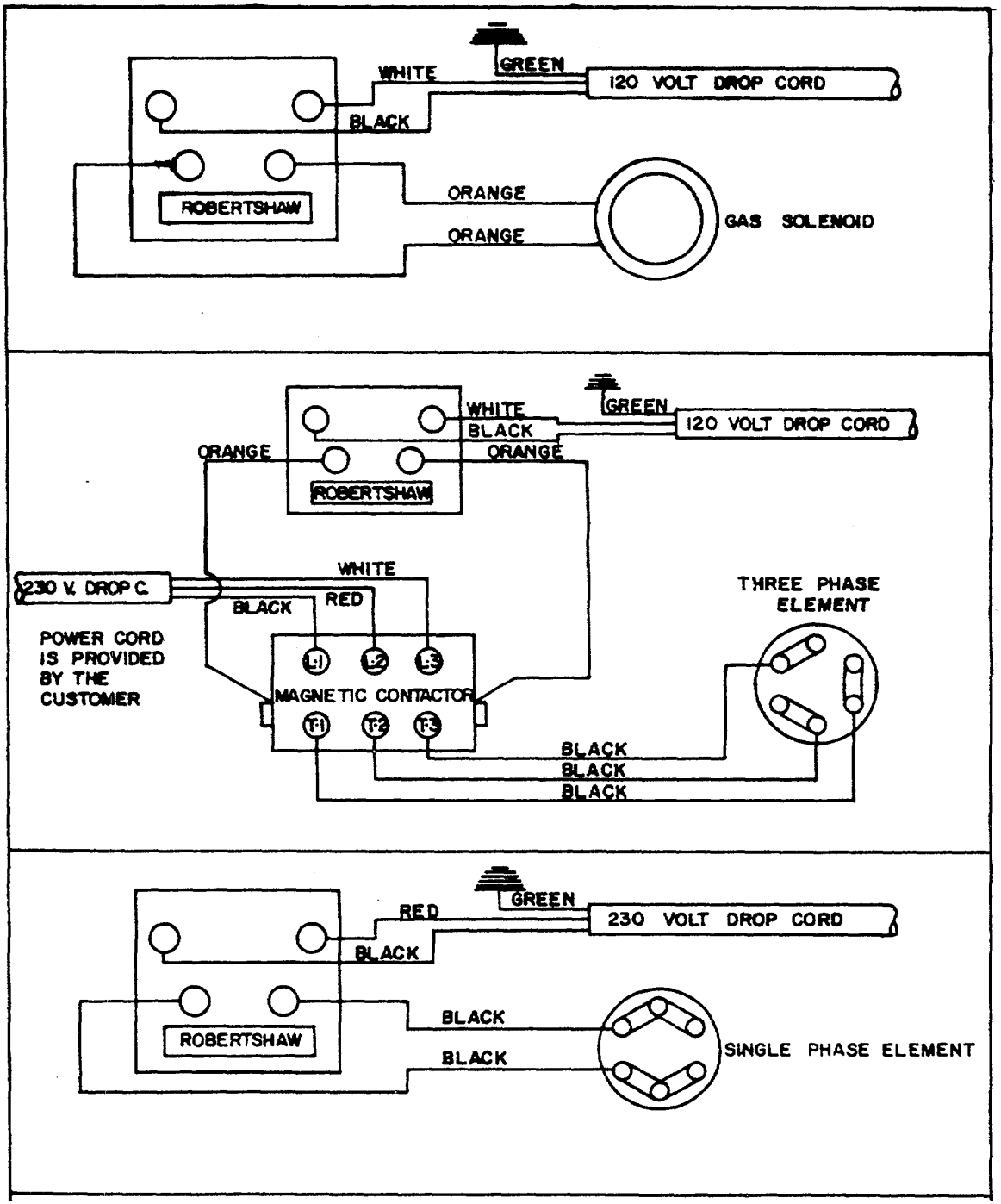
MODELS E60 AND E60B TEST AND REPAIR BENCHES

TJL 10-14-71

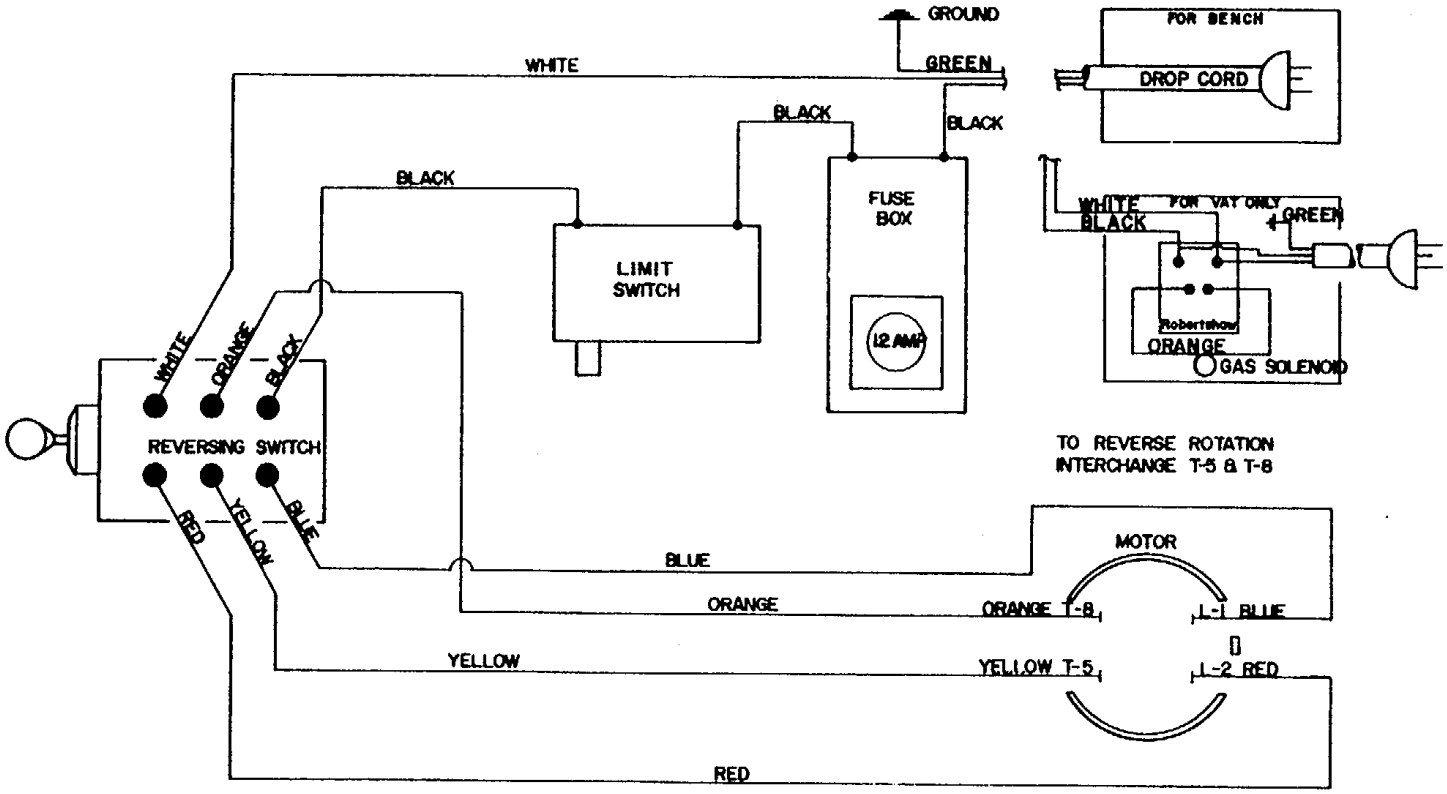
REF. NO.	PART NO	NO. REQ.	DESCRIPTION
36	M-0467	1	BRAKE LINING
37	N-1114	1	BLOW GUN



EXPLODED VIEW - MODELS E60 AND E60B TEST AND REPAIR BENCHES



WIRING DIAGRAM - GAS & ELECTRICALLY HEATED VAT MODELS EO, C-600, FCS-868, FCS-968, EJ2, C - 900 & C - 1000



WIRING DIAGRAM
FOR
6 - POLE REVERSING SWITCH

MODELS
EJ2 Hot Cleaning Vat
C-600, C-900 & C - 1000 2 in- 1 Radiator Shops
E-60 & E=60B Test & Repair Benches
FCS-868 & 968 3 in- 1 Radiator Shops

ELECTRICALLY OPERATED DRIVE SYSTEM

TABLE OF CONTENTS

ELECTRICALLY OPERATED DRIVE SYSTEM

Following instructions apply to all units equipped with the Electrically Operated Drive System. The system varies with gear reducer and/or motor size depending on the application. The operation remains the same.

1. INSTALLATION CHECKOUT

1.1. Operate platform elevator by moving Reversing Switch up or down. Place switch in center position to stop elevator motor. Apply foot brake to stop all elevator platform movement.

IMPORTANT: The brake and limit switch will automatically stop the platform when it reaches the extreme upper or lower safe travel point. To release brake first move reversing switch to opposite position and then raise brake rod upwards with toe.

CAUTION **DO NOT REVERSE DIRECTION OF ELEVATOR BEFORE ELEVATOR HAS STOPPED. SUDDEN REVERSING MAY CAUSE DAMAGE.**

2. CORRECTIVE MAINTENANCE (Refer to Drawing Electrically Operated Drive System)

2.1. Leveling Elevator Platform

2.1.1. Loosen cable holder bolt on highest end of platform. Loosen very slightly so that it will move only when tapped with a hammer. Tap platform downward with hammer until platform is level and retighten cable holder bolt. It is not necessary to reset elevator up and down travel limits after minor leveling.

2.2 Replacing Elevator Cable (Use Stainless Steel Cable)

2.2.1. Test and Repair Benches Only.

2.2.1.1. Raise elevator platform several inches above top edge of tank and place two boards across top of tank underneath elevator platform. This prevents platform from falling after cable is detached.

2.2.1.2. Lower elevator platform until it rests on boards and cable is slackened. Remove cable and covers. Disconnect power cord. Detach cable from elevator by removing cable holder and bolt located on inside of elevator guide channel. Proceed with Paragraph No. 2.2.3.

2.2.2. Hot Cleaning Vats Only.

2.2.2.1. Hold vat lid open with a length of board. Lower elevator platform to bottom of tank, disconnect power cord. It is not necessary to drain vat but if solution is extremely dirty, draining and cleaning at this time is recommended.

2.2.2.2. Holding elevator guides at the top, where lid rollers are attached, lift the elevator high enough to permit its removal from the tank vertical guide channels. Support elevator platform in this position with boards. Detach cable from elevator by removing cable holder and bolt located on inside of elevator guide channels.

2.2.3. All Units.

2.2.3.1. Detach other end of cable from cable drum by loosening cable clamp nut. Notice direction in which cable is wound on drum before removing. (Longer cable winds on gear box side.)

2.2.3.2. Pass one end of replacement cable over pulley and lead down inside elevator guide channel. Make a U shaped loop (about 4" long) in end of cable and fasten loop behind cable holder. Tighten cable holder securely.

2.2.3.3. Remove boards from underneath platform and slowly lower elevator until platform rests on bottom of tank.

2.2.3.4. Slide on cable stop collar, flat end first on other end of replacement cable and then wind cable around drum about 1-1/2 times before passing loose end through cable clamp.

2.2.3.5. Check to make sure cable is on pulley(s) and that cable is wound flat on cable drum. (Longer cable winds on gear box side.) Pull loose end of cable as tight as possible without lifting elevator platform. Tighten cable clamp nut. Cut off loose cable end 1-1/2" from drum cable clamp.

2.2.3.6. Connect power cord and run up elevator until platform is even with top of tank. If platform is not level, see Paragraph 2.1.

2.2.3.7. Set maximum elevator up and down travel limits. (See following section SETTING ELEVATOR TRAVEL LIMITS.)

2.3. Setting Elevator Travel Limits

2.3.1. The elevator travel limits are determined by the position of the cable stop collars which operate the limit switch to deenergize the drive motor and to engage the brake. Upper cable stop collar controls the up travel of elevator. Lower cable stop collar controls the down travel. These collars have been set at the factory and require no adjustment under normal conditions. Should adjustment become necessary because of slippage or part replacement, use the following procedure.

2.3.2. Operate elevator control and raise platform to the maximum height position. If limit switch operates to prevent raising to this height, loosen allen set screw on upper cable stop collar. Slide collar upward on cable. Operate elevator control and raise platform to the maximum height position.

2.3.3. Slide collar on cable downward , until distinct click sound is heard and brake is engaged. The click indicates that the switch has opened and will stop the motor in that position when operated. Tighten collar allen screw securely.

2.3.4. Operate elevator control and lower elevator to a position where the bottom of the platform is about 2" above the bottom of the tank. To adjust, perform the same adjustment procedure for the lower cable stop.

2.3.5. Operate elevator control to raise and lower platform to maximum positions and check for proper operation. Repeat above adjustment if platform does not stop at designated positions.

2.4. Belt Adjustment and Replacement

2.4.1. Loosen the four motor mount bolts and replace belt. Pull motor and mounting plate back until belt is tight. Correct belt tension is indicated when belt can be moved approximately 1/2" vertically at midpoint between pulleys. Hold motor in this position and tighten hold-down bolts.

3 PREVENTATIVE MAINTENANCE

3.1. Lubrication

3.1.1. **Gear Reducer**. Gear reducer is filled to level of test plug when shipped. Check on arrival and every six months thereafter. Fill to level of test plug. DO NOT OVERFILL. Use SAE 90 Automotive Transmission Oil.

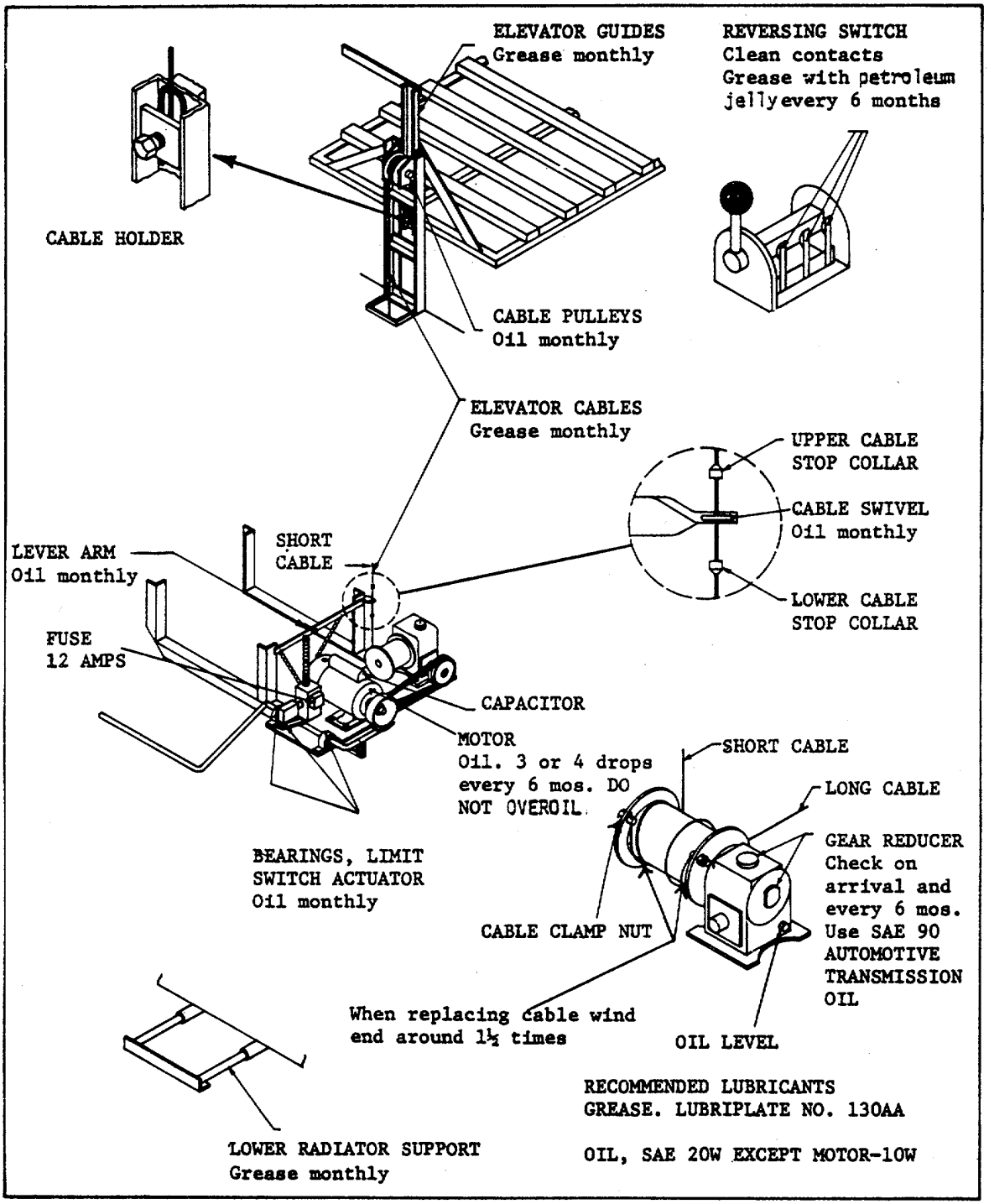
3.1.2. **Motors.** Motors without oil cups are sealed bearing motors and require no lubrication. Motors with oil cups have sleeve bearings which are lubricated by a reservoir filled with oil-saturated Permawick. Lubricate every six months with 3 or 4 drops of light mineral oil such as SAE 10 W. DO NOT OVEROIL. EXCESS OIL WILL FLOW IN MOTOR WINDINGS.

3.1.3. **Cable Pulleys**. Oil once a month. Use SAE 20 W.

3.1.4. **Elevator Guides and Cables**. Grease once a month. Use No. 130 AA Lubriplate.

3.1.5. **Reversing Switch**. CAUTION: First disconnect power cord from electrical outlet. Twice a year remove cover, clean contact points and lubricate lightly with petroleum jelly.

3.1.6. **Brake Assembly**. Oil Bearings, Lever Arm, Limit Switch Actuator and Cable Swivel Monthly. Use SAE 20 W.



ELECTRICALLY OPERATED DRIVE SYSTEM

By Order of the Secretary of the Army:

E. C. Meyer
General, United States Army
Chief of Staff

Official:

Robert M. Joyce
Brigadier General, United States Army
The Adjutant General

Distribution:
To be distributed in accordance with Special List.

***U.S. GOVERNMENT PRINTING OFFICE: 1995-388-421/00351**

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

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

PIN: 049328 000