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HARVESTORE® FARMSTEAD PRODUCTS
AUTOMATED FEEDING EQUIPMENT

MODEL

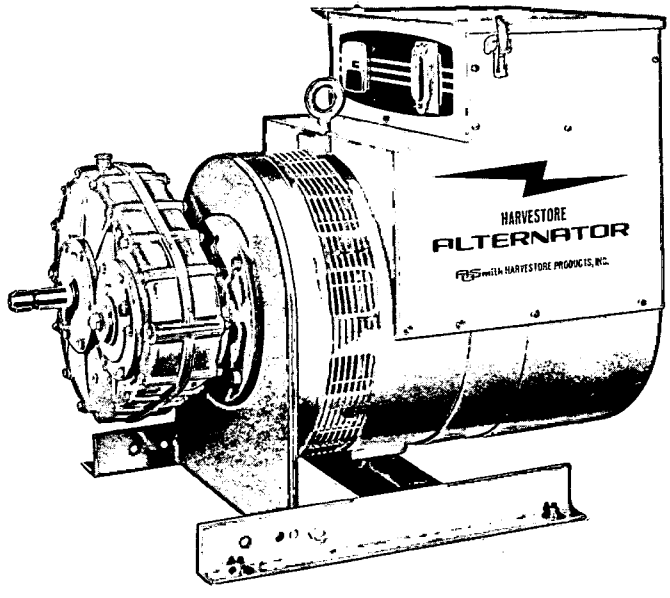
40PTO-1
40PTO-3
55PTO-1
55PTO-3

SPECIFICATIONS PAGE

STANDBY POWER ALTERNATOR

OPERATOR'S MANUAL

INSTALLATION
OPERATION
MAINTENANCE
PARTS CATALOG



A.O. Smith HARVESTORE® PRODUCTS, INC.
550 WEST ALGONQUIN RD., ARLINGTON HEIGHTS, ILLINOIS 60005

AOSHPI NO. 102
971-3

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PART NO. 19871-40
PRINTED IN U.S.A.

MMG 23092.0 9/15/70

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(Includes Parts) 40-50 KW

☐ Rerun ☐ Revised 9-15-70 ☒ New

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O.K.'d. by Bud Olson

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ENGINEERING CHANGE NOTICE

E C N #	Issue Date	Effective Date	Requested by	Issued by	Eff. Ser. #	Eff. Spec.	Series	Page of	ECN #
1682	7-12-73	7-12-73	Ertl	Ertl			UR	1 of 1	1682

Model Change, Reason: Regarding tractor drive generator gear boxes, there has been confusion regarding correct oil capacity. The books and some drawings have shown this to be 1-1/2 pints and this is incorrect. Inasmuch as our oil level check plugs have been incorrectly located on the gear boxes in the past, they should be disregarded as a means of checking oil level unless the center line of the oil level check plug is located 3" below the center line of the gearcase. Those oil level check plugs located 5" below the center line of the gearcase are too low and will result in maintaining insufficient oil in the gearbox. Oil (SAE 90 Multi Purpose Gear Lube) should be changed at 100 hour intervals. On those gear boxes having the oil level check plug in the incorrect location, if the oil level is in doubt during the 100 hour interval, drain the oil and refill with 5-1/2 pints on those boxes with 1000 RPM input. This would be the 190-0316 and 190-0327. On those gear boxes with 540 RPM input, the proper oil capacity is 2-1/2 pints. This would be the 190-0303 and 190-0328.

Disposition of Stock, & Comments:

Repair Jobs - Change? Charge?:

PARTS ADDED			Interchange New w/ Old / Old w/ New	PARTS DELETED		
Per Unit	Part No.	Name (Indent parts within assy.)		Per Unit	Part No.	Name (Indent parts within assy.)

ECN. NO.
1682

8108 M-BOOK

CUT ALONG THIS LINE AND DETACH

HARVESTORE FARMSTEAD PRODUCTS -
POWER ALTERNATOR WARRANTY REGISTRATION CARD

The A. O. Smith Harvestore Products, Inc. warranty can be applied only if this form is properly filled out and mailed within 30 days from original installation and/or delivery date of the following Farmstead Products - Standby Power Alternator.

Consistent with the warranty on my Harvestore Standby Power Alternator, this is to apprise you of the following information: (PLEASE PRINT)

Purchaser or Original User's Name _____

Installation Address _____

City and State _____

Dealer's Name (Print) _____

Installation and/or Delivery Date _____ Model No. _____

I have read the Harvestore Farmstead Products - Standby Power Alternator Warranty and understand its terms and conditions and that these are the sole warranties expressed or implied that are provided by A. O. Smith Harvestore Products, Inc. and upon which I rely.

_____ _____

Date Signed, Purchaser or Original User

CUT ALONG THIS LINE AND DETACH

IMPORTANT

Please return this Warranty Card

NO POSTAGE STAMP
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IF MAILED IN THE
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BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 234, ARLINGTON HEIGHTS, ILLINOIS

A.O. Smith

HARVESTORE® PRODUCTS, INC.

550 W. ALGONQUIN ROAD
ARLINGTON HEIGHTS, ILLINOIS 60005

HARVESTORE® FARMSTEAD PRODUCTS

This certificate constitutes a warranty by and between A. O. SMITH HARVESTORE PRODUCTS, INC., and the purchaser and/or original user of the equipment herein referred to. No Harvestore warranty extends to any subsequent purchaser or any person, firm or corporation except as set forth herein.

If within one year after the installation of the Farmstead Products, any part thereof shall prove defective in material or workmanship upon examination by A. O. Smith Harvestore Products, Inc. (hereinafter referred to as the "Corporation"), the Corporation will supply an identical or substantially similar replacement part f.o.b. the Corporation's factory, or the Corporation, at its option, will repair or allow credit for such part. Where applicable, this warranty is subject to the following restrictions: (1) Electric motors and gas or diesel industrial engines are warranted by the motor manufacturer and must be serviced at an approved motor service station; (2) The Corporation does not consider as defects excessive depreciation or wear attributable to the installation and use of its equipment in areas having abnormally abrasive soil conditions. Except for repair or replacement parts, the warranty for the Harvestore Farmstead Products shall commence with the date of installation and/or delivery. In order to make this warranty effective, the Warranty Registration Card executed by the purchaser or original user, as the case may be, shall be received by the Corporation within thirty (30) days from original date of installation and/or delivery. Any repair or replacement part provided hereunder shall be warranted against defects in material or workmanship during the unexpired portion of the warranty period applicable to the Harvestore Farmstead Products.

This warranty shall be applicable only if the Harvestore Farmstead Products shall still be the property of the original purchaser and shall have been properly installed, used, operated and maintained in accordance with the Harvestore Farmstead Products installation and Operators Manual. This warranty shall not be applicable if the Harvestore Farmstead Products have been subject to any accident, misapplication, alteration, abuse or misuse.

No other warranty, either express or implied, has been or will be made by or in behalf of the Corporation or by operation of law with respect to the Harvestore Farmstead Products or its installation, use, operation, replacement or repair. The Corporation shall not be liable by virtue of this warranty or otherwise for any special or consequential loss or damage resulting from the use or loss of use of the Harvestore Farmstead Products and will make no allowance for repair or alterations made without its consent. The Corporation makes no warranty with respect to the installation of the Harvestore Farmstead Products, accessories or related equipment by the Harvestore Dealer, who is an independent contractor, or by any other independent contractor. The only obligation of the Corporation shall be the replacement or repair of a defective part, and the Corporation shall not be liable for drayage or labor costs, except as provided above.

A. O. SMITH HARVESTORE PRODUCTS, INC.
Arlington Heights, Illinois

7/7/70

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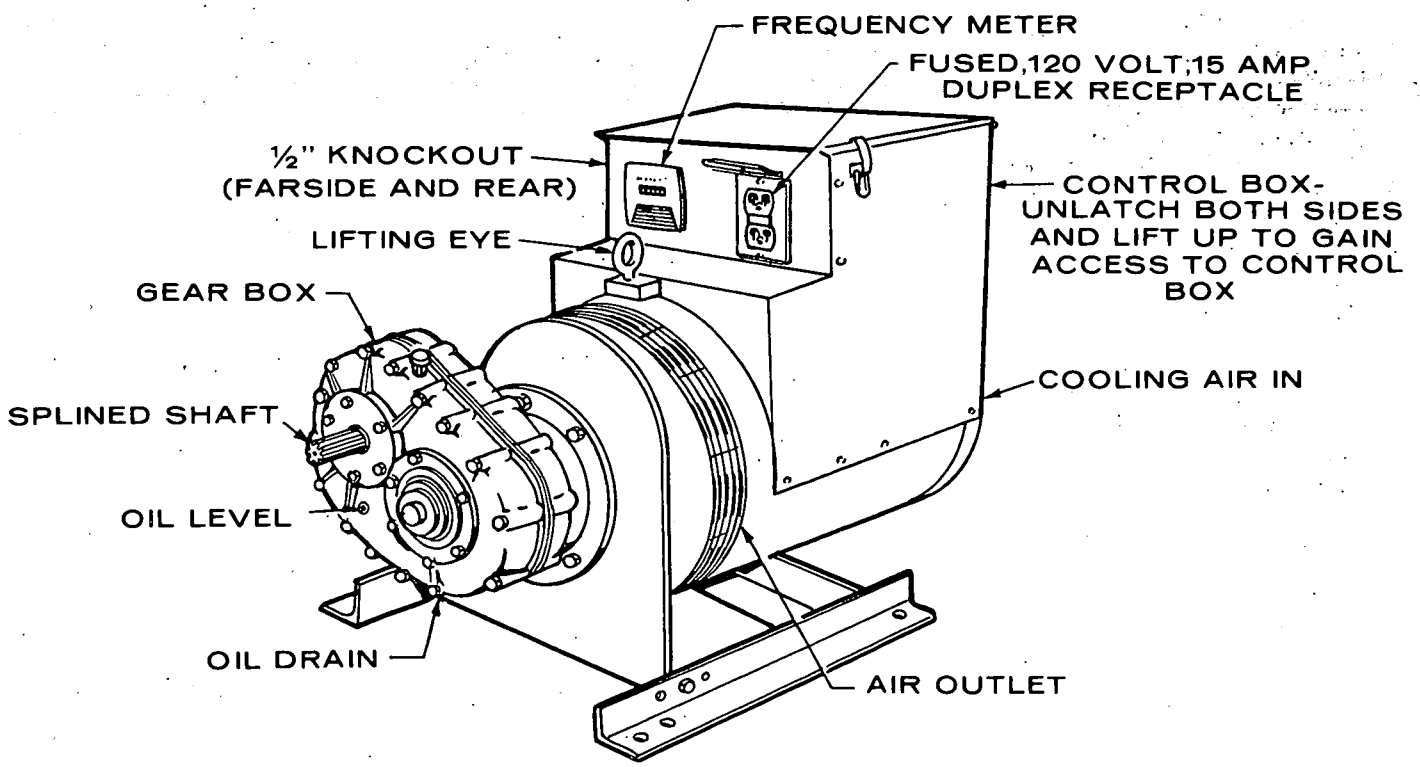

FREQUENCY METER
FUSED,120 VOLT;15 AMP. DUPLEX RECEPTACLE
½" KNOCKOUT (FARSIDE AND REAR)
CONTROL BOX- UNLATCH BOTH SIDES AND LIFT UP TO GAIN ACCESS TO CONTROL BOX
LIFTING EYE
GEAR BOX
COOLING AIR IN
SPLINED SHAFT
OIL LEVEL
OIL DRAIN
AIR OUTLET

GENERAL INFORMATION

INTRODUCTION

This manual contains information for the proper installation, operation and maintenance of your alternator. We suggest you keep this book handy so it can be referred to when necessary.

If you wish to contact your dealer regarding this equipment, be sure to supply the complete MODEL NUMBER and the full SERIAL NUMBER of your equipment. This information is necessary to identify your equipment among the many units manufactured.

DESCRIPTION

Harvestore Models 40 PTO and 55 PTO are revolving field, two bearing alternators. AC output voltage is generated in the stator and controlled by an exciter-regulator system. The exciter-regulator produces DC for field excitation and regulates the AC output.

The rotor consists of four inter-connected coils spaced symmetrically on a steel shaft. Slip rings on the shaft transmit excitation voltage to the field coils. The shaft is supported at both ends by prelubricated ball bearings. A centrifugal blower on the drive end of the alternator draws air through the alternator for cooling.

The complete alternator includes an exciter-regulator system, mounting feet, lifting eye, mounted gear box with splined shaft and control box.

Exciter-Regulator System: The exciter and voltage regulator work together to control the AC output voltage over a wide range of load conditions. This system is factory-set to provide the proper voltage.

Control Box: The control box includes a frequency meter, a fused, 120 volt, duplex receptacle, an exciter circuit breaker (alternator protection) and a load (line) circuit breaker and convenient load connection terminals.

The load circuit breaker can be used as a disconnect switch, however a transfer switch is recommended.

Gear Box: The gear box is secured to the alternator's rear adapter and has two gears. A pinion gear is pressed onto the splined alternator rotor shaft. It meshes with a larger spur gear which is pressed onto the splined gear reduction shaft. Two roller bearings support the shaft.

The gear box oil capacity is 1-1/2 pints; the gear ratio is 3.33 to 1.

CAUTION *This alternator cannot be belt driven.*

OPTIONAL ACCESSORIES

Power Take-Off Shaft: Telescoping, shielded, heavy duty power take-off shafts, recommended for use with PTO powered, Harvestore gear drive alternators provide maximum safety for the operator. The splined universal joint with snap ring type shield and quick disconnect feature, fits a 1-3/8 inch tractor PTO drive. PTO shaft operating lengths are: minimum 41 inch, maximum 57 inch; weight 65 pounds. Six spline universal for 540 rpm PTO.

SPECIFICATIONS

	40PTO-1	40PTO-3	55PTO-1	55PTO-3
Watts	40,000	40,000	55,000	55,000
Volts	120/240	120/240	120/240	120/240
Phase	1	3	1	3
Cycles	60	60	60	60
Running Current (Amperes)	~~208~~ 166	120	~~287~~ 230	166
Alternator Speed (RPM)	1800	1800	1800	1800
Tractor Speed (RPM)	540	540	540	540
Minimum Horsepower Required, Driving Source	73	73	100	100
Gear Ratio	3.33-1	3.33-1	3.33-1	3.33-1
Gear Box Oil Capacity, Pints	1½	1½	1½	1½
Recommended Gear Lubricant	SAE 90	SAE 90	SAE 90	SAE 90
Weight (Approximate)	1075	940	1300	1100
Power Factor	~~0.8~~ 1.0	0.8	~~0.8~~ 1.0	0.8
Max KVA (0.0 P.F.) (Kilo-Volt Amperes)	163	103	218	140
Run KVA (Kilo-Volt Amperes)	50	50	68.75	68.75
Run KW (Kilowatts)	40	40	55	55

Per Bill Nelson
8-27-73

INSTALLATION

LOCATION

Figure 1 shows dimensions of the alternator and bolthole centers for installation. Select a site for the alternator with the following points in mind.

1. Ventilation: The alternator creates considerable heat when operating under load. It is important that this heat be dissipated by proper ventilation. If the alternator is installed inside a small room or compartment, provide a vent for exhausting the air heated by the alternator. Locate the exhaust vent above the inlet vent. Heated air is discharged from the drive-shaft end of the alternator.
2. Convenience to Driving Power: Locate the alternator for easy connection to the tractor. Align the power take-off to the alternator. Stay within the limits of the power take-off shaft.
3. Dusty or Damp Conditions: Avoid dusty or damp conditions as much as possible. Alternator should be mounted under cover or inside a building to protect it against the weather.
4. Servicing Convenience: Allow at least 24 inches of space on all sides of the alternator.
5. Wiring Convenience: Do not locate the alternator in a location difficult to service or which would have poor ventilation, to save a few feet of wiring. Install the alternator as close to the load transfer switch as possible. Do not move the load transfer switch to the alternator. Refer to INSTALLING THE LOAD TRANSFER SWITCH.

MOUNTING THE ALTERNATOR

Figure 2 shows the recommended mounting base and bolthole centers to use for the alternator. The top surface must be level and flat so the mounting brackets will not be sprung when tightened down. After securing alternator with lockwashers and nuts, the shaft should turn freely by hand.

Be sure that the alternator is properly aligned with the driving mechanism and that it will stay in alignment.

CAUTION *To develop 40 and 50 KW requires 73 and 100 horsepower respectively at the power take-off. The torque will flip the alternator over unless secured to a strong substructure. DO NOT MOUNT THIS ALTERNATOR ON A TRAILER.*

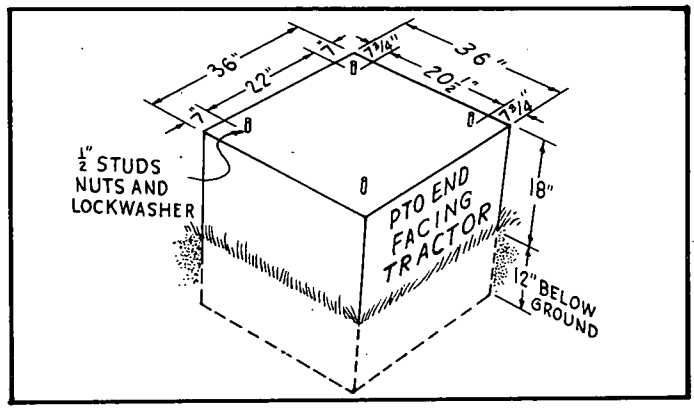
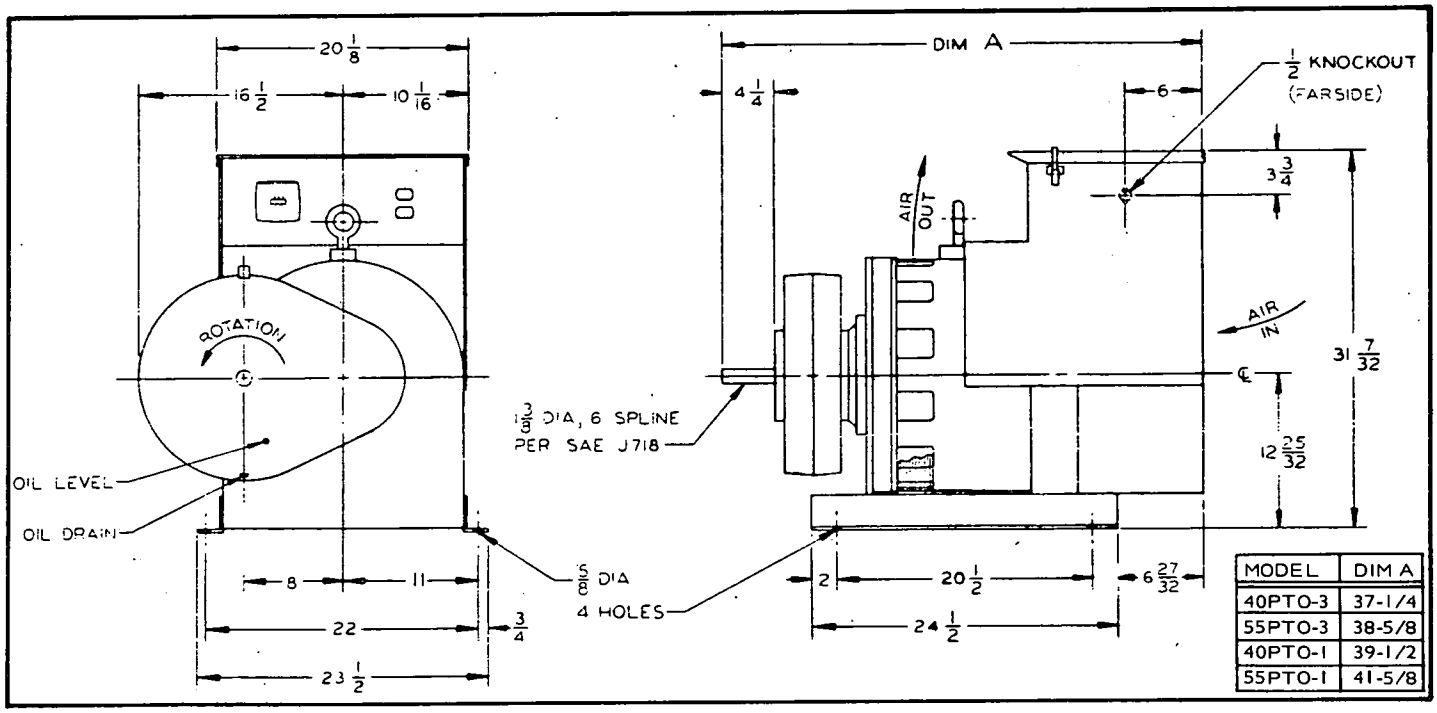


FIGURE 2. RECOMMENDED MOUNTING BASE



MODEL	DIM A
40PTO-3	37-1/4
55PTO-3	38-5/8
40PTO-1	39-1/2
55PTO-1	41-5/8

FIGURE 1. INSTALLATION OUTLINE

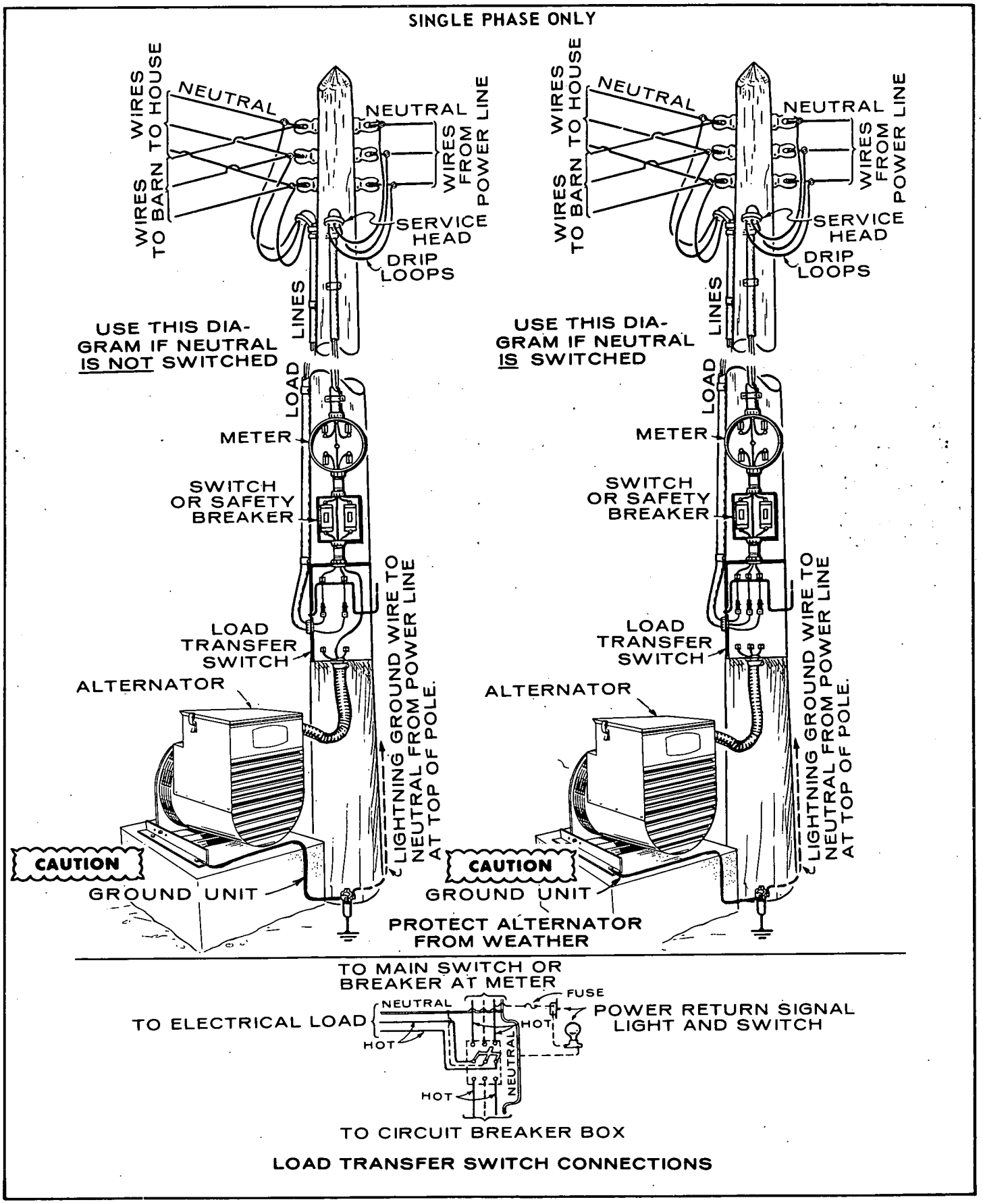


FIGURE 3. TYPICAL FARM STANDBY, SINGLE PHASE

CONNECTING THE ALTERNATOR WIRES

Connect the load wires to the large circuit breaker inside of the control box before operating the alternator. Fasten with large allen screws as shown in Figures 4 and 5. Connect the grounded wire to the neutral bar located near the circuit breaker.

Connect the circuit breaker leads to the load transfer switch using flexible conduit.

WARNING *Personnel connecting the alternator and any such auxiliary equipment must be fully qualified and understand wiring diagrams, circuits, etc.*

120/240 Volt, 1 Phase, 3 Wire Alternator: Terminal post L0 is the grounded (neutral) terminal. For 120 volt current, connect the "hot" load wire to either the L1 or L2 terminal. Connect the neutral load wire to the L0 terminal. Two 120 volt circuits are thus available, with not more than 1/2 the alternator's rated capacity available on each circuit. Balance the load as closely as possible.

For 240 volt current, connect one load wire to terminal L1 and the second load wire to terminal L2. Terminal L0 is not used for 240 volt service.

If using both 120 and 240 volt current at the same time, use care not to overload either circuit.

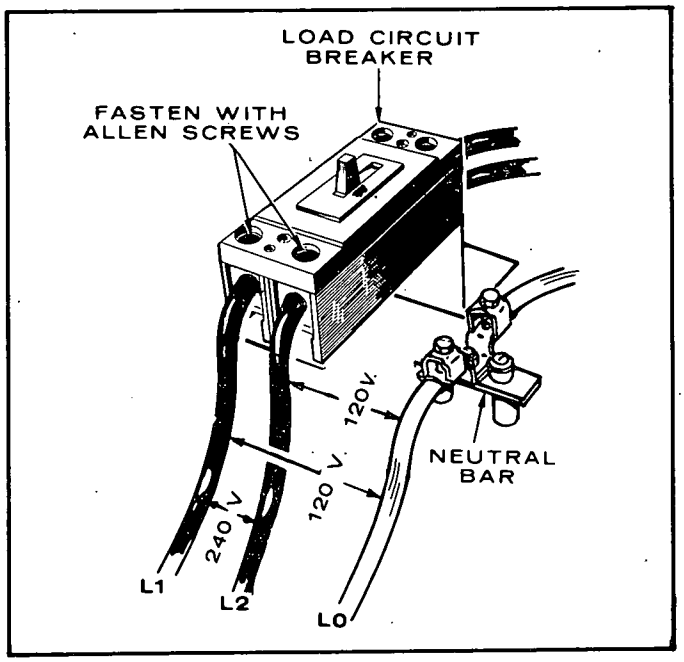


FIGURE 4. 120/240 VOLT, SINGLE PHASE

120/240 Volt, 3 Phase, 4 Wire Delta Connected Alternator: The 3 phase Delta connected unit is designed to supply 120 volt, 1 phase current and 240 volt, 3 phase current.

For 3 phase operation, connect the three load wires to the three terminals L1, L2, and L3 - one wire to each terminal. For 3 phase operation the L0 terminal is not used.

For 120/240 volt, 1 phase, 3 wire operation, terminals L1 and L2 are the "hot" terminals. The L0 terminal is the neutral, which can be grounded if required. For 120 volt service, connect the "hot" (black) load wire to either the L1 or L2 terminal. Connect the neutral (white) wire to the L0 terminal. Two 120 volt circuits are available.

Any combination of 1 phase and 3 phase loading can be used at the same time as long as no terminal current exceeds the NAMEPLATE rating of the alternator. If no 3 phase output is used, usable 1 phase output is 2/3 of 3 phase KVA.

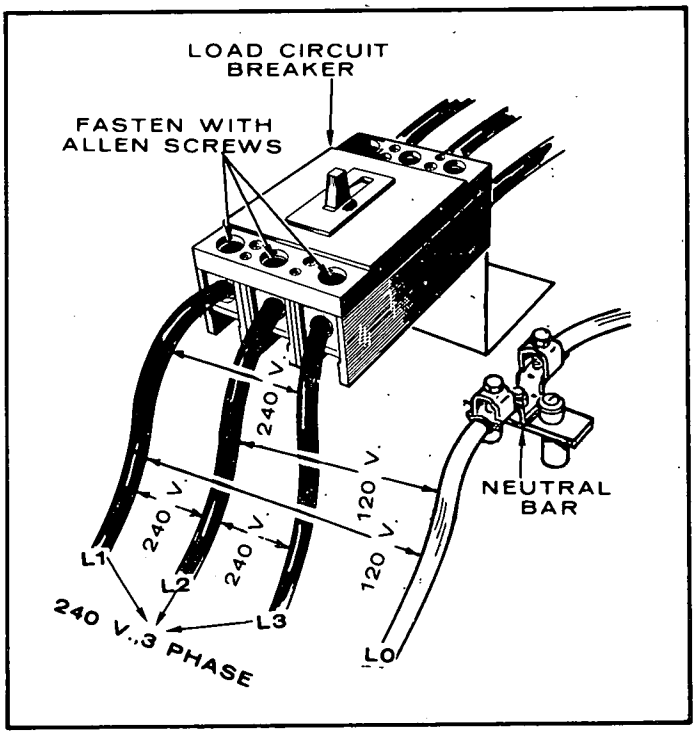


FIGURE 5. 120/240 VOLT, THREE PHASE

INSTALLING THE LOAD TRANSFER SWITCH

Before using the alternator for emergency purposes, install a DOUBLE THROW LOAD TRANSFER SWITCH. The switch must have an ampere rating large enough to carry the total load when the main source of power is in use. Follow the local electrical code. The load transfer switch should always be installed close to the main line switch, and between the main line switch and the load. When properly installed, the load transfer switch in one position will connect the electrical load to the highline. When the load transfer switch is thrown to the other position, the load is first disconnected from the main source of power, and then connected to the stand-by alternator. Using the load transfer switch makes it impossible to connect the alternator to the main source

of power. The load lines must connect to the center terminals of the transfer switch. The alternator leads and the main power source leads must be connected at OPPOSITE ends of the switch.

POWER RETURN SIGNAL

When using the alternator for emergency applications, install a pilot light or alarm signal to indicate when the power is restored and the alternator can be disconnected. Connect a signal light across the regular power line, just ahead of the load transfer switch. Install an on-off switch and a fuse for the signal light. When a power failure occurs, snap the signal switch to the ON position before putting the alternator into operation. When the normal power returns, the signal will operate and the alternator can then be disconnected.

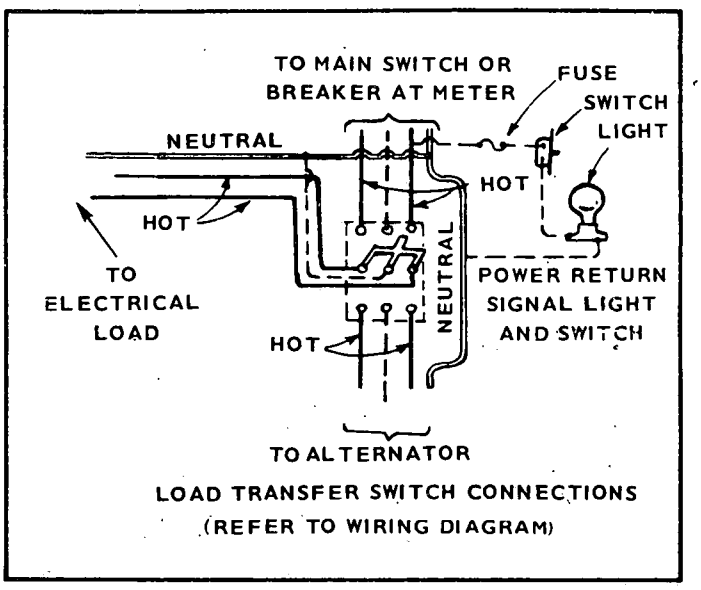


FIGURE 6. LOAD TRANSFER SWITCH

OPERATION

STARTING

When a power failure occurs, the alternator should be ready to run and to take over the load. Set up the tractor and properly install the power take-off shaft. Before engaging power take-off, proceed as follows in the order shown.

1. Alternator line circuit breaker must be in the OFF position.
2. Throw transfer switch to connect load to alternator.
3. Turn power return signal ON if one has been installed.
4. Engage power take-off and bring PTO shaft speed to 540 rpm. The alternator speed at this time will be 1800 rpm. The frequency meter on the alternator control box should read approximately 59-61 cycles.
5. Exciter breaker on.

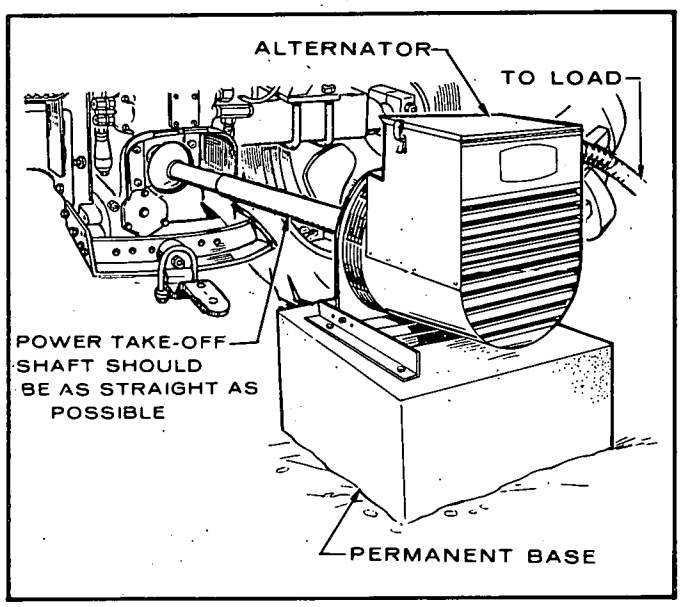


FIGURE 7. TRACTOR CONNECTION

OPERATING

With alternator running, throw the alternator line disconnect switch to the ON position. The various electrical loads can then be connected. When motor loads are connected, connect one at a time, allowing each to reach running speed before connecting the next one. Motors require four to five times more current for starting than for running at normal speed. If several motors are started at the same instant, the total electrical load may overload the alternator, causing the circuit breaker to operate.

If the alternator frequency is not at the proper value, it may be necessary to advance or retard the engine throttle control. In some cases, it may be necessary to change the engine throttle setting when large changes in the electrical load are made.

CAUTION *Keep the alternator load within its nameplate rating. If the alternator is seriously overloaded the circuit breaker will automatically trip, disconnecting the entire electrical load. Reduce the load before throwing the circuit breaker back to the ON position.*

If the tractor engine has very little reserve power, use care when operating the alternator. For example, if a 100 horsepower (at the power take-off) engine is used to drive a 55,000 watt alternator, the engine throttle will be wide open at full alternator load. If most of the electrical load is suddenly removed, the governor cannot act quickly and smoothly enough to prevent a surge of speed and high voltage. Any electrical equipment left connected may be damaged by the resulting high voltage.

When disconnecting large portions of the load, disconnect one piece of equipment at a time, or first disconnect that part of the load which will be left on. Then remove the rest of the load. Wait until the alternator speed has stabilized and then reconnect that part of the load which will be left on. The alternator speed will remain relatively stable, and the tractor engine speed will not change or surge enough to cause any damage if this procedure is followed.

SERVICE AND MAINTENANCE

PERIODIC SERVICE AND INSPECTION

Follow a definite schedule of inspection and servicing. Make a good visual check before, during, and after alternator operation; look for loose or broken leads and bad connections.

GEAR BOX LUBRICATION

Drain the gear box after the first 100 hours of operation and refill with fresh lubricant of the recommended grade. Use only SAE 90 multi-purpose gear lubricant. Repeat this procedure every six months thereafter, or every 100 hours.

Maintain the proper oil level between changes. Overfilling will cause foaming, which can lead to an oil leak due to overheating. Remove the filler plug on top of the case and the oil level plug from the face of the gear case. Fill the case until the oil just begins to flow from the oil level plug hole. Gear box holds 1-1/2 pints U. S. Measure. Replace both plugs. See Figure 8.

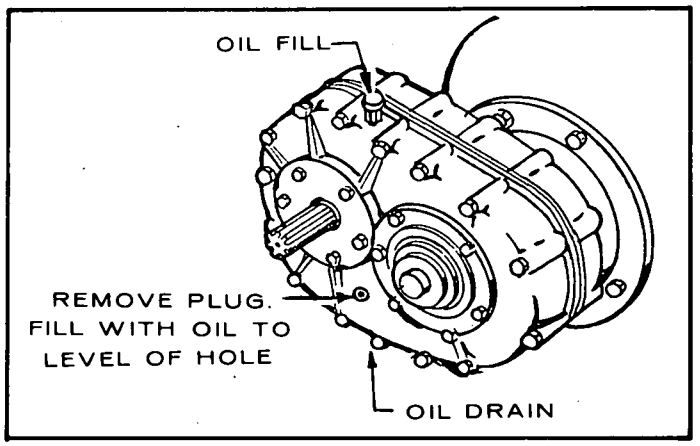


FIGURE 8. GEAR BOX LUBRICATION

POWER TAKE-OFF SHAFT

Grease the universal joints at least every 25 operating hours. Under adverse conditions, grease the joints as required, possibly every 4 to 8 hours. Never operate the alternator with the shield removed from the power take-off shaft.

WARNING *Be extremely careful when working near a running unit. Avoid wearing loose clothing which could get caught in the revolving PTO.*

SLIP RINGS

Slip rings must be clean and free of scratches and burrs (do not remove the dark brown film). If necessary to use an abrasive on the slip rings, use No. 00 sandpaper, *never emery cloth or other conducting abrasives.*

If rings are grooved, out of round, pitted, or rough so brushes seat poorly, remove rotor and refinish rings in a lathe. Remove or shield the bearing during refinishing.

BRUSHES

To examine the brushes, brush springs, and collector rings, remove the grille section below the control box. There is a direct access to the brushes through the large openings in the endbell.

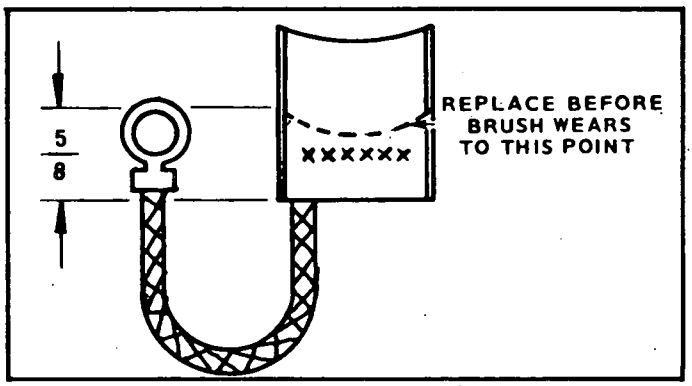


FIGURE 9. BRUSH REPLACEMENT

Replace brushes when worn to approximately 5/8" long, or when the brush is wearing into the stamped name (Figure 9). Do not attempt to remove the brush without first removing its spring and brackets as shown. Never bend a spring back over its bracket – doing so will put a kink in it and require its replacement. Do not use a substitute brush that may look identical but may have entirely different electrical characteristics. Be sure the brush is installed so that the short side of its taper is toward the spring and its bracket (Figure 10).

ALTERNATOR BEARING

The alternator bearing is double-sealed and prelubricated. Inspect the bearing for rotation every 1000 hours while the alternator is running.

If alternator is used for "prime power", replace the bearing every 10,000 hours or two years. If the alternator is used as "standby", replace the bearing every five years. Deterioration of the bearing grease, due to oxidation, makes this replacement necessary.

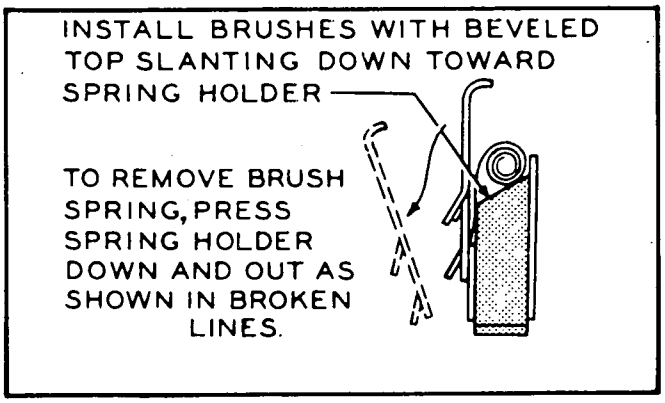


FIGURE 10. BRUSH REMOVAL

EXCITER VOLTAGE REGULATOR

This system contains no moving parts. Occasionally blow out dust, etc. with clean, filtered air. Check thoroughly to assure that all components are mechanically secure and that all electrical connections are tight.

FUSE REPLACEMENT

A fused, 120 volt duplex receptacle provides for convenient load connections up to 15 amps. If exceeding this load, fuse will blow and will require replacement. To change fuse, unlatch top panel of control box and lift open. Twist fuse holder as shown in Figure 11 and replace with Buss ABC 15 or equivalent.

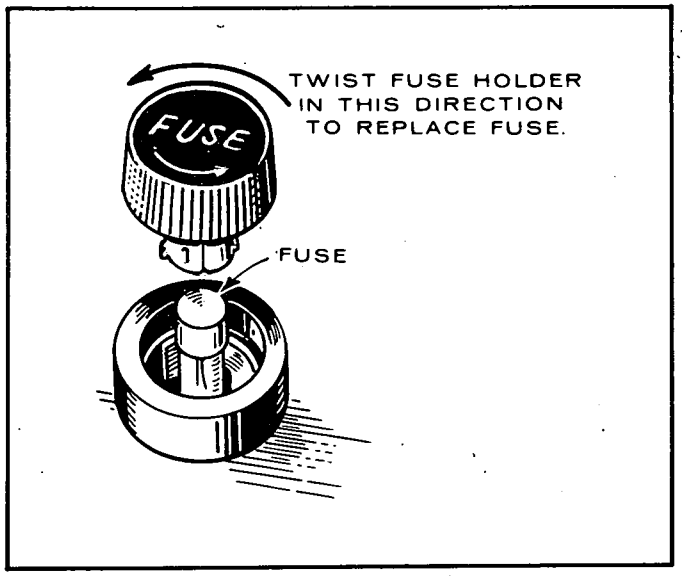


FIGURE 11. FUSE REPLACEMENT

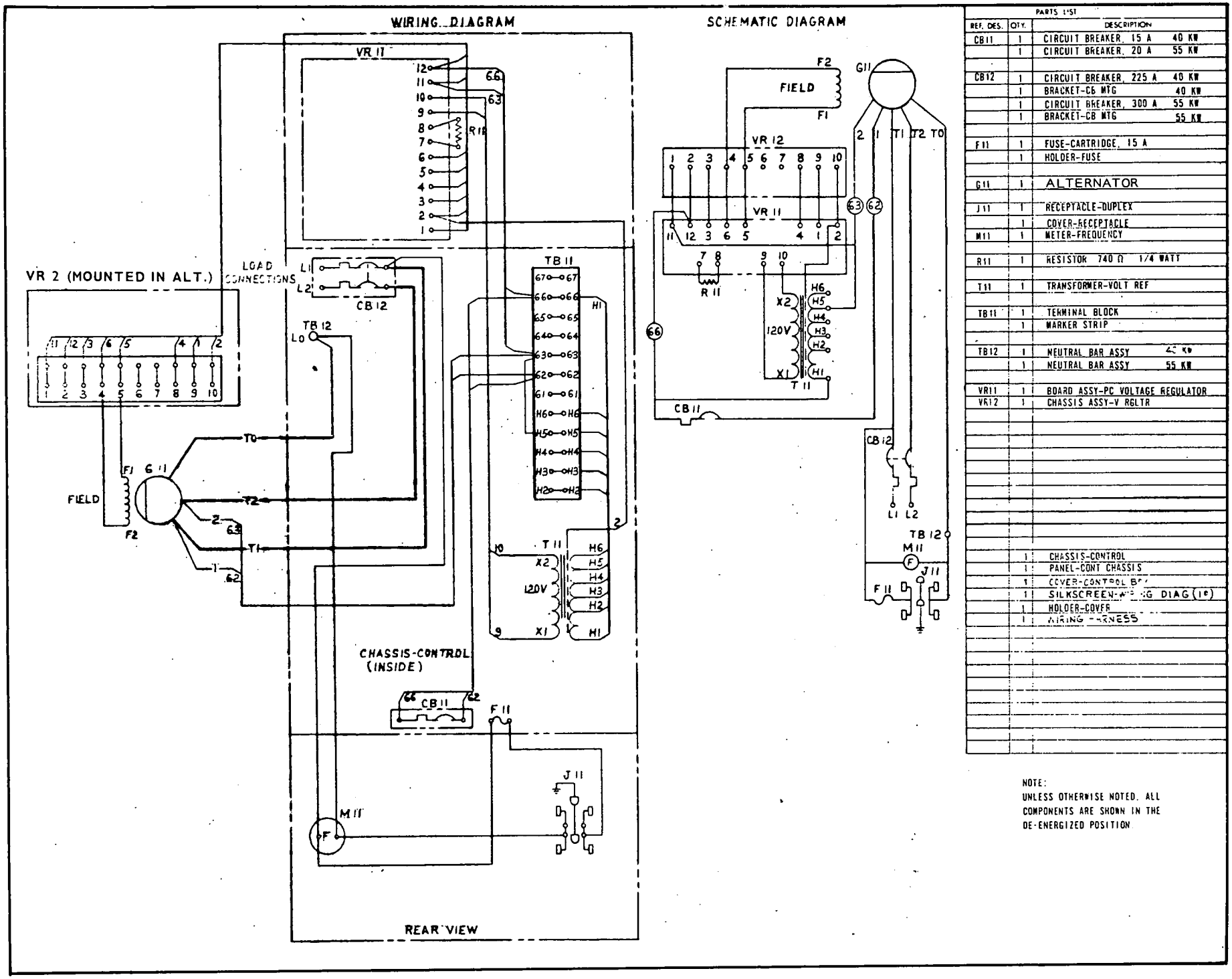
OUTPUT VOLTAGE

A voltage adjusting potentiometer located on the printed circuit board inside the control box, provides for a ± 3% adjustment of the output voltage. This potentiometer is preset at the factory and should not require readjustment unless replacing printed circuit board. Refer to Parts Catalog, Printed Circuit Board Assembly Group, Item 36.

ALTERNATOR OPERATIONAL GUIDELINES

NATURE OF TROUBLE	PROBABLE CAUSE
No Output Voltage	1. Check load circuit breaker for a tripped position; an external short or overload may have caused this condition. Remove part of the load before resetting breaker. 2. Check exciter circuit breaker for a tripped position. Correct problem before resetting. 3. Check tractor PTO speed - should be 540 rpm.
No Output Voltage From 120 Volt Duplex Receptacle	1. Blown fuse - Open control box cover and replace fuse with Buss ABC 15 or equivalent.
Low Frequency - Alternator Will Not Maintain 60 Cycles	1. Check engine PTO speed - Should be 540 rpm.
Alternator Overheats	1. Overloaded - Remove part of load. 2. Poor ventilation - Check alternator's air intake and outlet for restrictions.

NOTE: *If alternator does not produce current after making these checks, contact your nearest A. O. Smith Harvestore® dealer.*

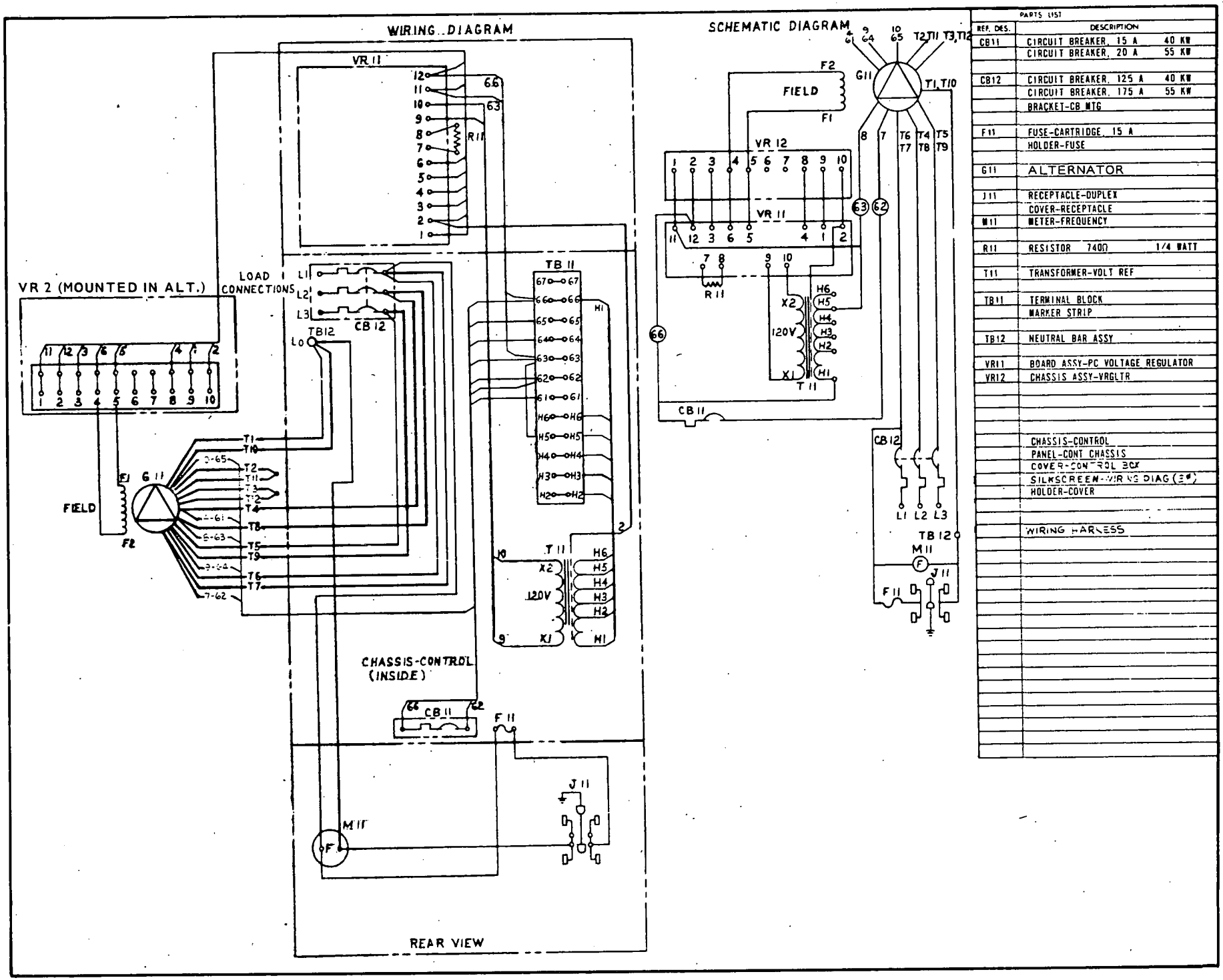


PARTS LIST

REF. DES.	QTY.	DESCRIPTION	
CB11	1	CIRCUIT BREAKER, 15 A	40 KW
	1	CIRCUIT BREAKER, 20 A	55 KW
CB12	1	CIRCUIT BREAKER, 225 A	40 KW
	1	BRACKET-CB MTG	40 KW
	1	CIRCUIT BREAKER, 300 A	55 KW
	1	BRACKET-CB MTG	55 KW
F11	1	FUSE-CARTRIDGE, 15 A	
	1	HOLDER-FUSE	
G11	1	ALTERNATOR	
J11	1	RECEPTACLE-DUPLEX	
	1	COVER-RECEPTACLE	
M11	1	METER-FREQUENCY	
R11	1	RESISTOR 740 Ω 1/4 WATT	
T11	1	TRANSFORMER-VOLT REF	
TB11	1	TERMINAL BLOCK	
	1	MARKER STRIP	
TB12	1	NEUTRAL BAR ASSY	40 KW
	1	NEUTRAL BAR ASSY	55 KW
VR11	1	BOARD ASSY-PC VOLTAGE REGULATOR	
VR12	1	CHASSIS ASSY-V RGLTR	
	1	CHASSIS-CONTROL	
	1	PANEL-CONT CHASSIS	
	1	COVER-CONTROL BOX	
	1	SILKSCREEN-WIRING DIAG (1@)	
	1	HOLDER-COVER	
	1	WIRING HARNESS	

NOTE:
UNLESS OTHERWISE NOTED, ALL COMPONENTS ARE SHOWN IN THE DE-ENERGIZED POSITION

FIGURE 12. WIRING DIAGRAM FOR MODELS 40PTO-1 AND 55PTO-1, SINGLE PHASE



PARTS LIST		
REF. DES.	DESCRIPTION	
CB11	CIRCUIT BREAKER, 15 A	40 KW
	CIRCUIT BREAKER, 20 A	55 KW
CB12	CIRCUIT BREAKER, 125 A	40 KW
	CIRCUIT BREAKER, 175 A	55 KW
	BRACKET-CB MTG	
F11	FUSE-CARTRIDGE, 15 A	
	HOLDER-FUSE	
G11	ALTERNATOR	
J11	RECEPTACLE-DUPLEX	
	COVER-RECEPTACLE	
M11	METER-FREQUENCY	
R11	RESISTOR 740Ω	1/4 WATT
T11	TRANSFORMER-VOLT REF	
TB11	TERMINAL BLOCK	
	MARKER STRIP	
TB12	NEUTRAL BAR ASSY	
VR11	BOARD ASSY-PC VOLTAGE REGULATOR	
VR12	CHASSIS ASSY-VRGLTR	
	CHASSIS-CONTROL	
	PANEL-CONT CHASSIS	
	COVER-CONTROL BOX	
	SILKSCREEN-WIRING DIAG (3")	
	HOLDER-COVER	
	WIRING HARNESS	

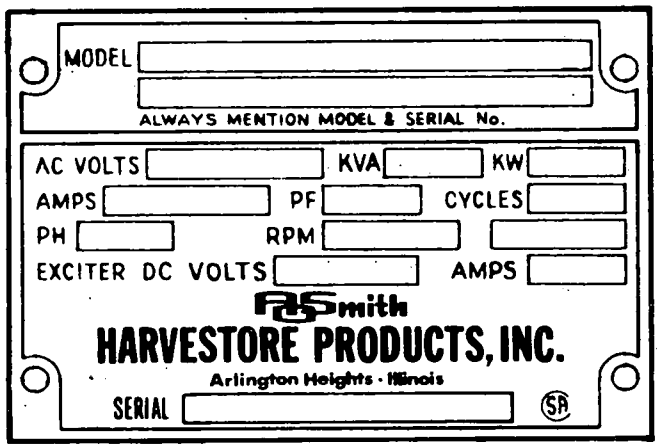
FIGURE 13. WIRING DIAGRAM FOR MODELS 40PTO-3 AND 55PTO-3, THREE PHASE

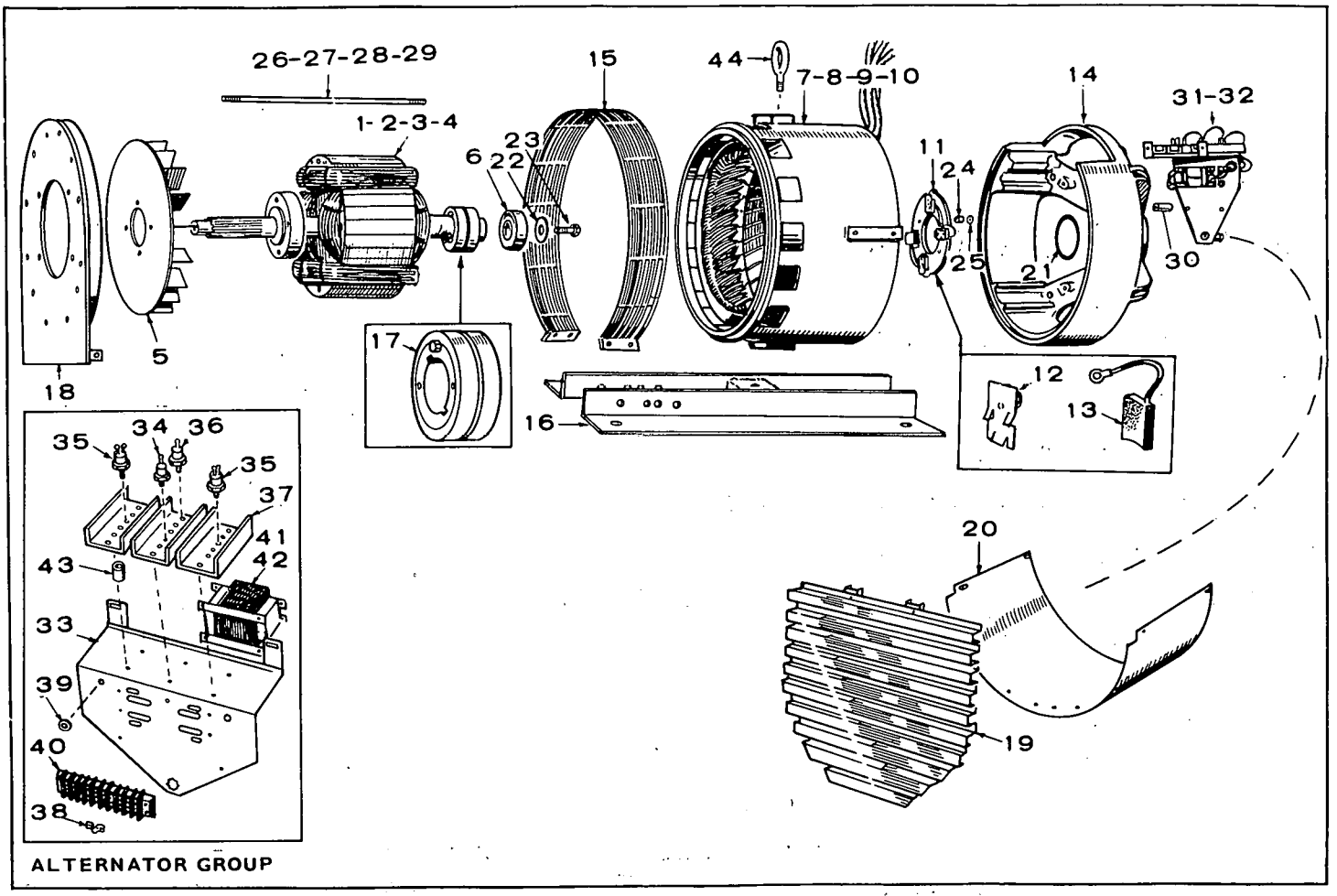
PARTS CATALOG

Always give the MODEL and SERIAL NO.

For parts or service, contact the dealer fromwhom you purchased this equipment.

To avoid errors or delay in filling your parts order, please furnish all information requested.



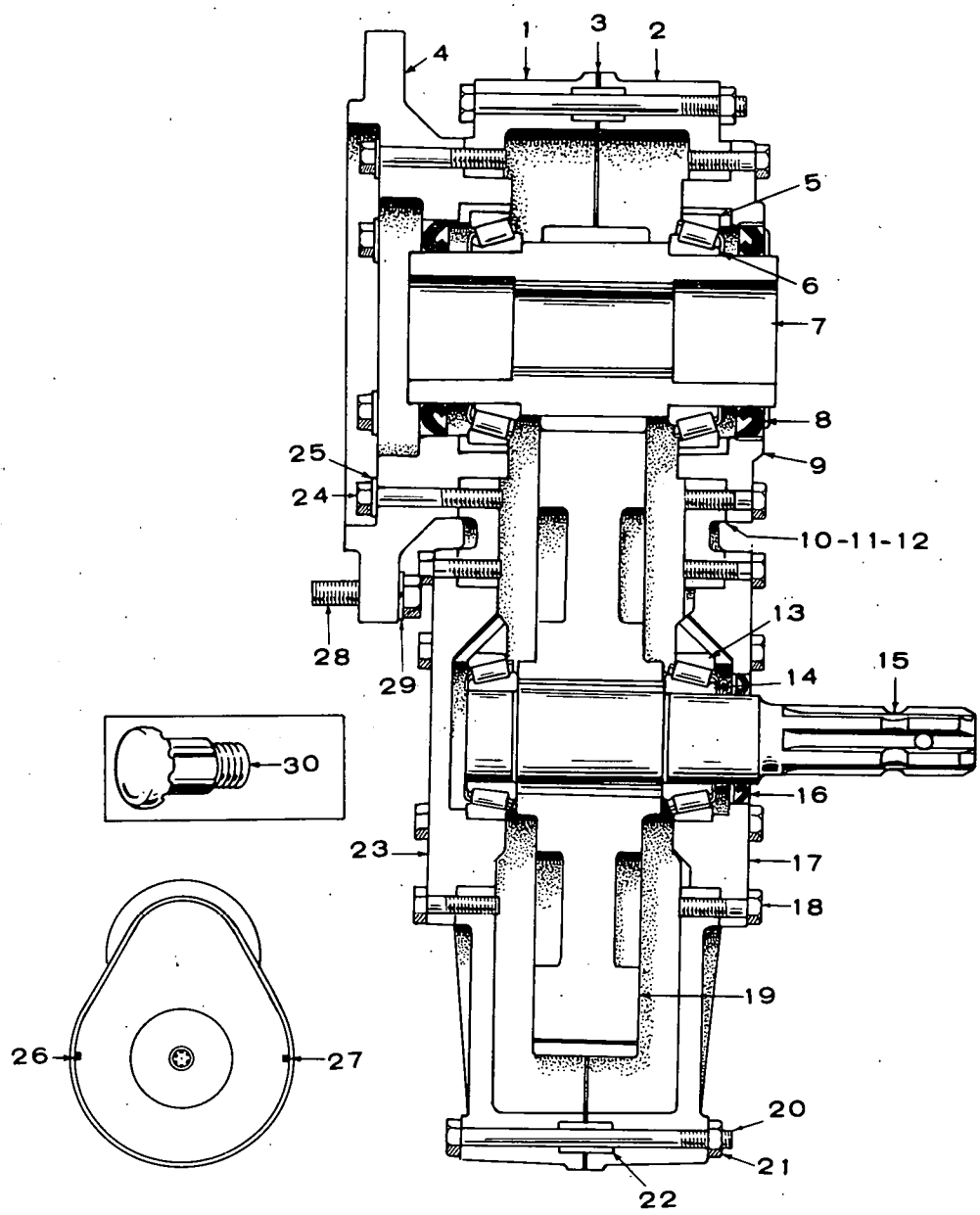


ALTERNATOR GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	82134-1	1	Rotor Assembly, Wound - 40 KW, 1 Phase
2	82134-2	1	Rotor Assembly, Wound - 40 KW, 3 Phase
3	82134-3	1	Rotor Assembly, Wound - 55 KW, 1 Phase
4	82134-4	1	Rotor Assembly, Wound - 55 KW, 3 Phase
5	82134-5	1	Blower
6	82134-6	1	Bearing
7	82134-7	1	Stator Assembly, Wound - 40 KW, 1 Phase
8	82134-8	1	Stator Assembly, Wound - 40 KW, 3 Phase
9	82134-9	1	Stator Assembly, Wound - 55 KW, 1 Phase
10	82134-10	1	Stator Assembly, Wound - 55 KW, 3 Phase
11	82134-11	1	Rig Assembly, Brush (Includes Brushes and Springs)
12	82134-12	4	Spring, Brush
13	82134-13	4	Brush
14	82134-14	1	Bell, End
15	82134-15	1	Screen, Alternator
16	82134-16	1	Base, Alternator Mounting
17	82134-17	1	Ring, Collector
18	82134-18	1	Adapter, Alternator
19	82134-19	1	Grille, Alternator Air Inlet
20	82134-20	1	Wrapper, Alternator End Bell
21	82134-21	1	Seal, "O" Ring - Bearing
22	82134-22	1	Washer, Bearing Retainer
23	82134-23	1	Screw, Bearing Retainer
24	82134-24	4	Spacer, Brush Rig Mounting
25	82134-25	4	Washer, Brush Rig Mounting

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
26	82134-26	4	Stud, Alternator Through - 40 KW, 1 Phase
27	82134-27	4	Stud, Alternator Through - 40 KW, 3 Phase
28	82134-28	4	Stud, Alternator Through - 55 KW, 1 Phase
29	82134-29	4	Stud, Alternator Through - 55 KW, 3 Phase
30	82134-30	2	Spacer, Voltage Regulator Chassis Mounting
31	82134-31	1	Chassis Assembly, Voltage Regulator (Includes Parts Marked *) - 3 Phase
32	82134-32	1	Chassis Assembly, Voltage Regulator (Includes Parts Marked +) - 1 Phase
33	82134-33	1	*+Chassis, Voltage Regulator
34	82134-34	1	*+Rectifier, Silicon (Avalanche) - Negative
35	82134-35	2	*+Rectifier, Gate Control (SCR) Negative
36	82134-36	2	*+Rectifier, Silicon (Avalanche) - Negative
37	82134-37	3	*+Heat Sink, Rectifier
38	82134-38	2	*+Jumper, Terminal Board
39	82134-39	2	*+Grommet, Reactor Leads
40	82134-40	1	*+Block, Terminal
41	82134-41	1	*Reactor Assembly
42	82134-42	1	+Reactor Assembly
43	82134-43	6	*+Insulator, Heat Sink Mounting
44	82134-44	1	Eyebolt, Lifting

* - Included in 82134-31 Chassis Assembly.
\+ - Included in 82134-32 Chassis Assembly.

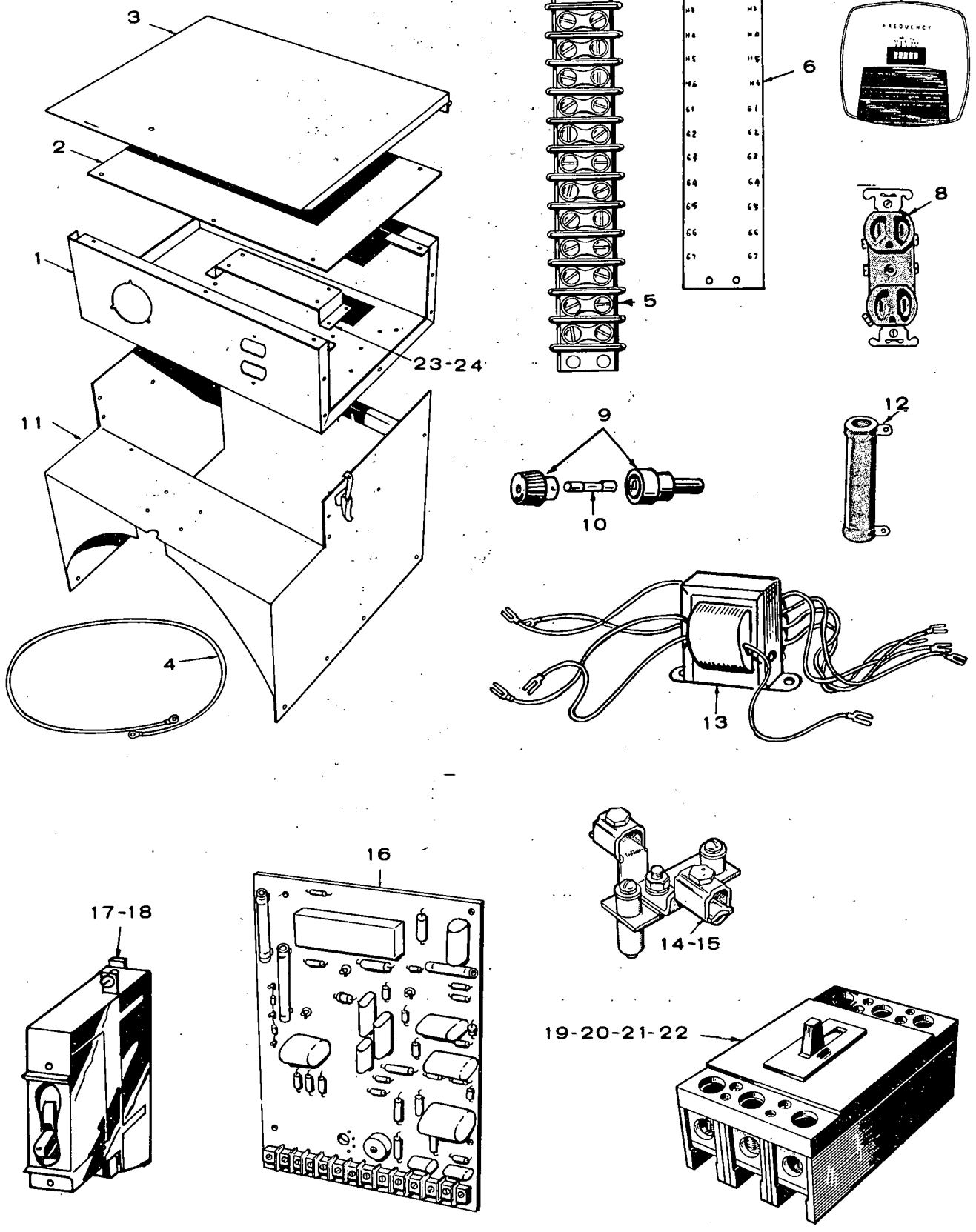


GEAR DRIVE BOX

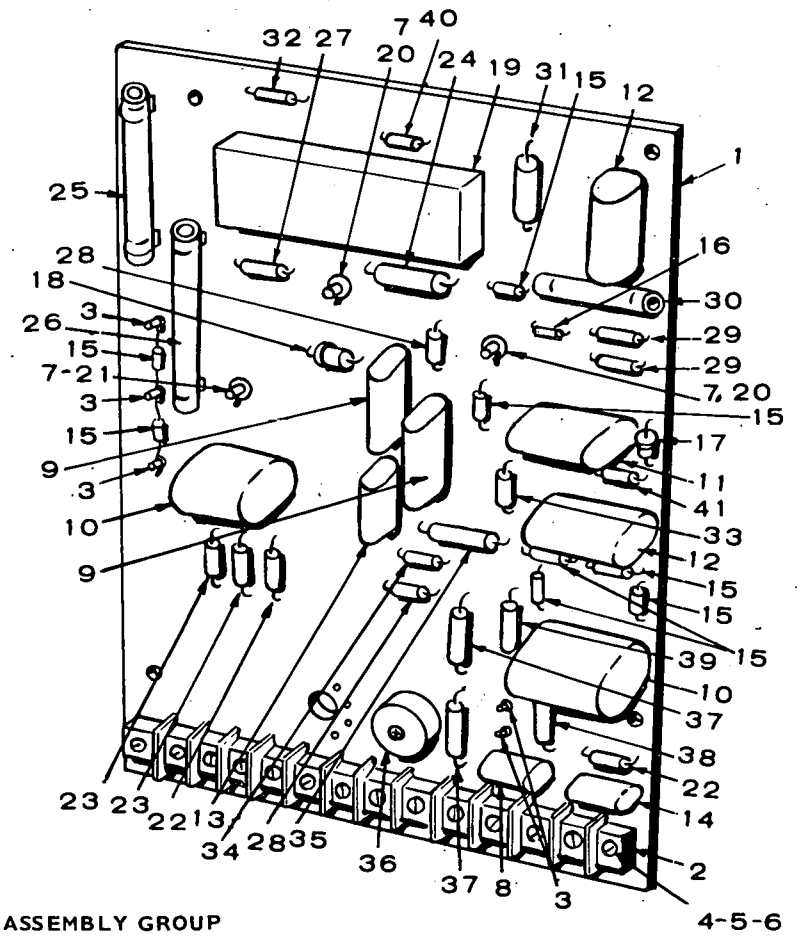
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	82135A	1	Gear Box - Complete
1	82135-1	1	Case (Less Pipe Plugs)
2	82135-2	1	Case (Includes Pipe Plugs
3	82135-3	1	Gasket
4	82135-4	1	Flange
5	82135-5	2	Bearing, Cup
6	82135-6	2	Bearing, Cone
7	82135-7	1	Shaft & Gear
8	82135-8	2	Seal
9	82135-9	1	Plate, Open End
10	82135-10	As Req.	Shim, .001" Thick (Clear)
11	82135-11	As Req.	Shim, .003" Thick (Green)
12	82135-12	As Req.	Shim, .005" Thick (Blue)
13	82135-13	2	Bearing, Cup
14	82135-14	2	Bearing, Cone
15	82135-15	1	Shaft, Splined

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
16	82135-16	1	Seal
17	82135-17	1	Plate, Open End
18	82135-18	18	Screw, Cap
19	82135-19	1	Gear
20	82135-20	16	Screw, Cap
21	82135-21	16	Nut
22	82135-22	2	Bushing, Lineup
23	82135-23	1	Plate, Closed End
24	82135-24	6	Screw, Cap
25	82135-25	6	Washer, Lock
26	82135-26	1	Plug
27	82126-20	2	Plug, Drain
28	82135-28	2	Screw, Cap
29	82135-29	2	Washer, Lock
30	82135-30	1	Cap, Vent

CONTROL GROUP



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	82136-1	1	Chassis, Control
2	82136-2	1	Panel, Control Chassis
3	82136-3	1	Cover, Control Chassis
4	82136-4	1	Holder, Cover
5	82136-5	1	Block, Terminal - 12 Place
6	82136-6	1	Strip, Marker - 12 Place
7	82136-7	1	Meter, Frequency
8	82136-8	1	Receptacle, Duplex
9	82136-9	1	Holder, Fuse
10	82136-10	1	Fuse, 15 Amp
11	82136-11	1	Saddle, Control Chassis Mounting
12	82136-12	1	Resistor, Fixed - 1740-Ohms, 1/4 Watt
13	82136-13	1	Transformer, Voltage
14	82136-14	1	Bar Assembly, Neutral - 55 KW, 1 Phase
15	82136-15	1	Bar Assembly, Neutral - 40 KW, 1 & 3 Phase and 55 KW, 3 Phase
16	82136-16	1	Board Assembly, Printed Circuit (See Separate Group For Components)
17	82136-17	1	Breaker, Circuit (15 Amp) - 40 KW, 1 & 3 Phase
18	82136-18	1	Breaker, Circuit (20 Amp) - 55 KW, 1 & 3 Phase
19	82136-19	1	Breaker, Circuit (125 Amp) - 40 KW, 3 Phase
20	82136-20	1	Breaker, Circuit (175 Amp) - 55 KW, 3 Phase
21	82136-21	1	Breaker, Circuit (225 Amp) - 40 KW, 1 Phase
22	82136-22	1	Breaker, Circuit (300 Amp) - 55 KW, 1 Phase
23	82136-23	1	Bracket, Circuit Breaker Mtg. - 40 KW, 1 Phase and 40 KW & 55 KW, 3 Phase
24	82136-24	1	Bracket, Circuit Breaker Mtg. - 55 KW, 1 Phase



PRINTED CIRCUIT BOARD ASSEMBLY GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	82136-16	1	Board Assembly, Printed Circuit - Complete
2	82137-2	1	Block, Terminal (12 Place)
3	82137-3	5	Terminal, Standoff
4	82137-4	2	Screw, Rd. Head Machine (#8-32 x 5/8)
5	82137-5	2	Washer, E.T. Lock (#8)
6	82137-6	2	Nut, Hex (#8-32)
7	82137-7	3	Pad, Transistor Mounting
8	82137-8	1	Capacitor (.47 Mfd., 100 Volt)
9	82137-9	2	Capacitor (.22 Mfd., 200 Volt)
10	82137-10	2	Capacitor (.47 Mfd., 400 Volt)
11	82137-11	1	Capacitor (.47 Mfd., 200 Volt)
12	82137-12	2	Capacitor (1 Mfd., 100 Volt)
13	82137-13	1	Capacitor (.1 Mfd., 200 Volt)
14	82137-14	1	Capacitor (.047 Mfd., 200 Volt)
15	82137-15	8	Rectifier, Silicon
16	82137-16	1	Diode, Zener
17	82137-17	1	Diode, Zener
18	82137-18	1	Diode, Zener
19	82137-19	1	Relay, Magnetic Reed
20	82137-20	2	Transistor, Silicon NPN
21	82137-21	1	Transistor, Unijunction
22	82137-22	2	Resistor (1/2 Watt, 47-Ohm)
23	82137-23	2	Resistor (1/2 Watt, 33-Ohm)
24	82137-24	1	Resistor (2 Watt, 4.7 Megohm)
25	82137-25	1	Resistor, Fixed (10 Watt, 270-Ohm)
26	82137-26	1	Resistor, Fixed (15 Watt, 5,000-Ohm)
27	82137-27	1	Resistor (1/2 Watt, 3,000-Ohm)
28	82137-28	2	Resistor (1/2 Watt, 300,000-Ohm)
29	82137-29	2	Resistor (1/2 Watt, 33,000-Ohm)
30	82137-30	1	Resistor, Fixed (5 Watt, 15,000-Ohm)
31	82137-31	1	Resistor (2 Watt, 13,000-Ohm)
32	82137-32	1	Resistor (2 Watt, 6,800-Ohm)
33	82137-33	1	Resistor (1/2 Watt, 220,000-Ohm)
34	82137-34	1	Resistor (1/2 Watt, 100,000-Ohm)
35	82137-35	1	Resistor, Metal Film (1/4 Watt, 12,100-Ohm)
36	82137-36	1	Potentiometer
37	82137-37	2	Resistor, Metal Film (1/4 Watt, 28,000-Ohm)
38	82137-38	1	Resistor, Metal Film (1/4 Watt, 5,110-Ohm)
39	82137-39	1	Resistor, Metal Film (1/4 Watt, 8,870-Ohm)
40	82137-40	1	Diode, Zener
41	82137-41	1	Capacitor (100 Mfd., 10 Volt)