

Elec-Trak
ELECTRIC TRACTORS



Model ER8-36

service manual

RIDER MOWER

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ER8-36 THEORY OF OPERATION

A basic explanation of the ER8 circuitry is usually helpful in making the detailed theory easier to understand. The block diagram in Fig. 1 is a simplified representation of the entire rider circuitry. Notice how the function blocks are interconnected.

After the house voltage is fed into the charger, it is changed to an appropriate d-c voltage and is then fed to the power pack to recharge the cells. The connecting line returning to the charger indicates that a sample of battery condition is used by the charger to properly meter charger output current.

The mower is also powered by the power pack, but manual switching must be performed to operate the mower. The line drawn from the manual switch switching block to the automatic control block represents the control of all other manual switches. These include the key switch, mower switch, seat switch, and neutral switch. All of these switches deliver commands to the drive motor or mower.

Successful troubleshooting of the Elec-Trak Rider requires an understanding of the electric circuits and mechanics involved in normal operation. Major areas that usually require instruction are: 1) start circuit, 2) PTO circuit, and 3) the charger. These three areas will be discussed individually, but with attention directed to the overall tractor response. The troubleshooting sketch should be closely followed during the explanation.

Start Circuit

The ER8 start circuit is relatively simple compared to the E15 or E20 tractors. Refer to Fig. 2 and notice that with the seat switch closed and the transmission in neutral, as soon as the key switch is turned to "ON" the L coil is energized. The neutral switch is physically mounted on the transmission housing and is actuated when the shift lever is moved to the neutral position.

When the L coil is energized, the two normally open contacts close. Contacts "A" bypass the neutral switch and "seal-in" the voltage to the L coil; the transmission may now be placed in gear allow-

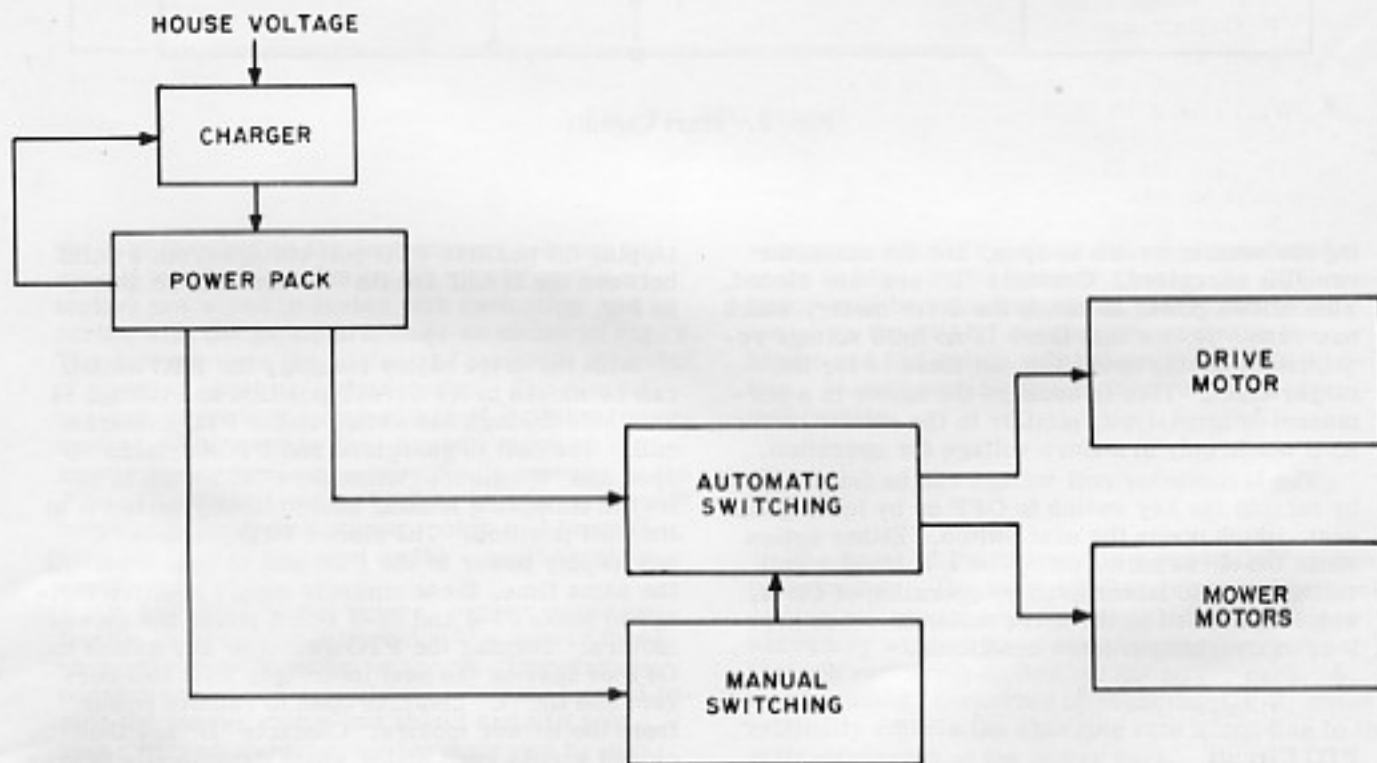


Fig. 1. ER-8 Block Diagram

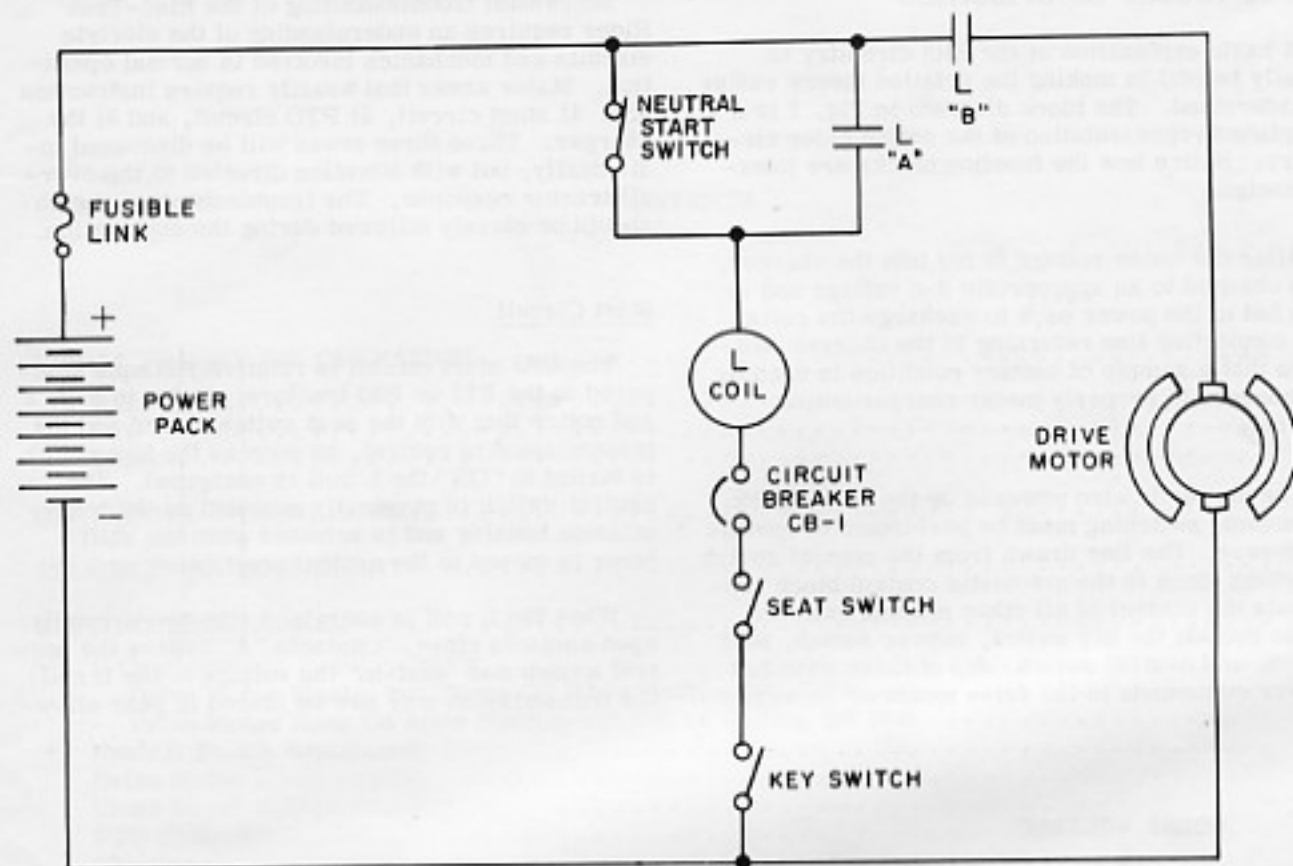


Fig. 2. Start Circuit

ing the neutral switch to open, and the contactor remains energized. Contacts "B" are also closed. This allows power to reach the drive motor, which now runs. Notice that there is no field voltage required for motor operation, as there is for the larger units. This is because the motor is a permanent-magnet-type, similar to the mower motors, so it needs only armature voltage for operation.

The L contactor coil voltage can be interrupted by turning the key switch to OFF or by leaving the seat, which opens the seat switch. Either action shuts the drive motor off. The L contactor coil voltage is also interrupted by operation of CB-1, which is located in the drive motor to sense overload or overtemperature conditions.

PTO Circuit

The PTO circuit requires that the L contactor be supplied voltage before its PTO contactor can be energized, so in normal operation the drive motor will be running before the mower motors can be started. This feature is accomplished by

tapping off positive PTO coil voltage from a point between the L coil and its "A" contacts as shown in Fig. 3.

With the drive motor running, the PTO switch can be moved to its START position and voltage is available through the switch to the PTO contactor coil. The coil is energized and PTO contacts "D" open and "C" close. When the PTO switch is released its spring loading automatically moves it to its RUN position. The closed PTO contacts "C" now supply power to the PTO coil to seal it in. At the same time, these contacts supply positive voltage to jacks J1-3 and J2-3 which power the mower motors. Turning the PTO switch or key switch to OFF or leaving the seat interrupts PTO coil current and the "C" contacts open to remove power from the mower motors. Contacts "D" are then closed across each motor which dynamically brakes their rotation very rapidly. To restart the motor, the PTO switch first must be moved to the START position to seal-in the PTO coil.

The ER8 uses a fuse and circuit breaker for protection of each mower motor. On 26ER8AA models,

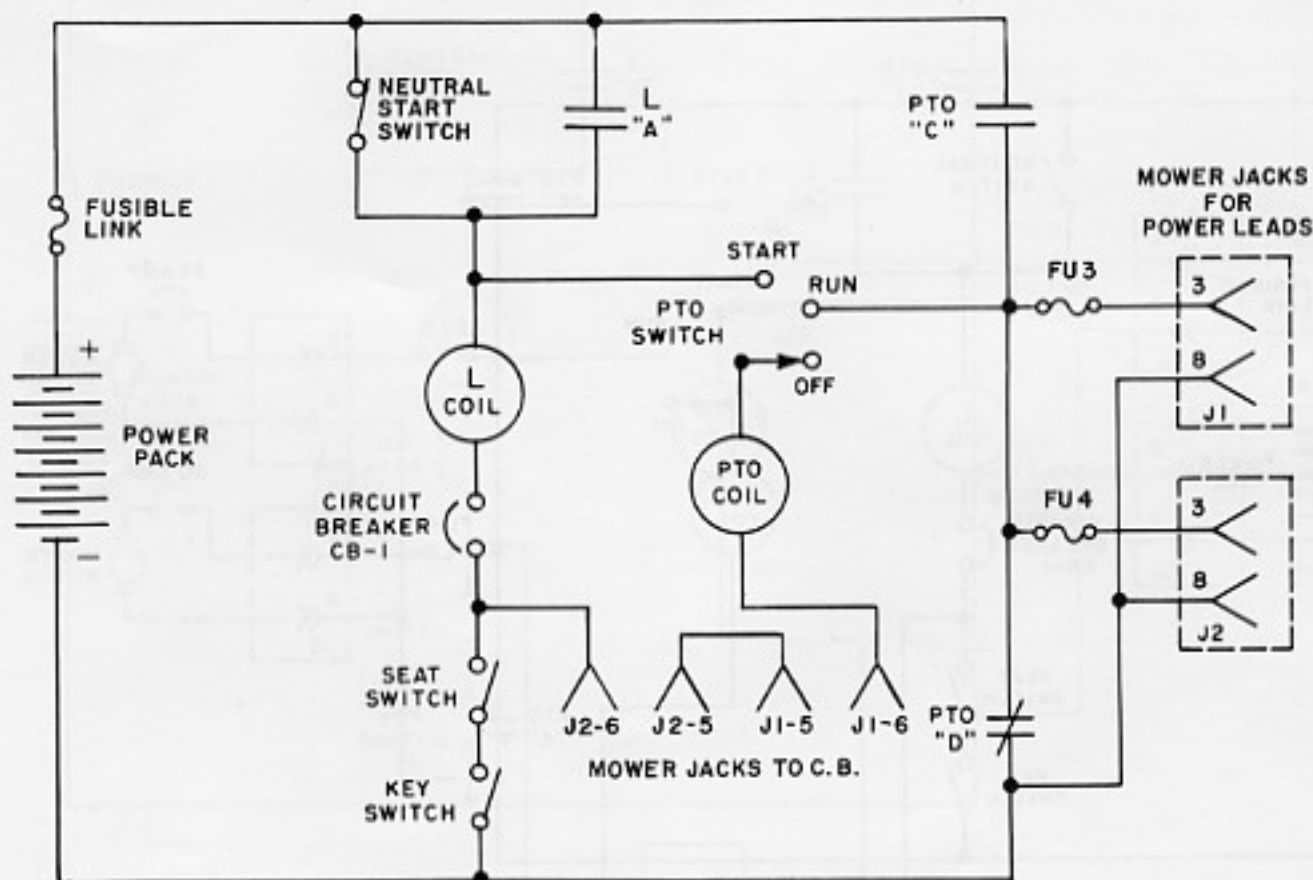


Fig. 3. PTO Circuit

the fuse (located on the seat support column) and circuit breaker (located on the mower motor exterior) are wired in series with each other and in series with the motor armature as shown in Fig. 4. The fuse protects the wiring and motor in the event of a wiring short or stalled motor. The circuit breaker protects the motor against sustained overloading. These units have jumper wires on the mower motor harnesses providing continuity to the PTO coil. In the event of a fuse blowing or circuit breaker tripping that mower motor will turn off until the fuse is replaced or the circuit breaker resets itself.

On 26ER8BA model riders, mower motor protection is somewhat different. The mower fuses share the same function as above. The circuit breakers used are actually thermostats located inside the mower motor end shield and will trip under excessive motor temperature due to sustained overloading. The circuit breakers (one for each motor) are wired in series with each other and in series with the PTO coil (see Fig. 5). If a circuit breaker opens, then PTO coil current is interrupted, the PTO contactor turns off and both mower motors turn off - just as if the PTO switch

were turned to OFF. Once the overheated motor cools and its circuit breaker resets, the PTO contactor may be turned on again. Move the mower switch to the START position then release the handle and the switch will return to its RUN position. Mower motors should then run in their normal fashion.

Charger

The heart of the charger is a specially designed transformer. The input winding receives household or line voltage through the timer contacts. The secondary winding provides charging current, through rectifying diodes, to the power pack. A third winding, connected to capacitor CP-2, automatically adjusts the charging rate according to the state-of-charge of the power pack.

A more detailed explanation may be appropriate with the use of Fig. 6. Line voltage is applied to the primary winding through a normally open switch. The switch is closed when the timer knob is turned to its proper "Start" position, which

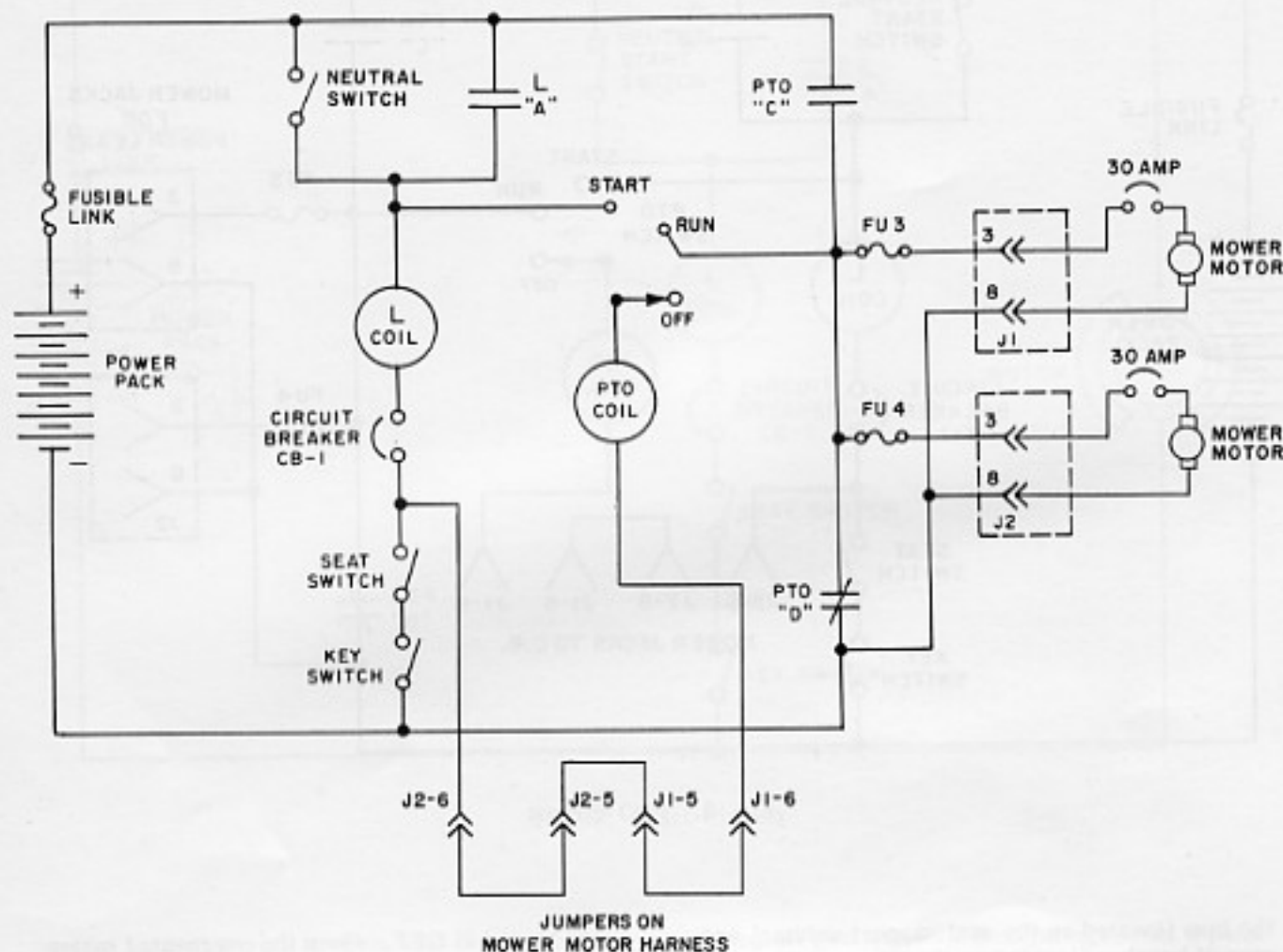


Fig. 4. 26ER8AA PTO Circuit

starts the timer motor and puts the charger into operation. The timer motor drives a cam which causes the contacts to open when the proper amount of time has elapsed.

The secondary winding reduces the line voltage to a usable charging level which is then full-wave rectified by the action of diodes CR4 and CR5. The diodes accept the 60-Hertz sine wave as an input from the secondary winding and output a pulsating positive d-c voltage which charges the power packs. The third winding, in conjunction with capacitor CP2, causes the charger to supply a high current when the power pack is deeply discharged and very low current when the power pack nears its full charge state.

WARNING: SINCE THE ER8 RIDER IS NOT EQUIPPED WITH A POWER DISCONNECT, THE BATTERY CLAMP TERMINATING WIRE NUMBER 2 MUST BE LIFTED FROM THE POSITIVE POST OF BATTERY B1 BEFORE PROCEEDING WITH SERVICING OF THE RIDER UNLESS VOLTAGE MEASUREMENTS MUST BE MADE! SEE FIG. 7.

CONTINUITY MEASUREMENTS

When making continuity measurements there must be no power in the circuit and one end of the circuit under test must be disconnected if additional circuitry interferes with the test. The circuit under test has good continuity if the meter indicates zero ohms on a properly "zeroed" R x 10 setting.

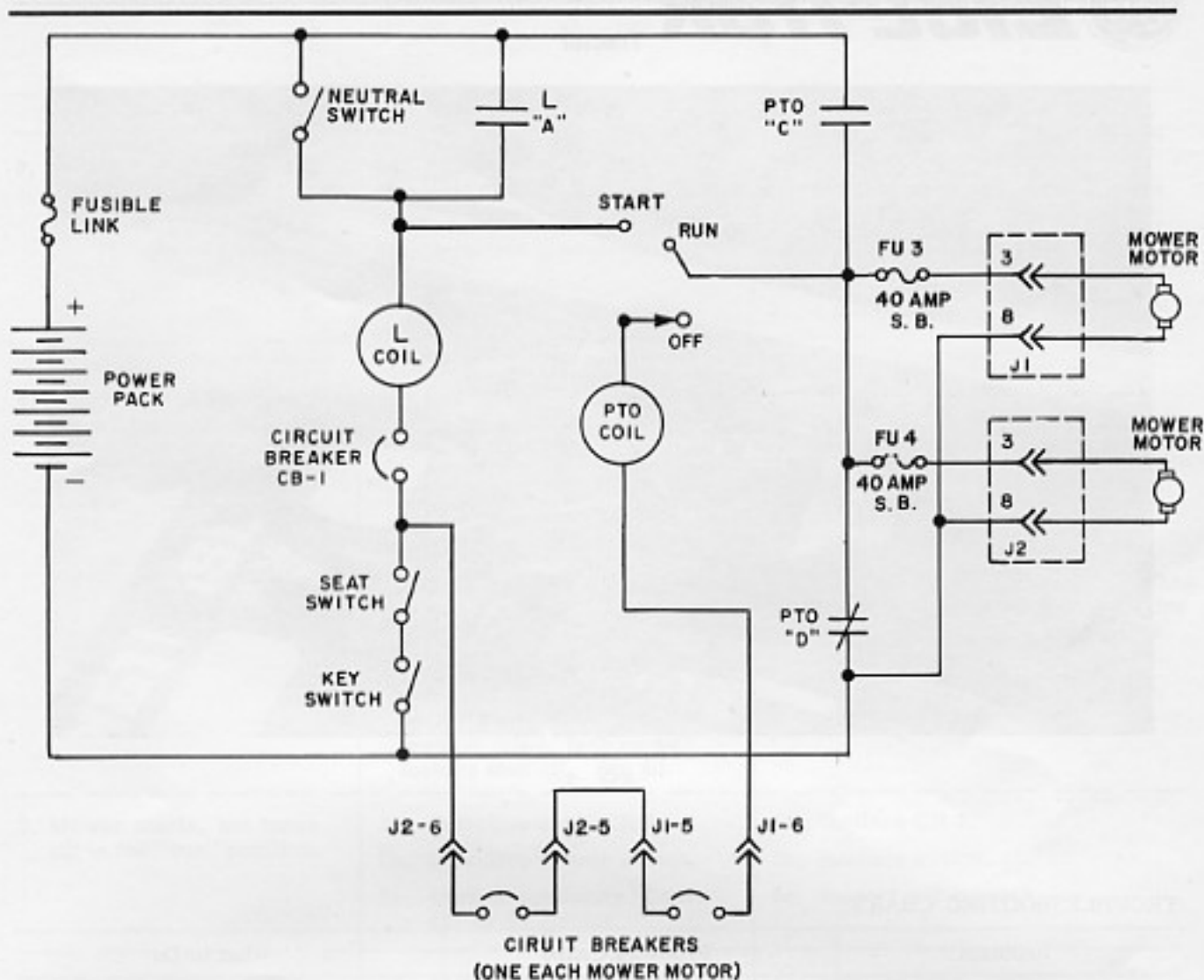


Fig. 5. 26ER8BA PTO Circuit

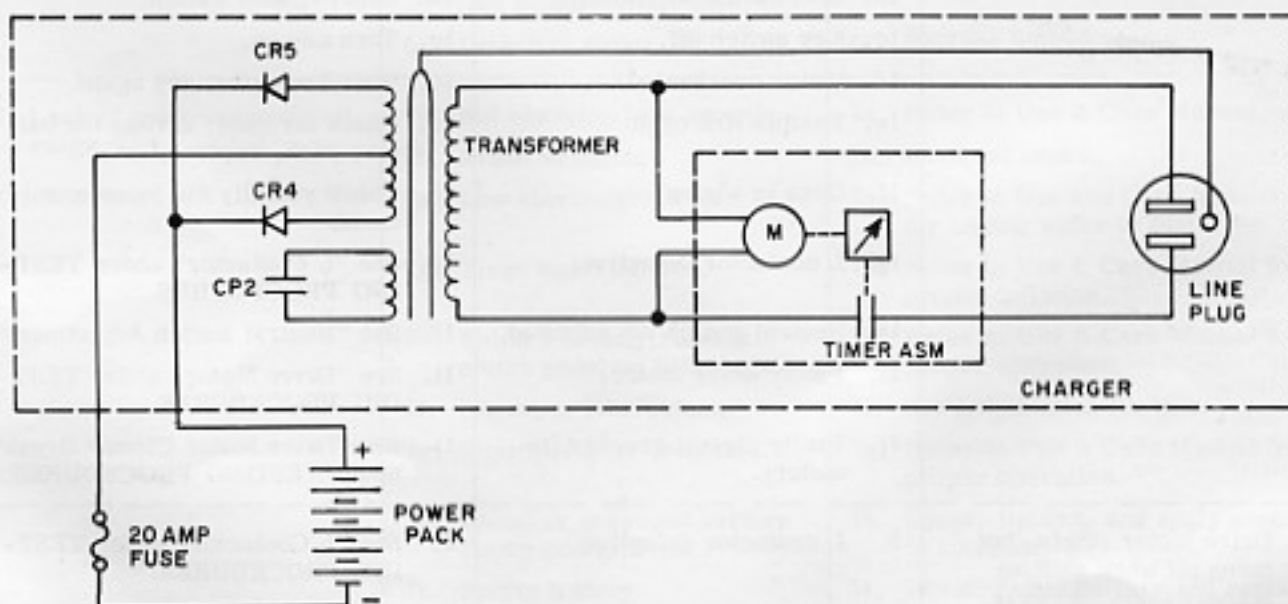


Fig. 6. Charger

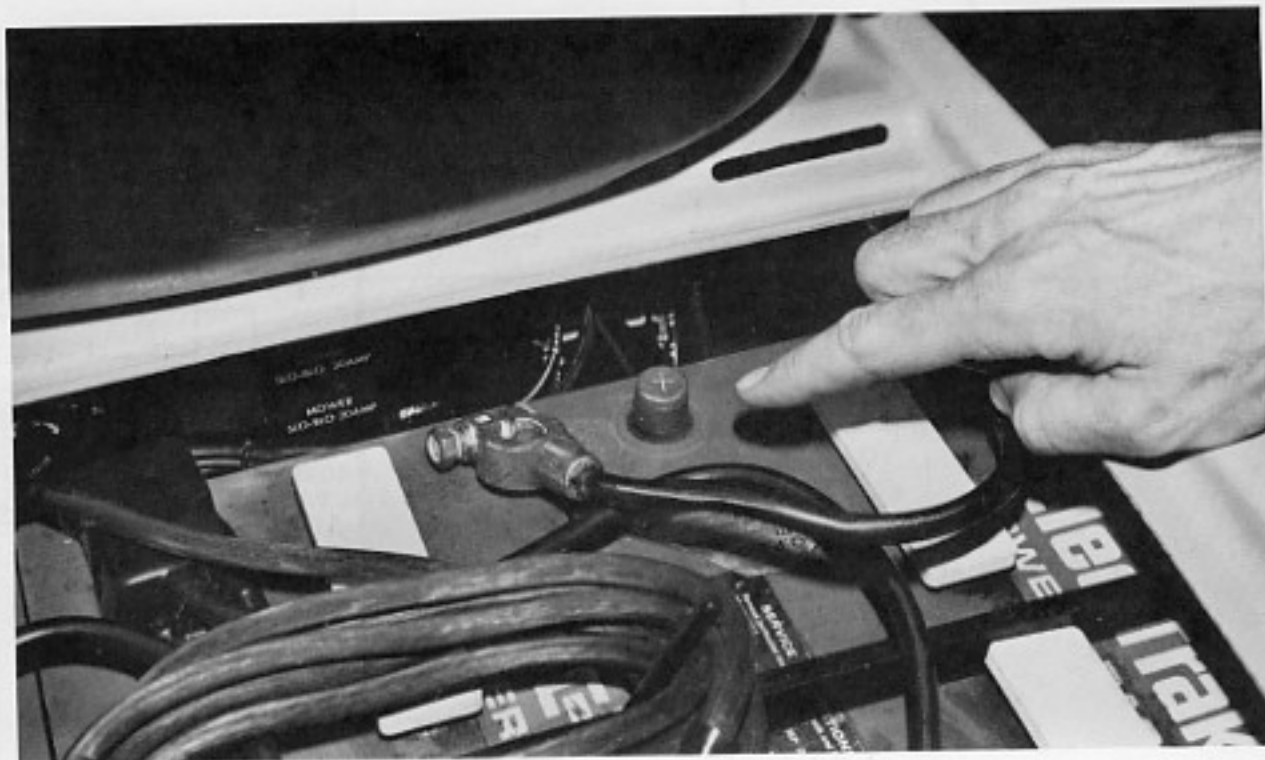


Fig. 7

TROUBLESHOOTING CHART

Problem	Probable Cause	What to Do
1. Drive motor does not start.	1a. Transmission not in neutral. 1b. Seat switch not closed. 1c. Key switch off. 1d. Motor overheated. 1e. Fusible link open. 1f. Open in wiring. 1g. L contactor defective. 1h. Neutral switch not adjusted. 1i. Faulty drive motor. 1j. Faulty circuit breaker (in motor).	1a. Place transmission in neutral. 1b. Depress seat switch. 1c. Turn key on. 1d. Wait 5 minutes, try again. 1e. Check for short across the battery pack, replace link. 1f. Check visually for loose connections. 1g. See "L Contactor" under TESTING PROCEDURES. 1h. See "Neutral Switch Adjustment". 1i. See "Drive Motor" under TESTING PROCEDURES. 1j. See "Drive Motor Circuit Breaker" under TESTING PROCEDURES.
2. Drive motor starts, but turns off when shifting transmission into gear.	2. L contactor defective.	2. See "L Contactor" under TESTING PROCEDURES.

Problem	Probable Cause	What to Do
3. Drive motor continues to run after turning off key or getting off seat.	3a. Defective key switch or seat switch.	3a. Remove one wire from switch. If motor turns off, then replace that switch.
	3b. Defective L contactor.	3b. See "L Contactor" under TESTING PROCEDURES.
	3c. CB-1 shorted to brush holder inside drive motor.	3c. Inspect and repair.
4. Drive motor runs but mower inoperative.	4a. One or both mower motors unplugged from tractor harness.	4a. Plug motor harness to tractor harness.
	*4b. Defective PTO contactor.	4b. See "PTO Contactor" under TESTING PROCEDURES.
	4c. Mower switch defective.	4c. Replace switch.
	4d. Mower motor circuit breaker tripped (BA model only).	4d. Wait 15 minutes, try again. Then measure each circuit breaker for continuity to ensure reset after cooling period.
	* On 26ER8BA rider mowers if one mower motor circuit breaker trips, both mower motors shut off. See 4d.	
5. Mower starts, but turns off in the "run" position.	5a. Defective diode CR 1.	5a. Replace CR 1.
	5b. Defective mower switch.	5b. Replace switch.
	5c. Lack of continuity of wire #11 or #7 circuit.	5c. Inspect and correct.
6. Only one mower motor operates.	6a. FU3 or FU4 fuse blown.	6a. Replace fuse.
	6b. Mower motor C.B. tripped (AA model only).	6b. Wait 5 minutes, try again.
	6c. Defective motor.	6c. Replace mower motor.
7. Lack of power or reduced range.	7a. Not charging long enough.	7a. Refer to Use & Care Manual.
	7b. Brake dragging.	7b. Readjust brake.
	7c. Low electrolyte level.	7c. Refer to Use and Care Manual for adding water to batteries.
	7d. Tires underinflated.	7d. Refer to Use & Care Manual for proper inflation.
	7e. Failure to fully release clutch pedal on long runs.	7e. Refer to Use & Care Manual for proper operation.
	7f. Improper lubrication.	7f. See Lubrication Section.
	7g. Improper gear selection.	7g. Refer to Use & Care Manual for proper operation.
	7h. Loose or corroded battery clamp connections.	7h. Clean, tighten, and apply coating to connections.
	7i. Faulty battery.	7i. Isolate faulty battery and replace.

Problem	Probable Cause	What To Do
8. Batteries not charging.	8a. 20 amp charger fuse blown. 8b. Charger not plugged into household outlet. 8c. Household outlet inoperative. 8d. Improper setting of charger dial setting. 8e. Defective charger.	8a. Replace fuse. 8b. Plug in. 8c. Reset household C.B. 8d. Refer to Use & Care Manual for proper charging time. 8e. See "Charger" under TESTING PROCEDURES.

NOTE: In order to perform the following tests, the Rider must be in Normal Operating Condition (NOC) - key switch ON, seat switch closed, and transmission in Neutral.

TESTING PROCEDURES

WARNING: JACK UP AND SAFETY BLOCK THE REAR WHEELS WHILE PERFORMING OPERATIONAL TESTS TO PREVENT POSSIBLE INJURY TO THE OPERATOR.

NOTE: With the Rider's body in place, obtain access for taking voltage measurements by removing the mower and working from underneath the rider.

L Contactor

To determine the condition of the L contactor, first measure the coil voltage to be 36 volts as shown in Fig. 8.

If the reading is 0 volts, there is no input to the contactor and its contacts cannot close. With 36 volts on the coil studs, there should not be any voltage across the large contact studs (Fig. 9). If voltage is present, replace the contactor.

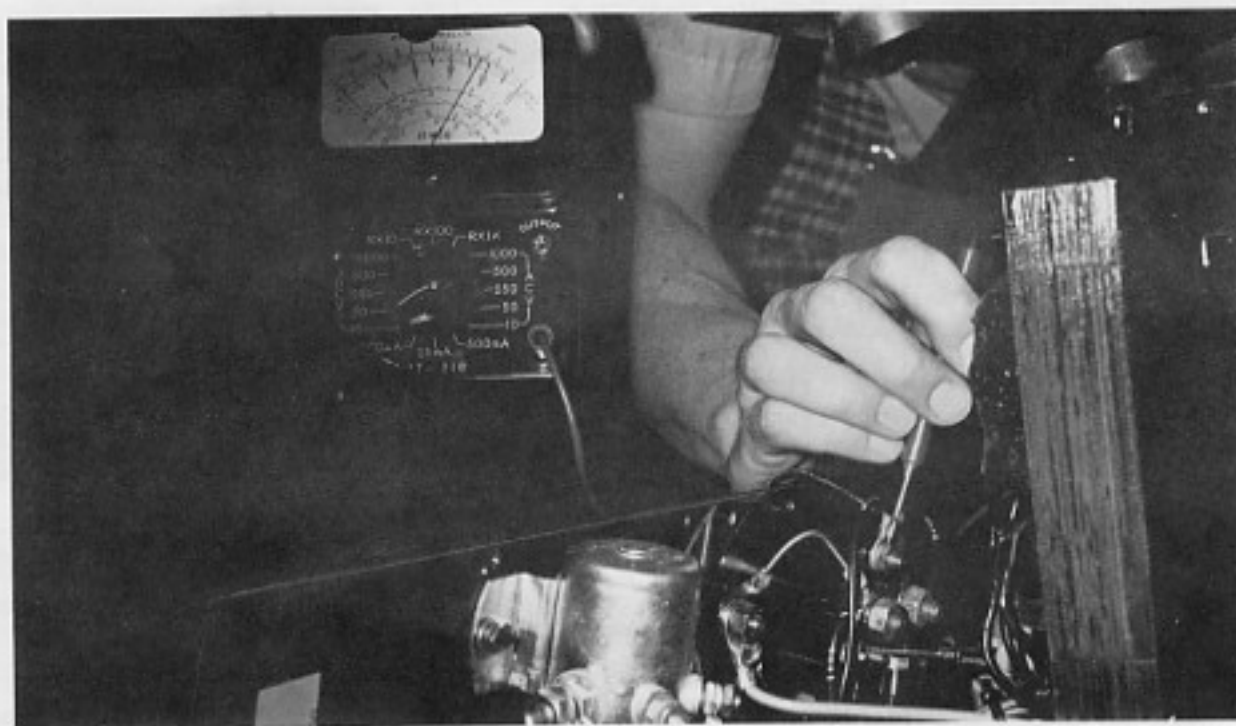


Fig. 8

WARNING: WHEN MAKING REPAIRS TO THE RIDER, ALWAYS REMOVE THE POSITIVE BATTERY CLAMP FROM BATTERY B1 IN THE POWER PACK. SEE FIG. 7.

NOTE: In order to perform the following tests, the Rider must be in Normal Operating Condition (NOC) - key switch ON, seat switch closed, and transmission in Neutral.



Fig. 9

**Drive Motor Starts, but Turns Off
When Shifting Into Gear**

Place the transmission in neutral to start the drive motor. This ensures closure of the contacts of the heavy studs on the L contactor. Measure for voltage across wires 1 and 5 (see Fig. 10) and shift into gear. If the meter reads 36 volts when the motor shuts off, replace the contactor.

**Drive Motor Runs On After Shutting
Off Key or Getting Off Seat**

Measure L contactor coil voltage as shown in Fig. 8. If the coil voltage is 0 volts and the drive motor is still running, the L contactor is jammed. Replace the L contactor. If the coil voltage is 36 volts, the L contactor is not defective. Refer to cause 3c on the Troubleshooting Chart, page 7.

Neutral Switch Adjustment

Due to a tolerance build-up in the Peerless transmission used in the Rider, the neutral switch on the transmission must be checked for operation within its proper range.

1. Jack up one rear wheel and place the transmission shift lever in the NEUTRAL position.

NOTE: This test can be performed by using the charger if the Rider does not have batteries installed. First, be sure the two loose battery cable ends are not touching each other or the Rider's metal frame. Next, plug in the line cord and turn the timer knob to the START position.

2. With the clutch pedal in the upright, or driving, position, depress the seat switch and turn the key switch to ON. The drive motor will now start. If the drive motor does not start, then recheck the controls and try again. If the motor still does not start, bypass the seat switch by removing the wire terminals from the switch and clipping them together. Next try bypassing the neutral switch. If you find the neutral switch is not closing, remove one shim from under the switch and try again. Remove shims one-at-a-time until the drive motor starts in the NEUTRAL shift position.

3. Put the transmission in REVERSE, and with the drive motor running, turn the key switch to the OFF position. The motor will now stop. Turn the

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NOTE: In order to perform the following tests, the Rider must be in Normal Operating Condition (NOC)
- key switch ON, seat switch closed, and transmission in Neutral.



Fig. 10

key back to the ON position. The motor should not restart.

4. **VERY SLOWLY** move the shift lever from the REVERSE position to the NEUTRAL position until the drive motor starts. Do not forget that the seat switch must be depressed or bypassed for this step in order for the motor to start. Mark the starting position with a pencil. The elevated rear wheel should not turn. If it does turn, then shimming of the neutral switch will be required. In any case, proceed to Step 5.

5. With the drive motor running and the shift lever in the NEUTRAL position, **VERY SLOWLY** move the shift lever toward the REVERSE position until the start of transmission engagement is felt and the raised rear wheel just starts to rotate. Mark this position of the shift lever with a pencil. The distance between the two pencil marks (one in Step 4 and the one in Step 5) must be at least one-eighth inch.

6. If the distance is less than one-eighth inch, remove the neutral wires, remove the neutral switch and add one shim, part 243A4613P1 (0.008 inch thickness). Reassemble the switch and wires.

7. Repeat Steps 3 through 6 until the proper neutral switch operational range (one-eighth inch) is obtained.

NOTE: If only one shim is added to adjust the neutral switch to the one-eighth inch dimension as in Step 5, and the addition of that one shim prevents the drive motor from starting under the same conditions, then replacement of the transmission is in order.

Drive Motor

To test the drive motor, place your meter probes as shown in Fig. 11. If 36 volts is present at the terminals and the motor doesn't run, it is faulty.

WARNING: WHEN MAKING REPAIRS TO THE RIDER, ALWAYS REMOVE THE POSITIVE BATTERY CLAMP FROM BATTERY B1 IN THE POWER PACK. SEE FIG. 7.

NOTE: In order to perform the following tests, the Rider must be in Normal Operating Condition (NOC) – key switch ON, seat switch closed, and transmission in Neutral.

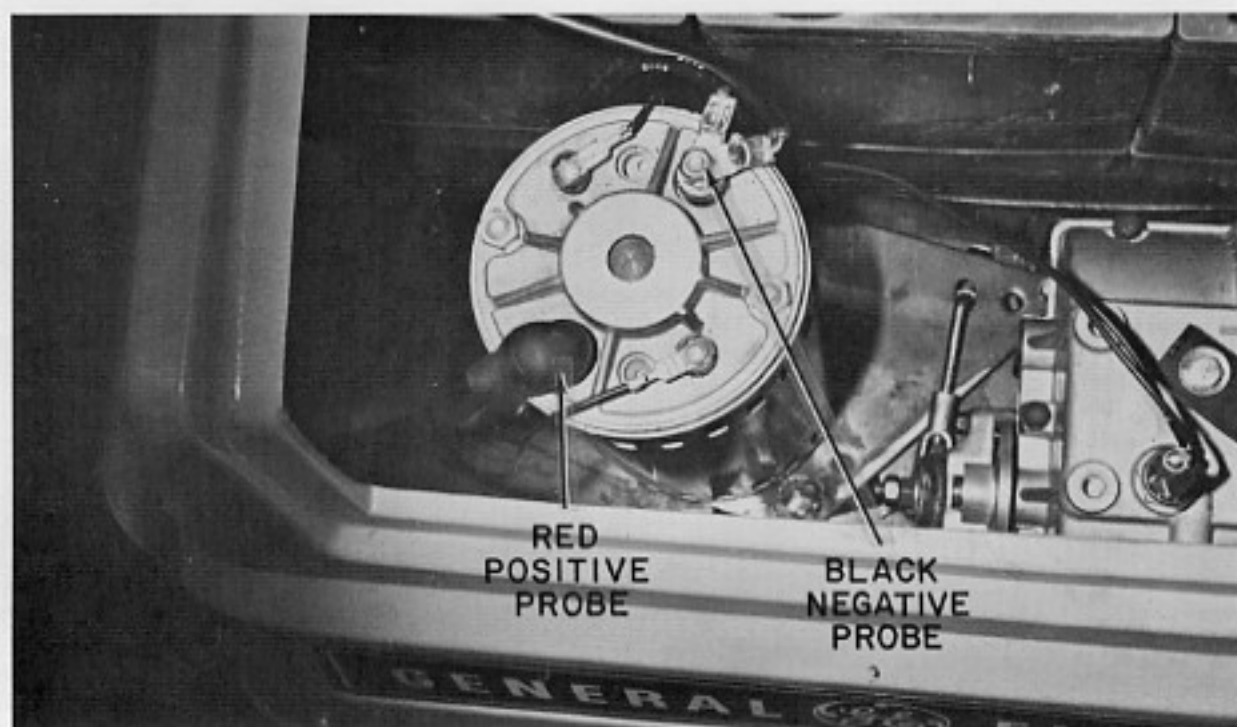


Fig. 11

Drive Motor Circuit Breaker

The drive motor circuit breaker is located inside the motor. To determine if the circuit breaker is open, proceed as follows. Locate the two light-gage wires at the drive motor (see Fig. 11). Unclip the two faston terminals and clip them together. If the motor starts normally, the circuit breaker must be replaced. If the drive motor is very warm, a sign of heavy usage or overloading, leave the circuit breaker in the circuit and wait fifteen minutes before performing the test to allow it to reset; then start the motor.

PTO Contactor

Measure the PTO contactor's coil voltage to be 36 volts (as shown in Fig. 12) with the mower switch in the START position. If no voltage is present at the coil, the contactor cannot operate.

If the reading is 36 volts, then measure the voltage across the two large studs on each side of the contactor where wires number 1 and 7 are attached. If voltage is present, replace the contactor.

Charger

To determine the condition of the charger, remove the battery clamp at B1+ and turn the charger knob to ON. Measure voltage as shown in Fig. 13. The voltage reading should be 40 to 44 volts d-c. If 0 volts is indicated, move the negative (black) probe to wire number 30 at the charger 20 amp fuse, located under the seat. If 40 to 44 volts is obtained at one side of the fuse, but 0 volts is obtained on the other side of the fuse, then change the fuse. If less than 40-44 volts is obtained, refer to the Charger Troubleshooting section of the Product Service Manual, page 1-26.

WARNING: WHEN MAKING REPAIRS TO THE RIDER, ALWAYS REMOVE THE POSITIVE BATTERY CLAMP FROM BATTERY B1 IN THE POWER PACK. SEE FIG. 7.

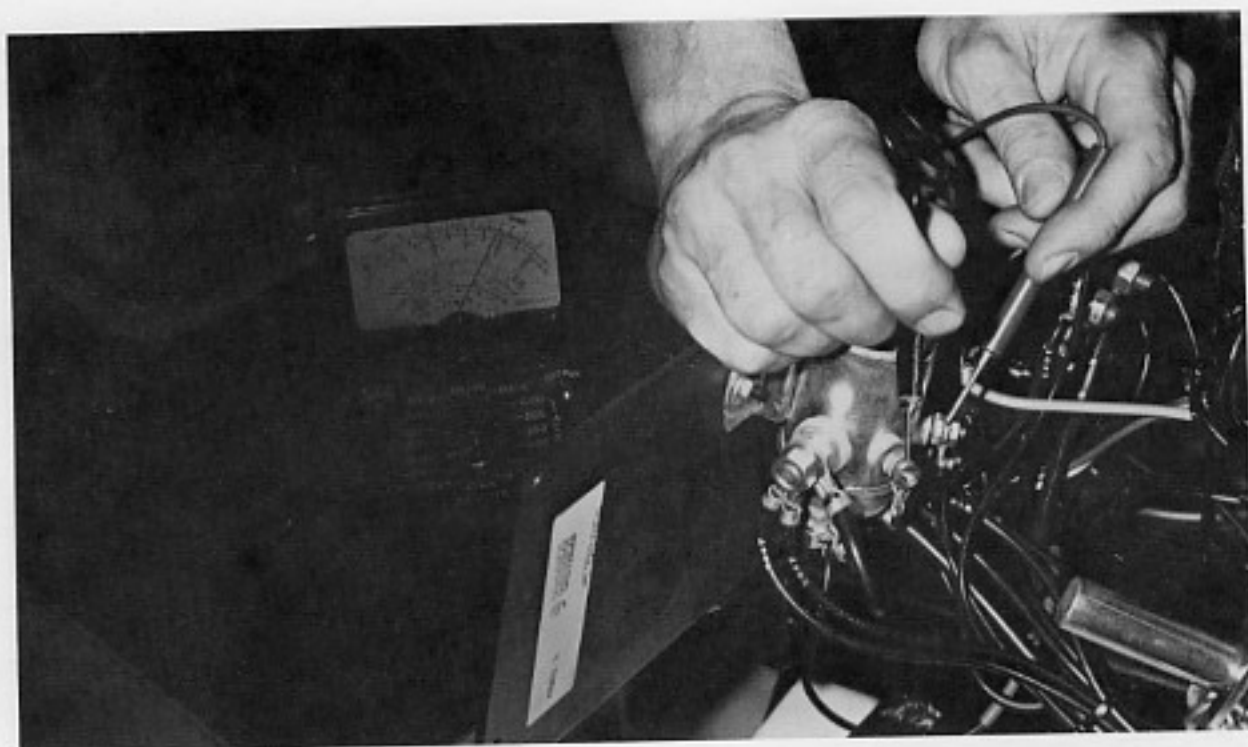


Fig. 12

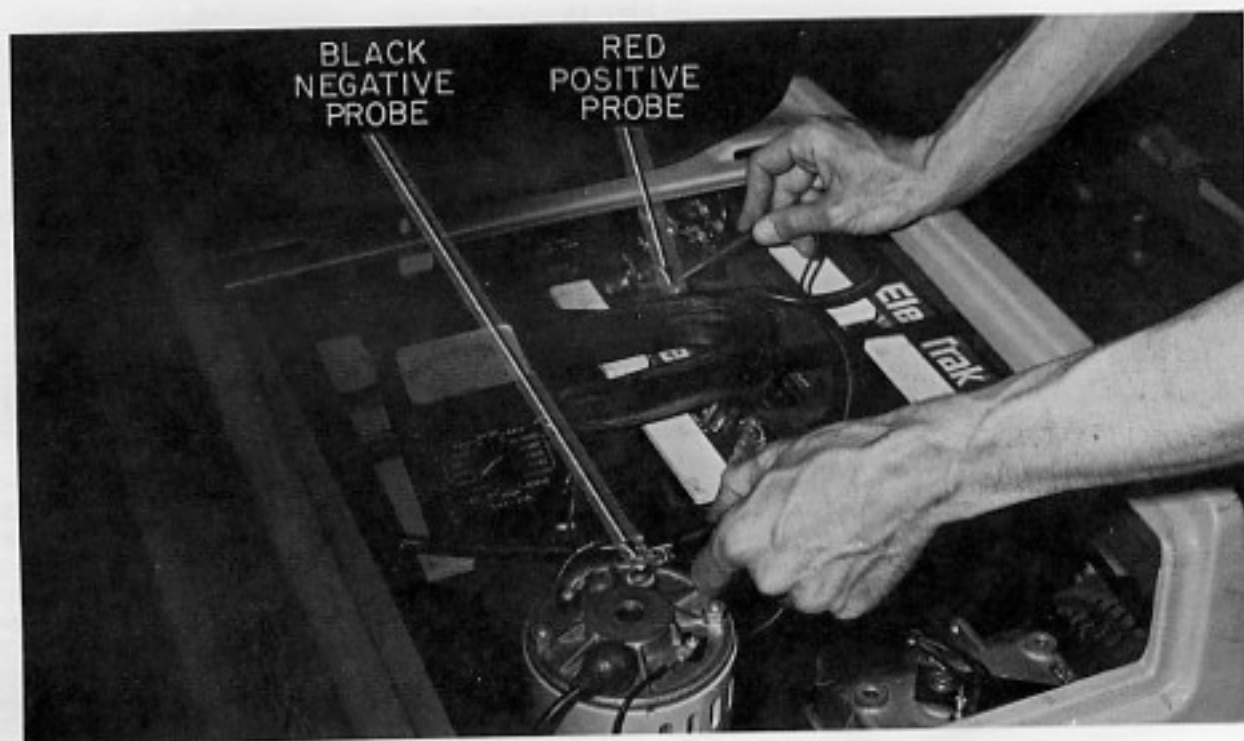


Fig. 13

MOWER USE AND CARE

WARNING: THE MOWER COMES WITH BLADES ATTACHED, AND SHOULD NOT BE ELECTRICALLY CONNECTED UNTIL FULLY MOUNTED AND BLADES CHECKED FOR TIGHTNESS.

Mower Attachment

To attach the mower, refer to Fig. 14 through 17 and take the following steps.

1. Drive the rider to a flat, level area and remove the key. Lower the mower lift handle to its lowest position.
2. Place the mower under the rider in its approximate mounted position.
3. Lift the "Z" bracket from the mower deck and place the short end over the right rear suspension pin of the rider (after removing the hair pin cotter). Place the long end over the left rear suspension pin of the mower.
4. Install the rear suspension arms over the rear suspension pins of the mower and rider on the right side. Stretch the spring connected to the second suspension arm (the spring goes under the "Z" bracket) and snap the arm on to the suspension pins on the left side.
5. Secure the ends of the suspension pins to the "Z" bracket with hair pin cotters. (See Fig. 14.) Cotter pins may also be used.
6. Remove the remaining set of suspension arms from the mower deck. Attach the second set of suspension arms (adjustable lengths with a spring

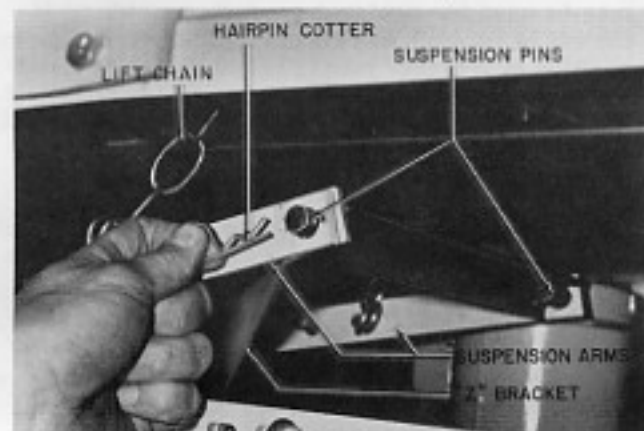


Fig. 14. Rear Suspension Assembly

between them) on the front set of suspension pins the same way the rear ones were installed. (See Fig. 15.)

7. The front arm lengths can be used for adjusting the levelness of the mower in the mowing positions. These arms are factory set, and should not require further adjustment.
8. Lift the mower deck with the manual lift. Remove the mower helper spring attached to the seat support through the rear compartment (Fig. 16). Attach the lower end to the hole in the rear of the mower deck support directly in back of the rear suspension arm lift pins. Stretch the spring and refasten it to the seat support it was first removed from. Install the second spring on the opposite side in the same way. If the batteries are in place, attach the upper end of the spring next to the seat support and stretch the spring from under the rider to fit into the mower deck support hole.
9. Join each mower-motor power-cord connector to its corresponding power cord exiting down from the bottom of the frame. (See Fig. 17)



Fig. 15. Front Suspension Arm Assembly



Fig. 16. Mower Helper Spring Installation

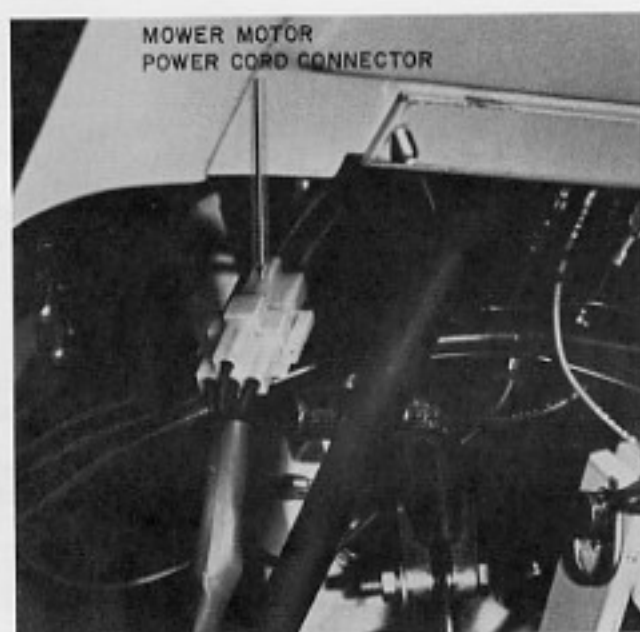


Fig. 17. Front Mower Suspension and Wiring

NOTE: The connector halves are keyed to fit together only one way to establish proper polarity.

WARNING: ALWAYS DISCONNECT BOTH PAIRS OF MOTOR POWER-CORD CONNECTORS BEFORE HANDLING THE MOWER FOR ANY REASON.

Adjustments

The rear mower wheels are the only part that requires adjustment. (See "Cutting" section.) Make adjustments as follows (Fig. 18):

1. Remove the key and turn the mower "OFF".
2. Raise the mower to the uppermost position.
3. Remove the center bolt of each rear wheel.
4. Relocate the wheel center bolts in the desired position.

NOTE: The upper adjustment hole gives the lowest cutting height and the lowest hole gives the maximum lawn cutting height. The other adjustment holes allow intermediate cutting heights in 1/2-inch increments.

5. Secure the wheel assemblies in the desired position with lockwashers and nuts, making sure

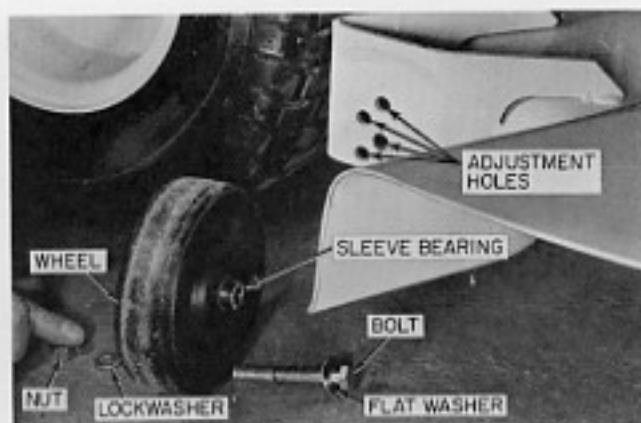


Fig. 18. Mower Wheel Height Adjustment

each wheel uses a similar mounting hole to keep the mower level.

Mower Operation

The operator must be seated on the rider, the transmission shifted to neutral, the key switch turned to "ON", and the drive motor started before the mower switch can be turned to "START" to operate the mower. An electrical interlock prevents mower starting if this procedure is not followed. Once the mower is running, if the operator leaves the seat or turns the key switch to "OFF", another interlock operates which not only interrupts mower power, but also stops blade rotation quickly by a dynamic braking action. To restart, with the key "ON", simply restart the drive motor and move the mower switch to "START" (fully up) and then to "RUN". For all normal use, the mower switch should be used to turn the mower off.

Gears 2 and 3 are the best speed ranges to use for average to heavy mowing, and gears 3 and 4 may be used for lighter duty, faster mowing. If the cut is not even and clean, a lower gear selector position or a higher cutting height should be used. The lower gears should be used on steep hillsides for greater control.

When mowing on steep hillsides, the travel should be up and down. Care should be exercised to avoid sudden starts and stops which may cause loss of control. The rider motor will offer some braking action provided the clutch/brake pedal is not depressed and the gear selector is left in gear. First gear offers the most motor braking.

Cutting

Always mow with sharp blades. The blades should be sharpened and balanced seasonally if

subjected to average use, or whenever cutting quality deteriorates. Always disconnect the motor power cords before servicing or adjusting the mower. After each sharpening, if mower vibration is noticeable, the blades should be checked for balance. Unbalanced blades will shorten the life of the mower motor bearings.

For good appearance of the mowed lawn, it is very important to have the mower adjusted correctly for height of cut. (See the section on "Adjustment".)

The best height of cut should be determined by positioning the rear mower wheels in the second-lowest adjusting holes for the first few passes. If the grass is not cut short enough, use of the third-lowest hole will give a 1/2-inch shorter cut, and so forth. Care must be used not to scalp uneven parts of the lawn by cutting too close.

Experience in operating the equipment under various conditions is important in obtaining maximum efficiency and the best appearance. After a few hours of operation, mower motor and blade loading can be easily determined by the change in sound produced. If the turf is very soft or the grass is very heavy the blade noise and mower vibration may increase signaling the operator of overloading. In this case, it is suggested that the lift lever be raised until the weight of the mower is first felt and then to lock the lift in the next higher position. After mowing with the mower in this position, if it is desired to cut the grass shorter, another pass with the mower fully lowered should be made. If the grass is not too long, shifting into a lower gear may eliminate the need for raising the mower.

On average lawns that have merely grown too long it may be necessary to mow on two passes in the same manner as described above to prevent clogging of the chute. This would also be the method used to mow very high grass or weeds, but the initial pass should be made with the mower in its highest cutting position.

When sections of rough terrain or an area which may contain small stones is encountered, the operator should constantly adjust the lift lever to the conditions to prevent damage to the equipment or injury to the operator or bystanders.

If the rider appears to groove the lawn or gives a bumpy ride, check the tire pressure. The pressure should be 12 psi rear, and 15 psi front.

MOWER OPERATING TIPS

It is recommended that the underside of the mower deck be cleaned frequently to maintain maximum mowing effectiveness and reduce the likelihood of blade clogging. The mower must be removed to facilitate effective cleaning.

CAUTION: The use of water can damage bearings in the motors.

Mow high grass by making two passes; the first pass with the mower in its highest position. If there are low obstructions such as twigs or small stones in the mowing area, the second pass should be made with the mower still at a high setting to accommodate the obstructions.

Sharpen and balance blades as required, but at least seasonally.

Oil mower wheel axles and lift pivot points frequently with a 30 weight machine oil.

Turn to the right when beginning to mow large open areas to discharge clippings away from borders such as sidewalks, fences, driveways, etc. After making two or three passes this way, mow in the opposite direction turning to the left to finish. See Fig. 19.

Turn to the left as much as possible so that grass clippings will be discharged evenly to the right over grass already cut. Turning to the right causes a build-up of grass clippings which prevents uniform cutting and causes an unnecessary load on the mower.

Avoid mowing wet grass as this can cause chute and blade clogging which reduces the cutting effectiveness and overloads the motors.

Listen to the sound of the motor as an indication of loading. If mower motors slow down and the mower deck vibrates because of loading in tall or thick grass, reduce vehicle speed by selecting the next lower gear.

LUBRICATION - EVERY 20 HOURS OF USE Grease

Use a general purpose lithium-base grease, part No. 243A4551P1. Grease should be applied

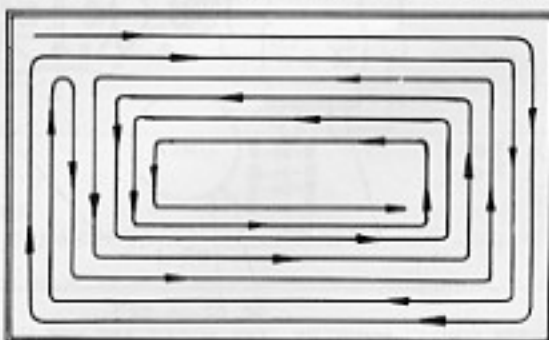
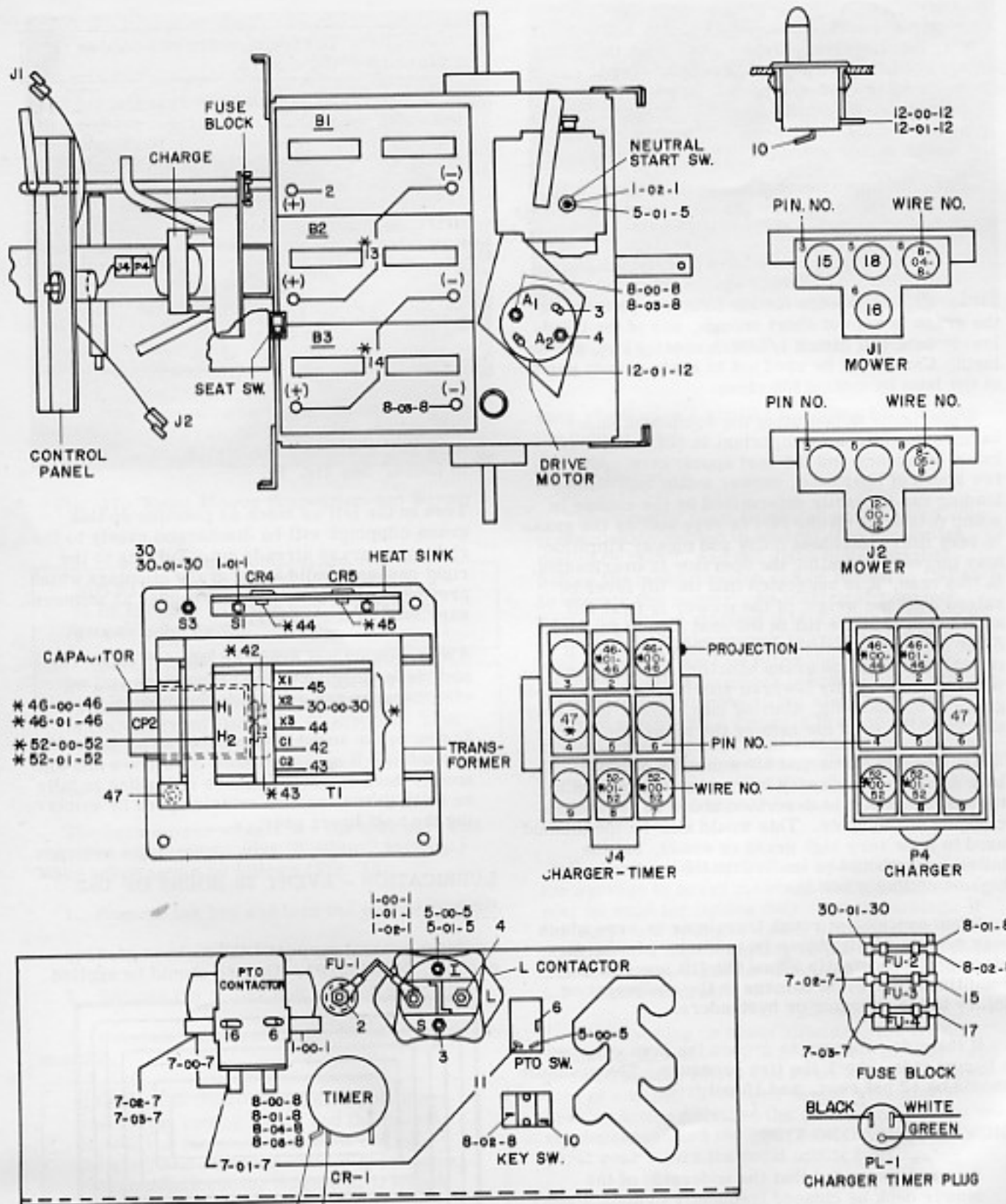


Fig. 19. Mowing Pattern



* THESE ARE CIRCUIT NUMBERS - THE WIRES ARE NOT NUMBERED AS ILLUSTRATED.

Fig. 20. Electrical Component Location

WIRING TABLE

CONTROL PANEL

WIRE NO.	SIZE AWG	WIRING SEQUENCE
1-00-1	8	L, PTO N.O.
1-02-1	18	L, NEUTRAL START SW.
2	6	B1 (+), FU-1
3	18	L COIL, CB-1 (MOTOR)
4	8	L, A ₂ (MOTOR)
5-00-5	18	L COIL, PTO SW.
5-01-5	18	L COIL, NEUTRAL START SW.
6	18	PTO SW., PTO COIL
7-00-7	8	PTO N.O., PTO N.C.
7-01-7	18	PTO N.C., CR-1
7-02-7	12	PTO N.O., FU-3
7-03-7	12	PTO N.O., FU-4
8-00-8	8	PTO N.C., A ₁ (MOTOR)
8-01-8	12	PTO N.C., FU-2
8-02-8	18	KEY SW., FU-2
8-03-8	6	B3 (-), A ₁ (MOTOR)
8-04-8	12	PTO N.C., J1-8
8-05-8	12	PTO N.C., J2-8
10	18	KEY SW., SEAT SW.
11	18	PTO SW., CR-1
12-00-12	18	SEAT SW., J2-6
12-01-12	18	SEAT SW., CB-1 (MOTOR)
15	12	FU-3, J1-3
16	18	PTO COIL, J1-6
17	12	FU-4, J2-3
18	18	J2-5, J1-15

CHARGER

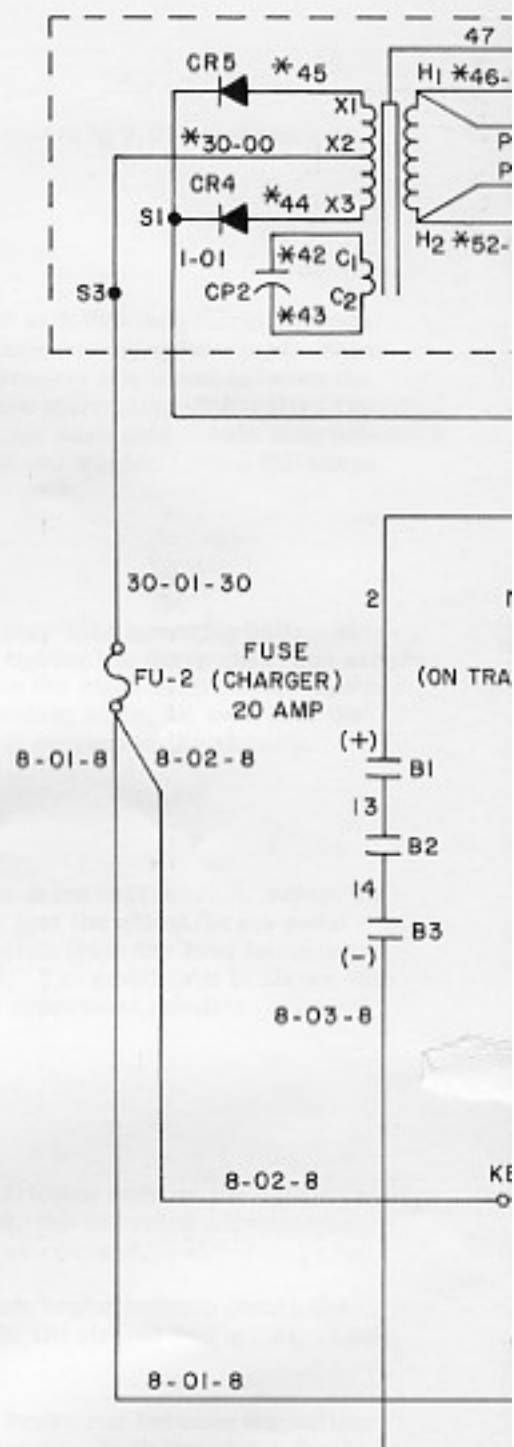
1-01-1	12	S1 (HEAT SINK), L
	12	T1 (X2), S3
30-01-30	12	S3, FU-2
	16	T1 (C1), CP2
	16	T1 (C2), CP2
	12	T1 (X3), CR4
	12	T1 (X1), CR5
	16	T1 (H1), P4-1
	16	T1 (H1), P4-2
47	16	T1 (GRD), P4-6
	16	T1 (H2), P4-7
	16	T1 (H2), P4-8

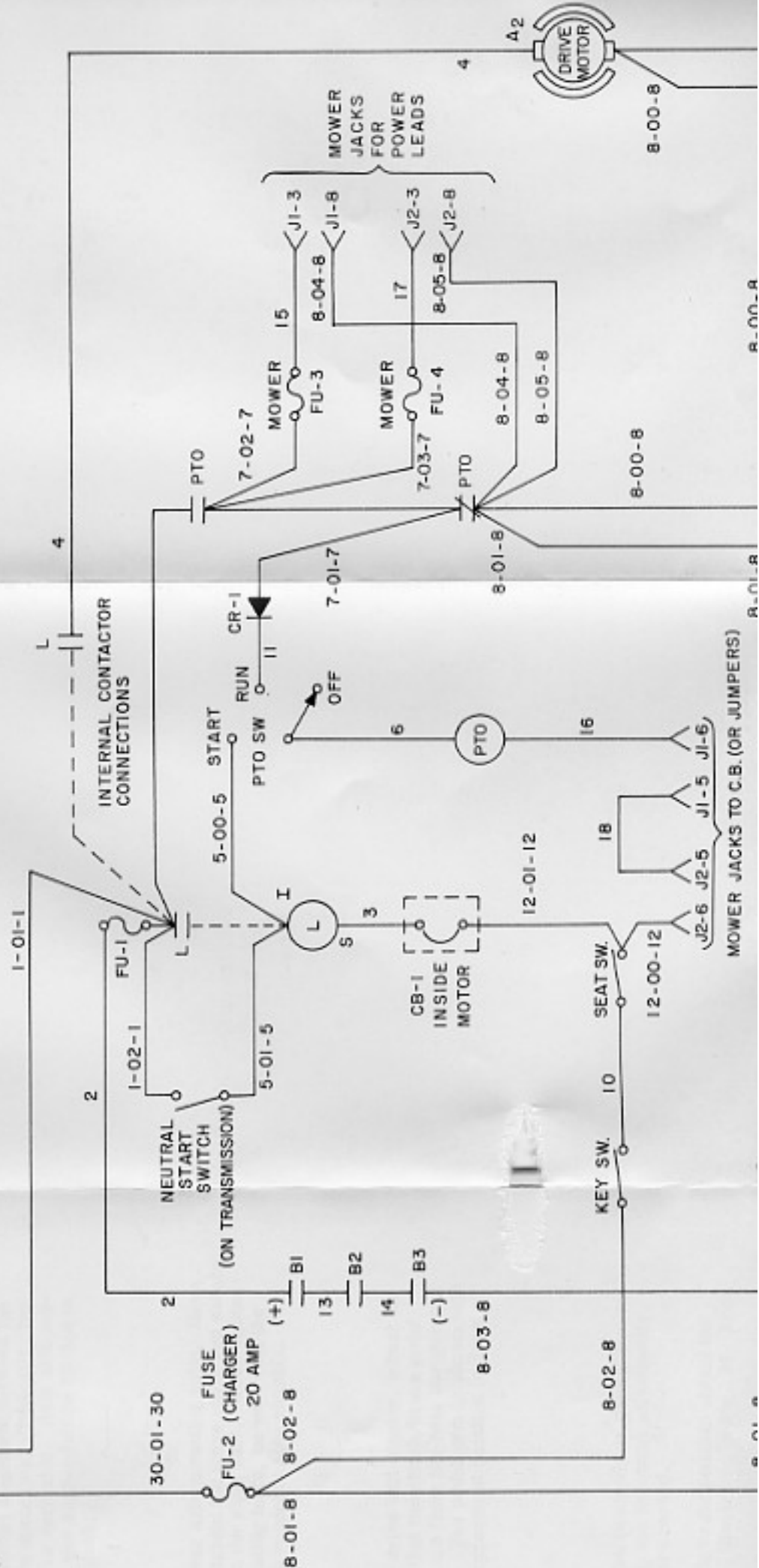
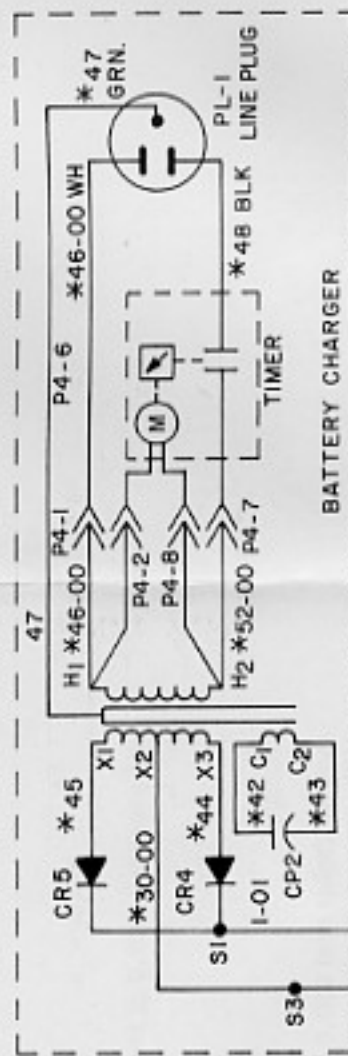
TIMER

	16 WH.	PL-1, J4-1
	16	MOTOR (TIMER), J4-2
	16 GRN	PL-1, J4-6
	16	PL-1, TIMER (N.O.)
52-00-52	18	TIMER (N.O.), J4-7
	16	MOTOR (TIMER), J4-8

BATTERY CABLES

	6	B1 (-), B2 (+)
	6	B2 (-), B3 (+)



KEYSYMBOL

N.O.	= NORMALLY OPEN CONTACTS	
N.C.	= NORMALLY CLOSED CONTACTS	
FU	= FUSE	
CB	= CIRCUIT BREAKER	
CR	= DIODE	
SW	= SWITCH	
P	= HARNESS PLUG	
J	= HARNESS JACK	

through the grease fittings with a hand grease gun. Pump the gun until all dirt and old grease are flushed out, and wipe all surfaces clean.

Apply grease to the fittings located at the front wheels (two) and the rear axle support bearings (two).

Liberal apply grease to the following locations:

1. The point of contact between the lift bar and lift rod.
2. The steering gear segment and pinion.
3. The underside of the drive motor mounting plate at the three embossed pivots.

Lightly coat each battery terminal and post to prevent corrosion.

Oil

Use heavy-duty (30 weight) non-detergent machine oil. Points requiring oiling are:

1. Clutch/brake pedal pivot pin and linkage connections
2. Mower mounting pins
3. Lift assembly pivot pins
4. Rear axle drive chain
5. Front axle pivot pin
6. Lift bar pivots
7. Nylon spindle bearings on front wheels
8. Upper bearing of the steering shaft

Prevent dirt and dust accumulation by wiping away all excess oil.

SPECIFICATIONS

Tire Inflation

Front	15 psi
Rear	12 psi

Torque Settings

Steering gear segment mounting bolt	50 to 60 ft-lbs
Drive motor mounting plate pivot bolt	50 to 60 ft-lbs
Rear axle mounting bolts (4)	17 to 19 ft-lbs
Transmission mounting bolts (4)	10 to 12 ft-lbs
Mower blade mounting bolts (2)	21 ft-lbs

ADJUSTMENTS

Steering

Shim the gear segment to 0.010 clearance as shown in Fig. 22.

Rear Axle

Use shims (0.050 to 0.060 inch thick) between the wheel hubs and axle mounting bearings. Shim to obtain the best sprocket alignment between the axle and transmission sprockets. Typically, two shims are required for each side. Axle side motion must not exceed one washer (shim) thickness, approximately 0.060 inch.

Drive Chain

Loosen the four rear axle mounting bolts. Move the axle forward to tighten the drive chain and secure the mounting bolts on the right side. When tightening the left side mounting bolts, be sure that the axle is not tilted with respect to the chassis.

Clutch

To assure proper drive belt tension, adjust the clutch rod clevis so that the clutch/brake pedal arm is located 1/4-inch from the rear bumper pad as shown in Fig. 23. The pedal arm is shown with the drive belt in its uppermost position (driver's foot off the pedal).

Brake

Whenever brake friction pads or the caliper assembly are replaced, the following adjustments must be performed or checked.

Depress the clutch/brake pedal to obtain the 2-3/8 inch dimension illustrated in Fig. 24. Lock the pedal in place.

Locate the short brake rod between the caliper and the motor pivot plate. With the clutch/brake pedal in its at-rest (upright) position, adjust the brake rod clevis so that the rod touches the rear of the brake rod slot in the motor plate. See Fig. 25.

Adjust the brake caliper so that the brake pads are just touching the brake disk. To adjust the caliper, loosen the lock-nut and turn the adjustment nut at the brake caliper (located on the transmission).



Transmission

If the transmission is replaced, two adjustments may be required.

1. Neutral Switch Shimming - See the instructions given under Neutral Switch Adjustment, page 12.

2. Shift Rod Adjustment - With the transmission in neutral, adjust the shift rod clevis so that the shift rod is in the center of the vertical slot of the shift gate, and lock the jam nut. See Fig. 26.

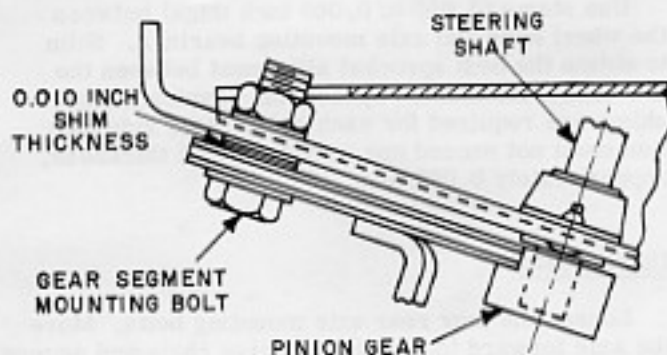


Fig. 22.
CLUTCH/BRAKE PEDAL ARM

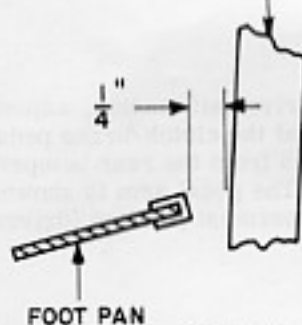


Fig. 23.

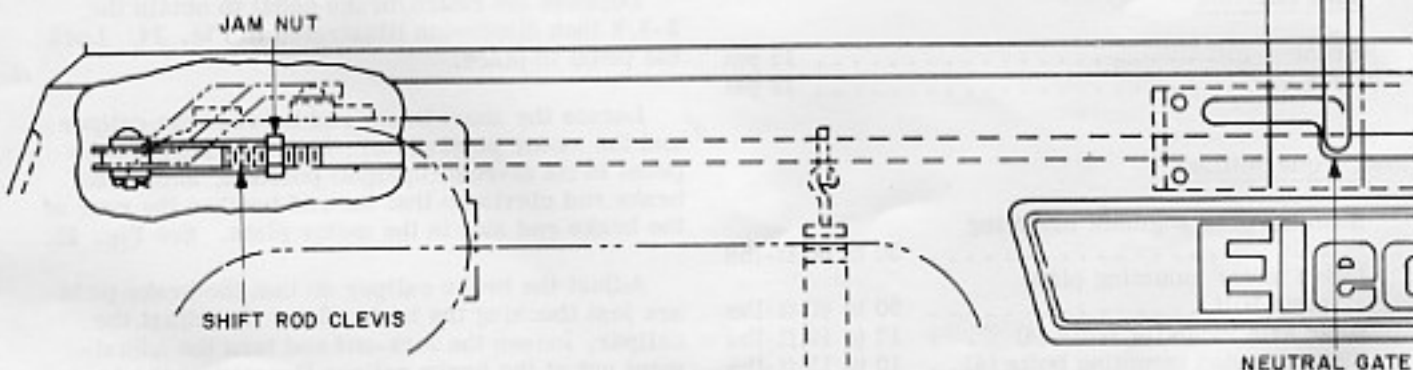


Fig. 26.

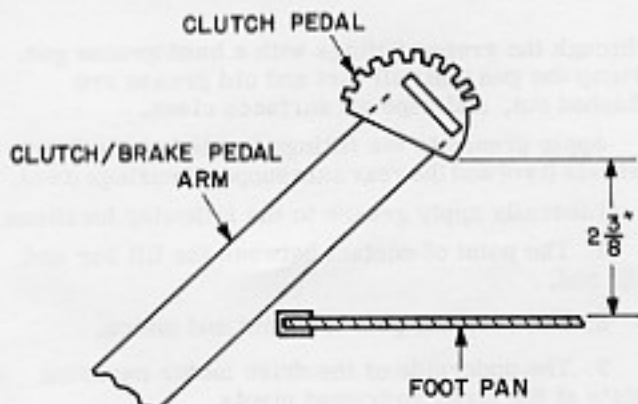


Fig. 24.

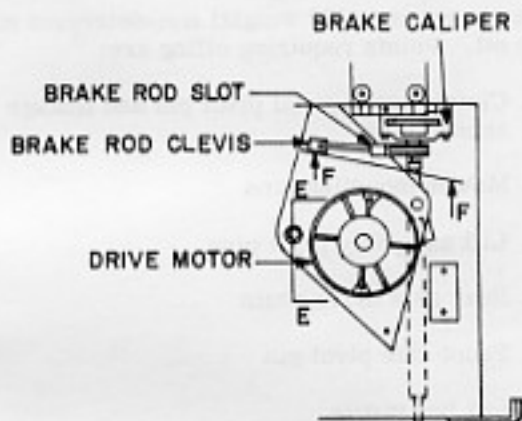


Fig. 25.

WARRANTY ELEC-TRAK RIDING LAWN MOWER

General Electric Company U.S.A. warrants to the original purchaser that it will repair or replace without charge, f.o.b. factory, including cost of parts and labor for replacement, any part of the ELEC-TRAK riding lawn mower with which this warranty is furnished which proves to be defective in material or workmanship within 12 months in ordinary home use (3 months if in commercial or institutional use) following the date of sale. This warranty does not apply to the power pack, which is separately warranted and offers additional replacement coverage. These warranties do not apply to any repair or replacement made necessary by special user applications not recommended by General Electric or improper use or maintenance, or by abuse or accidental damage.

The foregoing warranty states the entire obligation of General Electric Company U.S.A. with respect to said products and is in lieu of any and all other warranties, express or implied. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT WILL THE COMPANY BE LIABLE FOR INDIRECT OR CONSEQUENTIAL DAMAGES.

WARRANTY ER8-36 RIDER POWER PACK

General Electric Company U.S.A. warrants to the original purchaser that it will replace without charge, f.o.b. factory, any individual ELEC-TRAK rider power pack unit with which this warranty is furnished if it fails because of defects in material or workmanship within 12 months in ordinary home use (six months in commercial or institutional use) following the date of sale. After 12 months in home use, but within 36 months following the date of such sale a power pack will be replaced at a pro rata service charge equal to 1/36th of the list price for replacement units multiplied by the number of months which have elapsed from the date of original purchase to the date of failure. Labor and service call charges during the first 12 months in ordinary home use (3 months if in commercial or institutional use), will be covered as stated in the rider warranty. Service calls and labor after the first 12 months are the responsibility of the owner. This warranty does not apply to any replacement made necessary by improper use or maintenance, or by abuse or accidental damage. A replacement unit will carry the above 12 month warranty and thereafter will be considered to be installed on the same date as the other units in the power pack for pro rata adjustment.

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