



Electrak[®]

Garden Tractor

E8M and E10M

Owner's Use and Care Manual



GENERAL  **ELECTRIC**



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**READ BEFORE ATTEMPTING
TO OPERATE.**

® TRADEMARK

This manual does not purport to cover all possible applications or details or variations in equipment nor to provide for every possible contingency to be met in connection with operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purpose, the matter should be referred to your authorized ELEC-TRAK tractor dealer.

OWNER REGISTRATION

THE OWNER REGISTRATION CARD BELOW MUST BE FILLED-IN AND SUBMITTED TO GENERAL ELECTRIC TO ENSURE RECEIVING USER INFORMATION AND OPERATING TIPS WHICH GE PUBLISHES FOR ITS CUSTOMERS.

Did you receive a fully filled out Dealer Delivery Report from your Dealer?

☐ Yes ☐ No

Did your Dealer fully explain and demonstrate operation of the equipment?

☐ Yes ☐ No

Size of Property

- ☐ Less than 3/4 Acre
- ☐ 3/4 – 1-1/2 Acre
- ☐ 1-1/2 – 3 Acres
- ☐ More Than 3 Acres

Previous Equipment

- ☐ Walking Mower
- ☐ Riding Mower
- ☐ Tractor

Intended Uses

- ☐ Mow
- ☐ Plow Snow
- ☐ Blow Snow
- ☐ Tow Attachments
- ☐ Hand Power Tools

I Learned About ELEC-TRAK[®] Tractors
From:

- ☐ Friend
- ☐ Dealer
- ☐ TV
- ☐ Newspaper or Magazine

MODEL: _____

SERIAL NO.: _____

Dealer _____
(Type or Print)

Owner _____
(Type or Print)

Address _____

Address _____

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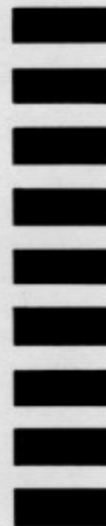
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OUTDOOR POWER EQUIPMENT OPERATION
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SCHENECTADY, NEW YORK 12305**

Attention: Product Service



Introduction

Congratulations! You now own a fine product built by the General Electric Company to assure you high quality and excellent service.

Electricity is the cleanest, most dependable and economical source of power. Every day, all around you and often taken for granted, electrical power is working for you . . . heating, cleaning, lighting, and cooling.

The ELEC-TRAK[®] garden tractor is the result of careful design engineering with the operator foremost in mind. Safety, ease of operation, economy, ruggedness, and maintenance-free features are built into the ELEC-TRAK tractor.

This manual has been carefully prepared to instruct you in operating, maintaining, and lubricating your tractor and mower. It is **VERY IMPORTANT THAT EACH OPERATOR FULLY UNDERSTANDS THE ENTIRE CONTENTS OF THIS MANUAL FOR SAFE, DEPENDABLE OPERATION AND TO PROLONG THE LIFE OF THE EQUIPMENT.**

Your ELEC-TRAK tractor dealer is equipped with genuine ELEC-TRAK tractor parts. He has factory-trained service personnel using the latest approved test and repair equipment and will service your tractor to assure safe, efficient, and economical operation. **UNAUTHORIZED SERVICE MAY VOID WARRANTY AND RESULT IN A SAFETY HAZARD IF NOT PERFORMED TO RECOMMENDED GE SPECIFICATIONS. HOWEVER, BEFORE CONTACTING YOUR DEALER, SEE THE TROUBLE-SHOOTING CHECK LIST ON PAGE 20.**

WARRANTY REGISTRATION

To validate your registration, your dealer must complete and submit a Dealer Delivery Report to General Electric Company. To assure proper warranty coverage, be sure that your dealer prepares this form for you with a copy properly dated and sent to the General Electric Company at the address shown below:

General Electric Company
Outdoor Power Equipment Operation
Manager of Product Service
Corporations Park
Schenectady, New York 12345

When ordering parts, remember to specify model and serial number shown on the right side of the frame just ahead of the rear wheel.

Plug-In . . . The key to automatic refueling

The ELEC-TRAK tractor is designed to refuel itself and always be ready for service if it is plugged in and the charger dial turned to the appropriate "Start" position. (See Page 12) **IT SHOULD ALWAYS BE PLUGGED INTO A 3-WIRE (GROUNDED) 115-VOLT OUTLET WHEN NOT IN USE.** When turned on, the charger automatically senses the power pack condition and adjusts the charging rate to the proper level to bring the power pack to a fully charged condition

as fast as possible. The charger timer will continue to move for several hours after full charge is reached but the charge rate will be very low to assure equalization of all the individual cells.

It is important to put the tractor on charge during any short breaks in operation (10 minutes or longer), since the high rate of input during the early part of the recharge cycle adds considerable range to the work period.

NOTE

Prior to initial use of the ELEC-TRAK tractor, the user should completely familiarize himself with all tractor controls and the safety interlocks. (Pages 5 through 8.) (See Figure 1)



Safety Practices

As with all power devices, prime responsibility for safe operation of the equipment rests with the operator. It is necessary that both operating instructions and the following safety information be fully understood by each operator before using the tractor and attachments.

- Become familiar with the location and function of all controls.
- Be sure the work area is clear of objects such as stones, metal objects, or sticks, which might be picked up and thrown by the mower.
- Regulate travel speed according to ground conditions.
- Don't forget to set the brake and shut off attachment power before you leave the tractor.
- Don't drive too close to creeks or ditches, in order to avoid the chance of tipping.
- Watch out for traffic when near roadways.
- Vehicles and attachments should be stopped and inspected for damage after striking a foreign object and the damage should be repaired before restarting and operating the equipment.
- Mow up and down the face of slopes; never across the face.
- Stay alert for holes and other hidden hazards.
- Watch where you're driving! Pay attention! The tractor is heavy and very powerful.
- Beware of steep slopes! Reduce speed on all side slopes and sharp turns to prevent tipping or losing control.
- Don't attempt to operate tractor when not in seat.
- Don't carry passengers without proper provisions.
- Keep children and pets at a safe distance, especially in the direction of mower discharge.
- Don't wear loose-fitting clothing that might get caught in moving parts.
- Never attempt to get off the tractor while it is in motion.
- Don't stop or start suddenly when going uphill or downhill. A sudden change of speed could upset the balance of tractor or operator.
- Keep tractor in good operating condition. Maintain all safety devices as indicated in this manual.
- Plug tractor charger cord into a normal 115-volt, 3-hole grounded receptacle. Do not use a 2-hole adapter unless properly grounded.
- Keep hands and feet clear of all rotating equipment.
- Disconnect power cord connections from tractor to attachment before handling or servicing power attachments.
- All safety devices are for your protection. Do not attempt to defeat them.
- Shut off power to attachments when transporting or not in use for safety and to conserve power.
- Take all possible precautions when leaving vehicle unattended; such as turning PTO switch to "Off", lowering attachments, setting parking brake, and removing key.
- Keep motors free of grease, leaves, or grass to prevent heat build-up.
- Use care when pulling loads or using heavy equipment.
 - Use only approved drawbar hitch points.
 - Limit loads to those you can safely control.
 - Do not turn sharply. Use care when backing.
- When using any attachments, never direct discharge of material toward bystanders or allow anyone near vehicle while in operation.
- When using tractor with mower:
 - Mow only in daylight or in good artificial light.
 - Check blade mounting bolts for proper tightness at frequent intervals.

OPERATION

NOTE

The ELEC-TRAK tractor should be plugged in and brought to the full charge state as soon as the owner takes delivery. (See Page 12.)

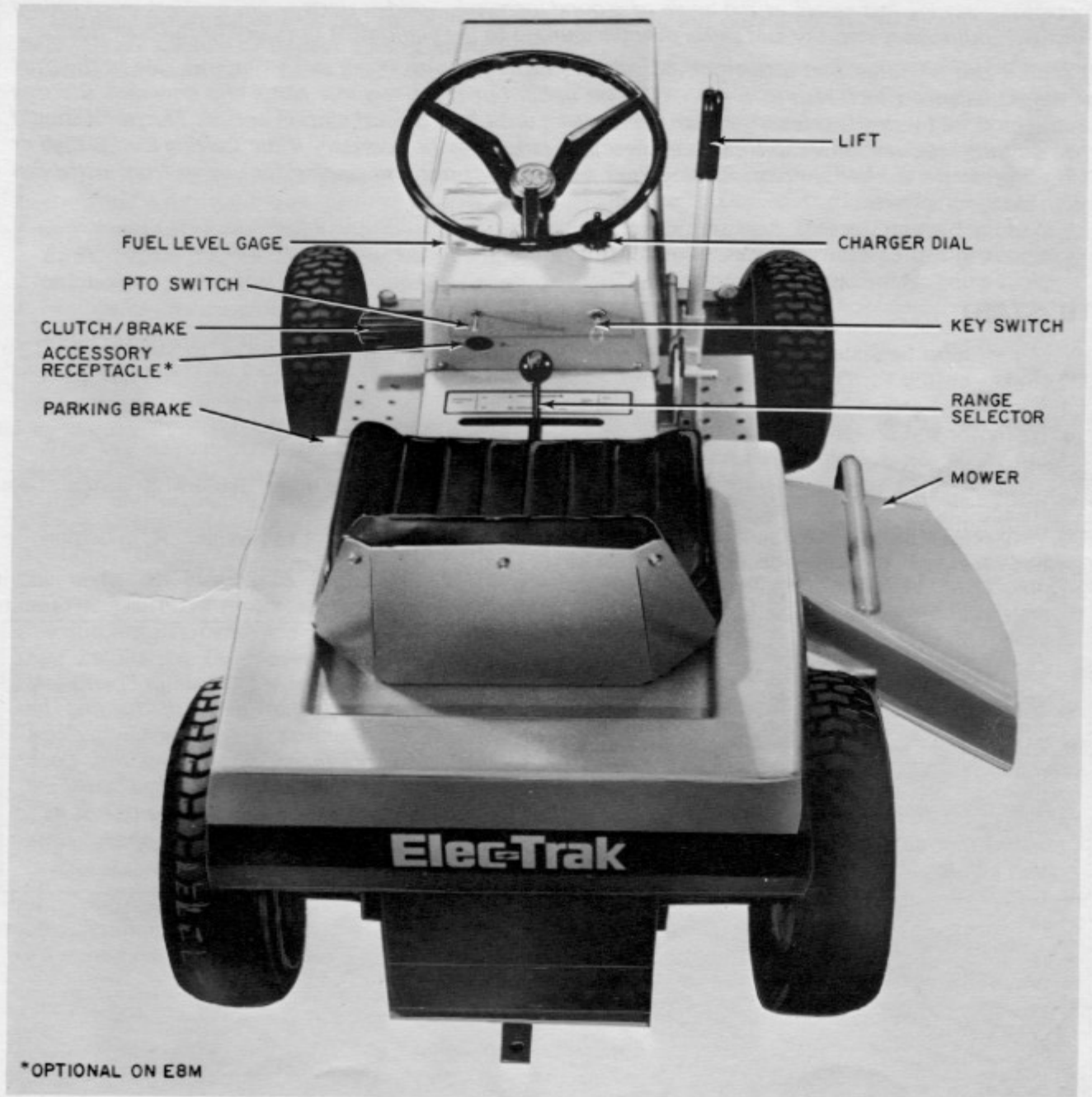


Figure 1. E10M ELEC-TRAK Tractor



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OPERATION

WARNING

Operator should not release clutch/brake pedal quickly in starting. This practice draws high current through the drive motor and can also result in a sudden snap start. The ELEC-TRAK tractor is much the same as an automobile; it is a powerful machine which must be handled with care and judgment. Special care in starting and braking on hilly terrain is imperative for safe operation since the balance shifts to make the machine less stable as the angle of ground increases. Sudden starts uphill or stops when rolling downhill could upset stability and cause possible damage to the equipment or injury to the operator.

It should also be noted that a tractor will climb a steeper hill than it can safely descend, due to the shift of weight balance which results in more traction uphill but much less rear wheel grip downhill. Starting should be done by slowly releasing clutch/brake pedal until full forward motion occurs. The pedal should then be fully released. Down shifting to a lower gear range may be necessary if the starting load is high or if the tractor slows after starting. Resting your heel on foot-rest and tipping foot away from pedal can aid in slow, soft, starts.

TO START

1. Operator must be seated in the seat.
2. Turn key switch to "On".
3. Fully depress clutch/brake pedal which will start drive motor and prevent tractor motion.
4. Move range selector to desired position (L, D1, or D2). A slight release of clutch will facilitate shifting.
5. *Slowly* release clutch/brake pedal.
6. When forward motion occurs, fully release pedal.

NOTE

Full depression of the clutch/brake pedal gives maximum braking and no transfer of power to the transaxle. Partial pedal depression allows tractor to "creep" or to regain forward motion after stopping midway on an uphill climb.

TO STOP

Depress clutch/brake pedal to stop tractor. To stop drive motor, turn key switch to "Off".

TO REVERSE

1. Stop tractor by fully depressing clutch/brake pedal.
2. Move range selector to reverse, "R," position.
3. *Slowly* release clutch/brake pedal.

NOTE

New power packs have a "break-in" period. It is recommended that deep discharging be avoided for the first 5 operational periods. This will assure longer power pack life. Deep discharging can be identified when the Fuel Level Gage reads in the red to the left of "E" (on E10M) or when the mower speed slows down on any model.

CONTROLS AND FEATURES

ATTACHMENTS

Use and care information for the 36 inch rotary mower is found on pages 9 through 11 of this manual. Information for other ELEC-TRAK attachments or accessories is found in the specific manual supplied with that equipment.

The rear pin hitch is provided for light hauling only. Heavy hauling or impact pulling, should not be attempted with the E8M or E10M models.

NOTE

Under no circumstances should automotive electrical equipment such as lights, horns, or any grounded frame device be attached to the ELEC-TRAK tractor. The tractor frame is not grounded and such devices could cause damage to the control system and a potential safety hazard if used.

TRACTOR KEY SWITCH

The key switch "Off" position disconnects all electrical circuits with the exception of the charger, and accessory receptacle*. These circuits are active with the key in either the "Off" or "On" position. The clockwise "On" key position allows power to be applied to the drive and mower motors. The drive motor is started by depressing the clutch/brake pedal and the mower motors can then be started by moving the PTO switch to "Start".

*E10M Model only

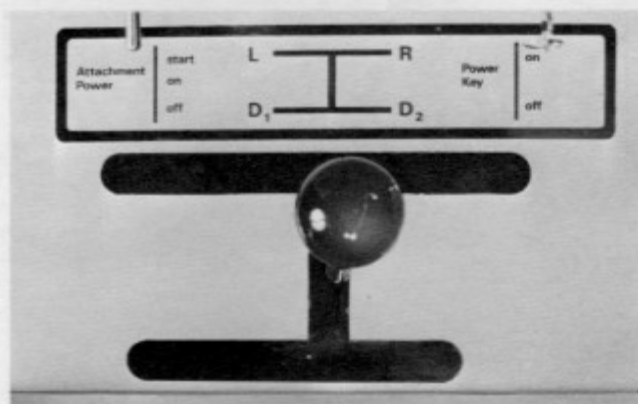


Figure 2. Range Selector

RANGE SELECTOR

Range selector lever position determines one of three forward speeds and one reverse according to the pattern shown in Figure 2.

Range selection is made with the clutch/brake pedal depressed, with a quick positive hand motion, but only after tractor motion has stopped.

NOTE

When range selector gears do not mesh immediately, slightly release the clutch/brake pedal, then with the lever in neutral position depress again and move the lever to the position desired. This will reposition the gears and allow shifting. Do not force gear changes if any interference is indicated.

MANUAL LIFT

The manual lift is used to raise and lower the mid-mounted mower and other attachments that may be connected to it. The lift handle, mounted just to the right of the control cabinet, is drawn towards the rear of the tractor to raise the mower. Lowering is accomplished by drawing the handle

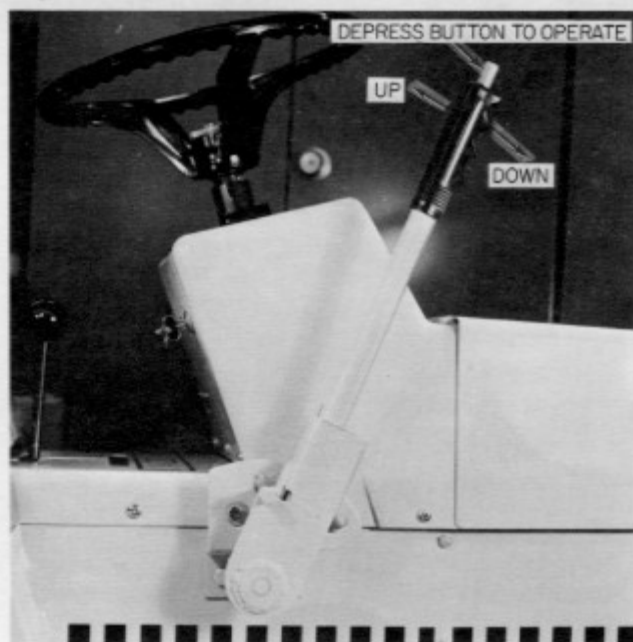


Figure 3. Manual Lift



CONTROLS AND FEATURES

back slightly and depressing the release button before moving the handle forward. (See Figure 3.) Notice that to raise the mower it is not necessary to press the release button.

PTO SWITCH

The control cabinet-mounted PTO switch controls mower motor power and power to the PTO receptacle* if the tractor is so equipped.

Before this circuit is operative, the drive motor must be started in the normal manner. With the attachment properly installed and the drive motor running, the PTO switch is held in the "Start" (up) position momentarily. When the switch handle is released, it automatically returns to the center "Run" position. To interrupt attachment power, move the PTO switch to the "Off" position.

FUEL LEVEL GAGE **

On the fuel level gage the green zone between the "E" (empty) and "F" (full) represents the range of the power pack. Readings in this zone are fractional portions of full-range remaining. See Figure 4.

When the charger is in operation and nearing completion of its cycle, the "CHG" zone indicates the power pack is being fully charged. This assures

* Available on E10M model only.

** Standard on E10M, optional on E8M model.

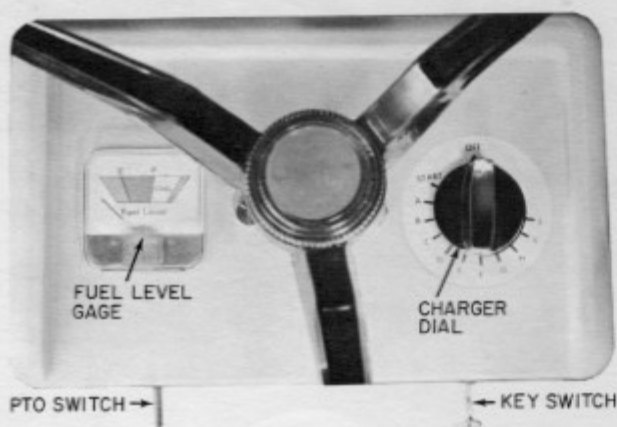


Figure 4. Control Panel

you of proper charger operation. After the charging cycle is completed, the indication should be "F" or higher, to be interpreted as "full". Use of heavy work attachments or high loads on the tractor will cause the indicator needle to drop below "F" as the heavy drain period begins. The fuel level gage will always read lower during heavy power usage. When the gage consistently reads below empty, the load should be reduced until the indicator needle returns to the green area or the tractor is recharged enough to permit further operation.

While the right red zone represents "overcharge", the left one represents "overdischarge". If either of these zones are indicated after charging, check the trouble-shooting tips on page 20. If proper operation is not restored by the suggestions there, consult your dealer.

CLUTCH/BRAKE PEDAL

As its name implies, the clutch/brake pedal provides multiple functions. Initial depression of the pedal starts the drive motor and causes a clutching action which partially disengages the motor from the transaxle. This permits smooth starting and "creeping", ability for maneuvering. As the pedal approaches full depression, the motor is fully disengaged and brake action begins. (See Figure 5.)

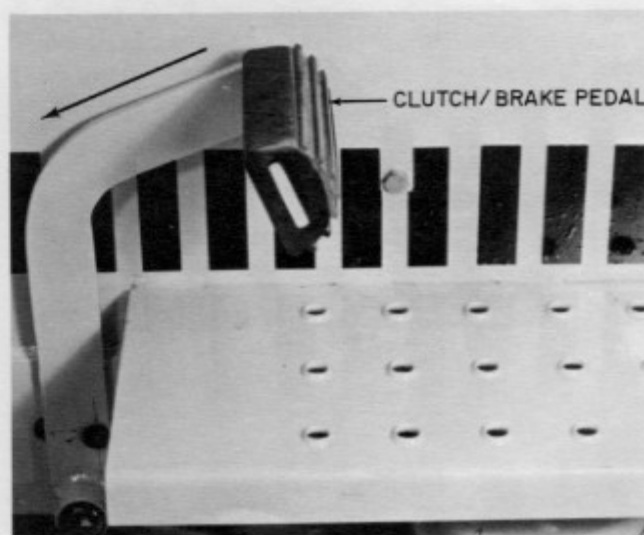


Figure 5. Clutch/Brake Pedal

CONTROLS AND FEATURES

NOTE

The clutch may be used for speed control for short periods but to prolong the life of the drive belt, fully release the clutch/brake pedal whenever possible. If the tractor speed is excessive, move range selector to a lower gear.

The tractor is started by turning the key switch to "On" and then depressing the clutch/brake pedal to start the drive motor. Move the range selector to the desired position and slowly release the clutch/brake pedal. When tractor motion occurs, fully release pedal.

PARKING BRAKE

The parking brake lever is mounted under the rear fender just above the left foot rest. This brake operates in conjunction with the clutch/brake pedal, therefore, to engage the parking brake, it is necessary to fully depress the clutch/brake pedal and hold the parking brake lever *down* while the pedal is released. When foot pressure is released, the pedal should remain in its depressed position. See Figure 6.



Figure 6. Parking Brake

The parking brake is released by reapplying pressure on the clutch/brake pedal and allowing the parking brake lever to move up. Spring loading returns the parking brake to its "Off" position automatically when the brake pedal is fully depressed.

ACCESSORY RECEPTACLE

(E10M Model Only)

The accessory receptacle on the ELEC-TRAK tractor lets you take your power source to your work. A variety of 36-volt electric power tools made just for the ELEC-TRAK tractor to make your home, yard, and garden chores easy and enjoyable are available from your ELEC-TRAK tractor dealer.

The accessory receptacle is located on the operator side of the control cabinet under the PTO switch as shown in Figure 7. The accessory plug is inserted in the receptacle and turned clockwise slightly to lock it in place.

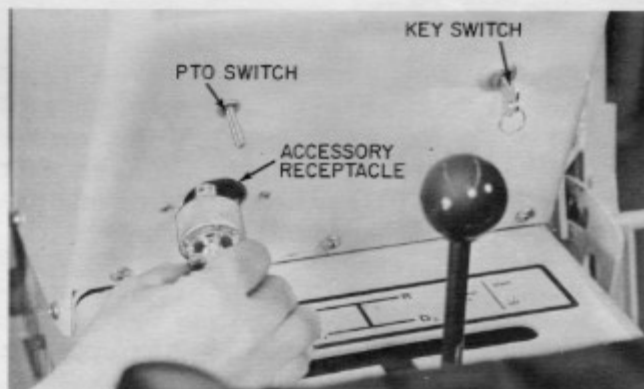


Figure 7. Accessory Receptacle (E10M Only)

Voltage to this receptacle is always on regardless of key switch position. In the event that a power tool does not operate, be sure that the manual circuit breaker button under the hood is pushed in. See Figure 8.

NOTE

The 36-volt accessory receptacle is designed to prevent the use of standard 115-volt AC power tools. Use only approved 36-volt tools in the accessory receptacle.



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CONTROLS AND FEATURES

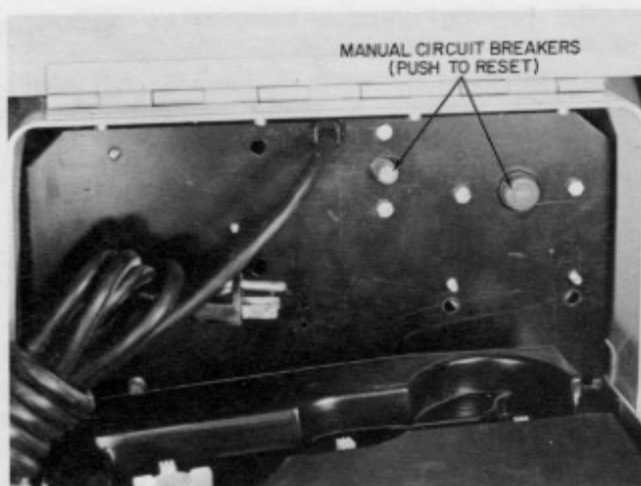


Figure 8. Manual Circuit Breakers

SAFETY INTERLOCKS

Seat Switch

The seat must be occupied in order to close a switch which permits power to be applied to the drive motor and PTO circuitry when normal starting sequences are followed. If the seat is vacated for any reason, all power circuits are shut off. The key and PTO switch should be used for turning off power in all normal operation.

Return-to-Off

If power to the PTO circuits is interrupted by the seat switch or turning the key switch to "Off", it cannot be restored unless the drive motor is restarted and the PTO switch turned to "Start" (fully up) and then "Run".

If power is interrupted to the drive motor, the clutch/brake pedal must be fully depressed to restart.

NOTE

These safety interlocks are used to ensure maximum safety for the operator of the ELEC-TRAK tractor. They should never be altered and should always be kept in good working order.

Electrical Protection

Five circuit breakers are used in this model ELEC-TRAK tractor to protect components and wiring. These devices operate on both high current and high temperature to sense potentially severe conditions that could damage components or circuits, and they remove power to the circuit under such conditions.

Two types of circuit breakers are used — automatic reset and manual reset. One automatic reset variety is internal in the drive motor. Should it "open" due to high motor temperature, after a short interval for cooling, the circuit breaker automatically recloses and operation can be restored by following normal starting procedure. Each mower motor is also protected by its own automatic reset circuit breaker that also resets automatically after a short cooling period. If these circuit breakers interrupt mower operation frequently, refer to the "Mower Section" of this manual, pages 9 through 11.

Two manual reset circuit breakers are mounted under the hood on the panel just below the hood hinge. See Figure 8. The smaller circuit breaker protects the charger and accessory receptacle.* If this circuit breaker "opens" to interrupt charging or hand power tool operation, turn the charge knob to "Off" or turn the power tool off before pushing the button back into the closed position. The charger or hand tool can now be put back into operation.

The larger circuit breaker's main purpose is to protect the drive motor and the tractor wiring, but if it opens, power to the PTO and fuel level gage will also be interrupted. If this circuit breaker opens, turn key switch to "Off" before pushing the button back into the closed position.

Continued interruptions of power by any circuit breaker reopening is a signal to reduce the load, or to search for a fault such as jamming or possibly an electrical problem that requires dealer service.

NOTE

Power pack charging cannot occur if the smaller circuit breaker is open.

*Standard on E10M, optional on E8M model.

MOWER USE AND CARE

MOWER USE AND CARE

Mower Attachment

To attach the mower, refer to Figures 9 through 11 and take the following steps:

1. Drive the tractor to a *flat level area*, and remove the key, place the range selector in "L" and release the parking brake to give maximum clearance under the frame.
2. Place the mower under the tractor in its approximate mounted position.
3. Insert all four suspension arms in their respective frame bushings so their lower ball rod ends lay on the mower deck near their mounting pins.
4. Attach the ball rod ends of both suspension arms on the left (clutch/brake pedal side). Secure with hair pin cotter.
5. Attach the remaining suspension arms in similar fashion.
6. Move the manual lift handle fully-forward and attach both lift cables to their corresponding lift pins on the mower deck. Secure with plain washers and hair pin cotter.
7. Join each mower-motor power-cord-connector to its corresponding power cord exiting bottom of frame.

NOTE

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



Figure 9. Tractor and Mower

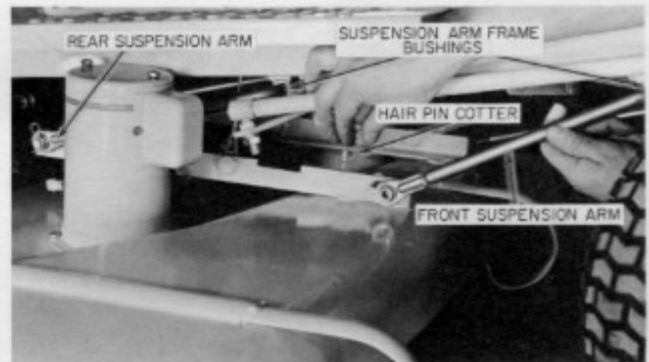


Figure 10. Front Suspension Arm Attachment

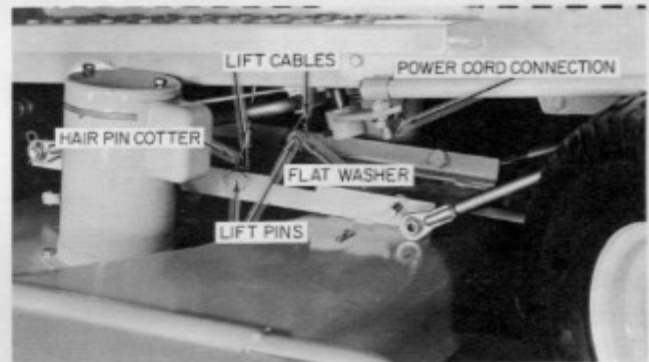


Figure 11. Lift Cable Attachment

Removal of the mower follows the same steps in the reverse order.

After removal of the mower, carefully store the washers, hair pin cotter, and suspension arms in the location from which they were removed for safekeeping.

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" on page 10.) Make adjustment as follows (Figure 12):

1. Disconnect both pairs of motor power cord connectors.
2. Raise the mower to the uppermost position.



MOWER USE AND CARE

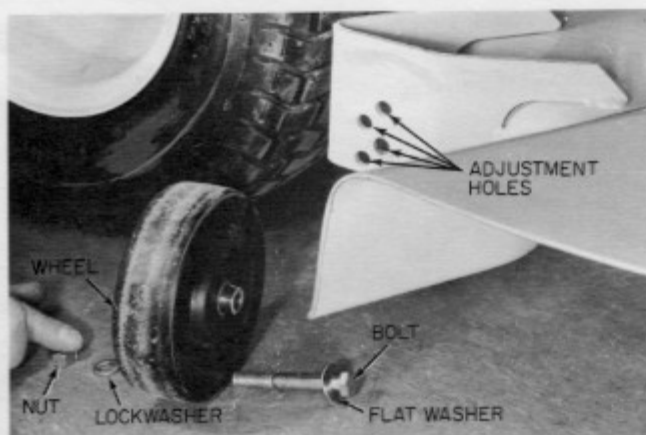


Figure 12. Mower Wheel Adjustment

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 desired position with lockwashers and nuts, making sure each wheel uses a similar mounting hole to keep the mower level.
6. Reconnect the motor power cords.

Mower Operation

The operator must be seated on the tractor, the key switch turned to "On", and the drive motor started (clutch/brake pedal depressed) before the PTO 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 immediately by a dynamic braking action. To restart, with the key "On", simply restart the drive motor and move the PTO switch to "Start" (fully up) and then to

"Run". For all normal use, the PTO switch should be used to turn the mower off.

"D1" is the best range selector position to use for average to heavy mowing and "D2" may be used for lighter duty, faster mowing. If the cut is not even and clean, a lower range selector position or a higher cutting height should be used. The low ("L") range 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 tractor motor will offer some braking action provided the clutch/brake pedal is not depressed and the range selector is left in gear. The "L" position 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 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 very 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 sound and vibration 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 drawn back until the weight of the mower is first felt and then to lock the lift in

MOWER USE AND CARE

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 range selector position 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 tractor appears to groove the lawn or gives a bumpy ride, check the tire pressure. The pressure should be 8-10 psi rear, and 10-15 front.

Ground Speed

Level positioning of the mower is very important for good cutting quality and low power consumption. If a mower motor becomes overloaded due to mowing too fast in high grass, too low or uneven adjustment for grass height, obstructions, clogging, or jamming, that motor may shut off momentarily. This is caused by the opening of a circuit breaker which prevents motor damage. After a short interval for cooling, the circuit breaker will reset automatically and the motor will restart. If the automatic circuit breakers on the mower motors continue to interrupt operation of one or more motors after loading has been reduced, remove the power cord from the PTO receptacle and carefully check the mower adjustment on a level surface. If the mower is level and the cutting height correct, check the blades for obstructions and refer to instructions in "Cutting" section.

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. (See page 9).

- Mowing of high grass may be made 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.
- The mower must be removed when using tire chains to give adequate clearance.
- Sharpen and balance blades as required, but at least seasonally.
- Oil mower wheel axles, and lift pivot points frequently as needed with a 30 weight machine oil as indicated in the "Service" section of this manual.
- 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.
- 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 Figure 13.

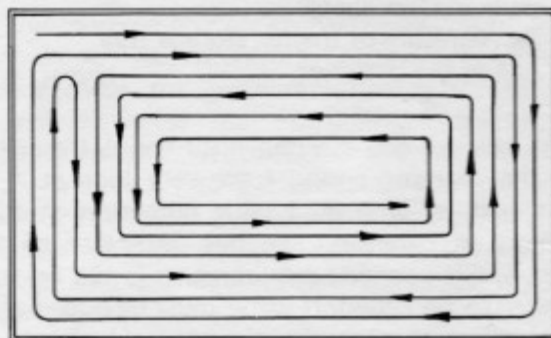


Figure 13. Mowing Pattern

- Never mow wet grass as this can cause chute and blade clogging which reduce the cutting effectiveness and overload the motors.
- Listen to motor noise 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 next lower gear.



Elec-Trak®

POWER PACK CARE AND CHARGING

POWER PACK CARE AND CHARGING

Batteries are one of man's oldest and most reliable sources of power. By following a few basic rules you can expect excellent service and long life from the advanced ELEC-TRAK tractor power pack.

The power pack is like a tank of energy. When using the tractor, this energy is drained. The charger replaces the used energy by properly converting and metering your household electricity into the power pack. The charger is designed to restore full charge to the power pack after one cycle of operation. Under normal conditions a full charge is nearly reached after 5 hours; however, the charger runs up to 19 hours to equalize cell voltages (when started on the "A" position. Older power packs require less charging time.)

The charger runs independently of the key switch. It is suggested that the key be removed to prevent unauthorized use of the tractor.

Charger Starting Positions (See Figure 14)

The amount of charging the power pack needs is dependent on:

1. Accumulative number of hours of operation since the last charge.
2. Temperature of tractor storage area.
3. Age of the batteries.

The charger dial starting positions A through J vary the charging period from very long at A to about half as long at J with numerous starting positions in between. The best indicator of the power pack's charging requirements is the amount of water to be added. If water must be added after one to three charges, the charger knob should be started at the next letter below that of the previous charge. The charger setting should not be varied more than one letter at a time, and two or more charges should be made before determining the need to use a new knob setting.

As the batteries age and go through more charging cycles, the charging period can be decreased. Typical homeowner use allows a full

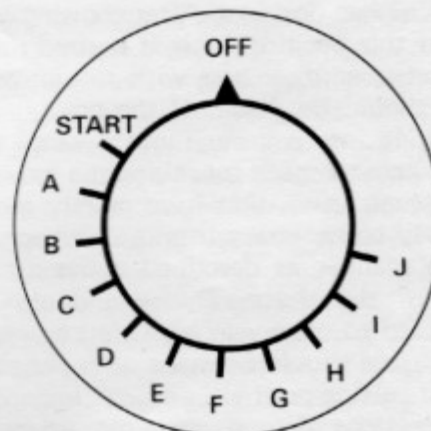


Figure 14. Charger Starting Positions

charge to occur if started in the "A" to "D" position during the first to second year and "D" to "F" position after the second or third year of use.

As the temperature decreases, there is a need to *increase* the charge time. For example, a power pack discharge to the same level will require as much as 50 percent more charge time for full recovery at 30°F than at 70°F. In very cold weather the "A" position can usually be used for all charging.

In any event, it is better to over-charge (charge too long) than to under-charge as long as there is not a high loss of water during charging. See "Power Pack Watering" instructions on page 13.

Charging

A *deeply discharged* power pack requires the charger to draw approximately 14-amperes from the 115-volt line receptacle. To prevent 15-ampere household fuses or circuit breakers from "opening" and interrupting power, it may be necessary to disconnect other appliances, tools, or lights from that circuit.

To start the charging operation, open the hood and plug the charger cord into any 3-wire, grounded, 115-volt receptacle and turn the charger knob to the "Start" position determined as previously outlined (Figure 14). (New power packs go through a seasoning period and must be charged longer).

POWER PACK CARE AND CHARGING

When the power pack is fully charged, the charger shuts off automatically. It is *not* necessary to remove the plug from the house receptacle after completion of the charging cycle. However, the tractor charger may be unplugged at any time during or after the charging cycle if the tractor is needed.

The charger line cord is equipped with a standard 3-prong plug which grounds the charger through the home electrical system. When a 2-hole receptacle is available, an adapter must be used between the plug and receptacle *with the ground lead permanently fastened to the ground screw on the outlet or other tested ground on your electrical system.*

In older homes equipped with original electrical wiring, the receptacle cover plate screw may not provide a ground connection when used with an adapter plug. If there is any doubt concerning the ground of your receptacle, consult your dealer or a qualified electrician.

NOTE

The power pack should not be charged in an area where the temperature is above 110°F to prevent overcharging.

POWER PACK WATERING

During the late stages of the charging cycle, there is a bubbling action or gassing process which allows some water in the electrolyte solution to evaporate. Remember that during this charging procedure *only water is lost*; so it is only necessary to *add water* to bring up the electrolyte level to the proper point. Distilled water or tap water that is low to average in mineral content is satisfactory for use in the ELEC-TRAK power pack.

Water should be added only after the power pack is charged. The only exception to this rule is if the water level should fall below the top of the plates. Sufficient water should be added to bring the electrolyte level just above the plates. The system should then be charged, and if necessary additional water added *after* charging. (This is because the electrolyte expands during charging.)

WARNING

Power pack electrolyte can cause irritation of the skin and may damage clothing. Any contacted electrolyte should be immediately neutralized with a solution of baking soda and water, or washed thoroughly with soap and water.

Any electrolyte running out of the top of the cells is an obvious sign of overfilling. It is important that the electrolyte level be maintained 1/4-3/8 inch above the plates and never above the indicator ring. Overfilling can result in dilution of electrolyte, which reduces capacity and life of the power pack. Overfilling can also cause corrosion where spillage of electrolyte occurs. (Your ELEC-TRAK tractor dealer has an automatic water filler jug available at a low cost.)

Under normal conditions it only will be necessary to check the electrolyte approximately once per month. Use of the tractor in higher temperature locations or under very heavy use may require more frequent checks of the level. Also, after several years of use, it may be necessary to add water more often.

CAUTION

The charging process evolves small amounts of hydrogen gas; therefore, normal precautions like those for gasoline refueling should be used whenever the ELEC-TRAK tractor is being charged. (No sparks or open flames near the tractor.) This gas concentration will not occur if there is free air circulation in the area where the tractor is stored or if the area is large so the concentration is reduced (i.e., a garage).

COLD WEATHER POWER PACK CARE

The efficiency of a power pack is somewhat less at lower temperatures. In order to obtain optimum performance of your ELEC-TRAK tractor during the winter months, and to properly care for the power pack when not in use, the following recommendations should be followed:



POWER PACK CARE AND CHARGING

Tractor in Storage

1. Fully charge power pack by setting charger knob to appropriate starting position as explained on page 12, and letting charger operate until it shuts off.
2. Add water to each cell of the power pack to the specified level as described in the previous section. It is important for best power pack care to be sure (a) that the perforated plates which may be seen through the filling holes are covered by the electrolyte level to a depth of 1/4-3/8" before charging, and (b) that the level is brought to the bottom of the indicator ring after charging. In this way, overfilling is prevented but sufficient water is assured.
3. The tractor may be stored in the cold, provided the power pack is charged. A discharged power pack can freeze in cold temperatures unless recharged immediately after use. The following table illustrates the relationship between amount of charge and freezing temperature of the electrolyte.

Amount of Charge	Freezing Temperature of Electrolyte
100%	-80F
75%	-42F
50%	-16F
25%	- 2F
10%	+ 7F

Self-discharge of a fully charged power pack is practically non-existent below 40 degrees Fahrenheit, and it can be stored for several months without attention when not used in any temperature less than 40F.

4. If stored in a warm area above 40F, the tractor should be recharged and the water level in the power pack checked and adjusted about once a month.
5. After storage of more than a few weeks, it is advisable to give the power pack an overnight charge before using.

Tractor in Use

1. Parking the tractor in a garage or enclosed building is recommended to reduce extreme low temperature and snow exposure. If stored outside, an ELEC-TRAK tractor cover should be used to enclose and protect the tractor.
2. Start the winter in good condition by following steps 1 and 2 as previously outlined under "Tractor in Storage".
3. Whenever possible, give the power pack another charge before using if cold weather operation can be predicted. (The night of the snow storm if you plan to remove snow in the morning.)
4. Do not let the power pack stay discharged in cold weather. As soon as the work is completed, recharge the power pack. If idle time occurs between start and finish, plug charger into outlet and let the power pack charge while you are not using the equipment, even if for only a few minutes. (This is helpful in *any* weather to give maximum range and performance.)
5. There is little danger of overcharging the power pack when it is cold, so extra charging in the winter is advisable when the use is expected within the next 24 to 36 hours.

MAKE IT A HABIT!
REMOVE KEY • PLUG IN • START CHARGER

LUBRICATION — SERVICE AND MAINTENANCE

SERVICE AND MAINTENANCE

The ELEC-TRAK tractor reduces your lubrication requirements tremendously since the electric motors are permanently lubricated.

Several high-friction points do require periodic lubrication to prolong life and give maximum operating satisfaction.

AFTER EACH 100 OPERATING HOURS —OR EVERY SIX MONTHS

After 100 operating hours, the transaxle filler plug should be removed and the fluid level checked (See Figure 15). The oil level should be to the bottom edge of the filler hole. If necessary, replenish with approved axle fluid only; i.e., SAE EP90.

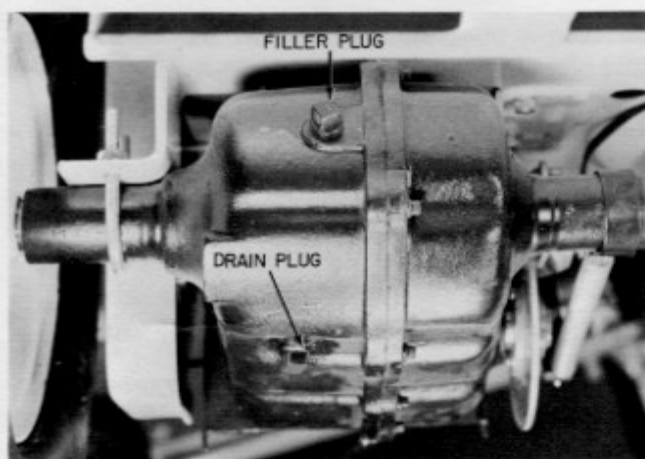


Figure 15. Transaxle

Twice a year or every 100 operating hours the front spindles, the front wheel bearings and the front axle main pivot pin should be greased with a hand grease gun using a No. 2 multipurpose lithium grease (See Figure 16). Pump gun until dirt and old grease are flushed out and wipe all surfaces clean.

All linkages and bearings should be oiled with a heavy duty (No. 30) machine oil. Major points to be considered include:

1. Clutch/brake pedal pivot pin and linkage connections.
2. Hood and seat hinges.

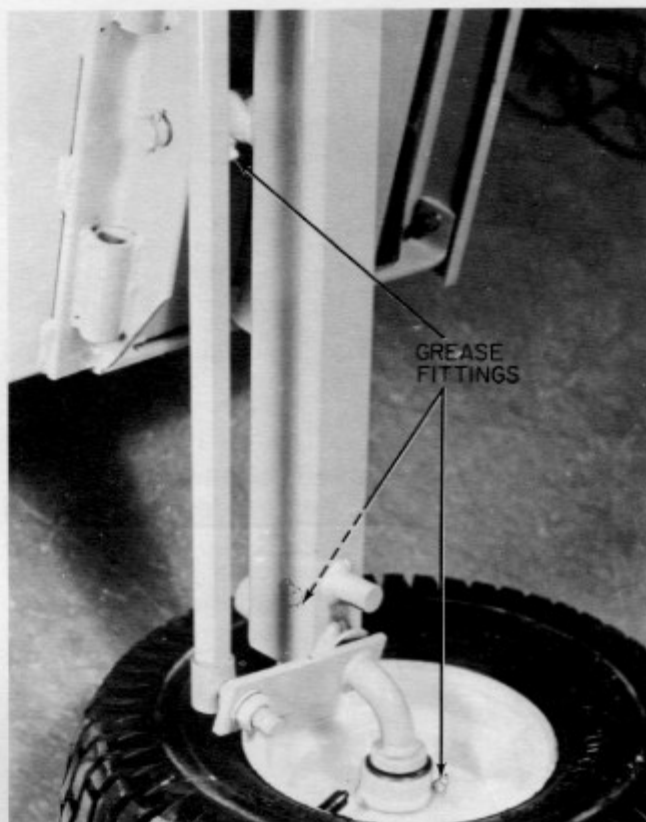


Figure 16. Front End Grease Fittings

3. Mower mounting arms.
4. Lift assembly pivot points.
5. Idler pulley assembly.

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

These lubrication intervals are meant to be a guide only. If the tractor is subjected to abnormal environmental conditions or greater-than-average use, the frequency of lubrication as well as other preventive maintenance measures should be adjusted accordingly.

VISUAL INSPECTION

Periodic inspection of the tractor is an important preventive maintenance measure. Make it a habit to visually check for loose fastening devices or any evidence of abnormal operation. Inside storage or covering of the tractor plus regular cleaning and polishing of exterior surfaces will give



SERVICE AND MAINTENANCE

greater satisfaction in owning and operating the ELEC-TRAK tractor and will enhance resale or trade-in value.

Adjustments, inspections, and maintenance procedures on both the tractor and attachments should be performed at regular intervals to assure trouble-free, economical operation.

POWER PACK

In addition to power pack charging and watering as outlined, other services may be performed to give more desirable service.

Check the electrolyte level in the power pack monthly. Add water only if necessary. To protect your warranty, no addition of electrolyte should be done, except by your dealer.

City tap water or water of a low to average mineral content is acceptable for refilling. To prevent contamination of water, use the recommended ELEC-TRAK tractor water-filling jug or clean glass or plastic containers with a funnel.

It pays to keep the power pack covers clean. Removal of accumulations of dirt, grass clippings, and so forth will assure optimum electrical system performance. An occasional wiping with wet paper toweling is usually sufficient, or the power pack can be flushed off with water which will drain out at bottom of tractor.

CAUTION

For personal and equipment protection, always unplug charger when cleaning and flushing power pack surfaces.

DRIVE ASSEMBLY

Power is transmitted from the drive motor to the transaxle through a heavy-duty, direct-coupled belt. The belt should be kept free of grease, oil, electrolyte and dressings, and checked occasionally for tightness to assure best performance.

If the belt becomes contaminated it should be wiped with a clean cloth. Any belt slippage is due to moisture or loose adjustment. If the belt becomes wet and slips, temporarily select a lower speed range (higher torque) until the belt dries, and then resume normal operation.

ELECTRIC CIRCUITRY

The bulk of the ELEC-TRAK tractor electric circuitry is used for power control and switching and is located primarily in the control cabinet. Service in this area should only be performed by your dealer only.

TIRES AND WHEELS

Proper tire inflation pressure is an important factor in determining tire life. Pressures should be checked and corrected, if necessary, on a monthly basis according to the following table.

Tire Inflation	Soil or Snow	Hard Surface
Front	10-15 psi ⁽¹⁾	15-28 psi ⁽²⁾
Rear	8-10 psi	10-24 psi

Pressure measurement should be made with a low-pressure gage which can be purchased from your dealer.

Use with chains requires the lowest pressures for smoothest ride and maximum traction.

Stumps, holes, and sharp objects should be avoided, and any cuts occurring in the tires should be repaired immediately or tire life will be reduced.

REAR WHEEL REMOVAL (See Figure 17)

The rear wheels are secured to the rear axle by clevis pins which pass through holes in the wheel extension tube (inside) and matching holes in the axles. To remove the rear wheels, jack up the rear of the tractor and remove the cotter pins which retain the clevis pins. The clevis pins can then be removed easily and the wheels can be removed from the axles. To remount wheels, align cross holes of wheel centers with the corresponding holes in the axles by inserting a small pointed tool such as a punch or nail. This will ease installation of the clevis pin.

- (1) Lower pressure will soften the ride and improve traction.
- (2) The higher tire pressure will decrease rolling resistance and extend use range on paved or other hard surfaces. (This does not apply to use with chains on hard surfaces.)

SERVICE AND MAINTENANCE



Figure 17. Rear Wheel Removal

BRAKE AND PARKING BRAKE

A fully depressed brake pedal or an engaged parking brake should prevent the tractor from rolling on average hillsides. If the brake does not perform satisfactorily, the following adjustment may be made: (See Figure 18.)

1. Remove the key and turn the charger off.
2. Block the front wheels and move the range selector to neutral.
3. Jack up the rear of the tractor and remove the right rear wheel.
4. Identify the 5-inch brake rod attached to the operating lever of the brake caliper. See Figure 18.
5. Loosen the jam nuts on the forward end of the brake rod and thread the nuts toward the brake caliper to *increase* braking action. One to two turns of the rear jam nut from its original position is usually sufficient to give satisfactory adjustment.
6. Hold the rear jam nut while tightening the forward one to secure adjustment.
7. Check to be sure there is no brake drag by rotating the brake disk manually.
8. Test brake function and readjust if necessary.

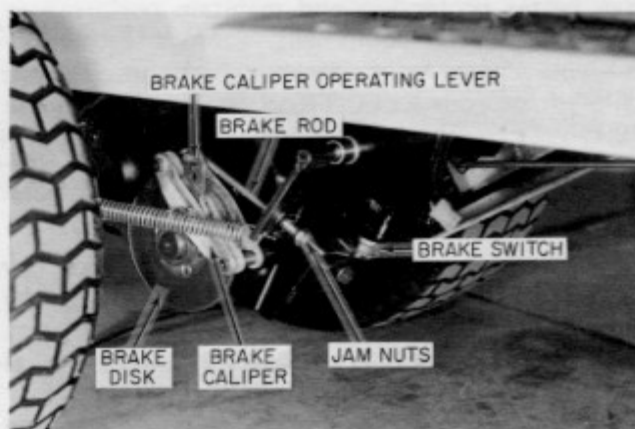


Figure 18. Brake Adjustment

STEERING ASSEMBLY

The front axle and steering system of the ELEC-TRAK tractor are extremely rugged. Toe-in, and steering gear and linkage are carefully adjusted at the factory and should require no additional adjustments in normal service, barring improper operation. If any service becomes necessary, contact your dealer.

USE OF CHAINS

Chains on the rear tires will be found helpful on loose or soft surfaces, and particularly when using the snowthrower* which, when lifted, counterbalances some of the weight off the rear wheels. The mower *must* be removed while using chains.

To facilitate installation of chains, the rear of the tractor should be lifted and the chains placed over the tire and connected at the bottom side, or the wheels can be removed as instructed on page 16, for chain installation.

Do not allow excess chain to rub or contact tractor body or frame.

STORAGE

Your tractor should be covered or under a roof in outside storage in snowy or rainy weather to

* E10M model only



SERVICE AND MAINTENANCE

give better protection and maintain performance and life of the equipment. Storage covers are available from your dealer which are custom tailored for your ELEC-TRAK tractor. (See Figure 19.)

Seasonal storage requires a minimum of preparation. The steps to be performed are as follows:

1. Wherever possible, store tractor in a cool, dry weather-protected area or cover with the ELEC-TRAK storage cover.
2. Clean power pack covers if necessary as outlined on page 16.
3. Plug charger into approved receptacle and start charger operation. Insure proper water level after first day (24 hours). (See page 13.)
4. Lubricate tractor and wipe oil on any parts that may be affected by rust.
5. *Recycle the charger operation monthly.*

The charge retention (without using additional electricity for recharging) of the power pack can be extended considerably if stored in a very cool place. Lower temperature slows the self-discharge. At temperatures below 40°F, virtually no self-discharge occurs.



Figure 19. Storage Cover

NOTE

At temperatures below 32°F the full charge state must be maintained to prevent cell electrolyte from freezing which may result in permanent damage to power pack.

PERIODIC SERVICE CHART

Service	Monthly	Every 100 Operating Hrs.
Check power pack water level	X	
Check tire pressures	X	
Check drive belt tension		X
Clean power pack top surfaces if necessary		X
Check fasteners and connectors for tightness		X
Grease wheels, spindles and steering assembly		X
Oil exposed moving parts — lift, clutch/ brake pedal, hinges, etc.		X

SPECIFICATION CHART

General

	E8M	E10M
Width (tractor)	36"	36"
Width (tractor with mower attached)	45.5"	45.5"
Length (overall)	67"	67"
Height (overall)	40"	40"
Weight (less mower)	495 lbs.	745 lbs.
Frame	Unitized	Unitized
Accessory Outlet (36 volt)	Optional	Standard
Brake	Disk	Disk
Front Tires	13 X 5:00-6	15 X 6:00-6
Rear Tires	18 X 6:50-8	18 X 9:50-8

Drive System

Power Pack	3-12 volt units	6-6 volt units
Transaxle	3 speed + R	3 speed + R
Transaxle Oil Capacity	2 U.S. pints	2 U.S. pints



TROUBLESHOOTING CHECK LIST

Indication	Possible Causes
<ul style="list-style-type: none">● Drive motor does not run and fuel level gage* does not indicate in the green zone.	<ul style="list-style-type: none">● Large circuit breaker "open". Push to reset.● Key switch not turned to "On".
<ul style="list-style-type: none">● Drive motor does not run, but fuel level gage* indicates in green zone.	<ul style="list-style-type: none">● Seat switch not operating properly.● Clutch switch does not close when the clutch/brake pedal is depressed.
<ul style="list-style-type: none">● Mower (PTO) inoperative, but drive motor runs.	<ul style="list-style-type: none">● Proper PTO starting sequence not followed.● PTO switch not moved from "Start" to "Run" position after starting motors.● Mower motor power cord connectors not joined.
<ul style="list-style-type: none">● Reduced tractor range.	<ul style="list-style-type: none">● Charger not started at proper dial setting.● Brake dragging. Readjust caliper unit.● Drive belt slipping due to adjustment or wear.● Power pack electrolyte level low.● Tires underinflated.● Failure to fully release clutch/brake pedal on long runs.● Improper lubrication.● Improper range selection. (Also lower range.)
<ul style="list-style-type: none">● Power Pack not charging.	<ul style="list-style-type: none">● Small circuit breaker "open". Push to reset.● Charger not plugged into 115-VAC outlet.● 115-VAC outlet inoperative due to open <i>household</i> fuse or circuit breaker.● Failure to start charger at proper dial setting.
<ul style="list-style-type: none">● Accessory tools* inoperative.	<ul style="list-style-type: none">● Small circuit breaker "open". Push to reset.● Tool plug not locked into accessory receptacle.● Tool power cord or plug defective.

*E10M model only

WARRANTY ELEC-TRAK GARDEN TRACTOR

General Electric Company warrants 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 garden tractor, mower, snow thrower, and dozer blade attachments 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 to the original purchaser for use. 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 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 E8M GARDEN TRACTOR POWER PACK

General Electric Company warrants that it will replace without charge, f.o.b. factory, any individual ELEC-TRAK garden tractor 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 *to the original purchaser* for use. 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 tractor 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.

The foregoing warranty states the entire obligation of General Electric Company 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 E10M GARDEN TRACTOR POWER PACK

General Electric Company warrants that it will replace without charge, f.o.b. factory, any individual ELEC-TRAK garden tractor power pack unit with which this warranty is furnished if it fails because of defects in material or workmanship within 24 months in ordinary home use (six months in commercial or institutional use) following the date of sale *to the original purchaser* for use. After 24 months in home use, but within 60 months following the date of such sale a power pack will be replaced at a pro rata service charge equal to 1/60th 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 tractor 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 24 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.

The foregoing warranty states the entire obligation of General Electric Company 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.

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GENERAL  ELECTRIC