



ElecTrak

GEH-518

Tractor

INSTRUCTIONS

POWER PACK BOOSTER

Model AP84

The AP84 Power Pack Booster is designed to extend the range of all large frame ELEC-TRAK Tractors. To make the unit operable, initial electrical receptacle installation must be made for connection to the tractor wiring. If it is desired to alternately mount the Power Pack Booster at the front and the rear of the tractor, an additional KP37 Front/Rear Receptacle Kit should be installed permanently to provide an outlet at the front and rear of the tractor.

CAUTION: Use of any batteries in the auxiliary power pack other than the 12-volt ELEC-TRAK batteries specified, voids all battery and electrical system warranties on the tractor.

WARNING: To prevent injury, be careful when working in the uncovered battery box to avoid shorting terminals with wires or tools.

4. Locate and drill a 3/16-inch hole in the top of the left fender using the template provided as shown in Fig. 1.

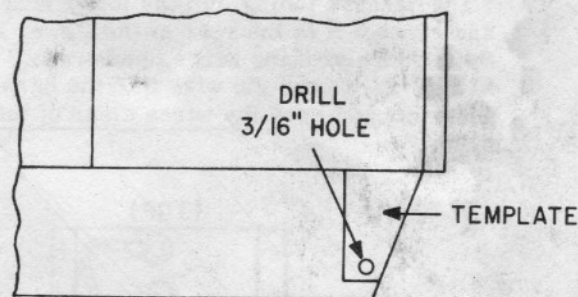


Figure 1. Left Fender

RECEPTACLE INSTALLATION

Rear Mounting

1. Open the power disconnect.

WARNING: The Power Disconnect must always be opened before working near tractor electrical components. Failure to do so could result in personal injury or damage to the tractor wiring.

2. Remove the lower control panel cover and the screws retaining the upper control panel. Hinge the upper control panel forward.

3. Remove the plastic cover over the power pack units in the rear battery box. Disconnect and remove the batteries.

NOTE: If the 7/8-inch hole is pre-punched as shown in Fig. 2, it may not be necessary to remove the batteries. Wires can be "fished" through the frame opening with a long, stiff, wire inserted from below the frame.

5. Locate and punch or drill a 7/8-inch hole in the left side of the rear battery box using the template provided as shown in Fig. 2. Remove any metal chips from inside the battery box.

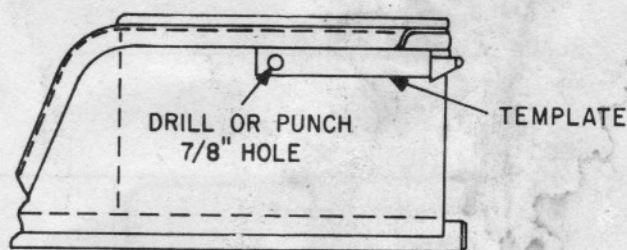


Figure 2. Battery Box - Left Side

6. Insert a grommet in the 7/8-inch hole just drilled.

7. Thread the long wire from the receptacle through the grommet from the outside of the box. Train the wire along the upper right and front edges of the battery box, and through the tubing used in the undercarriage harness to pass from the battery box to the underside of the frame. Keep plenty of slack above the frame to accommodate battery reinstallation.

8. Thread the short wire of the receptacle through the grommet.

9. Attach the receptacle to the left fender as shown in Fig. 3.

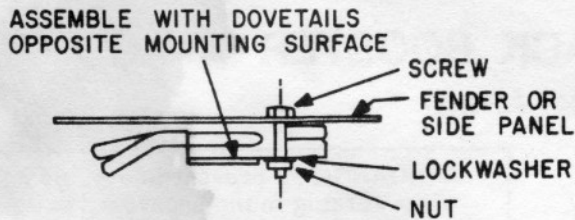


Figure 3. Receptacle Mounting

10. Replace the batteries following the layout in Fig. 4. **DO NOT RECONNECT THE BATTERIES AT THIS TIME!**

11. Thread the long wire through the undercarriage harness tubing into the lower control cabinet and connect it to the rear of the Power Disconnect Switch with existing wires numbered "2" as shown in Fig. 5. Dress the wire into the harness using wire ties and keep the wires clear of the steering gear.

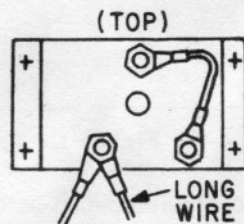


Figure 5. Power Disconnect - Rear View

12. Reconnect the batteries as shown in Fig. 4, connecting the short receptacle wire to the clamp on the negative post of battery B5.

13. Engage the power disconnect and test the receptacle for power.

14. Reassemble the plastic battery cover and control panel cover, and close the upper control panel.

Front Mounting

1. Open the power disconnect.

2. Remove the plastic cover from the front power pack units. Disconnect the battery cable from the battery B2 positive post.

WARNING: To prevent injury, be careful when working in the uncovered battery box to avoid shorting terminals with wires or tools.

3. Remove the screws retaining the upper control panel. Hinge the upper control panel forward.

4. Locate and drill a 3/16-inch hole in the right side panel using the template provided as shown in Fig. 6. Place a cloth inside the drilling area to prevent metal chips from entering the compartment.

5. Attach the receptacle to the inside of the right side panel as shown in Fig. 3.

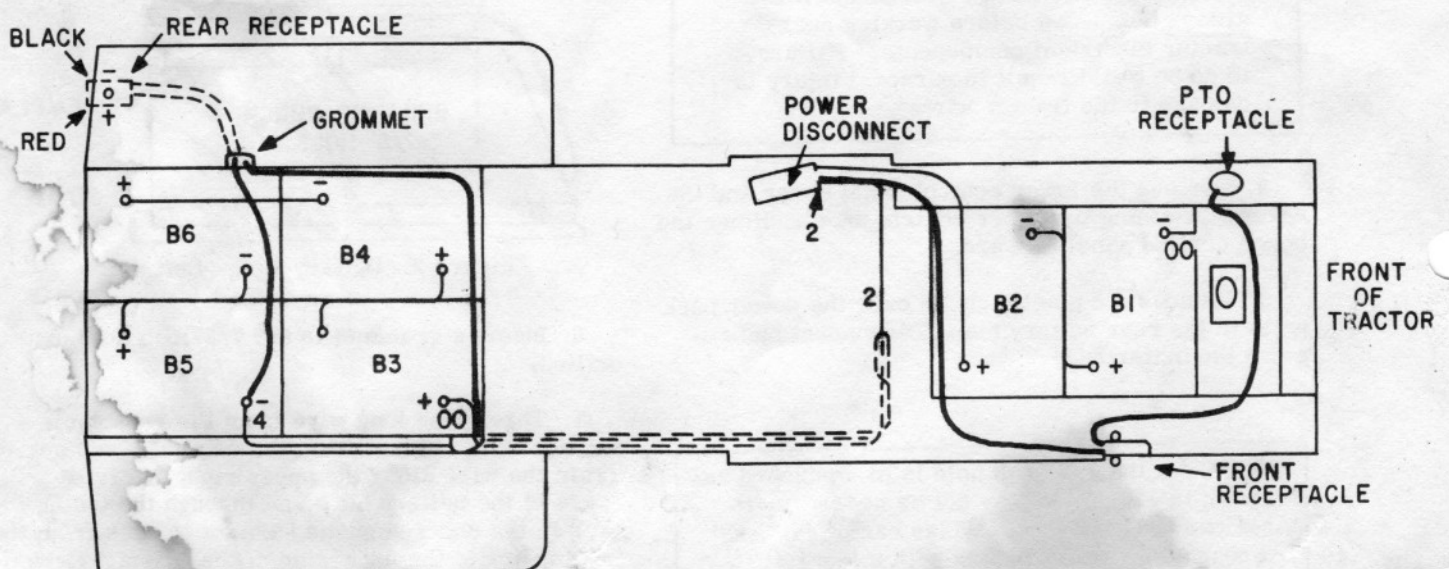


Figure 4. Wiring Layout - Top View

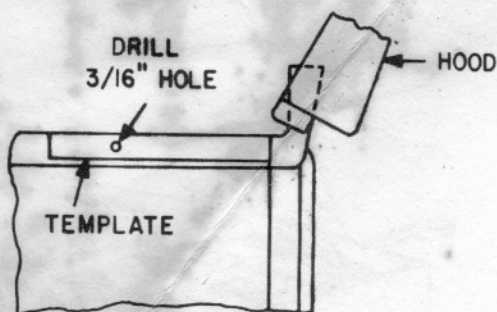


Figure 6. Right Panel

6. Remove the ring terminal from the short receptacle wire and strip off a 3/8-inch length of insulation.

7. Install the stripped end of the short wire to the rear of the PTO receptacle with existing wire number 24 as shown in Fig. 7.

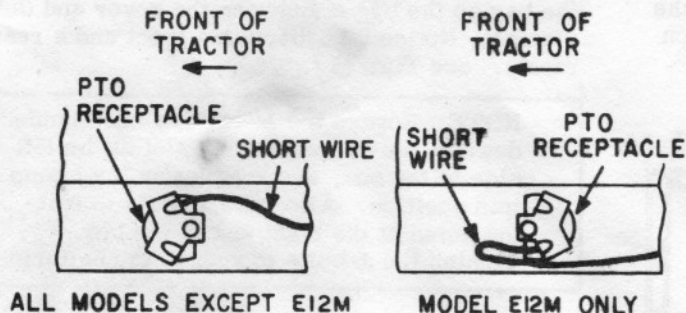


Figure 7. PTO Receptacle Wiring

8. Connect the long wire of the receptacle to the rear of the Power Disconnect Switch with existing wires numbered "2" as shown in Fig. 5.

9. Dress the long wire along the right side panel and in front of the upper control panel. Allow the excess wire to enter the control panel cutout and tie it to existing wires with wire ties.

10. Dress the short receptacle wire along the top surface of the perforated charger cover. See Fig. 4.

11. Reconnect the battery cable, engage the power disconnect, and test the receptacle for power.

12. Reassemble the battery cover and close the upper control panel.

ASSEMBLY

1. Remove all parts from the box.

2. Insert the support brackets into the frame openings at the rear of the tractor so their open sides face each other and their horizontal surfaces are on the top. See Fig. 8.

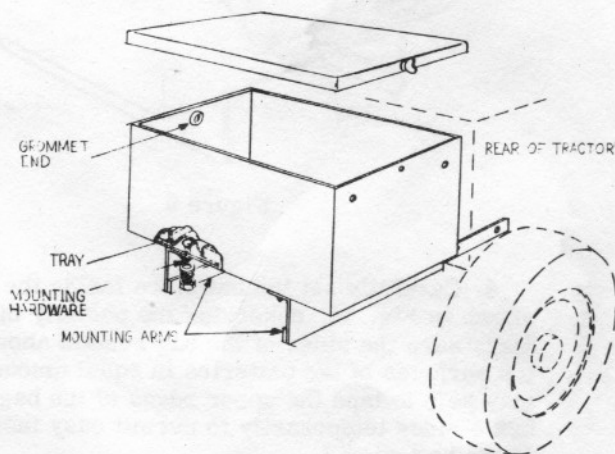


Figure 8

3. Identify the left side of the box as that side having a 7/8-inch hole near the top edge. Set the box on the support brackets with its left side towards the left side of the tractor. Align the holes in the bottom of the box with the holes in the support brackets. Insert carriage bolts in all aligned holes with their heads inside the box. Secure with washers, lockwashers and nuts in that order on the bottom side.

4. Reach under the frame and insert a 5/16-18 x 1/2 inch bolt into the threaded hole in each support bracket arm. Tighten each bolt so it firmly butts the inside of the frame, locking the arms to the frame, but not so tight as to distort the arm or frame.

5. Place the plastic tray in the bottom of the box so its drain hole lines up with the drain hole in the box (Fig. 9).

6. Unfold the poly bag and place it in the tray so the bag's bottom seam runs from left to right. Flatten the pockets that form at the seam ends so the bottom of the bag conforms to the tray (Fig. 9).

7. Place a vacuum-formed battery protector between the poly bag and the box wall at the left and right ends of the box. Position the protectors so their corrugations will face the battery walls. (See Fig. 9).

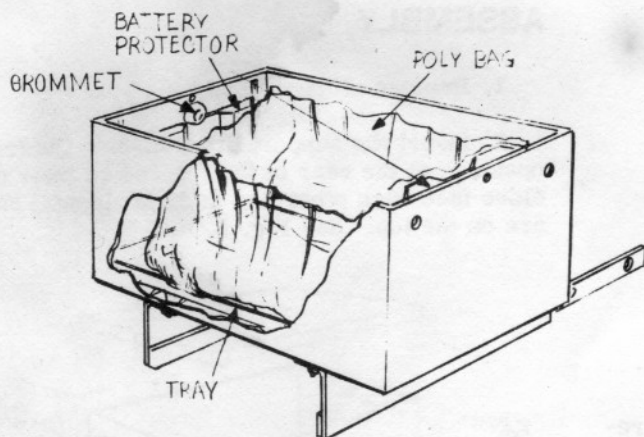


Figure 9

8. Carefully set the batteries inside the bag, as shown in Fig. 10, observing the polarity markings. Make sure the sides of the bag remain above the top surfaces of the batteries in equal amounts. (It may help to tape the upper edges of the bag to the box's sides temporarily to permit easy insertion of the batteries.)

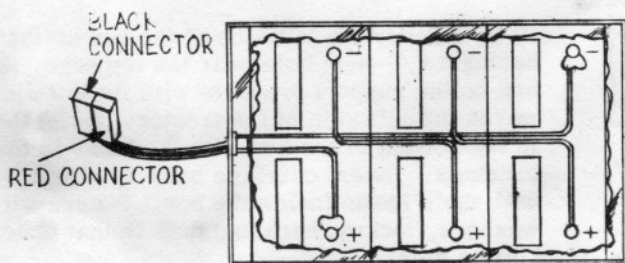


Figure 10

9. Install a rubber grommet on the left side of the box and pass the connector leads through it.

10. Connect the battery cables in accordance with Fig. 10. Observe the clamp polarity markings. Coat the terminals after the connections are made with a thin film of Battery Terminal Grease, AP31. Make sure all surfaces are coated!

11. Place the plastic cover over the batteries, but inside the top edges of the bag, making sure the battery cables go through the cut-out at the left end of the cover. Adjust the cables to fit in the center raised portion of the cover. See Fig. 11.

12. Attach a threaded "J-bolt" in the end hole of each hold-down angle clamp. Secure by installing a lockwasher and nut on the first few threads of each bolt. See Fig. 11.

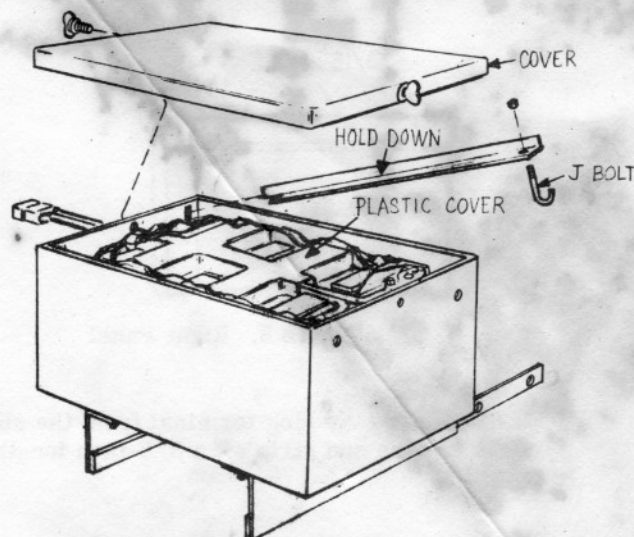


Figure 11

13. Place the hold-down angle clamps along the sides of the battery cover, outside the top-edges of the bag so the bag is between the cover and the clamps. Notice that there is a front and a rear clamp. See Fig. 11.

NOTE: Engage the left end of each hold-down in the corresponding slot at the left side of the box, and then lower the clamp into position. Allow the J-bolts to exit the holes at the right end of the box. Tighten the J-bolts to secure the batteries.

14. Install the box cover and secure with a thumb screw at each end. See Fig. 11.

15. Set charger timer to "Off" and remove the knob. Apply the new charger decal over the old decal so the "Off" positions correspond. Reinstall the knob so the "Off" position is properly indicated. Open the power disconnect and join the power pack booster connector with the receptacle (under the left fender - rear mount; under hood - front mount) making sure the red connector and red receptacle are plugged into each other.

WARNING: The receptacles and power pack connector are color coded. Join the like-colored pairs only or injury or equipment damage may result!

16. Fill each battery cell to the bottom of the filler opening with battery grade sulfuric acid of 1.260 specific gravity. Make sure all cells are filled to exactly the same level. This is important to ensure expected performance, since subsequent filling will be water addition only.

17. Leave the power disconnect out (disengaged), plug in the charger, and set the timer to "Aux. Batt. Start", position "A". The batteries must complete a full charging cycle before being used.

NOTE: The operator should realize that the Power Pack Booster will not have full capacity when first activated. Capacity will increase as it is used and recharged a few times.

18. Allow one hour after the initial charging cycle is completed and check each cell for specific gravity. The readings should be uniform and at least 1.250 specific gravity when temperature corrected.

FRONT MOUNTING

1. Locate and drill one 3/16-inch hole on each side of the frame, using the template provided. See Fig. 12.

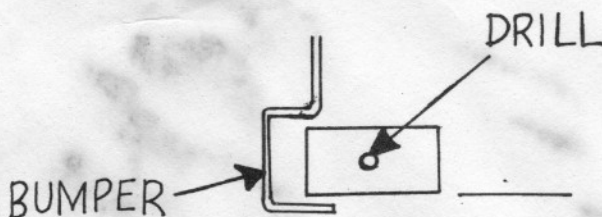


Figure 12

2. Assemble the Power Pack Booster initially as outlined under "Assembly - Rear Mounting", Steps 1 through 18.

3. Disconnect the power pack connector from the fender receptacle and remove both 5/16-18 x 1/2 inch screws from the support arms on the underside of frame.

4. Remove the Power Pack Booster from the rear of the tractor and remount it in a similar fashion at the front of the tractor.

5. Secure to the front of the tractor by threading 5/16-18 x 1/2 inch screws into the mounting arms through the holes drilled in Step 1 above.

6. Join the power pack connector with the receptacle under the hood.

OPERATION

After the initial battery filling and charging as outlined in the assembly instructions, operation merely requires that the power disconnect be engaged (in) and the tractor operated in the normal manner. Tractor batteries and Power Pack Booster batteries discharge at equal rates to allow full use of both sets of batteries. Recharging, however, is performed on each set of batteries separately. See the section on "Charging".

A special platform can be constructed high enough to just clear the mounting arms of the Power Pack Booster if it is necessary to remove or alternate mounting ends for the Power Pack. With a platform, very little lifting is required, since the tractor is positioned with the Power Pack Booster over the platform, removed, and then driven clear. To remount, the mounting arms are tilted upward and the tractor is driven very slowly onto the arms.

CHARGING

The Power Pack Booster must be charged separately from the main tractor power pack. This is accomplished by leaving the disconnect disengaged (out) for Power Pack Booster charging and the Power Pack connector removed from the receptacle and the disconnect engaged (in) for the tractor power pack charging.

CHARGING:

Power Pack Booster -
Power disconnect disengaged and connector/
receptacle joined

Tractor Power Pack -
Power disconnect engaged and connector/
receptacle separated

Since the Power Pack Booster recharges faster, it should be charged first, referring to the outer scale on the timer decal. See Fig. 13. The amount of charging needed is dependent on:

1. Accumulative number of hours of operation.
2. Temperature of storage area.
3. Age of the batteries.



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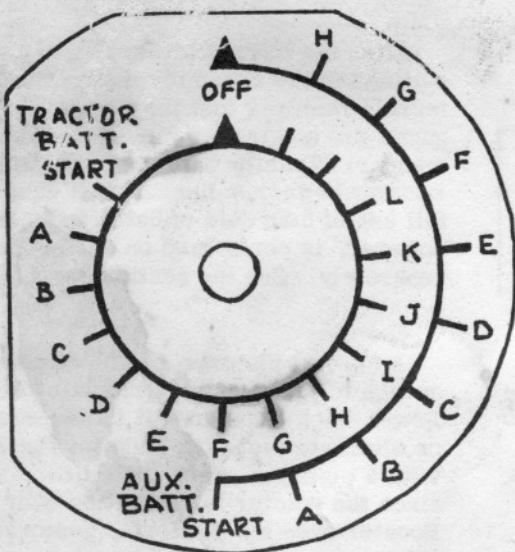


Figure 13

The outer "Aux. Batt" scale starting positions, A through H, vary the charging period from maximum at A (about 10 hours) to minimum at H (approximately 1 hour) 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. As temperature decreases, it is necessary to increase the charge time. For example, a power pack discharged 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 (under 30° F) the "A" position can usually be used for all charging.

Refer to the tractor Use and Care Manual for timer settings for recharging the tractor power pack.

The same service, maintenance, storage, and watering information for the tractor batteries should be followed for the batteries of the Power Pack Booster.