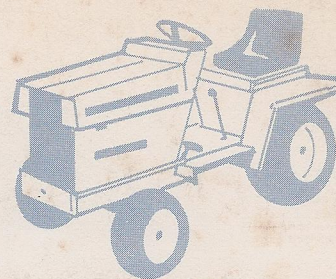




"BATTERY POWER IS BETTER"



Service Bulletin No. 2

ELECTRIC TRACTOR BATTERY CARE & MAINTENANCE

The Power Pack (Batteries) is the heart of the Electric Tractor. With proper care and maintenance, starting from the date the dealer receives them, the batteries will provide many years of reliable and economical service.

BATTERY RECEIVING

Upon receipt of a battery shipment to your dealership, follow these procedures:

1. Visually inspect each battery for possible shipping damage. If damage is observed, have carrier notate the freight bill. Then file damage claim with the carrier.
2. Check fluid level for possible spillage. If fluid has been spilled:
 - a. Add battery grade electrolyte (SPG $1.260 \pm .010$) to just cover plates.
 - b. Fully charge the battery (19 hrs.).
 - c. Allowing 30 minutes after completion of the charging cycle, check specific gravity.
 - d. Adjust specific gravity to 1.260 by:
 - adding water if reading is too high.
 - adding electrolyte if reading is too low.

BATTERY STORAGE

How you store and maintain batteries, prior to installation in the tractor, will affect their service life and efficiency. We recommend the following:

1. Store batteries
 - a. in their shipping cartons.
 - b. on wooden grid or pallet.
 - c. in a cool, dry area.
2. Do not stack.
3. Mark receiving date on carton.
4. Rotate stock; first in, first out.
5. Check specific gravity periodically and recharge whenever SPG falls below 1.220.

Batteries in storage will self-discharge. To recharge, use the Battery Charging Kit from the L & G TRACTOR SERVICE TOOL KIT purchased by your dealership for Avco New Idea Electric Tractor service. Recharging instructions are given in the "Power Pack" section of your LAWN & GARDEN TECHNICAL TRAINING MANUAL (Service School).

BATTERY SERVICE TOOLS

To properly service Electric Tractor Batteries, several special tools are needed. These are included in your L & G TRACTOR SERVICE TOOL KIT.

- Hydrometer -- to check battery cell specific gravity.
- Multimeter -- for checking battery voltage (and for other current measurements).
- Battery Charging Kit -- cables and connectors required for charging a battery pack not installed in a tractor (used in conjunction with the tractor charger).
- Battery Service Kit -- includes terminal brush (internal & external), cable clamp remover and clamp pliers.
- Battery Discharge Tester -- a unit for applying a controlled current load to a battery pack to identify a faulty battery.

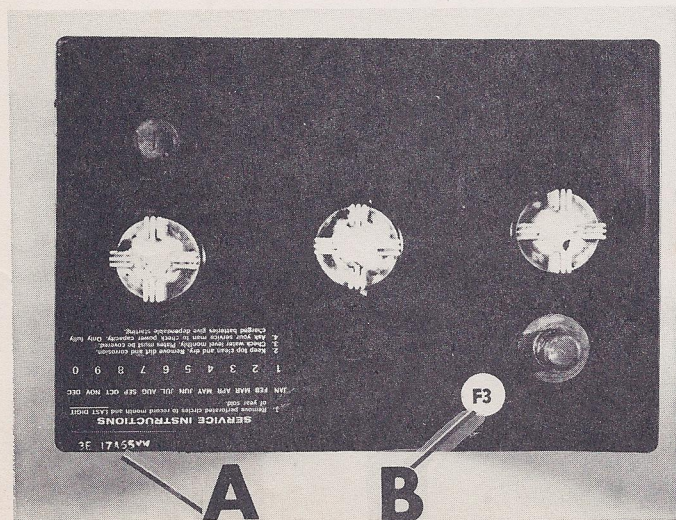
BATTERY CODING

Two types of code markings appear on each battery (see photo):

- a stamped code (A) which is the manufacturer's reference for use in cases of premature failure.
- a printed code (B) indicating the month and year of shipment by the manufacturer.

Both codes must be shown on the BATTERY REGISTRATION FORM submitted by your dealership--

- a. when the new tractor is delivered to your customer.
- b. when a warranty claim for a defective battery is submitted.



The printed code is your reference for stock rotation, indicating which batteries to use first. Code symbols are explained below:

		<u>73</u>	<u>74</u>	<u>75</u>
JAN	A	3	4	5
FEB	B	3	4	5
MARCH	C	3	4	5
APRIL	D	3	4	5
MAY	E	3	4	5

Example: B-4 is February, 1974.

Don't overlook the importance of battery stock rotation. If battery shelf-life exceeds 150 days from date of shipment (printed code), customer warranty is reduced by the period exceeding the 150 days.

BATTERY INSTALLATION

Three types of batteries are used in the Avco New Idea Electric Tractor line. Be sure to install only the battery specified for use in any given tractor model. The chart below shows installation specifications.

Battery Usage By Tractor Model

<u>TRACTOR</u>	<u>BATTERY CARTON NO.</u>	<u>VOLT</u>	<u>NO. OF BAT.</u>	<u>COLOR CODE</u>
EGT 80	080-0006	12V	3	All Red
Extended Range	080-0006	12V	3	All Red
EGT 100	100-0002	6V Standard	6	Red Walls Black Top
EGT 120	120-0009	6V Heavy Duty	6	All Red
EGT 150	120-0009	6V Heavy Duty	6	All Red

It is important too that batteries are correctly installed in the tractor and that cables are attached as per specifications. The Operator's Manual is your battery installation guide.

You'll find it helpful to fill out the coding and specific gravity segments of the BATTERY REGISTRATION FORM at the time batteries are installed in the tractor. Other parts of the form can be completed and mailed to your Region Office when the tractor is sold and delivered.

BATTERY CHARGING IN TRACTOR

Maximum operating range and long battery life are dependent on proper charging procedures as explained in the Operator's Manual. Additional charging information for dealership reference is included in the "Power Pack" section of your LAWN & GARDEN TECHNICAL TRAINING MANUAL (Service School).

Be sure you follow these instructions and educate your Avco New Idea Electric Tractor owners to charge batteries as specified.

BATTERY WATER

Proper watering procedures are essential to maximum battery life and operating range.

1. Add water only AFTER the Power Pack is charged. However, if fluid level falls below the top of the cell plates, add sufficient water to bring level 1/4"-3/8" above plates before charging. After completion of the charging cycle, recheck level and add water as required to fill to the indicator ring.

It is important that water level be maintained above the plates but never above the indicator ring.

2. Under normal conditions, check water level after every 3 or 4 charging cycles or at least once a month.
3. Charge batteries in a well-ventilated area free from sparks or open flame because the charging process produces small amounts of potentially explosive hydrogen gas. PLAY IT SAFE!

COLD WEATHER POWER PACK CARE

Power Pack efficiency decreases at lower temperatures. Also, battery freezing may result from low specific gravity, low water level or low charge.

TRACTOR IN STORAGE

Prior to winter storage of the tractor:

1. Check battery fluid level and fill to indicator ring as needed.
2. Fully charge the Power Pack (19 hour cycle).

During winter storage period:

1. Check water level and fully recharge monthly to compensate for normal self-discharge.
2. Recharge batteries before using the tractor.

Other useful information:

1. Battery self-discharge is practically non-existent at temperatures below 40° Fahrenheit. Therefore, time periods between storage recharging may be increased if battery storage area is consistently below the 40° temperature.
2. Batteries can freeze at lower charge levels. The following chart shows the relationship between charge level and freezing temperature of battery fluid.

<u>Charge Level</u>	<u>Fluid Freezing Temperature</u>
100%	-80° F
75%	-42° F
50%	-16° F
25%	- 2° F
10%	+ 7° F

Don't get caught with your batteries down!

TRACTOR IN USE

For best winter performance, tractor batteries require the following maintenance.

1. Maintain specified fluid level in all cells.
2. Fully charge batteries immediately after each use (19 hour cycle).
3. If tractor is not used within any 30 day period, recharge batteries at least once a month.
4. Battery efficiency at lower temperatures can be improved by parking the tractor in a heated area or by charging for a short time period just prior to tractor use.

That's the end of this special service bulletin. Using information from it and from your Avco New Idea Electric Tractor Operator's Manual (LG 1000 or 1001), fill in the attached questionnaire and mail it. With 100% correct answers, YOU'LL BE A WINNER!

To be eligible for award credits, the postage-paid questionnaire must be postmarked no later than midnight, February 28, 1974.