



## SAFETY PRECAUTIONS

1. Batteries contain sulfuric acid, which causes severe burns, and emit explosive hydrogen gas during charge. Only personnel who have been trained in battery installation, charging and maintenance should be allowed to work on the battery.
2. Always assume the battery is emitting hydrogen gas and take the following precautions:
  - a. Follow OSHA instruction 1910.178(g) Changing and Charging Storage Batteries. Charge in a well-ventilated area with the battery cover or compartment raised for ventilation and cooling.
  - b. Do not smoke, use an open flame or create arcs or sparks in the vicinity of the battery.
  - c. Do not charge the battery at a current greater than 5.0 amps per 100 ampere-hour capacity at end of charge.
3. If the battery is leaking, assume the substance is sulfuric acid and take the following precautions:
  - a. In case of contact with skin or eyes, flush thoroughly with clean water for at least fifteen minutes. Obtain immediate medical attention when eyes are affected.
  - b. A solution of 1 pound bicarbonate of soda to 1 gallon of water will neutralize acid spilled on clothing or material. Apply the solution until bubbling stops and rinse with clear water.
  - c. PRO Wash II is a sulfuric acid neutralizing solution available from EnerSys, part number 94880.
4. The battery is electrically live at all times:
  - a. Keep the top of the battery clean and dry to prevent ground shorts and corrosion.
  - b. Do not lay metallic objects on the battery. Insulate all tools before working on the battery to prevent short circuits. Remove all jewelry before working on the battery.
5. Observe the following precautions when lifting the battery:
  - a. Follow OSHA instruction 29 CFR 1910.179(n), Handling the Load.
  - b. Unless completely insulated lifting means are available, temporarily cover the top of all cells with an insulating material (plywood, thick rubber, etc.) to reduce the risk of short circuits.
  - c. Use a lifting device with two hooks that are electrically insulated from each other to prevent short circuits.

## INSTALLATION & OPERATING INSTRUCTIONS

### RECEIVING THE BATTERY

1. Immediately examine the exterior of the packaging for wet spots on the sides or bottom that may indicate damage or tipping during shipment.
2. If there is visible evidence of damage, mark the receipt "Shipment Received Damaged". Notify the carrier immediately and ask to make a damage report.
3. When the shipment is received and there is no visible evidence of damage but damage is found during unpacking, immediately contact the carrier and request a concealed damage report

### EQUALIZING CHARGE

Before placing a battery in service, connect it to an approved charger and give the battery an Equalize charge.

### OPERATION

1. Check the charger nameplate information to ensure the charger ampere-hour rating matches the battery ampere-hour rating.
2. Never discharge a battery more than 80% of its ampere-hour rating. Over-discharging will shorten the life of the battery.
3. Charge the battery on a daily basis returning 100% of the ampere-hours removed.
4. Equalize charge the battery once a week to properly mix the electrolyte and return specific gravity to nameplate rating.
5. Monitor battery temperature so it does not exceed 140° F. If the battery is too hot to hold your hand on for 10 seconds, this indicates the battery is too hot due to operating at too low a depth of discharge or charge rates too high.
6. Do not allow the battery to stand in a discharged condition. Connect the battery to the charger and charge immediately after stopping work.
7. Under normal workload, the battery may require the addition of water once a week. Only add water to the battery while it is on charge and gassing. Do not overfill the battery or it will spill electrolyte.

## BATTERY MAINTENANCE

### FOLLOW THESE SIMPLE RULES FOR LONG LIFE AND TOP PERFORMANCE.

#### DAILY

Connect battery to an approved automatic-start charger. If using manual start, press the start or daily button. Open the battery cover and/or lift truck hood to ventilate. Turn charger off prior to disconnecting charging connectors to prevent arcs and sparks.

After charge and before the work shift, take a hydrometer reading on one pilot cell. Make certain depth of discharge is no more than 80% and that the battery receives a full charge. See specific gravity table below for reference. After 30 days, a clear understanding of the duty cycle should emerge and gravity readings may be taken monthly thereafter.

#### WEEKLY

1. Add pure water to all cells while the battery is gassing and at the end of a charge cycle. Fill to a level approximately ¼" below the bottom of the vent well.
2. Provide an Equalize charge to properly mix the electrolyte and water.

#### MONTHLY

1. Take a specific gravity reading on all cells with a hydrometer after charge.
  - a. If the readings average less than the specific gravity ranges below, check the charger output.
  - b. If one or two cells read more than 20 points less than the average, circle those readings and check for improvement at the next monthly reading. If the low cells do not improve, contact your local EnerSys General Battery representative.
2. Inspect cable leads and connector for fraying, loose connectors or burned and pitted contact areas. Contact your local EnerSys representative for repair or replacement as needed.
3. Wipe down the top of the battery with a neutralizing cleaning agent such as PRO Wash Light, part number 94883-4QT.
4. For a more detailed description of maintenance and service, refer to the Motive Power Battery Service Manual, part number IND-210.

Cell Type	Fully Charged	80% Discharged	100% Discharged
55GL	1.315	1.160	1.125
75GL	1.315	1.160	1.130
85G	1.285	1.165	1.140
85P	1.285	1.165	1.140
100G	1.285	1.175	1.150
100P	1.285	1.175	1.150
125G	1.285	1.165	1.135
125P	1.285	1.165	1.135
160G	1.285	1.155	1.130

\*Specific Gravity @ 77° F



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