

Northern Lights generators utilize negative ground electrical systems. The negative (-) terminal of the battery should be connected to the cap screw on the bell housing near the starter. In the case of a “floating ground”, however, do not connect the negative (-) terminal to the engine block. Instead, connect it to the grounding post provided. The positive (+) terminal should always be connected to the starter solenoid terminal marked “positive”.

Always use batteries at least as large as those listed in the specification section at the end of this manual. The specifications also list recommended wire sizes and maximum distances that the batteries can be located from the engine.

The generator should not be operated off the propulsion engine's starting batteries. Dedicated generator batteries should be used. This prevents unintended discharge of the propulsion engine batteries as well as providing an extra set of batteries onboard should the need arise. When providing a separate set of batteries, be sure to include a shore powered charging system for the generator batteries.

Secure the batteries in an acid resistant container on a platform above the floor. Use a nonmetallic cover to prevent damage or sparks. Generator batteries should be installed as close to the unit as possible but not directly under the generator.



WARNING: Be sure to allow plenty of ventilation to prevent the accumulation of explosive hydrogen gas generated during battery charging.

United States Coast Guard regulation 33 CFR-183 requires that the generator be grounded and that a common conductor be connected between the generator set grounded starter motor circuit and the vessel's main propulsion engine grounded starter motor circuit. This conductor or common ground prevents the accidental passage of cranking current through the fuel system and small electrical conductors common to both engines. This conductor should be the same size as the largest battery cable.

AC Electrical System

Due to the possibility of fire and shock hazards, it is important that a qualified electrician installs and inspects the boat wiring. All wiring must meet Coast Guard, NFPA and any other applicable codes.

A circuit breaker should be installed as close to the generator as possible. Flexible wiring should be used between the generator connections and the circuit breaker. Most builders use flexible multi-strand wire throughout the boat to minimize breakage due to vibration.

The electrical distribution system must be designed in such a way that individual circuits cannot be energized by more than one source of electrical power at a time. Each shore power connection or generator is a separate source of electrical power and transfer between sources should be made with a switch that has arc-over protection between the contacts.

There is no consensus of opinion on whether the neutral conductor should be connected to the bonding system (grounded) or not (floating ground). Grounding the neutral may increase electrolytic corrosion. Not grounding the neutral creates a potential shock hazard. The American Boat and Yacht Council recommends grounding the neutral at the generator for safety reasons, though this may shorten the life of heat exchangers and other components. Northern Lights heartily recommends grounding the neutral since personal safety takes priority over all other considerations.

For additional electrical information, consult the AC wiring diagrams in the Generator Manual for the generator end installed on your set.