



Tech Bulletin

Permanent Magnet Starters

SEPTEMBER 3,
2008

VOLUME 1, NUMBER 2



Mounting Pad damage on the starter indicates the starter has been loose which can be caused by water ingestion

In many instances of 'Hydro Lock' an engine may not experience a complete hydraulic lock. Small amounts of water present in the cylinder chamber will raise the compression ratio causing high stress levels on the starter bolts and mounting pads during the cranking cycle.

Dear Mallory Marine Customers,

We want to inform you of two common failures in permanent magnet starters such as our part numbers 9-15900, 9-15901 & 9-15907.

1. Water ingestion in to the engine caused by leaking exhaust manifolds, gaskets, and risers or by water present in the fuel system can cause a condition referred to as 'Hydro Lock'. This condition combined with the high torque of these starters can result in damage to the starter, mounting bolts, and or ring gear on the flywheel. This not the fault of the starter and is not a warranty condition. Replacing the starter without checking for water intrusion will only result in a repeat failure and additional damages.
2. Water Damage inside the starter is also not covered under warranty. Always remove the lower case bolt to check for rust, if water has been present it is not a warranty situation. Find the cause before replacement!

These two problems left uncorrected will result in premature starter failures and possible engine damage regardless of the manufacturer of the starter.

Following the steps below every time you replace a Permanent Magnet Gear Reduction Starter will help insure a lasting repair and happy customer.

1. Before installing your new starter check for external signs of water.
2. Remove the lower thru bolt in the starter casing to inspect for signs of rust or corrosion, if present determine the cause, leaking hoses, defective bilge pump, etc.
3. Check for water in the fuel system and change the fuel water separating filter, if a fuel water separating fuel filter is not installed it is highly recommended. Water in the fuel tank can be detected using a water detecting paste.
4. Check for low battery conditions, corroded or loose connections, which can lead to starter problems.
5. If replacing an early style field wound starter with a Permanent Magnet type starter you must replace the old mounting bolts, failure to replace the bolts will void the warranty.

The above preventative steps are a good maintenance practices to be used when repairing or replacing any make or model starter and will lead to fewer failures and happier boaters.

Should you have any questions regarding this issue please call our Technical Assistance line 216-658-6438.