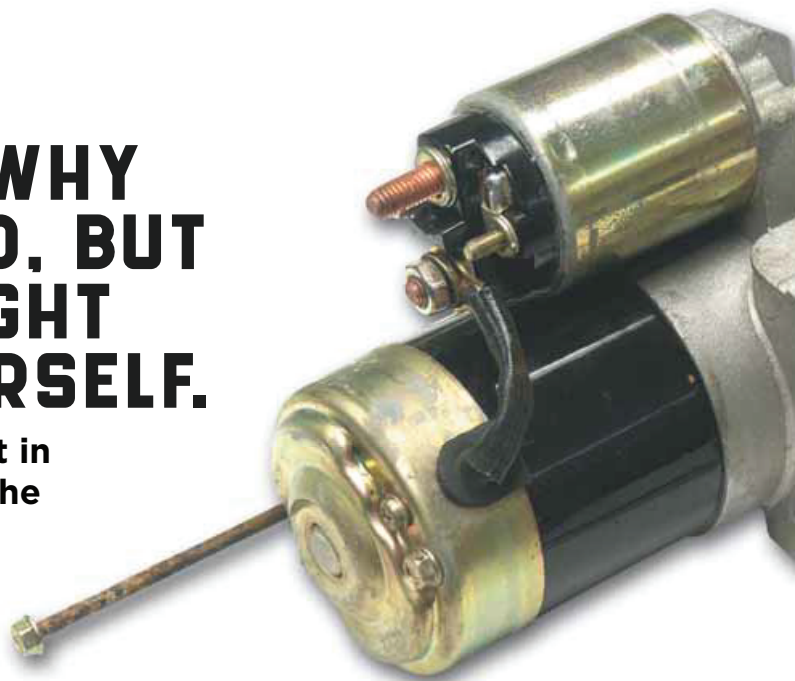


# TECH TIP

## WE COULD TELL YOU WHY YOUR STARTER FAILED, BUT WE THOUGHT YOU MIGHT LIKE TO SEE FOR YOURSELF.

If left unchecked, these problems will result in premature starter failure **REGARDLESS** of the **STARTER MANUFACTURER**.



*Although the outside of the starter (at bottom right) looks fine, the flywheel picked up water from the bilge and pumped it inside the starter causing the corrosion shown here.*

**WATER INTRUSION IS THE #1 CAUSE OF STARTER FAILURE.** If water gets pumped into the motor portion of the starter from the flywheel, it will not drain out. As you can see, rust and corrosion will destroy the inside components of the starter.

**THE #2 CAUSE OF STARTER FAILURE IS WATER INGESTED INTO THE ENGINE.** Leaking exhaust manifolds, gaskets and risers are often the source. Damage to the mounting pads, as shown above, indicate the starter has been loose on the engine; possibly caused by water ingestion into the cylinder. Although the engine may not experience a complete hydro lock, if enough water is on top of the piston to raise the compression to a high level, the starter bolts and mounting pads will be stressed beyond normal load conditions.

**DON'T BE FOOLED BY OUTWARD APPEARANCES.** As shown here, the outside condition of the starter appears to be fine, but by removing and inspecting the lower starter case bolt, it is obvious water has gotten inside the starter.



Shown here are damaged starter mounting pads. Water ingested into the engine stresses the mounting bolts beyond normal conditions. The bolts stretch and cause the starter to become loose. This could eventually lead to damage to the ring gear, starter casting and possibly the entire engine block.

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