

STARTER INSTALLATION INSTRUCTIONS

IMPROPER INSTALLATION WILL RESULT IN SEVERE STARTER AND/OR FLYWHEEL DAMAGE

IMPORTANT: Carefully follow these step-by-step instructions. It is highly recommended that a "REPAIR MANUAL" be purchased for more detailed instructions that will cover this particular vehicle. (These manuals are available thru part stores and/or dealers and will help with this and many other repairs.)

This starter is in top working condition and has been carefully assembled and thoroughly tested to meet or exceed O.E.M. specifications. **ANY ALTERATION, ABUSE, MISUSE, TAMPERING OR IMPROPER INSTALLATION OF THIS UNIT WILL VOID ALL WARRANTIES BY THE MANUFACTURER.**

CHECK THE ELECTRICAL SYSTEM

1. Test the battery. Make sure it is fully charged and has at least 12 volts. If the battery is removed, disconnect the **NEGATIVE (-) battery cable FIRST.**
2. Check the battery cables and cable ends for corrosion (Puffiness around cable insulation). Cables and/or connectors must be cleaned or replaced if badly corroded.
3. If there is no indication of power to the starter, check the following:

NOTE: A "Repair Manual" will be necessary for proper testing.

- Starter relay switch (Chrysler and some G.M.) usually located on the left inner fender.
- Neutral safety switch (automatic transmission only) usually located near the base of the steering column or under the console on floor mounted shift levers.
- Clutch safety switch (manual transmission only) usually located under the clutch pedal on the floor, or at the top of clutch pedal above the steering column.

4. Check the fender mounted or fire wall mounted solenoid/relay (Ford and AMC with Ford Starters Only).

CAUTION: The following test bypasses the ignition system and the starter may engage. Make sure vehicle is in park or neutral, and the parking brake is on. Keep hands away from possible moving fans, belts, and pulleys.

Place a heavy jumper cable across the (2) largest terminals of the solenoid. If the starter engages, the solenoid is bad and must be replaced.

5. Check wiring at the starter for frayed insulation or damaged wires. Wrap frayed insulation with electrical tape and replace damaged wires or cables.

(over)

TO REMOVE THE OLD STARTER

1. Disconnect the **NEGATIVE (-)** cable from the battery.
2. Raise the vehicle to a suitable working height. Block with jack stands under the frame.

NOTE: On some vehicles, it may be necessary to loosen or remove other components (exhaust pipe, power brake booster, air conditioning brackets, motor mounts, etc.) before the starter can be removed or replaced. If the starter is not easily accessible, refer to a "Repair Manual" for instructions.

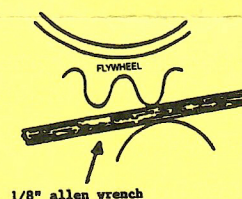
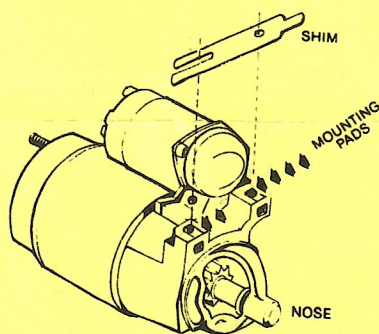
3. Disconnect all wiring from the starter (label each for re-connection).
4. Remove any support brackets from the starter, then unbolt and remove the starter.
- G.M. starters: Save and clean any shims for possible re-use.
5. Remove the flywheel cover and rotate the flywheel. If any worn or chipped teeth are found on the ring gear, replace the ring gear or the flywheel. **WORN OR CHIPPED TEETH WILL CAUSE STARTER FAILURE.** Refer to a "Repair Manual" for instructions.

TO INSTALL THE NEW STARTER

1. The starter drive housing (nose) on the old starter must match exactly with the drive housing on the replacement starter. Note: The case and/or end plate may be different but are interchangeable.
2. Re-attach the heat shield (if applicable) to the new starter.
3. Place starter in position and finger tighten the mounting bolts beginning with the top bolt. (The top bolt must be mounted first to avoid breakage of this "ear".)

G.M. PAD MOUNT STARTERS: (Re-use old shims at this time)

Check the flywheel's ring gear clearance by inserting a 1/8" allen wrench between a tooth of the ring gear and the armature shaft. Add shims if the wrench won't fit. Remove shims if the fit is too loose. If the fit is too loose and no shims have been used, add shims to the outside pad only until there is proper clearance.



4. Securely tighten all bolts and replace the flywheel cover.
5. Re-connect all wiring to the starter.
6. Remove the jack stands and lower the vehicle.
7. Re-connect the battery.
8. Check the operation of the starter. **G.M. PAD MOUNT STARTERS:** Unusual noises indicate improper flywheel/starter drive clearance.