

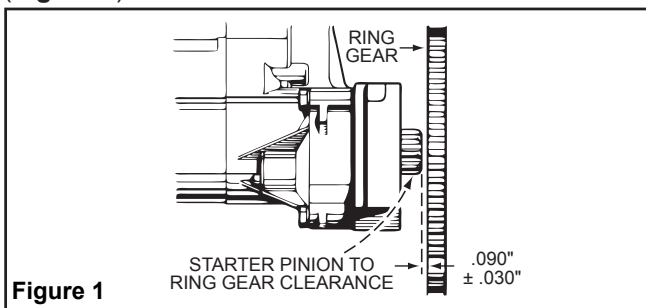
INSTALLATION INSTRUCTIONS

Permanent Magnet Starter

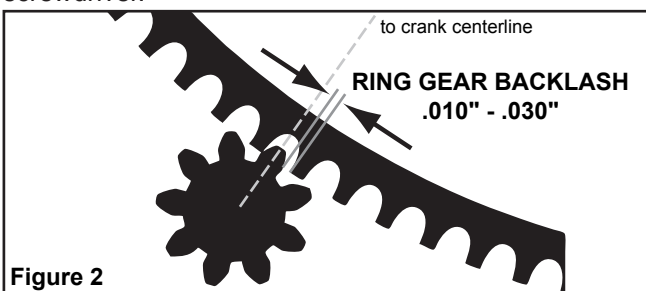
Tilton Engineering's Permanent Magnet Starter is designed to fit specific applications without modification. It is best to keep the solenoid as far away from the header pipes as possible. If the starter must be very close to the headers, use of a heat shield is mandatory. *The electrical installation is very important. Failure to follow instructions will result in improper starter operation, and premature starter damage!*

When installing the Permanent Magnet Starter, the relationship between the pinion and ring gear is important. Due to the starter's high operating torque, damage to the pinion and ring gear will occur if the recommended clearance is out of spec. The clearance will typically be in spec if you are using the correct starter for your application. There is a much greater chance of having clearance problems if you have a modified flywheel, ring gear, bellhousing or crankshaft.

- 1) The starter pinion to ring gear clearance should be $.090" \pm .030"$ when pinion is in its relaxed position (Figure 1).



- 2) When the pinion is engaged into the ring gear, there is to be $.010"-.030"$ backlash between the teeth of the gears. Make sure the battery is disconnected before making this check. To measure, one tooth of the pinion gear should lie along a line between the centers of the pinion and ring gears, as shown in Figure 2. Wire type feeler gauges, or number drills may be used while removing the entire backlash in one direction with a screwdriver.

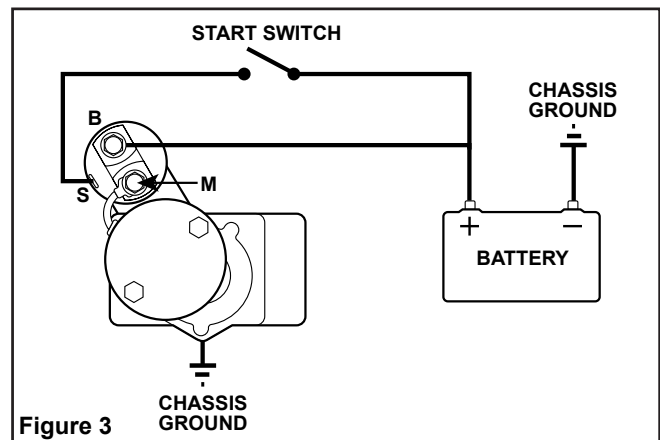


- 3) If the starter solenoid interferes with the engine block or any engine component, see if the nose on the starter is an indexable model. If so, the entire starter can be rotated about the nose to gain additional clearance.

Wiring

Standard: Chevrolet Style

Connect the positive battery cable to the unoccupied, bolted terminal in the starter solenoid (B). Connect the starter switch lead to the pigtail male spade (S). This is shown in Figure 3.



Remote solenoid: Ford & Chrysler Style

Connect the positive battery cable from the remote solenoid to the unoccupied, bolted terminal on the starter solenoid (B). Connect a wire from the terminal with the start wire on the remote solenoid, to the pigtail male spade (S). This is shown in Figure 4. **DO NOT** use a jumper between bolt-terminal (B) and male spade (S). Otherwise, starter run-on and damage will occur.

