

MSD INSTALLATION INSTRUCTIONS

MSD DynaForce Starter Chevrolet LS Series PN 5096/50963

IMPORTANT: Proper installation of the DynaForce Starter is important to the overall operation. Correct alignment of the starter pinion with the ring gear is needed to achieve the best operation and longevity from your starter. Please read the instructions before attempting the installation.

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Parts Included:

1 - Starter

2 - Mounting Bolts

1 - Shim Kit

WARNING: Before installing the DynaForce Starter disconnect the battery cables. When disconnecting the battery cables, always remove the Negative (-) cable first and install it last.

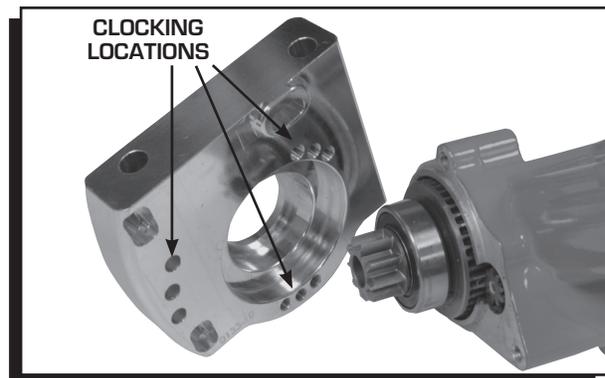


Figure 1 Clocking the Starter for Clearance.

1. Make sure the starter mounting flange on the engine block is clean and smooth.
2. Install the starter with the supplied hardware. It is recommended to leave the shims out until pinion gear to ring gear teeth is checked. Torque the bolts to 32 lb-ft.

Note: The supplied bolts **must** be used for proper installation.

3. Check that the position of the solenoid is away from direct heat sources and other components. If there are clearance problems, the starter housing can be rotated to move the location of the solenoid. This is done by removing the three bolts on the mounting block and repositioning the starter motor (Figure 1).

4. With the starter installed, check the clearance between the ring gear and the edge of the pinion gear (Figure 2). There should be at least 1/16". It is recommended to check this clearance in at least three places around the ring gear.

- **If there is not enough clearance**, you will need to install the supplied shim kit by removing the mounting block (Figure 3). Place the small shim ring in the bearing bore and install the outer shim on the support housing. Reinstall the mounting block. This will move the pinion gear into the starter approximately 0.060".

5. To check the pinion gear mesh, gently pry the gear out to engage to the ring gear. (Sometimes the pinion will not retract. This is normal.) Insert a wire gauge as shown in Figure 4. As a gauge, a standard 1.25" paperclip could be used as they generally are about .035" in diameter. There should be .020"-.035" clearance between the ring gear tooth and the pinion gear.

- **If there is not enough clearance**, install one of the supplied shims and check again.

- **If there is too much clearance**, install a shim under the outer bolt only. This will tighten the clearance.

6. Connect the switch wire to the ignition terminal. This wire should be 12-gauge (Figure 5).

7. Attach the battery cable. The size of the battery cable depends on its length. Using the proper gauge wire is important to the operation of the starter. Both the positive and ground wires must be able to meet the demands of the starter. The chart in Figure 5 shows the recommended sizes. Be sure to route the wire away from the exhaust and moving parts of the engine.

8. Connect the battery terminals and start the engine.

IMPORTANT: Never operate a starter for more than 30 seconds at a time without letting it cool for at least two minutes.

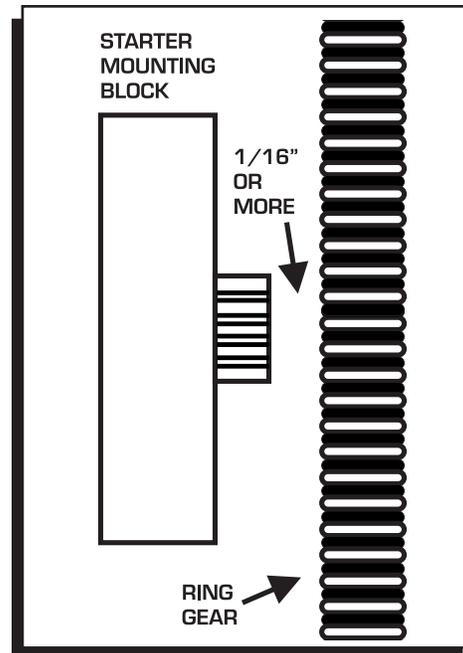


Figure 2 Checking Pinion Clearance.

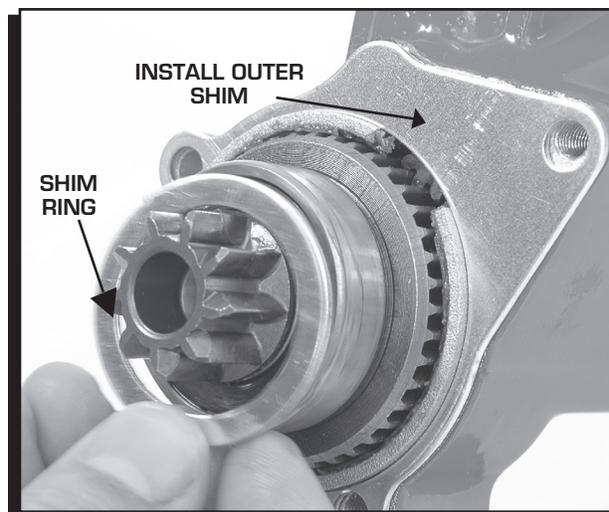


Figure 3 Installing the Pinion Shim Spacers.

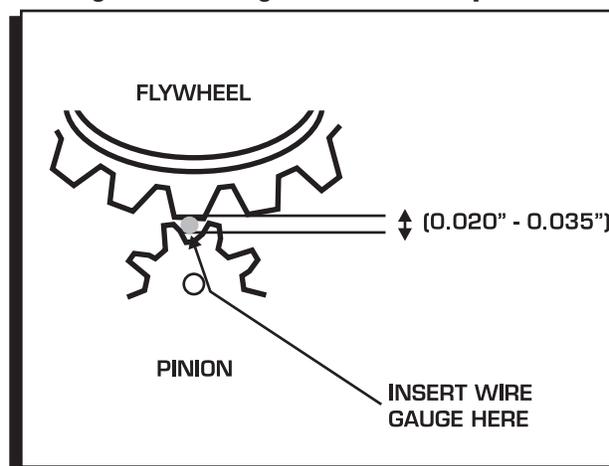


Figure 4 Checking Gear Mesh.

