

Gear Reduction High Performance Starter Chevrolet Applications

Installation Kit Parts List #1

Two (2) Rectangular Shims
One (1) Connector Terminal
Two (2) 3/8" – 16x4" Hex head bolts w/flange
One (1) Round Spacer
One (1) Housing Shaped Spacer

Congratulations on buying one of the latest innovations in starter technology. This starter offers high torque, through Gear Reduction at a compact lightweight size. Installation of this starter is similar to the original OEM starter.

- This starter is designed for use on Chevrolet applications with 153 or 168 tooth ring gears (flywheels).
- This starter is designed for **12-VOLT systems only!!** Use of this starter with higher than 12 VOLTS or long periods of cranking will damage starter and void warranty. **NOTICE: Never operate the starter motor more than 30 seconds at a time without pausing to allow it to cool for at least 2 minutes. Overheating, caused by too much cranking, will damage the starter motor.**
- Depending on the particular application or type of ring gear used it may be necessary to install shims and/or spacers.
- The proper pinion to ring gear clearance and backlash must be obtained before trying to start the engine. ***Damage to either the starter or ring gear will occur if clearance is not set properly.*** Check the pinion to ring gear clearance at three ring gear locations 120° apart around the ring gear. A wide variance in the readings indicates a bent or out of round ring gear. Always wear safety glasses.
- This starter can be indexed to move its solenoid to 3 different positions to accommodate custom header installations. To do so, remove the 3 screws { (2) Hex head, (1) Allen } holding the mounting block in place. Rotate starter to desired location, then reinstall the three screws. Torque to 2.5ft lbs. – 3.6ft lbs.

INSTALLATION INSTRUCTIONS

1. ***REMOVE GROUND CABLE FROM BATTERY.***
2. Remove original starter by disconnecting battery cable, ignition switch wire, and mounting bolts.
3. Remove lower flywheel housing cover.
4. Inspect ring gear for warpage and/or damage.
5. Position new starter on the engine.
6. Install the 2 starter mounting bolts found in installation kit (torque to 31-ft. lbs.)
7. Check ring gear clearance and backlash (figures 1 and 2). Add shims and/or spacers to starter if necessary to obtain proper clearance. **Note: Housing Shaped & Round Spacers must be used together as a set. See figure 3 for proper placement location.**
8. Connect wiring (Positive battery cable to B-Terminal, Ignition wire to S-Terminal) to the starter solenoid.
9. Reconnect battery ground cable.
10. Test starter for proper engagement by starting vehicle 4-6 times, listening for proper engagement.
11. If you hear that the starter is not engaging properly, return to step 7 for proper starter adjustment.

Checking Ring Gear / Pinion Clearance:

With the starter disengaged and mounted in the proper location, the pinion to ring gear clearance should be .100in.+/- .040

Figure 1

Checking Backlash To check the backlash, simply pull pinion as to engage. You should have .010" to .030" clearance between ring gear and pinion gear.
(See figure 1)

Checking Center of pinion to ring gear distance:
If clearance is too tight, add appropriate amount of shims to obtain proper backlash.
(See figure 2)

Spacer installation Remove rectangular mounting block and place the 2 spacers as shown on figure 3 and re-assemble mounting block.

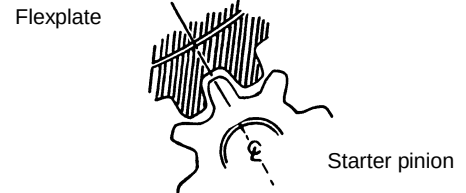
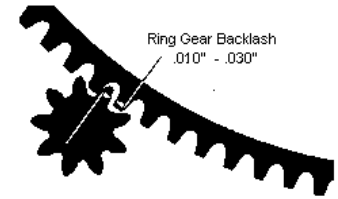


Figure 2

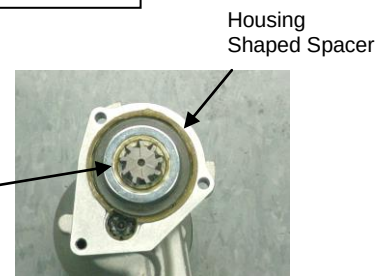


Figure 3

SOLENOID HOOK-UP

1. Attach positive battery cable to the B-Terminal (Terminal without attachments) on the starter solenoid.
2. The ignition wire is then attached from the starter switch to spade terminal on starter solenoid.

(See figure 4)

Note: It may be necessary to splice the ignition switch wire and install the solder less female connector provided in the installation kit.

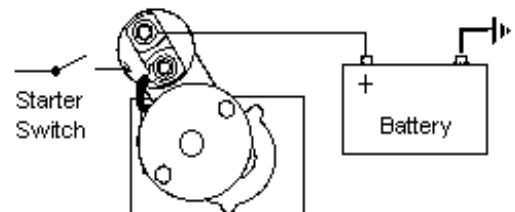


Figure 4

Remote Applications:

1. Connect the battery cable from the remote solenoid to the B-Terminal on the starter.
2. Connect a "jumper wire" (not included) from the B-Terminal to the S-Terminal.

(See figure 5)

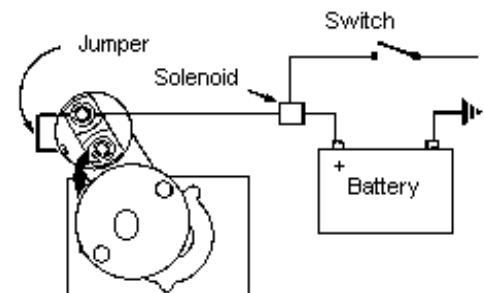


Figure 5