Hitachi
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

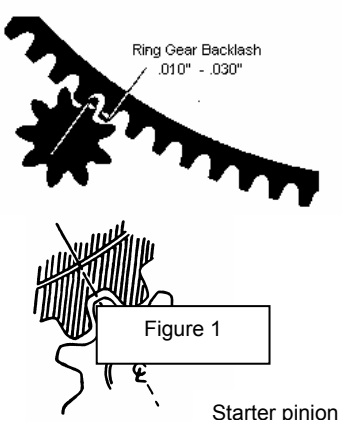

Figure 1

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)

Figure 2

Checking Center of pinion to ring gear distance:
Spacer installation Remove rectangular mounting block and place the 2 spacers as shown on figure 3 and re-assemble mounting block.

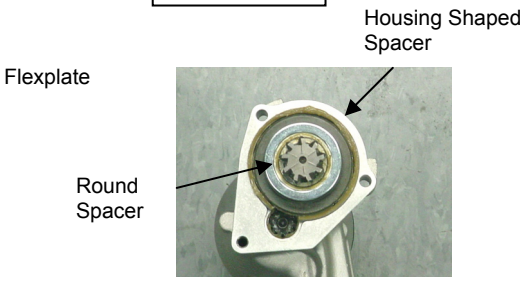

Figure 3

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.

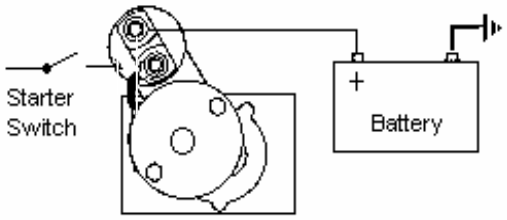

Figure 4

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)

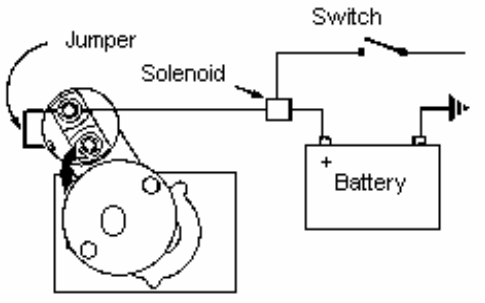

Figure 5