

GEAR REDUCTION STARTER INSTALLATION INSTRUCTIONS

Contents:

- (1) Starter motor
- (2) Mounting bolts
- (2) Engine block shim
- (1) Solderless terminal
- (1) Round-nose shim
- (1) Housing shim
- (1) Housing gasket

This starter is intended for use on GM corporate engines, small and big block V-8 as well as V-6. With either 12-3/4 inch (153 tooth) or the 14 inch (168 tooth) flywheels.

The armature housing may be rotated in relation to the mounting block. This allows for adjustment, if necessary, for clearance problems when used with large wet oil sumps and/or older exhaust systems.

This starter motor is designed for 12 volt-negative ground electrical systems.

NOTICE: NEVER OPERATE THIS STARTER MOTOR MORE THAN 30 SECONDS AT A TIME WITHOUT ALLOWING IT TO COOL FOR AT LEAST TWO MINUTES. OVERHEATING CAUSED BY TOO LONG OF A CRANKING PERIOD WILL DAMAGE THE STARTING MOTOR.

CAUTION: Disconnect battery leads prior to starter installation

INSTRUCTIONS

Hold starter motor into position at engine block. Install (2) supplied mounting bolts. Tighten to 38 lbs. ft.

NOTE: Before operating starter, gear clearance must be checked.

(A) Set pinion clearance. Pinion clearance should be .010 to .015 inch.

(See Fig. 1). If no pinion clearance exists, install the supplied shims as follows: 1)

- Remove (3) nose piece mounting bolts. NOTE - one bolt is located inside starter.
- Remove (2) end cap bolts and cap.
- Carefully remove armature with housing; do not allow armature to move within housing. (Bolts may disengage if armature is moved.) Note - Third nose piece bolt is now accessible.
- Fully remove nose piece gasket and discard.
- Insert round shim into mounting block.
- Align new gasket and housing shim into position.
- Insert housing into starter mounting block.
- Install (3) bolts; and tighten 10-15 lb. ft.
- As sure o-ring seal is in place on armature housing.
- Carefully install armature and housing into mounting block.
- Install end cap and bolts; tighten to 50 lb. ft.

(B) Check starter pinion backlash. This should be .040 to .015 inch. Measure and adjust as follows:

- 1) Pull pinion and engage pinion gear into flywheel.
- 2) Measure clearance between meshing gears. (See Fig. 2.)
- 3) Remove starter mounting bolts and install supplied shims as required.
- 4) Tighten starter mounting bolts to 38 lb. ft.

Wiring:

CAUTION: BATTERY LEADS MUST BE DISCONNECTED PRIOR TO STARTER INSTALLATION.

Note: (3) terminals at end of solenoid (See Fig. 3)

- a) Upper terminal
- b) Lower terminal (Note: Black lead is already attached.)
- c) Spade terminal

- 1) Attach positive battery to upper terminal
- 2) Connect a 12 or 14 gauge wire from starter switch to the spade terminal. Use the supplied mating connector if required.

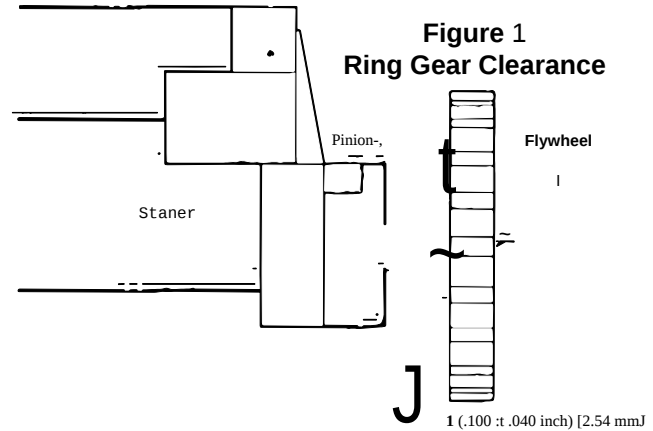


Figure 2 Pinion Backlash

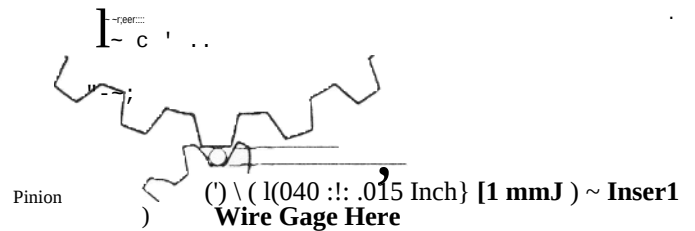


Figure 3 Electrical

