



# INSTALLATION INSTRUCTIONS

13186 & 13310

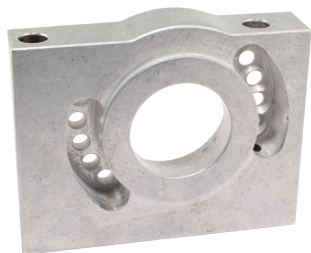
Gear Reduction Starters

**IMPORTANT! POSITIVE BATTERY CABLE MUST BE DISCONNECTED AT BATTERY PRIOR TO INSTALLATION! THIS IS A PERFORMANCE MODIFICATION, NOT JUST A REPLACEMENT STARTER.**

**ALL INSTRUCTIONS & PROCEDURES MUST BE FOLLOWED FOR A SUCCESSFUL INSTALLATION.**

*The 13186 starters are designed for use on Oldsmobile and Pontiac V8 engines with a stock flywheel, driver side block mounting. The 13310 starters are designed for 1997-01 GM LS1 and LS6 engines.*

**CAUTION: NEVER OPERATE STARTER MOTOR MORE THAN 30 SECONDS AT A TIME WITHOUT ALLOWING IT TO COOL FOR AT LEAST TWO MINUTES.** Overheating caused by extended cranking will damage the starter motor and void warranty.



13186 Oldsmobile &  
Pontiac w/stock flywheel,  
driver side block mounting



13310  
GM LS1 & LS6

Gear reduction starters have 4 or 5 mounting holes so they can be mounted and indexed. Verify that the pinion gear will engage into the flywheel before final bolt torquing. If the starter interferes with the engine block or any component, the entire starter can be indexed about the nose to gain additional clearance.

## Starter removal and installation

1. Disconnect starter wiring harness and remove old starter.
2. Make sure that the engine block to starter mounting surface is free of any rust, paint or debris to ensure proper grounding.
3. Hold new starter motor in position at engine block. Determine correct bolt holes in starter mounting block to use. The notch in the top of the mounting block is for the oil pan rail clearance.
4. Install (2) supplied mounting bolts. Tighten to 38 ft lbs.

## Wiring the starter

1. Attach the positive battery cable to the large starter terminal. **DO NOT OVERTIGHTEN THE NUT!** The stud terminal is made of soft brass for superior conductivity and will strip if overtightened.
2. Connect existing ignition switch wire to the spade terminal.

Positive battery cable +

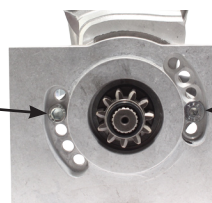
Ignition switch wire



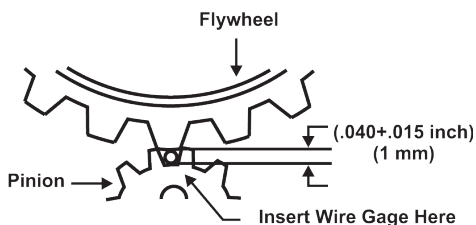
## Indexing the starter

If the starter interferes with the engine block or any component, the entire starter motor can be rotated about the nose to gain additional clearance. To index the starter from the mounting block, remove the two bolts noted and turn the starter motor to gain additional clearance. Reinstall and tighten the mounting bolts once in position.

Remove these  
bolts to index  
starter



Remove these  
bolts to index  
starter



## Pinion Back Lash

When the pinion is engaged into the ring gear, there is to be  $.040 \pm .015$ " backlash between them. This can be checked with a wire gauge (a standard size paper clip will work fine) when holding the pinion into the ring gear with a screwdriver.