



INSTALLATION INSTRUCTIONS

GM Starters - Chevy, Buick, Olds & Pontiac
Full Size 3510, 3570, 3631

IMPORTANT!

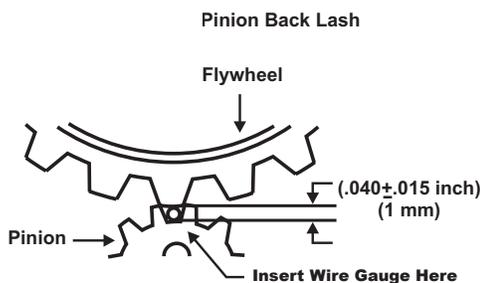
**POSITIVE BATTERY CABLE MUST BE DISCONNECTED AT BATTERY PRIOR TO INSTALLATION!
ALL INSTRUCTIONS & PROCEDURES MUST BE FOLLOWED FOR A SUCCESSFUL INSTALL.**

Prior to installation, be sure engine block to starter mounting surface is free of any rust, paint or debris to ensure proper grounding. For 12 volt negative ground electrical system.

Starter installation

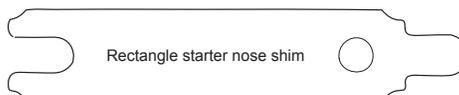
1. Disconnect starter wiring harness and remove old starter.
2. Hold new starter motor in position at engine block.
3. Reinstall mounting bolts. Tighten to 38 ft lbs.

Note: Before operating starter, gear clearances **MUST** be checked! Note that shims may or may not be necessary – it depends upon actual clearances as noted below.



Pinion Back Lash - Rectangle shims

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. If the fit is too tight, shim the nose from the block using the rectangle shims provided.



Wiring the starter

1. Attach the positive battery cable to the upper left terminal. **DO NOT** connect it to the lower right terminal that is connected to the black starter motor cable.
2. Reconnect the original wires or connect a 12 or 14 gauge wire from the starter switch to the S terminal, using the supplied terminal, if required.

CAUTION: 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 extended cranking will damage the starter motor and void warranty.

LIMITED ONE YEAR WARRANTY

For complete warranty information, visit www.tuffstuffperformance.com

CONTENTS

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1 - Starter motor

2 - Engine block shims



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