

" THIS ARTICLE IS INTENDED FOR YOUR REFERENCE ONLY.

ACTUAL PARTS, YEARS AND BODY STYLES CONTAINED

IN THIS ARTICLE MAY DIFFER SLIGHTLY FROM YOUR APPLICATION. "

Proper Starter Installation

by Randy Irwin

Nothing is worse than having a great looking car and when going to start it, have the starter sound like you are backing over a cat's tail! There are a lot of myths, wives tales and folklore about just where and how to mount the starter on your engine. If you get it correct the first time, the starter drive will last. With so many after market starters out there, you more than likely will have to shim the starter to get the proper starter drive to ring gear lash. In this article you will see the proper way to install the flywheel and starter. The Power Master XS Torque Series starter comes with everything you need, uses less amperage, goes easier on the battery and the one-piece bullet nose offers super durability!

Time Frame:

1 1/2 Hours

Tools Needed:

1/16" Drill bit

9/16" Wrench

Torque wrench

9/16" Socket

11/16" Socket

When installing the flywheel to the crankshaft hub you will find that the center hole in the flywheel has a lip on it. This lip will face outward towards the transmission and away from the crank hub (**see photo #1**).

If the engine is externally balanced and has a weight on the flywheel, the weight will be on the front side of the flywheel closest to the oil pan (**see photo #2**).

An automatic transmission flywheel uses a 11/16" long flywheel bolt, **part #19-62**, and a standard transmission flywheel uses a 1 1/4" long bolt, **part #19-61**. Make sure to always use the correct length bolt. If a shorter bolt is used on a standard transmission flywheel there won't be enough thread in the crankshaft hub to hold the flywheel properly. If the long bolts are used on an automatic transmission flywheel, the bolt will go through the crank hub and hit the rear main cap on the engine (**see photo #3**).

Although the flywheel bolts are supplied with serrated washers to keep them from backing out, using a small amount of thread locker, **part #27100**, is always a good idea. These bolts torque to 65 foot pounds (**see photo #4**).

We chose to install a gear reduction starter, **part #18-213**, but weather this starter, or a high or low torque starter is going to be installed, the gear lash is the same. By using a gear reduction it takes less amperage to turn the engine over so it is much easier on the battery. We have found that the Power Master XS Torque Series is tucked in the most for header clearance and has a one piece bullet nose for super durability. This will hold up to street



Parts Needed:

18-213 55-81 Gear reduction starter

Includes: bolts, washers and shims.

19-61 Flywheel to crank bolts
(standard transmission)

19-62 Flex plate to crank bolts
(automatic transmission)

27100 Thread locker

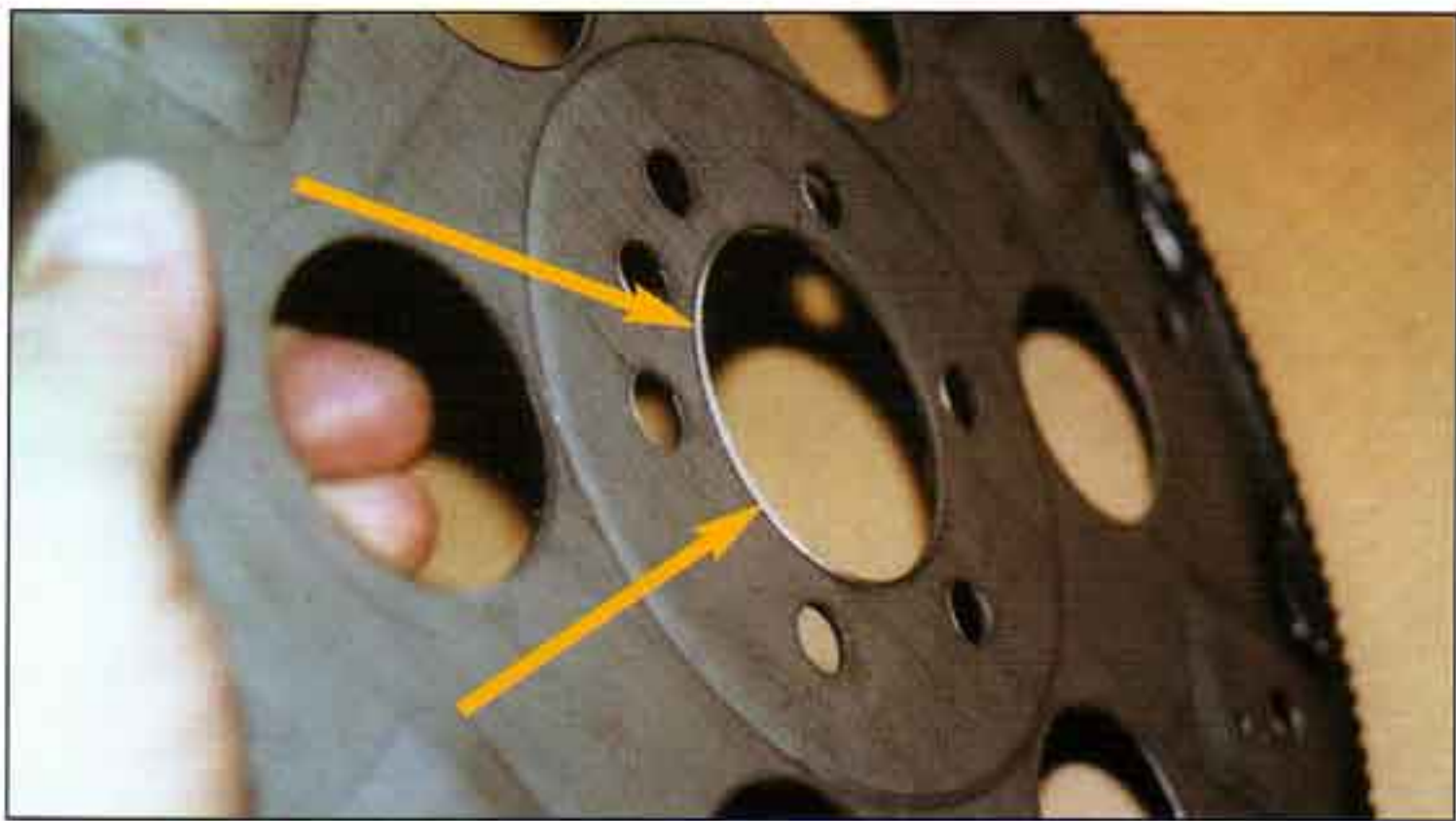


Photo #1



Photo #2

use, not some light duty two piece head for just racetrack use. The starter comes with starter bolts, washers and shims (see **photo #5**).

The bolt pattern for the gear reduction starter, as well as most high torque GM starters, is parallel with the flywheel (see **photo #6**).

The starter bolts use a flat washer at the head of the bolts and they will keep it from quelling the starter head. There is a knurrell at the threaded end of the bolt to keep it from backing out of the engine block (see **photo #7a & #7b**).

The starter comes with two shims. First install both shims and torque the starter bolts to 35 foot pounds (see **photos #8a & #8b**).



Photo #3



Photo #4



Photo #5

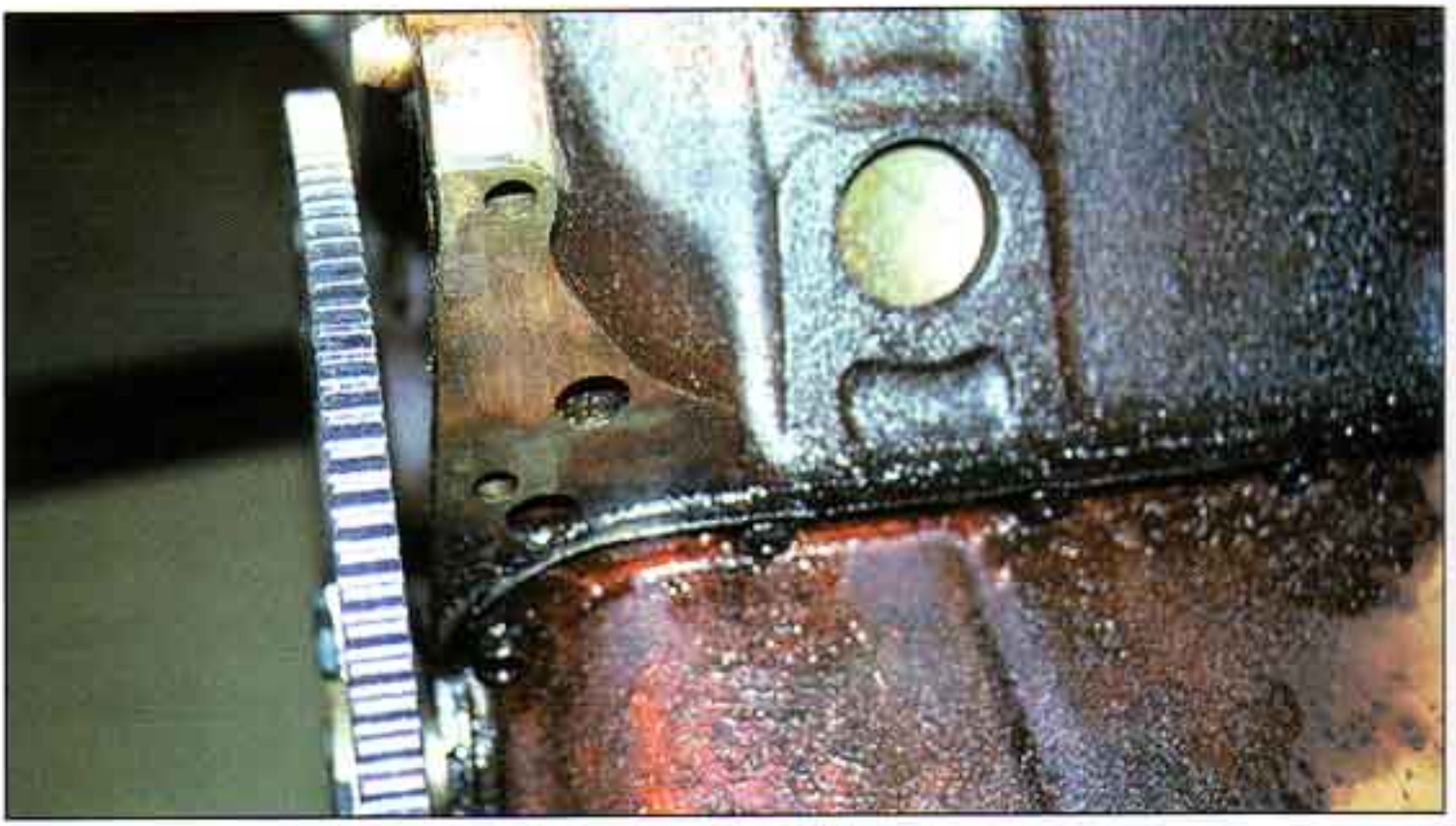


Photo #6



Photo #7a



Photo #7b

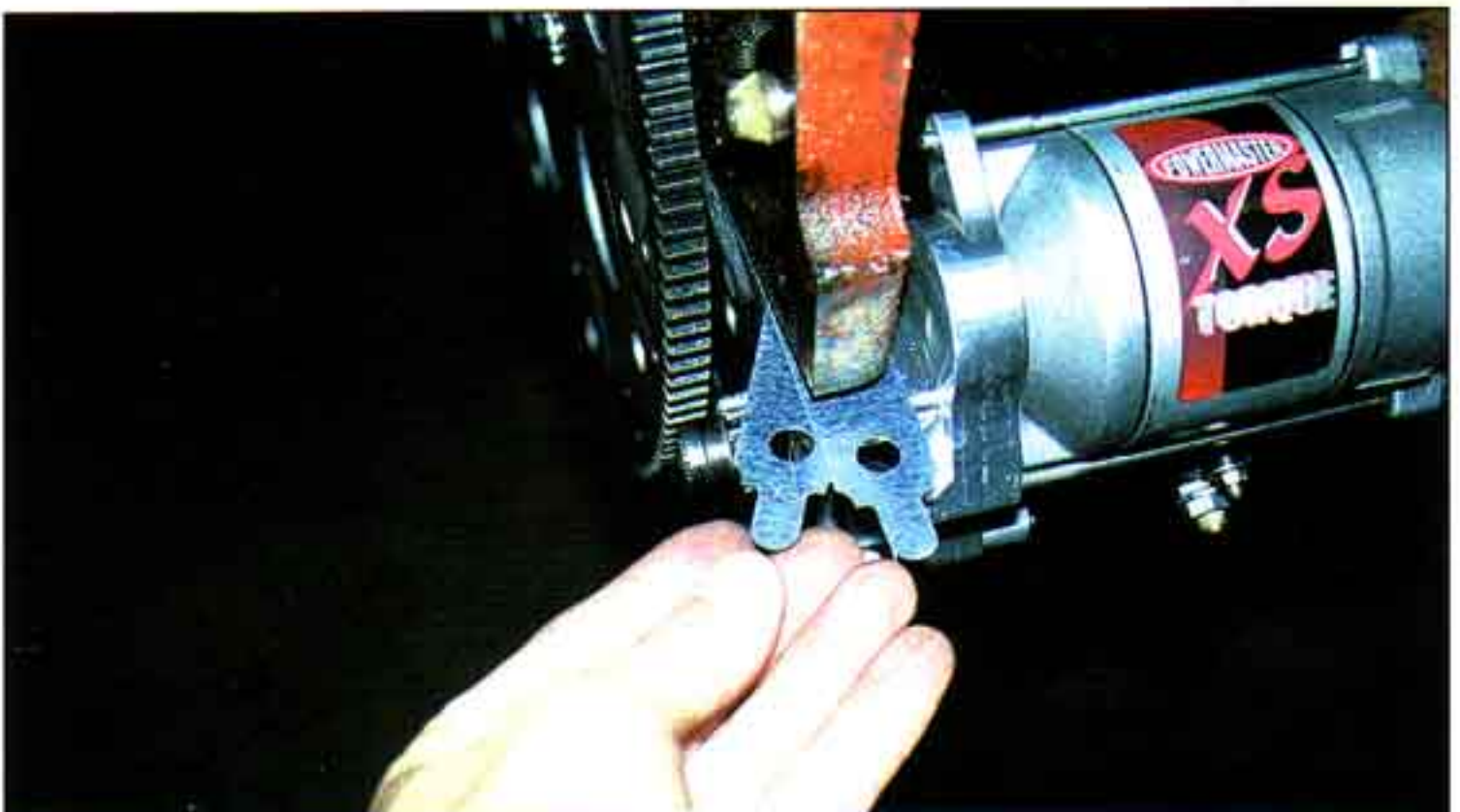


Photo #8a

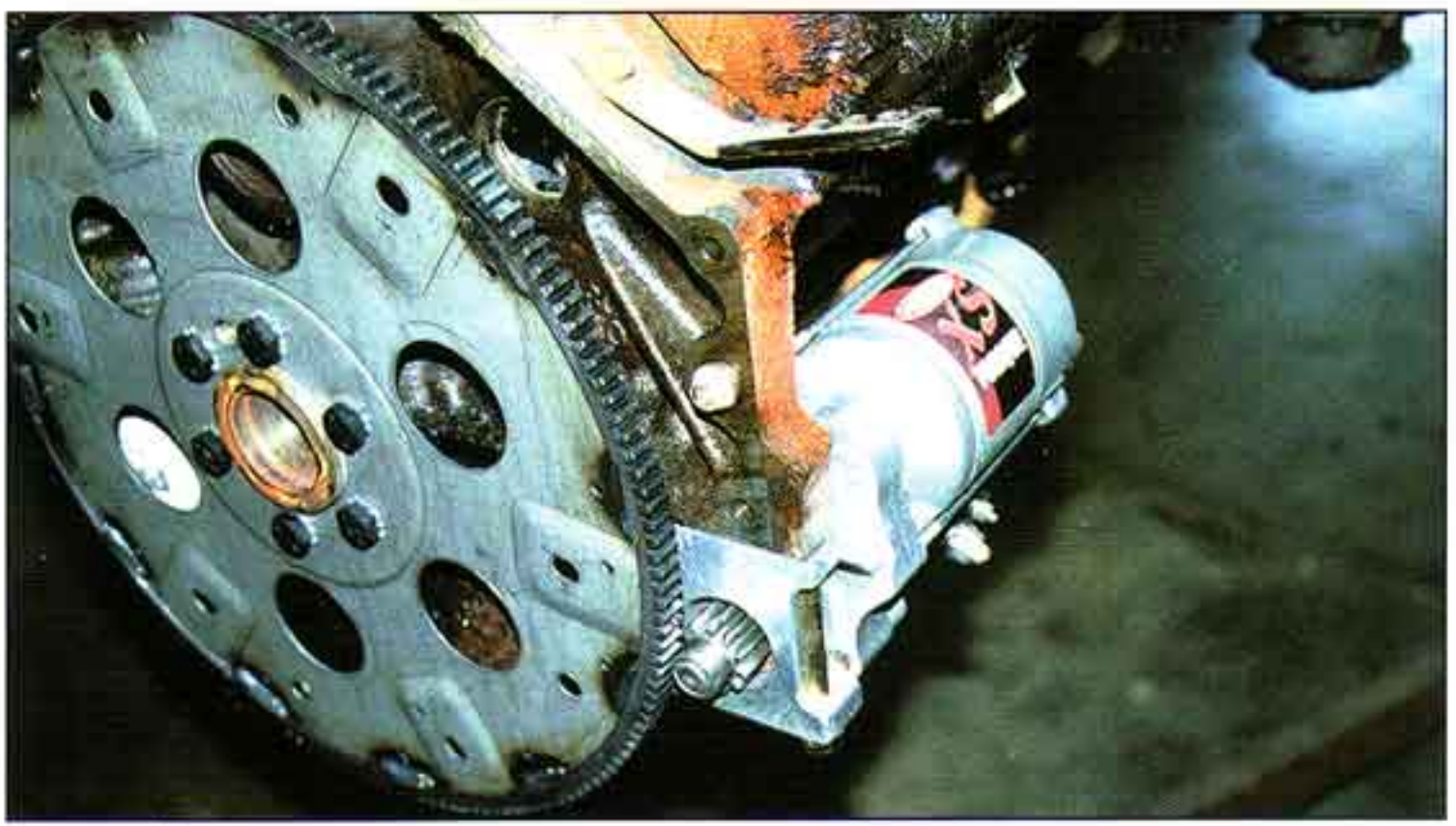


Photo #8b

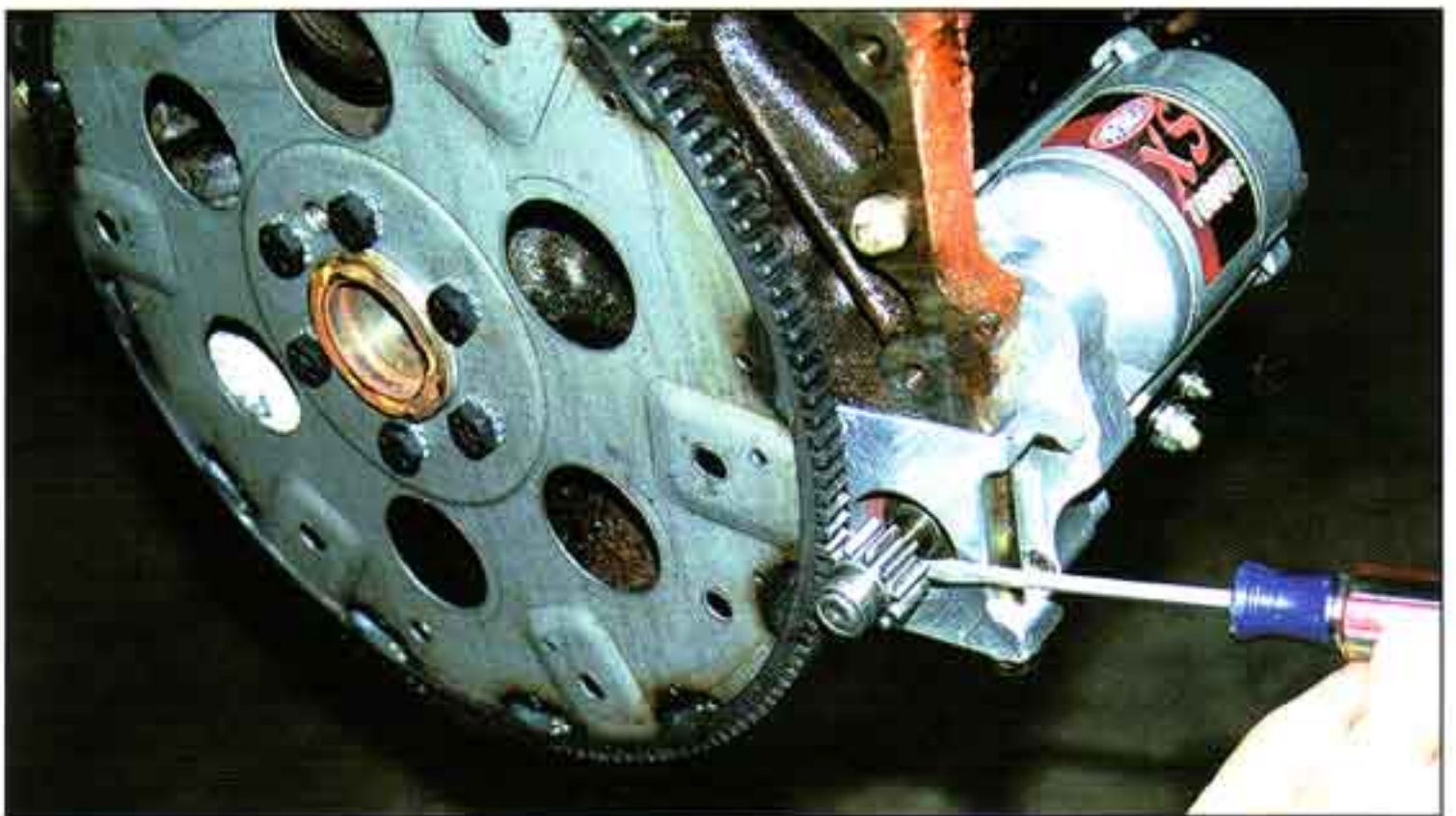


Photo #9

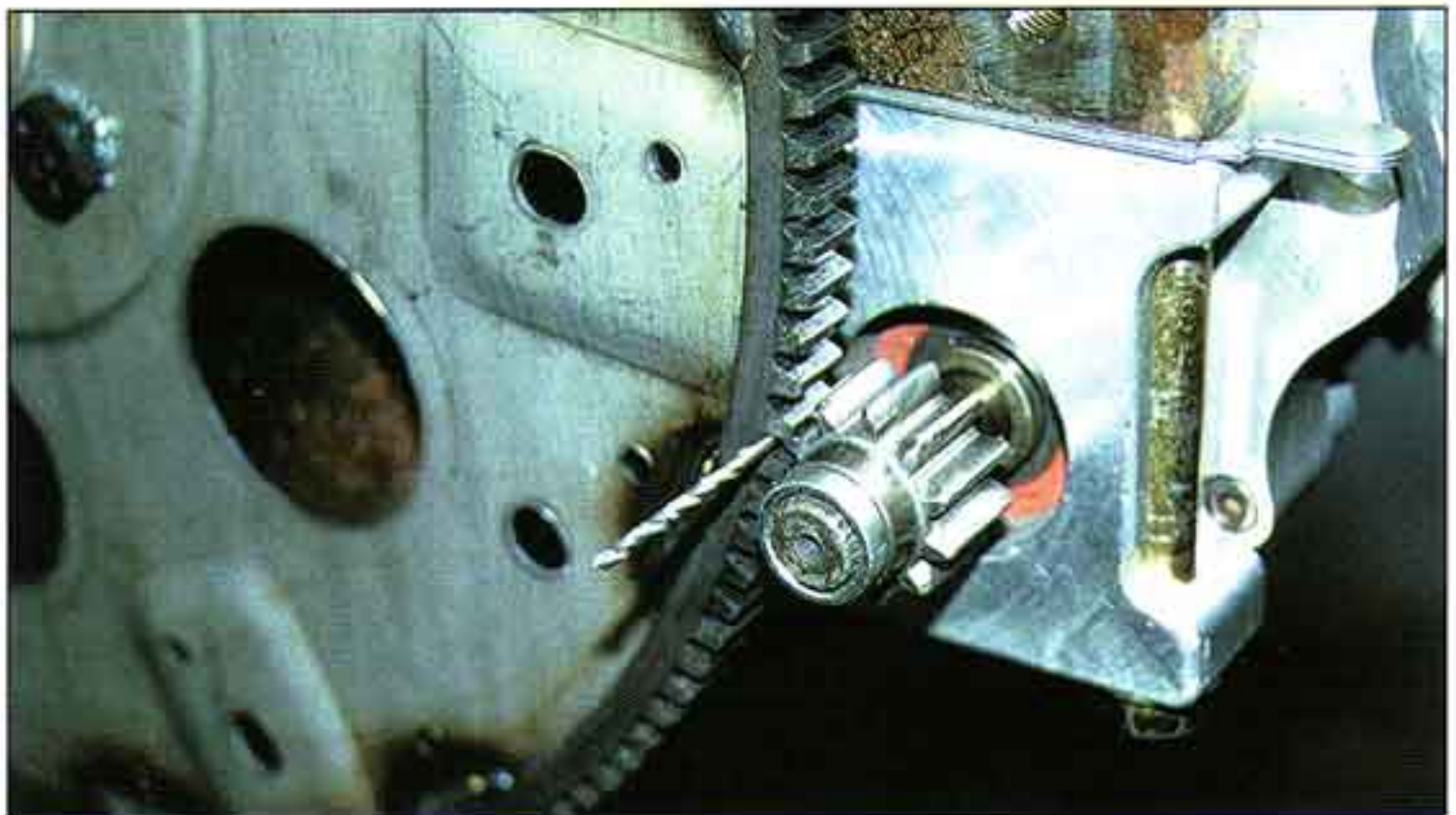

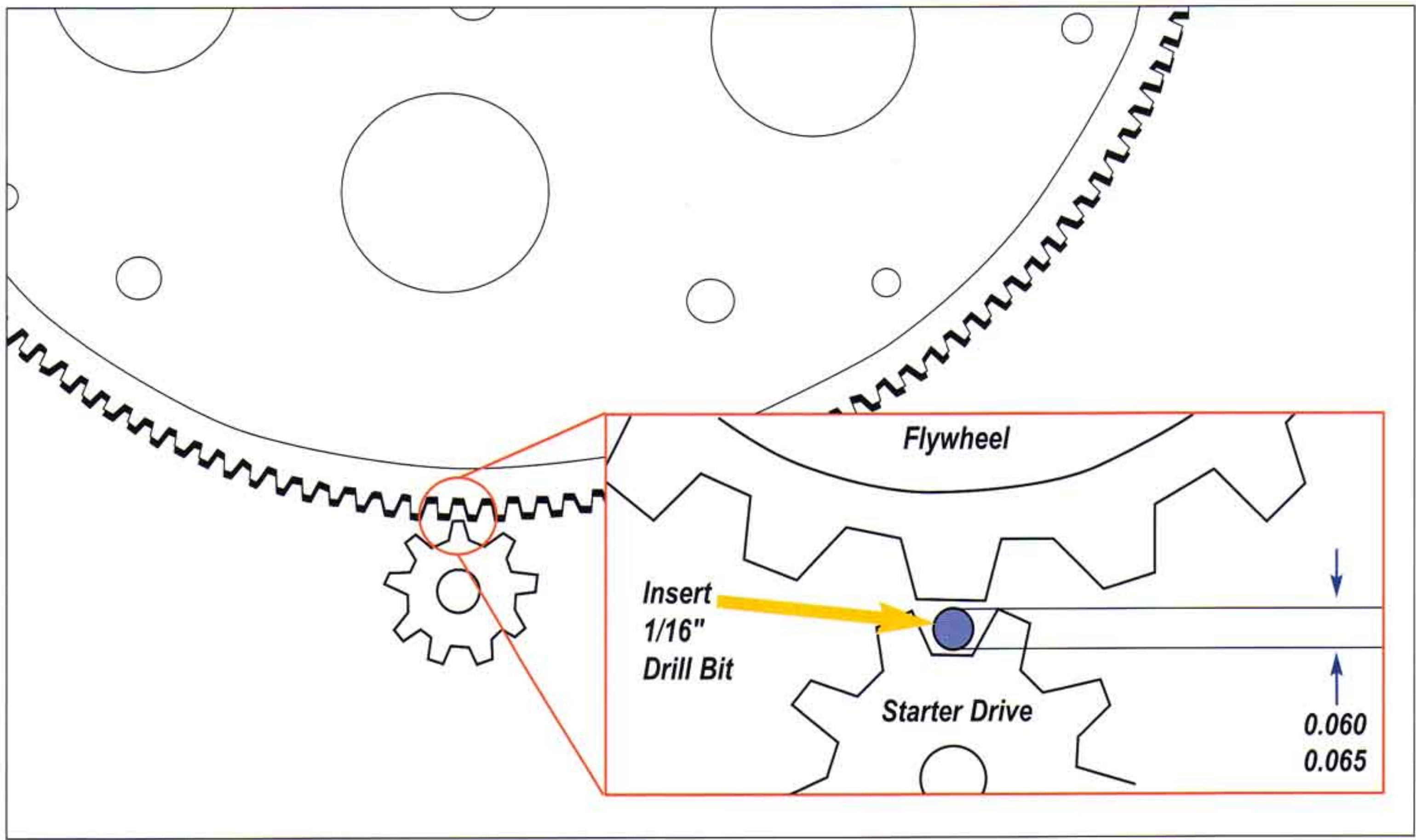


Photo #10

Using a screw driver, engage the starter drive to the flywheel (see **photo #9**).

Using a 1/16" drill bit, check the depth of the starter drive to the flywheel clearance (see **photo #10**). If the drill bit is loose, remove a shim until the drill bit fits snug in the flywheel. If the drill bit is tight, you will need to add some more shims. (See the **diagram** below for a closer look).

With the starter installed properly, the drive will last for a long time. Good luck! 



Diagram

1955-1972 WIRING A GEAR REDUCTION STARTER & ELECTRONIC IGNITION SYSTEM



Parts Needed:

18-213 168 Tooth Flywheel Gear Reduction Starter

26-42 Small Diameter Aluminum HEI Distributor

To order parts call 1-800-456-1957 or visit ClassicChevy.com

When installing a late model or a gear reduction starter on a classic, the solenoid may only have the large stud for the battery cable and ignition switch and the smaller terminal for the "stator" wire. This creates a problem on 1957 cars or on 1955-56 cars that have updated wiring. Without connecting a stator wire to the ignition coil, the coil will not have power when the engine is turning over and the engine will not start.

On a 1955-56 the original "plunger" style starter solenoid has two terminals while the 1957-up has three. The large terminal is for the positive battery cable and the black wire that runs to the ignition switch center position. The smaller terminal closest to the engine block is the "starter terminal". The other smaller terminal (1957-up only) farthest from the engine block is the "stator terminal". The "starter terminal" has a violet wire which is the wire that leads to the ignition switch "start" position. The "stator terminal" on a 1957-up has a green wire that powers the ignition coil while the starter is turning the engine over. The coil on original 1955-56 cars receives power from the ignition switch and not directly from the starter. Keep in mind many 1955-56 cars have been updated with 1957-up style solenoids and wiring.

On the back of the ignition switch on a 1955-57 there is one terminal marked "SOL". This connects to the starter terminal on the starter solenoid which engages the starter and turns the engine over. There is another terminal marked "IGN 1" on the 1955-56 which has a brown wire. On the 1957's there is a terminal marked "SOL" which has a tan wire which supplies power to the ignition coil only when the engine is running.

To supply power to the ignition coil while the engine is running and while the engine is turning over without using a stator wire, a jumper wire must be made between the "SOL" wire (violet) and the "IGN 1" (brown wire 1955-56) or "IGN" (tan wire 1957). Using a 3M Scotch Lock or a short piece of 14-gauge wire, connect the two wires together. This will supply the ignition coil with good solid 12-volts while the engine is running as well as when the engine is being started.

Good Luck! ✓

Diagram

