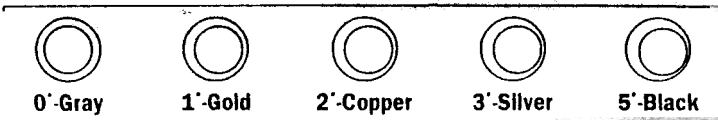


# PROFORM™ Installation Instructions

66917C SMALL BLOCK / 66918C BIG BLOCK CHEVROLET

1. Remove stock timing cover. Rotate engine to top dead center of cylinder #1 so that the timing marks on the original crank and cam sprockets are directly lined up with each other, i.e. the mark on the crank sprocket will be at 12 o'clock (straight up) and the mark on the cam sprocket will be at 6 o'clock (straight down).
2. Remove sprockets and chain.
3. Install desired offset bushing from enclosed set. Set selection provides 0°-Gray, 1°-Gold, 2°-Copper, 3°-Silver, 5°-Black, Camshaft Degree Options.



View is standard and advanced timing. To retard timing, flip desired bushing into place.

4. Pre-lube and install bronze thrust bearing on the block side of the cam gear.
5. Install cam and crank gears.
6. Torque enclosed cam bolts with washer to the factory spec of 21 ft/lbs.
7. Bend lock plate tabs over bolt heads to lock cam bolts.
8. Install camshaft thrust bearing assembly.

**NOTE:** The PROFORM™ System is made to fit under stock steel or a chrome replacement of the original timing cover. If you are using an aluminum cover, you might need to modify the bearing-to-cover endplay clearance.

**NOTE:** Failure to do so could result in a cracked timing cover or a timing malfunction.

## CLEARANCE TEST 1 -

9. Camshaft Thrust Bearing Cover Clearance Test - With camshaft endplay at max rearward travel, place clearance putty over front face of the camshaft thrust bearing assembly. Install timing cover with gasket. Hand tighten cover bolts. Remove cover and check putty.
10. Grind camshaft thrust bearing face as to provide the required .005" - .010" endplay clearance.
11. Install dog bone idler assembly as in Figure #1.

**NOTE:** Power idler (large gear) must be installed on left hand side as shown (when you are facing engine). Crankshaft gear will force Power idler (large gear) into tight mesh with camshaft gear as crankshaft rotates clockwise.

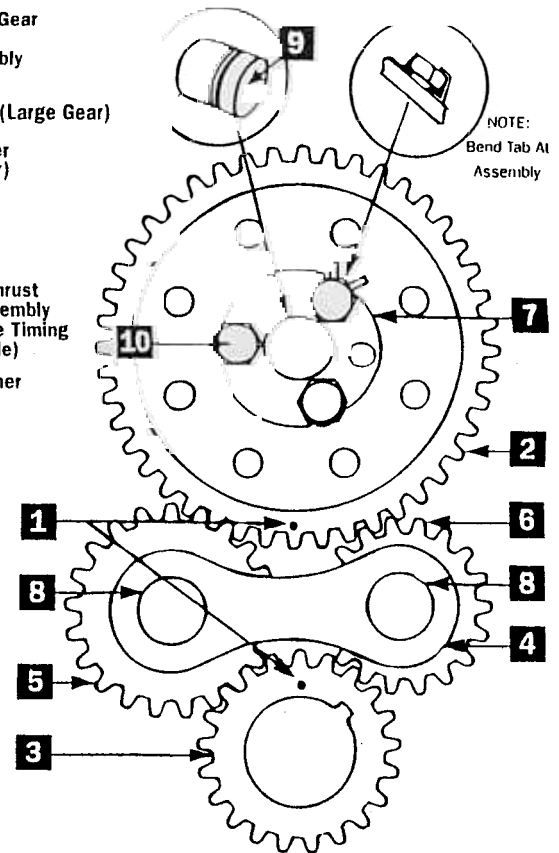
Reverse idler (small gear) should have free vertical movement of .005" - .075" when drive idler gear is in solid mesh with cam and crank gears.

Gear damage will occur from excessive friction if Reverse idler (small gear) does not have sufficient running clearance.

**NOTE:** Must use in conjunction with Harmonic Balancer. - Always refer to the proper repair manual for the most specific and detailed instructions.

## Figure #1

- 1 Timing Mark Locations
- 2 Camshaft Gear
- 3 Crankshaft Gear
- 4 Idler Assembly (Dog Bone)
- 5 Power Idler (Large Gear)
- 6 Reverse Idler (Small Gear)
- 7 Lock Plate
- 8 Idler Axles
- 9 Camshaft Thrust Bearing Assembly (Solid Face Timing Cover Side)
- 10 Bolt & Washer Assembly



## CLEARANCE TEST 2 -

12. Power Idler (Large Gear) Axle / Engine Block Clearance Test - Re-install dog bone idler assembly as follows -

**NOTE:** In operation, idler axles are always in contact with the front cover. All engine clearance is between engine block and drive idler axles as shown in Figure #2.

Put idler gears about half way in, then install cover (with gasket) and push into place. Remove cover and that is where idler assembly will run. The chamfered end of power idler axle must **not** touch block, grind off if necessary for at least .005" end clearance.

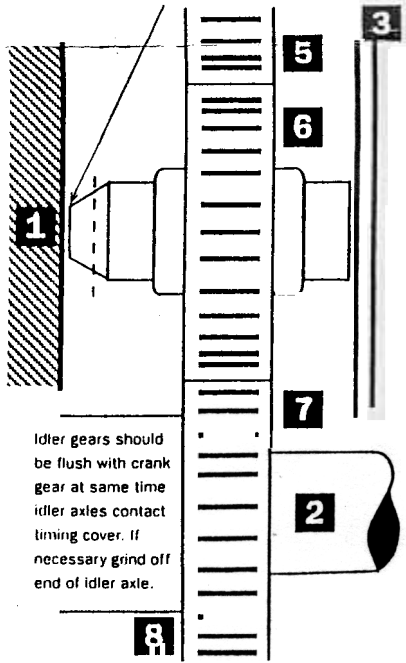
Clearance putty can be used to accurately check axle/block end clearance. **Do Not Trap Axles** between block and front cover.

**Alternate Clearance Check** - Use clearance putty as follows - place a thin piece of putty between the block and the axle. **Without using a gasket**, hand tighten the timing cover in place, then remove to check axle/block end clearance. There should be a very thin film of clearance putty remaining on the power idler axle. This assures that after installation of a gasket the proper .005" to .075" clearance is maintained.

**Figure #2**

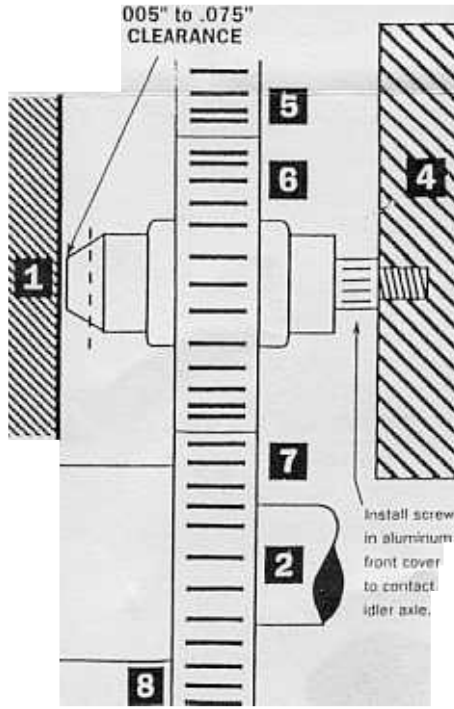
**Stock Front Cover**  
Standard Inside Depth

.005" to .075"  
CLEARANCE  
"Use Clearance Putty"



**Aluminum Front Cover**  
Inside Depth More Than Stock

.005" to .075"  
CLEARANCE



**Aluminum Front Cover**  
Inside Depth Less Than Stock

.005" to .075"  
CLEARANCE

