

Welcome to the Speedmaster Team

Warning! These instructions must be read and fully understood before beginning the installation. Failure to follow these instructions may result in poor performance, vehicle damage, personal injury, or death. If these instructions are not fully understood, installation should not be attempted.

Installation Instructions

APPLICATION GUIDE

Chevrolet Small Block Engines:

V6 200, 229, 262
V8 262, 265, 267, 283, 302, 305, 307, 327, 350L, 400

(Except with Factory Roller Cam)

20315, 20316

Chevrolet Small Block Engines: (with Factory Roller Cam)

V6 262 V8 305, 350
20320, 20321

Chevrolet Big Block Engines:

V8 396, 400, 402, 427, 454
20325, 20326

Chevrolet Big Block Gen VI Engines:

V8 454, 502
20360, 20361

Holden V8:

253, 304, 308

Chrysler Big Block Engines: (with 3 Bolt Cam)

V8 383, 400, 413, 426 Hemi
20330, 20331

Pontiac Engines:

V8 287, 316, 326, 347, 350M, 350P, 370, 389,
400, 421, 428, 455
20340, 20341

Ford Small Block Engines:

V8 289, 302, 5.0L 302 H/O, 351 Windsor, 351W H/O
20345, 20346

Ford Engines:

V8 351C, (2BBL & 4BBL), 351M, 400
20350, 20351

Ford Big Block Engines:

V8 429, 460

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, 2-Gold, 4-Copper, 6-Silver, 8-Black, Camshaft Degree Options.
4. Install cam and crank gears.
5. Torque enclosed cam bolts with washers to the factory spec of 21 ft/lbs.
6. Bend lock plate tabs over bolt heads to lock cam bolts.
7. Install camshaft thrust bearing assembly.

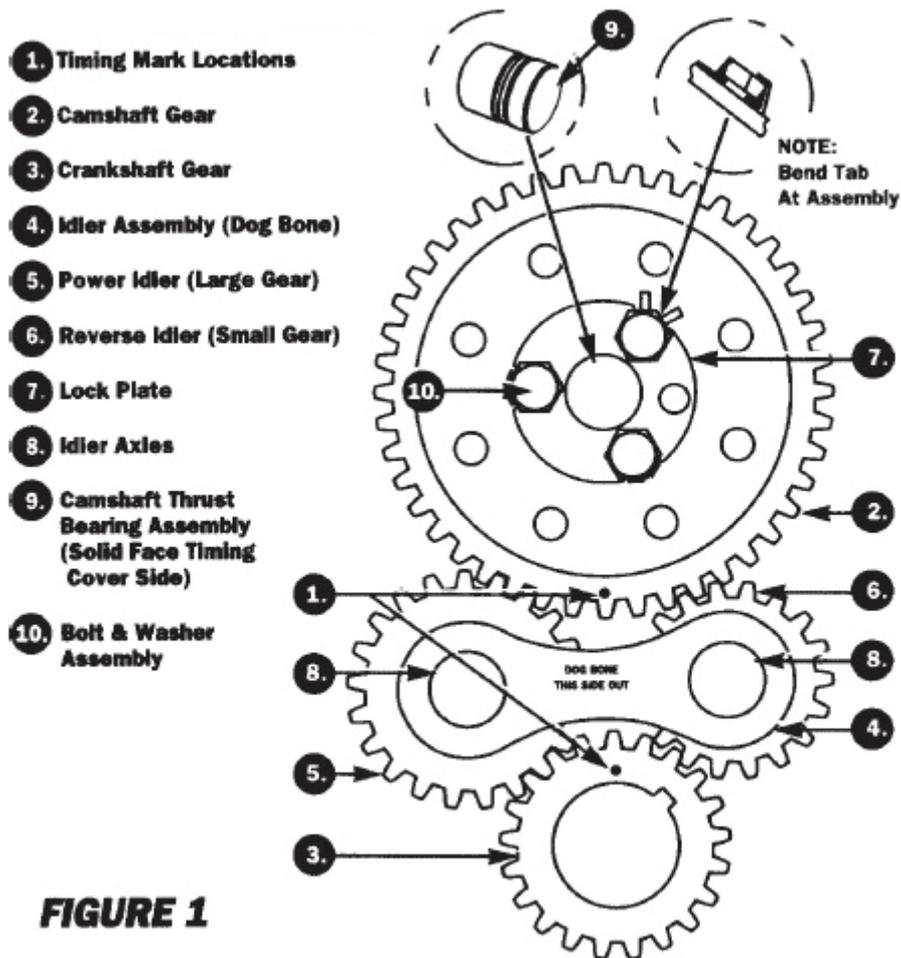


FIGURE 1

Clearance Test I

8. 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.

9. Grind camshaft thrust bearing face as to provide the required .005"-.010" endplay clearance.

10. Install dog bone idler assembly as in figure 1.

Notes: 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.

Clearance Test II

11. 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 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.

NOTE: Must use in conjunction with Harmonic Balancer.

* Always refer to the proper repair manual for the most specific and detailed instructions.

