GEAR DRIVE INSTALLATION

#12000-12250, 12600-12900, 13000-13250

Small Block Chevy, Big Block Chevy and Big Block Chrysler - Wedge & Hemi

Milodon makes three basic models of gear drives:

1. SUPER STOCK - to fit under the stock water pump.
2. UNBLOWN COMPETITION- includes fuel pump drive and adapter plate.
3. SUPERCHARGED ENGINE - includes fuel pump extension and drive.

INSTALLATION INSTRUCTIONS

(Chrysler engines must have a 3 bolt cam and not the stock single bolt.)

Remove the stock timing cover, chain and gear. These will not be used. Clean the face of the engine and remove the stock dowel pins(2) from the block. Be sure to remove any nicks or burrs on the front of the block. Place the three piece thrust bearing assembly on the camshaft (washer-bearing washer). Place the hub on the cam. Secure with three (3) allen bolts that are furnished. Install the large cam gear on the cam hub at this time using two or seven bolts. Any bolt location is o.k. Install the crankshaft gear.

Install the complete front cover assembly over hex on the cam hub. (On superstock models), just position the main cover in place and install the cover bolts, but do not tighten. Start all the cover bolts. USE NEWSPAPER TO ESTABLISH THE PROPER CLEARENCE BETWEEN ALL THREE GEARS. A single long strip of newspaper will work best. Be sure it is placed between idler gear and crank gear as well as the idler to the cam gear. Apply pressure to the idler side of the timing cover to hold the clearence tight. With the newspaper between the gears, tighten all the cover bolts. The center removable cover plate can be removed at this point. Rotate the gear drive to remove the newspaer, then check for smooth rotation.

MAKE SURE YOU HAVE DONE THE ABOVE INSTRUCTION CORRECTLY BEFORE YOU CONTINUE!

At this point, drill and ream the block through the front covers drill bushings. The hardened drill bushings stay in the cover permanently. Remove the cover assembly from the block. Then install the 5/16 dowel pins into the block, with the larger end in the block. With this assembly completed, your gear drive can be reemoved and reinstalled without additional adjustment. The lash will always be the same. Cam timing may now be set.
NOTE: Unblown and Supercharged gear drives include a silver laminated shim washer that may be peeled apart in .003 increments to set cam thrust clearance. This shim goes on the cam hub between the secondary cover and the cam hub bearing register. The end play must be .000 to .005.

Note: 12600, 12700, 12900 due to the many different Harmonic Balancers available on the market at this time, Milodon has had to modify the lower crankshaft gear on all the big block

chevrolet gear drives. The modifications allows the balancer to move outwards away from the cover. However, in some cases such as when a stock type balancer is being used, the balancer may need to be machined approvimately, 150-.160 (as shown in figure #1) to attain the desired pulley alignment.

TIMING THE ENGINE

Once gear drive has been properly installed as far as lash adjustment, we can now proceed to the timing. There are no dots or line up marks on our gears because these are usually inaccurate. We start by finding the exact "straight up pattern" (no advance or retard). Once this position has been found, advancing or retarding cam timing can be done quickly and accurately without messing around with offset bushings and keyways. All Milodon gear drives use our venieer cam bolt pattern to set and adjust cam timing.

With the engine disassembled, install cam hub, less the cam gear, on the cam and crank gear on crank snout. Install degree wheel on crank and set indicator on T.D.C. for #1 cylinder. Using cam manufacturer's specs, find the #1 intake opening and move crank to that position. Place dial indicator on #1 intake and open to what the cam manufacturer used for a checking clearance. For example, if the cam specs were intake opens at 39 degrees BTDC at .050" cam lift, you would set the crank degree wheel at 39 degrees and the dial indicator on #1 intake at .050" lift.

The cam and crank are now in the "straight up" position set EXACTLY with 0 degrees advance or retard. The cam gear is now installed onto the cam hub, with no bolts as yet. It will engage idler gear teeth and allow the cam gear bolts to exactly align with hub bolt holes in only one position. (There are 7 bolt holes and, therefore 7 possible positions). Once the correct cam gear to hub position has been found, install all seven cam gear bolts. These should be torqued to 22 ft/lbs.

Scribe an indicator mark on the cam hub adjacent to any cam gear bolt hole. Mark that bolt hole with #1. Going clockwise mark the other bolt holes #2 - #7. Now using the chart supplied, you can advance or retard the cam to any position, from any position. There will be two tooth locations possible for each bolt hole position. The one for which the cam must be rotated clockwise to align holes will advance the cam. The one for which the cam must be rotated counterclockwise will retard the cam.

The Milodon “Gear Drive Install and Cam Degree” video gives clear and easy to under stand direction, if needed. Contact your parts supplier for part # 14900.

Position #	Advance	Retard
1	0	0
2	6.5	7.5
3	12	2
4	4	10
5	10	4
6	2	12
7	7.5	6.5