



# Aluminum Gear Drive

1. Allstar gear drive for small block Chevrolet V8's is the ultimate in precise cam timing. Heat treated and case hardened gears eliminate timing chain stretch and harmonics. Camshaft and ignition timing remain accurate at all engine speeds – and that means more horsepower!

2. Cam timing is infinitely adjustable to allow maximum performance from any profile. Camshaft forward and rearward movements are controlled with needle bearing thrust washers.

3. Gear drive fits under most 2 pc. timing chain covers and the cam and cam gear can be removed for inspection without dropping the oil pan. Allstar gear drives deliver maximum performance and reliability.

- Eliminates Variations In Valve And Ignition Timing
- Controls Camshaft Thrust
- Allows Fine Tuning Cam Timing
- Simplifies Inspection And Maintenance
- Gears Can Be Inspected Or Removed Without Dropping Oil Pan



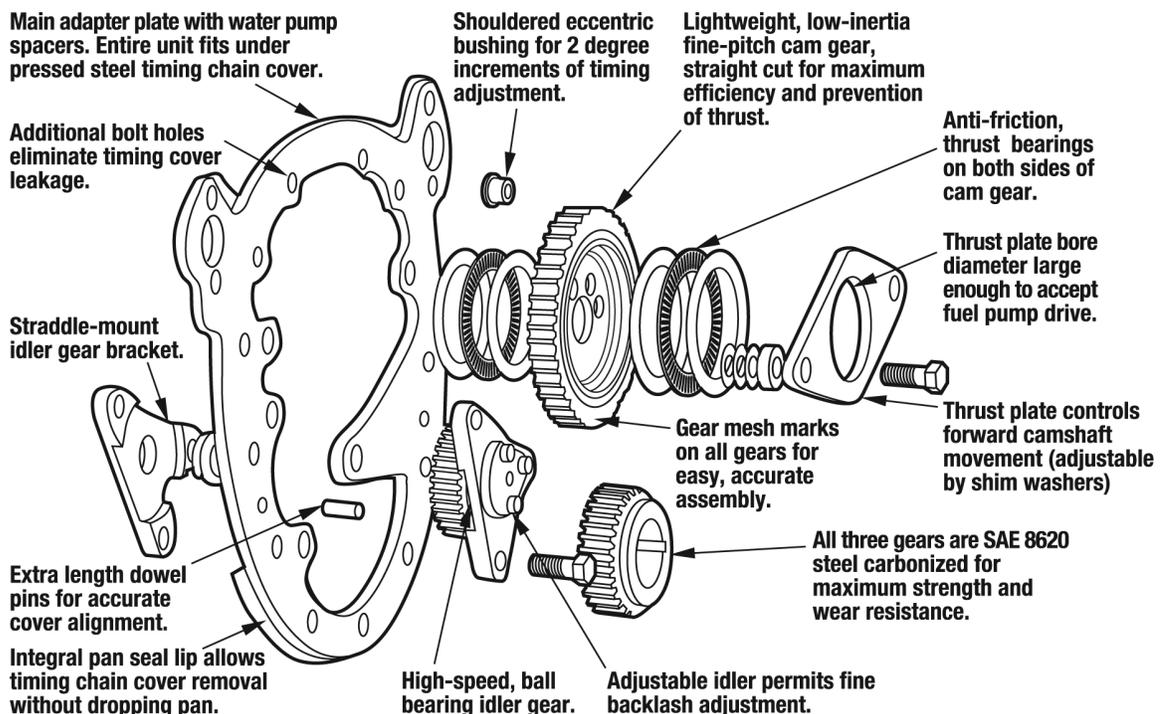
## Gear Drive Kit Contents

Qty.	Description
1	Main Adapter Plate With Idler Gear Assembly
1	Cam Gear
1	Crank Gear
4	1/4" Dowel Pins, (2 = 1" Long, 2 = 1-1/4" Long)
5	Offset Bushings - 0 Deg., 1 Deg., 2 Deg., 3 Deg., 4 Deg.
1	Small Diameter Thrust Bearing With 1 Thick And 1 Thin Race
1	Large Diameter Thrust Bearing With 2 Thin Races
1	Thrust Plate With 2 Bolts, 2 Spacers, And 10 .005" Shims

**Allstar Performance 8300 Lane Dr., Watervliet, MI 49098**  
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## Installation Instructions

1. Remove front timing chain cover locating dowel pins with a claw hammer. Extract dowels in same manner as pulling a nail. Install new dowels (furnished in kit) so that dowel protrudes 1/2" out from face of block. Use care driving dowels in place. Be sure they are straight.
2. Lower oil pan. Place gasket between main adapter plate and block. Install main adapter plate leaving idler gear assembly in place. Put all cover bolts in place and tighten, being sure that the main adapter plate is seated flat with the block face.
3. Remove crank sprocket and install crank gear. Align marks on crank and idler gear.
4. Shorten dowel pin in camshaft so that it does not protrude beyond flange face of cam gear if using fuel pump drive.
5. Coat small diameter needle thrust bearing and thrust washers with a heavy grease, and install on back of cam gear (washers must be on both sides of the bearing). Install cam gear on cam using concentric bushing. Install cam in block, using extreme caution to prevent thrust bearing and washers on cam gear from falling out of place. Align marks on cam and idler gear. Caution: the thick thrust washer must be installed after the thin washer on the bearing. See drawing.
6. Once all gears have been installed, degree the camshaft according to the manufacturer's specifications. Coarse adjustment of the timing can be made by indexing the cam gear one tooth. This is equal to 10.28 camshaft degrees. Fine adjustment can be made by installing the concentric or eccentric bushings in a centered, advanced, or retarded position. Bushings install from rear of gear. Do not assume that timing is correct without checking with a dial indicator and a degree wheel.
7. Loosen the three idler gear retaining bolts. Using a dial indicator, adjust between .006" and .008" total backlash between the idler gear and the crank gear. Once backlash is adjusted, tighten the three idler gear retaining bolts to lock placement of idler gear then remove each of the three idler gear retaining bolts (one at a time) apply Loctite to threads and re-install.
8. Coat the large diameter thrust bearing and two thrust washers with a heavy grease and install in front of the cam gear. The washers must be on both sides of the bearing. Caution: Be careful the front washer does not fall out of place.
9. Install the cam thrust plate on the main adapter with the countersunk holes facing away from the block. Put one spacer ring and five spacer shims on each side between the main adapter plate and thrust plate. Check cam end thrust using a dial indicator. Install or remove shims to arrive at a total end thrust of .002 preload to .002 clearance. Use Loctite on the two mounting bolts.



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