

Instructions for 88958679 Front Cover Kit

The GM 88958679 front cover assembly is manufactured for applications where a 4BBL carburetor and distributor are required. It can be combined with GM's new Bow-Tie valve covers p/n 25534398 & 25534399 for a complete traditional looking engine package.



Figure 1. 88958679 Front Cover Kit. (shown without front seal)

Kit Contents:

- 1- p/n 88958678 Machined Front Cover. (See Figure 1)
- 1- p/n 88958680 Fuel Pump Eccentric / Distributor Drive Gear Kit Assembly. (See Figure 4)
- 1 - Adapter Unit with 4 Color Coded Spacers. (see below chart for correct application.)
- 5 - Assembly Bolts. (1 drive unit bolt, 3 adapter bolts, 1 countersink front cover bolt)
- 1 - 12585673 Front Cover Seal
- 1- Detailed Instructions Sheet.

Requires:

- GM p/n 88958675 4 bbl Intake Manifold.
- p/n 8382 or 8579 MSD Distributor or equivalent. Requires coil & MSD6AL controller.
- HEI Distributor Option see page 4 for sources and p/n's.
- p/n 9860 Mr Gasket Distributor Hold Down Clamp.
- Carter Fuel Pump p/n 6904 street application, p/n 60454 street/strip, p/n 60968 race.
- p/n WAR-STE50025L Water Pump. (See last page for contact information.)
- p/n 917776 Steel hub ATI Damper 6.325" diameter, or 917215 Aluminum ATI Damper 6.325" diameter damper with Steel Hub. (See last page for contact information.)
- p/n 918993-1 ATI drill fixture kit for TDC Locating. (See last page for contact information.)
- A Set of Spark Plug Wires



Engine Timing: It will be necessary to bring the engine to TDC to adjust the timing pointer. Use GM p/n 12364087 TDC tool and follow instructions carefully to locate TDC. Adjust front cover pointer to line up with TDC on the balancer. Set timing at 29-32 degrees BTDC @ 4000 rpm with a standard timing light.

Firing Order: 1-8-7-2-6-5-4-3

GM recommends pointing the rotor towards # 1 cylinder when you install the Distributor. *It helps if you mark the location of # 1 on the cap before you secure cap to distributor.* The Distributor rotates Counter Clockwise. Install the spark plug wires in the cap. Use the above firing order starting with # 1 marked on the cap. Remember the wires must be installed counter clockwise. *Make sure they do not lay on exhaust manifolds or headers.*

Torque Specifications: DO NOT OVER TORQUE BOLTS!!!

Drive Adapter 5/16" Allen bolts:	25 ft lbs.
Dist Drive Adapter 7/16" Allen bolt:	60 ft lbs.
Front Cover Bolts:	18 ft lbs.
Cam Retainer Bolts:	18 ft lbs.
Camshaft Gear Bolts:	26 ft lbs.
Intake Bolts:	90 INCH lbs.
Balancer Bolt:	100 ft lbs.



Figure 2. Drive Adapter with Colored Spacers & bolts. Refer to Colored Spacer Application Chart.



Figure 3. Distributor Drive Gear, Fuel Pump Eccentric & bolt.

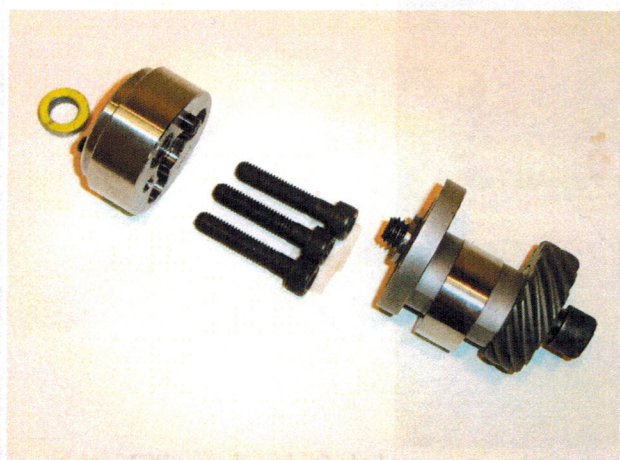


Figure 4. Installation sequence with Yellow Spacer. Photo shows how Drive Assembly bolts to Camshaft.

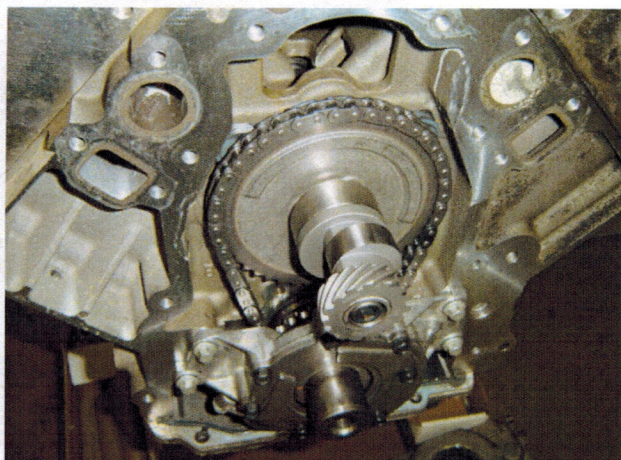
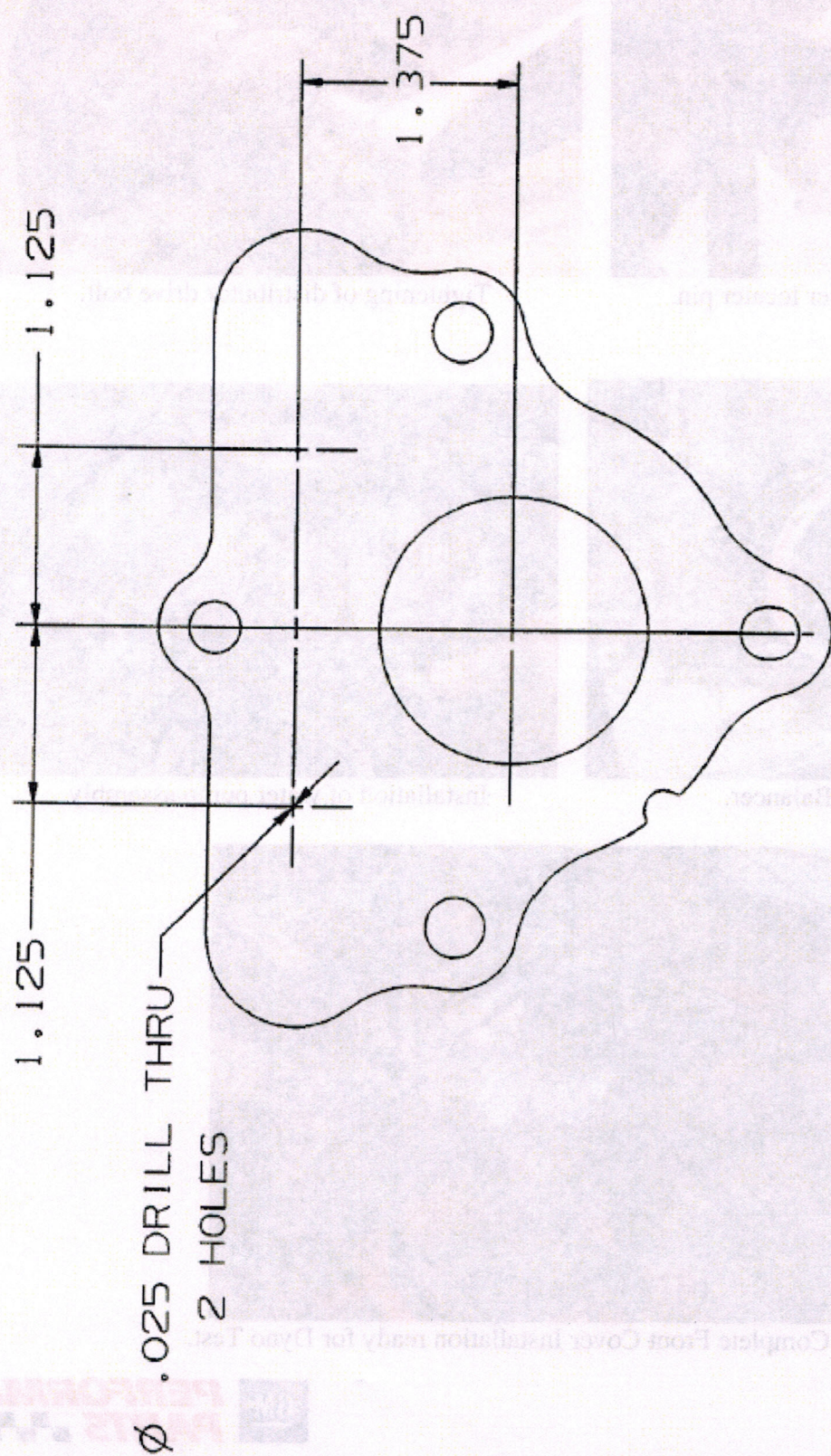


Figure 5. Complete drive unit installed on end of Camshaft. Shows how fuel pump & cam drive gear should look installed.



CAM RETAINER PLATE TEMPLATE

Installation Procedure:

Note: Always use proper eye protection. Use caution when working around combustible materials.
Refer to a GM Service Manual for detailed disassembly and reassembly instructions of your engine.

1. Disconnect Battery and drain anti-freeze. (*Note: Dispose of any un-used Hazard Waste fluids properly.*)
2. Remove all Accessory drive brackets, belts and hoses.
3. Remove balancer with proper puller.
4. Remove stock front cover bolts with 10 mm socket. Remove 2 lower front oil pan bolts as well.
5. Remove stock front cover and set aside. Do not destroy the gasket. The gasket & bolts will be reused.
6. Remove camshaft gear bolts, cam gear and chain to gain access to cam retainer & bolts.
7. NOTE: Remove cam retainer and drill .025" holes. Refer to Camshaft Retainer Instructions below. Use attached template for proper location. Reinstall cam gear and torque bolts to 26 ft lbs.
8. Remove oil pump & Timing chain drive gear from crankshaft using puller.
9. Drill the crankshaft using the ATI fixture p/n 918993-1.
10. Reinstall the timing chain drive gear on the crankshaft and reinstall the oil pump.
11. **See Figure 4** photo of how complete Distributor cam drive kit assembles to camshaft gear.
12. Install the correct colored cam gear spacer specified in the Application Chart Below. You must use the correct spacer that fits camshaft gear in your engine. **Engine Damage will occur if not used. (See figure 2)**
13. Position drive kit adapter against camshaft gear and engage dowel pin in proper hole. Make sure the countersunk holes in the adapter are outward so the 5/16" Allen bolts will be flush when installed and tightened. Torque the three allen bolts to 25 ft lbs.
14. Position the fuel pump/distributor drive gear and locate the dowel pin in the correct adapter hole. Install the 7/16" Allen head bolt and torque to 60 ft lbs. (**See Figure 3**)
15. **Figure 5** shows the complete drive unit installed on a engine.
16. Install the 12565673 GM front cover seal in the cover using a proper seal installation tool.
17. Clean and dry the front of the engine block. Put a dab of silicone sealer on each corner of the oil pan and engine block where the front cover/pan/ block come together.
18. Install the front cover to engine block using 7 of the stock 8 bolts. Install the 1 countersink bolt included in the kit in the countersunk hole located above the fuel pump. Install the 2 oil pan bolts. Tighten all front cover bolts first then the oil pan bolts. Torque to 18 ft lbs.
19. Install the balancer per instructions and torque to 100 ft lbs. Locate and mark top dead center (TDC).
20. Install Distributor and Fuel pump. (Lube gear and eccentric with oil or light grease)
21. Install spark plug wires. Refer to Firing Order notes below for proper routing of wires.
22. Install the water pump and torque bolts to 18 ft lbs. Install thermostat, hoses & clamps.
23. Install front pulleys and belts as needed and torque to proper specifications.
24. Start engine and set timing to 29-32 degrees @ 4000 RPM's (See engine timing section below.)
25. Run engine for 8-10 minutes at 1500 RPM's to break in eccentric. Check and fill fluids to proper levels. Check for leaks before driving vehicle.

Camshaft Retainer Plate Instructions: You Must drill .025" holes in the cam retainer plate.

Cut out attached template, line up bolt mounting holes and use a center punch to locate the exact drill point location. Drill the .025" holes and debur. Failure to drill the 2 holes in the plate will cause Catastrophic Engine Failure due to premature drive gear and eccentric wear. Reinstall the retainer plate and torque bolts to 18 ft lbs.

Colored Spacer Application Chart: (See Photo Figure 2) You must use spacer or failure will occur.

Green.	Use with Stock GM LS1 & LS6 Cam Gear.	(Green Spacer has .554" diameter register)
Black.	Use with Stock GM LS2 Cam Gear.	(Black Spacer has .550" diameter register)
Red.	Use with p/n CS1140 Roll Master Double Roller.	(Red Spacer has .685" diameter register)
Yellow.	Use with p/n 9-3153A Cloyes Hex-Adjust True Roller.	(Yellow Spacer has .686" diameter register)



Aftermarket Contact Information

Water Pump Contact Info:

Wegner Automotive
N2258 Hilltop Rd.
Markesan, WI 53946
(920) 394-3557
www.wegnerautomotive.com

Damper & Drill Fixture:

ATI Performance Products
6747 Whitestone Rd.
Baltimore, MD 21207
(800) 284-3433
www.atiperformanceproducts.com

MSD Contact Info:

Autotronic Controls Corporation
1490 Henry Brennan Dr.
El Paso, TX 79936
(915) 857-5200
www.msdisignition.com

HEI Style Distributors:

Pro-Form Parts HEI distributor P/N 66969R
www.proformparts.com

Performance Distributors P/N 31820
2699 Barris Dr.
Memphis, TN 38132
(910) 396-5782
www.performancedistributors.com
See below mail order sources.

Fuel Pump Info:

Summit Racing. www.summitracing.com
Jegs Automotive. www.jegs.com
Your local Speedshop.

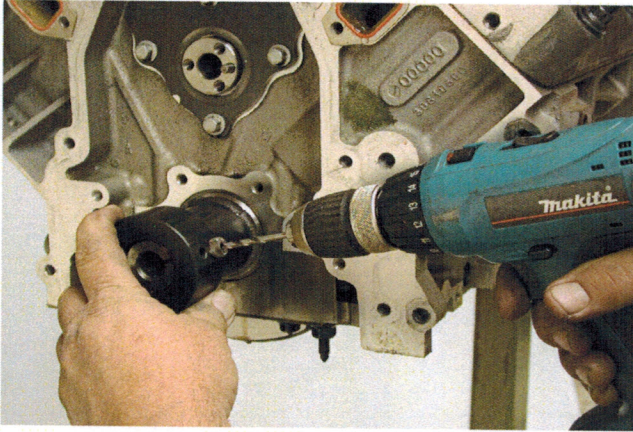
GM Bow-Tie Valve Covers



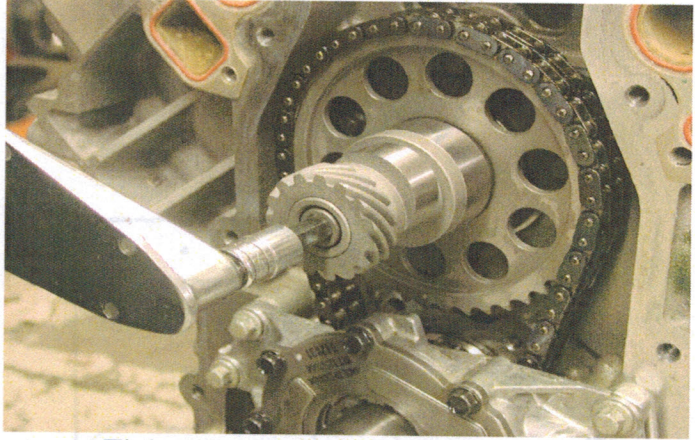
GM Bow-Tie valve Covers fit Gen 3 & 4 engines. P/N 25534398 (top cover in photo) has grommet hole for breather or PCV valve. P/N 25534399 does not have a fill hole. Covers are sold separately. Each cover includes mounting bolts and v/cover seal. Does not have provisions for coil mounting. Contact your local dealer for pricing and availability. Available 3rd Quarter 2005



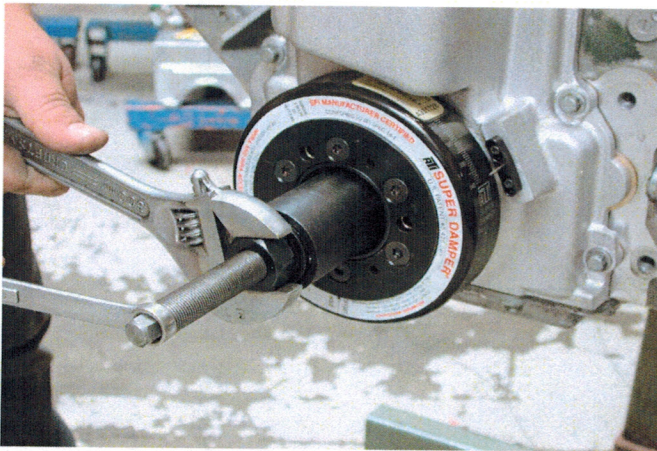
Additional Installation Photos:



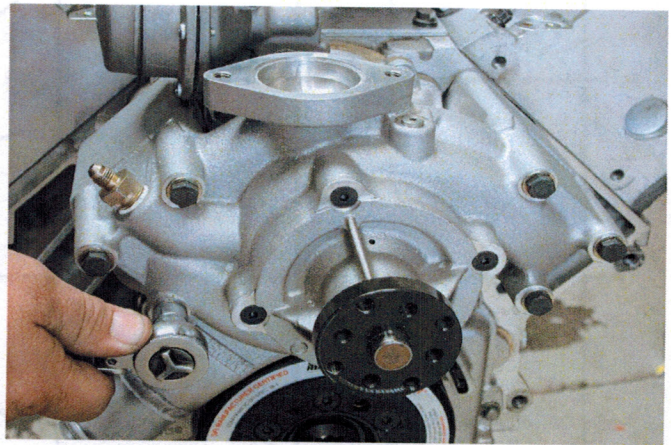
Drill Fixture for balancer locator pin.



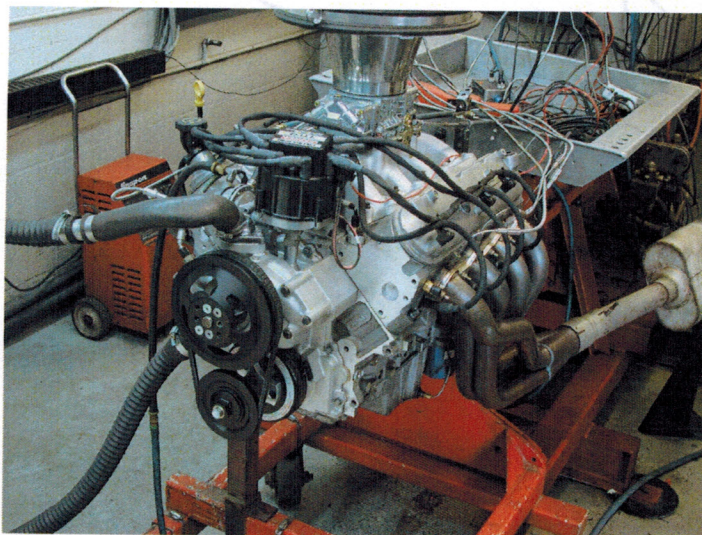
Tightening of distributor drive bolt.



Correct Installation of Balancer.



Installation of water pump assembly.



Complete Front Cover Installation ready for Dyno Test.