



**PERFORMER-PLUS
CAMSHAFT / LIFTERS / LUBE KIT**

CATALOG # 2103

MODEL: 400 c.i.d. Chevrolet V8 engines

GENERAL INSTRUCTIONS

- Please study these instructions carefully before you remove your stock camshaft. If you have any questions or problems, do not hesitate to contact our Technical Hotline at: 1-800-416-8628.
- These instructions are designed to give general installation guidelines. A complete step-by-step procedure manual would require many pages. If you are a novice or just learning to work on automotive engines, we recommend consulting either Chilton or Motors automotive manuals before you begin. You may also wish to contact an experienced mechanic. Be advised: improper installation may result in LOW MILEAGE, POOR PERFORMANCE, COSTLY REINSTALLATION AND EVEN ENGINE DAMAGE. Installing a camshaft is a complex procedure. Please follow these instructions carefully. Failure to do so may void your warranty.
- Before you begin the removal and installation process, please examine the kit for possible shipping damage. If the camshaft is damaged, contact your dealer immediately. Also, make sure you have all the recommended tools and parts as listed below. As you read through these instructions the first time, use the preparation checklist to check off the exact items you will need.
- *Performer-Plus* camshafts are ground specifically for use with the corresponding *Performer* manifold #2101 or #3701. Both are dyno-matched and street proven to work as a team; especially when matched with Edelbrock Tubular Exhaust Systems. However, the Performer camshaft may be used by itself. Edelbrock Performer-Plus cam #2103 is street legal in all 50 states - E.O.#D-215-19.

PREPARATION CHECKLIST

Tools & Equipment For Installation

- Box and open end wrenches
- Socket set
- Distributor wrench
- Pliers (channel locks & hose clamp)
- Screw drivers (regular and phillips)
- Torque wrench
- Hammer
- Gasket scraper or putty knife
- Timing light Vacuum gauge
- Rags
- Water bucket
- Harmonic balancer puller
- Masking tape (for tagging hoses and electrical wires)
- Engine oil & filter
- Crankshaft dampener puller

Hardware & Parts To Buy

- Gaskets - Edelbrock, OEM or equivalent
- Pipe plugs, if needed
- Edelbrock Gasgacinch #9300
- RTV Silicone Sealant
- Chalk
- Paper and pencil
- Radiator coolant
- Edelbrock Sure Seat Valve Springs, #5802 or #5902 (for rotators)
- Edelbrock Performer-Link True Rolling Timing Chain and Gear Set, #7800
- Teflon tape
- Front cover oil seal, OEM or equivalent

NOTE: Sure seat springs #5902 not applicable to cylinder heads 1977 and later with casting #14014416. These heads must use Edelbrock spring set #5802.

REMOVAL OF ENGINE PARTS BEFORE CAMSHAFT INSTALLATION

Be sure to keep all parts in order

**WARNING! DO NOT REMOVE RADIATOR CAP OR
RADIATOR HOSES WHILE ENGINE IS HOT!**

1. Disconnect the battery.
2. Drain radiator coolant. Drain plug will normally be located on lower right or left side of the radiator facing the engine.
3. Remove radiator and air conditioning condenser if so equipped. In some cases, the front grille may have to be removed. Measure distance from front cover to grille or brackets that may interfere with camshaft against the length of the camshaft.
4. Remove the gas cap to relieve pressure. Disconnect fuel line and plug. Replace gas cap.
5. Disconnect all linkage from carburetor such as throttle, throttle springs, transmission, cruise control and automatic choke.
6. Tag and remove coil wires and sensor wires.
7. Tag and remove vacuum lines.
8. Remove valve covers.
9. Remove distributor cap and wires, rotate engine until rotor points towards number 1 terminal in cap and pointer on front cover is on top dead center (TDC) and remove distributor. Note the approximate position of the distributor housing in relation to the manifold to assist in getting the distributor properly located during re-installation.
10. Remove carburetor and intake manifold. Remove and discard intake manifold gasket.
11. Remove rocker arms and pushrods.
12. Remove hydraulic valve lifters.
13. Remove crankshaft pulley, and using a suitable puller, crankshaft dampener.
14. Loosen oil pan and remove water pump and front cover.

NOTE: The front cover oil seal should be replaced before the front cover is re-installed.

15. Remove fuel pump and fuel pump pushrod. Rotate engine until timing marks are aligned as in Figure 1.
16. Remove bolts retaining camshaft sprocket. Remove sprocket and chain.
17. Remove crank sprocket using a gear puller.
18. Remove camshaft.

- VALVE SPRINGS

WARNING ABOUT YOUR WARRANTY:

In order for this *Performer-Plus* cam and lifter kit to be covered under ANY WARRANTY you must use either the correct Edelbrock *Sure Seat* valve springs or the stock original equipment valve springs. Failure to do so could cause the cam lobes to wear excessively and could cause additional engine damage.

1. This camshaft is designed to function either with the stock springs or with Edelbrock *Sure Seat* valve springs #5802 (std. retainer set), or for use with valve rotators, use #5902.
2. For older vehicles and vehicles with high mileage we highly recommend replacing the valve springs with Sure Seat Valve Springs # 5802 (std. retainer set), or for use with valve rotators, #5902.
NOTE: Sure Seat Springs #5902 not applicable to cylinder heads 1977 and later with casting #14014416. These heads must use Edelbrock spring set #5802.
3. Check spring height and set to factory specifications for correct year and model.

DUE TO THE MANY POSSIBLE SETTINGS OVER THE YEARS, WE ADVISE CHECKING MOTORS, CHILTON, OR FACTORY SERVICE MANUALS FOR CORRECT SPRING HEIGHT FOR YOUR VEHICLE.

- LIFTERS

1. New lifters must be used with a new camshaft. Use only the lifters supplied with your kit .
2. Check to make sure all lifters fit freely in lifter bores.

- INSTALLATION INSTRUCTIONS

1. Coat cam lobes and bottom of each lifter with MOS2 lube supplied with your kit. THIS WILL PREVENT CAM LOBE AND LIFTER WEAR FROM OCCURRING DURING INITIAL ENGINE START UP.
2. Install new camshaft with new sprockets and timing chain.

CAUTION: When using *Performer-Link True Rolling Timing Chain and Gear Set* (#7800 or #7802) with an Edelbrock cam and lifter kit, straight up timing alignment is achieved. If any other timing gear set is used, it is necessary to check camshaft position for correct timing alignment. This requires indexing the camshaft with a degree wheel to verify timing alignment. O.E.M. or non-Edelbrock timing gear sets are not recommended for use with Edelbrock camshafts. Use locking compound material on bolt threads holding gear to cam. Torque to factory recommendations specified in Motors or other repair manual.

3. Install camshaft with timing marks lined up as recommended by factory specifications. See Figure 2.

- PUSHROD AND ROCKER ARM INSTALLATION—After the cam is installed and timed correctly (see Figure 2), install pushrods, lifters and rocker arms.

- VALVE ADJUSTMENT

1. Turn the engine over until the No. 1 cylinder exhaust lifter starts to move up. At this point install adjusting nut on intake rocker arm and adjust to zero clearance between rocker arm and valve. From this point turn adjusting nut down (clockwise) 1/2 turn more for final adjustment.
2. Turn the engine over again until the intake lifter just stops coming down. At this point install adjusting nut on exhaust rocker arm and adjust to zero clearance between rocker arm and valve. From this point turn adjusting nut down (clockwise) 1/2 turn more for final adjustment.
3. The above procedure assures correct hydraulic lifter preload. Repeat this procedure for each of the other seven cylinders.
4. Install front timing cover with new gasket.
NOTE: Install new seal between oil pan and front cover if old seal is damaged after removal. Use RTV silicone sealant on seal to ensure proper seal to pan.
5. Torque front timing cover bolts to 6-7 ft. lbs.
6. Install front harmonic balancer and torque to 60 ft/lbs.
7. Install fuel pump and pushrod.
8. Install water pump using new gaskets and torque to 30 ft.-lbs.
9. Install intake manifold using new intake gasket set and torque bolts to 25 ft/lbs.

- DISTRIBUTOR INSTALLATION AND ENGINE TIMING

1. Turn the engine over in direction of rotation until the No. 1 intake valve closes and continue until the pointer on the front cover is approximately five degrees before top dead center (BTDC). See Figure 1 for firing order.
2. Re-install the distributor with the rotor pointing towards No. 1 terminal in the cap, and with the distributor housing in its original position. If distributor will not drop down all the way to the flange on the manifold, it will be necessary to align the distributor shaft with the oil pump drive. Slowly rotate the engine until the distributor drops down against the manifold, then continue turning until two complete revolutions are completed and the timing marks once again come to five degrees BTDC.
3. Lightly tighten the hold-down clamp so that the distributor can still be turned to determine final setting using a timing light with the engine running.
4. Replace valve covers, carburetor linkage and remaining vacuum and electrical connections.
5. Engine oil & filter should be changed before and after break-in.

- CAMSHAFT & LIFTER RUN-IN

IMPORTANT: DO NOT ALLOW THE ENGINE TO RUN UNDER 2000 RPM FOR THE FIRST 1/2 HOUR. Slow idle speeds may result in severe cam and lifter wear.

START THE ENGINE AND BRING TO BREAK-IN RPM.

- IMPORTANT NOTES AFFECTING YOUR WARRANTY

CAM LOBE WEAR— Cam lobe wear is almost non-existent unless mismatched parts are used or installation of the cam and lifters is done improperly. Most cam damage is caused by the timing gear loosening due to improper torque on bolts. Bolts holding gear to camshaft should be torqued carefully and a locking compound applied to threads of bolts. Before installing your new Performer-Plus camshaft, check the gear drive on the distributor and oil pump for any signs of wear. If worn, be sure to replace with a new gear or you may wear out your camshaft prematurely. High-volume oil pumps are not recommended with Performer-Plus camshafts. Edelbrock camshafts are designed to use O.E.M. type gears only.

CAM GEARS AND CAMSHAFT END PLAY— If cam gear becomes loose, the cam will slide back in the block, causing the lifters to hit the lobes next to them and also the cam bearing journals. If the engine is run after this happens, the bottom of the lifters and the sides of the lobes will become chipped.

SPECIAL INSTRUCTIONS

With the Edelbrock manifold and camshaft package plus a header installation, a carburetor jet change and ignition change may be required for best performance. Due to the varied applications of years and models of vehicles, no one combination could suffice for all installations. The following procedure is only a guideline and in many cases, the manufacturing specifications for recommended carburetors or timing may be best. The following data was found to produce best results in a test vehicle equipped with a typical 350 c.i.d. Chevy engine.

CARBURETION

OEM Rochester 4-bbl—No modifications necessary.

Edelbrock #1405 (600 cfm, manual choke)—No modifications necessary.

Edelbrock #1406 (600 cfm, electric choke)—No modifications necessary.

IGNITION TIMING

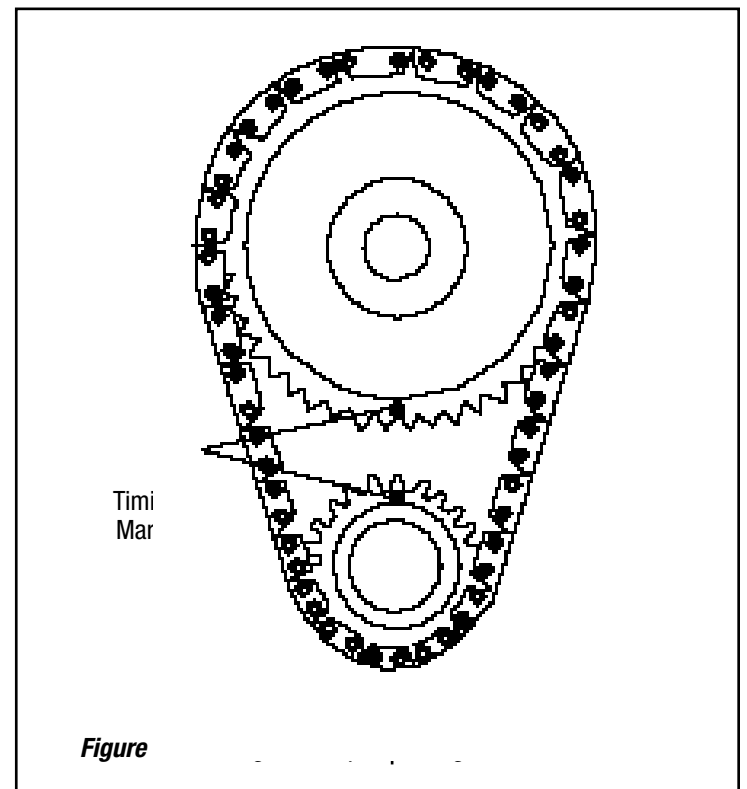
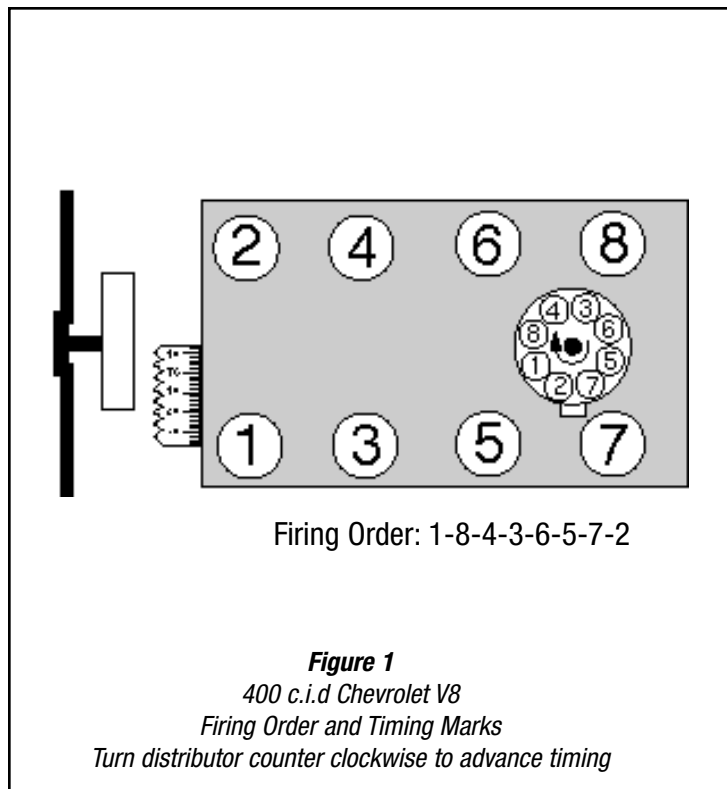
Increase initial setting to 14° BTDC (Before Top Dead Center). Total of initial and centrifugal advance not to exceed 32°. Full advance achieved at 3,000-3,500 rpm. Vacuum advance curve should be 2° to 4° advance at 8-9 inches of vacuum, increasing to 12° advance at 13 inches of vacuum. Vacuum advance line must be connected to direct manifold vacuum for best performance, not ported vacuum.

NOTE: The best combination for any particular vehicle or application must be determined by trial and error using the above information as a guideline.

TUBULAR EXHAUST SYSTEM—For best performance, a tubular exhaust system is recommended with the Performer package to provide the most low-end torque. Please consult your Edelbrock dealer or the Edelbrock catalog for a listing of available Edelbrock *Tubular Exhaust Systems*. Be sure to check local emission control regulations for legality of camshaft and exhaust system changes.

IMPORTANT NOTE: When using *Performer-Link True Rolling* timing chain and gear sets (#7800 or #7802) with an Edelbrock cam and lifter kit, straight up timing alignment is achieved. If any other timing gear set is used, it is necessary to check camshaft position for correct timing alignment. This requires indexing the camshaft with a degree wheel to verify timing alignment. O.E.M. or non-Edelbrock timing gear sets are not recommended for use with Edelbrock camshafts.

SPECIAL NOTICE: Edelbrock Performer-Plus camshaft/lifters/lube kits #2102 and #2103 have received E.O. #D-215-19 making them legal for street use on pollution-controlled motor vehicles in all 50 states. To assist you with emissions equipment certification, we have included a fan shroud decal to help testing personnel verify that the camshaft is a legal replacement part for small-block Chevrolet/GMC vehicles. The adhesive-backed decal should be affixed to your fan shroud next to the existing emission and engine specification decal. Do not cover your original equipment specification decal with the Edelbrock Performer-Plus camshaft decal.



CAMSHAFT: Performer-Plus
CATALOG #2103
ENGINE: 400 c.i.d. Chevrolet V8, 1970 & later
RPM RANGE: idle-5500



CAUTION:
Use only Sure Seat Valve Springs, #5802 or 5902
Use stock ratio rocker arms only

Duration at 0.006" Lift: Intake 288° Exhaust 288°
Duration at 0.050" Lift: Intake 214° Exhaust 214°

Lift at Cam: Intake 0.295" Exhaust 0.295"
Lift at Valve: Intake 0.442" Exhaust 0.442"

Timing at 0.050" Lift: Open Close
Intake: 0° ATDC 34° ABDC
Exhaust: 44° BTDC 10° BTDC

Intake Centerline: 107° Lobe Separation: 112°

CAUTION: Use Performer-Link Timing Chain and Gear Set, #7800 or #7802. Do not use late model timing sets. They are machined in a retarded position and are not recommended for this camshaft installation. Edelbrock Performer-Link True Rolling Timing Sets feature three keyways for specific timing selection. Always use the "0" or straight-up timing mark when installing Performer-Plus camshafts with Performer-Link Timing Sets.

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