



PERFORMER-PLUS CAMSHAFT / LIFTERS / LUBE KIT

MODEL: 351-M/400 c.i.d. Ford V8

CATALOG #2172

INSTALLATION INSTRUCTIONS

Please study these instructions carefully before installing your new camshaft. If you have any questions or problems, do not hesitate to contact our **Technical Hotline at: (800) 416-8628** from 7:00 am to 5:00 pm, Monday through Friday, Pacific Standard Time or e-mail us at: edelbrock@edelbrock.com.

CAMSHAFT: Edelbrock Performer-Plus camshafts are ground specifically for use with the corresponding Performer manifold. The Performer manifold #2171 or #3771, and Performer-Plus camshaft #2172, are designed to work as a team to give you better driveability and performance. They are dyno-matched and street-proven. For best results, use the Edelbrock manifold/camshaft package with the carburetor and headers we recommend.

NOTE: Maximum performance is achieved when packages are used with a 4-bbl carburetor and headers, however packages may be used with any of the following equipment:

- manifold/camshaft package only
- 1-5/8" headers
- aftermarket carburetor specified in instructions and catalog
- aftermarket/re-curved distributors

IMPORTANT: This instruction sheet provides general installation guidelines which can affect your warranty. Read it carefully. It is not our intent to cover each detail of installation here; a step-by-step procedure manual would be far too lengthy. We want to caution you that installing a camshaft is a complicated procedure that requires a good general knowledge of automotive engines. If you are not confident that you can complete the camshaft installation successfully, we suggest you consider having it installed by an experienced mechanic.

CAUTION: Improper installation will result in **LOW MILEAGE, POOR PERFORMANCE, COSTLY RE-INSTALLATION, and ENGINE DAMAGE. TO AVOID THESE PROBLEMS YOU MUST DO THE FOLLOWING:** Carefully study and understand all instructions. Examine the camshaft for possible shipping damage (if damaged contact your dealer immediately).

PREPARATION CHECKLIST

TOOLS AND EQUIPMENT—Use the following checklist for items needed.

- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> <input type="checkbox"/> Box and open-end wrenches | <input type="checkbox"/> Socket set | <input type="checkbox"/> Distributor wrench | <input type="checkbox"/> Pliers (channel locks & hose clamp) |
| <input type="checkbox"/> Screw drivers (regular and phillips) | <input type="checkbox"/> Torque wrench | <input type="checkbox"/> Hammer | <input type="checkbox"/> Gasket scraper or putty knife |
| <input type="checkbox"/> Timing light | <input type="checkbox"/> Gear puller-for | <input type="checkbox"/> Rags | <input type="checkbox"/> Water bucket |
| <input type="checkbox"/> Harmonic balancer puller | <input type="checkbox"/> Vacuum gauge | | |

HARDWARE & PARTS TO BUY

- | | | |
|--|---|--|
| ➤ Intake gaskets-OEM or equivalent Fel-Pro #1240 | ➤ Pipe plugs, if needed | ➤ Edelbrock Gasgacinch, #9300 |
| ➤ RTV silicone sealer | ➤ Chalk, Paper and pencil | ➤ Radiator coolant |
| ➤ Teflon tape | ➤ Manifold bolt kit #8574 | ➤ Thread locking compound |
| ➤ Edelbrock Sure Seat Valve Springs, #5872 or #5972 (for valve rotators) | ➤ Edelbrock Performer-Link True Rolling Timing Set, #7821 | ➤ Front cover oil seal-OEM or equivalent |

INSTRUCTIONS FOR ENGINE PARTS REMOVAL BEFORE CAMSHAFT INSTALLATION

1. Disconnect battery.
2. For ease of installation, keep all parts in some sort of order.

WARNING: Do not remove radiator cap or radiator hose if engine is hot.

3. Drain radiator coolant, move fan shroud back and remove fan and spacer from water pump. On air conditioned

vehicles, remove bolt, lower idler pulley and compressor-to-water pump mount. Disconnect hoses and brackets. Most vehicles will require radiator removal prior to cam removal. Remove water pump.

4. Disconnect all linkage from carburetor such as throttle, throttle springs, transmission, cruise control and automatic choke.

5. Tag and remove vacuum lines.
6. Remove valve covers.
7. 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 vacuum advance canister in relation to the manifold to assist in getting the distributor properly located during re-installation.
8. Remove carburetor and intake manifold.
9. Remove rocker arms and pushrods.

CAUTION: If your engine has non-adjustable rocker arms, care must be taken to keep the pushrods and rocker arms in proper order, as they may be different lengths.

10. Remove hydraulic valve lifters.
 11. Remove crankshaft pulley and, using a suitable puller, crankshaft dampener.
 12. Disconnect fuel pump outlet line from fuel pump and remove fuel pump. Remove front cover bolts and cut oil pan gasket flush with cylinder block. Remove front cover and water pump as an assembly.
- NOTE:** The front cover oil seal should be replaced before the front cover is re-installed.
13. Rotate engine until timing marks are aligned as shown in **Fig. 1**.
 14. Remove cam sprocket bolt, washer, and fuel pump eccentric. Slide sprocket and timing chain forward to remove.
 15. Remove thrust plate and camshaft. Using appropriate gear puller, remove crank sprocket.

VALVE SPRINGS

CAUTION: WARNINGS ABOUT YOUR WARRANTY

In order for this Performer-Plus cam and lifter kit to be covered under **ANY WARRANTY** you **MUST** use the correct Edelbrock Sure Seat Valve Springs or original equipment springs. Failure to install new Edelbrock valve springs or original specification springs with your new Performer-Plus cam could cause the cam lobes to wear excessively and could cause additional engine damage. In applications using rotators, **Edelbrock Valve springs MUST BE USED** or coil bind will occur. It is the customer's responsibility to check coil bind regardless of the valve springs used.

1. This camshaft is designed to function with Edelbrock Sure Seat valve springs #5872 (standard) or #5972 (for use with valve rotators). Do not use dual valve springs with this camshaft.

2. Check and set spring height to factory specifications for your year and model. If using Edelbrock #5872, set both intake and exhaust to 1.820"; for #5972, set exhaust to 1.680". **NOTE:** Due to the various settings through the years, we advise checking service manual for correct spring height setting for your vehicle.
3. You may use stock retainers and/or valve rotators with Edelbrock valve springs, or for non-rotator engines, you may install Edelbrock Valve Spring Retainers #9724 with stock valve locks.

LIFTERS

1. New lifters **must** be used with new camshaft. Use only the lifters supplied with this kit.
2. Check to be sure that all lifters fit freely in the lifter bores and that lifter bores were not machined for oversized lifters.

INSTALLATION INSTRUCTIONS

1. Coat cam lobes and bottoms of each lifter with MoS2 lube (supplied) to prevent cam lobe and lifter wear from occurring during initial start-up.
2. Install new camshaft with new sprockets, timing chain and lifters.

CAUTION: Use Edelbrock Performer-Plus True Rolling Timing Chain and Gear Set #7821. Do not use late model timing chain and gear sets that are designed in a retarded position and are not recommended for this camshaft installation. Edelbrock Timing Sets feature three keyways for specific timing selection. Use locking compound material on the bolt threads holding timing gear to cam. Torque to factory recommendations specified in motor repair manual.

Install camshaft with timing marks lined up as recommended by factory specifications. See Figure 1.

NOTE: When using Performer-Plus Timing Chain and Gear Sets (7800 series) with Edelbrock cam and lifter kits, straight up timing alignment is achieved. If any other timing gear set is used, it is necessary to check cam 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.

INSTALLING PUSHRODS AND ROCKER ARMS

1. After the cam is installed and timed correctly (**see Figure 1**), it will be necessary to check each pushrod for correct lifter pre-load.

VALVE ADJUSTMENT

1. Turn the engine over until the No. 1 cylinder exhaust lifter starts to move up. At this point install pushrod and adjusting nut on intake rocker arm and adjust to zero clearance between rocker arm and valve tip. For engines with non-adjustable rocker arms, continue to tighten the adjusting nut until it bottoms out. If this adjustment is less than one-half turn, you will need to purchase 0.060" longer pushrods from your Ford dealer.
2. Turn the engine over again until the intake lifter just stops coming down. At this point install pushrod and adjusting nut on exhaust rocker arm and repeat the same procedure as above.
3. The above procedure assures correct hydraulic lifter pre-load. Repeat this procedure for each of the other seven cylinders. For non-adjustable rockers, torque rocker arm nuts to 20-25 ft./lbs.
4. Re-install front cover, fuel pump, water pump, and oil pan using new gaskets.
5. Install intake manifold using new intake gasket set and torque manifold bolts to 25 ft./lbs.
6. Install crankshaft dampener and torque to factory spec. (60 ft./lbs.).

INSTALLING DISTRIBUTOR AND TIMING ENGINE

NOTE: Before installing your distributor, check the gear drive on the distributor and oil pump for any signs of wear. If worn, be sure to replace with new or you may prematurely wear out your camshaft. Edelbrock camshafts are designed to use OEM-type gears and oil pumps only. Do not use high volume, high pressure oil pumps.

1. Turn the engine over in the direction of rotation until the No. 1 intake valve closes and continue until the pointer on the front cover is approximately 5 degrees BTDC.
2. Re-install the distributor with the rotor pointing towards No. 1 terminal in the cap, and with the vacuum advance canister in its original position.
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. Re-install air conditioner, if so equipped.
6. Re-install radiator, fan shroud, and belts (if removed), fill radiator with coolant and re-connect battery.
7. Double check all connections, fuel lines, etc., before starting engine.

CAMSHAFT/LIFTER RUN-IN

CAUTION: Change the engine oil and filter before start-up and again after initial break-in. **Do not allow the engine to run under 2000 rpm for the 1/2 hour.** Vary engine speed between 2000 and 2500 rpm. Slow idle speeds will result in severe cam and lifter wear.

1. Start the engine and bring to break-in rpm.

IMPORTANT INSTRUCTIONS 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 coming loose due to improper torque on bolt. Bolts holding gear to camshaft should be torqued carefully and a locking compound applied to threads of bolts.

CAUTION: Use Edelbrock Performer-Plus Timing Chain and Gear Set #7821. Do not use late model timing chain and gear sets that are designed for emission-controlled engines. These timing sets are machined in a retarded position and are not recommended for this camshaft installation. Edelbrock Timing Sets feature three keyways for specific timing selection.

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.

CAUTION: When installing a camshaft, it is always important to check for proper operating clearances, especially when high performance components are used. Things to look for that can cause failure and damaged parts are as follows:

1. Improper valve-to-piston clearance (this should be no less than 0.100").
2. Rocker arm stud slot clearance (both ends; valve closed and open).
3. Proper valve spring installed height settings (1.820" intake and exhaust for Edelbrock Sure Seat springs #5872; 1.820" intake and 1.680" exhaust for Edelbrock Sure Seat springs #5972).

SPECIAL INSTRUCTION: With the Edelbrock manifold and camshaft package plus a header installation, a carburetor jet change may be required for best performance. Due to the varied applications of year and model 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.

CARBURETION AND IGNITION TIMING: Best carburetor results were with the Edelbrock Performer Series carburetors #1405 (600 cfm with manual choke), #1406 (600 cfm with electric choke). Stock jetting can be used for most installations, however, various conditions may require re-calibration for optimum performance (changes in altitude, temperature, exhaust system, etc.). Refer to the Edelbrock Performer Series carburetor Owner's Manual for calibration procedures. Ignition timing for this package may vary with each application. A good starting figure would be between 10 degrees to 14 degrees initial timing at idle with vacuum advance disconnected. Total advance should not exceed 32 degrees to 34 degrees with initial and centrifugal weights combined and should be at full advance at 3000-3500 rpm. After timing is adjusted, re-connect the vacuum advance line.

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

VACUUM ADVANCE: For best cruise and light throttle response, a vacuum advance curve was used with 24° to 28° maximum advance at 10-11 inches of vacuum and 6° to 8° advance at 3-4 inches of vacuum.

HEADERS: For best performance, headers are recommended with the Performer package. For this application, they should be 1-5/8" diameter, approximately 31" long and terminating into a 3" collector. The remainder of the exhaust system should consist of dual exhaust and tail pipes, at least 2" diameter with low back-pressure mufflers.

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

PLEASE complete and mail your warranty card. Be sure to write the model number of this product in the "Part #____" space.

THANK YOU.

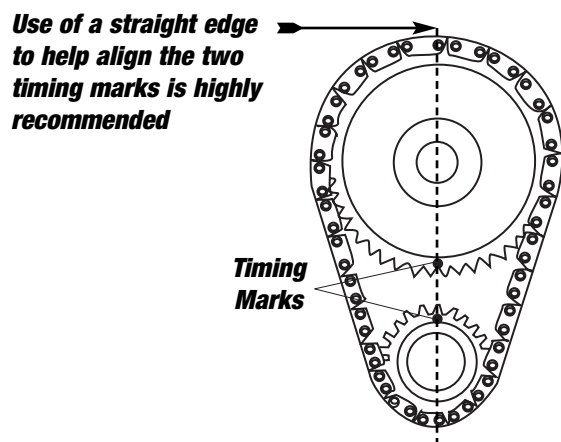


Figure 1
Timing Chain Sprocket Alignment & Timing Marks

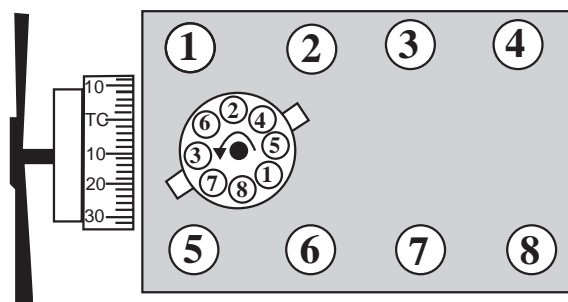


Figure 2 - 351-M/400 c.i.d. Ford V8
Firing Order 1-3-7-2-6-5-4-8
Turn distributor clockwise to advance timing.

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**CAMSHAFT: Performer-Plus Hydraulic
CATALOG #2172**

ENGINE: Ford 351-M/400 c.i.d. V8

RPM RANGE: Idle-5500

CAUTION: Do not use dual valve springs. Use only recommended stock or Edelbrock Sure Seat Valve Springs #5872 or #5972 (for valve rotators). Use stock ratio (1.73:1) rocker arms only.

Duration at .006" Lift:	Intake 282°	Exhaust 292°
Duration at .050" Lift:	Intake 204°	Exhaust 214°

Lift at cam:	Intake .280"	Exhaust .295"
Lift at valve:	Intake .484"	Exhaust .510"

Timing at .050 Lift:

	Open	Close
Intake	5° ATDC	29° ABDC
Exhaust	44° BBDC	10° BTDC

Centerlines:	Lobe separation	Intake C.L.
	112°	107°

CAUTION: Use Edelbrock Performer-Plus Timing Chain and Gear Set #7821. Do not use late model timing chain and gear sets that are designed for emission-controlled engines. These timing sets are machined in a retarded position and are not recommended for this camshaft installation. Edelbrock Timing Sets feature three keyways for specified timing selection.

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Brochure #63-0373
Rev. 4/05 - RS/mc



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