PERFORMER-PLUS
Camshaft/Lifters/Lube Kit
CATALOG #2182
MODEL: 351-Windsor Ford V8

- PLEASE study these instructions carefully before installing your new camshaft. If you have any questions or problems, do not hesitate to call our Technical Hotline at: 1-800-416-8628.
- CAMSHAFT: Edelbrock Performer-Plus camshafts are ground specifically for use with the corresponding Performer manifold. The Performer manifold #2181 or #3781, and Performer-Plus camshaft #2182, 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 you dealer immediately).

PREPARATION CHECKLIST
Use the following checklist for items needed.

TOOLS AND EQUIPMENT

- 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
- gear puller for crankshaft sprocket

HARDWARE & PARTS TO BUY

- pipe plugs, if needed
- Edelbrock Gasgacinch, #9300
- RTV Silicone Gasket Sealant
- chalk
- paper and pencil
- radiator coolant
- teflon tape
- Edelbrock Performer-Link True Rolling Timing Chain and Gear Set #7811 or #7820
- Edelbrock Sure Seat Valve Springs, #5882 (non-rotators) or #5982 (rotators)
- Intake gasket set-Fel-Pro Printoseal or OE replacement
- front cover oil seal- OEM or equivalent
- Manifold bolt kit #8584

- **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 lower idler pulley and compressor-to- water pump mount. Disconnect hoses and brackets. NOTE: Do not disconnect a/c hoses unless necessary. Before disconnecting hoses, a/c system must be evacuated by an authorized repair center. 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. Remove fuel pump.
9. Remove rocker arms and pushrods.
   CAUTION: If your engine has non-adjustable rocker arms (1969-1/2 or later), 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.

Rev. 9/08 - AJ/mc
Brochure #63-2182

12. Disconnect fuel pump outlet line from fuel pump; 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 Figure 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.

1. This camshaft is designed to function with Edelbrock Sure Seat valve springs #5882 (standard) or #5982 (for valve rotators) or OE valve springs. 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 #5882, set to 1.780"; for #5982, set exhausts to 1.600". NOTE: Due to the various settings through the years, we advise checking Mitchell, Motors, Chilton, or Ford service manuals for correct spring height setting for your vehicle.
3. For non-rotator engines, you may want to install Edelbrock Valve Spring Retainer Kit #9724 and Valve Stem Locks #9611. NOTE: #9611 fit single groove valve stems only; not for use with multi-groove valves.

- 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.

- INSTALLATION INSTRUCTIONS

1. Coat cam lobes and bottom 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 #7811 (1973-95) or #7820 (1965–72-1/2).
   Do not use late model timing chain & 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.***
   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
  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 equipped with adjustable rocker arms, continue tightening the adjusting nut one-half (1/2) turn. Check to make sure that the slot in the rocker arm has clearance at the stud in the full open and closed positions. If there is no clearance in the closed position a 0.060" longer pushrod is required. 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 the 0.060" longer pushrods from your Ford dealer.

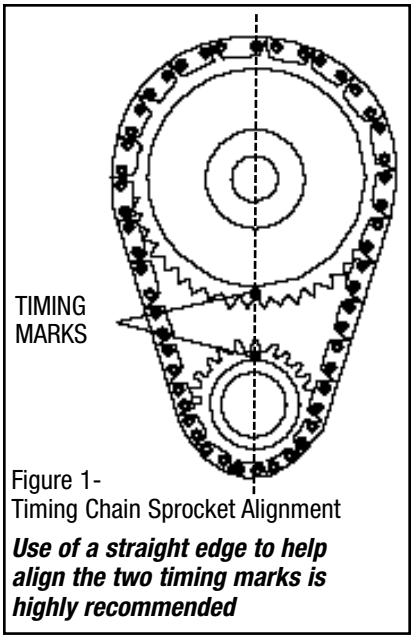

Figure 1-
Timing Chain Sprocket Alignment

Use of a straight edge to help align the two timing marks is highly recommended

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 only, 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 specification.

- 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 wear out your camshaft prematurely. This is especially true when rebuilding your engine and a high performance oil system is used, which generates a heavier load on the camshaft gear system.
  Edelbrock camshafts are designed to use OEM-type gears and oil pumps only.

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 break-in. Do not allow the engine to run under 2500 rpm for the first 1/2 hour. Vary engine speed between 2500 and 3000 rpm. Slow idle speeds will result in severe cam and lifter wear. 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 bolts. Bolts holding gear to camshaft should be torqued carefully and a locking compound applied to bolt threads.

- CAUTION: Use Edelbrock Performer-Plus Timing Chain and Gear Set #7811 or #7820. 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 clipped.
  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 0.080").
2. Rocker arm stud slot clearance (both ends; valve closed and open).
3. Proper spring settings (see dimensions with spring instruction sheet; correct dimensions mean maximum performance and longer engine life).

- 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) or #1406 (600 cfm with electric choke). Engines equipped with Performer 351-W (EGR) manifold #3781 should use OEM 4V carburetor only. 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.). Ignition timing for this package may vary with each application. A good starting figure would be 10 to 14 degrees initial timing at idle with vacuum advance disconnected. Total advance should not exceed 34 degrees to 38 degrees with initial and centrifugal weights combined and should be at full advance at 3000 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 16° to 20° maximum advance at 14-16 inches of vacuum and 4° to 10° advance at 10-12 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 such as the Edelbrock *RPM Series* stainless steel mufflers.
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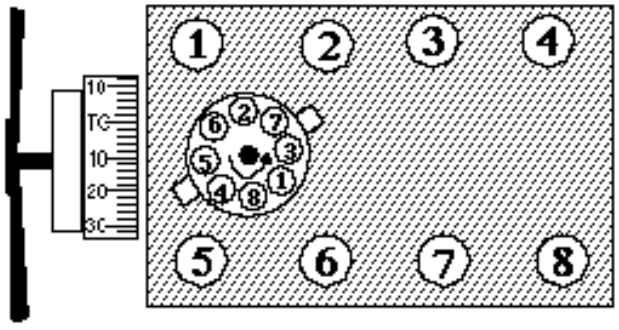

Figure 2
Firing Order 1-3-7-2-6-5-4-8
351-Windsor Ford V8
Turn distributor clockwise to advance timing.

CAMSHAFT: Performer-Plus Hydraulic
CATALOG #2182
ENGINE: Ford 351-Windsor V8
RPM RANGE: Idle-5500
CAUTION: Do not use dual valve springs.
Use only recommended stock or Edelbrock Sure Seat Valve Springs #5882 or #5982
Use stock ratio rocker arms only.

Duration at .006" Lift:	Intake 270º	Exhaust 280º
Duration at .050" Lift:	Intake 204º	Exhaust 214º

Lift at cam:	Intake .280"	Exhaust .295"
Lift at valve:	Intake .448"	Exhaust .472"

Timing at .050 Lift:

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

Centerlines:	Lobe Separation:	112º
	Intake Centerline:	107º

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