PERFORMER RPM HYDRAULIC ROLLER CAMSHAFTS
For 1967-Later 396-502 C.I.D. Chevrolet V8 Engines
Part # 2261, 2262

INSTALLATION INSTRUCTIONS

PLEASE study these instructions carefully before beginning this installation. Most installations can be accomplished with common tools and procedures. However, you should be familiar with and comfortable working on your vehicle. If you do not feel comfortable performing this installation, it is recommended to have the installation completed by a qualified mechanic. If you have any questions, please call our **Technical Hotline at: 1-800-416-8628**, 7:00 am - 5:00 pm, Pacific Standard Time, Monday through Friday or e-mail us at **Edelbrock@Edelbrock.com**.

IMPORTANT NOTE: Proper installation is the responsibility of the installer. Improper installation will void your warranty and may result in poor performance and engine or vehicle damage.

DESCRIPTION: Edelbrock Performer RPM hydraulic roller camshafts are ground specifically for use with the corresponding Performer RPM manifold. The Performer RPM manifold #7161 or RPM Air-Gap #7561 (for oval port heads), or Performer RPM #7163 or RPM Air-Gap #7563 (for rectangular port heads), and Performer RPM Hydraulic Roller camshaft #2261 (1965-1989 Mark IV and 1989-1995 Mark V blocks) or 2262 (1996-Up Mark VI blocks with camshaft thrust plate) 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 recommended carburetor and headers. Performer RPM camshafts are designed for use with modified or high performance cylinder heads and valve train components only. Screw-in studs, adjustable rocker arms, and matching valve springs must be used.

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 a qualified mechanic. Improper installation will result in LOW MILEAGE, POOR PERFORMANCE, COSTLY REINSTALLATION, and ENGINE DAMAGE.*

TO AVOID THESE PROBLEMS, YOU MUST DO THE FOLLOWING:

1. *Carefully study and understand all instructions.*
2. *Examine the camshaft for possible shipping damage (if damaged contact your dealer immediately).*

KIT CONTENTS:

- ❑ 1 Camshaft
- ❑ 1 Assembly Lube

PREPARATION CHECKLIST

TOOLS AND 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
- ❑ Gear puller for crankshaft sprocket
- ❑ Chalk , paper and pencil
- ❑ Masking tape (for tagging hoses and electrical wires)

HARDWARE AND PARTS REQUIRED:

- ❑ Edelbrock Roller Lifters #97443 or equivalent
- ❑ Push Rods designed for roller lifters
- ❑ Camshaft thrust button (For #2261)
- ❑ Gaskets - Intake #7203 (oval port) or #7202 (rect. port), Valve Cover #7580
- ❑ Pipe plugs, if needed
- ❑ Edelbrock Gasgacinch #9300
- ❑ RTV Silicone sealer
- ❑ Engine oil and filter
- ❑ Radiator coolant
- ❑ Edelbrock True Rolling Timing Chain Set #7810
- ❑ Front cover oil seal, OEM or equivalent
- ❑ Valve Springs with a closed pressure of 120-130, open pressure of 320-340 and a max lift of .700" (Note: Edelbrock Sure Seat Valve Springs #5762 are not recommended.)

CAM LOBE DAMAGE: Cam lobe wear is almost non-existent unless mismatched parts are used or installation of the cam and lifters is done improperly. Cam damage can result from 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 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-pressure oil pumps are not recommended with Performer RPM hydraulic roller camshafts. Edelbrock camshafts are designed to be used with Edelbrock timing chains.

VALVE SPRINGS (CAUTION REGARDING YOUR WARRANTY): In order for this Performer RPM roller cam to be covered under ANY WARRANTY, you MUST use the correct valve springs. Failure to install the correct valve springs may cause lifters not to follow the cam lobes and damage engine parts.

1. This camshaft is designed to function with valve springs that have a closed pressure of 120-130lbs, open pressure of 320-340 lbs and a max lift of .700". Special retainers may be necessary with your installation for proper spring height. Do not use rotator type valve springs or retainers for this application.

   Note: *Edelbrock Sure Seat Valve Springs #5762 are not recommended.*

LIFTERS: Edelbrock offers a retrofit roller lifter for engines not originally equipped with roller lifters. Use part #97443. To install your roller lifters, use fresh clean oil on the lifter and the lifter bore just prior to installing. The guide bar (high side of tappet) must face the opposite side of block. See roller lifter instructions for additional information.

PUSHRODS AND ROCKER ARMS: High performance pushrods and rocker arms and studs are recommended for this installation. After the cam is installed and timed correctly ***(See Figure 2)***, it will be necessary to check each pushrod for correct lifter preload.

TIMING CHAIN: Use Edelbrock Performer-Plus Timing Chain and Gear Set #7810 or Accu-Drive gear drive #7891 ONLY. 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 damaged. Therefore, a thrust button must be used to control end play. Late model (1996-Up Gen Vi) blocks use a thrust plate and do not require a thrust button. See Installation Instructions section for end play specifications.

OPERATING CLEARANCES: 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).

   NOTE: *We recommend the use of roller rockers.*
3. Proper valve spring settings. Correct dimensions mean maximum performance and longer engine life.

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!

IMPORTANT NOTICE: *If the air conditioning condenser needs to be removed to provide clearance for camshaft removal, have the system evacuated by an appropriate repair facility* ***BEFORE*** *starting the installation. The facility can recharge the system after installation.*

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. 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. 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.
5. Remove the gas cap to relieve pressure. Disconnect fuel line and plug the line. Replace gas cap.
6. Disconnect all linkage from carburetor such as throttle, throttle springs, transmission, cruise control and automatic choke.
7. Tag and remove coil wires and sensor wires.
8. Tag and remove vacuum lines.
9. Remove valve covers.
10. 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 ***(See Fig. 1)***. Make a note of the approximate position of the distributor housing in relation to the manifold to assist in getting the distributor properly located during re-installation.
11. Remove carburetor and intake manifold assembly. Remove and discard intake manifold gasket.

12. Remove rocker arms and pushrods.

13. Remove hydraulic valve lifters.

14. Remove crankshaft pulley, and using a suitable puller, remove crankshaft dampener (harmonic balancer).

15. 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.*

16. Remove fuel pump and fuel pump pushrod (vehicles with mechanical fuel pumps only).

17. Rotate engine until timing marks are aligned ***(See Fig. 2)***.

18. Remove bolts retaining camshaft sprocket. Remove sprocket and chain.

19. Remove camshaft thrust plate (1996-up, Gen VI late model blocks, when installing cam #2262).

20. Remove camshaft.

21. Using appropriate gear puller, remove crankshaft sprocket.

INSTALLATION PROCEDURE

1. Check lifters as covered in Lifters section. Coat cam lobes with fresh clean oil. Lube distributor drive of cam with assembly lube (supplied).

2. Install new camshaft with new sprockets and timing chain. Torque to 25 ft/lbs. *(Make sure to install the thrust plate before the cam sprocket on late model blocks).*

   NOTE: *Roller cams require the use of a cam thrust button spacer to control camshaft end play. Check camshaft end-play, maintain between .005" and .010". This must be checked with the timing cover, thrust button and gasket in place, just as it would be after final assembly without the roller lifters installed. Late model (1996-Up Gen VI) blocks use a thrust plate and do not require a thrust button.*

   CAUTION: *When using Performer-Link True Rolling Timing Chain and Gear Set (#7810) or Accu-Drive gear drive set (#7891) with an Edelbrock camshaft, 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 specification listed in Motors or other repair manual.*

3. Install your roller lifters using fresh clean oil on the lifter and the lifter bore just prior to installing. Check to make sure all lifters fit freely in lifter bores.

   NOTE: DO NOT *soak lifters in oil, or "pump up" lifters prior to installation. This will result in improper lifter preload.*

4. Line up camshaft with timing marks aligned ***(See Fig. 2)***.

5. **VALVE ADJUSTMENT:**

   A. Install pushrods with lube on both ends, making sure the pushrod tip hits the center of the lifter cup. Install rocker arms, but do not tighten the adjusting nuts. You are now ready to start valve adjustment.

   B. Turn the engine over until the No. 1 cylinder is at TDC firing position (Both #1 lifters are down in the lifter bores and cylinder #6 are up). At this point, adjust exhaust valves on cylinder numbers 1, 3, 4, 8 and intake valves on cylinder numbers 1, 2, 5, 7 to zero clearance between rocker arm and valve tip. This is "zero lash". While tightening the adjusting nut, spin the pushrod between your thumb and forefinger. When you feel resistance, you are at zero lash. From this point, turn adjusting nut down (clock-wise) ¾ to 1 turn more for final adjustment.

   C. Turn the engine over one full turn, until #6 cylinder is at TDC firing position, and adjust the exhaust valves on cylinder numbers 2, 5, 6, 7 and the intake valves on cylinders 3, 4, 6, 8 as described in step "B". The valves are now adjusted.

6. Install front timing cover and oil pan.

   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.*

7. Torque front timing cover bolts to 6-7 ft. lbs.

8. Install front harmonic balancer and torque to 60 ft.-lbs.

9. Install fuel pump and pushrod.

10. Install water pump using new gaskets and torque to 30 ft.-lbs.

11. Install intake manifold/carburetor assembly using new intake gasket set and torque bolts to 25 ft/lbs *(except for the four bolts between each pair of intake runners, which only get snugged hand-tight with a short box-end wrench).*

12. **DISTRIBUTOR INSTALLATION & ENGINE TIMING**

    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 a new gear 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 only.*

    A. 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 (5°) before top dead center (BTDC) ***(See Fig. 1 for firing order)***.

B. 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.

C. 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.

13. Replace valve covers, carburetor linkage and remaining vacuum and electrical connections.

14. Re-install air conditioner, if so equipped.

15. Refill radiator with coolant and re-connect battery.

16. Double check all connections, fuel lines, etc. before starting engine.

17. Engine oil and filter should be changed before start-up.

18. **CAMSHAFT & LIFTER RUN-IN:** Standard camshaft run-in is not required when using a roller cam.

SPECIAL INSTRUCTIONS: With the Edelbrock manifold and camshaft package installation, a carburetor jet change and ignition timing changes 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 procedures are only a guideline

- **IGNITION TIMING:** Increase initial setting to 12-14° BTDC (Before Top Dead Center). Total advance not to exceed 34-36°. With initial and centrifugal weights combined timing should be at full advance by 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.*

- **HEADERS:** For best performance, headers are recommended. For this application, primary tube diameter should be 1-7/8", approximately 31" long, and terminating into a 3" to 3-1/2" collector. The remainder of the exhaust system should consist of dual exhaust and tail pipes, at least 2-1/4" in diameter, with free-flowing mufflers. These recommendations may vary depending on your specific application.

WARNING

In order for this Performer RPM cam and lifter kit to be covered under ANY WARRANTY, you MUST use the correct specification valve springs. Failure to install the correct valve springs may cause lifters not to follow the cam lobes and damage engine parts.

IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION, PLEASE CONTACT OUR TECHNICAL DEPARTMENT IMMEDIATELY.

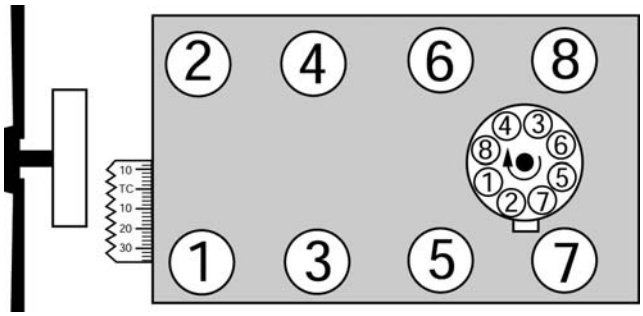

Figure 1 - 396-454 C.I.D. Chevrolet V8
Firing Order and Timing Marks
Firing Order: 1-8-4-3-6-5-7-2
Turn distributor counter clockwise to advance timing

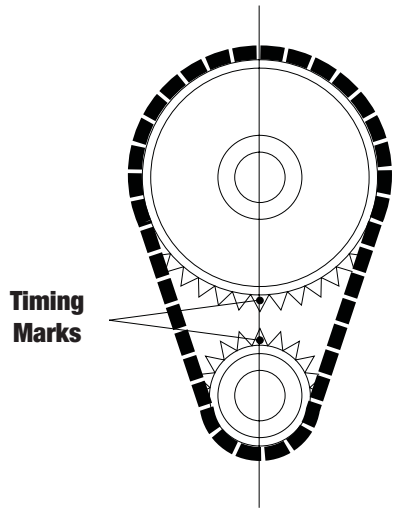

Figure 2 - Timing Chain Sprocket Alignment

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