

The Small and Big Block Chevrolet engines have been written about in almost every magazine, book, and paper since they were introduced over 40 years ago. One would think that there was nothing left to write about them. With all the changes going on these days, and all of the different versions of these engines now available, we at COMP Cams® have decided to use our decades of engine building experience and all of the experiences learned everyday dealing with all of the top engine builders, to pass along to our customers some of the unique tech tips we have learned. Chances are most of you have run across some of these problems and solutions before, but it never hurts to go back over them prior to building an engine. If ever in doubt, we have made available several books and video tapes to further explain the details, and there is always the ever present CAM HELP® line at 1-800-999-0853.

## Engine Types

### Small Block

There are several varieties of Small Block engines currently in use in the aftermarket. Although they mostly use the same block, the cylinder heads are very different and require totally different camshafts. The valve arrangement in the heads are different, and therefore the lobe placement on the camshafts must coincide with the head you are using.

**COMP Cam®'s standard Small Block Prefix is "12".**

This design is the same basic Small Block that everyone is accustomed to. This engine configuration is found on all Small Blocks from 1955 until 1987 when Chevrolet introduced the roller cam. Based on the original 1955 version, with the exception of the 1955-1957 versions, which had an oiling groove in the rear journal, the camshafts are interchangeable.

"54"	"12"	"08"	"07"
LS1	Early	Late	LT1



The nose of the standard early model cam "12" is very different from the later model hydraulic roller "08". The nose of the hydraulic roller "08" is necked down to accommodate the cam retention plate. The "07" is an LT-1 / LT-4 shaft which has a longer dowel pin and a center hole for the distributor. Be sure to check the diameter and depth of the hole in the front, as well as the length of the dowel pin.

Although the overall size of the cams vary, the same differences hold true for Big Block, Small Block, and 4.3 V-6 camshafts. The LS1 or "54" cam has larger journals than all previous small block cams

**The Hydraulic Roller Engines Prefix is "08".**

Beginning in 1987, most of the Small Block (both V-6 and V-8) engines were equipped with hydraulic roller camshafts. There are differences in the block to accommodate a cam retention thrust plate and the anti-rotation mechanism for the lifters. These blocks are identifiable by bolt holes for a cam retention plate under the upper timing sprocket, as well as bosses and tapped holes in the lifter valley for lifter retention hardware. The camshafts on these engines have a step nose and smaller bolt circle on the front of the cam. An earlier model camshaft may be used in these blocks by using the appropriate timing chain set and adding a thrust button when using a roller cam.

**LT-1 and LT-4 Engines use Prefix "07".**

These engines are, as far as the camshaft is concerned, essentially the same as the hydraulic roller engines, with one exception. The distributor is driven from the front of the cam, requiring some changes in the cam core. There is a deeper pilot hole in the front of the cam, as well as a longer dowel pin to locate this drive. These engines require a special timing chain set, and they utilize a self-aligning rocker arm. COMP Cams® LT-1 and LT-4 Magnum Rocker Arms™ can be found on page 283.

**V-6 Engines Use Prefix "18", "09", and "56".**

The 4.3L V-6 90° engines produced since 1985 are equipped with two types of camshafts and three types of cam drive systems. Early 1985 and 1986 engines (Prefix "18") were produced with flat tappet cams. Hydraulic roller cams were first introduced in 1987 (Prefix "09"). These two cam types require different timing chain sets, as the hydraulic roller cams have a stepped nose like the LT-1 engine described earlier. In 1992 a balance shaft was incorporated in this engine, which necessitated a third timing chain setup to drive both the cam and the balance shaft. The cam(prefix "56") in this balance shaft engine is also shorter than the earlier model and does not have a fuel pump lobe.

**Buick Head Small Block Engines use Prefix "19".**

Buick made a Small Block cylinder head in the early 1980's which fit a Small Block. This head was made by Dart, and is still very common in Drag Racing and some Oval Track Racing. The camshaft is different because of the different valve arrangement in the head.

**Splayed Valve GM and Dart Buick Engines use Prefix "19".**

The valve arrangement of this head is identical to the Buick, so the camshaft is the same as above. This head is commonly found in Short Track Oval Racing and Drag Racing.

**SB-2 Engines use Prefix "03" & "04".**

One of the latest versions from GM is the SB-2. It uses a totally different valve arrangement, and therefore a different core. One major item that changed is that there is a special SB-2 Block. The lifter bore spacing and lifter angle is different, specifically to work with a flat tappet for NASCAR applications. Most roller cam versions will use a standard block, and most NASCAR flat tappet engines will use the SB-2 block. When using a standard block and SB-2 head, use prefix "03". When using the SB-2 block and the SB-2 head, use prefix "04".

## LS1 Engines use Prefix "54".

This engine is the first real departure from GM's original Small Block design. Almost none of the parts carry over from previous engines. There are some parts available in the aftermarket. The camshaft is a steel roller cam, approximately 4" shorter and .300" larger in diameter, so there should be no problem with misapplications.

## Big Block

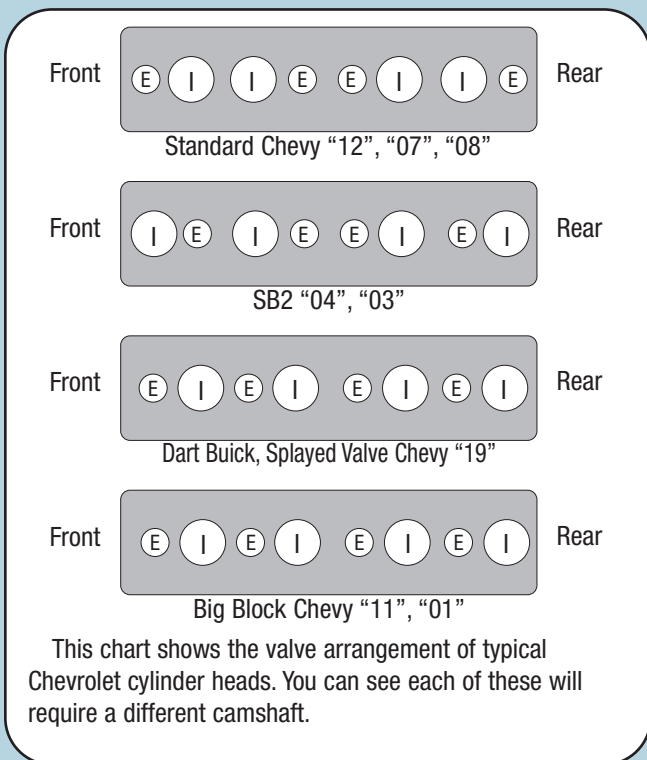
### The Big Block uses Prefix "11" and "01".

This engine was introduced in 1965 and with the exception of some of the very early 1965-1966 models, which had an oiling groove in the rear journal, the camshafts are interchangeable. This includes all of the Big Blocks, including the Mark V, with just about any style cylinder head until the GEN VI was introduced in 1996.

The latest 454-502 version Big Block to be introduced is the GEN VI engine. This engine is similar to the earlier standard big block. The heads are interchangeable but there is a nonadjustable valve train. It is equipped with a hydraulic roller camshaft. There is a positive camshaft retaining plate on the front, and the nose of the cam is stepped down to accept this plate. The lifter bosses are taller to accommodate the lifter anti-rotation plates. The engine will require a special timing chain set.

## Older Engines

The very first 1955-1957 265 c.i. Small Blocks had a unique oiling system. The same holds true for the first 1965 and 1966 396/427 Big Blocks. When one of these blocks is used, it is necessary to machine a small groove in the rear journal of the cam to allow oil flow to the top of the engine.



COMP Cams® camshafts come without this groove, so it is important to check the vintage of your block prior to camshaft installation. COMP Cams® can perform this operation or supply the specs to you for local machining.

## General Tips

### Springs

By far the most common problem encountered when installing a new high performance camshaft is the incompatibility of the existing valve springs to the new cam. Factory valve springs are designed to work with a certain lift cam and since most aftermarket cams have higher lift, the springs must be addressed.

It is highly recommended and a requirement of the warranty that the suggested springs be installed along with any COMP Cams® cam.

Most Big Block engines come stock with a double spring consisting of small diameter wire and many coils. Some people think that because it has double springs it is already high performance. However, nothing could be farther from the truth. This particular spring is one of the worst for accepting extra lift. Almost all Big Block engines will require a spring change along with the cam.

Whenever installing a High-Tech™ racing cam in any Small or Big Block engine, the cylinder heads must be equipped with the correct valve springs, screw-in studs, guide plates, and hardened pushrods. The increased loads and ultra high speeds of the racing engines make this a necessity for valve train stability.

### Small Block Spring Pockets

When machining a Small Block head for larger diameter valve springs, be aware that the area around the spring pockets in the head is very thin, especially the end or outboard exhaust. Care must be taken not to machine through the head when increasing the diameter of the spring pocket. You can round the edge of the cutter used to machine the pocket to resemble the diameter of the wire in the valve spring. Another way is to insert a .030" standard 1.250" diameter spring shim in the pocket prior to machining and cut only down to that point. The safest way is to seek professional help before ruining the heads.

### Studs

When you are using a high performance camshaft and have problems with the valves not staying properly adjusted, one of the first things to check is the rocker arm studs.

Most early model Small Block heads utilize pressed in studs. When high spring loads and high engine speeds are used with these stock type studs, they tend to pull out of the heads. You can check for this by laying a straight edge across the top of the studs to see if any of the studs are too high and out of alignment. If so, the heads should be removed and machined for screw in studs.

Factory Small Blocks were equipped with 3/8" studs and rocker arms. One of the most common practices on these engines is to replace these with larger 7/16" versions similar to those found on the Big Block engines. This is a simple conversion, but requires a roller trunion rocker arm. See page 290.

In 1991 Chevrolet introduced the Mark V Big Block, which comes from the factory with a non-adjustable valve train. When changing to a non-stock camshaft, the valve train must be converted to adjustable. We developed a special stud (Part #4514-16, page 291) to convert the heads with no required machining. Also on page 283 is a series of Magnum Rocker Arm Kits™ engineered specifically for these engines that include this stud.

## Flat Tappet Break-In

All Racing Flat Tappet cams and some of the higher performance Magnum Cams™ will require special attention during the break-in process. Special springs, rocker arms, and certainly tender loving care will be required to ensure a long cam life. Please refer to the instructions in your cam box for complete procedures. If ever in doubt, please call the COMP Cams® CAM HELP® line at 1-800-999-0853.

## Roller Cams

Several points must be considered when installing a roller cam in an earlier block designed for a flat tappet cam.

Flat tappet cams are ground with taper on the lobes to force the cam to the rear of the engine. Roller cam lobes are ground flat, so a thrust button must be used to keep the camshaft to the rear of the block. Most racing roller cams are steel billet cams, which require a special bronze distributor gear. Most street roller and hydraulic roller camshafts are made from a special steel which is compatible with the standard gear, however, to be sure, please call the COMP Cams® CAM HELP® at 1-800-999-0853.

## Hydraulic Roller Cams

When installing a hydraulic roller cam in an early model block, it is necessary to use a special hydraulic roller lifter with a link bar assembly to keep the lifters properly located within the block. In addition, special length pushrods must also be used. A thrust button must also be used to keep the cam from "walking" in the block.

When installing a flat tappet cam in a block originally equipped with a hydraulic roller, it is necessary to change the entire system. The cam, lifters, pushrods, and timing chain set must all be changed in this case, none of the old parts will interchange.

## Self Aligning Rail Rocker Arms

Originally, the Small Block engine used a machined slot in the head to guide the rocker arm on the valve. It has been common to enlarge this hole and install a guide plate when switching to a high performance valve train.

Beginning in 1988 with certain models and now, on all engines, Chevrolet began to utilize a small alignment slot in the valve tip end of the rocker where it contacts the valve. Although there may be a guide plate on the head, it is not hardened and is used only to align the pushrod during assembly. This guide plate may not be used with a standard non-aligning rocker arm. When building a high performance engine, it is suggested that the guide plates, pushrods, and rocker arms be replaced with the earlier style parts. When building a mild street engine, COMP Cams® developed the Magnum and Pro Magnum Rocker Arms™ designed specifically for the late model self-aligning design. They can be found on pages 283-286.

## High Ratio Rocker Arms

A higher than standard ratio rocker arm moves the pushrod closer to the rocker arm stud. It then becomes necessary to check the clearance between the pushrod and the head where the pushrod passes through the head. This is a very common problem and should be carefully checked whenever a rocker arm ratio change, or pushrod diameter change is made. We offer a special tool (part #4710) to machine this on page 346.

## Rocker Arm Geometry

Proper rocker arm geometry is necessary to ensure the maximum benefit from any cam design. Camshaft base circle, block deck height, cylinder head design and lifter design all contribute to possible errors in valve train geometry. It is simple to make compensation with pushrod length.

Usually, a longer than stock pushrod will be necessary in a high performance engine, but care must be taken to choose the correct length. A comprehensive explanation of the checking procedure can be found on pages 278-279.

## Rocker Arm Slots

One of the most frequent problems encountered when changing to a high lift camshaft is the slot in the rocker arm will bind the rocker arm stud. This is prevalent on both Small Block and Big Block engines with stock rocker arms. Always check this and change to either a roller trunion rocker or a long slot rocker arm when contact is evident. The COMP Cams® Magnum Rocker arm™ is a good solution to this problem.

## Valve Stem Oil Seals

When changing to a higher than stock lift camshaft, it is common to have a clearance problem between the bottom of the spring retainer and the top of the valve stem oil seal. Before final assembly of the heads, install one seal, one valve, and one retainer without the spring. Then measure the distance between the top of the seal and the bottom of the retainer to be sure that it is greater than the lift of the valve by at least .050-.060". Be sure to take into account any extra lift due to higher ratio rocker arms.

## Fuel Pump Pushrod

All Chevrolet V-6 and V-8 engines (except fuel injected models) feature a pushrod activated fuel pump. The fuel pump must be removed and the rod dropped away from the cam prior to camshaft removal. Failure to do so will result to damage to the cam, pushrod, or both.

When using a steel billet cam and a fuel pump pushrod, care must be taken to use a pushrod compatible with the cam core. See page 333 for a list of the proper fuel pump pushrods.

COMP Cams® has invested millions of dollars in Research and Development to stay years ahead of our competition. With today's technology and brilliant minds working around the clock COMP Cams® has rightfully earned respect as the leader in valve train technology in the automotive industry. Quality control is our main objective in creating award winning components and the ADCOLE Model 911 is just one of the many machines we have invested in to maintain that quality. When you purchase any COMP Cams® valve train components you make an investment into tomorrow's leading edge technology in pursuit of ultimate power.

## Camshaft Journal Diameter

Many of the newer all out racing engines utilize a larger than standard cam bearing journal diameter. The advantages of the larger diameter are less flex and a larger base circle to smooth out the lobe design, making this a very desirable addition to any extreme racing engine.

It is very common to use a 2.125" Ford babbit bearing or a 2.166" roller bearing in a Big Block engine. Small Blocks have four common sizes. The standard size is 1.868" journal diameter. There is a roller bearing which requires a 1.875" journal, and another roller bearing using a 1.968" (50MM) journal. Many engine builders use a Big Block bearing in Small Blocks which uses a 1.948" journal. Make sure to specify journal size when ordering your cam. If no special size is requested, the standard 1.868" journal will be chosen.

## Base Circle Size

Long stroke Small Block engines usually require smaller than standard base circle camshafts for clearance between the rod and the cam. This must be checked on all engines using long stroke crankshafts and/or large beefy connecting rods. Smaller than standard base circles must be requested when the cam is ordered. It is not recommended to use a small base circle cam with a cast flat tappet cam, as the casting is prone to breakage and catastrophic engine failure is almost certain to occur.



ADCOLE Model 911  
Camshaft Measurement Gauge

- 1 Requires screw-in studs & guide plates.
- 2 Requires machining on cylinder heads.
- 3 Valve spring oil shield available.
- 4 Requires .150" longer pushrod.
- 5 Pedestal style only (fits '74-'79).
- 6 Requires Bronze distributor gear.
- 7 Offset lifters available.
- 8 Stock springs cannot be used.
- 9 Fits only certain years.
- 10 50-State legal for '93 & earlier Chevy V6 200-229 c.i. C.A.R.B. E.O. #D-279-4.
- 11 Requires thrust button & wear plate.
- 12 92 & later w/non adjustable valve train cannot use non-stock base circle cams
- 13 Lifters only. Does not include valley pan or link bars.
- 14 Not for engines with balance shaft.
- 15 Hi-Tech pushrod kits available.
- 16 '88-'93 'Vette engines require COMP guide plate.
- 17 Lifters only, does not include lifter retainers or guides.
- 18 Longer pushrods may be required.
- 19 Hi-Tech Lite Lifters. No Chamfers.
- 20 10° steel retainer. Use with 611-16 locks.
- 21 10° Super Locks.
- 22 Requires machining on block.
- 23 Requires Bronze gear, thrust button & wear plate.
- 24 50-State legal on '93 & earlier S.B. Chevy 262-400 c.i. C.A.R.B. E.O. #D-279-4.
- 25 Steel welded core available.
- 26 50-State legal on '93 & earlier S.B. Chevy 262-400 c.i. C.A.R.B. E.O. #D-279-6.
- 27 For O.E equipped hydraulic rollers only.
- 28 Kits available. Contact CAM HELP® at 800-999-0853.
- 29 Lifters only.
- 30 LT1 and LT4 requires part #3206.
- 31 10° retainers use 611-16 locks.
- 32 Nonstandard lobe layout due to valve arrangement.
- 33 .180" offset on intake.
- 34 Truck engines have .400" taller block.
- 35 Mark V and Mark VI heads must use kit w/studs.
- 36 50-state legal for '93 & earlier B.B. V8, 396-454 c.i. C.A.R.B. E.O. #D-279-4.
- 37 K-Kit includes pushrods and cam button.
- 38 Tall block engines require part #4005.
- 39 For '81 engines originally equipped with hyd. lifters.
- 40 Fits '81-'87 models only.
- 41 Includes special shafts & spacers.
- 42 Special 10° 4 Groove Lock. Single Groove use part #612-16.
- 43 Offset Shafts available.
- 44 Includes special shafts & spacers.
- 45 1/2 set 2 groove; 1/2 set 4 groove.
- 46 413-440 c.i. use part #7432.
- 47 For 413-440 c.i. only, 383-400 use part #RP1421A-16.
- 48 Special 10° locks, 1/2 2 groove, 1/2 set 4 groove. Single groove use part #612-16.
- 49 Wear plates recommended.
- 50 3-Bolt core available. Change first 2 digits of part # to 23 .
- 51 May require cylinder head matching.
- 52 Other lifters & pushrod heights available.
- 53 Offset lifters available. Also for rev. kit applications.
- 54 Use part # 4028 with offset lifters.
- 55 These cams can only be used in 289-302 engines. NOT 302 H.O. blocks due to base circle size.
- 56 Requires Lifter installation kit #31-1000 for retro fit applications.
- 57 Pre-'72 engines use part #3220.
- 58 K-Kit also includes pushrod & lifter installation kit #31-1000 for retro fit applications.
- 59 Many year models.
- 60 Part #4504 studs required for '78-present.
- 61 '62-'69 use part # 7632-16.
- 62 Adjustable valve train required.
- 63 Pre-'68 use part # 831-16.
- 64 Magnum Roller Tip Rockers™ required.
- 65 Requires lifter installation kit # 35-1001 to install 851-16 lifters in blocks with O.E hyd. cams.
- 66 Kit includes installation kit #35-1001.
- 67 For 1.71:1 ratio use #RP1450-16.
- 68 For 1.71:1 ratio use #RP1453-16.
- 69 For 1.71:1 ratio use #RPM1453-16.
- 70 K-Kit for hyd. rollers also includes pushrod & lifter installation kit #31-1000 for retro fit applications.
- 71 These cam can only be used in actual 351W engines due to base circle size.
- 72 Fits only certain heads.
- 73 Most '79-'82 engines have single groove valves, use part #601-16 locks & #743-16 retainers.
- 74 For engines with single-groove valves, use #611-16 locks.
- 75 Cams can only be used in 351C, 351M-400M due to base circle size.
- 76 K-Kit includes pushrods for 351C.
- 77 K-Kit DOES NOT include pushrods for 351M-400M.
- 78 Includes Lifter installation kit #31-1000 for retro fit applications.
- 79 Fits only 302/351C Boss & SVO heads.
- 80 For engines with multi-groove valves, use part #624-16 locks. CAN NOT be used with lash caps.
- 81 Includes special rockers & shafts part #1047-2.
- 82 Includes special shafts.
- 83 Use screw in studs & guide plates. May require longer pushrods.
- 84 Pedestal mount.
- 85 Olds 400-455 use part #7582-16.
- 86 Olds 260-403 use part #7842-16.
- 87 For 260-403 engines only. 455 use kit #1442.
- 88 High Energy™ Rocker Arms.
- 89 265-301 use part # 864-16.
- 90 Special Design (NOT a Chevy part).
- 91 1.65:1 ratio available.
- 92 Fits only 350-455.
- 93 Pacaloy® spring.
- 94 Kit includes cam, lifters, retainers, locks, seals, timing set, valve springs, pushrods, and some kits include lifter guides, plates and bolts.
- 95 Includes 3 cam bolts, thrust bearing & washers, special adjustable cam timing system, 2 machined steel gears and true roller race chain.
- 96 Lightweight Titanium Retainer.
- 97 .065" x 3/8 Diameter Hi-Tech, check for proper length.
- 98 50 State Legal for '87 & earlier carbureted V-8 Small Block Chevy 262-400 C.A.R.B. E.O. #D-279-3, D-279-5, D-279-6.
- 99 Requires hardened guide plate.
- 1A Camshaft retaining plate #3120TB recommended.
- 2A Pushrod length may vary depending on combination, check for proper length.
- 3A Kit contains springs, retainers and valve locks.
- 4A Cannot be used with lash caps.
- 5A Engines with self-aligning rocker arms must use part #1417-16 or 1317-16.
- 6A Engines with self-aligning rocker arms must use part #RP1417-16.
- 7A These specs are measured with a stock length valve and .010" lash between the cam and follower.
- 8A These specs are measured with a .060" longer than stock valve and .010" lash between the cam and follower.
- 9A Does not fit 250 c.i. engines.
- 1B O.E. style pedestal mount roller rockers available. Part #1052-16 for 1.6:1 ratio. Part #1054-16 for 1.7:1 ratio.
- 2B For 351M and 400M engines, use part #7824-16 pushrods on retro-fit cams.
- 3B Lightweight HTL lifter available.
- 4B If equipped with studs and guide plates use part #1442-16.
- 5B Use part # 843-16 to oil through pushrods.
- 6B K-Kit includes 4514-KIT rocker arm adjusting kit and pushrods.
- 7B Requires part # 4514-KIT.
- 8B Engines with self-aligning rocker arms must use part #1417-12 or 1317-16.
- 9B Requires 7/16" rocker arm studs.
- 1C Works with two-piece fuel pump eccentric.

# CAMSHAFTS



## CHEVROLET 153 C.I. CHEVY II 4 CYL. 1962-1970

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.75 ROCKER IN.	EX.		
<b>HIGH ENERGY™ Hydraulic Flat Tappet Camshafts</b>													
HYDRAULIC-Good torque & power with smooth idle. Strong increase over stock.	3	Hyd.	Hyd.	800 to 4800	14-119 -4	252H	252	252	206	206	.460	.460	110°
HYDRAULIC-Good combination of torque and power. Performance street and marine.	3	Hyd.	Hyd.	1200 to 5200	14-123 -4	260H	260	260	212	212	.475	.475	110°

## CHEVROLET 173-207 C.I. (2.8-3.4L) 60° 6 CYL. 1979-1994

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.5 ROCKER IN.	EX.		
<b>HIGH ENERGY™ Hydraulic Flat Tappet Camshafts</b>													
HYDRAULIC-Works with stock computer & fuel injection. Very good for stock rebuild.	3	Hyd.	Hyd.	500 to 4500	16-115-4	240H	240	248	192	200	.390	.390	108°
HYDRAULIC-Good power for 2 or 4 wheel drive S-10, S-15 or Blazer. Works well in mild towing applications. Smooth idle.	3	Hyd.	Hyd.	800 to 4800	16-232-4	252H	252	252	206	206	.425	.425	110°
HYDRAULIC-Good performance cam for 2.8L engine. Lope at idle with extremely good top end power.	3	Hyd.	Hyd.	1000 to 5000	16-233-4	260H	260	260	212	212	.440	.440	110°

## CHEVY 90° ODD FIRE RACE ENGINE 6 CYL. 1980-PRESENT

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.5 ROCKER IN.	EX.		
<b>OVAL TRACK Mechanical Roller Camshafts</b>													
ROLLER-Baseline short track cam, good throttle response and torque.	3	.020	.022	4200 to 7200	17-900-9 <sup>6</sup>	288AR-4	288-8	300-5	260	264	.660	.630	104°
ROLLER-Good on mid-sized tracks with high corner speeds.	3	.020	.022	4500 to 7500	17-901-9 <sup>6</sup>	292AR-5	292-8	304-5	264	268	.660	.630	105°
ROLLER-Good on large tracks with wide corners. Needs good exhaust port flow.	3	.020	.022	4800 to 7800	17-902-9 <sup>6</sup>	296-R5	296	304	268s	268	.660	.630	105°

Footnotes: Master Footnote index on page 28.  
6 - Requires Bronze distributor gear.

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.



## RECOMMENDED KITS AND COMPONENTS

### CHEVROLET 153 C.I. CHEVY II 4 CYL. 1962-1970

K-KIT	SK-KIT	CL-KIT	RP-KIT	LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	STEEL RET.	VALVE LOCKS	VALVE SEALS
K14-119-4	SK14-119-4	CL14-119-4	N/A	812-8	3211	1261-8	7861-8	981-8	742-8	601-8	501-8
K14-123-4	SK14-123-4	CL14-119-4	N/A	812-8	3211	1261-8	7861-8	981-8	742-8	601-8	501-8

### CHEVROLET 173-207 C.I. (2.8-3.4L) 60° 6 CYL. 1979-1994

K-KIT	SK-KIT	CL-KIT	RP-KIT	LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	STEEL RET.	VALVE LOCKS	VALVE SEALS
K16-115-4	SK16-115-4	CL16-115-4	RP1413-12	802-12	3201	1413-12	7816-12	980-12	742-12 <sup>3</sup>	601-12	501-12
K16-232-4	SK16-232-4	CL16-232-4	RP1413-12	802-12	3201	1413-12	7816-12	980-12	742-12 <sup>3</sup>	601-12	501-12
K16-233-4	SK16-233-4	CL16-233-4	RP1413-12	802-12	3201	1413-12	7816-12	980-12	742-12 <sup>3</sup>	601-12	501-12

### CHEVY 90° ODD FIRE RACE ENGINE 6 CYL. 1980-PRESENT

LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	RETAINERS	VALVE LOCKS	VALVE SEALS	LASH CAPS	REV. KIT	DIST. GEARS	STUD GIRDLES
814-12 <sup>7</sup>	3100	1104-12	7972-12	943-12 <sup>2</sup>	731-12	611-12	503-12	621-12	4006	412	N/A
814-12 <sup>7</sup>	3100	1104-12	7972-12	943-12 <sup>2</sup>	731-12	611-12	503-12	621-12	4006	412	N/A
814-12 <sup>7</sup>	3100	1104-12	7972-12	943-12 <sup>2</sup>	731-12	611-12	503-12	621-12	4006	412	N/A

Footnotes: Master Footnote index on page 28.

2 - Requires machining on cylinder heads.

3 - Valve spring oil shield available.

7 - Offset lifters available.

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.

# CAMSHAFTS



## CHEVROLET 194-250 C.I. 6 CYL. 1963-1984

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.75 ROCKER IN.	EX.		
<b>HIGH ENERGY™ Hydraulic Flat Tappet Camshafts</b>													
HYDRAULIC-Good for stock rebuild. Excellent torque and mileage. Very smooth idle.	3	Hyd.	Hyd.	500 to 4500	61-113-4	240H	240	248	192	200	.455	.455	108°
HYDRAULIC-Good city and highway driving, strong vacuum. Works with stock computer. Good torque and mileage.	3	Hyd.	Hyd.	800 to 4800	61-232-4	252H	252	252	206	206	.474	.474	110°
HYDRAULIC-Best for towing, off road, and 4WD drive trucks. Noticeable idle. Good for highway driving.	3	Hyd.	Hyd.	1000 to 5000	61-233-4	260H	260	260	212	212	.489	.489	110°
<b>MAGNUM™ Hydraulic Flat Tappet Camshafts</b>													
HYDRAULIC-Good in Mini-Stock engines with one BBL. carb. Also good for ski and pleasure boats. Slight lobe at idle.	3	Hyd.	Hyd.	1200 to 5200	61-244-4	268H	268	268	218	218	.499	.499	110°
HYDRAULIC-For 1/4 to 1/2 mile oval track where hydraulic cams must be used. Excellent mid-range & top end.	3	Hyd.	Hyd.	1500 to 5500	61-246-4	280H	280	280	230	230	.536	.536	110°
<b>HI-TECH™ Mechanical Flat Tappet Camshafts</b>													
SOLID-Good for mini-stock with stock engine, when solid lifters can be used.	3	.022	.024	1500-5500	61-238-5	264S-8	264-1	264-1	220	220	.439	.439	108°
SOLID-Good for 1/4 to 1/2 mile track. Broad torque range.	3	.022	.024	3500-6500	61-662-5	280B-6	280-1	284-1	242	246	.591	.570	106°
SOLID-For fast 3/8 - 5/8 mile. Needs good cyl. head, carb & intake.	3	.022	.024	4000-7000	61-664-5	294A-8	294-1	294-1	256	256	.596	.596	108°

## CHEVROLET 200-229 C.I. (3.8L) 90° 6 CYL. 1978-1979

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.5 ROCKER IN.	EX.		
<b>HIGH ENERGY™ Hydraulic Flat Tappet Camshafts</b>													
HYDRAULIC-Excellent torque / good mileage. Works well with high axle ratios and overdrive transmissions. Good city driving.	3	Hyd.	Hyd.	500 to 4500	15-115-4	240H	240	248	192	200	.390	.390	108°
HYDRAULIC-Strong torque, good for trucks, 4WD and mild towing. Works with stock computer. Smooth idle and good mileage.	3	Hyd.	Hyd.	800 to 4800	15-200-4	252H	252	252	206	206	.425	.425	110°
HYDRAULIC-Good cam for highway use, off road and towing. Good for trucks with low axle ratios.	3	Hyd.	Hyd.	1000 to 5000	15-201-4	260H	260	260	212	212	.440	.440	110°

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.



## RECOMMENDED KITS AND COMPONENTS

### CHEVROLET 194-250 C.I. 6 CYL. 1963-1984

K-KIT	SK-KIT	CL-KIT	RP-KIT	LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	STEEL RET.	VALVE LOCKS	VALVE SEALS
K61-113-4	SK61-113-4	CL61-113-4	N/A	812-12	3211	1261-12	7861-12	981-12	742-12 <sup>3</sup>	601-12	501-12
K61-232-4	SK61-232-4	CL61-232-4	N/A	812-12	3211	1261-12	7861-12	981-12	742-12 <sup>3</sup>	601-12	501-12
K61-233-4	SK61-233-4	CL61-233-4	N/A	812-12	3211	1261-12	7861-12	981-12	742-12 <sup>3</sup>	601-12	501-12
K61-244-4	SK61-244-4 <sup>8</sup>	CL61-244-4 <sup>8</sup>	N/A	812-12	3211	1261-12	7861-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-12 <sup>2</sup>
K61-246-4	SK61-246-4 <sup>8</sup>	CL61-246-4 <sup>8</sup>	N/A	812-12	3211	1261-12	7861-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-12 <sup>2</sup>
N/A	N/A	N/A	N/A	813-12	3161	1033-12 <sup>1</sup>	7861-12 <sup>15</sup>	986-12 <sup>2</sup>	740-12	611-12	503-12 <sup>2</sup>
N/A	N/A	N/A	N/A	813-12	3161	1033-12 <sup>1</sup>	7861-12 <sup>15</sup>	986-12 <sup>2</sup>	740-12	611-12	503-12 <sup>2</sup>
N/A	N/A	N/A	N/A	813-12	3161	1033-12 <sup>1</sup>	7861-12 <sup>15</sup>	986-12 <sup>2</sup>	740-12	611-12	503-12 <sup>2</sup>

### CHEVROLET 200-229 C.I. (3.8L) 90° 6 CYL. 1978-1979

K-KIT	SK-KIT	CL-KIT	RP-KIT	LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	STEEL RET.	VALVE LOCKS	VALVE SEALS
K15-115-4	SK15-115-4	CL15-115-4	RP1412-12	812-12	3200	1412-12 <sup>10</sup>	7812-12	980-12	742-12 <sup>3</sup>	601-12	501-12
K15-200-4	SK15-200-4	CL15-200-4	RP1412-12	812-12	3200	1412-12 <sup>10</sup>	7812-12	980-12	742-12 <sup>3</sup>	601-12	501-12
K15-201-4	SK15-201-4	CL15-201-4	RP1412-12	812-12	3200	1412-12 <sup>10</sup>	7812-12	980-12	742-12 <sup>3</sup>	601-12	501-12

Footnotes: Master Footnote index on page 28.

1 - Requires screw-in studs & guide plates.

2 - Requires machining on cylinder heads.

3 - Valve spring oil shield available.

8 - Stock springs cannot be used.

10 - 50-State legal for '93 & earlier Chevy V6 200-229 c.i. C.A.R.B. E.O. #D-279-4.

15 - Hi-Tech pushrod kits available.

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.

# CAMSHAFTS



## CHEVROLET 4.3 LITER 262 C.I. 90° 6 CYL. 1980-1997

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.5 ROCKER IN.	EX.		
<b>HIGH ENERGY™ Hydraulic Flat Tappet Camshafts</b>													
HYDRAULIC-Excellent torque / good mileage. Works well with high axle ratios and overdrive transmissions. Good city driving.	3	Hyd.	Hyd.	500 to 4500	18-115-4 <sup>62</sup>	240H	240	248	192	200	.390	.390	108°
HYDRAULIC-Good power for trucks, 4WD and mild towing. Works well with stock computer. Smooth idle and good economy.	3	Hyd.	Hyd.	800 to 4800	18-119-4 <sup>62</sup>	252H	252	252	206	206	.425	.425	110°
HYDRAULIC-Good cam for highway use, off road and towing. Good for trucks with low axle ratios.	3	Hyd.	Hyd.	1000 to 5000	18-123-4 <sup>62</sup>	260H	260	260	212	212	.444	.444	110°
HYDRAULIC-Hi-performance, non-computer, low gears, stall speed converter suggested.	3	Hyd.	Hyd.	1500 to 5500	18-124-4 <sup>62</sup>	268H	268	268	218	218	.454	.454	110°
<b>MAGNUM™ Retro-Fit Hydraulic Roller Camshafts</b>													
HYDRAULIC ROLLER-Smallest of the line. Good mileage, smooth idle. Vans, pickups & towing. Stock gear ratios & torque converter.	3	Hyd.	Hyd.	1200 to 4500	18-410-8 <sup>11,62</sup>	260HR	260	260	206	206	.500	.500	110°
HYDRAULIC ROLLER-Mild street performance slightly noticeable lobe at idle. Stock converter, aftermarket intake & headers. 3.40 - 4.10 gears.	3	Hyd.	Hyd.	1800 to 5000	18-420-8 <sup>11,62</sup>	270HR	270	270	215	215	.500	.500	110°
HYDRAULIC ROLLER-Limited high performance street use. Aftermarket intake, headers, & stall, 3.40 - 4.10 gears. Mild rough idle.	3	Hyd.	Hyd.	2000 to 5500	18-430-8 <sup>11,62</sup>	280HR	280	280	224	224	.525	.525	110°
<b>MAGNUM™ Retro-Fit Hydraulic Roller Camshafts For Computer Controlled Vehicles</b>													
HYDRAULIC ROLLER-Works with stock computer, fuel injection. Good low end torque & gas mileage.	3	Hyd.	Hyd.	1200 to 4500	18-412-8 <sup>11,62</sup>	260AHR	260	266	206	210	.500	.500	112°
HYDRAULIC ROLLER-Works with throttle body and sequential port injection with aftermarket chip. Good low end, mid-range.	3	Hyd.	Hyd.	1800 to 5000	18-415-8 <sup>11,62</sup>	266HR	266	270	210	215	.500	.500	112°
HYDRAULIC ROLLER-Performance cam for computer cars. Needs aftermarket chip and exhaust. Strong mid-range and top end.	3	Hyd.	Hyd.	2000 to 5500	18-422-8 <sup>11,62</sup>	270AHR	270	276	215	220	.500	.510	114°
<b>MAGNUM™ 1987-Present Originally Equipped With Hydraulic Roller Camshafts, NON-BALANCE SHAFT</b>													
HYDRAULIC ROLLER-Smallest of the line. Good mileage, smooth idle. Works with vans, pickups & towing. Stock gear ratios & converter.	3	Hyd.	Hyd.	1200 to 4500	09-410-8 <sup>62</sup>	260HR	260	260	206	206	.500	.500	110°
HYDRAULIC ROLLER-Mild street performance. Slight lobe at idle. Stock converter, aftermarket intake and headers. 3.40 to 4.10 gears.	3	Hyd.	Hyd.	1800 to 5000	09-420-8 <sup>62</sup>	270HR	270	270	215	215	.500	.500	110°

Footnotes: Master Footnote index on page 28.

11 - Requires thrust button & wear plate.

62 - Adjustable valve train required.

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.



# RECOMMENDED KITS AND COMPONENTS

## CHEVROLET 4.3 LITER 262 C.I. 90° 6 CYL. 1980-1997

K-KIT	SK-KIT	CL-KIT	RP-KIT	LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	STEEL RET.	VALVE LOCKS	VALVE SEALS
K18-115-4	SK18-115-4	CL18-115-4	RP1412-12	812-12	3200	1412-12 <sup>10</sup>	7812-12	980-12	742-12 <sup>3</sup>	601-12	501-12
K18-119-4	SK18-119-4	CL18-119-4	RP1412-12	812-12	3200	1412-12 <sup>10</sup>	7812-12	980-12	742-12 <sup>3</sup>	601-12	501-12
K18-123-4	SK18-123-4	CL18-123-4	RP1412-12	812-12	3200	1412-12 <sup>10</sup>	7812-12	980-12	742-12 <sup>3</sup>	601-12	501-12
K18-124-4	SK18-124-4 <sup>8</sup>	CL18-124-4 <sup>8</sup>	RP1412-12	812-12	3200	1412-12 <sup>10</sup>	7812-12	981-12	742-12 <sup>3</sup>	601-12	501-12
K18-410-8 <sup>11</sup>	SK18-410-8 <sup>11</sup>	CL18-410-8 <sup>11</sup>	RPR200-12	853-12 885-12	2100 3100	1412-12 <sup>10</sup> 1301-12 <sup>10</sup>	7809-12 7949-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K18-420-8 <sup>11</sup>	SK18-420-8 <sup>11</sup>	CL18-420-8 <sup>11</sup>	RPR200-12	853-12 885-12	2100 3100	1412-12 <sup>10</sup> 1301-12 <sup>10</sup>	7809-12 7949-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K18-430-8 <sup>11</sup>	SK18-430-8 <sup>11</sup>	CL18-430-8 <sup>11</sup>	RPR200-12	853-12 885-12	2100 3100	1412-12 <sup>10</sup> 1301-12 <sup>10</sup>	7809-12 7949-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K18-412-8 <sup>11</sup>	SK18-412-8 <sup>11</sup>	CL18-412-8 <sup>11</sup>	RPR200-12	853-12 885-12	2100 3100	1412-12 <sup>10</sup> 1301-12 <sup>10</sup>	7809-12 7949-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K18-415-8 <sup>11</sup>	SK18-415-8 <sup>8,11</sup>	CL18-415-8 <sup>11</sup>	RPR200-12	853-12 885-12	2100 3100	1412-12 <sup>10</sup> 1301-12 <sup>10</sup>	7809-12 7949-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K18-422-8 <sup>11</sup>	SK18-422-8 <sup>11</sup>	CL18-422-8 <sup>11</sup>	RPR200-12	853-12 885-12	2100 3100	1412-12 <sup>10</sup> 1301-12 <sup>10</sup>	7809-12 7949-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K09-410-8 <sup>94</sup>	SK09-410-8 <sup>8</sup>	CL09-410-8 <sup>8</sup>	RPH300-12	850-12 <sup>17</sup> 875-12 <sup>17</sup>	3136 <sup>14</sup>	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K09-420-8 <sup>94</sup>	SK09-420-8 <sup>8</sup>	CL09-420-8 <sup>8</sup>	RPH300-12	850-12 <sup>17</sup> 875-12 <sup>17</sup>	3136 <sup>14</sup>	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>

Footnotes: Master Footnote index on page 28.

2 - Requires machining on cylinder heads.

3 - Valve spring oil shield available.

8 - Stock springs cannot be used.

10 - 50-State legal for '93 & earlier Chevy V6 200-229 c.i. C.A.R.B. E.O. #D-279-4.

11 - Requires thrust button & wear plate.

14 - Not for engines with balance shaft.

17 - Lifters only, does not include lifter retainers or guides.

94 - Kit includes cam, lifters, retainers, locks, seals, timing set, valve springs, pushrods, and some kits include lifter guides, plates and bolts.

**RED NUMBERS ARE THE PREMIUM CHOICE.**

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.

# CAMSHAFTS



## CHEVROLET 4.3 LITER 262 C.I. 90° 6 CYL. 1980-1997

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.5 ROCKER IN.	EX.		
<b>MAGNUM™ 1987-Present Originally Equipped With Hydraulic Roller Camshafts, NON-BALANCE SHAFT (CONT'D)</b>													
HYDRAULIC ROLLER-Limited high performance street use. Needs intake, headers & stall, 3.73 to 4.10 gears. Mild rough idle.	3	Hyd.	Hyd.	2000 to 5500	09-430-8 <sup>62</sup>	280HR	280	280	224	224	.525	.525	110°
<b>MAGNUM™ Same as above but for Computer Controlled Vehicles</b>													
HYDRAULIC ROLLER-Works with stock computers and fuel injection. Good low end torque and mileage.	3	Hyd.	Hyd.	1200 to 4500	09-412-8 <sup>62</sup>	260AHR	260	266	206	210	.500	.500	112°
HYDRAULIC ROLLER-Works with throttle body and sequential port injection with aftermarket chip. Good low end and mid-range.	3	Hyd.	Hyd.	1800 to 5000	09-415-8 <sup>62</sup>	266HR	266	270	210	215	.500	.500	112°
HYDRAULIC ROLLER-Performance cam for computer cars. Needs aftermarket chip and exhaust. Strong mid-range and top end.	3	Hyd.	Hyd.	2000 to 5500	09-422-8 <sup>62</sup>	270AHR	270	276	215	220	.500	.510	114°

## CHEVROLET 4.3 LITER 262 C.I. 90°

APPLICATION/CAMSHAFTS	VALVE SETTING		RPM OPERATING RANGE	CAMSHAFT PART NUMBER	CAM GRIND NUMBER	DURATION				VALVE LIFT		LOBE SEPARATION ANGLE	
	IN.	EX.				ADVERTISED IN.	EX.	@ .050" IN.	EX.	W/1.5 ROCKER IN.	EX.		
<b>MAGNUM™ 1992-Present Equipped With Hydraulic Roller Camshafts, WITH BALANCE SHAFT</b>													
HYDRAULIC ROLLER-Great torque for trucks, 4WD and light towing. Has smooth idle. Works with stock components, small carburetor.	3	Hyd.	Hyd.	1200 to 4500	56-410-8 <sup>62</sup>	260HR	260	260	206	206	.500	.500	110°
HYDRAULIC ROLLER-Mild street performance with slight idle for stock converters with aftermarket intake and headers.	3	Hyd.	Hyd.	1800 to 5000	56-420-8 <sup>62</sup>	270HR	270	270	215	215	.500	.500	110°
HYDRAULIC ROLLER-Limited high performance with rough idle. Needs intake, headers and stall with 3.73 to 4.10 gears.	3	Hyd.	Hyd.	2000 to 5500	56-430-8 <sup>62</sup>	280HR	280	280	224	224	.525	.525	110°
<b>MAGNUM™ Same as above but for Computer Controlled Vehicles</b>													
HYDRAULIC ROLLER-Works with stock computers and fuel injection. Good low end torque and mileage.	3	Hyd.	Hyd.	1200 to 4500	56-440-8 <sup>62</sup>	260AHR	260	266	206	210	.500	.500	112°
HYDRAULIC ROLLER-Works with throttle body and sequential port injection with aftermarket chip. Good low end and mid-range.	3	Hyd.	Hyd.	1800 to 5000	56-450-8 <sup>62</sup>	266HR	266	270	210	215	.500	.500	112°
HYDRAULIC ROLLER-Performance cam for computer cars. Needs aftermarket chip and exhaust. Strong mid-range and top end.	3	Hyd.	Hyd.	2000 to 5500	56-460-8 <sup>62</sup>	270AHR	270	276	215	220	.500	.510	114°

Footnotes: Master Footnote index on page 28.

11 - Requires thrust button & wear plate.

62 - Adjustable valve train required.

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.



# RECOMMENDED KITS AND COMPONENTS

## CHEVROLET 4.3 LITER 262 C.I. 90° 6 CYL. 1980-1997

K-KIT	SK-KIT	CL-KIT	RP-KIT	LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	STEEL RET.	VALVE LOCKS	VALVE SEALS
K09-430-8 <sup>94</sup>	SK09-430-8 <sup>8</sup>	CL09-430-8 <sup>8</sup>	RPH300-12	850-12 <sup>17</sup> 875-12 <sup>17</sup>	3136 <sup>14</sup>	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K09-412-8 <sup>94</sup>	SK09-412-8 <sup>8</sup>	CL09-412-8 <sup>8</sup>	RPH300-12	850-12 <sup>17</sup> 875-12 <sup>17</sup>	3136 <sup>14</sup>	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K09-415-8 <sup>94</sup>	SK09-415-8 <sup>8</sup>	CL09-415-8 <sup>8</sup>	RPH300-12	850-12 <sup>17</sup> 875-12 <sup>17</sup>	3136 <sup>14</sup>	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>
K09-422-8 <sup>94</sup>	SK09-422-8 <sup>8</sup>	CL09-422-8 <sup>8</sup>	RPH300-12	850-12 <sup>17</sup> 875-12 <sup>17</sup>	3136 <sup>14</sup>	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	503-16 <sup>2</sup>

## WITH BALANCE SHAFT 6 CYL. 1992-PRESENT

K-KIT	SK-KIT	CL-KIT	RP-KIT	LIFTERS	TIMING SET	ROCKER ARMS	PUSH RODS	VALVE SPRINGS	STEEL RET.	VALVE LOCKS	VALVE SEALS
N/A	N/A	N/A	N/A	850-12 <sup>17</sup> 875-12 <sup>17</sup>	N/A	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	983-12	751-12 <sup>3</sup>	611-12	502-12
N/A	N/A	N/A	N/A	850-12 <sup>17</sup> 875-12 <sup>17</sup>	N/A	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	983-12	751-12 <sup>3</sup>	611-12	502-12
N/A	N/A	N/A	N/A	850-12 <sup>17</sup> 875-12 <sup>17</sup>	N/A	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	986-12 <sup>2</sup>	740-12 <sup>3</sup>	611-12	502-12
N/A	N/A	N/A	N/A	850-12 <sup>17</sup> 875-12 <sup>17</sup>	N/A	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	983-12	751-12 <sup>3</sup>	611-12	502-12
N/A	N/A	N/A	N/A	850-12 <sup>17</sup> 875-12 <sup>17</sup>	N/A	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	983-12	751-12 <sup>3</sup>	611-12	502-12
N/A	N/A	N/A	N/A	850-12 <sup>17</sup> 875-12 <sup>17</sup>	N/A	1417-12 <sup>10</sup> 1317-12 <sup>10</sup>	7808-12 7940-12	983-12	751-12 <sup>3</sup>	611-12	502-12

Footnotes: Master Footnote index on page 28.  
 2 - Requires machining on cylinder heads.  
 3 - Valve spring oil shield available.  
 8 - Stock springs cannot be used.  
 10 - 50-State legal for '93 & earlier Chevy V6 200-229 c.i. C.A.R.B. E.O. #D-279-4.

11 - Requires thrust button & wear plate.  
 14 - Not for engines with balance shaft.  
 17 - Lifters only, does not include lifter retainers or guides.  
 94 - Kit includes cam, lifters, retainers, locks, seals, timing set, valve springs, pushrods, and some kits include lifter guides, plates and bolts.

**RED NUMBERS ARE THE PREMIUM CHOICE.**

Except as noted, not legal for sale or use on pollution-controlled motor vehicles.