

The information in this section is specific to Chevrolet small block and big block engines. You may already know some or all of the comments and tech tips offered. If so, feel free to skip this section. However, if you are new to camshafts and valvetrains, or new to engine building, you may want to read this section before ordering/installing a camshaft and/or valvetrain components into your engine.

Valve Springs

Stock Chevrolet valve springs are not designed for high-performance camshafts. They simply can't handle the added lift of a high-performance camshaft. For this reason, we recommend changing springs anytime you change the camshaft in a small block or big block Chevrolet engine.

Installing a high-lift camshaft in a Chevrolet performance or racing engine requires changes in related valvetrain components. These changes are necessary to maintain valvetrain stability. The cylinder heads may require modification to accommodate these components.

Most camshafts designed for Chevrolet street engines do not require the use of special valvetrain components. However, do not assume that your engine's valvetrain geometry will match a particular camshaft. Follow proper installation and break-in procedure to get the most from your camshaft.

1965-66 engines require a grooved rear camshaft bearing journal to ensure proper oiling. Do not use an ungrooved camshaft in these engines.

The end exhaust spring pockets on most stock small block heads are very thin. Pay particular attention to these pockets when machining the heads for larger diameter valve springs, especially on earlier models. You have two options when performing this modification:

- Round the edge of the cutter to match the radius of the spring wire.
- Install a .030" shim in the pocket before machining, then cut only to that depth.

Rocker Arm Studs

If you've installed a high-performance camshaft and must continually adjust the valves, check the rocker arm studs. Stock pressed in studs are notorious for pulling out of the head, especially on small block heads. Place a straight edge across the studs. If any studs are higher than the others, this is a good indication that they are pulling out of the head. Remove the heads and replace the pressed in studs with screw-in studs.

Flat Tappet Camshafts

When you install a flat tappet camshaft in a 1987-present Chevrolet small block engine originally equipped with a hydraulic roller valvetrain, you must also install new lifters, pushrods, and timing chain. These components must be designed to match the flat tappet camshaft. Using any of the old components will shorten the life of your camshaft and valvetrain components, or lead to total camshaft failure.

Roller Camshafts

Because the lobes on roller camshafts are ground without taper, a thrust button is required. Most roller camshafts also require a bronze distributor gear.

Hydraulic Roller Camshafts

This type of camshaft is similar to a solid roller camshaft, except it uses a hydraulic lifter with a roller wheel. Alloy steel billets require aluminum bronze gears and SADI billets require stock distributor gears.

Rail Rockers

Rail rockers are designed for use with late model Chevrolet engines. These rocker arms use self-guiding "rails" to guide the rocker and keep it centered over the valve tip. Because the pushrod slots no longer guide the pushrods, Chevrolet has enlarged the slots in production heads (even cast iron heads) to eliminate rubbing between the pushrod and pushrod slot.

Higher-Than-Stock Rocker Arm Ratios

Rocker arms with higher-than-stock ratios move the pushrods closer to the rocker arm studs. Because of this, you must check the clearance between the pushrod and the head. This is a common problem, and should be checked any time you change rocker arm ratio.

Pushrods

Pushrod length is the largest determining factor in valvetrain geometry. When using a camshaft with a base circle smaller than stock, a longer-than-stock pushrod may be required to compensate for the smaller base circle.

Many Chevrolet big block engines are equipped with 5/16" diameter pushrods and thin, stamped steel guide plates. When installing a high-performance camshaft, these pushrods and guide plates should be replaced with 3/8" diameter pushrods and heavy duty guide plates. See page 78.

Small block Chevrolet engines are not limited to 5/16" diameter pushrods. 3/8" pushrod and guide plate kit can be bolted on to any Chevrolet head originally equipped with guide plates. Early heads can be modified to accept guide plates. Pushrod Part No. E917911. Guide Plate Part No. E913004.

Oil Seals

When changing to a camshaft with higher-than-stock lift, clearance between the bottom of the retainer and the top of the oil seal must be greater than the camshaft lift. Before assembling the heads, install one seal, valve, and retainer. Do not install the spring. Check the clearance between the bottom of the retainer and the top of the oil seal.

Rocker Arm Slots

When installing a high-lift camshaft, the slot in the rocker arm will sometimes hit the stud. This is most common in big blocks, but should be checked in all engines. Solve the problem by installing roller rocker arms or long slot rocker arms.

Fuel Pumps

A fuel pump pushrod actuates the fuel pump on all Chevrolet engines, except fuel injected models. You must remove the fuel pump before removing the camshaft. This allows the fuel pump pushrod to clear the camshaft. If the fuel pump is not removed prior to camshaft removal, the camshaft and/or the fuel pump pushrod will be damaged.

Early Chevrolet Engines

If you are the proud owner of a 1955-57 original small block Chevrolet, 265 cubic inch engine or a 1965-1966 big block Chevrolet engine and you wish to change camshafts, then be aware of this: These engines had a unique system which required the use of a grooved rear camshaft journal. This groove completed a path in which pressurized engine oil traveled to the lifter galleys, supplying oil to the lifters, pushrods and rocker arms. If a non-grooved camshaft is used, serious damage will result. We can cut this groove for you or you can have your machine shop cut the rear camshaft journal to the following dimensions: .1875" wide by .1094" deep in the center of the rear journal.

Mark V Big Block Engines

The Mark V Big Block uses a non-adjustable valvetrain. When installing a camshaft with higher than stock lift or non-stock rocker arms on this engine, you must convert the valvetrain to an adjustable type.

Generation VI

The Generation VI big block Chevrolet was introduced in 1996 as a 454 or a 502 cubic inch engine. This engine, unlike the Mark IV and Mark V big blocks, came with a hydraulic roller camshaft. This camshaft core is similar to the 1987 and later small block camshaft with regards to the front journal. Both have a step cut in the front journal which accommodates the camshaft retaining plate or thrust plate. This camshaft requires a specific timing chain which is not interchangeable with earlier engines.

LT1 Small Block Engines

Most valvetrain components in the first generation LT1 (1970-71) and second generation LT1 (1995-96) are interchangeable. However, because of the front-mounted distributor and water pump drive setup on the newer LT1 engine, a special timing chain set is required.

4.3L V6 Engine

Chevrolet built this 90° V6 engine with two different camshafts and three different camshaft drive systems. 1985-86 engines were built with flat tappet camshafts. 1987-later engines featured hydraulic roller camshafts. Because of the stepped nose on the hydraulic roller camshafts, the two camshaft types require different timing chain sets. In 1992, a balance shaft was added to the roller camshaft setup. This requires a third type of timing chain set to drive the camshaft and balance shaft.

For questions regarding camshaft selection, call Erson's Technical Service Team at 775.882.1622.

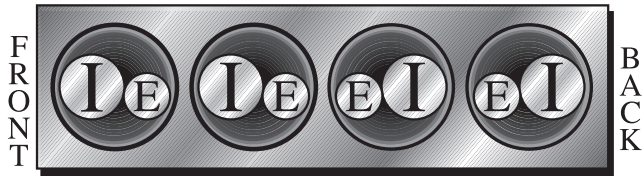


CYLINDER HEAD CONFIGURATION

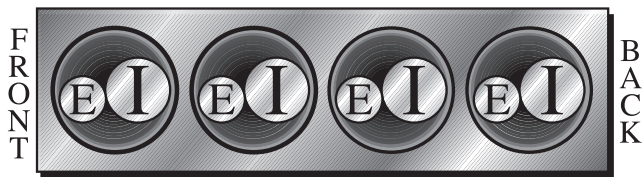
SMALL BLOCK CHEVROLET



Stock Small Block Cylinder Head



SB2



Dart-Buick Splayed Valve

• FIRING ORDER

| | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|
| STOCK | 1 | 8 | 4 | 3 | 6 | 5 | 7 | 2 |
| RACE | 1 | 8 | 7 | 3 | 6 | 5 | 4 | 2 |
| LS-1 | 1 | 8 | 7 | 2 | 6 | 5 | 4 | 3 |

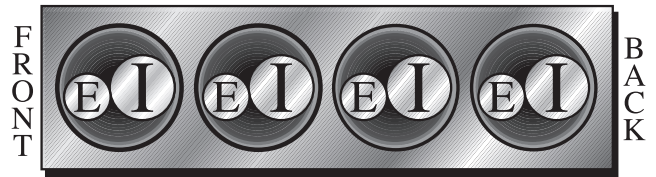
• LIFTER BORE ANGLES

| | | |
|-------|-------|-------|
| 41°IN | 41°EX | STOCK |
| 41°IN | 44°EX | SB2 |
| 45°IN | 45°EX | LS-1 |

• JOURNAL DIAMETERS

| | |
|--------|-----------------|
| 1.868" | STOCK |
| 1.875" | ROLLER BEARINGS |
| 1.950" | ROCKET BLOCK |
| 1.968" | SB2 |
| 2.165" | LS-1 |

BIG BLOCK CHEVROLET



Stock Cylinder Head

• FIRING ORDER

| | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|
| STOCK | 1 | 8 | 4 | 3 | 6 | 5 | 7 | 2 |
| RACE | 1 | 8 | 7 | 3 | 6 | 5 | 4 | 2 |
| RACE | 1 | 8 | 7 | 2 | 6 | 5 | 4 | 3 |

• COMMON LIFTER BORE ANGLES

| | | |
|----------|-------|-----------|
| 38.75°IN | 45°EX | STOCK |
| 45°IN | 45°EX | PRO STOCK |
| 42°IN | 48°EX | PRO STOCK |

• JOURNAL DIAMETERS

| | |
|--------|-----------------|
| 1.950" | STOCK |
| 1.968" | ROLLER BEARINGS |
| 2.125" | ROCKET BLOCK |

PROFERAL BILLET

INLINE 6 CYLINDER 194, 230, 250 CID ENGINES

HIGH PERFORMANCE HYDRAULIC FLAT TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|-------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| The "Commuter". More power than stock. Heavy traffic, expressway use. Smooth idle, good fuel efficiency. | 1,000-4,000 | E160001 RV5H | 274° IN 280° EX | 202° IN 208° EX | .478" IN .490" EX | 110° | 4° | .000" IN .000" EX |
| Excellent choice for increasing low end and mid-range performance. Works well with minor modifications to the intake and exhaust sides of the motor. Suitable for marine applications with outdrives. | 1,500-4,500 | E160112 RV12H | 280° IN 288° EX | 208° IN 214° EX | .490" IN .500" EX | 112° | 4° | .000" IN .000" EX |
| The "Performer". Chevrolet II's, Camaros and light duty trucks seeking improved mid-range performance. For increased top end, use aftermarket aluminum intake with 390 cfm 4-barrel or 500 cfm 2-barrel and headers. | 2,000-5,000 | E160121 TQ20H | 292° IN 292° EX | 214° IN 214° EX | .523" IN .523" EX | 110° | 4° | .000" IN .000" EX |

PROFERAL BILLET

INLINE 6 CYLINDER 292 CID TRUCK ENGINES

HIGH PERFORMANCE HYDRAULIC FLAT TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|-------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| The "Commuter". More power than stock. Heavy traffic, expressway use. Smooth idle, good fuel efficiency. | 1,000-4,000 | E170001 RV5H | 274° IN 280° EX | 202° IN 208° EX | .478" IN .490" EX | 110° | 4° | .000" IN .000" EX |
| Excellent choice for increasing low end and mid-range performance. Works well with minor modifications to the intake and exhaust sides of the motor. Suitable for marine applications with outdrives. | 1,500-4,500 | E170112 RV12H | 280° IN 288° EX | 208° IN 214° EX | .490" IN .500" EX | 112° | 4° | .000" IN .000" EX |
| The "Performer". Chevrolet II's, Camaros and light duty trucks seeking improved mid-range performance. For increased top end, use aftermarket aluminum intake with 390 cfm 4-barrel or 500 cfm 2-barrel and headers. | 2,000-5,000 | E170121 TQ20H | 292° IN 292° EX | 214° IN 214° EX | .523" IN .523" EX | 110° | 4° | .000" IN .000" EX |

**CAMSHAFT ACCESSORY KIT FOR CHEVROLET
INLINE 6 CYLINDER ENGINES EQUIPPED WITH
HYDRAULIC FLAT TAPPET CAMSHAFTS**

E816016 KIT INCLUDES THESE COMPONENTS:

- 12 hydraulic tappets.....E914502
- 12 valve springs, 1.750 x 1.220.....E915006
- 12 H.T. steel retainers, 7° x 11/32.....E961002
- 12 pair H.T. valve locks 7° x 11/32E911172
- 1 tube Moly Lube, 1/4 oz.....E911001

The springs in this kit are designed to fit stock heads. No machine work is required.

CAUTION —

When using high-pressure springs (springs having more than 130 pounds of seat load or more than 330 pounds of nose load) with a flat tappet camshaft, Erson Cams requires that you break the camshaft in for 30 minutes while using just the outer spring. Only after the break-in period should the inner spring be installed. Following this procedure will greatly reduce any chance of camshaft or lifter failure.

PROFERAL BILLET

200-229 CID (3.8L) ENGINES

HIGH PERFORMANCE HYDRAULIC FLAT TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|-------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Erson's first choice over stock offering improved low end and mid-range performance. Compatible with stock compression, converter and gearing. Good idle, throttle response and fuel efficiency. | 1,000-4,000 | E190116 RV5H | 274° IN 280° EX | 202° IN 208° EX | .410" IN .420" EX | 111° | 4° | .000" IN .000" EX |
| Excellent choice for improving mid-range performance without compromising valvetrain stability. Works well in light duty trucks towing small boats, personal water crafts, etc. Good idle and driveability. | 1,500-4,500 | E190126 RV12H | 280° IN 288° EX | 208° IN 214° EX | .420" IN .429" EX | 110° | 4° | .000" IN .000" EX |
| The "Performer". Super low- and mid-range power. Good idle, fuel efficiency and driveability. 4-barrel carburetor and headers recommended. | 2,000-5,000 | E193126 TQ20H | 292° IN 292° EX | 214° IN 214° EX | .449" IN .449" EX | 111° | 4° | .000" IN .000" EX |

**CAMSHAFT ACCESSORY KIT FOR CHEVROLET ENGINES EQUIPPED
WITH HYDRAULIC FLAT TAPPET CAMSHAFTS**

E816016 KIT INCLUDES THESE COMPONENTS:

- 12 hydraulic tappets.....E914502
- 12 valve springs, 1.750 x 1.220.....E915006
- 12 H.T. steel retainers, 7° x 11/32E961002
- 12 pair H.T. valve locks, 7° x 11/32E911172
- 1 tube Moly Lube, 1/4 oz.E911001

NOTE —

For a complete list of optional high-performance parts for your Chevrolet 90° V6 engine, call Erson's Technical Service Team at 775.882.1622.

CHEVROLET 90° V6 1985-86

1.5:1 STOCK ROCKER RATIO

262/4.3L CID ENGINES

PROFERAL BILLET

HIGH PERFORMANCE HYDRAULIC FLAT TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|--------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Excellent replacement camshaft. First level over stock offers improved low end performance and driveability. Compatible with stock compression and gearing. Good idle. | 1,000-4,000 | E195001 TQ10H | 274° IN 274° EX | 202° IN 202° EX | .410" IN .410" EX | 110° | 4° | .000" IN .000" EX |
| The "Commuter". Good all around driveability in passenger cars and light trucks seeking improved low end performance. Great for towing light to moderate loads. Good idle. Compatible with 1.6 rockers. | 1,200-4,300 | E195111 RV5H | 274° IN 280° EX | 202° IN 208° EX | .410" IN .420" EX | 111° | 4° | .000" IN .000" EX |
| Great cam for slightly modified V6 engines in 2-wheel drive and 4x4 pickups seeking strong low- and mid-range performance. Works best with headers and free flowing exhaust. Compatible with 1.6 rockers and small superchargers. | 1,500-4,500 | E195112 RV12H | 280° IN 288° EX | 208° IN 214° EX | .420" IN .429" EX | 112° | 4° | .000" IN .000" EX |
| The "Performer". Our most popular cam for improving mid-range performance. Easy on parts, requires limited modifications for noticeable gains. | 2,000-5,000 | E195121 TQ20H | 292° IN 292° EX | 214° IN 214° EX | .449" IN .449" EX | 111° | 4° | .000" IN .000" EX |
| Excellent choice for modified V6 engines with aluminum aftermarket intake manifolds, 390 cfm 4-barrel, lightly modified cylinder heads and free flowing exhaust system enhance mid-range torque and top end horsepower. | 2,500-5,500 | E195321 TQ40H | 284° IN 296° EX | 220° IN 228° EX | .472" IN .472" EX | 110° | 4° | .000" IN .000" EX |

CAMSHAFT ACCESSORY KIT FOR CHEVROLET ENGINES EQUIPPED WITH HYDRAULIC FLAT TAPPET CAMSHAFTS

E816016 KIT INCLUDES THESE COMPONENTS:

| | |
|---|--|
| 12 hydraulic tappets.....E914502 | 12 pair H.T. valve locks, 7° x 11/32.....E911172 |
| 12 valve springs, 1.750 x 1.220.....E915006 | 1 tube Moly Lube, 1/4 oz.....E911001 |
| 12 H.T. steel retainers, 7° x 11/32.....E961002 | |

CHEVROLET 90° V6 1987-91

1.5:1 STOCK ROCKER RATIO

262/4.3L CID ENGINES

S.A.D.I. BILLET

HIGH PERFORMANCE HYDRAULIC ROLLER CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|----------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| First performance level over stock, improved low end and mid-range performance compatible with stock compression and gearing. OK for towing light to moderate loads. | 1,200-4,500 | E195501 RH-276-3 | 276° IN 276° EX | 208° IN 208° EX | .480" IN .480" EX | 112° | 4° | .000" IN .000" EX |
| Excellent choice for passenger cars and light trucks seeking strong low end and mid-range performance. Compatible with on board fuel management and power brakes. Works best with 4- or 5-speed manual transmission and mid-3 series gearing. | 1,500-4,800 | E195502 RH-276-4 | 276° IN 282° EX | 208° IN 214° EX | .480" IN .480" EX | 114° | 6° | .000" IN .000" EX |
| Slightly modified engines seeking performance-oriented hydraulic roller with emphasis on mid-range torque and horsepower. Headers with free flowing cat-back exhaust system recommended. Aftermarket computer chip may be necessary. | 2,000-5,200 | E195503 RH-282-6A | 282° IN 286° EX | 214° IN 218° EX | .480" IN .510" EX | 112° | 4° | .000" IN .000" EX |
| New lobe technology incorporates faster ramps and longer seat timing resulting in more torque throughout. Great all around performance in street machines, hot rods and sport trucks. May need aftermarket computer chip to enhance performance. | 2,500-6,000 | E195504 RH-282-3 | 282° IN 282° EX | 222° IN 222° EX | .480" IN .480" EX | 112° | 4° | .000" IN .000" EX |

FOR KIT INFORMATION CALL ERSON CAMS TECHNICAL SERVICE TEAM AT 775.882.1622.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET 90° V6 ENGINES EQUIPPED WITH HYDRAULIC ROLLER VALVETRAINS

| | | |
|--|---|--------------------------------------|
| Roller timing chain set.....E991911 | P.C. seals, 11/32.....E910244 | Offset camshaft bushings.....E911451 |
| Valve springs, 1.750 x 1.220.....E915006 | Lash caps, 11/32.....E911540 | Degree wheel.....E911004 |
| H.T. steel retainers, 7° x 11/32.....E961002 | 12 self-guided billet rockers.....E928086 | |
| Screw-in studs, 3/8 x 24.....E912162 | H.T. machined valve locks, 11/32 4130.....E911112 | |

CHEVROLET 90° V6 ODDFIRE

1.5:1 STOCK ROCKER RATIO

COMMON CRANK PIN ENGINES

ALLOY STEEL BILLET

HIGH PERFORMANCE DRAG RACE COMPETITION SOLID ROLLER CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|---------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Competition Eliminator. Excellent choice for D/ED or D/EA classes using 230-260 cubic inch engines. Successful competitors use hand fabricated aluminum sheet metal intakes, heavily modified cylinder heads and high-stall 2-speed automatics with 1.65" IN and 1.6" EX rockers. | 6,000-9,000 | E190901 R-314-7 | 314° IN 330° EX | 284° IN 298° EX | .712" IN .667" EX | 111° | 0° | .032" IN .032" EX |
| Competition Eliminator. Recommended for 230-260 cubic inch V6 engines competing in D/D or D/A classes using clutchless 5-speed transmissions. Use 1.65" IN and 1.6" EX rockers for best results. | 6,500-9,500 | E190902 R-314-7A | 314° IN 330° EX | 284° IN 298° EX | .712" IN .667" EX | 113° | 0° | .032" IN .032" EX |
| Competition Eliminator. Recommended for large cubic inch, high-compression V6 engines using 5-speed clutchless transmissions. Prefers heavily modified splayed valve cylinder heads with 1.65" IN and 1.55" EX rockers for enhanced flow characteristics. | 6,500-9,500 | E190903 R-312-6 | 312° IN 346° EX | 282° IN 308° EX | .727" IN .688" EX | 113° | 0° | .032" IN .032" EX |

HIGH PERFORMANCE HYDRAULIC CAMSHAFTS FOR NON-EMISSIONS CONTROLLED VEHICLES

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|-------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Smooth idle. Slightly over stock. No modifications necessary. 2-barrel, 4-barrel or computer controlled fuel injection compatible. Improved low RPM driveability. | 1,000-3,500 | E110001 TQ-10-H | 274° IN 274° EX | 202° IN 202° EX | .410" IN .410" EX | 108° | 0° | .000" IN .000" EX |
| The "Commuter". More power through entire range. Stop and go traffic and expressway use. Good idle, throttle response and fuel efficiency. | 1,000-3,750 | E110111 RV5H | 274° IN 280° EX | 202° IN 208° EX | .410" IN .420" EX | 110° | 4° | .000" IN .000" EX |
| Broad power range. City and expressway driving and towing. Cars, wagons, pickups and heavier rigs. Good idle, throttle response and high-fuel efficiency. | 1,250-4,000 | E110101 RV10H | 280° IN 280° EX | 208° IN 208° EX | .420" IN .420" EX | 111° | 4° | .000" IN .000" EX |
| Good idle and fuel efficiency in smaller engines. Computer compatible. Works well in light trucks and 4x4 trucks. Towing light to moderate loads. OK with small superchargers. | 1,500-4,500 | E111011 M/P1 | 280° IN 292° EX | 208° IN 214° EX | .420" IN .449" EX | 114° | 6° | .000" IN .000" EX |
| Strong mid-range power. City, fast expressway and open road towing. Delivers maximum mid-range torque. Good idle, throttle response and fuel efficiency. | 1,750-4,750 | E110201 RV15H | 288° IN 288° EX | 214° IN 214° EX | .429" IN .429" EX | 111° | 4° | .000" IN .000" EX |
| Good idle and throttle response in larger engines. Prefers 4-barrel, headers, manual transmission and low gears for towing moderate to heavy loads. OK with small superchargers. | 2,000-5,000 | E111021 M/P2 | 292° IN 310° EX | 214° IN 226° EX | .449" IN .462" EX | 114° | 6° | .000" IN .000" EX |
| The "Performer". Super low- and mid-range power. Good idle, fuel efficiency and driveability. 4-barrel and headers recommended. | 2,000-4,750 | E113121 TQ20H | 292° IN 292° EX | 214° IN 214° EX | .449" IN .449" EX | 111° | 4° | .000" IN .000" EX |
| Fair idle. Reasonable fuel efficiency. Good low- and mid-range horsepower. Great camshaft for street rods or slightly modified street cars, 4-barrel and headers. | 2,250-5,000 | E110321 Hi-Flow AH | 284° IN 284° EX | 220° IN 220° EX | .472" IN .472" EX | 108° | 0° | .000" IN .000" EX |
| Street and Strip. High-lift, dual pattern. Fair idle. Reasonable fuel efficiency. Needs 4-barrel, headers and lower gears. OK with automatic and 2,500 RPM stall speed torque converter. | 2,500-5,500 | E113321 TQ40H | 284° IN 296° EX | 220° IN 228° EX | .472" IN .472" EX | 110° | 4° | .000" IN .000" EX |
| Recommended for roots, vane or centrifugal-style superchargers. Low-moderate boost 5-8 lbs. Good idle with increased low- and mid-range performance. | 2,000-5,500 | E113322 Hi-Boost 1H | 284° IN 296° EX | 220° IN 228° EX | .472" IN .472" EX | 112° | 4° | .000" IN .000" EX |
| Fair idle and fuel efficiency. Strong mid-range performance. Works best with 4-barrel, headers, 4-speed manual transmission and low gears. | 2,750-5,750 | E113221 TQ30H | 310° IN 310° EX | 226° IN 226° EX | .462" IN .462" EX | 114° | 6° | .000" IN .000" EX |
| Hot Street/E.T. Brackets, etc. High-lift. Short duration. Delivers broad power range, strong top end. Fair idle. Needs 4-barrel, headers, compression and gears. | 2,750-5,750 | E110421 Hi-Flow IH | 296° IN 296° EX | 228° IN 228° EX | .472" IN .472" EX | 108° | 0° | .000" IN .000" EX |
| Street and Strip. High-lift, dual pattern. Rough idle. Good mid and top-range horsepower. Needs 4-barrel intake, headers and lower gears. OK with automatic and 3,000 RPM stall speed torque converter. 9:1 compression or more. | 2,800-6,200 | E113421 TQ50H | 296° IN 306° EX | 228° IN 235° EX | .472" IN .472" EX | 110° | 4° | .000" IN .000" EX |
| Designed for street rodders looking for more mid-range performance. Blown cars with 8-15 lbs. boost. Cylinder head modifications and large exhaust helpful. | 2,500-6,000 | E113323 Hi-Boost 2H | 296° IN 316° EX | 228° IN 240° EX | .472" IN .472" EX | 114° | 6° | .000" IN .000" EX |
| Runs strong 3,500 to 7,000 RPM. Stick or automatic with gears. Needs good intake and headers. 9.5:1 or more compression. Loopy idle. | 3,200-6,400 | E110521 Hi-Flow IIH | 306° IN 306° EX | 235° IN 235° EX | .472" IN .472" EX | 108° | 0° | .000" IN .000" EX |
| Runs strong 4,000 to 7,500 RPM. Needs lower gears, 4-barrel, headers and compression for maximum performance. Rough idle. | 3,500-6,500 | E115911 Hi-Flow IIIH | 316° IN 316° EX | 240° IN 240° EX | .472" IN .472" EX | 108° | 0° | .000" IN .000" EX |
| Serious pro-street cars with 6-71 superchargers or equivalent. 12(+) lbs. of boost, multiple carburetion, large, free flowing exhaust system, aftermarket or modified cylinder heads. Use 2,500-3,500 RPM converter and low gears. | 3,500-7,000 | E113324 Hi-Boost 3H | 308° IN 316° EX | 244° IN 252° EX | .503" IN .517" EX | 114° | 4° | .000" IN .000" EX |
| 2-barrel or 4-barrel limited sportsman racers on 1/4-3/8 mile oval tracks. Proven winner in .500" lift rule hydraulic classes. | 3,500-6,500 | E111122 OTH500 | 318° IN 318° EX | 244° IN 244° EX | .504" IN .504" EX | 106° | 6° | .000" IN .000" EX |
| More top end than OTH500. 2-barrel or 4-barrel limited sportsmans on 3/8-1/2 mile tracks. Championship performance in .500" lift rule hydraulic camshaft classes. | 3,750-6,750 | E110622 OTH525 | 324° IN 324° EX | 252° IN 252° EX | .502" IN .502" EX | 106° | 6° | .000" IN .000" EX |
| Hot Street/E.T. Brackets. 377-410 CID engines with no less than 10.5:1 compression. Aftermarket or modified cylinder heads. Automatic cars use 3,500-4,000 RPM converter and 3" exhaust. Nitrous oxide optional. | 3,750-7,000 | E115912 Hi-Flow IVH | 312° IN 320° EX | 248° IN 256° EX | .503" IN .517" EX | 110° | 4° | .000" IN .000" EX |
| Hot Street/E.T. Brackets. Upper mid-range and top end power in 388-410 CID engines with no less than 11.0:1 compression using large valve aftermarket cylinder heads, single plane intake manifold, 750-850 cfm carburetion and open or free flowing exhaust. | 4,000-7,200 | E113422 TQ60H | 316° IN 324° EX | 252° IN 260° EX | .517" IN .517" EX | 108° | 0° | .000" IN .000" EX |

CAMSHAFT ACCESSORY KIT FOR CHEVROLET ENGINES EQUIPPED WITH HYDRAULIC CAMSHAFTS

E811011 KIT INCLUDES THESE COMPONENTS:

| | |
|---|---------|
| 16 hydraulic tappets..... | E914501 |
| 16 valve springs, 1.750 x 1.220..... | E915005 |
| 16 H.T. steel retainers | E961001 |
| 16 pair H.T. valve locks, 7" x 11/32..... | E911171 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET ENGINES EQUIPPED WITH HYDRAULIC VALVETRAINS

| | | | |
|--|---------|-------------------------------------|---------|
| Gear drive with front cover | E992000 | C.M. pushrods, 5/16 x 7.800 | E917101 |
| Roller timing chain set..... | E991900 | C.H. pushrods, 5/16 x 7.800 | E917111 |
| Forged roller rockers, 3/8 x 1.5 | E928001 | P.C. seals, 11/32 | E910243 |
| Forged roller rockers, 3/8 x 1.6 | E928003 | H.T. machined valve locks, | |
| Long-slot 1.5 stamped-steel rockers..... | E929002 | 7" x 11/32 4130 | E911111 |
| Roller-tip, long-slot rockers, 1.5 x 3/8 | E929009 | Offset camshaft bushings | E911451 |
| Roller-tip, long-slot rockers, 1.6 x 3/8 | E929010 | Rocker arm splash eliminators | E911007 |
| Screw-in studs, 3/8 x 24 | E912161 | Degree wheel | E911004 |
| Guide plates, 5/16 | E913001 | Self-locking camshaft bolts | E913011 |

1957-86 262-400 CID ENGINES

1987-97 305/350 CID HYDRAULIC FLAT TAPPET ENGINES

S.A.D.I. BILLET

HIGH PERFORMANCE RETROFIT HYDRAULIC ROLLER TAPPET CAMSHAFTS FOR NON EMISSION CONTROLLED VEHICLES

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|----------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Recommended for passenger cars and trucks seeking improved throttle response and low end torque without sacrificing mileage. Excellent for towing light to moderate loads. Good idle. | 1,500-4,000 | E119814 RH-276-2 | 276° IN 282° EX | 208° IN 214° EX | .480" IN .480" EX | 110° | 4° | .000" IN .000" EX |
| Mild hydraulic roller offering improved low- and mid-range power in passenger cars and light trucks. Works well with stock converter and mild gearing. Noticeable idle. | 1,750-4,250 | E119811 RH-282-1 | 282° IN 282° EX | 214° IN 214° EX | .480" IN .480" EX | 110° | 0° | .000" IN .000" EX |
| Dual purpose cam! Camaros and sport trucks seeking broad power with strong mid-range performance. Should have 5-speed transmission with 3.40-3.70 gearing. Or an excellent choice for supercharged street rods and street machines needing all around power. | 2,000-5,000 | E119815 RH-282-8 | 282° IN 294° EX | 214° IN 226° EX | .480" IN .510" EX | 114° | 6° | .000" IN .000" EX |
| Street Rods and Street Machines. This cam offers higher torque throughout the entire mid-range. Should have lightly modified cylinder heads, 4-barrel carburetion and headers with dual exhaust. Largest cam with stock converter. | 2,200-5,200 | E119813 RH-288-1 | 288° IN 288° EX | 219° IN 219° EX | .480" IN .480" EX | 110° | 0° | .000" IN .000" EX |
| Improved mid-range and upper mid-range performance when used with aftermarket cylinder heads, manifold and carburetion. Should have headers with free flowing exhaust for best results. Also works well with small superchargers and nitrous oxide. Marine compatible. | 2,500-5,500 | E119816 RH-286-1 | 286° IN 294° EX | 218° IN 226° EX | .510" IN .510" EX | 112° | 4° | .000" IN .000" EX |
| New lobe technology offers higher cylinder pressure and better throttle response by modifying timing points. Improved mid-range performance without compromising driveability. Marine compatible. | 2,400-5,400 | E119817 RH-282-4A | 282° IN 286° EX | 222° IN 226° EX | .480" IN .480" EX | 112° | 4° | .000" IN .000" EX |
| Supercharged Street Rods and Street Machines pushing 8 to 15 PSI of boost through modified aftermarket cylinder heads create respectable gains in mid-range torque and horsepower. OK with nitrous oxide. | 3,000-6,000 | E119818 RH-294-1 | 294° IN 296° EX | 226° IN 234° EX | .510" IN .533" EX | 114° | 6° | .000" IN .000" EX |
| Hot Street/E.T. Brackets. 350-400 CID engines with no less than 10.0:1 compression should have modified cylinder heads, single plane intake manifold, up to 750 cfm carburetion and headers for best results. Automatic cars use 3,000 RPM converter, 4.56 gear and 28" tire. OK with nitrous oxide and 1.6:1 rockers. | 3,250-6,250 | E119819 RH-302-1 | 302° IN 310° EX | 234° IN 242° EX | .510" IN .510" EX | 110° | 4° | .000" IN .000" EX |
| Hot Street/E.T. Brackets. Large gains in mid-range torque and top end horsepower from modified 383-410 CID small block Chevrolets with no less than 10.5:1 compression. Compatible with 4- or 5-speed transmission or 3-speed automatic with 3,500 RPM converter and low gears. | 3,500-6,500 | E119820 RH-310-1 | 310° IN 318° EX | 242° IN 250° EX | .510" IN .510" EX | 108° | 0° | .000" IN .000" EX |

NOTE —

When converting an engine originally equipped with hydraulic flat tappets to an engine using longer than stock retrofit hydraulic roller tappets one must also use shorter than originally equipped pushrods. Erson part #E917112, 5/16 case hardened pushrods are a must.

RETROFIT HYDRAULIC ROLLER CAMSHAFT ACCESSORY KIT FOR CAMSHAFTS LISTED ABOVE

E811013 KIT INCLUDES THESE COMPONENTS:

| | |
|--|---------|
| 8 pair hydraulic roller lifters | E919316 |
| 16 valve springs, 1.750 x 1.220 | E915005 |
| 16 H.T. steel retainers, 7° x 11/32 | E961001 |
| 16 pair H.T. valve locks, 7° x 11/32 | E911171 |
| 16 C.H. pushrods, 5/16 x 7.300 | E917112 |
| 1 thrust button | E911351 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

NOTE —

When ordering a hydraulic roller camshaft for your street machine or truck, make sure that the salesperson is aware of your particular application, which will help prevent you from receiving the wrong camshaft core.

Without a doubt, the Chevrolet engine has been the target of more factory and aftermarket research and development than any other engine. Intake manifolds, cylinder heads and block configurations are some of the more obvious areas of which engineers and engine builders exhibit continued efforts to enhance both strength and performance. Camshafts are no exception. Many issues must be taken into consideration before ordering a camshaft intended for use in competition. Four areas of concern are: the lifter bore angles, journal diameters, cylinder head configuration and firing order. All of this must be known by our staff before we begin grinding. If you plan on ordering a camshaft for competition, call Erson's Technical Service Team at 775.882.1622 for information regarding profile and billet selection. The following charts will serve as an example of camshaft core options.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET SMALL BLOCK ENGINES RECENTLY CONVERTED TO HYDRAULIC ROLLER TAPPET VALVETRAINS

FOR PRE-1987 CHEVROLET SMALL BLOCK ENGINES:

| | |
|--|---------|
| Valve springs, 1.700 x 1.450 | E915310 |
| H.T. steel retainers, 7° x 11/32 | E961312 |
| 4130 H.T. machined valve locks, 7° x 11/32 | E911111 |
| Case hardened pushrods, 5/16 | E917112 |
| Self-guided roller rockers, 1.5:1 x 3/8 | E928086 |
| Self-guided roller rockers, 1.6:1 x 3/8 | E928087 |
| Forged roller rockers, 1.5:1 x 3/8..... | E928008 |
| Forged roller rockers, 1.6:1 x 3/8..... | E928003 |
| Roller tip long slot rockers, 1.5:1 x 3/8 | E929009 |
| Roller tip long slot rockers, 1.6:1 x 3/8 | E929010 |
| Screw-in studs, 3/8 x 24 | E912161 |
| Guide plates, 5/16 | E913001 |
| Roller timing chain set..... | E991900 |
| Standard gear drive | E992000 |
| P.C. seals, 11/32 | E910243 |
| Offset camshaft bushings..... | E911451 |
| Degree wheel | E911004 |

RETROFIT HYDRAULIC ROLLER TAPPET CAMSHAFTS WITH EMISSION CONTROL DEVICES, COMPUTER COMPATIBLE

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|----------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| First performance level over stock. Increased low- and mid-range performance compatible with stock computers, injection, converters and gearing. | 1,500-4,500 | E119821 RH-276-4 | 276° IN 282° EX | 208° IN 214° EX | .480" IN .480" EX | 114° | 6° | .000" IN .000" EX |
| 305-350 CID engines in cars or trucks seeking more mid-range performance. Automatic with overdrive stock converters, mild gearing. Free flowing exhaust. Level 1 intake modifications. | 1,750-4,750 | E119822 RH-282-2A | 282° IN 288° EX | 214° IN 219° EX | .480" IN .480" EX | 115° | 7° | .000" IN .000" EX |
| Modified 305 engine or 350 CID engines with aftermarket manifolds, throttle modifications, headers and free flowing exhaust. Strong mid-range performance. | 2,000-5,000 | E119823 RH-282-6 | 282° IN 286° EX | 214° IN 218° EX | .480" IN .510" EX | 114° | 6° | .000" IN .000" EX |
| New lobe technology. Increases idle quality without sacrificing mid and upper mid-range performance. Aftermarket heads and free flowing exhaust suggested. Computer modifications may be necessary to improve idle characteristics. | 2,200-5,500 | E119824 RH-282-3A | 282° IN 282° EX | 222° IN 222° EX | .480" IN .480" EX | 116° | 8° | .000" IN .000" EX |

NOTE — When converting an engine originally equipped with hydraulic flat tappets to an engine using longer than stock retrofit hydraulic roller tappets one must also use shorter than originally equipped pushrods. Erson part #E917112, 5/16 case hardened pushrods are a must.

RETROFIT HYDRAULIC ROLLER CAMSHAFT ACCESSORY KIT FOR CAMSHAFTS LISTED ABOVE

E811013 KIT INCLUDES THESE COMPONENTS:

| | | | |
|---|---------|--|---------|
| 8 pair hydraulic roller lifters | E919316 | 16 pair H.T. valve locks, 7° x 11/32 | E911171 |
| 16 valve springs, 1.750 x 1.220 | E915005 | 16 C.H. Pushrods, 5/16 x 7.800 | E917112 |
| 16 H.T. steel retainers, 7° x 11/32 | E961001 | 1 thrust button | E911351 |
| | | 1 tube Moly Lube, 1/4 oz. | E911001 |

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET SMALL BLOCK ENGINES RECENTLY CONVERTED TO HYDRAULIC ROLLER TAPPET VALVETRAINS

FOR PRE-1987 CHEVROLET SMALL BLOCK ENGINES:

| | | | |
|--|---------|---|---------|
| Valve springs, 1.700 x 1.450 | E915310 | Roller tip long slot rockers, 1.5:1 x 3/8 | E929009 |
| H.T. steel retainers, 7° x 11/32 | E961312 | Roller tip long slot rockers, 1.6:1 x 3/8 | E929010 |
| 4130 H.T. machined valve locks, 7° x 11/32 | E911111 | Screw-in studs, 3/8 x 24 | E912161 |
| Case hardened pushrods, 5/16 x 7.300 | E917112 | Guide plates, 5/16 | E913001 |
| Self-guided roller rockers, 1.5:1 x 3/8 | E928086 | Roller timing chain set | E991900 |
| Self-guided roller rockers, 1.6:1 x 3/8 | E928087 | Standard gear drive | E992000 |
| Forged roller rockers, 1.5:1 x 3/8 | E928008 | P.C. seals, 11/32 | E910243 |
| Forged roller rockers, 1.6:1 x 3/8 | E928003 | Offset camshaft bushings | E911451 |
| | | Degree wheel | E911004 |

HIGH PERFORMANCE EMISSION AND COMPUTER CONTROLLED HYDRAULIC ROLLER CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|----------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| 305 and 350 cubic inch engines seeking improved low end performance. Compatible with stock compression, fuel injection and gearing. OK for towing light loads. Headers or free flowing cat-back exhaust system recommended. | 1,250-4,250 | E119825 RH-276-3 | 276° IN 276° EX | 208° IN 208° EX | .480" IN .480" EX | 112° | 4° | .000" IN .000" EX |
| Camaros, Firebirds and light trucks wishing to improve low- and mid-range performance. Aftermarket intake and exhaust helpful. Low boost superchargers OK. | 1,500-4,500 | E119826 RH-276-4 | 276° IN 282° EX | 208° IN 214° EX | .480" IN .480" EX | 114° | 6° | .000" IN .000" EX |
| Performance oriented passenger cars with aftermarket intake manifolds, larger throttle bodies and free flowing exhaust produce good low- and mid-range torque and increase power. Also works well in 1,500-2,500 series trucks towing moderate loads. | 1,750-4,750 | E119827 RH-282-2A | 282° IN 288° EX | 214° IN 219° EX | .480" IN .480" EX | 115° | 7° | .000" IN .000" EX |
| Super mid-range performance. New lobe design incorporates faster ramps for improved timing events. Cylinder heads, manifold, free flowing exhaust, 5-speed manual transmission or 4-speed automatics with low gears recommended. Computer modifications may be necessary. | 2,200-5,500 | E119828 RH-282-5 | 282° IN 286° EX | 222° IN 226° EX | .480" IN .480" EX | 116° | 8° | .000" IN .000" EX |

NOTE — Due to the unique billet required for the late model LT-1 engine, it is necessary to place a -10 behind the part number when ordering (eg.: E119825-10.)

CAMSHAFT ACCESSORY KIT FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH HYDRAULIC CAMSHAFTS

E811017 KIT INCLUDES THESE COMPONENTS:

| | |
|--|---------|
| 16 hydraulic roller lifters | E919320 |
| 16 valve springs, 1.750 x 1.220 | E915005 |
| 16 H.T. steel retainers | E961001 |
| 16 pair H.T. valve locks, 7° x 11/32 | E911171 |
| 16 5/16 H.T. pushrod | E917113 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET ENGINES EQUIPPED WITH HYDRAULIC VALVETRAINS

| | |
|---|---------|
| Roller timing chain set, (except late-model LT-1) | E991911 |
| Self-guided roller rockers, 1.5 x 3/8 | E928086 |
| Self-guided roller rockers, 1.6 x 3/8 | E928087 |
| P.C. seals, 11/32 | E910243 |
| Offset camshaft bushings | E911451 |
| Degree wheel | E911004 |

HIGH PERFORMANCE MECHANICAL FLAT TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|--------------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Hot Street/S.C.C.A. Slalom Racer. Good low- and mid-range power in small cubic inch engines. 600-650 cfm 4-barrel, dual plane manifold, 1.6 rockers and 4-speed with low gears. | 2,500-5,500 | E113123 TQ30M | 280° IN 280° EX | 230° IN 230° EX | .465" IN .465" EX | 108° | 0° | .022" IN .022" EX |
| Moderate lift and duration delivers more power through entire RPM range. The ideal street camshaft with minor modifications. | 3,000-6,000 | E110721 Hi-Flow IM | 286° IN 286° EX | 242° IN 242° EX | .510" IN .510" EX | 108° | 0° | .022" IN .022" EX |
| Hot Street/E.T. Bracket. Super mid-range performance. Needs 4-barrel, headers and low gears for best performance. 1.6 rockers optional. | 3,250-6,250 | E110821 Hi-Flow IIM | 294° IN 294° EX | 246° IN 246° EX | .510" IN .510" EX | 108° | 0° | .022" IN .022" EX |
| 327-350 CID engines with no less than 10.0:1 compression. Can be used with 1.6:1 rockers to enhance mid-range performance or with manual or automatic transmission and 3,000 RPM converter. | 3,250-6,500 | E110822 F-282-3 | 282° IN 290° EX | 246° IN 254° EX | .510" IN .510" EX | 108° | 2° | .025" IN .025" EX |
| High Performance Marine/Blower grind. Also works well in 3,000-3,400 lb. Street Machine with 4- or 5-speed manual transmission. OK with nitrous oxide. | 3,000-6,500 | E110823 Hi-Boost IM | 282° IN 290° EX | 246° IN 254° EX | .510" IN .510" EX | 114° | 6° | .025" IN .025" EX |
| Hot Street/E.T. Bracket. Works well in 350-406 CID engines with 10.0-11.0:1 compression. Aftermarket heads, 1.6 rockers, single plane manifold, free flowing exhaust, 3,500 converter and low gears. | 3,500-6,600 | E110824 F-286-3 | 286° IN 294° EX | 250° IN 258° EX | .510" IN .510" EX | 110° | 4° | .025" IN .025" EX |
| Mid-range and top end performer. Good closed-course road race camshaft. Easy on parts. Works best with 4- or 5-speed manual transmission. | 3,750-6,750 | E110921 320HLM | 320° IN 320° EX | 256° IN 256° EX | .534" IN .534" EX | 108° | 0° | .022" IN .022" EX |
| High Performance Blower grind. 250 series or 6-71 roots-style supercharger. Single 850 or twin 650-750 cfm carburetors, good heads, low gears, 3,500 RPM converter. | 3,500-7,000 | E110825 Hi-Boost IIM | 292° IN 302° EX | 254° IN 264° EX | .562" IN .562" EX | 114° | 4° | .025" IN .025" EX |
| E.T. Bracket/Road Racer. No less than 11.0:1 compression. 2,800-3,200 lb. modified production car. Single 4-barrel, good heads with mild head work. Headers and free flowing 3" exhaust system. | 3,800-6,800 | E110826 F-296-1 | 296° IN 302° EX | 258° IN 264° EX | .562" IN .562" EX | 108° | 0° | .025" IN .025" EX |
| E.T. Bracket/Oval Track camshaft. 355-406 CID engines with 11.0:1-12.0:1 compression. Modified steel or aluminum heads. Light to moderate weight chassis, fast 3/8-1/2 mile tracks. Alcohol or gas. | 4,000-7,000 | E110827 F-298-4 | 298° IN 306° EX | 260° IN 268° EX | .562" IN .562" EX | 108° | 0° | .025" IN .025" EX |
| E.T. Bracket/Road Racer. Builds big torque in 355-388 CID engines with 12.0-12.5:1 compression. Works well with single 4-barrel or low profile 2x4 barrel manifolds | 4,200-7,200 | E110828 F-302-2 | 302° IN 310° EX | 264° IN 272° EX | .562" IN .562" EX | 108° | 0° | .025" IN .025" EX |
| Hot Street/Strip/Bracket Racer. New design. Strong through broad range. Pulls hard from 4,000 up. For the built engine with no less than 12.0:1 compression only. | 4,500-7,500 | E111031 990AH | 312° IN 312° EX | 268° IN 268° EX | .575" IN .575" EX | 108° | 0° | .028" IN .030" EX |
| Strong mid-range and top end camshaft. Pulls hard past 7,000 in well set up engine. Bracket racers favorite. Can be used with 1.6:1 rockers. | 5,000-8,000 | E118631 990SB | 318° IN 318° EX | 278° IN 278° EX | .550" IN .550" EX | 108° | 0° | .028" IN .030" EX |
| E.T. Bracket/Super Categories. Serious drag racing only. Light 2-speed dragsters or alters with 5,000-5,500 RPM converter. 331-377 CID engines with no less than 13.0:1 compression. Good flowing heads a must! | 5,000-8,500 | E111009 2450X | 310° IN 320° EX | 276° IN 286° EX | .565" IN .565" EX | 108° | 0° | .024" IN .026" EX |

CAMSHAFT ACCESSORY KITS FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH MECHANICAL FLAT TAPPET CAMSHAFTS

E811012 KIT INCLUDES THESE COMPONENTS:

| | |
|---|---------|
| 16 mechanical tappets..... | E914021 |
| 16 valve springs, 1.750" x 1.220..... | E915005 |
| 16 H.T. steel retainers, 7° x 11/32..... | E961001 |
| 16 pair H.T. valve locks, 7° x 11/32..... | E911171 |
| 1 thrust bumper..... | E911351 |
| 1 tube Moly Lube, 1/4 oz..... | E911001 |

This kit is for use with the following camshafts: E113123, E110721, E110821, E110822, E110823 and E110824. Requires no modifications.

E811043 KIT INCLUDES THESE COMPONENTS:

| | |
|---|---------|
| 16 mechanical tappets..... | E914021 |
| 16 valve springs, 1.900 x 1.440..... | E915251 |
| 16 H.T. steel retainers, 7° x 11/32..... | E961051 |
| 16 pair H.T. valve locks, 7° x 11/32..... | E911171 |
| 1 thrust bumper..... | E911351 |
| 1 tube Moly Lube, 1/4 oz..... | E911001 |

This is for use with the following camshafts: E110921, E110825, E110826, E110827, E110828, E111031, E118631, E111009.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH MECHANICAL FLAT TAPPET VALVETRAINS

| | |
|--|---------|
| Standard gear drive..... | E992000 |
| Roller timing chain set..... | E991900 |
| Valve springs, 1.750 x 1.450..... | E915310 |
| Valve springs, 1.900 x 1.530..... | E915261 |
| H.T. steel retainers, 7° x 11/32..... | E961312 |
| H.T. steel retainers, 7° x 11/32..... | E961091 |
| H.T. machined valve locks, 7° x 11/32 4130..... | E911111 |
| H.T. machined valve locks, 10° x 11/32 4130..... | E911140 |
| C.M. pushrods, 5/16 x 7.800..... | E917101 |
| C.H. pushrods, 5/16 x 7.800..... | E917111 |
| C.H. pushrods, 5/16 x 7.900 (+) .100..... | E917214 |
| Forged roller rockers, 3/8 x 1.5..... | E928001 |
| Forged roller rockers, 3/8 x 1.6..... | E928003 |
| Billet aluminum roller rockers, 3/8 x 1.5..... | E928068 |
| Billet aluminum roller rockers, 3/8 x 1.6..... | E928069 |
| Long-slot, stamped-steel rockers, 3/8 x 1.5..... | E929002 |
| Screw-in studs, 3/8 x 24..... | E912161 |
| Guide plates, 5/16..... | E913001 |
| P.C. seals, 11/32..... | E910243 |
| Lash caps, 11/32..... | E911541 |
| Offset camshaft bushings..... | E911451 |
| Self-locking camshaft bolts..... | E913011 |
| Roller thrust button..... | E992004 |

NOTE —

It is possible to install a high-performance hydraulic (non-roller) camshaft or a mechanical flat tappet camshaft in a block originally equipped with a hydraulic roller camshaft. Matching lifters, pushrods, timing chains and, in some cases, rocker arms must be used to accommodate this conversion.

MECHANICAL FLAT TAPPET CAMSHAFTS FOR OVAL TRACK RACING

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|----------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| For small displacement engines using stock heads with no modifications. OK for 2-barrel or 4-barrel classes, with headers on short tracks. 1/4 mile to tight 3/8 mile. Advance 4° for best results. | 3,000-6,000 | E116300 F-282-1 | 282° IN 282° EX | 246° IN 246° EX | .510" IN .510" EX | 106° | 0° | .025" IN .025" EX |
| Increased mid-range and top end power in 327-355 CID engines. Aftermarket intake and carburetion with "cast iron" exhaust. OK with flat top pistons. Easy on parts. | 3,200-6,400 | E116301 F-282-2 | 282° IN 290° EX | 246° IN 254° EX | .510" IN .510" EX | 106° | 0° | .025" IN .025" EX |
| New oval track camshaft from Erson. Good low end power, yet likes to run upstairs. 4-barrel and headers recommended. 1/4 mile to fast 3/8 mile dirt or asphalt tracks. | 3,500-6,700 | E116306 F-286-1A | 286° IN 294° EX | 250° IN 258° EX | .510" IN .510" EX | 106° | 4° | .025" IN .025" EX |
| Top end camshaft in 327-355 CID engines on tight tracks, with limited "cast iron" intakes. 2-barrel to small 4-barrel carburetion. Low lift. Can be used with stamped steel rockers. | 3,750-6,750 | E116302 F-290-1 | 290° IN 294° EX | 254° IN 258° EX | .510" IN .510" EX | 106° | 0° | .025" IN .025" EX |
| Strong camshaft for limited 2-barrel classes up to 360 CID, on 1/4 mile to 3/8 mile dirt or asphalt tracks. 1.6:1 rocker ratio on the intake enhances performance, rules permitting. | 3,800-7,000 | E116307 F-294-1 | 294° IN 294° EX | 258° IN 258° EX | .510" IN .510" EX | 106° | 4° | .025" IN .025" EX |
| 355-406 cubic inch engines, 1/4-1/2 mile tracks, cylinder heads and improved intake recommended. No less than 12.0:1 compression for this barn burner. | 4,000-7,250 | E116303 F-298-1 | 298° IN 302° EX | 260° IN 264° EX | .562" IN .562" EX | 106° | 0° | .025" IN .025" EX |
| One of Erson's most popular grinds. 355-406 engines, running on fast 3/8-1/2 mile tracks. Quick out of the turns and fast down the shoots. | 4,200-7,500 | E116308 F-298-3 | 298° IN 306° EX | 260° IN 268° EX | .562" IN .562" EX | 106° | 4° | .025" IN .025" EX |
| When modified heads are allowed, yet 2-barrel or 390 cfm 4-barrel restrictions are imposed, this camshaft is a proven winner! 3/8-1/2 mile fast tracks, asphalt or dirt. | 4,500-7,200 | E116309 F-302-3 | 302° IN 296° EX | 264° IN 258° EX | .562" IN .562" EX | 106° | 6° | .025" IN .025" EX |
| 355 CID or larger engines, in late model sportsman cars, on 1/2-5/8 mile tracks with tight turns. Good in traffic. | 4,500-7,600 | E116304 F-302-1 | 302° IN 306° EX | 264° IN 268° EX | .562" IN .562" EX | 106° | 0° | .025" IN .025" EX |
| Big inch engines with good intake and exhaust systems. Needs modified heads and larger valves. May consider 1.6:1 rockers for more top end. Fast 1/2-5/8 mile tracks. | 4,750-7,800 | E116305 F-306-1 | 306° IN 314° EX | 268° IN 276° EX | .562" IN .562" EX | 106° | 0° | .025" IN .025" EX |

CAMSHAFT ACCESSORY KIT FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH MECHANICAL FLAT TAPPET CAMSHAFTS

E811012 KIT INCLUDES THESE COMPONENTS:

| | |
|---|---------|
| 16 mechanical tappets..... | E914021 |
| 16 valve springs, 1.750 x 1.220..... | E915005 |
| 16 H.T. steel retainers, 7° x 11/32..... | E961001 |
| 16 pair H.T. valve locks, 7° x 11/32..... | E911171 |
| 1 thrust bumper..... | E911351 |
| 1 tube Moly Lube, 1/4 oz..... | E911001 |

*This kit is for use with the following camshafts:
E116300, E116301, E116306, E116302 and E116307.*

E811043 KIT INCLUDES THESE COMPONENTS:

| | |
|---|---------|
| 16 mechanical tappets..... | E914021 |
| 16 valve springs, 1.900 x 1.440..... | E915251 |
| 16 H.T. steel retainers, 7° x 11/32..... | E961051 |
| 16 pair H.T. valve locks, 7° x 11/32..... | E911171 |
| 1 thrust bumper..... | E911351 |
| 1 tube Moly Lube, 1/4 oz..... | E911001 |

*This kit is for use with the following camshafts:
E116303, E116308, E116309, E116304 and E116305.*

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH MECHANICAL FLAT TAPPET VALVETRAINS

| | |
|--|---------|
| Standard gear drive..... | E992000 |
| Roller timing chain set..... | E991900 |
| Valve springs, 1.750 x 1.450..... | E915310 |
| Valve springs, 1.900 x 1.530..... | E915261 |
| H.T. steel retainers, 7° x 11/32..... | E961312 |
| H.T. steel retainers, 7° x 11/32..... | E961091 |
| H.T. machined valve locks, 7° x 11/32 4130..... | E911111 |
| H.T. machined valve locks, 10° x 11/32 4130..... | E911140 |
| C.M. pushrods, 5/16 x 7.800..... | E917101 |
| C.H. pushrods, 5/16 x 7.800..... | E917111 |
| C.H. pushrods, 5/16 x 7.900 (+) .100..... | E917214 |
| Forged roller rockers, 3/8 x 1.5..... | E928001 |
| Forged roller rockers, 3/8 x 1.6..... | E928003 |
| Billet aluminum roller rockers, 3/8 x 1.5..... | E928068 |
| Billet aluminum roller rockers, 3/8 x 1.6..... | E928069 |
| Screw-in studs, 3/8 x 24..... | E912161 |
| Guide plates, 5/16..... | E913001 |
| P.C. seals, 11/32..... | E910243 |
| Lash caps, 11/32..... | E911541 |
| Offset camshaft bushings..... | E911451 |
| Self-locking camshaft bolts..... | E913011 |
| Roller thrust button..... | E992004 |

NOTE —

LT-1 and LS-1 engines cannot be converted to mechanical flat tappet or hydraulic flat tappet camshafts and valvetrains.

NOTE —

For information regarding Erson Cams Grand National .875" diameter flat tappet profiles and proper component selection regarding these profiles, call Erson's Technical Service Team at 775.882.1622.

NOTE —

It is possible to install a high-performance hydraulic (non-roller) camshaft or a mechanical flat tappet camshaft in a block originally equipped with a hydraulic roller camshaft. Matching lifters, pushrods, timing chains and, in some cases, rocker arms must be used to accommodate this conversion.

LOW-LIFT STREET/E. T. BRACKET SOLID ROLLER CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|----------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Entry level, roller camshaft for mild street machine or street rod. 9.5:1 compression, single 4-barrel, headers and moderate gearing. OK in heavy car. | 2,500-6,000 | E119830 R-270-1 | 270° IN 278° EX | 230° IN 238° EX | .555" IN .555" EX | 112° | 4° | .025" IN .025" EX |
| Street roller camshaft with excellent low- and mid-range power. 10.0:1 compression, 650-750 cfm carburetion and mild head work with dual plane manifold makes big torque. | 3,000-6,500 | E119800 R-278-1 | 278° IN 286° EX | 238° IN 246° EX | .555" IN .555" EX | 108° | 0° | .025" IN .025" EX |
| High-performance street roller with broad power range. Works well in supercharged street rods with 8-12 lbs. boost. Marine, 17-19 foot hulls with loose impeller. OK with nitrous oxide. | 3,400-6,800 | E119831 R-286-1A | 286° IN 294° EX | 246° IN 254° EX | .555" IN .555" EX | 114° | 6° | .025" IN .025" EX |
| All out street roller. Works well in 3,000-3,400 lb. E.T. Bracket cars. 10.5:1 compression minimum. 1.6:1 rockers enhance mid-range performance. Low gears and small shot of nitrous oxide. | 3,500-7,000 | E119801 R-294-1 | 294° IN 302° EX | 254° IN 260° EX | .555" IN .555" EX | 108° | 0° | .025" IN .025" EX |
| Our largest, low lift blower camshaft for the street. Aftermarket aluminum heads, big valves, 6-71 supercharger, 2x4 barrel carburetion, low gears and 3,500 converter. | 3,500-7,000 | E119833 R-282-1A | 282° IN 292° EX | 253° IN 263° EX | .600" IN .600" EX | 114° | 6° | .032" IN .032" EX |
| 327-355 cubic inch E.T. Bracket cars with 11.0-12.0:1 compression. 2,800-3,200 lbs, good heads, 750(+) cfm carburetion, free flowing exhaust, 1.6 rocker, low gears, 4,000 converter. | 4,000-7,500 | E119832 R-302-3 | 302° IN 312° EX | 260° IN 270° EX | .555" IN .555" EX | 106° | 0° | .025" IN .025" EX |
| Maximum camshaft for the street. Our most popular E.T. Bracket camshaft by far. 12.5:1 compression, aftermarket heads, .640" lift with 1.6 rockers, 2.050-1.60 valves, good intake and exhaust. Pulls hard! OK with nitrous oxide. | 4,500-7,800 | E119802 R-296-1 | 296° IN 308° EX | 266° IN 278° EX | .600" IN .600" EX | 108° | 0° | .032" IN .032" EX |

CAMSHAFT ACCESSORY KIT FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH SOLID ROLLER CAMSHAFTS

E811041 KIT INCLUDES THESE COMPONENTS:

- 8 pair solid roller tappetsE919001
- 16 valve springs, 1.900 x 1.535.....E915057
- 16 H.T. steel retainers, 7° x 11/32E961091
- 16 pair 7H.T. valve locks, 7° x 11/32E911171
- 1 roller thrust button.....E992004
- 1 tube Moly Lube, 1/4 oz.E911001

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH SOLID ROLLER VALVETRAINS

- Standard gear drive.....E992000
- Competition gear drive w/front pump adapterE992002
- Roller timing chain setE991900
- Titanium retainer, 10° (fits E915057 spring).....E961408
- Forged aluminum roller rockers, 7/16 x 1.5E928004
- Forged aluminum roller rockers, 7/16 x 1.6E928008
- Billet aluminum roller rockers, 7/16 x 1.5E928071
- Billet aluminum roller rockers, 7/16 x 1.6E928072
- Billet aluminum roller rockers, 7/16 x 1.7E928075
- Screw-in studs, 7/16 x 20E912152
- Guide plates, 3/8E913004
- C.H. pushrods, 3/8 x 7.800E917911
- C.H. pushrods, 3/8 x 7.900 (+) .100E917215
- P.C. seals, 11/32E910243
- Lash caps, 11/32E911541
- Offset camshaft bushingsE911451
- Self-locking camshaft bolts.....E913011
- Aluminum-bronze distributor gearE911611
- Degree wheel.....E911004



PREMIERE PROFILES REPRESENT ERSON'S MOST POPULAR AND SUCCESSFUL SOLID ROLLER CAMSHAFTS

With regards to Erson Cams selection of high-performance, small block Chevrolet, solid roller camshafts: It would be nearly impossible to list all of the combinations available through Erson's extensive inventory of computer designed roller camshaft lobes. Not to mention, all of the possible combinations based on cubic inch displacements, compression ratios, cylinder head combinations, intake manifolds, exhaust systems, vehicle weights, classes and track length; just to name a few of the variables. Therefore, in an effort to satisfy the needs of our customers, we have selected what we term as "Premiere Profiles". These selected profiles have proven themselves over and over again in tracks all over the country, supplying our customer with that competitive edge needed to keep on winning.

1.5:1 STOCK ROCKER RATIO

CHEVROLET SMALL BLOCK V8

ALLOY STEEL BILLET

262-400 CID ENGINES

DRAG-RACE COMPETITION/SOLID ROLLER TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT* | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|----------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| E.T. Brackets. Recommended for 350-406 cubic inch engines with no less than 11:1 compression, ported and polished cast iron or aftermarket cylinder heads, single 750 cfm 4-barrel with 1.750" primary tube headers. 3,000-3,400 lb. automatic cars use 4,000 RPM converter. | 4,000-7,500 | E119906 R-286-5 | 286° IN 294° EX | 260° IN 268° EX | .675" IN .645" EX | 108° | 4° | .032" IN .032" EX |
| E.T. Brackets/Road Racer. 350-377 cubic inch engines with 11.5-12.5:1 compression, large valves, modified cylinder heads, single plane or low profile 2x4 barrel induction and free flowing exhaust makes great mid-range torque and horsepower. Works best with 4- or 5-speed manual transmission. | 4,200-7,600 | E119907 R-290-5 | 290° IN 298° EX | 264° IN 272° EX | .675" IN .645" EX | 108° | 4° | .032" IN .032" EX |
| E.T. Brackets/Super Street. 2,800-3,200 lb. door-slamers sporting 350-406 cubic inch engines with 12.0-12.5:1 compression makes great all around power! Heavily modified cylinder heads, use 1.6 rockers on both sides to enhance performance. | 4,500-7,700 | E119908 R-294-6 | 294° IN 302° EX | 268° IN 276° EX | .675" IN .645" EX | 106° | 0° | .032" IN .032" EX |
| Super Stock. Erson's version of one of the industry's most popular camshafts! Longer seat timing on the intake builds higher torque for automatic cars. Use 1.8" IN rockers and 1.6" EX rockers for best results. | 4,500-8,000 | E119909 R-294-3 | 294° IN 308° EX | 268° IN 282° EX | .615" IN .645" EX | 104° | 4° | .032" IN .032" EX |
| E.T. Brackets/Super Stock/Super Street. Excellent all around camshaft makes great mid-range torque and top end horsepower. Intended for 327-350 cubic inch, heavy automatic cars. 3-speed automatics use 4,500 RPM converter, 5.38" gears and 30" tires. 1.7" IN and 1.6" EX rockers are helpful. | 4,500-7,800 | E119910 R-298-3 | 298° IN 306° EX | 272° IN 280° EX | .645" IN .645" EX | 104° | 0° | .032" IN .032" EX |
| E.T. Brackets/Super Stock. 327-350 cubic inch door-slamers with good cylinder heads and intake should use 1.7" IN and 1.6" EX for best results. 3-speed automatics use 5,000 RPM converter. | 4,600-7,800 | E119911 R-300-1 | 300° IN 304° EX | 274° IN 278° EX | .675" IN .645" EX | 104° | 4° | .032" IN .032" EX |
| E.T. Brackets/Super Stock/Super Gas. Serious E.T. bracket racers with 377-406 cubic inch engines boasting 12.8-13.5:1 compression, super stock 327-350 cubic inch, 4-speed cars or 2,400 lb. super gas roadsters, this cam's for you! | 4,800-8,000 | E119912 R-302-5 | 302° IN 310° EX | 276° IN 284° EX | .675" IN .675" EX | 106° | 4° | .032" IN .032" EX |
| Super Stock/Super Gas. 350 cubic inch stick cars may install this camshaft straight up or advanced, depending upon vehicle weight and compression. 377(+) cubic inch, super gas roadsters pull hard coming off throttle stop. May use 1.6" rocker both sides to enhance flow characteristics. | 5,000-8,000 | E119913 R-308-2 | 308° IN 308° EX | 278° IN 282° EX | .712" IN .675" EX | 106° | 4° | .032" IN .032" EX |
| Super Comp./Competition Eliminator. Small cubic inch (up to 357 CID) engines with 13.0-15.0:1 compression, using heavily modified 18° cylinder heads in light (1,500 lb.) chassis makes relentless top end power. Recommend 1.65" IN and 1.6" EX exhaust rockers for more top end. | 5,200-8,200 | E119914 R-310-4 | 310° IN 314° EX | 280° IN 288° EX | .712" IN .675" EX | 110° | 3° | .032" IN .032" EX |
| Super Stock/Super Gas/Super Comp. 2,600-3,200 lb. super stock automatic cars with 350-364 cubic inch engines or 383-410 cubic inch super gas roadsters and super comp. dragsters with no less than 13.0:1 compression, compete well with this camshaft. Compatible with alcohol or gas and 1.6" rocker on both intake and exhaust. | 5,500-8,400 | E119915 R-314-6 | 314° IN 314° EX | 284° IN 288° EX | .712" IN .675" EX | 106° | 2° | .032" IN .032" EX |
| Super Comp. Primarily intended for large cubic inch, small blocks in light chassis such as super comp. dragsters or super pro, E.T. bracket categories. 2-speed automatic cars use 5,500 RPM converter with 1.6" IN rockers and 1.55" EX rockers. | 5,500-8,500 | E119916 R-312-1 | 312° IN 318° EX | 282° IN 292° EX | .712" IN .675" EX | 109° | 4° | .032" IN .032" EX |
| Competition Eliminator. Designed for and a proven winner in 287-323 cubic inch econo-altered and econo-dragsters running 'B' or 'C' classes. Aluminum sheet metal intake, heavily modified cylinder heads and high-stall automatics using 1.7" IN and 1.6" EX rockers are recommended for serious competition. | 6,000-9,200 | E119917 R-314-7 | 314° IN 330° EX | 284° IN 298° EX | .712" IN .667" EX | 111° | 0° | .032" IN .032" EX |
| Competition Eliminator. Same camshaft as above, however, this one is intended for clutchless 4- or 5-speed manual transmission in altered or dragsters. Prefers Dart-Buick splayed valve cylinder heads with 1.65" IN and 1.55" EX rockers. | 6,000-9,200 | E119918 R-314-7A | 314° IN 330° EX | 284° IN 298° EX | .712" IN .667" EX | 113° | 0° | .032" IN .032" EX |
| Competition Eliminator. 323-347 cubic inch econo-altered or econo-dragsters with 14.8-16.0:1 high-compression engines. Prefers Dart-Buick splayed valve cylinder heads with 1.7" IN and 1.6" EX rockers and high-stall, 2-speed automatics for championship performance. | 6,400-9,400 | E119919 R-314-8 | 314° IN 338° EX | 284° IN 302° EX | .727" IN .688" EX | 111° | 0° | .032" IN .032" EX |
| Competition Eliminator. 347 and larger cubic inch engines sporting 4- or 5-speed manual, clutchless transmissions work well in gas dragsters and altered. Can be used with Dart-Buick splayed valve or SB2 cylinder head configurations. Prefers 1.75" IN and 1.6" EX rocker ratios. | 6,600-9,600 | E119920 R-316-1 | 316° IN 346° EX | 286° IN 308° EX | .727" IN .688" EX | 114° | 0° | .032" IN .032" EX |

*ALL GROSS LIFT FIGURES ARE CALCULATED WITH STOCK ARM RATIOS.

Some parts are not legal for sale or use on any pollution-controlled motor vehicle.

CAMSHAFT ACCESSORY KIT FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH SOLID ROLLER CAMSHAFTS INTENDED FOR COMPETITION USE ONLY

E811045 KIT INCLUDES THESE COMPONENTS:

| | |
|--|---------|
| 8 pair competition series solid roller tappets | E919314 |
| 16 valve springs, 1.900 x 1.535 | E915057 |
| 16 titanium retainers, 10° | E961408 |
| 16 pair H.T. machined valve locks, 10° x 11/32 4130..... | E911140 |
| 1 roller thrust button | E992004 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

Camshaft Accessory Kit E811045 works with the following camshafts when used with 1.5:1 rockers on both intake and exhaust: R-286-5, R-290-5, R-294-6, R-294-3, R-298-3, R-300-1 and R-302-5.

E811042 KIT INCLUDES THESE COMPONENTS:

| | |
|--|---------|
| 8 pair competition series solid roller tappets | E919314 |
| 16 valve springs, 1.900 x 1.625 | E915150 |
| 16 titanium retainers, 10° | E961406 |
| 16 H.T. machined valve locks, 10° x 11/32 4130..... | E911140 |
| 1 roller thrust button | E992004 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

Camshaft Accessory Kit E811042 will work with all camshafts listed on page 23. However, modifications may be necessary to valve spring pockets, valve stem lengths, pushrod lengths, cylinder head bolts, valve guides and other components to accommodate larger valve springs.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH SOLID ROLLER VALVETRAINS

| | |
|--|---------|
| Standard gear drive..... | E992000 |
| Competition gear drive w/ front drive fuel pump | E992002 |
| Roller timing chain set | E991900 |
| Valve springs, 2.000 x 1.625..... | E915160 |
| Valve springs, 2.000 x 1.650 (triples) | E915213 |
| Valve springs, 2.100 x 1.650 (triples) | E915214 |
| Titanium retainer, 10° (fits E915150 & E915160 springs)..... | E961406 |
| Titanium retainer, 10° (fits E915213 & E915214 springs)..... | E961407 |
| Forged aluminum roller rockers, 7/16 x 1.5 | E928004 |
| Forged aluminum roller rockers, 7/16 x 1.6 | E928008 |
| Billet aluminum roller rockers, 7/16 x 1.5 | E928071 |
| Billet aluminum roller rockers, 7/16 x 1.6 | E928072 |
| Billet aluminum roller rockers, 7/16 x 1.7 | E928075 |
| Screw-in studs, 7/16 x 20 | E912152 |
| Guide plates, 3/8 | E913004 |
| C.H. pushrods, 3/8 x 7.800 | E917911 |
| C.H. pushrods, 3/8 x 7.900 (+) .100 | E917215 |
| P.C. seals, 11/32 | E910243 |
| Lash caps, 11/32 | E911541 |
| Offset camshaft bushings..... | E911451 |
| Self-locking camshaft bolts..... | E913011 |
| Aluminum-bronze distributor gear | E911611 |
| Degree wheel..... | E911004 |

NOTE — Due to the wide variety of cylinder head combinations available for the small block Chevrolet engine, it is necessary to add a 2 digit suffix behind the part number when ordering a camshaft intended for serious competition. For engines using SB2 cylinder heads, add a -20 behind the part number. For engines using Dart-Buick splayed valve cylinder heads, add a -30. For applications which incorporate the use of the SB2 block, call Erson's Technical Service Team at 775.882.1622.



PREMIERE PROFILES REPRESENT ERSON'S

MOST POPULAR AND SUCCESSFUL OVAL TRACK ROLLER CAMSHAFTS

With regards to Erson Cams selection of high-performance, small block Chevrolet, oval track roller camshafts: It would be nearly impossible to list all of the combinations available through Erson's extensive inventory of computer designed roller camshaft lobes. Not to mention, all of the possible combinations based on cubic inch displacements, compression ratios, cylinder head combinations, intake manifolds, exhaust systems, vehicle weights, classes and track length; just to name a few of the variables. Therefore, in an effort to satisfy the needs of our customers, we have selected what we term as "Premiere Profiles". These selected profiles have proven themselves over and over again in tracks all over the country, supplying our customer with that competitive edge needed to keep on winning.

1.5:1 STOCK ROCKER RATIO

CHEVROLET SMALL BLOCK V8

ALLOY STEEL BILLET

262-400 CID ENGINES

OVAL TRACK SOLID ROLLER TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS *LIFT* | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|--------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Heavy, late model sportsman. 355 CID engines. 9.0:1 compression or more. 390(+) cfm carburetion. 1.6" IN and EX rockers. | 3,500-6,500 | E119921 R-282-2 | 282° IN 288° EX | 253° IN 259° EX | .600" IN .600" EX | 106° | 4° | .028" IN .030" EX |
| 358-410 cubic inch engines. Winged sprint cards or late model sportsman. 1/4-1/2 mile tacky tracks. | 3,800-6,800 | E119922 R-286-4 | 286° IN 290° EX | 260° IN 264° EX | .675" IN .645" EX | 106° | 6° | .028" IN .030" EX |
| Erson's first camshaft recommended for non-restricted classes. Late models or limited sprinters, tight 3/8-1/2 mile dirt or asphalt tracks. Use 1.6" EX rocker. | 4,000-7,200 | E119923 R-286-3 | 286° IN 294° EX | 260° IN 268° EX | .645" IN .615" EX | 106° | 4° | .028" IN .030" EX |
| 355-406 CID engines with limited carburetion. 2-barrel or 390 cfm 4-barrel, 3/8-1/2 mile dirt or asphalt tracks. | 4,200-7,500 | E119924 R-290-1 | 290° IN 290° EX | 264° IN 264° EX | .645" IN .645" EX | 106° | 4° | .028" IN .030" EX |
| 377(+) cubic inch, late model sportsman, modified or super modified. Slick 3/8-5/8 mile tracks. No restrictions. | 4,200-7,600 | E119925 R-290-2 | 290° IN 294° EX | 264° IN 268° EX | .645" IN .645" EX | 106° | 4° | .028" IN .030" EX |
| Late model sportsman/sprint car. Closed course road racer. 350-410 CID. No restrictions. Alcohol or gas. | 4,400-7,800 | E119926 R-290-4 | 290° IN 298° EX | 264° IN 272° EX | .645" IN .645" EX | 106° | 2° | .028" IN .030" EX |
| 410(+) cubic inch, injected alcohol, outlaw sprint car or late model on fast 1/2-5/8 mile track. | 4,500-8,000 | E119927 R-294-5 | 294° IN 300° EX | 268° IN 274° EX | .675" IN .645" EX | 106° | 4° | .028" IN .030" EX |

*ALL GROSS LIFT FIGURES ARE CALCULATED WITH STOCK ROCKER ARM RATIOS.

CAMSHAFT ACCESSORY KIT FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH OVAL TRACK SOLID ROLLER TAPPET CAMSHAFTS

E811045 KIT INCLUDES THESE COMPONENTS:

| | |
|--|---------|
| 8 pair competition series solid roller tappets..... | E919314 |
| 16 valve springs, 1.900 x 1.535..... | E915057 |
| 16 titanium retainers, 10° | E961408 |
| 16 pair H.T. machined valve locks, 10° x 11/32 4130..... | E911140 |
| 1 roller thrust button..... | E992004 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

E811045 is an upgraded version of the E811041 camshaft accessory kit.
Both kits may be interchanged depending upon application.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET SMALL BLOCK ENGINES EQUIPPED WITH OVAL TRACK SOLID ROLLER TAPPET VALVETRAINS

| | |
|--|---------|
| Standard gear drive | E992000 |
| Competition gear drive | E992002 |
| Roller timing chain set..... | E991900 |
| Valve springs, 1.900 x 1.625 | E915150 |
| Valve springs, 2.000 x 1.625 | E915160 |
| Valve springs, 2.000 x 1.650 (triples) | E915213 |
| Valve springs, 2.100 x 1.650 (triples) | E915214 |
| Titanium retainer, 10° (fits E915150 & E915160 springs)..... | E961406 |
| Titanium retainer, 10° (fits E915213 & E915214 springs)..... | E961407 |
| Forged aluminum roller rockers, 7/16 x 1.5..... | E928004 |
| Forged aluminum roller rockers, 7/16 x 1.6..... | E928008 |
| Billet aluminum roller rockers, 7/16 x 1.5..... | E928071 |
| Billet aluminum roller rockers, 7/16 x 1.6..... | E928072 |
| Billet aluminum roller rockers, 7/16 x 1.7..... | E928075 |
| Screw-in studs, 7/16 x 20..... | E912152 |
| Guide plates, 3/8..... | E913004 |
| C.H. pushrods, 3/8 x 7.800 | E917911 |
| C.H. pushrods, 3/8 x 7.900 (+) .100..... | E917215 |
| P.C. seals, 11/32 | E910243 |
| Lash caps, 11/32 | E911541 |
| Offset camshaft bushings..... | E911451 |
| Self-locking camshaft bolts | E913011 |
| Aluminum-bronze distributor gear..... | E911611 |
| Degree wheel..... | E911004 |

396-502 CID ENGINES

PROFERAL BILLET

HIGH PERFORMANCE HYDRAULIC FLAT TAPPET CAMSHAFTS

| APPLICATIONS / CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|--------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Erson's first choice over stock. Excellent for 2-wheel drive pickups with campers, 4x4s, utility trucks and motorhomes wishing to improve low end performance and driveability. | 1,000-4,000 | E120102 M/P1 | 280° IN 292° EX | 208° IN 214° EX | .482" IN .514" EX | 112° | 4° | .000" IN .000" EX |
| Strong mid-range power. City, fast expressway and open road towing. Delivers maximum mid-range torque. Good Idle, throttle response and fuel efficiency. | 1,250-4,250 | E120201 RV15H | 288° IN 288° EX | 214° IN 214° EX | .492" IN .492" EX | 112° | 4° | .000" IN .000" EX |
| The "Performer". Super low- and mid-range power. Good idle, fuel efficiency and driveability. 4-barrel, headers and free flow dual exhaust system recommended. OK for towing moderate loads. | 1,500-5,000 | E120121 TQ20H | 292° IN 292° EX | 214° IN 214° EX | .514" IN .514" EX | 112° | 4° | .000" IN .000" EX |
| Suburbans, duallies and 4x4s seeking more mid-range torque and horsepower. Recommended for towing horse trailers, boats or fifth wheels when used with a dual plane intake manifold. A 4-barrel, free flowing exhaust and low gears. | 1,500-4,750 | E121021 M/P2 | 292° IN 310° EX | 214° IN 226° EX | .514" IN .530" EX | 114° | 4° | .000" IN .000" EX |
| Great camshaft for the slightly modified street car or sport truck. Good low end torque and mid-range horsepower can be used with 4-speed manual or automatic with stock converter. | 1,750-5,000 | E120320 Hi Flow AH | 284° IN 284° EX | 220° IN 220° EX | .542" IN .542" EX | 111° | 0° | .000" IN .000" EX |
| High-lift, short duration, dual pattern camshaft. Builds good torque down low with strong mid-range power. Largest cam recommended with stock converter. | 1,800-5,250 | E120621 TQ40H | 284° IN 296° EX | 220° IN 228° EX | .542" IN .542" EX | 110° | 0° | .000" IN .000" EX |
| Fair idle. Dual pattern camshaft. Works best in 454-502 cubic inch marine applications with through transom exhaust and single 4-barrel. Mini day cruiser or jets with "A" impeller. | 2,000-5,500 | E122061 Viking 100H | 306° IN 322° EX | 221° IN 235° EX | .500" IN .512" EX | 114° | 4° | .000" IN .000" EX |
| Mid-range and strong top end. Needs 4-barrel, headers and low gears. OK with automatic with low gears. Fair idle and fuel efficiency. | 2,250-5,400 | E120221 TQ30H | 310° IN 310° EX | 226° IN 226° EX | .530" IN .530" EX | 114° | 4° | .000" IN .000" EX |
| Strong street and strip cam for heavier car. High-lift and short duration guarantees lots of torque. OK for TURBO HYDRO with 3.55 gears. | 2,500-5,500 | E120421 Hi Flow IH | 296° IN 296° EX | 228° IN 228° EX | .542" IN .542" EX | 111° | 0° | .000" IN .000" EX |
| High-lift. Dual pattern camshaft. Needs 4-barrel, headers and low gears. 10.0:1 compression. 4-speed or automatic with 2,500(+) RPM converter. OK with small shot of nitrous oxide. | 2,750-5,800 | E120721 TQ50H | 296° IN 306° EX | 228° IN 235° EX | .542" IN .542" EX | 110° | 0° | .000" IN .000" EX |
| Dual purpose camshaft. Replaces JB-100 with strong emphasis on marine applications having an "A" impeller or street machines with small supercharger. | 2,800-6,000 | E120322 Hi Boost IH | 296° IN 316° EX | 228° IN 240° EX | .542" IN .542" EX | 112° | 4° | .000" IN .000" EX |
| Vehicles seeking strong mid-range performance and broad power. Should have 427-454 CID engine with no less than 10.0:1 compression, gasket-matched cylinder heads to intake, 4-barrel and headers. 2,500 RPM converter with low gears recommended. | 3,000-6,250 | E120521 Hi Flow IIIH | 306° IN 306° EX | 235° IN 235° EX | .542" IN .542" EX | 111° | 0° | .000" IN .000" EX |
| Designed for jet boats and river racers equipped with 454-468 CID engines with 10.0-11.0:1 compression. Single or two 4-barrel tunnel ram style intakes with blueprinted pumps and A-B impeller recommended. | 3,250-6,400 | E125421 JB200 | 306° IN 316° EX | 235° IN 240° EX | .542" IN .542" EX | 112° | 4° | .000" IN .000" EX |
| Single pattern camshaft offering super mid-range and top end performance. Excellent bracket cam in 454 cubic inch engines with no less than 10.5:1 compression. | 3,500-6,500 | E120321 Hi Flow IIIH | 316° IN 316° EX | 240° IN 240° EX | .542" IN .542" EX | 111° | 0° | .000" IN .000" EX |
| For the more serious jet boater. New lobe technology builds higher cylinder pressure. Must have good exhaust (no wet manifolds), tunnel ram style intake, blueprinted pump and loose impeller. | 3,800-6,800 | E125521 JB300 | 308° IN 316° EX | 244° IN 252° EX | .576" IN .576" EX | 112° | 4° | .000" IN .000" EX |
| Serious street machines. 6.71 supercharger. Multiple carburetion, low gears, free flowing exhaust, large cubic inch marine applications. OK with nitrous oxide. | 4,000-7,000 | E120323 Hi Boost IIIH | 312° IN 320° EX | 248° IN 256° EX | .576" IN .593" EX | 114° | 4° | .000" IN .000" EX |
| Strong mid-range and top end performance. 468(+) cubic inch engines. No less than 11.0:1 compression. 2,800-3,200 lb. vehicle. 4-series gear. High-performance with low maintenance. | 4,200-7,200 | E120324 TQ70H | 320° IN 324° EX | 256° IN 260° EX | .593" IN .593" EX | 110° | 0° | .000" IN .000" EX |

HYDRAULIC FLAT TAPPET CAMSHAFT ACCESSORY KIT FOR CAMSHAFTS LISTED ABOVE

E812010 KIT INCLUDES THESE COMPONENTS:

| | |
|---|---------|
| 16 hydraulic tappets..... | E914501 |
| 16 valve springs, 1.820 x 1.500..... | E915011 |
| 16 H.T. steel retainers, 7° x 3/8..... | E961311 |
| 16 pair H.T. valve locks, 7° x 3/8..... | E911271 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

CAUTION —

Most production engines can not accept more than .500 valve lift without modifying the valve guides for increased clearance. When installing a cam with more than .500 valve lift, it is absolutely essential that the valve spring retainer to guide clearance be checked. Do not attempt to operate an engine with less than .150 retainer to guide clearance. If you are using valve seals, check the clearance from the top of the seal rather than the top of the guide.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET BIG BLOCK ENGINES EQUIPPED WITH HYDRAULIC FLAT TAPPET VALVETRAINS

| | |
|--|---------|
| Standard gear drive | E992006 |
| Roller timing chain set..... | E991902 |
| Valve springs, 1.900 x 1.540 | E915051 |
| H.T. machined valve locks, 7° x 3/8 4130..... | E911121 |
| Forged aluminum roller rockers, 1.72:1 x 7/16..... | E928024 |
| C.H. pushrods, 3/8, 8.275 IN, 9.250 EX | E917121 |
| P.C. seals | E910213 |
| Lash caps, 3/8 | E911531 |
| Screw-in studs, 7/16 x 20 | E912151 |
| Long style exhaust screw-in studs, 7/16 x 20..... | E912153 |
| Posi lock nuts, 7/16 x 20 | E912007 |
| Offset camshaft bushings | E911451 |
| Degree wheel | E911004 |
| Moly Lube, 2 oz. tube | E911002 |

RETROFIT HYDRAULIC ROLLER TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|---------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| 2-wheel drive and 4x4 pickups, duallies and RVs seeking improved low end performance for towing. Compatible with stock compression, torque converter and gearing. Free flowing exhaust enhances mileage and performance. | 1,250-4,250 | E120202 RH-276-1 | 276° IN 282° EX | 208° IN 214° EX | .550" IN .550° EX | 112° | 4° | .000" IN .000° EX |
| Good idle and low end performance with increased mid-range. Our largest camshaft. Recommended for 454 CID pickups and RVs towing with stock compression. RV converter, free flowing exhaust. | 1,500-4,500 | E120203 RH-282-7 | 282° IN 294° EX | 214° IN 226° EX | .550" IN .550° EX | 114° | 4° | .000" IN .000° EX |
| Mild Street Performance/Marine grind. Increased mid-range in heavier chassis, i.e.: Chevilles, Impalas, Corvettes. 9.0:1 compression, dual plane manifold, 3-speed automatics, 3.55-3.73 gears, small shot nitrous oxide. | 2,000-5,000 | E120204 RH-286-1 | 286° IN 294° EX | 218° IN 226° EX | .585" IN .585° EX | 112° | 4° | .000" IN .000° EX |
| High-Performance Street Machines. New lobe design. Increases cylinder pressure and torque. Fair idle. Good low- and mid-range performance. 9.5:1-10.0:1 compression. 4-speed or automatic. Easy on parts. | 2,500-5,500 | E120205 RH-282-4 | 282° IN 286° EX | 222° IN 226° EX | .550" IN .550° EX | 110° | 0° | .000" IN .000° EX |
| Hot Street and E.T. Brackets. Rough idle. 9.5:1-10.0:1 compression. Mild head work, gasket-matching, etc. Single plane manifold, 750 cfm 3" exhaust, 2,500 converter and low gears needed for best results. | 3,000-6,000 | E120206 RH-294-2 | 294° IN 302° EX | 226° IN 234° EX | .585" IN .585° EX | 108° | 0° | .000" IN .000° EX |
| Hot Street/E.T. Brackets/Performance Marine. 427-468 CID engines. 10.0:1-10.7:1 compression. Single or dual 4-barrel carburetion, headers, 3-speed automatics with 3,000 RPM converter. OK with nitrous oxide. | 3,500-6,500 | E120207 RH-302-2 | 302° IN 310° EX | 234° IN 242° EX | .585" IN .585° EX | 112° | 4° | .000" IN .000° EX |
| High-Performance Street/E.T. Brackets. 454 or larger CID engines using 10.5:1-11.25:1 compression, aftermarket heads, single plane manifold, 850 cfm, 3,800 converter and 4.10 or lower gears increase mid-range and top end performance. | 3,800-6,800 | E120208 RH-310-2 | 310° IN 318° EX | 242° IN 250° EX | .585" IN .585° EX | 110° | 2° | .000" IN .000° EX |

All of the above cams must be checked for valve clearance. We recommend .080" intake and .100" exhaust.

TECH INFO —

For those customers who wish to have their hydraulic roller camshaft ground on a 2-piece billet, contact Erson's Technical Support Team at 775.882.1622 for information and special pricing.

HIGH PERFORMANCE CAMSHAFT ACCESSORY KIT FOR CHEVROLET BIG BLOCK ENGINES

E812015 KIT INCLUDES THESE COMPONENTS:

| | |
|---|---------|
| 8pr. retrofit hydraulic roller tappets..... | E919319 |
| 16 valve springs, 1.900 x 1.540 | E915051 |
| 16 H.T. steel retainers, 7° x 3/8 | E961101 |
| 16 pair H.T. valve locks, 7° x 3/8 | E911271 |
| 16 3/8 C.H. pushrods, 7.775 IN & 8.750 EX | E917122 |
| 1 roller thrust button | E992004 |
| 1 tube Moly Lube, 1/4 oz. | E911001 |

WARNING —

Valve spring E915051 is not to be used with valve spring rotators commonly found on mid-'70s 454 powered trucks.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET BIG BLOCK ENGINES EQUIPPED WITH RETROFIT HYDRAULIC ROLLER TAPPET VALVETRAINS

| | |
|--|---------|
| Standard gear drive | E992006 |
| Roller timing chain set..... | E991902 |
| Valve springs, 1.820 x 1.500 | E915011 |
| H.T. steel retainers, 7° x 3/8 | E961311 |
| H.T. machined valve locks, 4130 7° x 3/8 | E911121 |
| Screw-in studs, 7/16 x 20 | E912151 |
| Long-style exhaust screw-in studs, 7/16 x 20 | E912153 |
| Guide plates, 3/8 | E913005 |
| P.C. seals, 3/8 | E910213 |
| Lash caps, 3/8 | E911531 |
| Forged aluminum roller rockers, 1.72:1 | E928024 |
| Offset camshaft bushings..... | E911451 |
| Self-locking camshaft bolts | E913011 |
| Degree wheel..... | E911004 |

NOTE —

1967-90 big block Chevrolet engines came equipped with adjustable valvetrains. This made adjusting hydraulic lifter pre-load very easy. For example, using a 7/16" x 20" stud, common to big block Chevrolet engines, each 360° rotation in an upward or downward direction equals .050". Therefore, to properly adjust a hydraulic valvetrain, one would go 3/4 to 1 full turn past zero lash at the rocker arm adjusting nut, providing the lifter is at the base circle of the camshaft.

In 1991, General Motors introduced the 454-502 cubic inch, Generation V, big block engine. These engines produced from 1991-95 had non-adjustable valvetrains. When installing any camshaft with over .500" gross valve lift, the cylinder heads must be converted to adjustable valvetrains.

In 1996 General Motors introduced the 454-502 cubic inch, Generation VI, big block engine. These engines came equipped with hydraulic roller camshafts and have adjustable valvetrains. They require the use of a 2-bolt thrust plate for proper camshaft positioning and a special timing set.

1967-90 MARK IV 396, 402, 427, 454/7.4L ENGINES

1991-95 GEN V 454/7.4L, 502/8.2L ENGINES

PROFERAL BILLET

HIGH PERFORMANCE MECHANICAL FLAT TAPPET CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|---|-----------------|------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| High-lift, short duration camshaft offers improved mid-range torque and horsepower. Works best with headers and 3" free flow exhaust system. OK with 4-speed or automatic and low gears. | 3,000-6,000 | E121721 Hi Flow IM | 286° IN 286° EX | 242° IN 242° EX | .585" IN .585" EX | 110° | 0° | .025" IN .025" EX |
| High Performance Street/E.T. Bracket camshaft. 10.5:1 compression, 4-barrel, free flowing exhaust. Pulls hard in heavier chassis when advanced 4°. | 3,250-6,250 | E121821 Hi Flow IIM | 294° IN 294° EX | 246° IN 246° EX | .585" IN .585" EX | 110° | 0° | .025" IN .025" EX |
| Hot Street/E.T. Brackets/Marine. Good mid-range power with 10.5-11.0:1 compression and 4-speed with low gears. Jet boat with blueprinted pump and A-B impeller. Works well with nitrous oxide. | 3,500-6,500 | E120306 F-282-4 | 282° IN 290° EX | 246° IN 254° EX | .585" IN .585" EX | 112° | 4° | .025" IN .025" EX |
| Great low end torque and mid-range horsepower. Works best with lightly modified cylinder heads, 750-850 cfm, 4-barrel carburetion, and 3,500 RPM converter. Intended for 1/8-1/4 mile drag strips or 1/4-3/8 mile tacky dirt tracks. | 3,750-6,750 | E120307 F-286-2 | 286° IN 294° EX | 250° IN 258° EX | .585" IN .585" EX | 108° | 0° | .025" IN .025" EX |
| Hot Street/Marine/Blower grind. 6-71 Superchargers producing 8-15 lbs. of boost or jet boats with tunnel ram style intake manifolds using 2x750 cfm carburetors, open exhaust and blueprinted pump produce big power. OK with nitrous oxide. | 4,000-7,000 | E120308 F-292-1 | 292° IN 302° EX | 254° IN 264° EX | .645" IN .645" EX | 114° | 4° | .028" IN .030" EX |
| Hot Street/E.T. Brackets/Oval Track. Strong mid-range performance from 11.0-12.0:1 big blocks using TH-400 transmission with 4,000 RPM converter. 3/8-1/2 mile asphalt modifieds or late model sportsman on dry, slick track. | 4,200-7,200 | E120309 F-298-4 | 298° IN 306° EX | 260° IN 268° EX | .645" IN .645" EX | 108° | 0° | .028" IN .030" EX |
| E.T. Brackets/Oval Track/Racer. Great all around power. 12.5:1 427's-11.5:1 468 cubic inch engines. S.C.C.A. production road racers or late model sportsman/modifed on 1/2 mile high-banked asphalt tracks. | 4,400-7,400 | E120303 F-302-2 | 302° IN 310° EX | 264° IN 272° EX | .645" IN .645" EX | 108° | 0° | .028" IN .030" EX |
| E.T. Brackets. 2,800-3,200 lb. early Camaro or Nova. 427-454 CID engines, single plane manifold, oval port heads, mild head work. Upper mid-range and top end power. Easy on parts. | 4,400-7,400 | E125021 1900X | 308° IN 314° EX | 268° IN 274° EX | .610" IN .625" EX | 108° | 0° | .028" IN .030" EX |
| Pro Street/Marine/Blower grind. Popular in large, cubic inch pro-street cars. 3,200-3,400 lb. Camaros, Chevilles, etc. Automatic transmission with 4,500 converter, 500(+) cubic inch blown river racers, flats with V-drive. | 4,000-7,500 | E120310 F-306-2 | 306° IN 314° EX | 268° IN 276° EX | .645" IN .645" EX | 114° | 4° | .028" IN .030" EX |
| E.T. Brackets. Very popular camshaft in 427-454 CID big blocks with 11.5-12.5:1 compression. Good heads, single 4-barrel, 4,500 RPM converter. Modified or limited super-modifed on fast 1/2 mile track. | 4,500-7,500 | E120304 F-306-1A | 306° IN 314° EX | 268° IN 276° EX | .645" IN .645" EX | 108° | 0° | .028" IN .030" EX |
| E.T. Brackets/Super Street. 454(+) cubic inch engines with 12.5-13.5:1 compression with good heads and intake using up to 1,050 cfm carburetion on alcohol or gas. 2,400-2,800 lb. cars use 5,000 RPM converter, 14" x 32" slick and 5.38 gears. | 4,750-7,800 | E120311 F-310-2 | 310° IN 314° EX | 272° IN 276° EX | .645" IN .645" EX | 108° | 0° | .028" IN .030" EX |
| E.T. Brackets/Super Categories. 468(+) CID engines with 13.5-14.5:1 compression. Aftermarket aluminum heads, large single or dual 4-barrel carburetion, 2,200-2,600 lb. roadsters. Use 4,500-5,500 RPM converter. | 5,000-8,000 | E124931 2450X | 310° IN 320° EX | 276° IN 286° EX | .650" IN .650" EX | 108° | 0° | .028" IN .030" EX |
| E.T. Brackets/Super Categories. Intended for 500(+) cubic inch engines with no less than 14.5:1 compression. Light 2-speed dragsters or alteredds with good flowing cylinder heads, carbureted on gas or alcohol injected. Use 5,500 RPM converter. | 5,500-8,500 | E124531 2505X | 320° IN 330° EX | 286° IN 296° EX | .650" IN .650" EX | 110° | 2° | .028" IN .030" EX |

HIGH PERFORMANCE CAMSHAFT ACCESSORIES KIT FOR CHEVROLET BIG BLOCK ENGINES EQUIPPED WITH MECHANICAL FLAT TAPPET CAMSHAFTS

E812013 KIT INCLUDES THESE COMPONENTS:

| | |
|---|--|
| 16 mechanical tappets.....E914021 | 16 pair H.T. valve locks, 7° x 3/8.....E911271 |
| 16 valve springs, 1.900 x 1.440.....E915251 | 1 thrust bumper.....E911361 |
| 16 H.T. steel retainers, 7° x 3/8.....E961011 | 1 tube Moly Lube, 1/4 oz.....E911001 |

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET BIG BLOCK ENGINES EQUIPPED WITH MECHANICAL FLAT TAPPET VALVETRAINS

| | |
|---|--|
| Standard gear drive.....E992006 | Screw-in studs, 7/16 x 20.....E912151 |
| Roller timing chain set.....E991902 | Long style exhaust screw-in studs, 7/16 x 20.....E912153 |
| Valve springs, 1.900 x 1.530.....E915261 | Guide plates, 3/8.....E913005 |
| H.T. steel retainers, 7° x 3/8.....E961101 | P.C. seals, 3/8.....E910213 |
| Titanium retainer, 10°.....E961408 | Lash caps, 3/8.....E911531 |
| Valve springs, 1.900 x 1.50.....E915051 | Offset camshaft bushings.....E911451 |
| H.T. machined valve locks, 7° x 3/8 4130.....E911121 | Self-locking camshaft bolts.....E913011 |
| H.T. machined valve locks, 10° x 3/8 4130.....E911160 | Roller thrust bearing.....E992004 |
| Forged aluminum roller rockers, 1.72:1 x 7/16.....E928024 | Degree wheel.....E911004 |
| Billet aluminum roller rockers, 1.7:1 x 7/16.....E928066 | Moly Lube, 2 oz. tube.....E911002 |
| C.H. pushrods, 3/8, 8.275 IN., 9.250 EX.....E917121 | |

HIGH PERFORMANCE SOLID ROLLER CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|----------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Hot Street/Street Rods/Marine. 9.5-10.1:1 compression. 750 cfm single 4-barrel, dual plane manifold. Jet boat with "A" impeller. Good low end performance in heavy chassis. | 3,250-6,500 | E129869 R-278-2 | 278° IN 286° EX | 238° IN 246° EX | .629" IN .629" EX | 112° | 4° | .028" IN .028" EX |
| Hot Street/Marine/Blower Grind. B&M 250 series. 6-71 style supercharger. Single or 2x4 barrel carburetion. 4-speed or automatic transmission with 2,500 RPM converter. Jet boat with blueprinted pump and "A" impeller. | 3,400-6,700 | E129870 R-286-1B | 286° IN 294° EX | 246° IN 254° EX | .629" IN .629" EX | 114° | 4° | .028" IN .028" EX |
| Hot Street/E.T. Brackets. 396 or larger CID engines with no less than 10.0:1 compression. Strong low end and mid-range performance. 4-speed manual or automatic transmission with 3,000-3,500 RPM converter. | 3,500-6,500 | E129890 R-286-1 | 286° IN 294° EX | 246° IN 254° EX | .629" IN .629" EX | 108° | 0° | .028" IN .028" EX |
| Hot Street/E.T. Brackets/Oval Track. Strong mid-range performance. 10.5:1-11.0:1 compression. Single 750-850 cfm, 4-barrel, 3" free flowing exhaust. OK with nitrous oxide. Heavy late model or modifieds on 1/4-1/2 mile dirt or asphalt tracks. | 3,750-7,000 | E129871 R-282-1 | 282° IN 292° EX | 253° IN 263° EX | .680" IN .680" EX | 110° | 2° | .034" IN .034" EX |
| Hot Street/E.T. Brackets/Oval Track. Great baseline camshaft for modified big blocks. Mild head work, slightly larger valves, 3,200-3,400 lb. cars. Fast 3/8-1/2 mile tracks. | 3,800-6,800 | E129891 R-294-1 | 294° IN 302° EX | 254° IN 260° EX | .629" IN .629" EX | 108° | 0° | .028" IN .028" EX |
| E.T. Brackets/Oval Track. 396-427 CID engines with 11.0:1 compression. 4-speed or automatic transmissions and 4,000 RPM converter. Easy on parts. Good closed-course, road race camshaft. | 4,000-7,000 | E129892 R-288-1A | 302° IN 308° EX | 260° IN 266° EX | .629" IN .629" EX | 108° | 0° | .028" IN .028" EX |
| E.T. Brackets/Oval Track. Our first in a series of new lobe designs with more area under the curve. 1/8-1/4 mile drags or 468 CID asphalt modifieds on 1/4-1/2 track. | 4,000-7,200 | E129872 R-286-2 | 286° IN 294° EX | 260° IN 268° EX | .697" IN .697" EX | 108° | 0° | .034" IN .034" EX |
| E.T. Brackets/Pro-Street/Blower Grind. Largest streetable camshaft. 6-71 supercharger. 2x4 barrel carburetion. 2,800-3,200 lb. chassis. 4,000-4,500 RPM converter. | 4,000-7,000 | E129873 R-302-3A | 302° IN 312° EX | 260° IN 270° EX | .629" IN .629" EX | 114° | 4° | .028" IN .028" EX |
| E.T. Brackets/Oval Track/Road Racer/Marine. 427-468 CID engines. A 11.5-12.5:1 compression. Aftermarket rectangle port or modified oval port cylinder heads. 850-1,050 cfm. Popular all around camshaft. Broad power range. | 4,200-7,200 | E129874 R-290-3 | 290° IN 298° EX | 264° IN 272° EX | .731" IN .697" EX | 108° | 2° | .034" IN .034" EX |
| E.T. Brackets/Super Street./Marine. Without a doubt, our most popular camshaft. Excellent mid-range and top end power. Easy on parts. 468 CID engines with no less than 11.5:1 compression, 3,200-3,600 lb. engines. OK with nitrous oxide. | 4,200-7,300 | E129893 R-296-1 | 296° IN 308° EX | 266° IN 278° EX | .680" IN .680" EX | 108° | 0° | .034" IN .034" EX |
| E.T. Brackets/Oval Track. 468 cubic inch or larger engines with 13.0-14.5:1 compression, on 1/8 drag strips. Good 1/4 mile camshaft in smaller engines. Also works well on 1/2-5/8 mile, high-banked asphalt tracks in modifieds and super modifieds. | 4,400-7,500 | E129875 R-294-4 | 294° IN 298° EX | 268° IN 272° EX | .731" IN .697" EX | 108° | 2° | .034" IN .034" EX |
| E.T. Brackets/Oval Track. 396-427 CID engines with 12.5:1 compression or more or 454-468 CID engines with no less than 11.5:1 compression. Great camshaft in heavier chassis with 5.13 or lower gears and 4,000-4,500 RPM converter. More top end than E129875. | 4,400-7,600 | E129876 R-294-2 | 294° IN 302° EX | 268° IN 276° EX | .697" IN .697" EX | 108° | 0° | .034" IN .034" EX |
| E.T. Brackets/Super Street. 427-434 CID engines with 12.5-13.5:1 compression. Single 850-1,050 cfm carburetion, ported and polished GM rectangle port or aftermarket oval port cylinder heads with 2.250" x 1.88" stainless valves. OK with 2- or 3-speed automatics. | 4,500-7,500 | E129877 R-298-3A | 298° IN 306° EX | 272° IN 280° EX | .731" IN .731" EX | 108° | 0° | .034" IN .034" EX |
| E.T. Brackets/Super Street/Super Gas. 454-502 CID engines in full bodied cars or roadsters. 13.0-14.0:1 compression ratios, good heads, single open plenum-style manifold with 1,050 cfm carburetion, alcohol or gas. | 4,500-7,500 | E129894 R-302-2A | 302° IN 306° EX | 274° IN 278° EX | .740" IN .740" EX | 108° | 0° | .034" IN .034" EX |
| E.T. Brackets/Super Gas/Marine. Very popular all around camshaft. Makes big power, yet easy on parts. Single 4-barrel or tunnel ram applications; roadsters or altered with 2-speed automatics. Unblown gas, flat bottoms or hydros with V-drives. | 4,600-7,800 | E129878 R-302-4 | 302° IN 310° EX | 276° IN 284° EX | .731" IN .731" EX | 108° | 0° | .034" IN .034" EX |
| Super Gas/Super Stock. Low compression 454s or high-compression 396-427 CID super stockers. Also works well in larger cubic inch big blocks competing in super gas with 2.250" primary tubes and 2-speed power glides with 4,500-5,000 RPM converter. | 4,750-7,800 | 129879 R-304-1 | 304° IN 310° EX | 278° IN 284° EX | .765" IN .731" EX | 108° | 2° | .034" IN .034" EX |
| Super Street/Super Gas. 427-468 CID engines in 2,400-2,800 lb. chassis. Must have fairly high-compression, good flowing cylinder heads and manifold. Will work on cars with open exhaust or cars with free flowing 4" mufflers. | 4,800-8,000 | E129880 R-306-2 | 306° IN 314° EX | 280° IN 288° EX | .765" IN .731" EX | 110° | 2° | .034" IN .034" EX |
| Super Gas/Super Comp. Great camshaft in 468-502 CID roadsters with 13.0:1 compression or more. Compatible with alcohol or gas. Also, high compression 427 CID engines in super stock with 1.80:1 intake rockers, 2- or 3-speed automatics with 5,000 RPM converter. | 5,000-8,000 | E129881 R-310-2 | 310° IN 314° EX | 284° IN 288° EX | .731" IN .731" EX | 108° | 0° | .034" IN .034" EX |
| Super Comp/Super Gas. 468-500 CID engines up to 14.5:1 compression. Large, single, 4-barrel carburetor; 2-speed power glide 5,000 RPM converter. Alcohol or gas. | 5,000-8,200 | E129882 R-310-3 | 310° IN 318° EX | 284° IN 292° EX | .731" IN .731" EX | 110° | 2° | .034" IN .034" EX |
| Competition Eliminator/Super Stock. 430-480 CID A/Drags engines or 427-454 CID high-compression SS, SS/GT 4-speed cars, can use up to 1.8:1 rocker intake only. | 5,000-8,750 | E129883 R-314-9 | 314° IN 346° EX | 284° IN 308° EX | .825" IN .780" EX | 114° | 0° | .034" IN .034" EX |
| Pro-Stock/Competition Eliminator. 500 CID, NHRA legal, pro-stock engines. Best of everything! 1.85" IN x 1.80" EX rockers. 4- or 5-speed manual transmission. Also works in large cubic inch A/Drags. | 6,500-9,300 | E129884 R-308-3 | 308° IN 342° EX | 284° IN 312° EX | .867" IN .808" EX | 116° | 0° | .034" IN .034" EX |
| Blown-Gas Categories. Hydros, flat bottoms and coupes. 10-71 to 14-71 root-type or high-helix superchargers. No less than 16 nozzles. Powerful nostalgia eliminator! | 5,000-9,000 | E129885 R-314-5 | 314° IN 324° EX | 286° IN 296° EX | .782" IN .748" EX | 110° | 0° | .034" IN .034" EX |
| Super Comp. 480-541 CID engines in light rear engine dragsters or roadsters. A 14.0-15.0:1 compression. Large single 4-barrel carburetion. Alcohol or gas. Ported and polished aluminum cylinder heads with big 2.300" x 1.900" valves. | 5,250-8,500 | E129886 R-314-4 | 314° IN 324° EX | 288° IN 298° EX | .765" IN .731" EX | 110° | 2° | .034" IN .034" EX |

HIGH PERFORMANCE SOLID ROLLER CAMSHAFTS

| APPLICATIONS/CHARACTERISTICS | BASIC RPM RANGE | PART NO. GRIND NO. | DURATION ADVERTISED | DURATION @ .050" | GROSS LIFT | LOBE CENTER | ADVANCE | VALVE LASH |
|--|-----------------|---------------------------|---------------------|--------------------|----------------------|-------------|---------|----------------------|
| Super Comp/Super Eliminator/Top Sportsman. 541-650 CID engines with no less than 14.5:1 compression on alcohol or gas. 1,700-2,100 lb. rear engine dragsters. 2-speed power glide with 5,000-5,500 RPM converter. | 5,500-8,500 | E129887 R-322-4 | 322° IN 338° EX | 292° IN 302° EX | .808" IN .780" EX | 112° | 4° | .034" IN .034" EX |
| Pro-Modified/I.H.R.A. Pro-Stock. 650(+) CID engines. Heavily modified billet cylinder heads, sheetmetal intake and big carburetors. A 4- or 5-speed manual transmission. Lots of nitrous oxide, class permitting. | 5,500-8,500 | E129888 R-322-5 | 322° IN 348° EX | 292° IN 318° EX | .825" IN .808" EX | 118° | 0° | .034" IN .034" EX |
| Blown Alcohol Categories. NHRA, IHRA, NDBA, etc. 430-450 CID engines using billet cylinder heads, high-helix roots-type or screw-type superchargers and 3-speed planetary transmissions compete heads up for championship results.. | 6,000-10,000 | E129889 R-322-6 | 322° IN 316° EX | 294° IN 288° EX | .850" IN .850" EX | 116° | 4° | .034" IN .034" EX |

CAMSHAFT ACCESSORY KIT FOR CHEVROLET BIG BLOCK ENGINES EQUIPPED WITH SOLID ROLLER CAMSHAFTS USED IN COMPETITION

E812014 KIT INCLUDES THESE NEW COMPONENTS:

- 8 pair competition vertical bar roller tappetsE919315
- 16 valve springs, 1.900 x 1.535.....E915057
- 16 titanium retainers, 10°E961408
- 16 pair H.T. machined valve locks, 10° x 3/8 4130.....E911160
- 1 roller thrust button.....E992004
- 1 tube Moly Lube, 1/4 oz.E911001

Camshaft Accessory Kit E812020 is intended for use with camshaft gross valve lifts of .680 or less.

E812024 KIT INCLUDES THESE COMPONENTS:

- 8 pair competition vertical bar roller tappetsE919315
- 16 valve springs, 2.000 x 1.630.....E915160
- 16 titanium retainers, 10°E961406
- 16 pair H.T. machined valve locks, 10° x 3/8 4130.....E911160
- 1 roller thrust button.....E992004
- 1 tube Moly Lube, 1/4 oz.E911001

Camshaft Accessory Kit E812021 is intended for use with all roller camshafts with gross valve lifts of .800 or less.

OPTIONAL HIGH PERFORMANCE PARTS FOR CHEVROLET BIG BLOCK ENGINES EQUIPPED WITH SOLID ROLLER VALVETRAINS

- Standard gear driveE992006
- Roller timing chain setE991902
- Horizontal bar spring-loaded roller tappetsE919011
- Valve springs, 1.900 x 1.630E915150
- Valve springs, 2.000 x 1.650 "triple".....E915213
- Valve springs, 2.100 x 1.650 "triple".....E915214
- Valve springs, 2.000 x 1.630 "H-II triple".....E915216
- Titanium retainer, 10° triple.....E961407
- Forged aluminum roller rocker, 1.72:1 x 7/16.....E928024
- Billet aluminum roller rocker, 1.72:1 x 7/16.....E928066
- C.H. pushrods, 7/16, 8.275 IN, 9.250 EX.....E917205
- C.H. pushrods, 7/16 (+) .400 truck blocks.....E917206
- Screw-in studs, 7/16 x 20.....E912151
- Long style exhaust screw-in studs, 7/16 x 20E912153
- Guide plates, 7/16E913006
- P.C. seals, 3/8.....E910213
- Lash caps, 3/8.....E911531
- Aluminum bronze distributor gear.....E911611
- Offset camshaft bushings.....E911451
- Self-locking camshaft boltsE913011
- Degree wheel.....E911004

NOTE — For information regarding 5/16" and 11/32" valvetrain hardware, call Erson's Technical Service Team at 775.882.1622.

