CRANE Cams®

MASTER CATALOG

CUSTOM DESIGNED

WITH WINNING IN MIND

USING OUR 65 YEARS OF RACE WINNING VALVE TRAIN EXPERTISE, WE CAN DESIGN AND GRIND THE PERFECT CAM TO FIT YOUR SPECIFIC RACE ENGINE NEEDS

CRANE Cams®

ABOUT THE CATALOG

This catalog is organized into two sections. First is the **Cam and Valve Train section**, which includes all of the necessary information needed to choose the right camshaft and matching components for your needs. Next is the **Valve Train Buyers' Guide**. The Buyers' Guide contains all of the Crane Cams valve train component listings – lifters, rocker arms, valve springs, timing sets and much more. Also listed within this section are components for additional product applications and information not found on the regular **Cam and Valve Train** application pages.

Each product section is organized in alphabetical order and in "Make, Number of Cylinders, Year, Engine" fashion. The Cam and Valve Train section is organized in alphabetical order, by engine make. Cam profiles (grinds) are listed beginning with the "mildest" duration (lowest numerical duration shown at .050" cam lobe lift) through the "wildest" duration figures.

Catalog Sections:

Choosing the Correct Cam

All Crane Cams are organized in typical "Make, Number of Cylinders, Year, Engine" fashion, and according to the type of lifter used – Hydraulic, Hydraulic Roller, Mechanical (sometimes referred to as "solid" or "flat tappet"), and Mechanical Roller. Cam profiles (grinds) are listed beginning with the mildest duration through the most radical in each lifter type.

Each left hand page includes the following information:

- Series
- Lifter Type
- RPM Range
- Application
- Camshaft Part Number – Most camshaft part numbers end with the "1" digit.
- Cam & Lifter set part number (if one exists) – These typically end with the "2" digit.
- Grind Number
- Valve Settings
- Valve Lift
- Advertised Duration
- Duration @ .050"
- Lobe Separation

Each right hand page lists the properly matched valve train components for each camshaft. Items highlighted in yellow indicate a premium part upgrade. Anywhere the "—" symbol is seen indicates that there is not an option available for that particular camshaft part number. Recommended component listings include:

- Lifters
- Valve Springs & Retainer Kit
- Valve Springs
- Retainers
- Valve Locks
- Timing Set
- Rocker Arms
- Pushrods
- Valve Seals
- Guide Plates
- Distributor Gear

PRODUCT EMISSIONS CODES

Product Emissions Codes For California Air Resources Board (CARB) Regulations

The product Emissions Code is designed to aid in determining the correct application of emissions related motor vehicle components. Please use our Master Catalog to be sure that purchases comply with all emission laws.

1 Green Product bearing this product identification code has been granted a California Air Resources Board (CARB) exemption ("EO" number), or is a direct or consolidated replacement part. It is 50-state legal, per the manufacturer's application guide.

2 Blue The manufacturer of the product bearing this identification code represents that it has not been found, nor is it believed to be, unlawful for use under provisions of the Clean Air Act, per the manufacturer's application guidelines. This product is not legal for sale or use in the State of California (or in states which have adopted California emission standards) except on pre-emission-controlled vehicles/motor vehicle engines (pre-1966 model years).

3 Amber Products bearing this product identification code are legal only for off-highway use (except CA or states that have standards), or pre-emissions controlled engines (pre-1966 domestic vehicles certified to CA standards, pre-1968 domestic vehicles certified to federal standards and all pre-1968 foreign vehicles), per the manufacturer's application guide.

TABLE OF CONTENTS

Crane Engineering Company, Inc. was founded on January 1, 1953 in an unused corner of a machine shop in Florida.

The founder, a young apprentice machinist named Harvey J. Crane, Jr., became interested in "souping-up" his flathead Ford V8 hot rod. He was strongly influenced by the various hot rodding magazines and ordered his first camshaft from a magazine ad. His training and ingenuity had already taught him that camshaft design and accuracy exact a critical effect on engine power. He also knew he was easily capable of designing and manufacturing camshafts.

Although money was scarce, Crane traded his way into a well-used cylindrical grinder. In rebuilding this machine, he quickly developed cam manufacturing and design knowledge. His initial "homemade" cams were accurately made and surprisingly more powerful than anything he'd previously purchased. Local hot rodders soon found out and began buying from him. His reputation spread quickly across Florida and further into the Southeast. In response, Crane Engineering Company was founded.

By the mid-1950s the powerful, compact Chevrolet 265-283 V8 engines came on the scene. It seemed that with their arrival came a surge of growth for all forms of auto racing. Drag strips and oval tracks suddenly appeared across the county, and the tiny backroom cam company grew as well.

Then in 1961 an unknown drag racer named Pete Robinson and his little single-engine dragster with a Crane cam shocked the race field and the nation by winning the NHRA Top Eliminator and smashing records in a major upset. Suddenly, Crane Cams captured the racing world's attention.

This new reputation attracted a number of racers and engine builders including: A.J. Foyt, Red Farmer, The Wood Brothers, Bud Moore, Bill Elliott, Junior Johnson, Dale Earnhardt, Richard Petty, Darrell Waltrip, Bobby Allison, Donnie Allison, Cale Yarborough, and David Pearson, who all began using Crane cams to win circle track races across the South.

Crane Cams prospered greatly during the 1960s and moved into its own facilities in January of 1966, allowing an expansion of its product line and services. Crane introduced its hallmark gold-anodized aluminum roller rockers, was granted a U.S. patent on a brand new roller lifter design, began selling mass-produced, custom-ported, all-out racing cylinder heads, heat-treated chromemoly pushrods, aluminum, steel and titanium valve spring retainers, machined steel valve locks, high-rev kits, and stud girdles.

Crane's rapidly expanding product line was full of unique and innovative items, all engineered to boost horsepower and reliability in race engines, as well as street performance applications. That, plus the huge success that Crane-equipped racers were enjoying, firmly established Crane as the industry's No. 1 cam company.

It was also during this time Crane became a pioneer in the science of computerized cam lobe design. Computerization of the science of cam lobe profile design enabled Crane's design staff to explore new possibilities in cam and valve train function that led to more powerful camshafts. Crane Cams was tapped as a provider of cam design knowledge, as well as becoming a trusted supplier to the automotive industry. Ford, American Motors, Chrysler, and Holden all selected Crane Engineering Company as their choice for a variety of racing and street performance related products and services.

In recent years, Crane Cams has relocated to Olive Branch, Mississippi and now has an expanded amount of state-of-the art manufacturing firepower and R&D at its beck and call while quality control is aided by state-of-the-art testing equipment. With a camshaft database that now exceeds 80,000 profiles, an impressive manufacturing capability, and an experienced tech staff, Crane Cams is prepared to meet your performance needs and expectations. Customers can be secure in the knowledge that the company that has survived for 65 years will continue to lead the industry in quality and performance.

STREET PERFORMANCE CAMSHAFTS

Crane Cams introduces FIVE cam series designed to maximize performance and power for your street and marine performance applications. Each series offers numerous camshafts and matching components for all varieties of domestic and import applications.

TruckMax

The TruckMax Series delivers low-end grunt and mid-range performance for heavy vehicles with few modifications and lower compression. Thanks to a modern lobe design, the TruckMax line of camshafts delivers reliable performance in daily-driven trucks and SUVs that tow, 4x4 or just get you to work.

- **Delivers low-RPM torque**
- **Compatible with heavy trucks and SUVs**
- **Requires little to no modifications**
- **Works with lower compression engines**

FireBall NEW!

A spin-off of the classic Crane FireBall Cam with modern camshaft lobe designs, the new FireBall Cams feature three unique cam designs for each application that deliver excellent horsepower gains and a broad torque curve. These are an excellent choice for muscle cars and street rods.

- **Early intake valve opening & long exhaust duration create optimum overlap for a hard-hitting exhaust note**
- **Best with aftermarket converters & more rear gear**

EnergizerMax

EnergizerMax Street Performance Cams produce sizeable torque, horsepower and RPM increases at an affordable price. These single pattern cams have tighter lobe separations for added torque, mid-range power, throttle response and that popular lumpy idle for non-computer controlled V8 engines.

- **Many grinds available to accommodate vacuum assisted brakes**
- **Proven “best bang for the buck” for decades**

PowerMax

Ideal for street rods, muscle cars and some street/strip applications, the PowerMax Series offers a substantial increase in performance. With a modern lobe profile and a focus on providing more area under the curve, PowerMax Cams give classic to modern muscle cars a sizable power increase without sacrificing durability.

- **Significant increase in power over stock**
- **Modern lobe profile**
- **Ideal for modern and classic muscle, cruisers, street rods and street/strip applications**
- **Grinds that fit a variety of applications: daily drivers to hot street/strip cars**

MarineMax

Crane’s MarineMax Series delivers modern performance to boat enthusiasts. From mildly modified to all-out engines, the MarineMax line of cams has a grind that works with any boat.

- **Accommodates stock and heavily modified marine engines**
- **Grinds available for both wet and dry marine exhausts**
- **Blower ready grinds available for high-power boats**

RACE & CUSTOM CAMSHAFTS

With an expanded cam profile database, an impressive manufacturing capability and an experienced tech staff, Crane Cams is committed to providing racers with race-winning valve train components. We are prepared to exceed your performance needs and expectations.

Customers can be secure it the knowledge that the company will lead the industry in quality and performance while improving product availability to levels that racers expect.

RaceMax

When taking first place is a priority, look to the Crane RaceMax Camshaft Series. Offering aggressive lobe designs with more seat to @ .050" intensity than our street/strip PowerMax Series, the RaceMax Camshafts are the choice for your race car engine. Crane's RaceMax Series features a number of different grinds to accommodate applications from bracket racers to alcohol-fueled blown funny cars.

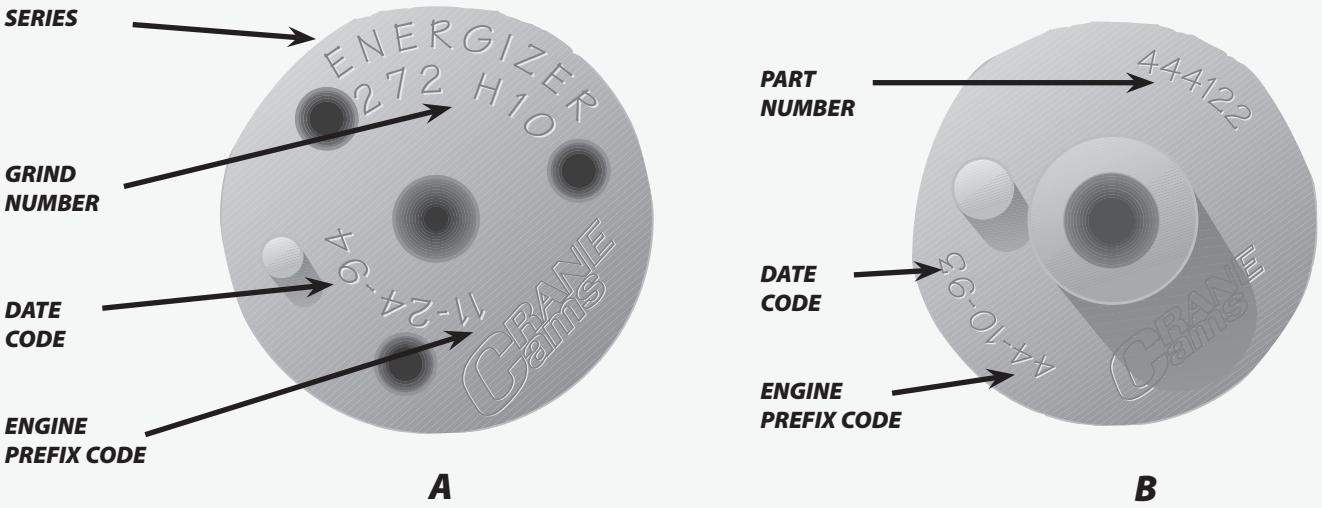
- **Aggressive lobe design**
- **Designed for all-out power**
- **The best choice when peak performance and short ETs are priorities**
- **Multiple grinds available to suit a range of racing classes**

Custom Grinds

Got a custom cam application that doesn't fit within the box of the "catalog" cam companies? Let us utilize our 65+ years of expertise and custom core manufacturing know-how to create the perfect camshaft solution for your specific race application. We have highly-experienced and reputable valve train professionals eager to work as your development partner throughout the custom cam or regrind process. At Crane, we embrace the unique and we're a valve train partner you can count on for solutions.

- **Over 80,000 cam lobe designs with more being added**
- **Custom cam core manufacturing capabilities (all materials)**
- **Regrinds and new cores available for many applications**

HOW TO IDENTIFY YOUR CRANE CAM



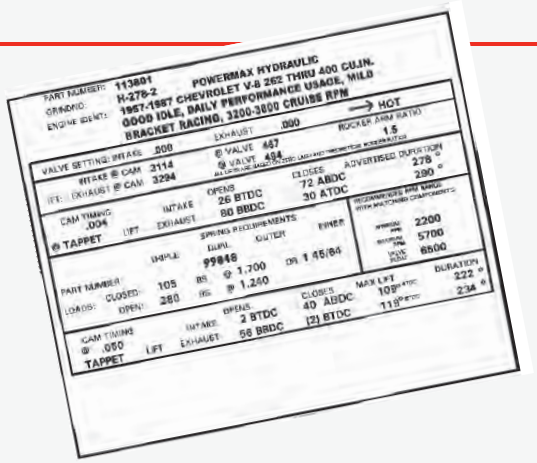
The above illustrates an easy method for identifying some of the most popular Crane camshafts. To use this, you must first view the end of the camshaft. (Some Crane and Cam Dynamics cams for thrustplate equipped engines are marked on the opposite end of that shown here.) Make note of the two digit engine prefix code number, the series name, and the grind number.

For example, the two cams listed above would be:

A Engine Code – 11
Series – PowerMax
Grind Number – 272 H10
(Part Number – **10005**)

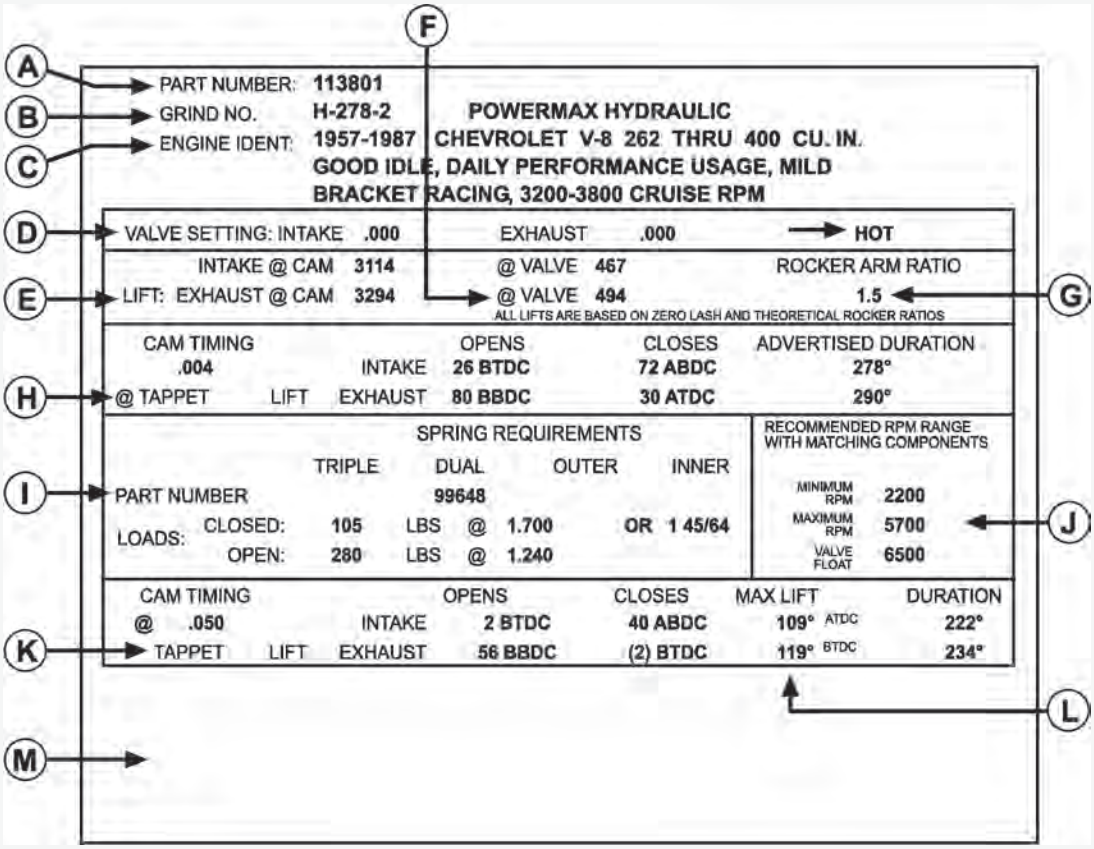
B Engine Code – 44
Part Number – 444122
Grind Number – 2030

NOTE: There are many more camshafts made by Crane Cams than are shown in this catalog.



For information on reading and understanding Cam Spec Cards, see page 7.

UNDERSTANDING THE CAM SPECIFICATION CARD



A. **Part Number**

B. **Grind Number** refers to engineering design information only. (This is not a part number)

C. **Identification** of the engine series

D. Recommended **valve setting** for the particular cam shaft profile. This represents the running clearance or Valve Lash required. This setting is chosen for maximum performance and valve train reliability.

E. **Cam lobe lift** as measured at the lifter (tappet) with a dial indicator having .500 inch minimum travel capacity.

F. The **valve lift** data is determined by multiplying the cam lobe lift by the rocker arm ratio.

G. The **rocker arm ratio** listed is the engine manufacturer's standard specified (or otherwise recommended) ratio.

H. The **cam timing** events used to compute advertised duration. The opening and closing events, and at what lifter rise (tappet lift) they were taken, show how the **advertised duration** is calculated.

Example:
These events are not meant for degreeing the cam. You should use the events (K) at .050" lifter rise (tappet lift) only for best accuracy.

26°	B.T.D.C. Intake Opening
+ 180°	Crankshaft Rotation
+ 72°	A.B.D.C. Intake Closing
= 278°	Advertised Duration

I. The **valve spring** requirements shown represent the maximum safe closed and open spring loads, and the most reliable valve springs for the camshaft profile and valve train combination.

J. **Recommended RPM** range is to be used as a guideline. This will vary depending on engine displacement and other equipment combinations.

K. **Cam timing** figures at .050" lifter rise (tappet lift) are provided for degreeing of the camshaft. They are expressed in degrees of crankshaft rotation.

L. The **maximum lift** (centerline) figures shown represent the theoretical maximum lift points of the intake and exhaust lobe centerlines. Due to most modern cam lobe designs being asymmetrical, this may not be the actual point at which the centerline occurs. This figure is provided as a point of reference and ***should not be used*** to degree a camshaft.

M. When necessary, special instructions are provided at the bottom of the cam card.

CAMSHAFTS

CRANE Cams

CAMSHAFT RECOMMENDATION FORM

Personal Information:

Name_____ Home Phone_____
Address_____ Work Phone_____
City_____ State_____ Zip_____ Fax_____
Email_____

Which type cam are you interested in? O Hydraulic O Hydraulic Roller
O Mechanical O Mechanical Roller

Vehicle Information:

O Computer Controlled (w/Emissions Controls)
O Emissions Controlled without Computer
O Non-Emissions Controlled

Make:_____ Year:_____Model:_____ Weight:_____

Vehicle Use:

O Street O Street/Strip O Off Road O Towing

For Marine Use:

Hull Type:_____ Length:_____Weight:_____
Drive: O Jet O Prop Explain:_____
Exhaust System: Brand_____ O Wet O Dry
Does Exhaust Exit: O Above Water Line O Below Water Line

Options:

RPM Power Range Desired: O 1000-4000 O 1500-4500 O 2000-5000 O 2500-5500
O 3000-6000 O 3500-6500 O 4000-7000
Engine Idle Characteristics: O Smooth O Choppy O Rough
NOTE: Computer Controlled Vehicles Must Use Smooth Idle Camshafts ONLY.

Engine Information:

Make:_____ Year:_____ No. of Cylinders:_____
Cubic Inches:_____ Compression Ratio:_____ Cylinder Head Type:_____
Ported: O Yes O No Valve Size: Int._____ Exh._____
Rocker Arm Type: O Stock O Roller Rocker Ratio: Int._____ Exh._____
Intake Manifold Type:_____ Carburetor:_____
Type of Injection:_____ O Speed Density O Mass Air O Special_____
Nitrous Oxide System:_____ Supercharger Type:_____ Drive Ratio:_____
Turbocharger Type:_____ P.S.I. Boost:_____
Cranking Compression P.S.I.:_____
Transmission Model:_____ O Standard O Automatic O Automatic with Overdrive__

Converter Stall Speed:_____ Rear Gear Ratio:_____
Cruise RPM @ 60 MPH:_____ Tire Diameter/Size:_____
Cam Now Used:_____ Part No.:_____ O Hydraulic O Hydraulic Roller
O Mechanical O Mechanical Roller
Lift: Int._____ Exh._____ Duration @ .050: Int._____ Exh._____
Lobe Separation:_____ Improvement Needed: O Low End Torque O Upper RPM Power

CAMSHAFT REGRINDING & SPECIAL CAMSHAFT SERVICES

REGRIND SERVICES

Crane Cams can regrind camshafts for most applications, including single, two, four and six cylinder as well as V8, V10 and V12 engines.

DESCRIPTION	LABOR PART NO.
Copper Plate Customer's Steel Round Lobe Camshaft	**98098**
Drill & Tap Rear of Cam for Sander Drive	**98089**
Grind Cam Bearing Journals	**98076**
Groove Cam Bearing Journal for Oiling	**98088**
Install 5/16" Dia. Dowel Pin	**98087**
Gun Drill Camshaft	**98096**
Grind Gearfit Step on Front Journal	**98073**
Miscellaneous Labor - Per Hour	**98111**
Ultra Pro Micro-Finish Camshaft	**98113**

CAM INSPECTION SERVICE

Crane Cams offers a cam inspection service for customer's new, used or damaged camshafts. Cams are straightened and checked for conformance to original specifications and lobe-to-lobe variation using the same high accuracy inspection equipment used to check and verify our own precision camshafts. A computer generated report giving the results of the check is furnished and returned with the cam. Our large file of measured data and specfications of engine manufacturers and other cam manufacturers will permit us to verify original specifications on almost any profile.

DESCRIPTION	LABOR PART NO.
Cam Inspection Service	**98014**

CAMSHAFTS

AMERICAN MOTORS/JEEP INLINE 6 1964-05 199-258

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Brute low-end torque. Smooth idle. Daily driver with economy. Fuel injection compatible. Compression 7.75 to 8.75.	750501[1]	—	H-192/3667-2S-10	Hyd	Hyd	.427	.456	248	260	192	204	110
	1200-4800	Good low-end torque. Daily driver with economy. Smooth idle. Fuel injection compatible. Compression 8.0 to 9.5.	753901[1]	—	H-260-2	Hyd	Hyd	.456	.484	260	272	204	216	112
	1800-5400	Good low-end and mid-range torque. Daily driver. Towing and off-road performance. Good idle. Compression 8.75 to 10.5.	753941[1]	—	H-272-2	Hyd	Hyd	.484	.512	272	284	216	228	112
	2600-6200	Good mid and upper RPM torque and HP. Serious off-road performance. Fair idle. Compression 10.25 to 11.75.	750591[1]	—	H-222/3200-2-8	Hyd	Hyd	.512	.538	294	304	222	232	108
MECHANICAL FLAT TAPPET														
TruckMax	2200-6000	Good low-end and mid-range torque and HP. Daily driver. Off-road performance. Good idle. Compression 9.5 to 10.75.	751101[1]	—	F-228/3334-2-12	.028	.030	.533	.555	264	274	228	238	112
	2800-6600	Good mid-range torque and HP. Serious off-road performance. Fair idle. 2500+ stall. Compression 9.5 to 11.0.	751121[1]	—	F-238/3467-2-8	.028	.030	.555	.576	274	284	238	248	108

AMERICAN MOTORS/JEEP V8 290-401 & 5.9L

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	1200-4800	Great low-end torque. Daily driver with economy. Mild turbocharged. Smooth idle. Compression 8.0 to 9.5.	863901	863902[4]	H-260-2	Hyd	Hyd	.456	.484	260	272	204	216	112
	1800-5400	Good low and mid-range torque. Daily driver with economy and performance. Good idle. Compression 8.75 to 10.5.	863941	986942[4]	H-272-2	Hyd	Hyd	.484	.512	272	284	216	228	112
	2200-5800	Good mid-range torque and HP. Daily driver with street/strip performance. Mild supercharged or nitrous. Good idle. Compression 9.5 to 10.75.	863801	863802[4]	H-278-2	Hyd	Hyd	.498	.527	278	290	222	234	114
TruckMax	800-4200	Brute low-end torque. Daily driver with economy. Smooth idle. Compression 7.75 to 8.75.	860501	—	H-192/2667-2S-10	Hyd	Hyd	.427	.456	248	260	192	204	110
RaceMax	2400-6000	Good mid-range to upper RPM torque and HP. Strip and bracket racing performance. Fair idle. 2800+ stall. Compression 9.5 to 11.0.	864441	864442[4]	H-288-2	Hyd	Hyd	.488	.496	288	292	226	230	112
	2800-6200	Good mid-range to upper RPM torque. Bracket racing performance for heavier vehicles. Rough idle. 3400+ stall. Compression 10.0 to 11.0.	860641	—	H-232/310-8	Hyd	Hyd	.496	.496	312	312	232	232	108
	3000-6600	Good mid to upper RPM HP. Bracket racing performance. Mild nitrous or supercharged. Rough idle. 3500+ stall. Compression 10.0 to 11.5.	864561	—	H-302-2	Hyd	Hyd	.538	.563	302	312	232	242	112
	3400-7000	Good upper RPM HP. Bracket racing performance for +390ci engines. Mild nitrous. Rough idle. 3800+ stall. Compression 11.0 to 12.5.	860661	—	H-242/3520-2-12	Hyd	Hyd	.563	.589	314	324	242	252	112
	4000-7200	Good upper RPM HP. Bracket racing performance for engines +401ci engines with aluminum cylinder heads. Plate nitrous. Rough idle. 4500+ stall. Compression 12.5 minimum.	860681	—	H-252/3680-2-10	Hyd	Hyd	.589	.614	324	334	252	262	110

[1] 1995-05 4.0 Liter engines have a camshaft with a different nose configuration. This cam can be used in these engines if the following factory parts are used: 53020443 gear, 53020444 chain, 53020445 gear and 83502890 bolt kit.
[4] Includes Rocker Arm Bridge Shim Kit.

AMERICAN MOTORS/JEEP INLINE 6 1964-05 199-258

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99278-12	—	96803-12[2]	99948-12[2]	—	—	—	—	—	—	—
99278-12	—	96803-12[2]	99948-12[2]	—	—	—	—	—	—	—
99278-12	—	96803-12[2]	99948-12[2]	—	—	—	—	—	—	—
99278-12	—	96803-12[2]	99948-12[2]	—	—	—	—	—	—	—
MECHANICAL FLAT TAPPET										
99260-12	—	96838-12[3]	99948-12[2]	—	—	—	—	—	—	—
99260-12	—	96838-12[3]	99948-12[2]	—	—	—	—	—	—	—

AMERICAN MOTORS/JEEP V8 290-401 & 5.9L

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99278-16	64308-1[5]	99839-16[5]	99957-16	99098-1	86977-1	11746-16[6]	95637-16	—		—
						36750-16[6]				
99278-16	64308-1[5]	99839-16[5]	99957-16	99098-1	86977-1	11746-16[6]	95637-16	—		—
						36750-16[6]				
99278-16	64308-1[5]	99839-16[5]	99957-16	99098-1	86977-1	11746-16[6]	95637-16	—		—
99378-16						36750-16[6]				
99278-16	64308-1[5]	99839-16[5]	99957-16	99098-1	86977-1	11746-16[6]	95637-16	—		—
						36750-16[6]				
99278-16	64308-1[6]	99839-16[5]	99957-16	99098-1	86977-1	11746-16[6]	95637-16	—		
99378-16						36750-16[6]				
99278-16	—	99838-16[3]	99948-16	99098-1	86977-1	11746-16[6]	95637-16	—		
99378-16						36750-16[6]				
99278-16	—	99838-16[3]	99948-16	99098-1	86977-1	11746-16[6]	95637-16	99822-16[3]		
99378-16						36750-16[6]				
99278-16	—	99838-16[3]	99948-16	99098-1	86977-1	11746-16[6]	95637-16	99822-16[3]		
99378-16						36750-16[6]				
99278-16	—	99838-16[3]	99954-16	99098-1	86977-1	11746-16[6]	95637-16	99822-16[3]		
99378-16						36750-16[6]				

[2] Except 4.0 liter engines.
[3] Must machine cylinder heads.
[5] Standard diameter valve springs, no machining required.
[6] Must machine 1974-91 cylinder heads and install 99156-16 3/8" rocker arm studs (or 99157-16 7/16" rocker arm studs for 86757-16 rockers) and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.

CAMSHAFTS

CRANE Cams®

AMERICAN MOTORS/JEEP V8 290-401 & 5.9L CONTD.

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	1000-5200	Brute low-end torque and HP. Daily driver with performance and economy. Smooth idle. Compression 8.0 to 9.5.	869501	—	HR-208/3313-2S-12	Hyd	Hyd	.530	.530	264	272	208	216	112
PowerMax	2000-6000	Good low-end and mid-range torque and HP, street/strip performance. Fair idle. 2500+ converter. Compression 9.5 to 10.75.	869521	—	HR-224/339-2S-12	Hyd	Hyd	.542	.563	286	294	224	232	112
TruckMax	1600-5600	Excellent low-end torque and HP. Good idle. Daily driver and off-road performance. Compression 8.75 to 10.5.	869511	—	HR-216/325-2S-12	Hyd	Hyd	.520	.542	278	286	216	224	112
RaceMax	2600-6200	Good mid-range torque and HP. Bracket racing performance for +390ci engines. Fair idle. 3000+ stall. Compression 10.0 to 11.5.	869531	—	HR-232/352-2S-10	Hyd	Hyd	.563	.584	294	302	232	240	110
RaceMax	3200-7000	Good upper RPM torque and HP. Bracket racing performance for +401ci engines with aluminum cylinder heads. Rough idle. 3500+ stall. Compression 11.0 to 12.5.	869541	—	HR-244/372-2S-12	Hyd	Hyd	.595	.595	306	318	244	256	112
MECHANICAL FLAT TAPPET														
RaceMax	2800-6400	Good mid-range torque and HP. Bracket racing performance. Fair idle. 3200+ stall. Compression 10.0 to 11.5.	861201	—	F-238/3200-2-12	.022	.022	.512 (1.6)	.533 (1.6)	300	310	238	248	112
RaceMax	3400-7000	Good mid-range to upper RPM torque and HP. Bracket racing performance. Rough idle. Compression 10.5 to 12.0.	861241	—	F-248/3334-2-12	.022	.022	.533 (1.6)	.555 (1.6)	310	320	248	258	112
RaceMax	4000-7400	Good upper RPM torque and HP. Bracket racing performance for +390ci engines with aluminum cylinder heads. Rough idle. 4500+ stall. Compression 11.0 to 12.5.	861321	—	F-258/3468-8	.022	.022	.555 (1.6)	.555 (1.6)	320	320	258	258	108
MECHANICAL ROLLER														
PowerMax	2600-6600	Good low-end and mid-range torque and HP. Serious street/strip performance. Fair idle. 3000+ stall. Compression 10.0 to 11.25.	868511	—	SR-236/350-2S-10	.020	.020	.560	.579	286	294	236	244	110
RaceMax	3800-7800	Good mid and upper RPM torque and HP. Oval track and bracket racing performance. Rough idle. 4200+ stall. Compression 11.5 minimum.	868821	—	R-258/420-2S-6	.020	.020	.672 (1.6)	.672 (1.6)	290	298	258	266	106

AMERICAN MOTORS/JEEP V8 290-401 & 5.9L CONTD.

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
86532-16[7]	—	99893-16[3]	99954-16	99098-1	86977-1	11746-16[6]	95622-16	99822-16[3]	—	—
						36750-16[6]				
86532-16[7]	—	99893-16[3]	99954-16	99098-1	86977-1	36750-16[6]	95622-16	99822-16[3]	—	—
						86757-16[6]				
86532-16[7]	—	99893-16[3]	99954-16	99098-1	86977-1	11746-16[6]	95622-16	99822-16[3]	—	—
						36750-16[6]				
86532-16[7]	—	99893-16[3]	99954-16	99098-1	86977-1[7]	36750-16[6]	95622-16	99822-16[3]	—	—
						86757-16[6]				
86532-16[7]	—	99893-16[3]	99954-16	99098-1	86977-1[7]	36750-16[6]	95622-16	99822-16[3]	—	—
						86757-16[6]				
MECHANICAL FLAT TAPPET										
99260-16	—	99838-16[3]	99954-16	99098-1	86977-1[7]	36750-16[6]	95641-16	99822-16[3]	—	—
						86757-16[6]				
99260-16	—	99838-16[3]	99954-16	99098-1	86977-1[7]	36750-16[6]	95641-16	99822-16[3]	—	—
						86757-16[6]				
99260-16	—	99838-16[3]	99954-16	99098-1	86977-1[7]	36750-16[6]	95641-16	99822-16[3]	—	—
						86757-16[6]				
MECHANICAL ROLLER										
66550-16[8]	—	99838-16[3]	99954-16	99098-1	86977-1	36750-16[6]	95645-16	99822-16[3]	—	—
						86757-16[6]				
66550-16[8]	—	99876-16[3]	99963-16	99098-1	86977-1[7]	36750-16[6]	95645-16	99822-16[3]	—	—
						86757-16[6]				

[3] Must machine cylinder heads.
[6] Must machine 1974-91 cylinder heads and install 99156-16 3/8" rocker arm studs (or 99157-16 7/16" rocker arm studs for 86757-16 rockers) and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[7] Special length pushrods required.
[8] .200" Short pushrod seats, special length pushrods required.

CAMSHAFTS

BUICK V8 1967-76 400-455

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	800-4200	Brute low-end torque. Daily driver with economy. Smooth idle. Compression 7.75 to 8.75.	850501	—	H-194/250-2S-10	Hyd	Hyd	.400	.416	252	260	194	202	110
PowerMax	1200-4800	Good low-end torque. Daily driver with economy and performance. Mild turbocharged. Smooth idle. Compression 8.0 to 9.5.	850521	—	H-202/260-2S-10	Hyd	Hyd	.416	.432	260	268	202	210	110
PowerMax	1800-5400	Good low to mid-range torque. Daily driver with performance and economy. Good idle. Compression 9.0 to 11.0.	850571	—	H-218/280-2S-12	Hyd	Hyd	.448	.464	276	284	218	226	112
PowerMax	2200-5800	Good mid-range torque. Street/strip performance. Excellent upgrade for 455GS. Fair idle. 5200+ stall. Compression 9.5 to 11.0.	850631	—	H-226/290-2S-10	Hyd	Hyd	.464	.480	284	292	226	234	110
PowerMax	2200-5800	Replacement for factory Stage 2 camshaft.	850421	—	BluePrinted 1385557	Hyd	Hyd	.453	.482	312	332	226	255	115
RaceMax	2800-6600	Good mid-range HP. Bracket racing performance. Rough idle. 3200+ stall. Compression 10.5 to 12.0	850671	—	H-242/310-2S-10	Hyd	Hyd	.496	.512	300	308	242	250	110
RaceMax	3600-6800	Good upper RPM HP. Bracket racing performance for +470ci. engines. Plate or manifold nitrous. Rough idle. 4000+ stall. Compression 12.0 minimum.	850701	—	H-252/348-2S-12	Hyd	Hyd	.557	.576	322	330	252	260	112

CADILLAC V8 1968-81 368-500

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	1200-4800	Excellent low-end torque. Daily driver with economy. Mild turbocharged. Smooth idle. Compression 8.0 to 10.0.	1020541	—	H-202/260-2S-14	Hyd	Hyd	.447 1.72	.464 1.72	260	268	202	210	114
PowerMax	1400-5200	Good low-end torque. Daily driver with performance and economy. Mild turbocharged. Good idle. Compression 9.0 to 10.0.	1020561	—	H-210/270-2S-12	Hyd	Hyd	.464 1.72	.482 1.72	268	276	210	218	112
PowerMax	1800-5600	Good low and mid-range torque. Daily driver with street performance. Good idle. 2200+ stall. Compression 9.0 to 11.0.	1020571	—	H-218/280-2S-12	Hyd	Hyd	.482 1.72	.499 1.72	276	284	218	226	112
PowerMax	2200-5800	Good mid-range torque and HP. Street/strip performance. Fair idle. 2500+ stall. Compression 9.5 to 11.0.	1020631	—	H-226/290-2S-12	Hyd	Hyd	.499 1.72	.516 1.72	284	292	226	234	112
RaceMax	2800-6400	Good mid and upper RPM torque and HP. Bracket racing performance. Mild nitrous. Rough idle. 3200+ stall. Compression 10.0 to 11.5.	1020641	—	H-234/300-2S-12	Hyd	Hyd	0.516	0.533	292	300	234	242	112

BUICK V8 1967-76 400-455

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99284-16	—	99838-16	99910-16	—	—	—	—	99822-16[3]	—	—
99284-16	—	99838-16	99910-16	—	—	—	—	99822-16[3]	—	—
99284-16	—	99838-16	99910-16	—	—	—	—	99822-16[3]	—	—
99284-16	—	99838-16	99910-16	—	—	—	—	99822-16[3]	—	—
99284-16	—	99838-16	99910-16	—	—	—	—	99822-16[3]	—	—
99284-16	—	99838-16	99910-16	—	—	—	—	99822-16[3]	—	—
99384-16										
99284-16	—	99838-16	99910-16	—	—	—	—	99822-16[3]	—	—
99384-16										

CADILLAC V8 1968-81 368-500

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99284-16	—	99848-16	99916-16	99097-1	—	—	102621-16[9]	99820-16[3]	—	—
99284-16	—	99848-16	99916-16	99097-1	—	—	102621-16[9]	99820-16[3]	—	—
99284-16	—	99848-16	99916-16	99097-1	—	—	102621-16[9]	99820-16[3]	—	—
99284-16	—	99848-16	99916-16	99097-1	—	—	102621-16[9]	99820-16[3]	—	—
99284-16	—	99848-16	99916-16	99097-1	—	—	102621-16[9]	99820-16[3]	—	—
99384-16										

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.

CAMSHAFTS

CHEVROLET INLINE 6 CYL. 1962-19 194-250

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	1200-4800	Good low-end torque. Smooth idle. Daily driver and off-road. Compression 8.0 to 9.5.	203901	—	H-260-2	Hyd	Hyd	.498	.530	260	272	204	216	112
PowerMax	1800-5400	Good low to mid-range torque. Daily driver with economy. Street performance. Good idle. Compression 8.75 to 10.5.	204541	—	H-272-2	Hyd	Hyd	.530	.560	272	284	216	228	112
RaceMax	3000-6000	Good mid to upper RPM torque and HP. Oval track and radical off-road performance. Rough idle. Compression 10.5 minimum.	200541	—	H-234/3250-2-6	Hyd	Hyd	.569	.593	304	314	234	244	106
MarineMax	Idle-3800	Great low-end torque improvement for boats with standard wet/underwater exit exhaust. Smooth idle. Compression 7.75 to 8.75.	200511	—	H-192/2667-2S-12	Hyd	Hyd	.467	.498	248	260	192	204	112
MECHANICAL FLAT TAPPET														
RaceMax	2800-6600	Good mid-range torque and HP. 1/4 to 3/8 mile oval track and off-road performance. Fair idle. Compression 10.0 to 11.5.	201141	—	F-238/3200-2-8	.022	.022	.560	.583	304	314	238	248	108
	3400-6800	Good mid and upper RPM HP. 3/8 to 1/2 mile oval track and bracket racing. Rough idle. Compression 11.0 to 12.5.	201221	—	F-248/3334-2-6	.022	.022	.583	.607	310	320	248	258	106
	4200-7200	Good mid and upper RPM HP. 1/2+ mile oval track and bracket racing performance. Rough idle. Compression 12.25 minimum.	201311	—	F-256/3634-2S-8	.026	.026	.636	.646	292	296	256	260	108

CHEVROLET 60° V6 1980-94 2.8L/3.1L/3.4L

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	800-4200	Low and mid-range torque and HP for stock engines. Daily driver with economy. EFI compatible. Smooth idle.	—	254112[13]	2020	Hyd	Hyd	.401	.427	258	264	198	204	104
	1200-4600	Mid and upper range torque and HP improvement for near stock or mildly modified engines in cars and light trucks. Daily driver with economy. EFI compatible. Smooth idle.	—	254122[13]	2030	Hyd	Hyd	.423	.423	264	274	204	214	109
	1200-4800	Good low-end torque. Daily driver with economy. Good idle. Compression 8.0 to 9.5.	253901	253902	H-260-2	Hyd	Hyd	.427	.454	260	272	204	216	112
	1800-5400	Good low to mid-range torque. Daily driver with economy. Good idle. Increased compression and gearing advised. Compression 8.75 to 10.5.	253941	—	H-272-2	Hyd	Hyd	.454	.480	272	284	216	228	112
RaceMax	2200-6000	Good mid to upper RPM torque and HP. Serious off-road, oval track, and strip performance. Fair idle. Compression 9.75 minimum.	250321	—	H-222/3114-2S-10	Hyd	Hyd	.467	.494	278	290	222	234	110

[13] For 1981-89 applications.

CHEVROLET INLINE 6 CYL. 1962-84 194-250

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99277-12	—	99838-12	99944-12	99097-1	—	20750-12[11]	20621-12	99820-12[3]	—	—
						13750-12[12]	20622-12[10]			
99277-12	—	99838-12	99944-12	99097-1	—	20750-12[11]	20621-12	99820-12[3]	—	—
						13750-12[12]	20622-12[10]			
99277-12	—	99838-12	99944-12	99097-1	—	20750-12[11]	20621-12	99820-12[3]	—	—
						13750-12[12]	20622-12[10]			
99277-12	—	99838-12	99944-12	99097-1	—	20750-12[11]	20621-12	99820-12[3]	—	—
						13750-12[12]	20622-12[10]			
MECHANICAL FLAT TAPPET										
99250-12	—	99893-12	99953-12	99097-1	—	20750-12[11]	20621-12	99820-12[3]	—	—
						13750-12[12]	20622-12[10]			
99250-12	—	99893-12	99953-12	99097-1	—	20750-12[11]	20621-12	99820-12[3]	—	—
						13750-12[12]	20622-12[10]			
99250-12	—	99893-12	99953-12	99097-1	—	20750-12[11]	20621-12	99820-12[3]	—	—
						13750-12[12]	20622-12[10]			

CHEVROLET 60° V6 1980-94 2.8L/3.1L/3.4L

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99286-12	—	99848-12[5]	99915-12	99097-1	—	25750-12[15]	25621-12[17]	—	—	—
						25759-12[16]				
99286-12	—	99848-12[5]	99915-12	99097-1	—	25750-12[15]	25621-12[17]	—	—	—
						25759-12[16]				
99286-12	—	99848-12[5]	99915-12	99097-1	—	25750-12[15]	25621-12[17]	—	—	—
						25759-12[16]				
99286-12	—	99848-12[5]	99915-12	99097-1	—	25750-12[15]	25621-12[17]	—	—	—
		96802-12[5, 14]		99095-1		25759-12[16]				
99286-12	—	99848-12[5]	99915-12	99097-1	—	25750-12[15]	25621-12[17]	—	—	—
		96802-12[6, 14]		99095-1		25759-12[16]				

[3] Must machine cylinder heads.
[5] No machining required.
[6] Must machine 1974-91 cylinder heads and install 99156-16 3/8" rocker arm studs (or 99157-16 7/16" rocker arm studs for 86757-16 rockers) and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[10] For use with Crane aluminum rockers.
[11] Requires 20622-12 pushrods.
[12] Enlarged stud diameter, requires 20622-12 pushrods.
[14] Additional assembly height required, use 99095-1 valve stem locks.
[15] 1.5 ratio, narrow body (non self-aligning) with special 10mm x 1.50 bottom x 3/8" x 24 top rocker arm studs included.
[16] 16. 1.6 ratio, narrow body (non self-aligning) with special 10mm x 1.50 bottom x 3/8" x 24 top rocker arm studs included.
[17] For cast iron inline valve cylinder heads and pushrod guideplates.

CAMSHAFTS

CRANE Cams®

CHEVROLET 90° V6 1992-02 4.3L (W/ COUNTER-BALANCE SHAFT)

						VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		
SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	800-4600	Brute low-end torque. Smooth idle. Daily driver. EFI compatible. Great improvement for stock engine.	1439801	—	HR-194/271-2-12	Hyd	Hyd	.407	.429	250	260	194	204	112
	1200-5200	Good low-end torque. Smooth idle. Daily driver and off-road. EFI compatible. Compression 8.0 to 9.5.	1439811	—	HR-204/286-2S-12	Hyd	Hyd	.429	.430	260	276	204	214	112
RaceMax	2200-6000	Good low and mid-range torque. Bracket racing and off-road performance. Mild supercharged. 2500+ stall. Fair idle. Compression 9.5 to 10.75.	1439731	—	HR-222/339-2S-12	Hyd	Hyd	.509	.528	284	292	222	230	112
	2600-6400	Good mid to upper RPM torque and HP. Bracket racing and serious off-road performance. Mild supercharged. 2800+ stall. Compression 10.25 to 11.5.	1439531	—	HR-230/352-2S-12	Hyd	Hyd	.528	.539	292	296	230	234	112
MarineMax	1200-5200	Good low-end and mid-range torque improvement for boats with upgraded wet or dry and through transom exhaust exit. Good idle. Compression 8.75 to 9.5.	1439721	—	HR-214/325-2S-12	Hyd	Hyd	.488	.509	276	284	214	222	112

CHEVROLET 90° V6 1992-02 4.3L (W/ COUNTER-BALANCE SHAFT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
10530-12[18]	—	96802-12[5]	99915-12	99097-1	—	11801-12[30, 19]	10621-12[9]	—	—	11951-1 (.491) 11950-1 (.500)
						10751-12[19, 20]				
10530-12[18]	—	96802-12[5]	99915-12	99097-1	—	11801-12[30, 19]	10621-12[9]	—	—	11951-1 (.491) 11950-1 (.500)
						10751-12[19, 20]				
10530-12[18]	—	99838-12[3]	99944-12	99097-1	—	11751-12	10621-12[9]	99820-12[3]	—	11951-1 (.491) 11950-1 (.500)
						11750-12[19]				
10530-12[18]	—	99838-12[3]	99944-12	99097-1	—	11751-12	10621-12[9]	99820-12[3]	—	11951-1 (.491) 11950-1 (.500)
						11750-12[19]				
10530-12[18]	—	99838-12[3]	99944-12	99097-1	—	11801-12[30, 19]	10621-12[9]	99820-12[3]	—	11951-1 (.491) 11950-1 (.500)
						11750-12[19]				

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[18] For use with standard GM alignment bars.
[19] Early 1992 engines are equipped with 3/8" stud self-aligning rocker arms. Late 1992 and later engines have 8mm stud self-aligning rocker arms. These engines can be converted to 3/8" studs by installing (6) of our 99148-2 rocker arm studs which have a 10mm bottom thread and a 3/8"-24 top thread (no maching is required). Appropriate pushrod guideplates must be installed if non self-aligning type rocker arms are used. If aluminum rocker arms are desired, only the narrow body configuration will fit if standard center bolt valve covers are being used.
[20] Self-aligning, narrow body for center bolt valve covers.
[30] Extra long slot.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC FLAT TAPPET														
TruckMax	500-4000	Brute low-end torque. Smooth idle. Daily driver. EFI/TBI compatible. Great improvement for stock 305 engines.	114101[21]	114102[21,22]	2010	Hyd	Hyd	.378	.401	244	254	184	194	104
	800-4600	Brute low-end torque. Smooth idle. Daily Driver with Economy. Compression 7.75 to 8.75.	113971	113972[22]	H-248-2	Hyd	Hyd	.400	.427	248	260	192	204	112
	800-4400	Good low-end and mid-range torque and HP. Daily driver. TBI compatible for 305 engines with optional gearing.	114111[21]	114112[21,22]	2020	Hyd	Hyd	.401	.423	254	264	194	204	104
	1000-4600	Excellent low-end torque. Smooth idle. Daily driver with economy. Compression 8.0 to 9.5.	10003	100032	Energizer 260 H10	Hyd	Hyd	.427	.427	260	260	204	204	110
	1200-4800	Good mid-range and top-end performance for 305HO and 350 trucks. Daily driver. TBI compatible.	114121[21]	114122[21,22]	2030	Hyd	Hyd	.423	.446	264	274	204	214	110
Fireball	1800-5400	Good low-end and mid-range torque and HP. Good to fair idle. 2200-2500 Stall converter. 9.25 to 10.0 Compression.	114901	114902	H-290-8	Hyd	Hyd	.454	.454	290	290	216	216	108
	3000-6000	Good mid-range torque and HP. Choppy idle. 3300-3500 Stall. 9.5 to 11.0 Compression.	114921	114922	H-302-10	Hyd	Hyd	.480	.480	302	302	228	228	110
PowerMax	800-4400	Great for 305 engines in cars and light to intermediate trucks with optional gearing. Daily driver with economy. Good low-end torque and HP. Smooth idle. TBI compatible for 305 engines. Compression 7.75 to 8.75.	114111	114112[21,22]	2020	Hyd	Hyd	.401	.423	254	264	194	204	104
	1200-4800	Good mid-range and top-end performance for cars with 305 HO and 350 equipped trucks. TBI compatible for 350 engines. Smooth idle. Compression 8.0 to 9.25.	114121	114122[21,22]	2030	Hyd	Hyd	.423	.446	264	274	204	214	110
	1200-5200	Excellent low-end torque and HP. Daily driver with economy. Smooth idle. Compression 8.0 to 9.5.	113501	113502[22]	Z-256-2	Hyd	Hyd	.432	.459	256	268	206	218	112
	1400-5000	Good low-end torque. Daily driver with economy. Smooth idle. Compression 8.5 to 10.0.	10004	100042	Energizer 266 H10	Hyd	Hyd	.440	.440	266	266	210	210	110
	1600-5400	Good low-end and mid-range torque. Daily driver with economy. Good idle. Compression 8.75 to 10.0.	10005	100052	Energizer 272 H10	Hyd	Hyd	.454	.454	272	272	216	216	110
	1800-5400	Good low-ed and mid-range torque. Performance for street/strip vehicles. Rough idle. 2500+ stall. Compression 8.75 to 10.0.	10017	100172	Energizer 274 H06	Hyd	Hyd	.450	.450	274	274	218	218	106
	1800-5800	Good low-end and mid-range torque. Daily driver for mildly modified 350ci engines with accesories requiring a good vacuum signal and stock stall converter. Good idle. Compression 8.75 to 10.75.	113521	113522[22]	Z-268-2	Hyd	Hyd	.459	.486	268	280	218	230	112
	2000-5800	Good mid-range torque. Daily driver with street/ strip performance. 2500+ stall. Good to Fair idle. Compression 9.5 to 10.75.	10013	100132	Energizer 278 H10	Hyd	Hyd	.467	.467	278	278	222	222	110
	2200-6400	Good mid-range to upper RPM torque and HP. Daily driver with street/strip performance. 2800+ stall. Fair idle. Compression 9.5 to 10.75.	113531	113532[22]	Z-274-2	Hyd	Hyd	.473	.486	274	280	224	230	110
	2800-6400	Good mid-range torque and HP. Serious street/ strip performance for heavier vehicles. 3000+ stall. Compression 10.0 to 11.5.	110591	110594[22]	Saturday Night Special H-228/3200-2S-6	Hyd	Hyd	.48	.494	284	290	228	234	106

[21] For 1981-87 applications.
[22] Includes Cam Sprocket Bolt Locking Plate.

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11308-1[5, 23]	99848-16[5, 23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]			11984-1	11744-16	11630-16[9]			
99277-16	11309-1[5, 24]	99846-16[24]	99944-16	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
		96802-16[25]	99969-16[27]	99094-1	11984-1	11750-16	11630-16[9]			

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[23] For 1967-87 with 1.700" assembly height.
[24] Standard diameter XHTCS tool steel valve springs for 1.800" assembly height.
[25] Standard diameter chrome silicon valve springs for 1.750" assembly height.
[26] Long slot.
[27] Requires Crane Multi-Fit Valve Locks.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC FLAT TAPPET														
RaceMax	3200-6600	Good mid and upper RPM torque. Street/hobby stock and Enduro for 1/4 to 3/8 mile oval track. Also Heavy, Pro ET bracket racing applications. 3500+ stall. Rough idle. Compression 10.5 to 12.0.	110651	—	H-238/3347-6	Hyd	Hyd	.502	.502	294	294	238	238	106
	3200-6800	Good mid and upper RPM torque. Bracket racing applications with mild supercharger or plate nitrous in heavy cars. 3500+ stall. Rough idle. Compression 10.5 to 12.0.	110521	—	H-238/3347-2S2-10	Hyd	Hyd	.502	.520	294	304	238	242	110
	3200-6800	Good mid and upper RPM torque. Street/Hobby stock and Enduro for 1/4 to 3/8 mile oval track. Also Heavy, Pro ET bracket racing applications. 3500+ stall. Rough idle. Compression 10.5 to 12.0.	110691	110694[22]	Saturday Night Special H-238/3347-2S-6	Hyd	Hyd	.502	.516	294	300	238	244	106
	3200-7000	Good mid and upper RPM HP. Bracket racing applications with manifold nitrous sytems. 3500+ stall. Rough idle. Compression 10.5 to 12.0. Also, Roots supercharged with 15psi and 8.0 max compression.	114051	—	H-300-2	Hyd	Hyd	.480	.495	300	308	238	246	112
	3400-7000	Good upper RPM torque and HP. Heavy, Pro ET, and Super ET N/A bracket racing applications. Rough idle. 3500+ stall. Compression 10.5 to 12.0.	110741	110744[22]	Saturday Night Special H-244/3439-2S-6	Hyd	Hyd	.516	.525	300	308	244	252	106
	3400-7000	Good upper RPM torque and HP. Heavy, Pro ET, and Super ET N/A bracket racing applications. 3/8 to 1/2 mile Street/Hobby stock, and Enduro oval track. Rough idle. 3500+ stall. Compression 10.5 to 12.0.	10011	100112	Energizer 302 H06	Hyd	Hyd	.500	.500	302	302	246	246	106
	3400-7200	Good upper RPM HP. Bracket racing applications with manifold nitrous sytems. 3500+ stall. Rough idle. Compression 11.25 to 13.0. Also, Roots supercharged with 18psi and 8.0 max compression.	114571	—	H-308-2	Hyd	Hyd	.495	.510	308	316	246	254	112
	3600-7200	Good upper RPM HP. +360ci in lightweight Pro ET, Super ET, etc. bracket racing applications. 4000+ stall. Rough idle. Compression 12.0 minimum.	110541	—	H-252/3500-12	Hyd	Hyd	.525	.525	308	308	252	252	112
MarineMax	800-4600	Excellent low-end torque and HP improvement for heavy boats with wet or dry, through prop-exhaust. Smooth idle. EFI compatible. Compression 8.0 to 9.0.	113901	113902[22]	H-260-2	Hyd	Hyd	.427	.454	260	272	204	216	112
	1200-5000	Good low-end and mid-range torque and HP improvement for light boats with mildly modified 350ci engines. Can use wet or dry, through-prop exhaust. Good idle. Compression 8.5 to 9.5.	113931	113932[22]	H-266-2	Hyd	Hyd	.440	.454	266	272	210	216	114
	1400-5200	Good low-end and mid-range torque and HP improvement for light boats with modified 350ci engines. Can use wet or dry, above water exit exhaust. Good idle. Compression 8.5 to 9.5.	113941	113942[22]	H-272-2	Hyd	Hyd	.454	.480	272	284	216	228	112

[22] Includes Cam Sprocket Bolt Locking Plate.

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99277-16	11310-1[3]	99838-16[3]	99944-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]		96874-16[3, 34]	99969-16[27]	99094-1	11977-1	11752-16	11630-16[9]			
99277-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]	11310-1[3]	99838-16[3]	99944-16	99095-1	11977-1	11752-16	11630-16[9]			
99277-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]	11310-1[3]	99838-16[3]	99944-16	99095-1	11977-1	11752-16	11630-16[9]			
99277-16	11310-1[3]	99838-16[3]	99944-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]		96874-16[3, 34]	99969-16[27]	99094-1	11977-1	11752-16	11630-16[9]			
99277-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]	11310-1[3]	99838-16[3]	99944-16	99095-1	11977-1	11752-16	11630-16[9]			
99277-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]	11310-1[3]	99838-16[3]	99944-16	99095-1	11977-1	11752-16	11630-16[9]			
99277-16	11310-1[3]	99838-16[3]	99944-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]		96874-16[34]	99969-16[27]	99094-1	11977-1	11752-16	11630-16[9]			
99277-16	11310-1[3]	99838-16[3]	99944-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99377-16[124]		96874-16[34]	99969-16[27]	99094-1	11977-1	11752-16	11630-16[9]			
99277-16	11308-1[23]	99848-16[23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
						11750-16[26]				
99277-16	11308-1[23]	99848-16[23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
						11750-16[26]				
99277-16	11308-1[23]	99848-16[23]	99915-16[23]	99097-1	11975-1	11800-16[26]	11621-16[9]	—	11650-1	11951-1 (.491) 11950-1 (.500)
						11750-16[26]				

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[24] Standard diameter XHTCS tool steel valve springs for 1.800" assembly height.
[27] Requires Crane Multi-Fit Valve Locks.
[34] Dual valve springs for +.100" valves.
[124] Optional Hi-Intensity hydraulic lifters.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
TruckMax	1600-5800	Excellent low-end and mid-range torque and HP. Good idle. Daily driver. Off-road performance with economy and .900" base circle. Compression 8.75 to 10.5.	119671[28]	—	HR-216/339-2S-12.90 IG	Hyd	Hyd	.509	.528	284	292	216	224	112
Fireball	2000-5900	Good low-end and mid-range torque and HP. Street/strip performance. 2500+ stall. Fair idle. Compression 8.5 to 10.0.	119771[28]	—	HR-268-2-6	Hyd	Hyd	.516	.528	268	276	216	222	106
	2400-6100	Great mid-range torque and HP. Serious street/strip performance. 2800+ stall. Rough idle. Compression 9.0 to 10.5.	119931[28]	—	HR-273-2-7	Hyd	Hyd	.520	.547	273	284	222	230	107
	2500-6500	Good mid-range torque and HP. Serious street/strip performance for N/A engines. 3000+ stall. Rough idle. Compression 10.0 to 11.5.	119761[28]	—	HR-285-2-7	Hyd	Hyd	.529	.558	285	294	232	240	107
EnergizerMax	1000-4800	Good low-end and mid-range torque and HP for stock or near stock engines. Daily driver. Smooth idle. Compression 8.0 to 9.5.	112101[28]	—	HR-206/313-2S1-12 4A	Hyd	Hyd	.455	.479	268	272	206	210	114
	1500-5500	Great low-end and mid-range torque and HP for near stock engines in heavier vehicles. Daily driver. Good idle. 2000+ stall. Compression 8.75 to 10.0.	112121[28]	—	HR-210/332-2S-10 4A	Hyd	Hyd	.498	.498	272	280	210	218	110
	2000-5800	Good mid-range torque and HP. Street/strip performance. Rough idle. 2500+ stall. Compression 9.0 to 10.5.	112141[28]	—	HR-222/339-2S-8 4A	Hyd	Hyd	.509	.528	284	292	222	230	108
	2500-6500	Good mid-range torque and HP for larger cubic inch engines. Street/strip performance. Fair idle. 3000+ stall. Compression 9.5 to 11.0.	112161[28]	—	HR-230/352-2S1-10 4A	Hyd	Hyd	.528	.548	292	300	230	238	110
PowerMax	1000-5200	Brute low-end torque and HP. Daily driver with economy. Smooth idle. Compression 8.0 to 9.5.	119811[28]	—	HR-260-2-12 IG	Hyd	Hyd	.429	.452	260	270	204	214	112
	1400-5600	Excellent low-end and mid-range torque and HP. Daily driver with economy. Street performance. N/A compression 8.75 to 10.5. Mild supercharged 8psi with 8.5 max compression. .900" base circle for long stroke clearance.	119561[28]	—	HR-210/325-2S-12.90	Hyd	Hyd	.488	.509	272	280	210	218	112
	1600-5800	Excellent low-end and mid-range torque and HP. Daily driver with economy. Street/strip performance. Mild plate nitrous. Compression 8.75 to 10.5. Mild supercharged 8psi with 8.5 max compression.	119821[28]	—	HR-276-2s-12 IG	Hyd	Hyd	.488	.509	276	284	214	222	112
	2000-6200	Good mid-range torque and HP. Daily driver with street/strip performance. Plate or mild manifold nitrous. 2500+ stall. Compression 9.5 to 10.75. Mild supercharged 10psi with 8.5 max compression.	119831[28]	—	HR-284-2S-12 IG	Hyd	Hyd	.509	.528	284	292	222	230	112
	2400-6400	Good mid-range torque and HP. Serious street/strip performance for heavy vehicles. Fair idle. 2800+ stall. Compression 9.5 to 10.75	119571[28]	—	HR-230/352-2S1-8 IG	Hyd	Hyd	.528	.548	292	300	230	238	108
	2800-6800	Good mid-range torque and HP. Serious street/strip performance. Good with plate or manifold nitrous. 3200+ stall. Compression 10.0 to 11.5. Mild supercharged 15psi with 8.5 max compression.	119841[28]	—	HR-296-2S-12 IG	Hyd	Hyd	.539	.558	296	304	234	242	112

[28] Requires cam button spacer, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
11532-16	—	144846-16[29]	99915-16	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	—	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11984-1	11744-16	95621-16[9]			
11532-16	—	144846-16[29]	99915-16	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	—	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11984-1	11744-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11984-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	96802-16[25]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	96802-16[25]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	96802-16[25]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	96802-16[25]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-165	99097-1	11975-1	11801-1630	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			

[3] Must machine cylinder heads.
[5] No machining required.
[7] Special length pushrods required.
[9] For use with or without pushrod guideplate cylinder heads.
[25] Standard diameter chrome silicon valve springs for 1.750" assembly height.
[29] PAC-enhanced valve springs for 1.750" assembly height.
[30] Extra long slot.

CAMSHAFTS

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
RaceMax	3000-6800	Good mid to upper RPM torque and HP. Bracket racing. Mild manifold nitrous. 3000+ stall. Fair idle. Compression 10.5 to 12.0. .900" base circle. Also, Roots supercharged with 18psi and 8.0 max compression.	119581[28]	—	HR-238/372-2S2-10.90 IG	Hyd	Hyd	.558	.558	300	304	238	242	110
	3400-7200	Good upper RPM torque and HP. +370ci. Bracket racing. Large manifold nitrous. 3500+ stall. Rough idle. Compression 10.5 to 12.0. .860" base circle. Also, Roots supercharged with 18psi and 8.0 max compression.	119681[28]	—	HR-240/372-2S1-14.86 IG	Hyd	Hyd	.558	.558	306	314	240	248	114
	3600-7200	Good upper RPM torque and HP. +370ci. Bracket racing. Large manifold nitrous. 3500+ stall. Rough idle. Compression 10.5 to 12.5. .900" base circle. Also, Roots supercharged with 20psi and 8.0 max compression.	119591[28]	—	HR-242/372-2S-12.90 IG	Hyd	Hyd	.588	.588	304	312	242	250	112
	3800-7200	Good upper RPM torque and HP. +380ci. Bracket racing. Large manifold nitrous. 4000+ stall. Rough idle. Compression 11.0 to 12.5. Also, Roots supercharged with 22psi and 8.0 max compression.	119601[28]	—	HR-246/372-2S-14 IG	Hyd	Hyd	.588	.588	308	316	246	254	114
	4200-7200	Good upper RPM torque and HP. +370ci N/A bracket racing applications. 4500+ stall converter. Rough idle. Compression 12.0 minimum.	119711[28]	—	HR-252/400-2S-8 IG	Hyd	Hyd	.600	.600	322	326	252	256	108
	4400-7200	Good upper RPM HP. +380ci bracket racing applications with larhe nitrous systems. 4800+ stall converter. Rough idle. Compression 12.5 minimum.	119721[28]	—	HR-258/372-2S-12.86 IG	Hyd	Hyd	.558	.558	320	328	258	266	112

[28] Requires cam button spacer, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
11532-16[5]	—	144846-16[29]	99915-16	99097-1	11975-1	11750-16	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11752-16	95621-16[9]			
11532-16[5]	—	144846-16[29]	99915-16	99097-1	11975-1	11750-16	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11752-16	95621-16[9]			
11532-16[5]	—	144846-16[29]	99915-16	99097-1	11957-1	11750-16	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11752-16	95621-16[9]			
11532-16[5]	—	144846-16[29]	99915-16	99097-1	11975-1	11750-16	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11752-16	95621-16[9]			
11532-16[5]	—	144846-16[29]	99915-16	99097-1	11975-1	11750-16	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11752-16	95621-16[9]			
11532-16[5]	—	144846-16[29]	99915-16	99097-1	11975-1	11750-16	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11752-16	95621-16[9]			

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[29] PAC-enhanced valve springs for 1.750" assembly height.

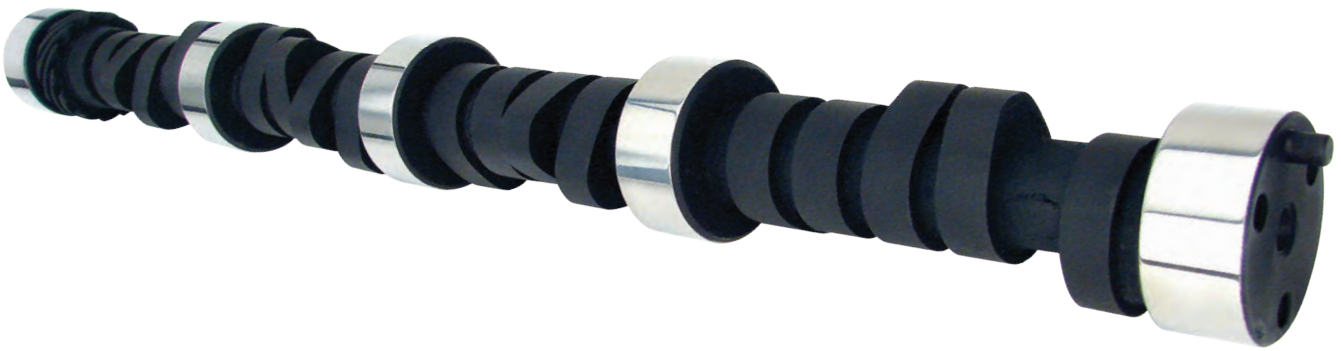
CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

						VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		
SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	2400-6000	Excellent low-end and mid-range torque and HP. Street/strip performance. 2500+ stall. Fair idle. Compression 8.75 to 10.0.	110911	—	F-228/3067-2-6	.022"	.022"	.460	.480	290	300	228	238	106
	2600-6200	Good low-end and mid-range torque and HP. Daily driver with street/strip performance. Stock to 2500+ stall. Compression 9.25 to 10.75.	110931	—	F-228/3067-2-10	.022"	.022"	.460	.480	290	300	228	238	110
	3000-6600	Good mid-range to upper RPM torque and HP. Street/strip performance. Fair idle. 3000+ stall. Compression 9.5 to 10.0. Mild roots or centrifugal supercharged 8psi with 8.5 max compression.	110941	—	F-238/3200-14	.022"	.022"	.480	.480	278	278	238	238	114
RaceMax	3200-6800	Good mid-range torque. Late Model, Sportsman, and IMCA applications for 1/4 to 3/8 mile oval track. Also Heavy, Pro ET bracket racing applications. 3000+ stall. Rough idle. Compression 10.5 to 12.0.	110921	110924[22]	Saturday Night Special F-244/3454-2S-6	.026	.026	.518	.536	280	288	244	252	106
	3200-7000	Good mid-range torque and HP. Performance for N/A engines or applications using a small nitrous system. Mild supercharged also. Rough idle. 3500+ stall. Compression 10.5 to 12.0.	114681	—	F-280-2	.026	.026	.518	.536	280	288	244	252	112
	3400-7000	Good mid and upper RPM torque. Heavy, Pro ET, and Super ET N/A bracket racing applications. 1/4 to 3/8 mile Late Model, Sportsman, and IMCA oval track applications. Rough idle. 3000+ stall. Compression 11.0 to 12.5.	110961	—	F-248/3334-6	.022	.022	.500	.500	288	288	248	248	106
	3400-7200	Good mid-range torque and HP. Bracket racing applications with manifold nitrous sytems. 3000+ stall. Rough idle. Compression 11.0 to 12.5. Also, Roots supercharged with 15psi and 8.0 max compression.	113861	—	F-288-2	.022	.022	.500	.520	288	298	248	258	114

[22] Includes Cam Sprocket Bolt Locking Plate.



CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99250-16	11309-1[5, 24]	99848-16[5, 23]	99915-16[5]	99095-1[31]	11975-1	11801-16[30]	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99097-1	11977-1	11750-16	95636-16[9]			
99250-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99095-1[31]	11975-1	11801-16[30]	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99097-1	11977-1	11750-16	95636-16[9]			
99250-16	—	96877-16[3]	99943-16	99097-1	11975-1	11801-16[30]	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16					11977-1	11750-16	95636-16[9]			
99250-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99095-1[31]	11977-1	11752-16	95636-16			
99250-16	—	96877-16[3]	99943-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16				99095-1[31]	11977-1	11752-16	95636-16			
99250-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99095-1[31]	11977-1	11752-16	95636-16			
99250-16	—	96877-16[3]	99943-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16				99095-1[31]	11977-1	11752-16	95636-16			

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[23] For 1967-87 with 1.700" assembly height.
[24] Standard diameter XHTCS tool steel valve springs for 1.800" assembly height.
[30] Extra long slot.
[31] +.050" Assembly height.

CAMSHAFTS

CRANE Cams

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL FLAT TAPPET														
RaceMax Contd.	3800-7200	Good mid-range torque and HP. Pro ET, and Super ET N/A bracket racing applications. 3/8 to 1/2 mile Late Model, Sportsman, and IMCA oval track applications. Rough idle. 4200+ stall. Compression 11.5 to 12.5.	110981	110984[22]	Saturday Night Special F-252/3574-2S-6	.026	.026	.536	0.554	288	296	252	260	106
	3800-7600	Good mid-range HP. Bracket racing applications with manifold nitrous sytems. 4200+ stall. Rough idle. Compression 11.5 to 12.5. Also, Roots supercharged with 18psi and 8.0 max compression.	114691	—	F-290-2	.026	.026	.536	.554	290	298	252	260	112
	4000-7600	Good mid-range torque and HP. Pro ET, and Super ET N/A bracket racing applications. 3/8 to 1/2 mile Late Model, Sportsman, and IMCA oval track applications. Rough idle. 4400+ stall. Compression 11.5 to 12.5.	111411	111414[22]	Saturday Night Special F-256/3634-2S-5	.026	.026	.545	.563	292	300	256	264	105
	4400-7600	Good mid and upper RPM HP. Pro, Super Pro, Super ET, N/A bracket racing applications. 3/8 to 1/2 mile Late Model, Sportsman oval track, and serious off-road applications. Rough idle. 4800+ stall. Compression 11.5 minimum.	111451	111454[22]	Saturday Night Special F-260/370-2-6	.026	.028	.555	.578	295	305	260	270	106
	4600-8200	Good upper RPM torque and HP. Performance N/A engines or applications using large manifold nitrous systems. Custom stall converter. Compression 11.5 to 12.5. Also, Roots supercharged with 20psi and 8.0 compression max.	114701	—	F-300-2	.026	.026	.563	.581	300	308	264	272	112
	4600-8000	Good upper RPM torque and HP. Pro ET, and Super ET N/A bracket racing applications. 3/8 to 1/2 mile Late Model, Sportsman, and IMCA oval track applications. Rough idle. Custom stall converter. Compression 12.0 minimum.	111501	111504[22]	Saturday Night Special F-268/3814-2S-6	.026	.026	.572	.590	304	312	268	276	106
	7800-8400	Good upper RPM HP. +370ci. Pro ET, Super ET, etc. bracket racing applications. Custom stall converter. Rough idle. Compression 12.5 minimum.	111001	—	F-276/3934-2S-6	.026	.026	.590	.608	312	320	276	284	106

[22] Includes Cam Sprocket Bolt Locking Plate.

BREAK-IN ENGINE OIL

Crane Cams has partnered with Driven Racing Oil to offer a specially formulated 10W-40 conventional engine oil to cope with the stresses created with flat tappet camshafts. A formula of advanced petroleum base, combined with an additive package used in Crane Cams Super Lube and a carefully proportioned zinc (ZDDP) component, this oil is intended for use with all conventional fuel types, with no additional oil additives required. Also recommended for roller lifter-equipped engines. **See page 234** of this catalog for more information.

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99250-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99095-1[31]	11977-1	11752-16	95636-16			
99250-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99095-1[31]	11977-1	11752-16	95636-16			
99250-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99095-1[31]	11977-1	11752-16	95636-16			
99250-16	11309-1[5, 24]	99846-16[24]	99915-16[5]	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16		96877-16[3]	99943-16	99095-1[31]	11977-1	11752-16	95636-16			
99250-16	—	96877-16	99943-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16				99095-1[31]	11977-1	11752-16	95636-16			
99250-16	—	96877-16	99943-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16				99095-1[31]	11977-1	11752-16	95636-16			
99250-16	—	96877-16	99943-16	99097-1	11975-1	11750-16	11621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
99350-16				99095-1[31]	11977-1	11752-16	95636-16			

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[24] Standard diameter XHTCS tool steel valve springs for 1.800" assembly height.
[31] +.050" Assembly height.

CAMSHAFTS

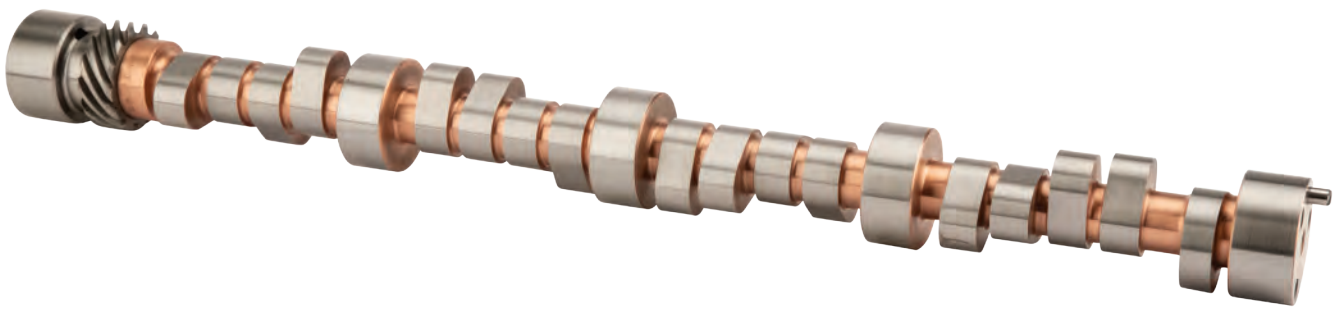
CRANE Cams®

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

						VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		
SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	LOBE SEP.
MECHANICAL ROLLER														
PowerMax	2200-6200	Excellent low-end and mid-range torque and HP. Daily driver with street/strip performance. Good idle. 2500+ stall. Compression 9.5 to 10.0.	118541[32]	—	SR-228/338-2S-12 IG	.020"	.020"	.507	.525	278	286	228	236	112
PowerMax	2400-6600	Good low-end and mid-range torque and HP. Street/strip performance. Fair idle. 3000+ stall. Compression 10.5 to 11.5. Mild centrifugal or roots supercharged 10psi with 8.5 max compression. .900" base circle for stroker clearance.	118571[32]	—	SR-232/350-2S-12.90 IG	.020"	.020"	.525	.543	286	294	232	240	112
PowerMax	2600-6800	Good low-end and mid-range torque and HP. Street/strip performance. Good with plate or manifold nitrous. Fair idle. 3000+ stall. Compression 10.5 to 11.5. Mild centrifugal or roots supercharged 10psi with 8.5 max compression.	118551[32]	—	SR-236/350-2S-12 IG	.020"	.020"	.525	.543	286	294	236	244	112
RaceMax	3000-7000	Good mid-range torque and HP. Bracket racing and serious off-road. 3500+ stall. Fair idle. .900" base circle. Compression 10.5 to 12.0.	118581[32]	—	SR-240/362-2S-10.90 IG	.020	.020	.543	.561	294	302	240	248	110
RaceMax	3600-7200	Good mid-range torque and HP. Heavy, Pro, etc. bracket racing applications. 4000+ stall. Rough idle. Circle track with 2bbl or 4bbl on 1/4 to 3/8 mile tracks. Compression 11.0 to 12.5.	118131[35]	—	TR-242/3867-2S-6	.022	.022	.580	.600	282	290	242	250	106
RaceMax	3600-7400	Good mid to upper RPM torque and HP. Bracket racing. Manifold nitrous. 3500+ stall. Fair idle. Compression 10.5 to 12.0. Also, Roots supercharged with 14psi and 8.0 max compression.	118531[32]	—	SR-244/362-2S-14 IG	.020	.020	.543	.561	294	302	244	252	114
RaceMax	3600-7400	Good mid to upper RPM torque and HP. Serious off-road and bracket racing applications. 4000+ stall. Compression 10.75 to 12.5.	118631[32]	—	SR-248/400-2S-8 IG	.020	.022	.600	.600	286	290	248	252	108
RaceMax	3800-7400	Good mid-range torque and HP. Bracket racing performance for heavier vehicles. 4200+ stall. Rough idle. 1/4 to 3/8 mile oval track. Compression 11.0 to 12.5.	118741[35]	—	R-248/420-2S2-6	.020	.020	.630	.630	280	288	248	256	106

[32] Requires cam button spacer, camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

[35] Requires cam button spacer, and a 11990-1 (.489" I.D.) or 11989-1 (.500" I.D.) aluminum-bronze distributor drive gear. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.



CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
11570-16	—	99893-16[3]	99953-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16[33]		11977-1	11752-16	95636-16[9]			
11570-16	—	99893-16[3]	99953-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16[33]		11977-1	11752-16	95636-16[9]			
11570-16	—	99893-16[3]	99953-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16[33]		11977-1	11752-16	95636-16[9]			
11570-16	—	99893-16[3]	99953-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16[33]		11977-1	11752-16	95636-16[9]			
11570-16	—	99885-16[3]	99956-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96883-16[3,33]	99675-16[36]		11977-1	11752-16	95636-16[9]			
11570-16	—	99893-16[3]	99953-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16[33]		11977-1	11752-16	95636-16[9]			
11570-16	—	99893-16[3]	99953-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16[33]		11977-1	11752-16	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11977-1	11752-16	95636-16[9]			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[33] For cylinder heads with +.100" long valves, use 99943-16 retainers.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[37] For cylinder heads with +.100" long valve, use 99970-16 retainers and 99087-1 valve stem locks.

CAMSHAFTS
COMPONENTS
LIFTERS
PUSHRODS
ROCKER ARMS
TIMING SETS
VALVE SPRINGS
TOOLS
MISC./MERCH

CAMSHAFTS

CRANE Cams

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL ROLLER														
RaceMax Contd.	3800-7400	Good upper RPM torque and HP. +388ci. Bracket racing. Large manifold nitrous. 4200+ stall. Rough idle. Compression 11.0 minimum .900" base circle. Also, Roots supercharged with 18psi and 8.0 max compression.	118691[32]	—	SR-250/374-2S-12.90 IG	.020	.020	.561	.561	300	308	250	258	112
	4000-7600	Good mid-range torque and HP. Heavy, Pro, etc. bracket racing applications. 4500+ stall. Good for 1/4 to 3/8 mile oval track also. Compression 11.0 to 12.5 (118761 has 4/7 Firing order swap).	118751[35] 118761[35, 44]	—	R-252/420-2S-6 R-252/420-2S-6 SFO	.020	.020	.630	.630	284	292	252	260	106
	4000-7800	Good upper RPM HP. Sprint Car and serious 1/4 to 3/8 mile oval track performance. Compression 12.5 minumum. Lift with 1.75:1 ratio rocker arms. (118811 tapped for Sanders rear drive and 1.875" roller bearing journals).	118971[35] 118811[35]	—	R-256/4301-2S-6 R-256/4301-2S-6 RB RD	.020	.022	.753	.753	284	290	256	262	106
	4000-7800	Good mid-range torque and HP. Pro and Super Pro bracket racing applications with 4000+ stall converter. Oval track and serious off-road performance. Rough idle. Compression 11.5 to 12.5	118821[35]	—	R-256/420-2S1-6	.020	.020	.630	.630	288	296	256	264	106
	4000-7600	Good upper RPM HP. +388ci. Pro-street and bracket racing performance. 4200+ stall. Compression 12.0 minimum.	118661[32]	—	SR-260/400-2S-8 IG	.020	.022	.600	.600	298	302	260	264	108
	4200-8200	Good upper RPM HP for 360 Sprint Car applications. Tapped for Sanders rear drive and .950" base circle. Compression 12.5 minimum.	19145[35]	—	294-304-08RRD.95	.012	.020	.670	.630	294	304	260	266	108
	4200-8000	Good mid to upper RPM torque and HP. Pro and Super Pro bracket racing applications. Custom stall converter. .960 base circle. Compression 11.5 minimum. (118431 has 4/7 Firing order swap).	118411[35] 118431[35, 44]	—	R-260/4467-2S-6.96 R-260/4467-2S-6.96 SFO	.012	.020	.670	.625	290	306	260	268	106
	4200-8000	Good upper RPM HP. Sprint Car, Modified, Super Modified and serious 3/8 to 1/2 mile oval track performance. 355-406ci. .950" base circle. Tapped for Sanders rear drive. Compression 12.0 minimum.	19137[35]	—	294-306-06 RRD.95	.012	.030	.670	.615	294	306	260	270	106

[32] Requires cam button spacer, camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

[35] Requires cam button spacer, and a 11990-1 (.489" I.D.) or 11989-1 (.500" I.D.) aluminum-bronze distributor drive gear. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

[44] SFO Firing order with 4/7 swap.

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
11570-16	—	99893-16[3]	99953-16	99097-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16		11977-1	11752-16	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11975-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11977-1	11752-16	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96885-16[3,37]	99675-16[37]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96885-16[3,37]	99675-16[37]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	99893-16[3]	99953-16	99097-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16		96870-16[3,33]	99943-16[33]		11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11990-1 (.491) 11979-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[33] For cylinder heads with +.100" long valves, use 99943-16 retainers.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[37] For cylinder heads with +.100" long valve, use 99970-16 retainers and 99087-1 valve stem locks.
[38] Wide body.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL ROLLER														
RaceMax Contd.	4200-7800	Good mid range torque and HP. Serious oval track performance for 2bbl or 4bbl engines on 1/4 to 3/8 mile tracks and 9.0 compression restricted classes.	19128[35]	—	295-299-06R.98	.012	.012	.650	.650	295	299	262	266	106
	4400-8400	Good upper RPM HP and torque. For Sprint Car and WOO oval track applications. Tapped for Sanders rear drive and has a .950" base circle. Lightweight gundrilled core for 1.875" roller bearing journals. Lift with 1.8:1 rocker arms.	19146[35]	—	383-431-08R.95 LWD RB RD	.020	.022	.770	.770	294	298	264	268	108
	4200-8000	Good mid to upper RPM HP. Super Pro bracket racing applications with a custom stall converter. Also 3/8 to 1/2 mile oval track performance. Compression 12.5 minimum.	118861[35]	—	R-264/420-2S1-6	.020	.020	.630	.630	296	304	264	272	106
	4200-8200	Good mid to upper RPM torque and HP. Bracket racing. Good with large manifold nitrous systems. Custom stall converter. Rough idle. Compression 12.5 minimum. Also, Roots supercharged with 20psi and 8.0 max compression. (118941 has 4/7 Firing order swap)	118921[35] 118941[35, 44]	—	R-264/420-2S1-10 R-264/420-2S1-10 SFO	.020	.020	.630	.630	296	304	264	272	110
	4400-8200	Good mid to upper RPM torque and HP. Super Pro, Super gas, and bracket racing applications with custom stall converter. Rough idle. Compression 12.5 minimum.	118881[35]	—	R-272/4334-2S2-10 R-272/4334-2S2-10 SFO	.020	.020	.630	.630	302	308	270	276	106
	6000-9800	High RPM max-effort for Super Stock and Competition Eliminator with 292-340ci engines. For stick or automatic applications with custom stall converter. Compression 14.0 minimum. Has 4/7 Firing order swap with 55mm journals. Lift with 1.8:1 intake rocker arms.	118991[35, 44]	—	R-276/5152-2S-14 SFO 55J	.020	.026	.927	.720	306	326	276	292	114
	5000-8600	Good upper RPM HP for Super Stock or Super Quick applications with stick or automatic transmissions using a custom stall converter. Compression 12.5 minimum.	118361[35]	—	R-280/450-2S-8	.026	.026	.675	.641	320	324	280	284	108
	6000-9800	High RPM HP for max effort Competition Eliminator 292-340ci. and 400ci Super Quick applications with stick or automatic transmissions using a custom stall converter. Compression 14.0 minimum. Lift with 1.65 rocker arms. (118461 has 4/7 Firing order swap).	118471[35] 118481[35, 44]	—	R-286/4765-2S3-12 R-286/4765-2S3-12 SFO	.035	.030	.786	.757	320	328	286	294	112

[35] Requires cam button spacer, and a 11990-1 (.489" I.D.) or 11989-1 (.500" I.D.) aluminum-bronze distributor drive gear. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.
[44] SFO Firing order with 4/7 swap.

CHEVROLET V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	96886-16[3,37]	99970-16[27]	99087-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11570D-16		96885-16[3,37]	99675-16[36]	99097-1	11984-1	11771-16[38]	95636-16[9]			
11570-16	—	99885-16[37]	99956-16	99097-1	11977-1	11750-16	11630-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11574-16		96883-16[3,37]	99675-16[36]		11984-1	11771-16[38]	95636-16[9]			
11570-16	—	99880-16[37]	99675-16[36]	99097-1	11977-1	11771-16[38]	11630-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11574-16					11984-1		95636-16[9]			
11570-16	—	99880-16[37]	99675-16[36]	99097-1	11977-1	11771-16[38]	95636-16[9]	99820-16[3]	11650-1	11979-1 (.491) 11990-1 (.500)
11574-16					11984-1					

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[37] For cylinder heads with +.100" long valve, use 99970-16 retainers and 99087-1 valve stem locks.
[38] Wide body.

CAMSHAFTS

CRANE Cams®

CHEVROLET TRUCK V8 1957-87 262-400 (NON-ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
EnergizerMax	1000-5000	Great low-end torque and HP for stock or near-stock engines. Daily driver and towing. Smooth idle. Compression 8.0 to 9.5.	112411	—	HR-206/313-12 4A	Hyd	Hyd	.470	.470	268	268	206	206	112
	1200-5200	Good low-end and mid-range torque and HP. Daily driver, towing, and off-road performance. Good idle. Compression 8.5 to 10.0.	112431	—	HR-210/319-2S2-12 4A	Hyd	Hyd	.479	.488	272	276	210	214	112
	2000-5800	Good mid-range torque and HP. Street and off-road performance. Fair idle. 2500+ stall. Compression 9.5 to 10.75.	112451	—	HR-222/339-2S-10 4A	Hyd	Hyd	.509	.525	284	292	222	230	110
	2500-6400	Great mid-range torque and HP. Street and serious off-road performance. Fair idle. 3000+ stall. Compression 9.75 to 11.0.	112471	—	HR-230/352-2S-9 4A	Hyd	Hyd	.528	.539	292	296	230	234	109

CHEVROLET V8 1987-1999 305-350 (FACTORY ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	1000-5200	Brute low-end torque and HP. Smooth idle. Daily driver and light towing. compatible with factory "spider" fuel injection on near-stock 350 engines Compression 8.0 to 9.5	109811[39]	—	HR-260-2-12 IG	Hyd	Hyd	.429	.452	260	270	204	214	112
Fireball	2800-6500	Good mid-range torque and HP. Serious street/strip performance for N/A engines. 3000+ stall. Rough idle. Compression 10.0 to 11.5.	109761	—	294HR07	Hyd	Hyd	.529	.558	285	294	232	240	107
	2000-5900	Good low-end and mid-range torque and HP. Street/strip performance. 2500+ stall. Fair idle. Compression 8.5 to 10.0	109771	—	277HR06	Hyd	Hyd	.516	.528	268	276	216	222	106
	2400-6100	Great mid-range torque and HP. Serious street/strip performance. 2800+ stall. Rough idle. Compression 9.0 to 10.5.	109931	—	279HR07	Hyd	Hyd	.520	.547	273	284	222	230	107
EnergizerMax	800-4500	Great low-end torque and HP improvement for stock engines. Daily driver. Smooth idle. Compression 8.5 to 9.5. MUST upgrade valve springs and retainers.	102101	—	HR-198/311-2S2-14 4A	Hyd	Hyd	.467	.488	260	268	198	206	114
	1400-5600	Excellent low-end and mid-range torque and HP. Daily driver. Street performance. Good idle. 2000+ stall. Compression 8.75 to 10.5. MUST upgrade valve springs, retainers, and computer tune.	102111	—	HR-210/319-2S3-12 4A	Hyd	Hyd	.479	.498	272	280	210	218	112
	1600-5800	Excellent low-end and mid-range torque and HP. Street/strip performance. Good idle. 2000+ stall. Compression 9.0 to 10.5. MUST upgrade valve springs, retainers, and computer tune.	102141	—	HR-218/332-2S-12 4A	Hyd	Hyd	.498	.509	280	284	218	222	112
	2500-6400	Good mid-range torque and HP. Street/strip performance. Fair idle. 3000+ stall. Compression 10.0 to 11.5. MUST upgrade valve springs, retainers, and computer tune.	102151	—	HR-230/365-2S1-10 4A	Hyd	Hyd	.548	.548	292	300	230	238	110

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHEVROLET TRUCK V8 1957-87 262-400 (NON-ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
11532-16[5, 7]	—	96802-16[25]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	96802-16[25]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	96802-16[25]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			
11532-16[5, 7]	—	144846-16[29]	99915-16[5]	99097-1	11975-1	11801-16[30]	11628-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16		11977-1	11750-16	95621-16[9]			

[3] Must machine cylinder heads.
[5] No machining required.
[7] Special length pushrods required.
[9] For use with or without pushrod guideplate cylinder heads.
[25] Standard diameter chrome silicon valve springs for 1.750" assembly height.
[29] PAC-enhanced valve springs for 1.750" assembly height.
[30] Extra long slot.

CHEVROLET V8 1987-1999 305-350 (FACTORY ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
10530-16[18]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16	10621-16	99820-16	11650-1	11951-1 (.491) 11950-1 (.500)
10535-16[42]		99838-16[3]	99944-16	99097-1		10750-16[45, 46]	95624-16			
10535-16[42]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-14[3]	10800C-16[30]	95624-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10750-16[20]				
10535-16[42]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-14[3]	10800C-16[30]	95624-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10750-16[20]	95624-16[9]			
10535-16[42]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-14[3]	10800C-16[30]	95624-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10750-16[20]				
10530-16[18]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
10535-16[42]		99838-16[3]	99944-16	99097-1		10750-16[45, 46]	95624-16[9]			
10530-16[18]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
10535-16[42]		99838-16[3]	99944-16	99097-1		10750-16[45, 46]	95624-16[9]			
10530-16[18]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
10535-16[42]		99838-16[3]	99944-16	99097-1		10750-16[45, 46]	95624-16[9]			
10535-16[42]	11309-1[5,40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10750-16[45, 46]	95624-16[9]			

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[18] For use with standard GM alignment bars.
[20] Self-aligning, narrow body for center bolt valve covers
[30] Extra long slot.
[40] Valve guide machining may be required to ensure sufficient valve guide-to-retainer clearance at full valve lift due to limited travel with stock components.
[42] For use with standard GM alignment bars. Required for use with camshafts having greater than stock lobe lift or reduced base circle diameters.
[43] For 1987-91 applications.
[45] To use on engines originally equipped with self-aligning rockers, hardened pushrod guideplates and heat-treated guideplates and pushrods must be installed and valve cover clearance checked.
[46] 1.5 Ratio (non self-aligning), narrow body for center bolt valve covers.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1987-1999 305-350 (FACTORY ROLLER BLOCKS)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	1800-6000	Excellent mid-range torque and HP. Daily driver with street strip performance. Crate motor upgrade. 2000+ stall. Good idle. Compression 9.0 to 11.0 Mild supercharged 10psi with 8.0 max compression.	109861[39]	—	HR-218/332-2S3-12 IG	Hyd	Hyd	.498	.518	280	288	218	226	112
PowerMax	2000-6200	Good mid-range torque and HP. Street/strip performance. Crate motor upgrade. 2500+ stall. Fair idle. Compression 9.5 to 11.0. Mild supercharged 10psi with 8.0 max compression.	109831[39]	—	HR-284-2S-12 IG	Hyd	Hyd	.509	.528	284	292	222	230	112
PowerMax	2600-6600	Good mid-range torque and HP. Street/strip performance. Plate or manifold nitrous. 2800+ stall. Fair idle. Compression 10.0 to 11.5. Roots supercharged 15psi with 8.0 max compression. .900" base circle for stroker clearance.	109661[39]	—	HR-230/359-2S-12.90 IG	Hyd	Hyd	.539	.558	292	300	230	238	112
PowerMax	2800-6800	Good mid-range torque and HP. Serious street/strip performance. Plate or manifold nitrous. 3000+ stall. Fair idle. Compression 10.0 to 11.5. Roots supercharged 15psi with 8.0 max compression. .900" base circle for stroker clearance.	109691[39]	—	HR-234/365-2S-12.90 IG	Hyd	Hyd	.548	.558	296	304	234	242	112
RaceMax	2800-6800	Good mid-range torque and HP. Mild bracket racing. Manifold nitrous. 3000+ stall. Fair idle. Compression 10.0 to 11.5. Also, Roots supercharged with 15psi and 8.0 max compression.	109841[39]	—	HR-296/2S-12 IG	Hyd	Hyd	.539	.558	296	304	234	242	112
RaceMax	3200-7200	Good upper RPM torque and HP. +370ci. Bracket racing. Supercharged and or nitrous. 1.040" base circle. Rough idle. Compression 10.5 to 12.0	109651[39]	—	HR-302-2S-10.04 IG	Hyd	Hyd	.558	.558	302	306	240	244	110
MarineMax	1200-5400	Good low-end and mid-range torque and HP improvement for light boats with mildly modified 350ci engines. Can use wet or dry, above water exit exhaust. Good idle. Compression 8.5 to 9.5.	109821[39]	—	HR-276-2S-12 IG	Hyd	Hyd	.488	.509	276	284	214	222	112
MECHANICAL ROLLER														
PowerMax	2200-6200	Excellent low-end and mid-range torque and HP. Daily driver. Street/strip performance. 2500+ stall. Good idle. Compression 9.5 to 11.0	108541[39]	—	SR-228/338-2S-12 IG	.020	.020	.507	.525	278	280	228	236	112
PowerMax	2400-6600	Good low-end and mid-range torque and HP. Street/strip performance. Plate or manifold nitrous. 3000+ stall. Fair idle. Compression 10.5 to 11.5. Mild supercharged. 10psi with 8.5 max compression. .900" base circle for stroker clearance.	108571[39]	—	SR-232/350-2S-12.90 IG	.020	.020	.525	.543	286	294	232	240	112

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHEVROLET V8 1987-1999 305-350 (FACTORY ROLLER BLOCKS)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
10535-16[42]	11309-1[5,40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10751-16[20]	95624-16[9]			
10535-16[42]	11309-1[5,40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10751-16[20]	95624-16[9]			
10535-16[42]	11309-1[5,40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	95626-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10751-16[20]				
10535-16[42]	11309-1[5,40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	95626-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10751-16[20]				
10535-16[42]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		96877-16[3]	99944-16	99097-1		10751-16[20]	95624-16[9]			
10535-16[42]	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	95625-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		96877-16[3]	99944-16	99097-1		10751-16[20]				
10535-16[42]	11309-1[40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	11951-1 (.491) 11950-1 (.500)
		99838-16[3]	99944-16	99097-1		10751-16[20]	95624-16[9]			
MECHANICAL ROLLER										
11570-16	—	99893-16[3]	99951-16	99097-1	10975-1[43]	10750-16[45, 46]	11621-16[9]	99820-16[47]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16							95638-16[9]			
11570-16	—	99893-16[3]	99951-16	99097-1	10975-1[43]	10750-16[45, 46]	95638-16[9]	99820-16[47]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16										

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[20] Self-aligning, narrow body for center bolt valve covers.
[30] Extra long slot.
[40] Valve guide machining may be required to ensure sufficient valve guide-to-retainer clearance at full valve lift due to limited travel with stock components.
[42] For use with standard GM alignment bars. Required for use with camshafts having greater than stock lobe lift or reduced base circle diameters.
[43] For 1987-91 applications.
[45] To use on engines originally equipped with self-aligning rockers, hardened pushrod guideplates and heat-treated guideplates and pushrods must be installed and valve cover clearance checked.
[46] 1.5 Ratio (non self-aligning), narrow body for center bolt valve covers.
[47] For LT1 aluminum heads.

CAMSHAFTS

CHEVROLET V8 1987-1999 305-350 (FACTORY ROLLER BLOCKS) CONTD.

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL ROLLER														
RaceMax	2400-6600	Good low-end and mid-range torque and HP. Mild bracket racing. Plate or manifold nitrous. Fair idle. 3000+ stall. Compression 10.5 to 11.5. Also, supercharged with 10psi and 8.5 max compression.	108551[39]	—	SR-236/350-2S-12 IG	Hyd	Hyd	.525	.543	296	294	236	244	112
	3400-7200	Good mid-range torque and HP. +383ci. Strip performance. Manifold nitrous. 3500+ stall. Fair idle. Compression 10.5 to 12.0. Also, Roots supercharged with 14psi and 8.0 max compression.	108611[39]	—	SR-240/362-2S-12.90 IG	Hyd	Hyd	.543	.561	294	302	240	248	112
	3400-7200	Good mid to upper RPM torque and HP. Strip performance. Manifold nitrous. 3500+ stall. Fair idle. Compression 10.5 to 12.0. Also, Roots supercharged with 14psi and 8.0 max compression.	108521[39]	—	SR-244/362-2S-12 IG	Hyd	Hyd	.543	.561	294	302	244	252	112

CHEVROLET TRUCK 1987-1999 V8 305-350

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
EnergizerMax	800-4500	Great low-end torque and HP improvement for stock engines. Daily driver. Smooth idle. Compression 8.5 to 9.5. MUST upgrade valve springs and retainers.	102401[39]	—	HR-198/311-2S-14 4A	Hyd	Hyd	.467	.488	260	268	198	206	114
	1200-5200	Good low-end and mid-range torque and HP for near-stock engines. Street and off-road performance. Good idle. Compression 8.75 to 9.75. MUST upgrade valve springs and retainers.	102421[39]	—	HR-210/319-14 4A	Hyd	Hyd	.479	.479	272	272	210	210	114
	1600-5800	Excellent low-end and mid-range torque and HP. Street and off-road performance. Good idle. 2000+ stall. Compression 9.0 to 10.5. MUST upgrade valve springs, retainers, and computer tune.	102441[39]	—	HR-218/332-2S-12 4A	Hyd	Hyd	.498	.509	280	284	218	222	112
	2000-6200	Good mid-range torque and HP. Street and off-road performance. Fair idle. 2500+ stall. Compression 9.5 to 11.0. MUST upgrade valve springs, retainers, and computer tune.	102461[39]	—	HR-226/345-2S1-10 4A	Hyd	Hyd	.518	.528	288	292	226	230	110

CHEVROLET V8 1992-1996 305-350 (LT1)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	1500-5700	Good low-end torque for 94-96 aluminum headed LT1 F-bodies and Corvettes with near-stock to mildly modified engines and mass air EFI. Good top-end increase without low-end loss. Good idle. Must upgrade valve springs.	104227[39]	—	2033	Hyd	Hyd	.479	.518	272	286	210	224	112
	2400-6400	Good mid-range torque for 94-95 aluminum headed F-bodies and Corvettes with highly modified engines using mass air EFI. High flow heads, headers, and exhaust system with a manual transmission recommended. Added top-end power with some low-end loss. Good idle. Must change valve springs.	104241[39]	—	2050	Hyd	Hyd	.498	.498	280	280	218	218	116

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHEVROLET V8 1987-1999 305-350 (FACTORY ROLLER BLOCKS) CONTD.

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
11570-16	—	99893-16[3]	99951-16	99097-1	10975-1[43]	10750-16[45, 46]	11621-16[9]	99820-16[47]	11650-1	11951-1 (.491) 11950-1 (.500)
11570D-16						11750-16[40, 45]	95638-16[9]			
11570-16	—	99893-16[3]	99951-16	99097-1	10975-1[43]	10750-16[45, 46]	95638-16[9]	99820-16[47]	11650-16	11951-1 (.491) 11950-1 (.500)
11570D-16						11750-16[40, 45]				
11570-16	—	99893-16[3]	99951-16	99097-1	10975-1[43]	10750-16[45, 46]	11621-16[9]	99820-16[47]	11650-16	11951-1 (.491) 11950-1 (.500)
11570D-16						11750-16[40, 45]	95638-16[9]			

CHEVROLET TRUCK 1987-1999 V8 305-350

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
10530-16	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	—
10535-16[42]		99838-16[3]	99944-16	99097-1		10751-16[20]	95624-16[9]			
10530-16	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	—
10535-16		99838-16[3]	99944-16	99097-1		10751-16[20]	95624-16[9]			
10530-16	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	10621-16[9]	99820-16[3]	11650-1	—
10535-16[42]		99838-16[3]	99944-16	99097-1		10751-16[20]	95624-16[9]			
10530-16	11309-1[5, 40]	99846-16	99915-16	99095-1	10975-1[43]	10800C-16[30]	95626-16[9]	99820-16[3]	11650-1	—
10535-16[42]		99838-16[3]	99944-16	99097-1		10751-16[20]				

CHEVROLET V8 1992-1996 305-350 (LT1)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
10530-16[18]	10308-1[47]	99893-16[47]	99951-16[47]	99097-1	—	10751-16[20]	10621-16[9]	—	11650-1	11951-1
10535-16[42]		96802-16[49]	99915-16[49]			10758-16[20, 50]	95624-16[9]			
10530-16[18]	10308-1[47]	99893-16[47]	99951-16[47]	99097-1	—	10751-16[20]	10621-16[9]	—	11650-1	11951-1
10535-16[42]		96802-16[49]	99915-16[49]			10758-16[20, 50]	95624-16[9]			

[3] Must machine cylinder heads.
[5] No machining required.
[9] For use with or without pushrod guideplate cylinder heads.
[18] For use with standard GM alignment bars.
[20] Self-aligning, narrow body for center bolt valve covers.
[30] Extra long slot.
[40] Valve guide machining may be required to ensure sufficient valve guide-to-retainer clearance at full valve lift due to limited travel with stock components.
[42] For use with standard GM alignment bars. Required for use with camshafts having greater than stock lobe lift or reduced base circle diameters.
[43] For 1987-91 applications.
[45] To use on engines originally equipped with self-aligning rockers, hardened pushrod guideplates and heat-treated guideplates and pushrods must be installed and valve cover clearance checked.
[46] 1.5 Ratio (non self-aligning), narrow body for center bolt valve covers.
[47] For LT1 aluminum heads.
[49] For LT1 iron heads.
[50] Valve springs and retainers must be changed to allow for increased valve travel.

CAMSHAFTS

CRANE Cams

CHEVROLET V8 1997-15 4.8L-6.2L (LS CATHEDRAL PORT)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	800-5200	Enhanced low-end torque for truck towing in 5.3L engines. Smooth idle. Increased HP with economy. Computer upgrade not required. Can be used with stock valve springs.	1449541	—	HR-200/295-15 1A	Hyd	Hyd	.502	.502	262	270	200	208	115
	1400-5500	Great daily driver or truck towing for 5.3L to 5.7L engines. Smooth idle. Computer upgrades not required. Can be used with stock valve springs.	1449511	—	HR-206/294-2S-14.55	Hyd	Hyd	.500	.500	270	278	206	214	114
	1800-6400	Good daily driver for stock or modified 4.8L to 6.0L. Light choppy idle. Compression 10.5+ or good with supercharger. Computer upgrades, performance valve springs, and HD pushrods required.	1449561	—	HR-216/3241-2S-15	Hyd	Hyd	.551	.551	278	286	216	224	115
PowerMax	1600-6000	Good overall torque and HP increase for stock or slightly modified 4.8L to 6.0L cathedral port engines. Daily driver with economy. Computer upgrades maybe required. Performance valve springs required.	1449041	—	HR-210/3241-2S-14 4a	Hyd	Hyd	.551	.551	272	280	210	218	114
	2000-6400	Good mid-range increase for stock to modified 5.7L to 6.0L cathedral port engines. Daily driver. Light choppy idle. 10.5+ compression or mild supercharged. Computer and valve spring upgrades required.	1449081	—	HR-216/344-2S-14	Hyd	Hyd	.585	.585	277	285	216	224	114
	2200-6500	Good mid-range increase for modified 5.7L to 6.0L cathedral port engines. Daily driver with street/strip performance. Light choppy idle. Fair fuel economy. 10.5+ compression with headers and free-flowing exhaust recommended. 2200+ stall. Computer and valve spring upgrades required.	1446111	—	HR-220/333-2S-15 4A	Hyd	Hyd	.566	.566	281	289	220	228	115
	2400-6500	Good mid to upper RPM torque and HP improvement for modified 5.7L to 6.0L cathedral port engines. Choppy idle. 11.0+ compression with headers, free-flowing exhaust, and low-ratio gearing required. 2500+ stall. Computer and valve spring upgrades required.	1449121	—	HR-224/347-2S1-15 4A	Hyd	Hyd	.590	.590	280	287	224	232	115
	2500-6800	Good mid to upper RPM torque and HP improvement for modified 5.7L to 6.0L cathedral port engines. Serious street/strip performance. Choppy idle. 11.0+ compression with headers, free-flowing exhaust. Supercharged or nitous. 2800+ stall. Computer and valve spring upgrades required.	1449401	—	HR-230/369-2S-13 3A	Hyd	Hyd	.627	.631	284	292	230	238	113
RaceMax	2700-6500	Good mid-range torque and HP for 5.7 to 7.0L engines with 11.5+ compression. Headers, high-flow exhaust, and upgraded rear-end gear ratio recommended. Choppy idle. 3200+ stall and computer upgrades required.	1449131	—	HR-228/353-13 4A	Hyd	Hyd	.600	.600	290	290	228	228	113
	2400-6500	Good mid-range torque and HP for modified 5.7 to 6.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Choppy idle. 3200+ stall. Compression 11.5 minimum.	1449601	—	HR-228/353-2S1-12	Hyd	Hyd	.600	.600	290	294	228	232	112

[18] For use with standard GM alignment bars.
[51] OE Replacement for use with standard GM alignment bars and standard base circle camshafts.
[52] Long body design for up to .715" valve lift and reduced base circle camshafts.
[53] Cylinder head removal required.
[54] Dual valve springs for up to .680" lift, requires 144944-16 or 144661-16 retainers, no machining required. 2002-Up heads require 144460-16 spring seats.

CHEVROLET V8 1997-15 4.8L-6.2L (LS CATHEDRAL PORT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
144530-16[51]	144309-1	144832-16	144944-16	99108-1	144984-1[172]	—	144621-16	99818-16	—	—
		144838-16[54]	144661-16		144985-1[173]			144460-16		
					144986-1[174]					
144530-16[51]	144309-1	144832-16	144944-16	99108-1	144984-1[172]	—	144621-16	99818-16	—	—
		144838-16[54]	144661-16		144985-1[173]			144460-16		
					144986-1[174]					
144530-16[51]	144317-1	144838-16[54]	144944-16	99108-16	144984-1[172]	—	144621-16	99818-16	—	—
	144318-1				144986-1[174]					
	144316-1									
144530-16[51]	144317-1	99831-16	99976-16	99107-1	144984-1[172]	—	144621-16	—	—	—
144536-16[18, 52]	144318-1	144838-16[54]	144944-16	99108-1	144985-1[173]					
	144316-1				144986-1[174]					
144532-16[53]	144317-1	99831-16	99976-16	99107-1	144984-1[172]	—	95629-16	99818-16	—	—
144536-16[18, 52]	144318-1	144838-16[54]	144944-16	99108-1	144985-1[173]	144790-16				
	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	144621-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144532-16[53]	144317-1	144838-16[54]	99976-16	99107-1	144984-1[172]	—	95629-16	99818-16	—	—
144536-16[18, 52]	144318-1		144944-16	99108-1	144985-1[173]	144790-16				
	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					

[55] For Warhawk blocks.
[172] Pro Series steel billet gears and double roller chain set with vernier adjustment for LS1 and LS6 without cam sensor trigger.
[173] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for early LS2 with single trigger cam sensor feature.
[174] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for late LS2, LS3, LS7 and L92 with four trigger cam sensor feature

CAMSHAFTS

CRANE Cams

CHEVROLET V8 1997-15 4.8L-6.2L (LS CATHEDRAL PORT)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
RaceMax Contd.	2400-6500	Good mid-range torque and HP for modified 5.7 to 6.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Choppy idle. 3200+ stall. Compression 11.0 minimum.	1449151 [3] ⚠	—	HR-228/353-2S1-14 2A	Hyd	Hyd	.600	.600	290	294	228	232	114
	2600-6400	Good mid-range and upper RPM torque and HP for larger framed single turbocharged 5.7 to 6.0L engines with upgraded cylinder heads and valvetrain. High-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Choppy idle. 3200+ stall.	1449171 [3] ⚠	—	HR-232/353-2SR-17 2A	Hyd	Hyd	.600	.600	294	290	232	228	117
	2900-6500	Good mid-range and upper RPM torque and HP for modified 5.7 to 6.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Choppy idle. 3600+ stall. Compression 11.5 minimum.	1449331 [3] ⚠	—	HR-232/353-2S1-14	Hyd	Hyd	.600	.600	294	298	232	236	114
	2800-6800	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Rough idle. 3400+ stall. Compression 11.5 minimum.	1449631 [3] ⚠	—	HR-232/353-2S-16 3A	Hyd	Hyd	.600	.600	294	302	232	240	116
	2900-6600	Excellent mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Rough idle. 3600+ stall. Compression 12.0 minimum.	1449201 [3] ⚠	—	HR-232/353-2S-10 0A	Hyd	Hyd	.600	.600	294	302	232	240	110
	3100-6800	Excellent mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Rough idle. 3600+ stall. Compression 12.0 minimum.	1449611 [3] ⚠	—	HR-236/353-2S-12	Hyd	Hyd	.600	.600	298	302	236	240	112
	2800-6800	Excellent mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Rough idle. 3600+ stall. Compression 11.5 minimum.	1449221 [3] ⚠	—	HR-236/347-2S1-15	Hyd	Hyd	.590	.590	291	299	236	244	115
	3000-7000	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with larger framed single turbos. Upgraded cylinder heads, valvetrain, high-flow exhaust, and computer tune required. Rough idle. 3500+ stall.	1449621 [3] ⚠	—	HR-240/353-14 2A	Hyd	Hyd	.600	.600	302	302	240	240	114
	3200-7200	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, computer tune, and upgraded rear-end gear ratio required. Rough idle. 3800+ stall. Compression 12.0 minimum.	1449261 [3] ⚠	—	HR-246/367-2-14	Hyd	Hyd	.624	.624	303	313	246	256	114

[52] Long body design for up to .715" valve lift and reduced base circle camshafts.
[53] Cylinder head removal required.
[54] Dual valve springs for up to .680" lift, requires 144944-16 or 144661-16 retainers, no machining required. 2002-Up heads require 144460-16 spring seats.

CHEVROLET V8 1997-15 4.8L-6.2L (LS CATHEDRAL PORT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					
144536-16[52]	144317-1	144838-16[54]	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144532-16[53]	144318-1		144661-16		144985-1[173]	144790-1				
144533-16[53, 55]	144316-1				144986-1[174]					

[55] For Warhawk blocks.
[172] Pro Series steel billet gears and double roller chain set with vernier adjustment for LS1 and LS6 without cam sensor trigger.
[173] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for early LS2 with single trigger cam sensor feature.
[174] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for late LS2, LS3, LS7 and L92 with four trigger cam sensor feature

CAMSHAFTS

CHEVROLET V8 1997-15 4.8L-6.2L (LS CATHEDRAL PORT)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
MarineMax	1000-5000	Direct fit camshaft for stock 4.8L-5.3L engines. Smooth idle. Great increase in torque and HP throughout entire RPM band. Can be used with wet or dry through-prop exhaust. Computer upgrades required.	1449541 [3] ⚠	—	HR-200/2951-2S-15 1A	Hyd	Hyd	.502	.502	262	270	200	208	115
	1200-5500	Great torque and HP increase for 4.8L-6.0L engines. Slight idle note. Can be used with wet or dry through-prop exhaust. Computer tuning, valve spring and pushrod upgrades required.	1449051 [3] ⚠	—	HR-210/3241-2S-16 2A	Hyd	Hyd	.551	.551	272	280	210	218	116
	1400-5700	Great torque and HP increase for 5.3L-6.0L engines. Light choppy idle. Can be used in a light boat with wet or dry free-flowing exhaust. Computer tuning, valve spring and pushrod upgrades required.	1449071 [3] ⚠	—	HR-216/344-2S1-16 3A	Hyd	Hyd	.585	.585	277	283	216	222	116
MECHANICAL ROLLER														
RaceMax	3500-7500	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, serious computer tune, and upgraded rear-end gear ratio required. Very rough idle. 4000+ stall. Compression 12.0 minimum.	1448051 [3] ⚠	—	R-240/3821-2S-10	.020	.022	.649	.649	269	273	240	244	110
	3300-7500	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Good for supercharger or nitrous. Headers, high-flow exhaust, serious computer tune, and upgraded rear-end gear ratio required. Very rough idle. 4000+ stall. Compression 12.0 minimum w/o supercharger.	1448011 [3] ⚠	—	R-242/353-2S-14	.020	.022	.600	.600	273	279	242	248	114
	3600-7600	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, serious computer tune, and upgraded rear-end gear ratio required. Very rough idle. 4200+ stall. Compression 12.0 minimum.	1448061 [3] ⚠	—	R-244/382-2S-10	.020	.022	.649	.649	273	277	244	248	110
	3600-7600	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Good for supercharger or nitrous. Headers, high-flow exhaust, serious computer tune, and upgraded rear-end gear ratio required. Very rough idle. 4200+ stall. Compression 12.0 minimum w/o supercharger.	1448021 [3] ⚠	—	R-248/353-2S-10 0A	.020	.022	.600	.600	279	292	248	260	110
	3800-7800	Good mid to upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, serious computer tune, and upgraded rear-end gear ratio required. Very rough idle. 4400+ stall. Compression 12.0 minimum.	1448031 [3] ⚠	—	R-262/395-2S-8	.020	.022	.671	.671	296	302	262	268	108
	4600-8800	Good upper RPM torque and HP for 5.7 to 8.0L engines with upgraded cylinder heads and valvetrain. Headers, high-flow exhaust, serious computer tune, and upgraded rear-end gear ratio required. Very rough idle. 5000+ stall. Compression 12.0 minimum.	1448041 [3] ⚠	—	R-276/420-2-14	.020	.022	.714	.714	308	318	276	286	114

[18] For use with standard GM alignment bars.
[27] Requires Crane Multi-Fit Valve Locks.
[51] OE Replacement for use with standard GM alignment bars and standard base circle camshafts.
[52] Long body design for up to .715" valve lift and reduced base circle camshafts.

CHEVROLET V8 1997-15 4.8L-6.2L (LS CATHEDRAL PORT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
144530-16[51]	144309-1	144832-16	144944-16	99108-1	144984-1[172]	—	144621-16	99818-16	—	—
		144838-16[54]	144661-16		144985-1[173]			144460-16		
					144986-1[174]					
144530-16[51]	144317-1	144838-16[54]	144944-16[27]	99108-1	144984-1[172]	144800-16	144621-16	99818-16	—	—
144536-16[18, 52]					144985-1[173]					
					144986-1[174]					
144530-16[51]	144317-1	144838-16[54]	144944-16[27]	99108-1	144984-1[172]	144800-16	95629-16	99818-16	—	—
144536-16[18, 52]					144985-1[173]					
					144986-1[174]					
MECHANICAL ROLLER										
144570-16	144316-1	144838-16	144661-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1[173]	144790-1				
					144986-1[174]					
144570-16	144316-1	144838-16	144661-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1[173]	144790-1				
					144986-1[174]					
144570-16	144316-1	144838-16	144661-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1[173]	144790-1				
					144986-1[174]					
144570-16	144316-1	144838-16	144661-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1[173]	144790-1				
					144986-1[174]					
144570-16	—	—	—	—	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1[173]					
					144986-1[174]					
144570-16	—	—	—	—	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1[173]	144790-16				
					144986-1[174]					

[54] Dual valve springs for up to .680" lift, requires 144944-16 or 144661-16 retainers, no machining required. 2002-Up heads require 144460-16 spring seats.
[55] For Warhawk blocks.
[172] Pro Series steel billet gears and double roller chain set with vernier adjustment for LS1 and LS6 without cam sensor trigger.
[173] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for early LS2 with single trigger cam sensor feature.
[174] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for late LS2, LS3, LS7 and L92 with four trigger cam sensor feature

CAMSHAFTS

CRANE Cams

CHEVROLET V8 1997-15 4.8L-6.2L (LS RECTANGULAR PORT)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
PowerMax	2000-6500	Good overall torque and HP increase for stock or slightly modified 6.2L to 7.0L rectangular port engines. Daily driver with eTconomy. Light choppy idle. Computer upgrades maybe required. Performance valve springs required.	2019371	—	HR-216/347-2S-13 4A	Hyd	Hyd	.590	.624	272	289	216	232	113
	2400-6700	Good mid-range increase for modified 6.2L to 7.0L rectangular port engines. Daily driver with street/strip performance. Light choppy idle. Fair fuel economy. 10.5+ compression with headers and free-flowing exhaust recommended. 2500+ stall. Computer and valve spring upgrades required.	2019381	—	HR-220/347-2S-13 4A	Hyd	Hyd	.590	.624	276	293	220	236	113
	2400-6800	Good mid to upper RPM torque and HP improvement for modified 6.2L to 7.0L rectangular port engines. Choppy idle. 11.0+ compression with headers, free-flowing exhaust, and low-ratio gearing required. 2600+ stall. Computer and valve spring upgrades required.	2019391	—	HR-226/367-2S1-14	Hyd	Hyd	.624	.624	283	297	226	240	114
	2500-7000	Good mid to upper RPM torque and HP improvement for modified 6.2L to 7.0L rectangular port engines. Serious street/strip performance. Choppy idle. 11.0+ compression with headers, free-flowing exhaust. Supercharged or nitous. 2800+ stall. Computer and valve spring upgrades required.	2016121	—	HR-234/371-2S-14	Hyd	Hyd	.631	.631	288	304	234	250	114
	2900-7200	Good mid to upper RPM torque and HP improvement for modified 6.2L to 7.0L rectangular port engines. Serious street/strip performance. Choppy idle. 11.5+ compression with headers, free-flowing exhaust. Supercharged or nitous. 3000+ stall. Computer and valve spring upgrades required.	2016131	—	HR-242/371-2S-14	Hyd	Hyd	.631	.631	296	312	242	258	114
RaceMax	2800-7200	Good mid-range torque and upper RPM HP. Headers and high-flow exhaust system recommended. Computer and spring upgrades required. Choppy idle. Good with 1.8:1 rocker arms. Compression 12.0 minimum.	2019341	—	HR-232/367-2S8-14 3A	Hyd	Hyd	.624	.624	289	305	232	248	114
	3200-7600	Good mid-range and upper RPM torque and HP for larger cubic inch engines with prepped cylinder heads with upgraded valve springs. Supercharged or nitrous. Rough idle. Custom stall converter required. Good with 1.8:1 rocker arms. Compression 12.5 minimum.	2019401	—	HR-242/367-2S6-16 4A	Hyd	Hyd	.624	.624	299	315	242	258	116
	3600-8000	Good upper RPM torque and HP for larger cubic inch engines with aftermarket cylinder heads and upgraded valve springs. Supercharged and or nitrous. Rough idle. Custom stall converter required. Compression 13.0 minimum w/o supercharger.	2019411	—	HR-250/382-2S-16 3A	Hyd	Hyd	.649	.661	307	319	250	264	116

CHEVROLET V8 1997-15 4.8L-6.2L (LS RECTANGULAR PORT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					
144532-16[53]	144317-1	99838-16	144944-16	99108-1	144984-1[172]	—	95629-16	99818-16[5]	—	—
144536-16[51]	144316-1		144661-16		144985-1[173]	144790-16				
					144986-1[174]					

[5] No machining required.
[51] OE Replacement for use with standard GM alignment bars and standard base circle camshafts.
[53] Cylinder head removal required.
[172] Pro Series steel billet gears and double roller chain set with vernier adjustment for LS1 and LS6 without cam sensor trigger.
[173] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for early LS2 with single trigger cam sensor feature.
[174] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for late LS2, LS3, LS7 and L92 with four trigger cam sensor feature

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1997-15 4.8L-6.2L (LS RECTANGULAR PORT)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHtANICAL ROLLER														
RaceMax	3200-7400	Good mid-range and upper RPM torque and HP for larger cubic inch engines with prepped cylinder heads and upgraded valve springs. Supercharged or small framed twin turbos. Rough idle. Custom stall converter required. Compression 12.5 minimum w/o boost.	2018011	—	R-244/382-2S2-13 2A	.020	.022	.649	.649	273	281	244	252	113
	3500-7700	Good mid-range torque and upper RPM HP for larger cubic inch engines with prepped cylinder heads and upgraded valve springs. Supercharged and or nitrous. Rough idle. Custom stall converter required. Compression 12.5 minimum w/o supercharger.	2018021	—	R-252/382-2S2-14 3A	.020	.022	.649	.663	281	295	252	266	114
	4000-8200	Good upper RPM torque and HP for larger cubic inch engines with aftermarket cylinder heads and upgraded valve springs. Supercharged or nitrous. Rough idle. Custom stall converter required. Compression 13.0 minimum w/o supercharger.	2018041	—	R-264/395-2S-16 3A	.020	.022	.671	.690	295		264	276	116
	4600-8800	Good upper RPM HP for larger cubic inch engines with aftermarket cylinder heads and upgraded valve springs. Supercharged or nitrous. Rough idle. Custom stall converter required. Compression 13.0 minimum w/o supercharger.	2018061	—	R-276/420-2-16 3A	.020	.020	.714	.714	304	314	276	286	116

CHEVROLET V8 1997-15 4.8L-6.2L (LS RECTANGULAR PORT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHtANICAL ROLLER										
144570-16	144316-1	144838-16	144661-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1[173]	144790-1				
					144986-1[174]					
144570-16	144316-1	144838-16	144661-16	99108-1	144984-1[172]	—	95629-16	99818-16	—	—
144572-16[55]					144985-1	144790-1				
					144986-1					
144570-16	—	—	—	—	144984-1	—	144621-16	99818-16	—	—
144572-16[55]					144985-1					
					144986-1					
144570-16	—	—	—	—	144984-1	—	144621-16	99818-16	—	—
144572-16[55]					144985-1	144790-16				
					144986-1					

[55] For Warhawk blocks.
[172] Pro Series steel billet gears and double roller chain set with vernier adjustment for LS1 and LS6 without cam sensor trigger.
[173] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for early LS2 with single trigger cam sensor feature.
[174] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for late LS2, LS3, LS7 and L92 with four trigger cam sensor feature.

CAMSHAFTS

CHEVROLET V8 2006-2015 7.0L LS7

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
RaceMax	2600-6800	Good mid-range torque and HP for modified LS7 engines with 11.0+ compression. Headers, high flow exhaust, and upgraded rear gear ratio recommended. Choppy idle. 3200+ stall, valve springs, and computer upgrade required.	2039281	—	HR-224/347-2S2-12 4A	Hyd	Hyd	.625	.625	280	299	224	244	112
	2300-6800	Good mid-range torque and HP for modified LS7 engines with 11.0+ compression. Headers, high flow exhaust, and upgraded rear gear ratio recommended. Choppy idle. 3000+ stall, valve springs, and computer upgrade required.	2039291	—	HR-224/347-2S2-15 4A	Hyd	Hyd	.625	.625	280	299	224	244	115
	2800-7000	Good mid to upper RPM torque and HP for modified LS7 engines. Headers, high-flow exhaust, serious computer tune, valve springs and upgraded rear-end gear ratio required. Choppy to rough idle. 3600+ stall. Compression 11.5 minimum.	2039341	—	HR-228/367-2S1-12 4A	Hyd	Hyd	.661	.661	285	303	228	246	112
	3400-7400	Good mid-range torque and HP. High-flow intake and exhaust recommended. Computer upgrades and valve springs required. Supercharged and or nitrous. Choppy idle. 3800+ stall. Compression 11.5 minimum.	2039361	—	HR-238/371-2S-15 3A	Hyd	Hyd	.667	.667	292	308	238	254	115
	3800-7800	Good mid-range to upper RPM torque and HP. Prepped/ported cylinder heads with upgraded valve springs recommended. Supercharged or nitrous. Rough idle. Custom stall converter. Compression 12.0 minimum.	2039381	—	HR-246/371-2S-16 4A	Hyd	Hyd	.667	.700	300	311	246	258	116
	4500-8500	Good upper RPM HP. Aftermarket or professionally prepped/ported cylinder heads with upgraded valve springs recommended. Supercharged or nitrous. Rough idle. Custom stall converter. Compression 12.0 minimum.	2039411	—	HR-258/389-2S-17 3A	Hyd	Hyd	.700	.700	311	323	258	270	117

BREAK-IN ENGINE OIL

Crane Cams has partnered with Driven Racing Oil to offer a specially formulated 10W-40 conventional engine oil to cope with the stresses created with flat tappet camshafts. A formula of advanced petroleum base, combined with an additive package used in Crane Cams Super Lube and a carefully proportioned zinc (ZDDP) component, this oil is intended for use with all conventional fuel types, with no additional oil additives required. Also recommended for roller lifter-equipped engines. **See page 234** of this catalog for more information.

CHEVROLET V8 2006-2015 7.0L LS7

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
144536-16[51]	—	99832-16[56]	99976-16[27]	99107-1	144986-1[174]	—	95629-16	99818-16[5]	—	—
144532-16[18, 52]						144790-16				
144533-16[53, 55]										
144536-16[51]	—	99832-16[56]	99976-16[27]	99107-1	144986-1[174]	—	95629-16	99818-16[5]	—	—
144532-16[18, 52]						144790-16				
144533-16[53, 55]										
144536-16[51]	—	—	—	—	144986-1[174]	—	95629-16	—	—	—
144532-16[18, 52]						144790-16				
144533-16[53, 55]										
144536-16[51]	—	—	—	—	144986-1[174]	—	95629-16	—	—	—
144532-16[18, 52]						144790-16				
144533-16[53, 55]										
144536-1651	—	—	—	—	144986-1[174]	—	95629-16	—	—	—
144532-16[18, 52]						144790-16				
144533-16[53, 55]										
144536-16[51]	—	—	—	—	144986-1[174]	—	95629-16	—	—	—
144532-16[18, 52]						144790-16				
144533-16[53, 55]										

[5] No machining required.
[18] For use with standard GM alignment bars.
[27] Requires Crane Multi-Fit Valve Locks.
[51] OE Replacement for use with standard GM alignment bars and standard base circle camshafts.
[52] Long body design for up to .715" valve lift and reduced base circle camshafts.
[53] Cylinder head removal required.
[55] For Warhawk blocks.
[56] LS3/L92 Heads require machining.
[172] Pro Series steel billet gears and double roller chain set with vernier adjustment for LS1 and LS6 without cam sensor trigger.
[173] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for early LS2 with single trigger cam sensor feature.
[174] Pro Series steel billet gears and double roller chain set with 9 keyway crank sprocket for late LS2, LS3, LS7 and L92 with four trigger cam sensor feature.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1958-65 348-427 (Z11)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	800-4400	Brute low-end torque. Daily driver with economy. Smooth idle. Compression 8.0 to 9.5.	150061	—	H-200/2717-2-10	Hyd	Hyd	.475	.502	264	274	200	210	110
PowerMax	1800-5400	Good low-end and mid-range torque. Daily driver with street/strip performance. Good idle. Compression 9.0 to 10.5.	150291	—	H-218/300-2S-12	Hyd	Hyd	.525	.543	288	300	218	230	112
PowerMax	2200-6000	Good mid-range torque and HP. Daily driver with street/strip performance. Hydraulic substitute for 409HP mechanical camshaft. Fair idle. Compression 9.5 to 11.0.	150301	—	H-224/3090-2-12	Hyd	Hyd	.541	.569	294	304	224	234	112
PowerMax	2800-6400	Good mid-range and upper RPM torque and HP. Street/strip performance. Hydraulic substitute for 425HP mechanical camshaft. 2500+ stall. Fair idle. Compression 10.0 to 11.5.	150311	—	H-230/3101-2S-14	Hyd	Hyd	.543	.551	292	296	230	234	114
RaceMax	3000-6000	Good mid and upper RPM torque and HP. Good for bracket racing and increased displacement stroker engines. Rough idle, 3500+ stall. Compression 10.5 to 12.0.	150171	—	H-236/325-2-10	Hyd	Hyd	.569	.588	296	306	236	246	110
HYDRAULIC ROLLER														
PowerMax	1600-5600	Excellent low-end torque and HP. Daily driver with street/strip performance. Good idle. Compression 9.0 10.5.	159511[59]	—	HR-218/332-2S-10	Hyd	Hyd	.581	.604	280	288	218	226	110
PowerMax	2000-6000	Good mid-range torque and HP. Street/strip performance. 2000+ stall. Fair idle. Compression 9.5 to 11.0.	159521[59]	—	HR-224/319-2S-10	Hyd	Hyd	.558	.574	280	286	224	230	110
RaceMax	2600-6600	Good mid-range torque and HP. Bracket racing. Fair idle. 3000+ stall. Compression 10.0 to 11.5.	159531[59]	—	HR-230/352-2S-12	Hyd	Hyd	.616	.628	292	296	230	234	112
RaceMax	3200-7000	Good mid-range and upper RPM torque and HP. Bracket racing and strip performance. Rough idle. 3500+ stall. Compression 11.0 to 12.5.	159541	—	HR-238/350-2S-8 2A	Hyd	Hyd	.612	.612	302	308	238	244	108
MECHANICAL FLAT TAPPET														
PowerMax	2500-5800	Excellent low and mid-range torque. Daily driver with street/strip performance. Good idle. Compression 8.5 to 9.75.	150811	—	F-228/3067-2-10	.022	.022	.537	.560	268	278	228	239	110
PowerMax	3000-6200	Replacement for Factory Mark IV 409HP 409ci camshaft.	150421	—	BluePrinted 3796077	.018	.022	.434	.434	280	280	234	234	116.5
PowerMax	3200-6500	Replacement for Factory Mark IV 425HP 409ci camshaft.	150431	—	BluePrinted 3830690	.022	.030	.504	.515	274	281	237	241	113.5
PowerMax	3800-7000	Replacement for Factory Mark VII 430HP Z-11 camshaft.	150441	—	BluePrinted 3837735	.030	.030	.555	.555	296	296	250	250	113.5
RaceMax	3800-7200	Good mid and upper RPM torque and HP. Bracket racing and strip performance. 4000+ stall. Compression 11.5 minimum.	151341	—	F-256/3412-2-10	.026	.026	.617	.634	292	302	256	266	110
MECHANICAL ROLLER														
PowerMax	2600-5800	Good low and mid-range torque. Daily driver with street/strip performance. 2500+ stall. Fair Idle. Compresiion 10.5 to 11.5.	158511[59]	—	SR-236/350-2S-12	.020	.020	.613	.634	286	294	236	244	112
RaceMax	3000-6200	Good mid-range torque and HP. Bracket racing and strip performance. Fair idle. 3400+ stall. Compression 11.0 to 12.0.	158171	—	SR-244/362-2S-10	.020	.020	.634	.655	294	302	244	252	110
RaceMax	3400-6800	Good upper RPM torque and HP. Good for bracket racing and increased displacement stroker engines. Rough idle. 3800+ stall. Compression 11.5 minimum.	158711	—	SR-252/374-2S-12	.020	.020	.655	.655	302	310	252	260	112

CHEVROLET V8 1958-65 348-427 (Z11)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99277-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
						13750-16[175]	15634-16			
99277-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
						13750-16[175]	15634-16			
99277-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
						13750-16[175]	15634-16			
99277-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
						13750-16[175]	15634-16			
99277-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
						13750-16[175]	15634-16			
HYDRAULIC ROLLER										
11532-16	—	96873-16[3]	99969-16	99098-1	—	15750-16	15630-16	99822-16[3]	—	11979-1 (.491) 11990-1 (.500)
						13750-16[175]	15640-16			
11532-16	—	96873-16[3]	99969-16	99098-1	—	15750-16	15630-16	99822-16[3]	—	11979-1 (.491) 11990-1 (.500)
						13750-16[175]	15640-16			
11532-16	—	96873-16[3]	99969-16	99098-1	—	15750-16	15630-16	99822-16[3]	—	11979-1 (.491) 11990-1 (.500)
						13750-16[175]	15640-16			
11532-16	—	96873-16[3]	99969-16	99098-1	—	15750-16	15630-16	99822-16[3]	—	11979-1 (.491) 11990-1 (.500)
						13750-16[175]	15640-16			
MECHANICAL FLAT TAPPET										
99250-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
99350-16						13750-16[175]	15634-16			
99250-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
99350-16						13750-16[175]	15634-16			
99250-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
99350-16						13750-16[175]	15634-16			
99250-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
99350-16						13750-16[175]	15634-16			
99250-16	—	96873-16[3]	99957-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11951-1 (.491) 11950-1 (.500)
99350-16						13750-16[175]	15634-16			
MECHANICAL ROLLER										
—	—	96870-16[3]	99969-16	99098-1	—	15750-16	15621-16	99822-16[3]	—	11979-1(.491) 11990-1 (.500)
						13750-16[175]	15634-16			
—	—	96870-16[3]	99969-16	99098-1	—	15750-16	15621-16	99822-16	—	11979-1(.491) 11990-1 (.500)
						13750-16[175]	15634-16			
—	—	96870-16[3]	99969-16	99098-1	—	15750-16	15621-16	99822-16	—	11979-1(.491) 11990-1 (.500)
						13750-16[175]	15634-16			

[3] Must machine cylinder heads.
[59] Requires cam button spacer and 11990-1 aluminum-bronze distributor drive gear.
[175] 1.7 Ratio, 7/16" stud.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	600-4200	Brute low-end torque. Smooth idle. Daily driver with economy. Compression 8.0 to 9.25.	133971 ① ⚠	—	H-248-2	Hyd	Hyd	.453	.484	248	260	192	204	110
	800-4400	Improved torque and HP across RPM range. Smooth idle. Daily driver and towing. TBI compatible for Dualies, Crew Cabs, SS454s and Suburbans.	134111 ① ⚠	134112 ① ⚠	2020	Hyd	Hyd	.468	.485	262	270	202	210	110
	1000-4800	Good low-end torque and HP. Smooth idle. Daily driver. Towing and off-road performance. Compression 8.5 to 10.0.	10304 ③ ⚠	103042 ③ ⚠	Energizer 266 H10	Hyd	Hyd	.499	.499	266	266	210	210	110
	1200-5000	Good low-end and mid-range torque and HP. Good idle. Daily driver. Towing and off-road performance. Increased mid-range to top-end torque and HP on SS454 trucks. TBI compatible. Compression 8.5 to 10.0.	133931 ① ⚠	134122 ① ⚠	2030	Hyd	Hyd	.485	.502	266	274	210	218	114
Fireball	1600-5000	Good low-end and mid-range torque and HP. Good to fair idle. 2200-2400 stall. 9.0 to 10.0 compression.	134901 ③ ⚠	134902 ③ ⚠	H-290-8	Hyd	Hyd	.515	.515	290	290	216	216	108
	2800-6000	Good mid-range torque and HP. Choppy idle. 3100-3300 stall. 9.5 to 11.0 compression.	134921 ③ ⚠	134922 ③ ⚠	H-302-10	Hyd	Hyd	0.544	0.544	302	302	228	228	110
PowerMax	1400-5000	Good mid-range torque and HP. Daily driver with economy and performance. Good idle. Compression 8.75 to 10.0.	10305 ③ ⚠	103052 ③ ⚠	Energizer 272 H10	Hyd	Hyd	.515	.515	272	272	216	216	110
	1600-5400	Excellent mid-range torque and HP. Daily driver with street peformance and economy. Small plate nitrous. Good idle. Compression 8.75 to 10.5. Mild supercharged. 8psi with 8.5 max compression.	133941 ③ ⚠	133942[22] ③ ⚠	H-272-2	Hyd	Hyd	.515	.510	272	284	216	228	112
	1800-5600	Good mid-range torque and HP. Daily driver with street/strip performance. Heavy car. Fair idle. 2000+ stall. Compression 9.5 to 10.75.	130201 ③ ⚠	—	H-222/3114-2S1-8	Hyd	Hyd	.529	.525	278	290	222	234	108
	2200-5600	Good mid-range to upper RPM torque and HP. Street/strip performance. Heavy car. Fair idle. 2500+ stall. Compression 9.5 to 11.0.	10307 ③ ⚠	103072 ③ ⚠	Energizer 282 H08	Hyd	Hyd	.533	.533	282	282	226	226	108
	2400-6200	Good mid-range torque and HP. Street/strip performance. Plate or manifold nitrous. 2500+ stall Compression 9.5 to 11.5. Supercharged 10psi with 8.5 max compression.	134241 ③ ⚠	134242[22] ③ ⚠	H-286-2	Hyd	Hyd	.534	.553	286	296	226	236	112
	2800-6200	Good mid-range to upper RPM torque and HP. Street/strip performance. 2500+ stall. Fair idle. Compression 9.5 to 11.0.	10306 ③ ⚠	103062 ③ ⚠	Energizer 284 H12	Hyd	Hyd	.544	.544	284	284	228	228	112
	3000-6600	Good mid-range to upper RPM torque and HP. Modified street/strip performance. 2800+ stall. Rough idle. Compression 9.75 to 11.0.	130211 ③ ⚠	—	H-230/318-2-10	Hyd	Hyd	.541	.559	290	300	230	240	110

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13800-16[66, 67]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
					13984-1	13744-16[66]	13640-16			
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13800-16[66, 67]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13800-16[66, 67]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
					13984-1	13744-16[66]	13640-16			
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13800-16[66, 67]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
					13984-1	13744-16[66]	13640-16			
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	13308-1	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	13308-1[60]	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	13308-1	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	13308-1	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	13308-1	99839-16[60]	99948-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		96801-16[61]	99957-16[61]		13977-1	13750-16[66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1	13975-1	13744-16[58]	13634-16	99822-16[3] 99820-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		96896-16[62]	99955-16[63]		13977-1	13750-16[66]	13640-16			

[3] Must machine cylinder heads.
[58] 8.1L Heads require 99155-16 7/16" rocker studs (no machining required) and factory pushrod guideplates.
[60] Contains standard diameter valve springs, no machining required. 1980-Later truck 366, 402, 427 and 454 engines have a short valve spring assembly height and should use 99837-16 valve springs and 99957-16 retainers.
[61] For 1980-95 truck 366, 302, 427 and 454 engines with short valve spring assembly height.
[62] Optional harmonic frequency optimized springs for street, marine, and endurance applications, requires 99955-16 retainers.
[63] For 99896-16 springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.
[67] Long slot for 1.560" maximum O.D. springs

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
RaceMax	3000-6600	Good mid and upper RPM torque and HP. Heavy, Pro ET Super ET and bracker racing applications with 3400+ stall. Rough idle. Also, 3/8 to 1/2 Street/ Hobby stock and Enduro oval track. Compression 10.0 to 11.5.	134551	134554	Saturday Night Special H-236/325-2-10	Hyd	Hyd	.553	.571	296	306	236	246	110
	3200-6800	Good mid-range HP. Bracket racing with 3500+ stall. Rough idle. Compression 10.0 to 11.5. Also, Roots supercharged with 15psi and 8.0 max compression.	10313	—	Energizer 294-304 H14	Hyd	Hyd	.569	.595	294	304	238	248	114
	3400-6800	Good upper RPM torque and HP. Heavy, Pro ET, Super ET bracket racing applications with 3800+ stall. Also, 3/8 to 1/2 mile Street/Hobby stock and Enduro oval track. Compression 10.5 to 12.0.	133101	—	Saturday Night Special 328 H08	Hyd	Hyd	.567	.567	328	328	246	246	108
	3400-7000	Good upper RPM HP. Bracket racing with 3800+ stall converter. Rough idle. Manifold nitrous. Compression 10.5 12.0. Also Roots supercharged with 18psi and 8.0 max compression.	134571	—	H-306-2	Hyd	Hyd	.571	.585	306	314	246	254	112
	3600-7000	Good mid and upper RPM HP for +500ci displacement engines. Bracket racing. Large manifold nitrous. Custom stall converter. Compression 10.75 to 12.5. Also, Roots supercharged with 20psi and 8.0 max compression.	130241	—	H-248/3500-2S-14	Hyd	Hyd	.595	.595	304	312	248	256	114
	3800-7200	Good mid and upper RPM HP for +500ci displacement engines. Bracket racing. Large manifold nitrous. Custom stall converter. Compression 10.5 to 12.0. Also, Roots supercharged with 22psi and 8.0 max compression.	130721	—	H-254/344-2S-14	Hyd	Hyd	.585	.600	314	322	254	262	114
	4000-7200	Good upper RPM HP for +500ci displacement engines. Bracket racing. Large manifold nitrous. Custom stall converter. Compression 11.5 minimum.	130731	—	H-262/353-2S-14	Hyd	Hyd	.600	.615	322	330	262	270	114
MarineMax	1300-5400	Great low-end and mid-range torque and HP increase for near stock engines with wet or dry through-prop exhaust. Good idle. Compression 8.5 to 9.5.	133801	133802[22]	H-278-2	Hyd	Hyd	.529	.525	278	290	222	234	114
	1900-5900	Standard camshaft for Mercruiser 400,405,420,425HP & 525SC 454ci engines. Increased torque and HP for mildly modified 350, 365, and 370 HP engines with free-flowing above water exit exhaust systems. Fair idle. Compression 9.0 to 9.6.	132561	—	H-228/312-2S-14 T1.2	Hyd	Hyd	.530	.551	298	306	228	236	114

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99277-16	—	99893-16	99954-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		99896-16[62]	99955-16[63]		13977-1	13763TR-16[38, 66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		99896-16[62]	99955-16[63]		13977-1	13763TR-16[38, 66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		99896-16[62]	99955-16[63]		13977-1	13763TR-16[38, 66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		99896-16[62]	99955-16[63]		13977-1	13763TR-16[38, 66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		99896-16[62]	99955-16[63]		13977-1	13763TR-16[38, 66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1t	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		99896-16[62]	99955-16[63]		13977-1	13763TR-16[38, 66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99377-16		99896-16[62]	99955-16[63]		13977-1	13763TR-16[38, 66]	13640-16			
99277-16	13308-1[66]	99839-16[60]	99948-16	99098-1	13975-1	13800-16[66, 67]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
	13309-1[61]	96801-16[61]	99957-16[61]		13984-1	13750-16[66]	13640-16			
99277-16	—	99893-16	99954-16	99098-1	13975-1	13801C-16[66, 72]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		96896-16[62]	99955-16		13984-1	13750-16[66]	13640-16			

[3] Must machine cylinder heads.
[38] Wide body.
[60] Contains standard diameter valve springs, no machining required. 1980-Later truck 366, 402, 427 and 454 engines have a short valve spring assembly height and should use 99837-16 valve springs and 99957-16 retainers.
[61] For 1980-95 truck 366, 302, 427 and 454 engines with short valve spring assembly height.
[62] Optional harmonic frequency optimized springs for street, marine, and endurance applications, requires 99955-16 retainers.
[63] For 99896-16 springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.
[67] Long slot for 1.560" maximum O.D. springs.
[72] Extra long slot for 1.560" maximum O.D. springs.

CAMSHAFTS

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
TruckMax	800-4600	Brute low-end torque. Smooth idle. Daily driver with economy. Compression 8.0 to 9.25.	139601[32]	—	HR-204/386-2-12 IG	Hyd	Hyd	.486	.512	260	270	204	214	112
Fireball	1900-5500	Good mid-range torque and HP. Street/strip and bracket racing performance. 2500+ stall. Fair idle. 9.5 to 10.75 Compression.	139961	—	83133S/ 83156B HR 107 + 4	Hyd	Hyd	.550	.589	277	281	224	232	107
	2400-5800	Great mid-range torque and HP. Serious street/strip performance. Bracket racing. 3000+ stall. Fair to rough idle. 9.75 to 11.0 Compression.	139111	—	83156B/ 83179B HR 108 + 5	Hyd	Hyd	.589	.623	281	291	232	240	108
	2600-6000	Strong mid-range torque and HP. Radial street performance. Bracket racing. 3200+ Stall. Rough idle. 10.0 to 11.25 Compression.	139121	—	83142B/ 83012B HR 108 + 5	Hyd	Hyd	.600	.632	289	298	236	244	108
EnergizerMax	800-4500	Great low-end torque and HP for stock or near stock engines. Daily driver with economy. Smooth idle. Compression 8.0 to 9.5.	132101	—	HR-208/292-12 4A	Hyd	Hyd	.496	.496	264	264	208	208	112
	1400-5500	Good low-end and mid-range torque and HP for mildly modified engines. Good idle. 2000+ stall. Compression 8.5 to 10.0.	132121	—	HR-214/301-2S-10 2A	Hyd	Hyd	.512	.527	270	276	214	220	110
	1800-5800	Excellent mid-range torque and HP. Street/strip performance. Mild supercharged or nitrous. Fair idle. 2500+ stall. Compression 9.5 to 11.0.	132141	—	HR-226/345-2S1-12 2A	Hyd	Hyd	.587	.610	288	296	226	234	112
	2500-6200	Good mid-range torque and HP. Street/strip and mild bracket racing performance. Rough idle. 3000+ stall. Compression 10.0 to 11.0.	132161	—	HR-236/364-2S-8 2A	Hyd	Hyd	.619	.632	300	304	236	242	108
	800-4500	Great low-end torque for towing and or highway use. Smooth idle. Compression 8.0 to 9.5.	132411	—	HR-210/319-12 2A	Hyd	Hyd	.542	.542	272	272	210	210	112

[32] Requires cam button spacer, camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
13532-16	—	99896-16	99955-16	99098-1	13975-1	13744-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1	13750-16[66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1		13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13744-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1	13750-16[66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1		13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1		13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1		13642-16			

[3] Must machine cylinder heads.
[38] Wide body.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.

CAMSHAFTS

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	1400-5200	Good low-end torque and HP. Daily driver. Crate motor upgrade. Good idle. Compression 8.75 to 10.0. Mild supercharged with 8psi and 8.5 max compression.	139611[32]	—	HR-218/3001-2S-14 IG	Hyd	Hyd	.510	.510	278	284	218	224	114
	1600-5400	Good low-end and mid-range torque and HP. Daily driver with street/strip performance. Fair idle. Compression 9.0 to 10.5.	139761[32]	—	HR-222/339-2S-10 IG	Hyd	Hyd	.576	.598	284	292	222	230	110
	1800-5600	Excellent mid-range torque and HP. Daily driver with street/strip performance. Plate or manifold nitrous. 2500+ stall. Fair idle. Compression 9.5 to 11.0. Supercharged with 10psi and 8.5 max compression.	139011[32]	—	ZHR-288-2S-12 IG	Hyd	Hyd	.587	.610	288	296	226	234	112
	2000-5800	Good mid-range torque and HP. Street/strip performance. 2500+ stall. Fair idle. Compression 9.75 to 11.25.	139771[32]	—	HR-230/352-2S1-14 IG	Hyd	Hyd	.598	.610	292	298	230	236	114
	2600-6200	Excellent mid-range to upper RPM torque and HP. Serious street/strip performance. 3000+ stall. Rough idle. Compression 10.5 to 12.0.	139681[32]	—	HR-240/365-2S-12 IG	Hyd	Hyd	.621	.632	302	310	240	248	112

[32] Requires cam button spacer, camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66t]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			

[3] Must machine cylinder heads.
[38] Wide body.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.

CAMSHAFTS

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
RaceMax	2200-6000	Good mid range torque and HP. Mild bracket racing. Manifold nitrous. 2800+ stall. +502ci upgrade. Fair idle. Compression 10.0 to 11.5. Also, supercharged with 16psi and 8.0 max compression.	139671[32]	—	HR-236/359-2S-14 IG	Hyd	Hyd	.610	.632	298	306	236	244	114
	3000-6400	Good mid-range to upper RPM torque and HP. Bracket racing with 3500+ stall. Rough idle. +500ci. Compression 10.5 to 12.5. Also, Roots supercharged with 18psi and 8.0 max compression.	139651[32]	—	HR-306-2S-14 IG	Hyd	Hyd	.632	.632	306	318	244	256	114
	3000-6400	Good mid-range to upper RPM torque. Bracket racing with 3500+ stall. +500ci. Rough idle. Compression 11.0 to 12.5.	139801[32]	—	HR-248/372-2S-10 IG	Hyd	Hyd	.632	.632	310	318	248	256	110
	3200-6400	Good upper RPM torque and HP. Bracket racing and strip performance. 3800+ stall. +540ci. Rough idle. Manifold nitrous. Compression 11.5 to 13.0. Also, supercharged with 20psi and 8.0 max compression.	139811[32]	—	HR-250/400-2S1-14 IG	Hyd	Hyd	.680	.680	320	328	250	258	114
	3400-6600	Good upper RPM torque and HP. +540ci. with well prepared cylinder heads. Bracket racing and strip performance. 3800+ stall. Compression 12.0 minimum.	139821[32]	—	HR-256/372-2S-10 IG	Hyd	Hyd	.632	.632	318	326	256	264	110
	3600-6600	Good upper RPM torque and HP. Bracket racing and strip performance. 40000+ stall. +540ci. Rough idle. Large manifold nitrous. Compression 12.0 minimum. Also, supercharged with 22psi and 8.0 max compression.	139831[32]	—	HR-258/4001-2S-14 IG	Hyd	Hyd	.680	.680	328	336	258	266	114
	3800-6800	Good upper RPM torque and HP. Super Gas, Super Comp and bracket racing. +572ci with prepared heads and custom stall. Large manifold nitrous. Compression 12.5 minimum. Also, supercharged with 26psi and 8.5 max compression.	139711[32]	—	HR-262/400-2S1-14 IG	Hyd	Hyd	.680	.680	332	340	262	270	114
	4000-7000	Good upper RPM HP for high torque +572ci drag race applications. Compression 13.0 minimum.	139861[32]	—	HR-264/420-2S-15 IG	Hyd	Hyd	.714	.714	328	336	264	272	115
MarineMax	800-4600	Excellent low-end torque and HP improvement for near-stock 454ci engines with wet or dry free-flowing above water exit exhaust systems in heavy boats. Good idle. Compression 8.0 to 9.0.	139001	—	ZHR-276-2S-10 IG	Hyd	Hyd	.553	.576	276	284	214	222	110
	1800-5600	Good mid-range torque and HP increase for modified 454-502ci engines with dry free-flowing above water exit exhaust systems. Mild supercharged. Fair idle. Compression 8.5 to 9.5.	139021	—	ZHR-296-2S-12 IG	Hyd	Hyd	.610	.632	296	304	234	242	112
	2500-5900	Good mid-range to upper RPM torque increase for modified +480ci engines with aftermarket tube headers and dry, above water exit exhaust in heavy boats. Rough idle. Compression 8.75 to 9.75.	139781	—	HR-244/372-2S-10 IG	Hyd	Hyd	.632	.632	306	318	244	256	110

[32] Requires cam button spacer, camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
					13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
					13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
					13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13984-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
					13977-1	13763TR-16[38, 66]	13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1		13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1		13642-16			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13984-1		13642-16			

[3] Must machine cylinder heads.
[38] Wide body.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.

CAMSHAFTS

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
Fireball	3600-7000	Good mid-range to upper RPM torque and HP. Rough idle. Custom stall recommended. 10.75 to 12.0 compression.	134361	—	F-326-2-8	.022	.024	.554	.554	326	336	252	262	108
PowerMax	2600-6200	Excellent low-end and mid-range torque and HP. Street/strip performance. Heavy car. 2500+ stall. Fair idle. Compression 10.5 to 11.5.	131101	—	F-238/3200-2-8	.022	.022	.544	.567	300	310	238	248	108
	2800-6600	Good low-end and mid-range torque and HP. Street/strip performance. Plate or manifold nitrous. 3000+ stall. Fair idle. Compression 10.5 to 11.5. Mild supercharged with 10psi and 8.5 max compression.	133841	—	F-304-2	.022	.022	.544	.567	304	314	238	248	114
	3000-6400	Replacement for factory 375HP 396ci, 425HP 427ci, 435HP 427ci, and 460HP 454ci camshaft.	969961	—	BluePrinted 3863143	.024	.028	.520	.520	—	—	242	242	114
	3200-6600	Good low-end and mid-range torque and HP. Street/strip performance. 3500+ stall. Fair idle. Compression 10.5 to 11.5.	131111	—	F-244/3454-2S-8	.026	.026	.587	.608	280	288	244	252	108

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99893-16	99954-16	99098-1	13975-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99893-16	99954-16	99098-1	13975-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99893-16	99954-16	99098-1	13975-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99893-16	99954-16	99098-1	13975-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			

[3] Must machine cylinder heads.
[38] Wide body.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.

CAMSHAFTS

CRANE Cams

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
RaceMax	3400-7000	Good mid-range torque and HP. Pro ET, Super ET, etc. and bracket racing performance. Rough idle. 3800+ stall. Also, 1/4 to 3/8 mile Street Stock and Modified oval track performance. Compression 11.0 to 12.0.	134781	134782	Saturday Night Special F-314-2	.022	.022	.567	.590	314	324	248	258	110
	3600-7000	Good mid-range torque and HP for bracket racing applications with 4000+ stall. Compression 11.25 to 12.25	131131	—	F-252/3574-2S-8	.026	.026	.608	.628	288	296	252	260	108
	4000-7500	Good mid-range and upper RPM torque and HP. Pro ET, Super ET,etc. and bracket racing performance. Rough idle. 3800+ stall. Also, 3/8 to 1/2 mile Street Stock and Modified oval track performance. Compression 11.5 to 12.5.	134691	134694	Saturday Night Special F-290-2	.026	.026	.580	.600	290	300	256	266	110
	4200-7800	Good upper RPM HP for engines with +480ci. For bracket racing applications with custom stall converter. Rough idle. Manifold nitrous. Compression 12.0 minimum. Also, Roots supercharged with 20psi and 8.0 max compression.	131281	—	F-260/3694-2S-14	.026	.026	.628	.648	296	304	260	268	114
	4400-7800	Good upper RPM torque and HP. Super Pro, Hot Rod, etc. and bracket racing performance. Rough idle. Custom stall converter required. Also, 3/8 to 1/2 mile Street Stock and Modified oval track performance. Compression 12.0 minimum.	134761	134764	Saturday Night Special F-310-2	.026	.026	.600	.620	310	320	266	276	110
	4400-8000	Good upper RPM HP for +454ci bracket racing engines. Large manifold nitrous. Custom stall converter. Compression 12.0 minimum. Also, Roots supercharged with 20psi and 8.0 max compression.	131151	—	F-266/3528-2-14	.026	.026	.600	.620	302	312	266	276	114
	4600-8000	Good upper RPM HP for +460ci bracket racing engines in 2300+lb vehicles. Custom stall converter required. Compression 12.5 minimum.	131161	—	F-270/3867-2S-10	.012	.026	.657	.620	300	312	270	276	110
	4600-8200	Good upper RPM HP for +500ci bracket racing engines. Large manifold nitrous. Custom stall converter. Compression 12.5 minimum. Also, Roots supercharged with 22psi and 8.0 max compression.	131291	—	F-272/3874-2S-14	.026	.026	.659	.679	308	316	272	280	114
	4800-8200	Good upper RPM HP for bracket racing engines in 2700+lb vehicles. Custom stall converter required. Compression 12.5 minimum. #131171 has 4/7 firing order swap.	131641 13117144	—	F-276/3934-2S-8 F-276/3934-2S-8 SFO	.026	.026	.669	.689	312	320	276	284	108
	5000-8400	Good high RPM HP for engines +540ci in flat tappet restricted classes. Custom stall converter required. Compression 13.0 minimum.	131761	—	F-280/3994-2S-10	.026	.026	.679	.699	316	324	280	288	110

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
							13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			
99250-16	—	99890-16	99974-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
99350-16					13977-1	13763TR-16[38, 66]	13640-16			

[3] Must machine cylinder heads.
[38] Wide body.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.

CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL ROLLER														
PowerMax	2800-6600	Excellent low-end and mid-range torque and HP. Street/strip performance. Plate nitrous. 3000+ stall. Good idle. Compression 10.5 to 11.5. Supercharged with 10psi and 8.5 max compression.	138551[32]	—	SR-238/350-2S-12 IG	.020	.020	.595	.615	288	296	238	246	112
	3000-6800	Good low-end and mid-range torque and HP. Street/strip performance. 3500+ stall. Fair idle. Compression 10.5 to 12.0.	138601	—	SR-246/362-2S-10 IG	.020	.020	.615	.636	296	304	246	254	110
	3200-6800	Excellent mid-range torque and HP. Street/strip performance. Plate or manifold nitrous. 3500+ stall. Fair idle. Compression 10.5 to 12.0. Supercharged with 16psi and 8.0 max compression.	138781	—	SR-246/362-2S-14 IG	.020	.020	.615	.636	296	304	246	254	114
RaceMax	3200-7000	Good mid-range torque and HP. Bracket racing performance for 3000+lb vehicles. Rough idle. 3800+ stall. Compression 11.0 to 12.5.	138871[35]	—	R-250/420-2S-10	.020	.020	.714	.714	282	290	250	258	110
	3400-7200	Good mid-range to upper RPM torque and HP. Bracket racing performance for +480ci with mild supercharger and or nitrous. Rough idle. 3800+ stall. Compression 11.0 minimum.	138631[32]	—	SR-254/374-2S-12 IG	.020	.020	.636	.636	304	312	254	262	112
	3600-7200	Good mid-range to upper RPM torque and HP. Bracket racing performance for +480ci with mild supercharger and or nitrous. Rough idle. 3800+ stall. Compression 11.0 minimum.	138101[32]	—	R-254/420-2S1-12 IG	.020	.020	.714	.714	286	294	254	262	112
	3800-7200	Good mid-range torque and HP for bracket racing engines in 2700+lb vehicles. Custom stall converter required. Compression 11.0 to 12.5.	138881[35]	—	R-254/420-2-10	.020	.020	.714	.714	286	296	254	264	110
	4000-7200	Good mid-range torque and HP for bracket racing engines in 3000+lb vehicles. Custom stall converter required. Compression 12.0 minimum.	138891[35]	—	R-258/420-2S-8	.020	.020	.714	.714	290	298	258	266	108
	4200-7600	Good mid-range torque and HP for +480ci bracket racing engines. Large manifold nitrous. Custom stall converter. Compression 11.5 minimum. Also, Roots supercharged with 20psi and 8.0 max compression.	138131[32]	—	R-262/420-2S1-14 IG	.020	.020	.714	.714	294	302	262	270	114
	4400-7600	Good mid to upper RPM torque and HP for bracket racing vehicles weighing 3000+lbs. Custom stall converter required. Also, oval track performance for Modifieds. Compression 12.0 minimum. #138617 has 4/7 firing order swap.	138831[35] 138671[35, 44]	—	R-268/420-2S-8 R-268/420-2S-8 SFO	.020	.020	.714	.714	300	304	268	272	108
	4400-7800	Good upper RPM HP for +480ci bracket racing engines. Large manifold nitrous. Custom stall converter required. Compression 12.5 minimum. Alsp, Roos supercharged with 22psi and 8.0 max compression.	138661[35]	—	R-270/420-2S2-14	.020	.020	.714	.714	302	310	270	278	114
	4600-8000	Good upper RPM torque and HP. Bracket racing performance for Super Comp, Super Pro, and Super Gas applications. Custom stall converter required. Compression 12.5 minimum. #138301 has 4/7 firing order swap.	138291[35] 138301[35, 44]	—	R-274/4334-2S-10 R-274/4334-2S-10 SFO	.026	.026	.737	.726	314	324	274	284	110

[32] Requires cam button spacer, camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

[35] Requires cam button spacer, and a 11990-1 (.489" I.D.) or 11989-1 (.500" I.D.) aluminum-bronze distributor drive gear. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.
[44] SFO firing order with 4/7 swap.

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
13570-16	—	99832-16[64]	99976-16[65]	99098-1	13975-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570D-16		99876-16[3]	99955-16		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	99832-16[64]	99976-16[65]	99098-1	13975-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570D-16		99876-16[3]	99955-16		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	99832-16[64]	99976-16[65]	99098-1	13975-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570D-16		99876-16[3]	99955-16		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16			99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	99832-16[64]	99976-16[65]	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570D-16		99876-16[3]	99955-16		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16			99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16			99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16			99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16			99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16			99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16			99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16[3]	13650-1	11990-1
13570D-16		961226-16[3, 69]	99661-16[27]		13977-1	13763TR-16[38, 66]	13640-16			

[3] Must machine cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[38] Wide body.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.
[68] Must use 99098-16 valve stem locks, included with retainers.
[69] Requires 99661-16 titanium retainers.

CAMSHAFTS

CHEVROLET V8 1967-1995 396-454 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL ROLLER														
RaceMax	4600-8600	Good upper RPM HP for +500ci bracket racing engines with large manifold injected nitrous systems. Custom stall converter required. Compression 12.5 minimum. 4/7 Firing order swap.	138931[35, 44]	—	R-274/5002-2S-14 SFO	.020	.016	.850	.818	304	331	274	300	114
	4600-8000	Good upper RPM torque and HP for N/A 427 to 468ci bracket race engines. Custom stall converter required. Compression 12.5 minimum.	138851[35]	—	R-278/420-2S-10	.020	.020	.714	.714	310	314	278	282	110
	4600-8200	Good upper RPM torque and HP for +540ci bracket racing engines. Large manifold nitrous. Custom stall converter. Compression 12.5 minimum. Also, Roots supercharged with 26psi and 8.0 max compression.	138471[32]	—	R-278/420-2-14 IG	.020	.020	.714	.714	310	320	278	288	114
	4800-8600	Good upper RPM HP for +540ci engines with large manifold injected nitrous systems. Custom stall converter requied. Compression 13.5 minimum. 4/7 Firing order swap.	138941[35, 44]	—	R-282/490-2S2-13 SFO	.026	.022	.833	.772	318	339	282	304	113
	5000-8400	Strong mid-range and top-end for +600ci Top Sportsman, Quick 16, and Top Dragster applications with manifold injected nitrous systems. Custom stall converter required. Compression 13.0 minimum. 4/7 Firing order swap.	138001[35, 44]	—	R-284/481-2S11-14 2A SFO	.016	.030	.818	.800	316	340	284	300	114
	5000-8600	Strong mid-range and top-end for +600ci Top Sportsman, Quick 16, and Top Dragster applications with large manifold injected nitrous systems. Custom stall converter required. Compression 13.0 minimum. 4/7 Firing order swap.	138011[35, 44]	—	R-286/490-2S6-14 3A SFO	.026	.016	.833	.818	322	336	286	304	114
	5000-8600	Strong mid-range and top-end for +600ci Top Sportsman, Quick 16, and Top Dragster applications with large manifold injected nitrous systems. Custom stall converter required. Compression 13.0 minimum. 4/7 Firing order swap.	138771[35, 44]	—	R-286/490-2S1-14 SFO	.026	.030	.833	.810	326	352	286	306	114
	5000-8600	Strong mid-range and top-end for +640ci Top Sportsman, Quick 16, and Top Dragster applications. Custom stall converter required. Compression 14.0 minimum. 4/7 Firing order swap.	138951[35, 44]	—	R-286/500-2S3-16 SFO	.026	.030	.850	.816	326	348	286	298	116
	6000-8400	Good upper RPM HP for +640ci bracket racing applications with large manifold injected nitrous systems. Custom stall converter required. Compression 14.5 minimum. 4/7 Firing order swap.	138961[35, 44]	—	R-286/5151-2S-16 SFO	.024	.026	.876	.794	320	344	286	310	116
	5000-8400	Max effort for +560ci Super Comp, Super Quick, etc. with stick or automatic transmissions. Custom stall converter required. Compression 14.0 minimum. 4/7 Firing order swap.	138971[35, 44]	—	R-288/5002-2S2-12 SFO	.020	.022	.850	.850	318	332	288	300	112
	5200-8400	For very large cubic inch engines and Outlaw 632, Unlimited Street classes with large manifold injected nitrous systems. Custom stall converter required. Compression 14.5 minimum. 4/7 Firing order swap..	138921[35, 44]	—	R-288/515-2S3-18 SFO	.020	.022	.876	.850	318	348	288	316	118

[32] Requires cam button spacer, camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

[35] Requires cam button spacer, and a 11990-1 (.489" I.D.) or 11989-1 (.500" I.D.) aluminum-bronze distributor drive gear. For engines equipped with mechanical fuel pumps, fuel pump pushrod 11985-1 is highly recommended to prevent fuel pump lobe wear.

[44] SFO firing order with 4/7 swap.

CHEVROLET V8 1967-1995 396-454 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16	13650-1	11990-1
13570D-16		96848-16[3, 70]	99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96886-16[3]	99970-16	99098-1	13984-1	13750-16[66]	13634-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13570D-16		96848-16[3, 70]	99676-16[68]		13977-1	13763TR-16[38, 66]	13640-16			
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					
13570-16	—	96848-16[3, 70]	99676-16[68]	99098-1	13984-1	13763TR-16[38, 66]	13640-16	99822-16[3]	13650-1	11990-1
13570D-16		961356-16[71]	99663-16[27]		13977-1					

[3] Must machine cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[38] Wide body.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.
[68] Must use 99098-16 valve stem locks, included with retainers.
[70] Supercharged applications use 99679-16 or 99678-16 retainers.
[71] For 2.100" assembly height, requires 99663-16 titanium retainers.

CAMSHAFTS

CHEVROLET TRUCK V8 396-454 1967-1995 (MARK IV)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
EnergizerMax	1200-5500	Good low-end torque and HP. Daily driver and off-road performance. Mild supercharged. Good idle. Compression 8.5 to 10.0.	132431	—	HR-216/339-14 2A	Hyd	Hyd	.576	.576	276	284	216	222	114
	1800-5700	Great mid-range torque and HP. Off-road performance for N/A engines. Fair idle. 2500+ stall. Compression 9.0 to 10.5.	132451	—	HR-226/345-2S2-10 2A	Hyd	Hyd	.587	.598	288	292	226	230	110
	2200-6200	Good mid-range torque and HP. Serious off-road performance. Mild supercharged or plate nitrous. Fair idle. 2800+ stall. Compression 9.5 to 11.0.	132471	—	HR-232/365-2S-14 2A	Hyd	Hyd	.621	.621	292	300	232	238	114

CHEVROLET V8 1996-2000 454-502 (GEN VI)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	800-5000	Brute low-end torque and HP. Smooth idle. Daily driver with economy. Towing. Compression 8.5 to 9.5	168711[39]	—	HR-204/286-2-12 IG	Hyd	Hyd	.486	.512	260	270	204	214	112
	1200-5000	Excellent low-end and mid-range torque and HP. Good idle. Daily driver with economy. Towing and off-road performance. Compression 8.75 to 10.5.	168721[39]	—	HR-214/325-2S-12 IG	Hyd	Hyd	.553	.564	276	282	214	220	112
Fireball	1900-5500	Good mid-range torque and HP. Street/strip and bracket racing performance. 2500+ Stall. Fair idle. 9.5 to 10.75 Compression.	169961[39]	—	HR-224/324-2S-7 IG	Hyd	Hyd	.550	.589	277	281	224	232	107
	2400-5800	Great mid-range torque and HP. Serious street/strip performance. Bracket racing. 3000+ stall. Fair to rough idle. 9.75 to 11.0 Compression.	169111[39]	—	HR-232/347-2S-8 IG	Hyd	Hyd	.589	.623	281	291	232	240	108
	2600-6000	Strong mid-range torque and HP. Radial street performance. Bracket racing. 3200+ Stall. Rough idle. 10.0 to 11.25 Compression.	169121[39]	—	HR-236/353-2S-8 IG	Hyd	Hyd	.600	.632	289	298	236	244	108

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHEVROLET TRUCK V8 396-454 1967-1995 (MARK IV)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1	13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
13532-16	—	99896-16	99955-16	99098-1	13975-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
		99832-16[64]	99976-16[65]		13977-1		13642-16			

CHEVROLET V8 1996-2000 454-502 (GEN VI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13744-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13750-16[66]	13642-16			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13744-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13750-16[66]	13642-16			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16	13642-16			
26535-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16[66]	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16[38, 66]	13642-16 13643-16 (+.400")			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16[66]	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16	13642-16			

[3] Must machine cylinder heads.
[38] Wide body.
[42] For use with standard GM alignment bars. Required for use with camshafts having greater than stock lobe lift or reduced base circle diameters.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[66] 1991-95 Engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates.

CAMSHAFTS

CRANE Cams

CHEVROLET V8 1996-2000 454-502 (GEN VI)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
PowerMax	1600-5600	Excellent mid-range torque and HP. Street/strip performance. Crate motor upgrade. 2500+ stall. Fair idle. Compression 9.5 to 11.0.	168731[39]	—	HR-226/345-2S-12 IG	Hyd	Hyd	.587	.610	288	298	226	236	112
	2200-5800	Excellent mid-range and upper RPM torque and HP. Serious street/strip performance. Heavy car. 3000+ stall. Rough idle. Compression 10.0 to 11.25.	168801[39]	—	HR-236/359-2S-10 IG	Hyd	Hyd	.610	.632	298	306	236	244	110
	2800-6200	Good mid-range to upper RPM torque and HP. Serious street/strip performance. 3500+ stall. Rough idle. Compression 11.0 to 12.75.	168811[39]	—	HR-242/372-2S-12 IG	Hyd	Hyd	.632	.632	304	308	242	246	112
RaceMax	3200-6400	Excellent upper RPM torque and HP. Bracket racing. +540ci. Manifold nitrous. Rough idle. 3600+ stall. Compression 11.5 to 12.75. Also, supercharged ith 20psi and 8.0 max compression.	169691[39]	—	HR-248/372-2S-14 IG	Hyd	Hyd	.632	.632	310	318	248	256	114
	3400-6600	Good upper RPM torque and HP for +540ci bracket racing engines. Rough idle. 4000+ stall. Compression 12.5 minimum.	168831[39]	—	HR-254/400-2S2-10 IG	Hyd	Hyd	.680	.680	324	332	254	262	110
	3600-6800	Good upper RPM torque and HP for +540ci engines with prepared cylinder heads. Large manifold nitrous. 4000+ stall. Compression 12.5 minimum. Also, supercharged with 22psi and 8.5 max compression.	168841[39]	—	HR-254/400-2S4-14 IG	Hyd	Hyd	.680	.680	324	332	254	262	114
	3800-6800	Good upper RPM torque and HP for +572ci bracket racing engines with prepared cylinder heads. 4200+ stall. Compression 12.5 minimum.	168851[39]	—	HR-262/400-2S-14 IG	Hyd	Hyd	.680	.680	332	326	262	264	114
	3800-7000	Good mid-range to upper RPM torque and HP. Bracket racing and serious strip performance. 4200+ stall. Rough idle. Compression 11.0 to 12.75.	169711[39]	—	HR-262/400-2S1-14 IG	Hyd	Hyd	.680	.680	332	340	262	270	114
MarineMax	1000-5000	Great low-end and mid-range torque and HP increase for near stock engines with wet or dry above water exit exhaust. Good idle. Compression 8.5 to 9.5.	168781[39]	—	HR-222/339-2S-12 IG	Hyd	Hyd	.576	.598	284	292	222	230	112
	1600-5400	Good mid-range torque and HP increase for mildly modified engines with performance wet or dry above water exit exhaust. Fair idle. Compression 8.5 to 9.5.	168761[39]	—	HR-230/352-2S-12 IG	Hyd	Hyd	.598	.610	292	298	230	236	112
	1800-5600	Good mid-range and upper RPM torque and HP for modified engines with aftermarket dry above water exit exhaust. Rough idle. Compression 8.75 to 9.75.	168741[39]	—	HR-236/359-2S-12 IG	Hyd	Hyd	.61	.632	298	306	236	244	112
	2200-5800	Good mid-range to upper RPM torque and HP for +540ci modified engines with aftermarket tubular, dry, above water exit exhaust systems. Rough idle. Supercharged also. Compression 9.0 to 10.0.	168771[39]	—	HR-240/365-2S-14 IG	Hyd	Hyd	.621	.632	302	310	240	248	114
	2600-6000	Good mid-range to upper RPM torque and HP for +540ci modified engines with aftermarket tubular, dry, above water exit exhaust systems. Rough idle. Supercharged also. Compression 9.25 to 10.0.	169651[39]	—	HR-244/372-2S2-14 IG	Hyd	Hyd	.632	.632	306	318	244	256	114

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHEVROLET V8 1996-2000 454-502 (GEN VI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
26535-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16 13629-16 (+.400)	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16	13642-16 13643-16 (+.400")			
26535-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16 13629-16 (+.400)	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16	13642-16 13643-16 (+.400")			
26535-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16 13629-16 (+.400)	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16	13642-16 13643-16 (+.400")			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16	13642-16			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13642-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16						13763TR-16				
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13642-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16						13763TR-16				
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13642-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16						13763TR-16				
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13642-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16						13763TR-16				
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16[38]	13642-16			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16[38]	13642-16			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16[38]	13642-16			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[64]	99976-16[65]			13763TR-16[38]	13642-16			
26532-16[42]	—	99896-16	99955-16	99098-1	16977-1	13750-16	13628-16	99822-16	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16	99976-16			13763TR-16[38]	13642-16			

[3] Must machine cylinder heads.
[38] Wide body.
[42] For use with standard GM alignment bars. Required for use with camshafts having greater than stock lobe lift or reduced base circle diameters.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.

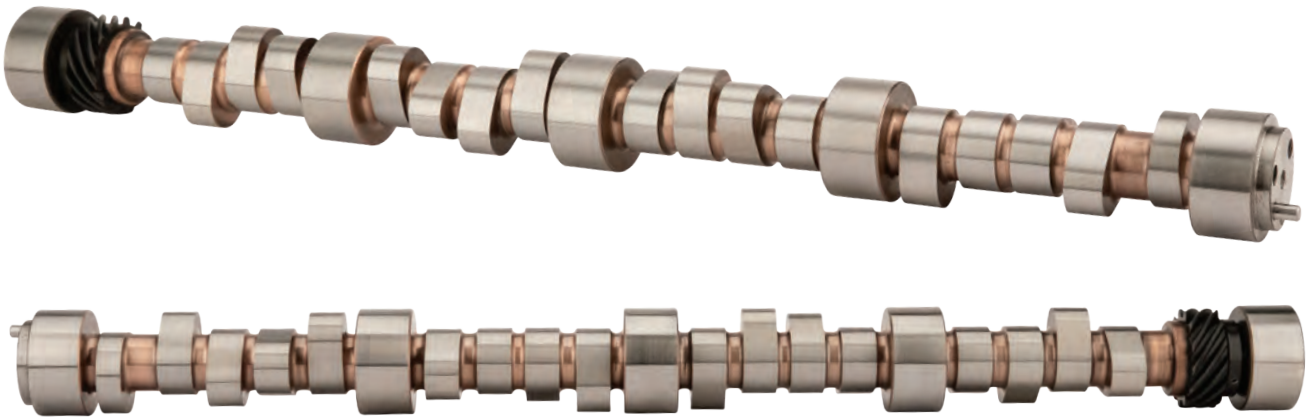
CAMSHAFTS

CRANE Cams®

CHEVROLET V8 1996-2000 454-502 (GEN VI)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL ROLLER														
PowerMax	2800-6600	Excellent low-end and mid-range torque and HP. Street/strip performance. 3300+ stall. Fair idle. Compression 10.5 to 11.5. Mild supercharged with 10psi and 8.5 max compression.	168551[39]	—	SR-238/350-2S-12 IG	.020	0.02	.595	.615	288	296	238	246	112
	3000-6800	Good low-end and mid-range torque and HP. Street/strip performance. 3500+ stall. Fair idle. Compression 10.5 to 12.0.	168601[39]	—	SR-246/362-2S-10 IG	.020	.020	.615	.636	296	304	246	254	110
RaceMax	3400-7200	Good mid-range to upper RPM torque and HP. Bracket racing and serious strip performance. 3800+ stall. Rough idle. Compression 11.0 to 12.5.	168631[39]	—	SR-254/374-2S-12 IG	.020	.020	.636	.636	304	312	254	262	112
	3600-7200	Good mid-range to upper RPM torque and HP. Bracket racing and serious strip performance. Rough idle. 4000+ stall. Compression 11.0 to 12.5.	168401[39]	—	R-254/420-2S-12 IG	.020	.020	.714	.714	286	294	254	262	112
	4200-7400	Good mid to upper RPM torque and HP. Pro, Super Pro and bracket racing performance in 2800lb+ vehicles. Very rough idle. Custom stall converter required. Compression 12.0 minimum.	168411[39]	—	R-264/420-2S-10 IG	.020	.020	.714	.714	296	302	264	270	110
	4600-8000	Good upper RPM torque and HP. Super Pro, Super Gas, Super Comp, and bracket racing performance in +2800lb vehicles. Custom stall converter. Compression 12.5 minimum.	168291[39]	—	R-274/4334-2S-10 IG	.026	.026	.737	.726	314	324	274	284	110
	4800-8200	Good upper RPM HP for +500ci bracket race engines. Large manifold nitrous. Custom stall converter. Compression 12.5 minimum. Also, Roots supercharged with 24psi and 8.0 max compression.	168351[39]	—	R-274/4334-2S-14 IG	.026	.026	.737	.726	314	324	274	284	114

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.



CHEVROLET V8 1996-2000 454-502 (GEN VI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
16510-16[18]	—	99832-16[64]	99976-16[65]	99098-1	16977-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570-16		99876-16[3]	99955-16			13763TR-16	13640-16			
16510-16[18]	—	99832-16[64]	99976-16[65]	99098-1	16977-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570-16		99876-16[3]	99955-16			13763TR-16	13640-16			
16510-16[18]	—	99876-16[3]	99955-16	99098-1	16977-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570-16		99832-16[64]	99976-16[65]			13763TR-16	13640-16			
16510-16[18]	—	96886-16[3]	99955-16	99098-1	16977-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570-16			99676-16[68]			13763TR-16	13640-16			
16510-16[18]	—	96886-16[3]	99955-16	99098-1	16977-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570-16			99676-16[68]			13763TR-16	13640-16			
16510-16[18]	—	96886-16[3]	99955-16	99098-1	16977-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570-16			99676-16[68]			13763TR-16	13640-16			
16510-16[18]	—	96886-16[3]	99955-16	99098-1	16977-1	13750-16	13634-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13570-16			99676-16[68]			13763TR-16	13640-16			

[3] Must machine cylinder heads.
[18] For use with standard GM alignment bars.
[38] Wide body.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[68] Must use 99098-16 valve stem locks, included with retainers.

CAMSHAFTS

CRANE Cams

CHEVROLET V8 2001-08 8.1L

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	800-4600	Brute low-end torque. Smooth idle. Daily driver with economy. Towing. EFI compatible. Compression 8.0 to 9.5.	268701[39]	—	HR-208/292-2S-16 IG	Hyd	Hyd	.496	.512	264	270	208	214	116
	1200-5000	Excellent low-end torque and HP. Good idle. Daily driver with economy. Towing and off-road performance. Computer tuning may be required. Compression 8.75 to 10.5.	268711[39]	—	HR-216/325-2S-14 IG	Hyd	Hyd	.553	.564	278	282	216	220	114
	1600-5600	Good mid-range torque and HP. Good idle. Serious off-road performance. Computer tuning required. Mild supercharged. Compression 9.0 to 11.0.	268731[39]	—	HR-226/345-2S-14 IG	Hyd	Hyd	.587	.610	288	296	226	234	114
MarineMax	1000-5000	Good low-end torque and HP improvement for near-stock engines with wet or dry free-flowing above water exit exhaust systems. Good idle. Computer tuning required. Compression 8.25 to 9.0.	268721[39]	—	HR-222/339-2S-12 IG	Hyd	Hyd	.576	.598	284	292	222	230	112
	1400-5400	Good mid-range torque and HP for modified engines with aftermarket dry, above water exit exhaust systems. Fair idle. Computer tuning required. Compression 8.5 to 9.25.	268761[39]	—	HR-230/352-2S-14 IG	Hyd	Hyd	.598	.610	292	298	230	236	114
	1800-5600	Good mid-range torque and HP for modified engines with aftermarket dry, above water exit exhaust systems. Rough idle. Computer tuning required. Compression 8.75 to 9.5.	268741[39]	—	HR-236/359-2S1-14 IG	Hyd	Hyd	.610	.632	298	306	236	244	114

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHRYSLER/DODGE NEON 4CYL 1995-05 SOHC 4V 2.0L

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	1000-6500	Good mid to upper RPM HP. Daily driver with street/strip performance. Nitrous. High-flow intake and exhaust recommended. Good idle.	158-0010	—	CHR-242-2S-6	Hyd	Hyd	.335	.315	242	250	196	200	106
	1500-6800	Good upper RPM HP. Street/strip performance. For use with intercooled turbo and aftermarket high-flow intake/exhaust systems. Good idle.	158-0012	—	CHR-250-2SR-8	Hyd	Hyd	.355	.315	250	250	204	200	108
	2500-7500	Good upper RPM HP. Serious street/strip performance. High-flowing cylinder head, intake, exhaust system, and ECM required. Fair idle. Compression 12.0. Can be used with aftermarket intercooled turbo systems.	158-0014	—	CHR-262-2SR-8	Hyd	Hyd	.355	.345	262	262	216	212	108
RaceMax	3000-7800	Good upper RPM HP for turbo/intercooled engines with a high flowing cylinder head, intake, and exhaust. Strip performance. Custom tune required. Compression 12.0 minimum on N/A engines.	158-0016	—	CHR-272-2S-14	Hyd	Hyd	.355	.345	272	282	226	226	114
	3200-8000	Good upper RPM HP for turbo/intercooled engines with a high flowing cylinder head, intake, and exhaust. Strip performance. Custom tune required. Compression 12.0 minimum on N/A engines.	158-0018[73]	—	CHR-232/400-2SR-10	Hyd	Hyd	.400	.400	280	285	232	230	110
	3500-8500	Good high RPM HP for turbo/intercooled engines with a high flowing cylinder head, intake, and exhaust. Strip performance. Custom tune required. Compression 12.0 minimum on N/A engines.	158-0020[73]	—	CHR-336/440-2SR-12	Hyd	Hyd	.440	.400	280	285	236	230	112

[39] Require Ferrrea lash caps C10008.

CHEVROLET V8 2001-08 8.1L

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
26535-16[42]	—	99896-16	99964-16	99098-1	26977-1	13744-16[58]	26640-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[57]	99976-16			13750-16[58]				
26535-16[42]	—	99896-16	99964-16	99098-1	26977-1	13744-16[58]	26640-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[57]	99976-16			13750-16[58]				
26535-16[42]	—	99896-16	99964-16	99098-1	26977-1	13744-16[58]	26640-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[57]	99976-16			13750-16[58]				
26535-16[42]	—	99896-16	99964-16	99098-1	26977-1	13750-16[58]	26640-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[57]	99976-16			13673TR-16				
26535-16[42]	—	99896-16	99964-16	99098-1	26977-1	13750-16[58]	26640-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[57]	99976-16			13673TR-16				
26535-16[42]	—	99896-16	99964-16	99098-1	26977-1	13750-16[58]	26640-16	99822-16[3]	13650-1	11951-1 (.491) 11950-1 (.500)
13532-16		99832-16[57]	99976-16			13673TR-16				

[3] Must machine cylinder heads.
[42] For use with standard GM alignment bars. Required for use with camshafts having greater than stock lobe lift or reduced base circle diameters.
[57] Requires 99976-16 retainers.
[58] For 99832-16 beehive springs.

CHRYSLER/DODGE NEON 4CYL 1995-05 SOHC 4V 2.0L

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
—	903-2003	158830-16[74]	158660-16	—	—	—	—	—	—	—
—	903-2003	158830-16[74]	158660-16	—	—	—	—	—	—	—
—	903-2003	158830-16[74]	158660-16	—	—	—	—	—	—	—
—	903-2003	158830-16[74]	158660-16	—	—	—	—	—	—	—
—	903-2003	158830-16[74]	158660-16	—	—	—	—	—	—	—
—	903-2003	158830-16[74]	158660-16	—	—	—	—	—	—	—

[74] Require 158660-16 retainers.

CAMSHAFTS

CRANE Cams®

CHRYSLER HEMI V8 1951-56 301-354 (EARLY HEMI)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	2200-6200	Good low-end and mid-range torque and HP. Daily driver with street/strip performance. 2500+ Stall. Good idle. Compression 8.75 to 10.5.	539521	—	HR-224/339-10	Hyd	Hyd	.509	.509	286	286	224	224	110
	2800-6800	Good mid to upper RPM torque and HP. Daily driver with street/strip performance. 3200+ Stall. Fair idle. Compression 9.5 to 11.0. Supercharged with 10psi and 8.5 max compression.	539531	—	HR-230/352-2-14	Hyd	Hyd	.528	.548	292	302	230	240	114
RaceMax	3200-6800	Good upper RPM torque and HP. Strip performance. Rough idle. 3500+ Stall. Compression 11.0 to 12.5.	539541	—	HR-240/365-2S-8	Hyd	Hyd	.548	.558	302	310	240	248	108
MECHANIC ROLLER														
PowerMax	2400-6400	Good low and mid-range torque. Daily driver with street/strip performance. 2800+ Stall. Good idle. Compression 8.75 to 9.75.	538491[75]	—	SR-230/338-8	.020	.020	.507	.507	280	280	230	230	108
	2400-6400	Good mid-range RPM torque and HP. Daily driver with street/strip performance. 2800+ Stall. Good idle. Compression 9.0 to 10.5. Supercharged with 10psi and 8.5 max compression.	538501[75]	—	SR-230/338-2S-10	.020	.020	.507	.525	280	288	230	238	110
	3000-6800	Good mid-range RPM torque and HP. Daily driver with street/strip performance. 3500+ Stall. Good idle. Compression 9.0 to 10.5. Supercharged with 15psi and 8.5 max compression.	538511[75]	—	SR-238/350-2-12	.020	.020	.525	.543	288	296	238	248	112
RaceMax	3200-7000	Good upper RPM torque and HP. Strip performance. Rough idle. 3500+ Stall. Compression 10.0 to 11.5. Also, mild supercharged with 8.5 to 10.5 compression.	538521[75]	—	SR-246/362-12	.020	.020	.543	.543	296	296	246	246	112
	6000-8600	Competition only, nostalgia A/F.	538701[75]	—	R-278/458-10	.020	.022	.687	.687	310	310	278	278	110
	6000-9900	Competition only, baseline nostalgia T/F.	538661[75]	—	R284-456-10	.026	.026	.684	.684	324	324	284	284	110
	N/A	Competition only, "cacklefest" exhibition.	538711[75]	—	R-285/410-8	.026	.028	.616	.615	328	328	285	285	108

[75] Requires either 69990-1 aluminum bronze or 69970-1 coated steel distributor gears.

CHRYSLER HEMI V8 1951-56 301-354 (EARLY HEMI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
68532-16[76]	—	99838-16[3]	99957-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99944-16	99097-1				99820-16[3]		69970-1
68532-16[76]	—	99838-16[3]	99957-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99944-16	99097-1				99820-16[3]		69970-1
68532-16[76]	—	99838-16[3]	99957-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99944-16	99097-1				99820-16[3]		69970-1
MECHANIC ROLLER										
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		69970-1
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		69970-1
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		69970-1
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		
66542-16	—	96884-16[3]	99675-16[36]	99097-1	69975-1	—	—	99822-16[3]	—	69990-1
66542-16	—	96884-16[3]	99675-16[36]	99097-1	69975-1	—	—	99822-16[3]	—	69990-1
66542-16	—	96884-16[3]	99675-16[36]	99097-1	69975-1	—	—	99822-16[3]	—	69990-1

[3] Must machine cylinder heads.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[76] Vertical locking bar hydraulic roller lifters. Due to the increased height of these lifters, the cylinder heads will require clearancing for the changed pushrod angles.

CAMSHAFTS

CRANE Cams®

CHRYSLER HEMI V8 1957-59 392 (EARLY HEMI)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	1800-5800	Good low-end and mid-range torque and HP. Daily driver with street/strip performance. 2500+ Stall. Good idle. Compression 8.75 to 10.5	549521[75]	—	HR-224/339-10	Hyd	Hyd	.509	.509	286	286	224	224	110
PowerMax	2400-6400	Good mid to upper RPM torque and HP. Daily driver with street/strip performance. 2800+ Stall. Fair idle. Compression 9.5 to 11.0. Supercharged with 10psi and 8.5 max compression.	549531[75]	—	HR-230/352-2-14	Hyd	Hyd	.528	.548	292	302	230	240	114
RaceMax	3000-6600	Good upper RPM torque and HP. Serious street/strip performance. 3500+ Stall. Rough idle. Compression 11.0 12.5	549541[75]	—	HR-240/365-2S-8	Hyd	Hyd	.548	.558	302	310	240	248	108
MECHANICAL ROLLER														
PowerMax	2000-6000	Good low and mid-range torque. Daily driver with street/strip performance. 2500+ Stall. Good idle. Compression 8.75 to 9.75	548491[75]	—	SR-230/338-8	.020	.020	.507	.507	280	280	230	230	108
PowerMax	2000-6000	Good mid-range RPM torque and HP. Daily driver with street/strip performance. 2500+ Stall. Good idle. Compression 9.0 to 10.5. Supercharged with 10psi and 8.5 max compression.	548501[75]	—	SR-230/338-2S-10	.020	.020	.507	.525	280	288	230	238	110
PowerMax	2600-6400	Good mid-range RPM torque and HP. Daily driver with street/strip performance. 3000+ Stall. Good idle. Compression 9.0 to 10.5. Supercharged with 15psi and 8.5 max compression.	548511[75]	—	SR-238/350-2S-12	.020	.020	.525	.543	288	296	238	243	112
RaceMax	3000-6800	Good upper RPM torque and HP. Serious street/strip performance. 3500+ Stall. Rough idle. Compression 10.0 to 11.5. Supercharged with 10psi and 8.5 max compression.	548521[75]	—	SR-246/362-12	.020	.020	.543	.543	296	296	246	246	112
RaceMax	6000-8600	Competition only, nostalgia A/F.	548701[75]	—	R-278/458-10	.020	.022	.687	.687	310	310	278	278	110
RaceMax	6000-9900	Competition only, baseline nostalgia T/F.	548661[75]	—	R284-456-10	.026	.026	.684	.684	324	324	284	284	110
RaceMax	N/A	Competition only, "cacklefest" exhibition.	548711[75]	—	R-285/410-8	.026	.028	.616	.615	328	328	285	285	108

[75] Requires either 69990-1 aluminum bronze or 69970-1 coated steel distributor gears.

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Brute low-end torque. Smooth idle. Daily driver with economy. Compression 7.75 to 8.75.	693971	—	H-248-2	Hyd	Hyd	.400	.427	248	260	192	204	112
TruckMax	1200-4800	Great low-end torque and HP. Smooth idle. Daily driver with economy. Towing and off-road performance. Compression 8.0 to 9.5.	693901	693902	H-260-2	Hyd	Hyd	.427	.454	260	272	204	216	112
TruckMax	1800-5200	Good low-end and mid-range torque and HP. Daily driver with economy. Highway towing and off-road performance. Compression 8.75 to 10.0.	15005	150052	Energizer 272 H10	Hyd	Hyd	.454	.454	272	272	216	216	110
PowerMax	1200-5000	Good low-end and mid-range torque and HP. Daily driver with economy and street performance. Good idle. Compression 8.5 to 10.0.	693511	693512	Z-268-2	Hyd	Hyd	.459	.480	268	276	212	220	112
PowerMax	1800-5400	Good low-end and mid-range torque and HP. Daily driver with street/strip performance. Good idle. Compression 8.75 to 10.5.	693941	693942	H-272-2	Hyd	Hyd	.454	.480	272	284	216	228	112
PowerMax	1800-5600	Good low-end and mid-range torque and HP. Daily driver with street performance and economy. Good idle. Compression 8.75 to 10.5.	693521	693522	Z-276-2	Hyd	Hyd	.480	.501	276	284	220	228	110

[75] Requires either 69990-1 aluminum bronze or 69970-1 coated steel distributor gears.

CHRYSLER HEMI V8 1957-59 392 (EARLY HEMI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
68532-16	—	99838-16[3]	99957-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99944-16	99097-1				99820-16[3]		69970-1
68532-16	—	99838-16[3]	99957-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99944-16	99097-1				99820-16[3]		69970-1
68532-16	—	99838-16[3]	99957-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99944-16	99097-1				99820-16[3]		69970-1
MECHANICAL ROLLER										
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		69970-1
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		69970-1
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		69970-1
66542-16	—	99838-16[3]	99954-16	99098-1	69975-1	—	—	99822-16[3]	—	69990-1
			99953-16	99097-1				99820-16[3]		
66542-16	—	96884-16[3]	99675-16[36]	99097-1	69975-1	—	—	99822-16[3]	—	69990-1
66542-16	—	96884-16[3]	99675-16[36]	99097-1	69975-1	—	—	99822-16[3]	—	69990-1
66542-16	—	96884-16[3]	99675-16[36]	99097-1	69975-1	—	—	99822-16[3]	—	69900-1

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	—	—	69970-1
						69771-16[78]				
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	—	—	69970-1
						69771-16[78]				
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	—	—	69970-1
						69771-16[78]				
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	—	—	69970-1
						69771-16[78]				
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	—	—	69970-1
						69771-16[78]				
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	—	—	69970-1
						69771-16[78]				

[3] Must machine cylinder heads.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax Contd.	2200-5800	Good mid-range torque and HP. Daily driver with street/strip performance. Mild supercharged or plate nitrous. 2500+ Stall. Compression 9.5 to 10.75.	693801	693802	H-278-2	Hyd	Hyd	.467	.494	278	290	222	234	114
	2600-6000	Good mid-range to upper RPM torque and HP. Street/strip performance. 2800+ Stall. Fair idle. Compression 9.5 to 11.0.	694301	694302	H-288-2	Hyd	Hyd	.458	.465	288	292	226	230	110
	3000-6200	Good mid-range torque. Street/street performance. 3000+ Stall. Fair idle. Compression 9.5 to 11.0.	15006	150062	Energizer 284 H12	Hyd	Hyd	.480	.480	284	284	228	228	112
RaceMax	3000-6200	Good mid-range torque and HP. Bracket racing performance for heavier vehicles. Rough idle. 3500+ Stall. Also, 1/4 to 3/8 mile oval track. Compression 10.0 to 11.5.	690591	—	H-228/3200-2S-8	Hyd	Hyd	.480	.494	284	290	228	234	108
	3200-6400	Strong mid-range to upper RPM torque and HP. Bracket racing performance. Rough idle. 3500+ Stall. Compression 10.0 to 11.5.	690221	—	H-232/3360-6	Hyd	Hyd	.504	.504	304	304	232	232	106
	3200-6800	Good mid-range to upper RPM torque and HP. Strip performance. Mild supercharged or nitrous. Rough idle. 3500+ Stall. Compression 10.0 to 11.5.	694561	—	H-302-2	Hyd	Hyd	.504	.528	302	312	232	242	114
	3600-7000	Good upper RPM HP. Bracket racing performance. Rough idle. 4000+ Stall. Compression 10.5 to 12.0.	694571	—	H-312-2	Hyd	Hyd	.528	.552	312	322	242	252	108
	3800-7000	Good upper RPM HP. Bracket racing performance for +360ci engines. Rough idle. 4200+ Stall. Compression 11.5 to 13.0.	690711	—	H-244/3439-6	Hyd	Hyd	.516	.516	300	300	244	244	106
	4400-7200	Good upper RPM HP. Bracket racing performance for +360ci engines with aluminum cylinder heads. Rough idle. Custom stall required. Compression 12.5 minimum.	690241	—	H-252/3680-2-10	Hyd	Hyd	.552	.576	324	334	252	262	110
HYDRAULIC ROLLER														
TruckMax	800-4800	Excellent low-end torque and HP. Smooth idle. Daily driver with economy. Towing. Compression 8.0 to 9.5.	699601[39]	—	HR-204/286-2-12 IG	Hyd	Hyd	.429	0.452	260	270	204	214	112
	1400-5400	Good low-end torque and HP. Good idle. Daily driver with economy. Towing and off-road performance. Compression 8.75 to 10.5.	699611[39]	—	HR-214/325-2S-12 IG	Hyd	Hyd	.488	.509	276	284	214	222	112
PowerMax	2000-6000	Good low-end and mid-range torque and HP. Daily driver with street/strip performance. 2500+ Stall. Fair idle. Compression 9.5 to 10.75.	699621[39]	—	HR-222/339-2S-12 IG	Hyd	Hyd	.509	.528	284	292	222	230	112
	2000-6000	Good mid-range torque and HP. Street/strip performance. Heavy car. 2500+ Stall. Compression 10.0 to 11.5.	699651[39]	—	HR-226/345-2S1-10 IG	Hyd	Hyd	.518	.528	288	292	226	230	110
	2600-6600	Good mid to upper RPM torque and HP. Street/strip performance. Manifold or plate nitrous. 3000+ Stall. Fair idle. compression 10.0 to 11.5.	699631[39]	—	HR-230/352-2S-12 IG	Hyd	Hyd	.528	.548	292	300	230	238	112
	2800-6800	Good mid-range to upper RPM torque and HP. Serious street/strip performance. 3500+ Stall. Rough idle. Compression 10.5 to 12.0.	699661[39]	—	HR-238/365-2S-8 IG	Hyd	Hyd	.548	.558	300	308	238	246	108

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
99378-16						69771-16[78]				
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
99378-16						69771-16[78]				
99278-16	69308-1	99835-16	99948-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
99378-16						69771-16[78]				
99278-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99278-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99278-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99278-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99278-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99278-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69621-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
HYDRAULIC ROLLER										
69532-16[7]	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	99838-16[3]	99948-16	—	69975-16	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	99838-16[3]	99948-16	—	69975-16	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	99838-16[3]	99948-16	—	69975-16	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	96874-16[3]	99957-16	—	69975-16	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				

[3] Must machine cylinder heads.
[7] Special length pushrods required.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
RaceMax	3000-7000	Good mid-range to upper RPM torque and HP. Bracket racing performance. Mild supercharged. Rough idle. 3500+ Stall. Compression 10.5 to 12.0.	699641[39]	—	HR-238/365-2S-14 IG	Hyd	Hyd	.548	.558	300	308	238	246	114
RaceMax	3200-7000	Good mid-range to upper RPM torque and HP. Bracket racing performance for +360ci engines. Rough idle. 3500+ Stall. Compression 11.0 to 12.5.	699671[39]	—	HR-242/372-2-8 IG	Hyd	Hyd	.558	.558	304	314	242	252	108
RaceMax	3400-7000	Good mid-range to upper RPM torque and HP. Bracket racing performance for +380ci engines in heavier vehicles. Rough idle. 4000+ Stall. Compression 11.5 to 13.0.	699681[39]	—	HR-246/372-2S-8 IG	Hyd	Hyd	.558	.558	308	316	246	254	108
RaceMax	4000-7200	Good upper RPM HP. Bracket racing performance for +380ci engines. Manifold nitrous or mild supercharged. Custom stall converter. Compression 13.0 minimum.	699691[39]	—	HR-252/372-2S-10 IG	Hyd	Hyd	.558	.558	314	324	252	262	110
MECHANICAL FLAT TAPPET														
PowerMax	2600-6400	Good low-end and mid-range torque and HP. Street/strip performance. 2800+ Stall. Fair idle. Compression 10.0 to 11.5.	691191	—	F-238/3200-2-14	.022	.022	.480	.500	300	310	238	248	114
PowerMax	3200-7000	Good mid-range torque and HP. Serious street/strip performance. Heavy car. 3500+ Stall. Rough idle. Compression 10.5 to 12.0.	690911	—	F-248/3602-2-8	.026	.026	.540	.560	284	294	248	258	108
RaceMax	3200-6800	Good mid-range torque. Bracket racing performance for heavier vehicles. Rough idle. 3500+ Stall. Also, 1/4 to 3/8 mile limited oval track applications. Compression 10.5 to 12.0.	690921	—	F-244/3454-2S-6	.026	.026	.518	.536	280	288	244	252	106
RaceMax	3600-7200	Great mid-range torque and HP. Bracket racing performance for +340ci engines. Rough idle. 4000+ Stall. Compression 11.0 to 12.5.	690931	—	F-256/383-2S-8	.014	.016	.575	.585	312	316	256	260	108
RaceMax	3800-7600	Good upper RPM torque and HP. Bracket racing performance for +360ci engines. Plate nitrous. Aluminum cylinder heads recommended. Rough idle. 4200+ Stall. Compression 12.0 minimum.	691391	—	F262/394-2S-10	.018	.018	.591	.596	294	296	262	264	110
RaceMax	4000-7600	Good upper RPM torque and HP. Bracket racing performance for +360ci engines. Rough idle. Custom stall required. Compression 12.0 minimum.	691561	—	F-268/3868-2-8	.026	.026	.580	.600	304	314	268	278	108
RaceMax	4200-8000	Good upper RPM torque and HP. Bracket racing performance for +360ci engines. Manifold nitrous. Rough idle. Custom stall required. Compression 12.5 minimum.	691571	—	F-274/412-2S-8	.018	.026	.618	.620	306	324	274	288	108
RaceMax	4400-8000	Good upper RPM HP. Bracket racing and strip performance for +360ci engines. Rough idle. Custom stall required. Compression 12.5 minimum.	691701	—	F-278/4002-8	.026	.026	.600	.600	314	314	278	278	108
RaceMax	5000-8400	Good upper RPM HP for max effort performance in flat tappet restricted classes. Aluminum cylinder heads recommended. Rough idle. Custom stall required. Compression 13.5 minimum.	691951	—	F-288/4134-8	.026	.026	.620	.620	324	324	288	288	108
MECHANICAL ROLLER														
PowerMax	2800-6600	Good low-end and mid-range torque and HP. Street/strip performance. 3000+ Stall. Fair idle. Compression 10.5 to 11.5.	698521[39]	—	SR-238/350-2S-12 IG	.020	.020	.525	.543	288	296	238	246	112
PowerMax	3200-7000	Good mid to upper RPM torque and HP. Serious street/strip performance. Plate nitrous. 3500+ Stall. Fair idle. Compression 10.5 to 12.0. Supercharged with 14psi and 8.0 max compression.	698531[39]	—	SR-246/362-2S-12 IG	.020	.020	.543	.561	283	290	246	254	112

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
69532-16[7]	—	96874-16[3]	99957-16	—	69975-1	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	96874-16[3]	99957-16	—	69975-1	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	96874-16[3]	99957-16	—	69975-1	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69532-16[7]	—	96874-16[3]	99957-16	—	69975-1	69770-16[78]	69628-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
MECHANICAL FLAT TAPPET										
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
99260-16	—	99838-16[3]	99948-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
MECHANICAL ROLLER										
69542-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				
69542-16	—	99838-16[3]	99957-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69970-1
						69771-16[78]				

[3] Must machine cylinder heads.
[7] Special length pushrods required.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.

CAMSHAFTS

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL ROLLER														
RaceMax	3800-7800	Good mid-range torque and upper RPM HP. Bracket racing performance for +360ci engines in heavier vehicles. Manifold nitrous. Aluminum cylinder heads recommended. Rough idle. 4200+ Stall. Compression 12.0 to 13.0.	698271[75]	—	R-256/452-2S-10	.020	.022	.678	.678	285	297	256	268	110
	3800-7600	Good mid-range torque and HP. Bracket racing and oval track performance. Rough idle. Custom stall required. Compression 11.5 to 12.5.	698801[75]	—	R-260/420-2S-8	.020	.020	.630	.630	292	298	260	266	108
	4000-7800	Good mid to upper RPM HP. Bracket racing and oval track performance. Rough idle. Custom stall required. Compression 12.5 minimum.	698821[75]	—	R-268/420-2S1-8	.020	.020	.630	.630	300	308	268	276	108
	4200-8000	Good upper RPM HP. Bracket racing performance. Rough idle. Custom stall required. Compression 12.5 minimum.	698831[75]	—	R-272/420-2-8	.020	.020	.630	.630	304	314	272	282	108
	4400-8200	Good upper RPM HP. Bracket racing performance. Plate or manifold nitrous. Rough idle. Custom stall required. Compression 12.5 minimum.	698841[75]	—	R-276/420-2-10	.020	.020	.630	.630	308	318	276	286	110
	5000-8600	Good upper RPM HP for bracket racing engines with aluminum cylinder heads. Rough idle. Custom stall converter. Compression 13.0 minimum.	698291[75]	—	R-280/452-2S-8	.020	.022	.678	.678	309	317	280	288	108

CHRYSLER/DODGE/PLYMOUTH V8 1986-91 318-360 (LA)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	800-4200	Brute low-end torque. Daily driver with economy. Towing. TBI compatible for improved low-end torque and HP in trucks and vans.	694101	—	2010	Hyd	Hyd	.407	.384	250	240	194	184	107
	1000-4600	Excellent low-end torque. Daily driver with economy. Towing. TBI compatible for improved low end torque and HP in trucks and vans.	694111	—	2020	Hyd	Hyd	.429	.407	260	250	204	194	112
	1000-4800	Good low-end torque and HP. Good idle. Daily driver. Towing. Computer upgrades required for TBI equipped vehicles. Compression 8.0 to 9.5	699701	—	HR-204/286-2S-14	Hyd	Hyd	.429	.438	260	250	204	208	114

[75] Requires either 69990-1 aluminum bronze or 69970-1 coated steel distributor gears.

CHRYSLER/DODGE/PLYMOUTH V8 1964-87 273-360 (LA)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
69542-16	—	99838-16[3]	99679-16[68]	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69990-1
						69771-16[78]				
69542-16	—	99885-16[3]	99955-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69990-1
						69771-16[78]				
69542-16	—	99885-16[3]	99955-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69990-1
						69771-16[78]				
69542-16	—	99885-16[3]	99955-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69990-1
						69771-16[78]				
69542-16	—	99885-16[3]	99955-16	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69990-1
						69771-16[78]				
69542-16	—	99883-16[3]	99679-16[68]	—	69975-1	69770-16[78]	69622-16[79]	99822-16[3]	—	69990-1
						69771-16[78]				

CHRYSLER/DODGE/PLYMOUTH V8 1986-91 318-360 (LA)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
70530-16[80]	—	—	—	—	69975-1	69770-16[78]	—	—	—	69970-1
70530-16[80]	—	—	—	—	69975-1	69770-16[78]	—	—	—	69970-1
70530-16[80]	—	—	—	—	69975-1	69770-16[78]	—	—	—	69970-1

[3] Must machine cylinder heads.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.
[80] For use with standard Chrysler alignment bars.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH MAGNUM V8 1992-02 5.2L-5.9L

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	800-4600	Brute low-end torque. Smooth idle. Daily driver with economy. Towing. Improves low-end torque for trucks and vans equipped with EFI. Compatible with factory valve train.	704111 ① ⚠	—	2020	Hyd	Hyd	.434	.458	250	260	194	204	112
	1200-5200	Excellent low end torque. Smooth idle. Daily driver with economy. Towing. Improves low-end and mid-range torque for trucks and vans equipped with EFI. Compatible with factory valve train.	704121 ① ⚠	—	2030	Hyd	Hyd	.458	.467	260	264	204	208	114
	1600-5600	Good low-end and mid-range torque. Good idle. Daily driver with economy. Towing and off-road performance. Mild Supercharged. Computer upgrades required. Compression 8.5 to 9.75.	708501 ③ ⚠	—	HR-208/292-2S1-10	Hyd	Hyd	.467	.482	264	272	208	216	110
	1800-5800	Good mid-range torque and HP. Daily driver. Serious off-road perfromance for light trucks. Mild supercharged. Cylinder head and computer upgrades required. Compression 8.75 to 10.5.	708511 ③ ⚠	—	HR-214/325-2S-14	Hyd	Hyd	.520	.531	276	282	214	220	114

CHRYSLER/DODGE V8 2003-15 5.7L-6.1L HEMI (NON-VCT)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	1000-5000	Excellent low-end and mid-range torque and HP. Smooth idle. Daily driver with economy. Towing. Computer and MDS compatible.	1989491 ③ ⚠	—	HR-208/297-2S-16	Hyd	Hyd	.505	.505	268	274	208	214	116
PowerMax	1200-5200	Excellent low-end and mid-range torque and HP. Daily driver with economy and performance. Smooth idle. Valve spring upgrades and non-MDS lifters required.	1989501 ③ ⚠	—	HR-210/3236-2S-12	Hyd	Hyd	.550	.550	268	274	210	216	112
	1800-5800	Good mid-range torque and HP. Daily driver with street/strip performance. Mild supercharged or nitrous. Good idle. Valve spring and computer upgrades required. Must use non-MDS lifters.	1989511 ③ ⚠	—	HR-216/3236-2S-12	Hyd	Hyd	.550	.550	274	280	216	222	112
	2200-6200	Good upper RPM HP. Serious street/strip performance. Fair idle. Valve springs, computer upgrades, and non MDS lifters are required.	1989521 ③ ⚠	—	HR-222/3236-2S-14	Hyd	Hyd	.550	.550	280	286	222	228	114

CHRYSLER/DODGE/PLYMOUTH MAGNUM V8 1992-02 5.2L-5.9L

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
70530-16[80]	—	—	—	—	69975-1	11746-16[81, 82]	36621-16[81]	—	—	69970-1
						11759-16[81, 82]				
70530-16[80]	—	—	—	—	69975-1	11746-16[81, 82]	36621-16[81]	—	—	69970-1
						11759-16[81, 82]				
70530-16[80]	—	—	—	—	69975-1	11746-16[81, 82]	36621-16[81]	—	—	69970-1
						1175/9-16[81, 82]				
70530-16[80]	—	—	—	—	69975-1	11746-16[81, 82]	36621-16[81]	—	—	69970-1
						11759-16[81, 82]				

[80] For use with standard Chrysler alignment bars.
[81] For use with 36655-16 Pushrod Guidplate and Rocker Arm Stud Conversion Kit.
[82] Requires 36621-16 pushrods.

CHRYSLER/DODGE V8 2003-15 5.7L-6.1L HEMI (NON-VCT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
—	—	99831-16[83]	—	—	—	—	—	—	—	—
—	—	99831-16[83]	—	—	—	—	—	—	—	—
—	—	99831-16[83]	—	—	—	—	—	—	—	—
—	—	99831-16[83]	—	—	—	—	—	—	—	—

[83] Compatible with standard retainers and valve stem locks.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC FLAT TAPPET														
TruckMax	1600-5400	Excellent low-end and mid-range torque and HP. Good idle. Daily driver with economy. Towing and off-road performance. Compression 8.75 to 10.5	683941	683942[84]	H-272-2	Hyd	Hyd	.454	.480	272	284	216	228	112
	1800-5600	Good mid-range torque and HP. Good idle. Daily driver. Off-road performance. Compression 9.5 to 10.75	680321	—	H-222/3114-2S-12	Hyd	Hyd	.467	.494	278	290	222	234	112
	2200-6000	Good mid-range to upper RPM torque and HP. Fair Idle. Serious off-road performance for light trucks. 2500+ Stall. Compression 9.5 to 11.0	684321	—	H-286	Hyd	Hyd	.471	.471	286	286	226	226	112
PowerMax	1200-4800	Excellent low-end torque. Daily driver with economy and performance. Mild turbocharged. Smooth idle. Compression 8.0 to 9.5	683901	683902[84]	H-260-2	Hyd	Hyd	.427	.454	260	272	204	216	112
	1800-5600	Good mid-range torque and HP. Daily driver with street/strip performance. Mild supercharged. 2500+ Stall. Good idle. Compression 9.5 to 10.75	683801	983802[84]	H-278-2	Hyd	Hyd	.467	.494	278	290	222	234	114
	2600-6400	Excellent mid-range torque and HP. Street/strip performance. Heavy car. 3000+ Stall. Rough idle. Compression 10.0 to 11.5	680591	—	H-228/3200-2S-8	Hyd	Hyd	.480	.494	284	290	228	234	108
	2800-6600	Good mid-range to upper RPM torque and HP. Serious street/strip performance. 3500+ Stall. Rough idle. Compression 10.0 to 11.5	684561	—	H-302-2	Hyd	Hyd	.504	.528	302	312	232	242	112
	3000-6800	Good mid-range to upper RPM torque and HP. Serious street/strip performance. Modern upgrade from factory Six-Pack camshaft. 3500+ Stall. Compression 10.0 to 11.5	680601	—	H-236/348-2S-12	Hyd	Hyd	.522	.543	292	300	236	244	112
RaceMax	3000-6800	Strong mid-range torque. Bracket racing performance. Rough idle. 3500+ Stall. Compression 10.5 to 12.0	680651	—	H-238/3347-6	Hyd	Hyd	.502	.502	294	294	238	238	106
	3200-7000	Good upper RPM torque and HP. Bracket racing performance for +440ci engines. Rough idle. 3500+ Stall. Compression 10.5 to 12.0	684571	—	H312-2	Hyd	Hyd	.528	.552	312	322	242	252	112
	3600-7200	Good upper RPM torque and HP. Bracket racing performance for +440ci N/A engines in heavier vehicles. Rough idle. 4000+ Stall. Compression 12.0 minimum.	680701	—	H-242/3520-2-8	Hyd	Hyd	.528	.552	314	324	242	252	108
	3800-7200	Good upper RPM torque and HP. Bracket racing performance for +440ci engines. Aluminum cylinder heads recommended. Rough idle. 4000+ Stall. Compression 11.0 to 12.5	680711	—	H-244/362-2S-12	Hyd	Hyd	.543	.564	300	308	244	252	112
	4000-7200	Good upper RPM torque and HP. Bracket racing performance for +440ci engines. Aluminum cylinder heads recommended. Rough idle. 4500+ Stall. Compression 11.5 to 13.0	680721	—	H-248/369-2S-12	Hyd	Hyd	.554	.575	304	312	248	256	112
	4000-7200	Good upper RPM HP. Bracket racing performance for +440ci engines. Rough idle. 4500+ Stall. Compression 12.0 minimum.	680761	—	H-252/3680-2-8	Hyd	Hyd	.552	.576	324	334	252	262	108

[84] For 1968-78 engines.

CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99278-16[84]	64308-1	99839-16	99957-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	—	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16[84]	64308-1	99839-16	99957-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	—	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16[84]	64308-1	99839-16	99957-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	—	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16[84]	64308-1	99839-16	99957-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	—	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16[84]	64308-1	99839-16	99957-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	—	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16[84]	—	99839-16	99954-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16[84]	—	99839-16	99954-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16[84]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
99378-16[124]					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
99378-16[124]					68977-1	64771-16[78]	64641-16[79] (HB)			
99287-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
99378-16[124]					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
99378-16[124]					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
99378-16[124]					68977-1	64771-16[78]	64641-16[79] (HB)			
99278-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64640-16[79] (LB)	99822-16[3]	—	66970-1
99378-16[124]					68977-1	64771-16[78]	64641-16[79] (HB)			

[3] Must machine cylinder heads.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.
[84] For 1968-78 engines.
[124] Optional high intensity hydraulic lifters.

CAMSHAFTS

CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
PowerMax	1400-5600	Excellent low-end and mid-range torque and HP. Daily driver with economy and performance. Good idle. Compression 8.75 to 10.5	689511[85]	—	HR-214/325-2S-12	Hyd	Hyd	.488	.509	276	284	214	222	112
	1800-6000	Good low-end and mid-range torque and HP. Street/strip performance. 2500+ Stall. Fair idle. Compression 9.5 to 10.75	689521[85]	—	HR-222/339-2S-12	Hyd	Hyd	.509	.528	284	292	222	230	112
	2200-6400	Good mid-range torque and HP. Street/strip performance. Excellent upgrade for 440 Six Pack. Mild supercharged. 2500+ Stall. Fair idle. Compression 10.0 to 11.5	689531[85]	—	HR-230/352-2S-12	Hyd	Hyd	.528	.539	292	298	230	236	112
	2600-6600	Good mid to upper RPM torque and HP. Street/strip performance. Mild supercharged. 3000+ Stall. Fair idle. Compression 10.5 to 12.0	689551[85]	—	HR-234/359-2S-12	Hyd	Hyd	.539	.558	296	304	234	242	112
	2800-6600	Good mid-range torque and HP. Serious street/strip performance. Heavy car. 3500+ Stall. Compression 10.5 to 12.0	689561[85]	—	HR-240/365-2S-10	Hyd	Hyd	.548	.558	302	310	240	248	110
RaceMax	3000-6800	Good mid-range and upper RPM torque and HP. Bracket racing performance for +440ci engines. Mild supercharged or plate nitrous. Rough idle. 3500+ Stall. Compression 11.5 to 13.0	689541[85]	—	HR-240/365-2S-14	Hyd	Hyd	.548	.558	302	310	240	248	114
	3200-7000	Good upper RPM torque and HP. Bracket racing performance for +470ci engines. Manifold nitrous. Rough idle. 3500+ Stall. Compression 12.0 to 13.5. Also, supercharged with 20psi and 8.0 max compression.	689571[85]	—	HR-248/372-2S-14	Hyd	Hyd	.558	.558	310	318	248	256	114
	3400-7000	Good mid-range to upper RPM torque and HP. Bracket racing performance for +470ci N/A engines in heavier vehicles. Rough idle. 3800+ Stall. Compression 12.0 minimum.	689581[85]	—	HR-248/372-2S-8	Hyd	Hyd	.558	.558	310	318	248	256	108
	3400-7000	Good upper RPM torque and HP. Bracket racing performance for +490ci engines with aluminum cylinder heads. Large manifold nitrous. Rough idle. 3800+ Stall. Also, supercharged with 22psi and 8.5 max compression.	689701[85]	—	HR-254/400-2S-14	Hyd	Hyd	.600	.600	324	332	254	262	114
MarineMax	800-4800	Great low-end torque improvement for stock engines with wet or dry through-prop exhaust. Smooth idle. Compression 7.5 to 9.0	689501[85]	—	HR-204/286-2-12	Hyd	Hyd	.429	.452	260	270	204	214	112

[85] Requires cam button spacer and 66990-1 aluminum bronze or 66970-1 coated steel distributor drive gears.

CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
68532-16[86]	—	99893-16[3]	99969-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			66970-1
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			66970-1
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			66970-1
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			66970-1
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			66970-1
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			
68532-16[86]	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			
68532-16[86]	—	99893-16[3]	99969-16	—	68975-1	64770-16[78]	64628-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64629-16[79] (HB)			66970-1

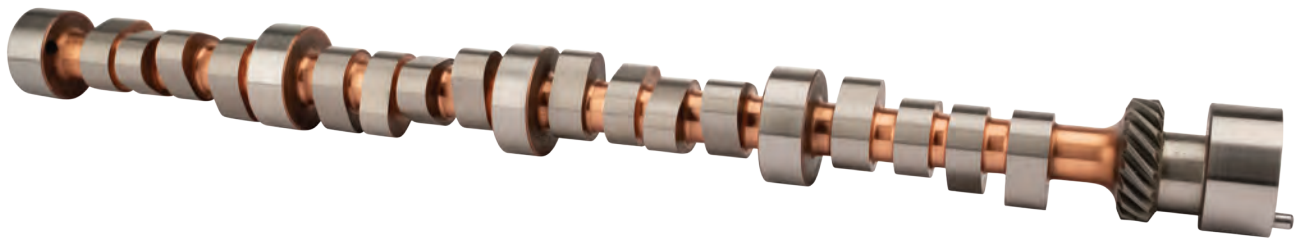
[3] Must machine cylinder heads.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.
[86] Special length pushrods required, use 64628-16 (Low Block) or 64629-16 (High Block) with adjustable rocker arms.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

						VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		
SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	2800-6600	Good low-end and mid-range torque and HP. Street/strip performance. 3500+ Stall. Compression 10.0 to 11.5.	681201	—	F-238/3467-2-12	.028	.030	.520	.540	284	294	238	248	112
PowerMax	3200-7000	Good mid-range torque and HP. Serious street/strip performance. 3500+ Stall. Rough idle. Compression 10.0 to 11.5.	681241	—	F-248/3334-2-12	.022	.022	.500	.520	310	320	248	258	112
PowerMax	3400-7000	Good mid-range torque and HP. Bracket racing performance. Rough idle. 3800+ Stall. Compression 10.5 to 12.0.	680931	—	F-248/3600-2-8	.028	.030	.540	.560	284	294	248	258	108
PowerMax	3600-7200	Good mid-range and upper RPM torque and HP. Bracket racing performance. Rough idle. 4000+ Stall. Compression 11.0 to 12.5.	680941	—	F-250/376-2S-12	.020	.018	.564	.573	282	286	250	254	112
PowerMax	4000-7400	Good mid-range and upper RPM torque and HP. Bracket racing performance. Custom stall converter required. Rough idle. Compression 11.0 to 12.5.	681321	—	F-258/3468-8	.022	.022	.520	.520	320	320	258	258	108
PowerMax	4600-7800	Good mid and upper RPM HP. Bracket racing performance. Rough idle. Custom stall required. Compression 11.5 to 13.0.	681561	—	F-268/3868-2-8	.026	.026	.580	.600	304	314	268	278	108
PowerMax	4800-8000	Good upper RPM HP. Bracket racing performance for +383ci engines with a single carbureter. Rough idle. Custom stall required. Compression 12.0 minimum.	681681	—	F-274/3933-8	.028	.028	.590	.590	314	314	274	274	108
PowerMax	5000-8200	Good upper RPM HP. Bracket racing performance for +440ci engines. Rough idle. Custom stall required. Compression 12.0 minimum.	681701	—	F-278/4002-8	.026	.026	.600	.600	314	314	278	278	108
PowerMax	5000-8400	Good upper RPM HP. Bracket racing performance for +470ci engines with aluminum cylinder heads. Rough idle. Custom stall required. Compression 13.0 minimum.	681721	—	F-280/430-10	.018	.018	.645	.645	320	320	280	280	110
PowerMax	5200-8400	Good upper RPM HP for max effort performance in flat tappet restricted classes with a single 4bbl carburetor. Rough idle. Custom stall required. Compression 13.0 minimum.	681941	—	F-288/4134-6	.026	.026	.620	.620	324	324	288	288	106



CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			
99259-16	—	99890-16[3]	99970-16	—	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66970-1
99359-16					68977-1	64771-16[78]	64622-16[79] (HB)			

[3] Must machine cylinder heads.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND #/ SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL ROLLER														
PowerMax	2500-6000	Excellent low-end and mid-range torque and HP. Daily driver with street/strip performance. 2800+ Stall. Good idle. Compression 9.0 to 10.0.	688501[85]	—	SR-222/326-2S-12	.020	.020	.489	.507	272	280	222	230	112
	3000-6500	Good low-end and mid-range torque and HP. Daily driver with street strip performance. Heavy car. 3500+ Stall. Fair idle. Compression 9.5 to 10.5.	688511[85]	—	SR-234/3634-2-10	.014	.014	.545	.570	282	292	234	244	110
	3200-7200	Excellent mid-range torque and HP. Serious street/strip performance. 3500+ Stall. Fair idle. Compression 10.5 to 11.5.	688521[85]	—	SR-246/362-2S-12	.020	.020	.543	.561	296	304	246	254	112
RaceMax	3400-7200	Good mid-range to upper RPM torque and HP. Mild bracket racing performance. Plate nitrous. Rough idle. 3800+ Stall. Compression 11.0 to 12.0.	688531[85]	—	SR-254/374-2S-12	.020	.020	.561	.561	304	308	254	258	112
	3800-7600	Good mid-range and upper RPM torque and HP. Bracket racing and oval track performance. Rough idle. 4200+ Stall. Compression 11.5 to 13.0.	688801[85]	—	R-260/420-2S-8	.020	.020	.630	.630	292	300	260	268	108
	4000-7800	Good upper RPM torque and HP. Bracket racing performance. Rough idle. Custom stall converter required. Compression 12.0 minimum.	688811[85]	—	R-268/420-2-8	.020	.020	.630	.630	300	310	268	278	108
	4200-8000	Good upper RPM HP. Bracket racing performance. Rough idle. Custom stall converter required. Compression 12.5 minimum.	688821[85]	—	R-272/420-2-10	.020	.022	.630	.630	304	314	272	282	110
	4400-8400	Good upper RPM HP. Bracket racing performance for +440ci engines. Rough idle. Custom stall converter required. Compression 12.5 minimum.	688831[85]	—	R-276/420-2-10	.020	.020	.630	.630	308	318	276	286	110
	4600-8200	Good upper RPM HP for Super Stock 383-400ci engines with a single 4bbl carburetor. Custom stall converter required. Compression 11.5 minumum.	688981[85]	—	R-280/4468-8	.028	.030	.670	.670	312	312	280	280	108
	4600-8400	Good upper RPM HP. Bracket racing performance. Aftermarket aluminum cylinder heads recommended. Custom stall converter required. Compression 13.0 minimum.	688681[85]	—	R-280/450-2S4-10	.026	.026	.675	.638	320	328	280	288	110
	4800-8600	Great upper RPM HP. Bracket racing performance for +470ci engines. Custom stall converter required. Compression 13.0 minimum.	688841[85]	—	R-282/420-2-10	.020	.020	.630	.630	314	324	282	292	110
	5000-8200	Good upper RPM HP for Super Stock 440ci engines with a single 4bbl carburetor. Compression 11.5 minimum.	688561[85]	—	R-284/456-6	.026	.026	.684	.684	324	324	284	284	106
	5000-8400	Good upper RPM HP for max-effort "Heads-Up" applications with +560ci engines using aftermarket cylinder heads and large manifold injected nitrous systems.	688671[85]	—	R-286/500-2S3-14	.026	.022	.750	.750	320	338	286	306	114

[85] Requires cam button spacer and 66990-1 aluminum bronze or 66970-1 coated steel distributor drive gears.

CHRYSLER/DODGE/PLYMOUTH V8 1970-78 383-440 (B)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
66542-16	—	96879-16[3]	99970-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64622-16[79] (HB)			66970-1
66542-16	—	96879-16[3]	99970-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64622-16[79] (HB)			66970-1
66542-16	—	96879-16[3]	99970-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64622-16[79] (HB)			66970-1
66542-16	—	96879-16[3]	99970-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
		99832-16[3, 64]	99976-16[65]		68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
					68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
					68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
					68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
					68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
			99681-16[68]		68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
			99681-16[68]		68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
			99681-16[68]		68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	99885-16[3]	99955-16	99098-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
			99681-16[68]		68977-1	64771-16[78]	64622-16[79] (HB)			
66542-16	—	96886-16[3]	99634-16	99081-1	68975-1	64770-16[78]	64621-16[79] (LB)	99822-16[3]	—	66990-1
		961246-16[3, 87]	99962-16[88]	99082-1	68977-1	64771-16[78]	64622-16[79] (HB)			

[3] Must machine cylinder heads.
[64] Ovate wire beehive spring, requires 99976-16 retainers.
[65] For 99832-16 beehive springs.
[78] Adjustable (shafts NOT included), must use appropriate Crane pushrods.
[79] For use with adjustable rocker arms.
[87] For 2.050" assembly height, requires 99662-16 retainers.
[88] For 961246-16 valve springs.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1966-71 (426 HEMI)

						VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		
SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	1600-5200	Excellent low-end torque. Daily driver with economy. Good idle. Compression 8.5 to 10.25	660091	—	H-212/304-2-12	Hyd	Hyd	.477	.486	284	294	212	222	112
PowerMax	2600-6000	Great mid-range torque and HP. Daily driver with street/strip performance. Street Hemi and crate motor upgrade. 3000+ Stall. Fair idle. Compression 10.5 to 11.5	660611	—	H-232/3360-2-12	Hyd	Hyd	.528	.535	304	314	232	242	112
PowerMax	2800-6200	Good mid-range torque and HP. Street/strip performance. Street Hemi and crate motor upgrade. 3200+ Stall. Fair idle. Compression 10.5 to 12.0	660621	—	H-236/348-2S-12	Hyd	Hyd	.546	.550	292	300	236	244	112
RaceMax	3200-6600	Good upper RPM HP. Bracket racing performance. Rough idle. 3500+ Stall. Compression 11.0 to 12.5. Also, supercharged with 18psi and 8.5 max compression.	660631	—	H-244/362-2S-14	Hyd	Hyd	.568	.572	300	308	244	252	114
HYDRAULIC ROLLER														
PowerMax	2200-6200	Great mid-range torque and HP. Street/strip performance. 2500+ Stall. Compression 9.5 to 11.0	669521[75]	—	HR-226/345-2S1-12	Hyd	Hyd	.542	.535	288	292	226	230	112
PowerMax	2600-6600	Good mid-range torque and HP. Street/strip performance. Street Hemi and crate motor upgrade. 3000+ Stall. Fair idle. Compression 10.0 to 11.5	669531[75]	—	HR-236/359-2S-12	Hyd	Hyd	.564	.555	298	302	236	240	112
PowerMax	3000-6800	Good upper RPM torque and HP. Street/strip performance. Crate motor upgrade. Mild supercharged and or nitrous. 3500+ Stall. Rough idle. Compression 10.5 to 12.0	669541[75]	—	HR-244/372-2S-14	Hyd	Hyd	.584	.565	306	310	244	248	114
RaceMax	3400-7000	Good upper RPM torque and HP. Bracket racing performance for +472ci engines. Large nitrous. Rough idle. 3800+ Stall. Compression 11.5 minimum. Also, supercharged with 22psi and 8.5 max compression.	669571[75]	—	HR-254/400-2S-14	Hyd	Hyd	.628	.608	324	328	254	258	114
RaceMax	3600-7000	Good upper RPM torque and HP. Bracket racing performance for +496ci engines. Large nitrous. Rough idle. 4000+ Stall. Compression 12.5 minimum. Also, supercharged with 28psi and 8.5 max compression.	669561[75]	—	HR-262/400-2S-14	Hyd	Hyd	.628	.608	332	336	262	266	114
MECHANICAL FLAT TAPPET														
PowerMax	2800-6400	Good low-end and mid-range torque. Street/strip performance. 3200+ Stall. Fair idle. Compression 10.0 to 11.5.	661201	—	F-238/3200-2-12	.022	.022	.502	.507	300	310	238	248	112
RaceMax	3600-7000	Good mid-range torque and HP. Crate motor upgrade. Mild supercharged or nitrous. Bracket racing performance. Rough idle. 4000+ Stall. Compression 10.5 to 12.0	660941	—	F-248/3600-2-12	.028	.030	.565	.568	294	304	248	258	112
RaceMax	4000-7200	Good mid-range and upper RPM torque and HP. Bracket racing performance. Mild supercharged and or nitrous. Compression 11.5 to 13.0	661381	—	F-260/391-2S-10	.018	.018	.614	.603	292	296	260	264	110

[75] Requires either 69990-1 aluminum bronze or 69970-1 coated steel distributor gears.

CHRYSLER/DODGE/PLYMOUTH V8 1966-71 (426 HEMI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99278-16	—	99893-16	99954-16[27]	99093-1	68975-1	—	66621-16	99824-16[3]	—	—
					68977-1					
99278-16	—	99893-16	99954-16[27]	99093-1	68975-1	—	66621-16	99824-16[3]	—	—
					68977-1					
99278-16	—	99893-16	99954-16[27]	99093-1	68975-1	—	66621-16	99824-16[3]	—	—
					68977-1					
99278-16	—	99893-16	99954-16[27]	99093-1	68975-1	—	66621-16	99824-16[3]	—	—
					68977-1					
HYDRAULIC ROLLER										
68532-16[89, 90]	—	99896-16[3]	99970-16[27]	99093-1	68975-1	—	66628-16	99824-16[3]	—	66990-1
					68977-1					66970-1
68532-16[89, 90]	—	99896-16[3]	99970-16[27]	99093-1	68975-1	—	66628-16	99824-16[3]	—	66990-1
					68977-1					66970-1
68532-16[89, 90]	—	99896-16[3]	99970-16[27]	99093-1	68975-1	—	66628-16	99824-16[3]	—	66990-1
					68977-1					66970-1
68532-16[89, 90]	—	99896-16[3]	99970-16[27]	99093-1	68975-1	—	66628-16	99824-16[3]	—	66990-1
					68977-1					
68532-16[89, 90]	—	99896-16[3]	99970-16[27]	99093-1	68975-1	—	66628-16	99824-16[3]	—	66990-1
					68977-1					
MECHANICAL FLAT TAPPET										
99259-16	—	99893-16	99954-16[27]	99093-1	68975-1	—	65689-16	99824-16[3]	—	66970-1
99369-16					68977-1					
99259-16	—	99893-16	99954-16[27]	99093-1	68975-1	—	65689-16	99824-16[3]	—	66970-1
99369-16					68977-1					
99259-16	—	99893-16	99954-16[27]	99093-1	68975-1	—	65689-16	99824-16[3]	—	66970-1
99369-16					68977-1					

[3] Must machine cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[89] Special length pushrods required, 66628-16.
[90] Due to the increased pushrod seat height of the Crane retrofit hydraulic roller lifters, the cylinder heads, and possibly the cylinder block, will have to be modified for pushrod clearance.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1966-71 (426 HEMI)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL ROLLER														
PowerMax	3000-7000	Good low-end and mid-range torque and HP. Street/strip performance. Crate motor upgrade. 3200+ Stall. Good idle. Compression 10.0 to 11.5	668511[85]	—	SR-238/350-2S-12	.020	.020	.550	.550	288	296	238	246	112
PowerMax	3200-7200	Good mid-range torque and HP. Street/strip performance. Crate motor upgrade. Mild supercharged and or nitrous. 3400+ Stall. Fair idle. Compression 10.5 to 11.5	668521[85]	—	SR-246/362-2S-12	.020	.020	.568	.568	296	304	246	254	112
PowerMax	3800-7600	Good mid-range to upper RPM torque and HP. Radical street/strip performance. Mild supercharged and or nitrous. 4000+ Stall. Rough idle. Compression 12.0 to 13.5	668541[85]	—	SR-262/400-2S-12	.020	.020	.628	.608	300	304	262	266	112
RaceMax	3600-7600	Good mid-range and upper RPM torque and HP. Bracket racing performance. Mild supercharged and or nitrous. Rough idle. 4000+ Stall. Compression 11.0 to 12.5	668531[85]	—	SR-254/374-2S-12	.020	.020	.587	.565	304	312	254	262	112
RaceMax	4000-7800	Good upper RPM HP. Bracket racing performance. Large plate or manifold nitrous. Rough idle. Custom stall converter. Compression 12.0 to 13.5. Also supercharged with 22psi and 8.5 max compression.	668301[85]	—	R-262/452-2S-12	.020	.020	.710	.699	291	312	262	276	112
RaceMax	4400-8000	Good upper RPM torque and HP. Bracket racing performance for heavier vehicles with a single 4bbl carburetor. Custom stall converter. Compression 12.0 to 13.5	668281[85]	—	R-274/4334-8	.026	.026	.680	.659	314	314	274	274	108
RaceMax	4000-6800	Competition only, NHRA A/FD. Camshaft has 2.125" journals for 48° lifter bank angles on 9310 steel material.	668821[85, 91, 92]	—	R-276/5401-2S-13XBB 48D	.020	.022	.848	.821	305	311	276	282	113
RaceMax	5500-8500	Competition only, serious race Super Stock with (2) 4bbl carburetors. Camshaft has 4/7 swap firing order and 2.125" journals on 9310 steel material.	668351[85, 91, 93]	—	R-276/555-2S-13XBBA SFO	.020	.022	.871	.798	306	324	276	294	113
RaceMax	5000-8500	Competition only, Nostalgia F/C. Camshaft has 2.125" journals for 48° lifter bank angles on 9310 steel material.	668311[85, 91, 92]	—	R-292/480-10XBB 48D	.026	.026	.754	.730	332	332	292	292	110
RaceMax	5500-9500	Competition only, Nostalgia A/GS. Camshaft has 2.125" journals for 48° lifter bank angles on 9310 steel material.	668321[85, 91, 92]	—	R-292/500-2S4 14XBBA 48D	.026	.026	.785	.760	332	336	292	296	114

[85] Requires cam button spacer and 66990-1 aluminum bronze or 66970-1 coated steel distributor drive gears.
[91] 9310 Steel camshaft with 2.125" cam bearing journals.
[92] For 48° lifter angle blocks.

CHRYSLER/DODGE/PLYMOUTH V8 1966-71 (426 HEMI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
66542-16	—	96878-16[3]	99970-16[27]	99085-1	68975-1	—	65689-16	99824-16[3]	—	66990-1
					68977-1					66970-1
66542-16	—	96878-16[3]	99970-16[27]	99085-1	68975-1	—	65689-16	99824-16[3]	—	66990-1
					68977-1					66970-1
66542-16	—	96878-16[3]	99970-16[27]	99085-1	68975-1	—	65689-16	99824-16[3]	—	66990-1
					68977-1					66970-1
66542-16	—	96878-16[3]	99970-16[27]	99085-1	68975-1	—	65689-16	99824-16[3]	—	66990-1
					68977-1					
66542-16	—	96886-16[3]	99970-16[27]	99085-1	68975-1	—	65689-16	99824-16[3]	—	66990-1
					68977-1					
66542-16	—	96886-16[3]	99970-16[27]	99085-1	68975-1	—	65689-16	99824-16[3]	—	66990-1
					68977-1					
66547-16[94]	—	96848-16[96]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
		961356-16[98]	99663-16[27, 101]							
66542-16	—	96849-16[97]	99656-16[27]	99093-1	—	—	—	99825-16	—	66990-1
		961355-16[99]	99663-16[27, 101]							
66547-16[94]	—	96849-16[97]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
		961356-16[98]	99663-16[27, 101]							
66542-16	—	96849-16[97]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
95542-16[95]		961355-16[99]	99663-16[27, 101]							

[3] Must machine cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[68] Must use 99098-16 valve stem locks, included with retainers.
[94] For standard to .200" spread lifter bore blocks, requires cylinder block machining.
[95] For .100" to .200" spread lifter bore blocks.
[96] For 2.100" assembly height, cylinder head machining may be required.
[97] For 2.200" assembly height, cylinder head machining may be required.
[98] Small diameter, low mass Pacaloy wire for 2.100" assembly height, requires 99963-16 titanium retainers.
[99] Small diameter, low mass Pacaloy wire for 2.175" assembly height, requires 99963-16 titanium retainers.
[100] Requires 99421-16 lash caps.
[101] Titanium for 961356-16 and 961355-16 springs.

CAMSHAFTS

CRANE Cams®

CHRYSLER/DODGE/PLYMOUTH V8 1966-71 (426 HEMI)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL ROLLER														
RaceMax Contd.	4600-8600	Competition only. Max-effort for high RPM N/A engines. Compression 12.5 minimum.	669091[85]	—	R-296/4778-8	.024	.026	.750	.726	328	328	296	296	108
	6000-10000	Competition only, supercharged alcohol dragster up to 480ci. 669161 Camshaft has 2.125" journals for 48° lifter bank angles on 9310 steel material.	669101[85] 669161[85, 91, 92]	—	R-296/4778-25 R-296/4778-25XBBA 48D	.024	.026	.750	.775	328	322	296	300	114
	6000-9600	Competition only, supercharged alcohol funny car with +480ci. 669131 Camshaft is for 48° lifter bank angles. 669171 Camshaft has 2.125" journals for 48° lifter bank angles on 9310 steel material.	669121[85] 669131[85,92] 669171[85, 91, 92]	—	R-296/500-16 R-296/500-16 48D R296/500-16XBBA 48D	.026	.026	.785	.760	336	336	296	296	116
	6000-9600	Competition only, supercharged alcohol funny car with +480ci. Also, Pro Mod with rigid valve train. Camshaft has 4/7 firing order swap.	668331[85, 91, 92, 93]	—	R-296/5001-16XBBA 48D SFO	.020	.022	.785	.760	330	330	296	296	116
	5000-8600	Competition only, baseline supercharged Fuel Dragster, Funny Car, and Blown Fuel Hydro. Camshaft has 2.125" journals for 48° lifter bank angles on 9310 steel material.	669181[85, 91, 92]	—	R-298/4778-14XBB 48D	.026	.026	.750	.726	330	330	298	298	114
	5000-9000	Competition only, Top Fuel, Funny Car, and Hydro applications. Camshaft has 60mm journals for 48° lifter bank angles and .920" lifter wheel size on 9310 steel material.	668361[85, 91, 92]	—	R-298/525-2S1-14X 60J 48D	.026	.032	.824	.791	332	336	298	302	114

[85] Requires cam button spacer and 66990-1 aluminum bronze or 66970-1 coated steel distributor drive gears.
[91] 9310 Steel camshaft with 2.125" cam bearing journals.
[92] For 48° lifter angle blocks.
[93] SFO firing order 1-8-7-3-6-5-4-2.

CHRYSLER/DODGE/PLYMOUTH V8 1966-71 (426 HEMI)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
66542-16	—	96848-16[96]	99656-16[27]	99093-1	—	—	66624-16	99825-16	—	66990-1
		961355-16[99]	99663-16[27, 101]							
66542-16	—	96848-16[96]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
95542-16[95]		96849-16[97] 961355-16[99]	99663-16[27, 101]							
66542-16	—	96848-16[96]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
95542-16[95]		96849-16[97] 961355-16[99]	99663-16[27, 101]							
66542-16	—	96848-16[96]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
95542-16[95]		96849-16[97] 961355-16[99]	99663-16[27, 101]							
66549-16[94]	—	96849-16[97]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
		961355-16[99]	99678-16[68, 102] 99663-16[27, 101]	99098-1				99828-16		
66549-16[94]	—	96849-16[97]	99681-16[36, 100]	99097-1	—	—	—	99826-16[3]	—	66990-1
		961355-16[99]	99678-16[68, 102] 99663-16[27, 101]	99098-1				99828-16		

[3] Must machine cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[68] Must use 99098-16 valve stem locks, included with retainers.
[94] For standard to .200" spread lifter bore blocks, requires cylinder block machining.
[95] For .100" to .200" spread lifter bore blocks.
[96] For 2.100" assembly height, cylinder head machining may be required.
[97] For 2.200" assembly height, cylinder head machining may be required.
[99] Small diameter, low mass Pacaloy wire for 2.175" assembly height, requires 99963-16 titanium retainers.
[100] Requires 99421-16 lash caps.
[101] Titanium for 961356-16 and 961355-16 springs.
[102] Requires 99422-16 lash caps.

CAMSHAFTS

CRANE Cams®

FORD 4 CYL. 1974-87 2300CC 83-87 2000CC

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FOLLOWER														
TruckMax	1400-4600	Excellent low-end torque. Smooth idle. Daily driver with economy. Great upgrade for stock engines.	190021	—	H-260-2	Hyd	Hyd	.415	.425	260	268	212	220	112
PowerMax	1400-4600	Good low-end torque. Daily driver with economy. Mild turbocharged. Smooth idle. Compression 8.75 to 10.0.	194611	—	H-270	Hyd	Hyd	.415	.415	270	270	218	218	113
	1800-5200	Good low and mid-range torque. Daily driver with economy and performance. Turbocharged performance. Good idle. Compression 9.5 to 11.0.	194621	—	H-272-2	Hyd	Hyd	.420	.420	272	280	226	234	110
	2400-5600	Good mid-range HP. Street/strip performance. Fair idle. Compression 10.0 to 11.5.	190071	—	H-278-2	Hyd	Hyd	.460	.480	278	286	234	242	110
MECHANICAL FOLLOWER														
RaceMax	2500-6000	Good mid and upper RPM torque and HP. Mini stock and or short oval performance. Fair idle. Compression 10.0 to 11.5.	192211[103]	—	FOR-272-2-10	.008	.008	.435	.460	272	282	232	242	110
	3200-7000	Good mid and upper RPM torque and HP. Mini stock and or short oval performance. Fair idle. Compression 10.5 to 12.0.	192251[103]	—	FOR-300-6	.010	.010	.510	.510	300	300	264	264	106
	3400-7200	Good mid and upper RPM torque and HP. Mini stock and or long oval performance. Fair idle. Compression 11.0 to 12.5.	192221[103]	—	FOR-300-8	.010	.010	.510	.510	300	300	264	264	108
	4000-7600	High RPM HP for radical turbocharged applications. Drag race and closed course performance. Prepared cylinder head recommended.	192261[103]	—	FOR-310-2R-8	.010	.010	.535	.510	310	300	274	264	108
	4200-8200	Good mid and upper RPM HP. Large oval track Mini-Stock and closed course applications. Prepared cylinder head recommended. Compression 12.0 minimum.	192241[103]	—	FOR-310-8	.010	.010	.535	.535	310	310	274	274	108
	4600-8400	Max effort high RPM performance for high boost, turbocharged applications. Compression 13.0 minimum.	192231[103]	—	FOR-320-10	.010	.010	.560	.560	320	320	284	284	110

FORD 4 CYL. 1988-98 2300CC

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER FOLLOWER														
TruckMax	1400-4600	Good low-end torque. Good idle. Daily driver. Off-road performance. Compression 8.75 to 10.5.	199501	—	RFOR-226/420-2S-12	Hyd	Hyd	.420	.420	274	282	226	234	112
PowerMax	1000-4200	Excellent low-end torque. Daily driver with economy. Great performance upgrade for stock applications. Smooth idle. Compressions 8.5 to 9.75.	199541	—	RFOR-214/420-12	Hyd	Hyd	.420	.420	252	252	214	214	112
	2000-5600	Good mid-range torque. Street/strip performance. 2500+ stall. Fair idle. Compression 9.5 to 10.75.	199511	—	RFOR-234/450-8	Hyd	Hyd	.450	.450	282	282	234	234	108
RaceMax	2800-6600	Good mid-range torque and HP. Bracket racing and oval track performance. Rough idle. 3000+ stall. Compression 10.0 to 11.5.	199521	—	RFOR-242/480-8	Hyd	Hyd	.480	.480	290	290	242	242	108
	3200-7000	Good upper RPM HP. Bracket racing and oval track performance. Rough idle. 3500+ stall. Compression 10.5 to 12.0.	199531	—	RFOR-250/510-10	Hyd	Hyd	.510	.510	298	298	250	250	110
MECHANICAL ROLLER FOLLOWER														
RaceMax	3200-7000	Good mid-range torque and HP. Short oval track and bracket racing performance. Rough idle. 3400+ stall. Compression 10.5 to 12.0.	198091	—	RFOR-252/560-6	.010	.012	.560	.560	284	284	252	252	106
	3600-7400	Good mid and upper RPM torque and HP. Long oval track and bracket racing performance. 4000+ stall. Compression 11.5 minimum.	198101	—	RFOR-260/584-8	.010	.012	.584	.584	292	292	260	260	108
	4000-7800	Good mid and upper RPM torque and HP. Oval track, bracket racing, and closed course performance. Custom stall converter required. Compression 12.0 minimum.	198131	—	RFOR-268/608-6	.010	.012	.608	.608	300	300	268	268	106
	4600-8400	Max-effort for high RPM and high boost applications. Bracket racing. Custom stall converter required. Compression 12.5 minimum for N/A engines.	198161	—	RFOR-276/632-8	.010	.012	.632	.632	308	308	276	276	108

[103] Requires 99423-16 lash caps.

FORD 4 CYL. 1974-87 2300CC 83-87 2000CC

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FOLLOWER										
19800-8	—	99882-8[3]	—	—	—	—	—	—	—	—
19800-8	—	99882-8	—	—	—	—	—	—	—	—
19800-8	—	99882-8	—	—	—	—	—	—	—	—
19800-8	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
MECHANICAL FOLLOWER										
19800-8	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
19800-8	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
19800-8	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
19800-8	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
19800-8	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
19800-8	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—

FORD 4 CYL. 1988-98 2300CC

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER FOLLOWER										
—	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
—	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
—	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
—	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
—	—	99884-8[3]	99967-8	—	—	—	—	99820-8[3]	—	—
MECHANICAL ROLLER FOLLOWER										
—	—	99838-8[3]	99936-8	99096-1	—	—	—	99820-8[3]	—	—
—	—	99838-8[3]	99936-8	99096-1	—	—	—	99820-8[3]	—	—
—	—	99838-8[3]	99936-8	99096-1	—	—	—	99820-8[3]	—	—
—	—	99838-8[3]	99936-8	99096-1	—	—	—	99820-8[3]	—	—

[3] Must machine cylinder heads.
[104] Requires Crane Multi-Fit Valve Locks.

CAMSHAFTS

FORD ZETEC 4 CYL. 1995-02 2.0L DOHC 4V

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	1000-6500	Good low and mid-range power. Daily driver and performance. Manual or auto trans. High-flow intake and header with free-flowing exhaust recommended.	223-0010	—	F-210/374-2SR-10	.008	.010	.374	.366	232	228	210	206	110
	2000-7000	Good mid-range to upper RPM power. Daily driver with street strip performance. Manual trans only. High-flow intake and header with free-flowing exhaust recommended.	223-0012	—	F-214/382-2SR-9	.008	.010	.382	.374	236	232	214	210	109
RaceMax	3000-8000	Upper RPM power. Strip and closed-course performance. Manual trans only. High-flow intake and header with free-flowing exhaust and ported cylinder head recommended. Supercharged or nitrous. Compression 10.5 to 12.0.	223-0014	—	F-218/390-2SR-10	.008	.010	.390	.382	240	236	218	214	110

FORD I6 1965-96 240-300 (4.9L)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Brute low-end torque. Smoot idle. Daily driver with economy. Compression 7.75 to 8.75	500511	—	H-192/2667-2S-12	Hyd	Hyd	.429	.458	248	260	192	204	112
	1200-4600	Good low-end torque. Smooth idle. Daily driver with economy. Towing and off-road performance. Compression 8.0 to 9.5	503901	—	H-260-2	Hyd	Hyd	.458	.487	260	272	204	216	112
RaceMax	2200-5600	Good low and mid-range torque. Serious off-road and bracket racing performance. 2500+ stall. Fair idle. Also, 1/4 to 3/8 mile oval track. Compression 8.75 to 10.5.	500211	—	H-224/309-2-6	Hyd	Hyd	.497	.523	288	298	224	234	106
	3200-6400	Good mid to upper RPM torque and HP. Radical off-road and bracket racing. 3500+ stall. Rough idle. Also, 3/8 to 1/2 mile oval track. Compression 11.0 to 12.50.	500641	—	H-238/3347-8	Hyd	Hyd	.539	.539	294	294	238	238	108
MarineMax	1400-5000	Good low-end and mid-range torque and HP improvement for near-stock or slightly modified engines with wet or dry through-prop exhaust. Good idle. Compression 8.25 to 9.25.	503941	—	H-272-2	Hyd	Hyd	.487	.515	272	284	216	228	112
MECHANICAL FLAT TAPPET														
RaceMax	2600-6000	Good mid-range torque and HP. Off-road and bracket racing performance. 2000+ stall. Fair idle. Compression 10.0 to 11.5.	501181	—	F-238/3200-2-10	.022	.022	.515	.537	304	314	238	248	110
	3000-6200	Good mid to upper RPM torque and HP. Serious off-road and bracket racing performance. 2500+ stall. Rough idle. Also, 3/8 to 1/2 mile oval track. Compression 11.5 minimum.	501211	—	F-246/359-2S-6	.012	.012	.578	.589	282	286	246	250	106
	3600-6800	Good upper RPM HP. 3/8 to 1/2 mile oval track and bracket racing performance. Rough idle. 3000+ stall. Compression 12.0 minimum.	501311	—	F-256/3634-2S-8	.026	.026	.585	.604	292	300	256	264	108

[103] Requires 99423-16 lash caps.

FORD ZETEC 4 CYL. 1995-02 2.0L DOHC 4V

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

FORD I6 1965-96 240-300 (4.9L)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99280-12	—	99838-12	99944-12	99097-1	—	—	50621-12	99820-12[3]	—	—
99280-12	—	99838-12	99944-12	99097-1	—	—	50621-12	99820-12[3]	—	—
99258-12	—	99838-12	99944-12	99097-1	—	—	50621-12	99820-12[3]	—	—
99280-12	—	99838-12	99944-12	99097-1	—	—	50621-12	99820-12[3]	—	—
99280-12	—	99838-12	99944-12	99097-1	—	—	50621-12	99820-12[3]	—	—
MECHANICAL FLAT TAPPET										
99257-12[105]	—	99893-12	99953-12	99097-1	—	—	50621-12	99820-12[3]	—	—
99257-12[105]	—	99893-12	99953-12	99097-1	—	—	50621-12	99820-12[3]	—	—
99257-12[105]	—	99893-12	99953-12	99097-1	—	—	50621-12	99820-12[3]	—	—

[3] Must machine cylinder heads.
[105] Appropriate Crane pushrods required.

CAMSHAFTS

CRANE Cams®

FORD V8 221-302 1962-87 (NON-H.O.)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Impoved low-end and mid-range torque and HP in speed density fuel injected truck applications with automatic or manual transmissions. Smooth idle. Daily driver with economy.	364211[112]	364112[106]	2021	Hyd	Hyd	.416	.432	252	260	190	198	109
	1200-4600	Excellent low-end torque. Smooth idle. Daily driver with economy. Compression 8.0 to 9.5.	13003[112]	130032	Energizer 260 H10	Hyd	Hyd	.456	.456	260	260	204	204	110
	1200-4800	Great low-end torque and HP. Smooth idle. Daily driver with economy. Towing and off-road performance. Compression 8.0 to 9.5.	363901[112]	363902[107]	H-260-2	Hyd	Hyd	.456	.484	260	272	204	216	112
	1800-5600	Good low-end and mid-range torque and HP. Good idle. Daily driver with economy. Towing and off-road performance. Mild supercharged. Compression 8.75 to 10.5.	363511[112]	363512[107]	Z-268-2	Hyd	Hyd	.490	.504	268	274	218	224	112
Fireball	1800-5200	Good low-end and mid-range torque and HP. Good to fair idle. 2200-2400 stall converter. Compression 9.25 to 10.0.	364901[112]	364902	H-290-8	hyd	hyd	.484	.484	290	290	216	216	108
PowerMax	800-4200	Good low-end and mid-range torque and HP improvement for non-roller SFI injected vehicles. Manual or Auto trans. EFI compatible.	364112[112]	—	2021	Hyd	Hyd	.416	.432	252	260	190	198	109
	1200-5000	Great low-end torque and HP. Daily driver with economy and street performance. Mild turbocharged. Smooth idle. Compression 8.0 to 9.5.	363501[112]	363502[107]	Z-256-2	Hyd	Hyd	.461	.475	256	262	206	216	112
	1400-4800	Good low-end torque. Daily driver with economy and performance. Smooth idle. Compression 8.5 to 10.0.	13004[112]	130042	Energizer 266 H10	Hyd	Hyd	.469	.469	266	266	210	210	110

[106] Includes rocker arm pedestal shim kit.
[107] Includes rocker arm adjusting nuts (polylocks).
[112] Requires 36970-1 (.467" ID), 36971-1 (.500" ID), 44970-1 (.531" ID SVO) steel OR 36990-1 (.467" ID), 36989-1 (.500" ID) or 44990-1 (.531" ID SVO) aluminum bronze distributor drive gear.

FORD V8 221-302 1962-87 (NON-H.O.)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
						44746-16[106]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	36970-1 (.467) 36971-1 (.500) 44970-1 (.531)
						11746-16[109]				

[108] For 1973-2000 engines.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.

CAMSHAFTS

FORD V8 221-302 1962-87 (NON-H.O.)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	1600-5200	Good low-end and mid-range torque. Daily driver with economy and street/strip performance. Good idle. Compression 8.75 to 10.0.	13005[112]	130052	Energizer 272 H10	Hyd	Hyd	.484	.484	272	272	216	216	110
PowerMax	2200-5600	Good mid-range torque. Daily driver with street/strip performance. 2500+ stall. Fair idle. Compression 9.5 to 10.75.	13009[112]	130092	Energizer 278 H10	Hyd	Hyd	.498	.498	278	278	222	222	110
PowerMax	2200-6000	Good mid-range torque and HP. Daily driver with street/strip performance. 2500+ stall. Good idle. 9.5 to 10.75.	363521[112]	363522[107]	Z-274-2	Hyd	Hyd	.504	.518	274	280	224	230	110
PowerMax	2800-6200	Good mid-range to upper RPM torque. Street strip performance. 3000+ stall. Fair idle. Compression 9.5 to 11.0.	13006[112]	130062	Energizer 284 H12	Hyd	Hyd	.512	.512	284	284	228	228	112
MarineMax	1000-4800	Excellent low-end and mid-range torque and HP improvement for near-stock or slightly modified engines with wet or dry through-prop exhaust. Good idle. Compression 7.75 to 8.75.	363931[112]	363932[107]	H-266-2	Hyd	Hyd	.456	.472	266	274	210	218	114
MarineMax	1400-5000	Good low-end and mid-range torque and HP improvement for modified engines with wet or dry, free-flowing above water exit exhaust systems. Good idle. Compression 8.0 to 9.0.	363941[112]	363942[107]	H-272-2	Hyd	Hyd	.484	.512	272	284	216	228	112
HYDRAULIC ROLLER														
PowerMax	1800-5600	Excellent low-end and mid-range torque and HP. Daily driver with economy and performance. Compression 8.75 to 10.0.	369541[111,112]	—	HR-216/325-2S-12	Hyd	Hyd	.520	.542	278	286	216	224	112
PowerMax	2400-6400	Good mid-range to upper RPM torque and HP. Street/strip performance. 2500+ stall. Compression 9.0 to 10.75.	369601[111,112]	—	HR-224/339-2S-12	Hyd	Hyd	.542	.563	286	294	224	232	112
MarineMax	800-4400	Brute low-end torque impovement for stock, factory hydraulic roller equipped engines with wet or dry through-prop exhaust. Smooth idle. EFI compatible.	364211[110]	—	2020	Hyd	Hyd	.445	.470	260	270	198	208	112

[106] Includes rocker arm pedestal shim kit.
[107] Includes rocker arm adjusting nuts (polylocks).
[110] For 1986-89 (non H.O.) engines originally equipped with hydraulic roller camshafts.
[111] Standard base circle for use with 36352-16 or 36560-16 hydraulic roller lifters.
[112] Requires 36970-1 (.467" ID), 36971-1 (.500" ID), 44970-1 (.531" ID SVO) steel OR 36990-1 (.467" ID), 36989-1 (.500" ID) or 44990-1 (.531" ID SVO) aluminum bronze distributor drive gear.

FORD V8 221-302 1962-87 (NON-H.O.)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	—
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	—
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	—
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68) 36622-16 (1969-95)	—	36655-16	—
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68)	—	—	—
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36621-16 (1963-68)	—	—	—
						11746-16[109]				
HYDRAULIC ROLLER										
36530-16[113]	—	96874-16[3]	99944-16	99097-1	44975-1[108]	36800-16[109]	95614-16	99820-16[3]	36655-16	36970-1
					44984-1[108]	11746-16[109]				
36530-16[113]	—	96874-16[3]	99944-16	99097-1	44975-1[108]	36800-16[109]	95614-16	99820-16[3]	36655-16	36970-1
					44984-1[108]	11746-16[109]				36990-1
36530-16[113]	36308-1	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36631-16[115, 120]	—	—	—

[3] Must machine cylinder heads.
[108] For 1973-2000 engines.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.
[113] For use with standard Ford alignment bars.
[115] For engines with non-adjustable pedestal mount rockers.
[120] For engines with stock base circle camshafts.

CAMSHAFTS

FORD V8 221-302 1962-87 (NON-H.O.)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	2200-6000	Replacement for factory 289 Hi-Po.	360901 [1] ⚠	—	BluePrinted C3OZ-6250-C	.020	.024	.477	.477	266	266	227	227	114
PowerMax	2800-6600	Good low-end and mid-range torque and HP. Street/strip performance. Mild supercharged or nitrous. 3200+ stall. Compression 10.5 to 11.5.	363841 [3] ⚠	—	F-278-2	.022	.022	.512	.533	278	288	238	248	114
PowerMax	3200-7000	Good mid-range torque and HP. Radical street/strip performance. 3500+ stall. Compression 11.0 to 12.5.	364681 [3] ⚠	364682[114]	F-280-2	.026	.026	.553	.572	280	288	244	252	108
MECHANICAL ROLLER														
PowerMax	2800-6600	Good low-end and mid-range torque and HP. Serious street/strip performance. 3200+ stall. Compression 10.5 to 11.5.	368511[112, 116] [3] ⚠	—	SR-238/350-2S-12	.020	.020	.560	.579	288	296	238	246	112
PowerMax	3400-7000	Good mid-range torque and HP. Serious street/strip performance. Manifold nitrous. 3800+ stall. Fair idle. Compression 10.5 to 12.0. Supercharged with 16psi and 8.0 max compression.	368601[112, 116] [3] ⚠	—	SR-246/362-2S-10	.020	.020	.579	.598	296	304	246	254	110

[107] Includes rocker arm adjusting nuts (polylocks).
[111] Standard base circle for use with 36352-16 or 36560-16 hydraulic roller lifters.
[112] Requires 36970-1 (.467" ID), 36971-1 (.500" ID), 44970-1 (.531" ID SVO) steel OR 36990-1 (.467" ID), 36989-1 (.500" ID) or 44990-1 (.531" ID SVO) aluminum bronze distributor drive gear
[114] Includes valve spring and retainer kit.
[116] Requires 7/16x20 x 1 1/4" grade 8 cam gear bolt and hardened washer.

FORD V8 221-302 1962-87 (NON-H.O.)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99257-16	—	96803-16	99946-16	99097-1	44975-1[108]	36800-16[109]	36622-16[9]	—	36650-1	—
99357-16					44984-1[108]	36750-16[109]	95618-16			
99257-16	—	99893-16[3]	99953-16	99097-1	44975-1[108]	36800-16[109]	36622-16[9]	99820-16[3]	36650-1	—
99357-16					44984-1[108]	36750-16[109]	95618-16			
99257-16	—	96877-16[3]	99943-16	99097-1	44975-1[108]	36750-16[109]	36622-16[9]	99820-16[3]	36650-1	—
99357-16					44984-1[108]	86757-16[109]	95618-16			
MECHANICAL ROLLER										
44570-16[53]	—	99893-16	99953-16	99097-1	44975-1[108]	36750-16[109]	36622-16[9]	99820-16[3]	36650-1	36990-1
44570D-16					44984-1[108]	86757-16[109]	95618-16			36970-1
44570-16[53]	—	99893-16	99953-16	99097-1	44975-1[108]	36750-16[109]	36622-16[9]	99820-16[3]	36650-1	36990-1
44570D-16					44984-1[108]	86757-16[109]	95618-16			36970-1

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[53] Cylinder head removal required.
[108] For 1973-2000 engines.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.

CAMSHAFTS

CRANE Cams®

FORD V8 1985-95 5.0L (302 H.O.)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC ROLLER														
TruckMax	1400-5400	Good low-end torque and HP. Good idle. Daily driver with economy. Towing and off-road performance. Compression 8.75 to 10.0.	449541 [3] ⚠	—	HR-216/ 325-2S-12	Hyd	Hyd	.520	.542	278	286	216	224	112
PowerMax	1000-5000	Good low to mid-range torque and HP. Daily driver with street performance. Compatible with speed density and mass air flow style EFI. Manual or auto trans. Good idle. Supercharged 8psi max with factory 9.2 compression.	444211 [1] ⚠	—	2020	Hyd	Hyd	.530	.530	262	270	208	216	112
	1400-5400	Good mid-range torque and HP. Daily driver with street performance. Compatible with mass air flow style EFI. Manual or auto trans with mild stall. Good idle. Nitrous. Factory 9.2 compression. Supercharged 10psi with 8.5 max compression. Designed for 1.7 rocker arms.	444225 [1] ⚠	—	2031	Hyd	Hyd	.513 w/1.7	.529 w/1.7	276	282	214	220	112
	1400-5400	Good mid-range torque and HP. Daily driver with street/strip performance. Compatible with mass air flow style EFI. Manual or auto trans with stall. 3.08 or numerically higher gears. Good idle. Nitrous. Factory 9.2 compression. Supercharged with 10psi with 8.5 max compression.	444221 [1] ⚠	—	2030	Hyd	Hyd	.533	.544	270	278	216	220	112
	1800-5800	Good mid-range and strong top-end power. E303 replacement. Requires modified mass airflow meter. Aftermarket intake, cylinder heads, headers and 3.55+ rear-end gears recommended. Nitrous. Light choppy idle. Factory 9.2 compression. Supercharged with 15psi and 8.0 max compression.	444231 [1] ⚠	—	2040	Hyd	Hyd	.498	.498	282	282	220	220	110
	2000-6000	Good mid-range torque and HP. Street/strip performance. For use with 1.7 rocker arms. 2500+ Stall. Fair idle. Compression 8.75 to 10.5. Supercharged with 20psi and 8.0 max compression.	449591 [3] ⚠	—	HR-220/311-2S-14	Hyd	Hyd	.529 w/1.7	.544 w/1.7	282	288	220	226	114
	2200-6000	Good mid-range torque and HP. Street strip performance. B303 upgrade, X303 replacement. 2500+ Stall. Fair idle. Compression 9.5 to 10.75.	449661 [3] ⚠	—	HR-224/339-12	Hyd	Hyd	.542	.542	286	286	224	224	112
	2800-6800	Good upper RPM torque and HP. Serious street/strip performance. Nitrous. 3200+ Stall. Compression 10.0 to 11.5. Supercharged with 20psi and 8.0 max compression.	449761 [3] ⚠	—	HR-232/352-2S-12	Hyd	Hyd	.563	.595	294	306	232	244	112

[3] Must machine cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[106] Includes rocker arm pedestal shim kit.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.

FORD V8 1985-95 5.0L (302 H.O.)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
36530-16[113]	44308-1[118]	96870-16[3]	99943-16	99097-1	44975-1	36759-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]	44309-1[119]		99969-16[27]	99087-1		36750-16	36625-16[121]			
36530-16[113]	44308-1[118]	99841-16	99942-16	99094-1	44975-1	36759-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]	44309-1[119]			99097-1	44984-1	36758-16[106, 115]				
36530-16[113]	44308-1[118]	99841-16	99942-16	99094-1	44975-1	44746-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]	44309-1[119]			99097-1	44984-1	36758-16[106, 115]				
36530-16[113]	44308-1[118]	99841-16	99942-16	99094-1	44975-1	36759-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]	44309-1[119]			99097-1	44984-1	36758-16[106, 115]				
36530-16[113]	44308-1[118]	99841-16	99942-16	99094-1	44975-1	36759-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]	44309-1[119]	96870-16[3]	99943-16	99097-1	44984-1	36758-16[106, 115]				
36530-16[113]	—	96870-16[3]	99943-16	99097-1	44975-1	44746-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]					44984-1	36758-16[106, 115]				
36530-16[113]	—	96870-16[3]	99943-16	99097-1	44975-1	36759-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]					44984-1	36758-16[106, 115]				
36530-16[113]	—	96870-16[3]	99943-16	99097-1	44975-1	36759-16[106, 115]	36631-16[115]	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]					44984-1	36758-16[106, 115]				

[113] For use with standard Ford alignment bars.
[115] For engines with non-adjustable pedestal mount rockers.
[116] Requires 7/16x20 x 1 1/4" grade 8 cam gear bolt and hardened washer.
[117] Vertical locking bar hydraulic roller lifters, no machining required. Cylinder head removal required for installation in 302 and 302 H.O applications.
[118] Valve stem locks included.
[119] For GT40P and similar long exhaust valve cylinder heads. No machining required.
[121] For 351W or 302 H.O. engines with adjustable rocker arms with pushrod guide-plate conversion kit 36655-16.

CAMSHAFTS

FORD V8 1969-93 351W & 1982-84 302 (HO)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Brute low-end torque. Smooth idle. Daily driver with economy. Compression 7.75 to 8.75.	440501 3 ⚠	—	H-192/2667-2S-10	Hyd	Hyd	.427	.456	248	260	192	204	110
	1400-5200	Good mid-range and top-end torque and HP. Daily driver. Great improvement for non-roller 351W Lightning trucks with speed density or mass airflow EFI. Compression 8.5 to 10.0.	444230 1 ⚠	444232[107]	2030	Hyd	Hyd	.448	.464	268	276	206	214	114
	1800-5400	Good low-end and mid-range torque and HP. Good idle. Daily driver with economy. Towing and off-road perfomance. Compression 8.75 to 10.0.	443941 1 ⚠	443942[107]	H-272-2	Hyd	Hyd	.484	.512	272	284	216	228	112
Fireball	1800-5000	Good low-end and mid-range torque and HP. Good to fair idle. 2200-2400 Stall converter. Compression 9.25 to 10.0.	444901 3 ⚠	—	H-290-8	Hyd	Hyd	.484	.484	290	290	216	216	108
PowerMax	1200-5000	Great low-end torque and HP. Daily driver with economy and performance. Mild turbocharged. Compression 8.0 to 9.5.	443501 3 ⚠	443502[107]	Z-256-2	Hyd	Hyd	.461	.475	256	262	206	212	112
	1600-5200	Good low-end and mid-range torque. Daily driver with economy and performance. Good idle. Compression 8.75 to 10.0.	18005 3 ⚠	180052	Energizer 272 H10	Hyd	Hyd	.484	.484	272	272	216	216	110
	1800-5600	Good low-end and mid-range torque and HP. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.0. Supercharged with 8psi and 8.5 max compression.	443511 3 ⚠	443512[107]	Z-268-2	Hyd	Hyd	.490	.504	268	274	218	224	112
	2800-6200	Good mid-range RPM torque and HP. Street/strip performance. Nitrous. 2000+ stall. Fair idle. Compression 9.25 to 11.0. Supercharged with 10psi and 8.5 max compression.	440221 3 ⚠	—	H-224/315-2S1-10	Hyd	Hyd	.504	.518	274	280	224	230	110
	2800-6200	Good mid-range to upper RPM torque and HP. Street/strip performance. Heavy car. 3200+ stall. Fair idle. Compression 9.5 to 11.0.	440141 3 ⚠	—	H-226/314-2-10	Hyd	Hyd	.502	.520	286	296	226	236	110
	3000-6600	Good mid-range to upper RPM torque and HP. Serious street/strip performance. Heavy car. 3500+ stall. Fair idle. Compression 10.0 to 11.5.	440151 3 ⚠	—	H-230/318-2-8	Hyd	Hyd	.509	.526	290	300	230	240	108
	3200-6800	Good mid-range to upper RPM torque and HP. Radical street/strip performance. Heavy car. 3500+ stall. Fair idle. Compression 10.0 to 11.5.	440161 3 ⚠	—	H-234/3294-2S-10	Hyd	Hyd	.527	.536	290	294	234	238	110
RaceMax	3400-7000	Good upper RPM torque and HP. Bracket racing performance for +2800lb vehicles. 3800+ stall. Compression 10.5 to 11.5.	440171 3 ⚠	—	H-236/325-2S-10	Hyd	Hyd	.520	.526	296	300	236	240	110
	3400-7200	Good upper RPM HP for heavier vehicles with plate or manifold nitrous systems. 3800+ stall. Rough idle. Compression 10.5 to 11.5. Also, supercharged with 15psi and 8.0 max compression.	440231 3 ⚠	—	H-236/325-2S-14	Hyd	Hyd	.520	.526	296	300	236	240	114
	3400-7200	Good upper RPM HP. Bracket racing performance. Manifold nitrous. Rough idle. 3800+ stall. Compression 10.5 to 12.0. Also, Roots supercharged with 15psi and 8.0 max compression.	440661 3 ⚠	—	H-238/3347-2-10	Hyd	Hyd	.536	.560	294	304	238	248	110
	3600-7200	Good mid to upper RPM torque for heavier N/A bracket racing vehicles. 4200+ stall. Compression 11.0 to 12.0.	440181 3 ⚠	—	H-246/3334-6	Hyd	Hyd	.533	.533	306	306	246	246	106
	4200-7200	Good upper RPM HP for lighter vehicles in flat tappet restricted classes. Custom stall required. Compression 12.5 minimum.	440201 3 ⚠	—	H-260/360-2S-8	Hyd	Hyd	.576	.595	330	338	260	268	108
MarineMax	800-4400	Great low-end torque and HP improvement for stock engines with wet or dry through-prop exhaust. Smooth idle. Compression 7.75 to 8.75.	443901 1 ⚠	443902	H-260-2	Hyd	Hyd	.456	.484	260	272	204	216	112

[107] Includes rocker arm adjusting nuts (polylocks).
[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.

FORD V8 1969-93 351W & 1982-84 302 (HO)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36800-16[109]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36800-16[109]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36800-16[109]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
						11746-16[109]				
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
						11746-16[109]				
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	11746-16[109]				
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	11746-16[109]				
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	11746-16[109]				
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95644-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	11746-16[109]				
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36759-16[106, 115]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	36750-16[109]	36622-16[9] (302)			
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36759-16[106, 115]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	36750-16[109]	36622-16[9] (302)			
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36759-16[106, 115]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	36750-16[109]	36622-16[9] (302)			
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36759-16[106, 115]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	36750-16[109]	36622-16[9] (302)			
99280-16	—	96874-16[3]	99943-16	99097-1	44975-1[122]	36759-16[106, 115]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
99380-16[124]			99969-16[27]	99094-1	44984-1[122]	36750-16[109]	36622-16[9] (302)			
99280-16	36308-1	96803-16	99946-16	99097-1	44975-1[122]	36800-16[109]	95644-16[9] (351W)	99820-16[3]	—	36970-1 (.467) 36971-1 (.500)
							36622-16[9] (302)			

[106] Includes rocker arm pedestal shim kit.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.
[115] For engines with non-adjustable pedestal mount rockers.
[122] For 1973-93 engines.
[123] For 1969-76 engines, non-adjustable with 5/16" top bottleneck studs, adjustable if straight 3/8" studs and locking nuts are installed.
[124] Optional Hi Intensity hydraulic lifters.

CAMSHAFTS

FORD V8 1969-93 351W & 1982-84 302 (HO)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	1600-5600	Good low-end and mid-range torque and HP. Good idle. Off-road performance. Mild supercharged. Compression 9.0 to 10.5.	449631[111, 125, 126]	—	HR-220/332-252-14	Hyd	Hyd	.531	.552	282	290	220	228	114
PowerMax	1800-5800	Good low-end and mid-range torque and HP. Street/strip performance. Fair idle. 2200+ stall. Compression 9.5 to 10.75.	449601[111, 125, 126]	—	HR-224/339-2S-12	Hyd	Hyd	.542	.563	286	294	224	232	112
	2400-6400	Good mid-range torque and HP. Street/strip performance. Nitrous. 2800+ stall. Fair idle. Compression 10.0 to 11.5. Supercharged with 24psi and 8.5 max compression.	449681[111, 125, 126]	—	HR-228/345-2S1-14	Hyd	Hyd	.552	.563	290	294	228	232	114
	2600-6600	Good mid range torque and HP. Serious street/strip performance. 3000+ stall. Rough idle. Compression 10.0 to 11.5.	449561[111, 125, 126]	—	HR-232/352-2S1-12	Hyd	Hyd	.563	.584	294	302	232	240	112
	2800-6800	Good mid to upper RPM torque and HP. Serious street/strip performance. 3200+ stall. Rough idle. Compression 10.5 to 12.0.	449641[111, 125, 126]	—	HR-236/359-2S-10	Hyd	Hyd	.574	.595	298	306	236	244	110
RaceMax	2400-6400	Good mid-range torque and HP. Strip and bracket racing performance. Manifold nitrous. Fair idle. 2800+ stall. Compression 10.0 to 11.5. Also, centrifugal or roots supercharged with 24psi and 8.5 max compression.	449681[111, 125, 126]	—	HR-228/345-2S1-14	Hyd	Hyd	.552	.563	290	294	228	232	114
	3000-7000	Good mid to upper RPM torque and HP. Bracket racing performance for +400ci and or manifold injected nitrous engines. Rough idle. 3500+ stall. Compression 10.5 to 12.0. Also, supercharged with 28psi and 8.5 max compression.	449711[111, 125, 126]	—	HR-240/365-2S1-14	Hyd	Hyd	.584	.595	302	306	240	244	114
	3400-7000	Good high RPM HP for +347ci bracket racing engines. 3800+ stall. Compression 11.5 minimum.	449581[111, 125, 126]	—	HR-244/372-2S-10	Hyd	Hyd	.595	.595	306	318	244	256	110
	3600-7200	Good mid-range to upper RPM for +400ci bracket racing engine with manifold nitrous systems. Rough idle. 4000+ stall. Compression 12.5 minimum. Also, supercharged with 34psi and 8.5 max compression.	449741[111, 125, 126]	—	HR-252/400-2S-14	Hyd	Hyd	.640	.640	322	330	252	260	114

[111] Standard base circle for use with 36532-16 or 36560-16 hydraulic roller lifters.
[125] Also applicable to 1994-97 351W engines.
[126] Requires 36970-1 (.467" ID), 44970-1 (.531" ID) steel OR 36990-1 (.467" ID), 44990-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1969-93 351W & 1982-84 302 (HO)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
36530-16[127]	—	96870-16[3]	99943-16	99097-1	44975-1[122]	36800-16[109]	95636-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]							95640-16[121]			
36530-16[127]	—	96870-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95636-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]					44984-1[122]	11746-16[109]	95640-16[121]			
36530-16[127]	—	96870-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95636-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]					44984-1[122]	11746-16[109]	95640-16[121]			
36530-16[127]	—	96870-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95636-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]					44984-1[122]	11746-16[109]	95640-16[121]			
36530-16[127]	—	96870-16[3]	99943-16	99097-1	44975-1[122]	36801-16[123]	95636-16[9] (351W)	99820-16[3]	36655-16	36970-1 (.467) 36971-1 (.500)
36532-16[117]					44984-1[122]	11746-16[109]	95640-16[121]			
36530-16	—	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16[9] (351W)	99820-163	36650-1	36970-1 (.467) 36971-1 (.500)
36532-16			99969-16	99087-1	44984-1	36750-16	95640-16[121]			
36530-16	—	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
36532-16			99969-16	99087-1	44984-1	36750-16	95640-16			
36530-16	—	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
36532-16			99969-16	99087-1	44984-1	36750-16	95640-16			
36530-16	—	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16	99820-16[3]	36650-1	36970-1 (.467) 36971-1 (.500)
36532-16			99969-16	99087-1	44984-1	36750-16	95640-16			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.
[117] Vertical locking bar hydraulic roller lifters, no machining required. Cylinder head removal required for installation in 302 and 302 H.O applications.
[121] For 351W or 302 H.O. engines with adjustable rocker arms with pushrod guideplate conversion kit 36655-16.
[122] For 1973-93 engines.
[123] For 1969-76 engines, non-adjustable with 5/16" top bottleneck studs, adjustable if straight 3/8" studs and locking nuts are installed.
[127] For use with standard Ford alignment bars on engines originally equipped with hydraulic roller lifters.

CAMSHAFTS

FORD V8 1969-93 351W & 1982-84 302 (HO)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
MarineMax	1000-5000	Increased performance throughout entire RPM band over stock camshaft. EFI compatible for speed density and mass-air style injection sytems. Good idle. Compression 9.2 (stock HO).	442101[111, 125, 126]	—	HR-208/293-14 4A	Hyd	Hyd	.469	.469	270	270	208	208	114
	2200-6000	Good mid-range torque and HP. Street/strip performance. B303 upgrade, X303 replacement. 2500+ Stall. Fair idle. Compression 9.5 to 10.75.	442121[111, 125, 126]	—	HR-224/3188-12 4A	Hyd	Hyd	.510	.510	284	284	224	224	112
	2000-5800	Good mid-range torque and HP for engines equipped with a single turbo. Fair idle. 2500+ Stall. Compression 9.0 to 9.5 with 18psi max.	442141[111, 125, 126]	—	HR-220/340-14 4A	Hyd	Hyd	.544	.544	280	280	220	220	114
	2500-6500	Good mid-range to upper RPM torque and HP. Serious street/strip performance. Rear gear upgrade recommended. Rough idle. 3000+ Stall. Compression 9.0 to 10.75.	442161[111, 125, 126]	—	HR-226/344-2S-10 4A	Hyd	Hyd	.550	.555	289	291	226	234	110
MECHANICAL FLAT TAPPET														
PowerMax	2800-6600	Good mid-range torque and HP. Street/strip performance. Heavy car. 3200+ stall. Rough idle. Compression 10.5 to 11.5.	441161	—	F-238/3200-8	.022	.022	.512	.512	300	300	238	238	108
	3400-7200	Good mid-range torque and HP. Radical street/strip performance. Heavy car. 3800+ stall. Rough idle. Compression 11.0 to 12.5.	441231	—	F-248/3334-2-8	.022	.022	.533	.555	310	320	248	258	108

[111] Standard base circle for use with 36532-16 or 36560-16 hydraulic roller lifters.
[125] Also applicable to 1994-97 351W engines.
[126] Requires 36970-1 (.467" ID), 44970-1 (.531" ID) steel OR 36990-1 (.467" ID), 44990-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1969-93 351W & 1982-84 302 (HO)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
36530-16	44308-1	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16	99820-16[3]	36650-16	36970-1
	44309-1									
36530-16	—	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16	99820-16[3]	36650-16	36970-1
36530-16	—	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16	99820-16[3]	36650-16	36970-1
36530-16	—	96870-16	99943-16	99097-1	44975-1	36759-16	95636-16	99820-16[3]	36650-16	36970-1
MECHANICAL FLAT TAPPET										
99257-16	—	96877-16[3]	99943-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16					44984-1[122]	36757-16[109]				
99257-16	—	96877-16[3]	99943-16	99097-1	44975-1[122]	36750-16[109]	95644-169 (351W)	99820-16[3]	36650-1	—
99357-16					44984-1[122]	36757-16[109]				

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] For use with standard Ford alignment bars.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.
[117] Vertical locking bar hydraulic roller lifters, no machining required. Cylinder head removal required for installation in 302 and 302 H.O applications.
[121] For 351W or 302 H.O. engines with adjustable rocker arms with pushrod guideplate conversion kit 36655-16.
[122] For 1973-93 engines.
[123] For 1969-76 engines, non-adjustable with 5/16" top bottleneck studs, adjustable if straight 3/8" studs and locking nuts are installed.
[127] For use with standard Ford alignment bars on engines originally equipped with hydraulic roller lifters.

CAMSHAFTS

FORD V8 1969-93 351W & 1982-84 302 (HO)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL FLAT TAPPET														
RaceMax	3200-6800	Good mid-range torque for heavier bracket racing vehicles. 3500+ stall. Rough idle. Also, Sportsman and IMCA 1/4 to 3/8 mile oval track for 2bbl or 4bbl engines. Compression 11.0 to 12.5.	440881	—	F-246/3467-2S2-6	.012	.012	.555	.565	278	282	246	250	106
	3800-7400	Good upper RPM. Bracket racing performance. Manifold nitrous. Rough idle. 4200+ stall. Compression 10.5 to 12.0. Also, supercharged with 15psi and 8.0 max compression.	440991	—	F-252/3574-2S1-10	.026	.026	.572	.581	288	292	252	256	110
	3800-7200	Good mid-range HP. Bracket racing performance for Pro, Pro/Super ET, etc. Rough idle. 4500+ stall. Compression Also, Late Model 3/8 to 1/2 mile oval track applications. Compression 11.5 minimum.	440981	—	F-252/3574-2S-6	.026	.026	.572	.591	288	296	252	260	106
	4200-7600	Good mid to upper RPM HP. Bracket racing performance for Pro and Super Pro applications. Custom stall required. Also, Late Models with 2bbl or 4bbl on 3/8 to 1/2 mile oval tracks. Compression 11.5 minimum.	441431	—	F-260/3694-2S7-6	.026	.026	.591	.601	296	300	260	264	106
	4600-8000	Good upper RPM HP. Bracket racing and long oval track performance. Custom stall converter required. Compression 12.0 minimum.	441551	—	F-268/394-2S5-8	.018	.018	.630	.640	304	308	268	272	108
	4800-8200	Good mid and upper RPM torque and HP. Bracket racing and oval track performance for flat tappet restricted classes. Aftermarket cylinder heads recommended. Custom stall required. Compression 12.0 minimum.	441591	—	F-272/400-2S-6	.018	.018	.640	.650	308	312	272	276	106
	5000-8400	Good upper RPM torque and HP. Bracket racing and oval track performance for flat tappet restricted classes. Aftermarket cylinder heads recommended. Custom stall required. Compression 12.5 minimum.	441621	—	F-276/406-2S1-8	.018	.018	.650	.660	312	320	276	284	108
MECHANICAL ROLLER														
PowerMax	2400-6400	Excellent low-end and mid-range torque and HP. Daily driver with street/strip performance. 2800+ stall. Compression 9.5 to 11.0.	448501[126]	—	SR-230/338-2S-10	.020	.020	.541	.560	280	288	230	238	110
	2800-7000	Good low-end and mid-range torque and HP. Serious street/strip performance. Nitrous. 3400+ stall. Fair idle. Supercharged 14psi with 8.0 max compression.	448521[126]	—	SR-238/350-2S-12	.020	.020	.560	.579	288	296	238	246	112
	3400-7200	Good mid-range torque and HP. Serious street/strip performance. Manifold nitrous. 3800+ stall. Fair idle. Compression 10.5 to 12.0. Supercharged with 16psi and 8.0 max compression.	448601[126]	—	SR-246/362-2S-10	.020	.020	.579	.598	296	304	246	254	110

[111] Standard base circle for use with 36532-16 or 36560-16 hydraulic roller lifters.
[125] Also applicable to 1994-97 351W engines.
[126] Requires 36970-1 (.467" ID), 44970-1 (.531" ID) steel OR 36990-1 (.467" ID), 44990-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1969-93 351W & 1982-84 302 (HO)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99257-16	—	96877-16[3]	99943-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16			99969-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
99257-16	—	96877-16[3]	99943-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16			99969-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
99257-16	—	96877-16[3]	99943-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16			99969-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
99257-16	—	96877-16[3]	99943-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16			99969-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
99257-16	—	96877-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16			99973-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
99257-16	—	96877-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16			99973-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
99257-16	—	96877-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	—
99357-16			99973-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
MECHANICAL ROLLER										
44570-16	—	99893-16[3]	99953-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1
44570D-16					44984-1[122]	86757-16[109]				36990-1
44570-16	—	99893-16[3]	99953-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1
44570D-16					44984-1[122]	36757-16[109]				36990-1
44570-16	—	99893-16[3]	99953-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	36970-1
44570D-16					44984-1[122]	36757-16[109]				36990-1

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cylinder heads for street applications.
[122] For 1973-93 engines.

CAMSHAFTS

FORD V8 1969-93 351W & 1982-84 302 (HO)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL ROLLER														
RaceMax	3000-6800	Good mid-range torque and HP for engines equipped with a larger framed single turbo. Fair idle. 3000+ stall. Compression 9.0 with 20psi.	448531[126]	—	SR-238/350-14	.020	.020	.560	.560	288	288	238	238	114
	3200-7000	Good low to mid-range torque and HP. Bracket racing and strip performance. Manifold nitrous. Rough idle. 3000+ stall. Compression 10.5 to 12.0. Also, supercharged with 16psi and 8.0 max compression.	448031[126]	—	TR-244/3867-2S-10	.022	.022	.619	.640	284	292	244	252	110
	3600-7400	Good mid-range torque and HP. Bracket racitng performance for heavier vehicles. Rough idle. 4000+ stall. Also, 1/4 to 3/8 mile oval track applications with 2bbl or 4bbl carburetors. Compression 11.0 to 12.5.	448801[126]	—	R-252/420-2S-8	.020	.020	.672	.672	284	290	252	258	108
	3800-7800	Good mid and upper RPM torque and HP. Bracket racing performance. Manifold nitrous. 4200+ stall. Compression 11.0 minimum. Also, supercharged with 20psi and 8.0 max compression.	448511[126]	—	SR-254/374-2S-10	.020	.020	.599	.599	304	312	254	262	110
	4000-7600	Good mid to upper RPM torque and HP. Bracket racing performance for Pro, Super Pro, etc. Custom stall converter. Compression 12.0 minimum. Also, 1/4 to 3/8 mile oval track applications with 2bbl or 4bbl carburetors.	448831[126]	—	R-258/420-2S-8	.020	.020	.672	.672	290	294	258	262	108
	4000-7800	Good mid to upper RPM torque and HP. Bracket racing perfomance. Large manifold nitrous. Rough idle. Custom stall converter. Compression 11.5 minimum. Also, supercharged with 20psi and 8.0 max compression.	448861[126]	—	R-258/420-2S-10	.020	.020	.672	.672	290	294	258	262	110
	4000-8000	Good mid to upper RPM HP. Bracket racing perfomance. Small nitrous system. Aftermarket cylinder heads recommended. Custom stall converter. Compression 12.0 minimum.	448301[126]	—	R-260/452-2S-10	.020	.020	.723	.672	289	300	260	268	110
	4600-8000	Good mid to upper RPM HP. Bracket racing performance. Large nitrous. Custom race converter. Compression 12.0 minimum. Also, supercharged with 24psi and 8.0 max compression.	448871[126]	—	R-266/420-2S3-10	.020	.020	.672	.672	298	308	266	276	110
	4800-8200	Good upper RPM torque and HP. Bracket racing and oval track performance. Rough idle. Custom stall converter required. Compression 12.0 minimum.	448851[126]	—	R-268/420-2S1-8	.020	.020	.672	.672	300	304	268	272	108
	5200-8400	Good upper RPM torque and HP. Bracket racing performance for engines with aftermarket cylinder heads. Custom stall converter required. Compression 12.5 minimum.	448291[126]	—	R-276/4334-2S-8	.026	.026	.693	.683	316	324	276	284	108
	5000-8600	Good upper RPM torque and HP. Bracket racing performance for larger cubic inch engines with aftermarket cylinder heads. Plate or manifold nitrous. Compression 13.0 minimum. Also, supercharged with 26psi and 8.0 max compression.	448901	—	R-278/4381-2S-14 2A	.020	.026	.700	.683	308	318	278	286	114
	5400-8800	Good upper RPM HP for +380ci engines using a large manifold nitrous kit, professionally prepared cylinder heads,and a custom stall converter. Compression 13.5 minimum.	448321[126]	—	R-284/466-2S-15	.020	.030	.746	.753	316	336	284	296	115
	5600-9000	Good upper RPM HP for +380ci engines using a large manifold nitrous kit, professionally prepared cylinder heads,and a custom stall converter. Compression 14.0 minimum.	448911	—	R-284/452-2S-15 2A	.020	.022	.723	.700	311	328	284	300	115

[126] Requires 36970-1 (.467" ID), 44970-1 (.531" ID) steel OR 36990-1 (.467" ID), 44990-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1969-93 351W & 1982-84 302 (HO)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	96886-16[3]	99681-16[36]	99097-1	44984-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16						86757-16[109]	36622-16[9] (302)			
44570-16	—	96886-16[3]	99681-16[36]	99097-1	44984-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16						86757-16[109]	36622-16[9] (302)			
44570-16	—	99893-16[3]	99953-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	36990-1
44570D-16					44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99885-16[3]	99956-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99826-16[3]	36650-1	36990-1
44570D-16			99970-16[27]	99087-1	44984-1[122]	86757-16[109]	36622-16[9] (302)			
44570-16	—	99893-16[3]	99953-16	99097-1	44975-1[122]	36750-16[109]	95644-16[9] (351W)	99820-16[3]	36650-1	36990-1
44570D-16					44984-1[122]	86757-16[109]	36622-16[9] (302)			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[109] Must machine 1966-00 heads and install 99156-16 (1.6, 3/8") or 99157-16 (1.6, 7/16") rocker studs and 36650-1 pushrod guideplates or use 36655-16 conversion kit on 1977-00 pedestal mount cyl. heads for street applications.
[122] For 1973-93 engines.

CAMSHAFTS

FORD V8 1970-82 351-400 (BOSS, C, M)

CRANE Cams®

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Brute low-end torque. Smooth idle. Daily driver with economy. Compression 7.75 to 8.75.	520581	—	H-192/2667-2S-14	Hyd	Hyd	.461	.493	248	260	192	204	114
TruckMax	1200-4800	Good low-end torque. Smooth idle. Daily driver with economy. Towing and off-road performance. Compression 8.0 to 9.5.	523901	523902	H-260-2	Hyd	Hyd	.493	.502	260	276	204	214	112
TruckMax	1400-4800	Good low-end torque and HP. Smooth idle. Daily driver with economy. Light towing and off-road performance. Compression 8.5 to 10.0.	13303	133032	Energizer 266 H10	Hyd	Hyd	.508	.508	266	266	210	210	110
Fireball	1800-5000	Good low-end and mid-range torque and HP. Good to fair idle. 2200-2400 Stall converter. Compression 9.25 to 10.0.	524901	—	H-290-8	hyd	hyd	.508	.508	290	290	216	216	108
PowerMax	1500-5000	Excellent low-end and mid-range torque and HP. Daily driver with performance and economy. Good Idle. Compression 8.5 to 10.0.	523921	523922	H-266-2	Hyd	Hyd	.508	.510	266	280	210	218	112
PowerMax	1600-5200	Good low-end and mid-range torque and HP. Daily driver with performance and economy. Compression 8.75 to 10.0.	13304	133042	Energizer 272 H10	Hyd	Hyd	.524	.524	272	272	216	216	110
PowerMax	1800-5400	Good low-end and mid-range torque. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.5.	523941	523942	H-272-2	Hyd	Hyd	.524	.519	272	284	216	228	112
PowerMax	2200-5600	Good mid-range torque and HP. Daily driver with street strip performance. 2500+ stall. Good to fair idle. Compression 9.5 to 10.75.	13313	133132	Energizer 278 H10	Hyd	Hyd	.539	.539	278	278	222	222	110
PowerMax	2400-6200	Good mid-range to upper RPM torque and HP. Street/strip performance. 2800+ stall. Fair idle. Compression 9.5 to 11.0.	524421	524422	H-288-2	Hyd	Hyd	.528	.536	288	292	226	230	110
PowerMax	2600-6400	Good mid-range HP. Street/strip performance. 3000+ stall. Compression 9.5 to 11.0.	13305	133052	Energizer 284 H12	Hyd	Hyd	.554	.554	284	284	228	228	112
RaceMax	2400-6000	Good mid-range torque and HP. Bracket racing and limited oval track performance. Rough idle. 3000+ stall. Compression 9.5 to 11.0.	520341	—	H-226/341-2S-6	Hyd	Hyd	.543	.550	286	290	226	230	106
RaceMax	2800-6600	Good mid-range to upper RPM HP. Bracket racing with small nitrous or mild supercharger. Fair idle. 3000+ stall. Compression 10.0 to 11.5.	524551	—	H-292-2	Hyd	Hyd	.536	.545	292	296	230	234	114
RaceMax	3200-6800	Good upper RPM HP. Bracket racing and 3/8 to 1/2 mile oval track performance. Rough idle. 3500+ stall. Compression 10.75 to 12.5.	520641	—	H-238/3347-10	Hyd	Hyd	.579	.579	294	294	238	238	110
RaceMax	3600-7200	Good upper RPM HP. Bracket racing performance. Rough idle. 4000+ stall. Compression 11.25 to 13.0.	520651	—	H-250/340-2S-10	Hyd	Hyd	.588	.595	310	314	250	254	110

FORD V8 1970-82 351-400 (BOSS, C, M)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
	35308-1[129]									
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
	35308- 1[129]									
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
	35308-1[129]									
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
	35308-1[129]	99839-16[130]	99969-16[27]	99094-1 (11/32")		27744-16[131]	95650-16[9, 133]			
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
	35308-1[129]	99839-16[130]	99969-16[27]	99094-1 (11/32")		27744-16[131]	95650-16[9, 133]			
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
	35308-1[129]	99839-16[130]	99969-16[27]	99094-1 (11/32")		27744-16[131]	95650-16[9, 133]			
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
	35308-1[129]	99839-16[130]	99969-16[27]	99094-1 (11/32")		27744-16[131]	95650-16[9, 133]			
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
99380-16[124]	35308-1[129]	99839-16[130]	99969-16[27]	99094-1 (11/32")		27744-16[131]	95650-16[9, 133]			
99280-16	52308-1[128]	96801-16	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	—	52655-16	52970-1 (.500)
99380-16[124]	35308-1[129]	99839-16[130]	99969-16[27]	99094-1 (11/32")		27744-16[131]	95650-16[9, 133]			
99280-16	—	96877-16[3]	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	52800-16	52621-16[9, 132]	99820-16[3]	52655-16	52970-1 (.500)
99380-16[124]			99969-16[27]	99094-1 (11/32")		27744-16[131]	95650-16[9, 133]			
99280-16	—	96877-16[3]	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	—	52650-1	52970-1 (.500)
99380-16[124]				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
99280-16	—	96877-16[3]	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1 (.500)
99380-16[124]				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
99280-16	—	96877-16[3]	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1 (.500)
99380-16[124]				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
99280-16	—	96877-16[3]	99944-16 (11/32") 99948-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1 (.500)
99380-16[124]				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			

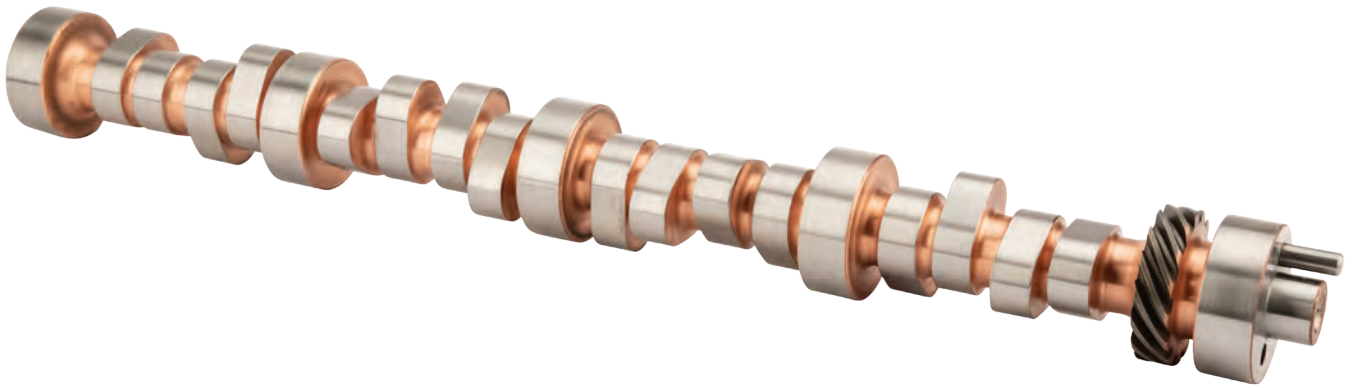
[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[38] Wide body.
[124] Optional Hi Intensity hydraulic lifters.
[128] For 1970-77 351C/351M/400 engines.
[129] For 1971-72 Boss 351 and 1979-82 351M/400 engines.
[130] Optional high rate 1.800" assembly height springs.
[131] Requires 7/16" rocker arm studs and pushrod guideplates.
[132] For 1970-74 351C.
[133] For 1971-72 Boss 351

CAMSHAFTS

FORD V8 1970-82 351-400 (BOSS, C, M)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
TruckMax	1600-5600	Excellent low-end torque and HP. Good idle. Daily driver with economy. Towing and off-road performance. Compression 8.75 to 10.0	529541[111, 134]	—	HR-216/325-2S-12	Hyd	Hyd	.562	.586	278	286	216	224	112
Fireball	2000-5600	Good low to mid-range torque and HP. Street performance. 2400+ Stall. Fair idle. Compression 9.0 to 10.25.	529641[111, 134]	—	83003F/ 83005F HR 107+4	Hyd	Hyd	.574	.596	272	280	218	226	107
	2700-6300	Great mid-range torque and HP. Serious street/ strip performance. 3200+ Stall. Rough idle. Compression 9.75 to 11.0.	529651[111, 134]	—	83005F/ 83007F HR 108+5	Hyd	Hyd	.596	.621	280	288	226	234	108
PowerMax	2000-6000	Good low and mid range torque and HP. Street/ strip performance. 2500+ stall. Compression 9.5 to 10.75.	529551[111, 134]	—	HR-224/339-2S-12	Hyd	Hyd	.586	.609	286	294	224	232	112
	2500-6500	Good low and mid range torque and HP. Serious street/strip performance. 3000+ stall. Fair idle. Compression 10.0 to 11.5.	529801[111, 134]	—	HR-228/345-2S-12	Hyd	Hyd	.597	.609	290	294	228	232	112
	2600-6800	Good mid-range to upper RPM torque and HP. Radical street performance. Heavy car. 3000+ stall. Rough idle. Compression 10.0 to 11.5.	529821[111, 134]	—	HR-232/352-2S-10	Hyd	Hyd	.609	.621	294	298	232	236	110
RaceMax	3000-7000	Good mid-range to upper RPM torque and HP. Bracket racing performance. Mild nitrous. Rough idle. 3500+ stall. Compression 10.5 to 12.0.	529811[111, 134]	—	HR-236/359-2S-12	Hyd	Hyd	.621	.631	298	302	236	240	112
	3200-7200	Good upper RPM torque and HP. Bracket racing performance. Aftermarket cylinder heads recommended. Rough idle. 3500+ stall. Compression 11.0 to 12.5.	529831[111, 134]	—	HR-240/365-2S-10	Hyd	Hyd	.631	.644	302	306	240	244	110
MECHANICAL FLAT TAPPET														
PowerMax	2000-6000	Replacement for factory Boss 351 camshaft.	520321	—	BluePrinted D1ZZ-6250-B	.024	.026	.502	.502	294	294	228	228	109
	2800-6600	Good low-end and mid-range torque and HP. Street/strip performance. 3200+ stall. Compression 10.0 to 11.0.	521131	—	F-232/330-2S-8	.020	.022	.571	.581	264	270	232	238	108
	3000-6800	Good low-end and mid-range torque and HP. Serious street/strip performance. 3500+ stall. Compression 10.5 to 11.5.	521141	—	F-238/3200-2-8	.022	.022	.554	.577	300	310	238	248	108

[111] Standard base circle for use with 36532-16 hydraulic roller lifters.
[134] Requires 52970-1 (.500" ID), 52971-1 (.531" ID) steel OR 52990-1 (.500" ID), 52989-1 (.531" ID) aluminum bronze distributor drive gear.



FORD V8 1970-82 351-400 (BOSS, C, M)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
36532-16[135]	—	99890-16[3]	99970-16[136]	99094-1 (11/32")	52975-1	52800-16	95654-16[115, 137]	99820-16[3]	52655-16	52970-1 (.500) 52971-1 (.531)
36532-16[135]	—	99890-16	99970-16[136]	99094-1 (11/32")	52975-1	52800-16	95654-16[115, 137]	99820-16[3]	52655-16	52970-1 (.500) 52971-1 (.531)
36532-16[135]	—	99890-16	99970-16[136]	99094-1 (11/32")	52975-1	52800-16	95654-16[115, 137]	99820-16[3]	52655-16	52970-1 (.500) 52971-1 (.531)
36532-16[135]	—	99890-16	99970-16[136]	99094-1 (11/32")	52975-1	52800-16	95654-16[115, 137]	99820-16[3]	52655-16	52990-1
						27744-16[131]	95658-16[138]			52970-1
36532-16[135]	—	99890-16[3]	99970-16[136]	99094-1 (11/32")	52975-1	52800-16	95654-16[115, 137]	99820-16[3]	52655-16	52990-1
						27744-16[131]	95658-16[138]			52970-1
36532-16[135]	—	99890-16[3]	99970-16[136]	99094-1 (11/32")	52975-1	52800-16	95654-16[115, 137]	99820-16[3]	52655-16	52990-1
						27744-16[131]	95658-16[138]			52970-1
36532-16[135]	—	99890-16[3]	99970-16[136]	99094-1 (11/32")	52975-1	27750-16[131]	95654-16[115, 137]	99820-16[3]	52650-1	52990-1
						27771-16[38, 131]	95658-16[138]			52970-1
36532-16[135]	—	99890-16[3]	99970-16[136]	99094-1 (11/32")	52975-1	27750-16[131]	95654-16[115, 137]	99820-16[3]	52650-1	52990-1
						27771-16[38, 131]	95658-16[138]			52970-1
MECHANICAL FLAT TAPPET										
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[38] Wide body.
[115] For engines with non-adjustable pedestal mount rockers.
[131] Requires 7/16" rocker arm studs and pushrod guideplates.
[132] For 1970-74 351C.
[133] For 1971-72 Boss 351
[135] Vertical locking bar hydraulic roller lifters. Appropriate pushrods required.
[136] Use 99094-1 valve stem locks for single groove 11/32" applications, and standard valve stem locks for multiple groove 3/8" type applications.
[137] For 1971-82 351M-400 engines.
[138] For 1971-82 351M-400 engines with adjustable rocker arms with pushrod guide-plate conversion kit 52655-16.

CAMSHAFTS

FORD V8 1970-82 351-400 (BOSS, C, M)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
MECHANICAL FLAT TAPPET														
RaceMax	3200-7000	Good mid-range torque and HP. Short oval track and bracket racing performance. Rough idle. 3500+ stall. Compression 11.0 to 12.5.	521211	—	F-246/3294-2-8	.026	.026	.570	.590	282	292	246	256	108
	4000-7500	Good mid-range to upper RPM torque and HP. Bracket racing performance. Mild nitrous or supercharger. Rough idle. 4500+ stall. Compression 11.5 minimum.	521321	—	F-256/3634-2S1-10	.026	.026	.629	.610	292	302	256	266	110
	4200-7600	Good mid-range to upper RPM HP. 1/4 to 1/2 mile oval track and bracket racing performance. Custom stall converter. Compression 11.5 minimum.	521421	—	F-260/3694-6	.026	.026	.639	.639	296	296	260	260	106
	4600-8000	Good mid and upper RPM torque and HP. Bracket racing and large oval track performance for flat tappet restricted classes. Aftermarket cyclinder heads recommended. Custom stall converter. Compression 12.0 minimum.	521501	—	F-266/400-2S-8	.018	.018	.692	.702	298	312	266	276	108
	4800-8200	Good upper RPM torque and HP. Bracket racing performance for flat tappet restricted classes. Aftermarket cyclinder heads recommended. Custom stall converter. Compression 12.5 minimum.	521631	—	F-276/3934-8	.026	.026	.681	.681	312	312	276	276	108
MECHANICAL ROLLER														
PowerMax	2800-6800	Good low-end and mid-range torque and HP. Street/strip performance. 3200+ stall. Compression 10.5 to 11.5.	528511[134]	—	SR-238/350-2S-12	.020	.020	.606	.626	288	296	238	246	112
	3200-7200	Good mid-range torque and HP. Serious street/strip performance. Heavy car. 3500+ stall. Compression 11.0 to 12.5.	528371[134]	—	R-246/3236-2-8	.024	.026	.560	.585	284	294	246	256	108
RaceMax	3200-7200	Good mid-range torque and HP. Mild bracket racing and strip performance. Rough idle. 3500+ stall. Compression 11.0 to 12.0.	528521[134]	—	SR-246/362-2S-12	.020	.020	.626	.647	296	304	246	254	112
	3600-7600	Good mid-range torque and HP. Oval track and bracket racing performance. 4000+ stall. Compression 11.5 to 12.5.	528801[134]	—	R-252/420-2-8	.020	.020	0.727	.727	284	294	252	262	108
	4200-8200	Good mid-range to upper RPM torque and HP. NMRA, NMCA and bracket racing performance. Custom stall converter. Compression 12.5 minimum.	528411[134]	—	R-262/4381-2S-8	.026	.022	0.758	.758	294	300	262	268	108
	4400-8200	Good upper RPM HP. Bracket racing performance. Custom stall converter required. Compression 12.5 minimum.	528821[134]	—	R-272/420-2-8	.020	.020	0.727	.727	304	314	272	282	108
	4600-8400	Good upper RPM HP. NMRA, NMCA and bracket racing performance. Manifold nitrous. Custom stall converter. Compression 13.5 minimum.	528831[134]	—	R-278/5002-2S-12	.020	.022	0.865	.865	306	320	278	292	112
	5000-8800	Good upper RPM HP. NMRA, NMCA and bracket racing performance for +400ci engines with aftermarket cylinder heads. Custom stall converter. Compression 14.0 minimum.	528841[134]	—	R-282/5001-2S-10	.020	.016	.865	0.832	314	318	282	286	110

[134] Requires 52970-1 (.500" ID), 52971-1 (.531" ID) steel OR 52990-1 (.500" ID), 52989-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1970-82 351-400 (BOSS, C, M)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			
99257-16	—	96870-16[3]	99969-16[27]	99094-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	—
99357-16						27771-16[38, 131]	95650-16[9, 133]			
MECHANICAL ROLLER										
44570-16	—	99893-16[3]	99953-16 (11/32") 99954-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
44570-16	—	99893-16[3]	99953-16 (11/32") 99954-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
44570-16	—	99893-16[3]	99953-16 (11/32") 99954-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
44570-16	—	99885-16[3]	99956-16 (11/32") 99970-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
44570-16	—	99885-16[3]	99956-16 (11/32") 99970-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
44570-16	—	99885-16[3]	99956-16 (11/32") 99970-16 (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16				99094-1 (11/32")		27771-16[38, 131]	95650-16[9, 133]			
44570-16	—	96888-16[3]	99681-16[36] (11/32") 99661-16[27] (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16		961226-16[3, 139]				27771-16[38, 131]	95650-16[9, 133]			
44570-16	—	96888-16[3]	99681-16[36] (11/32") 99661-16[27] (3/8")	99097-1 (11/32")	52975-1	27750-16[131]	52621-16[9, 132]	99820-16[3]	52650-1	52970-1
44570D-16		961226-16[3, 139]				27771-16[38, 131]	95650-16[9, 133]			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[38] Wide body.
[131] Requires 7/16" rocker arm studs and pushrod guideplates.
[132] For 1970-74 351C.
[133] For 1971-72 Boss 351
[139] For 2.100" assembly height, require 99661-16 titanium retainers.

CAMSHAFTS

CRANE Cams

FORD V8 1991-15 4.6L-5.4L (SOHC 2V)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER FOLLOWER														
TruckMax	2000-5000	Good low-end and mid-range torque and HP. Good idle. Daily driver with economy. Light towing and off-road performance. Computer tuning may be required on 4.6L.	379501[140]	—	HR-218/500-2-16	Hyd	Hyd	.500	.500	254	264	218	228	116
PowerMax	2400-6200	Good mid-range torque and HP. Street/strip performance. Fair idle. Computer tuning required.	379511[140]	—	HR-228/500-2S-12	Hyd	HYd	.500	.500	264	270	228	234	112
	1600-5500	Excellent low-end torque and HP. Daily driver with performance. Smooth idle.	379601[141]	—	HR-212/550-2S-15	Hyd	Hyd	.550	.550	248	254	212	218	115
	2000-5800	Good low-end and mid-range torque and HP. Mild nitrous or supercharged. Good idle.	379611[141]	—	HR-218/550-2-16	Hyd	Hyd	.550	.550	254	264	218	228	116
RaceMax	2400-6200	Good mid-range torque and HP. Custom computer tune required. MUST check piston-to-valve clearance. Fair idle. 2800+ stall.	379621[141]	—	HR-228/550-2S-12	Hyd	Hyd	.550	.550	264	270	228	234	112
	2800-6600	Good mid-range to upper RPM torque and HP. Bracket racing performance. Increaded compression ratio and custom computer tune required. MUST check piston-to-valve clearance. Rough idle. 3200+ stall. Also, mild supercharged or nitrous.	379631[141]	—	HR-236/600-2S-14	Hyd	Hyd	.600	.600	272	278	236	242	114
	3200-7000	Good upper RPM torque and HP. Bracket racing performance. Increaded compression ratio and custom computer tune required. MUST check piston-to-valve clearance. Rough idle. 3500+ stall. Also, mild supercharged or nitrous.	379641	—	HR-242/600-2S-14	Hyd	Hyd	.600	.600	278	286	242	250	114

FORD V8 1993-15 4.6L-5.4L (DOHC 4V)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER FOLLOWER														
PowerMax	2000-5800	Good low-end and mid-range torque and HP. Daily driver with performance. Mild nitrous or supercharged. Good idle. Computer tuning required.	4095001	—	HR-218/500-12	Hyd	Hyd	.500	.500	254	254	218	218	112
	2400-6200	Good low-end and mid-range torque and HP. Daily driver with performance. Mild nitrous or supercharged. Good idle. Computer tuning required.	4095011	—	HR-228/500-12	Hyd	Hyd	.500	.500	264	264	228	228	112
	2800-6600	Good mid-range to upper RPM torque and HP. Street/strip performance. Mild supercharged or nitrous. 3000+ stall. Rough idle.Must check piston-to-valve clearance. Computer tuning and increased compression ratio required.	4095021	—	HR-334/500-12	Hyd	Hyd	.500	.500	270	270	234	234	112

FORD V8 2005-15 4.6L-5.4L (SOHC 3V)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER FOLLOWER														
TruckMax	1800-5000	Good low-end and mid-range torque and HP. Smooth idle. Daily driver. 5.4L Towing. Spring upgrade required. Mild supercharged.	399501[145]	—	ZHR-208/468-2S-14	Hyd	Hyd	.468	.516	256	272	204	224	114
PowerMax	2200-5400	Good mid-range torque and HP. Street/strip performance. Mild nitrous or supercharged. Good idle. Valve spring and computer tuning required.	399511[145, 146]	—	ZHR-216/492-2S-14	Hyd	Hyd	.492	.552	264	284	216	236	114
RaceMax	2600-6200	Good mid to upper RPM torque and HP. Bracket racing and strip performance. Custom computer tune and upgraded valve springs required. Fair idle. 3000+ stall. Compression 11.0 minimum.	399521[145, 146]	—	ZHR-228/528-2S-12	Hyd	Hyd	.528	.576	276	292	228	244	112
	2800-6600	Good upper RPM HP. Bracket racing. Custom computer tune and upgraded valve springs required. Rough idle. 3200+ stall. Compression 11.0 minimum	399531[145, 146]	—	ZHR-236/552-2S-12	Hyd	Hyd	.552	.600	284	300	236	252	112
	3200-7000	Good upper RPM HP. Bracket racing. Professionally prepped/ported cylinder heads recommended. Large frame single turbo or supercharged. Custom computer tune and upgraded valve springs required. Rough idle. 3600+ stall. Compression 12.0 minimum w/o boost.	399541[145, 146]	—	ZHR-244/576-2S-16	Hyd	Hyd	.576	.600	292	300	244	252	116

[140] Pair of camshafts for 1992 and later engines with standard cylinder heads. 1997 And later applications will require Ford bolt-on gears: Ford part number F8AZ-6256-AA for the right gear and F8AZ-6256-BA for the left gear.
[141] Pair of camshafts for 1999 and later engines with Power Improvement cylinder heads. 1997 And later applications will require Ford bolt-on gears: Ford part number F8AZ-6256-AA for the right gear and F8AZ-6256-BA for the left gear.

FORD V8 1991-15 4.6L-5.4L (SOHC 2V)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER FOLLOWER										
—	—	37830-16[142]	37660-16[143]	—	—	—	—	—	—	—
—	—	37830-16[142]	37660-16[143]	—	—	—	—	—	—	—
—	—	37830-16[142]	37660-16[143]	—	—	—	—	—	—	—
—	—	37830-16[142]	37660-16[143]	—	—	—	—	—	—	—
—	—	37830-16[142]	37660-16[143]	—	—	—	—	—	—	—
—	—	37830-16[142]	37660-16[143]	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

FORD V8 1993-15 4.6L-5.4L (DOHC 4V)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER FOLLOWER										
—	—	40830-32[144]	40660-32[143]	—	—	—	—	—	—	—
—	—	40830-32[144]	40660-32[143]	—	—	—	—	—	—	—
—	—	40830-32[144]	40660-32[143]	—	—	—	—	—	—	—

FORD V8 2005-15 4.6L-5.4L (SOHC 3V)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER FOLLOWER										
—	—	37830-24	39660-24[143]	—	—	—	—	—	—	—
—	—	37830-24	39660-24[143]	—	—	—	—	—	—	—
—	—	37830-24	39660-24[143]	—	—	—	—	—	—	—
—	—	37830-24	39660-24[143]	—	—	—	—	—	—	—
—	—	37830-24	39660-24[143]	—	—	—	—	—	—	—

[142] Can be used with stock retainers.
[143] For use with standard valve stem locks.
[144] Require 40660-32 retainers.
[145] Must install 37830-24 valve springs and 39660-24 retainers.
[146] The use of stock pistons, cam phaser, and factory tuning can cause possible exhaust valve-to-piston contact. At least one of the following is necessary: Install a fixed position cam gear that eliminates phaser retard; Install aftermarket pistons with increased piston-to-valve clearance; Install aftermarket tuning with altered phaser strategy.

CAMSHAFTS

FORD V8 1963-76 352-428 (FE)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Brute low-end torque. Smooth idle. Daily driver with economy. Compression 7.75 to 8.75.	343971	—	H-248-2	Hyd	Hyd	.469	.501	248	260	192	204	114
	1800-5200	Good mid-range torque. Good idle. Daily driver with economy. Towing and off-road performance. Compression 8.75 to 10.5.	13405	134052	Energizer 272 H10	Hyd	Hyd	.533	.533	272	272	216	216	110
PowerMax	1400-4800	Good low and mid-range torque. Daily diver with economy and performance. Smooth idle. Compression 8.5 to 10.0	13404	134042	Energizer 266 H10	Hyd	Hyd	.516	.516	266	266	210	210	110
	1800-5200	Good low and mid-range torque. Daily driver with econmy and performance. Good idle. Compression 8.75 to 10.75	343941	343942	H-272-2	Hyd	Hyd	.533	.563	272	284	216	228	112
	2200-3600	Good mid-range torque and HP. Street/strip performance. Compression 9.5 to 11.0	344341	344342	H-288	Hyd	Hyd	.537	.537	288	288	226	226	112
RaceMax	2800-6200	Good mid-range HP. Bracket racing and strip performance. Fair idle. 3200+ stall. Compression 10.0 to 11.5	344621	—	H-296-2	Hyd	Hyd	.554	.563	296	300	234	238	112
	3000-6500	Good mid-range and upper RPM torque and HP. Bracket racing performance. Aftermarket aluminum cylinder heads recommended. Rough idle. 3500+ stall. Compression 10.0 to 11.5	344561	—	H-298	Hyd	Hyd	.572	.572	298	298	236	236	108
	3400-6800	Good upper RPM torque and HP. Bracket racing performance. Aftermarket aluminum cylinder heads recommended. Rough idle. 3800+ stall. Compression 10.5 to 12.0	340721	—	H-246/330-10	Hyd	Hyd	.581	.581	308	308	246	246	110
MarineMax	800-4400	Good low-end torque for stock engines with wet or dry through-prop exhaust. Smooth idle. Compression 7.75 to 8.75.	343901	343902	H-260-2	Hyd	Hyd	.501	.533	260	272	204	216	112
HYDRAULIC ROLLERS														
PowerMax	1400-5400	Good low-end torque. Daily driver with economy. Mild turbocharged. Smooth idle. 8.0 to 9.5	349511[149]	—	HR-214/319-2S-12	Hyd	Hyd	.561	.584	276	284	214	222	112
	1800-5600	Excellent low and mid-range torque and HP. Daily driver with street/strip perfomance. Good idle. Compresson 9.5 to 10.75	349551[149]	—	HR-222/320-2S1-12	Hyd	Hyd	.563	.563	286	290	222	226	112
	2000-5800	Excellent low-end and mid-range torque and HP. Street/strip performance. Good with aftermarket aluminium cylinder heads. Fair idle. Compression 10.0 to 11.5	349561[149]	—	HR-226/3201-2S-12	Hyd	Hyd	.563	.581	290	302	226	236	112
	2400-6200	Excellent mid-range and upper RPM HP. Street strip performance for lightweight kit car. Aftermarket aluminum cylinder heads recommended. 2800+ stall. Rough idle. Compression 10.5 to 12.0	349571[149]	—	HR-234/354-2S-12	Hyd	Hyd	.623	.651	298	306	234	242	112
RaceMax	2800-6400	Good mid-range and upper RPM HP. Mild bracket racing for lightweight kit car applications with +450ci engines. Aftermarket cylinder heads recommended. Rough idle. 3200+ stall. Compression 11.0 to 13.0	349581[149]	—	HR-242/350-2S-12	Hyd	Hyd	.616	.616	308	312	242	248	112

[149] Require 34970-16 (.467" ID) steel OR 34990-1 (.467" ID) aluminum bronze distributor drive gear, and 7/16-14x1 1/8" grade 8 cam gear bolt and hardened washer.

FORD V8 1963-76 352-428 (FE)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99281-16	13309-1	96801-16	99957-16	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
99281-16	13309-1	96801-16	99957-16	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
99281-16	13309-1	96801-16	99957-16	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
			99969-16[68]							
99281-16	13309-1	96801-16	99957-16	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
			99969-16[68]							
99281-16	13309-1	96801-16	99957-16	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
			99969-16[68]							
99281-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
99281-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
99281-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
99281-16	13309-1	96801-16	99957-16	99098-1	—	34772-16[148]	34621-16[147]	99822-16[3]	—	34970-1 (.467) 52970-1 (.500)
HYDRAULIC ROLLERS										
35532-16[135]	—	99832-16[150]	99976-16[65]	99099-1	—	34772-16[7]	—	99822-16[3]	—	34990-1
		99896-163	99970-16151							34970-1
35532-16[135]	—	99832-16[150]	99976-16[65]	99099-1	—	34772-16[7]	—	99822-16[3]	—	34990-1
		99896-16[3]	99970-16[151]							34970-1
35532-16[135]	—	99832-16[150]	99976-16[65]	99099-1	—	34772-16[7]	—	99822-16[3]	—	34990-1
		99896-16[3]	99970-16[151]							34970-1
35532-16[135]	—	99832-16[150]	99976-16[65]	99099-1	—	34772-16[7]	—	99822-16[3]	—	34990-1
		99896-16[3]	99970-16[151]							34970-1
35532-16[135]	—	99896-16[3]	99970-16[151]	99099-1	—	34772-16[7]	—	99822-16[3]	—	34990-1
		99832-16[150]	99976-16[65]							

[3] Must machine cylinder heads.
[7] Special length pushrods required.
[65] For 99832-16 beehive springs.
[68] Require 99098-1 valve stem locks.
[135] Vertical locking bar hydraulic roller lifters. Appropriate pushrods required.
[147] For use with 34772-16 adjustable rocker arms with ball type adjusters.
[148] Requires 34645-16 pushrods.
[150] Require 99976-16 retainers.
[151] Require 99099-1 valve locks.

CAMSHAFTS

FORD V8 1963-76 352-428 (FE)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
Fireball	2200-5400	Good low-end and mid-range torque and HP. Good to fair idle. 2500-2700 Stall. 9.5 to 11.0 Compression.	344461 ③ ⚠	—	F-294-12	.016	.018	.523	.523	294	294	227	227	112
PowerMax	2400-6000	Good mid-range torque and HP. Street/strip performance. Mild supercharged. 2800+ stall. Compression 10.0 to 11.5	341191 ③ ⚠	—	F-238/3200-2-14	.026	.026	.563	.584	300	310	238	248	114
	3000-6600	Replacement for factory 425HP, 427ci camshaft.	340321 ① ⚠		BluePrinted C3AZ-6250-AA	.018	.022	.524	.524	284	284	244	244	114
RaceMax	3400-7000	Good mid-range torque and HP. Strip and bracket racing performance. Rough idle. 3800+ stall. Compression 10.5 to 12.0	340471 ③ ⚠	—	F-248/3334-12	.026	.026	.587	.587	310	312	248	248	112
	3800-7200	Good mid and upper RPM torque and HP. Bracket racing performance. Custom stall converter. Compression 11.5 to 12.5	341341 ③ ⚠	—	F-254/382-2S-10	.018	.018	.672	.678	286	298	254	262	110
	4200-7600	Good mid-and upper RPM HP. Bracket racing performance. Aftermarket aluminum cyclinder heads recommended. Rough idle. Custom stall converter. Compression 12.0 minimum.	341461 ③ ⚠	—	F-266/3528-8	.026	.026	.621	.621	302	302	266	266	108
MECHANICAL ROLLER														
PowerMax	2800-6600	Excellent low-end and mid-range torque and HP. Street/strip performance. 3200+ stall. Fair idle. Compression 10.5 to 11.5	348511[149] ③ ⚠	—	SR-240/350-2S-14	.020	.020	.616	.637	290	298	240	248	114
	3000-6800	Excellent mid-range torque and HP. Serious street/strip performance. 3500+ stall. Fair idle. Compression 11.0 to 12.0	348521[149] ③ ⚠	—	SR-248/362-2S-10	.020	.020	.637	.658	285	292	248	256	110
RaceMax	3400-7200	Good mid-range torque and HP. Bracket racing performance. Rough idle. 3800+ stall. Compression 11.0 to 12.5	348801[149] ③ ⚠	—	R-252/420-2-8	.020	.020	.739	.739	284	294	252	262	108
	3800-7600	Good mid-range HP. Bracket racing performance. Large plate or manifold nitrous. Rough idle. 4200+ stall. Compression 12.0 minimum.	348821[149] ③ ⚠	—	R260/420-2-10	.020	.020	.739	.739	292	302	260	270	110
	4200-7800	Good upper RPM HP. Bracket racing. Manifold nitrous. Aftermarket aluminum cyclinder heads recommended. Rough idle. Custom stall converter. Compression 12.0 minimum.	348831[149] ③ ⚠	—	R-266/420-2-10	.020	.020	.739	.739	298	308	266	276	110
	4600-8200	Good upper RPM HP. Bracket racing performance. Large plate or manifold nitrous. Aftermarket cylinder heads recommended. Rough idle. Custom stall converter. Compression 12.5 minimum.	348841[149] ③ ⚠	—	R-276/420-2-10	.020	.020	.739	.739	308	318	276	286	110
	5000-8400	Good upper RPM HP. Bracket racing performance. Manual or automatic transmission. Aftermarket cylinder heads recommended. Rough idle. Custom stall converter. Compression 13.0 minimum.	348301[149] ③ ⚠	—	R-282/427-2S1-8	.028	.026	.752	.752	320	320	282	286	108

[149] Require 34970-16 (.467" ID) steel OR 34990-1 (.467" ID) aluminum bronze distributor drive gear, and 7/16-14x1 1/8" grade 8 cam gear bolt and hardened washer.

FORD V8 1963-76 352-428 (FE)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
99257-16	13309-1	96801-16	99957-16	99098-1	—	34772-16[7]	34621-16[153]	99822-16[3]	—	—
99256-16[152]			99969-16[68]							
99257-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[7]	34621-16[153]	99822-16[3]	—	—
99256-16[152]							34622-16[154]			
99257-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[7]	34621-16[153]	99822-16[3]	—	—
99256-16[152]							34622-16[154]			
99257-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[7]	34621-16[153]	99822-16[3]	—	—
99357-16							34622-16[154]			
99256-16[152]										
99257-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[7]	34621-16[153]	99822-16[3]	—	—
99357-16							34622-16[154]			
99256-16[152]										
99257-16	—	96877-16[3]	99969-16[68]	99098-1	—	34772-16[7]	34621-16[153]	99822-16[3]	—	—
99357-16							34622-16[154]			
99256-16[152]										
MECHANICAL ROLLER										
35570-16	—	99832-16[150]	99976-16[65]	99098-1	—	34772-16[105]	34641-16[147]	99822-16[3]	—	34990-1
		99893-16	99954-16							34970-1
35570-16	—	99832-16[150]	99976-16[65]	99098-1	—	34772-16[105]	34641-16[147]	99822-16[3]	—	34990-1
		99893-16	99954-16							34970-1
35570-16	—	96886-16[3]	99955-16	99098-1	—	34772-16[105]	34641-16[147]	99822-16[3]	—	34990-16
										34970-1
35570-16	—	96886-16[3]	99955-16	99098-1	—	34772-16[105]	34641-16[147]	99822-16[3]	—	34990-16
										34970-1
35570-16	—	96886-16[3]	99955-16	99098-1	—	34772-16[105]	34641-16[147]	99822-16[3]	—	34990-16
										34970-1
35570-16	—	96886-16[3]	99955-16	99098-1	—	34772-16[105]	34641-16[147]	99822-16[3]	—	34990-16
										34970-1
35570-16	—	96880-16[3]	99679-16[68, 118]	99098-1	—	34772-16[105]	34641-16[147]	99822-16[3]	—	34990-1
		961246-16[155]	99662-16[88]							34970-1

[3] Must machine cylinder heads.
[7] Special length pushrods required.
[65] For 99832-16 beehive springs.
[68] Require 99098-1 valve stem locks.
[88] For 961246-16 valve springs.
[105] Appropriate Crane pushrods required.
[118] Valve stem locks included.
[147] For use with 34772-16 adjustable rocker arms with ball type adjusters.
[150] Require 99976-16 retainers.
[152] Shell-type lifters. Require 34622-16 pushrods for 34772-16 rockers.
[153] For use with 99257-16 lifters and 34772-16 adjustable rockers.
[154] For use with 99256-16 lifters and 34772-16 adjustable rockers.
[155] Triple for 2.050" assembly height, require 99662-16 retainers.

CAMSHAFTS

FORD V8 1968-97 370-460

CRANE Cams

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING		VALVE LIFT		ADVERTISED DURATION		DURATION @ .050"		LOBE SEP.
						INT.	EXH.	INT. W/ ROCKER	EXH. W/ ROCKER	INT.	EXH.	INT.	EXH.	
HYDRAULIC FLAT TAPPET														
TruckMax	800-4200	Brute low-end torque. Smooth idle. Daily driver with economy. Towing. EFI compadible. Compression 7.75 to 8.75	350501	—	H-192/2667-2S-10	Hyd	Hyd	.456	.487	248	260	192	204	110
	1400-5000	Good low-end and mid-range torque HP. Good idle. Daily driver with economy. Towing and off-road performance. Compression 8.5 to 10.0	353931	353932	H-266-2	Hyd	Hyd	.487	.504	266	274	210	218	114
PowerMax	2200-5800	Good mid-range torque and HP. Serious street/strip performance. Heavy car. 2500+ stall. Fair idle. Compression 9.0 to 10.5	350541	—	H-226/314-2-8	Hyd	Hyd	.537	.556	286	296	226	236	108
RaceMax	2400-6000	Good mid-range HP. Oval track and bracket racing performance. Mild supercharged. Fair idle. 2800+ stall converter. Compression 9.5 to 11.0	354551	354552[114]	H-288-2	Hyd	Hyd	.522	.530	288	292	226	230	112
	2600-6200	Good mid-range HP. Bracket racing performance. Plate nitrous. Fair idle. 3000+ stall. Compression 11.0 to 12.0. Also, supercharged with 15psi and 8.5 max compression.	350551	—	H-230/318-2-14	Hyd	Hyd	.544	.563	290	300	230	240	114
	3000-6600	Good mid-range HP. Bracket racing performance. 3000+ stall. Fair idle. Also, 3/8 to 1/2 mile oval track Street/Hobby stock and Enduro applications. Compression 10.0 to 11.5	354561	354562[114]	H-296-2	Hyd	Hyd	.556	.563	296	300	236	240	110
	3200-6800	Good upper RPM HP. Bracket racing. Manifold nitrous. Rough idle. 3500+ stall. Compression 11.5 to 13.0	350561	—	H-244/3439-2S-12	Hyd	Hyd	.588	.599	300	308	244	252	112
	3400-7000	Good upper RPM HP. Bracket racing performance. Aftermarket aluminum cylinder heads recommended. Rough idle. 3800+ stall. Compression 12.0 to 13.5	350681	—	H-248/3500-8	Hyd	Hyd	.599	.599	304	304	248	248	108
	3800-7200	Good upper RPM HP. Bracket racing and strip performance. Manifold nitrous. Aluminum cylinder heads recommended. Rough idle. 4200+ stall. Compression 13.5 to 14.5. Also, Roots supercharged with 22psi and 8.5 max compression.	350571	—	H-252/364-2S-12	Hyd	Hyd	.622	.604	304	314	252	262	112
MarineMax	800-4400	Good low-end torque for stock engines with wet or dry through-prop exhaust. Smooth idle. Compression 7.75 to 8.75.	353901	353902	H-260-2	Hyd	Hyd	.487	.518	260	272	204	216	112
HYDRAULIC ROLLER														
TruckMax	800-4600	Brute low-end torque. Smooth idle. Daily driver with economy. Towing and off-road performance. Compression 8.0 to 9.5	359331[116, 134]	—	HR-200/311-2S-12	Hyd	Hyd	.532	.568	262	274	200	212	112
PowerMax	2200-6200	Good mid-range torque and HP. Street/strip performance. 2600+ stall. Fair idle. Compression 9.5 to 11.0	359351[116, 134]	—	HR-228/345-2S-14	Hyd	Hyd	.590	.614	290	300	228	238	114
	2400-6400	Good mid-range torque and HP. Serious street/strip performance. Heavy car. 2800+ stall. Compression 10.0 to 11.5	359381[116, 134]	—	HR-234/340-2S-10	Hyd	Hyd	.581	.581	300	308	234	242	110
RaceMax	3000-6600	Good mid to upper RPM torque and HP. Bracket racing performance for larger cubic inch engines. Mild supercharged. Fair idle. 3500+ stall. Compression 10.5 to 12.0	359361[116, 134]	—	HR-238/359-2S-12	Hyd	Hyd	.614	.636	300	308	238	246	112
	3200-6800	Good mid to upper RPM torque and HP. Bracket racing and strip performance for larger cubic inch engines. Rough idle. 3500+ stall. Compression 11.0 to 12.5	359391[116, 134]	—	HR-246/372-2S-12	Hyd	Hyd	.636	.636	308	312	246	250	112

[114] Includes valve spring and retainer kit.
[116] Requires 7/16x20 x 1 1/4" grade 8 cam gear bolt and hardened washer.
[134] Requires 52970-1 (.500" ID), 52971-1 (.531" ID) steel OR 52990-1 (.500" ID), 52989-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1968-97 370-460

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99280-16[156]	35308-1	96801-16	99944-16	99097-1	35975-1	52800-16[158]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99280-16[156]	35308-1	96801-16	99944-16	99097-1	35975-1	52800-16[158]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99280-16[156]	—	99893-16	99953-16	99097-1	35975-1	52800-16[158]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
						27744/-16[131]	35621-16[9, 157]			
99280-16[156]	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99380-16[124, 156]						27771-16[38, 131]	95653-16[9]			
99280-16[156]	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99380-16[124, 156]						27771-16[38, 131]	95653-16[9]			
99280-16[156]	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99380-16[124, 156]						27771-16[38, 131]	95653-16[9]			
99280-16[156]	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99380-16[124, 156]						27771-16[38, 131]	95653-16[9]			
99280-16[156]	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99380-16[124,156]						27771-16[38, 131]	95653-16[9]			
99280-16[156]	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
99380-16[124, 156]						27771-16[38,131]	95653-16[9]			
99280-16[156]	35308-1	96801-16	99944-16	99097-1	35975-1	52800-16[158]	35622-16[9]	99820-16[3]	35655-16	52970-1 (.500)
HYDRAULIC ROLLER										
35532-16[135]	—	96870-16	99957-16	99097-1	35975-1	52800-16[158]	95639-16	99820-16[3]	35655-16	52970-1 (.500) 52971-1 (.531)
35532-16[135]	—	99896-16	99956-16	99097-1	35975-1	52800-16[158]	95639-16[159]	99820-16[3]	35655-16	52990-1
			99970-16[27]	99094-1		27744-16[131]	95641-16[160]			52970-1
35532-16[135]	—	99896-16	99956-16	99097-1	35975-1	52800-16[158]	95639-16[159]	99820-16[3]	35655-16	52990-1
			99970-16[27]	99094-1		27744-16[131]	95641-16[160]			52970-1
35532-16[135]	—	99896-16	99956-16	99097-1	35975-1	27750-16[131]	95639-16[159]	99820-16[3]	35655-16	52990-1
			99970-16[27]	99094-1		27771-16[38, 131]	95641-16[160]			
35532-16[135]	—	99896-16	99956-16	99097-1	35975-1	27750-16[131]	95639-16[159]	99820-16[3]	35655-16	52990-1
			99970-16[27]	99094-1		27771-16[38, 131]	95641-16[160]			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[38] Wide body.
[124] Optional Hi Intensity hydraulic lifters.
[131] Requires 7/16" rocker arm studs and pushrod guideplates.
[149] Require 99976-16 retainers.
[134] Requires 52970-1 (.500" ID), 52971-1 (.531" ID) steel OR 52990-1 (.500" ID), 52989-1 (.531" ID) aluminum bronze distributor drive gear.
[135] Vertical locking bar hydraulic roller lifters. Appropriate pushrods required.
[156] May require appropriate Crane pushrods.
[158] Pedestal mount, non-adjustable for 1972-97 engines.
[159] For use with non-guideplate cylinder heads.
[160] For use with pushrod guideplate cylinder heads.

CAMSHAFTS

FORD V8 1968-97 370-460

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
RaceMax Contd.	3600-6800	Good mid-range and upper RPM torque and HP. Bracket racing and strip performance for +540ci engines. Large manifold nitrous. Rough idle. 4000+ stall. Compression 12.5 minimum. Also, Roots supercharged with 22psi and 8.5 max compression.	359401[116, 134]	—	HR-258/372-2S-114	Hyd	Hyd	.636	.636	320	328	258	266	114
	4000-6800	Good mid-range and upper RPM torque and HP. Bracket racing performance for +570ci engines. Aluminum cylinder heads recommended. Rough idle. 4500+ stall. Compression 13.5 minimum. Also, Roots supercharged with 26psi and 8.5 max compression.	359411[116, 134]	—	HR-264/400-2S-14	Hyd	Hyd	.684	.684	334	338	264	268	114
MarineMax	800-4600	Excellent low-end torque and HP improvement for stock to near-stock engines with wet or dry through-prop exhaust. Good idle. Compression 8.0 to 9.0.	359371[116, 134]	—	HR-212/332-2S-14	Hyd	Hyd	.568	.556	274	278	212	216	114
	1000-5000	Good low-end torque and HP for near-stock to mildly modified engines with wet or dry through-prop exhaust. Good idle. Compression 8.25 to 9.25.	359341[116, 134]	—	HR-216/325-2S-12	Hyd	Hyd	.556	.580	278	286	216	224	112
MECHANICAL FLAT TAPPET														
PowerMax	3000-6600	Good low-end and mid-range torque and HP. Street/strip performance. 3500+ stall. Fair idle. Compression 10.0 to 11.5	351201	—	F-238/3200-2-12	0.022	0.022	.547	.570	300	310	238	248	112
RaceMax	3600-7000	Good mid-range to upper RPM torque and HP. 1/4 to 3/8 mile oval track peformance for Late Model and Sportsman classes. Also, bracket racing performance. Rough idle. 4000+ stall. Compression 10.5 to 12.5	351211	351212[114]	F-246/3294-2-8	.026	.026	.563	.583	282	292	246	256	108
	4000-7400	Good mid to upper RPM torque and HP. Bracket racing and strip performance. Rough idle. Custom stall required. Compression 11.0 to 12.5	351341	—	F-256/3412-2-8	.026	.026	.583	.603	292	302	256	266	108
	4200-7600	Good upper RPM torque and HP. Bracket racing performance. Plate nitrous. Fair idle. Custom stall required. Compression 11.5 to 12.5	351351	—	F-256/3412--2-12	.026	.026	.583	.603	292	302	256	266	112
	4400-7800	Good mid to upper RPM HP. Bracket racing performance N/A engines. Rough idle. Custom stall converter required. Compression 11.5 to 13.0	351511	—	F-266/3528-2-8	.026	.026	.603	.624	302	312	266	276	108
	4600-8000	Good mid- to upper RPM HP. Bracket racing performance N/A engines. Rough idle. Custom stall converter required. Compression 12.5 minimum.	351601	—	F-272/3874-2S-8	.026	.026	.662	.683	308	316	272	280	108
	4800-8200	Good upper RPM HP. Bracket racing and strip performance. Large plate or manifold nitrous. Custom stall converter. Compression 13.0 minimum. Also, Roots supercharged with 22psi and 8.0 max compression.	351611	—	F-272/3874-2S-10	.026	.026	.662	.683	308	316	272	280	112
	4600-8200	Good upper RPM torque and HP for heavier vehicle with +514ci. engines. Aluminum cylinder heads recommended. Custom stall converter. Compression 13.0 minimum.	351621	—	F-274/3934-2S-10	.012	.012	.673	.684	304	308	274	278	110
	5000-8400	Good upper RPM HP for flat tappet restricted classes with +540ci and aluminum cylinder heads. Custom stall converter. Compression 13.5 minimum.	351631	—	F-286/3765-2S-12	.026	.030	.644	.653	322	332	286	292	112

[114] Includes valve spring and retainer kit.
[116] Requires 7/16x20 x 1 1/4" grade 8 cam gear bolt and hardened washer.
[134] Requires 52970-1 (.500" ID), 52971-1 (.531" ID) steel OR 52990-1 (.500" ID), 52989-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1968-97 370-460

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
35532-16[135]	—	99896-16	99956-16	99097-1	35975-1	27750-16[131]	95639-16[159]	99820-16[3]	—	52990-1
			99970-16[27]	99094-1		27771-16[38, 131]	95641-16[160]			
35532-16[135]	—	99896-16	99956-16	99097-1	35975-1	27750-16[131]	95639-16[159]	99820-16[3]	—	52990-1
			99970-16[27]	99094-1		27771-16[38, 131]	95641-16[160]			
35532-16[135]	—	96870-16	99957-16	99097-1	35975-1	52800-16[158]	95639-16[159]	99820-16[3]	—	52990-1 (.500) 52989-1 (.531)
35532-16[135]	—	96870-16	99957-16	99097-1	35975-1	52800-16[158]	95639-16[159]	99820-16[3]	—	52990-1 (.500) 52989-1 (.531)
MECHANICAL FLAT TAPPET										
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
						27771-16[38, 131]	95653-16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653-16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653-16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653-16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653- 16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653-16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653-16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653-16[160]			
99257-16[105]	—	99890-16	99970-16[27]	99094-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	35655-16	—
99357-16						27771-16[38, 131]	95653-16[160]			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[38] Wide body.
[105] Appropriate Crane pushrods required.
[131] Requires 7/16" rocker arm studs and pushrod guideplates.
[149] Require 99976-16 retainers.
[135] Vertical locking bar hydraulic roller lifters. Appropriate pushrods required.
[158] Pedestal mount, non-adjustable for 1972-97 engines.
[159] For use with non-guideplate cylinder heads.
[160] For use with pushrod guideplate cylinder heads.

CAMSHAFTS

FORD V8 1968-97 370-460

CRANE Cams®

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL ROLLER														
PowerMax	2500-6500	Excellent low and mid-range torque. Street/strip performance. 3000+ stall. Fair idle. Compression 10.5 to 11.5	358501[116, 134]	—	SR-232/338-2S-12	.020	.020	.578	.599	282	290	232	240	112
	3000-6800	Good low and mid-range torque and HP. Street/strip performance. 3500+ stall. Fair idle. Compression 10.5 to 12.0	358511[116, 134]	—	SR-248/362-2S1-12	.020	.020	.619	.640	298	306	248	256	112
	3200-7000	Good mid-range torque and upper RPM HP. Radical street/strip performance. 3600+ stall. Rough idle. Compression 11.0+ min.	358521[116, 134]	—	SR-252/400-2S-10	.020	.022	.684	.684	290	298	252	260	110
RaceMax	3400-7200	Good low and mid-range torque and HP. Bracket racing and strip performance. Rough idle. 3800+ stall. Compression 11.0 to 12.5	358801[116, 134]	—	R252/420-2-10	.020	.020	.718	.718	284	294	252	262	110
	3600-7400	Good mid-range torque and HP. Bracket racing performance for heavier vehicles. Rough idle. 4000+ stall. Compression 11.5 to 12.5	358201[116, 134]	—	R-258/420-2S-8	.020	.020	.718	.718	290	300	258	268	108
	3800-7800	Good mid-range HP for +514ci engines. Manifold nitrous. Rough idle. Custom stall converter required. Compression 12.5 minimum.	358211[116, 134]	—	R-266/434-2S-12	.020	.020	.742	.718	300	310	266	278	112
	4200-8000	Good upper RPM torque and HP. Bracket racing performance. Rough idle. Custom stall converter required. Compression 12.5 minimum.	358831[116, 134]	—	R-272/420-2S1-10	.020	.020	.718	.718	304	312	272	280	110
	4200-8200	Good upper RPM torque and HP for +540ci engines with aluminum cylinder heads. Large manifold nitrous. Custom stall converter required. Compression 12.5 minimum. Also, Roots supercharged with 24psi and 8.0 max compression.	358221[116, 134]	—	R-272/436-2S-14	.020	.022	.746	.732	302	312	272	280	114
	4400-8200	Good upper RPM torque and HP for +510ci engines. Bracket racing performance. Custom stall converter. Compression 12.5 minimum.	358841[116, 134]	—	R-276/420-2-10	.020	.020	.718	.718	308	318	276	286	110
	4600-8400	Good upper RPM torque and HP for +540ci engines with aluminum cylinder heads. Large manifold nitrous. Custom stall converter required. Compression 13.0 minimum. Camshaft has SF01 (1-5-4-8-6-3-7-2) firing order	358231[116, 134]	—	R-276/4334-2S-12 SF01	.026	.026	.741	.730	316	326	276	286	112
	5000-8800	NMRA and Top Sportsman. +540ci engines with aluminum cylinder heads. Large manifold nitrous. Custom stall converter required. Compression 14.0 minimum. Camshaft has SF01 (1-5-4-8-6-3-7-2) firing order.	358241[116, 134]	—	R280/5152-2S-14SF01	.020	.030	.881	.805	310	336	280	296	114
	5400-9200	Unlimited street, Quick 16, and Top Sportsman. +540ci engines with aluminum cylinder heads. Large manifold nitrous. Custom stall converter required. Compression 14.5 minimum. Camshaft has SF01 (1-5-4-8-6-3-7-2) firing order.	358251[116, 134]	—	R288/5152-2S-16SF01	.020	.030	.881	.838	318	346	288	310	116

[116] Requires 7/16x20 x 1 1/4" grade 8 cam gear bolt and hardened washer.
[134] Requires 52970-1 (.500" ID), 52971-1 (.531" ID) steel OR 52990-1 (.500" ID), 52989-1 (.531" ID) aluminum bronze distributor drive gear.

FORD V8 1968-97 370-460

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL ROLLER										
35570-16	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
						27771-16[38, 131]	95653-16[160]			52970-1
35570-16	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
						27771-16[38, 131]	95653-16[160]			52970-1
35570-16	—	99893-16	99953-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
						27771-16[38, 131]	95653-16[160]			52970-1
35570-16	—	99885-16	99956-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
			99974-16[27]	99094-1		27771-16[38, 131]	95653-16[160]			
35570-16	—	99885-16	99956-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
			99974-16[27]	99094-1		27771-16[38, 131]	95653-16[160]			
35570-16	—	99885-16	99956-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
			99974-16[27]	99094-1		27771-16[38, 131]	95653-16[160]			
35570-16	—	99885-16	99956-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
			99974-16[27]	99094-1		27771-16[38, 131]	95653-16[160]			
35570-16	—	99885-16	99956-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
			99974-16[27]	99094-1		27771-16[38, 131]	95653-16[160]			
35570-16	—	99885-16	99956-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
			99974-16[27]	99094-1		27771-16[38, 131]	95653-16[160]			
35570-16	—	99885-16	99956-16	99097-1	35975-1	27750-16[131]	35621-16[160]	99820-16[3]	—	52990-1
		961226-16[3, 69]	99661-16[27, 161]	99094-1		27771-16[38, 131]	95653-16[160]			
35570-16	—	96848-16[71]	99681-16[36]	99097-1	—	27750-16[131]	95810-16[162]	99826-16[3]	—	52990-1
		961356-16[3, 71]	99663-16[27, 101]			27771-16[38, 131]				
35570-16	—	96848-16[71]	99681-16[36]	99097-1	—	27750-16[131]	95810-16[162]	99826-16[3]	—	52990-1
		961356-16[3, 71]	99663-16[27, 101]			27771-16[38, 131]				

[3] Must machine cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[38] Wide body.
[69] Require 99661-16 titanium retainers.
[71] For 2.100" assembly height, requires 99663-16 titanium retainers.
[101] Titanium for 961356-16 and 961355-16 springs.
[116] Requires 7/16x20 x 1 1/4" grade 8 cam gear bolt and hardened washer.
[131] Requires 7/16" rocker arm studs and pushrod guideplates.
[160] For use with pushrod guideplate cylinder heads.
[161] For 961226-16 valve springs.
[162] Special guideplates required..

CAMSHAFTS

OLDSMOBILE V8 1967-84 260-455 (39° BANK ANGLE)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	1200-4800	Good low-end torque. Daily driver with economy. Mild turbocharged. Smooth idle. Compression 8.0 to 9.5.	803901	803902[106]	H-260-2	Hyd	Hyd	.456	.484	260	272	204	216	112
	1600-5400	Good low to mid-range torque. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.5.	804541	804542[106]	H-272-2	Hyd	Hyd	.484	.512	272	284	216	228	112
	2200-5800	Good mid-range torque and HP. Street/strip performance. Fair idle. 2500+ stall. Compression 9.5 to 11.0.	804551	804552[106]	H-284-2	Hyd	Hyd	.480	.496	284	292	222	230	110
	2600-6000	Replacement for Factory W-31 camshaft. (advancing this camshaft 5° will produce the equivalent specs of the 397328 W-30 camshaft).	800101	—	402194	Hyd	Hyd	.474	.474	300	300	232	232	113.5
	2800-6400	Good mid and upper RPM torque. Street/strip performance for +425ci engines in heavier vehicles. Fair idle 3200+ stall. Compression 10.5 to 12.0.	800601	—	H-234/325-2-10	Hyd	Hyd	.520	.542	304	314	234	244	110
RaceMax	2800-6400	Good mid-range horsepower, moderant performance for bracket racing, 3000 stall speed requiired. Compression 10.0 to 11.5:1.	804461	—	H-292-2	Hyd	Hyd	.496	.504	292	296	230	234	110
	3000-6600	Good mid-range and upper end horsepower, performance useage for 425 and 455+ cu.in, Bracket racing with 3500 stall converter. Compression 10.5 to 12.0.	800661	—	H-238/3347-10	Hyd	Hyd	.536	.560	294	304	238	248	110
	3400-6800	Good upper RPM horsepower performance usage, best with 455+ cu.in and aluninum heads. 3800 stall converter required. A minimum compression ratio of 11.5:1 required.	800681	—	H-248/3500-2S-12	Hyd	Hyd	.560	.560	304	312	248	256	112

[106] Includes rocker arm pedestal shim kit.

OLDSMOBILE V8 1967-84 260-455 (39° BANK ANGLE)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99284-16[163]	36308-1	96803-16	99946-16	99097-1	80975-1	80800-16[164]	See Chart Below	—	—	—
						80744-16[6]				
99284-16[163]	36308-1	96803-16	99946-16	99097-1	80975-1	80800-16[164]	See Chart Below	—	—	—
						80744-16[6]				
99284-16[163]	36308-1	96803-16	99946-16	99097-1	80975-1	80800-16[164]	See Chart Below	—	—	—
						80744-16[6]				
99284-16[163]	36308-1	96803-16	99946-16	99097-1	80975-1	80800-16[164]	See Chart Below	—	—	—
99384-16[124, 163]						80744-16[6]				
99284-16[163]	11310-1	99838-16	99944-16	99097-1	80975-1	80800-16[164]	See Chart Below	99820-16[3]	—	—
99384-16[124, 163]						80744-16[6]				
99284-16[163]	36308-1	96803-16	99946-16	99097-1	80975-1	80744-16[6]	See Chart Below	—	—	—
99384-16[124, 163]						80757-16[6]				
99284-16[163]	11310-1	99838-16	99944-16	99097-1	80975-1	80744-16[6]	See Chart Below	99820-16[3]	—	—
99384-16[124, 163]						80757-16[6]				
99284-16[163]	11310-1	99838-16	99944-16	99097-1	80975-1	80744-16[6]	See Chart Below	99820-16[3]	—	—
99384-16[124, 163]						80757-16[6]				

[3] Must machine cylinder heads.
[6] Must machine cylinder heads and install 99156-16 (3/8") or 99157-16 (7/16") rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[124] Optional Hi Intensity hydraulic lifters.
[163] Refer to chart at the bottom of the page, certain applications may require appropriate Crane pushrods.
[164] Fits 1967-79 engines, stamped steel with individual fulcrums and bridge straps.

YEAR	CUBIC INCH	MODEL	LIFTER DIA.	CAM BANK ANGLE	HYD. CAM LIFTERS	MECH. CAM LIFTERS	HYD. CAM PUSHRODS
1966	400	All	.921	39°	—	—	—
1966	425	Tornado ONLY	.921	39°	—	—	—
1967	400	All	.921	39°	—	—	—
1967	425	All Except Tornado	.842	39°	99284-16*	99250-16	—
1967	425	Tornado ONLY	.921	39°	—	—	95647-16
1968-69	400	All	.842	39°	99284-16*	99250-16	—
1968-80	350	All	.842	39°	99284-16*	99250-16	—
1968-76	455	All	.842	39°	99284-16*	99250-16	—
1975-82	260	All	.842	39°	99284-16*	99250-16	—
1977-79	403	All	.842	39°	99284-16*	99250-16	—
1980-84	307	All	.842	39°	99284-16*	99250-16	—

*Optional Hi-Intensity Hydraulic Lifters 99384-16 are available.

CAMSHAFTS

OLDSMOBILE V8 1967-84 260-455 (39° BANK ANGLE)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
PowerMax	1400-5600	Excellent low-end torque. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.5.	809611[39]	—	HR-214/325-2S-12 IG	Hyd	Hyd	.520	.542	276	284	214	222	112
PowerMax	1800-6000	Good low-end and mid-range torque and HP. Street/strip performance. Fair idle. 2500+ stall. Compression 9.5 to 10.75.	809621[39]	—	HR-222/339-2S-12 IG	Hyd	Hyd	.542	.563	284	292	222	230	112
PowerMax	2200-6400	Good mid-range torque and HP. Street/strip performance for +400ci engines. Mild plate nitrous. Fair idle. 2800+ stall Compression 10.0 to 11.5.	809631[39]	—	HR-230/352-2S-14 IG	Hyd	Hyd	.563	.595	292	304	230	242	114
RaceMax	3000-6800	Good mid-range torque and HP. Bracket racing performance for +400ci engines. Mild plate nitrous. Fair idle. 3000+ stall Compression 10.5 to 12.0.	809641[39]	—	HR-242/372-2S-14 IG	Hyd	Hyd	.595	.595	304	316	242	254	114
MECHANICAL FLAT TAPPET														
RaceMax	2800-6600	Good low and mid-range torque and HP. Bracket racing performance. Fair idle. 3200+ stall. Compression 10.0 to 11.5.	801181	—	F-238/3200-2-10	.022	.022	.512	.533	300	310	238	248	110
RaceMax	3600-7400	Good mid-range torque and HP. Bracket racing performance for +400ci engines in heavier vehicles. Rough idle. 4000+ stall. Compession 11.0 to 12.0.	801231	—	F-248/3334-2-8	.022	.022	.533	.555	310	320	248	258	108
MECHANICAL ROLLER														
RaceMax	3200-7400	Good mid-range torque and HP, Bracket racing performance. Rough idle. 3500+ stall. Compression 11.0 to 12.5	808801[165]	—	R-252/420-2-8	.020	.020	.672	.672	284	294	252	262	108
RaceMax	3600-7600	Good mid to upper RPM torque and HP. Bracket racing performance. Mild nitrous. Rough idle. 4000+ stall. Compression 11.5 minimum.	808811[165]	—	R-262/420-2-10	.020	.020	.672	.672	294	304	262	272	110
RaceMax	4200-8200	Good upper RPM torque and HP. Bracket racing performance. Manifold injected nitrous. Rough idle. Custom stall convertor required. Compression 12.5 minimum.	808821[165]	—	R-272/420-2-10	.020	.020	.672	.672	304	314	272	282	110
RaceMax	5000-8800	Good upper RPM HP. Performance for Super Stock with standard or automatic transmissions. Rough idle. Custom stall required. Compression 12.5 minimum.	808351[165]	—	R-282/450-2S2-8	.026	.026	.720	.681	322	332	282	292	108

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.
[165] Requires 80990-1 aluminum bronze distributor drive gear.

OLDSMOBILE V8 1967-84 260-455 (39° BANK ANGLE)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
28532-16[135]	—	99893-16	99953-16	99097-1	80975-1	80744-16[6]	—	99820-16[3]	—	—
						80757-16[6]				
28532-16[135]	—	99893-16	99953-16	99097-1	80975-1	80744-16[6]	—	99820-16[3]	—	—
						80757-16[6]				
28532-16[135]	—	99893-16	99953-16	99097-1	80975-1	80744-16[6]	—	99820-16[3]	—	—
						80757-16[6]				
28532-16[135]	—	99893-16	99953-16	99097-1	80975-1	80757-16[6]	—	99820-16[3]	—	—
MECHANICAL FLAT TAPPET										
99250-16[163]	11310-16	99838-16	99944-16	99097-1	80975-1	80757-16[6]	—	99820-16[3]	—	—
99250-16[163]	11310-16	99838-16	99944-16	99097-1	80975-1	80757-16[6]	—	99820-16[3]	—	—
MECHANICAL ROLLER										
28570-16	—	99885-16[3]	99678-163[6]	99097-1	80975-1	80757-16[6]	—	99820-16[3]	—	80990-1
28570-16	—	99885-16[3]	99678-163[6]	99097-1	80975-1	80757-16[6]	—	99820-16[3]	—	80990-1
28570-16	—	99885-16[3]	99678-16[36]	99097-1	80975-1	80757-16[6]	—	99820-16[3]	—	80990-1
28570-16	—	99885-16[3]	99678-16[36]	99097-1	80975-1	80757-16[6]	—	99820-16[3]	—	80990-1

[3] Must machine cylinder heads.
[6] Must machine cylinder heads and install 99156-16 (3/8") or 99157-16 (7/16") rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[36] Titanium, must use 99097-1 valve stem locks, included with the retainers.
[135] Vertical locking bar hydraulic roller lifters. Appropriate pushrods required.
[163] Refer to chart at the bottom of the page, certain applications may require appropriate Crane pushrods.

YEAR	CUBIC INCH	MODEL	LIFTER DIA.	CAM BANK ANGLE	HYD. CAM LIFTERS	MECH. CAM LIFTERS	HYD. CAM PUSHRODS
1966	400	All	.921	39°	—	—	—
1966	425	Tornado ONLY	.921	39°	—	—	—
1967	400	All	.921	39°	—	—	—
1967	425	All Except Tornado	.842	39°	99284-16*	99250-16	—
1967	425	Tornado ONLY	.921	39°	—	—	95647-16
1968-69	400	All	.842	39°	99284-16*	99250-16	—
1968-80	350	All	.842	39°	99284-16*	99250-16	—
1968-76	455	All	.842	39°	99284-16*	99250-16	—
1975-82	260	All	.842	39°	99284-16*	99250-16	—
1977-79	403	All	.842	39°	99284-16*	99250-16	—
1980-84	307	All	.842	39°	99284-16*	99250-16	—

*Optional Hi-Intensity Hydraulic Lifters 99384-16 are available.

CAMSHAFTS

PONTIAC V8 1955-91 265-455

CRANE Cams®

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC FLAT TAPPET														
PowerMax	1200-4800	Good low-end torque. Daily driver with economy. Smooth idle. Compression 8.0 to 9.5	283901	283902[107]	H-260-2	Hyd	Hyd	.427	.454	260	270	204	216	112
	1800-5200	Strong mid-range torque. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.0	10507	105072	Energizer 272 H10	Hyd	Hyd	.454	.454	272	272	216	216	110
	1800-5400	Good low and mid-range torque. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.0	283941	283942[107]	H-272-2	Hyd	Hyd	.454	.480	272	284	216	228	112
	1800-5600	Good low and mid-range torque and HP. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.5	283511	283512[107]	Z-268-2	Hyd	Hyd	.459	.473	268	274	218	224	112
	2000-5600	Good mid-range torque and horsepower.Excellent upgrade for 455 SD applications. Fair idle. 2500+ stall. Compression 9.5 to 10.75	283801	383802[107]	H-278-2	Hyd	Hyd	.467	.494	278	290	222	234	114
	2400-6000	Good mid-range torque and HP. Street/strip performance. Mild nitrous. Fair idle. 2800+ stall. Compression 9.5 to 11.0	283951	283952[107]	H-288/2	Hyd	Hyd	.458	.473	288	296	226	234	114
	2800-6200	Good mid-range HP. Street/strip performance. Fair idle 3200+ stall. Compression 9.5 to 11.0	10508	105082	Energizer 284 H12	Hyd	Hyd	.480	.480	284	284	228	228	112
RaceMax	2600-6400	Good mid to upper RPM torque and HP. Bracket racing performance. Mild nitrous. Fair idle. 3000+ stall. Compression 9.5 to 11.0	283521	283522[107]	Z-280-2	Hyd	Hyd	.486	.494	280	290	230	240	112
	2800-6600	Good mid to upper RPM torque and HP for +455ci engines with aluminum heads. Fair idle. 3200+ stall. Compression 10.0 to 11.5	284281	—	H-296-2	Hyd	Hyd	.473	.488	296	304	234	242	112
	3400-6800	Good upper RPM torque and HP. Bracket racing performance. Rough idle. 3800+ stall. Compression 10.5 to 12.0	280451	—	H-244/3387-2-8	Hyd	Hyd	.508	.532	314	324	244	254	108
	3400-7000	Good upper RPM HP. Bracket racing performance. Manifold nitrous. Rough idle. 3800+ stall. Compression 10.5 to 12.0	284571	—	H-308-2	Hyd	Hyd	.495	.510	308	316	246	254	114
	3800-7200	Good upper RPM HP. Bracket racing performance. Rough idle. 4200+ stall. Compression 12.0 minimum.	280601	—	H-260/360-2S-8	Hyd	Hyd	.540	.558	330	338	260	268	108
HYDRAULIC ROLLER														
PowerMax	1400-5600	Excellent low-end torque. Daily driver with performance and economy. Good idle. Compression 8.75 to 10.5	289611[39,166]	—	HR-214/325-2S-12 IG	Hyd	Hyd	.488	.509	276	284	214	222	112
	1800-6000	Good low-end and mid-range torque and HP. Street/strip performance. Fair idle. 2500+ stall. Compression 9.5 to 10.75	289621[39,166]	—	HR-222/339-2S-12 IG	Hyd	Hyd	.509	.528	284	292	222	230	112
	2000-6200	Good mid-range torque and HP. Street/strip performance for +389ci. engines. Fair idle. 2500+ stall. Compression 10.0 to 11.0	289661[39,166]	—	HR-226/345-2S1-12 IG	Hyd	Hyd	.518	.539	288	296	226	234	112
	2200-6400	Good mid-range torque and HP. Serious street/strip performance for +400ci. engines. Fair idle. 2600+ stall. Compression 10.0 to 11.5	289631[39,166]	—	HR-230/352-2S1-14 IG	Hyd	Hyd	.528	.548	292	300	230	238	114

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.
[107] Includes rocker arm adjusting nuts (polylocks).
[166] Not for use in 265 and 301 c.i. engines.

PONTIAC V8 1955-91 265-455

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC FLAT TAPPET										
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28800-16[168]	28624-16[160]	99820-16[3]	—	—
		99838-16				28747-16[169]	95654-16[159]			
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28800-16[168]	28624-16[160]	99820-16[3]	—	—
		99838-16				28747-16[169]	95654-16[159]			
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28800-16[168]	28624-16[160]	99820-16[3]	—	—
		99838-16				28747-16[169]	95654-16[159]			
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28800-16[168]	28624-16[160]	99820-16[3]	—	—
		99838-16				28747-16[169]	95654-16[159]			
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28800-16[168]	28624-16[160]	99820-16[3]	—	—
		99838-16				28747-16[169]	95654-16[159]			
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28800-16[168]	28624-16[160]	99820-16[3]	—	—
99382-16[167]		99838-16				28747-16[169]	95654-16[159]			
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28800-16[168]	28624-16[160]	99820-16[3]	—	—
99382-16[167]		99838-16				28747-16[169]	95654-16[159]			
99282-16[167]	28308-1	99840-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
99382-16[167]		99838-16				28758-16[169]	95654-16[159]			
99282-16[167]	11310-1	99838-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
99382-16[167]						28758-16[169]	95654-16[159]			
99282-16[167]	11310-1	99838-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
99382-16[167]						28758-16[169]	95654-16[159]			
99282-16[167]	11310-1	99838-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
99382-16[167]						28758-16[169]	95654-16[159]			
99282-16[167]	—	99893-16	99953-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
99382-16[167]						28758-16[169]	95654-16[159]			
HYDRAULIC ROLLER										
28532-16[135, 166]	—	99893-16	99953-16	99097-1	28975-1	28747-16[169]	—	99820-16[3]	—	—
						28758-16[169]				
28532-16[135, 166]	—	99893-16	99953-16	99097-1	28975-1	28747-16[169]	—	99820-16[3]	—	—
						28758-16[169]				
28532-16[135, 166]	—	99893-16	99953-16	99097-1	28975-1	28758-16[169]	—	99820-16[3]	—	—
28532-16[135, 166]	—	99893-16	99953-16	99097-1	28975-1	28758-16[169]	—	99820-16[3]	—	—

[3] Must machine cylinder heads.
[135] Vertical locking bar hydraulic roller lifters. Appropriate pushrods required.
[159] For use with non-guideplate cylinder heads.
[160] For use with pushrod guideplate cylinder heads.
[166] Not for use in 265 and 301 c.i. engines.
[167] 265 And 301 c.i. require 99277-16 or optional Hi Intensity hydraulic lifters.
[168] For 1969-76 engines, non-adjustable with 7/16" bottleneck studs and 3/8" studs.
[169] For straight 7/16" rocker arm studs.

CAMSHAFTS

PONTIAC V8 1955-91 265-455

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER														
RaceMax	2600-6600	Good mid-range and upper RPM torque and HP. Bracket racing performance for +455ci. engines. Fair idle. 3000+ stall. Compression 10.0 to 11.5	289651[39, 166]	—	HR-238/365-2S1-14 IG	Hyd	Hyd	.548	.558	300	308	238	246	114
	3000-6800	Good mid-range and upper RPM HP. Bracket racing performance for +455ci. engines. Rough idle. 3500+ stall. Compression 10.5 to 12.0	289641[39, 166]	—	HR-242/372-2-14 IG	Hyd	Hyd	.558	.558	304	314	242	252	114
MECHANICAL FLAT TAPPET														
PowerMax	2600-6400	Replacement for factory 389-421 Super Duty McKellar #10 camshaft.	280901	—	BluePrinted 541596	.012	.018	.416	.420	268	284	236	247	113.5
RaceMax	3000-7000	Good low-end and mid-range torque and HP. Limited oval and bracket racing performance. Rough idle. 3500+ stall. Compression 10.5 to 12.0	280921	—	F-244/3454-2S-6	.026	.026	.518	.536	280	288	244	252	106
	3400-7000	Good mid-range torque and HP. Bracket racing performance. Plate nitrous. Fair idle. Compression 10.0 to 11.5	281241	—	F-248/3334-2-12	.022	.022	.500	.520	290	300	248	258	112
	3600-7400	Good mid-range torque and HP. Short oval and bracket racing performance. Rough idle. 4000+ stall. Compression 11.5 to 12.5	280981	—	F-252/3574-2S1-6	.026	.026	.536	.554	288	296	252	260	106
	4000-7600	Good mid-range and upper RPM torque and HP. Bracket racing perfromance. Rough idle. Custom stall convertor required. Compression 12.0 minimum.	281441	—	F-260/3694-2S-8	.026	.026	.554	.572	296	304	260	268	108
MECHANICAL ROLLER														
PowerMax	2200-6200	Excellent low-end torque and HP. Daily driver with street performance. Good idle. 2500+ stall. Compression 10.0 to 11.5.	288541[39, 166]	—	SR-228/338/2S-12 IG	.020	.020	.507	.525	278	286	228	236	112
	2600-6600	Good low-end and mid-range torque and HP. Street/strip performance. Mild nitrous. Fair idle. 3000+ stall. Compression 10.0 11.5.	288551[39, 166]	—	SR-236/350-2S-12 IG	.020	.020	.525	.543	286	294	236	244	112
RaceMax	3000-7000	Good mid to upper RPM torque and HP. Bracket racing performance for +421ci. engines. Mild plate nitrous. Fair idle. 3500+ stall. Compression 10.5 to 12.0.	288521[39, 166]	—	SR-244/362-2S-12 IG	.020	.020	.543	.561	294	302	244	252	112
	3400-7200	Good upper RPM torque and HP. Bracket racing performance for +455ci. engines with aluminum heads. Rough idle. 3800+ stall. Compression 11.0 minumum.	288531[39, 166]	—	SR-252/374-2S-12 IG	.020	.020	.561	.561	302	306	252	256	112
	4200-7800	Good mid to upper RPM torque and HP. Bracket racing performance for +455ci. engines with aluminum heads. Manifold nitrous. Compression 12.0 minimum.	288811[166, 171]	—	R-268/420-2S-10	.020	.020	.630	.630	300	308	268	276	110

[39] Camshaft incorporates an integral cast iron distributor drive gear, aluminum-bronze distributor drive gear not required.
[166] Not for use in 265 and 301 c.i. engines.
[171] Requires 28990-1 aluminum bronze distributor drive gear.

PONTIAC V8 1955-91 265-455

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
HYDRAULIC ROLLER										
28532-16[135, 166]	—	99893-16	99953-16	99097-1	28975-1	28774-16[169]	—	99820-16[3]	—	—
						28758-16[169]				
28532-16[135, 166]	—	99893-16	99953-16	99097-1	28975-1	28774-16[169]	—	99820-16[3]	—	—
						28758-16[169]				
MECHANICAL FLAT TAPPET										
99255-16[170]	11310-1	99838-16	99944-16	99097-1	28975-1	28758-16[169]	28624-16[160]	99820-16[3]	—	—
							95663-16[9]			
99255-16[170]	11310-1	99838-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
						28758-16[169]	95663-16[9]			
99255-16[170]	11310-1	99838-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
						28758-16[169]	95663-16[9]			
99255-16[170]	11310-1	99838-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
						28758-16[169]	95663-16[9]			
99255-16[170]	11310-1	99838-16	99944-16	99097-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
						28758-16[169]	95663-16[9]			
MECHANICAL ROLLER										
28570-16[166]	—	96870-16	99973-16[27]	99094-1	28975-1	28758-16[169]	28624-16[160]	99820-16[3]	—	—
							95663-16[9]			
28570-16[166]	—	96870-16	99973-16[27]	99094-1	28975-1	28758-16[169]	28624-16[160]	99820-16[3]	—	—
							95663-16[9]			
28570-16[166]	—	96870-16	99973-16[27]	99094-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
						28758-16[169]	95663-16[9]			
28570-16[166]	—	96870-16	99973-16[27]	99094-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
						28758-16[169]	95663-16[9]			
28570-16[166]	—	99896-16	99973-16[27]	99094-1	28975-1	28774-16[169]	28624-16[160]	99820-16[3]	—	—
						28758-16[169]	95663-16[9]			

[3] Must machine cylinder heads.
[9] For use with or without pushrod guideplate cylinder heads.
[27] Requires Crane Multi-Fit Valve Locks.
[135] Vertical locking bar hydraulic roller lifters. Appropriate pushrods required.
[160] For use with pushrod guideplate cylinder heads.
[166] Not for use in 265 and 301 c.i. engines.
[169] For straight 7/16" rocker arm studs.
[170] Due to block casting variations, you must check that the lifter relief band is not exposed at the bottom of the lifter bore when the lifter is on the base circle of the camshaft.

CAMSHAFTS

CRANE Cams®

MG TC-TD-TF 4 CYL. 1940-55 1250-1466CC

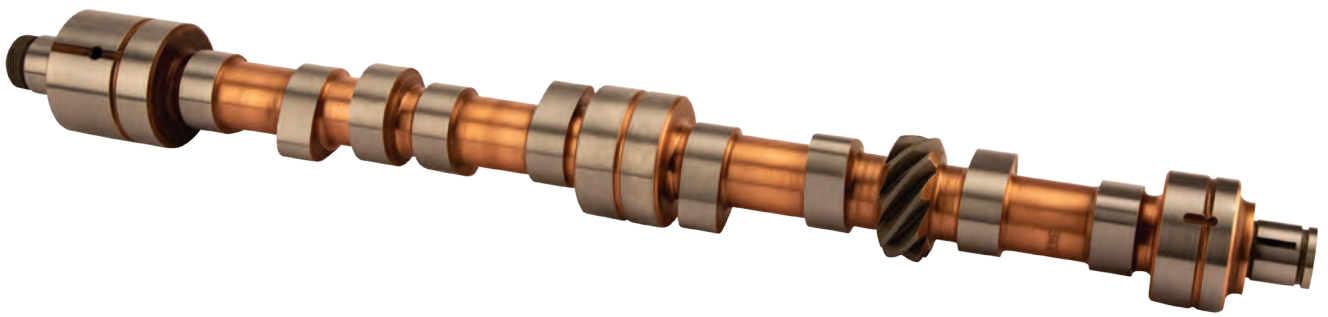
SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	1000-4500	Replacement for the 168533 camshaft. Must use 905-0003 pushrods to accomodate the oversized lobes utilized to reduce wear on this camshaft.	340-0002	—	BluePrinted 553-OS	.018	.020	.357	.357	242	242	190	190	110
	1800-5200	Daily driver. Street performance. Mild supercharged. Good idle. Compression 9.0 to 10.75.	340-0010	—	F-222/280-2-10	.016	.018	.420	.441	260	270	222	232	110
	2400-5800	Good mid to upper RPM torque and HP. Hot street and closed course performance. Fair idle. Compression 10.5 minimum.	340-0012	—	MG-T-3	.022	.024	.443	.443	294	294	234	234	110

MG-MGB 4 CYL. 1957-80 1598-1798CC

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	1000-4500	Replacement for factory 88G303 camshaft. 1964-1980 "2 grove."	342-0002	—	BluePrinted 88G303	.012	.014	.376	.376	248	263	199	215	107.5
	1800-5200	Daily driver. Street performance and autocross. Mild supercharged. Good idle. Compression 9.0 to 10.75.	342-0010	—	F-222/280-2-10	.014	.016	.399	.419	260	270	222	232	110
	2400-5800	Good mid to upper RPM torque and HP. Street and closed course performance. Fair idle. Compression 10.5 minimum.	342-0012	—	F-232/294-8	.016	.018	.419	.419	270	270	232	232	108
	4000-7500	Good upper RPM HP. Radical street and closed course performance. Rough idle. Compression 12.0 minimum.	342-0107	—	F-260/338-6	.028	.030	.482	.482	312	312	260	260	106

MG MIDGET-MINI-SPRINT 4 CYL. 1957-84 BMCA 848-1275CC

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	1800-5200	Daily driver. Street and closed course performance. Mild turbocharged. Good idle. Compression 9.0 to 10.5.	344-0010	—	F-222/280-2-10	.012	.014	.353	.370	260	270	222	232	110
	2200-5600	Good mid to upper RPM torque and HP. Hot street and closed course performance. Fair idle. Compression 10.0 minimum.	344-0012	—	F-232/294-2-10	.012	.014	.370	.388	270	280	232	242	110
	4500-8000	Good upper RPM HP. Radical street. Closed course competition. Rough idle. Compression 12.0 minimum.	344-0102	—	F-256/3526-2S-02	.020	.020	.444	.449	290	300	256	266	102



MG TC-TD-TF 4 CYL. 1940-55 1250-1466CC

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
—	—	—	—	—	—	—	905-003	—	—	—
—	—	—	—	—	—	—	905-003	—	—	—
—	—	—	—	—	—	—	905-003	—	—	—

MG-MGB 4 CYL. 1957-80 1598-1798CC

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
—	—	99884-8	99967-8	—	—	—	905-004	—	—	—
—	—	99884-8	99967-8	—	—	—	905-004	—	—	—
—	—	99884-8	99967-8	—	—	—	905-004	—	—	—
—	—	99884-8	99967-8	—	—	—	905-004	—	—	—

MG MIDGET-MINI-SPRINT 4 CYL. 1957-84 BMCA 848-1275CC

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

MITSUBISHI 4G63/4G63-T 4 CYL. 1989-99 DOHC 4V 2.0L (ECLIPSE-TALON-GALLANT)

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER FOLLOWER														
PowerMax	800-6500	Performance upgrade for stock engine. Daily driver with street performance. Aftermarket intake, exhaust, ECM, and valve springs recommended. Good idle.	435-0010	—	MIT-248-2SR-10	Hyd	Hyd	.404	.384	248	240	208	200	110
	1200-6800	Street/strip performance. Nitrous. Good idle. Aftermarket intake, exhaust, and ECM recommended. Upgraded valve springs and retainers required. Valve guide must be shortened.	435-0012	—	MIT-256-2SR-10	Hyd	Hyd	.424	.404	256	248	216	208	110
	1500-7500	Serious street/strip performance. Fair idle. For use with aftermarket turbo systems with upgraded intercooler. High-flow intake and exhaust required. Must use upgraded ECM, valve springs, and retainers. Valve guides must be shortened.	435-0014	—	MIT-264-2SR-10	Hyd	Hyd	.443	.424	264	256	224	216	110

MITSUBISHI 4G63BT EVO 8 4CYL. 2003-05 DOHC 4V 2.0L

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
HYDRAULIC ROLLER FOLLOWER														
PowerMax	800-6500	Daily driver with performance for stock engines. Good idle. Aftermarket intake, exhaust, ECM, and new valve springs/retainers recommended.	440-0010	—	MIT-248-2SR-10	Hyd	Hyd	.404	.384	248	240	208	200	110
	1200-6800	Street/strip performance for N/A and nitrous equipped engines. Good idle. Aftermarket intake, exhaust, and ECM recommended. Requires upgraded valve springs and retainers. Must shorten valve guides.	440-0012	—	MIT-256-SR-10	Hyd	Hyd	.424	.404	256	248	216	208	110
	1500-7500	Serious street/strip performance. Fair idle. For use with aftermarket turbo systems with upgraded intercooler. High-flow intake and exhaust required. Must use upgraded ECM, valve springs, and retainers. Must shorten valve guides.	440-0014	—	MIT-264-2SR-10	Hyd	Hyd	.444	.424	264	256	224	216	110

TOYOTA 20R-22R-22RE 4 CYL. 1974-89 2189-2666CC

SERIES	RPM RANGE	CAM APPLICATIONS	CAM	CAM W/ LIFTERS	GRIND # / SERIES	VALVE SETTING INT.	VALVE SETTING EXH.	VALVE LIFT INT. W/ ROCKER	VALVE LIFT EXH. W/ ROCKER	ADVERTISED DURATION INT.	ADVERTISED DURATION EXH.	DURATION @ .050" INT.	DURATION @ .050" EXH.	LOBE SEP.
MECHANICAL FLAT TAPPET														
PowerMax	1400-4800	Daily driver with performance for stock engines. Good idle. Aftermarket intake, exhaust, and new valve springs/retainers recommended. Compression 8.75 to 10.5.	704-0010	—	T20-262-2-10	.008	.010	.416	.430	262	272	214	224	110
	1800-5200	Daily driver with street and off-road performance. Good idle. Mild aftermarket intercooled turbo systems. Aftermarket intake, exhaust and ECM required. Compression 9.5 to 10.75.	704-0012	—	T20-272-2-10	.008	.010	.430	.444	272	282	224	234	110
	2200-5600	Good mid to upper RPM torque and HP. Serious street and closed course performance. Compression 9.5 to 11.5.	704-0014	—	T20-282-2-10	.008	.010	.444	.458	282	292	234	244	110
	2600-6000	Good mid to upper RPM torque and HP. Serious street/strip and closed course performance. Aftermarket intake, exhaust, and new valve springs/retainers recommended. Compression 10.5 to 12.0.	704-0016	—	T20-292-2-10	.008	.010	.458	.472	292	302	244	254	110
	3000-6400	Good upper RPM HP. Radical street and closed course performance. For lightweight vehicles with a fully prepared engine. Compression 11.0 to 12.5.	704-0100	—	T20-302-10	.008	.010	.472	.472	302	302	254	254	110

MITSUBISHI 4G63/4G63-T 4 CYL. 1989-99 DOHC 4V 2.0L (ECLIPSE-TALON-GALLANT)

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

MITSUBISHI 4G63BT EVO 8 4CYL. 2003-05 DOHC 4V 2.0L

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

TOYOTA 20R-22R-22RE 4 CYL. 1974-89 2189-2666CC

LIFTERS	VALVE SPRING & RETAINER KIT	VALVE SPRINGS	RETAINERS	VALVE LOCKS	TIMING SET	ROCKER ARMS	PUSHRODS	VALVE SEALS	GUIDE PLATES	DIST. GEAR
MECHANICAL FLAT TAPPET										
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

CAM BUTTON SPACERS

Engines without a cam thrust plate must use a cam button spacer when using a roller lifter camshaft to limit lateral movement. Our unique needle bearing buttons reduce friction and deliver extra "free" horsepower. Crane Solid Aluminum Spacer are priced for the budget minded racer. Machining of the cam sprocket may be required for proper installation.

SOLID ALUMINUM BUTTON APPLICATION	PART NO.
Chevrolet 90° V6 1978-86, 200-262	**99001-1**
Chevrolet V8 1955-95, 262-400	**99001-1**
Chevrolet V8 1965-95, 396-454	**99005-1**
Chrysler/Dodge/Plymouth V8 "B" 1970-78 w/ 3 Bolt Gear	**99163-1**
Chrysler/Dodge/Plymouth V8 1966-71, 426 Hemi w/ 3 Bolt Gear	**99163-1**
NEEDLE BEARING BUTTON APPLICATION	**PART NO.**
Chevrolet 90° V6 1978-86, 200-262	**99164-1**
Chevrolet V8 1955-95, 262-400	**99164-1**
Chevrolet V8 1965-95, 396-454	**99165-1**

#99001-1

#99164-1

CAMSHAFT BOLT AND LOCKING PLATE KIT

A must-have to prevent costly valve train damage. Simply install on cam gear, torque bolts properly, and bend locking tabs over to secure bolts from loosening.

APPLICATION	PART NO.
Chevrolet 90° V6 1978-86, 200-262 (Except Factory Hyd. Roller Engines)	**99168-1**
Chevrolet V8 1955-95, 262-400 (Except Factory Hyd. Roller Engines)	**99168-1**
Chevrolet V8 1958-65, 348-409-427 (Z-11)	**99168-1**
Chevrolet V8 1965-95, 396-402-427-454-502	**99168-1**

#99168-1

CAM FOLLOWERS

Crane Cams® Followers are designed and engineered for maximum performance and reliability. They are metallurgically engineered to be compatible with the cam lobe composition of Crane camshafts. We highly recommend the use of a Driven-brand Assembly Lube and Crane Cams Super Lube Break-In Concentrate (see Lubricants on Page 234) when installing these followers.

APPLICATION	PART NO.
Ford SOHCI4 1974-87, 2300cc (Also 1983-87 2000cc)	**19800-8**

#19800-8

CAM DEGREE BUSHINGS

Adjusting camshaft phasing with these bushings is one of the ways to vary the camshaft timing. These bushings are either color coded or number stamped with the degree of offset for easy identification. Included in each package are bushings in 0-2-4-6-8 degree increments. Machining of the cam sprocket may be required for proper installation.

APPLICATION	PART NO.
Chevrolet 90° V6 1978-86, 200-262	**11991-1***
Chevrolet V8 1955-95, 262-400	**11991-1***
Chevrolet V8 1965-95, 396-454	**11991-1***
Chrysler/Dodge/Plymouth V8 "B" 1958-78, 350-440	**11991-1***
Chrysler/Dodge/Plymouth V8 1966-71, 426 Hemi	**11991-1***

*This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

#11991-1

CAM DEGREE "TUNE-A-CAM" KIT

Everything you need to quickly, easily and accurately degree-in your camshaft for maximum performance.

DESCRIPTION	PART NO.
Universal Tune-A-Cam Kit	**99030-1**

KIT INCLUDES THE FOLLOWING:

- Precision Dial Indicator w/ Custom Design Base to Mount Cylinder Head
- Piston Stop
- Pointer
- (4) Checking Springs
- Degree Wheel
- Instructions
- Hard Mold Plastic Carrying Case

#99030-1

FUEL PUMP PUSHRODS

Crane's heat treated tubular steel fuel pump pushrods for Chevrolet small-block and big-block V8 engines are centerless ground for concentricity. They are also much lighter than solid steel O.E. type pushrods, while maintaining the strength and stiffness required for reliability in severe usage applications.

Part number 11986-1 is for hydraulic and mechanical "cast" type camshafts. Both ends of this pushrod are steel tipped for best wear characteristics for quality stock engine rebuilds.

#11985-1

Part number 11985-1 is specifically for use with 8620 and 9310 steel billet roller and slot hard-faced steel camshafts. One end of the pushrod has a bronze tip to compatibly bear against the fuel pump eccentric on the camshaft, eliminating the wear problems that occur when using a standard fuel pump pushrod (especially in endurance type applications).

#11986-1

DESCRIPTION	CAST PART NO.	8620 STEEL PART NO.
Chevrolet V8 1955-95, 262-400	**11986-1**	**11985-1**
Chevrolet V8 1958-65, 348-409	**11986-1**	**11985-1**
Chevrolet V-8 1965-90, 396-454	**11986-1**	**11985-1**

DISTRIBUTOR-MAGNETO DRIVE GEARS

COPPER ALLOY (ALUMINUM/BRONZE) DISTRIBUTOR GEARS

These drive gears are made from high silicon copper alloy (aluminum/bronze) and precision machined. They are required when using an 8620 steel billet cam.

Certain special Crane Cams Roller Camshafts are manufactured using an iron gear pressed onto the steel billet cam. These special cams DO NOT REQUIRE an aluminum bronze distributor drive gear. Refer to the specific camshaft application section of this catalog. (Iron gear camshaft part numbers use the "IG" suffix at the end of their grind numbers.)

Note: The "shaft diameter" dimension referred to is the portion of the distributor shaft, or intermediate shaft, on which the gear registers. It may be necessary to remove the original gear to measure the shaft diameter correctly.

#11990-1

#36989-1

CHEVROLET APPLICATIONS	.427" SHAFT DIA.	.491" SHAFT DIA.	.500" SHAFT DIA.
I4 1962-71, 153	—	20990-1⚠	—
I6 1962-84, 194-250, 292	—	20990-1⚠	—
90° V6 1978-86, 200-262	—	11990-1[1]⚠	11979-1[2]⚠
90° V6 1985-91, 262 (4.3L)T	11988-1[3]⚠	—	—
V8 1955-87, 262-400	—	11990-1[1]⚠	11979-1[2]⚠
V8 1985-99, 305-350	11988-1[3]⚠	—	—
V8 1958-65, 348-409-427 (Z-11)	—	11990-1⚠	—
V8 1965-90, 396-502	—	11990-1[1]⚠	11979-1[2]⚠
V8 1991-00, 454-502	—	11988-1[3]⚠	—
CHRYSLER APPLICATIONS	**.484" SHAFT DIA.**		
V8 1956-58, 354-392, Donovan 417	69990-1⚠	—	—
Chrysler/Dodge/Plymouth V8 1964-2000, "LA" 273-360, Magnum 5.2L-5.9L	69990-1⚠	—	—
Chrysler/Dodge/Plymouth V8 1958-78, "B" 350-440	66990-1⚠	—	—
Chrysler/Dodge/Plymouth V8 1966-71, 426 HEMI, Keith Black 426, JP-1, BA 426, Rodeck TFX-92	66990-1⚠	—	—
FORD APPLICATIONS	**.467" SHAFT DIA.**	**.500" SHAFT DIA.**	**.531" SHAFT DIA.**
V8 1962-95, 221-302, Boss 302	36990-1⚠	36989-1⚠	44990-1⚠
V8 1982-95, 302 H.O. (5.0L)	36990-1⚠	36989-1⚠	44990-1⚠
V8 1969-2000, 351W, 351SVO	36990-1⚠	36989-1⚠	44990-1⚠
V8 1970-82, Boss 351-351C-351M·400	—	52990-1⚠	52989-1⚠
V8 1958-76,"FE" 332-428	34990-1⚠	52990-1⚠	52989-1⚠
V8 1968-97, 370-429-460 (7.5L)	—	52990-1⚠	52989-1⚠
OLDSMOBILE APPLICATIONS	**.491" SHAFT DIA.**		
Oldsmobile	80990-1⚠	—	—
PONTIAC APPLICATIONS	**.489" SHAFT DIA.**	**.491" Shaft Dia.**	
I4 1977-89, 151 and1.5L S.D.	—	20990-1⚠	—
V8 1955-81,165-455	28990-1⚠	—	—

[1] Also fits Crane and Accel 34000, 35000 and 41000 series.
[2] Also fits Crane, Accel and MSD with standard configuration gear.
[3] GM HEI distributors with remote coil.

COATED STEEL DISTRIBUTOR GEARS

Crane Cams now offers precision machined, specially coated and processed steel distributor gears for popular engines using either cast flat faced lifter or steel roller camshafts. Since roller lifter cams are made from either induction hardened steel or carburized steel, neither of these materials are compatible with the normal stock distributor gears. In the past, "bronze" distributor gears were used. For street applications these gears can wear at a high rate and may have to be replaced on a regular basis.

By using modern heat treating and manufacturing processes, Crane Cams has developed a series of steel distributor gears that are compatible with standard cast cams and induction hardened and carburized steel roller cams. Crane Cams now makes it possible to use a steel distributor gear that provides OEM-style life-span, eliminating the need to frequently replace bronze alloy gears. These Crane steel gears are available for most popular engines for both stock and aftermarket distributors.

The use of these gears on camshafts that have been previously run with other types or materials of gears, or the unnecessary use of high volume/high pressure oil pumps, can be severely detrimental to the life of the camshaft gear.

Note: The "Shaft Diameter" dimension referred to is the portion of the distributor shaft, or intermediate shaft, on which the gear registers. It may be necessary to remove the original gear to measure the shaft diameter correctly.

#11950-1

CHEVROLET APPLICATIONS	.491" SHAFT DIA.	.500" SHAFT DIA.	
90° V6 1978-86, 200-262	11951-1[1]	11950-1[2]	—
V8 1955-87, 262-400	11951-1[1]	11950-1[2]	—
V8 1965-90, 396-502	11951-1[1]	11950-1[2]	—
CHRYSLER APPLICATIONS	**.484" SHAFT DIA.**		
V8 1956-58, 354-392, Donovan 417	69970-1	—	—
Chrysler/Dodge/Plymouth V8 1964-2000, "LA" 273-360, Magnum 5.2L-5.9L	69970-1	—	—
Chrysler/Dodge/Plymouth V8 1958-78, "B" 350-440	66970-1	—	—
Chrysler/Dodge/Plymouth V8 1966-71, 426 HEMI, Keith Black 426, JP-1, BA 426, Rodeck TFX-92	66970-1	—	—
FORD APPLICATIONS	**.467" SHAFT DIA.**	**.500" SHAFT DIA.**	**.531" SHAFT DIA.**
V8 1962-95, 221-302, Boss 302	36970-1	36971-1	44970-1
V8 1982-95, 302 H.O. (5.0L)	36970-1	36971-1	44970-1
V8 1969-2000, 351W, 351SVO	36970-1	36971-1	44970-1
V8 1970-82, Boss 351-351C-351M·400	—	52970-1	52971-1
V8 1958-76,"FE" 332-428	34970-1	52970-1	52971-1
V8 1968-97, 370-429-460 (7.5L)	—	52970-1	52971-1

[1] Also fits Crane and Accel 34000, 35000 and 41000 series.
[2] Standard configuration gear

#11951-1

#36970-1

#34970-1

#44970-1

HYDRAULIC & MECHANICAL FLAT TAPPET LIFTERS

"ANTI-PUMP UP" PERFORMANCE HYDRAULIC LIFTERS

Hydraulic lifters compensate for changes occurring within the valve train. Crane Cams precision made "Anti-Pump Up" lifters allow the engine to reach its maximum RPM potential (with the correct cam and components). The "bleed rate" of this lifter is maintained by micro tolerances that prevent pump-up and limiting of full RPM potential. After proper preload has been set, hydraulic lifters seldom need maintenance. ***Maximum RPM Potential: 6,500 to 7,000 RPM.***

#99277

HI INTENSITY HYDRAULIC LIFTERS

Crane Hi Intensity Hydraulic Lifters produce a "variable duration effect." At lower RPM this can reduce running duration by 6° to 10° and decrease valve lift by .020" to .030". Hi Intensity Lifters work best with a cam that requires more compression ratio than the engine actually has. They restore vacuum, cylinder pressure and bottom end performance. As RPM increases, these lifters act more like a normal hydraulic lifter. At 2500 to 3000 RPM they will transmit the full duration and lift of the cam.

Use only if the engine's compression ratio is below the minimum recommended on the application page (pages 10-161) for the cam you have chosen. Hi Intensity Lifters can cause "low speed detonation" if compression is too high. Slightly more noisy than standard lifters (NOT as noisy as a mechanical cam) and can trigger knock sensors. ***Maximum RPM Potential: 6,500 to 7,000 RPM.***

#99381

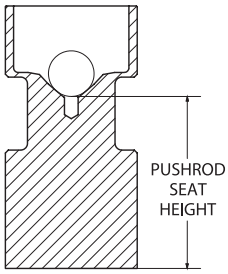
MECHANICAL (SOLID) LIFTERS

Mechanical "solid" lifters should be used in applications when hydraulic cams would surpass their maximum RPM potential. Mechanical lifters have no hydraulic mechanism to pump-up. They are also noisier than hydraulics. The engine must have an adjustable valve train system. Valve lash must be set, periodically checked, and maintained. (Can NOT be used on a hydraulic design cam.) EDM Oiling versions available. ***Theoretically, with the correct cam and engine components, a mechanical lifter cam has an RPM potential of 8000 to 8500 RPM.***

#99257

PUSHROD SEAT HEIGHTS

The pushrod seat heights listed on the following page are measured from the bottom face of the lifter to the bottom of the pushrod seat. The hydraulic lifters are measured without any preload.



AMC/JEEP APPLICATIONS	LIFTER BODY DIA.	PUSHROD SEAT HEIGHT	"ANTI-PUMP-UP" HYD. LIFTERS PART NO.	PUSHROD SEAT HEIGHT	HI INTENSITY HYD. LIFTERS PART NO.	PUSHROD SEAT HEIGHT	MECHANICAL LIFTERS PART NO.	MECHANICAL LIFTERS W/ EDM PART NO.
Jeep 1964-05 I6, 199-258	.904"	1.580"	**99278-12**	—	—	1.485"	**99260-12**	—
Jeep 1966-91 V8, 290-401	.904"	1.580"	**99278-16**	1.515"	**99378-16***	1.485"	**99260-16**	—
BUICK APPLICATIONS								
1962-86 V6, 196-252	.842"	1.755"	**99284-12**	1.655"	**99384-12***	1.560"	**99250-12**	
1964-80 V8, 300-350	.842"	1.755"	**99284-16**	1.655"	**99384-16***	1.560"	**99250-16**	**99350-16**
1967-76 V8, 400-455	.842"	1.755"	**99284-16**	1.655"	**99384-16***	1.560"	**99250-16**	**99350-16**

*This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

CHART CONTINUES ON NEXT PAGE →

CADILLAC APPLICATIONS	LIFTER BODY DIA.	PUSHROD SEAT HEIGHT	"ANTI-PUMP-UP" HYD. LIFTERS PART NO.	PUSHROD SEAT HEIGHT	HI INTENSITY HYD. LIFTERS PART NO.	PUSHROD SEAT HEIGHT	MECHANICAL LIFTERS PART NO.	MECHANICAL LIFTERS W/ EDM PART NO.
1968-81 V8, 368-500	.842"	1.755"	**99284-16**	1.655"	**99384-16***	1.560"	**99250-16**	**99350-16**
CHEVROLET APPLICATIONS								
Chevrolet 1962-71 I4, 153	.842"	1.690"	**99277-8**	—	—	1.560"	**99250-8**	—
Chevrolet 1962-84 I6, 194-250, 292	.842"	1.690"	**99277-12**	—	—	1.560"	**99250-12**	—
Chevrolet 1980-94 60D V6, 173 (2.8L)-189 (3.1L)	.842"	1.745"	**99286-12**	—	—	1.560"	**99250-12**	—
Chevrolet 1978-86 90D V6, 200-262	.842"	1.690"	**99277-12**	—	—	1.560"	**99250-12**	—
Chevrolet 1955-95 V8, 262-400	.842"	1.690"	**99277-16**	1.620"	**99377-16**[1]	1.560"	**99250-16**	**99350-16**
Chevrolet 1958-65 V8, 348-409-427 (Z11)	.842"	1.690"	**99277-16**	1.620"	**99377-16**[1]	1.560"	**99250-16**	**99350-16**
Chevrolet 1965-90 V8, 396-454, 502	.842"	1.690"	**99277-16**	1.620"	**99377-16**[1]	1.560"	**99250-16**	**99350-16**
CHRYSLER APPLICATIONS								
Chrysler-Dodge-Plymouth 1964-87 "LA" V8, 273-360	.904"	1.580"	**99278-16**	1.515"	**99378-16**[1]	1.485"	**99260-16**	**99359-16**
Chrysler-Dodge-Plymouth 1958-67 "B" V8, 350-440	.904"	—	—	—	—	1.300"	**99259-16**	**99359-16**
Chrysler-Dodge-Plymouth 1968-78 "B" V8, 383-440	.904"	1.580"	**99278-16**	1.515"	**99378-16***	1.300"	**99259-16**	**99359-16**
Chrysler-Dodge-Plymouth 1964-71 V8, Hemi 426	.904"	1.580"	**99278-16**	1.515"	**99378-16***	1.300"	**99259-16**	**99359-16**
FORD APPLICATIONS								
1960-83 I6, 144-250	.874"	1.575"	**99281-12**	—	—	—	—	—
1965-96 I6, 240-300	.874"	1.710"	**99280-12**	—	—	1.635"	**99257-12**	—
1962-95 V8, 221-302, 351W	.874"	1.710"	**99280-16**	1.635"	**99380-16***	1.635"	**99257-16**	**99357-16**
1969-82 V8, Boss 302, Boss 351, 351C, 351M-400	.874"	1.710"	**99280-16**	1.635"	**99380-16***	1.635"	**99257-16**	**99357-16**
1958-76 "FE" V8, 332-428	.874"	1.575"	**99281-16**	1.500"	**99381-16***	.150"	**99256-16**[2]	—
1968-97 V8, 370-460	.874"	1.710"	**99280-16**	1.635"	**99380-16***	1.635"	**99257-16**	**99357-16**
OLDSMOBILE APPLICATIONS								
1964-84 V8, 260-455	.842"	1.755"	**99284-16**	1.655"	**99384-16***	1.560"	**99250-16**	**99350-16**
PONTIAC APPLICATIONS								
1977-89 I4, 151(2.5L)	.842"	1.755"	**99284-8**	—	—	1.560"	**99250-8**	—
1955-81 V-8, 287-455 (Except 1977-81 265 & 301)	.842"	1.760"	**99282-16**	1.680"	**99382-16***	1.570"	**99255-16**	—
1977-81 V-8, 265, 301	.842"	1.690"	**99277-16**	1.620"	**99377-16***	1.560"	**99250-16**	**99350-16**
MISCELLANEOUS APPLICATIONS								
Rover 1968-00 V8, 215 (3.5L), 240 (3.9L), 4.2L	.842"	1.755"	**99284-16**	1.655"	**99384-16***	1.560"	**99250-16**	**99350-16**

[1] 50-State legal C.A.R.B. E.O. D-225-272.
[2] Shell type.
*This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

LIFTERS

HYDRAULIC ROLLER LIFTERS

CRANE PRO SERIES HYDRAULIC ROLLER LIFTERS

Crane Classic Hydraulic Roller Lifters are offered in two basic designs: those for use with standard factory alignment bars (on engines originally equipped with hydraulic roller lifters); and vertical locking bar drop-in lifters (designed to retrofit engines not factory equipped with hydraulic roller lifters).

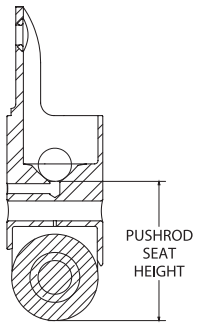
The Chevrolet standard alignment bar lifters are available in a normal dimensioned version, intended for use with standard lobe lift and standard base circle diameter cams. When lobe lifts increase and base circle diameters decrease, our exclusive long body design lifters must be used to prevent the lifters from dropping out of the factory alignment bars when on the base circle of the camshaft. This would allow the lifters to rotate, causing severe engine damage. As these lifters are for engines originally equipped with hydraulic roller lifters, special length pushrods ARE NOT USUALLY required.

Our retrofit vertical locking bar lifters are available for non-hydraulic roller equipped engines. They can also be used in many applications to replace factory hydraulic roller lifters and alignment mechanisms. No machining is normally required for the drop-in installation of these lifters, however with differences in block castings and camshaft base circle diameters, care must be taken to ensure that neither the locking bar nor its attaching rivets contact the block casting throughout their normal cycles. If there is any interference, the block can usually be ground to provide the necessary clearance. This should be checked prior to final engine assembly. When used in retrofit applications, special length pushrods ARE required.

The retrofit vertical locking bar lifters are machined from 8620 steel billet, heat treated, and assembled at our own facilities. Precision fit plunger assemblies are used to provide proper bleed-down rates, permitting high RPM use in properly set-up engines. The additional inherent strength of the 8620 material also maintains greater stability in the lifter body, permitting more consistent operation in very high spring pressure and high RPM applications, by keeping the plunger to body clearance consistent throughout the operation range. Retrofit lifters also utilize our latest Monel pin and retaining flange assembly to attach the guidebar, providing superior long term durability.

#11532-2


#69532-2



PUSHROD SEAT HEIGHTS

The pushrod seat heights listed on the following pages are measured from the bottom face of the lifter to the bottom of the pushrod seat. The hydraulic lifters are measured without any pre-load. Check or compare your lifters to these dimensions by placing a 5/16" diameter ball in the pushrod seat and measuring from the bottom of the lifter to the top of the ball. Then subtract the 5/16" diameter of the ball, obtaining the seat height.

AMC/JEEP APPLICATIONS	LIFTER BODY DIA.	FOLLOWER WHEEL DIA.	PUSHROD SEAT HEIGHT	O.E. REPLACEMENT PART NO.	CRANE PRO SERIES PART NO.
1966-91 V8, 290-401					
Vertical locking bar design. No machining required. Requires special length push-rods. See engine application pages for information.	.904"	.700"	2.320"	—	**86532-16**⚠
CHEVROLET APPLICATIONS					
1955-87 V8, 262-400					
Vertical locking bar design to retrofit pre-hydraulic roller blocks. No machining required. Requires special length pushrods 11628-16.	.842"	.700"	2.320"	—	**11532-16**⚠
1987-99 V8, 305, 350 & LS1 5.7L					
O.E. replacement for 1987-99 blocks originally equipped with hydraulic roller cam and lifters. For use with standard GM alignment bars.	.842"	.700"	2.340"	**10530-16**⚠	—
Long body design for 1987-99 blocks originally equipped with hydraulic roller cam and lifters. A necessity when camshafts have greater than stock lobe lift or reduced base circle diameter. For use with standard GM alignment bars.	.842"	.700"	2.320"	—	**10535-16**⚠

CHART CONTINUES ON NEXT PAGE →

CRANE PRO SERIES HYDRAULIC ROLLER LIFTERS

CHEVROLET APPLICATIONS (CONT'D.)	LIFTER BODY DIA.	FOLLOWER WHEEL DIA.	PUSHROD SEAT HEIGHT	O.E. REPLACEMENT PART NO.	CRANE PRO SERIES PART NO.
2000-Later V8, 5.7L LS1/LS6 & Vortec 4800, 5300, 6000					
O.E. Replacement for 2000 and later blocks originally equipped with hydraulic roller cam and lifters. For use with standard GM alignment bars.	.842"	.700"	2.340"	**144530-16**⚠	—
Long body design for 2000-Up blocks originally equipped with hydraulic roller cam & lifters. A necessity when camshafts have greater than stock lobe lift or reduced base circle diameter. For use with standard GM alignment bars.	.842"	.700"	2.320"	—	**144536-16**⚠
Vertical locking bar, long travel design. No machining required.	.842"	.700"	2.320"	—	**144532-16**⚠
Vertical locking bar, long travel design for Warhawk blocks. No machining required.	.842"	.700"	2.320"	—	**144533-16**⚠
1958-65 V8, 348-427 (Z11)					
Vertical locking bar design. No machining required. Requires special length pushrods. See engine application pages for information.	.842"	.700"	2.320"	—	**11532-16**⚠
1965-95 V8, 396-502					
Vertical locking bar design to retrofit pre-hydraulic roller blocks. No machining required. Requires special length pushrods 13628-16 for standard deck block or 13629-16 for +.400" tall deck block.	.842"	.700"	2.320"	—	**13532-16**⚠
1996-00 V8, 454-502 Gen VI					
Long body design for 96-00 blocks originally equipped with hydraulic roller cam and lifters. A necessity when camshafts have greater than stock lobe lift or reduced base circle diameter. For use with standard GM alignment bars.	.842"	.700"	2.320"	—	**26535-16**⚠
2001-08 V8, 8.1L (8100)					
Long body design. A necessity when camshafts have greater than stock lobe lift or reduced base circle diameter. For use with standard GM alignment bars.	.842"	.700"	2.320"	—	**26535-16**⚠
CHRYSLER/DODGE/PLYMOUTH APPLICATIONS					
1951-58 V8, 301-392					
Vertical locking bar design. No machining required. Requires special length push-rods. See engine application pages for information.	.904"	.700"	2.320"	—	**68532-16**[a]⚠
1964-87 "LA" V8, 273-360					
Vertical locking bar design. Machining not normally required. However, some 340-360 blocks may require modification for guidebar clearance, while early 273 and some aftermarket cylinder heads may require modification for pushrod clearance. Requires special length pushrods. See engine application pages for information.	.904"	.700"	2.320"	—	**69532-16**[a]⚠
1986-91 "LA" V8, 5.2-5.9L & 1992-02 Magnum 5.2-5.9L					
O.E. replacement for 1986-02 blocks originally equipped with hydraulic roller cam and lifters. For use with standard Chrysler alignment bars.	.904"	.700"	2.355"	**70530-16**[a]⚠	—
1958-78 "B" V8, 350-440					
Vertical locking bar design. No machining required. Requires special length push-rods. See engine application pages for information.	.904"	.700"	2.320"	—	**68532-16**[a]⚠
1964-71, Hemi 426					
Vertical locking bar design. No machining required. However, due to the increased pushrod seat height of the Crane retrofit hydraulic roller lifters, the cylinder heads and possibly the cylinder block will have to be modified for pushrod clearance. Requires special length pushrods. See engine application pages for information.	.904"	.700"	2.320"	—	**68532-16**[a]⚠

CHART CONTINUES ON NEXT PAGE →

TECH NOTES:

*To order spares, you may order any of these lifters in pairs by removing the -16 from the set part number and replacing it with -2. For example, a 11532-16 set will become a 11532-2 when ordering one pair.

LIFTERS

CRANE CLASSIC HYDRAULIC ROLLER LIFTERS

FORD APPLICATIONS	LIFTER BODY DIA.	FOLLOWER WHEEL DIA.	PUSHROD SEAT HEIGHT	O.E. REPLACEMENT PART NO.	CRANE PRO SERIES PART NO.
1962-87 V8, 221-302, Boss 302 and 1969-93, 351W					
Vertical locking bar design to retrofit pre-hydraulic roller blocks. No machining required. Requires cylinder head removal for installation on 221 through 302 and 302 H.O. applications. Requires special length pushrods. See engine application pages for information.	.874"	.700"	2.320"	—	**36532-16**⚠
1985-00 V8, 302, 302 H.O., 5.0L and 1994-97, 351W					
O.E. replacement for blocks originally equipped with hydraulic roller cam and lifters. For use with standard Ford alignment bars.	.874"	.700"	2.320"	**36530-16**⚠	—
1970-82 V8, 351-400 (Boss, C, M)					
Vertical locking bar design. No machining required. Requires special length push-rods. See engine application pages for information.	.874"	.700"	2.320"	—	**36532-16**⚠
1963-76 V8, 352-428					
Vertical locking bar design. No machining required for installation. Requires special length pushrods. See engine application pages for information.	.874"	.700"	2.320"	—	**35532-16**⚠
1968-97 V8, 370-460					
Vertical locking bar design. No machining required. Requires special length pushrods. See engine application pages for information.	.874"	.700"	2.320"	—	**35532-16**⚠
1969-70 V8, Boss 429 Hemi					
Vertical locking bar design. No machining required. Requires special length push-rods. See engine application pages for information.	.874"	.700"	2.320"	—	**30532-16**⚠
OLDSMOBILE APPLICATIONS					
1964-84, 260-455					
Vertical locking bar design for .842"diameter lifter bores. No machining required. Requires special length pushrods. See engine application pages for information.	.842"	.700"	2.320"	—	**28532-16**⚠
PONTIAC APPLICATIONS					
1955-81 V8, 287-455					
Vertical locking bar design. No machining required. Not for use in 265 (4.3L) or 301 (4.9L) engines. Requires special length pushrods. See engine application pages for information.	.842"	.700"	2.320"	—	**28532-16**⚠

TECH NOTES:

*To order spares, you may order any of these lifters in pairs by removing the -16 from the set part number and replacing it with -2. For example, a 11532-16 set will become a 11532-2 when ordering one pair.

MECHANICAL ROLLER LIFTERS

Crane roller lifters are the standard by which all others are judged. From our first horizontal locking bar version, with a patented roller shield body, to our latest Ultra-Pro Series design, Crane Cams has brought innovation and proven reliability to this critical component.

Crane Classic Mechanical Roller Lifters are suitable for virtually all performance applications. Both the horizontal and vertical locking bar versions are used throughout motorsports today. Our Ultra-Pro Series Lifters feature maximized lifter bore contact surfaces for less wear, weight removed from non-critical areas, increased body stiffness and premium materials chosen wherever necessary. A DLC-bushed option of the Ultra-Pro Lifters is also available for reduced friction, increased wear resistance and superior strength.

For maximum reliability, pressure-fed oil is routed to the roller wheel and bearings on engines with this Crane-pioneered oiling system design. Another Crane innovation is the use of bearing focused oiling. This utilizes two passages in the lifter body adjacent to the roller wheel, conducting the oil that is pressed out from between the roller and the camshaft lobe to the roller bearings. There are no small passages that can clog, and no engine oil pressure is sacrificed to provide this lubrication and cooling to the needle bearings. Bearing, roller, and axle lives are therefore extended by the benefits of a continuous oil flow over these components.

Features and benefits of the Ultra-Pro Series and Ultra-Pro DLC Lifters include: maximized lifter bore contact surfaces for less wear, weight removed from non-critical areas, increased body stiffness, and premium materials such as carburized 8620 steel bodies and upgraded materials and metal processing for the roller wheels, needle bearings, and axles. A guidebar attachment system incorporates a retaining button in conjunction with an aerospace quality Monel pin to provide superior clamping forces and resistance to wear. Extreme Spintron and track testing have confirmed this configuration to be superior to anything else on the market today.

All machining and assembly is performed at our own facilities, ensuring absolute accuracy and total quality control. The spring-loaded horizontal locking bar lifters have the unique feature of permitting cam changes without intake manifold removal (providing a rev-kit is not used). Loosening the rocker arms and removing the pushrods allows the springs to pick the lifters up away from the camshaft. The cam can then be removed and replaced in minimal time. This convenience is especially helpful during dyno and on-track testing sessions.

TECH NOTES:

We do not advise the use of oil restrictors with our roller lifters. Crane roller lifters are designed for use with normal oiling systems. The needle bearings within are dependent on oil flow to provide lubrication and transfer of the heat generated by today's high valve spring pressures and increased rocker arm ratios. Particularly hard on these components are prolonged periods of idling when oil flow is at a minimum but spring pressures are still high.

Whenever possible, standard pushrod seat height is maintained from the bottom of the wheel so that normal length pushrods are used. In consideration of special geometry applications, the seat may be higher or lower than standard for best fitment. These instances are noted in the application description where required. The pushrod socket radius is usually stock, and any deviations are also noted in the application description.

Block machining is not normally required for the installation of these lifters (other than the lifter bore diameter options), however with differences in block castings and camshaft base circle diameters, care must be taken to ensure that the lifter, locking bar, and locking bar attaching rivets (where applicable), do not encounter any bind, or unwanted contact, throughout their normal cycles. If there is any interference, the block can usually be ground to provide the necessary clearance. This should be checked prior to final engine assembly.

SELECTING THE RIGHT MECHANICAL ROLLER LIFTERS

You might be wondering just which series of lifters is right for your application. Listed below are some guidelines for making the correct choice and getting the best performance for your dollar.

Crane Classic Mechanical Roller Lifters were developed when camshaft lobes were not nearly as violent as today. They are ideal for street rollers, many bracket-race type applications and other racing uses where cam profiles aren't as aggressive. Made of carburized (heat-treated) 8620 alloy steel, these rollers are capable of handling up to 240 lbs. of valve spring seat pressure in bracket race applications and up to 220 lbs. of seat pressure in endurance applications – providing the cam lobe profile is not extremely violent. Open pressures exceeding 600 lbs. are not recommended for these lifters. Crane Classic Lifters feature high-quality wheels and axles that "look alike" lifters do not have. These roller lifters feature all the quality and durability you expect from a Crane Cams product, yet they are very economically priced.

Crane Ultra-Pro Roller Lifters are the ultimate in state-of-the-art, drop-in design premium quality roller lifters. Empirical design and development techniques have been used to eliminate any distortion effects of residual stresses resulting from the heat-treat process. Ultra-Pro Roller Lifters feature maximized strength; especially in the axle support struts. This ensures geometrically perfect tracking of the roller wheel. Additionally, super-premium wheels, axles and bearings made from the finest grades of alloy steels are used to conquer even the most violent cam lobe profiles. These lifters represent the best combination of lightweight, ultimate strength and reliability. They should be used in all drag race applications with spring seat pressures in excess of 300 lbs. and open pressures over 900 lbs. In addition, they should be used in any short track circle or endurance racing application where valve spring seat pressures exceed 250 lbs. and open pressures exceed 700 lbs.

A step-up from the popular solid roller Ultra-Pro™ Lifters, the Ultra-Pro™ DLC Lifters feature a DLC steel bushing for reduced friction, increased wear resistance and superior strength. They are the best available for high-stress racing applications and are designed for high spring pressure environments and use with radical camshaft profiles.

Crane Classic

Ultra-Pro*

*Arrow on link bar points up except for Part #11571-16.

Ultra-Pro DLC-Bushed

A

11515

B

11570, 11573, 11571
11574, 11572, 11575

C

11570D, 11571D

CHOOSING MECHANICAL ROLLER LIFTERS FOR YOUR APPLICATION

These drawings represent the basic styles of Crane mechanical roller lifters for Chevy 262-400 V8 type engines and their various heights. Drawing A is the horizontal locking bar (spring loaded) Crane Classic design. Drawing B represents the Ultra-Pro Series design as required for various lifter bore diameters and heights. Drawing C represents the Ultra-Pro DLC Series with a DLC steel bushing. All Crane solid roller lifters feature two EDM oil holes - one to feed the bearing and one to lube the top of the wheel/cam lobe.

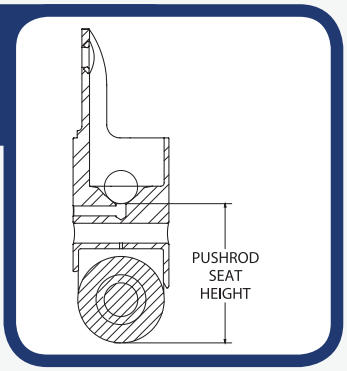
CRANE CLASSIC MECHANICAL ROLLER LIFTERS

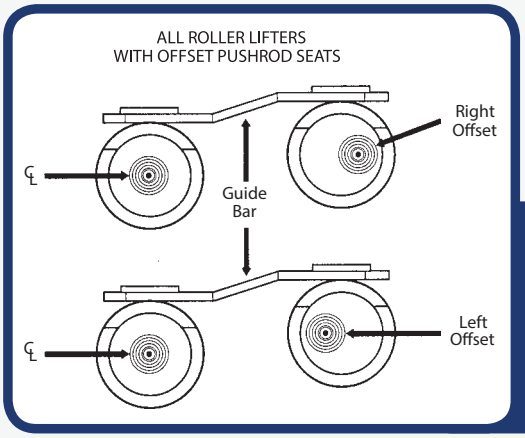
CHEVROLET APPLICATIONS	LIFTER BODY DIA.	FOLLOWER WHEEL DIA.	PUSHROD SEAT HEIGHT	CRANE CLASSIC PART NO.
1955-00 V8, 262-400, GM Bowtie, Donovan, Rodeck (Except LS1 and SB2)				
Horizontal locking bar	.842"	.750"	1.575"	**11515-16**
1988-00 V8, 305-350, LS1 5.7L (Except SB2)				
Long body design for use with standard GM alignment bars in engines originally equipped with hydraulic roller lifters	.842"	.700"	2.310"	**10510-16**
2000-Up V8, 5.7L LS1-LS2, LS3-L92-LS6 & Vortec 4800, 5300, 6000				
Long body design for use with standard GM alignment bars in engines originally equipped with hydraulic roller lifters	.842"	.700"	2.310"	**144511-16**
1965-00 V8, 396-502 (Including Gen V and Gen VI), Donovan, Rodeck 481				
Horizontal locking bar - must use 3/8" diameter pushrods	.842"	.750"	1.575"	**13515-16**
1996-00 V8, 454 (7.4L)-502 (8.2L) Gen VI				
Long body design for use with standard GM alignment bars in engines originally equipped with hydraulic roller lifters	.842"	.700"	2.310"	**16510-16**

When you purchase the perfect cam, you need perfectly matched lifters. Crane Cams offers a large number of our part numbered cams paired up with the matching lifters as a single part numbered set. When locating your camshaft on pages 10-161 of this catalog, part numbered camshafts are listed in the fourth column of the chart on the left hand pages. Simply look at the column labeled "Cam w/ Lifters," to determine if a cam and lifter set part number is available. It's that easy.

PUSHROD SEAT HEIGHTS

The pushrod seat heights listed are measured from the bottom of the follower wheel to the bottom of the pushrod seat.





HOW TO IDENTIFY ROLLER LIFTER OFFSETS

When ordering spare lifters with offset pushrod seat locations, you MUST specify left or right offset. For example, a pair of lifters for set number 13571-16 would be either 13571L-2 (left) or 13571R-2 (right). See drawing to indentify lifter offsets.

ULTRA-PRO MECHANICAL ROLLER LIFTERS

AFTERMARKET BLOCKS/ENGINES	LIFTER BODY DIA.	WHEEL DIA.	SEAT HEIGHT	ULTRA-PRO PART NO.	ULTRA-PRO DLC PART NO.
Arias/Fontana/MBR V8, 8.3L					
Vertical locking bar	.904"	.815"	1.325"	**95542-16**⚠	—
Vertical locking bar with .120" tall pushrod seat location	.904"	.815"	1.455"	**95543-16**⚠	—
Vertical locking bar will accommodate pushrod oiling	.904"	.815"	1.325"	**95550-16**⚠	—
Brad Anderson 426, Rodeck TFX-92, Keith Black Aluminum 426 V-8, JP-1					
Vertical locking bar	.904"	.815"	1.325"	**66542-16**⚠	—
Vertical locking bar with .120" tall pushrod seat location	.904"	.815"	1.455"	**66543-16**⚠	—
Vertical locking bar for spread lifter bore blocks	.904"	.815"	1.325"	**95542-16**⚠	—
Vertical locking bar for spread lifter bore blocks with .120" tall pushrod seat location	.904"	.815"	1.455"	**95543-16**⚠	—
Vertical locking bar for spread lifter bore cylinder blocks, will accommodate pushrod oiling	.904"	.815"	1.325"	**95550-16**⚠	—
Vertical locking bar for 1.000" dia. lifter bores with standard to .200" spread lifter bore spacing	.998"	.920"	1.320"	**66547-16**⚠	—
Vertical locking bar for 1.000" diameter lifter bores with standard to .200" spread lifter bore spacing, .200" tall pushrod seat location, will accommodate pushrod oiling	.998"	.920"	1.515"	**66555-16**⚠	—
Vertical locking bar for 1.062"diameter lifter bores with standard to .200" spread lifter bore spacing, .200"tall pushrod seat location	1.060"	.920"	1.520"	**66549-16**⚠	—
Johnson/Rodeck V8, 481X					
Vertical locking bar for .904" diameter lifter bores with pushrod oiling	.904"	.815"	1.385"	**140550-16**⚠	—
Rodeck V8, 481 (Except 481X)					
Vertical locking bar	.842"	.750"	1.575"	**13570-16**⚠	**13570D-16**⚠
Vertical locking bar with .180" offset left and right intake pushrod seats	.842"	.750"	1.575"	**13571-16**⚠	—
Vertical locking bar for .904" diameter lifter bores, for standard or tall lifter bore cylinder blocks	.904"	.815"	1.595"	**13574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset left and right intake push-rod seats, for standard or tall lifter bore cylinder blocks	.904"	.815"	1.595"	**13575-16**⚠	—
AMC APPLICATIONS					
1966-91 V8, 290-401					
Vertical locking bar with .200" short pushrod seat location	.904"	.815"	1.325"	**66550-16**⚠	—
CHEVROLET APPLICATIONS					
1955-00 V8, 262-400, GM Bowtie, Donovan, Rodeck (Except LS1 and SB2)					
Vertical locking bar for standard or tall lifter bore Bowtie, hydraulic roller, or aftermarket cylinder blocks	.842"	.750"	1.575"	**11570-16**⚠	**11570D-16**⚠
Vertical locking bar for blocks with 55mm or greater, oversize journal camshafts	.842"	.750"	1.575"	**11576-16**⚠	—
Vertical locking bar with .180" offset left and right intake pushrod seats for standard or tall lifter bore Bowtie, hydraulic roller, or aftermarket cylinder blocks	.842"	.750"	1.575"	**11571-16**⚠	**11571D-16**⚠
Vertical locking bar with .180" offset left and right intake pushrod seat for blocks with 55mm or greater, oversize journal camshafts	.842"	.750"	1.575"	**11577-16**⚠	—
Vertical locking bar for .875"diameter lifter bores in standard or tall lifter bore Bowtie, hydraulic roller, or aftermarket cylinder blocks	.874"	.750"	1.575"	**11572-16**⚠	—
Vertical locking bar for .875"diameter lifter bores for standard or tall lifter bore Bowtie, hydraulic roller, or aftermarket cylinder blocks with .180" offset left and right intake pushrod seats	.874"	.750"	1.575"	**11573-16**⚠	—
Vertical locking bar for .904"diameter lifter bores for standard or tall lifter bore Bowtie, hydraulic roller, or aftermarket cylinder blocks	.904"	.815"	1.595"	**11574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores for blocks with 55mm or greater, oversize journal camshafts	.904"	.815"	1.595"	**11578-16**⚠	—
Vertical locking bar for .904"diameter lifter bores with .210"offset left and right intake pushrod seats for standard or tall lifter bore Bowtie, hydraulic roller, or aftermarket cylinder blocks	.904"	.815"	1.595"	**11575-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset left and right intake push-rod seats for blocks with 55mm or greater, oversize journal camshafts	.904"	.815"	1.595"	**11579-16**⚠	—
2000-Up V8, 5.7L LS1-LS2, LS3-L92-LS6 & Vortec 4800, 5300, 6000					
Vertical locking bar, long body design for increased lift and reduced base circle camshafts	.842"	.750"	1.575"	**144570-16**⚠	—
Vertical locking bar, long body design for Warhawk blocks and increased lift and reduced base circle camshafts	.842"	.750"	1.575"	**144572-16**⚠	—

CHART CONTINUES ON NEXT PAGE →

ULTRA-PRO MECHANICAL ROLLER LIFTERS

CHEVROLET APPLICATIONS (CONT'D)	LIFTER BODY DIA.	WHEEL DIA.	SEAT HEIGHT	ULTRA-PRO PART NO.	ULTRA-PRO DLC PART NO.
1965-00 V8, 396-502 (Including Gen V and Gen VI), Donovan, Rodeck 481					
Vertical locking bar for standard or tall lifter bore cylinder blocks	.842"	.750"	1.575"	**13570-16**⚠	**13570D-16**⚠
Vertical locking bar for blocks with 55mm or greater, oversize journal camshafts	.842"	.750"	1.575"	**13576-16**⚠	—
Vertical locking bar with .180" offset left and right intake pushrod seats for standard or tall lifter bore cylinder blocks	.842"	.750"	1.575"	**13571-16**⚠	—
Vertical locking bar with .180" offset left and right intake pushrod seats, for blocks with 55mm or greater, oversize journal camshafts	.842"	.750"	1.575"	**13577-16**⚠	—
Vertical locking bar for .875" diameter lifter bores, for standard or tall lifter bore cylinder blocks	.874"	.750"	1.575"	**13572-16**⚠	—
Vertical locking bar for .875" diameter lifter bores, for standard or tall lifter bore cylinder blocks with .180" offset left and right intake pushrod seats	.874"	.750"	1.575"	**13573-16**⚠	—
Vertical locking bar for .904" diameter lifter bores, for standard or tall lifter bore cylinder blocks	.904"	.815"	1.595"	**13574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores, for blocks with 55mm or greater, oversize journal camshafts	.904"	.815"	1.595"	**13578-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset left and right intake pushrod seats, for standard or tall lifter bore cylinder blocks	.904"	.815"	1.595"	**13575-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210"offset left and right intake pushrod seats, for blocks with 55mm or greater, oversize journal camshafts	.904"	.815"	1.595"	**13579-16**⚠	—
CHRYSLER/DODGE/PLYMOUTH APPLICATIONS					
1951-58 V8, 301-392					
Vertical locking bar	.904"	.815"	1.325"	**66542-16**⚠	—
Vertical locking bar with .120" tall pushrod seat location	.904"	.815'	1.455"	**66543-16**⚠	—
1964-91 V8, "LA" 273-360 (Not Magnum) (No Lifter Bore Oiling Modifications Required)					
Vertical locking bar	.904"	.815"	1.325"	**69542-16**⚠	—
Vertical locking bar will accommodate pushrod oiling	.904"	.815"	1.325"	**69550-16**⚠	—
Vertical locking bar for tall lifter bore cylinder blocks with .400" tall pushrod seat location	.904"	.815"	1.725"	**69554-16**⚠	—
V8, "LA" R-Block 318-360 with 48° Lifter Bank Angle (NOT for R-Blocks Having 59° Lifter Bank Angles)					
Vertical locking bar will accommodate pushrod oiling	.904"	.815"	1.325"	**69552-16**⚠	—
1958-78 V8, "B" 350-440 (No lifter bore oiling modifications required)					
Vertical locking bar	.904"	.815"	1.325"	**66542-16**⚠	—
Vertical locking bar with .120" tall pushrod seat location	.904"	.815"	1.455"	**66543-16**⚠	—
Vertical locking bar will accommodate pushrod oiling	.904"	.815"	1.325"	**66550-16**⚠	—
Vertical locking bar for tall lifter bore cylinder blocks with .400" tall pushrod seat location	.904"	.815"	1.725"	**66554-16**⚠	—
1964-71 V8, Hemi 426 (Also See Keith Black Roller Lifter Listings) (No Lifter Bore Oiling Modifications Required)					
Vertical locking bar	.904"	.815"	1.325"	**66542-16**⚠	—
Vertical locking bar with .120" tall pushrod seat location	.904"	.815"	1.455"	**66543-16**⚠	—
Vertical locking bar will accommodate pushrod oiling	.904"	.815"	1.325"	**66550-16**⚠	—
Vertical locking bar for tall lifter bore cylinder blocks with .400" tall pushrod seat location	.904"	.815"	1.725"	**66554-16**⚠	—
Vertical locking bar for 1.000" diameter lifter bores with standard to .200" spread lifter bore spacing, with .200" tall pushrod seat location, will accommodate pushrod oiling	.998"	.920"	1.515"	**66555-16**⚠	—
Donovan V8, 417					
Vertical locking bar	.904"	.815"	1.325"	**66542-16**⚠	—
Vertical locking bar with .120" tall pushrod seat location	.904"	.815"	1.455"	**66543-16**⚠	—
Vertical locking bar for 1.000" diameter lifter bores with standard to .200" spread lifter bore spacing, with .200" tall pushrod seat location, will accommodate pushrod oiling	.904"	.815"	1.325"	**66555-16**⚠	—
FORD APPLICATIONS					
1962-00 V8, 221-302-5.0L, 5.0L H.O., Boss 302, 351W					
Vertical locking bar	.874"	.750"	1.720"	**44570-16**⚠	**44570D-16**⚠
Vertical locking bar with .180" offset right intake pushrod seats	.874"	.750"	1.720"	**44571-16**⚠	—
Vertical locking bar for .904" diameter lifter bores	.904"	.815"	1.720"	**44574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset right intake pushrod seats	.904"	.815"	1.720"	**44575-16**⚠	—

CHART CONTINUES ON NEXT PAGE →

ULTRA-PRO MECHANICAL ROLLER LIFTERS

FORD APPLICATIONS (CONT'D)	LIFTER BODY DIA.	WHEEL DIA.	SEAT HEIGHT	ULTRA-PRO PART NO.	ULTRA-PRO DLC PART NO.
1970-82 V8, 351-400 (Boss, C, M)					
Vertical locking bar	.874"	.750"	1.720"	**44570-16**⚠	**44570D-16**⚠
Vertical locking bar with .180" offset right intake pushrod seats	.874"	.750"	1.720"	**44571-16**⚠	—
Vertical locking bar for .904" diameter lifter bores	.904"	.815"	1.720"	**44574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset right intake pushrod seats	.904"	.815"	1.720"	**44575-16**⚠	—
V8, SVO 302 and SVO 351					
Vertical locking bar	.874"	.750"	1.720"	**44570-16**⚠	**44570D-16**⚠
Vertical locking bar with .180" offset right intake pushrod seats	.874"	.750"	1.720"	**44571-16**⚠	—
Vertical locking bar for .904" diameter lifter bores	.904"	.815"	1.720"	**44574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset right intake pushrod seats	.904"	.815"	1.720"	**44575-16**⚠	—
1963-76 V8, 352-428					
Vertical locking bar	.874"	.750"	1.720"	**35570-16**⚠	—
Vertical locking bar with .180" offset left and right intake pushrod seats	.874"	.750"	1.720"	**35571-16**⚠	—
Vertical locking bar for .904" diameter lifter bores	.904"	.815"	1.720"	**35574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset left and right intake pushrod seats	.904"	.815"	1.720"	**35575-16**⚠	—
1968-97 V8, 370-460 (except 429 Boss Hemi)					
Vertical locking bar	.874"	.750"	1.720"	**35570-16**⚠	—
Vertical locking bar with .180" offset left and right intake pushrod seats	.874"	.750"	1.720"	**35571-16**⚠	—
Vertical locking bar with .180" offset right intake pushrod seats for Ford Racing C460 heads	.874"	.750"	1.720"	**35571R-16**⚠	—
Vertical locking bar for .904" diameter lifter bores	.904"	.815"	1.720"	**35574-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset left and right intake pushrod seats	.904"	.815"	1.720"	**35575-16**⚠	—
Vertical locking bar for .904" diameter lifter bores with .210" offset right intake pushrod seats for Ford Racing C460 cylinder heads	.904"	.815"	1.720"	**35575R-16**⚠	—
1969-70 V8, Boss Hemi 429					
Vertical locking bar	.874"	.750"	1.720"	**30570-16**⚠	—
Vertical locking bar for .904" diameter lifter bores	.904"	.815"	1.720"	**30574-16**⚠	—
OLDSMOBILE APPLICATIONS					
1964-84 V8, 260-455					
Vertical locking bar for .842" diameter lifter bores	.842"	.750"	1.705"	**28570-16**⚠	—
PONTIAC APPLICATIONS					
1955-81 V8, 287-455					
Vertical locking bar	.842"	.750"	1.705"	**28570-16**⚠	—

REPLACEMENT LOCKING BAR KITS FOR HORIZONTAL BAR ROLLER LIFTERS

All kits include two locking bars and four hold down springs.

APPLICATION	DESCRIPTION	PART NO.
Chevrolet V8 262-400	Replacement for 11515-16	**99557-1**⚠
Chevrolet V8 396-502	Replacement for 13515-16	**99559-1**⚠

APPLICATION SPECIFIC

CHROMEMOLY STEEL APPLICATION SPECIFIC PUSHRODS

Crane Cams offers precision manufactured high-strength, heavy-wall tubular steel pushrods for almost any engine. Manufactured from 4130 chromemoly steel tubing, the ball radius ends are formed from the tubing and then hardened and centerless ground. Where indicated, Crane Cams Pushrods are carbonitride hardened for use with (or without) pushrod guideplates. ***NOTE: Hardened pushrods must be used with steel pushrod guideplate equipped cylinder heads (page 182) to prevent premature wear and failure.***

Also listed, where applicable, are the Crane Pro Series One-Piece Pushrods. These are cold-forged, die-formed, heat-treated and center-less-ground pushrods for both Small and Big Block Chevy V8 engines and other engine applications where pushrods with 5/16" diameter ball ends are required. For additional information, see page 181.

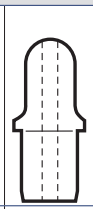
#64640-16

#95628-16 Pro Series One-Piece

EFFECTIVE LENGTH

The length is expressed as Effective Length. On pushrods having a ball on each end, this represents the overall length of the pushrod. For pushrods with a cup on one end, and a ball on the other, this is the measurement from the bottom of the cup to the tip of the ball.

END TYPES

Ball or Cup Dia.	3/8	5/16	5/16	5/16	5/16	1/2	5/16	3/8	5/16	10mm	5/16
											
	B1	B2	B2 w/h	B3	B4	B11	B14 w/h	C1	C2	C3	C4
Tubing Dia	3/8	3/8	3/8	5/16	5/16	5/16	7/16	3/8	3/8	5/16	5/16

PUSHRODS

CHROMEMOLY STEEL APPLICATION SPECIFIC PUSHRODS

AMC/JEEP APPLICATIONS	LENGTH	EFFECTIVE LENGTH	TUBING DIA.	END TYPE TOP	END TYPE BOTTOM	PART NO.
1970-91 V8, 304-401 w/ hydraulic lifters	Stock	7.850"	5/16"	B-4	B-4	**95637-16**
1966-91 V8, 290-401 w mechanical lifters	Stock	8.050"	5/16"	B-4	B-4	**95641-16**
1966-91 V8, 290-401 w/ 66550-16 roller lifters	+.200"	8.250"	5/16"	B-4	B-4	**95645-16**
CADILLAC APPLICATIONS						
1968-81 V8, 368-500	Stock	10.200"	5/16"	B-4	B-4	**102621-16**
CHEVROLET APPLICATIONS						
1962-84 I6, 194-250	Stock	9.718"	5/16"	B-4	B-4	**20621-12**
1962-84 I6, 194-250 with Crane aluminum rocker arms	+.282"	10.000"	5/16"	B-4	B-4	**20622-12**
1980-88 V6, 60° 173 with cast iron inline valve cylinder heads	Stock	6.163"	5/16"	B-4	B-4	**25621-12**
1978-86 V6, 90° 200-262	Stock	7.765"	5/16"	B-4	B-4	**11621-12**
1992-02 V6, 90° 4.3L with factory hyd. roller lifters	Stock	7.178"	5/16"	B-4	B-4	**10621-12**
1955-87 V8, 262-400 with Crane hyd. roller lifters	-.719"	7.046"	5/16"	B-4	B-4	**11628-16**
1955-87 V8, 262-400, standard wall	Stock	7.765"	5/16"	B-4	B-4	**11621-16**
1955-87 V8, 262-400	Stock	7.765"	5/16"	B-4	B-4	**11630-16**
1955-87 V8, 262-400, standard wall	+.100"	7.865"	5/16"	B-4	B-4	**11622-16**
1955-87 V8, 262-400	+.100"	7.865"	5/16"	B-4	B-4	**11632-16**
1955-87 V8, 262-400, standard wall	+.160"	7.925"	5/16"	B-4	B-4	**11624-16**
1955-87 V8, 262-400	+.200"	7.965"	5/16"	B-4	B-4	**11633-16**
1955-87 V8, 262-400	+.250"	8.015"	5/16"	B-4	B-4	**11635-16**
1988-99 V8, 305-350 with factory hyd. roller lifters	Stock	7.178"	5/16"	B-4	B-4	**10621-16**
1997-10 V8, LS1-LS2-LS6 5.7L	Stock	7.400"	5/16"	B-4	B-4	**144621-16**
1997-10 V8, LS1-LS2-LS6 5.7L for Crane adjustable rocker arm conversion kit	-.150"	7.250"	5/16"	B-4	B-4	**144622-16**
1958-65 V8, 348-427 (Z11) with Crane hyd. roller lifters	-.0686" -.0692"	8.100" Int. 8.450" Exh.	5/16" 5/16"	B-4 B-4	B-4 B-4	**15630-16**
1958-65 V8, 348-427 (Z11) with Crane hyd. roller lifters	-.0686" -.0692"	8.100" Int. 8.450" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**15640-16**
1958-65 V8, 348-427 (Z11)	Stock Stock	8.786" Int. 9.142" Exh.	5/16" 5/16"	B-4 B-4	B-4 B-4	**15621-16**
1958-65 V8, 348-427 (Z11)	Stock Stock	8.786" Int. 9.142" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**15634-16**
1965-90, 396-454 with Crane hyd. roller lifters	-.719" -.719"	7.531"Int. 8.531" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**13628-16**
1965-90, 396-454 with Crane hyd. roller lifters, Pro Series	-.700" -.700"	7.566" Int. 8.550" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**13642-16**
1965-90, 396-454	Stock Stock	8.250" Int. 9.250" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**13634-16**
1965-90, 396-454, Pro Series	Stock Stock	8.250" Int. 9.250" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**13640-16**
1965-90, 396-454	Stock Stock	8.250" Int. 9.250" Exh.	7/16" 7/16"	B-14 B-14	B-14 B-14	**13630-16**
1966-90, 366-427 tall deck (+.400") with Crane hyd. roller lifters	-.719" -.719"	7.936" Int. 8.906" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**13629-16**
1966-90, 366-427 tall deck (+.400") with Crane hyd. roller lifters, Pro Series	-.705" -.675"	7.950" Int. 8.950" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**13643-16**
1966-90, 366-427 tall deck (+.400")	Stock Stock	8.655" Int. 9.650" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**13635-16**
2001-08, 8.1L with hyd. lifters and adjustable rocker arms, Pro Series	Stock Stock	8.200" Int. 9.150" Exh.	3/8" 3/8"	B-2 w/h B-2 w/h	B-2 w/h B-2 w/h	**26640-16**

CHART CONTINUES ON NEXT PAGE →

CHROMEMOLY STEEL APPLICATION SPECIFIC PUSHRODS

CHRYSLER/DODGE/PLYMOUTH APPLICATIONS	LENGTH	EFFECTIVE LENGTH	TUBING DIA.	END TYPE TOP	END TYPE BOTTOM	PART NO.
1964-91, 273-360 "LA" with hyd. lifters and adjustable rockers	Stock	7.185"	5/16"	C-4	B-3	**69621-16**
1964-91, 273-360 "LA" with Crane hyd. roller lifters and adjustable rockers	-.750"	6.450"	5/16"	C-4	B-3	**69628-16**
1964-91, 273-360 "LA" with mechanical lifters and adjustable rockers	Stock	7.325"	5/16"	C-4	B-3	**69622-16**
1992-00, 318-360 "Magnum" with factory hyd. roller lifters and Crane adjustable rockers with 36655-16 conversion kit	Stock	6.812"	5/16"	B-4	B-4	**36621-16**
1958-78, 350-400 "B" low block with hyd. lifters and adjustable rockers	Stock	8.055"	3/8"	C-2	B-2	**64640-16**
1958-78, 350-400 "B" low block with Crane hyd. roller lifters and adjustable rockers	-.750"	7.290"	3/8"	C-2	B-2	**64628-16**
1958-78, 350-400 "B" low block with mechanical lifters and adjustable rockers	Stock	8.425"	3/8"	C-2	B-1	**64621-16**
1958-78, 413-440 "B" high block with hyd. lifters and adjustable rockers	Stock	8.930"	3/8"	C-2	B-2	**64641-16**
1958-78, 413-440 "B" high block with Crane hydraulic roller lifters and adjustable rockers	-.750"	8.180"	3/8"	C-2	B-2	**64629-16**
1958-78, 413-440 "B" high block with mechanical lifters and adjustable rockers	Stock	9.055"	3/8"	C-2	B-1	**64622-16**
1964-71, Hemi 426 with hyd. lifters	Stock Stock	10.450" Int. 11.385" Exh.	3/8" 3/8"	C-2 C-2	B-1 B-1	**66621-16**
1964-71, Hemi 426 with Crane hyd. roller lifters	-.750"	9.710" Int. 10.650" Exh.	3/8" 3/8"	C-2 C-2	B-2 B-2	**66628-16**
1964-71, Hemi 426 with mechanical lifters	Stock Stock	10.650" Int. 11.585" Exh.	3/8" 3/8"	C-2 C-2	B-1 B-1	**65689-16**
FORD APPLICATIONS						
1964-96 I6, 240-300	Stock	10.203"	5/16"	B-4	B-4	**50621-12**
1963-68 V8, 221-302	Stock	6.812"	5/16"	B-4	B-4	**36621-16**
1969-95 V8, 255-302	Stock	6.875"	5/16"	B-4	B-4	**36622-16**
1968-87 V8, 255-302 with Crane retrofit hyd. roller lifters and bottleneck studs or pedestal mount rocker arms, Pro Series	-.332"	6.500"	5/16"	B-4	B-4	**95610-16**
1977-87 V8, 255-302 with Crane retrofit hyd. roller lifters and adjustable rocker arms, Pro Series	-.132"	6.700"	5/16"	B-4	B-4	**95614-16**
1986-96 V8, 302 and 302 H.O. with factory hydraulic roller lifters, standard base circle cam, pedestal mount rocker arms	Stock	6.258"	5/16"	B-4	B-4	**36631-16**
1986-96 V8, 302 and 302 H.O. with factory hydraulic roller lifters and Crane aluminum rocker arms	.117"	6.375"	5/16"	B-4	B-4	**36625-16**
1985-94 V8, 302 and 302 H.O. with factory hyd. roller lifters, Pro Series	-.095"	6.200"	5/16"	B-4	B-4	**95604-16**
1969-93 V8, 351W, Pro Series	Stock	8.200"	5/16"	B-4	B-4	**95644-16**
1969-93 V8, 351W with Crane retrofit hydraulic roller lifters and bottleneck Studs or pedestal mount rocker arms, Pro Series	-.366"	7.800"	5/16"	B-4	B-4	**95636-16**
1977-93 V8, 351W with Crane retrofit hyd. roller lifters and adjustable rocker arms, Pro Series	-.191"	8.000"	5/16"	B-4	B-4	**95640-16**
1969-70 V8, Boss 302, Pro Series	Stock	7.650"	5/16"	B-4	B-4	**95633-16**
1970-74 V8, 351C	Stock	8.406"	5/16"	B-4	B-4	**52621-16**
1970-74 V8, 351C with Crane retrofit hyd. roller lifters and adjustable rocker arms, Pro Series	-.625"	7.781"	5/16"	B-4	B-4	**95636-16**
1971-72 V8, Boss 351, Pro Series	Stock	8.500"	5/16"	B-4	B-4	**95650-16**
1971-82 V8, 351M-400 with Crane retrofit hyd. roller lifters & pedestal mount rocker arms, Pro Series	-.800"	8.700"	5/16"	B-4	B-4	**95654-16**

CHART CONTINUES ON NEXT PAGE →

PUSHRODS

CHROMEMOLY STEEL APPLICATION SPECIFIC PUSHRODS

FORD APPLICATIONS (CONT'D)	LENGTH	EFFECTIVE LENGTH	TUBING DIA.	END TYPE TOP	END TYPE BOTTOM	PART NO.
1971-82 V8, 351M-400 with Crane retrofit hyd. roller lifters and adjustable rocker arms with 52655-16 conversion kit, Pro Series	-.625"	8.900"	5/16"	B-4	B-4	**95658-16**
1958-76 V8, 332-428 FE with hyd. and mechanical lifters and adjustable rocker arms	Stock	9.065"	3/8"	C-1	B-1	**34621-16**
1958-76 V8, 332-428 FE with shell mechanical lifters and adjustable rocker arms	Stock	10.485"	3/8"	C-1	B-1	**34622-16**
1958-76 V8, 332-428 w/ roller lifters	-.109"	8.960"	3/8"	C-1	B-2	**34641-16**
1969-97 V8, 370-460	Stock	8.563"	5/16"	B-4	B-4	**35622-16**
1970 V8, 429 Super CJ and all 370-460 with 5/16" pushrod guide-plates	Stock	8.656"	5/16"	B-4	B-4	**35621-16**
MG/MGA/MGB						
1940-55 4 Cyl., 1250-1466cc TC, TD, TF	Stock	8.360"	5/16"	C-3	B-11	**905-0003**
1957-80 4 Cyl., 1598-1798cc MGA, MGB	Stock	10.485"	5/16"	C-3	B-11	**905-0004**
OLDSMOBILE APPLICATIONS						
1964-84 V8, 260-307-330-350-403 with hyd. lifters, Pro Series	Stock	8.350"	5/16"	B-4	B-4	**95647-16**
PONTIAC APPLICATIONS						
1957-81 V8, 265-287-316-347-350-389-400-428-455	Stock	9.125"	5/16"	B-4	B-4	**28624-16**
1962-67 V8, 326-389-400-421, Pro Series	Stock	8.700"	5/16"	B-4	B-4	**95654-16**

PRO SERIES ONE-PIECE PUSHRODS

Crane Cams Pro Series One-Piece Pushrods are cold-forged and feature a precisely formed end that is actually stronger than the tubing wall itself.

Made from aircraft quality, .080" wall, 4130 chromemoly steel tubing, their finished overall length is accurate to within ±.005" per pushrod. These are available in 5/16" and 3/8" diameter, each with 5/16" diameter ball ends and .050" length increments (6.000" to 9.200" OAL in 5/16" diameter, 7.050" to 11.000" OAL in 3/8" diameter), heat-treated for use with or without pushrod guideplates. Each pushrod is laser etched with its overall length for quick identification.

95628-2

PRO SERIES 5/16" DIAMETER ONE-PIECE PUSHRODS - BY LENGTH

OVERALL LENGTH	PART NO	OVERALL LENGTH	PART NO	OVERALL LENGTH	PART NO	OVERALL LENGTH	PART NO
6.000"	95600-16	6.850"	95617-16	7.650"	95633-16	8.450"	95649-16
6.050"	95601-16	6.900"	95618-16	7.700"	95634-16	8.500"	95650-16
6.100"	95602-16	6.950"	95619-16	7.750"	95635-16	8.550"	95651-16
6.150"	95603-16	7.000"	95620-16	7.800"	95636-16	8.600"	95652-16
6.200"	95604-16	7.050"	95621-16	7.850"	95637-16	8.650"	95653-16
6.250"	95605-16	7.100"	95622-16	7.900"	95638-16	8.700"	95654-16
6.300"	95606-16	7.150"	95623-16	7.950"	95639-16	8.750"	95655-16
6.350"	95607-16	7.200"	95624-16	8.000"	95640-16	8.800"	95656-16
6.400"	95608-16	7.250"	95625-16	8.050"	95641-16	8.850"	95657-16
6.450"	95609-16	7.300"	95626-16	8.100"	95642-16	8.900"	95658-16
6.500"	95610-16	7.350"	95627-16	8.150"	95643-16	8.950"	95659-16
6.550"	95611-16	7.400"	95628-16	8.200"	95644-16	9.000"	95660-16
6.600"	95612-16	7.450"	95629-16	8.250"	95645-16	9.050"	95661-16
6.650"	95613-16	7.500"	95630-16	8.300"	95646-16	9.100"	95662-16
6.700"	95614-16	7.550"	95631-16	8.350"	95647-16	9.150"	95663-16
6.750"	95615-16	7.600"	95632-16	8.400"	95648-16	9.200"	95664-16
6.800"	95616-16						

PRO SERIES 3/8" DIAMETER ONE-PIECE PUSHRODS - BY LENGTH

7.050"	95777-16	8.050"	95797-16	9.050"	95817-16	10.050"	95837-16
7.100"	95778-16	8.100"	95798-16	9.100"	95818-16	10.100"	95838-16
7.150"	95779-16	8.150"	95799-16	9.150"	95819-16	10.150"	95839-16
7.200"	95780-16	8.200"	95800-16	9.200"	95820-16	10.200"	95840-16
7.250"	95781-16	8.250"	95801-16	9.250"	95821-16	10.250"	95841-16
7.300"	95782-16	8.300"	95802-16	9.300"	95822-16	10.300"	95842-16
7.350"	95783-16	8.350"	95803-16	9.350"	95823-16	10.350"	95843-16
7.400"	95784-16	8.400"	95804-16	9.400"	95824-16	10.400"	95844-16
7.450"	95785-16	8.450"	95805-16	9.450"	95825-16	10.450"	95845-16
7.500"	95786-16	8.500"	95806-16	9.500"	95826-16	10.500"	95846-16
7.550"	95787-16	8.550"	95807-16	9.550"	95827-16	10.550"	95847-16
7.600"	95788-16	8.600"	95808-16	9.600"	95828-16	10.600"	95848-16
7.650"	95789-16	8.650"	95809-16	9.650"	95829-16	10.650"	95849-16
7.700"	95790-16	8.700"	95810-16	9.700"	95830-16	10.700"	95850-16
7.750"	95791-16	8.750"	95811-16	9.750"	95831-16	10.750"	95851-16
7.800"	95792-16	8.800"	95812-16	9.800"	95832-16	10.800"	95852-16
7.850"	95793-16	8.850"	95813-16	9.850"	95833-16	10.850"	95853-16
7.900"	95794-16	8.900"	95814-16	9.900"	95834-16	10.900"	95854-16
7.950"	95795-16	8.950"	95815-16	9.950"	95835-16	10.950"	95855-16
8.000"	95796-16	9.000"	95816-16	10.000"	95836-16	11.000"	95856-16

ACCESSORIES

ADJUSTABLE CHECKING PUSHRODS

These Checking Pushrods are adjustable with over 1.000" of travel, enabling you to arrive at the correct pushrod length to create the correct valve train geometry for your particular engine, or when using hydraulic lifters, to determine hydraulic lifter preload. Once correct pushrod length is determined, refer to our pushrod listings on pages 178-181 to choose the correct pushrods. Two checking pushrods per package. NOT TO BE RUN IN THE ENGINE.

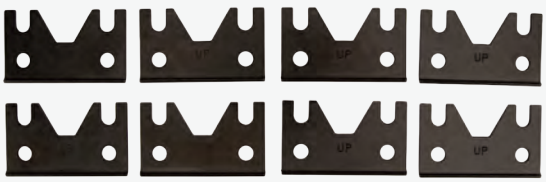
#99726-2

AMC APPLICATIONS	LENGTH	DIA.	PART NO.
V8 290-401	7.500" to 8.700"	5/16"	**99726-2**⚠
BUICK APPLICATIONS			
V8 400-455	8.500" to 9.800"	5/16"	**99727-2**⚠
CHEVROLET APPLICATIONS			
V8 262-400	7.500" to 8.700"	5/16"	**99726-2**⚠
V8 396-454	7.500" to 8.700" 8.500" to 9.800"	5/16"	**99730-2**⚠
CHRYSLER APPLICATIONS			
V8 "LA" 273-360	6.125" to 7.500"	5/16"	**99725-2**⚠
V8 "B" Low Block 350-400	7.500" to 8.700"	5/16"	**99726-2**⚠
V8 "B" High Block 413-440	8.500" to 9.800"	5/16"	**99727-2**⚠
FORD APPLICATIONS			
V8 221-302	6.125" to 7.500"	5/16"	**99725-2**⚠
V8 Boss 302	6.125" to 7.500"	5/16"	**99725-2**⚠
V8 351M-400	8.500 to 9.800"	5/16"	**99727-2**⚠
V8 Boss 351, 351C, 370-460	7.500" to 8.700"	5/16"	**99726-2**⚠
OLDSMOBILE APPLICATIONS			
V8 260-350 and 403	7.500" to 8.700"	5/16"	**99726-2**⚠
V8 400-455	8.500 to 9.800"	5/16"	**99727-2**⚠
PONTIAC APPLICATIONS			
V8 326-421	8.500" to 9.800"	5/16"	**99727-2**⚠

PUSHROD GUIDEPLATES

Crane's pushrod guideplates feature a significant increase in strength over stock designs. Their unique design provides a more rigid guide, reduces flexing, stabilizes the pushrod and reduces rocker arm "wander." All sets include (8) guideplates.

Heat-treated and carburized pushrods must be used with these guideplates, or premature pushrod wear and failure will occur. Cylinder head machining and screw-in rocker arm studs may be required to install these guideplates. Refer to the engine application and rocker arm pages for additional information.



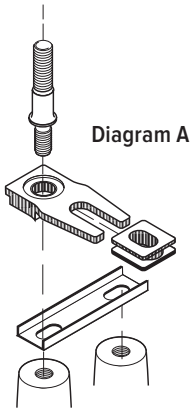
#144650-1

CHEVROLET APPLICATIONS	5/16" PUSHROD DIA. PART NO.	3/8" PUSHROD DIA. PART NO.
90° V6 1978-86, 200-262	**11650-1**⚠	—
V8 1955-95, 262-400	**11650-1**⚠	—
V8 1997-10, LS1-LS2-LS6 5.7L Vortec 4800, 5300, 6000, for Crane Adjustable Rocker Arms	**144650-1**⚠	**144651-1**⚠
V8 2008-10, L92 cyl. Heads, for Crane Adjustable Rocker Arms	**201650-1**⚠	**201651-1**⚠
V8 1965-90, 396-454, 502	—	**13650-1**⚠
FORD APPLICATIONS		
V8 1962-92, 221-302, 351W	**36650-1**⚠	—
V8 1969-82, 351C-351M-400	**52650-1**⚠	—

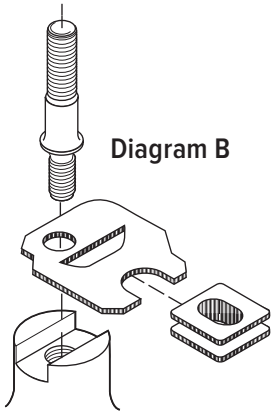
GUIDEPLATE CONVERSION KITS

Crane Cams Rocker Arm Stud/Pushrod Guideplate Conversion Kits enable you to convert late-model Dodge and Ford V8 engines with pedestal mount rocker arms to an adjustable-type valve train without machine work or cylinder head removal.

CHRYSLER/DODGE APPLICATIONS	PART NO.	DIAGRAM
1992-02, Magnum V8 318 (5.2L) and 360 (5.9L) engines with 5/16"-18 threaded stud bosses. Must use 11746-16 or 11759-16 aluminum rocker arms for 3/8" rocker arm studs and 5/16" dia. 36621-16 (heat-treated) pushrods.	**36655-16**	**A**
1992-02, Magnum V8 318 (5.2L) and 360 (5.9L) engines with 5/16"-18 threaded stud bosses. Must use 11747-16 or 11755-16 aluminum rocker arms for 7/16" rocker arm studs and 5/16" dia. 36621-16 (heat treated) pushrods.	**36656-16**	**A**
Aluminum Magnum and crate motor cylinder heads with 3/8"-16 threaded stud bosses. Must use 11746-16 or 11759-16 aluminum rocker arms for 3/8" rocker arm studs and 5/16" dia. 36621-16 (heat treated) pushrods.	**70655-16**	**A**
FORD APPLICATIONS		
V8 1977-00, 255-302, 302 H.O., 351W engines. Will accept 3/8" stud die-formed steel or Crane Aluminum Rocker Arms and 5/16" dia. pushrods.	**36655-16**	**A**
V8 1977-00, 255-302, 302 H.O., 351W engines. Will accept 7/16" stud Crane Aluminum Rocker Arms and 5/16" dia. pushrods.	**36656-16**	**A**
V8 1970-82, 351C, 351M, 400, and V8 1972-97, 370-429-460 engines. Will accept 7/16" stud die-formed steel or Crane Aluminum Rocker Arms and 5/16" dia. pushrods.	**52655-16**	**B**
V8 1972-97, 370, 429, 460 engines. Will accept 7/16" stud die-formed steel or Crane Aluminum Rocker Arms and 3/8" dia. pushrods.	**35655-16**	**B**
Replacement guideplate insert for 3/8" dia. pushrods (Included in kits)	**35655GB-16**	—
Replacement guideplate Insert for 5/16" dia. pushrods (Included in kits)	**52655GB-16**	—



#36656-2



#36655-2

ROCKER ARMS

IRON & STEEL

CAST CONSTRUCTION ROCKER ARMS

Stock replacement, cast iron material.

#36800

FORD APPLICATIONS	RATIO	STUD DIA.	PART NO.
1962-00 V8, 221-302, 351W			
Stock ratio, non-rail type with standard stud dia.	1.60	3/8"	**36800-16**
Stock ratio, rail type (self-aligning) with standard stud dia., supplied with both 5/16"-24 and 3/8"-24 nuts	1.60	3/8"	**36801-16**

DIE-FORMED STEEL ROCKER ARMS

Stock design with better material and heat-treat. Many supplied with long slot or extra long slot to provide more travel for increased valve lift. Economically priced for the budget engine rebuild.

#52800

CHEVROLET APPLICATIONS	RATIO	STUD DIA.	PART NO.
90° V6 1978-87, 200-262, 1955-87 V8, 262-400 (Not for Use with Valve Springs Over 1.520" O.D.)			
Stock ratio, factory performance replacement with long slot, non self-aligning	1.50	3/8"	**11800-16**
Stock ratio with extra long slot, non self-aligning	1.50	3/8"	**11801-16**
Increased ratio with extra long slot, non self-aligning (50-State Legal, C.A.R.B. E.O. D-225-50)	1.60	3/8"	**11802-16***
(8) Each of 1.50 and 1.60 ratio with extra long slot, non self-aligning, includes Kool Nuts (50-State legal, C.A.R.B. E.O. D-225-50)	1.50/1.60	3/8"	**11803-16***
1965-90 V8, 396-454, 502 (Not for Use with Valve Springs Over 1.520" O.D.)			
Stock ratio, performance replacement with long slot for up to .560" Valve Lift	1.70	7/16"	**13800-16[1]**
Stock ratio with extra long slot	1.70	7/16"	**13801-16[1]**
FORD APPLICATIONS			
1969-82 V8, Boss 302, Boss 351-400 (Boss C, M)			
Stock ratio for 1970-82 cyl. heads, non-adjustable, secured with 5/16" bolt, for hyd. lifter and hyd. roller cam applications ONLY, pedestal mount	1.71	5/16" Bolt	**52800-16**
1968-97 V8, 370-460			
Stock ratio for 1972-97 cyl. heads, non-adjustable, secured with 5/16" bolt, for hyd. lifter and hyd. roller cam applications ONLY, pedestal mount	1.71	5/16" Bolt	**52800-16[2]**
OLDSMOBILE APPLICATIONS			
1967-84 V8, 260-455			
Stock ratio for rocker arms supplied with individual fulcrums, bridge straps, secured with bolt	1.61	Bridge	**80800-16**
PONTIAC APPLICATIONS			
1967-81 V8, 265-455			
Stock ratio for use with bottleneck studs with 7/16" bottom and 3/8" top, includes spacer washers and 3/8" nuts	1.50	7/16" BN	**28800-16**

NITRO-CARB STEEL ROCKER ARMS

Crane Cams Nitro-Carb Rockers offer 3 to 5 times greater resistance to wear, fatigue and fracture in high-stress areas. Available exclusively from Crane Cams, Nitro-Carb Rockers eliminate pushrod cup and fulcrum failures with wear resistance and surface hardness properties that are similar to ceramics. They deliver the most accurate ratios of any similar steel rockers and are precision die-formed. Most feature a long-slot design and come complete with oil-groove pivot balls and adjusting nuts at no extra charge.

Perfect for high valve spring pressure - testing in-lab and on-track (using Crane 99846-16, XHTCS Tool Steel, stock Dia., 1.255" O.D. valve springs, 115 lb. seat, 350 lbs. open pressure) showed Crane Nitro-Carb Rockers to be failure-free after enduring millions of running cycles.

Nitro-Carb rockers should be used anywhere rules require "stock type steel rockers". This includes NHRA Stock and IHRA Pure Stock Class drag racing applications, plus oval track categories where stock-type rockers are required.

CHEVROLET APPLICATIONS	1.50 RATIO	1.60 RATIO
90° 1978-87 V6, 200-262		
Extra Long Slot, 3/8" Stud	**11801C-1**[3,4]⚠	**11802C-1**[3, 4*]⚠
1955-87 V8, 262-400		
Extra Long Slot, 3/8" Stud	**11801C-16**[3]⚠	**11802C-16**[3*]⚠
1988-99 V8, 305-350		
Self Aligning, 3/8" Stud	**10800C-16**[5]⚠	—
1965-90 V8, 396-454	**1.70 RATIO**	
Long Slot, 7/16" Stud	**13801C-16**[6]⚠	—

#13801C-1

[1] 1991-00 454-502 Gen V and VI hydraulic cam engines require the installation of 99152-16 7/16" rocker arm studs and factory pushrod guideplates (no machining required). Mechanical cam equipped engines require the installation of 99157-16 7/16" rocker arm studs and 13650-1 pushrod guideplates (mcahining required).

[2] On 1968-71 engines equipped with bottleneck studs, using 99768-16 positive locking nuts will permit valve adjustment. The 1972-97 engines equipped with pedestal mount rocker arms can use 36655-16 conversion kit for 3/8" pushrods (no machining required) for street applications.

[3] Non-self aligning, must be used with pushrod guideplate cylinder heads.

[4] Order in quantity of 12.

[5] For self-aligning applications only. Not for use with pushrod guideplates or with cylinder head castings that guide the pushrod, as severe pushrod wear will occur. Not for LS1 series engines.

[6] 1992-00 Gen V and VI 454-502 engines require the installation of 99152-16 7/16" rocker arm studs (no machining required) and factory pushrod guideplates.

*This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intened for use on any emission controlled vehicles operated on highways or roads.

To find the perfectly matched rocker arms for your camshaft/application, look to the right hand page of the cam charts on pages 10-161 of this catalog. The appropriate rocker arms will be listed in the seventh column.

ALUMINUM

ALUMINUM ROCKER ARMS

Crane Cams first introduced the racing world to aluminum rockers in 1964, and since then we've manufactured and sold millions of Crane aluminum rockers! From the beginning, our famous Gold-Race Aluminum Rockers have been continually enhanced with design and engineering improvements as well as material upgrades. Now, many generations later, today's Crane Cams Aluminum Rockers are still the strongest, most ratio-accurate, most durable aluminum rockers made.

Crane offers two versions of aluminum rockers - Energizer and Gold-Race - that are preferred by professional racing engine builders and offer outstanding power and performance advantages for street applications. An easy "Saturday afternoon" installation project, bolting on a set of Crane Aluminum Rockers can add from 15 up to 30+ horsepower (with increased ratios), plus increased throttle response in a street performance engine. These rocker arms are so strong, durable and reliable that Ford Motor Company selected the Crane Energizer needle-bearing fulcrum, full-roller rockers for their Cobra V8 production line engines and offered the full Ford factory warranty.

Crane Cams offers aluminum rocker arms for nearly all American V8 and V6 engines, plus many inline four and six-cylinder applications. Stock, plus optional longer-than-stock ratios, are offered for most engines. Some applications also provide offset pushrod seats for use on aftermarket cylinder heads with non-stock port locations. All Crane Cams Aluminum Rockers come complete with a set of positive locking adjusting nuts, or adjusting screws, at no extra cost to you.

SELECTING THE RIGHT ALUMINUM ROCKER ARM

	ENERGIZER	GOLD-RACE
MAIN BODY MATERIAL	• Aerospace Quality • Vacuum Die-Formed Casting Process	• Extruded Billet • Heat-Treated
MANUFACTURING METHOD	• CNC Machined	• CNC Machined
MAXIMUM OPEN SPRING PRESSURE	• 450 lbs.	• 700 lbs. Std. • 900 lbs. Wide-Body
FULCRUM DESIGN, UNIQUE FEATURES	• Precision Ground Steel Needle Bearings • Heat-Treated Steel Roller Tips • Adjustable Lock Nuts Included	• Precision Ground Steel Needle Bearings • Heat-Treated Steel Roller Tips • Adjustable Lock Nuts Included
IDEAL USES	• Hydraulic & Hydraulic Roller Lifter Equipped Engines • Street Performance • Bracket Drag Racing • Moderate Circle Track • Truck Performance	• Serious Street • Bracket Drag Racing • Circle Track Racing • Truck Performance/Race • Marine Race or Pleasure Craft
ENGINE APPLICATIONS	• Popular V8 Engines	• Most V8, 6 Cyl. Inline, V6 & 4 Cyl. Engines

#13744-2

#86757-2

AMC APPLICATIONS	RATIO	STUD DIA.	ENERGIZER	GOLD-RACE
1966-91 V8, 290-401				
Stock ratio with standard stud dia.	1.60	3/8"	**11746-16**[1]	**36750-16**[1]
Stock ratio with enlarged stud dia.	1.60	7/16"	**11747-16**[2]	**86757-16**[2]
Increased ratio with enlarged stud dia.	1.70	7/16"	—	**36757-16**[2*]
CHEVROLET APPLICATIONS				
1962-84 I6, 194-292				
Stock ratio with enlarged stud dia.	1.70	7/16"	—	**13750-12**[3]
60° 1980-94 V6, 173 (2.8L) and 189 (3.1L)				
Stock ratio with special stud dia.	1.50	3/8"	—	**25750-12**[4]
Increased ratio with special stud dia.	1.60	3/8"	—	**25759-12**[4]
90° 1978-87 V6, 200-262				
Stock ratio with standard stud dia.	1.50	3/8"	**11744-12**[5]	—
Stock ratio with enlarged stud dia.	1.50	7/16"	**11745-12**[5]	—
Increased ratio with standard stud dia.	1.60	3/8"	**11746-12**[5]	—
Increased ratio with enlarged stud dia.	1.60	7/16"	**11747-12**[5]	—
1955-87 V8, 262-400				
Stock ratio with standard stud dia.	1.50	3/8"	**11744-16**[5]	**11750-16**
Stock ratio with enlarged stud dia.	1.50	7/16"	**11745-16**[5]	—
Stock ratio with enlarged stud dia., clears 1.630" O.D. springs	1.50	7/16"	—	**11752-16**
Stock ratio with enlarged stud dia., clears 1.630" O.D. springs, "wide body" design for severe usage applications	1.50	7/16"	—	**11771-16**
Increased ratio with standard stud dia., 50-state legal, C.A.R.B. EO D-225-50	1.60	3/8"	**11746-16**[5]	**11759-16**
Increased ratio with enlarged stud dia., 50-state legal, C.A.R.B. EO D-225-50	1.60	7/16"	**11747-16**[5]	—
Increased ratio with enlarged stud dia., clears 1.630" O.D. dprings, 50-state legal, C.A.R.B. EO D-225-50	1.60	7/16"	—	**11755-16***
Increased ratio with enlarged stud dia., clears 1.630" O.D. springs, "wide body" design for severe usage applications	1.60	7/16"	—	**11772-16**
(8) each of 1.50 (11750) and 1.60 (11759) ratio with standard stud dia., 50-state legal, C.A.R.B. EO D-225-50	1.50/1.60	3/8"	—	**11748-16**
Increased ratio with standard stud dia.	1.70	3/8"	—	**70759-16***
1988-99 V8, 305 (5.0L)-350 (5.7L)				
Stock ratio with standard stud dia.	1.50	3/8"	—	**10750-16**[5]
Stock ratio with standard stud dia. (not for use with mechanical lifter cam)	1.50	3/8"	—	**10751-16**[6]
Increased ratio with standard stud dia., 50-state legal, C.A.R.B. EO D-225-50	1.60	3/8"	—	**10759-16**[5]
Increased ratio with standard stud dia. (not for use with mechanical lifter cam), 50-state legal, C.A.R.B. EO D-225-50	1.60	3/8"	—	**10758-16**[6]
Increased ratio with standard stud dia., limited travel (.550" max.) and certified ratio for Crate Motor Rules Applications (Non-Anodized)	1.60	3/8"	—	**10756-16**[6*]

[1] Must machine 1974-91 cylinder heads and install 99156-16 3/8" rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[2] Must machine 1966-91 cylinder heads and install 99157-16 7/16" rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[3] Require 20622-12 pushrods for 194-230-250 engines
[4] For inline valve cylinder heads. Set includes special 10mm x 1.50 bottom x 3/8" x 24 top rocker arm studs (99148-12), no machingin required. Check valve covers and intake manifold for clearance throughout the lift cycle.
[5] The 1988-99 engines equipped with self-aligning rocker arms require the installation of pushrod guideplates (and 99156-16 3/8" or 99157-16 7/16" rocker arm studs, if applicable) and appropriate heat-treated pushrods in order for proper rocker arm function. Valve cover clearance must also be checked. Not suitable for use with center-bolt valve covers.
[6] For use in self-aligning applications. Do not use with pushrod guideplates or with cylinder head castings that guide the pushrods, as severe pushrod wear will occur. Not for use in LS1 type engines.

CHART CONTINUES ON NEXT PAGE →

ROCKER ARMS

CHEVROLET APPLICATIONS (CONT'D)	RATIO	STUD DIA.	ENERGIZER	GOLD-RACE
1958-65 V8, 348-427 (Z11)				
Stock ratio with standard stud dia.	1.70	3/8"	—	**15750-16**⚠
Stock ratio with enlarged stud dia.	1.70	7/16"	—	**13750-16**⚠
1965-90 V8, 396-502, 1991-00 454-502 Gen V and VI, 2001-08 8.1L				
Reduced ratio with standard stud dia.	1.65	7/16"	—	**13759-16**[7]⚠
Stock ratio with standard stud dia.	1.70	7/16"	**13744-16**[7]⚠	**13750-16**[7]⚠
Stock ratio with standard stud dia., "wide body" design for severe usage applications	1.70	7/16"	—	**13763TR-16**[7]⚠
Increased ratio with standard stud dia., 50-state legal, C.A.R.B. EO D-225-50	1.80	7/16"	—	**13755-16**[7]⚠
CHRYSLER/DODGE/PLYMOUTH APPLICATIONS				
1992-00, "Magnum" 318 (5.2L), 360 (5.9L) (except Magnum R/T)				
Stock ratio, must use Crane Stud Conversion Kit with Guideplates (36655-16) and Pushrods (36668-16) to convert from stock pedestal rocker Arms to Adjustable Stud Mount Design, Optional Heat-Treated Pushrods Available (36621-16), Stock Valve Covers Must Be Modified or Spaced Upward Approximately 3/8" to Avoid Interference	1.60	3/8"	**11746-16**⚠	**11759-16**⚠
Increased Ratio, Must Use Crane Stud Conversion Kit with Guideplates (36655-16) and Pushrods (36668-16) to Convert From Stock Pedestal Rocker Arms to Adjustable Stud Mount Design, Optional Heat-Treated Pushrods Available (36621-16), Stock Valve Covers Must Be Modified or Spaced Upward Approximately 3/8" to Avoid Interference	1.70	3/8"	—	**70759-16***⚠
FORD APPLICATIONS				
1962-00 V8, 221-302, 351W, 5.0L H.O.				
Stock ratio with standard stud dia.	1.60	3/8"	**11746-16**[8]⚠	**36750-16**[8]⚠
Stock ratio with enlarged stud dia.	1.60	7/16"	**11747-16**[8]⚠	**86757-16**[8]⚠
Stock ratio, pedestal mount-type for 1977-00 cyl. heads, non-adjustable, secured with 5/16" bolt, for hyd. lifter and hyd. roller cam applications only	1.60	5/16" Bolt	—	**36759-16**[9]⚠
Increased ratio, pedestal mount-type for 1977-00 cyl. heads, non-adjustable, secured with 5/16" bolt, for hyd. lifter and hyd. roller cam applications only	1.70	5/16" Bolt	**44746-16**[9]⚠	**36758-16**[9]⚠
Increased ratio with enlarged stud dia., 50-state legal, C.A.R.B. EO D-225-50	1.70	7/16"	—	**36757-16**[8]⚠
1969-82 V8, Boss 302, Boss 351, 351C-351M-400				
Reduced ratio with standard boss stud dia.	1.6	7/16"	—	**27757-16**[11]⚠
Reduced ratio with standard boss stud dia.	1.65	7/16"	—	**27759-16**[11]⚠
Stock ratio with standardboss stud dia.	1.72	7/16"	**27744-16**[11]⚠	**27750-16**[11]⚠
Stock ratio with standard boss stud dia., "wide body" design for severe usage applications	1.73	7/16"	—	**27771-16**[11]⚠
V8, 351W, Boss 351 Ford Racing Blocks Equipped with Dart Pro 1 Cyl. Heads				
Reduced ratio with enlarged dia., .150" right offset intake, certified ratio for Crate Motor Rules Applications (non-anodized)	1.50	7/16"	—	**44756-16**⚠
1968-97 V8, 370-460				
Reduced ratio with standard Cobra Jet stud dia.	1.6	7/16"	—	**27757-16**[11]⚠
Reduced ratio with standard Cobra Jet Stud Dia.	1.65	7/16"	—	**27759-16**[11]⚠
Stock ratio with Standard Cobra Jet stud dia.	1.72	7/16"	**27744-16**[10]⚠	**27750-16**[11]⚠
Stock ratio with Standard Cobra Jet stud dia., "wide body" design for severe usage applications	1.73	7/16"	—	**27771-16**[11]⚠
OLDSMOBILE APPLICATIONS				
1967-91 V8, 260-455				
Increased ratio for 3/8" straight studs	1.65	3/8"	**80744-16**[12]⚠	—
Stock ratio with enlarged stud dia.	1.60	7/16"	—	**80757-16**[13]⚠
Increased ratio with enlarged stud dia.	1.70	7/16"	—	**36757-16**⚠
PONTIAC APPLICATIONS				
1967-91 V8, 260-455				
Increased ratio with enlarged stud dia.	1.65	7/16"	**28747-16**[14]⚠	**28758-16**[15]⚠

See footnotes at top of page 189.

[1] Must machine 1974-91 cylinder heads and install 99156-16 3/8" rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[2] Must machine 1966-91 cylinder heads and install 99157-16 7/16" rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods are required for use with guideplates.
[3] Require 20622-12 pushrods for 194-230-250 engines
[4] For inline valve cylinder heads. Set includes special 10mm x 1.50 bottom x 3/8" x 24 top rocker arm studs (99148-12), no machingin required. Check valve covers and intake manifold for clearance throughout the lift cycle.
[5] The 1988-99 engines equipped with self-aligning rocker arms require the installation of pushrod guideplates (and 99156-16 3/8" or 99157-16 7/16" rocker arm studs, if applicable) and appropriate heat-treated pushrods in order for proper rocker arm function. Valve cover clearance must also be checked. Not suitable for use with center-bolt valve covers.
[6] For use in self-aligning applications. Do not use with pushrod guideplates or with cylinder head castings that guide the pushrods, as severe pushrod wear will occur. Not for use in LS1 type engines.
[7] The 1991-00 Gen V & VI engines require the installation for 99152-16 7/16" rocker studs (no machining required) and factory pushrod guideplates. For applications with over 480 lbs. open spring pressure, the heads must be machined for the installation of 99157-16 7/16" rocker arm studs and 13650-1 pushrod guideplates. The 2001-08 8.1L engines require the installation of 99155-16 7/16" rocker arm studs (no machining required) and factory pushrod guideplates.
[8] Must machine 1966-00 cylinder heads and install 99156-16 3/8" or 99157-16 7/16" rocker arm studs and 36650-1 pushrod guideplates (heat-treated pushrods required) or use 36655-16 Conversion Kit (no machining required) on 1977-00 pedestal mount cylinder heads for street applications.
[9] Includes Rocker Arm Pedestal Shim Kit 99170-1.
[10] On 1968-71 engines equipped with bottleneck studs, install 99159-16 straight 7/16" studs to permit valve adjustment. The 1972-97 engines equipped with pedestal mount rocker arms can use 35655-16 Conversion Kit for 3/8" pushrods (no machining required) for street applications.
[11] The 351C-351M-400 engines equipped with pedestal mount rocker arms require the use of 52655- 16 Conversion Kit (no machining required) for street applications.
[12] Must machine cylinder heads and install 99156-16 3/8" rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods required.
[13] Must machine cylinder heads and install 99157-16 7/16" rocker arm studs and aftermarket pushrod guideplates. Special order heat-treated pushrods required.
[14] On engines not equipped with 7/16" rocker arm studs, cylinder head machining is required for the installation of 99157-16 7/16" rocker arm studs.
[15] Must machine cylinder heads and install 99157-16 7/16" rocker arm studs.

#11750

GM LS ROCKER ARM TRUNNION UPGRADE KIT & TOOL

This trunnion upgrade kit allows users of stock GM LS rockers to upgrade to a captured roller trunnion for more stability and stiffness for use in racing applications. In less than 30 minutes, the user can increase valve train durability with caged roller bearings.

Sold separately, the Trunnion Upgrade Installation Tool is a cylinder-shaped, magnetic tool that is perfect for use in an arbor press, bench vise or c-clamp and simplifies the installation process of Crane's upgraded trunnions on stock GM LS rockers.

TRUNNION UPGRADE KIT INCLUDES THE FOLLOWING:

- (16) Trunnions
- (16) Bolts
- (32) Bearings
- (32) Retaining Rings

DESCRIPTION	PART NO.
GM LS Trunnion Upgrade Kit	**144790-16**⚠
Trunnion Upgrade Kit Installation Tool	**99477-1**⚠

#144790

ADJUSTING NUTS & SCREWS

STEEL ROCKER ARM ADJUSTING NUTS, "KOOL NUTS"

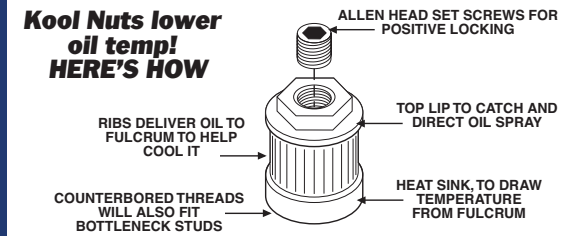
Crane's locknuts for stamped steel rocker arms are available in self-locking type standard configurations, and in our patented Kool Nut oil defection design. These direct the pressure-fed oil flow to the pivot ball-rocker arm interface, resulting in superior lubrication and cooling for this critical area.

STUD DIA. & THREAD	DESCRIPTION	PART NO.
5/16"-24	Self Locking	**99772-16**
3/8"-24	Self Locking	**99770-16**
3/8"-24	Kool Nuts with Oil Deflector	**99768-16**[1]
7/16"-20	Self Locking	**99771-16**
7/16"-20	Kool Nuts with Oil Deflector	**99769-16**[1]

[1] Counterbored on bottom to also fit bottleneck studs

#99770-2

END TYPES



#99769-2

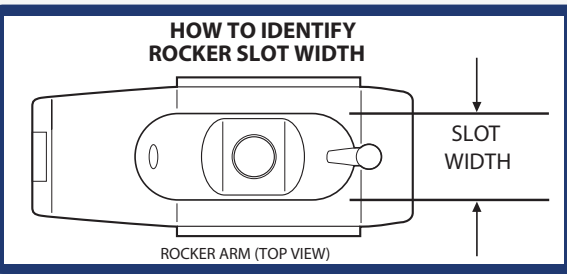
SHAFT-TYPE ROCKER ARM ADJUSTING SCREWS

Crane Shaft-Type Rocker Arm Adjusting Screws are precision machined from premium steel billet material and selectively hardened to provide maximum strength. These screws are extremely lightweight and drilled for oiling when necessary.

STUD DIA. & THREAD	BALL/CUP DIA.	DESCRIPTION	PART NO.
3/8"-24	**5/16" Ball**	Chrysler V8 "LA," "B," and 426 HEMI with Locknut	**99802-16**
3/8"-24	**3/8" Ball**	Chrysler V8 "LA," "B," and 426 HEMI with Locknut, for Severe Duty Applications, Special Pushrods Required	**99780-16**
7/16"-20	**5/16" Ball**	Chrysler V8 "LA," "B," and 426 HEMI with Locknut, for Repair or Ratio Modification of Rocker Arms	**66770AS-16**
7/16"-20	**3/8" Ball**	Ford V8 332-428 with Locknut, for 34772-16 Ductile Iron Rocker Arms	**99680-16**

#99780

TECH TIP:



Since mid-1985, most Crane Gold Race Stud Mount Extruded Rocker Arms (except narrow body versions) have had a .600" wide top slot. Crane Energizer Stud Mount Rocker Arms have a .570" wide top slot.

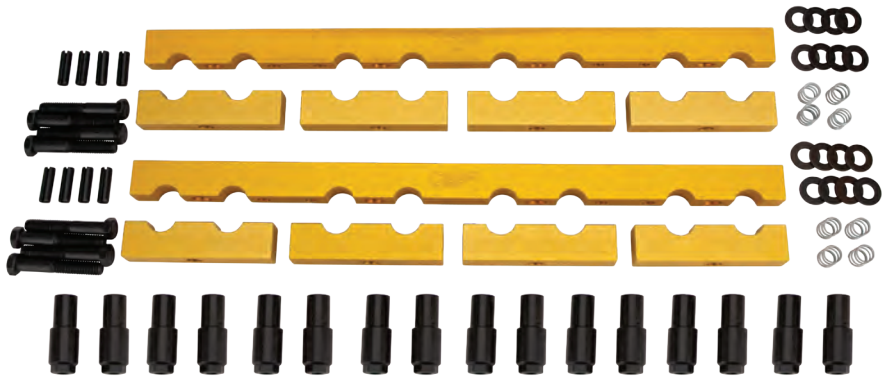
POLYLOCKS & STABILIZERS

ROCKER ARM ADJUSTING NUTS

Crane Adjusting Nuts for Crane's roller tip, needle bearing aluminum rocker arms feature high-quality metal bar stock, precision machined on our own automatic screw machines and heat-treated in house for maximum strength and durability. Each Crane locknut comes complete with an Allen head set screw for positive jam nut operation.

#99810-2

STUD DIA. & THREAD	MINIMUM ROCKER SLOT WIDTH	ALUMINUM ROCKER ADJUSTING NUT PART NO.	OVERALL HEIGHT	VTS BAR (STUD GIRDLE) ADJUSTING NUT PART NO.	OVERALL HEIGHT
3/8"-24	.550"	**99788-16**⚠	1.063"	**99803-8**⚠	2.013"
3/8"-24	.550"	**99795-16**⚠ (For Center Bolt Valve Cover Applications)	.860"	—	—
3/8"-24	.600"	**99793-16**⚠	1.063"	—	—
7/16"-20	.550"	**99790-16**⚠	.922"	—	—
7/16"-20	.550"	—	—	**99805-8**⚠ (For Chevrolet V8 396-454 Intake)	2.512"
7/16"-20	.600"	**99792-16**⚠	.969"	**99810-8**⚠	2.013"
7/16"-20	.600"	—		**99809-8**⚠ (For Chevrolet V8 396-454 Intake)	2.637"



#11604-1

VALVE TRAIN STABILIZERS - QUICK-LOCK STUD GIRDLES

Quick-Lock Valve Train Stabilizers are a unique approach to the now common use of stud girdles for racing engine applications. Most importantly, the Crane Quick-Lock unit slashes the time required for removal and replacement of the stabilizer unit to a fraction of the time other units require. Crane VTS bars are made from the finest quality aluminum bar stock, machined to precise blueprint specifications and attractively gold anodized for corrosion resistance. Each Crane VTS comes complete with all necessary hardware, including heat-treated steel rocker arm adjusting nuts. They are easily installed and require no cylinder head machining or modifications for installation. ***CAUTION: Added height of the Crane VTS requires the use of aftermarket tall valve covers.***

CHEVROLET APPLICATIONS	PART NO.
V8 262-400 & Pontiac-Brodix w/ Standard Rocker Arm Stud Spacing	
For 3/8" Rocker Arm Studs (99803 Nuts Included)	**11600-1**⚠
For .600" Wide Top Slot Rocker Arms and 7/16" Rocker Arm Studs (99810 Nuts Included)	**11604-1**⚠
V8 396-454 (Will Not Fit Casting 14044861)	
For .600" Wide Top Slot Rocker Arms (99809 Intake and 99810 Exhaust Nuts Included)	**13602-1**⚠
FORD APPLICATIONS	
V8 370-460	
For .600" Wide Top Slot Rocker Arms and 7/16" Rocker Arm Studs (99810 Nuts Included)	**35602-1**⚠

SHIM KITS

ROCKER ARM BRIDGE SHIM KIT

Crane's Rocker Arm Bridge Shim Kit will correct for excessive hydraulic lifter preload on late model American Motors V8 and I6 applications, as well as Oldsmobile V8s with the bridge mounted rocker arm assemblies. This kit will also work on the later model Pontiac 151 I4 with shoulder bolt mounted rocker arms. Two different thickness shims are included to decrease lifter preload by approximately .030", .060" or .090", depending on the combination of shims being used between the bridge and the cylinder head. Excessive preload may be caused by a camshaft change, valve job, head resurfacing, etc. These shims can be a quick and easy alternative to resorting to different length pushrods.

#99179-1

DESCRIPTION	PART NO.
Rocker Arm Bridge Shims Kit - 32 Pieces	**99179-1** ⚠

ROCKER ARM PEDESTAL SHIM KIT

Crane's Rocker Arm Pedestal Shim Kit is for use on Ford engines utilizing non-adjustable pedestal mounted rocker arms. The hydraulic lifters in these engines may have excessive preload due to a camshaft change, valve job, head resurfacing, etc. To cure this problem without resorting to changing pushrods, we offer this pedestal shim kit containing two different thickness shims. These shims are placed between the rocker arm pedestal and the cylinder head and will reduce the preload by approximately .030", .060", or .090". These will fit the Ford V8, 255-302, 302 H.O., 351W, 351C, 351M, 400, and 370-460 engines.

#99170

DESCRIPTION	PART NO.
Rocker Arm Pedestal Shims Kit - 32 Pieces	**99170-1** ⚠

BREAK-IN ENGINE OIL

Crane Cams has partnered with Driven Racing Oil to offer a specially formulated 10W-40 conventional engine oil to cope with the stresses created with flat tappet camshafts. A formula of advanced petroleum base, combined with an additive package used in Crane Cams Super Lube and a carefully proportioned zinc (ZDDP) component, this oil is intended for use with all conventional fuel types, with no additional oil additives required. Also recommended for roller lifter-equipped engines. **See page 234** of this catalog for more information.

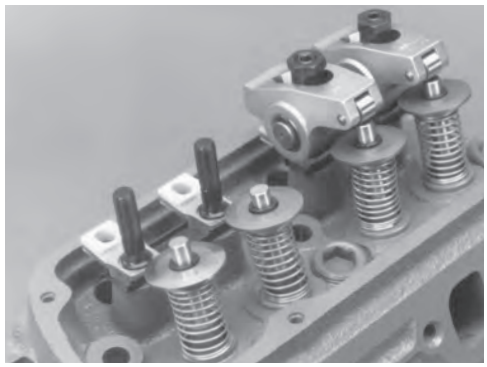
GUIDEPLATE CONVERSION KITS

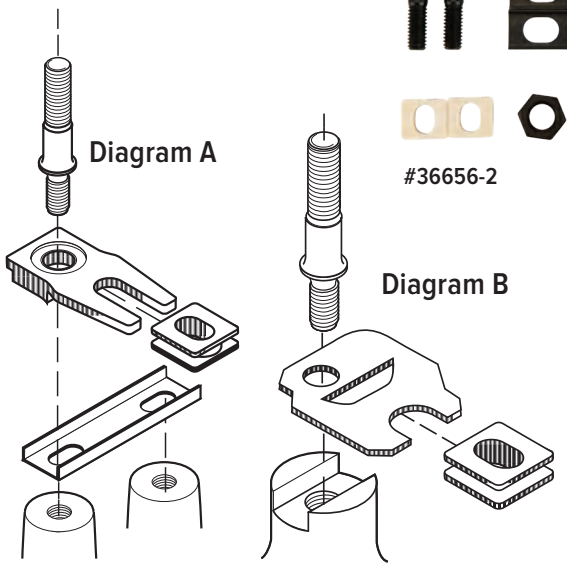
ROCKER ARM GUIDEPLATE CONVERSION KITS

Crane Cams' Rocker Arm Guideplate Conversion Kits enable you to convert late-model Dodge and Ford V8 engines with pedestal mount rocker arms to an adjustable-type valve train without machine work or cylinder head removal. These kits allow standard pushrods to be retained, in most instances, as the guideplate uses a special composite insert that prevents metal-to-metal contact. These kits are intended for mild performance applications using hydraulic lifter or hydraulic roller cams and are not recommended for competition use. Rocker arms, adjusting nuts, and pushrods are not included. These will fit all pedestal mount factory rocker arms for Ford V8 engines: 1977-00 255-302, 1977-97 351W, 1970-82 351C, 351M, 400, 1973-97 370-460.

HARDWARE INCLUDED:

- Guideplates
- Guideplate Inserts
- Studs
- Stud Installation Nuts





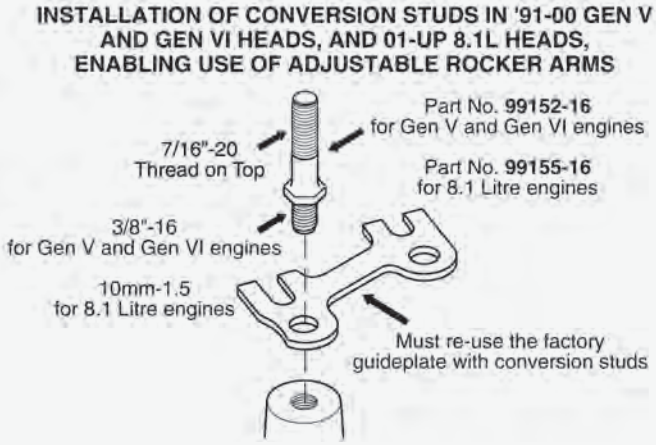
DODGE APPLICATIONS	PART NO.	DIAGRAM
Dodge 1992-02, Magnum V8 318 (5.2L) and 360 (5.9L)		
5/16"-18 Threaded Stud Bosses, Must Use 11746-16 or 11759-16 Aluminum Rocker Arms for 3/8" Rocker Arm Studs and 5/16" Dia. 36621-16 Heat Treated Pushrods	**36655-16**	A
5/16"-18 Threaded Stud Bosses, Must Use 11747-16 or 11755-16 Aluminum Rocker Arms for 7/16" Rocker Arm Studs and 5/16" Dia. 36621-16 Heat-Treated Pushrods	**36656-16**	A
Dodge Aluminum Magnum, Crate Motor Cyl. Heads		
3/8"-16 Threaded Stud Bosses, Must Use 11746-16 or 11759-16 Aluminum Rocker Arms for 3/8" Rocker Arm Studs and 5/16" Dia. 36621-16 Heat-Treated Pushrods	**70655-16**	A
FORD APPLICATIONS		
1977-00 V8, 255-302, 302 H.O., 351W		
Will Accept 3/8" Stud Die-Formed Steel or Crane Aluminum Rocker Arms and 5/16" Dia. Pushrods	**36655-16**	A
Will Accept 7/16" Stud Crane Aluminum Rocker Arms or 5/16" Dia. Pushrods	**36656-16**	A
1970-82 V8, 351C, 351M, 400, 1972-97 V8, 370-429-460		
Will Accept 7/16" Stud Die-Formed Steel or Crane Aluminum Rocker Arms and 5/16" Dia. Pushrods	**52655-16**	B
Will Accept 7/16" Stud Die-Formed Steel or Crane Aluminum Rocker Arms and 3/8" Dia. Pushrods	**35655-16**	B
Replacement Guideplate Insert for 5/16" Dia. Pushrods (Included in Kits)	**52655GB-16**	—
Replacement Guideplate Insert for 3/8" Dia. Pushrods (Included in Kits)	**35655GB-16**	—

STUD CONVERSION KITS

Chevrolet's 1991-00 Gen V and VI, 454-502 and 01-08 8.1L Big-Block V8 engines offer great performance potential but are handicapped by their non-adjustable, self-aligning rocker arms and valve train. In stock form, this system works well, but for performance applications or any instance where an aftermarket camshaft and valve train are called for, another solution is necessary.

Now Crane Cams offers an ingenious, simple, cost-effective way to convert these non-adjustable valve train engines to the obvious performance advantages of high strength, screw-in rocker studs, pushrod guideplates, and die-formed steel rockers or roller fulcrum, aluminum rocker arms. These unique rocker arm studs replace the stock studs without retapping, machining or removal of the cylinder heads.

APPLICATION	PART NO.
Chevrolet 1991-00 V8, 454 and 502 Gen V and Gen VI Engines	**99152-16**
Chevrolet 2001-08 V8, 8.1L Engines	**99155-16**




#99152

TECH NOTES:

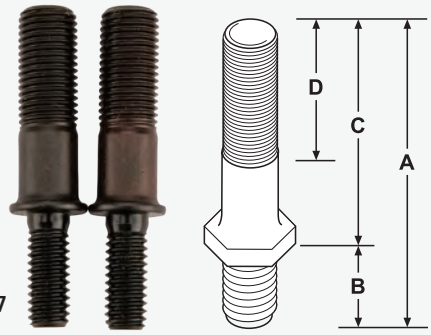
For the Gen V and VI, rocker arm stud kit 99152-16 is made with a 3/8" dia. bottom thread that bolts directly into the stock rocker bolt location. On top is a 7/16" threaded stud end that allows you to install any adjustable Chevy Big Block rocker directly onto the stud. Factory pushrod guideplates must be used to correctly align the pushrods. You can use 13634-16 heat treated pushrods or 3/8" dia. stock pushrods from any Big Block Chevy V8 equipped with adjustable rockers.

The Crane 99152-16 "big-and-small" studs are not recommended for use in competition applications or with valve spring open pressures over 480 lbs. For those applications use 99157-16 7/16" x 7/16" studs (you must drill and re-tap new threads in the heads) and 13650-1 guideplates.

For the 2001-08 8.1L engines, rocker arm stud kit 99155-16 incorporates a 10mm-1.5 bottom thread that bolts into the stock rocker stand location. The 7/16"-20 top thread allows you to use any adjustable Chevy Big Block rocker. Crane 26640-16 Pro Series Pushrods are recommended for proper valve train geometry.

ROCKER STUDS

Crane's screw-in rocker arm studs eliminate problems resulting from press-in studs pulling out at high RPM and in high valve spring pressure applications. Made from high-quality alloy steel, Crane studs are precision machined and heat-treated for reliable operation with today's valve train loading. Specially machined threads and shoulder area ensures firm and positive rocker arm support with minimum movement or distortion.



#99147

TOP STUD DIA. & THREAD	BOTTOM STUD DIA. & THREAD	DIM. A	DIM B.	DIM. C.	DIM. D	PART NO.
3/8"-24	5/16"-18	2.313	.813	1.500	.875	**99146-16**
3/8"-24	3/8"-16	2.313	.813	1.500	.875	**99145-16**
3/8"-24	10mm-1.5	2.384	.813	1.572	.582	**99148-16**
3/8"-24	7/16"-14	2.396	.700	1.750	.806	**99156-16**
7/16"-20	5/16"-18	2.313	.813	1.500	.875	**99147-16**
7/16"-20	7/16"-14	2.560	.800	1.760	.860	**99157-16**
7/16"-20	3/8"-16	2.650	.750	1.900	1	**99152-16**[1]
7/16"-20	10mm-1.5	2.650	.750	1.900	1.000	**99155-16**[2]
7/16"-20	7/16"-14	2.670	.740	1.930	1.060	**99159-16**

[1] Conversion stud for Chevrolet Gen V and VI, must use factory guideplates, not recommended for applications with over 480 lbs open valve spring pressure, no maching required.

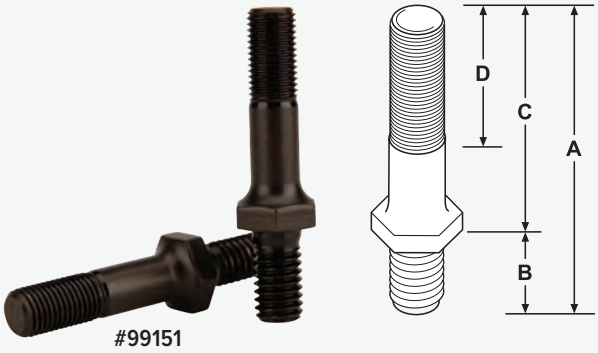
[2] Conversion stud for Chevrolet 8.1L V8, must use factory guideplates, no machining required.

TECH NOTES:

The 99148 studs are used to convert Chevrolet 60° 1980-94 V6, 2.8-3.1L engines with non-self aligning 10mm stud rocker arms to use adjustable narrow body 3/8" stud rocker arms without cylinder head machining.

PRO SERIES ROCKER ARM STUDS

Crane Cams professional quality, Pro Series Rocker Arm Studs feature extra large radii for reduced stud flex, even with today's extreme valve spring pressures and high RPM racing engine operating levels. Our Pro Series Rocker Studs are precision manufactured from 190,000 P.S.I. strength alloy steel material with rolled threads and precise top-to-bottom concentricity. These are state-of-the-art items designed and priced for those seeking the highest quality parts available.



#99151

TOP STUD DIA. & THREAD	BOTTOM STUD DIA. & THREAD	DIM. A	DIM B.	DIM. C.	DIM. D	PART NO.
3/8"-24	8mm-1.25	2.157	.720	1.437	.625	**99154-16**
3/8"-24	8mm-1.25	2.360	.615	1.745	.800	**99158-16**
7/16"-20	7/16"-14	2.650	.750	1.900	1.000	**99153-16**
7/16"-20	7/16"-14	2.700	.800	1.900	.800	**99151-16**[1]

[1] Stud has a longer than normal unthreaded portion in the top section, providing superior support and stability for the rocker arm fulcrum.

TIMING SETS

PERFORMANCE

PERFORMANCE ROLLER TIMING CHAIN SETS

Crane Performance Roller Chain Sets offer the precision, strength and accuracy of billet steel, CNC-machined camshaft and crankshaft sprockets with the strength, friction reduction and wear resistance of a double-row, roller timing chain. Most kits include a seven key-way crank sprocket for easy degreeing of your camshaft. Where applicable, most sets are machined for, and include, a thrust shim.

TECH NOTES:

Due to the increased width of the sprockets and chain, clearance must be checked between the timing set and the block casting. Some applications may require minor grinding of the block for clearance.

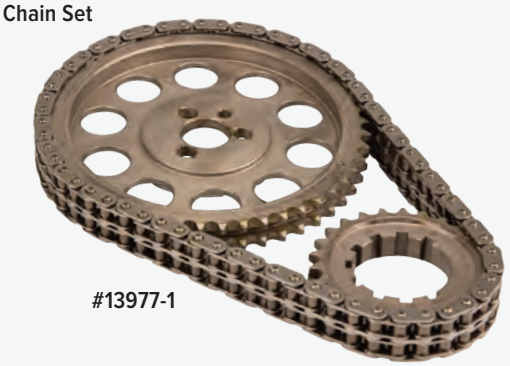
CHEVROLET APPLICATIONS	PART NO.
90° 1978-86 V8, 200-262 and 1955-87 V8, 262-400	**11975-1*⚠**
90° 1978-86 V8, 200-262 and 1955-87 V8, 262-400 with thrust bearing	**11976-1*⚠**
1987-91 V8, 305 and 350 with factory hyd. roller camshaft	**10975-1[1]*⚠**
1965-95 V8, 396-502 (including Gen V)	**13975-1[2]*⚠**
CHRYSLER/DODGE/PLYMOUTH APPLICATIONS	
Hemi 1951–56 V8, 301-354 and 1957–58 392	**69975-1*⚠**
1964-93 V8, "LA," 273-340-360 and 1967-91, 318	**69975-1*⚠**
Magnum 1992-02 V8, 5.2-5.9L	**69975-1*⚠**
1970-78 V8, "B", 383-440 (three bolt), and 1966-71 V8, 426 Hemi	**68975-1*⚠**
FORD APPLICATIONS	
1973-01 V8, 255 (4.2 L)-302-302 H.O-351W	**44975-1*⚠**
1969-82 V8, 351C-351M-400	**52975-1*⚠**
1968-97 V8, 370-460	**35975-1*⚠**
OLDSMOBILE APPLICATIONS	
1964-84 V8, 260-455	**80975-1*⚠**
PONTIAC APPLICATIONS	
1955-81 V8, 265-455	**28975-1*⚠**

[1] Complete set with multiple keyway crank sprocket and captured needle bearing thrust washer.
[2] Does not fit Gen VI or 8.1L.
*This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

Performance Roller Timing Chain Set

#35975-1

Pro Series Roller Timing Chain Set



#13977-1

PRO SERIES

PRO SERIES ROLLER TIMING CHAIN SETS

Crane Cams Pro Series Roller Timing Chain Sets offer the precision, strength and accuracy of billet steel, nitride hardened, CNC-machined camshaft and crankshaft sprockets with the strength, friction reduction and wear resistance of a premium quality, German manufactured, double-row, roller timing chain. The billet 4140 steel nitride hardened crankshaft sprocket features nine separate keyway locations, providing up to eight degrees of advance or retard.

AMC APPLICATIONS	PART NO.	REPLACEMENT CHAIN	REPLACEMENT THRUST WASHER
1966-91 V8, 290-401			
Complete set with multiple keyway crank sprocket and captured needle bearing thrust washer	**86977-1*⚠**	—	—
CHEVROLET APPLICATIONS			
90° 1978-86 V6, 200-262 and 1955-87 V8, 262-400			
Complete set with multiple keyway crank sprocket and machined to fit supplied thrust washer	**11984-1*⚠**	**11978-1⚠**	**11984TW-1⚠ (.031") 11984TWT-1⚠(.150")**
Complete set with multiple keyway crank sprocket and captured needle bearing thrust washer	**11977-1*⚠**	**11978-1⚠**	—
LS1/LS6 1997-15 V8, 5.7L and Vortec 4800, 5300, 6000 (will not fit LS2)			
Complete set with steel billet gears and double roller chain, includes attaching hardware, cam sprocket has vernier adjustment, no cam sensor triggers	**144984-1*⚠**	—	—
LS2 (early) V8 6.0L			
Complete set with steel billet gears and double roller chain with thrust bearing, cam sprocket has single trigger cam sensor feature, 9 keyway crank sprocket	**144985-1*⚠**	—	—
LS2 (late), LS3, LS7, and L92 V8 6.0-6.2-7.0L three bolt			
Complete set with steel billet gears and double roller chain with thrust bearing, cam sprocket has four trigger cam sensor feature, 9 keyway crank sprocket	**144986-1*⚠**	—	—
1965-95 V8, 396-454 & 502 (including Gen V)			
Complete set with multiple keyway crank sprocket and machined to fit supplied thrust washer (does not fit Gen VI or 8.1L)	**13984-1*⚠**	**13978-1⚠**	**13984TW-1⚠ (.031")**
1965-95 V8, 396-454 & 502 (including Gen V)			
Complete set with multiple keyway crank sprocket and captured needle bearing thrust washer (does not fit Gen VI or 8.1L)	**13977-1*⚠**	**13978-1⚠**	—
1996-00 V8, 454 (7.4L)-502 (8.2L) Gen VI			
Complete set with multiple keyway crank sprocket and captured needle bearing thrust washer	**16977-1*⚠**	—	—
2001-08 V8, 8.1L L18 (Vortec 8100)			
Complete set with multiple keyway crank sprocket and captured needle bearing thrust washer	**26977-1*⚠**	—	—
CHRYSLER/DODGE/PLYMOUTH APPLICATIONS			
1970-78 "B", 383-440 (three bolt), 1966-71 V8, 426 Hemi			
Complete set with multiple keyway crank sprocket and captured needle bearing thrust washer	**68977-1*⚠**	—	—
FORD APPLICATIONS			
1973-01 V8, 255 (4.2L), 302, 302 H.O., 351W, 351 SVO			
Complete set with multiple keyway crank sprocket and machined to fit supplied thrust washer	**44984-1*⚠**	**11978-1⚠**	—

*This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

SELECTION

HOW TO SELECT A VALVE SPRING

1) **"FLAT FACED LIFTER" cam/lifter applications (street & street/strip) seat pressure ranges are listed below.**
   a. Small Block: 105-125# Seat Pressure
   b. Big Block: 115-130# Seat Pressure (Big Block applications need higher seat pressures due to their larger, heavier valves).

2) **"FLAT FACED LIFTER" open pressures should not exceed 330# open pressure (sustained after spring break-in for acceptable cam and lifter life).**
   a. Open pressures should be a minimum of 220# for applications up to 4000 RPM.
   b. For good performance above 4000, open pressures should be at least 260# with stock weight valves (lightweight valves require less spring open pressure).
   c. Spring open pressures over 280# can cause pressed-in studs to come loose, so we recommend screw-in studs for open pressures above 280#.

3) **HYDRAULIC ROLLER CAMS require higher spring seat pressures to control the heavier roller tappets and the more aggressive opening and closing rates available to roller cam profiles.**
   a. Small Block: 120-145# Seat Pressure
   b. Big Block: 130-165# Seat Pressure

4) **HYDRAULIC ROLLER CAMS use higher open pressures to control the high vertical opening inertia of the heavier roller followers.**
   a. Small Block applications need at least 260# for general driving applications up to 4000 RPM.
   b. Moderate performance small block applications like 300-360# open.
   c. Serious small block applications can tolerate 400-425#* open pressures and still expect reasonable valve train life when top quality springs, pushrods, and lubricants are used.
   d. Big Block applications need at least 280# for general driving applications up to 4000 RPM.
   e. Moderate performance big block applications like 325-375# open pressure.
   f. Serious big block performance applications can tolerate 450#* open pressure and still expect reasonable valve train life when top quality springs, pushrods, and lubricants are used.

* Open pressures in excess of 360# require the use of roller tappet bodies made of billet steel. Crane hyd.raulic roller and solid roller tappets are made from heat-treated steel billet to withstand the stresses of high-performance use. Most stock hydraulic roller tappet bodies are made of cast iron and cannot tolerate high spring loads.

5) **ROLLER CAM/LIFTER applications are generally for serious street/strip use and full competition.**

   Most are not used in daily-drivers where day-to-day reliability is stressed. Instead, they are intended for winning performance. These cams are designed with very aggressive opening and closing rates. High seat pressures are necessary to keep the valves from bouncing when they come back to the seat. In all cases, the valve action and spring pressures required mandate the use of high-strength, one-piece valves.

   a. Seat pressures are determined by valve/retainer weight, engine RPM, and life expectancy of components before replacement is required. Milder roller cams require 165# on the seat as an absolute minimum, 180-200# is common for most modest performance applications, 220-250# is common for most serious sport categories and some circle track professional categories, Pro-Stock and Blown Alcohol/Fuel drag applications use as much as 340-500# on the seat.

   b. Open pressures need to be high enough to control the valve train as the lifter goes over the nose of the cam. Ideally, the minimum amount of open pressure to eliminate or minimize valve train separation is desired. Any excess open pressure only contributes to pushrod flex, which can aggravate valve train separation. For serious racing applications this can be determined only by experimentation and track testing. For general guidelines we offer the following:
      i. Street/Strip performance with long cam/lifter life desirable: 350-450# open
      ii. Circle track and moderate bracket racing: 450-600#
      iii. Serious drag racing and limited distance circle track racing: 600# and more

SINGLE

SINGLE VALVE SPRINGS

O.D.	I.D.	DAMPER	SEAT PRESSURE	OPEN PRESSURE	COIL BIND	RATE (LBS/IN.)	MAX NET LIFT	APPLICATION	PART NO.
1.000	.730	No	62 lbs @1.475	130 @ 1.025	.910	151 lbs/in.	.475	Ford Duratec 1.8-2.3L DOHC 4V 4 cyl., included in 903-2007 valve spring and retainer kit	**96845-16**
1.065	.725	No	60 lbs @1.535	255 lbs @ 1.063	.987	413 lbs/in.	.500	Chrysler/Dodge Neon DOHC I4	**180830-16**
1.065	.725	No	85 lbs @1.535	244 lbs @ 1.135	1.014	398 lbs/in.	.470	Chrysler/Dodge Neon SOHC I4	**158830-16**
1.255	.870	Yes	114 lbs @1.700	340 @ 1.200	1.153	432 lbs/in.	.487	SB Chevy street/strip, RV/truck power, stock dia. spring for 1.700" installed height, .480" max recommended valve lift	**99848-16**
1.255	.870	No	124 lbs @1.750	374 @ 1.150	1.100	409 lbs/in.	.640	Late model LT1 w/ alum. heads, LS1 or other alum. heads w/ 1.770-1.820" installed height, XHTCS	**99845-16**
1.255	.870	Yes	125 lbs @ 1.800	383 @ 1.200	1.100	428 lbs/in.	.640	SB Chevy up to .600" valve lift with stock spring seats, flat tappets installed @ 1.800", hyd. roller installed @ 1.750-1.800" XHTCS	**99846-16**
1.260	.876	Yes	107 lbs @ 1.800	348 @ 1.200	1.110	395 lbs/in.	.600	SB Chevy hyd.. roller w/1.750" installed height, SB Chevy flat tappet w/ 1.770-1.800" installed height	**96802-16**
1.265	.775	Yes	125 lbs @ 1.750	388 @ 1.250	1.100	526 lbs/in.	.600	SB Chevy performance hyd. roller cams, PAC enhanced wire	**144846-16**
1.435	1.035	Yes	107 lbs @ 1.700	317 @ 1.150	1.037	330 lbs/in.	.600	Various Ford 302-351W V8s, Ford 300 6 cyl., Mopar 360s and Olds 350/400/455	**96803-16**
1.437	1.077	Yes	104 lbs @ 1.750	229 @ 1.150	1.069	204 lbs/in.	.620	Ford V8 RV and mild street applications, used w/96840, 96842, 96843 for various hyd.. roller and flat tappet street/strip and bracket applications	**96806-16**
1.440	1.040	No	98 lbs @ 1.700	260 @ 1.200	1.080	328 lbs/in.	.560	AMC 6 cyl., SB Ford, Olds V8, street/strip, RV/ truck power applications	**99833-16**
1.460	1.060	Yes	110 lbs @ 1.550	303 @ 1.100	.935	442 lbs/in.	.605	Many Pontiac V8 street/strip applications	**99840-16**
1.460	1.060	Yes	114 lbs @ 1.800	287 @ 1.250	1.139	310 lbs/in.	.600	Ford V8s w/ 1.770-1.850" installed heights, used w/ 96840 and 96842 for high performance hyd. rollers and solid flat tappet cams	**96801-16**
1.500	1.086	Yes	113 lbs @ 1.600	280 @ 1.150	1.000	412 lbs/in.	.565	SB Chrysler, street/strip, RV/truck power	**99835-16**
1.500	1.086	Yes	121 lbs @ 1.800	298 @ 1.300	1.130	354 lbs/in.	.660	AMC V8, BB Chevy w/1.880" installed height, street/strip, RV/truck power	**99839-16**
1.539	1.125	Yes	129 lbs @ 1.950	358 @ 1.200	1.130	312 lbs/in.	.700	BB Chevy and BB Chrysler hyd. roller and high performance flat tappet cams, use +.050" keepers, used with 96843 & 96844 inners for several mech. roller cams	**96807-16**

SINGLE BEEHIVE-SHAPE VALVE SPRINGS

	O.D.	I.D.	DAMPER	SEAT PRESSURE	OPEN PRESSURE	COIL BIND	RATE (LBS/IN.)	MAX NET LIFT	APPLICATION	PART NO.
Top:	.930	.567	No	90 lbs @1.470	252 @ .970	.900	324 lbs/in.	.500	Ford Mod. 4.6-5.4L DOHC 4V V8	**40830-32**
Bottom:	1.025	.662								
Top:	.967	.636	No	85 lbs @1.640	250 @ 1.040	1.000	275 lbs/in.	.620	Ford 4.6-5.4L 2V & 3V V8	**37830-16**
Bottom:	1.096	.765								
Top:	1.055	.650	No	130 lbs @ 1.800	318 @ 1.200	1.140	313 lbs/in.	.600	LS1/LS2 Performance hyd. roller cams	**99831-16**
Bottom:	1.290	.885								
Top:	1.095	.650	No	155 lbs @ 1.880	377 @ 1.280	1.210	370 lbs/in.	.650	Big Block Chevy and FE Ford	**99832-16**
Bottom:	1.445	1.000								
Top:	1.295	.859	No	118 lbs @ 1.950	375 @ 1.380	1.320	457 lbs/in.	.580	Ford 5.0/351W street/strip, RV/truck power	**99841-16**
Bottom:	1.450	1.014								

VALVE SPRINGS

SINGLE & DUAL

INNER VALVE SPRINGS

The inner springs shown below are available separately for "mix-and-match" dual spring combinations using "96" part number prefix single valve springs. See specific "96" dual springs for correct components. These inner springs are not recommended for use with "99" prefix springs. Sold in sets of 16.

O.D.	I.D.	DAMPER	SEAT PRESSURE	OPEN PRESSURE	COIL BIND	RATE (LBS/IN.)	MAX NET LIFT	APPLICATION	PART NO.
.937	.697	No	29 lbs @ 1.600	90 @ 1.000	.925	96 lbs/in.	.615	For use with 96801, 96806, outer valve springs	**96842-16**
.953	.697	No	54 lbs @ 1.500	130 @ 1.000	.916	132 lbs/in.	.500	For use with 96806, 96807, outer valve springs	**96843-16**
.970	.700	No	51 lbs @ 1.750	134 @ 1.150	1.014	135 lbs/in.	.676	For use with 96801, 96806 outer valve springs	**96840-16**
1.015	.731	No	57 lbs @ 1.800	160 @ 1.150	1.045	155 lbs/in.	.650	For use with 96807 outer valve springs	**96844-16**

DUAL VALVE SPRINGS

O.D.	I.D. 1	I.D. 2	DAMPER	SEAT PRESSURE	OPEN PRESSURE	COIL BIND	MAX NET LIFT W/ .060" CLEARANCE	RATE (LBS/IN.)	APPLICATION	PART NO.
1.212	.900	.674	No	93 lbs @ 1.550	266 @ .950	.865	.625	290 lbs/in.	Buick V6 & Buick 350 V8	**99891-16**
1.218	.906	.680	No	91 lbs @ 1.300	220 @ .900	.783	.457	337 lbs/in.	Early Ford 2.0L SOHC & VW, liquid cooled	**99879-8**
1.297	.667	.917	No	148 lbs @ 1.800	413 @ 1.150	1.060	.680	408 lbs/in.	LS performance hyd. roller camshafts	**144838-16**
1.298	.664	.914	No	151 lbs @ 1.800	461 @ 1.150	1.080	.660	477 lbs/in.	LS performance hyd. roller camshafts, XHTCS material	**144847-16**
1.304	.980	.754	No	96 lbs @ 1.650	230 @ 1.150	.927	.663	215 lbs/in.	Nissan 4 cyl., Ford 2.3L SOHC	**99884-8**
1.344	1.000	.730	No	107 lbs @ 1.820	274 @ 1.300	1.057	.703	334 lbs/in.	SB Chevy 1987-91 L98 and Fast Burn alum. heads w/ hyd. roller cams	**96887-16**
1.437	1.080	.697	Yes	134 lbs @ 1.750	283 @ 1.250	1.185	.600	296 lbs/in.	Several SB Chevy, SB Ford flat tappet and hyd. roller applications **(96806 outer/96842 inner)**	**96873-16**
1.437	1.080	.697	Yes	128 lbs @ 1.800	328 @ 1.200	1.115	.625	322 lbs/in.	Various hyd. roller & flat tappet street perf. & mild bracket racing **(96806 outer/96843 inner)**	**96874-16**
1.437	1.080	.700	Yes	131 lbs @ 1.850	345 @ 1.200	1.110	.680	326 lbs/in.	SB Chevy & SB Ford hyd. rollers and flat tappet bracket racing w/ long valves or tall assembly heights **(96806 outer/96840 inner)**	**96872-16**
1.449	1.075	.794	No	120 lbs @ 1.875	394 @ 1.175	1.035	.625	392 lbs/in.	Hyd. and mech. flat faced lifter camshafts, mild hyd. roller camshafts	**99892-16**
1.460	1.060	.697	Yes	126 lbs @ 1.850	366 @ 1.250	1.175	.615	404 lbs/in.	BB Ford and BB Chrysler hyd. roller and flat tappet, street/strip use **(96801 outer/96842 inner)**	**96877-16**
1.460	1.075	.803	No	130 lbs @ 1.850	402 @ 1.150	1.080	.710	391 lbs/in.	BB Chevy, BB Ford, BB Chrysler, premium RV/truck power applications, flat tappet racing use	**99893-16**
1.460	1.060	.700	Yes	134 lbs @ 1.900	424 @ 1.250	1.154	.686	448 lbs/in.	High performace hyd. rollers, Sportsman flat tappet racing, moderate performace solid rollers **(96801 outer/96840 inner)**	**96870-16**
1.465	1.091	.807	No	112 lbs @ 1.650	336 @ 1.100	.950	.690	438 lbs/in.	AMC 6 cyl, Buick V8s, many performance cams with short assembly heights requiring high lifts and moderate spring rate	**99838-16**
1.500	1.050	.726	No	300 lbs @ 2.100	1002 @ 1.200	1.130	.900	780 lbs/in.	Small dia., low mass, all-out race, nano-peened, Pacaloy wire	**961356-16**
1.500	1.050	.726	No	420 lbs @ 2.175	1200 @ 1.175	1.130	1.000	780 lbs/in.	Small dia., low mass, high lift drag race, nano-peened, Pacaloy wire	**961355-16**

CHART CONTINUES ON NEXT PAGE →

DUAL

DUAL VALVE SPRINGS CONT'D

O.D.	I.D. 1	I.D. 2	DAMPER	SEAT PRESSURE	OPEN PRESSURE	COIL BIND	MAX NET LIFT W/ .060" CLEARANCE	RATE (LBS/ IN.)	APPLICATION	PART NO.
1.522	1.050	.726	No	400 lbs @ 2.250	1252 @ 1.300	1.190	.950	895 lbs/in.	Small dia., low mass, all-out race, nano-peened, Pacaloy wire	**961360-16**
1.530	1.116	.766	Yes	131 lbs @ 1.900	410 @ 1.250	1.160	.630	428 lbs/in.	BB Chevy hyd. and solid flat tappet racing, BBC, BB Ford, & Ford 351/400 hyd. roller cams	**99890-16**
1.539	1.125	.697	Yes	160 lbs @ 1.900	424 @ 1.300	1.145	.700	444 lbs/in.	BB Chevy and BB Chrysler solid street rollers or hyd. rollers w/ +.050" taller installation heights **(96807 outer/96843 inner)**	**96879-16**
1.539	1.125	.731	Yes	200 lbs @ 1.900	508 @ 1.250	1.152	.680	480 lbs/in.	Various solid roller applications for Pro Street & bracket use **(96807 outer/96844 inner)**	**96878-16**
1.540	1.140	.754	Yes	144 lbs @ 1.900	403 @ 1.300	1.175	.665	434 lbs/in.	Various Big Block hyd. roller applications	**99895-16**
1.540	1.140	.760	Yes	150 lbs @ 1.900	560 @ 1.150	1.135	.755	528 lbs/in.	Various Big Block hyd. roller applications, harmonics optimized for sustained high RPM marine use, solid flat tappets with tall assembly heights	**99896-16**
1.540	1.115	.729	Yes	224 lbs @ 1.950	638 @ 1.200	1.130	.760	544 lbs/in.	Professional roller cam race applications, electro-polished	**96883-16**
1.550	1.100	.706	Yes	275 lbs @ 2.000	805 @ 1.200	1.150	.800	663 lbs/in.	Various Small and Big Block roller camshafts, drag racing	**961226-16**
1.550	1.100	.788	No	250 lbs @ 2.000	765 @ 1.200	1.150	.800	644 lbs/in.	High rate dual spring for aggressive valve train, premium circle track, nano-peened, PAC enhanced wire	**961325-16**
1.550	1.100	.706	Yes	275 lbs @ 2.000	805 @ 1.200	1.150	.800	662 lbs/in.	High rate dual spring with damper for aggressive valve train, premium circle track, nano-peened, PAC enhanced wire	**961326-16**
1.550	1.050	.726	No	425 lbs @ 2.300	1440 @ 1.300	1.230	1.000	1015 lbs/ in.	Small diameter, low mass, high lift drag race, nano-peened, Pacaloy wire	**961354-16**
1.551	1.119	.699	Yes	226 lbs @ 2.000	717 @ 1.250	1.150	.790	652 lbs/in.	Drag race & circle track roller cams w/1.950- 2.000"installed hts	**96886-16**
1.555	1.130	.743	Yes	256 lbs @ 2.000	652 @ 1.250	1.178	.762	510 lbs/in.	Professional roller cam race applications, electro-polished	**96884-16**
1.565	1.146	.740	Yes	190 lbs @ 1.950	552 @ 1.250	1.200	.690	504 lbs/in.	Solid street rollers/bracket racing, high performance big block hyd. rollers w/ tall assembly heights	**99876-16**
1.565	1.129	.749	Yes	215 lbs @ 1.950	685 @ 1.200	1.121	.769	618 lbs/in.	Bracket race & circle track roller cams, XHTCS	**99885-16**
1.593	1.154	.741	Yes	254 lbs @ 2.050	687 @ 1.280	1.220	.780	576 lbs/in.	Professional circle track endurance, ID chamfered coils, radiused damper ends, PAC enhanced wire	**96885-16**
1.625	1.175	.851	No	280 lbs @ 2.100	847 @ 2.100	1.100	.900	629 lbs/in.	Bracket race applications with height lift/ aggressive valve train and RPM require-ments, Pacaloy wire	**961228-16**
1.625	1.175	.769	Yes	244 lbs @ 2.000	801 @ 1.150	1.090	.850	656 lbs/in.	Drag race roller cams with approximately 2.00" installed heights, XHTCS	**99880-16**
1.625	1.175	.769	Yes	250 lbs @ 2.050	673 @ 1.300	1.210	.750	564 lbs/in.	Various Big Block roller camshafts, lower lift bracket racing, PAC enhanced wire	**961299-16**
1.625	1.175	.851	No	275 lbs @ 2.000	810 @ 1.150	1.100	.850	625 lbs/in.	Various Big Block roller camshafts, high lift bracket racing, PAC enhanced wire	**961224-16**

VALVE SPRINGS

TRIPLE

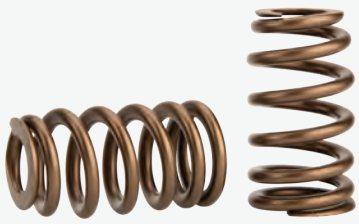
TRIPLE VALVE SPRINGS

O.D.	I.D. 1	I.D. 2	DAMPER	SEAT PRESSURE	OPEN PRESSURE	COIL BIND	MAX NET LIFT W/ .060" CLEARANCE	RATE (LBS/IN.)	APPLICATION	PART NO.
1.645	1.195	.635	No	250 lbs @ 2.050	801 @ 1.250	1.130	.800	689 lbs/in.	Various Big Block roller camshafts, high lift bracket racing, PAC enhanced wire	**961246-16**
1.645	1.195	.635	No	290 lbs @ 2.070	835 @ 1.270	1.130	.800	682 lbs/in.	Various Big Block roller camshafts, high lift bracket racing, nano-peened, PAC enhanced wire	**961347-16**
1.645	1.195	.635	No	332 lbs @ 2.100	950 @ 1.200	1.130	.900	688 lbs/in.	Various Big Block roller camshafts, high lift bracket racing, nano-peened, PAC enhanced wire	**961348-16**
1.667	1.195	.635	No	300 lbs @ 2.100	963 @ 1.250	1.135	.850	780 lbs/in.	Various Big Block roller camshafts, high lift bracket racing, PAC enhanced wire	**96888-16**
1.675	1.203	.634	No	362 lbs @ 2.100	1035 @ 1.200	1.161	.879	684 lbs/in.	Pro Drag Racing including blown alcohol & fuel	**96848-16**
1.675	1.203	.634	No	352 lbs @ 2.200	1024 @ 1.200	1.161	.979	690 lbs/in.	Pro Drag Racing including blown alcohol & fuel	**96849-16**

Single Spring W/ Damper

#96801

Single Beehive Spring



#99831

Triple Spring

#96888

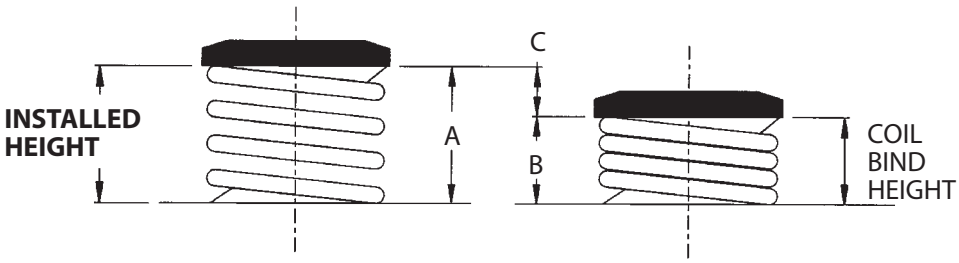
TECH NOTES:

What is Valve Spring Coil Bind and how does it relate to Spring Travel and Valve Lift?

When the valve spring is compressed until its coils touch one another and can travel no further, it is said to be in coil bind. The catalog (pages 199-202) shows the approximate coil bind height for Crane Cams valve springs. To measure this, you must install the retainer in the valve spring, then compress the spring until it coil binds. Now measure from the bottom side of the retainer to the bottom of the spring. This measurement is the coil bind height. (See Below) This can be done on the cylinder head with a spring compression tool in a bench vise or in a professional valve spring tester.

Using the diagram below, subtract the coil bind height "B" from the valve spring installed height "A". The difference "C" is the maximum spring travel. The spring travel is usually at least .060" greater than the full lift of the valve. This safety margin of .060" (or more) is necessary to avoid the dangers of coil bind and over-stressing the spring.

If coil bind occurs, the resulting mechanical interference will severely damage the camshaft and valve train components.



SPEC CHART

SPRING TYPE	Single	Single	Single	Single	Single	Single	Single	Single
O.D.	1.000	1.065	1.065	1.025/.930	1.096/.967	1.255	1.255	1.255
I.D.	.730	.725	.725	.662/.567	.765/.636	.870	.870	.870
DAMPER	No	No	No	No	No	Yes	No	Yes
INSTALLED HEIGHT	1.475	1.535	1.535	1.470	1.640	1.700	1.750	1.800
COIL BIND	.910	.987	1.014	.900	1.000	1.153	1.100	1.100
SPRING RATE (LBS/IN.)	151	413	398	324	275	432	415	428
MAX. NET LIFT	.475	.500	.470	.500	.600	.487	.640	.640
PART NO.	**96845**⚠	**180830**⚠	**158830**⚠	**40830**⚠	**37830**⚠	**99848**⚠	**99845**⚠	**99846**⚠
2.300								
2.250								
2.200								
2.150								
2.100								
2.050								
2.000								
1.950								
1.900								
1.850								104
1.800						81	103	**125**
1.750						100	**124**	147
1.700					69	**114**	145	169
1.650					82	137	165	190
1.600					96	158	187	213
1.550		54	79	64	110	179	208	235
1.500	58	74	94	80	124	201	228	256
1.450	66	95	114	96	137	222	249	278
1.400	74	115	134	113	151	243	270	299
1.350	81	136	154	129	165	265	290	321
1.300	89	156	173	145	179	287	311	342
1.250	96	177	193	161	192	313	332	363
1.200	104	197	213	177	206	340	353	383
1.150	111	218	233	194	220		374	405
1.100	119	238	253	210	234			
1.050	126	259		226	247			
1.000	134			242	261			
.950	142			258				
.900								
Popular Recommended Components								
STEEL RETAINERS (see page 213-214)	—	—	—	—	—	**99915**⚠ **99916**⚠	**99914**⚠	**99915**⚠ **99916**⚠
TITANIUM RETAINERS 7° (see page 214-215)	**903-0503**⚠	**158660**⚠	**158660**⚠	**40660**⚠	**37660**⚠	—	—	—
TITANIUM RETAINERS 10° (see page 215-216)	—	—	—	—	—	—	—	—
SPRING SEATS (see page 229)	—	—	—	—	—	—	—	—

*Denotes Inner Spring

VALVE SPRINGS

CRANE Cams®

SPRING TYPE	Single	Single	Single	Single	Single	Single	Single	Single
O.D.	1.260	1.265	1.290/.885	1.435	1.437	1.440	1.445/1.095	1.450/1.295
I.D.	.876	.865	1.055/.650	1.035	1.080	1.040	1.000/.650	1.014/.859
DAMPER	Yes	Yes	No	Yes	Yes	No	No	No
INSTALLED HEIGHT	1.800	1.750	1.800	1.700	1.750	1.700	1.880	1.950
COIL BIND	1.110	1.100	1.140	1.037	1.069	1.080	1.210	1.139
SPRING RATE (LBS/IN.)	395	526	313	330	204	328	370	457
MAX. NET LIFT	.600	.600	.600	.600	.620	.560	.650	.580
PART NO.	**96802**	**144846**	**99831**	**96803**	**96806**	**99833**	**99832**	**99841**
2.300								
2.250								
2.200								
2.150								
2.100								
2.050								
2.000								95
1.950							129	118
1.900			99				148	141
1.850		73	114		86		166	164
1.800	**107**	**99**	130		96		185	187
1.750	125	125	**146**	91	104	**83**	203	209
1.700	144	151	161	107	**113**	98	**222**	232
1.650	162	177	177	123	122	113	240	255
1.600	181	204	193	132	130	128	259	278
1.550	199	230	208	148	140	143	277	301
1.500	220	256	224	164	150	159	296	324
1.450	238	282	240	181	160	174	314	347
1.400	258	308	255	198	171	189	333	369
1.350	280	335	271	215	181	205	351	392
1.300	302	361	287	234	192	222	370	415
1.250	325	388	302	251	203	239	388	438
1.200	248	413	318	272	215	256		461
1.150		439		289	229	274		
1.100				317	240	293		
1.050								
1.000								
.950								
.900								
Popular Recommended Components								
STEEL RETAINERS (see page 213-214)	**99915** **99916**	**99915** **99916**	**144943** **99976**	**99946** **99969**	**99936** **99944**	**99936** **99944**	**99976**	**99942**
TITANIUM RETAINERS 7° (see page 214-215)	—	—	**99637**	—	—	—	**99637**	—
TITANIUM RETAINERS 10° (see page 215-216)	—	—	—	—	—	**99630**	—	—
SPRING SEATS (see page 229)	—	—	**99454**	—	—	—	—	—

*Denotes Inner Spring

SPRING TYPE	Single	Single	Single	Single	Single	Single	Single	Single
O.D.	1.460	1.460	1.500	1.500	1.539	.937	.953	.970
I.D.	1.060	1.060	1.086	1.086	1.125	.697	.697	.700
DAMPER	Yes	Yes	Yes	Yes	Yes	No	No	No
INSTALLED HEIGHT	1.550	1.800	1.600	1.800	1.950	1.600	1.500	1.750
COIL BIND	.935	1.139	1.000	1.130	1.130	.925	.916	1.014
SPRING RATE (LBS/IN.)	442	310	412	354	312	96	132	135
MAX. NET LIFT	.605	.600	.565	.660	.700	.615	.500	.676
PART NO.	**99840**⚠	**96801**⚠	**99835**⚠	**99839**⚠	**96807**⚠	**96842***⚠	**96843***⚠	**96840***⚠
2.300								
2.250								
2.200								
2.150								
2.100								
2.050								
2.000					115			
1.950		75			**129**			
1.900		88		86	136			
1.850		101		102	149			38
1.800		**114**		**121**	162			45
1.750		128		138	177	14		**51**
1.700		143		155	192	19		58
1.650		157	92	172	207	23		63
1.600	91	171	**113**	189	222	**29**	42	70
1.550	**110**	186	133	206	237	32	48	76
1.500	131	201	154	224	252	37	**54**	83
1.450	151	218	174	242	269	42	60	90
1.400	171	235	195	260	286	47	66	97
1.350	191	252	215	279	302	51	73	105
1.300	212	269	234	298	318	56	80	112
1.250	233	287	256	320	338	61	87	120
1.200	255	304	277	338	358	66	94	127
1.150	279		298	359		71	102	134
1.100	303		319			76	111	
1.050	328		342			82	120	
1.000	352		364			90	130	
.950	378							
.900								
Popular Recommended Components								
STEEL RETAINERS (see page 213-214)	**99936**⚠ **99944**⚠	**99936**⚠ **99944**⚠	**99936**⚠ **99944**⚠	**99936**⚠ **99944**⚠	**99962**⚠ **99970**⚠	—	—	—
TITANIUM RETAINERS 7° (see page 214-215)	—	—	—	—	—	—	—	—
TITANIUM RETAINERS 10° (see page 215-216)	**99630**⚠	—	**99630**⚠	**99630**⚠	**99641**⚠	—	—	—
SPRING SEATS (see page 229)	**99457**⚠	—	**99459**⚠	**99459**⚠	—	—	—	—

*Denotes Inner Spring

VALVE SPRINGS

CRANE Cams®

SPRING TYPE	Single	Dual	Dual	Dual	Dual	Dual	Dual	Dual
O.D.	1.015	1.212	1.218	1.298	1.298	1.344	1.437	1.437
I.D.	.731	.674	.680	.667	.664	.730	.697	.697
DAMPER	No	No	No	No	No	No	Yes	Yes
INSTALLED HEIGHT	1.800	1.550	1.300	1.800	1.800	1.800	1.750	1.800
COIL BIND	1.045	.865	.783	1.060	1.080	1.057	1.185	1.115
SPRING RATE (LBS/IN.)	155	290	337	408	477	334	296	322
MAX. NET LIFT	.650	.625	.457	.660	.680	.710	.600	.625
PART NO.	**96844***	**99891**	**99879**	**144838**	**144847**	**96887**	**96873**	**96874**
2.300								
2.250								
2.200								
2.150								
2.100								
2.050								
2.000								
1.950	33							
1.900	41			107	103			
1.850	49			128	127		106	112
1.800	**57**			**148**	**151**	**114**	120	**128**
1.750	64			168	175	129	**134**	142
1.700	72			189	199	144	148	156
1.650	80	**66**		209	223	160	162	171
1.600	88	79		230	246	176	175	186
1.550	95	93		250	270	192	189	202
1.500	103	107		270	294	208	204	218
1.450	111	121		291	318	224	219	234
1.400	119	135		311	342	240	234	252
1.350	126	148	76	332	366	257	250	270
1.300	134	162	**91**	352	390	274	267	289
1.250	143	176	106	372	413	292	283	308
1.200	151	190	122	393	437	310	299	328
1.150	160	204	137	413	461	330		352
1.100		219	152			350		
1.050		234	168					
1.000		250	184					
.950		266	202					
.900		284	220					
Popular Recommended Components								
STEEL RETAINERS (see page 213-214)	—	**99912**	**99926**	**144944**	**144944**	**99935**	**99944 99969**	**99944 99969**
TITANIUM RETAINERS 7° (see page 214-215)	—	**99916**	—	**99975**	**99975**	—	**99669**	**99669**
TITANIUM RETAINERS 10° (see page 215-216)	—	—	—	**144661**	**144661**	—	**99630**	**99630**
SPRING SEATS (see page 229)	—	—	—	**99657**	**99657**	—	**99465**	**99465**

*Denotes Inner Spring

SPRING TYPE	Dual	Dual	Dual	Dual	Dual	Dual	Dual	Dual
O.D.	1.437	1.449	1.460	1.460	1.460	1.465	1.500	1.500
I.D.	.700	.794	.697	.803	.700	.807	.726	.726
DAMPER	Yes	No	Yes	No	Yes	No	No	No
INSTALLED HEIGHT	1.850	1.875	1.850	1.850	1.900	1.650	2.100	2.175
COIL BIND	1.110	1.035	1.175	1.080	1.154	.950	1.130	1.130
SPRING RATE (LBS/IN.)	326	392	404	391	448	438	780	780
MAX. NET LIFT	.680	.625	.615	.710	.686	.690	.900	1.000
PART NO.	**96872**	**99892**	**96877**	**99893**	**96870**	**99838**	**961356**	**961355**
2.300								
2.250								361
2.200							222	**400**
2.150							261	439
2.100							**300**	478
2.050							339	517
2.000							378	556
1.950			88	92	113		417	595
1.900	115	110	107	112	**134**		456	634
1.850	**131**	130	**126**	**130**	154		495	673
1.800	146	149	144	149	174		534	712
1.750	160	169	163	167	194		573	751
1.700	175	189	183	186	215	91	612	790
1.650	189	208	203	205	236	**112**	651	829
1.600	205	228	222	223	256	131	690	868
1.550	221	247	242	242	278	151	729	907
1.500	238	267	261	261	300	171	768	946
1.450	255	287	282	279	323	190	807	985
1.400	272	306	304	298	348	210	846	1025
1.350	291	326	324	318	373	230	885	1064
1.300	309	345	346	338	398	251	924	1103
1.250	327	365	366	358	424	271	963	1142
1.200	345	385	389	380	447	292	1002	1181
1.150	368	404		402		313	1041	1220
1.100		424				336		
1.050						360		
1.000						383		
.950								
.900								
Popular Recommended Components								
STEEL RETAINERS (see page 213-214)	**99944** **99969**	**99953** **99954**	**99944** **99969**	**99953** **99954**	**99944** **99969**	**99944** **99969**	**99970** **99974**	**99970** **99974**
TITANIUM RETAINERS 7° (see page 214-215)	**99669**	**99639**	**99669**	**99669**	**99669**	**99669**	**99663**	**99663**
TITANIUM RETAINERS 10° (see page 215-216)	**99630**	—	**99630**	**99630**	**99630**	**99630**	**99640**	**99640**
SPRING SEATS (see page 229)	**99465**	—	**99465**	—	**99465**	—	**99465** **99455**	**99465** **99455**

*Denotes Inner Spring

VALVE SPRINGS

CRANE Cams®

SPRING TYPE	Dual	Dual	Dual	Dual	Dual	Dual	Dual	Dual
O.D.	1.522	1.530	1.539	1.539	1.540	1.540	1.540	1.550
I.D.	.726	.776	.697	.697	.754	.760	.729	.706
DAMPER	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INSTALLED HEIGHT	2.250	1.900	1.900	1.900	1.900	1.900	1.950	2.000
COIL BIND	1.190	1.160	1.145	1.152	1.175	1.085	1.130	1.150
SPRING RATE (LBS/IN.)	895	428	444	480	434	528	544	663
MAX. NET LIFT	.950	.630	.700	.680	.665	.755	.760	.800
PART NO.	961360⚠	99890⚠	96879⚠	96878⚠	99895⚠	99896⚠	96883⚠	961226⚠
2.300	357							
2.250	**402**							
2.200	447							
2.150	491							
2.100	536						148	209
2.050	581						174	242
2.000	626		116	154		110	200	**275**
1.950	670	112	137	178	123	128	**224**	308
1.900	715	**131**	**160**	**200**	**144**	**150**	250	341
1.850	760	151	180	222	165	173	275	374
1.800	805	171	202	244	186	196	300	407
1.750	849	190	223	266	207	220	327	441
1.700	894	210	244	288	228	244	352	474
1.650	939	229	266	311	250	267	379	507
1.600	984	250	286	335	272	290	404	540
1.550	1028	271	307	354	292	316	432	573
1.500	1073	292	328	383	312	343	458	606
1.450	1118	313	350	409	334	372	484	639
1.400	1163	336	375	436	357	399	512	672
1.350	1207	360	401	460	380	428	541	706
1.300	1252	385	424	484	403	460	572	739
1.250	1297	410	448	508	430	491	604	772
1.200	1342	435	471	532	457	524	638	805
1.150						560		838
1.100								
1.050								
1.000								
.950								
.900								
Popular Recommended Components								
STEEL RETAINERS (see page 213-214)	99970⚠ 99974⚠	99962⚠ 99970⚠	99926⚠	99970⚠ 99974⚠	99956⚠ 99970⚠	99956⚠ 99970⚠	99970⚠ 99974⚠	99970⚠ 99974⚠
TITANIUM RETAINERS 7° (see page 214-215)	99663⚠	99659⚠	—	99659⚠	99678⚠ 99681⚠	99678⚠ 99681⚠	99678⚠ 99681⚠	—
TITANIUM RETAINERS 10° (see page 215-216)	99640⚠	99641⚠	99641⚠	99634⚠ 99641⚠	99631⚠ 99632⚠	99631⚠ 99632⚠	—	99631⚠ 99639⚠
SPRING SEATS (see page 229)	99465⚠ 99455⚠	99466⚠	—	99460⚠	99464⚠	99466⚠ 99464⚠	99460⚠	99465⚠

*Denotes Inner Spring

SPRING TYPE	Dual	Dual	Dual	Dual	Dual	Dual	Dual	Dual	Dual
O.D.	1.550	1.550	1.550	1.551	1.555	1.565	1.565	1.625	1.593
I.D.	.788	.706	.726	.699	.743	.740	.749	.851	.741
DAMPER	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes
INSTALLED HEIGHT	2.000	2.000	2.300	2.000	2.000	1.950	1.950	2.100	2.050
COIL BIND	1.150	1.150	1.230	1.150	1.178	1.200	1.121	1.100	1.220
SPRING RATE (LBS/IN.)	644	662	1015	652	510	504	618	629	576
MAX. NET LIFT	.800	.800	1.00	.790	.762	.690	.769	.900	.770
PART NO.	**961325**⚠	**961326**⚠	**961354**⚠	**96886**⚠	**96884**⚠	**99876**⚠	**99885**⚠	**961228**⚠	**96885**⚠
2.300			**425**						
2.250			476						
2.200			526					217	
2.150			577					249	
2.100	186	209	628	167	207			**280**	227
2.050	218	242	679	197	232		161	311	**254**
2.000	**250**	**275**	729	**226**	**256**	163	189	343	280
1.950	282	308	780	255	280	**190**	**215**	374	305
1.900	314	341	831	284	308	214	242	406	330
1.850	347	374	882	314	332	239	270	437	356
1.800	379	407	932	344	357	264	297	469	383
1.750	411	441	983	374	381	290	324	500	411
1.700	443	474	1034	406	407	314	352	532	440
1.650	475	507	1085	439	431	339	381	563	468
1.600	507	540	1136	473	458	364	411	595	496
1.550	540	573	1186	507	482	390	444	626	526
1.500	572	606	1237	541	508	415	475	658	556
1.450	604	639	1288	574	533	441	505	689	587
1.400	636	672	1339	610	560	466	536	721	618
1.350	668	706	1389	643	585	493	572	752	647
1.300	701	739	1440	683	612	522	606	784	676
1.250	733	772	1491	717	652	552	645	815	
1.200	765	805			692		685	846	
1.150								878	
1.100									
1.050									
1.000									
.950									
.900									
Popular Recommended Components									
STEEL RETAINERS (see page 213-214)	**99970**⚠ **99974**⚠	**99970**⚠ **99974**⚠	**99970**⚠ **99974**⚠	**99974**⚠ **99970**⚠	**99956**⚠ **99970**⚠	**99956**⚠ **99970**⚠	**99956**⚠ **99970**⚠	—	**99970**⚠ **99974**⚠
TITANIUM RETAINERS 7° (see page 214-215)	**99661**⚠	**99661**⚠	**99663**⚠	**99659**⚠	**99675**⚠ **99681**⚠	**99678**⚠ **99681**⚠	**99678**⚠ **99681**	**99660**⚠	**99675**⚠
TITANIUM RETAINERS 10° (see page 215-216)	**99639**⚠ **99641**⚠	**99639**⚠ **99641**⚠	**99640**⚠	**99634**⚠ **99641**⚠	**99631**⚠ **99632**⚠	**99631**⚠ **99632**⚠	**99634**⚠ **99641**⚠	**99638**⚠	**99635**⚠ **99632**⚠
SPRING SEATS (see page 229)	**99464**⚠	**99465**⚠ **99464**⚠	**99465**⚠ **99455**⚠	**99465**⚠	**99460**⚠	**99460**⚠ **99464**⚠	**99460**⚠ **99464**⚠	**99463**⚠	**99460**⚠

*Denotes Inner Spring

VALVE SPRINGS

CRANE Cams®

SPRING TYPE	Dual	Dual	Dual	Triple	Triple	Triple	Triple	Triple	Triple
O.D.	1.625	1.625	1.625	1.645	1.645	1.645	1.667	1.675	1.675
I.D.	.769	.769	.851	.635	.635	.635	.635	.634	.634
DAMPER	Yes	Yes	No	No	No	No	No	No	No
INSTALLED HEIGHT	2.000	2.050	2.000	2.050	2.070	2.100	2.100	2.100	2.200
COIL BIND	1.090	1.210	1.100	1.130	1.130	1.135	1.135	1.161	1.161
SPRING RATE (LBS/IN.)	656	564	625	689	682	688	780	684	690
MAX. NET LIFT	.850	.750	.850	.800	.800	.900	.850	.879	.979
PART NO.	**99880**⚠	**961299**⚠	**961224**⚠	**961246**⚠	**961347**⚠	**961348**⚠	**96888**⚠	**96848**⚠	**96849**⚠
2.300								230	289
2.250								262	320
2.200						263		295	**352**
2.150		194			236	298	261	329	385
2.100	182	222	212	216	270	**332**	**300**	**362**	418
2.050	213	**250**	244	**250**	304	366	339	396	452
2.000	**244**	278	**275**	284	338	401	378	430	487
1.950	275	306	306	319	372	435	417	462	520
1.900	306	335	338	353	406	469	456	498	554
1.850	337	363	369	388	440	504	495	530	588
1.800	368	391	401	422	474	538	534	564	623
1.750	400	419	432	457	508	572	573	598	657
1.700	431	447	464	491	542	607	612	633	692
1.650	463	476	495	526	576	641	651	668	727
1.600	496	504	527	560	610	675	690	704	761
1.550	528	532	558	594	644	710	729	740	797
1.500	560	560	590	629	678	744	768	776	832
1.450	594	588	621	663	712	778	807	815	870
1.400	627	617	653	698	746	813	846	857	906
1.350	663	645	684	732	781	847	885	900	942
1.300	696	673	716	767	815	881	924	942	981
1.250	731	701	747	801	849	916	963	987	1024
1.200	764		779	835	883	950	1002	1035	
1.150	801		810			984			
1.100									
1.050									
1.000									
.950									
.900									
Popular Recommended Components									
STEEL RETAINERS (see page 213-214)	**99962**⚠	—	—	—	—	—	—	—	—
TITANIUM RETAINERS 7° (see page 214-215)	**99675**⚠	**99660**⚠	**99660**⚠	**99662**⚠	**99662**⚠	**99662**⚠	**99678**⚠ **99681**⚠	**99678**⚠ **99681**⚠	**99678**⚠ **99681**⚠
TITANIUM RETAINERS 10° (see page 215-216)	**99638**⚠	**99638**⚠	**99638**⚠	**99632**⚠	—	—	**99632**⚠ **99636**⚠	**99632**⚠ **99636**⚠	**99632**⚠ **99636**⚠
SPRING SEATS (see page 229)	**99466**⚠ **99463**⚠	**99466**⚠ **99463**⚠	**99463**⚠	**99461**⚠	**99461**⚠	**99461**⚠	—	—	—

*Denotes Inner Spring

RETAINERS

STEEL VALVE SPRING RETAINERS

STANDARD CONFIGURATION

Crane Cams Steel Valve Spring Retainers are precision-manufactured from high-quality bar stock steel, heat-treated for maximum strength and durability, and black oxided for corrosion resistance. They are made for 8mm, 5/16", 11/32", and 3/8" valve stem diameters with 7° taper and are compatible with either Crane stamped steel or machined steel valve stem locks. Retainers for 3/8" diameter valve stems will also accommodate Crane Multi-Fit Steel Locks. We additionally offer retainers designed for specific engine applications.

MULTI-FIT STYLE STEEL RETAINERS – 7° TAPER

The Multi-Fit style has the same basic tapered I.D. dimensions as a normal 7° steel retainer made for a 3/8" valve stem diameter and is manufactured from premium quality bar stock material. By using the special, thick Multi-Fit Valve Stem Locks, these retainers can be used with either 5/16" or 11/32" valve stem diameters. By using Crane Cams 3/8" machined steel valve locks, these same retainers will also accommodate a 3/8" valve stem.

MULTI-FIT STYLE STEEL RETAINERS – 10° TAPER

Our Multi-Fit 10° retainers and locks differ from the conventional 10° items, as we use a smaller outside diameter lock, enabling the retainer to have a greater cross section in the critical area separating the inner spring steps from the tapered center hole. This provides superior strength and stability when compared to the competition, and these retainers are designed for use only with our Multi-Fit Locks. Compatible locks are offered for 8mm, 5/16", 11/32" and 3/8" valve stems in standard square groove and bead groove configurations.

TITANIUM VALVE SPRING RETAINERS

The lighter your valve train components, the quicker the engine will rev. Titanium retainers are 40% lighter than steel. All Crane Cams Titanium Retainers are machined from certified American-made bar stock. Beware of inexpensive "titanium" retainers. These are often made of inferior material and will not pass certification standards.

MULTI-FIT STYLE TITANIUM RETAINERS – 7° TAPER

The Multi-Fit Style has the same basic tapered I.D. dimensions as a normal 7° steel retainer made for a 3/8" valve stem diameter and is manufactured from premium quality bar stock material. By using the special thick Multi-Fit Valve Stem Locks, these retainers can be used with either 5/16" or 11/32" valve stem diameters. By using Crane Cams 3/8" machined steel valve locks, these same retainers will also accommodate a 3/8" valve stem.

MULTI-FIT STYLE STEEL RETAINERS – 10° TAPER

Our Multi-Fit 10° retainers and locks differ from the conventional 10° items, as we use a smaller outside diameter lock, enabling the retainer to have a greater cross section in the critical area separating the inner spring steps from the tapered center hole. This provides superior strength and stability when compared to the competition, and these retainers are designed for use only with our Multi-Fit locks. Compatible locks are offered for 8mm, 5/16", 11/32" and 3/8" valve stems in standard square groove and bead groove configurations.

POSI-STOP DESIGN TITANIUM RETAINERS – 7° TAPER

Crane Cams' Posi-Stop Titanium Retainers feature the patented stepped design that reinforces the bottom of the retainer. This both significantly increases the integral strength of the retainer and eliminates the valve lock's ability to pull through the bottom of the retainer. Posi-Stop Retainers are made for 5/16", 11/32", or 3/8" valve stem diameters with 7° taper, and come with matching Crane machined valve stem locks.

MULTI-FIT STYLE TITANIUM RETAINERS – 10° TAPER

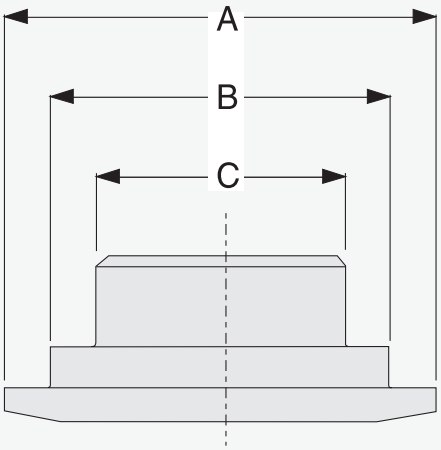
Our Multi-Fit 10° Retainers and locks differ from the conventional 10° items, as we use a smaller outside diameter lock, enabling the retainer to have a greater cross section in the critical area separating the inner spring steps from the tapered center hole. This provides superior strength and stability when compared to the competition, and these retainers are designed for use only with our Multi-Fit Valve Locks. Compatible locks are offered for 8mm, 5/16", 11/32" and 3/8" valve stems in standard square groove and bead groove configurations.

CONVENTIONAL DESIGN TITANIUM RETAINERS – 10° TAPER

Our Conventional 10° Titanium Retainers are made from premium quality titanium alloy bar stock that is precisely machined on our own automated equipment. Each retainer is carefully quality control inspected for precision and accuracy. These retainers are available in the popular conventional 10° design for strength and light weight.

HOW TO USE THE VALVE SPRING RETAINER CHARTS

The following pages supply you with specific information on the various valve spring retainers, valve stem locks, and their compatibility with the valve springs that Crane Cams offers. These parts can be used anywhere their physical size can be accommodated and where the resulting spring tension and spring travel is compatible with the camshaft, rocker arms, and lifters. Different combinations of valve springs, retainers and/or locks can be selected to match your particular needs.



SPRING RETAINER DIMENSIONS

Spring Retainer Dimensions are provided so you can determine how the retainer fits the valve springs. See pages 213-216.

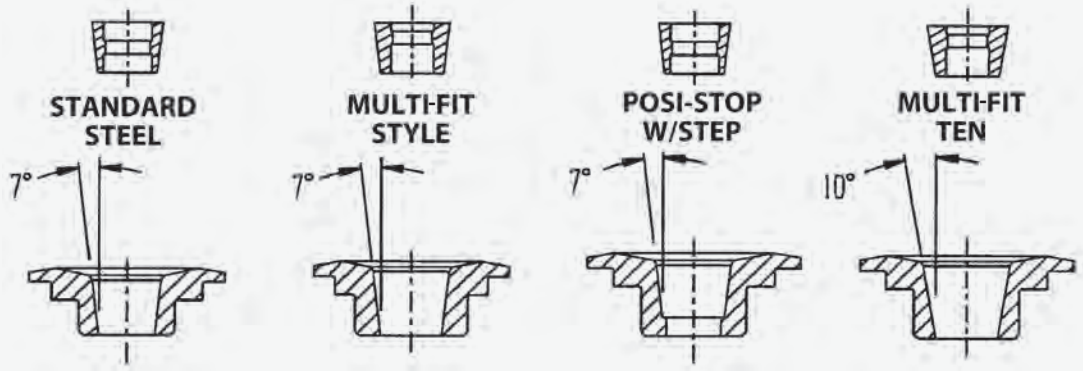
- Retainer Dimension "A" fits over the outer spring.
- Retainer Dimension "B" fits into the I.D. of the outer spring.
- Retainer Dimension "C" fits into the I.D. of the innermost spring.

RETAINER HEIGHT CHART

Crane presents a simplified method of matching the proper valve spring retainers and valve stem locks to your required assembly height. Simply measure your cylinder head from the spring seat to the top of the valve stem lock groove on the valve, and compare that to your needed assembly height. The chart indicates the relative heights for all of our retainer and standard height lock combinations, from the outer spring step to the top of the lock groove. No fixtures or sample parts are required, just the ability to measure. You can also take advantage of our wide range of +.050" and -.050" height locks to further refine your choices. This minimizes the shims required to achieve proper heights and pressures and provides a more stable platform for your valve springs. See pages 217-219.

SPRING TO RETAINER CROSS REFERENCE CHART

This chart shows what retainers are available to fit a particular part number valve spring. It is based on the diameter of the spring and matching diameter of the retainers. It is further broken down by valve stem size, then the material and design of the retainer. See pages 220-224.



STEEL RETAINER DIMENSIONS

7° MULTI-FIT STEEL RETAINERS FOR 5/16", 11/32", AND 3/8" VALVE STEM DIAMETERS

- For 5/16" square groove valve stems: use 99093-1 (standard), 99085-1 (+.050"), or 99086-1 (-.050") valve stem locks
- For 11/32" square groove valve stems: use 99094-1 (standard), 99087-1 (+.050"), or 99088-1 (-.050") valve stem locks
- For 3/8" square groove valve stems: use 99098-1 (standard), 99099-1 (+.050"), or 99089-1 (-.050") valve stem locks
- Valve stem locks for 5/16", 11/32", and 3/8" valve stems with bead groove configuration also available, see pages 226-228.

		RETAINER DIMENSIONS			
VALVE STEM DIA.	SPRING O.D. & TYPE	A	B	C	PART NO.
All	1.275" Dual	1.250	.910	.650	**99975-**
All	1.055"/1.290" to 1.095 "/1.445" Conical Single	.980	.640	—	**99976-**
All	1.430" to 1.500" Dual	1.375	1.030	.675	**99950-**
All	1.430" to 1.500" Dual or Triple	1.375	1.060	.675	**99948-**
All	1.430" to 1.500" Dual or Triple	1.375	1.060	.675	**99957-**
All	1.430" to 1.500" Single or Dual	1.425	1.060	.685	**99969-**
All	1.430" to 1.500" Single or Dual	1.425	1.060	.685	**99973-**
All	1.460" Dual	1.375	1.075	.792	**99954-**
All	1.510" to 1.625" Dual	1.500	1.100	.690	**99970-**
All	1.510" to 1.625" Dual	1.500	1.100	.690	**99974-**
All	1.530" Dual	1.500	1.111	.765	**99962-**
All	1.540" Dual	1.500	1.135	.725	**99964-**
All	1.540" Dual	1.500	1.135	.725	**99961-**
All	1.540" to 1.630 Dual or Triple	1.500	1.135	.635	**99955-**

7° STEEL RETAINERS FOR SPECIFIC VALVE STEM DIAMETERS AND APPLICATIONS

			RETAINER DIMENSIONS			
VALVE STEM DIA.	SPRING O.D. & TYPE	SPECIAL APPLICATIONS	A	B	C	PART NO.
8mm	1.055" Top/1.290" Bottom Beehive Single	Chevrolet LS1/LS2/LS6 V8	1.027	.637	—	**144943-**
8mm	1.275" Dual	Chevrolet LS1/LS2/LS6 V8	1.250	.910	.640	**144944-**
11/32"	1.225" to 1.250" Single or Dual	For Self-Aligning Rockers	1.210	.865	.595	**99914-**
11/32"	1.225" to 1.250" Single or Dual		1.203	.867	.607	**99916-**
11/32"	1.225" to 1.250" Single or Dual		1.203	.867	.607	**99915-**
11/32"	1.295" Top/1.450" Bottom Conical Single	Ford 302 H.O. V8	1.250	.859	—	**99942-**
11/32"	1.320" Dual	Ford SOHC 2.3L I4	1.250	.985	.745	**99967-**
11/32"	1.344" Dual	Chevy L98/Fast Burn Alum. Heads	1.275	.990	.720	**99935-**
11/32"	1.430" to 1.500" Single or Dual		1.375	1.030	.675	**99946-**
11/32"	1.430" to 1.500" Single or Dual		1.375	1.060	.675	**99936-**
11/32"	1.430" to 1.500" Single or Dual		1.375	1.060	.675	**99944-**
11/32"	1.430" to 1.500" Single or Dual		1.375	1.060	.675	**99943-**
11/32"	1.460" Dual		1.375	1.075	.792	**99953-**
11/32"	1.460" Dual for Self-Aligning Rocker Arms		1.375	1.075	.792	**99951-**
11/32"	1.540" to 1.630" Dual or Triple		1.500	1.135	.635	**99956-**

TECH NOTES:

The retainers are packaged in various quantities depending on the engine application. The suffix number (after the dash) in the part number indicates the quantity. For example, part no. 99944-16 would be packaged with 16 retainers. Consult the engine application pages for the correct quantity suffix.

10° MULTI-FIT STEEL RETAINERS

- For 5/16" square groove valve stems: use 99071-1 (standard), 99072-1 (+.050"), or 99070-1 (-.050") valve stem locks
- For 11/32" square groove valve stems: use 99074-1 (standard), 99075-1 (+.050"), or 99073-1 (-.050") valve stem locks
- For 3/8" square groove valve stems: use 99077-1 (standard), 99078-1 (+.050"), or 99076-1 (-.050") valve stem locks
- Valve stem locks for 5/16", 11/32", and 3/8" valve stems with bead groove configuration also available, see pages 226-228.

		RETAINER DIMENSIONS			
VALVE STEM DIA.	SPRING O.D. & TYPE	A	B	C	PART NO.
All	1.430" to 1.500" Single or Dual	1.425	1.060	.685	**99971-**
All	1.510" to 1.625" Dual	1.500	1.100	.690	**99972-**

TECH NOTES:

These recommended locks differ from competing conventional 10° locks and increase the breakage strength of our Multi-Fit Titanium Retainers by 25%. Also, many competing 10° locks vary in production from 9° to 11-1/2°. Because of the accurate, robust design of Crane locks, they are incompatible with most competitors' 10° retainers, and competitors' locks won't work with Crane Multi-Fit 10° Retainers.

STEEL RETAINERS WITH UNIQUE TAPER FOR SPECIFIC APPLICATIONS

			RETAINER DIMENSIONS			
VALVE STEM DIA.	SPRING O.D. & TYPE	SPECIAL APPLICATIONS	A	B	C	PART NO.
11/32"	1.225" to 1.250" Single or Dual, 11° Taper	Buick	1.200	.867	.599	**99912-**
3/8"	1.430" to 1.500" Dual, 11° Taper	Buick	1.375	1.075	.698	**99910-**

TITANIUM RETAINER DIMENSIONS

7° MULTI-FIT TITANIUM RETAINERS FOR 5/16", 11/32", AND 3/8" VALVE STEM DIAMETERS

- For 5/16" square groove valve stems: use 99093-1 (standard), 99085-1 (+.050"), or 99086-1 (-.050") valve stem locks.
- For 11/32" square groove valve stems: use 99094-1 (standard), 99087-1 (+.050"), or 99088-1 (-.050") valve stem locks.
- For 3/8" square groove valve stems: use 99098-1 (standard), 99099-1 (+.050"), or 99089-1 (-.050") valve stem locks.
- Valve stem locks for 5/16", 11/32", and 3/8" valve stems with bead groove configuration also available, see pages 226-228.

		RETAINER DIMENSIONS			
VALVE STEM DIA.	SPRING O.D. & TYPE	A	B	C	PART NO.
All	1.275" Dual	1.250	.918	.640	**99657-**
All	1.500" to 1.550" Dual	1.400	1.040	.715	**99663-**
All	1.530" to 1.550" Dual	1.440	1.105	.687	**99659-**
All	1.540" to 1.595" Dual	1.500	1.150	.720	**99655-**
All	1.550" Dual	1.440	1.090	.695	**99661-**
All	1.625" Dual	1.510	1.165	.760	**99660-**
All	1.625" to 1.675" Triple	1.500	1.180/.860	.620	**99656-**
All	1.645" Triple	1.530	1.185	.860	**99662-**

TECH NOTES:

The retainers are packaged in various quantities depending on the engine application. The suffix number (after the dash) in the part number indicates the quantity. For example, part no. 99944-16 would be packaged with 16 retainers. Consult the engine application pages for the correct quantity suffix.

7° TITANIUM RETAINERS FOR SPECIFIC VALVE STEM DIAMETERS AND APPLICATIONS

VALVE STEM DIA.	SPRING O.D. & TYPE	SPECIAL APPLICATIONS	RETAINER DIMENSIONS A	B	C	PART NO.
5.5mm	1.000" Single	Ford Duratec 1.8-2.3L DOHC 4V I4	.945	.710	—	**903-0503**
6mm	.999" Top/1.095" Bottom Beehive Single	Ford 4.6-5.4L 3V V8	.885	.615	—	**39660-**
6mm	1.065" Single	Chrysler/Dodge SOHC/ DOHC 4V I4	.995	.715	—	**158660-**
7mm	.930" Top/1.025" Bottom Beehive Single	Ford 4.6-5.4L 4V V8	.850	.560	—	**40660-**
7mm	.967" Top/1.096" Bottom Beehive Single	Ford 4.6-5.4L 2V V8	.885	.615	.503	**37660-**
8mm	1.055" Top/1.290" Bottom Beehive Single	Chevrolet LS1/LS2/LS6 V8	.974	.620	—	**99637-**
8mm	1.255" Single	—	1.180	.856	—	**99658-**
8mm	1.275" Dual	Chevrolet LS1/LS2/LS6 V8	1.250	.910	.640	**144661-**

7° POSI-STOP TITANIUM RETAINERS FOR SPECIFIC VALVE STEM DIAMETERS

VALVE STEM DIA.	SPRING O.D. & TYPE	RETAINER DIMENSIONS A	B	C	PART NO.
11/32"	1.430" to 1.500" Dual	1.375	1.045	.703	**99669-**
11/32"	1.540" Dual	1.500	1.135	.740	**99675-**
11/32"	1.560" to 1.630" Triple	1.500	1.135	.635	**99678-**
11/32"	1.560" to 1.630" Triple	1.500	1.135	.635	**99681-**
3/8"	1.540" Dual	1.500	1.135	.740	**99676-**
3/8"	1.560" to 1.630" Triple	1.500	1.135	.635	**99679-**

TECH NOTES:

All Posi-Stop Titanium Retainers are packaged with appropriate Crane Cams machined valve stem locks.

10° MULTI-FIT TITANIUM RETAINERS

- For 5/16" square groove valve stems: use 99071-1 (standard), 99072-1 (+.050"), or 99070-1 (-.050") valve stem locks
- For 11/32" square groove valve stems: use 99074-1 (standard), 99075-1 (+.050"), or 99073-1 (-.050") valve stem locks
- For 3/8" square groove valve stems: use 99077-1 (standard), 99078-1 (+.050"), or 99076-1 (-.050") valve stem locks
- Valve stem locks for 5/16", 11/32", and 3/8"valve stems with bead groove configuration also available, see pages 226-228.

VALVE STEM DIA.	SPRING O.D. & TYPE	RETAINER DIMENSIONS A	B	C	PART NO.
All	1.540" to 1.595" Dual	1.500	1.150	.720	**99635-**
All	1.625" to 1.675" Triple	1.500	1.180/.860	.620	**99636-**

TECH NOTES:

The retainers are packaged in various quantities depending on the engine application. The suffix number (after the dash) in the part number indicates the quantity. For example, part no. 99944-16 would be packaged with 16 retainers. Consult the engine application pages for the correct quantity suffix.

10° CONVENTIONAL TITANIUM RETAINERS

VALVE STEM DIA.	SPRING O.D. & TYPE	RETAINER DIMENSIONS A	B	C	PART NO.
All	1.430" to 1.500" Dual or Triple	1.375	1.060	.675	**99630-**
All	1.500" to 1.550" Dual	1.400	1.040	.715	**99640-**
All	1.510" to 1.625" Dual	1.500	1.100	.690	**99641-**
All	1.550" Dual	1.440	1.090	.695	**99639-**
All	1.540" to 1.560" Dual	1.500	1.120	.735	**99631-**
All	1.550" to 1.560" Dual	1.500	1.095	.700	**99634-**
All	1.560" to 1.630" Triple	1.500	1.135	.635	**99632-**
All	1.625" Dual	1.510	1.165	.760	**99638-**

TECH NOTES:

These retainers can be used with 5/16", 11/32"or 3/8"valve stems with single keeper grooves provided that the appropriate conventional 10° valve stem locks are used: 99080-1 for 5/16"; 99081-1 for 11/32"; 99082-1 for 3/8". See page 226-228 for +.050"and -.050"optional locks.

TECH NOTES:

The retainers are packaged in various quantities depending on the engine application. The suffix number (after the dash) in the part number indicates the quantity. For example, part no. 99944-16 would be packaged with 16 retainers. Consult the engine application pages for the correct quantity suffix.

Titanium 7° Multi-Fit

#99656

Titanium 10° Multi-Fit

#99635

Steel 7°

#99915

Titanium 7° Posi-Stop

#99669

RETAINER HEIGHT CHARTS

To be able to achieve the proper valve spring height while using the minimum amount of valve spring shims can be challenging when working with applications that use other than stock components. There has never been an industry standard to compare the relationship of retainer heights with each other, although we have previously listed our retainer heights by comparing them with each other. This has been somewhat helpful if you have at least one of our retainers on hand for comparison purposes but doesn't properly address the variations of valve stem diameters, valve stem lock thicknesses, and taper angles.

We are now providing a measurable dimension that can be easily checked for the cylinder head and valve combination you're working with. No sample retainers or fixtures are needed. The retainer height dimensions listed on the following pages indicate the relationship of the outer step of the retainer that the outer valve spring sets against with the top of the valve stem lock groove in the valve stem.

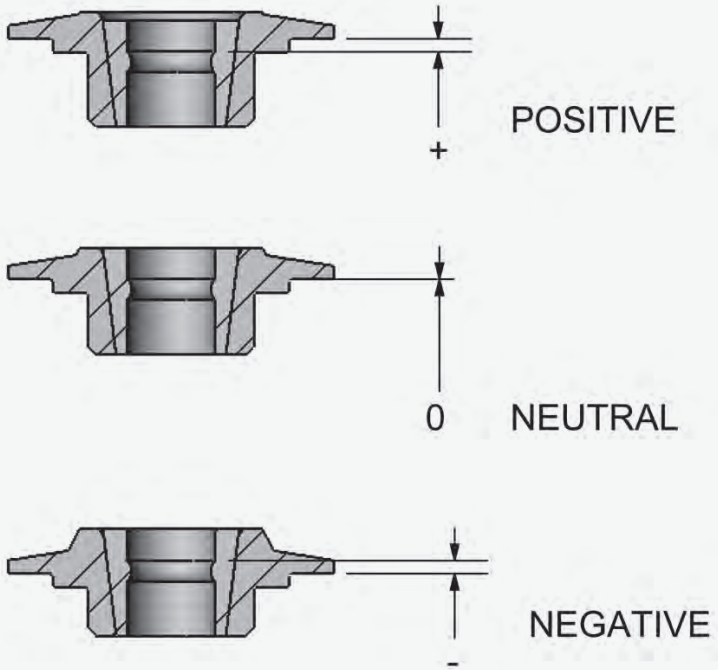
If the dimension on the chart is .000", the outer retainer step, and the top of the lock groove are at the same height. If the dimension is positive, such as .060", then the outer retainer step is .060" above the top of the lock groove. If the dimension is negative, such as -.040", then the outer spring step is .040" below the top of the lock groove. Check the drawings below for a visual explanation.

This will enable you to measure from the valve spring seat on the cylinder head to the top of the lock groove in the valve, then compare that dimension to your desired valve spring assembly height (see the Valve Spring Retainer Dimensions, pages 213-216, and the Valve Spring to Retainer Cross Reference, pages 220-224, for additional information). If you need an assembly height that's .060" higher than your measured dimension, check the listings for the applicable retainers for your valve springs, and look for a height figure close to .060".

The standard height Crane Cams Valve Stem Lock part numbers are listed with each diameter valve stem (where applicable) to achieve these figures. Remember, most of our valve stem locks are also available in +.050" and -.050" heights (see pages 226-228) to extend the available height combinations that can be created.

- The retainers are listed by material, then by lock configuration.
- The valve stems are listed by diameter and lock groove configuration.
- Certain unique specific retainers are listed using their usual valve locks, such as the Buick 11°, and the Ford Modular items.

We hope this will make choosing your components easier, and provide a more reliable valve spring retainer/valve stem lock combination for your application.



VALVE SPRINGS

STEEL RETAINERS

7° MULTI-FIT AND 3/8"

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.						
	99093 - 5/16 SQ.	99101 - 5/16 BEAD	99094 - 11/32 SQ.	99104 - 11/32 BEAD	99098 - 3/8 SQ.	99106 - 7MM BEAD	99107 - 8MM BEAD
99948⚠	-.055	-.055	-.050	-.050	-.080	-.055	-.055
99950⚠	.045	.045	.050	.050	.020	.045	.045
99954⚠	.040	.040	.045	.045	.015	.040	.040
99955⚠	.055	.055	.060	.060	.030	.055	.055
99957⚠	.045	.045	.050	.050	.020	.045	.045
99961⚠	.125	.125	.130	.130	.100	.125	.125
99962⚠	.125	.125	.130	.130	.100	.125	.125
99964⚠	.040	.040	.045	.045	.015	.040	.040
99969⚠	.045	.045	.050	.050	.020	.045	.045
99970⚠	.045	.045	.050	.050	.020	.045	.045
99973⚠	.110	.110	.115	.115	.085	.110	.110
99974⚠	.110	.110	.115	.115	.085	.110	.110
99975⚠	-.005	-.005	.000	.000	-.030	-.005	-.005
99976⚠	.010	.010	.015	.015	-.015	.010	.010

7° SPECIFIC

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.	
	99097 - 11/32 SQ.	99108 - 8MM BEAD
99914⚠	.035	—
99915⚠	.020	—
99916⚠	-.055	—
99935⚠	.075	—
99936⚠	.005	—
99942⚠	.285	—
99943⚠	.135	—
99944⚠	.075	—
99946⚠	.075	—
99951⚠	.135	—
99953⚠	.135	—
99956⚠	.125	—
99966⚠	.135	—
99967⚠	.215	—
144943⚠	—	-.020
144944⚠	—	-.030

10° MULTI-FIT

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.		
	99071 - 5/16 SQ.	99074 - 11/32 SQ.	99074 - 11/32 SQ.
99971⚠	.030	.055	.045
99972⚠	.030	.055	.045

11° SPECIFIC

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.	
99912⚠	11/32" Buick	-.060
99910⚠	3/8" Buick	-.085

TITANIUM RETAINERS

7° MULTI-FIT AND 3/8"

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.						
	99093 - 5/16 SQ.	99101 - 5/16 BEAD	99094 - 11/32 SQ.	99104 - 11/32 BEAD	99098 - 3/8 SQ.	7MM BEAD	8MM BEAD
99655⚠	.045	.045	.050	.050	.020	.045	.045
99656⚠	.045	.045	.050	.050	.020	.045	.045
99657⚠	-.005	-.005	.000	.000	-.030	-.005	-.005
99659⚠	.115	.115	.115	.115	.085	.115	.115
99660⚠	.115	.115	.115	.115	.085	.115	.115
99661⚠	.115	.115	.115	.115	.085	.115	.115
99662⚠	.115	.115	.115	.115	.085	.115	.115
99663⚠	.115	.115	.115	.115	.085	.115	.115

7° SPECIFIC

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.	
	99093 - 5/16 SQ.	99101 - 5/16 BEAD
37660⚠	7mm 3-Groove	-.070
39660⚠	6mm	.050
158660⚠	6mm	.025
40660⚠	7mm 3-Groove	.000
99637⚠	8mm	-.030
99658⚠	8mm	-.055
144661⚠	8mm	-.030
903-0503⚠	5.5mm	.020

7° POSI-STOP SPECIFIC

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.	
	99097 - 11/32 SQ.	99098 - 3/8 SQ.
99669⚠	.075	—
99675⚠	.150	—
99676⚠	—	.060
99678⚠	.075	—
99679⚠	—	.030
99681⚠	.165	—

10° MULTI-FIT

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.		
	99071 - 5/16 SQ.	99074 - 11/32 SQ.	99077 - 3/8 SQ.
99635⚠	.030	.055	.045
99636⚠	.030	.055	.045

10° CONVENTIONAL

RETAINER PART NO.	VALVE STEM LOCK PART NO./DIA.					
	99080 - 5/16 SQ.	99115 - 5/16 BEAD	99081 - 11/32 SQ.	99116 - 11/32 BEAD	99082 - 3/8 SQ.	99117 - 3/8 BEAD
99630⚠	.110	.110	.110	.110	.080	.080
99631⚠	.150	.150	.150	.150	.120	.120
99632⚠	.095	.095	.095	.095	.065	.065
99634⚠	.045	.045	.045	.045	.015	.015
99638⚠	.115	.115	.115	.115	.115	.115
99639⚠	.115	.115	.115	.115	.115	.115
99640⚠	.115	.115	.115	.115	.115	.115
99641⚠	.155	.155	.155	.155	.155	.155

RETAINER CROSS REFERENCE CHARTS

SINGLE SPRINGS

VALVE SPRING PART NO.	7° STEEL RETAINER 5/16"	7° STEEL RETAINER 11/32"	7° STEEL RETAINER 3/8"	10° STEEL RETAINER	TITANIUM RETAINER 7°	TITANIUM RETAINER 10°	TITANIUM RETAINER 8MM	SPRING SEAT I.D.
37830⚠	None	None	None	None	37660	None	None	None
40830⚠	None	None	None	None	40660	None	None	None
96801⚠	99969	99936 99943 99944 99969	99948 99957 99969	99971	None	None	None	None
96802⚠	None	99914 99915 99916	None	None	None	None	None	None
96803⚠	99969	99946 99969	99950 99969	99971	None	None	None	None
96806⚠	99969	99936 99943 99944 99951 99953 99969	99948 99954 99957 99969	99971	None	None	None	None
96807⚠	99962 99970	99962 99970	99962 99970	99972	None	99641	None	None
96845⚠	None	None	None	None	903-0503	None	None	None
99831⚠	99976	99976	99976	None	99637	None	144943	99454 (.502")
99832⚠	99976	99976	99976	None	99637	None	None	99456 (.500") 99457 (.570") 99458 (.637")
99833⚠	99950	99936 99943 99944 99946 99950	99948 99950 99957	None	None	99630	None	99457 (.570")
99835⚠	99950 99969	99936 99943 99944 99950 99969	99948 99950 99957 99969	99971	None	99630	None	99459 (.637")
99839⚠	99950 99969	99936 99943 99944 99950 99969	99948 99950 99957 99969	99971	None	99630	None	99459 (.637")
99840⚠	99950 99969	99936 99943 99944 99950 99969	99948 99950 99957 99969	99971	None	99630	None	99457 (.570")

SINGLE SPRINGS CONTD.

VALVE SPRING PART NO.	7° STEEL RETAINER 5/16"	7° STEEL RETAINER 11/32"	7° STEEL RETAINER 3/8"	10° STEEL RETAINER	TITANIUM RETAINER 7°	TITANIUM RETAINER 10°	8MM	SPRING SEAT I.D.
99841⚠	None	99942	None	None	None	None	None	None
99842⚠	None	None	None	None	None	None	None	None
99846⚠	None	99914 99915 99916	None	None	None	None	None	None
99848⚠	None	99914 99915 99916	None	None	None	None	None	None
144846⚠	None	99914 99915 99916	None	None	99658	None	None	None
158830⚠	None	None	None	None	158660	None	None	None
180830⚠	None	None	None	None	158660	None	None	None

DUAL SPRINGS

VALVE SPRING PART NO.	7° STEEL RETAINER 5/16"	7° STEEL RETAINER 11/32"	7° STEEL RETAINER 3/8"	10° STEEL RETAINER	7° TITANIUM POSI-STOP 5/16"	7° TITANIUM POSI-STOP 11/32"	7° TITANIUM POSI-STOP 3/8"	TITANIUM RETAINER 7°	TITANIUM RETAINER 10°	8MM	SPRING SEAT I.D.
96870⚠	99969	99936 99943 99944 99969	99957 99969	99971	None	99669	None	None	99630	None	99465 (.570")
96872⚠	99969	99936 99943 99944 99969	99948 99957 99969	99971	None	99669	None	None	99630	None	99465 (.570")
96873⚠	99969	99936 99943 99944 99969	99948 99957 99969	99971	None	99669	None	None	99630	None	99465 (.570")
96874⚠	99969	99936 99943 99944 99969	99948 99957 99969	99971	None	99669	None	None	99630	None	99465 (.570")
96877⚠	99969	99936 99943 99944 99969	99948 99957 99969	99971	None	99669	None	None	99630	None	99465 (.570")
96878⚠	99970 99974	99970 99974	99970 99974	99972	None	None	None	99659	99634 99641	None	99460 (.570")

DUAL SPRINGS CONTD.

VALVE SPRING PART NO.	7° STEEL RETAINER 5/16"	7° STEEL RETAINER 11/32"	7° STEEL RETAINER 3/8"	10° STEEL RETAINER	7° TITANIUM POSI-STOP 5/16"	7° TITANIUM POSI-STOP 11/32"	7° TITANIUM POSI-STOP 3/8"	TITANIUM RETAINER 7°	TITANIUM RETAINER 10°	8MM	SPRING SEAT I.D.
96879⚠	99970 99974	99970 99974	99970 99974	99972	None	None	None	99659	99634 99641	None	99465 (.570")
96883⚠	99970 99974	99970 99974	99970 99974	99972	None	99678 99681	99679	99659	99641	None	99460 (.570")
96884⚠	99961 99964 99970 99974	99956 99961 99964 99970 99974	99955 99961 99964 99970 99974	99972	None	99675 99678 99681	99676 99679	None	99631 99632 99641	None	99460 (.570")
96885⚠	99970 99974	99970 99974	99970 99974	99972	None	99675	None	None	99631 99632 99663	None	99460 (.570")
96886⚠	99970 99974	99970 99974	99970 99974	99972	None	None	None	99659	99634 99641	None	99465 (.570")
96887⚠	None	99935	None	None	None	None	None	None	None	None	None
99838⚠	99969	99936 99943 99944 99969	99948 99957 99969	99971	None	99669	None	None	99630	None	None
99876⚠	99970 99974	99956 99970 99974	99955 99970 99974	99972	None	99678 99681	99676	None	99631 99632	None	99460 (.570") 99464 (.637")
99879⚠	None	None	None	None	None	None	None	None	None	99926	None
99880⚠	99962	99962	99962	99972	None	99675	99676	99655	99638	None	99466 (.570") 99463 (.637")
99884⚠	None	99967	None	None	None	None	None	None	None	None	None
99885⚠	99961 99964 99970 99974	99956 99961 99964 99970 99974	99955 99961 99964 99970 99974	99972	None	99678 99681	99676	None	99634 99641	None	99460 (.570") 99464 (637")
99890⚠	99962 99970 99974	99962 99970 99974	99962 99970 99974	99972	None	None	None	99659	99641	None	99466 (.570")
99891⚠	None	99912 99914 99915 99916	None	None	None	None	None	None	None	None	None

DUAL SPRINGS CONTD.

VALVE SPRING PART NO.	7° STEEL RETAINER 5/16"	7° STEEL RETAINER 11/32"	7° STEEL RETAINER 3/8"	10° STEEL RETAINER	7° TITANIUM POSI-STOP 5/16"	7° TITANIUM POSI-STOP 11/32"	7° TITANIUM POSI-STOP 3/8"	TITANIUM RETAINER 7°	TITANIUM RETAINER 10°	8MM	SPRING SEAT I.D.
99892⚠	99954	99951 99953 99954	99954	99971	None	None	None	None	None	99639	None
99893⚠	99952 99969	99951 99953 99969	99954 99969	99971	None	99669	None	None	99630	None	None
99895⚠	99961	99956	99955	99972	None	99675	99676	None	99631	None	99466 (.570")
99896⚠	99964 99970 99974	99961 99964 99970 99974	99961 99964 99970 99974			99678 99681	99679		99632 99641		99464 (.637")
144838⚠	99975	99975	99975	None	None	None	None	99657	None	144661	None
144847⚠	99975	99975	99975	None	None	None	None	None	None	144661	None
961224⚠	None	None	None	None	None	None	None	99660	99638	None	99463 (.637")
961226⚠	None	None	99970 99974	99972	None	None	None	99661	99639	None	99465 (.570")
961228⚠	None	None	None	None	None	None	None	99660	99638	None	99463 (.637")
961299⚠	None	None	None	None	None	None	None	99660	99638	None	99466 (.570") 99463 (.637")
961325⚠	None	None	99970 99974	99972	None	None	None	99661	99639 99641	None	99464 (.637")
961326⚠	None	None	99970 99974	99972	None	None	None	99661	99639 99641	None	99465 (.570") 99464 (.637")
961354⚠	None	None	99970 99974	99972	None	None	None	99663	99640	None	99465 (.570") 99455 (.637")
961355⚠	None	None	99970 99974	99972	None	None	None	99663	99640	None	99465 (.570") 99455 (.637")
961356⚠	None	None	99970 99974	99972	None	None	None	99663	99640	None	99465 (.570") 99455 (.637")
961360⚠	None	None	99970 99974	99972	None	None	None	99663	99640	None	99465 (.570") 99455 (.637")

VALVE SPRINGS

TRIPLE SPRINGS

VALVE SPRING PART NO.	7° STEEL RETAINER 5/16"	11/32"	3/8"	10° STEEL RETAINER	7° TITANIUM POSI-STOP 5/16"	11/32"	3/8"	TITANIUM RETAINER 7°	10°	8MM	SPRING SEAT I.D.
96848⚠	None	None	None	None	None	99678 99681	99679	99656	99632 99636	None	None
96849⚠	None	None	None	None	None	99678 99681	99679	99656	99632 99636	None	None
96888⚠	None	None	None	None	None	99678 99681	99679	99656	99632 99636	None	None
961246⚠	None	None	None	None	None	None	None	99662	None	None	99461 (.637")
961347⚠	None	None	None	None	None	None	None	99662	None	None	99461 (.637")
961348⚠	None	None	None	None	None	None	None	99662	None	None	99461 (.637")

KITS

VALVE SPRING AND RETAINER KITS

Crane Cams Valve Spring and Retainer Kits offer an easy, cost-saving method of ensuring that your performance camshaft installation has the correctly matched valve springs and retainers needed to deliver maximum performance. These springs are designed to allow the increased RPM and more aggressive valve train operation that allows a Crane performance cam installation to "wake up" even stock engines. Crane steel and titanium valve spring retainers are designed to correctly fit the supplied Crane springs. The steel retainers are made from premium quality steel, precisely machined and heat-treat hardened for strength, durability and wear resistance. The titanium retainers are manufactured from certified American made bar stock. Best of all, most of these Crane Valve Spring and Retainer Kits can be easily installed with no cylinder head machining necessary. Consult the engine application pages for correct usage.

#13308-1

AMC APPLICATIONS	KIT PART NO.	CONTENTS VALVE SPRINGS	RETAINERS
1966-91 V8, 290-401			
For various hydraulic flat tappet applications up to .500" lift and 6000 RPM	**64308-1**⚠	**99839-16**⚠	**99957-16**⚠
CHEVROLET APPLICATIONS			
1967-87, V8 262-400			
For various hydraulic flat tappet applications up to .490" lift and 6000 RPM	**11308-1**⚠	**99848-16**⚠	**99915-16**⚠
XHTCS material, Saturday Night Special	**11309-1**[1]⚠ (Includes locks 99095-1)	**99846-16**⚠	**99915-16**⚠
1957-99 V8, 262-400			
Requires cyl. head machining	**11310-1**[2]⚠	**99838-16**⚠	**99944-16**⚠
1992-99 V8, 350 LT1			
With aluminum cyl. heads	**10308-1**⚠ (Includes locks 99097-1)	**99893-16**⚠	**99951-16**⚠
1994-99 V8, 350 LT1			
With iron cyl. heads	**10309-1**⚠	**99845-16**⚠	**99914-16**⚠
1995-96 V8			
Vortec 350	**10309-1**⚠	**99845-16**⚠	**99914-16**⚠

[1] Standard diameter valve springs for 1967-87 cylinder heads with 1.700"assembly height. Check valve guide to lock/retainer clearance at maximum valve lift, valve guide machining may be required.

[2] Must machine cylinder heads. Check valve guide to lock/retainer clearance at maximum valve lift, valve guide machining may be required.mum valve lift, valve guide machining may be required.

CHEVROLET APPLICATIONS (CONTD.)	KIT PART NO.	CONTENTS: VALVE SPRINGS	CONTENTS: RETAINERS
1997-Up V8, LS 4.8-5.3-5.7-6.0-6.2L			
For up to .600" gross valve lift	**144318-1** (Includes spring seats 99454-16, seals 99818-16, & locks 99108-1)	**99831-16**	**144943-16**
For up to .660" gross valve lift, XHTCS material	**144313-1** (Includes spring seats 144460-16, seals 99818-16, & locks 99108-1)	**144847-16**	**144944-16**
For up to .660" gross valve lift, XHTCS material	**144314-1** (Includes spring seats 144460-16, seals 99818-16, & locks 99108-1)	**144847-16**	**144661-16**
For up to .680" gross valve lift	**144317-1** (Includes spring seats 144460-16, seals 99818-16, & locks 99108-1)	**144838-16**	**144944-16**
For up to .680" gross valve lift	**144316-1** (Includes spring seats 144460-16, seals 99818-16, & locks 99108-1)	**144838-16**	**144661-16**
1965-98 V8, 396-502			
For stock and various hydraulic flat tappet applications up to .555" lift and 6000 RPM	**13308-1**	**99839-16**	**99948-16**
1980-95 V8, Truck 366-454			
With short valve spring assembly height	**13309-1**	**96801-16**	**99957-16**
CHRYSLER/DODGE/PLYMOUTH APPLICATIONS			
Neon 1995-05 I4, SOHC 4V 2.0L			
For stock & performance applications up to .450" lift and +8500 RPM	**903-2003**	**158830-16**	**158660-16**
Neon, PT Cruiser 1995-09 I4, DOHC 4V 2.0-2.4L			
For stock & performance applications up to .500" lift and +8800 RPM	**903-2002**	**180830-16**	**158660-16**
1964-91 V8, "LA" 273-360 and 1967-91, 318			
For performance hydraulic flat tappet applications up to .480" lift and 6000 RPM	**69308-1**	**99835-16**	**99948-16**
1958-78 V8, "B" 350-440			
For performance hydraulic flat tappet applications up to .475" lift and 6000 RPM	**64308-1**	**99839-16**	**99957-16**
FORD APPLICATIONS			
1962-87 V8, 221-302 and 1969-97, 351W			
For stock and performance hydraulic flat tappet applications up to .520" lift and +6000 RPM	**36308-1**	**96803-16**	**99946-16**
Requires cyl. head machining	**11310-1**[2]	**99838-16**	**99944-16**
1985-00 V8, 302 and 302 H.O. with Hyd. Roller Camshafts			
Conical design, for stock cyl. head	**44308-1**[3] (Includes locks 99094 and 99097)	**99841-16**	**99942-16**
Conical design, for GT40P and similar long exhaust valve cyl. heads	**44309-1** (Includes locks 99094)	**99841-16**	**99942-16**
1970-77 V8, 351C-351M-400			
For stock and performance hydraulic flat tappet applications up to .540" lift and +6000 RPM	**52308-1**	**96801-16**	**99948-16**
1971-72 V8, Boss 351 and 1979-82, 351M-400			
For stock and performance hydraulic flat tappet applications up to .540" lift and +6000 RPM	**35308-1**	**96801-16**	**99944-16**
1963-76 V8, FE 352-428			
For stock and performance hydraulic flat tappet applications up to .540" lift and +6000 RPM	**13309-1**	**96801-16**	**99957-16**
1968-97 V8, 370-460			
For stock and performance hydraulic flat tappet applications up to .520" lift and +5500 RPM	**35308-1**	**96801-16**	**99944-16**
1967-84 V8, 260-455 39° Bank Angle and 1964-67, 330-425 45° Bank Angle			
Requires cyl. head machining	**11310-1**[2]	**99838-16**	**99944-16**
OLDSMOBILE APPLICATIONS			
1967-84 V8, 260-455 39° Bank Angle and 1964-67, 330-425 45° Bank Angle			
For stock and performance hydraulic flat tappet applications up to .480" lift and +6000 RPM	**36308-1**	**96803-16**	**99946-16**
Requires cyl. head machining	**11310-1**[2]	**99838-16**	**99944-16**

CHART CONTINUES ON NEXT PAGE →

PONTIAC APPLICATIONS			
1955-81 V8, 265-455			
For stock and performance hydraulic flat tappet applications up to .500" lift and +6000 RPM	**28308-1**	**99840-16**	**99944-16**
Requires cyl. head machining	**11310-1[2]**	**99838-16**	**99944-16**

[1] Standard diameter valve springs for 1967-87 cylinder heads with 1.700"assembly height. Check valve guide to lock/retainer clearance at maximum valve lift, valve guide machining may be required.

[2] Must machine cylinder heads. Check valve guide to lock/retainer clearance at maximum valve lift, valve guide machining may be required.mum valve lift, valve guide machining may be required.

[3] Optional kit for 1979-00 302, 302 H.O., and 351W engines to provide increased valve spring travel when using stock cylinder heads.

7° VALVE STEM LOCKS

MACHINED STEEL LOCKS 7° - SINGLE GROOVE DESIGN

The ultimate in strength and wear resistance, these locks are machined from the highest quality alloy steel billet material using the finest automatic screw machines and then carefully heat-treated. Engineered specifically for today's high engine speeds and high-tension valve springs, these machined steel locks are the only locks to be used with our Posi-Lock Valve Spring Retainers. They are oxide finished for corrosion protection and color coded for assembly height identification.

VALVE STEM DIA.	INSTALL HEIGHT	COLOR	PART NO.
5/16"	Standard	Black	**99091-1**
11/32"	+.050"	Yellow	**99095-1**
11/32"	Standard	Black	**99097-1**
11/32"	-.050"	Silver	**99096-1**
3/8"	+.050"	Yellow	**99099-1**
3/8"	Standard	Black	**99098-1**
3/8"	-.050"	Silver	**99089-1**

#99096-1

TECH NOTES:

This design lock is packaged with all Crane Posi-Stop Titanium Retainers.

MACHINED STEEL LOCKS 7° - SINGLE BEAD DESIGN

These steel locks are precision-machined and heat-treated in our own facility for the latest generation of engine technology. Although primarily designed for the Chevrolet LS1/LS2/LS6 families, they are also applicable to most valve stems that require a bead-style valve lock.

VALVE STEM DIA.	INSTALL HEIGHT	PART NO.
8mm	Standard	**99108-1**
8mm, Multi-Fit	Increased	**99107-1**

#99108-1

MULTI-FIT VALVE STEM LOCKS 7° - SINGLE GROOVE DESIGN

Our steel billet, heat-treated Multi-Fit Locks feature an increased outside diameter for additional strength, durability and fatigue resistance. Highly recommended for any high RPM, high valve spring tension, or heavy valve application prone to lock distortion and retainer pull-through, the 7° taper actually provides more clamping force than wider 10° taper locks. (Use only with Crane Multi-Fit retainers).

VALVE STEM DIA.	INSTALL HEIGHT	COLOR	PART NO.
5/16"	+.050"	Yellow	**99085-1**
5/16"	Standard	Green	**99093-1**
5/16"	-.050"	Silver	**99086-1**
11/32"	+.050"	Yellow	**99087-1**
11/32"	Standard	Green	**99094-1**
11/32"	-.050"	Silver	**99088-1**
3/8"	+.050"	Yellow	**99099-1**
3/8"	Standard	Black	**99098-1**
3/8"	-.050"	Silver	**99089-1**

#99098-1

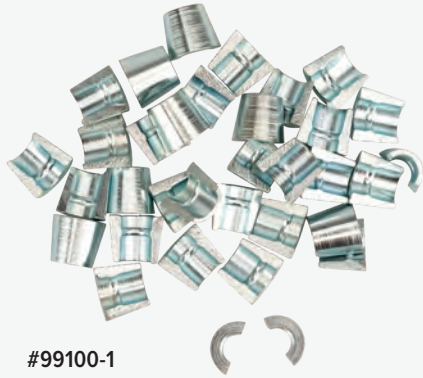
TECH NOTES:

Use ONLY with Crane Multi-Fit Retainers.

MULTI-FIT VALVE STEM LOCKS 7° - SINGLE BEAD DESIGN

Our steel billet, heat-treated Single Bead Multi-Fit Locks provide all of the advantages of our single square groove design, plus they are compatible with most of the aftermarket bead lock valves currently available. Also available in +/-.050" assembly height versions for 5/16" and 11/32" valve stems, these are specifically for use with only our Multi-Fit Retainers.

VALVE STEM DIA.	INSTALL HEIGHT	COLOR	PART NO.
5/16"	+.050"	Yellow	**99102-1**
5/16"	Standard	Black	**99101-1**
5/16"	-.050"	Silver	**99100-1**
11/32"	+.050"	Yellow	**99105-1**
11/32"	Standard	Black	**99104-1**
11/32"	-.050"	Silver	**99103-1**
7mm	Standard	Black	**99106-1**
8mm	Standard	Black	**99107-1**



#99100-1

10° VALVE STEM LOCKS

MACHINED STEEL LOCKS 10° CONVENTIONAL - SINGLE GROOVE DESIGN

Many engine builders are used to a conventional 10° taper, and these machined steel locks are perfect for any racing application where the conventional 10° design is specified. (Use only w/ 99630, 99631, 99632, 99633, 99634, 99638, 99639, or 99640 Crane retainers or competitors' conventional 10° retainers). Locks are recessed for lash cap clearance.

VALVE STEM DIA.	INSTALL HEIGHT	COLOR	PART NO.
5/16"	+.050"	Yellow	**99109-1**
5/16"	Standard	Black	**99080-1**
5/16"	-.050"	Silver	**99112-1**
11/32"	+.050"	Yellow	**99110-1**
11/32"	Standard	Black	**99081-1**
11/32"	-.050"	Silver	**99113-1**
3/8"	+.050"	Yellow	**99111-1**
3/8"	Standard	Black	**99082-1**
3/8"	-.050"	Silver	**99114-1**

#99111-1

10° VALVE STEM LOCKS

MACHINED STEEL LOCKS 10° CONVENTIONAL - SINGLE BEAD DESIGN

Many engine builders are used to a conventional 10° taper, and these machined steel locks are perfect for any racing application where the conventional 10° design is specified. (Use only w/ 99630, 99631, 99632, 99633, 99634, 99638, 99639, or 99640 Crane retainers or competitors' conventional 10° retainers). Locks are recessed for lash cap clearance.

VALVE STEM DIA.	INSTALL HEIGHT	COLOR	PART NO.
5/16"	+.050"	Yellow	**99118-1**
5/16"	Standard	Black	**99115-1**
5/16"	-.050"	Silver	**99121-1**
11/32"	+.050"	Yellow	**99119-1**
11/32"	Standard	Black	**99116-1**
11/32"	-.050"	Silver	**99122-1**
3/8"	+.050"	Yellow	**99120-1**
3/8"	Standard	Black	**99117-1**
3/8"	-.050"	Silver	**99123-1**

#99121-1

MULTI-FIT VALVE STEM LOCKS 10° - SINGLE GROOVE DESIGN

Crane 10° heat-treated, fully machined, steel billet, Multi-Fit Locks were designed to allow the retainer to have an increased cross-section in the critical area between the tapered hole for the locks and the valve spring steps. Having greater retainer integrity will provide a more stable platform for the valve springs, reducing retainer breakage and the possibility of the locks separating from the valve stem under adverse operating conditions. Many competing 10° locks vary in production from 9° to 11-1/2°. Because of the accurate, robust design of Crane locks, they are incompatible with most competitors 10° retainers, and competitors' locks won't work with Crane Multi-Fit 10° Retainers.

VALVE STEM DIA.	INSTALL HEIGHT	COLOR	PART NO.
5/16"	+.050"	Silver	**99072-1**
5/16"	Standard	Green	**99071-1**
5/16"	-.050"	Yellow	**99070-1**
11/32"	+.050"	Silver	**99075-1**
11/32"	Standard	Green	**99074-1**
11/32"	-.050"	Yellow	**99073-1**
3/8"	+.050"	Silver	**99078-1**
3/8"	Standard	Green	**99077-1**
3/8"	-.050"	Yellow	**99076-1**

#99071-1

ACCESSORIES

VALVE LASH CAPS

Precision machined from 8620 steel alloy, heat-treated and black oxided, these provide a better wear surface and lengthen valve for correct geometry.

VALVE STEM DIA.	HEAD HEIGHT	THICKNESS	PART NO.
5/16"	.162"	.060"	**99420-16**
11/32"	.162"	.060"	**99421-16**
11/32" for Ford 2300c.c. SOHC	.210"	.100"	**99423-8**
3/8"	.162"	.060"	**99422-16**
7mm for Ford 4.6-5.4L SOHC V8 & 4.6L DOHC V8	.200"	.080"	**99424-16**
8mm	.170"	.080"	**99425-16**
8mm for Ford 2000 c.c. SOHC	.204"	.050"	**99045-8**

#99425-2

TECH NOTES:

Maintain .030" clearance from bottom of lash cap to top of the valve locks.

VALVE SPRING LOCATORS AND CUPS

Crane shatters the myth that "all spring seats are the same". Our spring cups (those that contain the O.D. of the valve springs) and locators (that locate the I.D. of the valve springs) incorporate tapered vertical surfaces to eliminate the spring chafing that can quickly deteriorate and lead to premature, and often catastrophic, failure and breakage of the most expensive valve springs. These heat-treated steel billet items are advised for applications ranging from street performance to professional racing.

LOCATORS

O.D.	I.D.	SPRING I.D.	BASE	PART NO.
1.240	.505	.650	.050	144460-16[1]
1.290	.512	.990	.062	99456-16
1.290	.578	.990	.062	99457-16
1.290	.640	.870	.062	99468-16
1.290	.640	.990	.062	99458-16
1.295	.570	.718	.050	99467-16[2]
1.320	.502	.872	.060	99454-16[3]
1.480	.640	.716	.062	99455-16
1.500	.570	.695	.055	99465-16
1.500	.570	.730	.055	99460-16
1.558	.570	.760	.055	99466-16

[1] LS1/LS2/LS6 Applications
[2] L98/Fast Burn Alum. Head Applications
[3] LS Applications

#99465-2

#99459-2

CUPS

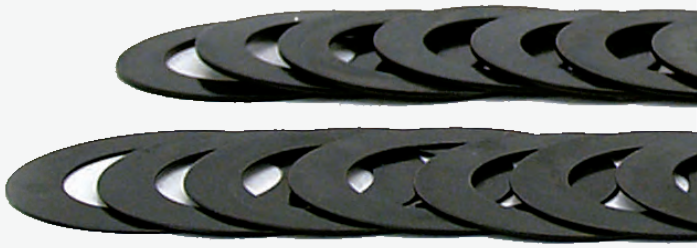
O.D.	I.D.	SPRING O.D.	BASE	PART NO.
1.685	.637	1.570	.062	99464-16
1.730	.630	1.520	.300	99459-8[4]
1.745	.637	1.630	.062	99463-16
1.745	.637	1.650	.062	99461-16

[4] For eliminating rotators on Chevrolet 396-454-502 and 8.1L cyl. heads

VALVE SPRING SHIMS

Durable steel shim stock, zinc-plated for wear resistance.

DESCRIPTION	PART NO.
.015 x 1.480 x .703, Hardened - Set of 16	99050-1
.015 x 1.640 x .703, Hardened - Set of 16	99046-1
.030 x 1.480 x .703 - Set of 32	99051-1
.030 x 1.6400 x .703 - Set of 32	99052-1



#99050-1

VALVE STEM SEALS

Crane Cams Valve Stem Seals provide maximum valve stem oil control. These seals wipe excess oil from the valve stem by means of a unique spring loaded wiper assembly, thus preventing unwanted oil from reaching and contaminating the cylinder. Machining usually required.

PTFE SEALS

VALVE STEM DIA.	GUIDE O.D.	SEAL O.D.	PART NO.
5/16"	.500"	.600"	99825-16
5/16"	.531"	.620"	99824-16
11/32"	.500"	.600"	99826-16
11/32"	.531"	.620"	99820-16
3/8"	.500"	.600"	99828-16
3/8"	.531"	.620"	99822-16

METAL JACKET VITON SEALS

VALVE STEM DIA.	GUIDE O.D.	SEAL O.D.	PART NO.
5/16"	.500"	.546"	99710-16
5/16"	.531"	.575"	99711-16
11/32"	.500"	.546"	99712-16
11/32"	.531"	.575"	99713-16
8mm	.500"	.600"	99818-16

#99820-2

#99711-2

TECH NOTES:
Machining usually required.

CAM DEGREE "TUNE-A-CAM" KIT

Everything you need to quickly, easily and accurately degree-in your camshaft for maximum performance.

DESCRIPTION	PART NO.
Universal "Tune-A-Cam" Kit	99030-1

KITS INCLUDE THE FOLLOWING:

- Precision Dial Indicator w/ Custom Design Base
- Piston Stop
- Pointer
- (4) Checking Springs
- Degree Wheel
- Instructions
- Hard Mold Plastic Carrying Case

#99030-1

LOW TENSION CHECKING SPRINGS

This low tension spring can be compressed with a single finger. It is to be used when mocking-up a cylinder head with a pair of valves and retainers for checking such things as valve lift, valve to piston clearance, and degreeing a cam at the retainer.

DESCRIPTION	PART NO.
Pair of Low Tension Valve Train Checking Springs	99881-2

#99881-2

CYLINDER PRESSURIZATION KIT

When changing the valve springs on an assembled engine while using one of our exclusive valve spring compressors or performing other maintenance that requires your cylinders to be pressurized, this convenient kit provides a quick and economical method to accomplish this. The kit contains a premium quality-hose, having an o-ringed 14mm and 18mm threaded adapter at one end to thread into the spark plug hole, while the other end has a female ¼" NPT threaded brass fitting to receive your choice of quick-disconnect adapters. There's also a long 14mm threaded adapter for aluminum heads to provide better sealing and providing superior thread engagement.

DESCRIPTION	PART NO.
Cylinder Pressurization Kit	99474-1

#99474-1

DEGREE WHEEL

Crane's degree wheels are made from rigid, durable stamped steel, 9½" in diameter and come with adapter inserts for 7/16", 1/2", and 5/8" center holes.

DESCRIPTION	PART NO.
Degree Wheel with Adapters	99162-1

#99162-1

PISTON STOP

Provide a positive stop for the piston when locating true TDC (Top Dead Center) for camshaft degreeing. Made to screw directly into the cylinder head spark plug hole. Machined from brass to prevent piston damage and incorporates an air bleed hold to prevent compression build-up while turning the engine over.

DESCRIPTION	PART NO.
TDC Piston Stop - 14mm Thread	**99412-1**

#99412-1

OIL PUMP PRIMER

Successful engine builders know that externally priming the oiling system of a new engine eliminates dangerous "dry" initial start-up. Our Chevrolet oil pump primer tool features a special bushing that seals the oil galley and completely primes and pressurizes the entire engine oil system. All models feature an upper collar that also prevents oil pump drive side-loading. Use your heavy duty 3/8" drive drill motor to build oil pressure and uniformly distribute oil throughout the engine for initial start-up.

DESCRIPTION	PART NO.
Chevrolet V8, 262-400, 396-454, and 90° V6	**99010-1**
Ford V8, 221-302, Boss 302, (1/4" Hex)	**99012-1**

#99010-1

VALVE TRAIN ORGANIZER TRAY

Lightweight tray accepts a wide range of rockers, pushrods, adjusting nuts, lifters and spark plugs. Integral handholds make handling easier. Resistant to heat, oils and solvents.

DESCRIPTION	PART NO.
Valve Train Organizer Tray	**99015-1**

#99015-1

VALVE SPRING COMPRESSORS

This handy tool is designed for removing valve springs while the cylinder head is attached to the engine. This facilitates the installation of new valve springs in substantially less time than it takes using a conventional valve spring compressor. In fact, it reduces the spring removal and replacement time on F-body cars to one-quarter of the time required for other tools. Use a ratchet or impact wrench to compress the springs. The rugged heat-treated steel fixtures are precision CNC-machined to ensure proper seating on the cylinder head & valve spring retainer.

DESCRIPTION	PART NO.
Chevrolet 1957-96 V8 262-400, Including LT1/LT4 and Chevrolet 200-229-4.3L 90° V6	99473-1
Chevrolet 1997-Up V8 LS1/LS2/LS6 5.7L and Vortec 4800, 5300, 6000 V8	99472-1
Chevrolet L92/LS3 Cyl. Heads for LS-Series V8	99475-1

TECH NOTES:

For Small Block Chevrolet models to fit all production Small Block V8 and V6 engines – including late model LS1/LS2/ LS6 & Vortec

VALVE SPRING HEIGHT MICROMETER

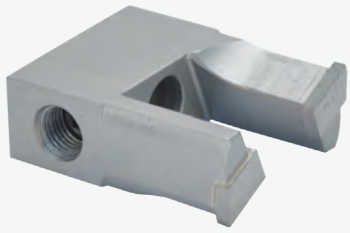
Rotating the tool expands it to simulate installed height. The micrometer measurements make it extremely easy to read. The tool will measure from 1.600" to 2.100" installed height with an accuracy of .001".

DESCRIPTION	PART NO.
Height Micrometer 1.600"-2.100"	99019-1

VALVE SPRING SEAT MACHINING TOOL BODIES

These carbide-tipped tools from Powerhouse Products machine the valve spring seat to the precise diameter and depth for high performance spring applications. Crane Machining Tool Arbors are required to pilot these tools in the valve stem bore.

DESCRIPTION	PART NO.
Machines 1.320" O.D., .630" I.D.	POW351319
Machines 1.440" O.D., .630" I.D.	POW351320
Machines 1.550" O.D., .630" I.D.	POW351325
Machines 1.580" O.D., .630" I.D.	POW351330
Machines 1.680" O.D., .630" I.D.	POW351335
Machines 1.740" O.D., .630" I.D.	POW351340



VALVE SPRING SEAT MACHINING TOOL ARBORS

These arbors accurately pilot the Valve Spring Seat Machining Tools by locating in the valve stem bore.

DESCRIPTION	PART NO.
Use with 5/16" Valve Stems	99026-1
Use with 11/32" Valve Stems	99027-1
Use with 3/8" Valve Stems	99028-1
Use with 8mm Valve Stems	99025-1

VACUUM KITS & ACCESSORIES

ADJUSTABLE VACUUM ADVANCE KITS

Tailor your ignition system to meet a wide variety of driving conditions and requirements with these unique, easy-to-install adjustable vacuum advance kits. Comes complete with adjustable vacuum canister featuring the unique adjustable vacuum diaphragm, three sets of advance weight springs, and a 3/32" allen wrench.

The adjustability provided by these kits permits you to run the maximum ignition advance throughout the RPM range without encountering detonation. Improved performance, efficiency, and dependability are the major benefits obtained. Once the kit is installed, you can also quickly compensate for changes in fuel quality and altitude.

APPLICATION	PART NO.
Delco Point Type (Includes Limiter Plate)	99601-1*
Ford 1973-85 V8 with Electronic Ignition (Without Computer Controls)	99607-1*
G.M. H.E.I. (Includes Limiter Plate)	99600-1*

* This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

VACUUM TIMING LIMITER PLATE

Limit the amount of vacuum timing needed for certain engine/vehicle applications by using the Crane Adjustable Vacuum Kit. The adjustment made through the vacuum port of the canister adjusts the rate of vacuum timing change as engine vacuum changes.

The Crane Vacuum Timing Limiter plate actually changes the amount of that vacuum timing. This is especially helpful with applications such as high compression ratio engines, heavy engine loads (such as very low numerical rear axle gearing) or heavy vehicle weights such as motor homes, trucks with trailers, etc..

Each plate notch will shorten the amount of vacuum timing by 2°. It will also advance the initial timing to 2° because of the change in the starting position of the breaker plate or magnetic pick-up.

DESCRIPTION	PART NO.
Vacuum Timing Limiter Plate - for GM/Delco V8 Point-Type and H.E.I. Ignition Distributors	99619-1*

* This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

VACUUM RESERVE SYSTEM

This unique kit allows you to store needed vacuum to operate your vacuum assisted power brakes, even with a more radical camshaft. Crane's Vacuum Reserve System utilizes a one-way check valve that stores engine vacuum until it's needed . . . like when you apply the brakes and your engine can't supply the needed vacuum. Compactly sized at just 5" x 7", this unit can be installed in tight areas. Comes complete with all hardware. Power brake hose not included.

DESCRIPTION	PART NO.
Vacuum Reserve System, Complete Kit including Fittings	99590-1

MISCELLANEOUS/MERCHANDISE

LUBRICANTS

ASSEMBLY LUBE (PASTE)

Crane Super Moly Lube by Driven is a moly-disulfide base lubricant for use on cam lobes, lifters and distributor drive gears and should be used for all cam installations (except for roller lifter applications). Advised for cup-end pushrod installation where only splash lubricant is utilized.

Also used in many areas of transmission and driveline assembly, where high initial loading occurs, and galling should be minimized. Not recommended where normal oil flow may be impeded due to the high viscosity of this product.

DESCRIPTION	PART NO.
Three 5/8 oz. Packages	99002-1*
1 lb. Container	99004-1*

ENGINE ASSEMBLY LUBE

Crane Engine Assembly Lube is specially formulated to provide extra lubrication protection to engine components during assembly and to provide outstanding resistance to scuffing, wear and friction during critical break-in. This lubricant is recommended for use on several different engine components, such as: rocker arm fulcrum balls, needle bearings, roller tips or rocker shafts, timing chain sprockets and gears, roller lifters and roller camshafts, engine bearing surfaces, outer surface of hydraulic or mechanical lifter bodies (use Assembly Lube Paste on face of these lifters).

DESCRIPTION	PART NO.
4 oz. Container	99008-1*

BREAK-IN ENGINE OIL

It's more important than ever to use the properly formulated oil for the initial break-in of your flat faced follower camshaft and lifters, either hydraulic or mechanical. Oils specified for today's hydraulic roller engines no longer contain the additives necessary to provide the optimum environment for sliding surfaces, especially for cam lobe and lifter interface of a flat face follower design. Crane Cams has partnered with Driven Racing Oil to offer a specially formulated 10W-40 conventional engine oil to cope with the stresses created with flat faced follower camshafts. This is to ensure that the critical first hour of your camshaft's life will lead to long term reliability. A formula of advanced petroleum base, combined with an additive package used in Crane Cams Super Lube, using a proportioned zinc (ZDDP) component (such as contained in Crane Cams Super Lube), this oil is intended for use with all conventional fuel types, with no additional oil additives required. Once your flat faced lifter camshaft is properly broken in, you should continue to use a performance-type ZDDP content oil for the remainder of the engine's life to ensure longevity.

DESCRIPTION	PART NO.
Quart	03706

* This product is applicable only to pre-1966 California and pre-1968 federally certified passenger cars. It is also applicable to non-emission controlled trucks and similar vehicles. It is not applicable or intended for use on any emission controlled vehicles operated on highways or roads.

SUPER LUBE BREAK-IN CONCENTRATE FOR CAM & LIFTER INSTALLATION

The original Crane Cams Super Lube Break-In Concentrate is an anti-wear additive formulated with a high concentration of special zinc dithiophosphate to provide sustained protection against cam lobe and flat-faced lifter scuffing and wear. This is especially important when using modern oils that have been compounded for use with roller-type camshafts. This oil supplement is to be added to the engine oil for the initial break-in period after the installation of a new camshaft and lifters.

DESCRIPTION	PART NO.
8 oz. Container	99003-1*

DRIVEN RACING OIL – STREET

Crane Cams now offers the full line of Driven Racing Oil products - from Street Performance to Hot Rod to Race and so much more. Popular sellers are listed below but call Crane Cams today for a full product listing.

STREET PERFORMANCE

Modern performance engines often utilize variable valve timing and hydraulic cam followers, so maintaining viscosity is critical to the performance of these valve trains. The Driven Street Performance Oils are specifically designed to resist shear thinning and maintain hydraulic force. The mPAO improves air release for improved anti-foam performance, and the high viscosity index of the mPAO delivers shear stable viscosity for the best in street performance lubrication.

THE DRIVEN LINE OF STREET PERFORMANCE OILS PROVIDES:

- HIGH ZINC CONTENT for anti-wear protection.
- STORAGE PROTECTION to guard against rush and corrosion when engine isn't running.
- SHEAR STABLE, SYNTHETIC FORMULAS provides cold-start protection, lower volatility and incresed high-temp shear protection.

DI30 5W-30 SYNTHETIC

DI Synthetic Engine Oil is designed specifically for Direct Fuel Injection Engines. The DI oil delivers cutting-edge lubricant technology specifically developed for direct injection engines. The DI oil utilizes an advanced additive package designed to reduce abnormal combustion, such as low speed pre-ignition issues, and protects against soot related wear. A lower volatility base oil also reduces crankcase vapors and carbon buildup on intake valves.

DESCRIPTION	PART NO.
Quart	18306

FR20 5W-20 SYNTHETIC

Designed specifically for high performance Ford Modular and Chrysler 5.7L Hemi based engines with and without variable valve timing, FR20 reduces oil consumption by limiting oil vaporization and foaming. FR20 utilizes advanced mPAO synthetic base oils to provide high temperature and high shear protection and delivers industry leading shear stability and HTHS bearing oil film thickness. Ideal for naturally aspirated, supercharged and tubrocharged engines that call for a 5W-20 viscosity.

DESCRIPTION	PART NO.
Quart	03006

LS30 5W-30 SYNTHETIC

Designed for high performance LS series engines, LS30 reduces oil consumption by limiting oil vaporization and foaming. It utilizes advanced mPAO synthetic base oils to reduce valve train noise and to provide high temperature and high shear protection for GM LS based engines with and without variable valve timing. LS30 delivers industry leading shear stability and HTHS bearing oil film thickness. Ideal for LS-based crate engines and supercharged LS performance engines as well as any performance engine that calls for a 5W-30 viscosity.

DESCRIPTION	PART NO.
Quart	02906

DT40 5W-40 SYNTHETIC

DT40 utilizes advanced synthetic base oils to provide high temperature and high shear protection for turbocharged, as well as European sports car engines, with and without variable valve timing. DT40 reduces oil consumption by limiting oil vaporization and foaming. Ideal for modern German, Italian and British sports car engines, as well as Chrysler 6.4L Hemis. Compatible with E85 and water/Methanol injection.

DESCRIPTION	PART NO.
Quart	02406

DRIVEN RACING OIL – HOT ROD

Driven Hot Rod Oil is designed to protect your camshaft. With high levels of ZDDP to protect your engine, it delivers the chemistry that classic cars, muscle cars and historic racers need. Because these cars are not daily drivers, Driven Hot Rod Oil also delivers storage protection additives to guard your engine from rust and corrosion. These additives also prevent dry starts. Developed specifically for older cars, no other oil provides this unique combination of lubricant chemistry.

HR1 15W-50 CONVENTIONAL

Well suited for a variety of hot rods, muscle cars and vintage vehicles. This oil is an excellent choice for big block muscle cars, blown street rods and engines with original seals. Features storage protection additives that guard agains rusht and corrosion during winter storage. Good for flat tappet, overhead and roller cam engines. No ZDDP or additives required.

DESCRIPTION	PART NO.
Quart	02106

HR2 10W-30 CONVENTIONAL

Great for small block crate engines. Features storage protection additives that guard agains rusht and corrosion during winter storage. 10W Multi-grade formula provides excellent start-up protection for flat tappet, overhead and roller cam engines. No ZDDP or additives required.

DESCRIPTION	PART NO.
Quart	02006

HR6 10W-40 SYNTHETIC

Perfect choice for muscle cars, European vintage sports cars and classic motorcycles. Safe for O2 sensors and catalytic converters. Features storage protection additives that guard agains rusht and corrosion during winter storage. No ZDDP or additives required.

DESCRIPTION	PART NO.
Quart	03906

DRIVEN RACING OIL – COMPETITION/RACE

Competition pushes engines to the edge, and your motor oil provides that thin film of lubricant that keeps your race engine from going over that edge. Driven Racing Oil developed a race specific line of oils to deliver a competitive advantage without compromising durability. Formulated with more Zinc, Moly and proprietary friction modifiers, the XP Series of Driven Racing Oil delivers championship winning performance and protection.

XP9 10W-40 SYNTHETIC

Reduces wear and lowers temperatures compared to conventional 20W-50 racing oils. Provides increased high temperature and high shear protection for wet sump and high compression applications. XP9 utilizes select synthetic base oils for increased durability at high temperatures. Compatible with methanol and high octane race fuels. Formulated with proprietary anti-wear and friction reducing additives to fight valve train wear and increase horsepower. Ideal for high output steel block engines.

DESCRIPTION	PART NO.
Quart	03206

XP3 10W-30 SYNTHETIC

Provides outstanding high temperature and high shear protection. Utilizes select synthetic base oils for increased durability at high temperatures. Formulated with proprietary anti-wear and friction reducing additives to fight valve train wear and increase horsepower. Ideal for crate, spec and custom built engines with clearances under .0027". Compatible with methanol and high octane race fuels.

DESCRIPTION	PART NO.
Quart	00306

XP5 20W-50 SEMI-SYNTHETIC

A semi-synthetic based on the original formula Driven race oil, XP5 provides excellent roller lifter and roller rocker arm protection. XP5 delivers improved high temperature shear and oxidation stability compared to mineral oil without the higher cost of a full synthetic. For use in high compression engines.

DESCRIPTION	PART NO.
Quart	00906

CLEANERS/WAXES

SPEED CLEAN FOAMING CLEANER

Speed Clean's foaming action lifts away honing residue from cylinder bores and cleans away greasy films. Excellent for cleaning away Cosmoline and microscopic dirt and debris from new engine parts prior to assembly. Prepares the surface for full adhesion of the assembly lubricant. Simply spray on, let soak, and then wipe off.

DESCRIPTION	PART NO.
18 oz. Can	50010

BRAKE & PARTS CLEANER

Powerful & quick cleaning performance makes Driven Brake & Parts Cleaner a must for every shop and toolbox. Non-chlorinated formula prevents chemical etching that can lead to part fractures. Dries quickly and does not leave an oily film. Meets all United States VOC requirements.

DESCRIPTION	PART NO.
14 oz. Can	50020⚠

SPEED SHIELD

Speed Shield is a spray-and-shine protectant that sheds dirt, dust and mud while providing a glossy protective film that isn't wet or oily. It does so through the use of advanced surfactant technology to provide a durable, lasting polish that helps prevent mud and dirt from sticking to surfaces. Ideal for off-road, powersports and dirt racing vehicles, this fast-drying, water-resistant product works great on plastic, paint, decals and fiberglass. Driven Speed Shield comes in an aerosol can that utilizes a powerful spraying action to displace dirt. With no wiping required, it makes all clean-ups easier.

DESCRIPTION	PART NO.
12 oz. Can	50070⚠

RACE WAX

Race Wax leaves a smooth, glossy finish that helps shed tire rubber, dirt and bugs. Race Wax cleans and shines glass, chrome, paint, plastic, tires and vinyl. It is a perfect product for fiberglass cars, decal wrapped race cars and hot rods. Perfect for a quick touch up clean and shine at the car show or race track, Race Wax can be used in direct sunlight and on cars that have not been washed. The clean and shine from Race Wax makes your car look sharp, and it makes clean up quick and easy with damaging the paint, windows, chrome or decal graphics.

DESCRIPTION	PART NO.
24 oz. Spray Bottle	50060⚠

MISCELLANEOUS/MERCHANDISE

DECALS

DESCRIPTION	PART NO.
11" Contingency Decal	99174-1
6" Small Logo Decal	99189-1
Door Decal	99188-1

PATCH

DESCRIPTION	PART NO.
5" Logo Patch	99209-1

BANNER

DESCRIPTION	PART NO.
3' x 8' Mesh Banner	99196-1

METAL SIGN

DESCRIPTION	PART NO.
24" x 16" Metal Sign	99210-1

APPAREL

DESCRIPTION	PART NO.
Hat	PP1010B
White Logo T-Shirt – Small	PP1350S
White Logo T-Shirt – Medium	PP1351M
White Logo T-Shirt – Large	PP1352L
White Logo T-Shirt – XL	PP1353XL
White Logo T-Shirt – 2XL	PP1354XXL
White Logo T-Shirt – 3XL	PP1355XXXL
White Logo T-Shirt – 4XL	PP1356XXXXL

C.A.R.B. E.O. NUMBERS

PART NO.	DESCRIPTION	C.A.R.B E.O. NO.
10003	260 H10 Camshaft - Ch. 262-400 V8 57-87	D-225-21
100032	260 H10 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-21
10004	266 H10 Camshaft - Ch. 262-400 V8 57-87	D-225-21
100042	266 H10 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-21
10005	272 H10 Camshaft - Ch. 262-400 V8 57-87	D-225-21
100052	272 H10 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-21
104201	2010 Camshaft - Ch. 305 (5.0L)-350 (5.7L) V8 87-92	D-225-22
104204	2011 Camshaft - Ch. 305 (5.0L)-350 (5.7L) V8 87-92	D-225-22
104211	2020 Camshaft - Ch. 305 (5.0L)-350 (5.7L) V8 87-92	D-225-22
104221	2030 Camshaft - Ch. 305 (5.0L)-350 (5.7L) V8 87-92	D-225-22
104224	2032 Camshaft - Ch. 305 (5.0L)-350 (5.7L) V8 87-92	D-225-22
104225	2031 Camshaft - Ch. 305 (5.0L)-350 (5.7L) V8 87-92	D-225-22
104241	2050 Camshaft - Ch. 5.0-5.7L V8 LT1 92-96	D-225-55
10758-1	Gold Race Rocker Arms - Ch. 305-350 V8 1.6 3/8" self-align. pkg/1	D-225-50
10758-16	Gold Race Rocker Arms - Ch. 305-350 V8 1.6 3/8" self-align. set/16	D-225-50
10759-1	Gold Race Rocker Arms - Ch. 305-350 V8 1.6 3/8" pkg/1	D-225-50
10759-16	Gold Race Rocker Arms - Ch. 305-350 V8 1.6 3/8" set/16	D-225-50
113901	H-260-2 Camshaft - Ch. 262-400 V8 57-87	D-225-18
113902	H-260-2 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-18
113931	H-266-2 Camshaft - Ch. 262-400 V8 57-87	D-225-18
113932	H-266-2 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-18
113941	H-272-2 Camshaft - Ch. 262-400 V8 57-87	D-225-18
113942	H-272-2 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-18
113971	H-248-2 Camshaft - Ch. 262-400 V8 57-87	D-225-18
113972	H-248-2 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-18
114102	2010 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-51
114112	2020 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-51
114122	2030 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-51
114132	2040 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-25
114142	2050 Camshaft and Lifter Kit - Ch. 262-400 V8 57-87	D-225-25
11746-1	Energizer Rocker Arms. - Ch. 262-400 V8 1.6 3/8" pkg/1	D-225-50
11746-16	Energizer Rocker Arms. - Ch. 262-400 V8 1.6 3/8" set/16	D-225-50
11747-1	Energizer Rocker Arms. - Ch. 262-400 V8 1.6 7/16" pkg/1	D-225-50
11747-16	Energizer Rocker Arms. - Ch. 262-400 V8 1.6 7/16" set/16	D-225-50
11748-16	Gold Race Rocker Arms - Ch. 262-400 V8 8-1.5/8-1.6 3/8" set/16	D-225-50
11752-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.5 7/16" pkg/1	D-225-17
11752-16	Gold Race Rocker Arms - Ch. 262-400 V8 1.5 7/16" set/16	D-225-17
11755-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 7/16" pkg/1	D-225-50
11755-16	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 7/16" set/16	D-225-50
11759-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 3/8" pkg/1	D-225-50
11759-16	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 3/8" set/16	D-225-50
11762L-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 off. .225"L 7/16" pkg/1	D-225-50

PART NO.	DESCRIPTION	C.A.R.B E.O. NO.
11762R-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 off. .225"R 7/16" pkg/1	D-225-50
11765L-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.5 off. .150"L 7/16" pkg/1	D-225-17
11765R-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.5 off. .150"R 7/16" pkg/1	D-225-17
11766L-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 off. .150"L 7/16" pkg/1	D-225-50
11766R-1	Gold Race Rocker Arms - Ch. 262-400 V8 1.6 off. .150"R 7/16" pkg/1	D-225-50
11802-1	Rocker Arms - Ch. 262-400 V8 Stamped 1.6 x-long pkg/1	D-225-50
11802C-1	Rocker Arms - Ch. 262-400 V8 Nitro-Carb Stamped 1.6 x-long pkg/1	D-225-50
11802C-16	Rocker Arms - Ch. 262-400 V8 Nitro-Carb Stamped 1.6 x-long set/16	D-225-50
11803-16	Rocker Arms - Ch. 262-400 V8 Stamped 8-1.5 / 8-1.6 x-long set/16	D-225-50
13755-16	Gold Race Rocker Arms - Ch. 396-454 V8 1.8 7/16" set/16	D-225-50
363901	H-260-2 Camshaft - Fd. 221-302 V8 62-87	D-225-32
363902	H-260-2 Camshaft and Lifter Kit - Fd. 221-302 V8 62-87	D-225-32
363941	H-272-2 Camshaft - Fd. 221-302 V8 62-87	D-225-32
363942	H-272-2 Camshaft and Lifter Kit - Fd. 221-302 V8 62-87	D-225-32
364112	2021 Camshaft and Lifter Kit - Fd. 221-302 V8 62-87	D-225-24
364211	2020 Camshaft - Fd. 221-302 V8 62-87	D-225-46
36750-1	Gold Race Rocker Arms - AMC 290-401 / Ford 221-351W V8 1.6 3/8" pkg/1	D-225-17
36750-16	Gold Race Rocker Arms - AMC 290-401 / Ford 221-351W V8 1.6 3/8" set/16	D-225-17
36757-1	Gold Race Rocker Arms - AMC 290-401 / Ford 221-351W V8 1.7 7/16" pkg/1	D-225-17
36757-16	Gold Race Rocker Arms - AMC 290-401 / Ford 221-351W V8 1.7 7/16" set/16	D-225-17
443901	H-260-2 Camshaft - Fd. 351W V8 69-93 and 5.0L HO 82-84	D-225-32
443902	H-260-2 Camshaft and Lifter Kit - Fd. 351W V8 69-93 and 5.0L HO 82-84	D-225-32
443941	H-272-2 Camshaft - Fd. 351W V8 69-93 and 5.0L HO 82-84	D-225-32
443942	H-272-2 Camshaft and Lifter Kit - Fd. 351W V8 69-93 and 5.0L HO 82-84	D-225-32
444211	2020 Camshaft - Fd. 5.0L V8 85-95	D-225-46
444212	2020 Camshaft, Spring, Retainer Kit - Fd. 5.0L V8 85-95	D-225-46
444221	2030 Camshaft - Fd. 5.0L V8 85-95	D-225-46
444222	2030 Camshaft, Spring, Retainer Kit - Fd. 5.0L V8 85-95	D-225-46
444225	2031 Camshaft - Fd. 5.0L V8 85-95	D-225-46
444226	2031 Camshaft, Spring, Retainer Kit - Fd. 5.0L V8 85-95	D-225-46
444231	2040 Camshaft - Fd. 5.0L V8 85-95	D-225-46
444232	2030 Camshaft and Lifter Kit - Fd. 351W V8 69-93 and 5.0L HO 82-84	D-225-46
694111	2020 Camshaft - Chry. LA 318-360 V8 86-91	D-225-23
704111	2020 Camshaft - Chry. Magnum 5.2-5.9L V8 92-02	D-225-47
704121	2030 Camshaft - Chry. Magnum 5.2-5.9L V8 92-02	D-225-54
99377-16	Hi Int. Hydraulic Lifters - Ch. .842" set/16	D-225-27
99377-2	Hi Int. Hydraulic Lifters - Ch. .842" pkg/2	D-225-27