



**CROWMER**

# CAMSHAFTS

## IMPORT CAMS:

- K20A2 - PG. 83-89
- EVO VIII - PG. 91-93
- SR20DE S13 - PG. 105-107

## DOMESTIC CAMS:

- CHEVROLET BEAST - PG. 20
- DODGE HEMI 5.7 & 6.1 - PG. 104
- FORD 302 - PG. 65-71



# VALVETRAIN

- SOLID LIFTERS - PG. 128-136
- ROLLER LIFTERS - PG. 127
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## RODS

- MAX-LIGHT RODS - PG. 207-209
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## CRANKSHAFTS

- MAXILIGHT CRANKS - PG. 199
- CRANKSHAFTS - PG. 189-204

# RODS & CRANKSHAFTS



## CLUTCHES

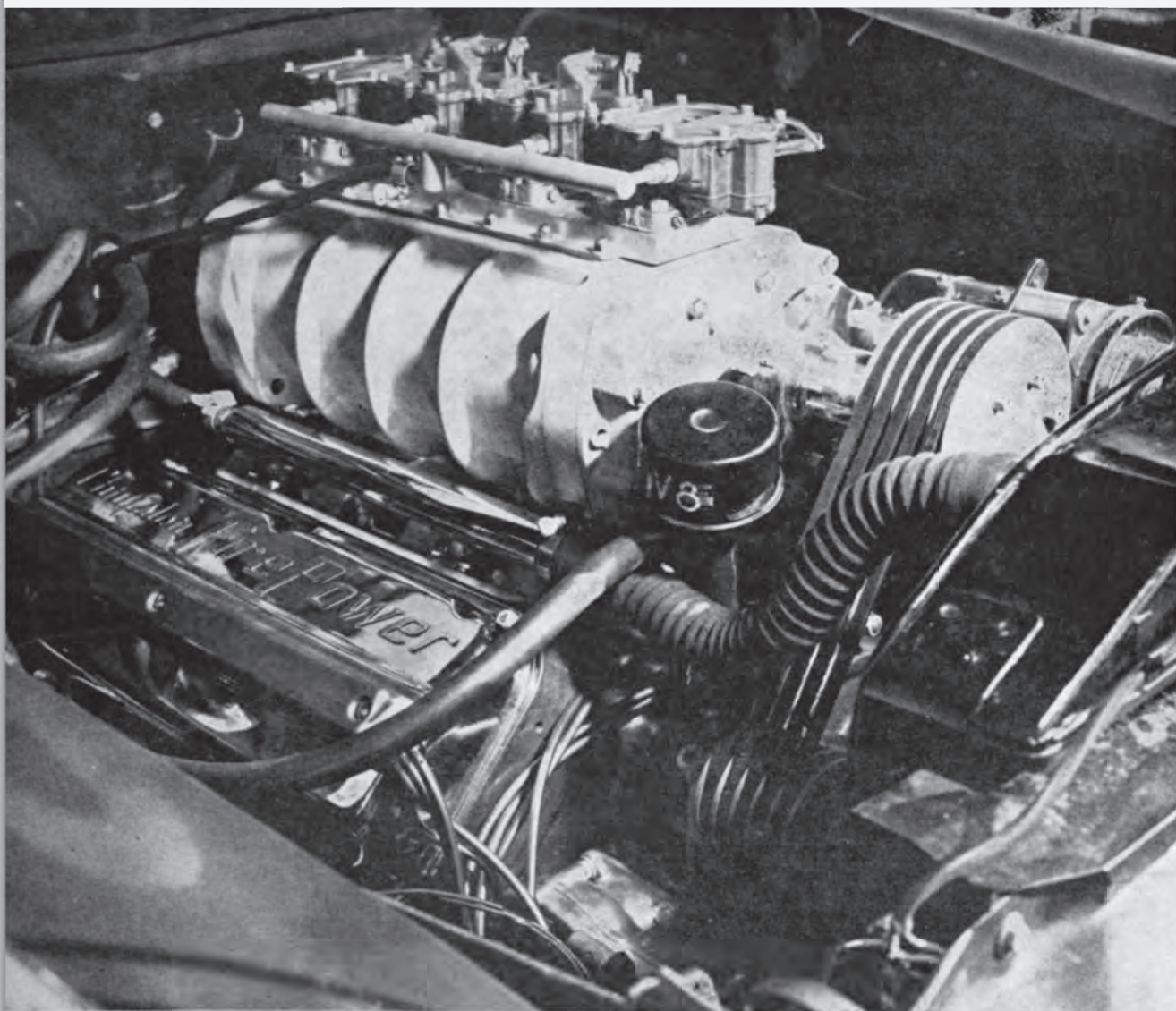
- GLIDE CLUTCHES - PG. 229
- 11" 2 DISC GLIDE
- 10" AA FULL TITANIUM GLIDE
- 8" 3 DISC GLIDE

## PEDAL CLUTCHES

- PG. 229-230
- 10" PRO SPORTSMAN
- 10" AA • 10.7"

# CLUTCHES

*60 Years of Quality & Power Innovation*



• Four Dodge Stromberg carburetors feed GMC blower, were chosen primarily because of their squat height, for hood clearance.

# Hustlin' Hudson

She's still slappin' you in the back  
at the end of the quarter

By Bozy Willis





• Crower's axle-snappin' Hudson was hitting 101.46 mph when he passed the last of the quarter-mile clocks, and this on his first trip to the traps! While it runs very smoothly at all speeds and idles down to 5 mph in high gear, it won't let you out of the seat once it starts to roll.

He pours supercharger components from an old coffee can, sleuths special clutch discs from long-forgotten taxicabs, and believes that there is still another hundred horsepower hidden in the depths of his Chrysler-inspired Hudson—that's Bruce Crower. Somewhat of a mechanical genius, expert machinist, welder and tool designer at the age of twenty-three, he has made some pretty startling modifications to a car that literally screams "stock" until Bruce gives a yank on the hood release handle. At about this point the words "drag it out" usually choke in the throat of would-be challengers who manage a meek "g-e-e-z . . . what a mill!"

A '51 Chrysler V8, a kind of secondary thing once you spot that big "Gimmie" blower, appears to have been factory installed, so neat is the workmanship. Mechanics immediately focus on the novel magneto positioning. A special drive, fabricated from steel plate stock and using '49 Ford distributor gears, locates the Harman and Collins mag low and out of the way. Gear driven, like a late Ford, its rotation is in reverse, advance controlled manually from the dash. Inside engine data list a stock bore and stroke of  $3\frac{13}{16}$  x  $3\frac{7}{8}$  inches, with standard pistons and valve springs. The ports have been cleaned up a bit; rough casting marks removed, and very little contouring done. Strange partners, '42 Buick push rods and '53 Studebaker lifters, are teamed up in the valve train; the lifters having been ground by Harman and Collins to the new Chrysler o.d. size. The camshaft, also by Harman and Collins, is classified as their "blower grind," with stock intake timing and full-race exhaust timing. Horsepower is estimated around 350 at 4800 rpm. Despite the fact that no fan is used, the engine runs cool at all ranges with the standard radiator set-up. The Chrysler installation necessitated no changes in either battery or steering gear position. Even the Hudson gearshift lever remains as before, attached to a '40 Chrysler Imperial transmission that is fitted to the Chrysler engine with a special adaptor fabricated from steel plate. Rear end ratio is 4 to 1, with overdrive.

Although Crower has had some trouble holding clutches and pressure plates, he is presently getting by with '37 De Soto taxicab clutch discs and a '42 Plymouth flywheel. Spring tension has been increased by the addition of inner springs, using a Dodge truck pressure plate. The throw-out arm is from a '37 De Soto. This arrangement has only to hold until Crower develops his new aluminum pressure plate, complete with ample spring tension.

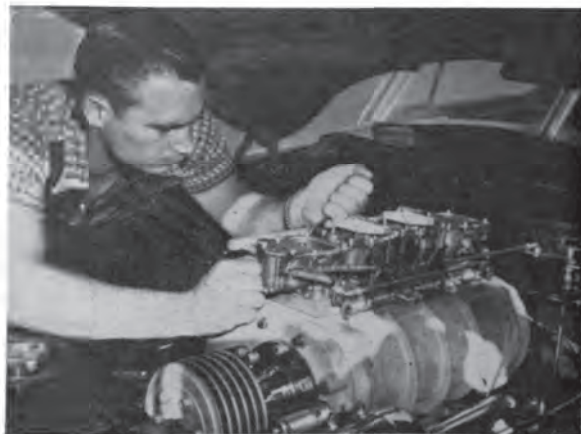
Crower designed and built his own chrome headers, with a Hudson double-entry and double-exhaust, heavy-duty muffler used in stock position. A pair of 24-inch Dualtone mufflers were added ahead of the Hudson silencer to help reduce the noise even more, but a decidedly low moan is still noticeable on a heavy throttle.

Now for the real excitement—that model 6071 GMC diesel supercharger. Driven off the crank, and running at crank speed, it develops a manifold pressure of 55 inches, or approximately a 14-pound boost at 5000 rpm. The blower is driven by five V

belts (Vulco special duty) with high tension piano wire inserts. The belts are  $\frac{3}{8}$  of an inch wide and have an outside circumference of 59 inches. Not having the proper pulleys, Crower melted some old Mercury pistons in a coffee can, poured the metal into home-made molds and machined them himself. One more, an idler pulley for belt tension, was made in a similar manner. Blower clearance was reset to switch the carburetors to the suction side of the blower, and adjusted so that the rotors would not clash upon deceleration. Crower went through ten sets of new drive gears, selecting the best available for quiet operation and minimum back-lash.

The blower manifold is another ingenious creation of his. It was completely fabricated from flat stock and then cadmium plated. A safety pop-off valve is incorporated in the under side, opens to the atmosphere, and is set at 23 pounds in case of a backfire. Manifold pressure is constant flow and has a 105-cubic-inch volume collector. Crower figures this is ample, so that when any intake valve opens, there will be a constant flow ready, no starving.

But what about that extra hundred horses that Bruce hopes to come up with? Let's see, that'd be about four hundred and . . . oh no! Judging from his past performance, we can hardly put anything past Bruce Crower, but you can bet he's not very far from his goal when he starts breaking those newly installed factory road racing rear axles. You see, the stock shafts went out back when he was churning up a mere 350 hp and that was a very long time ago for this boy, all of a month!



• Throttle linkage is compounded so that at half throttle all carburetors are open. Acceleration pumps are fitted to two middle jugs (only center two work to 80 mph). Specially designed, simple throttle setup consists of a sliding rod and tube arrangement that returns to zero position with little effort.



## Engine Talk with Bruce Crower

President of Crower Cams

I enjoyed seeing the Hustlin' Hudson article, written by Bozzy Willis and printed in Hot Rod Magazine in April, 1954. Great memories began to flood my mind of days spent hunting down the parts that I knew would enhance the speed of the more powerful V8. The discarded Jimmy blower I put on it came out of a San Diego Transit Diesel Bus. I picked up a heavy-duty limo tranny at a private junkyard and stuck that in. In those days there were lots of fix-it-yourself people, a carry over from the Depression. I was no different. As the Hudson article says, I really did melt down old aluminum pistons to form castings in Maxwell House coffee cans. Then I machined the grooves for the pulleys necessary for the 5 belt drive. Money was scarce, but machine shops and junkyards were plenty. I kept my eyes and ears open, always thinking, "How can I use this old part to better serve the speed game?"

I began modifying and machining parts in the '40's in my early teens. When I was 13, I got a Moto-Scout with a small 5/8 hp Briggs & Stratton. There wasn't much that could be done to add speed to it, but the engine was reliable and I did modify it a bit to get the most out of the low hp engine.

At 17, I picked up a used 74 cubic inch Harley from a guy who'd kept it in like-new condition. I raised the compression, achieving higher speeds and better economy. Gas was less than 2 bits a gallon; but coming out of the Depression, driving any vehicle was a privilege and everybody was pretty conservative with their money. To this day, I look for ways to keep or improve speed, while decreasing the need for the ever-increasing costly petrol.

The first car I owned was a '36 Ford Coupe that I'd picked up from a friend for \$115. I did a quick turnaround on that one - traded it for a '32 Ford Roadster. It was in much need of body and engine work, but I'd had some ideas about what I could do under the hood. It wasn't long before I installed a '41 flathead with the usual Edelbrock heads and manifold and a Harmon Collins camshaft.

I was 18 years old, but already getting a name with the racing fraternity in Phoenix, Arizona for the innovative speed modifications that I'd been doing that kept me in front of the casual hot rodders in the area. I'd also started making some money modifying engines for some of the local racers so I opened Bruce Crower Automotive Service in Phoenix. I was doing business for about a year when I received a draft notice. With that encouragement, I quickly enlisted in the Air Force, learning additional skills in Uncle Sam's machine shop. Upon my discharge in 1952, I headed to San Diego, where hot rodding was flourishing.

By the time I got that Hudson and was running it on Paradise Mesa drag strip and other local tracks, my constant focus was how I could make any engine run better, go faster and win the race. As I got more and more requests for making or modifying parts, I opened up a small machine shop and got serious in the aftermarket racing parts business. That was 1955.

I stopped using coffee cans for molding engine pulleys long ago. Crower Racing Cams & Equipment Company is now located in San Diego, CA in a 100,000 sq. ft. building and employs around 130 people. The coffee cans and borrowed time on somebody else's lathe have been replaced by manufacturing facility filled with state of the art, high-tech, machines, grinders, lathes and support equipment. Freight trucks deliver loads of American made aircraft quality metals to be transformed into a wide variety of products for a multitude of applications.

Many things have changed in the 75 years I've been paying attention to the racing industry. The economy has had its ups and downs, impacting racers as well as daily drivers. Computer aided technology in machine shops has increased production of parts as well as allowed for more choices for the consumer. Tracks have been modified and safety issues have been addressed; significantly lowering the many injuries and deaths seen on the tracks in the early years of hot rodding. Rules at the tracks have been adjusted as well, to try to keep pace with the technology and variables now available on the cars. These changes better serve the industry as well as keep the spectators coming to the tracks.

The only thing that hasn't changed is the racer. The race car driver still wants to run better, go faster and win the race. I continue to look for new and innovative ways to make that happen.

Bruce Crower



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## **WHERE TO PURCHASE CROWER PRODUCTS**

Crower performance products are available at better speed shops and performance warehouses throughout the world.

## **PAYMENT POLICY**

Crower accepts only U.S. postal money orders, certified check, cashier's checks and bank drafts as deposits or full payments. Personal or non-certified checks will not be accepted. Company checks are acceptable only if you have established credit with Crower prior to your order. Open accounts may be arranged by contacting the Crower Accounting Department. Credit applications are available upon request. **A minimum 50% deposit is required on all custom parts.**

## **CREDIT CARD POLICY**

We currently accept the following credit cards: Visa card, Master card, Discover card, and American Express. The following types of credit cards are not accepted: Diner's Club Card, and Gift Cards (Even if they have the Visa card, Master card, Discover card, or American Express logos they do not adhere to any safety protocols. To ensure that there is no credit card fraud here at Crower all credit cards must pass security screening. The following information must be provided by all cardholders whose credit cards are from banking/credit unions within the United States: **Cardholder Name, Credit card number, expiration date, Security code, and Billing Address.** If any of the above mentioned information is incomplete or invalid the order will be postponed until the correct information is provided.

## **INTERNET SPECIALS**

All specials, discounts, clearance item prices, shipping prices & sales posted on the Crower website are available for internet purchases only and are not applicable in combination with any other discounts or sale prices.

## **FREIGHT & SHIPPING**

All shipping is F.O.B., San Diego, California. If no shipping instructions are received with your order, Crower will ship by the most reasonable means in accordance with the size, weight and destination of your order. If you desire special handling such as overnight and two day service (UPS and FedEx please specify with your order. Drop shipments only if prepaid or open account. A fee will be applied on all dropship orders. The cutoff for processing all next day and second day orders is 12pm PST (3pm EST).

## **LIMITED WARRANTY**

All Crower racing products are 100% inspected for quality and quantity prior to shipment. Certain Crower products are covered by a limited warranty, others are not. For products that are covered. All guarantees or warranty claims must be referred to the Crower factory. No dealer, jobber or warehouse is authorized to handle these claims directly.

## **RETURNS, BACKORDERS & SHORTAGES**

All merchandise ordered in error is subject to a 15% handling and restocking charge. Merchandise may not be returned without written authorization from Crower. Special order or custom made parts are not returnable or refundable. Original invoice number and date of purchase must be furnished. All items must be returned freight prepaid along with written authorization from Crower. Out of stock items will be backordered and held until parts are available or order is cancelled by the customer. If you do not wish to have out of stock items backordered, please specify with your order. If parcel is received intact and a shortage or error is discovered, you must report this to Crower immediately and followed up in writing within 3 days after receipt of shipment. Merchandise sent in for refurbishing or specific tions will be held for no longer than 60 days. Merchandise in our possession after 60 days will become property of Crower.

**No returns or refunds will be accepted after one year.**



## **STATEMENT OF POLICY**

Crower Cams and Equipment Company, Incorporated will be herein referred to as 'Crower'. Crower's products are proven by laboratory and field testing. Crower does not warrant the product's performance due to the fact Crower cannot control the installation, application or usage. Crower does not warrant any items outside of the Crower line of products. Crower does not warrant or accept liability for the destruction or damage to other products used in conjunction with Crower products. By installing any Crower product you acknowledge that Crower products are high performance parts, not direct replacement parts, that they may have different tolerances or requirements and you agree to take full responsibility for meeting any such requirements. Crower neither delegates nor authorizes any person to assume obligations or liabilities on behalf of Crower in connection with any Crower products or the sale of any Crower products. Nothing in this Statement of Policy shall alter or enlarge the terms of the warranties, obligations or liabilities issued with the products. Warranty is void in race applications

## **WARRANTY PROVISIONS**

Applies to all connecting rods, crankshafts, clutches and valve train components. Valve train components include: hydraulic, solid, and roller lifters, valve springs, stainless steel rocker arms and pushrods. Crower warrants all of the above listed products against manufacturer's defects for one year from date of purchase. Shipping/Handling will not be covered during warranty replacement issues. Shipping/Handling is not credited or refunded during any warranty transaction

## **CAM WARRANTY PROVISIONS:**

Crower warrants its entire cam series against excessive lobe wear for one year from the date of purchase by the purchaser/user in accordance with Crower policies. Crower cams are designed and/or required to be used in conjunction with Crower kits to insure optimum performance and longevity. The warranty is valid only where a complete Crower kit is used. If excessive lobe wear occurs during said one year period, purchaser must return the cam and lifters to Crower, freight prepaid. The parts in question will be evaluated for proper installation and inspected for possible defects. If failure was determined to be due to installation, break in error or other errors in usage the purchaser must secure the means for return delivery of the parts. Parts left in possession of Crower will be scrapped after 30 days. Should Crower find a manufacturing defect, Crower will offer one of two options:

- a. Repair will be made at no cost to the purchaser.
- b. New replacement parts will be supplied at no cost.

# Camshaft Selection

Crower offers five levels of power to meet your performance needs.

## **LEVEL 1 CROWER CAMS MILEAGE & TORQUE**

Approximate RPM Power Range:  
Hydraulic Camshafts - Idle to 3500 / Redline: 4500  
Solid Camshafts - 1000 to 4000 / Redline: 5000

Crower Level 1 Camshafts are good stock replacements. These profiles are designed to enhance throttle response and low end torque in vans, trucks, passenger cars and mild marine applications while delivering fuel-efficient motoring. High vacuum, smooth idle and maximum efficiency are characteristics of these cams. Stock or small cfm carburetor, small diameter tube headers and dual exhaust are recommended for maximum benefit. These cams are intended for stock or near stock engines and drive trains, 8.5:1 compression, 2.70 to 3.25 ring and pinion, automatic transmission with stock converter or manual transmission.

## **LEVEL 2 CROWER CAMS MILEAGE & POWER**

Approximate RPM Power Range:  
Hydraulic Camshafts - 1500 to 4000 / Redline: 5500  
Solid Camshafts - 2000 to 5000 / Redline: 6000

Level 2 Crower Camshafts were designed for lightly modified street engines that require more power and an extended rpm range. They work well with stock or near-stock engines and drive trains, and provide excellent low-end and mid-range power for spirited street, off road driving, and mild marine applications. Modifications that should accompany installation of these cams include small diameter tube headers, low restriction exhaust, aftermarket intake manifold, increased cfm carburetor and a reworked or performance ignition. Increased compression (9.5:1) is recommended for maximum output. An aftermarket torque converter with a slightly higher stall speed is recommended.

## **LEVEL 3 CROWER CAMS HIGH PERFORMANCE**

Approximate RPM Power Range:  
Hydraulic Camshafts - 1800 to 4500 / Redline: 6000  
Solid Camshafts - 2200 to 6000 / Redline: 7000  
Hydraulic Roller Camshafts - 2000 to 4700 / Redline: 6250

Level 3 Crower Camshafts were developed for modified performance engines and intended for hot street/strip, and marine applications. These profiles have a moderate lobe at idle with an extended rpm range and increase upper-bottom to top-end power, along with a strong mid-range. These higher lift, longer duration camshafts require close attention to rear end gearing and tire diameter combinations. Choose a ring and pinion gear set and tire diameter that allows the engine to run in its optimum rpm power range (refer to Figure 1). These profiles perform well with manual or automatic transmissions with the use of a high stall torque converter. Headers, dual exhaust, larger than stock carburetor, performance manifold, and increased compression (9.5:1 to 10.5:1) are required. Mild porting and larger valves will improve performance.



# Camshaft Selection

**LEVEL 4  
CROWER CAMS  
ULTRA PERFORMANCE**

Approximate RPM Power Range:  
Hydraulic Camshafts - 2000 to 6000 / Redline: 6500  
Solid Camshafts - 2500 to 6500 / Redline: 7500  
Hydraulic Roller Camshafts - 2200 to 5000 / Redline: 6500

Level 4 Camshafts are intended for use on heavily modified engines. They have a definite lobe at idle and are intended for dual-purpose hot street/drag strip, oval track and hot marine applications. These grinds exhibit strong mid-range to top-end torque and horsepower. Headers, dual exhaust, large cfm carburetor, performance ignition and increased compression of 10.25:1 and above are recommended. Cylinder head modifications will increase performance. These profiles perform well with the use of a high stall torque converter. Close attention to proper ring and pinion and tire diameter selection is very important.

**LEVEL 5  
CROWER CAMS  
COMPETITION/  
RACE ONLY**

Crower engineers have listened to racers, and developed Level 5 camshaft profile. These profiles are intended for fully built, high compression racing engines and chassis. Extensive cylinder head modification, bigger valves, lightweight valve train, titanium valves, maximum flow carburetion or fuel injection, racing fuel, alcohol or nitro, magneto or electronic ignition, performance connecting rods and crank assembly and increased engine clearances are recommended for maximum benefit.

For assistance in choosing the right cam profile and other recommended upgrades, contact our technical support staff at 619-661-6477

**RPM RANGE AT 60 MPH**

Tire Diameter	Rear End Gear Ratio										
	2.18	2.50	2.74	3.08	3.23	3.50	3.73	3.90	4.10	4.56	4.88
24	1831	2100	2301	2587	2713	2940	3133	3276	3444	3830	4099
26	1690	1938	2124	2388	2504	2714	2892	3024	3179	3536	3784
28	1570	1800	1973	2218	2326	2520	2686	2808	2952	3283	3513
30	1465	1680	1841	2070	2170	2352	2507	2621	2755	3064	3279
32	1373	1575	1726	1940	2035	2205	2349	2457	2583	2873	3074
34	1293	1482	1625	1826	1915	2075	2212	2312	2431	2704	2894
36	1221	1400	1534	1725	1809	1960	2089	2184	2296	2554	2733
38	1157	1326	1454	1634	1714	1857	1979	2069	2175	2419	2589
40	1099	1260	1381	1552	1628	1764	1880	1966	2066	2298	2460
42	1046	1200	1315	1478	1550	1680	1790	1872	1968	2189	2342

**RPM CHART  
Fig.1**

**FORMULA:**

$$\frac{\text{MPH} \times \text{Axle Ratio}}{\text{Tire Diameter} \times 336}$$

# AMG HYDRAULIC FLAT TAPPET

1964 -1998

199 232 234 (Requires kit for 5/16" valves) 242 (4.0L) 258 (4.2L) 6 cylinder

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Better than stock cam, big mid-range power. RPM Power Range: 700 to 3800	<b>44902</b>	ALL CID	238HDP	112°	238°	246°	194°	202°	.432"	.453"	<b>84047</b> or <b>84042</b>
<b>BAJA BEAST / Performance Level 2</b> Strong upper bottom/top end power. RPM Power Range: 1800 to 4250 / Redline: 5000 plus	<b>44915</b>	ALL CID	280HDP	112°	280°	280°	208°	208°	.448"	.448"	<b>84047</b> or <b>84042</b>
<b>POWER COMPU-PRO / Performance Level 1</b> Enhances Mileage and torque in stock engines. RPM Power Range: Idel to 3500 / Redline: 4000 plus	<b>44242</b> <b>MTO</b>	ALL CID	242HDP	110°	242°	250°	184°	192°	.411"	.413"	<b>84044</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination power/mileage with extended rpm's. RPM Power Range: 1500 to 4000 / Redline: 4250 plus	<b>44243</b>	ALL CID	256HDP	112°	256°	264°	194°	204°	.437"	.445"	<b>84044</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 3</b> Street/strip cam. Super top end power. RPM Power Range: 2000 to 5000 / Redline: 5500 plus	<b>44245</b>	ALL CID	278HDP	112°	278°	284°	212°	218°	.462"	.475"	<b>84043</b> or <b>84042</b>
<b>Performance Level 4</b> Impressive horsepower increase with little low end loss. Don't let the lower duration numbers fool you. Nice idle sound. RPM Power Range: 2000 to 5000 / Redline: 5500 plus	<b>44246</b>	ALL CID	266HDP	110°	266°	270°	218°	222°	.490"	.501"	<b>84047</b> or <b>84042</b>
<b>Performance Level 4</b> Impressive horsepower increase with little low end loss. Don't let the lower duration numbers fool you. Nice idle sound. RPM Power Range: 2000 to 5000 / Redline: 5500 plus	<b>44247</b>	ALL CID	274HDP	114° LS	274°	278°	222°	230°	.324"	.328"	<b>84047</b> or <b>84042</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00144H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

Note: 2000 and up with electric fuel pump require a different cam core. Please specify when ordering

1989 - Later 199 - 258 Use a 3/8" valve stem size

## MECHANICAL FLAT TAPPET

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / Performance Level 3</b> Strong upper bottom to mid-range power. RPM Power Range: 1800 to 4500 / Redline: 6000 plus.	<b>44311</b>	ALL CID	282FDP	112°	282°	287°	238°	242°	.480"	.486"	<b>84247</b>
<b>PRO-STREET / Performance Level 4</b> Exhibits strong mid-range to top end performance. RPM Power Range: 2000 to 6000 / Redline: 7000 Plus.	<b>44312</b>	ALL CID	292FDP	110°	292°	298°	248°	250°	.499"	.512"	<b>84247</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order solid lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00144M</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

Note: 2000 and up with electric fuel pump require a different cam core Please specify when ordering

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
<b>84047</b>	66031-12	68313-12	87050- 12	<b>Hydraulic</b> Lifter. For rpm Up to 6000. 11/32" valve
<b>84042<sup>1</sup></b>	66031-12	68404-12	87044- 12	<b>Hydraulic</b> Lifter. 1989-up 5/16" valve, includes #86106 Keeper.
<b>84247</b>	66945-12	68390X3-12	87050- 12	<b>Solid Lifter.</b> For rpm over to 7000. 11/32" valve. Race Only

Lifters in Component Kit are available with COOLFACE & CAMSAVER options

### Spring pressure:

68313-12 Seat: 1.850" @ 104 lbs / Nose: 1.360" @ 254 lbs / Coil bind: 1.085" (Stock O.D., no machine work).  
68390X3-12 Seat: 1.800" @ 115 lbs / Nose: 1.300" @ 331 lbs / Coil bind: 1.110" (Machine work).  
68404-12 Seat: 1.600" @ 110 lbs / Nose: 1.100" @ 287 lbs / Coil bind: .880"  
\* Machine work required, specify 3/8 pilot shaft when ordering.

<sup>1</sup> Machine work required

### Optional Lifters:

**66031RM3-12** - High-Lube CamSaver hydraulic lifters  
**66945X980-12** - Coolface solids

Note: Longer pushrods may be required to achieve proper hydraulic lifter preload (.050" off snap-ring). Use checking pushrod.

Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.

# HYDRAULIC FLAT TAPPET



1966-1991

290 304 343 360 (5.9L) 390 401 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / PERFORMANCE LEVEL 1</b> Excellent low end and mid-range power. RPM Power Range: 1500 to 4000 / Redline: 5000 Plus.	<b>NEW</b> 45915	290	258HDP	112°	258°	264°	204°	210°	.445"	.448"	<b>84045 Upgrade 84045X3</b>
		304									
		343									
<b>POWER COMPU-PRO / Performance Level 2</b> Excellent low end and mid-range power and extended rpm range for spirited street and off-road driving. A perfect combination of mileage and power. Modifications should include small diameter tube headers, low restriction dual exhaust, aftermarket manifold, increased cfm carburetor and reworked or performance ignition. Increase in compression ratio to 9.5:1 is recommended for maximum output. Works well with automatic transmission or 4-speed. RPM Power Range: 1700 to 4500 / Redline: 5500 Plus.	<b>MTO</b> 45240	290	270HDP	112°	270°	276°	210°	220°	.450"	.475"	<b>84045 Upgrade 84045X3</b>
		304									
		343									
<b>POWER COMPU-PRO / Performance Level 2</b> Broadest power range we've ever had for these engines. Previously only available as custom order, now available. Use Camsaver lifters. RPM Power Range: 1500 to 4800 / Redline: 5500 Plus.	<b>MTO</b> 45249	290	276HDP	112°	262°	266°	214°	218°	.480"	.490"	<b>84045 Upgrade 84045X3</b>
		304									
		343									
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the performance oriented hot-street application, these cams offer an extended rpm range with emphasis on upper bottom to top end power. Performance gears, headers, dual exhaust, larger than stock cfm carburetor, performance manifold and increased compression (9.5:1 to 10.5:1) are required. Works well with automatic transmission if matched with proper ring and pinion gears and/or high stall converter. RPM Power Range: 1800 to 5000 / Redline: 6000 Plus.	<b>NEW</b> 45246	290	293HDP	114°	293°	293°	223°	223°	.477"	.477"	<b>84145 Upgrade 84145X3</b>
		304									
	343										
	45243	390	284HDP	112°	284°	290°	228°	234°	.512"	.525"	<b>84145 Upgrade 84145X3</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 4</b> Intended for the performance oriented hot-street application, these cams offer an extended rpm range with emphasis on upper bottom to top end power. Performance gears, headers, dual exhaust, larger than stock cfm carburetor, performance manifold and increased compression (9.5:1 to 10.5:1) are required. Works well with automatic transmission if matched with proper ring and pinion gears and/or high stall converter. RPM Power Range: 1800 to 5000 / Redline: 6000 Plus.	45247	390	305HDP	112°	305°	315°	234°	244°	.520"	.542"	<b>84145 Upgrade 84145X3</b>
		401									
<b>HI-DRAULIC HAULER / Performance Level 4</b> Strong mid to top end torque. Rough Idle. RPM Power Range: 2500 to 6000 / Redline: 6500 Plus.	<b>MTO</b> 45210	390	290HDP	108°	290°	298°	226°	236°	.498"	.496"	<b>84145 Upgrade 84145X3</b>
		401									
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	00145H	ALL									

Note: These cams use .000" intake and exhaust valve lash.

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
84045	66031-16	68313-16	87049-16 <sup>A</sup>	Hydraulic Lifter.
84045X3	66031X3-16	68313-16	87049-16 <sup>A</sup>	CamSaver Hydraulic Lifter.
84145	66031-16	68390X3-16	87049-16	Dual Spring
84145X3	66031X3-16	68390X3-16	87049-16	Dual W/CamSaver Lifter

### Spring pressure:

68313-16 Seat: 1.750" @ 95 lbs / Nose: 1.250" @ 267 lbs / Coil bind: 1.030"  
68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 284 lbs / Coil bind: 1.030"  
(Stock O.D., no machine work).

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

A. Some 1973-74 engines were equipped with 1132 exhaust valves and rotators. Order 87049-8 and 87050-8 steel retainers, and 86071-8 and 86072-8 valve stem seals.

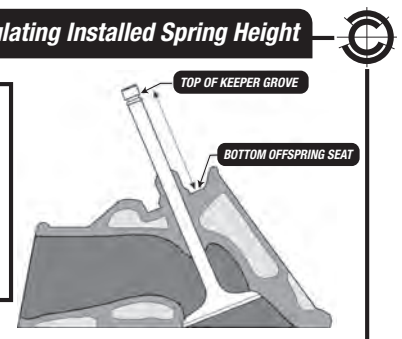
\* Machine work required, specify 3/8 pilot shaft when ordering.

**Note:** If exceeding 7500 rpm, high pressure springs and titanium retainers may be required. See spring and retainer specs or contact Crower for proper recommendations.

## SEE THE FOLLOWING PAGE FOR SPECS ON ACCESSORIES

Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# MECHANICAL FLAT TAPPET

1966-1991

290 304 343 360 (5.9L) 390 401 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4</b> High torque, all purpose camshaft with emphasis on mid-range power. RPM Power Range: 2500 to 6000 / Redline: 7000 Plus.	<b>45315</b>	360 401	282FDP	108°	282°	287°	240°	242°	.478"	.486"	<b>84345 Upgrade 84345X980</b>
<b>COMPU-PRO / Performance Level 4</b> High torque, all purpose camshaft with emphasis on mid to top end power. RPM Power Range: 3000 to 6500 / Redline: 7500 Plus.	<b>45316 MTO</b>	360 401	292FDP	108°	292°	298°	246°	250°	.499"	.509"	<b>84345 Upgrade 84345X980</b>
<b>COMPU-PRO / Performance Level 5</b> Does it all. Brutal power throughout the power range. RPM Power Range: 3500 to 7500 / Redline: 8000 Plus.	<b>45317</b>	290 343	304FDP	108°	304°	310°	258°	262°	.534"	.549"	<b>84345 Upgrade 84345X980</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00144M</b>	360 401									

Note: These cams use .022" intake, .024" exhaust valve lash.

**Roller cam available, please call Crower with your head flow numbers & application for a custom grind.**

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84345</b>	66945-16	68390X3-16 <sup>A</sup>	87049-16 <sup>A</sup>	86071-16	<b>Solid Lifter.</b> For high rpm. Limited street use.
<b>84345X980</b>	66945X980-16	68390X3-16 <sup>A</sup>	87049-16 <sup>A</sup>	86071-16	<b>CoolFace Solid Lifter.</b> For high rpm. Limited street use.

### Spring pressure:

68390X3-16 Seat: 1.800" @ 115 lbs / Nose: 1.300" @ 331 lbs / Coil bind: 1.110" (Machine work).

A. Some 1973-74 engines were equipped with 11/32 exhaust valves and rotators. Order 87049-8 and 87050-8 steel retainers, and 86071-8 and 86072-8 valve stem seals.

\* Machine work required, specify 38 pilot shaft when ordering.

**Note:** If exceeding 7500 rpm, high pressure springs and titanium retainers may be required. See spring and retainer specs or contact Crower for proper recommendations.

**Note:** If using guide plates, heat-treated pushrods (RC 60 series) are required. See pushrods or contact Crower.

**Note:** When installing solid or roller lifter camshafts, screw-in rocker studs are required. Contact Crower.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.





# HYDRAULIC FLAT TAPPET



1978-1986

196 (3.2L) 231 (3.8L) 252 (4.1L) V6 Evenfire

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 2</b> Good hot street cam with emphasis on upper bottom to top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 Plus.	<b>54915</b> <b>MTO</b>	ALL CID	280HDP	112°	280°	290°	204°	214°	.450"	.474"	<b>84053X3</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 3</b> Street/strip cam with strong mid to top end torque and horsepower. RPM Power Range: 2000 to 6000 / Redline: 6500 Plus.	<b>54245</b>	ALL CID	278HDP	112°	278°	284°	212°	218°	.462"	.478"	<b>84053X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00154H</b>	ALL CID									

Note: Early 198-225 cid 1962-1967 Odd Fire cam cores are available from Crower. Specify when ordering.

Note: These cams use .000" intake and exhaust valve lash.

**Note:** Crower has an extensive inventory of Buick V6 cam profiles and roller lifters that were designed for the Buick V6 Indy turbo engines.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 3</b> Extended rpm range with emphasis on upper bottom to top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 plus.	<b>54310</b> <b>MTO</b>	ALL CID	282FDP	107°	282°	287°	238°	242°	.483"	.486"	<b>84303</b>
<b>COMPU-PRO / Performance Level 4</b> Hot street/strip profile. Strong mid to top end torque and horsepower. RPM Power Range: 2200 to 6000 / Redline: 7000 plus.	<b>54311</b> <b>MTO</b>	ALL CID	292FDP	108°	292°	298°	244°	248°	.501"	.514"	<b>84303</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc when ordering.	<b>00154M</b>	196 231 252									

Note: Custom ground turbocharged/supercharged camshafts are available from Crower on a special order basis.

Buick GN 231 c.i. 6 cyl. 1977 1/2 - 1987, 1988 - 1989 AMC

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Oil Seals	Remarks
<b>84053</b>	66050-12	68301X1-12	86032-12		<b>Hydraulic Lifter.</b>
<b>84053X3</b>	66050X3-12	68301X1-12	86032-12		<b>CamSaver Hydraulic Lifter.</b>
<b>84303</b>	66900-12	68390X3-12	87048-12	86072-12	<b>Dual Spring.</b>
<b>84303X980</b>	66900X980-12	68390X3-12	87048-12	86072-12	<b>Dual W/ CoolFace Lifter</b>

### Spring pressure:

68301X1-12 Seat: 1.700" @ 101 lbs / Nose: 1.250" @ 274 lbs / Coil bind: 1.130"  
68304-16 Optional Spring

### Crower Recommends ZDDPlus for all Flat Tappet Cams

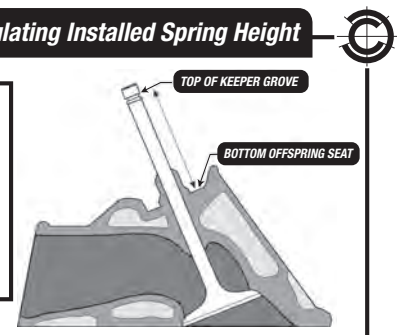
**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Note:** If exceeding 6500 rpm, high pressure springs and titanium retainers may be required. See spring and retainer specs or contact Crower for proper recommendations.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

**Diagram 1. Calculating Installed Spring Height**

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.



# HYDRAULIC FLAT TAPPET

## 215 300 340 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>MILEAGE COMPU-PRO / Performance Level 1</b> Enhances throttle response and low end torque while delivering fuel efficient drivability. RPM Power Range: Idle to 3500 / Redline: 4500 plus	<b>50227</b>	300	256HDP	112°	246°	253°	184°	190°	.402"	.421"	<b>84058</b>
	<b>50228</b>	340	250HDP	112°	250°	258°	192°	196°	.424"	.430"	<b>84058</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm range. Strong low end and mid-range power for spirited driving on or off the road. RPM Power Range: 1500 to 4000 / Redline: 5500 Plus.	<b>50229</b>	300	258HDP	112°	258°	260°	196°	202°	.430"	.446"	<b>84058</b>
	<b>50230</b>	340	260HDP	112°	260°	266°	202°	210°	.446"	.451"	<b>84058</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> These cams offer extended rpm range with emphasis on upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 Plus.	<b>50231</b>	300	270HDP	112°	270°	276°	210°	218°	.451"	.477"	<b>84058</b>
	<b>50232</b>	340	276HDP	112°	276°	281°	214°	218°	.488"	.490"	<b>84058</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> These cams exhibit strong mid-range and top end torque and horsepower. RPM Power Range: 2000 to 6000 / Redline: 6500 Plus.	<b>50233</b>	300	280HDP	112°	280°	286°	220°	226°	.488"	.501"	<b>84150</b>
	<b>50234</b>	340	284HDP	112°	284°	290°	228°	234°	.512"	.526"	<b>84150</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00151H</b>	ALL	CID								

Available for Land Rover, See Page 90

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 3</b> Strong mid to top end torque and horsepower. RPM Power Range: 2000 to 5500 / Redline: 7000 plus.	<b>50303</b>	300	282FDP	108°	282°	287°	238°	242°	.482"	.488"	<b>84350X980</b>
	<b>MTO</b>										
<b>COMPU-PRO / Performance Level 3</b> Strong mid-range and top end power. RPM Power Range: 2500 to 6000 / Redline: 7500 plus.	<b>50304</b>	340	292FDP	108°	292°	298°	246°	250°	.502"	.514"	<b>84350X980</b>
	<b>MTO</b>										
<b>COMPU-PRO / Performance Level 4</b> Tremendous upper mid to top end torque and horsepower. RPM Power Range: 3000 to 6500 / Redline: 7500 Plus.	<b>50305</b>	340	304FDP	108°	304°	310°	256°	262°	.536"	.549"	<b>84350X980</b>
	<b>MTO</b>										
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00151M</b>	ALL	CID								
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00060</b>	ALL	CID								

## ENGINEERED COMPONENT KITS

Note: These cams use .022" intake, .024" exhaust valve lash.

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84058</b>	66050-16	68313 -16	87019-16	86072-16	<b>Hydraulic Lifter.</b>
<b>84350</b>	66900-16	68405-16	87021-16	86072-16	<b>Solid Lifter.</b>
<b>84150X3</b>	66050X3-16	68405 -16	87021-16	86072-16	<b>CamSaver Hydraulic Lifter.</b>
<b>84350X980</b>	66900X980-16	68405-16	87021-16	86072-16	<b>CoolFace Mechanical Lifter.</b>

### Spring pressure:

68405-16 Seat: 1.700" @ 104 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 0.980" (Machine work, use cutter 68983\*).

\* Machine work required, specify 3/8 pilot shaft when ordering.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Note:** If exceeding 6500 rpm, high pressure springs and titanium retainers may be required.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

# HYDRAULIC FLAT TAPPET



1968-1980  
BUICK 350 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.55 / 1.55		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>MILEAGE COMPU-PRO / Performance Level 1</b> Enhances throttle response. Low end torque and fuel efficiency. RPM Power Range: Idle to 3500 / Redline: 4500 plus	50256	350	250HDP	112°	250°	258°	192°	196°	.411"	.419"	84058
<b>POWER COMPU-PRO / Performance Level 2</b> Power and mileage cam with extended rpm for spirited motoring. RPM Power Range: 1500 to 4000 / Redline: 5500 plus	50257	350	260HDP	112°	260°	266°	202°	210°	.434"	.436"	84058
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Strong upper bottom to top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 Plus.	50258	350	276HDP	112°	276°	281°	210°	220°	.446"	.468"	84150 84150X3
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Street/strip profile with superior upper bottom to top end torque. RPM Power Range: 2000 to 6000 / Redline: 6500 Plus.	50259 MTO	350	284HDP	112°	284°	290°	226°	234°	.499"	.508"	84150 84150X3
<b>HI-DRAULIC HAULER / Performance Level 4</b> Rough idle. Strong mid to top end torque and horsepower. RPM Power Range: 2500 to 6000 / Redline: 6500	50260 MTO	350	296HDP	108°	296°	302°	228°	242°	.485"	.512"	84150 84150X3
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range torque and horsepower. RPM Power Range: 3000 to 6500 / Redline: 6500	50261	350	304HDP	108°	304°	312°	240°	246°	.516"	.544"	84150 84150X3
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00150H	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.55 / 1.55		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 5</b> Superior mid-range and top end torque. RPM Power Range: 3500 to 7500 / Redline: 7750 plus.	50355 MTO	350	304HDP	108°	304°	310°	256°	262°	.519"	.532"	84350
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00150M	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84058	66050-16	68313-16	87019-16	86072-16	Hydraulic Lifter.
84350	66900-16	68405-16	87021-16	86072-16	Solid Lifter.
84150X3	66050X3-16	68405-16	87021-16	86072-16	CamSaver Hydraulic Lifter.
84350X980	66900X980-16	68405-16	87021-16	86072-16	CoolFace Solid Lifter.

**Engineered Component Kit for the part #'s: 84350. For Custom Ground Roller contact CROWER.**

Note: If exceeding 6500 rpm, high pressure springs and titanium retainers may be required. Contact Crower.

### Spring pressure:

68405-16 Seat: 1.700" @ 104 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 0.980" (Machine work, use cutter 68983\*).

\* Machine work required, specify 3/8 pilot shaft when ordering.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

Part #86092 - 4oz Bottle of ZDDPlus & Paste

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# HYDRAULIC FLAT TAPPET

Non Roller 1967-1976  
400 430 455 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm range. Strong low end and mid-range power for spirited driving on or off the road. RPM Power Range: 1500 to 4000 / Redline: 5500 Plus.	<b>52239</b>	455	276HDP	112°	276°	281°	212°	216°	.475"	.487"	<b>84054 Upgrade 84054X3</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot street application, these cams offer extended rpm range with emphasis on upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 Plus.	<b>52241</b>	455	284HDP	112°	284°	290°	230°	236°	.514"	.525"	<b>84054 Upgrade 84054X3</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/drag strip profile. These cams exhibit strong mid-range and top end torque and horsepower. RPM Power Range: 2000 to 5000 / Redline: 6500 Plus.	<b>52242</b>	400 430	297HDP	112°	297°	308°	238°	242°	.538"	.536"	<b>84054 Upgrade 84054X3</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Strong mid-range to top end power. RPM Power Range: 2750 to 6250 / Redline: 6500 Plus.	<b>52211 MTO</b>	455	304HDP	108°	311°	316°	248°	252°	.546"	.559"	<b>84054 Upgrade 84054X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00152H</b>	ALL CID									

1957-66 Buick V8 364 401 425 (Nail Head) hydraulic & solid cams available. Call Crowder

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
<b>84054</b>	66050-16	68143-16	87019-16	
<b>84054X3</b>	66050-16	68143-16	87019-16	<b>CamSaver Lifter</b>

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Spring pressure:

68143-16 Seat: 1.850" @ 92 lbs / Nose: 1.350" @ 300 lbs / Coil bind: 1.260" (Stock O.D., no machine work).

**Note:** When using high lift cams (over .480") or modified valve stem lengths, a longer pushrod is required to achieve proper lifter preload (.050" off snare-ring). Use checking pushrod to determine length and call with specs.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

### Crowder Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**





# MECHANICAL FLAT TAPPET



1967-1976  
400 430 455 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 3</b> High torque, all purpose profile. RPM Power Range: 2500 to 6000 / Redline: 6000 Plus.	<b>52310 MTO</b>	ALL CID	282FDP	108°	282°	287°	238°	242°	.482"	.488"	<b>84254</b> 84254X980
<b>COMPU-PRO / Performance Level 4</b> Superior mid-range and top end torque. Rough Idle RPM Power Range: 3500 to 6500 / Redline: 6500 Plus.	<b>52312 MTO</b>	ALL CID	304FDP	108°	304°	310°	258°	262°	.533"	.549"	<b>84254</b> 84254X980
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00152M</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash. **1957-66 Buick V8 364 401 425 (Nail Head) hydraulic & solid cams available. Call Crower**

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
<b>84254</b>	66900-16	68143-16	87019-16	
<b>84254X980</b>	66900X980-16	68143-16	87019-16	<b>CoolFace Lifter</b>

### Spring pressure:

68143 Seat: 1.850" @ 92 lbs / Nose: 1.350" @ 300 lbs / Coil bind: 1.280" (Stock O.D., no machine work).

**Note:** If exceeding 6500 rpm, high pressure springs and titanium retainers may be required. See spring and retainer specs or contact Crower for proper recommendations.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

**Note:** Solid lifter camshafts require adjustable pushrods. See pushrods or contact Crower.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



**Donnie Wang**



# HYDRAULIC FLAT TAPPET

**Non Roller 1963-1984**  
**194 230 250 inline 6 cylinder**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.75 / 1.75		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>MILEAGE COMPU-PRO / Performance Level 1</b> Enhances mileage and torque in stock engines. RPM Power Range: Idle to 3500 / Redline: 4500 plus.	<b>03240</b> <b>MTO</b>	ALL CID	240HDP	114°	240°	248°	182°	192°	.436"	.452"	<b>84008</b> <b>84008X3</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination power/mileage with extended rpm's. RPM Power Range: 1500 to 4000 / Redline: 5500 Plus.	<b>03241</b>	ALL CID	248HDP	112°	248°	258°	192°	200°	.448"	.460"	<b>84008</b> <b>84008X3</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Hot street profile with strong upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 Plus.	<b>03242</b>	ALL CID	262HDP	112°	262°	272°	204°	212°	.478"	.490"	<b>84008</b> <b>84008X3</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Street/strip cam. Super top end torque and horsepower. RPM Power Range: 2000 to 6000 / Redline: 6500 Plus.	<b>03243</b>	ALL CID	272HDP	112°	272°	276°	210°	212°	.490"	.508"	<b>84008</b> <b>84008X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00106H</b>	ALL CID									

**Note: 292 cid cam cores are available from Crower on a special order basis.**

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

**Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.75 / 1.75		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4</b> Does it all. Brutal power throughout the power range. RPM Power Range: 3000 to 6500 / Redline: 7000 Plus.	<b>03311</b>	ALL CID	282FDP	107°	282°	287°	238°	242°	.436"	.452"	<b>84303</b> <b>84008X980</b>
<b>COMPU-PRO / Performance Level 4</b> Does it all. Brutal power throughout the power range. RPM Power Range: 3000 to 6500 / Redline: 7000 Plus.	<b>03312</b>	ALL CID	292FDP	107°	292°	298°	248°	252°	.548"	.564"	<b>84303</b> <b>84008X980</b>
<b>COMPU-PRO / Performance Level 5</b> Explosive power. Superior mid-range and top end torque. RPM Power Range: 3500 to 7000 / Redline: 7500 Plus.	<b>03313</b>	ALL CID	304FDP	107°	304°	310°	258°	264°	.585"	.600"	<b>84303</b> <b>84008X980</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00106M</b>	ALL CID									
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00106R</b>	ALL CID									

**Note: 292 cid cam cores are available from Crower on a special order basis.**

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84008</b>	66000-12	68301X1-12	86032-12	86072-12	<b>Hydraulic Lifter.</b>
<b>84008X3</b>	66000X3-12	68301X1-12	86032-12	86072-12	<b>CamSaver Lifter. Race Only</b>
<b>84303</b>	66900-12	68390X3-12	87048-12	86072-12	<b>Solid Lifter. Race Only</b>
<b>84303X980</b>	66900X980-12	68390X3-12	87048-12	86072-12	<b>CoolFace Lifter.</b>

### Spring pressure:

68301X1-12 Seat: 1.700" @ 101 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 1.130" (Stock O.D., no machine work).  
 68390X3-12 Seat: 1.800" @ 115 lbs / Nose: 1.300" @ 331 lbs / Coil bind: 1.110" (Machine work).

\* Machine work required

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

# HYDRAULIC FLAT TAPPET



Non Roller

173 60° (2.8L) 189 (3.1L) V6

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 2</b> Strong upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 5750 Plus.	<b>03015</b>	ALL CID	278HDP	112°	283°	286°	204°	214°	.422"	.444"	<b>84008</b> <b>84008X3</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 3</b> Street/strip cam. Super top end torque. RPM Power Range: 2000 to 5000 / Redline: 6000 Plus.	<b>03043</b> <b>MTO</b>	ALL CID	278HDP	112°	278°	284°	212°	218°	.435"	.449"	<b>84008</b> <b>84008X3</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Strong mid-range and top end torque and horsepower. RPM Power Range: 2200 to 6200 / Redline: 6500 Plus.	<b>03050</b> <b>MTO</b>	ALL CID	290HDP	108°	290°	298°	226°	234°	.470"	.492"	<b>84008</b> <b>84008X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00107H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4</b> Hot street/strip profile. Strong mid to top end torque and horsepower. RPM Power Range: 2500 to 6500 / Redline: 7500 Plus	<b>03066</b> <b>MTO</b>	ALL CID	282FDP	110°	282°	287°	236°	242°	.449"	.458"	<b>84303</b> <b>84303X980</b>
<b>COMPU-PRO / Performance Level 5</b> Fantastic top end profile with plenty of horsepower. RPM Power Range: 3000 to 7000 / Redline: 8000 Plus	<b>03067</b> <b>MTO</b>	ALL CID	292FDP	108°	292°	298°	248°	250°	.470"	.479"	<b>84303</b> <b>84008X980</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00107M</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84008</b>	66000-12	68301X1-12	86032-12	86072-12	<b>Hydraulic Lifter.</b>
<b>84008X3</b>	66000X3-12	68301X1-12	86032-12	86072-12	<b>CamSaver Lifter. Race Only</b>
<b>84303</b>	66900-12	68390X3-12	87048-12	86072-12	<b>Solid Lifter. Race Only</b>
<b>84303X980</b>	66900X980-12	68390X3-12	87048-12	86072-12	<b>CoolFace Lifter.</b>

Your RPM range will vary depending on your **Cylinder Head Air Flow Data & Cubic Inches.**

Part numbers no longer listed may still be available as custom grinds. Please contact Crower.

### Spring pressure:

68301X1-12 Seat: 1.700" @ 101 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 1.130" (Stock O.D., no machine work).

68390X3-12 Seat: 1.800" @ 115 lbs / Nose: 1.300" @ 331 lbs / Coil bind: 1.110" (Machine work).

\* Machine work required

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

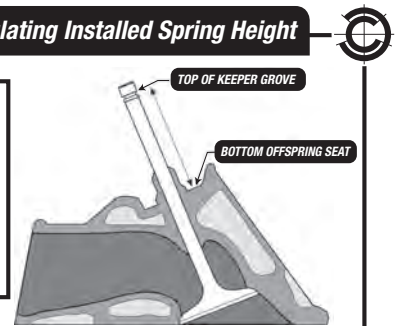
**Note:** If exceeding 6500 rpm, high pressure springs and titanium retainers may be required. Contact Crower.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

**Chevy V6 230 250 292 Billet Roller Cams available. Call Crower**

Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.



# HYDRAULIC FLAT TAPPET

**Non Roller**

**200 229 90° V6 (3.8L)**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 3</b> Strong upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 Plus.	<b>03115 MTO</b>	ALL CID	278HDP	114°	278°	288°	204°	214°	.422"	.444"	<b>84008 84008X3</b>
<b>POWER BEAST / Performance Level 4</b> Street/strip cam. Super top end torque. RPM Power Range: 2000 to 5500 / Redline: 6250 Plus.	<b>03103 MTO</b>	229	288HDP	112°	288°	298°	214°	224°	.444"	.467"	<b>84008 84008X3</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Strong mid-range and top end torque and horsepower. RPM Power Range: 2200 to 6200 / Redline: 6500 Plus.	<b>03150 MTO</b>	ALL CID	280HDP	108°	280°	288°	226°	232°	.474"	.484"	<b>84008 84008X3</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Explosive mid to top end power with emphasis on the upper end. RPM Power Range: 2500 to 6500 / Redline: 6500 Plus.	<b>03151 MTO</b>	229	296HDP	108°	296°	308°	228°	244°	.509"	.498"	<b>84008 84008X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00108H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4</b> High torque, all purpose grind for most applications. RPM Power Range: 2200 to 6200 / Redline: 6750 Plus.	<b>03165 MTO</b>	ALL CID	282FDP	110°	282°	287°	238°	244°	.451"	.460"	<b>84303 84303X980</b>
<b>COMPU-PRO / Performance Level 5</b> Vicious horsepower throughout the power band. RPM Power Range: 3000 to 7000 / Redline: 7500 Plus.	<b>03166 MTO</b>	ALL CID	292FDP	108°	292°	298°	246°	250°	.468"	.479"	<b>84303 84008X980</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00108M</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84008</b>	66000-12	68301X1-12	86032-12	86072-12	<b>Hydraulic Lifter.</b>
<b>84008X3</b>	66000X3-12	68301X1-12	86032-12	86072-12	<b>CamSaver Lifter. Race Only</b>
<b>84303</b>	66900-12	68390X3-12	87048-12	86072-12	<b>Solid Lifter. Race Only</b>
<b>84303X980</b>	66900X980-12	68390X3-12	87048-12	86072-12	<b>CoolFace Lifter.</b>

**Part numbers no longer listed may still available as custom grinds. Please contact Crower.**

### Spring pressure:

68301X1-12 Seat: 1.700" @ 101 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 1.130" (Stock O.D., no machine work).  
68390X3-12 Seat: 1.800" @ 115 lbs / Nose: 1.300" @ 331 lbs / Coil bind: 1.110" (Machine work).

\* Machine work required

**Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.**

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain. **Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# HYDRAULIC FLAT TAPPET



**Non Roller**  
**262 90° V6 (4.3L)**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>MILEAGE COMPU-PRO / Performance Level 1</b> Enhances mileage and torque in stock engines. RPM Power Range: Idle to 3500 / Redline: 4500 plus	<b>03302 MTO</b>	ALL CID	240HDP	114°	240°	248°	182°	190°	.386"	.387"	<b>84008 84008X3</b>
<b>COMPU-PRO / Performance Level 1</b> Strong upper bottom/top end power. RPM Power Range: 2000 to 4500+	<b>03342 MTO</b>	ALL CID	264HDP	112°	264°	270°	202°	206°	.419"	.420"	<b>84008 84008X3</b>
<b>COMPU-PRO / Performance Level 2</b> Street/strip cam. Super top end torque. RPM Power Range: 2000 to 5500+	<b>03343 MTO</b>	ALL CID	278HDP	112°	278°	284°	212°	218°	.435"	.449"	<b>84008 84008X3</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Strong mid-range and top end torque and horsepower. RPM Power Range: 2200 to 6200 / Redline: 6500 Plus.	<b>03350 MTO</b>	ALL CID	280HDP	108°	280°	288°	226°	232°	.474"	.484"	<b>84008 84008X3</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Explosive mid to top end power with emphasis on the upper end. RPM Power Range: 2500 to 6500 / Redline: 6700 Plus.	<b>03351 MTO</b>	ALL CID	296HDP	108°	296°	308°	228°	244°	.509"	.498"	<b>84008 84008X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00109H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4</b> High torque, all purpose grind for most applications. RPM Power Range: 2200 to 6200 / Redline: 6750 Plus.	<b>03365</b>	262	282FDP	110°	282°	287°	238°	244°	.451"	.460"	<b>84303X980</b>
<b>COMPU-PRO / Performance Level 5</b> Vicious horsepower throughout the power band. RPM Power Range: 3000 to 7000 / Redline: 7500 Plus.	<b>03366 MTO</b>	262	292FDP	108°	292°	298°	246°	250°	.468"	.474"	<b>84303X980</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00109M</b>	262									

Note: These cams use .022" intake, .024" exhaust valve lash.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84008</b>	66000-12	68301X1-12	86032-12	86072-12	<b>Hydraulic Lifter.</b>
<b>84303</b>	66900-12	68390X3-12	87048-12	86072-12	<b>Solid Lifter.</b>
<b>84008X3</b>	66000X3-12	68301X1-12	86032-12	86072-12	<b>CamSaver Lifter.</b>
<b>84303X980</b>	66900X980-12	68390X3-12	87048-12	86072-12	<b>CoolFace Lifter.</b>

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

### Spring pressure:

68301X1-12 Seat: 1.700" @ 101 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 1.130" (Stock O.D., no machine work)  
68390X3-12 Seat: 1.800" @ 115 lbs / Nose: 1.300" @ 331 lbs / Coil bind: 1.110" (Machine work)

\* Machine work required

**Note:** If exceeding 6500 rpm, high pressure springs and titanium retainers may be required. Contact Crower.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# HYDRAULIC FLAT TAPPET

*Performance at an Affordable Price*

1957-1998 Non Roller

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5/1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Strong bottom end power. Excellent for trucks and heavy cars. Economical price. RPM Power Range: 1200 to 3800 / Redline: 5200 Plus.	<b>00915</b>	283 350 400	258H	112°	258°	264°	204°	208°	.414"	.417"	<b>84000</b>
<b>TORQUE BEAST / Performance Level 2</b> Low to mid-range torque for daily drivability. Economical price. RPM Power Range: 1800 to 5500 / Redline: 6000 Plus.	<b>00904</b>	283 350 400	288H	112°	288°	298°	214°	224°	.444"	.467"	<b>84106</b>
<b>HOT STREET BEAST / Performance Level 3</b> Delivers impressive mid-range and top-end power. Healthy sound. Economical price. RPM Power Range: 2000 to 5700 / Redline: 6200 Plus.	<b>00903</b>	283 350 400	278H	112°	278°	284°	218°	226°	.462"	.470"	<b>84106</b>
<b>ULTRA BEAST / Performance Level 4</b> Upper mid-range to top end power. High stall convertor or 4-speed. Economical price. RPM Power Range: 2800 to 6200 / Redline: 6500 Plus.	<b>00917</b>	283 350 400	304H	112°	304°	316°	234°	244°	.488"	.509"	<b>84106</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00100H</b>	ALL CID									

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Keepers	Remarks
<b>84000</b>	66000-16	68301X1-16	86032-16		For rpm 6000 max.
<b>84106</b>	66000-16	68304-16	87032-16		High Rev design spring

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

### Spring pressure:

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).

68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"

\*(Optional Spring Cup available if heads are cut for larger springs, use cup #68922 & 86107X1 retainer.)

68100X200X1-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 255 lbs / Coil bind: 1.030" (1.440" OD).

\* Machine work required

## CROWER CAM BREAK-IN PROCEDURE



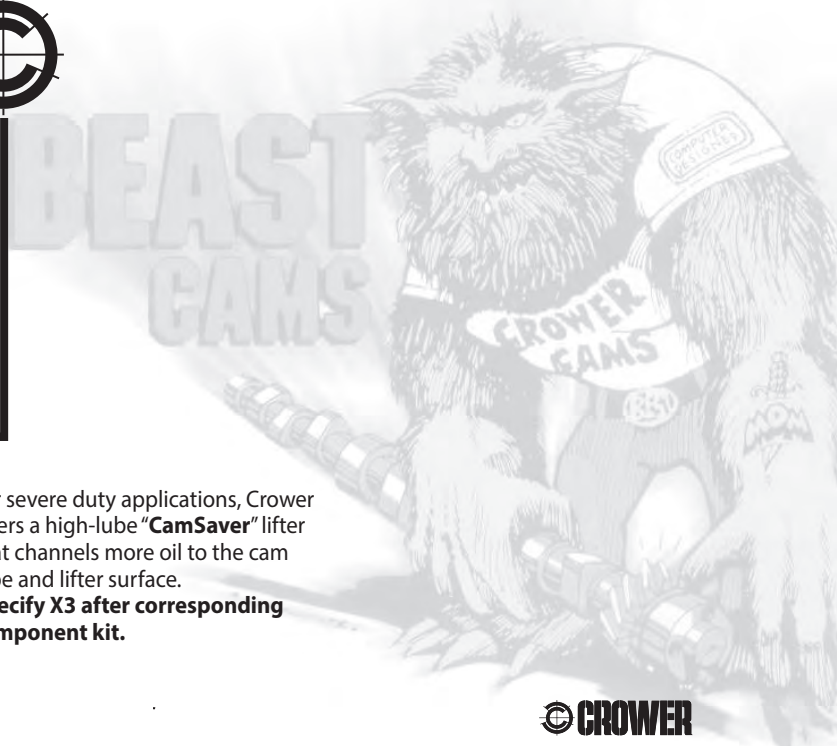
**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleries. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crower recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crower Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092

**Part numbers no longer listed may still available as custom grinds. Please contact Crower.**

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. Specify X3 after corresponding component kit.



# HYDRAULIC FLAT TAPPET



Non Roller 1957-1998

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Level 1</b> Increased mid-range power, 112 LSA helps with vacuum and mileage. RPM Power Range: Idle to 4800.	00239	307 to 400	254HDP	112°	254°	265°	204°	210°	.431"	.431"	84000
<b>COMPU-PRO / Level 2</b> Good idle with increased mid range response and top end power. RPM Power Range: Idle to 5300.	00240	350 up	267HDP	112°	267°	272°	210°	216°	.445"	.445"	84000
<b>COMPU-PRO / Level 2</b> Good idle with increased mid range response and top end power. RPM Power Range: Idle to 5300.	00241	400	270HDP	112°	270°	276°	214°	218°	.456"	.458"	84000
<b>COMPU-PRO / Level 3</b> Hot Street profile. Should have the upgrades listed for #00242. RPM Power Range: 3500 to 3700 / Redline: 4500 Plus.	00243	350 383	284HDP	112°	286°	289°	225°	230°	.454"	.463"	84106
<b>COMPU-PRO / Level 4</b> Ultimate Street Profile. Must have the above upgrades for #00242. RPM Power Range: Idle to 6500.	00244	350 400	288HDP	112°	288°	296°	234°	246°	.497"	.504"	84106
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00100H	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

**Note:** Late model Chevrolet 305 and 350 V8 engines (1988-up) use a different cam core configuration than 1957-87 Chevrolet V8 engines and cannot be interchanged. Specify engine year when ordering.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
84000	66000-16	68301X1-16	86032-16	For rpm 6000 max.
84106	66000-16	68304-16	86032-16	High Rev design spring
84106X3	66000X3-16	68304-16	86032-16	CamSaver Lifter.

**Part numbers no longer listed may be available as custom grinds. Please contact Crower.**

### Spring pressure:

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).

68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

**Note:** If using 3.750" stroke or above cranks, specify "S" after cam p/n for small base circle consideration.





# HYDRAULIC FLAT TAPPET

1957-1998 Non Roller

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>HI-DRAULIC HAULER / Performance Level 3</b> Rough idle. Hot street or track with strong mid-range power. RPM Power Range: 2200 to 5800+	<b>00210</b>	327 350	278HDP	108°	286°	289°	225°	229°	.454"	.463"	<b>84106 Upgrade 84106X3</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Rough idle. Explosive mid-range torque. RPM Power Range: 2200 to 6000+	<b>00211</b>	384 400	296HDP	108°	296°	308°	232°	242°	.500"	.518"	<b>84106 Upgrade 84106X3</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle and mid-range acceleration. RPM Power Range: 2750 to 6500 max.	<b>00212</b>	327 350	304HDP	108°	300°	308°	240°	248°	.492"	.510"	<b>84106 Upgrade 84106X3</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Brutal mid to top end torque and horsepower. RPM Power Range: 2750 to 6500+	<b>00213</b>	384 400	308HDP	106°	303°	311°	248°	256°	.507"	.527"	<b>84106 Upgrade 84106X3</b>
<b>TURBOMASTER 1</b> This cam provides excellent low end and mid-range power with mild boost (6 to 12 lbs). RPM Power Range: 1800 to 5000 / Redline: 6000 Plus.	<b>00978 MTO</b>	350 400	278HT	114°	278°	260°	212°	200°	.432"	.401"	<b>84106 Upgrade 84106X3</b>
<b>SUPERCHARGER 1</b> Excellent low and mid-range torque with moderate boost levels (5 to 10 lbs), this cam romps. RPM Power Range: 2400 to 6500 / Redline: 6500 Max.	<b>00980</b>	350 400	288HC	114°	288°	288°	232°	232°	.459"	.459"	<b>84106 Upgrade 84106X3</b>
<b>SUPERCHARGER 2</b> A very healthy blower cam for increased boost (10 lbs plus) and higher rpm. RPM Power Range: 2800 to 6500 / Redline: 6500 Max.	<b>00981</b>	350 400	304HC	114°	304°	304°	236°	236°	.506"	.506"	<b>84106 Upgrade 84106X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00100H</b>	All CID									
<b>CUSTOM CAM</b> Special order <b>4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	All CID									
<b>CUSTOM CAM</b> Special order <b>P55 Premium Cast Iron Core</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00055</b>	All CID									

**Note:** Late model Chevrolet 305 and 350 V8 engines (1988-up) use a different cam core configuration than 1957-87 Chevrolet V8 engines and cannot be interchanged. Specify engine year when ordering.

**Note:** These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
<b>84106</b>	66000-16	68304-16	86032-16	High Rev design spring
<b>84106X3</b>	66000X3-16	68304-16	86032-16	CamSaver Lifter.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Spring pressure:

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).  
68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



# 420 SERIES HYDRAULIC FLAT TAPPET



Non Roller 1957-1998

## Fast Action HardCore Race

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<p>The 420 series is our latest profile series with an extreme response through the short power band. We use fast opening rates with smoother closing ramps to improve valve and valve seat life. The ball nose design allows for nose wear reduction and prolonged lifter life. The harmonics are improved with this profile. This series uses the Pro55 core. The core is harder and denser with increased carbides. This core is longer lasting and more wear resistant than a standard cast core. Specifically designed for naturally aspirated applications, and low boost forced induction.</p> <p>Pay attention to operating power ranges for this series and remember that higher flowing cylinder heads change how the cam will act.</p>	<b>00223</b>	262-307-327	2400	4400	6000	6500+	262HDP	110°	262°	270°	214°	222°	.450"	.470"	See Below
	<b>00223S</b>	305-350	1800	3800	5200	5700+									
	<b>Small Base</b>	383	1600	3600	4900	5400+									
	<b>Circle</b>	406	1500	3500	4700	5200+									
	<b>00224</b>	262-307-327	2700	4700	6100	6500+	270HDP	110°	270°	278°	222°	230°	.470"	.488"	See Below
	<b>00224S</b>	305-350	2100	4100	5500	5900+									
	<b>Small Base</b>	383	1800	3800	5000	5500+									
	<b>Circle</b>	406	1700	3700	4800	5400+									
	<b>00225</b>	262-307-327	2400	4400	6000	6500+	278HDP	108°	278°	286°	230°	238°	.488"	.501"	See Below
	<b>00225S</b>	305-350	1800	3800	5200	6000+									
	<b>Small Base</b>	383	1600	3600	4900	5400+									
	<b>Circle</b>	406	2000	4200	5500	6000+									
<b>00226</b>	262-307-327	3000	5000	6200	6500+	290HDP	108°	290°	298°	242°	250°	.507"	.522"	84102	
<b>00226S</b>	305-350	2400	4400	5700	6200+										
<b>Small Base</b>	383	2000	4000	5200	5700+										
<b>Circle</b>	406	1900	3900	5000	5600+										
<b>CUSTOM CAM</b> Special order <b>P55 4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	All CID													
<b>CUSTOM GROUND HYDRAULIC</b> Special order <b>P55 Premium Cast Iron Core</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00055</b>	All CID													

Note: These cams use .000" intake and exhaust valve lash.

\*Indicates premium Pro55 cam core, others are Proferal core. Crower recommends using the factory cast iron distributor gear. If running 3.750" or higher stroke, use the part number with "S" for added rod clearance.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Oil Seals	Remarks
<b>84000</b>	66000-16	68301X1-16	86032-16		For rpm 6000 max.
<b>84106</b>	66000-16	68304-16	86032-16		High Rev design spring
<b>84106X3</b>	66000X3-16	68304-16	86032-16		CamSaver Lifter.
<b>84106RM3</b>	66000RM3-16	68304-16	86032-16		Rev-Max Lifter. 300-400 rpm gain.
<b>84102</b>	66000-16	68390X3-16	87048-16	86072-16	Dual Spring Hydraulic.

### Spring pressure:

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).  
 68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"  
 68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110" (Machine work).

\* Machine work required

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

**Part numbers no longer listed may still available as custom grinds. Please contact Crower.**

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# HYDRAULIC FLAT TAPPET

FOR EFI, FORCED INDUCTION & NOS

Non Roller 1957-1998 262 265 267 283 302 305 307 327 350 400 V8 SB

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
The 420 EFI, Forced Induction, NOS series is our latest profile series with an extreme response through the short power band. We use fast opening rates with smoother closing ramps to improve valve and valve seat life. The ball nose design allows for nose wear reduction and prolonged lifter life. The harmonics are improved with this profile. This series uses the Pro55 core. The core is harder and denser with increased carbides. This core is longer lasting and more wear resistant than a standard cast core. These are specifically designed for forced induction applications.	<b>00231</b>	262-307-327	2500	4500	5900	6400	270HDP	114°	270°	278°	222°	230°	.470"	.488"	<b>See Below</b>
	<b>00231S</b>	305-350	1900	3900	5300	5900									
	<b>Small Base</b>	383	1600	3600	4800	5300									
	<b>Circle</b>	406	1500	3500	4600	5200+									
	<b>00232</b>	262-307-327	3000	4800	6000	6500	278HDP	114°	278°	286°	230°	238°	.488"	.501"	<b>See Below</b>
	<b>00232S</b>	305-350	2200	4200	5500	6000									
	<b>Small Base</b>	383	1800	3800	5000	5500									
	<b>Circle</b>	406	1700	3700	4800	5300+									
	<b>00233</b>	262-307-327	3100	5100	6200	6500	290HDP	114°	290°	298°	242°	250°	.507"	.522"	<b>84102</b>
	<b>00233S</b>	305-350	2500	4500	5800	6300									
	<b>Small Base</b>	383	2200	4200	5300	5800									
	<b>Circle</b>	406	2100	4100	5100	5500+									
<b>00234</b>	262-307-327	3400	5400	6500	6500	298HDP	114°	298°	308°	250°	260°	.522"	.549"	<b>84102</b>	
<b>00234S</b>	305-350	2800	4800	6000	6500										
<b>Small Base</b>	383	2400	4400	5600	6000										
<b>Circle</b>	406	2300	4300	5300	5800+										
<b>CUSTOM CAM</b> Special order <b>P55 4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	All CID													
<b>CUSTOM CAM</b> Special order <b>P55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00055</b>	All CID													

Note: These cams use .000" intake and exhaust valve lash.

Crower recommends using the factory cast iron distributor gear. If running 3.750" or higher stroke, use the part number with "S" for added rod clearance.

**Note:** Late model Chevrolet 305 and 350 V8 engines (1988-up) use a different cam core configuration than 1957-87 Chevrolet V8 engines and cannot be interchanged. Specify engine year when ordering.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Oil Seals	Remarks
<b>84000</b>	66000-16	68301X1-16	86032-16		For rpm 6000 max.
<b>84106</b>	66000-16	68304-16	86032-16		High Rev design spring
<b>84106X3</b>	66000X3-16	68304-16	86032-16		CamSaver Lifter.
<b>84106RM3</b>	66000RM3-16	68304-16	86032-16		Rev-Max Lifter. 300-400 rpm gain.
<b>84102</b>	66000-16	68390X3-16	87048-16	86072-16	Dual Spring Hydraulic.

### Spring pressure:

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).  
 68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"  
 68100X200X1-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 255 lbs / Coil bind: 1.030" (Machine work required).  
 68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110" (Machine work).  
 \* Machine work required

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

# MARINE HYDRAULIC FLAT TAPPET



Non Roller 1957-1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Pro55 CORE WITH STANDARD ROTATION</b> There is improved mid range torque and top end power while maintaining some bottom end. Reverse rotation and 2 gear drives available as custom grind.	<b>00216</b>	262-307-327	2500	4000	5600	5800	258HDP	112°	258°	270°	214°	222°	.456"	.470"	<b>84106RM3</b>
	<b>00216S*</b>	305-350	2300	3800	4800	5500									
	<b>Small Base</b>	383	2000	3500	4500	5100									
	<b>Circle</b>	406	1900	3400	4300	5000									
<b>Pro55 CORE WITH STANDARD ROTATION</b> Emphasis on top end and bottom end is reduced significantly. Reverse rotation and 2 gear drives available as custom grind.	<b>00217</b>	262-307-327	2600	4100	5800	6000	274HDP	113°	274°	282°	226°	237°	.480"	.495"	<b>84106RM3</b>
	<b>00217S*</b>	305-350	2600	4100	5000	5800									
	<b>Small Base</b>	383	2400	3900	4600	5400									
	<b>Circle</b>	406	2300	3800	4400	5300									
<b>CUSTOM CAM</b> Special order Pro 55 4-7 switch firing order. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	All CID													
<b>CUSTOM CAM</b> Special order Pro 55, call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00055</b>	All CID													

Note: These cams use .000" intake and exhaust valve lash.

\*Crower recommends using the factory cast iron distributor gear. If running 3.750" or higher stroke, use the part number with "S" for added rod clearance.

**NOTE:** These cam grinds are available for 1955-1956, please specify when ordering.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
<b>84000</b>	66000-16	68301X1-16	86032-16	For rpm 6000 max.
<b>84106RM3</b>	66000RM3-16	68304-16	86032-16	Rev-Max Lifter. 300-400 rpm gain.

Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.

### Spring pressure:

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).  
68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"

\* Machine work required

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**



**Crower Recommends ZDDPlus for all Flat Tappet Cams**  
ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# STOCK LIFT RULE HYDRAULIC FLAT TAPPET

Non Roller 1957-1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range		Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Performance Level 5</b> Heavy car, 1/4 mile track, low end Redline: 6000 rpm maximum	00250	283-327	3250	6000	218H224	108°	266°	274°	218°	224°	.390"	.408"	See Below
		350-372	3000	5750									
		383-400	2750	5500									
<b>Performance Level 5</b> Lighter car, 3/8 mile track, low end Redline: 6000 rpm maximum	00251	283-327	3500	6000	228H236	106°	294°	294°	228°	236°	.390"	.410"	See Below
		350-372	3250	6000									
		383-400	3000	5750									
<b>Performance Level 5</b> 3/8 mile, high bank track, mid to top Redline: 6000 rpm maximum	00252	283-327	3750	6000	238H242	106°	300°	300°	238°	242°	.390"	.410"	See Below
		350-372	3500	6000									
		383-400	3250	6000									
<b>Performance Level 5</b> Heavy car, 1/4 mile track, low end Redline: 6000 rpm maximum	00253 MTO	283-327	3250	6000	218H226	108°	266°	276°	218°	226°	.419"	.420"	See Below
		350-372	3000	5750									
		383-400	2750	5500									
<b>Performance Level 5</b> Lighter car, 3/8 mile track, low end Redline: 6000 rpm maximum	00254	283-327	3500	6000	228H234	106°	294°	296°	228°	234°	.419"	.417"	See Below
		350-372	3250	6000									
		383-400	3000	5750									
<b>Performance Level 5</b> 3/8 mile, high bank track, mid to top Redline: 6000 rpm maximum	00255	283-327	3750	6000	234H242	106°	296°	296°	234°	242°	.417"	.416"	See Below
		350-372	3500	6000									
		383-400	3250	6000									
<b>CUSTOM CAM</b> Special order <b>Pro 55 4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	00047	ALL CID											
<b>CUSTOM CAM</b> Special order <b>Pro 55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	00055	ALL CID											

Note: Some oval track associations DO NOT allow the use of beehive springs.

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS \*Select kit to match your rpm range

Part No.	Lifters	Springs	Retainers	Keepers	Remarks
84106	66000-16	68304-16	86032-16		High Rev design spring
84106X3	66000X3-16	68304-16	86032-16		CamSaver Lifter.
84106RM3	66000RM3-16	68304-16	86032-16		Rev-Max Lifter. 300-400 rpm gain.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface.

### Spring pressure:

68301X4-16 Seat: 1.700" @ 136 lbs / Nose: 1.300" @ 325 lbs / Coil bind: 1.040" (Stock O.D., no machine work).

**Crower offers a variety of cams to meet your racing class rules**

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# STOCK LIFT RULE HYDRAULIC FLAT TAPPET



Non Roller 1957-1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range		Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Performance Level 5</b> Heavy car, 1/4 mile track, low end Redline: 6500 rpm plus	00256	283-327	2750	5750	220H226	108°	264°	278°	220°	226°	.451"	.453"	84106
			3500	5500									
			2250	5250									
<b>Performance Level 5</b> Lighter car, 3/8 mile track, low end Redline: 6500 rpm plus	00257	283-327	3000	6000	228H236	106°	282°	288°	228°	236°	.449"	.449"	84106
			2750	5750									
			2500	5500									
<b>Performance Level 5</b> 3/8 mile, high bank track, mid to top Redline: 6500 rpm plus	00258	283-327	3250	6250	236H242	106°	288°	292°	236°	242°	.449"	.446"	84106
			3000	6000									
			2750	5750									
<b>Performance Level 5</b> 1/2 mile, high bank track, mid to top Redline: 6500 rpm plus	00259 MTO	283-327	3500	6500	242H248	106°	292°	296°	242°	248°	.446"	.447"	84106
			3250	6250									
			3000	6000									
<b>VACUUM RULE - Perf Level 5</b> Lighter car, 3/8 mile track, low end Redline: 6500 rpm plus	00252V MTO	283-327	3750	6500	238H242	116°	300°	300°	238°	242°	.390"	.410"	84106
			3500	6250									
			3250	6000									
<b>VACUUM RULE - Perf Level 5</b> 3/8 mile, high bank track, mid to top Redline: 6500 rpm plus	00255V MTO	283-327	3750	6500	234H242	114°	296°	296°	234°	242°	.417"	.416"	84106
			3500	6250									
			3250	6000									
<b>VACUUM RULE - Perf Level 5</b> 1/2 mile, high bank track, mid to top Redline: 6500 rpm plus	00259V	283-327	3750	6500	242H248	114°	292°	296°	242°	248°	.446"	.447"	84106
			3500	6250									
			3250	6000									
<b>CUSTOM CAM</b> Special order <b>Pro 55 4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	00047	ALL CID											
<b>CUSTOM CAM</b> Special order <b>Pro 55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	00055	ALL CID											

Note: These cams use .000" intake and exhaust valve lash.

Note: Some oval track associations DO NOT allow the use of beehive springs.

**Note:** Small base circle cams are available if using 3.750" stroke and 350 style rods. Specify "S" after part number. If using 400 style or stroker rods the above base circle will work.

**Note:** Late model Chevrolet 305 and 350 V8 engines (1988-up) use a different cam core configuration than 1957-87 Chevrolet V8 engines and cannot be interchanged. Specify engine year when ordering.

**NOTE:** These cam grinds are available for 1955-1956, please specify when ordering.

**Crower Recommends ZDDPlus for all Flat Tappet Cams**  
ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Keepers	Remarks
84106	66000-16	68304-16	86032-16		High Rev design spring
84106X3	66000X3-16	68304-16	86032-16		CamSaver Lifter.
84106RM3	66000RM3-16	68304-16	86032-16		Rev-Max Lifter. 300-400 rpm gain.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface.

### Spring pressure:

68301X4-16 Seat: 1.700" @ 136 lbs / Nose: 1.300" @ 325 lbs / Coil bind: 1.040" (Stock O.D., no machine work).

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



# SHORT TRACK HYDRAULIC FLAT TAPPET

Non Roller 1957-1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
The Short track series is similar to our 420 series with the higher lift and faster lift rates. This series allows for higher RPMs due to the reduced lobe acceleration and is much smoother than the 420 series. This series uses the Pro55 core. The core is harder and denser with increased carbides.	<b>00270</b> <b>MTO</b>	262-307-327	2800	4000	5500	6000	226HDP	108°	277°	288°	224°	230°	.471"	.497"	<b>84106</b> <b>84106X3</b>
		305-350	2600	3800	5300	5800									
		383-406*	2400	3600	5100	5600									
	<b>00271</b> <b>MTO</b>	262-307-327	2950	4150	5650	6150	228HDP	108°	288°	290°	230°	238°	.497"	.497"	<b>84106</b> <b>84106X3</b>
		305-350	2750	3950	5450	5450									
		383-406*	2550	3750	5250	5750									
<b>NEW 350 SERIES CAMS</b> These new 350 Series Cams rev higher than the 420 Series. This series also uses the harder and denser Pro55 core. Great track / hot street cam	<b>00272</b>	350	3000		6000+	283HDP	107°	283°	288°	234°	240°	.518"	.525"	<b>84106</b> <b>84106X3</b>	
		383-406*	2500		5500+										
	<b>00273</b>	350	3250		6250+	288HDP	107°	288°	294°	240°	245°	.525"	.531"	<b>84106</b> <b>84106X3</b>	
		383-406*	3000		6000+										
<b>00274</b>	350	3500		6500+	294HDP	107°	294°	300°	245°	250°	.525"	.540"	<b>84106</b> <b>84106X3</b>		
	383-406*	3250		6250+											
<b>00275</b>	305	4000		7000+	300HDP	107°	300°	304°	250°	254°	.540"	.546"	<b>84106</b> <b>84106X3</b>		
	350-406*	3750		6750+											
<b>CUSTOM GROUND HYDRAULIC</b> Call with all engine data including head flow data, valve sizes, operating power range, etc. when ordering.	<b>00100</b>	ALL CID													
<b>CUSTOM CAM</b> Special order <b>Pro 55 4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	ALL CID													
<b>CUSTOM CAM</b> Special order <b>Pro 55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00055</b>	ALL CID													

Note: These cams use .000" intake and exhaust valve lash.

\*These cid engines (383, 406) require a smaller base circle for 3.750" or larger stroke cranks. If small base circle is desired use **00055**

Note: Some oval track associations DO NOT allow the use of beehive springs.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks	<b>Your RPM range will vary depending on your Cylinder Head Air Flow Data &amp; Cubic Inches.</b>
<b>84106</b>	66000-16	68304-16	86032-16	Single Spring.	
<b>84106X3</b>	66000X3-16	68304-16	86032-16	Single Spring W/CamSaver Lifter	
<b>84106RM3</b>	66000RM3-16	68304-16	86032-16	Rev-Max Lifters	

### Spring pressure:

68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"

\* Machine work required

**Note:** If using 3.750" stroke or above cranks, contact Crower for smaller base circle camshafts for more rod clearance.

**BE SMART!** Crower performance camshafts feature high lift, fast action features that can cause stock or other aftermarket valve train components to fail. Be sure to use a Crower engineered kit to avoid possible damage.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

**HIGH RPM!** Crower highly recommends the use of rollerized rockers. See rocker section for ratios and stud diameters.

These camshafts will work with the following carburetor sizes: 350 (210 cfm), 390 (410 cfm), 500 (350 cfm).

If you can supply cylinder head flow data, engine specs, operating power ranges and exhaust manifold configurations we will be able to grind you a camshaft that is far superior than any other brand currently available.

# ORIGINAL SERIES HYDRAULIC ROLLER TAPPET



1957-1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Grind Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Gross Lift 1.6 / 1.6		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
Biggest profile for maximum performance while maintaining some sort of fuel economy. 10:1 compression ratio will benefit this profile. Needs modification to heads and gears.	<b>00402</b> Early Model <b>00402LM</b> LM is step nose	262-302	3000	4200	5700	6200	216HR224 114°	278°	286°	220°	228°	.498"	.519"	.531"	.553"	<b>84583</b> or <b>84583LM</b>
		327	2800	4000	5500	6000										
		350	2600	3800	5300	5800										
		383	2500	3700	5200	5700										
		406	2400	3600	5100	5600										
Radical hot street for larger cubic inch and higher compression ratio motors. Great for EFI, forced induction and boost.	<b>00403</b> Early Model <b>00403LM</b> LM is step nose	262-302	3300	4500	6000	6500	224HR232 114°	286°	294°	226°	236°	.519"	.540"	.552"	.576"	<b>84583</b> or <b>84583LM</b>
		327	3100	4300	5800	6300										
		350	2900	4100	5600	6100										
		383	2800	4000	5500	6000										
		406	2700	3900	5400	5900										
This will get you to the track and back with an occasional cruise to show your ride. Meant for speed and power. Great strip profile. Stall speed can not be low. High Torque. Full mods needed.	<b>00418 *</b> Early Model <b>00418LM</b> LM is step nose	262-302	3300	4500	6000	6500	230HR230 108°	306°	306°	230°	230°	.480"	.480"	.512"	.512"	<b>84583</b> or <b>84583LM</b>
		327	3100	4300	5800	6300										
		350	2900	4100	5600	6100										
		383	2800	4000	5500	6000										
		406	2700	3900	5400	5900										
Drag grind. All modifications required with this profile. Manual tranny required or high stall speed. Will not idle low.	<b>00404</b> Early Model <b>00404LM</b> LM is step nose	262-302	3300	4500	6000	6500	232HR240 114°	294°	310°	236°	244°	.540"	.565"	.579"	.602"	<b>84583</b> or <b>84583LM</b>
		327	3100	4300	5800	6300										
		350	2900	4100	5600	6100										
		383	2800	4000	5500	6000										
		406	2700	3900	5400	5900										
Exceptionally high torque with slightly lower Peak HP. Used for a daily driver that spends many hours on the road. Better fuel economy and the total power is an increase over stock.	<b>00408 *</b> Early Model <b>00408LM</b> LM is step nose	262-302	2200	3400	4700	5200+	198HR210 112°	273°	288°	200°	212°	.435"	.462"	.464"	.493"	<b>84583</b> or <b>84583LM</b>
		327	2000	3200	4500	5000+										
		350	1700	3000	4300	4800+										
		383	1600	2900	4200	4700+										
		406	1500	2800	4100	4600+										
Slightly bigger duration and lift provides stronger mid range while maintaining basic low end performance. Broader operating power band.	<b>00400</b> Early Model <b>00400LM</b> LM is step nose	262-302	2400	3600	4900	5400+	200HR208 114°	260°	269°	204°	212°	.451"	.474"	.482"	.506"	<b>84583</b> or <b>84583LM</b>
		327	2200	3400	4700	5200+										
		350	1900	3200	4500	5000+										
		383	1800	3100	4400	4900+										
		406	1700	3000	4300	4800+										
Excellent hot street with a manual transmission or automatic tranny with a higher stall speed. Cylinder modification needed. Gear ratios are critical.	<b>00409</b> Early Model <b>00409LM</b> LM is step nose	262-302	2400	3600	4900	5400+	210HR215 110°	284°	288°	212°	218°	.462"	.470"	.493"	.501"	<b>84583</b> or <b>84583LM</b>
		327	2200	3400	4700	5200+										
		350	1900	3200	4500	5000+										
		383	1800	3100	4400	4900+										
		406	1700	3000	4300	4800+										
High Torque street rod with lower compressions. Applications within 3500-5200 can include EFI, forced or boost.	<b>00401</b> Early Model <b>00401LM</b> LM is step nose	262-302	2400	3600	4900	5400+	208HR216 114°	269°	278°	214°	220°	.474"	.498"	.507"	.531"	<b>84583</b> or <b>84583LM</b>
		327	2200	3400	4700	5200+										
		350	1900	3200	4500	5000+										
		383	1800	3100	4400	4900+										
		406	1700	3000	4300	4800+										
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00100HR</b>	ALL CID														

Note: These cams use .000" intake and exhaust valve lash.

"LM" cores fit 305-350 cid 1987-up only (w/step nose). Small base circle cams available for 383 and 406. Specify "S" after part number when ordering. **Note:** The above cams are ground on cast steel cores. If 8620 steel billet core with integral cast iron gear is desired, specify part number 00050. Crower recommends using the factory stock melinite or bronze distributor gear. **Note:** Late model Chevrolet 305 and 350 V8 engines (1988-up) use a different cam core configuration than 1957-87 Chevrolet V8 engines and cannot be interchanged. Specify engine year when ordering.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Plug	Keepers	Remarks
<b>84583</b>	66310LM-16	68304-16	86032-16	86085	86107-16	Up to 6500 rpm Linked Lifter.
<b>84583LM</b>	66330-16	68304-16	86032-16	86099	86107-16	Up to 6500 rpm Drop-In Lifter.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Spring pressure:

68304 (Optional Race Only, No Machine work required).

\* Machine work required Note: If using stock GM hydraulic roller lifters, use Crower pushrod 69720 (7.200").

**For The Best Overall Performance Gains Use The Cam Form, And Let Crower Make You A Custom Cam**

1957 - 1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
Perfect truck grind - strong bottom & mid power. Works well with stock components.	<b>00481</b>	262-302	2400	3800	5700	6300+	204HR213	114°	255°	264°	204°	213°	.484"	.505"	84583 or 84583LM
	Early model	327	2200	3700	5600	6100+									
	<b>00481LM</b>	350	1900	3400	5200	5700+									
	LM is step nose	383	1700	3200	4800	5300+									
		406	1600	3100	4700	5200+									
Streetable power - more mid range power for the everyday driver.	<b>00482</b>	262-302	2600	4000	5900	6400+	213HR221	114°	264°	273°	213°	221°	.505"	.525"	84583 or 84583LM
	Early model	327	2400	3900	5750	6250+									
	<b>00482LM</b>	350	2200	3700	5550	6050+									
	LM is step nose	383	2000	3500	5200	5700+									
		406	1900	3400	5100	5600+									
2000 stall or manual transmission recommended, needs head modifications, trackable daily driver.	<b>00483</b>	262-302	2800	4000	5900	6400+	221HR230	114°	273°	284°	221°	230°	.525"	.545"	84583 or 84583LM
	Early model	327	2500	3900	5750	6250+									
	<b>00483LM</b>	350	2400	3700	5550	6050+									
	LM is step nose	383	2100	3500	5200	5700+									
		406	2000	3400	5100	5600+									
Streetable drag profile - 2500 stall or manual transmission, chip mod. Hot street profile, head mods and gearing	<b>00484</b>	262-302	3000	4300	6200	6500+	228HR236	114°	284°	286°	230°	236°	.545"	.555"	84584 or 84584LM
	Early model	327	2700	4200	5900	6400+									
	<b>00484LM</b>	350	2600	4100	5850	6300+									
	LM is step nose	383	2300	3800	5700	6200+									
		406	2200	3700	5600	6100+									
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00100HR</b>	ALL CID													
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00003</b>	ALL CID													
<b>CUSTOM GROUND HYDRAULIC</b> Custom order steel billet roller with a cast iron gear. Call our technical support staff for personalized camshaft assistance.	<b>00050</b>	ALL CID													

Note: These cams use .000" intake and exhaust valve lash.

"LM" cores fit 305-350 cid 1987-up only (w/s ep nose). Small base circle cams available for 383 and 406. Specify "S" after part number when ordering.

Note: The above cams are ground on cast steel cores. If 8620 steel billet core with integral cast iron gear is desired, specify part number 00050.

Crower recommends using the factory stock melonite or bronze distributor gear. - **When using part # 00050**

**Note:** Late model Chevrolet 305 and 350 V8 engines (1988-up) use a different cam core configuration than 1957-87 Chevrolet V8 engines and cannot be interchanged. Specify engine year when ordering.

### ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Plug	Keepers	Remarks
<b>84583</b>	66310LM-16	68304-16	86032-16	86085	86107-16	Up to 6500 rpm Linked Lifters
<b>84583LM</b>	66330-16	68304-16	86032-16	86099	86107-16	Up to 6500 rpm Drop-In Lifters
<b>84584</b>	66310LM-16	68390X3-16	87048-16	86085	86107-16	Up to 6500 rpm Linked Lifters
<b>84584LM</b>	66330-16	68390X3-16	87048-16	86099	86107-16	Up to 6500 rpm Drop-In Lifters

Optional Hydraulic Lifters with HIPPO: 66310H, 66330H

#### Spring pressure:

68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).

\* Machine work required



**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# 350 SERIES HYDRAULIC ROLLER TAPPET



Latest Profile Design Technology

1957 - 1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range		Lobe Sep.	Advertised Duration		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Low RPM	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Performance Level 2</b> Mild street performance, slight lobe at idle. Headers & intake rec.	<b>00465</b>	283-327	2400	5750	110°	264°	273°	213°	221°	134°	142°	.337"	.350"	.505"	.525"	<b>84583</b> <b>84583LM</b>
	<b>00465LM</b>	350-372	2200	5550		264HHR										
	<b>MTO</b>	383-400	2000	5200												
<b>Performance Level 2</b> Strong mid-range, good throttle response, 2000 stall recommended.	<b>00466</b>	283-327	2400	5750	110°	270°	277°	217°	225°	139°	147°	.343"	.357"	.514"	.535"	<b>84583</b> <b>84583LM</b>
	<b>00466LM</b>	350-372	2300	5700		270HHR										
		383-400	2000	5300												
<b>NEW GRIND Performance Level 2+</b> Nice power gains over conventional roller lifter. Short seat time improves low end, faster lift rate increases upper mid to top end power. Rough idle	<b>00473</b>	283-327			108°	273°	284°	221°	230°	142°	151°	.350"	.363"	.525"	.544"	<b>84584</b> <b>84584LM</b>
	<b>00473LM</b>	350-372	2200	6000+		273HHR										
		383-400														
<b>Performance Level 3</b> Noticeable idle, good mid-range, requires headers.	<b>00468</b>	283-327	2700	5900	110°	277°	286°	225°	232°	149°	157°	.357"	.367"	.535"	.550"	<b>84584</b> <b>84584LM</b>
	<b>00468LM</b>	350-372	2600	5850		277HHR										
		383-400	2300	5700												
<b>Performance Level 3</b> Slight lobe at idle, needs headers, 2500 stall recommended	<b>00469</b>	283-327	2900	6000	110°	284°	286°	230°	236°	151°	159°	.363"	.370"	.544"	.555"	<b>84584</b> <b>84584LM</b>
	<b>00469LM</b>	350-372	2800	5950		284HHR										
		383-400	2400	5900												
<b>Performance Level 3</b> Rough idle, aftermarket intake and headers a must.	<b>00470</b>	283-327	2800	5950	110°	286°	292°	232°	240°	155°	163°	.366"	.373"	.549"	.559"	<b>84584</b> <b>84584LM</b>
	<b>00470LM</b>	350-372	2750	5900		277HHR										
		383-400	2400	5850												
<b>Performance Level 4</b> Street/strip applications, rough idle, 2500 stall required.	<b>00471</b>	283-327	2900	6000	110°	286°	292°	237°	240°	159°	163°	.370"	.373"	.555"	.559"	<b>84584</b> <b>84584LM</b>
	<b>00471LM</b>	350-372	2800	5950		290HHR										
		383-400	2400	5900												
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00100HR</b>	ALL CID														
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00003</b>	ALL CID														
<b>CUSTOM GROUND HYDRAULIC</b> Custom order steel billet roller with a cast iron gear. Call our technical support staff for personalized camshaft assistance.	<b>00050</b>	ALL CID														

**NOTE:** These cam grinds are available for 1955-1956, please specify when ordering.

Note: These cams use .000" intake and exhaust valve lash.

"LM" indicates Late Model 305-350 cid w/step nose core (1987-up). Small base circle cams available for 383 and 406. Specify "S" after part number when ordering.

**Note:** The above cams are ground on cast steel cores. If 8620 steel billet core with integral cast iron gear is desired, specify part number 00050. Crower recommends using the factory stock melonite or bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Plug	Keepers	Remarks
<b>84583</b>	66310LM-16	68304-16	86032-16	86085	86107-16	Up to 6500 rpm Linked Lifters
<b>84583LM</b>	66330-16	68304-16	86032-16	86099	86107-16	Up to 6500 rpm Drop-In Lifters
<b>84584</b>	66310LM-16	68390X3-16	87048-16	86085	86107-16	Up to 6500 rpm Linked Lifters
<b>84584LM</b>	66330-16	68390X3-16	87048-16	86099	86107-16	Up to 6500 rpm Drop-In Lifters

**For The Best Overall Performance Gains Use The Cam Form, And Let Crower Make You A Custom Cam...**

### Optional Hydraulic Lifters with HIPPO: 66310H, 66330H

#### Spring pressure:

68304-16 Seat: 1.750" @ 124 lbs / Nose: 1.250" @ 317 lbs / Coil bind: 1.090"  
68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110"  
(Machine work).

\* Machine work required Note: If using stock GM hydraulic roller lifters, use Crower pushrod 69720 (7.200").

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

**Note:** Rocker arms available in Aluminum & Stainless steel. (See pages 146-168)

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# HYDRAULIC ROLLER TAPPET

GM 350 LT1 - LT4 1993-1997

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STOCK REPLACEMENT</b> Increased performance in stock LT1 engines. RPM Power Range: Idle to 5000 / Redline: 5500 Max.	<b>00560</b> <b>MTO</b>	350 CID	254HR262	114°	254°	262°	204°	212°	.485"	.505"	<b>84552</b>
<b>Performance Level 1</b> Works well in stock or slightly modified engines. RPM Power Range: 1000 to 5500 / Redline: 6000 Max.	<b>00561</b>	350 CID	262HR266	114°	262°	266°	208°	216°	.495"	.515"	<b>84554</b>
<b>Performance Level 2</b> Modified computer, exhaust and high flow intake recommended. RPM Power Range: 1500 to 5800 / Redline: 6300 Max.	<b>00562</b>	350 CID	274HR284	114°	274°	284°	221°	230°	.525"	.545"	<b>84554</b>
<b>Performance Level 3</b> Mid to top end power in highly modified engines. RPM Power Range: 2000 to 6000 / Redline: 6500 Max.	<b>00563</b> <b>MTO</b>	350 CID	277HR286	114°	277°	286°	225°	232°	.535"	.550"	<b>84554</b>
<b>Performance Level 4+</b>	<b>00564</b> <b>MTO</b>	350 CID	284HR296	110°	284°	296°	236°	242°	.571"	.582"	<b>84554</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00003</b>	ALL CID									
<b>CUSTOM GROUND HYDRAULIC</b> Custom order steel billet roller with a cast iron gear. Call our technical support staff for personalized camshaft assistance.	<b>00050</b>	ALL CID									
<b>CUSTOM GROUND HYDRAULIC ROLLER</b> Special order hydraulic roller lifter camshaft ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00052</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

These cams are ground on steel cast cores. Crower recommends using melonite or bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Pushrods	Keepers	Remarks
<b>84552</b>	66330-16	68301X1-16	86032-16	69715-16	86107-16	For rpm up to 6000 max. Daily street use.
<b>84554</b>	66330-16	68311X1-16	86032-16	69715-16	Stock	Race only applications.

### Spring pressure:

68301X1-16 Seat: 1.700" @ 105 lbs / Nose: 1.250" @ 274 lbs / Coil bind: 1.130" (Stock O.D., no machine work).  
68311X1-16 Seat: 1.750" @ 120 lbs / Nose: 1.250" @ 389 lbs / Coil bind: 1.070" (Stock O.D., no machine work).

### Optional spring:

68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110" (Machine work). LT1 only.

### Recommendations:

- \*Optimum Performance Pushrods, specify part # **69715-16** when ordering.
- \*Optimum Performance Keepers, specify part # **86107-16** when ordering.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ACCESSORIES

Part No.	Description
<b>Pg's.146-168</b>	Rocker arms (1.5) 3/8 self aligning tip - LT1
<b>Pg's.146-168</b>	Rocker arms (1.6) 3/8 self aligning tip - LT1
<b>Pg's.146-168</b>	Rocker arms (1.5) 3/8 use w/guide plates - LT1
<b>Pg's.146-168</b>	Rocker arms (1.6) 3/8 use w/guide plates - LT1
<b>See pg. 136</b>	Cloyes Timing Gear Set

\*Use with guide plate #70517-8. (See page 145)

**Note:** Rocker arms available in Aluminum & Stainless steel. (See pages 146-168)

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

# 3 BOLT HYDRAULIC ROLLER TAPPET



## All New Profiles

GM LS1/LS2/LS3/LS6/LS7/LS9/LSX V8 - ALL 3 BOLT CAM CORES

1997 - Present

Description (Note: See pages 8-9 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Stage 1</b> Works well in stock or slightly modified engines. RPM Power Range: 1000 to 5500, redline: 6000 max	<b>00571</b>	350	258HR262	114°	258°	262°	208°	216°	.514"	.514"	<b>84411</b>
<b>Performance Level 2</b> Responsive mid-range power. Modified computer, exhaust and high flow intake recommended. Louis F. says - "WOW!! great cam for daily driver, I wouldn't go bigger. It has great power and good fuel mileage."	<b>00572</b>	350	272HR280	114°	272°	280°	217°	226°	.553"	.575"	<b>84411</b>
<b>Performance Level 2</b> Mid to top end power in highly modified engines.	<b>00573</b>	350	285HR289	114°	285°	289°	226°	232°	.566"	.566"	<b>84411</b>
<b>Performance Level 2</b> Excellent mid & top end performance. Requires ECU tuning.	<b>00574</b> <b>MTO</b>	350	275HR280	118°	275°	280°	226°	231°	.607"	.617"	<b>84411</b>
<b>Performance Level 4</b> Increased flow or aftermarket head required. ECU tune required. Good valve to piston clearance.	<b>00575</b> <b>MTO</b>	350	273HR286	120°	273°	286°	233°	237°	.624"	.629"	<b>84411</b>
<b>Performance Level 5</b> Great choice for bigger displacement engines. Head work or aftermarket head required. ECU tune required.	<b>00576</b> <b>MTO</b>		286HR290	120°	286°	290°	238°	241°	.629"	.634"	<b>84411</b>
<b>CUSTOM GROUND HYDRAULIC ROLLER</b> Special order hydraulic roller lifter camshaft ground to your specifications and Lobe Sep.. Call our technical support staff for personalized camshaft assistance.	<b>00053HR</b>										

Note: These cams use .000" intake and exhaust valve lash.

These cams are ground on steel cast cores. Crower recommends using melonite or bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Keepers	Remarks
<b>84411</b>	68435-16	87015-16	86118-16	No lash caps, always check retainer to seal clearance, use with stock roller lifters

These camshafts can be tuned for both Naturally Aspirated or Forced Induction applications.

## Stainless Steel Shaft Rockers

Part No.	Description
<b>74164F</b>	All Pro - LSW 12° Hurricane
	Brodix - LS Series STS BR-7 BS only
<b>74107F</b>	Brodix - LS Series STS BR-7
	GM - LS7 machine work is required
<b>74106F</b>	ETP - LXR LS7 4.0 Bore
<b>74108F</b>	ETP - LS7 4.100 Bore
<b>74109F</b>	ETP - LS7 4.000 Bore
<b>74147F</b>	Mast - LS7 LXR
<b>74146F</b>	Mast - LXR LS3 255cc 11°
<b>74160F</b>	Mast - LXR LS3 12° Med. Bore
<b>74150F</b>	TFS - LS1-1X
<b>74173F</b>	TFS - Gen X 255 LS3
<b>74110F</b>	World Products - LS7 Machining req.
<b>74101F</b>	GM - LS1, LS2, LS6
<b>74105F</b>	GM - LS3, L92

Shaft Rockers available for most aftermarket heads.

## Crankshafts & Connecting Rods

Part No.	Description
<b>95100</b>	Forged Crankshaft - Specify stroke and reluctor wheel size
<b>B93051B-8</b>	LS1 Steel billet connecting rods. Custom rods available.

## Lifters

Part No.	Description
<b>66322-16</b>	Retrofit (Link Blade ) Hydraulic Drop in Roller Lifters

\* Removal of stock guides required

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



**For The Best Overall Performance Gains Use The Cam Form, And Let Crower Make You A Custom Cam...**

GM LS1/LS2/LS3/LS6/LS7/LS9/LSX V8 - ALL 3 BOLT CAM CORES  
1997 - Present

All New Profiles

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
				Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Performance Level 3</b> Hot-street performance applications. RPM Power Range: 3500 to 7500	<b>00532</b>	279R285	114°	279°	285°	251°	254°	.644"	.644"	<b>84412</b>
	<b>MTO</b>									
<b>Performance Level 4</b> High revving, super mid to top end power. RPM Power Range: 4000 to 8000	<b>00533</b>	282R294	114°	282°	294°	260°	263°	.643"	.641"	<b>84412</b>
	<b>MTO</b>									
<b>Performance Level 5</b> Super competition profile. RPM Power Range: 4500 to 8500	<b>00534</b>	301R303	114°	301°	303°	269°	272°	.646"	.646"	<b>84412</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications and Lobe Sep.. Call our technical support staff for personalized camshaft assistance.	<b>00053HR</b>									

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Keepers	Seals	Spring Disc	Remarks
<b>84412</b>	68432-16	86036T-16	86118-16	86080-16	68947-16	Titanium retainer.

The above cores are 8620 steel billet. Use bronze distributor gear.

Note: These cams use .018" intake, .020" exhaust valve lash.

## Crankshafts & Connecting Rods

Part No.	Description
<b>95100</b>	Forged Crankshaft - Specify stroke and reluctor wheel size
<b>B93051B-8</b>	LS1 Steel billet connecting rods. Custom rods available.

## Stainless Steel Shaft Rockers

Part No.	Description
<b>74164F</b>	All Pro - LSW 12° Hurricane Brodix - LS Series STS BR-7 BS only
<b>74107F</b>	Brodix -LS Series STS BR-7 GM - LS7 machine work is required
<b>74106F</b>	ETP - LXR LS7 4.0 Bore
<b>74108F</b>	ETP - LS7 4.100 Bore
<b>74109F</b>	ETP - LS7 4.000 Bore
<b>74147F</b>	Mast - LS7 LXR
<b>74146F</b>	Mast - LXR LS3 255cc 11°
<b>74160F</b>	Mast - LXR LS3 12° Med. Bore
<b>74150F</b>	TFS - LS1-1X
<b>74173F</b>	TFS - Gen X 255 LS3
<b>74110F</b>	World Products - LS7 Machining req.
<b>74101F</b>	GM - LS1, LS2, LS6
<b>74105F</b>	GM - LS3, L92

Shaft Rockers available for most aftermarket heads.

## Lifters

Part No.	Description
<b>66278-16</b>	Solid Roller Lifters, link bar type
<b>66278H-16</b>	Solid Roller Lifters with HIPPO oiling
<b>66278E-16</b>	Solid Roller Lifters with Enduramax needleless roller bearing
<b>66278T-16</b>	Severe-Duty Mechanical Roller Lifters for LS1 (Tall Design)
<b>66278HT-16</b>	Severe-Duty Mechanical Roller Lifters
<b>66278ET-16</b>	EnduraMax Mechanical Roller Lifters Chevrolet
<b>.903 Body Available.</b>	
<b>66278X903H-16</b>	Severe-Duty Mechanical Roller Lifters
<b>66278X903E-16</b>	EnduraMax Roller Lifters LS1 .903" OD

**Note:** "MTO" denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.



**Adam Lunn and Trophy Truck 53**  
Using all Crower LS Series Components



# CARBURATED APPLICATION MECHANICAL ROLLER TAPPET

# Chevrolet

All New Profiles

CARBURATED GM LS1/LS2/LS3/LS6/LS7/LS9/LSX V8 - ALL 3 BOLT CAM CORES

1997 - Present

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
				Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Performance Level 3</b> Hot-street performance applications. RPM Power Range: 3500 to 7500	<b>00543</b> <b>MTO</b>	279R285	110°	279°	285°	251°	254°	.644"	.644"	<b>84412</b>
<b>Performance Level 4</b> High revving, super mid to top end power. RPM Power Range: 4000 to 8000	<b>00544</b> <b>MTO</b>	282R294	108°	282°	294°	260°	263°	.643"	.641"	<b>84412</b>
<b>Performance Level 5</b> Super competition profile. RPM Power Range: 4500 to 8500	<b>00545</b> <b>MTO</b>	301R303	108°	301°	303°	269°	272°	.646"	.646"	<b>84412</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications and Lobe Sep.. Call our technical support staff for personalized camshaft assistance.	<b>00053R</b>									

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Keepers	Seals	Spring Disc	Remarks
<b>84412</b>	68432-16	86036T-16	86118-16	86080-16	68947-16	Titanium retainer.

The above cores are 8620 steel billet. Use bronze distributor gear.

Note: These cams use .018" intake, .020" exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

## Stainless Steel Shaft Rockers Lifters

Part No.	Description
<b>74164F</b>	All Pro - LSW 12° Hurricane
	Brodix - LS Series STS BR-7 BS only
<b>74107F</b>	Brodix - LS Series STS BR-7
	GM - LS7 machine work is required
<b>74106F</b>	ETP - LXR LS7 4.0 Bore
<b>74108F</b>	ETP - LS7 4.100 Bore
<b>74109F</b>	ETP - LS7 4.000 Bore
<b>74147F</b>	Mast - LS7 LXR
<b>74146F</b>	Mast - LXR LS3 255cc 11°
<b>74160F</b>	Mast - LXR LS3 12° Med. Bore
<b>74150F</b>	TFS - LS1-1X
<b>74173F</b>	TFS - Gen X 255 LS3
<b>74110F</b>	World Products - LS7 Machining req.
<b>74101F</b>	GM - LS1, LS2, LS6
<b>74105F</b>	GM - LS3, L92

Shaft Rockers available for most aftermarket heads.

Part No.	Description
<b>66278-16</b>	Solid Roller Lifters, link bar type
<b>66278H-16</b>	Solid Roller Lifters with HIPPO oiling
<b>66278E-16</b>	Solid Roller Lifters with Enduramax needleless roller bearing
<b>66278T-16</b>	Severe-Duty Mechanical Roller Lifters for LS1 (Tall Design)
<b>66278HT-16</b>	Severe-Duty Mechanical Roller Lifters
<b>66278ET-16</b>	EnduraMax Mechanical Roller Lifters Chevrolet
<b>.903 Body Available.</b>	
<b>66278X903H-16</b>	Severe-Duty Mechanical Roller Lifters
<b>66278X903E-16</b>	EnduraMax Roller Lifters LS1 .903" OD

## Crankshafts & Connecting Rods

Part No.	Description
<b>95100</b>	Forged Crankshaft - Specify stroke and reluctor wheel size
<b>B93051B-8</b>	LS1 Steel billet connecting rods. Custom rods available.

**Alex Taylor**

Using all Crower LS Series Components





# MECHANICAL FLAT TAPPET

Non Roller 1957 - 1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / Performance Level 3</b> High torque at low revs. Lopey idle. RPM Power Range: 2000 to 6000 / Redline: 6500 plus.	<b>00320</b>	302 327	264SF	112°	264°	270°	230°	236°	.458"	.468"	<b>84299</b> or <b>84299X980</b>
<b>PRO-STREET / Performance Level 3</b> High torque with more mid-range. Crisp rpm. Really nice camshaft. RPM Power Range: 2400 to 6400 / Redline: 6800 Plus.	<b>00321</b>	302 327	274SF	114°	274°	282°	242°	248°	.482"	.504"	<b>84299</b> or <b>84299X980</b>
<b>PRO-STREET / Performance Level 4</b> High revving, super mid to top end power in small c.i.d. engines. Radical grind. RPM Power Range: 2800 to 6600 / Redline: 7000 Plus.	<b>00322</b>	350 327	282SF	112°	282°	292°	248°	254°	.504"	.528"	<b>84299</b> or <b>84299X980</b>
<b>PRO-STREET / Performance Level 5</b> High revving, super mid to top end power. RPM Power Range: 3000 to 6900 / Redline: 7200 Plus.	<b>00323</b>	350 400	294SF	114°	294°	300°	256°	262°	.528"	.545"	<b>84299</b> or <b>84299X980</b>
<b>CUSTOM CAM</b> Special order <b>Pro 55 4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	ALL CID									
<b>CUSTOM CAM</b> Special order <b>Pro 55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00056</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Oil Seals	Remarks
<b>84299</b>	66900-16	68390X3-16	87048-16	86072-16	
<b>84299X980</b>	66900X980-16	68390X3-16	87048-16	86072-16	CoolFace Lifter.

### Spring pressure:

68301X1-16 Seat: 1.750" @ 90 lbs / Nose: 1.300" @ 260 lbs / Coil bind: 1.130" (Stock O.D. no machine work).

\*(Optional Spring Cup available if heads are cut for larger springs, use cup #68922 & 86107X1 retainer.)

68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110" ( Machine work required).

\* Machine work required

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>

**Note:** Rocker arms available in Aluminum & Stainless steel

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

# MECHANICAL FLAT TAPPET



Non Roller 1957 - 1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4 Pro 55</b> Radical street, rough idle, good bottom-,mid-range power. Best with head modifications, headers, and gearing. High torque, heavy cam. RPM Power Range: 2000 to 6000 / Redline: 7000 Plus.	<b>00350</b>	350 400	268FDP	107°	268°	274°	238°	244°	.497"	.503"	<b>84299</b>
<b>COMPU-PRO / Performance Level 5 Pro55</b> High torque, short oval track cam, strong off corner. Emphasis in mid-range. Hot street. RPM Power Range: 2500 to 6500 / Redline: 7500 Plus.	<b>00355</b>	350 400	276FDP	105°	276°	282°	244°	250°	.503"	.518"	<b>84299</b> <b>84292X980</b>
<b>COMPU-PRO / Performance Level 5 Pro 55</b> Most popular Oval Track, NASCAR and Sportsman grind. Great high torque and mid-range power. RPM Power Range: 3000 to 7000 / Redline: 7500 Plus.	<b>00351</b>	350 400	288FDP	105°	288°	292°	254°	262°	.525"	.546"	<b>84299</b> <b>84292X980</b>
<b>COMPU-PRO / Performance Level 5 Pro 55</b> Good for fast track - high bank 3/8 mile or 1/2 mile oval. High torque at high revs. RPM Power Range: 3500 to 7500 / Redline: 7500 Plus.	<b>00356</b>	350 400	294FDP	105°	294°	302°	260°	266°	.540"	.557"	<b>84299</b> <b>84292X980</b> <b>84293X980</b>
<b>COMPU-PRO / Performance Level 5 Pro 55</b> Superb extended power range. Top end drag and oval track grind. RPM Power Range: 4000 to 7500 / Redline: 7500 Plus.	<b>00357</b>	350 400	302FDP	107°	302°	310°	268°	278°	.557"	.587"	<b>84292X980</b> <b>84293X980</b>
<b>CUSTOM CAM</b> Special order <b>Pro 55 4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	ALL CID									
<b>CUSTOM CAM</b> Special order <b>Pro 55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00056</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Oil Seals	Remarks
<b>84299</b>	66900-16	68390X3-16	87048-16	86072-16	
<b>84299X980</b>	66900X980-16	68390X3-16	87048-16	86072-16	CoolFace Lifter.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Spring pressure:

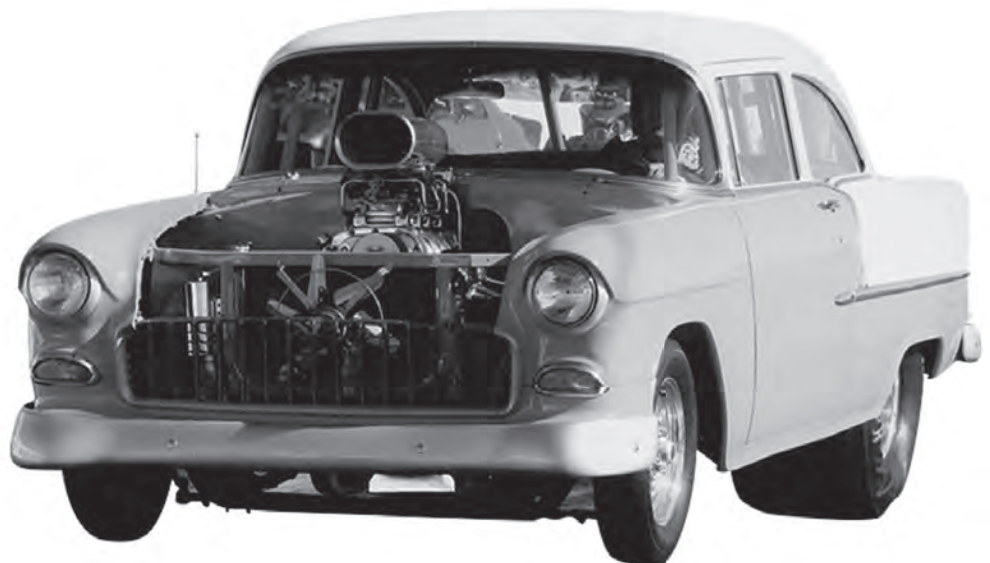
68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110" ( Machine work).

\* Machine work required

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

**REMEMBER!** Increasing rocker ratio on intake (1.6) will make the cam approximately 3° duration and .030" more lift.

**Dennis " Mr Big" Jauregui**  
Using all Crower Components





# 290 SERIES HIGH ROCKER RATIO MECHANICAL FLAT TAPPET

1957 - 1998

262 265 267 283 302 305 307 327 350 400 V8 Small Block

*New PRO 55 Cam Core Technology  
twice as strong*

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised Duration @ .020"		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.6 / 1.5		Gross Lift 1.7 / 1.6		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
Improved torque in mid-range while maintaining healthy bottom end response.	<b>00305 MTO</b>	262-307-327	3400	4900	6700	7200	108°	270°	278°	240°	248°	148°	156°	.333"	.346"	.533"	.519"	.566"	.554"	See Below
		305-350	3000	4500	6200	6700														
		383-406	2700	4200	5700	6200														
Real good limited card oval track, broad operating power.	<b>00306</b>	262-307-327	3500	5000	6800	7300	108°	274°	278°	244°	248°	152°	156°	.340"	.346"	.544"	.519"	.578"	.554"	See Below
		305-350	3100	4600	6300	6800														
		383-406	2800	4300	5800	6300														
Rolls torque higher with closer Lobe Sep.. Heavier car, more power off corner.	<b>00307</b>	262-307-327	3700	5200	7000	7500	106°	278°	286°	248°	256°	156°	165°	.346"	.360"	.554"	.540"	.588"	.576"	See Below
		305-350	3400	4900	6500	7000														
		383-406	3000	4500	6000	6500														
Heavy car, explosive off the corner, needs proper car setup. For well hooked up chassis. Radical Street.	<b>00308</b>	262-307-327	3800	5300	7100	7600	105°	282°	290°	252°	260°	161°	167°	.353"	.366"	.565"	.549"	.600"	.586"	See Below
		305-350	3500	5000	6600	7100														
		383-406	3100	4600	6100	6600														
<b>CUSTOM CAM</b> Special order <b>4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	All CID																		
<b>CUSTOM CAM</b> Special order <b>Pro 55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00056</b>	All CID																		

Note: These cams use .022" intake, .024" exhaust valve lash.

These cams work well with 1.5 rockers. But going up 1 rocker ratio is like adding 3-4 degrees and .030" lift

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

### ENGINEERED COMPONENT KITS \*Select kit to match your rpm range

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84299</b>	66900-16	68390X3-16	87048-16	86072-16	Race only
<b>84299X980</b>	66900X980-16	68390X3-16	87048-16	86072-16	CoolFace lifter option, race only

#### Spring pressure:

68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110" (Machine work required).

Super 7° titanium retainers available for kit #84293-980. Specify #86754 retainer when ordering.

Super 7° keepers required for #86767-16 retainers (kit #84265 and #84265X980).

Valve timing events are available online at: [www.crower.com](http://www.crower.com)

**NOTE:** These cam grinds are available for 1955-1956, please specify when ordering

### ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>

**Note:** Rocker arms available in Aluminum & Stainless steel

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### CROWER CAM BREAK-IN PROCEDURE



**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleries. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crower recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crower Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092



# 290 SERIES HIGH ROCKER RATIO MECHANICAL FLAT TAPPET



**New PRO 55 Cam Core Technology**  
*twice as strong*

**1957 - 1998**  
**262 267 283 302 305 307 327 350 400 V8 Small Block**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised Duration @ .020"		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.6 / 1.5		Gross Lift 1.7 / 1.6		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
Dynamite, heavy car, big mid range, fast track or slow 1/2 mile. Streetable, higher stall needed.	00309	262-307-327	3900	5400	7200	7800	105°	286°	294°	256°	264°	165°	173°	.360"	.373"	.576"	.559"	.612"	.597"	See Below
		305-350	3600	5100	6700	7200														
		383-406	3200	4700	6200	6700														
Streetable high stall needed, Radical street less bottom end.	00312	262-307-327	4200	5700	7400	7900	106°	290°	294°	260°	264°	161°	173°	.366"	.373"	.584"	.559"	.622"	.597"	See Below
		305-350	3700	5200	6800	7300														
		383-406	3300	4800	6300	6800														
Max street, super fast 3/8 & fast 1/2 mile, increased stroke high stall only	00313	262-307-327	4200	5700	7450	7950	106°	294°	298°	264°	268°	173°	177°	.373"	.380"	.597"	.570"	.634"	.608"	See Below
		305-350	3900	5400	6950	7450														
		383-406	3450	4950	6400	6900														
Competitive racing profile, wants high rocker ratio. All the tricks, high stalls, gears etc.	00316 MTO	262-307-327	4400	6000	7600	8100	108°	298°	302°	268°	272°	177°	181°	.380"	.386"	.608"	.579"	.646"	.618"	See Below
		305-350	4000	5500	7050	7550														
		383-406	3600	5100	6500	7000														
<b>CUSTOM CAM</b> Special order <b>4-7 switch firing order</b> . Call with all engine data including head flow data, valve sizes, operating power range, etc.	00047																			
<b>CUSTOM CAM</b> Special order <b>Pro 55</b> , call with all engine data including head flow data, valve sizes, operating power range, etc.	00056																			

Note: These cams use .022" intake, .024" exhaust valve lash.

4-7 Switch grind available on all cams listed on this page

These latest solid lifter profiles are multipurpose and are working extremely well in NASCAR late model, drag racing and street/strip applications. Available in any Lobe Sep.. Cam cores are ground from Pro 55 cores.

## ENGINEERED COMPONENT KITS \*Select kit to match your rpm range

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84299	66900-16	68390X3-16	87048-16	86072-16	Race only
84299X980	66900X980-16	68390X3-16	87048-16	86072-16	CoolFace lifter option, race only

### Spring pressure:

68390X3-16 Seat: 1.800" @ 116 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110" (Machine work required)  
Super 7° titanium retainers available for kit #84293-980. Specify #86754 retainer when ordering.  
Super 7° keepers required for #86767-16 retainers (kit #84265 and #84265X980).

**NOTE:** These cam grinds are available for 1955-1956, please specify when ordering

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ACCESSORIES

Description	See Page (s)
Rocker Arms	Pg's.146-168

**Note:** Rocker arms available in Aluminum & Stainless steel

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# 220 SERIES HIGH RPM MECHANICAL FLAT TAPPET

1957 - 1998

262 267 283 302 305 307 327 350 400 V8 Small Block

New PRO 55 Cam Core Technology  
twice as strong

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised Duration @ .020"		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.7 / 1.6		Gross Lift 1.8 / 1.7		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
Dynamite-oval track-bottom end & mid range for increased power for restarts & out of corners. Hot bracket & entry drag race.	00332	262-307-327	3600	5100	7800	8300	107°	285°	296°	251°	261°	156°	165°	.345"	.356"	.587"	.570"	.621"	.605"	84268 X980
		305-350	3400	4900	7400	7900														
		383-406	3100	4600	6900	7400														
Nice mix for competitive oval track & drag race. Broad operating power band. Powerglide or non shift upgrades recommended	00333 MTO	262-307-327	3700	5200	7900	8400	107°	290°	300°	255°	265°	159°	170°	.349"	.362"	.593"	.579"	.628"	.615"	84268 X980
		305-350	3600	5100	6600	8100														
		383-406	3200	4700	7000	7500														
Super fast track higher operating powerload.	00334	262-307-327	3800	5300	8000	8400	108°	293°	303°	259°	269°	165°	173°	.356"	.365"	.605"	.584"	.640"	.620"	84268 X980
		305-350	3700	5200	7700	8200														
		383-406	3300	4800	7100	7600														
Strong response through entire power band. Drag race.	00335 MTO	262-307-327	3900	5400	8100	8400	108°	298°	307°	263°	273°	167°	178°	.359"	.370"	.610"	.592"	.646"	.629"	84268 X980
		305-350	3850	5350	7750	8250														
		383-406	3400	4900	7150	7650														
<b>CUSTOM CAM</b> - Special order 4-7 switch firing order. Call with all engine data including head flow data, valve sizes, operating power range, etc.	00047																			
<b>CUSTOM CAM</b> - Special order Pro 55, call with all engine data including head flow data, valve sizes, operating power range, etc.	00056																			

Note: These cams use .018" intake, .020" exhaust valve lash.

The above cores are Pro 55. \* requires a smaller base circle for 3.750" or larger stroke cranks. Add an "S" at the end of desired cam part number (example: 002755) if smaller base circle is desired.

Note: These cams require #66900X980-16 No Chamfer lifters or, if running .874" lifter bores, use #66915-16.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
84268X980	66973X980-16	68441-16	87036-16	Super polished CoolFace Lifter.

### Spring pressure:

68441-16 Seat: 1.800" @ 145 lbs / Nose: 1.200" @ 366 lbs / Coil bind: 1.000"

Super 7° keepers required for #86767-16 retainers.

\*.842" diameter No Chamfer Lifters

1.8 Rockers are not recommended for street use. (See Page 146-168)

Valve spring pressures are critical for high mileage applications

**NOTE:** These cam grinds are available for 1955-1956, please specify when ordering.

## AVAILABLE SPECIALTY CORES

Description	Size
Stock Block with Roller Bearings ( Pro 55 cast material )	1.875"
Stock Rocket Block or Stock Big Block Chevrolet ( Pro 55 cast material )	1.948"
Stock Rocket Block with Roller Bearings ( 50mm ) ( Pro 55 cast material )	1.968"
55mm ( Hard Face 8620 steel billet )	2.165"
Hard Face ( 8620 steel billet only ) All bearing configuration available	Specify

To order the above cores specify #00003. For hard face cores specify #00033.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

## CROWER CAM BREAK-IN PROCEDURE



**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleries. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crower recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crower Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092

# 315 SERIES MECHANICAL ROLLER TAPPET



Mechanical Roller 1957 - 1998

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5	
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
<b>TORQUE BEAST ROLLER / Affordable Performance</b> Torque and mid-range power for drag and oval track racing. Cast steel core. RPM Power Range: 2500 to 6500 / Redline: 7000 Max.	<b>00422</b> <b>MTO</b>	350 400	268R	112°	268°	277°	240°	248°	.546"	.564"
<b>POWER BEAST ROLLER / Affordable Performance</b> Mid-range torque with emphasis on top end horsepower. Cast steel core. RPM Power Range: 2750 to 6750 / Redline: 7000 Plus.	<b>00423</b>	350 400	277R	110°	277°	285°	244°	253°	.564"	.582"
<b>ULTRA BEAST ROLLER / Affordable Performance</b> Intended for performance applications with emphasis on top end. Cast steel core. RPM Power Range: 3000 to 7000 / Redline: 7250 Max.	<b>00424</b> <b>MTO</b>	350 400	285R	108°	285°	293°	253°	261°	.582"	.603"
<b>STREET ROLLER 350</b> Intended for performance oriented hot-street applications. 8620 steel billet. RPM Power Range: 2500 to 6500 / Redline: 7000 Max.	<b>00425</b>	350 400	280R	112°	280°	288°	246°	248°	.554"	.567"
<b>STREET ROLLER 383+</b> Intended for performance oriented hot-street applications. 8620 steel billet. RPM Power Range: 3000 to 7000 / Redline: 7500 Max.	<b>00426</b> <b>MTO</b>	350 400	288R	112°	288°	290°	250°	252°	.570"	.584"
<b>HOT STREET ROLLER 350+</b> Intended for performance oriented hot-street applications. 8620 steel billet. RPM Power Range: 3250 to 7250 / Redline: 7750 Max.	<b>00427</b>	350 400	290R	112°	290°	296°	260°	266°	.585"	.597"
<b>ULTRA-ACTION / Performance Level 5</b> High torque oval track grind. RPM Power Range: 3000 to 7000 / Redline: 7500 plus.	<b>00430</b>	350 400	284R	105°	284°	294°	256°	260°	.626"	.627"
<b>ULTRA-ACTION / Performance Level 5</b> Mid-range torque and top end oval track profile. RPM Power Range: 3500 to 7500 / Redline: 8000 Plus.	<b>00431</b>	350 400	290R	105°	290°	296°	258°	262°	.626"	.626"
<b>ULTRA-ACTION / Performance Level 5</b> Fast 3/8 and 1/2 mile oval track grind. RPM Power Range: 4000 to 8000 / Redline: 8000 Plus.	<b>00432</b>	350 400	299R	105°	299°	308°	262°	272°	.639"	.629"
<b>ULTRA-ACTION / Performance Level 5</b> 1/2 mile or longer in big cid engine. Torque and mid-range for drag. RPM Power Range: 5000 to 8000 / Redline: 8000 plus.	<b>00434</b>	350 400	294R	105°	294°	302°	260°	268°	.626"	.624"

Note: These cams use .026" intake, .028" exhaust valve lash.

Lobe Sep.s can be changed for a small fee.  
Stroker engines require smaller base circle.

**Note:** "MTO" denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

**Note:** See lifter section. (see pages 127-140) for more info.

Street rollers have a smoother lift rate and require less spring pressure, increasing timing chain & roller life.

Big displacement, high RPM builds are not covered in this series. Please fill out the cam spec sheet or a custom grind. **More lifter diameters available:** See lifter section. (see pages 127-140) for more info.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### Spring pressure:

68795-16 Seat: 2.000" @ 284 lbs / Nose: 1.250" @ 699 lbs / Coil bind: 1.110"  
68806-16 Seat: 2.050" @ 194 lbs / Nose: 1.250" @ 733 lbs / Coil bind: 1.160"  
Due to the wide variety of valve train combinations (i.e. lifter bore diameters, offsets, valve lengths, installed heights, etc...), we highly recommend that you contact Crower for your specific valve train needs.

**HIPPO Note:** For severe duty roller lifter applications, we highly recommend using our roller lifters with Hippo "High Pressure Pin Oiling". Specify "H" in the part number. **Ex. 66290X874H-16**

**Note:** When ordering a .930" - .950" base circle cams for 3.750" or larger stroker cranks, add an "S" at the end of the part number. Example: 00432S. For strokes of 3.900" or larger contact Crower for .850" base circle camshafts.

**HIGH RPM!** With today's high engine rpm and increased rocker ratios, valve train life is extremely critical. Increased spring pressures are mandatory for insuring reliable valve train life. Contact Crower's technical assistance department for proper high rpm recommendations.

**INTEGRAL CAST IRON GEAR OPTION:** Premium 8620 steel billet copper plated cam cores with integral cast iron cam gear are available from Crower on a special order basis (specify part number 00050).



# EFI, FORCED INDUCTION & NOS MECHANICAL ROLLER TAPPET

1957 - 1998

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	Lobe Sep.	Advertised Duration @.020"		Duration @.050"		Duration @.200"		Lobe Lift		Gross Lift 1.5 / 1.5		Gross Lift 1.6 / 1.5		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PERFORMANCE LEVEL 4</b> Great 9:1, 355 cid, mid-range. RPM: 3000 to 7000 max	<b>00550*</b> <b>MTO</b>	114°	280°	288°	247°	255°	159°	167°	.365"	.382"	.548"	.573"	.584"	.573"	<b>84430</b>
<b>PERFORMANCE LEVEL 4</b> High stall, heavy car, low gears. RPM: 3500 to 7500 max	<b>00551*</b> <b>MTO</b>	114°	282°	290°	248°	254°	163°	171°	.373"	.391"	.560"	.587"	.597"	.587"	<b>84430</b>
<b>PERFORMANCE LEVEL 4</b> Strip Special - Easy on train. Excellent with 1.6 rockers (int).	<b>00552*</b>	114°	290°	296°	254°	262°	171°	177°	.391"	.408"	.587"	.612"	.626"	.612"	<b>84430</b>
<b>PERFORMANCE LEVEL 5</b> Super Stock & Bracket classes. High rocker ratio recommended.	<b>00553*</b>	114°	296°	306°	262°	270°	177°	186°	.408"	.425"	.612"	.638"	.653"	.638"	<b>84430</b>
<b>PERFORMANCE LEVEL 5</b> 2 carbs, high stall or 4-speed. Awesome top end cam!	<b>00554*</b> <b>MTO</b>	114°	306°	314°	270°	278°	186°	194°	.425"	.442"	.638"	.663"	.680"	.663"	<b>84430</b>
<b>PERFORMANCE LEVEL 5</b> Big engine, injected/carb, comp. RPM: 5500 to 8500 max	<b>00555*</b> <b>MTO</b>	114°	314°	322°	278°	284°	194°	201°	.442"	.459"	.663"	.689"	.707"	.689"	<b>84430</b>
<b>PERFORMANCE LEVEL 5</b> Major top end power. RPM: 5600 to 8500 rpm max	<b>00556*</b> <b>MTO</b>	114°	325°	332°	284°	292°	201°	210°	.459"	.475"	.689"	.713"	.734"	.713"	<b>84430</b>

\*Indicates spec change from previous listings. The above cores are 8620 steel billet. Small base circle cams available for 383 and 406. Specify "S" after part number when ordering.

Note: These cams use .018" intake, .020" exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84430</b>	66200-16	68804H-16	86781-16*	86072-16	.100"+ long valve. Limited street. Super 7° retainers

### Spring pressure:

68804H-16      Seat: 1.950" @ 235 lbs / Nose: 1.250" @ 582 lbs / Coil bind: 1.100" (1.550" O.D.)

Due to the wide variety of valve train combinations (i.e. lifter bore diameters, offsets, valve lengths, installed heights, etc.), we highly recommend that you contact Crower for your specific valve train needs.

**Note:** When ordering a .930" - .950" base circle cams for 3.750" or larger stroker cranks, add an "S" at the end of the part number. Example: 00432S. For strokes of 3.900" or larger contact Crower for .850" base circle camshafts.

**HIGH RPM!** With today's high engine rpm and increased rocker ratios, valve train life is extremely critical. Increased spring pressures are mandatory for insuring reliable valve train life. Contact Crower's technical assistance department for proper high rpm recommendations.

**INTEGRAL CAST IRON GEAR OPTION:** Premium 8620 steel billet, copper plated cam cores with integral cast iron cam gear are available from Crower on a special order basis (specify part number 00050). V

**HIPPO Note:** For severe duty roller lifter applications, we highly recommend using our roller lifters with Hippo "High Pressure Pin Oiling".

Specify "H" in the part number. **Ex. 66290X874H-16**

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>

**Note:** Rocker arms available in Aluminum & Stainless steel



# 350 SERIES MECHANICAL ROLLER TAPPET



Mechanical Roller 1957 - 1998

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>ULTRA-ACTION / Performance Level 5</b> Mid-range and top end drag race profile for 350 cid with automatic transmission. RPM Power Range: Varies on valve train, heads, manifold, etc... .975" Base Circle	<b>00439</b>	350	316R	108°	316°	319°	282°	286°	.672"	.687"	
<b>ULTRA-ACTION / Performance Level 5</b> This cam is drag race only or modifieds with 4 or 5 speed transmission. RPM Power Range: Varies on valve train, heads, manifold, etc... .975" Base Circle	<b>00440</b> <b>MTO</b>	350 400	319R	108°	319°	326°	286°	288°	.686"	.636"	
<b>CUSTOM GROUND</b> Custom order roller using a 4-7 swap firing order on a steel billet core. Call our technical support staff for personalized assistance.	<b>00003</b>	ALL CID									
<b>CUSTOM GROUND</b> Custom order steel billet roller with a cast iron gear. Call our technical support staff for personalized camshaft assistance.	<b>00050</b>	ALL CID									
<b>CUSTOM GROUND</b> Special order camshaft using a custom core or 4-7-3-2 firing order or any special configuration. Call our technical support staff for personalized camshaft assistance.	<b>00060</b>	ALL CID									
<b>CUSTOM GROUND ROLLER</b> Custom ground roller, using a billet 8620, ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00100R</b>	ALL CID									

Note: These cams use .026" intake, .028" exhaust valve lash.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

### ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84427</b>	66290-16	68795-16	86780-16	86072-16	.100"+ long valve. High RPM
<b>84439</b>	66290-16	68806-16	86780-16*	86072-16	.100"+ long valve. Limited street. Super 7° retainers

Street rollers have a smoother lift rate and require less spring pressure, increasing timing chain & roller life.

Big displacement, high RPM builds are not covered in this series. Please fill out the cam spec sheet or a custom grind.

#### Spring pressure:

68795-16 Seat: 2.000" @ 284 lbs / Nose: 1.250" @ 699 lbs / Coil bind: 1.110"  
68806-16 Seat: 2.050" @ 194 lbs / Nose: 1.250" @ 733 lbs / Coil bind: 1.160"

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

Due to the wide variety of valve train combinations (i.e. lifter bore diameters, offsets, valve lengths, installed heights, etc...), we highly recommend that you contact Crower for your specific valve train needs.

**HIPPO Note:** For severe duty roller lifter applications, we highly recommend using our roller lifters with Hippo "High Pressure Pin Oiling". Specify "H" in the part number. **Ex. 66290X874H-16**

**Note:** When ordering a .930" - .950" base circle cams for 3.750" or larger stroker cranks, add an "S" at the end of the part number. Example: 00432S. For strokes of 3.900" or larger contact Crower for .850" base circle camshafts.

**HIGH RPM!** With today's high engine rpm and increased rocker ratios, valve train life is extremely critical. Increased spring pressures are mandatory for insuring reliable valve train life. Contact Crower's technical assistance department for proper high rpm recommendations.

**INTEGRAL CAST IRON GEAR OPTION:** Premium 8620 steel billet, copper plated cam cores with integral cast iron cam gear are available from Crower on a special order basis (specify part number 00050).

**Let Crower Help You Pick Your Cam.** If you are not an experienced engine builder or are unsure of the correct cam profile or your application. Fill out the cam spec sheet, and let Crower tech's recommend a cam for peak engine performance.

### ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>

**Note:** Rocker arms available in Aluminum & Stainless steel

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# 390 SERIES LOW/ROCKER RATIO ROLLER TAPPET (MAX AREA PROFILE)

Mechanical Roller 1957 - 1998

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised Duration @ .020"		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.5 / 1.5		Gross Lift 1.6 / 1.5		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
High torque - needs modifications	00502	262-307-327	3400	4900	7600	8100	108°	284°	295°	255°	262°	179°	173°	.421"	.400"	.631"	.601"	.674"	.601"	
		305-350	3300	4800	7300	7800														
		383-406	3000	4500	6800	7300														
1/4 - 3/8 mile oval track, 390 carb	00503	262-307-327	3700	5200	7800	8300	108°	289°	299°	260°	264°	183°	178°	.429"	.408"	.643"	.612"	.686"	.612"	
		305-350	3500	5000	7600	8100														
		383-406	3100	4600	7000	7500														
Fast 3/8 - 1/2 mile track big area profile - excellent for 383 + ci.	00504	262-307-327	3800	5300	7900	8400	106°	294°	302°	265°	269°	187°	181°	.438"	.417"	.657"	.626"	.701"	.626"	
		305-350	3600	5100	7700	8200														
		383-406	3200	4700	7100	7600														
High torque - needs modifications	00505	262-307-327	3900	5400	8000	8500	105°	299°	306°	268°	273°	191°	185°	.446"	.424"	.669"	.636"	.714"	.636"	
		305-350	3800	5300	7800	8300														
		383-406	3400	4900	7200	7700														
Modified 400 ci blocks, super mid-range. Top end performance, all the whistles needed.	00506	262-307-327	4000	5500	8100	8600	105°	302°	312°	271°	278°	194°	190°	.454"	.434"	.681"	.652"	.726"	.652"	
		305-350	3900	5400	7900	8400														
		383-406	3400	4900	7300	7800														
CUSTOM GROUND	00003	ALL CID																		
CUSTOM GROUND	00050	ALL CID																		
CUSTOM GROUND	00060	ALL CID																		
CUSTOM GROUND ROLLER	00100R	ALL CID																		

Note: These cams use .016" intake, .018" exhaust valve lash.

The above cores are 8620 steel billet. Use bronze distributor gear. Small base circle cams available for 383 and 406. Specify "S" after part number when ordering.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84427	66290-16	68795-16	86780-16	86072-16	.100"+ long valve. High RPM
84439	66290-16	68806-16	86780-16*	86072-16	.100"+ long valve. Limited street. Super 7° retainers

## AVAILABLE CAM JOURNAL SIZES

Description	Size
Stock Small Block Chevrolet	1.868"
Stock Block with Roller Bearings	1.875"
Stock Rocket Block or Stock Big Block Chevrolet	1.948"
Stock Rocket Block with Roller Bearings (50mm)	1.968"
55mm	2.165"

**Your RPM range will vary depending on your  
Cylinder Head Air Flow Data & Cubic Inches.**

# 310 SERIES OVAL TRACK MECHANICAL ROLLER TAPPET



Mechanical Roller 1957 - 1998

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised Duration @ .020"		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.7 / 1.6		Gross Lift 1.8 / 1.7		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
Mid range monster, Heavy car, tight corner oval track.	<b>00510*</b> <b>MTO</b>	307-327	3600	5100	7500	8000	106°	277°	292°	248°	258°	164°	163°	.377"	.368"	.641"	.589"	.678"	.625"	<b>See Below</b>
		305-350	3400	4900	7300	7800														
		383-406	3000	4500	6900	7400														
Upper mid range & top end power, tight corner oval track.	<b>00511*</b>	307-327	3800	5300	7600	8100	106°	283°	297°	254°	264°	173°	175°	.393"	.406"	.668"	.650"	.707"	.690"	<b>See Below</b>
		305-350	3700	5200	7700	8200														
		383-406	3200	4700	7100	7600														
Versatile profile - good for high torque drag racing/bracker lower top end.	<b>00512*</b>	307-327	3900	5400	7900	8400	107°	289°	301°	260°	268°	180°	179°	.408"	.415"	.694"	.664"	.734"	.705"	<b>See Below</b>
		305-350	3800	5300	7800	8300														
		383-406	3400	4900	7300	7800														
Mid top end performance upgrades demanded.	<b>00513*</b> <b>MTO</b>	307-327	4000	5500	8000	8500	107°	293°	307°	264°	274°	184°	185°	.418"	.430"	.711"	.688"	.752"	.731"	<b>See Below</b>
		305-350	3900	5400	7900	8400														
		383-406	3600	5100	7400	7900														
All top end drag race, short rpm change oval track, upgrades a must.	<b>00514*</b> <b>MTO</b>	307-327	4100	5600	8450	8550	108°	297°	311°	268°	278°	187°	190°	.430"	.437"	.731"	.699"	.774"	.742"	<b>See Below</b>
		305-350	4000	5500	7950	8450														
		383-406	3700	5200	7500	8000														
<b>CUSTOM GROUND</b>	<b>00003</b>	All CID																		
<b>CUSTOM GROUND</b>	<b>00050</b>	All CID																		
<b>CUSTOM GROUND</b>	<b>00060</b>	All CID																		
<b>CUSTOM GROUND ROLLER</b>	<b>00100R</b>	All CID																		

\*Indicates the above cams come in Standard 18° head and block. Special bearing sizes are available as custom grinds.

Note: These cams use .012" intake, .018" exhaust valve lash.

The above cores are 8620 steel billet. Small base circle cams available for 383 and 406. Specify "S" after part number when ordering. Use bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84427</b>	66290-16	68795-16	86780-16	86072-16	.100"+ long valve. High RPM
<b>84439</b>	66290-16	68806-16	86780-16*	86072-16	.100"+ long valve. Limited street. Super 7° retainers

## AVAILABLE CAM JOURNAL SIZES

Description	Size
Stock Small Block Chevrolet	1.868"
Stock Block with Roller Bearings	1.875"
Stock Rocket Block or Stock Big Block Chevrolet	1.948"
Stock Rocket Block with Roller Bearings (50mm)	1.968"
55mm	2.165"

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# 230 SERIES ROLLER TAPPET HIGH RATIO SERIES

Mechanical Roller 1957 - 1998

262 267 283 302 305 307 327 350 400 V8 Small Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range			Lobe Sep.	Advertised Duration @ .020"		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.8 / 1.7		Gross Lift 1.9 / 1.8		Suitable Component Kit	
			Low RPM	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust		
Pro Series track racing, heavy car, high rocker ratio.	00520*	307-327	3800	5300	8000	108°	285°	294°	252°	260°	162°	167°	.380"	.374"	.684"	.635"	.722"	.673"	See Below	
		305-350	3500	5000	7800															
		383-406	3200	4700	7600															
Pro Series track racing high rocker ratio.	00521*	307-327	4000	5500	8200	108°	289°	299°	256°	256°	166°	172°	.388"	.383"	.698"	.651"	.737"	.689"	See Below	
		305-350	3600	5100	8000															
		383-406	3200	4700	7800															
Pro Series track racing high rocker ratio.	00522*	307-327	4100	5600	8300	108°	293°	304°	260°	270°	170°	177°	.397"	.393"	.714"	.668"	.754"	.707"	See Below	
		305-350	3800	5300	8100															
		383-406	3400	4900	7900															
Pro Series track racing high rocker ratio.	00524*	307-327	4300	5800	8500	108°	297°	310°	264°	276°	175°	183°	.406"	.406"	.731"	.690"	.771"	.730"	See Below	
		305-350	4000	5500	8300															
		383-406	3500	5000	8100															
Pro Series track racing high rocker ratio.	00526*	307-327	4500	6000	8800	108°	305°	313°	272°	279°	183°	188°	.424"	.412"	.763"	.721"	-	-	See Below	
		305-350	4200	5700	8600															
		383-406	3800	5300	8400															
Pro Series track racing high rocker ratio.	00528*	307-327	4500	6000	8800	108°	315°	323°	282°	291°	194°	199°	.445"	.428"	.801"	.727"	-	-	See Below	
		305-350	4200	5700	8600															
		383-406	3800	5300	8400															
CUSTOM GROUND	00003																			
CUSTOM GROUND	00050																			
CUSTOM GROUND	00060																			
CUSTOM GROUND ROLLER	00100R																			

Note: These cams use .018" intake, .020" exhaust valve lash.

The above cores are 8620 steel billet. Small base circle cams available for 383 and 406. Specify "S" after part number when ordering. Use bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84427	66290-16	68795-16	86780-16	86072-16	.100"+ long valve. High RPM
84439	66290-16	68806-16	86780-16*	86072-16	.100"+ long valve. Limited street. Super 7° retainers

## AVAILABLE CAM JOURNAL SIZES

Description	Journal Size
Stock Small Block Chevrolet	1.868"
Stock Block with Roller Bearings	1.875"
Stock Rocket Block or Stock Big Block Chevrolet	1.948"
Stock Rocket Block with Roller Bearings (50mm)	1.968"
55mm	2.165"

**Your RPM range will vary depending on your  
Cylinder Head Air Flow Data & Cubic Inches.**



# BEAST HYDRAULIC FLAT TAPPET



Non Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>TORQUE BEAST / Performance Level 2</b> Strong bottom end power. Excellent for trucks and heavy cars. Economical price. RPM Power Range: 1200 to 3800 / Redline: 5200 Plus.	01903	396 454	282H	112°	282°	292°	204°	214°	.478"	.503"	840015
<b>BAJA BEAST / Performance Level 3</b> Low to mid-range torque for daily drivability. Economical price. RPM Power Range: 1500 to 4500 / Redline: 5500 Plus.	01915	396 454	268H	112°	268°	274°	210°	216°	.478"	.481"	840015
<b>POWER BEAST / Performance Level 3</b> Delivers impressive mid-range and top-end power. Healthy sound. Economical price. RPM Power Range: 2000 to 4800 / Redline: 6200 Plus.	01904	396 454	292H	112°	292°	302°	214°	224°	.503"	.529"	840015 or 84103
<b>HOT STREET BEAST / Performance Level 4</b> Upper mid-range to top end power. High stall convertor or 4-speed. Economical price. RPM Power Range: 2500 to 5800 / Redline: 6500 Plus.	01101	396 454	278H	112°	278°	284°	220°	228°	.515"	.530"	84103
<b>CUSTOM GROUND</b> Special order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00047B	ALL CID									
<b>CUSTOM GROUND</b> Special order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00057	ALL CID									
<b>CUSTOM GROUND</b> Custom ground hydraulic flat tappet using the standard core. Call with all engine data including head flow data, valve sizes, operating power range, etc.	00101H	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
840015	66000-16	68302X2-16	87063-16		For rpm up to 6000 max. Daily street use
84103	66000-16	68340-16	87063-16	86071-16	For rpm over 6500 max.
84103RM3	66000RM3-16	68340-16	87063-16	86071-16	Rev-Max Lifter. For rpm over 6500 max.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

### Spring pressure:

68302X2-16 Seat: 1.850" @ 107 lbs / Nose: 1.350" @ 280 lbs / Coil bind: 1.250" (Machine work required).  
68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work required).

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

## ACCESSORIES

Description	See Page (s)
Rocker Arms	Pg's.146-168

Note: Rocker arms available in Aluminum & Stainless steel

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# HYDRAULIC FLAT TAPPET

Non Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

**X-TREME MILEAGE CAMS AVAILABLE!**  
CONTACT CROWER TECHNICIANS FOR MORE INFO.

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>POWER COMPU-PRO / Performance Level 2</b> These cams provide excellent low end and mid-range power and extended rpm range for spirited street and off-road driving. A perfect combination of mileage and power. Modifications should include small diameter tube headers, low restriction dual exhaust, aftermarket manifold, increased cfm carburetor and reworked or performance ignition. Increase in compression ratio to 9.5:1 is recommended for maximum output. Works well with automatic transmission or 4-speed. RPM Power Range: 1300-1500 to 4000-4200 / Redline: 5500 plus.	<b>01240</b>	402	270HDP	112°	270°	272°	210°	216°	.493"	.508"	<b>84003</b>
	<b>MTO</b>	427									<b>84001S</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the performance oriented hot street application. These cams offer an extended rpm range with emphasis on upper bottom to top end power (strong mid-range). Performance gears, headers, dual exhaust, larger than stock cfm carburetor, performance manifold and increased compression (9.5:1 to 10.5:1) are required. Works well with automatic transmission if matched with proper ring and pinion gears and/or high stall converter. RPM Power Range: 1600-1800 to 4500-4800 / Redline: 6000 plus.	<b>01241</b>	454	276HDP	112°	276°	278°	214°	218°	.518"	.520"	<b>84003</b>
		CID									<b>84001S</b>
	<b>01242</b>	402	280HDP	112°	280°	286°	218°	226°	.522"	.527"	<b>84001S</b>
	427										
<b>ULTRA-PERFORMANCE COMPU-PRO / Performance Level 4</b> The following grinds are best suited for dual purpose hot street/drag strip situations. These cams exhibit strong mid-range and top end torque and horsepower. Headers, dual exhaust, larger cfm carburetor, performance ignition and 11:1 compression are a must. Cylinder head modifications would be beneficial. Use with standard transmission or automatic with high stall converter. Low gearing a must. RPM Power Range: 2000-2200 to 6000-6200 / Redline: 6500 plus.	<b>01243</b>	454	284HDP	112°	284°	290°	224°	232°	.542"	.517"	<b>84001S</b>
		CID									<b>84103</b>
	<b>01244</b>	396	284HDP	112°	284°	290°	224°	232°	.542"	.517"	<b>84103</b>
	427										
<b>CUSTOM GROUND 4/7 Swap Firing Order</b> Special 4-7 switch firing order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00047B</b>	402	290HDP	112°	290°	298°	232°	244°	.562"	.571"	<b>84103</b>
		427									
<b>CUSTOM GROUND Pro 55</b> Special order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>01245</b>	454	311HDP	112°	311°	316°	246°	250°	.578"	.593"	<b>84103</b>
		CID									
<b>CUSTOM GROUND</b> Custom ground hydraulic flat tappet using the standard core. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00057</b>	ALL									
		CID									
<b>CUSTOM GROUND</b> Custom ground hydraulic flat tappet using the standard core. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00101H</b>	ALL									
		CID									

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84001S</b>	66000-16	68302X2-16	87063-16		For rpm up to 6000 max. Daily street use
<b>84103</b>	66000-16	68340-16	87063-16	86071-16	For rpm over 6500 max.
<b>84103RM3</b>	66000RM3-16	68340-16	87063-16	86071-16	Rev-Max Lifter. For rpm over 6500 max.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

### Spring pressure:

68302X2-16 Seat: 1.850" @ 107 lbs / Nose: 1.350" @ 280 lbs / Coil bind: 1.300" (Machine work required)  
68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work required).

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**

# HYDRAULIC FLAT TAPPET



Non Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>HI-DRAULIC HAULER / Performance Level 4</b> Lope at idle. Hot street/drag cam with strong mid-range power. RPM Power Range: 2000-2400 to 6000-6200 / Redline: 6500 Plus.	<b>01205</b>	396 427	280HDP	108°	280°	288°	220°	232°	.529"	.527"	<b>84103</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Lope at idle. Hot street/drag cam with strong mid-range power. RPM Power Range: 2000-2400 to 6000-6200 / Redline: 6500 Plus.	<b>01206</b>	454 CID	290HDP	108°	290°	302°	232°	242°	.525"	.537"	<b>84103</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Explosive mid-range torque. RPM Power Range: 3000-3400 to 6500 / Redline: 6700 Plus.	<b>01207</b>	397 CID	296HDP	108°	296°	306°	238°	244°	.532"	.530"	<b>84103</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Explosive mid-range torque. RPM Power Range: 3000-3400 to 6600 / Redline: 6800 Plus.	<b>01208</b> <b>MTO</b>	454 CID	306HDP	108°	306°	314°	246°	252°	.535"	.535"	<b>84103</b>
<b>TURBOMASTER 1</b> This cam provides excellent low end and mid-range power with mild boost (6-12 lbs). RPM Power Range: 1800 to 5000/ Redline: 6000 Plus.	<b>01978</b> <b>MTO</b>	396 427	278HT	114°	278°	260°	214°	200°	.493"	.456"	<b>840015</b>
<b>TURBOMASTER 2</b> For more boost (12 lbs plus) and higher rpm, this cam will extend your mid-range and top end power. RPM Power Range: 2200 to 6000/ Redline: 6250 Plus.	<b>01979</b> <b>MTO</b>	454 CID	290HT	114°	290°	280°	226°	212°	.510"	.490"	<b>84103</b>
<b>SUPERCHARGER 1</b> Excellent low and mid-range torque with moderate boost levels (5 to 10 lbs), this cam romps. RPM Power Range: 2400 to 6000/ Redline: 6000 Plus.	<b>01980</b> <b>MTO</b>	396 427	288HC	114°	288°	288°	228°	228°	.496"	.496"	<b>84103</b>
<b>SUPERCHARGER 2</b> A very healthy blower cam for increased boost (10 lbs plus) and higher rpm's. RPM Power Range: 2800 to 6500/ Redline: 6500 Plus.	<b>01981</b>	454 CID	304HC	114°	304°	304°	246°	246°	.536"	.536"	<b>840015</b> or <b>84103</b>
<b>CUSTOM GROUND 4/7 Swap Firing Order</b> Special order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00047B</b>	ALL CID									
<b>CUSTOM GROUND Pro 55</b> Special order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00057</b>	ALL CID									
<b>CUSTOM GROUND</b> Custom ground hydraulic flat tappet using the standard core. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00101H</b>	ALL CID									

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>840015</b>	66000-16	68302X2-16	87063-16		For rpm up to 6000 max. Daily street use
<b>84103</b>	66000-16	68340-16	87063-16	86071-16	For rpm over 6500 max.
<b>84103RM3</b>	66000RM3-16	68340-16	87063-16	86071-16	Rev-Max Lifter. For rpm over 6500 max.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

### Spring pressure:

68302X2-16 Seat: 1.850" @ 107 lbs / Nose: 1.350" @ 280 lbs / Coil bind: 1.250"  
(Machine work required).

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080"  
(Machine work required).

**IMPORTANT!** Stock big block Chevrolet single springs are designed for cams with approximately .400" lift. When stock valve springs are used with performance cams over .400" lift, coil bind and retainer to valve guide interference will occur.

**Note:** Rocker arms available in Aluminum & Stainless steel.

**Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.**



# 390 SERIES HYDRAULIC FLAT TAPPET

Non Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

X-TREME MILEAGE CAMS AVAILABLE!

CONTACT CROWER TECHNICIANS FOR MORE INFO.

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range			Lobe Sep.	Advertised Duration @ .006"		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.7/1.7		Suitable Component Kit	
			Low RPM	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust		
<b>PERFORMANCE LEVEL 2</b> Good performance street camshaft with bottom end power.	<b>01292</b> <b>MTO</b>	396	2200	5400	5900	112°	272°	286°	214°	225°	119°	133°	.285"	.303"	.485"	.515"	<b>See Below</b>	
		427	2100	5300	5800													
		454	1900	5000	5500													
		502	1850	4650	5150													
<b>PERFORMANCE LEVEL 2</b> Works well in big cubic inch engines. Mild performance and towing.	<b>01293</b> <b>MTO</b>	396	2300	5500	6000	112°	278°	294°	221°	233°	129°	142°	.297"	.315"	.505"	.536"	<b>See Below</b>	
		427	2200	5400	5900													
		454	2000	5100	5600													
		502	1900	4700	5200													
<b>PERFORMANCE LEVEL 3</b> Fair idle, excellent mid-range horsepower. Moderate performance.	<b>01294</b>	396	2400	5600	6100	112°	286°	294°	225°	233°	133°	142°	.303"	.315"	.515"	.536"	<b>See Below</b>	
		427	2300	5600	6000													
		454	2100	5200	5700													
		502	2000	4900	5400													
<b>PERFORMANCE LEVEL 3</b> Fair idle, excellent mid-range horsepower. Moderate performance	<b>01296</b>	396	2600	5800	6300	110°	294°	304°	233°	240°	142°	150°	.315"	.327"	.535"	.557"	<b>See Below</b>	
		427	2600	5700	6200													
		454	2400	5500	6000													
		502	2400	5100	5600													
<b>PERFORMANCE LEVEL 4</b> Rough idle, brutal mid-range torque and horsepower. Modifications required.	<b>01297</b>	396	2700	5900	6400	108°	304°	311°	240°	248°	150°	158°	.327"	.340"	.557"	.578"	<b>See Below</b>	
		427	2650	5850	6350													
		454	2500	5600	6100													
		502	2500	5200	5700													
<b>PERFORMANCE LEVEL 4</b> Rough idle, brutal mid-range torque and horsepower. Modifications required.	<b>01298</b> <b>MTO</b>	396	3000	6000	6550	108°	311°	312°	248°	256°	158°	163°	.340"	.360"	.578"	.612"	<b>See Below</b>	
		427	2900	5900	6400													
		454	2800	5800	6300													
		502	2800	5500	6000													
<b>CUSTOM GROUND 4/7 Swap Firing Order</b> Special order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00047B</b>		ALL CID															
<b>CUSTOM GROUND Pro 55</b> Special order camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00057</b>		ALL CID															
<b>CUSTOM GROUND</b> Custom ground hydraulic flat tappet using the standard core. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00101H</b>		ALL CID															

Note: These cams use .000" intake and exhaust valve lash.

Part numbers no longer listed may be available as custom grinds.

Your RPM range will vary depending on your  
Cylinder Head Air Flow Data & Cubic Inches.

Note: "MTO" denotes that this item is not usually stocked but is  
Made To Order in 2-3 days.

### ENGINEERED COMPONENT KITS \*Select kit to match your rpm range

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84001S</b>	66000-16	68302X2-16	87063-16		For rpm up to 6000 max. Daily street use
<b>84103</b>	66000-16	68340-16	87063-16	86071-16	For rpm over 6500 max.
<b>84103RM3</b>	66000RM3-16	68340-16	87063-16	86071-16	Rev-Max Lifter. For rpm over 6500 max.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

#### Spring pressure:

68302X2-16 Seat: 1.850" @ 107 lbs / Nose: 1.350" @ 280 lbs / Coil bind: 1.250" (Machine work required).

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work required).



Your RPM range will vary depending on your  
Cylinder Head Air Flow Data & Cubic Inches.



# HYDRAULIC ROLLER TAPPET



Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Duration @ .200"		Gross Lift 1.7 / 1.7		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
bottom and mid torque, daily driver, nitrous, blower.	<b>01401</b>	396	2250	3450	5000	5500	213HR222	112°	276°	282°	213°	222°	120°	128°	.512"	.540"	<b>84551</b> or <b>84551LM</b>
	Early model	402	2250	3450	5000	5500											
	<b>01401LM</b>	427	2150	3345	4900	5400											
	LM is step nose	454	1950	3145	4700	5200											
		502	1850	3045	4600	5100											
Broad power band, excellent hot street. Needs converter.	<b>01402</b>	396	2500	3700	5300	5800	222HR229	110°	278°	286°	222°	229°	128°	137°	.540"	.563"	<b>84551</b> or <b>84551LM</b>
	Early model	402	2500	3700	5300	5800											
	<b>01402LM</b>	427	2400	3600	5200	5700											
	LM is step nose	454	2300	3400	5000	5500											
		502	2200	3300	4900	5400											
Bracket special, mid to top range power. Excellent in 454 & 502.	<b>01403</b>	396	2750	3950	5550	6050	229HR237	110°	287°	296°	229°	237°	137°	145°	.563"	.586"	<b>84551</b> or <b>84551LM</b>
	Early model	402	2750	3950	5550	6050											
	<b>01403LM</b>	427	2650	3850	5450	5950											
	LM is step nose	454	2450	3650	5250	5750											
		502	2330	3520	5100	5650											
<b>Performance Level 3</b> Fair idle, excellent mid-range horsepower. Moderate performance.	<b>01404</b>	396	3050	4200	5750	6300	236HR245	110°	292°	303°	236°	245°	145°	154°	.586"	.612"	<b>84551</b> or <b>84551LM</b>
	Early model	402	3050	4200	5750	6300											
	<b>01404LM</b>	427	3000	4100	5700	6200											
	LM is step nose	454	2750	3900	5500	5950											
		502	2700	3700	5400	5800											
<b>Performance Level 4</b> Rough idle, brutal mid-range torque and horsepower. Modifications required.	<b>01405</b>	396	3300	4450	6050	6500	245HR253	110°	303°	311°	245°	253°	154°	162°	.612"	.636"	<b>84551</b> or <b>84551LM</b>
	Early model	402	3300	4450	6050	6500											
	<b>01405LM</b>	427	3200	4350	5900	6450											
	LM is step nose	454	3000	4150	5650	6200											
		502	2900	4000	5525	6100											
<b>Performance Level 4</b> Rough idle, explosive mid-range to top end horsepower. Modifications required.	<b>01406 *</b>	396	3570	4700	6100	6500	253HR260	110°	309°	318°	253°	260°	162°	171°	.636"	.659"	<b>84551</b> or <b>84551LM</b>
	Early model	402	3570	4700	6100	6000											
	<b>01406LM</b>	427	3450	4570	6000	6500											
	LM is step nose	454	3240	4390	5780	6300											
		502	3120	4270	5675	6170											
<b>CUSTOM GROUND</b> Special order hydraulic roller lifter cam ground to your specs on cast steel cam core using stock cast iron distributor gear.	<b>00003</b>	ALL	CID														
<b>CUSTOM GROUND</b> Custom order steel billet roller camshaft. Call our technical support staff for personalized camshaft assistance.	<b>00051</b>	ALL	CID														
<b>CUSTOM GROUND</b> Special order camshaft using a custom core or 4-7-3-2 firing order or any special configuration ground to your specifications.	<b>00060</b>	ALL	CID														
<b>CUSTOM GROUND</b> Custom ground hydraulic roller using a cast steel core. Call our technical support staff for personalized camshaft assistance.	<b>00101HR</b>	ALL	CID														

**Note:** The above cams are ground on cast steel cores. Crower recommends using the factory stock melanite or bronze distributor gear. If 8620 steel billet core with integral cast iron gear is desired, specify part number 00050.

**Note:** The RPM power ranges listed above are approximations, your RPM ranges may vary depending on engine setup (cylinder head flow, etc.). "LM" cores fit 454-502 cid 1994-up only (w/step nose).

Gen VI camshafts are different and require 8620 steel billet core with cast iron gear (#00050).

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Plug	Pushrods	Remarks
<b>84551</b>	66321-16	68340-16	87063M-16	86086	<b>Custom Push Rods Available</b>	For 9.800" deck.
<b>84551H</b>	66321H-16	68340-16	87063M-16	86086		HIPPO Lifter
<b>84551LM</b>	66331-16	68340-16	87063M-16			For Late Model block.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



# ORIGINAL SERIES MECHANICAL FLAT TAPPET

Non Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / Performance Level 3</b> High torque mid-range and top end grind. RPM Power Range: 2000 to 6500 / Redline: 7000 plus.	01320	396 427	282F	114°	282°	292°	238°	242°	.510"	.515"	84302
<b>PRO-STREET / Performance Level 3</b> High torque mid-range and top end grind. RPM Power Range: 2000 to 6500 / Redline: 7000 plus.	01321	454 CID	294F	114°	294°	300°	244°	246°	.517"	.532"	84302
<b>PRO-STREET / Performance Level 4</b> High revving, super mid to top end power. RPM Power Range: 3000 to 7000 / Redline: 7500 plus.	01322	396 427	300F	114°	300°	310°	246°	254°	.530"	.558"	84302
<b>PRO-STREET / Performance Level 4</b> High revving, super mid to top end power. RPM Power Range: 3000 to 7500 / Redline: 7750 plus.	01323	454 CID	310F	114°	310°	318°	252°	258°	.554"	.571"	84302
<b>CUSTOM CAM</b> Special order 4-7 switch firing order. Call with all engine data including head flow data, valve sizes, operating power range, etc.	00047B	ALL CID									
<b>CUSTOM GROUND SOLID Pro 55</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00057	ALL CID									
<b>CUSTOM GROUND SOLID</b> Special order camshaft using a custom core or 4-7-3-2 firing order or any special configuration ground to your specifications.	00060	ALL CID									
<b>CUSTOM GROUND SOLID</b> Custom mechanical flat tappet using the standard core, ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00101M	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84302	66900-16	68340-16	87063M-16	86071-16	7000 plus rpm. Street applications.
84302LW980	66900LW980-16	68340-16	87063M-16	86071-16	Light Weight Lifter

### Spring pressure:

68340-16 Seat: 1.900" @ 119 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work required).

**Note:** If engine is equipped with exhaust valve rotators see rotation eliminator cups.

**Note:** For proper oiling on 1965 and 1966 engines, rear cam bearing must be grooved. Specify when ordering cam.

**Note:** If exceeding 7500 rpm, high pressure springs and titanium retainers may be required.

**Note:** Steel billet hardface cams are available from Crower on a special order basis. Contact Crower for information.

## AVAILABLE CAM JOURNAL SIZES

Description	Size
Stock Small Block Chevrolet	1.868"
Stock Block with Roller Bearings	1.875"
Stock Rocket Block or Stock Big Block Chevrolet	1.948"
Stock Rocket Block with Roller Bearings (50mm)	1.968"
55mm	2.165"

**IMPORTANT!** Stock big block Chevrolet single springs are designed for cams with approximately .400" lift. When stock valve springs are used with performance cams over .400" lift, coil bind and retainer to valve guide interference may occur. If using 11/32 valve stem dia., must specify for different retainers/keepers.

To order the above cores specify #00060. 55mm is available on special order basis only (#00060). Go from 50mm to 55mm without any block machining by using babbitt bearing #85522. This bearing is coated.

### Special Firing Orders:

1-8-7-3-6-5-4-2 (4/7 Switch - A). Specify #00060 when ordering.

1-8-7-2-6-5-4-3 (LS1/Tri Y Header - C). Specify #00060 when ordering.

# ORIGINAL SERIES MECHANICAL FLAT TAPPET



Non Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4-5</b> High torque, short oval track cam. RPM Power Range: 2500 to 6500 / Redline: 7000 plus.	01351	396 427	288FDP	107°	288°	292°	252°	262°	.601"	.620"	84302 or 84302X980
<b>COMPU-PRO / Performance Level 4-5</b> Short oval grind with super torque. RPM Power Range: 3500 to 7500 / Redline: 8500 plus.	01352	396 427	298FDP	107°	298°	302°	258°	264°	.619"	.627"	84302X980
<b>COMPU-PRO / Performance Level 4-5</b> Superb extended power band for fast 3/8 and 1/2 mile ovals. RPM Power Range: 4000 to 8000 / Redline: 8500 plus.	01353	454 CID	310FDP	107°	310°	316°	276°	282°	.653"	.661"	84302X980
<b>COMPU-PRO / Performance Level 4-5</b> Upper mid-range and top end profile for added punch above 7000 rpm / RPM Power Range: 4500 to 8000 / Redline: 8500 plus.	01354	454 CID	320FDP	110°	320°	326°	284°	292°	.682"	.689"	84302X980
<b>COMPU-PRO / Performance Level 4-5</b> Great high torque, good mid-range oval track grind. RPM Power Range: 3000 to 7000 / Redline: 8000 plus.	01355	454 502	292FDP	107°	292°	300°	254°	260°	.595"	.622"	84302X980
<b>COMPU-PRO / Performance Level 4-5</b> Superior upper bottom, mid-range and top end power. RPM Power Range: 3750 to 7750 / Redline: 8500 plus.	01356	454 502	304FDP	107°	304°	310°	262°	266°	.626"	.634"	84302X980
<b>CUSTOM CAM</b> Special order 4-7 switch firing order. Call with all engine data including head flow data, valve sizes, operating power range, etc.	00047B	ALL CID									
<b>CUSTOM GROUND SOLID Pro 55</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00057	ALL CID									
<b>CUSTOM GROUND SOLID</b> Special order camshaft using a custom core or 4-7-3-2 firing order or any special configuration ground to your specifications.	00060	ALL CID									
<b>CUSTOM GROUND SOLID</b> Custom hydraulic flat tappet using the standard core ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00101	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84302	66900-16	68340-16	87063M-16	86071-16	7000 plus rpm. Street applications.
84301LW980	66900LW980-16	68385X2-16	87053-16	86071-16	Light Weight lifter. Race only.

### Spring pressure:

68340-16 Seat: 1.900" @ 119 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080"  
68385X2-16 Seat: 1.950" @ 144 lbs / Nose: 1.300" @ 422 lbs / Coil bind: 1.100"  
(Machine work required).

**Note:** If engine is equipped with exhaust valve rotators see rotation eliminator cups.

**Note:** For proper oiling on 1965 and 1966 engines, rear cam bearing must be grooved. Specify when ordering cam.

### AVAILABLE CAM JOURNAL SIZES

Description	Size
Stock Rocket Block or Stock Big Block Chevrolet	1.948"
Stock Rocket Block with Roller Bearings (50mm)	1.968"
55mm	2.165"

**IMPORTANT!** Stock big block Chevrolet single springs are designed for cams with approximately .400" lift. When stock valve springs are used with performance cams over .400" lift, coil bind and retainer to valve guide interference may occur. If using 11/32 valve stem dia., must specify for different retainers/keepers.

To order the above cores specify #00060. 55mm is available on special order basis only (#00060). Go from 50mm to 55mm without any block machining by using babbitt bearing #85522. This bearing is coated.

#### Special Firing Orders:

1-8-7-3-6-5-4-2 (4/7 Switch - A). Specify #00060 when ordering.  
1-8-7-2-6-5-4-3 (LS1/Tri Y Header - C). Specify #00060 when ordering.



# 220 SERIES (HIGH RPM) MECHANICAL FLAT TAPPET

Non Roller 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Lobe Sep.	Advertised		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.7 / 1.7		Gross Lift 1.8 / 1.7	
				Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
<b>Performance Level 3</b> Rough idle, torque, smooth pwerband. 3000 stall speed or 4 spd.	<b>01330</b>	396 427 454 502	108°	276°	285°	242°	251°	147°	156°	.335"	.345"	.570"	.587"	.603"	.587"
<b>Performance Level 3</b> Early mid range power, great marine, bracket racing.	<b>01332</b>	396 427 454 502	108°	285°	296°	251°	261°	156°	165°	.345"	.356"	.587"	.605"	.621"	.605"
<b>Performance Level 3</b> Increased mid range ear splitting, neck whipping power. High compression.	<b>01334</b> <b>MTO</b>	396 427 454 502	108°	293°	303°	259°	269°	165°	173°	.356"	.365"	.605"	.621"	.640"	.621"
<b>Performance Level 4</b> High torque drag, high rev, top end.	<b>01336</b> <b>MTO</b>	396 427 454 502	110°	301°	308°	267°	276°	171°	179°	.360"	.372"	.612"	.632"	.648"	.632"
<b>CUSTOM CAM</b> Special order 4-7 switch firing order. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00047</b>	ALL CID													
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00057</b>	ALL CID													

Note: These cams use .018" intake, .020" exhaust valve lash.

Full ball nose, longer wearing pattern, more contact with the lifter.

**Note:** If running .874" lifter bores, use # **66915-16** or **66915X980-16**.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84302X980</b>	66900X980-16	68340-16	87063M-16	86071-16	7000 plus rpm. Street applications.
<b>84302LW980</b>	66900LW980-16	68340-16	87063M-16	86071-16	Light Weight Lifter
<b>84301X980</b>	66900X980-16	68385X2-16	87053-16	86071-16	Race only.

### Spring pressure:

68340-16 Seat: 1.900" @ 119 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work required).

68385X2-16 Seat: 1.950" @ 144 lbs / Nose: 1.300" @ 422 lbs / Coil bind: 1.100" (Machine work required).

**Note:** If engine is equipped with exhaust valve rotators see rotation eliminator cups.

**Note:** For proper oiling on 1965 and 1966 engines, rear cam bearing must be grooved. Specify when ordering cam.

**Note:** If exceeding 7500 rpm, high pressure springs and titanium retainers may be required.

**Note:** Steel billet hardface cams are available from Crowder on a special order basis. Contact Crowder for information.

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>

**Note:** Rocker arms available in Aluminum & Stainless steel

**IMPORTANT!** Stock big block Chevrolet single springs are designed for cams with approximately .400" lift. When stock valve springs are used with performance cams over .400" lift, coil bind and retainer to valve guide interference may occur. If using 11/32 valve stem dia., must specify for different retainers/keepers.



**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



# ORIGINAL SERIES MECHANICAL ROLLER TAPPET



Mechanical 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> Intended for performance oriented hot-street applications. RPM Power Range: 2500 to 6000 / Redline: 6750 plus.	<b>01475</b>	427 454	286R	112°	286°	290°	242°	250°	.581"	.573"	<b>84511M</b>
<b>STREET ROLLER / Performance Level 4</b> Intended for performance oriented hot-street applications. RPM Power Range: 3000 to 7000 / Redline: 7000 plus.	<b>01476</b>	427 454	290R	112°	290°	296°	252°	254°	.585"	.578"	<b>84511M</b>
<b>STREET ROLLER / Performance Level 4</b> Intended for performance oriented hot-street applications. RPM Power Range: 3200 to 7000 / Redline: 7250 plus.	<b>01477</b>	427 454	296R	112°	296°	300°	254°	260°	.580"	.587"	<b>84511M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Strong mid-range design for bracket and marine use.	<b>01485</b>	427 454	296R	107°	296°	302°	256°	266°	.641"	.636"	<b>84511M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Strong mid-range design for bracket and marine use. RPM Power Range: 3000 to 7000 / Redline: 7500 plus.	<b>01486</b>	427 454	290R	107°	290°	306°	260°	270°	.651"	.677"	<b>84511M</b>
<b>ULTRA-ACTION / Performance Level 5</b> High torque and mid-range profile for bracket and marine applications. RPM Power Range: 4500 to 8000 / Redline: 8400 plus.	<b>01487</b>	427 454	306R	107°	306°	314°	270°	276°	.678"	.661"	<b>84512S</b>
<b>ULTRA-ACTION / Performance Level 5</b> Fast 3/8 and 1/2 mile oval track grind. RPM Power Range: 4800 to 8300 / Redline: 8700 plus.	<b>01488</b> <b>MTO</b>	427 454	309R	108°	309°	316°	276°	280°	.728"	.716"	<b>84512S</b>
<b>ULTRA-ACTION / Performance Level 5</b> Big cid profile for 3/8 and 1/2 mile oval. RPM Power Range: 5300 to 8800 / Redline: 9000 plus.	<b>01489</b>	427 454	318R	108°	318°	326°	284°	288°	.758"	.745"	<b>84512S</b>
<b>ULTRA-ACTION / Performance Level 5</b> Super competition profile. RPM Power Range: Varies on valve train, heads, manifold, etc...	<b>01490</b> <b>MTO</b>	427 454	321R	110°	321°	330°	288°	290°	.777"	.731"	<b>CALL CROWER</b>
<b>ULTRA-ACTION / Performance Level 5</b> Super competition profile. RPM Power Range: Varies on valve train, heads, manifold, etc...	<b>01491</b>	427 454	328R	110°	328°	336°	286°	292°	.801"	.780"	<b>CALL CROWER</b>
<b>ULTRA-ACTION / Performance Level 5</b> A very radical profile for competition use only. RPM Power Range: Varies on valve train, heads, manifold, etc...	<b>01492</b>	427 454	336R	112°	336°	340°	294°	300°	.779"	.717"	<b>CALL CROWER</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00003</b>	ALL CID									
<b>CUSTOM GROUND ROLLER</b> Custom order steel billet roller camshaft ground to your specifications. Available in 50, 55, 60mm & standard bearing sizes. Also available in a lightweight design, gun drilled core for racing purposes only.	<b>00051</b>	ALL CID									
<b>CUSTOM GROUND ROLLER</b> Special order camshaft using a custom core with LS firing order (4-7-3-2) or any special configuration ground to your specifications.	<b>00060</b>	ALL CID									
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00101R</b>	ALL CID									

Note: These cams use .026" intake, .028" exhaust valve lash.

The above cores are 8620 steel billet. Use bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Keepers	Plug	Remarks
<b>84511M</b>	66291-16	68804H-16	87055-16	86071-16	86111-16	86086	RPM up to 7500 max
<b>84512S</b>	66291-16	68365-16	87056-16	86071T-16	86111-16	86086	For rpm up to 8000 plus.

**Note:** "MTO" denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

### Spring pressure:

68365-16 Seat: 1.925" @ 259 lbs / Nose: 1.300" @ 654 lbs / Coil bind: 1.230"  
68804H-16 Seat: 1.950" @ 235 lbs / Nose: 1.250" @ 582 lbs / Coil bind: 1.100" (1.550" O.D.)  
(Machine work required).

**Optional springs: 68803H-16, 68806-16, 68547-16, 68548-16**

**CROWER recommends using HIPPO or Enduramax roller lifters in high RPM and high spring pressure applications.**

**Note:** If exceeding 8000 rpm, high pressure springs and titanium retainers may be required. Contact Crower.

**Note:** Special cam cores available for Torrington bearing applications.

**Note:** Rocker arms available in Aluminum & Stainless steel. (see page 151)



# 230 SERIES (HIGH RPM) MECHANICAL ROLLER TAPPET

Mechanical 1965-1996

366 396 402 427 454 502 & Rodeck V8 Big Block

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised		Duration @ .050"		Duration @ .200"		Lobe Lift		Gross Lift 1.7 / 1.7		Gross Lift 1.8 / 1.7		
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Performance Level 5</b> RPM Power Range: Varies on valve train, heads, manifold, etc...*	01521	396	3300	4800	7000	7500+	110°	295°	307°	262°	273°	173°	181°	.402"	.402"	.683"	.683"	.723"	.683"	
			427	3100	4600	6800														7300+
			454	2800	4300	6500														7000+
			502	2550	4050	6000														6500+
<b>Performance Level 5</b> RPM Power Range: Varies on valve train, heads, manifold, etc...*	01522	396	3300	4800	7000	7500+	110°	301°	313°	268°	279°	179°	188°	.415"	.412"	.706"	.700"	.747"	.700"	
			427	3100	4600	6800														7300+
			454	2800	4300	6500														7000+
			502	2550	4050	6000														6500+
<b>Performance Level 5</b> RPM Power Range: Varies on valve train, heads, manifold, etc...*	01523	396	3800	5300	7400	7900+	110°	311°	321°	278°	287°	190°	195°	.437"	.428"	.743"	.728"	.786"	.728"	
			427	3600	5100	7200														7700+
			454	3300	4800	6900														7400+
			502	3100	4600	6400														6900+
<b>Performance Level 5</b> RPM Power Range: Varies on valve train, heads, manifold, etc...*	01524 <b>MTO</b>	396	3950	5450	7600	8100+	112°	315°	323°	280°	289°	194°	199°	.445"	.421"	.757"	.716"	.801"	.716"	
			427	3750	5250	7400														7900+
			454	3450	4950	7100														7600+
			502	3400	4900	6600														7100+
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00003	All CID																		
<b>CUSTOM GROUND ROLLER</b> Custom order steel billet roller camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00051	All CID																		
<b>CUSTOM GROUND ROLLER</b> Special order camshaft using a custom core or 4-7-3-2 firing order or any special configuration ground to your specifications.	00060	All CID																		
<b>CUSTOM GROUND ROLLER</b> Custom ground roller, using a 8620 steel billet core, to your specifications. Call our technical support staff for personalized camshaft assistance.	00101R	All CID																		

\*Please provide cylinder head fl w numbers for accurate RPM Power Range

Note: These cams use .018" intake, .020" exhaust valve lash.

The above cores are 8620 steel billet. Use bronze distributor gear.

## ENGINEERED COMPONENT KITS \*Select kit to match your rpm range

Part No.	Lifters	Springs	Retainers	Plug	Remarks
84517S	66291-16	68806-16	86780-16	86086	Requires Super 7° keepers.
84516S	66291-16	68860-16	86780-16	86086	For rpm up to 8000 max. Requires Super 7° keepers.
84505	66291-16	68547-16	86069-16	86086	

To order the above cores specify #00003. 60mm is available on special order basis only (#00060).

### Special Firing Orders:

- 1-8-7-3-6-5-4-2 (4/7 Switch - A).
- Specify #00003 when ordering.
- 1-8-7-2-6-5-4-3 (LS1/Tri Y Header - C).
- Specify #00060 when ordering.

### Spring pressure:

68806-16 Seat: 2.000" @ 279 lbs / Nose: 1.250" @ 733 lbs / Coil bind: 1.160"  
68860-16 Seat: 1.950" @ 287 lbs / Nose: 1.100" @ 864 lbs / Coil bind: 1.010"

## AVAILABLE CAM JOURNAL SIZES

Description	Size
Pro Stock Roller Bearings / Babbit Bearing	2.124"
Large Roller Bearing	2.166"
Pro Stock Oversize	66mm

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ACCESSORIES

Description	See Page (s)
Rocker Arms	Pg's.146-168

Note: Rocker arms available in Aluminum & Stainless steel

**HIPPO Note:** For severe duty roller lifter applications, we highly recommend using our roller lifters with Hippo "High Pressure Pin Oiling". Specify "H" in the part number.

Ex. 66290X874H-16

Shaft Rockers are available. Refer to the new section in Valve Train area. (See Page 164)  
Titanium valves are mandatory on all ratios over 1.7:1.

# 4.6L/5.4L SOHC MODULAR (2 VALVE) MECHANICAL FLAT TAPPET



Low Lift Design

1994-1998 (Early Model Cylinder Head)

Description	Part Number	Lobe Sep	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift (1.8)		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (1994-98)</b>	<b>Stock</b>		233° 242°	Lobe Valve	242° 254°	186° 202°	Lobe Valve	191° 207°	.256" .259"	.461" .466"	<b>Stock</b>
<b>STAGE 1</b> Hot street profile. Emphasis on mid range. Spring recommended. RPM Range: 1500 to 6000+ on 4.6L, 5.4L will be lower	<b>62811-2</b> <b>MTO</b>	114°	252° 266°	Lobe Valve	256° 270°	204° 220°	Lobe Valve	208° 224°	.296" .296"	.532" .532"	<b>84706</b> <b>84707</b>
<b>STAGE 2</b> Designed specifically for supercharger applications for street use. RPM Range: 1750 to 6500+ on 4.6L, 5.4L will be lower	<b>62812-2</b> <b>MTO</b>	114°	258° 272°	Lobe Valve	258° 272°	212° 230°	Lobe Valve	212° 230°	.296" .296"	.532" .532"	<b>84706</b> <b>84707</b>
<b>STAGE 3</b> Designed specifically for supercharger applications for street use. RPM Range: 1750 to 6500+ on 4.6L, 5.4L will be lower	<b>62813-2</b> <b>MTO</b>	114°	258° 272°	Lobe Valve	258° 272°	212° 230°	Lobe Valve	212° 230°			
<b>CUSTOM GROUND 4.6L/5.4L CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles also available.	<b>00080-2</b>										

Note: These cams use .000" intake and exhaust valve lash.

**NOTE: These cams require aftermarket cam bolt kit #86053-2. The factory bolt WILL NOT work.**

The above cams are ground on factory 114 Lobe Sep.. Valve timing events are available online at: [www.crower.com](http://www.crower.com)

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84706</b>	68193-16	87025-16	High pressure spring, steel retainer for street and high mileage use.
<b>84707</b>	68193-16	87025T-16	High open pressure spring, titanium retainer for limited street & race.

## NEW HIGH RPM VALVE SPRING

### Spring pressure:

68193-16 Seat: 1.720" @ 124 lbs / Nose: 1.100" @ 257 lbs / Coil bind: 1.035"  
(No machine work required).

## ACCESSORIES

Part No.	Remarks
<b>86052</b>	Cam Gear Set
<b>86053-2</b>	Aftermarket Cam Bolt Kit (set 2)
<b>97434I-8</b>	Stainless steel valves - 44.5 mm head dia (8 only int)
<b>97434E-8</b>	Stainless steel valves - 34 mm head dia (8 only exh)
<b>97432I-8</b>	Stainless steel valves - 46.83 mm head - M-6049-D46 Cyl Head
<b>97435E-8</b>	Stainless steel valves - 36 mm head - M-6049-D46 Cylinder Head

**Note:** When ordering valves, be sure to specify one set int and one set exh.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

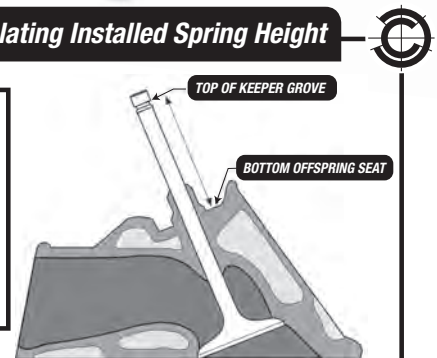
### STAINLESS STEEL VALVES

Made from the highest grade stainless steel, this new Crower valve is a must for high horsepower, high boost and high rpm applications. The exclusive "Pro Flo" head design delivers a significant increase in cylinder head flow rates, while the tip area is hardened to RC50, including past the critical keeper groove area for added strength. Fully CNC machined and swirl polished to insure that you will get the best performance valve available on the market. Choose from standard and 1mm oversize. Titanium valves also available.



**Diagram 1. Calculating Installed Spring Height**

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.



# 4.6L/5.4L SOHC MODULAR (2 VALVE) HYDRAULIC ROLLER TAPPET

High Lift Design

1999-up (Late Model Cylinder Head)

Description	Part Number	Lobe Sep	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift (1.8)		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (1999-up)</b>	<b>Stock</b>		233° 242°	Lobe Valve	239° 252°	184° 200°	Lobe Valve	191° 209°	.280" .295"	.504" .531"	<b>Stock</b>
<b>STAGE 1</b> Excellent for stock replacement. No other modifications required. RPM Range: Idle to 5500+ on 4.6L, 5.4L will be lower.	<b>62800-2</b>	114°	246° 260°	Lobe Valve	250° 264°	200° 216°	Lobe Valve	204° 220°	.300" .305"	.540" .549"	<b>Stock</b>
<b>STAGE 2</b> Hot street profile. Emphasis on mid range. Spring recommended. RPM Range: 1250 to 6000+ on 4.6L, 5.4L will be lower.	<b>62801-2</b>	114°	254° 268°	Lobe Valve	258° 272°	208° 224°	Lobe Valve	212° 228°	.311" .317"	.559" .570"	<b>84706</b>
<b>STAGE 2</b> Designed specifically for supercharger applications for street use. RPM Range: 1500 to 6500+ on 4.6L, 5.4L will be lower.	<b>62802-2</b>	114°	262° 276°	Lobe Valve	262° 276°	216° 234°	Lobe Valve	216° 234°	.322" .322"	.581" .581"	<b>84706</b> <b>84707</b>
<b>STAGE 3</b> Street/strip profile. Emphasis on top end power. Spring required. RPM Range: 1750 to 6750+ on 4.6L, 5.4L will be lower.	<b>62803-2</b>	114°	266° 280°	Lobe Valve	270° 284°	220° 238°	Lobe Valve	224° 242°	.328" .334"	.590" .601"	<b>84706</b> <b>84707</b>
<b>STAGE 3</b> Designed specifically for supercharger applications for street/strip. RPM Range: 2000 to 6900+ on 4.6L, 5.4L will be lower.	<b>62804-2</b>	114°	274° 288°	Lobe Valve	274° 288°	228° 246°	Lobe Valve	228° 246°	.340" .340"	.612" .612"	<b>84706</b> <b>84707</b>
<b>STAGE 4</b> Race grind. ECU mods and tuning required. Rough idle is common. RPM Range: 2250 to 7000+ on 4.6L, 5.4L will be lower.	<b>62805-2</b> <b>MTO</b>	114°	274° 288°	Lobe Valve	278° 292°	228° 246°	Lobe Valve	232° 250°	.340" .345"	.612" .621"	<b>84706</b> <b>84707</b>
<b>CUSTOM GROUND 4.6L/5.4L CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles also available.	<b>00080-2</b>										

Note: These cams use .000" intake and exhaust valve lash.

**NOTE: These cams require aftermarket cam bolt kit #86053-2. The factory bolt WILL NOT work.**

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84706</b>	68193-16	87025-16	High pressure spring, steel retainer for street and high mileage use.
<b>84707</b>	68193-16	87025T-16	High open pressure spring, titanium retainer for limited street & race.

### Spring pressure:

68193-16 Seat: 1.720" @ 124 lbs / Nose: 1.100" @ 257 lbs / Coil bind: 1.035"  
(No machine work required).

## ACCESSORIES

Part No.	Remarks
<b>86053-2</b>	Aftermarket Cam Bolt Kit (set 2)
<b>97434I-8</b>	Stainless steel valves - 44.5 mm head dia (8 only int)
<b>97434E-8</b>	Stainless steel valves - 34 mm head dia (8 only exh)

**Note:** When ordering valves, be sure to specify one set int and one set exh.

### Ford Timing Gears Part Numbers:

F8AE-6256-BA (Left Hand Gear)  
F8AE-6256-AA (Right Hand Gear)

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

### STAINLESS STEEL VALVES

Made from the highest grade stainless steel, this new Crower valve is a must for high horsepower, high boost and high rpm applications. The exclusive "Pro Flo" head design delivers a significant increase in cylinder head flow figures, while the tip area is hardened to RC50, including past the critical keeper groove area for added strength. Fully CNC machined and swirl polished to insure that you will get the best performance valve available on the market. Choose from standard and 1mm oversize. Titanium valves also available.





# 4.6L/5.4L SOHC MODULAR (3 VALVE) HYDRAULIC ROLLER TAPPET



2005 - up

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift (1.8)		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (1999-up)</b>	<b>Stock</b>		232° 246°	Lobe 260° Valve 274°	175° 193°	Lobe 198° Valve 216°	.216" .216"	.432" .432"	<b>Stock</b>		
<b>STAGE 1</b> Excellent for stock replacement. Programming recommended. RPM Range: 1000 to 5900+ RPM	<b>62830-2</b>	114°	245° 261°	Lobe 262° Valve 278°	188° 208°	Lobe 200° Valve 222°	.240" .234"	.480" .468"	<b>84708</b>		
<b>STAGE 2</b> Hot Street Profile with explosive mid-range torque. Supercharged/Nitrous. RPM Range: 1200 to 6200+ RPM	<b>62831-2</b>	114°	258° 274°	Lobe 268° Valve 284°	200° 220°	Lobe 216° Valve 236°	.246" .246"	.492" .492"	<b>84708</b>		
<b>STAGE 3</b> Street/Strip profile. Mid/Top end cam. 2500 stall rec. RPM Range: 1200 to 6400+ RPM	<b>62832-2</b> <b>MTO</b>	115°	262° 276°	Lobe 262° Valve 276°	216° 234°	Lobe 216° Valve 234°	.246" .251"	.490" .502"	<b>84708</b>		
<b>CUSTOM GROUND 4.6L/5.4L CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles also available.	<b>00082-2</b>										

## ENGINEERED COMPONENT KITS

Note: These cams use .000" intake and exhaust valve lash.

Part No.	Springs	Retainers	Remarks
<b>84709</b>	68193-24	87023-24	Steel Retainer, for daily street use.
<b>84708</b>	68193-24	87023T-24	High pressure spring, titanium retainer.

### Spring pressure:

68193-24 Seat: 1.660" @ 130 lbs / Nose: 1.100" @ 257 lbs / Coil bind: 1.035"  
(No machine work required).

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.







# 4.6L/5.4L SOHC MODULAR (4 VALVE) HYDRAULIC ROLLER TAPPET

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift (1.8)		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS</b>	<b>Stock</b>		220° Lobe 232° Valve	228° 240°	172° Lobe 186° Valve	178° 194°	.218" .217"	.392" .390"		<b>Stock</b>	
<b>STAGE 1</b> Excellent for stock replacement. No other modifications required. Stock Idle to 6800 RPM.	<b>62820-4 MTO</b>	114°	222° Lobe 234° Valve	232° 244°	176° Lobe 192° Valve	188° 204°	.234" .239"	.421" .430"		<b>Stock</b>	
<b>STAGE 2</b> Hot street profile. Emphasis on mid range. Spring recommended. Slight Lobe at Idle to 7000 RPM.	<b>62821-4</b>	114°	238° Lobe 250° Valve	246° 258°	194° Lobe 210° Valve	200° 216°	.262" .263"	.472" .473"		<b>84710 84711</b>	
<b>STAGE 2</b> Designed specifically for supercharger applications for street use. Slight Lobe at Idle to 7250 RPM.	<b>62822-4</b>	114°	252° Lobe 264° Valve	252° 264°	206° Lobe 222° Valve	206° 222°	.264" .264"	.475" .475"		<b>84710 84711</b>	
<b>STAGE 3</b> Street/strip profile. Emphasis on top end power. Spring required. Rough Idle to 7500 RPM.	<b>62823-4 MTO</b>	114°	258° Lobe 270° Valve	262° 274°	212° Lobe 228° Valve	216° 232°	.269" .269"	.484" .484"		<b>84710 84711</b>	
<b>STAGE 3</b> Designed specifically for supercharger applications for Race. Rough Idle to 7750+ RPM.	<b>62824-4</b>	114°	258° Lobe 270° Valve	258° 270°	220° Lobe 236° Valve	228° 244°	.269" .269"	.484" .484"		<b>84710 84711</b>	
<b>STAGE 4</b> Race grind. ECU mods and tuning required. Rough idle is expected. Rough Idle to 7800+ RPM.	<b>62825-4</b>	114°	266° Lobe 278° Valve	274° 286°	220° Lobe 236° Valve	228° 244°	.270" .275"	.486" .495"		<b>84710 84711</b>	
<b>CUSTOM GROUND 4.6L/5.4L CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles also available.	<b>00084-4</b>										

Note: These cams use .000" intake and exhaust valve lash.

**NOTE: These cams require aftermarket cam bolt kit #86053-2. The factory bolt WILL NOT work.**

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84711</b>	68194-32	87026-32	High pressure spring and steel retainer kit. Daily street use.
<b>84711X2</b>	68194X2-32	87020-32	High pressure spring and steel retainer kit. Daily street use.
<b>84711X3</b>	68193-16 68194X2-16	87024-16 87020-16	<b>For GT500 Head</b> - Intake & Exhaust require different valve spring assembly.
<b>84710</b>	68194-32	87026T-32	High pressure spring and titanium retainer kit. Limited street.
<b>84710X2</b>	68194X2-32	87020T-32	High pressure spring and titanium retainer kit. Limited street.

### Spring pressure:

68194-32 Seat: 1.420" @ 100 lbs / Nose: 0.910" @ 244 lbs / Coil bind: 0.850"

(No machine work required).

68194X2-32 Seat: 1.470" @ 108 lbs / Nose: 0.970" @ 240 lbs / Coil bind: 0.855"

(No machine work required).

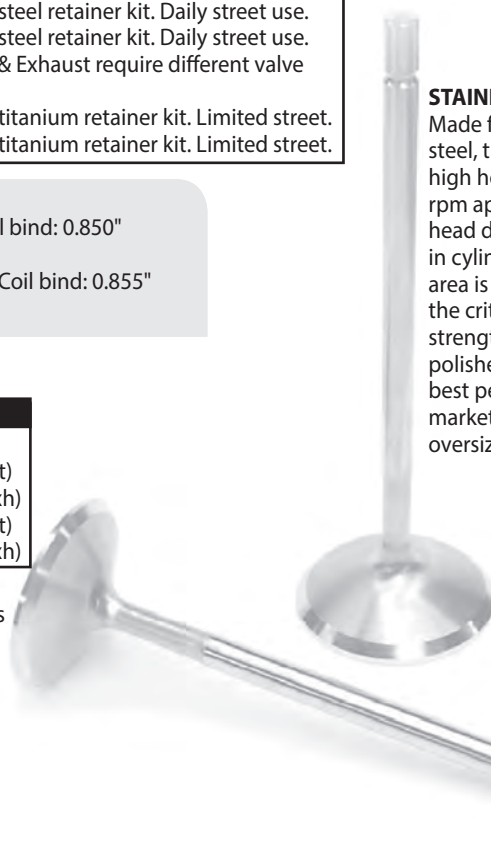
## ACCESSORIES

Part No.	Remarks
<b>86053-2</b>	Aftermarket Cam Bolt Kit
<b>97437I-16</b>	Stainless steel valves - 37 mm head dia (16 only int)
<b>97437E-16</b>	Stainless steel valves - 30 mm head dia (16 only exh)
<b>97438I-16</b>	Stainless steel valves - 38 mm head dia (16 only int)
<b>97438E-16</b>	Stainless steel valves - 31 mm head dia (16 only exh)

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

### STAINLESS STEEL VALVES

Made from the highest grade stainless steel, this new Crower valve is a must for high horsepower, high boost and high rpm applications. The exclusive "Pro Flo" head design delivers a significant increase in cylinder head flow figures, while the tip area is hardened to RC50, including past the critical keeper groove area for added strength. Fully CNC machined and swirl polished to insure that you will get the best performance valve available on the market. Choose from standard and 1mm oversize. Titanium valves also available.



# FOCUS ZX3 - TWIN CAM MECHANICAL FLAT TAPPET



1998 - up

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (1998-up)</b>	<b>Stock</b>	112°	276° 252°	Lobe 273° Valve 249°	206° 200°	Lobe 205° Valve 199°	.346" .341"	.341"	<b>Stock</b>
<b>STAGE 1</b> Automatic or mild turbo/supercharger. No head work required. RPM Range: Idle to 6500+	<b>62501-2</b> <b>MTO</b>	114°	268° 244°	Lobe 268° Valve 244°	220° 214°	Lobe 220° Valve 214°	.374" .374"	.374"	<b>Stock</b>
<b>STAGE 2</b> Street/Strip package. Perfect for all-motor use. Spring #68195 req. RPM Range: 1000 to 7000+	<b>62502-2</b>	114°	280° 256°	Lobe 276° Valve 252°	232° 226°	Lobe 228° Valve 222°	.413" .393"	.393"	<b>84169</b>
<b>STAGE 2</b> Forced induction special. Designed specifically for turbo or super charged applications. Spring kit req. RPM Range: 1500-up	<b>62502T-2</b>	114°	276° 252°	Lobe 276° Valve 252°	228° 222°	Lobe 228° Valve 222°	.393" .393"	.393"	<b>84169</b>
<b>STAGE 3 - 3/4 Race</b> Recommended for mostly strip use. Must clearance cylinder head. RPM Range: 1200 to 8000+	<b>62503-2</b>	114°	292° 268°	Lobe 284° Valve 260°	244° 238°	Lobe 236° Valve 230°	.433" .413"	.413"	<b>84169</b>
<b>STAGE 4 - Full Race</b> All out, all motor drag profile. Not for the inexperienced tuner. RPM Range: 1300 to 8500+	<b>62504-2</b>	114°	300° 276°	Lobe 292° Valve 268°	252° 246°	Lobe 244° Valve 238°	.454" .433"	.433"	<b>84169</b>
<b>CUSTOM GROUND ZX3 CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles also available.	<b>00071-2</b>								

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84169</b>	68195-16*	87082-16	Fits ZX3 and X2 heads

### Spring pressure:

68195-16 Seat: 1.400" @ 66 lbs / Nose: 0.950" @ 174 lbs / Coil bind: 0.860"  
(No machine work required on most heads).

\* Some cylinder heads may require machine work for valve spring.

## ACCESSORIES

Part No.	Remarks
<b>86054FB</b>	Adjustable Cam Sprocket (1 only). All black. 2 required
<b>86054FC</b>	Adjustable Cam Sprocket (1 only). Black & Silver. 2 required
<b>97430I-8</b>	Stainless steel valves - 32 mm head dia (8 only int)
<b>97430E-8</b>	Stainless steel valves - 28 mm head dia (8 only exh)
<b>97431I-8</b>	Stainless steel valves - 33 mm head dia (8 only int)
<b>97431E-8</b>	Stainless steel valves - 29 mm head dia (8 only exh)

**Note:** When ordering valves, be sure to specify one set int and one set exh.

**Note:** When ordering sprockets, be sure to specify two.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



### ADJUSTABLE SPROCKETS

Crower's new cam sprockets are made from premium 6061-T6 billet aluminum and incorporate a four bolt ARP® fastening system to prevent the slippage found in other brands. For the ultimate tuner, Crower sprockets feature 5/16" diameter, 12 point ARP® fasteners with a hardened washer to prevent galling and stripping. The lightweight design reduces unwanted harmonics which could cause valve train failure.

## FOCUS PZEV & ST, 4 CYL RANGER (2003-2007)

Description	Part Number	Lobe Sep.	Advised Duration (.010")		Duration @ .050"		Lobe Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Ford Focus ST (2004)</b>	<b>Stock</b>	112°	256°	252°	202°	189°	.358"	.317"	<b>Stock</b>
<b>STAGE 1</b> Street use with emphasis on bottom end and mid range power. Works with stock springs up to factory rev limiter. RPM Range: Idle to 7000+	<b>62551-2</b>	114°	260°	257°	211°	205°	.397"	.347"	<b>Stock</b>
<b>STAGE 2 - Forced Induction</b> Designed specifically for turbo or supercharger applications. Low duration, high lift profile. Requires Crower spring kit #84170. RPM Range: Idle to 8000+	<b>62551T-2</b>	112°	270°	270°	220°	220°	.400"	.400"	<b>84170</b>
<b>STAGE 2 - Ultra Hot Street</b> Designed for street/strip applications in normally aspirated engines. Requires spring/retainer kit #84170. RPM Range: 1000 to 7800+	<b>62552-2</b>	112°	276°	268°	228°	220°	.390"	.374"	<b>84170</b>
<b>STAGE 3 - Drag Race / Radical Street</b> Drag Race and radical Street/Strip. Requires #84170 spring kit and compatible ECU upgrade for optimum results. Rough idle. RPM Range: 1100 to 8000+	<b>62553-2</b>	112°	284°	276°	236°	228°	.414"	.393"	<b>84170</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary profiles available upon request.	<b>00079-2</b>								

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

Duration figures are taken at the lobe.

*Part numbers no longer listed may be available as custom grinds. Please contact Crower.*

### ENGINEERED COMPONENT KIT

Part No.	Springs	Retainers	Remarks
<b>84170</b>	68195-16	87083-16	Titanium retainer intended for race and limited street

#### Spring pressure:

68195-16 Seat: 1.400" @ 66 lbs / Nose: 1.000" @ 161 lbs / Coil bind: 0.860"  
(No machine work required).

### ACCESSORIES

Part No.	Remarks
<b>97427I-8</b>	Stainless steel valves - 35 mm head dia (8 only int)
<b>97427E-8</b>	Stainless steel valves - 30.5 mm head dia (8 only exh)
<b>97429I-8</b>	Stainless steel valves - 36 mm head dia (8 only int)
<b>97429E-8</b>	Stainless steel valves - 31 mm head dia (8 only exh)

Note: When ordering valves, be sure to specify one set int and one set exh.

#### STAINLESS STEEL VALVES

Made from the highest grade stainless steel, this new Crower valve is a must for high horsepower, high boost and high rpm applications. The exclusive "Pro Flo" head design delivers a significant increase in cylinder head flow figures, while the tip area is hardened to RC50, including past the critical keeper groove area for added strength. Fully CNC machined and swirl polished to insure that you will get the best performance valve available on the market. Choose from standard and 1mm oversize. Titanium valves also available.



# HYDRAULIC FLAT TAPPET



2300cc 1974-up 2000cc 1982-up (4 Bearing)

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.66 / 1.66		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Excellent low end and mid-range power. RPM Power Range: 1800 to 4500 / Redline: 5500+	<b>24915</b> <b>MTO</b>	All cid	280H	108°	280°	280°	222°	222°	.410"	.410"	<b>84208</b>
<b>POWER COMPU-PRO / Performance Level 2</b> RPM Power Range: Idle to 5500+	<b>24272</b> <b>MTO</b>	All cid	252HDP	108°	252°	252°	190°	200°	.445"	.460"	<b>84208</b>
<b>POWER COMPU-PRO / Performance Level 3</b> Perfect combination of power/mileage with extended rpm's. RPM Power Range: 1500 to 4000 / Redline: 5500+	<b>24273</b> <b>MTO</b>	All cid	270HDP	110°	270°	286°	228°	238°	.476"	.493"	<b>84208</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 4</b> Hot street. Strong upper bottom/top end power. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>24274</b>	All cid	286HDP	110°	286°	297°	244°	253°	.488"	.511"	<b>84208</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00125</b>	All cid									

Note: These cams use .000" intake and exhaust valve lash.

Note: Lift rule camshafts are available from Crower on a special order basis.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.66 / 1.66		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>POWER BEAST / Performance Level 4</b> High torque racing profile with bottom end power. RPM Power Range: 2800 to 6400 / Redline: 6800+	<b>24360</b> <b>MTO</b>	All cid	302F	109°	302°	307°	252°	262°	.459"	.461"	<b>84208</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 5</b> Torque with excellent mid-range power. RPM Power Range: 3000 to 6500 / Redline: 7000+	<b>24372</b>	All cid	288FDP	106°	288°	292°	257°	264°	.554"	.554"	<b>84208</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 5</b> Strong mid-range and top end power profile. RPM Power Range: 4000 to 7000 / Redline: 7500+	<b>24374</b>	All cid	311FDP	103°	311°	315°	274°	278°	.582"	.582"	<b>84208</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 5</b> Upper mid-range and top end power. RPM Power Range: 4500 to 7500 / Redline: 8000+	<b>24376</b>	All cid	314FDP	103°	314°	318°	278°	282°	.596"	.596"	<b>84208</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00125</b>	All cid									
<b>ROLLER</b>	<b>00125R</b>										Note: These cams use .012" intake, .014" exhaust valve lash.

**Note:** The above solid profiles are ground with a smaller base circle than stock. If using stock length valves, you must use .100" thick lash caps (86127-8) in kit below. Check follower geometry with Dykem hi-spot blue or any other non-drying compound and adjust valve length accordingly. Duration numbers @ .050" have been refigured to reflect valve lift. Note: Lift rule camshafts are available from Crower on a special order basis.

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84208</b>	68404-8	87049-8	<b>Hydraulic or Solid Lifter.</b>

## HYDRAULIC TO SOLID CONVERSION KITS

Part No.	Remarks
<b>76450-8</b>	Comes with heavy duty adjusters, nuts, sleeves and stabilizer spring.

**Spring pressure:** 68404-8 Seat: 1.600" @ 113 lbs / Nose: 1.000" @ 319 lbs / Coil bind: 0.950"  
68147-8 Seat: 1.550" @ 78 lbs / Nose: 1.100" @ 177 lbs / Coil bind: 1.000" (Stock O.D. 1.369", no machine work).  
\* Machine work required

**Note:** Ford overhead camshafts are susceptible to lobe wear. We highly recommend breaking in new cam and followers with a light pressure break-in spring for a minimum of 30 minutes.

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").



# HYDRAULIC FLAT TAPPET

## 240 300 Inline 6 Cylinder

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19205</b>	All CID	284HDP	110°	284°	290°	220°	222°	.509"	.517"	<b>84010</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19210</b>	All CID	248HDP	112°	248°	254°	184°	192°	.405"	.411"	<b>84010</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19211</b>	All CID	252HDP	112°	252°	258°	192°	196°	.426"	.440"	<b>84010</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Hot street profile. Strong upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19212</b>	All CID	260HDP	112°	260°	268°	202°	210°	.443"	.448"	<b>84010</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19213</b>	All CID	266HDP	112°	266°	274°	210°	213°	.456"	.461"	<b>84010</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00119H</b>	All CID									

Note: These cams use .000" intake and exhaust valve lash.

Note: Cam cores for 144, 170, 200 and 250 cid Ford engines are available from Crower on a special order basis.

# MECHANICAL FLAT TAPPET

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 5</b> Explosive power throughout the power band. RPM Power Range: 3500 to 7000+	<b>19312</b>	All cid	284FDP	105°	284°	290°	248°	252°	.558"	.563"	<b>84310</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00119M</b>	All cid									
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00060</b>	All cid									

Note: These cams use .022" intake, .024" exhaust valve lash.

Note: Cam cores for 144, 170, 200 and 250 cid Ford engines are available from Crower on a special order basis.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84010M</b>	66015-12	68324-12	87050-12	86072-12	Hydraulic Lifter. For rpm up to 6500 plus.
<b>84311</b>	66915-12	68405-12	87048D-12	86072-12	Solid Lifter. For rpm up to 7000 plus.

### Spring pressure:

68305X1-12 Seat: 1.700" @ 68 lbs / Nose: 1.200" @ 250 lbs / Coil bind: 1.050" (Stock OD, no machine work).

68405-12 Seat: 1.700" @ 110 lbs / Nose: 1.200" @ 297 lbs / Coil bind: .980" (Machine work, use cutter 68986\* & 68971 pilot).

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>

Note: Rocker arms available in Aluminum & Stainless steel

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**



# HYDRAULIC FLAT TAPPET



**Non Roller 1963-1995**  
**221 255 (4.2L) 260 289 302 V8**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. RPM Power Range: 1200 to 3800 / Redline: 5200+	<b>15915</b>	289 302	258H	112°	258°	264°	204°	210°	.443"	.452"	<b>84127</b>
<b>TORQUE BEAST / Performance Level 2</b> Delivers impressive mid-range and top end power. RPM Power Range: 2000 to 4800 / Redline: 6200+	<b>15916</b>	289 302	272H	112°	272°	279°	210°	220°	.448"	.474"	<b>84127</b>
<b>POWER BEAST / Performance Level 3</b> Emphasis on upper mid-range and top end power. RPM Power Range: 2000 to 4800 / Redline: 6200+	<b>15917</b>	289 302	288H	112°	288°	300°	214°	224°	.474"	.498"	<b>84127</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>15211</b>	302 CID	276HDP	112°	276°	281°	212°	216°	.491"	.500"	<b>84127</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> RPM Power Range: 1800 to 5000 / Redline: 6000+	<b>15213</b>	302 CID	280HDP	112°	284°	290°	228°	234°	.513"	.530"	<b>See Below</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Super rough idle. Hot street/strip cam with strong mid-range power. RPM Power Range: 2200 to 6200+	<b>15922</b>	260 289	274HDP	108°	274°	284°	220°	228°	.491"	.512"	<b>See Below</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle with explosive upper bottom and mid-range torque. RPM Power Range: 2500 to 6500+	<b>15923</b> <b>MTO</b>	302 CID	290HDP	108°	290°	298°	226°	238°	.502"	.499"	<b>See Below</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00115H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ENGINEERED COMPONENT KITS \*Select kit to match your rpm range

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84127</b>	66015-16	68313-16	87050-16	86072-16	Single Spring
<b>84117</b>	66015-16	68405-16	87048-16	86072-16	For rpm up to 6500 plus. Limited street use.
<b>84117X3</b>	66015X3-16	68405-16	87048-16	86072-16	For rpm up to 6500 plus. Limited street use.
<b>84119</b>	66015-16	68390X3-16	87048-16	86072-16	For rpm up to 6500. Limited street use.

### Spring pressure:

68313-16 Seat: 1.750" @ 95 lbs / Nose: 1.250" @ 267 lbs / Coil bind: 1.030"  
 68405-16 Seat: 1.700" @ 110 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 0.980"  
 68390X3-16 Seat: 1.800" @ 110 lbs / Nose: 1.200" @ 389 lbs / Coil bind: 1.110"

**Note:** If your installed height does not fall within these dimensions, contact Crower for a recommendation.

\* Machine work required

**Note:** If using Boss heads contact the Crower for special spring and retainer recommendations. Boss 302 engines employ a 1.73 rocker ratio, so the gross lifts will change for the Boss 302. To figure the correct gross lift for Boss 302 heads divide the gross lift listed by 1.6 (lobe lift then multiply the lobe lift by 1.73 (Boss 302 rocker ratio).

**Note:** Camshafts for 289/302 cid engines can be used in 351W engines by changing the fining order to 1-5-4-2-6-3-7-8.

Some early Ford heads use 5/16 valve stems. Please specify when ordering as the above kits are designed for 11/32 stems.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**



**For engines that were originally equipped with a hydraulic flat tappet cam, retro fit hydraulic roller cams & kit are available, call CROWER for details.**

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 146-168
<b>Cam Shafts</b>	Pg's. 6-126
<b>Accessories</b>	Pg's. 231-238

**Note:** Rocker arms available in Aluminum & Stainless steel



# HYDRAULIC FLAT TAPPET

Non Roller 1963-1995

221 255 (4.2L) 260 289 302 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle with explosive mid-range torque and acceleration. RPM Power Range: 2700 to 6000	<b>15924</b>	302 CID	296HDP	108°	296°	302°	230°	244°	.507"	.506"	<b>84117</b> <b>84117X3</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle with explosive mid-range and top end horsepower. RPM Power Range: 3000 to 6500	<b>15925</b> <b>MTO</b>	302 CID	304HDP	108°	304°	312°	240°	248°	.536"	.563"	<b>84117</b> <b>84117X3</b>
<b>TURBOMASTER</b> Intended for turbocharged hot street/strip and marine use. This cam offers extended rpm on mid-range and top end. RPM Power Range: 2000 to 6500	<b>15929</b> <b>MTO</b>	302 CID	290HT	114°	290°	272°	226°	210°	.486"	.462"	<b>84117</b> <b>84117X3</b>
<b>SUPERCHARGER</b> Designed for B&M/Roots type supercharged street/strip and marine. Emphasis on upper bottom to top end power. RPM Power Range: 2400 to 6500	<b>15930</b> <b>MTO</b>	302 CID	288HC	114°	288°	288°	228°	228°	.464"	.464"	<b>84117</b> <b>84117X3</b>
<b>SUPERCHARGER</b> Designed for B&M/Roots type supercharged street/strip and marine. Good mid to top end power. RPM Power Range: 2600 to 6500	<b>15931</b> <b>MTO</b>	302 CID	304HC	114°	304°	304°	246°	246°	.507"	.507"	<b>84117</b> <b>84117X3</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00115H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84117</b>	66015-16	68405-16	87048-16	86072-16	For rpm up to 6500 plus. Limited street use.
<b>84117X3</b>	66015X3-16	68405-16	87048-16	86072-16	CamSaver Lifter. For rpm up to 6500 plus. Limited street use.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface.

### Spring pressure:

68405-16 Seat: 1.700" @ 110 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 0.980"

\* Machine work, use cutter 68983

**Note:** If your installed height does not fall within these dimensions, contact Crower for a recommendation.

\* Machine work required

**Note:** If using Boss heads contact the Crower for special spring and retainer recommendations. Boss 302 engines employ a 1.73 rocker ratio, so the gross lifts will change for the Boss 302. To figure the correct gross lift for Boss 302 heads divide the gross lift listed by 1.6 (lobe lift) then multiply the lobe lift by 1.73 (Boss 302 rocker ratio).

**Note:** Camshafts for 289/302 cid engines can be used in 351W engines by changing the firing order to 1-5-4-2-6-3-7-8. Some early Ford heads use 5/16 valve stems. Please specify when ordering as the above kits are designed for 11/32 stems.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

**For engines that were originally equipped with a hydraulic flat tappet cam, retro fit hydraulic roller cams & kit are available, call CROWER for details.**

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 146-168
<b>Cam Shafts</b>	Pg's. 6-126
<b>Cranks</b>	Pg's. 189-204
<b>Rods</b>	Pg's. 141-145
<b>Accessories</b>	Pg's. 231-238

**Note:** Rocker arms available in Aluminum & Stainless steel

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

# HYDRAULIC ROLLER TAPPET



Factory Roller 1963-1995  
221 255 (4.2L) 260 289 302 (5.0l) & Boss 302 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PERFORMANCE LEVEL 2</b> Big sound. Excellent 5-speed cam for heavy car. Strong low and mid-range torque. 302 CID / 2200 - 5500 RPM / Redline: 6000 RPM max	15511	See Descrip	218HR224	114°	278°	282°	218°	224°	.468"	.486"	84563S
<b>PERFORMANCE LEVEL 2</b> Most popular Ford hyd roller grind, blows away Chevrolets. Heavy mid-range. 302 CID / 2400 - 5700 RPM / Redline: 6200 RPM max	15512	See Descrip	222HR228	112°	282°	286°	222°	228°	.496"	.512"	84563S
<b>PERFORMANCE LEVEL 3</b> Big cid camshaft (320-347 cid) with higher compression, good cylinder heads and valve train components. 302 CID / 2600 - 6000 RPM / Redline: 6500 RPM max	15513	See Descrip	228HR234	112°	288°	298°	228°	234°	.512"	.531"	84563S
<b>PERFORMANCE LEVEL 4</b> Aggressive rpm camshaft, high stall A.O.D. or a 5-speed with low gears. For well prepared engines. 302 CID / 2700 - 6200 RPM / Redline: 6500 RPM max	15514	See Descrip	234HR240	110°	298°	304°	234°	240°	.534"	.545"	84564
<b>PERFORMANCE LEVEL 5</b> Top end insanity for serious, professionally built engines only. 1/4 mile drag special. 302 CID / 3000 - 6300 RPM / Redline: 6500 RPM max	15515 MTO	See Descrip	236HR242	110°	300°	310°	236°	242°	.524"	.529"	84564
<b>O.E.M. FACTORY STOCK SPECIFICATIONS</b> 1989-1992 Ford Mustang. 302 H.O. Engine equipped with Hydraulic Roller camshaft.	Stock			115°	272°	272°	211°	211°	.437"	.437"	84564
<b>SVO FACTORY STOCK SPECIFICATIONS</b> 302 H.O. Engine equipped with Hydraulic Roller camshaft.	E-303			110°	-	-	220°	220°	.480"	.480"	84564
<b>SVO FACTORY STOCK SPECIFICATIONS</b> 302 H.O. Engine equipped with Hydraulic Roller camshaft.	B-303			110°	-	-	224°	224°	.498"	.498"	84564
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00115HR	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

These cams are ground on steel cast cores. Crower recommends using melonite or bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Keepers	Remarks
84563S	66335-16	68313-16	87050-16	86107X2-8 & 86107-8	6500 plus rpm. Limited street use. Drop-In style lifter.
84564	66335-16	68390X3-16	87048-16	86107X2-8 & 86107-8	6500 plus rpm. Limited street use. Drop-In style lifter.

### Spring pressure:

68390X3-16 Seat: 1.800" @ 115 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110"

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").



**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ACCESSORIES

Description	See Page (s)
Distrbuter Gears	Pg. 125

**For The Best Overall Performance Gains Use The Cam Form, And Let Crower Make You A Custom Cam...**



# HYDRAULIC RETROFIT ROLLER TAPPET

1963-1995

221 255 (4.2L) 260 289 302 & Boss 302 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PERFORMANCE LEVEL 1</b> Launches hard with A.O.D. transmission. Torque all over the tach! Brutal bottom end. 2100 - 5300 RPM / Redline: 5800 RPM maximum	<b>15520</b>	All CID	210HR214	112°	274°	278°	210°	214°	.480"	.480"	<b>84561S</b>
<b>PERFORMANCE LEVEL 2</b> Big sound. Excellent 5-speed cam for heavy car. Strong low and mid-range torque. 2200 - 5500 RPM / Redline: 6000 RPM maximum	<b>15521</b>	All CID	218HR224	114°	278°	282°	218°	224°	.468"	.486"	<b>84562</b>
<b>PERFORMANCE LEVEL 2</b> Most popular Ford hyd roller grind, blows away Chevrolets. Heavy mid-range. 2400 - 5700 RPM / Redline: 6200 RPM maximum	<b>15522</b> <b>MTO</b>	All CID	222HR228	112°	282°	286°	222°	228°	.496"	.512"	<b>84562</b>
<b>PERFORMANCE LEVEL 3</b> Big cid camshaft (320-347 cid) with higher compression, good cylinder heads and valve train components. 2600 - 6000 RPM / Redline: 6500 RPM maximum	<b>15523</b>	All CID	228HR234	112°	288°	298°	228°	234°	.512"	.531"	<b>84562</b>
<b>PERFORMANCE LEVEL 4</b> Aggressive rpm camshaft, high stall A.O.D. or a 5-speed with low gears. For well prepared engines. 2700 - 6200 RPM / Redline: 6500 RPM maximum	<b>15524</b>	All CID	234HR240	110°	298°	304°	234°	240°	.534"	.545"	<b>84562</b>
<b>PERFORMANCE LEVEL 5</b> Top end insanity for serious, professionally built engines only. 1/4 mile drag special. 3000 - 6300 RPM / Redline: 6500 RPM maximum	<b>15525</b> <b>MTO</b>	All CID	236HR242	110°	300°	310°	236°	242°	.524"	.529"	<b>84562</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance. Please provide cylinder head flow numbers.	<b>00115HR</b> <b>MTO</b>	All CID									

Note: These cams use .000" intake and exhaust valve lash.

These cams are ground on steel cast cores. Crower recommends using melonite or bronze distributor gear.

For engines which were manufactured with non-roller lifters, must be used with 66337-16 roller lifter.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Keepers	Remarks
<b>84562</b>	66337-16	68390X3-16	87048-16	86107X2-8 & 86107-8	6500 max rpm. Linked style lifter.
<b>84561S</b>	66337-16	68313-16	87050-16	86107X2-8 & 86107-8	6500 max rpm. Linked style lifter.

### Spring pressure:

68313-16 Seat: 1.750" @ 95 lbs / Nose: 1.250" @ 267 lbs / Coil bind: 1.030"

68390X3-16 Seat: 1.800" @ 115 lbs / Nose: 1.250" @ 355 lbs / Coil bind: 1.110"

**Note:** Requires screw in with studs & guide plates.

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower. **CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

Valve timing events are available online at: [www.crower.com](http://www.crower.com)

**Louis Floquet**  
TMS Titanium Ti-Chero



### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain. **Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

# MECHANICAL FLAT TAPPET



Non Roller 1963-1995

221 255 (4.2L) 260 289 302 (5.0I) & Boss 302 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / Performance Level 2</b> High torque grind with mid-range and top end power. RPM Power Range: 2200 - 6000 RPM / Redline: 7000+	<b>15320</b> <b>MTO</b>	289 302	260FDP	114°	260°	266°	212°	216°	.450"	.453"	<b>84219</b>
<b>PRO-STREET / Performance Level 3</b> High torque grind with mid-range and top end power. RPM Power Range: 2200 - 6000 RPM / Redline: 7000+	<b>15321</b>	289 302	282FDP	112°	282°	288°	238°	242°	.478"	.488"	<b>84219</b>
<b>PRO-STREET / Performance Level 4</b> High revving with superior mid-range and top end power. RPM Power Range: 2500 - 7500 RPM / Redline: 7500+	<b>15322</b>	289 302	292FDP	110°	292°	298°	248°	252°	.499"	.512"	<b>84219</b>
<b>COMPU-PRO / Performance Level 4</b> High torque, short oval camshaft. RPM Power Range: 2500 - 6000 RPM / Redline: 7000+	<b>15313</b>	289 302	274FDP	105°	274°	288°	242°	254°	.542"	.528"	<b>84219</b>
<b>COMPU-PRO / Performance Level 5</b> Excellent high torque and mid-range power oval track grind. RPM Power Range: 3000 - 7000 RPM / Redline: 8000+	<b>15314</b>	289 302	288FDP	105°	288°	299°	252°	258°	.563"	.579"	<b>84219</b>
<b>CUSTOM GROUND SOLID</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00115M</b>	All cid									

Note: These cams use .022" intake, .024" exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84219</b>	66915-16	68390X3-16	87048-16	86072-16	For rpm up to 7500 plus. Race Only, limited street use.
<b>84219X980</b>	66915X980-16	68390X3-16	87048-16	86072-16	For rpm up to 7500 plus. Race Only, limited street use.
<b>84217LW980</b>	66915LW980-16	68405-16	87048-16		Light Weight Lifter

Spring pressure:  
68390X3-16 Seat: 1.800" @ 115 lbs / Nose: 1.300" @ 331 lbs / Coil bind: 1.110"

**Note:** If keeper height is longer or shorter than correct height ( $\pm .050$ " tolerance, contact Crower for a recommendation.

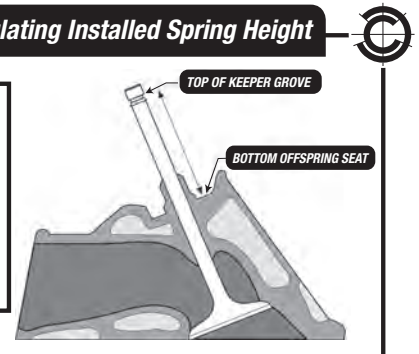
**Note:** If using Boss heads contact the factory for special spring and retainer recommendations. Boss 302 engines employ a 1.73 rocker ratio, so the gross lifts will change for the Boss 302. To figure the correct gross lift for Boss 302 heads divide the gross lift listed by 1.6 (lobe lift then multiply the lobe lift by 1.73 (Boss 302 rocker ratio).

**Note:** Camshafts for 289/302 cid engines can be used in 351W engines by changing the fitting order to 1-5-4-2-6-3-7-8. Some early Ford heads use 5/16 valve stems. Please specify when ordering as the above kits are designed for 11/32 stems.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

### Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. *See Page 186*



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**





# MECHANICAL ROLLER TAPPET

Mechanical 1963-1995

221 255 (4.2L) 260 289 302 (5.0I) & Boss 302 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> Excellent street/strip profile. RPM Power Range: 2500 to 6000 / Redline: 7500+	15415	289 302	280R	112°	280°	288°	232°	242°	.528"	.530"	
<b>ULTRA-ACTION / Performance Level 5</b> High torque oval track and drag race profile. RPM Power Range: 3000 to 7000 / Redline: 7500+	15416	289 302	285R	106°	285°	292°	254°	260°	.597"	.578"	
<b>ULTRA-ACTION / Performance Level 5</b> Fast 3/8 to 1/2 mile super oval track profile. RPM Power Range: 4000 to 7500 / Redline: 8000+	15417	289 302	292R	106°	292°	302°	256°	266°	.606"	.600"	
<b>CUSTOM GROUND SOLID</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00115R	All cid									

Note: These cams use .026" intake, .028" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84510M	66215-16	68804H-16	87062S-16	86072-16	For rpm up to 8000

A. These high lift cams require longer stem valves and higher spring pressure. Please contact Crower for properly engineered valvetrain.

### Spring pressure:

68804H-16 Seat: 1.800" @ 197 lbs / Nose: 1.200" @ 470 lbs / Coil bind: 1.110"

(Machine work required, use 68972 pilot)

**Note:** If using Boss heads contact the factory for special spring and retainer recommendations. Boss 302 engines employ a 1.73 rocker ratio, so the gross lifts will change for the Boss 302. To figure the correct gross lift for Boss 302 heads divide the gross lift listed by 1.6 (lobe lift then multiply the lobe lift by 1.73 (Boss 302 rocker ratio).

**Note:** Camshafts for 289/302 cid engines can be used in 351W engines by changing the fitting order to 1-5-4-2-6-3-7-8. Some early Ford heads use 5/16 valve stems. Please specify when ordering as the above kits are designed for 11/32 stems.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Note:** If exceeding 8000 rpm, high pressure springs and titanium retainers may be required. Contact Crower.

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

## ACCESSORY INFO

Description	See Page (s)
Rocker Arms	Pg's.146-168
Distributor Gears	Pg. 125
Cam Accessories	Pg's.123-125

**Note:** Rocker arms available in Aluminum & Stainless steel

Part numbers no longer listed may still available as custom grinds. Please contact Crower.

## CROWER CAM BREAK-IN PROCEDURE



**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleys. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crower recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crower Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092

# HYDRAULIC FLAT TAPPET



Non Roller

1969-1993 351W (5.8 L), 1982-1984 302 (5.0L), 302 SVO & 351 SVO

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>15935</b>	351	258H	112°	258°	264°	202°	210°	.438"	.446"	<b>84127</b>
<b>POWER BEAST / Performance Level 4</b> Delivers impressive mid-range and top end power. Health sound. RPM Power Range: 1750 - 6000 / Redline: 6500	<b>15903</b>	351	298H	112°	298°	304°	224°	234°	.498"	.520"	<b>84126</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1500 - 4000 / Redline: 5500+	<b>15233</b>	351	270HDP	112°	270°	276°	212°	218°	.475"	.489"	<b>84127</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Hot street/strip grind with emphasis on upper bottom to top end power. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>15236</b>	351	280HDP	112°	280°	286°	220°	226°	.488"	.501"	<b>84126</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Street/strip grind with strong mid to top end power. RPM Power Range: 2200 - 6000 / Redline: 6500+	<b>15237</b>	351	297HDP	112°	297°	308°	236°	242°	.538"	.534"	<b>84126</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range torque. RPM Power Range: 2500 - 6500	<b>15254</b>	351	84HDP	108°	284°	294°	224°	232°	.498"	.501"	<b>84126</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Power Range: 2700 - 6500	<b>15255</b>	351	296HDP	108°	296°	304°	230°	246°	.506"	.506"	<b>84126</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range torque. RPM Power Range: 3000 - 6500	<b>15256 MTO</b>	351	304HDP	108°	304°	312°	242°	250°	.536"	.506"	<b>84126</b>
<b>TURBOMASTER</b> This cam provides excellent low end and mid-range power with extended rpm range plus mileage for spirited offroad use. RPM Power Range: 1800 to 5500 plus.	<b>15938</b>	351	278HT	114°	278°	260°	212°	200°	.466"	.430"	<b>84126</b>
<b>TURBOMASTER</b> Intended for turbocharged hot street/strip and marine use. This cam offers extended rpm's on upper bottom and top. RPM Power Range: 2400 - 6500	<b>15939 MTO</b>	351	290HT	114°	290°	272°	226°	210°	.486"	.462"	<b>84126</b>
<b>SUPERCHARGER</b> Designed for B&M/Roots type supercharged street/strip and marine applications. Emphasis on mid to top end. RPM Power Range: 2400 to 6500	<b>15940 MTO</b>	351	288HT	114°	288°	288°	226°	226°	.467"	.467"	<b>84126</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00117H</b>	All CID									

**Note:** These cams use .000" intake and exhaust valve lash.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Seat Cups	Remarks
<b>84127</b>	66015-16	68313-16	87050-16	86072-16	68931-16	6000 rpm max.
<b>84126</b>	66015-16	68390X3-16	87048-16	86072-16	68951-16	Rev-Max Lifter.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

### Spring pressure:

68100X200-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 254 lbs / Coil bind: 1.030"  
(Stock O.D., no machine work)

**Note:** To eliminate using seat cups, you can machine heads with cutter 68990 (84125) or 68985 (84126).

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# MECHANICAL FLAT TAPPET

**Non Roller 1969-1993**

**351W (5.8 L), 1982-1984 302 (5.0L), 302 SVO & 351 SVO**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> High revving profile with superior mid-range and top end power. RPM Power Range: 2500 - 6500 / Redline: 7000+	<b>15359</b>	351	282FDP	112°	282°	288°	242°	250°	.538"	.557"	<b>84219</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High torque, high revving profile, perfect for short oval track applications. RPM Power Range: 3500 - 6500 / Redline: 7000+	<b>15345</b>	351	288FDP	105°	288°	299°	252°	258°	.562"	.579"	<b>84219</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High torque, high revving profile, perfect for midsize oval track applications. RPM Power Range: 4000 - 7000 / Redline: 7500+	<b>15346</b>	351	296FDP	106°	296°	306°	260°	268°	.586"	.605"	<b>84219</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Emphasis on mid-range and top end power for extra pop above 7000 rpm. RPM Power Range: 4500 to 7500 / Redline: 8000 +	<b>15347 MTO</b>	351	310FDP	108°	310°	316°	276°	278°	.622"	.629"	<b>84219</b>
<b>CUSTOM GROUND SOLID</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00117M</b>	All CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84219</b>	66915-16	68390X3-16	87048-16	86072-16	7500 max. Limited street use.

### Spring pressure:

68100X200-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 254 lbs / Coil bind: 1.030" (Machine work).

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>
<b>Rods</b>	<b>Pg's.141-145</b>

**Note:** Rocker arms available in Aluminum & Stainless steel



# MECHANICAL ROLLER TAPPET



Mechanical

1969-1993 351W (5.8 L), 1982-1984 302 (5.0L), 302 SVO & 351 SVO

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> Perfect for street/strip. Emphasis on mid-range power. RPM Power Range: 2500 - 6500 / Redline: 7000+	<b>15458 MTO</b>	351	280R	112°	280°	288°	232°	242°	.528"	.530"	<b>84518</b>
<b>PRO-STREET / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end power. RPM Power Range: 3500 - 7000 / Redline: 7000+	<b>15459 MTO</b>	351	290R	110°	290°	296°	248°	252°	.558"	.547"	<b>84518</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end, excellent drag profile. RPM Power Range: Varies on valve train, heads, manifold, etc... Steel Billet Cam Core	<b>15445</b>	351	285R	106°	285°	292°	254°	260°	.597"	.578"	<b>84518</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end, excellent drag profile. RPM Power Range: Varies on valve train, heads, manifold, etc... Steel Billet Cam Core	<b>15446</b>	351	300R	107°	300°	310°	268°	274°	.680"	.669"	<b>84518</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end, excellent drag profile. RPM Power Range: Varies on valve train, heads, manifold, etc... Steel Billet Cam Core	<b>15447 MTO</b>	351	309R	108°	309°	314°	276°	282°	.685"	.656"	<b>84518</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00117R</b>	ALL CID									
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance. Please provide cylinder head flow numbers.	<b>00060</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

The above cores are 8620 steel billet. Use bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84518</b>	66215-16	68543-16	86781-16	86072-16	8000+ rpm. Race only.

Part numbers no longer listed may still be available as custom grinds. Please contact Crower.

### Spring pressure:

68543-16 Seat: 1.850" @ 262 lbs / Nose: 1.200" @ 625 lbs / Coil bind: 1.110" (Machine work required).

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ACCESSORIES

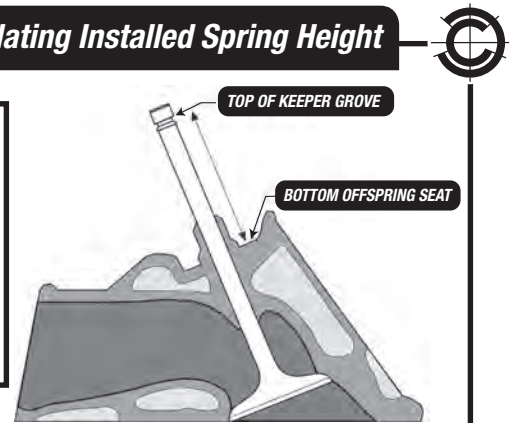
Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 146-168
<b>Distributor Gears</b>	Pg. 125

Note: Rocker arms available in Aluminum & Stainless steel



### Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



Note: If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.



# HYDRAULIC FLAT TAPPET

Non Roller 1970-1982

351C 351M 400 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / PERFORMANCE LEVEL 1</b> Exhibits broad stump pulling power and torque. Good for stock replacements. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>15965</b>	351 400	258H	112°	258°	264°	200°	210°	.477"	.486"	<b>84127</b>
<b>TORQUE BEAST / PERFORMANCE LEVEL 2</b> Delivers impressive mid-range and top end power. RPM Power Range: 2000 - 4800 / Redline: 6000+	<b>15975</b>	351 400	282H	112°	282°	292°	204°	214°	.486"	.512"	<b>84127</b>
<b>POWER BEAST / PERFORMANCE LEVEL 3</b> Exhibits broad stump pulling power and torque. Good for stock replacements. RPM Power Range: 2200 - 5000 / Redline: 6200+	<b>15973</b>	351 400	292H	112°	292°	302°	214°	224°	.512"	.538"	<b>84125X3</b>
<b>ULTRA BEAST / PERFORMANCE LEVEL 3</b> Delivers impressive mid-range and top end power. RPM Power Range: 2200 - 5000 / Redline: 6200+	<b>15966</b>	351 400	278H	112°	278°	284°	220°	226°	.529"	.540"	<b>84129</b>
<b>POWER COMPU-PRO / PERFORMANCE LEVEL 2</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited offroad use. RPM Power Range: Idle - 4000 / Redline: 5500+	<b>15240</b>	351 CID	270HDP	112°	270°	276°	210°	220°	.486"	.510"	<b>84125X3</b>
<b>HIGH PERFORMANCE COMPU-PRO / PERFORMANCE LEVEL 3</b> Intended for the hot marine/strip application, these cams offer an extended rpm range with upper bottom and top end power with strong emphasis on mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>15243</b>	400 CID	284HDP	112°	284°	290°	228°	234°	.557"	.574"	<b>84129</b>
<b>ULTRA PERFORMANCE COMPU-PRO / PERFORMANCE LEVEL 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 6500	<b>15244</b>	351 CID	297HDP	112°	297°	308°	234°	240°	.578"	.578"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Rough idle with explosive upper bottom and mid-range torque. RPM Power Range: 2500 - 6000+	<b>15266</b>	351 CID	280HDP	108°	280°	288°	222°	230°	.540"	.540"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Strong idle with violent mid-range acceleration and torque. RPM Power Range: 2700 - 6500	<b>15267</b> <b>MTO</b>	351 CID	290HDP	108°	290°	302°	238°	248°	.536"	.543"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Very rough idle with violent mid-range and top end acceleration and power. RPM Power Range: 3000 - 6500	<b>15268</b>	351 400	302HDP	108°	302°	312°	244°	248°	.548"	.545"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Very rough idle with violent mid-range and top end acceleration and power. RPM Power Range: 3000 - 6500	<b>15981</b>	351 400	304HDP	114°	304°	304°	246°	246°	.548"	.548"	<b>84129</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00114H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is Made To Order in 2-3 days.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Seat Cups	Remarks
<b>84127</b>	66015-16	68313-16	87050-16	86072-16	68931-16	6000 rpm max. Limited street use.
<b>84125X3</b>	66015X3-16	68100X200-16	87048-16	86072-16	68951-16	CamSaver Lifter. 6000 rpm max. Limited street use.
<b>84129</b>	66015-16	68390X3-16	87048-16	86072-16	68931-16	6500 rpm max. Limited street use.
<b>84129X3</b>	66015X3-16	68390X3-16	87048-16	86072-16	68931-16	CamSaver Lifter. 6500 rpm max. Limited street use.
<b>84129RM3</b>	66015RM3-16	68390X3-16	87048-16	86072-16	68931-16	Rev-Max Lifter.

### Spring pressure:

68313-16 Seat: 1.750" @ 95 lbs / Nose: 1.250" @ 267 lbs / Coil bind: 1.030"  
 68100X200-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 254 lbs / Coil bind: 1.030"  
 (Stock O.D., no machine work)  
 68390X3-16 Seat: 1.850" @ 96 lbs / Nose: 1.350" @ 331 lbs / Coil bind: 1.110" (Stock O.D.)

Note: To eliminate using seat cups, you can machine heads.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# MECHANICAL FLAT TAPPET



**Non Roller 1970-1982**  
**351C 351M 400 V8**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / PERFORMANCE LEVEL 3</b> High torque grind with mid-range and top end power. RPM Power Range: 2200 - 5750 / Redline: 6000	<b>15388 MTO</b>	351 400	282FDP	112°	282°	288°	238°	242°	.524"	.533"	<b>84226</b>
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> High revving with superior mid-range and top end power. RPM Power Range: 2200 - 6000 / Redline: 6250+	<b>15389</b>	351 400	292FDP	112°	292°	298°	246°	250°	.541"	.548"	<b>84226</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High torque, short oval camshaft. RPM Power Range: 3500 - 6500 / Redline: 7000+	<b>15380 MTO</b>	351 400	288FDP	105°	288°	294°	254°	258°	.569"	.580"	<b>84226</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Great high torque oval track grind with emphasis on mid-range power. RPM Power Range: 4000 - 7000 / Redline: 7500+	<b>15381 MTO</b>	351 400	298FDP	106°	298°	306°	262°	268°	.592"	.607"	<b>84226</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Upper mid-range and top end power for extra pop above 7000 rpm. RPM Power Range: 4500 - 7500 / Redline: 8000+	<b>15382</b>	351 400	311FDP	107°	311°	316°	274°	282°	.618"	.638"	<b>84226</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00114M</b>	351 400									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84226</b>	66915-16	68390X3-16	87048-16	86072-16	68951-16 Solid Lifter. 7500 rpm max. Limited street use.
<b>84226X980</b>	66915X980-16	68390X3-16	87048-16	86072-16	68951-16 CoolFace Solid Lifter. 7500 rpm max. Limited street use.

For severe duty applications, Crowder recommends using our solid lifter with the added "CoolFace oiling option".

### Spring pressure:

68390X3-16 Seat: 1.825" @ 106 lbs / Nose: 1.325" @ 342 lbs / Coil bind: 1.110" (Seat cups eliminate machine work).

**Note:** Some stock cylinder heads come with multi-groove keepers on the exhaust. If so, you must order retainer 87049-16 which is designed to fit multi groove keepers. See retainer specs or contact Crowder.

**Note:** If you machine heads to eliminate use of spring cups, see seat cutters or contact Crowder.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



**For The Best Overall Performance Gains Use The Cam Form, And Let Crowder Make You A Custom Cam...**

## CROWDER CAM BREAK-IN PROCEDURE



**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleries. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crowder recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crowder Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092



# MECHANICAL ROLLER TAPPET

## Mechanical 1970-1982

### 351C 351M 400 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range		Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
			Low RPM	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> Excellent street/strip profile. RPM Power Range: 2500 - 6000 / Redline: 7500+	<b>15480</b> <b>MTO</b>	ALL CID	2500	7500+	284R	110°	275°	284°	234°	244°	.570"	.572"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> High torque oval track profile. RPM Power Range: 3000 - 7000 / Redline: 7500+	<b>15481</b> <b>MTO</b>	ALL CID	3000	7500+	285R	106°	285°	292°	252°	260°	.645"	.626"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Fast 3/8 to 1/2 mile super oval track profile. RPM Power Range: 4000 - 7500 / Redline: 8000+	<b>15482</b>	ALL CID	4000	8000+	297R	106°	297°	304°	262°	268°	.662"	.636"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Mid-range and top end drag profile. RPM Power Range: 5200 - 8000 / Redline: 8250+	<b>15483</b>	ALL CID	5200	8250+	304R	106°	304°	312°	270°	276°	.690"	.672"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Mid-range and top end drag profile. RPM Power Range: 5500 to 8000 / Redline 8250 plus.	<b>15484</b>	ALL CID	5200	8250+	310R	108°	311°	318°	280°	284°	.783"	.724"	<b>84521M</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00114R</b>	ALL CID											
<b>CUSTOM GROUND MECHANICAL ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00060</b>	ALL CID											

Note: These cams use .022" intake, .024" exhaust valve lash.

The above cores are 8620 steel billet. Use bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Keeper	Remarks
<b>84521M</b>	66218-16	68369-16	87055-16	86072-16	<sup>11</sup> / <sub>32</sub> " 86110-16	8000 rpm. Race only.
<b>84521S</b>	66218-16	68369-16	87055-16	86071-16	<sup>3</sup> / <sub>8</sub> " 86111-16	8000 rpm. Race only.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

### Spring pressure:

68369-16 Seat: 1.900" @ 236 lbs / Nose: 1.200" @ 584 lbs / Coil bind: 1.100"  
Optional spring (street)

68555X1-16 Seat: 2.000" @ 239 lbs / Nose: 1.100" @ 870 lbs / Coil bind: 1.020"

\* Machine work required (race only).

**Note:** For high performance applications, we recommend using single groove valves and valve stem keepers. The above kits are designed for 1 1/32 single groove valve stems and 7° and 10° single groove keepers. Race applications must use .100" long valves.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

## AVAILABLE CAM JOURNAL SIZES

Description
Stock Ford Bearing Size - Journal 1 = 2.080", 2 = 2.065", 3 = 2.050", 4 = 2.035", 5 = 2.020"
Large Roller Bearing - Journal 1, 2, 3, 4 = 2.165", Journal 5 = 1.968"
Roller Bearing (Ford Motorsport / SVO) - All Journals = 2.051"
Babbit Bearing (Standard SVO) - All Journals = 2.081"

To order the above cores specify #00003. 60mm is available on special order basis only (#00060). Special Firing Orders also available.

**CROWER recommends using HIPPO or Enduramax roller lifters in high RPM and high spring pressure applications.**

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 146-168
<b>Distrbuter Gears</b>	Pg. 125

**Note:** Rocker arms available in Aluminum & Stainless steel



# HYDRAULIC FLAT TAPPET



Non Roller 1963-1976

332 352 360 390 406 410 427 428 V8 FE

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.76 / 1.76		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>16915</b>	332 390	268H	112°	268°	274°	204°	210°	.484"	.496"	<b>840165</b>
<b>POWER BEAST / Performance Level 2</b> Delivers impressive mid-range and top end power. Healthy sound. Economical price. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>16903</b>	390 428	292H	112°	292°	302°	214°	224°	.521"	.547"	<b>840165</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited offroad use. RPM Power Range: 1500 to 4000 / Redline: 5500 plus.	<b>16239</b>	390 428	270HDP	112°	270°	276°	210°	220°	.494"	.523"	<b>84116</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>16241</b>	390 428	280HDP	112°	280°	286°	222°	228°	.538"	.552"	<b>84116</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 6500	<b>16242</b>	332 352	284HDP	112°	284°	290°	228°	230°	.566"	.587"	<b>84116</b>
	<b>16243 MTO</b>	390 428	297HDP	112°	297°	308°	236°	242°	.591"	.588"	<b>84116</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range torque and power. RPM Power Range: 2500 - 6000	<b>16255</b>	390 428	228HDP	108°	280°	288°	224°	232°	.549"	.550"	<b>84116</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Power Range: 2700 - 6500	<b>16256</b>	390 428	290HDP	108°	290°	302°	238°	248°	.550"	.557"	<b>84116</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range acceleration and torque. RPM Power Range: 3000 to 6500	<b>16257</b>	390 428	302HDP	108°	302°	312°	244°	250°	.554"	.556"	<b>84116</b>
<b>SUPERCHARGER</b> Dual purpose hot street/strip cam designed to enhance B&M/Roots type supercharger. Strong mid to top end power. RPM Power Range: 2400 to 6500	<b>16981</b>	390 428	304HDP	114°	304°	304°	244°	244°	.556"	.556"	<b>84016</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00116H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

Part numbers no longer listed may still available as custom grinds. Please contact Crower.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>840165</b>	66016-16	68302X2-16	87063M-16		Hydraulic. 6000 plus rpm. Daily street use.
<b>84116</b>	66016-16	68340-16	87063-16	86071-16	Hydraulic. 6500 plus rpm. Limited street use.
<b>84116RM3</b>	66016RM-16	68340-16	87063-16	86071-16	Rev-Max Lifter, 6500 plus rpm. Limited street use.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

For severe duty applications, Crower recommends using our solid lifter with the added "coolface oiling option". **Specify X980 after corresponding component kit.**

### Spring pressure:

68302X2-16 Seat: 1.850" @ 110 lbs / Nose: 1.350" @ 284 lbs / Coil bind: 1.150" (Stock O.D., no machine work)  
68340-16 Seat: 1.900" @ 119 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work, use cutter 68986\*.)

\* Machine work required, specify 3/8 pilot shaft when ordering.

Deep Seat Shell design lifter: Crower deep seated, solid lifters (Deep Seat Shell 66925-16 and pushrods

(70138-16) insures proper valve train geometry.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# MECHANICAL FLAT TAPPET

## Non Roller 1963-1976

332 352 360 390 406 410 427 428 V8 FE

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.76 / 1.76		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / Performance Level 4</b> High revving with superior mid-range and top end power. RPM Power Range: 2500 - 6000 / Redline: 6500+	16357	390 428	278FDP	114°	278°	284°	240°	243°	.530"	.535"	84316
<b>COMPU-PRO / Performance Level 5</b> High torque, short oval camshaft. RPM Power Range: 2500 - 6000 / Redline: 7000+	16331	390 428	290FDP	108°	290°	298°	247°	252°	.551"	.565"	84316
<b>COMPU-PRO / Performance Level 5</b> Great high torque mid-range oval track grind. RPM Power Range: 3000 - 7000 / Redline: 7500+	16332	390 428	300FDP	108°	300°	310°	255°	260°	.579"	.593"	84316
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00116M	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84316	66916-16	68340-16	87063-16	86071-16	Solid. 7500 plus rpm.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

For severe duty applications, Crower recommends using our solid lifter with the added "coolface oiling option". **Specify X980 after corresponding component kit.**

### Spring pressure:

68340-16 Seat: 1.900" @ 119 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work, use good cutter).

\* Machine work required, specify 38 pilot shaft when ordering.

Deep Seat Shell design lifter: Crower deep seated, solid lifters (Deep Seat Shell 66925-16 and pushrods (70138-16 insures proper valve train geometry.

# MECHANICAL ROLLER TAPPET

## Mechanical 1963-1976

332 352 360 390 406 410 427 428 V8 FE

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.76 / 1.76		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / PERFORMANCE LEVEL 4</b> Excellent street/strip profile. RPM Power Range: 2500 to 6000 / Redline: 7500 plus.	16462	390 428	280FDP	110°	280°	288°	234°	244°	.580"	.582"	84524M 84524M
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> High revving with superior mid-range and top end power. RPM Power Range: 3750 - 7000 / Redline: 7500+	16463	390 428	290FDP	108°	290°	296°	248°	254°	.651"	.685"	84524M 84524M
<b>ULTRA-ACTION / PERFORMANCE LEVEL 5</b> Strong mid-range design. RPM Power Range: 4000 to 7250 / Redline: 7750 plus.	16464	390 428	296FDP	108°	296°	301°	254°	260°	.654"	.663"	84524M 84524M
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00116R	ALL CID									

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

The above cores are 8620 steel billet. Use bronze distributor gear.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84524M	66216-16	68369-16	87053-16	86071-16	7000 rpm. Street use.
84525M	66216-16	68735-16	86781-16	86071-16	7500 plus rpm.

### Spring pressure:

68735-16 Seat: 1.900" @ 267 lbs / Nose: 1.250" @ 595 lbs / Coil bind: 1.150"

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

Note: If exceeding 8000 rpm, high pressure springs and titanium retainers may be required. See spring and retainer specs or contact Crower for proper recommendations.

Note: These cams use .026" intake, .028" exhaust valve lash.

**HIPPO Note:** For severe duty roller lifter applications, we highly recommend using our roller lifters with Hippo "High Pressure Pin Oiling". Specify "H" in the part number. Ex. 66290X874H-16

# HYDRAULIC FLAT TAPPET



**Non Roller 1968-1994**  
**370 429 460 V8**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>22915</b>	370 460	268H	112°	268°	274°	203°	210°	.481"	.488"	<b>84022S</b>
<b>POWER BEAST / Performance Level 2</b> Low to mid-range torque for daily drivability. Economical price. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>22903</b>	429 460	293H	112°	268°	286°	210°	226°	.510"	.536"	<b>84022S</b>
<b>ULTRA BEAST / Performance Level 3</b> Delivers impressive mid-range and top end power. Economical price. RPM Power Range: 2000 - 4800 / Redline: 6200+	<b>22917</b>	460 CID	268H	112°	303°	308°	224°	234°	.538"	.562"	<b>84122</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited offroad use. RPM Power Range: 1500 - 4000 / Redline: 5500+	<b>22240</b>	460 CID	276HDP	112°	274°	281°	215°	221°	.527"	.535"	<b>84122</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>22241</b>	370 429	280HDP	112°	280°	286°	220°	226°	.524"	.541"	<b>84122</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>22242</b>	370 429	284HDP	112°	284°	290°	227°	232°	.552"	.569"	<b>84122</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 7000+	<b>22243</b> <b>MTO</b>	370 429	297HDP	112°	297°	308°	237°	240°	.580"	.576"	<b>84122</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 7000+	<b>22244</b>	460 CID	311HDP	112°	311°	316°	246°	250°	.588"	.604"	<b>84122</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Power Range: 2700 - 6700+	<b>22206</b>	429 460	290HDP	108°	290°	302°	236°	245°	.535"	.545"	<b>84022</b> <b>84122</b>
<b>SUPERCHARGER</b> Dual purpose hot street/strip cam designed to enhance B&M/Roots type supercharger. Strong mid to top end power. RPM Power Range: 2400 to 6700 plus.	<b>22981</b>	429 460	304HC	114°	304°	304°	244°	244°	.541"	.541"	<b>84022</b> <b>84122</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00122H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

*Part numbers no longer listed may be available as custom grinds. Please contact Crower.*

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84022S</b>	66015-16	68302X2-16	87062S-16	86072-16	Hydraulic. 6500 max rpm.
<b>84022RM3</b>	66015RM3-16	68302X2-16	87062-16	86072-16	Rev-Max Lifter
<b>84122</b>	66015-16	68340-16	87062-16	86072-16	Hydraulic. 6500 max rpm.
<b>84122X3</b>	66015X3-16	68340-16	87062-16	86072-16	CamSaver Hydraulic Lifter. 6500 max rpm.

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080" (Machine work required).

68302X2-16 Seat: 1.850" @ 110 lbs / Nose: 1.350" @ 284 lbs / Coil bind: 1.300" (Machine work required).

## ACCESSORIES

Part No.	Description
<b>73615-16</b>	Rocker arms (1.73) 7/16
<b>73619-16</b>	Rocker arms (1.8) 7/16
<b>76535</b>	Timing gear set (1972-up)

**Note:** If using guide plates, heat-treated pushrods (RC60 series) are required. See pushrod section or contact Crower.

**For engines that were originally equipped with a hydraulic flat tappet cam, retro fit hydraulic roller cams & kit are available, call CROWER for details.**

For severe duty applications, Crower recommends using our solid lifter with the added "coolface oiling option". **Specify X980 after corresponding component kit.**

**Note:** "MTO" denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.





# 390 SERIES HYDRAULIC FLAT TAPPET

Non Roller 1968-1994

370 429 460 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift 1.73 / 1.73		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>HOT STREET LEVEL 2</b> Hot street grind that sounds good and runs great. RPM range dependant on CID.	<b>22173</b> MTO	429 460	2100 1800	3600 3300	5200 4800	5700 5300	111°	280°	287°	219°	225°	.306"	.303"	.530"	.524"	<b>84122</b>
<b>HOT STREET LEVEL 3</b> Hot street grind that sounds good and runs great. RPM range dependant on CID.	<b>22175</b> MTO	429 460	2500 2300	4000 3800	5600 5200	6100 5700	110°	298°	303°	236°	241°	.332"	.328"	.574"	.567"	<b>84122</b>
<b>HOT STREET LEVEL 4</b> Hot street grind that sounds good and runs great. RPM range dependant on CID.	<b>22176</b> MTO	429 460	2700 2500	4200 4000	5800 5400	6300 5900	108°	304°	310°	242°	248°	.344"	.340"	.595"	.588"	<b>84122</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00122H</b>	ALL CID														

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84122</b>	66015-16	68340-16	87062-16	86072-16	Hydraulic. 6500 max rpm.
<b>84122X3</b>	66015X3-16	68340-16	87062-16	86072-16	CamSaver Hydraulic Lifter. 6500 max rpm.
<b>84122RM3</b>	66015RM3-16	68340-16	87062-16	86072-16	Rev-Max Lifter

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface.

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080" (Machine work, use cutter 68986\*).

## ACCESSORIES

Part No.	Description
<b>73615-16</b>	Rocker arms (1.73) 7/16
<b>73619-16</b>	Rocker arms (1.8) 7/16
<b>76535</b>	Timing gear set (1972-up)

Note: If using guide plates, heat-treated pushrods (RC60 series) are required. See pushrod section or contact Crower.

**For engines that were originally equipped with a hydraulic flat tappet cam, retro fit hydraulic roller cams & kit are available, call CROWER for details.**

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



## CROWER CAM BREAK-IN PROCEDURE



**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleries. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crower recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crower Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092

# 390 SERIES MECHANICAL FLAT TAPPET



Non Roller 1968-1994  
370 429 460 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>ULTRA BEAST / Performance Level 4</b> Delivers impressive mid-range and top end power. RPM Power Range: 2750 - 6500 / Redline: 7000+	<b>22360</b> <b>MTO</b>	429 460	317F	112°	294°	304°	244°	254°	.588"	.614"	<b>84322</b>
<b>PRO-STREET / Performance Level 4</b> High revving with superior mid-range top end power. RPM Power Range: 2500 - 6000 / Redline: 6500+	<b>22355</b>	429 460	278FDP	110°	278°	284°	238°	241°	.519"	.524"	<b>84322</b>
<b>COMPU-PRO / Performance Level 5</b> High torque, short oval camshaft. RPM Power Range: 2500 - 6000 / Redline: 7000+	<b>22356</b> <b>MTO</b>	429 460	290FDP	108°	290°	298°	247°	251°	.538"	.552"	<b>84322</b>
<b>COMPU-PRO / Performance Level 5</b> Great high torque profile with mid-range power. RPM Power Range: 3000 - 7000 / Redline: 7400+	<b>22357</b>	429 460	300FDP	108°	300°	310°	255°	255°	.569"	.578"	<b>84322</b>
<b>COMPU-PRO / Performance Level 5</b> Strong mid-range/top end profile. RPM Power Range: 4000 - 7250 / Redline: 7500+	<b>22358</b>	428 460	312FDP	108°	312°	318°	263°	269°	.590"	.602"	<b>84322</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00122M</b>	ALL CID									
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00060</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84322</b>	66915-16	68340-16	87062-16	86072-16	Solid. 7500 plus rpm.
<b>84322X980</b>	66915X980-16	68340-16	87062-16	86072-16	CoolFace Solid Lifter. 7500 plus rpm.
<b>84322LW980</b>	66915LW980-16	68340-16	87062-16	86072-16	Light Weight Lifter

For severe duty applications, Crower recommends using our solid lifter with the added "**coolface oiling option**".

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080"  
(Machine work, use cutter 68986\*.)

Optional spring (race only):

68385X2-16 Seat: 1.900" @ 166 lbs / Nose: 1.300" @ 422 lbs / Coil bind: 1.100"  
(Machine work, use cutter 68986\*.)

**Note:** Screw-in rocker studs should be used when installing solid lifter camshafts to insure proper valve adjustment. (See Page 162)

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of **ZDDPlus™** is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**For The Best Overall Performance Gains Use The Cam Form, And Let Crower Make You A Custom Cam...**



# MECHANICAL ROLLER TAPPET

1968-1994

370 429 460 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> - Excellent street/strip profil . RPM Power Range: 2500 to 6000 / Redline: 7500 plus.	<b>22401</b>	429 460	286R	110°	275°	284°	234°	244°	.570"	.572"	<b>84523</b>
<b>ULTRA-ACTION / Performance Level 5</b> -High torque oval track profil . RPM Power Range: 3750 to 7000 / Redline: 7500 plus.	<b>22402</b> <b>MTO</b>	429 460	290R	108°	290°	296°	249°	254°	.642"	.645"	<b>84523</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Strong mid-range design. RPM Power Range: 4000 to 7250 / Redline: 7750 plus.	<b>22403</b>	429 460	300R	108°	300°	310°	258°	268°	.654"	.648"	<b>84523</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Fast 3/8 to 1/2 mile super oval track profil . RPM Power Range: 4250 to 7500 / Redline: 8000 plus.	<b>22404</b>	429 460	308R	108°	308°	314°	264°	268°	.666"	.668"	<b>84806</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Mid-range and top end drag profil . RPM Power Range: 4500 to 7750 / Redline: 8250 plus.	<b>22405</b>	429 460	316R	108°	316°	322°	272°	277°	.690"	.698"	<b>84806</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Mid-range and top end drag profil . RPM Power Range: 4750 to 8000 / Redline: 8500 plus.	<b>22406</b> <b>MTO</b>	429 460	322R	110°	322°	328°	282°	280°	.757"	.721"	<b>84806</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Full top end power profil . RPM Power Range: 5000 to 8250 / Redline: 8750 plus.	<b>22407</b> <b>MTO</b>	429 460	330R	110°	330°	338°	284°	288°	.769"	.754"	<b>84806</b>
<b>CUSTOM GROUND ROLLER</b> - Special order roller lifter camshaft ground to your specific tions. Call our technical support staff for personalized camshaft assistance.	<b>00122R</b>	All cid									<b>See Below</b>

The above cores are 8620 steel billet. Use bronze distributor gear.

Note: These cams use .026" intake, .028" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Cups	Remarks
<b>84523</b>	66217-16	68804-16	87063M-16		8000 plus rpm. Race only.
<b>84806</b>	N/A	68806-16	86781M-16	68940-1	

### Optional springs:

68804-16 Seat: 1.900" @ 257 lbs / Nose: 1.250" @ 582 lbs / Coil bind: 1.100" (Machine work, use cutter)

68806-16 Seat: 2.050" @ 194 lbs / Nose: 1.250" @ 733 lbs / Coil bind: 1.160"

\* Machine work required, specify 1/32 pilot shaft when ordering.

(See Page 162)

Note: Screw-in rocker studs should be used when installing roller lifter cams to insure proper valve adjustment.

**Note:** Roller cams and kits available for Boss 429. Contact Crower for technical assistance.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**HIPPO Note:** For severe duty roller lifter applications, we highly recommend using our roller lifters with Hippo "High Pressure Pin Oiling". Specify "H" in the part number.

Ex. 66290X874H-16

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>
<b>Distrbuter Gears</b>	<b>Pg. 125</b>
<b>Cam Accessories</b>	<b>Pg's.123-125</b>

**Note:** Rocker arms available in Aluminum & Stainless steel



# B SERIES VTEC - TWIN CAM



## B16A / B18C / B17A - TWIN CAM

Description	Part Number	C.I.D. Group	Lobe Sep.	Advertised Duration (.010")		Duration @ .050"		Lobe Lift		Gross Lift		Suitable Component Kit
				Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STOCK CIVIC Si (1999-2000)</b>	<b>Civic Si</b>	Mid		284°	282°	224°	220°	.265"	.244"	.412"	.379"	<b>Stock</b>
<b>STOCK GSR (94-up)</b>	<b>GSR</b>	Mid		290°	292°	236°	224°	.273"	.244"	.423"	.378"	<b>Stock</b>
<b>JDM SPEC CIVIC TYPE R (98-up)</b>	<b>CTR</b>	Mid		294°	305°	240°	232°	.289"	.269"	.447"	.416"	<b>Stock</b>
<b>STAGE 1</b> Performance oriented street use. CTR+ profile that will work with Type R valve springs. Also works with mild turbo. RPM Power Range: 1500 - 8500+	<b>63401-2</b>	Mid Sec Pri	102°	296° 278° 259°	306° 288° 230°	242° 200° 176°	234° 201° 179°	.290" .214" .141"	.270" .204" .131"	.449" .321" .204"	.418" .306" .190"	<b>84161</b> <b>841615</b>
<b>STAGE 2</b> Forced Induction Special. Designed specifically for turbo/blower. Features short duration, low overlap and high valve lift. Requires kit #84161. RPM Power Range: 1500 - 9500+. Horsepower varies w/boost.	<b>63401T-2</b>	Mid Sec Pri	112°	308° 278° 259°	309° 288° 230°	233° 200° 176°	235° 201° 179°	.301" .214" .141"	.287" .204" .131"	.466" .321" .204"	.445" .306" .190"	<b>84161</b> <b>841615</b>
<b>STAGE 2</b> Stock idle lobes (sec/pri) with #63402 VTEC (mid) lobes. Recommend #84163 spring unless stock rev limit. 18+ hp over B18C. RPM Power Range: 1800 - 9250+. 18+ HP over built B18C.	<b>63402A-2</b>	Mid Sec Pri	102°	311° 278° 259°	308° 288° 230°	255° 200° 176°	248° 201° 179°	.301" .214" .141"	.301" .204" .131"	.466" .321" .204"	.466" .306" .190"	<b>841615</b>
<b>STAGE 3 Race</b> Road/Rally Race and Street/Strip. Requires #84161 kit with rev limiter mod. V-tec & ECU tuning req. 20+ hp over built B18C. RPM Power Range: 2500 - 9500+.	<b>63402-2</b>	Mid Sec Pri	102°	311° 284° 269°	308° 273° 259°	255° 215° 196°	248° 213° 193°	.301" .243" .181"	.301" .234" .174"	.466" .364" .262"	.466" .351" .252"	<b>84161</b> <b>841615</b>
<b>STAGE 4 - Full Race, All Motor / Turbo</b> Drag Race and rough Street/Strip. Requires #84161 kit with modified revs. 22+ over built B18C. RPM Power Range: 1200 - 9750+	<b>63403-2</b>	Mid Sec Pri	100°	305° 282° 291°	305° 284° 283°	263° 216° 198°	255° 214° 199°	.302" .243" .215"	.302" .234" .203"	.468" .364" .311"	.468" .351" .294"	<b>84161</b> <b>841615</b>
<b>CUSTOM GRIND</b> Crown can custom grind cams to your desired specs, also proprietary applications.	<b>00063-2</b>											

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

Duration figures are taken at the valve. Gross lift calculated by using the following rocker ratios: Mid (VTEC) - 1.55, Secondary - 1.50, Primary - 1.45.

**CROWER strongly recommends bolt upgrade # 86063-2 for all cams**

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84161</b>	68188-16	87093-16	Titanium retainer. High pressure spring for rpm over 9500
<b>84161D</b>	68188-16	87093D-16	Titanium retainer. High press. spring, high lift cams (+.060"). Mach work req.
<b>84161DS</b>	68188-16	87093DS-16	Steel retainer. High press. spring, high lift cams (+.060"). Mach work req.
<b>84161S</b>	68188-16	87093S-16	Steel retainer for street use.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

#### ADJUSTABLE SPROCKETS

Crower's new cam sprockets are made from premium 6061-T6 billet aluminum and incorporate a four bolt ARP® fastening system to prevent the slippage found in other brands. The lightweight design (327g) reduces unwanted harmonics which could cause valve train failure. To have the full potential of your cam performance, cam sprockets are required.

**\*Note: Some machine work may be required on the underside of rocker using 87093D retainer to allow clearance.**

86115-16 Premium steel billet valve keepers (locks) available in standard or +.050" inst ht (#86115X1-16).

86115T-16 Premium titanium billet valve keepers (locks) available in standard installed height. Half the weight of steel.

### ACCESSORIES

Part No.	Description
<b>86063-2</b>	Upgraded cam bolts (set 2) - CROWER strongly recommends these bolt for all cams
<b>86054BC</b>	Adjustable Cam Sprocket (1 only). 2 required
<b>97400I-8</b>	Stainless steel valves - 33 mm head dia (8 only int)
<b>97400E-8</b>	Stainless steel valves - 28 mm head dia (8 only exh)
<b>97401I-8</b>	Stainless steel valves - 33.5 mm head dia (8 only int)
<b>97401E-8</b>	Stainless steel valves - 28.5 mm head dia (8 only exh)
<b>97402I-8</b>	Stainless steel valves - 34 mm head dia (8 only int)



## FEATURES STRONGER CORE DESIGN

Description	Part Number	C.I.D. Group	Lobe Sep.	Advertised Duration (.010")		Duration @ .050"		Lobe Lift		Gross Lift		Suitable Component Kit
				Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STOCK Type SH</b>	<b>SH</b>	Mid		288°	308°	231°	234°	.289"	.268"	.448"	.415"	<b>Stock</b>
<b>STOCK JDM Type S</b>	<b>JDM</b>	Mid		306°	310°	230°	230°	.303"	.283"	.469"	.438"	<b>Stock</b>
<b>STAGE 1</b> Proven performer in all motor applications on the street. No Ecu mods or aftermarket valve springs required. RPM Power Range: Idle - 7500+	<b>63421-2</b>	Mid Sec Pri	110°	307° 214° 210°	318° 285° 276°	238° 183° 175°	234° 191° 183°	.296" .215" .179"	.276" .208" .169"	.459" .323" .260"	.428" .312" .245"	<b>Stock</b>
<b>STAGE 2 - Forced Induction Special</b> Excellent for turbo or supercharged applications. Features short duration and high lift. Requires spring #68184-16. RPM Power Range: Idle - 8000+	<b>63421T-2</b>	Mid Sec Pri	112°	308° 214° 210°	309° 285° 276°	233° 183° 175°	235° 191° 183°	.299" .215" .179"	.289" .208" .169"	.463" .323" .260"	.448" .312" .245"	<b>84167</b> <b>84167S</b>
<b>STAGE 2</b> Stock idle lobes (sec/pri) with similar #63422 VTEC (mid) lobes. Recommend kit #84167 unless stock revs. RPM Power Range: Idle - 8000	<b>63422A-2</b>	Mid Sec Pri	106°	311° 214° 210°	308° 285° 276°	255° 183° 175°	248° 191° 183°	.302" .215" .179"	.301" .208" .169"	.468" .323" .260"	.467" .312" .245"	<b>84167</b> <b>84167S</b>
<b>STAGE 3 Race - All Motor / Turbo</b> Road/Rally Race and Street/Strip. Most popular profile. Requires #84167 kit. V-tec & ECU tuning recommended. RPM Power Range: 1000 - 8000+	<b>63422-2</b>	Mid Sec Pri	106°	311° 280° 278°	308° 289° 256°	255° 199° 198°	248° 201° 199°	.302" .216" .196"	.301" .204" .182"	.468" .324" .284"	.467" .306" .263"	<b>84167</b> <b>84167S</b>
<b>STAGE 4 - Full Race, All Motor / Turbo</b> Drag Race and rough Street/Strip. Requires #84167 kit. Not for inexperienced tuner. Head Mods, V-tec & ECU tuning req. RPM Power Range: 1100 - 8200+	<b>63423-2</b>	Mid Sec Pri	102°	305° 267° 262°	305° 269° 254°	263° 216° 198°	255° 210° 193°	.302" .243" .184"	.302" .236" .176"	.468" .365" .267"	.468" .354" .255"	<b>84167</b> <b>84167S</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary applications.	<b>00065-2</b>	Mid Sec Pri										

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

Duration figures are taken at the valve.  
Gross lift calculated by using the following rocker ratios: Mid Lobe (VTEC) - 1.55, Secondary Lobe - 1.50, Primary Lobe - 1.45.

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84167</b>	68184-16	87093D-16	Titanium retainer is +.060" inst. ht. Rocker machining may be required.
<b>84167S</b>	68184-16	87093DS-16	Steel retainer, for daily street use.

Note: "MTO" denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

### Spring pressure:

68184-16 Seat: 1.460" @ 89 lbs / Nose: 0.950" @ 220 lbs / Coil bind: 0.790" (No machine work required).

Optional spring:

**Note:** Some machine work may be required on the underside of rocker to allow retainer clearance.

86115-16 Premium steel billet valve keepers (locks) available in standard or +.050" inst ht (#86115X1-16).

86115T-16 Premium titanium billet valve keepers (locks) available in standard installed height. Half the weight of steel.

### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

### ADJUSTABLE SPROCKETS

Crower's new cam sprockets are made from premium 6061-T6 billet aluminum and incorporate a four bolt ARP® fastening system to prevent the slippage found in other brands. The lightweight design (327g) reduces unwanted harmonics which could cause valve train failure. To obtain full potential of your cam performance, cam sprockets are required.

### STAINLESS STEEL VALVES

Made from the highest grade stainless steel, this new Crower valve is a must for high horsepower, high boost and high rpm applications. The exclusive "Pro Flo" head design delivers a significant increase in cylinder head flow figures, while the tip area is hardened to RC50, including past the critical keeper groove area for added strength. Fully CNC machined and swirl polished to insure that you will get the best performance valve available on the market. Choose from standard, 1/2 mm, 1 mm and 2 mm oversize. Titanium valves also available. Contact Crower for availability. When ordering sprockets, be sure to specify two.

## ACCESSORIES

Part No.	Description
<b>86054H</b>	Adjustable Cam Sprocket (1 only). All black. 2 required
<b>97415I-8</b>	Stainless steel valves - 35 mm head dia (8 only int)
<b>97415E-8</b>	Stainless steel valves - 30 mm head dia (8 only exh)
<b>97416I-8</b>	Stainless steel valves - 35.5 mm head dia (8 only int)
<b>97416E-8</b>	Stainless steel valves - 30.5 mm head dia (8 only exh)
<b>97417I-8</b>	Stainless steel valves - 36 mm head dia (8 only int)
<b>97417E-8</b>	Stainless steel valves - 31 mm head dia (8 only int)
<b>97418I-8</b>	Stainless steel valves - 37 mm head dia (8 only int)

**Note:** When ordering valves, be sure to specify one set int and one set exh.

**Note:** When ordering sprockets, be sure to specify two.

**Note: Valve guides may require honing to size. All Crower VTEC valves are 5.5mm stem diameter. Factory guides may vary depending on specific engine.**



# RSX-Type S (USDM) CIVIC Type R (JDM)

# Honda/Acura

## New Improved Cam Core Technology

K20A2, K20Z - VTEC

Description	Part Number	C.I.D. Group	Lobe Sep.	Advised Duration (.010")		Duration @ .050"		Lobe Lift		Gross Lift 1.75 / 1.75		Suitable Component Kit
				Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>ACURA RSX-Type S (2001-up)</b>	<b>Stock</b>	Mid		302°	305°	219°	215°	.276"	.246"	.483"	.431"	
<b>ACURA TSX (2004)</b>	<b>Stock</b>	Mid		310°	302°	210°	212°	.258"	.259"	.451"	.453"	
<b>STAGE 1</b> Performance oriented street. Hotter than JDM Type R profile. Works with stock springs if no mods to factory rev limiter. RPM Range: Idle - 9000	<b>63451-2</b>	Mid Sec Pri	110°	300° 245° 245°	290° 245° 245°	229° 176° 176°	226° 176° 176°	.274" .173" .173"	.272" .173" .173"	.480" .294" .294"	.476" .294" .294"	<b>Stock</b> <b>84164</b> <b>84164S</b>
<b>STAGE 2 - Forced Induction Special</b> Designed for turbo/supercharger. Features short duration, low overlap and high lift. Requires #84164 kit & ECU mods. Horsepower varies w/boost & mods. RPM Range: Idle - 9500+	<b>63451T-2</b>	Mid Sec Pri	112°	296° 245° 245°	296° 245° 245°	220° 176° 176°	220° 176° 176°	.297" .173" .173"	.297" .173" .173"	.519" .294" .294"	.519" .294" .294"	<b>84164</b> <b>84164S</b> <b>84164S</b>
<b>STAGE 2 - Race - All Motor / Turbo</b> Road/Rally and Street/Strip. Requires #84164 spring kit and compatible ECU upgrade. Slight lobe at idle to be expected. RPM Range: 1000 - 9500	<b>63452-2</b>	Mid Sec Pri	110°	304° 250° 250°	300° 250° 250°	234° 180° 180°	228° 180° 180°	.294" .190" .190"	.276" .190" .190"	.514" .323" .323"	.483" .323" .323"	<b>84164</b> <b>84164S</b> <b>84164S</b>
<b>STAGE 3 - Full Race, All Motor / Turbo</b> Drag Race and radical Street/Strip. Requires #84164 spring Not for inexperienced tuner. Head Mods, V-tec & ECU tuning req. RPM Range: 1200 - 10,000	<b>63453-2</b>	Mid Sec Pri	110°	310° 256° 256°	304° 256° 256°	247° 185° 185°	244° 185° 185°	.303" .207" .207"	.282" .207" .207"	.530" .352" .352"	.494" .352" .352"	<b>84164</b> <b>84164S</b> <b>84164S</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary applications.	<b>00066-2</b>	Mid Sec Pri										

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

**Note: The above cams will not fit the base RSX or Civic Si (USDM 2001-up) models with the K20A3 engine.** Cams for those applications will be available shortly. Duration figures are taken at the cam. Gross lift calculated by using the following rocker ratios: Mid (VTEC) - 1.75, Secondary - 1.7, Primary - 1.7.

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84164</b>	68189-16	87094-16	Titanium retainer intended for race and limited street
<b>84164S</b>	68189-16	87094S-16	Steel retainer, for daily street use.

#### Spring pressure:

68189-16 Seat: 1.590" @ 85 lbs / Nose: 1.110" @ 261 lbs / Coil bind: 1.030" (No machine work required).

**Note:** Crower titanium retainers weigh 7.5 grams vs. 12 grams stock steel. Crower steel retainers weigh 10.5 grams.

86115-16 Premium steel billet valve keepers (locks) available in standard installed height.

86115T-16 Premium titanium billet valve keepers (locks) available in standard installed height. Half the weight of steel.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

**Note:** When ordering valves, be sure to specify one set int and one set exh.

#### STAINLESS STEEL VALVES

Made from the highest grade stainless steel, this new Crower valve is a must for high horsepower, high boost and high rpm applications. The exclusive "Pro Flo" head design delivers a significant increase in cylinder head flow figures, while the tip area is hardened to RC50, including past the critical keeper groove area for added strength. Fully CNC machined and swirl polished to insure that you will get the best performance valve available on the market. Choose from standard, 1/2 mm, 1 mm and 2 mm oversize. Titanium valves also available. Contact Crower for availability.

### ACCESSORIES

Part No.	Description
<b>97410I-8</b>	Stainless steel valves - 35 mm head dia (8 only int)
<b>97410E-8</b>	Stainless steel valves - 30 mm head dia (8 only exh)
<b>97411I-8</b>	Stainless steel valves - 35.5 mm head dia (8 only int)
<b>97411E-8</b>	Stainless steel valves - 30.5 mm head dia (8 only exh)
<b>97412I-8</b>	Stainless steel valves - 36 mm head dia (8 only int)
<b>97412E-8</b>	Stainless steel valves - 31 mm head dia (8 only ext)

### Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

## New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advertised Duration @ .010"		Duration @ .050"		Lobe Lift		Gross Lift 1.75 / 1.75		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (B18B - LS)</b>	<b>Stock</b>		220° 265°	Lobe Valve	222° 267°	185° 194°	Lobe Valve	187° 196°	.225" .217"	.394" .380"	<b>Stock</b>
<b>STAGE 1</b> Street use with emphasis on mid range power. Slight lobe at idle. RPM Power Range: Idle - 7250+	<b>62402-2</b>	110°	245° 290°	Lobe Valve	251° 296°	193° 203°	Lobe Valve	198° 208°	.238" .228"	.417" .399"	<b>Stock</b>
<b>STAGE 2 - Forced Induction Special</b> Turbo Special. Short duration and high lift grind. Requires #84162 kit. RPM Power Range: 900 - 8000+	<b>62402T-2</b>	113°	256° 301°	Lobe Valve	256° 301°	193° 203°	Lobe Valve	193° 203°	.268" .268"	.469" .469"	<b>84162 84162S</b>
<b>STAGE 2</b> Street/Strip package. Most popular N/A profile. Requires #84162 kit. RPM Power Range: 1000 - 8000+	<b>62403-2</b>	110°	250° 295°	Lobe Valve	250° 295°	211° 221°	Lobe Valve	210° 220°	.241" .235"	.422" .411"	<b>84162 84162S</b>
<b>STAGE 3 - Race</b> Recommended for mostly strip use in N/A applications. Rough idle. RPM Power Range: 1100 - 8200+	<b>62404-2</b>	110°	263° 308°	Lobe Valve	258° 303°	216° 226°	Lobe Valve	214° 224°	.254" .248"	.445" .434"	<b>84162 84162S</b>
<b>STAGE 3 - Full Race All Motor</b> All out, all motor drag profile. RPM Range: 1500 to 8500+	<b>62405A-2</b>		308° 353°	Lobe Valve	305° 350°	230° 241°	Lobe Valve	227° 238°	.273" .268"	.478" .469"	<b>84162 84162S</b>
<b>CUSTOM GROUND B18A/B CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles also available.	<b>00062-2</b>										

Note: **62402 HC-2** Approved cams for Honda Challenge

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84162</b>	68181-16	87092-16	Titanium retainer. Fits B18A and B18B. For limited street use.
<b>84162S</b>	68181-16	87092S-16	Steel Retainer, for daily street use.

#### Spring pressure:

68181-16 Seat: 1.400" @ 48 lbs / Nose: 0.950" @ 148 lbs / Coil bind: 0.710" (No machine work required).

#### Optional spring:

68182-16 Seat: 1.400" @ 70 lbs / Nose: 0.950" @ 202 lbs / Coil bind: 0.800" (No mach work / High pressure design).

**Note:** Crower titanium retainers weigh 5.5 grams vs. 12 grams stock.

**Factory installed height on intake = 1.320", exhaust = 1.425"**

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

**Aweis Adde @ TB Motorworx  
9's V6 All Motor**



#### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

### ACCESSORIES

Part No.	Description
<b>86054BB</b>	Adjustable Cam Sprocket (1 only). All black. 2 required
<b>86054BC</b>	Adjustable Cam Sprocket (1 only). Black & Silver. 2 required
<b>97407I-8</b>	Stainless steel valves - 31 mm head dia (8 only int)
<b>97407E-8</b>	Stainless steel valves - 28 mm head dia (8 only exh)
<b>97408I-8</b>	Stainless steel valves - 31.5 mm head dia (8 only int)
<b>97408E-8</b>	Stainless steel valves - 28.5 mm head dia (8 only exh)

Note: When ordering valves, be sure to specify one set int and one set exh.

Note: When ordering sprockets, be sure to specify two.

**DON'T SEE YOUR  
FAVORITE PART #?  
IT MAY STILL BE AVAILABLE  
CALL THE CROWER  
TECH. DEPT FOR INFO.**

# H23 SERIES NON-VTEC TWIN CAM

# Honda/Acura

## New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advised Duration (.010")		Duration @.050"		Lobe Lift		Gross Lift 1.85 / 1.85		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>HONDA H23 Prelude Si (1994)</b>	<b>Stock</b>		240°	240°	183°	183°	.224"	.224"	.414"	.414"	<b>Stock</b>
<b>STAGE 1</b> Street use with emphasis on bottom end and mid range power. Works with stock springs up to factory rev limiter. RPM Power Range: Idle - 7000+	<b>62481-2</b>	114°	245°	251°	193°	193°	.238"	.228"	.440"	.422"	<b>84177</b>
<b>STAGE 2 - Forced Induction</b> Designed specifically for turbo or supercharger applications. Low duration, high lift profile. Requires Crower spring kit #84177. RPM Power Range: Idle - 8000+	<b>62481T-2</b>	114°	245°	245°	193°	193°	.238"	.238"	.440"	.440"	<b>84177</b>
<b>STAGE 2 - Race</b> Designed for street/strip applications in normally aspirated engines. Requires spring/retainer kit #84177. RPM Power Range: 1000 - 7800+	<b>62482-2</b>	114°	250°	250°	211°	211°	.241"	.235"	.446"	.435"	<b>84177</b>
<b>STAGE 3 - Full Race</b> Drag Race and radical Street/Strip. Requires #84177 spring kit and compatible ECU upgrade for optimum results. Rough idle. RPM Power Range: 1100 - 8000+	<b>62483-2</b>	110°	255°	255°	215°	215°	.244"	.244"	.451"	.451"	<b>84177</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary profiles available upon request.	<b>00061-2</b>										

Duration figures are taken at the lobe.

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84177</b>	68181-16	87092D-16	68929-16 Titanium retainer intended for race and limited street

#### Spring pressure:

68181-16 Seat: 1.350" @ 56 lbs / Nose: 0.950" @ 148 lbs / Coil bind: 0.710" (No machine work required).

**Note:** Crower titanium retainers weigh 7.5 grams vs. 12 grams stock steel. Crower steel retainers weigh 10.5 grams.

#### MAXI-LITE BILLET RODS

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

#### STEEL BILLET RODS (See Page 204-209)

Crower steel billet rods are made to exacting tolerances on state-of-the-art CNC machining centers. Available for all popular Honda/Acura engine makes, Crower connecting rods are the smart choice if you value your engine block and other internals. Made from premium, steel alloy and features 220,000 p.s.i. bolts for ultimate clamping.



## New Improved Cam Core Technology

Description	Part Number	Advertised Duration		Duration Lobe Lift		Lobe Lift		Duration @ .050"		Suitable Component Kit
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (2001 - up Civic Ex)</b>	<b>Stock</b>	235°	229°	183°	171°	.199"	.163"	.338" inches 8.58 mm	.310" inches 7.87 mm	<b>Stock</b>
<b>STAGE 1 - Normally Aspirated - Daily Driver</b> Stock idle, excellent street manners. Works with stock valve train. RPM Range: Idle - 7000+	<b>63461</b>	114°	234° 228°	188°	180°	.217"	.190"	.369" inches 9.37 mm	.361" inches 9.17 mm	<b>Stock</b>
<b>STAGE 2 - Boost Special - Street/Strip Turbo or Supercharger</b> Short duration, big lift turns your turbo loose for added HP. Requires kit #84166. RPM Range: Idle - 7500+	<b>63461T</b>	114°	243° 232°	193°	183°	.237"	.218"	.403" inches 10.23 mm	.414" inches 10.51 mm	<b>84166</b> <b>84166S</b>
<b>STAGE 2 - Normally Aspirated - Race Turbo</b> Hot street/strip profile, slight lobe at idle. #84166 spring kit required. RPM Range: 1500 - 8000+	<b>63462</b>	114°	253° 236°	200°	188°	.227"	.217"	.386" inches 9.80 mm	.412" inches 10.46 mm	<b>84166</b> <b>84166S</b>
<b>STAGE 3 - Normally Aspirated - All Motor Drag Profile</b> Not for inexperienced tuner. Head Mods, V-tec & ECU tuning req. Limited street. RPM Range: 1250 - 9000+	<b>63463</b>	114°	261° 253°	208°	200°	.250"	.227"	.425" inches 10.80 mm	.431" inches 10.94 mm	<b>84166</b> <b>84166S</b>
<b>CUSTOM GROUND D17A2 CAM</b> Special order custom ground profile available for an additional charge. Proprietary and confidential profiles also available.	<b>00087</b>									

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

Note: The above cores will not fit the D17A1 non VTEC cylinder head. No cores available at time of publication. Rocker ratio is 1.7:1 intake and 1.9:1 exhaust.

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84166</b>	68180-16	87096-16	High pressure single spring and titanium retainer kit.
<b>84166S</b>	68180-16	87096S-16	Steel Retainer for Daily Street Use.

### Spring pressure:

68180-16 Seat: 1.975" @ 58 lbs / Nose: 1.500" @ 154 lbs / Coil bind: 1.320" (No machine work required).

86115-16 Premium steel billet valve keepers (locks) available in standard or +.050" inst ht (#86115X1-16).

86115T-16 Premium titanium billet valve keepers (locks) available in standard installed height. Half the weight of steel.

### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

## ACCESSORIES

Part No.	Description
<b>97403I-8</b>	Stainless steel valves - 30 mm head dia (8 only int)
<b>97403E-8</b>	Stainless steel valves - 26 mm head dia (8 only exh)
<b>97404I-8</b>	Stainless steel valves - 30.5 mm head dia (8 only int)
<b>97404E-8</b>	Stainless steel valves - 26.5 mm head dia (8 only exh)

### STEEL BILLET RODS

100% made in the USA from premium steel billet material, Crower offers two styles of rods for the Honda D17A2 engine. Crower's premium standard steel billet rod (#B93740B-4) is designed for boosted applications in excess of 12 psi or over 100 HP shot of nitrous. Also available in a Maxi-Lite all motor design (ML93740B-4) for added weight reduction and quicker throttle response.

### MAXI-LITE BILLET RODS

(See Page 204-209)

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet.





# D16Z6 & D16Y8 VTEC SINGLE CAM

# Honda/Acura

## New Improved Cam Core Technology

Description	Part Number	Lobe	Lobe Sep.	Advertised Duration (.010")		Duration @ .050"		Lobe Lift		Gross Lift		Suitable Component Kit
				Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STOCK D16Z6 SOHC VTEC (92-95)</b>	<b>Stock</b>	Int Mid / Exh		304°	303°	212°	204°	.246"	.207"	.394"	.373"	<b>Stock</b>
<b>STOCK D16Y8 SOHC VTEC (96-up)</b>	<b>Stock</b>	Int Mid / Exh		310°	302°	210°	212°	.258"	.259"	.451"	.453"	<b>Stock</b>
<b>STOCK REPLACEMENT</b> Similar to stock profile. Excellent for mild turbo and nitrous on the street with no other mods. RPM Range: Idle - 7000+	<b>63440Z</b> <b>63440Y</b>	Mid Sec Pri	110° 111°	288° 293° 293°	299° - -	220° 197° 197°	207° - -	.243" .205" .205"	.203" - -	.389" .328" .328"	.365" - -	<b>Stock</b>
<b>STAGE 1</b> Features far more aggressive ramp rates than stock with added duration. Idle lobes remain same as stock. RPM Range: Idle - 7200+	<b>63441Z</b> <b>63441Y</b>	Mid Sec Pri	111° 110°	292° 293° 293°	302° - -	228° 197° 197°	208° - -	.254" .205" .205"	.214" - -	.406" .328" .328"	.385" - -	<b>84166</b> <b>84166S</b>
<b>STAGE 2 - Forced Induction Special</b> Designed specifically for turbo or supercharged engines. Short duration reduces overlap, for more cylinder pressure. RPM Range: Idle - 8000+	<b>63444ZT</b> <b>63444YT</b>	Mid Sec Pri	112° 112°	312° 293° 293°	318° - -	234° 197° 197°	217° - -	.269" .205" .205"	.237" - -	.430" .328" .328"	.427" - -	<b>84166</b> <b>84166S</b>
<b>STAGE 2 - Race</b> Street/Strip. Rough lobe at idle due to increased sec/pri lobe specifications. Most popular all-motor profile. RPM Range: 1000 - 7500+	<b>63442Z</b> <b>63442Y</b>	Mid Sec Pri	109° 109°	319° 295° 295°	310° - -	235° 204° 204°	223° - -	.270" .205" .205"	.242" - -	.432" .332" .332"	.436" - -	<b>84166</b> <b>84166S</b>
<b>STAGE 3 - Full Race</b> Race cams. Requires extensive cylinder head modifications. Not for inexperienced tuner. V-tec & ECU tuning required. RPM Range: 1200 - 8000+	<b>63443Z</b> <b>63443Y</b>	Mid Sec Pri	113° 113°	329° 295° 295°	317° - -	239° 204° 204°	226° - -	.276" .210" .210"	.260" - -	.442" .332" .332"	.468" - -	<b>84166</b> <b>84166S</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary applications.	<b>00067</b>	Mid Sec Pri										

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

**Note:** Specify "Z" after part number if D16Z6 (92-95) or "Y" after part number if D16Y8 (96-up). All duration figures listed above are specific to the D16Y8. Gross lift calculated by using the following rocker ratios: Int Mid Lobe (VTEC) - 1.60, Int Sec Lobe - 1.60, Int Pri Lobe - 1.60, Exhaust - 1.80.

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84166</b>	68180-16	87096-16	Fits D16Z6 (92-95) and D16Y8 (96-up) cylinder heads
<b>84166S</b>	68180-16	87096S-16	Steel Retainer for Daily Street Use.

#### Spring pressure:

68180-16 Seat: 1.975" @ 58 lbs / Nose: 1.500" @ 154 lbs / Coil bind: 1.320" (No machine work required).

86115-16 Premium steel billet valve keepers (locks) available in standard or +.050" inst ht (#86115X1-16).

86115T-16 Premium titanium billet valve keepers (locks) available in standard installed height. Half the weight of steel.

### ACCESSORIES

Part No.	Description
<b>86066</b>	Upgraded Cam Bolt
<b>86054YC</b>	D16Y8 Adjustable Cam Sprocket (1 only). Black & Silver.
<b>86054YB</b>	D16Y8 Adjustable Cam Sprocket (1 only). All Black.
<b>86054ZC</b>	D16Z6 Adjustable Cam Sprocket (1 only). Black & Silver.
<b>86054ZB</b>	D16Z6 Adjustable Cam Sprocket (1 only). All Black.
<b>97403I-8</b>	Stainless steel valves - 30 mm head dia (8 only int)
<b>97403E-8</b>	Stainless steel valves - 26 mm head dia (8 only exh)
<b>97404I-8</b>	Stainless steel valves - 30.5 mm head dia (8 only int)
<b>97404E-8</b>	Stainless steel valves - 26.5 mm head dia (8 only exh)

#### ADJUSTABLE SPROCKETS

Crower's new cam sprockets are made from premium 6061-T6 billet aluminum and incorporate a four bolt ARP® fastening system to prevent the slippage found in other brands. For the ultimate tuner, Crower sprockets feature 5/16" diameter, 12 point ARP® fasteners with a hardened washer to prevent galling and stripping. The lightweight design (367g) reduces unwanted harmonics which could cause valve train failure.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

**Note:** When ordering sprockets, Y = D16Y8 (96-up), Z = D16Z6 (92-95).

**Note:** When ordering valves, be sure to specify one set int and one set exh.





# HYDRAULIC FLAT TAPPET

Cam cores come standard with short nose, long nose cams available.

Please specify when ordering.

3.9L 4.0L 4.6L V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm range. Strong low end and mid-range power for spirited driving on or off the road. RPM Power Range: 1500 to 4000 / Redline: 5500 Plus.	53229	300	258HDP	112°	258°	260°	196°	202°	.430"	.446"	84058
	53230	340	260HDP	112°	260°	266°	202°	210°	.446"	.451"	84058
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> These cams offer extended rpm range with emphasis on upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 6000 Plus.	53231	300	270HDP	112°	270°	276°	210°	218°	.451"	.477"	84058
	53232	340	276HDP	112°	276°	281°	214°	218°	.488"	.490"	84058
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> These cams exhibit strong mid-range and top end torque and horsepower. RPM Power Range: 2000 to 6000 / Redline: 6500 Plus.	53233	300	280HDP	112°	280°	286°	220°	226°	.488"	.501"	84150
	53234	340	284HDP	112°	284°	290°	228°	234°	.512"	.526"	84150
<b>CUSTOM GROUND HYDRAULIC - Short Nose</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00153H	ALL									
<b>CUSTOM GROUND HYDRAULIC - Long Nose</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00157H	ALL									

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 4</b> Tremendous upper mid to top end torque and horsepower. RPM Power Range: 3000 to 6500 / Redline: 7500 Plus.	53305	340	304FDP	108°	304°	310°	256°	262°	.536"	.549"	84350
<b>CUSTOM GROUND SOLID - Short Nose</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00153M	ALL									
<b>CUSTOM GROUND SOLID - Long Nose</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00157M	ALL									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
84058	66050-16	68313 -16	87019-16	86072-16	Hydraulic Lifter.
84150	66050-16	68405 -16	87021-16	86072-16	Hydraulic Lifter.
84350X3	66050X3-16	68405-16	87021-16	86072-16	CamSaver Hydraulic Lifter.
84150	66900-16	68405 -16	87021-16	86072-16	Solid Lifter.
84350X980	66900X980-16	68405-16	87021-16	86072-16	CoolFace Mechanical Lifter.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

### Spring pressure:

68405-16 Seat: 1.700" @ 104 lbs / Nose: 1.200" @ 297 lbs / Coil bind:  
68313-12 Seat: 1.850" @ 104 lbs / Nose: 1.360" @ 254 lbs / Coil bind: 1.085"  
(Stock O.D., no machine work).

**Note:** If exceeding 6500 rpm, high pressure springs and titanium retainers may be required. Contact Crower.

Your RPM range will vary depending on your Cylinder Head Air Flow Data & Cubic Inches.

**Crower Recommends ZDDPlus for all Flat Tappet Cams**  
ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

# 4G63 TURBO ECLIPSE & TALON

# Mitsubishi/DSM

## New Improved Cam Core Technology

Description	Part Number	Advertised Duration		Duration @ .006"		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (Eclipse 4G63 USDM)</b>	<b>Stock</b>	256°	256°	181° Lobe 198° Valve	172° 189°	174° Lobe 190° Valve	165° 181°	.366" inches 9.29 mm	.343" 8.71	
	<b>264</b>	264°	264°	240° Lobe 256° Valve	240° 256°	187° Lobe 203° Valve	186° 202°	.393" inches 9.98 mm	.374" 9.50	
	<b>272</b>	272°	272°	249° Lobe 264° Valve	249° 264°	195° Lobe 211° Valve	195° 211°	.399" inches 10.13 mm	.379" 9.62	
<b>STAGE 1</b> Street use and more aggressive turbo and nitrous. Slight lobe at idle. RPM Range: Idle - 7500+	<b>64412-2</b>	264°	264°	242° Lobe 258° Valve	242° 258°	188° Lobe 204° Valve	188° 204°	.391" inches 9.93 mm	.372" 9.45	<b>Stock</b>
<b>STAGE 2</b> Specs derived from the popular 264 Intake / 272 Exhaust combination. RPM Range: Idle - 7750	<b>64416-2</b>	264°	272°	249° Lobe 265° Valve	249° 265°	188° Lobe 204° Valve	196° 212°	.398" inches 10.11 mm	.378" 9.60	<b>84175</b> <b>84175S</b>
<b>STAGE 2</b> Most popular profile for street/strip. Excellent all purpose turbo. RPM Range: 1000 - 8000	<b>64413-2</b>	272°	272°	254° Lobe 270° Valve	249° 265°	195° Lobe 211° Valve	196° 212°	.393" inches 9.98 mm	.379" 9.63	<b>84175</b> <b>84175S</b>
<b>STAGE 3 - Race</b> Recommended for strip and some street. Lobe at idle. Requires #84175. RPM Range: 1100 - 8250+	<b>64414-2</b>	280°	280°	258° Lobe 275° Valve	258° 275°	196° Lobe 213° Valve	198° 215°	.411" inches 10.44 mm	.391" 9.93	<b>84175</b> <b>84175S</b>
<b>STAGE 4 - Full Race</b> Not for the inexperienced tuner. Race only. RPM Range: 1200 - 8500+	<b>64415-2</b>	288°	288°	260° Lobe 278° Valve	256° 274°	200° Lobe 218° Valve	196° 216°	.425" inches 10.80 mm	.416" 10.57	<b>84175</b> <b>84175S</b>
<b>CUSTOM GROUND 4G63 CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles, as well as mechanical profiles also available.	<b>00064-2</b>									

If running a non-turbo 4G63 engine, the above cams are compatible for use.

Note: These cams use .000" intake (cold), .000" exhaust valve lash (cold).

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84175</b>	68190-16	87095-16	15% more pressure than factory spring.
<b>84175S</b>	68190-16	87095S-16	Steel Retainer for Daily Street Use.

#### Spring pressure:

68190-16 Seat: 1.550" @ 74 lbs / Nose: 1.050" @ 210 lbs / Coil bind: 0.900" (No machine work required).

**Note:** Crower titanium retainers weigh 7 grams vs. 14.5 grams stock.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

#### ADJUSTABLE SPROCKETS

Crower's new cam sprockets are made from premium 6061-T6 billet aluminum and incorporate a four bolt ARP® fastening system to prevent the slippage found in other brands. For the ultimate tuner, Crower sprockets feature 5/16" diameter, 12 point ARP® fasteners with a hardened washer to prevent galling and stripping. The lightweight design reduces unwanted harmonics which could cause valve train failure. Specify #86054M (sold separately).

### ACCESSORIES

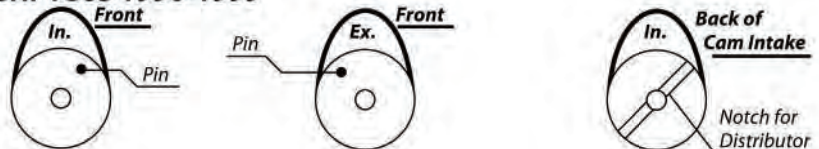
Part No.	Description
<b>86054M</b>	Adjustable Cam Sprocket (1 only). All black. 2 required
<b>97420I-8</b>	Stainless steel valves - 34 mm head dia (8 only int)
<b>97420E-8</b>	Stainless steel valves - 30.5 mm head dia (8 only exh)
<b>97421I-8</b>	Stainless steel valves - 34.5 mm head dia (8 only int)
<b>97421E-8</b>	Stainless steel valves - 31 mm head dia (8 only exh)
<b>97422I-8</b>	Stainless steel valves - 35 mm head dia (8 only int)
<b>97422E-8</b>	Stainless steel valves - 31.5 mm head dia (8 only int)

Note: When ordering valves, be sure to specify one set int and one set exh.

Note: When ordering sprockets, be sure to specify two.

### Dowell Pin and Cam Sensor position when #1 cylinder lobes are at 12:00 a clock

#### MITSUBISHI 4G63 1990-1999



## New Improved Cam Core Technology

Description	Part Number	Advertised Duration		Duration @ .006"		Duration @ .050"		Gross Lift 1.7 / 1.7		Suitable Component Kit
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (2004 Evolution VIII USDM)</b>	<b>Stock</b>	256°	256°	236° 252°	Lobe 232° Valve 248°	182° 198°	Lobe 178° Valve 194°	.386" inches .367" 9.80 mm 9.32		
	<b>264</b>	264°	264°	234° 250°	Lobe 232° Valve 248°	184° 200°	Lobe 182° Valve 198°	.416" inches .393" 10.56 mm 9.98		
	<b>272</b>	272°	272°	241° 258°	Lobe 240° Valve 257°	191° 208°	Lobe 190° Valve 206°	.415" inches .393" 10.54 mm 9.98		
	<b>280</b>	280°	280°	251° 267°	Lobe 250° Valve 266°	200° 216°	Lobe 200° Valve 216°	.415" inches .393" 10.54 mm 9.98		
<b>STAGE 1</b> Street use, plug and play, no cylinder head work or spring kit required. RPM Range: Idle - 7500+	<b>64431-2</b>	264°	264°	239° 256°	Lobe 236° Valve 252°	186° 203°	Lobe 184° Valve 202°	.413" inches .391" 10.50 mm 9.93	<b>84175</b>	<b>84175S</b>
<b>STAGE 2</b> Combination of the popular HKS 264 intake/272 exhaust cam setup. RPM Range: Idle - 7750	<b>64432-2</b>	264°	272°	239° 256°	Lobe 242° Valve 258°	185° 202°	Lobe 192° Valve 208°	.415" inches .396" 10.54 mm 10.00	<b>84175</b>	<b>84175S</b>
<b>STAGE 3 - Race</b> Most popular profile. Slight lobe at idle, added valve lift requires #84175. RPM Range: 1000 - 8000	<b>64433-2</b>	272°	272°	256° 272°	Lobe 250° Valve 266°	200° 216°	Lobe 192° Valve 208°	.425" inches .408" 10.80 mm 10.36	<b>84175</b>	<b>84175S</b>
<b>STAGE 4 - Race Profile</b> Race only. Not for the inexperienced tuner. Requires spring kit #84175. RPM Range: 1100 - 8250+	<b>64434-2</b>	280°	280°	270° 286°	Lobe 260° Valve 266°	214° 230°	Lobe 200° Valve 216°	.450" inches .425" 11.43 mm 10.80	<b>84175</b>	<b>84175S</b>
<b>CUSTOM GROUND 4G63 CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles, as well as mechanical profiles also available.	<b>00068-2</b>									

Note: These cams use .000" intake (cold), .000" exhaust valve lash (cold).

**These cams are not compatible for use on 4G63 Turbo Eclipse or Talon applications.**

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84175</b>	68190-16	87095-16	15% more pressure than factory spring.
<b>84175S</b>	68190-16		Steel Retainer for Daily Street Use.

#### Spring pressure:

68190-16 Seat: 1.550" @ 74 lbs / Nose: 1.050" @ 210 lbs / Coil bind: 0.900" (No machine work required).

**Note:** Crower titanium retainers weigh 7 grams vs. 14.5 grams stock.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

#### MAXI-LITE BILLET RODS

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet. (See pages 204-209)

#### STEEL BILLET RODS

Premium steel billet connecting rods designed for high boost applications are available for the 4G63 Evo and 2nd Gen Eclipse (#B93762B-4) as well as the 1st Gen Eclipse 4G63 (#B93761B-4). Includes aluminum-bronze bushings and rod bolts rated to 220,000 p.s.i. for ultimate clamping ability. Other Mitsubishi applications include the 3000GT/Stealth VR-4 (#B93763B-6) and the Lancer 4G94 (#B93764B-4).



### ACCESSORIES

Part No.	Description
<b>97420I-8</b>	Stainless steel valves - 34 mm head dia (8 only int)
<b>97420E-8</b>	Stainless steel valves - 30.5 mm head dia (8 only exh)
<b>97421I-8</b>	Stainless steel valves - 34.5 mm head dia (8 only int)
<b>97421E-8</b>	Stainless steel valves - 31 mm head dia (8 only exh)
<b>97422I-8</b>	Stainless steel valves - 35 mm head dia (8 only int)
<b>97422E-8</b>	Stainless steel valves - 31.5 mm head dia (8 only exh)

Note: When ordering valves, be sure to specify one set int and one set exh.

### Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

# 420A ECLIPSE NON-TURBO



TWIN CAM - (FRONT EXHAUST)

Description	Part Number	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift 1.75 / 1.75		Suitable Component Kit
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (Eclipse Non Turbo)</b>	<b>Stock</b>	222°	220°	172°	168°	.185"	.157"	.324"	.275"	<b>Stock</b>
<b>STAGE 1</b> Aggressive street use and nitrous. Slight lobe at idle. Kit #84176 required. RPM Range: 1500 - 7000+	<b>64461-2</b>	234°	238°	184°	184°	.200"	.176"	.350"	.308"	<b>84176</b> <b>84176S</b>
<b>STAGE 2</b> Designed specifically for Turbo/Supercharger application. Springs required. RPM Range: 1500 - 7200+	<b>64462-2</b>	238°	236°	187°	184°	.234"	.230"	.409"	.403"	<b>84176</b> <b>84176S</b>
<b>STAGE 2 - Race</b> Most popular profile for the street/strip. Lobe at idle. Kit #84176 required. RPM Range: 2000 - 7200+	<b>64462-2</b>	241°	241°	196°	194°	.222"	.204"	.388"	.357"	<b>84176</b> <b>84176S</b>
<b>STAGE 3 - Full Race</b> Recommended for drag race use. Heavy engine mods required. RPM Range: 2200 - 7500+	<b>64463-2</b>	254°	250°	205°	200°	.254"	.250"	.444"	.437"	<b>84176</b> <b>84176S</b>
<b>CUSTOM GROUND 4G63 CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles, as well as mechanical profiles also available.	<b>00069-2</b>									

Note: These cams use .000" intake and exhaust valve lash (cold).

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84176</b>	68190-16	87084-16	15% more pressure than factory spring
<b>84176S</b>	68190-16	87084S-16	Steel Retainer for Daily Street Use.

### Spring pressure:

68190-16 Seat: 1.500" @ 88 lbs / Nose: 1.100" @ 195 lbs / Coil bind: 0.920" (No machine work required).

**Note:** Crower titanium retainers weigh 7 grams vs. 12.5 grams stock.

## ACCESSORIES

Part No.	Description
<b>86054N</b>	420A Adjustable Cam Sprockets (1 only)

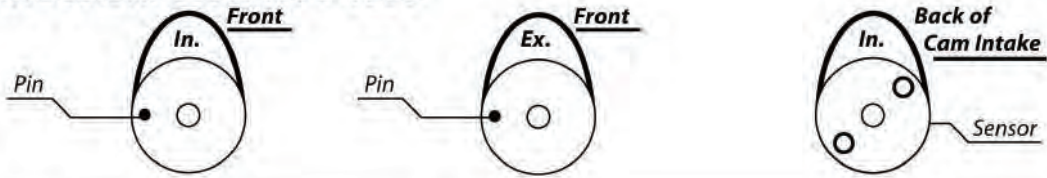
**Note:** When ordering sprockets, be sure to specify two.

### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/ smooth surface.

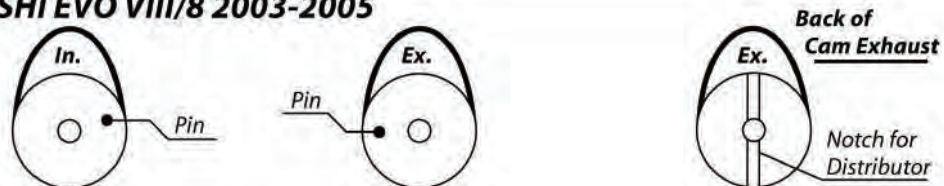
## Dowell Pin and Cam Sensor position when #1 cylinder lobes are at 12:00 a clock

### MITSUBISHI 420 A 1995-1998



## Dowell Pin and Cam Sensor position when #1 cylinder lobes are at 12:00 a clock

### MITSUBISHI EVO VIII/8 2003-2005







# DODGE NEON TWIN CAM (REAR EXHAUST)

New Improved Cam Core Technology

Description	Part Number	Advertised Duration @ .050"		Duration @ .050"		Lobe Lift		Gross Lift 1.75 / 1.75		Suitable Component Kit
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (Neon 2.0L)</b>	<b>Stock</b>	222°	222°	174°	172°	.198"	.180"	.347"	.315"	<b>Stock</b>
<b>STAGE 1</b> Works with stock valve springs and retainers. Daily driver, mild idle. RPM Range: Idle - 6700+	<b>64450N-2</b>	234°	234°	184°	184°	.200"	.200"	.350"	.350"	<b>Stock</b>
<b>STAGE 2</b> Aggressive street use and nitrous. Slight lobe at idle. Springs required. RPM Range: 1500 - 7000+	<b>64451N-2</b>	241°	241°	196°	196°	.230"	.230"	.403"	.403"	<b>84176</b>
<b>STAGE 2 - Forced Induction Special</b> Designed specifically for Turbo/Supercharger application. Springs required. RPM Range: 1500 - 7000+	<b>64454N-2</b>	238°	238°	188°	188°	.230"	.220"	.403"	.385"	<b>84176</b>
<b>STAGE 3 - Full Race</b> Recommended for drag race use. Heavy engine mods required. RPM Range: 2000 - 7200+	<b>64452N-2</b>	248°	248°	200°	200°	.234"	.234"	.410"	.410"	<b>84176</b>
<b>STAGE 4 - Full Race</b> Recommended for drag race use. Springs, ECU mods required. RPM Range: 2200 - 7500+	<b>64453N-2</b>	254°	254°	216°	216°	.265"	.265"	.463"	.463"	<b>84176</b>
<b>CUSTOM GROUND NEON CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles, as well as mechanical profiles also available.	<b>00069-2</b>									

Note: These cams use .000" intake and exhaust valve lash (cold).

Note: Cam specs are taken at the cam lobe. Specs at the valve will be higher.

# SRT-4 - TWIN CAM (REAR EXHAUST)

S = SRT-4 P = PT CRUISER

<b>STAGE 1</b> Works with stock valve springs and retainers. Daily driver, mild idle. RPM Range: Idle - 6700+	<b>64475P-2</b> <b>64475S-2</b>	266°	260°	210°	203°	.240"	.230"	.420"	.403"	<b>84176</b>
<b>STAGE 2</b> Aggressive street use and nitrous. Slight lobe at idle. Springs required. RPM Range: 1500 - 7000+	<b>64476P-2</b> <b>64476S-2</b>	274°	266°	218°	210°	.250"	.240"	.438"	.420"	<b>84176</b>
<b>STAGE 3 - Race</b> Most popular profile for the street/strip. Springs/retainers mandatory. RPM Range: 2000 - 7200+	<b>64477P-2</b> <b>64477S-2</b>	284°	277°	232°	223°	.265"	.254"	.464"	.445"	<b>84176</b>
<b>CUSTOM GROUND SRT-4, PT CRUISER CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles, as well as mechanical profiles also available.	<b>00077P-2</b> <b>00077S-2</b>									

## ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84176</b>	68190-16	87084-16	15% more pressure than factory spring
<b>84176S</b>	68190-16	87084S-16	Chromoly retainers for street use

### Spring pressure:

68190-16 Seat: 1.500" @ 88 lbs / Nose: 1.100" @ 195 lbs / Coil bind: 0.920" (No machine work required).

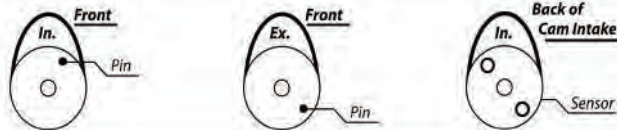
**Note:** Crower titanium retainers weigh 7 grams vs. 12.5 grams stock.

### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

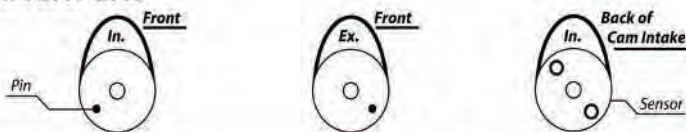
### Dowell Pin and Cam Sensor position when #1 cylinder lobes are at 12:00 a clock

NEON



### Dowell Pin and Cam Sensor position when #1 cylinder lobes are at 12:00 a clock

SRT4 2003-2005





# HYDRAULIC ROLLER TAPPET



**DODGE VIPER/RT-10 & GTS  
ALL YEARS**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift 1.6 / 1.6		Gross Lift 1.7 / 1.7		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>CUSTOM GROUND HYDRAULIC ROLLER - 1992-2002</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc when ordering.	<b>00136HR</b>												
<b>CUSTOM GROUND HYDRAULIC - 2003-UP</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc when ordering.	<b>00137HR</b>												

## DODGE V8 MAGNUM TRUCK

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift 1.6 / 1.6		Gross Lift 1.7 / 1.7		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Daily Driver</b> RPM Range: Idle to 4800 Redline: 5000 rpm max	<b>34414</b>	114°	268°	277°	204°	208°	.298"	.315"	.458"	.467"	.508"	.535"	<b>84567</b>
<b>Unblown or Blown, Daily Driver</b> RPM Range: 2200 to 6000 Redline: 6500 rpm max	<b>34415</b>	114°	274°	274°	216°	216°	.296"	.296"	.475"	.475"	.505"	.505"	<b>84567</b>
<b>Higher Compression (9.8:1+), Headers</b> RPM Range: 2800 to 6500 Redline: 7000 rpm	<b>34416</b>	114°	284°	284°	224°	224°	.307"	.307"	.492"	.492"	.523"	.523"	<b>84567</b>

**Note:** The above cores are cast steel. 8620 steel billet cores are also available.

## DODGE V10 MAGNUM TRUCK

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift 1.6 / 1.6		Gross Lift 1.7 / 1.7		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Daily Driver</b> RPM Range: Idle to 4800 Redline: 5000 rpm max	<b>35414</b>	114°	268°	277°	204°	208°	.298"	.315"	.458"	.467"	.508"	.535"	<b>84548</b>
<b>Unblown or Blown, Daily Driver</b> RPM Range: 2200 to 6000 Redline: 6500 rpm max	<b>35415</b>	114°	274°	274°	216°	216°	.296"	.296"	.475"	.475"	.505"	.505"	<b>84548</b>
<b>Higher Compression (9.8:1+), Headers</b> RPM Range: 2800 to 6500 Redline: 7000 rpm	<b>35416</b>	114°	284°	284°	224°	224°	.307"	.307"	.492"	.492"	.523"	.523"	<b>84548</b>

**Note:** The above cores are cast steel. 8620 steel billet cores are also available. 1998 V10 trucks are regrind only

## VALVE TRAIN ASSEMBLY

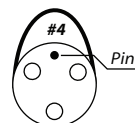
Part No.	Description
<b>73656K</b>	Stainless rockers (1.7) up to 5500 rpm. If V10, use #73659K
<b>73656PK</b>	Rocker (1.7), guide plate, pushrod kit over 5500 rpm
<b>68405</b>	Valve springs (1.700 @ 110 lbs, 1.150 @ 316 lbs)
<b>87044</b>	Steel retainers (5/16 stem diameter). Use stock keepers
<b>66325</b>	Hydraulic roller lifters. If V10 truck, use #66326

If exceeding 5500 rpm, Crower recommends running Crower springs/ retainers.  
PK kits include #70518 guide plates & pushrods (6.950") +.050 over stock.

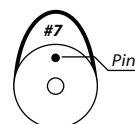
Please specify V8 or V10 when ordering cams & valve train components.

## ENGINEERED COMPONENT KITS

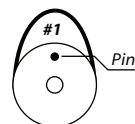
Part No.	Springs	Retainers	Seats	Remarks
<b>84548</b>	68405-20	87044-20	68940-20	Chromoly Retainers, V10
<b>84567</b>	68405-16	87044-16	68940-16	Chromoly Retainers, V8



**2003 - Up Viper V-10 3 Bolt, dowell pin to #7 lobe**  
same size all bearings 2.090". Please specify when ordering



**1998 - 2002 Viper V-10 Single Bolt, dowell pin to #4 lobe**  
same size all bearings 2.090". Please specify when ordering



**V-10 Magnum Truck Single Bolt, dowell pin to #1 lobe**  
different size all bearings

# HYDRAULIC ROLLER TAPPET

**03 & UP**  
**DODGE 5.7 & 6.1L HEMI**

Description (Note: See pages 8-9 for a detailed explanation of each Performance Level)	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		1.6 VL		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Hydraulic Roller</b> - Operation Power Range: 1600 - 6250 rpm	<b>33493</b>	114°	258°	267°	209°	218°	.512"	.538"	<b>84715</b> <b>84716</b>
<b>Hydraulic Roller</b> - Operating Power Range: 1800 - 6400 rpm	<b>33494</b>	114°	263°	271°	213°	222°	.528"	.548"	<b>84715</b> <b>84716</b>
<b>Hydraulic Roller</b> - Operating Power Range: 2000 - 6500 rpm	<b>33495</b>	114°	267°	275°	218°	225°	.539"	.560"	<b>84715</b> <b>84716</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc when ordering.	<b>00133HR</b>	<i>Refer to page 7 for camshaft recommendation form</i>							

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Description
<b>84715</b>	66323P-16	68435-16	87035-16	Steel Retainers
<b>84716</b>	66323P-16	68435-16	87035T-16	Titanium Retainers

### Spring pressure:

**68435-16:** O.D./I.D. Outer: 1.210/0.805 / O.D. Small End: 1.035 / I.D. Small End: 0.630 Seat: 1.800" @ 135 lbs / Nose: 1.200" @ 350 lbs / Beehive valve spring: / Spring Rate: 358 / Coil bind: 1.150" / Max Lift: 0.600 (Machine work not needed)  
See spring and retainer specs or contact Crower for proper recommendations.

**SPRING DISC:** # 68924-1 A (O.D.): 1.400", B (Step): .970", C (I.D.): .527  
# 68925-1 A (O.D.): 1.400", B (Step): .780", C (I.D.): .527

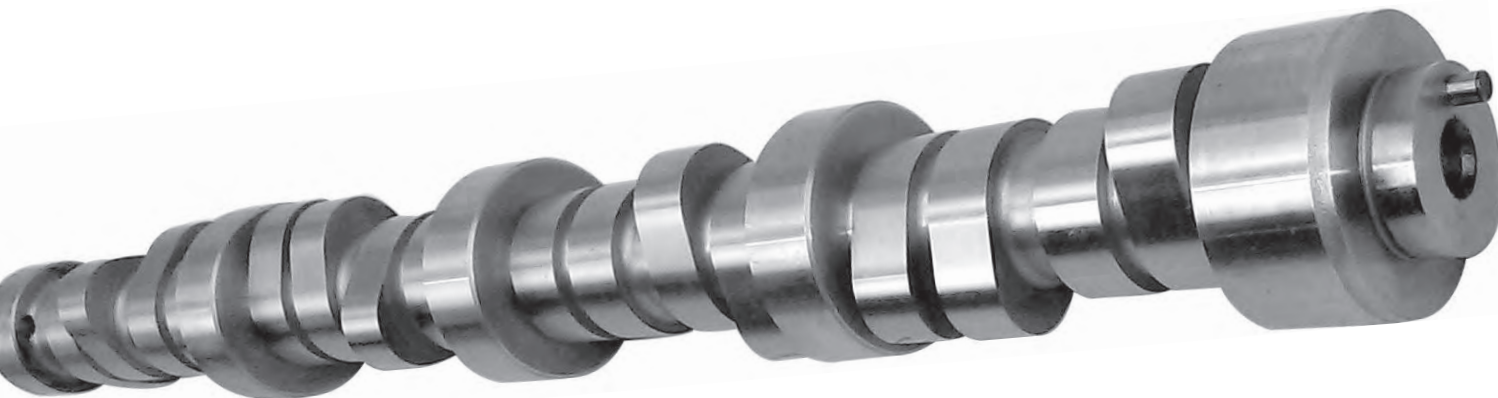
## ADJUSTABLE TIMING SET

Part No.	Description
<b>76857</b>	Crower adjustable timing set

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

**DON'T SEE YOUR FAVORITE PART # ?**  
IT MAY STILL BE AVAILABLE  
**CALL THE CROWER TECH. DEPT FOR INFO.**



# HYDRAULIC FLAT TAPPET



Non Roller

273 340 360 & 1967-up 318 LA V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>TORQUE BEAST / Performance Level 1</b> Low to mid-range torque for daily drivability. Economical price. RPM Range: 1500 - 4250 / Redline: 5500	<b>31917</b>	318 340	278H	112°	278°	288°	204°	214°	.422"	.444"	<b>84137</b>
<b>POWER BEAST / Performance Level 2</b> Delivers impressive mid-range and top end power. Healthy sound. Economical price. RPM Range: 1750 - 4500 / Redline: 5750	<b>31918</b>	318 360	288H	112°	288°	298°	214°	224°	.444"	.467"	<b>84137</b>
<b>ULTRA BEAST / Performance Level 3</b> Upper mid-range to top end power. Emphasis on top end. RPM Range: 2000 - 4800 / Redline: 6200	<b>31916</b>	318 360	269H	112°	269°	282°	223°	234°	.480"	.494"	<b>84131</b>
<b>HOT STREET BEAST / Performance Level 4</b> Explosive performance gains on top end power. Economical price. RPM Range: 2200 - 5000 / Redline: 6500	<b>31919</b>	318 360	318H	112°	318°	328°	232°	242°	.450"	.476"	<b>84131</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited driving. RPM Range: 1500 - 4000 / Redline: 5500	<b>31241</b> <b>MTO</b>	318 360	267HDP	112°	267°	271°	218°	222°	.474"	.485"	<b>84137</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Range: 1800 - 4500 / Redline: 6000	<b>31242</b> <b>MTO</b>	318 CID	271HDP	112°	271°	284°	222°	234°	.485"	.495"	<b>84131</b>
	<b>31243</b>	340 360	282HDP	112°	282°	292°	227°	237°	.480"	.503"	<b>84131</b>
<b>HI-DRAULIC HAULER / Performance Level 4</b> Rough idle. Explosive mid-range torque. RPM Range: 2500 - 6500	<b>31204</b>	340 360	280HDP	108°	280°	292°	218°	227°	.474"	.480"	<b>84131</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Range: 2700 - 6500	<b>31205</b> <b>MTO</b>	340 360	290HDP	108°	290°	298°	224°	234°	.507"	.522"	<b>84131</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range acceleration and torque. RPM Range: 3000 - 6500	<b>31206</b> <b>MTO</b>	340 360	302HDP	108°	302°	312°	240°	249°	.554"	.549"	<b>84131</b>
<b>TURBOMASTER</b> Intended for turbocharged hot street/strip and marine use. Delivers extended rpm's on upper bottom and top. RPM Power Range: 2000	<b>31979</b>	340 360	290HT	114°	290°	272°	228°	210°	.467"	.420"	<b>84131</b>
<b>SUPERCHARGER</b> Dual purpose hot drag and marine camshaft designed to enhance supercharger systems. Strong mid to top end. RPM Power Range: 2400	<b>31981</b>	340 360	304HC	114°	304°	304°	238°	238°	.501"	.501"	<b>84131</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic camshaft ground to your specifications. Call our technical supports staff for personalized camshaft assistance.	<b>00131</b>	ALL CID									

## ENGINEERED COMPONENT KITS

Part. No	Lifters	Springs	Retainers	Seals	Remarks
<b>84137</b>	66031-16	68313-16	87049-16	86071-16	For rpm up to 6500
<b>84131</b>	66031-16	68405-16	87049-16	86071-16	Dual Spring
<b>84131X3</b>	66031X3-16	68405-16	87049-16	86071-16	CamSaver Lifter

Note: These cams use .000" intake and exhaust valve lash.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface. **Specify X3 after corresponding component kit.**

**Spring pressure:**  
68405-16 Seat: 1.700" @ 110 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 0.980"

\* Machine work required, specify 38 pilot shaft when ordering.

**Note:** When using high lift cams (over .480" or modified valve stem lengths, a longer pushrod is required to achieve proper lifter preload (.050" off snare ring. Use checking pushrod to determine length and call with specs.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

## ACCESSORIES

Part. No	Description
See pg. 186	Spring seat cutter
Pg. 141-145	Pushrods
See pg. 136	Roller timing gear

**Note:** Longer pushrods required with Mopar adjustable rockers.

**Note:** If using longer than stock valves you may require spring and retainer modifications. Contact Crower.

## Non Roller

273 340 360 & 1967-up 318 LA V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / PERFORMANCE LEVEL 3</b> High revving with superior mid-range and top end power. RPM Power Range: 2500 - 6500 / Redline: 7000+	<b>31321</b>	ALL CID	294FDP	112°	294°	298°	243°	245°	.521"	.528"	<b>84331</b> or <b>84331X980</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High torque, short oval camshaft. RPM Power Range: 3500 - 6500 / Redline: 7000+	<b>31312</b>	ALL CID	304FDP	108°	304°	310°	250°	254°	.545"	.558"	<b>84331</b> or <b>84331X980</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Great high torque mid-range oval track grind. RPM Power Range: 4000 - 7000 / Redline: 7500+	<b>31313</b>	ALL CID	310FDP	105°	310°	318°	263°	265°	.573"	.581"	<b>84331</b> or <b>84331X980</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Upper mid-range and top end power for extra pop above 7000 rpm. RPM Power Range: 4500 - 7500 / Redline: 8000+	<b>31314</b>	ALL CID	318FDP	106°	318°	324°	270°	276°	.591"	.609"	<b>84331</b> or <b>84331X980</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00131M</b>	ALL CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part. No	Lifters	Springs	Retainers	Seals	Remarks
<b>84331</b>	66931-16	68405-16	87049-16	86071-16	For rpm up to 7500 plus.
<b>84331LW980</b>	66931LW980-16	68405-16	87049-16	86071-16	Light Weight Lifter.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

For severe duty applications, Crower recommends using our solid lifter with the added "**coolface oiling option**". Specify **X980** after corresponding component kit.

### Spring pressure:

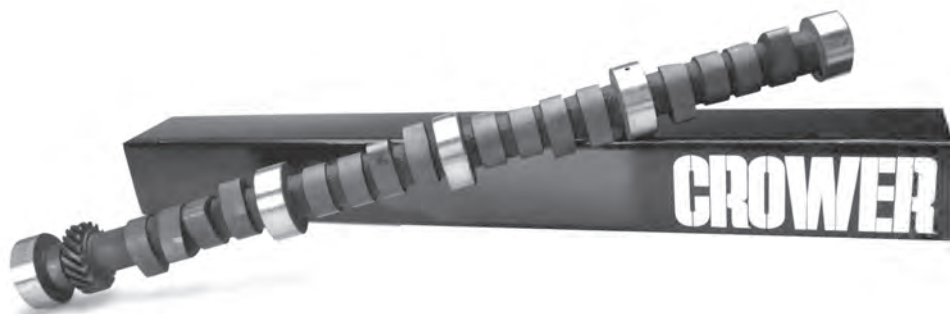
68405-16 Seat: 1.700" @ 110 lbs / Nose: 1.200" @ 297 lbs / Coil bind: 0.980"

\* Machine work required, specify 3/8 pilot shaft when ordering.  
#70176-16 or longer pushrods are required with adjustable rocker arms.  
CAUTION! When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>

Note: Rocker arms available in Aluminum & Stainless steel



**DON'T SEE YOUR FAVORITE PART #?**  
IT MAY STILL BE AVAILABLE  
**CALL THE CROWER**  
TECH. DEPT FOR INFO.

# MECHANICAL ROLLER TAPPET



Mechanical

273 340 360 & 1967-up 318 LA V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>ULTRA-ACTION / Performance Level 5</b> High torque oval track and drag profile. RPM Power Range: 3000 - 7000 / Redline: 7500+	<b>31407</b>	ALL CID	294R	108°	294°	298°	258°	262°	.624"	.627"	<b>84533</b>
<b>ULTRA-ACTION / Performance Level 5</b> Strong upper mid range and top end power. RPM Power Range: 4000 - 7500 / Redline: 8000+	<b>31408</b> <b>MTO</b>	ALL CID	300R	105°	300°	306°	258°	268°	.685"	.702"	<b>84531N</b>
<b>ULTRA-ACTION / Performance Level 5</b> High torque drag profile with mid-range and top end power. RPM Power Range: 5200 - 8000 / Redline: 8250+	<b>31409</b> <b>MTO</b>	ALL CID	304R	106°	304°	310°	268°	274°	.645"	.623"	<b>84531N</b>
<b>CUSTOM ORDER ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00131R</b>	ALL CID									See Below

Note: These cams use .026" intake, .028" exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

## ENGINEERED COMPONENT KITS

Part. No	Springs	Retainers	Seals	Remarks
<b>84533</b>	68725-16	87055D-16	86071-16	For rpm up to 6500.
<b>84531N</b>	68670S-16	87063-16	86071-16	For rpm above 8000.

### Spring pressure:

68725-16 Seat: 1.800" @ 264 lbs / Nose: 1.250" @ 556 lbs / Coil bind: 1.150"

A. Requires longer stem valves to achieve installed spring height.

\* Machine work required, specify 3/8 pilot shaft when ordering.  
#70176-16 or longer pushrods are required with adjustable rocker arms.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

ilable online at: [www.crower.com](http://www.crower.com)

## AVAILABLE CAM JOURNAL SIZES

Stock Chrysler Bearing Size - Journal 1 = 1.998", 2 = 1.982", 3 = 1.967", 4 = 1.951", 5 = 1.561"
Roller Bearing (Arrington) - Journal 1, 2, 3, 4 = 1.968", Journal 5 = 1.575"
Roller Bearing (Mopar Performance) - All Journals = 1.968"
Dodge R5 Standard Bearing - All Journals = 60mm

To order the above cores specify #00003. 60mm is available on special order basis only (#00060).

**Special Firing Orders also available.**

## ACCESSORIES

Description	See Page (s)
<b>Lifters</b>	<b>Pg's.127-140</b>

**Part numbers no longer listed may be available as custom grinds. Please contact Crower.**







# HYDRAULIC FLAT TAPPET

Non Roller 1958-1980

350 361 383 400 413 426 440 B V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. Good for stock replacement. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>32915</b>	383 CID	250H	112°	250°	254°	200°	207°	.423"	.444"	<b>84137</b>
<b>TORQUE BEAST / Performance Level 2</b> Low to mid-range torque for daily drivability. Economical price. RPM Power Range: 1500 - 4250 / Redline: 5500+	<b>32917 MTO</b>	383 CID	278H	112°	278°	288°	204°	214°	.422"	.444"	<b>84137</b>
<b>POWER BEAST / Performance Level 3</b> Delivers impressive mid-range and top end power. Healthy sound. Economical Price. RPM Power Range: 1750 - 4500 / Redline: 5750+	<b>32918 MTO</b>	350 361	288H	112°	288°	298°	214°	224°	.444"	.467"	<b>84132</b>
<b>ULTRA BEAST / Performance Level 3</b> Upper mid-range to top end power. Emphasis on top end. RPM Power Range: 2000 - 4800 / Redline: 6200+	<b>32916</b>	383 413	265H	112°	265°	269°	218°	222°	.475"	.484"	<b>84132</b>
<b>HOT STREET BEAST / Performance Level 4</b> Explosive performance gains on top end power. Economical price. RPM Power Range: 2200 - 5000 / Redline: 6500	<b>32919</b>	426 440	312H	109°	312°	320°	242°	252°	.521"	.551"	<b>84132</b>
<b>POWER COMPU-PRO / Performance Level 3</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited driving. RPM Power Range: 1500 - 4000 / Redline: 5500+	<b>32241</b>	426 440	267HDP	112°	267°	271°	220°	223°	.478"	.486"	<b>84132</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 4</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>32242</b>	383 413	271HDP	112°	271°	284°	222°	234°	.486"	.496"	<b>84132</b>
	<b>32243</b>	426 440	282HDP	112°	282°	292°	228°	236°	.478"	.502"	<b>84132</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic camshaft ground to your specifications. Call with all engine data including head flow data, valve sizes, operating power range, etc.	<b>00132H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

Note: Three-bolt cams are available. Specify when ordering.

Note: "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

## ENGINEERED COMPONENT KITS

Part. No	Lifters	Springs	Retainers	Seals	Remarks
<b>84137</b>	66031-16	68313-16	87049-16	86071-16	For rpm up to 6500 plus.
<b>84132X3</b>	66031X3-16	68340-16	87063-16	86071-16	For rpm up to 6500 plus.
<b>84132RM3</b>	66031RM3-16	68340-16	87063-16	86071-16	Rev-Max Lifter.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

### Spring pressure:

68340 -16 Seat: 1.900" @ 119 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work, use cutter 68986\*).

\* Machine work required, specify 3/8 pilot shaft when ordering.

Low Block: 350, 361, 383, 400 cid.

High Block: 413, 426, 440 cid.

**For engines that were originally equipped with a hydraulic flat tappet cam, retro fit hydraulic roller cams & kit are available, call CROWER for details.**

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Note:** When using high lift cams (over .480") or modified valve stem lengths, a longer pushrod is required to achieve proper lifter preload (.050" off sn -ring). Use checking pushrod to determine length and call with specs.

Part numbers no longer listed may be available as custom grinds.

Please contact Crower.

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.146-168</b>
<b>Rods</b>	<b>Pg's.141-145</b>
<b>Crankshafts</b>	<b>Pg's.189-204</b>

Note: Rocker arms available in Aluminum & Stainless steel

# HYDRAULIC FLAT TAPPET



Non Roller

350 361 383 400 413 426 440 BV8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 6500	<b>32242</b>	383 413	271HDP	112°	271°	284°	222°	234°	.486"	.496"	<b>84132</b>
	<b>32243</b>	426 440	282HDP	112°	282°	292°	228°	236°	.478"	.502"	<b>84132</b>
<b>PERFORMANCE LEVEL 5-</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 6500	<b>32244 MTO</b>	426 440	292HDP	112°	292°	310°	238°	249°	.534"	.552"	<b>84132</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Power Range: 2700 - 6500	<b>32206</b>	383 413	294HDP	108°	294°	304°	230°	241°	.509"	.530"	<b>84132</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range acceleration and torque. RPM Power Range: 3000 - 6500	<b>32207 MTO</b>	426 440	300HDP	108°	300°	310°	238°	249°	.528"	.552"	<b>84032</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Extremely violent mid-range and top end horsepower. RPM Power Range: 3200 - 6500	<b>32208</b>	426 440	308HDP	108°	308°	316°	249°	253°	.530"	.546"	<b>84132</b>
<b>SUPERCHARGER</b> Designed for B&M/Roots type supercharged street/strip and marine applications. Emphasis on mid to top end. RPM Power Range: 2400 to 6500	<b>32980 MTO</b>	426 440	288HC	114°	288°	288°	230°	230°	.461"	.461"	<b>84132</b>
<b>SUPERCHARGER</b> Dual purpose hot drag and marine camshaft designed to enhance supercharger systems. Strong mid to top end. RPM Power Range: 2400 to 6500	<b>32981 MTO</b>	426 440	304HDP	114°	304°	304°	236°	236°	.501"	.501"	<b>84132</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00132H</b>	ALL CID									

Note: Three-bolt cams are available. Specify when ordering.

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part. No	Lifters	Springs	Retainers	Seals	Remarks
<b>84132</b>	66031-16	68340-16	87063-16	86071-16	For rpm up to 6500 plus.
<b>84132X3</b>	66031X3-16	68340-16	87063-16	86071-16	For rpm up to 6500 plus.

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080" (Machine work).  
Low Block: 350, 361, 383, 400 cid.  
High Block: 413, 426, 440 cid.

**For engines that were originally equipped with a hydraulic flat tappet cam, retro fit hydraulic roller cams & kit are available, call CROWER for details.**

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

**Note:** When using high lift cams (over .480") or modified valve stem lengths, a longer pushrod is required to achieve proper lifter preload (.050" off snare-ring). Use checking pushrod to determine length and call with specs.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.



### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



# MECHANICAL FLAT TAPPET

Non Roller 1958-1980

350 361 383 400 413 426 440 B V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / Performance Level 4</b> High torque profile with big mid-range power. RPM Power Range: 3000 - 6000 / Redline: 6500+	<b>32309</b>	426 440	294FDP	112°	294°	298°	240°	244°	.519"	.531"	<b>84332</b>
<b>PRO-STREET / Performance Level 4</b> High revving with superior mid-range and top end power. RPM Power Range: 3500 - 6500 / Redline: 7000+	<b>32310</b>	426 440	304FDP	110°	304°	310°	251°	255°	.548"	.557"	<b>84332</b>
<b>COMPU-PRO / Performance Level 5</b> Great torque, midrange oval track grind. RPM Power Range: 4200 to 7200 / Redline: 7500 plus.	<b>32314</b>	426 440	318FDP	108°	318°	324°	271°	277°	.591"	.609"	<b>84332</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00132M</b>	ALL CID									<b>See Below</b>

Note: These cams use .022" intake, .024" exhaust valve lash.

# MECHANICAL ROLLER TAPPET

Mechanical 1959-1980

350 361 383 400 413 426 440 B V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> Excellent street/strip profile. RPM Power Range: 2500 - 6000 / Redline: 6500+	<b>32412</b> <b>MTO</b>	426 440	270R	110°	270°	280°	236°	246°	.550"	.548"	<b>84546M</b>
<b>ULTRA-ACTION / Performance Level 5</b> High torque profile with strong bottom and mid-range power. RPM Power Range: 3500 - 7250 / Redline: 7500+	<b>32413</b>	426 440	294R	108°	294°	298°	256°	265°	.624"	.627"	<b>84546M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Mid-range and top end drag profile. RPM Power Range: 4250 - 8000 / Redline: 8250+	<b>32416</b>	426 440	309R	104°	309°	318°	269°	280°	.714"	.716"	<b>84546M</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00132R</b>	ALL CID									<b>See Below</b>

Note: These cams use .026" intake, .028" exhaust valve lash.

**All cams are 3 bolt.**

## ENGINEERED COMPONENT KITS

Part. No	Lifters	Springs	Retainers	Seals	Remarks
<b>84032S</b>	66031-16	68302X2-16	87063-16	86071-16	Up to 6000 RPM Daily Driver.
<b>84332</b>	66931-16	68340-16	87063-16	86071-16	For rpm up to 7500 plus.
<b>84332LW980</b>	66931LW980-16	68340-16	87063-16	86071-16	Light Weight Lifter
<b>84546M</b>	66233-16	68804H-16	87055-16	86071-16	8000 plus rpm. Race only to .700" max lift.

**Note:** "MTO" denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

For severe duty applications, Crower recommends using our solid lifter with the added "**coolface oiling option**". **Specify X980 after corresponding component kit.**

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080" (Machine work, use cutter 68986\*)  
68363-16 Seat: 1.900" @ 212 lbs / Nose: 1.200" @ 560 lbs / Coil bind: 1.100"

**Optional springs:** (race only over .725" max lift and/or 8000 rpm  
68848-16 Seat: 2.100" @ 329 lbs / Nose: 1.300" @ 913 lbs / Coil bind: 1.150"  
\* Machine work required, specify 3/8 pilot shaft when ordering.

Low Block: 350, 361, 383, 400 cid.

High Block: 413, 426, 440 cid.

68803-16 Seat: 1.900" @ 371 lbs / Nose: 1.300" @ 765 lbs / Coil bind: 1.140"

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

# HYDRAULIC FLAT TAPPET



**Non Roller 1966-1971  
426 Hemi V8**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.57 / 1.52		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>POWER COMPU-PRO / Performance Level 2</b> Power and mileage with extended rpm range for spirited motoring. RPM Power Range: 1500 - 4000 / Redline: 5500+	<b>33240</b>	426	280HDP	112°	280°	286°	211°	219°	.475"	.483"	<b>84133</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Hot strip/strip cam. Strong upper bottom and top end power. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>33241</b>	426	294HDP	112°	294°	300°	222°	233°	.505"	.525"	<b>84133</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Good competition profile with super mid to top end performance. RPM Power Range: 2000 - 6000 / Redline: 6500+	<b>33242</b> <b>MTO</b>	426	300H	112°	300°	300°	233°	233°	.543"	.525"	<b>84133</b>
<b>CUSTOM GROUND ROLLER</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00133H</b>	ALL CID									<b>See Below</b>

**3 BOLT CAMS AVAILABLE**

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.57 / 1.52		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / Performance Level 3</b> High torque profile with emphasis on bottom end power. RPM Power Range: 2800 - 6000+	<b>33253</b>	426	284FDP	112°	284°	294°	238°	249°	.520"	.512"	<b>84333</b>
<b>COMPU-PRO / Performance Level 4</b> Strong mid-range and top end profile that offers excellent torque and horsepower. RPM Power Range: 3200 - 6400+	<b>33254</b> <b>MTO</b>	426	304FDP	108°	304°	308°	251°	255°	.571"	.563"	<b>84333</b>
<b>COMPU-PRO / Performance Level 4</b> Explosive mid-range to top end profile for high horsepower applications. RPM Power Range: 4000 - 7000+	<b>33255</b> <b>MTO</b>	426	310FDP	106°	310°	318°	269°	280°	.618"	.617"	<b>84333</b>
<b>CUSTOM GROUND ROLLER</b> Special order mechanical lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00133M</b>	ALL CID									<b>See Below</b>

**ENGINEERED COMPONENT KITS**

Note: These cams use .022" intake, .024" exhaust valve lash.

Part. No	Lifters	Springs	Retainers	Seals	Keepers	Remarks
<b>84133</b>	66031-16	68340-16	87064-16	86070-16	86109-16	Hydraulic Lifter. 6500 rpm.
<b>84133X3</b>	66031X3-16	68340-16	87064-16	86070-16	86109-16	Hydraulic Lifter. 6500 rpm.
<b>84333</b>	66931-16	68340-16	87064-16	86070-16	86109-16	Solid Lifter. 7500 plus rpm.
<b>84333X980</b>	66931X980-16	68340-16	87064-16	86070-16	86109-16	Solid Lifter. 7500 plus rpm.

**Spring pressure:**

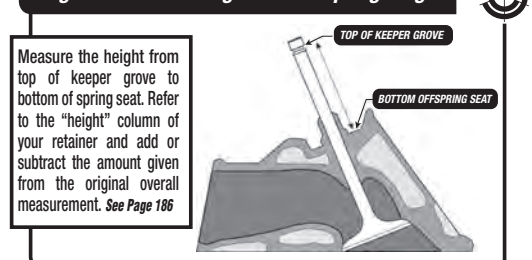
68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080" (Machine work, use cutter 68986 ZDDP).

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

**ACCESSORIES**

Description	See Page (s)
<b>Rods</b>	<b>Pg's.141-145</b>
<b>Crankshafts</b>	<b>Pg's.189-204</b>

**Diagram 1. Calculating Installed Spring Height**



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

## 426 Hemi V8 1966-1971 KB ALUMINUM JP1 TFX MILODON & RODECK 45° Block & 48° Block Available

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / PERFORMANCE LEVEL 4</b> Call for camshaft characteristics, as they depend on engine setup. RPM Power Range: 2500 - 6000+	<b>33470</b>	426	284R	110°	272°	280°	238°	246°	.576"	.558"	<b>84532</b>
<b>STREET ROLLER / PERFORMANCE LEVEL 5</b> Call for camshaft characteristics, as they depend on engine setup. RPM Power Range: 3500 - 7500+	<b>33471</b>	426	298R	108°	298°	304°	263°	268°	.626"	.630"	<b>84532</b>
<b>ULTRA-ACTION / PERFORMANCE LEVEL 5</b> Call for camshaft characteristics, as they depend on engine setup.	<b>33472 MTO</b>	426	308R	105°	308°	314°	278°	285°	.689"	.652"	<b>84536</b>
<b>ULTRA-ACTION / PERFORMANCE LEVEL 5</b> Call for camshaft characteristics, as they depend on engine setup.	<b>33473 MTO</b>	426	318R	106°	318°	322°	286°	290°	.720"	.711"	<b>84536</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00133R</b>	ALL CID									See Below

Note: These cams use .026" intake, .028" exhaust valve lash.

The above cores are 8620 steel billet. Use bronze distributor gear.

### ENGINEERED COMPONENT KITS

Part. No	Lifters	Springs	Retainers	Seals	Keepers
<b>84532</b>	66233-16	68803-16	86783-16	86070T-16	86709-16
<b>84536</b>	66233-16	68548-16	86069-16	86070T-16	86109-16

### 3 BOLT CAMS AVAILABLE

## SPECIAL ORDER DRAG RACING CAMSHAFTS

### KB Aluminum JP1 TFX Milodon & Rodeck

As of last count we have accumulated over 80 different combinations of proven drag racing cam profiles and Lobe Sep. configurations. So rather than list each profile and Lobe Sep., we felt that it would be more beneficial to encourage you to call our experienced technical support staff with your accumulated data and specifications. In a joint effort, that will be kept in the strictest of confidence, we will formulate the right combination of intake and exhaust lobe characteristics designed specifically for your application. We are currently involved with some of the top racers and engine builders and are achieving tremendous success with this style of format.

### Spring pressure:

\* Machine work required, specify 5/16 pilot shaft when ordering.

**Note:** If using 1 1/32 valve stems, change to keeper 86110-16.

**Note:** If running blown application, see heavy-duty roller lifters listed under accessories.

**Note:** If exceeding 7500 rpm, high pressure springs and titanium retainers may be required. See spring and retainer specs or contact Crower for proper recommendations.

**Note:** "MTO" denotes that this item is not usually stocked but is Made To Order in 2-3 days.

### ACCESSORIES

Part. No	Description
<b>73680-16</b>	Billet rocker adjusting screw and lock nut
<b>70188-16</b>	Tapered pushrods 3/8
<b>76545</b>	Timing gear set
<b>66284-16</b>	Roller lifters w/.903" body & .812" O.D. bearing
<b>66285-16</b>	Roller lifters w/high seat (+.120")

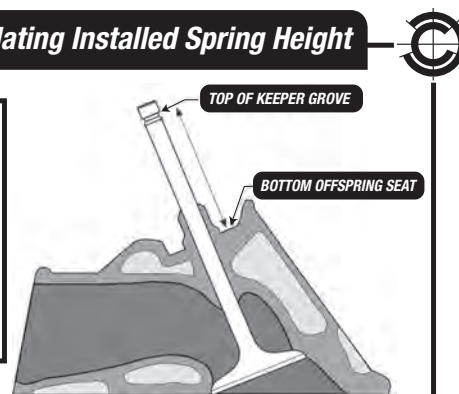
Crower has an extensive inventory of single and double tapered pushrods available on a special order basis. Customer must furnish accurate pushrod length.

### ACCESSORIES

Description	See Page (s)
<b>Rods</b>	Pg's.141-145
<b>Crankshafts</b>	Pg's.189-204

### Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.



# PATROL 4.2L & 4.5L - SINGLE CAM



New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advised Duration (.010")		Duration @ .050"		Lobe Lift		Gross Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>NISSAN PATROL 4.2L (Stock Specs)</b>	<b>Stock</b>	112°	260°	260°	198°	198°	.280"	.280"	.420"	.420"	<b>Stock</b>
<b>STAGE 1</b> Hotter than stock profile. Smooth idle quality and will work with stock valve springs. No ECU upgrade required. 12+ HP over stock setup. RPM Range: Idle - 6000+	<b>61390</b>	112°	280°	280°	220°	220°	.296"	.296"	.445"	.445"	<b>Stock</b>
<b>STAGE 2 - Forced Induction Special</b> Performance oriented street, use with turbo, supercharger and/or nitrous. Will work with stock springs and ECU. HP gains depend on engine mods. RPM Range: 1000 - 6500+	<b>61391</b>	112°	299°	299°	228°	228°	.309"	.309"	.464"	.464"	<b>Stock</b>
<b>STAGE 2</b> Recommend for hot street use. Rough idle is expected. Requires spring change (#68147). Lobe at idle is common. HP gains depend on engine mods. RPM Range: 1100 - 7000+	<b>61392</b>	112°	303°	303°	235°	235°	.333"	.333"	.500"	.500"	<b>68147</b>
<b>STAGE 3 - 3/4 Race</b> Road/Rally and Street/Strip. Requires spring change (#68147) and ECU upgrade to take advantage of higher rpm potential. HP gains depend on engine mods. RPM Range: 1200 - 7250+	<b>61393</b>	110°	309°	309°	248°	248°	.338"	.338"	.507"	.507"	<b>68147</b>
<b>STAGE 4 - Full Race</b> Emphasis on top end power with extremely rough idle quality. Not recommended for daily driver. Spring/ECU upgrade req. HP gains depend on engine mods. RPM Range: 1300 - 7500+	<b>61394</b>	108°	316°	316°	256°	256°	.350"	.350"	.526"	.526"	<b>68147</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary profiles available upon request.	<b>00054</b>										

Note: These cams use .014" intake (hot), .016" exhaust valve lash (hot).

**Note: The above cams will not fit the 4.8L Nissan Patrol applications.** Duration figures are taken at the lobe.

**Spring pressure:**

68147-12 Seat: 1.590" @ 85 lbs / Nose: 1.150" @ 261 lbs / Coil bind: 1.030" (No machine work required).

**MAXI-LITE BILLET RODS**

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet.

**4340 Steel Billet Connecting Rods Available**

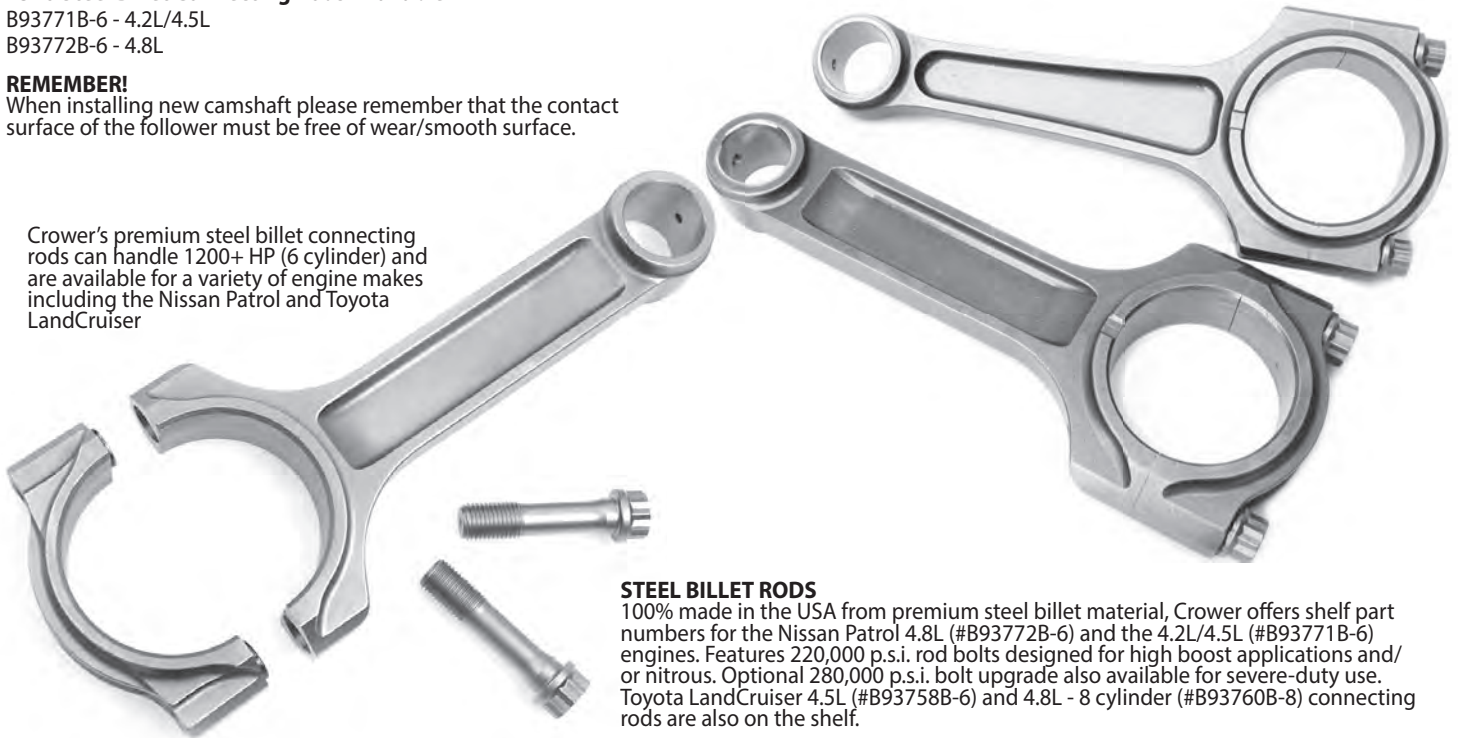
B93771B-6 - 4.2L/4.5L

B93772B-6 - 4.8L

**REMEMBER!**

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

Crower's premium steel billet connecting rods can handle 1200+ HP (6 cylinder) and are available for a variety of engine makes including the Nissan Patrol and Toyota LandCruiser



**STEEL BILLET RODS**

100% made in the USA from premium steel billet material, Crower offers shelf part numbers for the Nissan Patrol 4.8L (#B93772B-6) and the 4.2L/4.5L (#B93771B-6) engines. Features 220,000 p.s.i. rod bolts designed for high boost applications and/or nitrous. Optional 280,000 p.s.i. bolt upgrade also available for severe-duty use. Toyota LandCruiser 4.5L (#B93758B-6) and 4.8L - 8 cylinder (#B93760B-8) connecting rods are also on the shelf.

Description	Part Number	Lobe Sep.	Advised Duration		Duration @ .050"		Lobe Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STAGE 1</b> Street use with emphasis on bottom end and mid range power.	61381-2	112	266°	271°	218°	222°	.401"	.401"	84197 84197S
<b>STAGE 1</b> Designed for street/strip applications in normally aspirated engines.	61382-2	112	270°	280°	219°	227°	.397"	.415"	84197 84197S
<b>STAGE 2</b> Street/Strip package. Perfect for all-motor use.	61383-2	112	274°	288°	222°	230°	.401"	.425"	84197 84197S
<b>STAGE 2 - 3/4 Race</b> Excellent high torque and mid-range power	61384-2	112	292°	300°	229°	237°	.415"	.426"	84197 84197S
<b>STAGE 4 - Full Race</b> Drag Race and radical Street/Strip	61385-2	112	300°	308°	237°	245°	.436"	.458"	84197 84197S
<b>STAGE 5 - Full Race</b> All out, all motor drag profile. Not for the inexperienced tuner	61386-2	112	308°	314°	245°	253°	.458"	.480"	84197 84197S
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00048-2								

## ENGINEERED COMPONENT KITS

Part No	Spring	Retainers	Remarks
84197	68195-24	87077-24	Titanium retainers.
84197S	68195-24	87077S-24	Steel retainers



**Diagram 1. Calculating Installed Spring Height**

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

# PATROL 4.8L TB48 (TURBO)



Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STAGE 1</b> Fair idle. Good bottom end profile with mid-range power. Emphasis on torque.	61381T-2	114	271°	266°	222°	218°	.401"	.401"	84197 84197S
<b>STAGE 1</b> Street use and more aggressive turbo and nitrous. Slight lobe at idle. RPM Range: Idle to 7500+	61382T-2	114	280°	270°	227°	219°	.415"	.397"	84197 84197S
<b>STAGE 2</b> Excellent for turbo and nitrous for street/strip applications. Wide center for top end performance. RPM range 2600 to 7200+	61383T-2	114	288°	274°	230°	222°	.425"	.401"	84197 84197S
<b>STAGE 4 - Full Race</b> Race turbo (30+ lbs of boost minimum). Also works well with NOS. RPM Range: 2600 to 7200+	61384T-2	114	300°	292°	237°	229°	.426"	.415"	84197 84197S
<b>STAGE 4 - Full Race</b> Race turbo (30+ lbs of boost minimum). Also works well with NOS. RPM Range: 2600 to 7200+	61385T-2	114	308°	300°	245°	237°	.458"	.436"	84197 84197S
<b>STAGE 5 - Full Race</b> Performance built, race oriented application. Not for the inexperienced tuner. Top end insanity. RPM Range: 3000 to 8000+	61386T-2	114	314°	308°	253°	245°	.480"	.458"	84197 84197S
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00000								

## ENGINEERED COMPONENT KITS

Part. No	Spring	Retainers	Remarks
84197	68195-24	87077-24	Titanium retainers.
84197S	68195-24	87077S-24	Steel retainers

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

## CROWER CAM BREAK-IN PROCEDURE



**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleries. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crower recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crower Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092

**CRANKSHAFTS**  
(See Page 189-204)



**RODS**  
(See Page 205-227)





# HYDRAULIC FLAT TAPPET

**Non Roller 1967-up**

**260 307 (5.0L) 350 (5.7L) 400 403 425 455 (39° bank angle)**

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / PERFORMANCE LEVEL 2</b> Low to mid-range torque for daily drivability. Economical price. RPM Power Range: 1500 - 4250 / Redline: 5500+	<b>56915</b>	260 350	280H	112°	280°	289°	204°	214°	.450"	.474"	<b>84057</b>
<b>POWER BEAST / PERFORMANCE LEVEL 3</b> Delivers impressive mid-range and top end power. Healthy sound. Economical price. RPM Power Range: 1750 - 4500 / Redline: 5750+	<b>56903</b>	350 425	289H	112°	289°	300°	214°	224°	.474"	.498"	<b>84057</b>
<b>ULTRA BEAST / PERFORMANCE LEVEL 4</b> Upper mid-range to top end power. Emphasis on top end. RPM Power Range: 2000 - 4800 / Redline: 6200+	<b>56919</b>	455	304H	112°	304°	316°	234°	244°	.520"	.542"	<b>84057</b>
<b>POWER COMPU-PRO / Performance Level 2</b> These cams provide excellent low end and mid-range power and extended rpm range for spirited street and offroad driving. A perfect combination of mileage and power. Modifications should include small diameter tube headers, low restriction dual exhaust, aftermarket manifold, increased cfm carburetor and reworked or performance ignition. Increase in compression ratio to 9.5:1 is recommended for maximum output. Works well with automatic transmission or 4-speed. RPM Power Range: 1300-1500 to 4000-4200 / Redline: 5500+	<b>56262</b>	455	276HDP	112°	276°	281°	215°	221°	.488"	.494"	<b>84057</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the performance oriented hot street application. These cams offer an extended rpm range with emphasis on upper bottom to top end power (strong mid-range). Performance gears, headers, dual exhaust, larger than stock cfm carburetor, performance manifold and increased compression (9.5:1 to 10.5:1) are required. Works well with automatic transmission if matched with proper ring and pinion gears and/or high stall converter. RPM Power Range: 1600-1800 to 4500-4800 / Redline: 6000+	<b>56263</b>	400 425	280HDP	112°	280°	286°	220°	227°	.485"	.496"	<b>84157</b>
	<b>56264</b>	455	284HDP	112°	284°	290°	229°	236°	.520"	.528"	<b>84157</b>
<b>ULTRA-PERFORMANCE COMPU-PRO / Performance Level 4</b> The following grinds are best suited for dual purpose hot street/drag strip situations. These cams exhibit strong mid-range and top end torque and horsepower. Headers, dual exhaust, larger cfm carburetor, performance ignition and 11:1 compression are a must. Cylinder head modifications would be beneficial. Use with standard transmission or automatic with high stall converter. Low gearing a must. RPM Power Range: 2000-2200 to 6000-6200 / Redline: 6500	<b>56263</b>	260	280HDP	112°	280°	286°	220°	227°	.485"	.496"	<b>84157</b>
	<b>56264</b>	350	284HDP	112°	284°	290°	229°	236°	.520"	.528"	<b>84157</b>
	<b>56265</b>	400 425	297HDP	112°	297°	308°	237°	240°	.538"	.533"	<b>84157</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 3</b> Lope at idle. Hot street/strip cam with strong mid-range power. RPM Power Range: 2500 - 6500	<b>56270</b>	400	284HDP	108°	288°	298°	228°	238°	.464"	.482"	<b>84157</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 4</b> Rough idle. Explosive mid-range power and torque. RPM Power Range: 3000 - 6500	<b>56271</b>	400	296HDP	108°	296°	304°	229°	241°	.505"	.532"	<b>84157</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 4</b> Rough idle. Violent mid-range acceleration. RPM Power Range: 3500 - 6500	<b>56272</b>	400	304HD	108°	304°	312°	244°	249°	.540"	.568"	<b>84157</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00156H</b>	ALL CID									

Note: These cams use .000" intake and exhaust valve lash.

**Engineered Component Kit & Accessories refer to the following page for specs or contact CROWER for more info.**

Part numbers no longer listed may be available as custom grinds. Please contact Crower.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84157</b>	66056-16	68405-16	87048-16	86072-16	Hydraulic Lifter. 6500 rpm.
<b>84157X3</b>	66056X3-16	68405-16	87048-16	86072-16	CamSaver Hydraulic Lifter. 6500 rpm.
<b>84056</b>	66056-16	68100X200-16	87062-16	86072-16	Hydraulic Lifter. 6000 rpm.
<b>84057</b>	66056-16	68305X1-16	87048-16	86072-16	Hydraulic Lifter.

## ACCESSORIES

Description	See Page (s)
<b>Accessories</b>	<b>Pg's. 231-238</b>



# MECHANICAL FLAT TAPPET



Non Roller 1967-up

260 307 (5.0L) 350 (5.7L) 400 403 425 455 (39° bank angle)

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>COMPU-PRO / PERFORMANCE LEVEL 4</b> Super torque with explosive mid-range power. RPM Power Range: 3500 - 7500+	<b>56361</b>	400 455	284FDP	108°	284°	290°	248°	255°	.552"	.568"	<b>84357</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00156M</b>										
<b>CUSTOM GROUND SOLID</b> Special order camshaft using a custom core or 4-7-3-2 firing order or any special configuration. Call our technical support staff for personalized camshaft assistance.	<b>00060</b>										Call Crower

Note: These cams use .024" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84357</b>	66963-16	68405-16	87048-16	86072-16	Solid Lifter. 7500 plus rpm.
<b>84357X980</b>	66963X980-16	68405-16	87048-16	86072-16	CoolSaver Solid Lifter. 7500 plus rpm.

### Spring pressure:

68405-16 Seat: 1.700" @ 110 lbs / Nose: 1.100" @ 338 lbs / Coil bind: 0.980"  
(Machine work required)  
\* Machine work required

**Note:** For lifts over .480" pushrods 70049-16 or 70050-16 are required. All solid lifter profiles require adjustable pushrods.

Non-adjustable pushrods can be used if you have proper lifter preload (.050" off snare ring). Custom length pushrods are available from Crower to achieve proper lifter preload. Customer must furnish accurate pushrod length. In order to assist in proper preload measurement, Crower offers an adjustable checking pushrod.

**Note:** 1964-66 Oldsmobile blocks require 45° cam cores and cannot be interchanged with late model (39° cam cores). Early model 45° camshafts are available on a special order basis. Customer must furnish lifter bore diameter when ordering.

For severe duty applications, Crower offers a high-lube "CamSaver" lifter that channels more oil to the cam lobe and lifter surface.

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 146-168
<b>Cranks</b>	Pg's. 189-204
<b>Rods</b>	Pg's. 141-145
<b>Accessories</b>	Pg's. 231-238

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397 ppm of zinc to whatever the oil may or may not already contain.

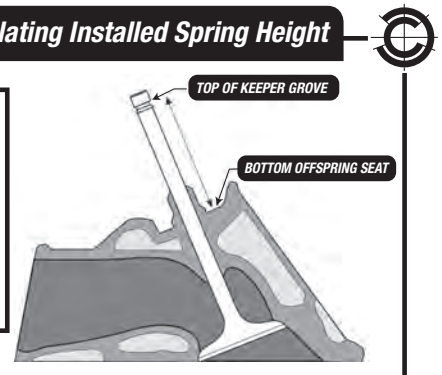
**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



**Part numbers no longer listed may be available as custom grinds. Please contact Crower.**

**Diagram 1. Calculating Installed Spring Height**

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 186



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.



Non Roller 1955-1981

287 301 316 341 350 370 389 400 421 455 V8

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / PERFORMANCE LEVEL 2</b> Low to mid-range torque for daily drivability. Economical price. RPM Power Range: 1500 - 4250 / Redline: 5500+	<b>60915</b>	301 350	272H	112°	272°	279°	211°	220°	.422"	.443"	<b>84057</b>
<b>TORQUE BEAST / PERFORMANCE LEVEL 3</b> Delivers impressive mid-range and top end power. Healthy sound. Economical price. RPM Range: 1750 - 4500 / Redline: 5750+	<b>60918</b>	370 421	288H	112°	288°	298°	214°	224°	.444"	.467"	<b>84160</b>
<b>POWER BEAST / PERFORMANCE LEVEL 4</b> Upper mid-range to top end power. Emphasis on top end. RPM Power Range: 2000 - 4800 / Redline: 6200+	<b>60916</b>	421 455	278H	112°	278°	289°	221°	229°	.455"	.470"	<b>84160</b>
<b>ULTRA BEAST / PERFORMANCE LEVEL 4</b> Hot street profile that delivers impressive mid-range and top end power. RPM Power Range: 2000 - 4800 / Redline: 6200+	<b>60919</b>	428 455	304H	112°	304°	316°	231°	240°	.470"	.470"	<b>84160</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 4</b> Intended for the performance oriented hot street application. These cams offer an extended rpm range with emphasis on upper bottom to top end power (strong mid-range). Performance gears, headers, dual exhaust, larger than stock cfm carburetor, performance manifold and increased compression (9.5:1 to 10.5:1) are required. Works well with automatic transmission if matched with proper ring and pinion gears and/or high stall converter. RPM Power Range: 1600-1800 to 4500-4800 / Redline: 6000+	<b>60243</b>	428 455	284HDP	112°	284°	290°	228°	235°	.479"	.494"	<b>84160</b>

Note: These cams use .000" intake and exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84160</b>	66056-16	68404-16	87048-16	86072-16	Hydraulic Lifter. Up to 6500 plus rpm.
<b>84160X3</b>	66056X3-16	68404-16	87048-16	86072-16	CamSaver Hydraulic Lifter. Up to 6500 plus rpm.
<b>84057</b>	66056-16	68305X1-16	87048-16	86072-16	Hydraulic Lifter.

### Spring pressure:

68404-16 Seat: 1.600" @ 116 lbs / Nose: 1.100" @ 302 lbs / Coil bind: 0.910" (Stock O.D., no machine work).

**A.** Lifter 66962-16 is a special high oil band tappet with high pushrod seat. It is not a Chevrolet solid lifter.

**Note:** Non-adjustable pushrods can be used if you have proper lifter preload (.050" off snap-ring). Custom length pushrods are available from Crower to achieve proper lifter preload. Customer must furnish accurate pushrod length.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

Note: The above kit will not work if using Pontiac heads with 1.65:1 rocker ratio (springs are too short). Contact Crower for special spring and retainer combination. See diagram 2.

**Note:** For proper valve adjustment on solid lifter profiles, Crower "Sure-Lock" rocker nuts (86053) must be used.

### Crower Recommends ZDDPlus for all Flat Tappet Cams

**ZDDPlus™** contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 146-168
<b>Cranks</b>	Pg's. 189-204
<b>Rods</b>	Pg's. 141-145
<b>Accessories</b>	Pg's. 231-238



# HYDRAULIC FLAT TAPPET



Non Roller 1955-1981

287 301 316 341 350 370 389 400 421 455 V8

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>ULTRA-PERFORMANCE COMPU-PRO / Performance Level 4</b> The following grinds are best suited for dual purpose hot street/drag strip situations. These cams exhibit strong mid-range and top end torque and horsepower. Headers, dual exhaust, larger cfm carburetor, performance ignition and 11:1 compression are a must. Cylinder head modifications would be beneficial. Use with standard transmission or automatic with high stall converter. Low gearing a must. RPM Power Range: 2000-2200 to 6000-6200 / Redline: 6500	<b>60243</b>	301 350	284HDP	112°	284°	290°	228°	235°	.479"	.494"	<b>84160</b>
	<b>60244</b>	370 421	297HDP	112°	297°	308°	239°	241°	.500"	.500"	<b>84160</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 4</b> Lope at idle. Hot street/strip cam with strong mid-range power. RPM Power Range: 2500 - 6000	<b>60210</b>	389 400	278HDP	108°	278°	288°	229°	239°	.480"	.501"	<b>84160</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 4</b> Rough idle. Explosive mid-range power and torque. RPM Power Range: 2800 - 6000+	<b>60211</b>	389 400	296HDP	108°	296°	308°	236°	242°	.509"	.516"	<b>84160</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Rough idle. Violent mid-range acceleration. RPM Power Range: 3000 - 6000	<b>60212</b>	428 455	304HDP	108°	304°	312°	239°	247°	.497"	.522"	<b>84160</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Brutal mid to top end torque and horsepower. RPM Power Range: 3000 - 6500	<b>60213</b>	428 455	308HDP	108°	308°	314°	248°	256°	.518"	.537"	<b>84160</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00160H</b>	All CID									

Note: These cams use .000" intake and exhaust valve lash.

# MECHANICAL FLAT TAPPET

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / PERFORMANCE LEVEL 3</b> High revving, super mid to top end power grind. RPM Power Range: 2800 - 6000+	<b>60310</b>	389 455	284FDP	112°	284°	288°	240°	248°	.477"	.501"	<b>84360</b>
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> Super upper mid-range and top end power profile. RPM Power Range: 3000 - 6500+	<b>60311</b>	389 455	292FDP	112°	292°	302°	247°	252°	.505"	.517"	<b>84360</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High revving, superior upper bottom profile with emphasis on mid to top end power. RPM Power Range: 3500 - 7000+	<b>60353</b>	389 455	304FDP	108°	304°	312°	255°	262°	.527"	.546"	<b>84360</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00160M</b>	All CID									

Note: These cams use .022" intake, .024" exhaust valve lash.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84160</b>	66056-16	68404-16	87048-16	86072-16	For rpm up to 6500 plus.
<b>84160X3</b>	66056X3-16	68404-16	87048-16	86072-16	CamSaver Lifter. For rpm up to 6500 plus.
<b>84360</b>	66963-16	68405-16	87048-16	86072-16	Solid Lifter. For rpm up to 7000 plus.
<b>84360X980</b>	66963-16	68405-16	87048-16	86072-16	CoolFace Solid Lifter. For rpm up to 7000 plus.

Mechanical 1955-1981

287 301 316 341 350 370 389 400 421 455 V8

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>ULTRA-ACTION / PERFORMANCE LEVEL 5</b> All range camshaft for heavy car, high stall with compression and headers. RPM Power Range: 3000 - 6500+	<b>60450</b>	389 455	275R	112°	275°	284°	233°	242°	.495"	.496"	<b>84568S</b>
<b>ULTRA-ACTION / PERFORMANCE LEVEL 5</b> Radical mid-range cam, shifts at 6500 rpm with a redline of 7000. RPM Power Range: 4000 - 7000	<b>60451</b> <b>MTO</b>	389 455	284R	108°	284°	294°	247°	254°	.582"	.567"	<b>84568S</b>
<b>ULTRA-ACTION / PERFORMANCE LEVEL 5</b> Large cid camshaft (455 cid or bigger). Smashing mid-range power hit and top end performer. RPM Power Range: 4500 - 7250+	<b>60452</b> <b>MTO</b>	389 455	294R	108°	294°	298°	257°	263°	.649"	.636"	<b>84568S</b>
<b>CUSTOM GROUND SOLID</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00160R</b>	All CID									

The above cores are 8620 steel billet. Use bronze distributor gear.

Note: These cams use .026" intake, .028" exhaust valve lash.

**Note: "MTO"** denotes that this item is not usually stocked but is **Made To Order** in 2-3 days.

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84568S</b>	66294-16	68369-16	87055M-16	86072-16	Roller Lifter. For rpm up to 7500 plus.

**Note:** Non-adjustable pushrods can be used if you have proper lifter preload (.050" off snar-ing. Custom length pushrods are available from Crower to achieve proper lifter preload. Customer must furnish accurate pushrod length.

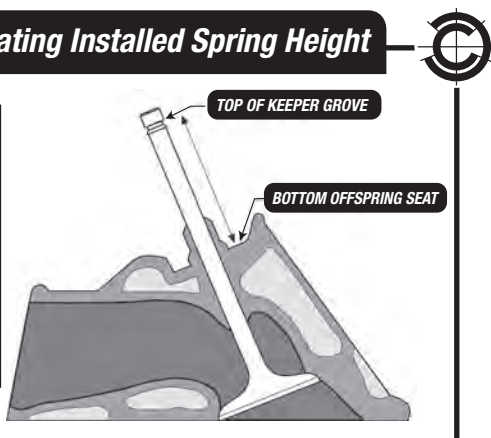
**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide clearance at full lift (minimum .050").

Note: The above kit will not work if using Pontiac heads with 1.65:1 rocker ratio (springs are too short. Contact Crower for special spring and retainer combination. See diagram 2.

Note: For proper valve adjustment on solid lifter profile, Crower "Sure-Lock" rocker nuts (86053) must be used.

**Diagram 1. Calculating Installed Spring Height**

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. *See Page 186*



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

## ACCESSORIES

Description	See Page (s)
<b>Rollers</b>	Pg. 127
<b>Rockers</b>	Pg's. 146-168
<b>Rods</b>	Pg's. 141-145
<b>Cranks</b>	Pg's. 189-204

**DON'T SEE YOUR FAVORITE PART #?**  
IT MAY STILL BE AVAILABLE  
**CALL THE CROWER**  
TECH. DEPT FOR INFO.

# EJ205 WRX USDM - QUAD CAM (2002-UP) WRX SEDAN / WRX WAGON (2002-UP)



## New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advised Duration Seat		Duration @ .050"		Gross Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Subaru EJ20 (2003)</b>	<b>Stock</b>	114°	248°	248°	208°	208°	.366"	.366"	<b>Stock</b>
<b>STAGE 1 - Hotter Than Stock</b> Street use with emphasis on bottom end and mid range power. Works with stock springs up to factory rev limiter. RPM Power Range: Idle - 7000+	<b>62580-4</b>	114°	256°	256°	216°	216°	.380"	.380" (9.65 mm)	<b>Stock</b>
<b>STAGE 2 - Mild Street/Strip</b> Best cam choice for daily driver. Delivers excellent top end without loosing low end torque. Recommend spring kit #84185. RPM Power Range: 1000 - 7500+	<b>62581-4</b>	114°	264°	264°	220°	220°	.400"	.400" (10.16 mm)	<b>84185</b> <b>84185S</b>
<b>STAGE 3 - Race</b> Designed for street/strip applications and features a slight lobe at idle and great top end power. Requires spring/retainer kit #84185. RPM Power Range: 1250 - 8000+	<b>62582-4</b>	114°	272°	272°	228°	228°	.406"	.406" (10.31 mm)	<b>84185</b> <b>84185S</b>
<b>STAGE 4 - Full Race</b> Drag Race and radical Street/Strip. Requires #84185 spring kit and compatible ECU upgrade for optimum results. Rough idle. RPM Power Range: 1500 - 8500+	<b>62583-4</b>	114°	280°	280°	234°	234°	.415"	.415" (10.55 mm)	<b>84185</b> <b>84185S</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary profiles available upon request.	<b>00095-4</b>								

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

If running EJ207, modifications are required to the cylinder head (AVCS) in order to run the above camshafts. Duration figures are taken at the lobe.

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84185</b>	68195-16	87085-16	Titanium retainer intended for race and street.
<b>84185S</b>	68195-16	87085S-16	Steel Retainer, for daily street use.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/ smooth surface.

#### Spring pressure:

68195-16 Seat: 1.420" @ 60 lbs / Nose: 1.000" @ 161 lbs / Coil bind: 0.860"  
(No machine work required).

#### MAXI-LITE BILLET RODS

(See Page 204-209)

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet.



#### STEEL BILLET RODS

Designed for high boost and nitrous applications, Crower offers a wide variety of connecting rods for the Subaru engine platforms including the WRX-EJ20/ STI-EJ257 (#B93766B-4). CNC machined from the highest grade, USA milled steel billet material, Crower connecting rods are the industry standard. Features 220,000 p.s.i. rod bolts standard and aluminum-bronze bushings standard.



# WRX STI EJ25 2.5L - QUAD CAM (2004 - UP)

## New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advised Duration Seat		Duration @ .050"		Gross Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>Subaru EJ25 (2004 - up)</b>	<b>Stock</b>	114°	248°	248°	208°	208°	.366"	.366"	<b>Stock</b>
<b>STAGE 1 - Hotter Than Stock</b> Street use with emphasis on bottom end and mid range power. Works with stock springs up to factory rev limiter. RPM Power Range: Idle - 6700+	<b>62590-4</b>	114°	256°	256°	216°	216°	.380"	.380" (9.65 mm)	<b>Stock</b>
<b>STAGE 2 - Mild Street/Strip</b> Best cam choice for daily driver. Delivers excellent top end without loosing low end torque. Recommend spring kit #84185. RPM Power Range: 1000 - 7500+	<b>62591-4</b>	114°	264°	264°	220°	220°	.400"	.400" (10.16 mm)	<b>84185</b> <b>84185S</b>
<b>STAGE 3 - Race</b> Designed for street/strip applications and features a slight lobe at idle and great top end power. Requires spring/retainer kit #84185. RPM Power Range: 1200 - 8000+	<b>62592-4</b>	114°	272°	272°	228°	228°	.406"	.406" (10.31 mm)	<b>84185</b> <b>84185S</b>
<b>STAGE 4 - Full Race</b> Drag Race and radical Street/Strip. Requires #84185 spring kit and compatible ECU upgrade for optimum results. Rough idle. RPM Power Range: 1400 - 8500+	<b>62593-4</b>	114°	280°	280°	234°	234°	.415"	.415" (10.55 mm)	<b>84185</b> <b>84185S</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary profiles available upon request.	<b>00091-4</b>								

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

If running EJ207, modifications are required to the cylinder head (AVCS) in order to run the above camshafts. Duration figures are taken at the lobe.

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84185</b>	68195-16	87085-16	Titanium retainer intended for race and street.
<b>84185S</b>	68195-16	87085S-16	Steel Retainer, for daily street use.

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.

#### Spring pressure:

68195-16 Seat: 1.420" @ 60 lbs / Nose: 1.000" @ 161 lbs / Coil bind: 0.860"  
(No machine work required).

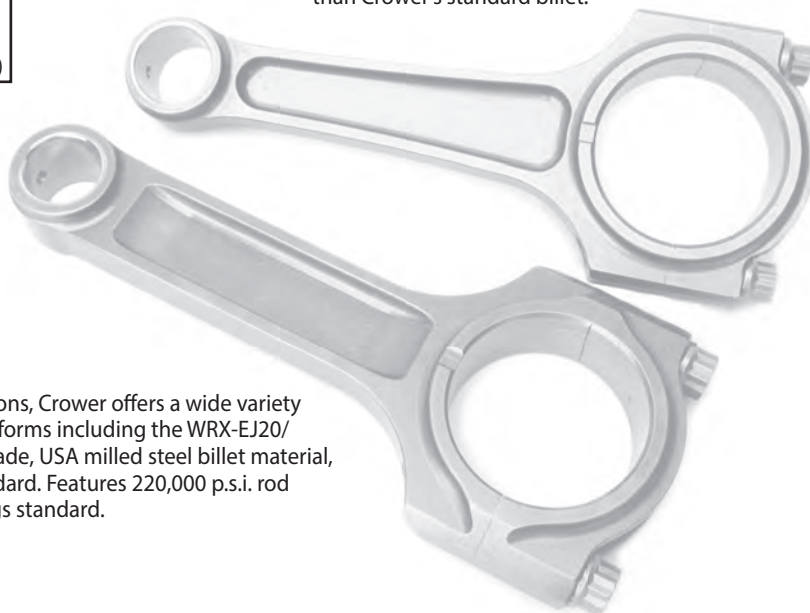
### ACCESSORIES

Part No.	Description
<b>97460I-8</b>	Stainless steel valves - 36 mm head dia (8 only int)
<b>97460E-8</b>	Stainless steel valves - 32 mm head dia (8 only exh)
<b>97461I-8</b>	Stainless steel valves - 36.5 mm head dia (8 only int)
<b>97461E-8</b>	Stainless steel valves - 32.5 mm head dia (8 only exh)

**Note:** When ordering valves, be sure to specify one set int and one set exh.

#### MAXI-LITE BILLET RODS

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet.



#### STEEL BILLET RODS

Designed for high boost and nitrous applications, Crower offers a wide variety of connecting rods for the Subaru engine platforms including the WRX-EJ20/STI-EJ257. CNC machined from the highest grade, USA milled steel billet material, Crower connecting rods are the industry standard. Features 220,000 p.s.i. rod bolts standard and aluminum-bronze bushings standard.



# SUPRA 2JZ-GTE FACTORY TURBO 6 CYL. TWIN CAM (93-98)



## New Improved Cam Core Technology

Description	Part Number	Advertised Duration		Duration @ .010"		Duration @ .050"		Gross Lift		Suitable Component Kit
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>FACTORY OEM SPECS (2JZGTE)</b>	<b>Stock</b>	248°	248°	276°	204°	200°	204°	.338" inches 8.58 mm	.346" inches 8.79 mm	<b>Stock</b>
	<b>264</b>	264°	264°	281°	281°	222°	222°	.364" inches 9.24 mm	.364" inches 9.24 mm	<b>Stock</b>
	<b>272</b>	272°	272°	287°	318°	229°	231°	.374" inches 9.50 mm	.380" inches 9.65 mm	<b>84168</b> <b>84168S</b>
<b>STAGE 1 - Daily Driver</b> Street use and more aggressive turbo and nitrous. Slight lobe at idle. RPM Power Range: Idle - 7500+	<b>61401-2</b>	264°	264°	289°	289°	218°	218°	.375" inches 9.52 mm	.375" inches 9.52 mm	<b>84168</b> <b>84168S</b>
<b>STAGE 2 - Race</b> Street/Strip package. Lobe at idle, extended rpms. Kit #84168 required. RPM Power Range: 1000 - 8500+	<b>61402-2</b>	272°	272°	276°	278°	230°	232°	.406" inches 10.31 mm	.415" inches 10.54 mm	<b>84168</b> <b>84168S</b>
<b>STAGE 2 - Race</b> Hot street, similar to HKS 272 specs. Kit #84168 required. RPM Power Range: 1000 - 8500+	<b>61402A-2</b>	272°	272°	310°	310°	228°	230°	.372" inches 9.45 mm	.372" inches 9.45 mm	<b>84168</b> <b>84168S</b>
<b>STAGE 3 - Full Drag Race</b> Limited street with rough idle. Shim under bucket may be required. RPM Power Range: 1250 - 9000+	<b>61403-2</b>	280°	280°	278°	280°	232°	234°	.415" inches 10.54 mm	.425" inches 10.80 mm	<b>84168</b> <b>84168S</b>
<b>CUSTOM GROUND 2JZGTE CAMS</b> Special order custom ground profiles available for an additional charge. Proprietary and confidential profiles also available. See specs listed below.	<b>00072-2</b>									

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

**Note:** The above cores will not fit the non-tu bo 2JZ cylinder head. No cores available at time of publication.

**Note:** 1JZ Cams available, call Crower.

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84168</b>	68195-24	87085-24	Titanium Retainer
<b>84168S</b>	68195-24	87085S-24	Steel Retainer

#### Spring pressure:

68195-24 Seat: 1.325" @ 82 lbs / Nose: 0.980" @ 166 lbs /  
Coil bind: 0.860" (No machine work required).

### BILLET STROKER KITS

Crower offers stroker kits for the 2JZGTE that feature a 4340 steel billet crankshaft, 4340 steel billet rods and custom pistons, pins, rings and locks.  
94mm stroke x 87mm bore = 3.4L...big horsepower!

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/ smooth surface.

### H-BEAM RODS

Crower also has H-Beam design rods.

## Custom Order CRANKS & RODS

### ACCESSORIES

Part No.	Description
<b>860540T</b>	Adjustable Cam Sprocket (1 only). All black. 2 required
<b>97440I-12</b>	Stainless steel valves - 33.6 mm head dia (12 only int)
<b>97440E-12</b>	Stainless steel valves - 29 mm head dia (12 only exh)
<b>97441I-12</b>	Stainless steel valves - 34.6 mm head dia (12 only int)
<b>97441E-12</b>	Stainless steel valves - 30 mm head dia (12 only exh)

Note: When ordering valves, be sure to specify one set int and one set exh.



## New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>TOYOTA COROLLA (2000)</b>	<b>Stock</b>	114°	256°	246°	204°	195°	.379"	.346"	<b>Stock</b>
<b>STAGE 1</b> Street use with emphasis on bottom end and mid range power. Works with stock springs up to factory rev limiter. RPM Power Range: Idle - 7000+	<b>61451-2</b>	114°	264°	264°	214°	202°	.379"	.367"	<b>Stock</b>
<b>STAGE 2 - Forced Induction</b> Designed specifically for turbo or supercharger applications. Low duration, high lift profile. Requires Crower spring kit #84199. RPM Power Range: Idle - 8000+	<b>61451T-2</b>	114°	272°	272°	215°	212°	.396"	.379"	<b>84199</b>
<b>STAGE 2 - Race</b> Designed for street/strip applications in normally aspirated engines. Requires spring/retainer kit #84199 and ECU mods. RPM Power Range: 1000 - 7800+	<b>61452-2</b>	112°	272°	272°	222°	219°	.396"	.396"	<b>84199</b>
<b>STAGE 3 - Full Race</b> Drag Race and radical Street/Strip. Requires #84199 spring kit and compatible ECU upgrade for optimum results. Rough idle. RPM Power Range: 1100 - 8000+	<b>61453-2</b>	112°	280°	280°	228°	219°	.415"	.396"	<b>84199</b>
<b>CUSTOM GRIND</b> Crower can custom grind cams to your desired specs, also proprietary profiles available upon request.	<b>00085-2</b>								

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

Duration figures are taken at the lobe.

### ENGINEERED COMPONENT KITS

Part No.	Springs	Retainers	Remarks
<b>84199</b>	68160-16	87086-16	Titanium retainer intended for race and limited street

#### Spring pressure:

68160-16 Seat: 1.310" @ 39 lbs / Nose: 0.880" @ 97 lbs / Coil bind: 0.810" (No machine work required).

#### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/smooth surface.



#### MAXI-LITE BILLET RODS (See Page 204-209)

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet.

#### STEEL BILLET RODS

100% made in the USA from premium steel billet material, Crower offers two styles of rods for the Toyota 1ZZ engine. Crower's premium standard steel billet rod (#B93751B-4) is designed for boosted applications in excess of 12 psi or over 100 HP shot of nitrous. Also available in a Maxi-Lite all motor design (ML93751B-4) for added weight reduction and quicker throttle response.

# 2T/2TC/3TC4 CYLINDER



## New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advised Duration		Duration @ .050"		Lobe Lift		Gross Lift 1.4 / 1.4		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STAGE 1</b> Stock replacement. RPM Power Range: Idle - 5500+	61850*	110°	256°	256°	194°	194°	.254"	.254"	.355"	.355"	Stock
<b>STAGE 1</b> Mild street, similar to stock idle. Good for bottom end performance. Works well with automatic transmission. RPM Power Range: Idle - 6000+	61851*	108°	260°	266°	206°	214°	.250"	.260"	.350"	.364"	Stock
<b>STAGE 2</b> Excellent normally aspirated street. Emphasis on mid-range power. Tight center for torque and lope at idle. RPM Power Range: 1000 - 7000+	61852*	108°	274°	280°	220°	230°	.253"	.268"	.354"	.375"	TRD
<b>STAGE 3 - Race</b> Excellent for turbo and nitrous for street/strip applications. Wide center for top end performance. RPM Power Range: 2600 - 7200+	61853*	114°	286°	280°	240°	230°	.263"	.268"	.368"	.375"	TRD
<b>STAGE 4 - Full Race</b> Race turbo (30+ lbs boost minimum). Also works well with NOS. RPM Power Range: 2600 - 7200+	61854*	112°	290°	296°	258°	268°	.360"	.370"	.504"	.518"	TRD
<b>STAGE 5 - Full Race</b> Performance built, race oriented application. Not for the inexperienced tuner. Top end insanity. RPM Power Range: 3000 - 8000+	61855*	114°	300°	300°	268°	268°	.370"	.370"	.518"	.518"	TRD
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00127										

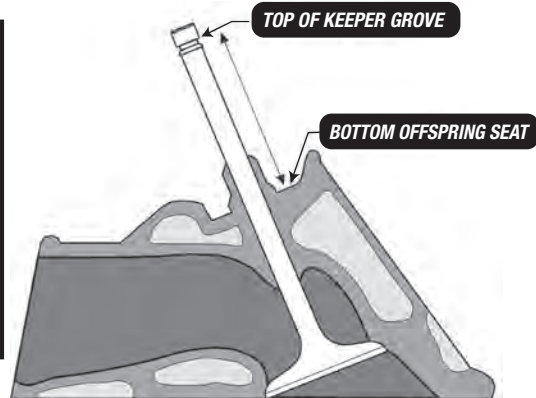
Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

### ACCESSORIES

Description	See Page (s)
<b>Rockers</b>	Pg's. 146-168
<b>Rods</b>	Pg's. 204-209

### Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. *See Page 186*



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.





# 22R4 CYLINDER

## New Improved Cam Core Technology

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.5 / 1.5		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>CARBURETOR - STAGE 1</b> 10:1 compression, low to mid-range torque. Heavy vehicle. RPM Range: 2200 - 6200+	61800	108°	270°	276°	216°	195°	.430"	.430"	Stock
<b>CARBURETOR - STAGE 1</b> 10:1+ compression, header, intake manifold, carb mods. RPM Range: 3000 - 7000+	61801	108°	286°	290°	226°	236°	.429"	.443"	Stock
<b>CARBURETOR - STAGE 2</b> 11:1+ compression, header, big single, or dual carbs. RPM Range: 3400 - 7200+	61803	108°	290°	298°	236°	240°	.443"	.417"	68218-8
<b>CARBURETOR - STAGE 3 (Race)</b> 12:1+ compression, header, big single, or dual carbs, porting, etc... RPM Range: 4200 - 8000+	61804*	106°	298°	304°	248°	254°	.489"	.504"	68218-8
<b>CARBURETOR - STAGE 4 (Full Race)</b> Professionally prepared, purpose built, race only engine. RPM Range: 5000 - 8500+	61805	106°	308°	308°	264°	264°	.566"	.566"	68218-8
<b>EFI - STAGE 1</b> Excellent stock replacement cam. No other modifications required, straight forward remove and replace. RPM Range: 1500 - 5500+	61802	114°	252°	260°	204°	210°	.420"	.438"	Stock
<b>EFI - STAGE 2</b> Street/Strip profile and all purpose daily driver. Headers, performance exhaust recommended. RPM Range: 2000 - 7000+	61807	114°	270°	276°	216°	220°	.430"	.430"	Stock
<b>EFI - STAGE 3 (Race)</b> Excellent for turbo and nitrous for street/strip applications. Wide center for top end performance. RPM Range: 2500 - 7000+	61808	114°	280°	280°	226°	226°	.445"	.445"	68218-8
<b>EFI - STAGE 4 (Full Race)</b> Mostly strip, not for daily driver. Very rough idle, aftermarket valve springs, ECU mods required. RPM Range: 3000 - 7500+	61809	114°	290°	298°	236°	240°	.443"	.417"	68218-8
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00128								

Note: These cams use .006" intake (cold), .008" exhaust valve lash (cold).

### REMEMBER!

When installing new camshaft please remember that the contact surface of the follower must be free of wear/ smooth surface.



### MAXI-LITE BILLET RODS

Crower's new Maxi-Lite billet is approximately 100 grams lighter than Crower's standard billet.

### STEEL BILLET RODS

100% made in the USA from premium steel billet material. Crower's premium standard steel billet rod (#B93755B-4) is designed for boosted applications in excess of 12 psi or over 100 HP shot of nitrous. Also available in a Maxi-Lite all motor design (ML93755B-4) for added weight reduction and quicker throttle response.

Description	Part Number	Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STAGE 1</b> Street use with emphasis on bottom end and mid range power.	61481-2	112°	266°	271°	218°	222°	.401"	.401"	84182 84182S
<b>STAGE 1</b> Designed for street/strip applications in normally aspirated engines.	61482-2	112°	270°	280°	219°	227°	.397"	.415"	84182 84182S
<b>STAGE 2</b> Street/Strip package. Perfect for all-motor use.	61483-2	112°	274°	288°	222°	230°	.401"	.425"	84182 84182S
<b>STAGE 2 - Race</b> Drag Race and radical Street/Strip	61484-2	112°	292°	300°	229°	237°	.415"	.426"	84182 84182S
<b>STAGE 4 - Full Race</b> Excellent high torque and mid-range power	61485-2	112°	300°	308°	237°	245°	.436"	.458"	84182 84182S
<b>STAGE 5 - Full Race</b> All out, all motor drag profile. Not for the inexperienced tuner	61486-2	112°	308°	314°	245°	253°	.458"	.480"	84182 84182S
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00049-2								

## ENGINEERED COMPONENT KITS

Part. No	Spring	Retainers	Remarks
84182	68183-24	87098-24	Titanium retainers.
84182S	68183-24	87098S-24	Steel retainers

## ACCESSORIES

Description	See Page (s)
Rockers	Pg's. 146-168
Rods	Pg's. 141-145

## CROWER CAM BREAK-IN PROCEDURE



**This applies to all hydraulic and solid lifter camshafts using higher than stock spring pressure:**

- Do not use block restrictors in the oil galleries. This severely limits oil flow to the cam, lifters and overhead.
- Break-in cam and lifters with low pressure springs only. Do not exceed 235 lbs open pressure.
- During break-in run engine for 35 to 45 minutes and vary rpm from 2000 to 3000.
- For break-in procedure Crower recommends 10W/30 motor oil. Heavier weight oils do not cold flow.
- Do not use synthetic oils during break-in period.
- For further information, please refer to the Crower Installation booklet that accompanies the camshaft.
- Use ZDD Plus Additive P/N 86092

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.  
Part #86092 - 4oz Bottle of ZDDPlus & Paste







# 1FZ-FE 4.5L LANDCRUISER (TURBO)

Description	Part Number	Lobe Sep.	Advised Duration		Duration @ .050"		Lobe Lift		Suitable Component Kit
			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STAGE 1</b> Fair idle. Good bottom end profile with mid-range power. Emphasis on torque.	61481T-2	114°	271°	266°	222°	218°	.401"	.401"	84182 84182S
<b>STAGE 1</b> Street use and more aggressive turbo and nitrous. Slight lobe at idle. RPM Range: Idle to 7500+	61482T-2	114°	280°	270°	227°	219°	.415"	.397"	84182 84182S
<b>STAGE 2</b> Excellent for turbo and nitrous for street/strip applications. Wide center for top end performance. RPM range 2600 to 7200+	61483T-2	114°	288°	274°	230°	222°	.425"	.401"	84182 84182S
<b>STAGE 4 - Full Race</b> Race turbo (30+ lbs of boost minimum). Also works well with NOS. RPM Range: 2600 to 7200+	61484T-2	114°	300°	292°	237°	229°	.426"	.415"	84182 84182S
<b>STAGE 4 - Full Race</b> Race turbo (30+ lbs of boost minimum). Also works well with NOS. RPM Range: 2600 to 7200+	61485T-2	114°	308°	300°	245°	237°	.458"	.436"	84182 84182S
<b>STAGE 5 - Full Race</b> Performance built, race oriented application. Not for the inexperienced tuner. Top end insanity. RPM Range: 3000 to 8000+	61486T-2	114°	314°	308°	253°	245°	.480"	.458"	84182 84182S
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	00049-2								

## ENGINEERED COMPONENT KITS

Part No	Spring	Retainers	Remarks
84182	68183-24	87098-24	Titanium retainers.
84182S	68183-24	87098S-24	Steel retainers

## ACCESSORIES

Description	See Page (s)
Rods	Pg's. 141-145

### Crower Recommends ZDDPlus for all Flat Tappet Cams

ZDDPlus™ contains 42,700 ppm of phosphorus and 57,300 ppm of zinc. When a 4-ounce bottle of ZDDPlus™ is added to 5 quarts of oil, it is diluted 41:1, which contributes 1047 ppm of phosphorus and 1397ppm of zinc to whatever the oil may or may not already contain.

**Part #86092 - 4oz Bottle of ZDDPlus & Paste**



## Type 1 & 3 Air Cooled, & Type 4 Water Cooled

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.1 / 1.1		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
Smooth idle. Great all around stock replacement cam. Super torque profile. RPM Power Range: 1000 - 5000+	61002	ALL CID	B260F	110°	260°	268°	220°	227°	.375"	.381"	84261
Fair idle. Good bottom end profile with mid-range power. Emphasis on torque. RPM Power Range: 1800 - 6000+	61000	ALL CID	M268F	110°	268°	268°	227°	227°	.354"	.354"	84261
Fair idle. Competition profile. Super torque and mid-range profile for 1600cc engines. RPM Power Range: 2000 - 7000+	61003	ALL CID	VW276F	107°	276°	284°	234°	244°	.398"	.421"	84261 84361
Fair idle. High torque profile with emphasis on the top end for 1800cc engines and under. RPM Power Range: 2500 - 7500+	61004	ALL CID	VW284F	107°	284°	290°	244°	252°	.424"	.446"	84261 84361
Fair idle. Broad mid-range and top end power for 2180cc engines and under. RPM Power Range: 2500 - 7500+	61005	ALL CID	VW290F	107°	290°	298°	252°	260°	.447"	.460"	84361
Fair idle. Broad mid-range and top end power for engines with increased compression. RPM Power Range: 3000 - 8000+	61006	ALL CID	VW298F	107°	298°	306°	260°	272°	.462"	.482"	84361
Rough idle. Strong mid-range and top end power for 2000cc engines or larger with increased compression. RPM Power Range: 3500 - 8500+	61007	ALL CID	VW306F	107°	306°	312°	272°	280°	.481"	.500"	84361
<b>CUSTOM GROUND VW CAMS</b> Special order custom ground profiles available. Proprietary and confidential profiles also available. See specs listed below. Type 1 & 3	00004	ALL CID									
<b>CUSTOM GROUND VW CAMS</b> Special order custom ground profiles available. Proprietary and confidential profiles also available. See specs listed below. VW Type 4	00004V	ALL CID									

Note: These cams use .006" intake, .008" exhaust valve lash.

**Note: Water cooled cam cores also available for Rabbit, Scirocco, Jetta and Dasher (1972-90) 4 cyl. P/N 00161**

Note: Increasing rocker ratio and spring pressure in these camshafts may enhance the performance characteristics of these camshafts, depending on engine setup.

### ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Remarks
84261	66961-8	68141-8	87045-8	For rpm up to 6500 plus.
84361	66961-8	68404-8	87044-8	For rpm up to 8000 plus.

### SPECIAL ORDER

#### VOLKSWAGEN CAMSHAFTS

##### COMPETITION PROFILES

Whether you're running the Type 1, 3 or 4 engine, Crower has hundreds of cam profiles that will deliver increased performance. Call with the following information for a proper **recommendation**:

- Engine specs (bore, stroke, etc...).
- Connecting rod length.
- Intake and exhaust flow figures (intake and exhaust manifold lengths).
- Intended operating power range and type of fuel.
- Data on your best existing camshaft.
- Rocker ratio information (intake and exhaust).
- Installed valve spring height (see diagram 2).
- Conventional flat tappet (cast iron), hardface or roller tappet (Type 1 and 3 only).

#### Spring pressure:

68141-8 Seat: 1.600" @ 52 lbs / Nose: 1.050" @ 150 lbs / Coil bind: 0.850" (Stock O.D., no machine work).  
 68404-8 Seat: 1.600" @ 116 lbs / Nose: 1.100" @ 281 lbs / Coil bind: 0.950" Optional spring (heavy duty):  
 68146-8 Seat: 1.600" @ 117 lbs / Nose: 1.100" @ 261 lbs / Coil bind: 0.975" (Stock O.D., no machine work).

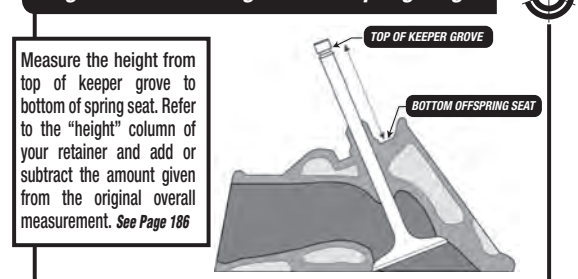
#### ACCESSORIES

Part No.	Description
86061	Replacement cam gear
86059-3	Cam bolts - Air Cooled

#### ACCESSORIES

Description	See Page (s)
<b>Rods</b>	Pg's. 141-145
<b>Cranks</b>	Pg's. 189-204

**Diagram 1. Calculating Installed Spring Height**



**Note:** If heads have been extensively modified (machined spring pockets, longer valves, etc.) contact Crower for proper spring, keeper, cup and retainer recommendations. Have your keeper/seat measurement available.

# Custom Camshafts / Regrinds

Lobe lift is the maximum lift point on the cam lobe. Not factored with a rocker ratio.

Duration is checked at seven different positions.

Average foot is the contact pattern of the lobe on the lifter surface.

Lobe area is derived from duration and lift. Used for comparison.

Lobe separation shows angular displacement of intake to exhaust.

Opening and closing velocity speeds are checked at three positions over a 30° cam and 60° crank movement to insure accurate lobe comparison data.

DURATION AT LIFT							VELOCITY/SPEED			FOOT AREA		
LC: 106	LIFT	005	010	020	050	100	200	300	OPEN SPEED	CLOSE SPEED	FOOT	AREA
INT	0.337	339	306	273	234	196	138	71	570/733/721	498/640/666	0.780	26.93
EXH	0.342	344	310	279	240	203	142	85	592/740/728	501/645/670	0.800	28.06

**CROWER COMPUTERIZED LOBE ANALYSIS**

## CUSTOM CAMSHAFTS

Crower has a variety of custom cam cores and cam options available to choose from. Please contact a Crower cam technician for further information.

## LOW VOLUME SEMI CORES

Crower has cam cores available for these applications:

### FOREIGN

Acura/Honda B18A/B DOHC non VTEC  
 Acura/Honda K20A2 DOHC VTEC  
 Acura/Honda B series DOHC VTEC  
 Acura/Honda H22 DOHC VTEC  
 Acura/Honda H23 DOHC non VTEC  
 Acura/Honda D16Z6 & D16Y8 SOHC VTEC  
 Acura/Honda D17A2 SOHC VTEC  
 BMW 6 cyl. 1972-80  
 Holden V8 (all appl.)  
 Mitsubishi/DSM 4G63  
 Mitsubishi Evolution  
 Mitsubishi/DSM 420A  
 Nissan SR20DE (DOHC)  
 Nissan "L" Series 16, 18, 20 4 cyl.  
 1969-80 (drilled for oil)  
 Nissan "Z" Series 240, 260, 280 6 cyl.  
 1977-80 (drilled for oil)  
 Subaru EJ205 (DOHC) - Quad Cam  
 Toyota Supra 2JZ (1994-98)  
 Toyota 1ZZ (DOHC)  
 Toyota 3TC 4 cylinder  
 Volvo B-18, B-20 4 cyl.  
 VW 4 cyl. Type 2 & 4 Air Cooled  
 411, 914  
 VW Rabbit, Scirocco, Jetta,  
 Dasher, 1.5, 1.6, 1.7, 1.8 4 cyl. (gas)

### DOMESTICS

Chevrolet/GM Ecotec 2.2L  
 Chevrolet 164 Corvair Flat 6 cyl. 1964-69  
 (std. rot.)  
 Chevrolet 164 Corvair Flat 6 cyl. 1964-69  
 (rev. rot.)  
 Dodge Neon (DOHC) & SRT-4  
 Dodge 170, 198, 225 Inline 6 cyl. 1960-75  
 Dodge 2.2L, 2.5L 4 cyl.  
 Ford Focus 2.0L Zetec  
 Ford 2.3L Duratec  
 Ford & Cortina 1600 cc 4 cyl.  
 Ford Flathead 239 V8 1948  
 (no nose)  
 Ford Flathead 239 V8 1949-53 (long nose)  
 Pontiac 151 4 cyl. Iron Duke w/3 main  
 journals, 2 gears (flat tappet)  
 Pontiac 151 4 cyl. Iron Duke w/3 main  
 journals, 2 gears  
 (roller tappet)

## CAMSHAFT REGRINDS

If you're lacking performance, send Crower your used or damaged camshaft for complete lobe analysis and regrinding or repair. Cams will be straightened and then checked-out (sample shown above) to establish original specs. A Crower technician will analyze all of the data and, based on your performance parameters, regrind your cam to desired specs.

Description	Duration
<b>#1 TOURING PROFILE (250F)</b> (Solid Lifter) Improves entire rpm range from 1000 to 6000. Smooth idle. Stock applications with no more than 10.5:1 compression.	250°
<b>#2 RALLY SPORT PROFILE (264F)</b> (Solid Lifter) Slight lobe at idle. Improves rpm range from 1500 to 6500. Greatly improves high gear acceleration for passing and hills.	264°
<b>#3 SLALOM/AUTOCROSS PROFILE (270F)</b> (Solid Lifter) Slight lobe at idle, but smooth into the throttle. Improves rpm range from 2000 to 6700 plus. More power for passing and hills.	270°
<b>#4 CLUB RACER PROFILE (284F)</b> (Solid Lifter) Racy lobe at idle. Extends rpm range from 2500 to 6500 with redline at 7100 plus. Increased compression, valve pocketing in combustion chamber and added carburetion will enhance total power.	284°
<b>#5 COMPETITION PROFILE (290F)</b> (Solid Lifter) Race only. Very rough idle, especially with added carburetion. Higher compression pistons or head milling advised as peak horsepower develops in 5500 to 6500 rpm range.	290°
<b>#6 ROAD RACING PROFILE (304F)</b> (Solid Lifter) Race only. Requires extensive modifications like 13:1 compression, grouped exhaust system, individual carburetion, inlet valve pocketing and engine balance. Rpm range from 4500 to 8000.	304°

Note: Lift figures are not provided because of the variety of rocker ratios from engine to engine.

## AVAILABLE REGRINDS

Part No.	Description
65000	Regrind - Hydraulic or Solid (any popular engine make)
65001	Regrind - Roller (any popular engine make)
65002	Regrind - Tractor (gas or diesel)
65003	Regrind - VW (single pattern)
65004	Regrind - VW (dual pattern)
65006	Regrind - Special Order Application (low volume)
65007	Regrind - INRAD Roller or Solid (low volume)
65008	Regrind - Hardface with 180° weld (low volume)
65009	Regrind - Hardface with 360° weld (low volume)
65010	Regrind - Custom Order
65014	Regrind - 4 cyl Twin Cam
65016	Regrind - 6 cyl Twin Cam
65020	Regrind - VTEC DOHC (B series, H22, etc...)
65021	Regrind - VTEC SOHC (D series)

# Camshaft Accessories



## ADVANCE & RETARD CAMSHAFT BUSHINGS

Using Crower camshaft bushings is the easy way to "tune" your camshaft timing. You'll receive five advance or retard bushings that are individually stamped to display amounts advance/retard in cam degrees (0°, 1°, 2°, 3°, 4°). Features a shouldered lip that retains the bushing and eliminates fallout.

Part No.	Description
72000	CHEVROLET 0° (1 only)
72001	CHEVROLET 1° (1 only)
72002	CHEVROLET 2° (1 only)
72003	CHEVROLET 3° (1 only)
72004	CHEVROLET 4° (1 only)
72005	CHEVROLET BUSHING KIT 0°-4°(set/5)
72007	DODGE Hemi 5.7 & 6.1 2°
72008	DODGE Hemi 5.7 & 6.1 4°
72009	DODGE Hemi 5.7 & 6.1 6°
72011	FORD 289-460 V8 (set/4 - 1° not included)

Note: Ford kits come with special dowel pin.



## LIGHTWEIGHT FUEL PUMP PUSHROD

The Crower fuel pump pushrod is manufactured from lightweight steel tubing that is heat-treated for added strength. The bronze tip insures proper surface mating with the fuel pump eccentric lobe on 8620 steel billet camshafts. This surface compatibility eliminates the wear problems associated with stock designs. For cast iron hydraulic and solid cams we offer a lightweight model with a steel tip at each end to protect against wear.

Part No.	Description
76200	CHEVROLET 262-454 V8 (8620 steel cams)
76201	CHEVROLET 262-454 V8 (cast iron cams)
76202	CHEVROLET 90° V6 (8620 steel billet cams)



## CAM THRUST PLUGS

Roller cam lobes are ground flat, without the taper found in hydraulic and solid lobes. The cam thrust plug sits between the front of the timing gear and the back of the front cover and prevents forward cam travel and ignition flutter in roller grinds. Available in choice of two styles: phenolic (non-galling material) or fully rollerized for reduced friction.

Part No.	Description	Style
86085	CHEVROLET 262-400 V8	Solid
86086	CHEVROLET 396-454 V8	Solid
86087	MOPAR 426 Hemi V8	Solid
86089	CHEVROLET 262-400 V8	Rollerized
86090	CHEVROLET 396-454 V8	Rollerized
86091	MOPAR "B"	Rollerized
86099	CHEVROLET 262-400 (Late Model)	



## CAMSHAFT BOLTS

Crower ultra-lock cam bolts are special "grade 8" tempered steel aircraft bolts that feature nylock inserts for positive holding. Their unique design eliminates the possibility of loose bolts in both the sprockets and the gears.

Part No.	Description
86060-3	CHEVY V8 5/16 (set/3) Ultra-Lock
86053-2	FORD 4.6L/5.4L 2 valve/4valve
86057-1	FORD 351C
86059-3	VW - Air Cooled (set/3)
86063-2	HONDA B18C



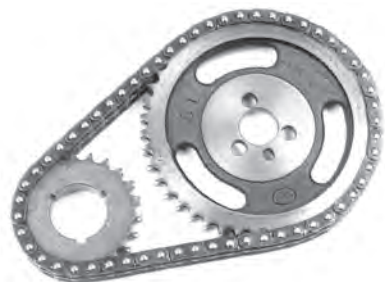
## CAM GEAR & BLOCK PROTECTOR KIT

Friction reducing needle bearing design eliminates the cam gear from scuffing or galling your block face. Back of cam timing gear must be machined. Machining specs included. See Timing Gear Kits for pre-machined, race-ready applications.

Part No.	Description
76400	CHEVROLET 90° V6 & 262-400 V8
76401	CHEVROLET 396-454 V8
76410	CHEVROLET V8 Captive Assembly (Oversize)



# Camshaft Accessories



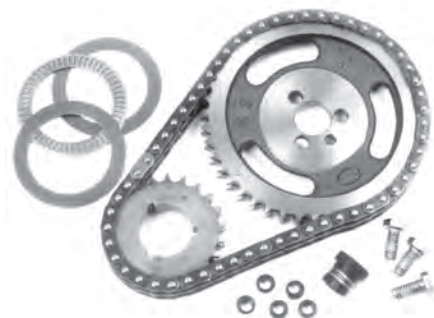
## CLOYES TIMING GEAR SETS

Crower offers Cloyes Timing Chains. The high performance Cloyes True roller chain is intended for high performance racing applications. Comes with three position bottom crank sprocket keyway and extra tough billet steel gears.



## CLOYES HEX-A-JUST TIMING GEAR SETS

Crower offers Cloyes patented timing adjustment system for precise installation without machining or fumbling with a variety of offset bushings. Simply dial in the timing and lock the gear in place.



## CLOYES TIMING GEAR KITS

Includes rollerized cam thrust plug, rollerized cam gear and block protector kit, advance and retard camshaft bushings and specially machined Cloyes True timing chain set. The ultimate setup for precision cam timing and block protection.

### CLOYES TRUE ROLLER

Part No.	Description
76555	AMC 4 cyl (2.5L), 6 cyl (4.0L)
76551	AMC 290-401 V8
76569	BUICK 181, 196, 252 V6 w/integral D-gear
76567	BUICK 198, 225, 231 V6 w/o gear and V8
76501	CHEVROLET 262-400 V8 and 90° V6
76504	CHEVROLET LT1 V8 '94-'97
76505	CHEVROLET LT4 V8 1996
76513	CHEVROLET 262-400 V8 1985-up
76511	CHEVROLET 396-454 V8 1965-up
76523	FORD 221-289, 302, 351W V8 '62-'84
76531	FORD 351C, 351M, 400 V8 '70-'82
76527	FORD 351C, Windsor Standard H/O
76525	FORD 332-428 V8 '64-'74
76533	FORD 429-460 V8 '68-'71
76535	FORD 429-460 V8 '72-up
76541	MOPAR 273 318 392 V8 Magnum
76543	MOPAR 361, 440, 426 "B" V8 (1bolt)
76545	MOPAR 350,361,383,400,413,426-H,440
76561	OLDSMOBILE 260-455 V8 '64-'83
76565	PONTIAC 287-455 V8
76567	ROVER 215 (3.5L) V8
86061	VW Cam Gear - Air Cooled

Part No.	Description
76801	CHEVROLET 262-400 V8 and 90° V6
76813	CHEVROLET 262-400 V8 '85-up
76806	CHEVROLET 262-400 "Rocket"
76813	CHEVROLET 262-400 (LT1) V8 & V6
76802	CHEVROLET LS1 V8 1998-UP
76811	CHEVROLET 396-454 V8 '65-up
76827	FORD 221-289, 351W V8 '62-'84 and 302 5.0L
76831	FORD 351C, 351M, 400 V8 '70-'82
76825	FORD 352-428 "FE" '64-'74
76833	FORD 429-460 V8 '68-up
76845	MOPAR 350-426W, Hemi V8 (w/3 bolt cam)
76847	DODGE Viper V10 '95-up
76857	DODGE 5.7 Hemi W/Tensioner
76861	OLDSMOBILE 260F-455 V8 '65-'83

\* True and Hex-A-Just are Registered Trademarks of Cloyes Gear & Products, Inc.

Part No.	Description
76900	Aluminum Front Cover Chevy 262-400 Cloyes Two Piece W/Adjustable Cam Button for Non-Factory Roller Cam
76910	Aluminum Front Cover Chevy 396-454 Cloyes Two Piece W/Adjustable Cam Button for Non-Factory Roller Cam



## PRECISION CAMSHAFT GEAR DRIVES

Made from lightweight aluminum alloy, the Shaver-Wesmar gear drive is designed to provide accurate, consistent cam timing under the toughest racing conditions. Features gears precision cut from 8620 steel with 20° pressure angle, a crack resistant steel idler gear support, Torrington bearings and a tough black oxide finish. Quick and easy installation without any machine work required. The absolute highest quality available. Fully adjustable.

Part No.	Description
76600	CHEVROLET 262-400 V8

Note: Fits most small block Chevrolet applications. Call for details.



# Camshaft Accessories



## PROFESSIONAL DEGREE WHEEL

Crower's new professional degree wheel features a large 11" diameter surface made from rugged .040" gauge aluminum. The unique, easy to read surface was designed by engine builders for engine builders.

Part No.	Description
<b>87602</b>	Degree Wheel and Instructions

## DEGREE KIT

Crower's degreeing kit contains all the components necessary for achieving optimum valve timing when installing your cam. Our kit includes a 7" degree wheel with 7/16 mounting hole, pointer, 1" travel dial indicator, indicator stand, magnetic base, TDC bolt stop and checking springs.

Part No.	Description
<b>87601</b>	Degree Wheel Kit and Instructions

## ASSEMBLY PRELUBE

Crower's assembly prelube is formulated especially for prelubrication of cam lobes and lifter surfaces (hydraulic and solid) prior to engine oil circulation. The petroleum based compound increases the load carrying capacity of the engine oil during break-in to prevent scuffing and galling. Includes special additives that withstand the extreme pressures exerted on cams and lifters. Also recommended for use on valve stems, rocker arms and pushrod tips.



## DISTRIBUTOR GEARS

Made from premium aluminum bronze alloy, these precision machined gears are highly recommended for performance cam applications and are mandatory when running 8620 steel billet roller camshafts.

Part No.	Description	Shaft Dia.
<b>76000</b>	CHEVROLET V8 & 90° V6 (Accel BE1)	.491"
<b>76001</b>	CHEVROLET V8 & 90° V6	.500"
<b>76001</b>	CHEVROLET V8 & 90° V6 (Accel)	.500"
<b>76002</b>	CHEVROLET V8 & 90° V6	.427"
<b>76006</b>	CHEVY II & CHEVY 4 & 6 cyl.	.491"
<b>76010</b>	DONOVAN V8	.484"
<b>76013</b>	FORD 351C-400, Boss 351, 429-460	.530"
<b>76014</b>	FORD 289-302 & Boss 302 V8	.500"
<b>76015</b>	FORD SVO 302-351W V8	.530"
<b>76016</b>	FORD 351C-400, Boss 351, 429-460	.500"
<b>76016</b>	FORD 352-428 V8	.500"
<b>76018</b>	FORD 289-302 & Boss 302 V8	.467"
<b>76019</b>	FORD 240-300 6 cyl.	.530"
<b>76020</b>	FORD 352-428 V8	.467"
<b>76030</b>	OLDSMOBILE V8	.491"
<b>76040</b>	MOPAR "B", 426 Hemi V8	.484"
<b>76010</b>	MOPAR "LA" V8	.484"
<b>76060</b>	PONTIAC V8	.489"
<b>76006</b>	PONTIAC 4 cyl. 151 (77-78)	.491"
<b>76062</b>	PONTIAC 4 cyl. 151 (79-85)	.491"
<b>76063</b>	PONTIAC 4 cyl. 151 (86-89)	.500"
<b>76100</b>	CHEVROLET V8 Reverse Rotation	.491"

**Warning:** If 8620 steel billet cam core, bronze gear is mandatory. If cast iron cam or cast iron gear, Crower recommends factory gear.

Crower does not recommend high volume oil pumps when running aluminum/bronze distributor gears.

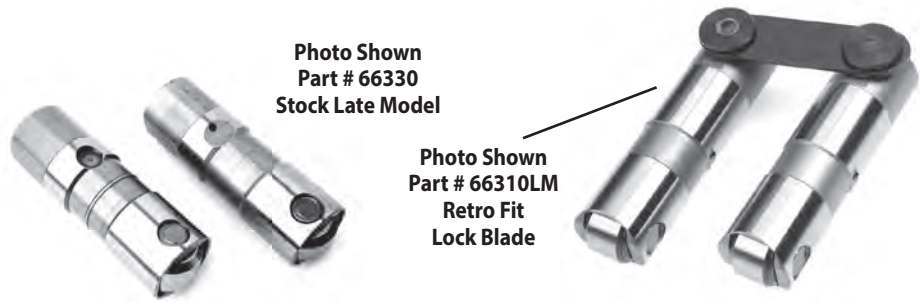
## MELANIZED

Part No.	Description
<b>76000M</b>	Distributor Gear "Melonized" Chevy V8 & 90° V6 .491 Shaft
<b>76001M</b>	Distributor Gear "Melonized" Chevy V8 & 90° V6 .500 Shaft

Part No.	Description
<b>86093</b>	Cam & Lifter Prelube (5/8 oz.)
<b>86094</b>	Cam & Lifter Prelube (8 oz.)
<b>86095</b>	Cam & Lifter Prelube (16 oz.)



# Hydraulic Roller Lifters



Crower hydraulic roller lifters combine the performance level characteristics of a roller with the reliability of a hydraulic. Crower hydraulic lifters are precision flow checked for optimum leak down rates. Completely redesigned body and bearing. Retro-fit hydraulic rollers are for early style blocks.

<b>LATE MODEL</b> (Drop-in style - No Blade)	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Bearing O.D.	Checking Pushrods	Checking Pushrod Length	HIPPO	Part No.
CHEVROLET 262-400 V8 - Late Model		-			70478-2	6.900"	-	66330-16
CHEVROLET 396-454 V8 - Late Model		-			70470-2	7.500"	-	66331-16
CHEVROLET 396-454 V8 - Late Model (Truck/Tall Deck)		-			70461-2	7.150"	-	66331-16
DODGE Magnum V8 (set/16) - Late Model		-			70466	7.600"/8.600"	-	66325-16
DODGE Magnum V10 and Viper V10 (set/20) - Late Model		-			70466T	8.000"/9.000"	-	66325-20
FORD 302 V8 For Late Model 289-302		-			70477-2	6.250"	-	66335-16
<b>RETRO-FIT</b> (Retro-Fit Rollers are linked pairs)	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Bearing O.D.	Checking Pushrods	Checking Pushrod Length	HIPPO	Part No.
CHEVROLET SBC 265-400 .300" - Taller retro-fi		-			70479-2	7.300"	-	66310LM-16*1
CHEVROLET SBC 265-400 .300 Taller retro-fit with pin oilin		-			70479-2	7.300"	YES	66310H-16
CHEVROLET 396-454 V8 .300 - Taller retro-fi		-			70465	7.750"/8.750"	-	66321LM-16*1
CHEVROLET 396-454 V8 .300 - Taller retro-fit Truck/Tall Deck)		-			70465T	8.150"/9.150"	-	66321LM-16*1
CHEVROLET 396-454 V8 .300 Taller retro-fit with pin oilin GM LS1		-			70465	7.750/8.750	YES	66321H-16
FORD Small Block 289-302-351W - Retro-fit li ter		-			70477-2	6.250"	-	66337-16
FORD Big Block 429, 460 - Retro-fit li ter		-			70463-2	7.975"	-	66338-16
MOPAR Small Block 273-360 - Retro-fit li ter		-			70499-2	Custom	-	66339-16
MOPAR Big Block 383-440 - Retro-fit li ter		-			70499-2	Custom	-	66341-16
OLDSMOBILE retro-fit ydraulic roller lifters		-			70462-2	8.700"	-	66333-16
PONTIAC retro-fit ydraulic roller lifters		-			70462-2	8.700"	-	66333-16

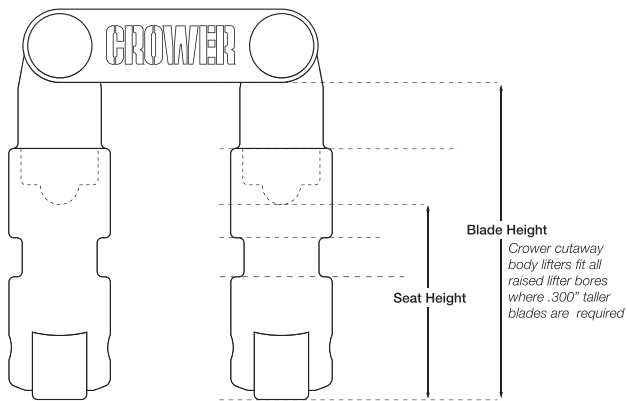
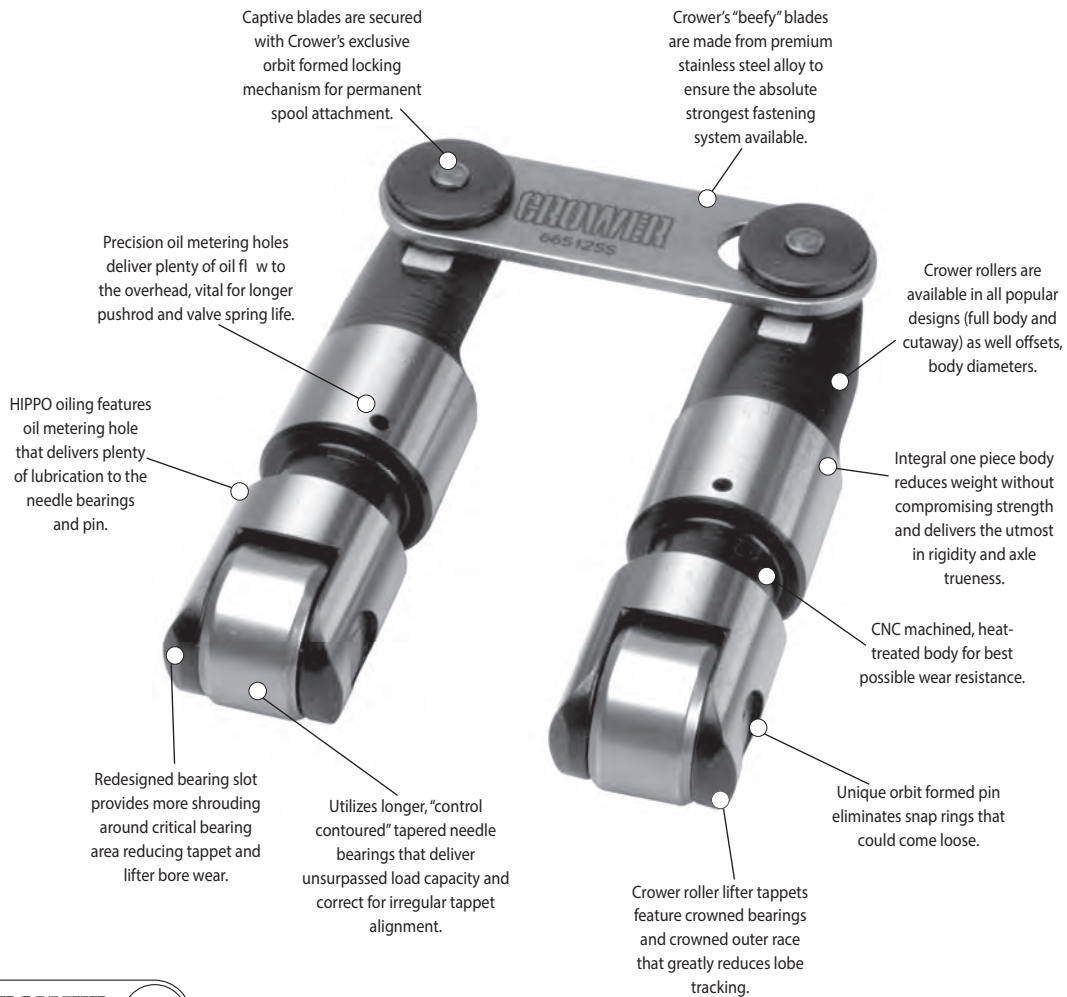
\*Requires a shorter pushrod length.

1Will fit Early & Late model blocks.

**All Crower hydraulic roller lifters are precision flow checked for optimum reliability**



# Solid Roller Lifters

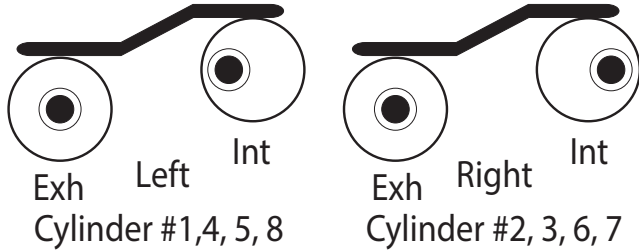


## Big Chief Using Crowder Components

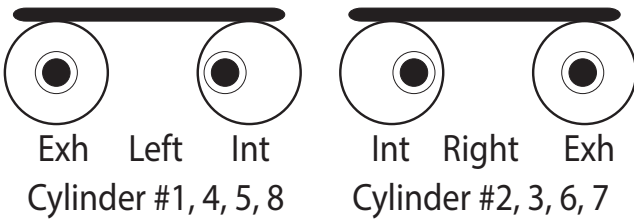


# Solid Roller Lifters

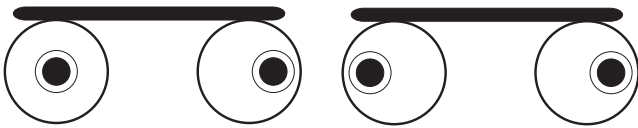
## BB CHEVY



## SB CHEVY



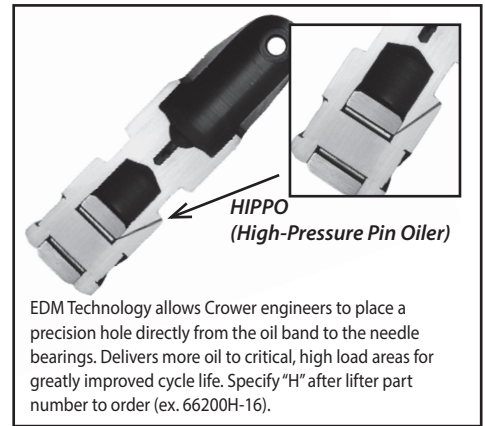
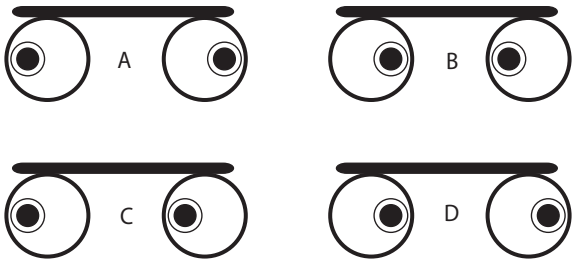
## SB/BB FORD      SBC w/SB2 Head



When ordering only pairs of roller lifters:  
 SB Chevy 1, 4, 5, 8 cylinders, specify "L" for left o<sup>r</sup> set  
 ex. #66292X937L-2 and be sure to specify cylinder number.  
 SB Chevy 2, 3, 6, 7 cylinders, specify "R" for right o<sup>r</sup> set  
 ex. #66292X937R-2 and be sure to specify cylinder number.

## CUSTOM CONFIGURATION ROLLERS

Crower can build your lifters to your exact configuration. Don't see what you need from our wide selection of lifters? Give us a call and speak to one of our techs and let us build you a custom set of lifters to your specs.



EDM Technology allows Crower engineers to place a precision hole directly from the oil band to the needle bearings. Delivers more oil to critical, high load areas for greatly improved cycle life. Specify "H" after lifter part number to order (ex. 66200H-16).

## Roller Lifter Sizes & Bore Sizes

Roller Lifter Size	Aluminum Block Lifter Bore	Cast Iron Block Lifter Bore
+/- .0002 tolerance	.001/.0015 clearance	.002/.0025 clearance
.8415"	.8425"/.8430"	.8435"/.8440"
.8731"	.8741"/.8746"	.8751"/.8756"
.9031"	.9041"/.9046"	.9051"/.9056"
.9361"	.9371"/.9376"	.9381"/.9386"
.9890"	.9900"/.9905"	.9910"/.9915"
.9975"	.9985"/.9990"	.9995"/1.000"

Note: OIL RESTRICTORS ARE NOT RECOMMENDED

## GROOVE LOCK ROLLERS

Crower has Groove Lock Rollers available for Flat Head Ford, and Diesel Applications. Call Crower for availability and pricing.



## GROOVE LOCK ROLLERS DRILL JIG





# Solid Roller Lifters



## CROWER'S ORIGINAL FULL BODY ROLLER LIFTERS

The best roller tappets on the market. Delivers 200% more life expectancy than competing brands. Features crowned bearings and crowned outer race that greatly reduces lobe tracking. No offsets.

Description	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Tall Lifter Bore Block*	Bearing O.D.	Part No.	HIPPO Part No.
CHEVY II 4 cylinder	.8415"	1.740"	126g	NO	.750"	66206-8	66206H-8
CHEVROLET '62-up 194-250 6 cylinder	.8415"	1.740"	126g	NO	.750"	66207-12	66207H-12
CHEVROLET V8 '55-up 262-400 cu. in.	.8415"	1.590"	119g	NO	.750"	66200-16	66200H-16
CHEVROLET V8 Small Block .300 taller body	.8415"	1.590"	125g	YES	.750"	66200T-16	66200TH-16
CHEVROLET V8 '55-up 262-400 cu. in.	.8731"	1.590"	130g	NO	.750"	66200X874-16	66200X874H-16
CHEVROLET V8 '64-up Big Block	.8415"	1.590"	119g	NO	.750"	66201-16	66201H-16
CHEVROLET V8 Big Block .300 taller body	.8415"	1.590"	125g	YES	.750"	66201T-16	66201TH-16
CHEVROLET V8 '64-up Big Block	.8731"	1.590"	130g	NO	.750"	66201X874-16	66201X874H-16
CHEVROLET V8 '58-'65 348-409 cu. in.	.8415"	1.590"	119g	NO	.750"	66201-16	66201H-16
OLDSMOBILE V8 '64-'84 260-455 cu. in.	.8415"	1.740"	127g	NO	.750"	66260-16	66260H-16
PONTIAC V8 '55-up 326-455 cu. in.	.8415"	1.740"	127g	NO	.750"	66260-16	66260H-16

For High Pressure Pin Oiling (HIPPO), specify "H" after p/n.

\*Tall Lifter Bore Block (tappets fit blocks with taller lifter bores)

Ex: 66200H-16

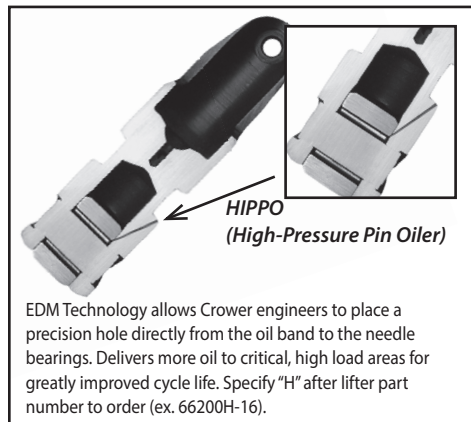
Also available in pairs by replacing -16 with -2.

Crower roller lifters are rebuildable.

## HI-SEAT OFFSET ROLLERS

Crower's "High-Seat" rollers feature a .180" offset, integral rev-kit button and Crower's "High-Seat" pushrod design. Allows for shorter pushrods, reducing flex and weight for more valve control.

### High Pressure Pin Oiling (HIPPO)



Description	Lifter Body Diameter	Lifter Weight	Tall Lifter Bore Block*	Part No.
CHEVROLET 265-400 V8 .842"	.8415"	136g	NO	66275-16
CHEVROLET 265-400 V8 .874"	.8731"	147g	NO	66277-16



# Solid Roller Lifters



## SEVERE-DUTY CUTAWAY ROLLER LIFTERS

A must for high cylinder pressure, high rpm applications. Crower's Severe-Duty Cut-Away style rollers feature a superior, billet alloy body, lightweight design and a heavy-duty blade, raised to fit I te model blocks. Severe-Duty Cutaway Roller Lifters are lighter than the original lifters and available with offset pushrod seats. Standard or .150" offset. Fit .842 & .875 Lifter Bore Blocks. Lifters are available with Hi Pressure Pin Oiling (HIPPO) option.

Description	Intake Offset	Exhaust Offset	Pushrod Left	Seat Center	Location Right	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Tall Lifter Bore Block*	Bearing O.D.	Part No.	Part No. w/HIPPO
AMC V8 '66-'91, 290-304-343-360(5.9L)-390-401 cu. in.	-	-	-	16	-	.9031"	1.340"	116g	-	.750"	66384-16	66384H-16
BUICK V6 '78-'86, 196(3.2L)-231(3.8L)-252(4.1L) cu. in.	-	-	-	16	-	.8415"	1.590"	126g	-	.700"	66266-12	66266H-12
BUICK V8 '61-'80, 215-300-340-350 cu. in.	-	-	-	16	-	.8415"	1.590"	126g	-	.700"	66266-16	66266H-16
BUICK V8 '67-'76, 400-430-455 cu. in.	-	-	-	16	-	.8415"	1.590"	126g	-	.700"	66267-16	66267H-16
BUICK V8 '67-'76, 400-430-455 cu. in. .150" offset	YES	-	4	8	4	.8415"	1.590"	126g	-	.700"	66261-16	66261H-16
CHEVROLET V6 90° '78-'86, 200-229-262(4.3L) cu. in. w/V8 oiling	-	-	-	12	-	.8415"	1.590"	106g	-	.700"	66289-12	66289H-12
CHEVROLET V8 '55 up, 262-400 cu. in.	-	-	-	16	-	.8415"	1.590"	112g	YES	.750"	66290-16	66290H-16
CHEVROLET V8 '55 up, 262-400 cu. in.	-	-	-	16	-	.8731"	1.590"	119g	YES	.750"	66290X874-16	66290X874H-16
CHEVROLET V8 '55 up, 262-400 cu. in.	YES	-	4	8	4	.8415"	1.590"	112g	YES	.750"	66292-16	66292H-16
CHEVROLET V8 '55 up, 262-400 cu. in.	YES	-	4	8	4	.8731"	1.590"	119g	YES	.750"	66292X874-16	66292X874H-16
CHEVROLET V8 '98-'05, 5.7L SB2 Head/STD. Block	YES	YES	8	-	8	.8415"	1.590"	112g	YES	.750"	66282-16	66282H-16
CHEVROLET V8 '98-'05, 5.7L SB2 Head/STD. Block	YES	YES	8	-	8	.8731"	1.590"	119g	YES	.750"	66282X874-16	66282X874H-16
CHEVROLET V8 5.7L SB2/SB2	-	-	-	16	-	.8415"	1.590"	112g	YES	.750"	66283-16	66283H-16
CHEVROLET V8 5.7L SB2/SB2	-	-	-	16	-	.8731"	1.590"	119g	YES	.750"	66283X874-16	66283X874H-16
CHEVROLET V8 262-400 cu. in. w/Dart Buick cyl head	YES	-	16	-	-	.8415"	1.590"	112g	YES	.750"	66252-16	66252H-16
CHEVROLET V8 2000-up 5.7L LS1/LS7 & Vortec 4800, 5300, 6000	-	-	-	16	-	.8415"	1.590"	130g	-	.750"	66278-16	66278H-16
CHEVROLET V8 2000-up 5.7L LS1/LS7 & Vortec 4800, 5300, 6000 Higher blade for base circle clearance	-	-	-	16	-	.8415"	1.590"	130g	-	.750"	66278T-16	66278TH-16
CHEVROLET SBC V8 262-400 cu. in. .842 dia. centers	-	-	4	8	4	.8415"	3.200"	-	-	.750"	66275-16	66275H-16
CHEVROLET SBC V8 262-400 cu. in. .874 dia. centers	-	-	4	8	4	.8731"	3.200"	-	-	.750"	66277H-16	66277H-16
CHEVROLET V8 '58-'65 348-409 cu. in.	-	-	-	16	-	.8415"	1.590"	112g	YES	.750"	66291-16	66291H-16
CHEVROLET V8 '64-up 396-572 cu. in., fits tall li ter bore	-	-	-	16	-	.8415"	1.590"	112g	YES	.750"	66291-16	66291H-16
CHEVROLET V8 '64-up 396-572 cu. in., fits tall li ter bore	-	-	-	16	-	.8731"	1.590"	119g	YES	.750"	66291X874-16	66291X874H-16
CHEVROLET V8 '64-up 396-572 cu. in., fits tall li ter bore	YES	-	4	8	4	.8415"	1.590"	112g	YES	.750"	66293-16	66293H-16
CHEVROLET V8 '64-up 396-572 cu. in., fits tall li ter bore	YES	-	4	8	4	.8731"	1.590"	119g	YES	.750"	66293X874-16	66293X874H-16
CHRYSLER V8 383-440 Chrysler/Stage V w/pushrod oiling, shielded bearing	-	-	-	16	-	.9031"	1.340"	116g	-	.750"	66384-16	66384H-16
CHRYSLER V8 340 Small Block, Nascar Block	-	-	-	-	-	-	-	-	-	-	66245-16	66245H-16
FORD V8 221-302-351 W '62-up	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66215-16	66215H-16
FORD V8 390-427 FE '63-up	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66216-16	66216H-16
FORD V8 370-460 '68-up	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66217-16	66217H-16
FORD V8 351C-351M-400 '63-up	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66218-16	66218H-16
FORD V8 429 Boss "Z" Bar	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66219-16	66219H-16
FORD V8 289-351 W w/intake offset	YES	-	-	8	8	.8731"	1.730"	126g	-	.750"	66378-16	66378H-16
FORD V8 429-460 w/intake offset	YES	-	-	8	8	.8731"	1.730"	126g	-	.750"	66379-16	66379H-16
HOLDEN V8 Early Model	-	-	-	-	-	.8415"	1.740"	127g	-	.750"	66262-16	66262H-16
HOLDEN V8 LS Series Late Model	-	-	-	-	-	.8415"	1.720"	127g	-	.750"	66264-16	66264H-16
HOLDEN Inline 6 cylinder	-	-	-	-	-	.8415"	1.740"	127g	-	.750"	66263-12	66263H-12
OLDSMOBILE V8 260-455 cu. in. '64-'84	-	-	-	16	-	.8415"	1.720"	120g	-	.750"	66294-16	66294H-16
OLDSMOBILE V8 400-455 cu. in.	YES	-	-	-	-	.8415"	-	130g	-	.750"	66387-16	66387H-16
PONTIAC V8 265-455 cu. in. '55-'81	-	-	-	16	-	.8415"	1.720"	120g	-	.750"	66294-16	66294H-16
PONTIAC V8 265-455 cu. in. '55-'81	YES	-	4	8	4	.8415"	1.720"	120g	-	.750"	66295-16	66295H-16

**Warning:** Never submerge roller lifters in parts washers due to possible contamination from suspended metal fines in the solvent.

Crower recommends .0015" - .0025" tappet bore clearance.

\*Tall Lifter Bore Block (tappets fit blocks with taller li ter bores)

# Solid Roller Lifters

Photo Shown  
Part # 66291X903H-16



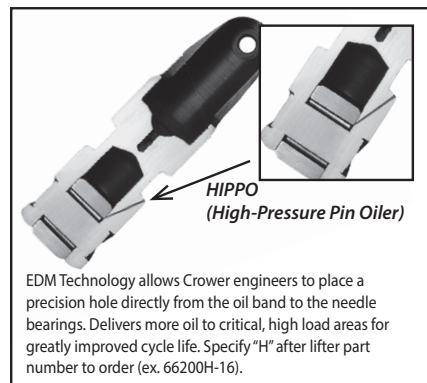
## SEVERE-DUTY / OVERSIZED BEARING

Crower offers a series of Severe-Duty roller lifters designed for full race use. Features an integral one piece body, CNC machined from special alloy and heat treated for the best possible wear. Utilizes larger diameter bearings with thicker wall than standard designs to withstand today's high performance race applications. Lifters are available with Hi Pressure Pin Oiling (HIPPO) option.

Description	Intake Offset	Exhaust Offset	Pushrod Seat Location			Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Tall Lifter Bore Block	Bearing O.D.	Part No.	Part No. w/HIPPO
CHEVROLET V8 '55-up 262-400 cu. in.	-	-	-	16	-	.9031"	1.590"	130g	YES	.812"	66290X903-16	66290X903H-16
CHEVROLET V8 '55-up 262-400 cu. in.	-	-	-	16	-	.9361"	1.430"	133g	YES	.850"	66290X937-16	66290X937H-16
CHEVROLET V8 '55-up 262-400 cu. in. intake offset	YES	-	4	8	4	.9031"	1.590"	130g	YES	.812"	66292X903-16	66292X903H-16
CHEVROLET V8 '55-up 262-400 cu. in. intake offset	YES	-	4	8	4	.9361"	1.430"	133g	YES	.850"	66292X937-16	66292X937H-16
CHEVROLET V8 2000-up 5.7L LS1/LS7 & Vortec 4800, 5300, 6000 W/ Oversized Bearings Tall Body	NO	-	-	16	-	.9031"	1.590"	-	YES	.812"	66278X903T-16	66278X903TH-16
CHEVROLET V8 '98-'05, 5.7L SB2 Head/STD. Block intake offset	YES	YES	8	-	8	.9031"	1.590"	130g	YES	.812"	66282X903-16	66282X903H-16
CHEVROLET V8 '98-'05, 5.7L SB2 Head/STD. Block intake offset	YES	YES	8	-	8	.9361"	1.430"	133g	YES	.850"	66282X937-16	66282X937H-16
CHEVROLET V8 '98-'05, 5.7L SB2 Head / SB2 Block	-	-	-	16	-	.9031"	1.590"	130g	YES	.812"	66283X903-16	66283X903H-16
CHEVROLET V8 '98-'05, 5.7L SB2 Head / SB2 Block	-	-	-	16	-	.9361"	1.430"	133g	YES	.850"	66283X937-16	66283X937H-16
CHEVROLET V8 '64-up Big Block, fits tall li ter bore.	-	-	-	16	-	.9031"	1.590"	130g	YES	.812"	66291X903-16	66291X903H-16
CHEVROLET V8 '64-up Big Block, fits tall li ter bore.	-	-	-	16	-	.9361"	1.430"	133g	YES	.850"	66291X937-16	66291X937H-16
CHEVROLET V8 '64-up Big Block 396-572 cu. in.	YES	-	4	8	4	.9031"	1.590"	130g	YES	.812"	66293X903-16	66293X903H-16
CHEVROLET V8 '64-up Big Block 396-572 cu. in.	YES	-	4	8	4	.9361"	1.430"	133g	YES	.850"	66293X937-16	66293X937H-16
CHRYSLER V8 440"B" - 426 w/pushrod oiling	-	-	-	16	-	.9031"	1.340"	122g	-	.812"	66233-16	66233H-16
CHRYSLER V8 340 59° with or without pushrod oiling	-	-	-	16	-	.9031"	1.340"	113g	-	.812"	66234X903-16	66234X903H-16
CHRYSLER V8 R3 48° Block *May require oil feed modif ications	-	-	-	16	-	.9031"	1.340"	113g	-	.812"	66235X903-16	66235X903H-16
CHRYSLER V8 340 with or without pushrod oiling intake offset	YES	-	4	8	4	.9031"	1.340"	113g	-	.812"	66238X903-16	66238X903H-16
CHRYSLER V8 360 MagnuM w/pushrod oiling	-	-	-	16	-	.9031"	1.340"	122g	-	.812"	66236-16	66236H-16
CHRYSLER V8 340 w/pushrod oiling/inboard blade	-	-	-	16	-	.9031"	1.340"	117g	-	.812"	66237-16	66237H-16
FORD 289-351 .903 dia.	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66215X903-16	66215X903H-16
FORD 289-351 .937 dia.	-	-	-	16	-	.9370"	1.590"	130g	-	.850"	66215X937-16	66215X937H-16
FORD 289-351W w/intake offset	YES	-	-	8	8	.9031"	1.590"	130g	-	.812"	66378X903-16	66378X903H-16
FORD 289-351W w/intake offset	YES	-	-	8	8	.9031"	1.590"	130g	-	.812"	66378X903T-16	66378X903TH-16
FORD 289-351W w/intake offset	YES	-	-	8	8	.9361"	1.430"	133g	-	.850"	66378X937-16	66378X937H-16
FORD 429 Boss "Z" Bar	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66219X903-16	66219X903H-16
FORD 429-460 intake offset	YES	-	-	8	8	.9031"	1.590"	130g	-	.812"	66379X903-16	66379X903H-16
FORD 429-460 intake offset	YES	-	-	8	8	.9361"	1.430"	133g	-	.850"	66379X937-16	66379X937H-16
FORD 460 "Straight"	YES	-	-	8	8	.9361"	1.430"	133g	-	.850"	66217X937-16	66217X937H-16

\* May require oil feed modif ications

Crower roller lifters are rebuildable.



**For High Pressure Pin Oiling (HIPPO), specify "H" after p/n.**

## Roller Lifter Sizes & Bore Sizes

Roller Lifter Size	Aluminum Block Lifter Bore	Cast Iron Block Lifter Bore
+/- .0002 tolerance	.001/.0015 clearance	.002/.0025 clearance
.8415"	.8425"/.8430"	.8435"/.8440"
.8731"	.8741"/.8746"	.8751"/.8756"
.9031"	.9041"/.9046"	.9051"/.9056"
.9361"	.9371"/.9376"	.9381"/.9386"
.9890"	.9900"/.9905"	.9910"/.9915"
.9975"	.9985"/.9990"	.9995"/1.000"

Note: OIL RESTRICTORS ARE NOT RECOMMENDED

# All New Raised Seat Roller Lifters

## RAISED SEAT ROLLER LIFTERS

All Crower lifters are designed to meet racers ever changing engine combinations. Many of the late model blocks have taller lifter bores, so using standard seat height lifters with an offset required manual notching of the lifter bore for pushrod clearance. We have developed a lifter with +.300" higher pushrod seat to solve this problem. No more need to notch the block for pushrod clearance and you'll use a .300" shorter pushrod creating the extra advantage of reduced fl x and weight. Our lightweight billet alloy bodies are paired with our beefy stainless steel alignment blade.

Crower Raised Seat lifters are available with needle bearings, needle bearing with high pressure pin oiling or in the bushed "EnduraMax" design. They are available in .842" and .903" diameters with centered or .150 seat offset. American made at our state of the art facility in San Diego, CA.

Description	Intake Offset	Exhaust Offset	Pushrod Seat Location			Lifter Body Diameter	Pushrod Seat Height	Weight	Bearing O.D.	Part No.
			Left	Center	Right					
SBC Cutaway .842 O.D. EnduraMax	-	-	-	16	-	.8415	1.890	131g	.750	66490X842E-16
SBC Cutaway .903 O.D. EnduraMax	-	-	-	16	-	.9031	1.890	153g	.812	66490X903E-16
SBC Cutaway .903 O.D. With Hi Pressure Pin Oiling (Set 16)	-	-	-	16	-	.9031	1.890	153g	.812	66490X903H-16
SBC Cutaway 86 Up & Bowtie	-	-	-	16	-	.8415	1.890	131g	.750	66490-16
SBC Cutaway .842 O.D. with Hi Pressure Pin Oiling	-	-	-	16	-	.8415	1.890	131g	.750	66490H-16
SBC Cutaway Intake O'set	Yes	-	4	8	4	.8415	1.890	131g	.750	66492-16
SBC Cutaway Intake O'set with Hi Pressure Pin Oiling	Yes	-	4	8	4	.8415	1.890	131g	.750	66492H-16
SBC Cutaway Intake O'set .842 O.D. EnduraMax	Yes	-	4	8	4	.8415	1.890	131g	.750	66492X842E-16
SBC Cutaway Intake O'set .903 O.D. EnduraMax	Yes	-	4	8	4	.9031	1.890	153g	.812	66492X903E-16
SBC Cutaway Intake O'set .903 O.D. With Hi Pressure Pin Oiling	Yes	-	4	8	4	.9031	1.890	153g	.812	66492X903H-16
BBC & Big Chief Intake O'set .300" Taller Body	Yes	-	4	8	4	.8415	1.890	131g	.750	66493-16
BBC & Big Chief Intake O'set With Hi Pressure Pin Oiling	Yes	-	4	8	4	.8415	1.890	131g	.750	66493H-16
BBC & Big Chief Intake O'set .842 O.D. EnduraMax	Yes	-	4	8	4	.8415	1.890	131g	.750	66493X842E-16
BBC & Big Chief Int O'set .903 O.D.	Yes	-	4	8	4	.9031	1.890	153g	.812	66493X903-16
BBC & Big Chief Intake O'set .903 O.D. EnduraMax	Yes	-	4	8	4	.9031	1.890	153g	.812	66493X903E-16
BBC & Big Chief Intake O'set .903 O.D. With Hi Pressure Pin Oiling	Yes	-	4	8	4	.9031	1.890	153g	.812	66493X903H-16
BBC Cutaway .842 O.D.	-	-	-	16	-	.8415	1.890	131g	.750	66491-16
BBC Cutaway .842 O.D. With Hi Pressure Pin Oiling	-	-	-	16	-	.8415	1.890	131g	.750	66491H-16
BBC Cutaway .842 O.D. EnduraMax	-	-	-	16	-	.8415	1.890	131g	.750	66491X842E-16
BBC Cutaway .903 O.D. EnduraMax	-	-	-	16	-	.9031	1.890	153g	.812	66491X903E-16
BBC Cutaway .903 O.D. With Hi Pressure Pin Oiling (Set 16)	-	-	-	16	-	.9031	1.890	153g	.812	66491X903H-16

# MAXIMUS

## SERIES ROLLER LIFTERS

Maximus Series Roller Lifters feature a High Strength Alloy Steel Body, carbonized for strength and wear resistance. A beefy stainless steel alignment blade and precision ground mounting pad ensure a perfect alignment. The finest bearing quality steel available, heat treated to our spec., gives our outer race the best rolling element and highest impact loading possible. Riding on precision sorted, contoured & micro polished needles. These roll on a tool steel axle, heat treated to material specifications for maximum strength, hardness, and reliability. Then precision ground to size and roundness, and micro polish finishes.

Description	Intake Offset	Exhaust Offset	Pushrod Seat Location			Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Tall Lifter Bore Block*	Bearing O.D.	Part No.
			Left	Center	Right						
CHRYSLER V8 426 Hemi w/pushrod oiling 1.000 dia.	-	-	-	16	-	.9975"	1.340"	142g	-	.920"	66271M-16
CHRYSLER V8 426 Hemi 1.000 dia.	-	-	-	16	-	.9975"	1.340"	142g	-	.920"	66272M-16
CHRYSLER V8 426 .903 dia.	-	-	-	16	-	.9031"	1.340"	121g	-	.812"	66284M-16
CHRYSLER V8 426 Hemi .903 dia. +.120 pushrod seat	-	-	-	16	-	.9031"	1.460"	129g	-	.812"	66285M-16
CHRYSLER V8 426 Hemi .903 dia. w/BA blade +.120 pushrod seat	-	-	-	16	-	.9031"	1.460"	129g	-	.812"	66285MB-16
CHRYSLER V8 Arias 8.3L (std seat height) .903 dia.	-	-	-	16	-	.9031"	1.340"	121g	-	.812"	66284AM-16
CHRYSLER V8 Arias 8.3L (+.120 seat height) .903 dia.	-	-	-	16	-	.9031"	1.460"	129g	-	.812"	66285AM-16
CHRYSLER V8 Arias 10.0L (std seat height) .903 dia.	-	-	-	16	-	.9031"	1.340"	121g	-	.812"	66284ATM-16
CHRYSLER V8 Arias 10.0L (+.120 seat height) .903 dia.	-	-	-	16	-	.9031"	1.460"	129g	-	.812"	66285ATM-16

Crower roller lifters are rebuildable.

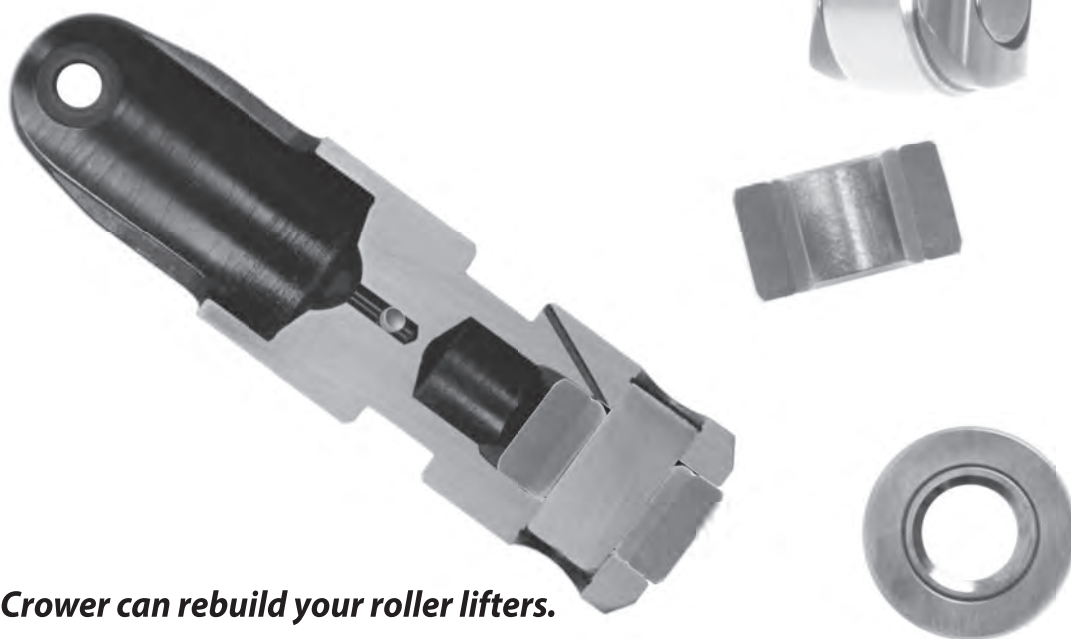


# ENDURA **max**

## **NEEDLELESS ROLLERS**

EnduraMax lifters feature a needleless roller bushing allowing for a greater load handling ability and more durability. They are available in all popular sizes and come standard with Crower's HIPPO (High Pressure Pin Oiling) to help keep the roller and shaft lubricated.

*EnduraMax lifters are the choice of serious racers, and have been race proven to be the longest lasting lifter on the market.*



**Crower can rebuild your roller lifters.**

We can convert any Crower roller with .317" or .363" axle, to EnduraMax Needleless Bearings. EnduraMax rollers must be equipped with HIPPO oiling. HIPPO oiling can be added to most Crower roller lifters when being converted to EnduraMax bearing.



# Solid Roller Lifters

## ENDURA **max** *The choice of serious racers*

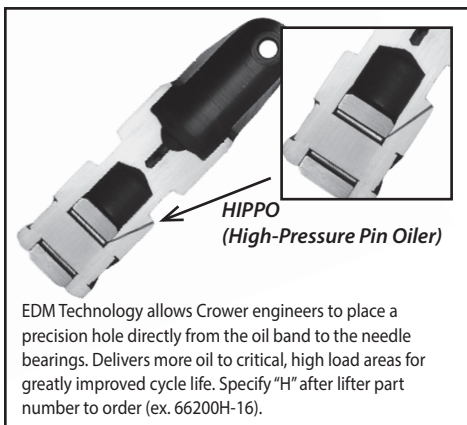
Description	Intake Offset	Exhaust Offset	Pushrod Left	Seat Location Center	Right	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Tall Lifter Bore Block	Bearing O.D.	Part No.
CHEVROLET V8 Small Block	-	-	-	16	-	.8415"	-	-	YES	.750"	66200E-16
CHEVROLET V8 Small Block .300 taller body	-	-	-	16	-	.8415"	-	-	YES	.750"	66200TE-16
CHEVROLET V8 Small Block	-	-	-	16	-	.8731"	-	-	YES	.750"	66200X874E-16
CHEVROLET V8 Big Block .300 taller body	-	-	-	16	-	.8415"	-	-	YES	.750"	66201TE-16
CHEVROLET V8 Big Block	-	-	-	16	-	.8415"	-	-	YES	.750"	66201E-16
CHEVROLET V8 Big Block	-	-	-	16	-	.8731"	-	-	YES	.750"	66201X874E-16
CHEVROLET SBC V8 262-400 cu. in. .842 dia. centers	-	-	4	8	4	.8415"	3.200"	-	YES	.750"	66275E-16
CHEVROLET SBC V8 262-400 cu. in. .874 dia. centers	-	-	4	8	4	.8731"	3.200"	-	YES	.750"	66277E-16
CHEVROLET SBC V8 262-400 cu. in. .842 dia. centers	-	-	-	16	-	.8415"	1.590"	112g	YES	.750"	66290X842E-16
CHEVROLET SBC V8 262-400 cu. in. .874 dia. centers	-	-	-	16	-	.8731"	1.590"	119g	YES	.750"	66290X874E-16
CHEVROLET SBC V8 262-400 cu. in. .903 dia. centers	-	-	-	16	-	.9031"	1.590"	130g	YES	.812"	66290X903E-16
CHEVROLET SBC V8 262-400 cu. in. .937 dia. centers	-	-	-	16	-	.9361"	1.430"	133g	YES	.850"	66290X937E-16
CHEVROLET SBC V8 262-400 cu. in. .842 dia. intake offset .150"	YES	-	4	8	4	.8415"	1.590"	112g	YES	.750"	66292X842E-16
CHEVROLET SBC V8 262-400 cu. in. .874 dia. intake offset .150"	YES	-	4	8	4	.8731"	1.590"	119g	YES	.750"	66292X874E-16
CHEVROLET SBC V8 262-400 cu. in. .903 dia. intake offset .150"	YES	-	4	8	4	.9031"	1.590"	130g	YES	.812"	66292X903E-16
CHEVROLET SBC V8 262-400 cu. in. .937 dia. intake offset .150"	YES	-	4	8	4	.9361"	1.430"	133g	YES	.850"	66292X937E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/std block .842 dia.	YES	YES	8	-	8	.8415"	1.590"	112g	YES	.750"	66282X842E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/std block .874 dia.	YES	YES	8	-	8	.8731"	1.590"	119g	YES	.750"	66282X874E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/std block .903 dia.	YES	YES	8	-	8	.9031"	1.590"	130g	YES	.812"	66282X903E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/std block .937 dia.	YES	YES	8	-	8	.9361"	1.430"	133g	YES	.850"	66282X937E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/SB2 Block .842 dia. centers only	-	-	-	16	-	.8415"	1.590"	112g	YES	.750"	66283X842E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/SB2 Block .874 dia. centers only	-	-	-	16	-	.8731"	1.590"	119g	YES	.750"	66283X874E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/SB2 Block .903 dia. centers only	-	-	-	16	-	.9031"	1.590"	130g	YES	.812"	66283X903E-16
CHEVROLET V8 262-400 cu. in. SB2 Head w/SB2 Block .937 dia. centers only	-	-	-	16	-	.9361"	1.430"	133g	YES	.850"	66283X937E-16
CHEVROLET BBC V8 396-572 cu. in. .842 dia. centers	-	-	-	16	-	.8415"	1.590"	112g	YES	.750"	66291X842E-16
CHEVROLET BBC V8 396-572 cu. in. .874 dia. centers	-	-	-	16	-	.8731"	1.590"	119g	YES	.750"	66291X874E-16
CHEVROLET BBC V8 396-572 cu. in. .903 dia. centers	-	-	-	16	-	.9031"	1.590"	130g	YES	.812"	66291X903E-16
CHEVROLET BBC V8 396-572 cu. in. .937 dia. centers	-	-	-	16	-	.9361"	1.430"	133g	YES	.850"	66291X937E-16
CHEVROLET BBC V8 396-572 cu. in. .842 dia. intake offset .150	YES	-	4	8	4	.8415"	1.590"	112g	YES	.750"	66293X842E-16
CHEVROLET BBC V8 396-572 cu. in. .874 dia. intake offset .150	YES	-	4	8	4	.8731"	1.590"	119g	YES	.750"	66293X874E-16
CHEVROLET BBC V8 396-572 cu. in. .903 dia. intake offset .150	YES	-	4	8	4	.9031"	1.590"	130g	YES	.812"	66293X903E-16
CHEVROLET BBC V8 396-572 cu. in. .937 dia. intake offset .150	YES	-	4	8	4	.9361"	1.430"	133g	YES	.850"	66293X937E-16
CHEVROLET V8 2000-up 5.7L LS1/LS7	-	-	-	16	-	.8415"	1.590"	130g	-	.750"	66278E-16
CHEVROLET V8 2000-up 5.7L LS1/LS7 Tall Body	-	-	-	16	-	.8415"	1.590"	130g	-	.750"	66278TE-16
CHEVROLET V8 2000-up 5.7L LS1/LS7 Tall Body	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66278X903TE-16
FORD V8 62' up 221-302-351W .874 dia.	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66215E-16
FORD V8 62' up 221-302-351W .903 dia.	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66215X903E-16
FORD V8 62' up 221-302-351W .937 dia.	-	-	-	16	-	.9361"	1.430"	133g	-	.850"	66215X937E-16
FORD V8 63' up 390-427FE .874 dia.	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66216E-16
FORD V8 63' up 390-427FE .903 dia.	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66216X903E-16
FORD V8 63' up 390-427FE .937 dia.	-	-	-	16	-	.9361"	1.430"	133g	-	.850"	66216X937E-16

# Solid Roller Lifters

## ENDURA **max** *The choice of serious racers*

Description	Intake Offset	Exhaust Offset	Pushrod Left	Seat Center	Location Right	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Tall Lifter Bore Block*	Bearing O.D.	Part No.
FORD V8 68' up 370-460 .874 dia.	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66217E-16
FORD V8 68' up 370-460 .903 dia.	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66217X903E-16
FORD V8 68' up 370-460 .937 dia.	-	-	-	16	-	.9361"	1.430"	133g	-	.850"	66217X937E-16
FORD V8 63' up 351C-351M-400 .874 dia.	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66218E-16
FORD V8 63' up 351C-351M-400 .903 dia.	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66218X903E-16
FORD V8 63' up 351C-351M-400 .937 dia.	-	-	-	16	-	.9361"	1.430"	133g	-	.850"	66218X937E-16
FORD V8 429 Boss "Z" Bar .874 dia.	-	-	-	16	-	.8731"	1.730"	126g	-	.750"	66219E-16
FORD V8 429 Boss "Z" Bar	-	-	-	16	-	.9031"	1.590"	130g	-	.812"	66219X903E-16
FORD V8 289-351W .874 dia. intake offset .150	-	-	-	8	8	.8731"	1.730"	126g	-	.750"	66378E-16
FORD V8 289-351W .903 dia. intake offset .150	-	-	-	8	8	.9031"	1.590"	130g	-	.812"	66378X903E-16
FORD V8 289-351W .937 dia. intake offset .150	-	-	-	8	8	.9361"	1.430"	133g	-	.850"	66378X937E-16
FORD V8 429-460 .874 dia. intake offset .150	-	-	-	8	8	.8731"	1.730"	126g	-	.750"	66379E-16
FORD V8 429-460 .903 dia. intake offset .150	-	-	-	8	8	.9031"	1.590"	130g	-	.812"	66379X903E-16
FORD V8 429-460 .937 dia. intake offset .150	-	-	-	8	8	.9361"	1.430"	133g	-	.850"	66379X937E-16
HOLDEN V8 Early Model	-	-	-	-	-	.8415"	1.740"	-	-	.750"	66262E-16
HOLDEN V8 2S Series	-	-	-	-	-	.8415"	1.720"	-	-	.750"	66264E-16
HOLDEN Inline 6 cylinder	-	-	-	-	-	.8415"	1.740"	-	-	.750"	66263E-12
CHRYSLER V8 426-440 Tall lifter bore block w/pushrod oiling	-	-	-	16	-	.9031"	1.340"	-	-	.812"	66233E-16
OLDSMOBILE V8 260-455 cu. in.	-	-	-	16	-	.8415"	1.720"	-	-	.750"	66294E-16
PONTIAC V8 265-455 cu. in.	-	-	-	16	-	.8415"	1.720"	-	-	.750"	66294E-16
PONTIAC V8 '55-up 326-455 cu. in.	-	-	-	16	-	.8415"	1.720"	-	-	.750"	66260E-16

Crower roller lifters are rebuildable.



### Drag Week 2013

1028 miles, 4 race tracks  
5 days, 3 records.

All 6 second runs  
Not One Lifter Failure with ENDURAmx

### Roller Lifter Sizes & Bore Sizes

Roller Lifter Size	Aluminum Block Lifter Bore	Cast Iron Block Lifter Bore
+/- .0002 tolerance	.001/.0015 clearance	.002/.0025 clearance
.8415"	.8425"/.8430"	.8435"/.8440"
.8731"	.8741"/.8746"	.8751"/.8756"
.9031"	.9041"/.9046"	.9051"/.9056"
.9361"	.9371"/.9376"	.9381"/.9386"
.9890"	.9900"/.9905"	.9910"/.9915"
.9975"	.9985"/.9990"	.9995"/1.000"

Note: OIL RESTRICTORS ARE NOT RECOMMENDED

**Tom Bailey**  
Worlds Fastest Street Car



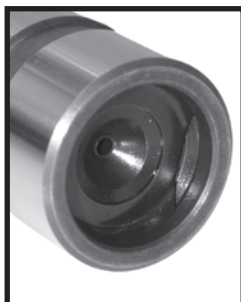
# Hydraulic Flat Tappet Lifters



## HYDRAULIC FLAT TAPPET

Crower hydraulic lifters will compliment any hydraulic cam. Features ball-check oil control valving, precision radius faces and quick break-in. New lifters must be used when installing a new camshaft to avoid premature lobe and lifter wear.

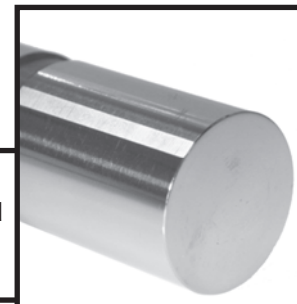
Description	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Oiling Option	Part No.
AMC 6 cyl. 1964-up (set/12)	.903"	1.600"	107.4g		66031-12
AMC V8 1966-up (set/16)	.903"	1.600"	107.4g		66031-16
AMC 6 cyl. 1964-up (set/12), Cam Saver	.903"	1.600"		Cam Saver	66031X3-12
AMC V8 1966-up (set/16), Cam Saver	.903"	1.600"		Cam Saver	66031X3-16
BUICK V6 Evenfi e 1978-up (set/12)	.842"				66050-12
BUICK V8 1964-1980 (set/16)	.842"				66050-16
BUICK V6 Evenfi e 1978-up (set/12), Cam Saver	.842"			CamSaver	66050X3-12
BUICK V8 1964-1980 (set/16), Cam Saver	.842"			Cam Saver	66050X3-16
CHEVROLET 6 cyl. (set/12)	.842"	1.700"	97.8g		66000-12
CHEVROLET V8 (set/16)	.842"	1.700"	97.8g		66000-16
CHEVROLET V8 Race Series (set/16)	.842"	1.700"			66000R-16
CHEVROLET 6 cyl. (set/12), Cam Saver	.842"	1.700"		Cam Saver	66000X3-12
CHEVROLET V8 (set/16), Cam Saver	.842"	1.700"		Cam Saver	66000X3-16
CHEVROLET Cam Saver, Heavy Duty snap ring	.842"	1.700"	97.3g	Cam Saver	66000RX3-16
CHEVROLET Cheater Hydraulic .150 Longer push rod	.842"	1.700"	96.2g		66000X5-16
FORD 144 250 6 cyl. (set/12)	.874"				66016-12
FORD 240 300 6 cyl. (set/12)	.874"	1.725"	104.6g		66015-12
FORD 332-429 V8 (set/16)	.874"				66016-16
FORD 221-460 V8 (set/16)	.874"	1.725"	104.6g		66015-16
FORD 144 250 6 cyl. (set/12), Cam Saver	.874"			Cam Saver	66016X3-12
FORD 240 300 6 cyl. (set/12), Cam Saver	.874"	1.725"		Cam Saver	66015X3-12
FORD 332-429 V8 (set/16), Cam Saver	.874"			Cam Saver	66016X3-16
FORD 221-460 V8 (set/16), Cam Saver	.874"	1.725"		Cam Saver	66015X3-16
FORD Cheater Hydraulic	.874"	1.700"	102.2g		66015X5-16
MOPAR 273-360 LA V8 (set/16)	.903"	1.600"	107.4g		66031-16
MOPAR 350-440 B V8 (set/16)	.903"	1.600"	107.4g		66031-16
MOPAR 426 Hemi V8 (set/16)	.903"	1.600"	107.4g		66031-16
MOPAR LA Block, Cam Saver	.903"	1.600"	108.3g	Cam Saver	66031X3-16
MOPAR B Block, Cam Saver	.903"	1.600"	108.3g	Cam Saver	66031X3-16
OLDSMOBILE V8 1968-up (set/16)	.842"				66056-16
OLDSMOBILE V8 1968-up (set/16), Cam Saver	.842"			Cam Saver	66056X3-16
PONTIAC V8 1955-up (set/16)	.842"				66056-16
PONTIAC V8 1955-up (set/16), Cam Saver	.842"			Cam Saver	66056X3-16



**Heavy Duty Snap Ring**

### Cam Saver

.0025 Groove from the oil band to the lifer face for reduced lobe wear



# Hydraulic Flat Tappet Lifters

## REV-MAX HYDRAULIC FLAT TAPPET

Description	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	RC Hardness	Part No.
<b>CHEVROLET</b> Rev-Max Lifter. Slow leak down, High RPM	.842"				66000RM-16
<b>CHEVROLET</b> Rev-Max Lifter. Slow leak down, High RPM w/Cam Saver option	.842"				66000RM3-16
<b>CHEVROLET</b> Rev-Max Lifter. Slow leak down, High RPM w/Dual Cam Saver Grooves*	.842"				66000RM4-16

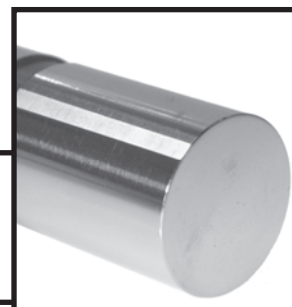
\*Dual Cam Saver option requires the use of a high volume oil pump

## VARIABLE DURATION HYDRAULIC FLAT TAPPET

Description	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	RC Hardness	Part No.
<b>CHEVROLET</b> Variable Duration Hydraulic Lifter. Increase vacuum & reduce valvetrain noise. Not recommended for high mileage applications. Fast leakdown.	.842"				66000V-16
<b>CHEVROLET</b> Variable Duration Hydraulic Lifter. Increase vacuum & reduce valvetrain noise. Not recommended for high mileage applications. Fast leakdown. w/Cam Saver option	.842"				66000V3-16

### Cam Saver

.0025 Groove from the oil band to the lifter face for reduced lobe wear



# Mechanical Flat Tappet Lifters



## MECHANICAL FLAT TAPPET

To avoid premature lobe wear and insure long cam and lifter life be sure to specify Crower solid lifters. Features precision ground radius faces and finish for fast break-in and trouble free operation.

Description	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	Oiling Option	Part No.
AMC 6 cyl. 1964-up (set/12)	.903"				66945-12
AMC V8 1966-up (set/16)	.903"				66945-16
AMC Coolface	.903"	1.485"	99.5g	CoolFace	66945X980-16
BUICK V6 Evenfire 1978-up (set/12)	.842"				66900-12
BUICK V8 1964-1980 (set/16)	.842"				66900-16
CHEVROLET 6 cyl. (set/12)	.842"	1.570"	97.5g		66900-12
CHEVROLET V8 (set/16)	.842"	1.570"	97.5g		66900-16
CHEVROLET V8 .842" Billet (set/16)	.842"				66973SP-12
CHEVROLET V8 Coolface	.842"	1.570"	84.3g	CoolFace	66900X980-16
CHEVROLET Billet, Super polished face	.842"	1.570"	85g		66973X980SP-16
CHEVROLET .842" Edge Orifice Oiling	.842"				66909-16
FORD 240 300 6 cyl. (set/12)	.874"	1.640"	98.2g		66915-12
FORD 221-460 V8 (set/16)	.874"	1.640"	98.2g		66915-16
FORD 332-428 V8 (set/16)	.874"				66916-16
FORD 332-428 V8 (set/16) - Deep Seat, Shell Type	.874"				66925-16
FORD 332-428 V8 (set/16)	.874"			CamSaver	66916X3-16
FORD 332-428 V8 (set/16) - Deep Seat, Shell Type	.874"			CamSaver	66925X3-16
FORD Coolface	.874"	1.640"	107.9g	CoolFace	66915X980-16
FORD Billet, Super polished face	.874"	1.640"	88.9g	CoolFace	66974X980SP-16
MOPAR 273-360 LA V8 (set/16)	.903"				66931-16
MOPAR 350-440 B V8 (set/16)	.903"				66931-16
MOPAR 426 Hemi V8 (set/16)	.903"				66931-16
MOPAR Coolface, Polished face, with pushrod oiling	.903"	1.532"	100.3g	CoolFace	66931X980-16
MOPAR Billet, Super polished face	.903"	1.570"	85g		66970X980SP-16
PONTIAC V8 1955-up, High Oil Band (set/16)	.842"				66963-16
PONTIAC V8 1955-up, High Oil Band (set/16)	.842"			CoolFace	66963X980-16



# Mechanical Flat Tappet Lifters

## LIGHT WEIGHT MECHANICAL FLAT TAPPET

Description	Lifter Body Diameter	Pushrod Seat Height	Lifter Weight	RC Hardness	Part No.
CHRYSLER Light weight			78g		66931LW-16
CHRYSLER Light weight, Coolface			78g		66931LW980-16
FORD Light weight			75g		66915LW-16
FORD Light weight, Coolface			75g		66915LW980-16
CHEVROLET Light weight			72g		66900LW-16
CHEVROLET Light weight, Coolface			72g		66900LW980-16
CHEVROLET Light weight, Dual Coolface oiling option*			72g		66900LW982-16

\*Dual Coolface option requires the use of a high volume oil pump



### Coolface

The CROWER Coolface option sends oil to the lifter face for reduced lobe wear

**DON'T SEE YOUR  
FAVORITE PART # ?  
IT MAY STILL BE AVAILABLE  
CALL THE CROWER  
TECH. DEPT FOR INFO.**

## CROWER PUSHRODS

Only the finest 4130 seamless chromoly tubing is used to manufacture Crower pushrods. All ends are heat-treated to a surface hardness of RC60 for maximum durability and wear resistance. Crower's standard pushrod design features an end-to-tube spot weld fastener for extended use. For severe duty or guide plate applications see our vast assortment of RC60 Series pushrods.

## ADJUSTABLE PUSHRODS

When going from hydraulic to solid lifters, adjustable pushrods are often required if there is no adjustment provision at the rocker arm. The overall length of Crower adjustable pushrods is listed with adjustable end in the middle of the adjustment range.

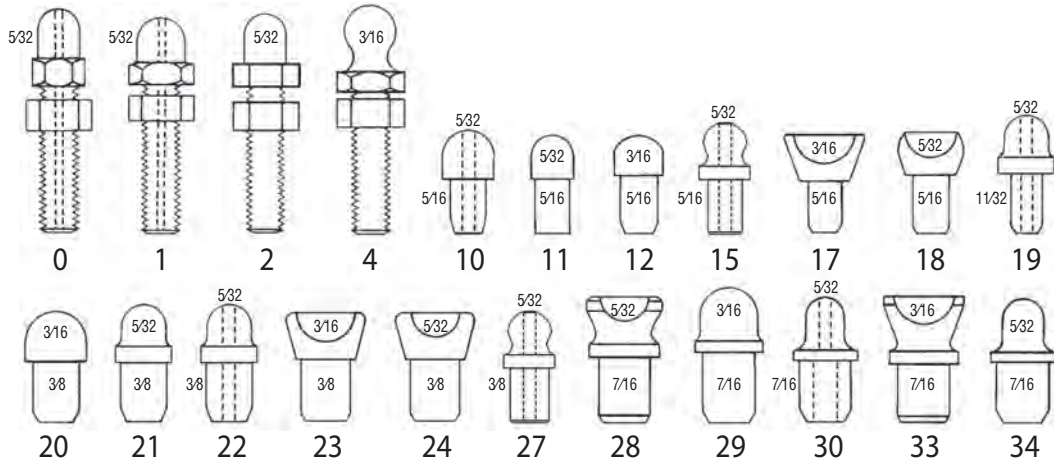
## NON-ADJUSTABLE PUSHROD KITS

- Non-adjustable pushrod kits include the following:
- 16 non-adjustable pushrods (1/4" longer than stock) with one end out.
  - 16 pushrod ends.
  - One adjustable pushrod (two if intake & exhaust are different lengths).

## STOCK PUSHROD SPECS

Engine Make	Application	Length	Overall Length	Tube O.D.	Ends Top	Ends Bot	Engine Make	Application	Length	Overall Length	Tube O.D.	Ends Top	Ends Bot
<b>AMC NON-ADJUSTABLE PUSHROD SETS</b>							<b>FORD NON-ADJUSTABLE PUSHROD SETS</b>						
232-258 6 cyl.	Hyd Lifter & Non-Adj Rocker	Stock	9.625"	5/16	15	15	240-300 6 cyl.		Stock	10.140"	5/16	15	15
290-401 V8	Hyd Lifter & Non-Adj Rocker	Stock	7.813"	5/16	15	15	221-302 V8	Non-Guide Plate Heads	Stock	6.820"	5/16	15	15
290-401 V8	Hyd Lifter & Non-Adj Rocker	Stock	8.031"	5/16	15	15	351W V8	Non-Guide Plate Heads	Stock	8.170"	5/16	15	15
<b>BUICK NON-ADJUSTABLE PUSHROD SETS</b>							<b>MOPAR ADJUSTABLE PUSHROD SETS</b>						
192-252 V6	Hyd Lifter & Non-Adj Rocker	Stock	8.578"	5/16	15	15	351M-400V8	Non-Guide Plate Heads	Stock	9.500"	5/16	15	15
196-252 V6	Hyd Lifter & Non-Adj Rocker	Stock	8.688"	5/16	15	15	332-428 V8	Hyd or Solid & Adj Rocker	Stock	9.325"	3/8	23	20
<b>BUICK ADJUSTABLE PUSHROD SETS</b>							<b>MOPAR NON-ADJUSTABLE PUSHROD SETS</b>						
196-252 V6	Hyd or Solid & Non-Adj Rocker	Stock	8.687"	5/16	1	10	273-360 V8	Hyd Lifter & Non-Adj Rocker	Stock	7.325"	5/16	2	11
300 V8	Hyd or Solid & Non-Adj Rocker	Stock	8.750"	5/16	2	11	273-360 V8	Solid Lifter & Non-Adj Rocker	Stock	7.500"	5/16	2	12
340 V8	Hyd or Solid & Non-Adj Rocker	Stock	9.343"	5/16	2	11	361-383 V8 Low Block	Hyd Lifter & Non-Adj Rocker	Stock	8.440"	3/8	2	20
350 V8	Hyd or Solid & Non-Adj Rocker	Stock	9.687"	5/16	2	11	361-383 V8 Low Block	Solid Lifter & Non-Adj Rocker	Stock	8.600"	3/8	2	20
350 V8	Hyd or Solid & Non-Adj Rocker	Stock	9.687"	5/16	1	10	413-440 V8 High Block	Hyd Lifter & Non-Adj Rocker	Stock	9.296"	3/8	2	20
400-455 V8	Hyd or Solid & Non-Adj Rocker	Stock	9.375"	3/8	1	22	413-440 V8 High Block	Solid Lifter & Non-Adj Rocker	Stock	9.500"	3/8	2	20
<b>CHEVROLET NON-ADJUSTABLE RC60 HEAT-TREATED PUSHROD SETS</b>							<b>MOPAR NON-ADJUSTABLE PUSHROD SETS</b>						
220-229 90° V6	Guide Plate Heads	Stock	7.765"	5/16	15	15	273-360 LA	Hyd Lifter & Non-Adj Rocker	Stock	7.500"	5/16	11	11
173 60° V6	Guide Plate Heads	Stock	6.163"	5/16	15	15	273-360 LA	Hyd Lifter & Non-Adj Rocker	Stock	7.500"	3/8	21	21
265-400 V8	Guide Plate Heads	Stock	7.790"	5/16	15	15	273-360 LA	Hyd Lifter & Adj Rocker	Stock	7.325"	5/16	18	11
265-400 V8	Guide Plate Heads	Stock	8.140"	3/8	22	22	273-360 LA	Hyd Lifter & Adj Rocker	Stock	7.325"	3/8	24	21
265-400 V8	Guide Plate Heads	Stock	7.290"	5/16	15	15	273-360 LA	Solid Lifter & Adj Rocker	Stock	7.500"	5/16	18	12
396-454 V8	Guide Plate Heads	Stock	8.250"	3/8	22	22	273-360 LA	Solid Lifter & Adj Rocker	Stock	7.500"	3/8	24	20
			9.250"				350-400 B Low Block	Hyd Lifter & Non-Adj Rocker	Stock	8.550"	3/8	21	20
396-454 V8 High Block	Guide Plate Heads	Stock	8.650"	3/8	22	22	350-400 B Low Block	Hyd Lifter & Adj Rocker	Stock	8.250"	3/8	24	20
			9.650"				350-400 B Low Block	Solid Lifter & Adj Rocker	Stock	8.600"	3/8	24	20
396-454 V8	Guide Plate Heads	Stock	8.250"	7/16	30	30	413-440 B High Block	Hyd Lifter & Non-Adj Rocker	Stock	9.300"	3/8	21	20
			9.250"				413-440 B High Block	Hyd Lifter & Adj Rocker	Stock	9.160"	3/8	24	20
396-454 V8 High Block	Guide Plate Heads	Stock	8.650"	7/16	30	30	413-440 B High Block	Solid Lifter & Adj Rocker	Stock	9.300"	3/8	24	20
			9.650"				426 Hemi V8	Hyd Lifter & Adj Rocker	Stock	10.625"	3/8	24	20
<b>CHEVROLET NON-ADJUSTABLE PUSHROD SETS</b>							<b>MOPAR NON-ADJUSTABLE RC60 HEAT-TREATED PUSHROD SETS</b>						
194-250 6 cyl.	Hyd Lifter & Non-Adj Rocker	Stock	9.625"	5/16	15	15	426 Hemi V8	Solid Lifter & Adj Rocker	Stock	10.812"	3/8	24	20
200-229 90° V6	Hyd Lifter & Non-Adj Rocker	Stock	7.813"	5/16	15	15				11.735"			
265-400 V8	Solid Lifter & Non-Adj Rocker	Stock	7.790"	5/16	15	15	426 Hemi V8	Solid Lifter & Adj Rocker	Stock	10.812"	7/16	28	20
<b>FORD ADJUSTABLE PUSHROD SETS</b>							<b>MOPAR NON-ADJUSTABLE RC60 HEAT-TREATED PUSHROD SETS</b>						
351C V8		Stock	8.360"	5/16	0	10	426 Hemi V8	Solid or Roller Lifter	Stock	10.812"	3/8	24	20
400M V8		Stock	9.500"	5/16	0	10				11.735"			
332-428 V8	Hyd Lifter & Non-Adj Rocker	Stock	9.500"	3/8	4	20	426 Hemi V8	Solid or Roller Lifter	Stock	10.812"	7/16	28	29
332-428 V8	Bot Seat Shell Design Lifter	Stock	10.500"	3/8	4	20				11.735"			

**MOST  
POPULAR  
PUSHROD  
ENDS**



## AMC NON-ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Overall Length	Tube Length	Ends O.D.	Top	Bot
70158-12	232-258 6 cyl.	Hyd Lifter & Non-Adj Rocker	Stock 9.625"	5/16	15	15	
70156-16	290-401 V8	Hyd Lifter & Non-Adj Rocker	Stock 7.813"	5/16	15	15	
70157-16	290-401 V8	Hyd Lifter & Non-Adj Rocker	Stock 8.031"	5/16	15	15	

## BUICK NON-ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Overall Length	Tube Length	Ends O.D.	Top	Bot
70190-12	192-252 V6	Hyd Lifter & Non-Adj Rocker	Stock 8.578"	5/16	15	15	
70191-12	196-252 V6	Hyd Lifter & Non-Adj Rocker	Stock 8.688"	5/16	15	15	

## BUICK ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Overall Length	Tube Length	Ends O.D.	Top	Bot
70019-12	196-252 V6	Hyd or Solid & Non-Adj Rocker	Stock 8.687"	5/16	1	10	
70029-16	300 V8	Hyd or Solid & Non-Adj Rocker	Stock 8.750"	5/16	2	11	
70033-16	340 V8	Hyd or Solid & Non-Adj Rocker	Stock 9.343"	5/16	2	11	
70036-16	350 V8	Hyd or Solid & Non-Adj Rocker	Stock 9.687"	5/16	2	11	
70038-16	350 V8	Hyd or Solid & Non-Adj Rocker	Stock 9.687"	5/16	1	10	
70034-16	400-455 V8	Hyd or Solid & Non-Adj Rocker	Stock 9.375"	3/8	1	22	

## CHEVROLET NON-ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Overall Length	Tube Length	Ends O.D.	Top	Bot
70115-12	194-250 6 cyl.	Hyd Lifter & Non-Adj Rocker	Stock 9.625"	5/16	15	15	
70116-12	200-229 90° V6	Hyd Lifter & Non-Adj Rocker	Stock 7.813"	5/16	15	15	
70100-16	265-400 V8	Solid Lifter & Non-Adj Rocker	Stock 7.790"	5/16	15	15	

## CHEVROLET NON-ADJUSTABLE PUSHROD KITS

Part No.	Engine Make	Application	Length	Tube O.D.	Ends Top	Ends Bot
70401	265-400 V8	+ .250" Over Stock	Cut to length	5/16	15	10
70412	265-400 V8	+ .250" Over Stock	Cut to length	3/8	22	22
70403	396-454 V8	+ .250" Over Stock	Cut to length	3/8	22	22
70404	396-454 V8	+ .250" Over Stock	Cut to length	7/16	30	30
70417	366-427 V8 High Block	+ .250" Over Stock	Cut to length	3/8	22	22
70418	366-427 V8 High Block	+ .250" Over Stock	Cut to length	7/16	30	30

## CHEVROLET NON-ADJUSTABLE RC60 HEAT-TREATED PUSHROD SETS

Part No.	Engine Make	Application	Length	Overall Length	Tube O.D.	Ends Top	Ends Bot
70312-12*	220-229 90° V6	Guide Plate Heads	Stock	7.765"	5/16	15	15
70308-16	396-454 V8	Guide Plate Heads	Stock	8.250"	7/16	30	30
70308X1-16	396-454 V8	Guide Plate Heads	+ .050"	8.300"	7/16	30	30
70308X2-16	396-454 V8	Guide Plate Heads	+ .100"	8.350"	7/16	30	30
70308X3-16	396-454 V8	Guide Plate Heads	+ .150"	8.400"	7/16	30	30
70308X4-16	396-454 V8	Guide Plate Heads	+ .200"	8.450"	7/16	30	30
70308X5-16	396-454 V8	Guide Plate Heads	+ .250"	8.500"	7/16	30	30
70304-16	396-454 V8 High Block	Guide Plate Heads	Stock	8.650"	7/16	30	30
70304X1-16	396-454 V8 High Block	Guide Plate Heads	+ .050"	8.700"	7/16	30	30
70304X2-16	396-454 V8 High Block	Guide Plate Heads	+ .100"	8.750"	7/16	30	30
70304X3-16	396-454 V8 High Block	Guide Plate Heads	+ .150"	8.800"	7/16	30	30
70304X4-16	396-454 V8 High Block	Guide Plate Heads	+ .200"	8.850"	7/16	30	30
70304X5-16	396-454 V8 High Block	Guide Plate Heads	+ .250"	8.900"	7/16	30	30

## FORD ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Length	Overall Length	Tube O.D.	Ends Top	Ends Bot
70003-16	351C V8		Stock	8.360"	5/16	0	10
70004-16	400M V8		Stock	9.500"	5/16	0	10
70000-16	332-428 V8	Hyd Lifter & Non-Adj Rocker	Stock	9.500"	3/8	4	20
70001-16	332-428 V8	Bot Seat Shell Design Lifter	Stock	10.500"	3/8	4	20

## FORD NON-ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Length	Overall Tube Ends		
				Length	O.D.	Top Bot
70146-12	240-300 6 cyl.		Stock	10.140"	5/16	15 15
70130-16	221-302 V8	Non-Guide Plate Heads	Stock	6.820"	5/16	15 15
70134-16	351W V8	Non-Guide Plate Heads	Stock	8.170"	5/16	15 15
70125-16	351M-400V8	Non-Guide Plate Heads	Stock	9.500"	5/16	15 15
70136-16	332-428 V8	Hyd or Solid & Adj Rocker	Stock	9.325"	3/8	23 20
70138-16	332-428 V8	Deep Seat Sol&Adj Rocker	Stock	10.668"	3/8	23 20

## FORD NON-ADJUSTABLE PUSHROD KITS

Part No.	Engine Make	Application	Length	Tube Ends		
				O.D.	Top	Bot
70405	221-302 V8		Cut to length	5/16	15	15
70405L	221-302 V8	Guide Plate Heads	Cut to length	5/16	15	15
70406	302 Boss		Cut to length	5/16	15	15
70407	351W V8		Cut to length	5/16	15	15
70407L	351W V8	Guide Plate Heads	Cut to length	5/16	15	10
70408	351C	Guide Plate Heads	Cut to length	5/16	10	10
70409	351C	Guide Plate Heads	Cut to length	3/8	22	22
70419	332-428		Cut to length	3/8	23	20
70420L	429-460	Guide Plate Heads	Cut to length	5/16	15	15

## MOPAR NON-ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Length	Overall Tube Ends		
				Length	O.D.	Top Bot
70170-16	273-360 LA	Hyd Lifter & Non-Adj Rocker	Stock	7.500"	5/16	11 11
70170X1-16	273-360 LA	Hyd Lifter & Non-Adj Rocker	+0.050"	7.550"	5/16	11 11
70170X2-16	273-360 LA	Hyd Lifter & Non-Adj Rocker	+0.100"	7.600"	5/16	11 11
70171-16	273-360 LA	Hyd Lifter & Non-Adj Rocker	Stock	7.500"	3/8	21 21
70171X1-16	273-360 LA	Hyd Lifter & Non-Adj Rocker	+0.050"	7.550"	3/8	21 21
70171X2-16	273-360 LA	Hyd Lifter & Non-Adj Rocker	+0.100"	7.600"	3/8	21 21
70174-16	273-360 LA	Hyd Lifter & Adj Rocker	Stock	7.325"	5/16	18 11
70173-16	273-360 LA	Hyd Lifter & Adj Rocker	Stock	7.325"	3/8	24 21
70175-16	273-360 LA	Solid Lifter & Adj Rocker	Stock	7.500"	5/16	18 12
70176-16	273-360 LA	Solid Lifter & Adj Rocker	Stock	7.500"	3/8	24 20
70178-16	350-400 B Low Block	Hyd Lifter & Non-Adj Rocker	Stock	8.550"	3/8	21 20
70178X1-16	350-400 B Low Block	Hyd Lifter & Non-Adj Rocker	+0.050"	8.600"	3/8	21 20
70178X2-16	350-400 B Low Block	Hyd Lifter & Non-Adj Rocker	+0.100"	8.650"	3/8	21 20
70179-16	350-400 B Low Block	Hyd Lifter & Adj Rocker	Stock	8.250"	3/8	24 20
70180-16	350-400 B Low Block	Solid Lifter & Adj Rocker	Stock	8.600"	3/8	24 20
70181-16	413-440 B High Block	Hyd Lifter & Non-Adj Rocker	Stock	9.300"	3/8	21 20
70181X1-16	413-440 B High Block	Hyd Lifter & Non-Adj Rocker	+0.050"	9.350"	3/8	21 20
70181X2-16	413-440 B High Block	Hyd Lifter & Non-Adj Rocker	+0.100"	9.400"	3/8	21 20
70183-16	413-440 B High Block	Hyd Lifter & Adj Rocker	Stock	9.160"	3/8	24 20
70184-16	413-440 B High Block	Solid Lifter & Adj Rocker	Stock	9.300"	3/8	24 20
70185-16	426 HemiV8	Hyd Lifter & Adj Rocker	Stock	10.625" 11.582"	3/8	24 20
70186-16	426 HemiV8	Solid Lifter & Adj Rocker	Stock	10.812" 11.735"	3/8	24 20
70187-16	426 HemiV8	Solid Lifter & Adj Rocker	Stock	10.812" 11.735"	7/16	28 20

## MOPAR ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Length	Overall Tube Ends		
				Length	O.D.	Top Bot
70005-16	273-360 V8	Hyd Lifter & Non-Adj Rocker	Stock	7.325"	5/16	2 11
70006-16	273-360 V8	Solid Lifter & Non-Adj Rocker	Stock	7.500"	5/16	2 12
70007-16	361-383 V8 Low Block	Hyd Lifter & Non-Adj Rocker	Stock	8.440"	3/8	2 20
70008-16	361-383 V8 Low Block	Solid Lifter & Non-Adj Rocker	Stock	8.600"	3/8	2 20
70009-16	413-440 V8 High Block	Hyd Lifter & Non-Adj Rocker	Stock	9.296"	3/8	2 20
70010-16	413-440 V8 High Block	Solid Lifter & Non-Adj Rocker	Stock	9.500"	3/8	2 20

## MOPAR NON-ADJUSTABLE RC60 HEAT-TREATED PUSHROD SETS

Part No.	Engine Make	Application	Length	Overall Tube Ends		
				Length	O.D.	Top Bot
70305-16	426 Hemi V8	Solid or Roller Lifter	Stock	10.812" 11.735"	3/8	24 20
70306-16	426 Hemi V8	Solid or Roller Lifter	Stock	10.812" 11.735"	7/16	28 29

## OLDSMOBILE ADJUSTABLE PUSHROD SETS

Part No.	Engine Make	Application	Length	Overall Tube Ends		
				Length	O.D.	Top Bot
70049-16	260-403 V8	Hyd or Solid Lifter	Stock	8.375"	5/16	1 10
70050-16	400-455 V8	Hyd or Solid Lifter	Stock	9.596"	5/16	1 10

## CUSTOM PUSHRODS

Crower custom pushrods are made from the finest alloy steel tubing available and are heat treated for wear resistance and durability. Since 1960, Crower has been supplying top teams in drag racing, stock car and open wheel classes with the finest pushrods available on the market. Crower pushrods are also available for vintage and antique restoration, as well as marine applications. For more information and details about a pushrod for your particular application, give the Crower technical support team a call. We'll fix you up with the correct length, wall thickness, tube diameter, taper and pushrod ends that you require.

## CUSTOM PREMIUM PUSHRODS AND PUSHROD KITS

Part No.	Application
70099	Custom Adjustable Pushrods (includes setup charge)
70199	Custom Non-Heat Treated Pushrods (includes setup charge)
70399	Custom Heat Treated Pushrods (includes setup charge)
70499	Custom Pushrod Kit (includes setup charge)

Note: When ordering custom pushrods you must specify:

- Pushrod length
- Tube diameter
- Wall thickness
- Type of ends
- Cubic inches of engine
- Make and model
- Year of engine
- Type of rockers and lifters

\* Indicates limited supply. Refer to Crower's one piece pushrod section or customs if out of stock.



## ONE PIECE PERFORMANCE PUSHRODS

- Available in 5/16 and 3/8 diameters, .080" wall thickness.
- Die formed radius tip of .156" ( $\pm$  .0005").
- 4130 seamless chromoly steel tubing made in USA.
- Deep drawn to insure uniform, compatible tip radius.
- Controlled length variation to within .005" tolerances.
- Straightness controlled to within .002" run out.
- Overall length measured from end to end.
- Heat treated to a surface hardness of 60RC.
- Black oxide finish provides rigidity and toughness.

## 3/8 DIAMETER PUSHRODS

6.550" - 9.450" • .080" WALL

Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length
71655-8	6.550"	71710-8	7.100"	71765-8	7.650"	71820-8	8.200"
71660-8	6.600"	71715-8	7.150"	71770-8	7.700"	71825-8	8.250"
71665-8	6.650"	71720-8	7.200"	71775-8	7.750"	71830-8	8.300"
71670-8	6.700"	71725-8	7.250"	71780-8	7.800"	71835-8	8.350"
71675-8	6.750"	71730-8	7.300"	71785-8	7.850"	71840-8	8.400"
71680-8	6.800"	71735-8	7.350"	71790-8	7.900"	71845-8	8.450"
71685-8	6.850"	71740-8	7.400"	71795-8	7.950"	71925-8	9.250"
71690-8	6.900"	71745-8	7.450"	71800-8	8.000"	71930-8	9.300"
71695-8	6.950"	71750-8	7.500"	71805-8	8.050"	71935-8	9.350"
71700-8	7.000"	71755-8	7.550"	71810-8	8.100"	71940-8	9.400"
71705-8	7.050"	71760-8	7.600"	71815-8	8.150"	71945-8	9.450"

Stock length big block Chevy is 8.250" (int) & 9.250" (exh).

## 3/8 DIAMETER PUSHRODS W/ RADIUS ENDS

6.550" - 11.300" • .080" WALL 210° radius on one end.

Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length
71825R-8	8.250"	71905R-8	9.050"	71985R-8	9.850"	71065R-8	10.650"
71830R-8	8.300"	71910R-8	9.100"	71990R-8	9.900"	71070R-8	10.700"
71835R-8	8.350"	71915R-8	9.150"	71995R-8	9.950"	71075R-8	10.750"
71840R-8	8.400"	71920R-8	9.200"	71000R-8	10.000"	71080R-8	10.800"
71845R-8	8.450"	71925R-8	9.250"	71005R-8	10.050"	71085R-8	10.850"
71850R-8	8.500"	71930R-8	9.300"	71010R-8	10.100"	71090R-8	10.900"
71855R-8	8.550"	71935R-8	9.350"	71015R-8	10.150"	71095R-8	10.950"
71860R-8	8.600"	71940R-8	9.400"	71020R-8	10.200"	71100R-8	11.000"
71865R-8	8.650"	71945R-8	9.450"	71025R-8	10.250"	71105R-8	11.050"
71870R-8	8.700"	71950R-8	9.500"	71030R-8	10.300"	71110R-8	11.100"
71875R-8	8.750"	71955R-8	9.550"	71035R-8	10.350"	71115R-8	11.150"
71880R-8	8.800"	71960R-8	9.600"	71040R-8	10.400"	71120R-8	11.200"
71885R-8	8.850"	71965R-8	9.650"	71045R-8	10.450"	71125R-8	11.250"
71890R-8	8.900"	71970R-8	9.700"	71050R-8	10.500"	71130R-8	11.300"
71895R-8	8.950"	71975R-8	9.750"	71055R-8	10.550"		
71900R-8	9.000"	71980R-8	9.800"	71060R-8	10.600"		

Stock length big block Chevy is 8.250" (int) & 9.250" (exh).

## CLEARANCE TIP RADIUS PUSHRODS

Crower has 5/16 and 3/8 diameter, clearance tip radius pushrods for high lift applications where added clearance is necessary.

This 5/16 dia. radius cut away shows radius tip with consistent .080" wall throughout.



## 5/16 DIAMETER PUSHRODS

7.800" - 8.000" • .080" WALL

Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length
69780-16	7.800"	69790-16	7.900"	69795-16	7.950"	69800-16	8.000"
69785-16	7.850"						

## 5/16 DIAMETER PUSHRODS W/ RADIUS ENDS

6.000" - 9.950" • .080" WALL 210° radius on one end.

Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length	Part No.	Overall Length
69600R-16	6.000"	69700R-16	7.000"	69800R-16	8.000"	69900R-16	9.000"
69605R-16	6.050"	69705R-16	7.050"	69805R-16	8.050"	69905R-16	9.050"
69610R-16	6.100"	69710R-16	7.100"	69810R-16	8.100"	69910R-16	9.100"
69615R-16	6.150"	69715R-16	7.150"	69815R-16	8.150"	69915R-16	9.150"
69620R-16	6.200"	69720R-16	7.200"	69820R-16	8.200"	69920R-16	9.200"
69625R-16	6.250"	69725R-16	7.250"	69825R-16	8.250"	69925R-16	9.250"
69630R-16	6.300"	69730R-16	7.300"	69830R-16	8.300"	69930R-16	9.300"
69635R-16	6.350"	69735R-16	7.350"	69835R-16	8.350"	69935R-16	9.350"
69640R-16	6.400"	69740R-16	7.400"	69840R-16	8.400"	69940R-16	9.400"
69645R-16	6.450"	69745R-16	7.450"	69845R-16	8.450"	69945R-16	9.450"
69650R-16	6.500"	69750R-16	7.500"	69850R-16	8.500"	69950R-16	9.500"
69655R-16	6.550"	69755R-16	7.550"	69855R-16	8.550"	69955R-16	9.550"
69660R-16	6.600"	69760R-16	7.600"	69860R-16	8.600"	69960R-16	9.600"
69665R-16	6.650"	69765R-16	7.650"	69865R-16	8.650"	69965R-16	9.650"
69670R-16	6.700"	69770R-16	7.700"	69870R-16	8.700"	69970R-16	9.700"
69675R-16	6.750"	69775R-16	7.750"	69875R-16	8.750"	69975R-16	9.750"
69680R-16	6.800"	69780R-16	7.800"	69880R-16	8.800"	69980R-16	9.800"
69685R-16	6.850"	69785R-16	7.850"	69885R-16	8.850"	69985R-16	9.850"
69690R-16	6.900"	69790R-16	7.900"	69890R-16	8.900"	69990R-16	9.900"
69695R-16	6.950"	69795R-16	7.950"	69895R-16	8.950"	69995R-16	9.950"





## PUSHROD GUIDE PLATES

Crower's pushrod guide plates are specially hardened for added strength and durability. They are positioned on the rocker arm studs to guarantee proper pushrod alignment. Crower's unique guide plate design reduces the fl x and rocker arm slop found in other brands, providing more pushrod stability and added strength. Adjustable guide plates are also available. Please specify when ordering.

Part No.	Description	Pushrod Dia.
70502-8	CHEVROLET 262-400 V8	5/16
70500-8	CHEVROLET 262-400 V8	3/8
70505-8	CHEVROLET 262-400 V8 (.225")	3/8
70517-8	CHEVROLET 262-400 V8 Adj.	5/16
70516-8	CHEVROLET 262-400 V8 Adj.	3/8
70506-8	CHEVROLET 396-454 V8	3/8
70503-8	CHEVROLET 396-454 V8	7/16
70504-8	FORD 289-302 V8	5/16
70501-8	FORD 351C-400 V8	3/8
70512-8	FORD 351C	5/16
70508-8	FORD 429-460 V8	5/16
70507-8	FORD 429-460 V8	3/8
70518-8	DODGE 318-360 Magnum V8	5/16
70518-6	DODGE Magnum V6	5/16



## ADJUSTABLE CHECKING PUSHRODS

Crower adjustable checking pushrods have  $\pm .250"$  adjustment travel in order to obtain accurate measurements for determining the optimum pushrod length. Overall lengths are listed with the adjustable end in the middle of the adjustment range. Made from 5/16 tubing with two pushrods per package.

Part No.	Description	Overall Length
70477-2	Adjustable Checking Pushrods	6.300"
70478-2	Adjustable Checking Pushrods	6.800"
70461-2	Adjustable Checking Pushrods	7.150"
70479-2	Adjustable Checking Pushrods	7.250"
70470-2	Adjustable Checking Pushrods	7.500"
70471-2	Adjustable Checking Pushrods	7.750"
70465-2	Adjustable Checking Pushrods	7.750"/8.750"
70466-2	Adjustable Checking Pushrods	7.600"/8.600"
70463-2	Adjustable Checking Pushrods	7.975"
70466T-2	Checking Pushrods (Tall Deck)	8.000"/9.000"
70465T-2	Checking Pushrods (Tall Deck)	8.150"/9.150"
70472-2	Adjustable Checking Pushrods	8.250"
70473-2	Adjustable Checking Pushrods	8.400"
70462-2	Adjustable Checking Pushrods	8.700"
70474-2	Adjustable Checking Pushrods	9.550"
70475-2	Adj. Checking Pushrods (Low Blk)	8.250"/9.250"
70476-2	Adj. Checking Pushrods (High Blk)	8.650"/9.650"
70499-2	Adjustable Checking Pushrods	Custom

Note: Also available with a cup end and adjustable bottom.



## PRECISION ADJUSTABLE CHECKING PUSHRODS

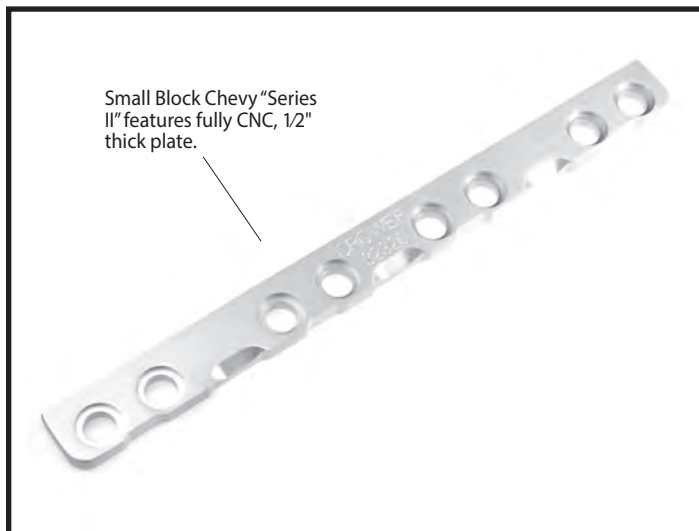
Correct pushrod length is critical in achieving proper valve train geometry. Crower precision checking pushrods guarantee accurate measurements for determining the optimum pushrod length. Precision crafted from steel alloy with a black oxide finish or added durability, Crower checking pushrods are extremely easy to use. Each complete revolution is equal to  $.050"$ .

Part No.	Description	Length
70480A	Precision Checking Pushrod	5.800" / 6.800"
70481A	Precision Checking Pushrod	6.800" / 7.800"
70482A	Precision Checking Pushrod	7.800" / 8.800"
70483A	Precision Checking Pushrod	8.800" / 9.800"
70485A	Checking Kit (1 ea of above)	5.800" / 9.800"

## HI-REV KITS

Crower highly recommends installing a Hi-Rev kit in any roller cam or extreme rpm application to provide added stability to the valve train. Each Crower Hi-Rev Kit includes two lightweight aluminum alloy bars, spacers, and springs required for quick and easy installation. Available for both standard and cutaway design Crower roller lifter tappets. Cutaway designs must specify intake and exhaust rocker offsets.

Part No.	Description	Head
82020	CHEVY 262-400 Series II (66200)	Stock
82020-X1	CHEVY 262-400 Series II (66200) Hi-Pressure	Stock
82027	CHEVY 262-400 Series II (66275)	18°, 11x, -12
82027-H	CHEVY 262-400 Series II (66275) Hi-Pressure	18°, 11x, -12
82029	CHEVY 262-400 Series II (66200)	18°, 11x, -12
82030	CHEVY 262-400 Series II (w/.050" Offset Plates)	Stock
83000	CHEVY 262-400 Cutaway Lifters (Offset)	Stock
83003	CHEVY 262-400 Cutaway Lifters (Center)	Stock
83007	CHEVY 262-400 Cutaway (Offset/Center)	18°, 11x, -12
83008	BUICK HEAD Cutaway Lifters (Offset)	Stock



Small Block Chevy "Series II" features fully CNC, 1/2" thick plate.

# Engineering the Science of Geometry

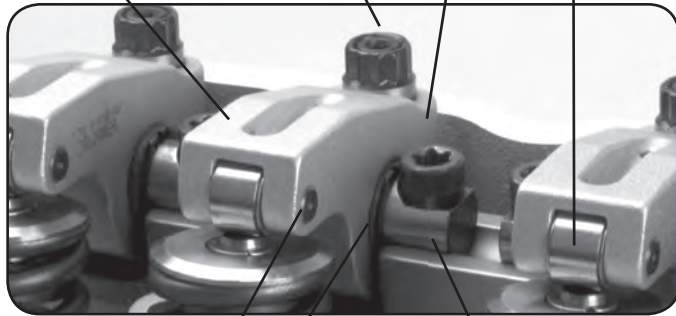
## Anatomy of a CROWER ROCKER

Our lash adjusters are machined from aircraft quality Hi-temp alloy, precision thread rolled after double heat treat process.

Our 2024 aluminum bodies deliver maximum strength at operating temperature.

Aircraft quality 12 point nuts.

Hardened tip wheel withstands race rigors and minimizes scrubbing.



Fully rollerized precision needle bearing fulcrum.

Crower shafts are CNC precision machined from ball race alloy steels, heat-treated twice and micro finish ground in-house.

Our Axles are "super secured" for trouble free operation.

## Needle Bearing Tip Option

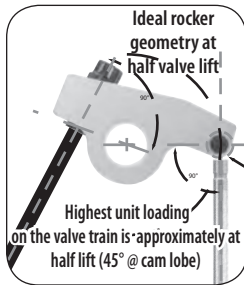
Crower has raised the bar on valve train technology with a new needle bearing roller tip option available on all new Crower stud and shaft mount rocker arm assemblies.

Specify #73715R after rocker part number for stainless steel, #72915R for aluminum.

Reduced friction for added horsepower and reduced valve guide and valve stem wear.



The lighter tip delivers greater valve control for increased rpm and improves valve spring longevity by decreasing heat over traditional non needle designs.

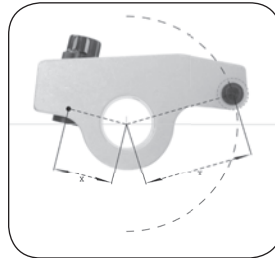


Ideal rocker geometry at half valve lift

Highest unit loading on the valve train is approximately at half lift (45° @ cam lobe)

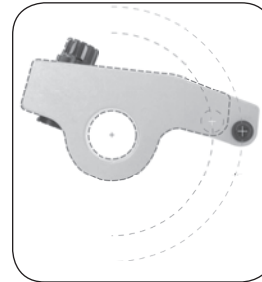
This configuration minimizes tip travel across the valve stem and keeps contact centered on top of the valve, reducing frictional losses due to valve guide side loading and tip scrubbing. Pushrod deflection is also minimized for more accurate valve action.

## Rocker Ratio



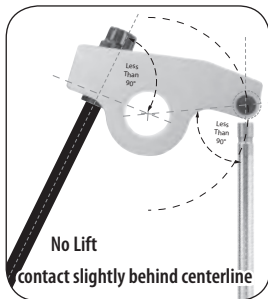
Rocker arm ratio is determined by dividing the distance from the fulcrum to the tip centerpoints (Y) by the distance from the fulcrum to the pushrod seat centerpoints (X). This theoretical ratio may vary from our net/advertised ratio due to measured valve train deflection under load.

## Long Arm



Higher rocker ratios require extending the arm of the rocker. Long arm rockers allow proper pushrod seat positioning in relation to the fulcrum point. An additional long arm benefit is reduced back and forth tip travel across the valve stem. Less scrubbing and valve stem side loading occur and associated frictional losses are minimized.

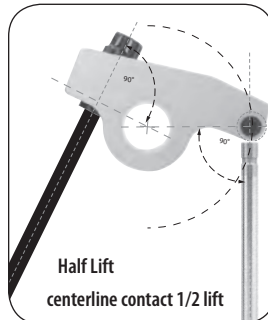
## Tip Travel



No Lift

contact slightly behind centerline

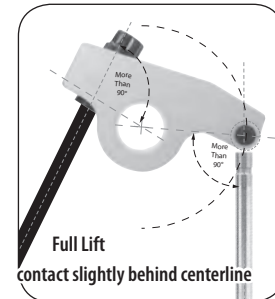
When the valve is closed tip contact is slightly behind the centerline of the valve.



Half Lift

centerline contact 1/2 lift

At highest unit loading (approx. 1/2 lift) tip contact ideally is on the centerline of the valve. The valve train is overcoming spring pressure and, more importantly, rapidly accelerating its mass. To minimize deflection, side loading and frictional loss, we want the valve train geometry in its strongest and straightest configuration at this point.

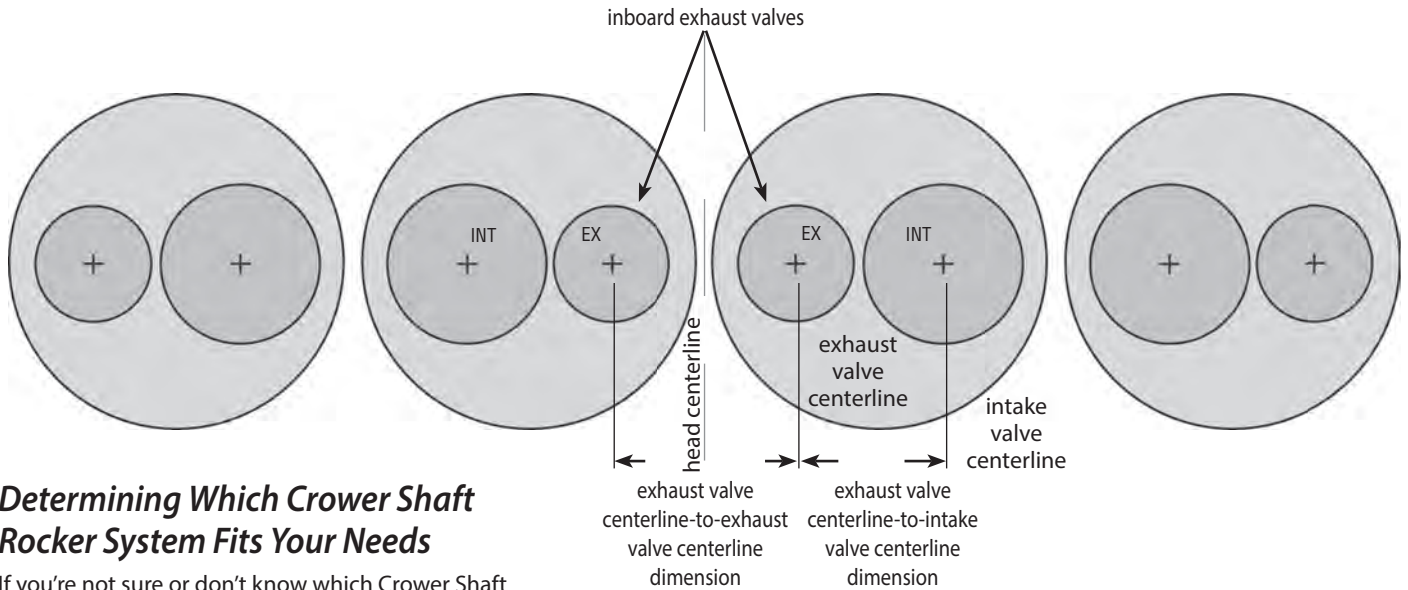


Full Lift

contact slightly behind centerline

When the valve is fully open, tip contact is slightly behind the centerline of the valve. The valve train in this position (at high RPM) feels the least amount of unit loading as float approaches...everything gets momentarily weightless.

# Useful Ordering Information



## Determining Which Crowder Shaft Rocker System Fits Your Needs

If you're not sure or don't know which Crowder Shaft Rocker System will fit your cylinder head and need help, follow these simple procedures:

1. You'll need to provide us with some critical information and dimensions.
  - a. Cylinder head manufacturer
  - b. Engine type
  - c. Intake and exhaust valve distances from cylinder head centerline.
  - d. Rocker stud spacing from cylinder head centerline.

### Here's how you do it.

Measure the distance from the outside diameter of the two inboard exhaust valves. Record the value. Subtract the diameter of the valve (Example: .341) from your recorded value and divide this measurement by 2. Now you'll know the distance from the cylinder head centerline to exhaust valve centerline.

Now measure the distance from the outside of the intake valve to the outside diameter of the exhaust valve diameter. Subtract .341" from that to get the centerline distance from exhaust to intake valve.

Note: .341" diameter is based on 11/32" intake and exhaust valves. Some cylinder heads have different size intake stems. Make sure you measure valve stem size before measuring valve centerline.

2. Follow the same procedure for the studs.
3. Supply us the dimensions and we'll take it from there!

## Rocker Body Identification

To order replacement rockers and insure correct fit you'll need to provide your Crowder technician with the following info.

Rocker Bodies without I.D. numbers:

- Rocker arm Ratio
- Rocker arm Offset
- Which valve the rocker actuates (intake or exhaust)
- Which cylinder the rocker is mounted on (2,4,6,8-1,3,5,7, etc.)
- Name/brand of cylinder head
- Stand Number
- Shaft Diameter

Rocker Bodies with I.D. numbers:

- Rocker arm Body I.D. number
- Rocker arm Ratio
- Rocker arm Offset
- Stand Number
- Shaft Diameter

Aluminum Stud Mount Rockers



## Ratio and Offset Locations

Stainless Stud Mount Rockers



Aluminum Shaft Mount Rockers



Stainless Shaft Mount Rockers





# Stainless Steel Stud Mounted Rockers

Steel billet rockers available for all popular applications.

## ENDURO LONG ARM/BACKSET ROLLERIZED ROCKERS



Crower's Long Arm/Backset trunnion rollerized rockers are made to the same high tolerances as our standard stainless steel rocker arms with a .090" backset trunnion and these added features:

- Increased area under the lift curve
- Additional spring clearance (1.650")
- Smoother valve action
- Less side loading on stems/guides
- Drop on installation
- Set of 8 for intake (use standard Crower stainless steel rockers on exhaust)

Part#	Description	Ratio	Stud
73677-8	Chevrolet 265-400 V8	1.5	7/16
73674-8	Chevrolet 265-400 V8	1.6	7/16
73672-8	Chevrolet 265-400 V8	1.65	7/16
73673-8	Chevrolet 265-400 V8	1.7	7/16
73676-8	Chevrolet 265-400 V8	1.75	7/16
73675-8	Chevrolet 265-400 V8	1.8	7/16
73678-8	Chevrolet 265-400 V8	1.85	7/16

Note: May be purchased as mixed ratios intake and exhaust. Can be ordered N.S. without sure-locks

## ENDURO CENTERLINE ROLLERIZED ROCKERS

When installing a .100" long valve, the rocker arm tip must be backed up .050" to insure centerline contact at half lift. Crower offsets the rocker stud hole in the trunnion, pulling the rocker tip back into correct alignment with the valve stem. Re-establishing correct geometry reduces valve guide wear and promotes more accurate valve timing.



Part#	Description	Ratio
73690-8	Chevrolet 265-400 .050 backset	1.5
73691-8	Chevrolet 265-400 .050 backset	1.55
73692-8	Chevrolet 265-400 .050 backset	1.6
73693-8	Chevrolet 265-400 .050 backset	1.65
73694-8	Chevrolet 265-400 .050 backset	1.7
73696-8	Chevrolet 265-400 .050 backset	1.75
73695-8	Chevrolet 265-400 .050 backset	1.8
73682-8	Chevrolet 396-454 .050 backset	1.65
73683-8	Chevrolet 396-454 .050 backset	1.7
73684-8	Chevrolet 396-454 .050 backset	1.75
73685-8	Chevrolet 396-454 .050 backset	1.8
73686-8	Chevrolet 396-454 .090 backset	1.65
73687-8	Chevrolet 396-454 .090 backset	1.7
73688-8	Chevrolet 396-454 .090 backset	1.75
73689-8	Chevrolet 396-454 .090 backset	1.8

The above rockers may be purchased in sets of 8 to mix ratios. Note: 7/16 stud diameter.

Can be ordered N.S. without sure-locks

## LATE MODEL ROCKERS

Crower's self-aligning rocker arms are available for late model small and big block Chevrolet, Dodge Magnum truck and the V10 Viper.

Features include:

- Self aligning roller tip holds rocker in place
- 25 hp, 4 mph on 1/4 mile with 1.7's on V10
- Emissions Legal certified ARB #D-410



Part#	Description	Ratio	Stud
<b>CHEVROLET</b>			
73602-12	V6 Chevy 85-96, 97-98 Vortec	1.5	3/8
73603-12	V6 Chevy 85-96, 97-98 Vortec	1.6	3/8
73602-16	SB Chevy 85-96, 97-98 Vortec, LT1	1.5	3/8
73603-16	SB Chevy 85-96, 97-98 Vortec, LT1	1.6	3/8
73660-16	SB Chevy Narrow, Non Align	1.5	3/8
73661-16	SB Chevy Narrow, Non Align	1.6	3/8
73608-16	BB Chevy 85-96, 97-98 Vortec	1.8	7/16
<b>DODGE</b>			
73653K*	V6 Dodge Magnum	1.6	3/8
73654K*	V6 Dodge Magnum	1.7	3/8
73655K*	V8 Dodge Magnum	1.6	3/8
73656K*	V8 Dodge Magnum	1.7	3/8
73657K*	V10 Dodge Magnum	1.6	5/16
73659K*	V10 Dodge Magnum	1.7	3/8
73662K*	V10 Dodge Viper	1.6	7/16
73663K*	V10 Dodge Viper	1.7	7/16

\*"K" incl. rocker studs. 5500 RPM limit on "K" kits (6300 on Viper) Can be ordered N.S. without sure-locks

## DODGE MAGNUM ROLLER ROCKER KITS

Our "PK" kits are a must in order to maintain valve train integrity when RPM's over 5500 are reached. If sustained high RPM is expected, you must upgrade to 6830SX1 spring. "PK" kits include rocker studs, guide plates (#70518) & 1 pc. pushrods (#69695).

Part#	Description	Ratio	Stud
73653PK*	V6 Dodge Magnum	1.6	3/8
73654PK*	V6 Dodge Magnum	1.7	3/8
73655PK*	V8 Dodge Magnum	1.6	3/8
73656PK*	V8 Dodge Magnum	1.7	3/8

## STAMPED STEEL ROCKER ARMS

Crower's stamped steel rockers utilize a longer slot for high lift, aftermarket cams. Made from high strength steel alloy and stamped to resist the rocker flex for the longest possible operating life.



Part#	Description	Ratio
73050-16	Chevrolet 265-400 (set 16)	1.5
73051-16	Chevrolet 265-400 (set 16)	1.6
73053	Chevrolet 265-400 (8 ea/8 ea) Kit	1.5/1.6

Note: For small block Chevrolet, a 1.6 ratio will raise gross valve lift for a nominal horsepower increase. All rockers listed are 3/8 stud.

## ENDURO STAINLESS STEEL ROLLERIZED ROCKERS



Made from 17-4PH stainless steel with 1025 heat-treating, these proven rollerized rockers feature premium, oversized needle bearings, sure-lock rocker nuts and alloy steel tip rollers. Superior lightweight body design provides plenty of clearance for large diameter springs. Includes sure-locks.

Part#	Description	Ratio	Stud
<b>AMC</b>			
73645-16*	AMC 290-401 V8	1.6	3/8
73646-16*	AMC 290-401 V8	1.6	7/16
73648-12*	AMC 6 cyl.	1.6	3/8
73647-12*	AMC 6 cyl.	1.6	7/16

Part#	Description	Ratio	Stud
<b>CHEVROLET</b>			
73625-8	Chevy II 4 cyl.	1.75	3/8
73628-12	Chevrolet 230 250 292 6cyl.	1.6	3/8
73629-12	Chevrolet 230 250 292 6 cyl.	1.75	3/8
73630-12	Chevrolet 230 250 292 6 cyl.	1.6	7/16
73631-12	Chevrolet 230 250 292 6 cyl.	1.75	7/16
73649-12	Chevrolet 200 229 90° V6	1.6	3/8
73650-12	Chevrolet 200 229 90° V6	1.5	7/16
73651-12	Chevrolet 200 229 90° V6	1.65	7/16
73652-12	Chevrolet 200 229 90° V6	1.6	7/16
73635-16	Chevrolet 265-400 V8	1.35	7/16
73600-16	Chevrolet 265-400 V8	1.5	3/8
73660-16	Chevrolet 265-400 V8 LT1	1.5	3/8
73640-16	Chevrolet 265-400 V8	1.6	3/8
73661-16	Chevrolet 265-400 V8 LT1	1.6	3/8
73670-16	Chevrolet 265-400 V8	1.65	3/8
73601-16	Chevrolet 265-400 V8	1.5	7/16
73641-16	Chevrolet 265-400 V8	1.6	7/16
73642-16	Chevrolet 265-400 V8	1.55	7/16
73671-16	Chevrolet 265-400 V8	1.65	7/16
73643-16	Chevrolet 265-400 V8	1.7	7/16
73604-16	Chevrolet 396-454 V8	1.55	7/16
73606-16	Chevrolet 396-454 V8	1.6	7/16
73605-16	Chevrolet 396-454 V8	1.7	7/16
73607-16	Chevrolet 396-454 V8	1.75	7/16
73608-16	Chevrolet 396-454 V8	1.8	7/16

Part#	Description	Ratio	Stud
<b>FORD</b>			
73609-16	Ford 289 302 351W V8	1.6	3/8
73610-16	Ford 289 302 351W V8	1.65	3/8
73611-16	Ford 289 302 351W V8	1.7	3/8
73612-16	Ford 289 302 351W V8	1.6	7/16
73613-16	Ford 289 302 351W V8	1.65	7/16
73614-16	Ford 289 302 351W V8	1.7	7/16
73637-16	Ford 289 302 351W V8	1.75	7/16
73638-16	Ford 289 302 351W V8	1.8	7/16
73618-16	Ford Boss 351C 400 429 460	1.6	7/16
73616-16	Ford Boss 351C 400 429 460	1.65	7/16
73615-16	Ford Boss 351C 400 429 460	1.73	7/16
73617-16	Ford Boss 351C 400 429 460	1.75	7/16
73619-16	Ford Boss 351C 400 429 460	1.8	7/16

Part#	Description	Ratio	Stud
<b>PONTIAC</b>			
73626-16	Pontiac V8	1.5	3/8
73621-16	Pontiac V8	1.7	7/16
73622-16	Pontiac V8	1.6	3/8
73627-16	Pontiac V8	1.5	7/16
73623-16	Pontiac V8	1.6	7/16
73624-16	Pontiac V8	1.65	7/16

Part#	Description	Ratio	Stud
<b>OLDSMOBILE</b>			
73644-16*	Oldsmobile 67-91 V8 V8	1.6	7/16

\* Requires machine work Note: Rocker arms can be purchased in 1/2 sets (8 intake and 8 exhaust for split ratio applications) or individually Note: Specify stud 88400 (3/8) or 88401 (7/16) when ordering. Can be ordered N.S. without sure-locks

**CROWER HAS NHRA STOCK CLASS ACCEPTED STUD MOUNTED ROCKER SYSTEMS TO KEEP YOU AHEAD OF THE COMPETITION**



# Aluminum Stud Mounted Rockers

## ALUMINUM STUD ROLLERIZED ROCKERS

Crower's Enduro aluminum stud mount rocker arms are fully CNC machined from USA made, premium aluminum extrusion. Crower's unique "full arch" design reduces the rocker flex found in other brands. Results are increased rpm, greater area under the lift curve and added spring clearance. Double-step, serrated pins feature our rotor clip design that eliminates pin loosening. USA made needle bearings. When vertical valve cover clearance is an issue, specify "LP" when ordering. Will clear 1.625" diameter spring.



## ALUMINUM CENTERLINE ROLLERIZED ROCKERS

When installing a .100" long valve, the rocker arm tip must be backed up .050" to ensure centerline contact at half lift. Crower offsets the rocker stud hole in the trunnion, pulling the rocker tip back into correct alignment with the valve stem. Re-establishing correct geometry reduces valve guide wear and promotes more accurate valve timing. Will clear 1.650" diameter spring.



## BREAK-IN ALUMINUM ROLLERIZED ROCKERS

Reduce cam and lifter break-in failures by running Crower's new break-in rocker arms first. Features a reverse offset trunnion (.050") that repositions the pushrod closer to the stock position. In other words, Crower moves the rocker arm and pushrod forward .050" for easier installation. Current break-in rockers on the market only offer center trunnion stud hole positions that require extensive cylinder head modifications to the pushrod hole in order to achieve proper pushrod and head clearance. Crower's break-in rockers drop on with no machine work required. Spring pockets machined for 1.560" O.D. spring

Part#	Description	Ratio	Stud
<b>AMC</b>			
72845-16*	AMC 290-401 V8	1.6	3/8
72846-16*	AMC 290-401 V8	1.6	7/16
72848-12*	AMC 6 cyl.	1.6	3/8
72847-12*	AMC 6 cyl.	1.6	7/16

<b>CHEVROLET</b>			
72825-8	Chevy II 4 cyl.	1.75	3/8
72828-12	Chevrolet 230 250 292 6cyl.	1.6	3/8
72829-12	Chevrolet 230 250 292 6 cyl.	1.75	3/8
72830-12	Chevrolet 230 250 292 6 cyl.	1.6	7/16
72831-12	Chevrolet 230 250 292 6 cyl.	1.75	7/16
72850-12	Chevrolet 200 229 90° V6	1.5	7/16
72852-12	Chevrolet 200 229 90° V6	1.6	7/16
72854-12	Chevrolet 200 229 90° V6	1.65	7/16
72835-16	Chevrolet 265-400 V8	1.35	7/16
72800-16	Chevrolet 265-400 V8	1.5	3/8
72840-16	Chevrolet 265-400 V8	1.6	3/8
72870-16	Chevrolet 265-400 V8	1.65	3/8
72801-16	Chevrolet 265-400 V8	1.5	7/16
72841-16	Chevrolet 265-400 V8	1.6	7/16
72842-16	Chevrolet 265-400 V8	1.55	7/16
72871-16	Chevrolet 265-400 V8	1.65	7/16
72843-16	Chevrolet 265-400 V8	1.7	7/16
72804-16	Chevrolet 396-454 V8	1.55	7/16
72806-16	Chevrolet 396-454 V8	1.6	7/16
72805-16	Chevrolet 396-454 V8	1.7	7/16
72807-16	Chevrolet 396-454 V8	1.75	7/16
72808-16	Chevrolet 396-454 V8	1.8	7/16

<b>FORD</b>			
72809-16	Ford 289 302 351 W V8	1.6	3/8
72810-16	Ford 289 302 351W V8	1.65	3/8
72811-16	Ford 289 302 351W V8	1.7	3/8
72832-16	Ford 289 302 351W-351-N V8	1.5	7/16
72833-16	Ford 289 302 351W 351-N V8	1.55	7/16
72812-16	Ford 289 302 351W 351-N V8	1.6	7/16
72813-16	Ford 289 302 351W 351-N V8	1.65	7/16
72814-16	Ford 289 302 351W 351-N V8	1.7	7/16
72837-16	Ford 289 302 351W 351-N V8	1.75	7/16
72838-16	Ford 289 302 351W 351-N V8	1.8	7/16
72818-16	Ford Boss 351C 400 429 460	1.6	7/16
72816-16	Ford Boss 351C 400 429 460	1.65	7/16
72815-16	Ford Boss 351C 400 429 460	1.73	7/16
72817-16	Ford Boss 351C 400 429 460	1.75	7/16
72819-16	Ford Boss 351C 400 429 460	1.8	7/16

<b>PONTIAC</b>			
72826-16	Pontiac V8	1.5	3/8
72821-16	Pontiac V8	1.7	7/16
72822-16	Pontiac V8	1.6	3/8
72827-16	Pontiac V8	1.5	7/16
72823-16	Pontiac V8	1.6	7/16
72824-16	Pontiac V8	1.65	7/16

<b>OLDSMOBILE</b>			
72844-16	Oldsmobile 67-91 V8	1.6	7/16

\* Requires machine work  
Can be ordered N.S. without sure-locks



Part#	Description	Ratio	Stud
72890-8	Chevrolet 265-400 V8 (set 8)	1.5	7/16
72891-8	Chevrolet 265-400 V8 (set 8)	1.55	7/16
72892-8	Chevrolet 265-400 V8 (set 8)	1.6	7/16
72893-8	Chevrolet 265-400 V8 (set 8)	1.65	7/16
72894-8	Chevrolet 265-400 V8 (set 8)	1.7	7/16
72896-8	Chevrolet 265-400 V8 (set 8)	1.75	7/16
72895-8	Chevrolet 265-400 V8 (set 8)	1.8	7/16
72897-8	Chevrolet 396-454 V8 (set 8)	1.7	7/16
72898-8	Chevrolet 396-454 V8 (set 8)	1.8	7/16

The above rockers come in sets of 8 to mix ratios.  
Can be ordered N.S. without sure-locks

## OFFSET ALUMINUM INTAKE ROCKERS

Crower has a .150" offset aluminum rocker available in 7/16" stud diameter only. These rockers include the same features as our Enduro Aluminum rockers, but in an offset design. Order only for the intake and then 8 only standard stud mount rockers on the exhaust (see p/n at left).



Part#	Description	Ratio	Stud
<b>CHEVROLET</b>			
72801X1-8	Chevrolet 265-400 V8	1.5	7/16
72841X1-8	Chevrolet 265-400 V8	1.6	7/16
72842X1-8	Chevrolet 265-400 V8	1.55	7/16
72843X1-8	Chevrolet 265-400 V8	1.7	7/16
72871X1-8	Chevrolet 265-400 V8	1.65	7/16

<b>FORD</b>			
72812X1-8	Ford 289-302-351W 351N V8	1.6	7/16
72813X1-8	Ford 289-302-351W 351N V8	1.65	7/16
72814X1-8	Ford 289-302-351W 351N V8	1.7	7/16
72832X1-8	Ford 289-302-351W 351N V8	1.5	7/16
72833X1-8	Ford 289-302-351W 351N V8	1.55	7/16
72837X1-8	Ford 289-302-351W 351N V8	1.75	7/16
72838X1-8	Ford 289-302-351W 351N V8	1.8	7/16

Note: These rockers come 8 only for the intake side. You must order 8 only standard design rockers for the exhaust side.  
Can be ordered N.S. without sure-locks

## NEEDLE BEARING TIP OPTION

All Crower stud and shaft mount rocker arms are available with Crower's new needle bearing roller tip option. Results are greatly reduced friction for added horsepower and reduced valve guide and valve stem wear. The lighter tip delivers greater valve control for increased rpm and improves valve spring longevity by decreasing heat over traditional non needle designs. Specify #73715R option for stainless steel (stud or shaft) or #72915R option for aluminum (stud or shaft) when ordering rocker arms. Not available on self-aligning tip designs.



### Example A

.350 Lobe Lift  
x 1.7 Rocker Ratio  
.595 Gross Lift  
-.020 Lash  
.575 Net Valve Lift

### Example B

.350 Lobe Lift  
x 1.2 Rocker Ratio  
.420 Gross Lift  
-.020 Lash  
.400 Net Valve Lift

As you can see in example (A), net valve lift is .575" and example (B) is .400" net. Depending on spring rate, this could be as much as 100 lbs. or more reduced open pressure.

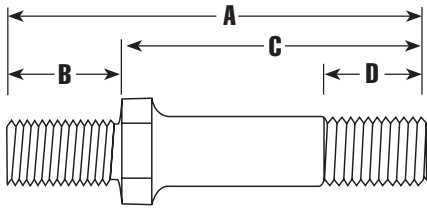
Part#	Description	Ratio	Stud
<b>CHEVROLET</b>			
72881-16	Chevrolet 265-400 V8	1.2	7/16
72886-16	Chevrolet 265-400 V8	1.35	7/16
72882-16	Chevrolet 396-454 V8	1.4	7/16

<b>FORD</b>			
72884-16	Ford 289 302 351W V8	1.3	7/16
72885-16	Ford 351C V8	1.33	7/16

### SLEEVES

72921	Sleeves 3/8 to 7/16 For Rockers
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# Stud Mounted Rocker Parts



## ALLOY ROCKER STUDS

Crower screw-in rocker studs are rated to 190,000 p.s.i. tensile strength and insure reliability in your valve train. Machined and finished from 8740 aircraft quality steel and heat-treated for maximum strength. All threads are cold rolled for concentricity and extreme durability.

Part#	Description	Diameter		Dimensions				
		Top	Bottom	A	B	C	D	
88419-12	Chevrolet 60° V6 2.8-3.1 (80-94)	3/8	10mm	2.375"	0.805"	1.570"	0.610"	
88400-16	Chevrolet 265-400	3/8	7/16	2.430"	0.680"	1.750"	0.800"	
88400S-16	Chevrolet 265-400	3/8	3/8	2.430"	0.685"	1.750"	0.785"	
88401-16	Chev 265-400 & 396-454	7/16	7/16	2.650"	0.750"	1.900"	0.650"	
88425-16	Chevrolet (Special appl. +.175")	7/16	7/16	2.825"	0.815"	1.900"	1.000"	
88402L	Chevrolet 396-454 (Alum Heads)	Int:	7/16	7/16	2.825"	0.825"	2.000"	1.000"
		Exh:	7/16	7/16	3.660"	1.650"	2.010"	1.050"
88405-8	Chevrolet 396-454 (Alum Hds Ex. only)	7/16	7/16	3.660"	1.650"	2.010"	1.050"	
88414-8	Chevrolet Late Model Vortec	3/8	8mm	2.350"	0.600"	1.750"	0.800"	
88418-16	Chev Late Mod/Mark V	7/16	3/8 (a)	2.650"	0.750"	1.900"	1.000"	
88401-16	Ford 302, 351C	7/16	7/16	2.650"	0.750"	1.900"	0.650"	
88416-12	Dodge Magnum V6	3/8	5/16	2.440"	0.680"	1.760"	0.800"	
88416-16	Dodge Magnum V8	3/8	5/16	2.440"	0.680"	1.760"	0.800"	
88414-20	Dodge Magnum Truck 2001-2002	3/8	8mm	2.350"	0.600"	1.750"	0.800"	
88400S-16	Dodge Magnum Truck 2001-2002	3/8	3/8(b)	2.435"	0.685"	1.750"	0.785"	
88416-20	Dodge V10 Magnum	3/8	5/16 (c)	2.440"	0.680"	1.760"	0.800"	
88417-20	Dodge Viper V10	3/8	5/16	2.450"	0.750"	1.700"	0.800"	

### Notes:

- (a) Reuse factory guide plates with 3/8 mounting hole.
- (b) Certain model years require 3/8 thread.
- (c) Certain model years require 5/16 thread.

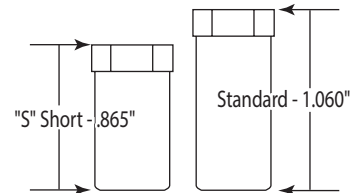


## SURE LOCK ROCKER NUTS

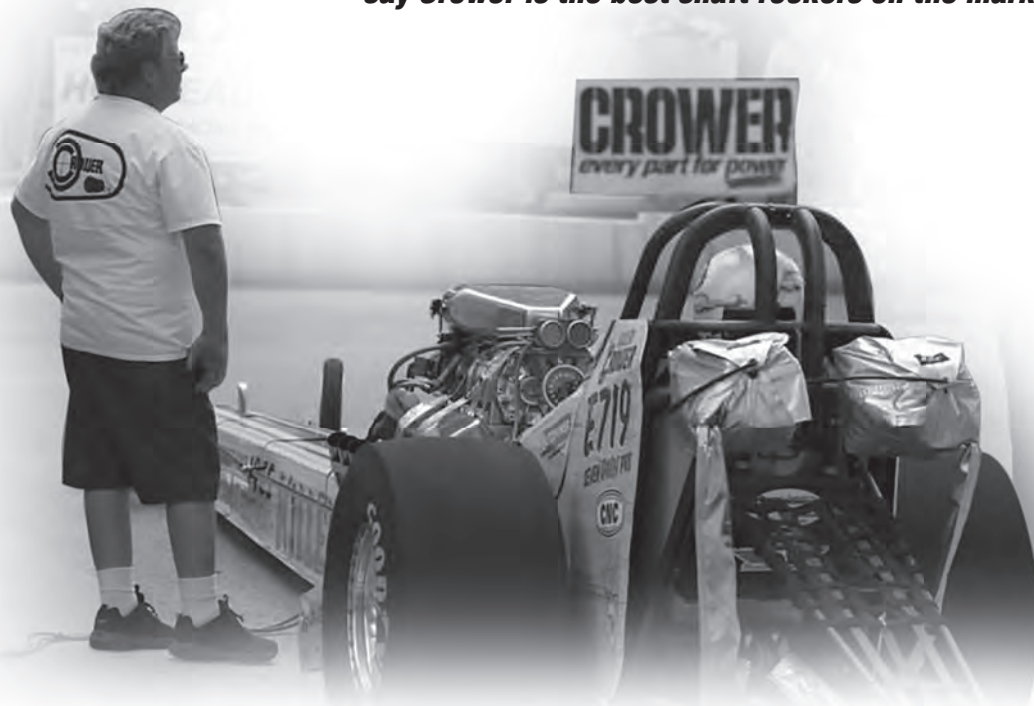
Made from high quality, heat treated chromoly steel, Crower sure lock nuts allow for precise adjustments. Includes nuts, Allen head set screws.

Part#	Stud Dia.	Shank Dia.	Engine
86050-16	7/16	.600"	V8
86050S-16	7/16	.600"	V8
86051-16	3/8	.530"	V8
86051S-16	3/8	.530"	V8
86052-12	3/8	.530"	6 cyl

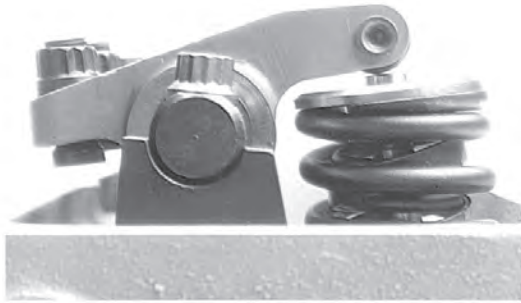
"S" indicates short (.865") design for valve cover clearance. Std = 1.060"



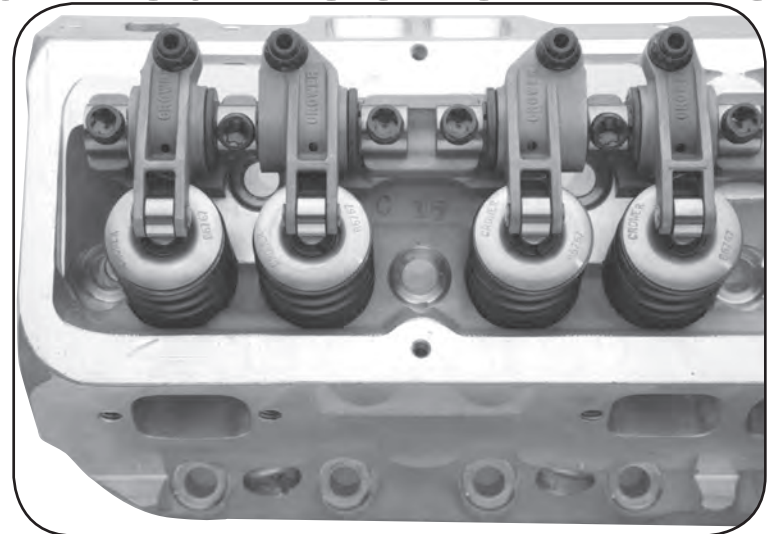
**Gregg Scott Racing Engines and Tommy Keeter of KPE Engines say Crower is the best shaft rockers on the market !**



# Stainless Steel Shaft Mounted Rocker Arms



For those of you that feel most confident running a steel based valve train, we offer you the Crower collection of shaft mounted stainless steel rocker arms. Each and every configuration has been religiously scrutinized to offer extreme rigidity and accuracy while optimizing moment of inertia phenomena condition. Crower engineers made ease of installation and maintenance a top priority so you'll never waste a moment when time is critical at the track. Our stainless steel shaft rocker systems are a perennial favorite of dirt late models and marine endurance competitors. Sustained high temperature has little effect on the strength properties of stainless steel so components made from this material should have a longer life expectancy than similar components made from aluminum.



## Offset Guide

Straight



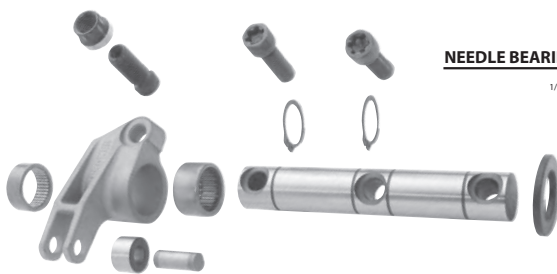
.200"-.250"  
Offset Right



.350"-.550"  
Offset Right

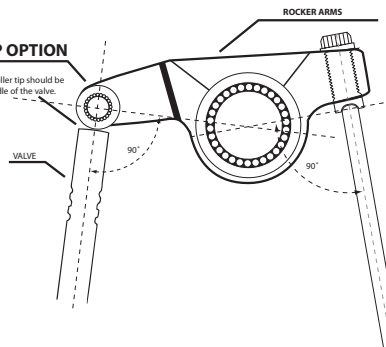


.550" Available on  
arm lengths 1.480"  
and over



### NEEDLE BEARING TIP OPTION

1/2 Valve lift roller tip should be on the middle of the valve.



New for 2015 the EnduraMax  
Bushing option in rocker tips  
#73715BB



## NEEDLE BEARING TIP OPTION

All Crower stud and shaft mount rocker arms are available with Crower's new needle bearing roller tip option. Results are greatly reduced friction for added horsepower and reduced valve guide and valve stem wear. The lighter tip delivers greater valve control for increased rpm and improves valve spring longevity by decreasing heat over traditional non needle designs. **Specify #73715R option for stainless steel (stud or shaft) or #72915R option for aluminum (stud or shaft) when ordering rocker arms.**

### NEEDLE BEARING TIP OPTION

#73715R



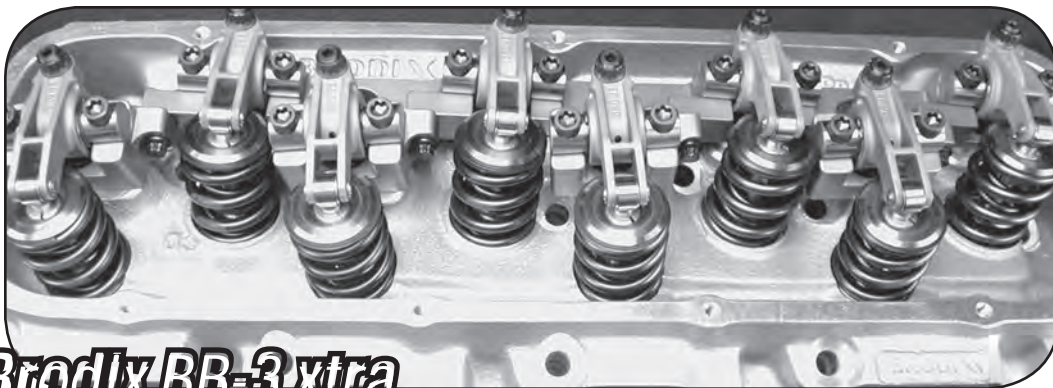
### REGULAR ROLLER TIP



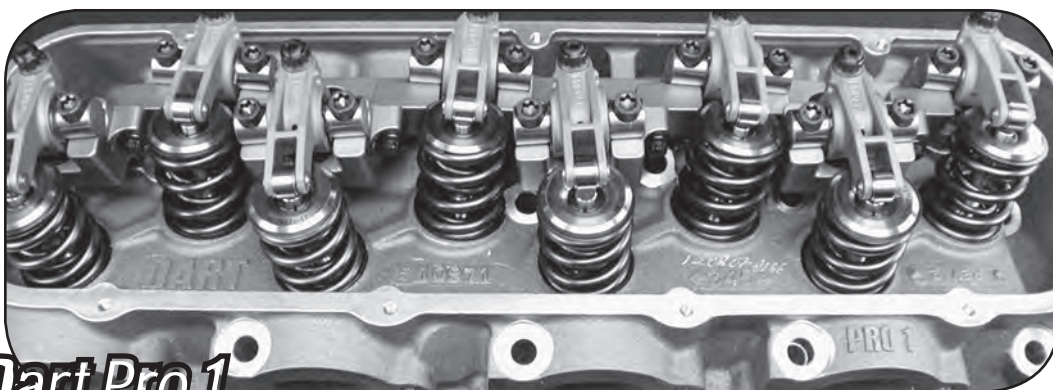




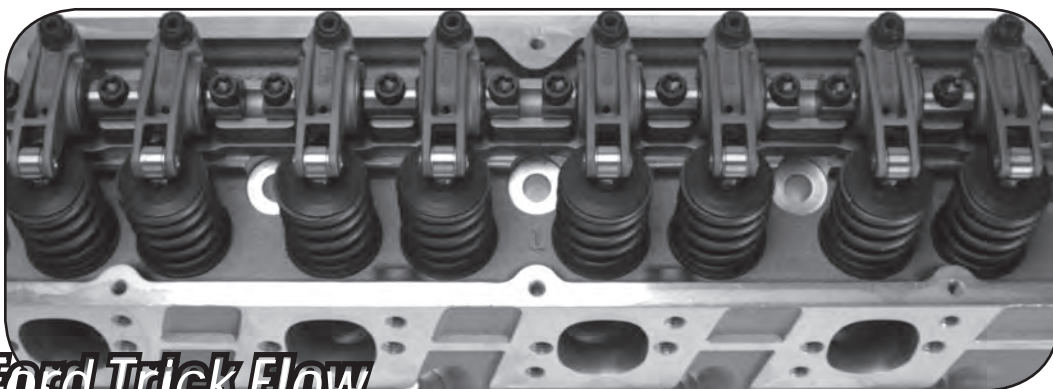
# Stainless Steel Shaft Mounted Rocker Arms



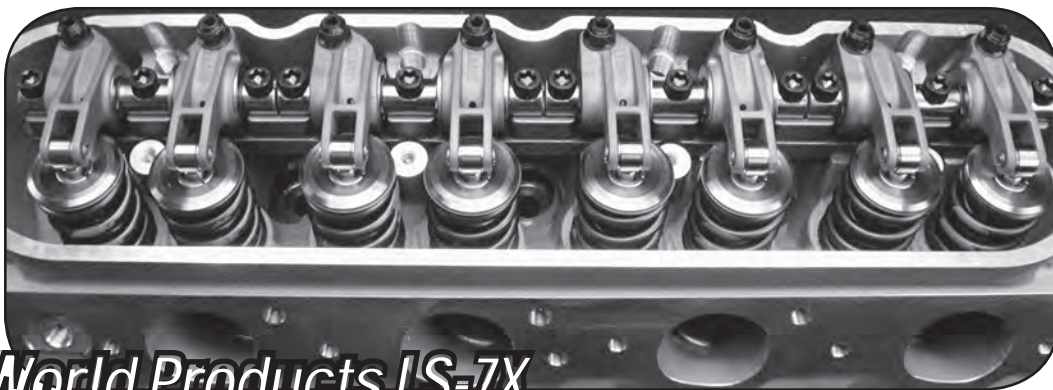
***Brodix BB-3 Xtra***



***Dart Pro 1***



***Ford Trick Flow***



***World Products LS-7X***



Steel Billet Rockers Available  
For All Popular Applications

# Stainless Steel

# Shaft Mounted Rocker Systems

AFR

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74101F	LS1	1.450	.000	.000	108.F	74400X108F
74139F	SBC 180cc thru 220cc w/L-98 bolt pattern Eliminator Street Head	1.450	.250	.100	014F	74400X014F
74132F	SBC 215 RR	1.480	.450	.100	021F	74000X021F
74141F	SBC 227 & 235 Eliminator 60/40	1.450	.350	.100	025FT	74400X025FT
74148F	SBC 245 Eliminator	1.450	.450 w/offset lifter	.100	025FT	74400X025FT
74718F	BBC AFR 345 VERSION 1 , used with smaller diameter pushrods	1.650	.550	.250	012F	7440x012F
74707F*	BBC AFR 325/345/357 VERSION 2	1.650	.100	.000	210F Intake 211F Exhaust	74400X210F 74400X211F
74717F	BBC AFR 377ec 240	1.650	.000	.100	227F Intake 219F Exhaust	74400X227F 74400X219F
74140F	SB Ford #165 - 225 + .100 Valve +.700 Lift	1.450	.100	.000	031F	74400X031F
74140XF	SB Ford #165 - 225 + .100 Valve -.700 Lift	1.450	.100	.000	085F	74400X085F

ALL PRO

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74164F	LS Series LSW 12° Hurricane	1.550	.450	.050	032F	74400X032F
74134F	SBC 23° 40/60	1.480	.450	.175	021F	74400X021F
74135F	SBC 17°	1.650	.450	.175	013F	74400X013F
74143F	SBC 13°	1.650	.550	.150	023F	74400X023F
74168B	SBC 272-21 & 280-22 Billet	1.650	.750	.250	023F	74400X023F

BRODIX

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74226F	Chev Lil Brodie 90° V-6-10	1.550	.300	.175	001F	74400X001F
74164F	LS Series STS BR-7 BS	1.550	.450	.050	032F	74400X032F
74107F	LS Series STS BR-7, Machining req.	1.550	.350	.050	007F	74400X007F
74112F	SBC -8 through -11	1.480	.250	.100	020F	74400X020F
74126F	SBC 10x 11x 40/60 & ASCS	1.480	.250	.100	021F	74400X021F
74127F**	SBC 10x 11x 40/60 & ASCS	1.480	.450	.100	021F	74400X021F
74122F*	SBC -12 RP LA 40/60	1.650	.500	.250	023F	74400X023F
74136F	SBC -12 RP LA 58/107	1.650	.550	.250	023F	74400X023F
74124F*	SBC -12 RP LA 70/125	1.650	.550	.250	023F	74400X023F
74018F	SBC 13° Clements Head	1.650	.550	.250	012F	74400X012F
74018B	SBC 13° Clements Head Billet	1.650	.650	.250	012F	74400X012F
74129F	SBC 18° Clone	1.480	.550	.250	021F	74400X021F
74125F*	SBC 18° Clone LA	1.650	.550	.250	013F	74400X013F
74126F	SBC 18x 40/60	1.480	.250	.100	021F	74400X021F
74188B	SBC 4.500 Bore Spacing 11° Steel Billet	1.650	.650	.170/.270	004F	74400X004F
74182B	SBC 4.500 Bore Spacing 13° Billet	1.650	.600	.250	009F	74400X009F
74159F	SBC Dragon Slayer DS225cc 23°	1.480	.250	.100	052F	74400X052F
74168B	SBC GB-2300 & GB-2000 Billet	1.650	.750	.250	023F	74400X023F
74023F	SBC Headhunter 23° 225-234cc	1.450	.450	.150	021FT	74400X021F
74174F	Spec SP CH SBC Track I,	1.480	.150	.100	014F	74400X014F
74126F	SBC Track 1x 40/60	1.480	.250	.100	021F	74400X021F
74175F	SBC Track 1x STS T1 STD 233, STS T1 245	1.480	.550	.100	021F	74400X021F
74704F*	BBC BB-1, BB-2, BB-2 plus / Race Rite	1.650	.100	.000	204F Intake 208F Exhaust	74400X204F 74400X208F
74702F*	BBC, BB-2X, BB-2extra, BB-3	1.650	.100	.000	202F Intake 205F Exhaust	74400X202F 74400X203F
74703F*	BBC BB-3 XTRA	1.650	.100	.000	206F Intake 207F Exhaust	74400X206F 74400X207F
74706F*	BBC Head Hunter 383	1.650	.100	.000	218F Intake 219F Exhaust	74400X218F 74400X219F
74713F*	BBC Head Hunter 383-395MC	1.650	.100	.050	218F Intake 219F Exhaust	74400X218F 74400X219F
74716B	BBC SR20 Billet	1.850	.000	.000	141F Intake 142F Exhaust	75400X141F 75400X142F
74285F	SBF Track 1 351 Spec	1.480	.000	.000	085F	74400X085F

New for 2015 the EnduraMax  
Bushings option in rocker tips  
#73715BB



Needle Bearing Tip Option  
#73715R



**NOTE:** I.D. numbers are stamped on all mounting base stands. When you are ordering your replacement base stand please reference this I.D. number to ensure you get the correct part.

Most shaft rocker assemblies are available with optional offsets. If you don't find the offset you require, please ask about availability.

Note: Part numbers ending in "B" have steel billet rocker bodies.

\* One piece intake stand, no machine work required.

\* LA = Long Arm \*\*Optional offset

Ratios over 1.8 may require a long arm rocker arm. Arm lengths over 1.650 are available in aluminum or steel billet.



# Stainless Steel Shaft Mounted Rocker Systems

Steel Billet Rockers Available For All Popular Applications

**BMF**

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74178F	SBC 18°	1.650	.500	.250	012F	74400X012F
*74705	BBC BMF 385	1.650	.100	.000	201F Intake 220F Exhaust	74400X201F 74400X220F
*74705	BBC BMF 350	1.650	.100	.000	201F Intake 220F Exhaust	74400X201F 74400X220F

**CANFIELD**

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74111F	SBC 23° 400	1.480	.100	.100	020F	74400X020F
74131F	SBC Small Runner	1.480	.250	.100	020F	74400X020F
74132F	SBC Large Runner	1.480	.450	.100	021F	74400X021F
74144F	SBC 23° 220	1.480	.450	.100	024F	74400X024F
74145F	SBC Model #20450 Windsor	1.480	.100	.100	085F	74400X085F

**DART**

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74103F	SBC Pro 1 227, 23°	1.480	.300	.200	052F	74400x052F
74104F	SBC Pro 1 Platinum 227 + .100 valve CNC ports	1.480	.350	.175	052F	74400X052F
74105F	LS3, L92 & Dart #11030050	1.450	.175	.000	105F	74400X105F
74112F	SBC Pro 1	1.480	.250	.100	020F	74400X020F
74111F	SBC Dart II Sportsman	1.480	.100	.100	020F	74400X020F
74112F**	SBC Dart II Sportsman	1.480	.250	.100	052F	74400X052F
74152F	SBC 230 Iron Eagle	1.450	.350	.100	052F	74400X052F
74113F	SBC Iron Eagle + .300 valve	1.480	.300	.200	027F	74400X027F
74127F	SBC 23° RR 40/60	1.480	.450	.100	021F	74400X021F
74117F*	SBC15°, 16°, 18° Clone LA	1.650	.550	.250	012F	74400X012F
74128F	SBC15°, 16°, 18° Clone	1.480	.550	.250	020F	74400X020F
74102F	SBC 12.5°	1.650	.550	.250	012F	74400X012F
74183B	SBC 4.500 Bore Spacing 9° Billet	1.650	.650	.250	019F	74400X019F
74184B	SBC 4.400 Bore Spacing 9° Billet	1.650	.650	.250	018F	74400X018F
*74701F	BBC Pro 1 310/325/345	1.650	.000	.000	100F Intake 101F Exhaust	74400x100F 74400x101F
*74721F	BBC Pro 1 CNC 335/355 & Pro 2 380	1.650	.100	.075	100F Intake 101F Exhaust	74400x100F 74400x101F
*74708F	BBC Race series 320-360	1.650	.000	.075	104F Intake 101F Exhaust	74400x104F 74400X101F
*74709F	BBC Big M	1.650	.000	.000	100F Intake 212F Exhaust	74400X100F 74400X212F
74710B	BBC Race Series 18° Oval Billet	1.850	.100 .150	.000	196F Intake 197F Exhaust	75400X196F 75400X197F
74156F	SB Ford Pro I CNC 225 4.155 Bore	1.450	.000	.000	085F	74400X085F

\* One piece intake stand, no machine work required.

Note:

The shaft rocker part numbers listed are made to the manufacturers max lift configurations. If your application has modifications, such as longer valves for higher lift, it may require customization to maintain correct geometry. Please specify when ordering.

Most shaft rocker assemblies are available with optional offsets. If you don't find the offset you require, please ask about availability.

\* LA = Long Arm \*\*Optional offset  
Ratios over 1.8 may require a long arm rocker arm. Arm lengths over 1.650 are available in aluminum or steel billet.

NOTE: I.D. numbers are stamped on all mounting base stands. When you are ordering your replacement base stand please reference this I.D. number to ensure you get the correct part.

New for 2015 the EnduraMax  
Bushing option in rocker tips  
#73715BB



Needle Bearing Tip Option  
#73715R



Steel Billet Rockers Available  
For All Popular Applications

# Stainless Steel Shaft Mounted Rocker Systems

## EDELBROCK

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74111F	SBC Performer	1.480	.100	.100	020F	74400X020F
74131F	SBC Victor Jr.	1.480	.250	.100	020F	74400X020F
74128F	SBC Victor 18°	1.480	.550	.250	020F	74400X020F
74117F	SBC Victor 18° LA	1.650	.550	.250	012F	74400X012F
74186F	S.B.C. head 61229	1.480	.550	.200	021FT	74400X021FT
*74704F	BBC RPM Performer	1.650	.100	.100	204F Intake 208F Exhaust	74400X204F 74400X208F
*74724F	BBC Victor 24°	1.650	.000	.100	216F Intake 217F Exhaust	74400X216F 74400X217F
74156F	SB Ford Victor Jr.	1.450	.000	.000	085F	74400X085F
74163F	Pontiac 326-455	1.480	.100	.100	060F	74400X060F
74165F**	Pontiac 326-455	1.480	specify	specify	060F	74400X060F

Needle Bearing Tip Option  
#73715R



ETP

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74106F	LXR - LS-7 4.0 Bore		.350	.000	007F	74400X007
74108F	LS-7 4.100 Bore	1.550	.350	.000	007F	74400X007
74109F	LS-7 4.000 Bore	1.550	.350	.050	007F	74400X007

## GM CASTINGS

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74101F	LS1-LS2-LS6	1.450	.000	.000	108F	74400X108F
74105F	LS3 & L92	1.450	.175	.000	105F	74400X105F
74107F	LS7 Machining Required	1.550	.350	.050	007F	74400X007F
74218F*	V6 18° LA	1.650	.550/.650	.250	006F	74400X006F
74111F	SBC Iron & Bowtie	1.480	.100	.100	020F	74400X020F
74119F	SBC Phase 6 Alum. Bowtie	1.480	.450	.100	020F	74400X020F
74128F	SBC 18°	1.480	.550	.250	020F	74400X020F
74117F*	SBC 18° LA	1.650	.550	.250	012F	74400X012F
74151F*	SBC GM LA (1.8:1 to 2:1)	1.650	.100	.100	012F	74400x012F
*74700F	BBC Iron casting	1.650	.000	.000	204F Intake 207F Exhaust	74400X204F 74400X207F
74122F*	Pontiac/SBC 15° LA	1.650	.475	.100	023F	74400x023F
74126F	Pontiac/SBC 23° 867 40/60	1.480	.250	.100	021F	74400X021F
74127F**	Pontiac/SBC 23° 867 40/60	1.480	.450	.100	021F	74400X021F
74163F	Pontiac BB 326/455	1.480	.100	.100	060F	74400X060F
74166F	Pontiac 18° #10093391	1.480	.550	.100	021F	74400X021F
74169F	Pontiac Kauffman Head	1.450	.200	.100	062F	74400X062F

Most shaft rocker assemblies are available with optional offsets. If you don't find the offset you require, please ask about availability.

\* LA = Long Arm \*\*Optional offset  
Ratios over 1.8 may require a long arm rocker arm. Arm lengths over 1.650 are available in aluminum or steel billet.

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Bushing option in rocker tips  
#73715BB



## KAUFFMAN

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74169F	Pontiac KRE 326-455	1.450	.200	.100	062F	74400X062F

## Mast

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74147F	Fits- 510-224, 510-225, 510-204, 510-207 & 510-209	1.550	.450	.000	007F	74400X007F
74160F	Fits- 510-303, 510-310 & 510-323	1.450	.400	.150	061F	74400X061F
74164F	Fits- 510-224 J, 510-225 J, 510-204 J, 510-207 J & 510-209 J	1.550	.450	.050	.032	74400X032F

NOTE: I.D. numbers are stamped on all mounting base stands. When you are ordering your replacement base stand please reference this I.D. number to ensure you get the correct part.

\* One piece intake stand,  
no machine work required.

Note:

Crower has manufactured its Shaft Rocker Systems to cylinder head manufacturer's specifications and maximum lifts. If you deviate from these specifications such as using longer valves to increase lift, you will need a custom part number made to keep geometry correct.



# Stainless Steel Shaft Mounted Rocker Parts

Steel Billet Rockers Available  
For All Popular Applications

## RHS / PRO TOPLINE / PRO ACTION

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74187F	Chevy LS-7 #54501 Only	1.550	.250	.000	105F	74400X105F
74123F	SBC 23° Iron RR	1.480	.450	.100	020F	74400X020F
74153F	SBC 23° Iron RR LA*	1.650	.450	.100	012F	74400X012F
74118F	SBC 220 Motown 23°	1.480	.250	.100	020F	74400X020F
74174F	SBC Iron Lightning	1.480	.150	.100	014F	74400X014F
74138F	SBC Pro Action 14°	1.650	.550	.250	016F	74400X016F
74149F	SBC Pro Action 235cc	1.450	.350	.150	052F	74400X052F
74149F	SBC Pro Topline 235cc	1.450	.350	.150	052F	74400X052F
74720F*	BBC RHS 380 CNC	1.650	.000	.000	206F Intake 220F Exhaust	74400X206F 74400X220F
74167F	SB Ford Pro Topline 215cc	1.480	.000	.075	067F	74400X067F

## Pro-Comp

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74158F*	SBC Pro-Comp PC-3003	1.480	.150	.075	052F	74400X052F
74715F*	BBC Pro-Comp	1.650	.100	.050	222F Intake 223F Exhaust	74400X222F 74400X223F

## Pro-Filer

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74189B	SBC 13° 219X Billet	1.650	.750	.250	012F	74400X012F
74185F	SBC 23° 176-18 to 176-XC23	1.480	.300	.100	003F	74400X003F
74191F	BBC Sniper 320cc 355-375	1.650	.000	.000	258F Intake 259F Exhaust	74400X258F 74400X259F

## TFS-Trick Flow

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74173F	Gen X 255 LS3	1.450	.350	.000	005F	74400X005F
74150F	LS1-1X	1.450	.100	.000	135F	74400X135F
74101F	LS1-2	1.450	.000	.000	108F	74400X108F
74107F	LS7 Gen X 260	1.550	.350	.050	007F	74400X007F
74154F	SBC -5 18°	1.480	.550	.250	020F	74400X020F
74111F	SBC 23°	1.480	.100	.100	020F	74400X020F
74719F	BBC 280-320-360	1.650	.000	.150	227F Intake 219F Exhaust	74400X227F Int. 74400X219F Exh.
74723F	BBC 365cc	1.650	.000	.000	229F Intake 219F Exhaust	74400X229F Int. 74400X209F Exh.
74275F	SBF Ford High Port Race	1.480	.100	.075	085F	74400X085F

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\* One piece intake stand,  
no machine work required.

## WORLD PRODUCTS

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
74110F	LS-7X Machining Required	1.550	.350	.050	007F	74400X007F
74111F	SBC SR Torquer	1.480	.100	.100	020F	74400X020F
74112F	SBC Sportsman II	1.480	.250	.100	020F	74400X020F
74711F*	BBC Cast Iron Merlin	1.650	.000	.000	204F Intake 207F Exhaust	74400X204F 74400X207F
74712F*	BBC Merlin III	1.650	.000	.000	214F Intake 215F Exhaust	74400X214F 74400X215F

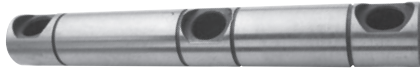
### Note:

Crower has manufactured its Shaft Rocker Systems to cylinder head manufacturer's specifications and maximum lifts. If you deviate from these specifications such as using longer valves to increase lift, you will need a custom part number made to keep geometry correct.



**Steel Billet Rockers**  
For All Popular Applications

# Stainless Steel Shaft Mounted Rocker Systems



## SHAFT REPLACEMENTS

Part#	Description
74501X001	Chevrolet SB Cylinders 1,5,8,4 11/16"
74501X002	Chevrolet SB Cylinders 3,7,6,2 11/16"
74501X003	Chevrolet SB SB2 11/16"
74501X004	Pontiac 11/16"
74501X020	Chevrolet BB 11/16"
74501X001F	Chevrolet SB Cylinders 1,5,8,4 5/8"
74501X002F	Chevrolet SB Cylinders 3,7,6,2 5/8"
74501X008F	Ford 351 5/8"
74501X020F	Chevrolet BB 5/8"
74501X027F	BB Iron casting

## Stainless Steel Shaft Rocker Replacement Bodies

Our replacement bodies are built to the same exacting tolerances as our shaft assemblies for true bolt-on accuracy and repeatability. They include the adjusting components, tip assembly and bearings. They are fully assembled, ready for mounting. Specify engine, head, which cylinder, intake or exhaust, ratio and offset when ordering.

#74510 Shaft Rocker Body 1 only



## SHAFT SPACERS

Hardened steel spacers for proper valve stem-to-rocker tip alignment.

Part#	Description
74526X000	11/16" x 1 1/8" x Custom
74526X015	11/16" x 1 1/8" x .010 thick
74526X045	11/16" x 1 1/8" x .045 thick
74526X055	11/16" x 1 1/8" x .055 thick
74526X065	11/16" x 1 1/8" x .065 thick
74526X075	11/16" x 1 1/8" x .075 thick
74526X085	11/16" x 1 1/8" x .085 thick
74526X100	11/16" x 1 1/8" x .100 thick
74526X125	11/16" x 1 1/8" x .125 thick
74526X145	11/16" x 1 1/8" x .145 thick
74526X190	11/16" x 1 1/8" x .190 thick
74526F250	11/16" x 1 1/8" x .250 thick
74526F018	5/8" x 1 1/8" x .018 thick
74526F020	5/8" x 1 1/8" x .020 thick
74526F030	5/8" x 1 1/8" x .030 thick
74526F060	5/8" x 1 1/8" x .060 thick



## Torx Head Shaft Bolts

Shaft bolt fastens rocker shaft to the mounting base stand. (5/16-24 X 1 1/4 Torx Plus)

#74524-002 1 Only



## Snap Rings

Snap ring for Stainless steel shaft rocker assemblies. 11/16 shaft

#73714 1 only

5/8 shaft

#74529S 1 only



## Stand-to-Cylinder Head Shims

Mounting base stand shimming is often required to achieve optimum rocker arm-to-valve geometry. Available in three thicknesses. Specify head when ordering

Part#	Description
74527X025	.025 Thick 1 only
74527X050	.050 Thick 1 only
74527X100	.100 Thick 1 only
74530X030	Inv. Sft. Rk. 1 only



## Dowel Pin

Dowel pin for locating individual shaft rocker mounting base stands.

Part No. 74531 3/16"  
Part No. 74531S 1/8"



## Assembled Stainless Steel Shaft Rocker Replacements

Our mounted replacement bodies are fully assembled, ready for mounting. They include the adjusting components, tip assembly, bearings, shaft and shaft spacers. Specify which cylinder, ratio and offset when ordering.

#74503 Shaft Rocker - 1 Assembled Pair for 1 pc. stand

#74505 Shaft Rocker - 1 Assembled Rocker for individual stand



## Axle Pin & Wheel Assemblies

Individual parts:

#73715P Axle pin, 1 only

#73715T261 Tip wheel, 1 only



## Lash Adjustment Components

#74522 3/8 lash adjuster screw, 1 only

#74523 Lash adjuster jam nut, 1 only 3/8-24 12pt



## Needle Bearings

Part#	Description
73713	11/16" dia. x 3/8"
74528X002	11/16" dia. x 1/2"
74528X010	5/8" dia. x 7/16"
74528X011	5/8" dia. x 1/2"

## Stand Bolts

Fasteners for securing mounting base stands to cylinder head. Specify length: 3/4", 1", 1 1/4".

Part#	Description
74525X001	MOUNTING BOLT 7/16 X .750 LONG
74525X002	MOUNTING BOLT 7/16 X 1.000 LONG
74525X003	MOUNTING BOLT 7/16 X .875 LONG
74525X004	MOUNTING BOLT 7/16 X 1.250 LONG
74525X005	MOUNTING BOLT (TO HEAD) 3/8 X .750 LONG
74525X006	MOUNTING BOLT (TO HEAD) 3/8 X 1.000 LONG
74525X007	PLATE BOLT FLAT HEAD TORX PLUS 3/8-16 X 1.00
74525X007M	LS STAND BOLT FLAT HEAD TORX 8mm X 1.25



## Accessories

### Adjustable Pushrod Gauge

Allows you to quickly determine the precise pushrod length requirement. A must have tool for achieving optimum valve train geometry.

Part#	Description
70480	5.500" to 6.500"
70481	6.500" to 7.500"
70482	7.500" to 8.500"
70483	8.500" to 9.500"
70485	includes one of each length



### Torx Drive Insert

Fits our shaft bolts.  
#74307

### Testing/Checking Spring

Set of 2  
87601-SPR



### Shaft Height Gauge kit

Clever tool makes quick work of setting optimum stand and shaft rocker height.

#74300X004 11/16" Gauge

#74300X625 5/8" Gauge

#74301F2 5/8" Shaft

#74301 11/16" Shaft



### E-Z Wrench

A must have for quick rocker adjustment.

7/16 12 point wrench with 1/8 hex. Also available with 5/32 hex.

#74305-1/8"

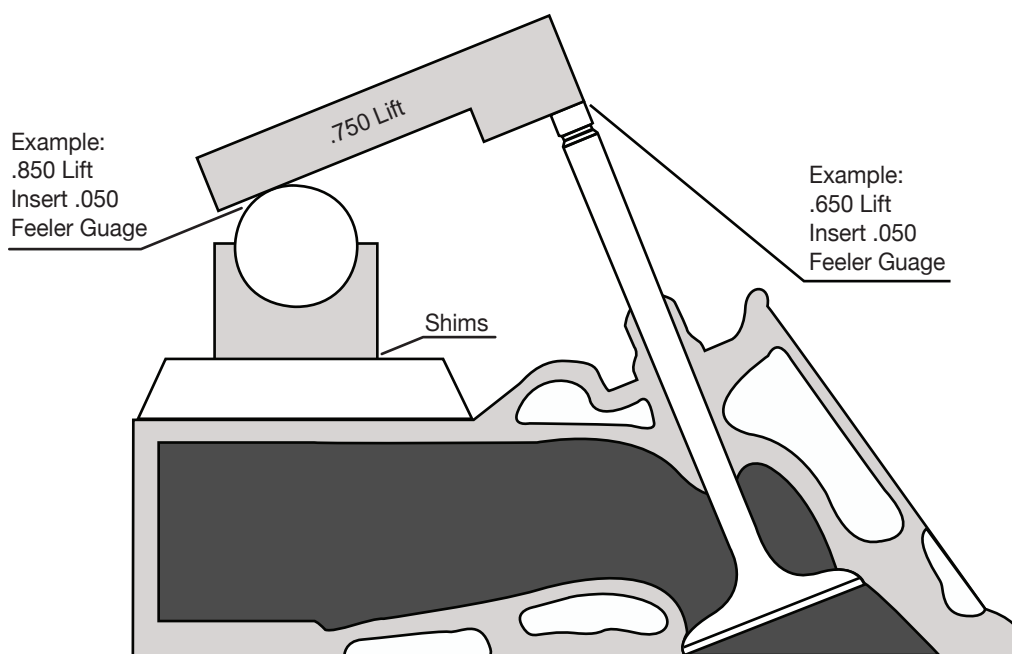
#74305N-5/32"



# Installation Instructions

## Guage Instructions & Torque Specs

While securing valve seat, place guage on valve shown. Raise or lower rocker stand until guages makes contact with setup shaft supplied.



<b>Shaft Bolt Torque Specs:</b>	
5/16 - 24	25 ft lbs. with oil
	28 ft lbs.
<b>Stand Bolts:</b>	
7/16 - 20	55 ft lbs. with thread inserts.
	Without inserts use head manufacturer torque specs. Use thread sealant.
1/4 - 20	5 - 10 ft lbs.
3/8 - 16	35 ft lbs.
<b>Bracket to Head:</b>	
8 mm	25 ft lbs. with oil
	28 ft lbs.

Note: The shaft height guage supplied with this assembly is manufactured for 0.750" of valve lift. For lifts less than 0.750", the shaft height should be raised by half the difference. For lifts greater than 0.750" lift, the shaft height should be lowered by half the difference. See Example

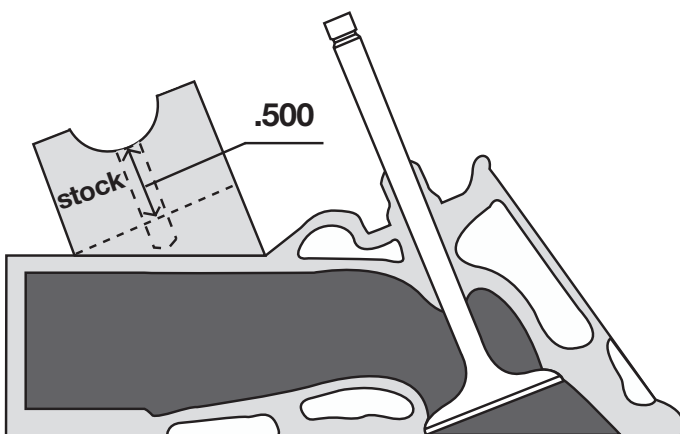
# Installation Instructions

## LS-7 STOCK GM ALUMINUM HEAD / BRODIX STS BR-7

Machine work required for stainless steel shaft mounted rocker system.

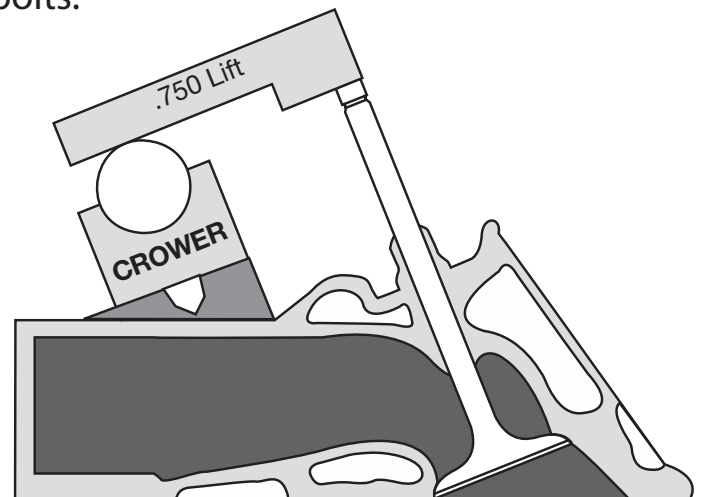
You must machine down original GM rocker pedestal at 7° degree angle same as hold down bolt, cut pad area only (do not cut across the intake port), machine pedestal down .500 from bottom of radius in stock pedestal as shown in Fig.1. Using gage provided check rocker stand height as shown in Fig. 2.

Note: This number .500 was determined using stock length valves and .750 lift. If you use different length valves and different lift you must adjust accordingly. Now drill and tap 8mm x 1.25, hold down bolts as deep as possible. Use caution not to drill into intake port If you do use thread sealant on bolts.



**MACHINE WORK REQUIRED.**

Figure. 1



**MACHINE WORK REQUIRED.**

Figure. 2

Shaft Bolt Torque Specs:	
5/16 - 24	25 ft lbs. with oil 28 ft lbs.
Stand Bolts:	
8 mm	25 ft lbs. thread sealant 28 ft lbs.

While securing valve seat, place gage on valve as shown.

Raise or lower rocker stand until gage makes contact with setup shaft supplied.

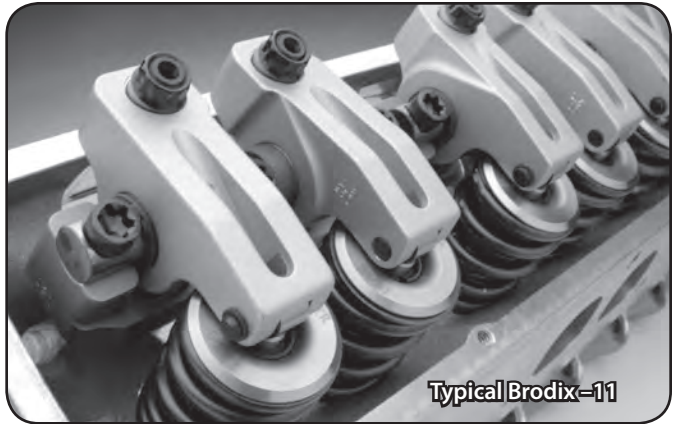
Note: The shaft height gage supplied with this assembly is manufactured for 0.750" of valve lift. For lifts less than 0.750", the shaft height should be raised by half the difference. For lifts greater than 0.750" lift, the shaft height should be lowered by half the difference. See Example on pg 158

# Aluminum Shaft Mounted Rocker Arms

Each of our Aluminum Shaft Rocker configurations is impeccably designed and produced to maximize valve train rigidity and accuracy while offering a minimal amount of reciprocating mass.

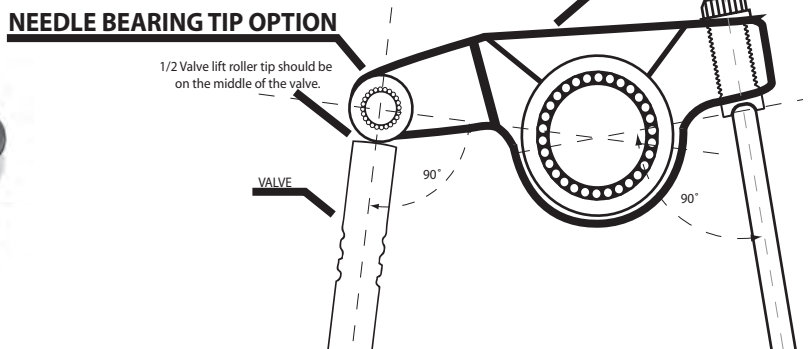
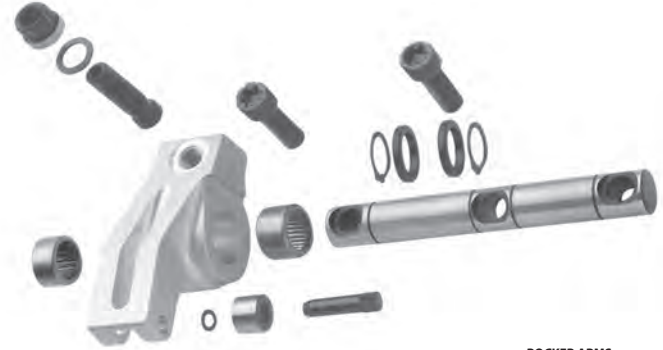
We have utilized the longest arm lengths practical for each application. The results are minimal rocker tip travel and associated frictional losses as well as the capability to accommodate large diameter valve springs with ease.

Speaking of ease, these set-ups allow for the quickest at-the-track valve train modifications around. Any task that requires rocker removal can be performed without concern for absolute accuracy and repeatability upon reassembly.



**NEEDLE BEARING TIP OPTION**

All Crower stud and shaft mount rocker arms are available with Crower's new needle bearing roller tip option. Results are greatly reduced friction for added horsepower and reduced valve guide and valve stem wear. The lighter tip delivers greater valve control for increased rpm and improves valve spring longevity by decreasing heat over traditional non needle designs. **Specify #72915R option for aluminum (stud or shaft) when ordering rocker arms.**



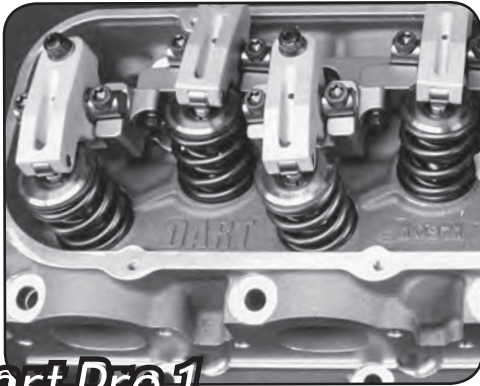
## Offset Guide

- Straight
- .100" Offset Right
- .150"-.175" Offset Right
- .250" Offset Right
- .350"-.650" Offset Right





# Aluminum Shaft Mounted Rocker Arms



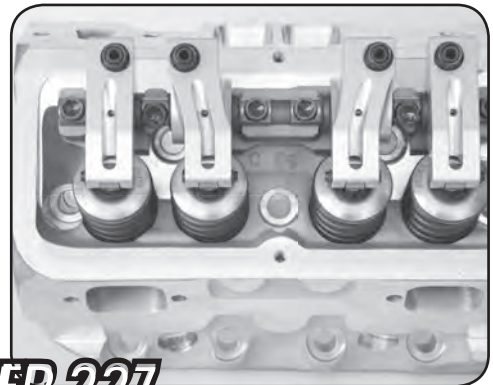
***Dart Pro 1***



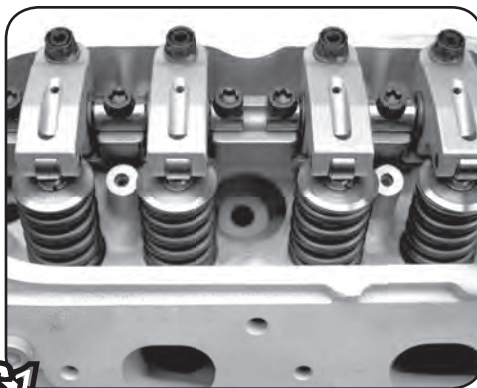
***Brodix BB-3 xtra***



***Ford Motorsports A-460***



***AFR 227***



***LS1***

**Note:**

Crower has manufactured its Shaft Rocker Systems to cylinder head manufacturer's specifications and maximum lifts. If you deviate from these specifications such as using longer valves to increase lift, you will need a custom part number made to keep geometry correct.

# Aluminum Shaft Mounted Rocker Systems

AFR

New for 2015 the EnduraMax  
Bushings option in rocker tips  
#73715BB



Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75101	LS1	1.450	.100	.075	108	75101X108
75130	SBC 227 Old Style	1.520	.450	.100	125	75400X125
75131	SBC 180/210 Old Style	1.520	.250	.100	110	75400X110
75132	SBC 215 RR	1.520	.450	.100	125	75400X125
75132	SBC 180/220 Old Style	1.520	.450	.100	125	75400X125
75139	SBC 180cc thru 220cc w/L-98 bolt pattern Eliminator Street Head	1.450	.250	.100	102	75400X102
75140	SB Ford 165cc - 225cc	1.520	.000	.000	008	75400X008

ALL PRO

Needle Bearing Tip Option  
#72915R



Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75134	23° 40/60	1.520	.450	.100	121	75400X121
75135	17°	1.620	.450	.175	113	75400X113
75168	13° 272/280 Ultra Series	1.650	.750	.250	123	75400X123

BRODIX

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75116	SBC Track I	1.450	.150	.100	114	75400X114
75116	SBC Irwindale Spec	1.450	.150	.100	114	75400X114
75126	SBC Track 1 x 40/60	1.520	.250	.100	121	75400X121
75112	SBC -8 through -11	1.450	.250	.100	114	75400X114
75112L	SBC -8 through -11 Ratio over 1.75	1.520	.250	.100	114	75400X114
75126	SBC 10x 11x 40/60 & ASCS	1.520	.250	.100	121	75400X121
75127**	SBC 10x 11x 40/60 & ASCS	1.520	.450	.100	121	75400X121
75121	SBC BD1010	1.650	.700	.000	157	75400X157
75122*	SBC -12 & LA	1.650	.500	.100	123	75400X123
75136	SBC 12X12	1.650	.550	.100	123	75400X123
75124*	SBC 12X12RP LA	1.650	.550	.100	123	75400X123
75137**	SBC 12X12RP XLA	1.750	.650	.100	119	75400X119
75129	SBC 18° Clone	1.520	.550	.250	121	75400X121
75125*	SBC 18° Clone LA	1.650	.550	.250	113	75400X113
75126	SBC 18x 40/60	1.520	.250	.100	121	75400X121
75142	SBC GB-2200 13.5°	1.650	.650	.150	123	75400X123
75168	SBC GB-2300 & GB-2000	1.650	.750	.250	123	75400X123
75000	BBC Special Order	.000	.000	.000	000	000
75716F	BBC SR-20	1.850	.000	.000	141F Int. 142F Exh.	75400X141F 75400X142F
75012	BBC Big Duke 18° PB1800 & PB1802 (individual stand)	Int. 1.650 Exh. 1.850	.600/1.300	.000	381IW Int. 381I Int. 381E Exh.	75400X381IW 75400X381I 75400X381E +.100
75015	BBC Big Duke PB1803 18° (individual stand)	Int. 1.650 Exh. 1.850	1.150/.600	.000	382IW Int. 382I Int. 382E Exh.	75400X381IW 75400X381I 75400X381E +.100
75016	BBC Big Duke 18° (KC 1600) (individual stand)	1.850	1.300/.600	.000	382IW Int. 382I Int. 382E Exh.	75400X382IW 75400X382I 75400X382E

\* One piece intake stand, no machine work required.

Most shaft rocker assemblies are available with optional offsets. If you don't find the offset you require, please ask about availability.

\*LA = Long Arm \*\*Optional offset

Ratios over 1.8 may require a long arm rocker arm.

Arm lengths over 1.650 are available in aluminum only.

# Aluminum Shaft Mounted Rocker Systems

## CANFIELD

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75111	23° 400 SBC	1.450	.100	.100	114	75400X114
75131	Small Runner SBC	1.520	.250	.100	110	75400X110
75132	Large Runner SBC	1.520	.450	.100	125	75400X125
75144	23° 220 SBC	1.480	.450	.100	124	75400X124

New for 2015 the EnduraMax  
Bushing option in rocker tips  
#73715BB



Needle Bearing Tip Option  
#72915R



## DART

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75103	S.B. Chev. Pro 1 227 23°	1.480	.300	.200	326	75400X114
75181	SBC Platinum Series	1.450	.250	.100	120	74500X120
75112**	SBC Pro 1	1.450	.250	.100	114	75400X114
75112L	SBC Pro 1 Ratio over 1.75	1.520	.250	.100	114	75400X114
75111	SBC Dart II Sportsman	1.450	.100	.100	114	75400X114
75112**	SBC Dart II Sportsman	1.450	.250	.100	114	75400X114
75112L	SBC Dart II Sportsman Ratio over 1.75	1.520	.250	.100	114	75400X114
75111	SBC 230 Iron Eagle	1.450	.100	.100	114	75400X114
75112**	SBC 230 Iron Eagle	1.450	.250	.100	114	75400X114
75112L	SBC 230 Iron Eagle Ratio over 1.75	1.520	.250	.100	114	75400X114
75127	SBC 23° RR 40/60	1.520	.450	.100	121	75400X121
75128	SBC 18° Clone	1.520	.550	.250	120	75400X120
75117*	SBC 18° Clone LA	1.650	.550	.250	111	75400X111
75007	BBC Big Chief/14° Early Style (individual stand)	1.650	1.300/.600	.000	3815e Exh. 3815i Int. 3815iw Int.	75400X3815e 75400x3815i 75400x3815iw
75001	BBC Big Chief/18° (individual stand)	1.650	1.300/.600	.000	381e Exh. 381i Int. 381iw Int.	75400X381e 75400x381i 75400x381iw
*75710F	BBC Race Series 18° oval	1.850	.150/.100	.000	196F Int. 197F Exh.	75400X196 75400x197

## DODGE

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75170	Viper (2002-prior) Gen 1 & 2	1.450	.150	.150	190	75400X190
75171	Viper (2003-up) Gen 3	1.450	.100	.000	191	75400X191
75172	Viper (2003-up) JM-Striker	1.450	.350	.000	195	75400X195
90720-2	Billet aluminum spacer kit					

\* One piece intake stand,  
no machine work required.

Most shaft rocker assemblies are available with optional offsets. If you don't find the offset you require, please ask about availability.

\*LA = Long Arm \*\*Optional offset  
Ratios over 1.8 may require a long arm rocker arm. Arm lengths over 1.650 are available in aluminum only.

Note:

Crower has manufactured its Shaft Rocker Systems to cylinder head manufacturer's specifications and maximum lifts. If you deviate from these specifications such as using longer valves to increase lift, you will need a custom part number made to keep geometry correct.

# Aluminum Shaft Mounted Rocker Systems

EDELBROCK

New for 2015 the EnduraMax  
Bushing option in rocker tips  
#73715BB



Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75131	SBC Victor Jr	1.520	.250	.100	110	75400X110
75111	SBC Performer	1.450	.100	.100	114	74500X114
75128	SBC Victor 18°	1.520	.550	.250	120	75400X120
75118*	SBC Victor 18° LA	1.650	.550	.250	111	75400X111
75155	SBC Victor 23° High Port	1.520	.450	.250	121	75400X121
75283	302/351 Ford Victor Jr. SBF	1.450	.000	.000	156	75400X156
75282	Ford V-351 Edelbrock SBF	1.520	.500	.000	152	75400X152
75163	Pontiac BB 326-455	1.520	.100	.100	160	75400X160
75165**	Pontiac BB 326-455	1.520	specify	specify	160	75400X160

## FORD & SVO

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75283	SB Ford 302/351 Stock Production	1.475	.000	.000	150	75400X150
75284	Z-304 SB Ford	1.575	.220	.000	158	75400X158
75280	Ford 351-N (SVO) SB Ford	1.475	.150	.150	150	75400X150
75287	351 Ford Irwindale Spec	1.475	.000	.000	150	75400X150
75087	C460 1pc. stand BB Ford	1.650 Int. 1.750 Exh.	1.000	.000	155	75400X155
75788	BB Eliminator by IDT	1.600	.000	.000	188T Int. 189T Exh.	75400X188T 75400X189T
75789	A-460 Ford Motorsports BB Ford (individual stand)	1.600	.000	.000	188 Int. 189 Exh.	75400X188 75400X189

Needle Bearing Tip Option  
#72915R



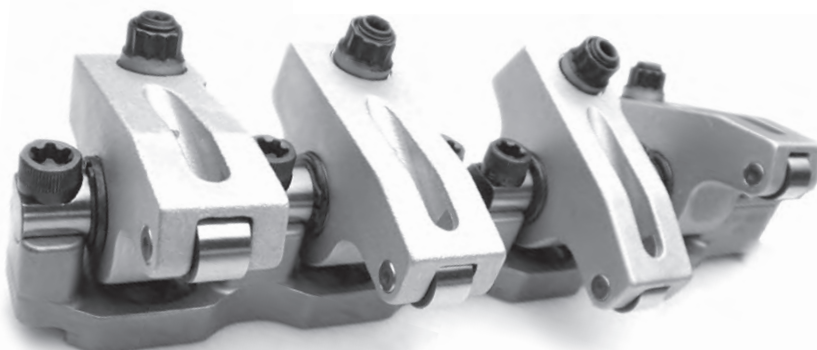
### Note:

Crower has manufactured its Shaft Rocker Systems to cylinder head manufacturer's specifications and maximum lifts. If you deviate from these specifications such as using longer valves to increase lift, you will need a custom part number made to keep geometry correct.

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75218	V6 18° LA	1.650	.550/.650	.250	106	75400X106
75101	LS1/LS2/LS6 - Gen III	1.450	.000	.000	108	74500X108
75111	SBC Iron & Bowtie	1.450	.100	.100	114	75400X114
75116	SBC Iron & Bowtie	1.450	.150	.100	114	75400X114
75119	SBC Phase 6 Alum. Bowtie	1.520	.250	.100	110	75400X110
75128	SBC 18°	1.520	.550	.250	120	75400X120
75117*	SBC 18° LA	1.650	.550	.250	111	75400X111
75120	SBC 2-2 Head & Block	specify	specify	specify	131	75400X131
75122	Pontiac/SBC 15° LA	1.650	.500	.100	123	75400X123
75162	Pontiac/SBC 40/60	-	-	-	110	75400X110
75126	Pontiac/SBC 23° 867 40/60	1.520	.250	.100	120	75400X120
75127**	Pontiac/SBC 23° 867 40/60	1.520	.450	.100	120	75400X120
75163	Pontiac BB 326/455	1.520	.100	.100	160	75400X160

## GM CASTINGS

\* One piece intake stand, no machine work required.



Most shaft rocker assemblies are available with optional offsets. If you don't find the offset you require, please ask about availability.

\*LA = Long Arm \*\*Optional offset

Ratios over 1.8 may require a long arm rocker arm.

Arm lengths over 1.650 are available in aluminum only.



# Aluminum Shaft Mounted Rocker Systems

## IDT

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75788	BBF Eliminator	1.600	.000	.000	188t Int. 189t Exh.	75400X188t 75400X189t

New for 2015 the EnduraMax  
Bushing option in rocker tips  
#73715BB



## RHS / PRO TOPLINE / PRO ACTION

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75116	SBC Iron Lightning & 23°	1.450	.150	.100	114	75400X114
75123	SBC 23° Iron RR	1.520	.450	.100	110	75400X110
75153*	SBC 23° Iron RR LA	1.650	.450	.100	111	75400X111
75138	SBC 14°	1.650	.550	.250	116	75400X116
75113	SBC 220 Motown Hard Core	-	-	-	125	75400X125
75118	SBC Pro Action 220 Motown 23°	1.520	.550	.250	120	75400X120

## TFS

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75154	SBC -5 18°	1.520	.550	.250	110	75400X110
75112	SBC 23°	1.450	.250	.100	114	75400X114
75750	BBF A-460	1.650	.075	.000	320 Int. 320 Exh.	75400X320i 75400X320e

Needle Bearing Tip Option  
#72915R



### \* One piece intake stand, no machine work required.

Most shaft rocker assemblies are available with optional offsets. If you don't find the offset you require, please ask about availability.

\*LA = Long Arm \*\*Optional offset

Ratios over 1.8 may require a long arm rocker arm. Arm lengths over 1.650 are available in aluminum or steel billet.

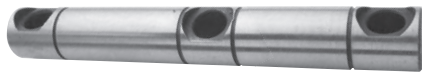
## WORLD PRODUCTS

Part#	Description	Arm Length	Intake Offset	Exhaust Offset	Stand I.D. #	Stand Part #
75111	SBC SR TorqueT	1.450	.100	.100	114	75400X114
75112	SBC Sportsman II	1.450	.250	.100	114	75400X114
75157	SB Ford Manowar 285cc 10° 02315	1.575	.350	.100	103	75400X103

### Note:

Crower has manufactured its Shaft Rocker Systems to cylinder head manufacturer's specifications and maximum lifts. If you deviate from these specifications such as using longer valves to increase lift, you will need a custom part number made to keep geometry correct.

# Aluminum Shaft Mounted Rocker Parts



## Shaft Replacements

Part#	Description
75501X001	Chevrolet SB Cylinders 1,5,8,4
75501X002	Chevrolet SB Cylinders 3,7,6,2
75501X003	Chevrolet SB SB2 1.6 Bolt Centers
75501X004	Pontiac
75501X005	Ford 351N
75501X006	Ford 302 & Windsor
75501X007	Ford Victor 351
75501X020	Chevrolet BB, Ford 460, Olds & Big Duke Exh.
75501X021	Olds 14"/ Big Duke .6 intake offset
75501X022	Olds 14"/ Big Duke 1.3 intake offset
75501X027	LS1

## Aluminum Shaft Rocker Replacement Bodies



Our replacement bodies are built to the same exacting tolerances as our shaft assemblies for true bolt-on accuracy and repeatability. They include the adjusting components, tip assembly and bearings. They are fully assembled, ready for mounting. Specify engine, head, which cylinder, intake or exhaust, ratio and offset when ordering.

### #75510 Shaft Rocker Body 1 only



## Snap Rings

#72914 Snap ring for aluminum shaft rocker assemblies.



## Axle Pin & Wheel Assemblies

**Individual parts:**  
 #75520C Rotor Clip, 1 only  
 #72915P Axle pin, 1 only  
 #72915T Tip wheel, 1 only



## Lash Adjustment Components

#75522 Lash adjuster screw, 1 only  
 #74523 Lash adjuster jam nut, 1 only  
 #75523W Jam nut washer, 1 only



**Torx Head Shaft Bolts**  
 Shaft bolt fastens rocker shaft to the mounting base stand. (5/16-24 X 1" 12 Pt)  
**#74524-001 1 Only**



## Needle Bearings

#75528X001 9/16" dia. x 3/8"  
 #75528X002 9/16" dia. x 1/2"



## Stand Bolts

Fasteners for securing mounting base stands to cylinder head. Specify length: 3/4", 1", 1 1/4".

Part#	Dia.	Length
74525X001	7/16"	.7500"
74525X002	7/16"	1.0000"
74525X004	7/16"	1.2500"
74525X005	3/8"	.7500"
74525X006	3/8"	1.000"
74525X003	7/16"	.8750"
72525X007M	8mm Bolt	LS



## Stand-to-Cylinder Head Shims

Mounting base stand shimming is often required to achieve optimum rocker arm-to-valve geometry. Available in three thicknesses. Specify head when ordering.

Part#	Description
<b>Chevrolet</b>	
74527X025	SBC .025 Thick 1 only
74527X050	SBC .050 Thick 1 only
74527X100	SBC .100 Thick 1 only
74530X045	.045 BBC 1 pc Stand Inv. Sft. Rk. 1 only
<b>Ford &amp; Pontiac</b>	
74521X024	.024 Thick 1 only
74521X050	.050 Thick 1 only
74521X100	.100 Thick 1 only

## Shaft Spacers for Aluminum Shaft Rockers

Part#	Description
75526X000	9/16 x 3/4 x Custom
75526X030	9/16 x 3/4 x .030 thick
75526X050	9/16 x 3/4 x .050 thick
75526X060	9/16 x 3/4 x .060 thick
75526X085	9/16 x 3/4 x .085 thick
75526X100	9/16 x 3/4 x .100 thick
75526X105	9/16 x 3/4 x .105 thick
75526X290	9/16 x 3/4 x .290 thick
75526X395	9/16 x 3/4 x .395 thick

## Assembled Aluminum Shaft Rocker Replacements

Our assembled replacement bodies are fully complete, ready for mounting. They include the adjusting components, tip assembly, bearings, shaft and shaft spacers. Specify which cylinder, ratio and offset when ordering.

#75503 Shaft Rocker - 1 Assembled Pair for 1 pc. stand  
 #75505 Shaft Rocker - 1 Assembled Rocker for individual stand

## Adjustable Pushrod Gauge

Allows you to quickly determine the precise pushrod length requirement. A must have tool for achieving optimum valve train geometry.

Part#	Description
70480	5.500" to 6.500"
70481	6.500" to 7.500"
70482	7.500" to 8.500"
70483	8.500" to 9.500"
70485	includes one of each length



## Dowel Pin

Dowel pin for locating individual shaft rocker mounting base stands.

Part No. 74531 3/16"  
 Part No. 74531S 1/8"

## Accessories

### E-Z Wrench

A must have for quick rocker adjustment. 7/16 12 point wrench with 1/8 hex. Also available with 5/32 hex.

#74305 - 1/8"  
 #74305N - 5/32"



### Torx Drive INSERT

Fits our shaft bolts. 3/8" drive  
**#74307**



### Mounting Kit

Kit for individual mounting base stand shaft rocker systems.

#74308 Includes: #74309 Includes:  
 1-jig 1-jig  
 1-3/16" drill 1-1/8" drill  
 1-Drill stop 1-Drill stop  
 1-Hold down bolt 1-Hold down bolt  
 32 #74530 shims 32 #74530 shims  
 32 #74531 dowel pins 32 #74531S dowel pins

## Shaft Height Gauge kit

Clever tool makes quick work of setting optimum stand and shaft rocker height.  
**#75300X004** Gauge  
**#75301** Shaft



## Testing/Checking Spring

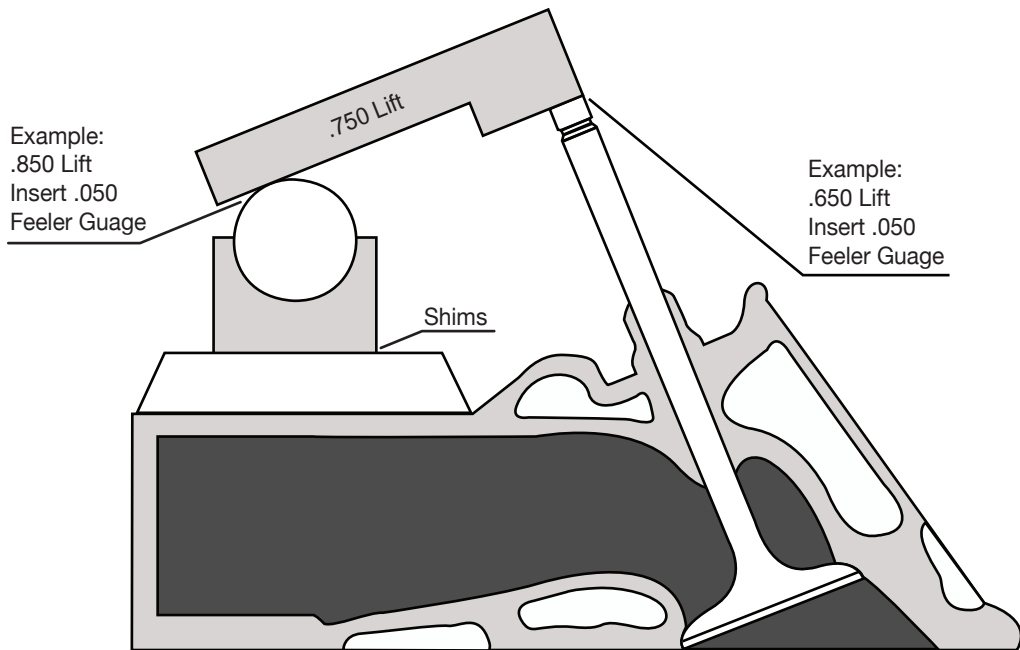
Set Of 2  
**87601-SPR**



# Installation Instructions

## Guage Instructions & Torque Specs

While securing valve seat, place guage on valve shown. Raise or lower rocker stand until guages makes contact with setup shaft supplied.



<b>Shaft Bolt Torque Specs:</b>	
5/16 - 24	25 ft lbs. with oil
	28 ft lbs.
<b>Stand Bolts:</b>	
7/16 - 20	55 ft lbs. with thread inserts.
	Without inserts use head manufacturer torque specs. Use thread sealant.
1/4 - 20	5 - 10 ft lbs.
3/8 - 16	35 ft lbs.
<b>Bracket to Head:</b>	
8 mm	25 ft lbs. with oil
	28 ft lbs.

Note: The shaft height guage supplied with this assembly is manufactured for 0.750" of valve lift. For lifts less than 0.750", the shaft height should be raised by half the difference. For lifts greater than 0.750" lift, the shaft height should be lowered by half the difference. See Example

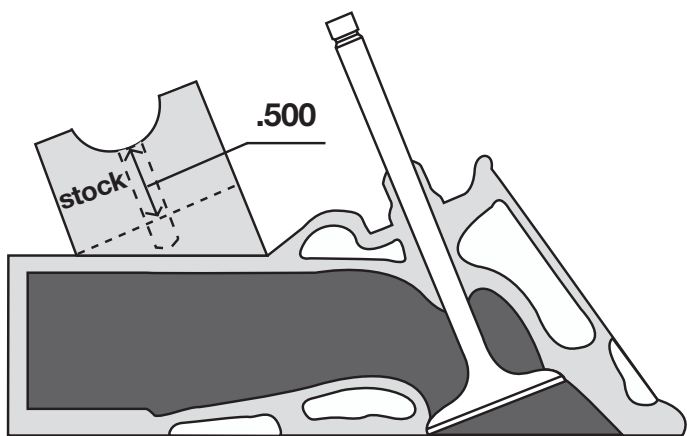
# Installation Instructions

## LS-7 STOCK GM ALUMINUM HEAD / BRODIX STS BR-7

Machine work required for stainless steel shaft mounted rocker system.

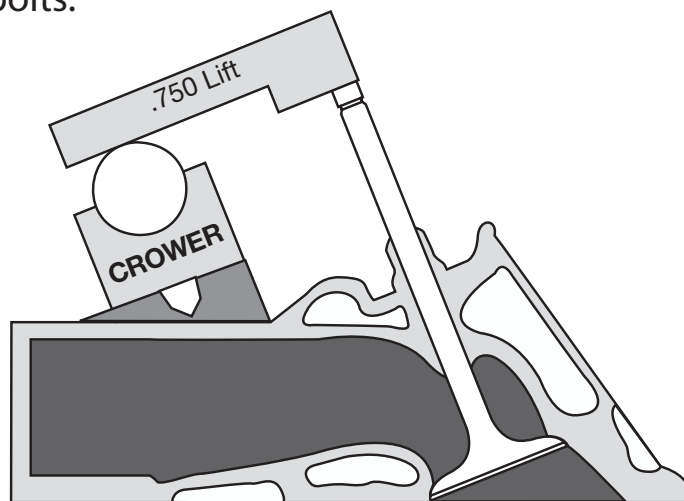
You must machine down original GM rocker pedestal at 7° degree angle same as hold down bolt, cut pad area only (do not cut across the intake port), machine pedestal down .500 from bottom of radius in stock pedestal as shown in Fig.1. Using gage provided check rocker stand height as shown in Fig. 2.

Note: This number .500 was determined using stock length valves and .750 lift. If you use different length valves and different lift you must adjust accordingly. Now drill and tap 8mm x 1.25, hold down bolts as deep as possible. Use caution not to drill into intake port If you do use thread sealant on bolts.



**MACHINE WORK REQUIRED.**

Figure. 1



**MACHINE WORK REQUIRED.**

Figure. 2

### Shaft Bolt Torque Specs:

5/16 - 24	25 ft lbs. with oil
	28 ft lbs.

### Stand Bolts:

8 mm	25 ft lbs. thread sealant
	28 ft lbs.

While securing valve seat, place gage on valve as shown.

Raise or lower rocker stand until gage makes contact with setup shaft supplied.

Note: The shaft height gage supplied with this assembly is manufactured for 0.750" of valve lift. For lifts less than 0.750", the shaft height should be raised by half the difference. For lifts greater than 0.750" lift, the shaft height should be lowered by half the difference. See Example on pg 167



# Valve Springs: What you should know about them

Valve springs are a most important part of you valve train operation. Valve springs are responsible for properly controlling and seating the valves at varying RPM's and operation conditions. Proper installation of the recommended Crower valve springs is critical to achieving optimum performance and trouble free operation.

## STOCK SPRINGS

In most cases stock valve springs do a good job for stock camshafts. When changing to a high lift Crower performance camshaft, stock springs physically won't travel the distance your Crower high lift camshaft requires. The spring coils stack solid and the destructive condition called COIL BIND exists. Because the spring acts like a solid piece of metal in this condition, broken rocker arms, bent push rods, and worn lifters and camshaft can result.

Crower performance camshafts also deliver increased RPM capability. As RPM's increase, more valve spring pressure is required to control the reciprocating valve train mass as it opens and closes the valves (as RPM increase, valve train increase, similar to trying to hold onto a merry-go-round as it turns faster.) As stock springs reach their performance threshold, the condition called valve float occurs. The valve springs can no longer exert enough pressure to keep the lifters in contact with the camshaft lobes, and an out-of-control situation results. Valves begin bouncing off the valve seats, lifters slap precision cam lobes with devastating impacts, and pistons slam into valves that should be seated, etc. Massive and costly damage can result.

## HIGH PERFORMANCE VALVE SPRINGS

Crower valve springs in many cases resemble stock spring but have subtle changes in material, wire diameter, outside diameter, inside diameter, and coil count. Our engineers have taken extreme care to properly match spring travel and pressure to accommodate your camshaft action and lift. In order to avoid coil bind, valve float and extreme damage to your valve train, always install the recommended Crower engineered valve spring kit with your new Crower performance camshaft.

## A SIMPLE CHECK

At full valve lift, your valve springs should have, at the very least, .050" of clearance between the coil. The outer spring, inner spring, and damper spring should all be checked for proper clearance. This is simply accomplished by slipping .050" feeler gauge between the coils with the valve fully open.

## ACHIEVING CORRECT INSTALLED HEIGHT

Each set of Crower valve springs comes with an installation card that specifies the correct installed height for your springs. Installed height is the distance from the spring seat on the cylinder head to the outside spring land on the bottom of the valve spring retainer (this is the space the valve spring occupies). Achieving the recommended installed height is imperative if the springs are to exert the pressures they were designed to deliver and properly control the valves.

If the springs install too high, Crower has shims available to close the space up. Or you can install one of Crower's negative offset (domed) spring retainer sets that produce the same results. (pic. 2)

If the springs install too short, you can:

- a. Machine the cylinder head spring seat deeper (.050" to .075" max) with the appropriate Crower spring seat cutter.
- or... b. Install a set of Crower positive offset spring retainer set.
- or... c. Install a new set of .100" longer stemmed valves to correct the problem.

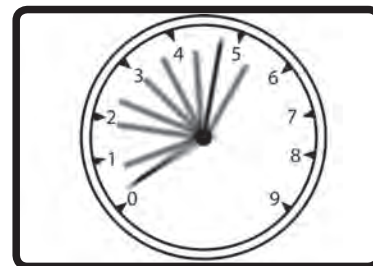
NOTE: If you don't find a retainer that corrects your problem listed in our catalog, our custom retainer service can make you a special set that will do the trick.

## PROPER SPRING SEATING

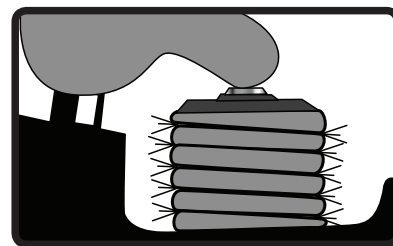
In some cases Crower performance valve springs do not seat properly on the stock spring seats. That is, they don't seat flush/square on your cylinder heads. This is especially true when going from stock single springs to high performance dual or triple spring designs. The usual problem is the spring O.D. is too large for the spring seat O.D. and/or the inner spring I.D. is too small for the stock valve guide O.D.

## VALVE STEM OIL SEAL TO SPRING CLEARANCE

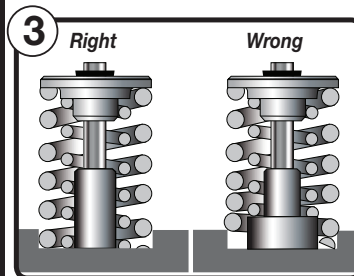
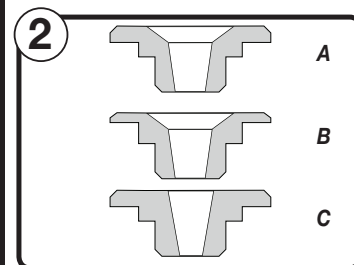
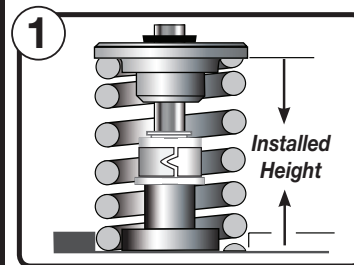
When switching from single springs it will be necessary to install smaller diameter Crower positive sealing valve stem oil seals for proper seal-to-spring clearance. Crower has the valve guide machining tools for installing these superior seals.



1. Stock springs can loose control of valves when hi-revving performance cam is installed.



2. Stock springs can coil bind when used with high lift performance cams.



<b>O.D./I.D. Outer</b>	.885/.610	.890/.620	.930/.660	.940/.580(top)	1.000/.630(top)	1.030/.630(top)	1.045/.745	1.055/.650 (top)
<b>O.D./I.D. Middle</b>	-	-	-	1.110/.745(bottom)	-	1.210/.805(bottom)	-	1.250/.845 (bottom)
<b>O.D./I.D. Inner</b>	-	-	-	-	1.065/.700(bottom)	-	-	-
<b>Installed Height</b>	1.975	1.350	1.400	1.470	1.700	1.900	1.400	1.750
<b>Rate</b>	212	120	-	321	-	.352	251	349
<b>Part #</b>	<b>68180</b>	<b>68160</b>	<b>68162</b>	<b>68194X2</b>	<b>68444</b>	<b>68435</b>	<b>68195</b>	<b>68155</b>
<b>Type</b>	Single	Single	Single	Single	Beehive	Beehive	Single	Single Conical
<b>Color Code</b>	None	None	Yellow	None	None	None	None	None
<b>Damper</b>	No	No	No	No	No	No	No	No
<b>Free Length</b>	2.310	1.825	1.685	1.775	2.065	2.255	1.690	2.069
<b>Wire Diameter</b>	.140	.134	.128	.144/.175 (ovate)	.139	Ovate	.146	.167/.202 (ovate)
<b>Material</b>	Silicone	Silicone	-	Silicone	-	-	Silicone	Silicone
<b>2.300</b>	-	-	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-	-	-
<b>2.000</b>	53 lbs	-	-	-	-	-	-	-
<b>1.950</b>	63 lbs	-	-	-	-	-	-	-
<b>1.900</b>	72 lbs	-	-	-	-	95 lbs	-	-
<b>1.850</b>	82 lbs	-	-	-	-	112 lbs	-	-
<b>1.800</b>	92 lbs	-	-	-	-	126 lbs	-	-
<b>1.750</b>	104 lbs	-	-	-	-	143 lbs	-	113 lbs
<b>1.720</b>	-	-	-	-	-	-	-	-
<b>1.700</b>	113lbs	-	-	-	90 lbs	158 lbs	-	128 lbs
<b>1.650</b>	123 lbs	-	-	-	103 lbs	174 lbs	-	142 lbs
<b>1.600</b>	133 lbs	-	-	-	115 lbs	191 lbs	-	159 lbs
<b>1.550</b>	144 lbs	-	-	-	128 lbs	207 lbs	-	174 lbs
<b>1.500</b>	154 lbs	-	-	77 lbs	141 lbs	224 lbs	42 lbs	193 lbs
<b>1.450</b>	165 lbs	-	-	-	155 lbs	241 lbs	54 lbs	210 lbs
<b>1.420</b>	-	-	-	103 lbs	-	-	-	-
<b>1.400</b>	175 lbs	34 lbs	49 lbs	108 lbs	169 lbs	261 lbs	66 lbs	228 lbs
<b>1.350</b>	-	39 lbs	58 lbs	122 lbs	184 lbs	280 lbs	79 lbs	247 lbs
<b>1.300</b>	-	46 lbs	67 lbs	137 lbs	197 lbs	299 lbs	90 lbs	266 lbs
<b>1.250</b>	-	51 lbs	76 lbs	154 lbs	212 lbs	318 lbs	104 lbs	285 lbs
<b>1.200</b>	-	56 lbs	86 lbs	169 lbs	226 lbs	337 lbs	115 lbs	302 lbs
<b>1.150</b>	-	62 lbs	100 lbs	187 lbs	240 lbs	356 lbs	126 lbs	-
<b>1.100</b>	-	68 lbs	112 lbs	202 lbs	255 lbs	-	139 lbs	-
<b>1.050</b>	-	74 lbs	126 lbs	220 lbs	-	-	149 lbs	-
<b>1.000</b>	-	81 lbs	140 lbs	238 lbs	-	-	161 lbs	-
<b>0.950</b>	-	87 lbs	156 lbs	256 lbs	-	-	174 lbs	-
<b>Coil Bind</b>	1.320	.815	.895	.870	-	1.080	0.860	1.100
<b>Retainers</b>	87096 (5.5mm)	87086 (5.5mm)	-	87020	87039T (.900-.630)	-	87085 (6mm)	-
<b>7° Titanium Retainer</b>	-	-	-	87020T	-	-	87082 (6mm)	87018T
<b>7° Titanium Retainer</b>	-	-	-	-	-	-	-	87029T
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-	-	-	-
<b>Titanium Ret 10°</b>	-	-	-	-	-	-	-	-
<b>Titanium Super 7°</b>	-	-	-	-	-	-	-	-
<b>7° Steel Retainer 5/16</b>	-	-	-	-	-	87015 (8mm)	-	87028
<b>7° Steel Retainer 11/32</b>	-	-	-	-	-	87029M	-	87029
<b>7° Steel Retainer 3/8</b>	-	-	-	-	-	-	-	-
<b>Steel Retainer 10°</b>	-	-	-	-	-	-	-	-
<b>Seat Cup</b>	-	-	-	-	-	-	-	-
<b>Seat Disc</b>	-	-	-	-	-	68949	-	-

**VALVE SPRING SPECIFICATIONS –  
Listed According to O.D.**

# Valve Springs

<b>O.D./I.D. Outer</b>	1.050/.650 (top)	1.080/.720	1.090/.650	1.090/.780	1.105/.820	1.105/.820
<b>O.D./I.D. Middle</b>	1.290/.885 (bottom)	-	-	-	-	-
<b>O.D./I.D. Inner</b>	-	-	1.450/1.005	-	.800/.627	.811/.608
<b>Installed Height</b>	1.750	1.420	1.900	1.550	1.350	1.350
<b>Rate</b>	308	330	334	289	234	314
<b>Part #</b>	<b>68878</b>	<b>68194</b>	<b>68152</b>	<b>68190</b>	<b>68181</b>	<b>68182</b>
<b>Type</b>	Single Conical	Single	Conical	Single	Dual	Dual
<b>Color Code</b>	Blue	None	None	None	Orange	Orange
<b>Damper</b>	No	No	No	No	No	No
<b>Free Length</b>	2.290	1.650	2.500	1.820	1.635	1.635
<b>Wire Diameter</b>	.168/.200	.181/.144 (ovate)	.214/.170 (ovate)	.160	.140/.085	.140/.104
<b>Material</b>	Silicone	Silicone	-	Silicone	Silicone	Silicone
<b>2.300</b>	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-
<b>2.000</b>	-	-	117 lbs	-	-	-
<b>1.950</b>	-	-	134 lbs	-	-	-
<b>1.900</b>	-	-	149 lbs	-	-	-
<b>1.850</b>	-	-	165 lbs	-	-	-
<b>1.800</b>	132 lbs	-	182 lbs	-	-	-
<b>1.750</b>	146 lbs	-	198 lbs	-	-	-
<b>1.720</b>	-	-	-	-	-	-
<b>1.700</b>	159 lbs	-	214 lbs	-	-	-
<b>1.650</b>	172 lbs	-	231 lbs	42 lbs	-	-
<b>1.600</b>	187 lbs	-	247 lbs	55 lbs	-	-
<b>1.550</b>	199 lbs	-	264 lbs	74 lbs	-	28 lbs
<b>1.500</b>	216 lbs	-	280 lbs	88 lbs	-	42 lbs
<b>1.450</b>	231 lbs	-	298 lbs	101 lbs	36 lbs	56 lbs
<b>1.420</b>	-	-	-	-	-	-
<b>1.400</b>	249 lbs	82 lbs	316 lbs	111 lbs	48 lbs	70 lbs
<b>1.350</b>	266 lbs	98 lbs	335 lbs	122 lbs	56 lbs	84 lbs
<b>1.300</b>	283 lbs	114 lbs	354 lbs	135 lbs	70 lbs	98 lbs
<b>1.250</b>	300 lbs	131 lbs	379 lbs	149 lbs	83 lbs	113 lbs
<b>1.200</b>	317 lbs	148 lbs	401 lbs	163 lbs	95 lbs	127 lbs
<b>1.150</b>	336 lbs	165 lbs	428 lbs	177 lbs	106 lbs	141 lbs
<b>1.100</b>	-	181 lbs	-	195 lbs	118 lbs	155 lbs
<b>1.050</b>	-	198 lbs	-	211 lbs	129 lbs	169 lbs
<b>1.000</b>	-	214 lbs	-	231 lbs	139 lbs	185 lbs
<b>0.950</b>	-	230 lbs	-	-	148 lbs	202 lbs
<b>Coil Bind</b>	1.080	.806	1.055	0.920	0.710	0.800
<b>Retainers</b>	-	87026 (7mm)	-	-	-	-
<b>7° Titanium Retainer</b>	87028T (LS1)	87026T (7mm)	87057+	87095 (6.5mm)	87092 (6.5mm)	87092 (6.5mm)
<b>7° Titanium Retainer</b>	87029	-	87029+	-	-	-
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-	-
<b>Titanium Ret 10°</b>	-	-	-	-	-	-
<b>Titanium Super 7°</b>	-	-	-	-	-	-
<b>7° Steel Retainer 5/16</b>	87018T	-	87057	-	-	-
<b>7° Steel Retainer 11/32</b>	87029	-	87029	-	-	-
<b>7° Steel Retainer 3/8</b>	-	-	-	-	-	-
<b>Steel Retainer 10°</b>	-	-	-	-	-	-
<b>Seat Cup</b>	-	-	68934	-	-	-
<b>Seat Disc</b>	-	-	-	-	Stock .108 step inner	Stock .108 step inner

<b>O.D./I.D. Outer</b>	1.130/.650(top)	1.160/.840	1.160/.870	1.160/.870	1.175/.875	1.180/.880
<b>O.D./I.D. Middle</b>	1.120/.750(bottom)	-	-	-	-	-
<b>O.D./I.D. Inner</b>	-	-	.860/.660	.865/.660	.820/.628	.870/.670
<b>Installed Height</b>	1.650	1.550	1.590	1.460	1.350	1.350
<b>Rate</b>	230	245	353	250	295	309
<b>Part #</b>	<b>68193</b>	<b>68183</b>	<b>68189</b>	<b>68184</b>	<b>68185</b>	<b>68188</b>
<b>Type</b>	Single	Single	Dual	Dual	Dual	Dual
<b>Color Code</b>	None	Purple	Yellow	Red	None	Red/White
<b>Damper</b>	No	No	No	No	No	No
<b>Free Length</b>	2.330	1.920	2.015	1.815	1.580	1.580
<b>Wire Diameter</b>	.146/ .148 (ovate)	.161	.149/.104	.148/.098	.146/.096	.154/.099
<b>Material</b>	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
<b>2.300</b>	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-
<b>2.000</b>	-	-	-	-	-	-
<b>1.950</b>	-	-	-	-	-	-
<b>1.900</b>	-	-	-	-	-	-
<b>1.850</b>	-	-	-	-	-	-
<b>1.800</b>	103 lbs	-	-	-	-	-
<b>1.750</b>	114 lbs	-	-	-	-	-
<b>1.720</b>	124 lbs	-	-	-	-	-
<b>1.700</b>	128 lbs	-	-	-	-	-
<b>1.650</b>	134 lbs	-	65 lbs	44 lbs	-	-
<b>1.600</b>	150 lbs	-	81 lbs	55 lbs	-	-
<b>1.550</b>	153 lbs	73 lbs	96 lbs	68 lbs	-	-
<b>1.500</b>	171 lbs	84 lbs	112 lbs	78 lbs	-	-
<b>1.450</b>	-	95 lbs	127 lbs	91 lbs	28 lbs	-
<b>1.420</b>	-	-	-	-	-	-
<b>1.400</b>	195 lbs	107 lbs	144 lbs	101 lbs	38 lbs	68 lbs
<b>1.350</b>	197 lbs	119 lbs	159 lbs	113 lbs	49 lbs	82 lbs
<b>1.300</b>	217 lbs	130 lbs	178 lbs	122 lbs	60 lbs	97 lbs
<b>1.250</b>	220 lbs	141 lbs	198 lbs	139 lbs	74 lbs	111 lbs
<b>1.200</b>	240 lbs	152 lbs	218 lbs	153 lbs	89 lbs	125 lbs
<b>1.150</b>	244 lbs	166 lbs	238 lbs	167 lbs	103 lbs	140 lbs
<b>1.100</b>	257 lbs	177 lbs	261 lbs	180 lbs	115 lbs	155 lbs
<b>1.050</b>	276 lbs	191 lbs	-	193 lbs	136 lbs	170 lbs
<b>1.000</b>	-	205 lbs	-	205 lbs	152 lbs	183 lbs
<b>0.950</b>	-	-	-	220 lbs	167 lbs	202 lbs
<b>Coil Bind</b>	1.035	0.895	1.030	0.790	0.805	0.765
<b>Retainers</b>	87024 (7mm steel)	-	-	-	-	-
<b>7° Titanium Retainer</b>	87024T	87097 (6mm)	87094 (5.5mm)	87093D (+.060")	87093 (5.5mm)	87093 (5.5mm)
<b>7° Titanium Retainer</b>	87025 +.060*	-	-	-	-	-
<b>7° Titanium Ret 3/8</b>	87023 3 valve	-	-	-	-	-
<b>Titanium Ret 10°</b>	87023T 3 valve	-	-	-	-	-
<b>Titanium Super 7°</b>	-	-	-	-	-	-
<b>7° Steel Retainer 5/16</b>	-	-	-	-	-	-
<b>7° Steel Retainer 11/32</b>	-	-	-	-	-	-
<b>7° Steel Retainer 3/8</b>	-	-	-	-	-	-
<b>Steel Retainer 10°</b>	-	-	-	-	-	-
<b>Seat Cup</b>	-	-	-	-	-	-
<b>Seat Disc</b>	-	87023T 3 valve	-	Stock .080 step inner	Stock .080 step inner	Stock .080 step inner
<b>Seat Disc</b>	-	-	-	-	Stock .108 step inner	-



**VALVE SPRING SPECIFICATIONS –  
Listed According to O.D.**

# Valve Springs

<b>O.D./I.D. Outer</b>	1.240	1.250/.875	1.250/.940	1.250/.890	1.255/.780	1.255/.780	1.260/.760	1.265/.790
<b>O.D./I.D. Middle</b>	-	-	-	-	-	-	-	-
<b>O.D./I.D. Inner</b>	-	-	.910/.680	-	-	-	-	-
<b>Installed Height</b>	1.600	1.750	1.650	1.700	1.750	1.700	1.800	1.750
<b>Rate</b>	-	456	285	330	522	378	390	407
<b>Part #</b>	<b>68141</b>	<b>68301X4</b>	<b>68106X208</b>	<b>68301X3</b>	<b>68311X1</b>	<b>68301X1</b>	<b>68304</b>	<b>68301</b>
<b>Type</b>	Single	Single	Dual	Single	Single	Single	Single	Single
<b>Color Code</b>	-	None	None	None	None	None	None	None
<b>Damper</b>	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
<b>Free Length</b>	-	2.050	2.225	2.050	1.995	1.980	2.100	2.020
<b>Wire Diameter</b>	-	.185	.155/.112	.182	0.198	0.185	0.190	0.192
<b>Material</b>	-	-	Silicone	Silicone	Super Clean Silicone	Silicone	Silicone	Silicone
<b>2.300</b>	-	-	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-	-	-
<b>2.000</b>	-	-	-	-	-	-	-	-
<b>1.950</b>	-	-	-	-	-	-	-	-
<b>1.900</b>	-	-	-	-	-	-	-	-
<b>1.850</b>	-	-	-	-	73 lbs	-	88 lbs	-
<b>1.800</b>	-	-	-	76 lbs	97 lbs	70 lbs	106 lbs	-
<b>1.750</b>	-	108 lbs	102 lbs	90 lbs	120 lbs	88 lbs	124 lbs	96 lbs
<b>1.720</b>	-	-	-	-	-	-	-	-
<b>1.700</b>	-	129 lbs	118 lbs	104 lbs	146 lbs	105 lbs	141 lbs	114 lbs
<b>1.650</b>	-	150 lbs	130 lbs	117 lbs	169 lbs	123 lbs	159 lbs	130 lbs
<b>1.600</b>	51 lbs	173 lbs	145 lbs	131 lbs	194 lbs	140 lbs	176 lbs	149 lbs
<b>1.550</b>	59 lbs	195 lbs	158 lbs	146 lbs	220 lbs	157 lbs	195 lbs	169 lbs
<b>1.500</b>	67 lbs	217 lbs	172 lbs	160 lbs	246 lbs	174 lbs	210 lbs	188 lbs
<b>1.450</b>	76 lbs	239 lbs	186 lbs	174 lbs	274 lbs	192 lbs	231 lbs	207 lbs
<b>1.420</b>	-	-	-	-	-	-	-	-
<b>1.400</b>	85 lbs	263 lbs	199 lbs	196 lbs	302 lbs	210 lbs	250 lbs	229 lbs
<b>1.350</b>	94 lbs	287 lbs	213 lbs	210 lbs	331 lbs	230 lbs	271 lbs	252 lbs
<b>1.300</b>	103 lbs	312 lbs	226 lbs	230 lbs	359 lbs	252 lbs	295 lbs	274 lbs
<b>1.250</b>	112 lbs	336 lbs	240 lbs	247 lbs	389 lbs	274 lbs	317 lbs	299 lbs
<b>1.200</b>	121 lbs	362 lbs	253 lbs	269 lbs	424 lbs	297 lbs	345 lbs	-
<b>1.150</b>	130 lbs	387 lbs	269 lbs	-	459 lbs	-	-	-
<b>1.100</b>	141 lbs	-	286 lbs	-	-	-	-	-
<b>1.050</b>	151 lbs	-	302 lbs	-	-	-	-	-
<b>1.000</b>	161 lbs	-	317 lbs	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-	-	-	-
<b>Coil Bind Retainers</b>	.895	1.050	0.910	1.125	1.070	1.130	1.090	1.170
<b>7° Titanium Retainer</b>	-	-	86046	86037T	86037T	86037T	86037T	-
<b>7° Titanium Retainer</b>	-	-	-	86031	86031	86031	86031	86031
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-	-	-	-
<b>Titanium Ret 10°</b>	-	-	-	-	-	-	-	-
<b>Titanium Super 7°</b>	-	-	86757S	-	-	-	-	-
<b>7° Steel Retainer 5/16</b>	87045	86106	87045	86037	86037	86037	86037	-
<b>7° Steel Retainer 11/32</b>	-	87036	-	86032 or 87036	86032 or 87036	86032 or 87036	86032	86032 or 87036
<b>7° Steel Retainer 3/8</b>	-	-	86032	-	-	-	-	-
<b>Steel Retainer 10°</b>	-	-	-	-	-	-	-	-
<b>Seat Cup</b>	-	-	68922	-	-	-	-	-
<b>Seat Disc</b>	-	-	68948	-	-	-	-	-

<b>O.D./I.D. Outer</b>	1.270/.800	1.275/.925	1.285/.905	1.285/.940	1.290/.890	1.290/.890	1.290/.950
<b>O.D./I.D. Middle</b>	-	-	-	-	-	-	-
<b>O.D./I.D. Inner</b>	-	.913/.685	.900/.615	.935/.690	.890/.660	.890/.660	.690
<b>Installed Height</b>	1.750	1.600	2.050	1.800	1.900	1.900	1.800
<b>Rate</b>	477	388	524	350	382	382	369
<b>Part #</b>	<b>68311</b>	<b>68109X1</b>	<b>68852</b>	<b>68153</b>	<b>68156NP</b>	<b>68156</b>	<b>68441</b>
<b>Type</b>	Single	Dual	Dual	Dual	Dual	Dual	Dual
<b>Color Code</b>	None	Orange/Yellow	None	None	None	None	None
<b>Damper</b>	Yes	No	No	No	No	No	No
<b>Free Length</b>	2.030	1.830	2.400	2.225	-	-	2.400
<b>Wire Diameter</b>	.193	.175/.118	.186/.136	.171/.121	.163/.115	.163/.115	.126/.165
<b>Material</b>	Silicone	Silicone	-	-	-	-	-
<b>2.300</b>	-	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-	-
<b>2.050</b>	-	-	146 lbs	-	-	-	-
<b>2.000</b>	-	-	170 lbs	-	-	-	-
<b>1.950</b>	-	-	194 lbs	-	-	-	-
<b>1.900</b>	-	-	221 lbs	93 lbs	119 lbs	113 lbs	-
<b>1.850</b>	-	-	248 lbs	111 lbs	138 lbs	-	-
<b>1.800</b>	75 lbs	-	274 lbs	128 lbs	158 lbs	151 lbs	145 lbs
<b>1.750</b>	99 lbs	-	300 lbs	146 lbs	175 lbs	-	154 lbs
<b>1.720</b>	-	-	-	-	-	-	-
<b>1.700</b>	121 lbs	58 lbs	327 lbs	163 lbs	193 lbs	187 lbs	163 lbs
<b>1.650</b>	141 lbs	77 lbs	355 lbs	181 lbs	212 lbs	-	219 lbs
<b>1.600</b>	163 lbs	95 lbs	381 lbs	198 lbs	231 lbs	225 lbs	-
<b>1.550</b>	186 lbs	113 lbs	408 lbs	216 lbs	250 lbs	-	-
<b>1.500</b>	209 lbs	130 lbs	435 lbs	233 lbs	270 lbs	265 lbs	-
<b>1.450</b>	235 lbs	148 lbs	463 lbs	250 lbs	290 lbs	-	-
<b>1.420</b>	-	-	-	-	-	-	-
<b>1.400</b>	255 lbs	166 lbs	491 lbs	266 lbs	310 lbs	306 lbs	-
<b>1.350</b>	279 lbs	183 lbs	519 lbs	285 lbs	332 lbs	-	-
<b>1.300</b>	302 lbs	202 lbs	556 lbs	303 lbs	354 lbs	348 lbs	-
<b>1.250</b>	326 lbs	222 lbs	594 lbs	322 lbs	376 lbs	-	348 lbs
<b>1.200</b>	353 lbs	240 lbs	-	342 lbs	398 lbs	391 lbs	366 lbs
<b>1.150</b>	380 lbs	261 lbs	-	363 lbs	419 lbs	-	385 lbs
<b>1.100</b>	407 lbs	281 lbs	-	383 lbs	441 lbs	435 lbs	402 lbs
<b>1.050</b>	440 lbs	302 lbs	-	-	-	-	422 lbs
<b>1.000</b>	-	323 lbs	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-	-	-
<b>Coil Bind</b>	0.990	0.955	1.180	1.015	.995	.995	1.000
<b>Retainers</b>	-	-	-	-	-	-	-
<b>7° Titanium Retainer</b>	-	86046	86037+* or 87007	87006 (8mm)	86036T	86036T	87006 (8mm)
<b>7° Titanium Retainer</b>	86031	-	87078	-	86031	86031	-
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-	-	-
<b>Titanium Ret 10°</b>	-	-	-	-	-	-	-
<b>Titanium Super 7°</b>	-	86753 or 86753S	-	86757S	86753 or 86753S	86753 or 86753S	86757
<b>7° Steel Retainer 5/16</b>	-	87046	86037 +.050	86036 (8mm)	86036	86036	87006S (8mm)
<b>7° Steel Retainer 11/32</b>	86032-87036	-	87007	87036	86032	86032	87036
<b>7° Steel Retainer 3/8</b>	-	-	-	-	-	-	-
<b>Steel Retainer 10°</b>	-	-	-	-	-	-	-
<b>Seat Cup</b>	68935	68935	68935	68935	68923 or 68935	68923 or 68935	68923 or 68935
<b>Seat Disc</b>	-	68948	68947	68948	-	68948	68948

**VALVE SPRING SPECIFICATIONS –  
Listed According to O.D.**

# Valve Springs

<b>O.D./I.D. Outer</b>	1.290/.950	1.290/1.055	1.290/.950	1.300/.900	1.300/.908	1.300/1.065	1.304/.950
<b>O.D./I.D. Middle</b>			-	.890/.695	-	-	-
<b>O.D./I.D. Inner</b>	.680	.890/.650	.945/.670	-	.906/.625	.880/.650	.694
<b>Installed Height</b>	1.800	1.850	1.800	1.900	-	1.900	1.800
<b>Rate</b>	409	302	371	375	-	342	433
<b>Part #</b>	<b>68436</b>	<b>68448</b>	<b>68157</b>	<b>68521</b>	<b>68432</b>	<b>68449</b>	<b>68447</b>
<b>Type</b>	Dual	Conical	Dual	Dual	Dual	Conical	Dual
<b>Color Code</b>	None	None	None	None	None	None	None
<b>Damper</b>	No	No	No	No	No	No	No
<b>Free Length</b>	2.390	2.380	2.280	2.275	2.250	2.375	2.300
<b>Wire Diameter</b>	.127/.165	.195/.160	.172/.134	.163/.115	.195/.134	.200/.160	.127/.171
<b>Material</b>	-	-	Silicone	-	-	-	-
<b>2.300</b>	-	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-	-
<b>2.000</b>	-	-	-	-	-	-	-
<b>1.950</b>	-	-	-	-	142 lbs	-	-
<b>1.900</b>	-	115 lbs	-	123 lbs	178 lbs	120 lbs	-
<b>1.850</b>	-	129 lbs	128 lbs	141 lbs	212 lbs	137 lbs	-
<b>1.800</b>	145 lbs	142 lbs	144 lbs	159 lbs	247 lbs	152 lbs	155 lbs
<b>1.750</b>	165 lbs	155 lbs	161 lbs	177 lbs	283 lbs	168 lbs	176 lbs
<b>1.720</b>	-	-	-	-	-	-	-
<b>1.700</b>	186 lbs	168 lbs	178 lbs	195 lbs	317 lbs	185 lbs	198 lbs
<b>1.650</b>	206 lbs	182 lbs	196 lbs	213 lbs	353 lbs	202 lbs	232 lbs
<b>1.600</b>	-	197 lbs	212 lbs	231 lbs	383 lbs	219 lbs	-
<b>1.550</b>	-	212 lbs	229 lbs	251 lbs	427 lbs	237 lbs	-
<b>1.500</b>	-	227 lbs	247 lbs	271 lbs	463 lbs	255 lbs	-
<b>1.450</b>	-	244 lbs	265 lbs	290 lbs	500lbs	272 lbs	-
<b>1.420</b>	-	-	-	-	-	-	-
<b>1.400</b>	-	260 lbs	284 lbs	310 lbs	539lbs	291 lbs	-
<b>1.350</b>	-	276 lbs	303 lbs	331 lbs	581 lbs	310 lbs	-
<b>1.300</b>	-	293 lbs	324 lbs	351 lbs	622 lbs	327 lbs	-
<b>1.250</b>	369 lbs	310 lbs	345 lbs	372 lbs	665 lbs	346 lbs	393 lbs
<b>1.200</b>	389 lbs	326 lbs	367 lbs	393 lbs	705lbs	364 lbs	414 lbs
<b>1.150</b>	411 lbs	345 lbs	389 lbs	414 lbs	750lbs	386 lbs	436 lbs
<b>1.100</b>	432 lbs	-	415 lbs	435 lbs	-	-	458 lbs
<b>1.050</b>	-	-	-	-	-	-	-
<b>1.000</b>	-	-	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-	-	-
<b>Coil Bind</b>	1.000	1.070	1.040 w/.050 step	.990	.970	1.100	1.000
<b>Retainers</b>							
<b>7° Titanium Retainer</b>	87006 (8mm)	87057+*	86030 / 86046	-	86036T	87057+*	87006 (8mm)
<b>7° Titanium Retainer</b>	-	87029+*	86031	-	-	87029+*	-
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-	-	-
<b>Titanium Ret 10°</b>	-	-	-	-	-	-	-
<b>Titanium Super 7°</b>	86757 or 86757S	-	-	86753 or 86753S	-	-	86757-86757S
<b>7° Steel Retainer 5/16</b>	87006S	87057	87045	-	-	87057	87006S (8mm)
<b>7° Steel Retainer 11/32</b>	87036	87029	86032D	87036	-	87029	87036
<b>7° Steel Retainer 3/8</b>	-	-	-	-	-	-	-
<b>Steel Retainer 10°</b>	-	-	-	-	-	-	-
<b>Seat Cup</b>	68935 or 68923	68923	-	68923	-	68923	68923
<b>Seat Disc</b>	68948	-	-	68941	-	-	68948

<b>O.D./I.D. Outer</b>	1.304/.950	1.315/.915	1.324/.950	1.324/.950	1.354/.940	1.360/1.000	1.380/1.00
<b>O.D./I.D. Middle</b>	-	-	-	-	-	-	-
<b>O.D./I.D. Inner</b>	.694	-	.680	.694	-	-	.980/.710
<b>Installed Height</b>	1.800	1.800	1.800	1.800	1.850	1.550	1.950
<b>Rate</b>	392	356	500	460	415	228	402
<b>Part #</b>	<b>68446</b>	<b>68438</b>	<b>68442</b>	<b>68440</b>	<b>68143</b>	<b>68147</b>	<b>68851</b>
<b>Type</b>	Dual	Single	Dual	Dual	Single	Single	Dual
<b>Color Code</b>	None	None	None	None	None	None	None
<b>Damper</b>	No	No	No	No	Yes	No	No
<b>Free Length</b>	2.330	2.195	2.280	2.250	2.075	1.925	2.440
<b>Wire Diameter</b>	.125/.171	.213/.168	.127/.181	.127/.183	.208	0.177	.180/.135
<b>Material</b>	-	-	-	-	Silicone	Silicone	-
<b>2.300</b>	-	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-	-
<b>2.000</b>	-	-	-	-	-	-	116 lbs
<b>1.950</b>	-	-	-	-	-	-	136 lbs
<b>1.900</b>	-	-	-	-	72 lbs	-	155 lbs
<b>1.850</b>	-	-	-	-	92 lbs	-	175 lbs
<b>1.800</b>	155 lbs	106 lbs	160 lbs	180 lbs	113 lbs	-	194 lbs
<b>1.750</b>	164 lbs	120 lbs	185 lbs	193 lbs	134 lbs	-	214 lbs
<b>1.720</b>	-	-	-	206 lbs	-	-	-
<b>1.700</b>	174 lbs	137 lbs	210 lbs	229 lbs	155 lbs	-	233 lbs
<b>1.650</b>	194 lbs	154 lbs	235 lbs	-	175 lbs	57 lbs	253 lbs
<b>1.600</b>	-	170 lbs	-	-	196 lbs	67 lbs	273 lbs
<b>1.550</b>	-	190 lbs	-	-	217 lbs	78 lbs	294 lbs
<b>1.500</b>	-	207 lbs	-	-	238 lbs	89 lbs	315 lbs
<b>1.450</b>	-	226 lbs	-	-	258 lbs	100 lbs	337 lbs
<b>1.420</b>	-	-	-	-	-	-	-
<b>1.400</b>	-	245 lbs	-	-	279 lbs	110 lbs	359 lbs
<b>1.350</b>	-	264 lbs	-	-	300 lbs	120 lbs	382 lbs
<b>1.300</b>	-	284 lbs	-	-	-	130 lbs	406 lbs
<b>1.250</b>	370 lbs	305 lbs	435 lbs	413 lbs	-	141 lbs	431 lbs
<b>1.200</b>	390 lbs	329 lbs	466 lbs	436 lbs	-	153 lbs	456 lbs
<b>1.150</b>	409 lbs	364 lbs	485 lbs	459 lbs	-	165 lbs	-
<b>1.100</b>	429 lbs	-	510 lbs	485 lbs	-	177 lbs	-
<b>1.050</b>	-	-	-	-	-	-	-
<b>1.000</b>	-	-	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-	-	-
<b>Coil Bind</b>	1.000	1.120	1.000	1.000	1.280	1.000	1.130
<b>Retainers</b>	-	-	-	-	-	-	-
<b>7° Titanium Retainer</b>	87006 (8mm)	87034+*	87006 (8mm)	87006 (8mm)	-	-	87040 +.050*
<b>7° Titanium Retainer</b>	-	-	-	-	-	-	-
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-	-	-
<b>Titanium Ret 10°</b>	-	-	-	-	-	-	-
<b>Titanium Super 7°</b>	86757	86753 or 86753S	86757 or 86757S	86757	-	-	86757
<b>7° Steel Retainer 5/16</b>	87006S (8mm)	87046	87006S (8mm)	87006S (8mm)	-	87044	87047 +.050*
<b>7° Steel Retainer 11/32</b>	87036 or 86757S	-	87036	87036	-	-	87050 or 86757S
<b>7° Steel Retainer 3/8</b>	-	-	-	-	-	87021 Buick 11°	-
<b>Steel Retainer 10°</b>	-	-	-	-	-	-	-
<b>Seat Cup</b>	68923	68923	-	-	-	-	-
<b>Seat Disc</b>	68948	-	68948	68948	-	-	68941A



**VALVE SPRING SPECIFICATIONS –**  
Listed According to O.D.

# Valve Springs

<b>O.D./I.D. Outer</b>	1.385/1.060	1.400/1.045	1.405/1.055	1.430/1.040	1.440/1.050	1.440/1.070
<b>O.D./I.D. Middle</b>	-	-	-	-	-	-
<b>O.D./I.D. Inner</b>	1.050/.800	1.040/.770	1.045/.780	-	.975/.700	1.085/.811
<b>Installed Height</b>	1.650	1.700	1.600	1.650	1.800	1.800
<b>Rate</b>	258	382	338	367	450	324
<b>Part #</b>	<b>68324</b>	<b>68405</b>	<b>68404</b>	<b>68305X1</b>	<b>68390X3</b>	<b>68100X200</b>
<b>Type</b>	Dual	Dual	Dual	Single	Dual	Dual
<b>Color Code</b>	Orange/Green	Orange/White	Blue/Grey	Grey	Yellow/White	None
<b>Damper</b>	No	No	No	Yes	Yes	No
<b>Free Length</b>	2.150	1.975	1.920	1.900	2.100	2.370
<b>Wire Diameter</b>	.160/.127	.176/.133	.175/.134	0.200	.190/.133	.179/.133
<b>Material</b>	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
<b>2.300</b>	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-
<b>2.000</b>	-	-	-	-	-	-
<b>1.950</b>	-	-	-	-	-	-
<b>1.900</b>	-	-	-	-	76 lbs	83 lbs
<b>1.850</b>	-	-	-	-	96 lbs	94 lbs
<b>1.800</b>	-	76 lbs	-	-	116 lbs	107 lbs
<b>1.750</b>	86 lbs	92 lbs	-	51 lbs	136 lbs	121 lbs
<b>1.720</b>	-	-	-	-	-	-
<b>1.700</b>	96 lbs	110 lbs	82 lbs	68 lbs	156 lbs	134 lbs
<b>1.650</b>	108 lbs	129 lbs	96 lbs	84 lbs	175 lbs	147 lbs
<b>1.600</b>	118 lbs	146 lbs	113 lbs	101 lbs	194 lbs	161 lbs
<b>1.550</b>	129 lbs	165 lbs	128 lbs	116 lbs	215 lbs	175 lbs
<b>1.500</b>	146 lbs	184 lbs	143 lbs	138 lbs	238 lbs	190 lbs
<b>1.450</b>	161 lbs	204 lbs	157 lbs	156 lbs	261 lbs	205 lbs
<b>1.420</b>	-	-	-	-	-	-
<b>1.400</b>	172 lbs	221 lbs	177 lbs	174 lbs	284 lbs	221 lbs
<b>1.350</b>	186 lbs	240 lbs	192 lbs	191 lbs	307 lbs	238 lbs
<b>1.300</b>	197 lbs	258 lbs	208 lbs	210 lbs	331 lbs	255 lbs
<b>1.250</b>	211 lbs	278 lbs	225 lbs	229 lbs	355 lbs	274 lbs
<b>1.200</b>	227 lbs	297 lbs	244 lbs	250 lbs	389 lbs	291 lbs
<b>1.150</b>	240 lbs	316 lbs	263 lbs	268 lbs	-	309 lbs
<b>1.100</b>	254 lbs	338 lbs	282 lbs	-	-	330 lbs
<b>1.050</b>	269 lbs	360 lbs	302 lbs	-	-	-
<b>1.000</b>	283 lbs	380 lbs	319 lbs	-	-	-
<b>0.950</b>	-	-	-	-	-	-
<b>Coil Bind</b>	0.910	0.980	0.950	1.050	1.110	1.030
<b>Retainers</b>	-	-	-	-	-	-
<b>7° Titanium Retainer</b>	86033	87040	87040	87040	86033	86033
<b>7° Titanium Retainer</b>	87041	-	-	-	87041	87041
<b>7° Titanium Ret 3/8</b>	87042	87042	87042	87042	87042	87042
<b>Titanium Ret 10°</b>	86067M	-	-	86067C	86067M	87065
<b>Titanium Super 7°</b>	-	-	86771	-	86767M	86767M
<b>7° Steel Retainer 5/16</b>	87044	87044	87044	87044	87047	87047
<b>7° Steel Retainer 11/32</b>	87050	87050	87050	87050	87048	87062
<b>7° Steel Retainer 3/8</b>	87049	87049	87049	87049	87049	87063
<b>Steel Retainer 10°</b>	87060M	-	87060M	-	87060M	87060
<b>Seat Cup</b>	-	68930	68930	68930 or 68951	68931	68931
<b>Seat Disc</b>	68943	68938 or 68940	68938 or 68940	-	68941A or 68941	68943

<b>O.D./I.D. Outer</b>	1.440/1.085	1.440/1.190	1.450/1.065	1.455/.975	1.455/1.050	1.460/1.070	1.460/1.060
<b>O.D./I.D. Middle</b>	-	-	-	-	-	-	-
<b>O.D./I.D. Inner</b>	1.075/.795	.995/.745	.975/.705	-	-	.975/.710	.975/.710
<b>Installed Height</b>	1.850	2.050	1.900	1.850	1.700	1.800	1.800
<b>Rate</b>	340	382	463	300	350	483	456
<b>Part #</b>	<b>68100X209</b>	<b>68439</b>	<b>68382</b>	<b>68313</b>	<b>68314</b>	<b>68390X2</b>	<b>68380X2</b>
<b>Type</b>	Dual	Conical	Dual	Single	Single	Dual	Dual
<b>Color Code</b>	None	None	Purple/Orange	None	None	2 Yellow	Blue/Yellow
<b>Damper</b>	No	No	Yes	Yes	Yes	Yes	Yes
<b>Free Length</b>	2.360	2.540	2.220	2.250	2.050	2.100	2.220
<b>Wire Diameter</b>	.178/.140	.219/.179	.198/.133	.193	-	.198/.133	.200/.130
<b>Material</b>	Silicone	-	Silicone	-	-	Silicone	Silicone
<b>2.300</b>	-	-	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-	-
<b>2.100</b>	-	-	-	-	-	-	-
<b>2.050</b>	-	-	-	-	-	-	-
<b>2.000</b>	-	151 lbs	91 lbs	-	-	-	-
<b>1.950</b>	135 lbs	169 lbs	110 lbs	-	-	48 lbs	-
<b>1.900</b>	150 lbs	188 lbs	137 lbs	-	-	69 lbs	152 lbs
<b>1.850</b>	166 lbs	206 lbs	159 lbs	104 lbs	-	90 lbs	173 lbs
<b>1.800</b>	182 lbs	224 lbs	179 lbs	118 lbs	67 lbs	113 lbs	197 lbs
<b>1.750</b>	197 lbs	244 lbs	201 lbs	132 lbs	86 lbs	134 lbs	218 lbs
<b>1.720</b>	-	-	-	-	-	-	-
<b>1.700</b>	212 lbs	263 lbs	221 lbs	147 lbs	101 lbs	156 lbs	241 lbs
<b>1.650</b>	229 lbs	284 lbs	246 lbs	162 lbs	118 lbs	187 lbs	263 lbs
<b>1.600</b>	245 lbs	303 lbs	269 lbs	176 lbs	136 lbs	208 lbs	283 lbs
<b>1.550</b>	262 lbs	324 lbs	292 lbs	190 lbs	151 lbs	231 lbs	308 lbs
<b>1.500</b>	279 lbs	344 lbs	315 lbs	207 lbs	168 lbs	254 lbs	328 lbs
<b>1.450</b>	296 lbs	368 lbs	341 lbs	222 lbs	185 lbs	278 lbs	353 lbs
<b>1.420</b>	-	-	-	-	-	-	-
<b>1.400</b>	314 lbs	392 lbs	364 lbs	238 lbs	203 lbs	302 lbs	377 lbs
<b>1.350</b>	331 lbs	416 lbs	391 lbs	254 lbs	220 lbs	325 lbs	399 lbs
<b>1.300</b>	349 lbs	440 lbs	415 lbs	271 lbs	238 lbs	349 lbs	424 lbs
<b>1.250</b>	368 lbs	465 lbs	443 lbs	288 lbs	257 lbs	377 lbs	446 lbs
<b>1.200</b>	388 lbs	-	477 lbs	305 lbs	276 lbs	408 lbs	470 lbs
<b>1.150</b>	-	-	-	322 lbs	298 lbs	439 lbs	-
<b>1.100</b>	-	-	-	-	318 lbs	-	-
<b>1.050</b>	-	-	-	-	-	-	-
<b>1.000</b>	-	-	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-	-	-
<b>Coil Bind</b>	1.110	1.180	1.115	1.085	1.030	1.070	1.110
<b>Retainers</b>	-	-	-	-	-	-	-
<b>7° Titanium Retainer</b>	86033	-	86033	87040	87040	86033	86033
<b>7° Titanium Retainer</b>	87041	-	87041	-	-	87041	87041
<b>7° Titanium Ret 3/8</b>	-	-	87042	87042	87042	87042	87042
<b>Titanium Ret 10°</b>	87065	-	86067M	86067A	86067C	86067M	86067M
<b>Titanium Super 7°</b>	86767M	-	86767M	-	-	86767M	86767M
<b>7° Steel Retainer 5/16</b>	-	-	87047	87044	87044	87047	87047
<b>7° Steel Retainer 11/32</b>	87062	-	87048	87050	87050	87050	87050
<b>7° Steel Retainer 3/8</b>	87063	-	87049	87049	87039	87049	87049
<b>Steel Retainer 10°</b>	87060	-	87060M	-	-	87060M	87060M
<b>Seat Cup</b>	68931	68934	68934	68931	-	68931	68931
<b>Seat Disc</b>	68938 or 68940	-	68941A	-	-	68941A	68941A

**VALVE SPRING SPECIFICATIONS –  
Listed According to O.D.**

# Valve Springs

<b>O.D./I.D. Outer</b>	1.475/1.075	1.490/1.120
<b>O.D./I.D. Middle</b>	-	-
<b>O.D./I.D. Inner</b>	1.070/.750	-
<b>Installed Height</b>	1.800	1.850
<b>Rate</b>	538	250
<b>Part #</b>	<b>68501</b>	<b>68140</b>
<b>Type</b>	Dual	Single
<b>Color Code</b>	Lavender/Yellow	Green
<b>Damper</b>	No	Yes
<b>Free Length</b>	2.225	2.300
<b>Wire Diameter</b>	.200/.155	0.190
<b>Material</b>	H11 Vasco	Silicone
<b>2.300</b>	-	-
<b>2.250</b>	-	-
<b>2.200</b>	-	-
<b>2.150</b>	-	-
<b>2.100</b>	-	-
<b>2.050</b>	-	-
<b>2.000</b>	-	-
<b>1.950</b>	-	79 lbs
<b>1.900</b>	171 lbs	90 lbs
<b>1.850</b>	204 lbs	102 lbs
<b>1.800</b>	230 lbs	113 lbs
<b>1.750</b>	254 lbs	126 lbs
<b>1.720</b>	-	-
<b>1.700</b>	280 lbs	139 lbs
<b>1.650</b>	308 lbs	151 lbs
<b>1.600</b>	334 lbs	162 lbs
<b>1.550</b>	362 lbs	175 lbs
<b>1.500</b>	390 lbs	187 lbs
<b>1.450</b>	417 lbs	199 lbs
<b>1.420</b>	-	-
<b>1.400</b>	443 lbs	212 lbs
<b>1.350</b>	472 lbs	227 lbs
<b>1.300</b>	499 lbs	242 lbs
<b>1.250</b>	525 lbs	257 lbs
<b>1.200</b>	-	274 lbs
<b>1.150</b>	-	-
<b>1.100</b>	-	-
<b>1.050</b>	-	-
<b>1.000</b>	-	-
<b>0.950</b>	-	-
<b>Coil Bind</b>	1.180	1.100
<b>Retainers</b>	-	-
<b>7° Titanium Retainer</b>	86033	-
<b>7° Titanium Retainer</b>	87041	-
<b>7° Titanium Ret 3/8</b>	-	-
<b>Titanium Ret 10°</b>	86067M	86067
<b>Titanium Super 7°</b>	86767M	86754
<b>7° Steel Retainer 5/16</b>	87044	-
<b>7° Steel Retainer 11/32</b>	87062	87054
<b>7° Steel Retainer 3/8</b>	87053	87053
<b>Steel Retainer 10°</b>	87060M	87055
<b>Seat Cup</b>	68957	68957
<b>Seat Disc</b>	68938 • 940 • 942	-

<b>O.D./I.D. Outer</b>	1.500/1.050	1.500/1.050	1.500/1.050
<b>O.D./I.D. Middle</b>	-	-	-
<b>O.D./I.D. Inner</b>	.726	.726	.726
<b>Installed Height</b>	2.175	2.100	2.150
<b>Rate</b>	780	780	780
<b>Part #</b>	<b>68855</b>	<b>68856</b>	<b>68857</b>
<b>Type</b>	Dual	Dual	Dual
<b>Color Code</b>	-	-	-
<b>Damper</b>	Yes	Yes	Yes
<b>Free Length</b>	-	-	-
<b>Wire Diameter</b>	-	-	-
<b>Material</b>	Super Clean Silicone	Super Clean Silicone	Super Clean Silicone
<b>2.175</b>	420 lbs	-	-
<b>2.150</b>	-	-	375 lbs
<b>2.100</b>	-	300 lbs	-
<b>2.050</b>	-	-	-
<b>2.000</b>	-	-	-
<b>1.950</b>	-	-	-
<b>1.900</b>	-	-	-
<b>1.850</b>	-	-	-
<b>1.800</b>	-	-	-
<b>1.750</b>	-	-	-
<b>1.720</b>	-	-	-
<b>1.700</b>	-	-	-
<b>1.675</b>	810 lbs	-	-
<b>1.650</b>	-	650 lbs	765 lbs
<b>1.600</b>	-	-	-
<b>1.550</b>	-	-	-
<b>1.500</b>	-	-	-
<b>1.450</b>	-	-	-
<b>1.420</b>	1005 lbs	-	-
<b>1.400</b>	-	885 lbs	960 lbs
<b>1.350</b>	-	-	-
<b>1.300</b>	-	-	-
<b>1.250</b>	-	-	-
<b>1.200</b>	-	1080 lbs	1116 lbs
<b>1.175</b>	1200 lbs	-	-
<b>1.150</b>	-	-	-
<b>1.100</b>	-	-	-
<b>1.050</b>	-	-	-
<b>1.000</b>	-	-	-
<b>0.950</b>	-	-	-
<b>Coil Bind</b>	1.130	1.130	1.130
<b>Retainers</b>	-	-	-
<b>7° Titanium Retainer</b>	-	-	-
<b>7° Titanium Retainer</b>	-	-	-
<b>7° Titanium Ret 3/8</b>	-	-	-
<b>Titanium Ret 10°</b>	-	-	-
<b>Titanium Super 7°</b>	86784 or 86785	86784 or 86785	86784 or 86785
<b>7° Steel Retainer 5/16</b>	-	-	-
<b>7° Steel Retainer 11/32</b>	-	-	-
<b>7° Steel Retainer 3/8</b>	-	-	-
<b>Steel Retainer 10°</b>	-	-	-
<b>Seat Cup</b>	68941A-16	68941A-16	68941A-16
<b>Seat Disc</b>	-	-	-

<b>O.D./I.D. Outer</b>	1.500/1.120	1.505/.990	1.505/1.130	1.525/1.120	1.525/1.125
<b>O.D./I.D. Middle</b>	-	-	-	-	-
<b>O.D./I.D. Inner</b>	1.030/.755	-	1.085/.805	1.015/.745	1.030/.750
<b>Installed Height</b>	1.900	1.850	1.900	1.950	1.900
<b>Rate</b>	452	342	353	500	432
<b>Part #</b>	<b>68340</b>	<b>68302X2</b>	<b>68101X202</b>	<b>68725</b>	<b>68385X2</b>
<b>Type</b>	Dual	Single	Dual	Dual	Dual
<b>Color Code</b>	Green	Green/White	None	Gold/White	Purple
<b>Damper</b>	Yes	Yes	No	Yes	Yes
<b>Free Length</b>	2.270	2.170	2.390	2.370	2.330
<b>Wire Diameter</b>	.191/.141	0.204	.192/.148	.205/.133	.198/.141
<b>Material</b>	Silicone	Silicone	Silicone	Super Clean Silicone	Silicone
<b>2.175</b>	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-
<b>2.100</b>	-	-	-	129 lbs	-
<b>2.050</b>	-	-	-	151 lbs	-
<b>2.000</b>	-	-	116 lbs	168 lbs	123 lbs
<b>1.950</b>	100 lbs	61 lbs	131 lbs	194 lbs	144 lbs
<b>1.900</b>	118 lbs	77 lbs	146 lbs	215 lbs	166 lbs
<b>1.850</b>	143 lbs	91 lbs	162 lbs	242 lbs	187 lbs
<b>1.800</b>	165 lbs	107 lbs	178 lbs	264 lbs	207 lbs
<b>1.750</b>	184 lbs	121 lbs	194 lbs	287 lbs	228 lbs
<b>1.720</b>	-	-	-	-	-
<b>1.700</b>	206 lbs	136 lbs	211 lbs	311 lbs	249 lbs
<b>1.675</b>	-	-	-	-	-
<b>1.650</b>	228 lbs	150 lbs	229 lbs	334 lbs	269 lbs
<b>1.600</b>	249 lbs	164 lbs	249 lbs	359 lbs	291 lbs
<b>1.550</b>	271 lbs	179 lbs	268 lbs	385 lbs	310 lbs
<b>1.500</b>	293 lbs	194 lbs	287 lbs	408 lbs	333 lbs
<b>1.450</b>	313 lbs	211 lbs	304 lbs	444 lbs	353 lbs
<b>1.420</b>	-	-	-	-	-
<b>1.400</b>	336 lbs	229 lbs	323 lbs	463 lbs	375 lbs
<b>1.350</b>	359 lbs	250 lbs	342 lbs	498 lbs	398 lbs
<b>1.300</b>	384 lbs	270 lbs	363 lbs	525 lbs	422 lbs
<b>1.250</b>	407 lbs	292 lbs	383 lbs	556 lbs	445 lbs
<b>1.200</b>	437 lbs	-	-	-	469 lbs
<b>1.175</b>	-	-	-	-	-
<b>1.150</b>	477 lbs	-	-	-	-
<b>1.100</b>	-	-	-	-	-
<b>1.050</b>	-	-	-	-	-
<b>1.000</b>	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-
<b>Coil Bind</b>	1.080	1.150	1.140	1.150	1.100
<b>Retainers</b>	-	-	-	-	-
<b>7° Titanium Retainer</b>	-	86033	-	-	-
<b>7° Titanium Retainer</b>	-	87041	-	-	-
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-
<b>Titanium Ret 10°</b>	86067	86067M	86067B	86067D	86067B
<b>Titanium Super 7°</b>	86767	86767M	86781	86767	-
<b>7° Steel Retainer 5/16</b>	87044	87047	-	-	-
<b>7° Steel Retainer 11/32</b>	87062	87062	87054	-	-
<b>7° Steel Retainer 3/8</b>	87053	87063	87053	-	87053
<b>Steel Retainer 10°</b>	87055	87060	87055	87055M	87055
<b>Seat Cup</b>	68936	68936	68936	68933	68933
<b>Seat Disc</b>	68938 or 68940	-	68943	68938 or 68940	68938 or 68940



**VALVE SPRING SPECIFICATIONS –  
Listed According to O.D.**

# Valve Springs

<b>O.D./I.D. Outer</b>	1.530/1.125	1.540/1.100	1.550/1.130	1.550/1.135	1.550/1.140	1.550/1.050	1.555/1.155
<b>O.D./I.D. Middle</b>	-	-	-	-	-	-	-
<b>O.D./I.D. Inner</b>	1.000/.745	.990/.720	1.025/.735	.812	1.035/.755	0.790	0.726
<b>Installed Height</b>	1.950	1.900	1.900	1.850	1.950	1.900	2.300
<b>Rate</b>	501	671	502	550	473	459	1015
<b>Part #</b>	<b>68705</b>	<b>68670S</b>	<b>68804H</b>	<b>68543</b>	<b>68369</b>	<b>68363</b>	<b>68854</b>
<b>Type</b>	Dual	Dual	Dual	Dual	Dual	Dual	Dual
<b>Color Code</b>	Gold/Pink	Lt. Purple	None	None	Yellow/Purple	Blue/Purple	-
<b>Damper</b>	Yes	Yes	Yes	No	Yes	Yes	Yes
<b>Free Length</b>	2.360	2.180	2.500	-	2.460	2.430	-
<b>Wire Diameter</b>	.205/.134	.220/.136	.202/.140	-	.207/.140	.206/.133	-
<b>Material</b>	Super Clean Silicone	H11 Vasco	Super Clean Silicone	-	Silicone	Silicone	Super Clean Silicone
<b>2.300</b>	-	-	-	-	-	-	425
<b>2.250</b>	-	-	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-	-	-
<b>2.100</b>	95 lbs	-	-	-	-	-	-
<b>2.050</b>	115 lbs	-	-	-	173 lbs	-	-
<b>2.000</b>	134 lbs	129 lbs	-	-	192 lbs	172 lbs	-
<b>1.950</b>	160 lbs	164 lbs	-	-	215 lbs	194 lbs	-
<b>1.900</b>	183 lbs	196 lbs	246 lbs	240 lbs	236 lbs	212 lbs	-
<b>1.850</b>	205 lbs	227 lbs	270 lbs	262 lbs	260 lbs	233 lbs	-
<b>1.800</b>	227 lbs	262 lbs	293 lbs	295 lbs	281 lbs	254 lbs	932 lbs
<b>1.750</b>	250 lbs	292 lbs	317 lbs	314 lbs	301 lbs	273 lbs	-
<b>1.700</b>	273 lbs	324 lbs	340 lbs	337 lbs	322 lbs	294 lbs	-
<b>1.650</b>	297 lbs	354 lbs	364 lbs	363 lbs	345 lbs	315 lbs	-
<b>1.600</b>	320 lbs	385 lbs	387 lbs	386 lbs	366 lbs	335 lbs	-
<b>1.550</b>	345 lbs	418 lbs	416 lbs	414 lbs	390 lbs	356 lbs	1186 lbs
<b>1.500</b>	370 lbs	451 lbs	442 lbs	442 lbs	413 lbs	380 lbs	-
<b>1.450</b>	396 lbs	482 lbs	470 lbs	472 lbs	437 lbs	403 lbs	-
<b>1.400</b>	422 lbs	517 lbs	497 lbs	502 lbs	462 lbs	429 lbs	-
<b>1.350</b>	451 lbs	549 lbs	526 lbs	532 lbs	489 lbs	457 lbs	-
<b>1.300</b>	479 lbs	582 lbs	554 lbs	570 lbs	515 lbs	484 lbs	1440 lbs
<b>1.250</b>	511 lbs	617 lbs	583 lbs	-	546 lbs	515 lbs	-
<b>1.200</b>	548 lbs	654 lbs	611 lbs	625 lbs	584 lbs	560 lbs	-
<b>1.150</b>	-	694 lbs	641 lbs	651 lbs	-	-	-
<b>1.100</b>	-	734 lbs	-	-	-	-	-
<b>1.050</b>	-	-	-	-	-	-	-
<b>1.000</b>	-	-	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-	-	-
<b>Coil Bind</b>	1.125	1.010	1.095	1.100	1.100	1.100	1.230
<b>Retainers</b>	-	-	-	-	-	-	-
<b>7° Titanium Retainer</b>	-	-	-	-	-	-	-
<b>7° Titanium Retainer</b>	-	-	-	-	-	-	-
<b>7° Titanium Ret 3/8</b>	-	-	87063M	-	-	-	-
<b>Titanium Ret 10°</b>	86067D	86067	86067D	-	86067B	86067C	-
<b>Titanium Super 7°</b>	86767	86767	86781	86781	86781	86784	86784 or 86785
<b>7° Steel Retainer 5/16</b>	-	-	-	-	-	-	-
<b>7° Steel Retainer 11/32</b>	-	-	-	-	-	-	-
<b>7° Steel Retainer 3/8</b>	-	-	-	-	87053	87053	-
<b>Steel Retainer 10°</b>	87055M	87055	87055	-	87055M	87055M	-
<b>Seat Cup</b>	68933	68953X1	68953X1	-	68953X1	68953X1	68941A-16
<b>Seat Disc</b>	68938 or 68940	68939 or 68941A	68938/68940	68943	68938 or 68940	68938 or 68940	-

<b>O.D./I.D. Outer</b>	1.560/1.115	1.560/1.140	1.560/1.150	1.560/1.145	1.560/1.145	1.560/1.145	1.565/1.140
<b>O.D./I.D. Middle</b>	-	-	-	-	-	-	-
<b>O.D./I.D. Inner</b>	1.000/.725	1.140/.830	1.040/.745	1.040/.745	1.040/.745	1.040/.745	1.035/.740
<b>Installed Height</b>	2.100	2.000	2.000	2.000	2.000	2.000	2.000
<b>Rate</b>	600	489	516	508	521	546	640
<b>Part #</b>	<b>68803H</b>	<b>68735</b>	<b>68765</b>	<b>68775</b>	<b>68785</b>	<b>68795</b>	<b>68671</b>
<b>Type</b>	Dual	Dual	Dual	Dual	Dual	Dual	Dual
<b>Color Code</b>	-	Gold	Gold/Green	Gold/Orange	Gold/Lt. Blue	Gold/Yellow	None
<b>Damper</b>	Yes	No	Yes	Yes	Yes	Yes	Yes
<b>Free Length</b>	2.560	2.540	2.550	2.520	2.620	2.620	2.440
<b>Wire Diameter</b>	.221/.138	.205/.162	.206/.148	.206/.147	.206/.147	.210/.147	.219/.148
<b>Material</b>		Super Clean Silicone	Super Clean Silicone	Super Clean Silicone	Super Clean Silicone	Super Clean Silicone	H11 Vasco
<b>2.300</b>		-	-	-	-	-	-
<b>2.250</b>		-	-	-	-	-	-
<b>2.200</b>		-	-	-	-	-	-
<b>2.150</b>		-	-	-	-	-	-
<b>2.100</b>	248 lbs	178 lbs	182 lbs	196 lbs	203 lbs	237 lbs	174 lbs
<b>2.050</b>	279 lbs	199 lbs	208 lbs	217 lbs	226 lbs	262 lbs	205 lbs
<b>2.000</b>	307 lbs	220 lbs	229 lbs	237 lbs	244 lbs	284 lbs	233 lbs
<b>1.950</b>	340 lbs	244 lbs	253 lbs	262 lbs	274 lbs	310 lbs	263 lbs
<b>1.900</b>	371 lbs	267 lbs	277 lbs	284 lbs	298 lbs	335 lbs	291 lbs
<b>1.850</b>	399 lbs	291 lbs	302 lbs	310 lbs	322 lbs	359 lbs	322 lbs
<b>1.800</b>	429 lbs	314 lbs	326 lbs	333 lbs	352 lbs	381 lbs	351 lbs
<b>1.750</b>	460 lbs	337 lbs	352 lbs	359 lbs	376 lbs	408 lbs	379 lbs
<b>1.700</b>	490 lbs	361 lbs	375 lbs	381 lbs	399 lbs	431 lbs	411 lbs
<b>1.650</b>	515 lbs	384 lbs	400 lbs	406 lbs	423 lbs	457 lbs	441 lbs
<b>1.600</b>	548 lbs	407 lbs	426 lbs	431 lbs	448 lbs	485 lbs	475 lbs
<b>1.550</b>	584 lbs	438 lbs	453 lbs	456 lbs	469 lbs	510 lbs	507 lbs
<b>1.500</b>	618 lbs	464 lbs	481 lbs	481 lbs	494 lbs	538 lbs	537 lbs
<b>1.450</b>	652 lbs	490 lbs	508 lbs	508 lbs	532 lbs	567 lbs	577 lbs
<b>1.400</b>	688 lbs	516 lbs	535 lbs	536 lbs	560 lbs	595 lbs	610 lbs
<b>1.350</b>	726 lbs	543 lbs	568 lbs	565 lbs	589 lbs	627 lbs	648 lbs
<b>1.300</b>	765 lbs	568 lbs	595 lbs	593 lbs	621 lbs	660 lbs	678 lbs
<b>1.250</b>	807 lbs	595 lbs	634 lbs	628 lbs	654 lbs	699 lbs	718 lbs
<b>1.200</b>	871 lbs	-	-	-	-	-	752 lbs
<b>1.150</b>		-	-	-	-	-	-
<b>1.100</b>		-	-	-	-	-	-
<b>1.050</b>		-	-	-	-	-	-
<b>1.000</b>		-	-	-	-	-	-
<b>0.950</b>		-	-	-	-	-	-
<b>Coil Bind</b>	1.140	1.150	1.150	1.160	1.160	1.160	1.110
<b>Retainers</b>		-	-	-	-	-	-
<b>7° Titanium Retainer</b>		-	-	-	-	-	-
<b>7° Titanium Retainer</b>		-	-	-	-	-	-
<b>7° Titanium Ret 3/8</b>		-	-	-	-	-	-
<b>Titanium Ret 10°</b>	86067D	-	86067D	86067D	86067D	86067D	86067
<b>Titanium Super 7°</b>	86785	86781	86781	86781	86781	86781	86781
<b>7° Steel Retainer 5/16</b>		-	-	-	-	-	-
<b>7° Steel Retainer 11/32</b>		-	-	-	-	-	-
<b>7° Steel Retainer 3/8</b>		-	-	-	-	-	-
<b>Steel Retainer 10°</b>	87055M	-	87064	87064	87064	87064	87055
<b>Seat Cup</b>	68953X1	68953X1	68953X1	68953X1	68953X1	68953X1	-
<b>Seat Disc</b>	68941A	68943	68938 or 68940	68938 or 68940	68938 or 68940	68938 or 68940	68938, 68940, 68942

**VALVE SPRING SPECIFICATIONS –  
Listed According to O.D.**

# Valve Springs

<b>O.D./I.D. Outer</b>	1.590/1.145	1.600/1.170	1.600/1.170	1.600/1.175	1.610/1.215
<b>O.D./I.D. Middle</b>	-	-	-	-	1.205/.890
<b>O.D./I.D. Inner</b>	1.025/.735	1.060/.765	1.055/.760	1.160/.850	.890/.665
<b>Installed Height</b>	2.050	2.050	2.050	2.100	1.850
<b>Rate</b>	617	547	604	552	514
<b>Part #</b>	<b>68808</b>	<b>68805</b>	<b>68806</b>	<b>68844</b>	<b>68694</b>
<b>Type</b>	Dual	Dual	Dual	Dual	Triple
<b>Color Code</b>	Red/Purple	Red/Blue	Red/Purple	Yellow	None
<b>Damper</b>	Yes	Yes	Yes	No	No
<b>Free Length</b>	2.515	2.630	2.552	2.554	2.440
<b>Wire Diameter</b>	.219/.148	.218/.148	.225/.147	.221/.155	.199/.155/.112
<b>Material</b>	Super Clean Silicone	Super Clean Silicone	Super Clean Silicone	Super Clean Silicone	Silicone
<b>2.300</b>	-	-	-	-	-
<b>2.250</b>	-	-	-	-	-
<b>2.200</b>	-	-	-	-	-
<b>2.150</b>	-	-	-	-	-
<b>2.100</b>	228 lbs	233 lbs	227 lbs	229 lbs	-
<b>2.050</b>	261 lbs	258 lbs	255 lbs	253 lbs	-
<b>2.000</b>	295 lbs	280 lbs	279 lbs	276 lbs	-
<b>1.950</b>	315 lbs	305 lbs	306 lbs	305 lbs	161 lbs
<b>1.900</b>	347 lbs	329 lbs	331 lbs	331 lbs	181 lbs
<b>1.850</b>	375 lbs	353 lbs	356 lbs	357 lbs	203 lbs
<b>1.800</b>	403 lbs	379 lbs	382 lbs	384 lbs	226 lbs
<b>1.750</b>	433 lbs	406 lbs	410 lbs	409 lbs	250 lbs
<b>1.700</b>	465 lbs	431 lbs	440 lbs	435 lbs	273 lbs
<b>1.650</b>	493 lbs	461 lbs	469 lbs	462 lbs	305 lbs
<b>1.600</b>	525 lbs	489 lbs	498 lbs	489 lbs	329 lbs
<b>1.550</b>	553 lbs	516 lbs	529 lbs	516 lbs	355 lbs
<b>1.500</b>	583 lbs	544 lbs	559 lbs	544 lbs	380 lbs
<b>1.450</b>	615 lbs	574 lbs	593 lbs	572 lbs	404 lbs
<b>1.400</b>	650 lbs	603 lbs	626 lbs	601 lbs	431 lbs
<b>1.350</b>	684 lbs	633 lbs	661 lbs	626 lbs	456 lbs
<b>1.300</b>	720 lbs	663 lbs	696 lbs	660 lbs	494 lbs
<b>1.250</b>	755 lbs	695 lbs	733 lbs	-	519 lbs
<b>1.200</b>	-	-	-	-	545 lbs
<b>1.150</b>	-	-	-	-	572 lbs
<b>1.100</b>	-	-	-	-	-
<b>1.050</b>	-	-	-	-	-
<b>1.000</b>	-	-	-	-	-
<b>0.950</b>	-	-	-	-	-
<b>Coil Bind</b>	1.170	1.180	1.160	1.210	1.050
<b>RETAINERS</b>	-	-	-	-	-
<b>7° Titanium Retainer</b>	-	-	-	-	-
<b>7° Titanium Retainer</b>	-	-	-	-	-
<b>7° Titanium Ret 3/8</b>	-	-	-	-	-
<b>Titanium Ret 10°</b>	86067	86068	86068	86068	86069
<b>Titanium Super 7°</b>	86781	86780	86780	86780	-
<b>7° Steel Retainer 5/16</b>	-	-	-	-	-
<b>7° Steel Retainer 11/32</b>	-	-	-	-	-
<b>7° Steel Retainer 3/8</b>	-	-	-	-	-
<b>Steel Retainer 10°</b>	-	87056	87056	-	87056
<b>Seat Cup</b>	68955	68955	68955	68955	68955
<b>Seat Disc</b>	68938/68940	68938/68940	68938/68940	68943	68939 or 68941

<b>O.D./I.D. Outer</b>	1.615/1.175	1.625/1.175	1.630/1.190	1.630/1.180
<b>O.D./I.D. Middle</b>	-	-	-	-
<b>O.D./I.D. Inner</b>	1.060/.775	1.075/.770	1.050/.760	1.050/.750
<b>Installed Height</b>	2.100	2.000	1.900	2.000
<b>Rate</b>	530	595	704	666
<b>Part #</b>	<b>68755</b>	<b>68745</b>	<b>68555X2</b>	<b>68555X1</b>
<b>Type</b>	Dual	Dual	Dual	Dual
<b>Color Code</b>	Gold	Gold/White	Pink/Red	Red
<b>Damper</b>	Yes	Yes	Yes	Yes
<b>Free Length</b>	2.665	2.520	2.240	2.400
<b>Wire Diameter</b>	.225/.147	.225/.147	.227/.147	.226/.149
<b>Material</b>	Super Clean Silicone	Super Clean Silicone	H11 Vasco	H11 Vasco
<b>2.300</b>	-	-	-	-
<b>2.250</b>	-	-	-	-
<b>2.200</b>	234 lbs	-	-	-
<b>2.150</b>	261 lbs	-	-	-
<b>2.100</b>	287 lbs	203 lbs	-	176 lbs
<b>2.050</b>	312 lbs	227 lbs	-	206 lbs
<b>2.000</b>	336 lbs	253 lbs	155 lbs	239 lbs
<b>1.950</b>	361 lbs	282 lbs	188 lbs	273 lbs
<b>1.900</b>	388 lbs	307 lbs	219 lbs	305 lbs
<b>1.850</b>	414 lbs	333 lbs	254 lbs	336 lbs
<b>1.800</b>	442 lbs	361 lbs	285 lbs	371 lbs
<b>1.750</b>	466 lbs	389 lbs	318 lbs	409 lbs
<b>1.700</b>	491 lbs	423 lbs	348 lbs	441 lbs
<b>1.650</b>	521 lbs	452 lbs	380 lbs	474 lbs
<b>1.600</b>	548 lbs	481 lbs	410 lbs	510 lbs
<b>1.550</b>	578 lbs	510 lbs	442 lbs	542 lbs
<b>1.500</b>	610 lbs	542 lbs	477 lbs	571 lbs
<b>1.450</b>	640 lbs	575 lbs	513 lbs	605 lbs
<b>1.400</b>	671 lbs	609 lbs	551 lbs	640 lbs
<b>1.350</b>	706 lbs	643 lbs	590 lbs	674 lbs
<b>1.300</b>	738 lbs	680 lbs	630 lbs	705 lbs
<b>1.250</b>	-	713 lbs	670 lbs	745 lbs
<b>1.200</b>	-	-	712 lbs	770 lbs
<b>1.150</b>	-	-	765 lbs	817 lbs
<b>1.100</b>	-	-	807 lbs	870 lbs
<b>1.050</b>	-	-	-	-
<b>1.000</b>	-	-	-	-
<b>0.950</b>	-	-	-	-
<b>Coil Bind</b>	1.190	1.150	1.020	1.020
<b>RETAINERS</b>	-	-	-	-
<b>7° Titanium Retainer</b>	-	-	-	-
<b>7° Titanium Retainer</b>	-	-	-	-
<b>7° Titanium Ret 3/8</b>	-	-	-	-
<b>Titanium Ret 10°</b>	86068	86068	86068	-
<b>Titanium Super 7°</b>	86780	86780	86780	86780
<b>7° Steel Retainer 5/16</b>	-	-	-	-
<b>7° Steel Retainer 11/32</b>	-	-	-	-
<b>7° Steel Retainer 3/8</b>	-	-	-	-
<b>Steel Retainer 10°</b>	-	87056	87056	87056
<b>Seat Cup</b>	68955	68955	68955	68955
<b>Seat Disc</b>	68938 or 68940	68938 or 68940	68938 or 68940	68938 or 68940



**VALVE SPRING SPECIFICATIONS –  
Listed According to O.D.**

# Valve Springs

<b>O.D./I.D. Outer</b>	1.635/1.190	1.650/1.205	1.650/1.205
<b>O.D./I.D. Middle</b>	-	1.195/.880	1.200/.880
<b>O.D./I.D. Inner</b>	1.185/.874	.880/.640	.875/.640
<b>Installed Height</b>	2.050	2.100	2.200
<b>Rate</b>	646	687	692
<b>Part #</b>	<b>68860</b>	<b>68547</b>	<b>68548</b>
<b>Type</b>	Dual	Triple	Triple
<b>Color Code</b>	Blue	Red/Purple	Red/Purple
<b>Damper</b>	No	No	No
<b>Free Length</b>	2.470	2.520	2.620
<b>Wire Diameter</b>	.223/.162	.215/.162/.119	.215/.162/.119
<b>Material</b>	Super Clean Silicone	Super Clean Silicone	Super Clean Silicone
<b>2.300</b>	-	-	-
<b>2.250</b>	-	-	-
<b>2.200</b>	-	-	279 lbs
<b>2.150</b>	-	255 lbs	312 lbs
<b>2.100</b>	206 lbs	287 lbs	343 lbs
<b>2.050</b>	236 lbs	321 lbs	375 lbs
<b>2.000</b>	257 lbs	351 lbs	405 lbs
<b>1.950</b>	287 lbs	380 lbs	439 lbs
<b>1.900</b>	316 lbs	416 lbs	470 lbs
<b>1.850</b>	350 lbs	448 lbs	502 lbs
<b>1.800</b>	381 lbs	480 lbs	534 lbs
<b>1.750</b>	411 lbs	512 lbs	570 lbs
<b>1.700</b>	442 lbs	541 lbs	602 lbs
<b>1.650</b>	472 lbs	580 lbs	636 lbs
<b>1.600</b>	504 lbs	610 lbs	667 lbs
<b>1.550</b>	537 lbs	645 lbs	705 lbs
<b>1.500</b>	567 lbs	679 lbs	740 lbs
<b>1.450</b>	599 lbs	715 lbs	772 lbs
<b>1.400</b>	633 lbs	750 lbs	810 lbs
<b>1.350</b>	667 lbs	790 lbs	850 lbs
<b>1.300</b>	702 lbs	825 lbs	890 lbs
<b>1.250</b>	741 lbs	863 lbs	927 lbs
<b>1.200</b>	771 lbs	905 lbs	966 lbs
<b>1.150</b>	818 lbs	947 lbs	1006 lbs
<b>1.100</b>	864 lbs	-	-
<b>1.050</b>	-	-	-
<b>1.000</b>	-	-	-
<b>0.950</b>	-	-	-
<b>Coil Bind</b>	1.010	1.085	1.080
<b>RETAINERS</b>	-	-	-
<b>7° Titanium Retainer</b>	-	-	-
<b>7° Titanium Retainer</b>	86044	-	-
<b>7° Titanium Ret 3/8</b>	-	-	-
<b>Titanium Ret 10°</b>	86068	86069	86069
<b>Titanium Super 7°</b>	86780	86769	86769
<b>7° Steel Retainer 5/16</b>	-	-	-
<b>7° Steel Retainer 11/32</b>	-	-	-
<b>7° Steel Retainer 3/8</b>	-	-	-
<b>Steel Retainer 10°</b>	87056	87056	87056
<b>Seat Cup</b>	68955	68955	68955
<b>Seat Disc</b>	-	-	-

# Valve Spring Retainers

## 7° TITANIUM RETAINERS

Part No.	Stem	Grams	"A"	"B"	"C"	Step	Height
87039T	-	5.7	0.900	0.630	-	-	-
86037T	5/16	11	1.250	0.855	0.630	.075	+0.50
86046	5/16	10.4	1.250	0.925	0.630	.075	-
86030	5/16	11.6	1.250	0.925	0.630	.075	+0.90
87040	5/16	17.2	1.375	1.020	0.685	.105	+0.70
87007	11/32	9.7	1.200	0.890	.0600	.100	-
86031	11/32	11.9	1.250	0.795	0.660	.130	+0.50
87041	11/32	13.9	1.375	1.065	0.670	.115	+0.140
86044	11/32	22.5	1.500	1.185	0.775	.115	+0.065
87042	3/8	16.4	1.375	1.020	0.680	.100	+0.70

Note: Requires 7° keepers.

## SUPER 7° TITANIUM RETAINERS

Part No.	Grams	"A"	"B"	"C"	"D"	Step	Height
86756	9.2	1.100	.890	-	0.660	.100	+0.30
86757	8.6	1.200	.945	.685	-	.060	+0.50
86753	9.4	1.150	.900	.650	-	.100	+0.000
86770	-	1.350	1.070	-	0.720	.100	+0.150
86780L	15.1	1.350	1.165	-	0.765	.100	+0.150
86783	15	1.400	1.105	-	0.695	.100	+0.150
86767M	15.3	1.440	1.065	-	0.700	.095	+0.070
86784	16	1.500	1.035	-	0.710	.100	+0.050
86785	16	1.500	1.035	-	0.710	.100	+0.150
86767	15.3	1.500	1.100	-	0.700	.100	+0.070
86767D	15.3	1.500	1.100	-	0.720	.095	+0.100
86781	17.3	1.500	1.135	-	0.730	.100	+0.150
86790	20.1	1.500	1.165	-	0.765	.100	+0.075
86780	19.9	1.500	1.165	-	0.765	.100	+0.150
86769	19.9	1.500	1.185	.850	0.640	.100	+0.100

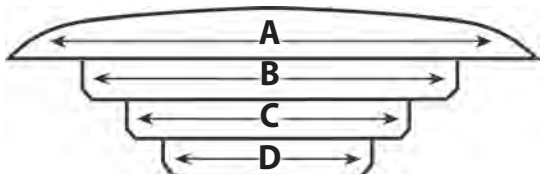
## 10° TITANIUM RETAINERS

Part No.	Grams	"A"	"B"	"C"	"D"	Step	Height
86067M	12	1.440	1.065	-	0.700	.095	+0.70
86068CL	16.5	1.500	0.970	0.760	0.655	.100	+0.100
86067A	17.5	1.500	0.970	-	0.695	.095	+0.050
86067C	13	1.500	1.020	-	0.740	.040	+0.050
86068C	14	1.500	1.050	0.760	0.630	.100	+0.120
87065	18.5	1.500	1.065	-	0.700	.110	+0.070
87072	17.5	1.500	1.100	-	0.650	.110	+0.075
87071	18	1.500	1.100	-	0.675	.115	+0.070
86067	13	1.500	1.100	-	0.700	.100	+0.070
86065	17.5	1.500	1.100	-	0.700	.110	-0.10
86067D	18	1.500	1.100	-	0.720	.095	+0.100
86067B	19	1.500	1.100	-	0.750	.100	+0.070
86068	15.5	1.500	1.175	-	0.765	.100	+0.100
86068D	16.5	1.500	1.175	-	0.760	.110	+0.160
86069	19	1.500	1.185	0.850	0.640	.100	+0.100
86062*	19	1.500	1.185	0.850	0.640	.100	+0.100

Note: Requires 10° keepers. \* Indicates LightWeight design.

## RETAINER MEASUREMENTS

Diagram 2.  
Retainer Dimensions for Retainers  
(columns "A, B, C, D"). "C" is used for triple springs only.



## BUICK 11° STEEL RETAINERS

Part No.	Stem	"A"	"B"	"C"	Step	Height
87019	3/8	1.370	0.940	0.670	.185	-
87021	3/8	1.370	1.000	0.670	.185	-
87022	3/8	1.490	1.080	0.730	.115	-

Note: Requires factory keepers.

## MISCELLANEOUS RETAINERS

Part No.	Engine	Stem	Grams	"A"	"B"	"C"	Step	Height
87095	4G63/Evo	6.5mm	8.8	1.050	.740	-	-	Stk
87095S	4G63/Evo	6.5mm	15	1.050	.740	-	-	Stk
87091	B-VTEC Stk	5.5mm	7.1	1.100	.830	.600	.080	Stk
87091S	B-VTEC Stk	5.5mm	12.6	1.100	.830	.600	.080	Stk
87092	B18A/B	6.5mm	6.6	1.100	.805	.600	.080	Stk
87092S	B18A/B	6.5mm	11.3	1.100	.805	.600	.080	Stk
87093	B-VTEC H22	5.5mm	8.0	1.150	.870	.610	.080	Stk
87093S	B-VTEC H22	5.5mm	13.8	1.150	.870	.610	.080	Stk
87093D	B-VTEC H22	5.5mm	8.6	1.150	.870	.610	.080	+0.060
87093DS	B-VTEC H22	5.5mm	14.7	1.150	.870	.610	.080	+0.060
87015	LS1 Chromoly	8mm	-	1.000	.630	-	-	Stk
87018	LS1 Chevy	8mm	11.6	1.000	.645	-	-	Stk
87018T	LS1 Chevy	8mm	8	1.000	.645	-	-	Stk
86036T	LS1 Chevy	8mm	9.3	1.250	.880	.625	.075	+0.050
87029	LT1 Chevy	11/32	13.8	1.000	.645	-	-	Stk
87029T	LT1 Chevy	11/32	7.9	1.000	.645	-	-	Stk
87096	D16/D17A	5.5mm	4.5	.875	.610	.450	-	Stk
87096S	D16/D17A	5.5mm	7.5	.875	.610	.450	-	Stk
87084	DSM 420A	6mm	6.7	1.075	.770	.450	-	Stk
87083	Duratec 2.3	5.5mm	7.1	1.000	.745	.610	-	Stk
87082	Ford Focus	6mm	6.2	1.030	.735	-	-	+0.050
87023	4.6/5.4 Ford	6mm	9.1	.875	.630	.480	.105	Stk
87023T	4.6/5.4 Ford	6mm	5.2	.875	.630	.480	.105	Stk
87020	4.6/5.4 Ford	7mm	6.7	.872	.567	.480	.105	Stk
87020T	4.6/5.4 Ford	7mm	4.0	.872	.567	.480	.105	Stk
87024	4.6/5.4 Ford	7mm	7.7	.875	.620	.480	.100	Stk
87024T	4.6/5.4 Ford	7mm	4.7	.875	.620	.480	.100	Stk
87025	4.6/5.4 Ford	7mm	8.2	.875	.620	.480	.100	+0.060
87025T	4.6/5.4 Ford	7mm	4.8	.875	.620	.480	.100	+0.060
87026	4.6/5.4 32v	7mm	11.2	1.000	.705	.495	.100	Stk
87026T	4.6/5.4 32v	7mm	6.2	1.000	.705	.495	.100	Stk
87087	H22 Stk	5.5mm	5.7	1.000	.815	.610	.080	Stk
87035	5.7-6.1 Hemi	-	9.1	1.000	.615	-	-	Stk
87035T	5.7-6.1 Hemi	-	5.1	1.000	.615	-	-	Stk
87094	K20A/K24A	5.5mm	7.1	1.050	.870	.610	.080	Stk
87094S	K20A/K24A	5.5mm	12.3	1.050	.870	.610	.080	Stk
87098	KA24DE(T)	6mm	8.1	1.115	.850	.610	-	Stk
87076	Patrol 4.8	-	7.1	1.055	.770	.450	-	+0.050
87097	SR20DE(T)	6mm	9.3	1.125	.825	.475	-	Stk
87085	Toyota 2JZ	6mm	6.3	1.050	.745	.515	.100	Stk
87086	Toyota 1zz	5.5mm	5.2	.800	.640	.515	-	Stk
87011	VW	8mm	22.8	1.200	.890	.680	.125	Stk
87077	TB48	8mm	22.8	1.055	.750	.450	.075	+0.050
87077S	TB48	8mm	22.8	1.055	.750	.450	.075	+0.050

S = Steel • T = Titanium

## SUPER 7° STEEL RETAINERS

Part No.	Stem	Grams	"A"	"B"	"C"	Step	Height
86753S	-	16.3	1.150	0.900	0.650	.085	+0.000
86753SS	-	14.3	1.150	0.790	0.650	.095	+0.000



## 7° STEEL RETAINERS

Part No.	Stem	Grams	"A"	"B"	"C"	Step	Height
87057	5/16	14.8	1.000	0.650	-	-	-
86037	5/16	19	1.250	0.855	0.630	.075	+0.50
87045	5/16	20.1	1.250	0.930	0.620	.145	+0.50
87046	5/16	24.6	1.250	0.910	0.615	.100	+0.025
87047	5/16	24.7	1.375	1.020	0.685	.065	-0.50
87044	5/16	27.6	1.375	1.010	0.740	.145	+0.110
87006	8mm	17.9	1.250	.950	0.680	.075	-
87029M	11/32	13.7	1.000	.615	-	-	-
87036	11/32	19.6	1.200	.780	.685	.100	-
86032	11/32	25.4	1.250	0.795	0.660	.130	-0.15
86032D	11/32	21.5	1.250	0.795	0.660	.130	+0.050
86032S	11/32	24.1	1.250	0.795	0.660	.130	-0.065
87009	-	14.4	1.130	0.865	-	.060	-
87009M	-	-	1.130	0.865	-	.060	+0.30
87050	11/32	31.1	1.375	1.020	0.685	.115	+0.000
87052	11/32	31.1	1.375	1.020	0.685	.115	-0.50
87048	11/32	30.8	1.375	1.020	0.685	.115	+0.085
87048D	11/32	25.5	1.375	1.020	0.685	.140	+0.150
87054*	11/32	29.1	1.375	1.115	0.815	.100	+0.080
87062	11/32	32.3	1.500	1.080	0.730	.115	+0.125
87062S	11/32	32.2	1.500	1.080	0.730	.115	+0.025
87049	3/8	29.6	1.375	1.020	0.685	.115	+0.070
87049D	3/8	28.1	1.375	1.020	0.685	.140	+0.100
87053*	3/8	25.7	1.375	1.115	0.745	.100	+0.080
87063	3/8	31.6	1.500	1.080	0.740	.115	+0.100
87063M	3/8	37	1.500	1.080	0.740	.115	+0.050
87063S	3/8	37.2	1.500	1.080	0.740	.115	+0.000

Note: Requires 7° keepers. \* Indicates LightWeight retainer design.

## 10° STEEL RETAINERS

Part No.	Grams	"A"	"B"	"C"	"D"	Step	Height
87060M	27.3	1.440	1.065	-	0.650	.115	+0.050
87060	28.7	1.500	1.080	-	0.650	.115	+0.070
86064P	34.6	1.500	1.080	-	0.700	.115	-0.020
87064P	30.2	1.500	1.080	-	0.700	.115	+0.100
87064	30.2	1.500	1.080	-	0.740	.115	+0.100
87055M	32.1	1.500	1.100	-	0.700	.115	+0.050
87055	31.2	1.500	1.100	-	0.700	.115	+0.085
87055D	28.5	1.500	1.100	-	0.700	.115	+0.110
87056	35.8	1.500	1.180	-	0.650	.100	+0.100

Note: Requires 10° keepers.



## 10° LITE WEIGHT TOOL STEEL RETAINERS

Part No.	Grams	"A"	"B"	"C"	"D"	Step	Height
87001-16	19.4	1.375	1.068	.705	-	.098	+0.100
87002-16	21.9	1.390	1.100	.800	.650	.090	+0.085
87003-16	21.4	1.450	1.100	.710	-	.090	+0.085

# Valve Spring Accessories



## VALVE STEM SEALS

Crower valve stem seals provide correct oil control at the valve guide. The spring loaded wiper design prevents unwanted oil contamination on the cylinder. Heavy-duty steel and teflon construction.

Part No.	Description	Stem Dia.	I.D.
86070-16	Standard	5/16	.530"
86070T-16	Smaller O.D. (triple spring)	5/16	.500"
86071-16	Standard	3/8	.530"
86071T-16	Smaller O.D. (triple spring)	3/8	.500"
86072-16	Standard	11/32	.530"
86072T-16	Smaller O.D. (triple spring)	11/32	.500"
86072S-16	.5500D Steel/Rubber	11/32	.500"
86080-16	.600 OD Steel/Rubber	8mm	.500"

Also available in singles by replacing -16 with -1.



## LASH CAPS

Crower lash caps protect the ends of your valves from excessive wear and help to correct rocker geometry by increasing rocker arm to retainer clearance. Machined from high grade chromoly steel and heat-treated for added strength, Crower lash caps give your valves an added .080" margin of protection. Highly recommended for performance applications, and a must for costly stainless steel or titanium valves.

Part No.	Description	Depth
86120-16	5/16 valve stem (Set/16)	.090"
86120S-16	5/16 valve stem (Set/16)	.060"
86121-16	11/32 valve stem (Set/16)	.090"
86121D-16	11/32 valve stem (Set/16)	.120"
86121S-16	11/32 valve stem (Set/16)	.060"
86122-16	3/8 valve stem (Set/16)	.090"
86122D-16	3/8 valve stem (Set/16)	.120"
86122S-16	3/8 valve stem (Set/16)	.060"
86123-8	5/16 valve stem VW (Set/8)	.090"
86125-24	6mm valve stem Toyota (Set/24)	.050"
86127-8	11/32 2300cc (Set/8)	.100"
86128-16	7mm Ford 4.6/5.4L (Set/16)	.120"

Also available in singles by replacing -16 with -1.



## BILLET PERFORMANCE 7° VALVE STEM KEEPERS

Crower billet performance valve stem keepers are precision machined from premium billet bar stock chromoly steel. Heat-treated for maximum strength to insure against shoulder shearing (common with stock and lesser quality keepers). In addition to our standard height, we also offer .050" higher and .050" lower to achieve the correct installed spring height. Each variation is color coded for identification. Serious engine builders should have a complete selection on hand at all times.

Color Coded By Installed Height

BLACK (B) = STANDARD • SILVER (S) = +.050" • GOLD (G) = -.050"

Part No.	Stem Dia.	Color Code	Inst. Height
86106-16	5/16	B	Standard
86107-16	11/32	B	Standard
86107X1-16	11/32	S	+.050"
86107X2-16	11/32	G	-.050"
86108-16	3/8	B	Standard
86108X1-16	3/8	S	+.050"
86108X2-16	3/8	G	-.050"
86115-16	5.5mm	N/A	Standard
86115X1-16	5.5mm	N/A	+.050"
86118-16	LS1 8mm Bead lock	N/A	Standard
86118X1-16	LS1 8mm Bead lock	N/A	+.050"
86118X2-16	LS1 8mm Bead lock	N/A	-.050"

## SUPER 7° KEEPERS

Part No.	Stem Dia.	Color Code	Inst. Height
86709-16	5/16	B	Standard
86709X1-16	5/16	S	+.050"
86709X2-16	5/16	G	-.050"
86710-16	11/32	B	Standard
86710X1-16	11/32	S	+.050"
86710X2-16	11/32	G	-.050"

Also available in pairs by replacing -16 with -PR.



## STAMPED STEEL 7° VALVE STEM KEEPERS

Crower valve stem keepers are stamped from the finest grade steel alloy and heat-treated for added strength and wear resistance. Outperforms stock keepers.

Part No.	Stem Dia.	Inst. Height
86100-16	11/32	Standard
86102-16	3/8	Standard

Also available in pairs by replacing -16 with -PR.

## TITANIUM KEEPERS

For the ultimate in lightweight performance, Crower billet titanium keepers are CNC machined to insure the best possible keeper.

Part No.	Stem Dia.	Inst. Height	Lock Type	Groove
86115T-16	5.5mm	STD	Std	Square
86117T-16	7mm	STD	Std	Bead
86117X1T-16	7mm	+.050	Std	Bead
86117X2T-16	7mm	-.050	Std	Bead
86717T-16	7mm	STD	Super 7	Bead
86717X1T-16	7mm	+.050	Super 7	Bead
86717X2T-16	7mm	-.050	Super 7	Bead
86109T2-16	5/16	-.050	10 Degree	Square
86709T-16	5/16	STD	Super 7	Square
86709T1-16	5/16	+.050	Super 7	Square
86709T2-16	5/16	-.050	Super 7	Square
86110T2-16	11/32	-.050	10 Degree	Square
86710T-16	11/32	STD	Super 7	Square
86710T2-16	11/32	-.050	Super 7	Square
86710T3-16	11/32	-.100	Super 7	Square



## JUMBO SPLIT-LOCK 10° VALVE STEM KEEPERS

Crower Jumbo valve stem keepers are designed with a 10° taper (twice the strength of the conventional 7° taper). Jumbo keepers are machined from premium chromoly steel and heat-treated for maximum strength. Crower Jumbo keepers are available in standard height, .050" higher or .050" lower positions for added flexibility in achieving the correct installed spring height. Each variation is color coded for easy identification.

Part No.	Stem Dia.	Color Code	Inst. Height
86109-16	5/16	B	Standard
86110-16	11/32	B	Standard
86110X1-16	11/32	S	+.050"
86110X2-16	11/32	G	-.050"
86111-16	3/8	B	Standard
86111X1-16	3/8	S	+.050"
86111X2-16	3/8	G	-.050"

Also available in pairs by replacing -16 with -PR.

## Crower Keepers

GOLD (G) = -.050"  
SILVER (S) = +.050"  
BLACK (B) = STANDARD



# Valve Spring Accessories



## CALIBRATION SPRINGS

Crower's calibration springs help calibrate your spring tester with accurate seat and nose open spring pressures based on a plotted graph included with the spring. Available in low or high pressure design. A must for any engine shop.

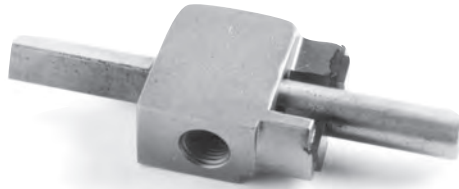
Part No.	Description
68000-1	Low Pressure Calibration Spring (Single)
68001-1	High Pressure Calibration Spring (Dual)



## COPPER PLATED SPRING SHIMS

Crower copper plated spring shims are case hardened .005" to .010" deep to a surface hardness of 45RC. Available in single or assorted thickness sets and bulk.

Part No.	Description	O.D. x I.D.	Size
85056	Shim	1.509 x 1.310	.030
85060-16	Set/16 pcs	1.525 x 0.735	.015
85060B	Bulk/80 pcs (1 size)	1.525 x 0.735	.015
85061-16	Set/16 pcs	1.525 x 0.735	.030
85061B	Bulk/80 pcs (1 size)	1.525 x 0.735	.030
85062-16	Set/16 pcs	1.525 x 0.735	.060
85062B	Bulk/80 pcs (1 size)	1.525 x 0.735	.060
85063A	Asst/16 ea (015,030,060)	1.525 x 0.735	Asst
85065-16	Set/16 pcs	1.625 x 0.635	.015
85065	Bulk/80 pcs (1 size)	1.625 x 0.635	.015
85066-16	Set/16 pcs	1.625 x 0.635	.030
85066B	Bulk/80 pcs (1 size)	1.625 x 0.635	.030
85067-16	Set/16 pcs	1.625 x 0.635	.060
85067B	Bulk/80 pcs (1 size)	1.625 x 0.635	.060
85068A	Asst/16 ea (015,030,060)	1.625 x 0.635	Asst



## VALVE SEAL CUTTERS

Crower valve seal/valve guide cutter includes cutting tool. Must order pilot separately when ordering.

Part No.	I.D.
86079	.530"
86079T	.500"

**Note:** Must order pilot separately. See pilots listed on the left.

## CUTTER PILOTS

Pilots available for spring seat and valve seal cutters.

Part No.	Stem Dia.
68970	5/16
68971	3/8
68972	1/2



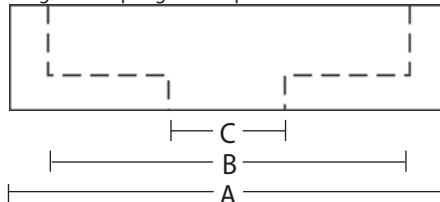
## SPRING SEAT CUPS & SEAT DISCS

Crower valve spring seat cups eliminate the need for seat cutting in some instances and shimming in others. Designed to keep springs from wandering, seat cups also protect aluminum heads from "galling." Spring seat discs also available.

### SEAT CUPS

Part No.	"A"	"B"	"C"	Cutter
68920-16	1.410	1.310	0.780	
68922-16	1.365	1.265	0.570	-
68935-16	1.410	1.285	0.565	-
68923-16	1.410	1.310	0.570	-
68934-16	1.550	1.450	0.575	68981
68930-16	1.550	1.440	0.635	68979
68951-16	1.550	1.455	1.000	-
68931-16	1.550	1.475	0.635	68979
68957-16	1.590	1.490	0.675	68984
68952-16	1.620	1.515	0.635	-
68936-16	1.625	1.540	0.635	-
68933-16	1.685	1.565	0.635	68989
68953X1-16	1.695	1.565	0.635	68989
68955-16	1.745	1.650	0.635	68996
68959-16	1.740	1.700	0.635	68996
68956-16	1.795	1.700	0.635	-
68958-16	Rotation Eliminators (396-454 Chevy)			

Diagram 1. Spring Seat Cup



## SPRING SEAT CUTTERS

Designed to accurately machine cylinder heads for aftermarket spring applications using a drill press or hand drill. Cutter blades are carbide tipped and valve guide pilots are interchangeable. Special spring seat cutters in custom sizes are available. Call for pricing and availability.

Part No.	O.D. x I.D.	Part No.	O.D. x I.D.
68986	1.515 x 0.750	68984	1.630 x 0.670
68979	1.555 x 0.630	68995	1.630 x 0.770
68977	1.570 x 0.545	68989	1.705 x 0.630
68981	1.575 x 0.610	68996	1.750 x 0.630

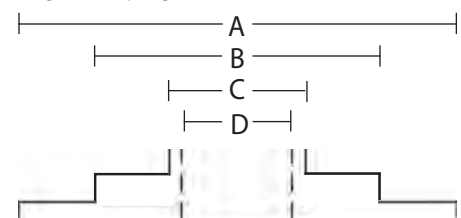
**Note:** Must order pilot separately. See pilots listed on the left.

### SEAT DISCS

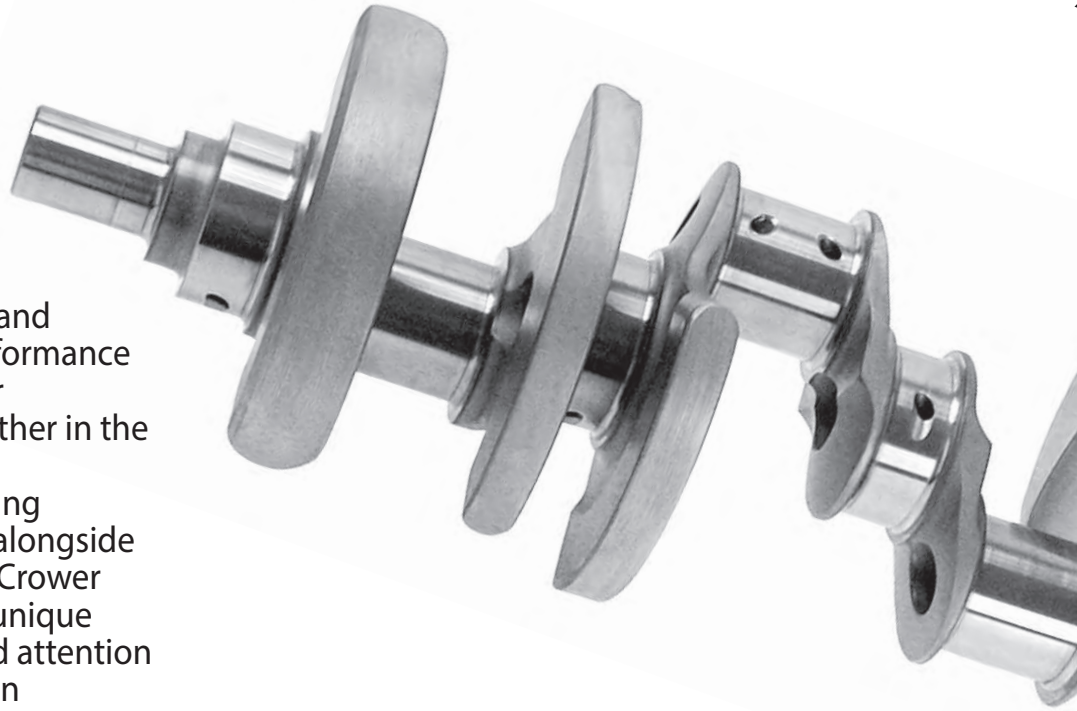
Part No.	"A"	"B"	"C"	"D"
68924-16	1.400	0.970	-	0.527
68925-16	1.400	0.780	-	0.527
68926-16	.842	0.635	-	0.495
68928-16	1.250	0.635	-	0.515
68929-16	1.100	0.970	0.600	0.482
68938-16	1.560	0.740	-	0.505
68939-16	1.565	0.660	-	0.505
68940-16	1.560	0.740	-	0.562
68940A-16	1.560	0.750	-	0.570
68941-16	1.565	0.660	-	0.562
68941A-16	1.570	0.690	0.570	0.590
68942-16	1.535	0.730	-	0.635
68943-16	1.545	0.805	-	0.565
68948-16	1.300	0.680	0.510	0.510
68947-16	1.270	0.615	0.505	0.505
68949-16	1.300	0.800	0.570	0.570

Note: All cups/discs are approximately .060" thick.

Diagram 2. Spring Seat Disc







## **CROWER CRANKSHAFTS**

Choose a Crower crankshaft and you'll get the finest high performance crankshaft made. The Crower crankshaft facility is like no other in the industry, utilizing massive, state-of-the-art CNC machining centers that work in unison, alongside seasoned master craftsmen. Crower crankshafts incorporate the unique combination of precision and attention to detail with high production capabilities, in a wide variety of designs and applications.

## **THE MATERIAL**

Crower Crankshafts are made from the finest quality materials in the world. Our top of the line forged cranks are made from aerospace quality, vacuum degassed 4340 chromoly steel. Our 4340 forged cranks are "non-twist" drop forged for the strongest crankshafts on the market. Crower's billet cranks utilize either 4340 or EN30B materials. It's your choice at Crower, we make what you want and need for your application.

## **MANUFACTURING**

Crower has created a very effective combination of streamlined production capabilities and quality engineering that produces better crankshafts, quicker and more accurately than any competing crankshaft manufacturer. Crower combines the latest CNC machining centers with nearly 30 years of crankshaft manufacturing experience, to deliver the highest quality crankshaft, built to exacting specifications, at an affordable price. The capability of manufacturing from round bar allows Crower to produce steel billet crankshafts for just about any engine make to any desired stroke and horsepower needs.

## **GUARANTEED**

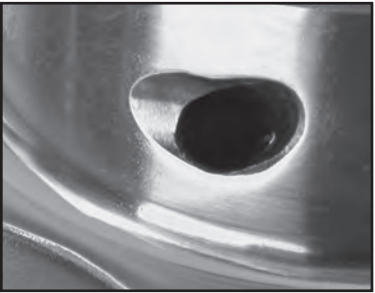
When you purchase a Crower crankshaft you'll get a quality crankshaft, manufactured from the finest materials to exacting tolerances, that goes unmatched in the high performance industry. You are guaranteed precision indexing and throw-to-throw consistency that engine builders swear is absolutely perfect. When you install a genuine Crower crankshaft in your engine, you'll do so with the peace of mind that it will perform flawlessly.

## A TYPICAL SCENARIO

For years you've been running a stock crank and have never experienced rod bearing failure. You decide to "step-up" and replace your stock crank with an aftermarket brand. Immediately you encounter bearing scuff or total bearing failure. This scenario happens often, much to the dismay of the engine builder.



Looking from the rod, back up through the main, you can see daylight, indicating it's a genuine Crower crankshaft with the "straight-shot" oiling system.



The unique teardrop scoop and exclusive Crower "straight-shot" oiling system increases critical oil flow from the main bearings to the rod bearings.



Entry holes for the rod feed are located at the O.D. of the main, allowing oil to flow equally and unrestricted to the bearings. This is key to prolonging bearing life.

Crower engineers developed the straight-shot oiling system and virtually eliminates bearing burnout and customer complaints. It features two Crower exclusives, off center drilling and the teardrop design oil hole, which scoops oil at the main and forces it into the rod feed hole. Although it's time consuming, we feel it's worth it.

## THE PROBLEM

On most aftermarket brands the rod feed hole is only drilled to the centerline of the main. This method of drilling doesn't deliver enough oil to the rod. Creating a high centrifuge, high pressure zone at the main, restricting critical oil flow intended for your rods. As engine rpm increases this centrifuge effect gets worse, possibly resulting in severe crankshaft damage or even total engine destruction. Not the performance characteristics you expected when you switched to an aftermarket brand crankshaft.

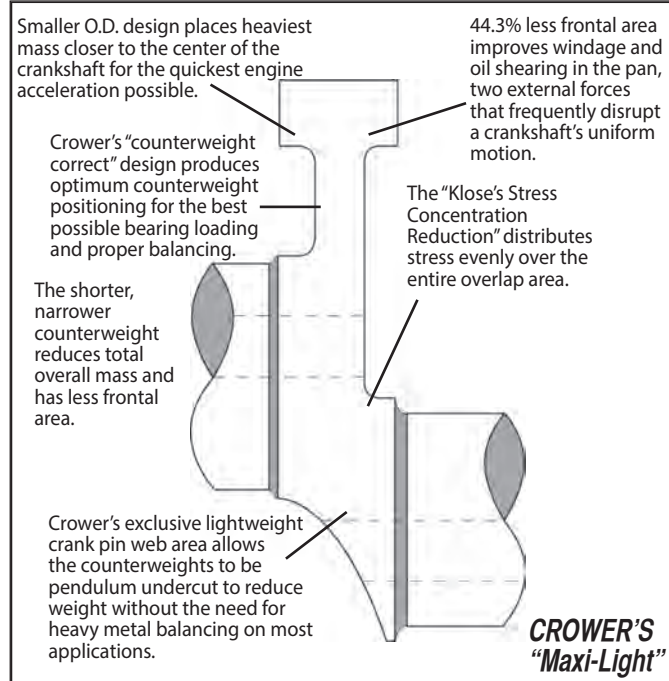
## THE SOLUTION STRAIGHT-SHOT OILING

After extensive research and design,

## THE PROVEN FACTS

It has been proven time and time again, "the lighter the parts, the quicker the throttle response." This is no more evident than in the components that make up the bottom end of an engine. Reducing a crankshaft's counterweight mass is critical in getting quicker acceleration and deceleration. It also alleviates stress and engine wear and improves oil shearing in the pan.

## PENDULUM UNDERCUTTING AND LIGHTWEIGHT PIN WEB AREA



## REVOLUTIONARY DESIGN

The Crower Maxi-Light crankshaft redefines the term "light rotating mass" by attaining just the right ratio of a smaller O.D. counterweight with an exclusive lightweight crank pin web area. By lightening the crank pin web area we are able to machine excess material from the center of the counterweights without adversely effecting balancing. This is Crower's patented pendulum undercutting. Lighter than any other crankshaft like it on the market, the Maxi-Light is structurally just as strong and easy to balance. Although competing manufacturer's claim to have comparable designs similar to the Crower Maxi-Light, consider the fact that it takes much more than just scalloping out the center of the counterweight to achieve the correct combination of light rotating mass and proper balance. Crower pioneered pendulum undercutting the counterweights back in 1989.

# Crankshafts

Small Block Chevrolet V8

262 267 283 302 305 307 327 350 400

## ENDURO

The Enduro is designed for extreme durability. Used in pro street, heavy nitrous and blown applications. Our 100% American made forging, is the same one used to make our Ultra-Light crankshafts. The only difference is the amount of machining time and less debur. 1/8" radii, heat-treat, "counterweight correct" design and straight shot oiling. Comes standard with four lightening holes.

100% American Made

**WEIGHT:** 57-59 lbs (determined by stroke, rod, and main size.)



## STANDARD

New lightened version of our popular Standard design. Premium 4340 NT (non-twist) forgings, Crower's standard crankshaft features straight-shot oiling, jumbo 1/8" radii, heat-treating, teardrop oil holes, "counterweight-correct" design. Four lightening holes come standard.

100% American Made

**WEIGHT:** 53-57 lbs (depends on stroke and main)

Part No.	Description	Stroke	Journal
<b>E95121X4</b>	Chevy Small Block	3.480"	Specify
<b>E95122X4</b>	Chevy Small Block	3.500"	Specify
<b>E95124X4</b>	Chevy Small Block	3.625"	Specify
<b>E95125X4</b>	Chevy Small Block	3.750"	Specify
<b>E95127X4</b>	Chevy Small Block	3.875"	Specify
<b>E95128X4</b>	Chevy Small Block	4.000"	Specify
<b>E95129X4</b>	Chevy Small Block	4.125"	Specify

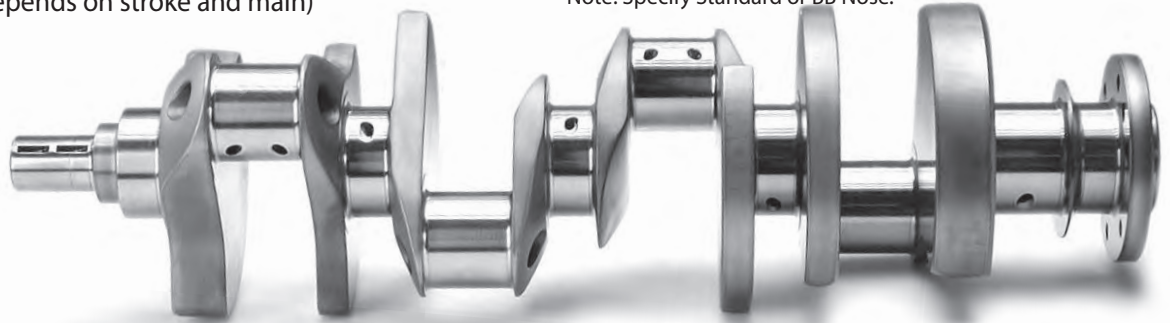
Includes 4 lightening holes.

All weights are approximate.

Note: Specify Rod & Main sizes.

Note: Specify rod length to insure proper piston to counterweight clearance.

Note: Specify Standard or BB Nose.



Part No.	Description	Stroke	Journal
<b>95120</b>	Chevrolet V8 Small Block	Custom	Specify
<b>95121</b>	Chevrolet V8 Small Block	3.480"	Specify
<b>95122</b>	Chevrolet V8 Small Block	3.500"	Specify
<b>95123</b>	Chevrolet V8 Small Block	3.562"	Specify
<b>95124</b>	Chevrolet V8 Small Block	3.625"	Specify
<b>95125</b>	Chevrolet V8 Small Block	3.750"	Specify
<b>95126</b>	Chevrolet V8 Small Block	3.800"	Specify
<b>95127</b>	Chevrolet V8 Small Block	3.875"	Specify
<b>95128</b>	Chevrolet V8 Small Block	4.000"	Specify
<b>95129</b>	Chevrolet V8 Small Block	4.125"	Specify
<b>95110C</b>	Chevrolet V8 Small Block (Billet)	4.250"	Specify

All weights are approximate.

Note: Specify Rod & Main sizes.

Note: Specify rod length to insure proper piston to counterweight clearance.

Note: Specify Standard or BB Nose.



Small Block Chevrolet V8

262 267 283 302 305 307 327 350 400



## LIGHT-WEIGHT

Our 4340 Light-Weight includes standard features like straight shot oiling, 1/8" radii, heat treat, plus lightweight profilin , center counterweight removal, four lightening holes and radius edges. Smaller O.D. reduces rotating mass for quicker response, and less drag. 100% American Made. Can be made to meet 50lb class restrictions.

WEIGHT: 44-50 lbs (Determined by stroke, rod, and main size)

Part No.	Description	Stroke	Journal
LW95120	Chevrolet V8 Small Block	Custom	Specify
LW95115	Chevrolet V8 Small Block	3.000"	Specify
LW95118	Chevrolet V8 Small Block	3.125"	Specify
LW95119	Chevrolet V8 Small Block	3.250"	Specify
LW95111	Chevrolet V8 Small Block	3.320"	Specify
LW95112	Chevrolet V8 Small Block	3.330"	Specify
LW95113	Chevrolet V8 Small Block	3.335"	Specify
LW95114	Chevrolet V8 Small Block	3.340"	Specify
LW95121	Chevrolet V8 Small Block	3.480"	Specify
LW95122	Chevrolet V8 Small Block	3.500"	Specify
LW95123	Chevrolet V8 Small Block	3.562"	Specify
LW95124	Chevrolet V8 Small Block	3.625"	Specify
LW95125	Chevrolet V8 Small Block	3.750"	Specify
LW95126	Chevrolet V8 Small Block	3.800"	Specify
LW95127	Chevrolet V8 Small Block	3.875"	Specify
LW95128	Chevrolet V8 Small Block	4.000"	Specify
LW95129	Chevrolet V8 Small Block	4.125"	Specify

Note: Specify Rod & Main sizes

Note: Specify Std. or BB Nose.





## MAXI-LIGHT®

® Ultra-Light is a Registered Trademark of Crower, Inc.

This premium crankshaft was developed for Sprint car and various Late Model applications. The Maxi-Light combines the best features from our race proven Ultra-Light and Light-Weight designs. Machined from our premium USA made 4340 non-twist chromoly forging to create the strongest, most reliable crankshaft that money can buy. This crankshaft delivers a small rotating mass for improved throttle response. 100% American Made

**WEIGHT:** 43 - 45 lbs

Refer to LW p/n and add #95302 (1 side) or #95309 (2 sides) Semi Maxi-Light option.

### Note:

Specify rod and main diameters.

Specify Standard or BB Nose.

All cranks come with 1/8" radius for strength and reliability.

Rod and Main Bearings are available from Crower.

Part No.	Description	Stroke	Journal
<b>ML95120</b>	Chevrolet V8 Small Block	Custom	Specify
<b>ML95115</b>	Chevrolet V8 Small Block	3.000"	Specify
<b>ML95118</b>	Chevrolet V8 Small Block	3.125"	Specify
<b>ML95119</b>	Chevrolet V8 Small Block	3.250"	Specify
<b>ML95111</b>	Chevrolet V8 Small Block	3.320"	Specify
<b>ML95112</b>	Chevrolet V8 Small Block	3.330"	Specify
<b>ML95113</b>	Chevrolet V8 Small Block	3.335"	Specify
<b>ML95114</b>	Chevrolet V8 Small Block	3.340"	Specify
<b>ML95121</b>	Chevrolet V8 Small Block	3.480"	Specify
<b>ML95122</b>	Chevrolet V8 Small Block	3.500"	Specify
<b>ML95123</b>	Chevrolet V8 Small Block	3.562"	Specify
<b>ML95124</b>	Chevrolet V8 Small Block	3.625"	Specify
<b>ML95125</b>	Chevrolet V8 Small Block	3.750"	Specify
<b>ML95126</b>	Chevrolet V8 Small Block	3.800"	Specify
<b>ML95127</b>	Chevrolet V8 Small Block	3.875"	Specify
<b>ML95128</b>	Chevrolet V8 Small Block	4.000"	Specify
<b>ML95129</b>	Chevrolet V8 Small Block	4.125"	Specify

# Crankshafts

## Small Block Chevrolet V8

262 267 283 302 305 307 327 350 400



### ULTRA-LIGHT®

® Ultra-Light is a Registered Trademark of Crower, Inc.

The Crower Ultra-Light is Crower's premium crank. Includes all the standard 4340 NT (non-twist forging) features, plus ultra-lightweight profilin , pendulum undercutting, gun drilled mains, four lightening holes and radius edges. Less drag in oil increases horsepower, rapid response throttle . 100% American Made.

**WEIGHT:** 36-39 lbs (Determined by stroke, rod, and main size.)

Part No.	Description	Stroke	Journal
<b>UL95120</b>	Chevrolet V8 Small Block	Custom	Specify
<b>UL95115</b>	Chevrolet V8 Small Block	3.000"	Specify
<b>UL95118</b>	Chevrolet V8 Small Block	3.125"	Specify
<b>UL95119</b>	Chevrolet V8 Small Block	3.250"	Specify
<b>UL95111</b>	Chevrolet V8 Small Block	3.320"	Specify
<b>UL95112</b>	Chevrolet V8 Small Block	3.330"	Specify
<b>UL95113</b>	Chevrolet V8 Small Block	3.335"	Specify
<b>UL95114</b>	Chevrolet V8 Small Block	3.340"	Specify
<b>UL95121</b>	Chevrolet V8 Small Block	3.480"	Specify
<b>UL95122</b>	Chevrolet V8 Small Block	3.500"	Specify
<b>UL95123</b>	Chevrolet V8 Small Block	3.562"	Specify
<b>UL95124</b>	Chevrolet V8 Small Block	3.625"	Specify
<b>UL95125</b>	Chevrolet V8 Small Block	3.750"	Specify
<b>UL95126</b>	Chevrolet V8 Small Block	3.800"	Specify
<b>UL95127</b>	Chevrolet V8 Small Block	3.875"	Specify
<b>UL95128</b>	Chevrolet V8 Small Block	4.000"	Specify

#### Note:

All rod and main diameters available.

Specify Standard or BB Nose.

Large 1/8" Radius is Standard chamfered

Bearings available from Crower.



# Crankshafts

Small Block Chevrolet V8

262 267 283 302 305 307 327 350 400

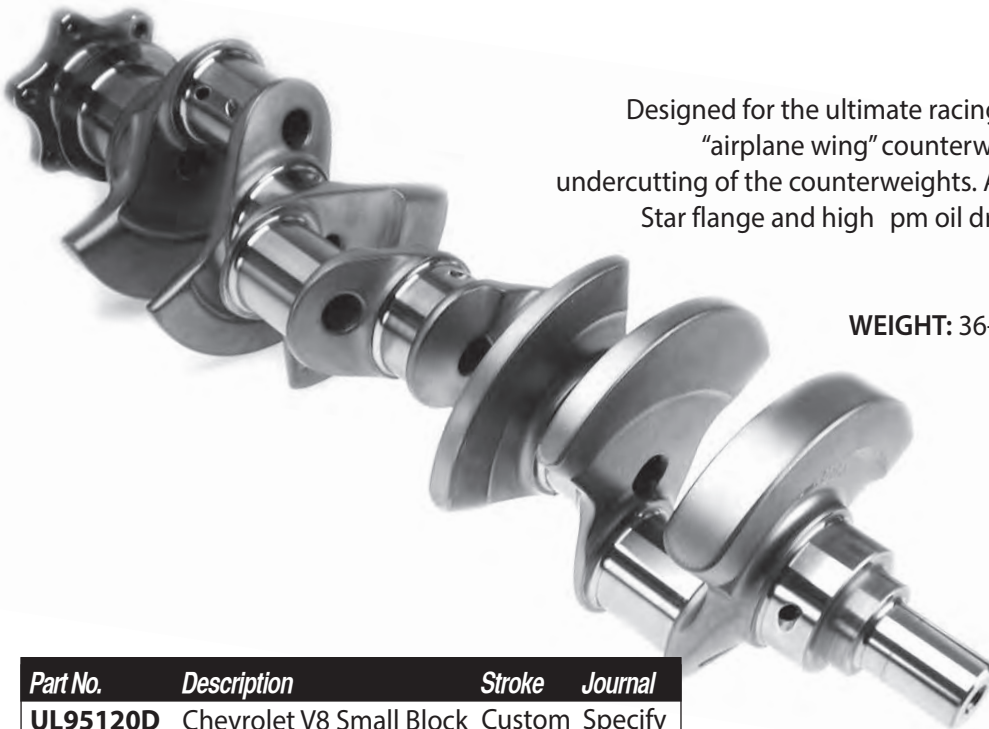
## DIHEDRAL ULTRA-LIGHT®

® Ultra-Light is a Registered Trademark of Crower, Inc.

Designed for the ultimate racing application. Features include tapered "airplane wing" counterweights for less windage and pendulum undercutting of the counterweights. Available in standard or big block nose.

Star flange and high rpm oil drilling included. Specify rod & main size when ordering. 100% American Made.

**WEIGHT:** 36-39 lbs (Determined by stroke, rod, and main sizes.)



Part No.	Description	Stroke	Journal
UL95120D	Chevrolet V8 Small Block	Custom	Specify
UL95119D	Chevrolet V8 Small Block	3.250"	Specify
UL95111D	Chevrolet V8 Small Block	3.320"	Specify
UL95112D	Chevrolet V8 Small Block	3.330"	Specify
UL95113D	Chevrolet V8 Small Block	3.335"	Specify
UL95114D	Chevrolet V8 Small Block	3.340"	Specify
UL95121D	Chevrolet V8 Small Block	3.480"	Specify
UL95122D	Chevrolet V8 Small Block	3.500"	Specify
UL95123D	Chevrolet V8 Small Block	3.562"	Specify
UL95124D	Chevrolet V8 Small Block	3.625"	Specify
UL95125D	Chevrolet V8 Small Block	3.750"	Specify
UL95126D	Chevrolet V8 Small Block	3.800"	Specify

Note:

•If you prefer a machined billet 4340 crank, specify "C" after crank part number.

•1.888" journal diameter is available. Requires special rods and bearings from Crower.

•For EN30B material option, specify when ordering.

•Jumbo radius rod (.156") and main journals (.171") are available. 125" is standard.

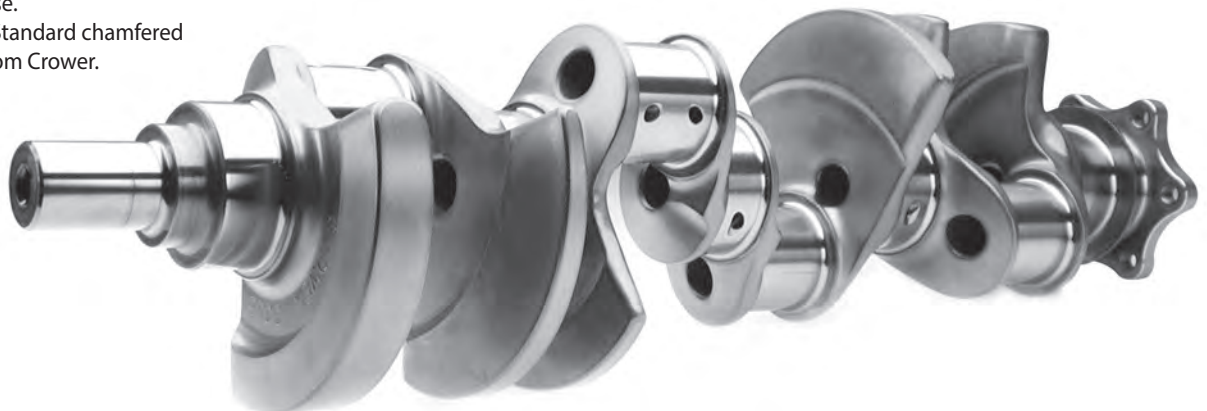
Note:

Crower cranks are made to customer's specific tions. All rod and main diameters available.

Specify Std or BB Nose.

Large 1/8" Radius is Standard chamfered

Bearings available from Crower.



# Crankshafts

Big Block Chevrolet V8  
366 396 402 427 454 502

## ENDURO™

Crower's Enduro crank features our premium 4340 NT (non-twist) forging, straight-shot oiling, jumbo 1/8 radii, four lightening holes, heat-treat and "counterweight-correct" design. Designed for extreme durability! Used in pro street, sportsman class, monster trucks, off shore boats, heavy nitrous, and blown applications. 100% American made.

**WEIGHT:** 82-85 lbs (Determined by stroke, rod, and main size.)

Part No.	Description	Stroke	Journal
<b>E95132x4</b>	Chevy Big Block	3.760"	Specify
<b>E95133x4</b>	Chevy Big Block	4.000"	Specify
<b>E95135x4</b>	Chevy Big Block	4.250"	Specify
<b>E95136x4</b>	Chevy Big Block	4.375"	Specify
<b>E95137x4</b>	Chevy Big Block	4.500"	Specify
<b>E95140x4</b>	Chevy Big Block	4.750"	Specify

All weights are approximate.

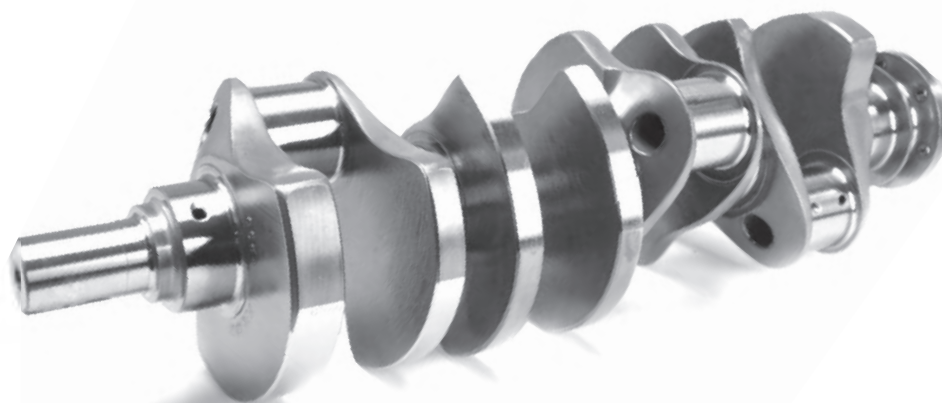
Note: Specify rod length to insure proper piston to counterweight clearance.





# Crankshafts

**Big Block Chevrolet V8**  
366 396 402 427 454 502



## STANDARD

Redesigned lightened version of our popular Standard crankshaft. Precision machined from premium 4340 NT forgings. Standard features are straight-shot oiling, jumbo 1/8" radii, heat-treating, teardrop oil holes. "Counterweight-correct" design. This crankshaft can be ordered with or without center counterweights to fit your application. 100% American Made

**WEIGHT:** 71-83 lbs (Determined by stroke, rod, and main size.)

<i>Part No.</i>	<i>Description</i>	<i>Stroke</i>	<i>Journal</i>
<b>95130</b>	Chevrolet V8 Big Block	Custom	Specify
<b>95132</b>	Chevrolet V8 Big Block	3.760"	Specify
<b>95133</b>	Chevrolet V8 Big Block	4.000"	Specify
<b>95134</b>	Chevrolet V8 Big Block	4.125"	Specify
<b>95135</b>	Chevrolet V8 Big Block	4.250"	Specify
<b>95136</b>	Chevrolet V8 Big Block	4.375"	Specify
<b>95137</b>	Chevrolet V8 Big Block	4.500"	Specify
<b>95138</b>	Chevrolet V8 Big Block	4.562"	Specify
<b>95139</b>	Chevrolet V8 Big Block	4.625"	Specify
<b>95140</b>	Chevrolet V8 Big Block	4.750"	Specify
<b>95141</b>	Chevrolet V8 Big Block	4.875"	Specify
<b>95142</b>	Chevrolet V8 Big Block	5.000"	Specify

All weights are approximate.

Note: Specify rod length to insure proper piston to counterweight clearance.

Note: If you prefer a machined billet crankshaft, specify "C" after crank part number. EN30B material available.

# Crankshafts

**Big Block Chevrolet V8**  
**366 396 402 427 454 502**

## LIGHT-WEIGHT

The 4340 NT (non-twist) LightWeight includes standard features like straight-shot oiling, 1/8" radii, heat-treat, teardrop oil holes and "counterweight-correct," plus lightweight profilin , with or without center counter weights, four lightening holes and radius edges. Less drag, more power. 100% American made.

**WEIGHT:** 65-74 lbs

Part No.	Description	Stroke	Journal
LW95130	Chevrolet V8 Big Block	Custom	Specify
LW95132	Chevrolet V8 Big Block	3.760"	Specify
LW95133	Chevrolet V8 Big Block	4.000"	Specify
LW95134	Chevrolet V8 Big Block	4.125"	Specify
LW95135	Chevrolet V8 Big Block	4.250"	Specify
LW95136	Chevrolet V8 Big Block	4.375"	Specify
LW95137	Chevrolet V8 Big Block	4.500"	Specify
LW95138	Chevrolet V8 Big Block	4.562"	Specify
LW95139	Chevrolet V8 Big Block	4.625"	Specify
LW95140	Chevrolet V8 Big Block	4.750"	Specify
LW95141	Chevrolet V8 Big Block	4.875"	Specify
LW95142	Chevrolet V8 Big Block	5.000"	Specify

All weights are approximate.

Note: Specify rod length to insure proper piston to counterweight clearance.

Note: If you prefer a machined billet crankshaft, specify "C" after crank part number.

Specify rod diameter when ordering.



# Crankshafts

**Big Block Chevrolet V8**  
366 396 402 427 454 502



## MAXI-LIGHT®

® Maxi-Light is a Registered Trademark of Crower, Inc.

The Maxi-Light includes standard 4340 NT features, maxi-light profiling, pendulum undercutting, center counterweight removal, four lightening holes and radius edges. Less drag and weight increases horsepower and torque. 100% American made.

**WEIGHT:** 59-64 lbs

Part No.	Description	Stroke	Journal
<b>ML95130</b>	Chevrolet V8 Big Block	Custom	Specify
<b>ML95132</b>	Chevrolet V8 Big Block	3.760"	Specify
<b>ML95133</b>	Chevrolet V8 Big Block	4.000"	Specify
<b>ML95134</b>	Chevrolet V8 Big Block	4.125"	Specify
<b>ML95135</b>	Chevrolet V8 Big Block	4.250"	Specify
<b>ML95136</b>	Chevrolet V8 Big Block	4.375"	Specify
<b>ML95137</b>	Chevrolet V8 Big Block	4.500"	Specify
<b>ML95138</b>	Chevrolet V8 Big Block	4.562"	Specify
<b>ML95139</b>	Chevrolet V8 Big Block	4.625"	Specify
<b>ML95140</b>	Chevrolet V8 Big Block	4.750"	Specify
<b>ML95141</b>	Chevrolet V8 Big Block	4.875"	Specify
<b>ML95142</b>	Chevrolet V8 Big Block	5.000"	Specify

## ULTRA-LIGHT®

® Ultra-Light is a Registered Trademark of Crower, Inc.

The Ultra-Light Includes standard 4340 NT features, plus ultra-lightweight profiling, pendulum undercutting, center counterweight removal, four lightening holes and radius edges. Smaller O.D. quickens throttle response, reduces stress and wear, creates less drag in oil and increases horsepower and torque. Crower's Ultra-Light delivers all of this without compromising overall strength. 100% American made.

**WEIGHT:** 58-62 lbs

Part No.	Description	Stroke	Journal
<b>UL95130</b>	Chevrolet V8 Big Block	Custom	Specify
<b>UL95132</b>	Chevrolet V8 Big Block	3.760"	Specify
<b>UL95133</b>	Chevrolet V8 Big Block	4.000"	Specify
<b>UL95134</b>	Chevrolet V8 Big Block	4.125"	Specify
<b>UL95135</b>	Chevrolet V8 Big Block	4.250"	Specify

All weights are approximate.

Note: Due to bob-weight considerations some BB Chevrolet Ultra-Light crankshafts must be custom ordered.

Note: Specify rod length to insure proper piston to counterweight clearance.

Note: If you prefer a machined billet crankshaft, specify "C" after crank part number.



# Crankshafts

Chevrolet V8  
LS Series



## **STANDARD**

Redesigned lightened version of our popular Standard crankshaft. Precision machined from premium 4340 NT forgings. Standard features are straight-shot oiling, jumbo 1/8" radii, heat-treating, teardrop oil holes. "Counterweight-correct" design. This crankshaft can be ordered with or without center counterweights to fit your application. 100% American Made

**WEIGHT:** 48-59 lbs (Determined by stroke, rod, and main size.)

## **CHEVROLET LS SERIES CRANKS**

All LS Crankshafts are custom made to customer specs.  
Please call our techs

<i>Part No.</i>	<i>Description</i>	<i>Stroke</i>	<i>Journal</i>
<b>95100</b>	Custom Made LS Crank	Custom	Specify
<b>95100C</b>	Custom Billet LS Crank	Custom	Specify



# Crankshafts

Ford  
V6 Chevrolet & Buick

## FORD

FORGED - 4340 "Non-Twist" Chromoly Steel

Part No.	Description	Stroke	Journal
95185	Ford 302 V8 or SVO Forging	Custom	Specify
LW95185	Ford 302 V8 or SVO Forging	Custom	Specify
ML95185	Ford 302 V8 or SVO Forging	Custom	Specify
UL95185	Ford 302 V8 or SVO Forging	Custom	Specify
95185C	Ford 302 V8 or SVO Billet	Custom	Specify
95186	Ford 351C V8 or SVO Forging	Custom	Specify
LW95186	Ford 351C V8 or SVO Forging	Custom	Specify
ML95186	Ford 351C V8 or SVO Forging	Custom	Specify
UL95186	Ford 351C V8 or SVO Forging	Custom	Specify
95186C	Ford 351C V8 or SVO Billet	Custom	Specify

Note: Specify desired stroke when ordering.

Specify rod journal diameter and width when ordering.



Ford 460 Crank.

## FORD

BILLET - 4340 Round Chromoly Steel

Part No.	Description	Stroke	Journal
95187C	Ford 429-460 V8	Custom	Specify
95187Cx1	Ford 429-460 V8	5.000 & up	Specify
95191C	Ford 427-428 V8	Custom	Specify

Note: Specify desired stroke when ordering.

Specify rod journal diameter and width when ordering.

For LightWeight or Ultra-Light profiling, place "LW" or "UL" in front of part number.



Ford 302-351 Crank.

## CUSTOM FORD

We can custom make any crank to meet your specific needs. Provide us your custom specs.

Part No.	Description
95204	Custom 4 cylinder crankshaft
95206	Custom 6 cylinder crankshaft
95208	Custom 8 cylinder crankshaft
95210	Custom 10 cylinder crankshaft



Ford 5.4L Crank

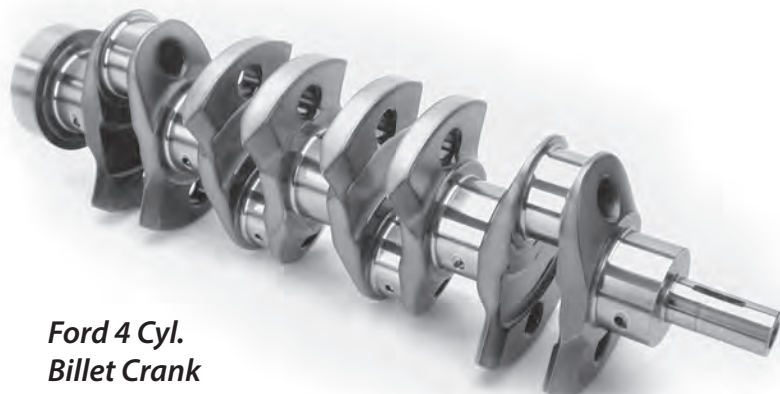
## V6 CHEVY & BUICK

Premium billet 4340 chromoly crankshafts are available for Chevrolet and Buick V6 applications on a custom order basis.

Any desired stroke available.

Part No.	Description	Stroke	Journal
95151C	Chevy V6 (Billet)	Specify	Specify
95156C	Buick V6 (Billet)	Specify	Specify

Note: Specify rod length to insure proper piston to counterweight clearance.



Ford 4 Cyl.  
Billet Crank

Mopar / Imports / Vintage / Custom

Part # LW 95160



## MOPAR

FORGED - 4340 "Non-Twist" Chromoly Steel

Part No.	Description	Stroke	Journal
95160	Mopar 426 Hemi V8	Custom	Specify
95161	Mopar 426 Hemi V8	3.600"	Specify
95162	Mopar 426 Hemi V8	3.750"	Specify
95163	Mopar 426 Hemi V8	3.875"	Specify
95164	Mopar 426 Hemi V8	4.000"	Specify
95165	Mopar 426 Hemi V8	4.125"	Specify
95166	Mopar 426 Hemi V8	4.250"	Specify
95167	Mopar 426 Hemi V8	4.375"	Specify
95168	Mopar 426 Hemi V8	4.500"	Specify
95169	Mopar 426 Hemi V8	4.625"	Specify
95170	Mopar 426 Hemi V8	4.750"	Specify
95171	Mopar 273-340-360	Custom	Specify

Note: Specify rod length for proper piston to counterweight clearance.  
Balanced or unbalanced specify when ordering.

## MOPAR

BILLET - 4340 or EN30B Round Steel

Part No.	EN30B	Description	Stroke	Journal
95160C4	95160CE	Mopar 426 Hemi V8	Custom	Specify
95161C4	95161CE	Mopar 426 Hemi V8	3.600"	Specify
95162C4	95162CE	Mopar 426 Hemi V8	3.750"	Specify
95163C4	95163CE	Mopar 426 Hemi V8	3.875"	Specify
95164C4	95164CE	Mopar 426 Hemi V8	4.000"	Specify
95165C4	95165CE	Mopar 426 Hemi V8	4.125"	Specify
95166C4	95166CE	Mopar 426 Hemi V8	4.250"	Specify
95167C4	95167CE	Mopar 426 Hemi V8	4.375"	Specify
95168C4	95168CE	Mopar 426 Hemi V8	4.500"	Specify
95169C4	95169CE	Mopar 426 Hemi V8	4.625"	Specify
95170C4	95170CE	Mopar 426 Hemi V8	4.750"	Specify
95171C4	95171CE	Mopar 426 Hemi V8	Custom	Specify

Note: Specify rod length for proper piston to counterweight clearance.  
Balanced or unbalanced specify when ordering.  
For LightWeight or Ultra-Light profilin , place "LW" or "UL" in front of part number.

## IMPORT/CUSTOM BILLETS & FORGINGS

Crower can machine custom 4340 or EN30B crankshafts for any application. Call for pricing and availability.

Part No.	Description
95204	Custom 4 cylinder crankshaft (most applications)
95206	Custom 6 cylinder crankshaft (most applications)
95208	Custom 8 cylinder crankshaft (most applications)
95210	Custom 10 cylinder crankshaft (most applications)
95212	Custom 12 cylinder crankshaft (most applications)

# Custom Crankshafts



*Custom Honda Crank*

***CROWER Can Make Crankshafts  
For Any Application***

*Custom Ferrari Crank*



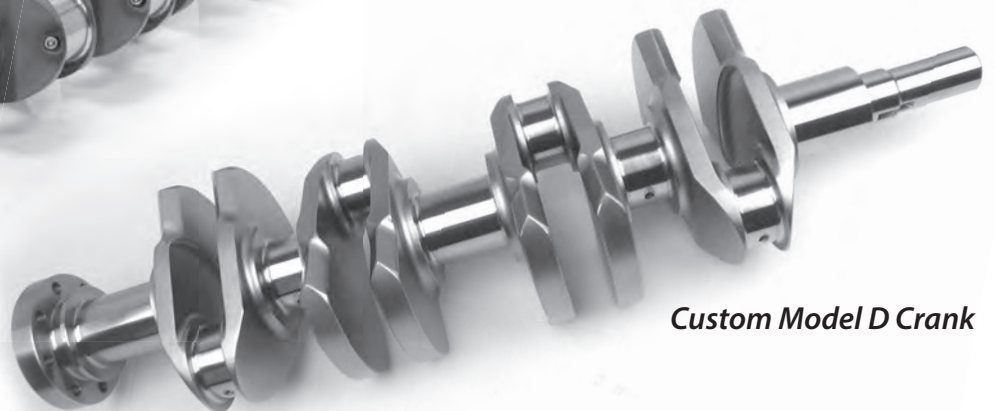
*Custom Nissan VQ35DE Crank*



*Custom Nissan Patrol Crank*



*Custom Model D Crank*





**CROWER**

CUBIC INCH CHART

**STROKE**

	<b>3.000</b>	<b>3.125</b>	<b>3.250</b>	<b>3.375</b>	<b>3.480</b>	<b>3.500</b>	<b>3.562</b>	<b>3.625</b>	<b>3.750</b>	<b>3.760</b>	<b>3.875</b>	<b>4.000</b>	<b>4.125</b>	<b>4.250</b>	<b>4.375</b>	<b>4.500</b>	<b>4.625</b>	<b>4.750</b>	<b>5.000</b>	<b>5.125</b>
<b>3.8750</b>	283.0	294.8	306.6	318.4	323.0	330.2	336.1	342.0	353.8	354.7	365.6	377.4	389.2	401.0	412.8	424.6	-	-	-	-
<b>3.9375</b>	292.2	304.4	316.6	328.8	339.0	340.9	347.0	353.1	365.3	366.2	377.5	389.7	401.8	414.0	426.2	438.4	-	-	-	-
<b>4.0000</b>	301.6	314.2	<b>326.7</b>	339.3	<b>349.8</b>	351.9	358.1	364.4	377.0	377.9	389.6	402.1	414.7	427.3	439.8	452.4	-	-	-	-
<b>4.0300</b>	306.4	318.8	331.9	344.7	355.1	357.4	363.5	370.2	<b>383.0</b>	383.6	395.7	408.5	421.3	434.0	446.4	459.2	-	-	-	-
<b>4.0625</b>	311.1	324.1	337.0	350.0	360.8	362.9	369.4	375.9	388.9	389.8	401.8	414.8	427.8	440.7	453.7	466.6	-	-	-	-
<b>4.1250</b>	320.7	334.1	347.5	360.8	372.0	374.2	380.9	387.6	400.9	401.9	414.3	427.6	441.0	454.4	467.7	481.1	-	-	-	-
<b>4.1550</b>	325.6	339.2	352.8	366.3	<b>377.5</b>	379.9	386.4	393.5	407.1	<b>407.8</b>	420.6	<b>434.2</b>	447.8	461.4	474.6	488.1	-	-	-	-
<b>4.1875</b>	330.5	344.3	358.1	371.8	383.4	385.6	392.5	399.4	413.2	414.2	426.9	440.7	454.5	468.3	482.0	495.8	-	-	-	-
<b>4.2500</b>	340.5	354.7	368.8	383.0	394.9	397.2	404.3	411.4	425.6	426.6	439.8	454.0	468.1	482.3	496.5	510.7	524.8	539.1	567.5	581.6
<b>4.3125</b>	350.6	365.2	379.8	394.4	406.6	409.0	416.3	423.6	438.2	439.3	452.8	467.4	482.0	496.6	511.2	525.8	540.4	555.0	584.3	598.8
<b>4.3750</b>	360.8	375.8	390.9	405.9	418.5	420.9	428.4	436.0	451.0	452.1	466.0	481.1	496.1	511.1	526.2	541.2	556.0	571.0	601.3	616.3
<b>4.4375</b>	371.2	386.6	402.1	417.6	430.5	433.0	440.8	448.5	464.0	465.2	479.4	494.9	510.4	525.8	541.3	556.8	572.0	587.7	618.6	634.1
<b>4.5000</b>	381.7	397.6	413.5	429.4	442.7	445.3	453.3	461.2	477.1	478.4	493.0	508.9	524.8	540.7	556.7	572.6	588.5	604.4	636.1	652.1
<b>4.5625</b>	392.4	408.7	425.1	441.4	455.1	457.8	466.0	474.1	490.5	491.7	506.8	523.2	539.5	555.9	572.2	588.6	604.9	621.3	653.9	679.5
<b>4.6250</b>	403.2	420.0	436.8	453.6	467.6	470.4	478.8	487.2	504.0	505.3	520.8	537.6	554.4	571.2	588.0	604.8	621.6	638.0	671.9	688.7
<b>4.6875</b>	414.2	431.4	448.7	465.9	480.4	483.2	491.8	500.5	517.7	519.1	535.0	552.2	569.5	586.7	604.0	621.3	638.5	655.7	690.2	707.5
<b>4.7500</b>	425.3	443.0	460.7	478.5	493.3	496.2	505.0	513.9	531.6	533.0	549.3	567.1	584.8	602.5	620.2	637.9	655.6	673.4	708.8	726.5

**B O R E      D I A M E T E R**

INDICATES APPLICABLE SMALL BLOCK CHEVROLET C.I.D.

CUBIC INCH FORMULA: BORE x BORE x STROKE x .7854 x NO. of CYLINDERS



# Rod & Main Bearings



## ROD BEARINGS

Crower high performance rod bearings are quality engine bearings designed to withstand the extreme loads of professionally tuned racing engines. Features high strength trimetal copper-lead material in the load area for superior strength and embedding. Lead overplate provides excellent fatigue strength and superior conformability to compensate for distortion and/or misalignment. Superlative bearing-to-bearing size consistency enables you to "build-in" the exact oil clearance you require, while narrowed and chamfered versions are available for large fillet journals where additional clearance is necessary. If running aluminum rods, Crower has chamfered rod bearings with dowel pin holes.

### STANDARD

Part No.	Description
<b>85300</b>	CHEVROLET 283-327 V8
<b>85301</b>	CHEVROLET 302-305-327-350-400 V8
<b>85310</b>	CHEVROLET 396-402-427-454 V8

### CHAMFERED

Part No.	Description
<b>85300C</b>	CHEVROLET 283-327 V8
<b>85301C</b>	CHEVROLET 302-305-327-350-400 V8
<b>85310C</b>	CHEVROLET 396-402-427-454 V8

### CHAMFERED w/DOWEL PIN HOLE

Part No.	Description
<b>85300CD</b>	CHEVROLET 283-327 V8
<b>85301CD</b>	CHEVROLET 302-305-327-350-400 V8
<b>85310CD</b>	CHEVROLET 396-402-427-454 V8
<b>85330CD</b>	CHRYSLER 426 Hemi V8

Note: Specify standard, .010", .020" or .030" undersized when ordering.



## MAIN BEARINGS

Crower high performance main bearings offer professional racers and engine builders the extreme accuracy and bearing-to-bearing consistency required to build an engine that can handle the extreme loads associated with high performance racing. Features high strength copper-lead in the load area for superior strength and embedding. Crower high performance main bearings are designed to deliver improved bearing-to-bore contact for better heat transfer and a reduction in high rpm bearing chatter and or failure. Order chamfered bearings, for use with large fillet journals. A must when running any Crower crank.

### STANDARD

Part No.	Description
<b>85400</b>	CHEVROLET 283-327 V8
<b>85401</b>	CHEVROLET 302-305-327-350-400 V8
<b>85402</b>	CHEVROLET 400 V8
<b>85410</b>	CHEVROLET 396-402-427-454 V8

### CHAMFERED

Part No.	Description
<b>85400C</b>	CHEVROLET 283-327 V8
<b>85401C</b>	CHEVROLET 302-305-327-350-400 V8
<b>85402C</b>	CHEVROLET 400 V8
<b>85410C</b>	CHEVROLET 396-402-427-454 V8
<b>85430C</b>	CHRYSLER 426 Hemi V8

### BEARING SPACER KIT

Part No.	Description
<b>85200</b>	Adapts Chevrolet 350 crank to 400 block includes bearings.

Note: Specify standard, .010", .020" or .030" undersized when ordering.

# Connecting Rods

## **THE CROWEROD DIFFERENCE**

An extensive effort in CAD (Computer Assisted Design) & F.E.A (Finite Element Analysis), as well as rigorous dyno and track testing have been expended through perfection of our strongest yet lightest rods available. When you employ a set of genuine Crowerods you do so with the knowledge and peace of mind that each rod will perform flawlessly. That's why they are hands down, the favorite of professional and amateur engine builders throughout the world.

## **IT'S THE MATERIAL...**

While other manufacturers are cutting corners, using inferior or low grade materials, Crower has kept costs down without lowering our standards. Crowerods incorporate only the finest aircraft quality steel and titanium materials. They are heat treated to obtain that perfect balance of strength and durability, to insure the best quality and reliability possible.



## **AND THE DESIGN**

Take a close look at a Crowerod and you'll notice that it is shaped like no other rod in the industry. Every contour is designed to enhance overall strength and reliability at high engine rpm. Crower connecting rods incorporate an "I-beam" design that eliminates pockets of excess material and delivers exceptional longitudinal and horizontal strength. The cap screw design assures true roundness and a positive bearing seat under severe load factors, in which eliminating rod bearing failure. Tolerances are to an exacting  $\pm 0.0001$ " of an inch to insure trouble free installation. For those who prefer an "H-beam" design, Crower also offers this style of rod on a custom order basis.

***CROWER, your # 1 source for rods.  
CROWER makes rods for  
almost any application.***

## **THE BOTTOM LINE**

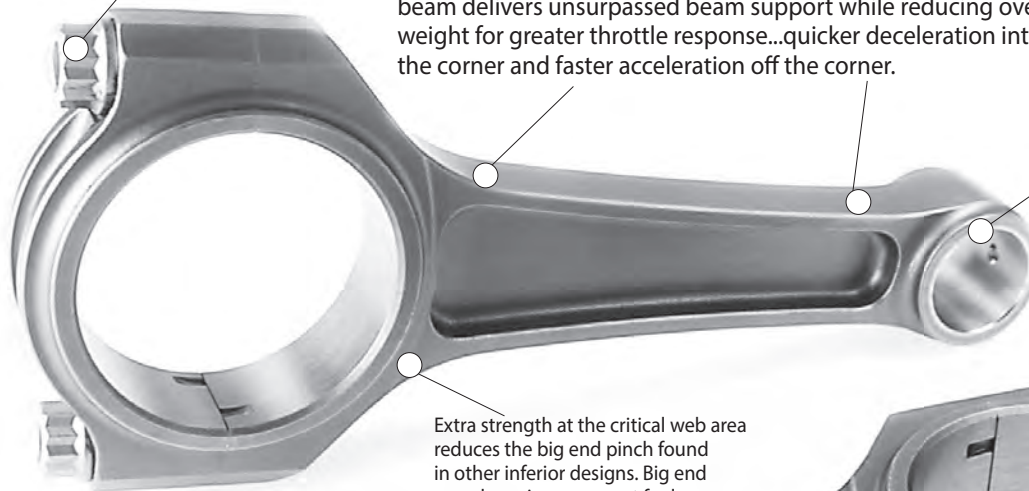
When you install a set of genuine Crowerods in your high performance engine, the design expertise, material and craftsmanship are working hard to maximize your racing effort. It's the kind of dependability and confidence that can put you in the winner's circle. Crowerods are available for most domestic and foreign applications, as well as motorcycles, industrial, vintage and one of a kind prototypes. Our Crowerod design is often imitated, but never duplicated. For any new enthusiast we have an excellent staff that can help you on any particular design you may want. **Protect your investment by insisting on only genuine Crowerods for your high performance needs.**

# "RBT" Steel Billet Connecting Rods

Aircraft quality, 12-point cap screw fastening system provides added security at high rpm.

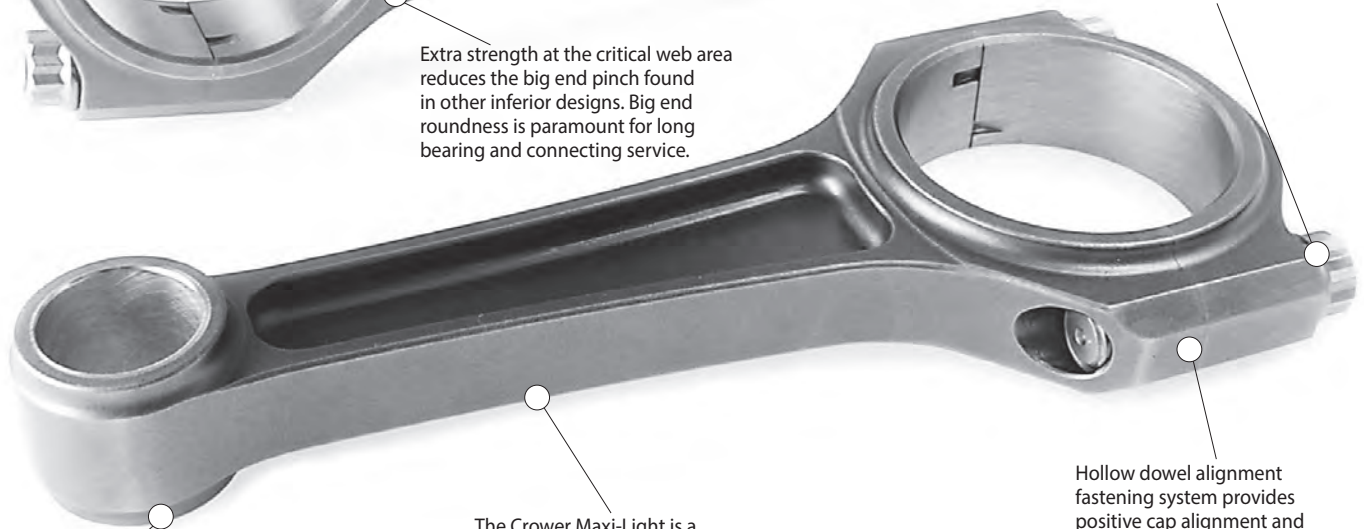
Crower's all new Radial Beam Technology design ("RBT") is the ultimate connecting rod, often copied by competitors, but never replicated to Crower's engineered standards. The radial shape beam delivers unsurpassed beam support while reducing overall weight for greater throttle response...quicker deceleration into the corner and faster acceleration off the corner.

Drilled and chamfered pin oil hole on all Crowerods provides additional oil at the pin end to prevent galling. The high alloy, aluminum-bronze, one piece bushing delivers long, reliable service.



H11 - Tool Steel bolts rated to 220,000 p.s.i. come standard. For extreme duty, Crower highly recommends the AMS5844 rod bolt upgrade rated to 280,000 p.s.i. for ultimate clamping ability.

Extra strength at the critical web area reduces the big end pinch found in other inferior designs. Big end roundness is paramount for long bearing and connecting service.



Hollow dowel alignment fastening system provides positive cap alignment and prevents unwanted cap walk.

Pin boss dynamics are essential when designing a high performance connecting rod. To maintain trouble free operation, Crower beefs up the pin eye area.

The Crower Maxi-Light is a proven performer on the race track. Tapered beam design delivers the strength you need in a lightweight, yet reliable profile.

## **RADIAL BEAM TECHNOLOGY ("RBT") MAXI-LIGHT DESIGN**

Crower's exclusive "RBT" Maxi-Light design is a revolutionary new beam shape that removes excess material from noncritical stress areas for the lightest, yet strongest connecting rod available on the market. Choose from a wide variety of weight configurations, depending on your individual horsepower and rpm requirements.

## **AMS5844 ROD BOLT UPGRADE**

Crower's AMS5844 rod bolt upgrade is available for all steel billet and titanium rods. Highly recommended for extreme duty rpm and endurance applications. Rated at 280,000 p.s.i., these bolts are corrosion resistant, nonmagnetic and deliver ultimate clamping capabilities for the highest cycle life. Specify desired rod bolt part number when ordering.





# "RBT" Steel Billet Connecting Rods

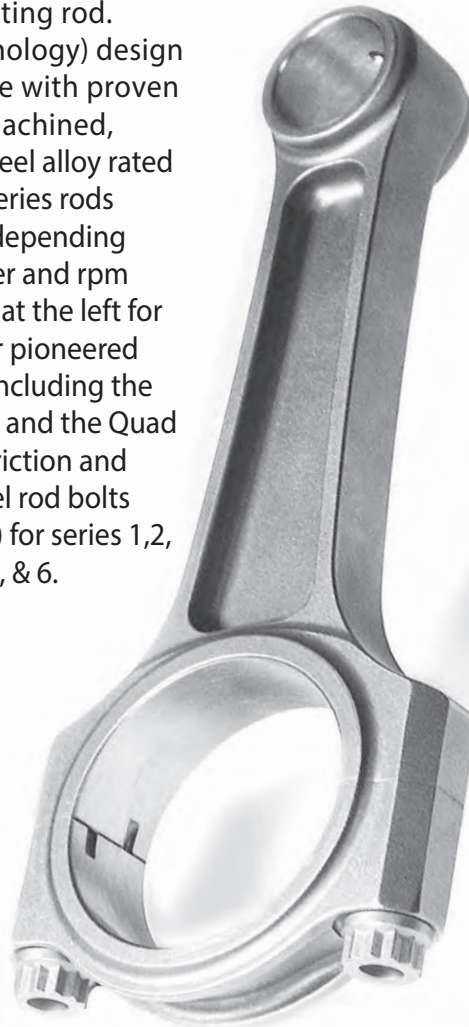
ALSO AVAILABLE IN TITANIUM

## RADIAL BEAM TECHNOLOGY MAXI-LIGHT DESIGN

® Maxi-Light is a Registered Trademark of Crower, Inc.

The original tapered beam connecting rod. Crower's "RBT" (Radial Beam Technology) design combines lightweight performance with proven reliability at extended rpm. CNC machined, vacuum degassed, and premium steel alloy rated to 170,000 p.s.i. The Maxi-Light 93 Series rods are available in six unique designs, depending on intended application, horsepower and rpm considerations. Refer to the column at the left for weights and hp/rpm ratings. Crower pioneered the use of small journal diameters, including the popular Honda bearing size (2.008") and the Quad 4 bearing size (2.015") for reduced friction and increased horsepower. H11 tool steel rod bolts come in standard sizes, 3/8 (#90829) for series 1, 2, & 3, and 7/16 (#90826) for series 4, 5, & 6.

Optional AMS5844 bolt upgrade available (280,000 p.s.i.) for both 3/8 (#90842) & 7/16 (#90830) bolts.



### MAXI-LIGHT® 93 SERIES 1

APPROX. WEIGHT: 6.0" @ 495g  
HORSEPOWER RANGE: 500+ (oval)  
HORSEPOWER RANGE: 550+ (drag)

### MAXI-LIGHT® 93 SERIES 2

APPROX. WEIGHT: 6.0" @ 520g  
HORSEPOWER RANGE: 600+ (oval)  
HORSEPOWER RANGE: 650+ (drag)

### MAXI-LIGHT® 93 SERIES 3

APPROX. WEIGHT: 6.0" @ 580g  
HORSEPOWER RANGE: 650+ (oval)  
HORSEPOWER RANGE: 700+ (drag)

### MAXI-LIGHT® 93 SERIES 4

APPROX. WEIGHT: 6.0" @ 605g  
HORSEPOWER RANGE: 750+ (oval)  
HORSEPOWER RANGE: 800+ (drag)

### MAXI-LIGHT® 93 SERIES 5

APPROX. WEIGHT: 6.0" @ 645g  
HORSEPOWER RANGE: 850+ (oval)  
HORSEPOWER RANGE: 1000+ (drag)

### MAXI-LIGHT® 93 SERIES 6

Nitrous \ Turbo blown applications.  
Extreme Horsepower.  
Call to special order.

\* Choose the desired HP Series number  
(1, 2, 3, 4, 5, 6).

Part No.	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
ML93000B*-8	5.700"	2.125"	.927"	.941"
ML93002B*-8	6.000"	2.125"	.927"	.941"
ML93003B*-8	5.850"	2.125"	.927"	.941"
ML93004B*-8	6.125"	2.125"	.927"	.941"
ML93005B*-8	5.700"	2.225"	.927"	.941"
ML93006B*-8	6.000"	2.225"	.927"	.941"
ML93007B*-8	6.250"	2.225"	.927"	.941"
ML93008B*-8	5.850"	2.225"	.927"	.941"
ML93009B*-8	6.125"	2.225"	.927"	.941"
ML93040B*-8	6.200"	2.125"	.927"	.941"
ML93041B*-8	6.200"	2.225"	.927"	.941"
ML93042B*-8	6.000"	2.015"	.927"	.941"
ML93043B*-8	6.386"	2.225"	.990"	.990"
ML93900B*-8	Custom	2.125"	Custom	Custom
ML93901B*-8	Custom	2.008" Honda	Custom	Custom
ML93902B*-8	Custom	2.015" Quad 4	Custom	Custom
ML93903B*-8	Custom	2.008" IRL	Custom	Custom
ML93904B*-8	Custom	1.890"	Custom	Custom
ML93905B*-8	Custom	2.225"	Custom	Custom



# Steel Billet Connecting Rods

Big Block V8

366 396 402 427 454 502

## THE SPEED DEMON TEAM

RELIES ON CROWER Clutch, Crankshaft & Connecting Rods



## MAXI-LIGHT® DESIGN

\* Maxi-Light is a Registered Trademark of Crower, Inc.

Extremely light, yet unbelievably strong, the Maxi-Light is intended for use in moderate horsepower applications, where light rotating mass is a must. Currently the lightest steel billet rod available on the market is for big block Chevrolet. Made with the finest aircraft quality steel and titanium materials. They are heat treated to obtain that perfect balance of durability and strength, including 7/16 (#90826) H-11 tool steel cap screw bolts rated at 220,000 p.s.i. Optional AMS5844 bolt upgrade available (280,000 p.s.i.) for 7/16 bolt (#90830).



### MAXI-LIGHT® SERIES 4

APPROX. WEIGHT: 6.386" @ 735g

HORSEPOWER RANGE: 850+ (oval)

HORSEPOWER RANGE: 1000+ (drag)

### MAXI-LIGHT® SERIES 5

APPROX. WEIGHT: 6.386" @ 800g

HORSEPOWER RANGE: 1000+ (oval)

HORSEPOWER RANGE: 1500+ (drag)

### MAXI-LIGHT® SERIES 6

Nitrous \ Turbo blown applications.

Extreme Horsepower.

Call to special order.

Part No.	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
ML93010B*-8	6.136"	2.325"	.990"	.991"
ML93043B*-8	6.386"	2.225"	.990"	.990"
ML93011B*-8	6.386"	2.325"	.990"	.991"
ML93014B*-8	6.405"	2.325"	.990"	.991"
ML93012B*-8	6.536"	2.325"	.990"	.991"
ML93015B*-8	6.625"	2.325"	.990"	.991"
ML93016B*-8	6.700"	2.325"	.990"	.991"
ML93017B*-8	6.800"	2.325"	.990"	.991"
ML93911B*-8	Custom under 7.250"	2.325"	Custom	.991"
ML93909B*-8	Custom over 7.250"	2.325"	Custom	.991"

\* Choose the desired HP Series number (4, 5, or 6).

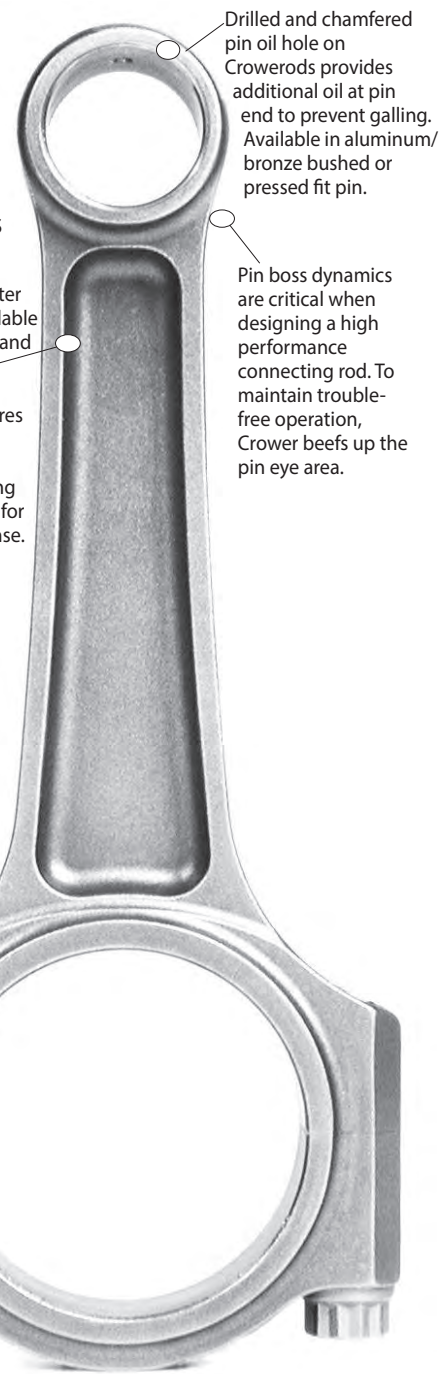
If Pressed Fit Pin desired, replace "B" after Part No. (ex. ML93010PF4-8).

All weights are approximate.

# Steel Billet Connecting Rods

## STEEL BILLET ROD WITH 12 POINT CAP SCREW BOLT

Unquestionably the most critical part of a high performance, internal combustion engine is the connecting rod. Connecting rods support the primary tension loads caused by engine operation in each revolution or cycle of the crankshaft. Therefore, it is of utmost importance that the rods you choose to put in your engine are made from only the finest quality materials, manufacturing methods and fastening systems available on the market. For over 30 years, Crower has been meeting this challenge by using the finest quality steel in the production of our steel billet connecting rods. Every rod is fully CNC machined to remove all surface imperfections, 100% magnaflux inspected, checked for hardness and then machined to finalize the exact tolerance within 0.0001" of an inch. Each set of rods is fully balanced and then shot peened to achieve the ultimate in strength and reliability. Choose from premium H-11 tool steel rod bolts or available as an upgrade, AMS5844 bolts.



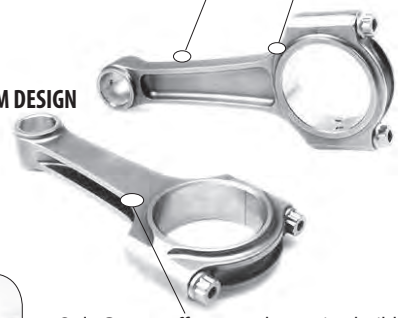
Drilled and chamfered pin oil hole on Crowerods provides additional oil at pin end to prevent galling. Available in aluminum/bronze bushed or pressed fit pin.

Pin boss dynamics are critical when designing a high performance connecting rod. To maintain trouble-free operation, Crower beefs up the pin eye area.

An assortment of computer designed beams are available for different horsepower and weight requirements.

Crower's RBT beam features a radius beam design for the utmost in strength capabilities while reducing overall weight of the rod for improved throttle response.

### CROWER H-BEAM DESIGN

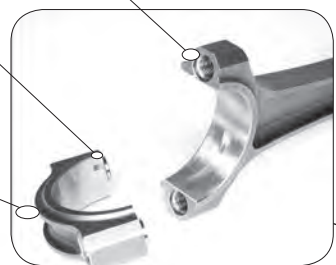


Only Crower offers you, the engine builder, the choice of "I-Beam or H-Beam" design.

Hollow dowel alignment fastening system provides positive cap alignment and "no hassle" removal.

Integrally threaded beam can be made to accept bolt diameters of 5/16, 3/8 and 7/16.

Deep, double-ribbed cap guarantees superior strength and reliability at high engine rpm.



Extremely reliable H-11 tool steel bolts, rated at 220,000 p.s.i. or aircraft quality, AMS5844 alloy bolts that are corrosion resistant and rated at 280,000 p.s.i. Both feature 12-point heads.



### MAXI-LIGHT DESIGN

### AMS5844 ROD BOLT UPGRADE

Crower's AMS5844 rod bolt upgrade is available for all steel billet and titanium rods. Highly recommended for extreme duty rpm and endurance applications. Rated at 280,000 p.s.i., these bolts are corrosion resistant, nonmagnetic and deliver ultimate clamping capabilities for the highest cycle life. Specify desired rod bolt when ordering.

**Proper bolt torque: Torque rod bolts to 10 ft lbs on both sides, then torque to proper spec with one pull.**

### CROWER "H-BEAM" CONNECTING RODS

Although Crower is known mostly for its "I-Beam" rods, we also build a variety of European influenced "H-Beam" designs as well. The thicker cross sections of the H-Beam are better suited for the EDM oil hole that runs the length of the beam delivering added oil to the pin. Weights are equivalent to Crower's standard "I-Beam" billet rod. Specify H-Beam when ordering. For Pressure Fed Pin option specify #90798 after rod part number.

# Steel Billet Connecting Rods

## CUSTOM BILLET CONNECTING RODS

Crower is the industry leader in high performance connecting rods. Choose from the largest selection of makes available including Honda/Acura, BMW, Porsche, Ferrari, Nissan, Toyota, Audi, Volkswagen and more. CNC manufactured from premium quality steel and titanium, Crower billet rods are the only choice when running nitrous oxide, high boost or high rpm in your vehicle. Contact your Crower Tech for more information, including availability.

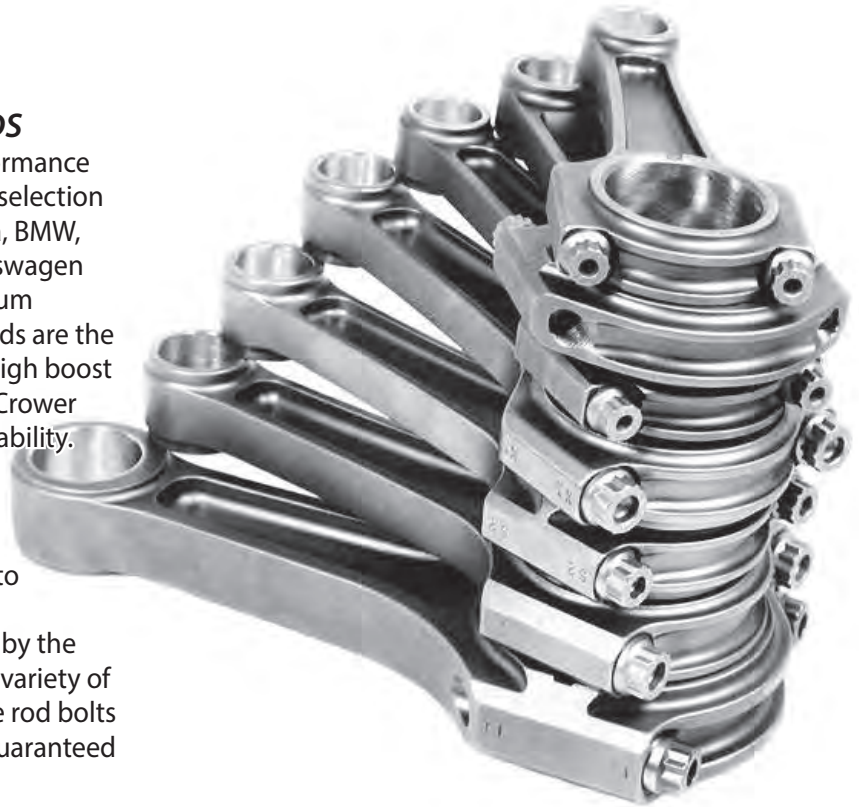
## MANUFACTURING

Crower has the manufacturing capability to produce connecting rods for any type of performance requirement. As you can see by the Crowerod availability list, we make a wide variety of rods. All are equipped with cap screw style rod bolts and hollow dowel alignment sleeves for guaranteed ultimate clamping.

## MATERIALS

Crowerods incorporates only the finest aircraft quality materials. They are heat treated to obtain that perfect balance of strength and durability.

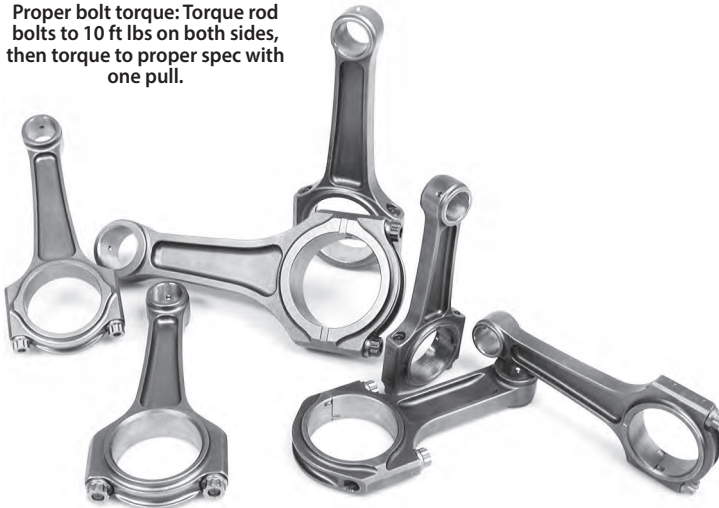
- Premium Steel and Titanium.
- Uniform hardness developed by heat treatment.
- High fatigue strength is ideal for stressed parts.
- H-11 (220,000 psi) or AMS5844 (280,000 psi) bolts.



## CROWEROD AVAILABILITY

TRUCKS	DOMESTICS	IMPORT	MOTORCYCLES
Chevrolet	Buick	BMW	BSA
Caterpillar	Cadillac	Nissan/Datsun	Ducati
Cummings	Chevrolet	Fiat	Harley Davidson
Dodge	Chrysler	Honda/Acura	Honda
Ford	Dodge	Jaguar	Indian
GMC	Ford	Mercedes Benz	Kawasaki
Jeep	GMC	Mitsubishi	Norton
John Deere	Mopar	Porsche	Royal Infield
Mack	Oldsmobile	Renault	Suzuki
Peterbuilt	Plymouth	Toyota/Lexus	Triumph
White	Pontiac	VW/Audi	Yamaha

Proper bolt torque: Torque rod bolts to 10 ft lbs on both sides, then torque to proper spec with one pull.



## BUICK

Part No	Description	Length	B.E. Bore	Pin Dia
B93907B-6	Buick 6 cyl	Custom	Specify	Specify
B93908B-8	Buick V8	Custom	Specify	Specify

If press fit pin is desired, specify "PF" after part number.

## CHEVROLET/GM

Part No	Description	Length	B.E. Bore	Pin Dia
B93906B-6	Chevy 6 cyl	Custom	Specify	Specify
B93731B-4	GM Ecotec	5.767"	2.052"	.787"
B93732B-8	GM 2.4L	5.715"	2.015"	.866"
B93036B-8	GM Duramax 6600	6.420"	2.637"	1.358"
B93936B-8	GM Duramax 6600	Custom	Custom	Custom
B93051B-8	LS1 V8	6.100"	2.225"	.944"
B93737B-4	Saturn 99 & up	5.846"	1.976"	.787"
B93736B-4	Saturn 1.9L	5.712"	1.976"	.787"

If press fit pin is desired, specify "PF" after part number.



# Steel Billet Connecting Rods

## FORD

Part No	Description	Length	B.E. Bore	Pin Dia
B93074B-4	2.0L 4 cyl	5.000"	2.165	.944"
B93075B-4	2.3L 4 cyl	5.200"	2.172	.912"
B93974B-4	2.0L-2.3L 4 cyl	Custom	Specify	Specify
B93788B-4	Focus ZX3	5.482"	1.965"	.787"
B93034B-4	Ford Model B	7.500"	2.021"	.999"
B93926B-6	Ford 6 cyl	Custom	Specify	Specify
B93024B-8	289-302 V8	5.090"	2.239"	.912"
B93025B-8	289-302 V8	5.155"	2.239"	.912"
B93026B-8	289-302 V8	5.315"	2.239"	.912"
B93925B-8	289-302 V8	Custom	Specify	Specify
B93020B-8	351C V8	5.780"	2.436"	.912"
B93921B-8	351C V8	Custom	Specify	Specify
B93023B-8	351W V8	5.956"	2.426"	.912"
B93923B-8	351W V8	Custom	Specify	Specify
B93018B-8	390-427 V8	6.488"	2.590"	.975"
B93918B-8	390-427 V8	Custom	Specify	Specify
B93027B-8	370-460 V8	6.605"	2.652"	1.040"
B93919B-8	370-460 V8	Custom	Specify	Specify
B93028B-8	5.4L	6.657"	2.239"	.866"
B93021B-8	4.6L & 5.0L Coyote	5.933"	2.239"	.8671"

If press fit pin is desired, specify "PF" after part number.

## DIESEL RODS

Part No	Description	Length	B.E. Bore	Pin Dia
B93037B-6	Cummins 5.9 L6 Diesel	7.545"	2.874"	1.575"
B93022B-8	Ford 6.0L PowerStroke	6.929"	2.874"	1.338"
B93039B-8	Ford 6.7L PowerStroke	6.969"	2.989"	1.338"
B93029B-8	Ford 7.3L PowerStroke	7.130"	2.691"	1.308"
B93036B-8	GM Duramax 6600	6.420"	2.637"	1.358"

Most rods can be made in the Maxi-Light design



## MOPAR

Part No	Description	Length	B.E. Bore	Pin Dia
B93031B-8	273-360 "A" V8	6.120"	2.250"	.984"
B93931B-8	273-360 "A" V8	Custom	Specify	Specify
B93935B-8	361-400 "B" V8	Custom	Specify	Specify
B93033B-8	413-440 "RB" V8	6.766"	2.500"	1.094"
B93934B-8	426 Hemi V8	Custom	Specify	Specify
B93785B-4	Neon/Eclipse 2.0L	5.472"	2.007"	.827"
B93786B-4	SRT- 4/PT Csr 2.4L	5.945"	2.086"	.866"
B93938B-10	Viper/RT10	Specify	Specify	Specify

Note: All non standard orders require a minimum 50% deposit.  
All rods now available in Maxi- Light design. Specify "ML" before p/n

## OLDSMOBILE

Part No	Description	Length	B.E. Bore	Pin Dia
B93056B-8	Olds V8	6.735"	2.625"	.9806
B93956B-8	Olds V8	Custom	Specify	Specify

If press fit pin is desired, specify "PF" after part number.

## PONTIAC

Part No	Description	Length	B.E. Bore	Pin Dia
B93060B-8	Pontiac V8	6.625"	2.374"	.980"
B93960B-8	Pontiac V8	Custom	Specify	Specify

If press fit pin is desired, specify "PF" after part number.

## PORSCHE

Part No	Description	Length	B.E. Bore	Pin Dia
B93784	Porsche 912	5.354"	2.243"	.866"

If press fit pin is desired, specify "PF" after part number.

## CHEVY-BIG BLOCK

Part No	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
B93010B-8	6.136"	2.325"	0.990"	0.991"
B93011B-8	6.386"	2.325"	0.990"	0.991"
B93014B-8	6.405"	2.325"	0.990"	0.991"
B93012B-8	6.536"	2.325"	0.990"	0.991"
B93015B-8	6.625"	2.325"	0.990"	0.991"
B93016B-8	6.700"	2.325"	0.990"	0.991"
B93017B-8	6.800"	2.325"	0.990"	0.991"
B93911B-8	Custom	2.325"	0.990"	0.991"
B93909B-8	Custom	2.325"	0.990"	0.991"

If Pressed Fit Pin desired, replace "B" after p/n (ex. B93010PF-8).



# Sport Compact Connecting Rods

## NISSAN

Part No.	Description	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore (mm)	P.E. Thick
B93774B-4	240SX -KA24	6.495"	2.086"	.973"	.827"	21 1.000"
B93776B-6	300ZX -VG30	6.069"	2.086"	.818"	.866"	22 .858"
B93775B-6	350Z	5.677"	2.165"	.818"	.866"	22 .820"
B93770B-4	Altima QR25	5.632"	1.889"	.896"	.787"	20 .900"
B93778B-6	CA16DE / CA18DET 16 valve	5.236"	1.890"	.957"	.787"	20 .957"
B93771B-6	Patrol 4.5L	6.552"	2.361"	1.290"	.905"	23 1.025"
B93772B-6	Patrol 4.8L	6.436"	2.361"	1.290"	.905"	23 1.025"
B93777B-6	RB26DETT	4.783"	2.008"	.858"	.827"	21 .858"
B93773B-4	SR20	5.366"	2.008"	.896"	.866"	22 .896"
B93779B-6	VR38DETT / GT-R	6.496"	2.323"	.896"	.904"	23 .896"

Proper bolt torque: Torque rod bolts to 10 ft lbs on both sides, then torque to proper spec with one pull.

## ROD BOLTS

Part No.	Torque	Dimension
90821-1	45 ft lbs	3/8 x 1.600
90824A-1	30 ft lbs	5/16 x 1.500



Crower Rods, incorporate only the finest aircraft quality materials, heat treated to obtain that perfect balance of strength and durability.

All rods now available in Maxi- Light design. Specify "ML" before p/n

## GM/CHEVROLET

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore (mm)	P.E. Thick
B93731B-4	GM	Ecotec 2.2L/2.0L	5.767"	2.052"	.943"	.787"	20 .945"
B93732B-4	GM	Ecotec 2.4L	5.715"	2.015"	.913"	.866"	22 .940"
B93736B-4	Saturn	1.9L	5.710"	1.976"	.973"	.767"	.975"
B93737B-4	Saturn	99 & up	5.846"	1.976"	.974"	.787"	20 .975"

## FORD/MAZDA

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore (mm)	P.E. Thick
B93787B-4	Ford/Mazda	2.0L 93-97	5.322"	2.008"	.860"	.748"	19 .860"
B93788B-4	Ford	2.0L Zetec	5.482"	1.965"	.957"	.787"	20 .800"
B93789B-4	Ford/Mazda	2.3L Duratec	6.093"	2.087"	.859"	.826"	21 .710"
B93791B-4	Mazda	Miata 1.8L	5.234"	1.890"	.860"	.787"	20 .860"

## MINI COOPER / BMW

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore (mm)	P.E. Thick
B93077B-4	Mini	01-up	5.180"	1.929"	.916"	.827"	21 .730"

## VOLKSWAGEN / AUDI

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore (mm)	P.E. Thick
B93780B-4	VW	1.8 - 2.0L	5.669"	1.992"	.980"	.787"	20 .980"
B93781B-4	VW	2.0L	6.258"	1.992"	.980"	.826"	21 .980"
B93782B-6	VW	VR6	6.460"	2.237"	.784"	.787"	20 .784"

## CUSTOM APPLICATIONS

Part No.	Description	Engine	Length	B.E. Bore
B93978-3	Stock Spec	3cyl	Stock Spec	Stock Spec
B93970B-4	Custom	4 cyl	Specify	Specify
B93980B-4	Stock Spec	4 cyl	Stock Spec	Stock Spec
B93971B-6	Custom	6 cyl	Specify	Specify
B93981B-6	Stock Spec	6 cyl	Stock Spec	Stock Spec
B93972B-8	Custom	8 cyl	Specify	Specify
B93969B-10	Custom	10 cy	Specify	Specify
B93973B-12	Custom	12 cyl	Specify	Specify
B93979-3	Custom	3cyl	Specify	Specify

All rods come bushed for floating pin. If press fit pin is desired, replace "B" with "PF" after part number.



Crower can rebuild your existing Crower connecting rods for extended use by rebushing the pin end, resizing, magna-flux inspection and new rod bolt installation. Send the rods to Crower with contact and payment information.

## ROD BUSHINGS

Part No	Application	Dimension
90926-1	B16A, B Series, 4G63 (1g)	.827"
90947-1	D16, D15	.748"
90966-1	H22, H23, 4G63 (2g), Toyota	.866"
90987-1	VW, Toyota	.787"
90922-1	Custom application	Specify

Specify pin end width of your rods when ordering.

# Sport Compact Connecting Rods



Crower can rebuild your existing Crower connecting rods for extended use by rebushing the pin end, resizing, magna-flux inspection and new rod bolt installation.

## MITSUBISHI/DSM

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	(mm)	P.E. Thick
B93785B-4	DSM	420A / Neon	5.472"	2.007"	1.031"	.827"	21	1.031"
B93761B-4	DSM	4G63 (1Gen)	5.906"	1.890"	1.115"	.827"	21	1.038"
B93762B-4	DSM	4G63 (2G) / Evo	5.906"	1.890"	1.038"	.866"	22	1.038"
B93764B-4	DSM	4G93T	5.231"	1.890"	0.860"	.748"	19	0.860"
B93763B-6	DSM	6G72 / VR-4	5.548"	2.086"	0.821"	.866"	22	0.835"

## TOYOTA

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	(mm)	P.E. Thick
B93758B-6	Toyota	1FZ-FE LndCrsr	6.063"	2.383"	1.095"	1.023"	26	1.095"
B93751B-4	Toyota	1ZZ	5.772"	1.851"	.779"	.787"	20	.780"
B93756B-6	Toyota	2JZ	5.590"	2.166"	1.020"	.866"	22	1.020"
B93750B-4	Toyota	2RZ	5.786"	2.205"	1.015"	.9447"	24	1.015"
B93760B-8	Toyota	2UZ-FE LndCrsr	5.748"	2.166"	.902"	.866"	22	.830"
B93759B-4	Toyota	2ZZ	5.433"	1.891"	.780"	.787"	20	.780"
B93753B-4	Toyota	3SGTE	5.433"	2.008"	1.055"	.866"	22	1.055"
B93755B-4	Toyota	3TC	4.844"	2.008"	1.053"	.866"	22	1.053"
B93752B-4	Toyota	4AGE	4.803"	1.772"	.859"	.787"	20	.860"
B93754B-4	Toyota	5SFE	5.435"	2.166"	1.055"	.866"	22	1.055"
B93724B-4	Toyota	7AFES	5.216"	2.008"	.858"	.787"	20	.865"
B93757B-6	Toyota	7M/5M	5.980"	2.166"	.977"	.866"	22	.980"
B93725B-4	Toyota	Scion XB	5.545"	1.693"	.705"	.708"	18	.705"

All rods now available in Maxi- Light design. Specify "ML" before p/n

## SUBARU

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	(mm)	P.E. Thick
B93765B-4	Subaru	EJ25 II - SOHC	5.162"	2.165"	0.842"	.905"	23	0.842"
B93768B-4	Subaru	EJ25 II - DOHC	5.185"	2.165"	0.842"	.905"	23	0.842"
B93767B-4	Subaru	EJ25 Phase I	5.185"	2.008"	0.842"	.905"	23	0.840"
B93766B-4	Subaru	WRX and STi	5.138"	2.165"	0.842"	.905"	23	0.842"

## HONDA/ACURA

Part No.	Make	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	(mm)	P.E. Thick
B93727B-4	Acura	B17A VTEC	5.208"	1.890"	.935"	.827"	21	.900**
B93728B-4	Acura	B18A-B/B20B	5.394"	1.890"	.935"	.827"	21	.900**
B93729B-4	Acura	B18C VTEC	5.433"	1.890"	.858"	.827"	21	.900**
B93726B-4	Acura	D16A (ZC)	5.394"	1.890"	.898"	.748"	19	.716"
B93738B-4	Acura	K20A	5.473"	2.008"	.780"	.866"	22	.780**
B93743B-4	Honda	1237cc	5.065"	1.693"	.858"	.669"	17	.710"
B93742B-4	Honda	1342cc	5.436"	1.693"	.898"	.748"	19	.710"
B93741B-4	Honda	1.5L Civic	5.275"	1.890"	.899"	.748"	19	.710"
B93720B-4	Honda	B16 Stroker	5.276"	1.890"	.935"	.787"	20	.900"
B93721B-4	Honda	B16 Stroker	5.356"	1.890"	.935"	.787"	20	.900"
B93722B-4	Honda	B18/20 Stroker	5.512"	1.890"	.935"	.787"	20	.900"
B93723B-4	Honda	B18/20 Stroker	5.564"	1.890"	.935"	.787"	20	.900"
B93733B-4	Honda	B16A VTEC	5.287"	1.772"	.935"	.827"	21	.900**
B93745B-4	Honda	D16 Series	5.394"	1.890"	.898"	.748"	19	.716"
B93740B-4	Honda	D17A Civic	5.394"	1.890"	.780"	.748"	19	.900**
B93739B-4	Honda	F20C	6.025"	2.008"	.938"	.905"	23	.940"
B93735B-4	Honda	F22C (04-up)	5.893"	2.008"	.938"	.905"	23	.938"
B93749B-4	Honda	F23	5.550"	1.890"	.780"	.866"	22	.780"
B93747B-4	Honda	H23/F22	5.580"	2.008"	.935"	.866"	22	.940**
B93748B-4	Honda	H22 VTEC	5.636"	2.008"	.935"	.866"	22	.940**
B93744B-4	Honda	K20A3 5	5.453"	1.890"	.780"	.866"	22	.780"
B93746B-4	Honda	K24A	5.985"	2.008"	.780"	.866"	22	.900**
B93718B-4	Honda	L15A7	5.866"	1.693"	.702"	.708"	18	.702"



Crower Rods, incorporate only the finest aircraft quality materials, heat treated to obtain that perfect balance of strength and durability.

\* Not OEM thickness.

# Motorcycle Connecting Rods

## DUCATI

Part No.	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	P.E. Thick
B93095B-2	996 Corsa	4.881"	1.772"	.863"	.748" / 19mm	.865"
B93078B-2	900SS / 906 / 907	5.118"	1.772"	.863"	.748" / 19mm	.865"
B93079B-2	851 / 748 / 916	4.882"	1.772"	.863"	.826" / 20mm	.860"
B93078-2	DS1000	5.118"	1.772"	.863"	.748" / 19mm	.865"

## HONDA

Part No.	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	P.E. Thick
B93094B-4	CBR600 F3	3.732"	1.338"	.821"	.669" / 17mm	.800"
B93090B-4	CBR1100XX Blackbird	4.297"	1.693"	.854"	.748" / 19mm	.710"
B93098B-4	CBR1000RR (04-up)	4.084"	1.551"	.855"	.669" / 17mm	.630"

## KAWASAKI

Part No.	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	P.E. Thick
B93065B-4	ZX6R (00-01), ZX6R 636 (00-01), ZZR600 (05-08)	3.661"	1.299"	.727"	.629" / 16mm	.590"
B93072B-4	ZXR750	3.937"	1.456"	.900"	.708" / 18mm	.710"
B93091B-4	ZX9	4.112"	1.496"	.899"	.708" / 18mm	.710"
B93073B-4	ZX10 (04-up)	4.203"	1.477"	.822"	.669" / 17mm	.630"
B93076B-4	ZX11	4.370"	1.536"	.900"	.708" / 18mm	.900"
B93096B-4	ZX12	4.231"	1.575"	.932"	.827" / 21mm	.750"
B93066B-4	ZX14 (06-11)	4.428"	1.614"	.932"	.787" / 20mm	.755"
B93064B-4	ZX14 (12-up)	4.549"	1.614"	.931"	.787" / 20mm	.755"

## POLARIS

Part No.	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	P.E. Thick
ML93149B-2	POLARIS XP 900	5.056"	1.732"	.956"	.787" / 20mm	.785"
ML93148B-2	POLARIS XP 1000	4.915"	1.732"	.957"	.800" / 20mm	.800"

## SUZUKI

Part No.	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	P.E. Thick
B93063B-4	GSXR 1000 (2009-2014)	4.405"	1.496"	.786"	.590" / 15mm	.632"
B93069B-4	GSXR 600 (2004-2014)	3.633"	1.338"	.786"	.551" / 14mm	.635"
B93071B-4	GSXR 600 (01-up)	3.750"	1.338"	.786"	.590" / 15mm	.635"
B93087B-4	GSXR 750 (00-05)	4.060"	1.417"	.786"	.590" / 15mm	.635"
B93068B-4	GSXR 750 (06-08)	3.732"	1.417"	.786"	.590" / 15mm	.635"
B93086B-4	GSXR 1000 2001-2004	4.370"	1.496"	.786"	.629" / 16mm	.632"
B93093B-4	GSXR 1000 2005-2006	4.370"	1.496"	.786"	.590" / 15mm	.635"
B93088B-4	GSXR 1100 (Watercooled)	4.606"	1.614"	.826"	.787" / 20mm	.826"
B93084B-4	GSXR 1300 Hayabusa(2008)	4.704"	1.614"	.826"	.708" / 18mm	.826"
B93089B-4	GSXR 1300 Hayabusa	4.704"	1.614"	.826"	.787" / 20mm	.826"
B93099B-4	GSXR 1300 Hayabusa Heavy Duty / 3/8" Bolts	4.704"	1.614"	.826"	.787" / 20mm	.826"

## CUSTOM RODS



Available in 4340 Steel or Titanium made for any application

For titanium rods, replace "B" with "T" in front of p/n on all of rods listed on this page. Ex: T93089B-4



# Motorcycle Connecting Rods

Crower motorcycle connecting rods are available for most popular engines and come in your choice of I-Beam or H-Beam design. H-11 alloy 220,000 p.s.i. rod bolts come standard, 280,000 p.s.i. rod bolts upgrade available upon request.



## ROD BOLTS

Part No.	P.S.I.	Torque	Dimension
90847-1	280,000	275 in. lbs	1/4 x 1.375
90824A-1	220,000	30 ft lbs	5/16 x 1.500
90845-1	280,000	45 ft lbs	5/16 x 1.500
90821-1	220,000	45 ft lbs	3/8 x 1.600
90842-1	280,000	65 ft lbs	3/8 x 1.600

Proper bolt torque: Torque rod bolts to 10 ft lbs on both sides, then torque to proper spec with one pull.

**Note: If using stretch method, Crower recommends .005" to .007".**

## TRIUMPH

Part No.	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	P.E. Thick
B93130B-2	650 Twin T120	6.500"	1.770"	1.041"	.687"	1.000"
B93131B-2	750 Twin T140	6.000"	1.770"	1.041"	.750"	1.000"
B93132B-3	Triple (95-up)	4.587"	1.732"	.915"	.748" / 19mm	.875"
B93930B-3	3Cyl	Custom	Custom	Custom	Custom	Custom

## YAMAHA

Part No.	Engine	C-to-C	B.E. Bore	B.E. Thick	P.E. Bore	P.E. Thick
B93124B-4	FJ 1100/1200	4.665"	1.614"	.936"	.708" / 18mm	.800"
B93125B-4	FZR 1000	4.310"	1.536"	.819"	.748" / 19mm	.630"
B93116B-3	Nytro Snowmobile	4.742"	1.6142"	.858"	.748" / 19mm	.710"
T93116B-3	Nytro Snowmobile Titanium	4.742"	1.6142"	.858"	.748" / 19mm	.710"
B93120B-4	R1 (04-up)	4.055"	1.456"	.885"	.669" / 17mm	.630"
B93122B-4	R6 (01-03)	3.603"	1.299"	.701"	.629" / 16mm	.630"
B93128B-1	TT 500 / XT 500	5.710"	1.645"	.943"	.826" / 20mm	.945"
B93126B-4	V-Max	4.882"	1.614"	.784"	.748" / 19mm	.675"
B93129B-1	XT 600	5.335"	1.693"	.865"	.866" / 22mm	.865"
B93127B-1	XTZ 660 Raptor	5.374"	1.772"	.864"	.866" / 22mm	.866"
B93121B-4	YZF R1	4.350"	1.536"	.819"	.669" / 17mm	.715"
B93123B-4	YZF R6 (99-00)	3.622"	1.299"	.701"	.629" / 16mm	.700"
B93119B-4	YZF R6 (06-08)	3.563"	1.339"	.702"	.590" / 15mm	.595"
B93118B-4	YZF R6 (2009)	3.563"	1.339"	.701"	.590" / 15mm	.591"

## CUSTOM APPLICATIONS

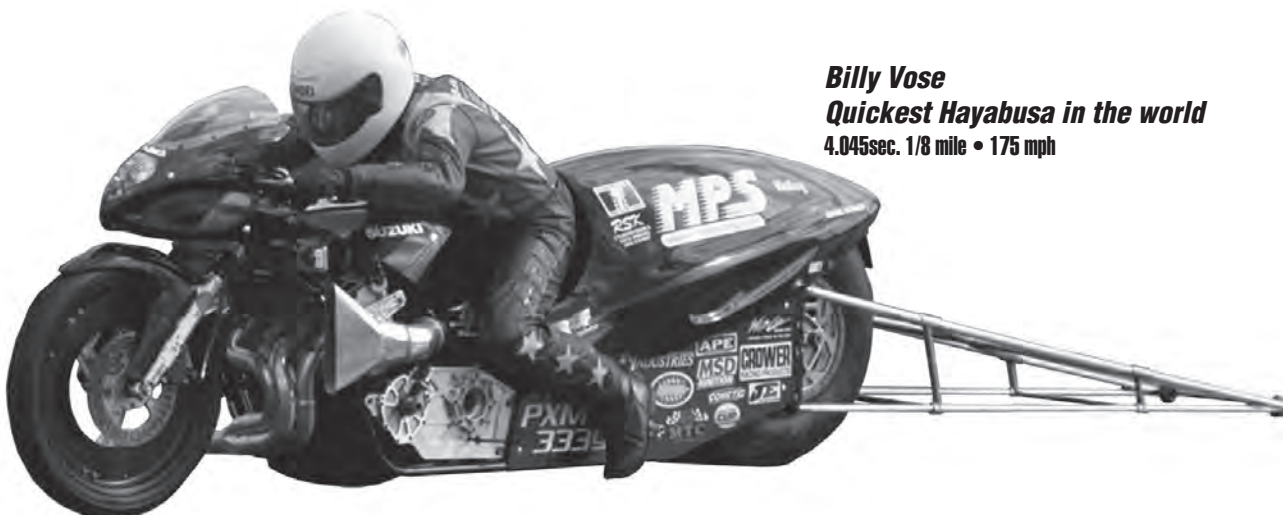
Part No.	Engine	Description
B93976B-4	4 cyl	Steel Alloy - Any Desired Specifications
T93976B-4	4 cyl	Titanium - Any Desired Specifications
B93975B-3	3 cyl	Steel Alloy - Any Desired Specifications
T93975B-3	3 cyl	Titanium - Any Desired Specifications
B93975B-2	2 cyl	Steel Alloy - Any Desired Specifications
T93975B-2	2 cyl	Titanium - Any Desired Specifications

Note: To order the upgraded rod bolts (rated to 280,000 psi), refer to the rod bolt part numbers above and add the desired bolt to the end of the rod number. Ex: B93089B-4 / 90845

Note: Titanium rods are available by replacing "B" with "T" before p/n



Crower Rods incorporate only the finest aircraft quality premium steel and titanium materials, heat treated to obtain that perfect balance of strength and durability.



**Billy Vose**  
**Quickest Hayabusa in the world**  
 4.045sec. 1/8 mile • 175 mph



# Titanium Connecting Rods

## TITANIUM RODS

Crower uses only aerospace quality, titanium in the manufacturing of our billet Crowerods. Titanium has a lower thermal expansion rate than steel and much less than aluminum, which allows the racer to hold closer tolerances within the engine. Crower offers a wide variety of applications. Everything from a 4 cycle motorcycle to a 8" long big block Chevrolet for Pro Modified. All Crower titanium connecting rods are equipped with cap screw bolts and stroker designed to insure plenty of camshaft and case clearance, also reducing weight in noncritical areas.

Special "pressure fed" oiling hole from big end to pin end is available on all titanium and premium steel billet Crowerods. Specify this option when ordering.

All titanium rods come standard with aluminum/bronze bushings.

Crower uses only titanium, with a composition of 6% aluminum and 4% vanadium.

Crower is a complete production facility. Every step of manufacture is performed under rigid quality control standards

Custom rods available in most center to center pin end size and big end I.D.

Special plasma sprayed sides prevents galling that occurs when titanium rubs with steel.

Hollow dowel alignment fastening system provides positive cap alignment and "no hassle" removal.



Extremely reliable H-11 tool steel bolts, rated at 220,000 p.s.i. or aircraft quality, AMS5844 alloy bolts that are corrosion resistant and rated at 285,000 p.s.i. Both feature 12-point heads.

## AMS5844 ROD BOLT UPGRADE

Crower now offers a new AMS5844 rod bolt upgrade option available for all steel billet and titanium rods. Highly recommended for extreme duty rpm and endurance applications. Rated at 280,000 p.s.i., these bolts are corrosion resistant, nonmagnetic and deliver ultimate clamping capabilities for the highest cycle life. Be sure and specify upgrade option when ordering.



# Titanium Connecting Rods



## Chevrolet

Part No.	Description	Length	B.E. Bore	Pin Dia.
ST93000B-8	262-400 V8	5.700"	2.125"	.927"
ST93003B-8	262-400 V8	5.850"	2.125"	.927"
ST93002B-8	262-400 V8	6.000"	2.125"	.927"
ST93900B-8	262-400 V8	Custom	2.125"	.927"
ST93005B-8	262-400 V8	5.700"	2.225"	.927"
ST93008B-8	262-400 V8	5.850"	2.225"	.927"
ST93006B-8	262-400 V8	6.000"	2.225"	.927"
ST93009B-8	262-400 V8	6.125"	2.225"	.927"
ST93007B-8	262-400 V8	6.250"	2.225"	.927"
ST93905B-8	262-400 V8	Custom	2.225"	.927"
ST93010B-8	396-454 V8	6.136"	2.325"	.990"
ST93011B-8	396-454 V8	6.386"	2.325"	.990"
ST93014B-8	396-454 V8	6.405"	2.325"	.990"
ST93012B-8	396-454 V8	6.536"	2.325"	.990"
ST93015B-8	396-454 V8	6.625"	2.325"	.990"
ST93016B-8	396-454 V8	6.700"	2.325"	.990"
ST93017B-8	396-454 V8	6.800"	2.325"	.990"
ST93909B-8	396-454 V8	Custom	(7.250" & over)	.990"
ST93911B-8	396-454 V8	Custom	(under 7.250")	.990"
ST93906B-6	Chevy 6 cyl	Custom	Specify	Specify

All Crower small & big block titanium rods are stroker designed.

Crower Titanium lube #90897 is supplied with all sets of titanium rods.

### Approximate Chevrolet V8 Weights

Small Block: 5.700" @ 480g • 6.000" @ 495g • 6.250" @ 548g  
Big Block: 6.136" @ 540g • 6.536" @ 625g • 7.650" @ 724g

Crower has the capability of manufacturing just about any type of titanium connecting rod.



Proper bolt torque: Torque rod bolts to 10 ft lbs on both sides, then torque to proper spec with one pull.

## Ford/Buick

Part No.	Description	Length	B.E. Bore	Pin Dia.
T93974B-4	Ford 2.0L / 2.3L 4 cyl	Custom	Specify	Specify
T93907B-6	Buick 6 cyl	Custom	Specify	Specify
T93908B-8	Buick V8	Custom	Specify	Specify

## Mopar

Part No.	Description	Length	B.E. Bore	Pin Dia.
T93934B-8	426 Hemi V8	Custom	Specify	Specify

## Import Applications

Part No.	Description	Length	B.E. Bore	Pin Dia.
T93970B-4	4 cyl	Custom	Specify	Specify
T93971B-6	6 cyl	Custom	Specify	Specify
T93972B-8	8 cyl	Custom	Specify	Specify
T93973B-12	12 cyl	Custom	Specify	Specify

## Motorcycle (4 Cycle)

Part No.	Description	Length	B.E. Bore	Pin Dia.
T93088B-4	Suzuki GSX	4.606"	1.614"	.787"
T93089B-4	Suzuki Hayabusa	4.704"	1.614"	.787"
T93975B-2	2 cylinder	Custom	Specify	Specify
T93976B-4	4 cylinder	Custom	Specify	Specify

## Custom Applications

Part No.	Description	Length	B.E. Bore	Pin Dia.
T93912B-4	Custom 4 cyl	Custom	Specify	Specify
T93913B-6	Custom 6 cyl	Custom	Specify	Specify
T93914B-8	Custom 8 cyl	Custom	Specify	Specify

Crower Moly lube #90897 is supplied with all titanium rods.

Note: All non standard orders require a minimum 50% deposit.

# Sportsman Connecting Rods

3/8 cap screw bolt delivers a lighter big end rotating weight.

Premium grade 3/8 cap screw bolts are rated at 180,000 p.s.i. (#90828)

Drilled and chamfered pin oil hole puts additional oil at the wrist pin to prevent galling.

Single ribbed cap delivers distortion free performance and removes excess weight at a noncritical area.

3/8 thru-bolt (#90805) and nut (#90814) are rated at 180,000 p.s.i.

**SP93206B-8**  
**SB CHEVY 6.000"**  
**CAP SCREW**

**SP91206B-8**  
**SB CHEVY 6.000"**  
**THRU-BOLT**

**SSP93306B-8**  
**SB CHEVY 6.000"**  
**STROKER**

Extra strength at this critical web area reduces the big end pinch found in other aftermarket brands.

Separate forging dies for each length (5.7" and 6.0") to establish better grain fl w. Lesser designs try and get by with just one die for several lengths, then cut to size.

Stroker design offers more cam-to-rod clearance and is intended for strokes of 3.750" and up. Can also be used in shorter stroke engines if 7/16 bolt is desired.

3/8 aircraft quality, 8740 chromoly steel thru-bolt and nut adheres to O.E.M. stock specs, making it stock legal for all major sanctioning bodies.

The "Crown" in the beam assures quality and reliability...don't settle for second best.

Properly engineered small end guarantees long, reliable pin alignment. Available in bushed aluminum/bronze or pressed fit pin

Stroker design utilizes a larger 7/16 cap screw bolt for ultimate clamping ability (#90846).

Ribbed cap delivers distortion free performance at high horsepower and rpm.

Experienced engine builders know that heavy rods are notoriously hard on the wrist pin area. Crown reduces unwanted loads by minimizing overall weight.



# Sportsman Connecting Rods



## STROKER SPORTSMAN®

\*Sportsman is a Registered Trademark of Crower, Inc.

The cap screw designed Sportsman incorporates all of the strength and value of our inexpensive Sportsman model with the clearance advantages of a stroker design. The stroker design allows additional cam-to-rod clearance for strokes above 3.750". Crower Stroker Sportsman's are forged from high strength alloy and feature extremely reliable 7/16 8740 steel alloy cap screw bolts (180,000 p.s.i.). Proven lightweight design (under 600g).

**APPROX. WEIGHT: 5.7" @ 595g**  
**HORSEPOWER RANGE: 700**  
**RPM RANGE: 8200**  
**TORQUE SPECS: 75 foot lbs.**

Part No.	Engine	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
SSP93300B-8	SB Chevy	5.700"	2.125"	.927"	.941"
SSP93305B-8	SB Chevy	5.700"	2.225"	.927"	.941"

If Pressed Fit Pin desired, specify "PF" after p/n (ex. SSP93300PF-8).



## SPORTSMAN® CAP SCREW

\*Sportsman is a Registered Trademark of Crower, Inc.

Features a 3/8 cap screw design for easier cap removal and placement. The new fastening system features 8740 steel alloy bolts (180,000 p.s.i.) that thread directly into the rod fork. Fully CNC machined steel. Crower Sportsman rods are the lighter, yet stronger alternative to factory "pinks." Installs without the need of an expensive balance job.

**APPROX. WEIGHT: 5.7" @ 585g**  
**HORSEPOWER RANGE: 600**  
**RPM RANGE: 8200**  
**TORQUE SPECS: 45 foot lbs.**

Part No.	Engine	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
SP93200B-8	SB Chevy	5.700"	2.125"	.927"	.941"
SP93205B-8	SB Chevy	5.700"	2.225"	.927"	.941"
SP93208B-4	Chevy II 4 cyl.	5.700"	2.125"	.927"	(set/4)
SP93210B-6	Chevy 6 cyl.	5.700"	2.125"	.927"	(set/6)

If Pressed Fit Pin desired, specify "PF" after p/n (ex. SP93200PF-8).  
 For Cosworth Vega, use #SP93208B-4



## SPORTSMAN® THRU-BOLT

\*Sportsman is a Registered Trademark of Crower, Inc.

First introduced back in 1987, the Crower Sportsman rod was the original high performance stock replacement rod. Features traditional thru-bolt and nut fasteners for stock legal classes. Includes 3/8 8740 bolts and nuts (180,000 p.s.i.).

**APPROX. WEIGHT: 5.7" @ 585g**  
**HORSEPOWER RANGE: 600**  
**RPM RANGE: 8200**  
**TORQUE SPECS: 50 foot lbs. w/oil**

Part No.	Engine	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
SP91200B-8	SB Chevy	5.700"	2.125"	.927"	.941"
SP91205B-8	SB Chevy	5.700"	2.225"	.927"	.941"
SP91208B-4	Chevy II 4 cyl.	5.700"	2.125"	.927"	(set/4)
SP91210B-6	Chevy 6 cyl.	5.700"	2.125"	.927"	(set/6)

If Pressed Fit Pin desired, specify "PF" after p/n (ex. SP91200PF-8).



# Sportsman Connecting Rods

**APPROX. WEIGHT: 6.536" @ 830g**  
**HORSEPOWER RANGE: 1000+**  
**RPM RANGE: 8200**  
**TORQUE SPECS: 70 foot lbs.**

Part No.	Engine	C-to-C	B.E. Bore	P.E. Bore
SP93415B-8	396-354 Chevy	6.536"	2.325"	.990"
SP93416B-8	396-354 Chevy	6.625"	2.325"	.990"
SP93417B-8	396-354 Chevy	6.700"	2.325"	.990"
SP93418B-8	396-354 Chevy	6.800"	2.325"	.990"
SP93419B-8	400-455 PONTIAC	6.625"	2.374"	.980"
SP93420B-8	400-455 PONTIAC	6.700"	2.374"	.980"
SP93421B-8	400-455 PONTIAC	6.800"	2.374"	.980"

**WEIGHT: 5.090" @ 560g**  
**HORSEPOWER RANGE: 600**  
**RPM RANGE: 8200**  
**TORQUE SPECS: 45 foot lbs. w/oil**

Part No.	Engine	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
SP91224B-8	302	5.090"	2.239"	.912"	.832"
SP91225B-8	302	5.155"	2.239"	.912"	.832"
SP91226B-8	302	5.315"	2.239"	.912"	.832"
SP91227B-8	302	5.090"	2.225"	.927"	.941"
SP91228B-8	302	5.155"	2.225"	.927"	.941"
SP91229B-8	302	5.315"	2.225"	.927"	.941"
SP91230B-4	2.0L	5.000"	2.165"	.944"	1.010"
SP91235B-4	2.0L	5.700"	2.165"	.927"	1.010"
SP91236B-4	2.0L	5.700"	2.125"	.927"	1.010"
SP91231B-4	2.3L	5.200"	2.172"	.912"	.990"
SP91232B-4	2.3L	5.400"	2.172"	.912"	.990"
SP91233B-4	2.3L	5.500"	2.172"	.912"	.990"
SP91234B-4	2.3L	5.700"	2.172"	.927"	.990"
SP91237B-4	2.3L	5.700"	2.125"	.927"	.990"
SP91220B-8	Custom 8 cylinder application (set/8)				
SP91221B-4	Custom 4 cylinder application (set/4)				

If Pressed Fit Pin desired, specify "PF" after p/n (ex. SP91224PF-8).  
 All weights are approximate.  
 SP91224 - Lt Model Stock / SP91225 - Early Model Stock  
 SP91231 - Stock 2300cc  
 .832" - Ford width, .941" - Chevy width

**APROX. WEIGHT: 5.7" @ 625g**  
**HORSEPOWER RANGE: 600**  
**RPM RANGE: 8200**  
**TORQUE SPECS: 45 foot lbs.**

Part No.	Engine	C-to-C	B.E. Bore	P.E. Bore	B.E. Width
SP93230B-4	2.0L	5.000"	2.165"	.944"	1.010"
SP93235B-4	2.0L	5.700"	2.165"	.927"	1.010"
SP93236B-4	2.0L	5.700"	2.125"	.927"	1.010"
SP93231B-4	2.3L	5.200"	2.172"	.912"	.990"
SP93232B-4	2.3L	5.400"	2.172"	.912"	.990"
SP93233B-4	2.3L	5.500"	2.172"	.912"	.990"
SP93234B-4	2.3L	5.700"	2.172"	.927"	.990"
SP93237B-4	2.3L	5.700"	2.125"	.927"	.990"

If Pressed Fit Pin desired, specify "PF" after p/n (ex. SP93230PF-4).  
 SP93230B-4 is SCCA legal

## SCCA FORMULA VEE APPROVED ROD

Part No.	C-to-C	B.E. Bore	B.E. Width	P.E. Bore	P.E. Width
SP93280B-4	5.120"	2.275"	.934"	.787"	1.010"

## BIG BLOCK SPORTSMAN®

\* Sportsman is a Registered Trademark of Crower, Inc.

The big block version of our popular small block design, the Sportsman offers a USA made, 4340 chromoly steel forged rod at an economical price. Available for both Big Block Chevrolet and Pontiac applications. Features 7/16 high strength steel alloy cap screw bolts rated at 180,000 p.s.i. for unrivaled strength.



## FORD SPORTSMAN® THRU-BOLT

\* Sportsman is a Registered Trademark of Crower, Inc.

First introduced back in 1987, the Crower Sportsman rod was the original high performance stock replacement rod. Features traditional thru-bolt and nut fasteners for stock legal classes. Includes 3/8 8740 bolts and nuts (180,000 p.s.i.).



## FORD SPORTSMAN® CAP SCREW

\* Sportsman is a Registered Trademark of Crower, Inc.

Crower offers the Ford Sportsman for the 2.0L & 2.3L Ford in a cap screw design. Forged from the best aircraft quality steel. Ford Sportsman's come standard with aircraft quality 3/8 8740 steel alloy cap screw bolts rated at 180,000 p.s.i.



# Rod Bolts & Nuts

## ROD BOLTS

Available in three unique styles, depending on your rod design and horsepower requirement. All Crower Sportsman feature high strength steel alloy bolts (180,000 p.s.i.), while all Crower steel billet and titanium rods come standard with H-11 tool steel bolts (220,000 p.s.i.). But for extreme rpm and endurance applications, Crower offers the new AMS5844 bolt (285,000 p.s.i.) available as an upgrade option. Both feature a 12-point head and rolled fillets, thread rolled after heat-treat. To determine which bolts are required for a particular rod, contact Crower. Sold by the piece or set. Bolt lengths are measured from under the head to the end of the threaded portion.



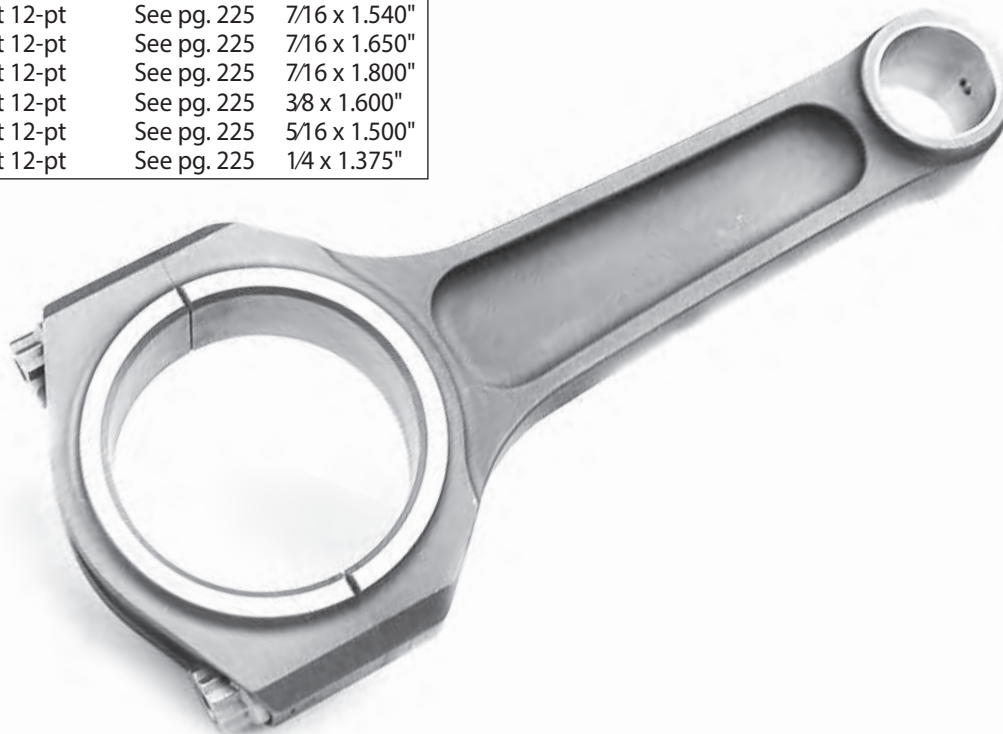
## ROD NUTS

Crower offers two grades of quality rod nuts. The H-11 tool steel nuts are rated at 220,000 p.s.i., while the high strength steel alloy nuts are rated at 180,000 p.s.i. Sold separately, by the piece.



Part No.	Description	Torque Specs	Dimension
<b>8740 STEEL ALLOY (180,000 p.s.i.)</b>			
90800-1	Cap Screw 12-pt	See pg. 225	7/16 x 2.000"
90802-1	Thru-bolt (SB, F)	See pg. 225	7/16 x 1.715"
90803-1	Thru-bolt (F)	See pg. 225	7/16 x 1.940"
90804-1	Thru-bolt (F)	See pg. 225	7/16 x 2.320"
90805-1	Thru-bolt (B, SP <sup>SB</sup> )	See pg. 225	3/8 x 1.920"
90807-1	Thru-bolt (SB)	See pg. 225	7/16 x 2.070"
90828-1	Cap Screw bolt 12-pt (SP <sup>SB</sup> )	See pg. 225	3/8 x 1.600"
90829-1	Cap Screw bolt 12-pt (SP <sup>BB</sup> )	See pg. 225	7/16 x 1.800"
90846-1	Cap Screw (SSP)	See pg. 225	7/16 x 1.440"
<b>H-11 TOOL STEEL ALLOY (220,000 p.s.i.)</b>			
90818-1	Cap Screw bolt 12-pt	See pg. 225	3/8 x 1.600"
90820-1	Cap Screw bolt 12-pt	See pg. 225	7/16 x 1.800"
90824-A	Cap Screw bolt 12-pt	See pg. 225	5/16 x 1.500"
90823-1	Cap Screw bolt 12-pt	See pg. 225	7/16 x 1.650"
90826-A	Cap Screw bolt 12-pt	See pg. 225	7/16 x 1.540"
90821-1	Cap Screw bolt 12-pt	See pg. 225	3/8 x 1.600"
<b>AMS5844 STEEL ALLOY (280,000 p.s.i.)</b>			
90830-1	Cap Screw bolt 12-pt	See pg. 225	7/16 x 1.540"
90833-1	Cap Screw bolt 12-pt	See pg. 225	7/16 x 1.650"
90832-1	Cap Screw bolt 12-pt	See pg. 225	7/16 x 1.800"
90842-1	Cap Screw bolt 12-pt	See pg. 225	3/8 x 1.600"
90845-1	Cap Screw bolt 12-pt	See pg. 225	5/16 x 1.500"
90847-1	Cap Screw bolt 12-pt	See pg. 225	1/4 x 1.375"

Part No.	Description	Dimension
90811-1	Billet or Forged Rods	7/16
90813-1	Billet Rods	11/32
90814-1	Billet & Sportsman Rods , 12-point Alloy	3/8



# Connecting Rod Accessories

## ALIGNMENT SLEEVES

Crower hollow dowel connecting rod alignment sleeves are precision ground from high grade alloy. Sold by the piece.

Part No.	Description	Dimension
90850-1	Rod alignment sleeve (1 only)	5/16
90851-1	Rod alignment sleeve (1 only)	3/8
90852-1	Rod alignment sleeve (1 only)	7/16
90854-1	Rod alignment sleeve (1 only)	1/4
90855-1	Rod alignment sleeve (1 only)	1/2

## STRETCH GAUGE

Crower highly recommends using a stretch gauge to tighten rod bolts to their recommended stretch figures. This tool will provide accurate and repeatable results every time if used correctly. Includes dial indicator, fixture and instructions.



Part No.	Description
90700	Rod bolt stretch gauge indicator

## ARP ULTRA TORQUE LUBE

In order to achieve proper preload during rod bolt installation, it is important to use the lubricant that is recommended for that particular bolt and rod combination.

- Steel rods with 8740 bolts and Steel rods with H-11 or upgraded AMS5844 bolts must use ARP Ultra-Torque Lube (#90894).
- Titanium rods with H-11 or AMS5844 bolts must use special Crower titanium lube (#90897).

Part No.	Description
90894	ARP Ultra Torque Lubricant 1/2 oz. tube



Part No.	Description
90897	Crower Titanium Lube (Titanium rods) 1/2 oz tub
90897C	Crower Titanium Lube (Titanium rods) 2 lb, 10 oz container





## ROD BUSHINGS

Crower uses premium aluminum-bronze one piece billet bushings in all of the rods we manufacture. These high quality bushings are sold separately, by the piece.



Part Number	Wrist Pin	Rod Pin Size	Bushing O.D.	Final Rod Size
90991	.4907"	.547"	.550"	.4914"
90951	.5512"	.607"	.610"	.5519"
90959	.5905"	.647"	.650"	.5912"
90924	.6246"	.687"	.690"	.6253"
90929	.6299"	.687"	.690"	.6306"
90969	.6693"	.737"	.740"	.6700"
90988	.6883"	.747"	.750"	.6890"
90908	.7087"	.777"	.780"	.7094"
90928	.7283"	.787"	.790"	.7290"
90947	.7480"	.817"	.820"	.7487"
90950	.7500"	.817"	.820"	.7507"
90957	.7576"	.817"	.820"	.7583"
90906	.7663"	.827"	.830"	.7670"
90967	.7676"	.827"	.830"	.7683"
90987	.7874"	.857"	.860"	.7881"
90989	.7896"	.857"	.860"	.7903"
90979	.7913"	.857"	.860"	.7920"
90970	.8002"	.862"	.865"	.8009"
90911	.8122"	.877"	.880"	.8129"
90926	.8268"	.897"	.900"	.8275"
90966	.8662"	.932"	.935"	.8669"
90976	.8752"	.937"	.940"	.8759"
90901	.9009"	.967"	.970"	.9016"
90904	.9046"	.967"	.970"	.9053"
90905	.9055"	.967"	.970"	.9062"

Part Number	Wrist Pin	Rod Pin Size	Bushing O.D.	Final Rod Size
90912	.9122"	.979"	.982"	.9129"
90927*	.9272"	.994"	.997"	.9279"
90927N	.9272"	.979"	.982"	.9279"
90930	.9308"	.979"	.982"	.9315"
90937	.9375"	.997"	1.000"	.9328"
90939	.9398"	.997"	1.000"	.9405"
90944	.9447"	.997"	1.000"	.9454"
90977	.9678"	1.027"	1.030"	.9685"
90975	.9752"	1.039"	1.042"	.9759"
90980	.9802"	1.039"	1.042"	.9809"
90984	.9842"	1.039"	1.042"	.9849"
90990	.9900"	1.039"	1.042"	.9908"
90923	1.0236"	1.087"	1.090"	1.0243"
90931	1.0306"	1.107"	1.110"	1.0313"
90940	1.0402"	1.107"	1.110"	1.0409"
90964	1.0639"	1.122"	1.125"	1.0646"
90994	1.0939"	1.152"	1.155"	1.0946"
90925	1.1253"	1.182"	1.185"	1.1260"
90948	1.2463"	1.307"	1.310"	1.2470"
90938	1.3080"	1.367"	1.370"	1.3087"
90933	1.3385"	1.422"	1.425"	1.3392"
90903	1.3582"	1.437"	1.440"	1.3590"
90962	1.6243"	1.762"	1.770"	1.6250"
90909	1.5748"	1.672"	1.675"	1.5753"

**Note:** Custom orders available, specify bore, pin dia and length. Customer needs to specify width or overall length.

## CUSTOM ROD BUSHINGS

Part Number	Bushing O.D.
90922X000	up to 1.099"
90922X100	1.100" to 1.199"
90922X200	1.200" to 1.299"
90922X300	1.300" to 1.399"
90922X400	1.400" to 1.499"
90922X500	1.500" to 1.599"
90922X600	1.600" to 1.699"



# Rod Bolt Stretch & Torque Specs

Connecting Rod Bolt Specification				Steel Connecting Rods			Titanium Connecting Rods		
Part #	Diameter x U.H.Length	PSI	Material	Assembly Lubricant	Bolt Stretch	Torque	Assembly Lubricant	Bolt Stretch	Torque
90847	1/4" x 1.375"	280,000	AMS	Crower #90894 *	.005"-.007"	275 in lbs	Crower Lube #90897	.005"-.007"	240 in lbs
90824A	5/16" x 1.500"	220,000	ARP2000	Crower #90894 *	.005"-.007"	30 ft lbs	Crower Lube #90897	.005"-.007"	25 ft lbs
90845	5/16" x 1.500"	280,000	AMS	Crower #90894 *	.005"-.007"	45 ft lbs	Crower Lube #90897	.005"-.007"	35 ft lbs
90821	3/8" x 1.600"	220,000	ARP2000	Crower #90894*	.005"-.007"	45 ft lbs	Crower Lube #90897	.005"-.007"	45 ft lbs
90818	3/8" x 1.600"	220,000	H-11	Crower #90894 *	.005"-.007"	45 ft lbs	Crower Lube #90897	.005"-.007"	45 ft lbs
90828	3/8" x 1.600"	180,000	8740	Crower #90894 *	.005"-.007"	45 ft lbs			
90842	3/8" x 1.600"	280,000	AMS	Crower #90894 *	.005"-.007"	65 ft lbs	Crower Lube #90897	.005"-.007"	50 ft lbs
90805	3/8" x 1.920"		ARP	20W/50 Motor Oil	.004"-.006"	50 ft lbs			
90846	7/16" x 1.440"	180,000	8740	20W/50 Motor Oil	.005"-.007"	75 ft lbs			
90830	7/16" x 1.540"	280,000	ARP 3.5	Crower #90894 *	.005"-.007"	95 ft lbs	Crower Lube #90897	.005"-.007"	80 ft lbs
90826A	7/16" x 1.550"	220,000	ARP2000	Crower #90894 *	.005"-.007"	75 ft lbs	Crower Lube #90987	.005"-.007"	65 ft lbs
90823	7/16" x 1.650"	220,000	ARP 11	Crower #90894 *	.005"-.007"	75 ft lbs	Crower Lube #90897	.005"-.007"	65 ft lbs
90823L	7/16" x 1.650"	220,000	ARP 11	Crower #90894 *	.005"-.007"	75 ft lbs	Crower Lube #90897	TITAN	70 ft lbs
90833	7/16" x 1.650"	280,000	ARP	Crower #90894 *	.005"-.007"	95 ft lbs	Crower Lube #90897	.005"-.007"	80 ft lbs
90802	7/16" x 1.700"			20W/50 Motor Oil	.004"-.006"	65 ft lbs			
90820	7/16" x 1.800"	220,000	ARP	Crower #90894 *	.005"-.007"	75 ft lbs	Crower Lube #90897	.005"-.007"	65 ft lbs
90829	7/16" x 1.800"	180,000	8740	Crower #90894 *	.005"-.007"	75 ft lbs			
90832	7/16" x 1.800"	280,000	AMS	Crower #90894 *	.005"-.007"	95 ft lbs	Crower Lube #90897	.005"-.007"	90 ft lbs
90803	7/16" x 1.940"			20W/50 Motor Oil	.004"-.006"	65 ft lbs			
90800	7/16" x 2.000"			Crower #90894 *	.005"-.007"	70 ft lbs			
90807	7/16" x 2.070"			20W/50 Motor Oil	.004"-.006"	65 ft lbs			
90804	7/16" x 2.320"			20W/50 Motor Oil	.004"-.006"	65 ft lbs			
90809	1/2" x 2.500"		ARP	Crower #90894*	.005"-.007"	95 ft lbs			
90849	1/2" x 1.885"		ARP	Crower #90894*	.005"-.007"	110 ft lbs			

\* Note: Crower #90894 is ARP Ultra Torque Lubricant. Not all bolts listed are currently available.

Proper bolt torque: Torque rod bolts to 10 ft lbs on both sides, then torque to proper spec with one pull.

- \*Thru-bolt torque specs based on steel rods using motor oil.
- \*Cap Screw 8740 torque specs based on steel rods using oil
- \*Cap Screw H-11 torque specs based on steel rods using anti-seize.
- \*AMS5844 torque specs based on steel rods using anti-seize.
- \* Bolts for titanium rods require special lubricant available from Crower.

Specify -8 after part number if four cylinder, -12 if six or -16 in eight cyl.

**Note: If using stretch method, Crower recommends .005" to .007".**

# Rod Bolt Stretch & Torque Specs

The following information is vital for the proper connecting rod assembly installation:

STEP 1: Your Crower connecting rods came with a connecting rod specific tion tag. Check the tag to find the od bolt part number used to fasten your connecting rods. Rod bolt length listed here is the measurement from under the head to the end.

STEP 2: Use the chart to determine the recommended lubricant, rod bolt stretch and torque amounts.

**\*IMPORTANT\* DO NOT EXCEED THE TORQUE AMOUNT SHOWN FOR EACH BOLT PART NUMBER AND ITS RECOMMENDED LUBRICATION (If you are using lubrication other than shown, a stretch gauge must be used)**

STEP 3: Taking the necessary precautions to protect the rod surfaces, secure the rod in a vise and leave the cap free to flo t. If the rod is titanium, take extra precautions to avoid damaging the plasma coating on the big end sides of the rod.

STEP 4: Apply a liberal amount of the recommended assembly lubricant to the bolt's threads and under the head of the bolt (the underside of the bolt's head).

STEP 5: (Use Stretch Method to determine exact torque) Since it is near impossible to use a stretch gauge when installing rods inside the motor, please use the following method to determine the exact torque that your wrench will read when the correct stretch is achieved. Using the above table, torque the rod bolts to achieve the required amount of stretch for your application. Record this torque spec as this is the exact torque spec that you will be using to install your rods in the motor.

STEP 6: (Torquing the bolt) When tightening bolts, especially in titanium rods it is best to torque all bolts to 20% of the total required torque and then in one smooth motion torque the bolt to the final orque spec without stopping.

Torquing your rod bolts without pre-determining the required torque to achieve the correct rod bolt stretch is not recommended. However if this is the only tightening method available to you, **DO NOT EXCEED THE TORQUE AMOUNT INDICATED FOR YOUR BOLTS.**

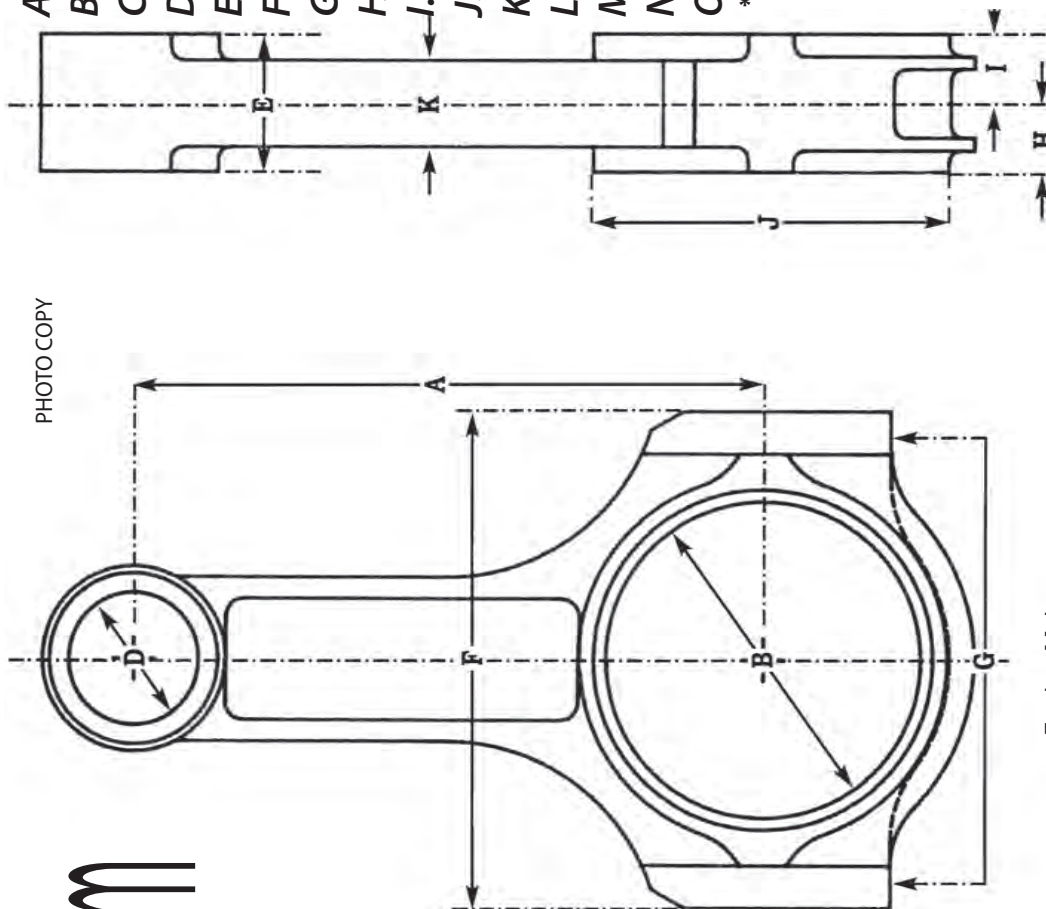
NOTE: Your Crowerods are totally rebuildable. We can make most used rods like new again, replace bolts, replace bushings, resize them, respray the plasma on Titanium rods and freshen them up as needed. If you have any questions as to the durability and application of your rods or whether it is time to rebuild or replace them, please call our tech line at (619) 661-6477 or email us at [rods@crower.com](mailto:rods@crower.com)

# Crowerod Form

Quantity Desired: \_\_\_\_\_

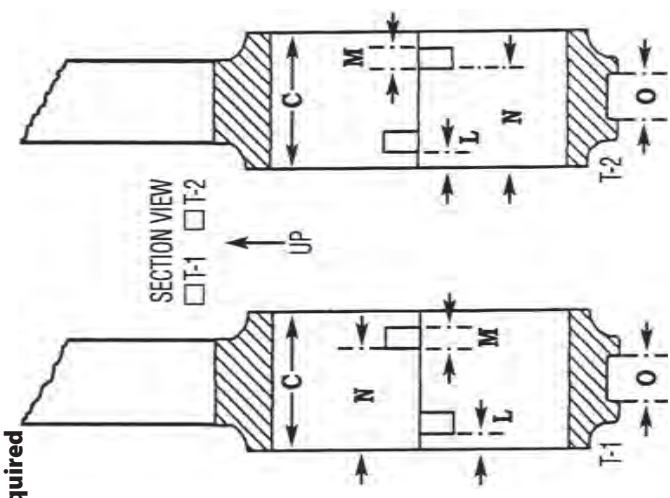
- I-Beam     H-Beam  
 Premium Steel     Titanium

PHOTO COPY



- A.\*** \_\_\_\_\_ Center to Center Length  
**B.\*** \_\_\_\_\_ Big End Housing Bore  
**C.\*** \_\_\_\_\_ Big End Width  
**D.\*** \_\_\_\_\_ Pin End Bore  
**E.\*** \_\_\_\_\_ Pin End Width  
**F.** \_\_\_\_\_ Overall BE Width  
**G.** \_\_\_\_\_ Bolt to Bolt Width  
**H.** \_\_\_\_\_ BE Offset  
**J.** \_\_\_\_\_ Big End Ring Diameter  
**K.** \_\_\_\_\_ Beam Width  
**L.** \_\_\_\_\_ Tang Positioning  
**M.** \_\_\_\_\_ Tang Width  
**N.** \_\_\_\_\_ Tang Dimension  
**O.** \_\_\_\_\_ Rib to Rib Width

**\*Required**



**Measurement in inches or millimeters**

Previous W.O. No.: \_\_\_\_\_  
 Customer: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Engine Make: \_\_\_\_\_  
 No. of Cylinders: \_\_\_\_\_  
 Cylinder Bore Size: \_\_\_\_\_  
 Target Weight: \_\_\_\_\_  
 Max RPM: \_\_\_\_\_  
 Max Horsepower: \_\_\_\_\_  
 Turbo/Boost: \_\_\_\_\_ p.s.i./bar  
 Nitrous Oxide: \_\_\_\_\_ HP Shot



# CROWER BUILDS CUSTOM CLUTCHES

## CROWER CLUTCHES

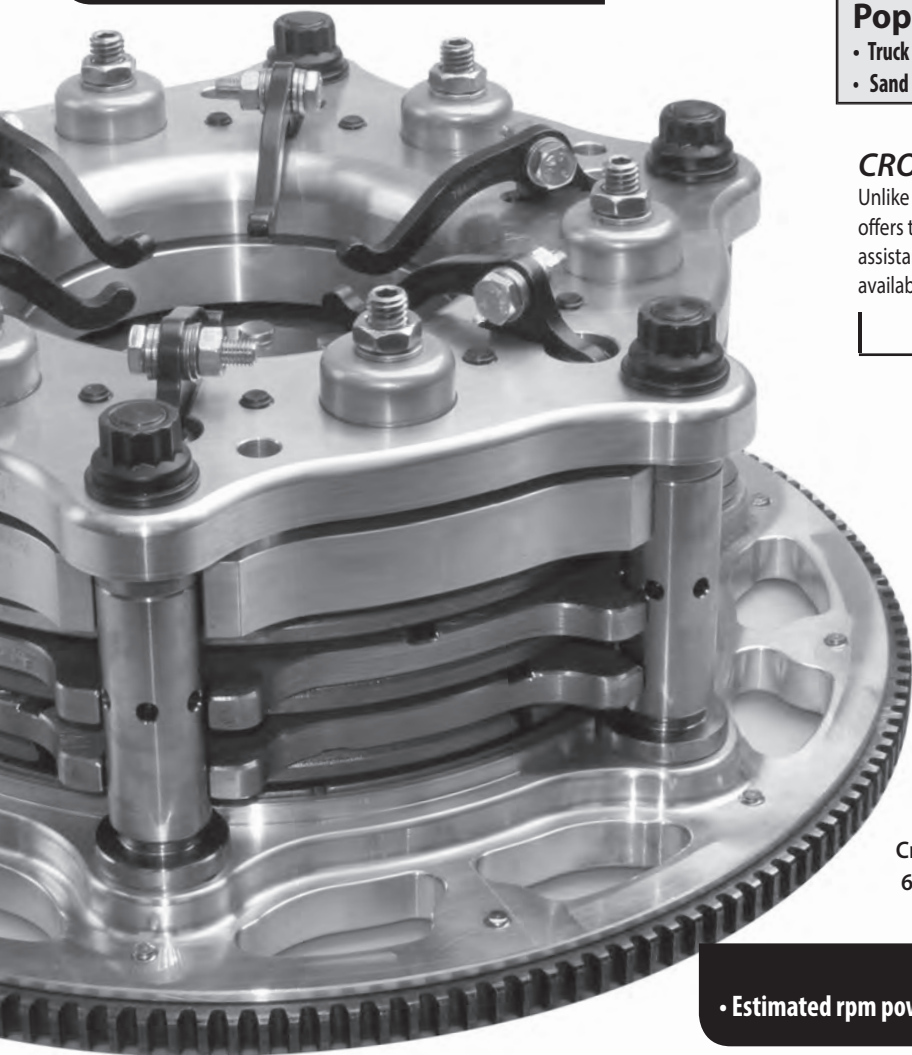
Since their inception in 1966, Crower clutches have been regarded as the ultimate solution to high horsepower, high torque, power to ground control. There is no other clutch available on the market that can harness the extreme power output of a competition engine and control it as accurately and consistently as a genuine Crower clutch. Our ongoing trackside research and development program insures you of the latest and most innovative components available.

### THE "CROWERGLIDE"

The most copied clutch in racing, the original "Crowerglide" incorporates a completely centrifugal design and is totally adjustable. It was the industries first real slipper clutch, which is why it is so prevalent in racing today.

All Crower clutches are shipped complete with flywheel bolts, washers, one pilot bearing, feeler gauges, additional counterweights and instructions.

**Redesigned NEW 9" Springer with Beefed up cover, donut & flywheel popular in AAGAS**



### Features:

- Aluminum or Titanium • Two through five disc set-up
- Choice of six or twelve stand configurations
- Fully machined 7075t6 Billet aluminum pressure plate assembly
- 6-9 or 12 finger configuration ( Staged fingers available)
- Including stall speed springs • Counterweights
- Available in 8", 10", 10.7", and 12.5"
- Adjustable stands are standard (except 8" mini "CROWERGLIDE)
- S. F. I Certified

### Popular Applications:

- Truck and Tractor Pulling • Drag Racing or Nost. Top Fuel & AA Funny
- Sand Drags • Monster Trucks • Mud Racing • Top Alcohol - A Fuel

### CROWER PEDAL CLUTCHES

Unlike the completely centrifugal "Crowerglide," the Crower pedal clutch offers the conventional style foot control launch combined with centrifugal assistance and static spring adjustment. This highly versatile Crower clutch is available in an assortment of centrifugal lever and static spring combinations.

### Features:

- Aluminum or Titanium
- 7075T6 construction
- Titanium adjusting stands
- Dial indicator for setting pressure plate height
- Installation procedures

### Popular Applications:

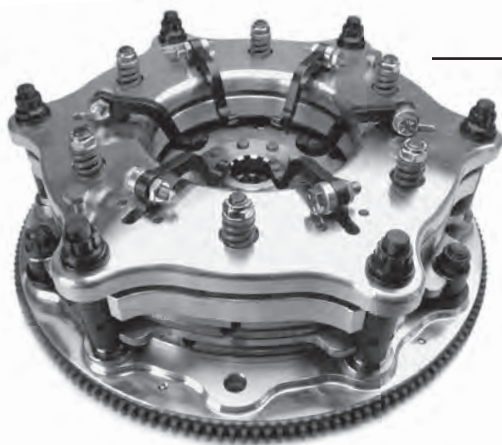
- Alcohol Dragster & Funny Car • Pro Modified
- AA Gas • Sand Drags • Truck & Tractor Pulling

### HOW TO ORDER CROWER CLUTCHES

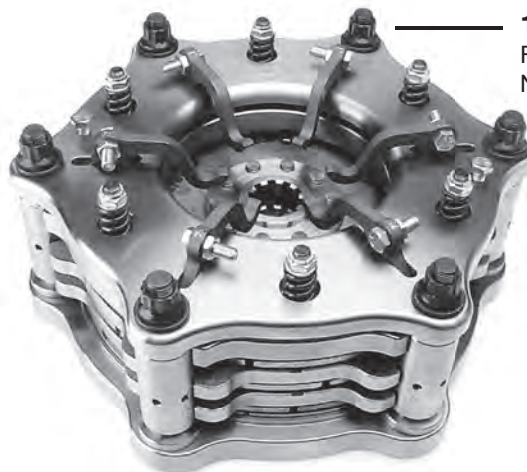
Due to the variety of applications and amount of variables involved in building a clutch that will function properly, Crower recommends that you call our Clutch Department at 619-690-7848 for personalized support or fax the following information to 619-690-7846.

- Engine make • Application or class of competition
- Estimated rpm power range • Transmission spline info (O.D. and number of teeth)





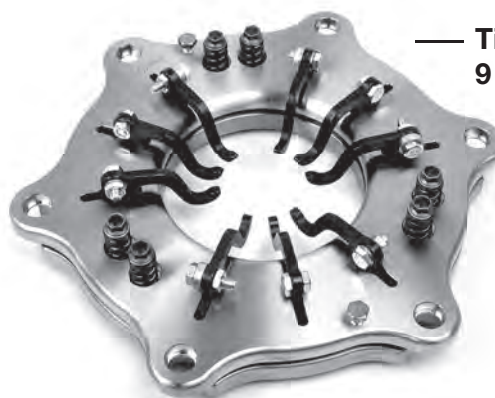
**11" Glide**  
The Standard In Truck &  
Tractor Pulling. 2 Thru 5 Disc  
Available.



**10" AA, 10.5 & 10.7**  
Full Titanium Glide  
Nostalgia Fuel



**8"3 Disc Glide**  
Mini Rod-Oval Track

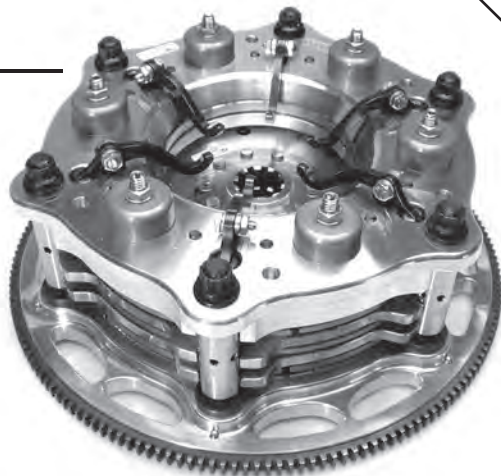


**Titanium 10.7"**  
9 Finger

## Pedal Clutches

### 10" Pro Sportsman

Promodified  
Top Gas  
Bonneville



**10"AA**  
Tops In Top  
Alcohol Dragster



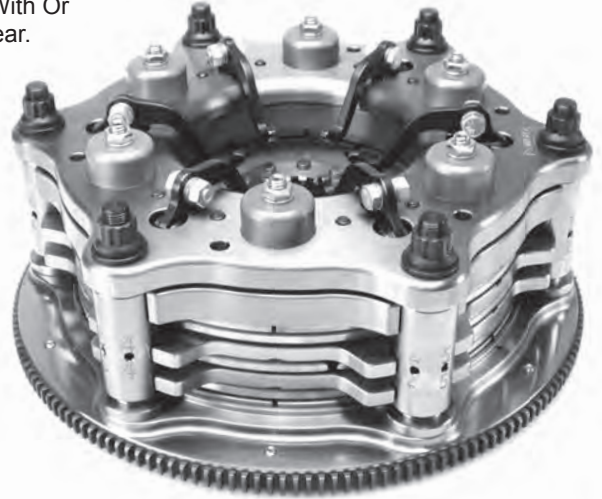
# Clutches

## Pedal Clutches (continued)

**12.5" Pullmaster**  
Pedal Pressure Plate Assembly



**10.7" Top Alcohol & Promod**  
Available With Or Without Gear.



## Accessories and Tools

**New Flywheels available for**  
10", 10.5" & 10.7" Using NHRA/SFI  
mandated liner bellhousings



**10" Available with 130, 153,  
162, 164A or 168S**

**10.7" Available with 164A  
or 168S**

**Bronze Floaters available**  
9" thru 11"



**Chromoly  
Cross Shaft Arm & Fork**



**Throwout Bearing  
Assembly & Candle Stick**



**1 3/8 10  
& 1 3/4 10  
Line Up Shafts**

**Band Clamps Available**  
9", 10"PS, 10"AA, 10.5", 10.7"



**Dial & Dial Standard**





### Off-Road T-Shirt

**86313B S-3XL**

Off-Road design, features the new Crowder off-road logo.



### Hardcore T-Shirt

**86320B - Black S-3XL**

**86320W - White S-3XL**

100% cotton, back printed with Crowder name and products list.



### Hardcore Long Sleeve T-Shirt

**86307 White S-3XL**

**86308 Black S-3XL**

100% cotton, back printed with Crowder logo and products lists.



### Anniversary T-Shirt

**86310 white S-3XL**

**86311 black S-3XL**

**86312 gray S-3XL**

Celebrate 50 years of Crowder heritage with this classic print.



## Engine Kit T-Shirt

86387 S-3XL

100% cotton, printed with  
Crower logo and engine kit.



## Every Part for Power T-Shirt

86328 S-3XL

100% cotton, back printed  
with Crower logo and  
performance cars.



## 55th Anniversary Shirt

86319 M-2XL

Celebrate 55 years of Crower  
racing heritage.



# Womens Apparel



**Off-Road Tank**  
86300 S-2XL Back  
86305 S-2XL Pink  
Printed off-road logo.

## V-Neck Shirt

86351 White S-XL  
86352 Black S-XL  
V-neck with printed  
Crower logo



## Long Sleeve

86302 Black S-2XL  
86301 White S-2XL  
Long sleeve t-shirt,  
back and sleeves printed.



## Womens Hoodie

86380 S-XL - Purple/Orchid  
86383 S-XL - Turquoise/White  
Zip up hoodie, with  
embroidered cam lobe logo



## Every Part for Power

86303 M-3XL  
Classic logo with  
race cars.



# Nostalgia Apparel

## 55th Anniversary Killer T-Shirt

86330 gray S-3XL

86331 white S-3XL

Features the vintage Killer Crow, new 55th anniversary logo on the front.



## The Beast T-Shirt

86353 S-3XL

100% cotton, back printed with "The Beast", Cam Lobe Logo on the front



## Vintage Cam Lobe T-Shirt

86332 S-3XL (white)

100% cotton, back printed with vintage Cam Lobe Logo printed front and back.



# Nostalgia Apparel

## Nostalgia Jacket

86314P Purple S-3XL

86314B Black S-3XL

Embroidered with vintage Crower logo, leather sleeves, originally released in 1966.



## Killer Series Jacket

86315B Black S-3XL

86315 Gray S-3XL

Embroidered with "Killer" nostalgia crow, shop jacket.





### Classic Logo Hoodie

**86339 S-3XL**

Embroidered with classic logo, no zipper.



### Sherpa Zip Hoodie

**86338 S-3XL**

Embroidered with classic logo, sherpa lining.

### Zip Hoodie W/QUILTED LINING

**86344 S-3XL**

Embroidered with classic logo, quilted lining.

### Youth Hoodie

**86333Y Black S-XL**

Black hoodie with classic logo.

**86334Y Pink S-XL**

Pink zip-up hoodie with classic logo.

Also in toddler sizes.

**86333T Black 2 thru 6**

**86334T Pink 2 thru 6**



### Fleece Vest

**86337G S-2XL**

Gray fleece vest embroidered with classic logo.

### Cam Lobe Hoodie

**86382 S-2XL**

Black/Gray

**86381 S-2XL**

Navy/Turquoise

Zippered hoodie with embroidered cam lobe logo





# Apparel



**Off-Road Pinstripe**  
**86375** S-M, L-XL  
Black Flex-Fit, Pinstripe,  
3D embroidered off-road logo.



**Cap Black**  
**86367S** S-M,  
**86367L** L-XL  
Flex-Fit, polyester spandex,  
Crower Racing Products logo.



**Off-Road Pique**  
**86360P**  
Black Flex-Fit Pique,  
3D embroidered off-road logo.  
One size fits all



**Black Pique**  
**86360B** one size  
Flex-Fit, pique, classic logo.



**Off-Road Stone**  
**86377** S-M, L-XL  
Stone Flex-Fit,  
3D embroidered off-road logo.



**Wool Shop Classic**  
**86361B**  
Wool cap, with classic logo  
embroidered.



**Beanie**  
**86359**  
Embroidered classic logo.

# Accessories

**Apron**  
86350  
Shop apron,  
classic logo.



**Can Koozie**  
86386  
Neoprene  
can cooler.



**Crower Scarf**  
86358B black  
86358 gray  
Embroidered with classic Crower logo.



**Every Part For Power Sign**  
86445



**King of Cams Sign**  
86442



**Killer Series Sign**  
86440

**Crower Clutch Equipped Decal**  
86362Q



**Crower Cam Lobe Decal**  
86362N



**Every Part For Power Decal**  
86362L

**Crower Off Road Decal**  
86368



**Crower Racing Products Decal**  
86362R

**Crower Beast Decal**  
86362B



**Cam Lobe Sign**  
86443



**Vintage Crow Sign**  
86441



**Crower Clutch Sign**  
86444

# CONVERSION CHART

FRACTIONAL INCHES • DECIMAL INCHES • MILLIMETERS

Fraction Of Inch		Decimal Of Inch	Decimal Millimeters	Fraction Of Inch		Decimal Of Inch	Decimal Millimeters
1/16	1/64	.0156	0.3969	17/32	33/64	.5118	13.0000
	1/32	.0313	0.7938		35/64	.5156	13.0969
	3/64	.0469	1.1906		37/64	.5313	13.4938
		.0625	1.5875		39/64	.5469	13.8906
1/8	5/64	.0781	1.9844	9/16		.5625	14.2875
		.0787	2.0000		37/64	.5781	14.6844
	3/32	.0938	2.3813		19/32	.5906	15.0000
	7/64	.1094	2.7781			.5938	15.0813
1/8		.1181	3.0000	5/8	39/64	.6094	15.4781
	1/8	.1250	3.1750			.6250	15.8750
	9/64	.1406	3.5719			.6299	16.0000
	5/32	.1563	3.9688		41/64	.6406	16.2719
3/16		.1575	4.0000	11/16	21/32	.6563	16.6688
	11/64	.1719	4.3656			.6693	17.0000
		.1875	4.7625		43/64	.6719	17.0656
	13/64	.1969	5.0000			.6875	17.4625
1/4	7/32	.2031	5.1594	23/32	45/64	.7031	17.8594
	15/64	.2188	5.5563			.7087	18.0000
		.2344	5.9531			.7188	18.2563
		.2362	6.0000		47/64	.7344	18.6531
1/4		.2500	6.3500	3/4		.7480	19.0000
	17/64	.2656	6.7469			.7500	19.0500
		.2756	7.0000		49/64	.7656	19.4469
	9/32	.2813	7.1438			.7813	19.8438
5/16		.2813	7.1438	13/16	25/32	.7813	19.8438
	19/64	.2969	7.5406			.7874	20.0000
		.3125	7.9375		51/64	.7969	20.2406
	21/64	.3150	8.0000			.8125	20.6375
3/8	11/32	.3281	8.3344	7/8	53/64	.8268	21.0000
		.3438	8.7313			.8281	21.0344
	23/64	.3543	9.0000		27/32	.8438	21.4313
		.3594	9.1281		55/64	.8594	21.8281
7/16	25/64	.3750	9.5250	1		.8661	22.0000
		.3906	9.9219			.8750	22.2250
	13/32	.3937	10.0000		57/64	.8906	22.6219
	27/64	.4063	10.3188			.9055	23.0000
1/2		.4219	10.7156	1	29/32	.9063	23.0188
		.4331	11.0000		59/64	.9219	23.4156
	29/64	.4375	11.1125			.9375	23.8125
		.4531	11.5094			.9449	24.0000
1/2	15/32	.4688	11.9063	1	61/64	.9531	24.2094
		.4724	12.0000		31/32	.9688	24.6063
	31/64	.4844	12.3031			.9843	25.0000
		.5000	12.7000		63/64	.9844	25.0031
				1	1.0000	25.4000	