

# Camshaft Recommendation Form

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE/ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

## WHICH TYPE OF CAMSHAFT ARE YOU INTERESTED IN:

Hydraulic  Roller  Mushroom  Other: \_\_\_\_\_

Solid  Hydraulic Roller  Regrind \_\_\_\_\_

## DESIRED ENGINE PERFORMANCE:

More Low Speed Torque

More Mid-Range Power

Mid-Range and Top End Power

## TYPE OF SERVICE REQUIRED:

Recommend Cam and Kit

Regrind Enclosed Cam

## ENGINE APPLICATION:

Street Only

Street/Strip

Drag Race: \_\_\_\_\_

Oval Track: \_\_\_\_\_

Class  
Track Length

Off-Road Only

Truck/Tractor Pull

Marine: \_\_\_\_\_

Other: \_\_\_\_\_

Hull Specs/Prop or Jet Drive

## ENGINE SPECIFICATIONS:

Engine Make: \_\_\_\_\_ Year: \_\_\_\_\_

Cubic Inches: \_\_\_\_\_ Bore and Stroke: \_\_\_\_\_ .200" Int \_\_\_\_\_ Exh \_\_\_\_\_

Number of Cylinders: \_\_\_\_\_ Fuel: \_\_\_\_\_ .300" Int \_\_\_\_\_ Exh \_\_\_\_\_

Rocker Arm Ratio: \_\_\_\_\_ Carburetor cfm: \_\_\_\_\_ .400" Int \_\_\_\_\_ Exh \_\_\_\_\_

Piston Make: \_\_\_\_\_ Total Venturi Area: \_\_\_\_\_ .500" Int \_\_\_\_\_ Exh \_\_\_\_\_

Compression Ratio: \_\_\_\_\_ Intake Manifold: \_\_\_\_\_ .600" Int \_\_\_\_\_ Exh \_\_\_\_\_

Supercharger/Turbo: \_\_\_\_\_ Valve Head Diameter: \_\_\_\_\_ .700" Int \_\_\_\_\_ Exh \_\_\_\_\_

Drive Ratio: \_\_\_\_\_ Valve Size: Intake: \_\_\_\_\_ Exhaust: \_\_\_\_\_ .800" Int \_\_\_\_\_ Exh \_\_\_\_\_

Tappet Diameter: \_\_\_\_\_ Ported/Amount: \_\_\_\_\_ .900" Int \_\_\_\_\_ Exh \_\_\_\_\_

## CHASSIS/RPM INFORMATION:

Weight: \_\_\_\_\_ Year and Make: \_\_\_\_\_

Rear Axle Ratio: \_\_\_\_\_ Transmission Type: \_\_\_\_\_

Minimum and Maximum RPM: \_\_\_\_\_ to \_\_\_\_\_ Overdrive%: \_\_\_\_\_

Stall Speed: \_\_\_\_\_ Tire Size and Diameter: \_\_\_\_\_

## CURRENT CAMSHAFT INFORMATION:

Type Of Tappet Design (Hydraulic, Solid, Roller, etc): \_\_\_\_\_

Advertised Duration: Intake: \_\_\_\_\_ Exhaust: \_\_\_\_\_

Duration at .050": Intake: \_\_\_\_\_ Exhaust: \_\_\_\_\_

Lobe Lift (w/o ratio): Intake: \_\_\_\_\_ Exhaust: \_\_\_\_\_

Lobe Separation: \_\_\_\_\_

Performance Remarks: \_\_\_\_\_

Complete all of the above information and send to:

Attn: Camshaft Technical Support

**CROWER CAMS & EQUIPMENT COMPANY, Inc.**

6180 Business Center Court

San Diego, CA 92154-5604

For faster service fax this form to 619-661-6466 or

complete the form online at [www.crower.com](http://www.crower.com)

# Camshaft Selection

## **VEHICLE PACKAGE**

It is the complete vehicle package that will determine how well your vehicle satisfies your performance preference.

By complete vehicle package we mean the interaction of all a vehicle's components and subsystems, including the engine and its related parts (such as the carburetor, intake manifold, exhaust system, camshaft and ignition), the transmission, rear end gears, wheel and tire combinations and diameters and suspension pieces. All of these components must work in unison to produce the desired performance results.

## **RPM POWER RANGE**

Before thumbing through the collection of profiles listed on the following pages you will need to formulate a definite idea of your motoring requirements. Doing so will dictate what rpm power range you will be operating in most often (see Fig. 1). Because camshaft selection as well as carburetion, manifold choice and gearing are based on it, knowing your rpm power range is the key to building a successful vehicle package.

Be realistic when examining your driving style, the vehicle's present engine/drive train components and your pocket book. Be sure you can afford to purchase all of the components necessary to complete the desired vehicle package at your performance level. Remember, the further from stock you deviate in the engine department, the more modifications will be required elsewhere in the vehicle.

Refer to the five performance levels listed below for an idea of the components required to produce a successful vehicle package at the performance level you desire.

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

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

Level 1 indicates a good stock replacement camshaft. 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. 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 four-speed manual transmission.

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

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

Level 2 profiles are for individuals that require more power and an extended rpm range. Works well with stock or near-stock engines and drive trains. These camshafts provide excellent low end and mid-range power for spirited street and off road driving and mild marine applications. Modifications that should accompany installation of these cams include small diameter tube headers, low restriction dual exhaust, aftermarket manifold, increased cfm carburetor and reworked or performance ignition. Increased compression (9.5:1) is recommended for maximum output. Aftermarket torque converter with slightly higher stall speed is recommended because stock factory converters do not allow the engine to provide adequate idle speed and off idle performance. Works well with four-speed manual transmission. Designed for lightly modified street engines.

# Camshaft Selection

## LEVEL 3 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 camshafts are designed for moderately modified engines. Intended for performance hot street/strip and performance marine applications, these profiles have a moderate lobe at idle and offer an extended rpm range with emphasis on upper bottom to top end power and a strong mid-range. These higher lift, longer duration camshafts demand close attention to rear end gearing and tire diameter combinations. The secret here is to pick a ring and pinion gear set and tire diameter that keeps the engine in its optimum rpm power range (see Fig. 1). These profiles perform well with four-speed manual transmissions or automatic transmissions if a high stall torque converter is employed. 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.

## LEVEL 4 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 designed for heavily modified engines. They have a definite lobe at idle and are best suited for dual purpose hot street/drag strip, hot marine and oval track 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 required. Cylinder head modifications would be beneficial. Use with standard manual transmission or automatic with high stall torque converter. Again, close attention to proper ring and pinion and tire diameter selection is imperative.

## LEVEL 5 CAMS COMPETITION/ RACE ONLY

Level 5 camshafts are designed for fully prepared, high compression, all-out racing engines and chassis. Extensive cylinder head modification, bigger valves, lightweight valve train, titanium valves, maximum flow carburetion or fuel injection, racing gas, alky or nitro, magneto or electronic ignition, performance rod and crank assembly and increased engine clearances are required for maximum benefit.

The wide selection of level 5 profiles enable the experienced engine builder to choose the proper camshaft for his particular application, whether it be drag racing, oval track competition, tractor pulling or performance marine. If you are uncertain as to which cam profile best suits your needs, please contact our technical support staff at 619-422-1191.

### 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:

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