



# Blue Racer Cam Listings

## Blue Racer Applications

- Chevrolet V-8, 1957-94 Small Block ..... 3
- Chevrolet V-8, 1965-95 Big Block ..... 5
- Chrysler-Dodge-Plymouth V-8, 1964-87 (273-318-340-360) ..... 6
- Ford V-8, "Cleveland", 1970-82 ..... 7
- Ford V-8, "Windsor", 1962-93 ..... 8
- Ford V-8, "385 Series", 1968-97 (429-460)..... 9
- Holden V-8, 1969-87 ..... 10
- Holden V-8, 1988-97 ..... 10
- Holden Valve Train Chart ..... 11

## BlueRacer Hydraulic And Mechanical Cams

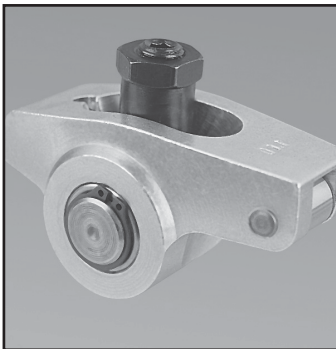
### Computer-Designed Cams for Street Performance

- Outstanding "HP-Per-Dollar" value for street performance or mild street/strip applications.
- Hydraulic lobe profiles using the latest in state-of-the-art computer software.
- Precision made exclusively by Crane Cams in Daytona Beach.
- Max power plus Crane Cams' famous lobe-to-lobe accuracy.
- For optimum HP, torque and RPM match with BlueRacer valve train components.
- Coverage for popular V-8 engines; small & big block Chev, Ford Windsor, Cleveland & 460, Holden V8 and small block Chrysler.
- For use with stock or aftermarket performance engine and valve train components.
- Use with either Crane replacement or anti-pump lifters with Crane's exclusive anti pump up design, giving increased upper RPM power or Blue Racer chilled iron base hydraulic lifters for increased durability. (Available for Chev & Holden engines).

## BlueRacer Performance Rocker Arms

### BlueRacer Extruded Aluminum, Full-Roller Rockers

- CNC-machined, extruded billet aluminum main bodies for strength and deflection resistance.
- Dyno-proven to add up to 25 HP over stock rockers!
- Needle-Bearing Fulcrum reduces operating friction, lowers oil temp, improves off-idle response.
- Roller Tip reduces valve guide wear.
- Precision machined, heat treated steel locking adjusting nuts included at no extra cost!
- Made by Crane Cams, the World's Largest Maker of Aluminum Rockers!
- Small and Big-Block Chevy, Ford Windsor, Cleveland & 460, and Holden V8.  
For small block Chrysler engines, Crane gold race roller rockers are available.



## Super Lube Concentrate

### For Cam & Lifter Installation

Super Lube Break-In Concentrate is an anti-wear additive formulated with a high concentration of special zinc dithiophosphate to provide sustained protection against cam lobe and lifter scuffing and wear. This is especially important when using modern oils that have been compounded for use with roller-type camshafts. In many oils the Zinc compound has been eliminated, causing the potential for excessive wear on run-in. This oil supplement is to be added to the engine oil for the initial break-in period after the installation of a new camshaft and lifters.

**Part No. 99003-1;** - 8-ounce container



# Chevrolet V-8, 1957-94 (Except Hyd. Roller)

## 262, 267, 283, 302, 305, 307, 327, 350, 400 cu. in., Hydraulic

### Performance Cams - Hydraulic

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050 Cam Lift Int./Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int./Exh.	Gross Valve Lift Int. Exh.
<b>HYDRAULIC</b> - Smooth idle, good low end torque, economy and throttle response. Use as stock replacement. <b>BASIC RPM 1000-3200</b>	Street	CD194-11 <sup>c</sup>	975213	C37-16 99277-16 C817C-16	194 204	256 262	112	.000 .000	.398 .420
<b>HYDRAULIC</b> - Good idle, good low end torque & throttle response. Works well with minimal modifications. <b>BASIC RPM 1500-4000</b>	Street	CD204-11 <sup>c</sup>	975850	C37-16 99277-16 C817C-16	204 214	270 280	112	.000 .000	.420 .442
<b>HYDRAULIC</b> - Good idle with lobe Good all round performance with basic intake and exhaust modifications, strong low-mid range torque. <b>BASIC RPM 2000-4800</b>	Street	CD214-11 <sup>c</sup>	975848	C37-16 99277-16 C817C-16	214 224	280 290	112	.000 .000	.442 .465
<b>HYDRAULIC</b> - Fair idle with lobe, strong low-mid range street and strip performance. Works well in autos with basic street modifications. <b>BASIC RPM 2000-4800</b>	Street Strip	CD218-11 <sup>c</sup>	975886	C37-16 99277-16 C817C-16	218 218	284 284	110	.000 .000	.450 .450
<b>HYDRAULIC</b> - Fair idle with lobe, use as replacement for 350H.P. 327 cam. Good mid-range horsepower with wide power band. <b>BASIC RPM 2200-5200</b>	Street Strip	CD222-11 <sup>c</sup>	975806	C37-16 99277-16 C817C-16	222 222	306 306	114	.000 .000	.447 .447
<b>HYDRAULIC</b> - Fair idle with lobe, good mid range, upper RPM horsepower and torque. Good street and strip performance when used with correct intake, exhaust and gearing. Supercharger – Nitrous Cam <b>BASIC RPM 2200-5400</b>	Street Strip	CD224-11 <sup>c</sup>	975892	C37-16 99277-16 C817C-16	224 234	290 300	114	.000 .000	.465 .488
<b>HYDRAULIC</b> - Rough idle suits hot street type vehicle. Good mid range horsepower, needs converter etc. in auto trans vehicles. <b>BASIC RPM 2800-5600</b>	Street Strip	CD230-11 <sup>d</sup>	975835	99277-16 C817C-16	230 230	292 292	109	.000 .000	.480 .480
<b>HYDRAULIC</b> - Rough idle suits hot street type vehicle. Good mid range horsepower, needs converter etc. in auto trans vehicles. Supercharger – Nitrous Cam <b>BASIC RPM 2800-6000</b>	Street Strip	CD235-11 <sup>d</sup> <b>NEW</b>	975893	99277-16 C817C-16	234 234	300 300	114	.000 .000	.488 .488
<b>HYDRAULIC</b> - Rough idle suits hot street type vehicle. Good mid range horsepower, needs converter etc. in auto trans vehicles. Supercharger – Nitrous Cam <b>BASIC RPM 2800-6500</b>	Street Strip	CD234-11 <sup>d</sup>	975888	99277-16 C817C-16	234 244	300 310	114	.000 .000	.488 .510
<b>HYDRAULIC</b> - Rough idle suits hot street type vehicle. Good mid range horsepower, needs converter etc. in auto trans vehicles. Supercharger – Nitrous Cam <b>BASIC RPM 3000-6700</b>	Street Strip	CD243-11 <sup>d</sup> <b>NEW</b>	975894	99277-16 C817C-16	244 254	310 320	114	.000 .000	.510 .533

**Performance Valve Train Components For Hydraulic Cams On Next Page**

## Performance Valve Train Components For Hydraulic Cams

Hydraulic Lifters	Valve Springs	Retainers	Locks	V.S. Seals	P/Rods	Timing Chain Kit	Roller Rockers
C37-16 OEM	99848-16 <sup>C</sup>	99915-16 <sup>C</sup>	99041-1HT	99820-16 <sup>F</sup>	11660-16	REC1000 ECONO	3060 <sup>G,K</sup>
99277-16 <sup>A</sup>	99838-16 <sup>D,F</sup>	99944-16 <sup>D,E</sup>	99097-1 Mach Stl.		11621-16	RCS1000 PREMIUM	3061 <sup>H,K</sup>
817C-16 <sup>B</sup>	96874-16 <sup>E,F</sup>				95635-16 <sup>I</sup>	RCS1050 Torr/Nit. Gears	3062 <sup>I,K</sup>
Valve Springs: * Use CR99893-16/ CR99953-19 Retainers for Hi-RPM use or Valve Lifts over .500"							3063 <sup>J,K</sup>

## Chevrolet V-8, 1957-94 (Except Hyd. Roller) 262, 267, 283, 302, 305, 307, 327, 350, 400 cu. in., Mechanical

### Performance Cams - Mechanical

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int./Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int.
<b>MECHANICAL</b> - Rough idle suits strip, oval track or pro- street with auto and 3500 stall. Great mid range horsepower and torque. <b>BASIC RPM 3200-6700</b>	Strip Oval	CD244-11	975900	99250-16	244 252	280 288	106	.026 .026	.518 .536
<b>MECHANICAL</b> - Rough idle suits strip or oval track. Good mid and upper RPM horsepower and torque. <b>BASIC RPM 3800-6700</b>	Strip Oval	CD250-11	975902	99250-16	250 260	285 295	106	.026 .028	.533 .555
<b>MECHANICAL</b> - Rough idle suits strip or larger oval track. Good mid and upper RPM horsepower and torque. <b>BASIC RPM 4200-7000</b>	Strip Oval	CD256-11	975904	99250-16	256 264	292 300	105	.026 .026	.545 .563

### Performance Valve Train Components - Mechanical Cams

Lifters	Valve Springs	Retainers	Locks	V.S Seals	Pushrods	Timing Chain Kit	Roller Rockers
99250-16	96877-16 <sup>F</sup>	99943-16	99097-1 Mach Stl.	99820-16 <sup>F</sup>	11621-16	RCS1000 Premium	3060 <sup>G,K</sup>
					95635-16 <sup>I</sup>	RCS 1050 Torr/Nit. Gears	3061 <sup>H,K</sup>
							3062 <sup>I,K</sup>
							3063 <sup>J,K</sup>

**IMPORTANT NOTE: CR99003-1 Crane super lube must be used during run-in of all Hydraulic & solid flat tappet cams.**

<sup>A</sup> Anti-Pump Lifters

<sup>B</sup> Chilled Iron Base Lifters

<sup>C</sup> Use CR 99848-16 V/Springs, No Machining Required & CR 99915-16 Retainers.

<sup>D</sup> Use CR 99838-16 1.465" Dual V/Springs & CR 99944-16 Retainers. For Hi-RPM use or Valve Lifts over .500". Cyl heads Require Machining.

<sup>E</sup> If Using +.100" length Valves use CR 96874-16 with CR 99944-16 Retainers.

<sup>F</sup> Must Machine Heads.

<sup>G</sup> 1.5 x 3/8"

<sup>H</sup> 1.5 x 7/16"

<sup>I</sup> 1.6 x 3/8"

<sup>J</sup> 1.6 x 7/16"

<sup>K</sup> Not suitable for Self-Aligning or centre bolt Valve cover applications.

<sup>L</sup> Pro Series 1/pce, Heavy Wall Heat Treated Pushrods.

## Chevrolet V-8, 1965-95 (Except Hyd. Roller) 366, 396, 402, 427, 454 cu. in., Hydraulic

### Performance Cams

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int./Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh.
<b>HYDRAULIC</b> - Fair idle with lope, strong low-mid range performance. Works well in auto with basic modifications. <b>BASIC RPM 2000-4800</b>	Street Strip	CD216-13	975887	C37-16 99277-16 C817C-16	216 216	284 284	110	.000 .000	.515 .515
<b>HYDRAULIC</b> - Fair idle with lope. Good all round performance with basic intake and exhaust modifications strong mid range torque & horsepower. Supercharger – Nitrous Cam <b>BASIC RPM 2200-5400</b>	Street Strip	CD228-13	975891	C37-16 99277-16 C817C-16	228 238	290 300	114	.000 .000	.540 .540

### Performance Valve Train Components

Hydraulic Lifters	Heat Treated Pushrods	Valve Springs	Retainers	V.S Seals	Locks	Timing Chain Kit	Roller Rockers
C37-16 <sup>A</sup>	13660-16 <sup>D</sup>	99839-16 <sup>F</sup>	99948-16	99822-16 <sup>K</sup>	99042-1HT	RCS2000 Premium	3064 <sup>H</sup>
99277-16 <sup>B</sup>	13634-16 <sup>E</sup>	96801-16 <sup>G</sup>	99957-16		99098-1 Mach. Stl	RCS2040 Premium w/Torr. Brg.	13744-16 <sup>I</sup>
C817C-16 <sup>C</sup>							13750-16 <sup>J</sup>

**IMPORTANT NOTE: CR99003-1 Crane super lube must be used during run-in of all Hydraulic & solid flat tappet cams.**

IMPORTANT NOTE: 1991-95 Gen V engines can use these camshafts and components if lifter preload is checked, or if converted to use adjustable rocker arms by installing aftermarket rocker arm studs and appropriate rocker arms.

NOTE: In order to use these cams in 1965-66 engines, you must groove the center of the rear cam bearing journal, 3/16" wide and 7/64" deep.

<sup>A</sup> OEM Hydraulic Lifters

<sup>B</sup> Anti-Pump Hydraulic Lifters

<sup>C</sup> Chilled Iron Base Lifters

<sup>D</sup> 5/16" Diameter Heat-Treated Pushrods

<sup>E</sup> 3/8" Diameter C/Moly Heat-Treated Pushrods

<sup>F</sup> Standard Diameter Valve Springs - No Machining Required

<sup>G</sup> Some Late Truck Engines Have A Short Installed Valve Spring Height. Use CR 96801-16 & CR 99957-16 For These Applications

<sup>H</sup> 1.7 Ratio, 7/16" Stud. Blue Racer Extruded Rockers

<sup>I</sup> 1.7 Ratio, 7/16" Stud. Energizer Diecast Rockers

<sup>J</sup> 1.7 Ratio, 7/16" Stud Crane Gold Extruded Rockers

<sup>K</sup> Machining Required

## Chrysler-Dodge-Plymouth V-8, 1964-87 (Except Hyd. Roller) 318 cu.in., (1967-86), 273, 340, 360 cu. in., (1964-87) Hydraulic

### Performance Cams

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int./Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh.
HYDRAULIC - Good idle, good low end torque & throttle response. Works well with minimal modifications. <b>BASIC RPM 1500-4000</b>	Street	CD204-69	971817	C89-16 99278-16	204 214	270 280	112	.000 .000	.420 .443
HYDRAULIC - Fair idle with lobe, strong low mid range performance. Works well in auto with basic modifications. <b>BASIC RPM 2200-5000</b>	Street	CD216-69	971837	C89-16 99278-16	216 216	284 284	110	.000 .000	.454 .454

RPM range shown is for average usage. These cam profiles will RPM higher, depending upon application.

### Performance Valve Train Components

Hydraulic Lifters	Pushrods	Valve Springs	Retainers	Timing Chain Kit	Roller Rockers
C89-16 OEM	69691-16 <sup>v</sup>	99835-16 <sup>w</sup>	99948-16	RCS5000 Premium (R/master)	69790-1 (1.5 ratio) <sup>x</sup>
99278-16 A/Pump					69791-1 (1.6 ratio) <sup>x</sup>

<sup>v</sup> For use with hydraulic cams with adjustable Rocker Arms.

<sup>w</sup> Standard Diameter valve Springs, no machining required.

<sup>x</sup> Use with CR 69691-16 pushrods for hydraulic cam applications.

**IMPORTANT NOTE: CR99003-1 Crane super lube must be used during run in of all hydraulic and solid flat-tappet cams.**

**NOTE:** Early 1986-91 318 (5.2L) and early 1987-91 360 (5.9L) engines are equipped with hydraulic roller camshafts and lifters. Conventional hydraulic camshafts and lifters can be installed in these engines, providing the appropriate kit components are used.

## Ford V-8, "Cleveland", 1970-82 302, 351C, 351M, 400 cu. in.

### Performance Cams

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int./Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh.
<b>HYDRAULIC</b> - Good idle, good low end torque and throttle response. Works well with minimal modifications. <b>BASIC RPM 1500-4000</b>	Street	CD204-52 <sup>A</sup>	972835	C35-16 99280-16	204 214	270 280	112	.000 .000	.484 .510
<b>HYDRAULIC</b> - Good idle, good economy use as factory replacement for 266H.P. 351 cu. in. cam. <b>BASIC RPM 1700-4200</b>	Street	CD206-52 <sup>A</sup>	972227	C35-16 99280-16	206 221	270 290	115	.000 .000	.481 .490
<b>HYDRAULIC</b> - Good idle with lope. Good all round performance with basic intake and exhaust modifications, strong low-mid range torque. <b>BASIC RPM 2000-4800</b>	Street	CD214-52 <sup>A</sup>	972836	C35-16 99280-16	214 224	280 290	112	.000 .000	.510 .536
<b>HYDRAULIC</b> - Fair idle with lope, strong low-mid range street and strip performance. Works well in autos with basic street modifications. <b>BASIC RPM 2000-4800</b>	Street Strip	CD218-52 <sup>A</sup>	972874	C35-16 99280-16	218 218	284 284	110	.000 .000	.524 .524
<b>HYDRAULIC</b> - Fair idle with lope broad power band in street engine with minimal modifications. Low valve lift suitable for single stock type springs. <b>BASIC RPM 2100-5000</b>	Street Strip	CD219-52 <sup>A</sup>	972803	C35-16 99280-16	218 228	290 300	114	.000 .000	.509 .509
<b>HYDRAULIC</b> - Fair idle with lope, good mid range - upper RPM horsepower and torque. Good street and strip performance when used with correct intake, exhaust and gearing. <b>BASIC RPM 2200-5400</b>	Street Strip	CD224-52 <sup>B</sup>	972866	C35-16 99280-16	224 234	290 300	112	.000 .000	.536 .563
<b>HYDRAULIC</b> - Rough idle suits well modified street/strip type vehicle. Good mid-upper rev range horsepower. <b>BASIC RPM 2800-5800</b>	Street Strip	CD234-52 <sup>B</sup>	972855	99280-16	234 244	300 310	112	.000 .000	.563 .588

NOTE: For 302 - 351c - 351m - 400, Footnotes, see next page.

### Performance Valve Train Components (Hydraulic Cams)

Lifters	Valve Springs	Retainers	Locks	V.S Seals	Pushrods	Timing Chain Kit	Rockers
C35-16OEM	96801-16 <sup>A</sup>	99944-16 <sup>C</sup>	99041-1 H.T. <sup>C</sup>	99820-16	52621-16	REC3080 ECONO	52745-16 <sup>F</sup>
99280-16 Anti-Pump	96877-16 <sup>B</sup>	99948-16 <sup>D</sup>	99097-1 mach. Stl. <sup>C</sup>		95648-16	RCS3080 Premium	13744-16 <sup>G</sup> Energizer
			L77006 m/Groove. <sup>D</sup>				3064 <sup>E</sup> Blue Racer

**Ford V-8, "Windsor" 1962-93 Firing Order: 1-5-4-2-6-3-7-8**  
**221, 255, 260, 289, 302, cu. in., 5.0L (Non-H.O), (Non Hydraulic-Roller)**  
**Performance Hydraulic Cams**

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int./Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh.
<b>HYDRAULIC</b> - Good idle, good low end torque and throttle response. Works well with minimal modifications. <b>BASIC RPM 1500-4000</b>	Street	CD204-36	972834	C35-16 99280-16	204 214	270 280	112	.000 .000	.448 .472
<b>HYDRAULIC</b> - Good idle with lope. Good all round performance with basic intake and exhaust modifications, strong low-mid range torque. <b>BASIC RPM 2000-4800</b>	Street	CD216-36	972831	C35-16 99280-16	216 216	280 280	110	.000 .000	.484 .484
<b>HYDRAULIC</b> - Fair idle with lope, strong low-mid range street and strip performance. Works well in autos with basic street modifications. Supercharger - Nitrous Cam <b>BASIC RPM 2200-5200</b>	Street Strip	CD218-36	972801	C35-16 99280-16	218 228	288 298	114	.000 .000	.471 .471
<b>HYDRAULIC</b> - Fair idle with lope, good mid range - upper RPM horsepower and torque. Good street and strip performance when used with correct intake, exhaust and gearing. <b>BASIC RPM 2200-5400</b>	Street Strip	CD222-36	972853	C35-16 99280-16	222 234	290 300	114	.000 .000	.498 .527

**Ford V-8, "Windsor" 1969-93 Firing Order: 1-3-7-2-6-5-4-8**  
**351W, 1969-93 and 302 cu. in., 5.0L H.O, (Non Hydraulic-Roller)**  
**Performance Hydraulic Cams**

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int. Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh.
<b>HYDRAULIC</b> - Good idle, good low end torque and throttle response. Works well with minimal modifications. <b>BASIC RPM 1500-4000</b>	Street	CD204-44	972843	C35-16 99280-16	204 214	270 280	112	.000 .000	.448 .472
<b>HYDRAULIC</b> - Good idle with lope. Good all round performance with basic intake and exhaust modifications, strong low-mid range torque. <b>BASIC RPM 2000-4800</b>	Street	CD214-44	972848	C35-16 99280-16	214 224	280 290	112	.000 .000	.472 .496

**Performance Valve Train Components**

Lifters	Valve Springs	Retainers	Locks	V.S Seals	Pushrods	Timing Chain Kit	Roller Rockers
C35-16 OEM	96803-16 <sup>f</sup>	99946-16	99041-1 H.T	99820-16 <sup>a</sup>	95616-16 <sup>b</sup>	REC 3010 ECONO	11746-16 <sup>o</sup>
99280-16 Anti Pump			99097-1 Mach. Stil.		95618-16 <sup>b</sup>	RCS 3010 Premium	44746-16 <sup>e</sup>
					95643-16 <sup>c</sup>		



## Ford V-8, "385 Series", 1968-97 370, 429, 460, 512 cu. in. (Including SVO 512 "Crate Motor")

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int. Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh.
HYDRAULIC - Fair idle with lope, strong low-mid range performance. Works well in auto with basic modifications. Supercharger - Nitrous Cam BASIC RPM 2200-5000	Street Strip	CD218-35	972875	C35-16 99280-16	218 228	284 294	114	.000 .000	.503 .503

### Performance Valve Train Components

Hydraulic Lifters	Heat Treated P/RODS	Valve Springs	Locks	Retainers	Timing Chain Kit	Roller Rockers
C35-16 OEM	95651-16 <sup>g</sup>	96801-16 <sup>i</sup>	99041-1 H.T	99944-16	RCS4000 Premium	3064 <sup>j</sup>
99280-16 A/Pump	95653-16 <sup>h</sup>		99097-1 Mach. Stl.			13744-16 <sup>j</sup>

**IMPORTANT:** Check your hydraulic lifter preload, with your original pushrods, to first determine if different pushrods may be required. On 1972-97 engines, if your hydraulic lifter preload is excessive, this can be remedied by using a Rocker Arm Pedestal Shim Kit PN#99170-1.

**NOTE:** To provide the most accurate valve adjustment on hydraulic lifter camshafts, in other than 429 Super C.J. engines, a method of effecting valve adjustment is required. On 1968-71 engines equipped with bottleneck type studs, using positive locking nuts will permit valve adjustment. On 1972-97 engines, the heads can be machined to use screw-in studs and pushrod guideplates.

<sup>g</sup> 8.550 Pro Series

<sup>h</sup> 8.650 Pro Series suits Super CJ

<sup>i</sup> Standard diameter valve springs, no machining required.

<sup>j</sup> 1.7 ratio, 7/16" stud, requires 7/16" rocker arm studs and pushrod guideplates & heat-treated pushrods.

### FOOTNOTES FOR CAMS ON PAGE 9 (289 - 302 - 351W)

**IMPORTANT NOTE: CR99003-1 Crane super lube must be used during run-in of all Hydraulic & solid flat tappet cams.**

**NOTE:** Many 1985-87 302 engines, all 1988-97 302 passenger car engines, all 1996-00 302 truck engines, all 1985-95 302 H.O., and all 1994-97 351 Windsor engines are equipped with hydraulic roller camshafts and lifters. Conventional hydraulic camshafts and lifters can be easily installed in these engines, providing the appropriate kit components are used. EFI engines must use standard firing order Cams (1-3-7-2-6-5-4-8).

**NOTE:** Ford 221 thru 302 camshafts can be used in 351 Windsor engines if the engine is changed to 221 thru 302 firing order (1-5-4-2-6-3-7-8). Ford 351W firing order is 1-3-7-2-6-5-4-8.

**NOTE:** To provide the most accurate valve adjustment on hydraulic lifter camshafts, the heads can be machined to accept screw-in studs (on engines not originally equipped). On engines equipped with bottleneck type studs, using positive locking nuts will permit valve adjustment. For engines equipped with pedestal mounted rocker arms and hydraulic lifters, excessive lifter preload can be easily remedied by using a Rocker Arm Pedestal Shim Kit (99170-1).

<sup>A</sup> Must machine cylinder heads.

<sup>B</sup> 289-302W - Check exact length required, 95616-16 = 6.810", 95618-16 = 6.90".

<sup>C</sup> ProSeries 8.150" suits 351W.

<sup>D</sup> 1.6 x 3/8" stud.

<sup>E</sup> 1.70 Pedestal mount, non-adjustable for 77 on heads.

<sup>F</sup> Standard Diameter Springs - No machining required.

## Holden V8 1969-87

### 253-304-308 cu. in.

### Hydraulic Lifter Cams

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int. Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh. <sup>M</sup>
<b>HYDRAULIC</b> - Smooth idle, dual pattern cam for everyday street driving and light duty towing. Good fuel economy and throttle response. <b>BASIC RPM 1200-3800</b>	Street	CD194-24 <b>Chart A</b> (p11)	976806	C73-16 <sup>A</sup> 99284-16 <sup>B</sup> C969C-16 <sup>C</sup>	194 204	260 270	110	.000 .000	.424 .448
<b>HYDRAULIC</b> - Good idle, good low end torque and throttle response. Works well with minimal modifications. <b>BASIC RPM 1500-4000</b>	Street	CD204-24 <b>Chart A</b> (p11)	976803	C73-16 <sup>A</sup> 99284-16 <sup>B</sup> C969C-16 <sup>C</sup>	204 204	270 270	110	.000 .000	.448 .448
<b>HYDRAULIC</b> - Good idle with lope. Good all round performance with basic intake and exhaust modifications, strong low-mid range torque. <b>BASIC RPM 2000-4800</b>	Street Strip	CD214-24 <b>Chart A</b> (p11)	976800	C73-16 <sup>A</sup> 99284-16 <sup>B</sup> C969C-16 <sup>C</sup>	214 214	280 280	110	.000 .000	.472 .472
<b>HYDRAULIC</b> - Fair idle with lope, good mid range - upper RPM horsepower and torque. Good street and strip performance when used with correct intake, exhaust and gearing. <b>BASIC RPM 2200-5400</b>	Street Strip	CD224-24 <b>Chart A</b> (p11)	976801	C73-16 <sup>A</sup> 99284-16 <sup>B</sup> C969C-16 <sup>C</sup>	224 224	290 290	110	.000 .000	.496 .496

## HOLDEN V8 88-97

### 304-350 cu. in. EFI (with flat tappet)

### Hydraulic Lifter Camshafts

APPLICATION AND BASIC RPM	CAM USE	GRIND NO.	CAM PART NO.	LIFTERS	Deg. Dur. @ .050" Cam Lift Int. Exh.	Deg. Adv. Dur. Int. Exh.	Deg. Lobe Separation	Running Clearance -Hot- Int. Exh.	Gross Valve Lift Int. Exh. <sup>M</sup>
<b>HYDRAULIC</b> - Good idle, good low end torque and throttle response. Works well with minimal modifications. Equivalent to HSV 185i-215i cam. (92061394) <b>BASIC RPM 1500-4000</b>	Street	CD206-88 <b>Chart A</b> (p11)	976810	C73-16 <sup>A</sup> 99284-16 <sup>B</sup> C969C-16 <sup>C</sup>	206 206	272 272	112	.000 .000	.448 .448
<b>HYDRAULIC</b> - Fair idle with lope, strong low-mid range street and strip performance. Works well in autos with basic street modifications. <b>BASIC RPM 2300-5300</b>	Street	CD218-88 <b>Chart A</b> (p11)	976811	C73-16 <sup>A</sup> 99284-16 <sup>B</sup> C969C-16 <sup>C</sup>	218 218	284 284	110	.000 .000	.471 .471
<b>HYDRAULIC</b> - Fair idle with lope, good mid range - upper RPM horsepower and torque. Good street and strip performance when used with correct intake, exhaust and gearing. <b>BASIC RPM 2500-5900</b>	Street	CD228-88 <b>Chart A</b> (p11)	976812	C73-16 <sup>A</sup> 99284-16 <sup>B</sup> C969C-16 <sup>C</sup>	228 228	294 294	110	.000 .000	.471 .471

Footnotes For Holden Cams On Page 11.

## \* Holden V8 253/304/308 Valve Train Parts Chart (A)

Valve Springs	Retainers	Valve Locks	V.S. Seals	Pushrods	Timing Chain Kit	Roller Rockers
99848-16	99915-16	99041-1 HT	99820-16 <sup>D</sup>	24621-16 <sup>E</sup>	REC6000 ECONO	24744-16 <sup>G,D</sup>
		99097-1 Mach. Stl		95654-16 <sup>F</sup>	RCS6000 Premium	24745-16 <sup>H</sup>
						3066 <sup>I</sup>
						3067 <sup>J</sup>
						28758-16 <sup>K,D</sup>

<sup>A</sup> OEM Lifters

<sup>B</sup> Anti-Pump Lifters

<sup>C</sup> Chilled Iron Base Lifters

<sup>D</sup> Must Machine Cylinder Heads

<sup>E</sup> C/Moly 8.688"

<sup>F</sup> ProSeries 1/pce. Heavy Wall 8.700" (+.012")

<sup>G</sup> Energizer 1.65 Ratio x7/16 Stud Mount

<sup>H</sup> Energizer Bolt-On Kit 1.65 Ratio - No Machining Required

<sup>I</sup> Blue Racer 1.65 Ratio x7/16 Stud Mount

<sup>J</sup> Blue Racer Bolt-On Kit 1.65 Ratio - No Machining Required

<sup>K</sup> GoldRace 1.65 Ratio x7/16 Stud Mount

<sup>M</sup> All valve lifts shown are 1.6:1. If using Roller Rockers Ratio is 1.65:1 and lift will increase.