Custom-Profile Cams

Although the Crane Cams catalog includes an extensive variety of camshafts, unique applications do occur that may require a camshaft selection not found in our standard listings. This is not an unusual happening at Crane, where custom-ground cams are produced daily. We maintain the largest lobe profile library of any performance cam grinder, an accumulation that began with our founding in 1953.

We cover the entire spectrum of internal combustion engine applications, ranging from stationary power plants to Top Fuel dragsters. Prototype work is performed for a variety of clients, from the giant Original Equipment manufacturers to the individual engine builder/racer. Custom production runs are also commonplace for an equally diverse range of customers. Proprietary work is also a function of our diversity throughout the OEM and performance markets.

It is always recommended that our staff of Performance Consultants be contacted (386/258-6174) as the first step in the initiation of a special camshaft order. Their combined decades of experience in all forms of camshaft applications can easily save the customer time (and money) when refining their particular combination.

Following are some basic explanations and rules to follow when considering a custom-ground camshaft.

Our hydraulic and mechanical profiles are designed for a particular finished lobe size. Applying a lobe design to an engine having a smaller base circle diameter than the lobe is intended for, will probably cause the minimum radius of curvature (which usually occurs at, or near, the maximum lift point) to decrease to an unacceptable level. This will cause premature lobe and lifter failure.

Consideration is also given as to the type of valve train. Engines having an overhead valve style valve train (cam-lifters-pushrod-rocker arm-valve), can not utilize as much positive acceleration at the follower as those engines having direct-actuation valve trains (cam-follower-valve), due to the comparative stiffness of each style. Although the minimum tappet diameter and basic specifications may appear quite similar, there are great lobe design differences, mandating that these types not be interchanged.

Hydraulic and mechanical profiles also have design differences, primarily in the clearance ramps. Without going into great detail, you should not use hydraulic lifters on a mechanical lifter cam, nor should you use mechanical lifters on a hydraulic lifter cam.

Crane also has available lobe series for most SOHC and DOHC slipper follower valve train engines. As virtually each of these engines utilize their own unique valve train geometry, lobe designs can not be interchanged among engines, even though their valve trains may appear identical in configuration.

Due to space limitations, we cannot list all of these series here, and recommend that you contact Crane’s Performance Consultant staff for specific recommendations.

Notes on Minimum Tappet Diameter

For flat-tappet grinds, this is the smallest tappet face diameter advisable for use with the particular profile. Use of a smaller face diameter tappet will result in the lobe to lifter contact point going off of the edge of the tappet,

usually causing immediate lobe and lifter wear and failure. A larger tappet can be used without this wear potential, however you may be sacrificing tappet velocity (which usually increases performance) if other profiles are available for larger tappets. Some common values for tappet diameter are:

.842” SB & BB Chevy, Pontiac and Buick V8

.875” SB & BB Ford V8

.904” Chrysler and AMC V8.

For more information on Minimum Tappet Diameter and how it affects your application, call a Crane Performance Consultant at (386) 258-6174.

Special Cam Services Price Schedule

The following basic price schedule (which is subject to change without notice) covers services offered. Additional quotations will be submitted on request. All prices are FOB, Daytona Beach, Florida.

Design:

1. Cam Profile Design-Inelastic system with Accelerated Ramps. Lift table with velocities and accelerations in one degree spacing will be furnished. Time required: 5 to 10 working days.

   Each Profile $360.00

2. Cam Profile Design-Inelastic system with Accelerated Ramps, for slipper follower type applications. Lift table with velocities and accelerations in one degree spacing will be furnished. Time required: 10 to 20 working days.

   Each Profile $720.00

3. Profile Smoothing-Computer smoothing of your cam profile design. Performs smooth blending of ramps, nose and roughness-smoothed lift table will be furnished.

   Each Profile $100.00

Tooling (Models or Masters):

1. Generate Model or Van Norman/Berco Plate Master Cam Profile. Grind to five decimal place data on Moore Grinder. (Included verification check of submitted design for errors.) Time required: 5 to 10 working days. If Model Cam is to be shipped to customer for copying into a master cam plate, add $40.00. If Master Cam plate is to be shipped to customer for use in his machine, add $40.00.

   Each Valve Profile $360.00

2. Generate dual lobe model for intake lobe and exhaust lobe with specified included separation angle. Time required: 5 to 10 working days. (This model to remain at Crane Cams, Inc., for the exclusive use of the purchaser)

   Each Dual Lobe Model $720.00

3. Generate steel billet gangmaster for mass production of finished camshafts, (This gangmaster to remain at Crane Cams, Inc., for the exclusive use of the purchaser)

   Each 8 Lobe Gangmaster $2,128.00

   Each 12 Lobe Gangmaster $4,256.00

   Each 16 Lobe Gangmaster $4,256.00

4. Generate Van Norman/Berco Plate for customer-supplied camshaft (includes base circle runout correction).

   Each Single Pattern Plate (Labor PN 98017) $85.00

   Each Dual Pattern Plate Set (Labor PN 98018) $150.00

Manufacture:

1. Grind customer’s round lobe 8620 steel billet camshaft core - includes copper plate, rough grind, heat treat and finish grind. Time required: approximately 20 working days. For roller camshafts that require base circle undercutting, add $30.00.

   Each V8 Camshaft (Labor PN 98085) $460.00

   Each V8 Camshaft - Rough Grind & Heat Treat Only (Labor PN 98064) $302.60

   Each 6 Cyl. Camshaft (Labor PN 98072) $460.00

   Each 4 Cyl. Camshaft (Labor PN 98071) $460.00

   Each 1 Cyl. Camshaft (Labor PN 98070) $190.00

2. Grind Crane round lobe 8620 steel billet camshaft core. Time required: approximately 20 working days. For roller follower camshafts that require base circle undercutting, add $30.00.

   Most V8 Round Lobe Steel Billet Cams $525.00
   Includes Core (Labor PN 98061)

   Most 6 Cyl. Round Lobe Steel Billet Cams $522.00
   Includes Core (Labor PN 98086)

   Most 4 Cyl. Round Lobe Steel Billet Cams $522.00
   Includes Core (Labor PN 98062)

3. Grind one sample camshaft from customer’s unground lobe camshaft and inspect for conformance to design data. Cams up to sixteen cylinders and

74 inches long. (Customer to furnish semi-finished cam billet if Crane billet is not available.) Time required: 5 to 10 working days.

Each Camshaft Please Request Quotation

4. Miscellaneous manufacturing services - for other services not listed, contact Crane Cams for a quotation.

   Grind Camshaft Bearing Journals (Labor PN 98076) $84.00

   Install 5/16" Dowel Pin (Labor PN 98087) $72.00

   Groove #4 Cam Bearing Journal (Labor PN 98088) $54.00

   Drill And Tap For Sander Rear Drive (Labor PN 98089) .. $92.00

Inspection:

1. Profile Check to verify lift and timing against furnished specifications. Time required: 2 to 3 working days.

   Each Camshaft $40.00

2. Cam Lobe measurement and computer analysis. Complete report giving lift, velocity, acceleration and graphs. Time required: 5 to 10 working days.

   First Valve Lobe On Camshaft $200.00

   Each Additional Valve Lobe $100.00

Packaging For Shipment:

Special wooden crates for shipment (when standard cardboard packaging will not offer adequate protection).

Each Cam Add Approximately $16.00 Each

Prototype Cam Services

Crane Cams, Incorporated utilizes computer programs to perform precision cam profile measurements and design analysis. This enables Crane to constantly update and improve their entire product line, plus prototype development for other cam and engine manufacturers.

Crane Cams, Incorporated, offers a broad scope of services and capabilities from a single source - a unique and extremely advantageous feature. This multi-faceted service can provide a complete package of engine cam development and manufacturing, from design through sample cams for developmental evaluation at an amazingly low total cost.

The "as measured" cam profile analysis services are the most accurate measurement and analysis data currently available in the industry. A precision measurement facility is located in the Crane facility and is used in many phases of Crane's production and development work, as well as by various other engine and cam manufacturers. Sharing equal importance with the physical measurements are the computer analysis techniques employed in processing the "as measured" data. This process permits a broad and accurate analysis of the data with corrections to systematic and random errors, which occur in all

measurement procedures. The resulting computer printout is an exceedingly accurate lift data (to the nearest 10 millionths of an inch) of the actual measured profile. This data can then be immediately compared to the design data.

One outstanding feature of the cam profile analysis program allows one-degree (or 2-1/2 degree) design data to be read into the computer, which will immediately return printout-cutting data in one-half degree increments. This unique feature permits a model cam to be generated on one-half degree increments of maximum accuracy, even though the original design was tabulated in one-degree increments.

Only the latest equipment is incorporated into the extensive cam development facilities at Crane Cams, Incorporated. Equipment is only as good as the people that use it, however, and Crane personnel have been one of the main keys to the firm's successful rise to the "Number One" rating in the high performance cam industry. Top management at Crane fully appreciates the importance of care, accuracy, speed and competence, and reflects this concern in its total involvement in all cam facets, from design through volume production.

Tooling

From design data, the first step in cam profile production is the generation of the master cam lobe. At Crane, this is the most critical and precision step in cam profile manufacturing, since every step from this point forward can result in possible accumulative errors and deviations from the desired profile unless extreme detail and attention is afforded the project.

From the master cam blank, a rough cam shape is first rough ground on a Van Norman cam grinder. The final rough and finish grinding is performed on a unique Moore Special Tool Co., numerically controller continuous path jig grinder.

The grinder utilizes a General Electric Mark Century positioning control unit which positions the two axes of the worktable and a third vertical axis in the head. The Mark Century unit has a basic resolution of one millionth of an inch, with a complete system resolution of 10 millionths of an inch, and a grinding accuracy and repeatability of plus or minus 15 millionths.

Manufacturing

Crane utilizes Van Norman and Norton Automatic cam grinders for production cam grinding. If production volume run cams are desired, Crane offers the highest quality at competitive prices, backed up by the fastest delivery possible.

Inspection

Crane's production run inspection procedures, designed to check production cams for accuracy, plus establishing performance parameters of a given camshaft of profile, is a very useful and rapid measuring device (Adcole 911) with resolution to .0001 inch and one-quarter of one degree.

A custom-built dynamic inspection machine is utilized in many critical inspection areas to rapidly indicate acceleration, velocity, displacement and jerk of a model, or sample cam, profile. Relative smoothness can be instantly reviewed for comparison, as well as lobe-to lobe variations in profiles. The

viewed trace on the oscilloscope truly gives a “finger-print” of the cam profile almost instantly, and with a minimum of set-up. Conclusions can be quickly established relating to dynamic problems due to design or manufacture. This machine is also utilized to select optimum lobes, average lobes, or worst lobes, for further inspection and analysis, or for copying profiles on developmental or test cams.

Also located at the Crane facility in Daytona Beach, Florida, is the physical measurement equipment. Another custom-designed installation, this machine performs precise measurement of “as made” cam profiles, conducts mathematical analysis to correct for systematic and random errors, and provides velocity and acceleration data. Features include a basic resolution of .000010 inch and two arc seconds. An extremely high accuracy of 20 millionths of an inch (mean standard deviation) is maintained through the operating system employed and close temperature control of the measurement room. Ground and lapped carbide utilized as cam followers, maintain high precision and accuracy.

Our Adcole gage is considered to be the standard of the industry for camshaft design verification and production. (This is the measuring equipment virtually demanded by the Original Equipment manufacturers for quality control purposes.) Measurements are precise to within 1/10 micron (0.0001mm) and 0.001 degrees. Computer-aided control combines extreme accuracy with speed, and provides for complete plot traces of deviations from the programmed standards.

Important: Lobe Design Size When Choosing a Roller Grind

Our roller profiles are designed for a particular finished lobe size, as determined by engine types or base circle radius requirements. We have provided a column indicating the Lobe Design Size for each of the listed profiles. Coding is as follows:

A. 1.786” nominal journal diameter (Buick V-6 and V-8, or special small base circle diameter. Chevrolet 262-400 V-8 requiring connecting rod to cam clearance in long stroke applications.)

B. 1.868” nominal journal diameter (Chevrolet 262-400 and 348-409 V-8 and Pontiac 265-455 V-8)

C. 1.948” to 1.968” or 50 mm journal diameter (Chevrolet 262-400 V-8 LRB, Chevrolet 396-454 V-8, Plymouth-Dodge 273-360, 350-440, & Hemi V-8’s)

D. 2.036” nominal journal diameter (Ford 221-302 and 351C-400 V-8’s), AMC

E. 2.125” nominal journal diameter (Ford 429-460 and other engines)

F. 55 mm or 2.165” nominal journal diameter (Chevrolet LS1 V-8, Chevrolet Vortec V-8, Ford LRB, and other engines)

G. 60 mm or 2.362” nominal journal diameter (Large cubic inch race only engines)

Some lobe designs have had masters generated for more than one size category. These have been indicated where applicable. When a roller lobe designed for one journal size is applied to an engine having a different nominal journal size, a duration change will occur. For example, an “A” lobe ground on a “C” engine camshaft will realize a four-degree increase at 0.050” cam lift. There is usually a two-degree change between design size series. Caution must be used when selecting a larger sized lobe for a smaller lobe application. If a “D” lobe were used on an “A” application, not only would a duration loss of eight degrees take place, but also a negative radius of curvature (inverted flank) may try to occur in the grinding process, resulting in a finished lobe shape that is not representative of the actual design shape. This may result in unstable valve train, possibly causing component failure. Lobes that are intended to have this inverted flank (Crane’s IR series) were carefully designed and manufactured using a special process to prevent this condition. Even so, IR camshafts are not normally advised for high RPM applications.

Cam Lobe Listing

Z **The Z hydraulic lobes are our most aggressive series for use with .842” diameter tappets. Short seat timing with maximum area under the curve provides outstanding performance.**

Profile Type Duration At .050” Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200” Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-206/288	256	.0040	117	.047	.021	.432	.461	.490	.507	.842
H-212/297	262	.0040	124	.056	.028	.446	.475	.505	.523	.842
H-218/306	268	.0040	130	.066	.035	.459	.490	.520	.539	.842
H-224/315	274	.0040	137	.077	.044	.473	.504	.536	.554	.842
H-230/324	280	.0040	143	.087	.053	.486	.518	.551	.570	.842
H-236/327	286	.0040	148	.098	.063	.491	.523	.556	.576	.842
H-240/3291	290	.0040	152	.105	.070	.494	.526	.559	.579	.842
H-244/331	294	.0040	156	.112	.077	.497	.530	.563	.582	.842
H-248/333	298	.0040	160	.119	.084	.500	.533	.566	.586	.842

HMV **HMV Hydraulic series intended for mid-range torque and street use, also fuel economy. Designed to make maximum use of .842" diameter tappets.**

Profile Type Duration At .050” Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200” Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-192/2667	248	.0040	83	.029	.013	.400	.427	.453	.469	.842
H-198/2754	254	.0040	106	.036	.017	.413	.441	.468	.485	.842
H-204/2847	260	.0040	114	.044	.021	.427	.456	.484	.501	.842
H-210/2934	266	.0040	120	.053	.027	.440	.469	.499	.516	.842
H-216/3027	272	.0040	127	.064	.037	.454	.484	.515	.533	.842
H-222/3114	278	.0040	133	.074	.041	.467	.498	.529	.548	.842
H-228/3200	284	.0040	139	.085	.049	.480	.512	.544	.563	.842

H-234/3294	290	.0040	144	.093	.059	.494	.527	.560	.580	.842
H-238/3347	294	.0040	148	.100	.065	.502	.536	.569	.589	.842
H-240/3378	296	.0040	152	.103	.070	.507	.540	.574	.595	.842
H-248/3500	304	.0040	159	.118	.081	.525	.560	.595	.616	.842
H-252/3500	308	.0040	164	.124	.090	.525	.560	.595	.616	.842
H-256/3500	312	.0040	167	.131	.095	.525	.560	.595	.616	.842

CCH1 **CCH Series created for performance hydraulic applications requiring higher engine speeds on smaller diameter lobes. Designed for .842" diameter or larger tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-194/250	252	.0040	90	.031	.015	.375	.400	.425	.440	.842
H-198/255	256	.0040	97	.036	.017	.383	.408	.434	.449	.842
H-202/260	260	.0040	102	.042	.020	.390	.416	.442	.458	.842
H-210/270	268	.0040	112	.053	.028	.405	.432	.459	.475	.842
H-214/275	272	.0040	117	.059	.032	.413	.440	.468	.484	.842
H-218/280	276	.0040	122	.065	.037	.420	.448	.476	.493	.842
H-226/290	284	.0040	131	.078	.047	.435	.464	.493	.510	.842
H-230/295	288	.0040	135	.084	.053	.443	.472	.502	.519	.842
H-234/300	292	.0040	140	.091	.059	.450	.480	.510	.528	.842
H-242/310	300	.0040	149	.105	.071	.465	.496	.527	.546	.842
H-250/320	308	.0040	158	.118	.084	.480	.512	.544	.563	.842

CCH2 **CCH Series created for performance hydraulic applications requiring higher engine speeds. Designed for .842" diameter or larger tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-190/260	252	.0040	93	.027	.014	.390	.416	.442	.458	.842
H-194/265	256	.0040	98	.032	.016	.398	.424	.451	.466	.842
H-198/270	260	.0040	103	.037	.019	.405	.432	.459	.475	.842
H-202/275	264	.0040	108	.042	.022	.413	.440	.468	.484	.842
H-206/280	268	.0040	112	.047	.025	.420	.448	.476	.493	.842
H-210/285	272	.0040	116	.053	.029	.428	.456	.484	.502	.842
H-214/290	276	.0040	121	.059	.033	.435	.464	.493	.510	.842
H-218/295	280	.0040	125	.065	.037	.443	.472	.502	.519	.842
H-222/3001	284	.0040	129	.071	.042	.450	.480	.510	.528	.842
H-226/305	288	.0040	134	.078	.047	.458	.488	.519	.537	.842
H-230/3101	292	.0040	138	.084	.053	.465	.496	.527	.546	.842
H-234/315	296	.0040	142	.091	.058	.473	.504	.536	.554	.842
H-238/320	300	.0040	146	.098	.064	.480	.512	.544	.563	.842
H-242/325	304	.0040	150	.104	.070	.488	.520	.553	.572	.842
H-246/330	308	.0040	155	.111	.077	.495	.528	.561	.581	.842
H-254/340	316	.0040	163	.125	.090	.510	.544	.578	.598	.842

H1 **Series created for engines with large diameter lobes and long rocker ratios, such as big block Chevrolet, used in performance and marine applications. Designed for .842" diameter or larger tappets.**

Profile Type	Advertised Duration	Dur. At .200"	Tappet Lift At TDC	Gross Valve Lift With Zero Lash	Min. Tappet Dia./Design

Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-220/307	280	.0042	128	.067	.040	.461	.491	.522	.540	.842
H-226/314	286	.0042	134	.076	.047	.471	.502	.534	.553	.842
H-230/318	290	.0042	138	.082	.053	.477	.509	.541	.560	.842
H-236/325	296	.0042	144	.092	.061	.488	.520	.553	.572	.842
H-240/329	300	.0042	148	.098	.067	.494	.526	.559	.579	.842
H-246/336	306	.0042	154	.108	.076	.504	.538	.571	.591	.842
H-250/340	310	.0042	158	.115	.082	.510	.544	.578	.598	.842
H-254/344	314	.0042	162	.122	.089	.516	.550	.585	.605	.842
H-262/353	322	.0042	170	.136	.102	.530	.565	.600	.621	.842
H-270/362	330	.0042	178	.149	.115	.543	.579	.615	.637	.842

H2 **Series created for Chrysler and AMC engines using .904" diameter tappets for street and racing applications.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-202/2880	274	.0040	114	.039	.023	.431	.461	.490	.507	.904
H-212/3040	284	.0040	125	.053	.032	.456	.486	.517	.535	.904
H-222/3200	294	.0040	136	.069	.044	.480	.512	.544	.563	.904
H-232/3360	304	.0040	146	.087	.058	.504	.538	.571	.591	.904
H-242/3520	314	.0040	156	.105	.073	.528	.563	.598	.620	.904
H-252/3680	324	.0040	166	.122	.089	.552	.589	.626	.648	.904
H-262/3840	334	.0040	176	.141	.107	.576	.614	.653	.676	.904

F1 **Series created for oval track and marine engines with long rocker ratios, such as the big block Chevrolet, where stable high RPM valve motion is required. Recommended lash is .026".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-236/3177	272	.0200	138	.082	.064	.477	.508	.540	.559	.842
F-246/3294	282	.0200	149	.098	.077	.494	.527	.560	.580	.842
F-256/3412	292	.0200	159	.115	.092	.512	.546	.580	.601	.842
F-266/3528	302	.0200	169	.131	.107	.529	.564	.600	.621	.842
F-276/3648	312	.0200	179	.148	.121	.547	.584	.620	.642	.842
F-286/3765	322	.0200	189	.165	.137	.565	.602	.640	.663	.842

F2 **Series created for street use and mid-range torque applications. Recommended lash is .022".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-198/270	260	.0140	102	.038	.023	.405	.432	.459	.475	.842
F-218/2933	280	.0140	122	.064	.038	.440	.469	.499	.516	.842
F-228/3067	290	.0140	134	.079	.050	.460	.491	.521	.540	.842
F-238/3200	300	.0140	144	.094	.063	.480	.512	.544	.563	.842
F-248/3334	310	.0140	155	.111	.078	.500	.533	.567	.587	.842
F-258/3468	320	.0140	165	.128	.092	.520	.555	.590	.610	.842

F3 **Series created for racing mechanical flat tappet. This series has an excellent racing history. Designed to make full use of .842" diameter tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-244/3454	280	.0200	152	.104	.072	.518	.553	.587	.608	.842
F-248/3514	284	.0200	156	.111	.078	.527	.562	.597	.618	.842
F-252/3574	288	.0200	160	.118	.084	.536	.572	.608	.629	.842
F-256/3634	292	.0200	164	.124	.091	.545	.581	.618	.640	.842
F-260/3694	296	.0200	169	.132	.097	.554	.591	.628	.650	.842
F-264/3754	300	.0200	172	.139	.104	.563	.601	.638	.661	.842
F-268/3814	304	.0200	177	.147	.109	.572	.610	.648	.671	.842
F-272/3874	308	.0200	180	.153	.117	.581	.620	.659	.682	.842
F-276/3934	312	.0200	184	.158	.124	.590	.629	.669	.692	.842
F-280/3994	316	.0200	189	.166	.132	.599	.639	.679	.703	.842
F-284/4054	320	.0200	192	.174	.139	.608	.649	.689	.714	.842
F-288/4114	324	.0200	196	.181	.145	.617	.658	.699	.724	.842

TLF1 **TLF Series created for oval track racing using a lash setting of .012". Designed to make full use of .842" diameter tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-246/3467	282	.0160	155	.109	.076	.520	.555	.589	.610	.842
F-250/3534	286	.0160	159	.116	.082	.530	.565	.601	.622	.842
F-254/3600	290	.0160	163	.123	.087	.540	.576	.612	.634	.842
F-258/3667	294	.0160	167	.130	.094	.550	.587	.623	.645	.842
F-262/3734	298	.0160	171	.137	.100	.560	.597	.635	.657	.842
F-264/3767	300	.0160	173	.141	.104	.565	.603	.640	.663	.842
F-266/3800	302	.0160	175	.144	.107	.570	.608	.646	.669	.842
F-270/3867	306	.0160	179	.151	.114	.580	.619	.657	.681	.842
F-274/3934	310	.0160	183	.158	.121	.590	.629	.669	.692	.842
F-278/4001	314	.0160	187	.165	.128	.600	.640	.680	.704	.842
F-282/4067	318	.0160	191	.172	.135	.610	.651	.691	.716	.842

F4 **Series created for NASCAR® racing applications using a lash setting of .018". This series has an excellent racing history. Designed to make full use of .875" diameter tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-262/3851	298	.0200	174	.137	.101	.578	.616	.655	.678	.875
F-264/388	300	.0200	176	.141	.105	.582	.621	.660	.683	.875
F-266/391	302	.0200	178	.144	.108	.587	.626	.665	.688	.875
F-268/394	304	.0200	180	.149	.112	.591	.630	.670	.693	.875
F-270/397	306	.0200	182	.152	.115	.596	.635	.675	.699	.875
F-272/400	308	.0200	184	.156	.118	.600	.640	.680	.704	.875
F-274/403	310	.0200	186	.159	.122	.605	.645	.685	.709	.875
F-276/406	312	.0200	188	.163	.126	.609	.650	.690	.715	.875

F-278/409	314	.0200	190	.167	.130	.614	.654	.695	.720	.875
F-280/4125	316	.0200	192	.171	.133	.619	.660	.701	.726	.875
F-284/4125	320	.0200	196	.179	.141	.619	.660	.701	.726	.875
F-286/4125	322	.0200	198	.182	.144	.619	.660	.701	.726	.875

F5 **Series created for NASCAR® racing applications using a lash setting of .018". The series spacing of every two crank degrees allows fine tuning for any combination. Designed to make full use of .875" diameter tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-246/370	278	.0200	158	.109	.076	.555	.592	.629	.651	.875
F-250/376	282	.0200	162	.116	.082	.564	.602	.639	.662	.875
F-254/382	286	.0200	166	.123	.088	.573	.611	.649	.672	.875
F-258/388	290	.0200	170	.130	.095	.582	.621	.660	.683	.875
F-260/391	292	.0200	172	.134	.098	.587	.626	.665	.688	.875
F-262/394	294	.0200	174	.137	.102	.591	.630	.670	.693	.875
F-264/397	296	.0200	176	.141	.105	.596	.635	.675	.699	.875
F-266/400	298	.0200	178	.145	.109	.600	.640	.680	.704	.875
F-268/403	300	.0200	180	.148	.112	.605	.645	.685	.709	.875
F-270/406	302	.0200	182	.152	.116	.609	.650	.690	.715	.875
F-272/409	304	.0200	184	.156	.119	.614	.654	.695	.720	.875
F-274/412	306	.0200	186	.159	.123	.618	.659	.700	.725	.875
F-276/415	308	.0200	188	.163	.126	.623	.664	.706	.730	.875
F-278/4181	310	.0200	190	.167	.130	.627	.669	.711	.736	.875
F-280/421	312	.0200	192	.170	.134	.632	.674	.716	.741	.875
F-286/430	318	.0200	198	.181	.145	.645	.688	.731	.757	.875

TLF2 **TLF Series created for NASCAR® racing applications using a lash setting of .012". Designed to make full use of .875" diameter tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-258/3642	294	.0160	170	.133	.094	.546	.583	.619	.641	.875
F-260/3821	296	.0160	172	.136	.098	.573	.611	.650	.672	.875
F-262/3642	298	.0160	174	.140	.101	.546	.583	.619	.641	.875
F-264/3881	300	.0160	176	.144	.104	.582	.621	.660	.683	.875
F-266/3911	302	.0160	178	.147	.108	.587	.626	.665	.688	.875
F-268/3700	304	.0160	180	.151	.111	.555	.592	.629	.651	.875
F-268/3941	304	.0160	180	.151	.111	.591	.631	.670	.694	.875
F-270/3700	306	.0160	182	.155	.114	.555	.592	.629	.651	.875
F-270/3975	306	.0160	182	.155	.114	.596	.636	.676	.700	.875
F-272/4001	308	.0160	183	.158	.118	.600	.640	.680	.704	.875
F-274/4032	310	.0160	186	.162	.122	.605	.645	.685	.710	.875
F-276/4063	312	.0160	188	.166	.125	.609	.650	.691	.715	.875
F-278/4063	314	.0160	190	.170	.129	.609	.650	.691	.715	.875
F-280/4063	316	.0160	192	.173	.132	.609	.650	.691	.715	.875
F-282/4063	318	.0160	194	.177	.136	.609	.650	.691	.715	.875
F-284/4188	320	.0160	196	.181	.140	.628	.670	.712	.737	.875
F-286/4063	322	.0160	198	.184	.143	.609	.650	.691	.715	.875
F-288/4250	324	.0160	200	.188	.147	.638	.680	.723	.748	.875

F6 **This series is designed for unrestricted NASCAR® engines using high rocker arm ratios. Recommended lash is .020" intake and .022" exhaust.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.70	1.75	1.80	1.85	Min. Tappet Dia./Design Lobe Size Code
F-270/376	304	.0200	176	.142	.108	.639	.658	.677	.696	.875
F-274/384	308	.0200	180	.150	.115	.653	.672	.691	.710	.875
F-278/392	312	.0200	184	.157	.121	.666	.686	.706	.725	.875

F7 **This series is designed for unrestricted NASCAR® engines using high rocker arm ratios. Recommended lash is .020" intake and .022" exhaust.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.80	1.85	1.90	1.95	Min. Tappet Dia./Design Lobe Size Code
F-259/353	294	.0200	164	.120	.090	.635	.653	.671	.688	.875
F-263/359	298	.0200	168	.127	.096	.646	.664	.682	.700	.875
F-265/362	300	.0200	170	.130	.099	.652	.670	.688	.706	.875
F-267/365	302	.0200	172	.134	.102	.657	.675	.694	.712	.875
F-269/368	304	.0200	174	.137	.105	.662	.681	.699	.718	.875
F-271/371	306	.0200	176	.141	.108	.668	.686	.705	.723	.875
F-273/374	308	.0200	178	.145	.111	.673	.692	.711	.729	.875
F-275/377	310	.0200	180	.149	.115	.679	.697	.716	.735	.875
F-277/380	312	.0200	182	.152	.118	.684	.703	.722	.741	.875
F-279/383	314	.0200	184	.156	.121	.689	.709	.728	.747	.875
F-281/386	316	.0200	186	.160	.125	.695	.714	.733	.753	.875
F-283/389	318	.0200	188	.163	.128	.700	.720	.739	.759	.875
F-285/392	320	.0200	190	.167	.131	.706	.725	.745	.764	.875

F8 **Mechanical series designed for restricted NASCAR® engines using high rocker ratios. Recommended lash is .020" intake and .022" exhaust.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.80	1.85	1.90	1.95	Min. Tappet Dia./Design Lobe Size Code
F-232/330	264	.0200	140	.082	.055	.594	.610	.627	.644	.875
F-238/336	270	.0200	146	.091	.062	.604	.622	.638	.655	.875
F-242/340	274	.0200	150	.098	.068	.612	.629	.646	.663	.875
F-246/344	278	.0200	154	.104	.073	.619	.636	.654	.671	.875
F-258/356	290	.0200	166	.125	.091	.641	.659	.676	.694	.875

F9 **Mechanical series designed for restricted NASCAR® engines using high rocker ratios. Recommended lash is .020" intake and .022" exhaust.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.80	1.85	1.90	1.95	Min. Tappet Dia./Design Lobe Size Code
F-240/348	272	.0200	148	.094	.065	.626	.644	.661	.679	.875
F-244/354	276	.0200	152	.100	.070	.637	.655	.673	.690	.875
F-248/3601	280	.0200	157	.107	.076	.648	.666	.684	.702	.875
F-252/366	284	.0200	161	.114	.081	.659	.677	.695	.714	.875
F-264/384	296	.0200	173	.135	.100	.691	.710	.730	.749	.875

F10 **Mechanical series is designed for unrestricted NASCAR® engines using high rocker arm ratios. Recommended lash is .020" intake and .022" exhaust.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.80	1.85	1.90	1.95	Min. Tappet Dia./Design Lobe Size Code
F-270/392	302	.0200	177	.145	.110	.706	.725	.745	.764	.875
F-272/3981	304	.0200	180	.149	.113	.716	.736	.756	.776	.875
F-274/404	306	.0200	183	.153	.117	.727	.747	.768	.788	.875
F-276/4103	308	.0200	185	.157	.120	.738	.759	.779	.800	.875
F-278/4101	311	.0200	185	.158	.121	.738	.759	.779	.800	.875
F-280/4102	314	.0200	185	.158	.122	.738	.759	.779	.800	.875

F11 **Series created for Chrysler and AMC engines using .904" diameter tappets on street and mid-range torque applications. Recommended lash is .028" to .030".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-228/3334	264	.0200	140	.078	.050	.500	.533	.567	.587	.904
F-238/3467	274	.0200	148	.093	.063	.520	.555	.589	.610	.904
F-248/3600	284	.0200	158	.110	.077	.540	.576	.612	.634	.904

F12 **Series created for Chrysler and AMC engines using .904" diameter tappets on racing applications. Recommended lash is .028" to .030".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-248/3602	284	.0200	156	.104	.080	.540	.576	.612	.634	.904
F-258/3735	294	.0200	166	.119	.097	.560	.598	.635	.657	.904
F-268/3868	304	.0200	177	.137	.113	.580	.619	.658	.681	.904
F-278/4002	314	.0200	186	.155	.130	.600	.640	.680	.704	.904
F-288/4134	324	.0200	196	.173	.147	.620	.661	.703	.728	.904

F13 **Series created for racing mechanical flat tappet. Designed to make full use of .842" diameter tappets. Recommended lash is .014" to .016".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-242/346	267	.0200	154	.106	.072	.519	.554	.588	.609	.842
F-246/353	271	.0200	158	.113	.079	.529	.565	.600	.621	.842
F-250/3601	275	.0200	162	.120	.085	.540	.576	.612	.634	.842
F-254/367	279	.0200	166	.127	.092	.550	.587	.624	.646	.842
F-256/370	281	.0200	168	.129	.094	.555	.592	.629	.651	.842
F-258/374	283	.0200	170	.134	.099	.561	.598	.636	.658	.842
F-262/381	287	.0200	174	.141	.106	.572	.610	.648	.670	.842
F-266/388	291	.0200	178	.147	.112	.582	.621	.660	.683	.842

NOPOP1 **NOPOP series created for Chrysler Hemi drag race applications. Recommended lash is .028".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-292/398	332	.0162	200	.184	.150	.597	.637	.677	.700	.904
F-298/414	338	.0162	206	.194	.161	.621	.662	.704	.729	.904
F-304/414	344	.0162	212	.206	.172	.621	.662	.704	.729	.904

HR1 **Hydraulic roller series created for high lift applications with good stability.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
HR-206/313	268	.0040	124	.047	.026	.470	.501	.532	.551	B
HR-210/319	272	.0040	128	.053	.030	.479	.510	.542	.561	B C
HR-214/325	276	.0040	132	.059	.034	.488	.520	.553	.572	B C
HR-218/332	280	.0040	137	.065	.038	.498	.531	.564	.584	B
HR-222/339	284	.0040	141	.072	.043	.509	.542	.576	.597	B C
HR-226/345	288	.0040	145	.078	.048	.518	.552	.587	.607	B C
HR-230/352	292	.0040	150	.085	.053	.528	.563	.598	.620	B C
HR-234/359	296	.0040	154	.093	.058	.539	.574	.610	.632	B C
HR-238/365	300	.0040	158	.100	.064	.548	.584	.621	.642	B C
HR-242/372	304	.0040	163	.108	.070	.558	.595	.632	.655	B C
HR-246/372	308	.0040	166	.116	.077	.558	.595	.632	.655	B C
HR-250/372	312	.0040	170	.124	.084	.558	.595	.632	.655	B
HR-254/372	316	.0040	173	.131	.091	.558	.595	.632	.655	B C
HR-262/372	324	.0040	179	.146	.106	.558	.595	.632	.655	B
HR-270/372	332	.0040	183	.155	.118	.558	.595	.632	.655	B
HR-278/372	340	.0040	190	.169	.132	.558	.595	.632	.655	B

HR2 **Hydraulic roller series used for large cubic inch high lift applications.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
HR-198/311	260	.0040	117	.041	.018	.467	.498	.529	.547	B D
HR-206/325	268	.0040	126	.047	.026	.488	.520	.553	.572	B
HR-210/332	272	.0040	131	.053	.030	.498	.531	.564	.584	B D
HR-214/339	276	.0040	135	.059	.034	.509	.542	.576	.597	B
HR-222/352	284	.0040	144	.070	.041	.528	.563	.598	.620	B
HR-230/365	292	.0040	152	.084	.052	.548	.584	.620	.642	B
HR-238/378	300	.0040	160	.099	.064	.567	.605	.643	.665	B
HR-248/391	308	.0040	170	.120	.080	.586	.626	.665	.688	C
HR-252/391	316	.0040	174	.128	.088	.586	.626	.665	.688	C

HR3 **Hydraulic roller series created for mild performance and emissions legal camshafts using stock springs. Designed for small block Chevrolet size lobes.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
HR-184/256	240	.0040	89	.022	.009	.384	.410	.435	.451	B C
HR-194/271	250	.0040	102	.032	.015	.407	.434	.461	.477	B C
HR-204/286	260	.0040	115	.044	.023	.429	.458	.486	.503	B C
HR-208/292	264	.0040	119	.050	.027	.438	.467	.496	.514	B C
HR-214/301	270	.0040	127	.059	.033	.452	.482	.512	.530	B C
HR-220/310	276	.0040	134	.068	.039	.465	.496	.527	.546	B
HR-226/319	282	.0040	140	.079	.047	.479	.510	.542	.561	C
HR-232/328	288	.0040	146	.089	.056	.492	.525	.558	.577	C
HR-238/337	294	.0040	154	.100	.065	.506	.539	.573	.593	C

HR4 **Hydraulic roller series created for mild performance and emissions legal camshafts using stock springs. Designed for small block Ford size lobes.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
HR-188/262	246	.0040	95	.026	.012	.393	.419	.445	.461	D
HR-198/278	256	.0040	107	.037	.018	.417	.445	.473	.489	D
HR-208/294	266	.0040	119	.050	.027	.441	.470	.500	.517	D
HR-218/310	276	.0040	131	.065	.037	.465	.496	.527	.546	D

HR5 **Hydraulic roller series for Chevrolet LS1 V8 and other engines with 55mm journal diameter.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.8	Min. Tappet Dia./Design Lobe Size Code
HR-200/2951	262	.0040	114	.039	.020			.502	.531	F
HR-208/2951	270	.0040	119	.049	.027			.502	.531	F
HR-210/3121	272	.0040	126	.052	.029			.530	.562	F
HR-210/3241	272	.0040	129	.052	.029			.551	.583	F
HR-216/3241	278	.0040	133	.061	.035			.551	.583	F
HR-216/344	277	.0040	139	.062	.035			.585	.619	F
HR-218/3121	280	.0040	131	.064	.038			.530	.562	F
HR-218/3241	280	.0040	134	.065	.038			.551	.583	F
HR-220/3241	282	.0040	136	.068	.040			.551	.583	F
HR-222/3241	284	.0040	137	.071	.041			.551	.583	F
HR-222/344	283	.0040	144	.072	.041			.585	.619	F
HR-224/3241	286	.0040	139	.074	.045			.551	.583	F
HR-224/344	285	.0040	146	.075	.045			.585	.619	F
HR-228/3241	290	.0040	142	.081	.049			.551	.583	F
HR-228/344	287	.0040	149	.082	.049			.585	.619	F
HR-228/353	290	.0040	149	.082	.051			.600	.635	F
HR-232/3241	294	.0040	145	.088	.055			.551	.583	F
HR-232/353	294	.0040	152	.089	.056			.600	.635	F

HR-236/3241	298	.0040	148	.095	.062		.551	.583	F
HR-236/353	298	.0040	155	.096	.062		.600	.635	F
HR-240/353	302	.0040	158	.104	.068		.600	.635	F
HR-246/353	308	.0040	162	.115	.078		.600	.635	F

HR6 **Hydraulic roller series for large displacement engines with 50 mm journal diameter.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
HR-250/400	320	.0040	170	.122	.083	.600	.640	.680	.704	C
HR-254/400	324	.0040	174	.130	.090	.600	.640	.680	.704	C
HR-258/4001	328	.0040	178	.138	.097	.600	.640	.680	.704	C
HR-262/400	332	.0040	182	.145	.105	.600	.640	.680	.704	C
HR-266/400	336	.0040	186	.153	.113	.600	.640	.680	.704	C
HR-270/400	340	.0040	190	.161	.120	.600	.640	.680	.704	C

HR7 **Hydraulic roller series for IHRA Top Stock with restricted lift.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
HR-260/330	316	.0040	174	.139	.102	.495	.528	.561	.581	B
HR-264/330	320	.0040	178	.147	.109	.495	.528	.561	.581	B
HR-268/330	324	.0040	182	.155	.117	.495	.528	.561	.581	B
HR-272/330	328	.0040	186	.162	.124	.495	.528	.561	.581	B
HR-276/330	332	.0040	191	.169	.132	.495	.528	.561	.581	B

HIR **HIR Hydraulic roller series created for aggressive high lift applications. Designed for small block size lobes with an inverted flank area.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
HIR-182/2734	238	.0040	98	.020	.009	.410	.437	.465	.481	B
HIR-190/2867	246	.0040	108	.028	.013	.430	.459	.487	.505	B
HIR-194/2934	250	.0040	112	.032	.016	.440	.475	.504	.522	B
HIR-198/3000	254	.0040	117	.037	.018	.450	.480	.510	.528	B
HIR-202/3067	258	.0040	122	.042	.022	.460	.491	.521	.540	B
HIR-206/3134	262	.0040	126	.047	.025	.470	.501	.533	.552	B
HIR-210/3200	266	.0040	131	.053	.029	.480	.512	.544	.563	B
HIR-214/3267	270	.0040	135	.059	.033	.490	.523	.555	.575	B
HIR-218/3334	274	.0040	140	.066	.037	.500	.533	.567	.587	B
HIR-222/3400	278	.0040	144	.073	.042	.510	.544	.578	.598	B
HIR-226/3467	282	.0040	149	.080	.047	.520	.555	.589	.610	B
HIR-230/3534	286	.0040	153	.088	.053	.530	.565	.601	.622	B
HIR-234/3600	290	.0040	157	.095	.059	.540	.576	.612	.634	B
HIR-238/3667	294	.0040	161	.104	.065	.550	.587	.623	.645	B
HIR-242/3735	298	.0040	166	.112	.071	.560	.598	.635	.657	B
HIR-250/3867	306	.0040	174	.129	.085	.580	.619	.657	.681	B
HIR-254/3867	310	.0040	177	.136	.093	.580	.619	.657	.681	B
HIR-260/3867	316	.0040	182	.148	.104	.580	.619	.657	.681	B

HIR-270/3867	326	.0040	190	.165	.123	.580	.619	.657	.681	B

SR **SR Street Roller series created for late model engines running mechanical rollers requiring quiet valve train operation due to monitoring by knock sensors.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
SR-212/314	262	.0150	123	.055	.034	.471	.502	.534	.553	B
SR-220/326	270	.0150	132	.066	.041	.489	.522	.554	.574	B
SR-228/338	278	.0150	140	.077	.050	.507	.541	.575	.595	B
SR-236/350	286	.0150	149	.090	.060	.525	.560	.595	.616	B
SR-240/356	290	.0150	153	.097	.065	.534	.570	.605	.627	B
SR-244/362	294	.0150	157	.104	.071	.543	.579	.615	.637	B
SR-248/368	298	.0150	162	.111	.078	.552	.589	.626	.648	B
SR-252/374	302	.0150	166	.118	.084	.561	.598	.636	.658	B
SR-256/374	306	.0150	169	.126	.090	.561	.598	.636	.658	B
SR-260/374	310	.0150	172	.133	.097	.561	.598	.636	.658	B
SR-264/374	314	.0150	176	.140	.104	.561	.598	.636	.658	B
SR-268/374	318	.0150	179	.147	.111	.561	.598	.636	.658	B
SR-270/374	320	.0150	182	.150	.114	.561	.598	.636	.658	B
SR-274/374	324	.0150	185	.157	.121	.561	.598	.636	.658	B

SR400 **SR Street Roller series created for late model large cubic inch engines running mechanical rollers requiring quiet valve train operation due to monitoring by knock sensors.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
SR-244/400	282	.0200	163	.103	.070	.600	.640	.680	.704	B
SR-248/400	286	.0200	167	.111	.076	.600	.640	.680	.704	B
SR-252/400	290	.0200	170	.119	.082	.600	.640	.680	.704	B
SR-256/400	294	.0200	174	.127	.089	.600	.640	.680	.704	B

TR **TR Series created for oval track racing with a proven, excellent history over the years. A benchmark from which other cams are measured.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
TR-242/3867	282	.0195	157	.094	.071	.580	.619	.657	.681	B
TR-250/400	290	.0195	165	.110	.082	.600	.640	.680	.704	B
TR-256/4167	296	.0195	173	.123	.093	.625	.667	.708	.733	B
TR-260/4167	300	.0195	175	.129	.099	.625	.667	.708	.733	B
TR-266/4167	306	.0195	180	.141	.108	.625	.667	.708	.733	B
TR-270/4167	310	.0195	186	.152	.116	.625	.667	.708	.733	B
TR-274/410	314	.0195	186	.156	.117	.615	.656	.697	.722	C
TR-276/4167	316	.0195	190	.162	.126	.625	.667	.708	.733	B
TR-280/4167	320	.0195	193	.166	.134	.625	.667	.708	.733	B
TR-286/4167	326	.0195	198	.179	.142	.625	.667	.708	.733	B

420 **Series created for oval track racing applications including sprint cars. A .020" recommended lash allows for a tight cold setting on aluminum engines.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-244/420	276	.0200	166	.105	.070	.630	.672	.714	.739	B
R-246/420	278	.0200	169	.109	.073	.630	.672	.714	.739	B
R-248/420	280	.0200	169	.113	.081	.630	.672	.714	.739	A B
R-252/420	284	.0200	173	.121	.087	.630	.672	.714	.739	A B
R-256/420	288	.0200	176	.129	.094	.630	.672	.714	.739	A B
R-258/420	290	.0200	178	.133	.098	.630	.672	.714	.739	B
R-260/420	292	.0200	180	.137	.101	.630	.672	.714	.739	A B
R-262/420	294	.0200	182	.141	.105	.630	.672	.714	.739	B G
R-264/420	296	.0200	183	.145	.109	.630	.672	.714	.739	A B G
R-266/420	298	.0200	185	.150	.113	.630	.672	.714	.739	B
R-268/420	300	.0200	187	.154	.116	.630	.672	.714	.739	A B F
R-270/420	302	.0200	189	.158	.120	.630	.672	.714	.739	B
R-272/420	304	.0200	191	.162	.124	.630	.672	.714	.739	A B
R-274/420	306	.0200	193	.166	.128	.630	.672	.714	.739	B
R-276/420	308	.0200	195	.170	.132	.630	.672	.714	.739	A B
R-278/420	310	.0200	196	.174	.136	.630	.672	.714	.739	B
R-280/420	312	.0200	198	.178	.140	.630	.672	.714	.739	B
R-282/420	314	.0200	200	.182	.145	.630	.672	.714	.739	B
R-284/420	316	.0200	202	.186	.147	.630	.672	.714	.739	B
R-286/420	318	.0200	202	.190	.149	.630	.672	.714	.739	B
R-290/420	322	.0200	203	.198	.154	.630	.672	.714	.739	B

LH **LH Low Harmonic mechanical roller series minimizes valve spring excitation in the RPM range of maximum engine output. Results of testing have shown an increase of valve spring life in circle track, marine, and bracket racing applications. Recommended lash is .020" intake and .022" exhaust.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-250/406	282	.0200	166	.111	.081	.609	.650	.690	.715	D
R-252/410	284	.0200	168	.115	.084	.615	.656	.697	.722	B
R-256/418	288	.0200	173	.123	.091	.627	.669	.711	.736	D
R-258/422	290	.0200	175	.127	.094	.633	.675	.717	.743	C D
R-260/426	292	.0200	177	.131	.097	.639	.682	.724	.750	C D
R-262/430	294	.0200	179	.135	.100	.645	.688	.731	.756	C D
R-264/434	296	.0200	181	.139	.103	.651	.694	.738	.764	B C D
R-266/438	298	.0200	183	.143	.107	.657	.701	.745	.771	B C D
R-268/442	300	.0200	185	.147	.111	.663	.707	.751	.778	B C D
R-270/446	302	.0200	187	.151	.114	.669	.714	.758	.785	B C D
R-272/450	304	.0200	189	.156	.118	.675	.720	.765	.792	C D
R-274/454	306	.0200	191	.160	.122	.681	.726	.772	.799	C D
R-276/458	308	.0200	193	.164	.125	.687	.733	.779	.806	B C D
R-278/462	310	.0200	195	.169	.129	.693	.739	.785	.813	B C D
R-280/466	312	.0200	197	.173	.133	.699	.746	.792	.820	B
R-284/474	316	.0200	201	.183	.141	.711	.758	.806	.834	B

R-286/478	318	.0200	203	.188	.145	.717	.765	.813	.841	C D
R-288/472	320	.0200	205	.192	.149	.723	.771	.819	.831	C
R-290/486	322	.0200	207	.197	.153	.729	.778	.826	.855	C D

LH2 **Low Harmonic mechanical roller series minimizes valve spring excitation in the RPM range of maximum engine output. Higher RPM potential than the original LH.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-268/432	298	.0200	181	.149	.111	.648	.691	.734	.760	C
R-270/436	300	.0200	184	.153	.115	.654	.698	.741	.767	C
R-272/440	302	.0200	186	.157	.119	.660	.704	.748	.774	C
R-276/448	306	.0200	191	.166	.126	.672	.717	.762	.788	C D F
R-278/452	308	.0200	194	.171	.130	.678	.723	.768	.796	C
R-280/456	310	.0200	196	.176	.134	.684	.730	.775	.802	C D
R-282/4601	312	.0200	199	.180	.138	.690	.736	.782	.810	C F

422 **Series is used primarily as an intake lobe with high rocker arm ratios. The lobes are sized on a .950 base circle diameter. Recommended lash is .012".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-256/422	284	.0220	177	.131	.096	.633	.675	.717	.743	A
R-260/422	288	.0220	181	.139	.103	.633	.675	.717	.743	A
R-264/422	292	.0220	184	.147	.110	.633	.675	.717	.743	A
R-268/422	296	.0220	188	.155	.118	.633	.675	.717	.743	A
R-272/422	300	.0220	192	.164	.126	.633	.675	.717	.743	A

428 **Mechanical roller series for up to 1.8:1 rocker ratio. Recommended lash is .020".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-256/428	286	.0200	175	.127	.090	.642	.685	.723	.753	B F
R-258/428	288	.0200	176	.131	.094	.642	.685	.723	.753	F
R-260/428	290	.0200	178	.135	.097	.642	.685	.723	.753	A C F G
R-262/428	292	.0200	180	.138	.101	.642	.685	.723	.753	A C F
R-264/428	294	.0200	182	.143	.104	.642	.685	.723	.753	A C F G
R-266/428	296	.0200	184	.147	.108	.642	.685	.723	.753	A C F
R-268/428	298	.0200	186	.151	.111	.642	.685	.723	.753	A C G
R-270/428	300	.0200	188	.155	.115	.642	.685	.723	.753	A
R-272/428	302	.0200	190	.160	.119	.642	.685	.723	.753	A F
R-274/428	304	.0200	190	.161	.124	.642	.685	.723	.753	F
R-276/428	306	.0200	191	.162	.129	.642	.685	.723	.753	C
R-278/428	308	.0200	191	.163	.132	.642	.685	.723	.753	C
R-282/428	312	.0200	194	.172	.133	.642	.685	.723	.753	C
R-300/428	330	.0200	210	.206	.167	.642	.685	.723	.753	C

452 **Mechanical roller series for up to 1.8:1 rocker ratio. Recommended lash is .020".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-252/452	281	.0200	173	.122	.085	.678	.723	.768	.796	D
R-254/452	283	.0200	175	.126	.089	.678	.723	.768	.796	C
R-256/452	285	.0200	177	.130	.092	.678	.723	.768	.796	C D
R-258/452	287	.0200	179	.134	.095	.678	.723	.768	.796	C F G
R-260/452	289	.0200	181	.138	.099	.678	.723	.768	.796	B C
R-262/452	291	.0200	183	.142	.103	.678	.723	.768	.796	B F
R-264/452	293	.0200	185	.147	.106	.678	.723	.768	.796	B C G
R-266/452	295	.0200	187	.151	.110	.678	.723	.768	.796	B C F G
R-268/452	297	.0200	189	.156	.114	.678	.723	.768	.796	B C F G
R-270/452	299	.0200	191	.160	.118	.678	.723	.768	.796	B C G
R-272/452	301	.0200	193	.165	.122	.678	.723	.768	.796	B C F G
R-274/452	303	.0200	195	.169	.126	.678	.723	.768	.796	B C F G
R-276/452	305	.0200	196	.174	.131	.678	.723	.768	.796	B C
R-280/452	309	.0200	200	.183	.139	.678	.723	.768	.796	C G
R-282/452	311	.0200	202	.187	.143	.678	.723	.768	.796	A C F G
R-284/452	313	.0200	204	.192	.147	.678	.723	.768	.796	B
R-286/452	315	.0200	206	.196	.152	.678	.723	.768	.796	A

4467 **Series created for oval track and drag racing that gives a .700"+ net valve lift when used with a 1.6:1 or greater rocker ratio. Recommended lash is .012".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-252/4467	284	.0202	177	.126	.089	.670	.715	.759	.786	B
R-256/4467	288	.0202	180	.139	.096	.670	.715	.759	.786	B
R-258/4467	290	.0202	182	.142	.100	.670	.715	.759	.786	B
R-260/4467	292	.0202	184	.144	.104	.670	.715	.759	.786	B
R-262/4467	294	.0202	186	.148	.108	.670	.715	.759	.786	B C
R-264/4467	296	.0202	187	.152	.112	.670	.715	.759	.786	B C G
R-266/4467	298	.0202	189	.156	.115	.670	.715	.759	.786	B C F G
R-268/4467	300	.0202	191	.161	.120	.670	.715	.759	.786	B C F
R-270/4467	302	.0202	193	.165	.124	.670	.715	.759	.786	B C G
R-272/4467	304	.0202	195	.170	.128	.670	.715	.759	.786	B F
R-274/4467	306	.0202	197	.174	.132	.670	.715	.759	.786	F
R-276/4467	308	.0202	198	.178	.136	.670	.715	.759	.786	B C
R-278/4467	310	.0202	200	.183	.140	.670	.715	.759	.786	B
R-280/4467	312	.0202	202	.187	.144	.670	.715	.759	.786	B C
R-282/4467	314	.0202	204	.191	.149	.670	.715	.759	.786	B
R-284/4467	316	.0202	206	.195	.153	.670	.715	.759	.786	B
R-288/4467	320	.0202	210	.203	.161	.670	.715	.759	.786	B
R-292/4467	324	.0202	214	.212	.170	.670	.715	.759	.786	B

4440 **Series created for oval track and drag racing that gives a .700"+ net valve lift when used with a 1.6:1 or higher rocker ratio. Sized on a .900" diameter base circle for Buick and long stroke (small base circle) Chevrolet with a .012" recommended lash.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-258/4440	286	.0220	181	.138	.099	.660	.710	.755	.781	A
R-262/4440	290	.0220	185	.146	.107	.660	.710	.755	.781	A
R-266/4440	294	.0220	189	.155	.115	.660	.710	.755	.781	A
R-270/4440	298	.0220	192	.164	.123	.660	.710	.755	.781	A
R-274/4440	302	.0220	196	.173	.131	.660	.710	.755	.781	A
R-278/4440	306	.0220	200	.181	.139	.660	.710	.755	.781	A
R-282/4440	310	.0220	204	.190	.148	.660	.710	.755	.781	A

4168 IR Series created for oval track applications with aggressive inverted flank areas for small block Chevrolet size lobes. Recommended lash is .012".

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
IR-248/410	284	.0160	169	.114	.082	.615	.656	.697	.722	B
IR-252/4134	288	.0160	173	.122	.088	.620	.661	.703	.728	B
IR-256/4168	292	.0160	176	.131	.094	.625	.667	.709	.734	B
IR-260/4168	296	.0160	180	.139	.101	.625	.667	.709	.734	B
IR-264/4168	300	.0160	184	.148	.108	.625	.667	.709	.734	B
IR-268/4168	304	.0160	188	.157	.116	.625	.667	.709	.734	B
IR-272/4168	308	.0160	191	.165	.123	.625	.667	.709	.734	B
IR-276/4168	312	.0160	195	.173	.131	.625	.667	.709	.734	B
IR-280/4168	316	.0160	199	.181	.139	.625	.667	.709	.734	B

4334 IR Series created from the Cam Dynamics series of masters for oval track applications with aggressive inverted flank areas. Recommended lash is .012".

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
IR-254/4334	278	.0245	179	.133	.093	.650	.693	.737	.763	B
IR-258/4334	282	.0245	182	.142	.100	.650	.693	.737	.763	B
IR-262/4334	286	.0245	186	.150	.107	.650	.693	.737	.763	B
IR-266/4334	290	.0245	190	.160	.115	.650	.693	.737	.763	B
IR-270/4334	294	.0245	193	.168	.122	.650	.693	.737	.763	B
IR-274/4334	298	.0245	197	.176	.130	.650	.693	.737	.763	B
IR-278/4334	292	.0245	201	.185	.139	.650	.693	.737	.763	B

4188 IR Series created for oval track, marine, and drag racing applications with aggressive inverted flank areas for the big block Chevrolet and similar engines. Recommended lash is .012".

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
IR-252/4188	290	.0140	174	.125	.088	.628	.670	.712	.737	C
IR-262/4188	300	.0140	183	.147	.105	.628	.670	.712	.737	C
IR-268/4188	306	.0140	189	.160	.116	.628	.670	.712	.737	C

IR-272/4188	310	.0140	193	.169	.124	.628	.670	.712	.737	C
IR-278/4188	316	.0140	198	.181	.135	.628	.670	.712	.737	C
IR-286/4188	324	.0140	205	.196	.152	.628	.670	.712	.737	C

IR **IR Series created for Super Stock drag racing where aggressive lobes are used with limited RPM. Recommended lash is .012".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
IR-272/4714	310	.0140	195	.168	.128	.707	.754	.801	.830	C
IR-276/4714	314	.0140	199	.177	.136	.707	.754	.801	.830	C
IR-280/4778	318	.0140	203	.186	.145	.717	.764	.812	.841	C
IR-284/500	322	.0140	208	.197	.154	.750	.800	.850	.880	C
IR-288/500	326	.0140	211	.205	.163	.750	.800	.850	.880	C
IR-292/500	330	.0140	215	.213	.172	.750	.800	.850	.880	C

R1 **Series created for oval track and marine for the big block Chevrolet and other long rocker ratio engines where stable high RPM valve motion is required. Recommended lash is .026".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-236/3177	272	.0200	139	.082	.064	.477	.508	.540	.559	C
R-246/3294	282	.0200	150	.098	.077	.494	.527	.560	.580	C
R-256/3412	292	.0200	159	.114	.092	.512	.546	.580	.601	C
R-266/3528	302	.0200	166	.126	.107	.529	.564	.600	.621	C
R-276/3648	312	.0200	179	.147	.123	.547	.584	.620	.642	C
R-286/3765	322	.0200	189	.165	.130	.565	.602	.640	.663	C
R-296/394	332	.0200	201	.185	.156	.591	.630	.670	.693	C

R2 **Series created for drag racing applications for engines like the big block Chevrolet and Chrysler engines where stable high RPM valve motion is required. Recommended lash is .028".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-280/4468	312	.0225	192	.168	.129	.670	.715	.760	.786	C
R-290/446B	322	.0225	202	.188	.148	.669	.714	.758	.785	C
R-290/4618	322	.0225	202	.188	.148	.693	.739	.785	.813	B C
R-296/4778	328	.0225	209	.200	.161	.717	.764	.812	.841	B C
R-300/4778	332	.0225	213	.207	.167	.717	.764	.812	.841	G
R-300/5098	332	.0225	215	.213	.173	.765	.816	.867	.897	C

NOPOP2 **NOPOP Series created for various drag race applications where stable high RPM valve motion is required. Recommended lash is .026".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-264/4334	304	.0162	176	.132	.103	.650	.693	.737	.763	C

R-268/4834	308	.0162	180	.139	.109	.725	.773	.822	.851		C
R-274/4334	314	.0162	197	.176	.130	.650	.693	.737	.763		C
R-278/413	318	.0162	187	.157	.125	.620	.661	.702	.727	B	C
R-280/450	320	.0162	191	.165	.125	.675	.720	.765	.792	B	C
R-280/500	320	.0162	192	.165	.129	.750	.800	.850	.880		C
R-282/4701	322	.0162	194	.167	.135	.705	.752	.799	.827		C
R-284/427	324	.0162	194	.170	.136	.641	.683	.726	.752		C
R-284/456	324	.0162	195	.171	.136	.684	.730	.775	.803	B	C
R-284/5003	322	.0162	200	.172	.140	.750	.800	.850	.880		E
R-286/4588	326	.0162	198	.177	.140	.688	.734	.780	.807		C
R-286/4668	326	.0162	197	.176	.139	.700	.747	.794	.822	B	C
R-286/4701	326	.0162	198	.175	.142	.705	.752	.799	.827		C
R-286/500	326	.0162	200	.182	.142	.750	.800	.850	.880		C E
R-286/5203	324	.0162	203	.186	.147	.780	.832	.884	.915		C
R-288/4254	328	.0162	198	.179	.144	.638	.681	.723	.749	B	C
R-288/4588	328	.0162	200	.182	.144	.688	.734	.780	.807	B	C
R-288/4714	328	.0162	199	.180	.144	.707	.754	.801	.830	B	C E
R-288/5251	328	.0162	200	.181	.148	.787	.840	.892	.908		E
R-290/415	330	.0162	199	.182	.147	.623	.664	.706	.730	B	C
R-290/4778	330	.0162	201	.184	.147	.717	.764	.812	.841		C
R-290/480	330	.0162	201	.185	.147	.720	.768	.816	.845		C
R-292/4254	332	.0162	202	.187	.151	.638	.681	.723	.749	B	C
R-292/480	332	.0162	202	.187	.150	.720	.768	.816	.845	B	C
R-292/500	332	.0162	203	.190	.150	.750	.800	.850	.880		C E
R-294/440	334	.0162	204	.190	.154	.660	.704	.748	.774		C
R-294/4778	334	.0162	205	.193	.154	.717	.764	.812	.841		C
R-296/435	336	.0162	206	.195	.159	.653	.696	.740	.766	B	C
R-296/500	336	.0162	207	.198	.159	.750	.800	.850	.880	B	C E
R-296/515	336	.0162	209	.198	.163	.773	.824	.876	.906		C
R-296/525	336	.0162	209	.198	.163	.788	.840	.893	.924		C
R-298/515	338	.0162	211	.202	.167	.773	.824	.876	.906		E
R-300/525	340	.0162	213	.207	.171	.788	.840	.893	.924		C
R-302/467	342	.0162	212	.206	.169	.701	.747	.794	.822		C
R-302/5066	342	.0162	213	.210	.170	.760	.811	.861	.892		C
R-304/500	344	.0162	216	.216	.172	.750	.800	.850	.880		E
R-308/525	346	.0162	224	.237	.193	.788	.840	.892	.924		C
R-310/467	350	.0162	220	.223	.185	.701	.747	.794	.822		C
R-312/525	350	.0162	228	.246	.201	.750	.800	.850	.880		C

4765 Symmetrical design series created for high RPM drag race applications from the Cam Dynamics series of masters. Primarily used as an intake lobe with a recommended lash is .030" to .035".

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code	
R-278/4765	312	.0240	190	.161	.121	.715	.762	.810	.839	B	
R-280/4765	314	.0240	192	.164	.125	.715	.762	.810	.839	B	
R-282/4765	316	.0240	194	.169	.129	.715	.762	.810	.839	B	G
R-284/4765	318	.0240	196	.173	.132	.715	.762	.810	.839		G
R-286/4765	320	.0240	197	.177	.136	.715	.762	.810	.839	B	C
R-290/4765	324	.0240	201	.185	.144	.715	.762	.810	.839	B	
R-294/4765	328	.0240	205	.194	.152	.715	.762	.810	.839	B	
R-298/4765	332	.0240	209	.202	.160	.715	.762	.810	.839	B	
R-304/4765	338	.0240	215	.214	.172	.715	.762	.810	.839	B	

481 **Mechanical roller series created for high RPM large cubic inch drag race engines. Recommended lash is .016".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-268/481	312	.0120	184	.147	.109	.722	.770	.818	.847	C
R-272/481	316	.0120	188	.156	.116	.722	.770	.818	.847	C
R-274/481	318	.0120	190	.160	.120	.722	.770	.818	.847	C
R-276/481	320	.0120	192	.164	.124	.722	.770	.818	.847	C
R-280/481	324	.0120	196	.173	.131	.722	.770	.818	.847	C
R-282/481	326	.0120	198	.177	.135	.722	.770	.818	.847	C
R-284/481	328	.0120	200	.181	.139	.722	.770	.818	.847	C
R-286/481	330	.0120	201	.185	.143	.722	.770	.818	.847	C
R-288/481	332	.0120	203	.189	.147	.722	.770	.818	.847	C
R-290/481	334	.0120	205	.194	.151	.722	.770	.818	.847	C
R-292/481	336	.0120	207	.198	.155	.722	.770	.818	.847	C
R-294/481	338	.0120	209	.202	.159	.722	.770	.818	.847	C
R-296/481	340	.0120	211	.207	.164	.722	.770	.818	.847	C
R-296/502	340	.0120	212	.209	.164	.688	.734	.780	.808	F
R-298/481	342	.0120	213	.211	.168	.722	.770	.818	.847	C
R-300/481	344	.0120	215	.215	.172	.722	.770	.818	.847	C
R-302/530	346	.0120	218	.224	.177	.795	.848	.901	.933	G
R-304/502	348	.0120	220	.227	.181	.753	.803	.853	.884	F G
R-304/530	348	.0120	220	.227	.181	.795	.848	.901	.933	G
R-306/502	350	.0120	222	.231	.186	.753	.803	.853	.884	F G
R-308/502	352	.0120	224	.235	.190	.753	.803	.853	.884	F
R-308/530	352	.0120	224	.238	.191	.795	.848	.901	.933	G
R-310/5301	354	.0120	226	.243	.196	.795	.848	.901	.933	G

4589 **Symmetrical design series created for high RPM drag race applications from the Cam Dynamics series of masters. Primarily used as an exhaust lobe with a recommended lash of .030" to .035".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-278/4589	312	.0240	183	.149	.115	.688	.734	.780	.808	B
R-282/4589	316	.0240	187	.157	.121	.688	.734	.780	.808	B
R-286/4589	320	.0240	191	.164	.128	.688	.734	.780	.808	B
R-290/4589	324	.0240	195	.172	.135	.688	.734	.780	.808	B
R-294/4589	328	.0240	198	.180	.142	.688	.734	.780	.808	B
R-298/4589	332	.0240	202	.188	.147	.688	.734	.780	.808	B
R-302/4589	336	.0240	206	.196	.157	.688	.734	.780	.808	B
R-306/4589	340	.0240	210	.204	.164	.688	.734	.780	.808	B
R-308/4589	342	.0240	212	.208	.168	.688	.734	.780	.808	B
R-312/4589	346	.0240	216	.216	.176	.688	.734	.780	.808	B
R-314/4589	348	.0240	218	.220	.180	.688	.734	.780	.808	B
R-318/4589	352	.0240	222	.227	.187	.688	.734	.780	.808	B

515 **Series is used primarily as an intake lobe on large cubic inch drag race engines. Recommended lash is .024".**

Profile Type	Advertised Duration	Dur. At .200"	Tappet Lift At TDC	Gross Valve Lift With Zero Lash	Min. Tappet Dia./Design

Duration At .050" Lift	At Tappet Deg.	In.	Tappet Lift	104° Int.	114° Exh.	With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Lobe Size Code
R-274/515	308	.0200	196	.171	.125	.773	.824	.876	.906	C
R-280/515	314	.0200	200	.183	.137	.773	.824	.876	.906	C
R-284/515	318	.0200	204	.192	.145	.773	.824	.876	.906	C
R-288/515	322	.0200	208	.199	.153	.773	.824	.876	.906	C
R-292/515	326	.0200	211	.208	.161	.773	.824	.876	.906	C

LH3 **A collection of low harmonic lobes used in large cubic inch drag race engines. Recommended lash is .020"**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-268/470	299	.0200	188	.151	.113	.705	.752	.799	.872	C
R-272/480	303	.0200	192	.160	.121	.720	.768	.816	.845	C
R-278/5151	312	.0200	194	.169	.127	.773	.824	.876	.906	E
R-280/5001	311	.0200	199	.179	.137	.750	.800	.850	.880	C
R-282/515	316	.0200	198	.178	.135	.773	.824	.876	.906	F
R-284/510	318	.0200	202	.184	.141	.765	.816	.867	.898	E
R-284/5152	318	.0200	201	.183	.139	.773	.824	.876	.906	F
R-286/515	320	.0200	202	.188	.143	.773	.824	.876	.906	F
R-288/510	322	.0200	206	.193	.157	.765	.816	.867	.898	E F
R-298/520	332	.0200	214	.216	.168	.780	.832	.884	.915	F
R-300/520	334	.0200	216	.221	.173	.780	.832	.884	.915	F
R-300/5001	334	.0200	209	.202	.161	.750	.800	.850	.880	F
R-302/5201	336	.0200	218	.226	.178	.780	.832	.884	.915	F
R-304/520	304	.0200	220	.231	.183	.780	.832	.884	.915	F
R-308/520	342	.0200	224	.240	.192	.780	.832	.884	.915	F
R-312/500	347	.0200	222	.232	.187	.750	.800	.850	.880	E F
R-312/520	346	.0200	230	.250	.202	.780	.832	.884	.915	F
R-318/5001	352	.0200	227	.241	.197	.750	.800	.850	.880	E F

LH4 **A collection of low harmonic lobes used in large cubic inch engines that are slightly more aggressive than the LH3.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-272/4171	304	.0200	185	.151	.113	.626	.667	.709	.734	C
R-276/5002	306	.0200	195	.169	.126	.750	.800	.850	.880	F
R-276/5201	306	.0200	195	.169	.126	.780	.832	.884	.915	G
R-278/4201	310	.0200	191	.163	.124	.630	.672	.714	.736	C
R-278/5002	308	.0200	197	.173	.130	.750	.800	.850	.880	F
R-280/4401	312	.0200	193	.167	.128	.660	.704	.748	.774	C F
R-280/5002	310	.0200	198	.178	.134	.750	.800	.850	.880	F
R-282/4201	314	.0200	194	.172	.132	.630	.672	.714	.736	C
R-282/5002	312	.0200	201	.182	.138	.750	.800	.850	.880	F
R-282/530	312	.0200	201	.182	.138	.795	.848	.901	.933	E
R-284/5002	314	.0200	202	.187	.143	.750	.800	.850	.880	F
R-284/5153	314	.0200	203	.187	.143	.773	.824	.876	.906	F
R-286/5002	316	.0200	205	.192	.147	.750	.800	.850	.880	F
R-286/5152	316	.0200	205	.192	.147	.773	.824	.876	.906	F
R-288/5002	318	.0200	206	.197	.151	.750	.800	.850	.880	F

R-288/5152	318	.0200	206	.197	.151	.773	.824	.876	.906	E F
R-290/5002	320	.0200	208	.202	.155	.750	.800	.850	.880	F
R-290/5152	320	.0200	208	.202	.155	.773	.824	.876	.906	F
R-292/5002	322	.0200	210	.207	.160	.750	.800	.850	.880	F
R-292/5152	322	.0200	210	.207	.160	.773	.824	.876	.906	F
R-294/5002	326	.0200	207	.198	.155	.750	.800	.850	.880	F
R-294/5152	324	.0200	212	.211	.164	.773	.824	.876	.906	E
R-294/525	324	.0200	212	.212	.164	.788	.840	.893	.924	E
R-296/5151	327	.0200	212	.209	.164	.773	.824	.876	.906	E
R-298/5002	330	.0200	211	.207	.163	.750	.800	.850	.880	F
R-300/5002	332	.0200	213	.212	.167	.750	.800	.850	.880	F
R-300/530	330	.0200	218	.227	.178	.795	.848	.901	.933	E
R-302/5002	334	.0200	215	.217	.172	.750	.800	.850	.880	F
R-304/5002	336	.0200	217	.221	.176	.750	.800	.850	.880	F
R-306/5002	338	.0200	219	.226	.180	.750	.800	.850	.880	F
R-308/5002	340	.0200	221	.231	.185	.750	.800	.850	.880	F
R-310/5002	342	.0200	223	.235	.189	.750	.800	.850	.880	F
R-310/530	340	.0200	229	.251	.202	.795	.848	.901	.933	F
R-312/5002	344	.0200	225	.239	.193	.750	.800	.850	.880	F
R-312/530	342	.0200	230	.256	.207	.795	.848	.901	.933	F
R-314/5002	346	.0200	227	.244	.198	.750	.800	.850	.880	F
R-316/500	348	.0200	229	.248	.203	.750	.800	.850	.880	E
R-316/5002	348	.0200	229	.248	.203	.750	.800	.850	.880	F
R-318/5002	350	.0200	231	.252	.207	.750	.800	.850	.880	F
R-318/515	351	.0200	229	.247	.201	.773	.824	.876	.906	E
R-320/5001	354	.0200	228	.245	.201	.750	.800	.850	.880	F
R-320/515	352	.0200	232	.258	.212	.773	.824	.876	.906	E
R-322/515	355	.0200	232	.257	.210	.773	.824	.876	.906	E F

5401 Mechanical roller series for large displacement engines with large journal diameters.

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-276/5401	305	.0200	201	.183	.136	.810	.864	.918	.950	G
R-276/600	305	.0200	202	.185	.136	.900	.960	1.02	1.056	G
R-278/5401	307	.0200	203	.188	.140	.810	.864	.918	.950	G
R-280/5301	309	.0200	205	.192	.144	.795	.848	.901	.933	G
R-280/5401	309	.0200	205	.192	.144	.810	.864	.918	.950	F G
R-280/550	309	.0200	205	.194	.145	.825	.880	.935	.968	G
R-280/615	309	.0200	207	.197	.146	.923	.984	1.046	1.082	G
R-280/640	310	.0200	208	.200	.147	.960	1.024	1.088	1.126	G
R-282/5401	311	.0200	207	.198	.149	.810	.864	.918	.950	G
R-282/610	311	.0200	210	.205	.153	.915	.976	1.037	1.074	G
R-282/615	311	.0200	209	.203	.151	.923	.984	1.046	1.082	G
R-284/530	313	.0200	209	.202	.154	.795	.848	.901	.933	F
R-284/5401	313	.0200	209	.203	.154	.810	.864	.918	.950	G
R-284/550	313	.0200	209	.203	.154	.825	.880	.935	.968	F
R-284/580	313	.0200	210	.205	.155	.870	.928	.986	1.021	G
R-284/615	313	.0200	212	.211	.158	.923	.984	1.046	1.082	G
R-286/5401	315	.0200	211	.207	.158	.810	.864	.918	.950	E F G
R-286/550	315	.0200	211	.208	.159	.825	.880	.935	.968	E G
R-286/560	315	.0200	211	.209	.159	.840	.896	.952	.986	E
R-286/580	315	.0200	212	.210	.159	.870	.928	.986	1.021	G
R-288/525	317	.0200	212	.211	.163	.788	.840	.893	.924	F

R-288/5401	317	.0200	213	.212	.163	.810	.864	.918	.950	G
R-300/5601	331	.0200	219	.227	.178	.840	.896	.952	.986	G
R-304/600	335	.0200	223	.239	.189	.900	.960	1.02	1.056	G
R-306/5401	337	.0200	225	.242	.194	.810	.864	.918	.950	G
R-310/5401	340	.0200	231	.256	.207	.810	.864	.918	.950	F G
R-310/5601	341	.0200	228	.251	.201	.840	.896	.952	.986	G
R-310/600	340	.0200	233	.266	.213	.900	.960	1.02	1.056	G
R-312/615	342	.0200	236	.274	.220	.923	.984	1.046	1.082	G
R-314/530	344	.0200	235	.262	.216	.795	.848	.901	.933	E
R-314/5401	345	.0200	233	.259	.212	.810	.864	.918	.950	E
R-314/550	344	.0200	235	.266	.218	.825	.880	.935	.968	G
R-314/560	345	.0200	234	.262	.213	.840	.896	.952	.986	E
R-314/580	345	.0200	234	.265	.215	.870	.928	.986	1.021	G
R-314/600	344	.0200	237	.277	.224	.900	.960	1.02	1.056	G
R-316/515	347	.0200	234	.258	.213	.773	.824	.876	.906	F
R-316/550	346	.0200	237	.271	.222	.825	.880	.935	.968	F
R-316/580	347	.0200	237	.271	.222	.870	.928	.986	1.021	G
R-318/580	348	.0200	241	.282	.232	.870	.928	.986	1.021	G
R-324/5401	354	.0200	244	.284	.238	.810	.864	.918	.950	F

HC Hooters Cup mechanical roller series using 1.6 and 1.7 rocker arms for the .625” lift rule.

Profile Type Duration At .050” Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200” Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.6	1.7	Min. Tappet Dia./Design Lobe Size Code
R-252/390	283	.0200	166	.116	.083	.625		C
R-254/365	287	.0200	162	.115	.083		.625	C
R-256/390	287	.0200	170	.124	.089	.625		C
R-258/365	291	.0200	166	.121	.089		.625	C, G
R-258/3651	288	.0200	172	.133	.096		.625	F
R-258/390	289	.0200	172	.127	.092	.625		C
R-260/3901	292	.0200	172	.128	.094	.625		C
R-262/365	295	.0200	170	.129	.095		.625	C
R-262/3901	295	.0200	172	.129	.095	.625		C
R-264/365	297	.0200	172	.133	.099		.625	C
R-264/390	296	.0200	176	.135	.100	.625		C
R-266/365	300	.0200	170	.134	.101		.625	G
R-266/3651	296	.0200	178	.147	.110		.625	F
R-266/390	298	.0200	178	.139	.103	.625		C
R-268/365	302	.0200	173	.136	.103		.625	C, G
R-268/390	300	.0200	179	.143	.107	.625		C
R-270/390	303	.0200	179	.143	.108	.625		C
R-272/390	305	.0200	181	.147	.111	.625		C
R-274/390	307	.0200	182	.151	.115	.625		C
R-278/390	311	.0200	186	.159	.121	.625		C
R-280/3901	313	.0200	188	.162	.125	.625		C
R-286/390	319	.0200	194	.173	.136	.625		C

CD1 Cam Dynamics Stocker Series - Non Dwell

Profile Type Duration At .050” Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200” Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio	Cam Dynamics Master Number

						1.5	1.6	1.7	1.76	
F-254/301	326	.0030	148	.111	.081	.451	.482	.512	.530	625
F-258/301	330	.0030	151	.117	.086	.451	.482	.512	.530	626
F-260/260	314	.0030	154	.129	.098	.390	.416	.442	.458	622
F-260/3060	322	.0030	156	.125	.095	.459	.490	.520	.539	260M
F-261/307	328	.0030	155	.124	.094	.461	.491	.522	.540	832
F-262/3234	324	.0030	162	.130	.098	.485	.517	.550	.569	262M
F-262/329	328	.0030	166	.132	.097	.494	.526	.559	.579	631
F-264/285	318	.0030	163	.136	.104	.428	.456	.485	.502	628
F-268/301	340	.0030	158	.131	.101	.452	.482	.512	.530	627
F-268/3060	330	.0030	164	.137	.107	.459	.490	.520	.539	268M
F-272/3095	337	.0030	166	.141	.111	.465	.496	.527	.546	869
F-270/329	336	.0030	167	.138	.107	.494	.526	.559	.579	868
F-272/3234	334	.0030	172	.145	.113	.485	.517	.550	.569	272M
F-272/345	326	.0030	186	.161	.124	.518	.552	.587	.607	636
F-276/3090	338	.0030	170	.149	.119	.464	.494	.525	.544	276M
F-278/3290	340	.0030	176	.154	.123	.494	.526	.559	.579	278M
F-278/345	332	.0030	192	.171	.135	.518	.552	.587	.607	867
H-206/254	263	.0030	94	.048	.025	.381	.406	.432	.447	731
H-209/239	266	.0030	89	.053	.031	.359	.382	.406	.421	735
H-221/259	254	.0030	103	.069	.043	.389	.414	.440	.456	730
H-224/278	285	.0030	118	.070	.043	.417	.445	.473	.489	726
H-224/258	299	.0030	116	.072	.045	.462	.493	.524	.542	750
H-227/249	284	.0030	108	.077	.052	.374	.398	.423	.438	738
H-227/265	283	.0030	122	.079	.048	.398	.424	.451	.466	751
H-228/2254	284	.0030	104	.078	.050	.338	.361	.383	.397	734
H-228/282	286	.0030	124	.079	.051	.423	.451	.479	.496	727
H-235/269	290	.0030	124	.089	.061	.404	.430	.457	.473	724
H-236/285	290	.0030	136	.092	.061	.428	.456	.484	.502	797
H-236/285	293	.0030	131	.091	.061	.428	.456	.484	.502	725
H-242/247	302	.0030	113	.096	.070	.371	.395	.420	.435	721
H-242/260	296	.0030	134	.099	.069	.390	.416	.442	.458	788
H-242/272	299	.0030	123	.093	.067	.408	.435	.462	.479	711
H-242/2764	298	.0030	136	.099	.069	.415	.442	.470	.486	729
H-242/285	296	.0030	142	.101	.070	.428	.456	.484	.502	793
H-245/264	307	.0030	123	.100	.071	.396	.422	.449	.465	722
H-247/278	305	.0030	137	.104	.075	.420	.445	.473	.489	715
H-248/240	302	.0030	136	.110	.079	.360	.384	.408	.422	609
H-248/296	302	.0030	150	.111	.079	.444	.474	.503	.521	602
H-248/307	302	.0030	152	.111	.079	.461	.491	.522	.540	639
H-249/264	308	.0030	130	.106	.078	.396	.422	.449	.465	712
H-250/238	307	.0030	104	.100	.076	.357	.381	.405	.419	740
H-250/278	304	.0030	148	.114	.082	.417	.445	.473	.489	798
H-250/300	306	.0030	145	.110	.080	.450	.480	.510	.528	619
H-252/2601	306	.0030	150	.118	.086	.390	.416	.442	.458	615
H-252/260	308	.0030	144	.114	.084	.390	.416	.442	.458	790
H-252/296	306	.0030	154	.118	.085	.444	.474	.503	.521	606
H-252/301	306	.0030	154	.118	.083	.452	.482	.512	.530	728
H-252/307	306	.0030	155	.118	.086	.461	.491	.522	.540	611
H-254/2764	314	.0030	137	.111	.083	.416	.443	.471	.488	723
H-254/301	326	.0030	148	.111	.081	.451	.482	.512	.530	625
H-256/260	310	.0030	154	.124	.092	.390	.416	.442	.458	617
H-256/296	310	.0030	158	.124	.092	.444	.474	.503	.521	618
H-256/324	311	.0030	160	.125	.092	.486	.518	.551	.570	736
H-258/240	312	.0030	145	.125	.094	.360	.384	.408	.422	610
H-258/290	312	.0030	158	.127	.095	.435	.464	.493	.510	604
H-258/301	330	.0030	151	.117	.086	.451	.482	.512	.530	626

H-258/307	312	.0030	161	.128	.095	.461	.491	.522	.540	612
H-259/238	319	.0030	110	.109	.086	.357	.381	.405	.419	719
H-260/2601	314	.0030	154	.129	.098	.390	.416	.442	.458	622
H-260/278	319	.0030	142	.120	.092	.417	.445	.473	.489	713
H-260/296	314	.0030	162	.130	.098	.444	.474	.503	.521	620
H-260/315	314	.0030	164	.131	.098	.473	.504	.536	.554	794
H-261/248	323	.0030	124	.114	.089	.372	.397	.422	.436	720
H-262/301	316	.0030	164	.134	.101	.452	.482	.512	.530	791
H-262/3011	334	.0030	152	.122	.092	.452	.482	.512	.530	640
H-262/325	316	.0030	167	.135	.102	.488	.520	.553	.572	607
H-264/260	320	.0030	152	.131	.102	.390	.416	.442	.458	799
H-264/2844	320	.0030	152	.128	.100	.427	.455	.483	.501	716
H-264/285	318	.0030	163	.136	.104	.428	.456	.485	.502	628
H-264/296	318	.0030	165	.137	.105	.444	.474	.503	.521	637
H-265/3034	322	.0030	162	.136	.106	.455	.485	.516	.534	714
H-266/260	320	.0030	161	.138	.107	.390	.416	.442	.458	796
H-266/273	320	.0030	160	.136	.105	.410	.437	.464	.480	789
H-266/294	318	.0030	157	.133	.104	.441	.470	.500	.517	768
H-266/307	320	.0030	168	.140	.108	.461	.491	.522	.540	613
H-268/296	322	.0030	169	.143	.111	.444	.474	.503	.521	603
H-268/301	340	.0030	158	.131	.101	.452	.482	.512	.530	627
H-268/315	322	.0030	172	.144	.111	.473	.504	.536	.554	601
H-270/301	324	.0030	172	.146	.114	.452	.482	.512	.530	792
H-272/273	326	.0030	172	.150	.118	.410	.437	.464	.480	616
H-272/273	328	.0030	162	.143	.114	.410	.437	.464	.480	272A
H-272/290	326	.0030	172	.149	.117	.435	.464	.493	.510	605
H-272/315	326	.0030	175	.151	.118	.473	.504	.536	.554	795
H-272/325	326	.0030	177	.151	.118	.488	.520	.553	.572	608
H-274/296	328	.0030	174	.152	.121	.444	.474	.503	.521	621
H-276/307	330	.0030	180	.147	.138	.461	.491	.522	.540	755
H-278/326	332	.0030	180	.158	.126	.489	.522	.554	.574	757

CD2 Cam Dynamics Stocker Series - Dwell at Max Lift

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Cam Dynamics Master Number
H-235/261	289	.0030	131	.091	.064	.392	.418	.444	.459	742
H-236/265	302	.0030	132	.056	.056	.398	.424	.451	.466	752
H-242/2600	300	.0030	135	.092	.063	.390	.416	.442	.458	754
H-242/265	298	.0030	138	.101	.070	.398	.424	.451	.466	741
H-244/307	297	.0030	150	.085	.096	.461	.491	.522	.540	747
H-250/307	304	.0030	155	.103	.096	.461	.491	.522	.540	748
H-253/260	309	.0030	148	.118	.088	.392	.416	.442	.458	744
H-253/307	307	.0030	159	.108	.101	.461	.491	.522	.540	746
H-254/272	308	.0030	150	.120	.088	.408	.435	.462	.479	753
H-262/309	315	.0030	166	.120	.112	.461	.491	.522	.540	749
H-260/260	316	.0030	148	.125	.096	.390	.416	.442	.458	260A
H-265/273	320	.0030	162	.134	.095	.410	.437	.464	.480	743
H-268/307	322	.0030	172	.134	.125	.461	.491	.522	.540	756
H-276/273	332	.0030	165	.148	.120	.410	.437	.464	.480	600
H-276/3082	328	.0030	184	.161	.127	.462	.493	.524	.542	276M
H-278/326	326	.0030	180	.159	.126	.489	.522	.554	.574	757
H-284/308	338	.0030	191	.162	.152	.462	.493	.524	.542	745

CD3 Hydraulic Roller Cam Dynamics Stocker Series - Non Dwell

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Cam Dynamic Master Number
HR-238/300	298	.0040	150	.097	.065	.450	.480	.510	.528	295R
HR-244/268	300	.0030	136	.104	.073	.402	.429	.456	.472	292R
HR-244/278	300	.0030	152	.105	.073	.417	.445	.473	.489	263R
HR-246/300	306	.0040	156	.111	.077	.450	.480	.510	.528	296R
HR-252/268	308	.0030	142	.116	.085	.402	.429	.456	.472	293R
HR-252/300	312	.0040	162	.122	.087	.450	.480	.510	.528	297R
HR-254/278	310	.0030	150	.120	.089	.417	.445	.473	.489	264R
HR-258/300	318	.0040	156	.125	.093	.450	.480	.510	.528	629R
HR-260/268	316	.0030	150	.128	.097	.402	.429	.456	.472	294R
HR-266/306	326	.0040	164	.138	.106	.459	.490	.520	.538	630R

MF5 **Mechanical series for performance and racing mechanical flat tappet applications on smaller diameter lobes. Designed for .800" diameter or larger tappets.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-202/252	240	.0160	96	.042	.023	.378	.403	.428	.444	.800
F-212/266	250	.0160	110	.055	.032	.399	.426	.452	.468	.800
F-222/280	260	.0160	123	.070	.043	.420	.448	.476	.493	.800
F-232/294	270	.0160	135	.086	.055	.441	.470	.500	.517	.800
F-242/308	280	.0160	146	.102	.070	.462	.493	.524	.542	.800
F-252/322	290	.0160	157	.119	.085	.483	.515	.547	.567	.800
F-262/336	300	.0160	168	.136	.102	.504	.538	.571	.591	.800
F-272/350	310	.0160	179	.153	.119	.525	.560	.595	.616	.800

OHC1 **Mechanical series for OHC engines or air-cooled VW engines using a one-inch tappet diameter. Lash is .012" for OHC, and .002" for VW cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-210/305	264	.0120	129	.053	.026	.458	.488	.519	.537	1.000
F-220/320	274	.0120	140	.071	.039	.480	.512	.544	.563	1.000
F-230/340	284	.0120	150	.089	.053	.510	.544	.578	.598	1.000
F-240/360	294	.0120	162	.109	.070	.540	.576	.612	.634	1.000
F-250/380	304	.0120	174	.129	.089	.570	.608	.646	.669	1.000
F-260/400	314	.0120	184	.149	.108	.600	.640	.680	.704	1.000

MF6 **Mechanical series for flathead engines with a minimum tappet diameter of .996". Minimum design base circle radius is .900" minus lobe lift. Recommended lash settings are .010" intake cold, and .014" exhaust cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code

F-198/290	238	.0080	117	.033	.012					.996
F-208/310	248	.0080	130	.050	.019					.996
F-218/330	258	.0080	141	.069	.033					.996
F-228/350	254	.0140	152	.089	.050					.996
F-238/370	264	.0140	162	.109	.069					.996
F-248/390	274	.0140	172	.129	.089					.996
F-258/410	284	.0140	183	.149	.109					.996

MF7 **Mechanical series for industrial engines used in tractor pulling competition with a minimum tappet diameter of 1.100". Recommended lash is .016" to .018".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-200/302	240	.0100	124	.037	.016	.453	.483	.513	.532	1.100
F-210/322	250	.0100	136	.054	.024	.483	.515	.547	.567	1.100
F-220/342	260	.0100	148	.074	.037	.513	.547	.581	.602	1.100
F-230/362	270	.0100	160	.096	.054	.543	.579	.615	.637	1.100
F-240/382	280	.0100	171	.119	.074	.573	.611	.649	.672	1.100

MR3 **Mechanical roller series for industrial engines used in tractor pulling competition with a minimum journal size of 2.200" diameter. Recommended lash is .016" to .018".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-200/302	252	.0100	117	.040	.021	.453	.483	.513	.532	
R-210/322	262	.0100	129	.053	.029	.483	.515	.547	.567	
R-220/342	272	.0100	141	.068	.038	.513	.547	.581	.602	
R-230/362	282	.0100	152	.085	.053	.543	.579	.615	.637	
R-236/374	288	.0100	159	.096	.061	.561	.598	.636	.658	
R-240/382	292	.0100	163	.104	.068	.573	.611	.649	.672	
R-250/402	302	.0100	173	.125	.085	.603	.643	.683	.708	

MR4 **Mechanical roller series for industrial engines used in tractor pulling competition with a minimum journal size of 2.200" diameter. Recommended lash is .020" to .022".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
R-200/375	236	.0200	126	.041	.024	.563	.600	.638	.660	
R-210/390	246	.0200	136	.054	.033	.585	.624	.663	.686	
R-220/405	256	.0200	146	.066	.041	.608	.648	.689	.713	
R-230/420	266	.0200	156	.082	.052	.630	.672	.714	.739	
R-236/429	272	.0200	162	.092	.060	.644	.686	.729	.755	
R-240/435	276	.0200	166	.099	.066	.653	.696	.740	.766	
R-250/450	286	.0200	175	.120	.081	.675	.720	.765	.792	

HEV **Hydraulic roller series for 1984-Up Harley Davidson Evolution engines.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.60	Min. Tappet Dia./Design Lobe Size Code
HEV-226/3064	270		.014			.490	
HEV-226/344	270		.014			.550	
HEV-236/3064	280		.014			.490	
HEV-236/344	286		.014			.550	
HEV-236/363	286		.014			.581	
HEV-240/363	290		.014			.581	
HEV-242/3064	286		.014			.490	
HEV-246/344	298		.014			.550	
HEV-246/375	296		.014			.600	
HEV-248/363	298		.014			.581	
HEV-252/3064	296		.014			.490	
HEV-252/363	302		.014			.581	
HEV-254/344	306		.014			.550	
HEV-254/375	304		.014			.600	
HEV-254/406	304		.014			.650	
HEV-256/344	311		.014			.550	
HEV-260/375	310		.014			.600	
HEV-262/375	314		.014			.600	
HEV-262/394	308		.014			.630	
HEV-262/425	314		.014			.680	
HEV-265/375	317		.014			.600	
HEV-265/394	311		.014			.630	
HEV-265/425	317		.014			.680	
HEV-266/375	316		.014			.600	
HEV-266/406	316		.014			.650	
HEV-270/394	316		.014			.630	
HEV-276/394	322		.014			.630	
HEV-278/406	330		.014			.650	
HEV-286/406	338		.014			.650	

HTC Hydraulic roller series for 1999-Up Harley Davidson Twin-Cam 88 engines.

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.65	Min. Tappet Dia./Design Lobe Size Code
HTC-220/306	255		.0200			.505	
HTC-226/306	261		.0200			.505	
HTC-236/306	271		.0200			.505	
HTC-240/3456	275		.0200			.570	
HTC-242/306	277		.0200			.505	
HTC-246/375	296		.0140			.619	
HTC-246/4001	281		.0200			.660	
HTC-248/3456	283		.0200			.570	
HTC-252/306	287		.0200			.505	
HTC-252/3456	287		.0200			.570	
HTC-254/326	289		.0200			.538	
HTC-254/3637	290		.0200			.600	
HTC-254/375	304		.0140			.619	
HTC-254/4001	289		.0200			.660	
HTC-258/4001	291		.0200			.660	
HTC-260/3637	296		.0200			.600	

HTC-260/4001	295	.0200						.660		
HTC-262/3456	297	.0200						.570		
HTC-266/3637	302	.0200						.600		
HTC-266/400	301	.0200						.660		
HTC-270/406	305	.0200						.670		
HTC-274/406	309	.0200						.670		

OHC2 **Hydraulic series designed for OHC engines using bucket style lifters with a minimum diameter of 1.308". Minimum design base circle radius is 1.000" minus lobe lift.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-224/384	268	.0040	160	.086	.042					1.308
H-232/402	276	.0040	169	.106	.058					1.308
H-240/420	284	.0040	178	.126	.076					1.308
H-248/438	292	.0040	186	.146	.095					1.308
H-256/456	300	.0040	195	.168	.115					1.308

OHC3 **Hydraulic series designed for OHC engines using bucket style lifters with a minimum diameter of 1.500". Minimum design base circle radius is .700".**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
H-192/325	232	.0040	126	.019	.007					1.500
H-212/395	252	.0040	154	.059	.023					1.500
H-222/430	262	.0040	164	.085	.038					1.500
H-232/430	272	.0040	173	.111	.058					1.500
H-232/460	272	.0040	176	.112	.059					1.500
H-242/480	282	.0040	186	.141	.083					1.500
H-252/480	292	.0040	195	.167	.109					1.500
H-262/480	302	.0040	204	.191	.135					1.500

OHC4 **Mechanical series for OHC engines with a minimum tappet diameter of 1.020" and a minimum design base circle radius of .510". Recommended lash is .006" intake cold, and .010" exhaust cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-236/340	284	.0052	156	.104	.065					1.020
F-242/360	290	.0052	163	.115	.076					1.020
F-246/380	294	.0052	170	.126	.083					1.020
F-252/388	298	.0052	178	.140	.097					1.020
F-256/397	302	.0052	182	.148	.104					1.020
F-262/400	308	.0052	186	.159	.119					1.020
F-272/412	318	.0052	198	.179	.139					1.020

OHC5 **Mechanical series for OHC engines with a minimum tappet diameter of .960" and a base circle radius of .550". Recommended cold lash setting is .008" intake and .010" exhaust.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-230/318	258	.0160	144	.089	.053					.960
F-238/342	266	.0160	156	.106	.068					.960
F-244/360	272	.0160	165	.118	.079					.960

OHC6 **Mechanical series for OHC engines with a minimum tappet diameter of 1.020" and a minimum design base circle radius of .510". Recommended lash is .006" intake cold, and .010" exhaust cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-264/390	306	.0120	184	.154	.115					1.020
F-268/398	310	.0120	188	.162	.123					1.020
F-274/410	316	.0120	194	.174	.134					1.020
F-278/418	320	.0120	198	.181	.142					1.020
F-288/438	330	.0120	208	.199	.163					1.020

OHC7 **Mechanical series for OHC engines with a minimum tappet diameter of 1.100" and a minimum design base circle radius of .500". Recommended lash is .012" intake cold, and .014" exhaust cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-240/380	280	.0140	168	.114	.072					1.100
F-260/420	300	.0140	188	.157	.113					1.100

OHC8 **Mechanical series for OHC engines with a minimum tappet diameter of 1.125" and a minimum design base circle radius of .925" minus lobe lift. Recommended lash is .006" intake cold, and .008" exhaust cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-206/310	250	.0050	128	.047	.019					1.125
F-216/330	260	.0050	140	.065	.031					1.125
F-226/350	270	.0050	152	.085	.046					1.125
F-236/370	280	.0050	164	.107	.065					1.125
F-246/390	290	.0050	176	.130	.086					1.125
F-256/410	300	.0050	186	.153	.108					1.125
F-266/430	310	.0050	196	.177	.131					1.125
F-276/450	320	.0050	208	.200	.154					1.125
F-286/470	330	.0050	218	.224	.178					1.125

OHC9 **Mechanical series for OHC engines with a minimum tappet diameter of 1.180 and a minimum design base circle radius of .970" minus lobe lift. Recommended lash is .006" intake cold and .008" exhaust cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-258/450	300	.0040	194	.168	.119					1.180
F-268/470	310	.0040	204	.190	.142					1.180

OHC10 **Miscellaneous mechanical flat tappet masters created for OHC engines of various tappet diameters and lobe sizes. Contact a Performance Consultant for correct application.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-230/440	292	.0140	168	.095	.053					1.300
F-240/470	302	.0140	180	.121	.072					1.300
F-262/420	300	.0100	197	.176	.129					1.200
F-262/450	300	.0100	200	.181	.131					1.200
F-280/530	322	.0050	220	.233	.178					1.300
F-284/488	324	.0140	219	.227	.177					1.180

OHC11 **Series created for OHC engines with a minimum tappet diameter of 1.200" and a minimum design base circle radius of .970" minus lobe lift. Recommended lash is .008" intake cold, and .010" exhaust cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-260/450	292	.0100	200	.180	.130					1.200
F-270/465	302	.0100	214	.204	.155					1.200
F-280/480	312	.0100	219	.227	.179					1.200

OHC12 **Series created for OHC engines with a minimum tappet diameter of 1.220" and a minimum design base circle radius of 1.150" minus lobe lift. Recommended lash is .018" cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-222/408	270	.0140	157	.072	.045					1.220
F-232/428	280	.0140	167	.095	.061					1.220
F-242/448	290	.0140	176	.117	.078					1.220
F-252/468	300	.0140	186	.143	.099					1.220
F-284/492	332	.0140	220	.231	.182					1.220

OHC13 **Series created for OHC engines with a minimum tappet diameter of 1.375" and a minimum design base circle radius of 1.130" minus lobe lift. Recommended lash is .018" cold.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-260/525	308	.0140	200	.175	.122					1.375

F-270/545	318	.0140	209	.201	.148					1.375
F-276/558	324	.0140	215	.219	.165					1.375
F-282/570	330	.0140	221	.238	.181					1.375

OHC14 Series created for Ford Zetec DOHC 2.0L 4-valve engine. These lobes use a base circle radius of .709". (223)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-206/366	228	.0200	142	.046	.020					1.181
F-210/374	232	.0200	146	.054	.024					1.181
F-214/382	236	.0200	150	.063	.029					1.181
F-218/390	240	.0200	154	.072	.033					1.181
F-226/410	248	.0200	164	.090	.046					1.181
F-236/435	258	.0200	174	.115	.068					1.181
F-246/460	268	.0200	184	.139	.090					1.181

OHC15 Series created for Toyota DOHC 3.0L 4-valve 6-cylinder engine. These lobes use a base circle radius of .709". (705)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-214/362	236	.0200	146	.061	.022					1.093
F-222/378	244	.0200	154	.079	.039					1.093
F-230/394	252	.0200	162	.097	.054					1.093
F-238/410	260	.0200	170	.115	.071					1.093
F-246/426	268	.0200	178	.133	.088					1.093
F-254/442	276	.0200	186	.151	.105					1.093
F-262/458	284	.0200	192	.169	.122					1.093

OHC16 Series created for Ford Duratec DOHC 2.3L 4-valve engine. These lobes use a base circle radius of .650". (224)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio 1.5	1.6	1.7	1.76	Min. Tappet Dia./Design Lobe Size Code
F-204/354	224	.0200	140	.042	.017					1.220
F-212/374	232	.0200	150	.068	.024					1.220
F-216/385	238	.0200	154	.066	.030					1.220
F-226/410	248	.0200	164	.090	.046					1.220
F-236/435	258	.0200	174	.115	.068					1.220
F-246/460	268	.0200	184	.139	.090					1.220
F-256/485	278	.0200	194	.165	.115					1.220

VW1 Series created for air-cooled VW Type 4 engines with .941" tappet diameter. Recommended lash is .006" intake cold and .008" exhaust cold.

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .200" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Gross Valve Lift With Zero Lash With Theoretical Rocker Ratio	Min. Tappet Dia./Design Lobe Size Code

						1.5	1.6	1.7	1.76	
F-230/328	278	.0160	142	.082	.053		.426		.446	.941
F-240/335	288	.0160	150	.098	.066		.436		.456	.941
F-250/3677	296	.0140	166	.121	.084		.478		.500	.941

FOR1 **Mechanical series for the Ford 2.0L SOHC engine using stock base circle size and stock length valve with no lash cap. Recommended lash is .008" intake, and .010" exhaust set between the follower and base circle. (14)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
FOR-222/410	262	.0120	112	.079	.040	.253	0.590
FOR-232/435	272	.0120	128	.103	.058	.267	0.590
FOR-242/460	282	.0120	140	.130	.080	.282	0.590

FOR2 **Mechanical series for the Ford 2.0L SOHC engine using a .050" longer valve than stock or a stock length valve with a .050" thick lash cap. Recommended lash is .010" set between follower and base circle. (14)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
FOR-264/510	300	.0160	160	.179	.128	.314	0.500
FOR-274/535	310	.0160	172	.208	.154	.326	0.500
FOR-284/560	320	.0160	184	.237	.182	.336	0.500

FOR3 **Hydraulic series for the Ford 2.3L SOHC engine using cast followers and stock hydraulic adjusters. Cams are ground on the stock base circle size and use a stock length valve with no lash cap. (19)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
HFOR-226/420	272	.0060	120	.091	.046	.245	0.590
HFOR-234/420	280	.0060	126	.111	.062	.245	0.590
HFOR-254/420	298	.0060	132	.142	.097	.245	0.590

FOR4 **Hydraulic series for the Ford 2.3L SOHC engine using cast followers and stock hydraulic adjusters. Cams are ground on a reduced base circle requiring a .100" longer valve than stock or a stock length valve with a .100" thick lash cap. (19)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
HFOR-234/460 IN	278	.0060	133	.109	.061	.284	0.545
HFOR-242/480 EX	286	.0060	143	.130	.078	.295	0.545

FOR5 **Mechanical series for the Ford 2.3L SOHC engine using cast followers and a .100" longer valve than stock or a stock length valve with a .100" thick lash cap. Recommended lash is .010" set between follower and base circle. (19)**

Profile Type	Advertised Duration	Dur. At .300"	Tappet Lift At TDC	Cam Lift	Base Circle

Duration At .050" Lift	At Tappet Deg.	At Tappet In.	Tappet Lift	104° Int.	114° Exh.		Radius
FOR-254/485	290	.0160	148	.152	.103	.279	0.500
FOR-264/510	300	.0160	160	.179	.128	.293	0.557
FOR-274/460	312	.0160	150	.165	.123	.283	0.525
FOR-274/535	310	.0160	172	.208	.154	.306	0.545
FOR-284/560	320	.0160	184	.237	.182	.319	0.533

FOR6 **Hydraulic roller series for Ford 2.3L OHC engines using stock roller followers and an 8620 steel camshaft. Valve train is based on hydraulic adjusters and a stock-length Ford valve. (19)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	At Tappet In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
RFOR-214/420	252	.0060	112	.061	.028	.227	0.590
RFOR-226/420	274	.0060	119	.087	.047	.228	0.590
RFOR-234/420	282	.0060	124	.106	.060	.228	0.590
RFOR-234/450	282	.0060	131	.106	.060	.243	0.590
RFOR-242/480	290	.0060	142	.127	.076	.259	0.590
RFOR-250/510	298	.0060	152	.148	.094	.274	0.590

FOR7 **Mechanical roller series for Ford 2.3L SOHC engines using stock roller followers and 8620 steel camshafts. Valve train geometry is based on a 4.900" length valve. Recommended lash is .010"(intake) and .012"(exhaust) set between roller and base circle. (19)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	At Tappet In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
RFOR-244/536	276	.0220	145	.118	.074	.298	0.500
RFOR-252/560	284	.0220	154	.140	.092	.311	0.500
RFOR-260/584	292	.0220	163	.162	.110	.323	0.500
RFOR-264/596	296	.0220	170	.176	.120	.330	0.500
RFOR-268/608	300	.0220	171	.185	.130	.336	0.500
RFOR-272/620	304	.0220	178	.202	.141	.342	0.500
RFOR-276/632	308	.0220	180	.210	.151	.349	0.500
RFOR-284/656	316	.0220	188	.235	.174	.361	0.500
RFOR-292/680	324	.0220	196	.261	.198	.374	0.500
RFOR-296/692	328	.0220	200	.275	.210	.380	0.500

ACU **Mechanical series for the Acura DOHC 1.8L 4-valve B18A1 engine. (101)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	At Tappet In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
ACU-202/400 INT	228	.0200	97	.041	.020	.224	0.551
ACU-206/400 INT	232	.0200	99	.047	.023	.224	0.551
ACU-204/388 EXH	242	.0200	94	.044	.025	.218	0.551
ACU-208/388 EXH	246	.0200	95	.050	.027	.218	0.551
ACU-212/388 EXH	250	.0200	97	.056	.031	.218	0.551
ACU-218/433	246	.0200	114	.067	.036	.240	0.551
ACU-226/453	254	.0200	125	.083	.047	.250	0.551
ACU-234/472	262	.0200	134	.101	.060	.260	0.551

CHR1 **Hydraulic roller series for the Chrysler SOHC 2.0L 4-valve engine. Lobes with a base radius of .550" or less require Ferrea lash cap #C10008. (158)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
CHR-196/335 INT	242	.0060	60	.021		.216	0.591
CHR-204/355 INT	250	.0060	76	.031		.230	0.583
CHR-216/355 INT	262	.0060	80	.051		.230	0.583
CHR-226/355 INT	272	.0060	84	.072		.230	0.583
CHR-232/400 INT	280	.0060	108	.080		.245	0.550
CHR-236/440 INT	280	.0060	120	.091		.269	0.542
CHR-200/315 EXH	250	.0060	40		.020	.207	0.591
CHR-212/345 EXH	262	.0060	72		.031	.228	0.585
CHR-226/345 EXH	282	.0060	76		.047	.228	0.585
CHR-230/400 EXH	285	.0060	104		.052	.257	0.550

CHR2 **Hydraulic roller series for the Chrysler DOHC 2.0-2.4L 4-valve engine and the Mitsubishi DOHC 420A engine. (180, 193, 431)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
CHR-196/345	238	.0060	68	.033	.012	.198	0.591
CHR-200/354	242	.0060	76	.038	.016	.204	0.591
CHR-204/364	246	.0060	82	.044	.019	.210	0.591
CHR-208/374	250	.0060	88	.050	.023	.216	0.591
CHR-216/394	258	.0060	100	.064	.034	.228	0.591
CHR-224/413	266	.0060	112	.078	.044	.239	0.591
CHR-232/433	274	.0060	122	.096	.057	.251	0.591
CHR-240/453	282	.0060	132	.114	.070	.264	0.591
CHR-248/472	290	.0060	142	.134	.087	.275	0.591
CHR-256/492	298	.0060	152	.154	.104	.287	0.591
CHR-264/492	306	.0060	158	.175	.123	.287	0.579
CHR-268/492	310	.0060	161	.185	.133	.287	0.573
CHR-272/500	314	.0060	166	.196	.144	.292	0.567

CHR3 **Hydraulic roller series for the Chrysler SOHC 4.7L V8 engine. Regrind base circle radius of .826" must use 99424-16 lash caps.**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
CHR-206/502	242	.0060	124	.044	.015	.271	0.826
CHR-212/502	248	.0060	128	.056	.022	.271	0.826
CHR-218/463	254	.0060	126	.070	.030	.251	0.826
CHR-218/502	254	.0060	134	.070	.030	.271	0.826
CHR-224/520	260	.0060	140	.085	.044	.280	0.826

HON1 **Mechanical series for the Honda SOHC 1.6L 4-valve D16A6 engine. (251)**

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
HON-200/384 INT	226	.0200	91	.037	.019	.236	0.610

HON-206/394	INT	232	.0200	98	.047	.023	.242	0.610
HON-216/425	INT	242	.0200	114	.065	.032	.260	0.610
HON-202/376	EXH	228	.0200	89	.040	.020	.201	0.629
HON-208/386	EXH	234	.0200	96	.050	.024	.206	0.629
HON-218/416	EXH	244	.0200	112	.070	.035	.220	0.629

HON2 Mechanical series for the Honda SOHC VTEC 4-valve D16Y8 engine. (252)

Profile Type Duration At .050" Lift		Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
HON-186/319	INT	214	.0200				.200	0.630
HON-190/327	INT	218	.0200				.205	0.630
HON-224/423	INT	258	.0200				.259	0.630
HON-228/433	INT	262	.0200				.264	0.630
HON-232/443	INT	266	.0200				.270	0.630
HON-232/453	INT	254	.0200				.275	0.630
HON-210/386	EXH	238	.0200				.214	0.646
HON-218/406	EXH	246	.0200				.224	0.646
HON-234/445	EXH	262	.0200				.244	0.646

HON3 Mechanical series for the Honda DOHC VTEC 4-valve B16A engine. (253)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
HON-180/210	216	.0200				.145	0.581
HON-180/295	205	.0200				.199	0.581
HON-190/315	215	.0200				.211	0.581
HON-200/307	232	.0200				.207	0.581
HON-200/315	225	.0200				.211	0.581
HON-200/335	225	.0200				.224	0.581
HON-210/355	235	.0200				.236	0.581
HON-220/354	245	.0200				.235	0.581
HON-230/425	254	.0200				.272	0.581
HON-236/441	260	.0200				.281	0.581
HON-242/457	266	.0200				.289	0.581
HON-248/472	272	.0200				.297	0.581
HON-254/488	278	.0200				.306	0.581
HON-260/472	284	.0200				.297	0.581
HON-260/504	284	.0200				.315	0.581

RHON Mechanical roller series for the Honda DOHC 4-valve B16A engine. Use 8620 steel camshaft and Crane/Ferrea roller followers. (253)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
RHON-224/425	248	.0200	114	.077	.044	.277	0.581
RHON-230/441	254	.0200	122	.090	.053	.287	0.581
RHON-236/457	260	.0200	130	.102	.063	.297	0.581
RHON-242/472	266	.0200	137	.116	.074	.307	0.581
RHON-248/488	272	.0200	144	.131	.086	.317	0.571
RHON-254/504	278	.0200	151	.146	.098	.326	0.561
RHON-260/504	284	.0200	156	.162	.111	.326	0.561
RHON-266/520	290	.0200	163	.181	.128	.336	0.551

RHON-272/520	296	.0200	168	.194	.140	.336	0.551
RHON-278/536	302	.0200	174	.212	.156	.347	0.541

HR Hydraulic roller series for the Ford SOHC 4.6-5.4L V8. (37)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
HR-218/500	254	.0060	133	.072	.032	.274	0.947
HR-218/550	254	.0060	139	.072	.032	.300	0.947
HR-228/500	264	.0060	140	.097	.050	.274	0.947
HR-228/550	264	.0060	146	.098	.050	.300	0.947
HR-230/575	266	.0060	151	.104	.054	.313	0.947
HR-234/500	270	.0060	144	.114	.062	.274	0.947
HR-234/550	270	.0060	151	.116	.063	.300	0.947
HR-234/575	270	.0060	154	.116	.063	.313	0.947
HR-236/600	272	.0060	158	.122	.067	.326	0.947
HR-238/575	274	.0060	157	.124	.072	.313	0.947
HR-242/575	278	.0060	161	.141	.082	.313	0.947
HR-242/600	278	.0060	163	.142	.082	.326	0.947

HR Hydraulic roller high lift series for the Ford SOHC 4.6-5.4L V8. (37)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
HR-212/550	248	.0060	134	.058	.024	.300	0.947
HR-216/565	252	.0060	138	.067	.029	.308	0.947
HR-220/580	256	.0060	143	.077	.036	.315	0.947
HR-224/595	260	.0060	147	.087	.042	.323	0.947
HR-228/610	264	.0060	152	.098	.050	.331	0.947
HR-232/625	268	.0060	156	.110	.058	.339	0.947
HR-236/625	272	.0060	160	.122	.067	.339	0.947
HR-240/625	276	.0060	163	.135	.077	.339	0.947

MIT Hydraulic roller series for the Mitsubishi DOHC 2.0L 4-valve 4G63 engine. (435)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
MIT-200/384	240	.0060	90			.221	0.591
MIT-204/394	244	.0060	96			.227	0.591
MIT-208/404	248	.0060	102			.233	0.591
MIT-216/424	256	.0060	112			.245	0.591
MIT-224/444	264	.0060	122			.256	0.591
MIT-232/464	272	.0060	132			.268	0.591
MIT-240/484	280	.0060	142			.280	0.591

TOY Mechanical series for the Toyota 20R-22R SOHC engine using cast rocker arms and stock length valves. (704)

Profile Type Duration At .050" Lift	Advertised Duration At Tappet Deg.	In.	Dur. At .300" Tappet Lift	Tappet Lift At TDC 104° Int.	114° Exh.	Cam Lift	Base Circle Radius
T20-214/416	262	.0100	110	.062	.029	.269	0.706

T20-224/430	272	.0100	120	.083	.043	.278	0.701
T20-234/444	282	.0100	130	.107	.061	.287	0.697
T20-244/458	292	.0100	140	.133	.083	.296	0.692
T20-254/472	302	.0100	152	.160	.107	.305	0.688
T20-264/430	304	.0100	150	.179	.130	.282	0.688

6/13/05