

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



Low Lift Design

1994-1998 (Early Model Cylinder Head)

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

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

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

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

## ENGINEERED COMPONENT KITS

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

## NEW HIGH RPM VALVE SPRING

### Spring pressure:

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

## ACCESSORIES

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

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

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

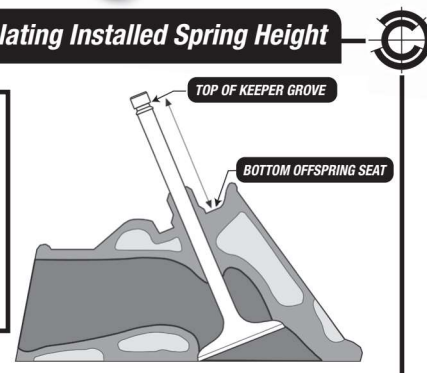
### STAINLESS STEEL VALVES

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



**Diagram 1. Calculating Installed Spring Height**

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 148



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

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



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

## High Lift Design

1999-up (Late Model Cylinder Head)

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

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

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

The above cams are ground on factory 114 Lobe Sep.. 1999 and up SOHC engines require cam gears to replace pressed on units. Valve timing events are available online at: [www.crower.com](http://www.crower.com)

## ENGINEERED COMPONENT KITS

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

### Spring pressure:

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

## ACCESSORIES

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

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

### Ford Timing Gears Part Numbers:

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

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

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

### STAINLESS STEEL VALVES

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





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



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

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

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

## ENGINEERED COMPONENT KITS

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

### Spring pressure:

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

(No machine work required).

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

(No machine work required).

## ACCESSORIES

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

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

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

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

### STAINLESS STEEL VALVES

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

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

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

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

Duration figures are taken at the lobe.

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

### ENGINEERED COMPONENT KIT

Part No.	Springs	Retainers	Remarks
<b>84170</b>	68195-16	87083-16	Titanium retainer intended for race and limited street
<b>84169M</b>	68195-16	87082-16	Fits Mazda Miata

#### Spring pressure:

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

### ACCESSORIES

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

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

#### STAINLESS STEEL VALVES

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





# HYDRAULIC FLAT TAPPET



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

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

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

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

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

# MECHANICAL FLAT TAPPET

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

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

## ENGINEERED COMPONENT KITS

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

## HYDRAULIC TO SOLID CONVERSION KITS

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

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

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

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

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

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



# HYDRAULIC FLAT TAPPET

## 240 300 Inline 6 Cylinder

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration Intake Exhaust	Duration @ .050" Intake Exhaust	Gross Lift 1.6 / 1.6 Intake Exhaust	Suitable Component Kit
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19205</b>	All CID		128FD	284° 290°	220° 222°	.509" .517"	<b>84010</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19210</b>	All CID		128FD	248° 254°	184° 192°	.405" .411"	<b>84010</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19211</b>	All CID		152FD	252° 258°	192° 196°	.426" .440"	<b>84010</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Hot street profile. Strong upper bottom and top end power. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19212</b>	All CID		160FD	260° 268°	202° 210°	.443" .448"	<b>84010</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1800 to 4500 / Redline: 6000+	<b>19213</b>	All CID		166FD	266° 274°	210° 213°	.456" .461"	<b>84010</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00119H</b>	All CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					

Note: These cams use .000" intake and exhaust valve lash.  
Note: Cam cores for 144, 170, 200 and 250 cid Ford engines are available from Crower on a special order basis.

# MECHANICAL FLAT TAPPET

Description	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration Intake Exhaust	Duration @ .050" Intake Exhaust	Gross Lift 1.6 / 1.6 Intake Exhaust	Suitable Component Kit
<b>COMPU-PRO / Performance Level 5</b> Explosive power throughout the power band. RPM Power Range: 3500 to 7000+	<b>19312</b>	All cid	284FDP	105°	284° 290°	248° 252°	.558" .563"	<b>84311</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00119M</b>	All cid	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00119H</b>	All cid	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					

Note: These cams use .022" intake, .024" exhaust valve lash.  
**Note:** Cam cores for 144, 170, 200 and 250 cid Ford engines are available from Crower on a special order basis.

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84010</b>	66015-12	68305X1-12	87048-12	86072-12	Hydraulic Lifter. For rpm up to 6500 plus.
<b>84010M</b>	66015-12	68324-12	87050-12	86072-12	Hydraulic Lifter. For rpm up to 6500 plus.
<b>84311</b>	66915-12	68405-12	87048D-12	86072-12	Solid Lifter. For rpm up to 7000 plus.

### Spring pressure:

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

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

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.134-146</b>

**Note:** Rocker arms available in Steel Billet or Stainless.

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

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



# HYDRAULIC FLAT TAPPET



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

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

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

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

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

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

### Spring pressure:

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

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

\* Machine work required

**Note:** If using Boss heads contact the Crower for special spring and retainer recommendations.

Boss 302 engines employ a 1.73 rocker ratio, so the gross lifts will change for the Boss 302. To figure the correct gross lift for Boss 302 heads divide the gross lift listed by 1.6 (lobe lift) then multiply the lobe lift by 1.73 (Boss 302 rocker ratio).

**Note:** Ford 289/302 and 351W camshafts are interchangeable by changing the firing order to match the camshaft. 289/302 1-5-4-2-6-3-7-8 • 351W 1-3-7-2-6-5-4-8  
 Some early Ford heads use 5/16 valve stems. Please specify when ordering as the above kits are designed for 11/32 stems.

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

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

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



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

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 134-146
<b>Camshafts</b>	Pg's. 6-119
<b>Camshaft Accessories</b>	Pg's. 117-119

**Note:** Rocker arms available in Steel Billet or Stainless.



# HYDRAULIC FLAT TAPPET

## Non Roller 1963-1995

221 255 (4.2L) 260 289 302 V8

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

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

## ENGINEERED COMPONENT KITS

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

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

### Spring pressure:

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

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

\* Machine work required

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

**Note:** Ford 289/302 and 351W camshafts are interchangeable by changing the firing order to match the camshaft.

289/302 1-5-4-2-6-3-7-8 • 351W 1-3-7-2-6-5-4-8

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

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

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

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

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's. 134-146
<b>Camshafts</b>	Pg's. 6-119
<b>Cranks</b>	Pg's. 170-184
<b>Rods</b>	Pg's. 185-206
<b>Camshaft Accessories</b>	Pg's. 117-119

**Note:** Rocker arms available in Steel Billet or Stainless.

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

### Crower Recommends ZDDPlus for all Flat Tappet Cams

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



# HYDRAULIC ROLLER TAPPET



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

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PERFORMANCE LEVEL 2</b> Big sound. Excellent 5-speed cam for heavy car. Strong low and mid-range torque. 302 CID / 2200 - 5500 RPM / Redline: 6000 RPM max	<b>15511</b>	See Descrip	218HR224	114°	278°	282°	218°	224°	.468"	.486"	<b>845635</b>
<b>PERFORMANCE LEVEL 2</b> Most popular Ford hyd roller grind, blows away Chevrolets. Heavy mid-range. 302 CID / 2400 - 5700 RPM / Redline: 6200 RPM max	<b>15512</b>	See Descrip	222HR228	112°	282°	286°	222°	228°	.496"	.512"	<b>845635</b>
<b>PERFORMANCE LEVEL 3</b> Big cid camshaft (320-347 cid) with higher compression, good cylinder heads and valve train components. 302 CID / 2600 - 6000 RPM / Redline: 6500 RPM max	<b>15513</b>	See Descrip	228HR234	112°	288°	298°	228°	234°	.512"	.531"	<b>845635</b>
<b>PERFORMANCE LEVEL 4</b> Aggressive rpm camshaft, high stall A.O.D. or a 5-speed with low gears. For well prepared engines. 302 CID / 2700 - 6200 RPM / Redline: 6500 RPM max	<b>15514</b>	See Descrip	234HR240	110°	298°	304°	234°	240°	.534"	.545"	<b>84564</b>
<b>PERFORMANCE LEVEL 5</b> Top end insanity for serious, professionally built engines only. 1/4 mile drag special. 302 CID / 3000 - 6300 RPM / Redline: 6500 RPM max	<b>15515 MTO</b>	See Descrip	236HR242	110°	300°	310°	236°	242°	.524"	.529"	<b>84564</b>
<b>O.E.M. FACTORY STOCK SPECIFICATIONS</b> 1989-1992 Ford Mustang. 302 H.O. Engine equipped with Hydraulic Roller camshaft.	<b>Stock</b>			115°	272°	272°	211°	211°	.437"	.437"	<b>84564</b>
<b>SVO FACTORY STOCK SPECIFICATIONS</b> 302 H.O. Engine equipped with Hydraulic Roller camshaft.	<b>E-303</b>			110°	-	-	220°	220°	.480"	.480"	<b>84564</b>
<b>SVO FACTORY STOCK SPECIFICATIONS</b> 302 H.O. Engine equipped with Hydraulic Roller camshaft.	<b>B-303</b>			110°	-	-	224°	224°	.498"	.498"	<b>84564</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00115HR</b>	ALL CID	Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation								

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Keepers	Remarks
<b>845635</b>	66335-16	68313-16	87050-16	86107X2-8 & 86107-8	6500 plus rpm. Limited street use. Drop-In style lifter.
<b>84564</b>	66335-16	68390X3-16	87048-16	86107X2-8 & 86107-8	6500 plus rpm. Limited street use. Drop-In style lifter.

### Spring pressure:

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

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

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

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

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

## ACCESSORIES

Description	See Page (s)
Distributor Gears	Pg. 119



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



# HYDRAULIC RETRO FIT ROLLER TAPPET

1963-1995

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

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

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

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

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

## ENGINEERED COMPONENT KITS

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

### Spring pressure:

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

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

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

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

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

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

### Crower Recommends ZDDPlus for all Flat Tappet Cams

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



**Rick Reynolds**  
**2018 Crower Cup Champion**  
**2013 NHRA Pro ET Champion**



# MECHANICAL FLAT TAPPET



Non Roller 1963-1995

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

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

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

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

## ENGINEERED COMPONENT KITS

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

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

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

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

**Note:** Ford 289/302 and 351W camshafts are interchangeable by changing the firing order to match the camshaft.

289/302 1-5-4-2-6-3-7-8 • 351W 1-3-7-2-6-5-4-8

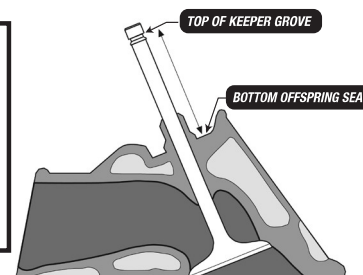
Some early Ford heads use 5/16 valve stems. Please specify when ordering as the above kits are designed for 11/32 stems.

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

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

### Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 148



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

### Crowder Recommends ZDDPlus for all Flat Tappet Cams

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



# MECHANICAL ROLLER TAPPET

**Mechanical 1963-1995**

**221 255 (4.2L) 260 289 302 (5.0L) & Boss 302 V8 , Cores not available use 351W Core**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> Excellent street/strip profile. RPM Power Range: 2500 to 6000 / Redline: 7500+	<b>15415</b> (351W FO) <b>15458</b>	289 302	280R	112°	280°	288°	232°	242°	.528"	.530"	<b>84510</b>
<b>ULTRA-ACTION / Performance Level 5</b> High torque oval track and drag race profile. RPM Power Range: 3000 to 7000 / Redline: 7500+	<b>15416</b> (351W FO) <b>15445</b>	289 302	285R	106°	285°	292°	254°	260°	.597"	.578"	<b>84510</b>
<b>ULTRA-ACTION / Performance Level 5</b> Fast 3/8 to 1/2 mile super oval track profile. RPM Power Range: 4000 to 7500 / Redline: 8000+	<b>15417</b> (351W FO) <b>CUSTOM</b>	289 302	292R	106°	292°	302°	256°	266°	.606"	.600"	<b>84510</b>
<b>CUSTOM GROUND SOLID</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00115R</b>	All cid	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								

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

## ENGINEERED COMPONENT KITS

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

A. These high lift cams require longer stem valves and higher spring pressure. Please contact Crower for properly engineered valvetrain.

### Spring pressure:

68804H-16 Seat: 1.800" @ 293 lbs / Nose: 1.200" @ 611 lbs / Coil bind: 1.110"

(Machine work required, use 68972 pilot).

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

**Note:** Ford 289/302 and 351W camshafts are interchangeable by changing the firing order to match the camshaft.

289/302 1-5-4-2-6-3-7-8 • 351W 1-3-7-2-6-5-4-8

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

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

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

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

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

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's.134-146
<b>Distributor Gears</b>	Pg. 119
<b>Camshaft Accessories</b>	Pg's.117-119

**Note:** Rocker arms available in Steel Billet or Stainless.

**Note:** Break in for a flat tappet

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

## CROWER CAM BREAK-IN PROCEDURE

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

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



# HYDRAULIC FLAT TAPPET



Non Roller

1969-1993 351W (5.8 L), 1982-1984 302 (5.0L), 302 SVO & 351 SVO

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration Intake Exhaust	Duration @ .050" Intake Exhaust	Gross Lift 1.6 / 1.6 Intake Exhaust	Suitable Component Kit
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>15935</b>	351	258H	112°	258° 264°	202° 210°	.438" .446"	<b>84127</b>
<b>POWER BEAST / Performance Level 4</b> Delivers impressive mid-range and top end power. Health sound. RPM Power Range: 1750 - 6000 / Redline: 6500	<b>15903</b>	351	298H	112°	298° 304°	224° 234°	.498" .520"	<b>84126</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage with extended rpm's. RPM Power Range: 1500 - 4000 / Redline: 5500+	<b>15233</b>	351	270HDP	112°	270° 276°	212° 218°	.475" .489"	<b>84127</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Hot street/strip grind with emphasis on upper bottom to top end power. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>15236</b>	351	280HDP	112°	280° 286°	220° 226°	.488" .501"	<b>84126</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Street/strip grind with strong mid to top end power. RPM Power Range: 2200 - 6000 / Redline: 6500+	<b>15237</b>	351	297HDP	112°	297° 308°	236° 242°	.538" .534"	<b>84126</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range torque. RPM Power Range: 2500 - 6500	<b>15254</b>	351	84HDP	108°	284° 294°	224° 232°	.498" .501"	<b>84126</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Power Range: 2700 - 6500	<b>15255</b>	351	296HDP	108°	296° 304°	230° 246°	.506" .506"	<b>84126</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range torque. RPM Power Range: 3000 - 6500	<b>15256 MTO</b>	351	304HDP	108°	304° 312°	242° 250°	.536" .506"	<b>84126</b>
<b>TURBOMASTER</b> This cam provides excellent low end and mid-range power with extended rpm range plus mileage for spirited offroad use. RPM Power Range: 1800 to 5500 plus.	<b>15938</b>	351	278HT	114°	278° 260°	212° 200°	.466" .430"	<b>84126</b>
<b>TURBOMASTER</b> Intended for turbocharged hot street/strip and marine use. This cam offers extended rpm's on upper bottom and top. RPM Power Range: 2400 - 6500	<b>15939 MTO</b>	351	290HT	114°	290° 272°	226° 210°	.486" .462"	<b>84126</b>
<b>SUPERCHARGER</b> Designed for B&M/Roots type supercharged street/ strip and marine applications. Emphasis on mid to top end. RPM Power Range: 2400 to 6500	<b>15940 MTO</b>	351	288HT	114°	288° 288°	226° 226°	.467" .467"	<b>84126</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00117H</b>	All CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Seat Cups	Remarks
<b>84127</b>	66015-16	68313-16	87050-16	86072-16	68931-16	6000 rpm max.
<b>84126</b>	66015-16	68390X3-16	87048-16	86072-16	68951-16	Rev-Max Lifter.

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

### Spring pressure:

68100X200-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 254 lbs / Coil bind: 1.030" (Stock O.D., no machine work).

**Note:** To eliminate using seat cups, you can machine heads with cutter 68990 (84125) or 68985 (84126).

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

### Crowder Recommends ZDDPlus for all Flat Tappet Cams

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

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





# MECHANICAL FLAT TAPPET

## Non Roller 1969-1993

351W (5.8 L), 1982-1984 302 (5.0L), 302 SVO & 351 SVO

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.6 / 1.6		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> High revving profile with superior mid-range and top end power. RPM Power Range: 2500 - 6500 / Redline: 7000+	<b>15359</b>	351	282FDP	112°	282°	288°	242°	250°	.538"	.557"	<b>84219</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High torque, high revving profile, perfect for short oval track applications. RPM Power Range: 3500 - 6500 / Redline: 7000+	<b>15345</b>	351	288FDP	105°	288°	299°	252°	258°	.562"	.579"	<b>84219</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High torque, high revving profile, perfect for midsize oval track applications. RPM Power Range: 4000 - 7000 / Redline: 7500+	<b>15346</b>	351	296FDP	106°	296°	306°	260°	268°	.586"	.605"	<b>84219</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Emphasis on mid-range and top end power for extra pop above 7000 rpm. RPM Power Range: 4500 to 7500 / Redline: 8000 +	<b>15347 MTO</b>	351	310FDP	108°	310°	316°	276°	278°	.622"	.629"	<b>84219</b>
<b>CUSTOM GROUND SOLID</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00117M</b>	All CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								

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

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84219</b>	66915-16	68390X3-16	87048-16	86072-16	7500 max. Limited street use.

### Spring pressure:

68100X200-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 254 lbs / Coil bind: 1.030" (Machine work).

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	<b>Pg's.134-146</b>
<b>Rods</b>	<b>Pg's.185-206</b>

**Note:** Rocker arms available in Steel Billet or Stainless.



# MECHANICAL ROLLER TAPPET



Mechanical

1969-1993 351W (5.8 L), 1982-1984 302 (5.0L), 302 SVO & 351 SVO

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advised Duration Intake Exhaust	Duration @ .050" Intake Exhaust	Gross Lift 1.6 / 1.6 Intake Exhaust	Suitable Component Kit
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> Perfect for street/strip. Emphasis on mid-range power. RPM Power Range: 2500 - 6500 / Redline: 7000+	<b>15458 MTO</b>	351	280R	112°	280° 288°	232° 242°	.528" .530"	<b>84518</b>
<b>PRO-STREET / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end power. RPM Power Range: 3500 - 7000 / Redline: 7000+	<b>15459 MTO</b>	351	290R	110°	290° 296°	248° 252°	.558" .547"	<b>84518</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end, excellent drag profile. RPM Power Range: Varies on valve train, heads, manifold, etc... Steel Billet Cam Core	<b>15445</b>	351	285R	106°	285° 292°	254° 260°	.597" .578"	<b>84518</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end, excellent drag profile. RPM Power Range: Varies on valve train, heads, manifold, etc... Steel Billet Cam Core	<b>15446</b>	351	300R	107°	300° 310°	268° 274°	.680" .669"	<b>84518</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Perfect for street/strip. Emphasis on mid-range and top end, excellent drag profile. RPM Power Range: Varies on valve train, heads, manifold, etc... Steel Billet Cam Core	<b>15447 MTO</b>	351	309R	108°	309° 314°	276° 282°	.685" .656"	<b>84518</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00117R</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance. Please provide cylinder head flow numbers.	<b>00060</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84518</b>	66215-16	68543-16	86781-16	86072-16	8000+ rpm. Race only.

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

### Spring pressure:

68543-16 Seat: 1.850" @ 262 lbs / Nose: 1.200" @ 625 lbs / Coil bind: 1.110" (Machine work required).

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

## ACCESSORIES

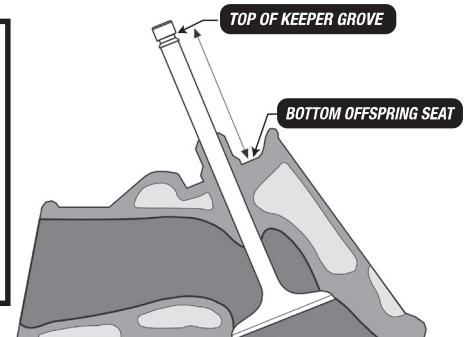
Description	See Page (s)
<b>Rocker Arms</b>	Pg's.134-146
<b>Distributor Gears</b>	Pg. 119

**Note:** Rocker arms available in Steel Billet or Stainless.



## Diagram 1. Calculating Installed Spring Height

Measure the height from top of keeper groove to bottom of spring seat. Refer to the "height" column of your retainer and add or subtract the amount given from the original overall measurement. See Page 148



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



# HYDRAULIC FLAT TAPPET

**Non Roller 1970-1982**

**351C 351M 400 V8**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / PERFORMANCE LEVEL 1</b> Exhibits broad stump pulling power and torque. Good for stock replacements. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>15965</b>	351 400	258H	112°	258°	264°	200°	210°	.477"	.486"	<b>84127</b>
<b>TORQUE BEAST / PERFORMANCE LEVEL 2</b> Delivers impressive mid-range and top end power. RPM Power Range: 2000 - 4800 / Redline: 6000+	<b>15975</b>	351 400	282H	112°	282°	292°	204°	214°	.486"	.512"	<b>84127</b>
<b>POWER BEAST / PERFORMANCE LEVEL 3</b> Exhibits broad stump pulling power and torque. Good for stock replacements. RPM Power Range: 2200 - 5000 / Redline: 6200+	<b>15973</b>	351 400	292H	112°	292°	302°	214°	224°	.512"	.538"	<b>84125X3</b>
<b>ULTRA BEAST / PERFORMANCE LEVEL 3</b> Delivers impressive mid-range and top end power. RPM Power Range: 2200 - 5000 / Redline: 6200+	<b>15966</b>	351 400	278H	112°	278°	284°	220°	226°	.529"	.540"	<b>84129</b>
<b>POWER COMPU-PRO / PERFORMANCE LEVEL 2</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited offroad use. RPM Power Range: Idle - 4000 / Redline: 5500+	<b>15240</b>	351 CID	270HDP	112°	270°	276°	210°	220°	.486"	.510"	<b>84125X3</b>
<b>HIGH PERFORMANCE COMPU-PRO / PERFORMANCE LEVEL 3</b> Intended for the hot marine/strip application, these cams offer an extended rpm range with upper bottom and top end power with strong emphasis on mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>15243</b>	400 CID	284HDP	112°	284°	290°	228°	234°	.557"	.574"	<b>84129</b>
<b>ULTRA PERFORMANCE COMPU-PRO / PERFORMANCE LEVEL 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 6500	<b>15244</b>	351 CID	297HDP	112°	297°	308°	234°	240°	.578"	.578"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Rough idle with explosive upper bottom and mid-range torque. RPM Power Range: 2500 - 6000+	<b>15266</b>	351 CID	280HDP	108°	280°	288°	222°	230°	.540"	.540"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Strong idle with violent mid-range acceleration and torque. RPM Power Range: 2700 - 6500	<b>15267 MTO</b>	351 CID	290HDP	108°	290°	302°	238°	248°	.536"	.543"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Very rough idle with violent mid-range and top end acceleration and power. RPM Power Range: 3000 - 6500	<b>15268</b>	351 400	302HDP	108°	302°	312°	244°	248°	.548"	.545"	<b>84129</b>
<b>HI-DRAULIC HAULER / PERFORMANCE LEVEL 5</b> Very rough idle with violent mid-range and top end acceleration and power. RPM Power Range: 3000 - 6500	<b>15981</b>	351 400	304HDP	114°	304°	304°	246°	246°	.548"	.548"	<b>84129</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00114H</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								

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

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Seat Cups	Remarks
<b>84127</b>	66015-16	68313-16	87050-16	86072-16	68931-16	6000 rpm max. Limited street use.
<b>84125X3</b>	66015X3-16	68100X200-16	87048-16	86072-16	68951-16	CamSaver Lifter. 6000 rpm max. Limited street use.
<b>84129</b>	66015-16	68390X3-16	87048-16	86072-16	68931-16	6500 rpm max. Limited street use.
<b>84129X3</b>	66015X3-16	68390X3-16	87048-16	86072-16	68931-16	CamSaver Lifter. 6500 rpm max. Limited street use.
<b>84129RM3</b>	66015RM3-16	68390X3-16	87048-16	86072-16	68931-16	Rev-Max Lifter.

### Spring pressure:

68313-16 Seat: 1.750" @ 95 lbs / Nose: 1.250" @ 267 lbs / Coil bind: 1.030"  
 68100X200-16 Seat: 1.800" @ 107 lbs / Nose: 1.300" @ 254 lbs / Coil bind: 1.030"  
 (Stock O.D., no machine work).  
 68390X3-16 Seat: 1.850" @ 96 lbs / Nose: 1.350" @ 331 lbs / Coil bind: 1.110" (Stock O.D.)

Note: To eliminate using seat cups, you can machine heads.

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

### Crower Recommends ZDDPlus for all Flat Tappet Cams

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



# MECHANICAL FLAT TAPPET



**Non Roller 1970-1982  
351C 351M 400 V8**

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / PERFORMANCE LEVEL 3</b> High torque grind with mid-range and top end power. RPM Power Range: 2200 - 5750 / Redline: 6000	<b>15388 MTO</b>	351 400	282FDP	112°	282°	288°	238°	242°	.524"	.533"	<b>84226</b>
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> High revving with superior mid-range and top end power. RPM Power Range: 2200 - 6000 / Redline: 6250+	<b>15389</b>	351 400	292FDP	112°	292°	298°	246°	250°	.541"	.548"	<b>84226</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> High torque, short oval camshaft. RPM Power Range: 3500 - 6500 / Redline: 7000+	<b>15380 MTO</b>	351 400	288FDP	105°	288°	294°	254°	258°	.569"	.580"	<b>84226</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Great high torque oval track grind with emphasis on mid-range power. RPM Power Range: 4000 - 7000 / Redline: 7500+	<b>15381 MTO</b>	351 400	298FDP	106°	298°	306°	262°	268°	.592"	.607"	<b>84226</b>
<b>COMPU-PRO / PERFORMANCE LEVEL 5</b> Upper mid-range and top end power for extra pop above 7000 rpm. RPM Power Range: 4500 - 7500 / Redline: 8000+	<b>15382</b>	351 400	311FDP	107°	311°	316°	274°	282°	.618"	.638"	<b>84226</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00114M</b>	351 400	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Seat Cups	Remarks
<b>84226</b>	66915-16	68390X3-16	87048-16	86072-16	68951-16	Solid Lifter. 7500 rpm max. Limited street use.
<b>84226X980</b>	66915X980-16	68390X3-16	87048-16	86072-16	68951-16	CoolFace Solid Lifter. 7500 rpm max. Limited street use.

For severe duty applications, Crowder recommends using our solid lifter with the added "CoolFace oiling option".

### Spring pressure:

68390X3-16 Seat: 1.825" @ 106 lbs / Nose: 1.325" @ 342 lbs / Coil bind: 1.110" (Seat cups eliminate machine work).

**Note:** Some stock cylinder heads come with multi-groove keepers on the exhaust. If so, you must order retainer 87049-16 which is designed to fit multi-groove keepers. See retainer specs or contact Crowder.

**Note:** If you machine heads to eliminate use of spring cups, see seat cutters or contact Crowder.

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

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



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

## CROWDER CAM BREAK-IN PROCEDURE



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

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



# MECHANICAL ROLLER TAPPET

## Mechanical 1970-1982

### 351C 351M 400 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range		Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
			Low RPM	Top RPM			Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> Excellent street/strip profile. RPM Power Range: 2500 - 6000 / Redline: 7500+	<b>15480 MTO</b>	ALL CID	2500	7500+	284R	110°	275°	284°	234°	244°	.570"	.572"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> High torque oval track profile. RPM Power Range: 3000 - 7000 / Redline: 7500+	<b>15481 MTO</b>	ALL CID	3000	7500+	285R	106°	285°	292°	252°	260°	.645"	.626"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Fast 3/8 to 1/2 mile super oval track profile. RPM Power Range: 4000 - 7500 / Redline: 8000+	<b>15482</b>	ALL CID	4000	8000+	297R	106°	297°	304°	262°	268°	.662"	.636"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Mid-range and top end drag profile. RPM Power Range: 5200 - 8000 / Redline: 8250+	<b>15483</b>	ALL CID	5200	8250+	304R	106°	304°	312°	270°	276°	.690"	.672"	<b>84521M</b>
<b>ULTRA-ACTION / Performance Level 5</b> Mid-range and top end drag profile. RPM Power Range: 5500 to 8000 / Redline 8250 plus.	<b>15484</b>	ALL CID	5200	8250+	310R	108°	311°	318°	280°	284°	.783"	.724"	<b>84521M</b>
<b>CUSTOM GROUND ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00114R</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>										
<b>CUSTOM GROUND MECHANICAL ROLLER</b> Special order roller lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00060</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>										

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Keeper	Remarks
<b>84521M</b>	66218-16	68369-16	87055-16	86072-16	<sup>11</sup> / <sub>32</sub> 86110-16	8000 rpm. Race only.
<b>84521S</b>	66218-16	68369-16	87055-16	86071-16	<sup>3</sup> / <sub>8</sub> 86111-16	8000 rpm. Race only.

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

### Spring pressure:

68369-16 Seat: 1.900" @ 236 lbs / Nose: 1.200" @ 584 lbs / Coil bind: 1.100"  
Optional spring (street).

68555X1-16 Seat: 2.000" @ 239 lbs / Nose: 1.100" @ 870 lbs / Coil bind: 1.020"

\* Machine work required (race only).

**Note:** For high performance applications, we recommend using single groove valves and valve stem keepers. The above kits are designed for 1 1/32 single groove valve stems and 7° and 10° single groove keepers. Race applications must use .100" long valves.

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

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

## AVAILABLE CAM JOURNAL SIZES

Description
Stock Ford Bearing Size - Journal 1 = 2.080", 2 = 2.065", 3 = 2.050", 4 = 2.035", 5 = 2.020"
Large Roller Bearing - Journal 1, 2, 3, 4 = 2.165", Journal 5 = 1.968"
Roller Bearing (Ford Motorsport / SVO) - All Journals = 2.051"
Babbitt Bearing (Standard SVO) - All Journals = 2.081"

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

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

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's.134-146
<b>Distributor Gears</b>	Pg. 119

**Note:** Rocker arms available in Steel Billet or Stainless.



# HYDRAULIC FLAT TAPPET



Non Roller 1963-1976

332 352 360 390 406 410 427 428 V8 FE

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration Intake Exhaust	Duration @ .050" Intake Exhaust	Gross Lift 1.76 / 1.76 Intake Exhaust	Suitable Component Kit
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>16915</b>	332 390	268H	112°	268° 274°	210° 204°	.484" .496"	<b>840165</b>
<b>POWER BEAST / Performance Level 2</b> Delivers impressive mid-range and top end power. Healthy sound. Economical price. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>16903</b>	390 428	292H	112°	292° 302°	224° 214°	.521" .547"	<b>840165</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited offroad use. RPM Power Range: 1500 to 4000 / Redline: 5500 plus.	<b>16239</b>	390 428	270HDP	112°	270° 276°	220° 210°	.494" .523"	<b>84116</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>16241</b>	390 428	280HDP	112°	280° 286°	228° 222°	.538" .552"	<b>84116</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 6500	<b>16242</b>	332 352	284HDP	112°	284° 290°	230° 228°	.566" .587"	<b>84116</b>
	<b>16243 MTO</b>	390 428	297HDP	112°	297° 308°	242° 236°	.591" .588"	<b>84116</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range torque and power. RPM Power Range: 2500 - 6000	<b>16255</b>	390 428	228HDP	108°	280° 288°	232° 224°	.549" .550"	<b>84116</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Power Range: 2700 - 6500	<b>16256</b>	390 428	290HDP	108°	290° 302°	248° 238°	.550" .557"	<b>84116</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Rough idle. Explosive mid-range acceleration and torque. RPM Power Range: 3000 to 6500	<b>16257</b>	390 428	302HDP	108°	302° 312°	250° 244°	.554" .556"	<b>84116</b>
<b>SUPERCHARGER</b> Dual purpose hot street/strip cam designed to enhance B&M/Roots type supercharger. Strong mid to top end power. RPM Power Range: 2400 to 6500	<b>16981</b>	390 428	304HDP	114°	304° 304°	244° 244°	.556" .556"	<b>84016</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00116H</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>840165</b>	66016-16	68302X2-16	87063M-16		Hydraulic. 6000 plus rpm. Daily street use.
<b>84116</b>	66016-16	68340-16	87063-16	86071-16	Hydraulic. 6500 plus rpm. Limited street use.
<b>84116RM3</b>	66016RM-16	68340-16	87063-16	86071-16	Rev-Max Lifter, 6500 plus rpm. Limited street use.

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

For severe duty applications, Crowder recommends using our solid lifter with the added "coolface oiling option". **Specify X980 after corresponding component kit.**

### Spring pressure:

68302X2-16 Seat: 1.850" @ 110 lbs / Nose: 1.350" @ 284 lbs / Coil bind: 1.150" (Stock O.D., no machine work).  
68340-16 Seat: 1.900" @ 119 lbs / Nose: 1.350" @ 359 lbs / Coil bind: 1.080" (Machine work, use cutter 68986\*).

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

Deep Seat Shell design lifter: Crowder deep seated, solid lifters (Deep Seat Shell 66925-16) and pushrods

(70138-16) insures proper valve train geometry.

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

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

### Crowder Recommends ZDDPlus for all Flat Tappet Cams

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

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





# MECHANICAL FLAT TAPPET

Non Roller 1963-1976

332 352 360 390 406 410 427 428 V8 FE

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.76 / 1.76		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>PRO-STREET / Performance Level 4</b> High revving with superior mid-range and top end power. RPM Power Range: 2500 - 6000 / Redline: 6500+	<b>16357</b>	390 428	278FDP	114°	278°	284°	240°	243°	.530"	.535"	<b>84316</b>
<b>COMPU-PRO / Performance Level 5</b> High torque, short oval camshaft. RPM Power Range: 2500 - 6000 / Redline: 7000+	<b>16331</b>	390 428	290FDP	108°	290°	298°	247°	252°	.551"	.565"	<b>84316</b>
<b>COMPU-PRO / Performance Level 5</b> Great high torque mid-range oval track grind. RPM Power Range: 3000 - 7000 / Redline: 7500+	<b>16332</b>	390 428	300FDP	108°	300°	310°	255°	260°	.579"	.593"	<b>84316</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00116M</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84316</b>	66916-16	68340-16	87063-16	86071-16	Solid. 7500 plus rpm.

For severe duty applications, Crowder recommends using our solid lifter with the added "coolface oiling option". Specify X980 after corresponding component kit.

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

### Spring pressure:

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

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

Deep Seat Shell design lifter: Crowder deep seated, solid lifters (Deep Seat Shell 66925-16) and pushrods (70138-16) insures proper valve train geometry.

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

# MECHANICAL ROLLER TAPPET

Mechanical 1963-1976

332 352 360 390 406 410 427 428 V8 FE

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.76 / 1.76		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / PERFORMANCE LEVEL 4</b> Excellent street/strip profile. RPM Power Range: 2500 to 6000 / Redline: 7500 plus.	<b>16462</b>	390 428	280FDP	110°	280°	288°	234°	244°	.580"	.582"	<b>84524S 84525M</b>
<b>PRO-STREET / PERFORMANCE LEVEL 4</b> High revving with superior mid-range and top end power. RPM Power Range: 3750 - 7000 / Redline: 7500+	<b>16463</b>	390 428	290FDP	108°	290°	296°	248°	254°	.651"	.685"	<b>84524S 84525M</b>
<b>ULTRA-ACTION / PERFORMANCE LEVEL 5</b> Strong mid-range design. RPM Power Range: 4000 to 7250 / Redline: 7750 plus.	<b>16464</b>	390 428	296FDP	108°	296°	301°	254°	260°	.654"	.663"	<b>84524S 84525M</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00116R</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84524S</b>	66216-16	68369-16	87064-16	-	7000 rpm. Street use.

**CAUTION!** When using high lift cams pay close attention to retainer, oil seal and valve guide

clearance at full lift (minimum .050").

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

See spring and retainer specs or contact Crowder for proper recommendations.

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

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

# HYDRAULIC FLAT TAPPET



Non Roller 1968-1994

370 429 460 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>BAJA BEAST / Performance Level 1</b> Exhibits broad stump pulling power and torque. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>22915</b>	370 460	268H	112°	268°	274°	203°	210°	.481"	.488"	<b>840225</b>
<b>POWER BEAST / Performance Level 2</b> Low to mid-range torque for daily drivability. Economical price. RPM Power Range: 1200 - 3800 / Redline: 5200+	<b>22903</b>	429 460	293H	112°	268°	286°	210°	226°	.510"	.536"	<b>840225</b>
<b>ULTRA BEAST / Performance Level 3</b> Delivers impressive mid-range and top end power. Economical price. RPM Power Range: 2000 - 4800 / Redline: 6200+	<b>22917</b>	460 CID	268H	112°	303°	308°	224°	234°	.538"	.562"	<b>84122</b>
<b>POWER COMPU-PRO / Performance Level 2</b> Perfect combination of power and mileage. Provides excellent low end and mid-range power with extended rpm's for spirited offroad use. RPM Power Range: 1500 - 4000 / Redline: 5500+	<b>22240</b>	460 CID	276HDP	112°	274°	281°	215°	221°	.527"	.535"	<b>84122</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>22241</b>	370 429	280HDP	112°	280°	286°	220°	226°	.524"	.541"	<b>84122</b>
<b>HIGH PERFORMANCE COMPU-PRO / Performance Level 3</b> Intended for the hot marine/strip application, these cams offer extended rpm range with emphasis on upper bottom to top end power with strong mid-range. RPM Power Range: 1800 - 4500 / Redline: 6000+	<b>22242</b>	370 429	284HDP	112°	284°	290°	227°	232°	.552"	.569"	<b>84122</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 7000+	<b>22243</b> <b>MTO</b>	370 429	297HDP	112°	297°	308°	237°	240°	.580"	.576"	<b>84122</b>
<b>ULTRA PERFORMANCE COMPU-PRO / Performance Level 4</b> Dual purpose hot street/strip camshaft. Delivers strong mid-range and top end torque and horsepower. RPM Power Range: 2000 - 6000 / Redline: 7000+	<b>22244</b>	460 CID	311HDP	112°	311°	316°	246°	250°	.588"	.604"	<b>84122</b>
<b>HI-DRAULIC HAULER / Performance Level 5</b> Violent mid-range acceleration and torque. RPM Power Range: 2700 - 6700+	<b>22206</b>	429 460	290HDP	108°	290°	302°	236°	245°	.535"	.545"	<b>840225</b> <b>84122</b>
<b>SUPERCHARGER</b> Dual purpose hot street/strip cam designed to enhance B&M/Roots type supercharger. Strong mid to top end power. RPM Power Range: 2400 to 6700 plus.	<b>22981</b>	429 460	304HC	114°	304°	304°	244°	244°	.541"	.541"	<b>840225</b> <b>84122</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call with all engine data incl. head flow data, valve sizes, operating power range, etc when ordering.	<b>00122H</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84022S</b>	66015-16	68302X2-16	87062S-16	86072-16	Hydraulic. 6500 max rpm.
<b>84022RM3</b>	66015RM3-16	68302X2-16	87062-16	86072-16	Rev-Max Lifter
<b>84122</b>	66015-16	68340-16	87062-16	86072-16	Hydraulic. 6500 max rpm.
<b>84122X3</b>	66015X3-16	68340-16	87062-16	86072-16	CamSaver Hydraulic Lifter. 6500 max rpm.

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080" (Machine work required).

68302X2-16 Seat: 1.850" @ 110 lbs / Nose: 1.350" @ 284 lbs / Coil bind: 1.250" (Machine work required).

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

For severe duty applications, Crowder recommends using our solid lifter with the added "coolface oiling option". Specify X980 after corresponding component kit.

## ACCESSORIES

Part No.	Description
<b>73615-16</b>	Rocker arms (1.73) 7/16
<b>73619-16</b>	Rocker arms (1.8) 7/16
<b>76535</b>	Timing gear set (1972-up)

Note: If using guide plates, heat-treated pushrods (RC60 series) are required. See Page 169 or contact Crowder.

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

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



# 390 SERIES HYDRAULIC FLAT TAPPET

Non Roller 1968-1994

370 429 460 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	RPM Range				Lobe Sep.	Advertised Duration		Duration @ .050"		Lobe Lift		Gross Lift 1.73 / 1.73		Suitable Component Kit
			Low RPM	Peak Torque	Peak HP	Top RPM		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>HOT STREET LEVEL 2</b> Hot street grind that sounds good and runs great. RPM range dependant on CID.	<b>22173</b> <b>MTO</b>	429 460	2100 1800	3600 3300	5200 4800	5700 5300	111°	280°	287°	219°	225°	.306"	.303"	.530"	.524"	<b>84122</b>
<b>HOT STREET LEVEL 3</b> Hot street grind that sounds good and runs great. RPM range dependant on CID.	<b>22175</b> <b>MTO</b>	429 460	2500 2300	4000 3800	5600 5200	6100 5700	110°	298°	303°	236°	241°	.332"	.328"	.574"	.567"	<b>84122</b>
<b>HOT STREET LEVEL 4</b> Hot street grind that sounds good and runs great. RPM range dependant on CID.	<b>22176</b> <b>MTO</b>	429 460	2700 2500	4200 4000	5800 5400	6300 5900	108°	304°	310°	242°	248°	.344"	.340"	.595"	.588"	<b>84122</b>
<b>CUSTOM GROUND HYDRAULIC</b> Special order hydraulic lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00122H</b>	ALL CID	Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation													

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84122</b>	66015-16	68340-16	87062-16	86072-16	Hydraulic. 6500 max rpm.
<b>84122X3</b>	66015X3-16	68340-16	87062-16	86072-16	CamSaver Hydraulic Lifter. 6500 max rpm.
<b>84122RM3</b>	66015RM3-16	68340-16	87062-16	86072-16	Rev-Max Lifter

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

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080"  
(Machine work, use cutter 68986\*).

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

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

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

## ACCESSORIES

Part No.	Description
<b>73615-16</b>	Rocker arms (1.73) 7/16
<b>73619-16</b>	Rocker arms (1.8) 7/16
<b>76535</b>	Timing gear set (1972-up)

**Note:** If using guide plates, heat-treated pushrods (RC60 series) are required. See page 169 or contact Crowder.

**DON'T SEE YOUR FAVORITE PART # ?**  
IT MAY STILL BE AVAILABLE  
**CALL THE CROWER TECH. DEPT FOR INFO.**

## CROWER CAM BREAK-IN PROCEDURE

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

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





# 390 SERIES MECHANICAL FLAT TAPPET



Non Roller 1968-1994

370 429 460 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration Intake Exhaust	Duration @ .050" Intake Exhaust	Gross Lift 1.73 / 1.73 Intake Exhaust	Suitable Component Kit
<b>ULTRA BEAST / Performance Level 4</b> Delivers impressive mid-range and top end power. RPM Power Range: 2750 - 6500 / Redline: 7000+	<b>22360 MTO</b>	429 460	317F	112°	294° 304°	244° 254°	.588" .614"	<b>84322</b>
<b>PRO-STREET / Performance Level 4</b> High revving with superior mid-range top end power. RPM Power Range: 2500 - 6000 / Redline: 6500+	<b>22355</b>	429 460	278FDP	110°	278° 284°	238° 241°	.519" .524"	<b>84322</b>
<b>COMPU-PRO / Performance Level 5</b> High torque, short oval camshaft. RPM Power Range: 2500 - 6000 / Redline: 7000+	<b>22356 MTO</b>	429 460	290FDP	108°	290° 298°	247° 251°	.538" .552"	<b>84322</b>
<b>COMPU-PRO / Performance Level 5</b> Great high torque profile with mid-range power. RPM Power Range: 3000 - 7000 / Redline: 7400+	<b>22357</b>	429 460	300FDP	108°	300° 310°	255° 255°	.569" .578"	<b>84322</b>
<b>COMPU-PRO / Performance Level 5</b> Strong mid-range/top end profile. RPM Power Range: 4000 - 7250 / Redline: 7500+	<b>22358</b>	428 460	312FDP	108°	312° 318°	263° 269°	.590" .602"	<b>84322</b>
<b>CUSTOM GROUND SOLID</b> Special order solid lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00122M</b>	ALL CID	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>					

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

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Seals	Remarks
<b>84322</b>	66915-16	68340-16	87062-16	86072-16	Solid. 7500 plus rpm.
<b>84322X980</b>	66915X980-16	68340-16	87062-16	86072-16	CoolFace Solid Lifter. 7500 plus rpm.
<b>84322LW980</b>	66915LW980-16	68340-16	87062-16	86072-16	Light Weight Lifter

For severe duty applications, Crower recommends using our solid lifter with the added **"coolface oiling option"**.

### Spring pressure:

68340-16 Seat: 1.900" @ 118 lbs / Nose: 1.350" @ 355 lbs / Coil bind: 1.080"  
(Machine work, use cutter 68986\*).

Optional spring (race only):

68385X2-16 Seat: 1.900" @ 166 lbs / Nose: 1.300" @ 422 lbs / Coil bind: 1.100"  
(Machine work, use cutter 68986\*).

**Note:** Screw-in rocker studs should be used when installing solid lifter camshafts to insure proper valve adjustment. (See Page 137)

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

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

### Crower Recommends ZDDPlus for all Flat Tappet Cams

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

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

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



# MECHANICAL ROLLER TAPPET

1968-1994

370 429 460 V8

Description (Note: See pages 6-7 for a detailed explanation of each Performance Level)	Part Number	C.I.D. Group	Grind	Lobe Sep.	Advertised Duration		Duration @ .050"		Gross Lift 1.73 / 1.73		Suitable Component Kit
					Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	
<b>STREET ROLLER / Performance Level 4</b> - Excellent street/strip profile. RPM Power Range: 2500 to 6000 / Redline: 7500 plus.	<b>22401</b>	429 460	286R	110°	275°	284°	234°	244°	.570"	.572"	<b>84523</b>
<b>ULTRA-ACTION / Performance Level 5</b> - High torque oval track profile. RPM Power Range: 3750 to 7000 / Redline: 7500 plus.	<b>22402 MTO</b>	429 460	290R	108°	290°	296°	249°	254°	.642"	.645"	<b>84523</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Strong mid-range design. RPM Power Range: 4000 to 7250 / Redline: 7750 plus.	<b>22403</b>	429 460	300R	108°	300°	310°	258°	268°	.654"	.648"	<b>84523</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Fast 3/8 to 1/2 mile super oval track profile. RPM Power Range: 4250 to 7500 / Redline: 8000 plus.	<b>22404</b>	429 460	308R	108°	308°	314°	264°	268°	.666"	.668"	<b>84806</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Mid-range and top end drag profile. RPM Power Range: 4500 to 7750 / Redline: 8250 plus.	<b>22405</b>	429 460	316R	108°	316°	322°	272°	277°	.690"	.698"	<b>84806</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Mid-range and top end drag profile. RPM Power Range: 4750 to 8000 / Redline: 8500 plus.	<b>22406 MTO</b>	429 460	322R	110°	322°	328°	282°	280°	.757"	.721"	<b>84806</b>
<b>ULTRA-ACTION / Performance Level 5</b> - Full top end power profile. RPM Power Range: 5000 to 8250 / Redline: 8750 plus.	<b>22407 MTO</b>	429 460	330R	110°	330°	338°	284°	288°	.769"	.754"	<b>84806</b>
<b>CUSTOM GROUND ROLLER</b> - Special order roller lifter camshaft ground to your specifications. Call our technical support staff for personalized camshaft assistance.	<b>00122R</b>	All cid	<b>Refer to <a href="http://www.crower.com">www.crower.com</a> for camshaft recommendation</b>								<b>See Below</b>

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

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

## ENGINEERED COMPONENT KITS

Part No.	Lifters	Springs	Retainers	Cups	Remarks
<b>84523</b>	66217-16	68804-16	87063M-16		8000 plus rpm. Race only.
<b>84806</b>	N/A	68806-16	86781M-16	68940-1	

### Optional springs:

68804-16 Seat: 1.900" @ 257 lbs / Nose: 1.250" @ 582 lbs / Coil bind: 1.100" (Machine work, use cutter)

68806-16 Seat: 2.050" @ 194 lbs / Nose: 1.250" @ 733 lbs / Coil bind: 1.160"

\* Machine work required, specify 1 1/32 pilot shaft when ordering.

Note: Screw-in rocker studs should be used when installing roller lifter cams to insure proper valve adjustment. (See Page 137)

**Note:** Roller cams and kits available for Boss 429. Contact Crower for technical assistance.

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

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

Ex. 66290X874H-16

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

## ACCESSORIES

Description	See Page (s)
<b>Rocker Arms</b>	Pg's.134-146
<b>Distributor Gears</b>	Pg. 119
<b>Cam Accessories</b>	Pg's.117-119

**Note:** Rocker arms available in Steel Billet or Stainless.

