

New! from Zipper's Performance Products

# RED SHIFT

## Performance Camshafts

Available for Twin Cam®, EV Big Twin, Sportster®, XR1200® and Buell® Models



For over 30 years, **Red Shift Performance Camshafts** have been the choice of high performance engine builders. Master engine developer and **Red Shift Performance Camshaft** designer Dick Hilferty has always been at the forefront in all forms of racing and performance applications. Today, Dick Hilferty's designs are

manufactured at **Zipper's Performance Products** with the most advanced engineering design processes built into every cam. **Zipper's Performance Products** has always believed that power gains should be achieved by improved dynamics and efficiency, not by compromising valve train component reliability. Let **Red Shift Cams** create the power that you desire while protecting the investment that you have in your engine and valve train. **Engineered and Manufactured in the U.S.A.**

Zipper's Performance Products • 6655-A Amberton Dr. • Elkridge, MD • 21075  
P: (410) 579-2828 • F: (410) 579-2835 • [www.ZippersPerformance.com](http://www.ZippersPerformance.com) • [www.Thunder-Max.com](http://www.Thunder-Max.com)

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# ThunderMax Cams By Red Shift



Made In USA

For over 3 decades, Red Shift Cams have been the choice of high performance engine builders. Master engine developer and Red Shift camshaft designer Dick Hilferty has always been at the forefront in all forms of racing and performance applications. Today Dick's designs are manufactured at Zipper's with the most advanced engineering design processes built into every cam. Zipper's has always believed that power gains should be achieved by improved dynamics and efficiency, not by compromising valve train component reliability. Let Red Shift create the power that you desire while protecting the investment that you have in your engine and valve train.

## THUNDERMAX RED-SHIFT CAMS

### ThunderMax by Red Shift for 2007-up\* Twin Cam®

The stroked crankshaft in the 96" engine changes the dynamic from '06 and earlier model 88" engines, making correct cam choice crucial to avoid engine damaging detonation with today's fuel quality. All models require adjustable pushrods and are available in chain or gear drive. Spring work required unless otherwise noted as a bolt-in cam. We recommend new cam bearings and performance tappets with any cam change.

\*These cams can also be used in 2006 FXD engines

**575-HS:** Bolt-in cams for 96, 103 and 110 inch engines with stock, unmodified heads. Great bolt-in upgrade for stock 96 or 110" engines; also works well in 96 to 103" conversions. Lowers engine temperatures, increases torque and horsepower across the board, with emphasis on torque.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 575-HS '07-up	#413-926S	#413-926G

**577-HS:** The cam to use for 2007-up 103" and up conversion engines with flat-top pistons and stock or ported heads (bolt-in with stock conical springs). Provides smooth power without detonation. Broader timing for lower cranking compression and lower temperatures; great mid-range torque with strong top-end pull.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 577-HS '07-up	#413-921S	#413-921G

**657-HS:** 107" and Larger Engines. Max torque grind for '07up larger displacement engines with heavy payload. Narrower timing increases compression for more low-end grunt. Excellent valve train dynamics for long life. Works well with most bagger exhaust.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 657-HS '07-up	#413-941S	#413-941G

**647-HS:** 113" and larger engines. Max power grind for '07up larger displacement engines. Broader timing for higher compression applications. Great valve train dynamics for long life. Compliments high flow heads, intake and exhaust.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 647-HS '07-up	#413-931S	#413-931G



### Torrington® Cam Bearings

These genuine Torrington® brand full-compliment (no inner cage) bearings are the best you can buy! Specialized tools allow

professional, damage-free removal and installation.

Made In USA

PART NO.	DESCRIPTION
#417-460	Set/2, TC '07up & '06 FXD
#758-993	JIMS® cam bearing puller fits TC '07 up & '06 FXD
#758-991	JIMS® cam bearing installer fits TC '07 up & '06 FXD

### S&S Cam Gear Drive Kit



S&S's Gear Drive kit for Twin Cam® engines replaces the factory cam chain drive with inner and outer gear sets. Decreases drag and torsional load on the camshaft bearings, and eliminates chains, tensioners and guides that will eventually wear out over time. Because the factory chain drive has some slack inherent in its design, there are variations in

cam timing that can lead to power losses, especially when high lift cams and performance valve springs are installed. Requires camshafts specifically designed for gear drives (sold separately). Over- and under-size gears are available for custom fitment of gear lash if desired.

'99-'06*	'07-UP	DESCRIPTION
#416-908	#416-308	4-pc inner/outer drive gears w/hardware
N/A	#416-691	Gear drive installation/oil port blocking kit
*2006 FXD Engines Use '07up Gears		
#416-903	#416-303	2-pc outer drive gears only w/hardware
#416-905	#416-305	2-pc inner drive gears only w/keys
#416-906	#416-306	Undersize rear cam inner drive gear only
#416-907	#416-307	Oversize rear cam inner drive gear only
#416-901	#416-901	Undersize pinion (crankshaft) drive gear only
#416-902	#416-902	Oversize pinion (crankshaft) drive gear only
#416-909	#416-909	Replacement key set for gear drive gears

# ThunderMax Cams By Red Shift

## For '99-'06\* Twin Cam® Engines

Available in standard splined gear chain drive (stock H-D style), or configured for use with S&S Gear-Drive gear sets. All require adjustable pushrods; spring work required unless otherwise noted as a bolt-in cam. We recommend new cam bearings and performance tappets with any cam change.

\*These cams can not be used in 2006 FXD engines



Made In USA

**557TC:** 88"-95" Twin Cam® grind. Smooth, quiet operation with excellent valve control. Strong torque curve works well for riders who like cruising at lower RPM's, and 95" dressers that pull a heavy payload. Bolt-in with conical springs ('05-'06); small amount of case clearance required on some earlier year cases. Recommended compression range 9.0- 9.8 to 1.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 557TC '99-'06	#413-910S	#413-910G

**575TC:** Torque cams specifically designed for CVO 103" engines. Best choice for riders who want a large increase in useable torque with durability and smooth, quiet operation. Creates best power between 2000-4800 for a strong pull you will enjoy with every shift. Bolt-in with CVO 103 heads or '05up heads with (stock) conical springs.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 575TC '99-'06	#413-925S	#413-925G

**577TC:** Performance cams for 95"-103" Twin Cam® engines. Nice, smooth power and big torque in engines with good flowing heads, increased compression (9.5-10.5:1), performance ignition, exhaust and larger carb or throttle body. Bolt-in with conical springs or CVO 103 heads; runs very quiet. Can produce 105-110 rear wheel HP and torque in 95" engines.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 577TC '99-'06	#413-920S	#413-920G

ThunderMax Cams Spec Chart					
All numbers are calculated using stock rocker arm ratios. Re-calculate the figures if using higher ratio rocker arms.					
Cam Model	Intake Timing Exhaust @ .053"	Duration	Valve Lift	TDC Lift @ Valve	Spring Spacing?
557TC/HS	INT 20/100/42 EX 44/104/18	242 242	.557 .557	.180 .164	NO '05-Up YES '99-'04
575TC/HS	INT 25/97/41 EX 49/105/17	246 246	.575 .575	.200 .157	NO '05-Up YES '99-'04
577TC/HS	INT 25/100/47 EX 49/104/23	252 252	.577 .577	.214 .194	NO '05-Up YES '99-'04
627TC/HS	INT 28/102/52 EX 58/107/27	260 265	.625 .600	.241 .204	YES
647TC/HS	INT 26/106/58 EX 58/106/26	264 264	.647 .647	.211 .211	YES
657TC/HS	INT 27/99/45 EX 52/104/27	252 259	.657 .650	.227 .214	YES
727TC/HS	INT 35/105/66 EX 67/112/34	281 281	.727 .727	.285 .269	YES

**657TC:** Popular big lift cam, standard equipment in our Muscle 107 kit. Designed for powerful torque applications; has produced over 120 rear wheel horsepower in a 107" engine with mild compression, mufflers and pump gas. Everything you expect from Red Shift – great performance with excellent valve train dynamics.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 657TC '99-'06	#413-940S	#413-940G

**647TC:** This cam is designed for true performance enthusiasts who require a wide, usable power curve and strong top end charge, with excellent valve control. Recommended engine size 116" and up; 10.0-10.5:1 compression for pump gas; for additional power add 1.75 rockers and more compression. This cam is standard equipment in our muscle 120 and 124" kits.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 647TC '99-'06	#413-930S	#413-930G

**727TC:** Our hottest TC cam, intended for drag racing but can be used for big displacement, performance application TC engines. Requires highly modified heads with special valve springs. Extensive set up required for installation. Available in gear drive only.

DESCRIPTION	CHAIN DRIVE	GEAR DRIVE
Red Shift 727TC '99-'06	N/A	#413-950G



### Cam Bearing Kits And Tools

Cam change kits include genuine Torrington® brand full-compliment (no inner cage) inner bearings - the best you can buy! Specialized tools allow professional, damage-free removal and installation. **See page 7.x** for additional cam bearing tools.

PART NO.	DESCRIPTION
#417-450	Set of 4 inner and outer bearings fits '99-'06 w/chain drive cams
#417-455	Set of 4 inner and outer bearings fits '99-'06 w/gear drive cams
#758-279	JIMS® inner cam brg puller fits '99-'06 (not '06 FXD)
#758-278	JIMS® inner cam brg installer fits '99-'06 (not '06 FXD)

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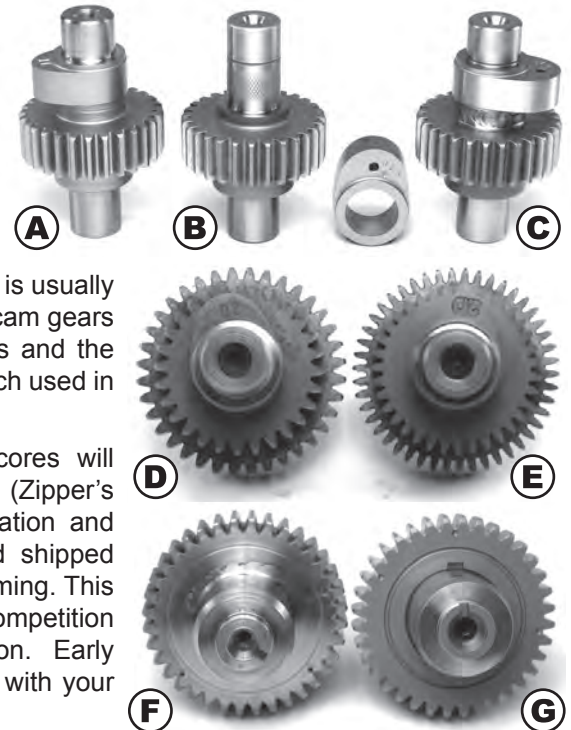
# Red Shift Cams for Sportster® And Buell® Engines

Red Shift Sportster® and Buell® cams can be ordered two ways. You can provide Zipper's your original cam gear set (A) from your engine, and we will remove the factory stock lobes (B) and replace them with new, hand-timed Red Shift lobes ground from 8620 steel billet (C). H-D® had gone to great pains to tighten gear lash on pre-2000 engines, using literally hundreds of cam gear sizes to match manufacturing differences during engine mass production. Installing the Red Shift lobes on the factory gear set retains this precise fitment.

If no cores are available or you do not want to wait (in-house production time is usually 2-3 weeks), you can order your cams installed on our new gear cores. Our cam gears feature a keyed drive to prevent gear slippage in severe duty applications and the driven gears are the pre-2000 wide pitch design (D), stronger than the fine pitch used in 2000 and later engines (E).

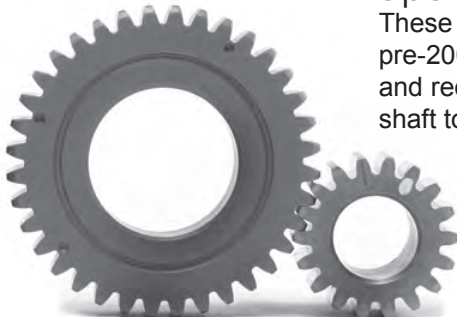
**Performance Notes:** Any camshaft above .600" of lift on factory cores will require the press-fit #2 drive gear to be welded (F) to prevent rotation (Zipper's new gear cores use a keyway on the #2 drive gear (G) to prevent rotation and do not require welding). Red Shift Sportster® cams can be timed and shipped un-welded, giving the performance engine builder final control of desired cam timing. This is required for any aftermarket 4-cam cases and recommended for all-out competition engines, due to manufacturing variations in case and component production. Early XR-style intake and exhaust patterns can be easily adapted. Call or write with your special requests.

The one thing that the following cam grinds have in common is that they usually service engines that will be run hard! For these cams to be able to deliver maximum output reliably, consideration must be given to the entire valve train especially in the area of the lifters and valve springs. The lifters in 5-speed XL® engines use guide pins against a flat area on the lifter body to control lifter rotation within the bore; they are tricky to modify properly for high lift cams and are prone to rotation in the bore. The stock lifters in '91-'99 engines should be replaced with units that are designed for increased lift and improved cam following such as JIMS® PowerGlide II lifters. A Zipper's Tappet Pin kit must be used on 'L94-'99 engines. Engines that will see RPM above 6,000 require stiff pushrods and heavier valve springs with titanium collars to reduce valve train weight and maintain valve control. Once control is lost, performance suffers and expensive parts get beat up in a hurry. Before making your purchase, think of the cams as only part of your valve train system. Contact us if you need help selecting the other supporting components.



## Sportster® Cam Drive Gears

These gears can be used to convert 2000 and later, high-contact cam drive gears to the pre-2000, wide teeth stronger versions used from 1991-1999. #2 drive gear is un-keyed and requires timing to be set in an engine base with a degree wheel, then welded to the shaft to prevent rotation in severe-duty applications.

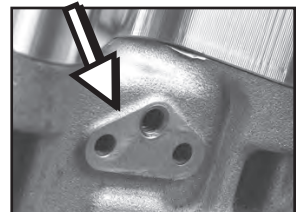


PART NO.	DESCRIPTION
#416-200	#2 Cam driven gear, '91-'99 style
#698-162	"Blue" '91-'99 pinion drive gear (smallest)
#698-163	"Red" '91-'99 pinion drive gear
#698-164	"White" '91-'99 pinion drive gear
#698-165	"Green" '91-'99 pinion drive gear
#698-166	"Yellow" '91-'99 pinion drive gear (largest)

## 5-Speed XL Tappet Pin Kit



Pre-2000 5 Speed XL engines use a tappet guide pin to control tappet rotation in the tappet bore. In earlier engines ('91 to around mid-94), the guide pins were fully supported on both sides of the tappet bore by a hole drilled in the case. In later engines, the case was machined differently; the guide pin hole was not drilled as deep and the pin did not fully cross the tappet, contacting only a part of the flat machined on the tappet designed to control tappet rotation. In high lift and/or high RPM applications, the tappet can be allowed to rotate as much as 5 degrees, resulting in premature tappet failure and cam damage. Our tappet pin kit includes 4 longer hardened pins and a drill bit to correct this problem. The engines in question can easily be identified by studying the photo shown. If the flat area under the cover plate is raised as shown (not recessed), you should perform this task.



PART NO.	DESCRIPTION
#413-901	Red Shift Tappet Pin Kit, 'L94-'99 5 speed XL's

**XR 1200 Cams  
Now Available!**



# Red Shift Cams For '91up Sportster® And Buell XB® Engines

These engines have on-center tappets (tappet centerline in line with cam shaft centerline) Most of our 5-speed XL cams require some clearance work to swing clearly in the engine case. This can be accomplished with our cam clearance tool (#713-908) for a very professional result. 2000 and later models require more extensive clearancing of the case and pinion bearing race. Most models will also require rocker box clearancing for the rocker arms on the pushrod side at full lift. Must be used with adjustable pushrods.

**567V2:** This extremely popular grind is used in our Super Hammer 1200 kit, produces the widest powerband available for the 5-speed 1200 engine! Narrow TDC lift for uncomplicated head set-up; excellent low end power and with great acceleration. RPM to 7200+ with proper set-up. Optimum performance with 9.8+:1 compression. Case clearancing required.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '91-up XL engines	#413-115	#413-115NC*
For '02-up XB engines	#413-115XB	#413-115XBNC*
For '08-up XR engines	#413-115XR	#413-115XRNC

**575V2:** New design for hot rod 1200 XL-XR engines. More low end/mid range torque than 567 cams; max power to 6500. Bolts in late model XL-XR engines with factory conical springs (2005-up), however, spring and retainer upgrade is required for high rpm use. Case clearancing required.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '91-up XL engines	#413-117	#413-117NC*
For '02-up XB engines	#413-117XB	#413-117XBNC*
For '08-up XR engines	#413-117XR	#413-117XRNC

**585V2:** Performance grind designed for 78"-88" engines. Good manners with great mid-range and top end power in big bore engines. Works very well in big bore Buells and S&S 79" Hot Set Up engines. Requires cam lobe to case clearancing, quality lifters and valve springs.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '91-up XL engines	#413-120	#413-120NC*
For '02-up XB engines	#413-120XB	#413-120XBNC*
For '08-up XR engines	#413-120XR	#413-120XRNC

**630/585:** Combination grind for high torque output in 79"- 88" engines. Really pulls down low to accelerate very quickly in the twistys. Strong power in the 2,200-6,000 RPM range. Engine should have 9.5-10:1 compression and good flowing heads.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '91-up XL engines	#413-127	#413-127NC*
For '02-up XB engines	#413-127XB	#413-127XBNC*
For '08-up XR engines	#413-127XR	#413-127XRNC

**643V2:** High output cams for 79"-99" competition engines. 11:1 compression needed for best results. Will deliver 7000+ RPM power with high breathing heads. Lower TDC lifts to reduce chamber volume in heads for ease of installation. Requires cam lobe to case clearancing, quality lifters and high quality valve springs.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '91-up XL engines	#413-130	#413-130NC*
For '02-up XB engines	#413-130XB	#413-130XBNC*
For '08-up XR engines	#413-130XR	#413-130XRNC

**729V2:** Dragster cams for 5 speed XL engines, and aftermarket cases with on-center tappets, 88" and up. Designed for max output of torque and HP. Requires high compression (12:1 min), case clearancing, tappet modifications, Pro Geometry roller rockers in 1.62 or use 1.75 to 1.85 rockers for more lift.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '91-up XL engines	#413-135	#413-135NC*
For '02-up XB engines	#413-135XB	#413-135XBNC*

**790V2:** On-center tappet design. This profile will allow tuning for increased power and torque over the previous 485 on-center design. Increased valve train stability of this design requires extra-stiff pushrods but allows substantial reduction in valve spring pressure compared to other cams in this class. Baisley Pro-Geometry rocker arms recommended (increase ratio for more lift).

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '91-up XL engines	#413-150	#413-150NC*
For '02-up XB engines	#413-150XB	#413-150XBNC*

\*2000 and later engines require the purchase of '91-'99 pinion drive gear...**(see page x.x or list #s if room)**

## Red Shift Cams for '91up Sportster® and Buell XB® Engines

All numbers are calculated using stock rocker arm ratios. Re-calculate the figures if using higher ratio rocker arms.

Cam Model	Intake Timing Exhaust @ .053"	Duration	Valve Lift	TDC Lift @ Valve	Spring Spacing?
567V2	INT 24/101/49 EX 54/108/19	253 253	.567 .567	.211 .172	YES
575V2	INT 26/96/38 EX 44/102/20	244 244	.575 .575	.204 .172	NO '05-Up YES '91-'04
585V2	INT 22/108/59 EX 66/117/13	261 259	.583 .583	.183 .139	YES
630/585V2	INT 26/95/40 EX 59/108/21	246 260	.630 .583	.224 .181	YES
643V2	INT 28/104/62 EX 71/116/19	270 270	.643 .643	.235 .172	YES
729V2	INT 34/104/65 EX 71/112/28	279 279	.729 .729	.279 .228	YES
790V2	INT 36/104/66 EX 66/106/36	282 282	.790 .790	.282 .280	YES



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# Red Shift Cams for Sportster® Engines

## '86-'90 EV XL and 4 Cam Offset Tappet Engines

*These engines have off-center tappets (tappet centerline offset from cam shaft centerline)*

**573V2:** Back by popular demand! Hard charging cams for high output 1200 engines with oversize valves, ported heads, increased compression and performance intake and exhaust. Can also be used for higher torque in 79-88" engines.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '86-'90 XL engines	#413-615	#413-615NC

**615V2:** High lift and narrow lobe profile, for high output big bore engines. Run with 10.5-11:1 compression on pump gas. Excellent balance of torque and horsepower.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '86-'90 XL engines	#413-618	#413-618NC

**723V2:** Most popular design for Sportsman dragsters (88" and up), broad valve timing and big lift for maximum torque and high RPM horsepower. Excellent dynamics for valve control and longevity.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '86-'90 XL engines	#413-635	#413-635NC

**723/719V2:** For Nitro dragster engines. Popular 723 intake cams matched with extra wide duration exhaust cams specifically designed for Nitro powered engines with offset tappets.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '86-'90 XL engines	#413-636	#413-636NC

**785V2:** Offset tappet design - the original design of the venerable XL Pro-Stock-Top Gas Cams. This same profile has been used in many championship forms of racing. Net tappet lift is .485"; .785" @ valve with 1.62 rocker ratio. Increase rocker ratio for more valve lift.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '86-'90 XL engines	#413-642	#413-642NC*

**745/719V2:** Broader intake timing for larger for nitro dragster engines; matched with extra wide duration exhaust cams specifically designed for Nitro powered engines with offset tappets

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '86-'90 XL engines	#413-638	#413-638NC

**786V2:** This profile will allow tuning for increased power and torque over the previous 785 off-center design. Increased valve train stability of this design requires extra-stiff pushrods but allows substantial reduction in valve spring pressure compared to other cams in this class. Baisley Pro-Geometry rocker arms recommended (increase ratio for more lift).

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '86-'90 XL engines	#413-640	#413-640NC

### Red Shift Cams for '86-'90 4 Speed EV XL and 4 Cam Offset Tappet Engines

All numbers are calculated using stock rocker arm ratios. Re-calculate the figures if using higher ratio rocker arms.

Cam Model	Intake Timing Exhaust @ .053"	Duration	Valve Lift	TDC Lift @ Valve	Spring Spacing?
573V2	INT 25/105/55 EX 65/115/15	260 260	.575 .575	.215 .157	YES
615V2	INT 28/103/58 EX 59/106/25	266 264	.615 .615	.225 .207	YES
723V2	INT 39/105/62 EX 75/116/25	281 280	.723 .723	.284 .207	YES
723/719V2	INT 39/105/62 EX 82/113/35	281 297	.723 .719	.284 .290	YES
745/719V2	INT 36/109/73 EX 82/113/35	289 297	.745 .719	.279 .290	YES
785V2	INT 27/112/71 EX 78/119/20	278 278	.787 .787	.237 .190	YES
786V2	INT 28/111/72 EX 78/119/20	280 278	.787 .787	.219 .183	YES

## '57-'85 Iron Sportster® Engines

*These engines have off-center tappets (tappet centerline offset from cam shaft centerline)*

**505XL:** Performance cams for 61-74" Iron Sportster® engines (can also be configured for XR1000 engines). Compliments ported heads, increased compression, high flow carb and exhaust. Extra-wide powerband with great dynamics.

DESCRIPTION	ON YOUR CORES	ON NEW CORES
For '57-'85 XL engines	#413-710	CALL

## Zipper's Sportster® Cam Relief Tool

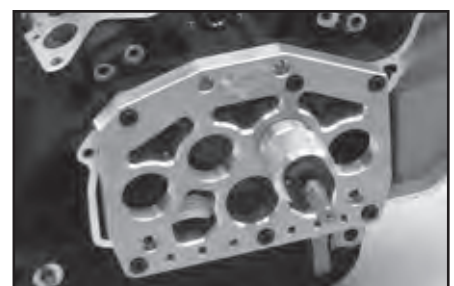
Installing high lift cams in 5 speed Sportster and Buell engines usually requires the removal of some case material at the base of the lifter bores and around the pinion bearing for lobe swing clearance. Doing the job correctly required splitting the cases and a milling machine; a lot of work! This tool cuts clearance quickly and professionally and can be performed on an assembled engine in the frame.

PART NO.	DESCRIPTION
#713-908	Zipper's '91-up XL, Buell XB cam relief tool

### Red Shift Cams for '57-'85 Iron Sportster® Engines

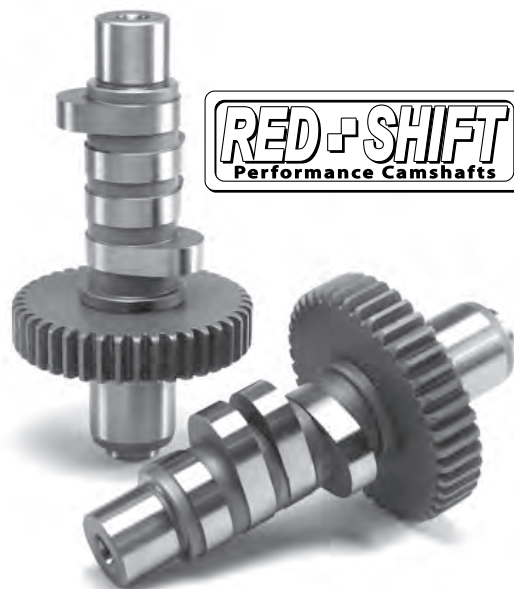
All numbers are calculated using stock rocker arm ratios. Re-calculate the figures if using higher ratio rocker arms.

Cam Model	Intake Timing Exhaust @ .053"	Duration	Valve Lift	TDC Lift @ Valve	Spring Spacing?
505XL	INT 25/105/55 EX 65/115/15	260 260	.505 .505	.188 .138	YES
520XR	INT 25/105/55 EX 65/115/15	260 260	.520 .520	.194 .143	NO



# Red Shift Cams for EV Big Twin Engines

**For over 3 decades, Red Shift Cams have been the choice of high performance engine builders for aftermarket H-D® applications.** Master engine developer and Red Shift camshaft designer Dick Hilferty has always been at the forefront of the most advanced designs in all forms of racing and performance applications. Today Dick's designs are manufactured at Zipper's with the most advanced engineering design processes built into every cam. Red Shift Cams will provide you with the most advanced components for power gains and unrivaled valve train dynamics. Maintaining valve train control should be every engine builder's first concern when choosing a camshaft. A lack of valve train control, or noise, simply shows a lack of dynamic sophistication and your engine will ultimately pay the price. Zipper's has always believed that power gains should be achieved by improved sophistication and efficiency, not by compromising component reliability. **Let Red Shift create the power that you desire while protecting the investment that you have in your engine and valve train.**



**559V2:** Our most popular performance cam for 80-88" Evolution engines, used in our 80/80 kit. Big, broad power from 2,200 to 6,000 RPM, this cam delivers an extra-wide torque curve that tops out at over 90 ft lbs of torque, HP in the mid to upper 80's. Designed to be used with 9.5 to 10:1 compression. Uncomplicated head set-up for .560" lift, minor case clearancing required.

DESCRIPTION	PART NO.
Red Shift 559V2 '84-'99 EVBT Cam	#413-413

**576V2:** This cam is designed for high output 80-88" EV engines, 10.5:1 and up. Aggressive torque and horsepower; with good heads will produce 105+ hp. Minor case clearancing necessary due to the larger base circle used to reduce pressure angle. Hydraulic travel limiters suggested.

DESCRIPTION	PART NO.
Red Shift 576V2 '84-'99 EVBT Cam	#413-422

**626V2:** Torque cam for big bore/stroker engines, shifts optimum power to lower RPM range (2,200-5,500). Excellent choice for larger displacement engines in heavier bikes that will be operated at moderate RPM's. Case clearancing and hydraulic limiters required.

DESCRIPTION	PART NO.
Red Shift 626V2 '84-'99 EVBT Cam	#413-427

**647V2:** Big motor horsepower cam. New dynamics matched for today's cylinder head technology yields excellent power increase throughout rpm range. Works best with 10.2 + compression on 100"+ cubic inch engines. Case clearancing and hydraulic limiters required.

DESCRIPTION	PART NO.
Red Shift 647V2 '84-'99 EVBT Cam	#413-428

**656V2:** This cam is designed for maximum torque, yet produces excellent top end power in 96"-125" street engines. Ideal for use in heavier machines; a real stump puller! Requires moderate compression and uncomplicated head set-up; moderate TDC lifts make installation of this cam easy. Works best with 9.8-10+ :1 compression. Case clearancing required.

DESCRIPTION	PART NO.
Red Shift 656V2 '84-'99 EVBT Cam	#413-442

**715V2:** Big power cam for large performance engines - The HP King! Big lift and broad timing, designed for large, high compression (11.5+) engines that have requirements that production cams cannot fill. Popular choice for all-out hot rods but has strong mid-range and good valve control for longevity. Best results when used with Baisley Pro Geometry roller rockers.

DESCRIPTION	PART NO.
Red Shift 715V2 '84-'99 EVBT Cam	#413-445

**790V2:** Pro Gas dragster cam for big inch EV engines. Improved output and valve control, .790" lift with 1.62 rockers (increase rocker ratio for more lift.) Sophisticated profile delivers big power. TDC lift requires professional set up of cylinders heads and valve gear. Use with solid lifters only.

DESCRIPTION	PART NO.
Red Shift 790V2 '84-'99 EVBT Cam	#413-451

## Red Shift Cams for EV Big Twins Spec Chart

All numbers are calculated using stock rocker arm ratios.  
Re-calculate the figures if using higher ratio rocker arms.

Cam Model	Intake Timing Exhaust @ .053"	Duration	Valve Lift	TDC Lift @ Valve	Spring Spacing?
559V2	INT 16/104/46 EX 47/106/15	242 242	.555 .555	.159 .154	YES
576V2	INT 26/99/46 EX 47/102/25	252 252	.576 .576	.219 .203	YES
626V2	INT 28/102/52 EX 58/107/27	260 265	.625 .600	.241 .204	YES
647V2	INT 26/106/58 EX 58/106/26	264 264	.647 .647	.211 .211	YES
656V2	INT 28/100/50 EX 52/104/26	258 258	.648 .648	.233 .219	YES
715V2	INT 31/110/71 EX 80/119/22	282 282	.715 .715	.251 .200	YES
790V2	INT 36/104/66 EX 66/106/36	282 282	.791 .791	.282 .280	YES

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