

ZIPPER'S PERFORMANCE PRODUCT SPOTLIGHT

ThunderMax Cams

09/2011



For over 3 decades, Red Shift Cams have been the choice of high performance engine builders.

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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.

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.*

ThunderMax Cams by Red Shift for '07-Up TC



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. Made in U.S.A. *Click on the part number to order on-line!*

Part No. Description

[#413-926S](#) CHAIN DRIVE - Red Shift 575-HS Cams for '07-up TC Models

[#413-926G](#) GEAR DRIVE - Red Shift 575-HS Cams for '07-up TC Models

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. *Click on the part number to order on-line!*

Part No. Description

[#413-921S](#) CHAIN DRIVE - Red Shift 577-HS Cams for '07-up TC Models

[#413-921G](#) GEAR DRIVE - Red Shift 577-HS Cams for '07-up TC Models

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 bigger exhaust. *Click on the part number to order on-line!*

Part No. Description

[#413-941S](#) CHAIN DRIVE - Red Shift 657-HS Cams for '07-up TC Models

[#413-941G](#) GEAR DRIVE - Red Shift 657-HS Cams for '07-up TC Models

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. *Click on the part number to order on-line!*

Part No. Description

[#413-931S](#) CHAIN DRIVE - 647-HS Cam f/ '07-up TCs

[#413-931G](#) GEAR DRIVE - 647-HS Cam f/ '07-up TCs

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? |
|-----------|-------------------------------|----------|------------|------------------|-----------------|
| 957TCMS | INT 20/100/42 | 242 | .557 | .190 | NO '05-Up |
| | EX 44/104/18 | 242 | .557 | .164 | YES '99-'04 |
| 978TCMS | INT 25/97/41 | 246 | .575 | .200 | NO '05-Up |
| | EX 49/105/17 | 246 | .575 | .157 | YES '99-'04 |
| 977TCMS | INT 25/100/47 | 252 | .577 | .214 | NO '05-Up |
| | EX 49/104/23 | 252 | .577 | .194 | YES '99-'04 |
| 947TCMS | INT 26/106/58 | 264 | .647 | .211 | YES |
| | EX 58/106/26 | 264 | .647 | .211 | YES |
| 957TCMS | INT 27/99/45 | 252 | .657 | .227 | YES |
| | EX 52/104/27 | 258 | .650 | .214 | YES |
| 727TCMS | INT 35/105/66 | 281 | .727 | .295 | YES |
| | EX 67/112/34 | 281 | .727 | .269 | YES |

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 U.S.A. *Click on the part number to order on-line!*

Part No. Description

[#417-460](#) Set of 2, for '07-Up TCs and '06 FXD

[#758-993](#) JIMS® cam bearing pulper fits TC '07-up and '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. *Click on the part number to order on-line!*

Part No. Description

[#416-308](#) 4-pc inner/outer drive gears w/hardware