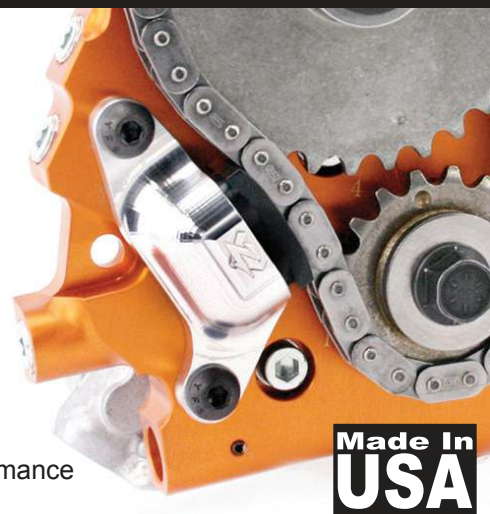


Red Shift® Dual Piston Cam Chain Tensioners

A Better Alternative to Gear Drive Cams!

New Red Shift® Dual Piston Hydraulic Cam Chain Tensioners are the “Go-To” product for all Twin Cam® engines using hydraulic chain tensioners. This revolutionary new design is simple and effective, improving cam chain tension stability, hydraulic performance, and valve train control for a quieter, better running engine.



Made In
USA

Benefits Include:

- Dual Piston Design Eliminates Chain Instability & Tensioner Shoe “Rocking”
- Facilitates Accurate Cam Timing Events for Both Cylinders
- Tolerates Common Crankshaft Run-Out (Unlike Gear-Drive Cams)
- Improves Throttle Response, Acceleration and Across-The-Board Power
- Larger Reservoir Increases Oil Flow to Tensioners for Better Hydraulic Performance
- Precision CNC Machined and Made From Superior Materials



RED SHIFT

PERFORMANCE CAMSHAFTS

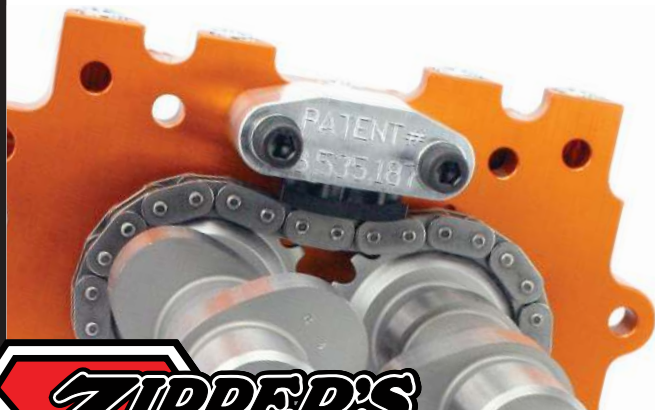
Red Shift® Dual Piston Tensioners feature design and manufacturing improvements for superior performance over the stock tensioners. When the Twin Cam® engine is running, the power pulses rock the factory single-piston tensioner shoe. The stock shoe movement causes the tensioner piston to unseat at the base, interrupting the pressurized oil system and introducing air into the tensioner. This introduction of air diminishes the pressure that the tensioner shoe places on the cam drive chains, resulting in poor valve train control. This loss of control contributes to engine noise and “bounced” components including valves, spring collars, rocker arms, pushrods, lifters and camshafts.

Red Shift® Tensioners’ dual-piston design reinforces shoe and hydraulic stability, eliminating harmful air leaks in the tensioner system. By creating reliable overall valve train control and durability, Red Shift Tensioners will reduce engine noise and wear on valve train parts.

Red Shift® Dual Piston Cam Chain Tensioners are the finest tensioners on the market, engineered with superior manufacturing and design. Red Shift® Dual Piston Cam Chain Tensioners are manufactured in the U.S.A., from high-quality aluminum, premium wear-resistant plastic and automotive grade hydraulic tensioning bodies. These tensioners are manufactured to extremely close tolerances to ensure maximum valve train control and engine performance. **Patent # 8,535,187**

PART NO. DESCRIPTION

- | PART NO. | DESCRIPTION |
|----------|--|
| #413-901 | Fits all '07-up Twin Cam® engines and '99-'06 engines converted to hydraulic tensioner systems |
| #413-902 | Red Shift® Cam Chain Tensioners w/Axtell Oil Bypass Valve Kit #620-103 for all H-D® & S.E.® Cam Plates |



v.20150119

Zipper's Performance Products
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Cam Chest / Oil System Upgrades

Axtell Oil Bypass Valve

This is a new product designed and developed by the Axtell Mountain Motor team. This bypass valve consists of a precision-machined "needle and seat" that inserts in place of the factory oil pressure relief valve located within the Twin Cam® cam plate. With the factory OEM oiling system configuration, when oil pressure becomes excessive, it is bypassed from the high pressure side of the feed gerotor back to the low pressure side, "looping" the oil in the feed gerotor gears. This causes the introduction of air into the pressurized oil (aeration) - aerated oil is foamy and spongy, and results in lower oil pressure and volume. When this occurs, the entire oiling system is affected - engine heat and noise builds, piston oilers shut down sooner than designed, valve train and top end life is shortened. This system blocks the factory port back to the feed side of the pump and directs the bypassed oil into the cam chest. The scavenge side of the oil pump returns the excess oil to the oil tank and eliminates the oil "looping" and its negative effects.

Cam Plate Cutaway with #620-103 Bypass Valve
Fluted Design of Needle Allows Oil Flow Through Valve



With the Axtell valve you can expect higher, more stable oil pressure at all engine rpms, longer oil life due to reduced oil shear, lower oil and engine temperature, improved valve train control and reduced noise. Zipper's recommends this for use with our Red Shift® Dual Piston Cam Chain Tensioners. Fits all factory H-D® and Screamin' Eagle® cam plates. Patent Pending #61/693,612

PART NO.	DESCRIPTION
#620-103	Axtell Bypass Valve for All Harley-Davidson® and Screamin' Eagle® Brand Twin Cam® Cam Plates
#413-902	Red Shift® Cam Chain Tensioners w/Axtell Oil Bypass Valve Kit #620-103 for all H-D® & S.E.® Cam Plates



Baisley Precision-Ground Bypass Plunger

#626-010 The factory-installed plunger valve does not have a concentric taper where the valve seats on the cam plate bypass passage and is known to leak pressure at lower engine rpm's. Baisley's Precision-Ground Oil Pressure Relief Valve has a concentric taper that is designed to improve sealing and oil pressure below the blow-off point, enhancing and stabilizing oil pressure to critical engine components. Fits all Twin Cam® engines

#626-010



Oil Pressure Relief Valve Springs

A. Baisley Hi-Performance LMR-2: 6.2 lbs of Seat Force, 14.2 lbs fully compressed. Baisley springs offer increased seat pressure and overall spring force. Baisley springs operate in a progressive manner, and are precision ground to exact lengths. #626-002

B. Baisley Hi-Performance LMR-4: 7.0 lbs of Seat Force, 16.7 lbs fully compressed. Baisley Hi-Performance springs operate in a progressive manner, and are precision ground to exact lengths. LMR-4 is best for use in large displacement engines with upgraded oil pumps and aggressive cams. #626-004

Zipper's '99-'06 Twin Cam® Oil Bypass Shim

The TC engine features an oil pressure bypass passage within the cam support plate that is controlled by a spring-loaded plunger. Inconsistencies in 1999-2006 spring length and passage machining can cause the plunger to open prematurely and/or not fully close the passage, resulting in a loss of critical oil pressure and volume at lower RPM's. This shim assures proper spring pre-load, improving oil pressure and volume.



DESCRIPTION	EACH	5-PACK	10-PACK
Zipper's '99-'06 TC88 Oil Bypass Shim	#617-602	#617-603	#617-604

Products on this page are not for use on pollution controlled vehicles.



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