



Installation Instructions for Red Shift Big Twin Cams

Thank you for your purchase of a Red Shift Cam! Certain areas must be checked for adequate clearance when installing this cam, and modifications must be made if proper clearances are not available in present form.

When installing any camshaft with increased timing and lift, valve to valve clearance must be checked at piston top dead center. This is easy to do on an unassembled head. Clamp the head (gently) in a vise on its side. Insert both valves in the guides, bottomed on the valve seats. Measure the valve stem from the top of the guide to the top of the valve. Using the specifications provided, open the intake valve the specified amount, then the exhaust valve. The distance between the open valves must be a minimum of .050". If more clearance is needed, the valve must be recessed further into the head. This is done before any valve spring packing. Make sure you recalculate for a modified rocker ratio if yours is different from the stock specifications shown.

Evolution Big Twins

Rotate the cam in the case and check clearance between the last lobe and pinion race. Clearance should be a minimum of .030". Remove material from the case insert and race if needed for clearance (our cam clearance machining tool makes this job a snap, part # 713-902). This is also a good time to install a new Torrington brand cam bearing. Install cam, set end play to .008"-.015". Install one lifter block with lifters and slowly roll the engine over to check each lifter travel in the lifter block. With a lifter at max lift on the cam, check for an additional minimum of .060" of lifter travel. If there is not adequate clearance or the lifter roller tops out in the lifter block, carefully file the roller slots in the lifter blocks for clearance. Check for minimum .060" cam lobe (to lifter block bottom side) clearance for the opposite cylinder's cam lobes, and clearance between each cam lobe and the *sides* of the lifters *next* to it. Once all clearances have been made, install the other lifter block and repeat the above steps. Use our travel limiters (part #498-339) in the lifters for more precise valve control. Use only adjustable pushrods.

Set the heads up to the TDC and travel specifications shown below. Use a quality valve spring kit with seat pressure set at the minimum shown, and coil bind a minimum of .040" over valve lift. Check clearance between rocker arms and rocker lids at full lift, and .060" valve-to-piston clearance using lightweight checking springs (our part 738-881) in place of the valve springs for accurate readings.

Dyno testing has proven a performance exhaust system is crucial to obtain maximum results from these cams. Pipes designed with emphasis on "cosmetics or style" are usually poor performers on high output engines. Performance-designed muffler pipes will yield high, broad torque curves and good horsepower output, while drag pipes will make more peak power with a narrower torque curve. Engine size and flow requirements should be taken into consideration when choosing drag pipe diameter, and length is also critical for a broad powerband. Commercially available drag pipes are usually not long enough for best power.

559V2 Notes: Works best with ported heads, high flow carb and pipes and 10-10.5:1 compression.

576V2 Notes: Works best with ported heads, high flow carb and pipes and 10.5-11:1 compression.

626V2 Notes: Narrower timing than the 625V2 for stronger, earlier torque delivery; makes more power at lower RPM range. For larger displacement engines in heavier bikes that will be operated at up to 6,000 RPM's. Will also improve power curve in larger engines with lower static compression.

647V2 Notes: We recommend setting compression to 10+:1 for street and 12+:1 for race-only use with this grind. Use of a domed piston such as our Axtell 30 degree models will simplify raising compression without major head modifications. Roller rockers recommended, check rocker arm geometry. d not create any rocker geometry problems.

656V2 Notes: High torque street cam. Strong top end power and broader torque in larger engines with compression in the 10:1+ range. 528-973 spring kit and roller rockers recommended, minimal rocker arm geometry work required.

715V2 Notes: Serious output cam for large road engines. High lift requires more headwork and domed pistons. The higher the compression (11:1+), the better the results. Pro valve springs, roller rockers, valve length modification and corrected rocker arm geometry required.

790V2 Notes: Broad TDC lift requires extensive headwork and domed pistons. Roller rockers, valve length modification and corrected rocker arm geometry required. Use of 1.7+:1 rocker arms will require rocker spacer plates and our 568-425 spring kit.

Cam Model	Cam ID	Valve Lift	Hyd. OK	Solid Only	Tappet Clearance	Timing @.053 Open/Center/Close	T.D.C. at Valve	Rocker Ratio	Seat Pressure
559V2	Int 559E	.555"	Yes			16/104/46	.159"	1.62	160#
	Exh	.555"	Yes			47/106/15	.154"	1.62	160#
576V2	Int 576E	.576"	Yes			26/99/47	.219"	1.62	160#
	Exh	.576"	Yes			47/102/24	.203"	1.62	160#
626V2	Int 626E	.626"	Yes			29/102/54	.243"	1.62	160#
	Exh	.600"	Yes			56/107/26	.206"	1.62	160#
647V2	Int 647E	.647"	Yes			26/106/58	.211"	1.62	160#
	Exh	.647"	Yes			58/106/26	.211"	1.62	160#
656V2	Int 656E	.648"	Yes			28/100/52	.233"	1.62	160#
	Exh	.648"	Yes			52/104/26	.219"	1.62	160#
715V2	Int 715E	.715"	Yes		.003 - .006"	31/110/71	.251"	1.62	200#
	Exh	.715"	Yes		.003 - .006"	80/119/20	.200"	1.62	200#
790V2	Int 790E	.791"		Yes	.006 - .010"	36/104/66	.282"	1.62	220#
	Exh 790E	.791"		Yes	.006 - .010"	66/106/36	.280"	1.62	220#

This product is legal in California only for racing vehicles which may never be used upon a highway.

1/08 Thank You for Purchasing a Zippers Performance Product!