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YAMAHA
RAPTOR
24039

With Titanium Retainers

HIGH PERFORMANCE VALVE SPRINGS INSTALLATION GUIDE

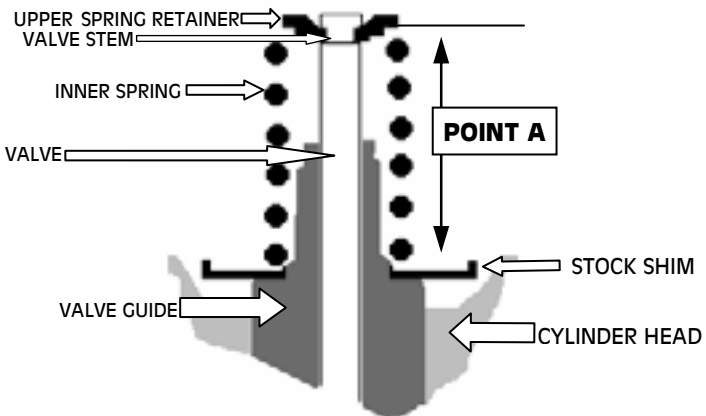
TO OBTAIN THE CORRECT INSTALLED HEIGHT:

Assemble the valve in the head, leaving out the outer spring. Measure the space available for the outer spring (this is called the installed height dimension). If the installed height is larger than desired, it can be reduced by replacing shims. When you have determined how much shim will be needed, disassemble the valve train. From this point on, do not mix up the valves, springs, retainers, etc. It is recommended that you mark the pieces for identification with paint rather than stamping or scribing.

Check to see that the spring retainer will not contact the valve stem seal at full lift. To do this, assemble the retainer on the valve with no springs. AT maximum lift there should be at least .020" clearance between the retainer and the stem seal. If you need additional clearance, you must shorten the guide. ***DO NOT, under any circumstances, remove material from the bottom of the retainer!***

After full assembly and adjustment of the valve train, check for any other interference, such as contact between the spring retainer and rocker arm or cam cover. A final visual check for coil bind at full valve lift should be made at this time before starting the engine.

RECOMMENDED INSTALLED HEIGHT OF THESE SPRINGS - **POINT A - IS: 1.200" TO 1.210"**



VALVE SPRING INSTALLATION INSTRUCTIONS – PAGE 2



Powroll spring kits are designed for use in high performance engines. We warrant these springs to be free of defects. Please inspect springs carefully BEFORE installation, as used parts cannot be returned under warranty.

When assembling a high-performance engine, components (such as pistons, cams, valve guides, etc) which were not designed or tested by the engine manufacturer are brought together. It is your responsibility to ensure these parts operate together without interference.

SOME POINTS TO CHECK ON AN OHC, ROCKER ARM, SINGLE CYLINDER ENGINE ARE:

- ➡ Check rocker arm to top retainer clearance (.040" min). Start at TDC, go through one complete revolution of the cam.
- ➡ Stop at maximum lift and check top retainer to valve guide seal clearance (.020" min).
- ➡ Stop at overlap position (both inlet and exhaust valves open) and check clearance between inlet and exhaust valves (.040" min). This is vital with oversize valves and high performance cams.
- ➡ Check piston to cylinder head and head gasket clearance (.030" min). This is especially important with big-bore pistons.
- ➡ Check piston to inlet and exhaust valve clearance (.030" min). This step is vital with high compression pistons, high lift cams, and oversize valves (used singly or together).

NOTE

Powroll spring kits are designed to work with Powroll and OEM Parts. When using components from other manufacturers, it is up to the purchaser to determine whether such components are compatible.