Pushrod Adjustments and Hydraulic Lifters

Because we make many camshafts and pushrod sets for the H/D accessory market, we frequently hear the following question; “What is the proper procedure for adjusting the pushrods on my bike?”

The diagram at the right shows a cutaway schematic view of an adjustable pushrod and hydraulic lifter assembly. Labels identify some of the components. (Note that for this explanation, no check valve is shown but it is part of the lifter).

When hydraulic lifter units are first assembled (with no pushrod present), the compression spring pushes the hydraulic unit and pushrod seat upwards until the pushrod seat contacts the lower edge of the retaining ring. At this point the hydraulic unit cannot move any further upwards.

It can however move down approximately .150 inches. This downward travel is the adjustment range. In other words, the adjustment length starts at 0.0 and can be as much as .150 inches. Correctly adjusted lifters position the hydraulic units in the middle of the .150 travel range.

For hydraulic lifters to function correctly, the engine oiling system must operate with at least 10 to 15 PSI oil pressure. Pressurized oil will then fill the area around the compression spring. And as far as hydraulic lifters are concerned, more oil pressure will not result in lifters running better.

Pushrod adjustments may now be completed. First, with each roller lifter at the low lift point, lengthen the adjuster screw by hand until it makes tight contact with the pushrod seat in the lifter. Then, extend the adjuster screw down (making the pushrod longer) three or four full turns. (The exact number of turns is not critical).

Andrews Products adjuster screws for EV80 and Twin Cam pushrods are made with (5/16 x 32) threads, so three turns will lengthen the pushrod by .093 inches (3 x 1/32 = .093 inches). Each full turn of an adjuster screw changes the pushrod length by .032 inches.

The pushrod seat and hydraulic unit are now positioned to operate correctly, and will move up or down to compensate for engine expansion due to warm up or cooling down of the engine. As long as the hydraulic unit and pushrod seat can move up and down and not touch the upper retaining ring or “bottom out” during operation, the pushrod length has been set for the lifters to function normally.

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