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TECH TIPS FROM THE CHIEF

PUSHROD LENGTH AND ROCKER ARM GEOMETRY

A large number of variables are involved in determining the correct length pushrod for your application. Any or all of the following affect pushrod length:

- Block Deck Height
- Head Deck Height
- Head Stud Boss Height
- Rocker Arm Brand/Design
- Cam Base Circle Size
- Lifter Design/Brand/Pushrod Seat Height
- Valve Stem Length



Do not assume anything in determining the right pushrod for your new engine. A pushrod that fits one engine may not necessarily work in another. Any number of items can be different on your engine, requiring you to use a different pushrod length. Following the steps below will streamline the pushrod selection process, ensuring that you get the right parts the first time.

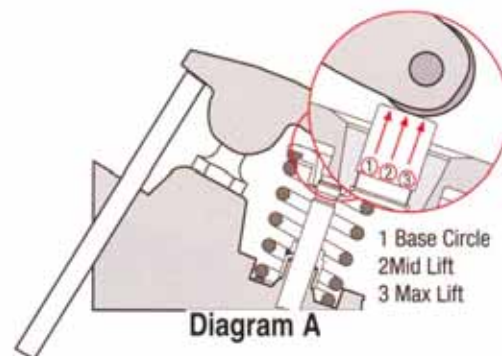
1. Buy a checking pushrod

Do not buy pushrods when you buy the cam, lifters, and the rest of the valve train components. Nobody can predict ahead of time what length a given engine needs, unless it is bone stock. Instead, invest in a checking pushrod at this time.

With a checking pushrod, you can actually rotate the motor over and check the rocker arm/valve tip relationship as you adjust the pushrod length. When you get the correct geometry, it is a simple matter then to measure the length and place an order.

2. Determine the correct valve train geometry

What is the correct length pushrod for your application? The one that produces correct valve train geometry. What is correct valve train geometry? When the rocker arm roller tip rolls from the intake side of the valve tip, across the center of the tip (at approximately mid-lift), to the exhaust side of the valve tip (at full lift) and back. See Diagram A



3. Measure the resulting pushrod

Measuring the length of a pushrod is really rather simple, but it can be confusing at times. The most important thing to remember is that different manufacturers measure pushrods differently. So not all pushrods of a stated length will measure the same. The three most common pushrod measurements are shown in Diagram B.



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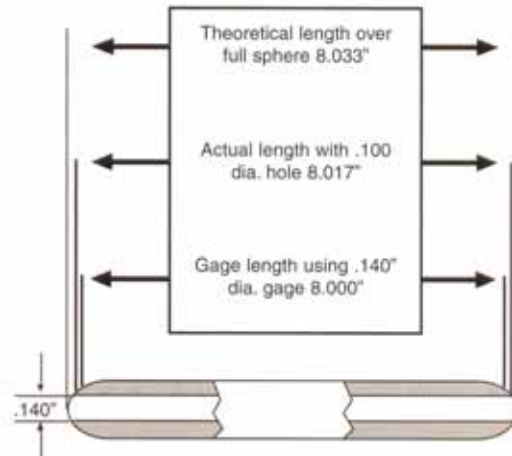


Diagram B

Theoretical Length: This assumes that the pushrod has no oil hole in the end of it. Therefore, the radius at either end is complete, which lengthens the pushrod approximately .017" in the case of a 5/16" pushrod with .100" diameter oil holes, minimally chamfered.

Actual Length: This is what you would measure if you had a set of calipers large enough to measure over the oil holes at each end of the pushrod. Most people can relate to this measurement. Unfortunately, this measurement is affected not only by the diameter of the oil holes, but also by the entrance chamfer for each oil hole.

Gage Length: Although the most difficult to measure (requires special length checking gauge CMC-4997), this measurement is the most reliable. This is because the oil holes and their chamfers are eliminated from the measurement. The only problem is that not all companies use the same gage diameter. Comp Cams uses a .140" gage diameter.