

TWS Cam Break In Procedure

Please follow all 3 steps below, in order

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1. Pre cam install instructions for lifters

- Soak lifters in [mineral oil](#) for a minimum of 2 hours, moving lifters around every 30 minutes
- After this, soak lifters in regular motor oil (non-synthetic) for 4 hours

2. Setting lifter preload

When installing any new cam, lifters or valve springs it is a good idea to check your lifter preload.

Parts used in this document:

- [TWS Performance Cam Kit](#)
- [TWS Heavy Duty Push Rods](#)
- [TWS Shim Kit](#)

Step 1

Put your number 1 cylinder push rods in and lay your rocker shaft on the head without shims. It is also helpful to put the 2nd to the last push rod in to keep the rocker assembly straight.



Step 2

Begin to tighten down the rocker assembly on the number 1 cylinder until there is zero play (up and down) on both number 1 push rods.

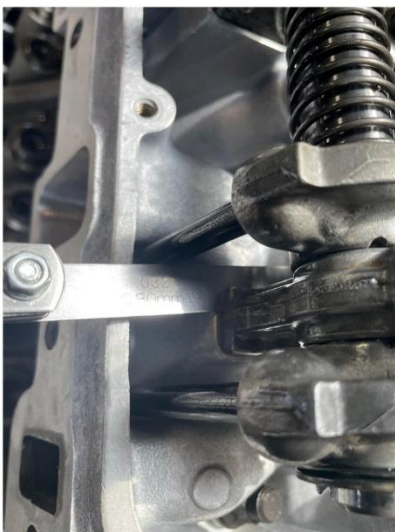


Step 3

Now you will measure the gap (in thousandths) between the rocker stanchion and the head with a feeler gauge. Take the number you get and multiply this by 1.6 (rocker ratio). You want the final number to be between .040 and .060 thousandths of an inch. If you're not within this range and are above that range, you will need to use shims under the rocker stanchions to correct this.

Example. First measurement is .060, then you multiply by 1.6, which gives you .096 preload, which means you are not within spec. To correct this, you could put in .030 thousandths shims which gets you to .048 preload.

Now with the .030 shims our first measurement is under the stanchion is .030, multiply that by 1.6, gets you .048, which is within spec.



Step 4

When you install the shims, be sure to line up the oil feed hole or the rockers will not get oil. The feed hole is towards the front of the motor.

Place your shims under the rest of the stanchions. Unless you feel your heads have been shaved unevenly, you can use the same measurements for the passenger side.



3. Cam break in procedure

- Ensure you have followed steps 1 and 2 above
- Fill engine with break-in oil. We use [Driven Racing Oil break in 10w40](#) or Royal Purple break in oil, which can be found at your local auto parts store.
- Break in motor for 20 minutes at 2000rpms. **DO NOT IDLE MOTOR DURING THIS TIME.**
- If you purchased a 14CUX chip, please stock chip and MAF for break in. Change out to TWS chip and MAF after break in.
- Change oil after break-in process. We recommend 20-50w or 10w40 with zinc or zinc additive. Valvoline VR1 20-50 for warm climates or Driven Racing 10-40 for warm climates. **NO SYNTHETIC OILS**
- Check oil after first 500 miles. (checking for oil level, fuel smell in oil, shininess in oil (metal))
- Change oil after first 1000 miles.
- For 14CUX, GEMS or Bosch vehicles, we recommend you follow the initial break in procedure, followed by a quick 5-minute drive, shut off the car and let sit for 15 minutes, followed by a 15-minute drive. This will allow the ECUs to adjust appropriately.