



# FEULING®

**PART #'S: #1230 #1231 #1232**

Touring '17-'22 Softail '18-'22

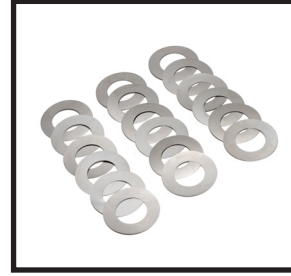


## ROCKER ARM SHIM INSTALLATION INSTRUCTIONS FOR M-EIGHT ENGINES

Quiet your M-Eight engine by tightening the rocker arm end play clearance and help prevent further cylinderhead standoff thrust wear.

After having a rocker shaft failure road racing our 2019 Harley-Davidson® Road Glide at Laguna Seca in 2020 we decided to design the best possible rocker arm shafts and create a method to tighten up excessive rocker arm end play to help reduce further cylinder head thrust wear.

Recommended for all M-Eight engines & especially engines running higher lift camshafts with heavier valve spring pressures.



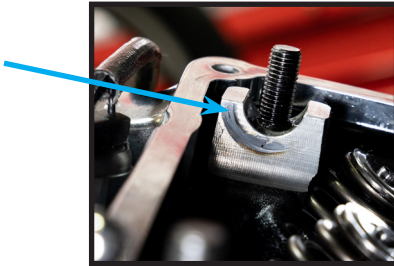
**PART #1230**



**PART #1232**

### INSTRUCTIONS

1. Refer to proper service manual for your model motorcycle engine. Wash, clean and inspect all new FEULING hardware.
2. FEULING recommends using Rocker Shaft & Stud/Nut Kit (FEULING [Part #1232](#)).
3. Inspect cylinder head standoffs for excessive wear. Verify surface is smooth and free of burrs.



Install rocker arms without pushrods to measure end play

4. With pushrods removed, install rocker arms and shafts. Measure rocker arm to cylinder head standoff end play using feeler gauges.
  - A.) Rocker arm to cylinder head end play: FEULING recommends an ideal clearance of 0.0035"–0.0045". The factory calls out 0.004"–0.015".
  - B.) Rocker shaft to bushing clearance: FEULING recommends 0.0005"–0.0015". The factory calls out 0.0005"–0.0022".

**NOTE:** Larger clearances produce lower oil pressure and increase noise.



**NOTE:** It is not recommended to use the 0.003" shim by itself. When pairing the 0.003" shim with other shims, always use on the cylinder head side.

5. Measure needed shim thickness. FEULING offers .003", .005" and .010" (FEULING [Part #1230](#))

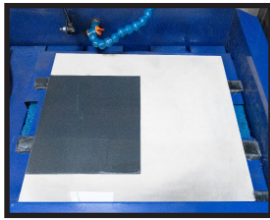
**NOTE:** Multiple shims can be used to achieve proper end play, end play should be verified with shims installed



|                 |        |
|-----------------|--------|
| Example:        |        |
| Clearance       | 0.010" |
| Ideal Clearance | 0.004" |
|                 | -      |
| Needed Shim     | 0.006" |
| Shim Used       | 0.005" |
| Final Clearance | 0.005" |

|                 |    |    |
|-----------------|----|----|
| Clearance       | RI | RE |
| Ideal Clearance | -  | -  |
| Needed Shim     |    |    |
| Shim Used       | =  | =  |
| Final Clearance |    |    |
| Clearance       | FI | FE |
| Ideal Clearance | -  | -  |
| Needed Shim     |    |    |
| Shim Used       | =  | =  |
| Final Clearance |    |    |

6. Clean rocker arm thrusting surfaces using fine grit sand paper or scotch brite to remove any imperfections in surface finish.



Use edge of flat surface to overhang arms to allow squaring up of the rockerarm end thrusting surfaces

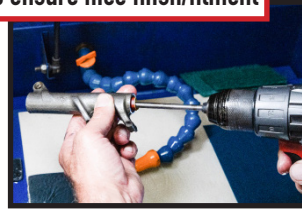


Before

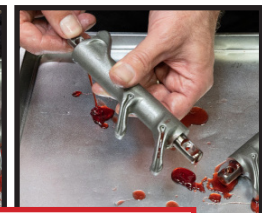
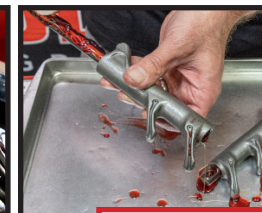
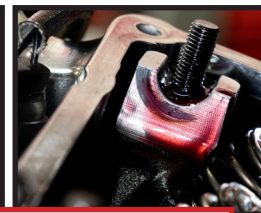
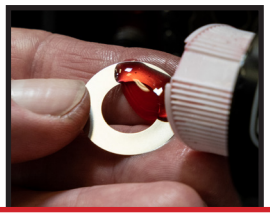


After

If needed clean rockershaft bushings with scotch brite or super fine sand paper (800 grit) to ensure nice finish/fitment



7. Lube rocker shafts, rocker arm bushings, standoffs, shims & rocker arms. Install shafts into rocker arms.



Lube rocker shafts, rocker arm bushings, standoffs, shims & rocker arm side thrusting surfaces.

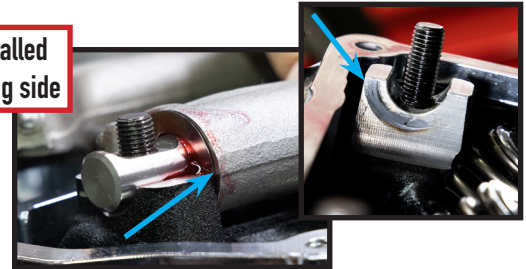
Slide rockershaft into rocker arms

8. Pump up rocker arms with an oil squirt can. Slide required shims over shaft matching the non thrusting side of cylinder head stand off. Slide rocker arm assembly into head, lead with shim side first.

NOTE: Install shim-side FIRST on load-bearing side of rocker arms.



Shim to be installed on load-bearing side



9. Tighten and torque fasteners evenly, see tech tip

A.) If using the factory bolts, final torque to 23-27 ft.lbs.

B.) If using FEULING bolt kit #3037, final torque to 24-26 ft.lbs

TECH TIP: It is important to seat the rocker arm shafts by evenly tightening the nuts to estimated 10 Ft. Lbs. then loosening to allow the shafts to settle in, then re-tighten evenly and step the torque to a final 24 – 26 ft/lbs.

NOTE: Be careful not to hit the shims while tightening fasteners. Shims bend and damage easily.



NOTE: Choose proper wrench to provide enough clearance between wrench and rocker arm.



**\* STANDARD 1 YEAR WARRANTY:**

- WARRANTY COVERS MANUFACTURE DEFECTS.
- DOES NOT COVER PARTS THAT HAVE FAILED DUE TO IMPROPER INSTALLATION, MAINTENANCE, EXCESSIVE CRANKSHAFT RUNOUT, OR MISUSE.
- DOES NOT COVER ANY CONSEQUENTIAL DAMAGE RESULTING FROM A FAILURE OF A FEULING PRODUCT.
- CRANKSHAFT RUNOUT MUST BE BELOW 0.005"

**\* OPTIONAL 2 YEAR WARRANTY:**

- ADDITIONAL YEAR WARRANTY IS ONLY AVAILABLE IF PARTS ARE INSTALLED BY A PROFESSIONAL INSTALLER.
- THE ONLINE WARRANTY FORM MUST BE COMPLETED BY THE DEALER PRIOR TO BIKE DELIVERY.
- OIL TANK MUST BE DROPPED & CLEANED.
- CRANKSHAFT RUNOUT MUST BE BELOW 0.005"

NOTE: FOR FULL WARRANTY INFORMATION VISIT [WWW.FEULINGPARTS.COM/WARRANTY](http://WWW.FEULINGPARTS.COM/WARRANTY)

