



FEULING®

ROCKER SHAFT AND ROCKERBOX BREATHER INSTALLATION
INSTRUCTIONS FOR **TWIN CAM** ENGINES

'99-'17
CHAIN & GEAR DRIVE



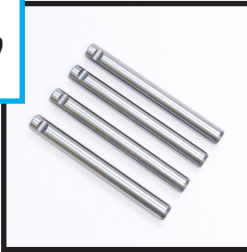
PART #S: 1235, 1236, 1237
3045, 3046, 3200

Designed with strength in mind, with over double the strength of the factory & our competitors shafts. Precision ground from 4140HT steel, gas nitrided & final surface treated.

After having a rocker shaft failure road racing our 2019 Harley-Davidson® Road Glide at Laguna Seca in 2020 we decided to source the best possible material and heat treat process available to create the best rocker shaft on the market.

Recommended for all Twin Cam engines & especially for engines running higher lift camshafts & heavier valvespring pressures.

PART #1235
TC '99-'17
EVO '84-'99
XL '86-'22



PART #1236 TC Dyna & FL
'99-'00 Softail '00-'01
Qty. 4 - 5/16-18 x 2.750"
Qty. 4 - 5/16-18 x 2.500"
Qty. 8 - 5/16 washers



PART #1237 TC Dyna & FL
'01-'17 Softail '02-'17
Qty. 8 - 5/16-18 x 2.500"
Qty. 8 - 5/16 washers

PART #3200
TC '99-'17



ROCKER BOX BREATHER INSTRUCTIONS

Properly sized breather holes for optimum engine breathing. Machined from billet 6061 aluminum with square surfaces promoting excellent gasket and breather system sealing. Kits include: billet breather housings, gaskets, breather filter elements, umbrella valves and ARP hardware.

MADE IN THE USA

IMPORTANT NOTICE:

Measure flywheel pinion shaft run out. Excessive pinion shaft run out will cause camplate and oil pump damage and or failure. Excessive pinion shaft run out will void manufacturer's warranty.

INSTRUCTIONS:

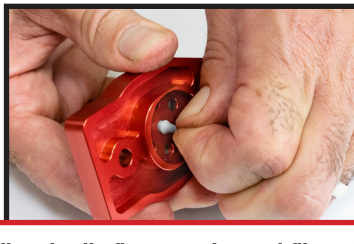
1. Refer to the correct factory service manual for your model and year of engine, for removal of existing rocker box breathers.
2. Clean and inspect each new Feuling rocker box breather housings, gasket surfaces etc.
3. Clean and inspect mounting surfaces of engine rocker box
4. Assemble the new Feuling rocker box breathers
 - a. Install umbrella valves
 - b. Install filter element
 - c. Install gaskets
 - d. Use Loctite on threads of new ARP hardware, use moly lube/engine assembly/oil on underhead bolt flanges
 - e. Alternately tighten and final torque bolts to 90-120 inch lbs



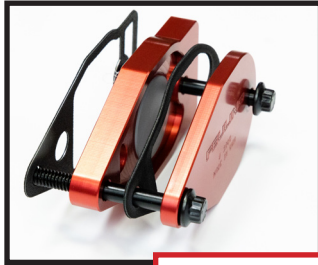
Clean & inspect new Feuling components for assembly



Clean & prep factory rocker box surfaces



Install umbrella flapper valve and filter element



Install gaskets and assemble



Apply Loctite to new ARP hardware



Install assembly



Alternately tighten breather assembly bolts then final torque to 90-120 inch-lbs installation and torque

ROCKERSHAFT INSTRUCTIONS

CAUTION:

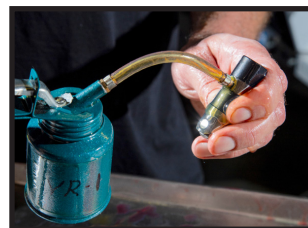
Removal of the rocker arms and or pushrods with the valve train loaded can damage rocker arms, push rods, bushings and or camplate. Rotate engine to TDC of compression stroke on the servicing cylinder.

INSTRUCTIONS

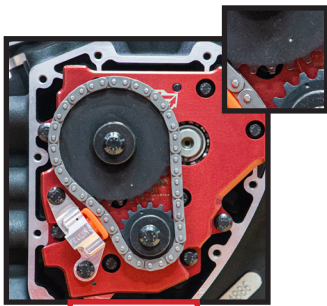
1. Refer to proper service manual for your model motorcycle engine. Wash, clean and inspect all new FEULING hardware.
2. FEULING recommends using ARP rocker support bolts, see part #1236 & 1237.
3. Use a Drift to remove OEM shafts if needed
4. Start install with fully pumped up lifters, see oil squirt can (FEULING Part #9005). Check rocker arm to support side clearance.
 - A.) Rocker arm to support side clearance: FEULING recommends an ideal side clearance of 0.0025"-0.0055". Factory calls out 0.003"-0.013".
 - B.) Rocker shaft to bushing clearance: FEULING recommends 0.0005"-0.0015". The factory calls out 0.0005"-0.0020".

NOTE: Larger clearances produce lower oil pressure and more noise.

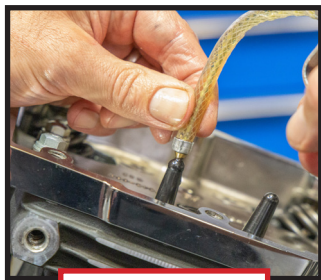
NOTE: Check side clearance. Bolt shafts & rocker arms into place.



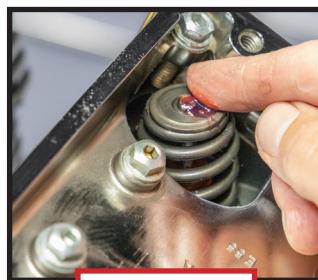
5. Rotate working cylinder to TDCC. Install pushrods & pump up with an oil squirt can. Lube valve tips & pushrod tips.



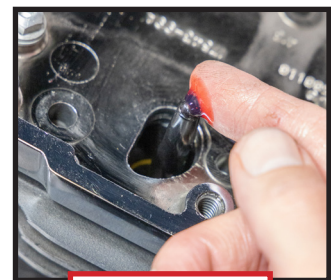
Rear TDCC



Pump up pushrods.

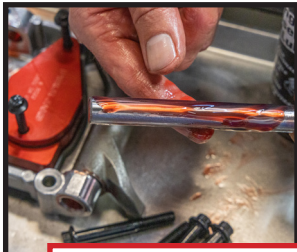


Lube valve tips.



Lube pushrod tips.

5. Lube rocker shafts, rocker arm bushings, rocker support & rocker arm side thrusting surfaces.



Lube rocker shafts & rocker arm support thrusting surfaces.



Lube & install rocker support breather O-ring.

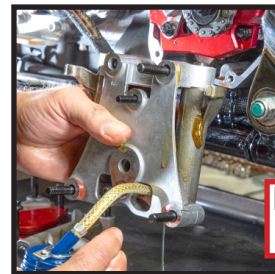
6. Install rocker arms into rocker arm supports. Slide shafts through support & rocker arms. Apply red loctite to support bolt threads & moly lube to the underhead flanges. Pump up rocker arms.



Slide rocker shafts into supports/rocker arms.



A drift can be used to assist lining up rocker shaft notch with bolt hole.



Pump up rocker arms.

NOTE: For part #s 3045 & 3046 Use washers for Rocker Arm support bolts on primary side only



With washers



Without washers

Apply red loctite to bolt threads and install rocker arm assembly onto cylinder heads.



7. Service breathers if needed. Tighten & torque rocker support bolts. Final torque to 18-22 ft./lbs. Tighten & torque rocker box breather bolts. Final torque to 120 in./lbs.



Tighten and torque support bolts. Final torque to 18-22 ft./lbs.



Tighten and torque breather bolts. Final torque to 120 in./lbs.

8. Clean gasket surfaces, install new rocker cover gaskets, install covers and tighten/torque rocker cover bolts. Final torque to 15-18 ft./lbs.

ROCKER BOX HARDWARE

IMPORTANT NOTICE:

This installation should be done by an experienced mechanic who has access to a factory service manual and all required tools.

CAUTION:

Incorrect installation can cause engine damage not covered under warranty. Failure to install components correctly can cause engine seizure. Engine seizure may result in serious injury to motorcycle, operator, passenger, and/or others. Improperly torqued bolts may result in oil leaks and distortion of components. If replacing the engines head bolts or studs always use new head & base gaskets.

Some fastener kits may include fasteners not applicable to your model.

1. Refer to the proper service manual for your model motorcycle engine.
2. Wash, clean and inspect all new Feuling hardware.
3. Clean and inspect all bolt holes.
4. Lightly coat the under head flange of all bolts with moly lube as well as washers when applicable.
5. Lightly coat threads with Loctite when and where applicable. (See owners manual)
6. It is recommended to use new gaskets and O-rings to insure proper sealing.
7. Check gaskets and O-rings for proper installation.
8. When installing fasteners on moving parts always rotate engine over several times before tightening to insure the parts are centered.
9. First finger tight each fastener using the proper sequence from your service manual, if no sequence is giving always use an alternating sequence starting in the center working your way out.
10. Torque the fasteners following your recommended torque values and always tighten fasteners stepping the torque value in small increments.

Part #	Description	Qty.
3045	T/C 12PT. ROCKER ARM SUPPORTS, HOUSINGS, BREATHERS ('99-'00 DYNA & FLT, '00-'01 SOFTAIL)	
3045-01	Rocker Arm Supports, blk. oxide 5/16-18 x 2.750	4
3045-02	Rocker Arm Supports, blk. oxide 5/16-18 x 2.500	4
3045-03	Rocker Box Housing, blk. oxide 5/16-18 x 1.750	4
3045-04	Rocker Box Housing, blk. oxide 5/16-18 x 1.250	8
3045-05	Breathers, blk oxide 1/4-20 x 2.250	4
3045-06	Black 5/16 Washer	20

Part #	Description	Qty.
3046	T/C 12PT. ROCKER ARM SUPPORTS, HOUSINGS, BREATHERS ('01-PRESENT DYNA & FLT, '02-PRESENT SOFTAIL)	
3046-02	Rocker Arm Supports, blk. oxide 5/16-18 x 2.500	8
3046-03	Rocker Box Housing, blk. oxide 5/16-18 x 1.750	4
3046-04	Rocker Box Housing, blk. oxide 5/16-18 x 1.250	8
3046-05	Breathers, blk oxide 1/4-20 x 2.250	4
3046-06	Breathers, blk oxide 1/4-20 x 1.750 (use washers)	4
3046-07	Breather bolt washers, small OD, blk oxide 1/4	4
3046-08	Rocker Arm Supports/Housings washers, blk oxide 5/16	16

U.S. STANDARD TORQUE VALUES BY



TORQUE ARP LUBE (FT/LBS.)	PRELOAD (LBS.)
12	3.492
24	5.805
45	8.622

* 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.

* 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