INSTALLATION INSTRUCTIONS FEULING® HP+® MILWAUKEE EIGHT ONE PIECE PUSHRODS

ELIMINATE PUSHROD FLEX, REDUCE VALVE-TRAIN HARMONICS AND INCREASE VALVE LIFT

Fixed Length 4130 Chrome moly one piece pushrods with swedged formed ends. Heavy duty 7/16" diameter tube with 0.165" wall thickness, precision concentricity, heat treated with a black oxide finish. Intake and Exhaust length pushrods are stock replacement lengths and designed to work with the factory base circle camshaft dimensions. These pushrods work with all Feuling®, stock and SE® Milwaukee Eight camshafts.

Due to the unstable nature of this 4 valve engine design with 1 rocker arm activating 2 valvesprings Feuling® highly recommends running one piece pushrods over quick install adjustable rods to maintain maximum cam/valve lift and reduce valvetrian harmonics and associated hydraulic lifter issues.

#4087 HP+® 0.165" Wall Fits: Milwaukee Eight® '17 - '18

FEULING® HP+® and RACE SERIES® pushrods can be used with factory pushrod tubes

TECH TIP FOR USING 1 PIECE PUSHRODS:

1.) Remove gas tank, spark plug wires from plugs, left side spark plugs, fuel injector plug ins, compression release plug ins etc.
2.) Remove voltage regulator bracket bolts qty. 2
3.) Remove front top engine mount, from frame first then cylinder heads
4.) Remove exhaust
5.) Remove oil line 'oil cooled models' small catch tray on top of trans cover, wad of rags in the front to catch oil
6.) Remove cam cover, rotate engine to timing marks
7.) Remove top rocker covers, rocker arms, pushrods, pushrod tubes, lifter covers

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.

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.

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.

1. **Refer to the proper factory service manual for your model and year of engine, for removal of existing pushrods.**

2. **Clean and inspect each new Feuling® pushrod including center oil hole**

3. **Feuling® pushrods are marked Intake and Exhaust. The shorter pushrods are Intake and the longer pushrods Exhaust.**

4. **Feuling® recommends using new O-rings and gaskets where applicable to prevent oil leaks**

5. **Always pump up hydraulic lifters before installing them. Use an oil squirt can to fill the lifter with oil through the feed hole on the side of the lifter, push oil through the feed hole until the air bubbles are gone. If needed work the oil back and forth through the feed hole and pushrod seat with the squirt can. Light weight oil can be helpful.**

6. **Assemble one cylinder at a time, the servicing cylinder needs to be on TDC of compression stroke so the cam lobes and lifters are at their lowest point.**

7. **Install pushrods with pushrods, once pushrods are in place, pump up the pushrods with an oil squirt can to fill the center oil feed hole**

8. **Pump up the rocker arms into the pushrod seat until you see oil squirt out hole the exit feed hole**

9. **NOTE: It is important to seat the rocker arm shafts by evenly tightening to estimated 8-10 Ft. Lbs. then loosening to allow the shafts to settle in, then re-tighten evenly and step to final torque.**

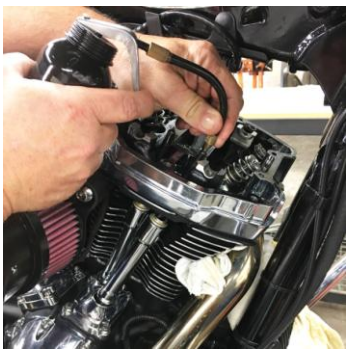
10. **Torque rocker arm shafts to factory torque spec's if using the factory bolts, if using Feuling's rocker arm studs/nuts torque to a final spec of 24 Ft. Lbs - See Feuling #3047.**

11. **All Feuling® hydraulic lifters run best at .090" - .100" of Pre load.**

12. **Wait for hydraulic lifters to bleed off before rotating engine over, this may take 10 – 15 minutes.**

***To aid oil flow and limit damage to parts on initial start up always manually pump up lifters, pushrods and rocker arms this will also produce a quiet start up**

Pump up & manually fill lifters



Fill pushrods full of oil

Fill rocker arms full of oil

WARRANTY:

All parts are guaranteed to the original purchaser to be free of manufacturing defects in materials and workmanship for a period of twelve (12) months from the date of purchase. Merchandise that fails to conform to these conditions will be repaired or replaced at FOP's option if the parts are returned to FOP by the purchaser within the (12) month warranty period. In the event warranty service is required, the original purchaser must notify FOP of the problem immediately. Some problems may be rectified by a telephone call and need no further action. A part that is suspect of being defective must not be replaced without prior authorization from FOP. If it is deemed necessary for FOP to make an evaluation to determine whether the part was defective, it must be packaged properly to avoid further damage, and be returned prepaid to FOP with a copy of the original invoice of purchase and a detailed letter outlining the nature of the problem, how the part was used and the circumstances at the time of failure. After an evaluation has been made by FOP and the part was found to be defective, repair, replacement or refund will be granted. Excessive flywheel pinion shaft run out will damage camplate and oil pump and or cause engine damage and or failure. Damage to Feuling oil pump corporation products from excessive pinion shaft run out will void manufacturer's warranty.

ADDITIONAL WARRANTY PROVISIONS:

FOP shall have no obligation in the event an FOP part is modified by any other person or organization, or if another manufacturer's part is substituted for one provided by FOP. FOP shall have no obligation if an FOP part becomes defective in whole or in part as a result of improper installation, improper break-in or maintenance, improper use, abnormal operation, or any other misuse or mistreatment. FOP shall not be liable for any consequential or incidental damages resulting from the failure of an FOP part, the breach of any warranties, the failure to deliver, delay in delivery, delivery in non-conforming condition, or any other breach of contract or duty between FOP and the customer. The installation of parts may void or otherwise adversely affect your factory warranty. In addition, such installation and use may violate certain federal, state and local laws, rules and ordinances as well as other laws when used on motor vehicles operated on public highways, especially in states where pollution laws may apply. Always check with federal, state, and local laws before modifying your motorcycle. It is the sole and exclusive responsibility of the user to determine the suitability of the product for his/her use, and the user shall assume all legal, personal injury risk and liability and all other obligations, duties and risks associated therewith. Our high performance parts, engines and motorcycles are intended for experienced riders only.

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