



Cam torque reaction tool #9003 (OEM HD-53289)

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 and may result in serious injury to motorcycle, operator, passenger, and/or others.

Removal:

1. Prior to starting, the battery/main fuse should be disconnected and the valve train needs to be unloaded. (Pushrods and lifters removed).
2. Disconnect the VVT harness plug coming out of the front of the camchest cover.
3. Remove the camchest cover. (Removing the two screws for the VVT solenoid actuator cover is not required.)
4. Align the camshaft timing dots on the sprockets so they are nearest to each other.
5. Be sure to mark the chain so it can be installed in the same rotating direction.
6. Insert cam sprocket locking tool and remove the crankshaft sprocket bolt.
7. Remove the sprocket locking tool.
8. Insert the cam torque reaction tool #9003 into the phaser assembly (unit build into the upper cam sprocket).
9. Use a 36mm or adjustable/crescent wrench to hold the cam torque reaction tool while removing the spool valve/center bolt. (We do not recommend to use a impact wrench to remove the spool valve/center bolt.)
10. Remove cam chain tensioner assembly
11. Remove phaser assembly, crankshaft sprocket, and chain.

Installation:

1. Refer to the standard M8 camchest assembly instructions until you reach installation of the camshaft drive assembly.
2. Align pinion shaft flat horizontally. (Flat spot upward)
3. Align camshaft alignment dot downward to pinion shaft flat.
4. Apply assemble lube to the pinion shaft, camshaft and camshaft chain.
5. Install phaser assembly, pinion sprocket and chain. Be sure chain is installed in the same rotating direction as removed.

6. Verify that the timing dot on the phaser assembly and pinion sprocket are lined up nearest to each other.
7. Install spool valve/center bolt hand tight.
8. Install washer and pinion sprocket bolt hand tight. (Use ARP moly lube on the threads and under the flange if using an ARP fastener. Use oil under the flange and Loctite 262 red thread locker if using factory fastener.)
9. Insert the cam torque reaction tool into the phaser assembly. Hold the tool using a 36mm or adjustable/crescent wrench. Tighten the spool valve/center bolt to 26.6-29.5 ft-lb, then to final torque of 52-56°.
10. Insert cam sprocket locking tool and tighten pinion shaft sprocket bolt to 15 ft-lbs, then loosen and tighten to a final torque of 24 ft-lbs.
11. Apply assembly lube to chain tensioner pad. Install bottom bolt first then rotate top of tensioner to line up to the top bolt. Tighten fasteners to 90-120 in-lbs.
12. Install new camchest cover gasket and camchest cover. Tighten bolts in a crisscross pattern to 90-120 in-lbs.
13. Reconnect VVT harness connector on front of camchest cover.
14. The remainder of installation is the same as the standard M8 engines. Please refer to the standard M8 install instructions.

Notes:

- Feuling parts that fit the VVT models and will be removed/installed in this section: Camplate #8017, Oil pumps #7019 / #7021, Cam chain #8061, Camshaft bearing #2080, Pinion shaft sprocket #1091, Lifters #4000 / #4017, Pushrods #4087, Rocker shaft shims #1230, Rocker shafts #1231 / #1232
- #9014 run out tool.
- #9017 oil pump alignment tool.

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 NOTE

Feuling offers an additional 12 month warranty for a total of 2 years if product is installed by a professional V-Twin installer, oil tank is dropped and cleaned at time of install and the WARRANTY REGISTRATION form is filled out - form can be found on www.feulingparts.com

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. Feuling Oil Pump Corporation reserves the right to change prices and/or discounts without notice and to bill at the prevailing prices at the time of shipments. The words Harley®, Harley-Davidson® and H-D® and all H-D® part numbers and model designations are used in reference only. Feuling Oil Pump Corporation is in no way associated with, or authorized by Harley-Davidson Motor Co®. To manufacture and sell any of the engine parts described in this instruction sheet.

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