



Installation Instructions for KPMI[®] Part No: **20-21040**
HARLEY DAVIDSON • MILWAUKEE-EIGHT • 2017-'23
Black Diamond[™] Cylinder Studs

- 1) Using two standard 7/16-14 UNC nuts, remove old cylinder studs from cases. Remove the studs by tightening both nuts back to back on the stud. With a wrench on the lower nut, back out the old stud.
- 2) Properly clean case stud holes using a 7/16-14 UNC G3 bottoming roll tap. Be careful if the engine is assembled, not to allow the debris into the lower crank case. KPMI[®] suggests using Tapmatic[®] cutting fluid, ATF, or WD40[®] when cleaning up threads in the case.
- 3) Each end of the cylinder stud has a different thread type; one standard and one interference. The OEM head nut will not screw completely onto the interference end. In addition, the interference end is denoted by a dimple in the end of the stud. Apply a “neversieze” compound to the studs prior to installation. Install Black Diamond[™] studs by reversing the stud removal process, paying careful attention that the **interference end is threaded into the case**. Achieve the following stud height upon installation:
 - a. 5.040" Milwaukee-Eight
- 4) KPMI recommends using Loctite[™] (blue) on case studs only when threads in the case are worn or loose. If threads are too loose or worn, proper case repair must be made.
- 5) KPMI recommends the following torque procedure: It is absolutely necessary that a small amount of neversieze, oil or grease is applied to the head nut end of the stud prior to torquing the head. Using a **criss-cross pattern**, torque the head nuts according in the following increments:

- | | |
|-------------------------|-------------------------------|
| Step 1) 10 ft-lbs | Step 7) 25 ft-lbs |
| Step 2) 20 ft-lbs | Step 8) 30 ft-lbs |
| Step 3) 30 ft-lbs | Step 9) 35 ft-lbs |
| Step 4) loosen 1/4 turn | Step 10) 45 ft-lbs |
| Step 5) 10 ft-lbs | Step 11) wait 15 min. |
| Step 6) 20 ft-lbs | Step 12) recheck at 45 ft-lbs |

Packaged By: _____

Date: _____