

SportGear™ Installation Instructions

For Sportster™ and Buell™ Motorcycle Transmissions

It is important that the general procedure described in the Harley-Davidson™ service manual is followed when installing the **SportGear™** Drive System. It is not necessary to remove the engine/transmission from the frame to install these parts.

Disassembly

Installation of the **SportGear™** Drive System will first require disassembly of the transmission. Remove the primary drive, then the trapdoor assembly and output gear. Remove the main drive oil seal and clean the transmission case. Disassemble the trapdoor.

Counter Shaft Assembly

Note the order and orientation of the gears on the counter shaft. Disassemble the counter shaft and transfer the parts to the **TwistGear™** counter shaft. Note that the **TwistGear™** counter shaft assembles in a different order than the OEM counter shaft. Two washers are required in the position as shown in Figure 1 (see arrow) before the retainer ring is installed. The second washer is included in the kit.

Four-Point Bearing Assembly

Select a driver that fits over the counter shaft end with minimum clearance and properly contacts the inner bearing shoulder (not the bearing race). Press one inner race onto the counter shaft. Press the OEM ball bearing out of the trapdoor counter shaft position and press in the four-point bearing outer ring assembly (do not use a hammer since the trapdoor may be damaged). Press the remaining ring onto the shaft end. Wash the oil off the counter shaft threads and Torx head screw, dry and coat threads with thread locker or loctite before carefully applying 200 lb-in torque. The countershaft assembly should look like Figure 2 (trapdoor housing and other parts are not shown).

Main Drive Gear Installation

The main drive gear is supplied fully assembled and ready for installation. Use tools shown in the service manual to install the gear. Install seal and retainer ring after output gear is installed in the case (see Figure 3).

Output Shaft Seal Installation

Assemble triple lip output seal 705002 and output spacer 280001 together. The seal is shipped with high performance grease packed into the seal lips to ensure lubrication and exclude dust & water. (Caution: Only high temperature grease should be used, grease is better than oil, never install the seal dry.) Slide the quad

ring and seal/spacer assembly onto the transmission output shaft, then slide JE300001 tool onto the shaft and finally tighten the nut until the tool drives the seal flush with the case. Do not attempt to install the main drive seal without the JE tool or the seal will be damaged, and the seal performance will be compromised (the JE seal is wider around the shaft for the third sealing lip, which will be damaged if a tool is pressed against it.) It is best that a new JE spacer be used each time a new seal is installed for quick break-in of the main lip seal surface.

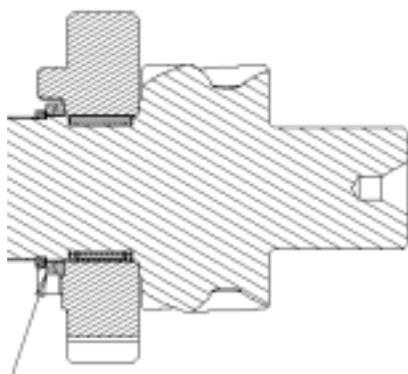


Figure 1. Counter shaft spacer location (two spacers)

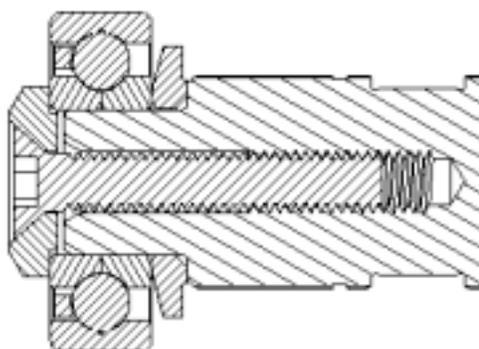


Figure 2. Four point bearing assembly on counter shaft end with Torx screw

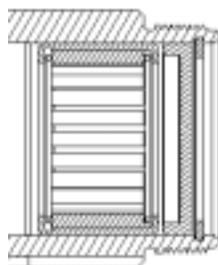


Figure 3. Output gear with seal and retainer ring



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