

## TwistGear and WideGear Installation Instructions

It is important that the general procedure described in the Harley-Davidson service manual is followed when installing the TwistGear (or WideGear) Drive System. It is not necessary to remove the transmission from the frame to install these parts.

Usually the transmission case will not require modification. Use a hand grinder to remove interferences that may exist since the output gear OD is slightly larger.

### Disassembly

Installation of the TwistGear Drive System kit requires complete disassembly of the transmission.

Remove the primary drive and inner ring located on the transmission input shaft. Remove the shift drum and forks, trapdoor assembly and output gear. Remove the main drive oil seal and clean the transmission case.

Any case interference with the main drive gear will most probably occur at the bump on the case floor, which is easily ground down at this time.

### Seal and Spacer Assembly

Transmission assembly is in reverse order, beginning with pressing the triple lip main drive seal into the case. The Johnson Engineering oil seal is wider than the stock seal. **Do not try to drive the seal below the transmission surface.**

The seal should install about flush, or perhaps even slightly above the surface. The main drive gear is supplied fully assembled and ready for installation. Oil seal performance will be greatly enhanced if a JE spacer is installed (for TwistGear use P/N 280001, WideGear comes complete with spacer).

Oiling the JE spacer and rotating it while pushing it into the seal installs the spacer without folding any seal lips over. Use a new JE spacer each time a new seal is installed for proper break-in of the main lip seal surface.

### Countershaft Assembly

Note the order and orientation of the gears on the countershaft when it is removed from the trapdoor. Disassemble the countershaft and transfer the parts to the TwistGear countershaft.

**Note that the TwistGear countershaft assembles in different order than the OEM countershaft.** 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 countershaft end with minimum clearance and properly contacts the inner bearing shoulder (not the bearing race). Press one inner race onto the countershaft, and if an optional bearing was purchased, press one inner race onto the main shaft as well.

Press the OEM ball bearing out of the trapdoor countershaft position and press in the four-point bearing outer ring assembly (do not use a hammer since the trapdoor may be damaged). If an optional bearing was purchased, press one outer race assembly in the main shaft position as well. Trapdoor assembly is easier if both trapdoor bearings are four-point bearings.

Press the remaining ring(s) onto the shaft end(s). Torque the trapdoor countershaft and main shaft lock nuts to service manual specifications. The countershaft assembly should look like figure 2 (trapdoor housing is not shown).

### Primary Drive Assembly

Ensure that the engine, transmission, primary drive and rear tire are all aligned upon assembly or vibration will result.

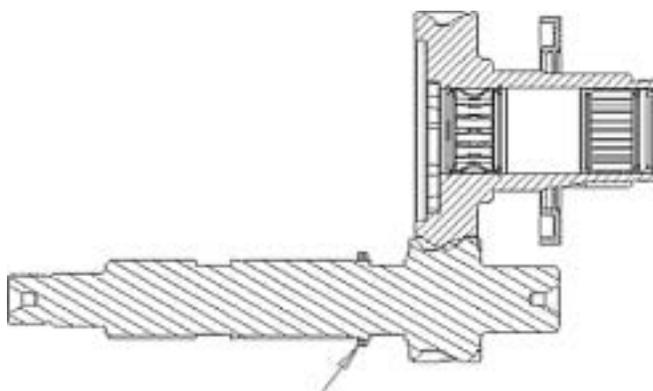


Figure 1. Countershaft spacer location (two spacers)

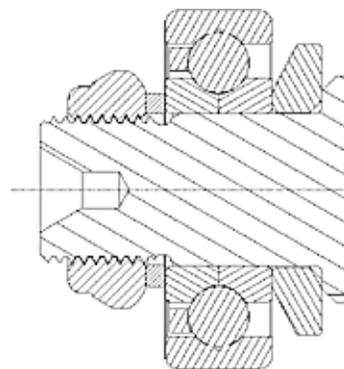


Figure 2. Four Point Bearing Assembly on Shaft End

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