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Service Information Bulletin

SUBJECT	DATE
Power Take-Off	November 2017

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0140	DT12	Installation of the Power Take-Off	Updates to section.





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2 Installation of the Power Take-Off

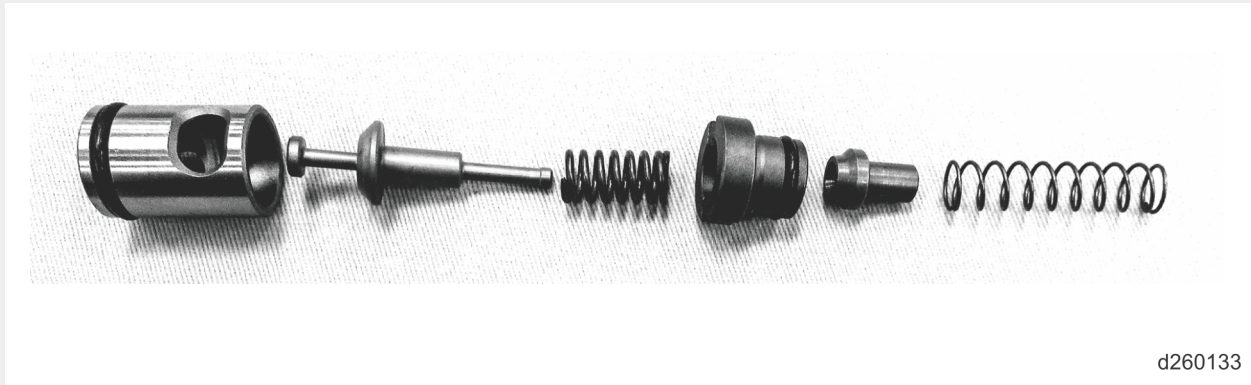
Install as follows:

Table 1.

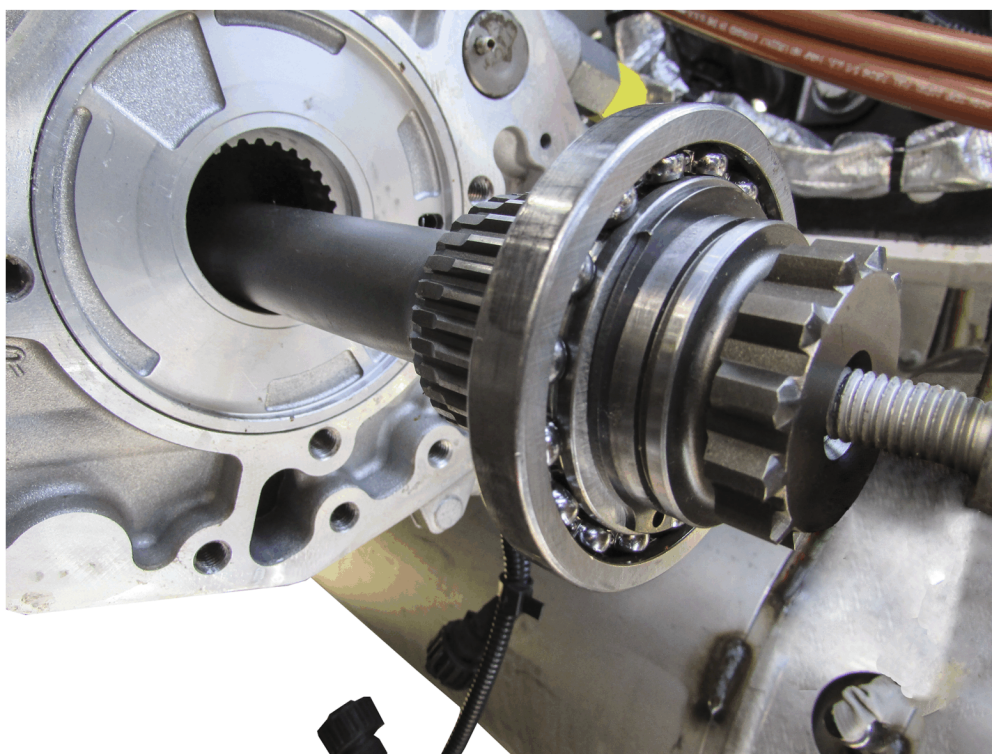
Required Tools:	
Tool Description	Tool Image
Depth Gauge	 <p>d580271</p>
Strip Clamps (2) DDE DSN012T16003, included in PTO Service Kit DDE DKI012T16004	 <p>d260163a</p>

NOTE: If any of the components that affect the spacing for the oil pump are being changed, or the Power Take-Off (PTO) is being installed for the first time, the oil pump shim thickness must be measured.

NOTICE: Be aware of the oil cooler control valve while installing the PTO. The assembly is spring loaded, and may dislodge unexpectedly, before the PTO is installed. If the spring pressure pushes it out of the housing without being retained, the internal parts of the valve will fly apart and may be lost or damaged. In the event the valve does become dislodged, refer to the following figure to see the details required to assemble the valve.

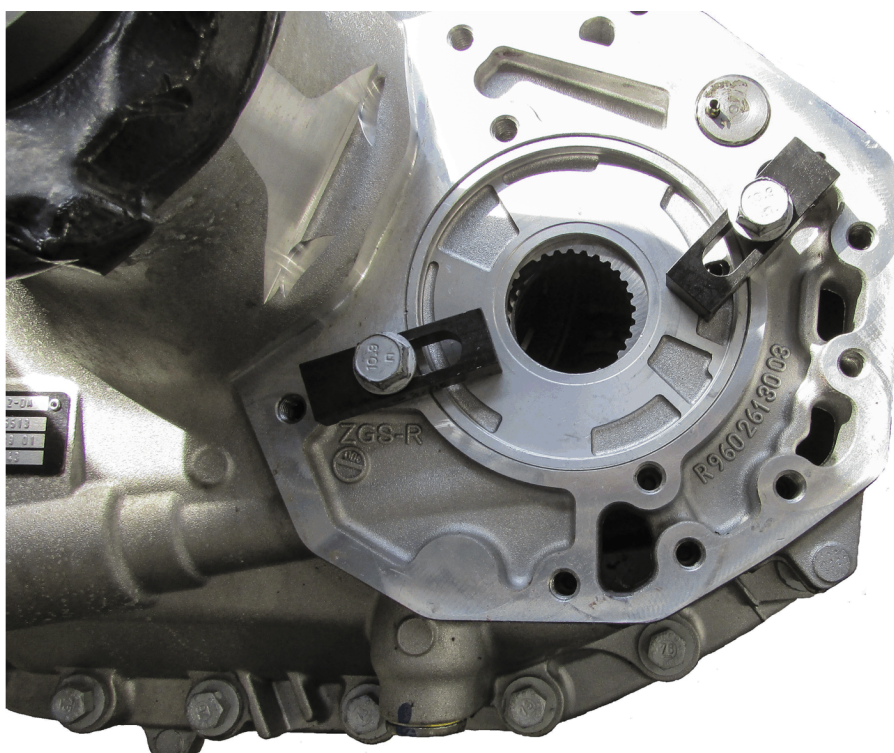


1. Shut off the engine, apply the parking brake, chock the wheels, and perform any other applicable safety steps.
2. If the oil pump drive shaft is still in the transmission, install a bolt in the end, as a handle, and remove the shaft.



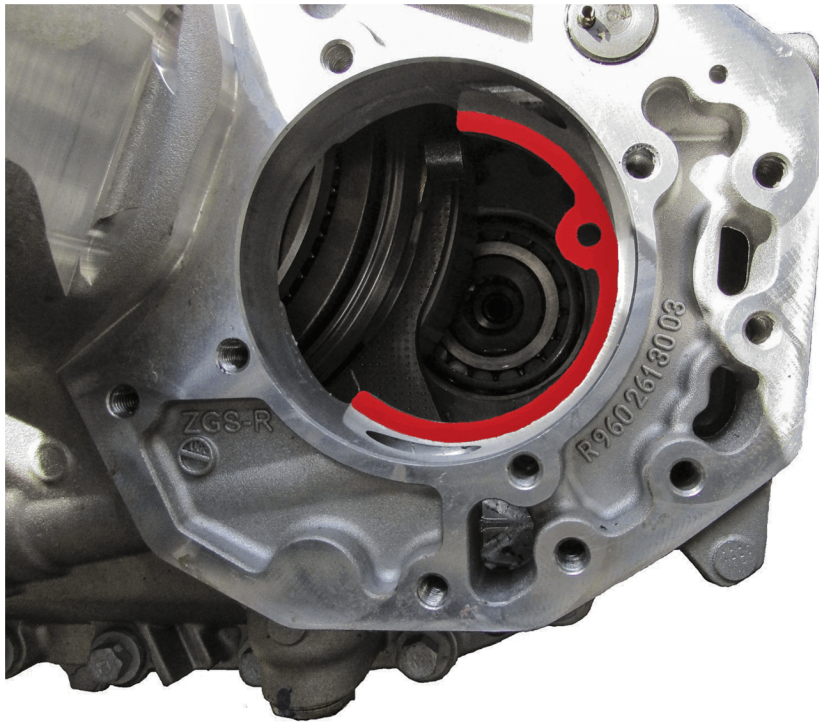
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3. Clean the mating surfaces of the transmission and PTO housing.



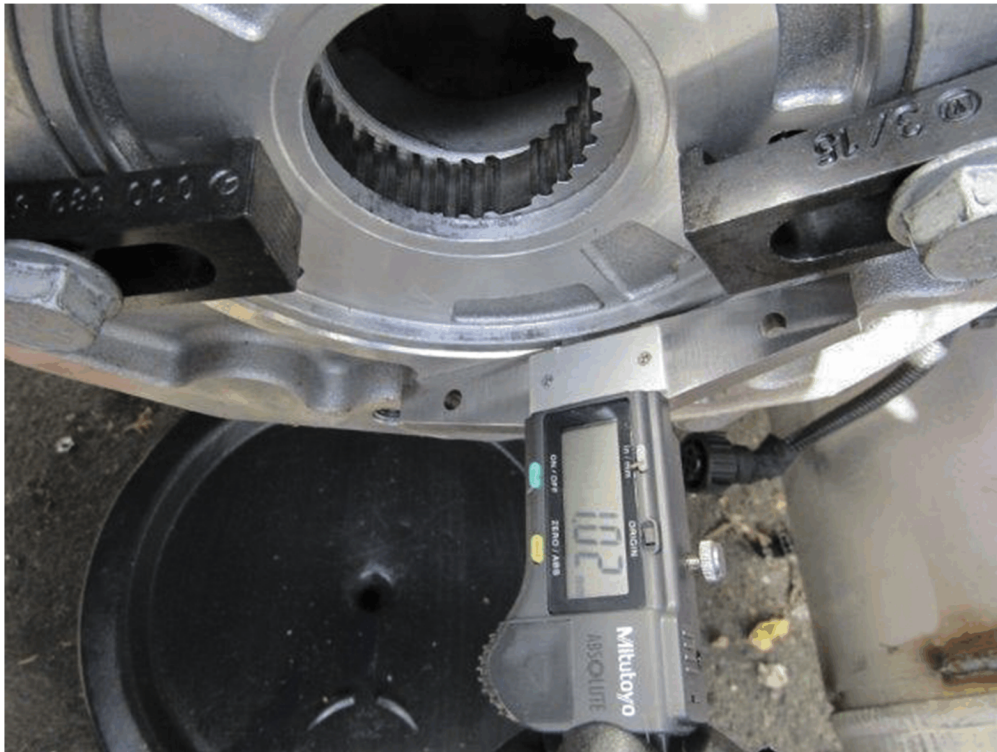
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4. Install two Strip Clamps, tool DDE DSN012T16003, on the transmission, to close any gaps between the thrust plate and pump housing. Torque to 10 N·m (88.5 lb-in.).



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5. Check the depth at the top and bottom of the oil pump pocket, where the shim is supported by the transmission housing.



d260131

6. Measure and record the gap between the raised edge of the oil pump thrust plate and the surface of the transmission housing. There must be 0.0 to 0.08 mm (0.0 to 0.0031 in.) gap, between the transmission housing and the surface of the thrust plate. If the measured value is 0.0 mm (0.0 in.), confirm the thrust plate is not protruding from the pocket by measuring from the plate edge to the transmission housing.
7. Remove the thrust plate and pump assembly. The shim is between the transmission housing and the back of the pump.



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8. Measure the original shim thickness and add or subtract the gap measurement to find the shim size that would make the gap 0.0 mm (0.0 in.).

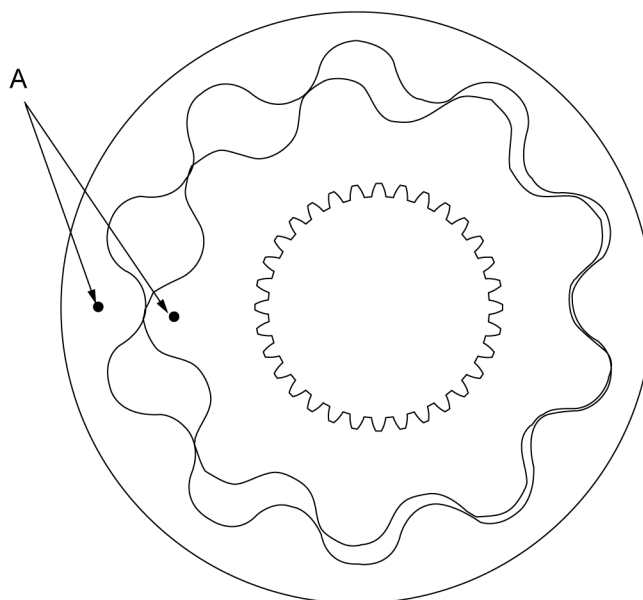
Table 2.

Determining Shim Thickness to Achieve Zero Gap
Example 1: The gap measurement is too large.
Original Shim 0.90 mm (0.0354 in.) + Gap 0.12 mm (0.0048 in.) = Maximum New Shim 1.02 mm (0.04 in.).
The available shim <u>equal or smaller</u> than the calculated dimension is 1.00 mm (0.039 in.).
Example 2: The gap measurement is too small (the thrust plate protrudes from the face of the transmission housing).
Original Shim 0.85 mm (0.033 in.) - Gap 0.02 mm (0.0007 in.) = Maximum New Shim 0.83 mm (0.032 in.).
The available shim <u>equal or smaller</u> than the calculated dimension is 0.80 mm (0.031 in.).

9. Install the pump housing and shim, into the transmission housing.
10. Install the oil pump hub and rotor, confirming the dots on both are visible.



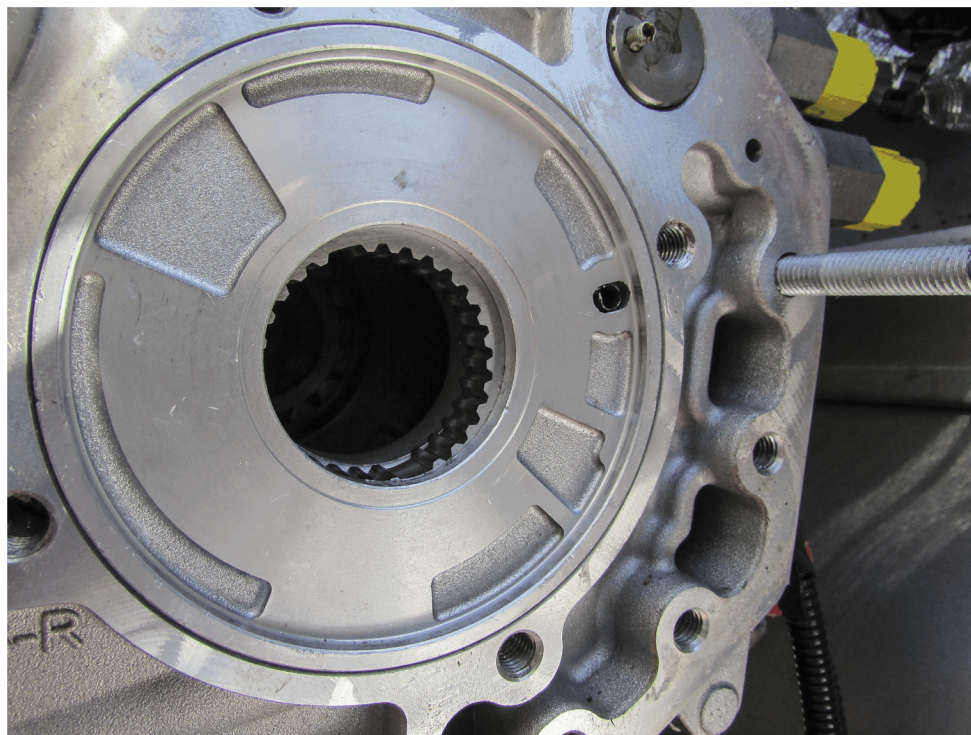
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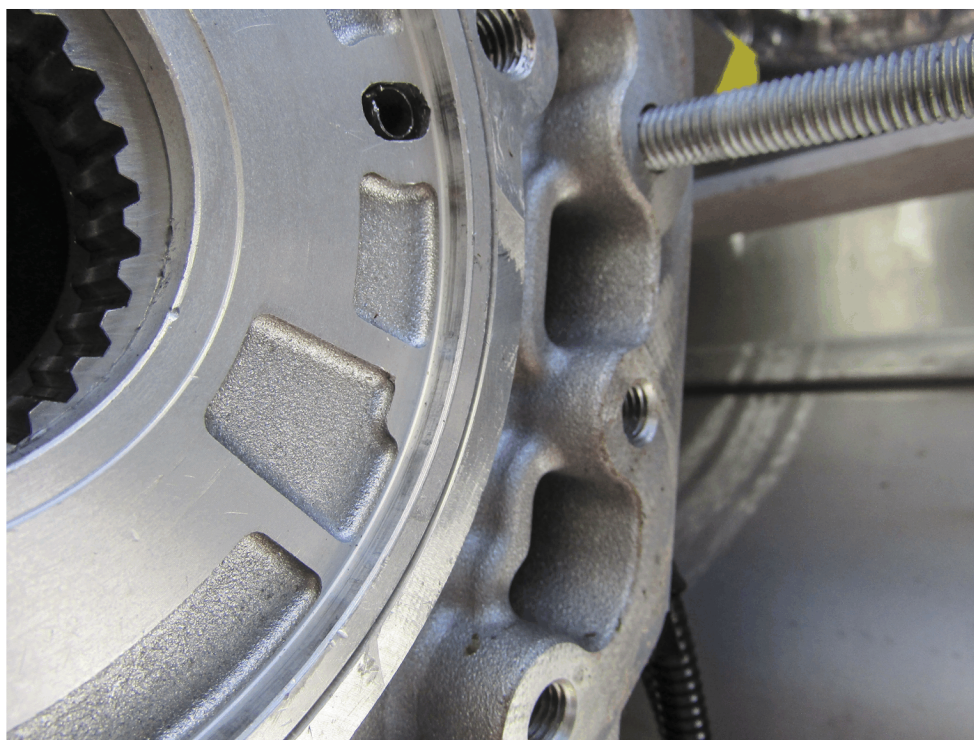
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NOTICE: The pump cover plate must be installed with the dished surface against the PTO or the pump will not work.

11. Install the thrust plate.



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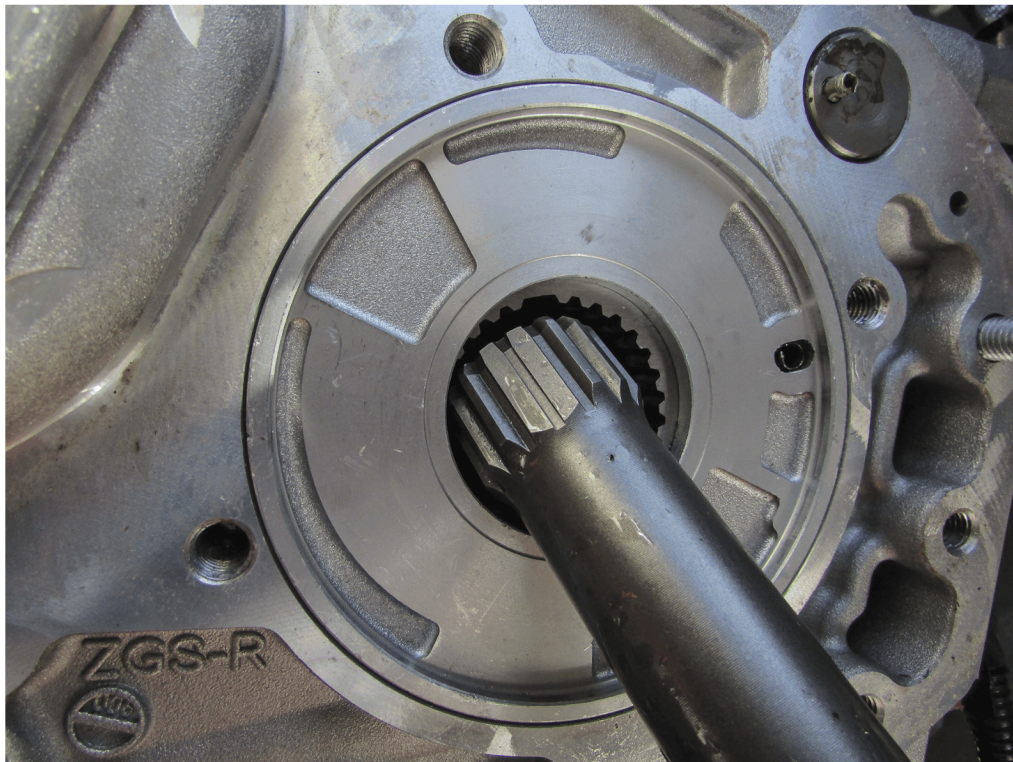


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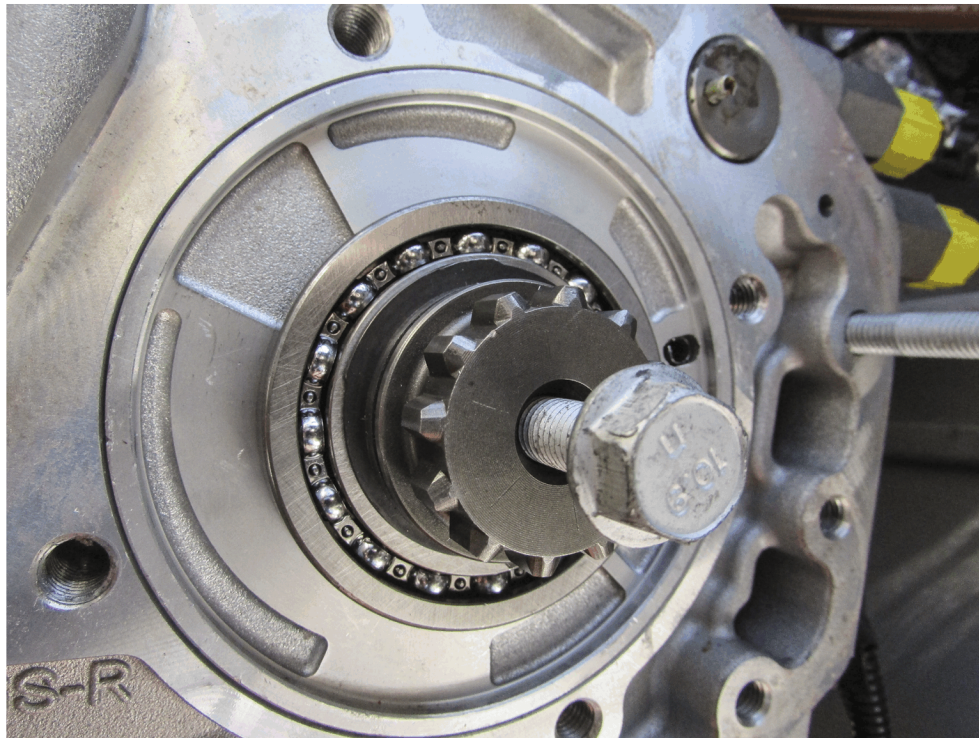
12. If a new shim was required, install the clamps and recheck the thrust plate gap.

NOTE: If there are missing teeth on the driven end of the oil pump drive shaft, this feature is intended to improve ease of installation. When placed in the nine o'clock position, the missing teeth will allow the shaft to pass by the planetary gear more easily.

13. Install the oil pump drive shaft.

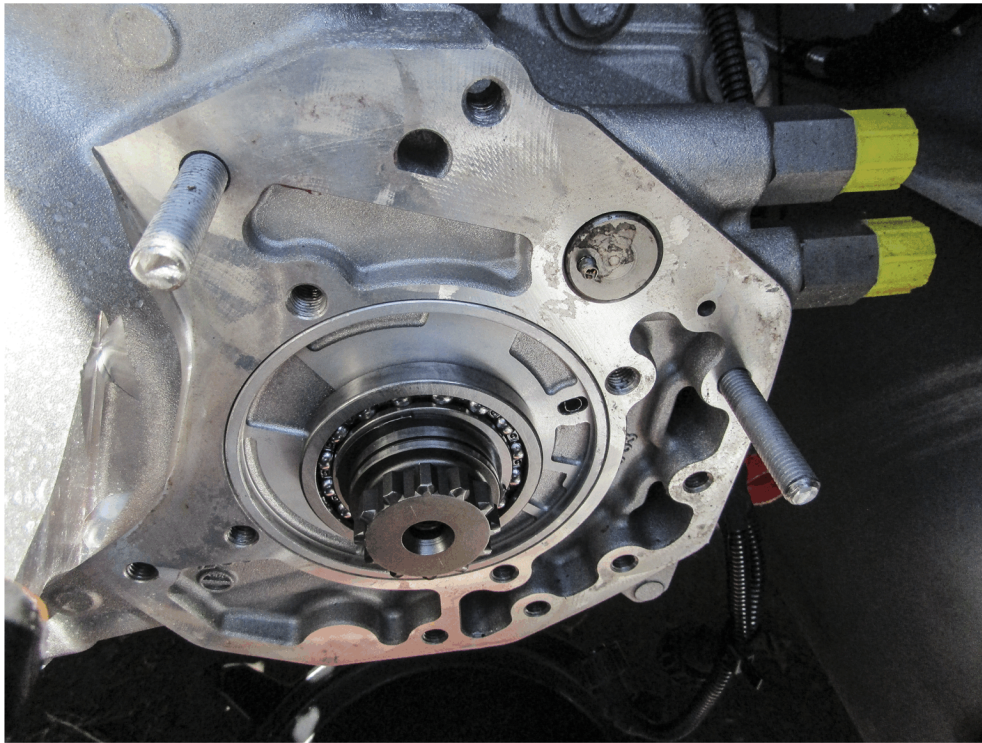


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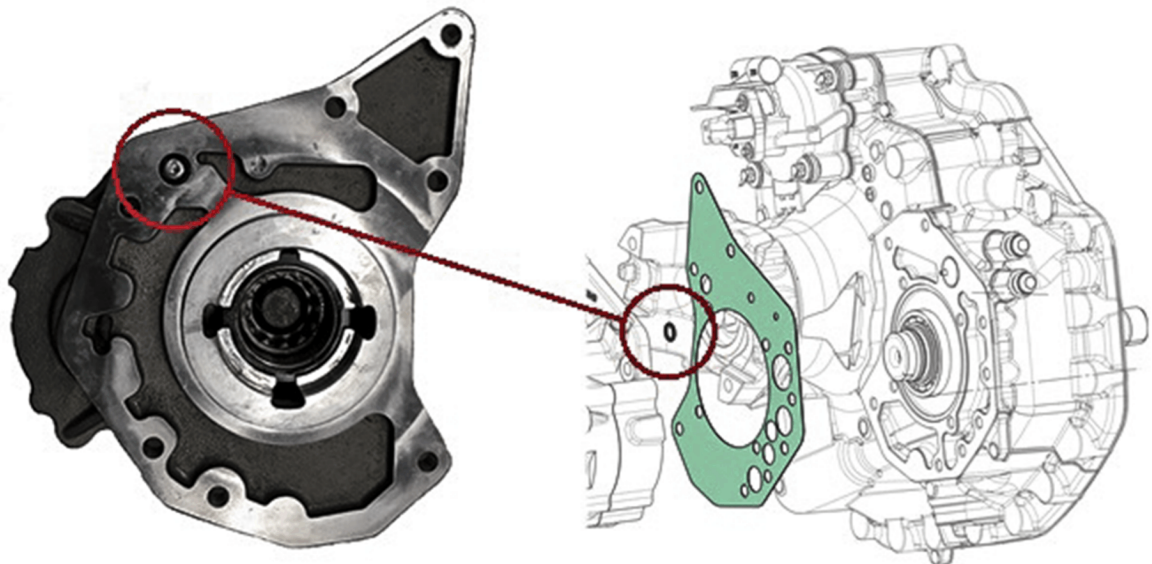
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14. If not already in place, install guide studs in the back of the transmission.



d260111

15. Install the O-ring into its position on the face of the PTO and the gasket into position on the transmission.



d260098

16. Apply some transmission oil to the outer bearing race, on the pump driveshaft, and the bearing pocket in the PTO and install the PTO assembly.
17. Install the PTO fasteners to hold the PTO in position.
18. Replace the guide studs and torque the PTO fasteners to 50 N·m (37 lb·ft).
19. Connect and secure the air and electrical harnesses to the PTO.
20. Fill the transmission with oil, with the level even to the bottom of the fill plug.

21. Fit a new fill plug seal, and torque the fill plug to 60 N·m (44 lb·ft).