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Service Information Bulletin

SUBJECT	DATE
Internal Component Repair	February 2019

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0140	DT12	Installation of the Countershaft Brake Seals and Clutch	Add notes and additional graphics.

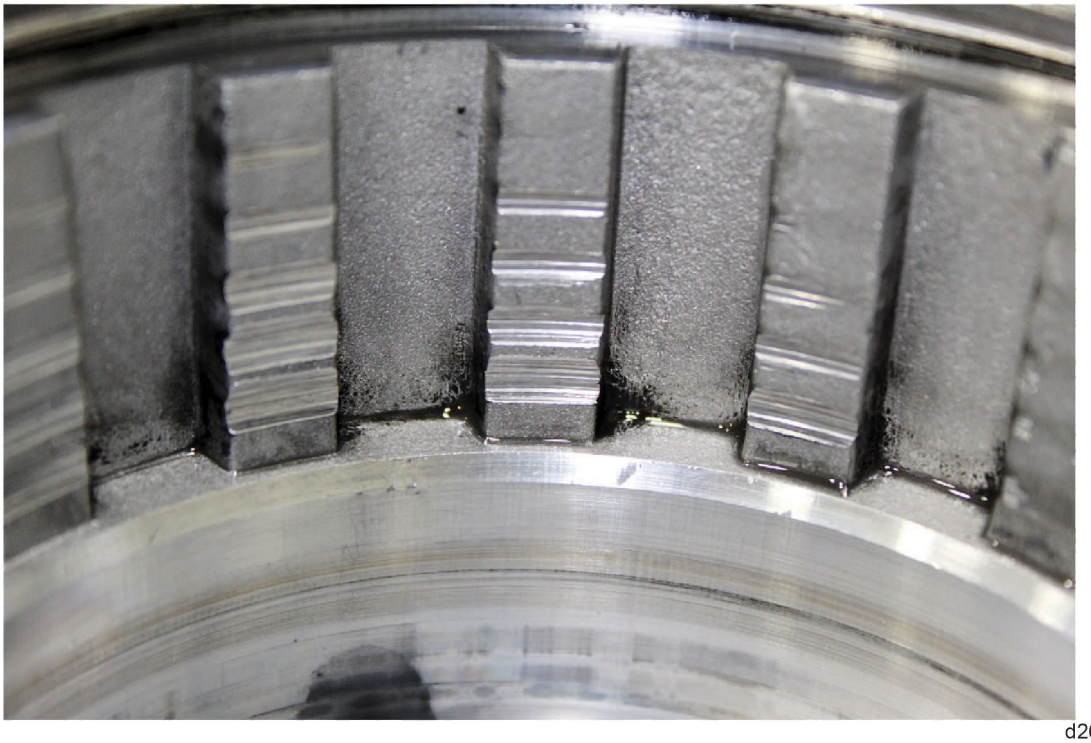
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2 Installation of the Countershaft Brake Seals and Clutch

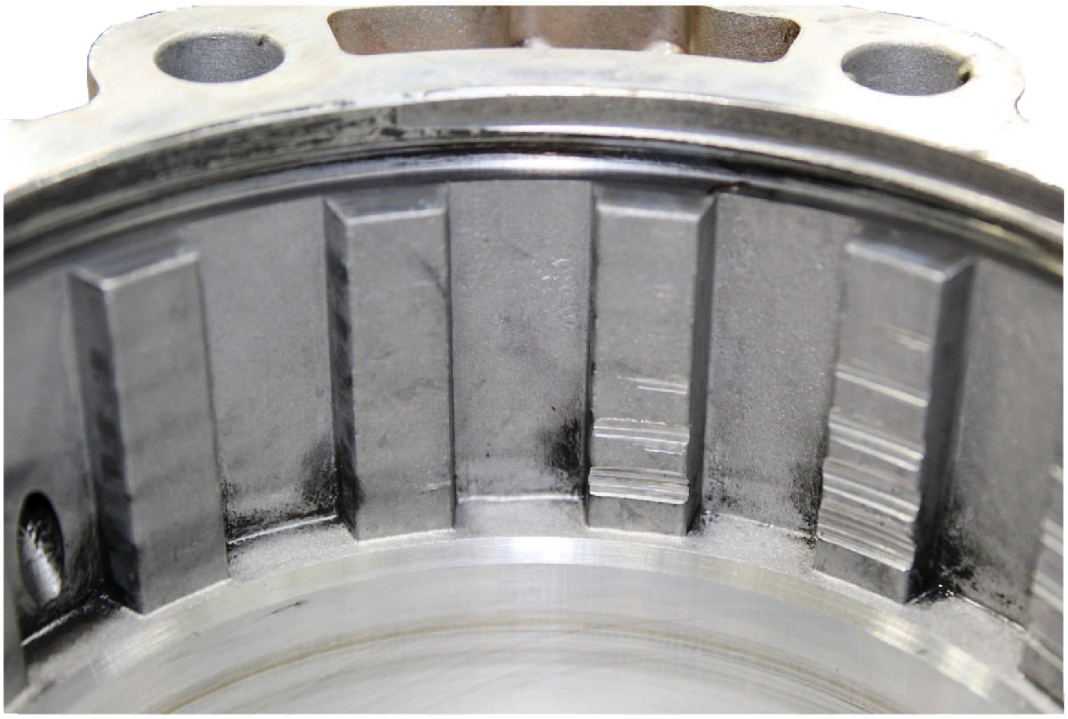
Install as follows:

NOTE: Images below show normal wear marks in the countershaft brake housing. The housing can be reused and no action is required.

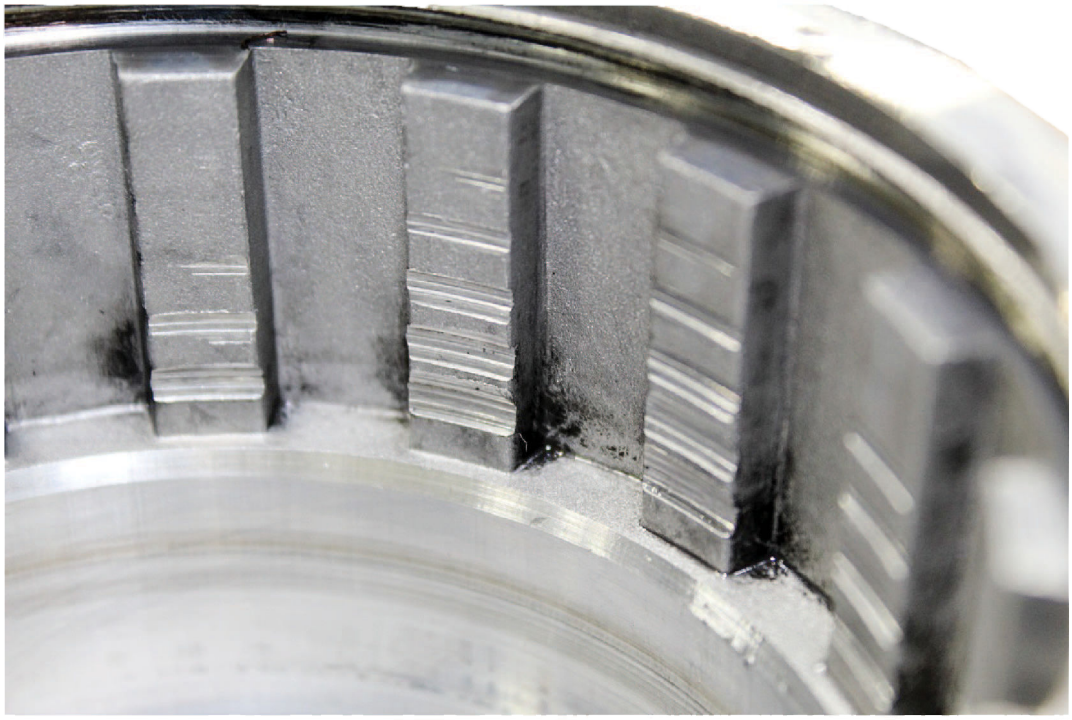


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1. Lubricate the O-rings with grease (A 001 989 32 51 10).

NOTE: If the seals and piston did not require service, begin with brake disk installation process at step 5.

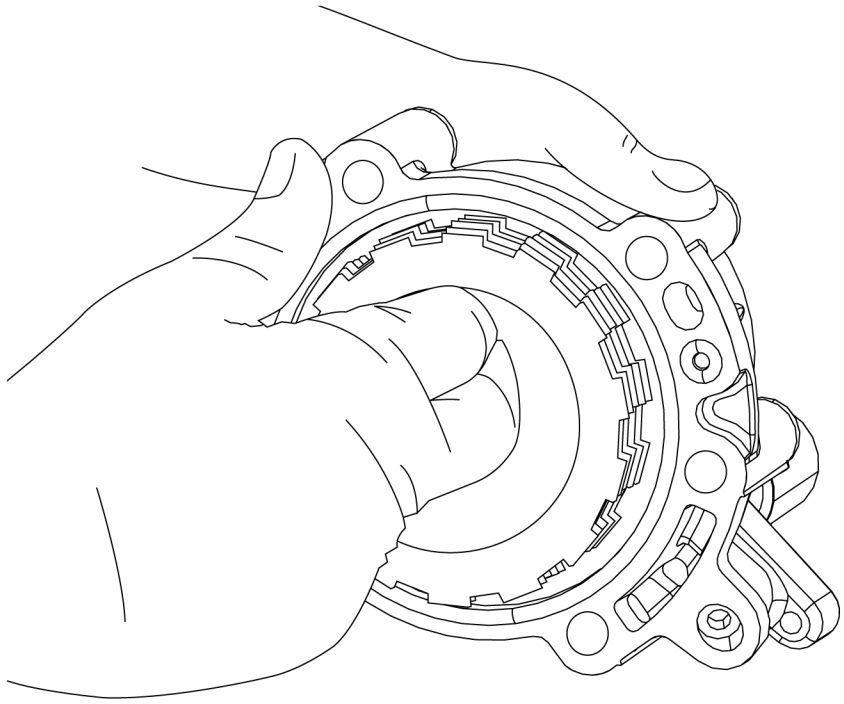
NOTE: The open side of the lip seals face away from the center seal.

2. Install the piston seals.
3. Install the piston.

NOTE: Older versions of the Countershaft Brake Disks have two open slots in the inside spline on each of the friction disks. These slots should be aligned across the entire set, to allow oil to escape during brake actuation.

4. Insert the clutch disk pack together into the housing.

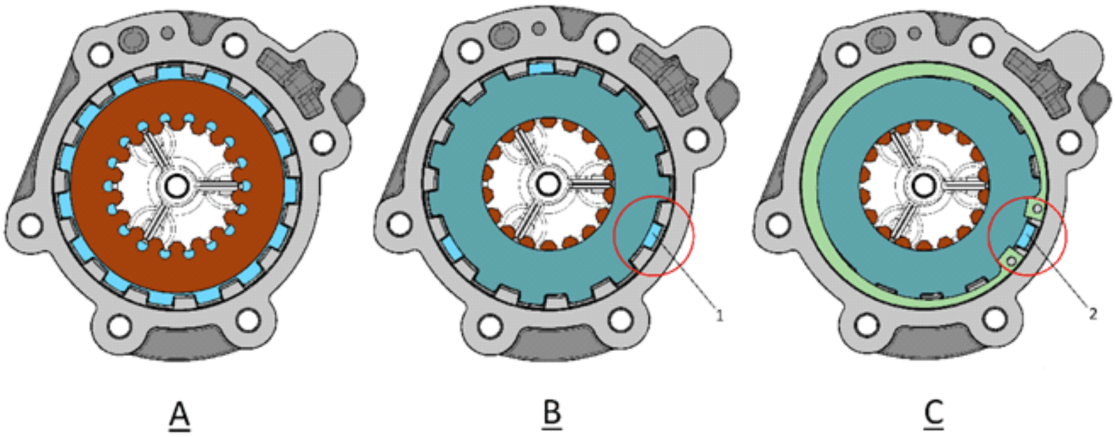
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NOTE: Older versions of the Countershaft Brake Disks don't use the End Plate with the missing teeth. Those instruction details don't apply to the early disk sets.

5. Install the end plate so one of the missing teeth is located as shown (B, 1).



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6. Install the snap ring.

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7. Orient the split in the snap ring with the missing tooth in the end plate (C, 2). Align the grooves on the friction disks that fit onto the splines of the countershaft, to allow the brake assembly to be slid onto the splines of the countershaft.

NOTE: Early versions of the transmission utilized an additional heavy washer, installed between the snap ring for the disk set and the thinner, counter shaft bearing shim.

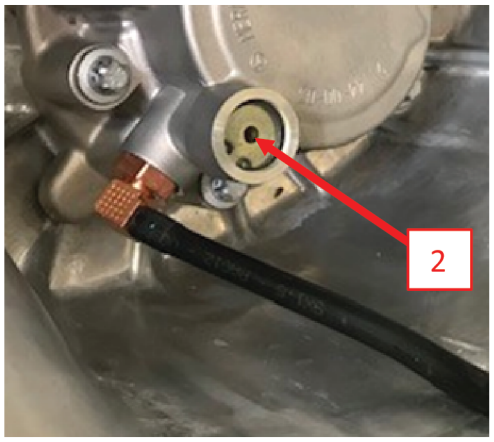
NOTE: To prevent the countershaft bearing shim from dropping out of position, use petroleum jelly to hold the shim in the brake housing, while it is being fitted up to the transmission.

8. Install the heavy washer, if present, then the shim, in the brake assembly.
9. Clean the old sealant from the housing, bolt threads, and the case.
10. Install the O-ring onto the countershaft bearing race.
11. Install the brake assembly onto the transmission.
12. Apply medium thread locker/sealer to the capscrews, and then install the housing. Torque the capscrews to 25 N·m (18 lb·ft).

NOTE: A tool can be made to perform this test by cutting a Counter Shaft Brake Air Line, and adapting a fitting to the line. A push button valve will make the test process easy to perform.

13. Test the function of the brake by supplying shop air to the line port in the brake housing. While turning the input shaft, apply and remove air pressure at the port. The resistance of the brake can be felt as air is applied, and once removed, the resistance is reduced and air will discharge from the hole in the valve cap (2).





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14. Install the air line. Torque the fastener to 10 N·m (90 lb·in.). If necessary, torque the air fitting end of the line to 12 N·m (105 lb·in.).
15. Install the transmission. For instructions, Refer to section "Installation of the Transmission".
16. Fill the transmission with oil. For specifications, see the Vehicle Maintenance Manual.
17. Relearn the Clutch. Cycle ignition OFF, then ON after learn has successfully completed.
18. To reseat the countershaft brake disc (must be performed with engine running), perform the following sequence:

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Table 1.

NOTICE: DO NOT run this complete routine multiple times in a row, otherwise the brake could overheat without cooling time.
• 30°C (86°F) minimum transmission fluid temp required - short warmup or drive in the lot. • Release Park Brake. • Apply service brake for the following procedure. • Start Learning Dynamic values. • From Neutral - Select Drive or Reverse - Wait for gear engagement- then shift back to N. • From Neutral - accelerate engine to 1000 rpm - Lift off Throttle - Select Drive, wait for Gear engagement- then return to N. • From Neutral - accelerate engine to 1500 rpm - Lift off Throttle - Select Drive, Wait for Gear engagement- then return to N. • From Neutral - accelerate engine speed to 2000 rpm or max - Lift off Throttle - Select Drive, wait for Gear engagement - then return to N. • Dynamic values should now be learned - Take unit for a test drive to confirm - The dynamic values will continue to learn and improve further with usage.

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