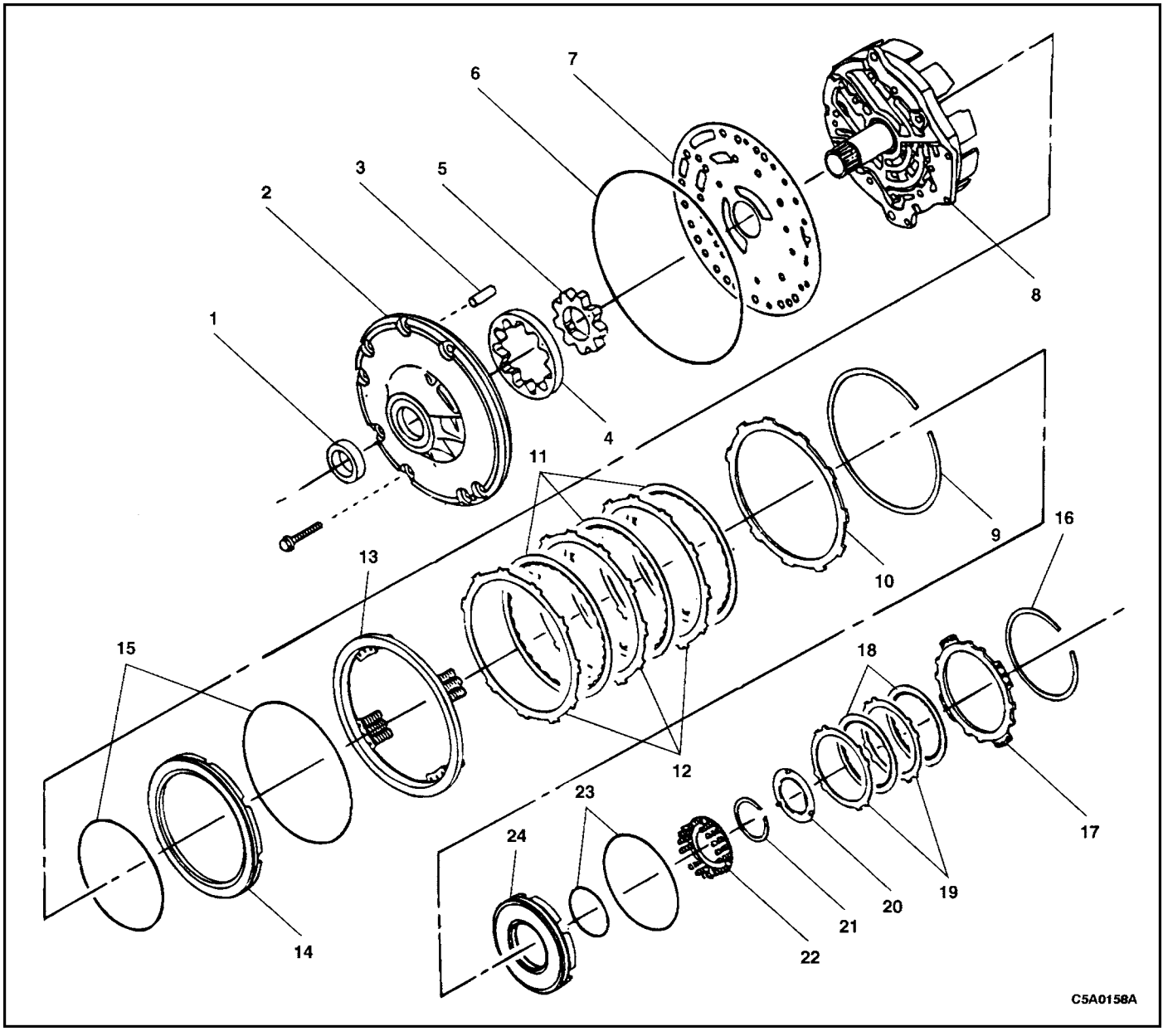
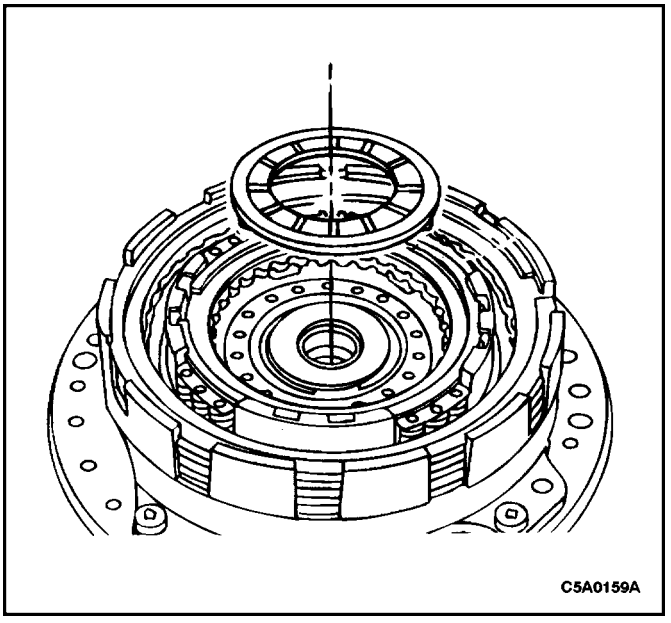
OIL PUMP, SECOND COAST AND SECOND BRAKE ASSEMBLY



1. Oil Pump Seal
2. Oil Pump Body
3. Straight Pin
4. Pump Driven Gear
5. Pump Drive Gear
6. O–Ring
7. Oil Pump Plate
8. Stator Support
9. Snap Ring
10. Second Brake Pressure Plate
11. Second Brake Friction Plate
12. Second Brake Steel Plate
13. Second Brake Piston Return Spring
14. Second Brake Piston
15. O–Ring
16. Snap Ring
17. Coast Clutch Pressure Plate
18. Coast Clutch Friction Plate
19. Coast Clutch Steel Plate
20. Thrust Washer
21. Shaft Snap Ring
22. Second Coast Piston Return Spring
23. O–Ring
24. Second Coast Piston

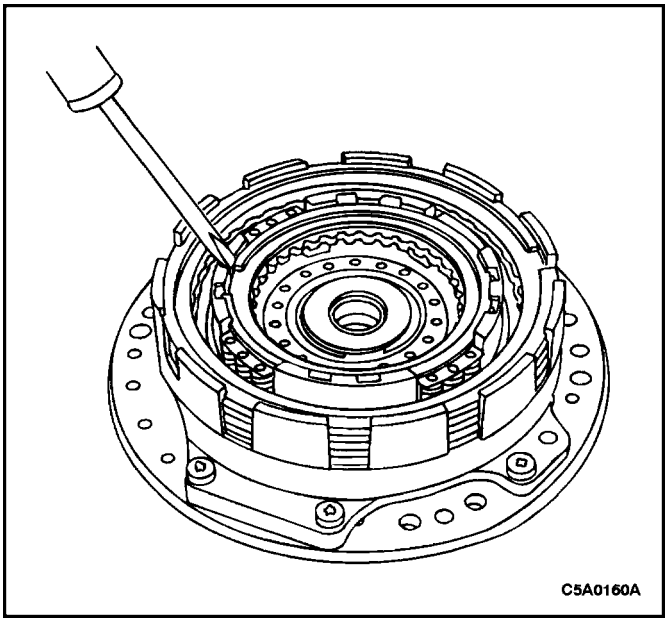

C5A0159A

Tools Required

KM–698 Spring Compressor
KM–674 Oil Seal Installer

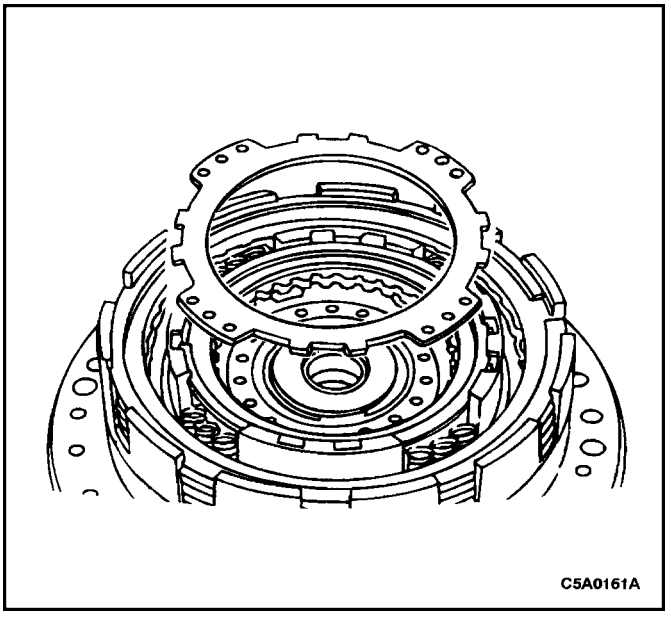
Disassembly Procedure

1. Remove the thrust washer.


C5A0160A

WARNING : USE CAUTION WHEN REMOVING SNAP RINGS OR PERSONAL INJURY MAY RESULT.

2. Carefully remove the snap ring.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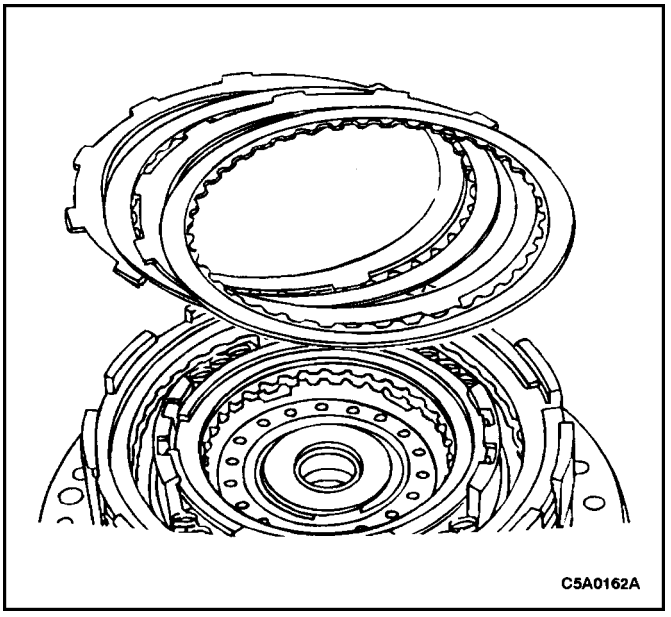
3. Remove the coast clutch pressure plate.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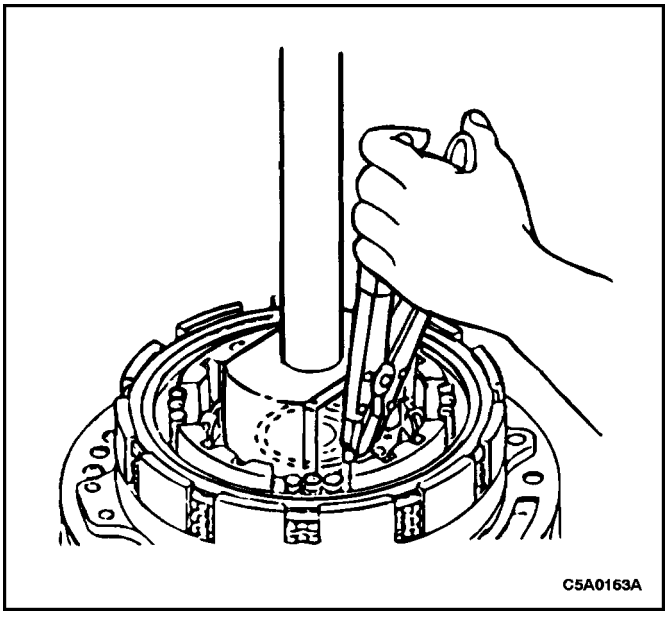
4. Remove the coast clutch disc pack.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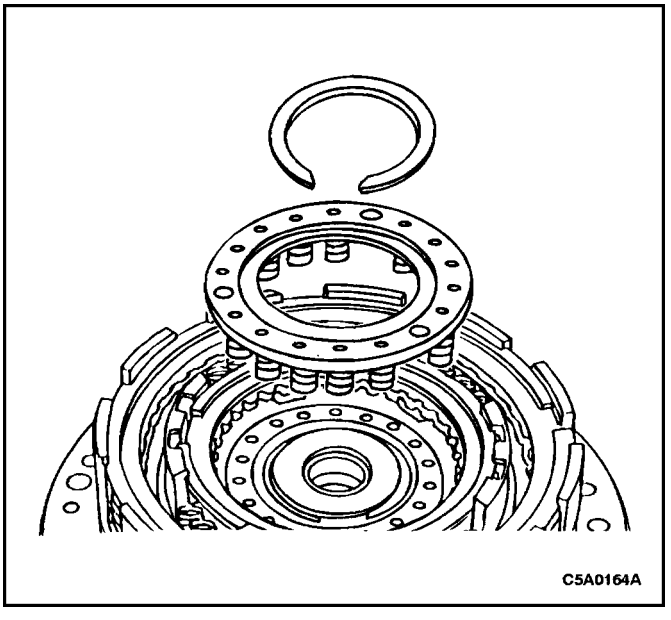
5. Position spring compressor KM–698 on the clutch piston return spring. Using a press, compress the spring, then remove the snap ring from the groove.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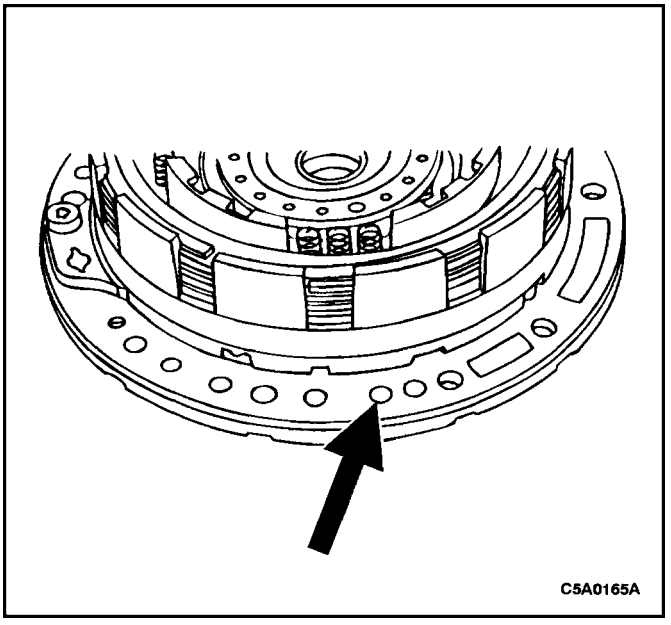
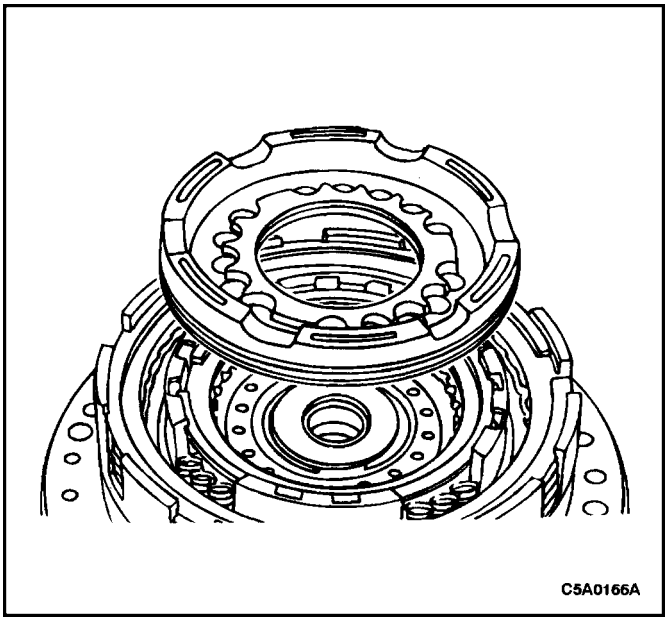
6. Remove the snap ring and the clutch piston return spring.


C5A0165A

WARNING : USE CAUTION WHEN REMOVING COMPONENTS WITH COMPRESSED AIR OR PERSONAL INJURY MAY RESULT.

Notice : If the piston does not come out completely, use needlenose pliers to remove.

7. Apply 57 psi (396 kPa) of compressed air into the oil passage shown to remove the second coast piston.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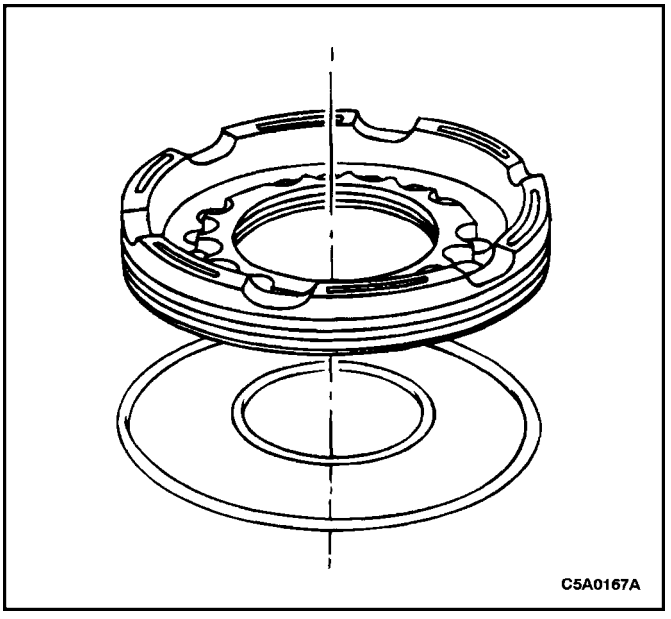
8. Remove the second coast piston.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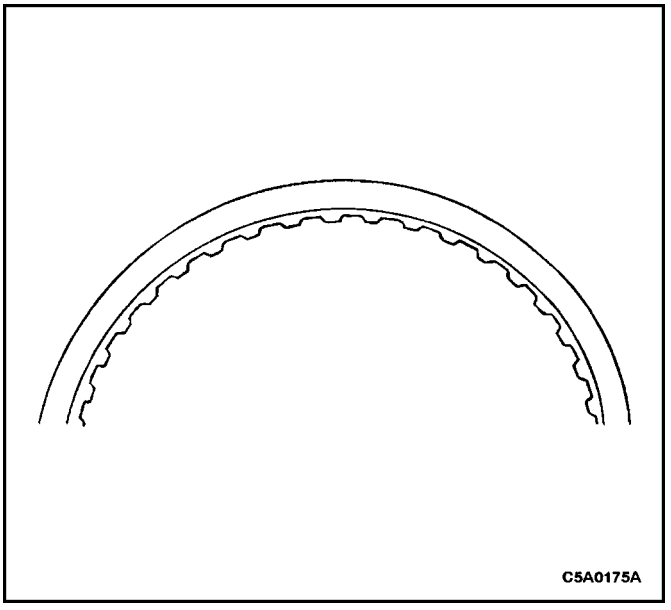
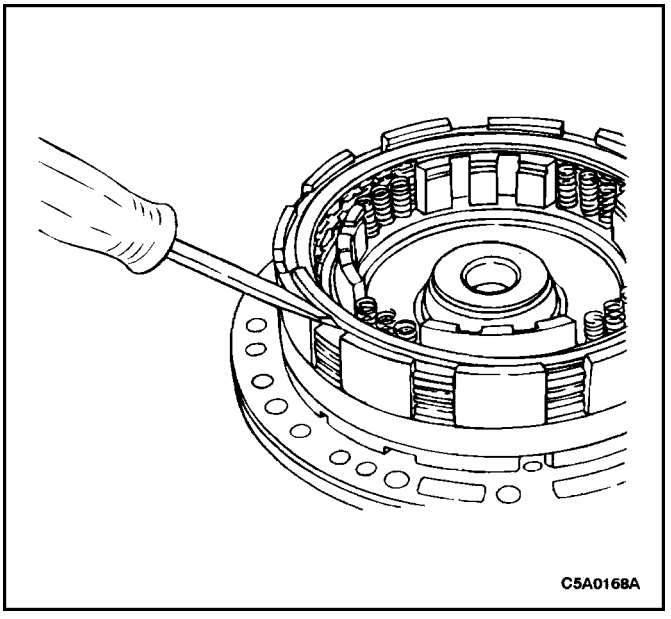
9. Remove and discard the second coast piston O–rings.


C5A0175A

Notice : Check the steel and friction plates for wear or damage. Replace if necessary.

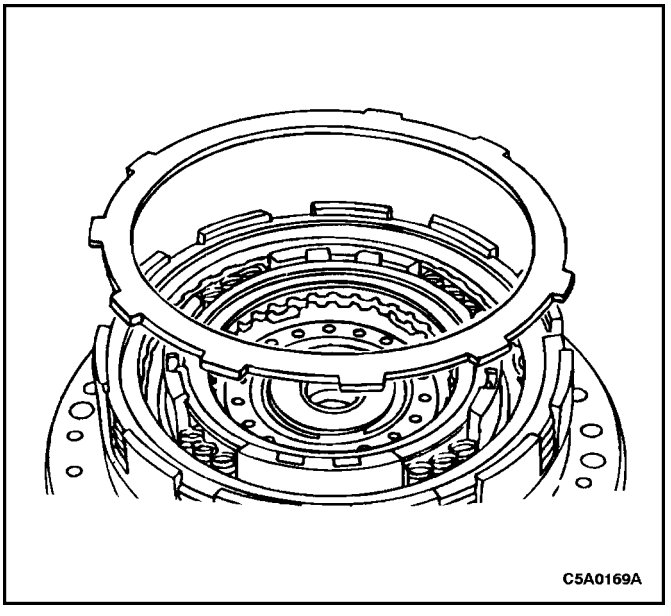
Notice : New clutch plates should be soaked in Texaco 1854 automatic transmission fluid for two hours before being assembled.

10. Inspect the coast clutch steel and friction plates.

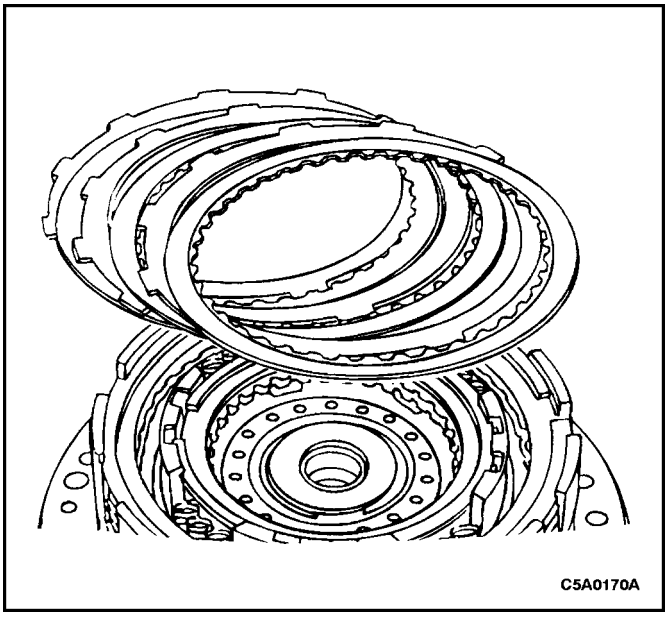

C5A0168A

WARNING : USE CAUTION WHEN REMOVING SNAP RINGS OR PERSONAL INJURY MAY RESULT.

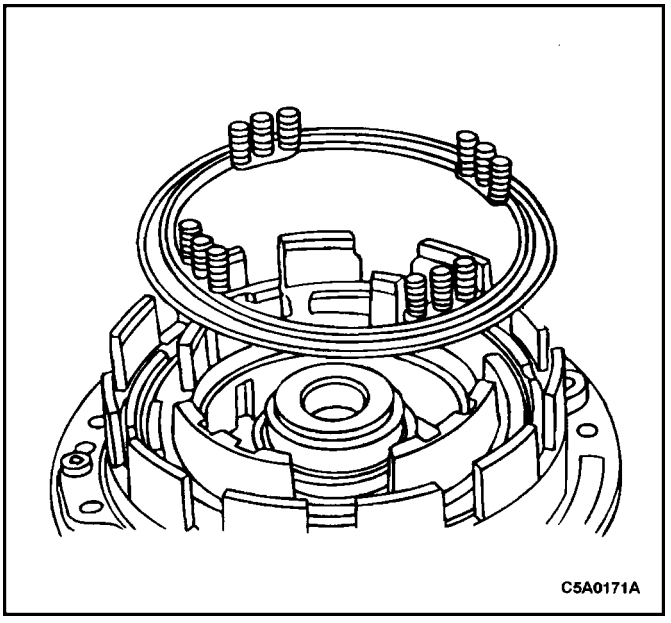
11. Carefully remove the snap ring.


C5A0169A

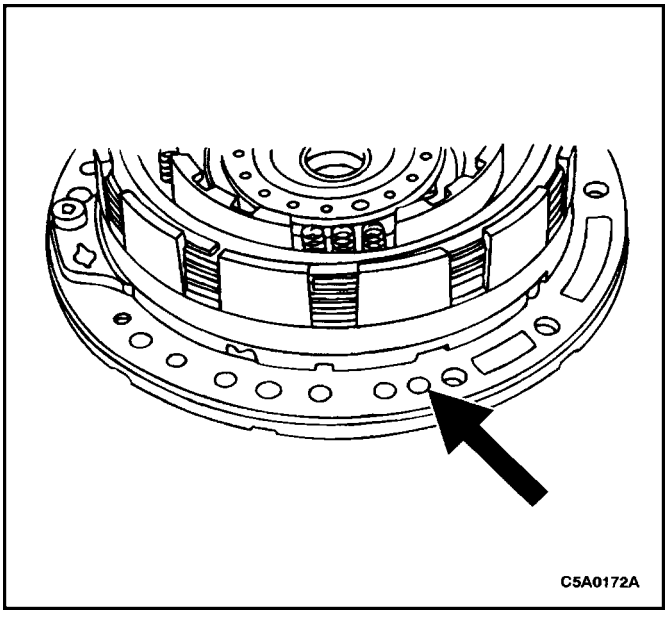
12. Remove the second brake upper flange.


C5A0170A

13. Remove the second brake clutch pack.


C5A0171A

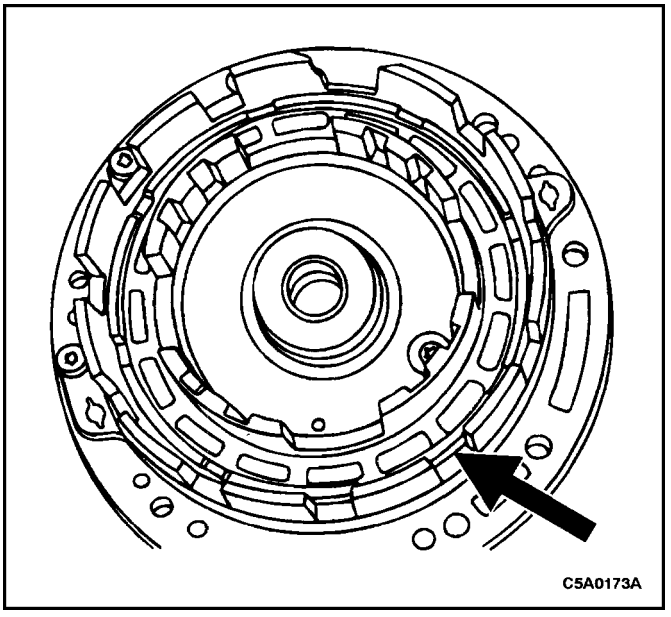
14. Remove second brake piston return spring.


C5A0172A

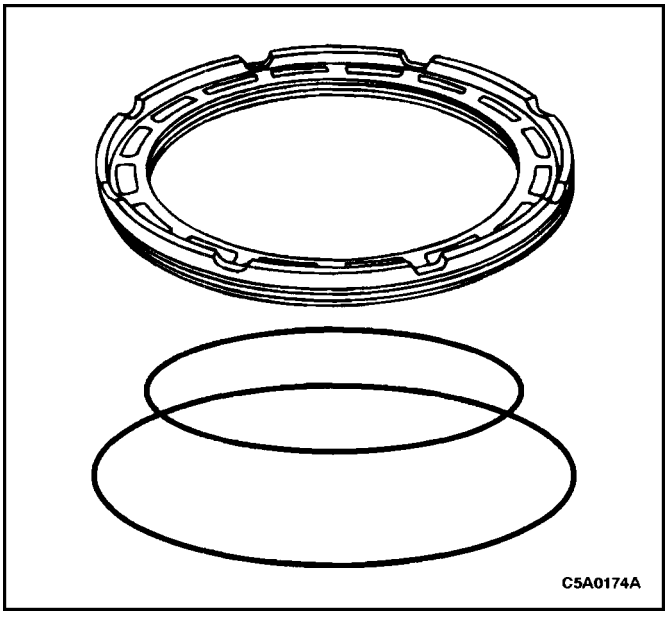
WARNING : USE CAUTION WHEN REMOVING COMPONENTS WITH COMPRESSED AIR OR PERSONAL INJURY MAY RESULT.

Notice : If the piston does not come out completely, use needle–nose pliers to remove.

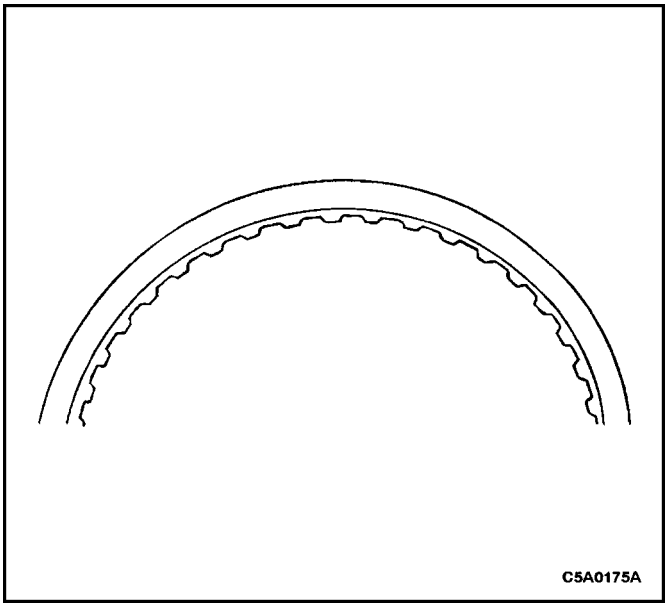
15. Apply 57 psi (396 kPa) of compressed air into the oil passage shown to remove the second brake piston.


C5A0173A

16. Remove the second brake piston.


C5A0174A

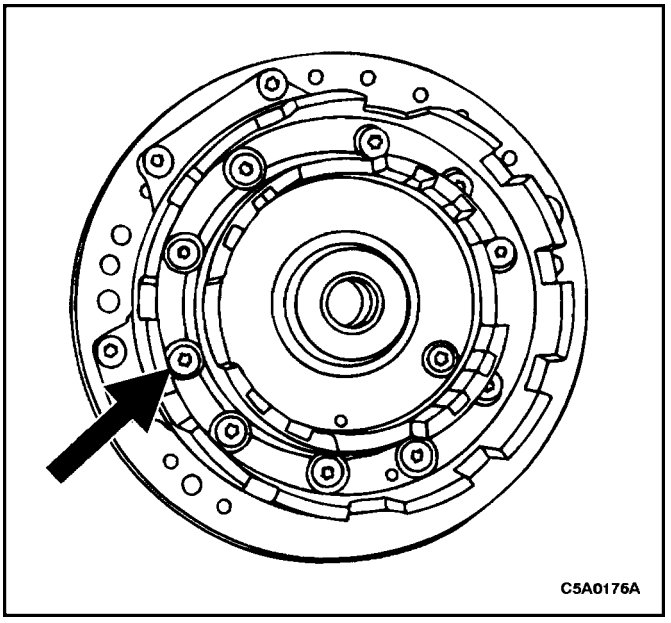
17. Remove and discard the second brake piston O–rings.


C5A0175A

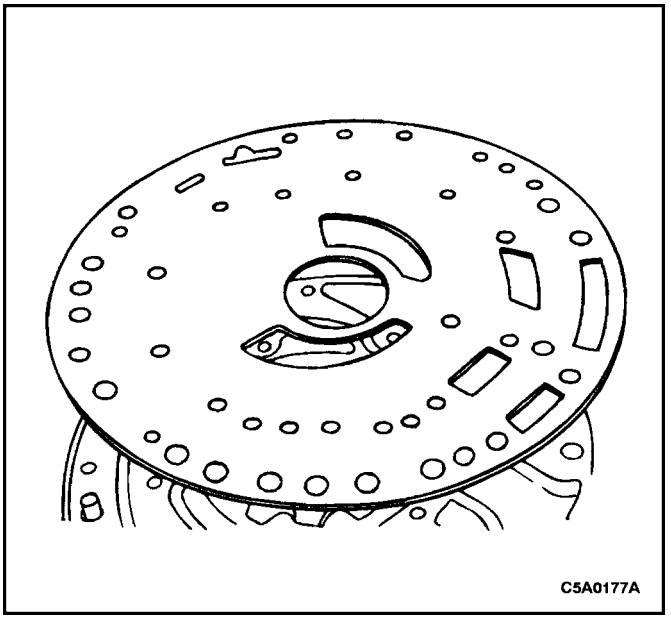
Notice : Check the steel and friction plates for wear or damage. Replace as necessary.

Notice : New clutch plates should be soaked in Texaco 1854 automatic transmission fluid for two hours before being assembled.

18. Inspect the second brake flange, steel and friction plates.

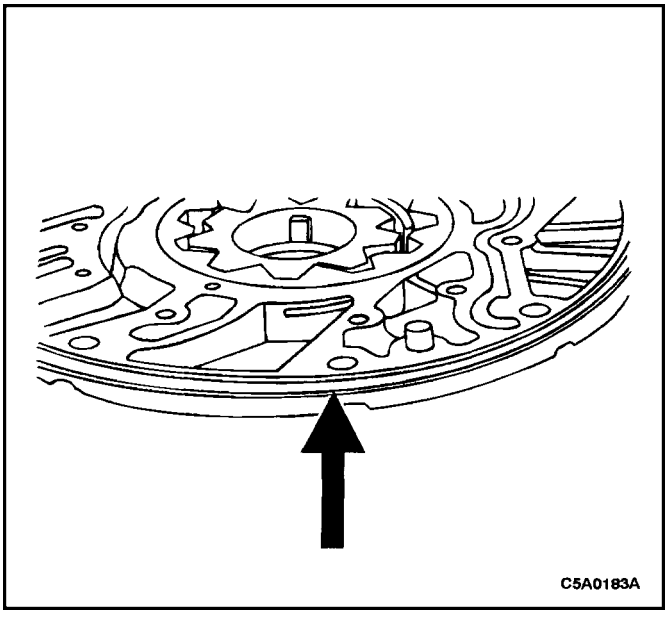


19. Remove the stator support to oil pump body bolts.

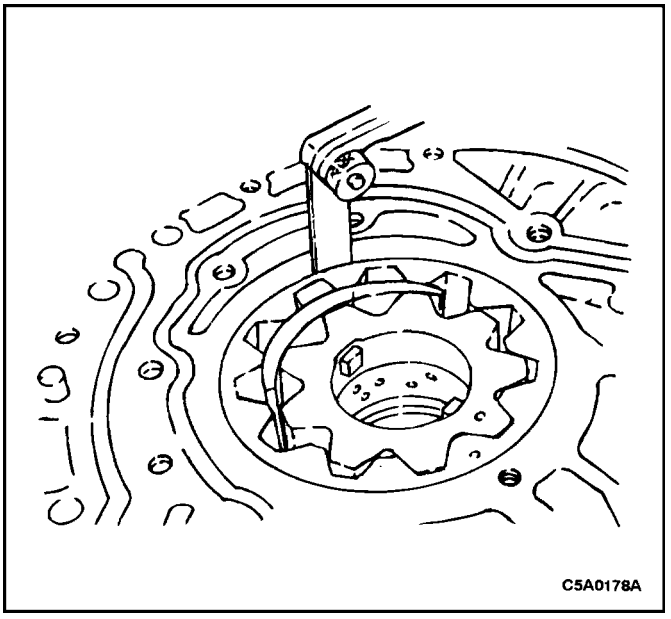


Notice : Replace the oil pump plate if the gear face contact surface is scratched or worn.

20. Remove the oil pump plate.

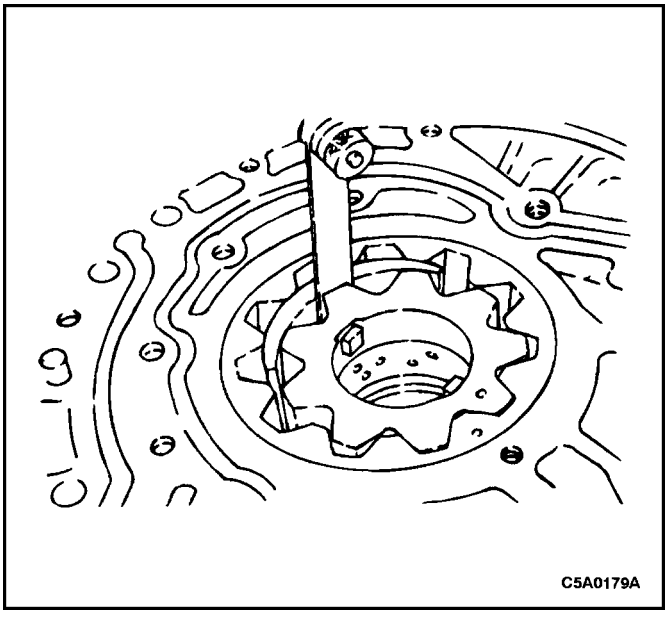


21. Remove and discard the oil pump body O–ring.


C5A0178A

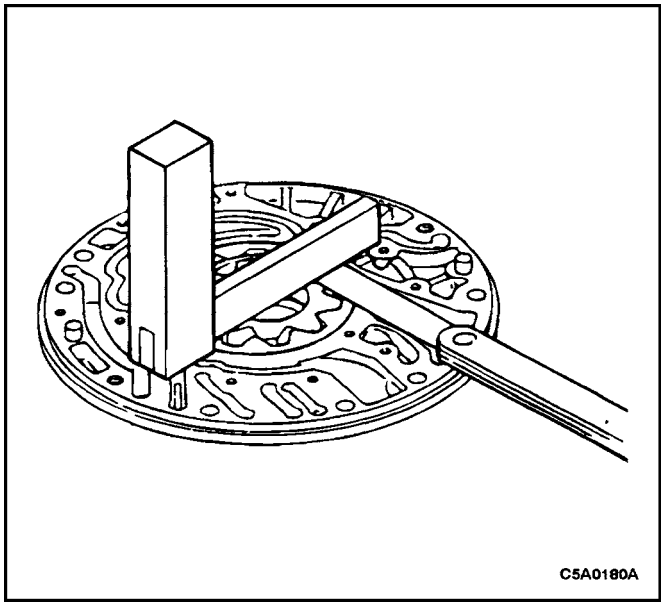
22. Measure the clearance between the pump driven gear and the oil pump body. If not as specified, replace the gears.

Standard Clearance	0.003–0.006 in (0.075–0.150 mm)
Maximum	0.008 in (0.20 mm)


C5A0179A

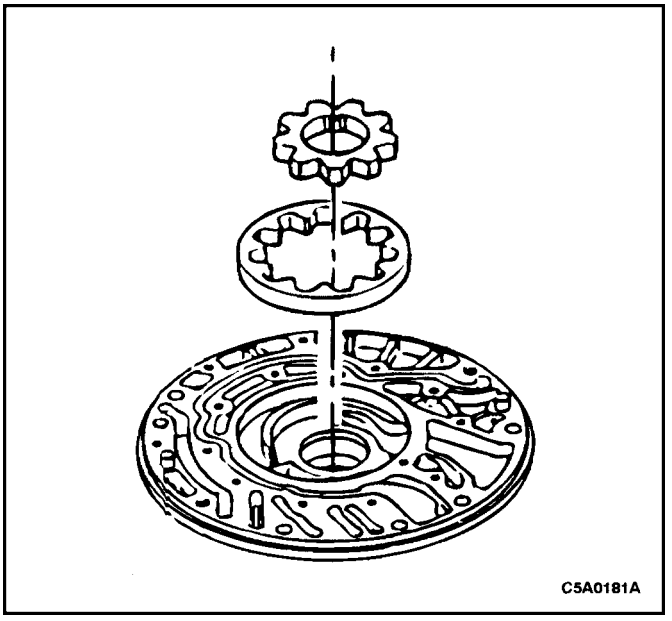
23. Measure the clearance between the pump drive gear and the oil pump body boss. If not as specified, replace the oil pump body and gears.

Standard Clearance	0.0001–0.010 in (0.004–0.248 mm)
Maximum	0.012 in (0.298 mm)


C5A0180A

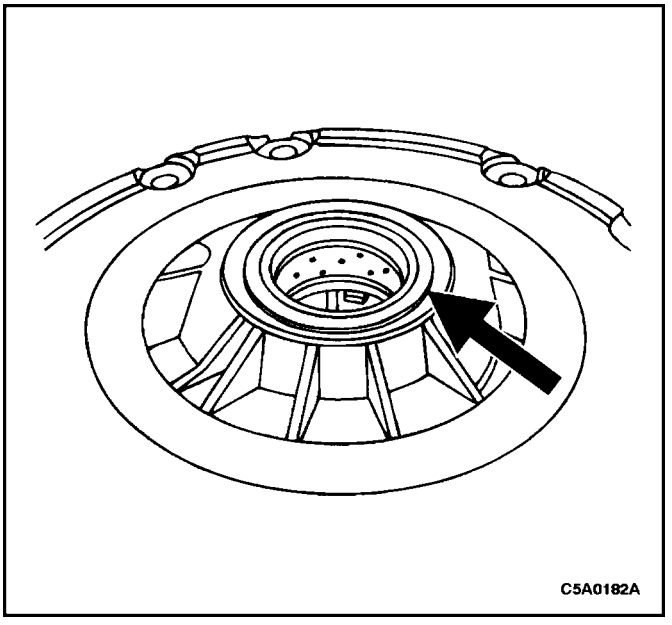
24. Measure the clearance between the pump drive gear, driven gear and the oil pump body. If not as specified, replace the oil pump body and gears.

Standard Clearance	0.001–0.002 in (0.030–0.050 mm)
Maximum	0.004 in (0.100 mm)


C5A0181A

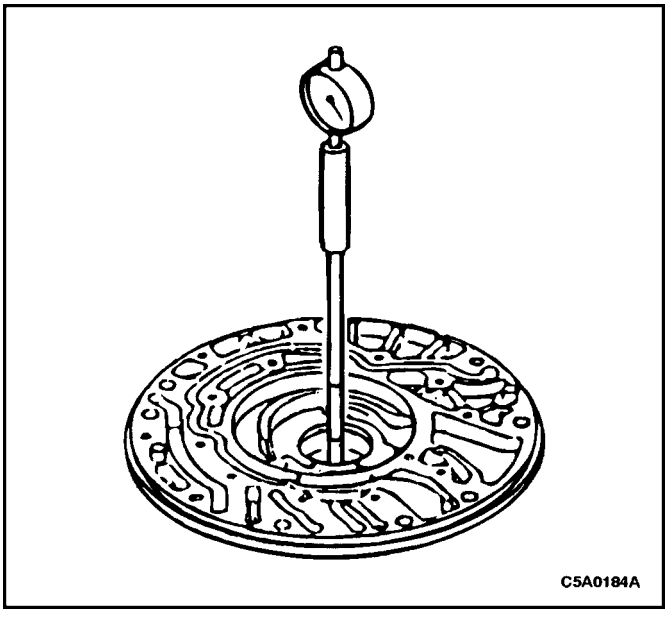
Notice : Check the pump driven gear and drive gear for wear or damage. Replace as necessary.

25. Remove the pump driven gear and pump drive gear.


C5A0182A

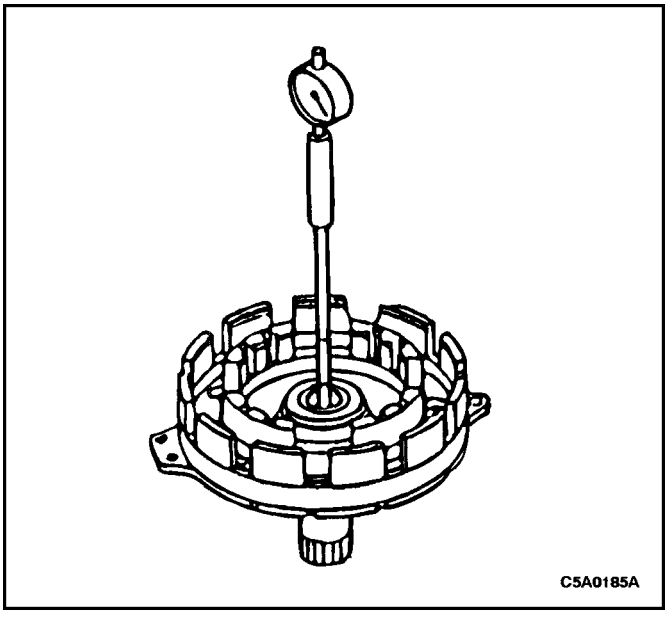
Notice : Be careful not to damage the oil pump body bushing.

26. Remove and discard the oil pump seal.


C5A0184A

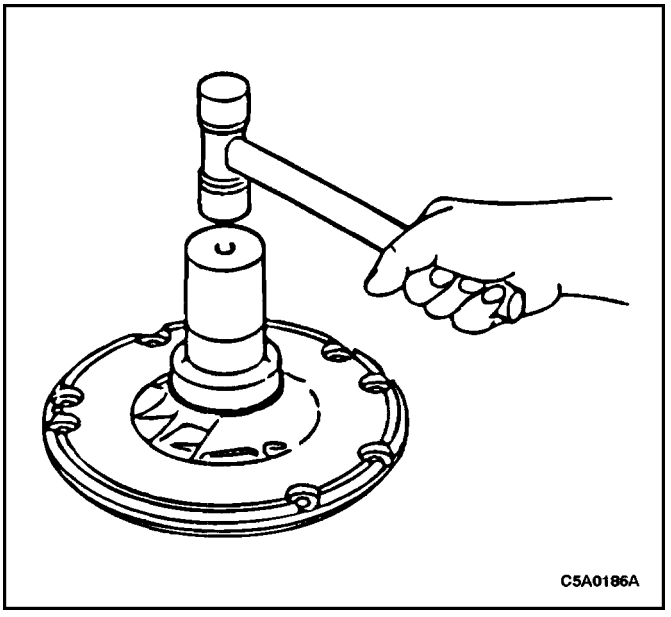
27. Inspect the oil pump body bushing.
    - Using a dial indicator, measure the inner diameter of the oil pump body bushing. Measure the bushing at three different places and calculate the average. If it is greater than the maximum, replace the oil pump body.

Standard	1.500–1.501 in (38.113–38.138 mm)
Maximum	1.503 in (38.180 mm)



28. Inspect the stator support shaft bushing.
    - Using a dial indicator, measure the inner diameter of the stator support shaft bushing. Measure the bushing at three different places and calculate the average. If it is greater than the maximum, replace the stator support.

Standard	.846–.847 in (21.510–21.527 mm)
Maximum	.849 in (21.570 mm)



Assembly Procedure

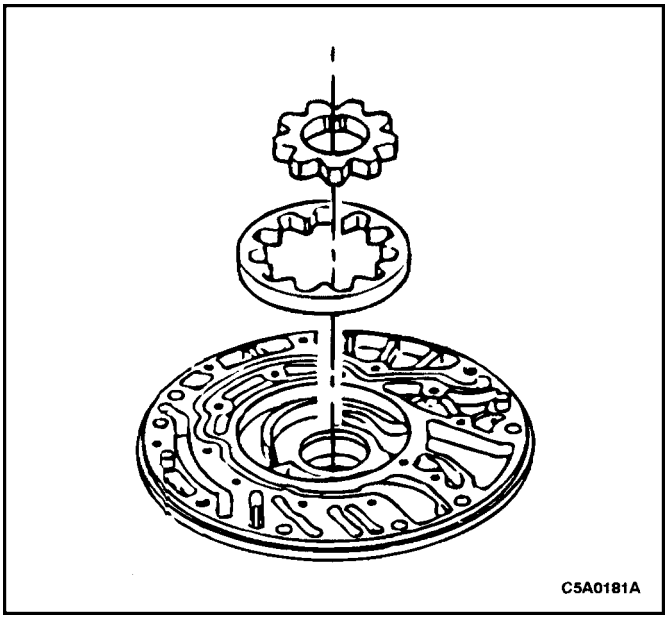
1. Clean the components using a clean, high–quality parts cleaning solvent and use compressed air to dry all parts. Inspect all parts for damage or wear.

Notice : Apply automatic transmission fluid to the inner surface of the oil pump body.

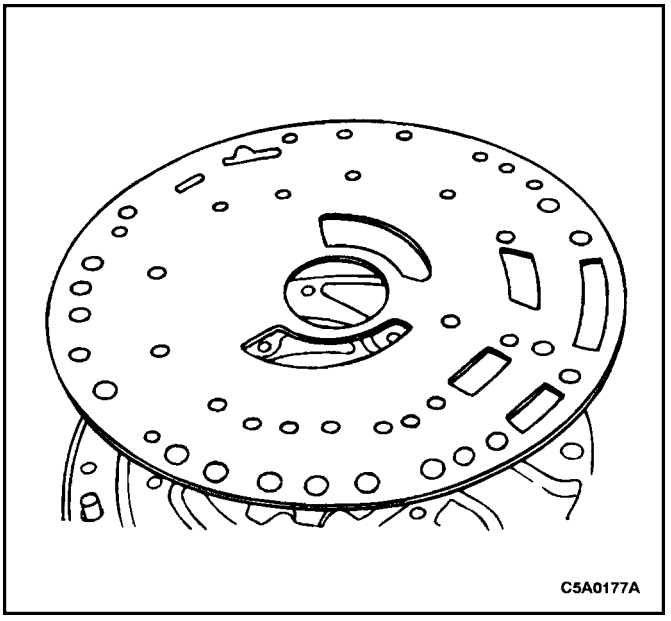
Notice : Apply Transjel Assembly Lubricant J–36850 or equivalent to the oil lip seal.

Notice : The seal should be flush with the outer edge of the oil pump body.

2. Install a new oil pump seal using oil seal installer KM–674.



3. Install the pump driven gear and pump drive gear.
    - Align the marks on the gears.
    - Apply Texaco 1854 automatic transmission fluid into the gear cavity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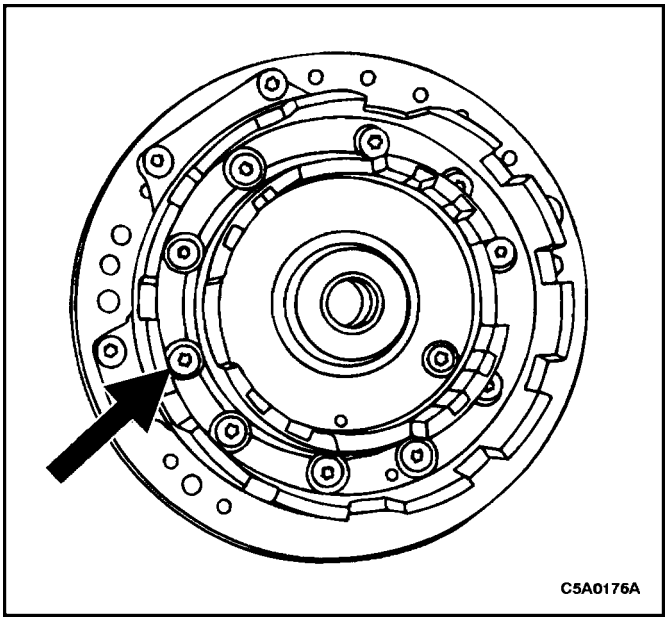
Notice : Align the oil pump plate hole with the dowel pin in the oil pump body.

4. Install the oil pump plate.

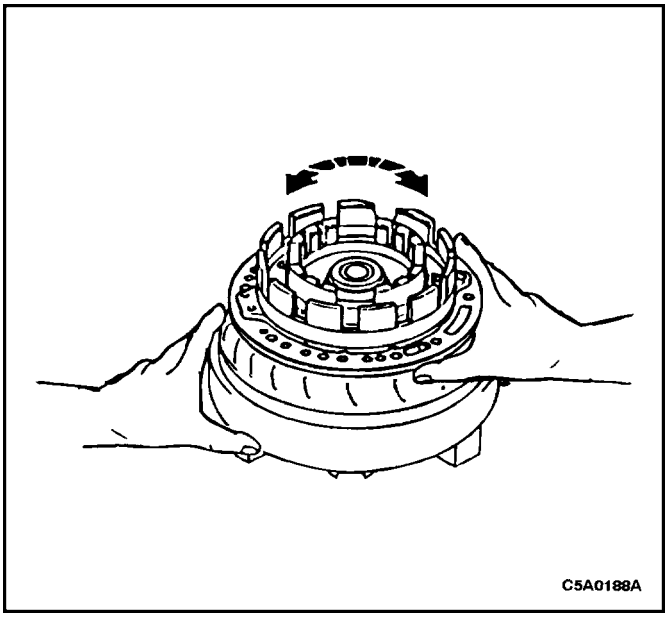

C5A0176A

CAUTION : Tighten the bolts evenly and gradually.

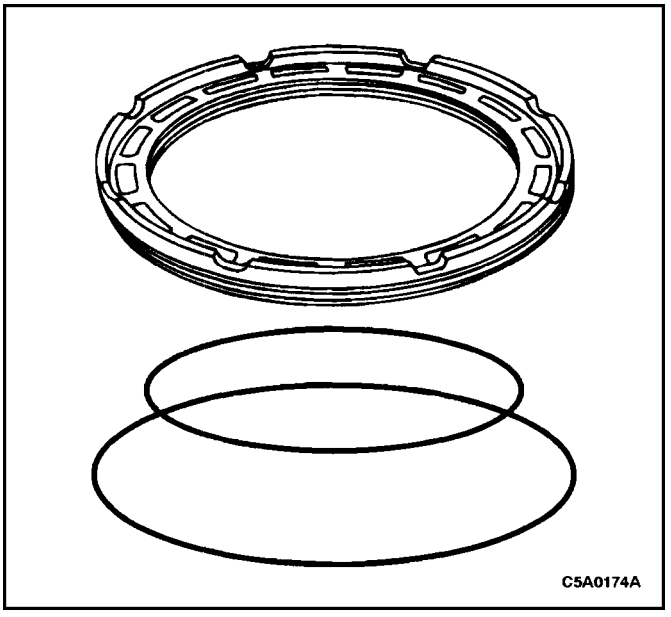
5. Install the stator support.
   - Align the stator support with each bolt hole in the oil pump body and temporarily tighten the bolts evenly and gradually.

   Tighten

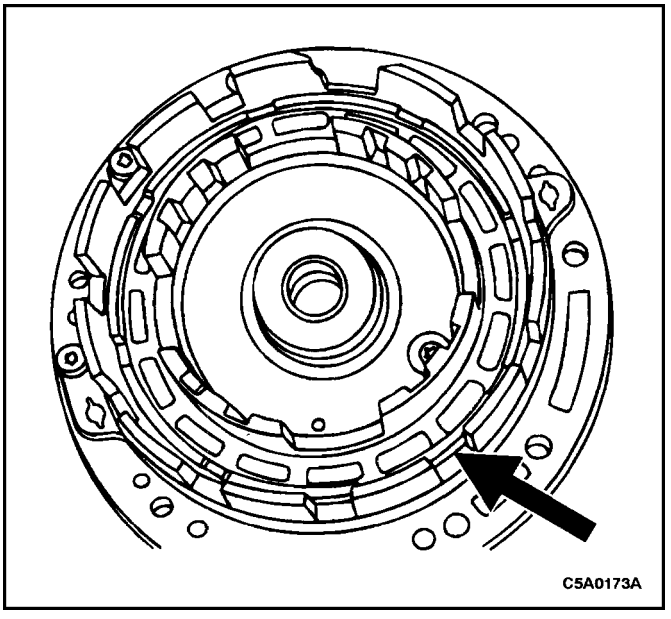
   Tighten the M5 bolts to 53–62 lb–in (6–7 N•m) and the M6 bolts to 89–124 lb–in (10–14 N•m).


C5A0188A

6. Check the pump drive gear rotation.
   - Install the pump assembly into the torque converter to verify smooth operation.



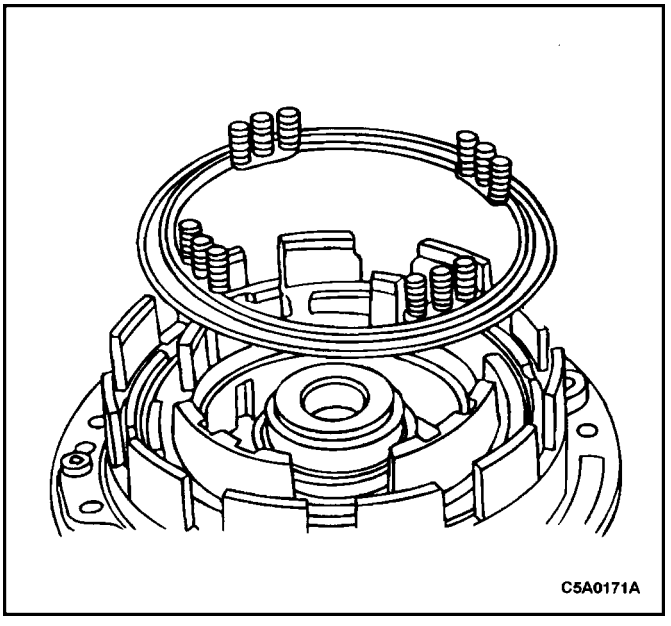
7. Install new second brake piston O–rings.



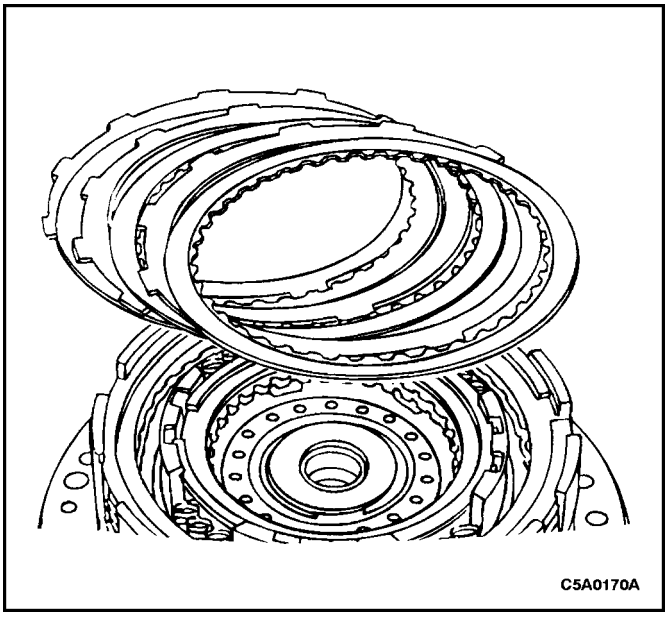
Notice : Apply Texaco 1854 automatic transmission fluid to the new second brake piston O–rings and the stator support seal area.

Notice : Seat the piston by pushing evenly around the circumference of the piston, being careful not to damage the outer seal.

8. Install the second brake piston.

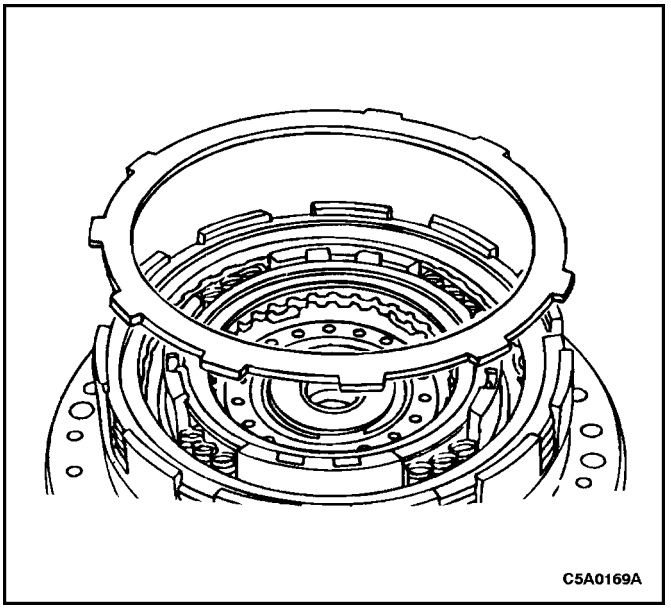


9. Install the second brake piston return spring.


C5A0170A

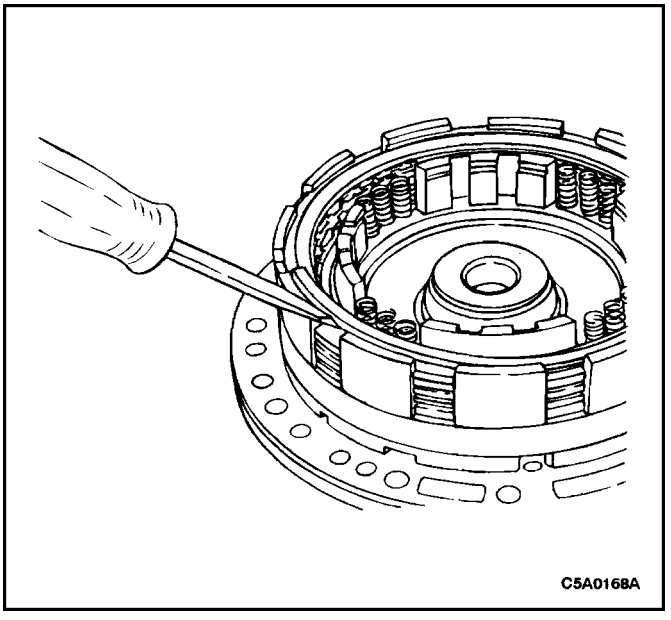
Notice : The flanges are thicker than the steels.

10. Install the second brake clutch pack.
    - The installation order is: flange–friction–steel–friction– steel–friction.


C5A0169A

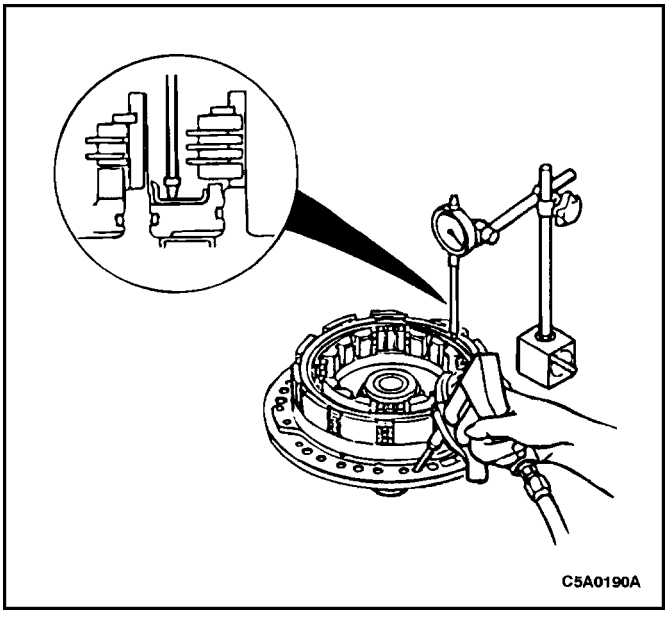
Notice : The flanges are thicker than the steels.

11. Install the second brake top flange.


C5A0168A

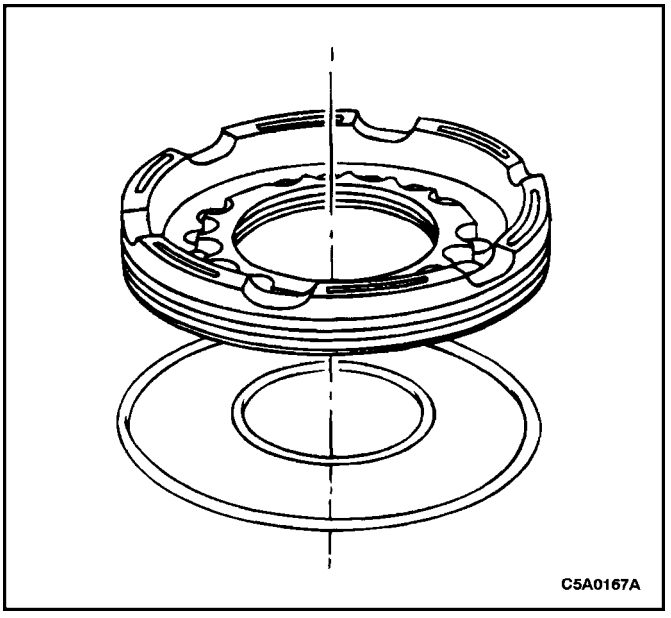
Notice : Be sure the snap ring end gap is not aligned with one of the stator support cutouts.

12. Install the snap ring.

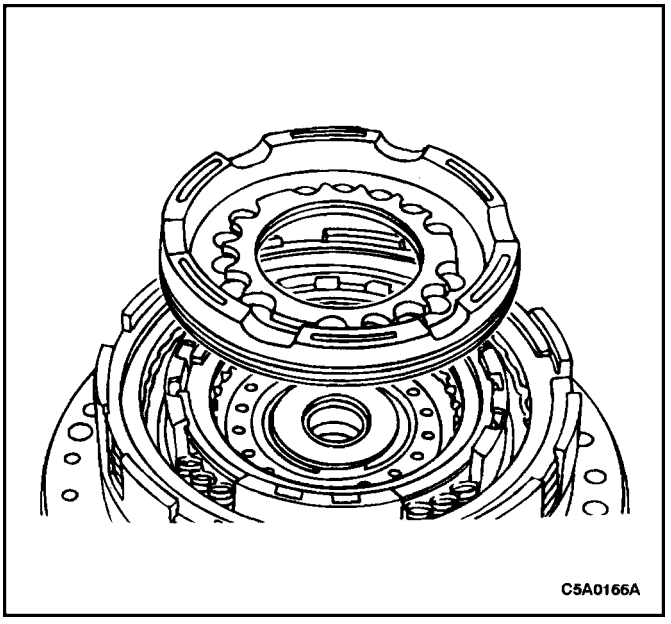


WARNING : USE CAUTION WHEN CHECKING COMPONENTS WITH COMPRESSED AIR OR PERSONAL INJURY MAY RESULT.

13. Check the second brake clutch operation.
    - Install a dial indicator.
    - Apply 57 psi (396 kPa) of compressed air into the oil passage shown and measure the second brake clutch piston stroke. The piston stroke is 0.045–0.073 in (1.14–1.860 mm). The clutch should make a solid apply sound, with no whistle or sign of leaks.



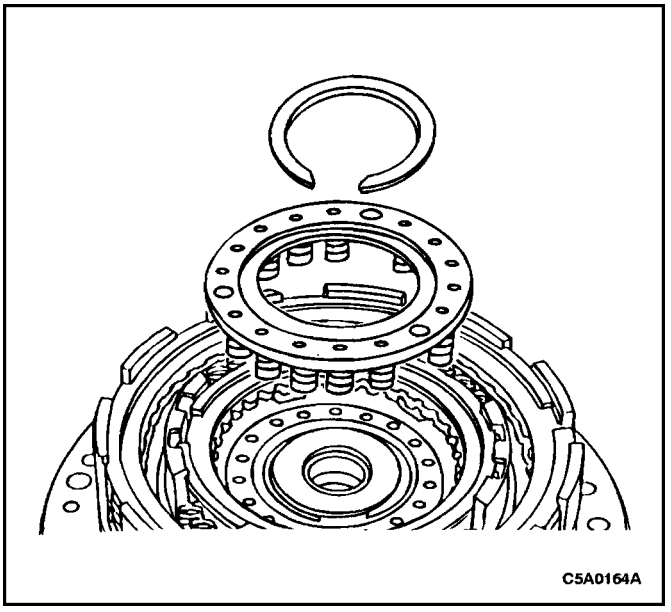
14. Install new second coast piston O–rings.



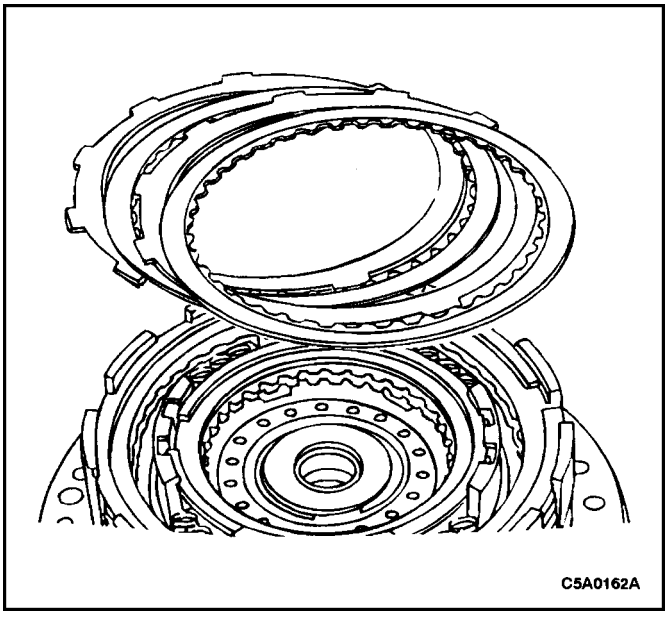
Notice : Apply Texaco 1854 automatic transmission fluid to the new second coast piston O–rings and the stator support seal area.

Notice : Seat the piston by pushing evenly around the circumference of the piston, being careful not to damage the outer seal.

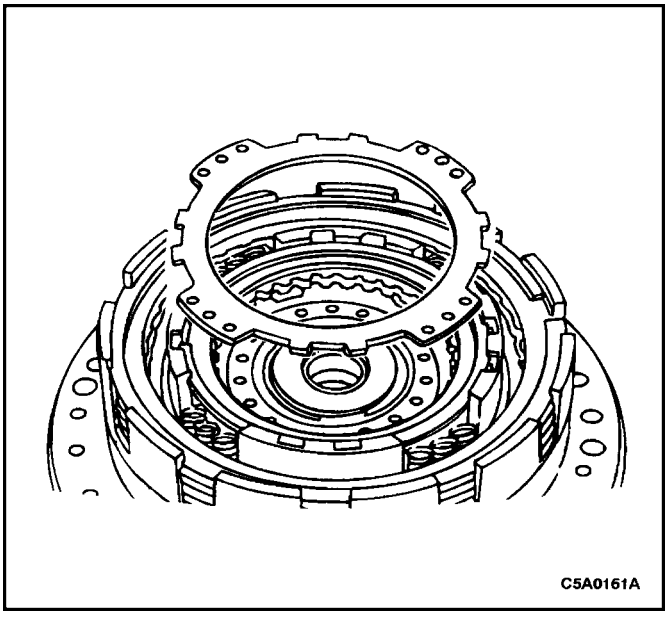
15. Install the second coast piston.


C5A0164A

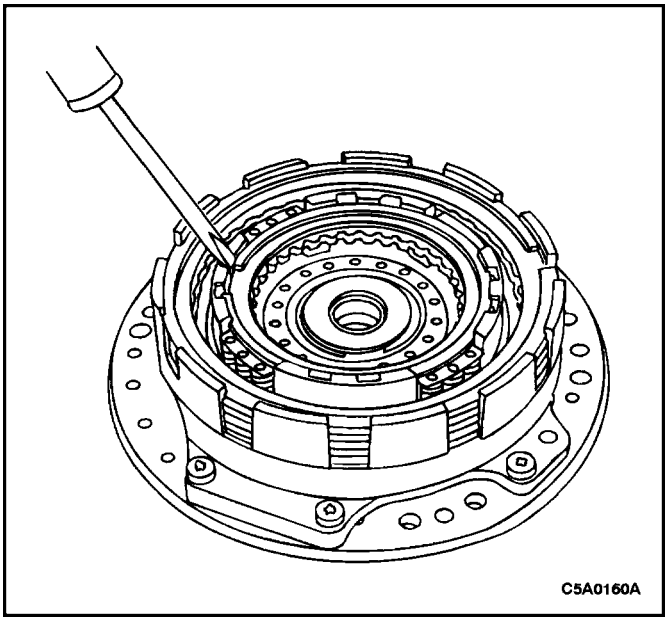
16. Install the second coast piston return spring. Position spring compressor KM–698 on the clutch piston return spring. Using a press, compress the spring, then install the snap ring in the groove.


C5A0162A

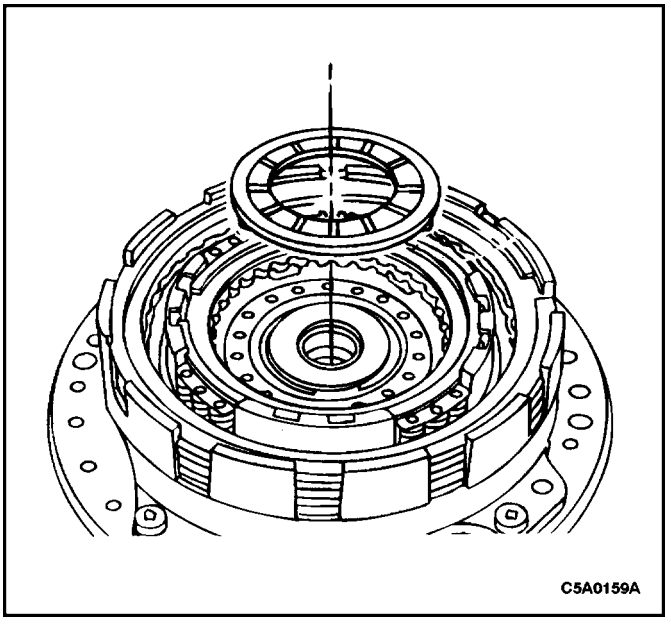
17. Install the coast clutch disc pack.
    - The installation order is: steel–friction–steelfriction.


C5A0161A

18. Install the coast clutch pressure plate.

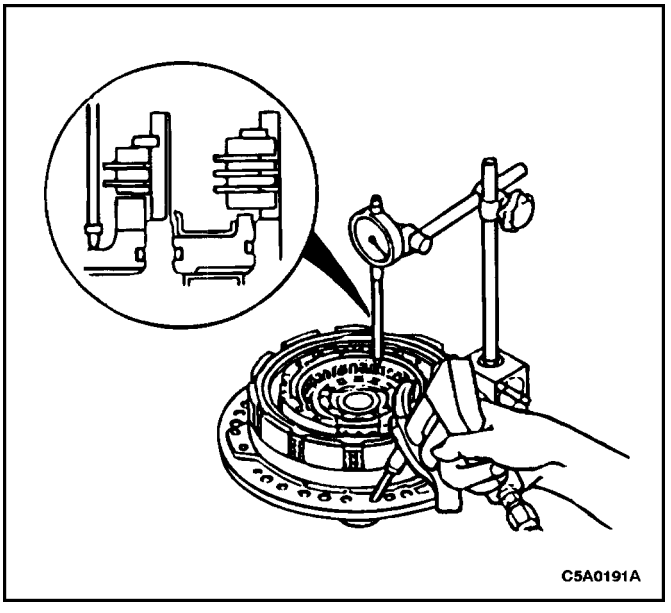


19. Install the snap ring.



CAUTION : Make sure the lugs of the thrust washer align with the second coast piston return spring.

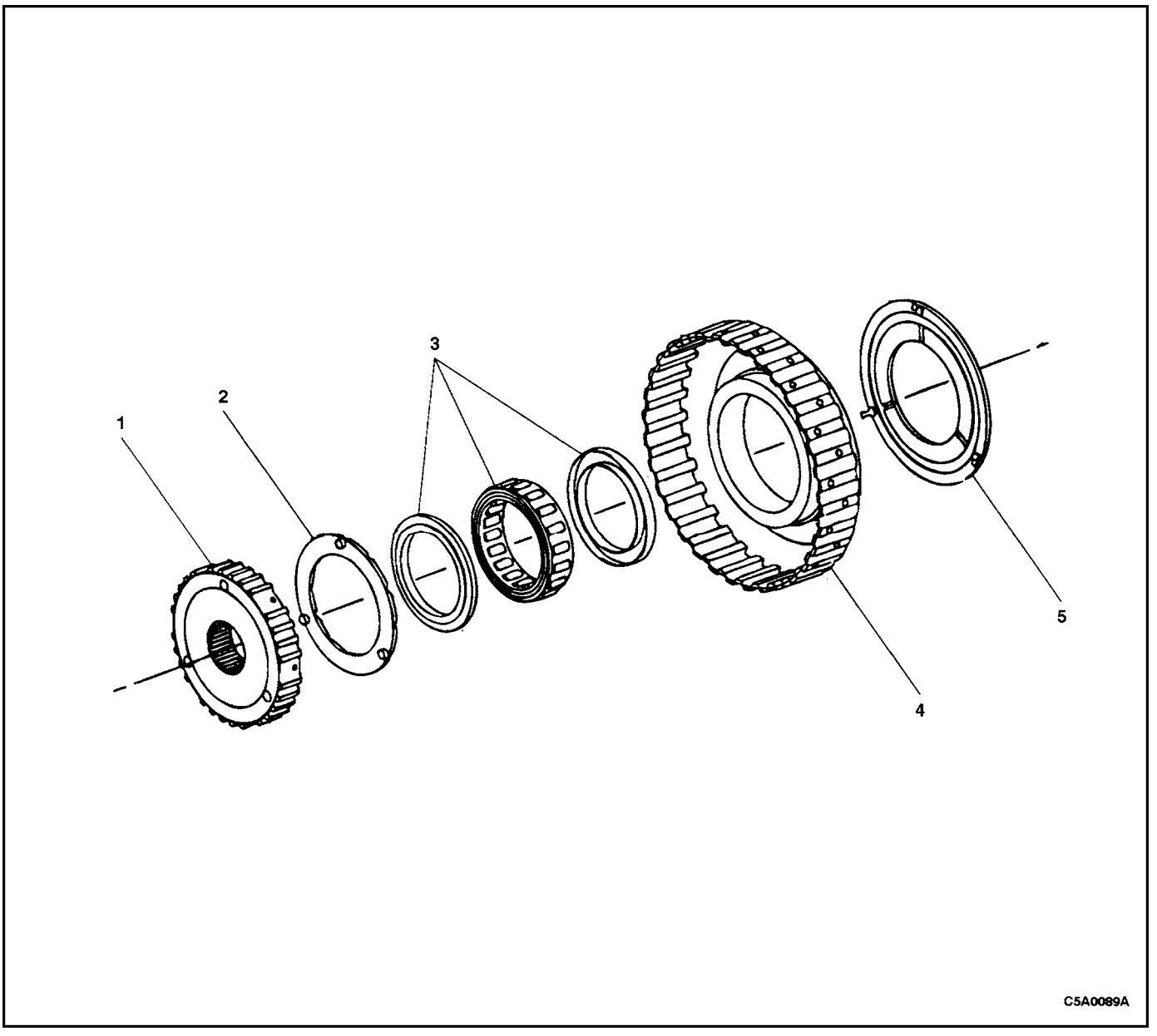
20. Install the thrust washer.



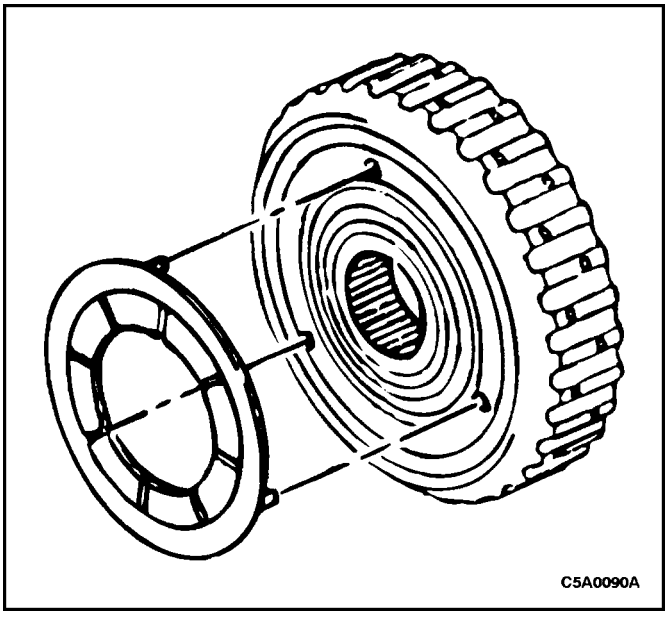
WARNING : USE CAUTION WHEN CHECKING COMPONENTS WITH COMPRESSED AIR OR PERSONAL INJURY MAY RESULT.

21. Check the second coast clutch operation.
    - Install a dial indicator.
    - Apply 57 psi (396 kPa), of compressed air into the oil passage and measure the second coast clutch piston stroke. The piston stroke is 0.029–0.056 in (0.760–1.440 mm). The clutch should make a solid apply sound, with no whistle or sign of leaks.

SECOND COAST, SECOND BRAKE HUB AND ONE–WAY CLUTCH

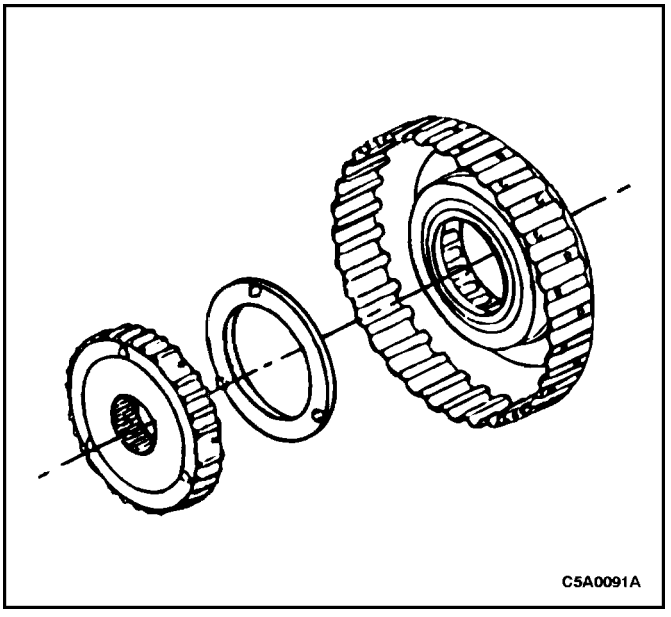


1. Second Coast Brake Hub (Inner Race)
2. Thrust Washer
3. one–way Clutch
4. Second Brake Hub (Outer Race)
5. Rear Thrust Washer

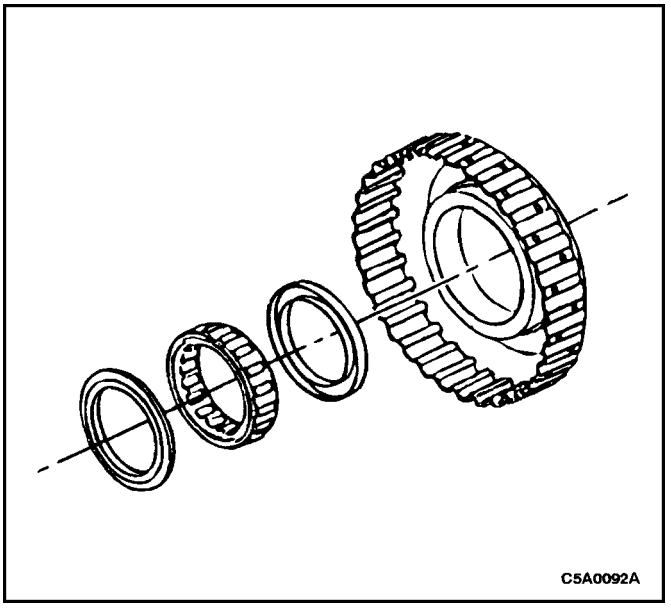


Disassembly Procedure

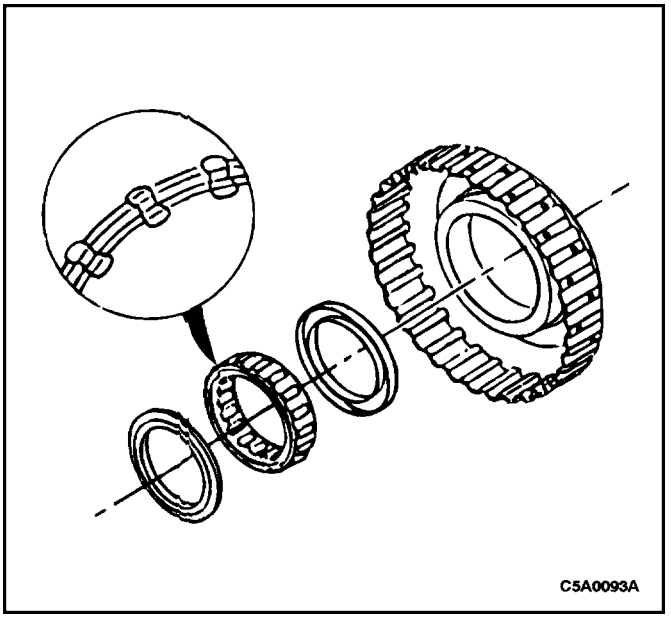
1. Remove the rear thrust washer.



2. Remove the second coast brake hub from the second brake hub. Separate the thrust washer from the inner race.

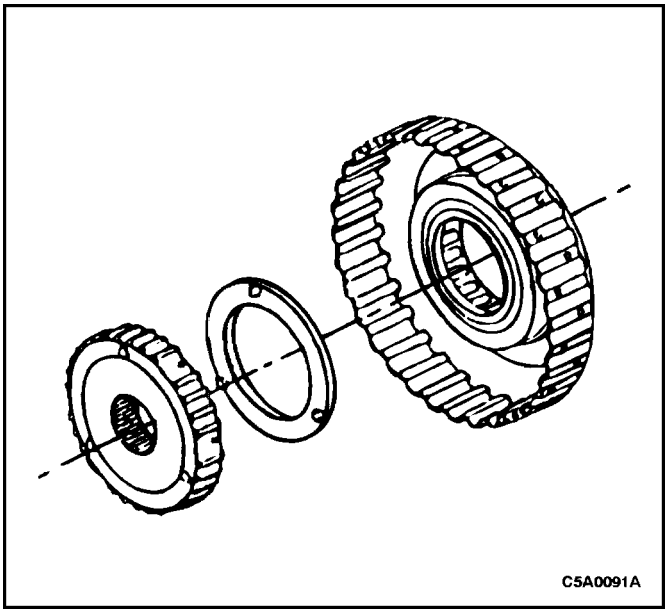


3. Remove the one–way clutch from the second brake hub.



Assembly Procedure

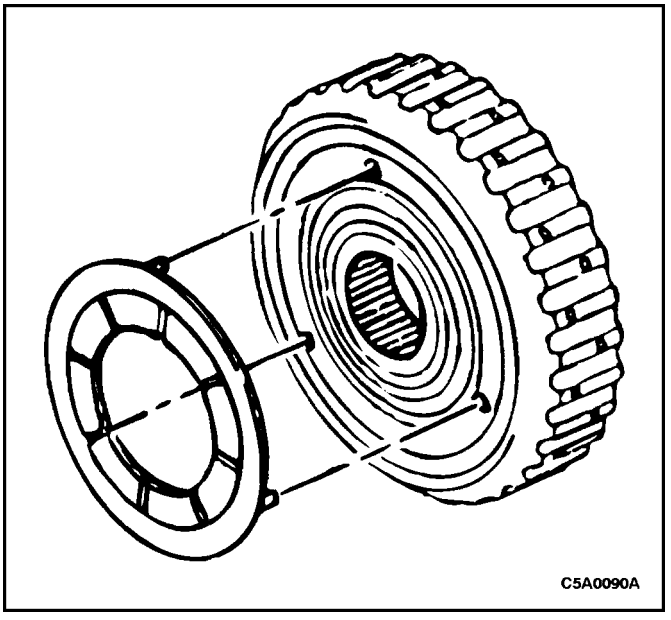
1. Clean the components using a clean, high–quality parts cleaning solvent and use compressed air to dry all parts. Inspect all parts for damage or wear.
2. Install the one–way clutch into the outer race.



Notice : Apply Transjel Assembly Lubricant J–36850 or equivalent to the thrust washer.

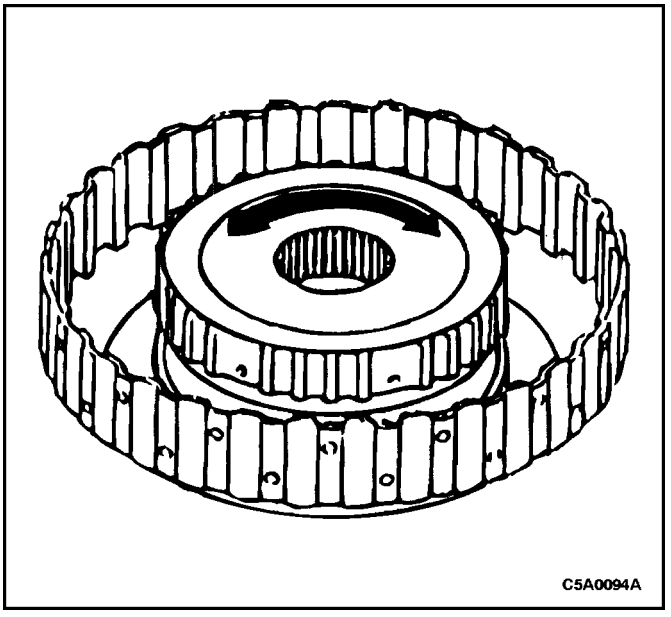
Notice : While turning the inner race, slide it onto the outer race.

3. Position the thrust washer onto the inner race. Install the second coast brake hub into the second brake hub.



Notice : Apply Transjel Assembly Lubricant J–36850 or equivalent to the thrust washer.

4. Install the rear thrust washer.



5. Verify the operation of the one–way clutch. While holding the outer race, turn the inner race. The inner race should rotate smoothly when turned clockwise, and lock when turned counterclockwise.