

2010 TRANSMISSION

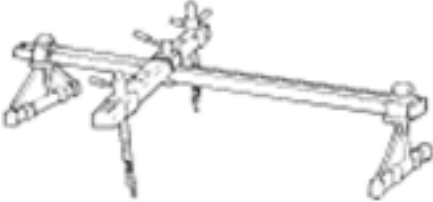
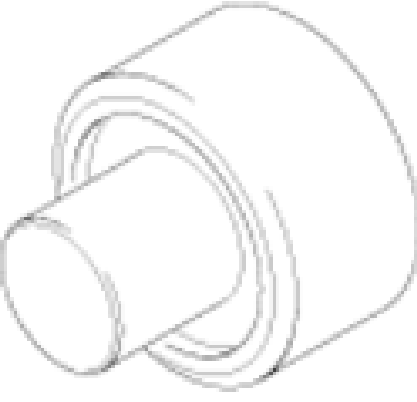
Overhaul-A4CF2 - Forte

AUTOMATIC TRANSAXLE SYSTEM

GENERAL INFORMATION

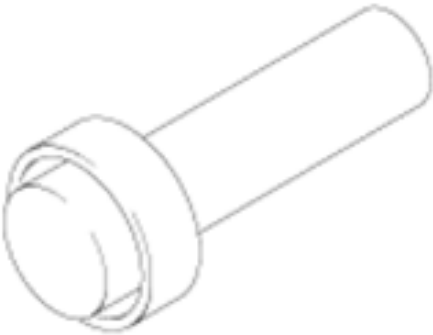
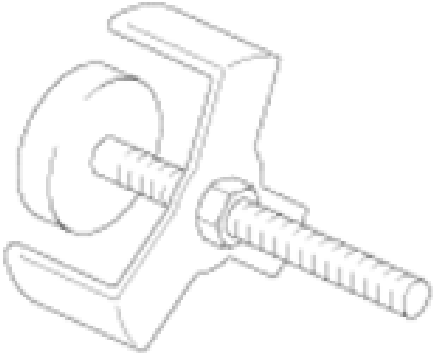
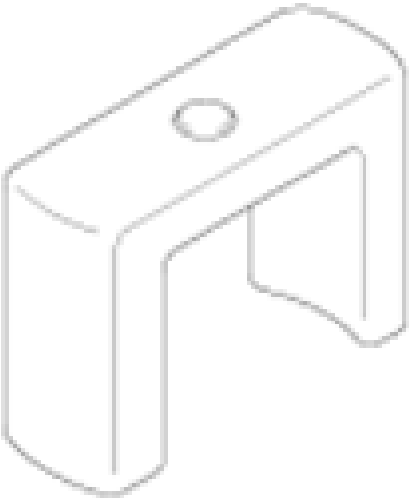
SPECIAL SERVICE TOOLS

SPECIAL SERVICE TOOLS

Tool (Number and Name)	Illustration	Use
Engine support fixture 09200 - 38001		Removal and installation of transaxle
09453-2F100 Bearing installer		Installation of the driven gear taper roller bearing
09493-2F200 Bearing installer		Installation of the deferential taper roller bearing

2010 Kia Forte EX

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09493-2F300 Oil seal installer		Installation of the differential oil seal
09493-2F400 Snap ring installer & remover		Removal and installation of the low & reverse snap ring
09493-2F500 Bearing outer race puller		Removal of the bearing outer race
09453-4C300 Spring compressor		Removal and installation of overdrive clutch snap ring Removal and installation of underdrive clutch snap ring

2010 Kia Forte EX**2010 TRANSMISSION Overhaul-A4CF2 - Forte**

09453-2F600
Guide pin



Installation of the oil pump

SPECIFICATION**SPECIFICATIONS**

Automatic transaxle model		A4CF2
T/con size		3 elements, 1 stage, 2 phases
Oil pump type		Parachoid type
T/M case type		Separated
Elements		Clutch : 3 EA
		Brake : 2 EA
		OWC : 1 EA
Planetary gear		2 EA
Gear ratio	1st	2.919
	2st	1.551
	3rd	1.000
	4th	0.713
	Reverse	2.480
Hydraulic balance piston		3EA
Engine stall speed		2,000~2,700rpm
Accumulator		4EA
Solenoid valve		6EA(PWM:5EA, VFS:1EA)

SERVICE STANDARD**SERVICE STANDARD**

Item	in(mm)
Output shaft end play	0~0.0035L (0 ~ 0.09L)
Brake reaction plate end play	0~0.0063L (0 ~ 0.16L)
Low & reverse brake end play	0.045~0.057 (1.15 ~ 1.45)
Second brake end play	0.033~0.045 (0.85 ~ 1.15)
Underdrive sun gear end play	0.0098L~0.0177L (0.25L ~ 0.45L)
Input shaft end play	0.024L~0.057L (0.6L ~ 1.45L)
Differential case end play	0.0017T~0.0041T (0.045T ~ 0.105T)

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Differential side gear and pinion gear backlash

0.00098~0.0059L (0.025L ~ 0.150L)

TORQUE**TORQUE SPECIFICATIONS**

Item	Nm	kgf.cm	lb-ft
Control cable bracket	19~23	190 ~ 230	14~17
Eye bolt	28~34	280 ~ 340	19~24
Oil cooler feed	tube	19~23 190~ 230	14~17
Oil filter	10~12	100 ~ 120	7~8
Input shaft speed sensor	10~12	100 ~ 120	7~8
Output shaft speed sensor	10~12	100 ~ 120	7~8
Manual control lever	17~21	170 ~ 210	13~15
Inhibitor switch	10~12	100 ~ 120	7~8
Valve body cover	10~12	100 ~ 120	7~8
Valve body mounting bolt	10~12	100 ~ 120	7~8
Manual control shaft detent	8~10	80 ~ 100	6~7
Manual valve lever	9~12	90 ~ 120	6.5~8
Parking rod guide	8~10	80 ~ 100	6~7
Rear cover	20~27	200 ~ 270	14~19
Torque converter housing	43~55	430 ~ 550	32~41
Oil pump	20~27	200 ~ 270	14~19
Transfer drive gear	8~12	80 ~ 120	6~8
Transfer drive gear lock	nut	18~21 180~ 210	13~16
Oil drain plug	35~45	350 ~ 450	25~32
Differential drive gear	130~140	1300 ~ 1400	94~101
Pressure check plug	8~10	80 ~ 100	6~7

Lubricant**LUBRICANT SPECIFICATIONS**

Items	Specified lubricant	Quantity
Transaxle fluid liter(US qt, limp. qt)	GENUINE DIAMOND ATF SP-III or S ATF SP-III	6.2(6.5, 5.4)

Sealants**SEALANTS SPECIFICATIONS**

Items	Specified sealant
Rear cover Torque converter housing Valve body cover	LOCTITE FMD-546
Transmission case side cover	Threebond TB1389 or LOCTITE 518

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Snap ring, spacer, thrust washer and pressure plate

SNAP RING, SPACER, THRUST WASHER AND PRESSURE PLATE SPECIFICATIONS

Part name	Thickness [in (mm)]	Identification symbol
Thrust washer (For adjustment of underdrive sun gear end play)	0.051(1.3)	45853-23013
	0.055(1.4)	45853-23014
	0.059(1.5)	45853-23015
	0.063(1.6)	45853-23016
	0.067(1.7)	45853-23017
	0.071(1.8)	45853-23018
	0.075(1.9)	45853-23019
	0.079(2.0)	45853-23020
	0.083(2.1)	45853-23021
Pressure plate (For adjustment of low and reverse brake reaction plate end play)	0.067(1.7)	45635-23170
	0.075(1.9)	45635-23190
	0.083(2.1)	45635-23210
	0.091(2.3)	45635-23230
	0.098(2.5)	45635-23250
	0.106(2.7)	45635-23270
	0.114(2.9)	45635-23290
Thrust washer (For adjustment of underdrive sun gear end play)	0.071(1.8)	45544-39180
	0.079(2.0)	45544-39200
	0.087(2.2)	45544-39220
	0.094(2.4)	45544-39240
	0.106(2.6)	45544-39260
	0.110(2.8)	45544-39280
Pressure plate (For adjustment of 2ND brake reaction plate end play)	0.079(2.0)	45668-23200
	0.087(2.2)	45668-23220
	0.094(2.4)	45668-23240
	0.106(2.6)	45668-23260
	0.110(2.8)	45668-23280

AUTOMATIC TRANSAXLE SYSTEM**DIFFERENTIAL**

Components and Components Location

COMPONENTS

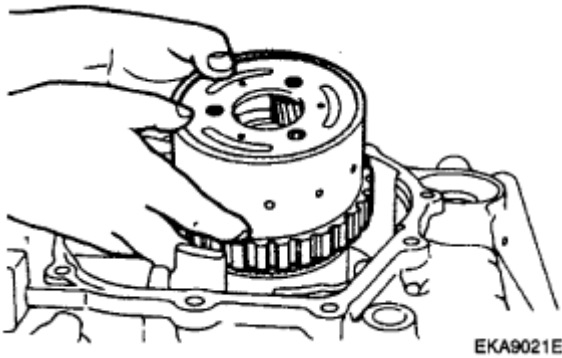


Fig. 1: Exploded View Of Differential
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

1. Remove the taper roller bearing(A) using the press.

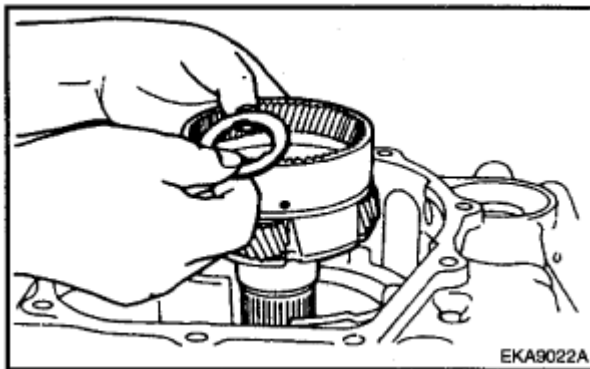


Fig. 2: Removing Taper Roller Bearing Using Press
Courtesy of KIA MOTORS AMERICA, INC.

REASSEMBLY

1. Reassemble the spacer, side gear, washer, pinion and pinion shaft
 1. Connect the side gear with the spacer, and install the side gear into differential case.

NOTE: Use a spacer of neutral thickness.
0.037-0.039in(0.93-1.00mm) for a new side gear

2. Connect the washer to the pinion and install them simultaneously at the point so that they may lock with the side gear.

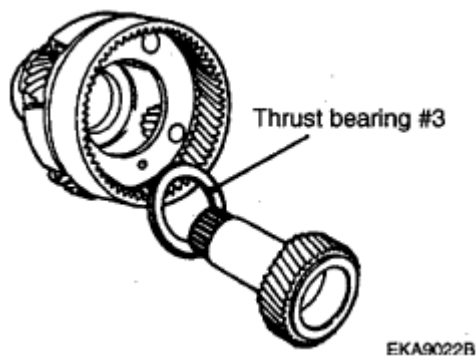


Fig. 3: Connecting Washer To Pinion
Courtesy of KIA MOTORS AMERICA, INC.

3. Insert the pinion shaft(A).

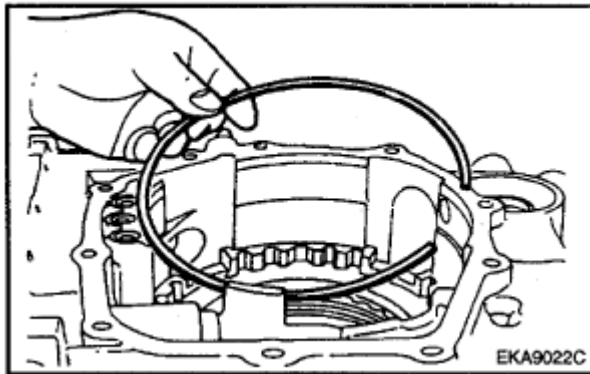


Fig. 4: Inserting Pinion Shaft
Courtesy of KIA MOTORS AMERICA, INC.

4. Check the side gear pinion backlash and install a proper spacer.

Standard value :0.00098-0.0059in (0.025-0.150mm)

NOTE: Adjust backlashes at both sides to be within standard value.

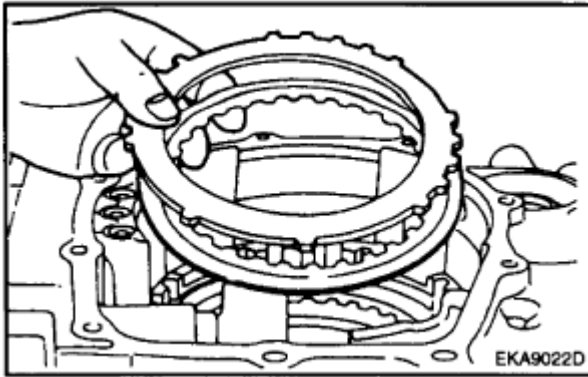


Fig. 5: Checking Side Gear Pinion Backlash
Courtesy of KIA MOTORS AMERICA, INC.

2. Install the lock pin(A).
 1. Install the lock pin as shown in the illustration.

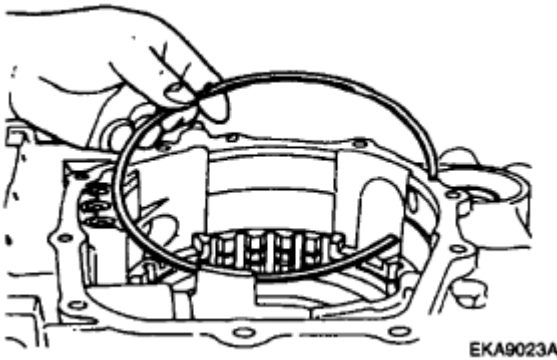


Fig. 6: Installing Lock Pin
Courtesy of KIA MOTORS AMERICA, INC.

3. Install the differential drive gear.

Apply the ATF to the entire threads of the bolts. Tighten to specifications using the sequence shown in the illustration.

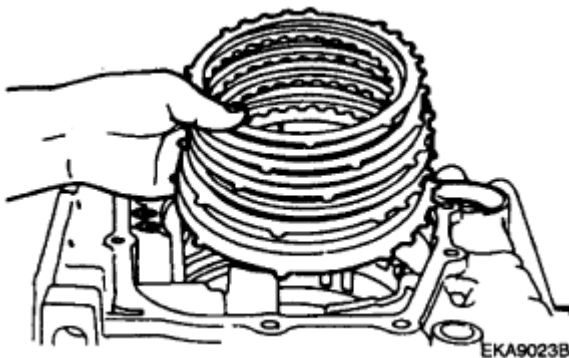


Fig. 7: Identifying Differential Drive Gear Bolts Tightening Sequence
Courtesy of KIA MOTORS AMERICA, INC.

4. Using the special tool(09493-2F200) and press, install the taper roller bearing(A).

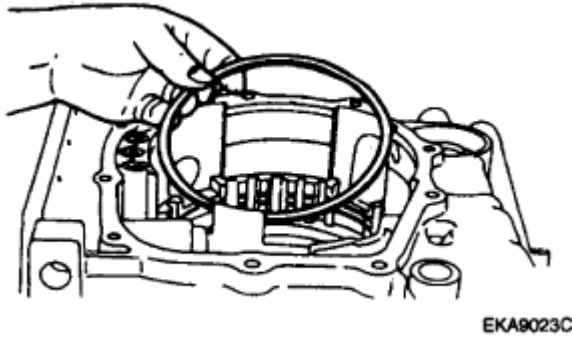


Fig. 8: Installing Taper Roller Bearing Using Special Tool (09493-2F200)
Courtesy of KIA MOTORS AMERICA, INC.

AUTOMATIC TRANSAXLE

Components and Components Location

COMPONENTS(1)

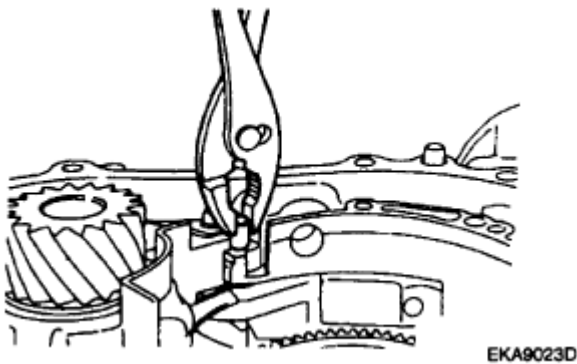


Fig. 9: Identifying Automatic Transaxle Components And Components Location With Torque Specifications (1 Of 2)
Courtesy of KIA MOTORS AMERICA, INC.

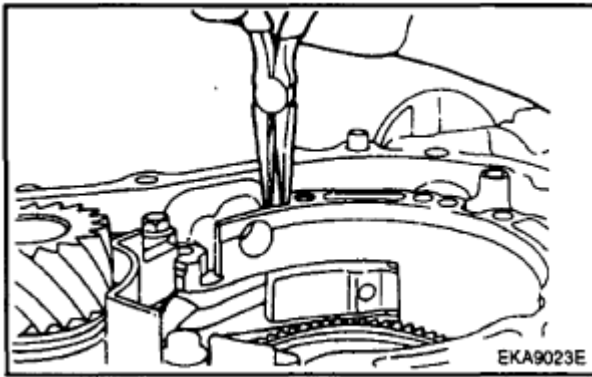


Fig. 10: Identifying Automatic Transaxle Components And Components Location (2 Of 2)
Courtesy of KIA MOTORS AMERICA, INC.

COMPONENTS(2)

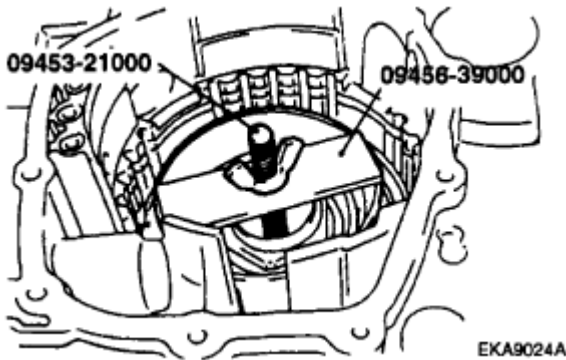


Fig. 11: Exploded View Of Automatic Transaxle With Torque Specifications (1 Of 2)
Courtesy of KIA MOTORS AMERICA, INC.

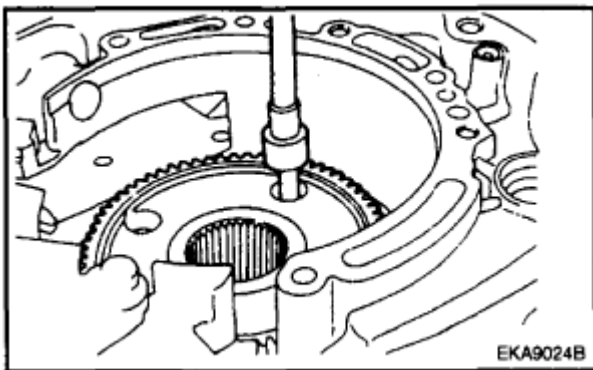


Fig. 12: Exploded View Of Automatic Transaxle (2 Of 2)
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

CAUTION:

- Automatic transaxles consist of delicate parts. Be careful not to damage them in disassembly and assembly.
- Spread a rubber mat on a workbench and keep it clean.
- Do not use cotton or muslin fiber. Use nylon fabric or paper towel.
- Cleanse the disassembled components. Clean metal parts with a general cleaning agent or dry them with a blower.
- Clean clutch discs, thrust plates made of resin, and rubber parts with automatic transaxle fluid and keep them dust free.
- If transaxle body has been damaged, disassemble and clean cooler system.

1. Remove the torque converter (A).

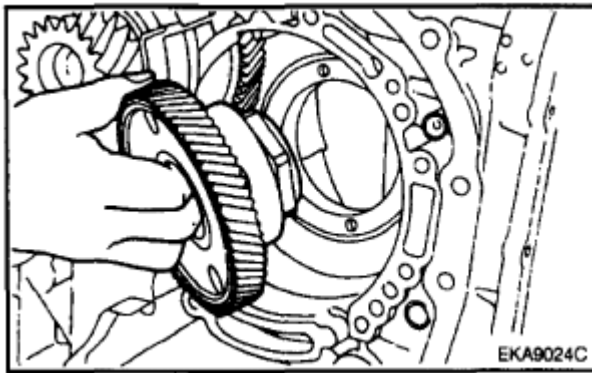


Fig. 13: Locating Torque Converter
Courtesy of KIA MOTORS AMERICA, INC.

2. Remove each bracket.
3. Remove the wiring harness bracket.
4. Remove the oil pan (A) (Bolt:19 EA).

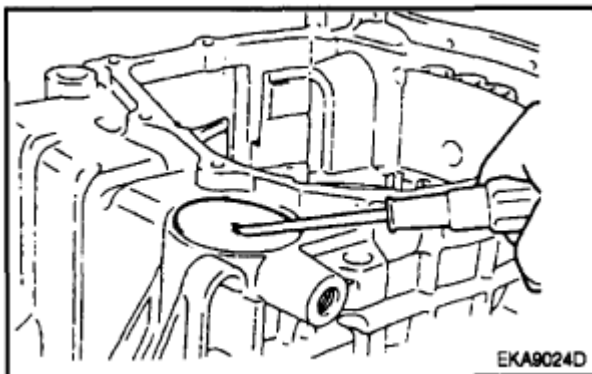


Fig. 14: Identifying Oil Pan Bolt
Courtesy of KIA MOTORS AMERICA, INC.

5. Remove the oil filter (A) (Bolt:3 EA).

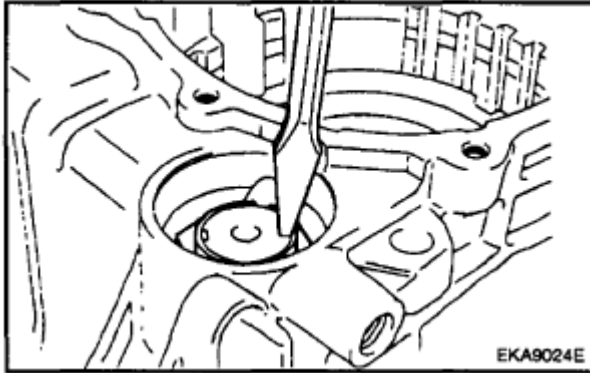


Fig. 15: Identifying Oil Filter And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

6. Remove the valve body(Bolt:21 EA).

NOTE: **6x30mm(A): 17EA, 6x35mm(B): 1EA, 6x40mm(C): 1EA, 6X55mm(D):1EA, 6x60mm(E): 1EA**

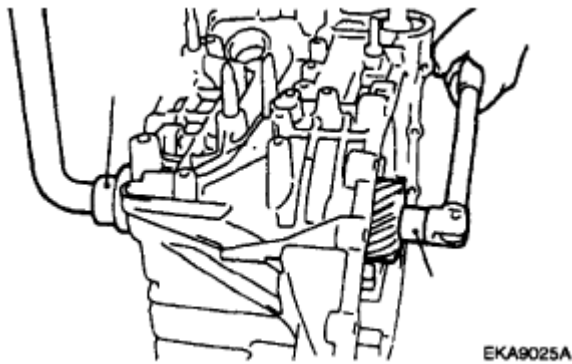


Fig. 16: Identifying Valve Body Bolts
Courtesy of KIA MOTORS AMERICA, INC.

7. Remove the two O-rings from low & reverse brake and transfer drive gear hole.

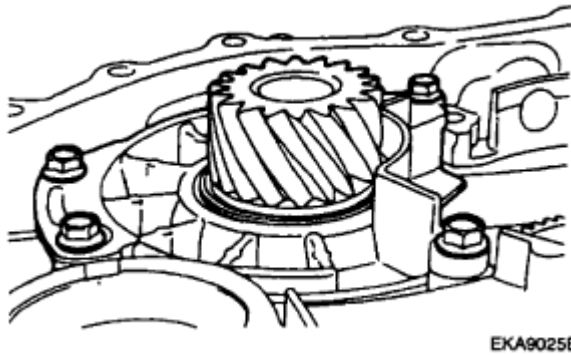


Fig. 17: Locating O-Rings Of Low & Reverse Brake
Courtesy of KIA MOTORS AMERICA, INC.

8. Remove each accumulator piston, a new seal ring and the springs.

NOTE: Accumulator spring identification

ACCUMULATOR SPRING IDENTIFICATION CHART

NO.	Use	I.D. Color	Spring number
A	U/D clutch	White/White	2
B	O/D clutch	Yellow	1
C	2ND brake	White	2
D	L/R brake	Yellow	1

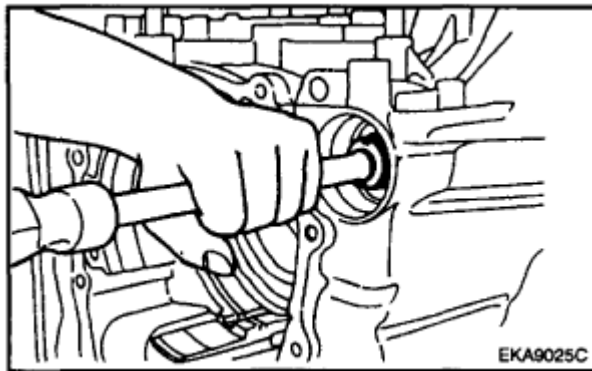


Fig. 18: Locating Accumulator Piston, Seal Ring And Springs
Courtesy of KIA MOTORS AMERICA, INC.

9. Remove the control valve connector (A) and mounting clip (B).

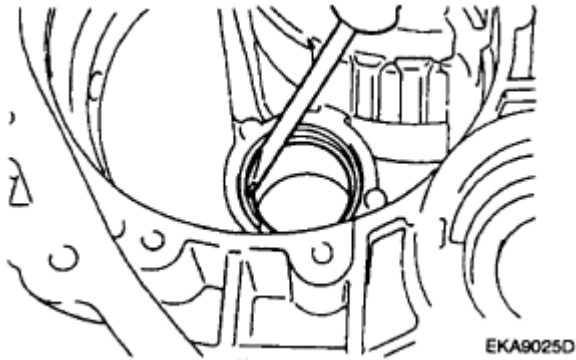


Fig. 19: Locating Control Valve Connector And Mounting Clip
Courtesy of KIA MOTORS AMERICA, INC.

10. Remove the oil level gauge (A) and bracket(Bolt:2EA).

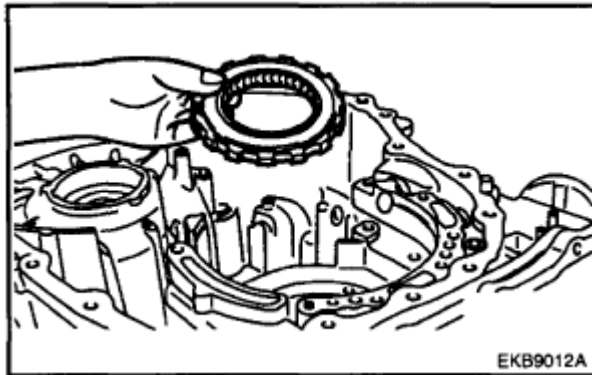


Fig. 20: Locating Oil Level Gauge, Bracket And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

11. Remove the shift cable bracket (A) (Bolt:2EA).

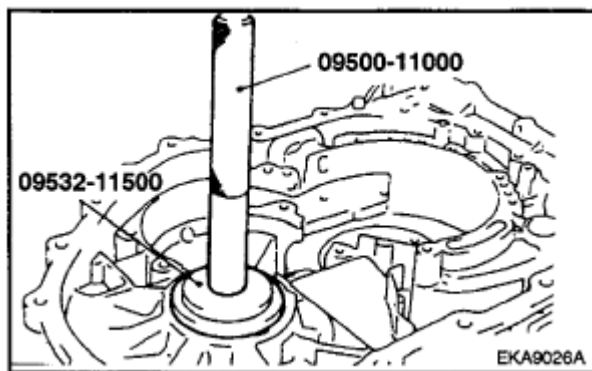


Fig. 21: Locating Shift Cable Bracket And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

12. Remove the plug(A) (Bolt:1EA).

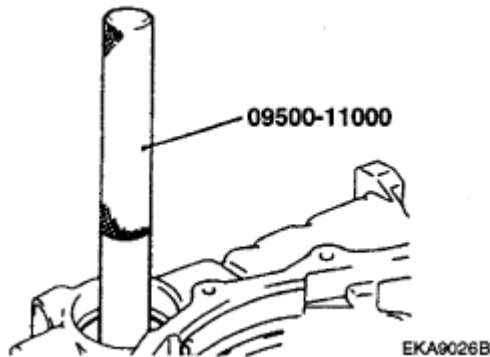


Fig. 22: Locating Plug And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

13. Remove the output shaft speed sensor (A) (Bolt:1EA).

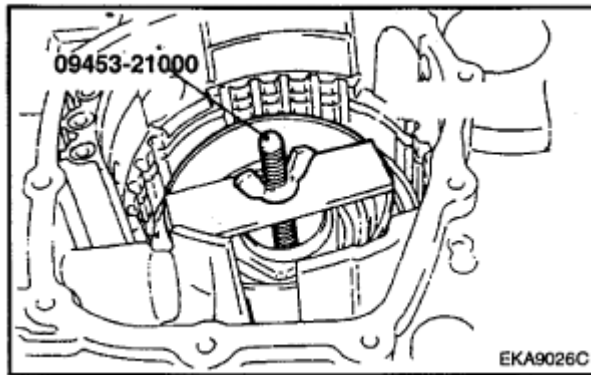


Fig. 23: Locating Output Shaft Speed Sensor And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

14. Remove the input shaft speed sensor (A) (Bolt:1EA).

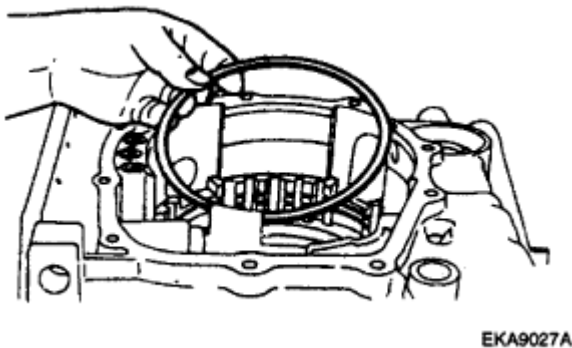


Fig. 24: Locating Input Shaft Speed Sensor And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

15. Remove the torque converter housing (Bolt:17EA).

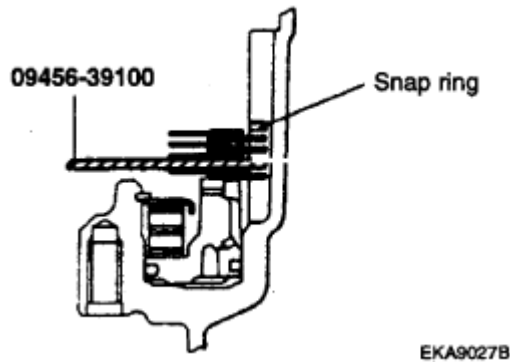


Fig. 25: Locating Torque Converter Housing And Bolt
 Courtesy of KIA MOTORS AMERICA, INC.

16. Remove the oil separate (A) (Bolt:3EA).

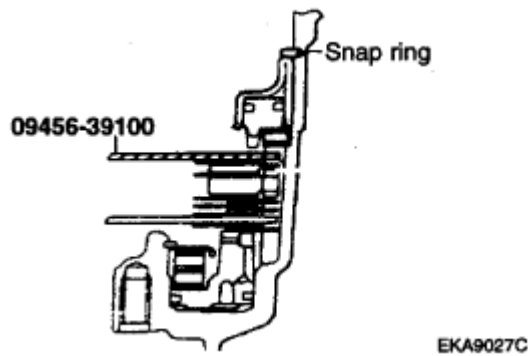


Fig. 26: Locating Oil Separate And Bolt
 Courtesy of KIA MOTORS AMERICA, INC.

17. Remove the oil seal(A) from the torque converter housing.

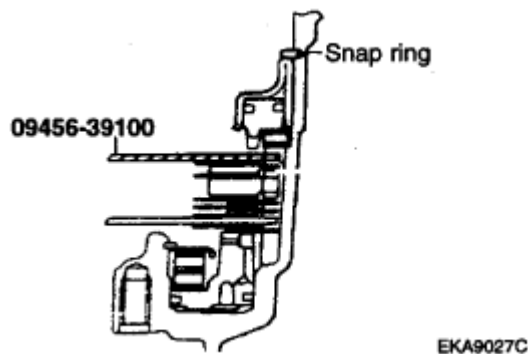


Fig. 27: Locating Oil Seal Of Torque Converter Housing
 Courtesy of KIA MOTORS AMERICA, INC.

18. Remove the differential gear assembly(A).

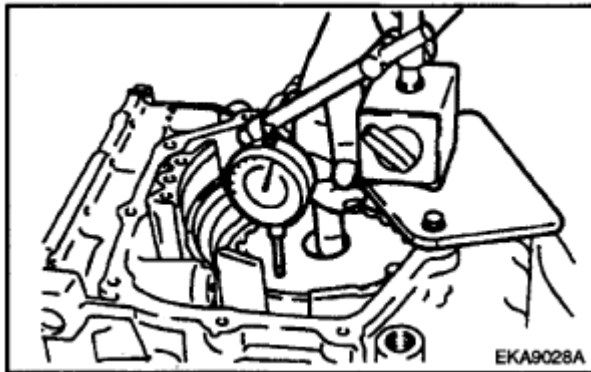


Fig. 28: Locating Differential Gear Assembly
Courtesy of KIA MOTORS AMERICA, INC.

19. Using the special tool(09453-2F100), remove the differential outer race(A).

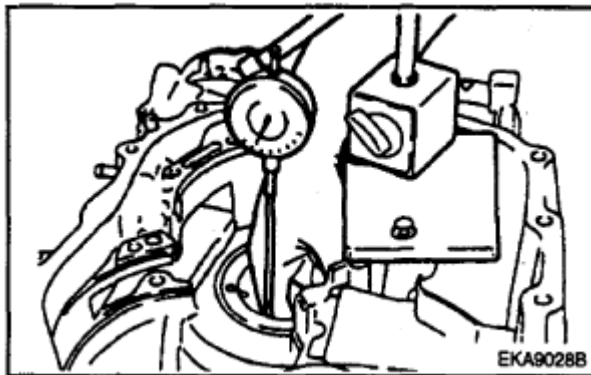


Fig. 29: Locating Differential Outer Race Using Special Tool (09453-2F100)
Courtesy of KIA MOTORS AMERICA, INC.

20. Remove the two O-rings.

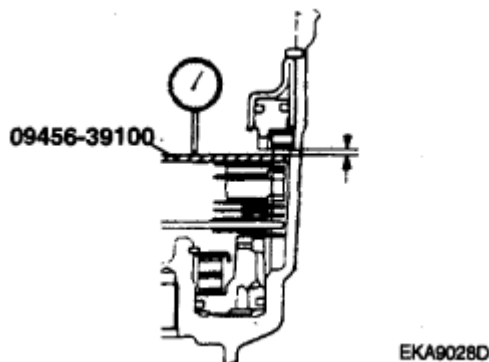


Fig. 30: Locating O-Rings

Courtesy of KIA MOTORS AMERICA, INC.

21. Remove the oil pump(A) (Bolt:7EA).

CAUTION: Do not disassemble the oil pump. Misalignment during assembly may damage the pump and the transaxle.

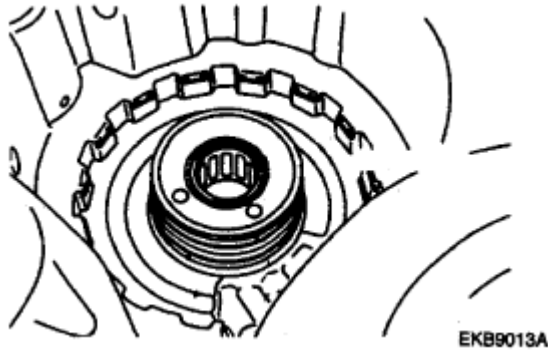


Fig. 31: Locating Oil Pump And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

22. Remove the oil pump gasket(A).

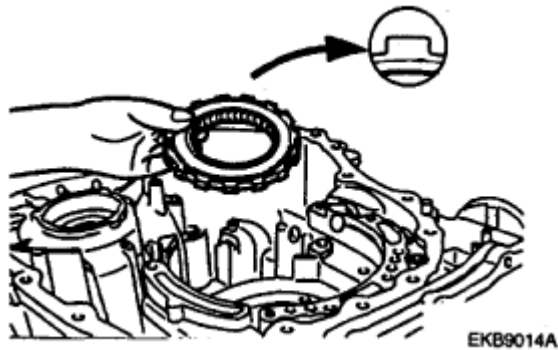


Fig. 32: Locating Oil Pump Gasket
Courtesy of KIA MOTORS AMERICA, INC.

23. Remove the thrust washer(A).

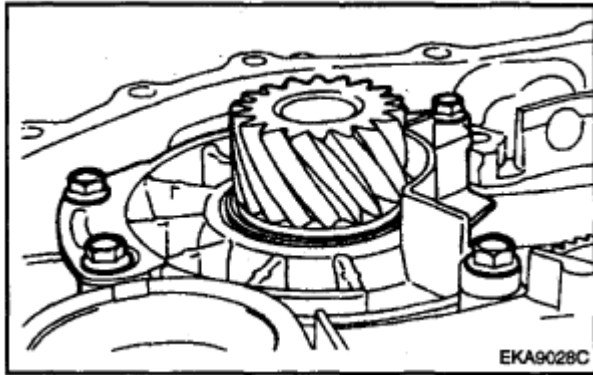


Fig. 33: Locating Thrust Washer
Courtesy of KIA MOTORS AMERICA, INC.

24. Remove the underdrive clutch(A).

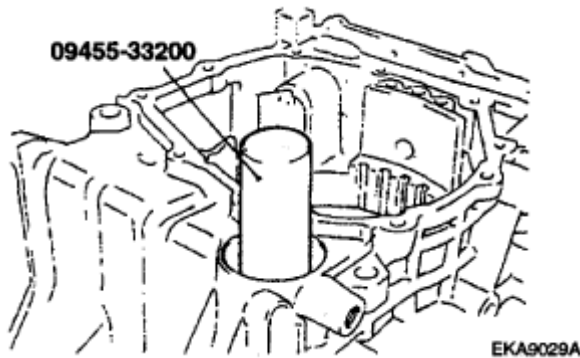


Fig. 34: Locating Underdrive Clutch
Courtesy of KIA MOTORS AMERICA, INC.

25. Remove the thrust bearing(A).

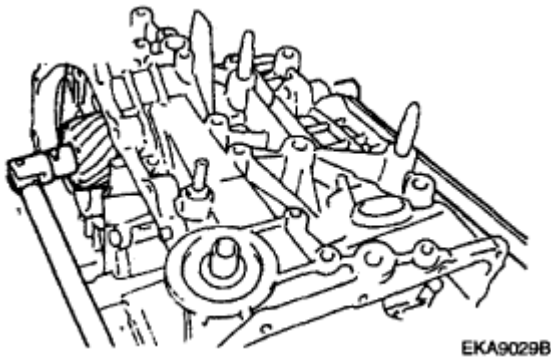


Fig. 35: Locating Thrust Bearing
Courtesy of KIA MOTORS AMERICA, INC.

26. Remove the underdrive clutch hub(A).

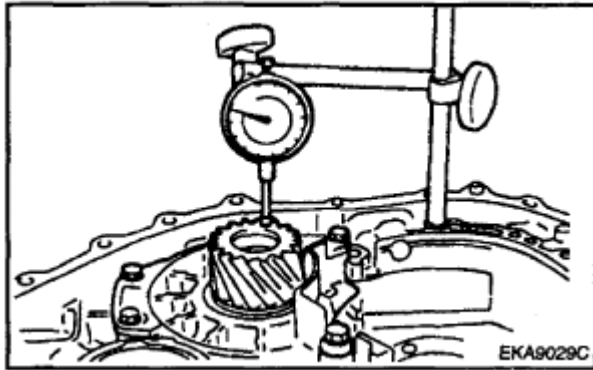


Fig. 36: Locating Underdrive Clutch Hub
Courtesy of KIA MOTORS AMERICA, INC.

27. Remove the oil guide plate(A).

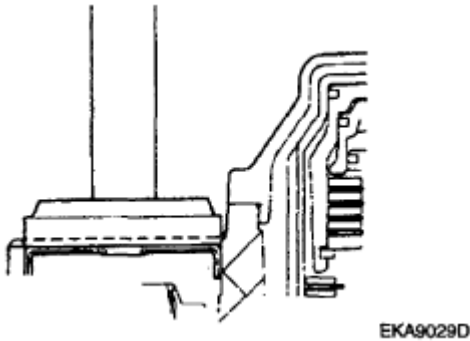


Fig. 37: Locating Oil Guide Plate
Courtesy of KIA MOTORS AMERICA, INC.

28. Remove the parking rod guide (A) and the oil plate (B) (Bolt:2EA).

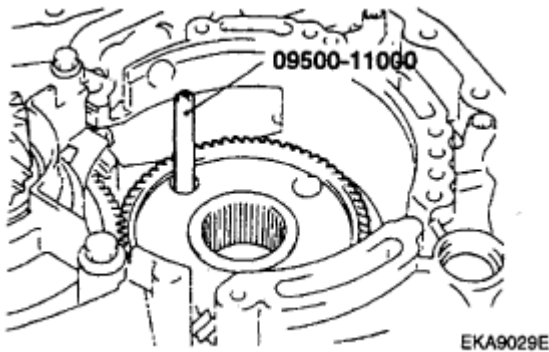


Fig. 38: Locating Parking Rod Guide, Oil Plate And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

29. Remove the inhibitor switch (A) and the manual control lever (B).

(Inhibitor switch - Bolt:2EA, control lever shaft - Nut:1EA).

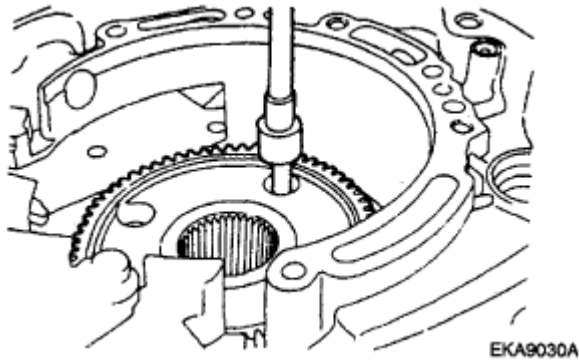


Fig. 39: Locating Inhibitor Switch And Manual Control Lever
Courtesy of KIA MOTORS AMERICA, INC.

30. Remove the parking sprag (A), shaft (B) and sprag spring (C).

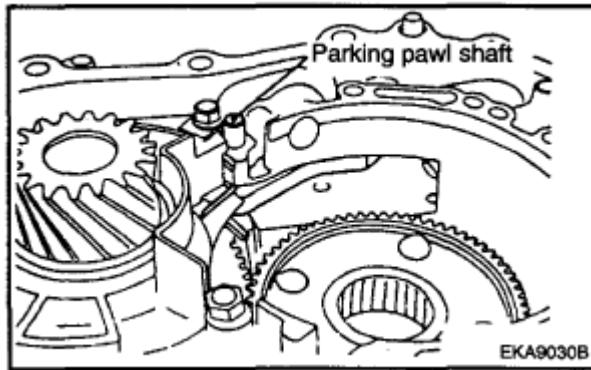


Fig. 40: Locating Parking Sprag, Shaft And Sprag Spring
Courtesy of KIA MOTORS AMERICA, INC.

31. Install the driven gear and the outer race.
32. Remove the plate (A) (1 reamer bolt).

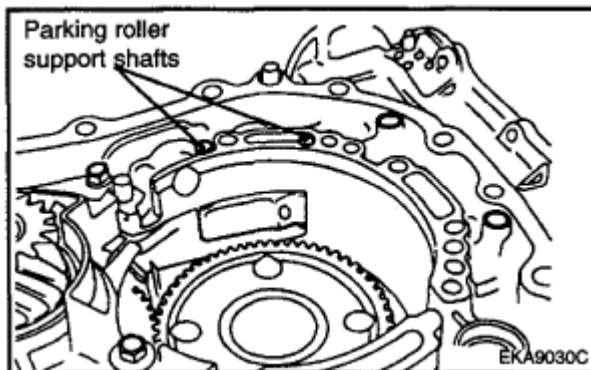
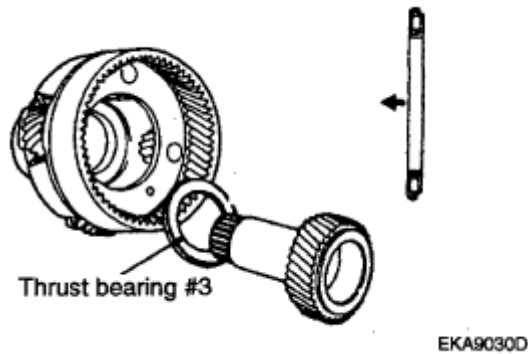


Fig. 41: Locating Plate (Reamer Bolt)

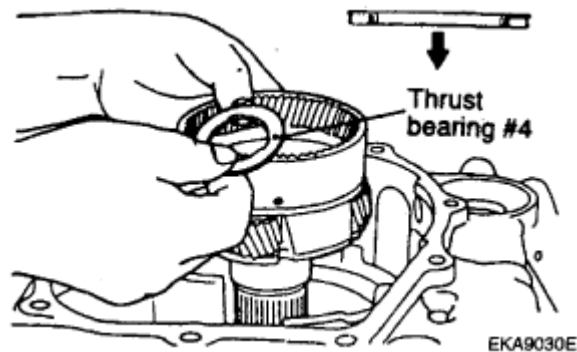
Courtesy of KIA MOTORS AMERICA, INC.

33. Remove the detent spring(A).

**Fig. 42: Locating Detent Spring**

Courtesy of KIA MOTORS AMERICA, INC.

34. Remove the manual shaft mounting groove bolt.

**Fig. 43: Locating Manual Shaft Mounting Groove Bolt**

Courtesy of KIA MOTORS AMERICA, INC.

35. Remove the reamer bolt from the detent lever.
36. Remove the manual control shaft(A) (including the two O-rings), the detent lever(B) and the parking rod (C).

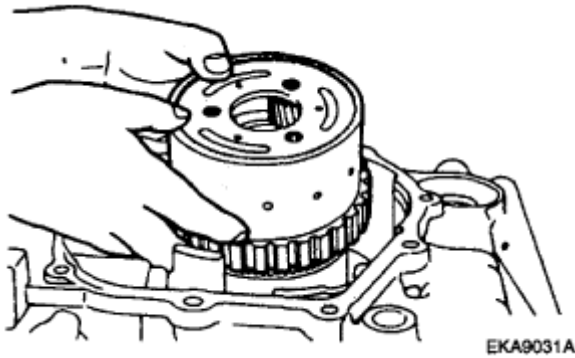


Fig. 44: Locating Manual Control Shaft, Detent Lever And Parking Rod
Courtesy of KIA MOTORS AMERICA, INC.

37. Remove the feed tube (A) (4 gaskets, 2 eye bolts).

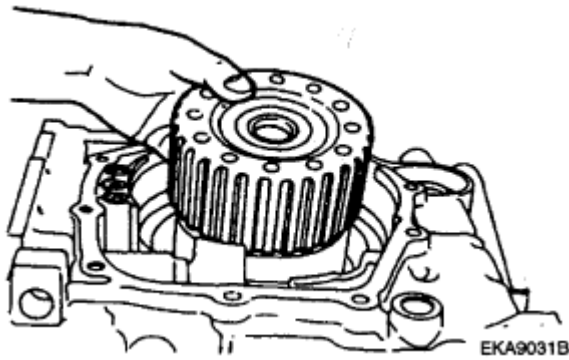


Fig. 45: Locating Feed Tube (Gaskets, Eye Bolts)
Courtesy of KIA MOTORS AMERICA, INC.

38. Remove the rear cover (A) (Bolt:9EA).

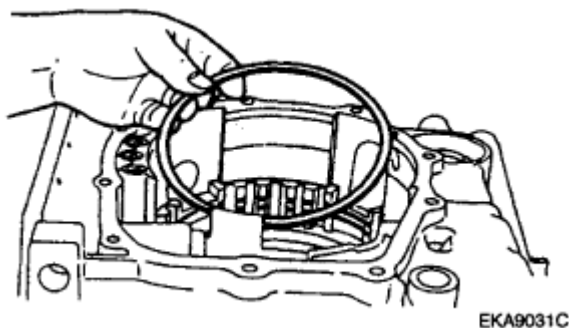


Fig. 46: Locating Rear Cover And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

39. Remove the five O-rings from the transaxle.

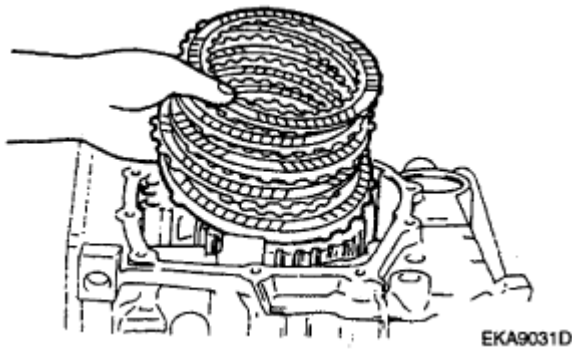


Fig. 47: Identifying O-Rings Of Transaxle
Courtesy of KIA MOTORS AMERICA, INC.

40. Remove the thrust race (A) from the rear cover.

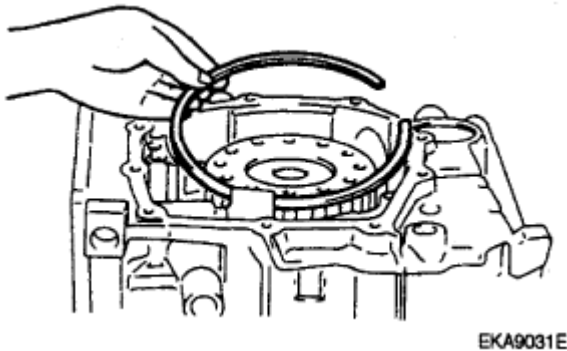


Fig. 48: Locating Thrust Race Of Rear Cover
Courtesy of KIA MOTORS AMERICA, INC.

41. Remove the four seal rings from the rear cover.

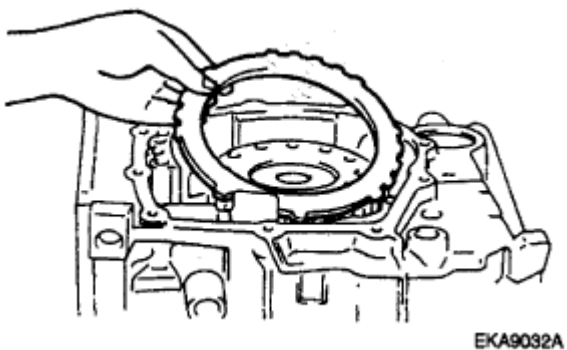


Fig. 49: Locating Seal Rings Of Rear Cover
Courtesy of KIA MOTORS AMERICA, INC.

42. Remove the thrust bearing (45851-23000).

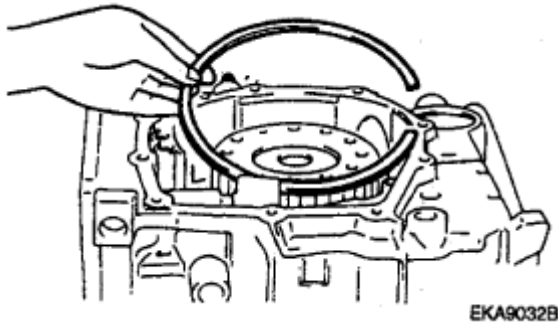


Fig. 50: Locating Thrust Bearing (45851-23000)
Courtesy of KIA MOTORS AMERICA, INC.

43. Remove the reverse & overdrive clutch(A).

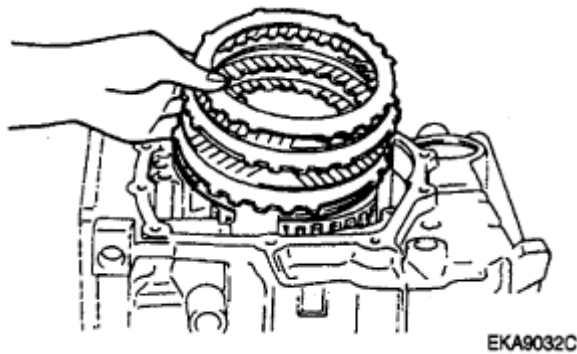


Fig. 51: Locating Reverse & Overdrive Clutch
Courtesy of KIA MOTORS AMERICA, INC.

44. Remove the thrust bearing (45798-39060).

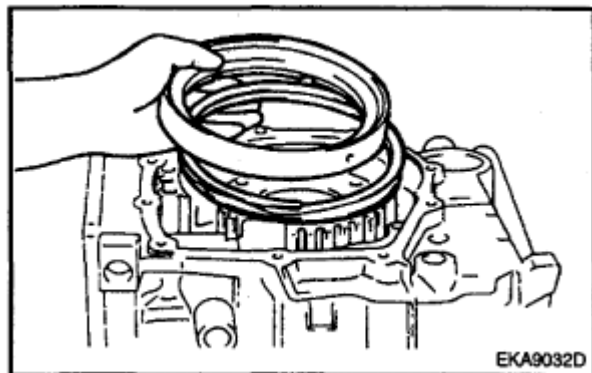
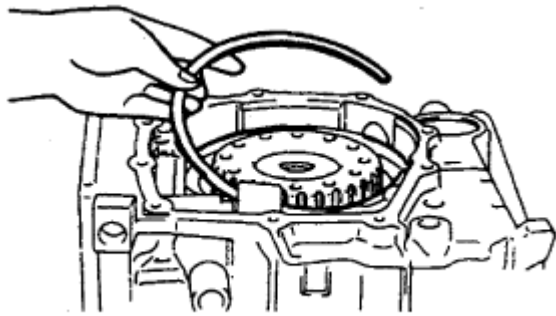


Fig. 52: Locating Thrust Bearing (45798-39060)
Courtesy of KIA MOTORS AMERICA, INC.

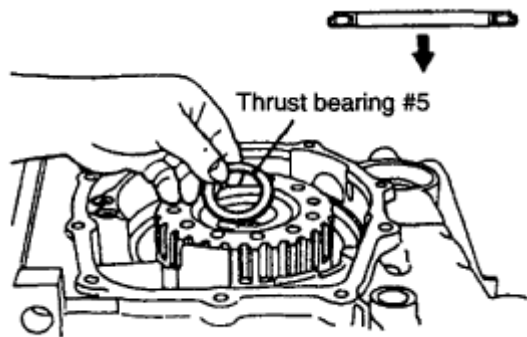
45. Remove the overdrive hub(A).



EKA9032E

Fig. 53: Locating Overdrive Hub
Courtesy of KIA MOTORS AMERICA, INC.

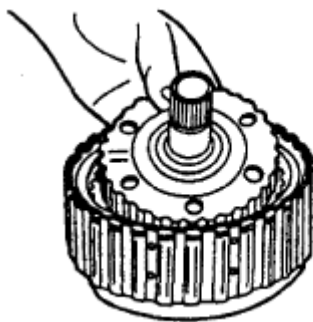
46. Remove the thrust bearing(45798-39060).



EKA9033A

Fig. 54: Locating Thrust Bearing (45798-39060)
Courtesy of KIA MOTORS AMERICA, INC.

47. Remove the reverse sun gear(A).



EKA9033B

Fig. 55: Locating Reverse Sun Gear
Courtesy of KIA MOTORS AMERICA, INC.

48. Remove the piston mounting snap ring(A).

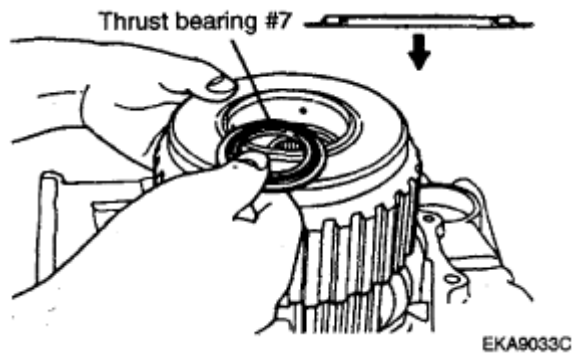


Fig. 56: Locating Piston Mounting Snap Ring
 Courtesy of KIA MOTORS AMERICA, INC.

49. Remove the 2ND brake piston(A).

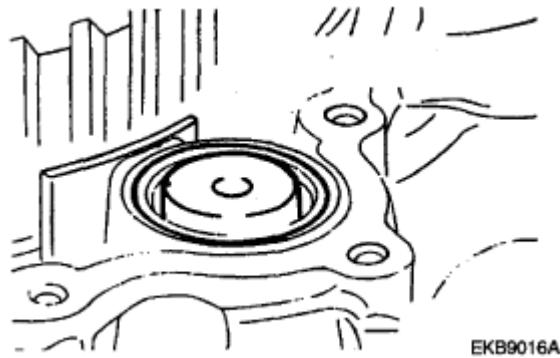


Fig. 57: Locating 2nd Brake Piston
 Courtesy of KIA MOTORS AMERICA, INC.

50. Remove the 2ND brake return spring(A).

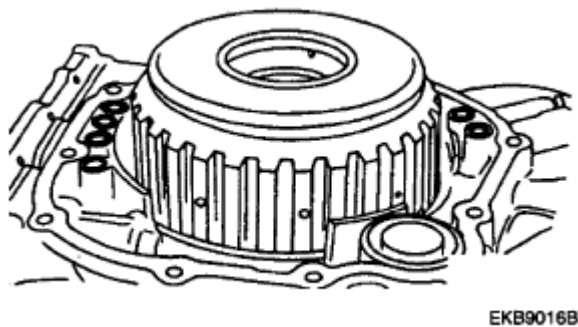


Fig. 58: Locating 2nd Brake Return Spring
 Courtesy of KIA MOTORS AMERICA, INC.

51. Remove the 2ND brake pressure plate(A), the brake discs(B), the brake plates(C), the brake reaction plate (D) and the snap ring(E).

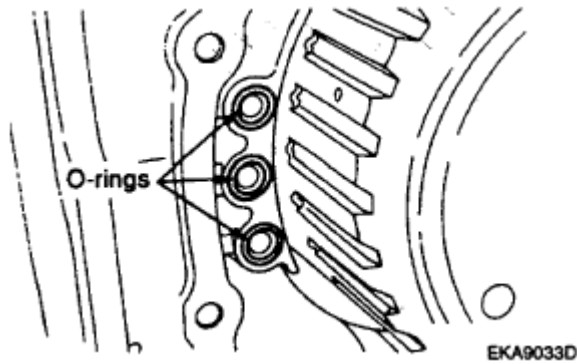


Fig. 59: Identifying 2nd Brake Pressure Plate, Brake Discs, Brake Plates, Brake Reaction Plate And Snap Ring

Courtesy of KIA MOTORS AMERICA, INC.

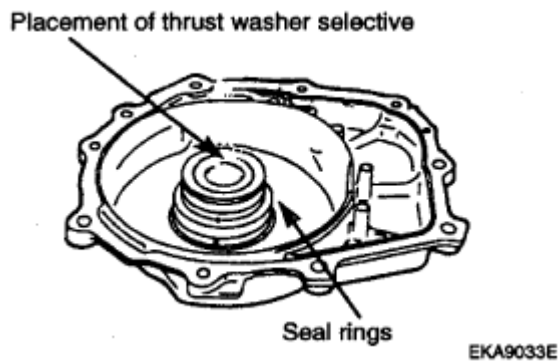


Fig. 60: Locating 2nd Brake Pressure Plate, Brake Discs, Brake Plates, Brake Reaction Plate And Snap Ring

Courtesy of KIA MOTORS AMERICA, INC.

52. Remove the Low & reverse planetary gear set (A).

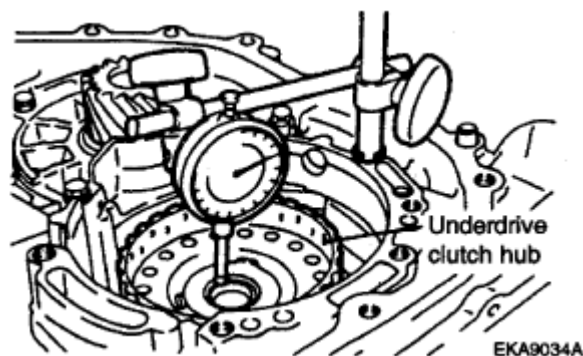


Fig. 61: Removing Low & Reverse Planetary Gear Set

Courtesy of KIA MOTORS AMERICA, INC.

53. Remove the inner race mounting snap ring(A).

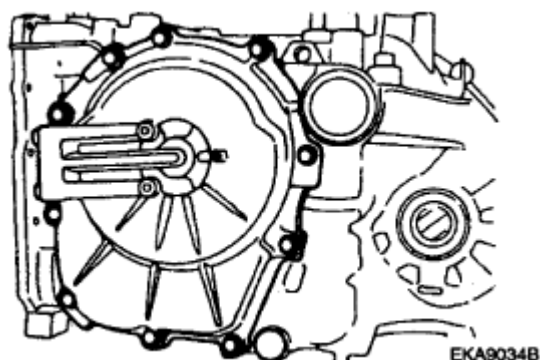


Fig. 62: Locating Inner Race Mounting Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

54. Remove the one way clutch inner race(A).

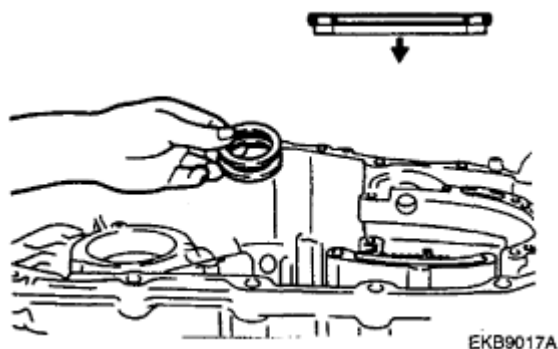


Fig. 63: Locating One Way Clutch Inner Race
Courtesy of KIA MOTORS AMERICA, INC.

55. Remove the snap ring(A).

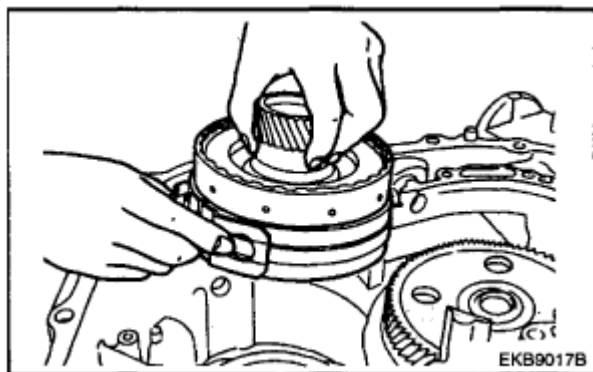


Fig. 64: Locating Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

56. Remove the low & reverse brake discs(A), plates(B) and pressure plate(C).

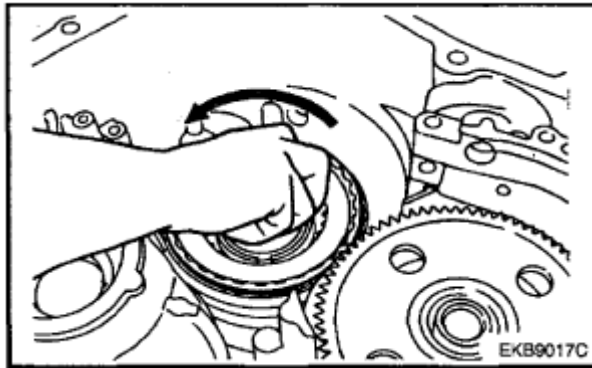


Fig. 65: Identifying Low & Reverse Brake Discs, Plates And Pressure Plate
 Courtesy of KIA MOTORS AMERICA, INC.

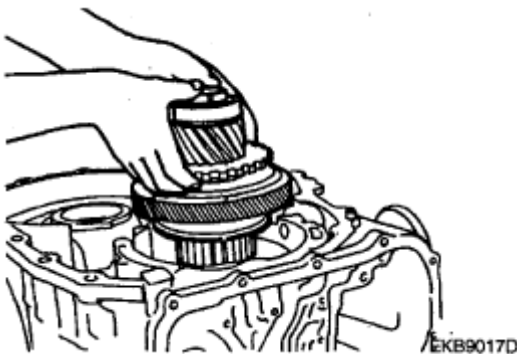


Fig. 66: Locating Low & Reverse Brake Discs, Plates And Pressure Plate
 Courtesy of KIA MOTORS AMERICA, INC.

57. Remove the wave spring(A).

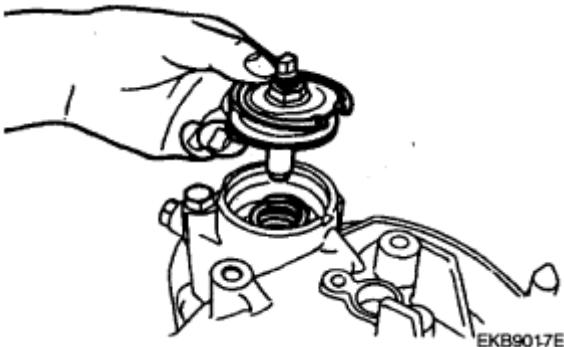


Fig. 67: Locating Wave Spring
 Courtesy of KIA MOTORS AMERICA, INC.

58. Using the special tool (09493-2F400), remove the snap ring(A).

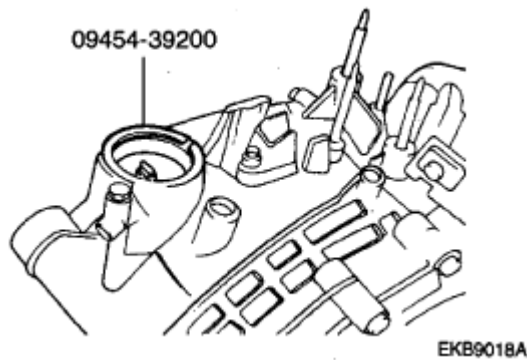


Fig. 68: Removing Snap Ring Using Special Tool (09493-2F400)
 Courtesy of KIA MOTORS AMERICA, INC.

59. Remove the low & reverse brake spring retainer(A).

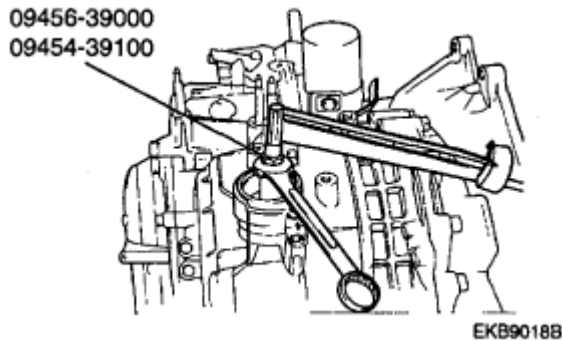


Fig. 69: Locating Low & Reverse Brake Spring Retainer
 Courtesy of KIA MOTORS AMERICA, INC.

60. Remove the return spring(A).

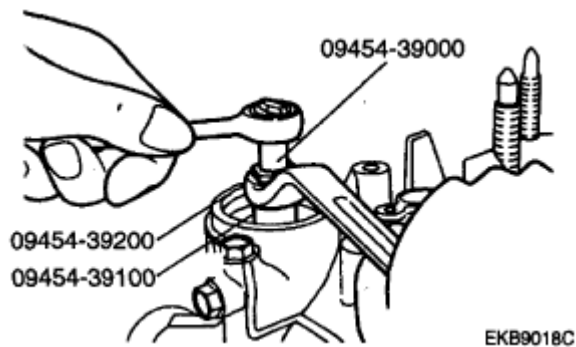


Fig. 70: Locating Return Spring
 Courtesy of KIA MOTORS AMERICA, INC.

61. Remove the low & reverse brake piston(A).

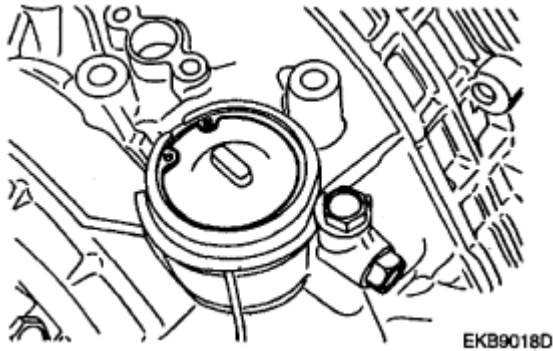


Fig. 71: Locating Low & Reverse Brake Piston
Courtesy of KIA MOTORS AMERICA, INC.

62. Remove the transfer drive gear (A) (Screw:8 EA).

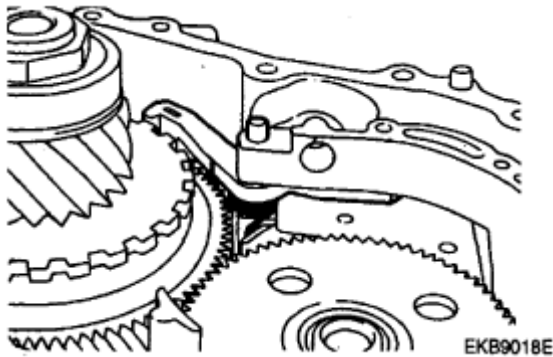


Fig. 72: Locating Transfer Drive Gear And Screw
Courtesy of KIA MOTORS AMERICA, INC.

63. Using the special tool (09453-2F100), remove the outer race and spacer of differential bearing from converter housing.
64. Using the special tool (09453-2F100), remove the outer race of differential bearing from converter housing.

REASSEMBLY

CAUTION:

- Keep the workbench and parts always clean and dirt free.
- Do not use cotton gloves. Use paper towel and nylon rag. Do not use nappy fabric.
- Do not use grease at any place otherwise specified. Use white vaseline or blue mineral oil if necessary.
- Insert each snap ring firmly into the seat. Do not use deformed rings.
- Do not allow dirt to remain on the surface to apply liquid gasket during reassembly.
- Oil pump gasket, valve body mounting bolts (6X25) and oil seals shall

not be used again, and use the new ones in assembly.

- New clutch and brake discs shall be dipped in ATF for 2 hours or more before use.
- In reassembly, replace ATF and cleanse its filter thoroughly. Replace the damaged filter element with a new one.
- Apply required minimum quantity of white vaseline, blue mineral oil, or ATF on each of the bearing part, the thrust face moving part, the oil pump moving part, the seal ring, and the O-ring.
- Do not replace the ATF in the fluid cooler.
- Be careful not to allow dirt to come through the transaxle openings before transaxle mounting onto the vehicle. (including electronic part connector).

1. Using SST (09493-2F300), install the differential oil seal on the transaxle case(B).

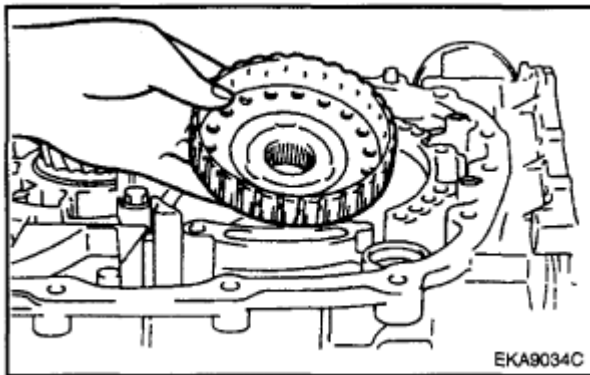


Fig. 73: Installing Differential Oil Seal On Transaxle Case Using SST (09493-2F300)
Courtesy of KIA MOTORS AMERICA, INC.

2. After applying grease, install the transfer drive gear (A) (8 screws).

TORQUE :

8~12Nm(80~120Kgf.cm, 6~8lb-ft)

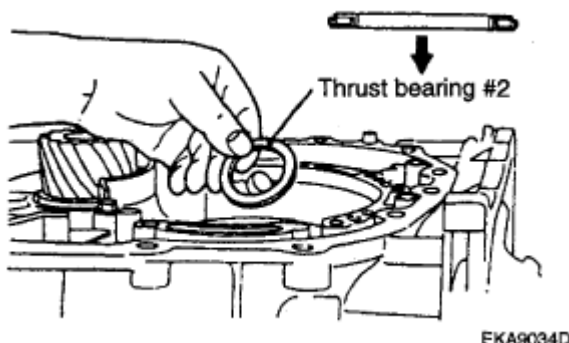


Fig. 74: Locating Transfer Drive Gear And Screws
Courtesy of KIA MOTORS AMERICA, INC.

3. Install the Low & reverse brake piston(A).

CAUTION: When installing, make sure that the finger of Low and reverse brake piston is seated correctly in groove on the transaxle case.

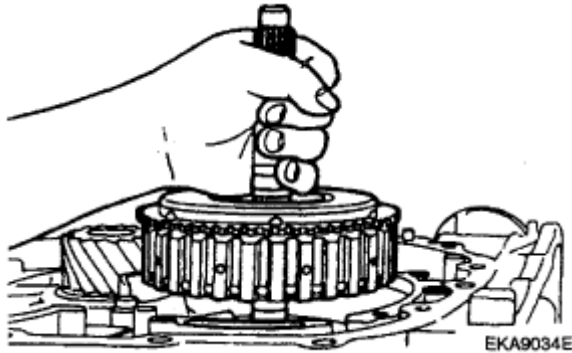


Fig. 75: Locating Low & Reverse Brake Piston
Courtesy of KIA MOTORS AMERICA, INC.

4. Install the return spring(A).

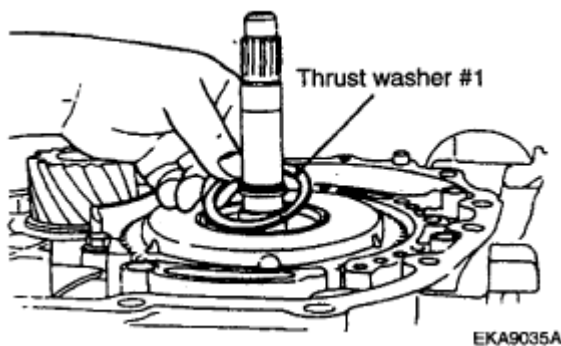


Fig. 76: Locating Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

5. Install the Low & reverse brake spring retainer(A).

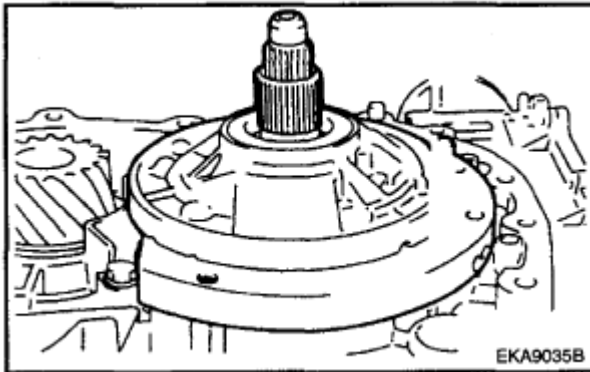


Fig. 77: Locating Low & Reverse Brake Spring Retainer
 Courtesy of KIA MOTORS AMERICA, INC.

6. Using the special tool(09493-2F400), install the snap ring(A).

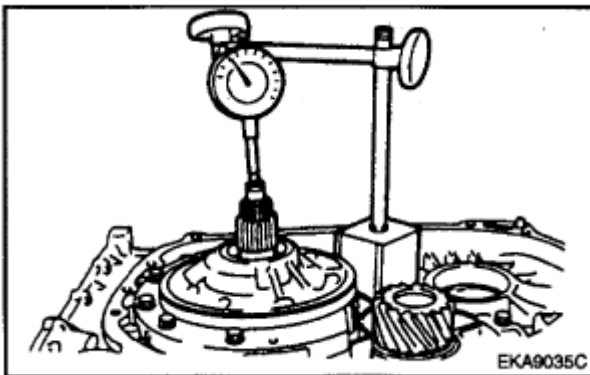


Fig. 78: Installing Snap Ring Using Special Tool(09493-2F400)
 Courtesy of KIA MOTORS AMERICA, INC.

7. Install the wave spring(A).

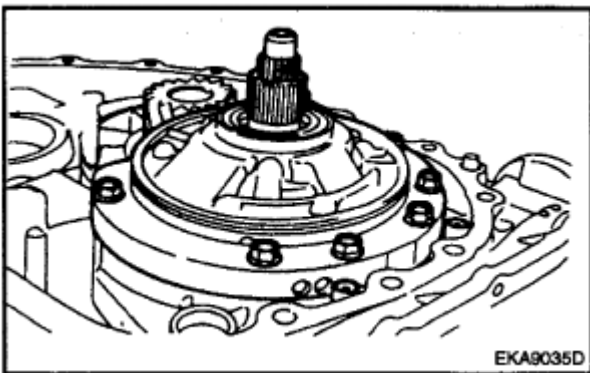


Fig. 79: Locating Wave Spring
 Courtesy of KIA MOTORS AMERICA, INC.

8. In order to measure the Low & reverse brake end play, install the Low & reverse brake plates(5), discs(6), special service tool, reaction plate(1) and snap ring with the special service tool(0.079in(2mm)) instead of the selected plate.

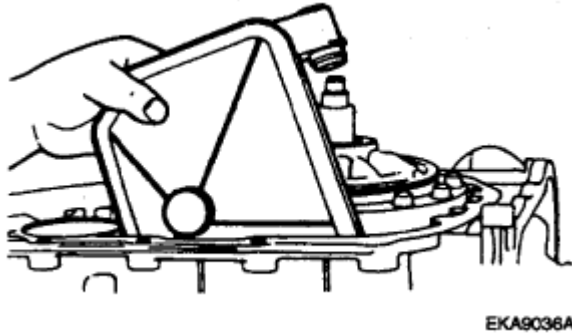


Fig. 80: Identifying Reaction Plate And Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

9. Applying 49N(5Kgf,11lbf) weight and 245.17kPa(2.5 Bar, 35.56psi) air pressure on the plates and discs, measure the end play. At that time, measure the actual gap when releasing the clutch.

Standard value : 0.045~0.057in(1.15 ~1.45mm)



Fig. 81: Measuring End Play When Applying 49N(5Kgf,11lbf) Weight And 245.17kPa(2.5 Bar, 35.56psi) Air Pressure On Plates And Discs
Courtesy of KIA MOTORS AMERICA, INC.

NOTE: Choose the proper plate as followed.
For keeping accuracy, measure at least 3 places and calculate the average value.
Pressure plate = [A(travel) + special service tool(0.079in(2.0mm)) - Standard value(0.070in(1.8mm))]

Pressure plate

PRESSURE PLATE REFERENCE CHART

Identification symbol	Thickness [in(mm)]
-----------------------	--------------------

45635-23170	0.067(1.7)
45635-23190	0.075(1.9)
45635-23210	0.083(2.1)
45635-23230	0.091(2.3)
45635-23250	0.098(2.5)
45635-23270	0.106(2.7)
45635-23290	0.114(2.9)

10. Select the proper plate. After disassembling the snap ring, reassemble the selected plate(C) instead of the special service tool(0.079in(2.0mm)), snap ring, low & reverse brake discs(A) and plates(B) and then install the snap ring.

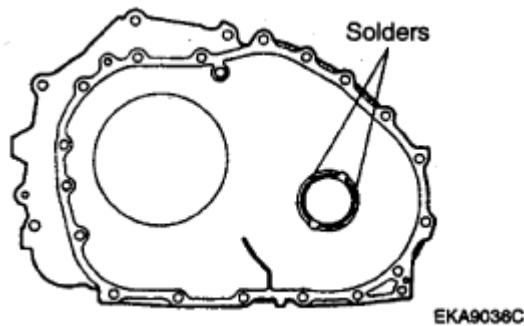


Fig. 82: Identifying Low & Reverse Brake Discs And Plates
Courtesy of KIA MOTORS AMERICA, INC.

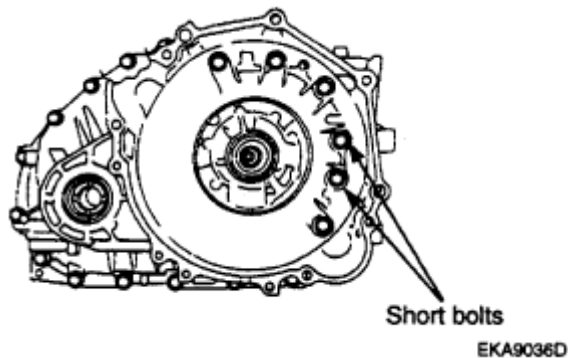


Fig. 83: Locating Low & Reverse Brake Discs And Plates
Courtesy of KIA MOTORS AMERICA, INC.

11. In order to measure the 2ND brake end play, install the special service tool(0.079in(2.0mm)) instead of the selected plate.
1. Install the 2ND brake plate(3), disc(4) and the special service tool(0.079in(2.0mm)).
 2. Install the 2ND brake return spring(A).

CAUTION: Make sure that the flat face of the return spring should be located to the downward.

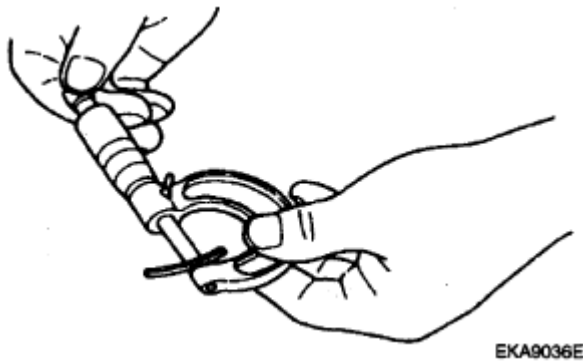


Fig. 84: Locating 2nd Brake Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

3. Install the 2ND brake piston(A).

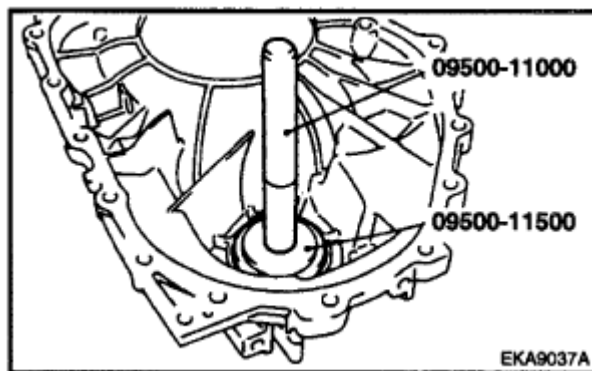


Fig. 85: Locating 2nd Brake Piston
Courtesy of KIA MOTORS AMERICA, INC.

4. Install the piston fixing snap ring(A).

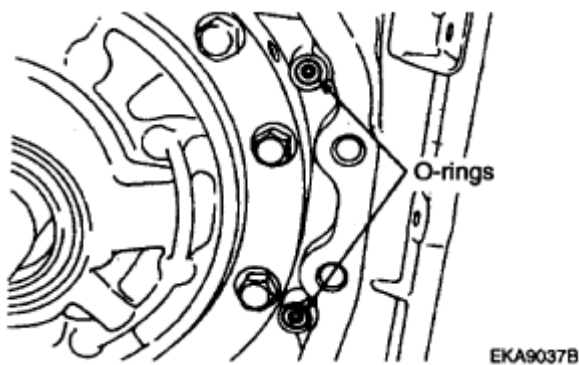


Fig. 86: Locating Piston Fixing Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

12. Applying 49N(5Kgf,11lbf) weight and 245.17kPa(2.5 Bar, 35.56psi) air pressure on the plates and discs, measure the end play. At that time, measure the actual gap when releasing the clutch.

Standard value : 0.03~0.045in(0.85 ~ 1.15mm)

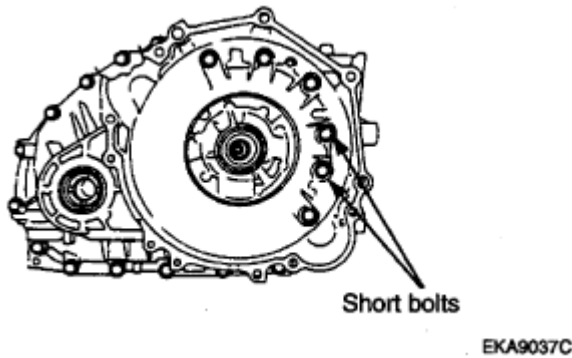


Fig. 87: Measuring End Play When Applying 49N(5Kgf,11lbf) Weight And 245.17kPa(2.5 Bar, 35.56psi) Air Pressure On Plates And Discs
 Courtesy of KIA MOTORS AMERICA, INC.

NOTE: Choose the proper plate as followed.
 For keeping accuracy, measure at least 3 places and calculate the average value.
 Pressure plate = [A(travel) + special service tool(0.079in(2.0mm)) - Standard value(0.047in(1.2mm))]

Pressure plate

PRESSURE PLATE REFERENCE CHART

Identification symbol	Thickness [in(mm)]
45668-23200	0.079(2.0)
45668-23220	0.087(2.2)
45668-23240	0.094(2.4)
45668-23260	0.106(2.6)
45635-23280	0.110(2.8)

13. After selecting the proper plate, disassemble the snap ring, piston, return spring, disc and plate.
 14. Install the one way clutch inner race(A).

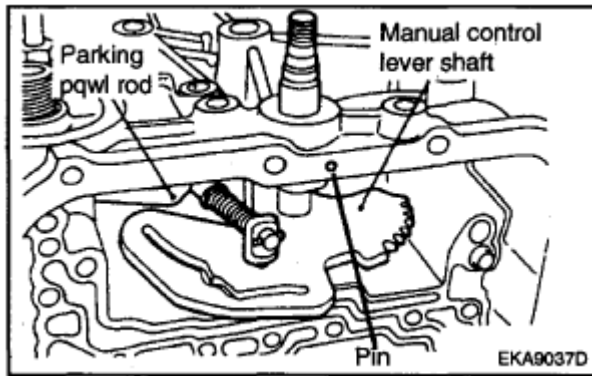


Fig. 88: Locating One Way Clutch Inner Race
Courtesy of KIA MOTORS AMERICA, INC.

15. Install the inner race fixing snap(A).

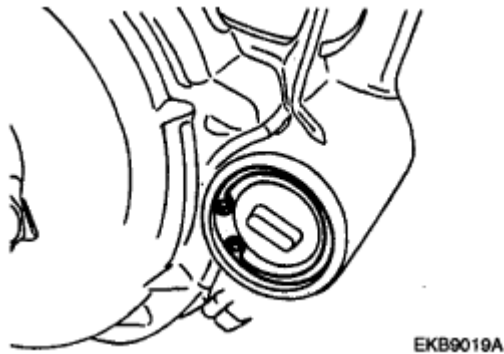
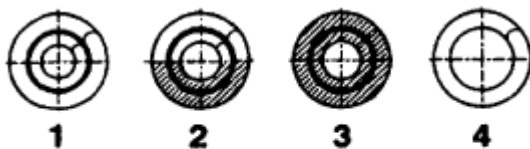


Fig. 89: Installing Inner Race Fixing Snap
Courtesy of KIA MOTORS AMERICA, INC.

16. Install the Low & reverse planetary gear set(A).



EKA9037E

Fig. 90: Locating Low & Reverse Planetary Gear Set
Courtesy of KIA MOTORS AMERICA, INC.

17. Install the snap ring(E), 2ND brake, pressure plate(A), return spring, plates(C-3EA), discs(B-4EA), reaction plate (D), return spring and 2ND brake piston.

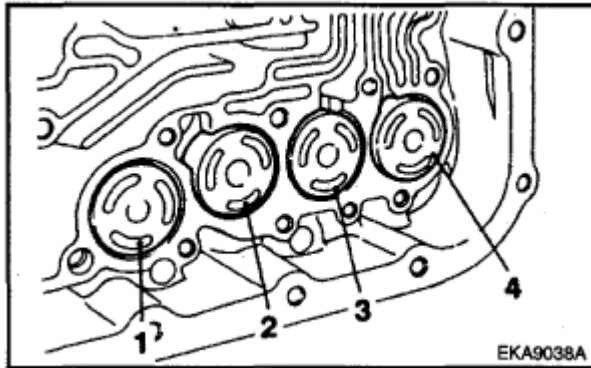


Fig. 91: Identifying Snap Ring, 2nd Brake, Pressure Plate, Return Spring, Plates(C-3EA), Discs(B-4EA), Reaction Plate, Return Spring And 2nd Brake Piston
 Courtesy of KIA MOTORS AMERICA, INC.

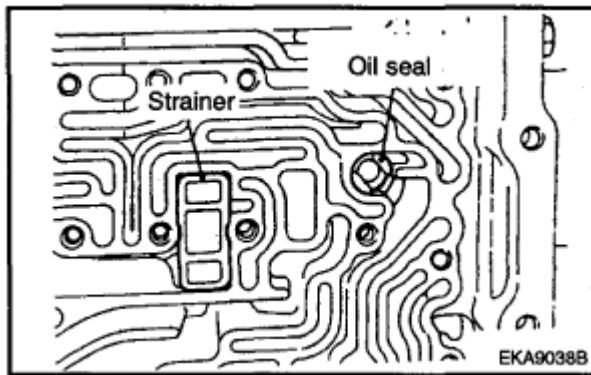


Fig. 92: Locating Snap Ring, 2nd Brake, Pressure Plate, Return Spring, Plates(C-3EA), Discs(B-4EA), Reaction Plate, Return Spring And 2nd Brake Piston
 Courtesy of KIA MOTORS AMERICA, INC.

18. Install the snap ring(A).

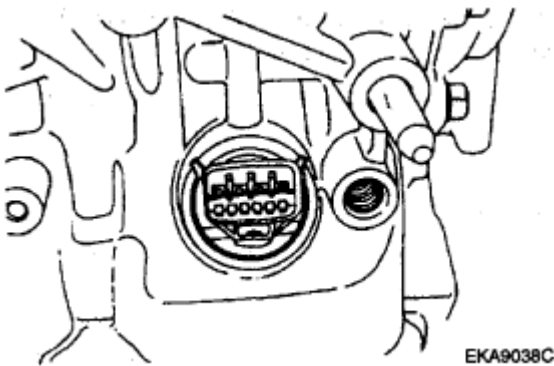


Fig. 93: Locating Snap Ring
 Courtesy of KIA MOTORS AMERICA, INC.

-
- Steel balls
- EKA9038D

Exploded view diagram of the EKA9038E engine block. The diagram shows the main components and their dimensions in millimeters (mm). Key dimensions include:

- Top cover: 20mm, 70mm, 38mm, 38mm, 38mm, 105mm, 105mm, 38mm, 38mm, 38mm, 70mm, 105mm, 70mm, 105mm.
- Block: 20mm, 38mm, 38mm, 38mm, 38mm, 45mm, 75mm, 105mm, 105mm, 105mm, 70mm, 105mm.
- Fluid temperature sensor: 45mm.

EKA9038E

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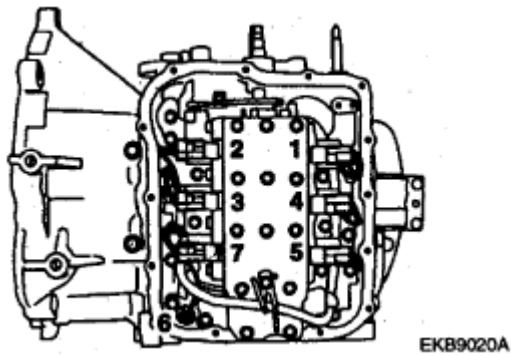


Fig. 96: Locating Overdrive Hub
Courtesy of KIA MOTORS AMERICA, INC.

22. After applying the grease, install the thrust bearing(45798-39060).

CAUTION: Be careful not to reverse the direction of the thrust bearing.

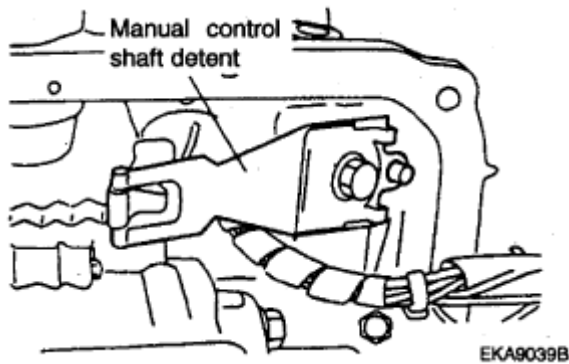


Fig. 97: Locating Thrust Bearing (45798-39060)
Courtesy of KIA MOTORS AMERICA, INC.

23. Install the reverse & overdrive clutch(A).

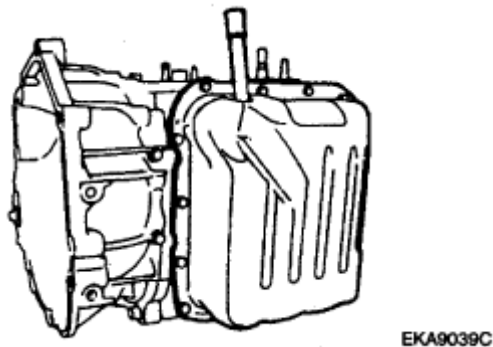


Fig. 98: Locating Reverse & Overdrive Clutch

Courtesy of KIA MOTORS AMERICA, INC.

24. After applying the grease, install the thrust bearing(45851-23000).

CAUTION: Be careful not to reverse the direction of the thrust bearing.

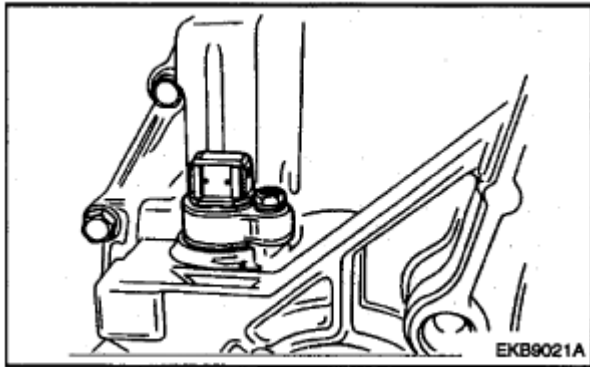


Fig. 99: Locating Thrust Bearing (45851-23000)
Courtesy of KIA MOTORS AMERICA, INC.

25. In order to select the thrust race, install the used thrust bearing. Applying 30N(3Kgf, lb) (A) weight, measure the distance between the rear cover contacting surface of transaxle case and the thrust bearing.

NOTE: Put the flat board or something on the transaxle case to keep accuracy when measuring.
For keeping accuracy, measure at least 3 places and calculate the average value.

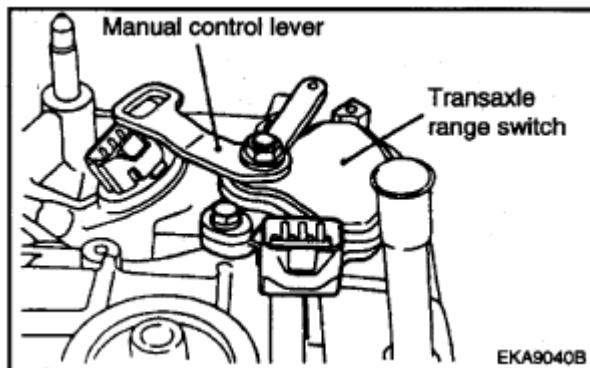


Fig. 100: Measuring Distance Between Rear Cover Contacting Surface Of Transaxle Case And Thrust Bearing Applying 30N(3Kgf, lb) Weight
Courtesy of KIA MOTORS AMERICA, INC.

26. Measure the distance between the contacting surface of the rear cover and the seating surface of thrust race.

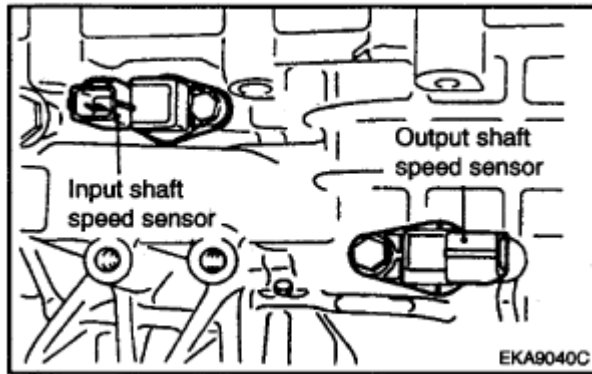


Fig. 101: Measuring Distance Between Contacting Surface Of Rear Cover And Seating Surface Of Thrust Race

Courtesy of KIA MOTORS AMERICA, INC.

27. Choose the proper plate as followed.

Thrust race(in(mm)) = [(A-B)] - end play(0.0098~0.0177in(0.25~0.45mm)).

Thrust race

THRUST RACE REFERENCE CHART

Identification symbol	Thickness [in(mm)]
45853-23013	0.051(1.3)
45853-23014	0.055(1.4)
45853-230015	0.059(1.5)
45853-23016	0.063(1.6)
45853-23017	0.067(1.7)
45853-23018	0.071(1.8)
45853-23019	0.075(1.9)
45853-23020	0.079(2.0)
45853-23021	0.083(2.1)

28. Install the four seal rings on the rear cover.

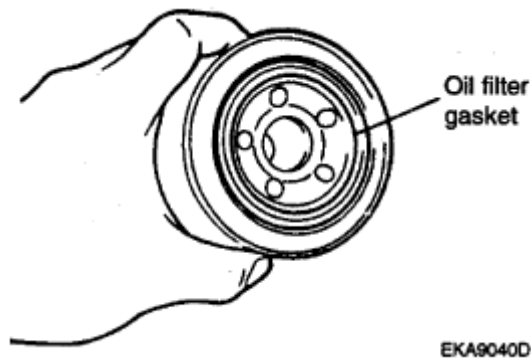


Fig. 102: Identifying Seal Rings Of Rear Cover
Courtesy of KIA MOTORS AMERICA, INC.

29. Install the thrust race(A) on the rear cover.

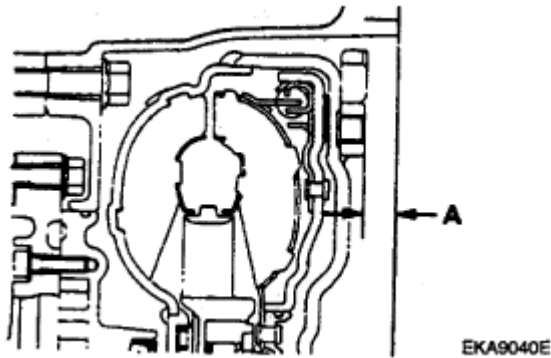
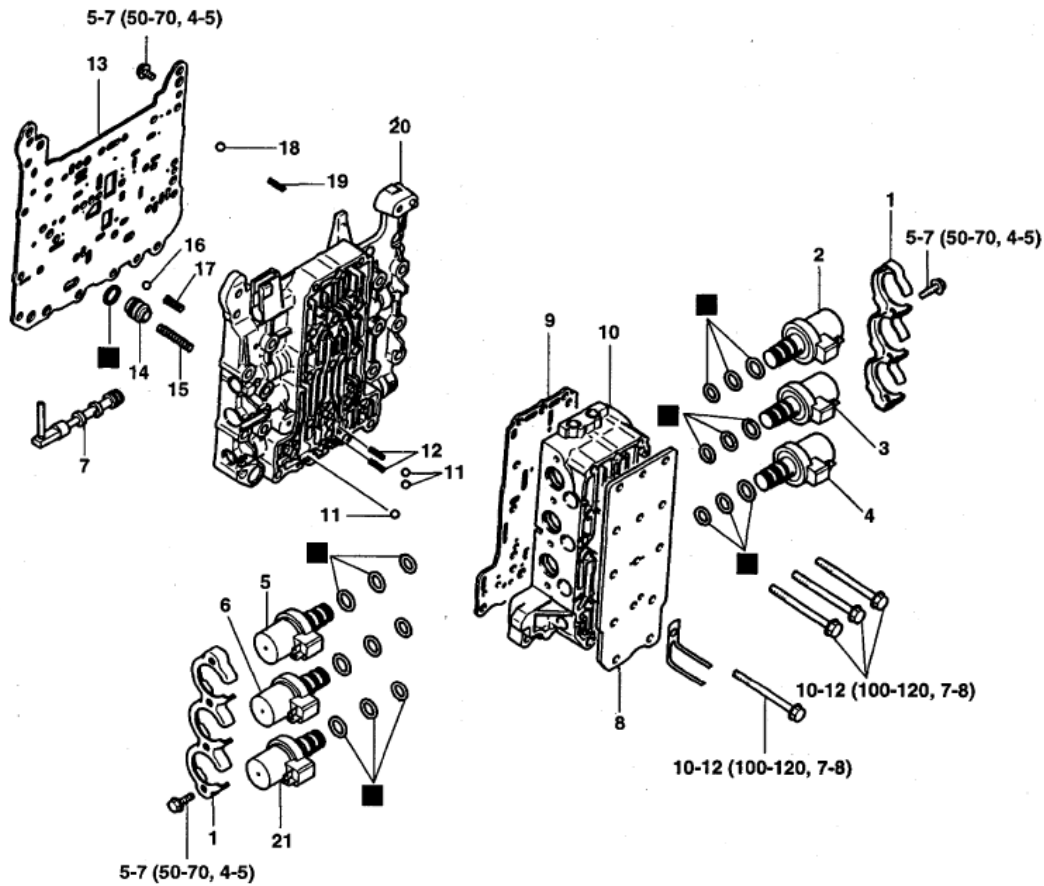


Fig. 103: Locating Thrust Race On Rear Cover
Courtesy of KIA MOTORS AMERICA, INC.

30. Install the five O-rings on the transmission case.



<Disassembly steps>

1. Solenoid valve support
2. UD clutch solenoid valve
3. 2nd brake solenoid valve
4. Damper clutch control solenoid valve
5. OD clutch solenoid valve
6. L & R brake solenoid valve
7. Manual valve
8. Cover
9. Plate
10. Outside valve body assembly

11. Still ball (Orifice check ball)
12. Spring
13. Plate
14. Damping valve
15. Damping valve spring
16. Steel ball (line relief)
17. Spring
18. Steel ball (orifice check ball)
19. Spring
20. Inside valve body assembly
21. Reduction solenoid valve (F5A51 Model)

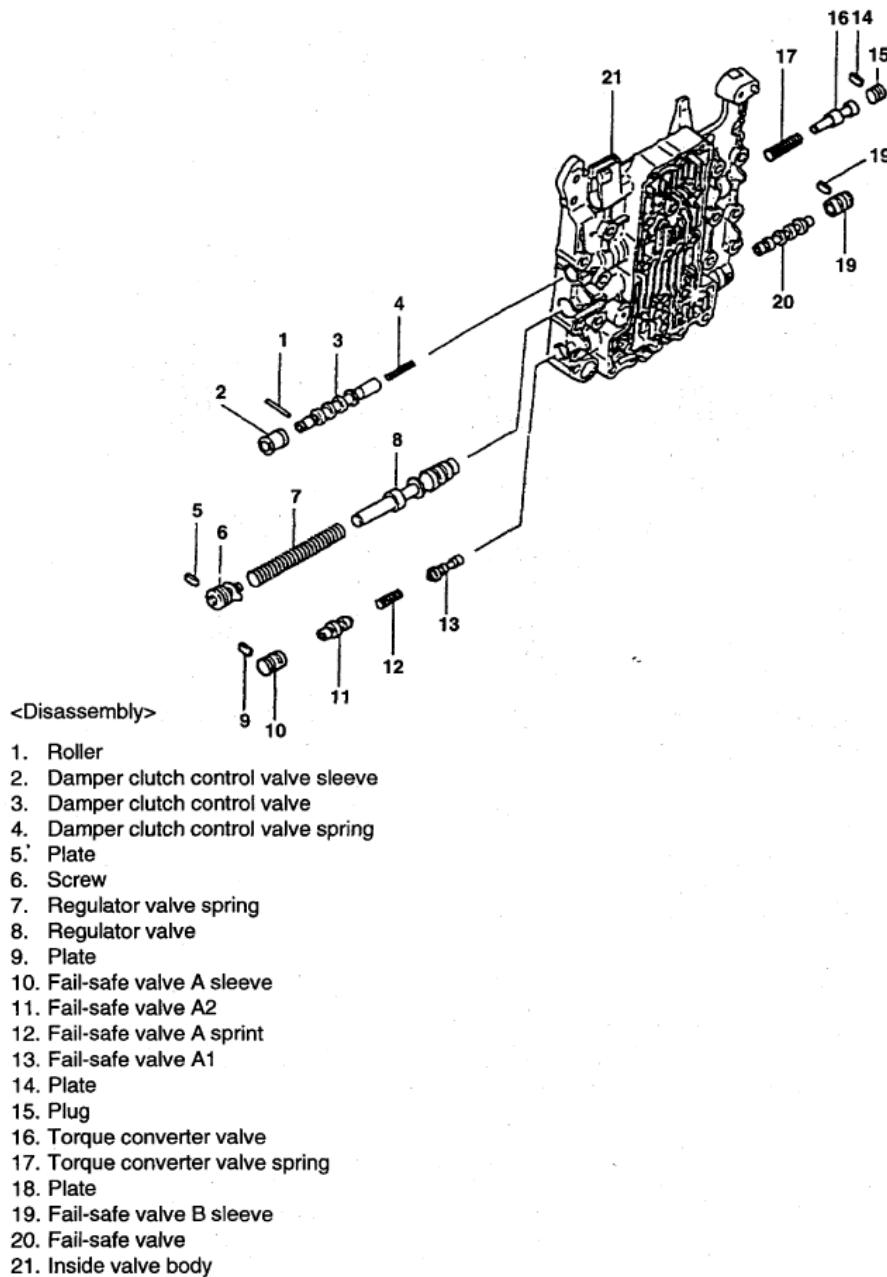
TORQUE : Nm (kg-cm, lb-ft)

EKA9041B

Fig. 104: Identifying O-Rings On Transmission Case
 Courtesy of KIA MOTORS AMERICA, INC.

31. Apply liquid gasket with 0.063in(1.6mm) thickness on the rear cover surface without a pause.

Liquid gasket : Threebond 1281B



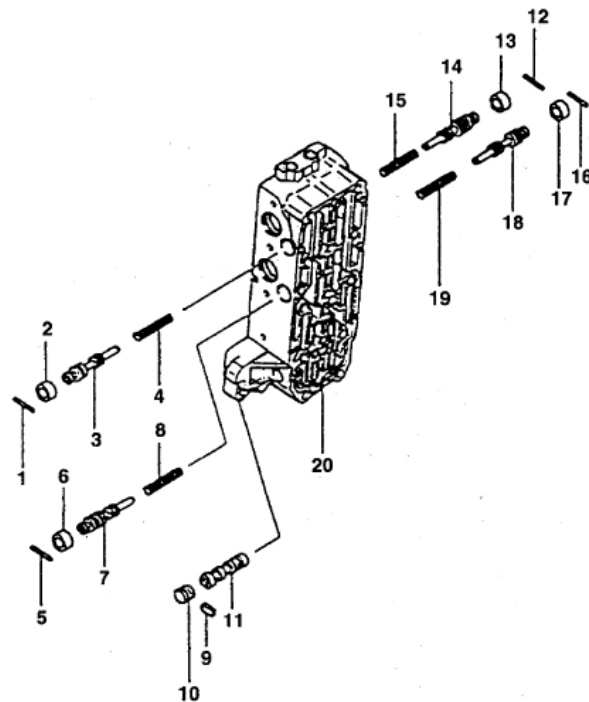
EKA9041A

Fig. 105: Applying Liquid Gasket With 0.063in(1.6mm) Thickness On Rear Cover Surface
 Courtesy of KIA MOTORS AMERICA, INC.

32. Install the rear cover(A) (Bolts:9ea).

TORQUE :

20~27Nm(200~270kgf.cm, 14~19lb-ft)



<Disassembly>

1. Roller
2. Overdrive pressure control valve sleeve
3. Overdrive pressure control valve
4. Overdrive pressure control valve spring
5. Roller
6. Low-reverse pressure control valve sleeve
7. Low-reverse pressure control valve
8. Low-reverse pressure control valve spring
9. Plate
10. Plug
11. Switching valve
12. Roller
13. Underdrive pressure control valve sleeve
14. Underdrive pressure control valve
15. Underdrive pressure control valve spring
16. Roller
17. Second pressure control valve sleeve
18. Second pressure control valve
19. Second pressure control valve spring
20. Outside valve body

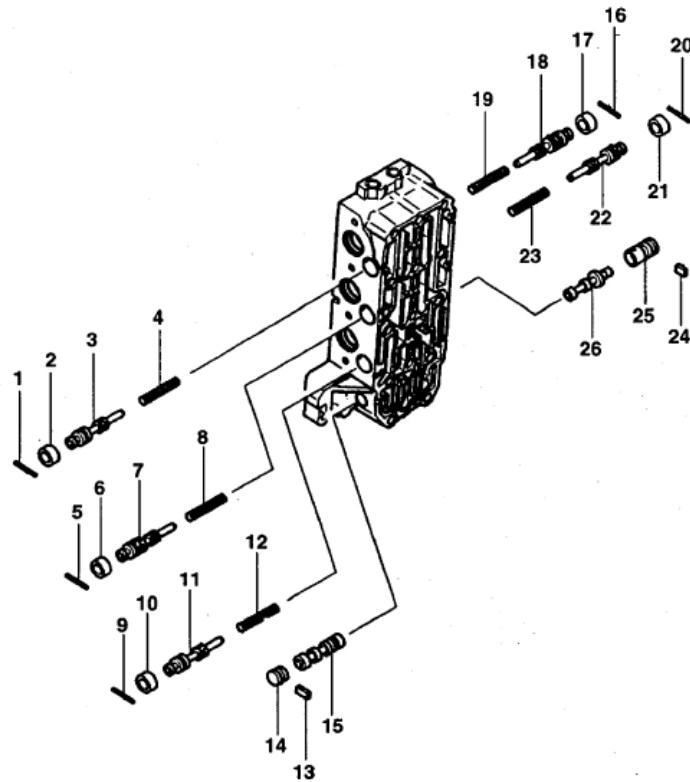
EKA9042A

Fig. 106: Locating Rear Cover And Bolts
 Courtesy of KIA MOTORS AMERICA, INC.

33. Insert the four gaskets into feed tube(A) and then install it to the transaxle case.

TORQUE :

28~34Nm(280~340kgf.cm, 19~24lb-ft)



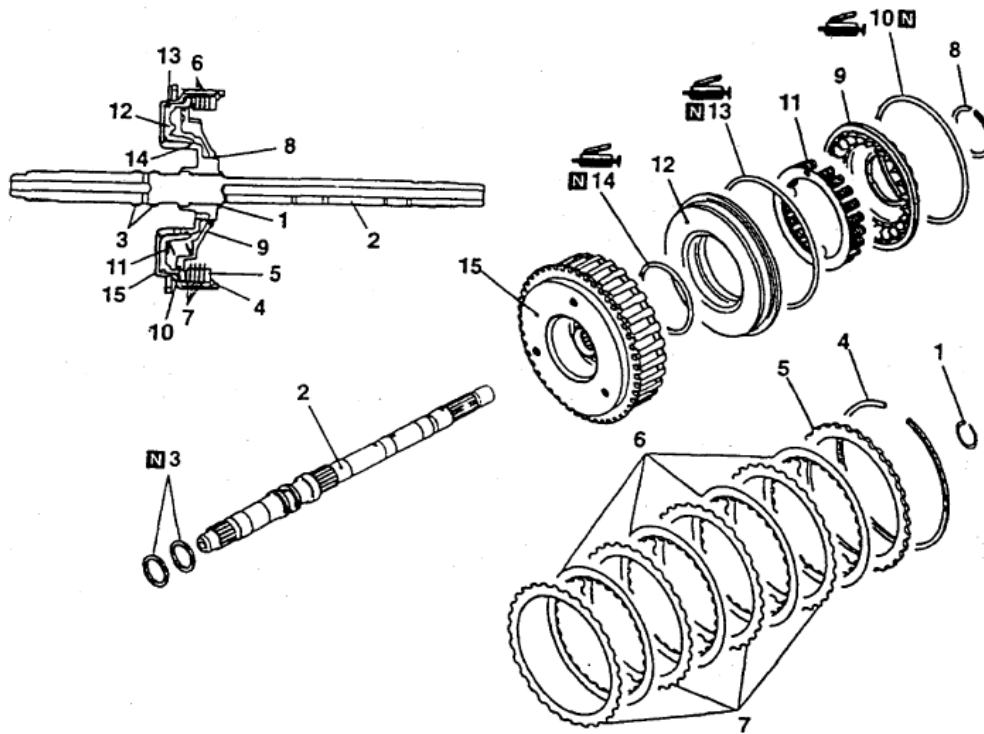
<Disassembly steps>

- | | |
|--|--|
| 1. Roller | 14. Plug |
| 2. Overdrive pressure control valve sleeve | 15. Switching valve |
| 3. Overdrive pressure control valve | 16. Roller |
| 4. Overdrive pressure control valve spring | 17. Underdrive pressure control valve sleeve |
| 5. Roller | 18. Underdrive pressure control valve |
| 6. Low-reverse pressure control valve sleeve | 19. Underdrive pressure control valve spring |
| 7. Low-reverse pressure control valve | 20. Roller |
| 8. Low-reverse pressure control valve spring | 21. Second pressure control valve sleeve |
| 9. Roller | 22. Second pressure control valve |
| 10. Reduction pressure control valve sleeve | 23. Second pressure control valve spring |
| 11. Reduction pressure control valve | 24. Plate |
| 12. Reduction pressure control valve spring | 25. Fail safe valve "C" sleeve |
| 13. Plate | 26. Fail safe valve "C" |

EKB9022A

Fig. 107: Locating Gaskets And Feed Tube
Courtesy of KIA MOTORS AMERICA, INC.

34. Install the manual control shaft(A, including the two O-ring), the detent lever(B) and the parking rod(C).



Disassembly steps

1. Snap ring
2. Input shaft
3. Seal ring
4. Snap ring
5. Clutch reaction plate
6. Clutch disc
7. Clutch plate
8. Snap ring
9. Spring retainer
10. D-ring
11. Return spring
12. Underdrive clutch piston
13. D-ring
14. D-ring
15. Underdrive clutch retainer

EKA9043A

Fig. 108: Locating Manual Control Shaft, Detent Lever And Parking Rod
 Courtesy of KIA MOTORS AMERICA, INC.

35. Install the reamer bolt on detent lever.

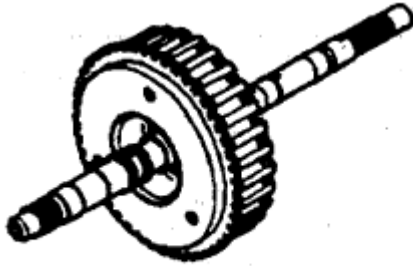
TORQUE :

8~10Nm(80~100kgf.cm, 6~7lb-ft)

36. Install the manual control shaft fixing groove bolt.

TORQUE :

8~10Nm(80~100kgf.cm, 6~7lb-ft)



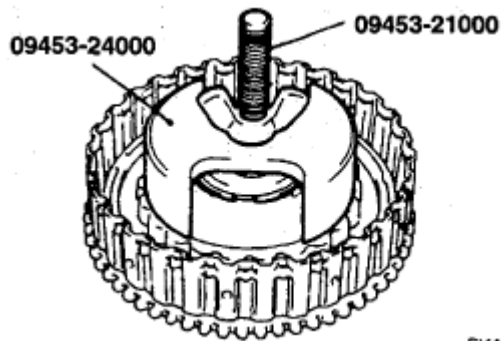
EKA9044A

Fig. 109: Identifying Manual Control Shaft Fixing Groove Bolt
Courtesy of KIA MOTORS AMERICA, INC.

37. Install the detent spring(A).

TORQUE :

8~10Nm(80~100kgf.cm, 6~7lb-ft)



EKA9044B

Fig. 110: Locating Detent Spring
Courtesy of KIA MOTORS AMERICA, INC.

38. Install the plate(A) and then tighten the reamer bolt.

TORQUE :

8~10Nm(80~100kgf.cm, 6~7lb-ft)

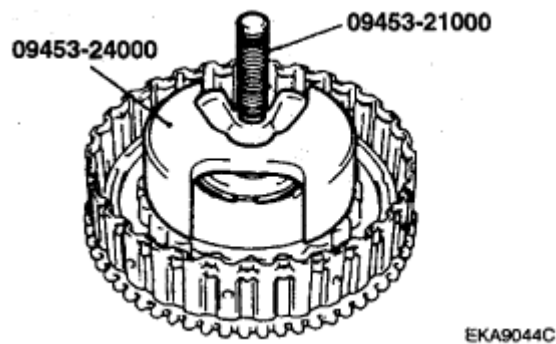


Fig. 111: Locating Plate And Reamer Bolt
Courtesy of KIA MOTORS AMERICA, INC.

39. When installing the driven gear, measure the length(A) between both sides of the driven gear with outer races. Measure the length(A) between both sides of the differential gear with outer races. Calculate the sum of the case length and the housing length.

Specified clearance of driven gear: $A-C = -0.0003 \sim -0.0035 \text{ in} (-0.01 \sim -0.09 \text{ mm})$

Specified clearance of differential gear: $A-C = -0.0017 \sim -0.0041 \text{ in} (-0.045 \sim -0.105 \text{ mm})$

If the calculated value is not within the specified clearance, install the suitable spacer.

40. Install the driven gear and the outer race.
41. Install the driven gear(A), the shaft(B) and the sprag spring(C).

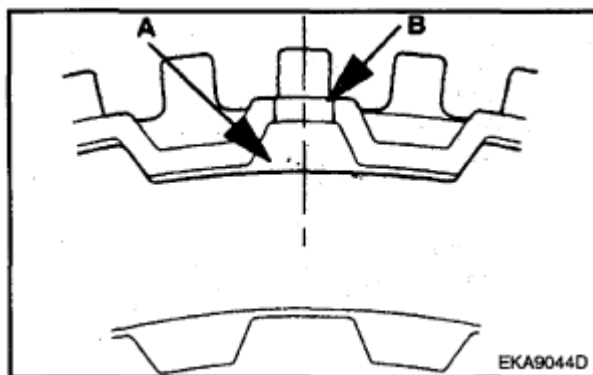


Fig. 112: Locating Driven Gear, Shaft And Sprag Spring
Courtesy of KIA MOTORS AMERICA, INC.

42. Install the inhibitor switch(A) and the manual control lever(B).

TORQUE(shaft nut) :

17~21Nm(170~210kgf.cm, 13~15lb-ft)

TORQUE(2bolts) :

10~12Nm(100~120kgf.cm, 7~8lb-ft)

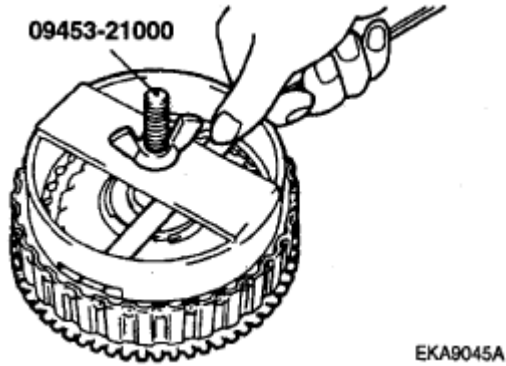


Fig. 113: Locating Inhibitor Switch And Manual Control Lever
Courtesy of KIA MOTORS AMERICA, INC.

43. Install the parking rod guide(A) and oil plate(B) (Bolt:2EA).

TORQUE:

8~10Nm(80~100kgf.cm, 6~7lb-ft)

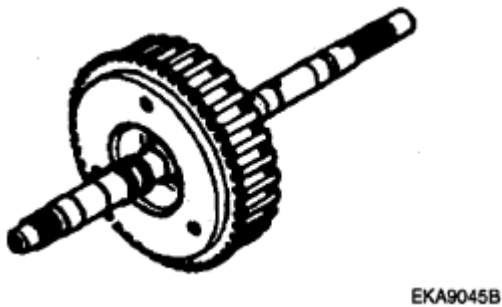
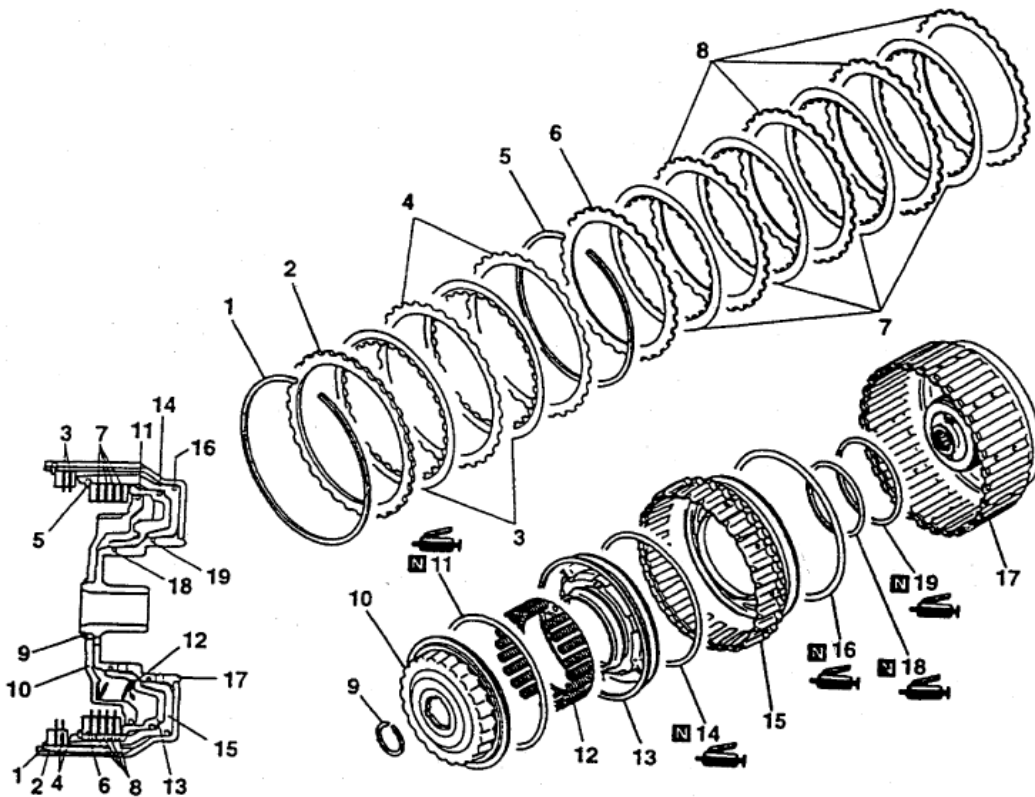


Fig. 114: Locating Parking Rod Guide, Oil Plate And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

44. Install the oil guide plate(B).

TORQUE:

8~10Nm(80~100kgf.cm, 6~7lb-ft)



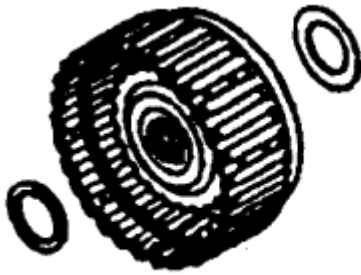
Disassembly steps

1. Snap ring
2. Clutch reaction plate
3. Clutch disc
4. Clutch plate
5. Snap ring
6. Clutch reaction plate
7. Clutch disc
8. Clutch plate
9. Snap ring
10. Spring retainer
11. D-ring
12. Return spring
13. Overdrive clutch piston
14. D-ring
15. Reverse clutch piston
16. D-ring
17. Reverse clutch retainer
18. D-ring
19. D-ring

EKA9046A

Fig. 115: Locating Oil Guide Plate
 Courtesy of KIA MOTORS AMERICA, INC.

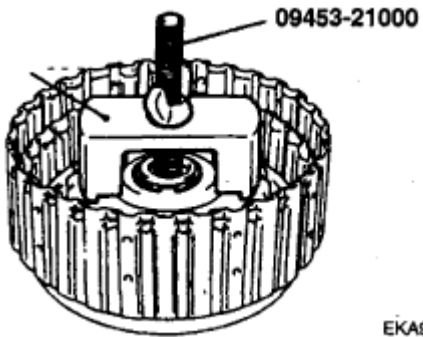
45. Install the underdrive clutch hub(A).



EKA9047A

Fig. 116: Locating Underdrive Clutch Hub
Courtesy of KIA MOTORS AMERICA, INC.

46. Install the thrust bearing(A).



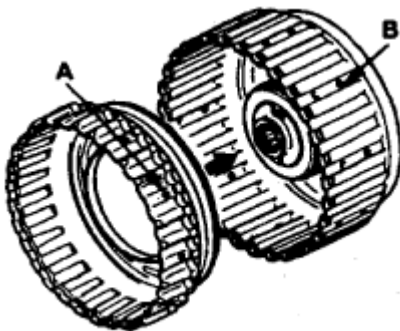
EKA9047B

Fig. 117: Locating Thrust Bearing
Courtesy of KIA MOTORS AMERICA, INC.

NOTE: Be careful not to reverse the direction of the thrust bearing.

47. Install the underdrive clutch(A).

NOTE: Check that the underdrive clutch is seated correctly.



EKA9047C

Fig. 118: Locating Underdrive Clutch
Courtesy of KIA MOTORS AMERICA, INC.

48. Install the used thrust washer(A).

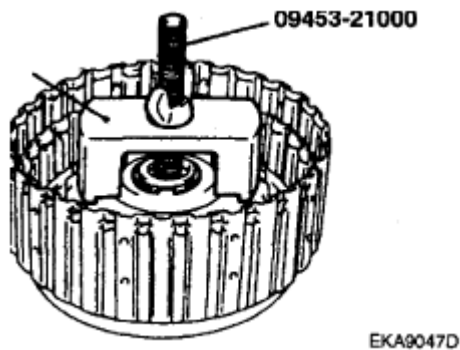


Fig. 119: Locating Thrust Washer
Courtesy of KIA MOTORS AMERICA, INC.

49. Install the oil pump gasket(A).

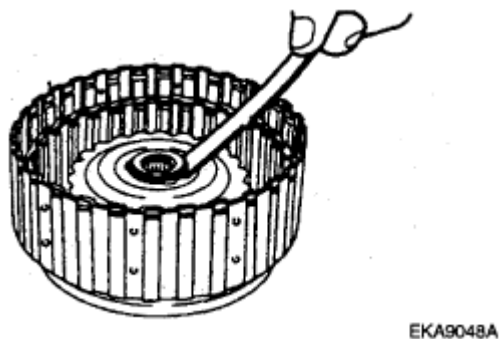


Fig. 120: Locating Oil Pump Gasket
Courtesy of KIA MOTORS AMERICA, INC.

50. Using the guide pin(09493-2F600), install the oil pump(A) (Bolt:7 EA).

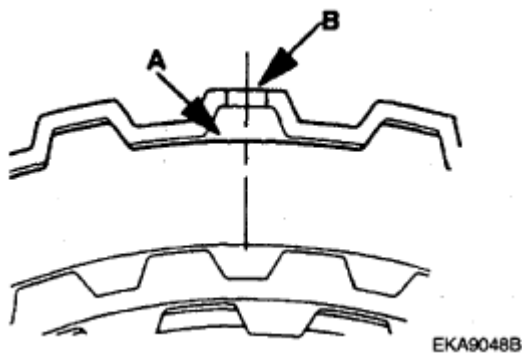


Fig. 121: Locating Oil Pump, Guide Pin (09493-2F600) And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

51. Measure the end play of input shaft and install the spacer if necessary.

Standard value : 0.024~0.043in(0.6 ~ 1.1mm)

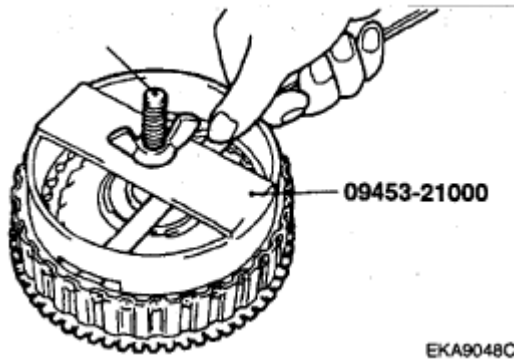


Fig. 122: Measuring End Play Of Input Shaft
Courtesy of KIA MOTORS AMERICA, INC.

52. Install the two new O-rings.

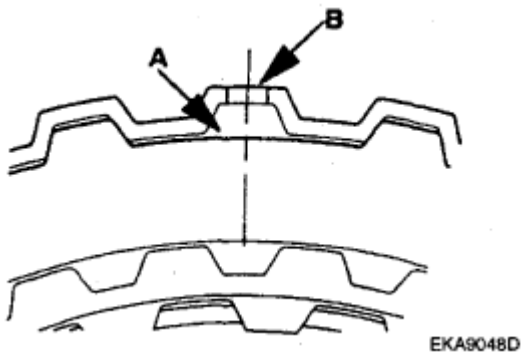


Fig. 123: Locating O-Rings
Courtesy of KIA MOTORS AMERICA, INC.

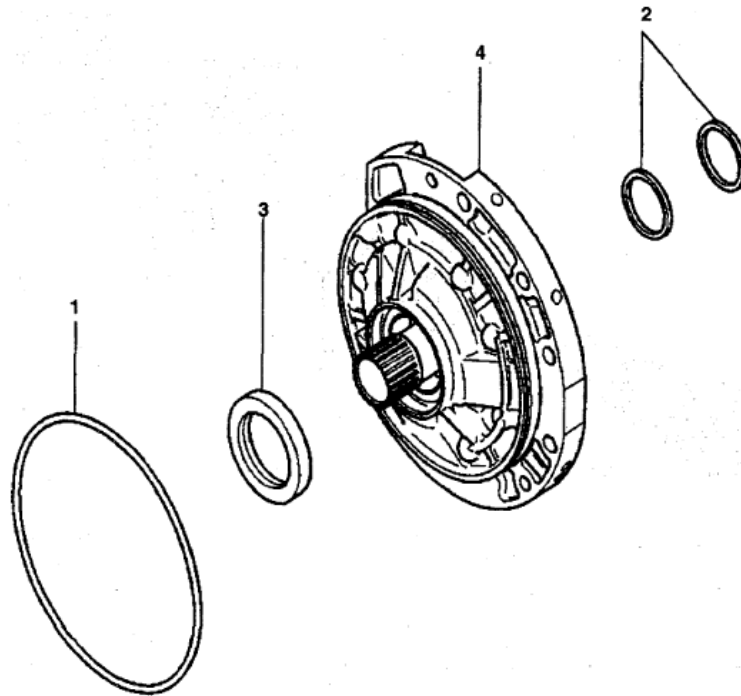
53. Install the differential outer race(A).



Fig. 124: Locating Differential Outer Race

Courtesy of KIA MOTORS AMERICA, INC.

54. Install the differential gear assembly(A).



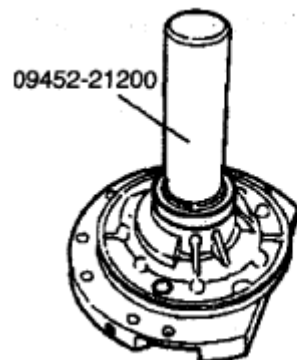
<Disassembly steps>

- 1.O-ring
- 2.Seal ring
- 3.Oil seal
- 4.Oil pump ass'y

EKA9055A

Fig. 125: Locating Differential Gear Assembly
 Courtesy of KIA MOTORS AMERICA, INC.

55. Using special service tool(09493-2F300), install the oil seal on the torque converter housing.

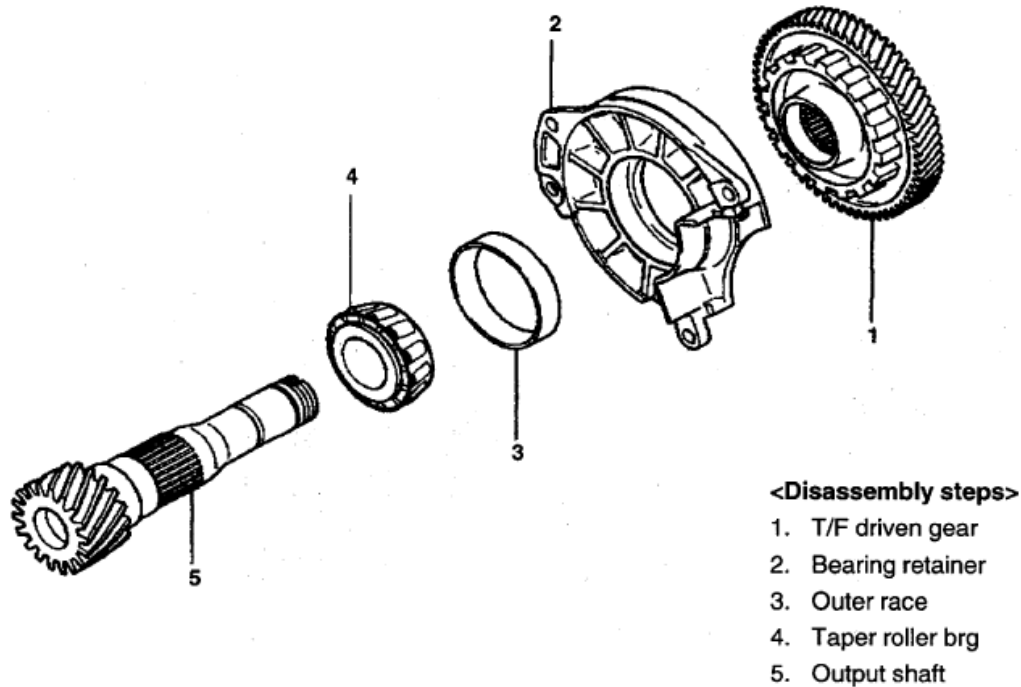


EKA9055B

Fig. 126: Installing Oil Seal On Torque Converter Housing Using Special Service Tool (09493-2F300)

Courtesy of KIA MOTORS AMERICA, INC.

56. Install the two dowels pin on the torque converter housing.



EKA9056A

Fig. 127: Locating Dowels Pin On Torque Converter Housing
Courtesy of KIA MOTORS AMERICA, INC.

57. Install the oil separate(A) (Bolt:3EA).

TORQUE:

8~10Nm(80~100kgf.cm, 6~7lb-ft)

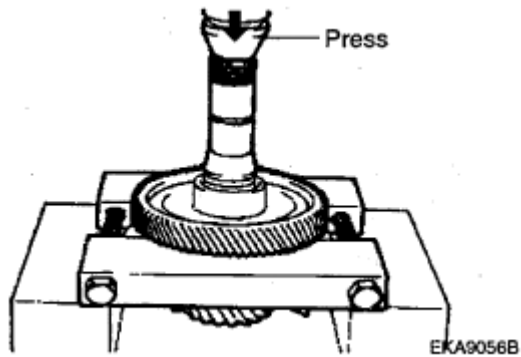


Fig. 128: Locating Oil Separator And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

58. Install the spacer(A) on the differential and the transfer driven gear of the torque converter housing.

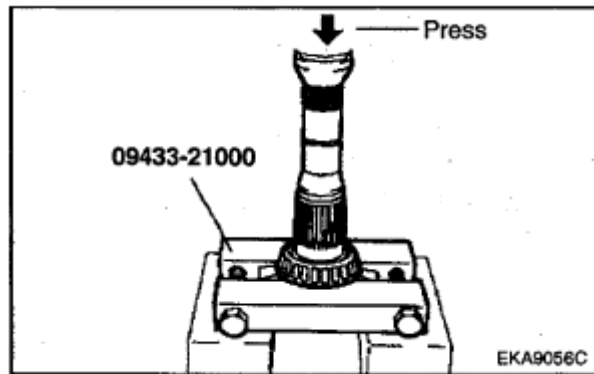
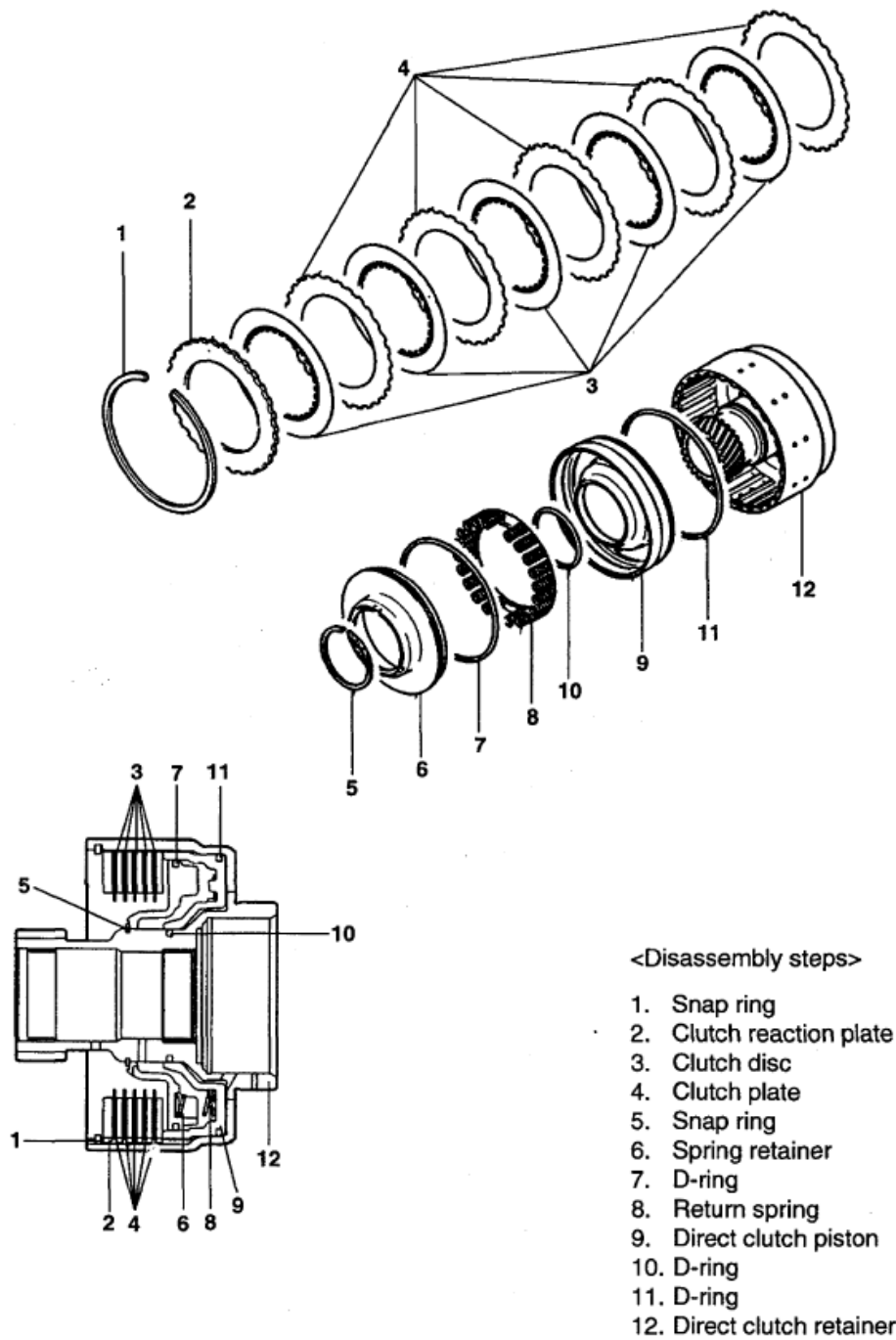


Fig. 129: Locating Spacer Of Differential
Courtesy of KIA MOTORS AMERICA, INC.

59. Install the driven gear race(A) and the driven gear outer race(B) of the torque converter housing.

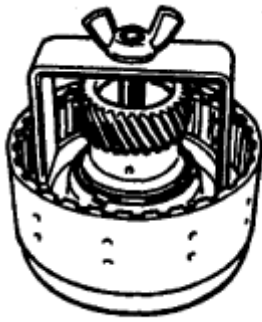


EKB9023A

Fig. 130: Locating Driven Gear Race And Driven Gear Outer Race Of Torque Converter Housing
 Courtesy of KIA MOTORS AMERICA, INC.

60. Apply liquid gasket with 0.063in(1.6mm) thickness on the torque converter housing without a pause.

Liquid gasket : Threebond 1281B



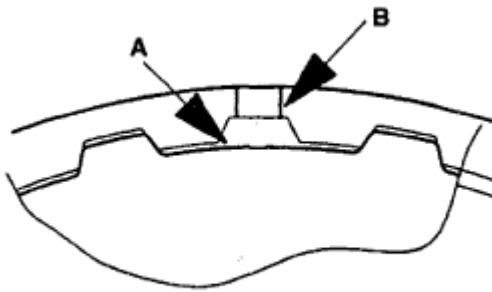
EKB9024A

Fig. 131: Applying Liquid Gasket With 0.063in(1.6mm) Thickness On Torque Converter Housing
Courtesy of KIA MOTORS AMERICA, INC.

61. Install the torque converter housing and tighten the bolt(Bolt: 17EA).

TORQUE :

43~55Nm(430~550kgf.cm, 32~41lb-ft)



EKB9024B

Fig. 132: Identifying Torque Converter Housing And Bolts
Courtesy of KIA MOTORS AMERICA, INC.

62. Install the input shaft speed sensor(A) (Bolt:1EA).

TORQUE :

10~12Nm(100~120kgf.cm, 7~8lb-ft)

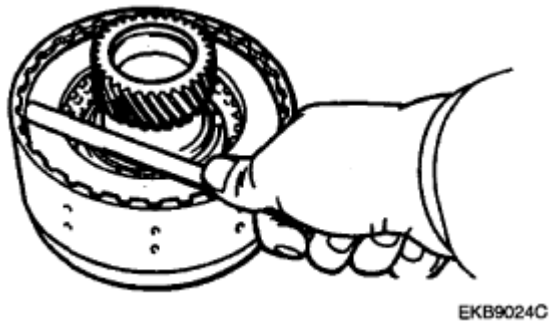
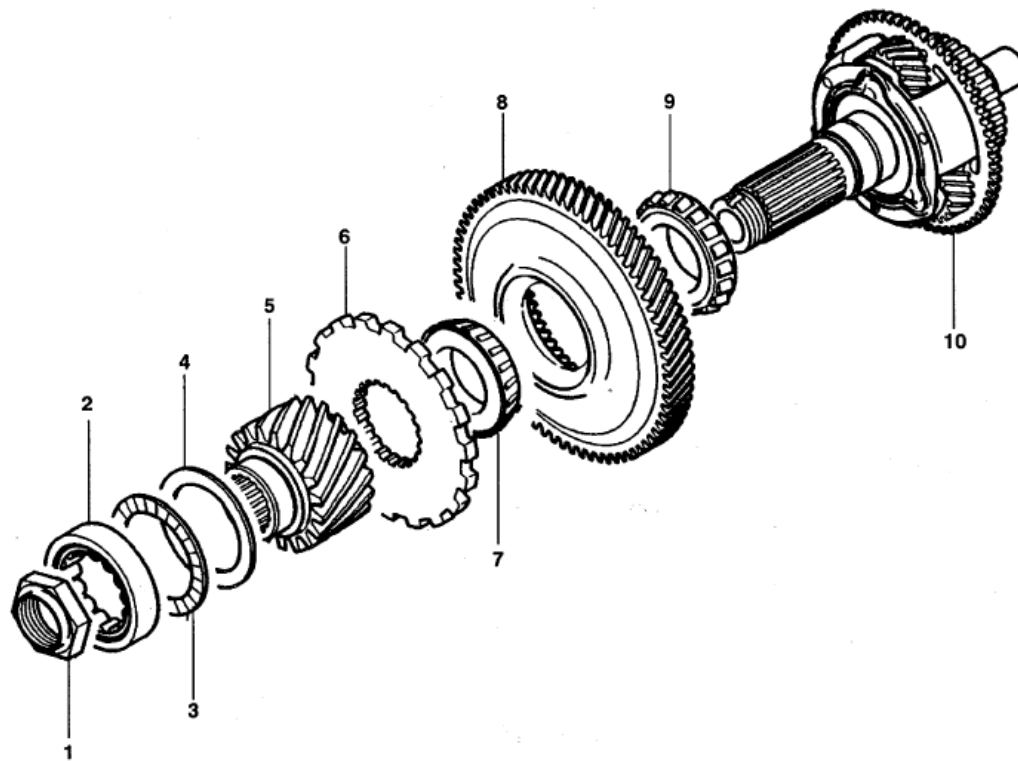


Fig. 133: Locating Input Shaft Speed Sensor And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

63. Install the output shaft speed sensor(A) (Bolt:1EA).

TORQUE :

10~12Nm(100~120kgf.cm, 7~8lb-ft)



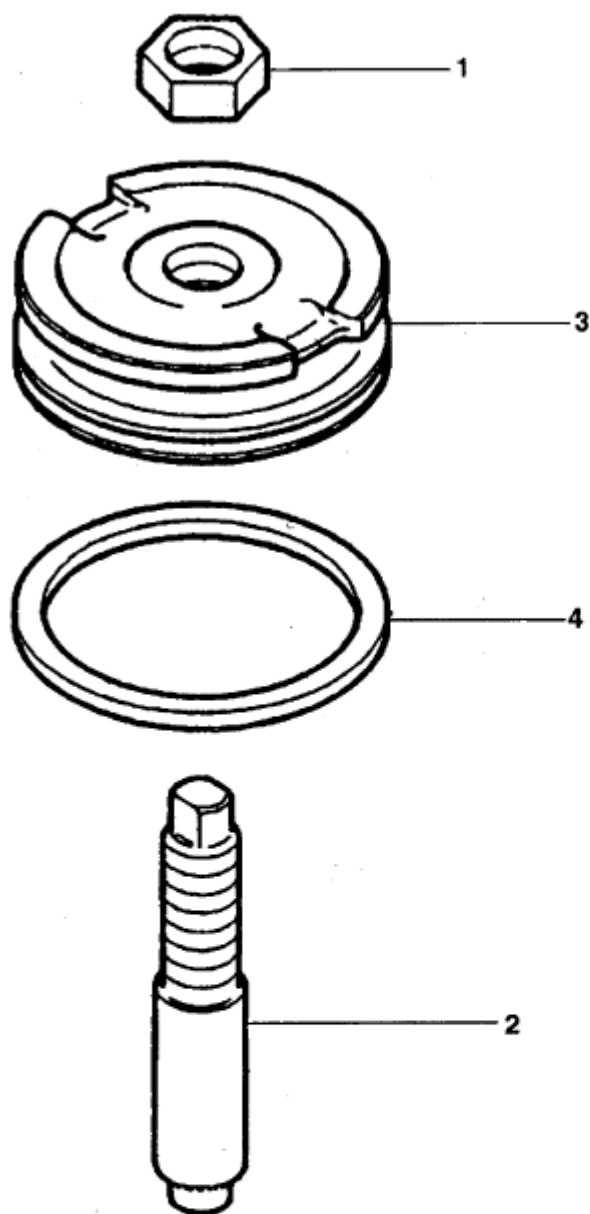
<Disassembly steps>

1. Lock nut
2. Roller bearing
3. Thrust bearing #9
4. Thrust race #10
5. Output gear
6. Parking gear
7. Taper roller bearing
8. Transfer driven gear
9. Taper roller bearing
10. Direct planetary carrier

EKB9025A

Fig. 134: Locating Output Shaft Speed Sensor And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

64. Install the plug(A).



<Disassembly steps>

1. Nut
2. Adjust rod
3. Reduction brake piston
4. Seal-ring

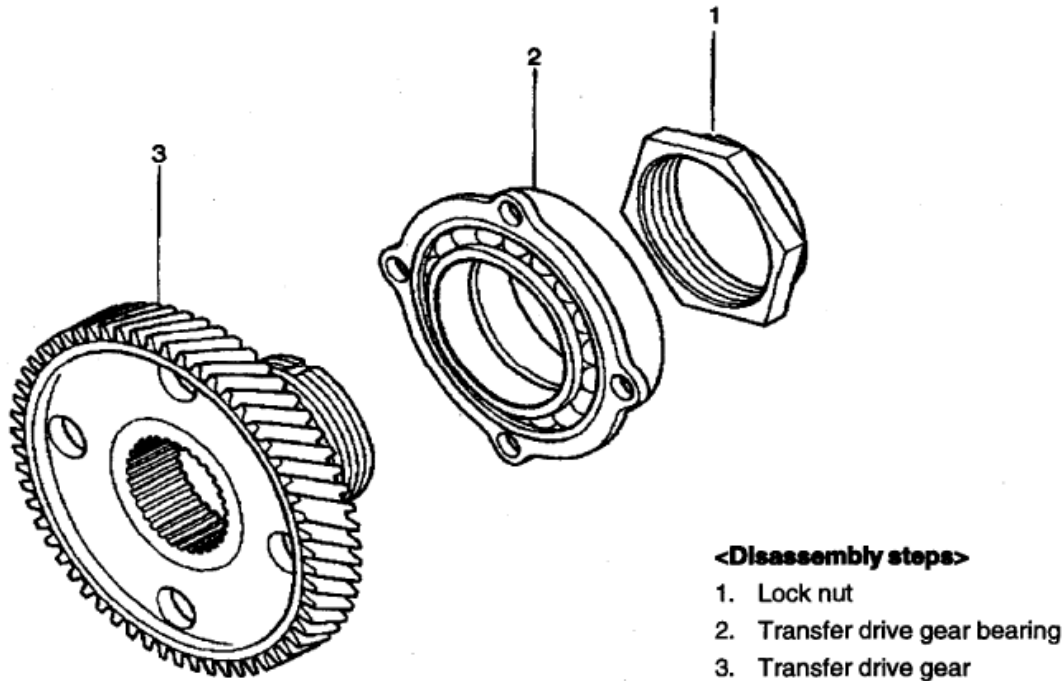
Fig. 135: Locating Plug

Courtesy of KIA MOTORS AMERICA, INC.

65. Install the shift cable bracket(A) (Bolt:2EA).

TORQUE :

19~23Nm(190~230kgf.cm, 14~17lb-ft)



EKA9057A

Fig. 136: Locating Shift Cable Bracket And Bolt

Courtesy of KIA MOTORS AMERICA, INC.

66. Install the oil level gauge(A) and bracket(Bolt:2EA).

TORQUE :

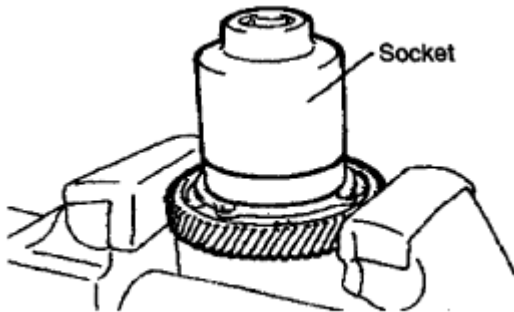
19~23Nm(190~230kgf.cm, 14~17lb-ft)



EKA9057B

Fig. 137: Locating Oil Level Gauge, Bracket And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

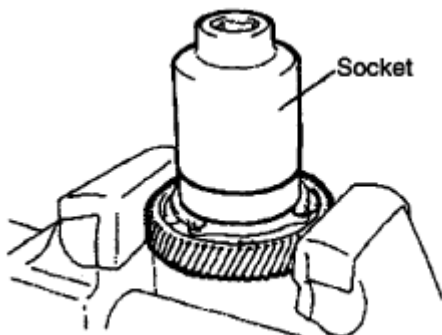
67. Install the control valve connector(A).



EKA9057C

Fig. 138: Locating Control Valve Connector
Courtesy of KIA MOTORS AMERICA, INC.

68. Insert each accumulator piston, new sealing and spring.



EKA9057D

Fig. 139: Locating Accumulator Piston, Sealing And Spring
Courtesy of KIA MOTORS AMERICA, INC.

NOTE: Accumulator spring identification.

ACCUMULATOR SPRING IDENTIFICATION CHART

NO.	Use	I.D. Color	Number
A	U/D clutch	White/White	2
B	O/D clutch	Yellow	1
C	2ND brake	Yellow/Yellow	2
D	L/R brake	Yellow	1

69. Install the two new O-rings.

NOTE: Insert the new O-ring into the hole of the L/R brake and transfer driven gear.



EKA9057E

Fig. 140: Locating O-Rings

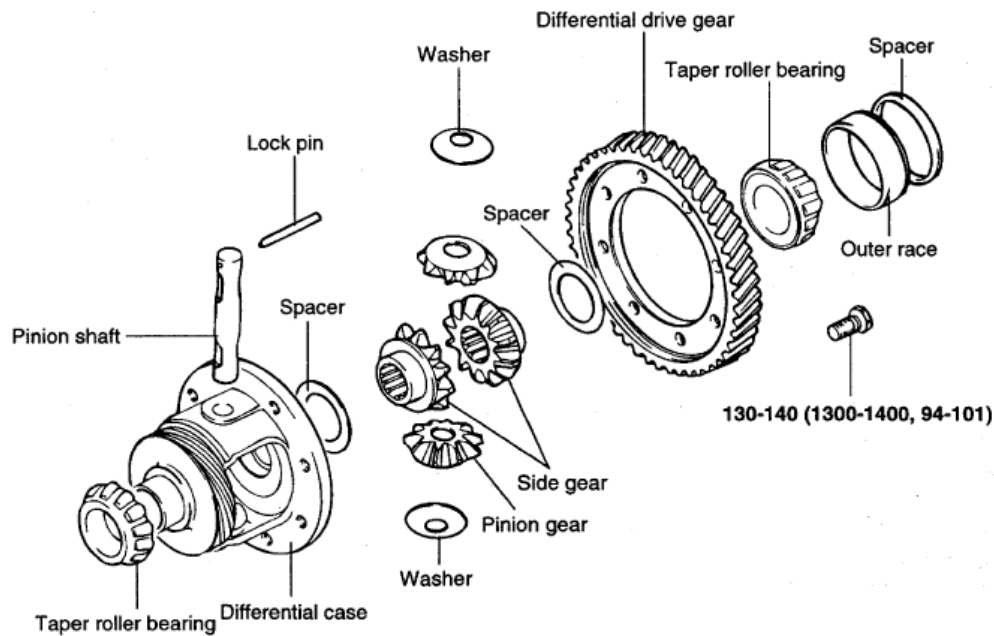
Courtesy of KIA MOTORS AMERICA, INC.

70. Install the valve body(Bolt:21EA).

NOTE: 6x30[(A): 17EA, 6x35[(B): 1EA, 6x40[(C): 1EA, 6x55[(D): 1EA, 6x60[(E): 1EA

TORQUE :

10~12Nm(100~120kgf.cm, 7~8lb-ft)



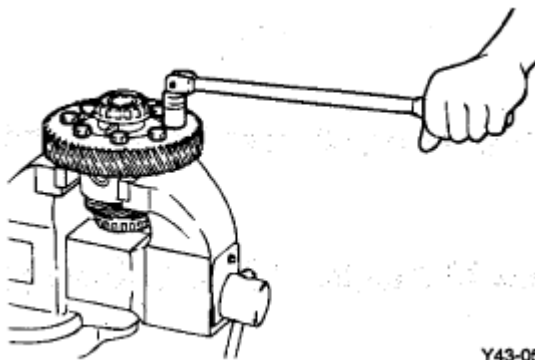
V5MT023B

Fig. 141: Locating Valve Body Bolts
Courtesy of KIA MOTORS AMERICA, INC.

71. Install the manual valve mounting bracket(Nut:1EA)

TORQUE :

9~12Nm(90~120kgf.cm, 6.5~8lb-ft)



Y43-050B

Fig. 142: Locating Manual Valve Mounting Bracket Nut
Courtesy of KIA MOTORS AMERICA, INC.

72. Install the oil filter(A) (Bolt:3EA).

TORQUE :

5~7Nm(50~70kgf.cm, 4~5lb-ft)

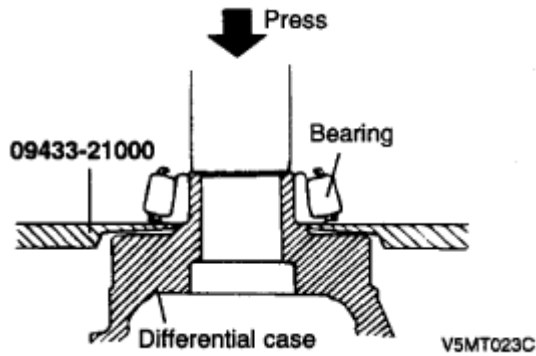


Fig. 143: Locating Oil Filter And Bolt
Courtesy of KIA MOTORS AMERICA, INC.

73. Install the three magnets in the lower end of the oil filter.

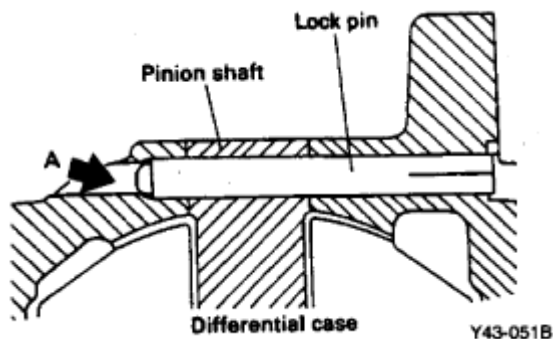


Fig. 144: Locating Magnets In Lower End Of Oil Filter
Courtesy of KIA MOTORS AMERICA, INC.

74. Apply liquid gasket with 0.102in(2.6mm) thickness without a pause as shown in the illustration.



Fig. 145: Applying Liquid Gasket With 0.102in (2.6mm) Thickness
 Courtesy of KIA MOTORS AMERICA, INC.

75. Connect the oil pan(A) and tighten the bolt.

TORQUE :

10~12Nm(100~120kgf.cm, 7~8lb-ft)

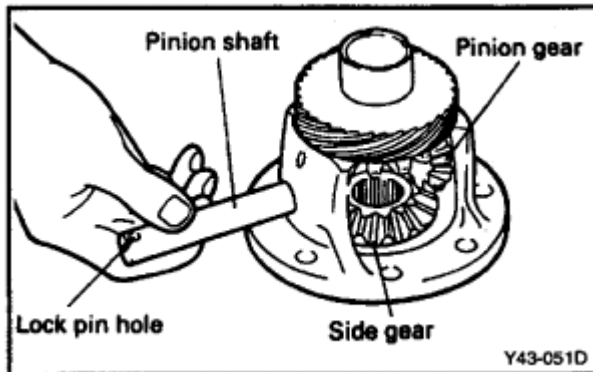


Fig. 146: Locating Oil Pan And Bolt
 Courtesy of KIA MOTORS AMERICA, INC.

76. Install the drain plug(A).

TORQUE :

35~45Nm(350~450kgf.cm, 25~32lb-ft)

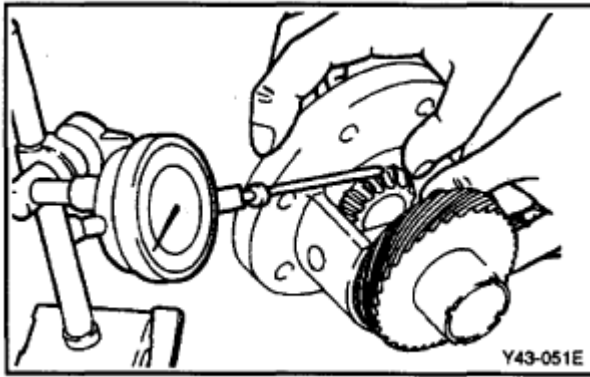


Fig. 147: Locating Drain Plug
Courtesy of KIA MOTORS AMERICA, INC.

HYDRAULIC SYSTEM

OIL PUMP

Components and Components Location

COMPONENTS

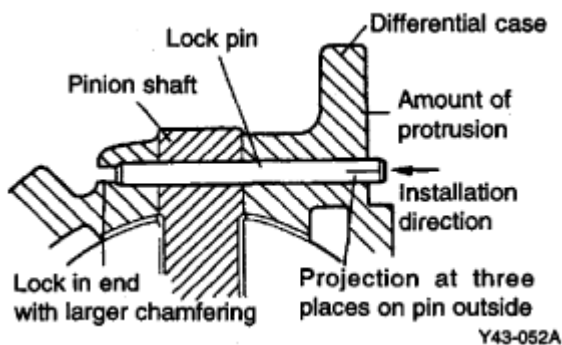


Fig. 148: Identifying Oil Pump Components
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

REASSEMBLY

1. Install the oil sealing.
2. Install the O-ring.

Install the new O-ring around oil pump and apply ATF, blue mineral oil, or white Vaseline around the O-ring.

VALVE BODY SYSTEM

VALVE BODY

Components and Components Location

COMPONENTS(1)

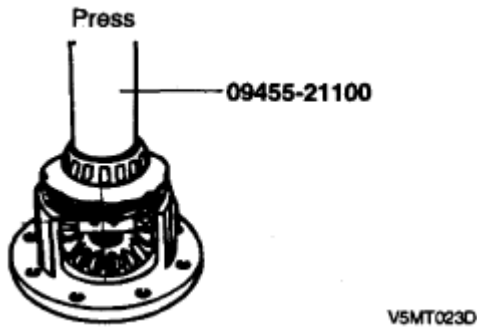


Fig. 149: Identifying Valve Body Components And Components Location
Courtesy of KIA MOTORS AMERICA, INC.

COMPONENTS(2)

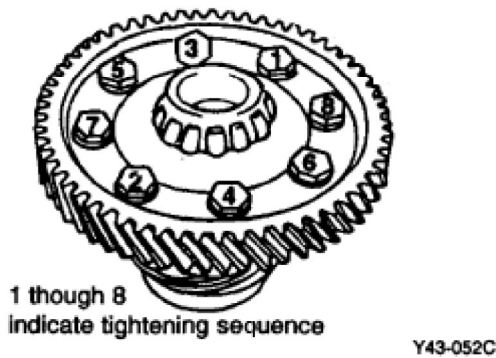
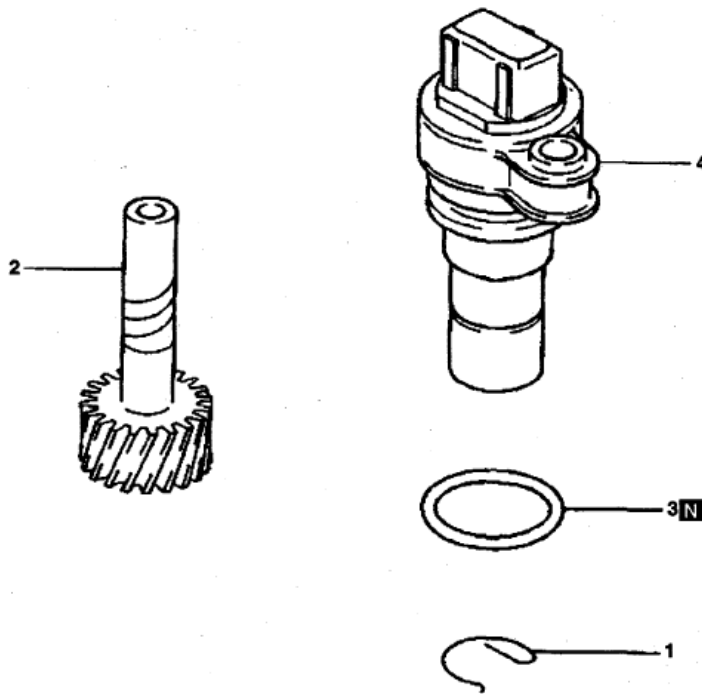


Fig. 150: Identifying Valve Body Components And Components Location
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

1. Remove the main harness(A) from the valve body.



<Disassembly steps>

1. E-clip
2. Speedometer driven gear
3. O-ring
4. Sleeve

EKA9058A

Fig. 151: Removing Main Harness From Valve Body (1 Of 2)
 Courtesy of KIA MOTORS AMERICA, INC.

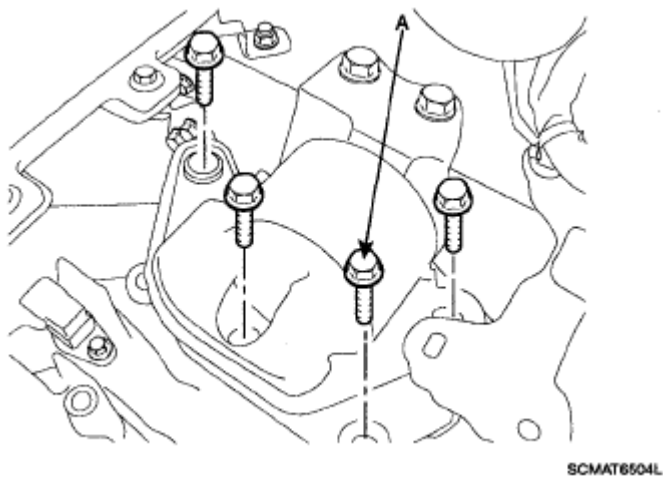
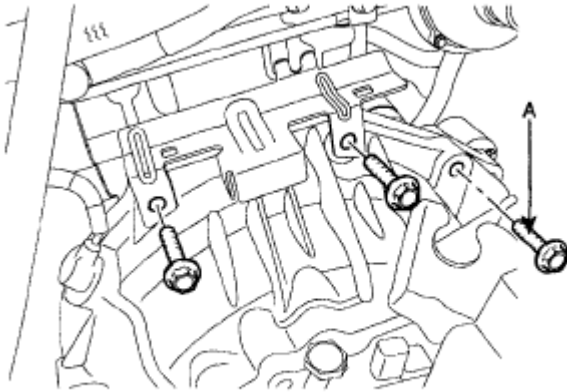


Fig. 152: Removing Main Harness From Valve Body (2 Of 2)
 Courtesy of KIA MOTORS AMERICA, INC.

2. Remove the solenoid valve assembly(A).

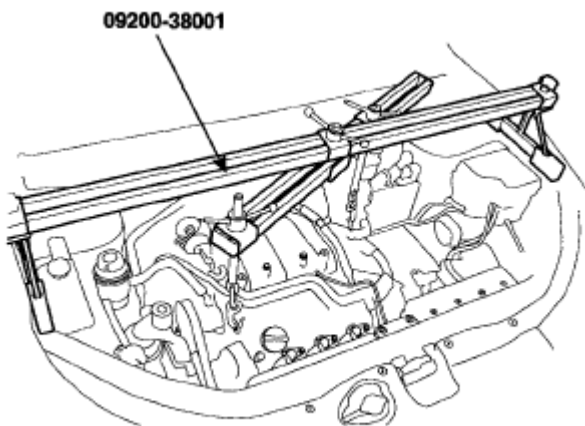


AKKF002O

Fig. 153: Locating Solenoid Valve Assembly
Courtesy of KIA MOTORS AMERICA, INC.

3. Remove the valve body(Bolt:24EA).

A : 6 X 60 (19EA), B : 6 X 55 (1EA), C : 6X 70 (4EA)



SCMA76503L

Fig. 154: Locating Valve Body Bolt
Courtesy of KIA MOTORS AMERICA, INC.

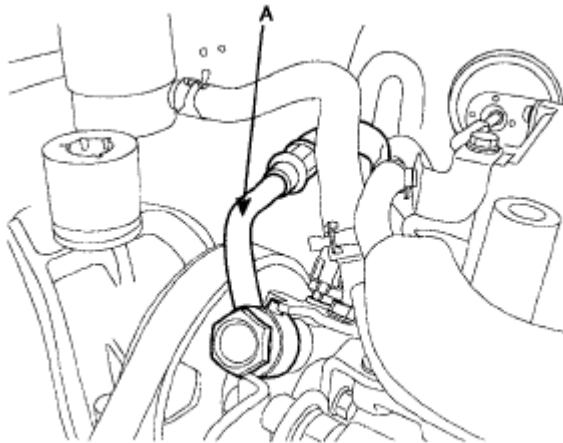
REASSEMBLY

CAUTION:

- All reassembled parts must be thoroughly cleaned.
- Do not use grease and use the petrolatum or industrial Vaseline if necessary.
- Apply AT fluid to all of the components.
- Do not use the cotton gloves. Use paper towel or nylon fabric.

- After reassembling the valve body, be careful not to insert the dirt and dust into the valve body.

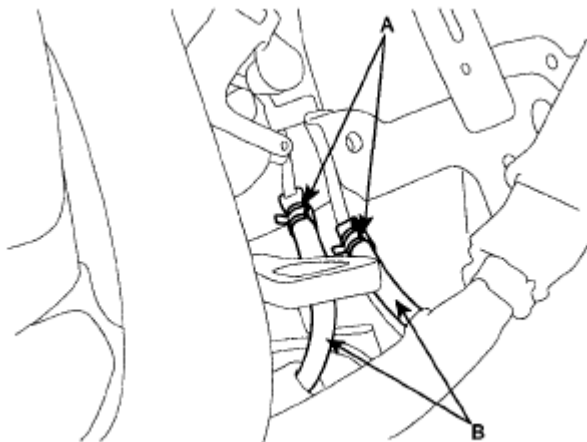
1. Install the damping valve and the damping spring on the outside valve body.



SCMAT6506L

Fig. 155: Locating Damping Valve And Damping Spring On Outside Valve Body
Courtesy of KIA MOTORS AMERICA, INC.

2. Install the two steel balls, spring, strainer on the inside valve body.



SCMAT6013D

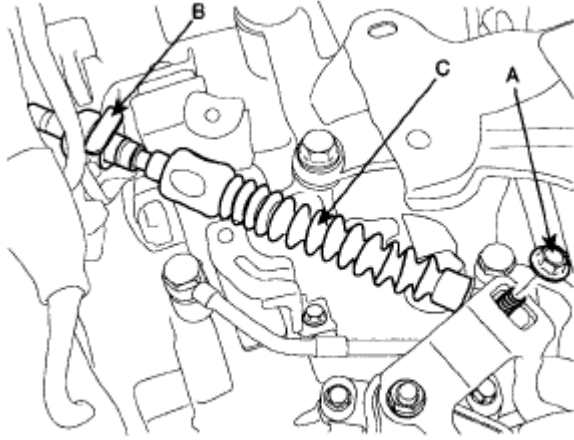
Fig. 156: Locating Steel Balls, Spring, Strainer On Inside Valve Body
Courtesy of KIA MOTORS AMERICA, INC.

3. Install the control valve on the valve body.
4. Tighten the valve body bolts.

A : 6 X 60 (19EA), B : 6 X 55 (1EA), C : 6X 70 (4EA)

TORQUE :

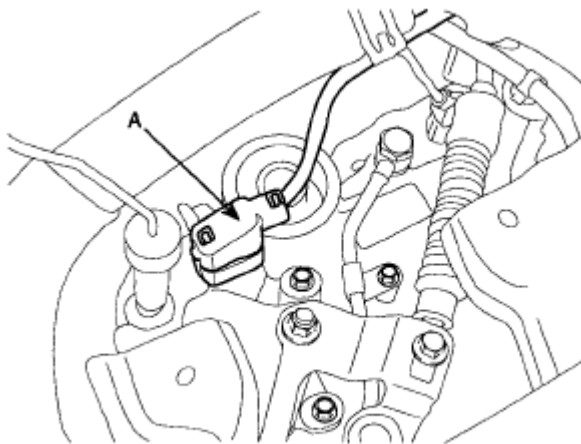
10 ~ 12Nm(100~120 kgf.cm, 7~8lb-ft)



SCMAT6012D

Fig. 157: Locating Valve Body Bolts
Courtesy of KIA MOTORS AMERICA, INC.

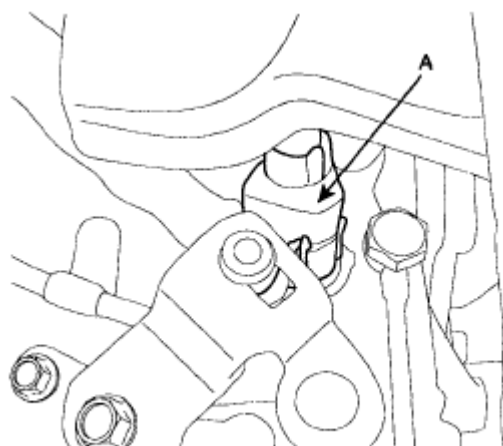
5. Install the solenoid valve assembly(A).
 - A. Prior to assembly, remove the marked parts.



SCMAT6007D

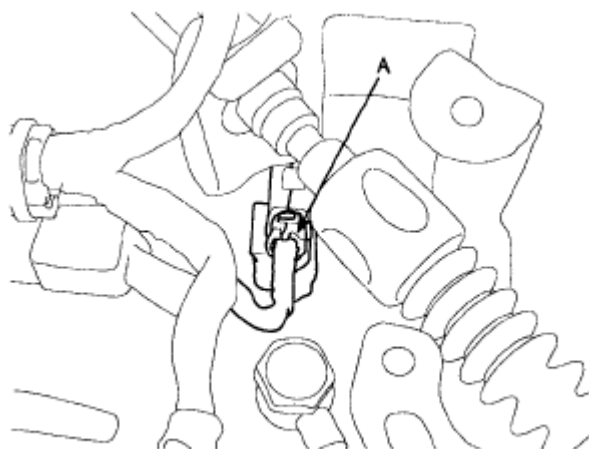
Fig. 158: Locating Solenoid Valve Assembly
Courtesy of KIA MOTORS AMERICA, INC.

6. Install the main harness(A) on the valve body.



SCMAT6008D

Fig. 159: Installing Main Harness On Valve Body (1 Of 2)
Courtesy of KIA MOTORS AMERICA, INC.



SCMAT6009D

Fig. 160: Installing Main Harness On Valve Body (2 Of 2)
Courtesy of KIA MOTORS AMERICA, INC.

CLUTCH & BRAKE

UNDERDRIVE CLUTCH

Components and Components Location

COMPONENTS

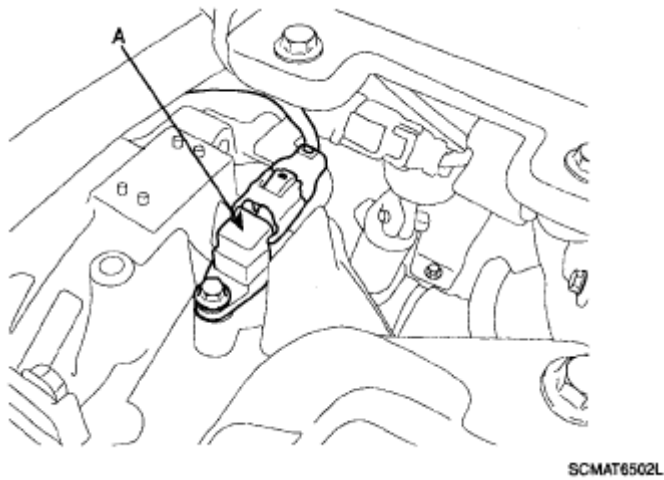


Fig. 161: Identifying Underdrive Clutch Components And Components Location
 Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

1. Remove the input shaft snap ring(A).

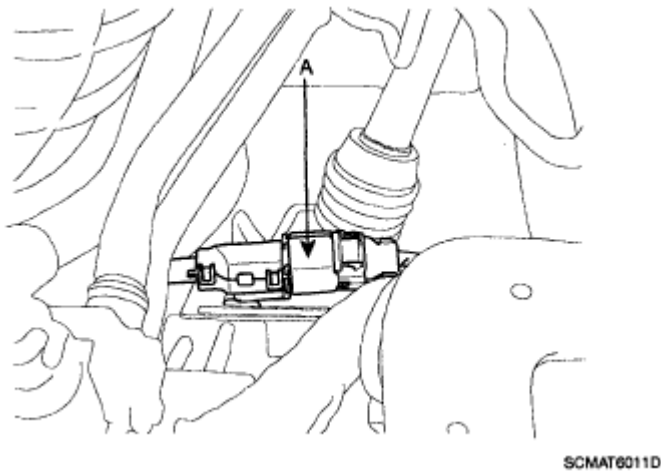
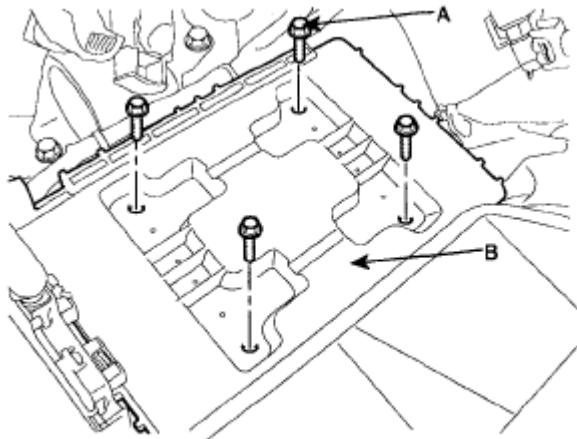


Fig. 162: Removing Input Shaft Snap Ring
 Courtesy of KIA MOTORS AMERICA, INC.

2. Remove the input shaft(A).

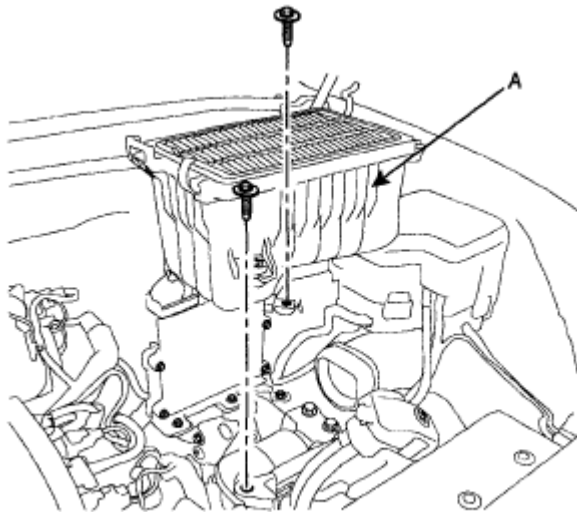


SCMAT6006D

Fig. 163: Locating Input Shaft

Courtesy of KIA MOTORS AMERICA, INC.

3. Remove the two seal rings.
4. Remove the clutch reaction plate snap(A).

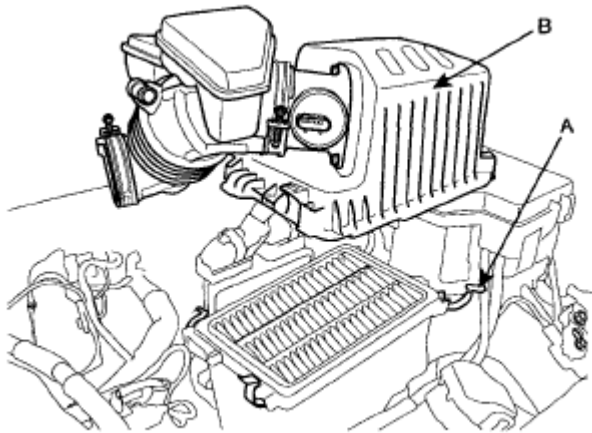


SCMAT8005D

Fig. 164: Locating Clutch Reaction Plate Snap

Courtesy of KIA MOTORS AMERICA, INC.

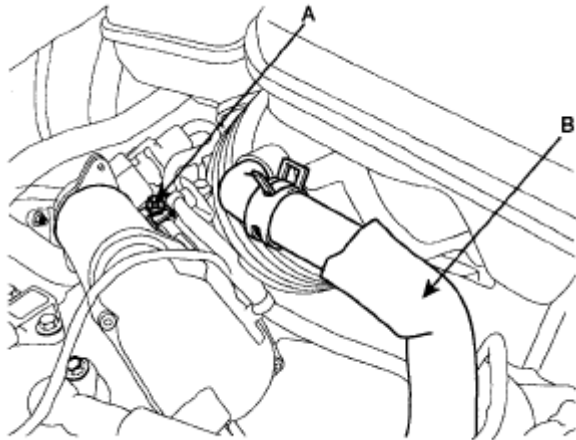
5. Disassemble the clutch reaction plate.
6. Disassemble the three clutch discs and three plates.
7. Using the special tool(09453-4C300), remove the underdrive clutch piston snap ring(A).



SCMAT6004D

Fig. 165: Removing Underdrive Clutch Piston Snap Ring Using Special Tool (09453-4C300)
Courtesy of KIA MOTORS AMERICA, INC.

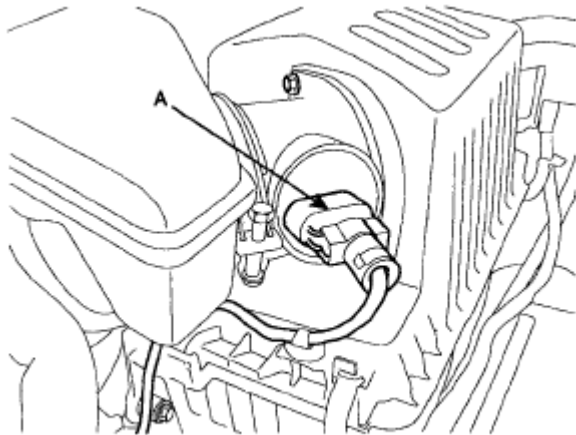
8. Using air pressure, remove the under drive clutch piston(A).



SCMAT6003D

Fig. 166: Locating Under Drive Clutch Piston
Courtesy of KIA MOTORS AMERICA, INC.

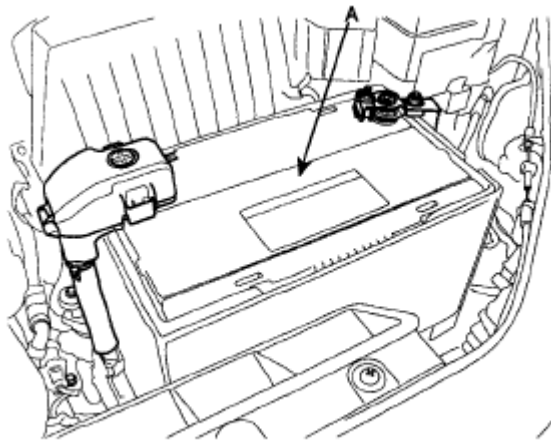
9. Disassemble the two underdrive clutch piston D-rings.
10. Remove the clutch return spring(A).



SCMAT6002D

Fig. 167: Locating Clutch Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

11. Remove the underdrive clutch spring retainer(A).



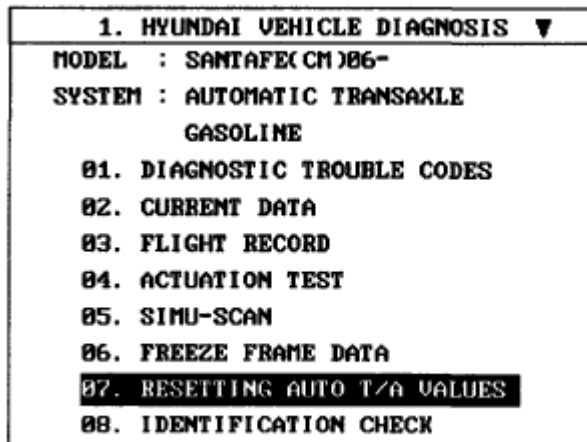
SCMAT6001D

Fig. 168: Locating Underdrive Clutch Spring Retainer
Courtesy of KIA MOTORS AMERICA, INC.

12. Disassemble the two underdrive clutch spring D-rings.

REASSEMBLY

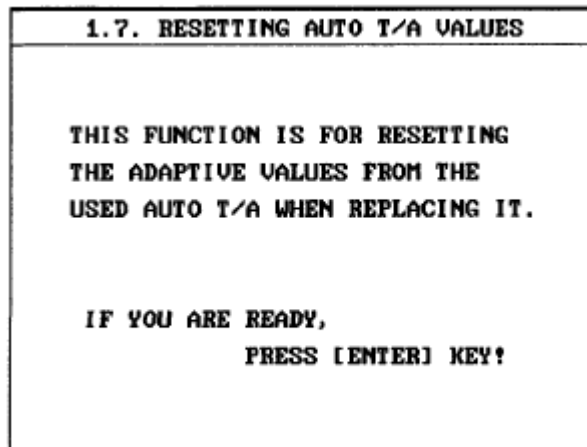
1. Assemble the two underdrive clutch spring D-rings.
2. Install the under driveclutch spring retainer(A).



SCMAT6511L

Fig. 169: Locating Under Driveclutch Spring Retainer
Courtesy of KIA MOTORS AMERICA, INC.

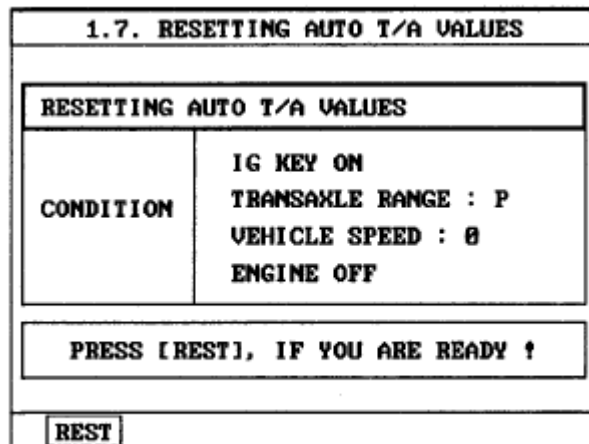
3. Assemble the two underdrive clutch piston D-rings.
4. Install the under driveclutch piston(A).



SCMAT6512L

Fig. 170: Locating Under Driveclutch Piston
Courtesy of KIA MOTORS AMERICA, INC.

5. Using the special tool(09453-4C300), install the underdrive clutch piston snap ring(A).



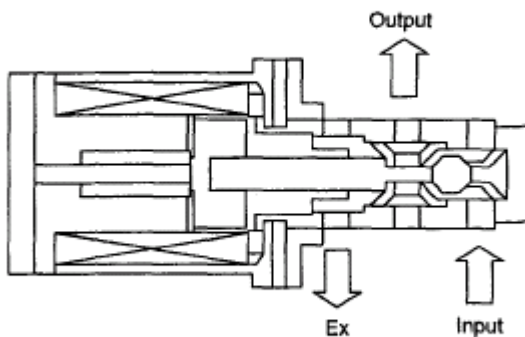
SCMAT6513L

Fig. 171: Installing Underdrive Clutch Piston Snap Ring Using Special Tool (09453-4C300)
Courtesy of KIA MOTORS AMERICA, INC.

6. Assemble the clutch plate, clutch disc and clutch reaction plate.

CAUTION: Align the two tooth of the clutch plate, clutch disc and clutch reaction plate with two holes of the underdrive clutch as shown below illustration.

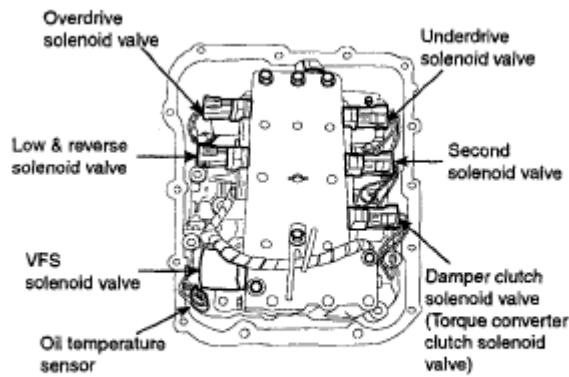
(LR, 2ND, UD, OD, DCC)



EKRF018J

Fig. 172: Aligning Two Tooth Of Clutch Plate, Clutch Disc And Clutch Reaction Plate With Two Holes Of Underdrive Clutch
Courtesy of KIA MOTORS AMERICA, INC.

7. Install the clutch reaction plate.
8. Install the clutch reaction plate snap ring(A).

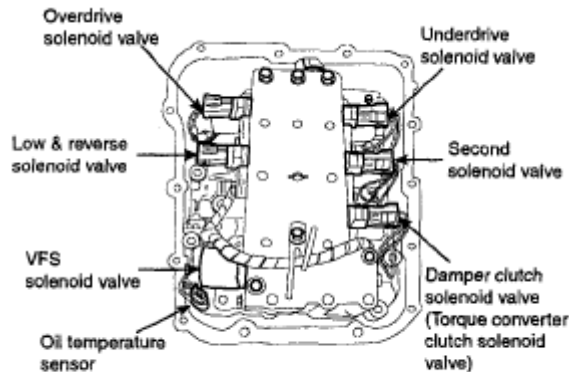


EKRF018K

Fig. 173: Locating Clutch Reaction Plate Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

9. Measure the end play between the snap ring and the reaction plate with 245.17kPa(2.5 Bar, 35.56psi) air pressure and 1200N(120kgf) weight applied.

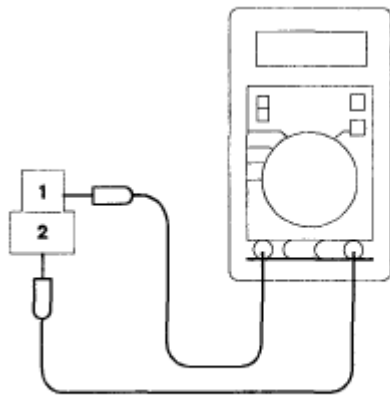
Standard value : 0.047 ~ 0.055in(1.2 ~ 1.4mm)



EKRF018K

Fig. 174: Measuring End Play Between Snap Ring And Reaction Plate With 245.17kPa(2.5 Bar, 35.56psi) Air Pressure And 1200N(120kgf) Weight Applied
Courtesy of KIA MOTORS AMERICA, INC.

10. If the end play is not within the standard value, choose the suitable snap ring.
11. Install the two seal rings on in the input shaft.
12. Assemble the input shaft(A) in the under driveclutch assembly.



EKRF011B

Fig. 175: Locating Input Shaft In Under Driveclutch Assembly
Courtesy of KIA MOTORS AMERICA, INC.

13. Install the input shaft snap(A).



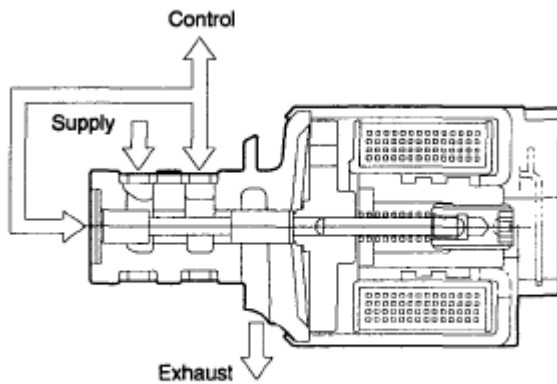
EKRF011C

Fig. 176: Installing Input Shaft Snap
Courtesy of KIA MOTORS AMERICA, INC.

REVERSE AND OVERDRIVE CLUTCH

Components and Components Location

COMPONENTS



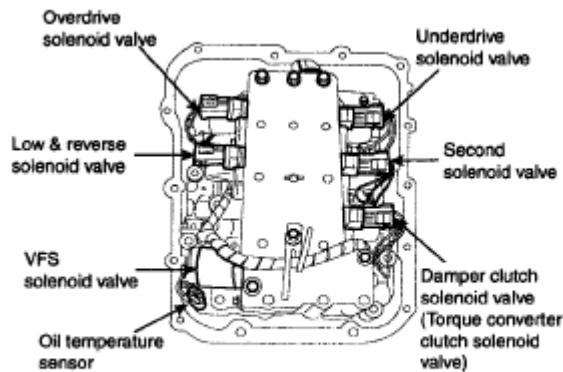
EKRF082A

Fig. 177: Identifying Reverse And Overdrive Clutch Components And Components Location
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

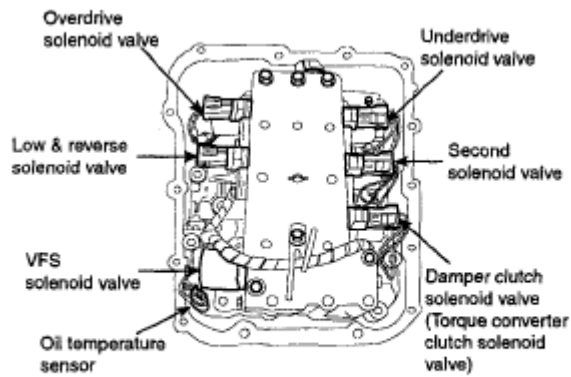
1. Remove the reverse clutch reaction plate snap ring(A).



EKRF018K

Fig. 178: Locating Reverse Clutch Reaction Plate Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

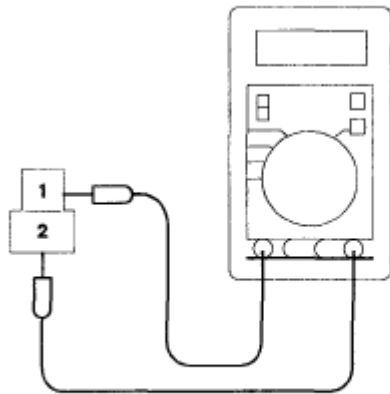
2. Remove the reverse reaction plate.
3. Remove the three reverse clutch discs and the three plates.
4. Remove the over drive reaction plate snap ring(A).



EKRF018K

Fig. 179: Locating Over Drive Reaction Plate Snap Ring
 Courtesy of KIA MOTORS AMERICA, INC.

5. Remove the overdrive reaction plate.
6. Remove the four overdrive clutch discs and the four plates.
7. Using the special tool(09453-4C300), remove the clutch spring retainer snap ring(A).



EKRF011B

Fig. 180: Removing Clutch Spring Retainer Snap Ring Using Special Tool (09453-4C300)
 Courtesy of KIA MOTORS AMERICA, INC.

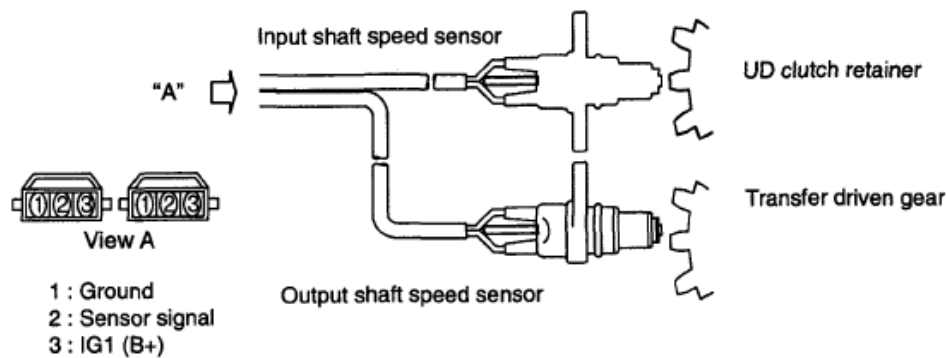
8. Remove the clutch spring retainer.



EKRF011C

Fig. 181: Removing Clutch Spring Retainer
Courtesy of KIA MOTORS AMERICA, INC.

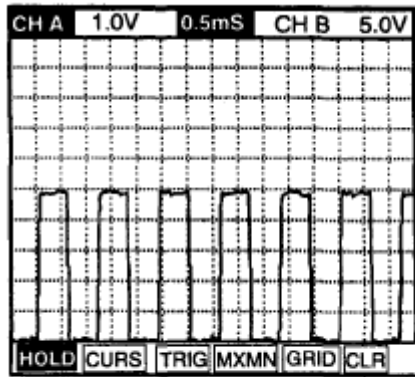
9. Remove the D-ring from the clutch spring retainer.
10. Remove the clutch return spring(A).



EKRF018A

Fig. 182: Locating Clutch Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

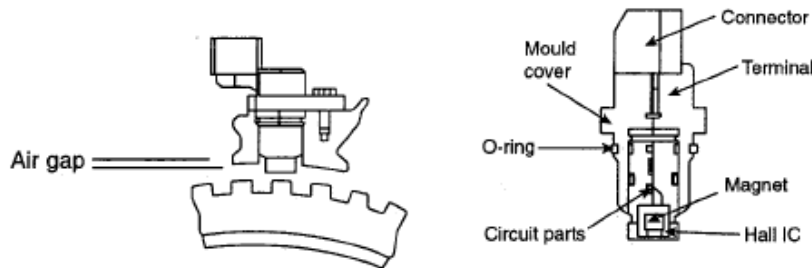
11. Using air pressure, remove the overdrive clutch piston(A).



EKR018B

Fig. 183: Locating Overdrive Clutch Piston
Courtesy of KIA MOTORS AMERICA, INC.

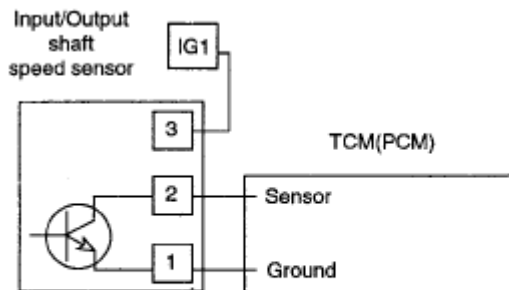
12. Disassemble the D-ring.
13. Remove the reverse clutch piston(A).



EKR018E

Fig. 184: Locating Reverse Clutch Piston
Courtesy of KIA MOTORS AMERICA, INC.

14. Remove the two D-rings from the reverse clutch retainer.

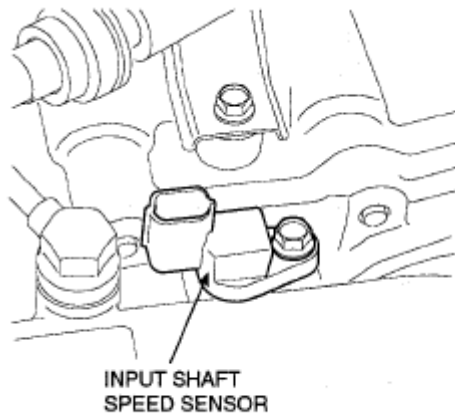


EKR018C

Fig. 185: Locating D-Rings Of Reverse Clutch Retainer
Courtesy of KIA MOTORS AMERICA, INC.

REASSEMBLY

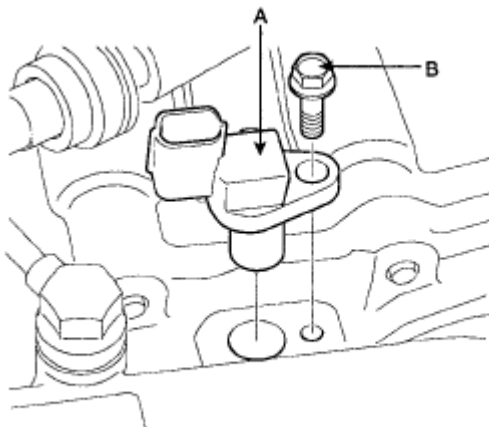
1. Assemble the two D-rings on the reverse clutch retainer.



EKRF018D

Fig. 186: Locating D-Rings Of Reverse Clutch Retainer
Courtesy of KIA MOTORS AMERICA, INC.

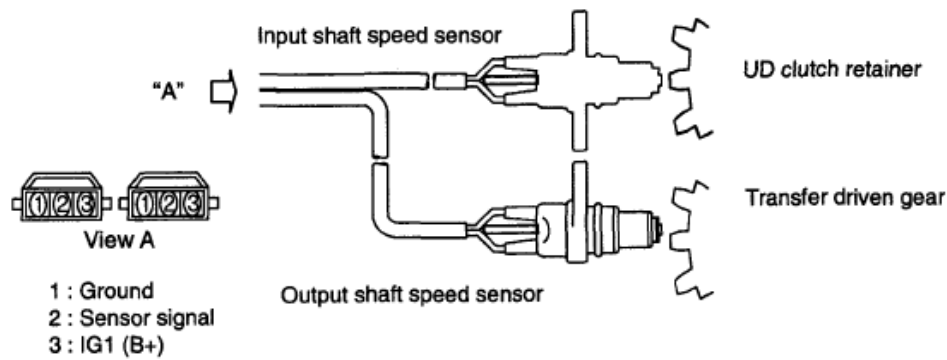
2. Install the reverse clutch piston(A).



EKRF009F

Fig. 187: Locating Reverse Clutch Piston
Courtesy of KIA MOTORS AMERICA, INC.

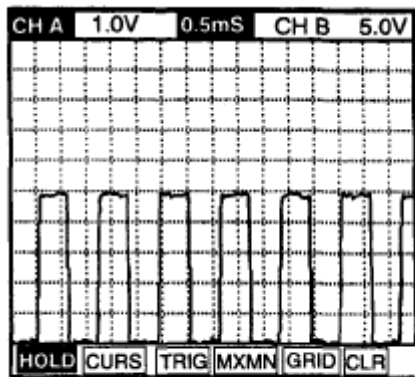
3. Assemble the two D-rings.
4. Install the overdrive clutch piston(A).



EKRFO18A

Fig. 188: Locating Overdrive Clutch Piston
Courtesy of KIA MOTORS AMERICA, INC.

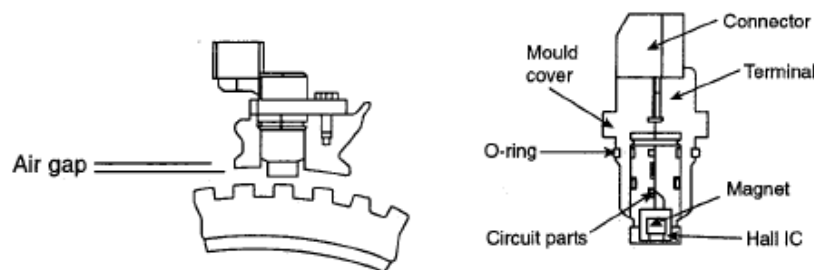
5. Install the clutch return spring(A).



EKRFO18B

Fig. 189: Locating Clutch Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

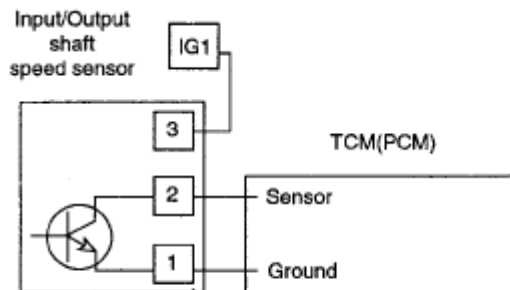
6. Assemble the two D-rings in the clutch spring retainer.
7. Install the clutch spring retainer.



EKRFO18E

Fig. 190: Locating Clutch Spring Retainer
Courtesy of KIA MOTORS AMERICA, INC.

8. Using the special tool(09453-4C300), install the clutch spring retainer snap ring(A).



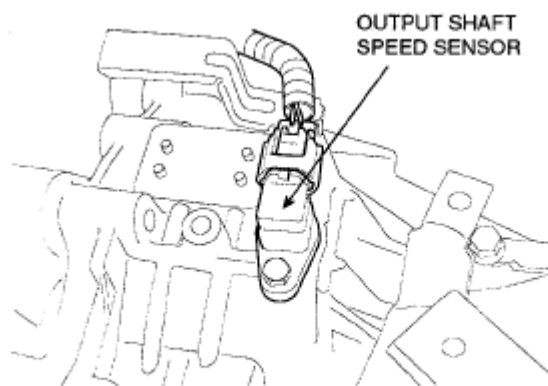
EKRF018C

Fig. 191: Installing Clutch Spring Retainer Snap Ring Using Special Tool(09453-4C300)
Courtesy of KIA MOTORS AMERICA, INC.

9. Applying 49N(5Kgf,11lbf) weight on the return spring retainer, measure the end play. If the measured value is not within the standard value, choose the suitable snap ring.

Standard value :

0~0.0035in(0 ~ 0.09 mm)



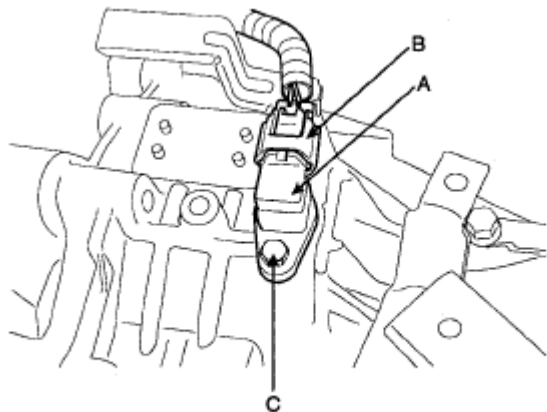
EKRF018F

Fig. 192: Measuring End Play Applying 49N(5Kgf,11lbf) Weight On Return Spring Retainer
Courtesy of KIA MOTORS AMERICA, INC.

NOTE: Soak the clutch disc in ATF sufficiently before assembly.

10. Install the four overdrive discs and the four plates.

11. Install the overdrive reaction plate.
12. Install the snap ring(A).



EKRF010A

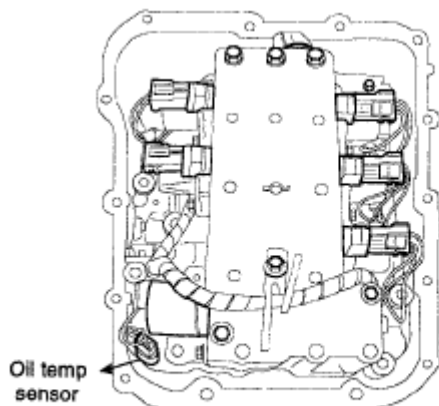
Fig. 193: Locating Snap Ring

Courtesy of KIA MOTORS AMERICA, INC.

13. Measure the end play between the overdrive clutch reaction plate and snap ring with 49N(5Kgf,11lbf) weight and 245.17kPa(2.5 Bar, 35.56psi) air pressure applied. If the measured value is not within the standard value, choose the suitable snap ring.

Standard value :

0.027~0.05in(0.7 ~ 0.9 mm)



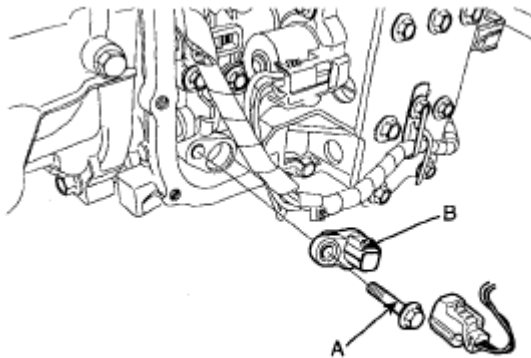
EKRF018G

Fig. 194: Measuring End Play Between Overdrive Clutch Reaction Plate And Snap Ring With 49N (5Kgf,11lbf) Weight And 245.17kPa(2.5 Bar, 35.56psi) Air Pressure Applied

Courtesy of KIA MOTORS AMERICA, INC.

14. Align the teeth of the clutch plate, the clutch disc and the clutch reaction plate(**Fig. 195**) and the hole of

the reverse clutch retainer(**Fig. 195**) and then assemble them.



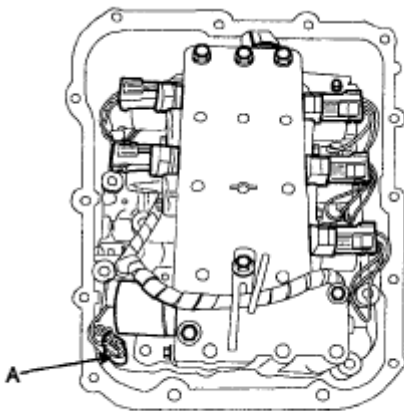
EKRF009C

Fig. 195: Aligning Teeth Of Clutch Plate, Clutch Disc And Clutch Reaction Plate And Hole Of Reverse Clutch Retainer

Courtesy of KIA MOTORS AMERICA, INC.

15. Install the three reverse clutch discs and the three plates.
16. Install the reverse clutch reaction plate.
17. Install the snap ring(A).

CAUTION: Install the snap ring to reverse the each aperture direction of snap ring.



EKRF009D

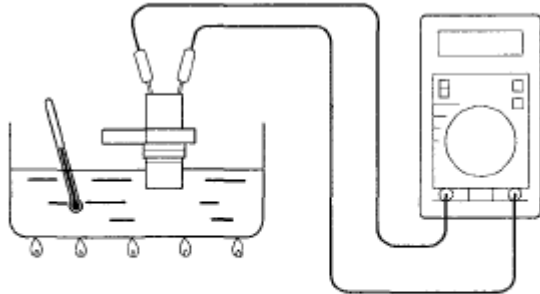
Fig. 196: Locating Snap Ring

Courtesy of KIA MOTORS AMERICA, INC.

18. Applying 1,200N(120Kgf) weight and 3.5 Bar pressure on the plates and discs of the overdrive clutch reaction, measure the end play. If the measured value is not within the standard value, choose the suitable snap ring.

Standard value :

0.047~0.055in(1.2 ~ 1.4 mm)



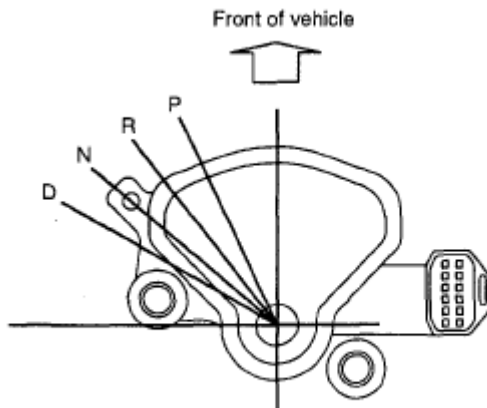
EKRF009E

Fig. 197: Measuring End Play Applying 1,200N(120Kgf) Weight And 3.5 Bar Pressure On Plates And Discs Of Overdrive Clutch Reaction
Courtesy of KIA MOTORS AMERICA, INC.

SECOND BRAKE

Components and Components Location

COMPONENTS



EKRF018H

Fig. 198: Identifying Second Brake Components
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

1. Using air pressure, remove the underdrive clutch piston(A).

Range	Terminal Number									
	1	2	3	4	5	6	7	8	9	10
P			○	—				○	○	○
R							○	○		
N				○	—			○	○	○
D	○	—						○		

EKRF018I

Fig. 199: Removing Underdrive Clutch Piston Using Air Pressure
 Courtesy of KIA MOTORS AMERICA, INC.

REASSEMBLY

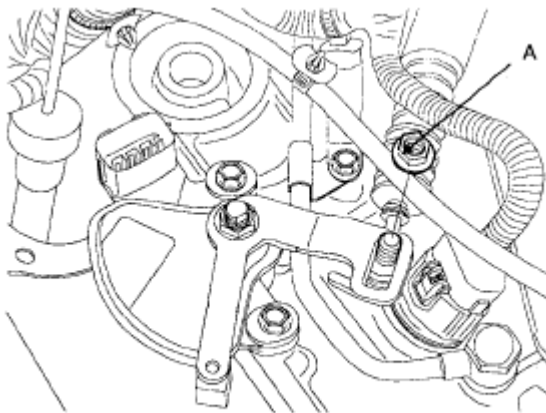
1. Install the D-ring.

Apply ATF or white Vaseline on the D-ring and install it carefully not to damage it.

LOW AND REVERSE BRAKE

Components and Components Location

COMPONENTS



EKRF006E

Fig. 200: Identifying Low And Reverse Brake Components
 Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

REASSEMBLY

1. Install the D-ring.

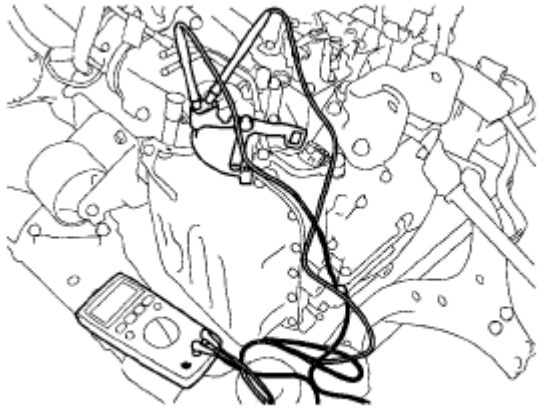
Apply ATF or white Vaseline on the D-ring and be careful not to damage when installing it.

GEAR SYSTEM

PLANETARY GEAR

Components and Components Location

COMPONENTS



EKR008F

Fig. 201: Identifying Planetary Gear Components
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

Disassembly

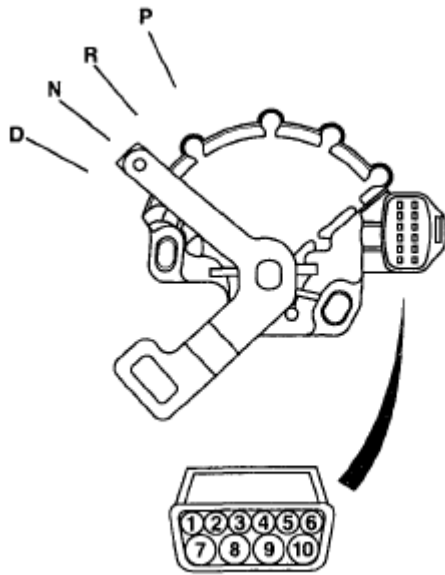
1. Remove the stopper plate(A).

Range	Terminal Number									
	1	2	3	4	5	6	7	8	9	10
P			○	—				○	○	○
R							○	○		
N				○	—			○	○	○
D	○	—						○		

EKR008G

Fig. 202: Locating Stopper Plate
Courtesy of KIA MOTORS AMERICA, INC.

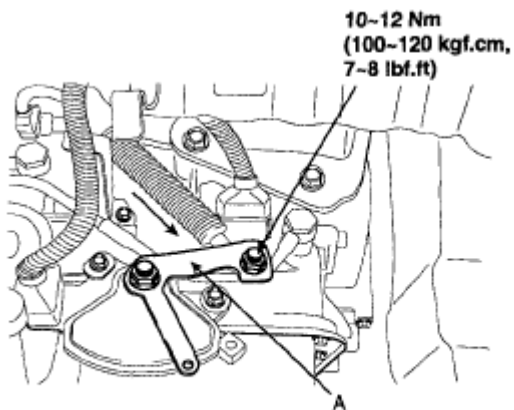
2. Remove the one way clutch(A).



EKRF008H

Fig. 203: Locating One Way Clutch
Courtesy of KIA MOTORS AMERICA, INC.

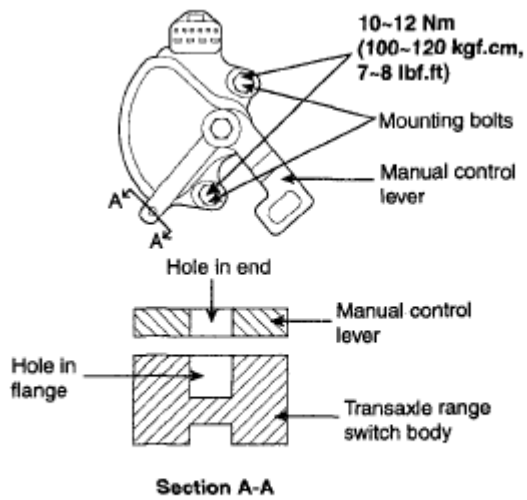
3. Remove the output carrier(A).



EKRF009A

Fig. 204: Locating Output Carrier
Courtesy of KIA MOTORS AMERICA, INC.

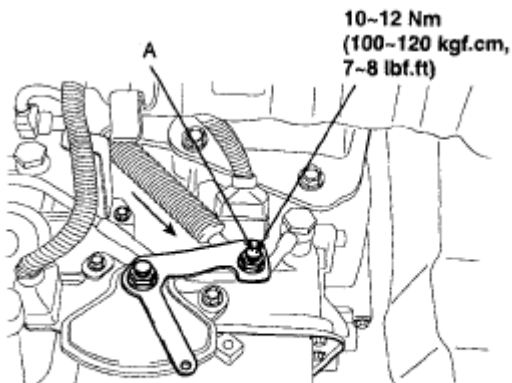
4. Remove the thrust bearing(A).



EKRF008B

Fig. 205: Locating Thrust Bearing
Courtesy of KIA MOTORS AMERICA, INC.

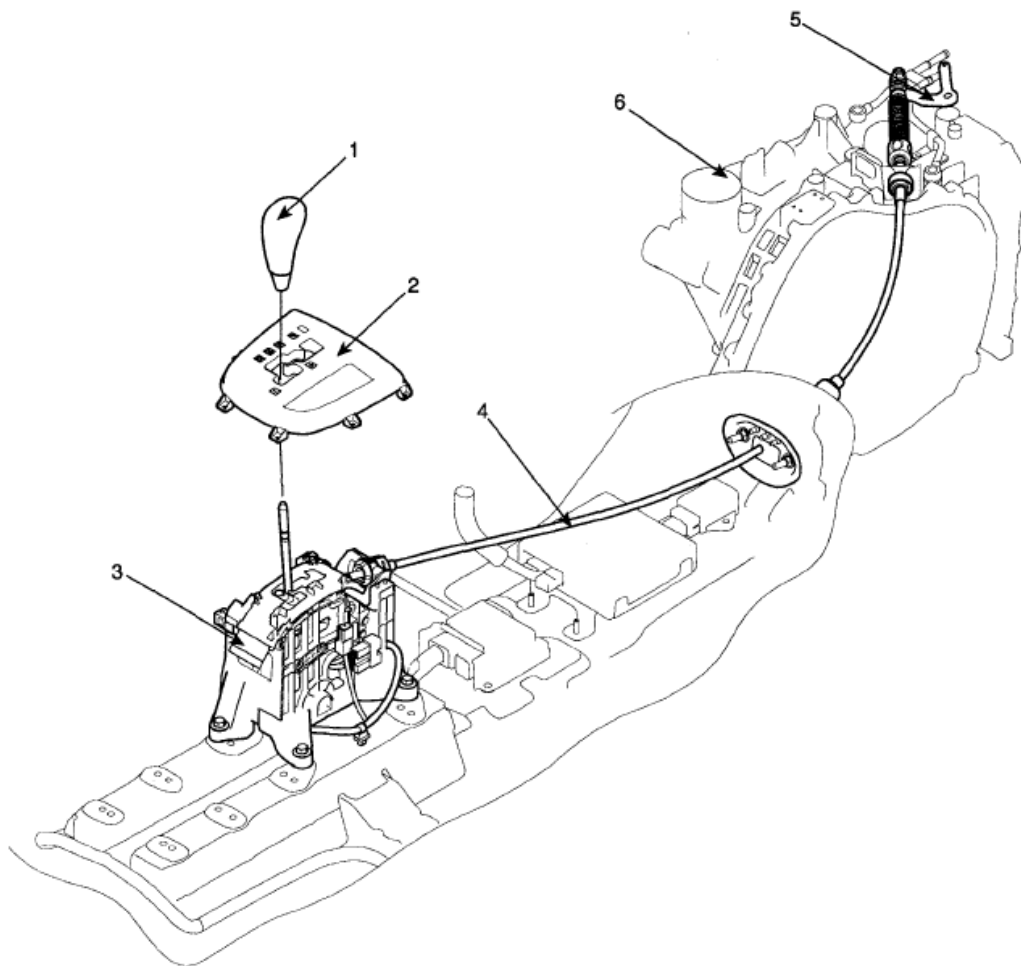
5. Remove the underdrive sun gear(A).



EKRF090A

Fig. 206: Locating Underdrive Sun Gear
Courtesy of KIA MOTORS AMERICA, INC.

6. Remove the thrust bearing(A) from the overdrive carrier.



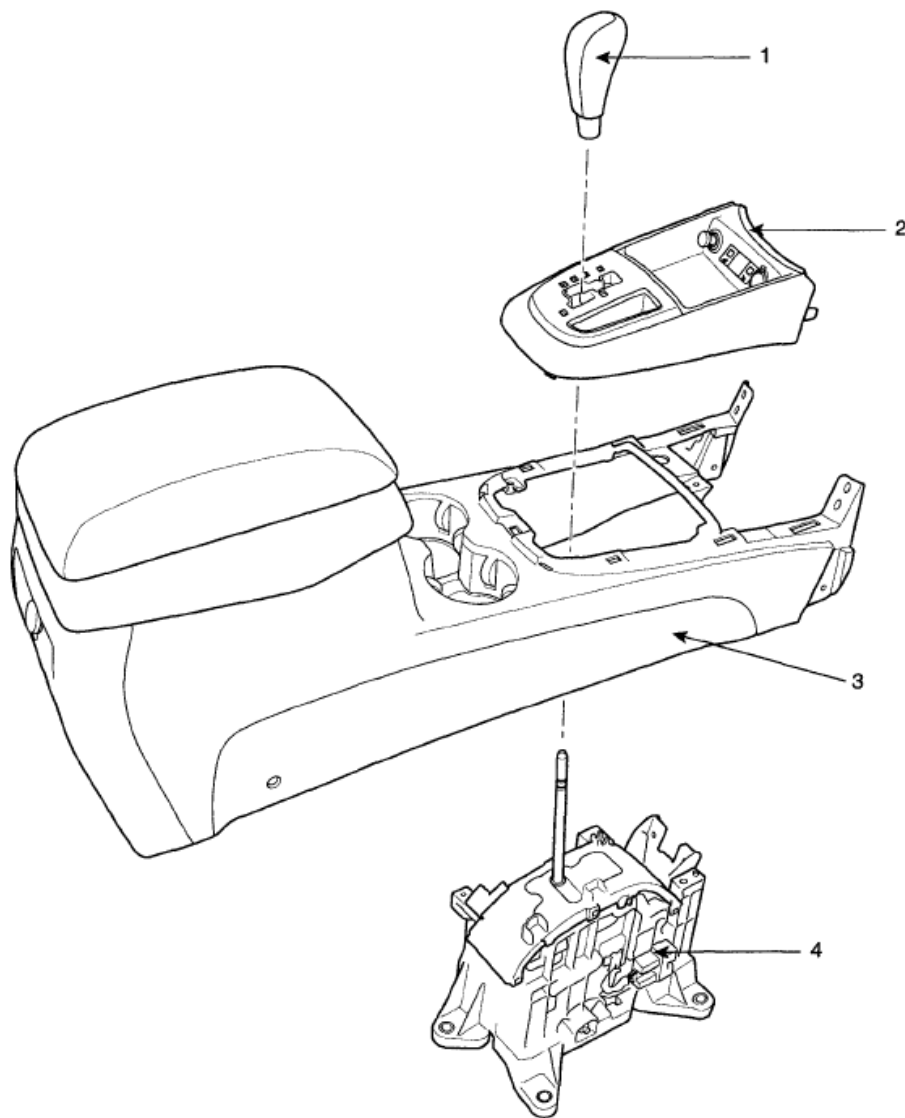
- 1. Shift lever knob
- 2. Indicator assembly
- 3. Shift lever assembly

- 4. Control cable assembly
- 5. Shift lever assembly (AT side)
- 6. Automatic transaxle assembly

SCMAT6507N

Fig. 207: Locating Thrust Bearing On Overdrive Carrier
 Courtesy of KIA MOTORS AMERICA, INC.

- 7. Remove the snap ring(A).
- 8. Remove the overdrive carrier(B) from the Low & reverse annulus gear.



- 1. Shift lever knob
- 2. Center console cover

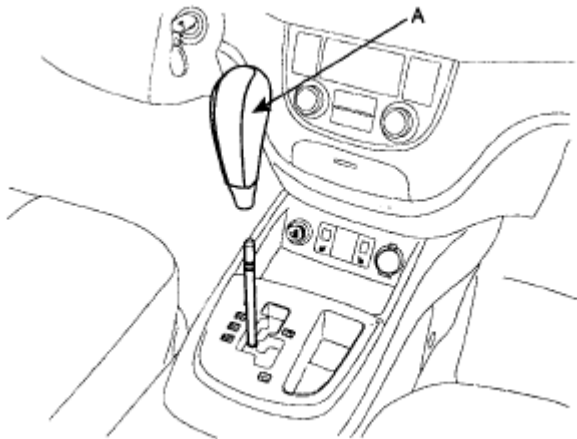
- 3. Center console
- 4. Shift lever

SCMAT6508N

Fig. 208: Locating Snap Ring And Overdrive Carrier
 Courtesy of KIA MOTORS AMERICA, INC.

REASSEMBLY

1. Install the overdrive carrier(B) on the & reverse annulus gear.

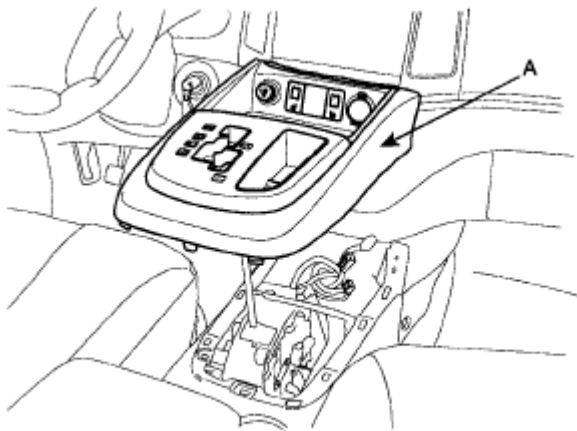


SCMAT6022D

Fig. 209: Locating Overdrive Carrier On & Reverse Annulus Gear
Courtesy of KIA MOTORS AMERICA, INC.

2. Install the snap ring(A).
3. Install the thrust bearing(A) on the Low & reverse annulus gear.

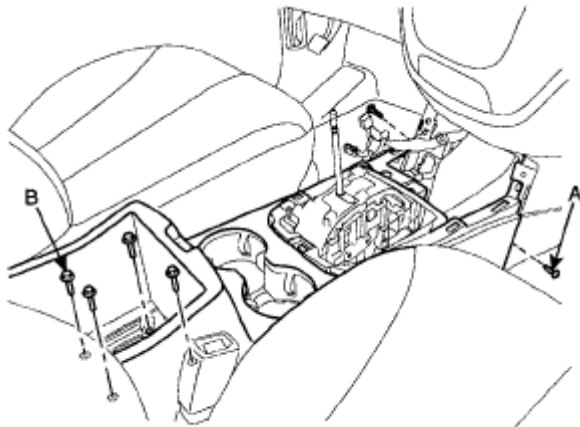
CAUTION: Be careful not to reverse the direction of the thrust bearing.



SCMAT6023D

Fig. 210: Locating Thrust Bearing On Low & Reverse Annulus Gear
Courtesy of KIA MOTORS AMERICA, INC.

4. Install the undersdrive sun gear(A).

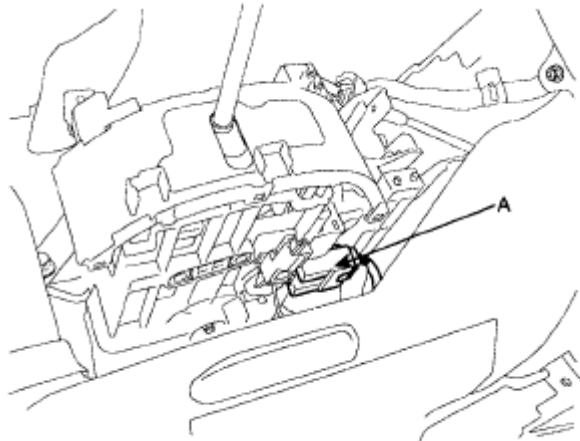


SCMAT6024D

Fig. 211: Locating Undersdrive Sun Gear
Courtesy of KIA MOTORS AMERICA, INC.

5. Install the thrust bearing(A) on the Low & reverse annulus gear.

CAUTION: Be cautions to the direction of the thrust bearing.



SCMAT6025D

Fig. 212: Locating Thrust Bearing On Low & Reverse Annulus Gear
Courtesy of KIA MOTORS AMERICA, INC.

6. Install the output carrier(A).

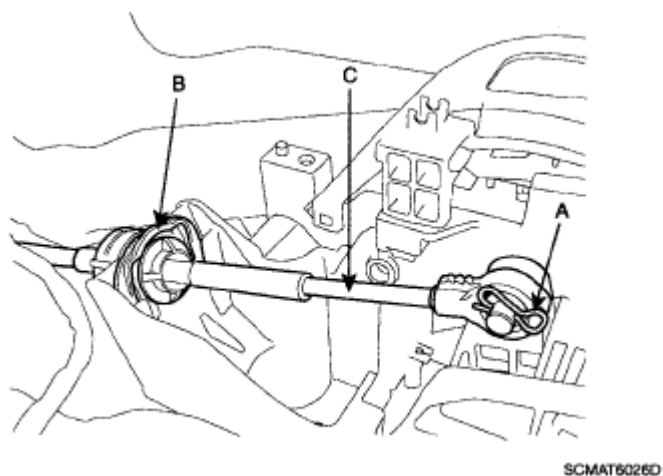


Fig. 213: Locating Output Carrier
Courtesy of KIA MOTORS AMERICA, INC.

7. Install the one way clutch(A).

CAUTION: Be careful not to reverse the direction of the one way clutch.

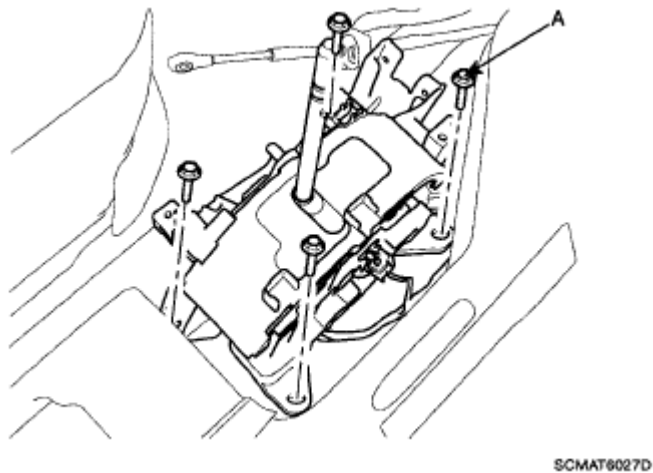
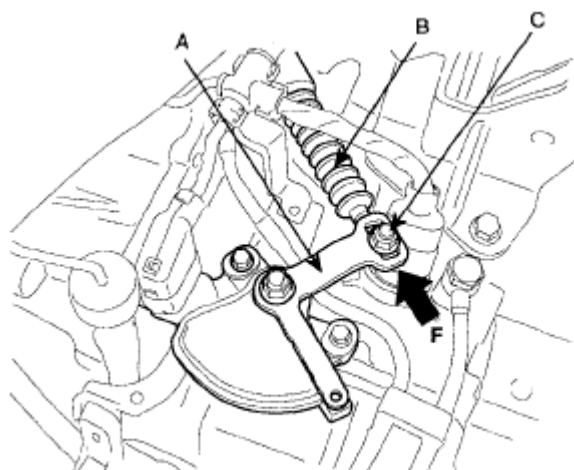


Fig. 214: Locating One Way Clutch
Courtesy of KIA MOTORS AMERICA, INC.

8. Install the stopper plate(A).



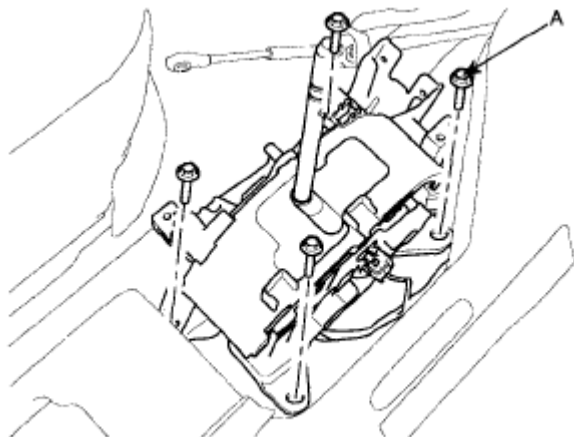
LKLG002B

Fig. 215: Locating Stopper Plate
Courtesy of KIA MOTORS AMERICA, INC.

TRANSFER DRIVE GEAR

Components and Components Location

COMPONENTS



SCMAT6027D

Fig. 216: Identifying Transfer Drive Gear Components
Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

1. Cock the lock nut only enough to turn.

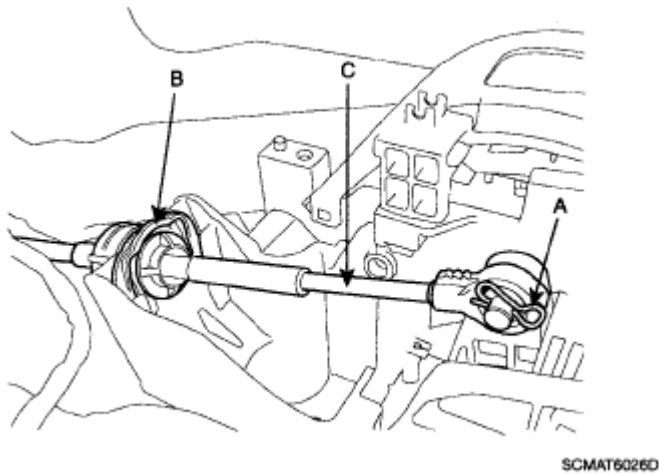


Fig. 217: Cocking Lock Nut
 Courtesy of KIA MOTORS AMERICA, INC.

2. Remove the lock nut(A).

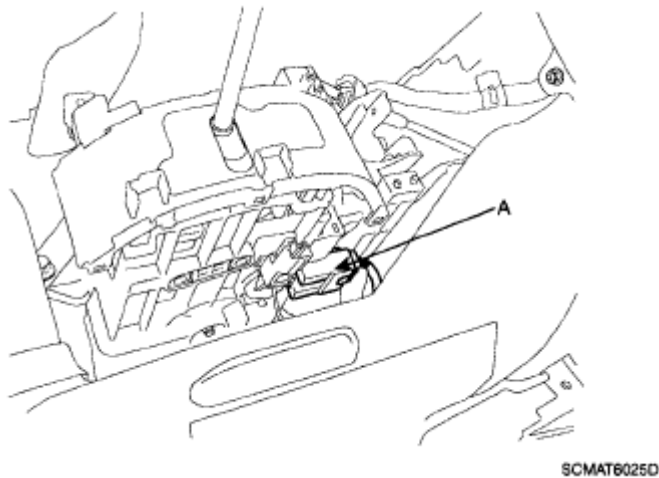
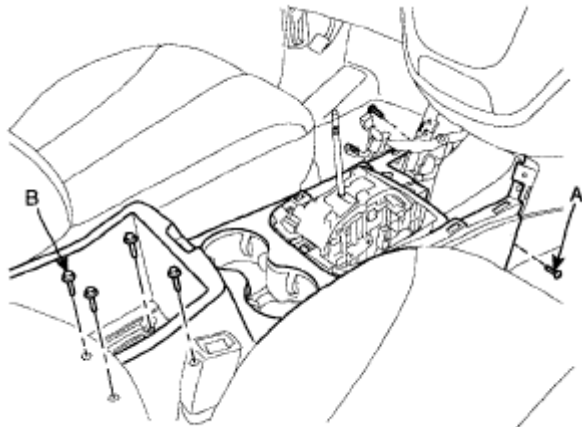


Fig. 218: Removing Lock Nut
 Courtesy of KIA MOTORS AMERICA, INC.

3. Remove the taper roller bearing.
4. Remove the transfer drive gear bearing bracket(A).



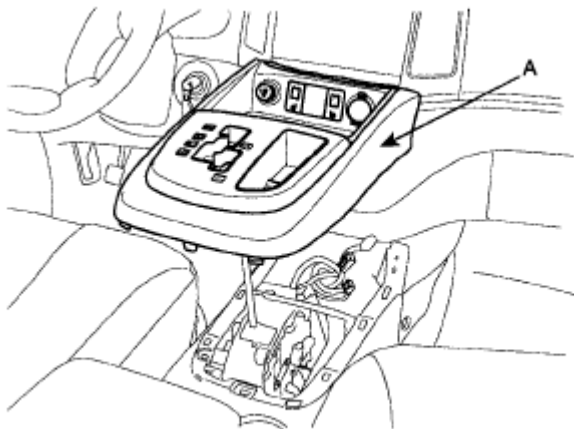
SCMA76024D

Fig. 219: Locating Transfer Drive Gear Bearing Bracket
 Courtesy of KIA MOTORS AMERICA, INC.

5. Remove the taper roller bearing.

REASSEMBLY

1. Press the taper roller bearing(A) into the transfer driver gear.



SCMA76023D

Fig. 220: Locating Taper Roller Bearing
 Courtesy of KIA MOTORS AMERICA, INC.

2. Install the bearing bracket(A).

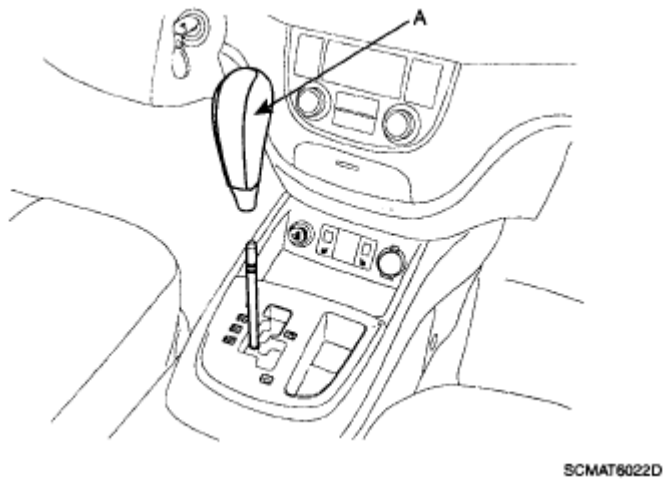


Fig. 221: Locating Bearing Bracket
Courtesy of KIA MOTORS AMERICA, INC.

3. Press the taper roller bearing(A).

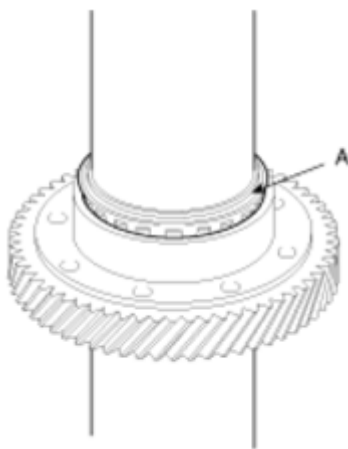
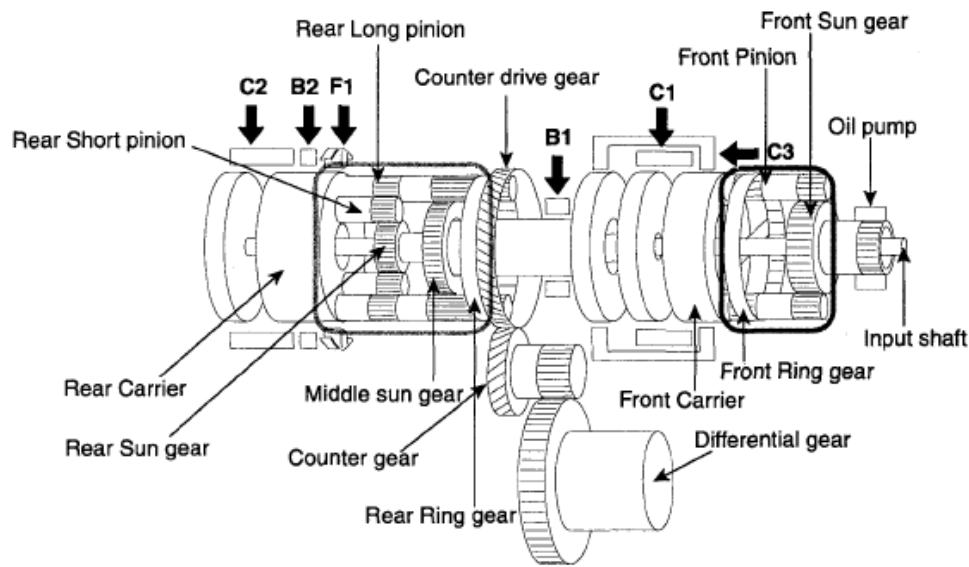


Fig. 222: Locating Taper Roller Bearing
Courtesy of KIA MOTORS AMERICA, INC.

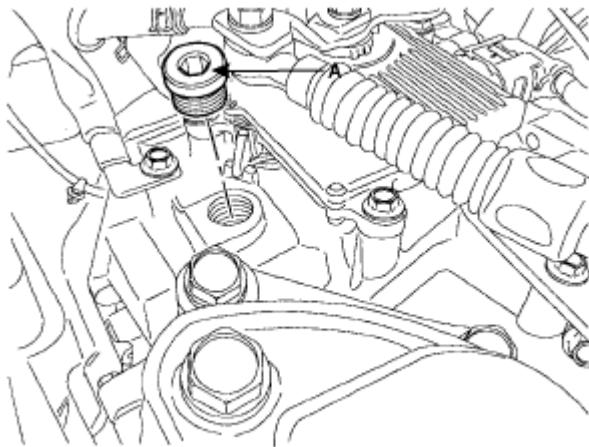
4. Using the torque wrench tighten the lock nut(A).



SENAT7050L

Fig. 223: Tightening Lock Nut Using Torque Wrench
Courtesy of KIA MOTORS AMERICA, INC.

5. Stake the nut with a chisel.



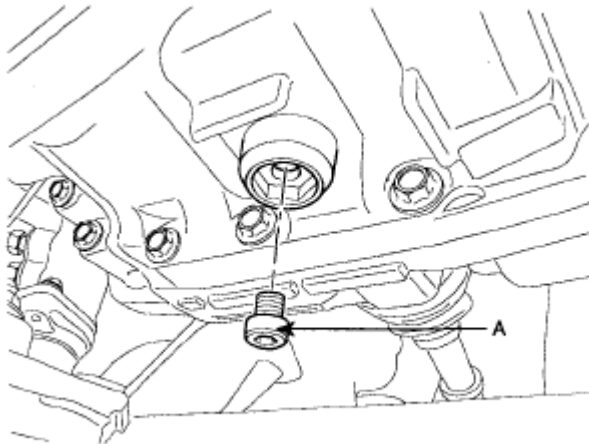
SENAT7061D

Fig. 224: Staking Nut With Chisel
Courtesy of KIA MOTORS AMERICA, INC.

TRANSFER DRIVEN GEAR

Components and Components Location

COMPONENTS



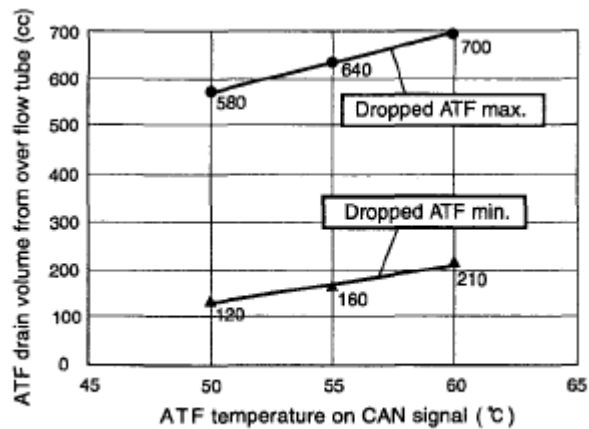
SENAT7060D

Fig. 225: Identifying Transfer Driven Gear Components
 Courtesy of KIA MOTORS AMERICA, INC.

Repair procedures

DISASSEMBLY

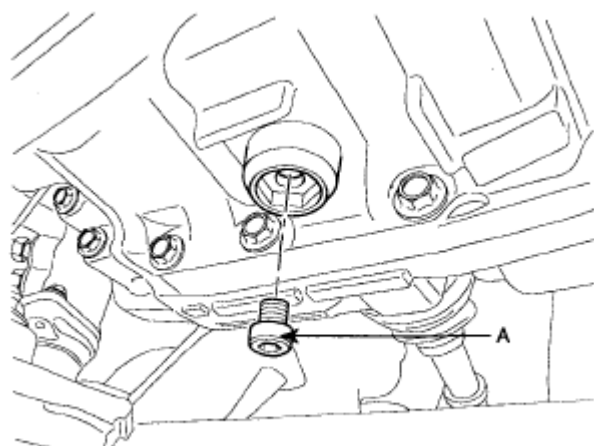
1. Remove the taper roller bearing(A).



SENAT7038L

Fig. 226: Locating Taper Roller Bearing
 Courtesy of KIA MOTORS AMERICA, INC.

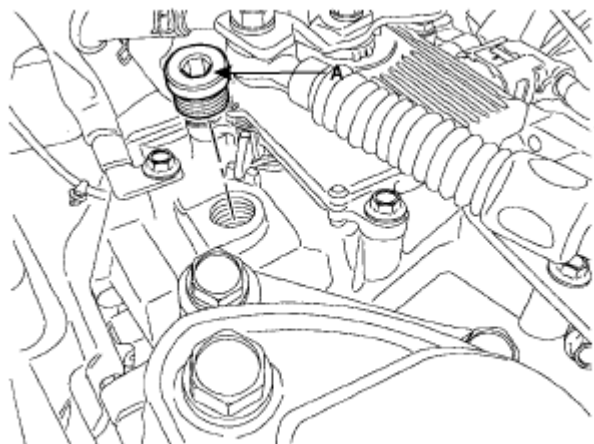
2. Remove the transfer driven gear(A) and shaft(B).



SENAT7060D

Fig. 227: Locating Transfer Driven Gear And Shaft
Courtesy of KIA MOTORS AMERICA, INC.

3. Remove the cap seal(A) from the shaft.



SENAT7061D

Fig. 228: Locating Cap Seal On Shaft
Courtesy of KIA MOTORS AMERICA, INC.

REASSEMBLY

1. Install the cap seal(A) on the output shaft.

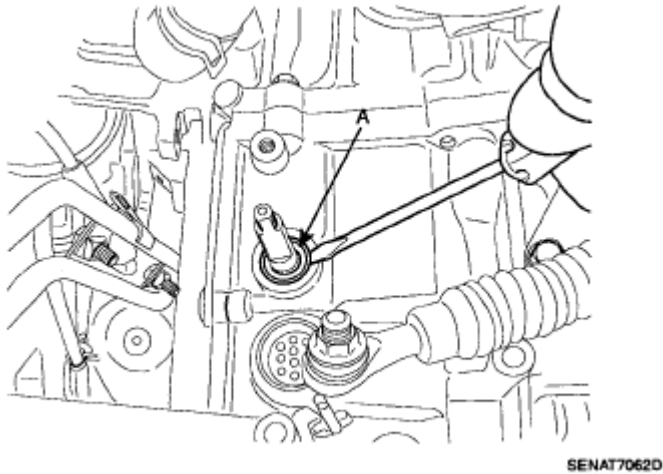


Fig. 229: Locating Cap Seal On Output Shaft
Courtesy of KIA MOTORS AMERICA, INC.

2. Press the transfer driven gear(A) and shaft(B).

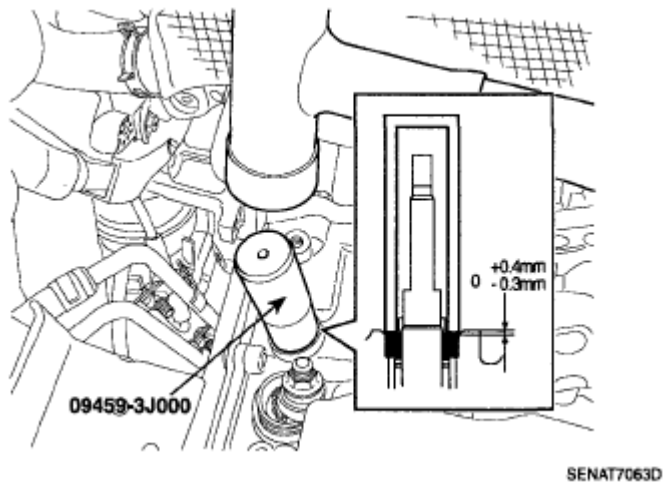
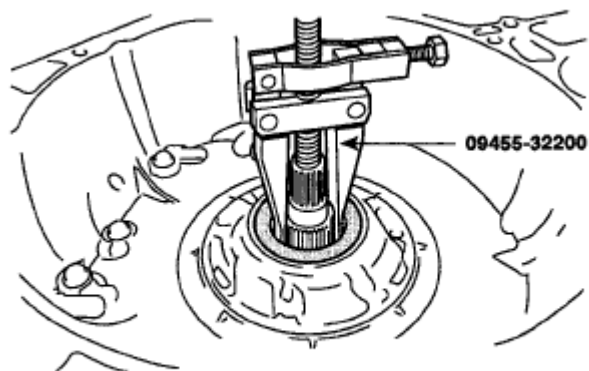


Fig. 230: Locating Transfer Driven Gear And Shaft
Courtesy of KIA MOTORS AMERICA, INC.

3. Using the special tool(09453-2F100), press the taper roller bearing (A).



SENAT7064D

Fig. 231: Pressing Taper Roller Bearing Using Special Tool (09453-2F100)
Courtesy of KIA MOTORS AMERICA, INC.