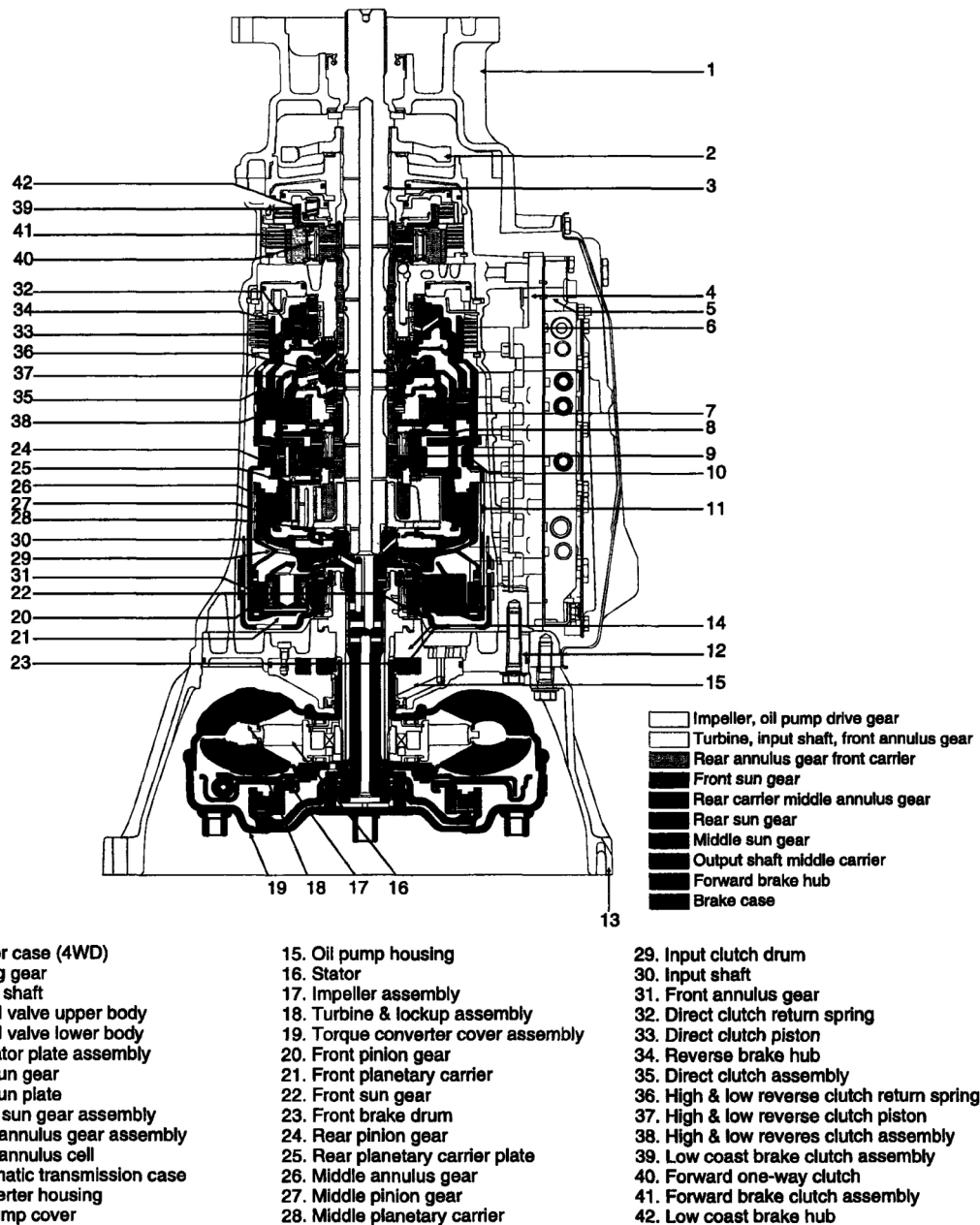


2005-06 TRANSMISSION

Automatic Transaxle - Sorento

COMPONENTS

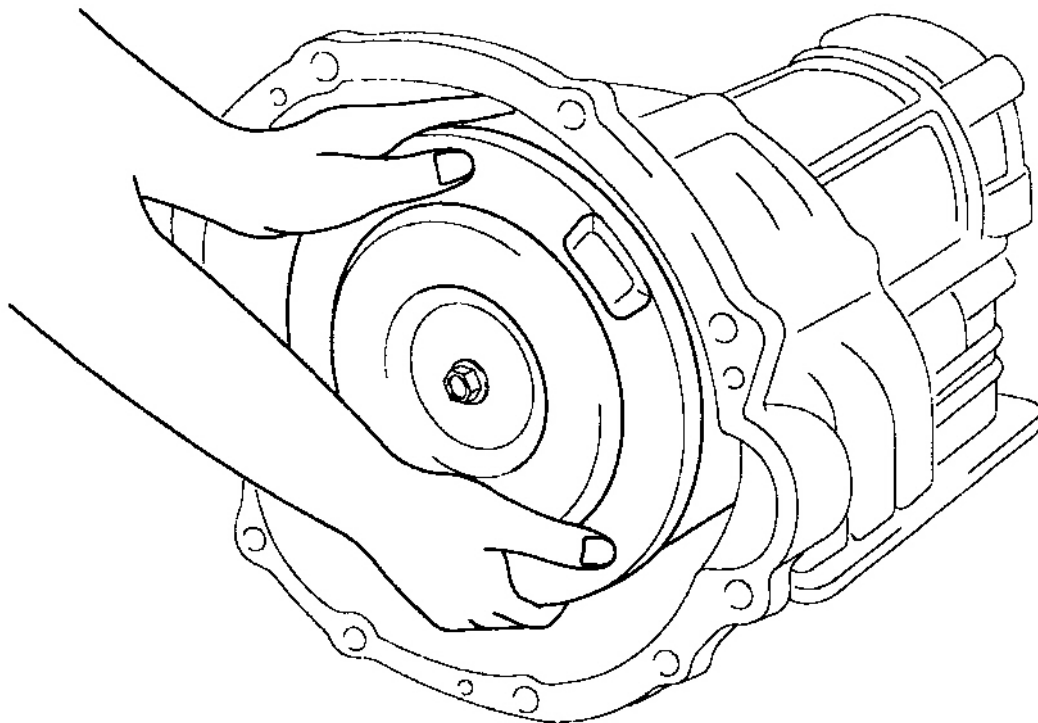


G03877569

Fig. 1: Identifying Components Automatic Transmission (A5SR1)
 Courtesy of KIA MOTORS AMERICA, INC.

DISASSEMBLY

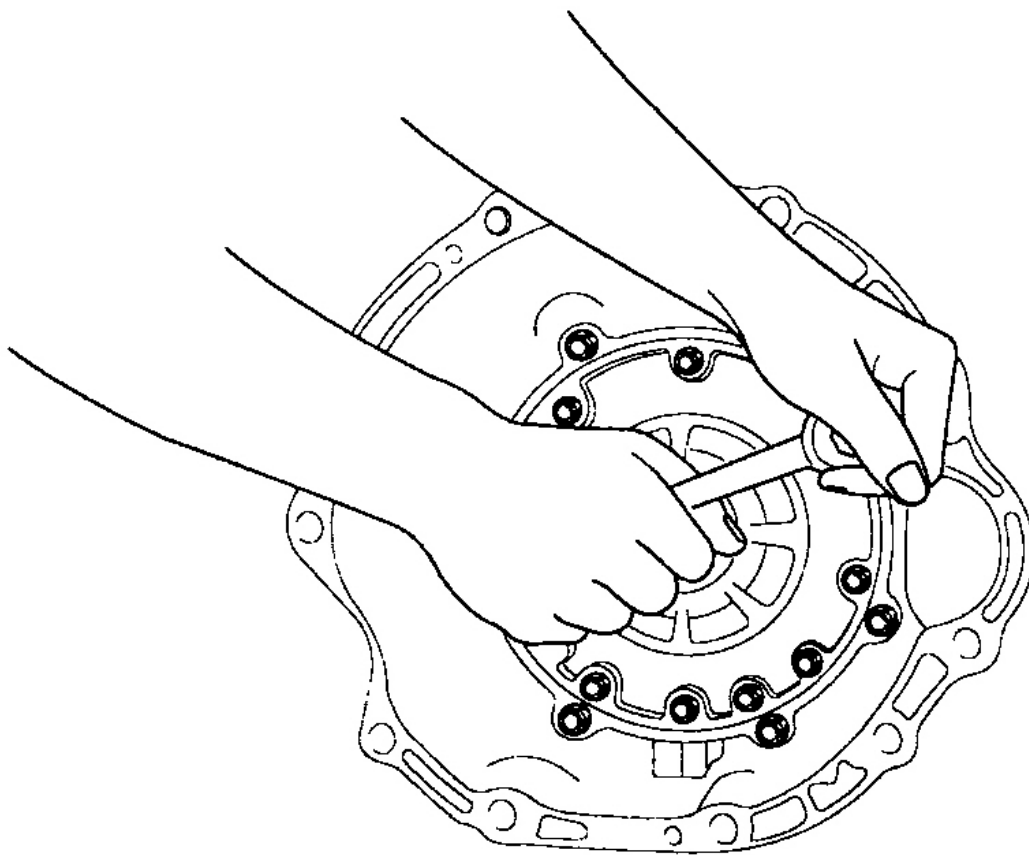
1. Remove the torque converter.



G03877570

Fig. 2: Removing Torque Converter
Courtesy of KIA MOTORS AMERICA, INC.

2. Remove the converter housing - transmission case installation bolts (8), then remove the converter housing.



G03877571

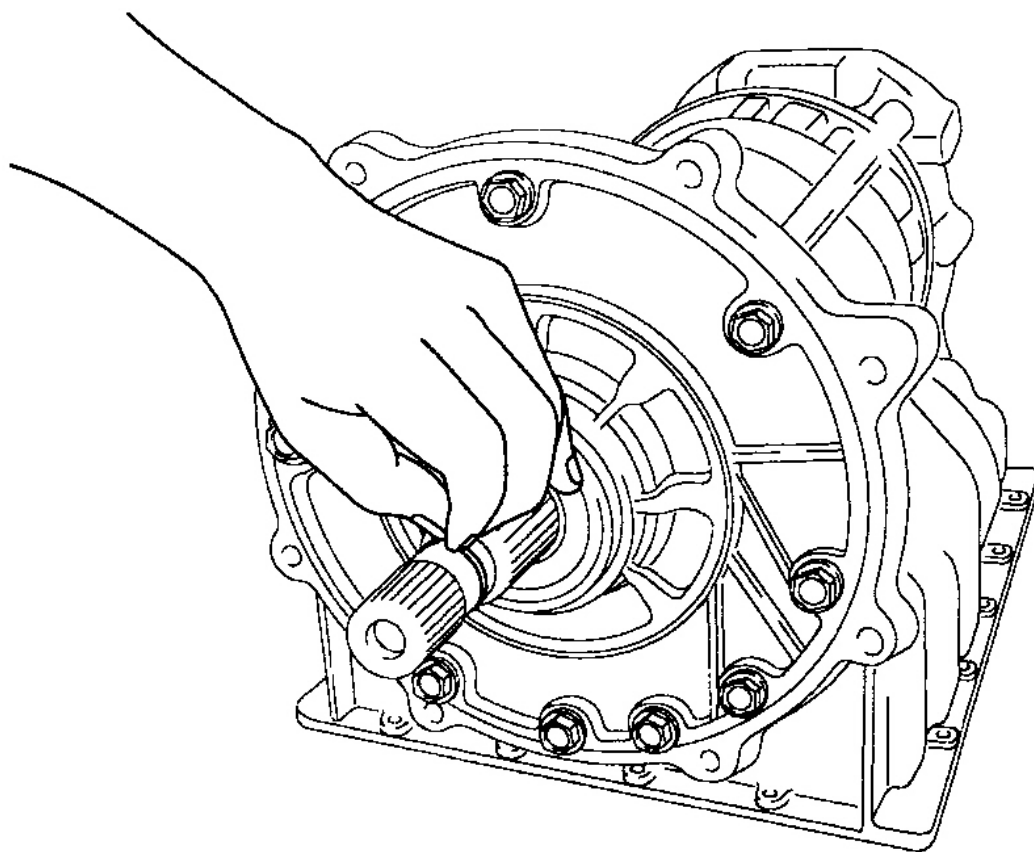
Fig. 3: Removing Bolts

Courtesy of KIA MOTORS AMERICA, INC.

CAUTION: Be careful not to have your finger cut by the sharp edge in the converter housing engine section.

Do not reuse bolts of the seal bolt section.

3. Remove the O-ring of the input shaft. Do not reuse O-ring.



G03877572

Fig. 4: Removing O-Ring Of Input Shaft
Courtesy of KIA MOTORS AMERICA, INC.

4. Remove the oil pump-transmission case installation bolts (10).

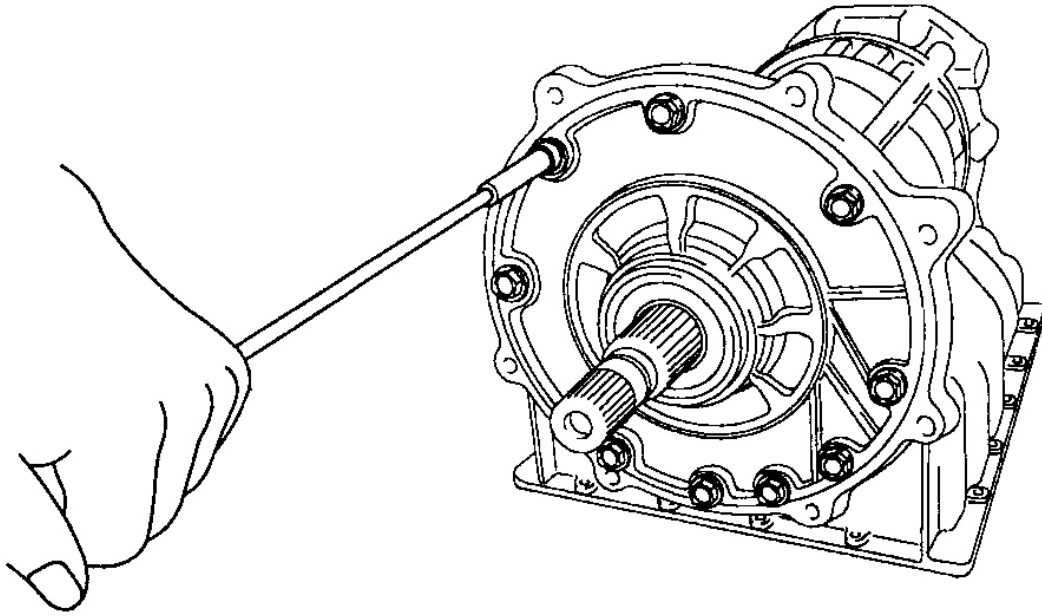
**G03877573**

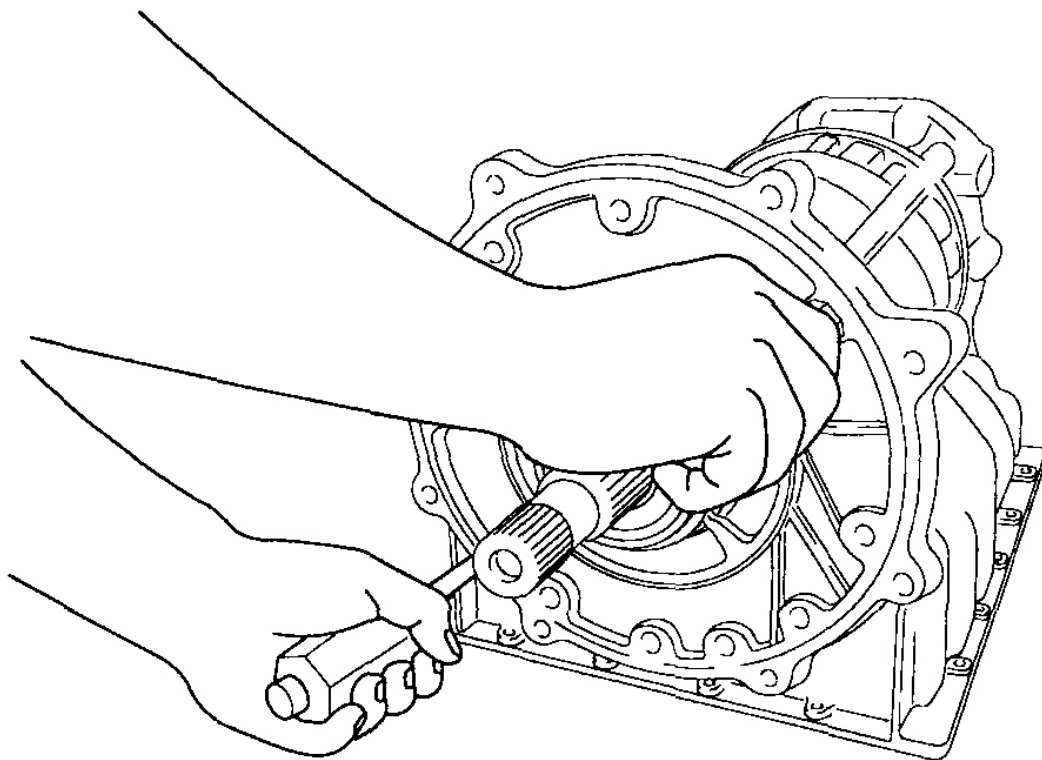
Fig. 5: Removing Oil Pump-Transmission Case Installation Bolts
Courtesy of KIA MOTORS AMERICA, INC.

5. Use the oil pump puller to remove the oil pump assembly.

Tighten screws of puller all the way.

Make sure the Bearing race comes out simultaneously.

Remove the outer O-ring. Do not reuse the O-ring. Puller installation position is as in figure below
(Where the screws grinded)

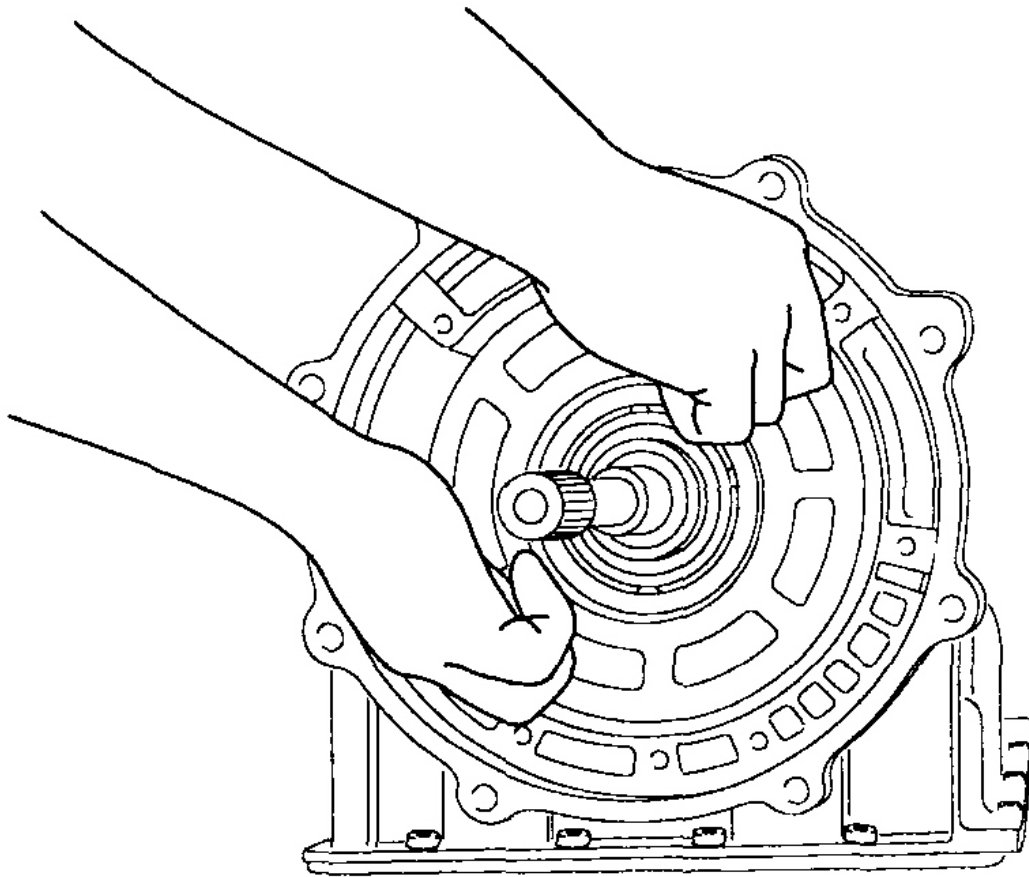


G03877574

Fig. 6: Installing Puller

Courtesy of KIA MOTORS AMERICA, INC.

6. Remove the thrust bearing and the front sun gear. Turn the front sun gear right and left to remove.

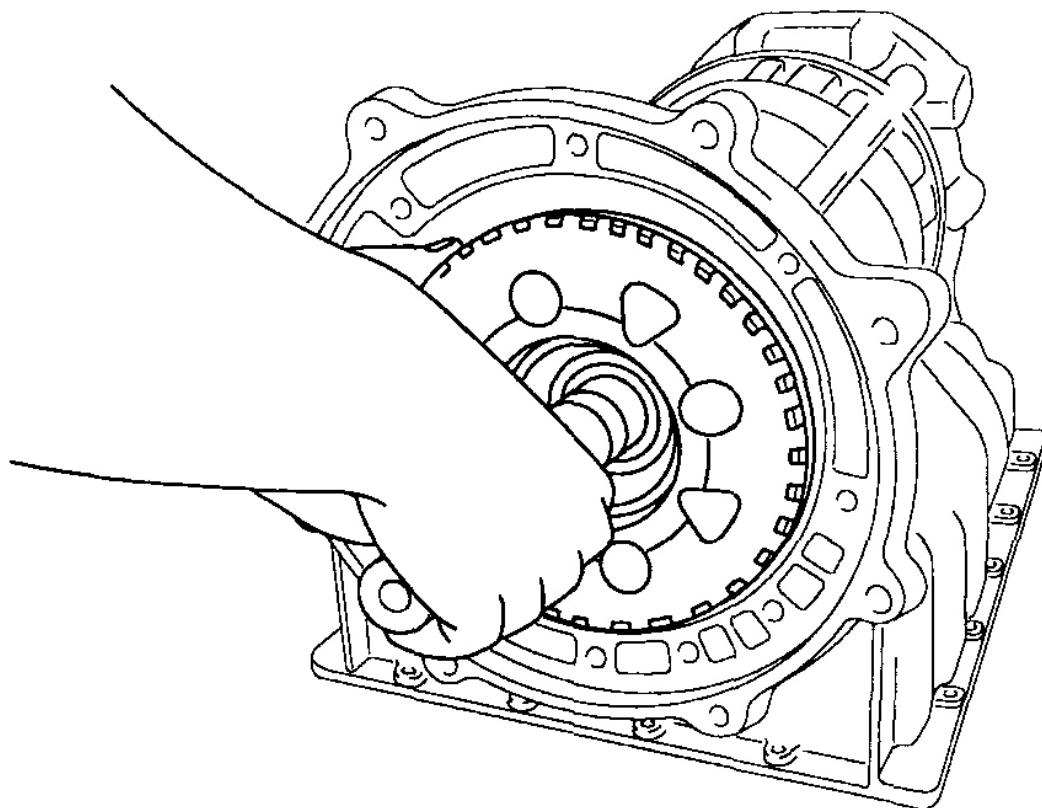


G03877575

Fig. 7: Removing Thrust Bearing And Front Sun Gear
Courtesy of KIA MOTORS AMERICA, INC.

7. Remove the front carrier assembly and the input clutch assembly as a unit.

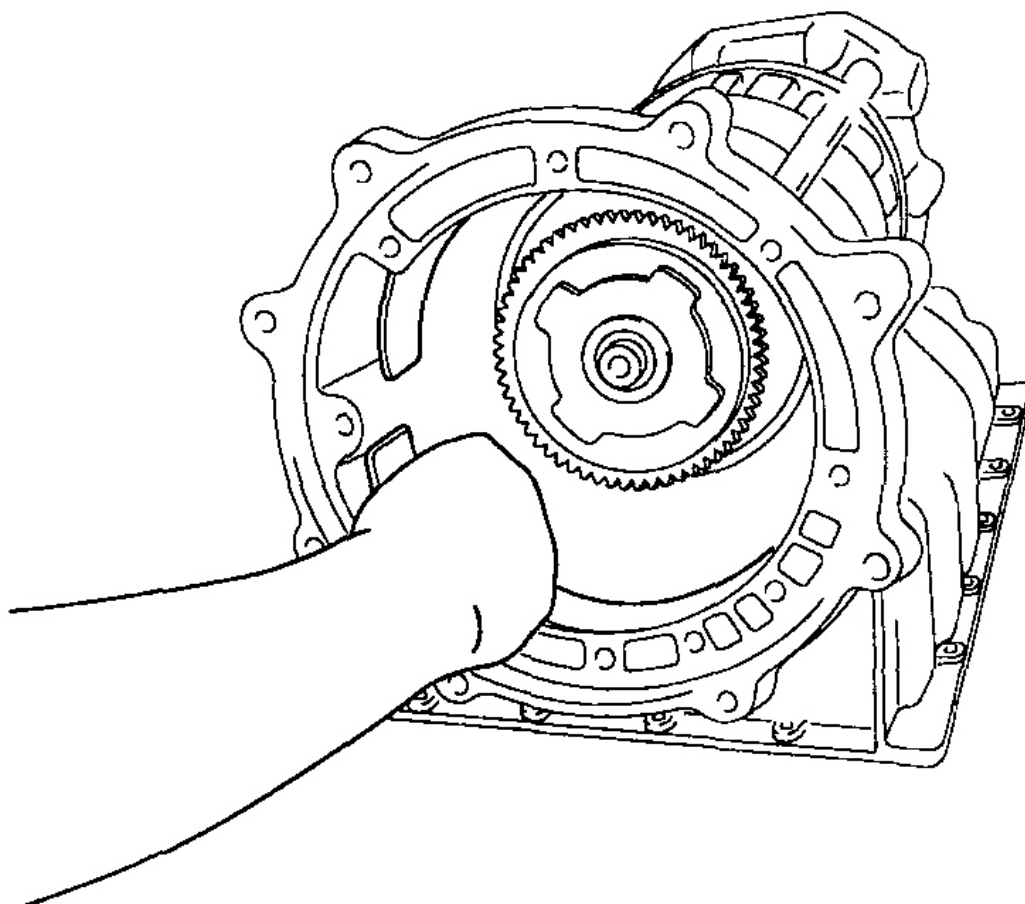
CAUTION: Make sure that thrust bearing come out together.



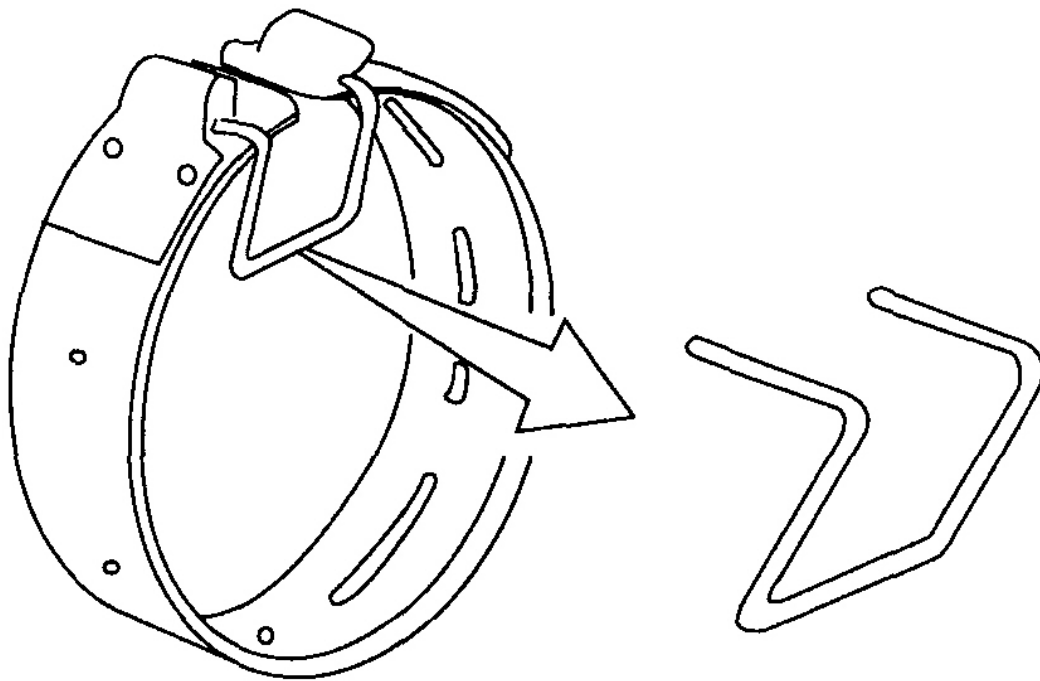
G03877576

Fig. 8: Removing Front Carrier Assembly And Input Clutch Assembly
Courtesy of KIA MOTORS AMERICA, INC.

8. Remove the brake band.

**G03877577****Fig. 9: Removing Brake Band****Courtesy of KIA MOTORS AMERICA, INC.**

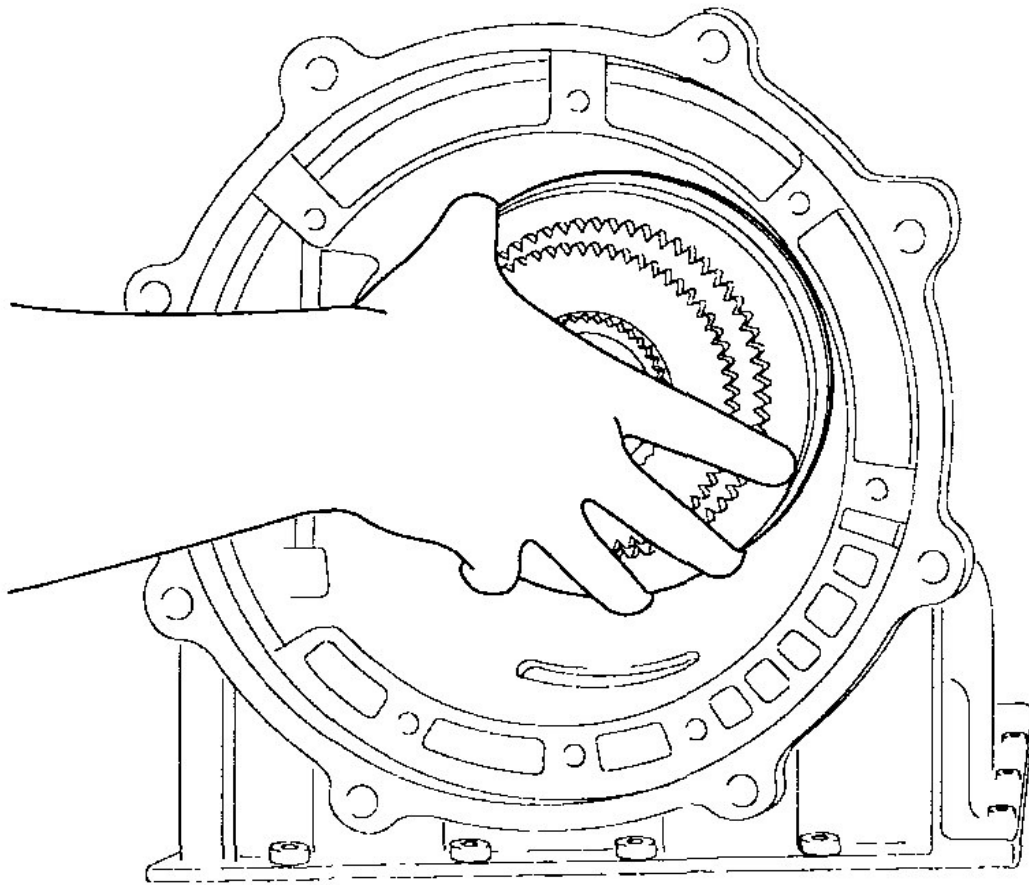
Keep the brake band to be in sphere shape after having been removed by using the fixture of the following figure made of metal seam.



G03877578

Fig. 10: Keeping Brake Band To Be In Sphere Shape
Courtesy of KIA MOTORS AMERICA, INC.

9. Remove the middle carrier assembly and the rear carrier assembly as a unit.

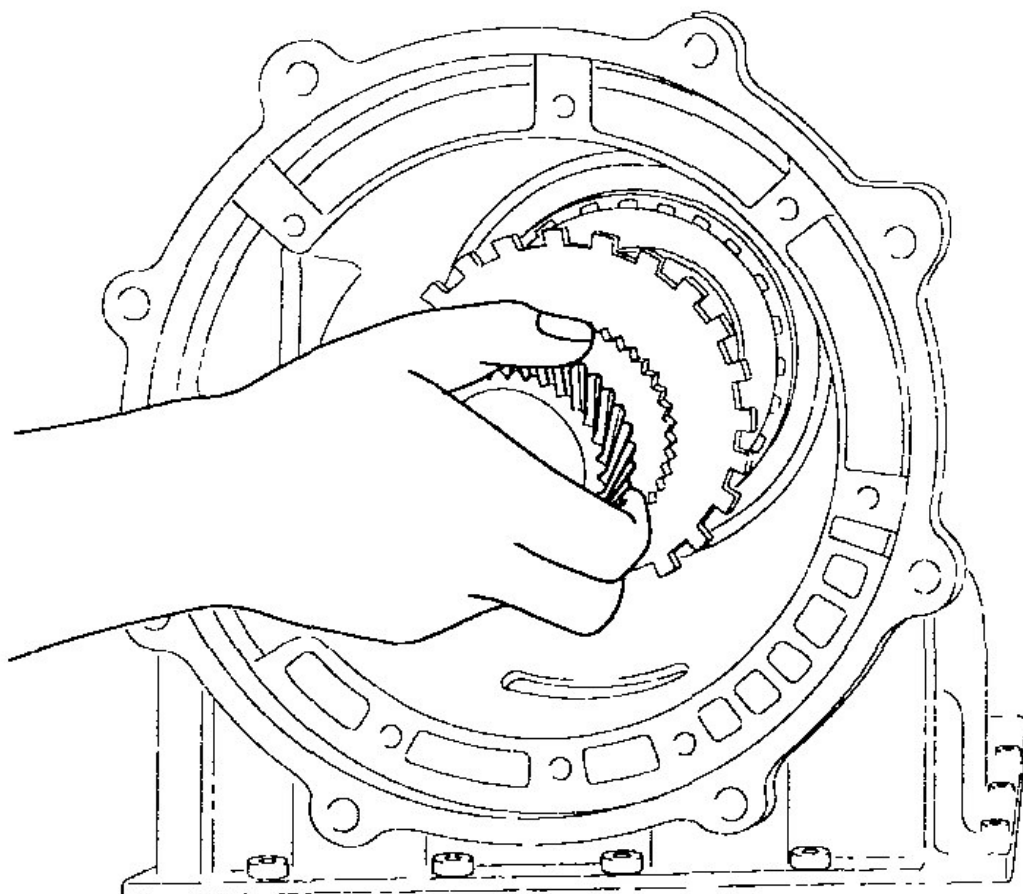


G03877579

Fig. 11: Removing Middle Carrier Assembly And Rear Carrier Assembly
Courtesy of KIA MOTORS AMERICA, INC.

10. Remove the middle sun gear, the rear sun gear assembly, and the high & low reverse clutch hub as a unit.

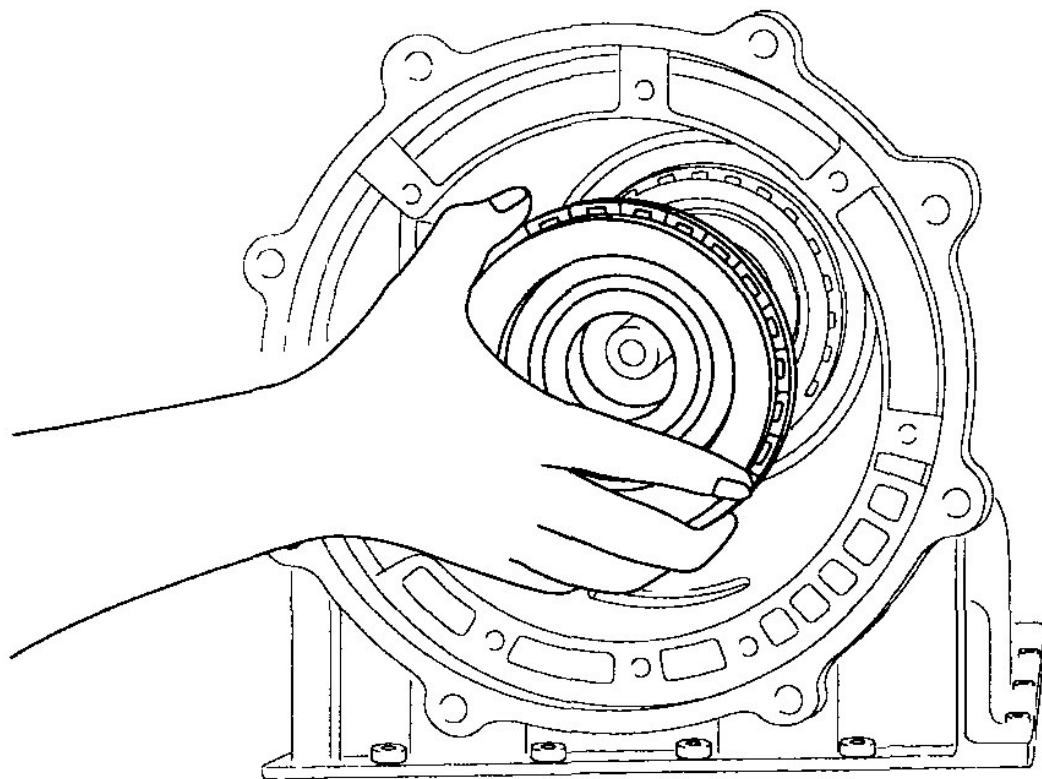
CAUTION: Be careful that the bearing race and bearing will come apart at the same time.



G03877580

Fig. 12: Removing Middle Sun Gear
Courtesy of KIA MOTORS AMERICA, INC.

11. Remove the high & low reverse clutch assembly. Make sure that the bearing race is attached to the section.



G03877581

Fig. 13: Removing High & Low Reverse Clutch Assembly
Courtesy of KIA MOTORS AMERICA, INC.

12. Remove the direct clutch assembly.

Also remove the bearings (2) on the section that support the drum.

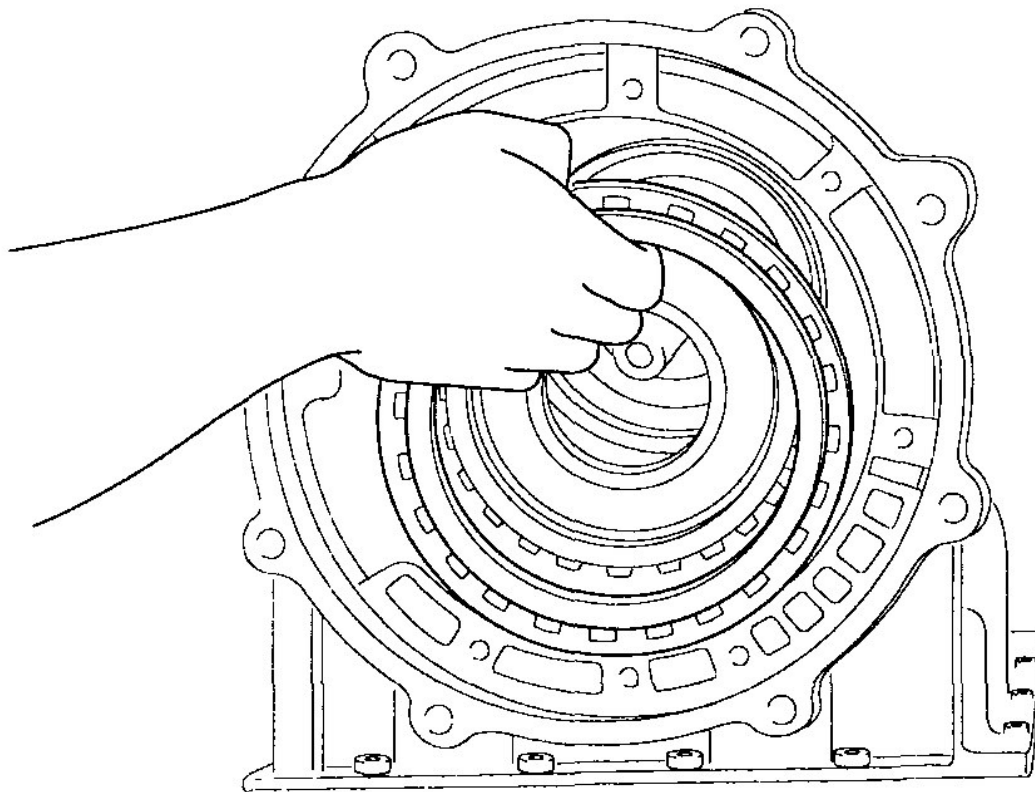
**G03877582**

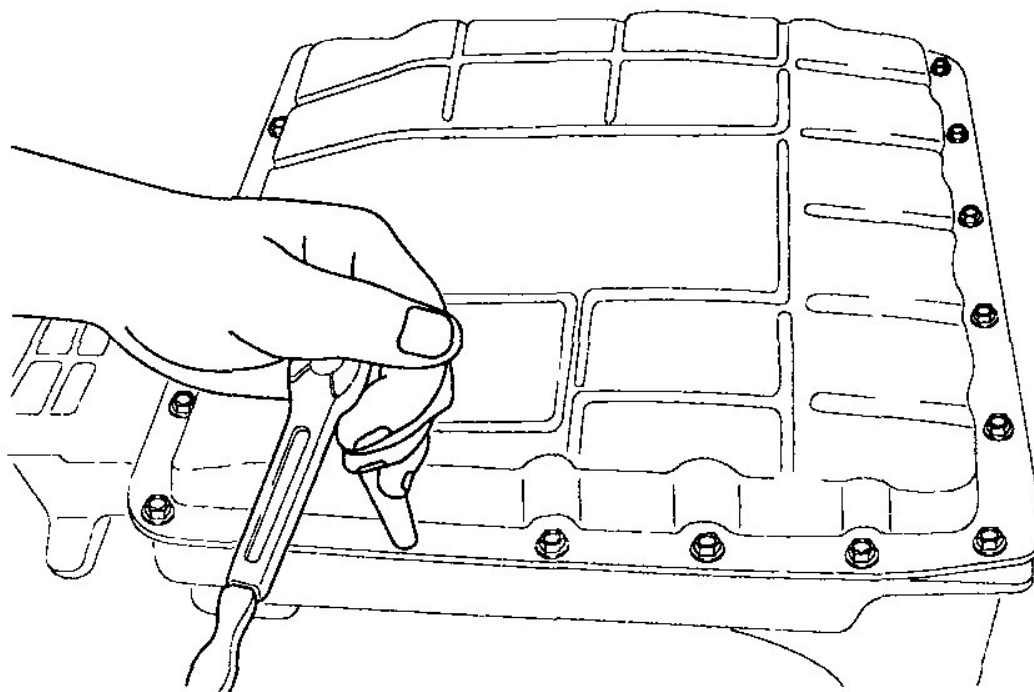
Fig. 14: Removing Direct Clutch Assembly
Courtesy of KIA MOTORS AMERICA, INC.

13. Remove oil pan bolts (22), then the oil pan.

Remove the oil pan gasket.

Do not reuse the removed bolts. (Non-reusable)

Discard the gasket too. (Non-reusable)



G03877583

Fig. 15: Removing Oil Pan Gasket
Courtesy of KIA MOTORS AMERICA, INC.

14. Press the stable part of the connector from the terminal assembly with a hand (driver) to pull out the connector.

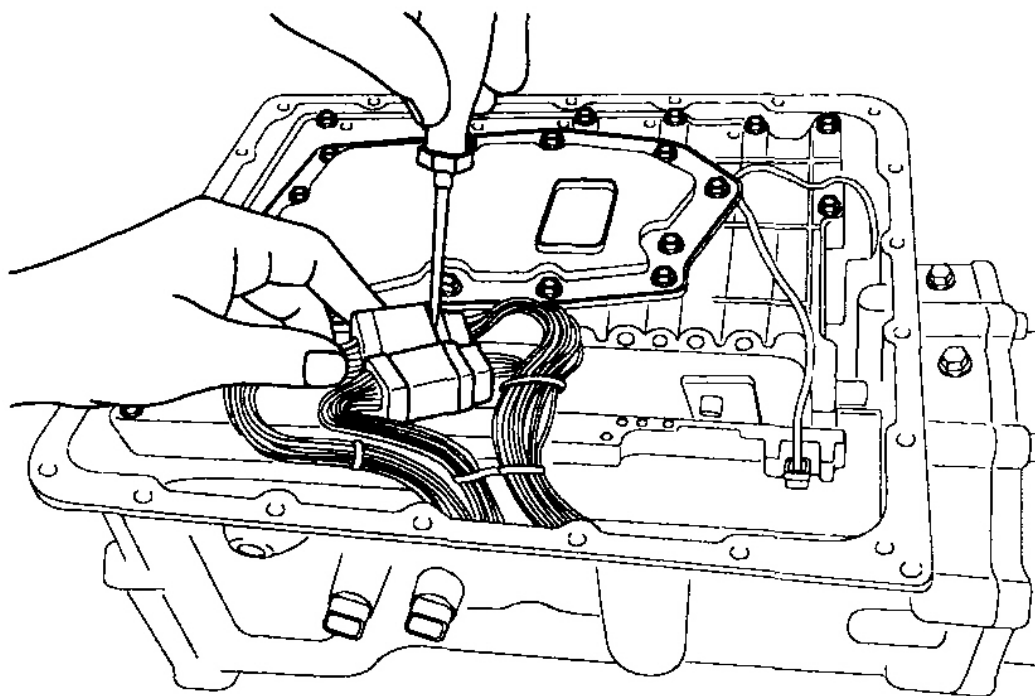
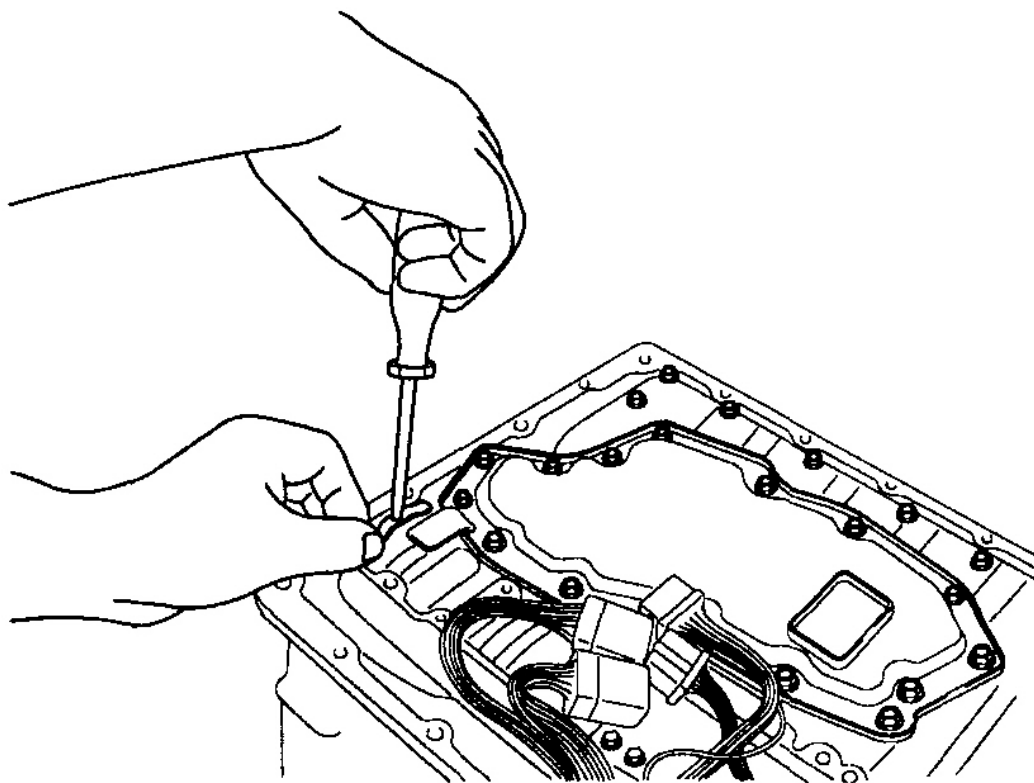
**G03877584**

Fig. 16: Pressing Stable Part Of Connector
Courtesy of KIA MOTORS AMERICA, INC.

15. Remove the connector of the temperature sensor (Not necessary when not having to pull out the temperature sensor).

Disconnect the temperature sensor using a hand or driver.

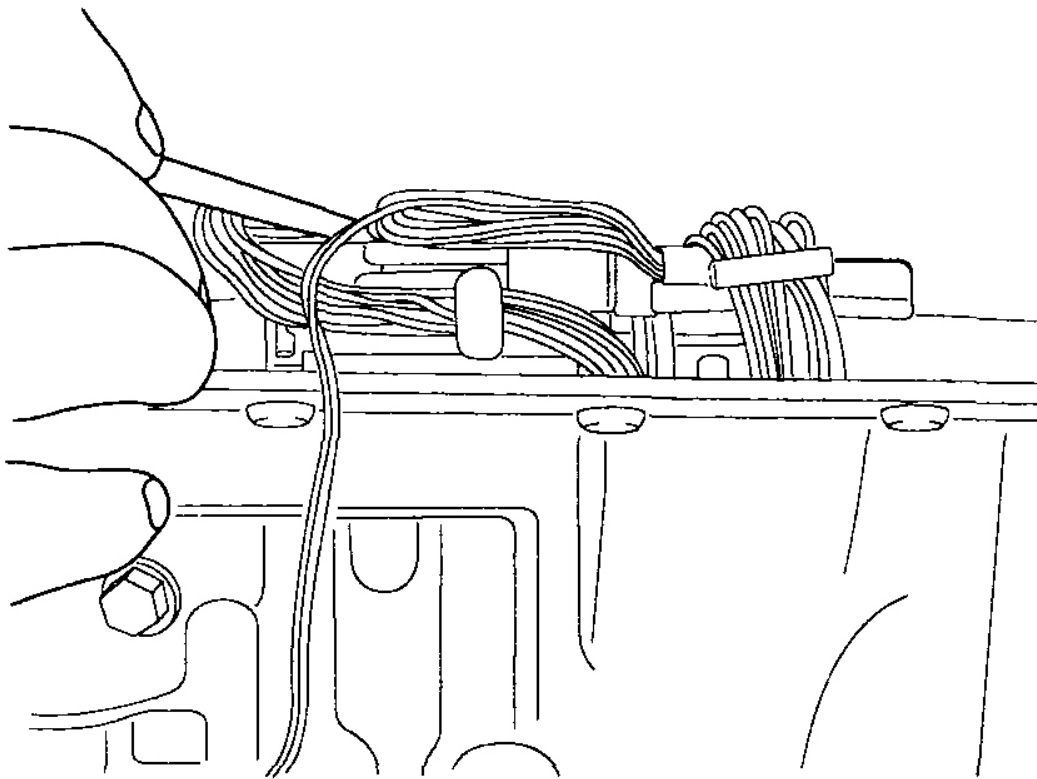
Pull out the temperature sensor if needed.



G03877585

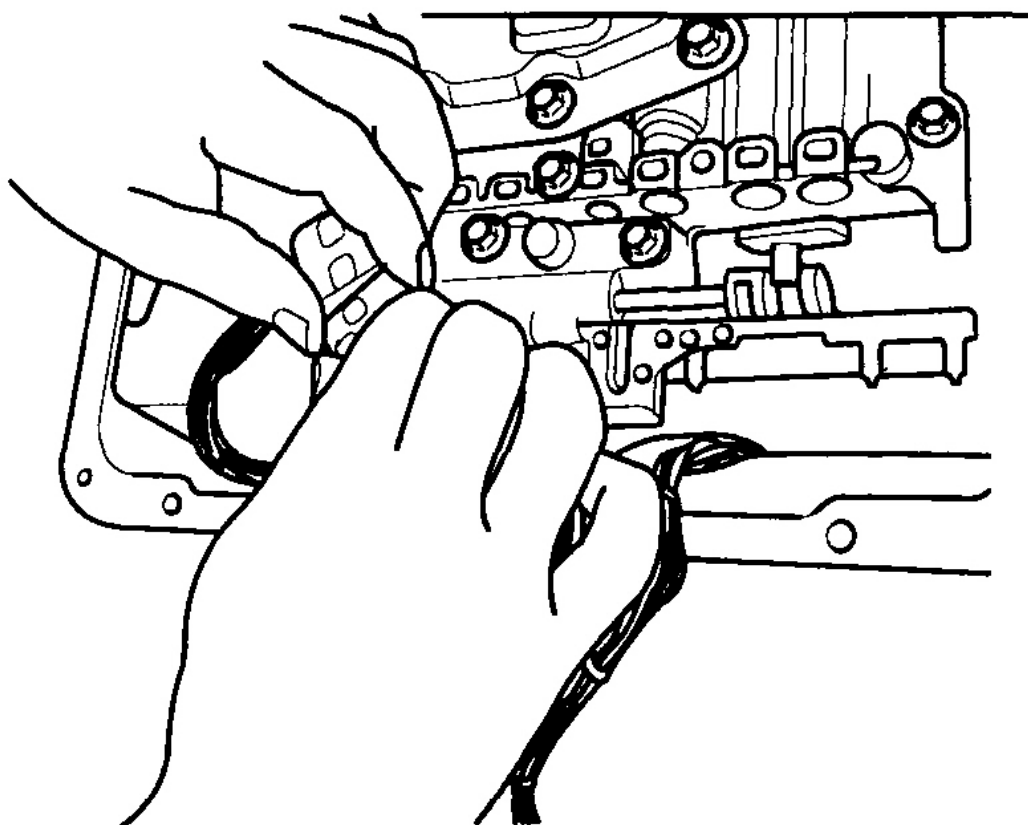
Fig. 17: Disconnecting Temperature Sensor Using Hand Or Driver
Courtesy of KIA MOTORS AMERICA, INC.

16. Remove connector in front by hitting general tool 1 to fit intervals between the bracket and the connector.



G03877586

Fig. 18: Removing Connector
Courtesy of KIA MOTORS AMERICA, INC.

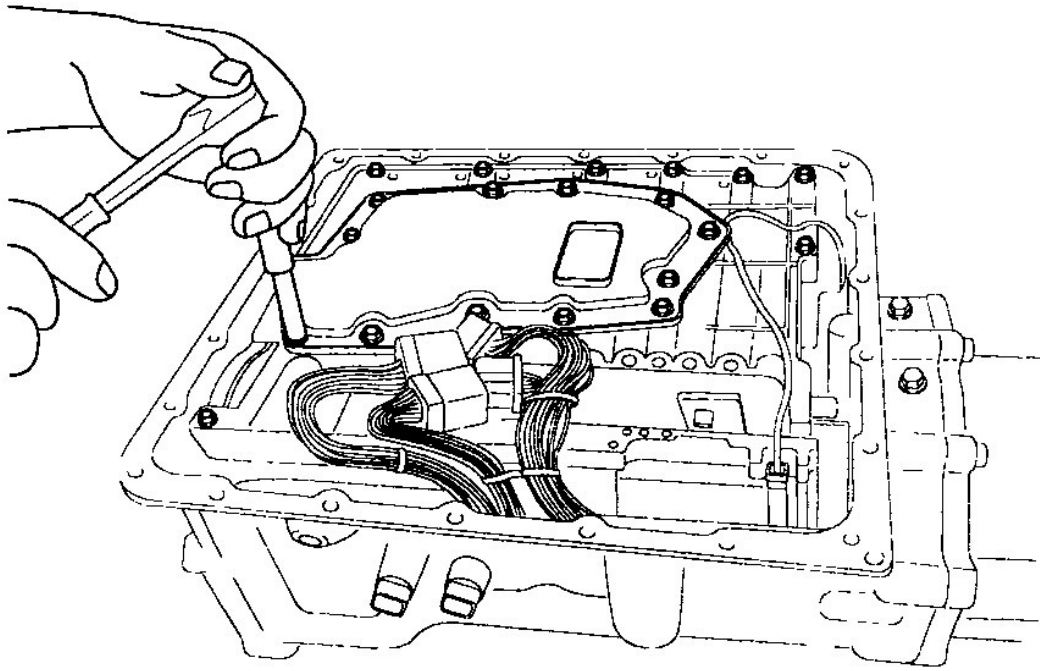


G03877587

Fig. 19: Removing Connector

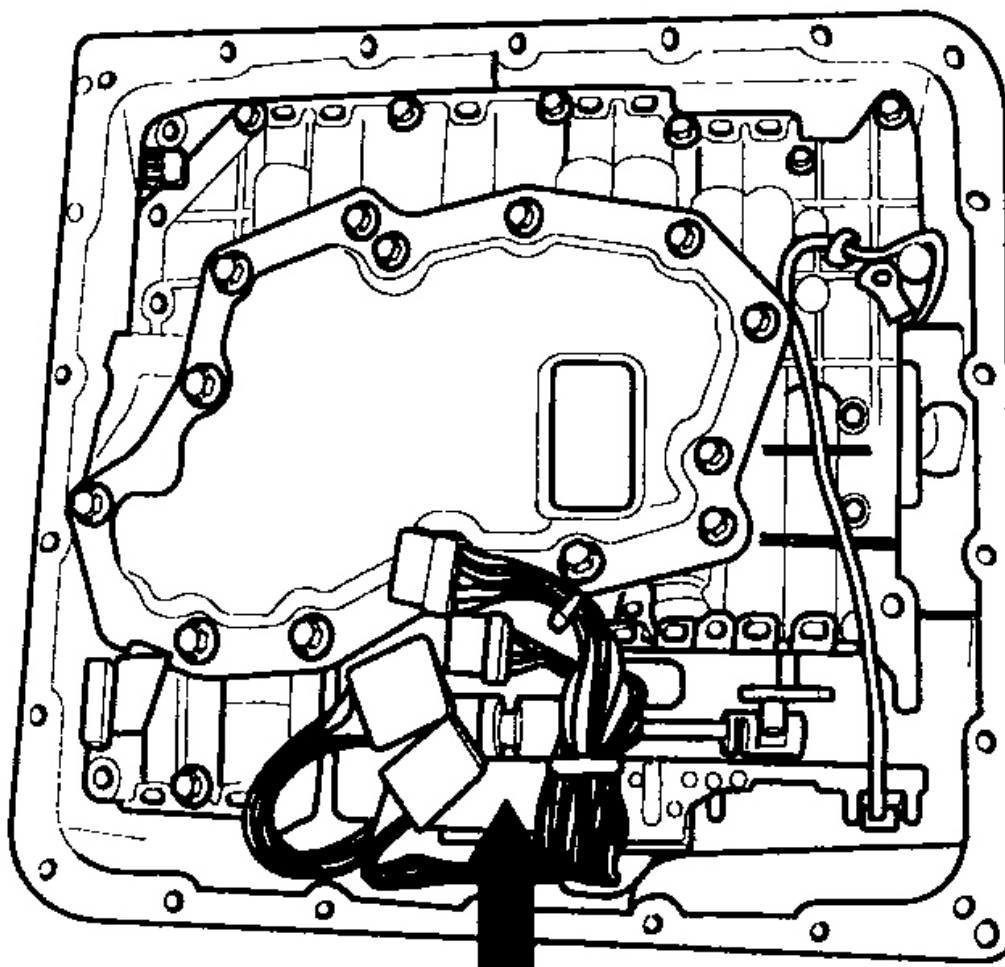
Courtesy of KIA MOTORS AMERICA, INC.

17. Remove the control valve - T/M case installation bolts (12).



G03877588

Fig. 20: Removing Control Valve - T/M Case Installation Bolts
Courtesy of KIA MOTORS AMERICA, INC.



G03877589

Fig. 21: Keep Harness Carefully
Courtesy of KIA MOTORS AMERICA, INC.

18. Remove the control valve - T/M case installation bolts along with the clip with bolts attached to it at the same time.

(Remove the clip that fixes the harness of the revolution sensor in advance.)

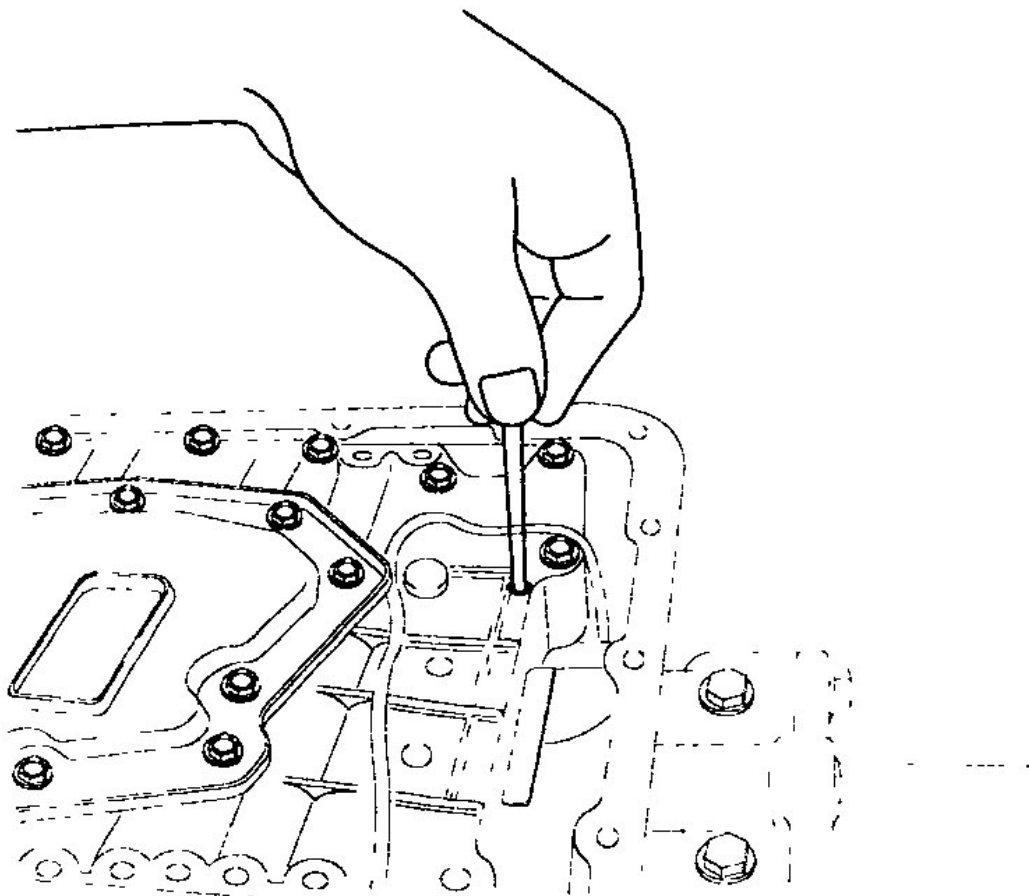
**G03877590**

Fig. 22: Removing Control Valve
Courtesy of KIA MOTORS AMERICA, INC.

19. Remove the connector of the revolution sensor.

Pull out the sensor connector upward using a hand or driver.

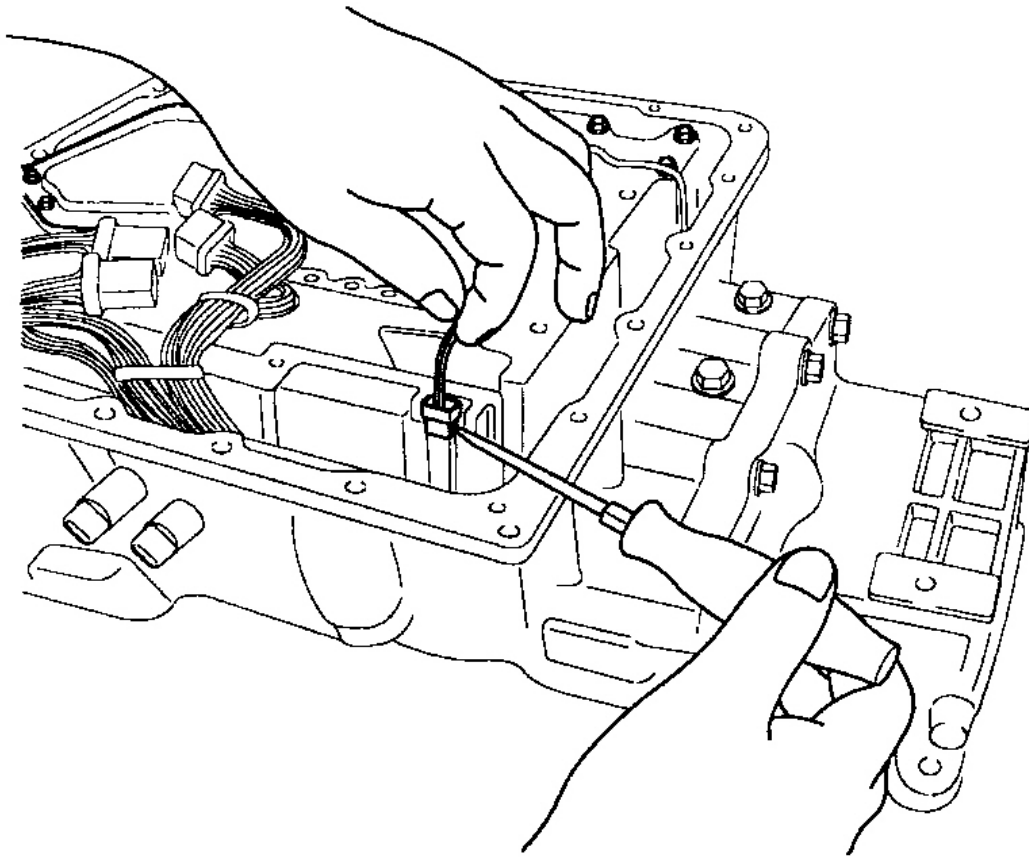
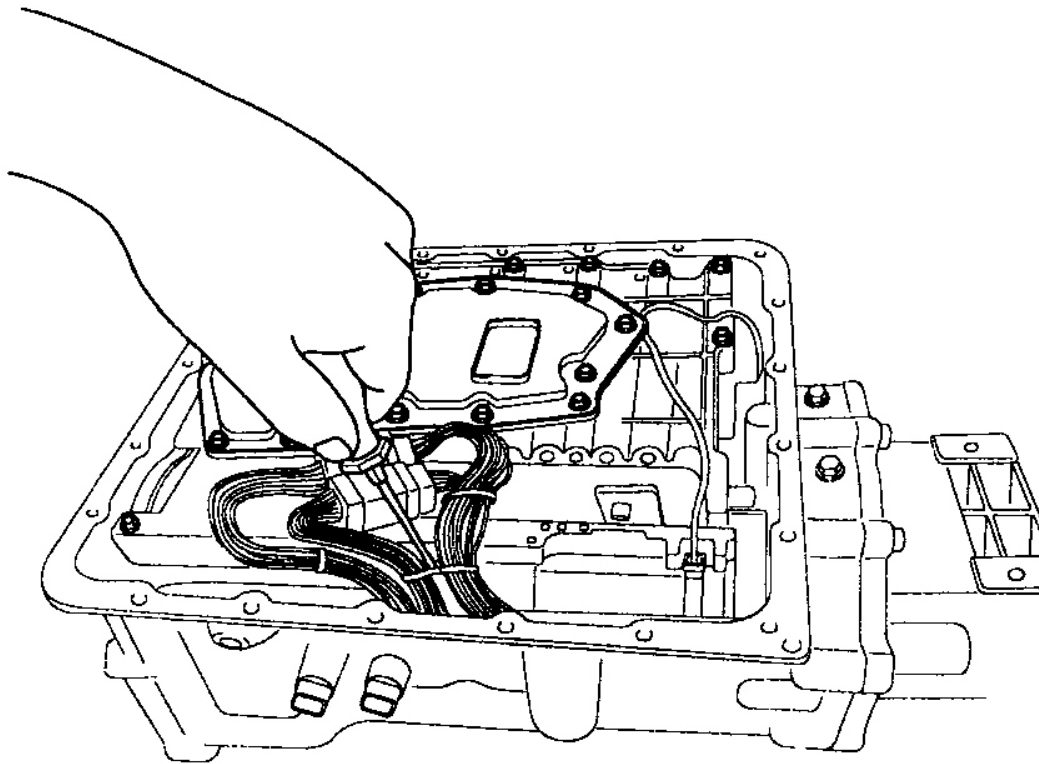
**G03877591**

Fig. 23: Pulling Out Sensor Connector Upward Using Hand Or Driver
Courtesy of KIA MOTORS AMERICA, INC.

20. Remove the clip that fixes the harness of the terminal assembly.

Spread the harnesses of the terminal assembly and the revolution sensor in a row outward not to interfere with the one that is on hold during the control valve assembly installation.



G03877592

Fig. 24: Removing Clip
Courtesy of KIA MOTORS AMERICA, INC.

21. Pull out the control valve.

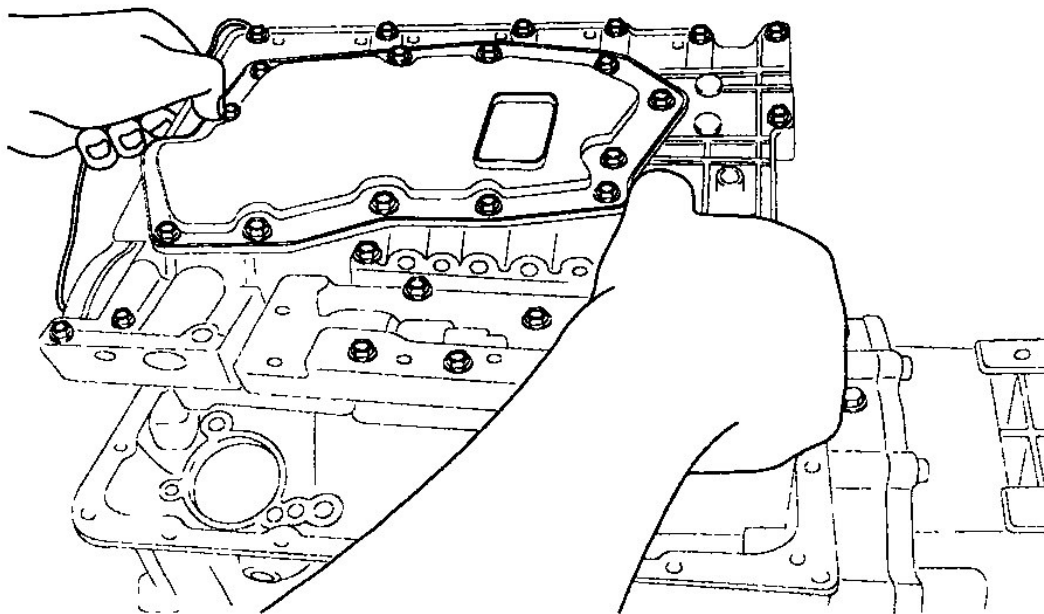
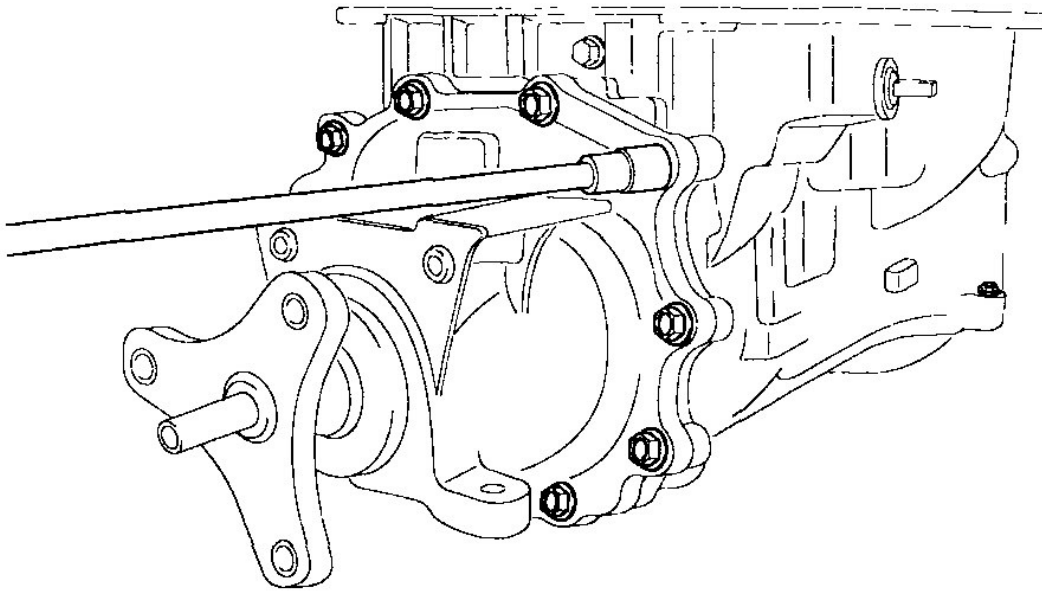
**G03877593**

Fig. 25: Pulling Out Control Valve
Courtesy of KIA MOTORS AMERICA, INC.

22. Pull out the extension parts bolts (10).

Remove the parts that the bracket is attached to at once.

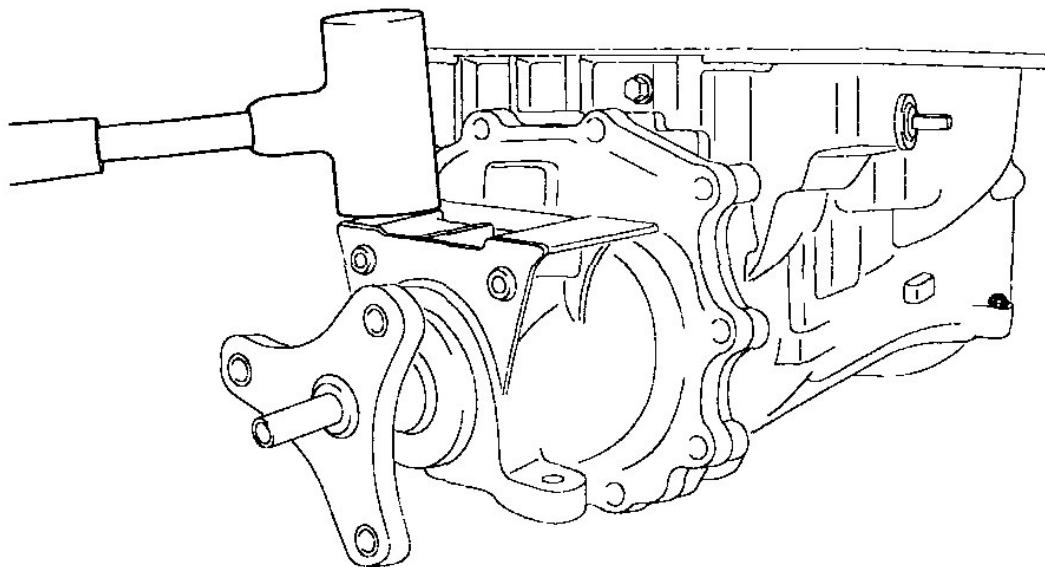
Do not use the old seal bolts.



G03877594

Fig. 26: Pulling Out Extension Parts Bolts
Courtesy of KIA MOTORS AMERICA, INC.

23. Tap the extension part lightly with a plastic hammer. (This does not easily come off since the sealant has been applied).

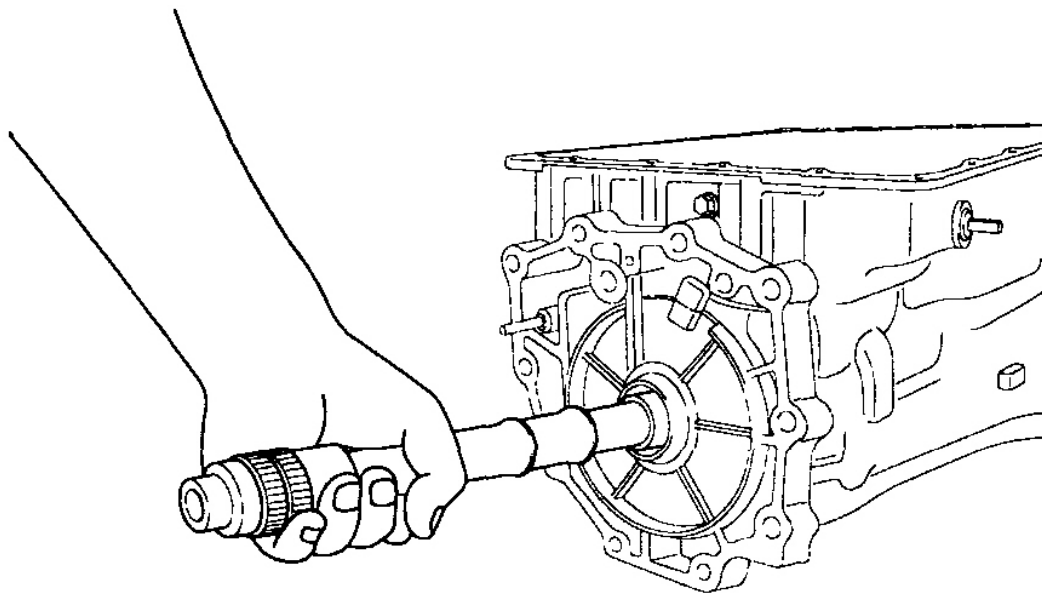


G03877595

Fig. 27: Taping Extension Part Lightly With Plastic Hammer
Courtesy of KIA MOTORS AMERICA, INC.

24. Remove the output shaft.

Turn it right and left and pull it to the rear side.



G03877596

Fig. 28: Removing Output Shaft

Courtesy of KIA MOTORS AMERICA, INC.

25. Pull out the revolution sensor.

CAUTION: Make sure the harness not to get damaged by the case corners.

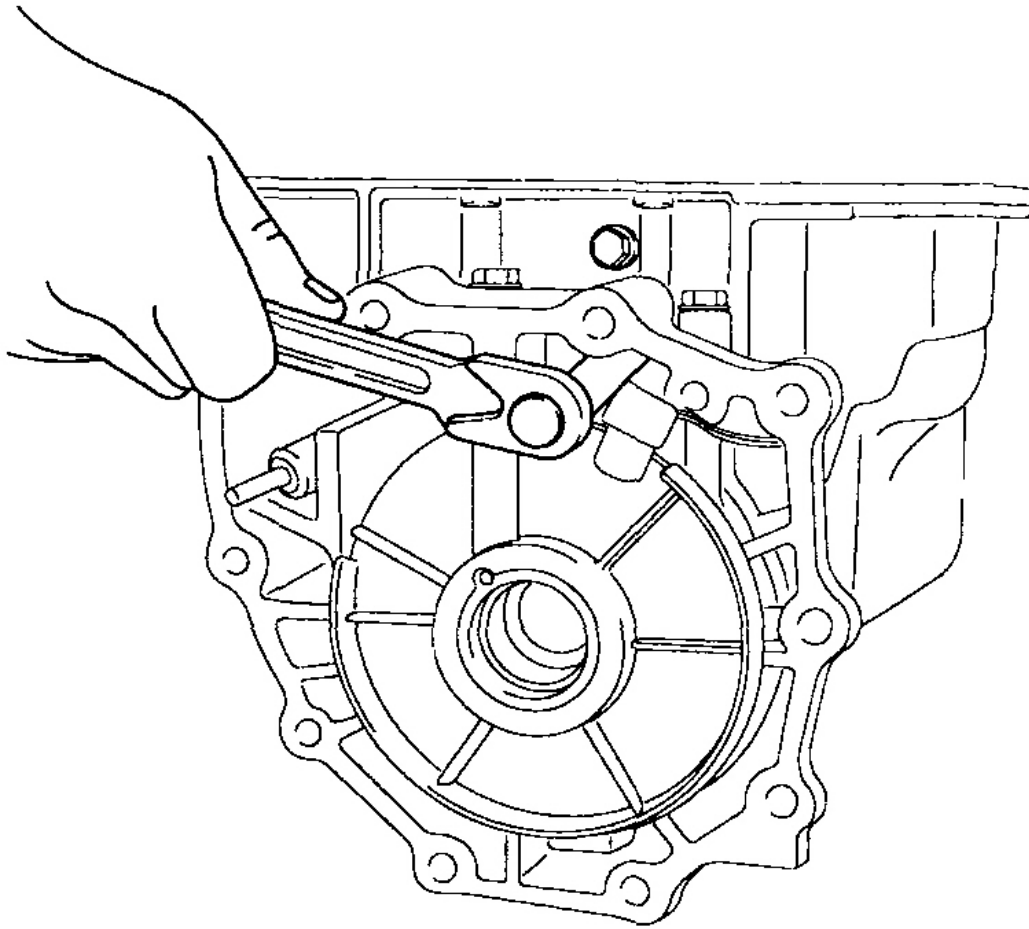
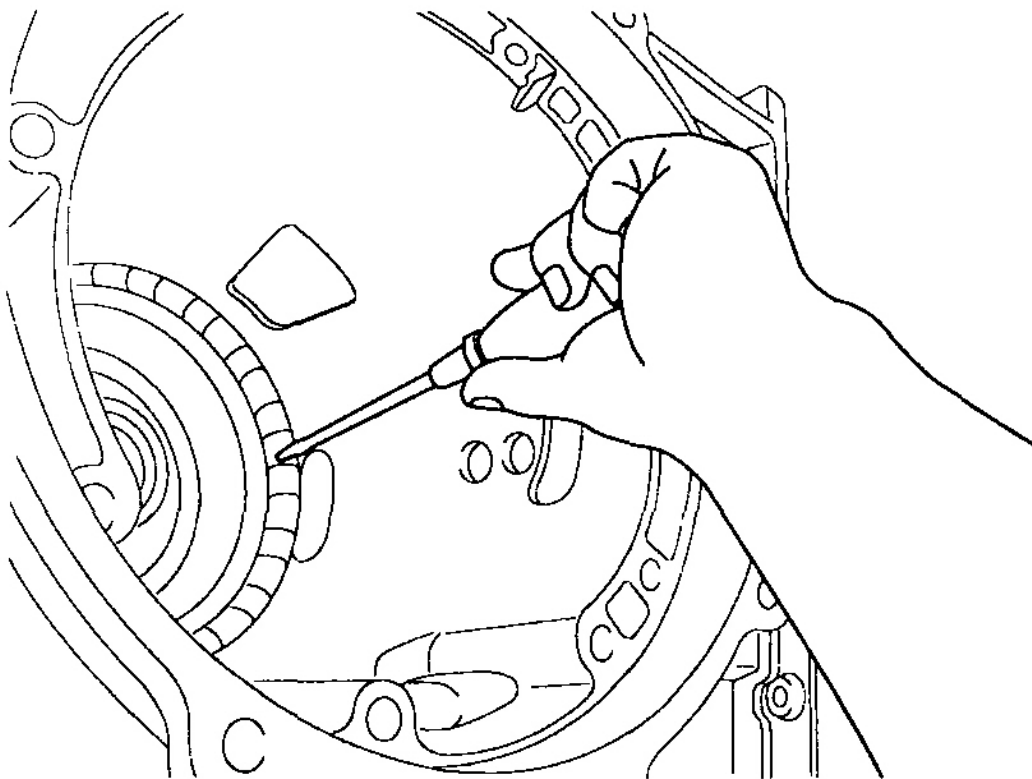
**G03877597**

Fig. 29: Pulling Out Revolution Sensor
Courtesy of KIA MOTORS AMERICA, INC.

26. Use two drivers to pull out the snap ring (that stops the plate) of the reverse brake part.

Press and pull out the snap ring through the slit of the oil pan side of the case, then pull out it once again with the first driver.

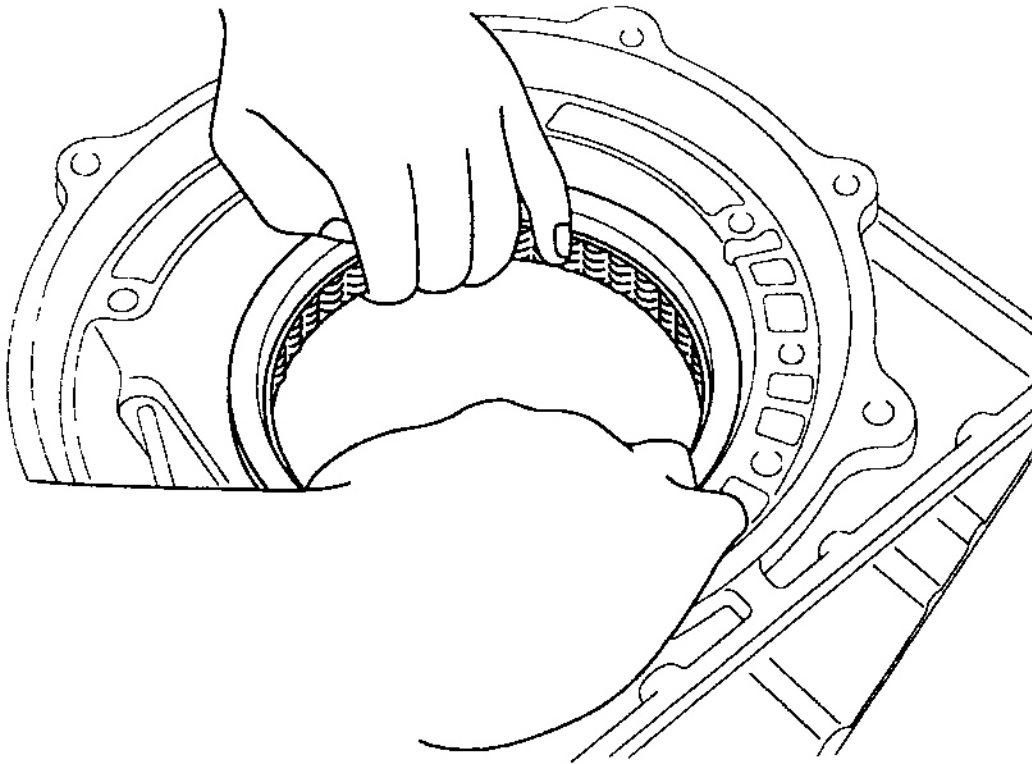


G03877598

Fig. 30: Pulling Out Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

27. Remove the plates of the reverse brake.

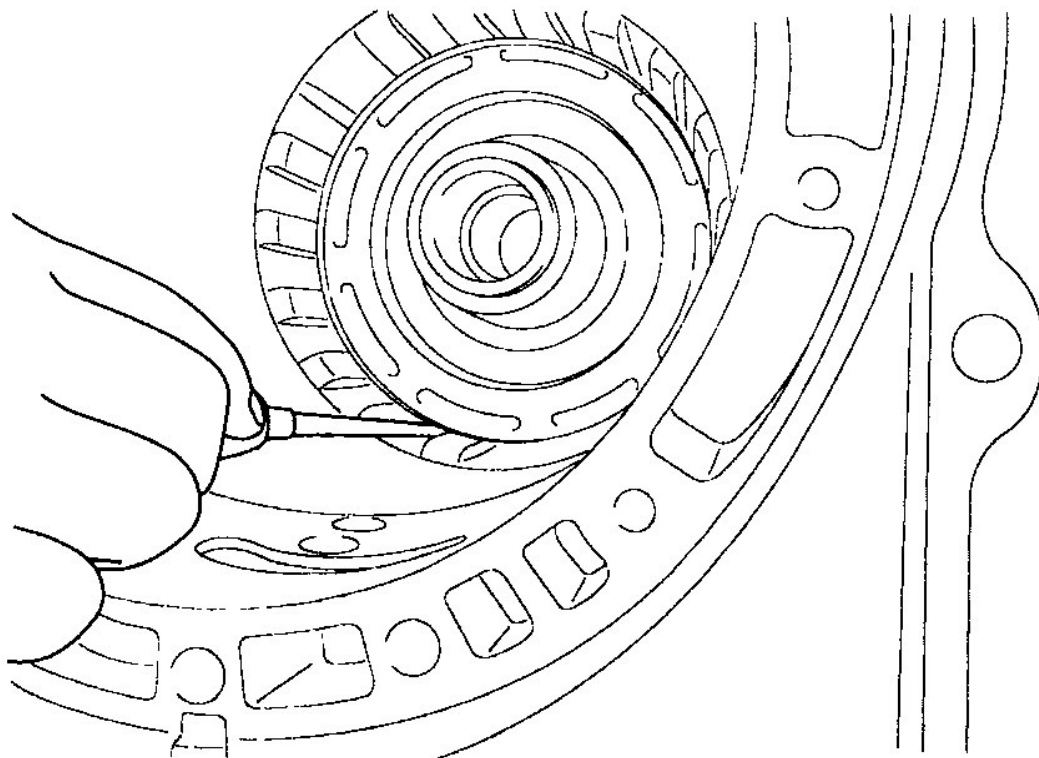
CAUTION: Be care that the spring will be pulled out together.



G03877599

Fig. 31: Removing Plates Of Reverse Brake
Courtesy of KIA MOTORS AMERICA, INC.

28. Use the driver to pull out the snap ring (that stops the spring retainer) of the reverse brake.



G03877600

Fig. 32: Pulling Out Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

29. Remove the spring retainer and spring (plate screw).

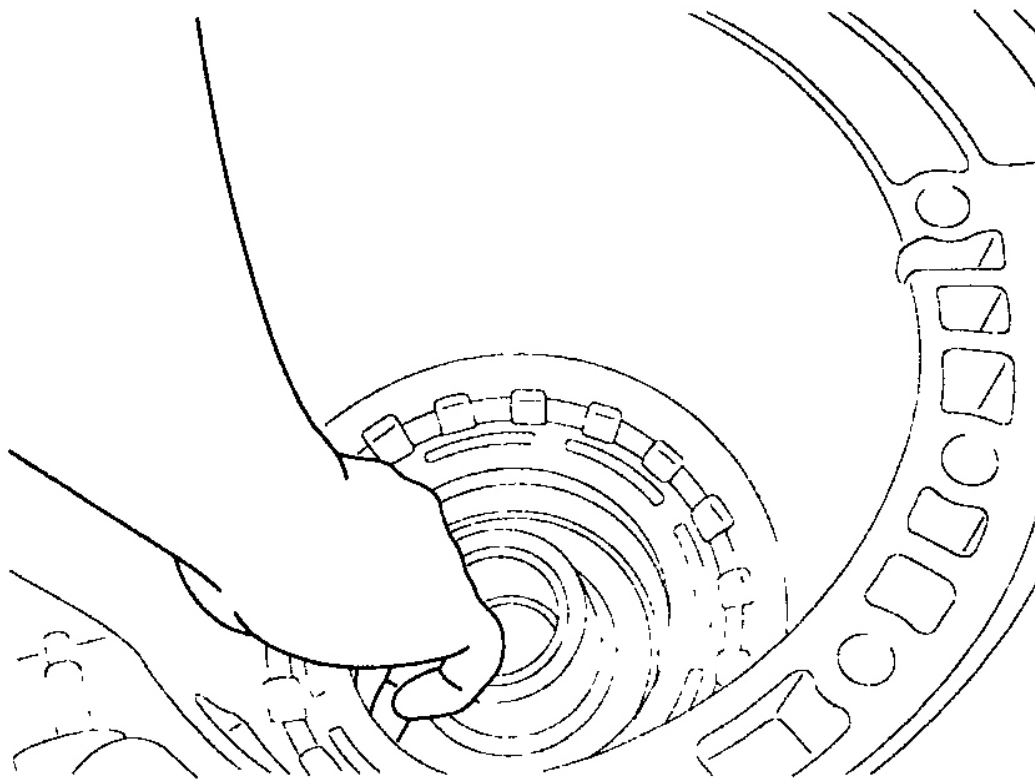
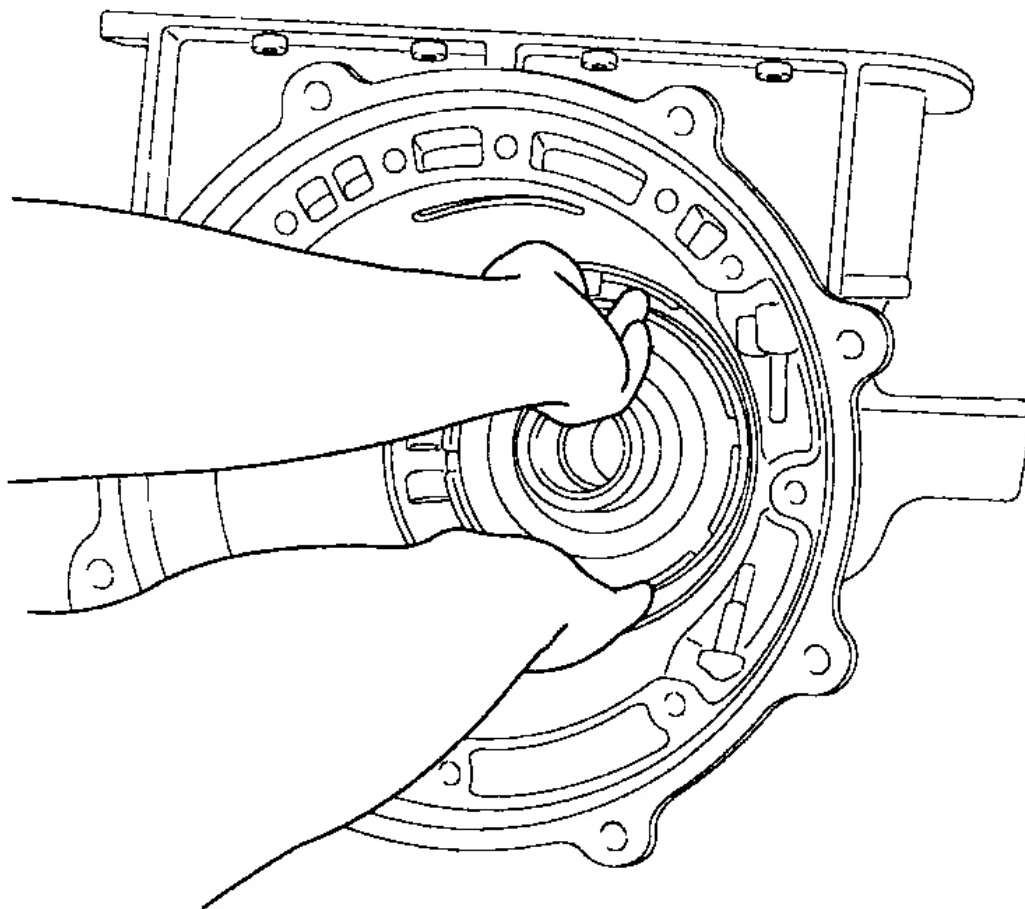
**G03877601**

Fig. 33: Removing Spring Retainer And Spring
Courtesy of KIA MOTORS AMERICA, INC.

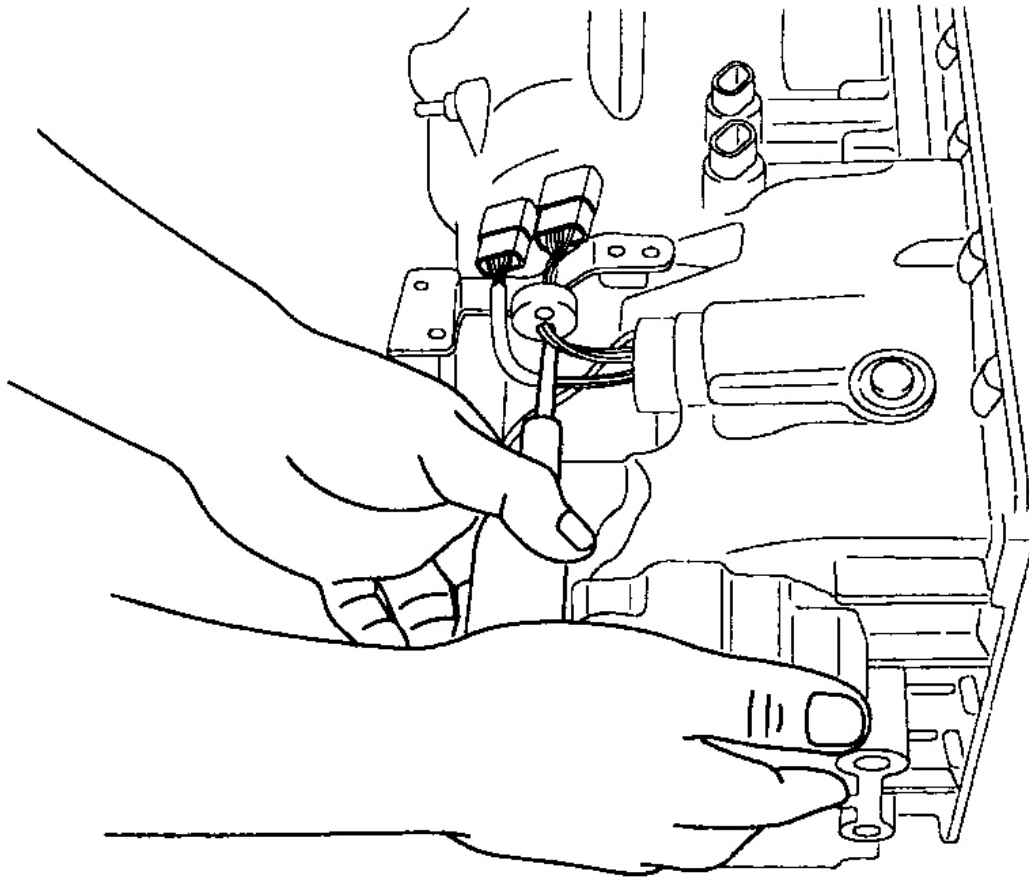
30. Remove the piston.

Pull out the pump seal, the D-ring, and then discard them.

**G03877602****Fig. 34: Pulling Out Pump Seal****Courtesy of KIA MOTORS AMERICA, INC.**

31. Remove the terminal from the connector.

Use the general tool 1 said above. Place the tool between the bracket and the connector and lift up the connector projection part to pull out the connector.



G03877603

Fig. 35: Removing Terminal From Connector
Courtesy of KIA MOTORS AMERICA, INC.

32. Remove the terminal assembly.

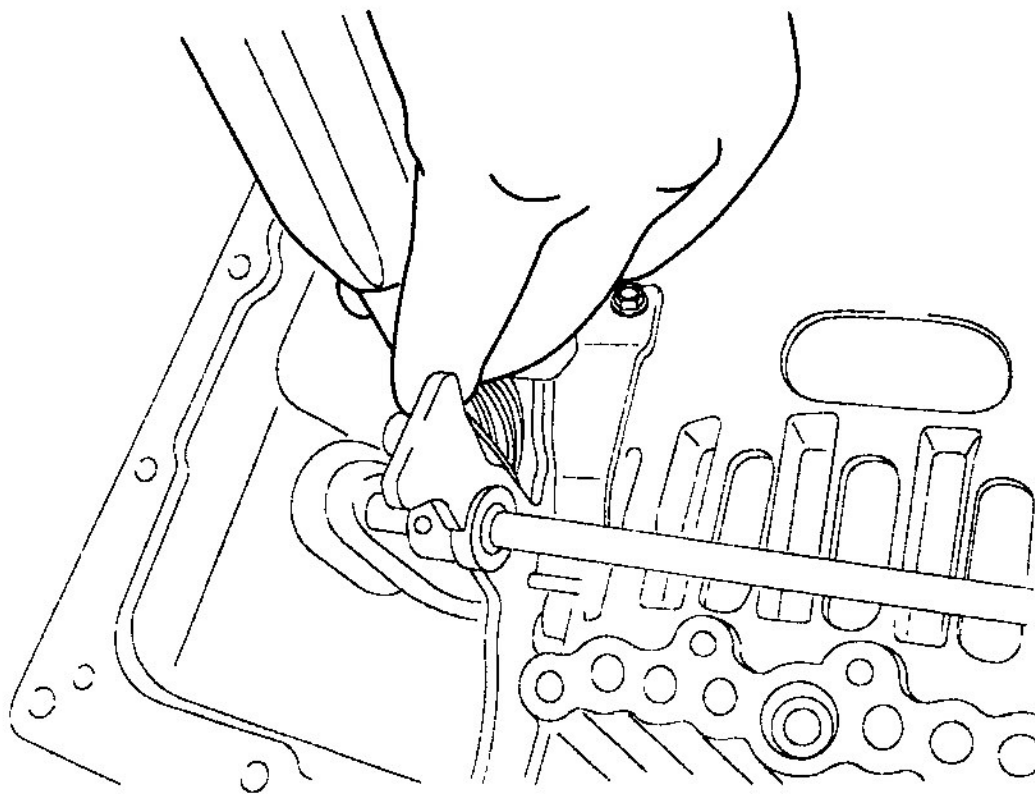
**G03877604**

Fig. 36: Removing Terminal Assembly
Courtesy of KIA MOTORS AMERICA, INC.

33. Tap the spring pin of the manual shaft with a punch to pull out.

Discard the spring pin.

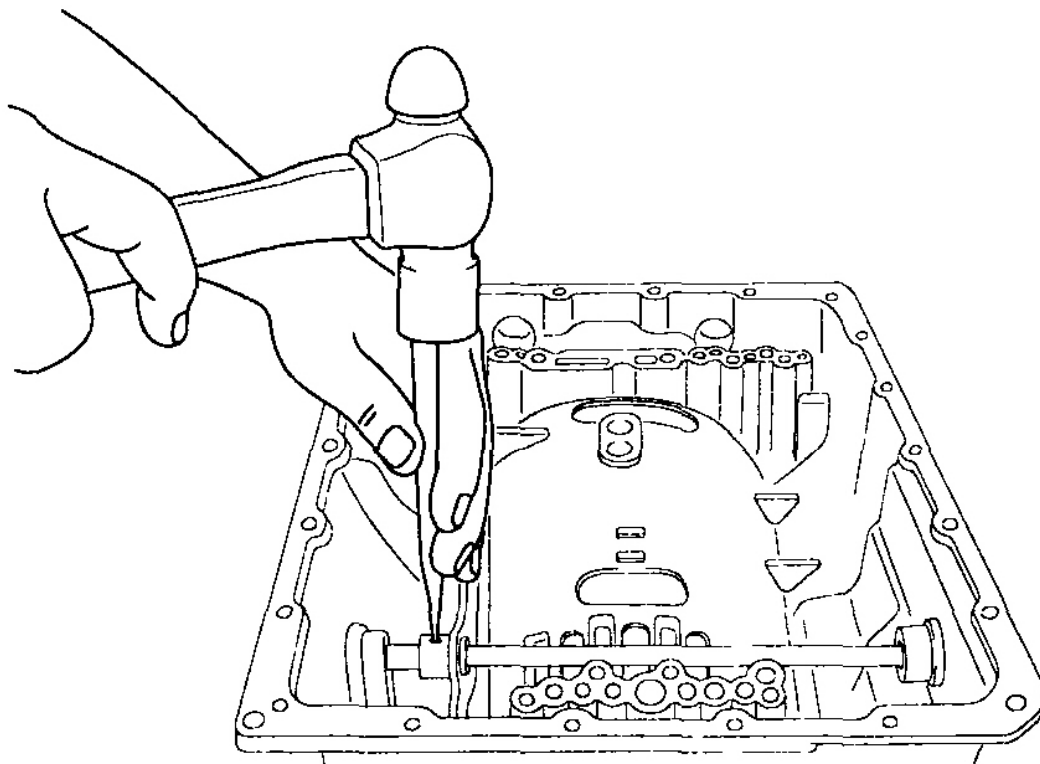
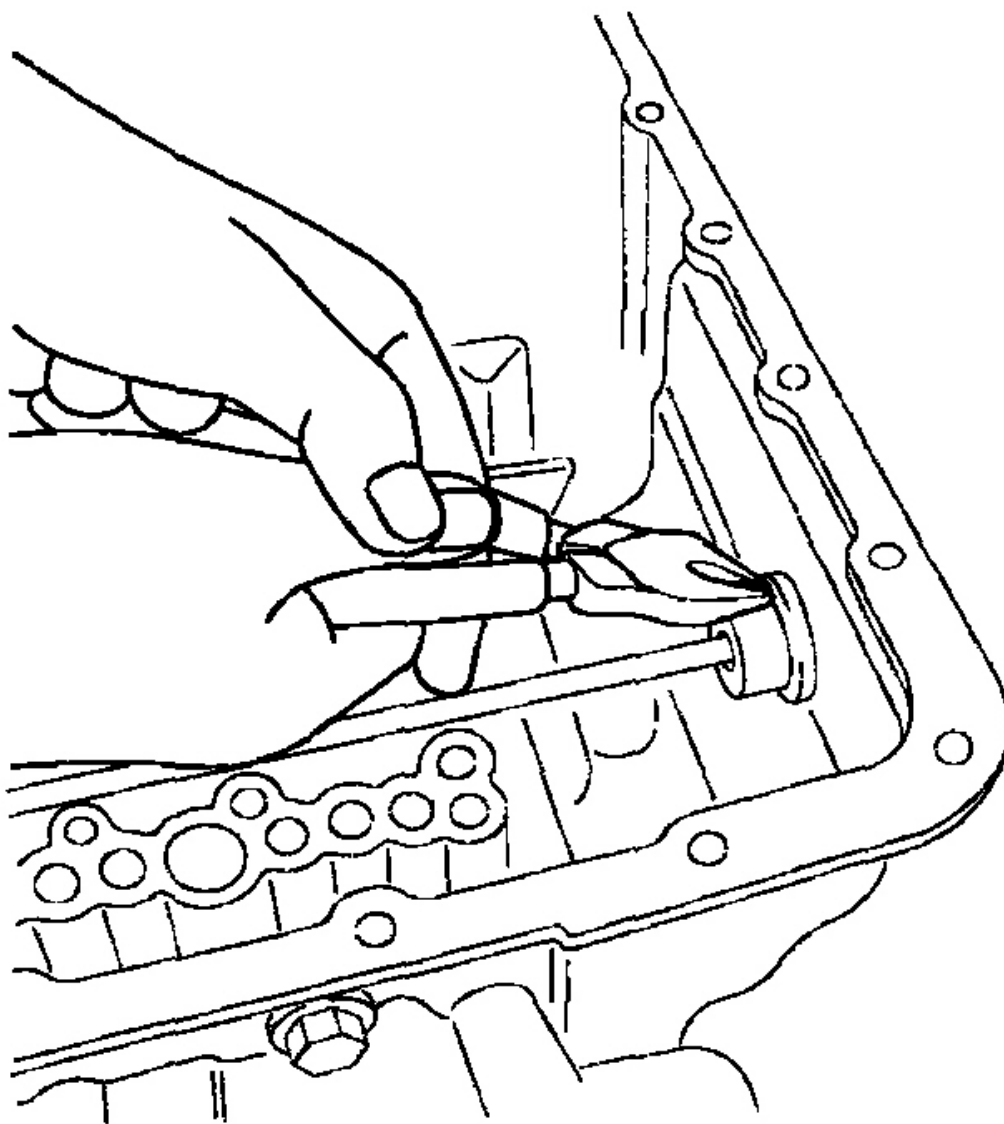
**G03877605**

Fig. 37: Taping Spring Pin Of Manual Shaft
Courtesy of KIA MOTORS AMERICA, INC.

34. Press the spring pin of the manual shaft with a nipper to pull out.

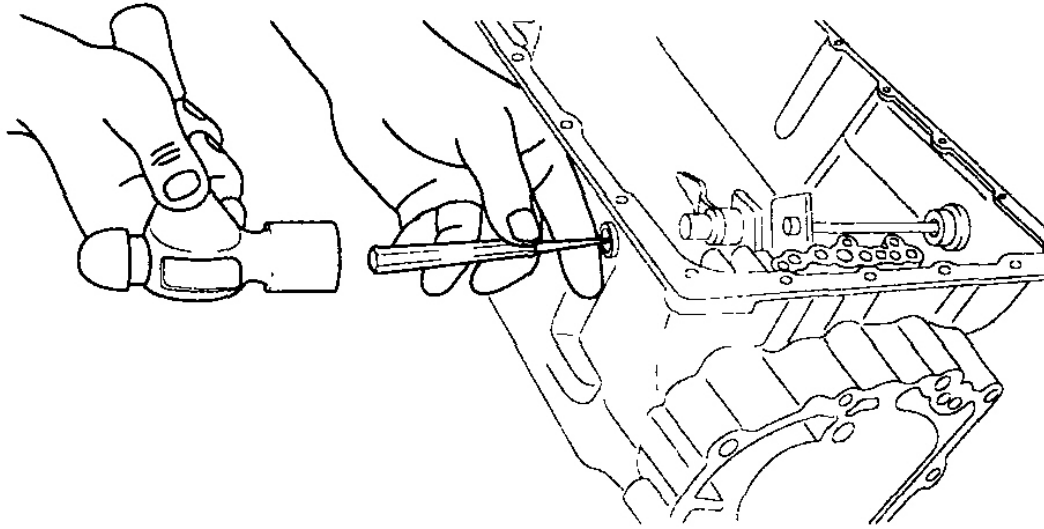
Discard the spring pin.



G03877606

Fig. 38: Pressing Spring Pin Of Manual Shaft
Courtesy of KIA MOTORS AMERICA, INC.

35. Remove the manual shaft.

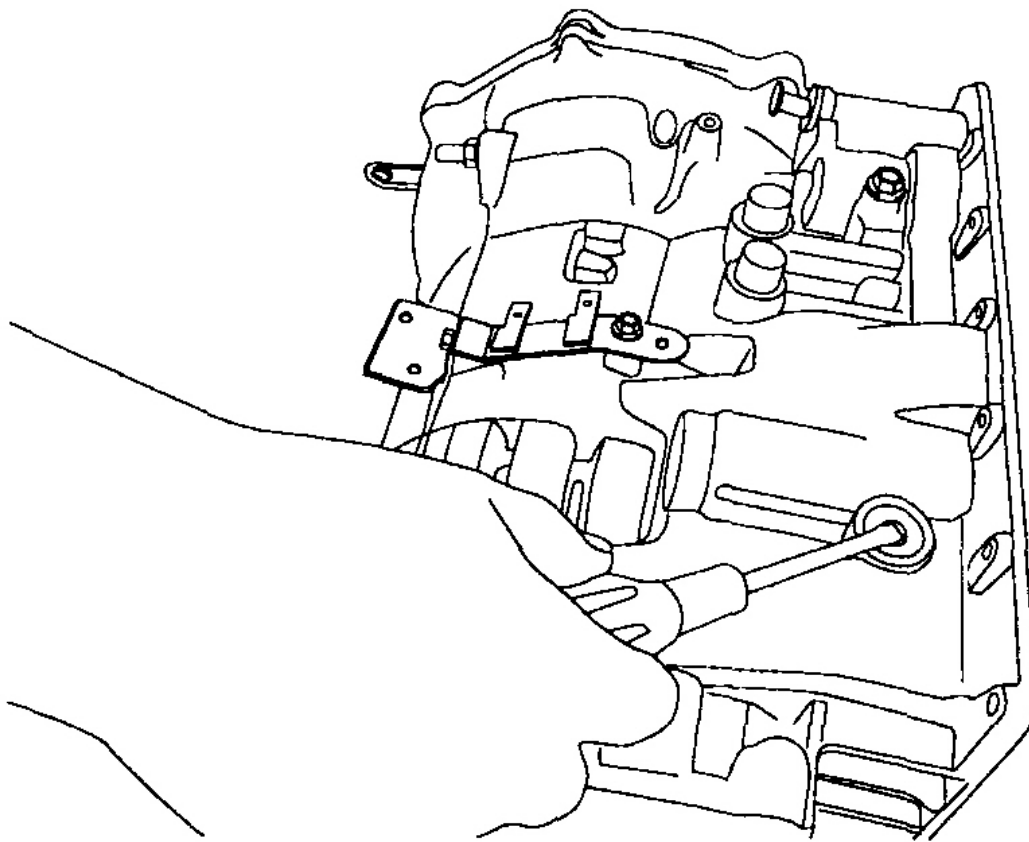


G03877607

Fig. 39: Removing Manual Shaft
Courtesy of KIA MOTORS AMERICA, INC.

36. Remove the oil seal (2).

Discard the oil seal.

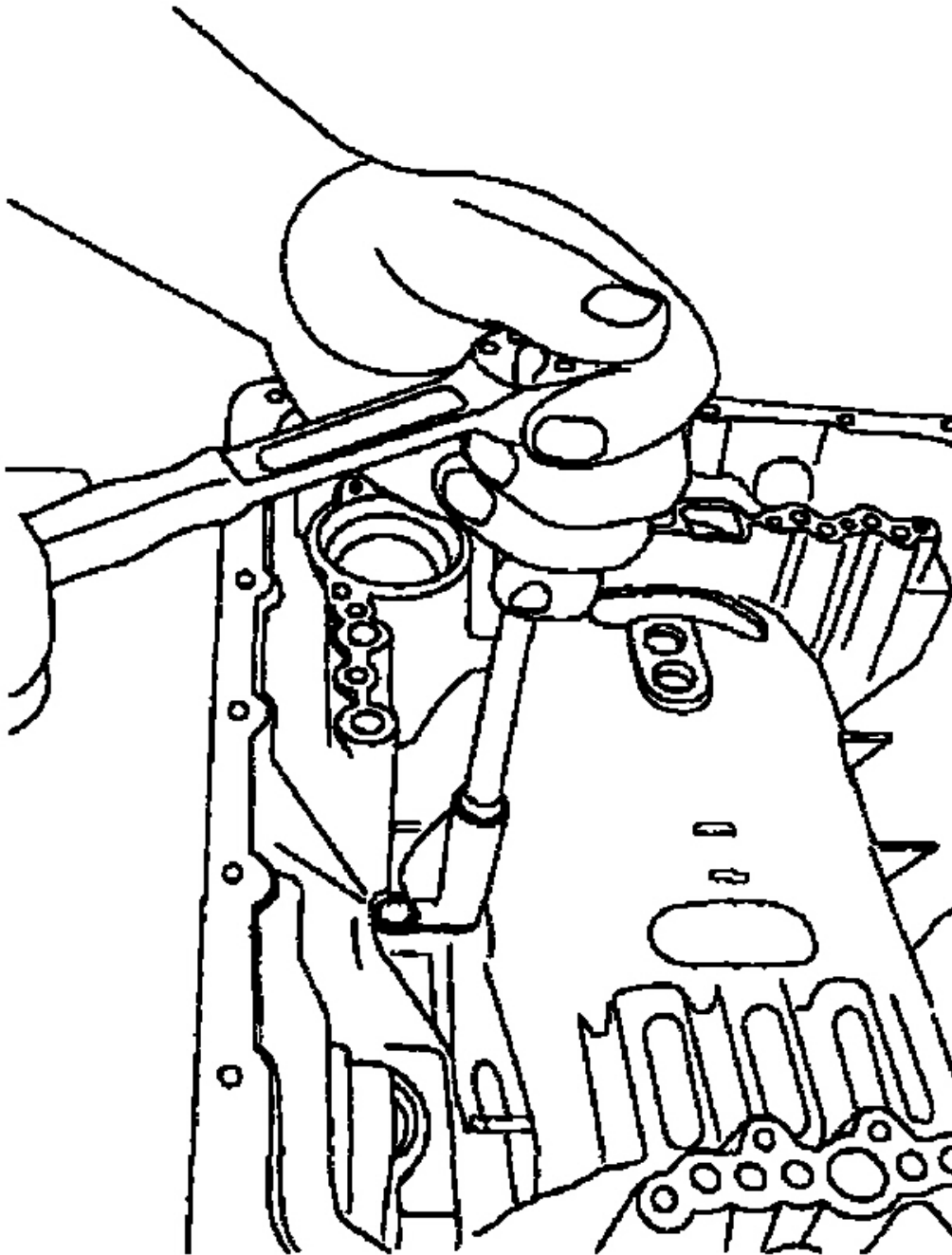


G03877608

Fig. 40: Removing Oil Seal

Courtesy of KIA MOTORS AMERICA, INC.

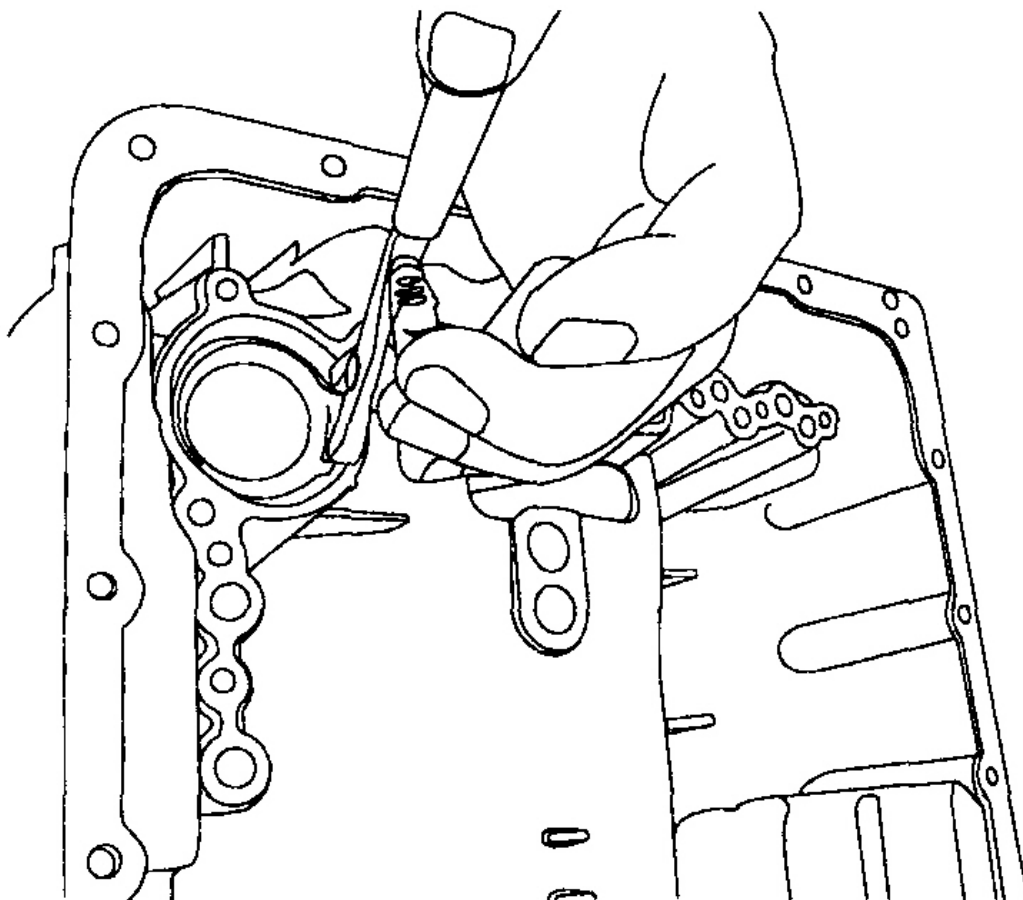
37. Pull out the detent spring.



G03877609

Fig. 41: Pulling Out Detent Spring
Courtesy of KIA MOTORS AMERICA, INC.

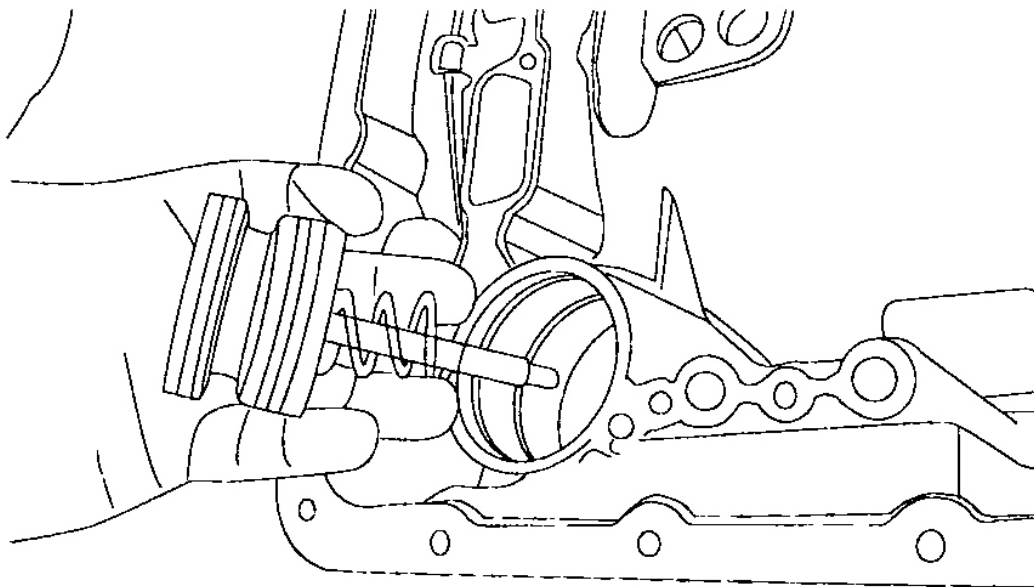
38. Use the snap ring pliers to pull out the snap ring from the servo part.



G03877610

Fig. 42: Pulling Out Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

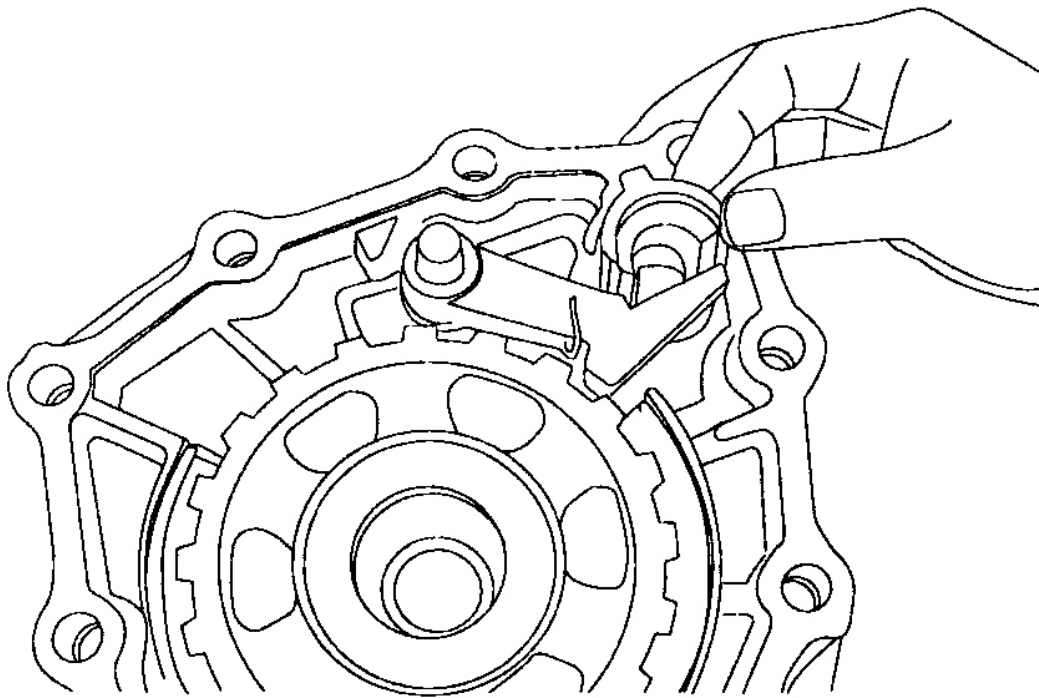
39. Remove the servo retainer/stem piston/return spring.



G03877611

Fig. 43: Removing Servo Retainer/Stem Piston/Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

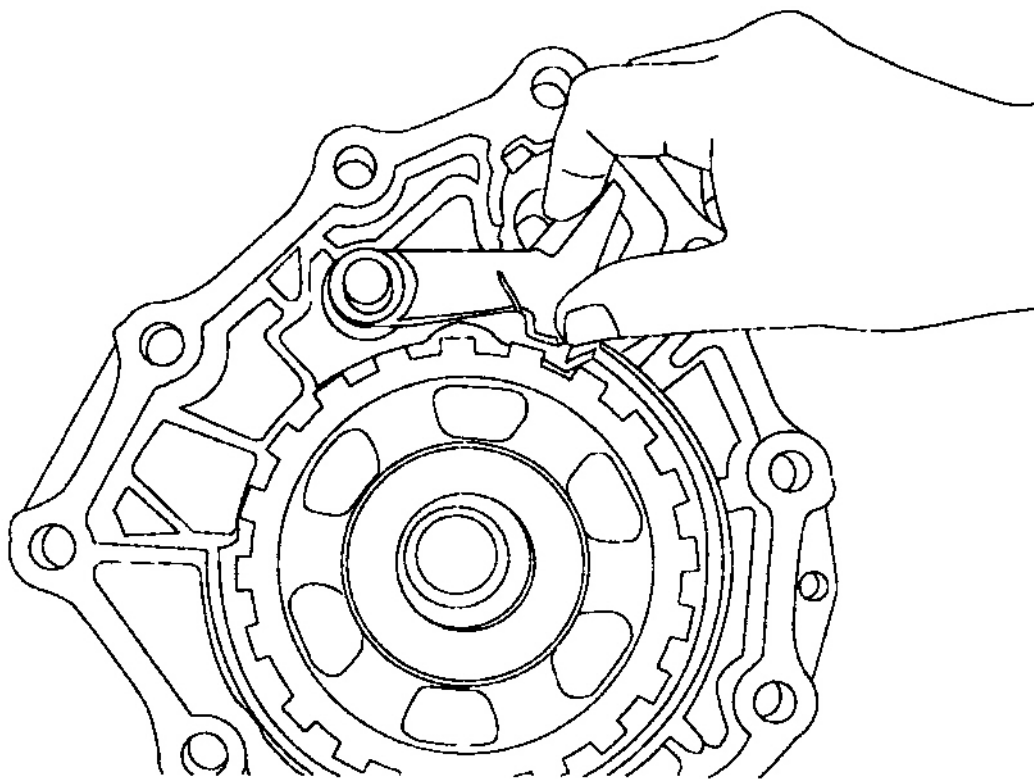
40. Pull out the actuator support part.



G03877612

Fig. 44: Pulling Out Actuator Support Part
Courtesy of KIA MOTORS AMERICA, INC.

41. Remove the parking pole, shaft, and return spring.

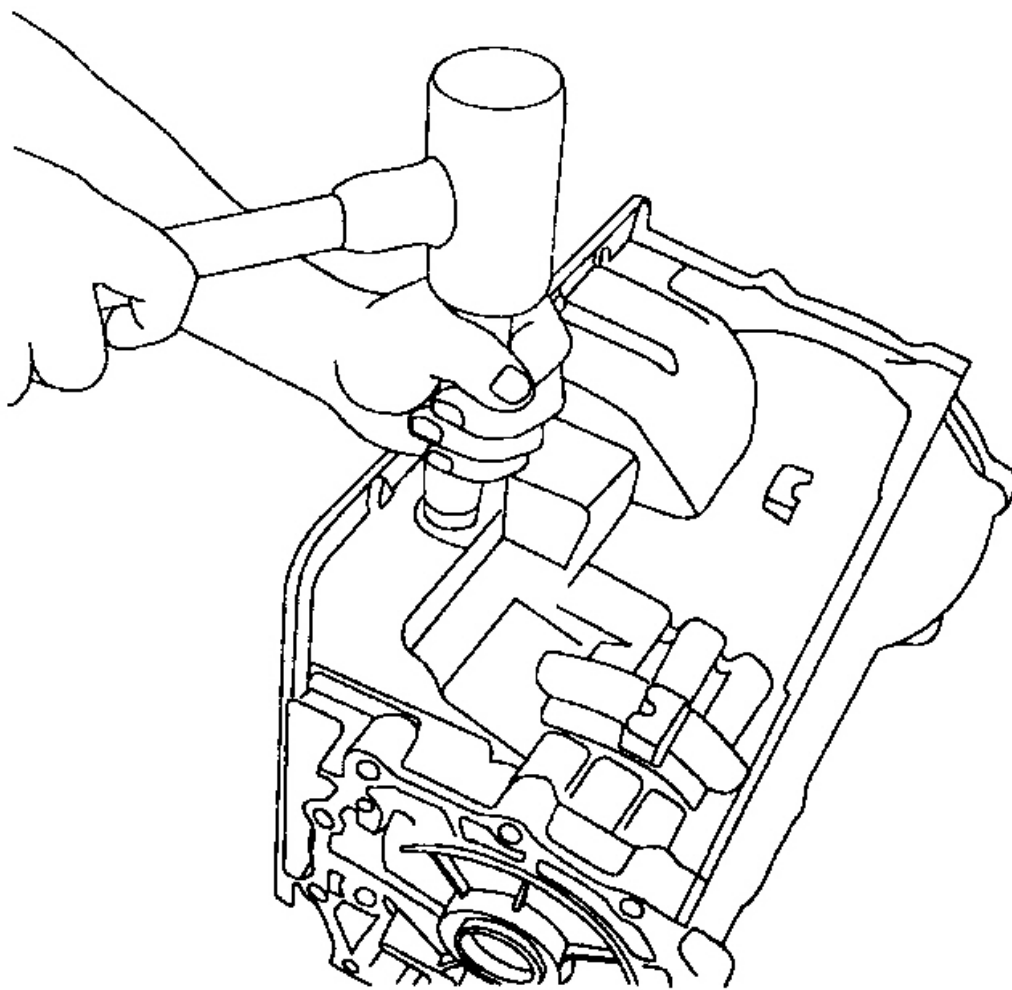


G03877613

Fig. 45: Removing Parking Pole, Shaft, And Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

REASSEMBLY

1. Use drift to punch the oil seal (2).

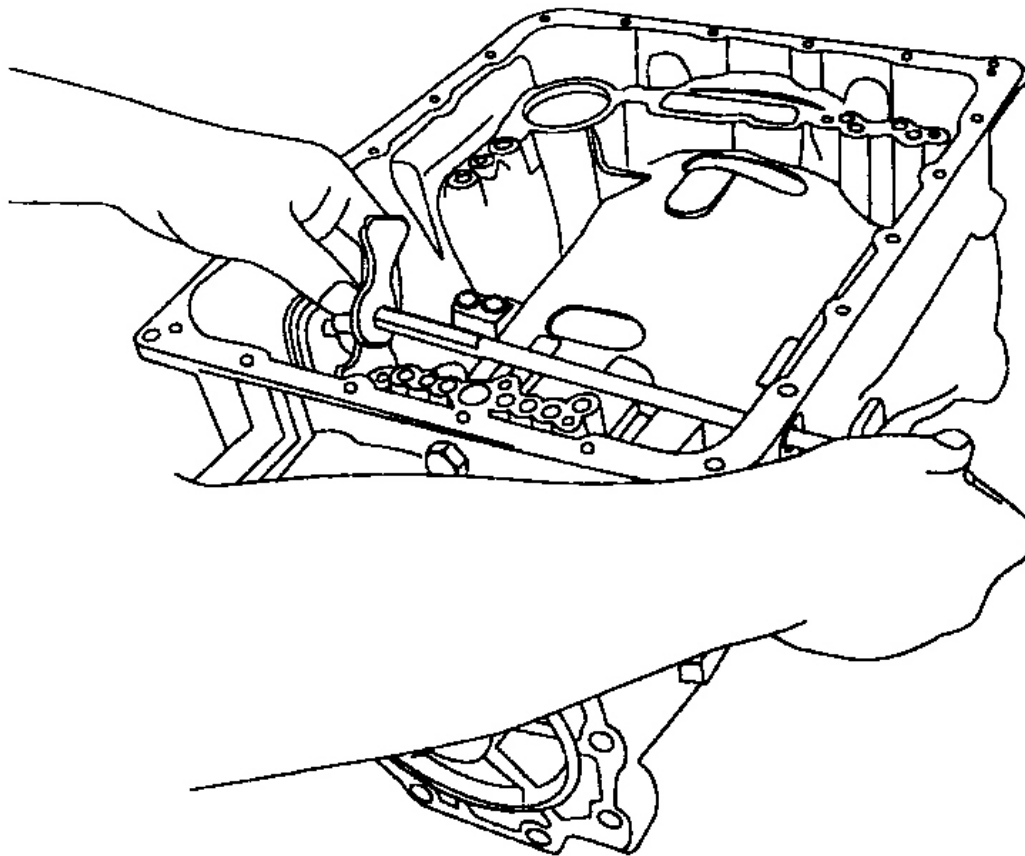


G03877614

Fig. 46: Punching Oil Seal

Courtesy of KIA MOTORS AMERICA, INC.

2. Assembly the manual shaft and the manual plate parking road.



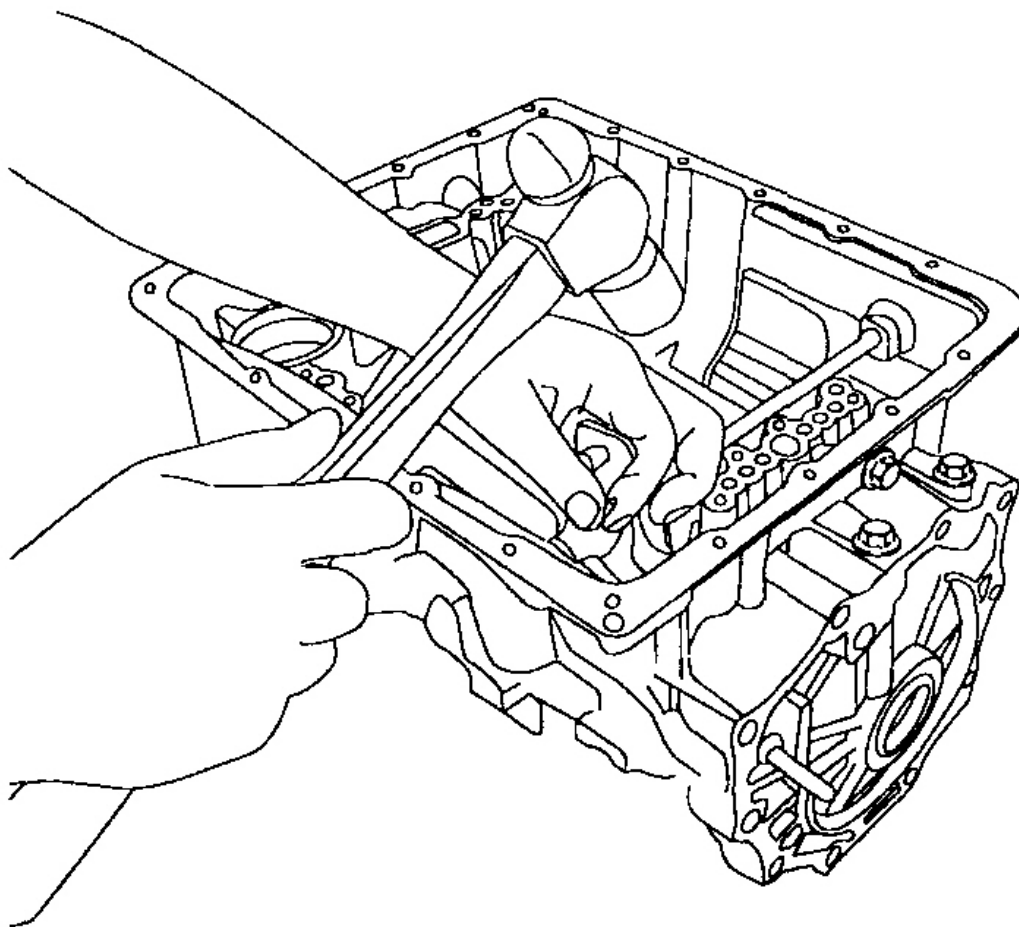
G03877615

Fig. 47: Assembling Manual Shaft And Manual Plate Parking Road
Courtesy of KIA MOTORS AMERICA, INC.

3. Punch the spring pin that attaches the manual plate to the manual shaft.

Use the punch or something similar to fit with the holes.

Make sure that the spring pin can be pulled out. Leave 2 +/-0.5 mm(0.0787~0.0197in.) of the tip.



G03877616

Fig. 48: Punching Spring Pin

Courtesy of KIA MOTORS AMERICA, INC.

4. Use the punch or something similar to locate the hole of the spring pin that attaches the manual shaft to the case.

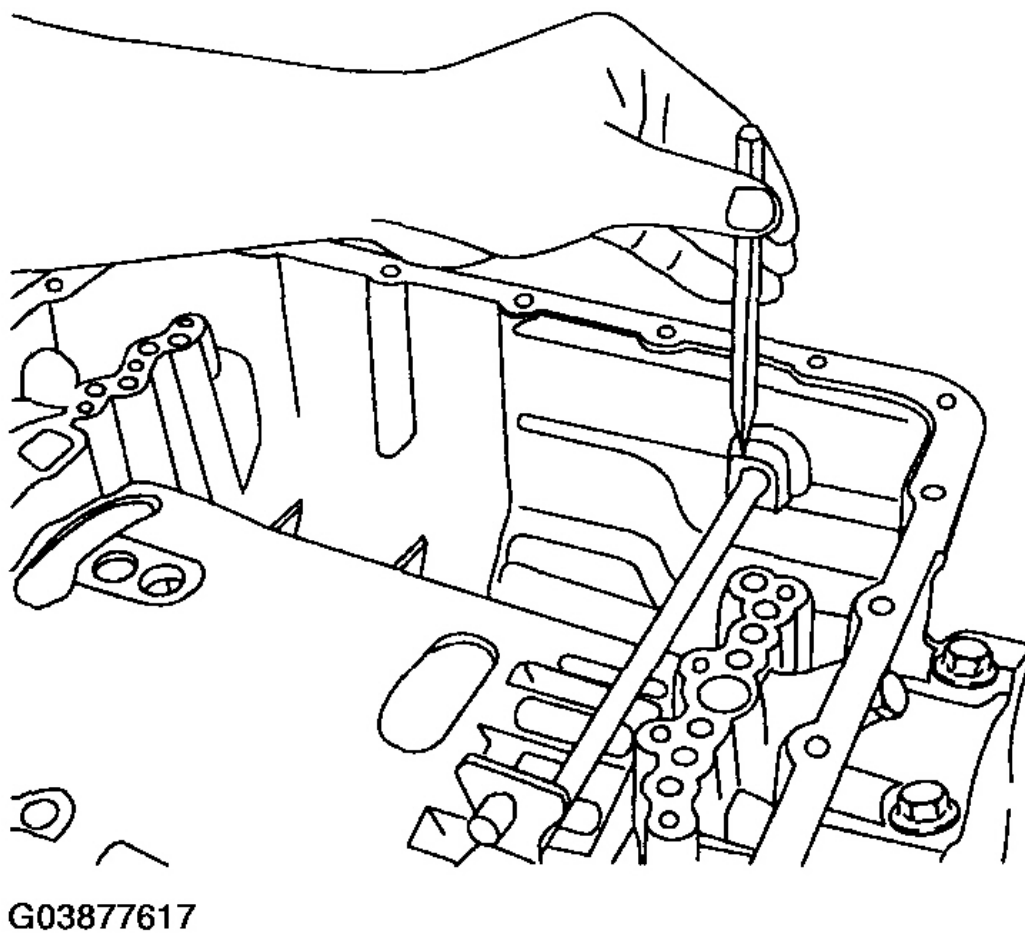
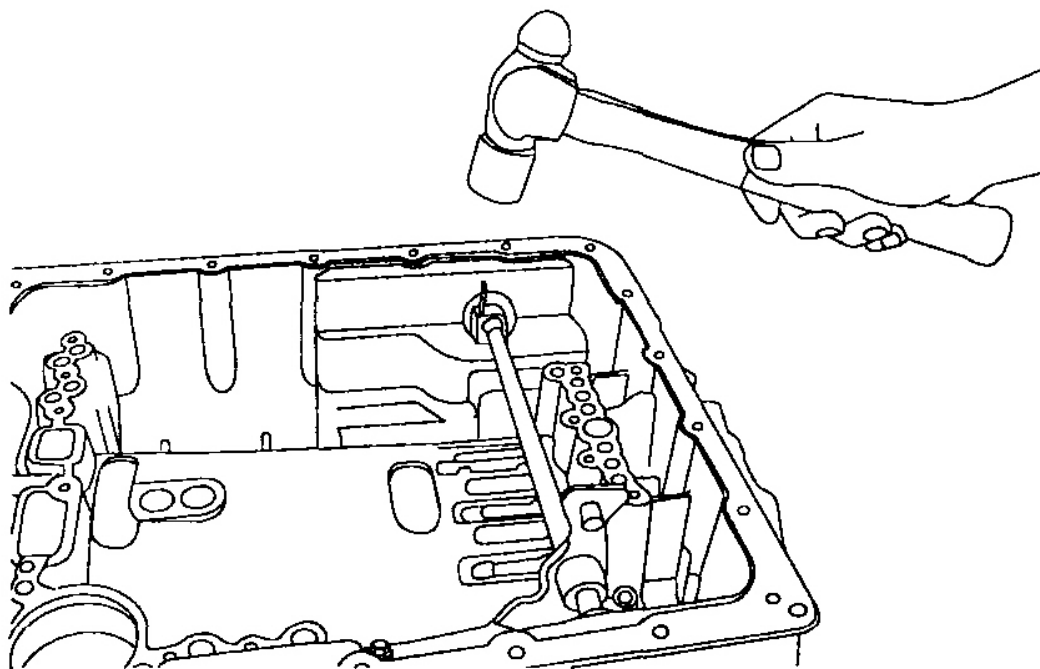


Fig. 49: Locating Hole Of Spring Pin
Courtesy of KIA MOTORS AMERICA, INC.

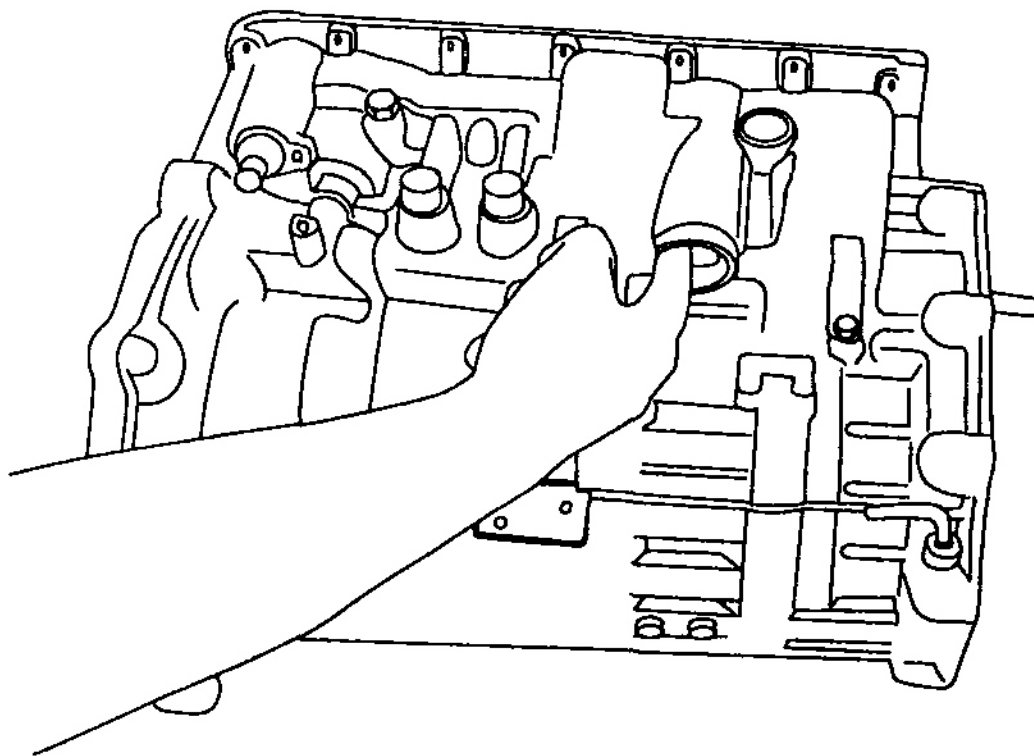
5. Attach the manual shaft to the case. Punch the spring pin. Leave 5 +/-1 mm(0.1969~ 0.0394in.).



G03877618

Fig. 50: Attaching Manual Shaft To Case
Courtesy of KIA MOTORS AMERICA, INC.

6. Apply vaseline to the terminal assembly installation hole.



G03877619

Fig. 51: Applying Vaseline To Terminal Assembly Installation Hole
Courtesy of KIA MOTORS AMERICA, INC.

7. Insert the terminal assembly to the installation hole.

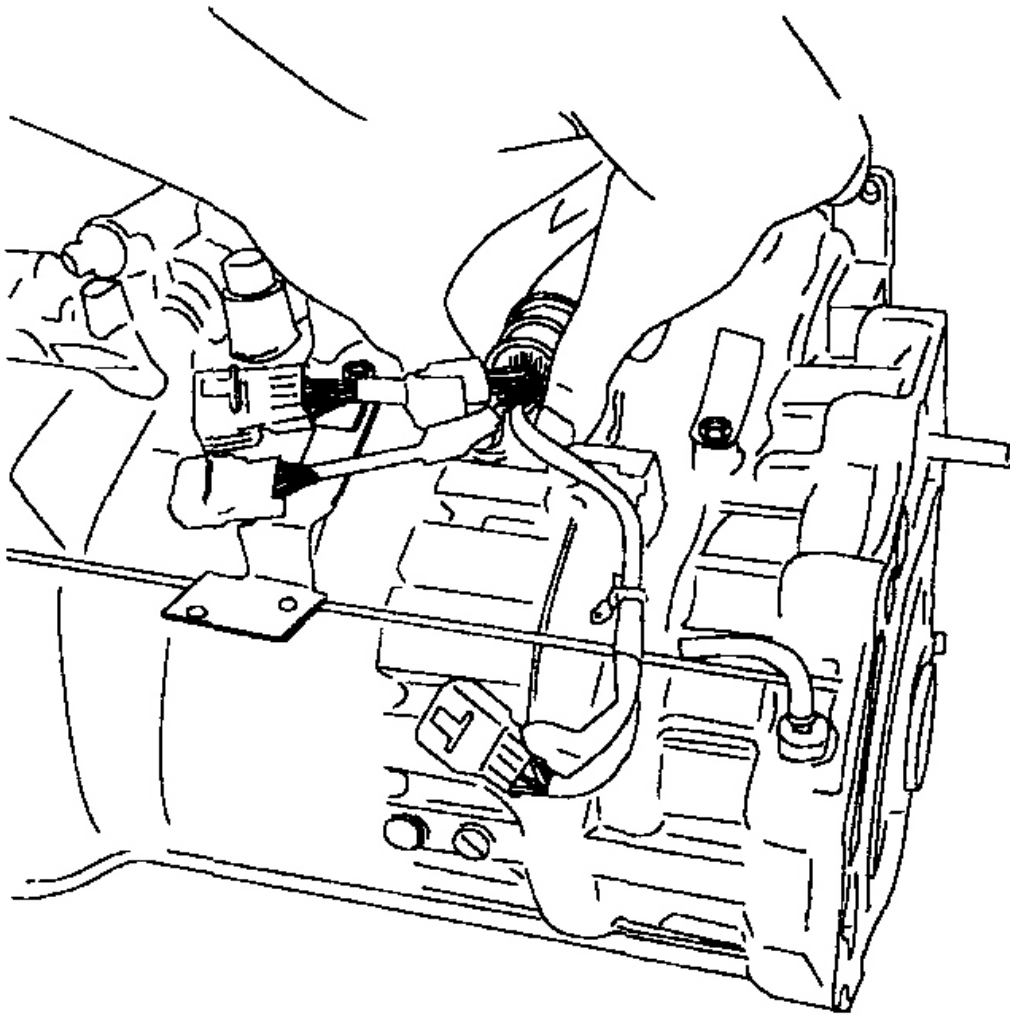
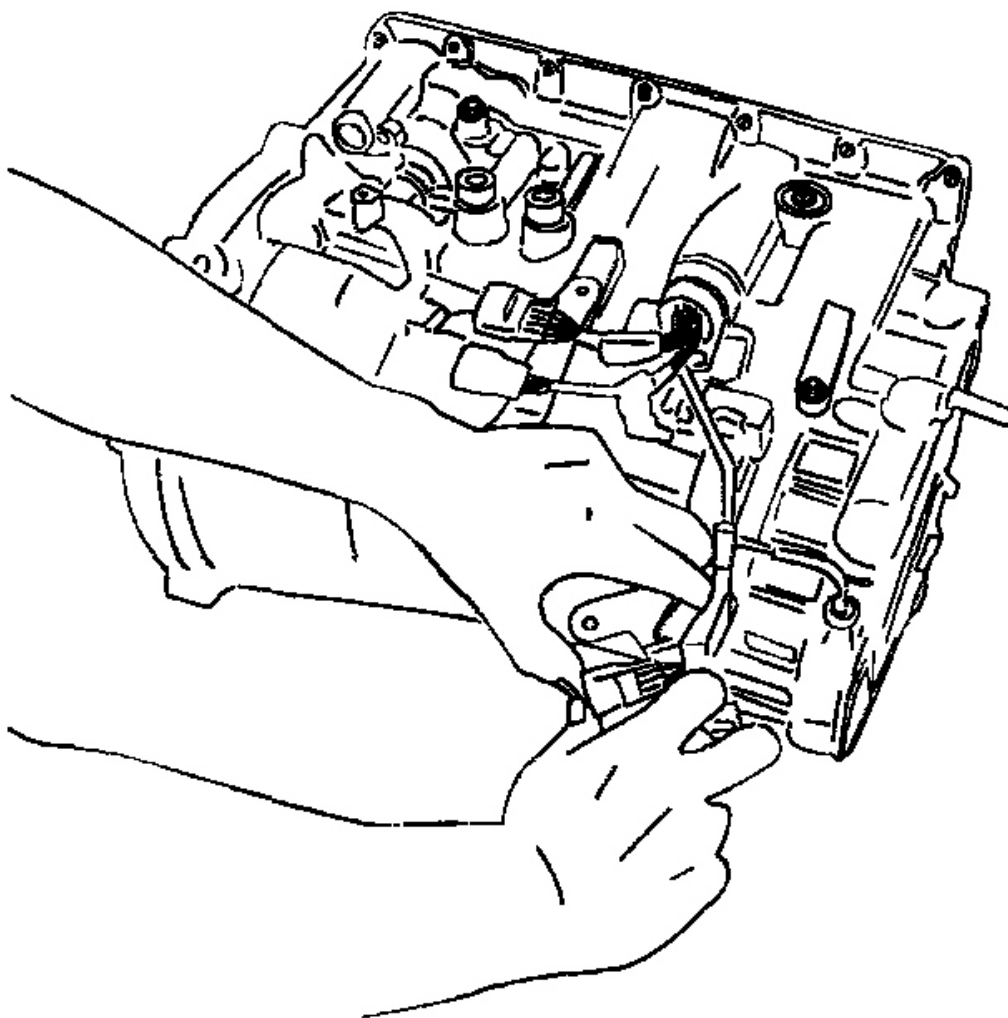
**G03877620**

Fig. 52: Inserting Terminal Assembly To Installation Hole
Courtesy of KIA MOTORS AMERICA, INC.

8. Attach the terminal connector to the bracket.

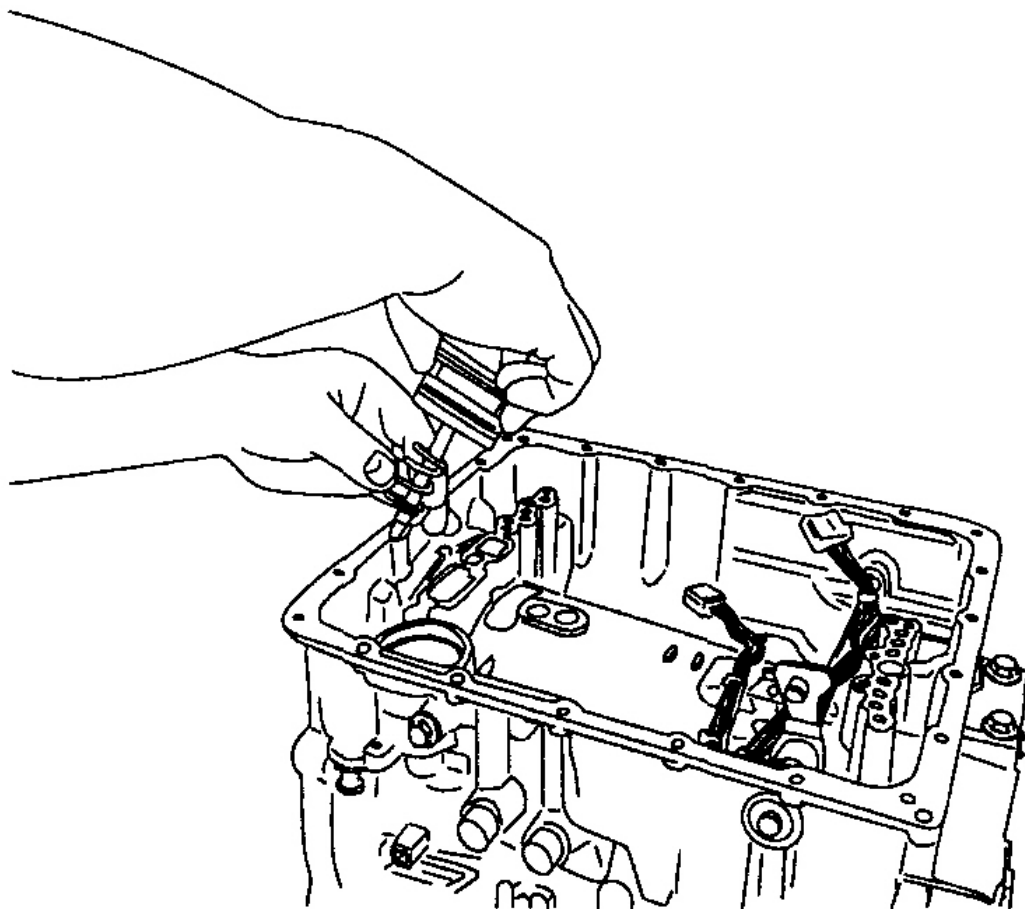
The position for each connector is as in figure below.



G03877621

Fig. 53: Attaching Terminal Connector To Bracket
Courtesy of KIA MOTORS AMERICA, INC.

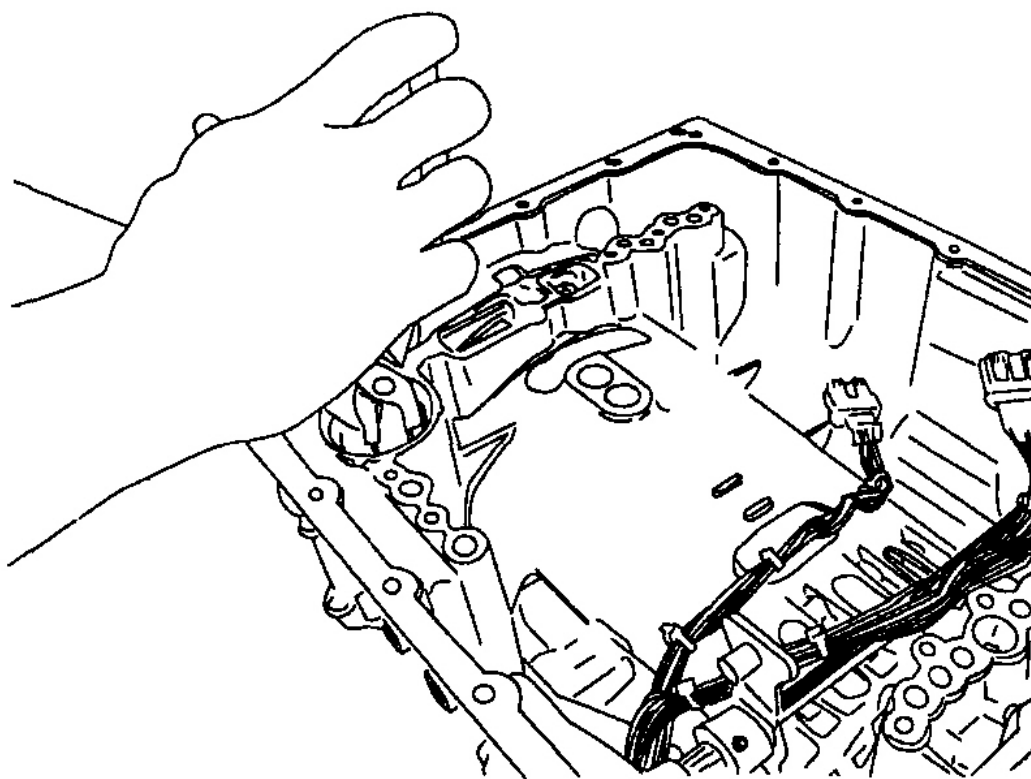
9. Attach the servo piston, servo retainer, and servo stem return spring to the case.



G03877622

Fig. 54: Attaching Servo Piston, Servo Retainer, And Servo Stem Return Spring To Case
Courtesy of KIA MOTORS AMERICA, INC.

10. Attach the snap ring of the servo.

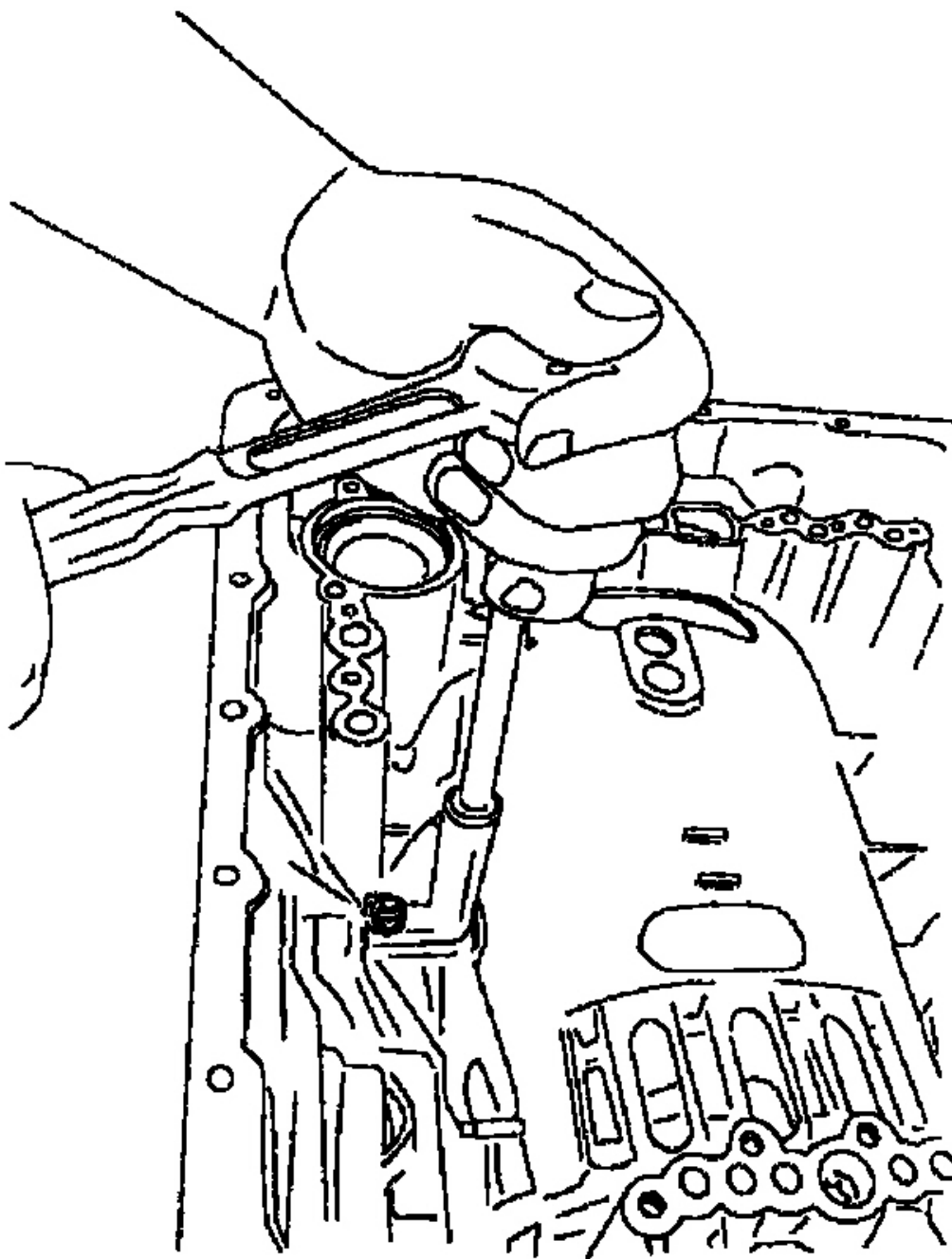


G03877623

Fig. 55: Attaching Snap Ring Of Servo
Courtesy of KIA MOTORS AMERICA, INC.

11. Fix the detent spring.

Tightening torque: 6.9 ~ 8.8 Nm (69 ~ 88kg.cm, 5.1 ~ 6.5lbf.ft)



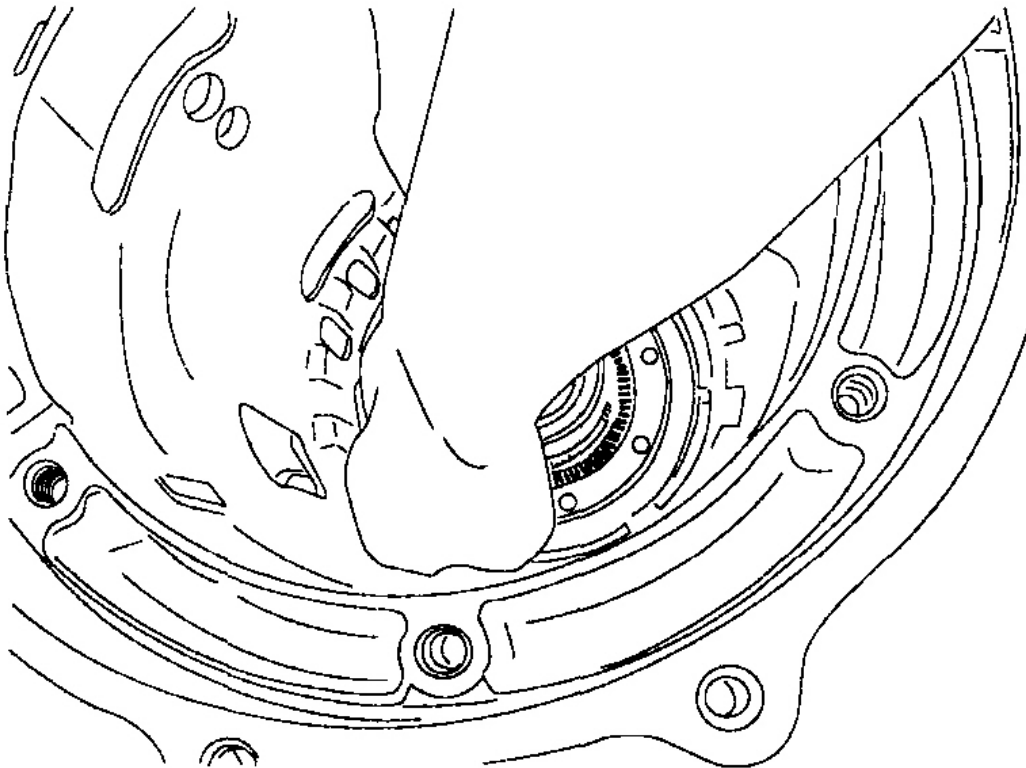
G03877624

Fig. 56: Fixing Detent Spring

Courtesy of KIA MOTORS AMERICA, INC.

12. Apply Vaseline to the outer O-ring of the reverse brake piston.
13. Assembly the reverse brake piston.

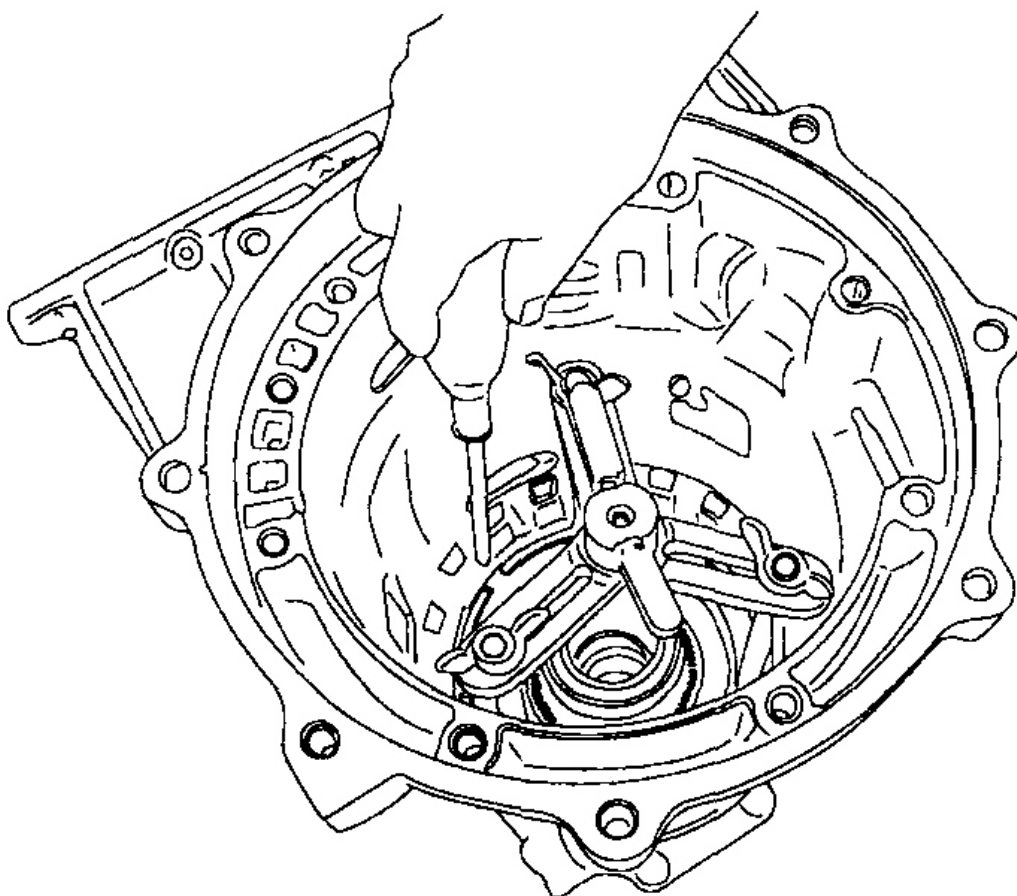
Apply the drum support bearing to install.



G03877625

Fig. 57: Assembling Reverse Brake Piston
Courtesy of KIA MOTORS AMERICA, INC.

14. Assembly the return spring of the reverse brake piston and the spring retainer.
Use the clutch compressor to install the snap ring that installs the spring retainer.
Use the driver to make sure since the tension of the snap ring is somewhat weak.

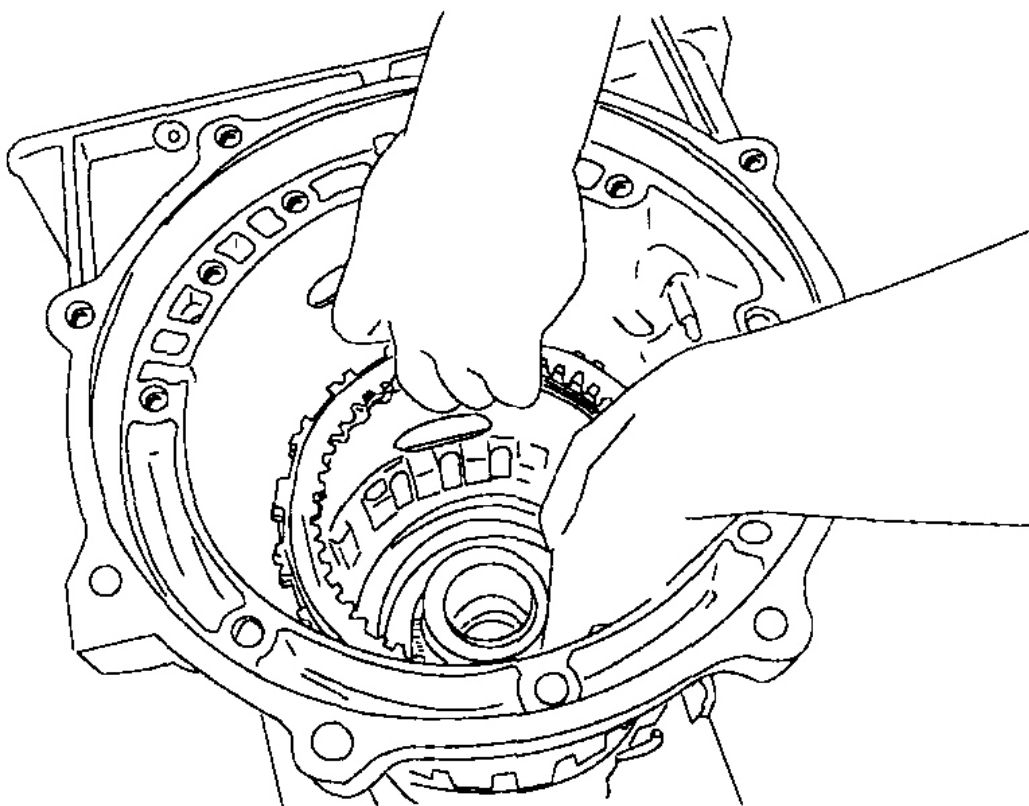


G03877626

Fig. 58: Installing Snap Ring

Courtesy of KIA MOTORS AMERICA, INC.

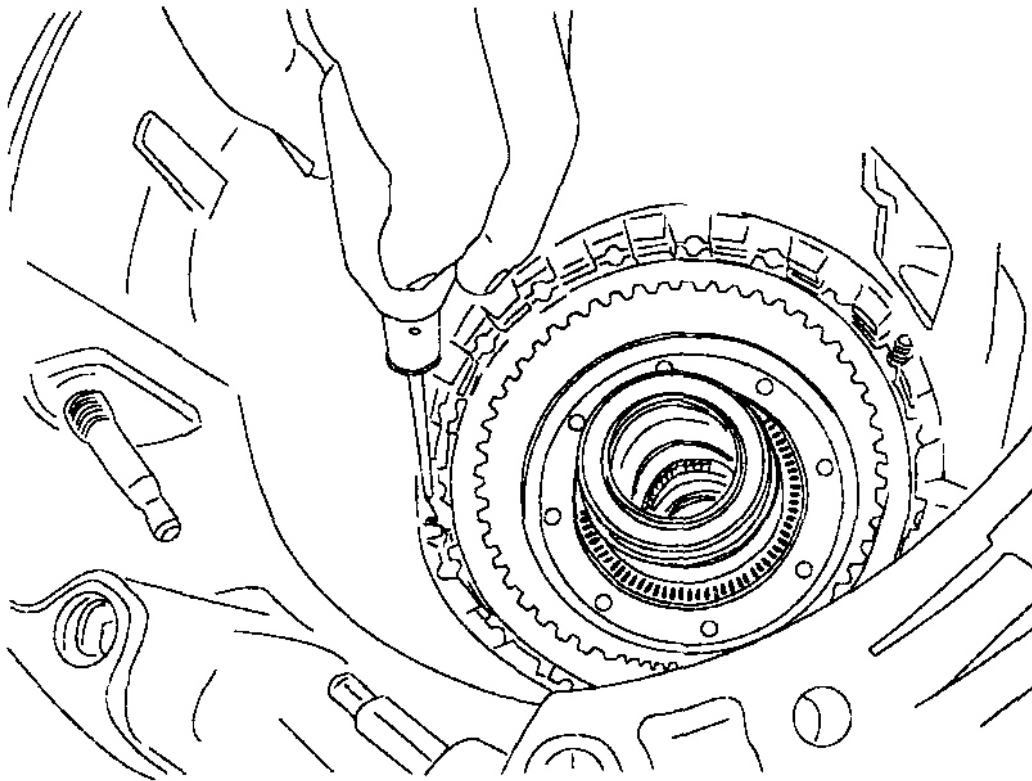
15. Assembly the reverse brake clutches.



G03877627

Fig. 59: Assembling Reverse Brake Clutches
Courtesy of KIA MOTORS AMERICA, INC.

16. Assembly SPG to prevent shattering.



G03877628

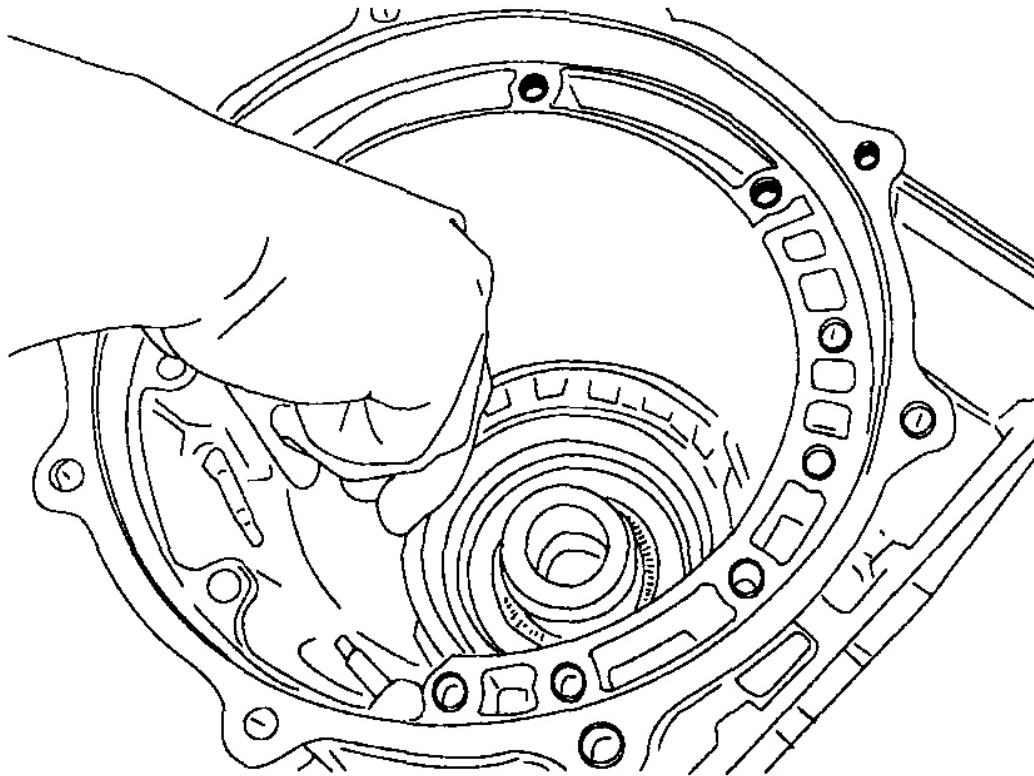
Fig. 60: Assembling SPG To Prevent Shattering
 Courtesy of KIA MOTORS AMERICA, INC.

NOTE: Adjust the gap between reverse ~ brake Check L dimension using a thickness gauge and adjust it to become 0.7 ~ 1.1 mm(0.0276 ~ 0.0433in.) using the retainer plate. When L dimension is not within the aforesaid values, check the thickness of the retainer plate and select the proper part of the following table and replace it.

PART NUMBER AND DIMENSION REFERENCE

Part number	Dimension [mm(in.)]
45627-4C000	4.2 (0.1654)
45627-4C001	4.4 (0.1732)
45627-4C002	4.6 (0.1811)
45627-4C003	4.8 (0.1890)
45627-4C004	5.0 (0.1969)

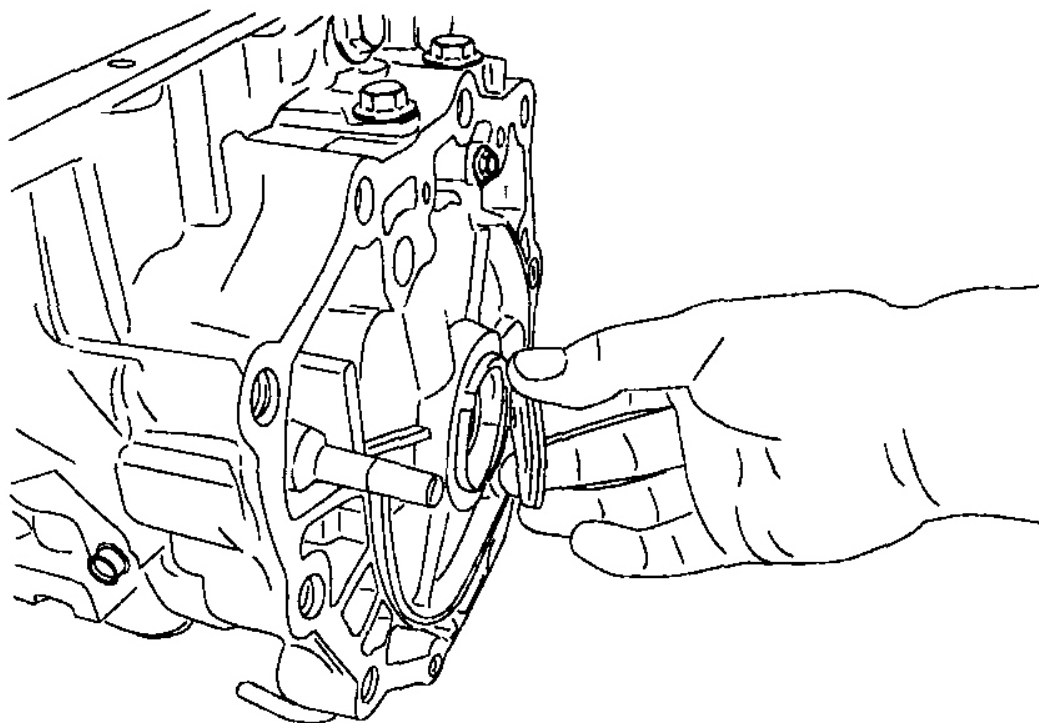
17. Assembly the snap ring that is for fixing the reverse brake plates.



G03877629

Fig. 61: Assembling Snap Ring
Courtesy of KIA MOTORS AMERICA, INC.

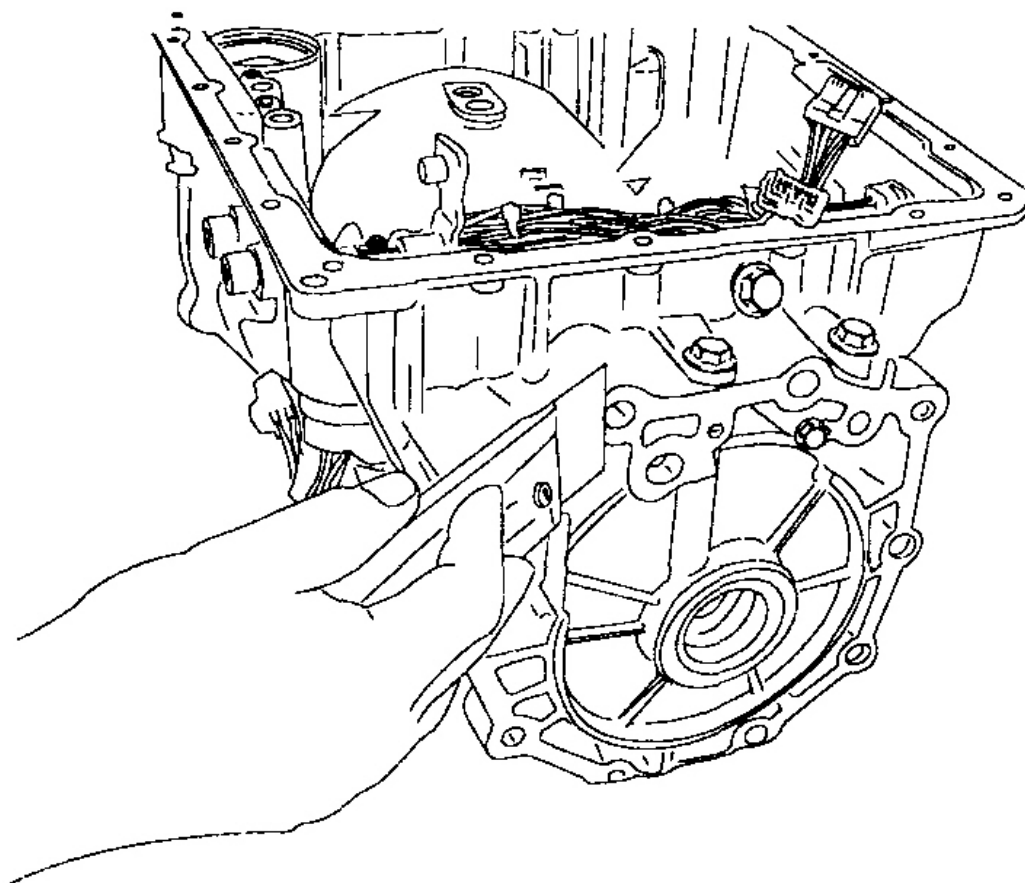
18. Install the bearing that Vaseline has been applied to the rear case surface.



G03877630

Fig. 62: Installing Bearing
Courtesy of KIA MOTORS AMERICA, INC.

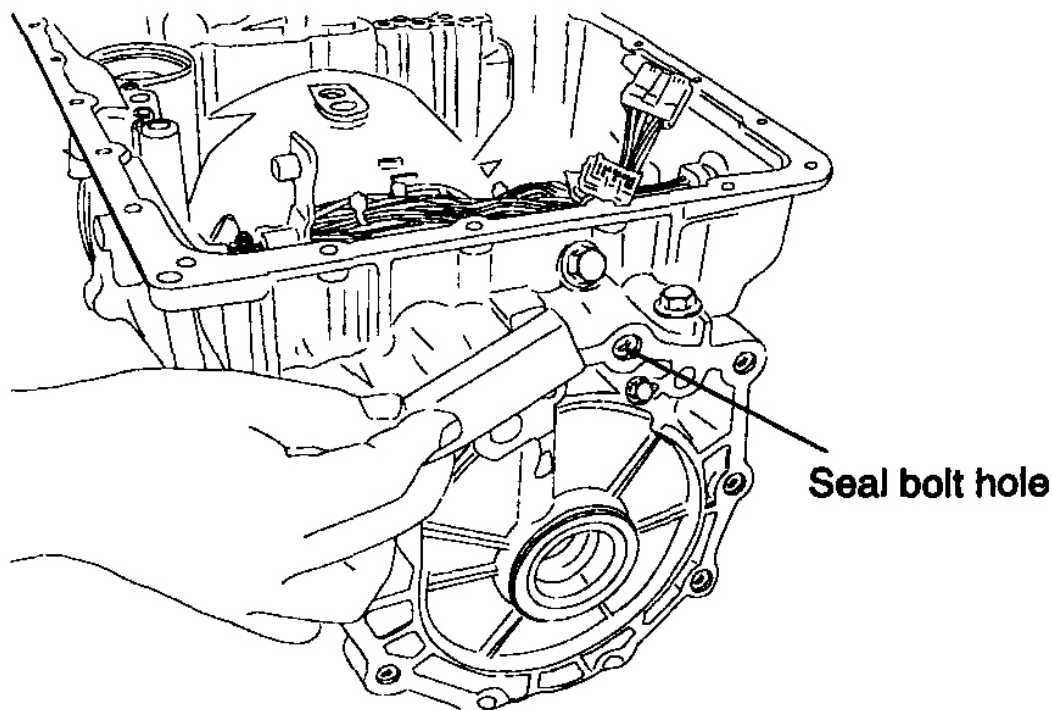
19. Scratch off the sealant.

**G03877631****Fig. 63: Scratching Off Sealant****Courtesy of KIA MOTORS AMERICA, INC.**

20. Wipe the surface that is in contact with the extension with an oil whetstone lightly and remove the sealant completely.

Tap the seal bolt slit lightly.

Apply the washer fluid to wipe with the whetstone so that the removed gasket not to become sticking.



G03877632

Fig. 64: Identifying Location Seal Bolt Hole
Courtesy of KIA MOTORS AMERICA, INC.

21. Scratch off the sealant that is attached to the surface that is contact with the case.

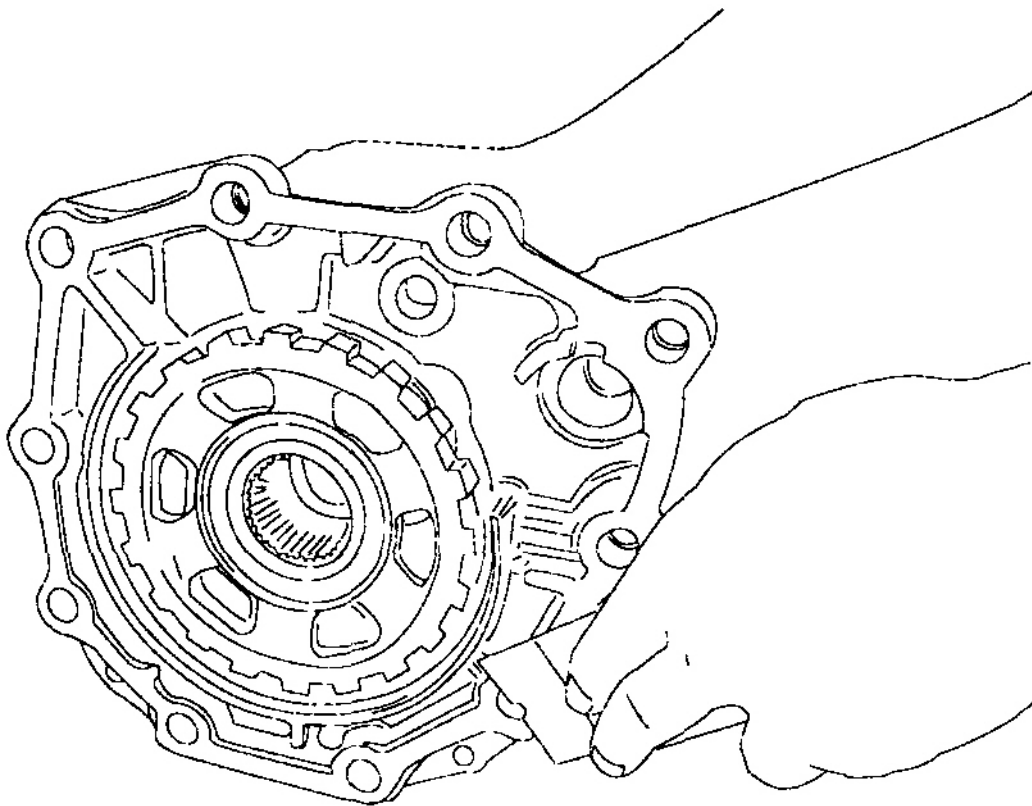
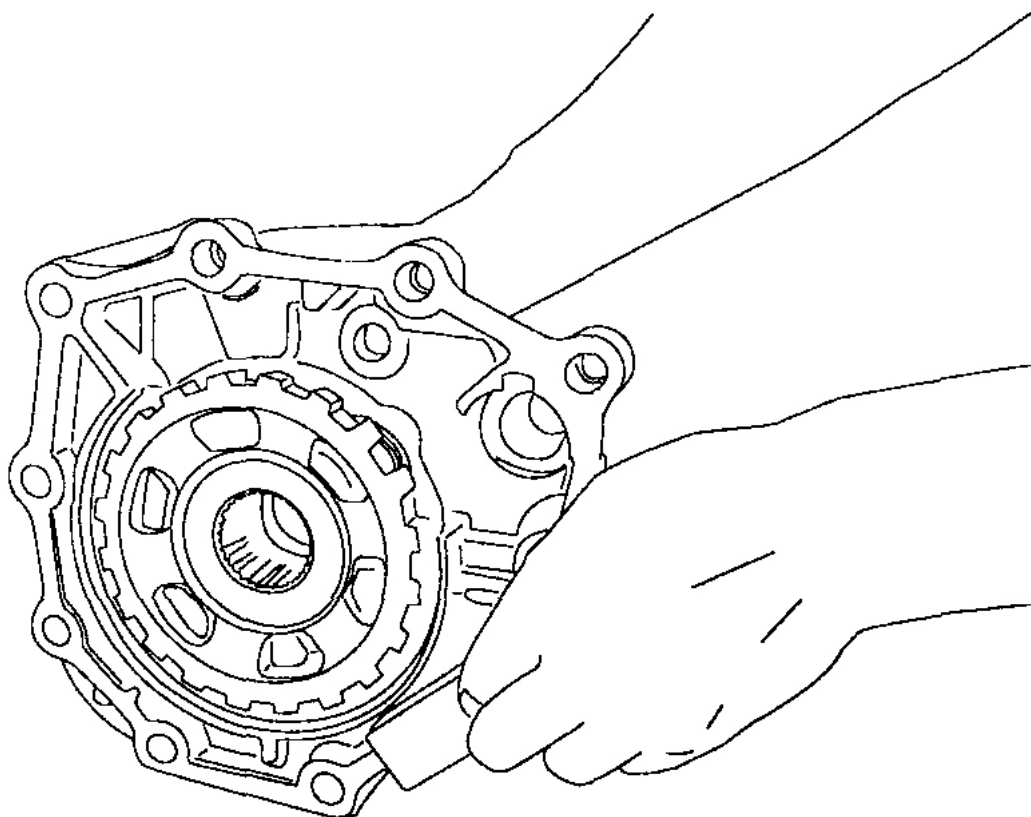
**G03877633**

Fig. 65: Scratching Off Sealant
Courtesy of KIA MOTORS AMERICA, INC.

22. Wipe the surface conjoined with the case with oil whetstone lightly and remove the sealant completely. Tap the seal bolt slit lightly.

Apply the washer fluid to wipe with the whetstone so that the case not to become sticking after cleaning.

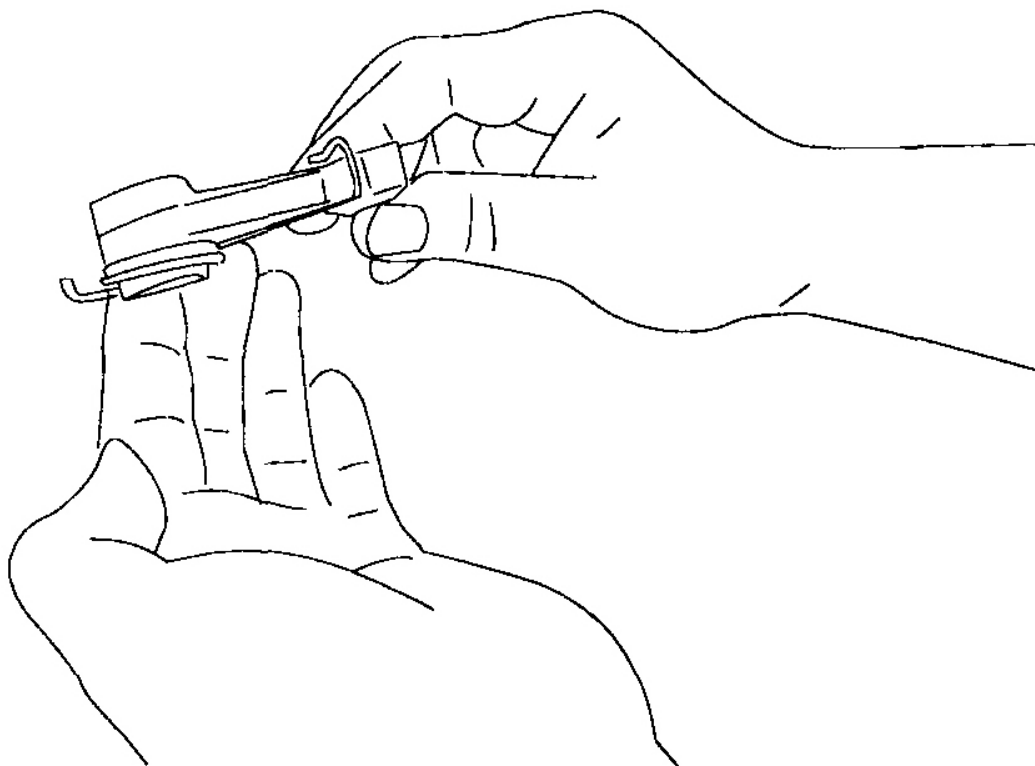


G03877634

Fig. 66: Wiping Surface

Courtesy of KIA MOTORS AMERICA, INC.

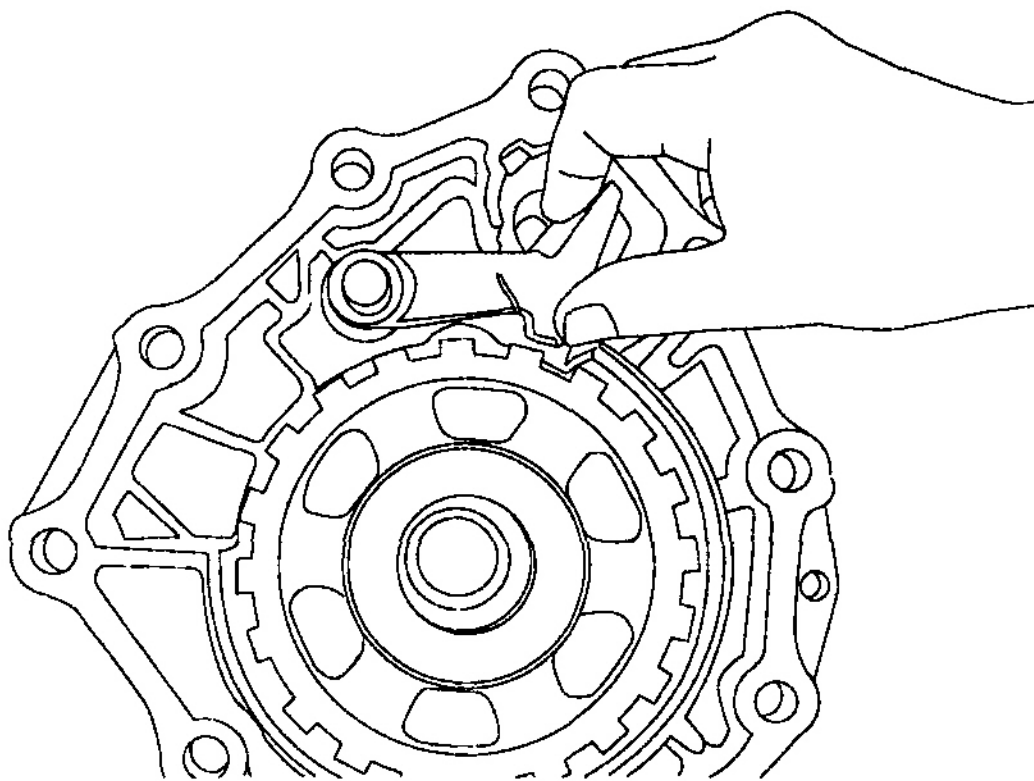
23. Install the return spring to the parking pole. See the following figure when mounting.



G03877635

Fig. 67: Installing Return Spring
Courtesy of KIA MOTORS AMERICA, INC.

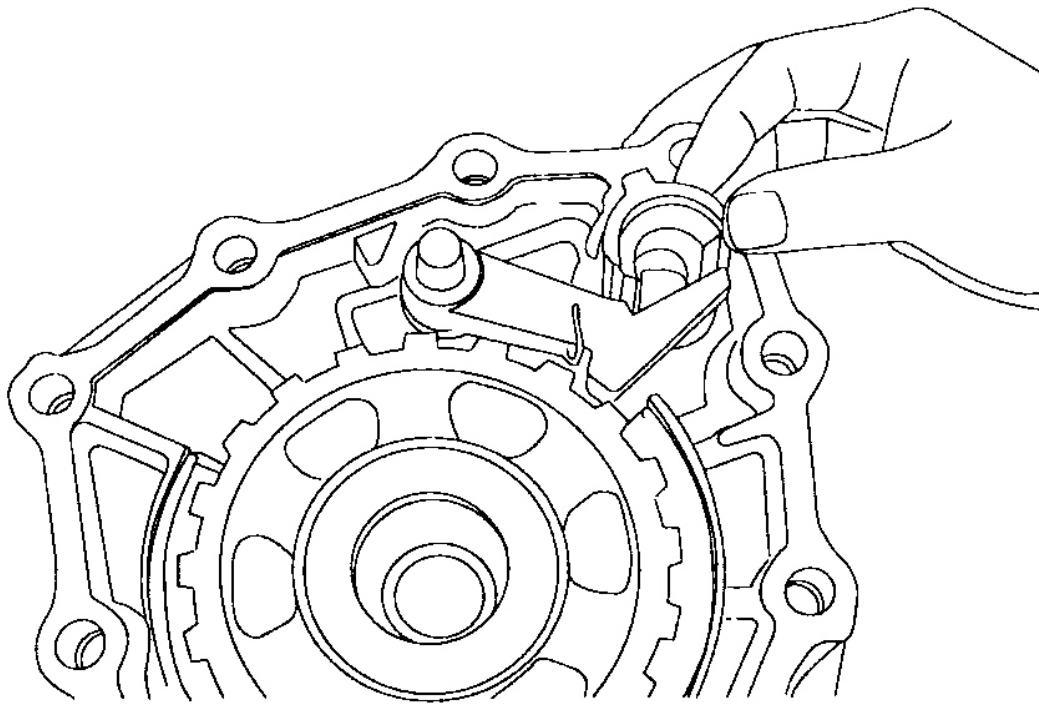
24. Install the parking pole, return spring shaft.



G03877636

Fig. 68: Installing Parking Pole, Return Spring Shaft
Courtesy of KIA MOTORS AMERICA, INC.

25. Install the actuator support.



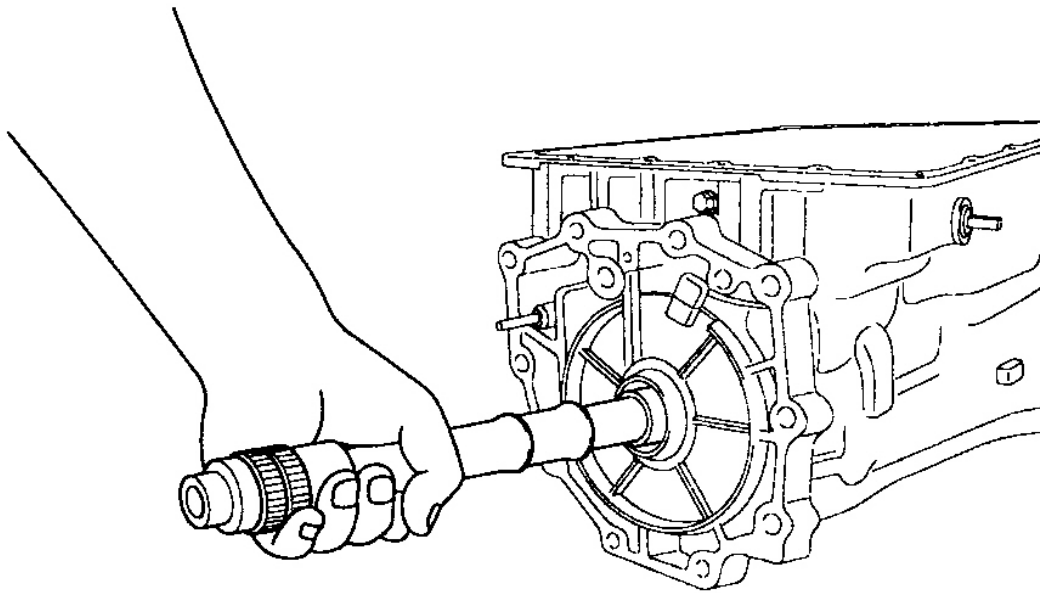
G03877637

Fig. 69: Installing Actuator Support
Courtesy of KIA MOTORS AMERICA, INC.

26. Assemble the output shat.

CAUTION: Note that the shapes of the front and back are similar. (Front side is where the tip outer diameter is narrower (Torque converter side))

See the shape figure.

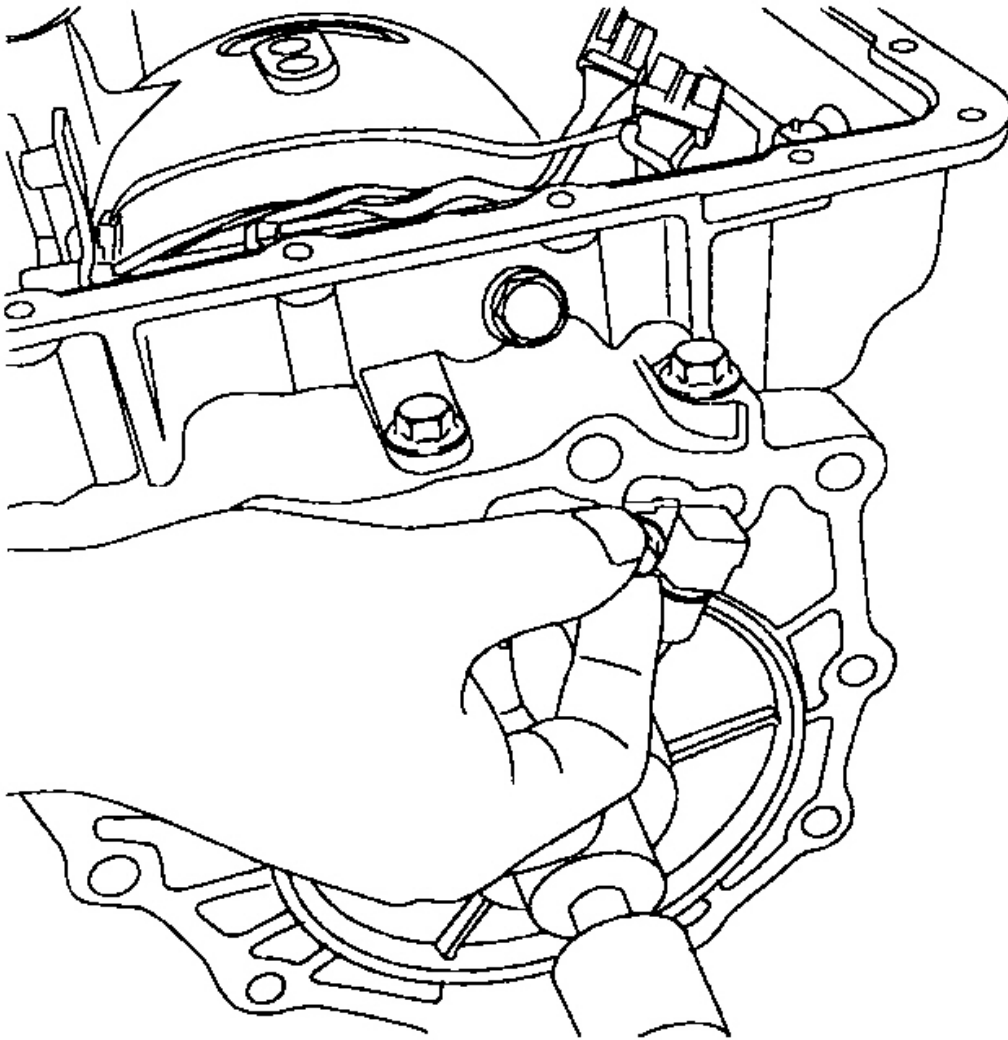


G03877638

Fig. 70: Assembling Output Shaft
Courtesy of KIA MOTORS AMERICA, INC.

27. Install the revolution sensor.

Tightening torque: 4.6 ~ 6.9Nm(46 ~ 69kg.cm, 3.4 ~ 5.1 lbf.ft)



G03877639

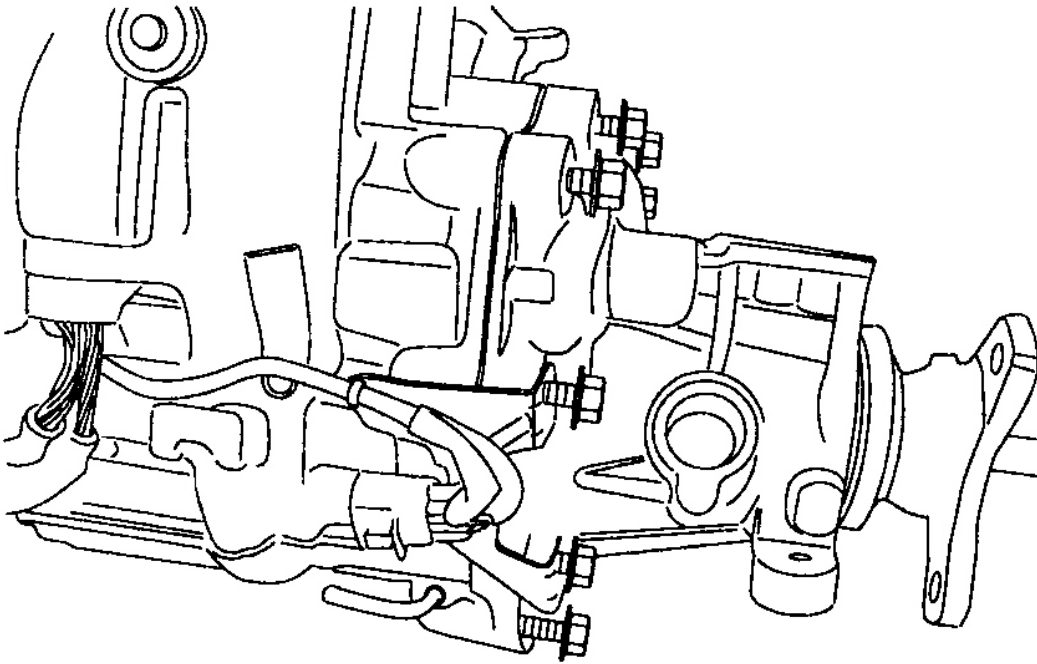
Fig. 71: Installing Revolution Sensor
Courtesy of KIA MOTORS AMERICA, INC.

28. Apply the sealant to the surface in contact with the extension case.

CAUTION: Use Loctite 518=part number: 313A98E000 made by Loctite Inc. In Japan. Remove the fluid gasket from the case contact surface, EXT contact surface and wipe the contact surface with washer not to have any harmful oil or dusts.

29. Assembly the output shaft to the case.
30. Tighten the output shaft & companion flange installation bolts provisionally.

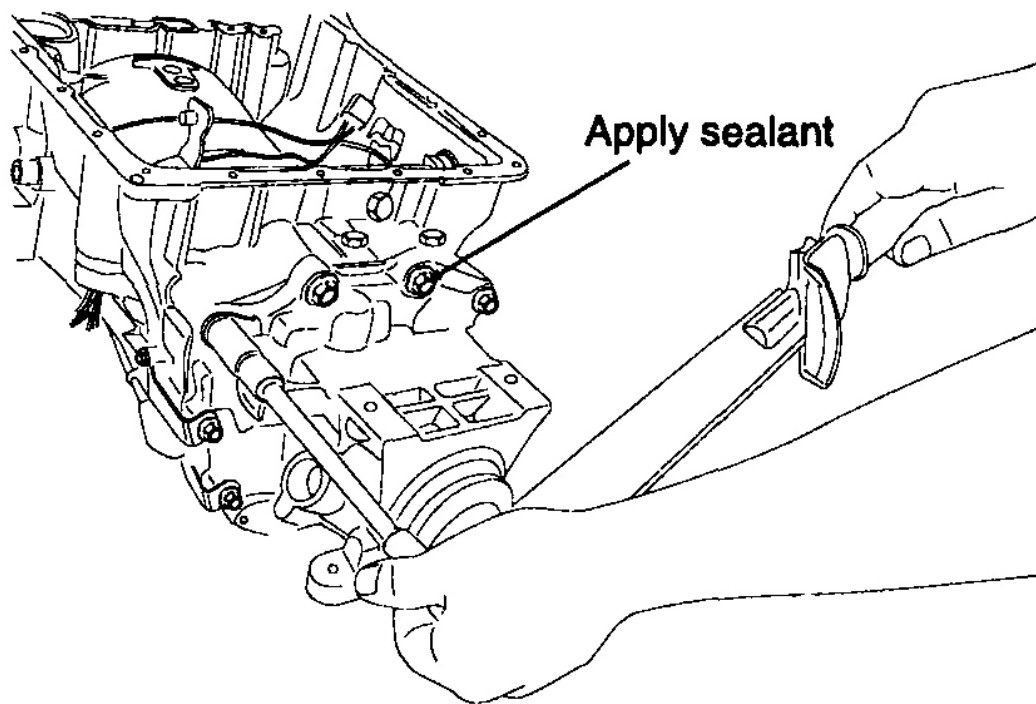
Tighten and attach the bracket that is fixing the terminal assembly connector at the same time.



G03877640

Fig. 72: Assembling Output Shaft To Case
Courtesy of KIA MOTORS AMERICA, INC.

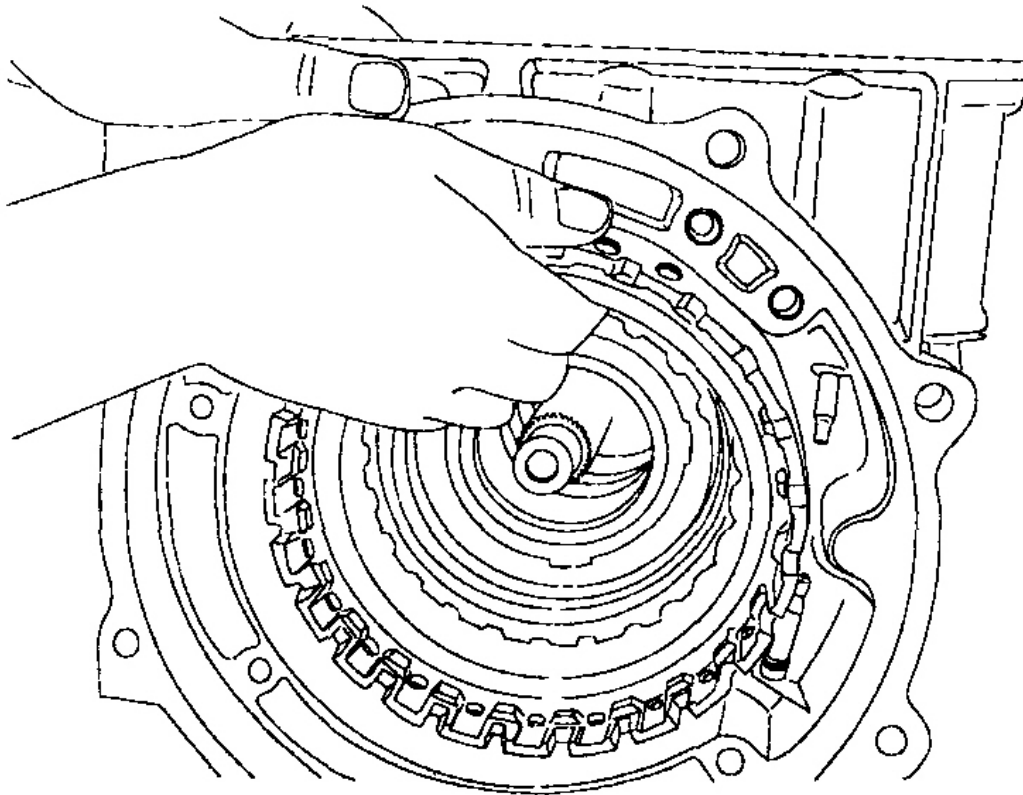
31. Tighten the output shaft companion flange installation bolts at 50-54.9Nm (9) using the torque meter. The seal bolt part is tightened at 58 ~ 63Nm (1).



G03877641

Fig. 73: Tightening Output Shaft Companion Flange Bolts
Courtesy of KIA MOTORS AMERICA, INC.

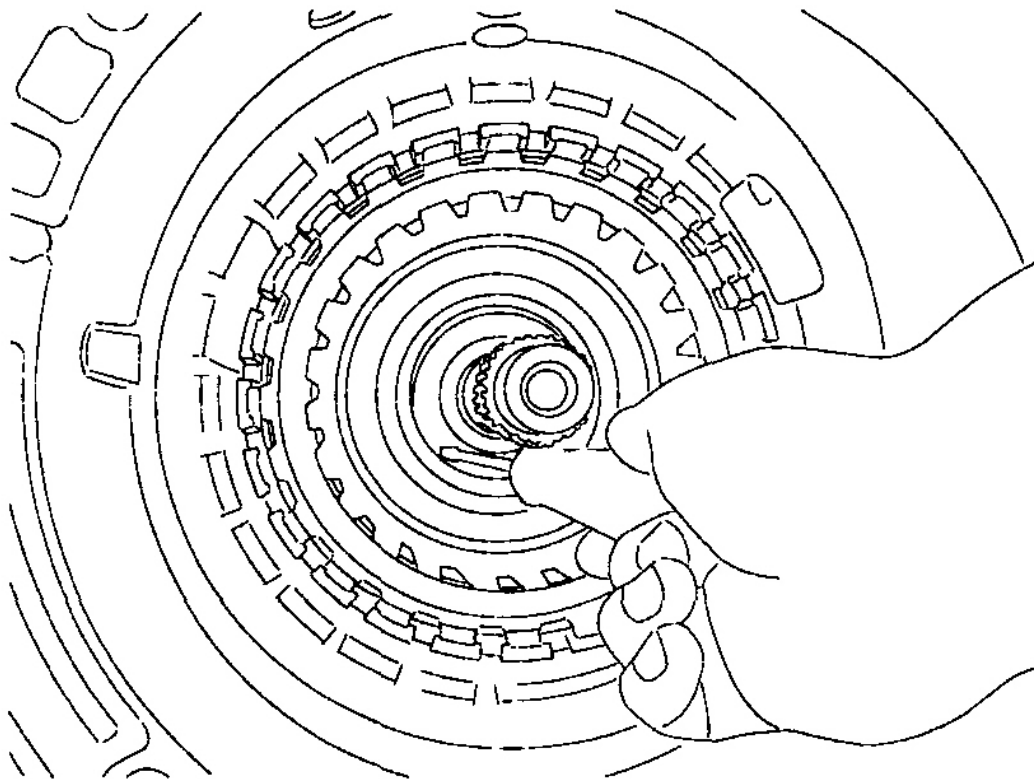
32. Apply vaseline to the seal ring of the drum support, and then assemble the direct clutch.



G03877642

Fig. 74: Applying Vaseline To Seal Ring Of Drum Support
Courtesy of KIA MOTORS AMERICA, INC.

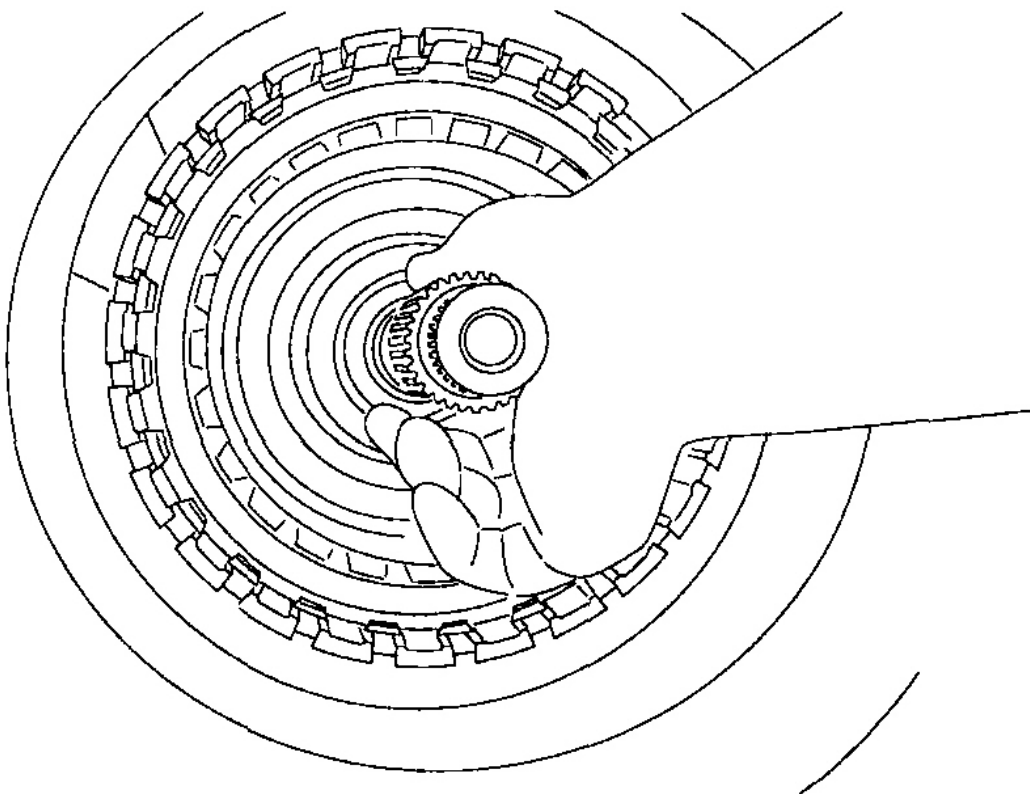
33. Make sure that both the drum support surface and the inner BOSS side of the clutch come almost to the same position.



G03877643

Fig. 75: Checking Clutch Position
Courtesy of KIA MOTORS AMERICA, INC.

34. Mount the bearing with vaseline applied to the drum support surface.

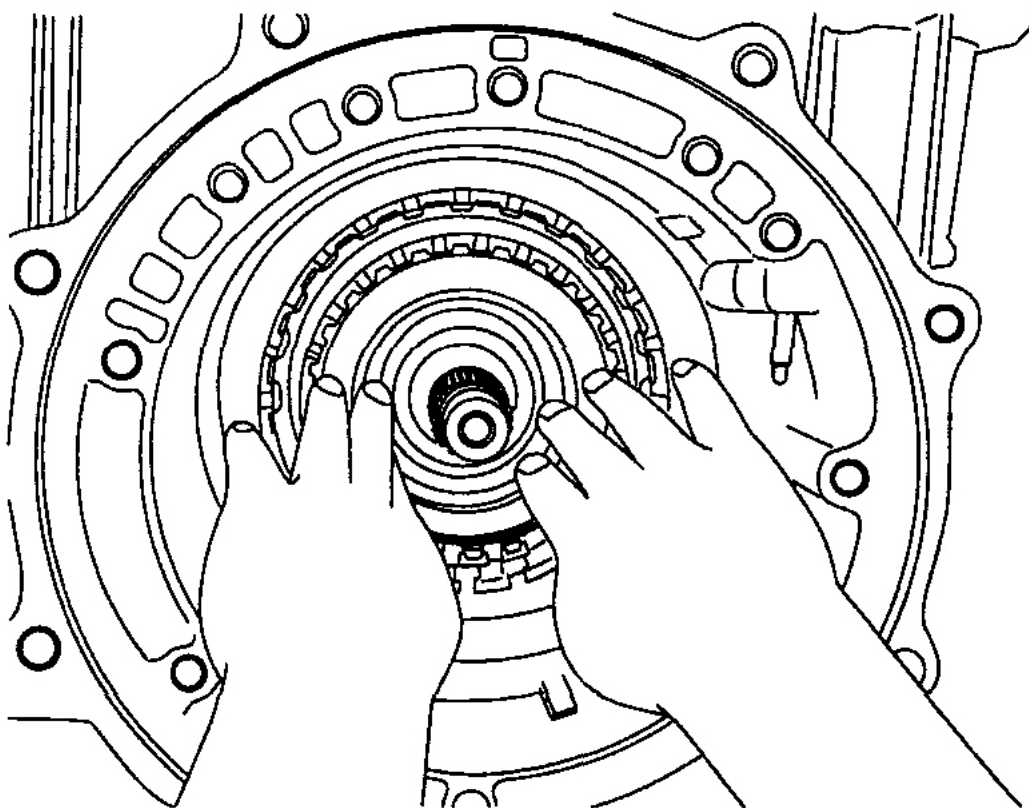


G03877644

Fig. 76: Mounting Bearing With Vaseline Applied To Drum Support Surface
Courtesy of KIA MOTORS AMERICA, INC.

35. Assemble the high & low reverse clutch.

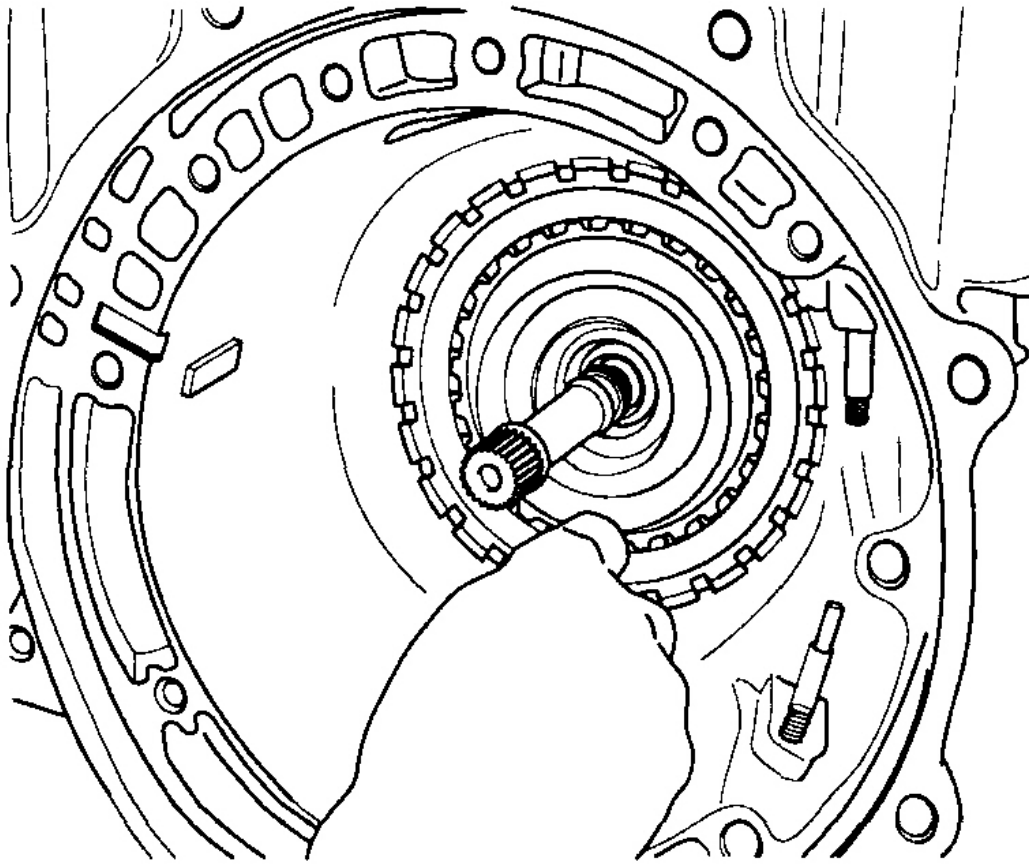
CAUTION: Use the one with the same part number when replacing the high & low reverse clutch.



G03877645

Fig. 77: Assembling High & Low Reverse Clutch
Courtesy of KIA MOTORS AMERICA, INC.

36. Align the spool lines of the high & low reverses clutch drive plate with a driver.



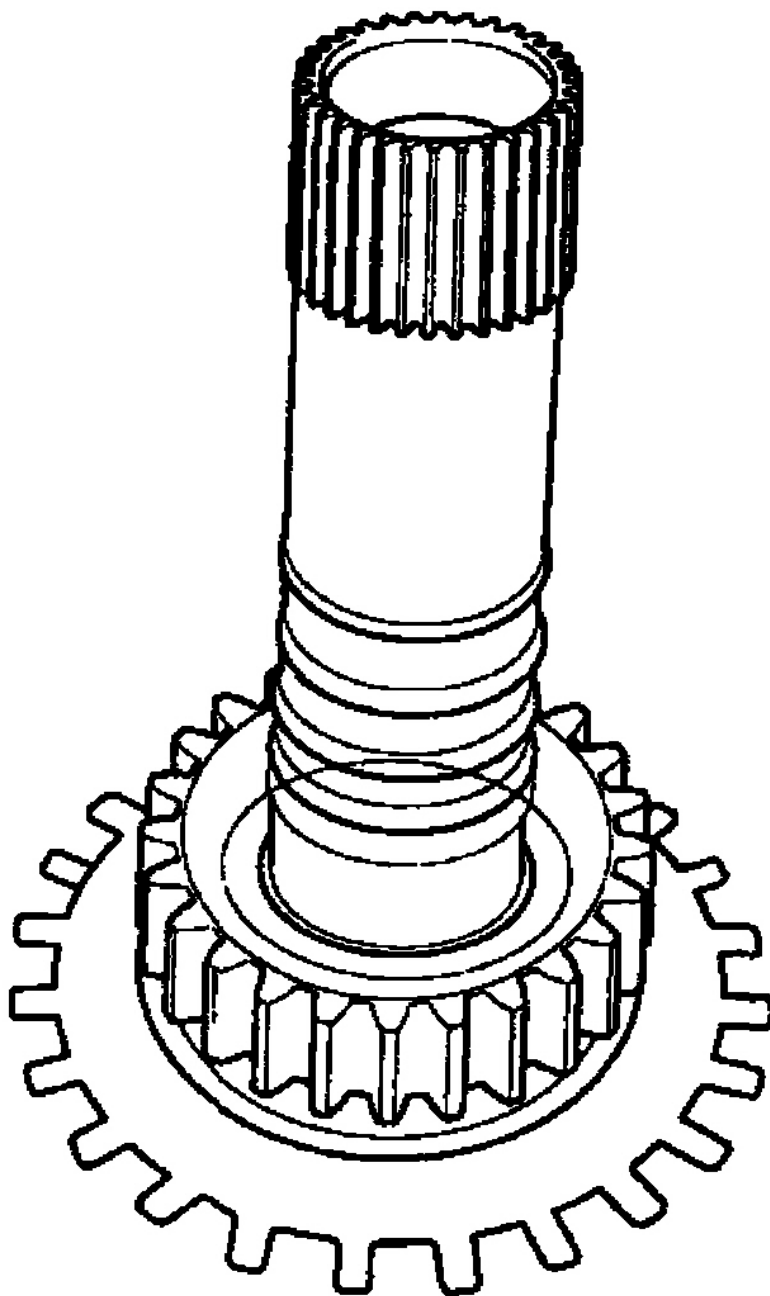
G03877646

Fig. 78: Aligning Spool Lines Of High & Low Reverses Clutch Drive Plate With Driver
Courtesy of KIA MOTORS AMERICA, INC.

37. Assemble the rear sun gear and the high & low reverse clutch hub to the middle sun gear, and then fix it with the snap ring.

Mount the bearing race and bearing. (called "Middle gear sun-sub assembly")

CAUTION: Use the one with the same part number when replacing the middle sun gear.

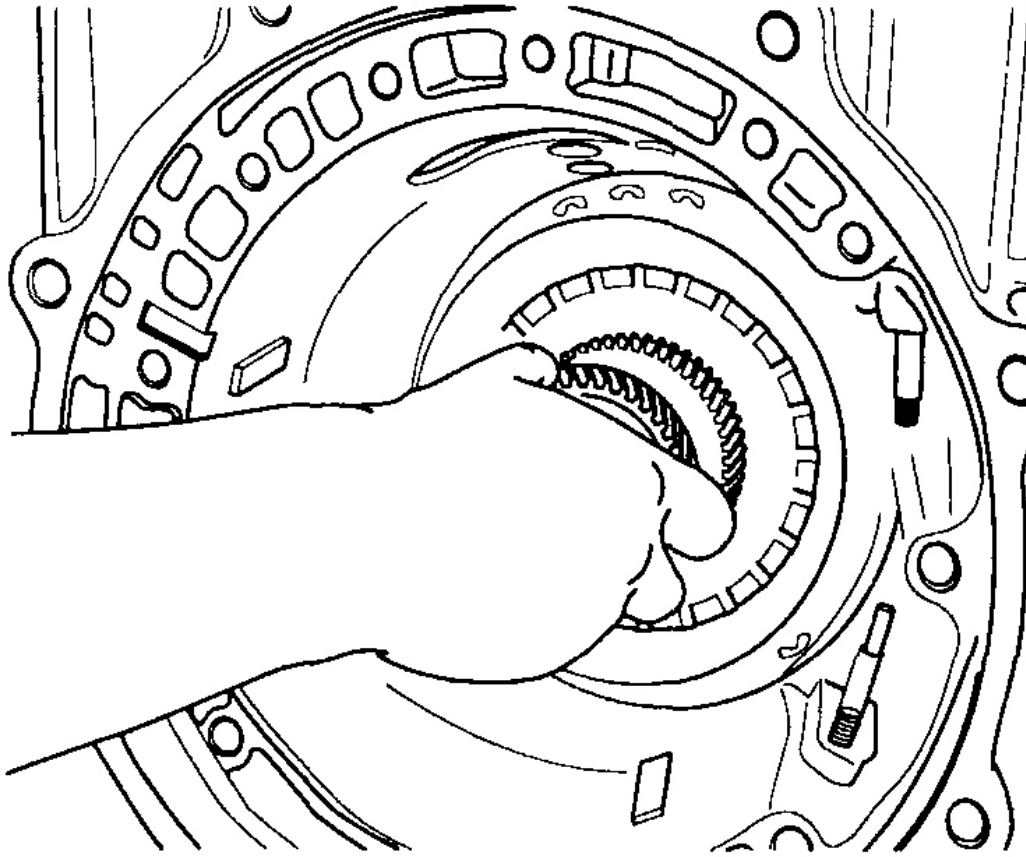


G03877647

Fig. 79: Assembling Rear Sun Gear And High & Low Reverse Clutch Hub
Courtesy of KIA MOTORS AMERICA, INC.

38. Assemble the middle sun gear-sub assembly.

Turn the middle sun gear right to left and press it until it fits to the position.

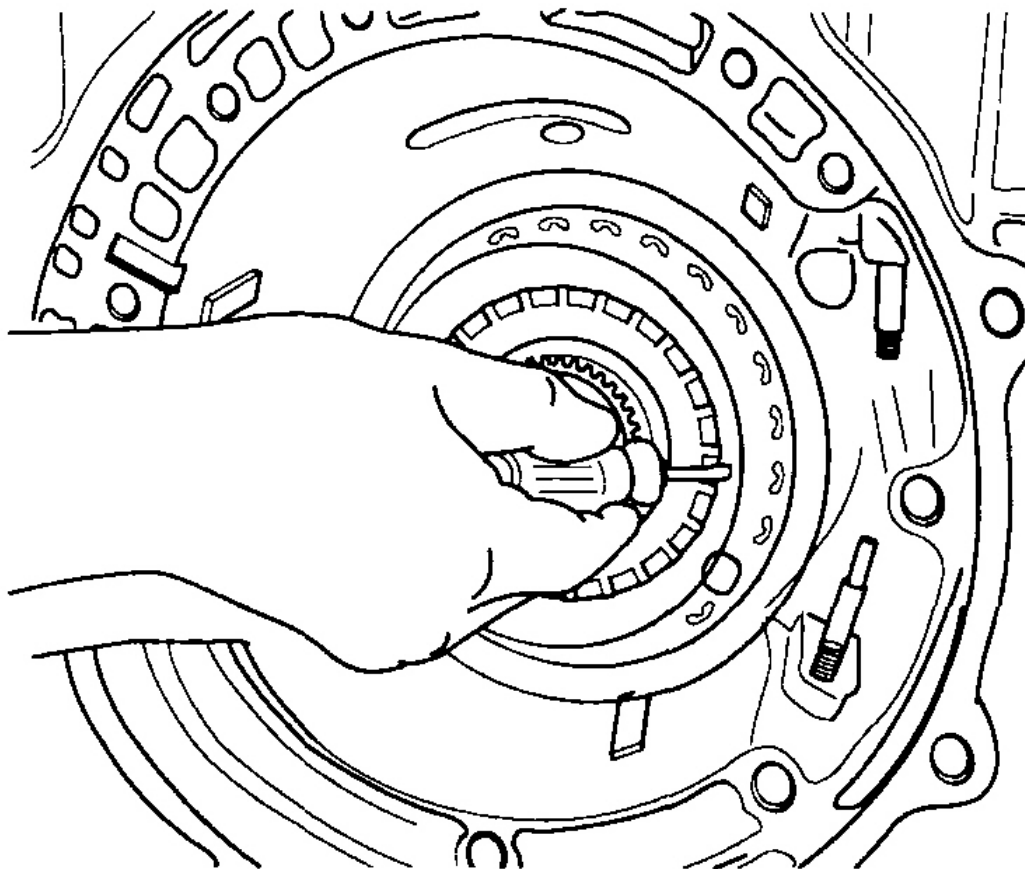


G03877648

Fig. 80: Assembling Middle Sun Gear-Sub Assembly
Courtesy of KIA MOTORS AMERICA, INC.

39. Check the flange-combined part of the rear sun gear is approximately 2 mm(0.0787in.) lower than the high & low reverse clutch drum surface.

If there is no about 2mm(0.0787in.) of step height, it wont fit to the position. Remove it and try again.

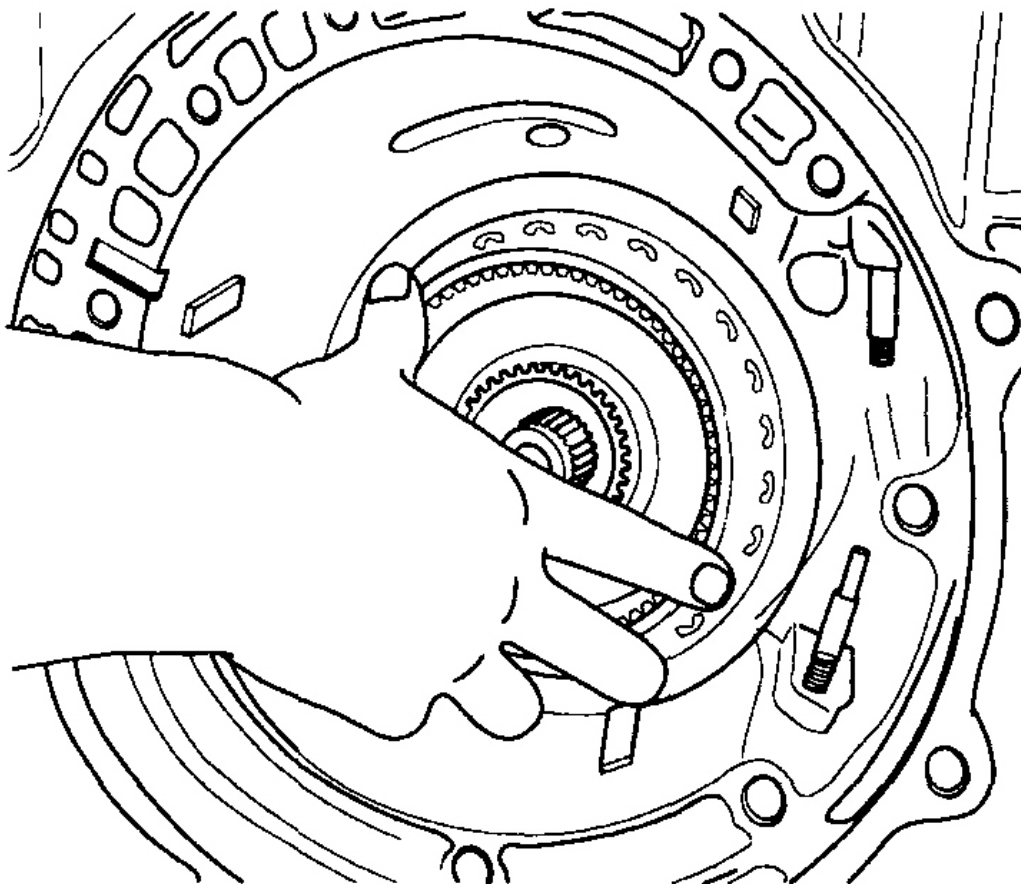


G03877649

Fig. 81: Checking Distance

Courtesy of KIA MOTORS AMERICA, INC.

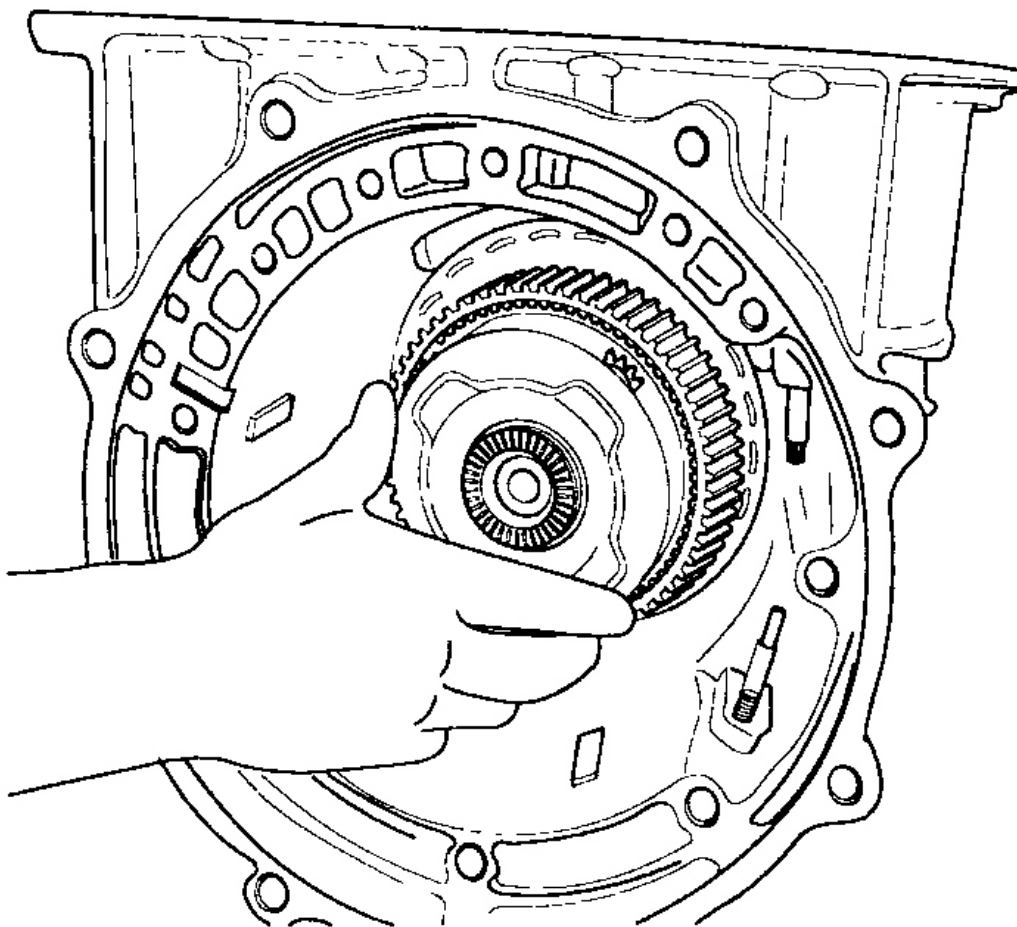
40. Apply Vaseline to the bearing race, mount the rear carrier, and then assemble the rear carrier assembly.



G03877650

Fig. 82: Applying Vaseline To Bearing Race
Courtesy of KIA MOTORS AMERICA, INC.

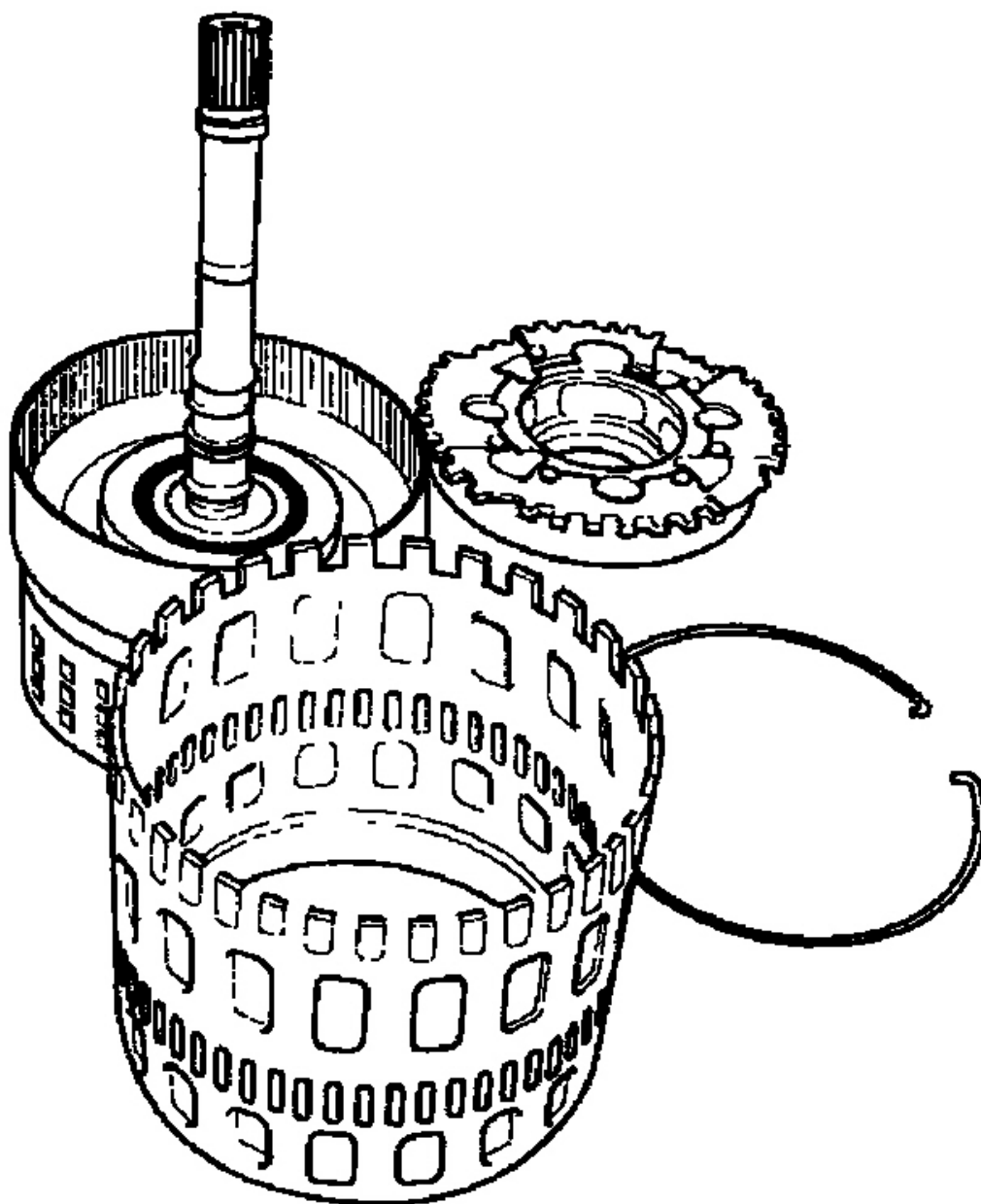
41. Apply Vaseline to the bearing, and then assemble the middle carrier assembly.



G03877651

Fig. 83: Applying Vaseline To Bearing
Courtesy of KIA MOTORS AMERICA, INC.

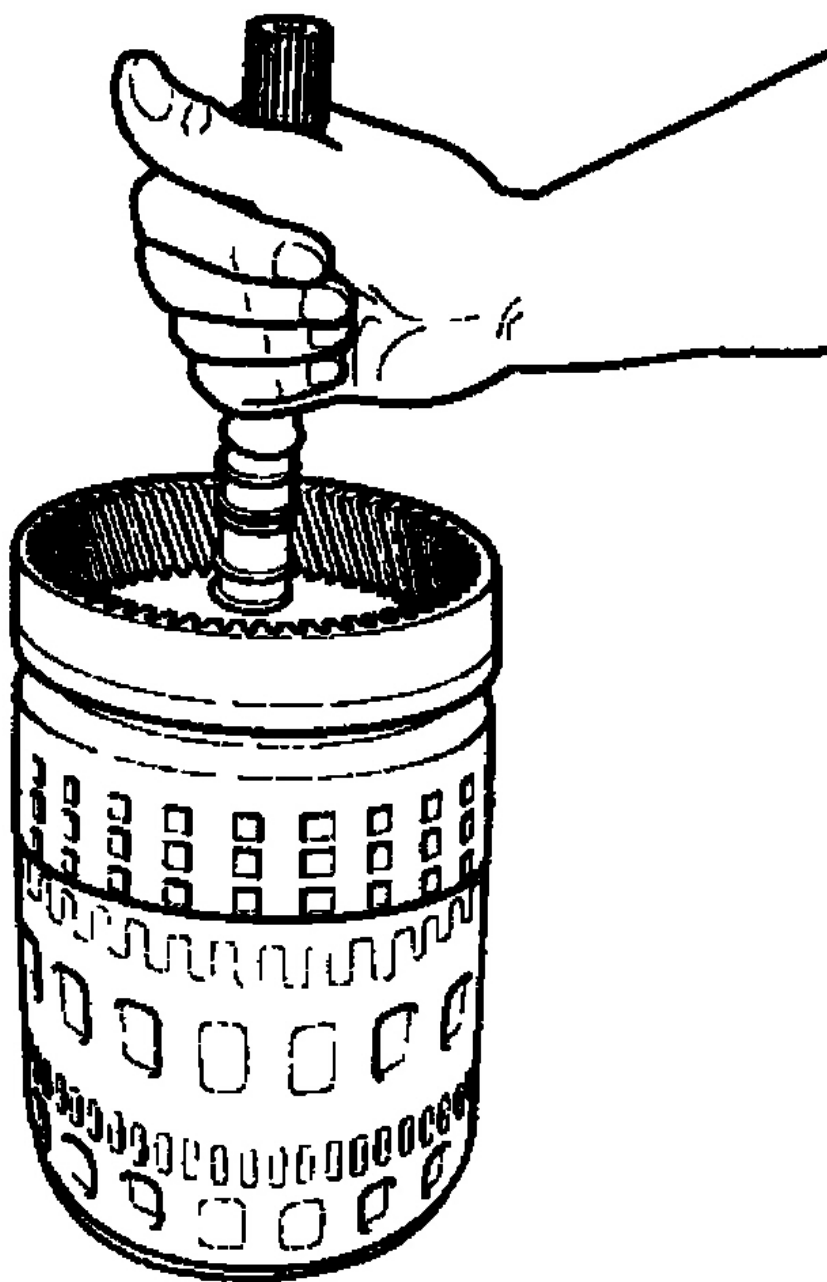
42. Assemble the input clutch, front carrier, and rear internal gear.



G03877652

Fig. 84: Assembling Input Clutch, Front Carrier, And Rear Internal Gear
Courtesy of KIA MOTORS AMERICA, INC.

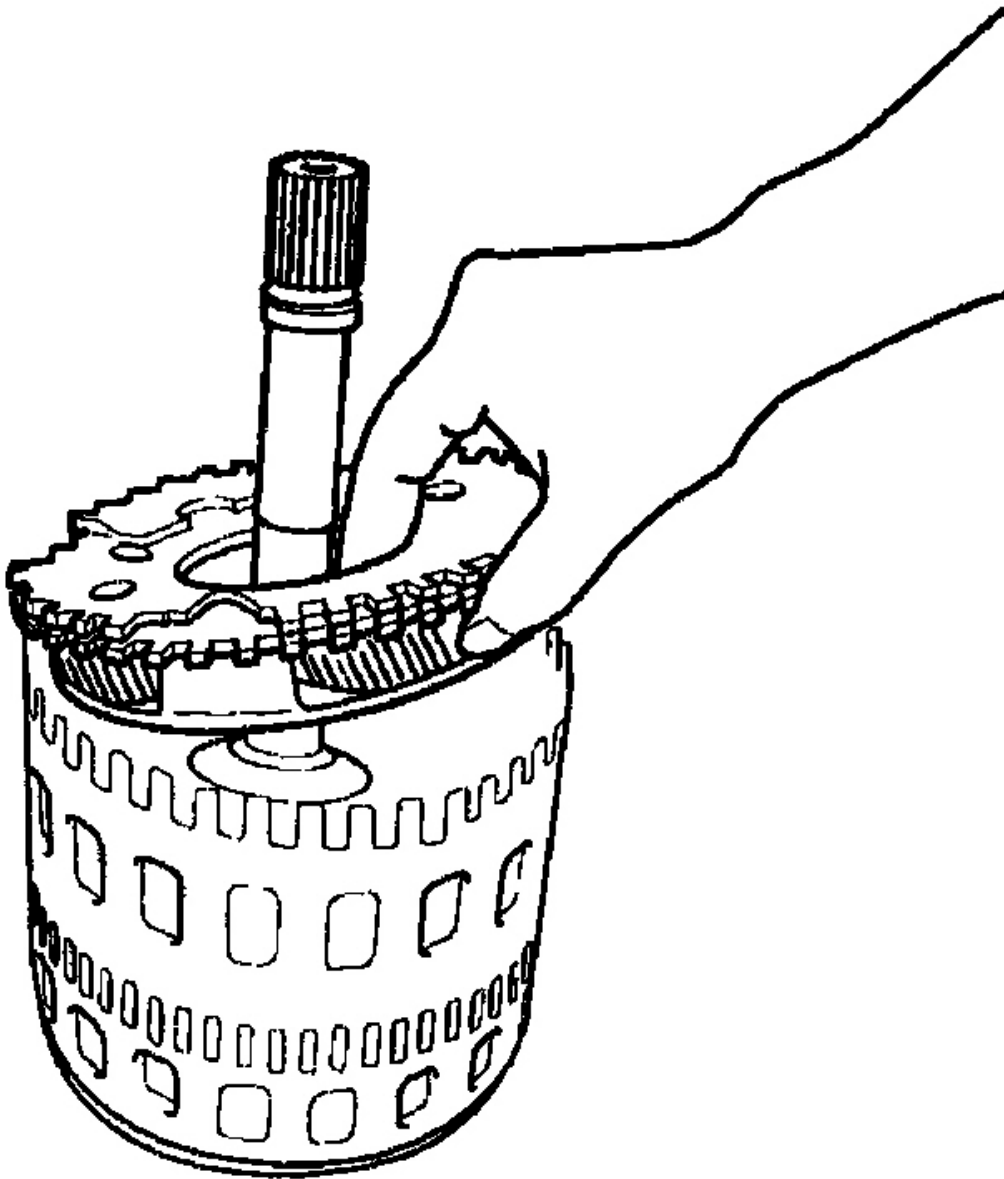
43. Assemble the input clutch to the rear internal gear.



G03877653

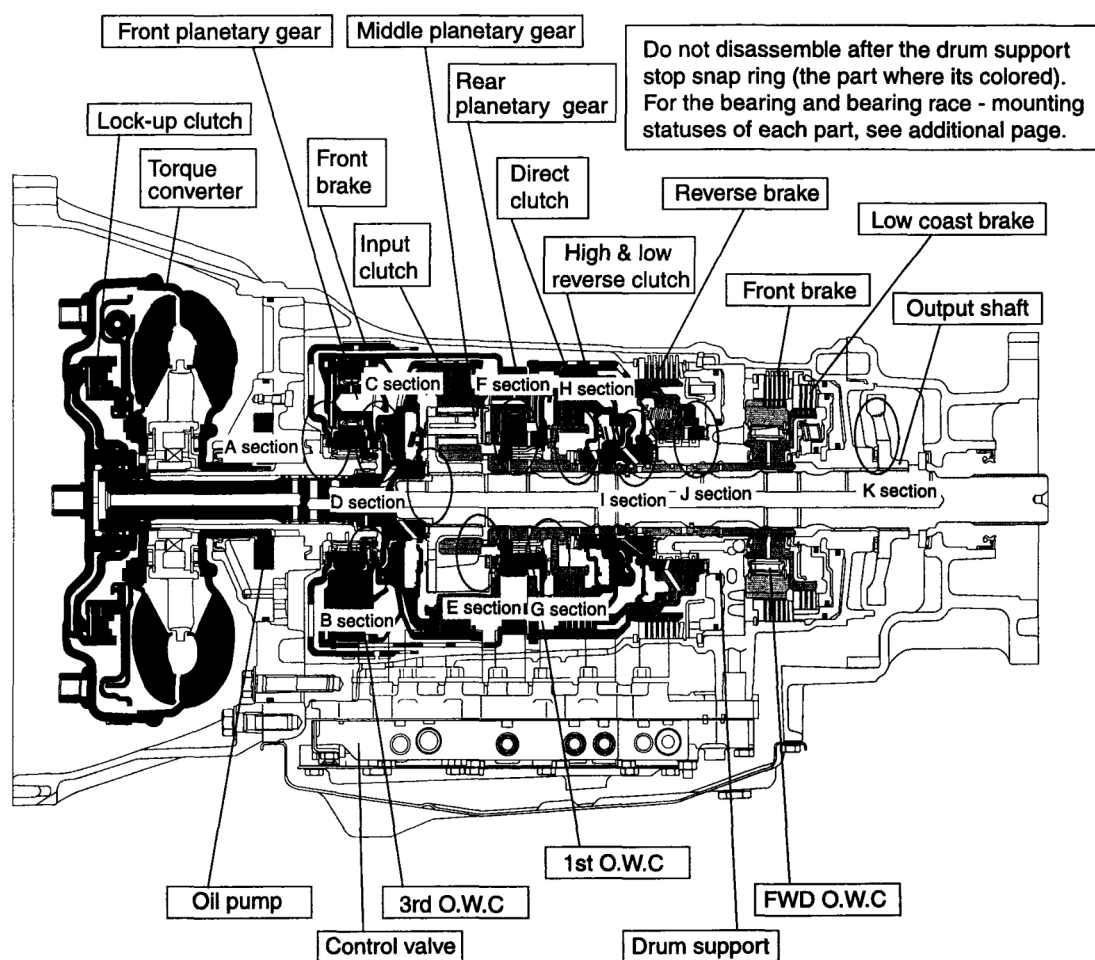
Fig. 85: Assembling Input Clutch To Rear Internal Gear
Courtesy of KIA MOTORS AMERICA, INC.

44. Assemble the front carrier.



G03877654

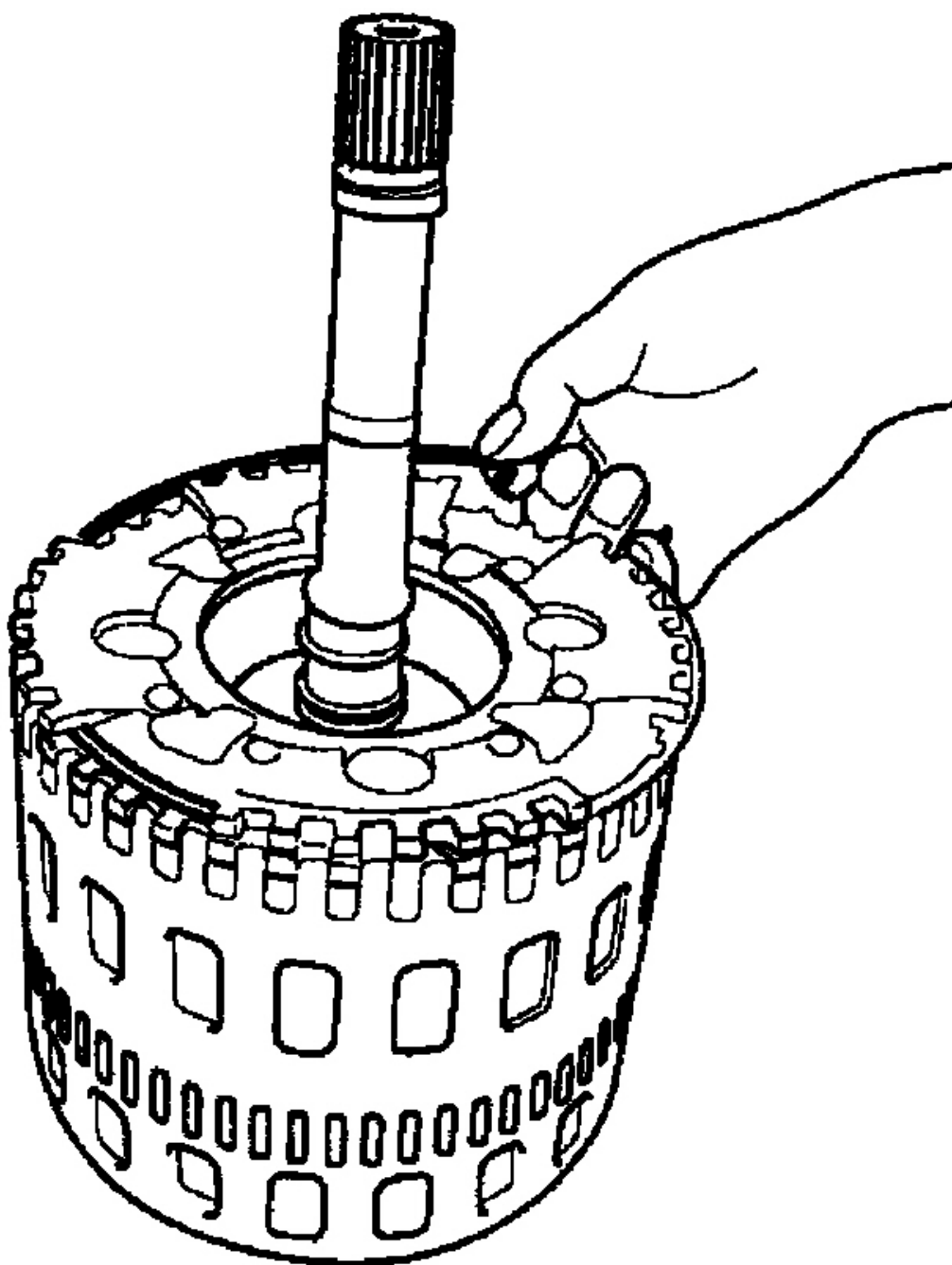
Fig. 86: Assembling Front Carrier
Courtesy of KIA MOTORS AMERICA, INC.



G03877655

Fig. 87: Automatic Transaxle System Overview
 Courtesy of KIA MOTORS AMERICA, INC.

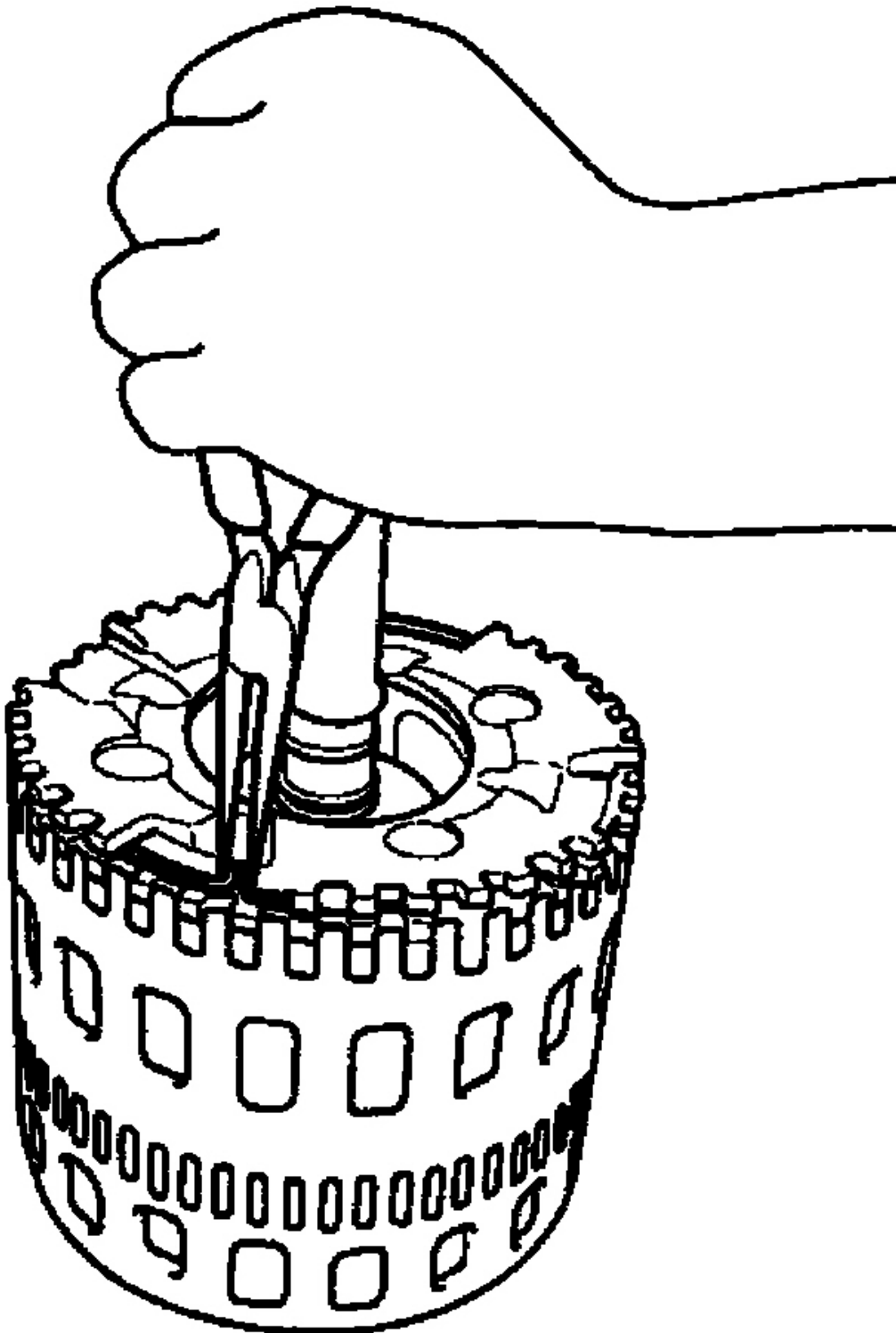
45. Insert the snap ring to the slit in the front carrier.



G03877656

Fig. 88: Inserting Snap Ring To Slit In Front Carrier
Courtesy of KIA MOTORS AMERICA, INC.

46. Tighten the snap ring with the snap ring pliers, and then combine the front carrier to the rear internal gear. Loosen the snap ring and fix the front carrier and the rear internal gear at the same time.

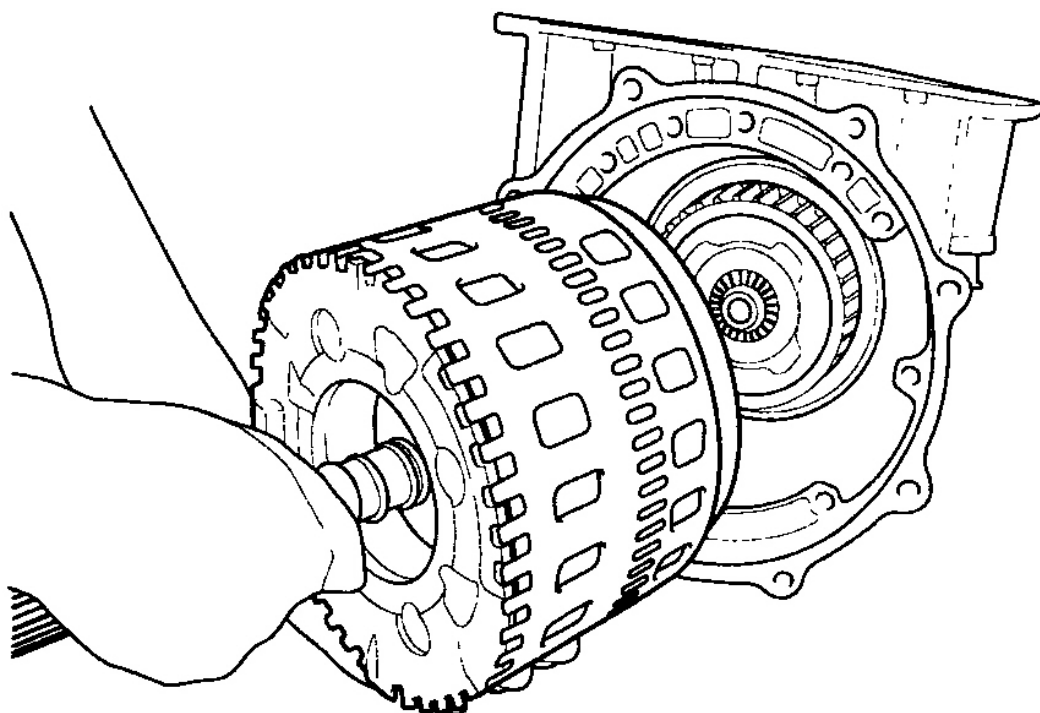


G03877657

Fig. 89: Tightening Snap Ring

Courtesy of KIA MOTORS AMERICA, INC.

47. Assemble the input clutch pack.

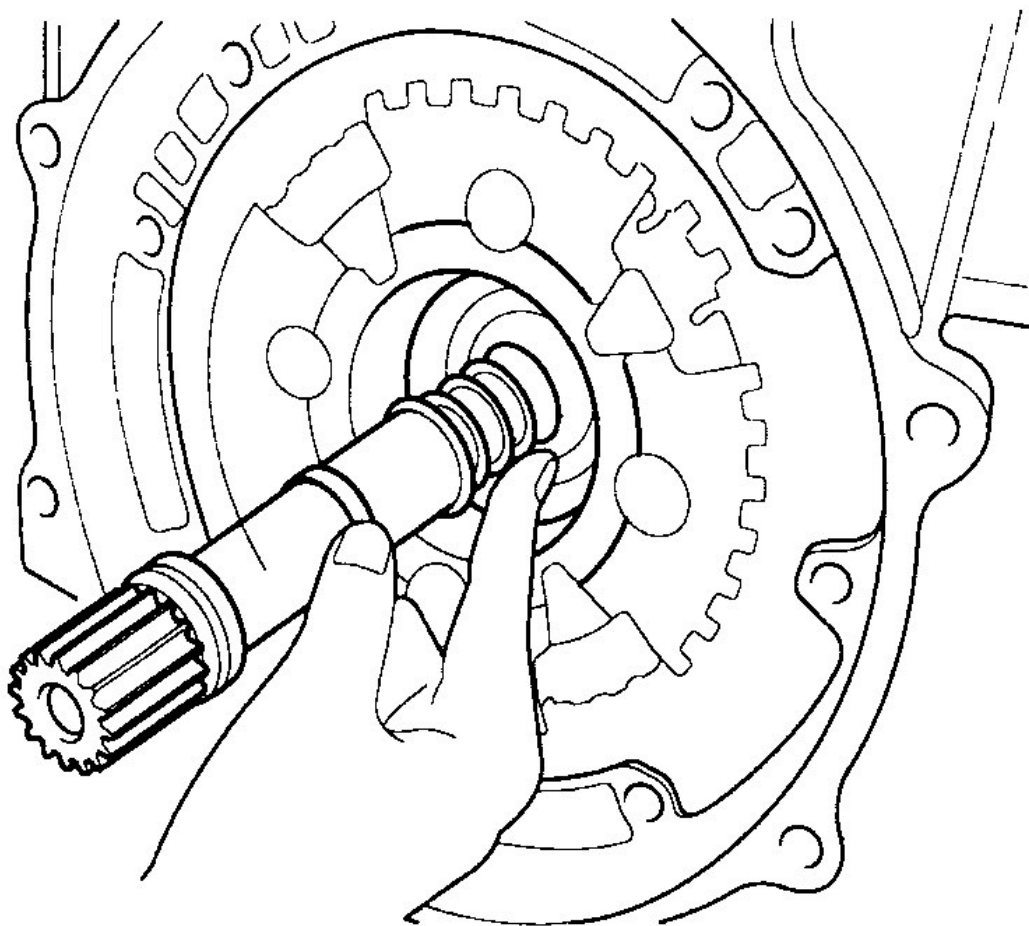


G03877658

Fig. 90: Assembling Input Clutch Pack

Courtesy of KIA MOTORS AMERICA, INC.

48. Apply vaseline to the seal ring of the input shaft.



G03877659

Fig. 91: Applying Vaseline To Seal Ring Of Input Shaft
Courtesy of KIA MOTORS AMERICA, INC.

49. Exchange the end anchor pin, and attach provisionally.

Assemble the brake band provisionally. For band assembly, check "Brake band assembly* adjustment tips."

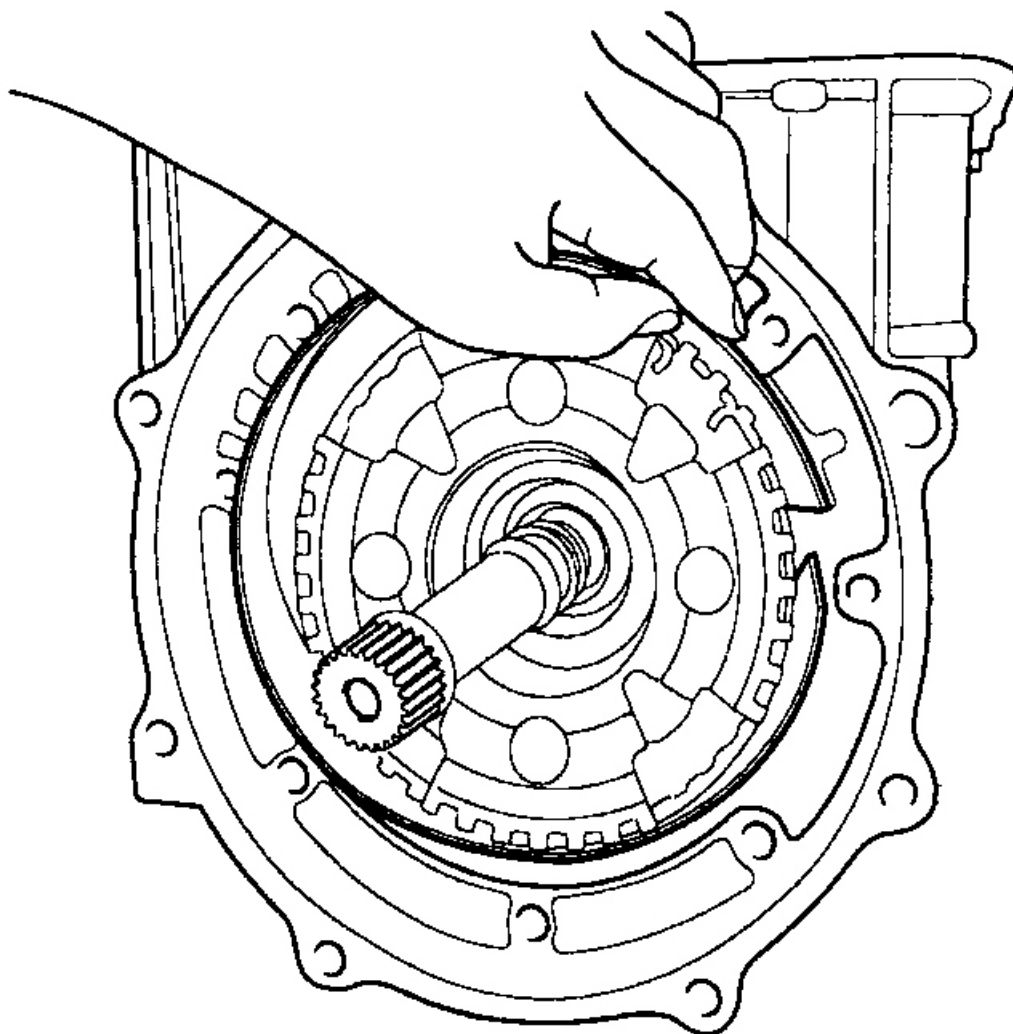
**G03877660**

Fig. 92: Checking Brake Band Assembly Adjustment Tips
Courtesy of KIA MOTORS AMERICA, INC.

50. Assemble the front sun gear.

Apply ATF to the bush section of the front sun gear and the end bearing section of the one-way clutch.

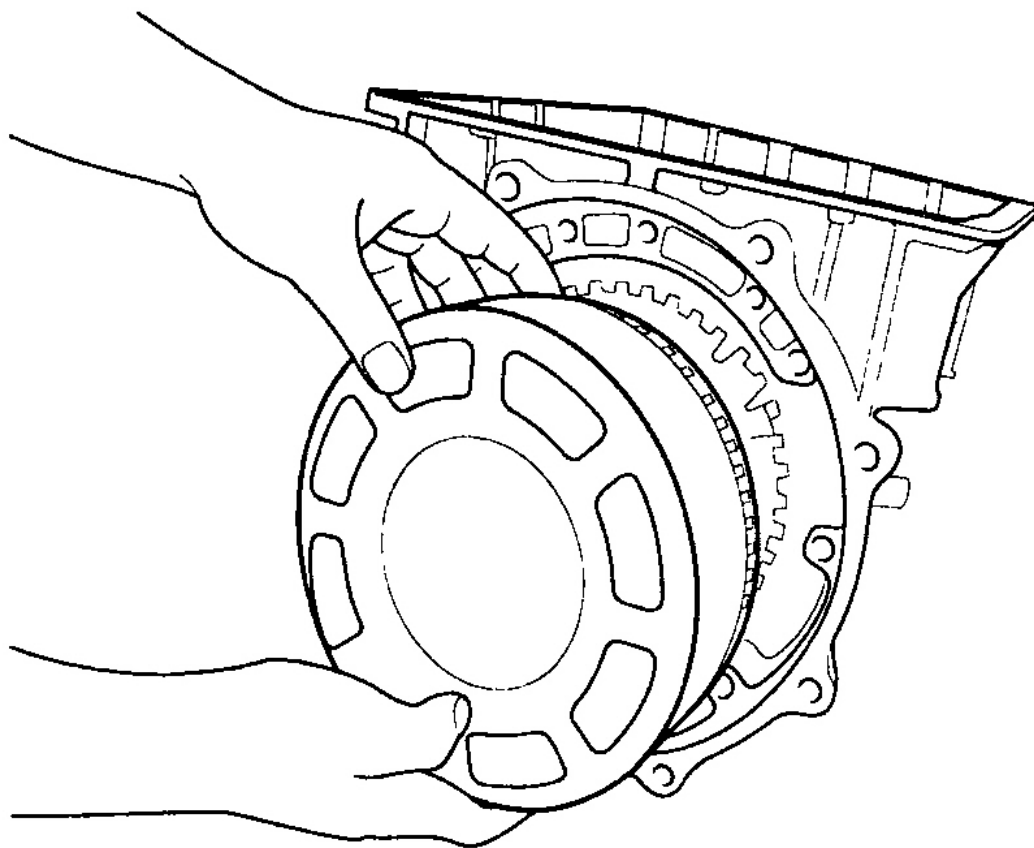
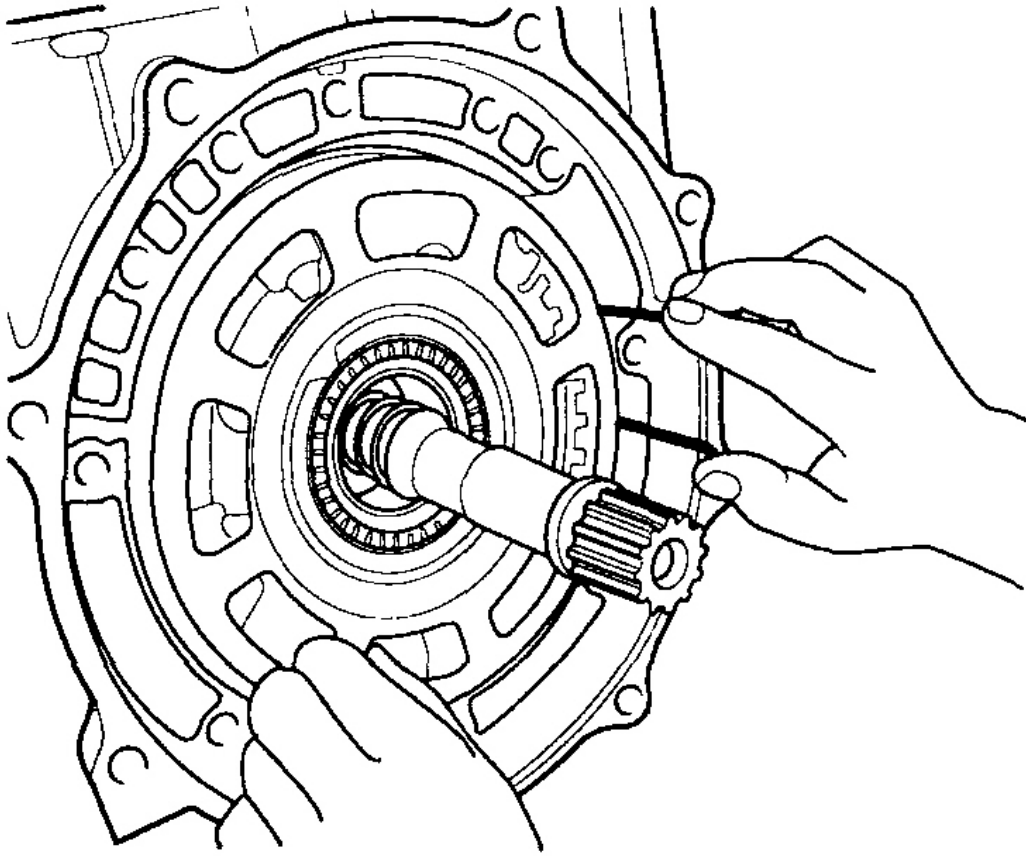
**G03877661**

Fig. 93: Assembling Front Sun Gear
Courtesy of KIA MOTORS AMERICA, INC.

51. Adjust the leaning of the band using a wire as in the following figure so that the brake band is attached evenly with the front sun gear drum.



G03877662

Fig. 94: Adjusting Leaning Of Band
 Courtesy of KIA MOTORS AMERICA, INC.

52. Adjust the brake band attaching status based on "Brake band assembly * adjustment tips."

Brake band assembly-adjustment tips

- Tips for assembly
 1. Assemble so that indication mark post-assemble prevention becomes the SERVO side.
 2. Be careful not to lean the band when assembling. To prevent the band from being assembled askew, check that there is a gap between the band and drum while SERVO FREE.
- Brake band adjustment

Tighten Lock nut (31365 41X00), mount anchor end pin (31625 90X00) with 4 ~ 6 Nm(40 ~ 60 kg.cm, 3 ~ 4.4lb.ft) of torque, loosen 3 strokes, tighten lock nut with 40 ~ 51 Nm (400 ~ 510 kg.cm, 29.5 ~

37.6lb.ft) of torque.

53. Check total end play.

For check tips, see " Total end play adjustment tips ."

NOTE: **Total end play adjustment tips. Adjust with BRG-RACE so that clearance, L1 becomes 0.25 ~ 0.55mm(0.0098 ~ 0.0217in.).**

Select the bearing race after checking end play when replacing the power train parts.

Check end play for flaw prevention also when not replacing the power train parts.

54. Apply ATF to the radial bearing.

Apply vaseline to the O-ring of the oil pump, bearing race.

Match the intake of the oil pump and the one of the case. Push in the oil pump attachment bolts with both hands until the surface of the oil pump and the one of the case become as high at the same time.

Remove the fluid gasket of the bolt on the left side (10), and then apply new fluid gasket (Threebond # 1215).

CAUTION: Make sure that fluid gasket does not touch the screw part.

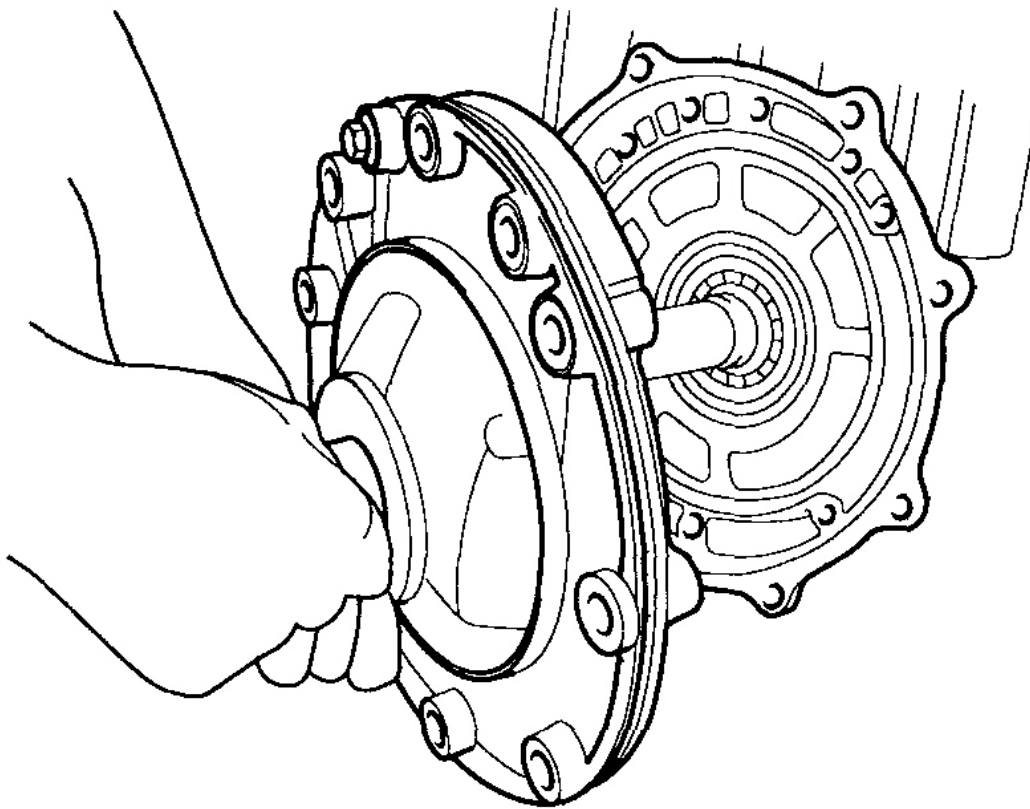
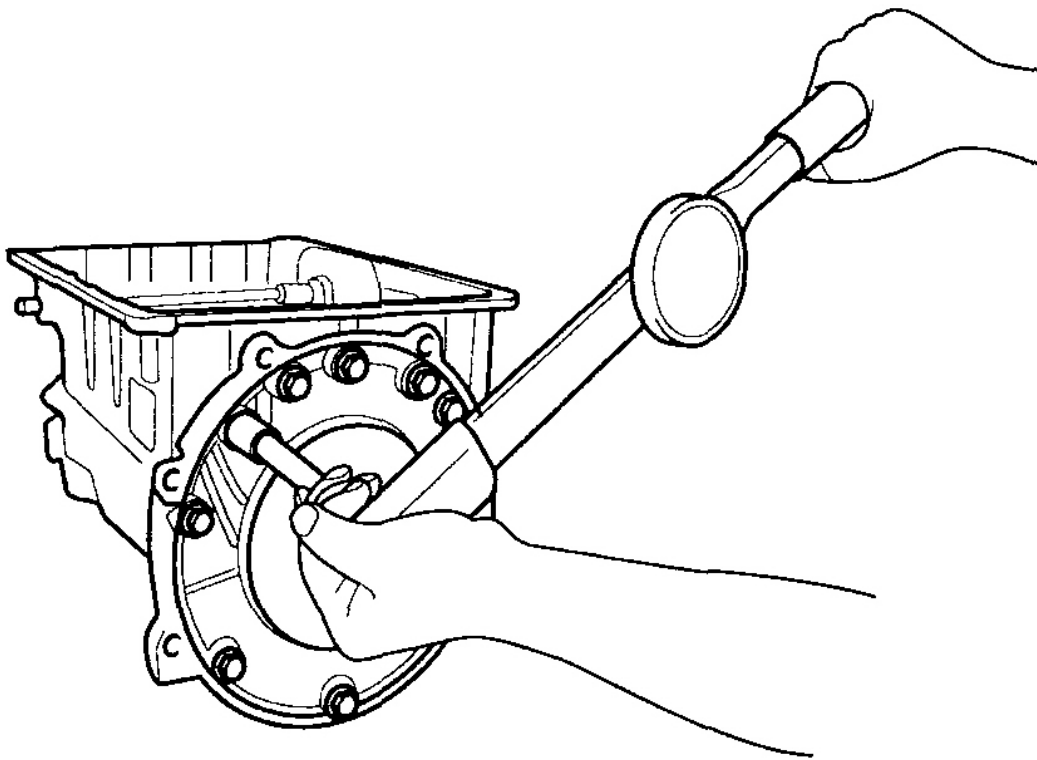
**G03877663**

Fig. 95: Pushing In Oil Pump Attachment Bolts
Courtesy of KIA MOTORS AMERICA, INC.

55. Use the torque meter, tighten the bolts to the case with torque of 54.9 ~ 59.8 Nm(549 ~ 598kg.cm, 40.49 ~ 44.1lb.ft).

Apply AFT to the bush section of the oil pump.



G03877664

Fig. 96: Tightening Bolts
 Courtesy of KIA MOTORS AMERICA, INC.

Total end play adjustment tips

- Adjust with the bearing race so that clearance L1 becomes 0.25 ~ 0.55mm(0.0098 ~ 0.0217in.).

PART NUMBER AND DIMENSION REFERENCE

Bearing race part number	Dimension [mm(in.)]
45833-4C000	0.8 (0.0315)
45833-4C001	1.0 (0.0039)
45833-4C002	1.2 (0.0472)
45833-4C003	1.4 (0.0551)
45833-4C004	1.6 (0.0630)
45833-4C005	1.8 (0.0709)

56. Assemble the O-ring of the input shaft.

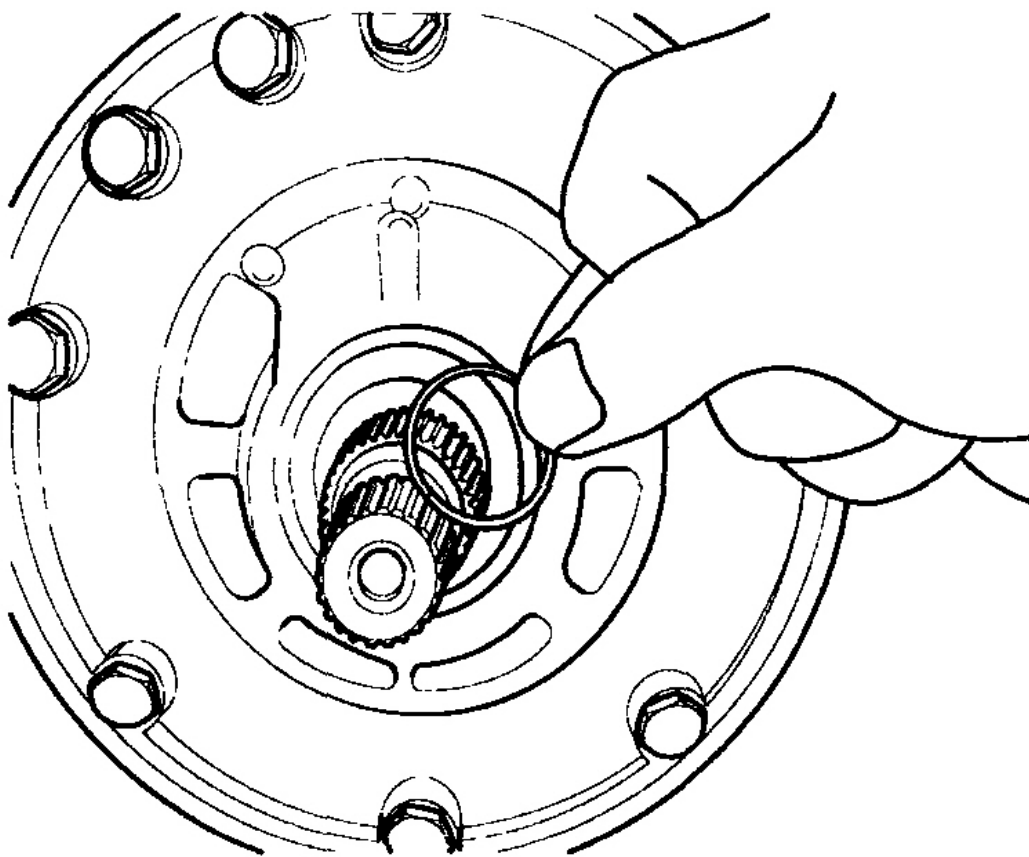
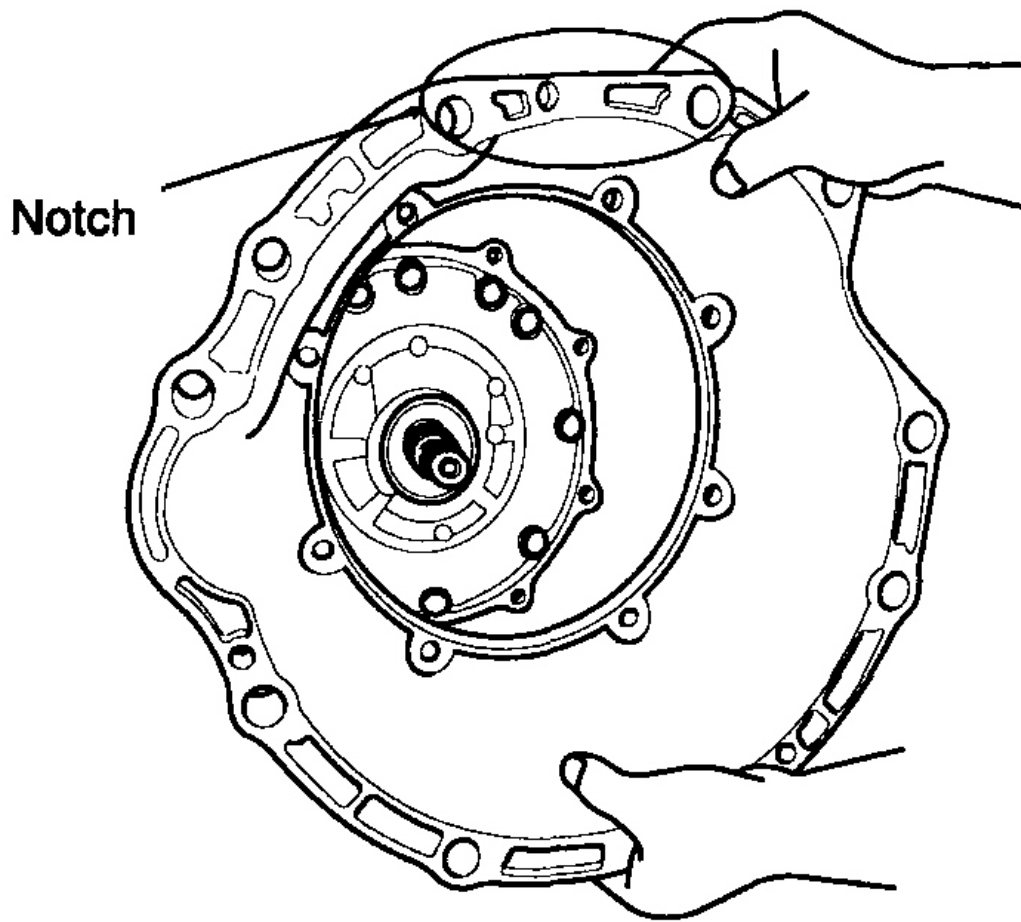
**G03877665**

Fig. 97: Assembling O-Ring Of Input Shaft
Courtesy of KIA MOTORS AMERICA, INC.

57. Mount the converter housing to the case.

The notch comes to upward when having the oil pan upward.



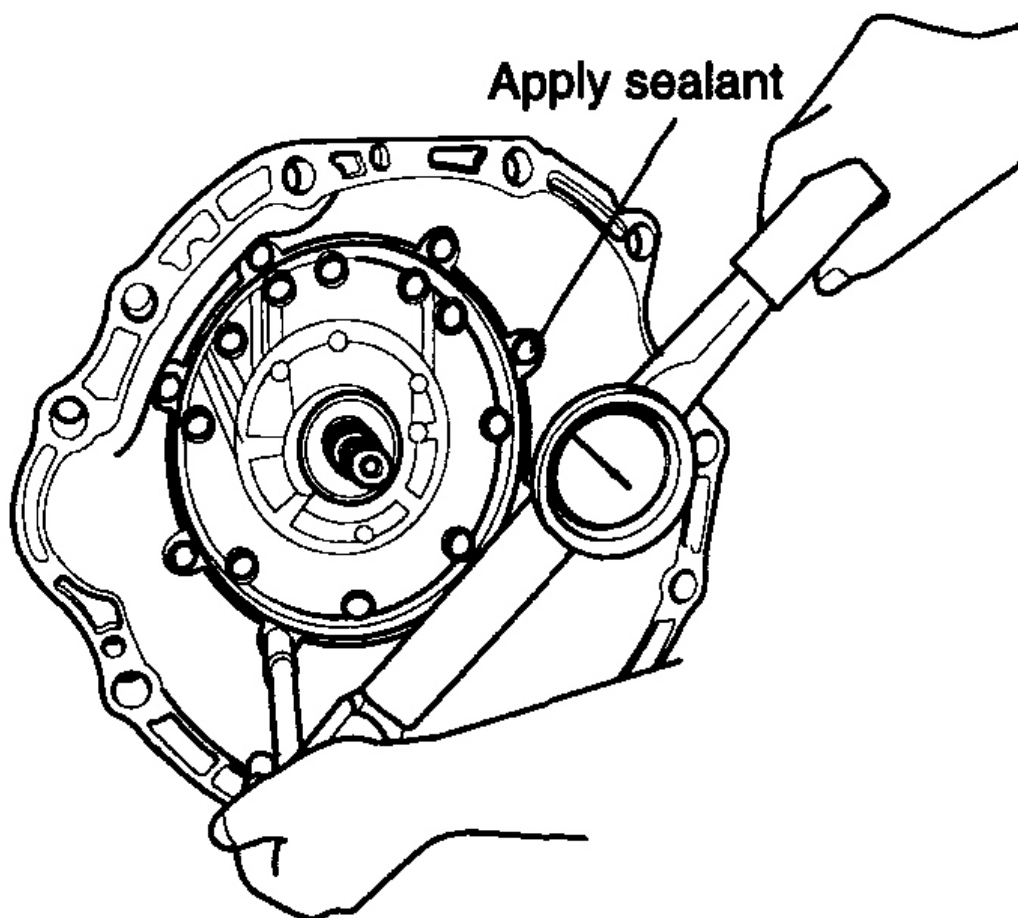
G03877666

Fig. 98: Mounting Converter Housing To Case
Courtesy of KIA MOTORS AMERICA, INC.

58. Mount the housing converter tightening bolts.

After provisional tightening, use the torque meter and tighten them all with torque of 50 ~ 54.9Nm(500 ~ 549kg.cm, 36.9 ~ 40.5lbf.ft). (7).

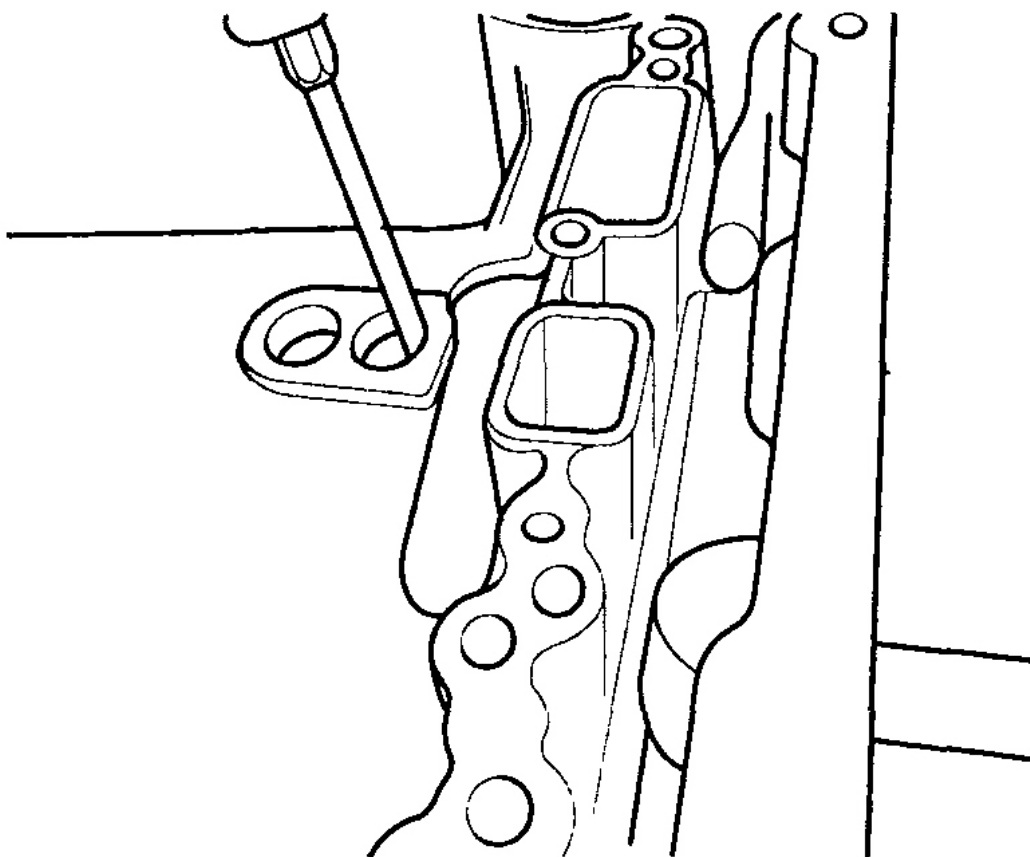
The seal bolts are tightened with torque of 58 ~ 63Nm(580 ~ 630kg.cm, 42.8 ~ 46.5lbf.ft).



G03877667

Fig. 99: Mounting Housing Converter Tightening Bolts
Courtesy of KIA MOTORS AMERICA, INC.

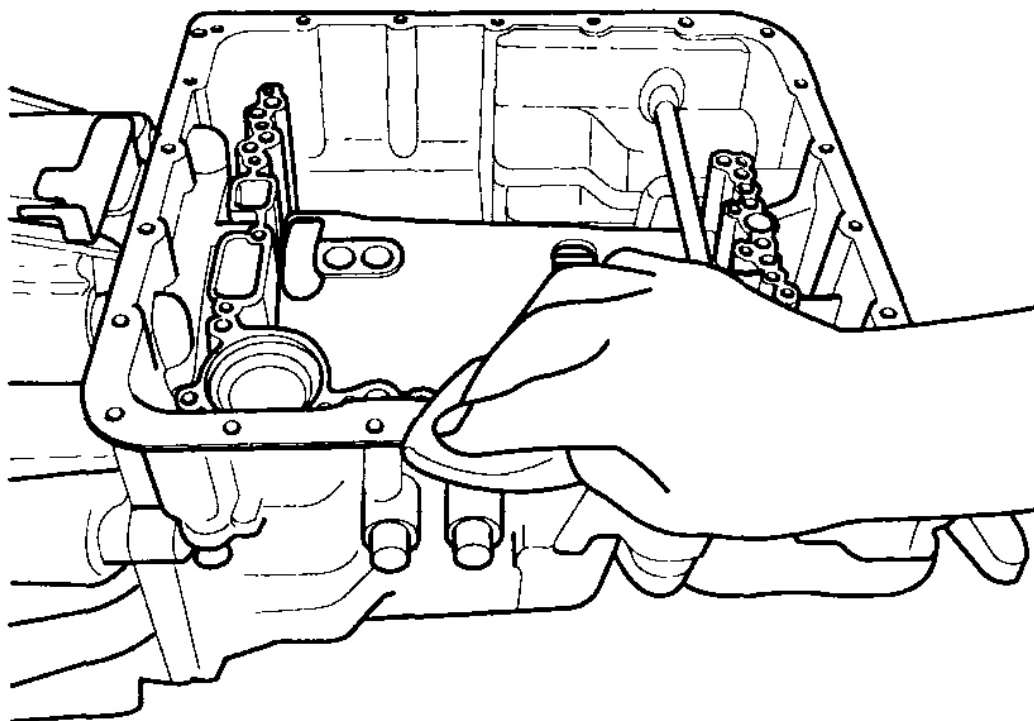
59. Check the brake band is not blocking the turbine sensor hole.



G03877668

Fig. 100: Checking Brake Band Is Not Blocking Turbine Sensor Hole
Courtesy of KIA MOTORS AMERICA, INC.

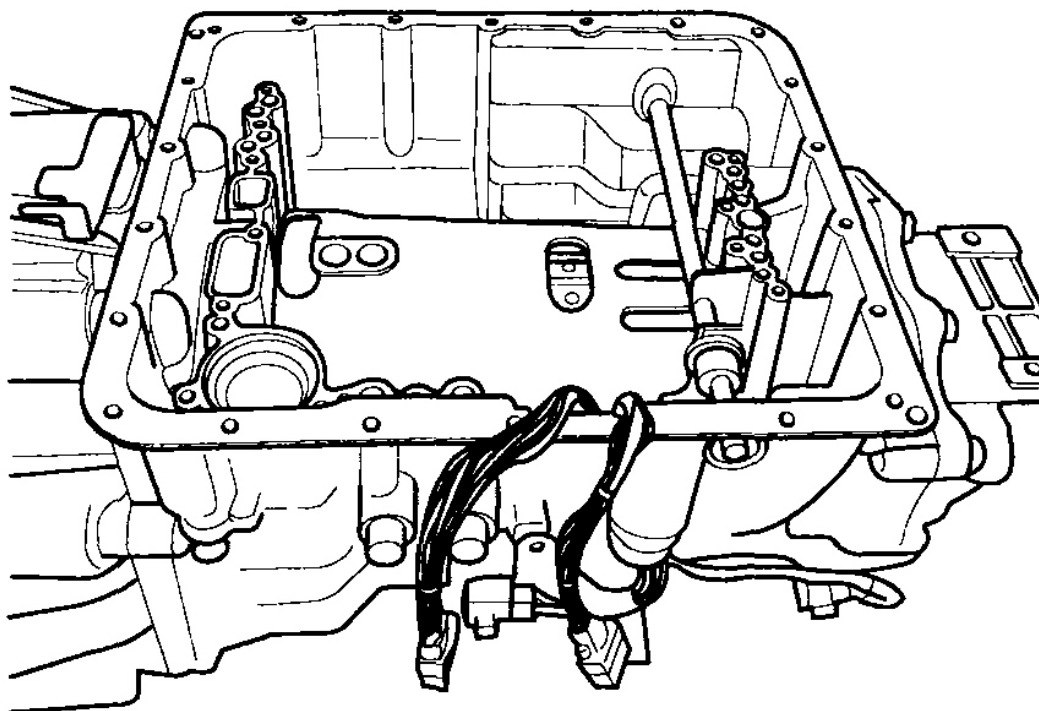
60. Wipe with the whetstone so that oil does not stick to the contact surface with the oil pan of the case.



G03877669

Fig. 101: Wiping With Whetstone
Courtesy of KIA MOTORS AMERICA, INC.

61. Spread the terminal assembly and the harness of the revolution sensor to the outer side of the case.

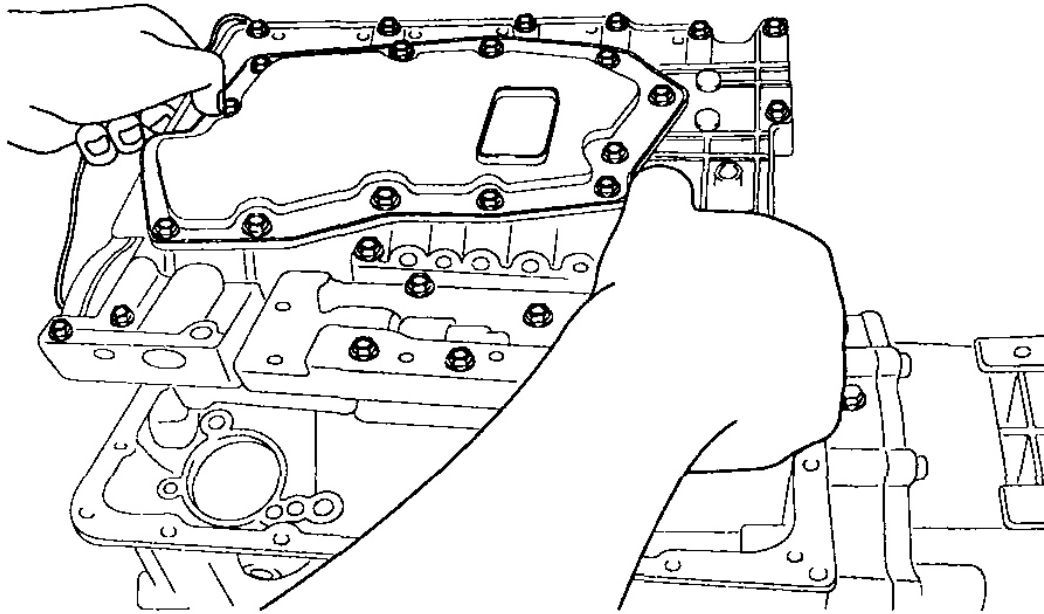


G03877670

Fig. 102: Spreading Terminal Assembly And Harness Of Revolution Sensor
Courtesy of KIA MOTORS AMERICA, INC.

62. Mount the control valve assembly.

Adhere the turbine sensor to the case installation surface so that the slit of the manual valve in the case hole fit in the curvature of the manual plate. (See the control valve installation figure)



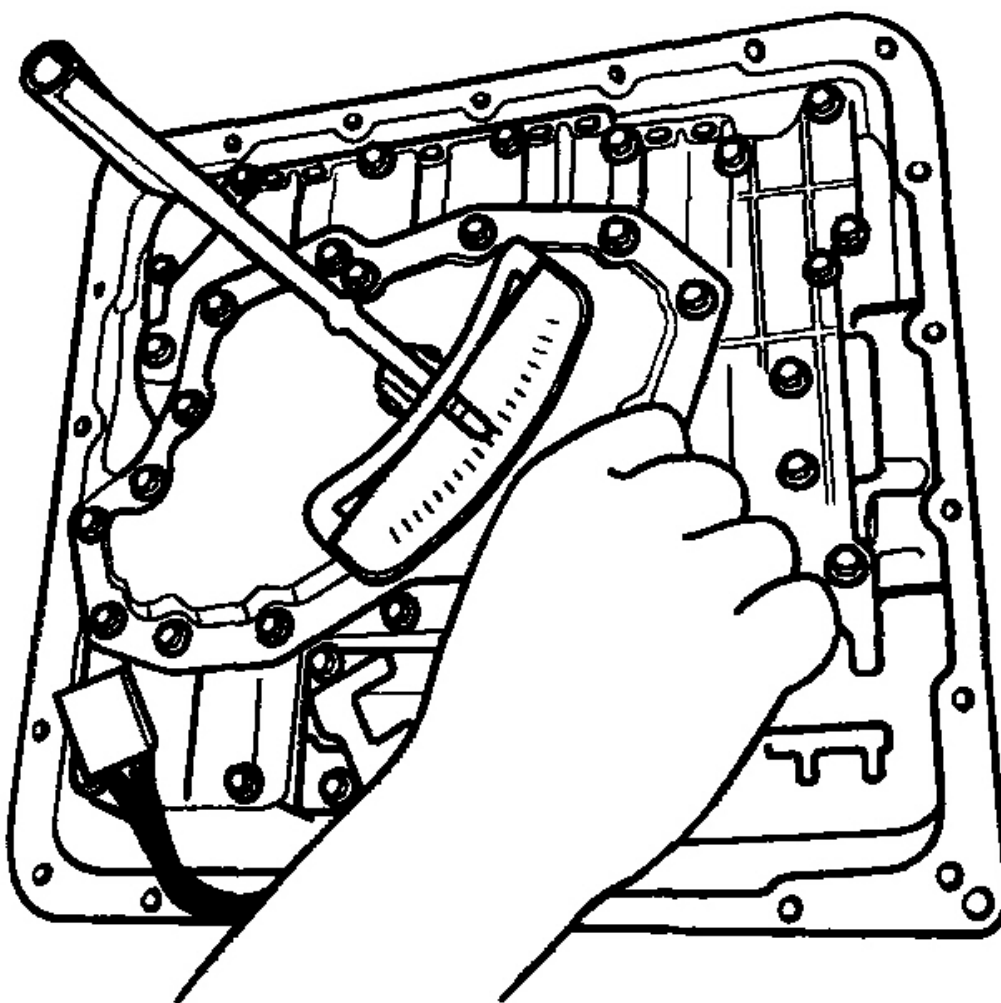
G03877671

Fig. 103: Mounting Control Valve Assembly
Courtesy of KIA MOTORS AMERICA, INC.

63. Tighten the control valve assembly and case installation bolts provisionally and then use the torque meter to tighten.

Tightening torque: 6.9 ~ 8.8 Nm(69 ~ 88 kg.cm, 5.1 ~ 6.5lb.ft)

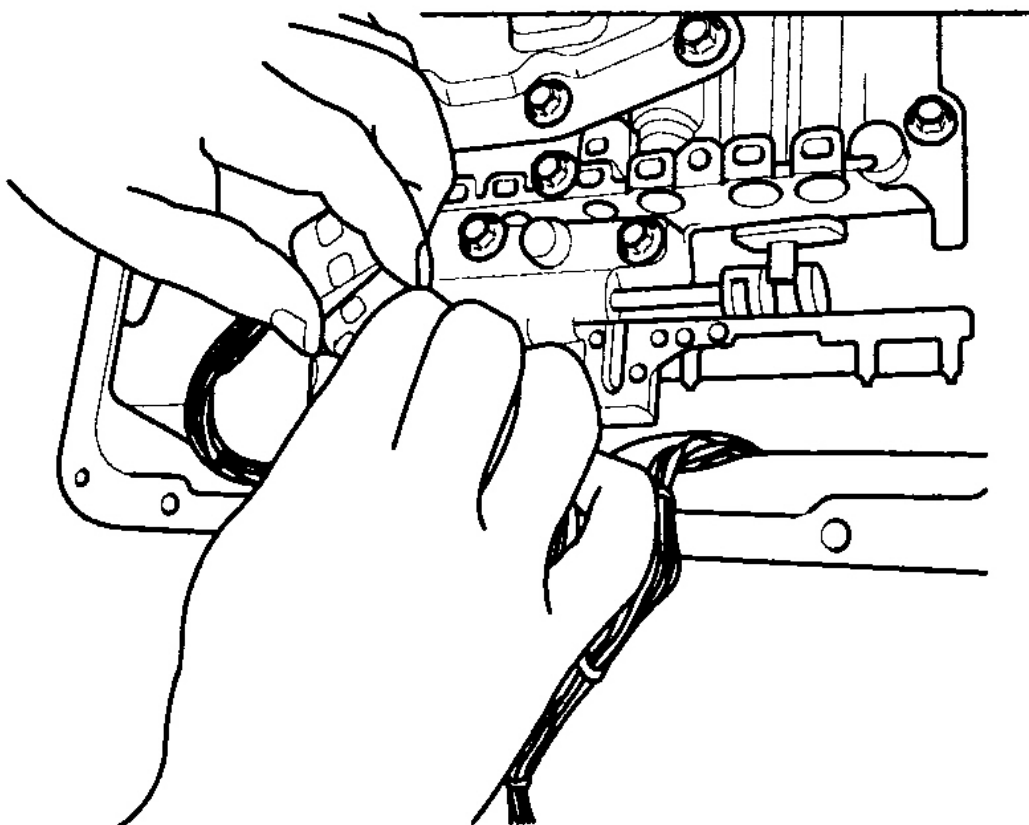
CAUTION: Make sure that the harness does not get stuck in the case.



G03877672

Fig. 104: Tightening Control Valve Assembly And Case Installation Bolts
Courtesy of KIA MOTORS AMERICA, INC.

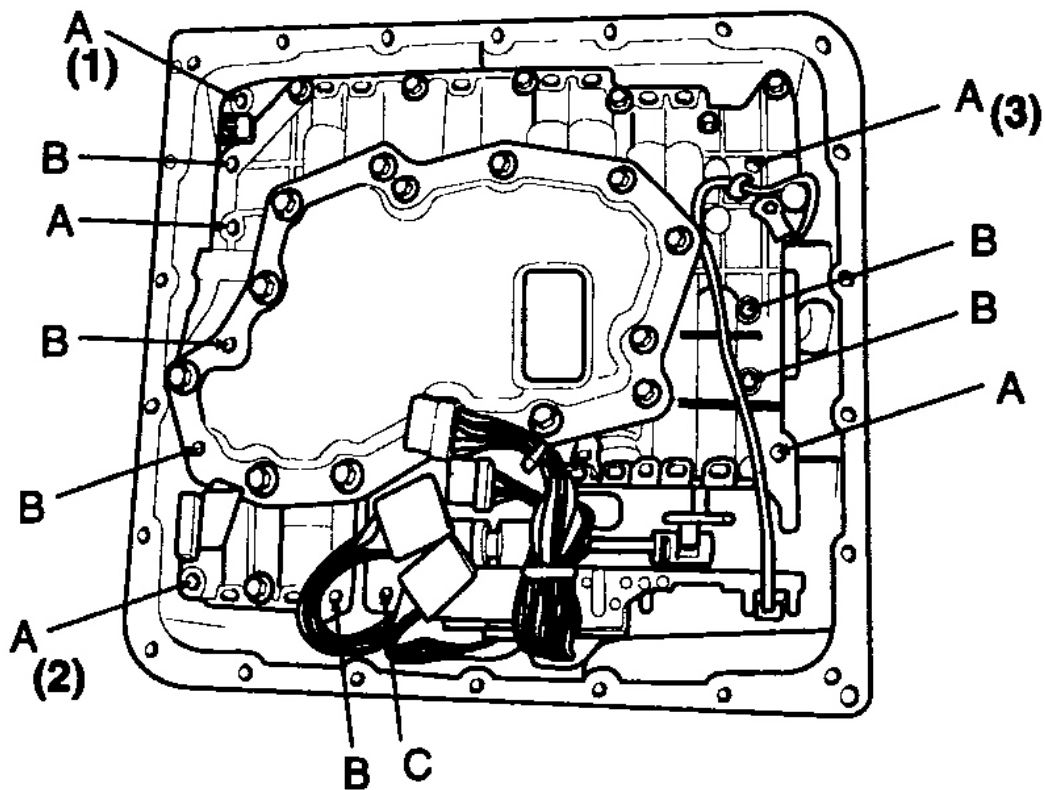
64. Mount the terminal assembly connector to the bracket.



G03877673

Fig. 105: Mounting Terminal Assembly Connector To Bracket
Courtesy of KIA MOTORS AMERICA, INC.

- Control valve - case installation bolts position and tightening tips.



G03877674

Fig. 106: Tightening Sequence

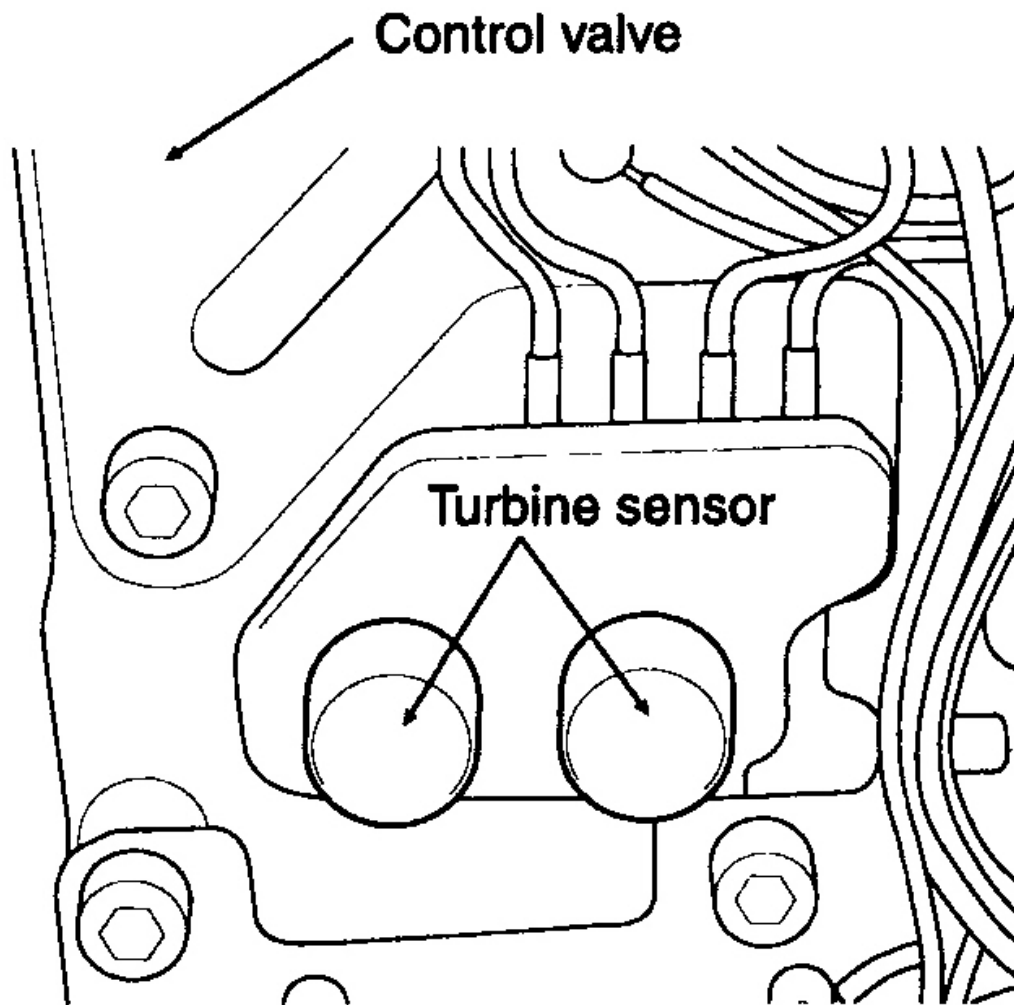
Courtesy of KIA MOTORS AMERICA, INC.

Tighten bolts 1,2,3 of the figure above to prevent dislocation provisionally. After that, tighten them in order of 1-->2-->3 and then tighten the other bolts.

BOLT CODE AND SIZE REFERENCE

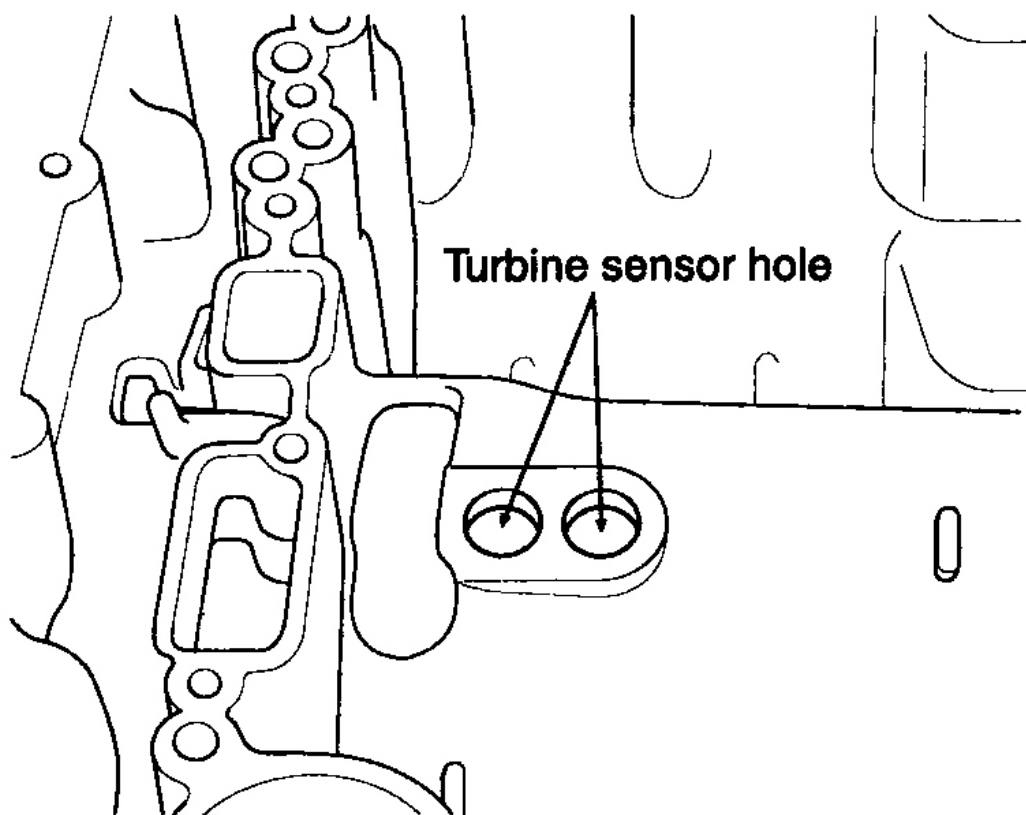
Code	Size mm(in.)	Bolt head	Count
A	42 (0.1654)	B	5
B	55 (0.2165)	7	6
C	40 (0.1575)	7	1

- Mount to the control valve assembly to the case.



G03877675

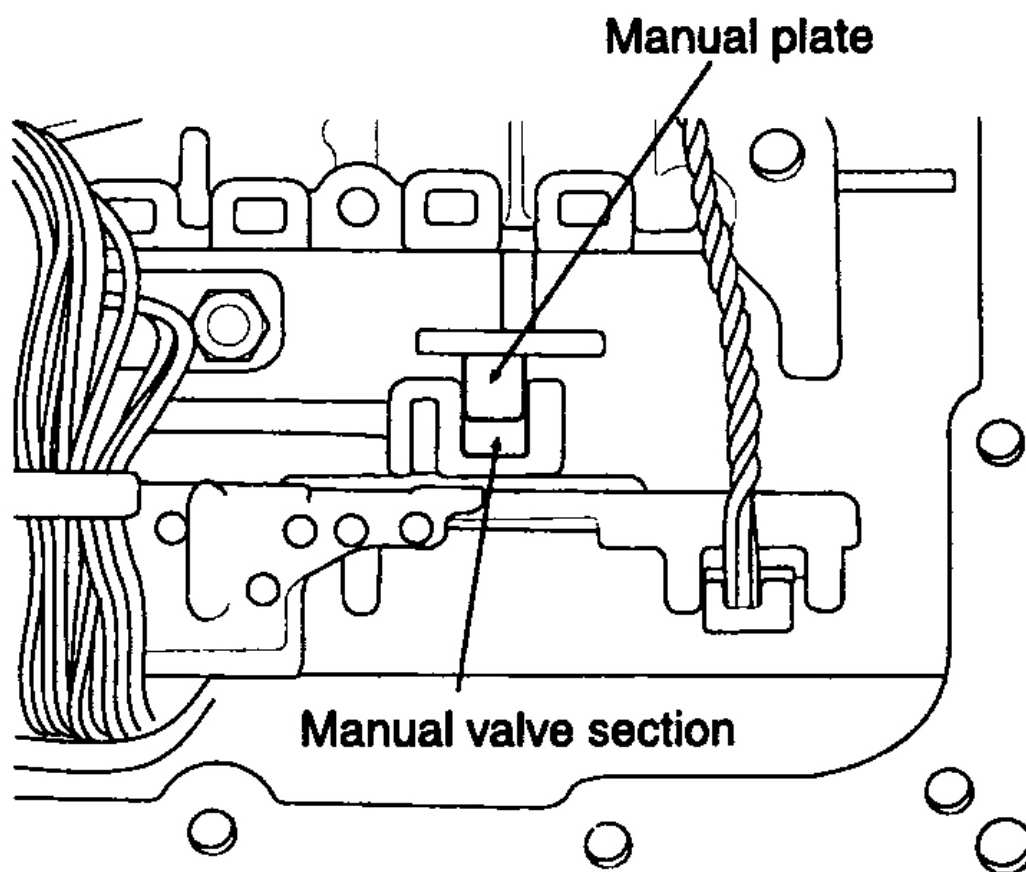
Fig. 107: Identifying Turbine Sensor
Courtesy of KIA MOTORS AMERICA, INC.



G03877676

Fig. 108: Identifying Location Turbine Sensor Hole
Courtesy of KIA MOTORS AMERICA, INC.

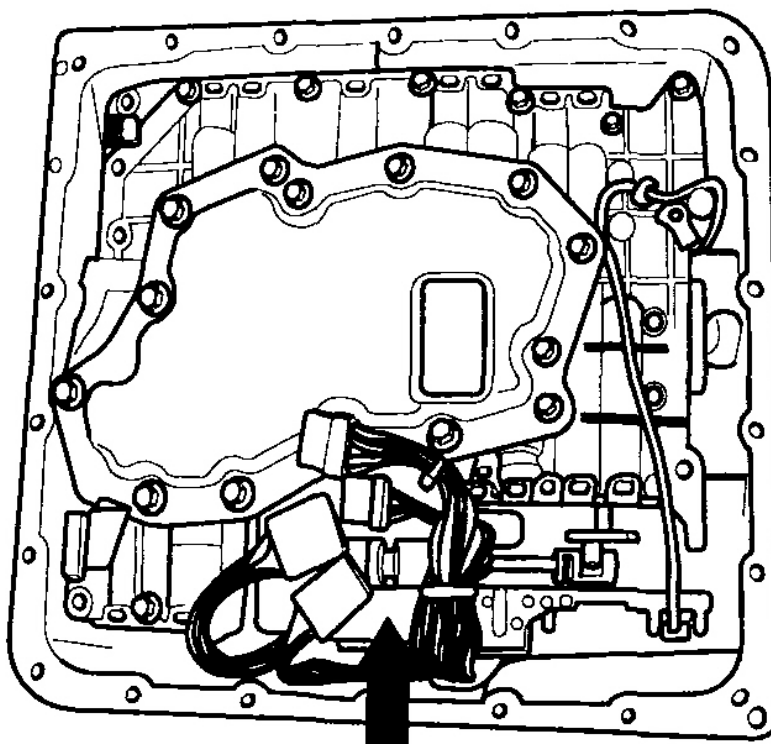
1. Match the manual valve section part and the manual plate as shown in figure.



G03877677

Fig. 109: Matching Manual Valve Section Part And Manual Plate
Courtesy of KIA MOTORS AMERICA, INC.

2. Be careful when inserting the harness since the slit between the case and the control valve is small in the figure.

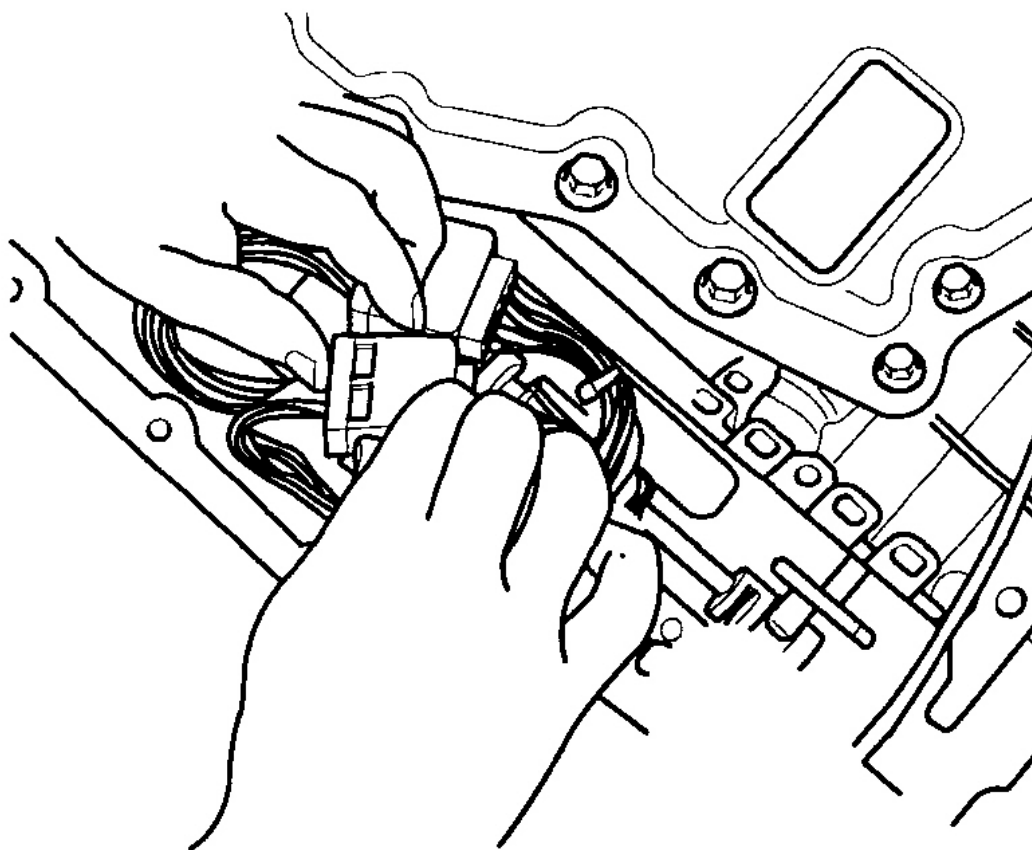


Be careful that the harness does not get stuck in the case.

G03877678

Fig. 110: Precaution When Inserting Harness
Courtesy of KIA MOTORS AMERICA, INC.

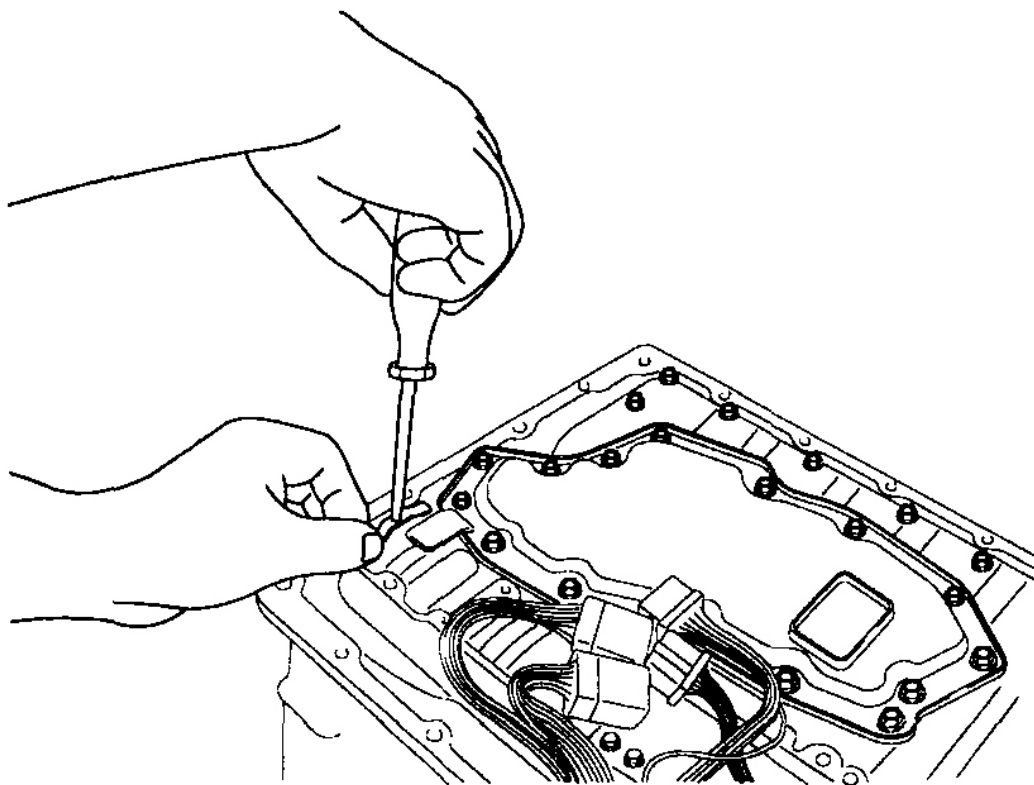
65. Connect the terminal assembly and the control valve assembly connector.



G03877679

Fig. 111: Connecting Terminal Assembly And Control Valve Assembly Connector
Courtesy of KIA MOTORS AMERICA, INC.

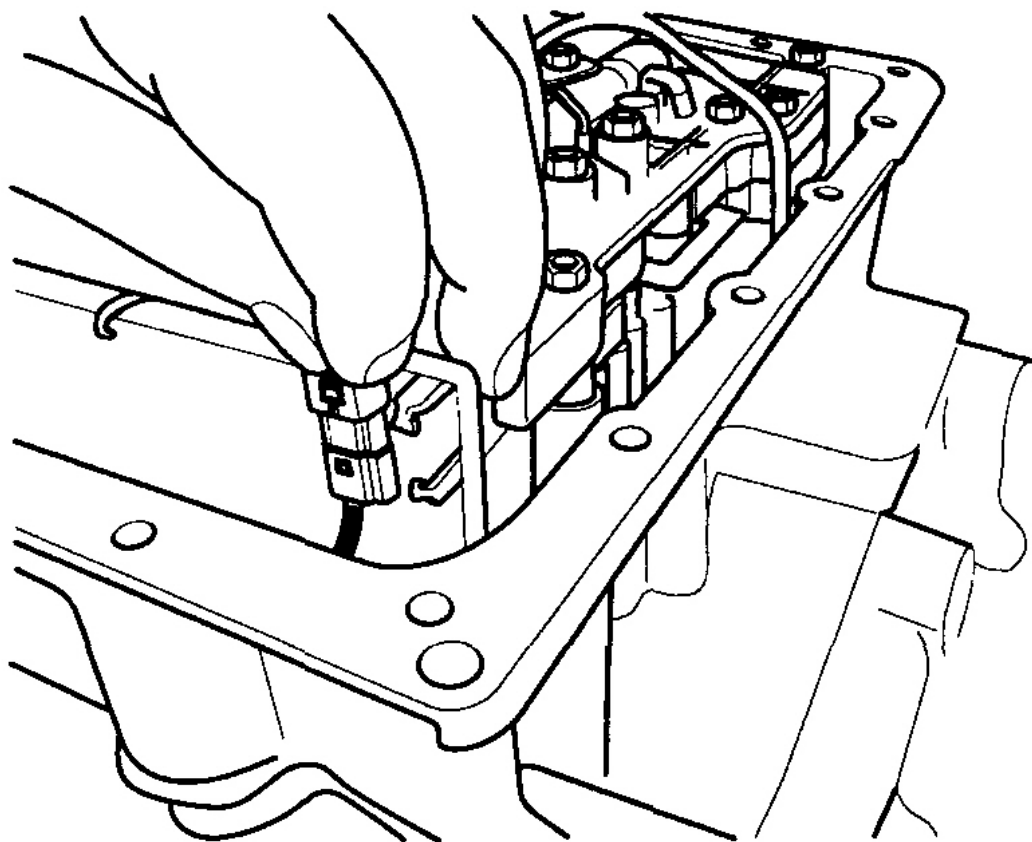
66. Connect the temperature sensor connector.



G03877680

Fig. 112: Connecting Temperature Sensor Connector
Courtesy of KIA MOTORS AMERICA, INC.

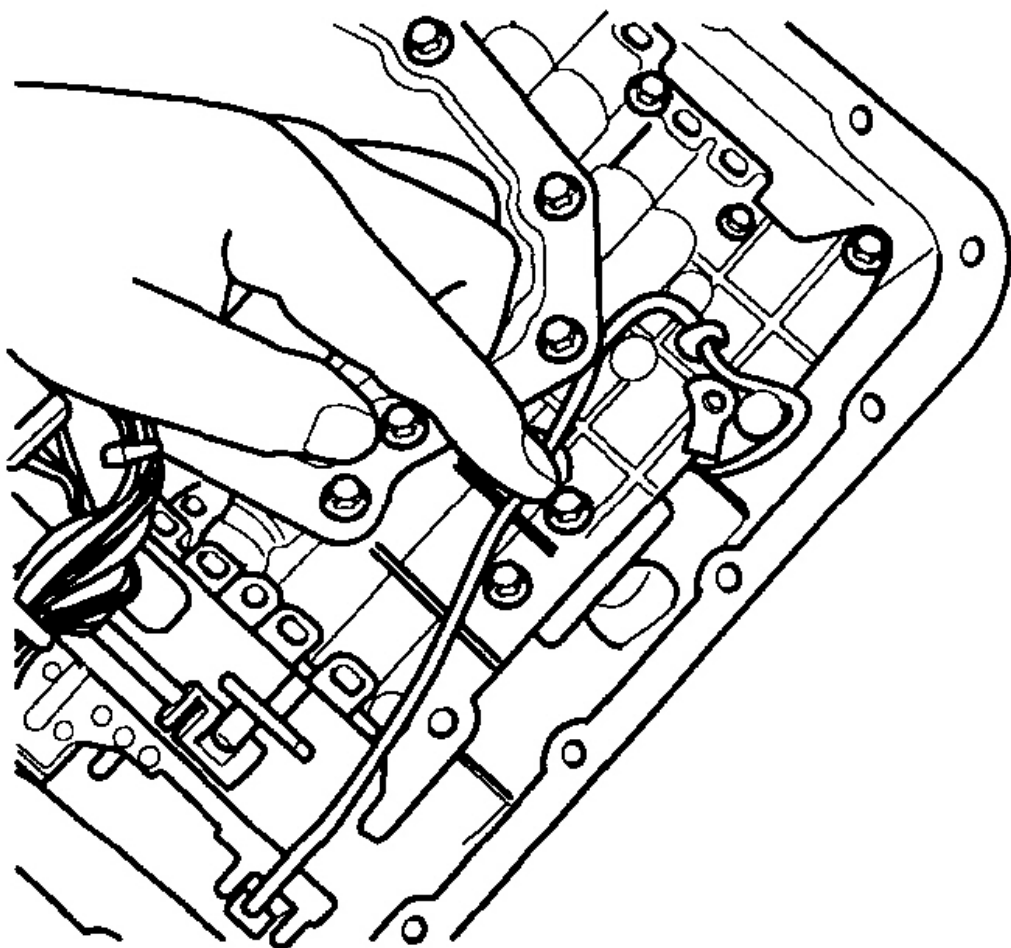
67. Connect the revolution sensor connector.



G03877681

Fig. 113: Connecting Revolution Sensor Connector
Courtesy of KIA MOTORS AMERICA, INC.

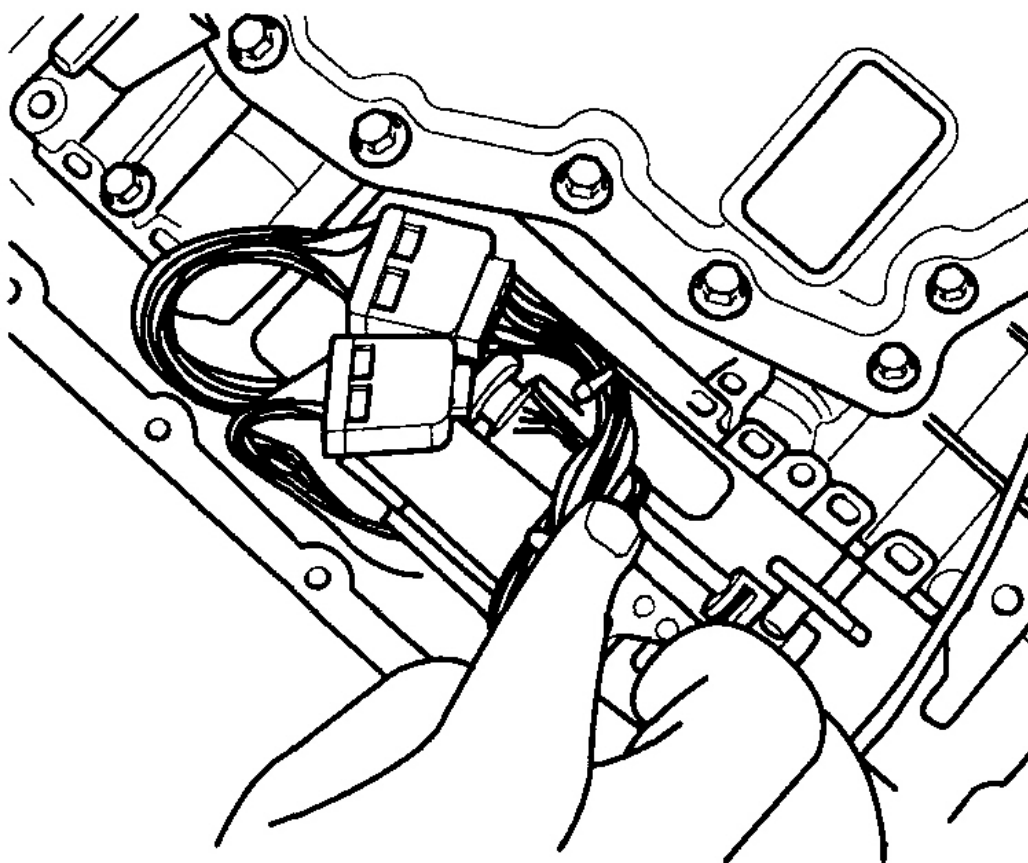
68. Fix the revolution sensor harness to the control valve assembly with a clip.



G03877682

Fig. 114: Fixing Revolution Sensor Harness To Control Valve Assembly
Courtesy of KIA MOTORS AMERICA, INC.

69. Fix the terminal assembly harness to the control valve assembly with a clip.

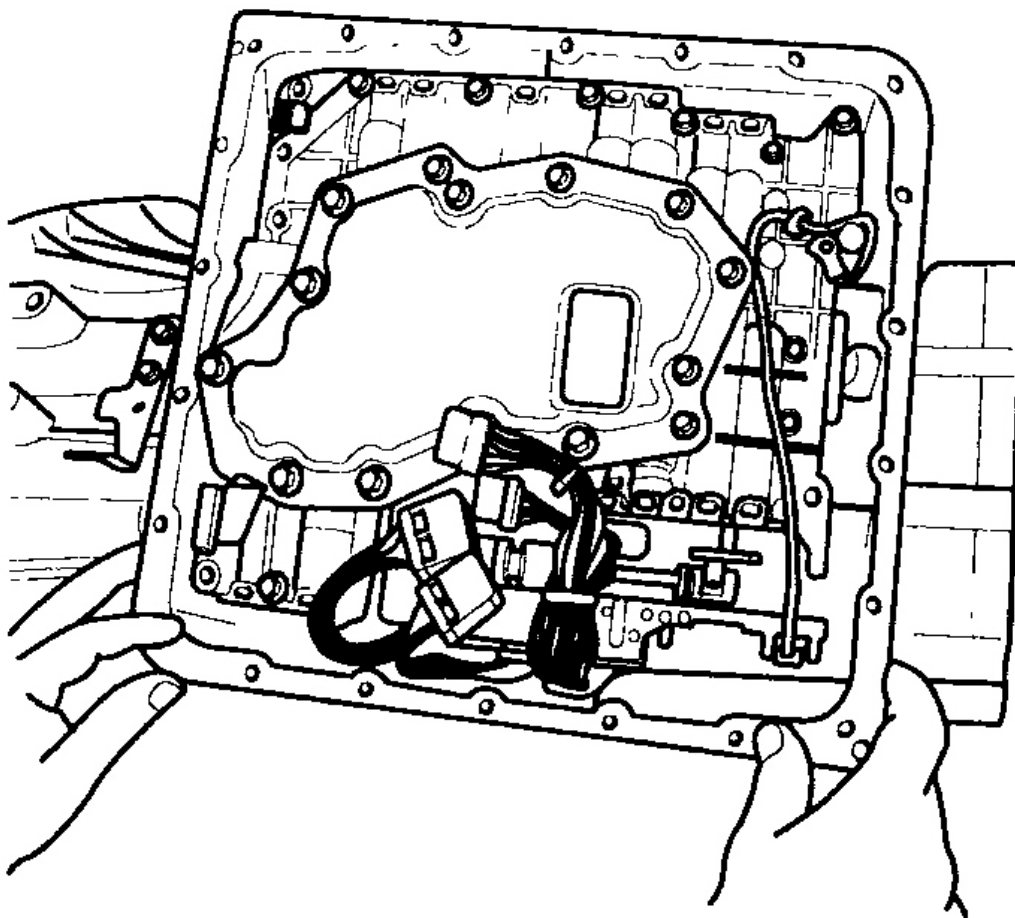


G03877683

Fig. 115: Fixing Terminal Assembly Harness To Control Valve Assembly
Courtesy of KIA MOTORS AMERICA, INC.

70. Mount the oil pan gasket.

Match the mounting orientation to the hole.



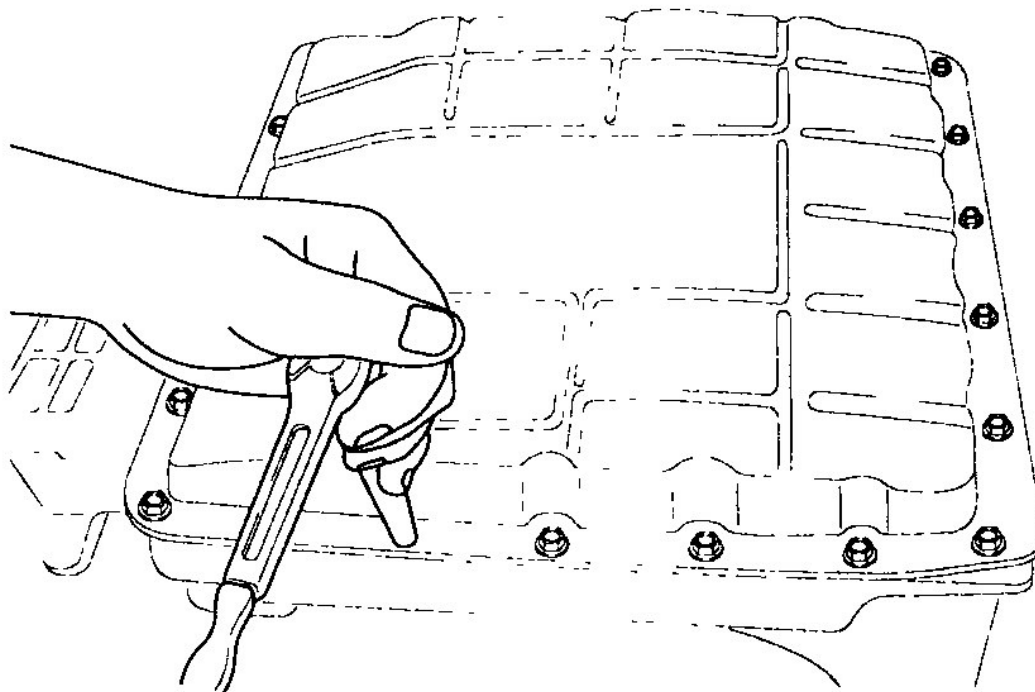
G03877684

Fig. 116: Mounting Oil Pan Gasket
Courtesy of KIA MOTORS AMERICA, INC.

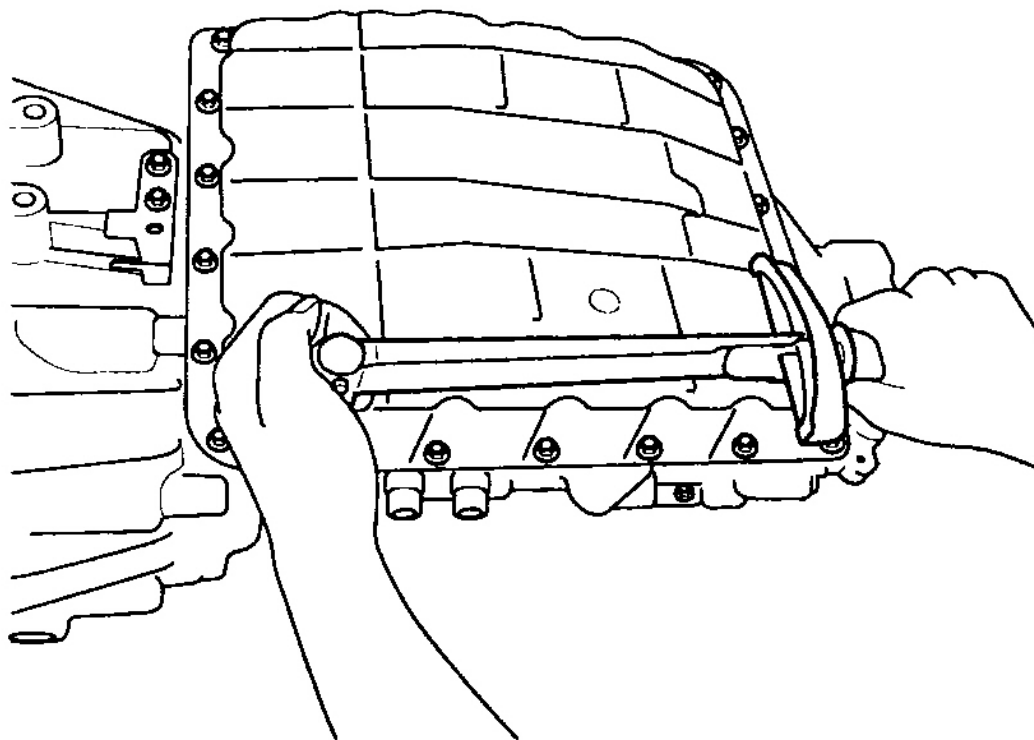
71. Mount the oil pan.

Mount so that the drain bolt comes to the position of the figure on the left.

CAUTION: Make sure the harness does not get stuck.

**G03877685****Fig. 117: Mounting Oil Pan****Courtesy of KIA MOTORS AMERICA, INC.**

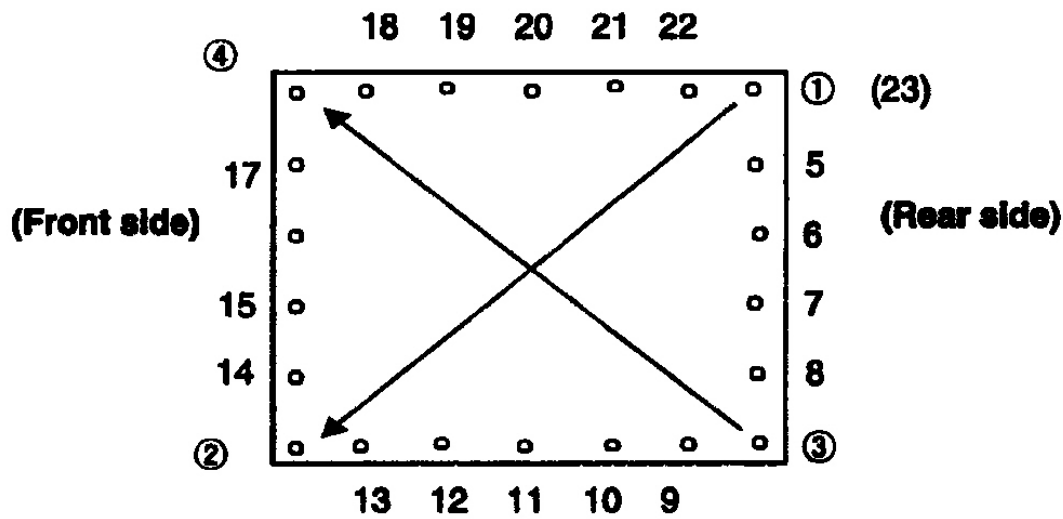
72. Tighten the oil pan installation bolts provisionally, and then use the torque meter to tighten them with torque of 6.9 ~ 8.8 Nm (69 ~ 88kg.cm, 5.1 ~ 6.5 lbf.ft).



G03877686

Fig. 118: Tightening Oil Pan Installation Bolts
Courtesy of KIA MOTORS AMERICA, INC.

- Bolt assembly tips are as follows: Assemble in the following order.
Assemble diagonally at first.



G03877687

Fig. 119: Assembling Sequence

Courtesy of KIA MOTORS AMERICA, INC.

73. Mount the torque converter.

Check that the distance between the six point BOSS section and the converter housing section is 27.1mm (1.063in.).

NOTE: Disassembly and assembly of oil pan drain bolts

- **Disassembly**

Loosen the oil pan drain bolts and remove ATF. Discard the drain bolt washer (non-reusable)

- **Reassembly**

Assemble the new drain bolt washer.

Tighten the drain bolt with tightening torque of 29 ~ 39Nm(290 ~ 390kg.cm, 21.3 ~ 28.8lb.ft).