

CONTENTS

PRECAUTIONS	2	TRANSAXLE ASSEMBLY	12	F
Cautions	2	Removal and Installation From Vehicle	12	
PREPARATION	3	REMOVAL	12	
Special Service Tools	3	INSTALLATION	13	G
NOISE, VIBRATION, AND HARSHNESS (NVH)		Cross-Sectional View	14	
TROUBLESHOOTING	5	Component Parts Location	15	
NVH Troubleshooting Chart	5	CASE AND HOUSING COMPONENTS	15	H
MANUAL TRANSAXLE	5	GEAR COMPONENTS	16	
M/T OIL	6	SHIFT CONTROL COMPONENTS	18	
Replacement	6	FINAL DRIVE COMPONENTS	19	
DRAINING	6	Disassembly and Assembly	19	I
FILLING	6	DISASSEMBLY	19	
Inspection	6	ASSEMBLY	24	
OIL LEAKAGE AND OIL LEVEL	6	Input Shaft and Gear	31	J
SIDE OIL SEAL	7	INSPECTION AFTER DISASSEMBLY	31	
Removal and Installation	7	SYNCHRONIZER	31	
REMOVAL	7	Disassembly and Assembly of Mainshaft	31	K
INSTALLATION	7	GENERAL PRECAUTIONS	31	
POSITION SWITCH	8	DISASSEMBLY	32	
Removal and Installation	8	INSPECTION AFTER DISASSEMBLY	34	L
Inspection	8	ASSEMBLY	35	
CONTROL LINKAGE	9	Disassembly and Assembly of Final Drive	35	
Removal and Installation of Control Device and		DISASSEMBLY	35	
Cable	9	ASSEMBLY	36	M
REMOVAL	9	Shift Control	36	
INSTALLATION	9	INSPECTION	36	
AIR BREATHER HOSE	10	SERVICE DATA AND SPECIFICATIONS (SDS)	37	
Removal and Installation	10	General Specifications	37	
5TH GEAR ASSEMBLY	11	TRANSAXLE	37	
On Board Removal and Installation	11			
REMOVAL	11			
INSTALLATION	11			

PRECAUTIONS

PRECAUTIONS

PFP:00001

Cautions

ECS008JN

- If manual transaxle is removed from the vehicle, always replace CSC (concentric slave cylinder). CSC insert is returned to original position to remove transaxle. Dust on clutch disc sliding parts may damage CSC seal and may cause clutch fluid leak.
- Do not reuse transaxle oil, once it has been drained.
- Check oil level or replace oil with vehicle on level ground.
- During removal or installation, keep inside of transaxle clear of dust or dirt.
- Check for the correct installation status prior to removal or disassembly. If mating marks are required, be certain they do not interfere with the function of the parts they are applied to.
- In principle, tighten nuts and bolts gradually in several steps working diagonally from inside to outside. If tightening sequence is specified, observe it.
- Be careful not to damage sliding surfaces and mating surfaces.

PREPARATION

PREPARATION

PFP:00002

Special Service Tools

ECS008JO

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MT

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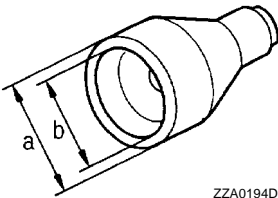
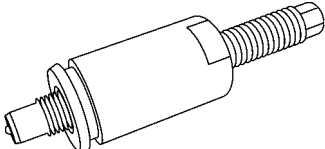
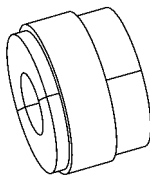
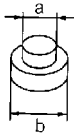
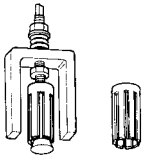
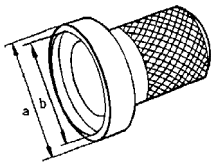
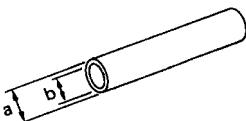
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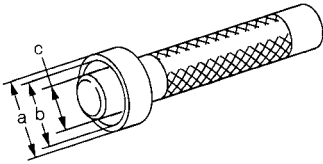
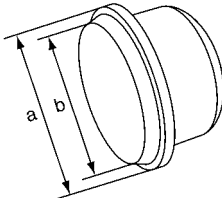
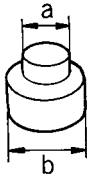
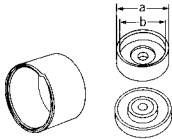
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M

Tool number Tool name	Description
ST27862000 a: ϕ 62.5 mm (2.46 in) b: ϕ 42 mm (1.65 in) Drift	Installing differential side oil seal  ZZA0194D
KV32300QAC (Renault tool number: B.Vi.22-01) Remover	Removing 5th main gear  SCIA1781J
KV32300QAD (Renault tool number: B.Vi.1000) 5th gear adapter	Removing 5th main gear  SCIA1782J
ST35300000 a: ϕ 45 mm (1.77 in) b: ϕ 59 mm (2.32 in) Drift	Installing and removing, input shaft rear bearing and main shaft rear bearing  ZZA0969D
KV111038S0 Valve seat remover	Removing main shaft front bearing  ZZA0872D
ST33061000 a: ϕ 60 mm (2.36 in) b: ϕ 47 mm (1.85 in) Drift	Installing main shaft front bearing  ZZA0814D
KV40100900 a: ϕ 52.5 mm (2.07 in) b: ϕ 28 mm (1.10 in) Drift	Instal and remove input shaft front bearing  ZZA0534D

PREPARATION

Tool number Tool name		Description
ST33220000 a: ϕ 32 mm (1.26 in) b: ϕ 31.5 mm (1.24 in) c: ϕ 21 mm (0.83 in) Drift	 ZZA1046D	Installing input shaft oil seal
KV32300QAE (Renault tool number: B.Vi.1554) a: ϕ 63 mm (2.48 in) b: ϕ 65 mm (2.56 in) Drift (set)	 SCIA1783J	Installing side bearing outer race
ST30052000 a: ϕ 22 mm (0.87 in) b: ϕ 28 mm (1.10 in) Drift	 ZZA1023D	Removing differential side oil seal
KV40104920 a: ϕ 44.7 mm (1.76 in) b: ϕ 21.7 mm (0.85 in) Drift	 ZZA1101D	Installing differential side bearing

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

ECS008SN

Use the chart below to help you find the cause of the symptom. The numbers indicate the order of the inspection. If necessary, repair or replace these parts.

MANUAL TRANSAXLE

Reference page		MT-6			MT-15	MT-15	MT-15	MT-9	MT-36	MT-36	MT-31	MT-31	MT-31	MT-31
SUSPECTED PARTS (Possible cause)		OIL (Oil level is low.)	OIL (Wrong oil.)	OIL (Oil level is high.)	GASKET (Damaged)	OIL SEAL (Worn or damaged)	O-RING (Worn or damaged)	SHIFT CONTROL LINKAGE (Worn)	CHECK PLUG RETURN SPRING AND CHECK BALL (Worn or damaged)	SHIFT FORK (Worn)	GEAR (Worn or damaged)	BEARING (Worn or damaged)	BAULK RING (Worn or damaged)	INSERT SPRING (Damaged)
Symptoms	Noise	1	2								3	3		
	Oil leakage		3	1	2	2	2							
	Hard to shift or will not shift		1	1				2					3	3
	Jumps out of gear							1	2	3	3			

M/T OIL

PFP:KLD20

Replacement DRAINING

ECS008JP

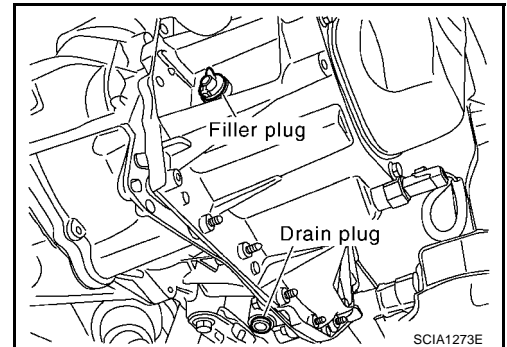
1. Start the engine and let it run to warm up the transaxle.
2. Stop the engine. Remove drain plug and drain oil.
3. Set a gasket on the drain plug and install it to the transaxle.

Drain plug

 : 22 N·m (2.2 kg-m, 16 ft-lb)

CAUTION:

Do not reuse gaskets.



FILLING

1. Remove filler plug. Fill with new oil until oil level reaches the specified limit near filler plug mounting hole.

Specified oil : Api GL-4

Capacity (reference) : Approx. 2.6 ℓ (4-5/8 Imp pt)

2. After refilling oil, check oil level. Assemble filler plug to transaxle body.

NOTE:

Filler plug

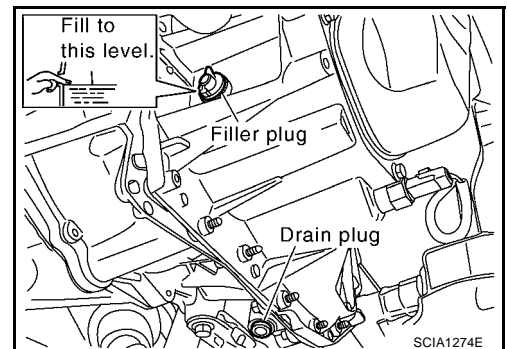
 : 2 N·m (0.2kg, 1.8 in-lb)

Inspection

OIL LEAKAGE AND OIL LEVEL

ECS008JQ

- Check oil level from filler plug mounting hole as shown in the figure.
(If there is no oil leak, it determines that oil level is normal and allows omitting this inspection.)



SIDE OIL SEAL

SIDE OIL SEAL

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Removal and Installation

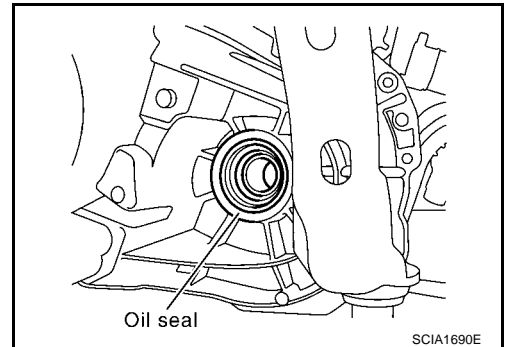
ECS008JR

REMOVAL

1. Remove the drive shaft. Refer to [FAX-13, "Removal and Installation"](#).
2. Remove oil seal with a slotted screwdriver.

CAUTION:

Be careful not to damage the case surface when removing the oil seal.



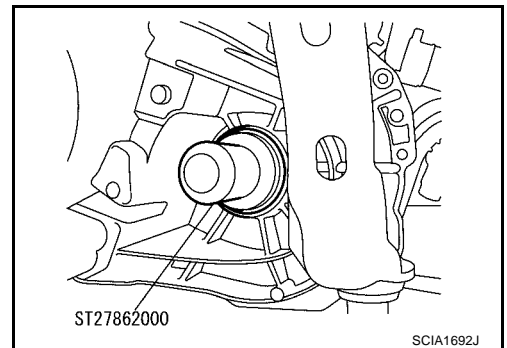
INSTALLATION

1. Using a drift (SST), install an oil seal to the transaxle. About the measure of oil seal, refer to

CAUTION:

Do not reuse the oil seal.

2. Install drive shaft to the transaxle. Refer to [FAX-13, "Removal and Installation"](#).



POSITION SWITCH

POSITION SWITCH

PFP:32005

Removal and Installation

ECS008JS

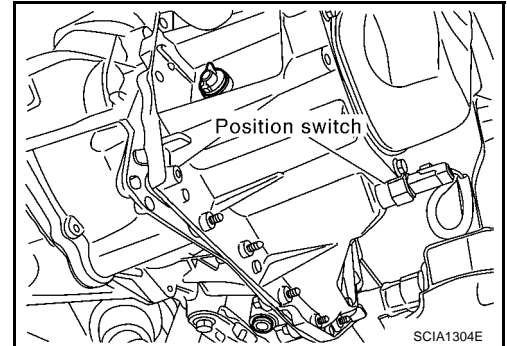
Be careful of the following.

- When installing, tighten to torque specified below.

Position switch tightening torque

 : 22.5 N·m (2.3kg-m, 17ft-lb)

- After installing, check oil leak and oil level.



Inspection

ECS008JT

- Disconnect position switch connector. Check continuity between corresponding terminals with the selector lever turned to 1st to 5th and Reverse, Neutral position.

Between terminals 1 and 2 (Reverse switch)

Reverse

: Continuity should exist.

Except reverse

: Continuity should not exist.

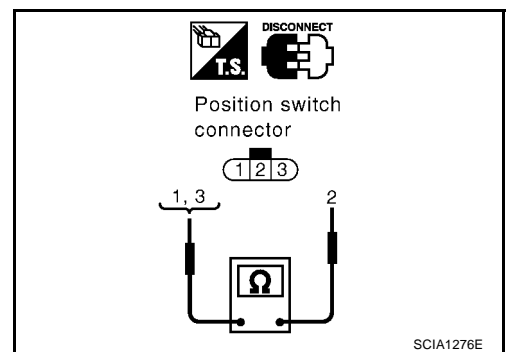
Between terminals 2 and 3 (Neutral switch)

Neutral position

: Continuity should exist.

Other than neutral position

: Continuity should not exist.



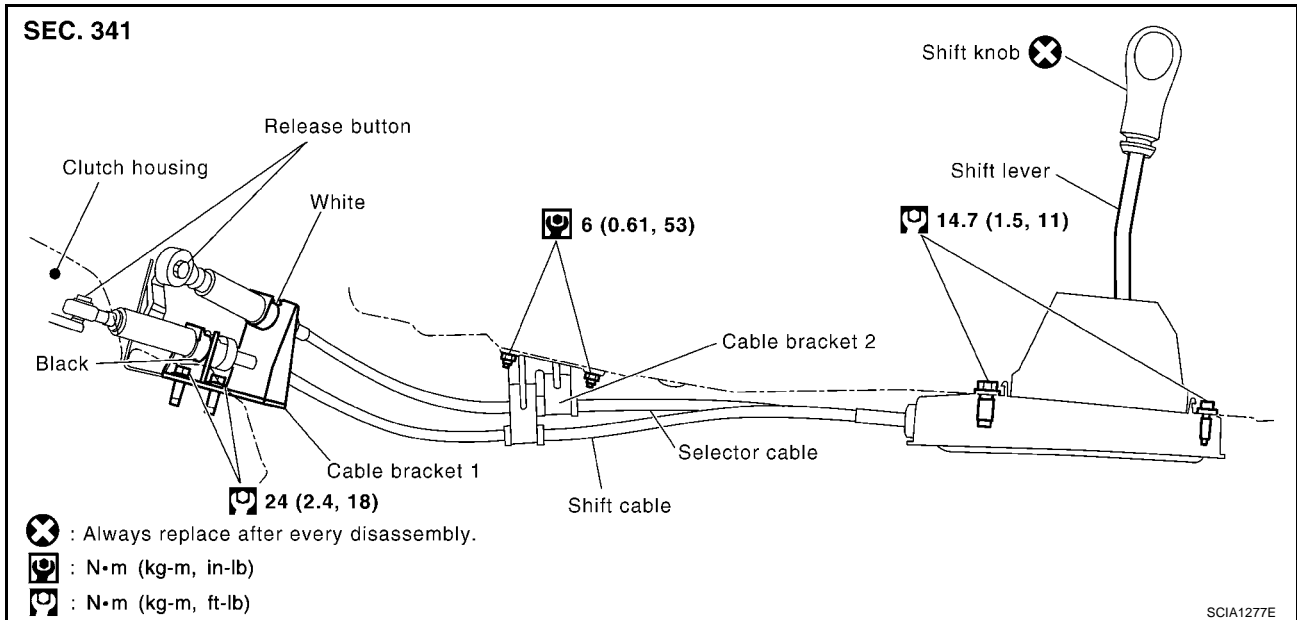
CONTROL LINKAGE

CONTROL LINKAGE

PFP:34103

Removal and Installation of Control Device and Cable

ECS008JU



REMOVAL

1. Remove center console and shift boot. Refer to [IP-10, "CONSOLE BOX"](#).
2. Remove control device mounting bolts.
3. Pressing release bottom of cable end, remove cable from either manual transmission shift lever or A/T selector lever.
4. Lift up cable and remove it from cable bracket 1.
5. Remove center muffler and heat plate. Refer to [EX-3, "EXHAUST SYSTEM"](#).
6. Separate cable bracket 2 from the vehicle.
7. Remove front and rear claws of control device. Remove control device and cable from the vehicle.

NOTE:

If shift knob needs to be removed, pull it up to remove.

INSTALLATION

Note the following, and install in the reverse order of removal.

- When installing, make sure to insert cable end into either manual transmission shift lever or A/T selector lever.
- After assembly, make sure selector lever automatically returns to Neutral when it is moved to 1st, 2nd, or Reverse.
- After installation, make sure that the shift to each position works well.
- When installing shift knob, press it onto selector lever.

CAUTION:

Do not reuse shift knob.

AIR BREATHER HOSE

AIR BREATHER HOSE

PFP:31098

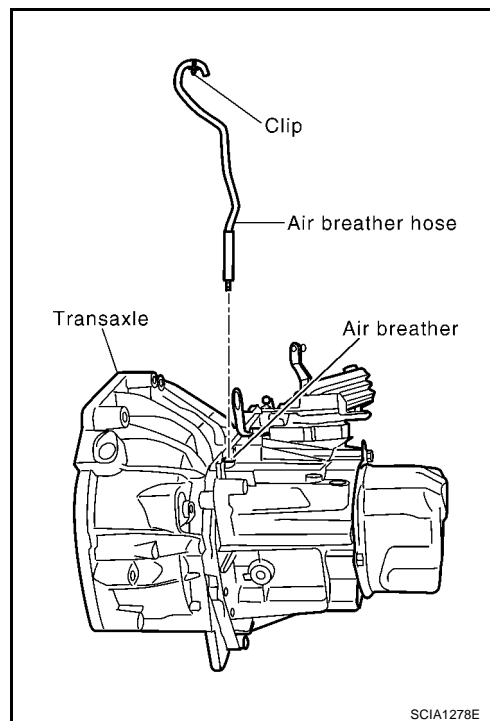
Removal and Installation

ECS008JV

Refer to the figure for air breather hose removal and installation information.

CAUTION:

- Make sure there are no pinched or restricted areas on the air breather hose caused by bending or winding during installation.
- Be sure to insert hose into the transaxle tube until overlap area reaches the spool.
- Do not remove and install breather hose by rotating. When removing, be sure to hold connector of air breather securely.



SCIA1278E

5TH GEAR ASSEMBLY

5TH GEAR ASSEMBLY

PFP:32341

On Board Removal and Installation REMOVAL

ECS008JW

1. Remove shift, select cable from either manual transmission shift lever or A/T selector lever. Refer to [MT-9, "CONTROL LINKAGE"](#).
2. Set gear at 3rd with control shaft assembly.
3. Remove drain plug. Drain M/T oil.

CAUTION:

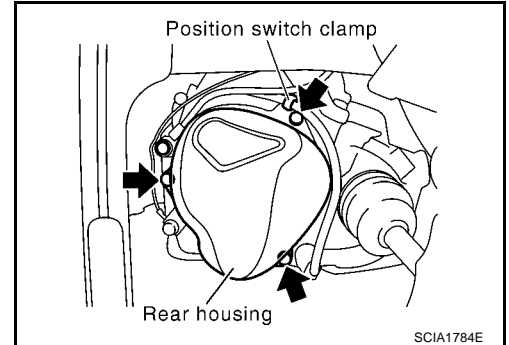
Do not reuse drained oil.

4. Remove LH front tire and remove splash cover. Refer to [EI-12, "FENDER PROTECTOR"](#).
5. Remove reverse switch harness from clamp.
6. Remove rear housing.

CAUTION:

Rear housing oil channel is inserted to input shaft center hole. Therefore, when removing, remove it to axial direction of input shaft.

7. Remove 5th gear assembly. Refer to transaxle assembly over haul steps 5 to 14 of [MT-32, "DISASSEMBLY"](#).



INSTALLATION

Perform in the reverse order of removal.

- Shift selector lever to 3rd gear. Refer to [MT-12, "TRANSAXLE ASSEMBLY"](#) procedure 34-42.
- Install O-ring and rear housing to transaxle, and tighten mounting bolts to the specified torque.

 : 24.5 N·m (2.5 kg-m, 18ft-lb)

- After installation, check the following.
 - Check oil leak and oil quantity. [MT-6, "M/T OIL"](#)
 - Move shift lever and make sure that shift to each position works well.

TRANSAXLE ASSEMBLY

TRANSAXLE ASSEMBLY

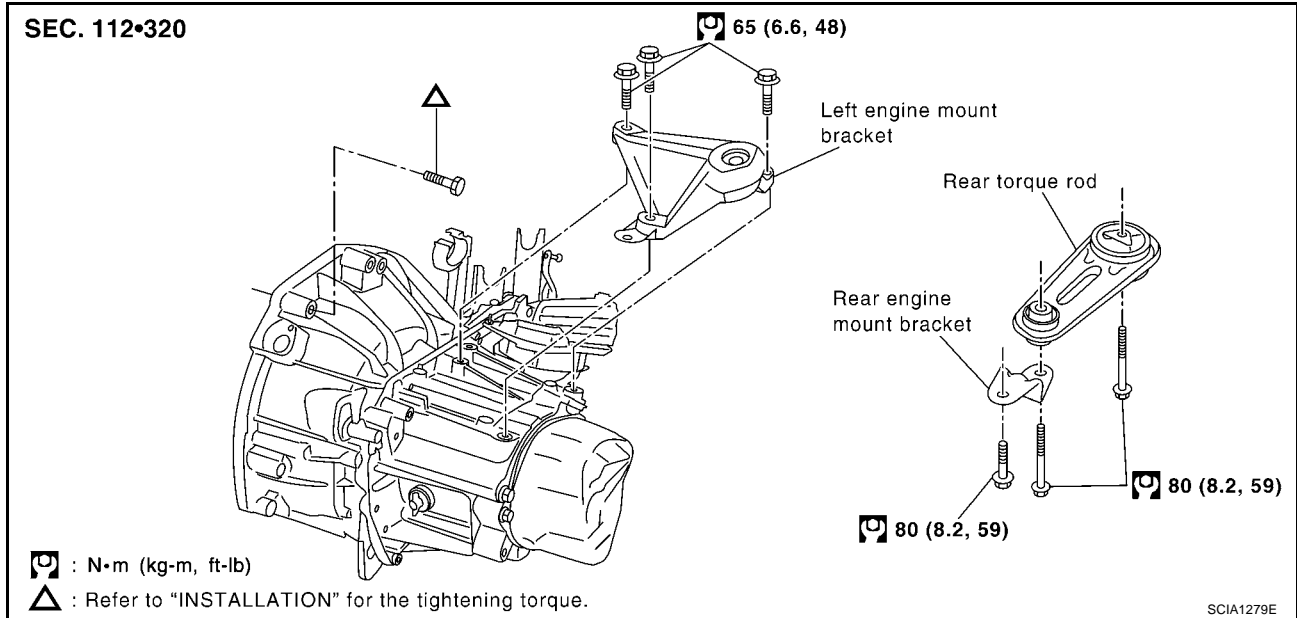
PFP:32010

Removal and Installation From Vehicle

ECS008JX

CAUTION:

If manual transaxle is removed from the vehicle, always replace CSC (concentric slave cylinder). (Commercial) CSC insert is returned to original position to remove transaxle. Dust on clutch disc sliding parts may damage CSC seal and may cause clutch fluid leak.



REMOVAL

CAUTION:

Before removal transaxle from engine, remove crankshaft position sensor (POS).

1. Remove battery.
2. Remove transaxle from the control cable. Refer to [MT-9, "Removal and Installation of Control Device and Cable"](#).
3. Drain clutch fluid and remove clutch tube from CSC.(conecentric slave cylinder)
4. Remove engine harness clamp.
5. Remove crankshaft position sensor (POS). Refer to [EM-69, "Disassembly and Assembly"](#).

CAUTION:

- Do not subject it to impact by dropping or hitting.
 - Do not disassemble.
 - Keep the magnetized part on the sensor end of metal powder.
 - Keep sensor away from magnetic position.
6. Remove the starter motor. Refer to [SC-37, "Starter"](#).
 7. Remove air breather hose from transaxle. Refer to [MT-10, "Removal and Installation"](#).
 8. Remove the exhaust front tube. Refer to [EX-3, "Removal and Installation"](#).
 9. Remove LH/RH drive shaft. Refer to [FAX-13, "Removal and Installation"](#).
 10. Remove position switch connector and clamp.
 11. Set a transmission jack under the transaxle.
 12. Set the transmission jack under the engine.
 13. Remove rear engine mount bracket and rear torque rod and remove bolts securing transaxle to LH engine mount bracket (transaxle side). Refer to [EM-98, "Tightening Torque"](#).
 14. Remove transaxle mounting bolt.
 15. Remove transaxle from the vehicle.

TRANSAXLE ASSEMBLY

INSTALLATION

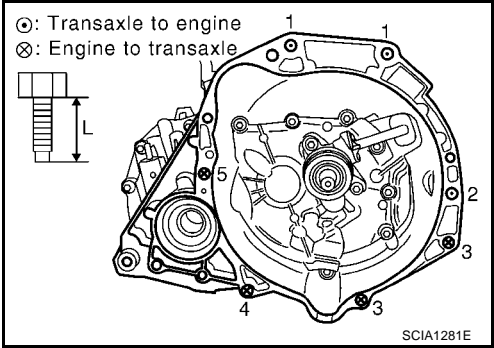
Note the following, and install in the reverse order of removal.

- When installing transaxle to engine, always replace CSC (concentric slave cylinder) with a new one. Refer to [CL-9, "Removal and Installation"](#).
- When installing the transaxle to the engine, use the tightening torque shown below:

CAUTION:

- When installing transaxle, be careful not to bring transaxle input shaft into contact with the clutch cover.
- Tighten bolts without oil stain on bolt and bolt seats.

Bolt No.	1	2	3	4	5
Quantity	2	1	2	1	1
Bolt length [mm (in)]	70 (2.76)	80 (3.15)	20 (0.79)	30 (1.18)	50 (1.97)
Tightening torque [N·m (kg·mft-lb)]	35.15 (3.6, 26)		20.05 (2.0, 15)		35.15 (3.6, 26)

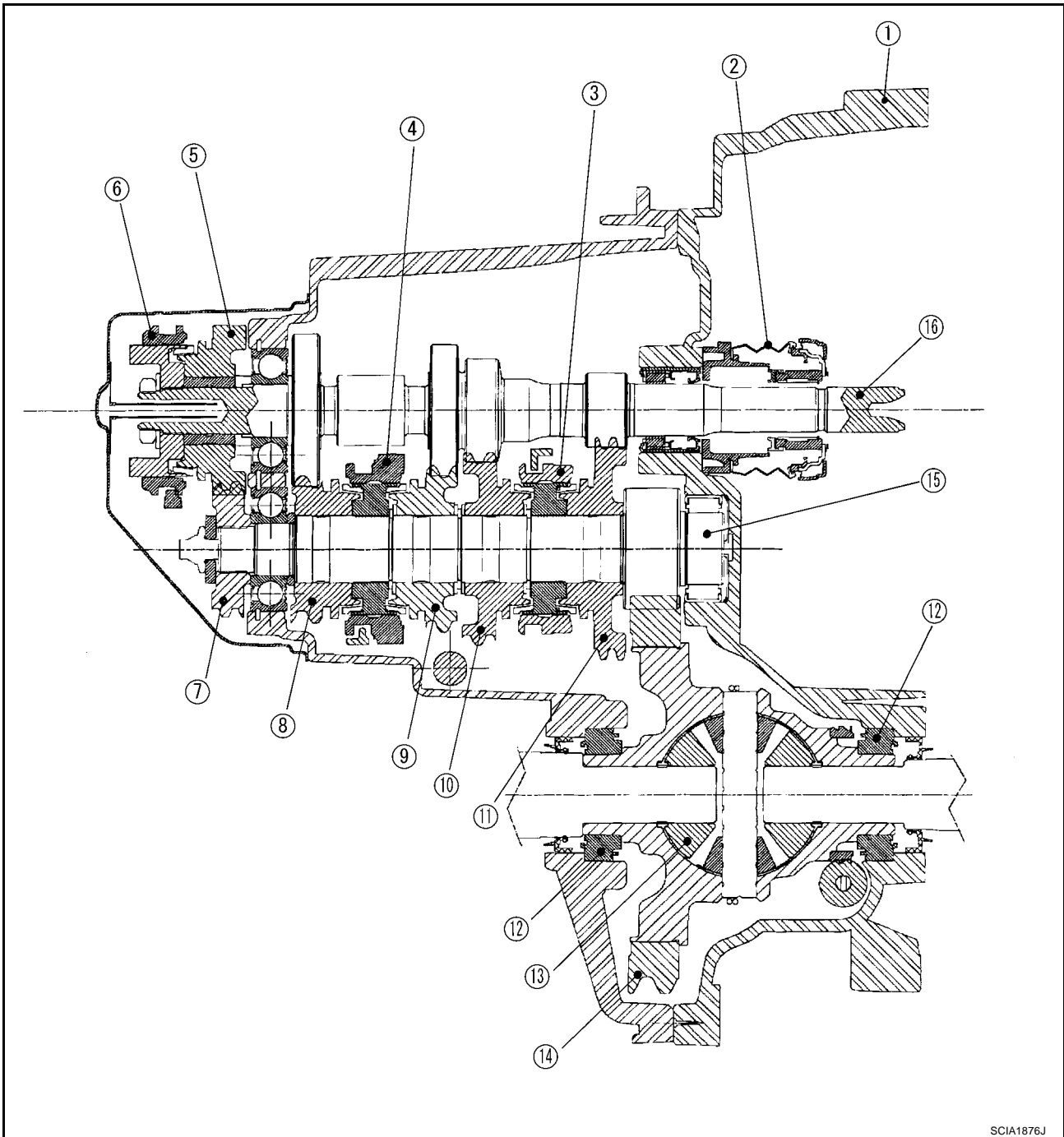


- After installing transaxle, bleed air from the clutch piping. Refer to [CL-7, "Air Bleeding Procedure"](#).
- After the installation, check oil level and look for oil leakage. Refer to [MT-6, "M/T OIL"](#).

TRANSAXLE ASSEMBLY

Cross-Sectional View

ECS008JY



SCIA1876J

- | | | |
|------------------------------------|------------------------------------|------------------------------------|
| 1. Clutch housing | 2. CSC (concentric slave cylinder) | 3. 1st & 2nd synchronizer assembly |
| 4. 3rd & 4th synchronizer assembly | 5. 5th input gear | 6. 5th synchronizer assembly |
| 7. 5th main gear | 8. 4th main gear | 9. 3rd main gear |
| 10. 2nd main gear | 11. 1st main gear | 12. Bearing |
| 13. Differential | 14. Final gear | 15. Mainshaft |
| 16. Input shaft | | |

TRANSAXLE ASSEMBLY

ECS008JZ

Component Parts Location CASE AND HOUSING COMPONENTS

A

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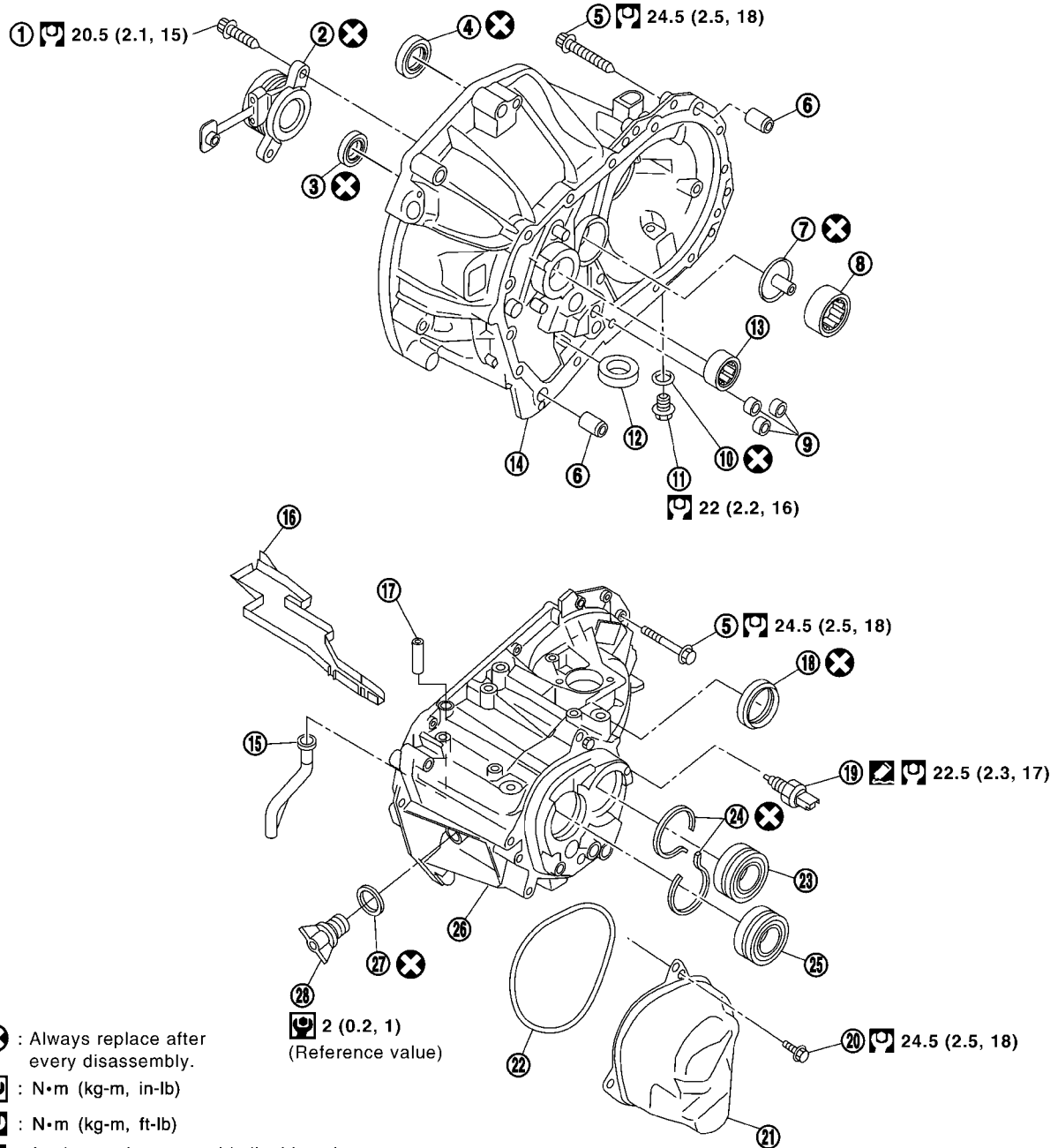
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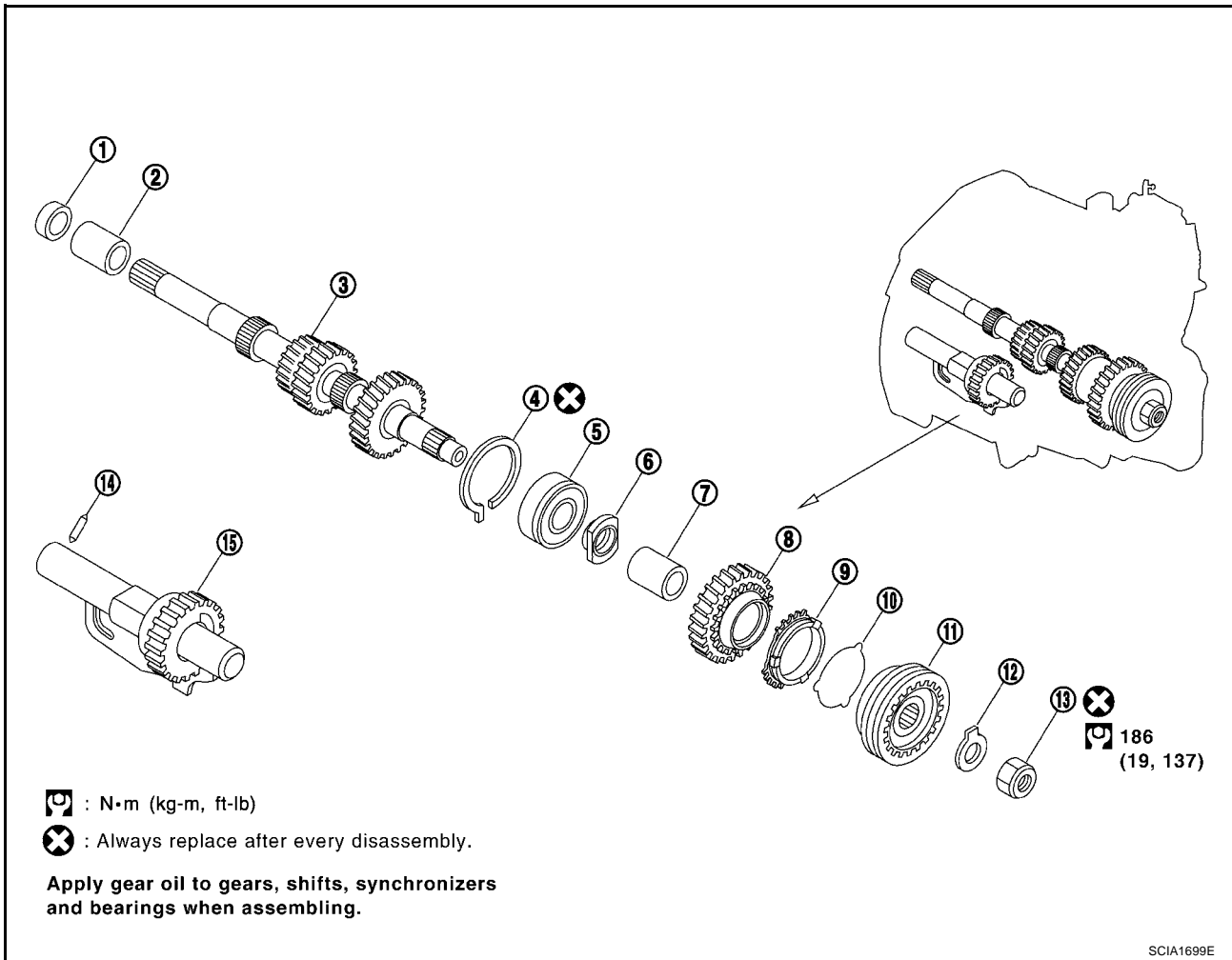
SCIA1698E

- | | | |
|---|------------------------------------|-----------------------------|
| 1. CSC (Concentric slave cylinder) bolt | 2. CSC (Concentric slave cylinder) | 3. Input shaft oil seal |
| 4. Differential oil seal | 5. Clutch housing bolt | 6. Knock pin |
| 7. Oil channel | 8. Mainshaft needle bearing | 9. Shift fork race |
| 10. Gasket | 11. Drain plug | 12. Magnet |
| 13. Input shaft needle bearing | 14. Clutch housing | 15. Air breather inner tube |
| 16. Oil gutter | 17. Air breather tube | 18. Differential oil seal |
| 19. Reverse switch | 20. Rear housing bolt | 21. Rear housing |
| 22. O-ring | 23. Mainshaft ball bearing | 24. Snap rings |
| 25. Input shaft ball bearing | 26. Transaxle case | 27. Gasket |
| 28. Filler plug | | |

TRANSAXLE ASSEMBLY

GEAR COMPONENTS

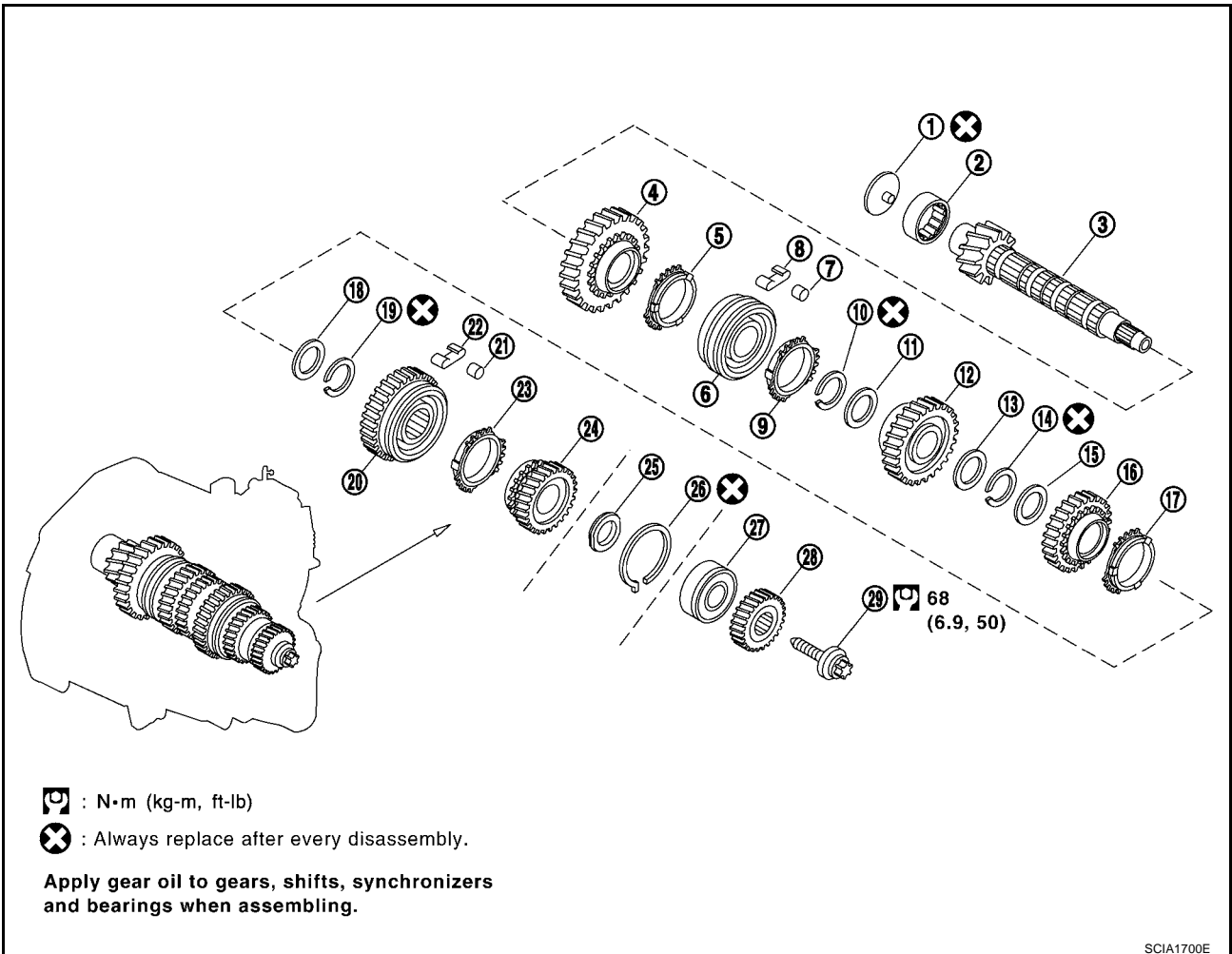
Input Gear Assembly and Reverse Gear Assembly



- | | | |
|---------------------|--|---------------------------|
| 1. Oil seal | 2. Input shaft front bearing (clutch housing side) | 3. Input shaft |
| 4. Snap rings | 5. Input shaft bearing (transaxle case side) | 6. Thrust washer |
| 7. 5th bushing | 8. 5th input gear | 9. 5th baulk ring |
| 10. Spread spring | 11. 5th synchronizer hub/coupling sleeve assembly | 12. Lock washer |
| 13. Input shaft nut | 14. Reverse gear knock pin | 15. Reverse gear assembly |

TRANSAXLE ASSEMBLY

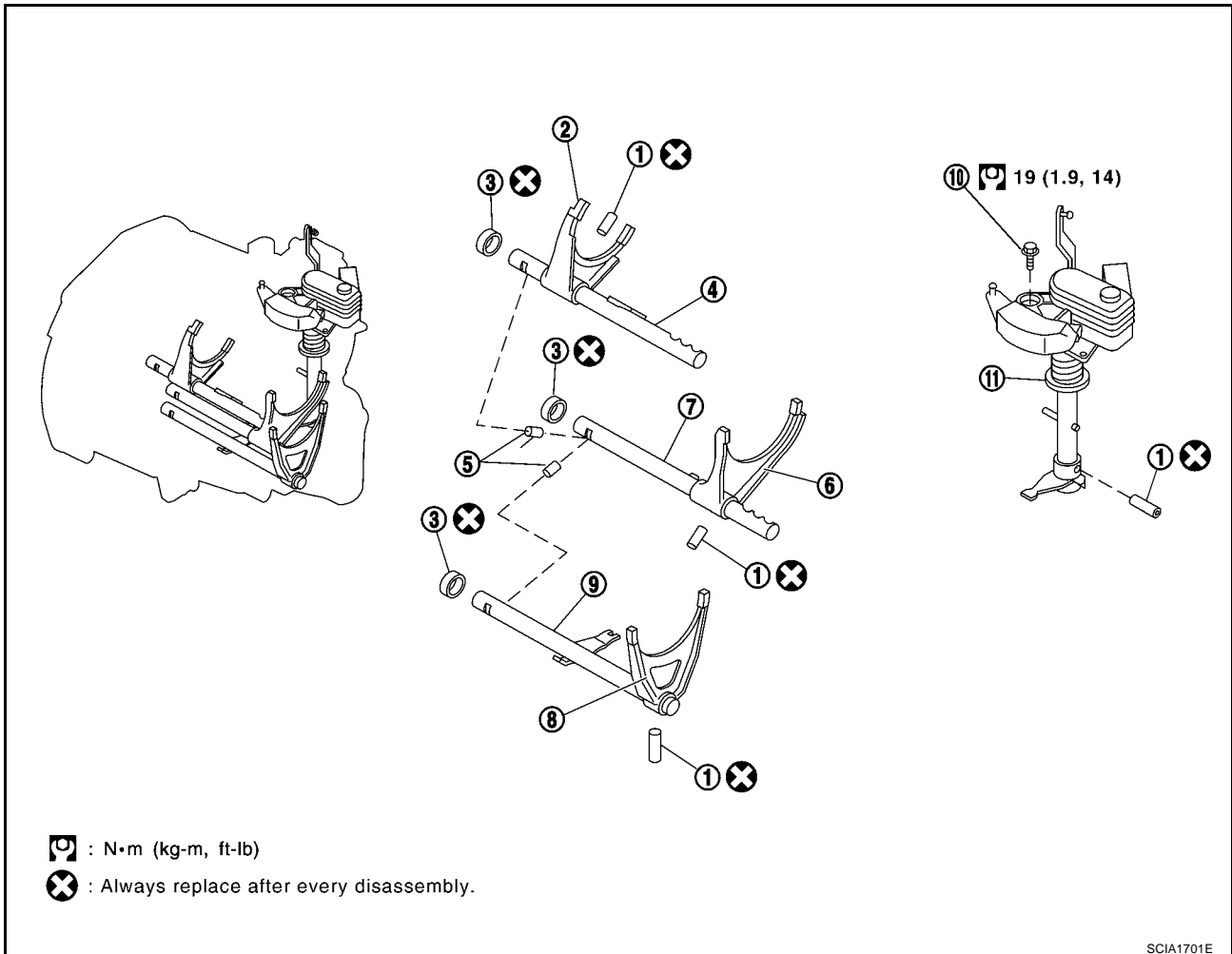
Mainshaft Assembly



- | | | |
|-------------------|--|--|
| 1. Oil channel | 2. Mainshaft needle bearing (clutch housing side) | 3. Mainshaft |
| 4. 1st main gear | 5. 1st outer baulk ring | 6. 1st & 2nd synchronizer hub/coupling sleeve assembly |
| 7. Insert key | 8. Spring | 9. 2nd outer baulk ring |
| 10. Snap rings | 11. Thrust washer | 12. 2nd main gear |
| 13. Thrust washer | 14. Snap rings | 15. Thrust washer |
| 16. 3rd main gear | 17. 3rd outer baulk ring | 18. Thrust washer |
| 19. Snap rings | 20. Reverse gear (3rd & 4th synchronizer assembly) | 21. Insert key |
| 22. Spring | 23. Reverse outer baulk ring | 24. 4th gear |
| 25. Washer | 26. Snap ring (bearing lock) | 27. Mainshaft bearing (transaxle case side) |
| 28. 5th gear | 29. Mainshaft bolt | |

TRANSAXLE ASSEMBLY

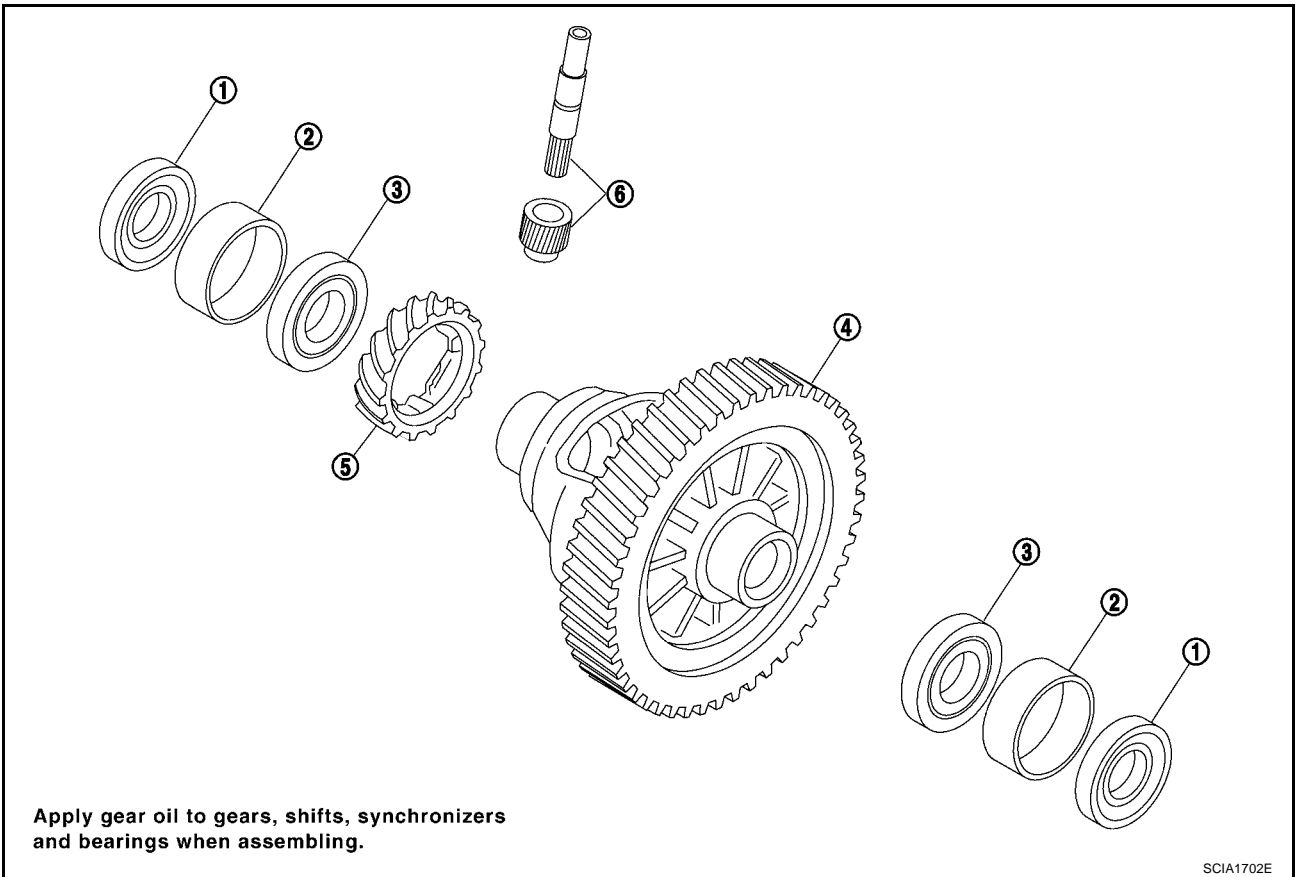
SHIFT CONTROL COMPONENTS



- | | | |
|------------------------|----------------------------|-------------------------|
| 1. Retaining pin | 2. 1st & 2nd shift fork | 3. Bushing |
| 4. 1st & 2nd fork rod | 5. Lock pin | 6. 3rd & 4th shift fork |
| 7. 3rd & 4th fork rod | 8. 5th shift fork | 9. 5th fork rod |
| 10. Control shaft bolt | 11. Control shaft assembly | |

TRANSAXLE ASSEMBLY

FINAL DRIVE COMPONENTS



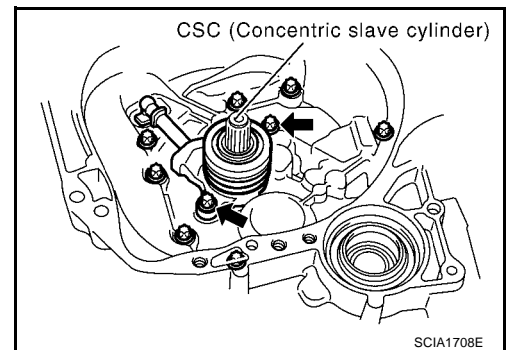
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|---------------|---|------------------------------|
| 1. Oil seal | 2. Differential side bearing outer race | 3. Differential side bearing |
| 4. Final gear | 4. Speed meter driver gear | 5. speed meter pinion |

Disassembly and Assembly

DISASSEMBLY

1. Remove drain plug and filler plug, and drain oil.
2. Remove CSC (Concentric slave cylinder).

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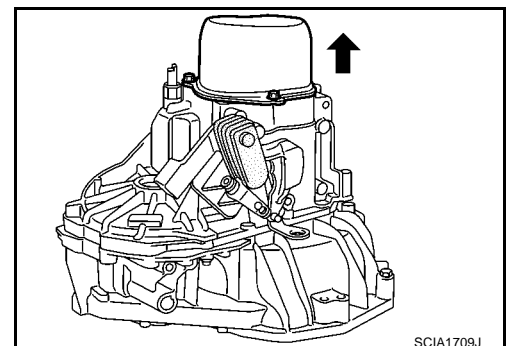


3. Remove bolts (3), and remove rear housing and O-ring.

CAUTION:

When removing, remove rear housing straight out to axial direction of input shaft because rear housing oil channel is inserted to input shaft center hole.

4. Shift selector lever to 3rd gear.



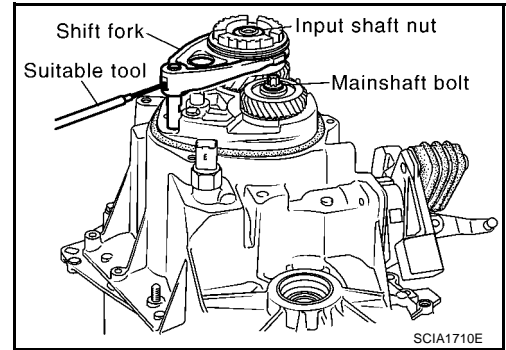
TRANSAXLE ASSEMBLY

5. Remove retaining pin 5th shift fork with pin punch.
6. Press 5th shift fork to 5th, and mesh 5th with 3rd.
7. Remove mainshaft bolt.
8. Remove input shaft nut.

CAUTION:

Do not use impact wrench to avoid damage to each gear.

9. Remove 5th shift fork and 5th coupling sleeve from synchronizer hub.

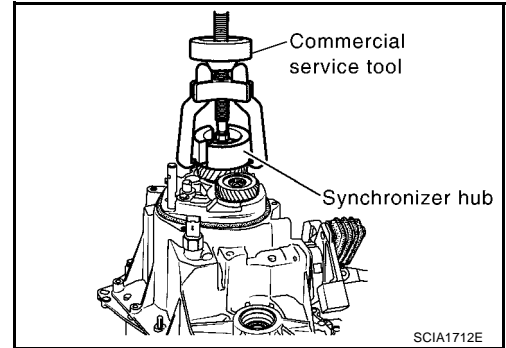


10. Remove 5th synchronizer hub from input shaft with puller (commercial service tool).

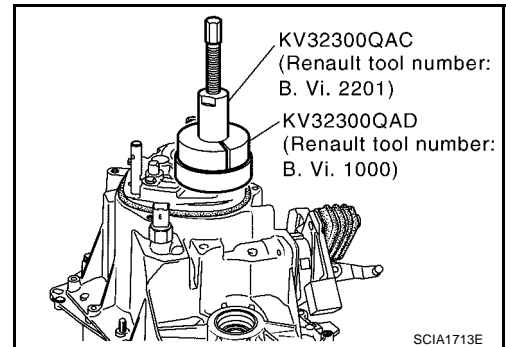
CAUTION:

When setting puller to synchronizer hub, put nail part of puller onto the wider part of the hub.

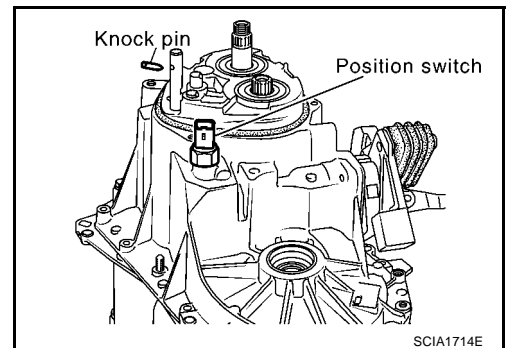
11. Remove 5th baulk ring and 5th input gear from input shaft.



12. Remove 5th main gear from main shaft with remover (SST) and 5th gear adapter (SST).

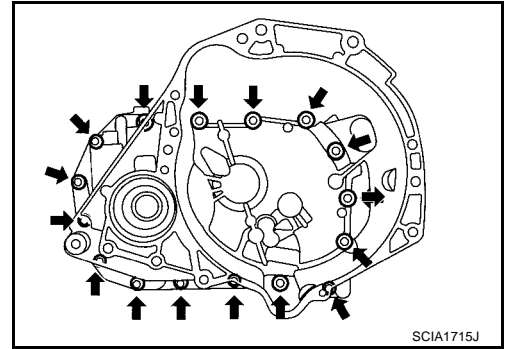


13. Remove reverse gear knock pin from reverse gear assembly.
14. Remove reverse gear switch from transaxle case.

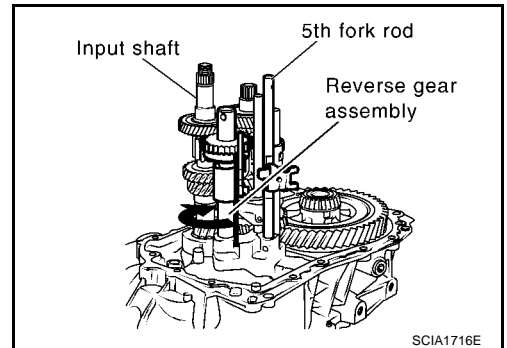


TRANSAXLE ASSEMBLY

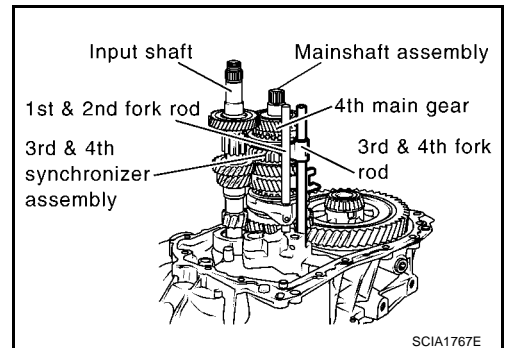
15. Remove transaxle casemounting bolts (16).
16. Remove transaxle case from clutch housing.



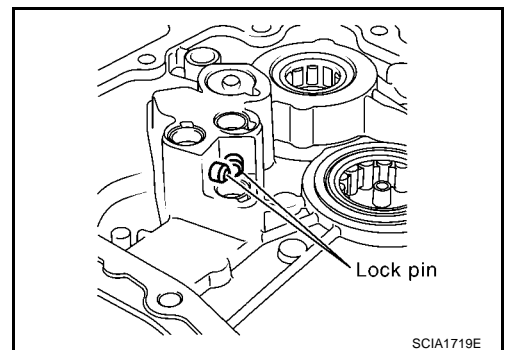
17. Turn reverse gear assembly clockwise to remove reverse 5th fork rod.
18. Raise input shaft and 3th & 4th coupling sleeve slightly. Remove reverse gear assembly.



19. Remove 4th main gear from main shaft.
20. Maintaining 1st & 2nd shift fork at neutral position, remove 3rd & 4th fork rod, 3rd & 4th synchronizer assembly and input shaft from clutch housing simultaneously.
21. Remove main shaft assembly and 1st & 2nd fork rod simultaneously.



22. Remove lock pins (2) of 1st & 2nd shift fork rod and 3rd & 4th fork rod and magnet.



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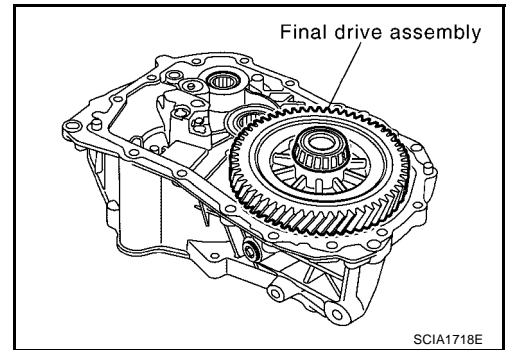
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TRANSAXLE ASSEMBLY

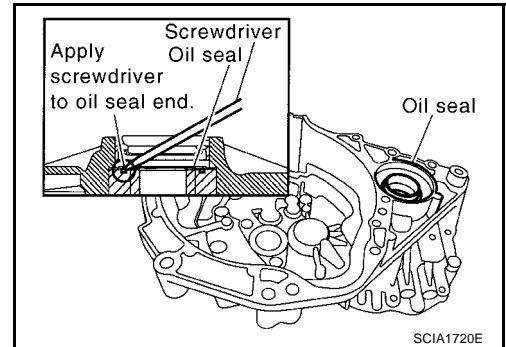
23. Remove final drive assembly from clutch housing.



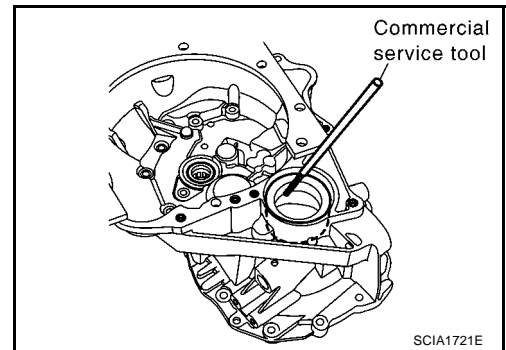
24. Using a screwdriver, remove side oil seal from clutch housing and transaxle case.

CAUTION:

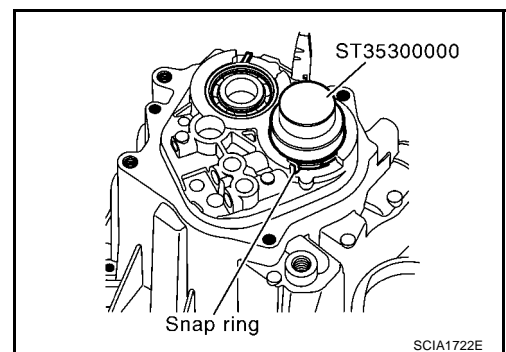
Be careful not to damage transaxle case.



25. Using a pin remover (commercial service tool), remove differential side bearing outer race from clutch housing and transaxle case.

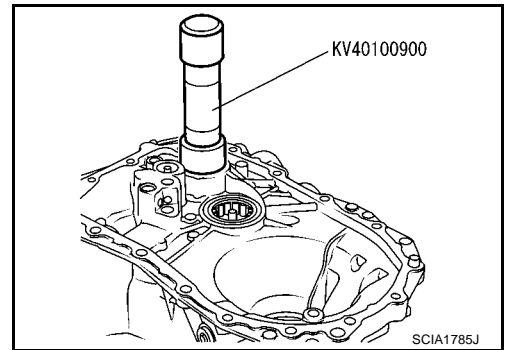


26. Using a press and drift (SST), with snap ring stretched, remove input shaft rear bearing and main shaft rear bearing from housing.

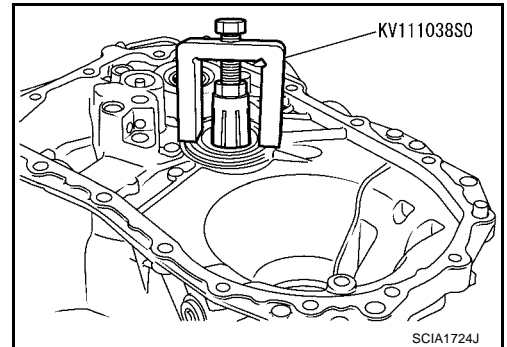


TRANSAXLE ASSEMBLY

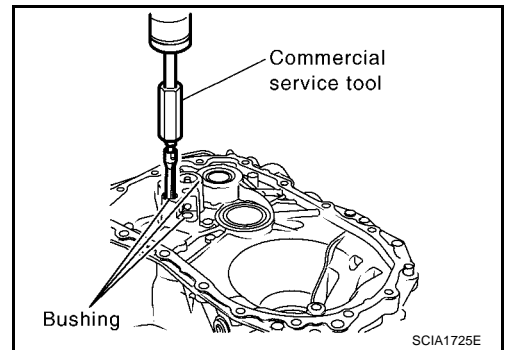
27. Using a drift (SST), remove input shaft front oil seal and bearing.
28. Separate mainshaft cutting off oil channel tube at the root.



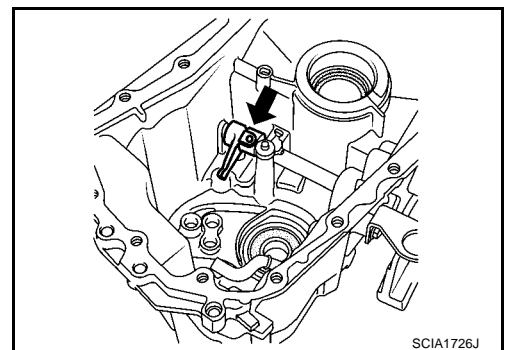
29. Using valve sheet remover (SST), remove main shaft front bearing and oil channel.



30. Using bearing remover (SST), remove bush.

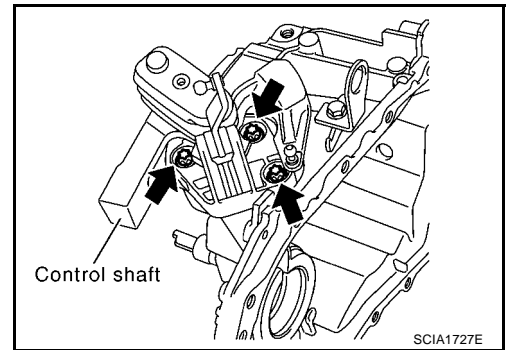


31. Using pin punch (Commercial Service Tool), remove retaining pins from control shaft selector.

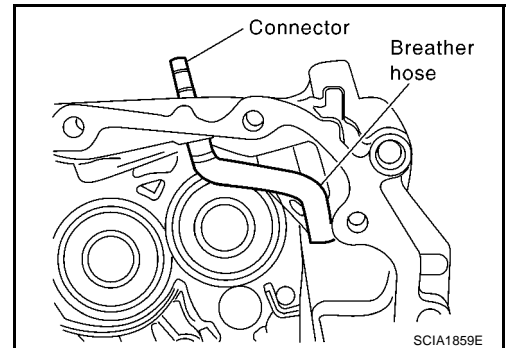


TRANSAXLE ASSEMBLY

32. Remove mounting bolts(3) and control shaft assembly.



33. Remove air breather connector from hose, pulling to straight.
34. Remove air breather hose from axle housing case.



ASSEMBLY

1. Install air bearing hose to axle housing case.
Avoid damage to hose.

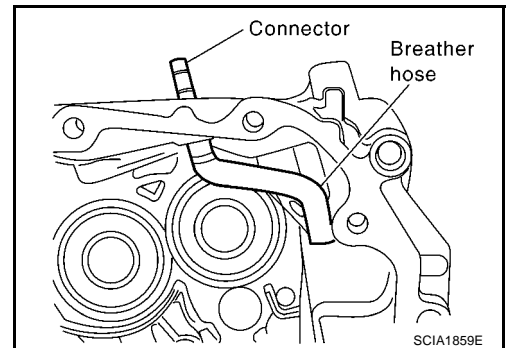
NOTE:

To make installation easier, wind tape around the end of hose and squeeze the end. After installation, remove the tape.

2. Insert air breather connector straight to hose.

CAUTION:

Make sure that hose has no twists.

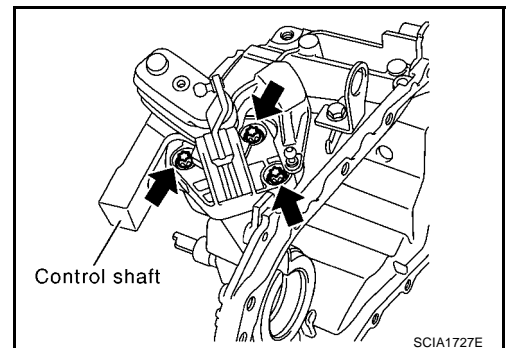


3. Insert control shaft assembly to transaxle case, install selector to control shaft assembly, and tighten mounting bolt to the specified torque.

CAUTION:

Be careful to the direction of selector

 : 19 N·m (1.9 kg-m, 14ft-lb)

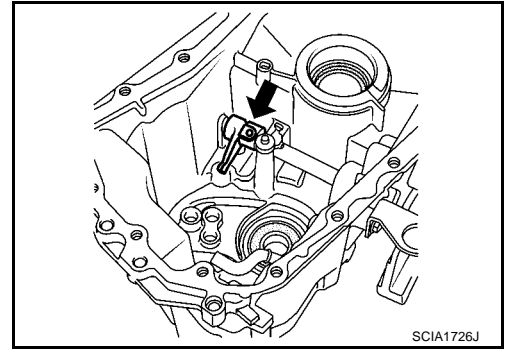


TRANSAXLE ASSEMBLY

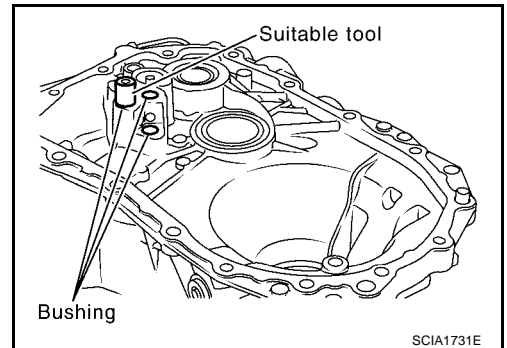
4. Using a pin punch, fix selector to control shaft assembly with retaining pins.

CAUTION:

Retuning pins are not reusable.



5. Using a 14.5mm dia. Drift (Commercial Service Tool), install bush. Push it until it stops.

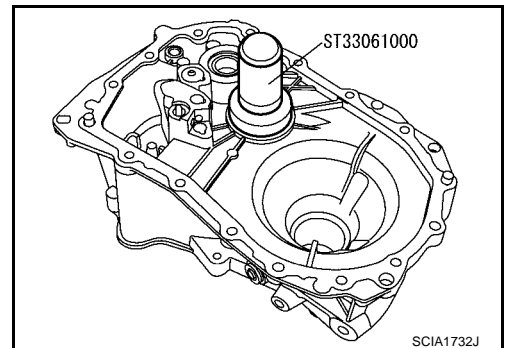


6. Install oil channel.

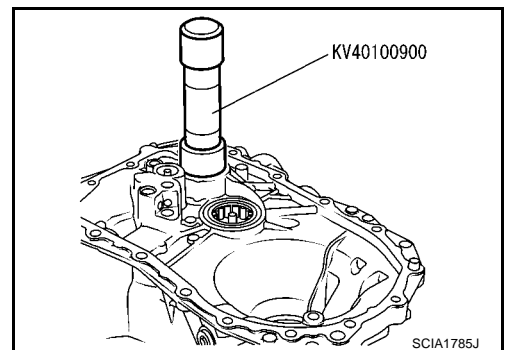
CAUTION:

Oil channel is not reusable.

7. Using drift (SST), install mainshaft front bearing so that becomes flush with the housing surface.



8. Using drift (SST), install input shaft front bearing so that it becomes flush with the housing surface.



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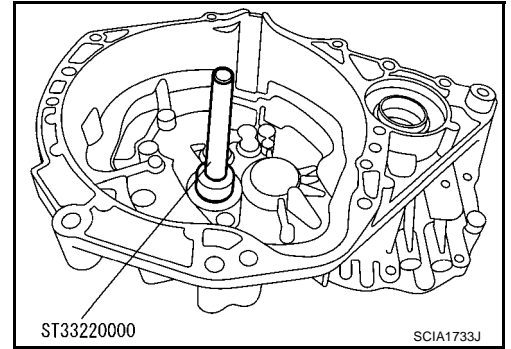
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TRANSAXLE ASSEMBLY

9. Using a drift (SST), install input shaft oil seal so that it becomes flush with the housing surface.

CAUTION:

Oil seal is not reusable.

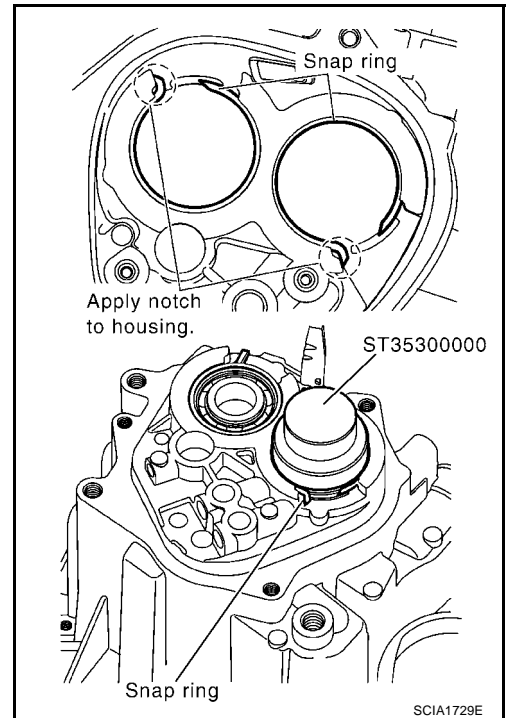


10. Insert snap rings along the ditch of axle case, and install them with the notch onto housing as shown in the figure.

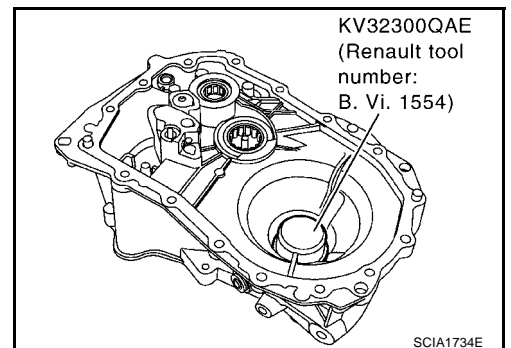
CAUTION:

Snap rings are not reusable. be careful to the direction and avoid mis installation.

11. Enlarge snap ring, press bearing with press and drift (SST). Make sure that snap ring are installed in the ditch of bearing.



12. Using a drift (SST). Install side bearing outer race to clutch housing and transaxle case. press it until stops.



TRANSAXLE ASSEMBLY

13. Using drift (SST), install side oil seal to clutch housing and transaxle case so that it becomes flush with the housing and case surface.

CAUTION:

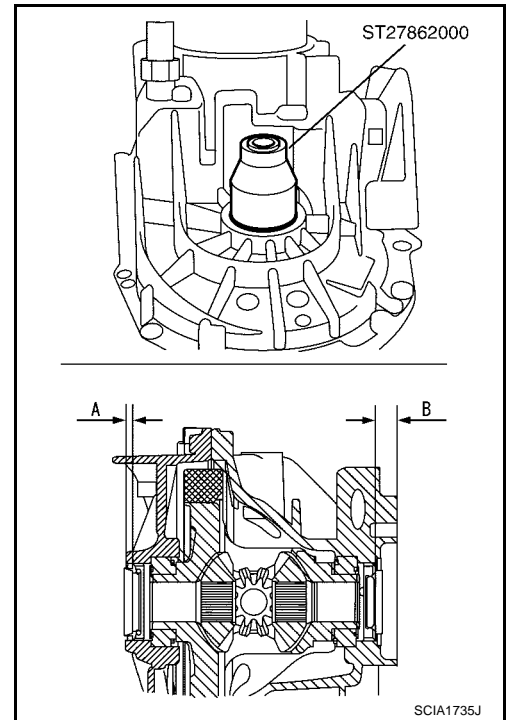
Oil seal is not reusable.

14. Using drift (SST: KV38100300), fit oil seal to the specified measure.

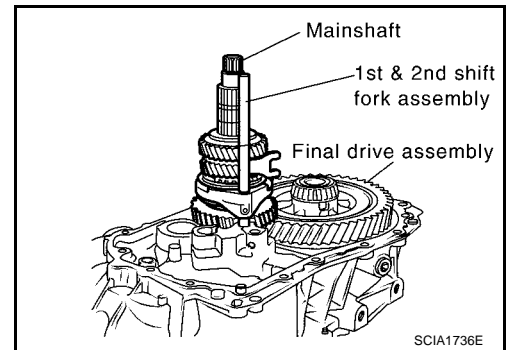
Measure for installation (mm)

A : 6.0 ± 0.30

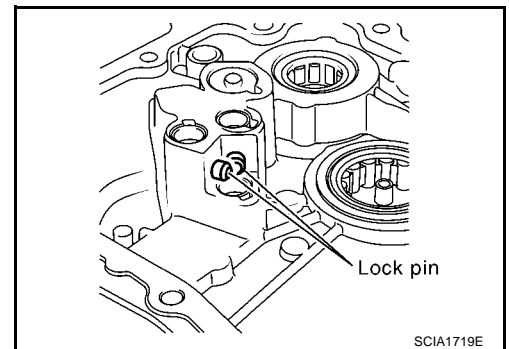
B : 16.7 ± 0.30



15. Install final drive assembly to clutch housing.
16. Install dwell pin to clutch housing.
17. Install mainshaft and 1st & 2nd shift fork assembly to clutch housing.



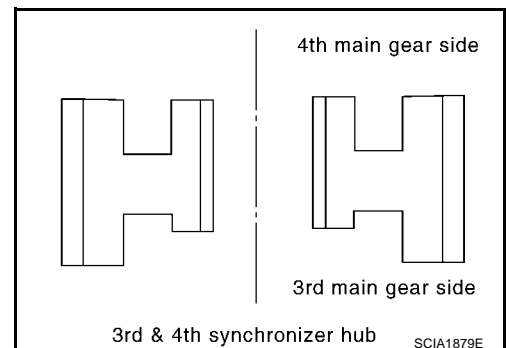
18. Install 1st & 2nd and 3rd & 4th fork rod lock pins (2) to clutch housing.



19. Install 3rd & 4th synchronizer hub to mainshaft. assemble insert key, spring and coupling sleeve.

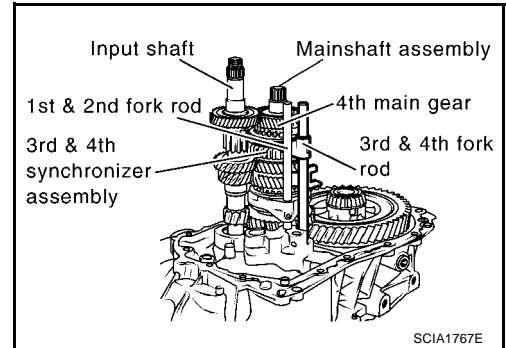
CAUTION:

Synchronizer hub has its own direction for installation. Follow the instruction as shown in the figure.



TRANSAXLE ASSEMBLY

20. Set 1st & 2nd coupling sleeve at neutral position.
21. Set 3rd & 4th shift fork to coupling sleeve, and install fork rod to clutch housing.
22. Lift 3rd & 4th coupling sleeve, and install input shaft.

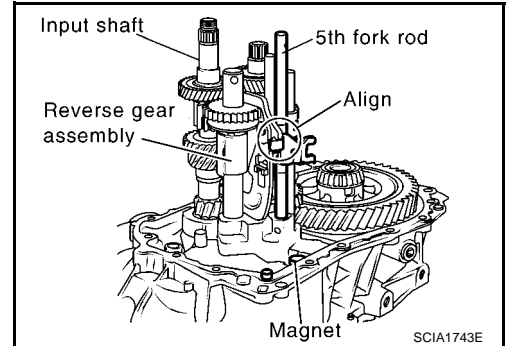


23. Lift input shaft slightly, and install 5th fork rod and reverse gear assembly to clutch housing.

CAUTION:

5th fork rod lever should be fit to the ditch of reverse gear assembly.

24. Install 4th synchronizer assembly (insert key, spring, baulk ring) and main gear to mainshaft.
25. Install magnet to clutch housing.



26. Push down 3rd & 4th fork rod and set coupling sleeve to 3rd.
27. Set control shaft assembly lever at the 3rd.

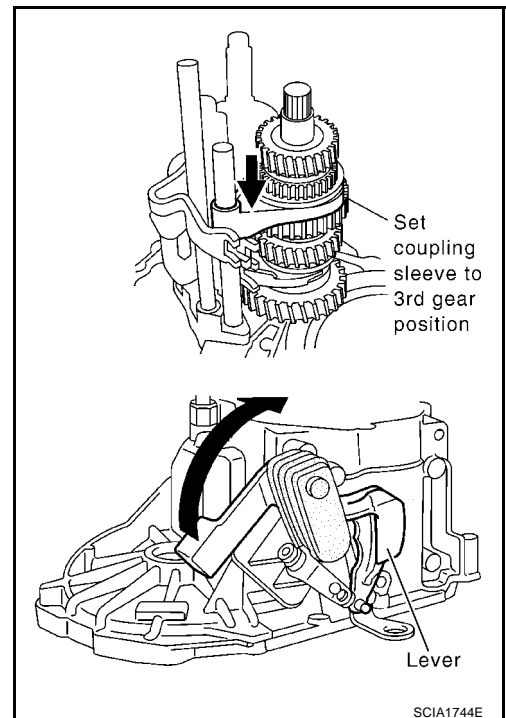
NOTE:

“At the 3rd” is the position that control shaft assembly lever is fully turned clockwise, and turned back 30°

28. Install oil garter to transaxle case.
29. Apply gasket fluid 1215 to the surface of clutch housing transaxle case.

CAUTION:

- Remove old sealant adhering to mounting surface. also remove any moisture, oil or foreign material adhering to application and mounting surface.
- Check for damage on the mounting surface.
- Apply gasket fluid 1215 uniformly.



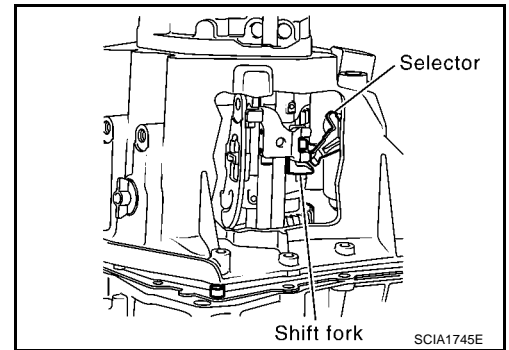
TRANSAXLE ASSEMBLY

30. Install transaxle case to clutch housing. If it's hard to install, sift back control shaft assembly lever lightly to counterclockwise direction.

CAUTION:

- When installing, put a case or equivalent to avoid drying.
- Be careful so that 5th fork rod lever will not be off from the ditch of reverse gear assembly.

31. Install reverse gear knock pin.

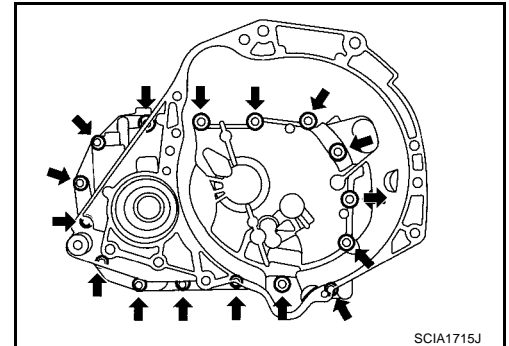


32. Turning input shaft, fitting shaft with bearing, tighten transaxle case mounting bolts (16) to the specified torque.

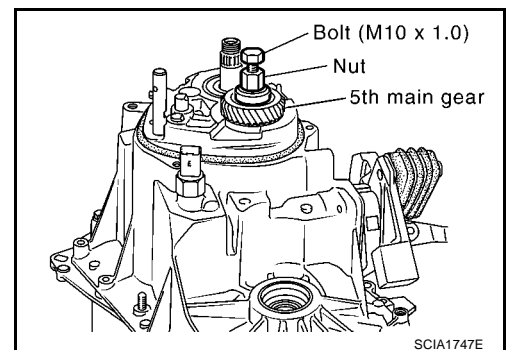
 : 24.5 N·m (2.5 kg-m, 18ft-lb)

33. Install position switch.

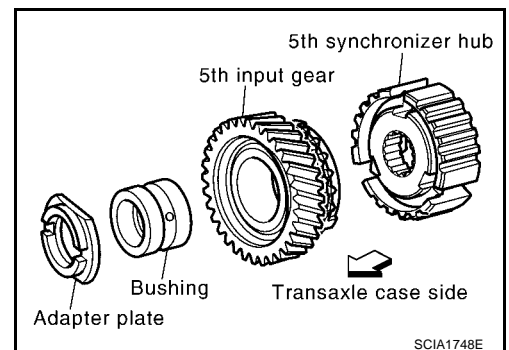
 : 22.5 N·m (2.3 kg-m, 17ft-lb)



34. Apply gear oil onto mainshaft spline, using bolt (M10 x 1.0) and nut, install with pressing washer and 5th main gear to mainshaft.



35. Install adapter plate, bushing, 5th input gear and 5th synchronizer hub to input main shaft.



TRANSAXLE ASSEMBLY

36. Set shift fork to 5th coupling sleeve. install it to input shaft and fork rod.

CAUTION:

Be careful about the mounting direction of coupling sleeve.

37. Shift selector lever to 3rd gear. press 5th shift fork to 5th.
38. Tighten mainshaft bolt to the specified torque.

 : 68 N·m (6.9 kg-m, 50-ft-lb)

39. Tighten input shaft nut to the specified torque.

 : 186 N·m (19.0 kg-m, 137-ft-lb)

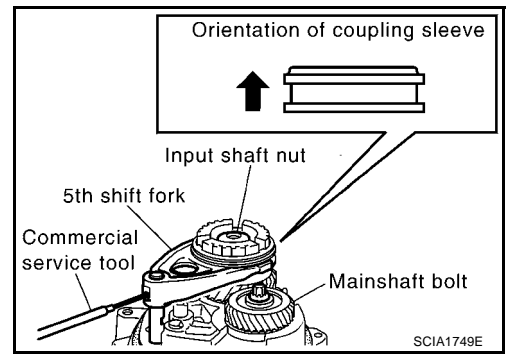
40. Using pin punch, fix 5th shift fork with retaining pin.

CAUTION:

Retaining pins are not reusable.

41. Shift transmission to the neutral position
42. Install O-ring, rear housing, and tighten rear housing bolts (3) to the specified torque.


 : 24.5 N·m (2.5 kg-m, 18-ft-lb)



43. Install CSC (concentric slave cylinder). Refer to [CL-9, "INSTALLATION"](#).

CAUTION:

CSC (concentric slave cylinder) is not reusable.

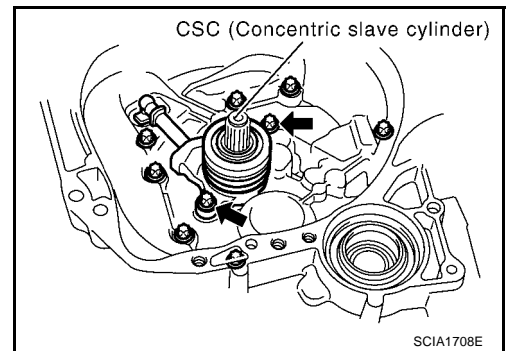
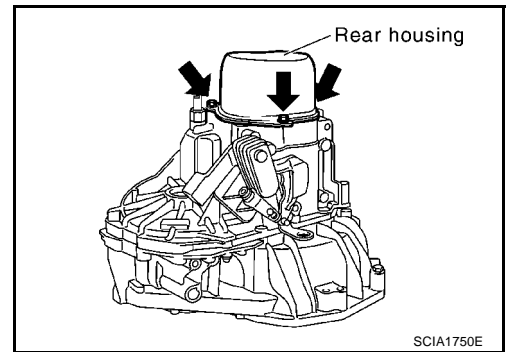
 : 20.5 N·m (2.1 kg-m, 15-ft-lb)

44. Install drain plug and filler plug.

Tightening torque

Drain plug  : 22.0 N·m (2.2kg-m, 16in-lb)

Filler plug  : 2.0 N·m (0.2kg-m, 17in-lb)



TRANSAXLE ASSEMBLY

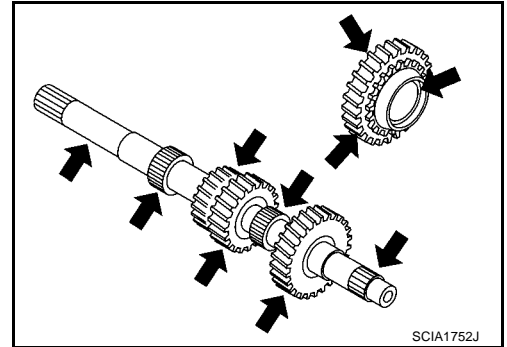
Input Shaft and Gear INSPECTION AFTER DISASSEMBLY

ECS008K1

Input Shaft

Check for the following and replace if necessary.

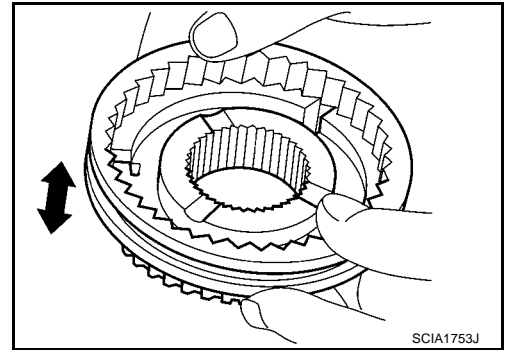
- Damage, exfoliation, bend, uneven wear, and distortion of shaft
- Early wear, damage, exfoliation of gear



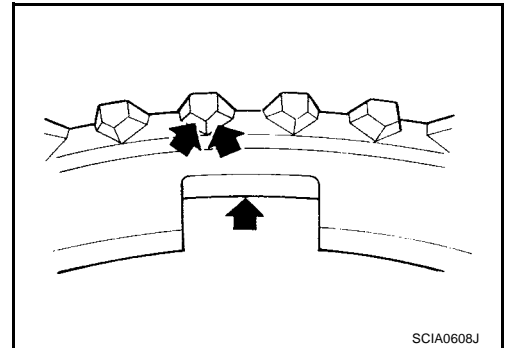
SYNCHRONIZER

Check for the following and replace if necessary.

- Contact surface breakage, damage, and early wear of coupling sleeve, synchronizer hub, insert key, spring.
- Coupling sleeve and synchronizer hub moves smoothly.



- Breakage, damage, and early wear of baulk ring cam surface and insert contact surface.



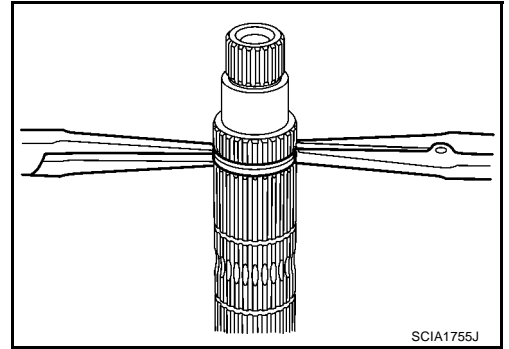
Disassembly and Assembly of Mainshaft GENERAL PRECAUTIONS

ECS008K2

- Set mainshaft on the device with back plate and remove gears, snap rings.
- For installation and removal of snap ring, set circlip pliers and flat pliers at both side of snap ring. Stretching snap ring, move it with flat pliers.
- Be certain to replace snap ring.

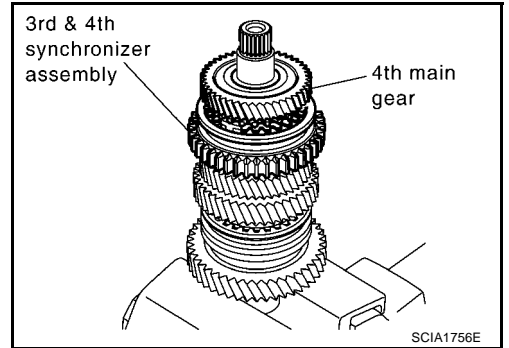
TRANSAXLE ASSEMBLY

- Disassemble gear components putting direction marks on the parts that do not affect any functions.

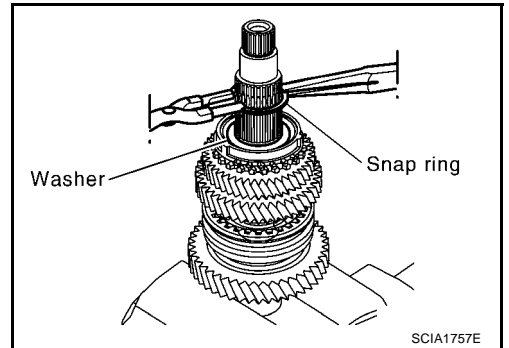


DISASSEMBLY

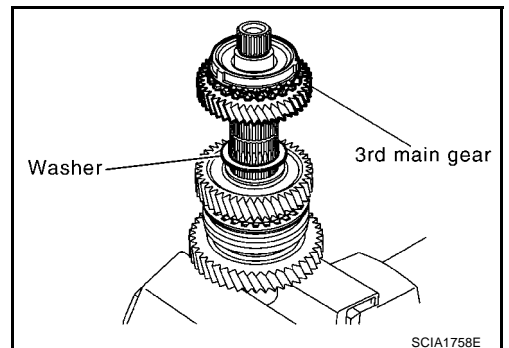
1. Remove 4th main gear, reverse gear (3rd & 4th synchronizer assembly).



2. Remove snap ring and washer.

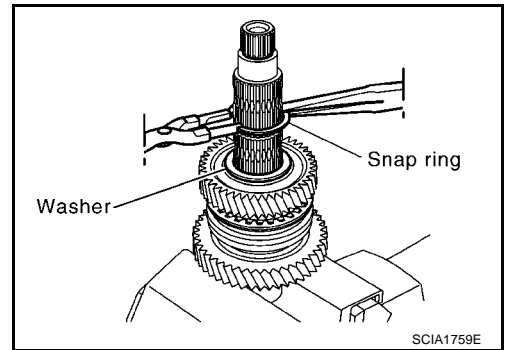


3. Remove 3rd main gear assembly and washer.

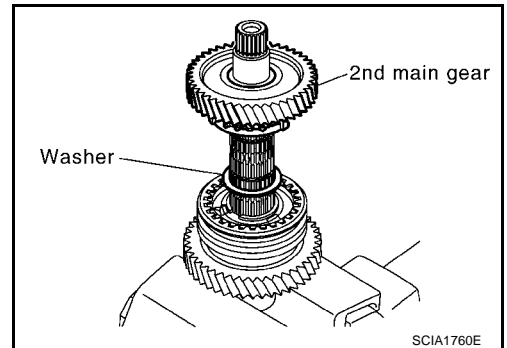


TRANSAXLE ASSEMBLY

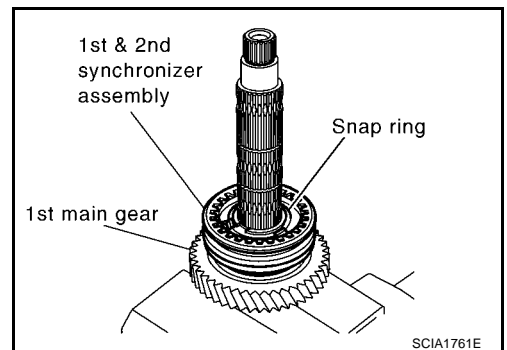
4. Remove snap ring and washer.



5. Remove 2nd main gear and washer.



6. Remove snap rings and remove 1st & 2nd synchronizer assembly, 1st main gear.



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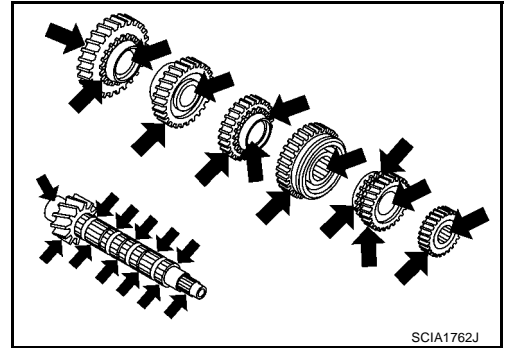
TRANSAXLE ASSEMBLY

INSPECTION AFTER DISASSEMBLY

Mainshaft and Gear

Check for the following and replace if necessary.

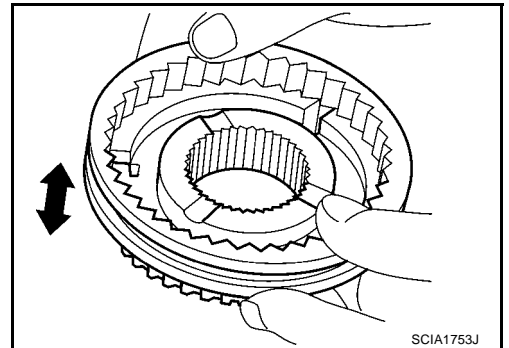
- Damage, exfoliation, bend, uneven wear, and distortion of shaft
- Early wear, damage, exfoliation of gear



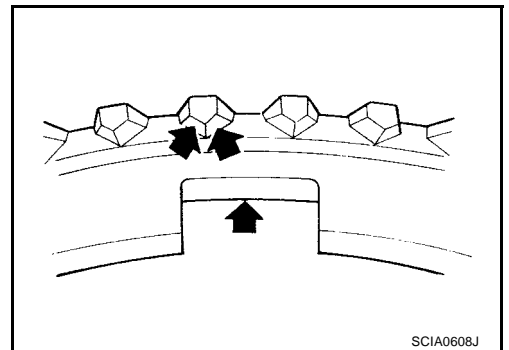
Synchronizer

Check for the following and replace if necessary.

- Connect surface breakage, damage, and early wear of coupling sleeve, synchronizer hub, insert key, spring.
- Coupling sleeve and synchronizer hub moves smoothly.



- Breakage, damage, and early wear of baulk ring cam surface and insert connect surface



TRANSAXLE ASSEMBLY

ASSEMBLY

1. Install 1st main gear, 1st outer baulk ring and 1st & 2nd synchronizer hub according to the order to main shaft.
2. Install spring and insert key to synchronizer hub. Set coupling sleeve and fix it to mainshaft with snap spring

CAUTION:

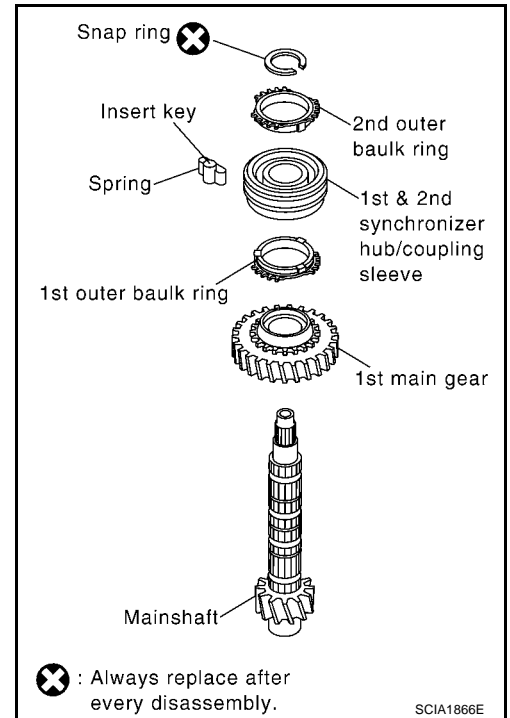
Snap ring is not reusable.

Assemble in reverse order of disassembly.

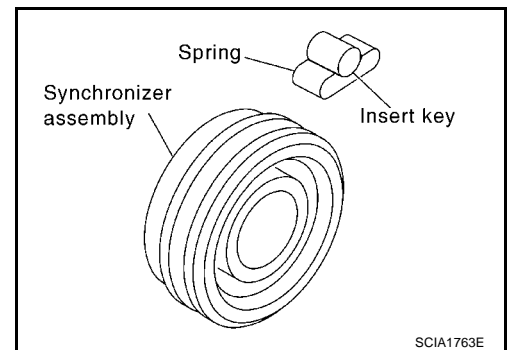
CAUTION:

Be certain to replace snap ring.

- **Be careful about the direction of synchronizer assembly coupling sleeve. The figure is example of 1st & 2nd synchronizer assembly.**



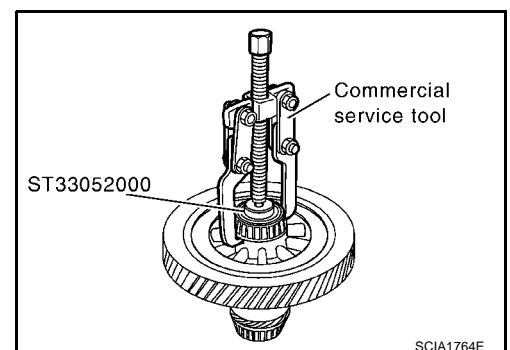
- **Be careful about installing direction of synchronizer insert key, snap ring.**



Disassembly and Assembly of Final Drive

DISASSEMBLY

1. Using a drift (SST) and puller (commercial service tool), remove final drive front bearing, final drive rear bearing.



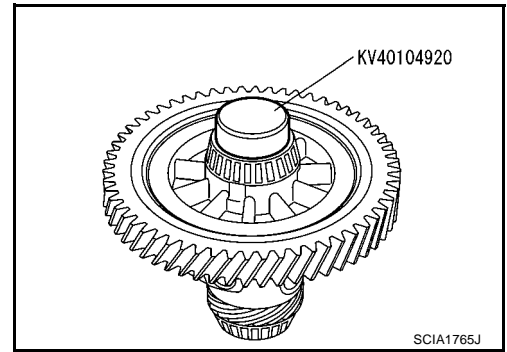
TRANSAXLE ASSEMBLY

ASSEMBLY

1. Using a drift (SST), install final drive front bearing, final drive rear bearing.

CAUTION:

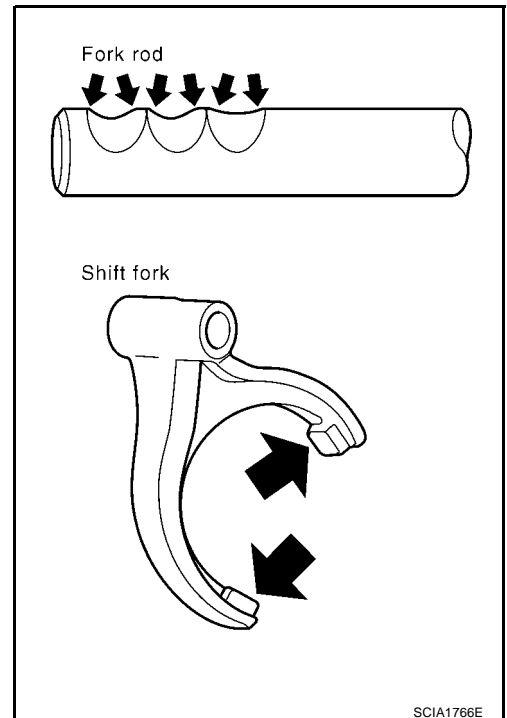
Face bearing seal surface to front (oil seal) side.



ECS008K4

Shift Control INSPECTION

Check contact surface and sliding surface of fork rod, shift fork for wear, damage, and bend. Replace if necessary. (Replacement is not necessary if its malfunction is contact and so on.)




SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

General Specifications TRANSAXLE

ECS008SQ

Transaxle model		RS5F91A
Model code number		AX000
Number of speed		5
Shift pattern 5 speed		 <p>SCIA0821E</p>
Gear ratio	1st	3.727
	2nd	2.047
	3rd	1.392
	4th	1.028
	5th	0.820
	Reverse	3.545
Oil capacity ℓ (Imp pt)		2.6 (4 -5/8)

SERVICE DATA AND SPECIFICATIONS (SDS)
