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PRECAUTIONS

PRECAUTIONS

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Service Notice or Precautions

ECS008BM

- Do not reuse transaxle oil, once it has been drained.
- Check oil level or replace oil with vehicle on level surface.
- 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 matching mark are required, be certain they do not interfere with the function of the parts they are applied.
- In principle, tighten bolts or nuts gradually in several steps working diagonally from inside to outside. If tightening sequence is specified, use it.
- Be careful not to damage sliding surfaces and mating surfaces.

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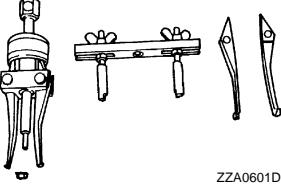
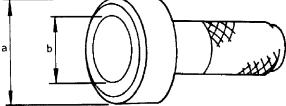
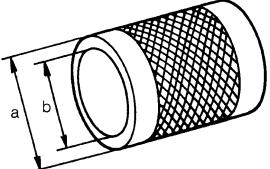
PREPARATION

PREPARATION

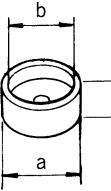
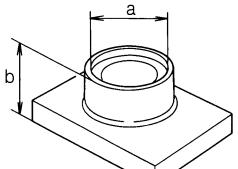
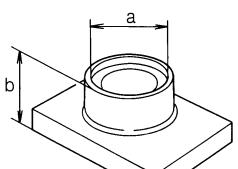
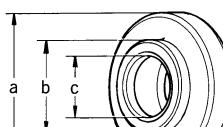
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Special Service Tools

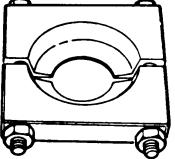
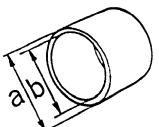
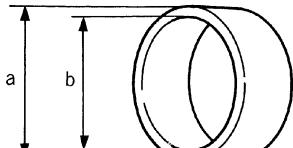
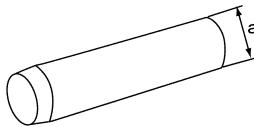
ECS008BN

Tool number Tool name	Description
KV381054S0 Puller	<ul style="list-style-type: none"> ● Removing differential side bearing outer race ● Removing mainshaft front bearing  <p>ZZA0601D</p>
ST35321000 Drift a: 49 mm (1.93 in) dia. b: 41 mm (1.61 in) dia.	<ul style="list-style-type: none"> ● Installing input shaft oil seal ● Installing reverse main gear ● Installing 1st main gear bushing ● Installing 1st-2nd synchronizer hub assembly ● Installing 2nd main gear bushing ● Installing 3rd main gear ● Removing differential side bearing (clutch housing side for 4WD models)  <p>ZZA1000D</p>
ST30720000 Drift a: 77 mm (3.03 in) dia. b: 55.5 mm (2.185 in) dia.	<ul style="list-style-type: none"> ● Installing differential side oil seal ● Installing differential side bearing outer race ● Installing mainshaft rear bearing ● Installing differential side bearing  <p>ZZA0811D</p>
ST33200000 Drift a: 60 mm (2.36 in) dia. b: 44.5 mm (1.752 in) dia.	<ul style="list-style-type: none"> ● Installing mainshaft front bearing ● Installing 6th input gear bushing (RS6F51A) ● Installing 4th main gear ● Installing 5th main gear ● Installing 6th main gear (RS6F51A)  <p>ZZA1002D</p>
KV40105320 Drift a: 88 mm (3.46 in) dia.	Installing differential side bearing outer race
ST33061000 Drift a: 38 mm (1.50 in) dia. b: 28.5 mm (1.122 in) dia.	<ul style="list-style-type: none"> ● Installing bore plug ● Removing differential side bearing (clutch housing side for 2WD models) ● Removing differential side bearing (transaxle case side for 4WD models)  <p>ZZA1000D</p>

PREPARATION

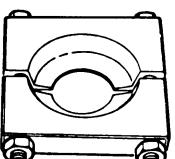
Tool number Tool name	Description
ST33052000 Drift a: 22 mm (0.87 in) dia. b: 28 mm (1.10 in) dia.	<ul style="list-style-type: none"> ● Installing welch plug ● Removing input shaft rear bearing ● Removing input shaft bearing spacer and 5th stopper (RS5F51A) ● Removing 5th input gear bushing, thrust washer, 4th input gear, 4th input gear bushing, 3rd-4th synchronizer hub assembly and 3rd input gear ● Installing input shaft front bearing ● Removing 6th input gear and 6th input gear bushing (RS6F51A) ● Removing mainshaft rear bearing ● Removing 4th main gear and 5th main gear ● Removing 6th main gear (RS6F51A)
	 <p>ZZA1023D</p>
KV40105020 Drift a: 39.7 mm (1.563 in) dia. b: 35 mm (1.38 in) dia. c: 15 mm (0.59 in)	<ul style="list-style-type: none"> ● Removing 5th input gear, 5th synchronizer hub assembly (RS5F51A) and 5th-6th synchronizer hub assembly (RS6F51A) ● Removing 3rd main gear, 2nd main gear, 2nd main gear bushing, 1st-2nd synchronizer hub assembly, 1st main gear, reverse main gear and 1st main gear bushing
	 <p>ZZA1133D</p>
KV40105710 Press stand a: 46 mm (1.81 in) dia. b: 41 mm (1.61 in)	<ul style="list-style-type: none"> ● Installing 3rd-4th synchronizer hub assembly ● Installing 4th input gear bushing ● Installing 5th input gear bushing ● Installing 5th synchronizer hub assembly (RS5F51A) ● Installing 5th-6th synchronizer hub assembly (RS6F51A) ● Installing 2nd main gear bushing ● Installing 3rd main gear
	 <p>ZZA1058D</p>
ST38220000 Press stand a: 63 mm (2.48 in) dia. b: 65 mm (2.56 in)	<ul style="list-style-type: none"> ● Installing reverse main gear ● Installing 1st main gear bushing ● Installing 1st-2nd synchronizer hub assembly
	 <p>ZZA1058D</p>
ST30032000 Drift a: 80 mm (3.15 in) dia. b: 38 mm (1.50 in) dia. c: 31 mm (1.22 in) dia.	<ul style="list-style-type: none"> ● Installing 5th stopper and input shaft bearing spacer (RS5F51A) ● Installing input shaft front bearing
	 <p>ZZA0978D</p>
ST30901000 Drift a: 79 mm (3.11 in) dia. b: 45 mm (1.77 in) dia. c: 35.2 mm (1.386 in) dia.	<ul style="list-style-type: none"> ● Installing input shaft rear bearing ● Installing 4th main gear ● Installing 5th main gear ● Installing 6th main gear (RS6F51A) ● Installing mainshaft rear bearing
	 <p>ZZA0978D</p>

PREPARATION

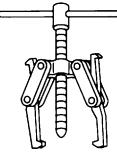
Tool number Tool name	Description
ST30031000 Puller	Measuring wear of inner baulk ring
	 ZZA0537D
KV40101630 Drift a: 68 mm (2.68 in) dia. b: 60 mm (2.36 in) dia.	Installing reverse main gear
	 ZZA1003D
KV38102510 Drift a: 71 mm (2.80 in) dia. b: 65 mm (2.56 in) dia.	<ul style="list-style-type: none"> ● Installing 1st main gear bushing ● Installing 1st-2nd synchronizer hub assembly ● Installing differential side bearing (clutch housing side for 2WD models) ● Installing differential side bearing (transaxle case side for 4WD models)
KV40104830 Drift a: 70 mm (2.76 in) dia. b: 63.5 mm (2.500 in) dia.	Installing differential side bearing (clutch housing side for 4WD models)
	 ZZA0936D
ST15243000 Drift a: 30 mm (1.18 in) dia.	Measuring end play of side gear
	 SCIA1088J

Commercial Service Tools

ECS008B0

Tool name	Description
Puller	Removing each bearing, gear and bushing
	 ZZA0537D

PREPARATION

Tool name	Description	
Puller	 NT077	Removing each bearing, gear and bushing
Pin punch Tip diameter: 4.5 mm (0.177 in) dia.	 ZZA0815D	Removing and installing each retaining pin

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NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

ECS008BP

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.

Reference page		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)	SHIFT FORK (Worn)	GEAR (Worn or damaged)	BEARING (Worn or damaged)
	Noise	1	2							3	3
	Oil leakage		3	1	2	2	2				
	Hard to shift or will not shift		1	1				2			3
	Jumps out of gear						1	2	3	3	3
Symptoms											

DESCRIPTION

DESCRIPTION

Cross-Sectional View

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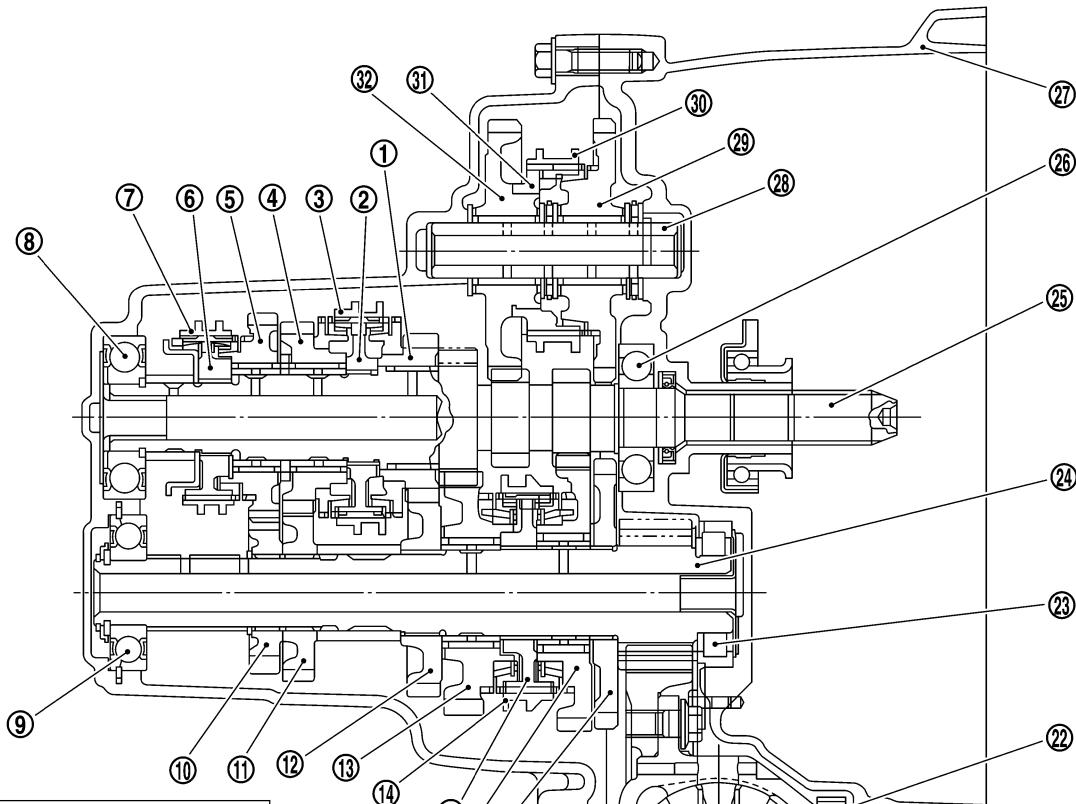
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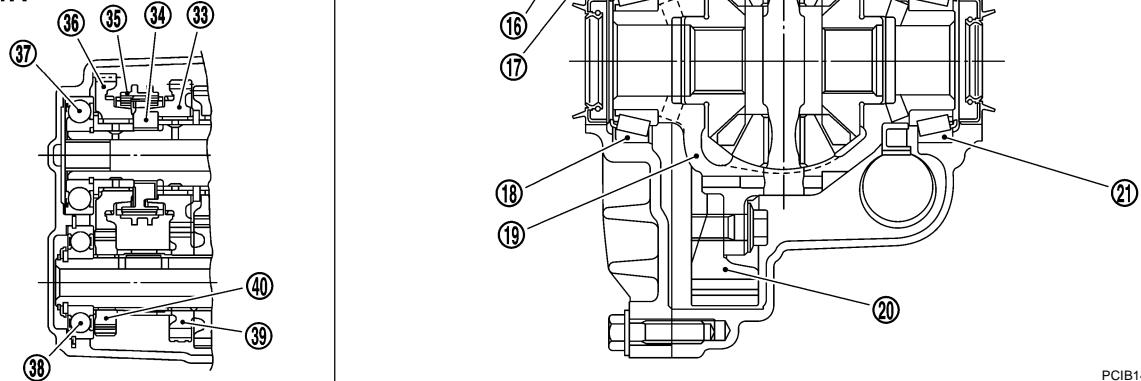
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2WD models

RS5F51A



RS6F51A

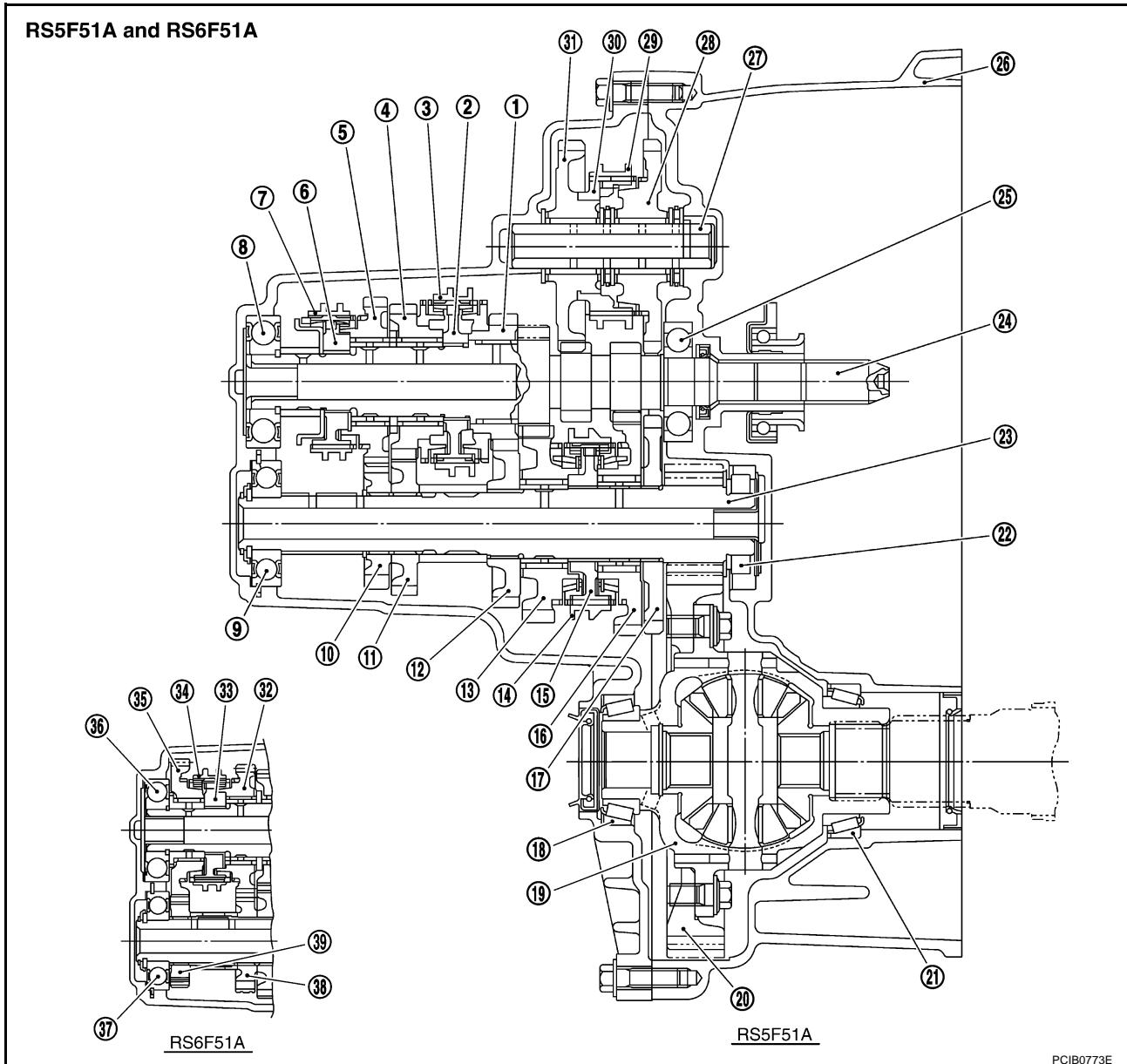


PCIB1456E

1. 3rd input gear	2. 3rd-4th synchronizer hub	3. 3rd-4th coupling sleeve
4. 4th input gear	5. 5th input gear	6. 5th synchronizer hub
7. 5th coupling sleeve	8. Input shaft rear bearing	9. Mainshaft rear bearing
10. 5th main gear	11. 4th main gear	12. 3rd main gear
13. 2nd main gear	14. 1st-2nd coupling sleeve	15. 1st-2nd synchronizer hub
16. 1st main gear	17. Reverse main gear	18. Differential side bearing
19. Differential case	20. Final gear	21. Differential side bearing
22. Speedometer drive gear	23. Mainshaft front bearing	24. Mainshaft
25. Input shaft	26. Input shaft front bearing	27. Clutch housing
28. Reverse idler shaft	29. Reverse idler gear (Front)	30. Reverse coupling sleeve
31. Reverse synchronizer hub	32. Reverse idler gear (Rear)	33. 5th input gear
34. 5th-6th synchronizer hub	35. 5th-6th coupling sleeve	36. 6th input gear
37. Input shaft rear bearing	38. Mainshaft rear bearing	39. 5th main gear
40. 6th main gear		

DESCRIPTION

4WD models



1. 3rd input gear	2. 3rd-4th synchronizer hub	3. 3rd-4th coupling sleeve
4. 4th input gear	5. 5th input gear	6. 5th synchronizer hub
7. 5th coupling sleeve	8. Input shaft rear bearing	9. Mainshaft rear bearing
10. 5th main gear	11. 4th main gear	12. 3rd main gear
13. 2nd main gear	14. 1st-2nd coupling sleeve	15. 1st-2nd synchronizer hub
16. 1st main gear	17. Reverse main gear	18. Differential side bearing
19. Differential case	20. Final gear	21. Differential side bearing
22. Mainshaft front bearing	23. Mainshaft	24. Input shaft
25. Input shaft front bearing	26. Clutch housing	27. Reverse idler shaft
28. Reverse idler gear (Front)	29. Reverse coupling sleeve	30. Reverse synchronizer hub
31. Reverse idler gear (Rear)	32. 5th input gear	33. 5th-6th synchronizer hub
34. 5th-6th coupling sleeve	35. 6th input gear	36. Input shaft rear bearing
37. Mainshaft rear bearing	38. 5th main gear	39. 6th main gear

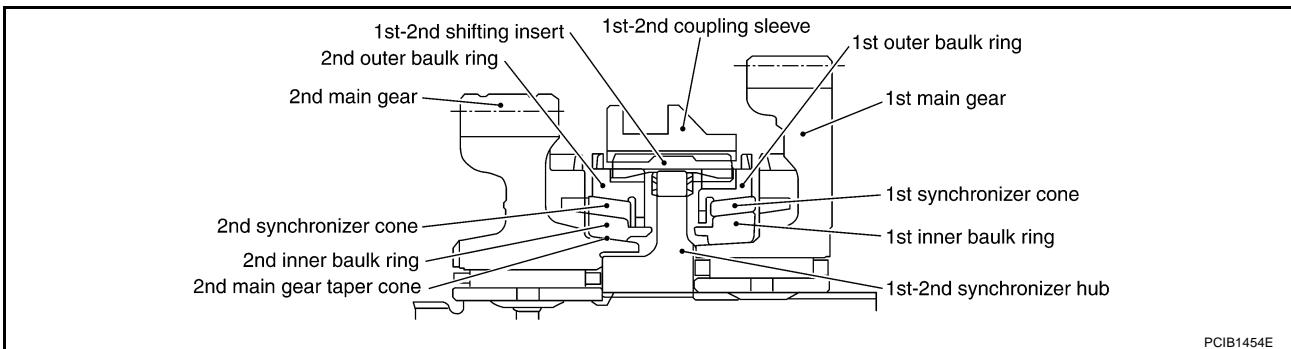
DESCRIPTION

DOUBLE-CONE SYNCHRONIZER

Double-cone synchronizer is adopted for 3rd gear to reduce operating force of the shift lever.

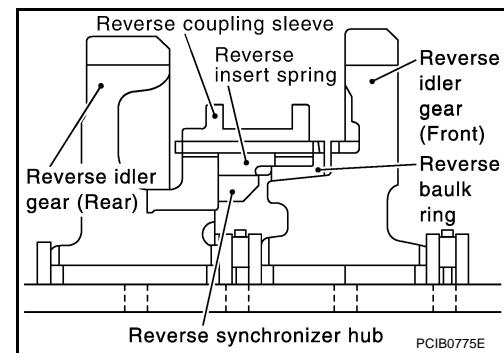
TRIPLE-CONE SYNCHRONIZER

Triple-cone synchronizer is adopted for 1st and 2nd gears to reduce operating force of the shift lever.



REVERSE GEAR NOISE PREVENTION FUNCTION (SYNCHRONIZING METHOD)

Reverse gear can be matched smoothly in a structure by setting synchronizer hub, coupling sleeve, baulk ring and insert spring to reverse gear, and letting reverse gear be synchronized.



M/T OIL

PFP:KLD20

Changing M/T Oil**DRAINING**

ECS008BR

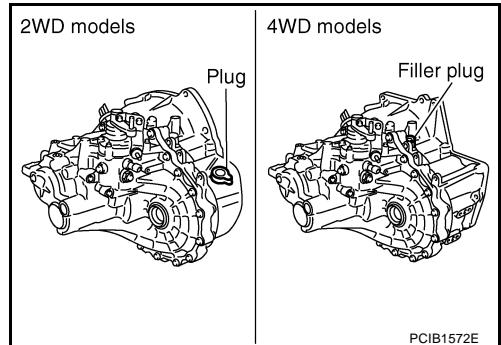
1. Start engine and let it run to warm up transaxle.
2. Stop engine. Remove drain plug and then drain oil.
3. Set a gasket on drain plug and install it to transaxle case. Tighten drain plug to the specified torque. Refer to [MT-22, "Case and Housing Components"](#) (RS5F51A) or [MT-40, "Case and Housing Components"](#) (RS6F51A).

CAUTION:**Do not reuse gasket.****FILLING**

1. Remove plug (for 2WD models) or filler plug (for 4WD models). Fill with new oil to transaxle.

Oil grade and viscosity: Refer to [MA-17, "Fluids and Lubricants"](#).

Oil capacity (reference): Approx. 2.2 ℥ (3-7/8 Imp pt)



2. After refilling oil, check oil level.
3. Set a O-ring on plug (for 2WD models) or gasket on filler plug (for 4WD models) and then install it to clutch housing.

CAUTION:**Do not reuse O-ring or gasket.**

4. Tighten plug mounting bolt (for 2WD models) or filler plug (for 4WD models) to the specified torque. Refer to [MT-22, "Case and Housing Components"](#) (RS5F51A) or [MT-40, "Case and Housing Components"](#) (RS6F51A).

Checking M/T Oil

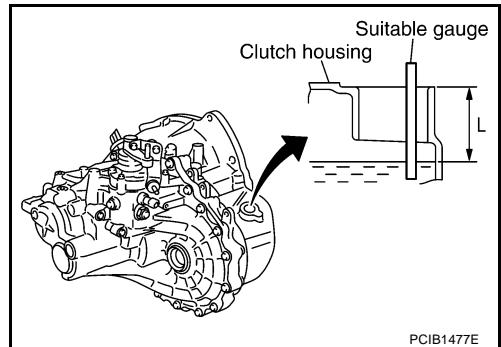
ECS008BS

OIL LEAKAGE AND OIL LEVEL

- Make sure that oil is not leaking from transaxle or around it.
- Remove plug (for 2WD models) or filler plug (for 4WD models).
- Measure oil level using a suitable gauge as shown in the figure, and then check if it is within the specifications.

CAUTION:**Do not start engine while checking oil level.****- For 2WD models**

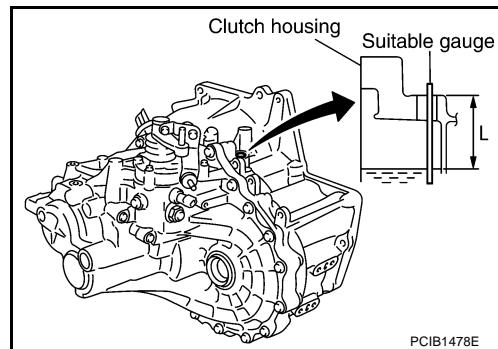
Oil level "L" : 55.0 - 61.0 mm (2.17 - 2.40 in)



M/T OIL

- For 4WD models

Oil level "L" : 168.0 - 174.0 mm (6.61 - 6.85 in)



- Set a O-ring on plug (for 2WD models) or gasket on filler plug (for 4WD models) and then install it to clutch housing.
CAUTION:
Do not reuse O-ring or gasket.
- Tighten plug mounting bolt (for 2WD models) or filler plug (for 4WD models) to the specified torque. Refer to [MT-22, "Case and Housing Components"](#) (RS5F51A) or [MT-40, "Case and Housing Components"](#) (RS6F51A).

SIDE OIL SEAL

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Removal and Installation

REMOVAL

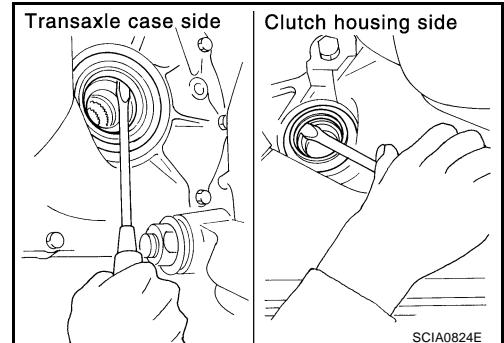
ECS008BT

- Clutch housing side oil seal used on 4WD vehicles is attached to transfer. Be sure to replace it when transfer is removed.

1. Remove drive shaft from transaxle. Refer to [FAX-11, "Removal and Installation"](#) .
2. Remove oil seal with a flat-bladed screwdriver.

CAUTION:

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



INSTALLATION

1. Using the drift, drive the oil seal straight until it protrudes from the case end equal to dimension A shown in the figure.

Dimension "A"

: Within 0.5 mm (0.020 in) of flush with the case.

Drift to be used:

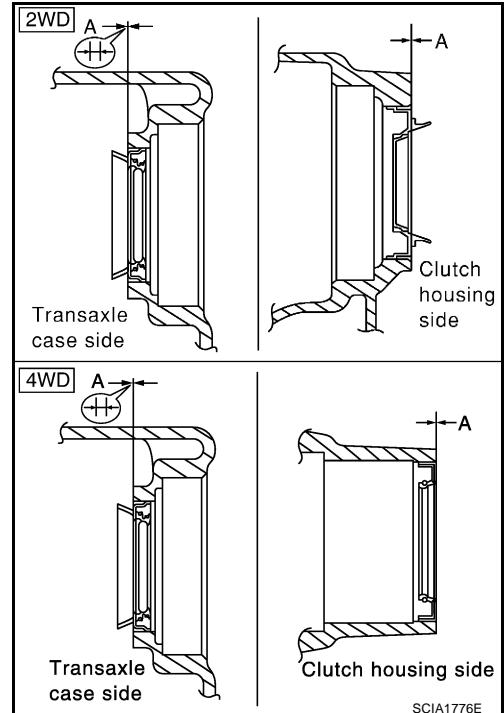
Transaxle case side : ST30720000

Clutch housing side : ST30720000

CAUTION:

- Apply multi-purpose grease onto oil seal lip. (For clutch housing side of 4WD models)
- Do not reuse oil seal.

2. Install all parts in the reverse order of removal and check oil level after installation. Refer to [MT-12, "Checking M/T Oil"](#) .



POSITION SWITCH

POSITION SWITCH

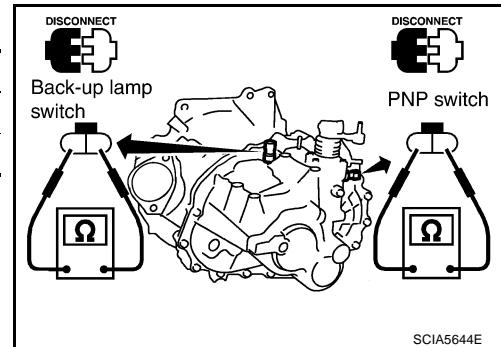
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Checking BACK-UP LAMP SWITCH

ECS008BU

- Check continuity.

Gear position	Continuity
Reverse	Yes
Except reverse	No



PARK/NEUTRAL POSITION SWITCH

- Check continuity.

Gear position	Continuity
Neutral	Yes
Except neutral	No

CONTROL LINKAGE

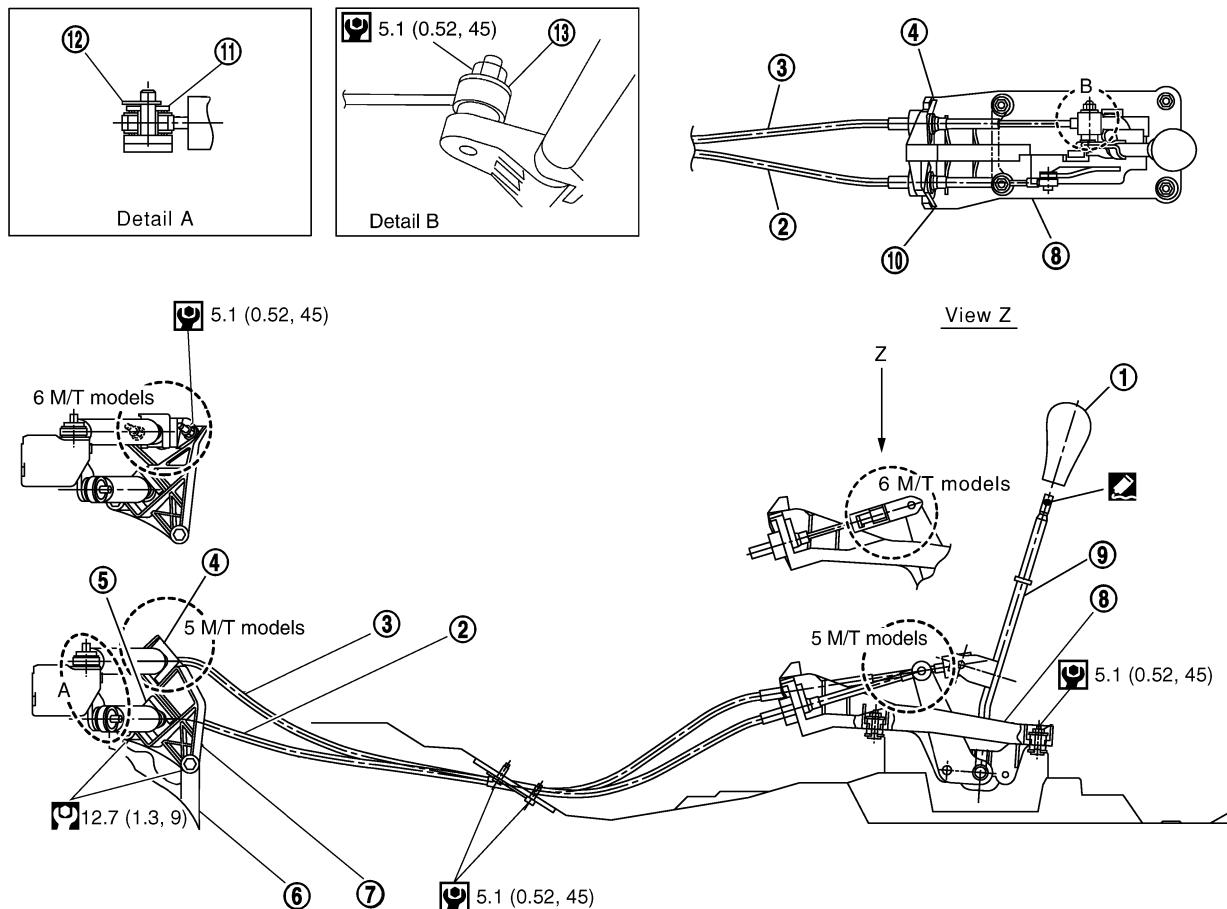
CONTROL LINKAGE

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Components of Control Device and Cable

ECS008BV

SEC.341



: N·m (kg·m, in·lb)

: N·m (kg·m, ft·lb)

: Apply cement.

PCIB0777E

1. Control lever knob
2. Select cable
3. Shift cable
4. Lock plate (shift side)
5. Lock plate (select side)
6. Clutch housing
7. Cable mounting bracket
8. Control device assembly
9. Control lever
10. Lock plate
11. Washer
12. Snap pin
13. Washer

Removal and Installation

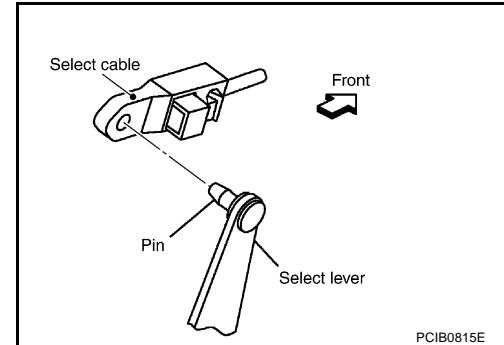
ECS00CY6

Note the following, when removal and installation.

- Shift the control lever to the neutral position for removal.
- Keep in mind that the select side lock plate for securing control cable is different from the shift side lock plate.
- After assembly, make sure selector lever automatically returns to Neutral when it is moved to 1st, 2nd, or Reverse.

Install select cable according to the following procedure.

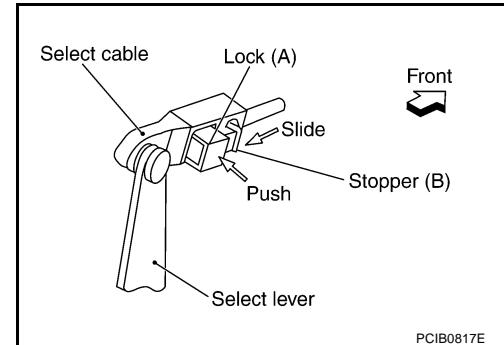
- Install select cable of transaxle side to control assembly.
- Install select cable to pin on select lever part of control device assembly.



- Push lock part (A) of select cable all the way to the direction of the arrow. (For 6M/T models)
- Slide stopper part (B) all the way to lock part (A) as shown by the arrow. (For 6M/T models)

CAUTION:

Make sure that select cable and select lever are installed securely.



AIR BREATHER HOSE

AIR BREATHER HOSE

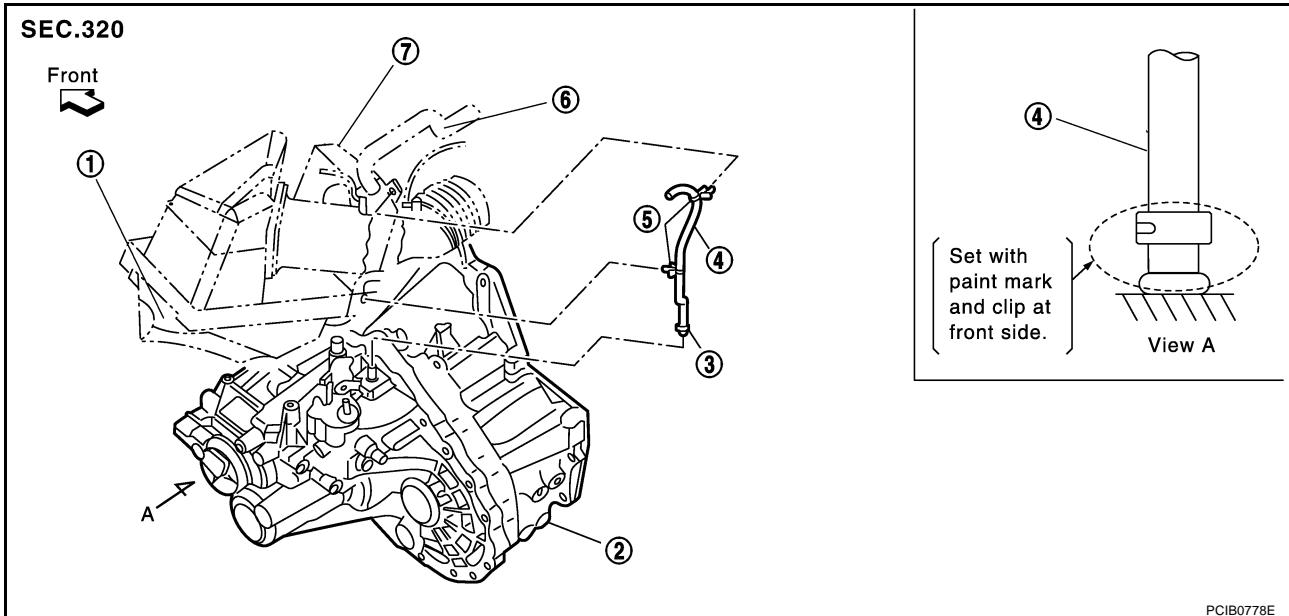
PFP:31098

Removal and Installation

ECS008BW

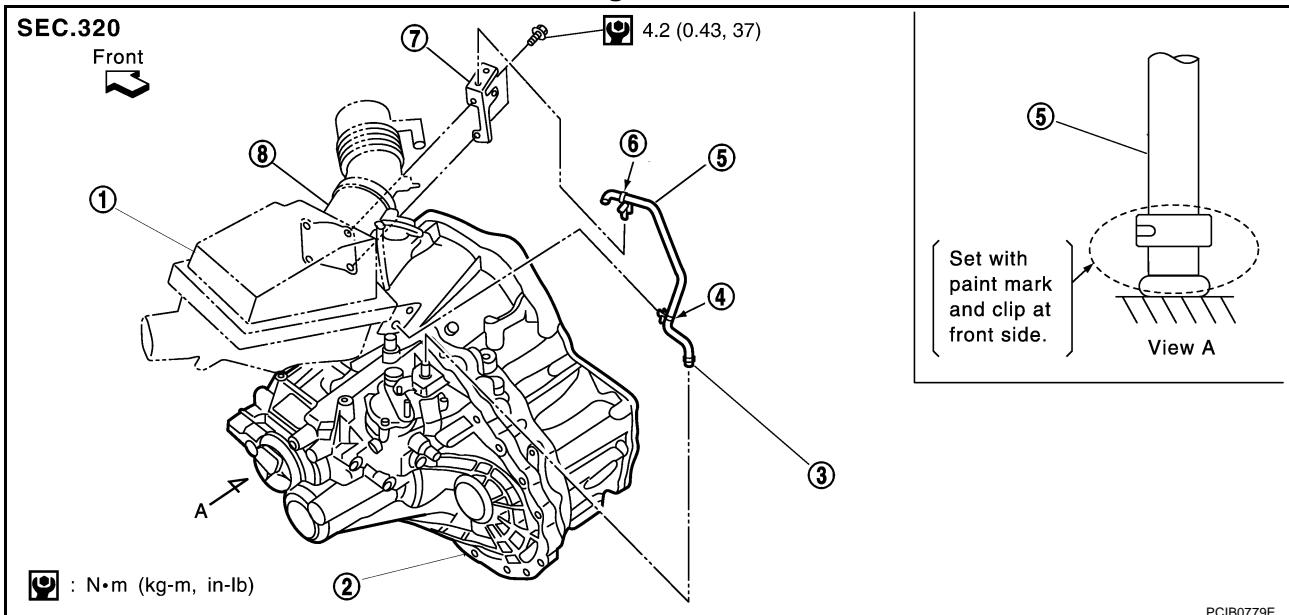
Refer to the figure for air breather hose removal and installation information.

QR engine models



1. Air cleaner case
2. Transaxle assembly
3. Clip
4. Air breather hose
5. Clip
6. PCV hose
7. Resonator

YD engine models



1. Air cleaner case
2. Transaxle assembly
3. Clip
4. Clip
5. Air breather hose
6. Clip
7. Bracket
8. Mass air flow sensor

CAUTION:

- Make sure there are no pinched or restricted areas on air breather hose caused by bending or winding when installing it.
- Be sure to insert air breather hose into air breather tube until overlap area reaches the spool.

TRANSAXLE ASSEMBLY

TRANSAXLE ASSEMBLY

Removal and Installation COMPONENTS

PFP:32010

ECS008BX

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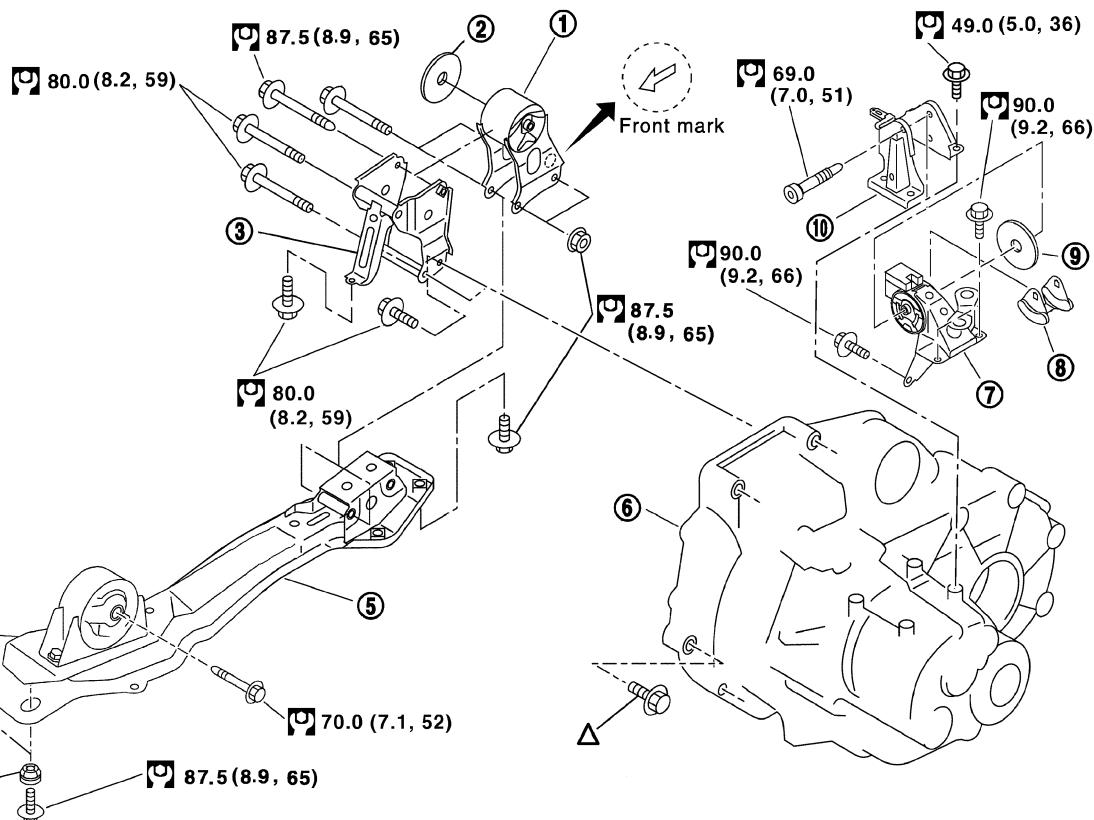
K

L

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2WD models

SEC. 112-320



: N·m (kg·m, ft·lb)

: Refer to "INSTALLATION" for the tightening torque.

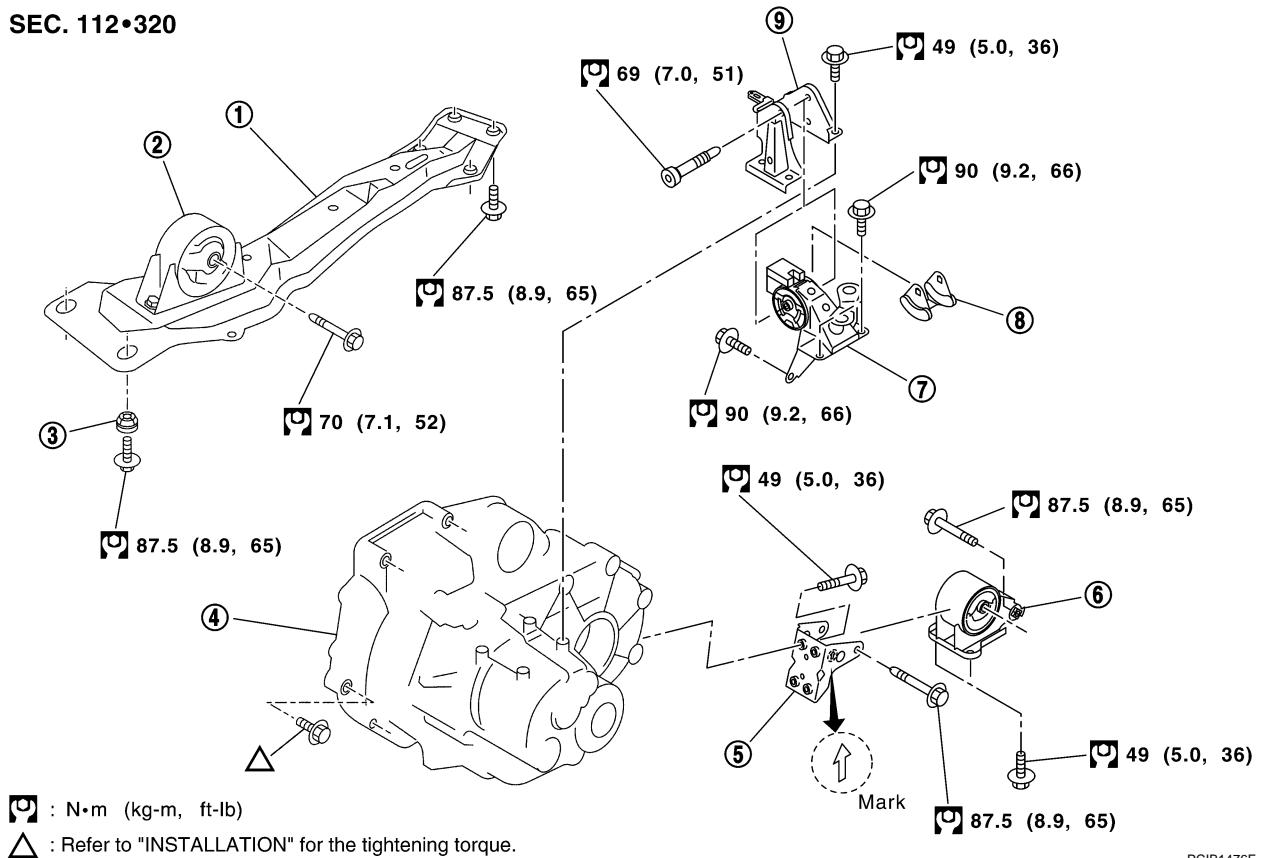
PCIB0866E

1. Rear engine mounting insulator	2. Rubber seat	3. Rear engine mounting bracket
4. Grommet	5. Center member	6. Transaxle assembly
7. LH engine mounting insulator	8. Stopper	9. Rubber seat
10. LH engine mounting bracket		

TRANSAXLE ASSEMBLY

4WD models

SEC. 112•320



PCIB1476E

1. Center member
2. Front engine mounting insulator
3. Grommet
4. Transaxle assembly
5. Rear engine mounting bracket
6. Rear engine mounting insulator
7. LH engine mounting insulator
8. Stopper
9. LH engine mounting bracket

REMOVAL

1. Disconnect the battery cable from the negative terminal.
2. Remove air cleaner, air duct and battery. Refer to [EM-16, "Removal and Installation"](#) (QR engine models) or [EM-142, "Removal and Installation"](#) (YD engine models).
3. Remove air breather hose. Refer to [MT-18, "Removal and Installation"](#) .
4. Remove clutch operating cylinder. Refer to [CL-12, "Removal and Installation"](#) .

CAUTION:

Do not depress clutch pedal during removal procedure.

5. Disconnect control cable from transaxle assembly. Refer to [MT-17, "Removal and Installation"](#) .
6. Drain gear oil. Refer to [MT-12, "DRAINING"](#) .
7. Disconnect PNP switch, back-up lamp switch and ground harness connectors.
8. Remove exhaust front tube. Refer to [EX-2, "Removal and Installation"](#) .
9. Remove drive shaft. Refer to [FAX-11, "FRONT DRIVE SHAFT"](#) .
10. Remove transfer (for 4WD models). Refer to [TF-57, "Removal and Installation"](#) .
11. Remove starter motor. Refer to [SC-27, "Removal and Installation"](#) .
12. Support transaxle assembly with a jack.

CAUTION:

When setting a jack, be careful not to bring it into contact with switches.

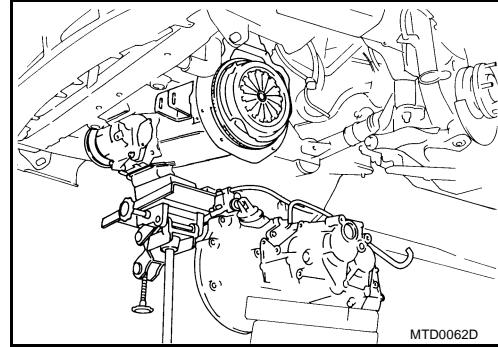
13. Remove center member, engine insulator and engine mount bracket. Refer to [EM-81, "ENGINE ASSEMBLY"](#) (QR engine models) or [EM-222, "ENGINE ASSEMBLY"](#) (YD engine models).
14. Remove suspension members (for 4WD models). Refer to [FSU-12, "FRONT SUSPENSION MEMBER"](#) .
15. Support engine with a jack under oil pan.
16. Remove transaxle assembly mounting bolts.

TRANSAXLE ASSEMBLY

17. Remove transaxle assembly from the vehicle.

CAUTION:

Secure transaxle assembly to a jack while removing it.



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INSTALLATION

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

- When installing the transaxle assembly to the engine, install the mounting bolts following the standard below.

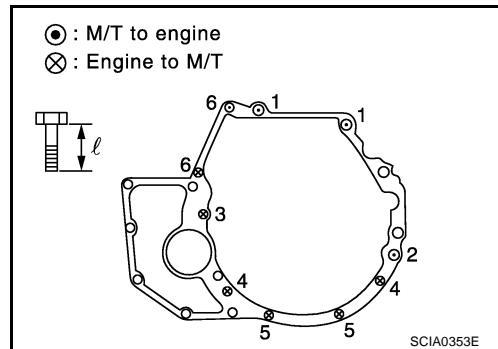
CAUTION:

When installing transaxle assembly, be careful not to bring transaxle input shaft into contact with clutch cover.

- **QR engine models**

Bolt No.	1	2	3*	4	5	6
Quantity	2	1	1	2	2	2
Bolt length "ℓ" mm (in)	40 (1.57)	75 (2.95)	45 (1.77)	40 (1.57)	30 (1.18)	40 (1.57)
Tightening torque N·m (kg·m, ft·lb)	74.5 (7.6, 55)		42.7 (4.4, 31)		35.3 (3.6, 26)	

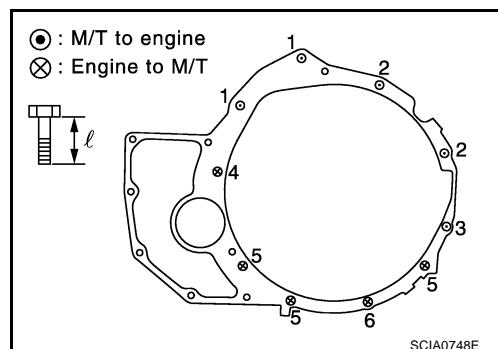
*: Tightening the bolt for 4WD models.



- **YD engine models**

Bolt No.	1	2	3	4	5	6
Quantity	2	2	1	1	3	1
Bolt length "ℓ" mm (in)	55 (2.17)	50 (2.76)	120 (4.72)	45 (1.77)	40 (1.57)	35 (1.38)
Tightening torque N·m (kg·m, ft·lb)	44 (4.5, 32)			33.5 (3.4, 25)		

- After installation, check oil level, and check for leaks and loose mechanisms. Refer to [MT-12, "Checking M/T Oil"](#).



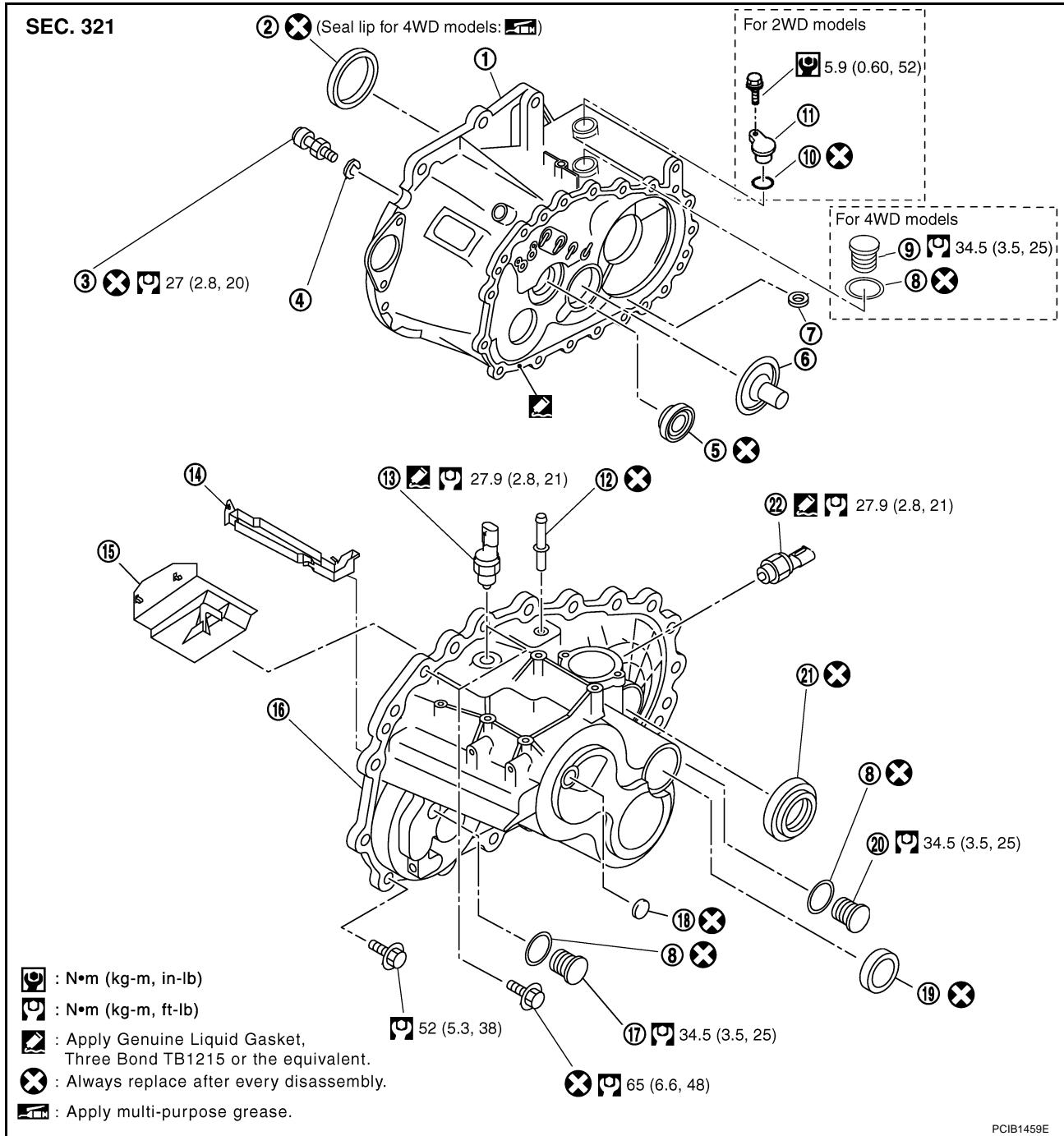
TRANSAXLE ASSEMBLY

Disassembly and Assembly (RS5F51A)

COMPONENTS

Case and Housing Components

ECS008C0

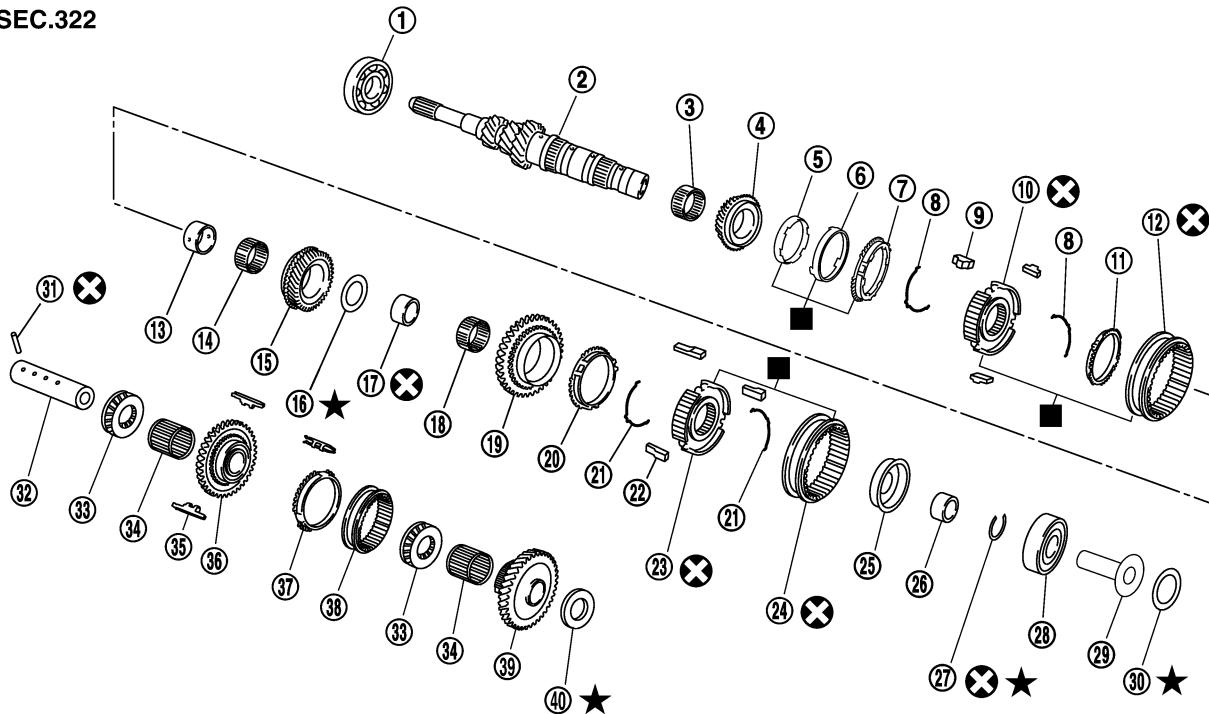


1. Clutch housing
2. Differential side oil seal
3. Ball pin
4. Washer
5. Input shaft oil seal
6. Oil channel
7. Magnet
8. Gasket
9. Filler plug
10. O-ring
11. Plug
12. Air breather tube
13. Back-up lamp switch
14. Oil gutter
15. Baffle plate
16. Transaxle case
17. Plug
18. Welch plug
19. Bore plug
20. Drain plug
21. Differential side oil seal
22. Park/Neutral position (PNP) switch

TRANSAXLE ASSEMBLY

Gear Components

SEC.322



★ : Select with proper thickness.

✖ : Always replace after every disassembly.

■ : Replace the parts as a set.

• Apply gear oil to gears, shafts, synchronizers and bearings when assembling.

PCIB1458E

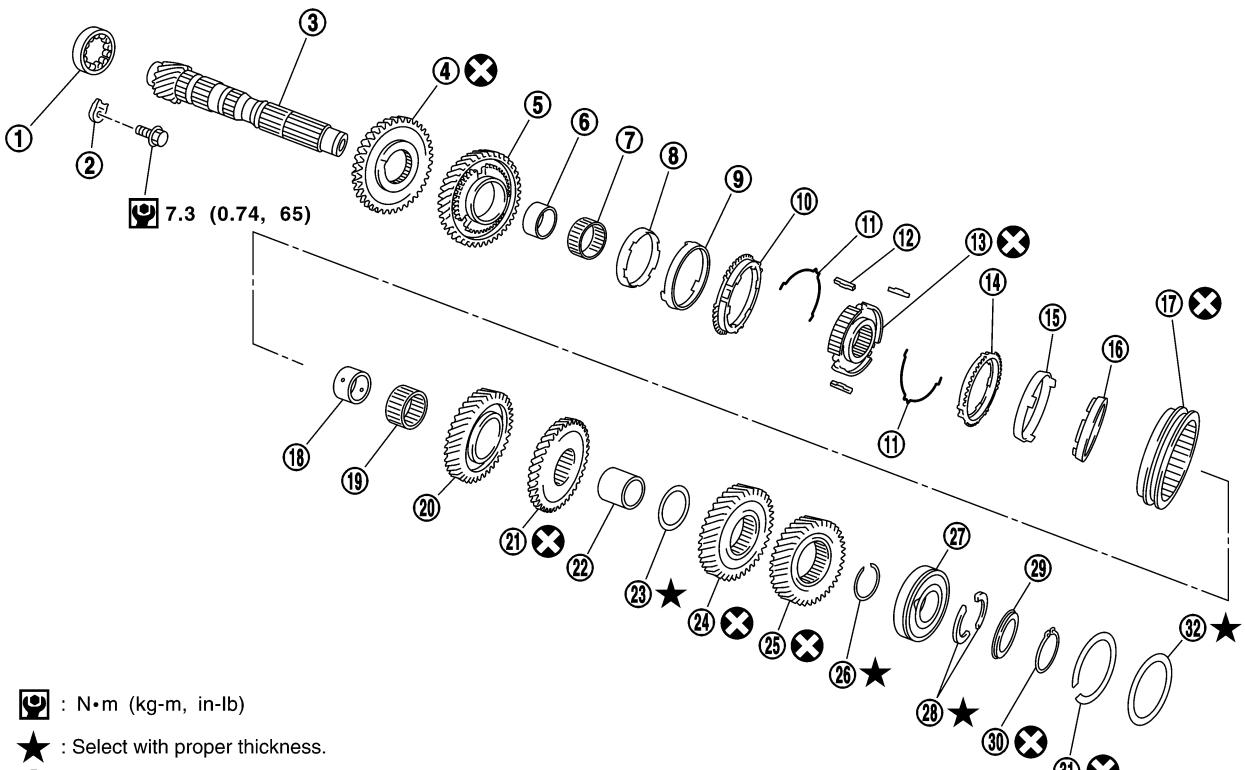
1. Input shaft front bearing	2. Input shaft	3. 3rd needle bearing
4. 3rd input gear	5. 3rd inner baulk ring	6. 3rd synchronizer cone
7. 3rd outer baulk ring	8. 3rd-4th spread spring	9. 3rd-4th shifting insert
10. 3rd-4th synchronizer hub	11. 4th baulk ring	12. 3rd-4th coupling sleeve
13. 4th input gear bushing	14. 4th needle bearing	15. 4th input gear
16. Thrust washer	17. 5th input gear bushing	18. 5th needle bearing
19. 5th input gear	20. 5th baulk ring	21. 5th spread spring
22. 5th shifting insert	23. 5th synchronizer hub	24. 5th coupling sleeve
25. 5th stopper	26. Input shaft bearing spacer	27. Snap ring
28. Input shaft rear bearing	29. Oil channel	30. Input shaft rear bearing adjusting shim
31. Retaining pin	32. Reverse idler shaft	33. Thrust needle bearing
34. Reverse idler gear needle bearing	35. Reverse insert spring	36. Reverse idler gear (Front)
37. Reverse baulk ring	38. Reverse coupling sleeve	39. Reverse idler gear (Rear)
40. Reverse idler gear adjusting shim		

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TRANSAXLE ASSEMBLY

SEC. 322



: N·m (kg-m, in-lb)

★ : Select with proper thickness.

✗ : Always replace after every disassembly.

- Apply gear oil to gears, shafts, synchronizers and bearings when assembling.
- Replace (13) and (17) as a set.

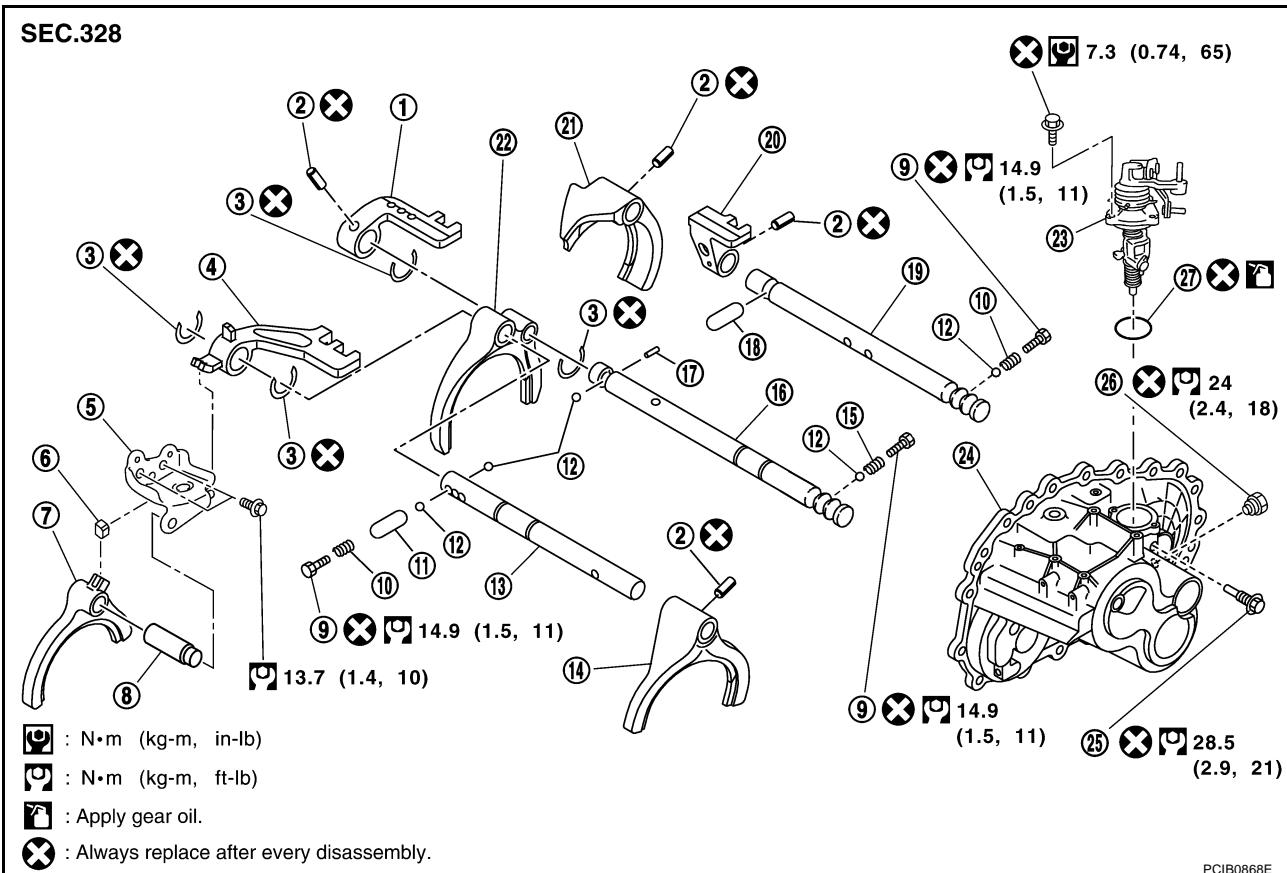
PCIB0783E

1. Mainshaft front bearing	2. Mainshaft bearing retainer	3. Mainshaft
4. Reverse main gear	5. 1st main gear	6. 1st main gear bushing
7. 1st needle bearing	8. 1st inner baulk ring	9. 1st synchronizer cone
10. 1st outer baulk ring	11. 1st-2nd spread spring	12. 1st-2nd shifting insert
13. 1st-2nd synchronizer hub	14. 2nd outer baulk ring	15. 2nd synchronizer cone
16. 2nd inner baulk ring	17. 1st-2nd coupling sleeve	18. 2nd main gear bushing
19. 2nd needle bearing	20. 2nd main gear	21. 3rd main gear
22. 3rd-4th mainshaft spacer	23. 4th main gear adjusting shim	24. 4th main gear
25. 5th main gear	26. Snap ring	27. Mainshaft rear bearing
28. Mainshaft C-ring	29. C-ring holder	30. Snap ring
31. Snap ring	32. Mainshaft rear bearing adjusting shim	

TRANSAXLE ASSEMBLY

Shift Control Components

SEC.328



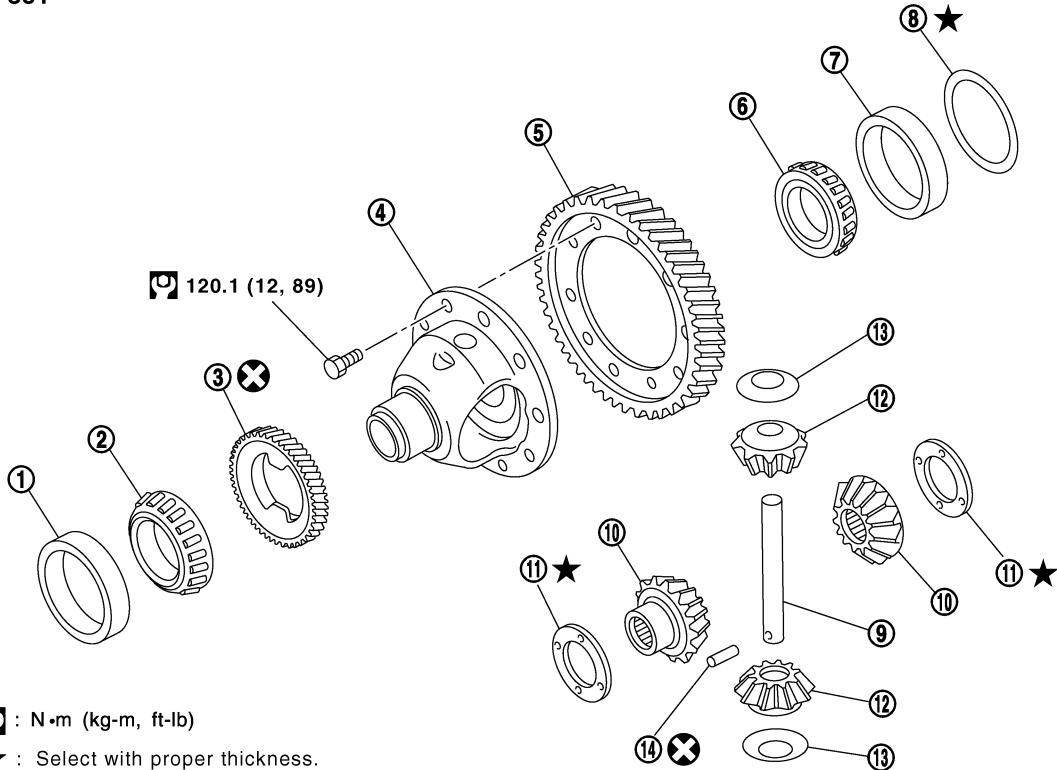
PCIB0868E

1. 3rd-4th bracket	2. Retaining pin	3. Stopper ring
4. 5th-reverse bracket	5. Reverse lever assembly	6. Shifter cap
7. Reverse shift fork	8. Reverse fork rod	9. Check plug
10. Check spring	11. Shift check sleeve	12. Check ball
13. 5th-reverse fork rod	14. 5th shift fork	15. Check spring
16. 3rd-4th fork rod	17. Interlock pin	18. Shift check sleeve
19. 1st-2nd fork rod	20. 1st-2nd bracket	21. 1st-2nd shift fork
22. 3rd-4th shift fork	23. Control assembly	24. Transaxle case
25. Stopper bolt	26. Shift check	27. O-ring

TRANSAXLE ASSEMBLY

Final Drive Components

SEC. 381

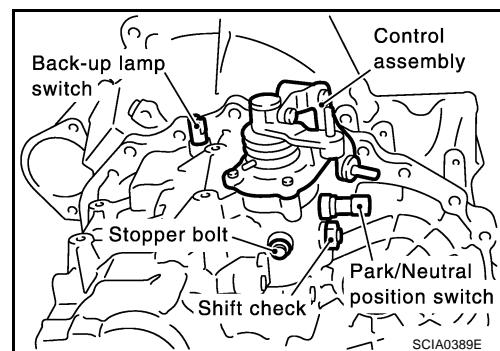


PCIB0869E

1. Differential side bearing outer race (clutch housing side)
2. Differential side bearing (clutch housing side)
3. Speedometer drive gear (for 2WD models)
4. Differential case
5. Final gear
6. Differential side bearing (transaxle case side)
7. Differential side bearing outer race (transaxle case side)
8. Differential side bearing adjusting shim
9. Pinion mate shaft
10. Side gear
11. Side gear thrust washer
12. Pinion mate gear
13. Pinion mate thrust washer
14. Retaining pin

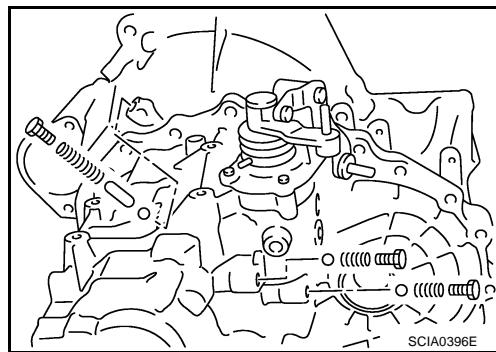
DISASSEMBLY

1. Remove plug (for 2WD models) or filler plug (for 4WD models) from clutch housing.
2. Remove drain plug and plug from transaxle case.
3. Remove park/neutral position switch and back-up lamp switch from transaxle case.
4. Remove shift check and stopper bolt from transaxle case, and then remove control assembly from transaxle case.



TRANSAXLE ASSEMBLY

5. Remove check plugs (3 pieces), check springs (3 pieces), check balls (3 pieces) and shift check sleeve (1 piece).



6. Remove transaxle case mounting bolts.

7. Remove bore plug from transaxle case.

CAUTION:

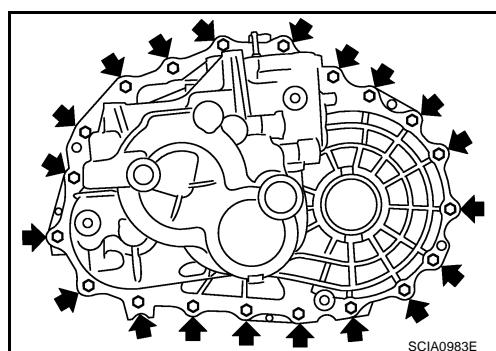
Be careful not to damage transaxle case.

8. While spreading the snap ring of mainshaft rear bearing located at bore plug hole, remove transaxle case from clutch housing.

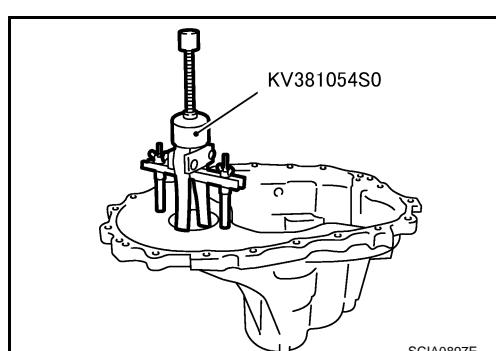
9. Remove oil gutter, baffle plate from transaxle case.

10. Remove snap ring, mainshaft rear bearing adjusting shim from transaxle case.

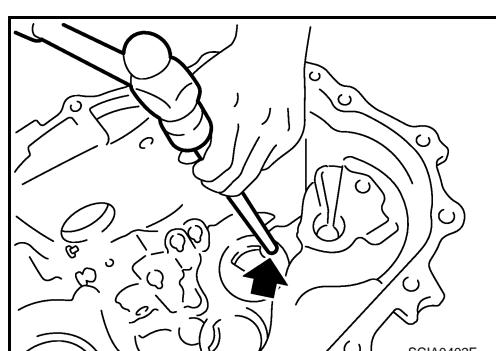
11. Remove input shaft rear bearing adjusting shim and reverse idler gear adjusting shim.



12. Remove differential side bearing outer race from transaxle case using the puller, and then remove differential side bearing adjusting shim from transaxle case.



13. Remove Welch plug from transaxle case.



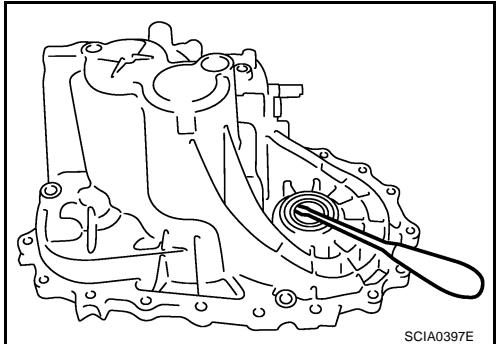
TRANSAXLE ASSEMBLY

14. Remove differential side oil seal from transaxle case.

CAUTION:

Be careful not to damage transaxle case.

15. Remove magnet from clutch housing.



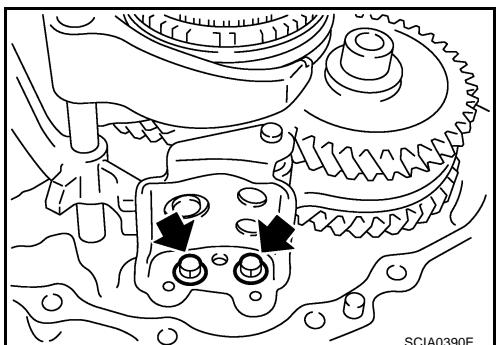
SCIA0397E

16. With shift lever in 5th position, remove mounting bolts from reverse lever assembly. Lift reverse lever assembly to remove.

CAUTION:

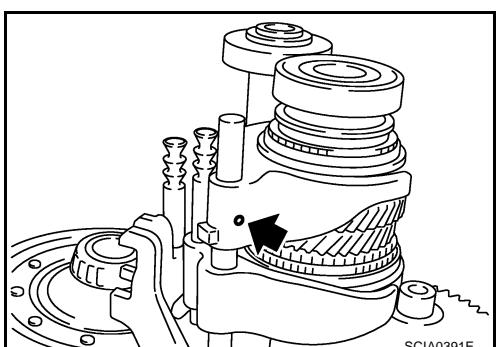
Be careful not to lose shifter cap.

17. Pull out reverse fork rod then remove reverse shift fork.



SCIA0390E

18. Shift 3rd-4th fork rod to 3rd position. Remove retaining pin of 5th shift fork using a pin punch.

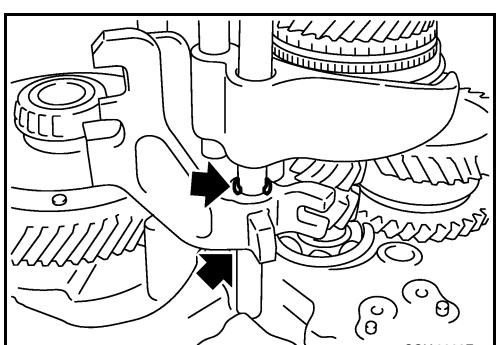


SCIA0391E

19. Remove stopper rings for 5th-reverse bracket.

20. Pull out 5th-reverse fork rod and remove 5th shift fork and 5th-reverse bracket.

21. Remove check balls (2 pieces) from clutch housing.



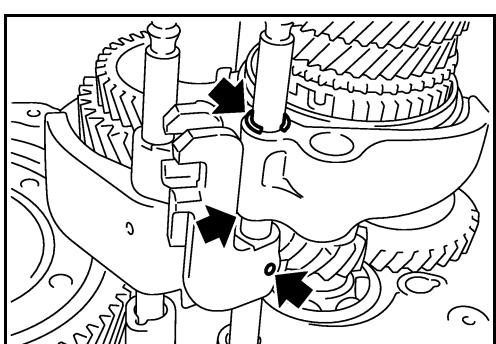
SCIA0392E

22. Remove retaining pin of 3rd-4th bracket using a pin punch.

23. Remove stopper rings for 3rd-4th shift fork.

24. Pull out 3rd-4th fork rod and remove 3rd-4th shift fork and 3rd-4th bracket.

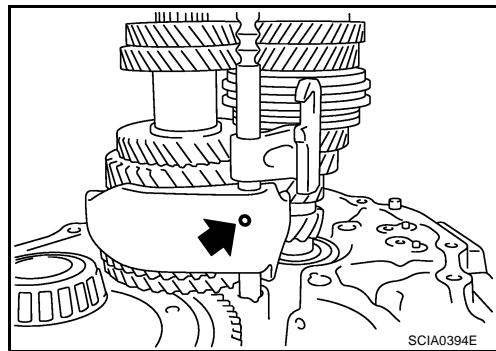
25. Remove interlock pin and shift check sleeve from clutch housing.



SCIA0393E

TRANSAXLE ASSEMBLY

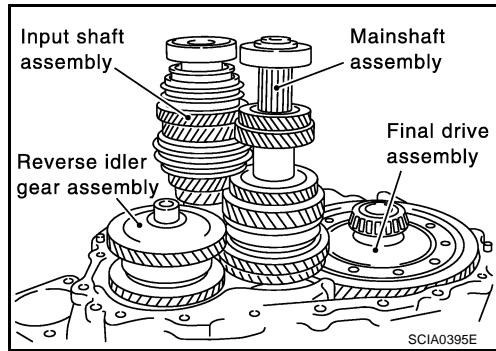
26. Remove retaining pin of 1st-2nd shift fork using a pin punch.
27. Pull out 1st-2nd fork rod with 1st-2nd bracket.
28. Remove 1st-2nd shift fork.
29. Remove retaining pin of 1st-2nd bracket using a pin punch and separate 1st-2nd fork rod and 1st-2nd bracket.



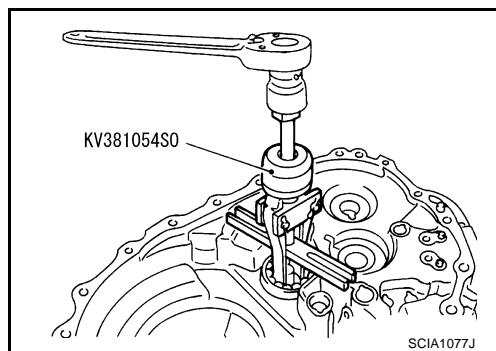
30. Remove gear components from clutch housing in the following procedure.
 - a. Remove input shaft assembly, mainshaft assembly and reverse idler gear assembly as a set, tapping input shaft with plastic hammer.

CAUTION:
Always withdraw mainshaft straight out. Failure to do so can damage resin oil channel on clutch housing side.

- b. Remove final drive assembly.

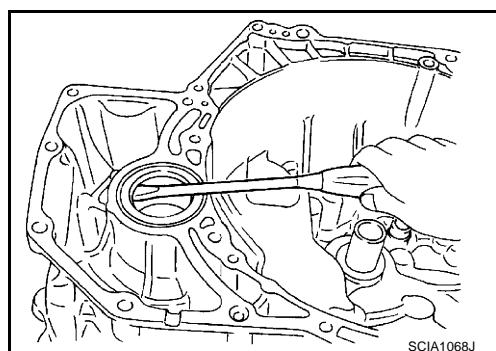


31. Remove mainshaft bearing retainer and then mainshaft front bearing from clutch housing using the puller.
32. Remove oil channel from clutch housing.

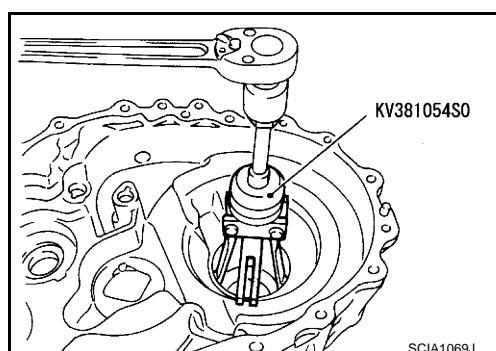


33. Remove differential side oil seal from clutch housing.

CAUTION:
Be careful not to damage clutch housing.



34. Remove differential side bearing outer race from clutch housing using the puller.

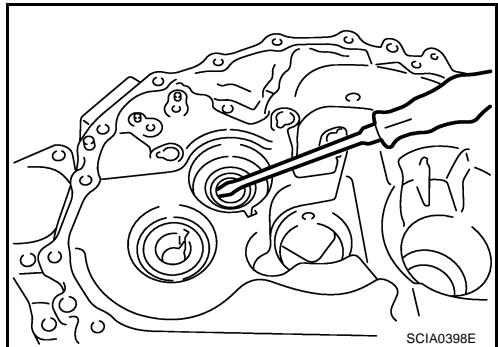


TRANSAXLE ASSEMBLY

35. Remove input shaft oil seal from clutch housing.

CAUTION:

Be careful not to damage clutch housing.



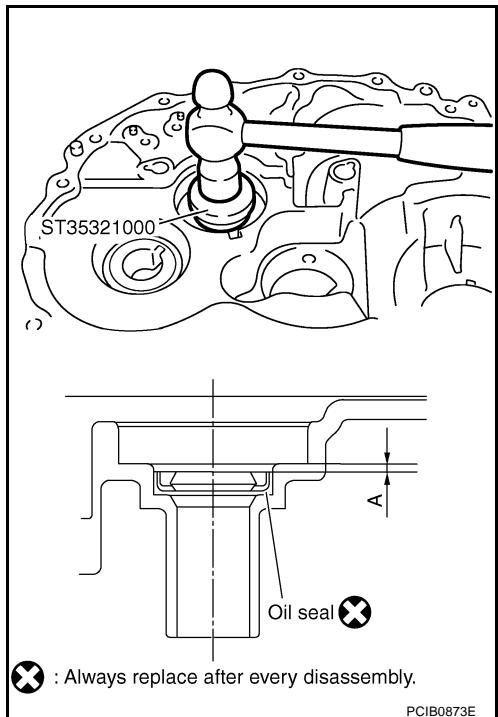
ASSEMBLY

1. Install input shaft oil seal to clutch housing using the drift.

Dimension **A: 1.8 - 2.8 mm (0.071 - 0.110 in)**

CAUTION:

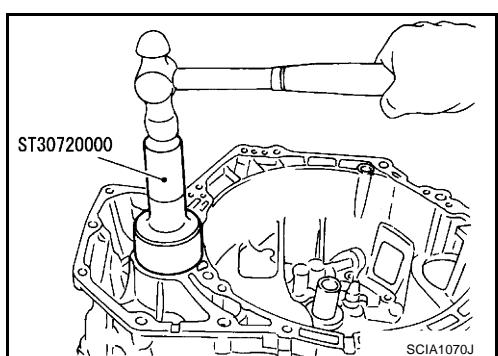
Do not reuse input shaft oil seal.



2. Install differential side oil seal until it become flush with end face of clutch housing using the drift.

CAUTION:

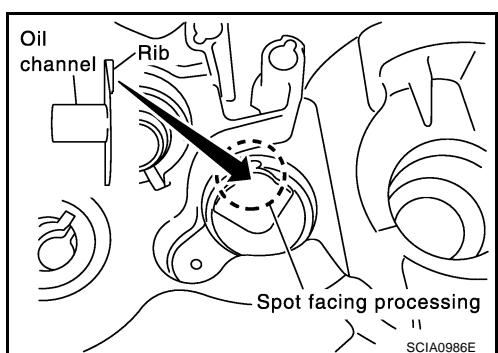
- Do not reuse differential side oil seal.
- Apply multi-purpose grease onto oil seal lip. (For 4WD models)



3. Install oil channel on mainshaft side.

CAUTION:

Be careful with the orientation of installation.

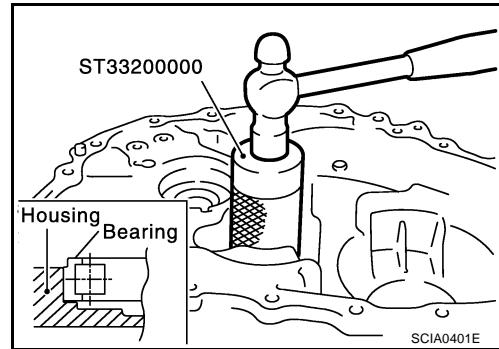


TRANSAXLE ASSEMBLY

4. Install mainshaft front bearing to clutch housing using the drift.

CAUTION:

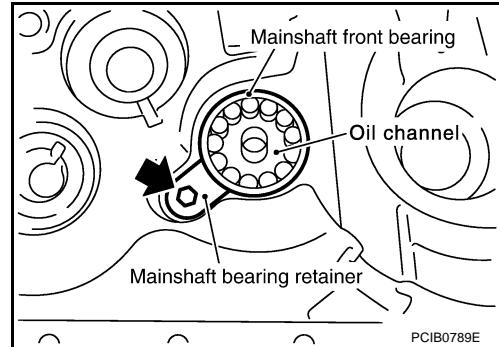
Be careful with the orientation of installation.



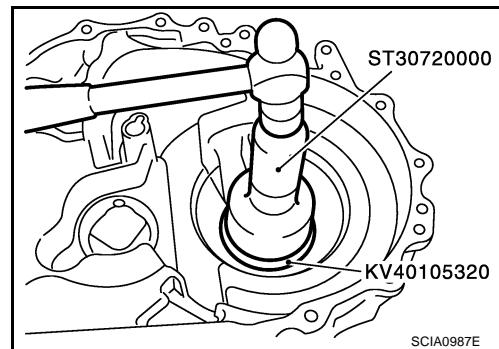
5. Install mainshaft bearing retainer to clutch housing and tighten mounting bolt to the specified torque. Refer to [MT-23, "Gear Components"](#).

CAUTION:

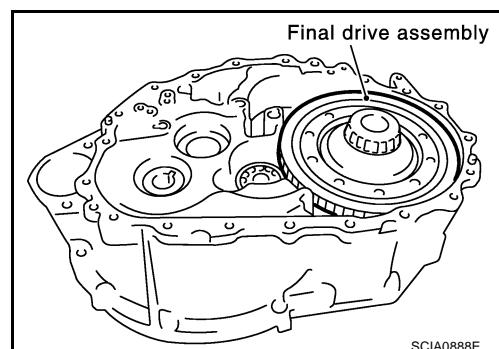
Install with punched surface facing up.



6. Install differential side bearing outer race to clutch housing using the drifts.



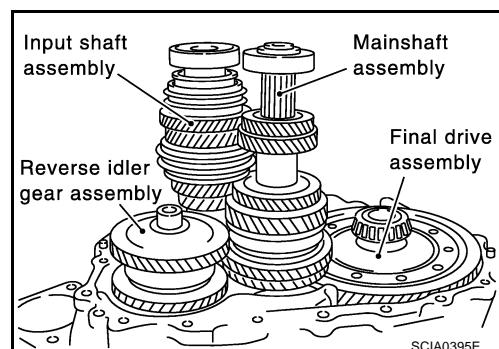
7. Install final drive assembly into clutch housing.



8. Install input shaft assembly, mainshaft assembly, and reverse idler gear assembly into clutch housing.

CAUTION:

Be sure not to damage input shaft oil seal.

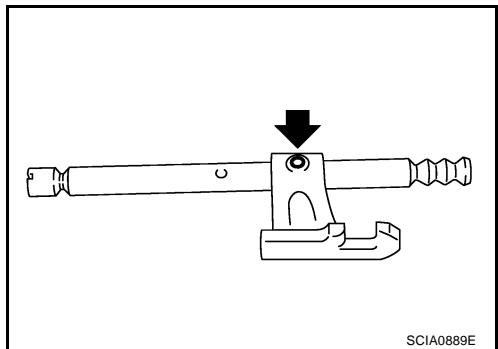


TRANSAXLE ASSEMBLY

9. Install 1st-2nd bracket onto 1st-2nd fork rod, and then install retaining pin to 1st-2nd bracket.

CAUTION:

Do not reuse retaining pin.



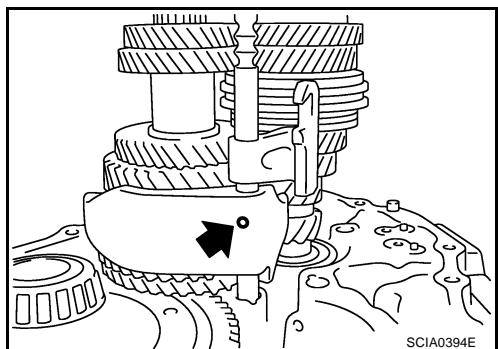
SCIA0889E

10. Install 1st-2nd fork rod and 1st-2nd shift fork, and then install retaining pin to 1st-2nd shift fork.

CAUTION:

Do not reuse retaining pin.

11. Install shift check sleeve to clutch housing.



SCIA0394E

12. Install interlock pin to 3rd-4th fork rod.

13. Install 3rd-4th bracket, 3rd-4th shift fork, and 3rd-4th fork rod.

14. Install stopper rings onto 3rd-4th shift fork.

CAUTION:

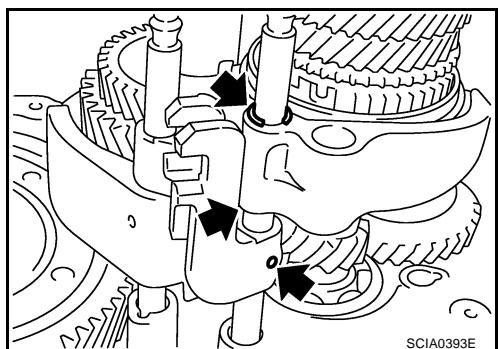
Do not reuse stopper ring.

15. Install retaining pin onto 3rd-4th bracket.

CAUTION:

Do not reuse retaining pin.

16. Install 2 check balls to clutch housing.



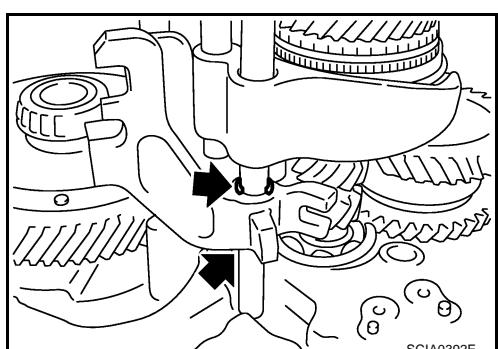
SCIA0393E

17. Install 5th-reverse bracket, 5th shift fork, and 5th-reverse fork rod.

18. Install stopper rings onto 5th-reverse bracket.

CAUTION:

Do not reuse stopper ring.



SCIA0392E

19. Install retaining pin onto 5th shift fork.

CAUTION:

Do not reuse retaining pin.

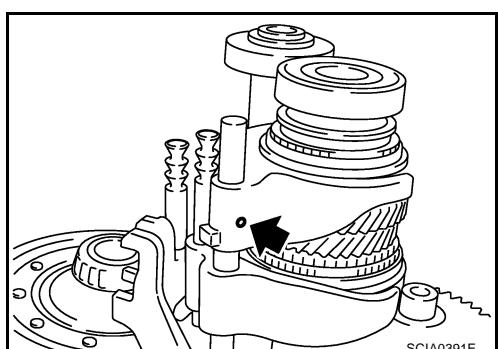
20. Install reverse shift fork and reverse fork rod.

21. Install reverse lever assembly following the procedures below.

a. Install shifter cap onto reverse lever assembly cam, and then install them onto reverse shift fork.

CAUTION:

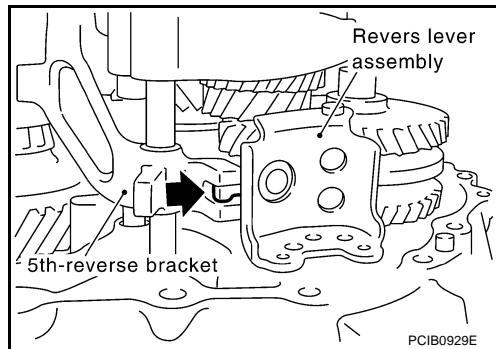
Do not drop shifter cap.



SCIA0391E

TRANSAXLE ASSEMBLY

b. While lifting reverse shift fork, align cam with 5th-reverse bracket.



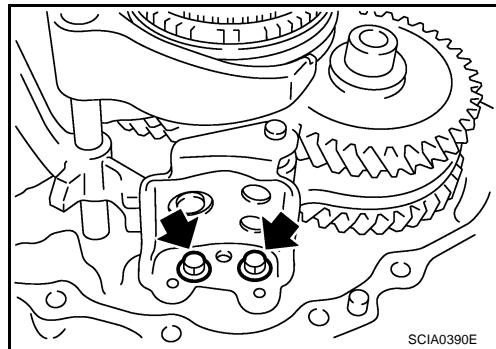
c. Install reverse lever assembly to clutch housing, and then tighten mounting bolts to the specified torque. Refer to [MT-25, "Shift Control Components"](#).

22. Install check ball, shift check sleeve, check spring and check plug to clutch housing.

CAUTION:

- Do not reuse check plug.
- Do not drop check ball.

23. Install the magnet onto clutch housing.



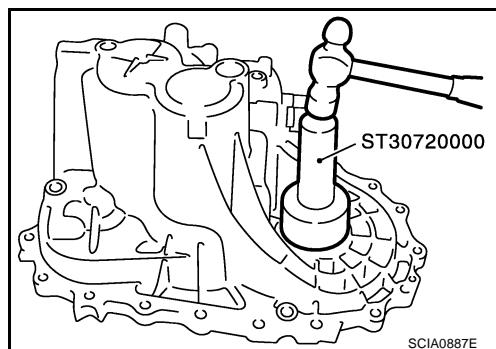
24. Install differential side oil seal until it is flush with end face of transaxle case using the drift.

CAUTION:

Do not reuse differential side oil seal.

25. Install selected differential side bearing adjusting shim and differential side bearing outer race.

- For selection of adjusting shim, refer to [MT-36, "Differential Side Bearing Preload"](#).



26. Install selected reverse idler gear adjusting shim onto reverse idler gear assembly.

- For selection of adjusting shims, refer to [MT-37, "Reverse Idler Gear End Play"](#).

27. Install selected input shaft rear bearing adjusting shim onto input shaft.

- For selection of adjusting shims, refer to [MT-37, "Input Shaft End Play"](#).

28. Install baffle plate and oil gutter to transaxle case.

29. Install transaxle case following the procedures below.

a. Install selected mainshaft rear bearing adjusting shim into transaxle case.

- For selection of adjusting shims, refer to [MT-38, "Mainshaft End Play"](#).

b. Temporarily install snap ring of mainshaft rear bearing into transaxle case.

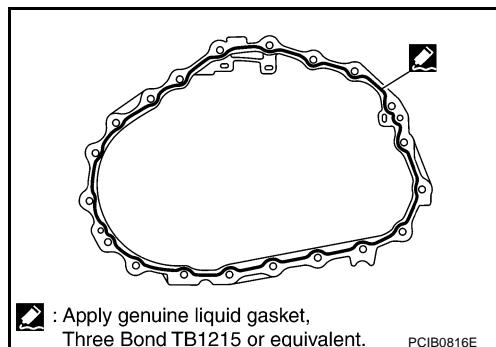
CAUTION:

Do not reuse snap ring.

c. Apply recommended sealant to mating surfaces of transaxle case and clutch housing.

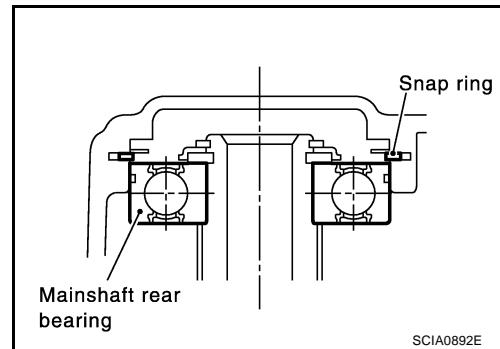
CAUTION:

Remove old sealant adhering to mounting surfaces. Also remove any moisture, oil, or foreign material adhering to application and mounting surfaces.

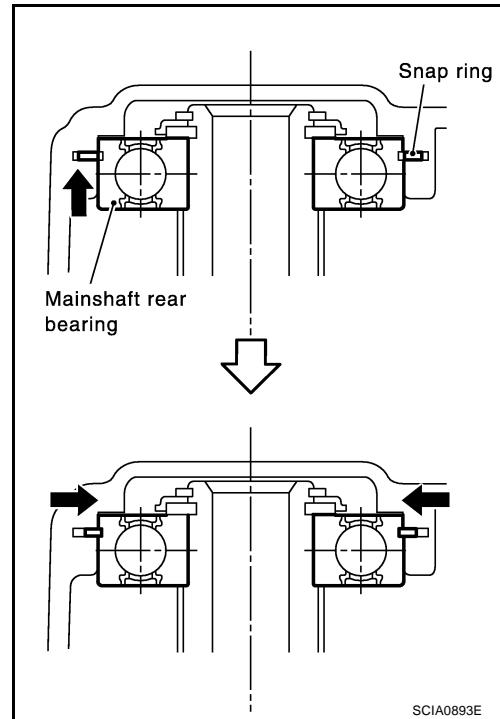


TRANSAXLE ASSEMBLY

d. With snap ring of mainshaft rear bearing temporarily installed, place transaxle case over clutch housing.



e. Through bore plug mounting hole, with snap ring stretched, and lift up mainshaft assembly from the control assembly mounting hole.
f. Securely install snap ring onto mainshaft rear bearing.



g. Tighten mounting bolts to the specified torque.

Bolt A:

: 52 N·m (5.3 kg-m, 38 ft-lb)

Bolt B:

: 65 N·m (6.6 kg-m, 48 ft-lb)

CAUTION:

Always replace bolts B as they are self-sealing bolts.

h. Apply gear oil to O-ring and install it to control assembly. Then install control assembly to transaxle case. Tighten bolts to the specified torque. Refer to [MT-25, "Shift Control Components"](#).

CAUTION:

Do not reuse O-ring.

i. Install shift check to transaxle case, and then tighten shift check to the specified torque. Refer to [MT-25, "Shift Control Components"](#).

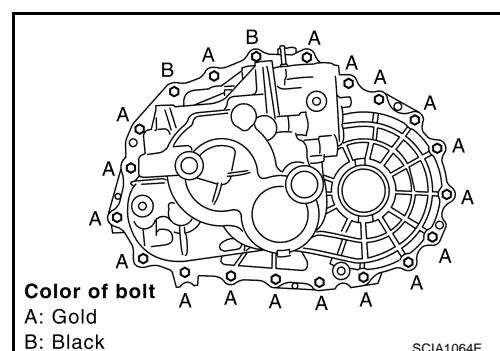
CAUTION:

Do not reuse shift check.

j. Install stopper bolt to transaxle case, and then tighten stopper bolt to the specified torque. Refer to [MT-25, "Shift Control Components"](#).

CAUTION:

Do not reuse stopper bolt.

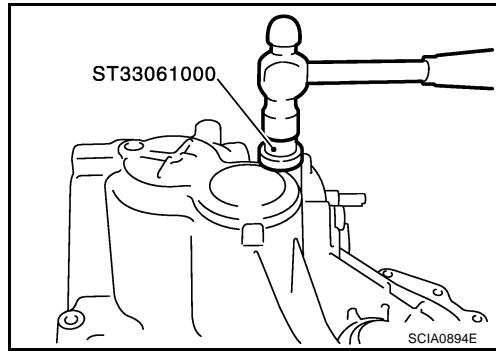


TRANSAXLE ASSEMBLY

30. Install bore plug to transaxle case using the drift.

CAUTION:

Do not reuse bore plug.

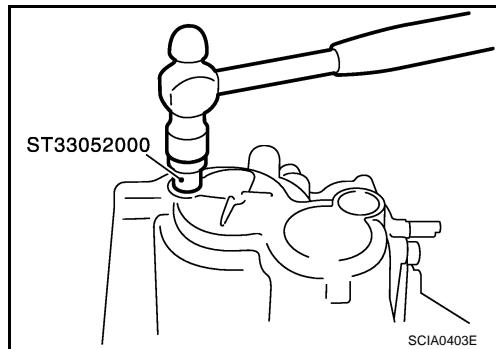


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31. Install welch plug to transaxle case using the drift.

CAUTION:

Do not reuse welch plug.

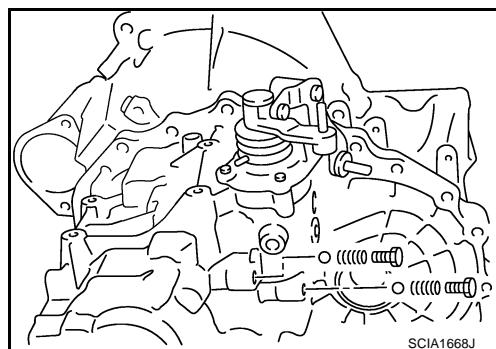


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32. Install 2 check balls, 2 check springs and 2 check plugs to transaxle case, and then tighten check plug to the specified torque. Refer to [MT-25, "Shift Control Components"](#).

CAUTION:

Do not reuse check plug.



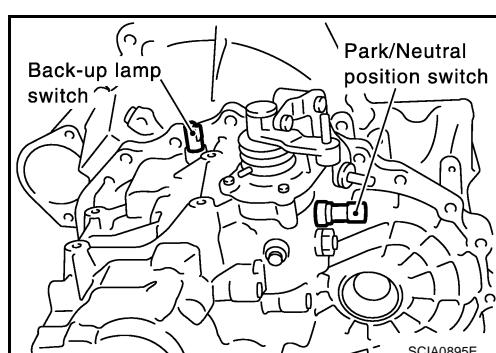
L
M

33. Apply recommended sealant to threads of park/neutral position switch and back-up lamp switch. Then install them to transaxle case and tighten to the specified torque. Refer to [MT-22, "Case and Housing Components"](#).

34. Install gaskets onto drain plug and plug, and then install them into transaxle case. Tighten drain plug and plug to the specified torque. Refer to [MT-22, "Case and Housing Components"](#).

CAUTION:

Do not reuse gasket.



35. Install O-ring onto plug (for 2WD models) or gasket onto filler plug (for 4WD models), and then install it into clutch housing. Tighten plug mounting bolt or filler plug to the specified torque. Refer to [MT-22, "Case and Housing Components"](#).

CAUTION:

• Do not reuse O-ring or gasket.

• After oil is filled, tighten plug mounting bolt or filler plug to specified torque.

TRANSAXLE ASSEMBLY

ADJUSTMENT

Differential Side Bearing Preload

- When adjusting differential side bearing preload, select adjusting shim for differential side bearing. To select adjusting shim, measure clearance "L" between transaxle case and differential side bearing outer race. Refer to [MT-108, "DIFFERENTIAL SIDE BEARING ADJUSTING SHIM\(S\)"](#).

CAUTION:

Up to 2 adjusting shims can be selected.

- Calculate dimension "L" (thickness of adjusting shim) using the following procedure to satisfy specification of preload for differential side bearing.

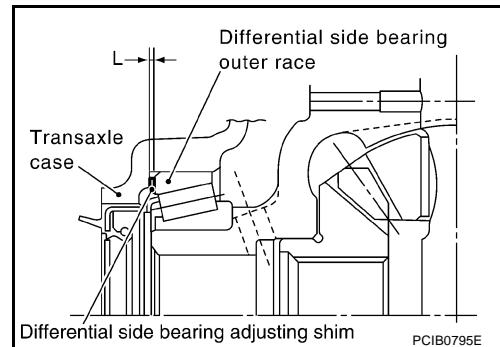
Preload: 0.15 - 0.21 mm (0.0059 - 0.0083 in)

Dimension "L" = (L₁ - L₂) + Preload

L: **Thickness of adjusting shim**

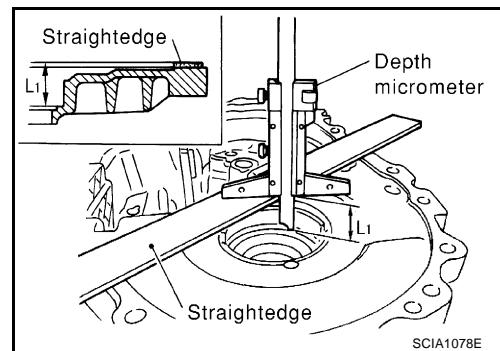
L₁: **Distance between transaxle case end face and mounting face of adjusting shim**

L₂: **Distance between differential side bearing outer race and clutch housing end face**



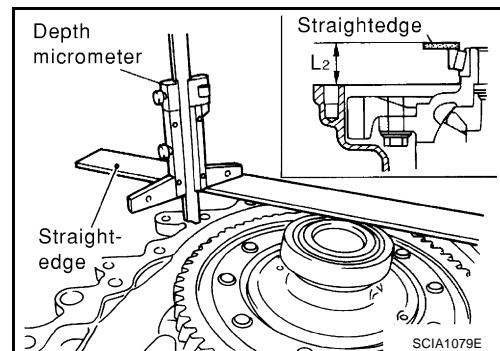
PCIB0795E

- Using depth micrometer and straightedge, measure dimension "L₁" between transaxle case end face and mounting face of adjusting shim.
- Install differential side bearing outer race onto differential side bearing on final gear side. Holding lightly differential side bearing outer race horizontally by hand, rotate final gear five times or more (for smooth movement of bearing roller).



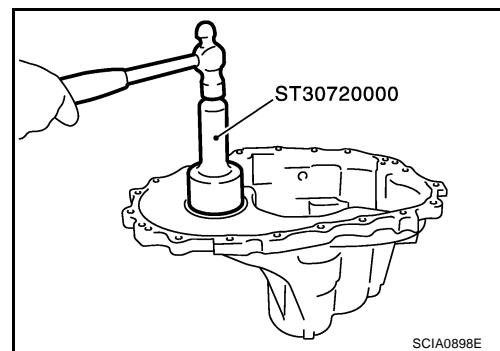
SCIA1078E

- Using depth micrometer and straightedge as shown in the figure, measure dimension "L₂" between differential side bearing outer race and clutch housing end face.



SCIA1079E

- Install selected differential side bearing adjusting shim, and then install differential side bearing outer race using the drift.



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TRANSAXLE ASSEMBLY

Reverse Idler Gear End Play

- When adjusting reverse idler gear end play, select adjusting shim for reverse idler gear. To select adjusting shim, measure clearance between transaxle case and reverse idler gear. Refer to [MT-107, "REVERSE IDLER GEAR ADJUSTING SHIM"](#).

CAUTION:

Only 1 adjusting shim can be selected.

- Calculate dimension "Q" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for reverse idler gear.

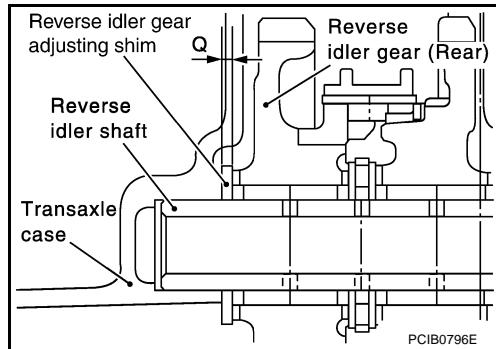
End play: 0.04 - 0.10 mm (0.0016 - 0.0039 in)

Dimension "Q" = (Q₁ - Q₂) - End play

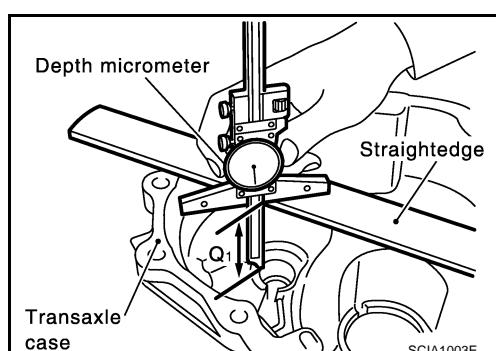
Q: Thickness of adjusting shim

Q₁ : Distance between transaxle case end face and mounting face of adjusting shim

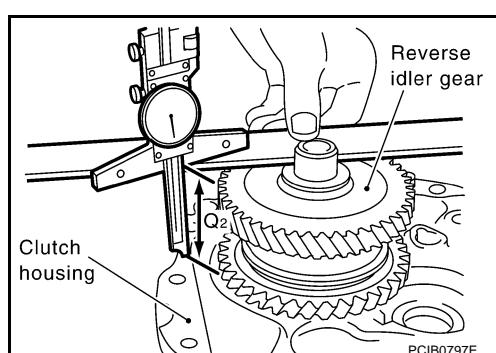
Q₂ : Distance between clutch housing end face and end face of reverse idler gear (Rear)



- Using depth micrometer and straightedge, measure dimension "Q₁" between transaxle case end face and mounting face of adjusting shim.



- Using depth micrometer and straightedge as shown in the figure, measure dimension "Q₂" between clutch housing end face and end face of reverse idler gear (Rear).
- Install selected reverse idler gear adjusting shim onto reverse idler gear assembly.



Input Shaft End Play

- When adjusting input shaft end play, select adjusting shim for input shaft rear bearing. To select adjusting shim, measure clearance between transaxle case and input shaft rear bearing. Refer to [MT-107, "INPUT SHAFT REAR BEARING ADJUSTING SHIM"](#).

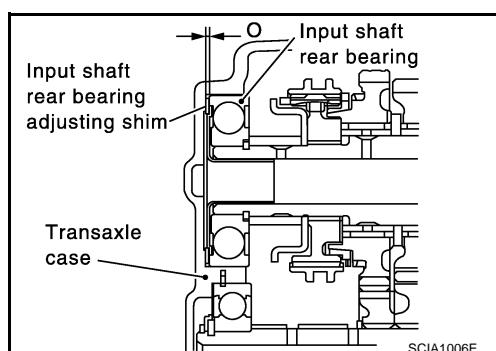
CAUTION:

Only 1 adjusting shim can be selected.

- Calculate dimension "O" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for input shaft rear bearing.

End play: 0 - 0.06 mm (0 - 0.0024 in)

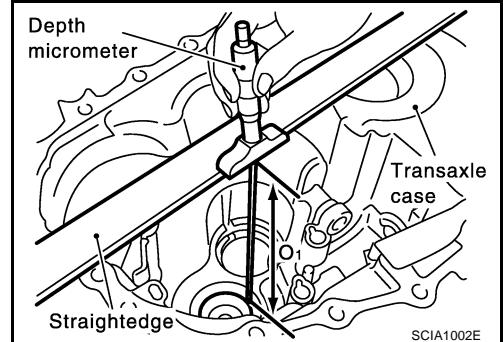
Dimension "O" = (O₁ - O₂) - End play



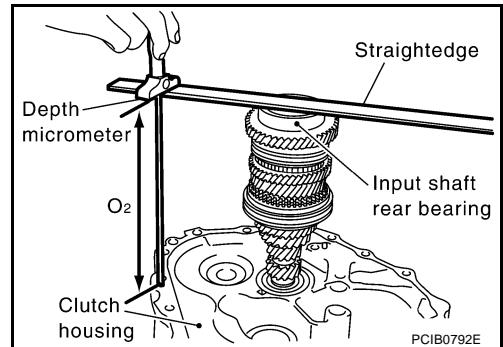
TRANSAXLE ASSEMBLY

- O: Thickness of adjusting shim
- O₁: Distance between transaxle case end face and mounting face of adjusting shim
- O₂: Distance between clutch housing end face and end face of input shaft rear bearing

1. Using depth micrometer and straightedge, measure dimension "O₁" between transaxle case end face and mounting face of adjusting shim.



2. Using depth micrometer and straightedge as shown in the figure, measure dimension "O₂" between clutch housing end face and end face of input shaft rear bearing.
3. Install selected input shaft rear bearing adjusting shim onto input shaft.



Mainshaft End Play

- When adjusting mainshaft end play, select adjusting shim for mainshaft rear bearing. To select adjusting shim, measure clearance "M" between transaxle case and mainshaft rear bearing. Refer to [MT-107, "MAINSHAFT REAR BEARING ADJUSTING SHIM"](#).

CAUTION:

Only 1 adjusting shim can be selected.

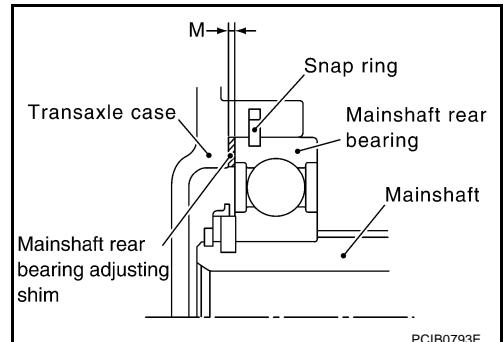
- Calculate dimension "P" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for mainshaft rear bearing.

End play: 0 - 0.06 mm (0 - 0.0024 in)

Dimension "P" = "M" - End play

- P: Thickness of adjusting shim

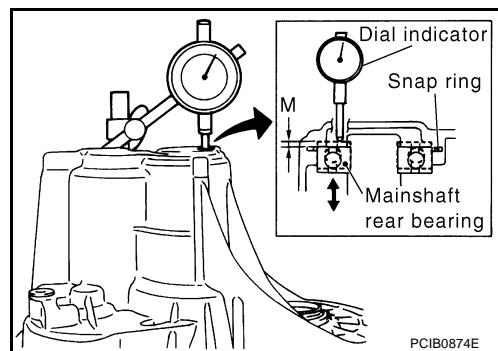
- M: Distance between mainshaft rear bearing end face and transaxle case end face



1. Install mainshaft assembly to clutch housing.
2. Install snap ring to transaxle case.
3. Install transaxle case to clutch housing, and temporarily assemble them with fixing bolts. Install temporarily snap ring to mainshaft rear bearing.

TRANSAXLE ASSEMBLY

4. Install dial indicator to bore plug mounting hole, and expand snap ring. Lift mainshaft assembly through control assembly installation hole, and push it against transaxle case. This state shall be defined as base. Moving distance of mainshaft assembly, with snap ring fit on main rear bearing, becomes "M".



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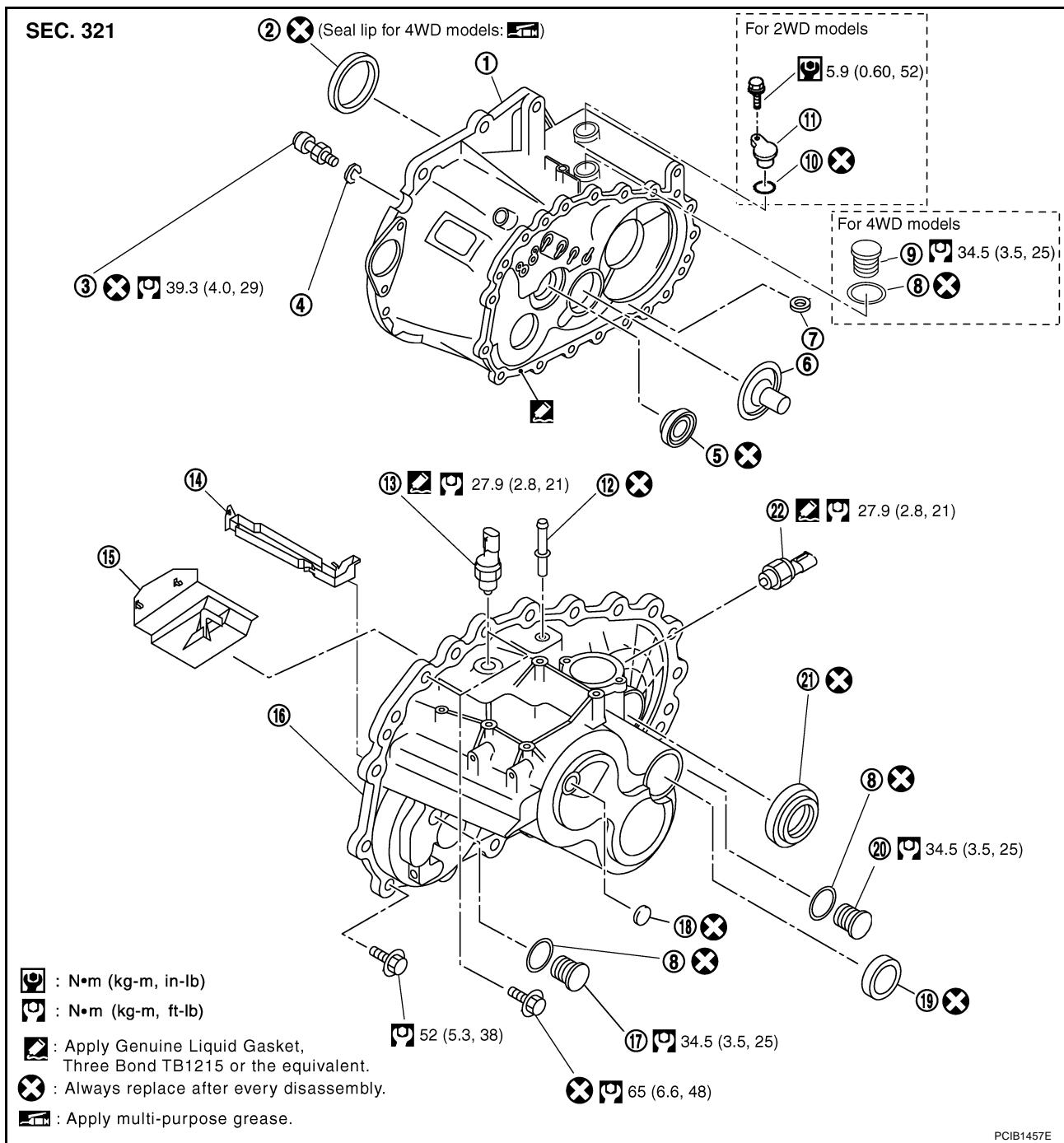
TRANSAXLE ASSEMBLY

Disassembly and Assembly (RS6F51A)

COMPONENTS

Case and Housing Components

ECS008C1

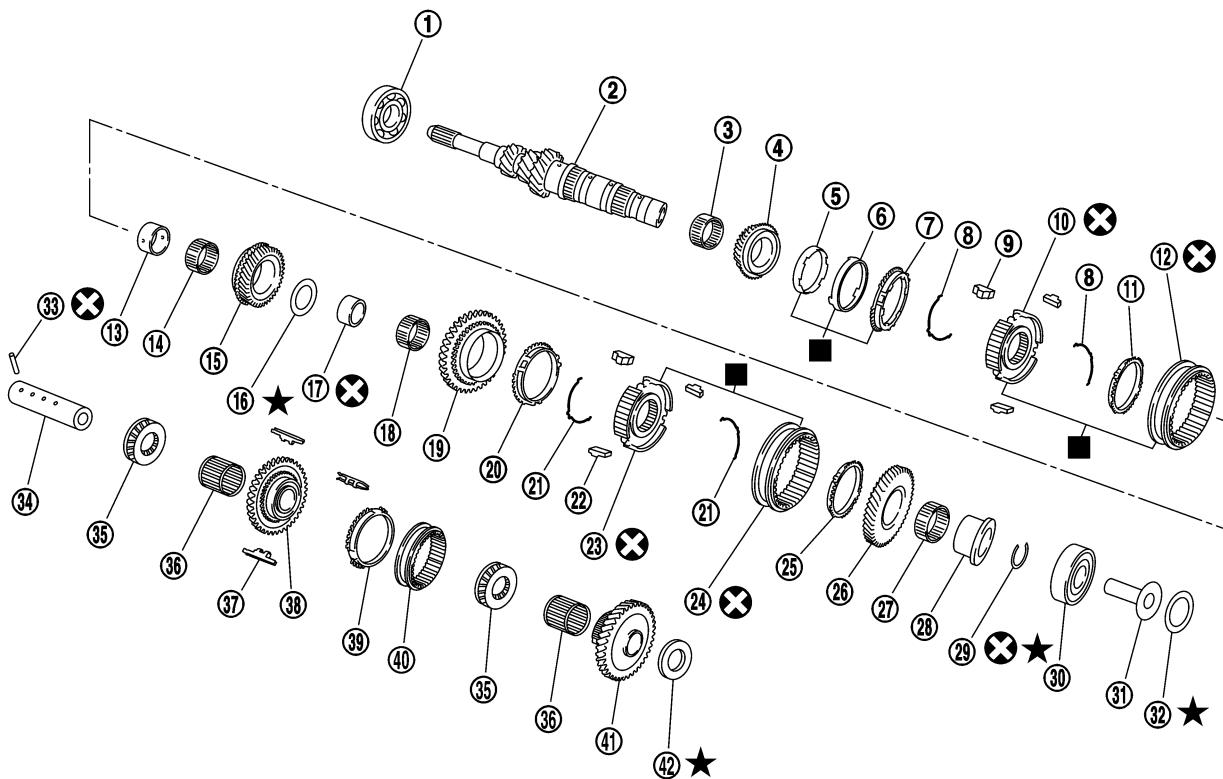


1. Clutch housing
2. Differential side oil seal
3. Ball pin
4. Washer
5. Input shaft oil seal
6. Oil channel
7. Magnet
8. Gasket
9. Filler plug
10. O-ring
11. Plug
12. Air breather tube
13. Back-up lamp switch
14. Oil gutter
15. Baffle plate
16. Transaxle case
17. Plug
18. Welch plug
19. Bore plug
20. Drain plug
21. Differential side oil seal
22. Park/Neutral position (PNP) switch

TRANSAXLE ASSEMBLY

Gear Components

SEC. 322



★ : Select with proper thickness.

✗ : Always replace after every disassembly.

█ : Replace the parts as a set.

- Apply gear oil to gears, shafts, synchronizers and bearings when assembling.

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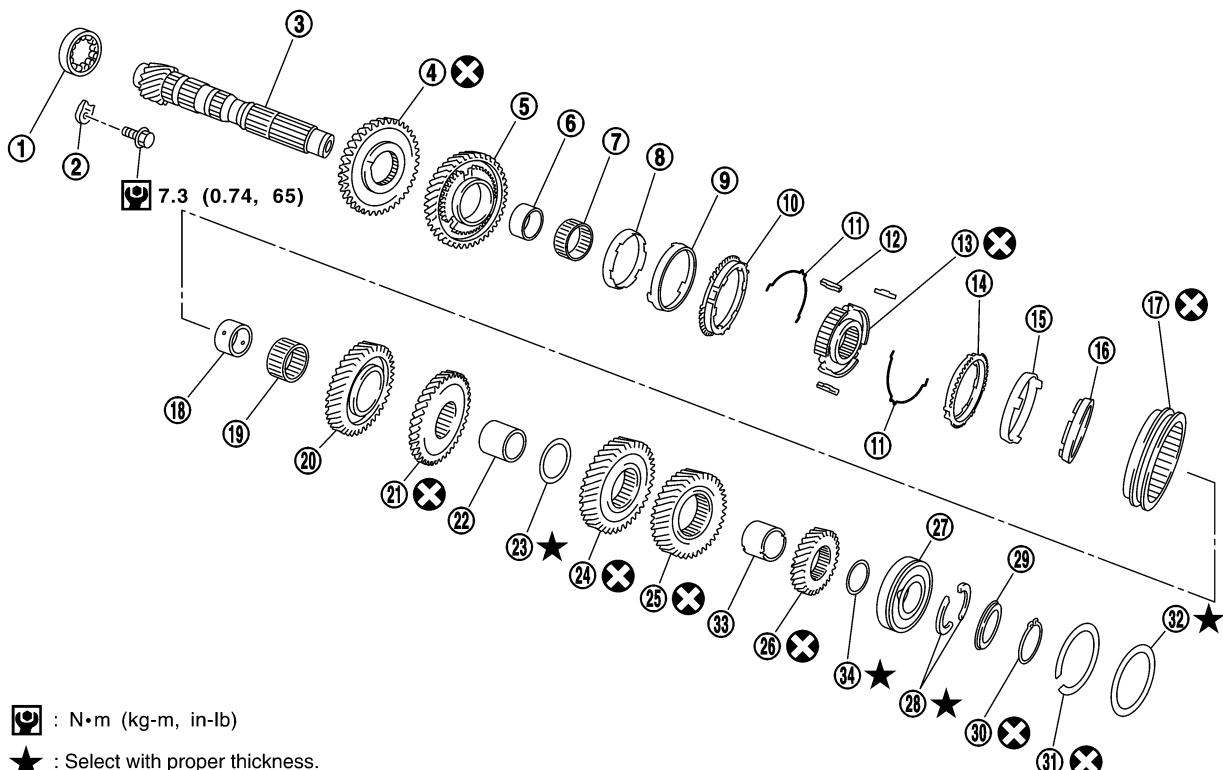
1. Input shaft front bearing	2. Input shaft	3. 3rd needle bearing
4. 3rd input gear	5. 3rd inner baulk ring	6. 3rd synchronizer cone
7. 3rd outer baulk ring	8. 3rd-4th spread spring	9. 3rd-4th shifting insert
10. 3rd-4th synchronizer hub	11. 4th baulk ring	12. 3rd-4th coupling sleeve
13. 4th input gear bushing	14. 4th needle bearing	15. 4th input gear
16. Thrust washer	17. 5th input gear bushing	18. 5th needle bearing
19. 5th input gear	20. 5th baulk ring	21. 5th-6th spread spring
22. 5th-6th shifting insert	23. 5th-6th synchronizer hub	24. 5th-6th coupling sleeve
25. 6th baulk ring	26. 6th input gear	27. 6th needle bearing
28. 6th input gear bushing	29. Snap ring	30. Input shaft rear bearing
31. Oil channel	32. Input shaft rear bearing adjusting shim	33. Retaining pin
34. Reverse idler shaft	35. Thrust needle bearing	36. Reverse idler gear needle bearing
37. Reverse insert spring	38. Reverse idler gear (Front)	39. Reverse balk ring
40. Reverse coupling sleeve	41. Reverse idler gear (Rear)	42. Reverse idler gear adjusting shim

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TRANSAXLE ASSEMBLY

SEC. 322



: N·m (kg-m, in-lb)

★ : Select with proper thickness.

✗ : Always replace after every disassembly.

- Apply gear oil to gears, shafts, synchronizers and bearings when assembling.
- Replace ⑯ and ⑰ as a set.

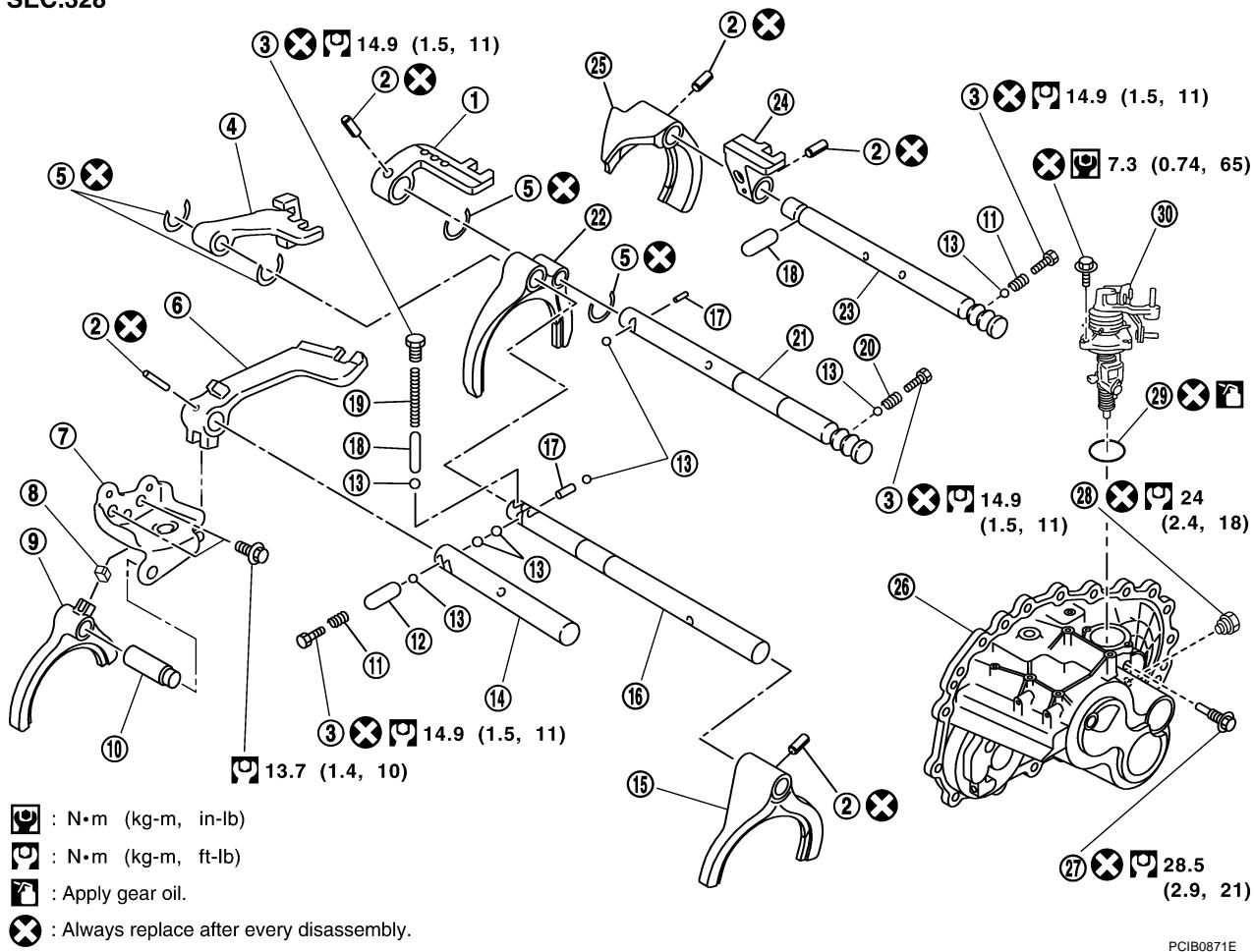
PCIB0787E

1. Mainshaft front bearing	2. Mainshaft bearing retainer	3. Mainshaft
4. Reverse main gear	5. 1st main gear	6. 1st main gear bushing
7. 1st needle bearing	8. 1st inner baulk ring	9. 1st synchronizer cone
10. 1st outer baulk ring	11. 1st-2nd spread spring	12. 1st-2nd shifting insert
13. 1st-2nd synchronizer hub	14. 2nd outer baulk ring	15. 2nd synchronizer cone
16. 2nd inner baulk ring	17. 1st-2nd coupling sleeve	18. 2nd main gear bushing
19. 2nd needle bearing	20. 2nd main gear	21. 3rd main gear
22. 3rd-4th mainshaft spacer	23. 4th main adjusting shim	24. 4th main gear
25. 5th main gear	26. 6th main gear	27. Mainshaft rear bearing
28. Mainshaft C-ring	29. C-ring holder	30. Snap ring
31. Snap ring	32. Mainshaft rear bearing adjusting shim	33. 5th-6th mainshaft spacer
34. 6th main adjusting shim		

TRANSAXLE ASSEMBLY

Shift Control Components

SEC.328

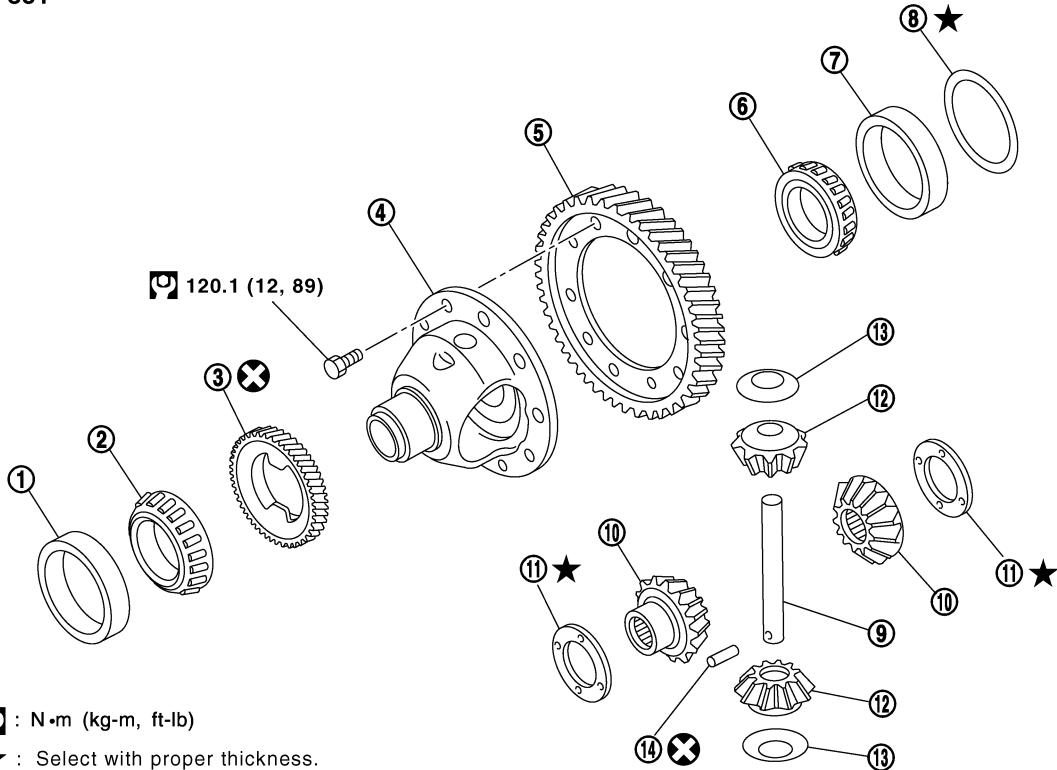


1. 3rd-4th bracket	2. Retaining pin	3. Check plug
4. 5th-6th bracket	5. Stopper ring	6. Reverse bracket
7. Reverse lever assembly	8. Shifter cap	9. Reverse shift fork
10. Reverse fork rod	11. Check spring	12. Shift check sleeve
13. Check ball	14. Reverse bracket fork rod	15. 5th-6th shift fork
16. 5th-6th fork rod	17. Interlock pin	18. Shift check sleeve
19. Check spring	20. Check spring	21. 3rd-4th fork rod
22. 3rd-4th shift fork	23. 1st-2nd fork rod	24. 1st-2nd fork rod bracket
25. 1st-2nd shift fork	26. Transaxle case	27. Stopper bolt
28. Shift check	29. O-ring	30. Control assembly

TRANSAXLE ASSEMBLY

Final Drive Components

SEC. 381

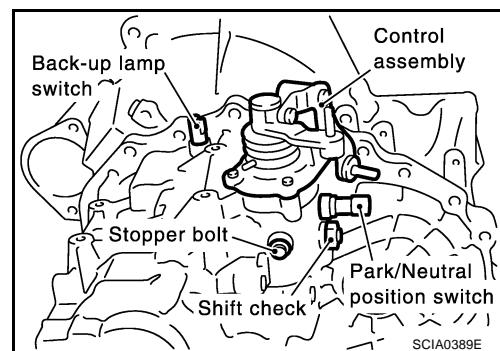


PCIB0869E

1. Differential side bearing outer race (clutch housing side)
2. Differential side bearing (clutch housing side)
3. Speedometer drive gear (for 2WD models)
4. Differential case
5. Final gear
6. Differential side bearing (transaxle case side)
7. Differential side bearing outer race (transaxle case side)
8. Differential side bearing adjusting shim
9. Pinion mate shaft
10. Side gear
11. Side gear thrust washer
12. Pinion mate gear
13. Pinion mate thrust washer
14. Retaining pin

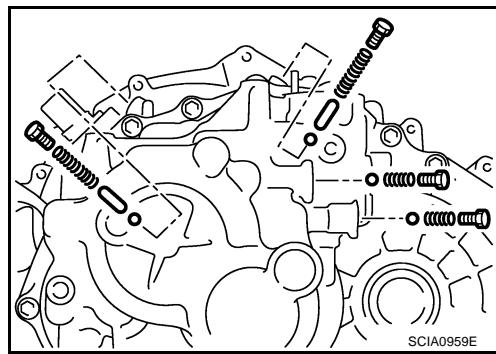
DISASSEMBLY

1. Remove plug (for 2WD models) or filler plug (for 4WD models) from clutch housing.
2. Remove drain plug and plug from transaxle case.
3. Remove park/neutral position switch and back-up lamp switch from transaxle case.
4. Remove shift check and stopper bolt from transaxle case, and then remove control assembly from transaxle case.



TRANSAXLE ASSEMBLY

5. Remove check plugs (4 pieces), check springs (4 pieces), check balls (4 pieces) and shift check sleeve (2 pieces).



6. Remove transaxle case mounting bolts.

7. Remove bore plug from transaxle case.

CAUTION:

Be careful not to damage transaxle case.

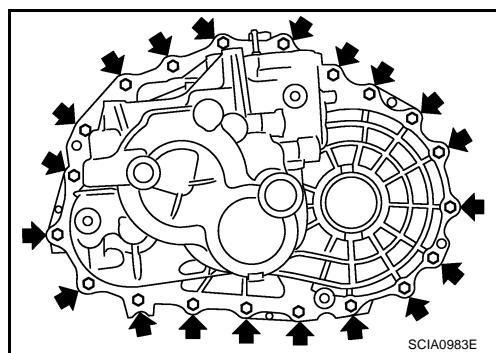
8. While spreading the snap ring of mainshaft rear bearing located at bore plug hole, remove transaxle case from clutch housing.

9. Remove oil gutter, baffle plate from transaxle case.

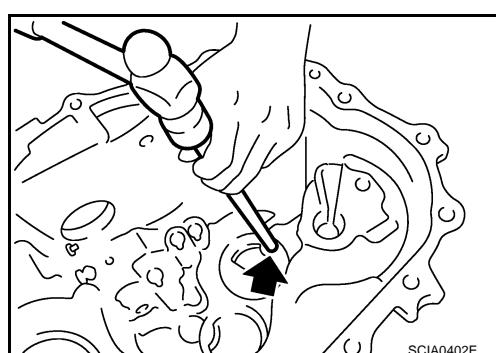
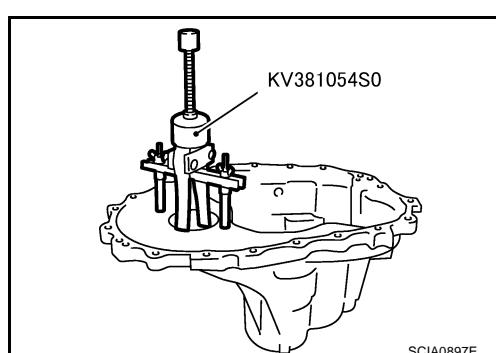
10. Remove snap ring, mainshaft rear bearing adjusting shim from transaxle case.

11. Remove input shaft rear bearing adjusting shim and reverse idler gear adjusting shim.

12. Remove differential side bearing outer race from transaxle case using the puller, and then remove differential side bearing adjusting shim from transaxle case.



13. Remove Welch plug from transaxle case.



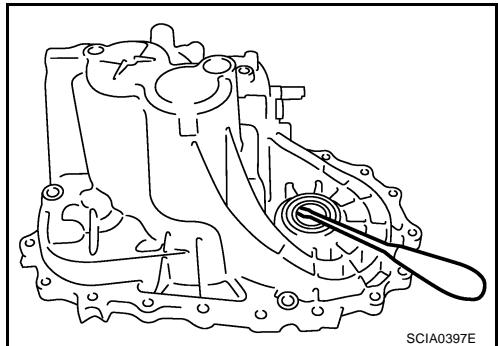
TRANSAXLE ASSEMBLY

14. Remove differential side oil seal from transaxle case.

CAUTION:

Be careful not to damage transaxle case.

15. Remove magnet from clutch housing.

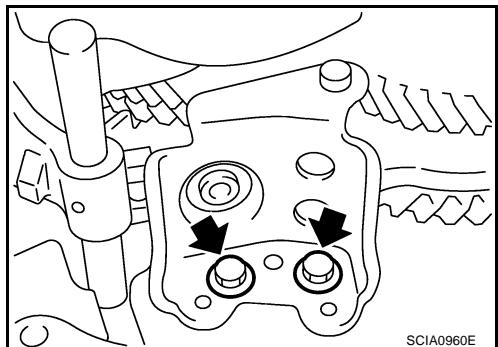


16. With shift lever in 5th position, remove mounting bolts from reverse lever assembly. Lift reverse lever assembly to remove.

CAUTION:

Be careful not to lose shifter cap.

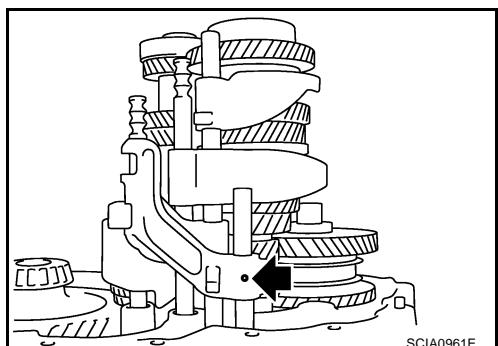
17. Pull out reverse fork rod then remove reverse shift fork.



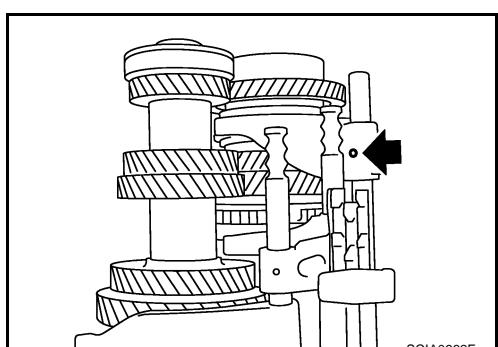
18. Remove retaining pin of reverse bracket using a pin punch.

19. Pull out reverse bracket and reverse bracket fork rod.

20. Remove check ball (2 pieces) and interlock pin from clutch housing.



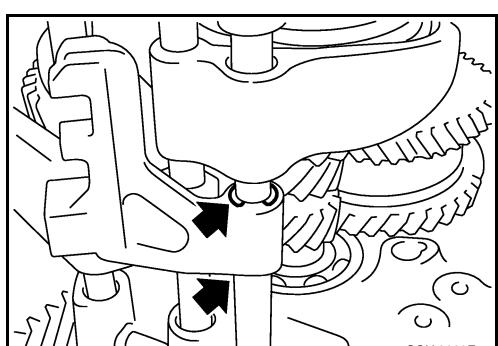
21. Shift 3rd-4th fork rod to 3rd position. Remove retaining pin of 5th - 6th shift fork using a pin punch.



22. Remove stopper rings for 5th-6th bracket.

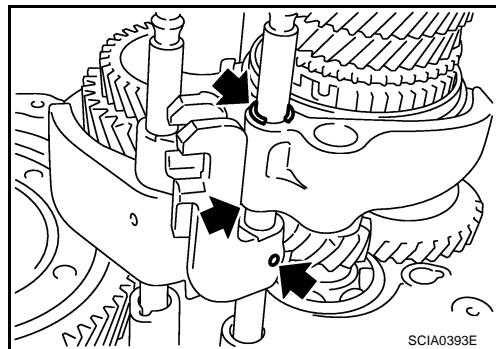
23. Pull out 5th-6th fork rod and remove 5th-6th shift fork and 5th-6th bracket.

24. Remove check balls (2 pieces) and interlock pin.

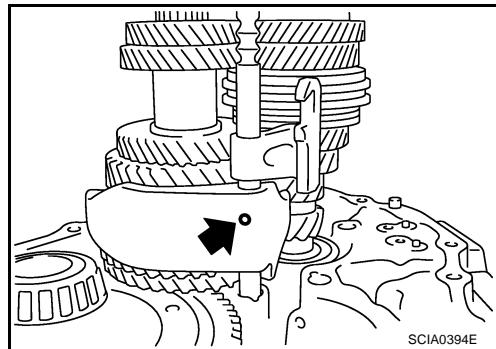


TRANSAXLE ASSEMBLY

25. Remove retaining pin of 3rd-4th bracket using a pin punch.
26. Remove stopper rings for 3rd-4th shift fork.
27. Pull out 3rd-4th fork rod and remove 3rd-4th shift fork and 3rd-4th bracket.
28. Remove shift check sleeve from clutch housing.



29. Remove retaining pin of 1st-2nd shift fork using a pin punch.
30. Pull out 1st-2nd fork rod with 1st-2nd bracket.
31. Remove 1st-2nd shift fork.
32. Remove retaining pin of 1st-2nd bracket using a pin punch and separate fork rod and 1st-2nd bracket.

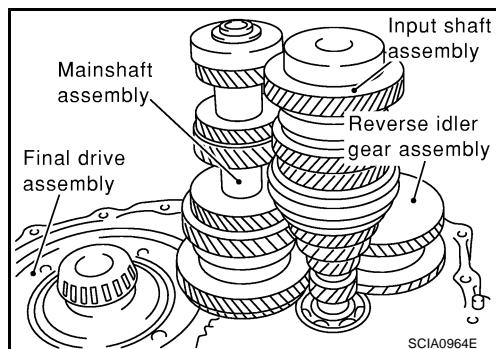


33. Remove gear components from clutch housing in the following procedure.
 - a. Remove input shaft assembly, mainshaft assembly and reverse idler gear assembly as a set, tapping input shaft with plastic hammer.

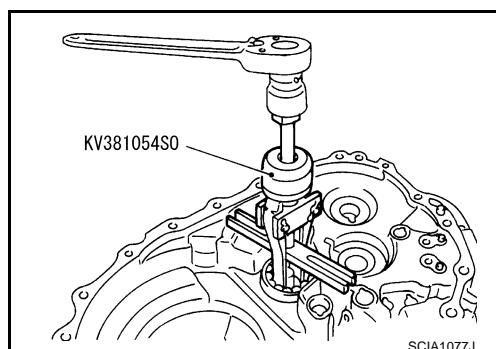
CAUTION:

Always withdraw mainshaft straight out. Failure to do so can damage resin oil channel on clutch housing side.

- b. Remove final drive assembly.



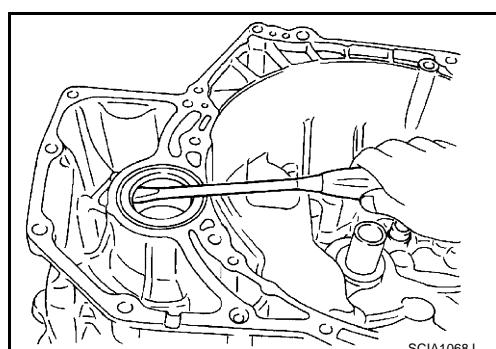
34. Remove mainshaft bearing retainer and then mainshaft front bearing from clutch housing using the puller.
35. Remove oil channel from clutch housing.



36. Remove differential side oil seal from clutch housing.

CAUTION:

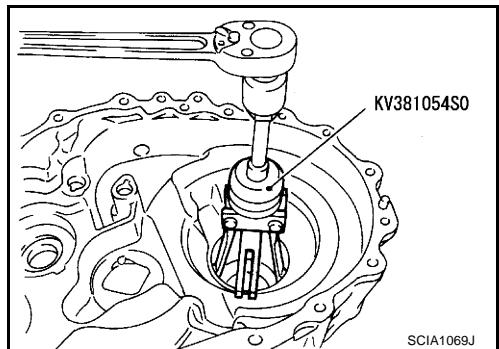
Be careful not to damage clutch housing.



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TRANSAXLE ASSEMBLY

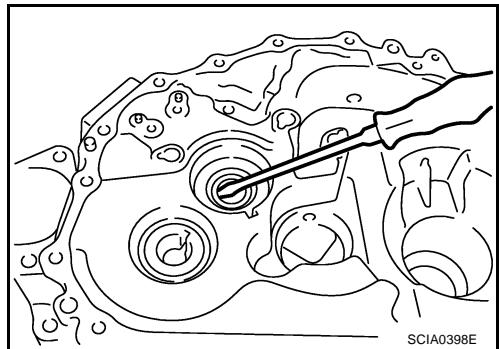
37. Remove differential side bearing outer race from clutch housing using the puller.



38. Remove input shaft oil seal from clutch housing.

CAUTION:

Be careful not to damage clutch housing.



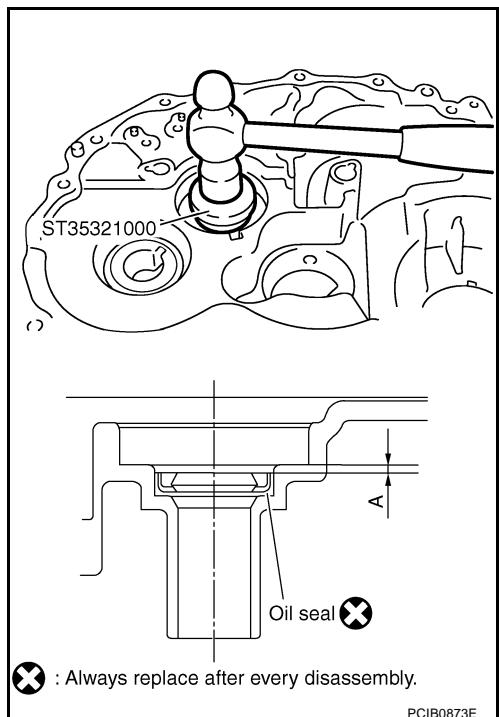
ASSEMBLY

1. Install input shaft oil seal to clutch housing using the drift.

Dimension **A: 1.8 - 2.8 mm (0.071 - 0.110 in)**

CAUTION:

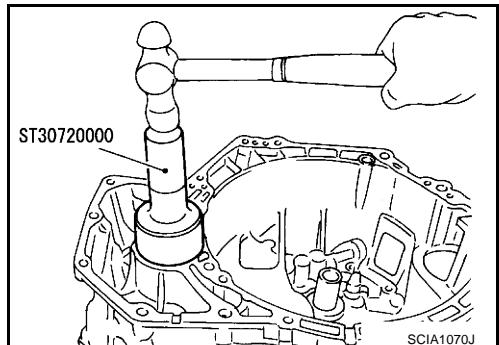
Do not reuse input shaft oil seal.



2. Install differential side oil seal until it become flush with end face of clutch housing using the drift.

CAUTION:

- Do not reuse differential side oil seal.
- Apply multi-purpose grease onto oil seal lip. (For 4WD models)

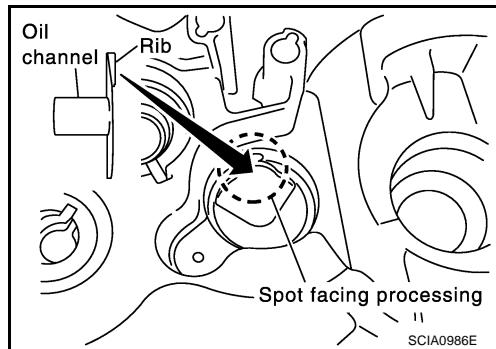


TRANSAXLE ASSEMBLY

3. Install oil channel on mainshaft side.

CAUTION:

Be careful with the orientation of installation.

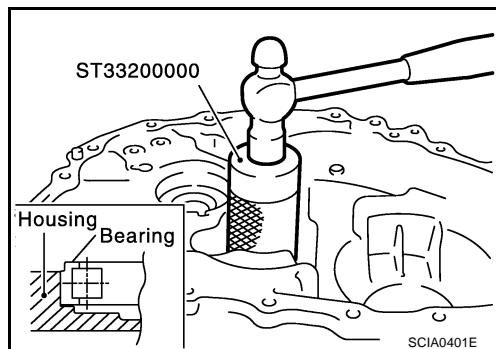


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4. Install mainshaft front bearing to clutch housing using the drift.

CAUTION:

Be careful with the orientation of installation.

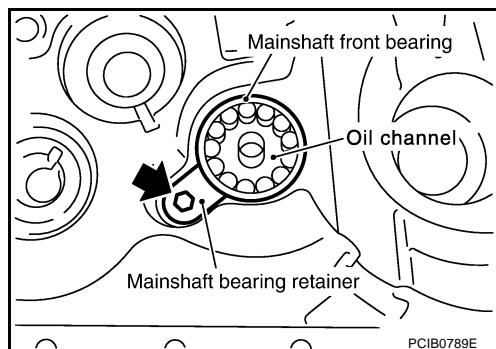


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5. Install mainshaft bearing retainer to clutch housing and tighten mounting bolt to the specified torque. Refer to [MT-41, "Gear Components"](#).

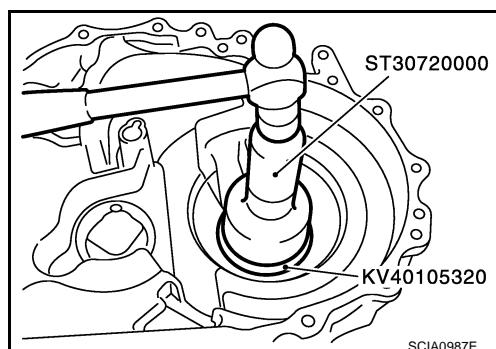
CAUTION:

Install with punched surface facing up.

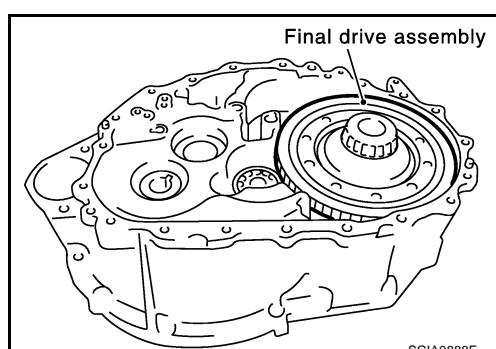


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6. Install differential side bearing outer race to clutch housing using the drifts.



7. Install final drive assembly into clutch housing.



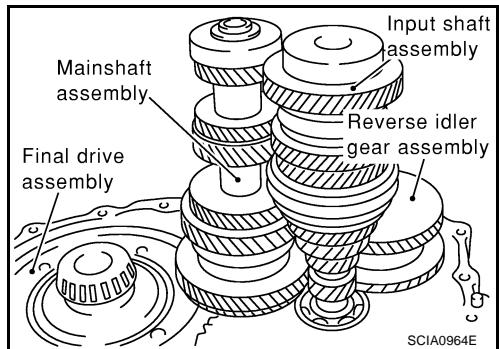
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TRANSAXLE ASSEMBLY

8. Install input shaft assembly, mainshaft assembly, and reverse idler gear assembly into clutch housing.

CAUTION:

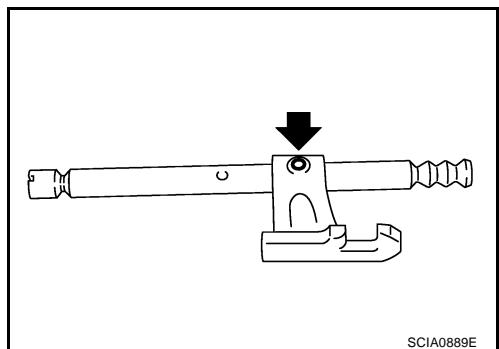
Be sure not to damage input shaft oil seal.



9. Install 1st-2nd bracket onto 1st-2nd fork rod, and then install retaining pin to 1st-2nd bracket.

CAUTION:

Do not reuse retaining pin.

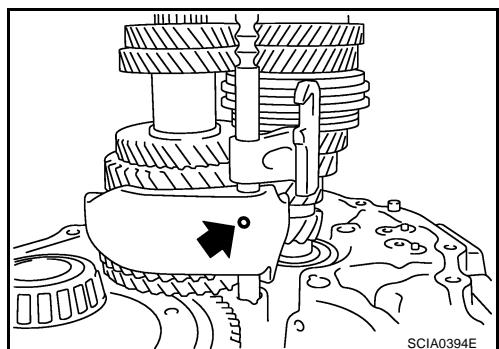


10. Install 1st-2nd fork rod and 1st-2nd shift fork, and then install retaining pin to 1st-2nd shift fork.

CAUTION:

Do not reuse retaining pin.

11. Install shift check sleeve to clutch housing.



12. Install interlock pin to 3rd-4th fork rod.

13. Install 3rd-4th bracket, 3rd-4th shift fork, and 3rd-4th fork rod.

14. Install stopper rings onto 3rd-4th shift fork.

CAUTION:

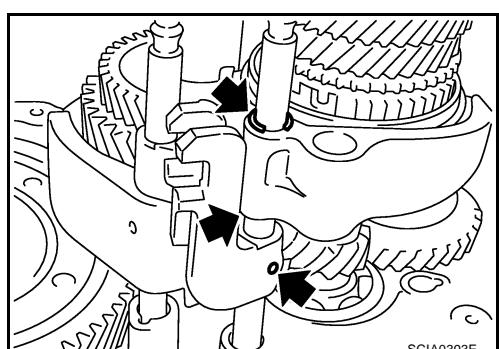
Do not reuse stopper ring.

15. Install retaining pin onto 3rd-4th bracket.

CAUTION:

Do not reuse retaining pin.

16. Install 2 check balls to clutch housing.

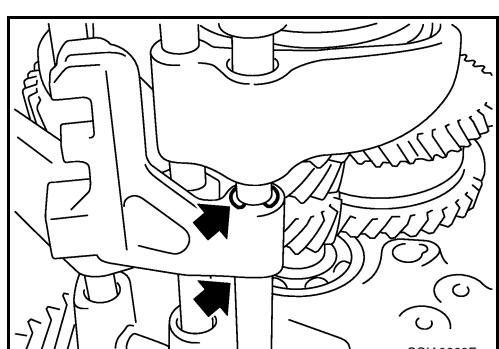


17. Install 5th-6th bracket, 5th-6th shift fork, and 5th-6th fork rod with interlock pin.

18. Install stopper rings onto 5th-6th bracket.

CAUTION:

Do not reuse stopper ring.



TRANSAXLE ASSEMBLY

19. Install retaining pin onto 5th-6th shift fork.

CAUTION:

Do not reuse retaining pin.

20. Install 2 check balls.

21. Install check ball, shift check sleeve, check spring and check plug.

CAUTION:

- **Do not reuse check plug.**
- **Do not drop check ball.**

22. Install reverse bracket fork rod and reverse bracket.

23. Install retaining pin onto reverse bracket.

CAUTION:

Do not reuse retaining pin.

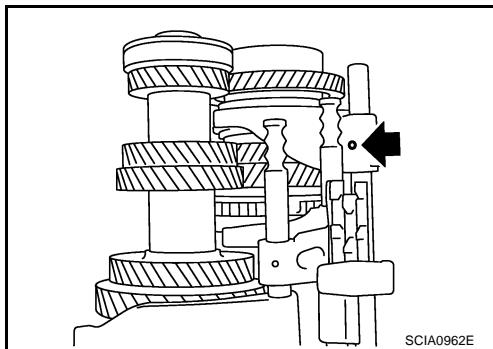
24. Install reverse shift fork and reverse fork rod.

25. Install reverse lever assembly following the procedures below.

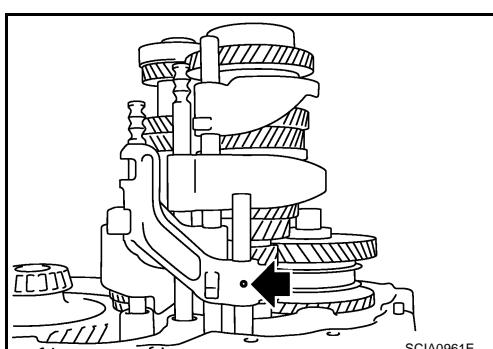
a. Install shifter cap onto reverse lever assembly cam, and then install them onto reverse shift fork.

CAUTION:

Do not drop shifter cap.

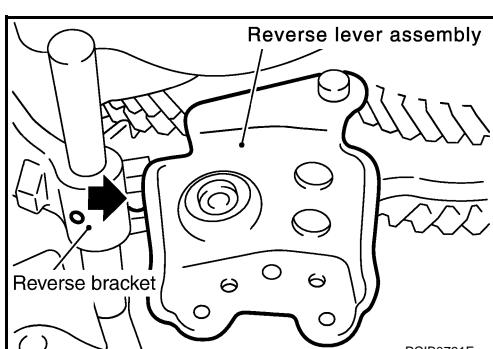


SCIA0962E



SCIA0961E

b. While lifting reverse shift fork, align cam with reverse bracket.



PCIB0791E

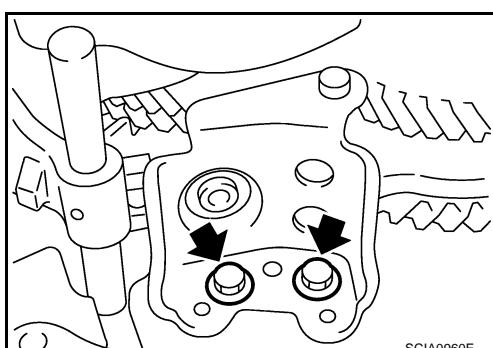
c. Install reverse lever assembly to clutch housing, and then tighten mounting bolts to the specified torque. Refer to [MT-43, "Shift Control Components"](#).

26. Install check ball, shift check sleeve, check spring and check plug to clutch housing.

CAUTION:

- **Do not reuse check plug.**
- **Do not drop check ball.**

27. Install the magnet onto clutch housing.



SCIA0960E

28. Install differential side oil seal until it is flush with end face of transaxle case using the drift.

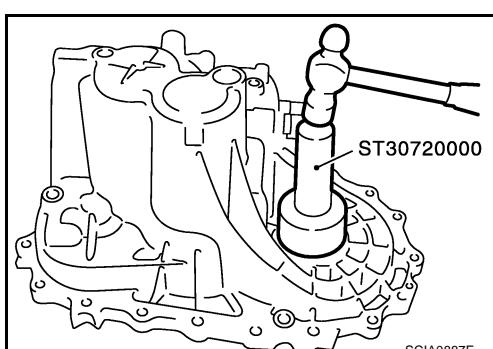
CAUTION:

Do not reuse differential side oil seal.

29. Install selected differential side bearing adjusting shim and differential side bearing outer race.

- For selection of adjusting shim, refer to [MT-54, "Differential Side Bearing Preload"](#).

30. Install selected reverse idler gear adjusting shim onto reverse idler gear assembly.



SCIA0887E

TRANSAXLE ASSEMBLY

- For selection of adjusting shims, refer to [MT-55, "Reverse Idler Gear End Play"](#) .
- 31. Install selected input shaft rear bearing adjusting shim onto input shaft.
 - For selection of adjusting shims, refer to [MT-56, "Input Shaft End Play"](#) .

32. Install baffle plate and oil gutter to transaxle case.
33. Install transaxle case following the procedures below.
 - a. Install selected mainshaft rear bearing adjusting shim into transaxle case.
 - For selection of adjusting shims, refer to [MT-57, "Mainshaft End Play"](#) .
 - b. Temporarily install snap ring of mainshaft rear bearing into transaxle case.

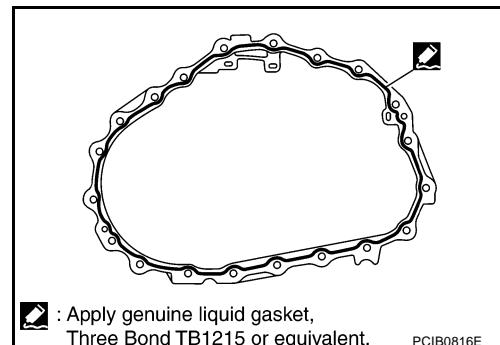
CAUTION:

Do not reuse snap ring.

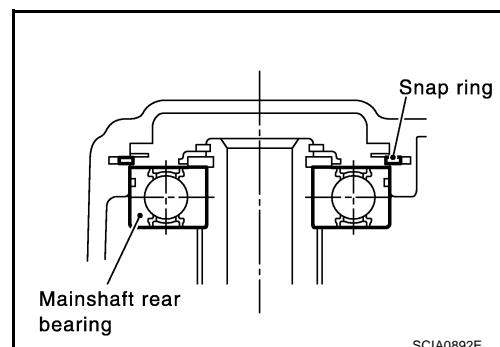
- c. Apply recommended sealant to mating surfaces of transaxle case and clutch housing.

CAUTION:

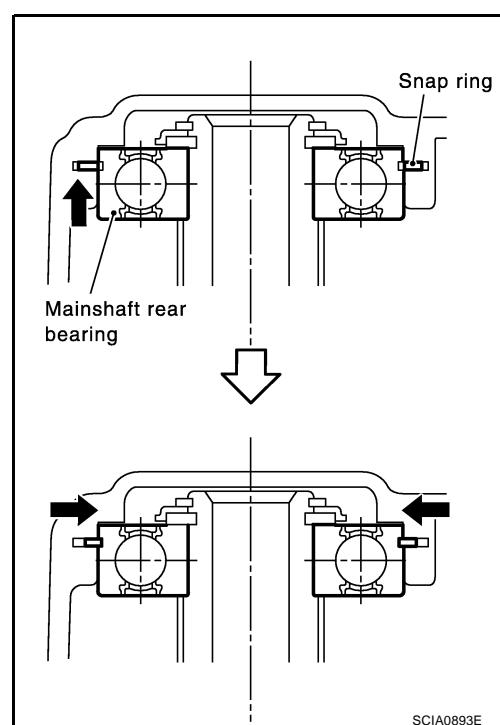
Remove old sealant adhering to mounting surfaces. Also remove any moisture, oil, or foreign material adhering to application and mounting surfaces.



- d. With snap ring of mainshaft rear bearing temporarily installed, place transaxle case over clutch housing.



- e. Through bore plug mounting hole, with snap ring stretched, and lift up mainshaft assembly from the control assembly mounting hole.
- f. Securely install snap ring onto mainshaft rear bearing.



TRANSAXLE ASSEMBLY

g. Tighten mounting bolts to the specified torque.

Bolt A:

 52 N·m (5.3 kg·m, 38 ft-lb)

Bolt B:

 65 N·m (6.6 kg·m, 48 ft-lb)

CAUTION:

Always replace bolts B as they are self-sealing bolts.

h. Apply gear oil to O-ring and install it to control assembly. Then install control assembly to transaxle case. Tighten bolts to the specified torque. Refer to [MT-43, "Shift Control Components"](#) .

CAUTION:

Do not reuse O-ring.

i. Install shift check to transaxle case, and then tighten shift check to the specified torque. Refer to [MT-43, "Shift Control Components"](#) .

CAUTION:

Does not reuse shift check.

j. Install stopper bolt to transaxle case, and then tighten stopper bolt to the specified torque. Refer to [MT-43, "Shift Control Components"](#) .

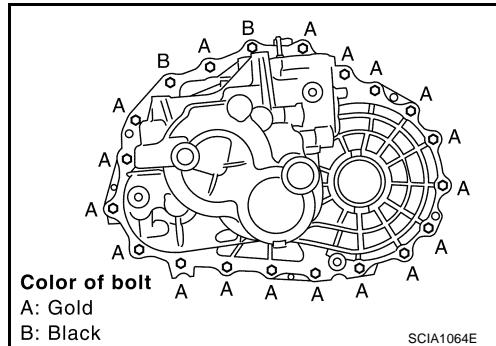
CAUTION:

Do not reuse stopper bolt.

34. Install bore plug to transaxle case using the drift.

CAUTION:

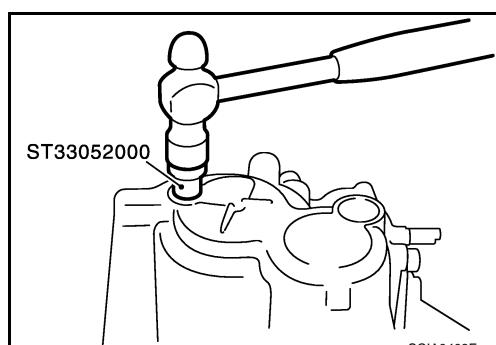
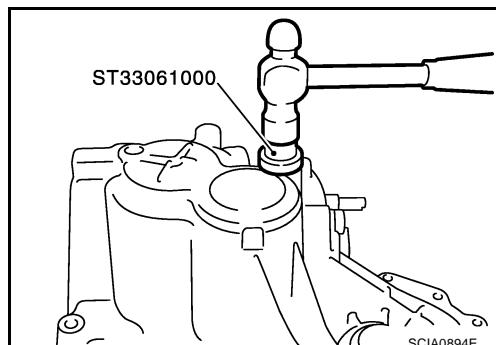
Do not reuse bore plug.



35. Install welch plug to transaxle case using the drift.

CAUTION:

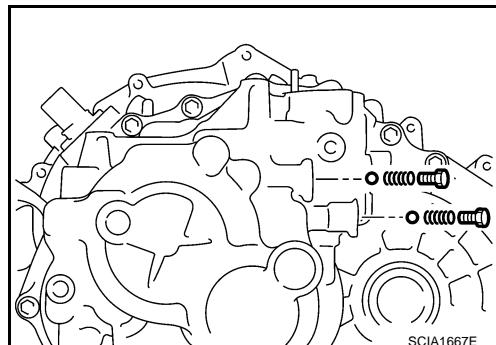
Do not reuse welch plug.



36. Install 2 check balls, 2 check springs and 2 check plugs to transaxle case, and then tighten check plug to the specified torque. Refer to [MT-43, "Shift Control Components"](#) .

CAUTION:

Do not reuse check plug.



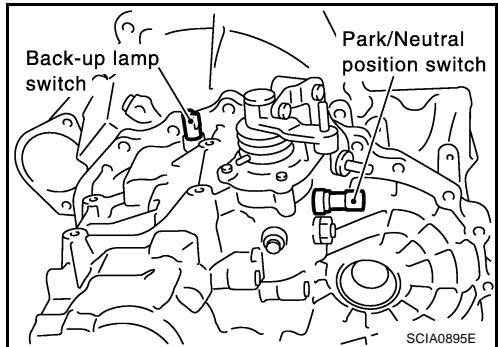
TRANSAXLE ASSEMBLY

37. Apply recommended sealant to threads of park/neutral position switch and back-up lamp switch. Then install them to transaxle case and tighten to the specified torque. Refer to [MT-40, "Case and Housing Components"](#).

38. Install gaskets onto drain plug and plug, and then install them into transaxle case. Tighten drain plug and plug to the specified torque. Refer to [MT-40, "Case and Housing Components"](#).

CAUTION:

Do not reuse gasket.



39. Install O-ring onto plug (for 2WD models) or gasket onto filler plug (for 4WD models), and then install it into clutch housing. Tighten plug mounting bolt or filler plug to the specified torque. Refer to [MT-40, "Case and Housing Components"](#).

CAUTION:

- **Do not reuse O-ring or gasket.**
- **After oil is filled, tighten plug mounting bolt or filler plug to specified torque.**

ADJUSTMENT

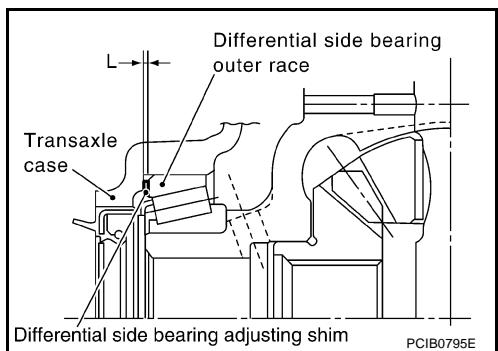
Differential Side Bearing Preload

- When adjusting differential side bearing preload, select adjusting shim for differential side bearing. To select adjusting shim, measure clearance "L" between transaxle case and differential side bearing outer race. Refer to [MT-108, "DIFFERENTIAL SIDE BEARING ADJUSTING SHIM\(S\)"](#).

CAUTION:

Up to 2 adjusting shims can be selected.

- Calculate dimension "L" (thickness of adjusting shim) using the following procedure to satisfy specification of preload for differential side bearing.



Preload: 0.15 - 0.21 mm (0.0059 - 0.0083 in)

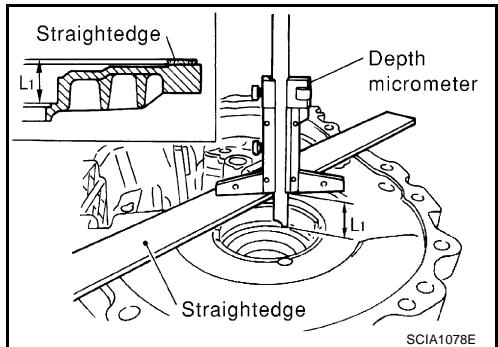
Dimension "L" = (L₁ - L₂) + Preload

L: **Thickness of adjusting shim**

L₁: **Distance between transaxle case end face and mounting face of adjusting shim**

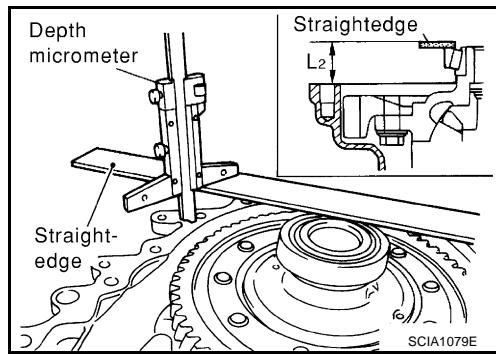
L₂: **Distance between differential side bearing outer race and clutch housing end face**

1. Using depth micrometer and straightedge, measure dimension "L₁" between transaxle case end face and mounting face of adjusting shim.
2. Install differential side bearing outer race onto differential side bearing on final gear side. Holding lightly differential side bearing outer race horizontally by hand, rotate final gear five times or more (for smooth movement of bearing roller).

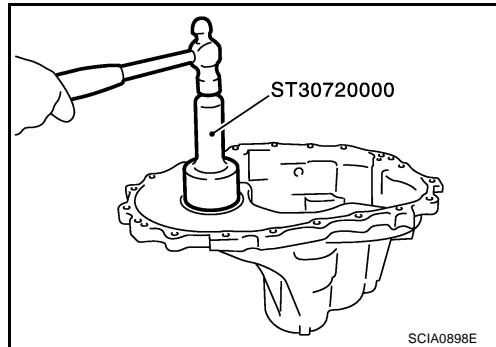


TRANSAXLE ASSEMBLY

3. Using depth micrometer and straightedge as shown in the figure, measure dimension "L2" between differential side bearing outer race and clutch housing end face.



4. Install selected differential side bearing adjusting shim, and then install differential side bearing outer race using the drift.



Reverse Idler Gear End Play

- When adjusting reverse idler gear end play, select adjusting shim for reverse idler gear. To select adjusting shim, measure clearance between transaxle case and reverse idler gear. Refer to [MT-107, "REVERSE IDLER GEAR ADJUSTING SHIM"](#).

CAUTION:

Only 1 adjusting shim can be selected.

- Calculate dimension "Q" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for reverse idler gear.

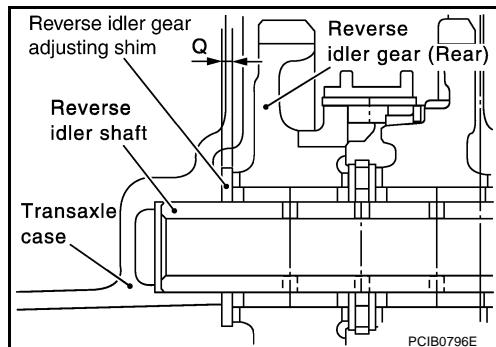
End play: 0.04 - 0.10 mm (0.0016 - 0.0039 in)

Dimension "Q" = (Q1 - Q2) - End play

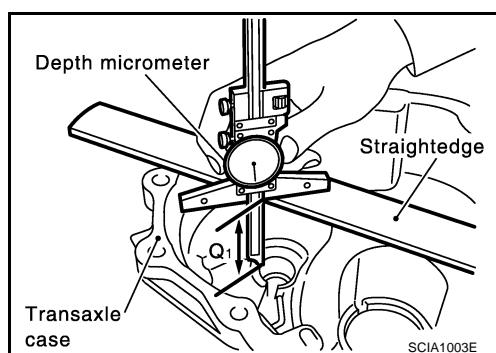
Q: Thickness of adjusting shim

Q1 : Distance between transaxle case end face and mounting face of adjusting shim

Q2 : Distance between clutch housing end face and end face of reverse idler gear (Rear)

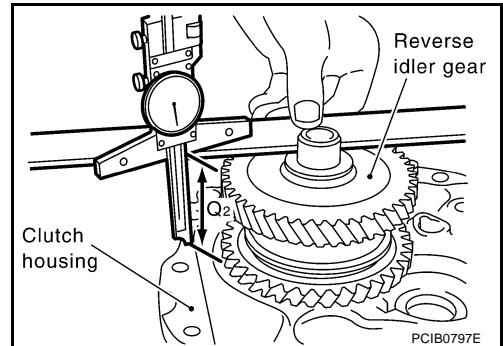


1. Using depth micrometer and straightedge, measure dimension "Q1" between transaxle case end face and mounting face of adjusting shim.



TRANSAXLE ASSEMBLY

- Using depth micrometer and straightedge as shown in the figure, measure dimension "Q₂" between clutch housing end face and end face of reverse idler gear (Rear).
- Install selected reverse idler gear adjusting shim onto reverse idler gear assembly.



Input Shaft End Play

- When adjusting input shaft end play, select adjusting shim for input shaft rear bearing. To select adjusting shim, measure clearance between transaxle case and input shaft rear bearing. Refer to [MT-107, "INPUT SHAFT REAR BEARING ADJUSTING SHIM"](#).

CAUTION:

Only 1 adjusting shim can be selected.

- Calculate dimension "O" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for input shaft rear bearing.

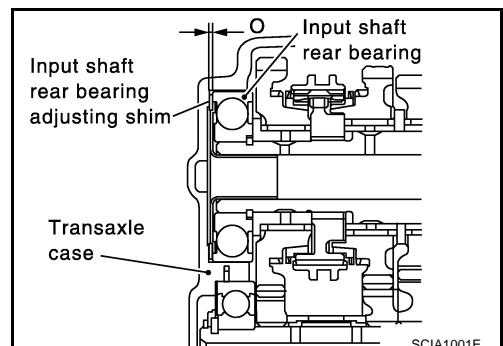
End play: 0 - 0.06 mm (0 - 0.0024 in)

Dimension "O" = (O₁ - O₂) - End play

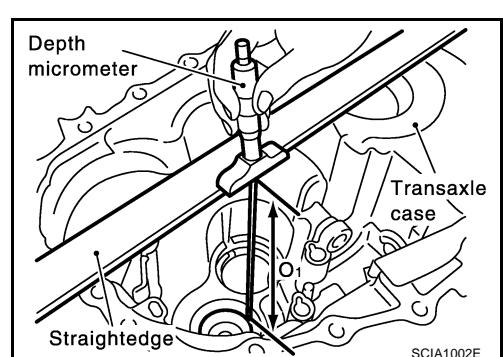
O: Thickness of adjusting shim

O₁ : Distance between transaxle case end face and mounting face of adjusting shim

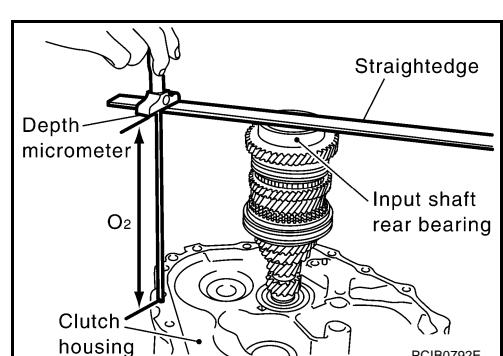
O₂ : Distance between clutch housing end face and end face of input shaft rear bearing



- Using depth micrometer and straightedge, measure dimension "O₁" between transaxle case end face and mounting face of adjusting shim.



- Using depth micrometer and straightedge as shown in the figure, measure dimension "O₂" between clutch housing end face and end face of input shaft rear bearing.
- Install selected input shaft rear bearing adjusting shim onto input shaft.



TRANSAXLE ASSEMBLY

Mainshaft End Play

- When adjusting mainshaft end play, select adjusting shim for mainshaft rear bearing. To select adjusting shim, measure clearance "M" between transaxle case and mainshaft rear bearing. Refer to [MT-107, "MAINSHAFT REAR BEARING ADJUSTING SHIM"](#).

CAUTION:

Only 1 adjusting shim can be selected.

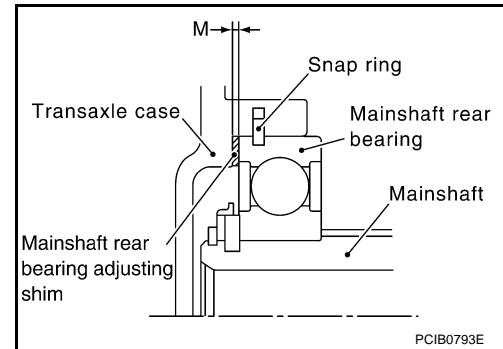
- Calculate dimension "P" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for mainshaft rear bearing.

End play: 0 - 0.06 mm (0 - 0.0024 in)

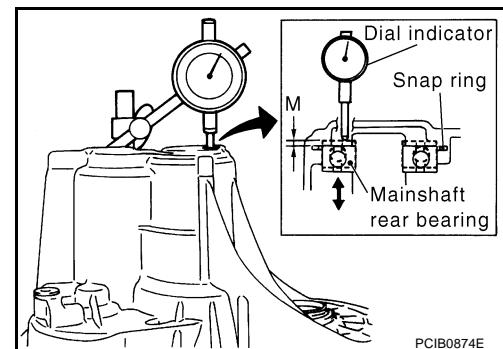
Dimension "P" = "M" - End play

P: Thickness of adjusting shim

M: Distance between mainshaft rear bearing end face and transaxle case end face



- Install mainshaft assembly to clutch housing.
- Install snap ring to transaxle case.
- Install transaxle case to clutch housing, and temporarily assemble them with fixing bolts. Install temporarily snap ring to mainshaft rear bearing.
- Install dial indicator to bore plug mounting hole, and expand snap ring. Lift mainshaft assembly through control assembly installation hole, and push it against transaxle case. This state shall be defined as base. Moving distance of mainshaft assembly, with snap ring fit on main rear bearing, becomes "M".



INPUT SHAFT AND GEARS

INPUT SHAFT AND GEARS

PFP:32200

Disassembly and Assembly (RS5F51A) DISASSEMBLY

ECS008C4

1. Before disassembling, measure end play for 3rd, 4th, and 5th input gears.

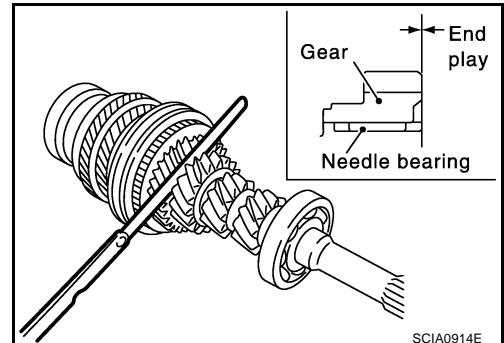
End play standard value

3rd input gear : 0.18 - 0.31 mm (0.0071 - 0.0122 in)

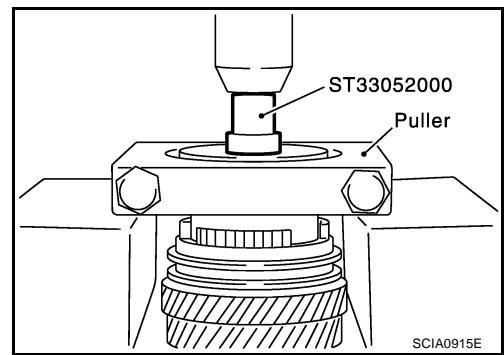
4th input gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

5th input gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)

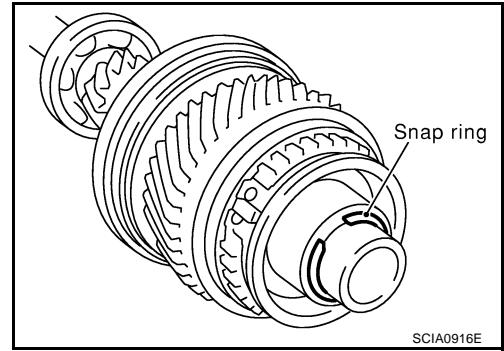
2. Remove oil channel.



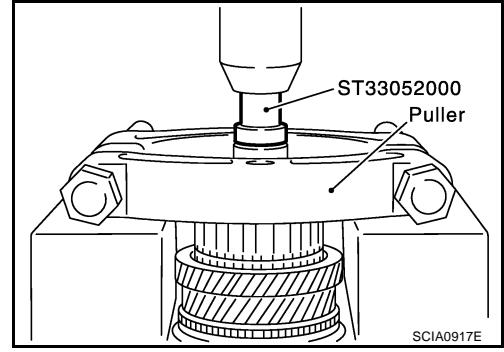
3. Press out input shaft rear bearing using the drift and a puller.



4. Remove the snap ring.

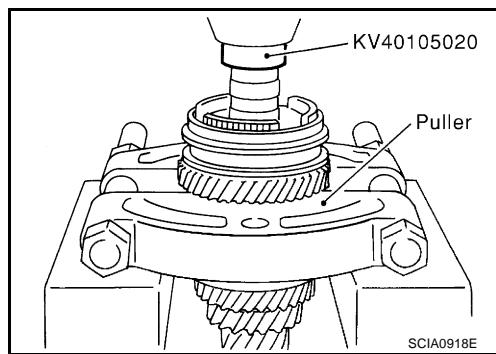


5. Press out input shaft bearing spacer and 5th stopper using the drift and a puller.

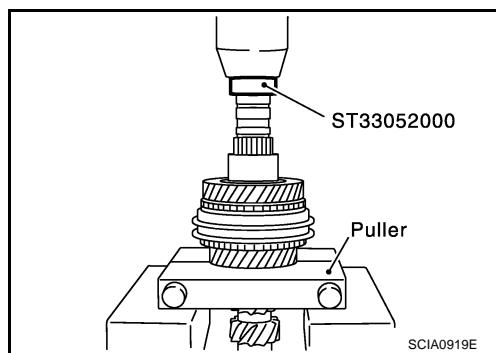


INPUT SHAFT AND GEARS

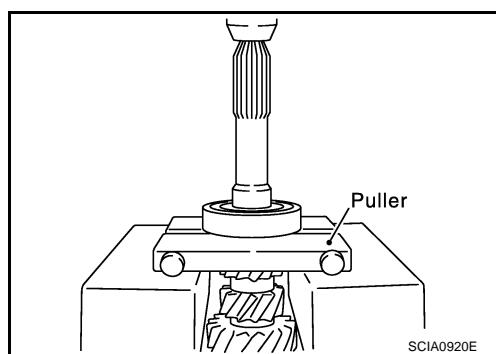
6. Press out 5th input gear and 5th synchronizer hub assembly using the drift and a puller.
7. Remove 5th needle bearing.



8. Press out 5th input gear bushing, thrust washer, 4th input gear, 4th needle bearing, 4th input gear bushing, 3rd-4th synchronizer hub assembly and 3rd input gear using the drift and a puller.
9. Remove 3rd needle bearing.



10. Press out input shaft front bearing using a puller.

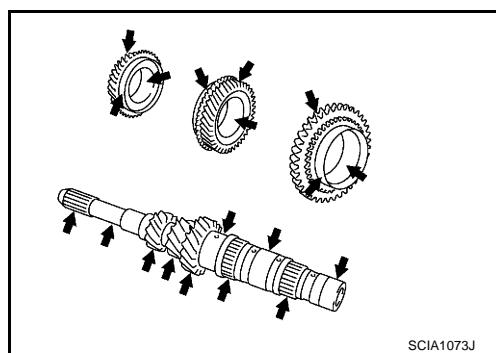


INSPECTION AFTER DISASSEMBLY

Input Shaft and Gears

Check items below. If necessary, replace them with new ones.

- Damage, peeling, dent, uneven wear, bending, etc. of shaft
- Excessive wear, damage, peeling, etc. of gears

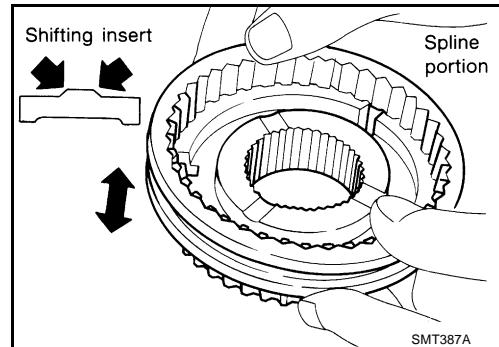


INPUT SHAFT AND GEARS

Synchronizer

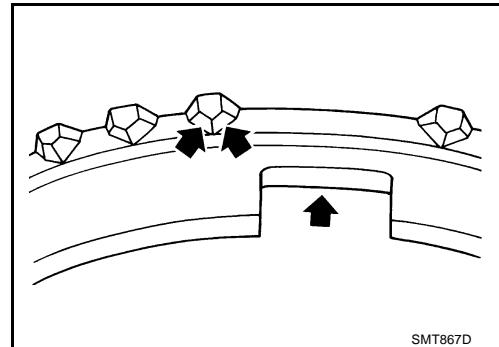
Check items below. If necessary, replace them with new ones.

- Damage and excessive wear of contact surfaces of coupling sleeve, synchronizer hub and shifting insert
- Coupling sleeve and synchronizer hub must move smoothly.



SMT387A

- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



SMT867D

BAULK RING CLEARANCE

- **Single-cone synchronizer (4th and 5th)**

Push baulk ring on the cone, and measure the clearance between baulk ring and cone. If measurement is below limit, replace it with a new one.

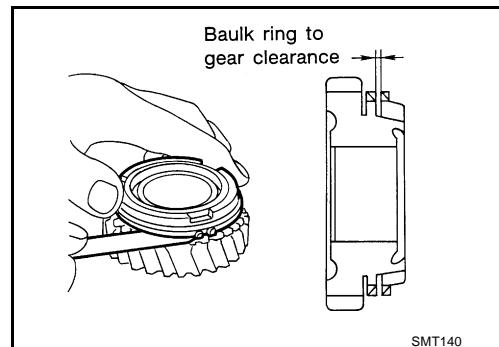
Clearance

Standard value

4th : 0.9 - 1.45 mm (0.035 - 0.057 in)

5th : 0.95 - 1.4 mm (0.037 - 0.055 in)

Limit value : 0.7 mm (0.028 in)



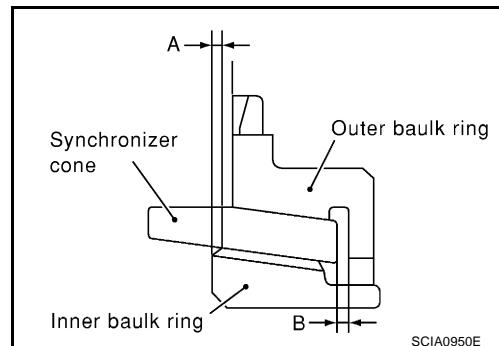
SMT140

- **Double-cone synchronizer (3rd)**

Check the clearance between outer baulk ring, synchronizer cone and inner baulk ring as follows.

CAUTION:

The clearances "A" and "B" are controlled with outer baulk ring, synchronizer cone and inner baulk ring as a set. Replace them as a set if the clearances are outside the limit value.



SCIA0950E

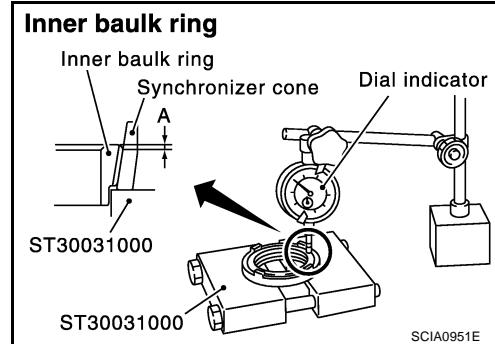
INPUT SHAFT AND GEARS

1. Measure the clearance "A" at 2 points or more diagonally opposite using a dial indicator. And then calculate mean value.

Clearance "A"

Standard value : 0.6 - 0.8 mm (0.024 - 0.031 in)

Limit value : 0.2 mm (0.008 in)

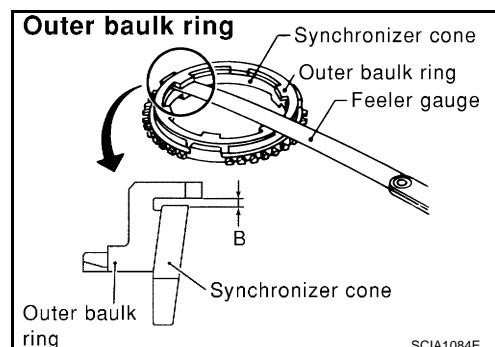


2. Measure the clearance "B" at 2 points or more diagonally opposite using a feeler gauge. And then calculate mean value.

Clearance "B"

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

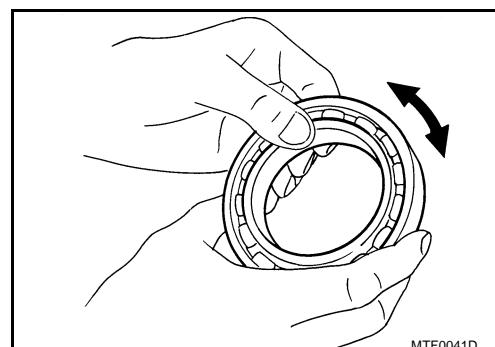
Limit value : 0.2 mm (0.008 in)



Bearing

Check items below. If necessary, replace them with new ones.

- Damage and rough rotation of bearing



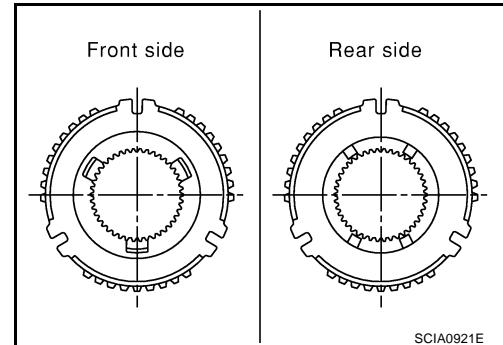
INPUT SHAFT AND GEARS

ASSEMBLY

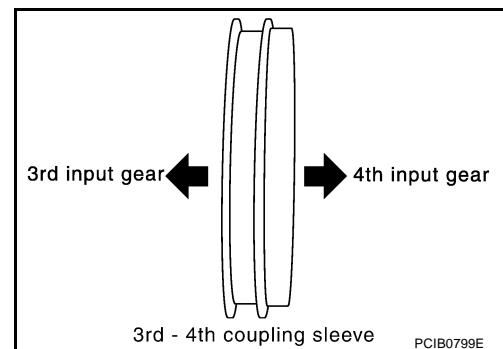
1. Install 3rd needle bearing to input shaft.
2. Install 3rd input gear and 3rd baulk ring to input shaft.
3. Install 3rd-4th spread spring, 3rd-4th shifting insert and 3rd-4th synchronizer hub onto 3rd-4th coupling sleeve.

CAUTION:

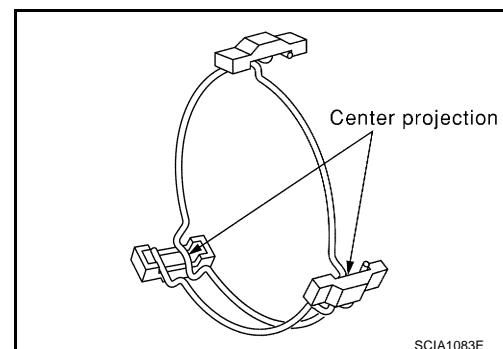
- Be careful with orientation of 3rd-4th synchronizer hub.
- Do not reuse 3rd-4th synchronizer hub.



- Be careful with orientation of 3rd-4th coupling sleeve.
- Do not reuse 3rd-4th coupling sleeve.



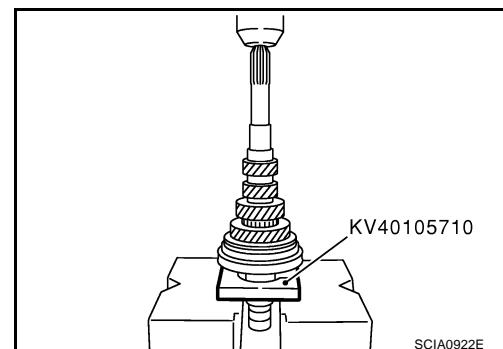
- Be sure not to hook center projection of 2 spread springs on same shifting insert.



4. Press in 3rd-4th synchronizer hub assembly using the press stand.

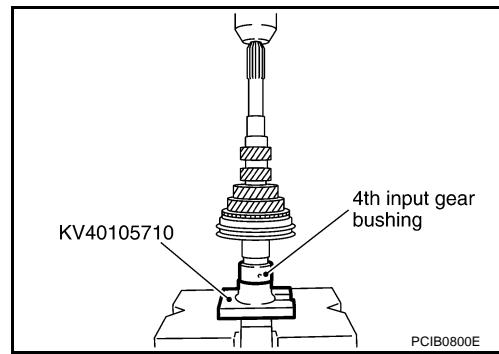
CAUTION:

Align grooves of 3rd-4th shifting insert and 3rd outer baulk ring.



INPUT SHAFT AND GEARS

5. Press in 4th input gear bushing using the press stand.
6. Install 4th baulk ring.
7. Install 4th needle bearing and 4th input gear to input shaft.



A
B
MT
D
E
F
G
H
I
J
K
L
M

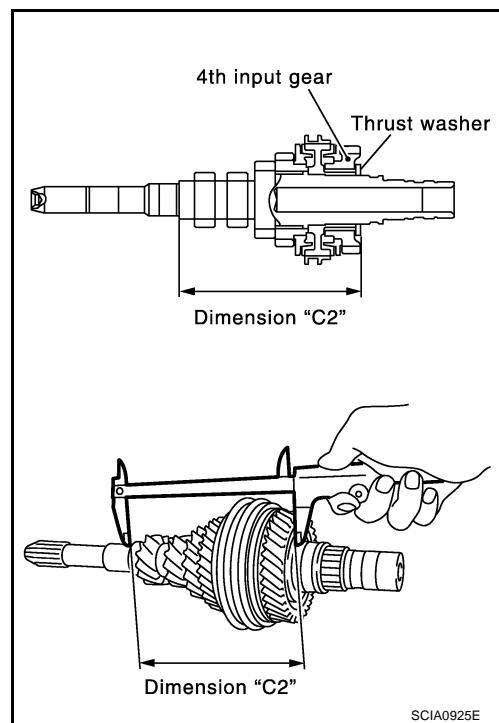
8. Select thrust washer so that dimension "C2" satisfies the standard value below. Then install thrust washer onto input shaft. Refer to [MT-106, "INPUT SHAFT THRUST WASHER"](#) .

Standard for dimension C2

: 154.7 - 154.8 mm (6.091 - 6.094 in)

CAUTION:

Only one thrust washer can be selected.

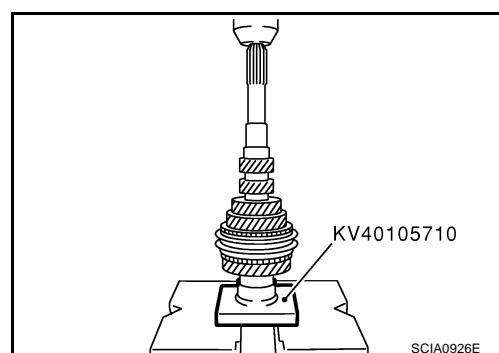


9. Press in 5th input gear bushing using the press stand.

CAUTION:

Do not reuse 5th input gear bushing.

10. Install 5th needle bearing and 5th input gear to input shaft.
11. Install 5th baulk ring.

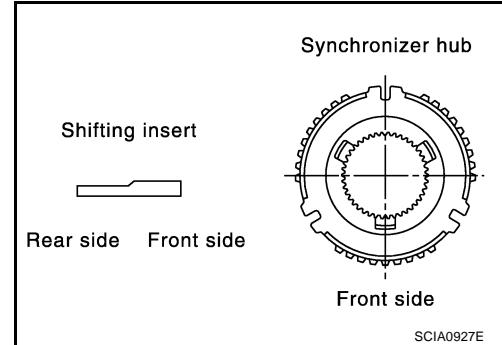


12. Install 5th synchronizer hub and 5th spread spring, 5th shifting insert onto 5th coupling sleeve.

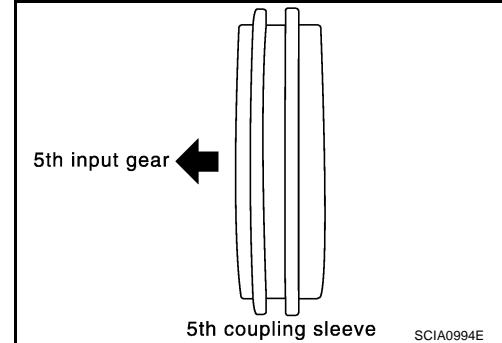
INPUT SHAFT AND GEARS

CAUTION:

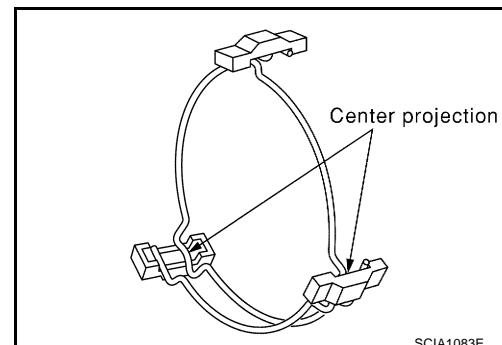
- Be careful with orientation of 5th synchronizer hub and shifting insert.
- Do not reuse 5th synchronizer hub.



- Be careful with orientation of 5th coupling sleeve.
- Do not reuse 5th coupling sleeve.



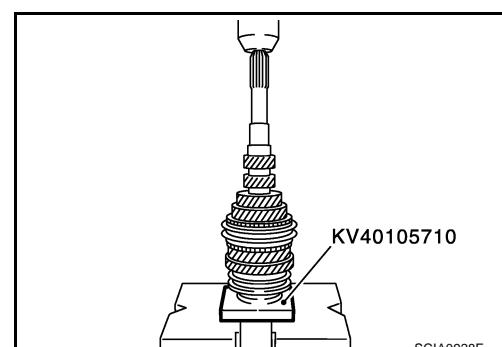
- Be sure not to hook center projection of 2 spread springs on same shifting insert.



13. Press in 5th synchronizer hub assembly using the press stand.

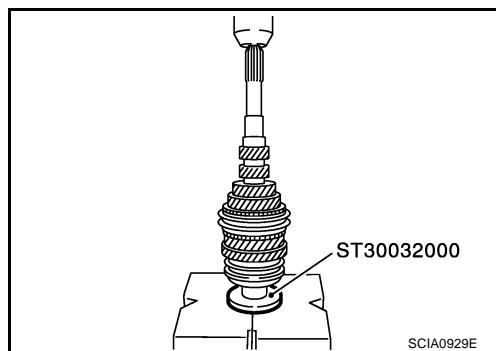
CAUTION:

Align grooves of 5th shifting insert and 5th baulk ring.



INPUT SHAFT AND GEARS

14. Press in 5th stopper and then input shaft bearing spacer using the drift.



A
B
MT

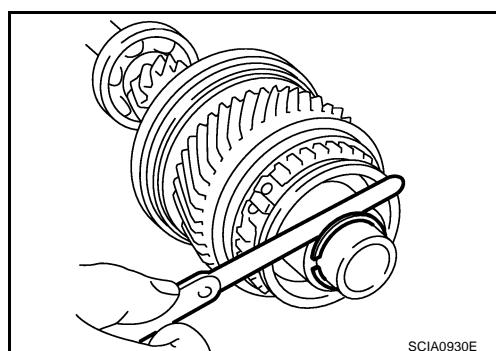
15. Install snap ring onto input shaft, and make sure that end play (gap between snap ring and groove) of input shaft bearing spacer satisfies the standard value.

End play standard value : 0 - 0.1 mm (0 - 0.004 in)

- If measurement is outside the standard range, select snap ring. Refer to [MT-105, "INPUT SHAFT BEARING SPACER"](#).

CAUTION:

Do not reuse snap ring.

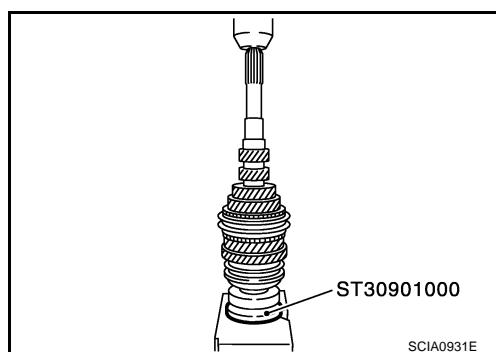


D
E
F
G

16. Press in input shaft rear bearing using the drift.

CAUTION:

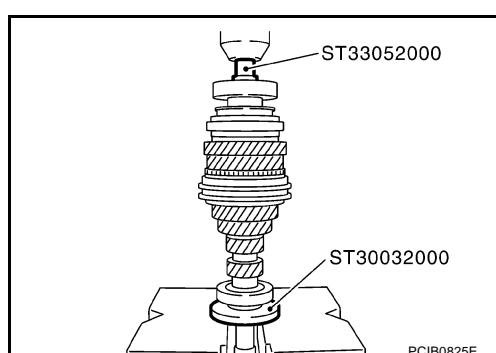
Install input shaft rear bearing with its brown surface facing the input gear side.



H
I
J
K

17. Press in input shaft front bearing using the drifts.

18. Install oil channel onto input shaft.



L
M

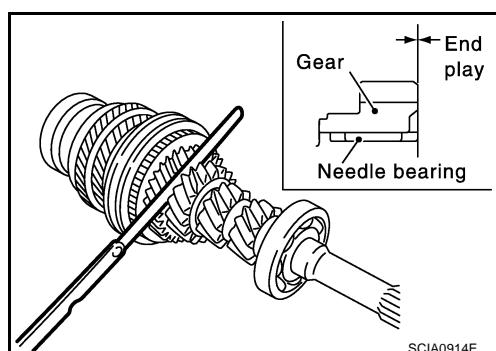
19. Check end play of 3rd, 4th, and 5th input gears.

End play standard value

3rd input gear : 0.18 - 0.31 mm (0.0071 - 0.0122 in)

4th input gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

5th input gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)



A
B
MT

INPUT SHAFT AND GEARS

Disassembly and Assembly (RS6F51A) DISASSEMBLY

ECS008C5

1. Before disassembling, measure end play for 3rd, 4th, 5th and 6th input gears.

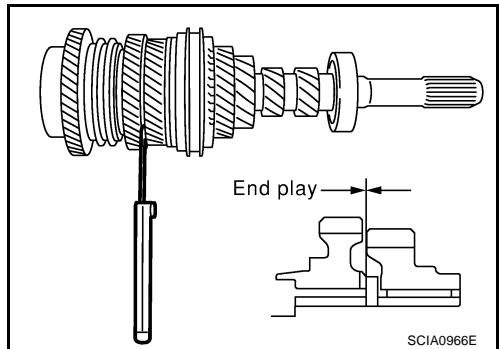
End play standard value

3rd input gear : 0.18 - 0.31 mm (0.0071 - 0.0122 in)

4th input gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

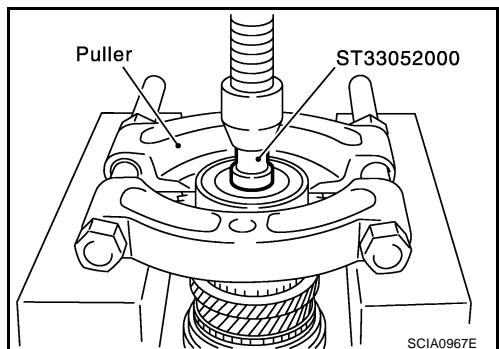
5th input gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)

6th input gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)



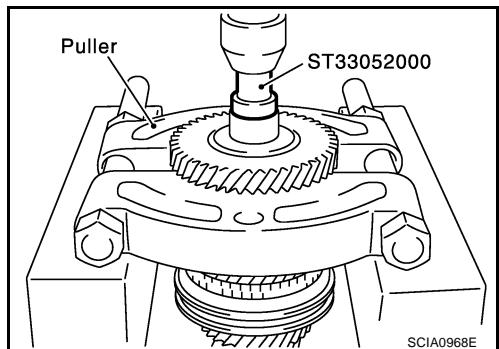
SCIA0966E

2. Remove oil channel.



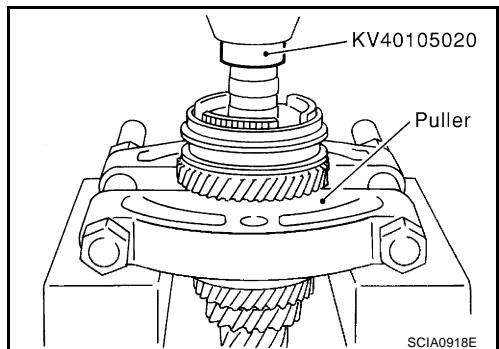
SCIA0967E

3. Press out input shaft rear bearing using the drift and a puller.
4. Remove snap ring.



SCIA0968E

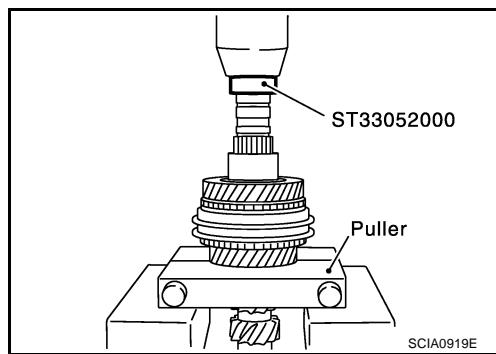
5. Press out 6th input gear, 6th needle bearing and 6th input gear bushing using the drift and a puller.
6. Remove 6th baulk ring.



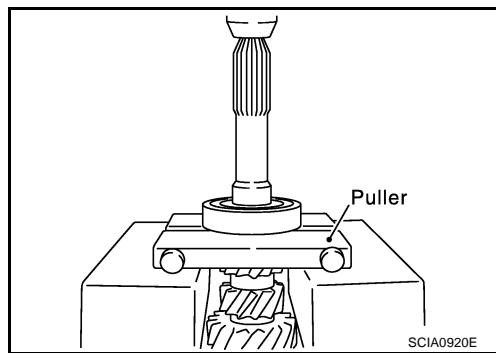
SCIA0918E

INPUT SHAFT AND GEARS

9. Press out 5th input gear bushing, thrust washer, 4th input gear, 4th needle bearing, 4th input gear bushing, 3rd-4th synchronizer hub assembly and 3rd input gear using the drift and a puller.
10. Remove 3rd needle bearing.



11. Press out input shaft front bearing using a puller.

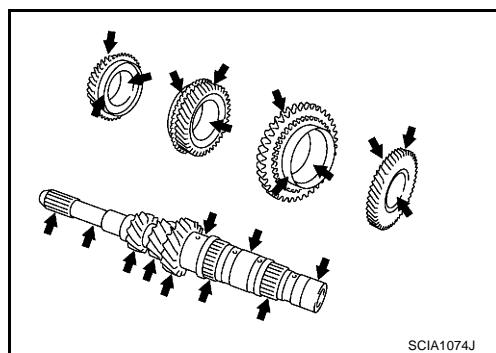


INSPECTION AFTER DISASSEMBLY

Input Shaft and Gears

Check items below. If necessary, replace them with new ones.

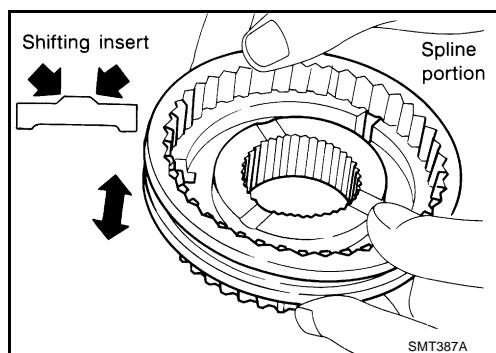
- Damage, peeling, dent, uneven wear, bending, etc. of shaft
- Excessive wear, damage, peeling, etc. of gears



Synchronizer

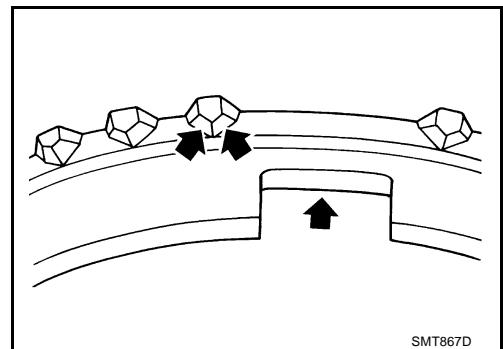
Check items below. If necessary, replace them with new ones.

- Damage and excessive wear of contact surfaces of coupling sleeve, synchronizer hub and shifting insert
- Coupling sleeve and synchronizer hub must move smoothly.



INPUT SHAFT AND GEARS

- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



BAULK RING CLEARANCE

- **Single-cone synchronizer (4th, 5th and 6th)**

Push baulk ring on the cone, and measure the clearance between baulk ring and cone. If measurement is below limit, replace it with a new one.

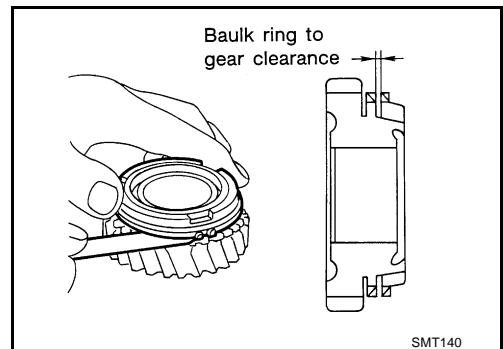
Clearance

Standard value

4th : 0.9 - 1.45 mm (0.035 - 0.057 in)

5th and 6th : 0.95 - 1.4 mm (0.037 - 0.055 in)

Limit value : 0.7 mm (0.028 in)

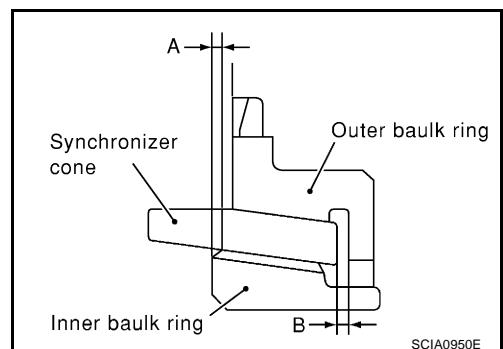


- **Double-cone synchronizer (3rd)**

Check the clearance between outer baulk ring, synchronizer cone and inner baulk ring as follows.

CAUTION:

The clearances "A" and "B" are controlled with outer baulk ring, synchronizer cone and inner baulk ring as a set. Replace them as a set if the clearances are outside the limit value.

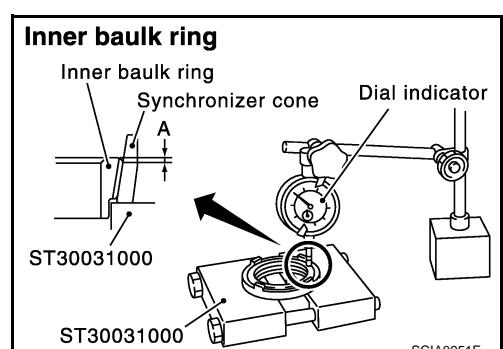


1. Measure the clearance "A" at 2 points or more diagonally opposite using a dial indicator. And then calculate mean value.

Clearance "A"

Standard value : 0.6 - 0.8 mm (0.024 - 0.031 in)

Limit value : 0.2 mm (0.008 in)



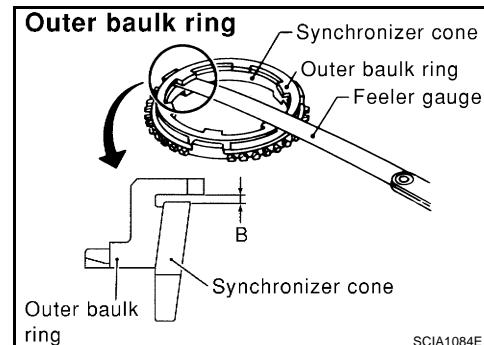
INPUT SHAFT AND GEARS

2. Measure the clearance "B" at 2 points or more diagonally opposite using a feeler gauge. And then calculate mean value.

Clearance "B"

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

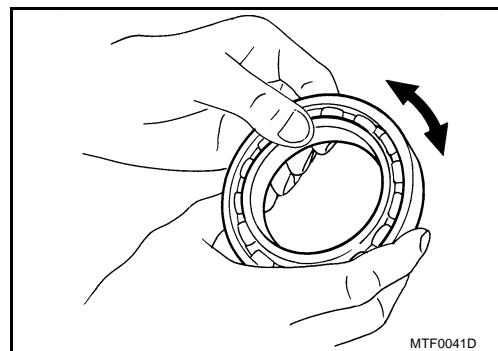
Limit value : 0.2 mm (0.008 in)



Bearing

Check items below. If necessary, replace them with new ones.

- Damage and rough rotation of bearing

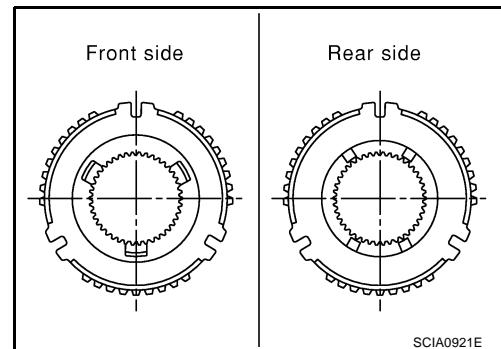


ASSEMBLY

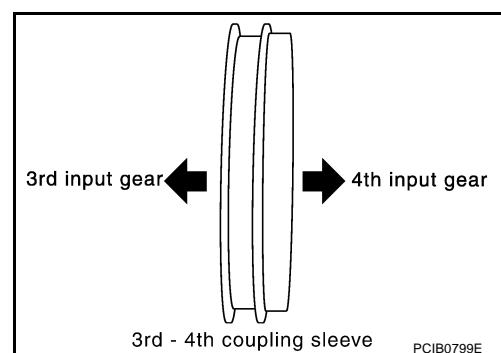
1. Install 3rd needle bearing to input shaft.
2. Install 3rd input gear and 3rd baulk ring to input shaft.
3. Install 3rd-4th spread spring, 3rd-4th shifting insert and 3rd-4th synchronizer hub onto 3rd-4th coupling sleeve.

CAUTION:

- Be careful with orientation of 3rd-4th synchronizer hub.
- Do not reuse 3rd-4th synchronizer hub.

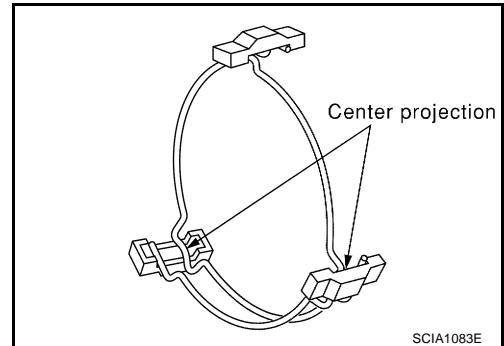


- Be careful with orientation of 3rd-4th coupling sleeve.
- Do not reuse 3rd-4th coupling sleeve.



INPUT SHAFT AND GEARS

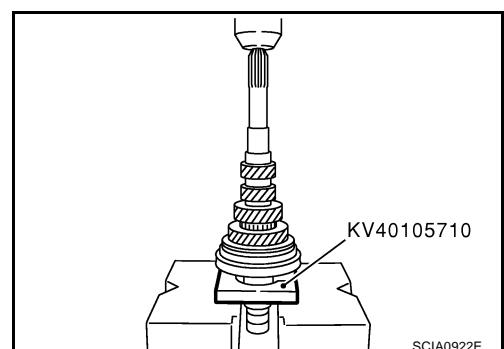
- Be sure not to hook center projection of 2 spread springs on same shifting insert.



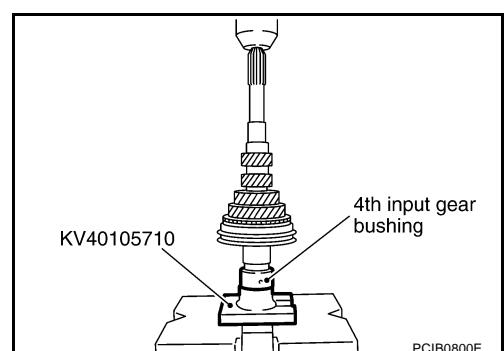
4. Press in 3rd-4th synchronizer hub assembly using the press stand.

CAUTION:

Align grooves of 3rd-4th shifting insert and 3rd outer baulk ring.



5. Press in 4th input gear bushing using the press stand.
6. Install 4th baulk ring.
7. Install 4th needle bearing and 4th input gear to input shaft.



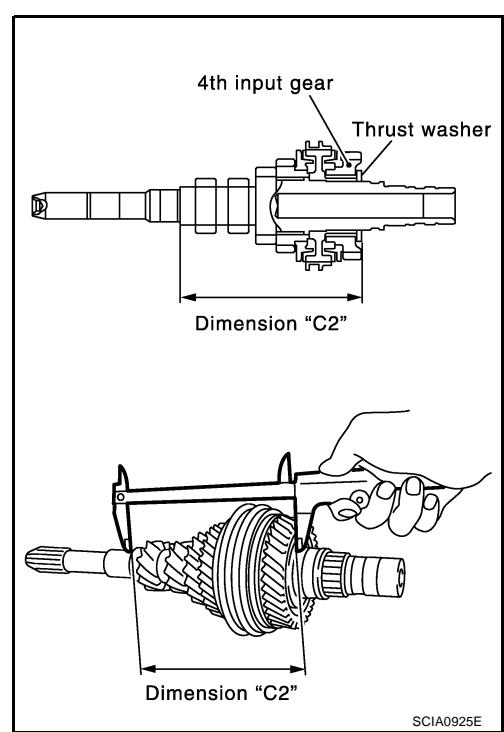
8. Select thrust washer so that dimension "C2" satisfies the standard value below. Then install thrust washer onto input shaft. Refer to [MT-106, "INPUT SHAFT THRUST WASHER"](#).

Standard value for dimension C2

: 154.7 - 154.8 mm (6.091 - 6.094 in)

CAUTION:

Only one thrust washer can be selected.



INPUT SHAFT AND GEARS

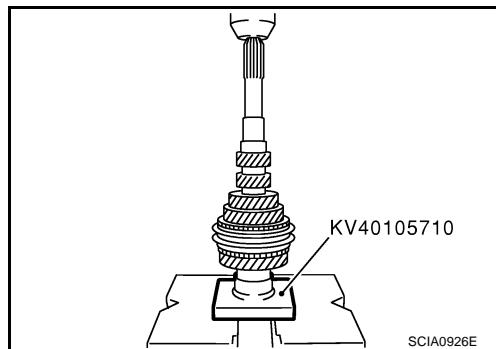
9. Press in 5th input gear bushing using the press stand.

CAUTION:

Do not reuse 5th input gear bushing.

10. Install 5th needle bearing and 5th input gear to input shaft.

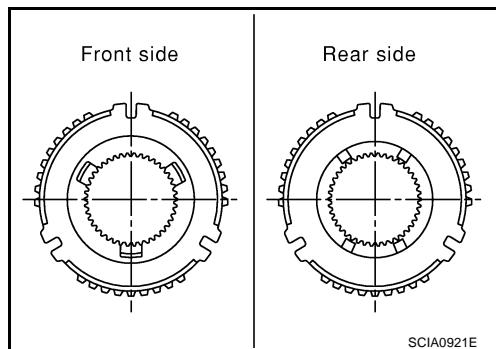
11. Install 5th baulk ring.



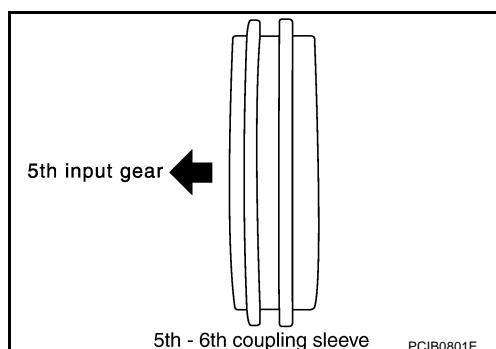
12. Install 5th-6th synchronizer hub, 5th-6th spread spring and 5th-6th shifting insert onto 5th-6th coupling sleeve.

CAUTION:

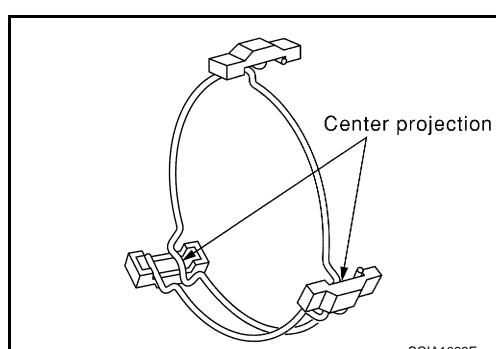
- Be careful with orientation of 5th-6th synchronizer hub.
- Do not reuse 5th-6th synchronizer hub.



- Be careful with orientation of 5th-6th coupling sleeve.
- Do not reuse 5th-6th coupling sleeve.



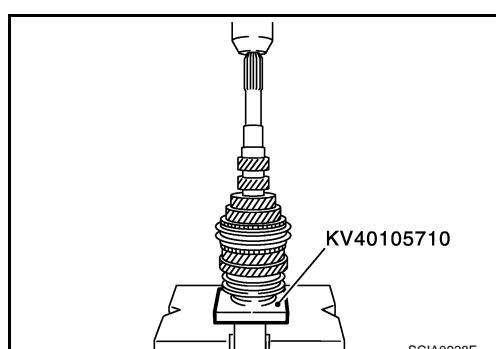
- Be sure not to hook center projection of 2 spread springs on same shifting insert.



13. Press in 5th-6th synchronizer hub assembly using the press stand.

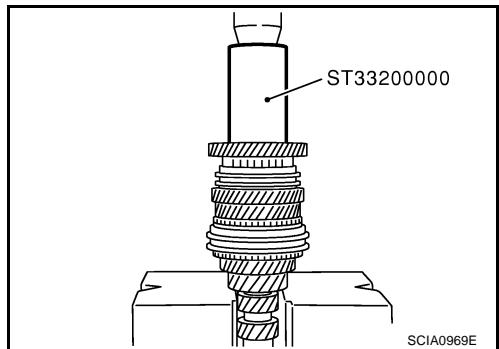
CAUTION:

Align grooves of 5th-6th shifting insert and 5th baulk ring and 6th baulk ring.



INPUT SHAFT AND GEARS

14. Install 6th needle bearing, 6th input gear, 6th baulk ring onto 6th input gear bushing, and then press in 6th bushing onto input shaft using the drift.



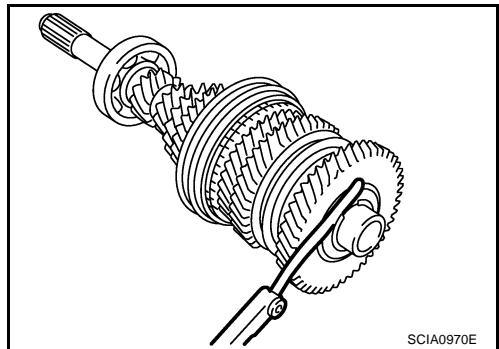
15. Install snap ring onto input shaft, and make sure that end play (gap between snap ring and groove) of 6th input gear bushing satisfies the standard value.

End play standard value : 0 - 0.1 mm (0 - 0.004 in)

- If measurement is outside the standard range, select snap ring. Refer to [MT-105, "6TH INPUT GEAR BUSHING"](#).

CAUTION:

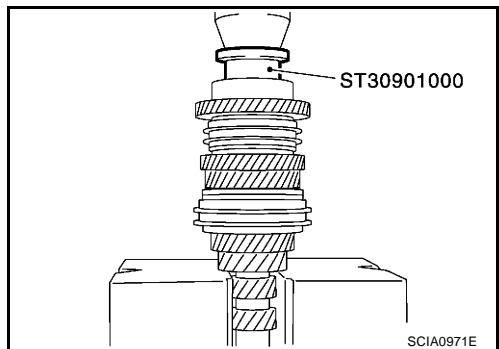
Do not reuse snap ring.



16. Press in input shaft rear bearing using the drift.

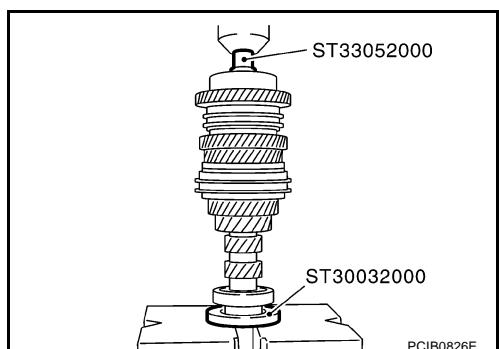
CAUTION:

Install input shaft rear bearing with its brown surface facing the 6th input gear side.



17. Press in input shaft front bearing using the drifts.

18. Install oil channel onto input shaft.



19. Check end play of 3rd, 4th, 5th and 6th input gears.

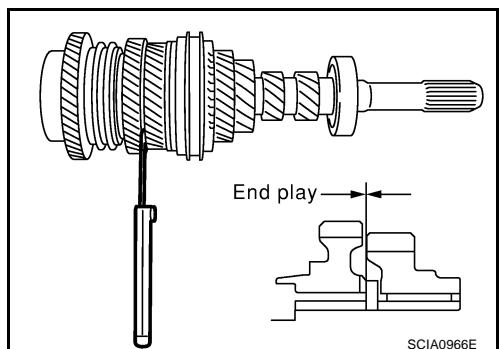
End play standard value

3rd input gear : 0.18 - 0.31 mm (0.0071 - 0.0122 in)

4th input gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

5th input gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)

6th input gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)



MAINSHAFT AND GEARS

PFP:32241

Disassembly and Assembly (RS5F51A) DISASSEMBLY

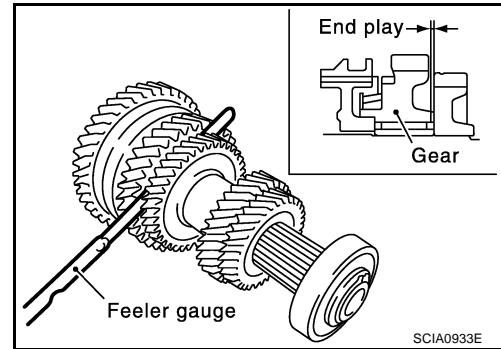
ECS008C6

1. Before disassembling, measure the end play of 1st and 2nd main gears.

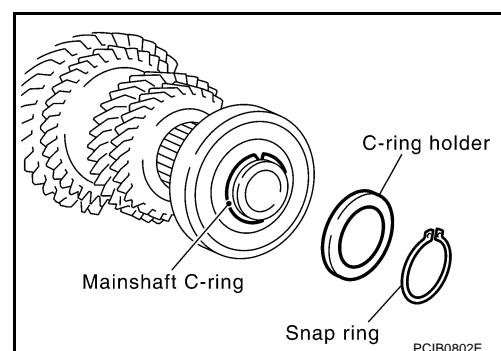
End play standard value

1st main gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

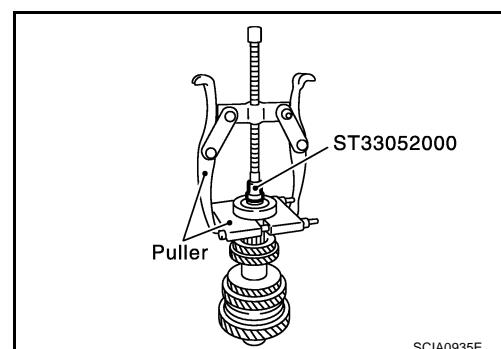
2nd main gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)



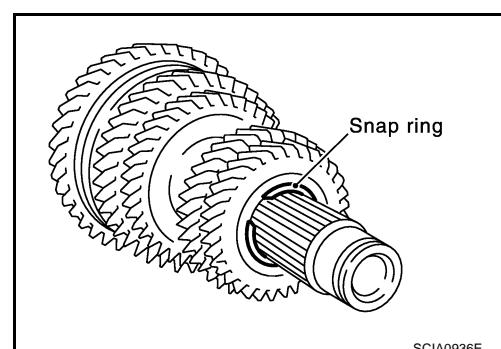
2. Remove snap ring.
3. Remove C-ring holder, and then remove mainshaft C-ring.



4. Remove mainshaft rear bearing using the drift and pullers.

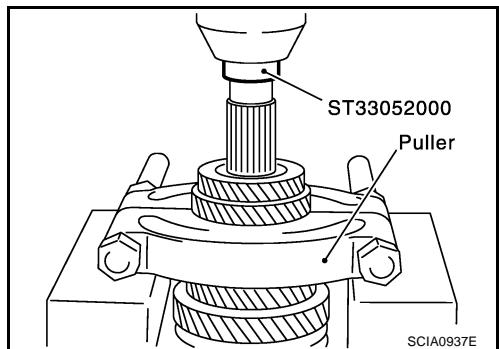


5. Remove snap ring.

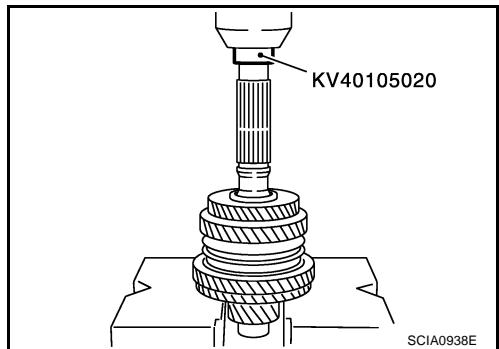


MAINSHAFT AND GEARS

6. Press out 4th main gear and 5th main gear using the drift and a puller.
7. Remove 4th main gear adjusting shim.
8. Remove 3rd-4th mainshaft spacer.



9. Press out 3rd main gear, 2nd main gear, 2nd needle bearing, 2nd main gear bushing, 1st-2nd synchronizer hub assembly, 1st main gear, 1st needle bearing, and 1st main gear bushing reverse main gear using the drift.

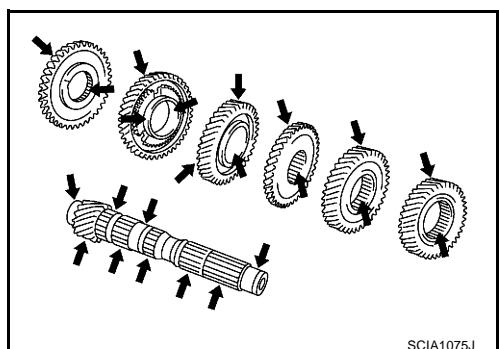


INSPECTION AFTER DISASSEMBLY

Mainshaft and Gears

Check items below. If necessary, replace them with new ones.

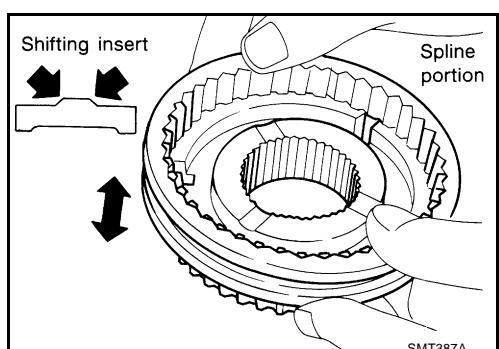
- Damage, peeling, dent, uneven wear, bending, and other non-standard conditions of the shaft.
- Excessive wear, damage, peeling, and other non-standard conditions of the gears.



Synchronizer

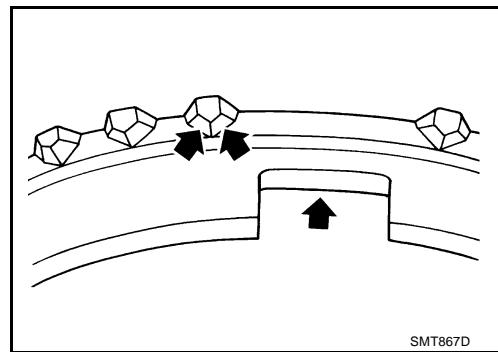
Check items below. If necessary, replace them with new ones.

- Damage and unusual wear on contact surfaces of coupling sleeve, synchronizer hub and shifting insert.
- Coupling sleeve and synchronizer hub must move smoothly.



MAINSHAFT AND GEARS

- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



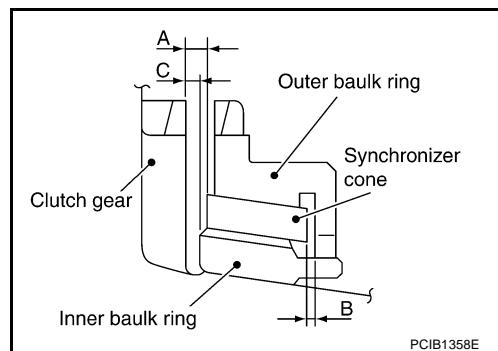
BAULK RING CLEARANCE

Triple-cone synchronizer (1st and 2nd)

- Check the clearance between outer baulk ring, synchronizer cone and inner baulk ring as follows.

CAUTION:

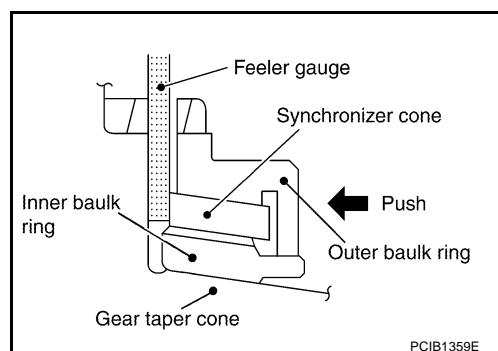
The clearances "A", "B" and "C" are controlled with outer baulk ring, synchronizer cone and inner baulk ring as a set. Replace them as a set if the clearances are outside the limit value.



1. Measure the clearance "A" at 2 points or more diagonally opposite using a feeler gauge when pressing baulk ring toward clutch gear taper cone. And then calculate mean value.

Clearance "A"

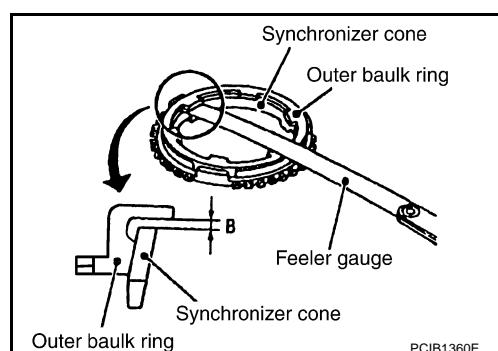
Standard value : 0.6 - 1.2 mm (0.024 - 0.047 in)
 Limit value : 0.3 mm (0.012 in)



2. Measure the clearance "B" at 2 points or more diagonally opposite using a feeler gauge. And then calculate mean value.

Clearance "B"

Standard value : 0.6 - 1.1 mm (0.024 - 0.043 in)
 Limit value : 0.2 mm (0.008 in)



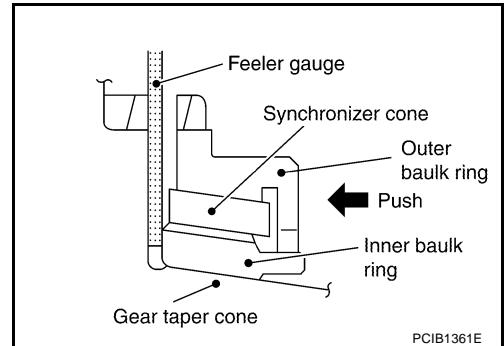
MAINSHAFT AND GEARS

3. Measure the clearance "C" at 2 points or more diagonally opposite using a feeler gauge when pressing baulk ring toward clutch gear taper cone. And then calculate mean value.

Clearance "C"

Standard value : 0.7 - 1.1 mm (0.028 - 0.043 in)

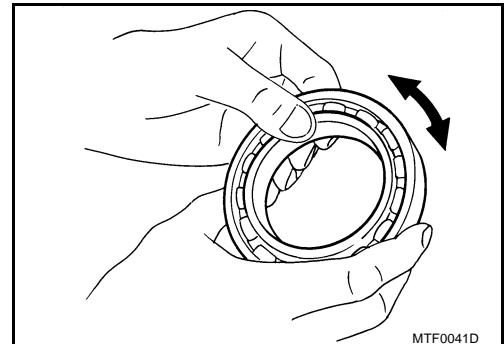
Limit value : 0.3 mm (0.012 in)



Bearing

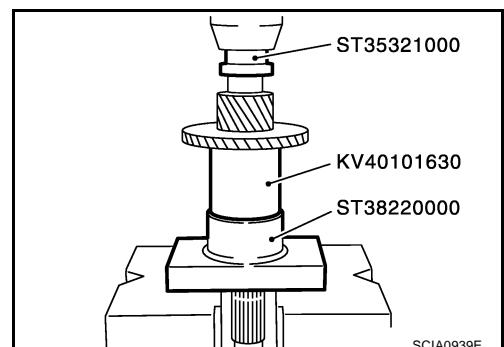
Check items below. If necessary, replace them with new ones.

- Damage and rough rotation of bearing



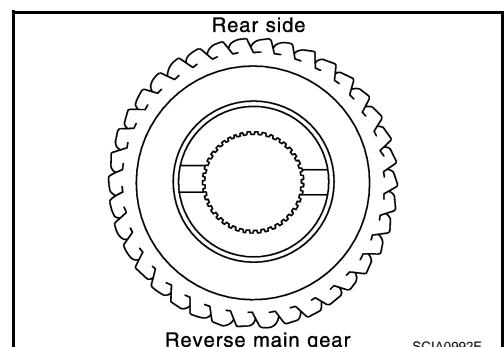
ASSEMBLY

1. Press in reverse main gear using the drifts and the press stand.



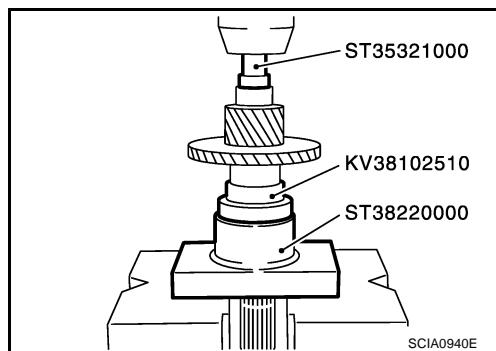
CAUTION:

- Be careful with orientation of reverse main gear.
- Do not reuse reverse main gear.



MAINSHAFT AND GEARS

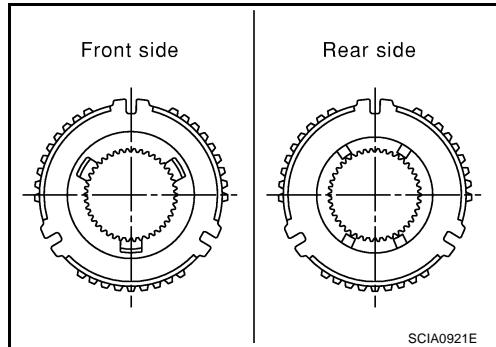
2. Press in 1st main gear bushing using the drifts and the press stand.
3. Install 1st needle bearing, and then 1st main gear.



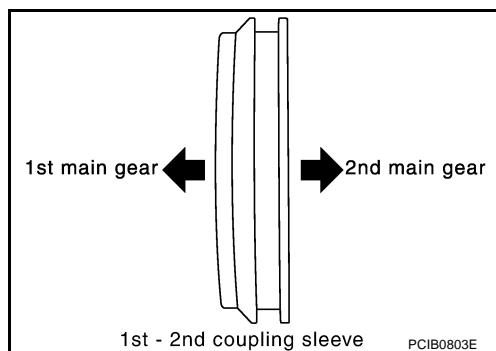
4. Install 1st-2nd spread spring, 1st-2nd shifting insert and 1st-2nd synchronizer hub onto 1st-2nd coupling sleeve.

CAUTION:

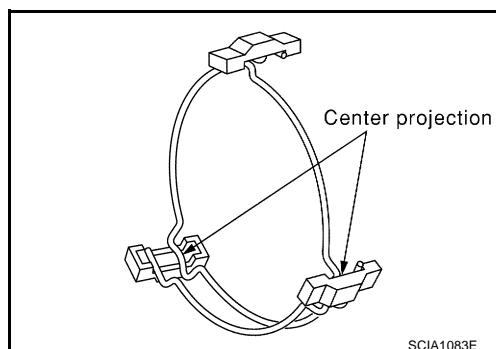
- Be careful with orientation of 1st-2nd synchronizer hub.
- Do not reuse 1st-2nd synchronizer hub.



- Be careful with orientation of 1st-2nd coupling sleeve.
- Do not reuse 1st-2nd coupling sleeve.



- Be sure not to hook center projection of 2 spread springs on same 1st-2nd shifting insert.

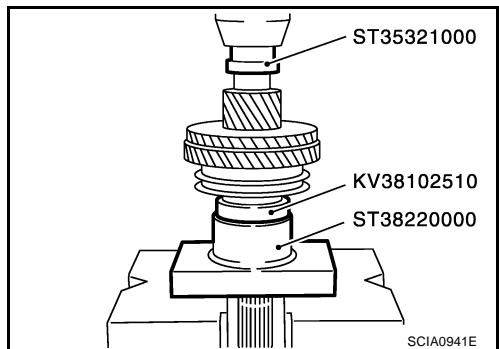


MAINSHAFT AND GEARS

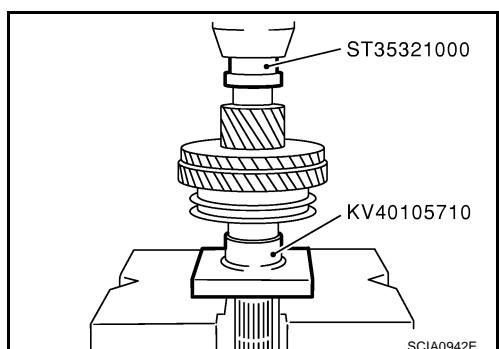
5. Install 1st inner baulk ring, 1st synchronizer cone, 1st outer baulk ring onto mainshaft, and then press in 1st-2nd synchronizer hub assembly onto mainshaft using the drifts and the press stand.

CAUTION:

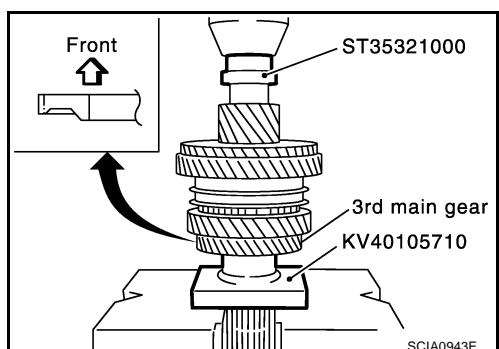
- Outer baulk ring, synchronizer cone, and inner baulk ring on 2nd gear-side must have been removed.
- Be careful with orientation of coupling sleeve.



6. Press in 2nd main gear bushing using the drift and the press stand.
 7. Install 2nd outer baulk ring, 2nd synchronizer cone, and 2nd inner baulk ring.
 8. Install 2nd needle bearing and 2nd main gear.



9. Press in 3rd main gear using the drift and the press stand.
CAUTION:
 ● Be careful with orientation of 3rd main gear.
 ● Do not reuse 3rd main gear.
 10. Install 3rd-4th mainshaft spacer.



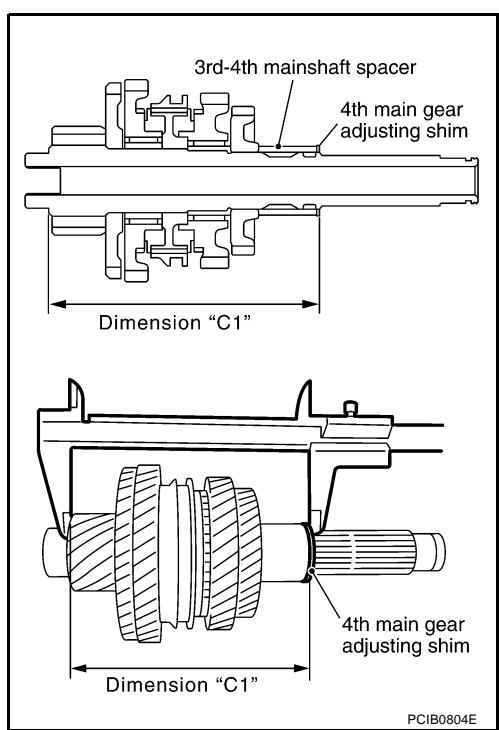
11. Select 4th main gear adjusting shim so that dimension "C1" satisfies the standard value below, and install 4th main gear adjusting shim onto mainshaft. Refer to [MT-106, "4TH MAIN GEAR ADJUSTING SHIM"](#).

Standard value for dimension C1

: 173.85 - 173.95 mm (6.844 - 6.848 in)

CAUTION:

Only one adjusting shim can be selected.

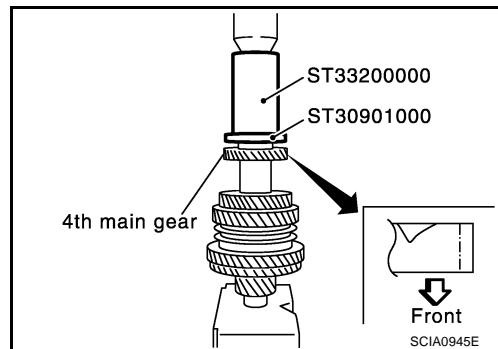


MAINSHAFT AND GEARS

12. Press in 4th main gear using the drifts.

CAUTION:

- Be careful with orientation of 4th main gear.
- Do not reuse 4th main gear.

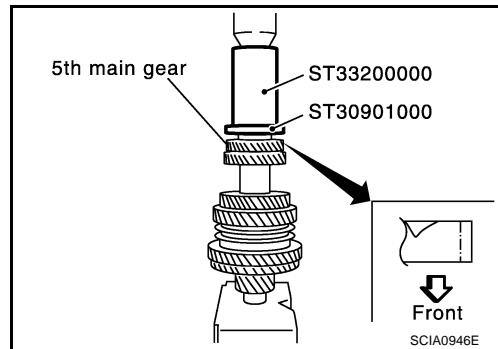


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13. Press in 5th main gear using the drifts.

CAUTION:

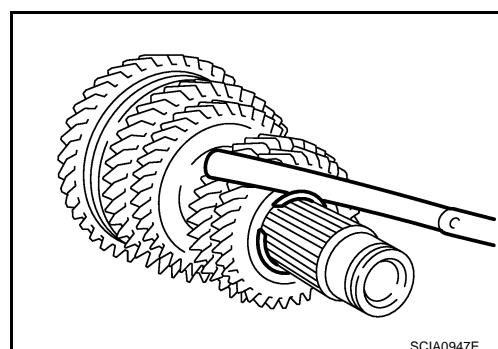
- Be careful with orientation of 5th main gear.
- Do not reuse 5th main gear.



14. Install snap ring onto mainshaft, and check that end play of 5th main gear satisfies the standard value.

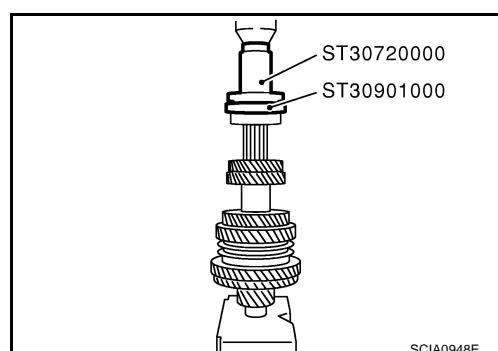
End play standard value : 0 - 0.1 mm (0 - 0.004 in)

- If measurement is outside the standard range, reselect snap ring. Refer to [MT-105, "5TH MAIN GEAR"](#).



SCIA0947E

15. Press in mainshaft rear bearing using the drifts.

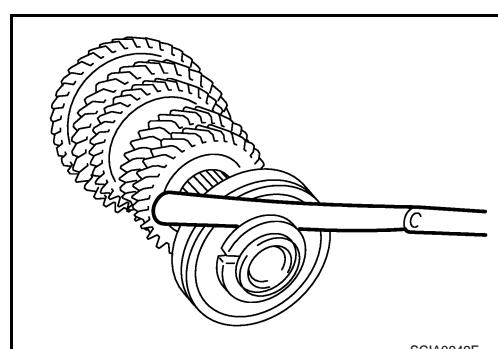


SCIA0948E

16. Install mainshaft C-ring onto mainshaft, and check that end play of mainshaft rear bearing satisfies the standard value.

End play standard value : 0 - 0.06 mm (0 - 0.0024 in)

- If measurement is outside the standard range, reselect mainshaft C-ring. Refer to [MT-105, "MAINSHAFT C-RING"](#).



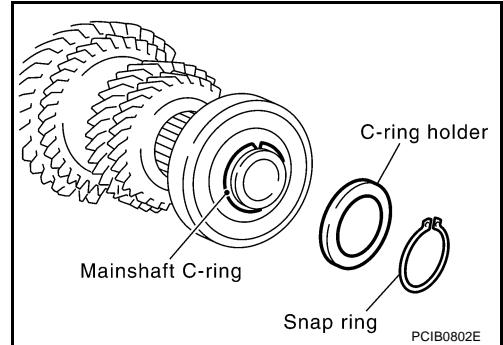
SCIA0949E

MAINSHAFT AND GEARS

17. Install C-ring holder, and then install snap ring.

CAUTION:

Do not reuse snap ring.

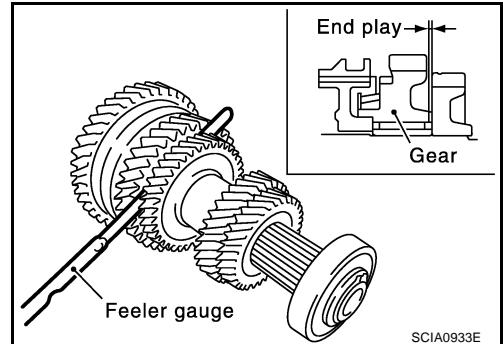


18. Check end play of 1st and 2nd main gears.

End play standard value

1st main gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

2nd main gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)



Disassembly and Assembly (RS6F51A)

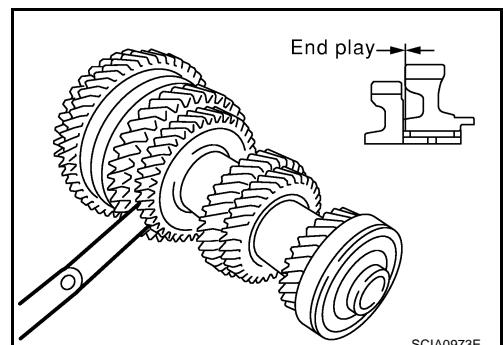
DISASSEMBLY

1. Before disassembling, measure the end play of 1st and 2nd main gears.

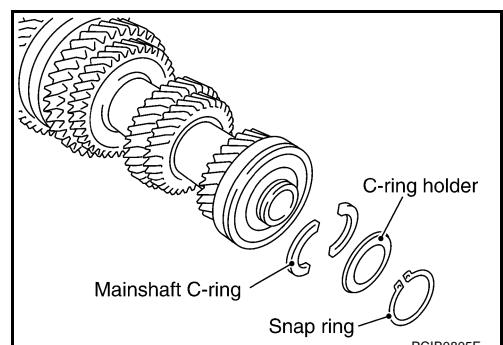
End play standard value

1st main gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

2nd main gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)

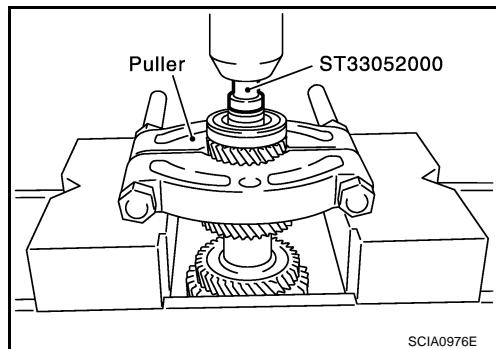


2. Remove snap ring.
3. Remove C-ring holder, and then remove mainshaft C-ring.

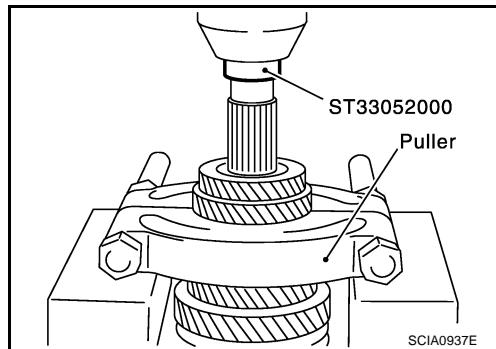


MAINSHAFT AND GEARS

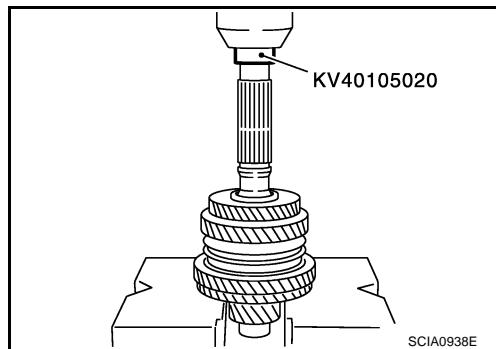
4. Press out mainshaft rear bearing, 6th main adjusting shim and 6th main gear using the drift and a puller.
5. Remove 5th-6th mainshaft spacer.



6. Press out 4th main gear and 5th main gear using the drift and a puller.
7. Remove 4th main gear adjusting shim.
8. Remove 3rd-4th mainshaft spacer.



9. Press out 3rd main gear, 2nd main gear, 2nd needle bearing, 2nd main gear bushing, 1st-2nd synchronizer hub assembly, 1st main gear, 1st needle bearing, and 1st main gear bushing reverse main gear using the drift.

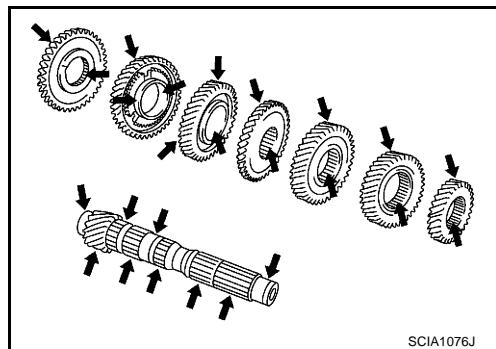


INSPECTION AFTER DISASSEMBLY

Mainshaft and Gears

Check items below. If necessary, replace them with new ones.

- Damage, peeling, dent, uneven wear, bending, and other non-standard conditions of the shaft.
- Excessive wear, damage, peeling, and other non-standard conditions of the gears.

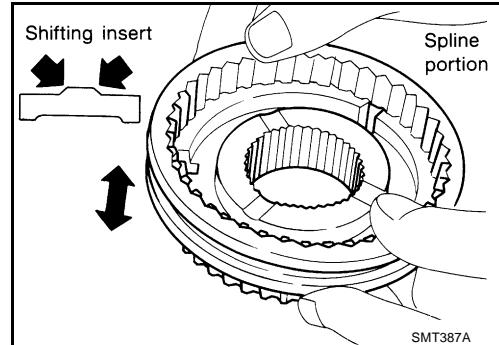


MAINSHAFT AND GEARS

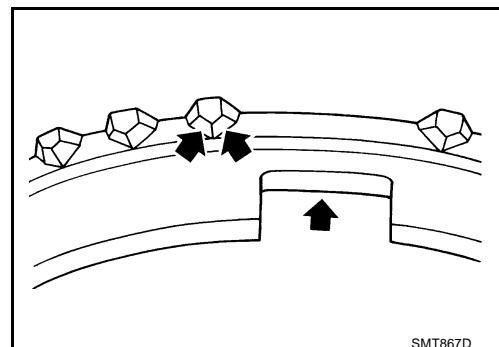
Synchronizer

Check items below. If necessary, replace them with new ones.

- Damage and unusual wear on contact surfaces of coupling sleeve, synchronizer hub and shifting insert.
- Coupling sleeve and synchronizer hub must move smoothly.



- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



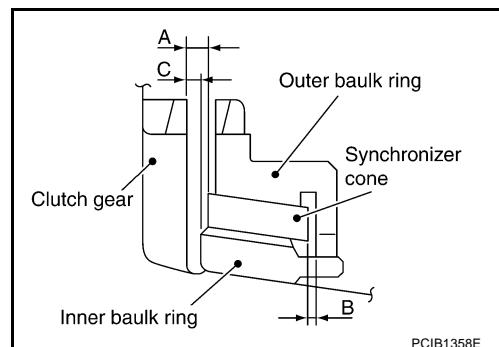
BAULK RING CLEARANCE

Triple-cone synchronizer (1st and 2nd)

- Check the clearance between outer baulk ring, synchronizer cone and inner baulk ring as follows.

CAUTION:

The clearances "A", "B" and "C" are controlled with outer baulk ring, synchronizer cone and inner baulk ring as a set. Replace them as a set if the clearances are outside the limit value.

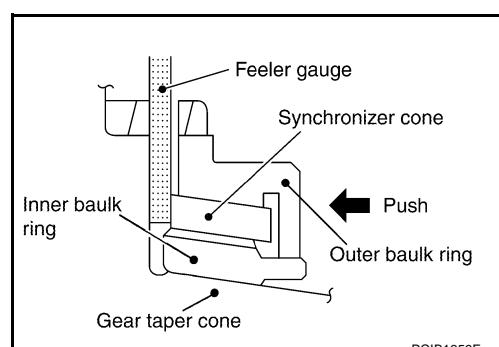


1. Measure the clearance "A" at 2 points or more diagonally opposite using a feeler gauge when pressing baulk ring toward clutch gear taper cone. And then calculate mean value.

Clearance "A"

Standard value : 0.6 - 1.2 mm (0.024 - 0.047 in)

Limit value : 0.3 mm (0.012 in)



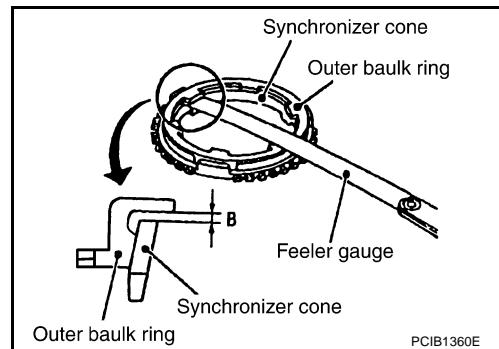
MAINSHAFT AND GEARS

2. Measure the clearance "B" at 2 points or more diagonally opposite using a feeler gauge. And then calculate mean value.

Clearance "B"

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

Limit value : 0.2 mm (0.008 in)

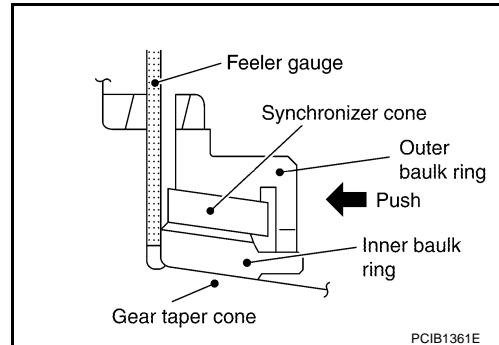


3. Measure the clearance "C" at 2 points or more diagonally opposite using a feeler gauge when pressing baulk ring toward clutch gear taper cone. And then calculate mean value.

Clearance "C"

Standard value : 0.7 - 1.1 mm (0.028 - 0.043 in)

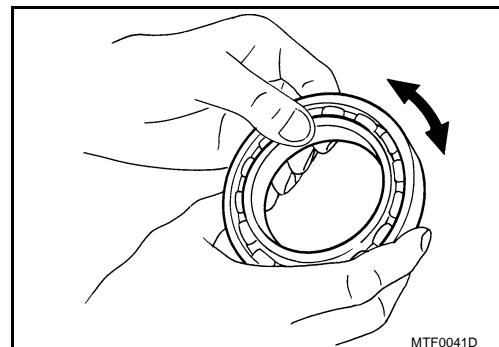
Limit value : 0.3 mm (0.012 in)



Bearing

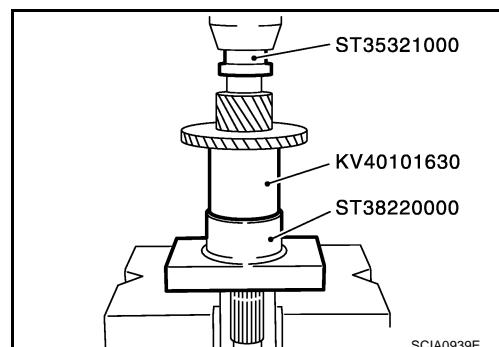
Check items below. If necessary, replace them with new ones.

- Damage and rough rotation of bearing



ASSEMBLY

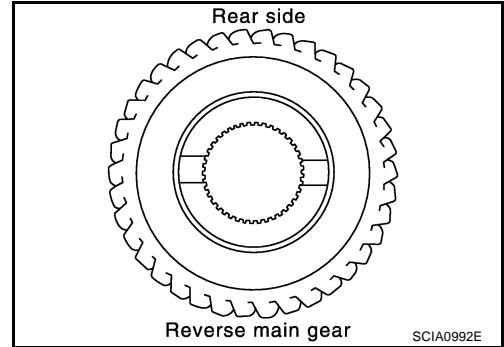
1. Press in reverse main gear using the drifts and the press stand.



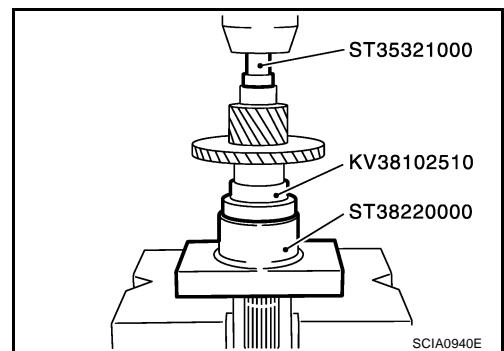
MAINSHAFT AND GEARS

CAUTION:

- Be careful with orientation of reverse main gear.
- Do not reuse reverse main gear.



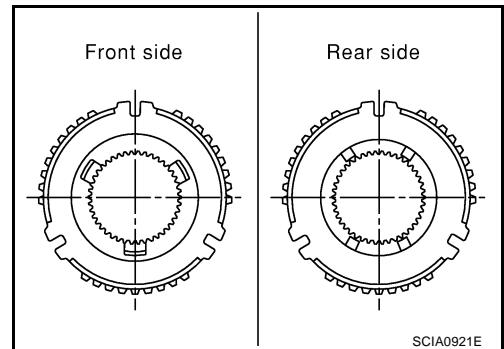
2. Press in 1st main gear bushing using the drifts and the press stand.
3. Install 1st needle bearing, and then 1st main gear.



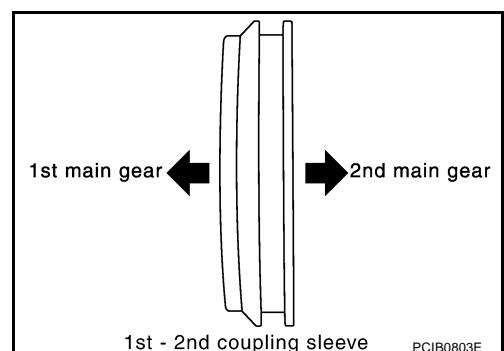
4. Install 1st-2nd spread spring, 1st-2nd shifting insert and 1st-2nd synchronizer hub onto 1st-2nd coupling sleeve.

CAUTION:

- Be careful with orientation of 1st-2nd synchronizer hub.
- Do not reuse 1st-2nd synchronizer hub.

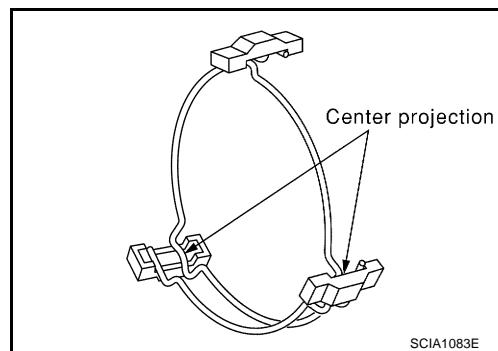


- Be careful with orientation of 1st-2nd coupling sleeve.
- Do not reuse 1st-2nd coupling sleeve.



MAINSHAFT AND GEARS

- Be sure not to hook center projection of 2 spread springs on same 1st-2nd shifting insert.

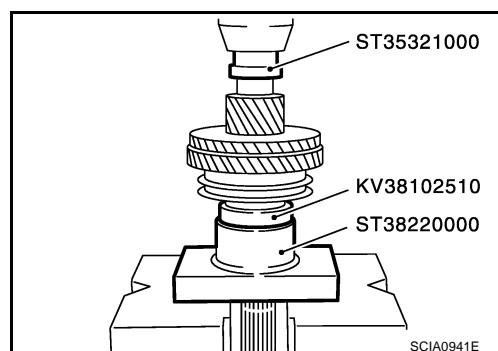


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5. Install 1st inner baulk ring, 1st synchronizer cone, 1st outer baulk ring onto mainshaft, and then press in 1st-2nd synchronizer hub assembly onto mainshaft using the drifts and the press stand.

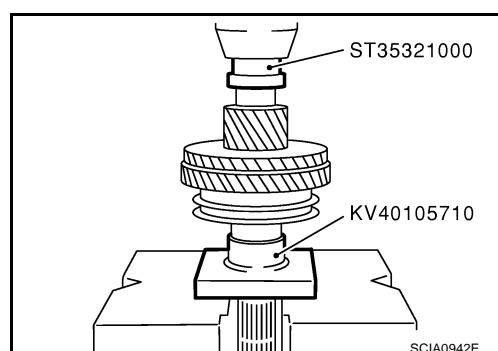
CAUTION:

- Outer baulk ring, synchronizer cone, and inner baulk ring on 2nd gear-side must have been removed.
- Be careful with orientation of coupling sleeve.



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6. Press in 2nd main gear bushing using the drift and the press stand.
7. Install 2nd outer baulk ring, 2nd synchronizer cone, and 2nd inner baulk ring.
8. Install 2nd needle bearing and 2nd main gear.



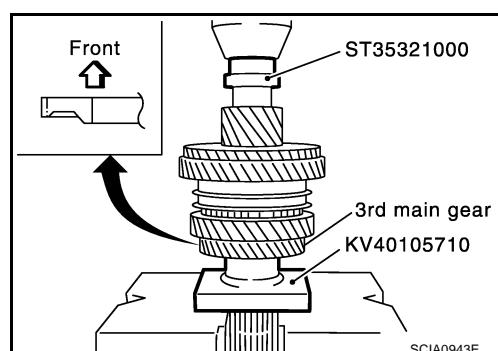
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9. Press in 3rd main gear using the drift and the press stand.

CAUTION:

- Be careful with orientation of 3rd main gear.
- Do not reuse 3rd main gear.

10. Install 3rd-4th mainshaft spacer.



MAINSHAFT AND GEARS

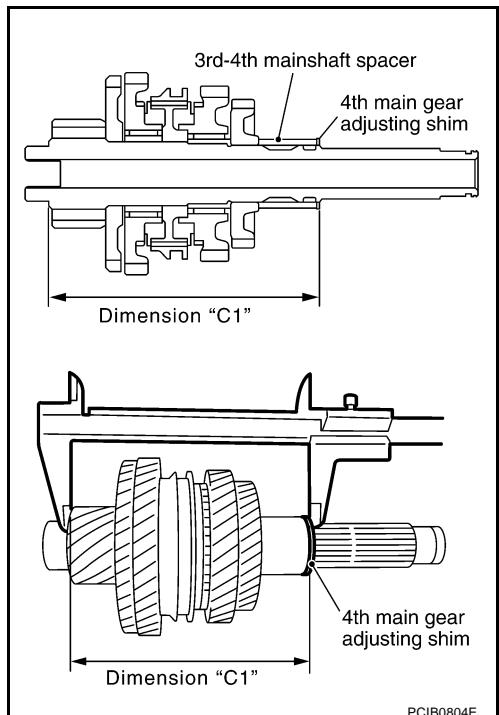
11. Select 4th main gear adjusting shim so that dimension "C1" satisfies the standard value below, and install 4th main gear adjusting shim onto mainshaft. Refer to [MT-106, "4TH MAIN GEAR ADJUSTING SHIM"](#).

Standard value for dimension C1

: 173.85 - 173.95 mm (6.844 - 6.848 in)

CAUTION:

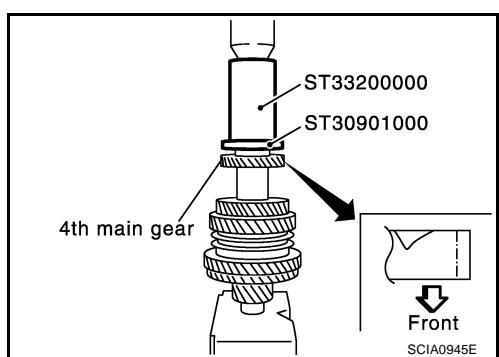
Only one adjusting shim can be selected.



12. Press in 4th main gear using the drifts.

CAUTION:

- Be careful with orientation of 4th main gear.
- Do not reuse 4th main gear.

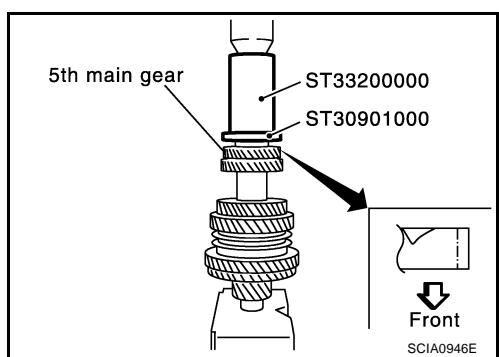


13. Press in 5th main gear using the drifts.

CAUTION:

- Be careful with orientation of 5th main gear.
- Do not reuse 5th main gear.

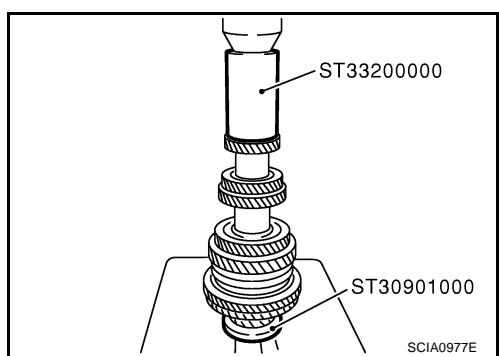
14. Install 5th-6th mainshaft spacer.



15. Press in 6th main gear using the drifts.

CAUTION:

Do not reuse 6th main gear.



MAINSHAFT AND GEARS

16. Select 6th main adjusting shim and then install it onto mainshaft.

- Calculate thickness "S" of 6th main adjusting shim following the procedure below so that end play dimension between 6th main gear and mainshaft rear bearing becomes the dimension shown below. Refer to [MT-107, "6TH MAIN GEAR ADJUSTING SHIM"](#) .

End play: 0 - 0.1 mm (0 - 0.004 in)

Dimension "S" = $(S_1 - S_2) - \text{End play}$

S: Thickness of adjusting shim

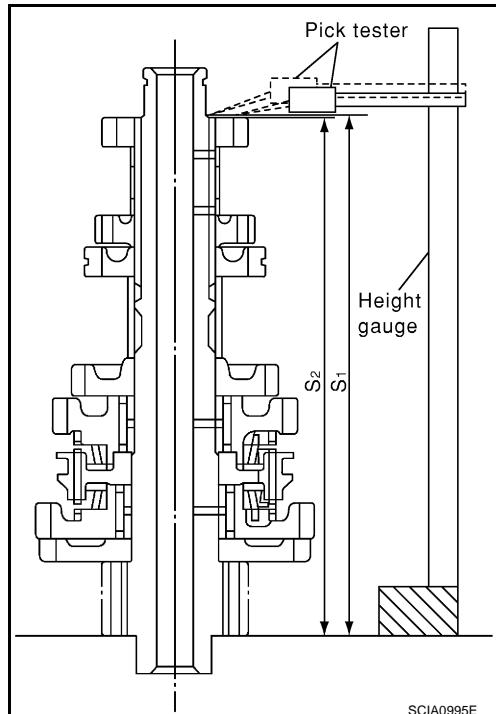
S₁: Dimension from mainshaft standard face to mainshaft rear bearing press-fit end face

S₂: Dimension from mainshaft standard face to 6th main gear end face

CAUTION:

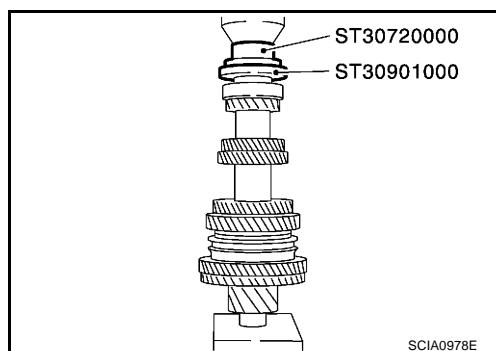
Only one adjusting shim can be selected.

- Using height gauge, measure dimension "S₁" and "S₂".
- Install selected 6th main adjusting shim to mainshaft.



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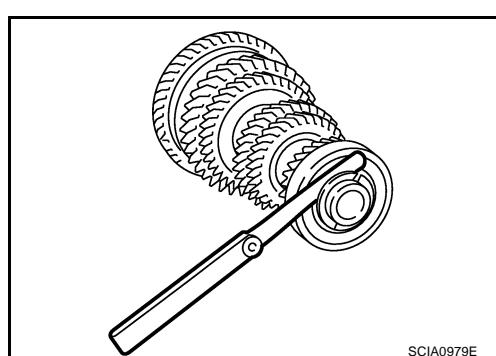
17. Press in mainshaft rear bearing using the drifts.



18. Install mainshaft C-ring onto mainshaft, and check that end play of mainshaft rear bearing satisfies the standard value.

End play standard value : 0 - 0.06 mm (0 - 0.0024 in)

- If measurement is outside the standard range, reselect mainshaft C-ring. Refer to [MT-105, "MAINSHAFT C-RING"](#) .

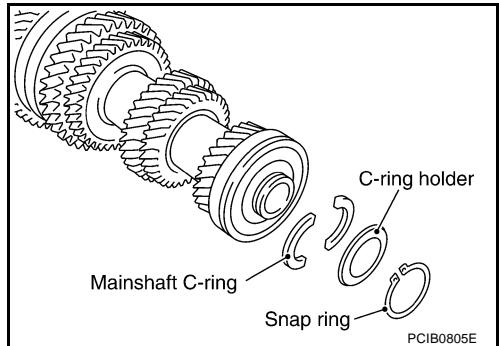


MAINSHAFT AND GEARS

19. Install C-ring holder, and then install snap ring.

CAUTION:

Do not reuse snap ring.

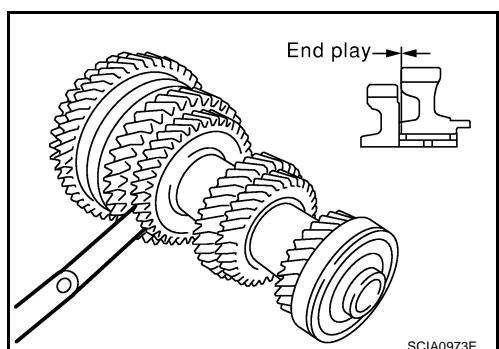


20. Check end play of 1st and 2nd main gears.

End play standard value

1st main gear : 0.20 - 0.30 mm (0.0079 - 0.0118 in)

2nd main gear : 0.06 - 0.16 mm (0.0024 - 0.0063 in)



REVERSE IDLER SHAFT AND GEARS

REVERSE IDLER SHAFT AND GEARS

PFP:32281

Disassembly and Assembly (RS5F51A) DISASSEMBLY

ECS008C8

1. Remove reverse idler gear (rear), reverse coupling sleeve and reverse insert spring simultaneously.
2. Remove reverse idler gear needle bearing.
3. Remove thrust needle bearing.
4. Remove reverse baulk ring.
5. Remove reverse idler gear (front).
6. Remove reverse idler gear needle bearing.
7. Remove thrust needle bearing.
8. Remove retaining pin from reverse idler shaft.

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CAUTION:

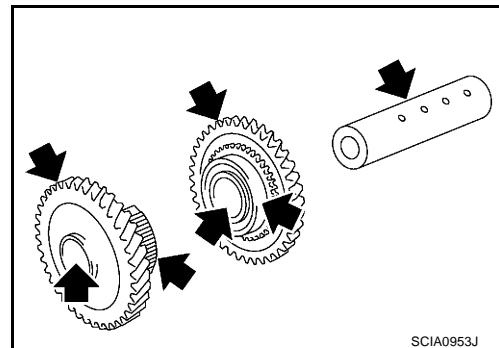
Do not reuse retaining pin.

INSPECTION AFTER DISASSEMBLY

Reverse Idler Shaft and Gears

Check items below. If necessary, replace them with new ones.

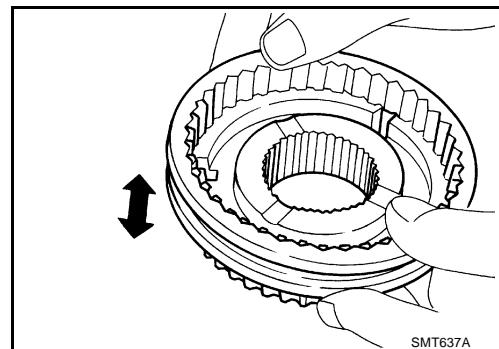
- Damage, peeling, dent, uneven wear, bending, and other non-standard conditions of the shaft.
- Excessive wear, damage, peeling, and other non-standard conditions of the gears.



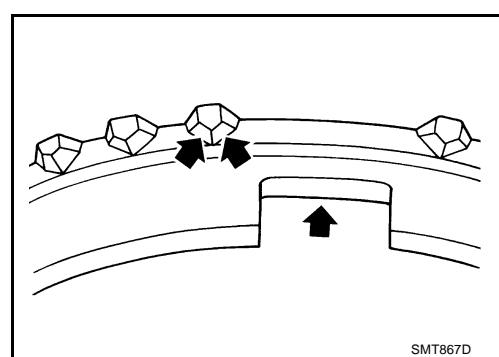
Synchronizer

Check items below. If necessary, replace them with new ones.

- Damage and unusual wear on contact surfaces of reverse coupling sleeve, reverse synchronizer hub and reverse insert spring.
- Reverse coupling sleeve and reverse synchronizer hub must move smoothly.



- If any crack, damage, or excessive wear is found on cam face of reverse baulk ring or working face of insert, replace it.



REVERSE IDLER SHAFT AND GEARS

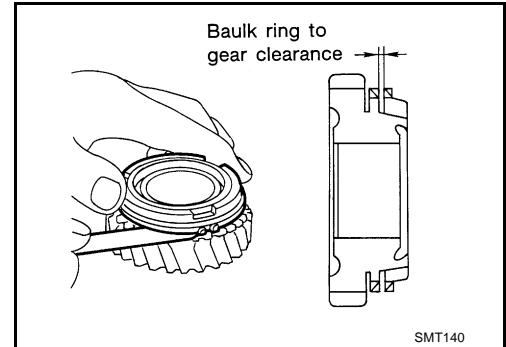
BAULK RING CLEARANCE

- Push baulk ring on the cone, and measure the clearance between baulk ring and cone. If the measurement is below limit, replace it with a new one.

Clearance

Standard value : 0.95 - 1.4 mm (0.037 - 0.055 in)

Limit value : 0.7 mm (0.028 in)



Bearing

Check items below. If necessary, replace them with new ones.

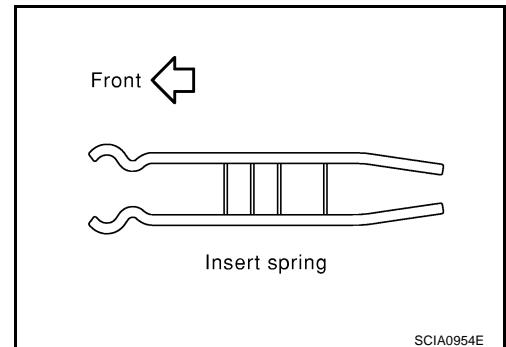
- Damage and rough rotation of bearing.

ASSEMBLY

Paying attention to the following caution, assemble in reverse order of disassembly.

CAUTION:

- Be careful with orientation of reverse insert spring.



Disassembly and Assembly (RS6F51A)

ECS008C9

DISASSEMBLY

- Remove reverse idler gear (rear), reverse coupling sleeve and reverse insert spring simultaneously.
- Remove reverse idler gear needle bearing.
- Remove thrust needle bearing.
- Remove reverse baulk ring.
- Remove reverse idler gear (front).
- Remove reverse idler gear needle bearing.
- Remove thrust needle bearing.
- Remove retaining pin from reverse idler shaft.

CAUTION:

Do not reuse retaining pin.

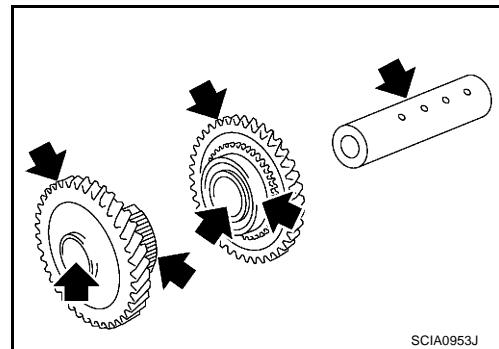
REVERSE IDLER SHAFT AND GEARS

INSPECTION AFTER DISASSEMBLY

Reverse Idler Shaft and Gears

Check items below. If necessary, replace them with new ones.

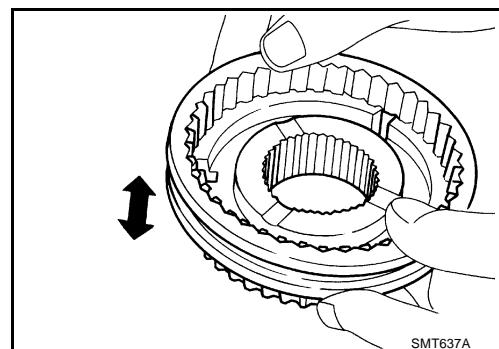
- Damage, peeling, dent, uneven wear, bending, and other non-standard conditions of the shaft.
- Excessive wear, damage, peeling, and other non-standard conditions of the gears.



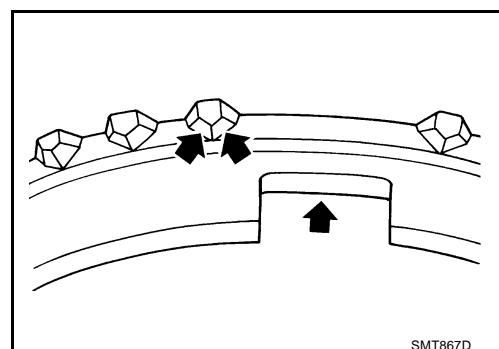
Synchronizer

Check items below. If necessary, replace them with new ones.

- Damage and unusual wear on contact surfaces of reverse coupling sleeve, reverse synchronizer hub, and reverse insert spring.
- Reverse coupling sleeve and reverse synchronizer hub must move smoothly.



- If any crack, damage, or excessive wear is found on cam face of reverse baulk ring or working face of insert, replace it.



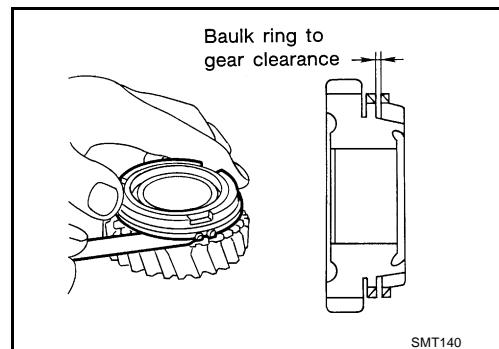
BAULK RING CLEARANCE

- Push baulk ring on the cone, and measure the clearance between baulk ring and cone. If the measurement is below limit, replace it with a new one.

Clearance

Standard value : 0.95 - 1.4 mm (0.037 - 0.055 in)

Limit value : 0.7 mm (0.028 in)



Bearing

Check items below. If necessary, replace them with new ones.

- Damage and rough rotation of bearing.

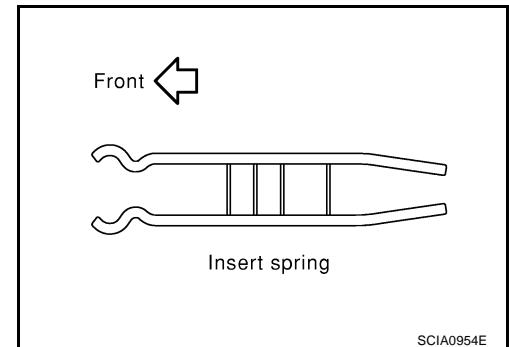
ASSEMBLY

Paying attention to the following caution, assemble in reverse order of disassembly.

REVERSE IDLER SHAFT AND GEARS

CAUTION:

- Be careful with orientation of reverse insert spring.



SCIA0954E

FINAL DRIVE

PFP:38411

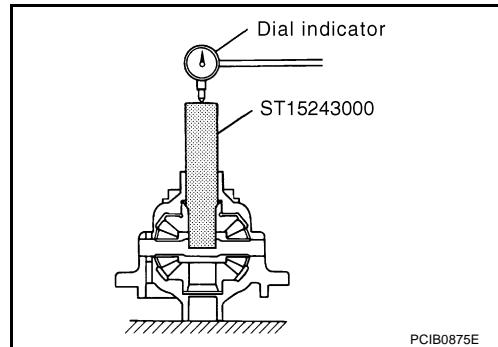
Disassembly and Assembly (RS5F51A)

ECS008CA

PRE-INSPECTION

- Check the clearance between side gear and differential case as follows.

- Clean final drive assembly sufficiently to prevent side gear thrust washer, differential case, side gear, and other parts from sticking by gear oil.



- Put differential case vertically so that side gear to be measured faces upward.
- Place the drift and a dial indicator onto side gear. Move side gear up and down, and measure the clearance.

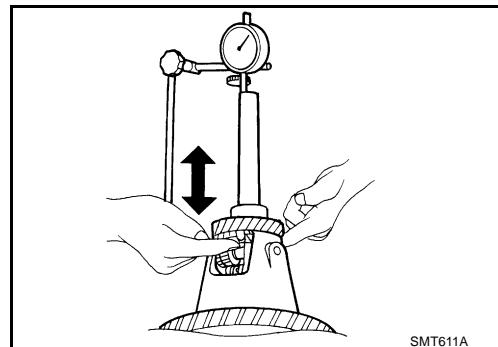
Clearance between side gear and differential case

: 0.1 - 0.2 mm (0.004 - 0.008 in)

CAUTION:

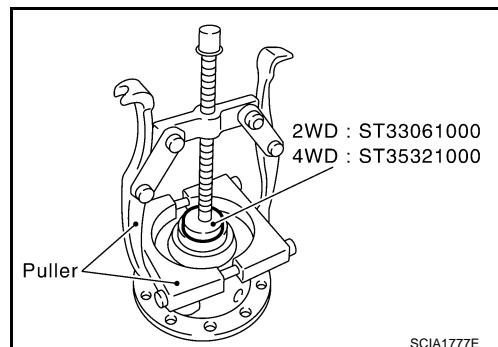
There should be no resistance and gears should rotate freely.

- If not within specification, adjust the clearance by changing side gear thrust washer thickness.
- Turn differential case upside down, and measure the clearance between side gear and differential case on the other side in the same way.

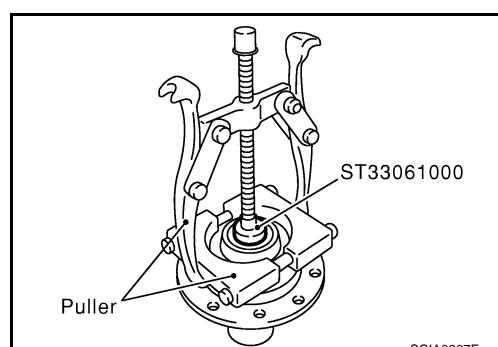


DISASSEMBLY

- Remove final gear mounting bolts, and then separate the final gear from differential case.
- Remove differential side bearing (clutch housing side) using the drift and pullers.

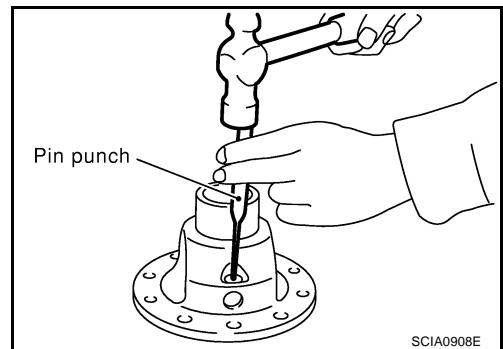


- Remove differential side bearing (transaxle case side) using the drift and pullers.
- Remove speedometer drive gear. (For 2WD models)



FINAL DRIVE

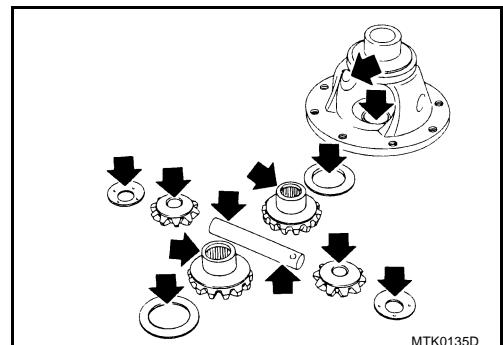
5. Remove retaining pin from differential case using a pin punch, and then remove pinion mate shaft.
6. Rotate pinion mate gears, and remove pinion mate gears, pinion mate thrust washers, side gears, and side gear thrust washers from differential case.



INSPECTION AFTER DISASSEMBLY

Gear, Washer, Shaft and Case

- Check side gears, side gear thrust washers, pinion mate shaft, pinion mate gears, pinion mate thrust washers and differential case. If necessary, replace with a new one.

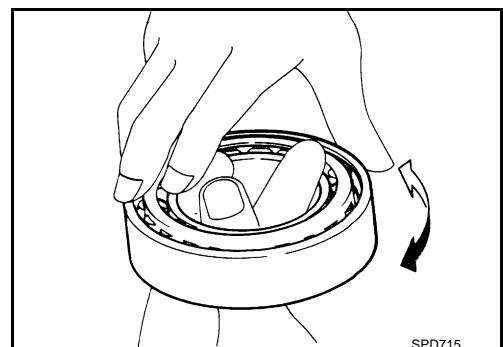


Bearing

- Check for bearing damage and rough rotation. If necessary, replace with a new one.

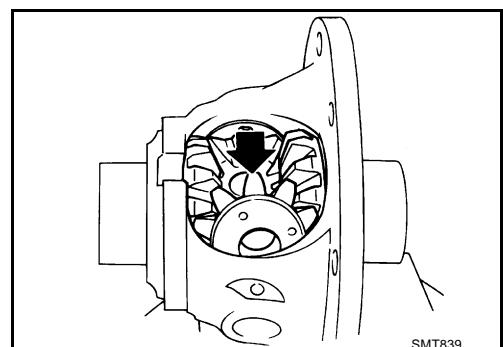
CAUTION:

When replacing tapered roller bearing, replace outer and inner races as a set.



ASSEMBLY

1. Apply gear oil to sliding area of differential case, each gear, and thrust washer.
2. Install side gear thrust washers and side gears into differential case.
3. While rotating pinion mate thrust washers and pinion mate gears, aligning them diagonally, install them into differential case.

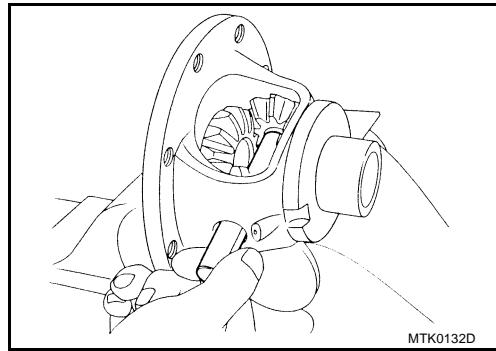


FINAL DRIVE

4. Insert pinion mate shaft into differential case.

CAUTION:

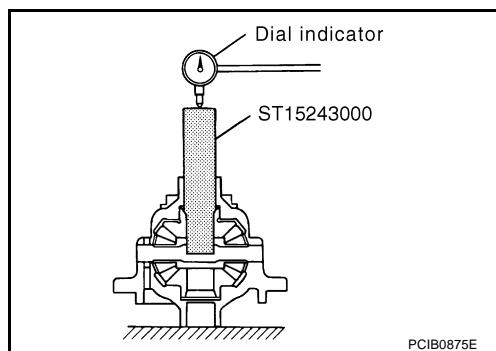
Be sure not to damage pinion mate thrust washers.



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5. Measure end play of side gears following the procedure below. Then select side gear thrust washer.

- Put differential case vertically so that its side gear to be measured faces upward.
- Place the drift and a dial indicator onto side gears.



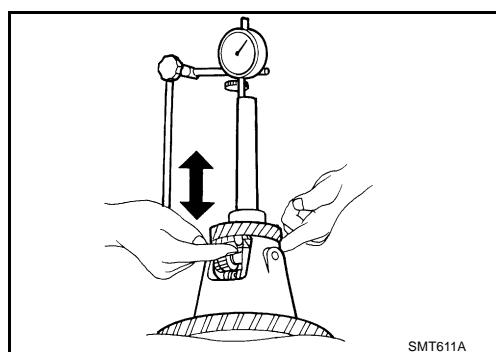
- Move side gears up and down to measure end play, and select thrust washer so that it satisfies the standard value. Refer to [MT-106, "DIFFERENTIAL SIDE GEAR THRUST WASHER"](#).

End play standard value

: 0.1 - 0.2 mm (0.004 - 0.008 in)

CAUTION:

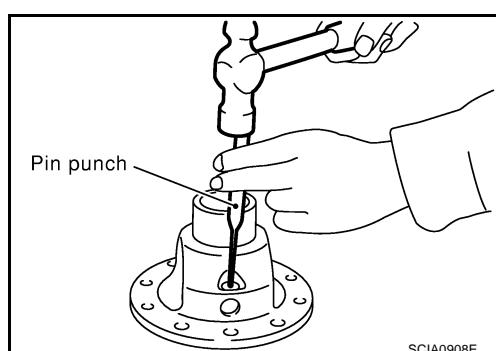
- There should be no resistance and gears should rotate freely.
- Place differential case upside down. Measure the end play for opposite side-gears likewise securely.
- Only one thrust washer can be selected.



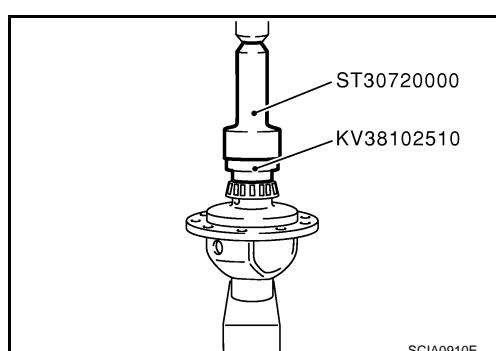
6. Install retaining pin into pinion mate shaft using a pin punch.

CAUTION:

Do not reuse retaining pin.

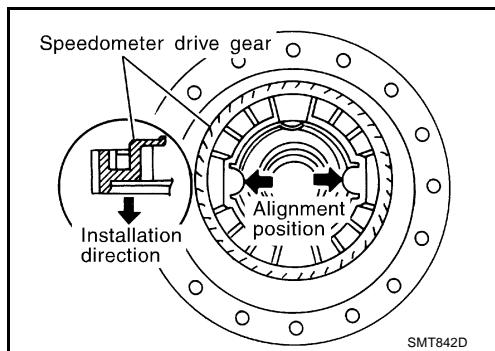


7. Press in differential side bearing (transaxle case side) to differential case using the drifts.

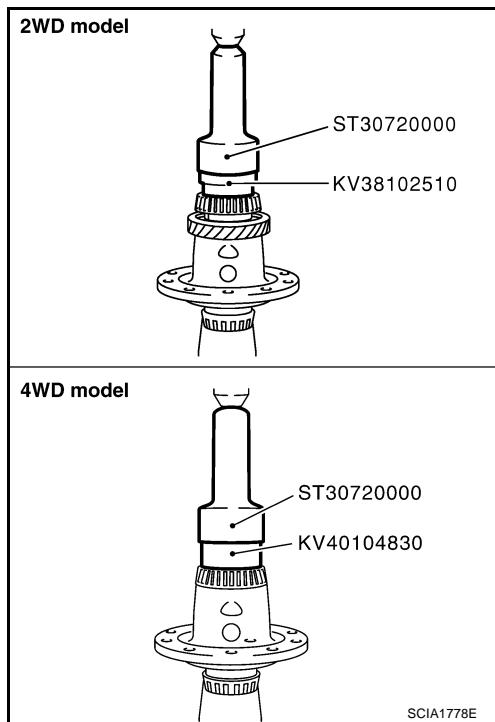


FINAL DRIVE

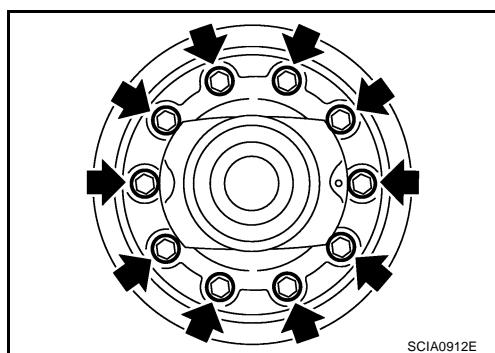
8. Align and install speedometer drive gear onto differential case.
(For 2WD models)



9. Press in differential side bearing (clutch housing side) to differential case using the drifts.



10. Install final gear into differential case, and tighten final gear mounting bolts to the specified torque. Refer to [MT-26, "Final Drive Components"](#) .

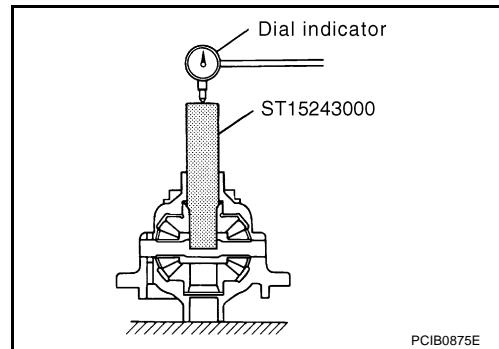


Disassembly and Assembly (RS6F51A)

PRE-INSPECTION

- Check the clearance between side gear and differential case as follows.

- Clean final drive assembly sufficiently to prevent side gear thrust washer, differential case, side gear, and other parts from sticking by gear oil.



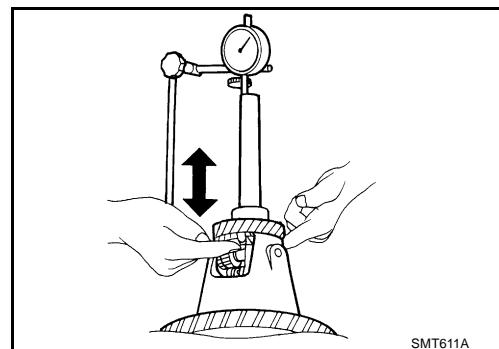
- Put differential case vertically so that side gear to be measured faces upward.
- Place the drift and a dial indicator onto side gear. Move side gear up and down, and measure the clearance.

Clearance between side gear and differential case
: 0.1 - 0.2 mm (0.004 - 0.008 in)

CAUTION:

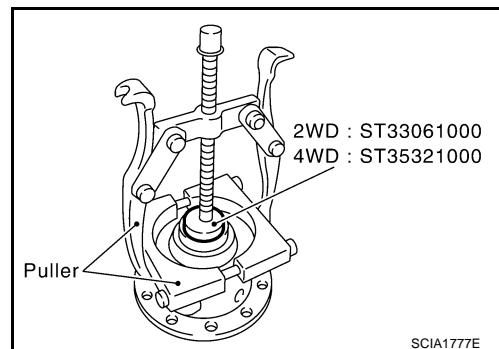
There should be no resistance and gears should rotate freely.

- If not within specification, adjust the clearance by changing side gear thrust washer thickness.
- Turn differential case upside down, and measure the clearance between side gear and differential case on the other side in the same way.

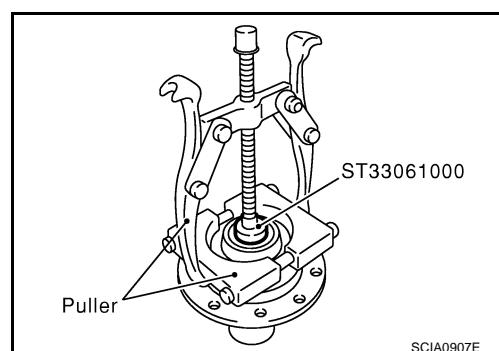


DISASSEMBLY

- Remove final gear mounting bolts, and then separate the final gear from differential case.
- Remove differential side bearing (clutch housing side) using the drift and pullers.

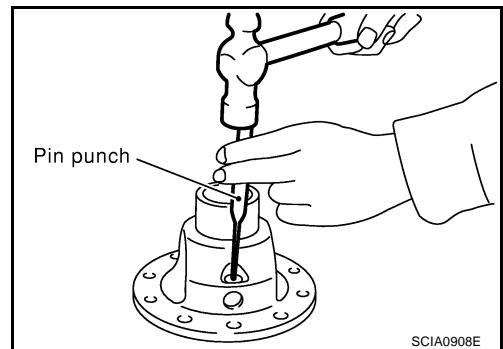


- Remove differential side bearing (transaxle case side) using the drift and pullers.
- Remove speedometer drive gear. (For 2WD models)



FINAL DRIVE

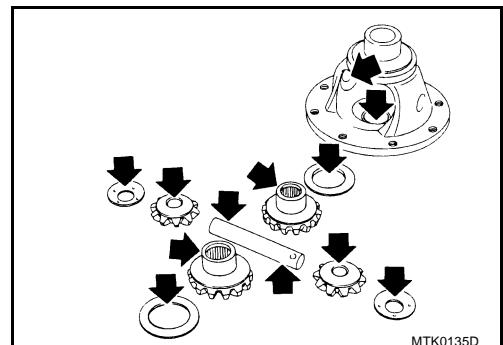
5. Remove retaining pin from differential case using a pin punch, and then remove pinion mate shaft.
6. Rotate pinion mate gears, and remove pinion mate gears, pinion mate thrust washers, side gears, and side gear thrust washers from differential case.



INSPECTION AFTER DISASSEMBLY

Gear, Washer, Shaft and Case

- Check side gears, side gear thrust washers, pinion mate shaft, pinion mate gears, pinion mate thrust washers and differential case. If necessary, replace with a new one.

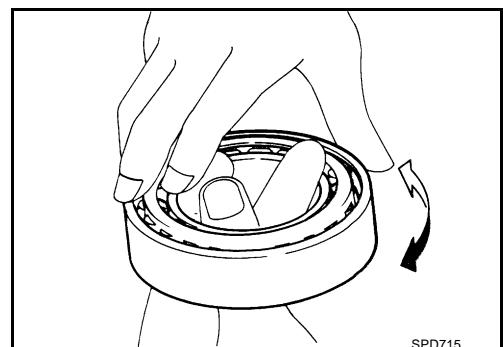


Bearing

- Check for bearing damage and rough rotation. If necessary, replace with a new one.

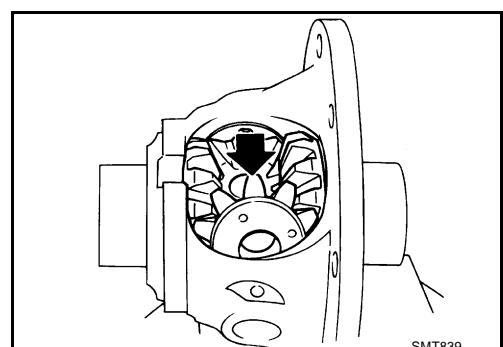
CAUTION:

When replacing tapered roller bearing, replace outer and inner races as a set.



ASSEMBLY

1. Apply gear oil to sliding area of differential case, each gear, and thrust washer.
2. Install side gear thrust washers and side gears into differential case.
3. While rotating pinion mate thrust washers and pinion mate gears, aligning them diagonally, install them into differential case.

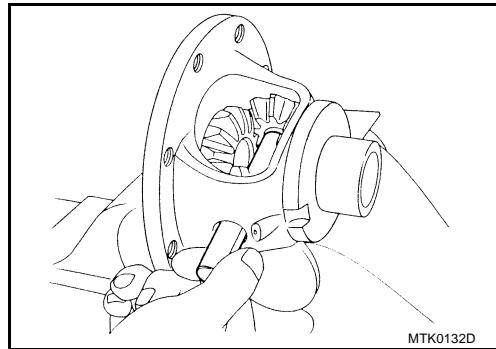


FINAL DRIVE

4. Insert pinion mate shaft into differential case.

CAUTION:

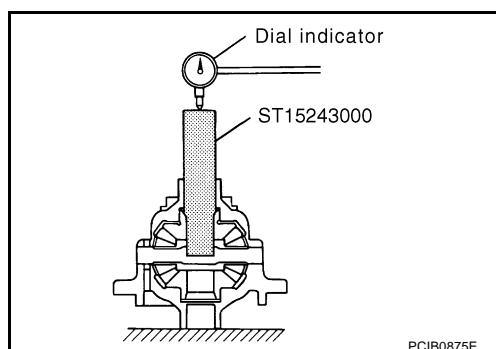
Be sure not to damage pinion mate thrust washers.



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5. Measure end play of side gears following the procedure below. Then select side gear thrust washer.

- Put differential case vertically so that its side gear to be measured faces upward.
- Place the drift and a dial indicator onto side gears.



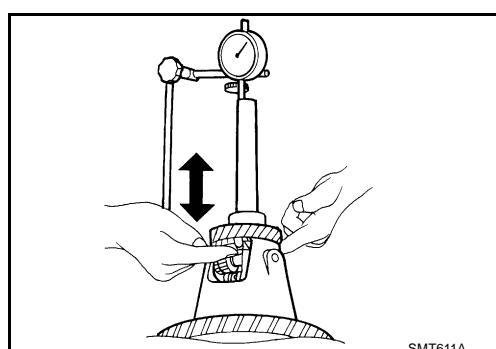
- Move side gears up and down to measure end play, and select thrust washer so that it satisfies the standard value. Refer to [MT-106, "DIFFERENTIAL SIDE GEAR THRUST WASHER"](#).

End play standard value

: 0.1 - 0.2 mm (0.004 - 0.008 in)

CAUTION:

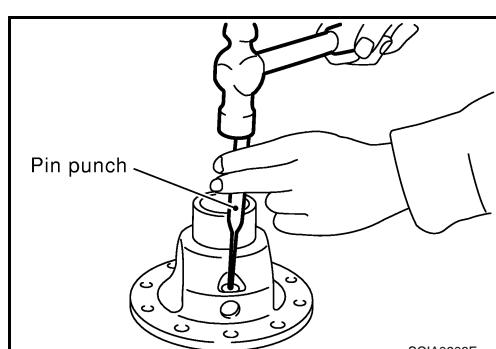
- There should be no resistance and gears should rotate freely.
- Place differential case upside down. Measure the end play for opposite side-gears likewise securely.
- Only one thrust washer can be selected.



- Install retaining pin into pinion mate shaft using a pin punch.

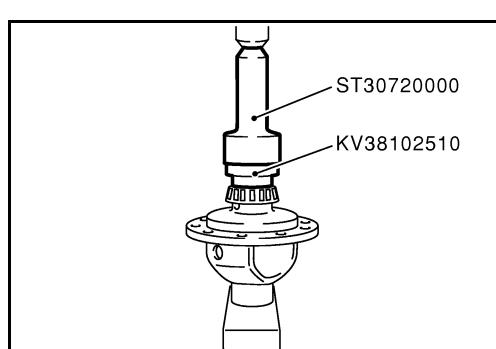
CAUTION:

Do not reuse retaining pin.



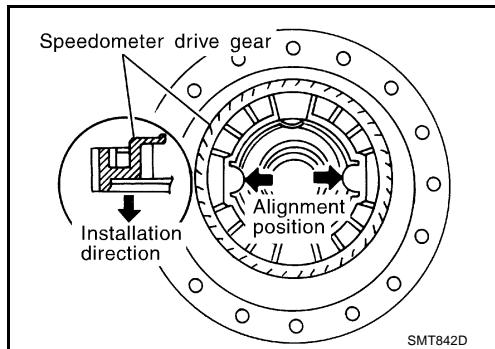
M

- Press in differential side bearing (transaxle case side) to differential case using the drifts.

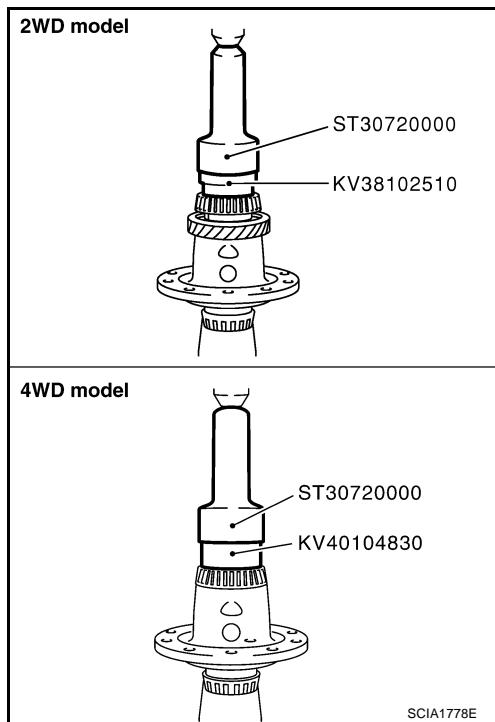


FINAL DRIVE

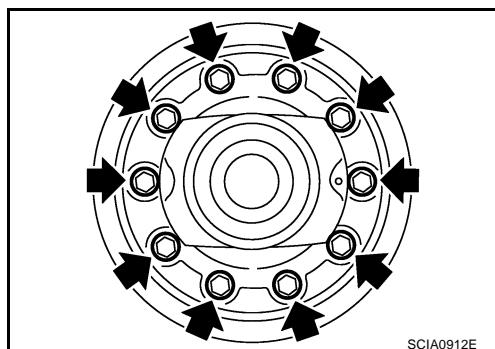
8. Align and install speedometer drive gear onto differential case.
(For 2WD models)



9. Press in differential side bearing (clutch housing side) to differential case using the drifts.



10. Install final gear into differential case, and tighten final gear mounting bolts to the specified torque. Refer to [MT-44, "Final Drive Components"](#) .



SHIFT CONTROL

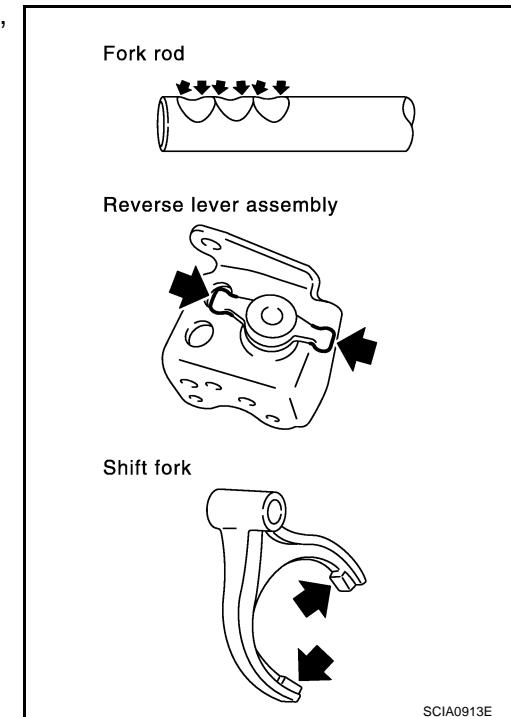
SHIFT CONTROL

Inspection (RS5F51A)

PFP:32982

ECS008CC

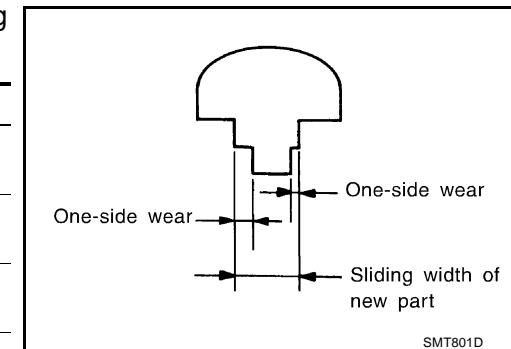
- Check contact surfaces and sliding area for wear, damage, bending, etc. If necessary, replace parts.



SHIFT FORK

- Check if the width of shift fork hook (sliding area with coupling sleeve) is within allowable specification below.

Item	One-side wear specification	Sliding width of new part
1st-2nd	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
3rd-4th	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
5th	0.2 mm (0.008 in)	6.10 - 6.23 mm (0.2402 - 0.2453 in)
Reverse	0.2 mm (0.008 in)	12.80 - 12.93 mm (0.5039 - 0.5091 in)

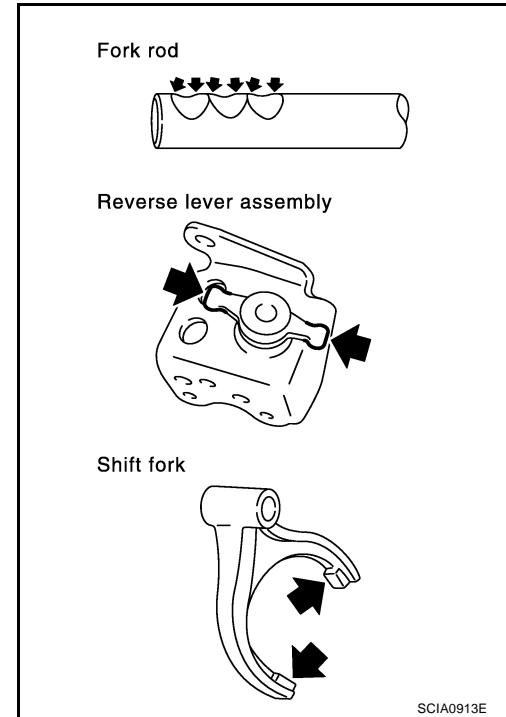


SHIFT CONTROL

Inspection (RS6F51A)

ECS008CD

- Check contact surfaces and sliding area for wear, damage, bending, etc. If necessary, replace parts.

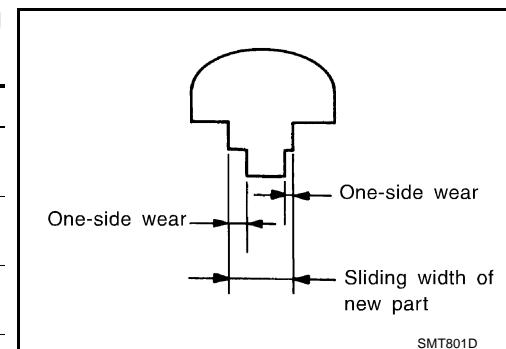


SCIA0913E

SHIFT FORK

- Check if the width of shift fork hook (sliding area with coupling sleeve) is within allowable specification below.

Item	One-side wear specification	Sliding width of new part
1st-2nd	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
3rd-4th	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
5th-6th	0.2 mm (0.008 in)	6.10 - 6.23 mm (0.2402 - 0.2453 in)
Reverse	0.2 mm (0.008 in)	12.80 - 12.93 mm (0.5039 - 0.5091 in)



SMT801D

SERVICE DATA AND SPECIFICATIONS (SDS)

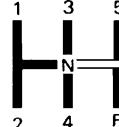
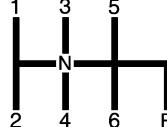
SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

General Specifications

TRANSAXLE

ECS008CE

Engine type	QR20DE	QR25DE	YD22DDTi	
Transaxle model	RS5F51A			RS6F51A
Axle type	2WD	4WD	2WD	4WD
Model code number	EQ500	EQ000	EQ008	EQ078
Number of speed	5		6	
Synchromesh type	Warner			
Shift pattern	5 speed			
	6 speed			
Gear ratio	1st	3.500	3.416	3.500
	2nd		1.944	
	3rd		1.258	
	4th		0.947	
	5th	0.772	0.733	0.772
	6th	—		0.630
	Reverse	3.374	3.252	3.374
	Final gear	4.750		4.428
Number of teeth	Input gear	1st	14	12
		2nd		18
		3rd		31
		4th		38
		5th	44	45
		6th	—	46
		Reverse	14	12
	Main gear	1st	49	41
		2nd		35
		3rd		39
		4th		36
		5th	34	33
		6th	—	29
		Reverse		38

SERVICE DATA AND SPECIFICATIONS (SDS)

Engine type			QR20DE	QR25DE	YD22DDTi					
Transaxle model			RS5F51A		RS6F51A					
Axe type		2WD	4WD		2WD	4WD				
Model code number			EQ500	EQ000	EQ008	EQ078	EQ068			
Number of teeth	Reverse idler gear	Front	37							
		Rear	46	38	46					
	Final gear	Final gear/ Pinion	76/16		62/14					
		Side gear/ Pinion mate gear	14/10							
Oil level mm (in)			55.0 - 61.0 (2.17 - 2.40)	168.0 - 174.0 (6.61 - 6.85)	55.0 - 61.0 (2.17 - 2.40)	168.0 - 174.0 (6.61 - 6.85)				
Oil capacity (Reference) ℓ (Imp pt)			Approx. 2.2 (3-7/8)							
Remarks	Reverse synchronizer	Installed								
	Double-cone synchronizer	3rd								
	Triple-cone synchronizer	1st and 2nd								

Gear End Play

ECS008CF

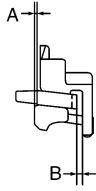
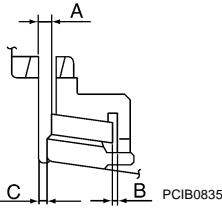
Unit: mm (in)

Gear	End play
1st main gear	0.20 - 0.30 (0.0079 - 0.0118)
2nd main gear	0.06 - 0.16 (0.0024 - 0.0063)
3rd input gear	0.18 - 0.31 (0.0071 - 0.0122)
4th input gear	0.20 - 0.30 (0.0079 - 0.0118)
5th input gear	0.06 - 0.16 (0.0024 - 0.0063)
6th input gear (For RS6F51A models)	0.06 - 0.16 (0.0024 - 0.0063)

Baulk Ring Clearance

ECS00CV4

Unit: mm (in)

Measurement point	Standard value	Limit value
3rd (Double-cone synchronizer)	Clearance between synchronizer cone and inner baulk ring end face "A"	0.6 - 0.8 (0.024 - 0.031)
	Clearance between outer baulk ring pawl and synchronizer cone "B"	0.6 - 1.1 (0.024 - 0.043)
		0.2 (0.008)
1st and 2nd (Triple-cone synchronizer)	Clearance between synchronizer cone and clutch gear end face "A"	0.6 - 1.2 (0.024 - 0.047)
	Clearance between outer baulk ring pawl and synchronizer cone "B"	0.6 - 1.1 (0.024 - 0.043)
	0.3 (0.012)	0.2 (0.008)
	Clearance between inner baulk ring and clutch gear end face "C"	0.7 - 1.1 (0.028 - 0.043)
		0.3 (0.012)

SERVICE DATA AND SPECIFICATIONS (SDS)

Measurement point	Standard value	Limit value
4th	0.9 - 1.45 (0.035 - 0.057)	0.7 (0.028)
5th	0.95 - 1.4 (0.037 - 0.055)	
6th (For RS6F51A models)	0.95 - 1.4 (0.037 - 0.055)	
Reverse	0.95 - 1.4 (0.037 - 0.055)	

Available Snap Rings INPUT SHAFT BEARING SPACER

ECS008CH

MT

—For RS5F51A Models—

End play		0 - 0.1 mm (0 - 0.004 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
1.71 (0.0673)	32204 8H510	2.01 (0.0791)	32204 8H516
1.76 (0.0693)	32204 8H511	2.06 (0.0811)	32204 8H517
1.81 (0.0713)	32204 8H512	2.11 (0.0831)	32204 8H518
1.86 (0.0732)	32204 8H513	2.16 (0.0850)	32204 8H519
1.91 (0.0752)	32204 8H514	2.21 (0.0870)	32204 8H520
1.96 (0.0772)	32204 8H515	2.26 (0.0890)	32204 8H521

*: Always check with the Parts Department for the latest parts information.

6TH INPUT GEAR BUSHING

—For RS6F51A Models—

End play		0 - 0.1 mm (0 - 0.004 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
1.76 (0.0693)	32204 8H511	2.01 (0.0791)	32204 8H516
1.81 (0.0713)	32204 8H512	2.06 (0.0811)	32204 8H517
1.86 (0.0732)	32204 8H513	2.11 (0.0831)	32204 8H518
1.91 (0.0752)	32204 8H514	2.16 (0.0850)	32204 8H519
1.96 (0.0772)	32204 8H515	2.21 (0.0870)	32204 8H520

*: Always check with the Parts Department for the latest parts information.

5TH MAIN GEAR

—For RS5F51A Models—

End play		0 - 0.1 mm (0 - 0.004 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
1.85 (0.0728)	32204 8H500	2.05 (0.0807)	32204 8H504
1.90 (0.0748)	32204 8H501	2.10 (0.0827)	32204 8H505
1.95 (0.0768)	32204 8H502	2.15 (0.0846)	32204 8H506
2.00 (0.0787)	32204 8H503	2.20 (0.0866)	32204 8H507

*: Always check with the Parts Department for the latest parts information.

Available C-Rings MAINSHAFT C-RING

ECS008CI

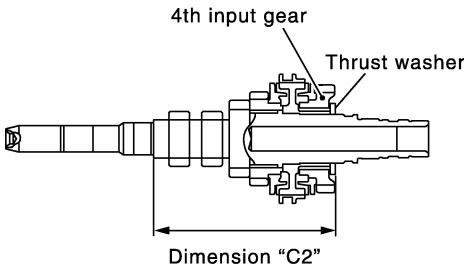
End play		0 - 0.06 mm (0 - 0.0024 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
2.535 (0.0998)	32348 8H800	2.835 (0.1116)	32348 8H810
2.565 (0.1010)	32348 8H801	2.865 (0.1128)	32348 8H811
2.595 (0.1022)	32348 8H802	2.895 (0.1140)	32348 8H812
2.625 (0.1033)	32348 8H803	2.925 (0.1152)	32348 8H813
2.655 (0.1045)	32348 8H804	2.955 (0.1163)	32348 8H814
2.685 (0.1057)	32348 8H805	2.985 (0.1175)	32348 8H815
2.715 (0.1069)	32348 8H806	3.015 (0.1187)	32348 8H816
2.745 (0.1081)	32348 8H807	3.045 (0.1199)	32348 8H817
2.775 (0.1093)	32348 8H808	3.075 (0.1211)	32348 8H818
2.805 (0.1104)	32348 8H809		

*: Always check with the Parts Department for the latest parts information.

SERVICE DATA AND SPECIFICATIONS (SDS)

Available Thrust Washer INPUT SHAFT THRUST WASHER

ECS008CJ



SCIA1008E

Standard length "C2"		154.7 - 154.8 mm (6.091 - 6.094 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
3.84 (0.1512)	32347 8H500	4.02 (0.1583)	32347 8H503
3.90 (0.1535)	32347 8H501	4.08 (0.1606)	32347 8H504
3.96 (0.1559)	32347 8H502	4.14 (0.1630)	32347 8H505

*: Always check with the Parts Department for the latest parts information.

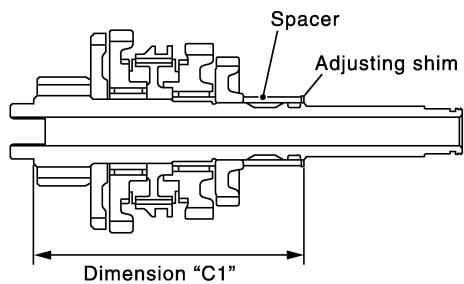
DIFFERENTIAL SIDE GEAR THRUST WASHER

Allowable clearance between side gear and differential case with washer	0.1 - 0.2 mm (0.004 - 0.008 in)
Thickness mm (in)	Part number*
0.75 (0.0295)	38424 81X00
0.80 (0.0315)	38424 81X01
0.85 (0.0335)	38424 81X02
0.90 (0.0354)	38424 81X03
0.95 (0.0374)	38424 81X04

*: Always check with the Parts Department for the latest parts information.

Available Adjusting Shims 4TH MAIN GEAR ADJUSTING SHIM

ECS008CK



SCIA1009E

Standard length "C1"		173.85 - 173.95 mm (6.844 - 6.848 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
0.52 (0.0205)	32238 8H500	0.84 (0.0331)	32238 8H504
0.60 (0.0236)	32238 8H501	0.92 (0.0362)	32238 8H505
0.68 (0.0268)	32238 8H502	1.00 (0.0394)	32238 8H506
0.76 (0.0299)	32238 8H503	1.08 (0.0425)	32238 8H507

*: Always check with the Parts Department for the latest parts information.

SERVICE DATA AND SPECIFICATIONS (SDS)

INPUT SHAFT REAR BEARING ADJUSTING SHIM

End play			0 - 0.06 mm (0 - 0.0024 in)		
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
0.40 (0.0157)	32225 8H500	0.88 (0.0346)	32225 8H512	1.36 (0.0535)	32225 8H524
0.44 (0.0173)	32225 8H501	0.92 (0.0362)	32225 8H513	1.40 (0.0551)	32225 8H560
0.48 (0.0189)	32225 8H502	0.96 (0.0378)	32225 8H514	1.44 (0.0567)	32225 8H561
0.52 (0.0205)	32225 8H503	1.00 (0.0394)	32225 8H515	1.48 (0.0583)	32225 8H562
0.56 (0.0220)	32225 8H504	1.04 (0.0409)	32225 8H516	1.52 (0.0598)	32225 8H563
0.60 (0.0236)	32225 8H505	1.08 (0.0425)	32225 8H517	1.56 (0.0614)	32225 8H564
0.64 (0.0252)	32225 8H506	1.12 (0.0441)	32225 8H518	1.60 (0.0630)	32225 8H565
0.68 (0.0268)	32225 8H507	1.16 (0.0457)	32225 8H519	1.64 (0.0646)	32225 8H566
0.72 (0.0283)	32225 8H508	1.20 (0.0472)	32225 8H520	1.68 (0.0661)	32225 8H567**
0.76 (0.0299)	32225 8H509	1.24 (0.0488)	32225 8H521	1.72 (0.0677)	32225 8H568**
0.80 (0.0315)	32225 8H510	1.28 (0.0504)	32225 8H522		
0.84 (0.0331)	32225 8H511	1.32 (0.0520)	32225 8H523		

*: Always check with the Parts Department for the latest parts information.

**: RS5F51A models only.

MAINSHAFT REAR BEARING ADJUSTING SHIM

End play		0 - 0.06 mm (0 - 0.0024 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
0.44 (0.0173)	32238 8H510	0.80 (0.0315)	32238 8H519
0.48 (0.0189)	32238 8H511	0.84 (0.0331)	32238 8H520
0.52 (0.0205)	32238 8H512	0.88 (0.0346)	32238 8H521
0.56 (0.0220)	32238 8H513	0.92 (0.0362)	32238 8H522
0.60 (0.0236)	32238 8H514	0.96 (0.0378)	32238 8H523
0.64 (0.0252)	32238 8H515	1.00 (0.0394)	32238 8H524
0.68 (0.0268)	32238 8H516	1.04 (0.0409)	32238 8H560
0.72 (0.0283)	32238 8H517	1.08 (0.0425)	32238 8H561
0.76 (0.0299)	32238 8H518		

*: Always check with the Parts Department for the latest parts information.

REVERSE IDLER GEAR ADJUSTING SHIM

End play		0.04 - 0.10 mm (0.0016 - 0.0039 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
1.76 (0.0693)	32237 8H800	2.24 (0.0882)	32237 8H812
1.80 (0.0709)	32237 8H801	2.28 (0.0898)	32237 8H813
1.84 (0.0724)	32237 8H802	2.32 (0.0913)	32237 8H814
1.88 (0.0740)	32237 8H803	2.36 (0.0929)	32237 8H815
1.92 (0.0756)	32237 8H804	2.40 (0.0945)	32237 8H816
1.96 (0.0772)	32237 8H805	2.44 (0.0961)	32237 8H817
2.00 (0.0787)	32237 8H806	2.48 (0.0976)	32237 8H818
2.04 (0.0803)	32237 8H807	2.52 (0.0992)	32237 8H819
2.08 (0.0819)	32237 8H808	2.56 (0.1008)	32237 8H820
2.12 (0.0835)	32237 8H809	2.60 (0.1024)	32237 8H821
2.16 (0.0850)	32237 8H810	2.64 (0.1039)	32237 8H822
2.20 (0.0866)	32237 8H811		

*: Always check with the Parts Department for the latest parts information.

6TH MAIN GEAR ADJUSTING SHIM

—For RS6F51A Models—

End play		0 - 0.1 mm (0 - 0.004 in)	
Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
0.88 (0.0346)	32237 8H560	1.20 (0.0472)	32237 8H564
0.96 (0.0378)	32237 8H561	1.28 (0.0504)	32237 8H565
1.04 (0.0409)	32237 8H562	1.36 (0.0535)	32237 8H566
1.12 (0.0441)	32237 8H563		

*: Always check with the Parts Department for the latest parts information.

SERVICE DATA AND SPECIFICATIONS (SDS)

Available Shims

ECS008CL

— Differential Side Bearing Preload and Adjusting Shim

BEARING PRELOAD

Differential side bearing preload: L*	0.15 - 0.21 mm (0.0059 - 0.0083 in)
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*: Install shims which are "deflection of differential case" + "L" in thickness.

DIFFERENTIAL SIDE BEARING ADJUSTING SHIM(S)

Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
0.48 (0.0189)	31438 80X00	0.72 (0.0283)	31438 80X06
0.52 (0.0205)	31438 80X01	0.76 (0.0299)	31438 80X07
0.56 (0.0220)	31438 80X02	0.80 (0.0315)	31438 80X08
0.60 (0.0236)	31438 80X03	0.84 (0.0331)	31438 80X09
0.64 (0.0252)	31438 80X04	0.88 (0.0346)	31438 80X10
0.68 (0.0268)	31438 80X05	0.92 (0.0362)	31438 80X11

*: Always check with the Parts Department for the latest parts information.