

## PRECAUTIONS

PF0:00001

### Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

ECS00J30

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

### Service Notice or Precautions

UCS007A0

- 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 marks 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.

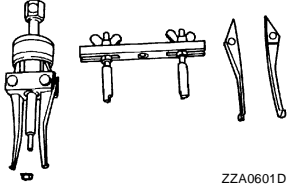
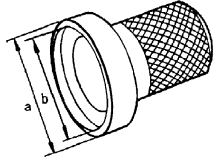
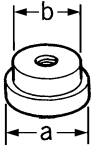
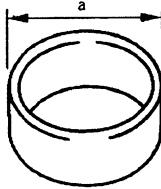
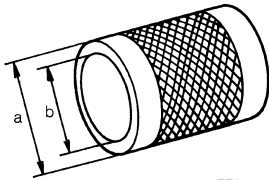
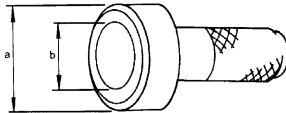
## PREPARATION

PFP:00002

### Special Service Tools

UCS007A1

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name		Description
KV381054S0 (J-34286) Puller	 ZZA0601D	<ul style="list-style-type: none"> <li>● Removing differential side bearing outer race (clutch housing side)</li> <li>● Removing differential side bearing outer race (transaxle case side)</li> <li>● Removing mainshaft front bearing</li> </ul>
ST33400001 (J-26082) Drift a: 60 mm (2.36 in) dia. b: 47 mm (1.85 in) dia.	 ZZA0814D	Installing differential side oil seal (clutch housing side)
ST35321000 ( — ) Drift a: 49 mm (1.93 in) dia. b: 41 mm (1.61 in) dia.	 ZZA1000D	<ul style="list-style-type: none"> <li>● Installing input shaft oil seal</li> <li>● Installing reverse main gear</li> <li>● Installing 1st main gear bushing</li> <li>● Installing 1st-2nd synchronizer hub assembly</li> <li>● Installing 2nd main gear bushing</li> <li>● Installing 3rd main gear</li> </ul>
KV40105320 ( — ) Drift a: 88 mm (3.46 in) dia.	 ZZA0898D	Installing differential side bearing outer race (clutch housing side)
ST33200000 (J-26082) Drift a: 60 mm (2.36 in) dia. b: 44.5 mm (1.752 in) dia.	 ZZA1002D	<ul style="list-style-type: none"> <li>● Installing mainshaft front bearing</li> <li>● Installing 6th input gear bushing</li> <li>● Installing 4th main gear</li> <li>● Installing 5th main gear</li> <li>● Installing 6th main gear</li> </ul>
ST30720000 (J-25405) Drift a: 77 mm (3.03 in) dia. b: 55.5 mm (2.185 in) dia.	 ZZA0811D	<ul style="list-style-type: none"> <li>● Installing differential side oil seal (transaxle case side)</li> <li>● Installing differential side bearing outer race (clutch housing side)</li> <li>● Installing differential side bearing outer race (transaxle case side)</li> <li>● Installing mainshaft rear bearing</li> <li>● Installing differential side bearing (clutch housing side)</li> <li>● Installing differential side bearing (transaxle case side)</li> </ul>

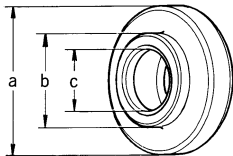
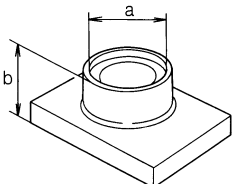
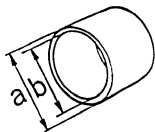
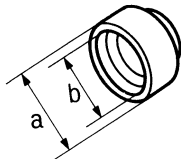
# PREPARATION

[RS6F52H]

Tool number (Kent-Moore No.) Tool name	Description
ST33061000 (J-8107-2) Drift a: 38 mm (1.50 in) dia. b: 28.5 mm (1.122 in) dia. <div data-bbox="719 279 812 426"> </div> <div data-bbox="849 451 914 468">ZZA1000D</div>	<ul style="list-style-type: none"> <li>● Installing bore plug</li> <li>● Removing differential side bearing (transaxle case side)</li> <li>● Removing differential side bearing (clutch housing side)</li> </ul>
ST33052000 ( — ) Drift a: 22 mm (0.87 in) dia. b: 28 mm (1.10 in) dia. <div data-bbox="727 577 816 751"> </div> <div data-bbox="849 751 914 768">ZZA1023D</div>	<ul style="list-style-type: none"> <li>● Removing input shaft rear bearing</li> <li>● Removing 6th input gear, 6th input gear bushing, 5th-6th synchronizer hub assembly, and 5th input gear</li> <li>● Removing 5th input gear bushing, 4th input gear, 4th input gear bushing, 3rd-4th synchronizer hub assembly, and 3rd input gear</li> <li>● Installing input shaft front bearing</li> <li>● Removing mainshaft rear bearing</li> <li>● Removing 6th main gear</li> <li>● Removing 4th main gear and 5th main gear</li> </ul>
KV40105020 ( — ) Drift a: 39.7 mm (1.563 in) dia. b: 35 mm (1.38 in) dia. c: 15 mm (0.59 in) <div data-bbox="719 867 865 1056"> </div> <div data-bbox="849 1056 914 1073">ZZA1133D</div>	Removing 3rd main gear, 2nd main gear, 2nd main gear bushing, 1st-2nd synchronizer hub assembly, 1st main gear, 1st main gear bushing, and reverse main gear
ST30031000 (J-22912-01) Puller <div data-bbox="662 1108 833 1276"> </div> <div data-bbox="849 1287 914 1304">ZZA0537D</div>	Measuring wear of inner baulk ring
KV40105710 ( — ) Press stand a: 46 mm (1.81 in) dia. b: 41 mm (1.61 in) <div data-bbox="654 1360 881 1549"> </div> <div data-bbox="849 1549 914 1566">ZZA1058D</div>	<ul style="list-style-type: none"> <li>● Installing 3rd-4th synchronizer hub assembly</li> <li>● Installing 4th input gear bushing</li> <li>● Installing 5th input gear bushing</li> <li>● Installing 5th-6th synchronizer hub assembly</li> <li>● Installing 2nd main gear bushing</li> <li>● Installing 3rd main gear</li> </ul>
ST30901000 (J-26010-01) Drift a: 79 mm (3.11 in) dia. b: 45 mm (1.77 in) dia. c: 35.2 mm (1.386 in) dia. <div data-bbox="630 1633 865 1791"> </div> <div data-bbox="849 1801 914 1818">ZZA0978D</div>	<ul style="list-style-type: none"> <li>● Installing input shaft rear bearing</li> <li>● Installing 4th main gear</li> <li>● Installing 5th main gear</li> <li>● Installing 6th main gear</li> <li>● Installing mainshaft rear bearing</li> </ul>

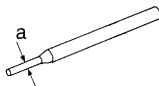
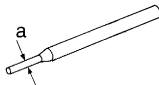
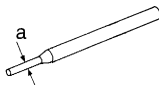
# PREPARATION

[RS6F52H]

Tool number (Kent-Moore No.) Tool name	Description	
ST30032000 (J-26010-01) Drift a: 80 mm (3.15 in) dia. b: 38 mm (1.50 in) dia. c: 31 mm (1.22 in) dia.	Installing input shaft front bearing	A
 ZZA0978D		B
ST38220000 ( — ) Press stand a: 63 mm (2.48 in) dia. b: 65 mm (2.56 in)	<ul style="list-style-type: none"> <li>Installing reverse main gear</li> <li>Installing 1st main gear bushing</li> <li>Installing 1st-2nd synchronizer hub assembly</li> </ul>	D
 ZZA1058D		E
KV40101630 (J-35870) Drift a: 68 mm (2.68 in) dia. b: 60 mm (2.36 in) dia.	Installing reverse main gear	F
 ZZA1003D		G
KV38102510 ( — ) Drift a: 71 mm (2.80 in) dia. b: 65 mm (2.56 in) dia.	<ul style="list-style-type: none"> <li>Installing 1st main gear bushing</li> <li>Installing 1st-2nd synchronizer hub assembly</li> <li>Installing differential side bearing (transaxle case side)</li> <li>Installing differential side bearing (clutch housing side)</li> </ul>	H
 ZZA0838D		I

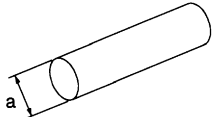
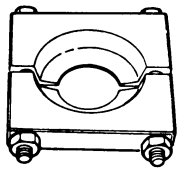
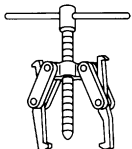
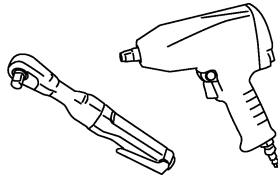
## Commercial Service Tools

UCS007A2

Tool name	Description	
Pin punch a: 4.5 mm (0.177 in) dia.	Removing and installing retaining pin	K
 NT410		L
Pin punch a: 5.5 mm (0.217 in) dia.	Removing and installing retaining pin of selector lever	M
 NT410		
Pin punch a: 7.5 mm (0.295 in) dia.	Removing and installing retaining pin of each shifter lever	
 NT410		

# PREPARATION

[RS6F52H]

Tool name	Description
<p>Drift a: 24.5 mm (0.965 in) dia.</p>  <p>S-NT063</p>	<p>Installing striking rod oil seal and shifter lever oil seal</p>
<p>Puller</p>  <p>ZZA0537D</p>	<p>Removing each bearing, gear, and bushing</p>
<p>Puller</p>  <p>NT077</p>	<p>Removing each bearing, gear, and bushing</p>
<p>Power tool</p>  <p>PBIC0190E</p>	<p>Loosening bolts and nuts</p>

# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

[RS6F52H]

## NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

### NVH Troubleshooting Chart

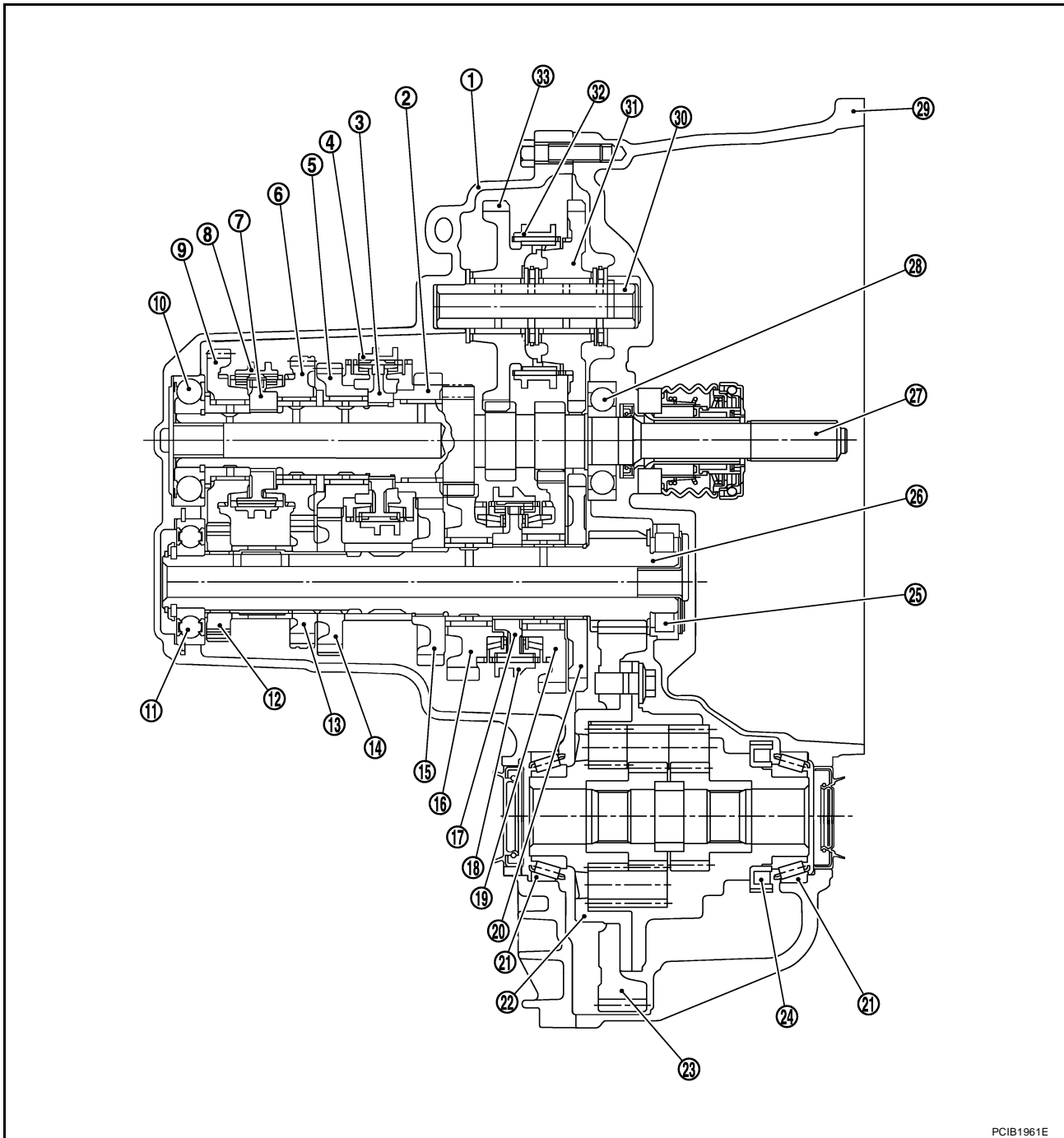
UCS007A3

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		<a href="#">MT-136</a>			<a href="#">MT-144</a>		<a href="#">MT-139</a>	<a href="#">MT-147</a>	<a href="#">MT-145</a>				
SUSPECTED PARTS (Possible cause)		OIL (Oil level is low.)	OIL (Wrong oil.)	OIL (Oil level is high.)	GASKET (Damaged)	OIL SEAL (Worn or damaged)	SHIFT CONTROL LINKAGE (Worn)	STRIKING ROD ASSEMBLY (Worn or damaged)	SHIFT FORK (Worn)	GEAR (Worn or damaged)	BEARING (Worn or damaged)	BAULK RING (Worn or damaged)	INSERT SPRING (Damaged)
Symptoms	Noise	1	2							3	3		
	Oil leakage		3	1	2	2							
	Hard to shift or will not shift		1	1			2					3	3
	Jumps out of gear						1	2	3	3			

## DESCRIPTION

## Cross-Sectional View



PCIB1961E

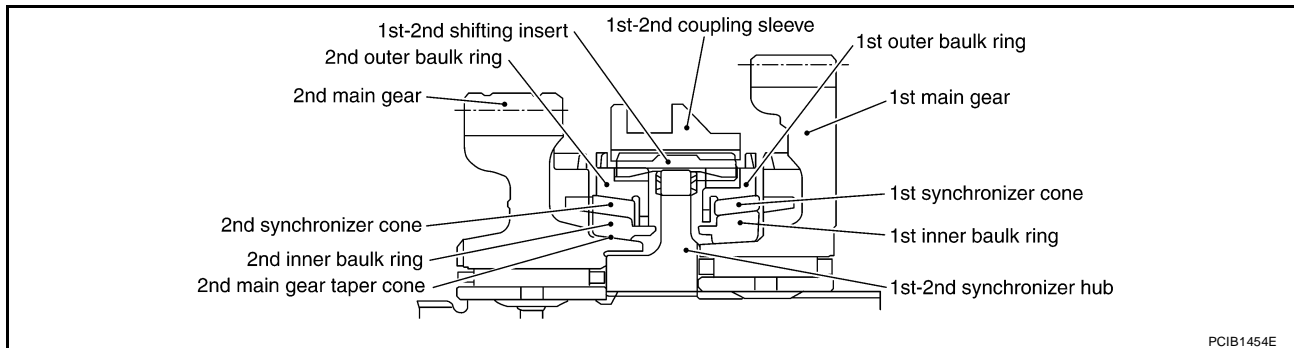
- |                                |                              |                               |
|--------------------------------|------------------------------|-------------------------------|
| 1. Transaxle case              | 2. 3rd input gear            | 3. 3rd-4th synchronizer hub   |
| 4.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

**DOUBLE-CONE SYNCHRONIZER**

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

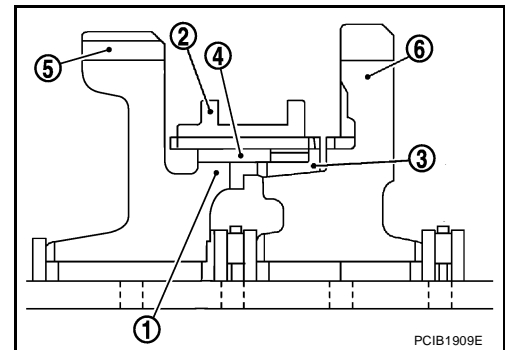
**TRIPLE-CONE SYNCHRONIZER**

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

**REVERSE GEAR NOISE PREVENTION FUNCTION (SYNCHRONIZING METHOD)**

Reverse gear can be matched smoothly in a structure by setting synchronizer hub (1) of reverse idler gear (rear), reverse coupling sleeve (2), reverse baulk ring (3), and reverse insert spring (4) to reverse idler gears, and letting reverse gear be synchronized.

- 5 : Reverse idler gear (rear)
- 6 : Reverse idler gear (front)





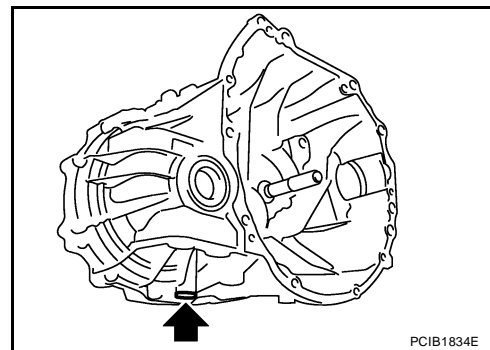
## M/T OIL

Changing M/T Oil  
DRAINING

1. Start engine and let it run to warm up transaxle.
2. Stop engine. Remove drain plug and drain oil.
3. Set a gasket on drain plug and install it to transaxle. Tighten drain plug to the specified torque. Refer to [MT-144, "Case and Housing Components"](#).

**CAUTION:**

Never reuse gasket.



PCIB1834E

## FILLING

1. Remove plug (with ABS models) (1) or speedometer pinion gear (without ABS models) (1). Fill with new oil to transaxle.

A : Suitable gauge

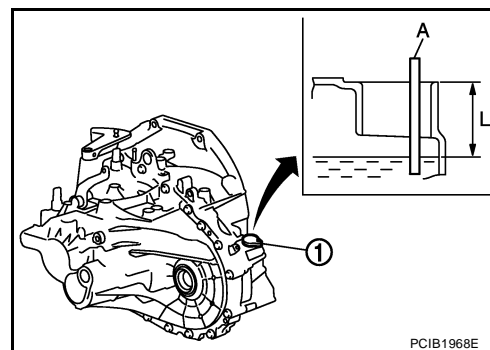
Oil grade and viscosity : Refer to [MA-14, "MR20DE"](#).

Oil capacity (reference) : Refer to [MT-197, "General Specifications"](#).

2. After refilling oil, check oil level.
3. Set a O-ring on plug (with ABS models) (1) or speedometer pinion gear (without ABS models) (1) and then install it to transaxle. Tighten mounting bolt to the specified torque. Refer to [MT-144, "Case and Housing Components"](#).

**CAUTION:**

Never reuse O-ring.



PCIB1968E

Checking M/T Oil  
OIL LEAKAGE AND OIL LEVEL

1. Make sure that oil is not leaking from transaxle or around it.
2. Remove plug (with ABS models) (1) or speedometer pinion gear (without ABS models) (1).
3. Measure oil level using a suitable gauge (A) as shown in the figure, and then check if it is within the specifications.

Oil level "L" : Refer to [MT-197, "General Specifications"](#).

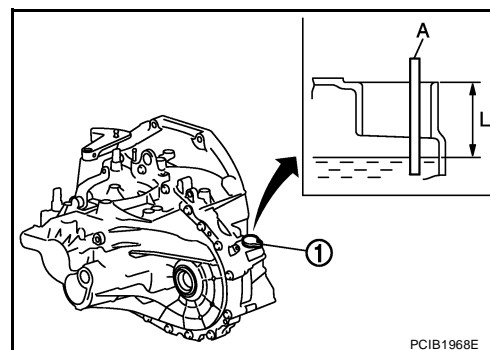
**CAUTION:**

Never start engine while checking oil level.

4. Set a O-ring on plug (with ABS models) (1) or speedometer pinion gear (without ABS models) (1) and then install it to transaxle. Tighten mounting bolt to the specified torque. Refer to [MT-144, "Case and Housing Components"](#).

**CAUTION:**

Never reuse O-ring.



PCIB1968E

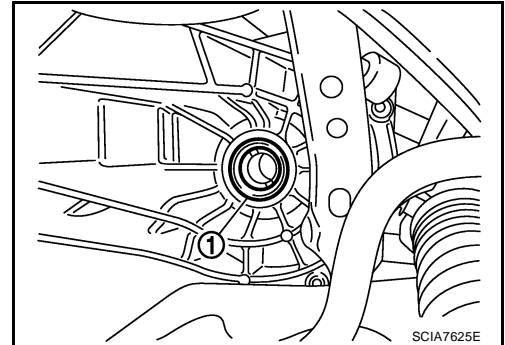
## SIDE OIL SEAL

Removal and Installation  
REMOVAL

1. Remove front drive shafts from transaxle assembly. Refer to [FAX-8, "Removal and Installation \(Left Side\)"](#) and [FAX-10, "Removal and Installation \(Right Side\)"](#).
2. Remove differential side oil seal (1) using a suitable tool.

**CAUTION:**

Never damage transaxle case and clutch housing.



## INSTALLATION

Installation is in the reverse order of removal.

- Install differential side oil seal to clutch housing and transaxle case using the drift.

**Dimension "A" : -0.5 - 0.5 mm (-0.020 - 0.020 in)**

Drift to be used

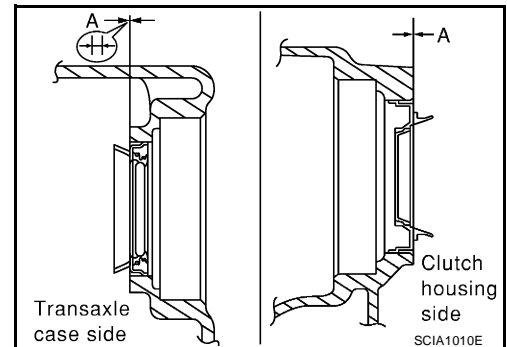
Transaxle case side : ST30720000 (J-25405)

Clutch housing side : ST33400001 (J-26082)

**CAUTION:**

Never reuse oil seal.

- Check oil level after installation. Refer to [MT-136, "Checking M/T Oil"](#).



## POSITION SWITCH

### Checking

#### NOTE:

For removal and installation of the switches, refer to [MT-144, "Case and Housing Components"](#) .

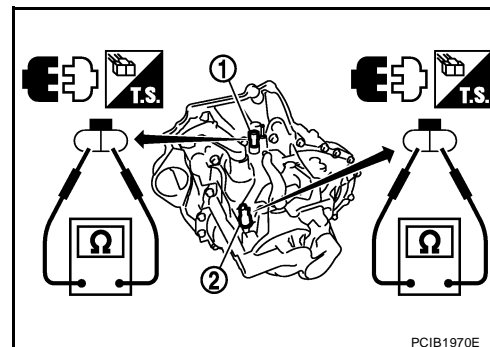
### BACK-UP LAMP SWITCH

- Check continuity.

Gear position	Continuity
Reverse	Yes
Except reverse	No

1 : Park/Neutral position (PNP) switch

2 : Back-up lamp switch



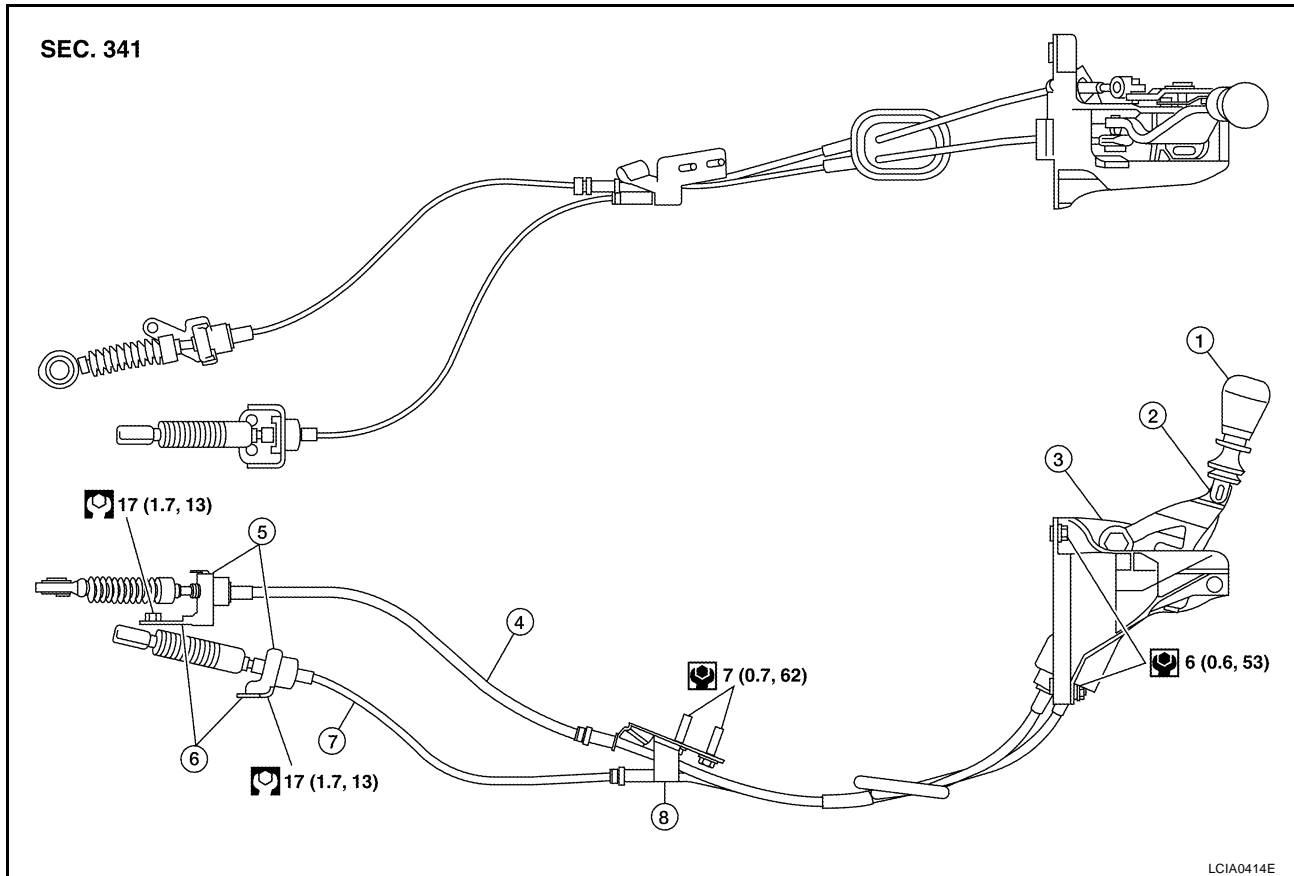
### PARK/NEUTRAL POSITION (PNP) SWITCH

- Check continuity.

Gear position	Continuity
Neutral	Yes
Except neutral	No

## CONTROL LINKAGE

### Components of Control Device and Cable



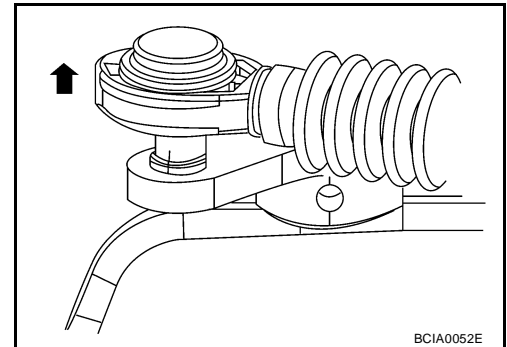
- |                       |                          |                            |
|-----------------------|--------------------------|----------------------------|
| 1. Control lever knob | 2. Control lever         | 3. Control device assembly |
| 4. Select cable       | 5. Lock plate            | 6. Cable bracket           |
| 7. Shift cable        | 8. Cable support bracket |                            |

Refer to [GI-10, "Components"](#) for the symbols in the figure.

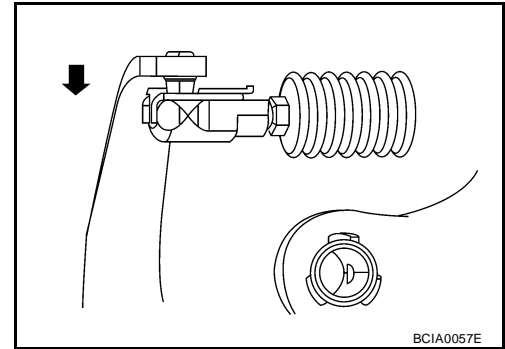
## Removal and Installation

### REMOVAL

1. Remove battery. Refer to [SC-7, "Removal and Installation QR25DE"](#).
2. Remove air cleaner and air duct. Refer to [EM-130, "Removal and Installation"](#).
3. Remove shift cable from shifter lever.



4. Remove select cable from selector lever A.

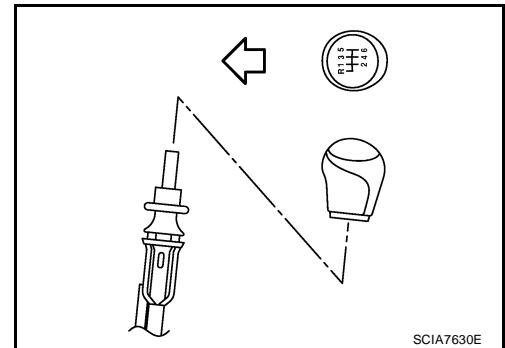


5. Shift control lever to neutral position.  
6. Remove control lever knob.  
7. Remove center console assembly. Refer to [IP-17, "CENTER CONSOLE ASSEMBLY"](#) .  
8. Remove control device assembly nuts.  
9. Remove exhaust front tube, center muffler and heat shield. Refer to [EX-5, "Removal and Installation"](#) .  
10. Remove cable support bracket.  
11. Remove select cable and shift cable from cable bracket.  
12. Remove control device assembly from the vehicle.

## INSTALLATION

Installation is in the reverse order of removal.

- Securely install each cable to shifter lever and selector lever.
- Be careful about the installation direction, and screw control lever knob onto control lever.

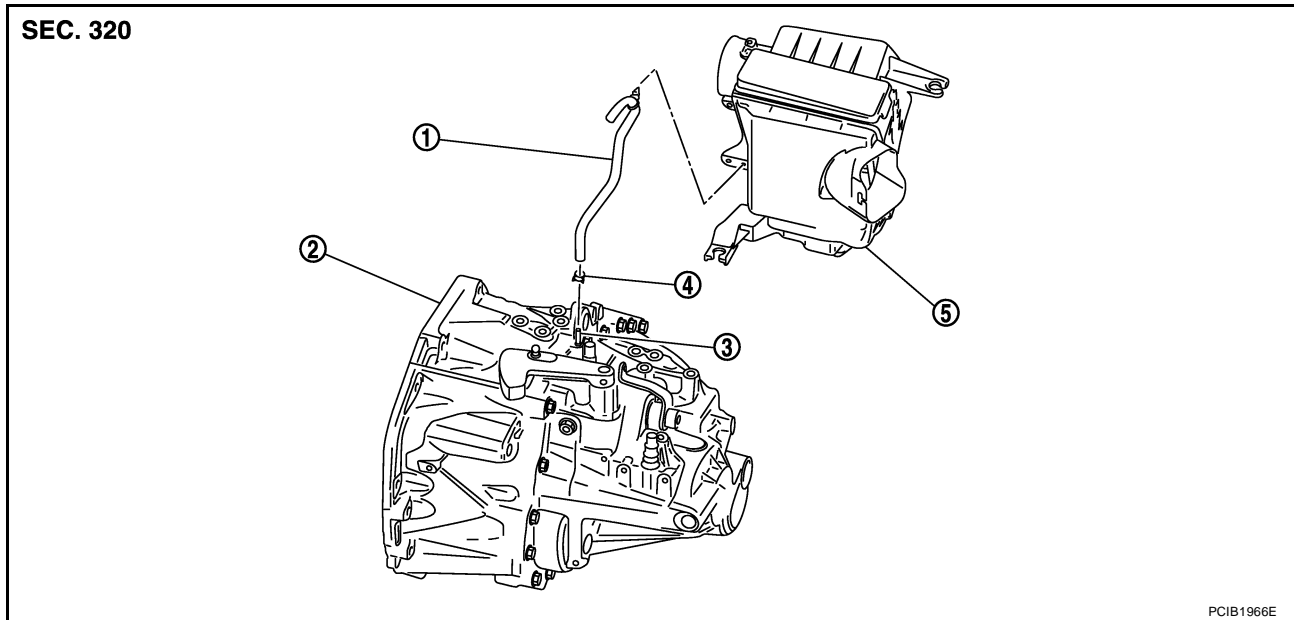


- When control lever is selected to 1st-2nd side and 5th-6th side, confirm control lever returns to neutral position smoothly.
- When control lever is shifted to each position, make sure there is no binding or disconnection in each boot.

## AIR BREATHER HOSE

### Removal and Installation

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



- |                      |                       |                      |
|----------------------|-----------------------|----------------------|
| 1. Air breather hose | 2. Transaxle assembly | 3. Air breather tube |
| 4. Clamp             | 5. Air cleaner case   |                      |

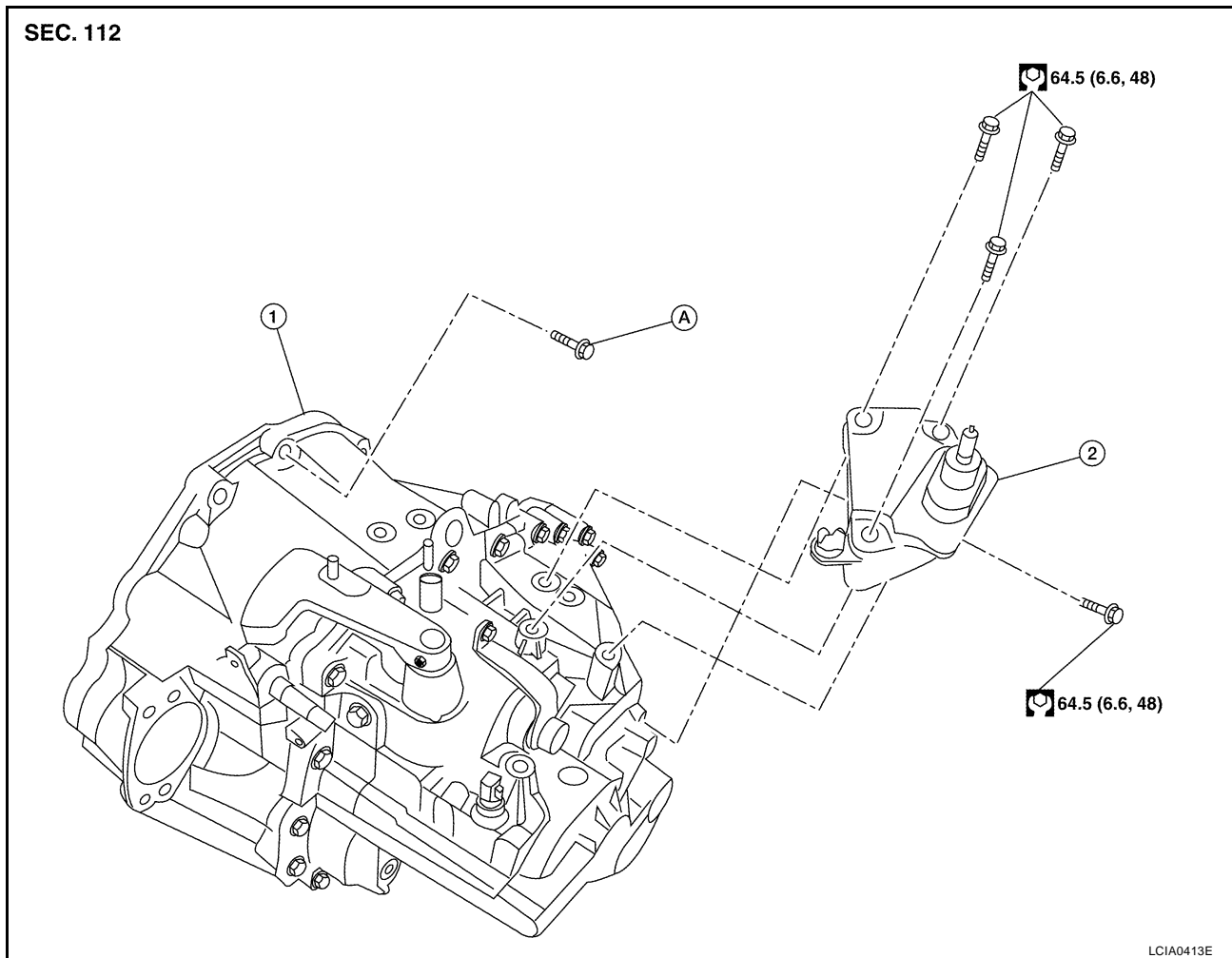
#### CAUTION:

- Make sure there are no pinched or restricted areas on the air breather hose caused by bending or winding when installing it.
- Be sure to insert air breather hose into air breather tube until hose end reaches the tube's base.
- Set air breather hose with painted mark facing forward.
- Install air breather hose to air cleaner case by fully inserting the clip.

## TRANSAXLE ASSEMBLY

## Components

SEC. 112



1. Transaxle assembly                      2. LH engine mount bracket

A. Refer to [MT-142, "INSTALLATION"](#) for specification.

Refer to [GI-10, "Components"](#) for the symbols in the figure.

## Removal and Installation

UCS007BC

**CAUTION:**

If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Inserted CSC returns to the original position when removing transaxle assembly. Dust on clutch disc sliding parts may damage CSC seal, and may cause clutch fluid leakage.

**REMOVAL**

1. Drain gear oil. Refer to [MT-136, "Changing M/T Oil"](#).
2. Drain clutch fluid and remove clutch tube from CSC. Refer to [CL-12, "Removal and Installation"](#).

**CAUTION:**

Never depress clutch pedal during removal procedure.

3. Remove engine and transaxle assembly. Refer to [EM-181, "Removal and Installation"](#).
4. Remove starter motor. Refer to [SC-24, "Removal and Installation QR25DE"](#).
5. Remove transaxle assembly to engine bolts.
6. Separate transaxle assembly from engine.

**INSTALLATION**

Installation is in the reverse order of removal.

# TRANSAXLE ASSEMBLY

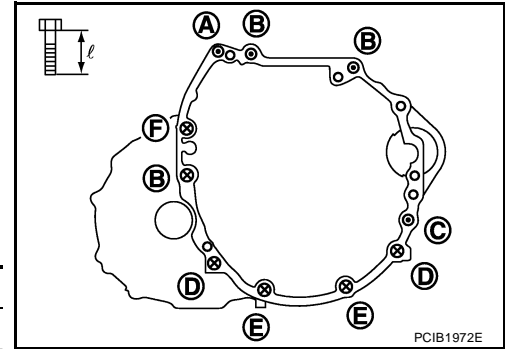
[RS6F52H]

- If transaxle assembly is removed from the vehicle, always replace CSC. Refer to [CL-11, "Removal and Installation"](#).
- When installing the transaxle assembly to the engine, use the specified tightening torque in the numerical sequence shown:
  - : Transaxle to engine
  - X : Engine to transaxle

## CAUTION:

**When installing transaxle assembly, never allow the transaxle input shaft to make contact with the clutch cover.**

Bolt symbol	A	B	C	D	E	F
Quantity	1	3	1	2	2	1
Bolt length "ℓ" mm (in)	45 (1.77)		80 (3.15)	45 (1.77)	35 (1.38)	45 (1.77)
Tightening torque N·m (kg·m, ft·lb)	35.3 (3.6, 26)	74.5 (7.6, 55)		42.6 (4.3, 31)		48.0 (4.9, 35)

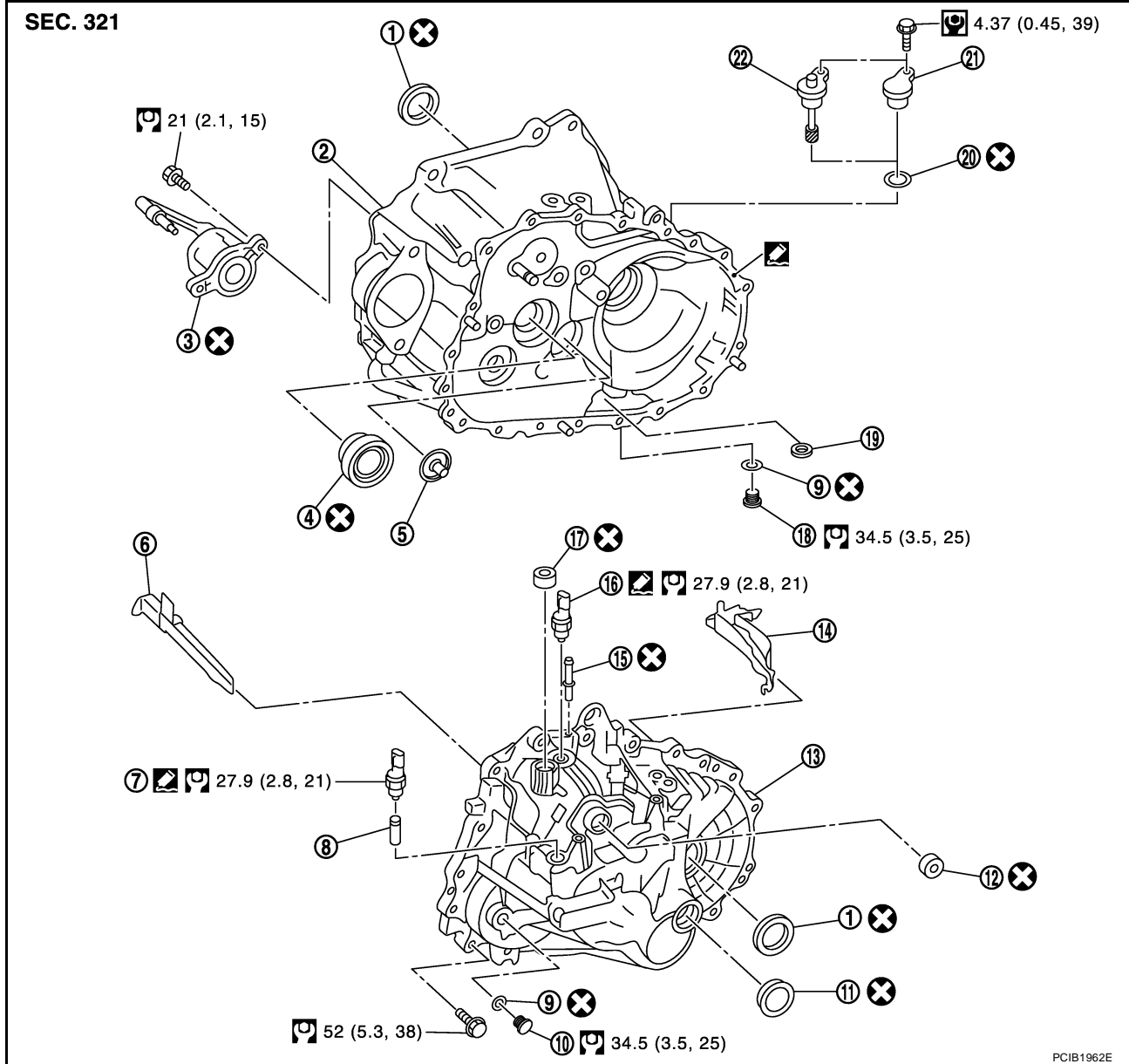


- Bleed the air from the clutch hydraulic system. Refer to [CL-8, "Air Bleeding Procedure"](#).
- After installation, check oil level and check for leaks and loose mechanisms. Refer to [MT-136, "Checking M/T Oil"](#).



## Disassembly and Assembly COMPONENTS

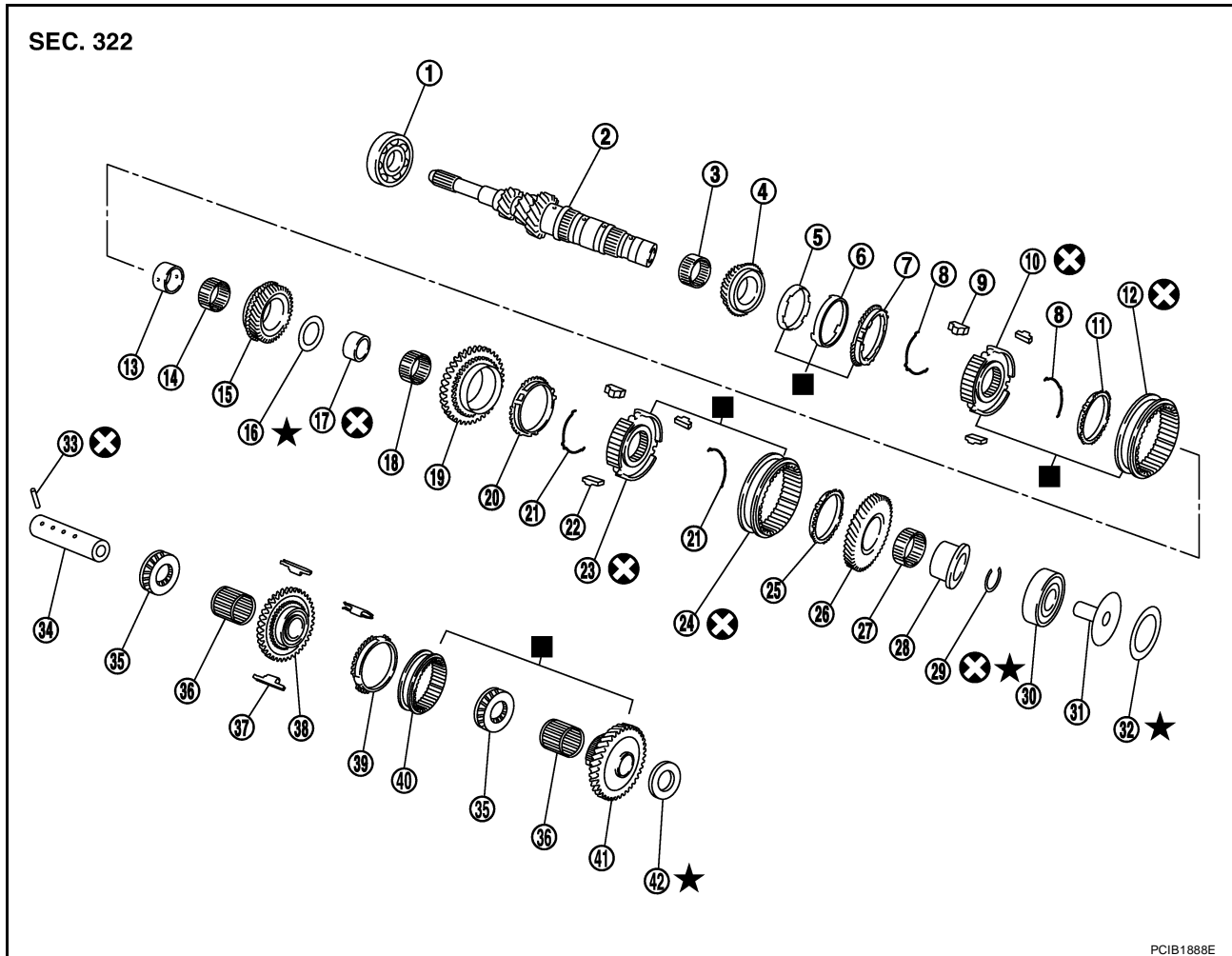
### Case and Housing Components



- |  |                            |                                    |
|--|----------------------------|------------------------------------|
| 1. Differential side oil seal                    | 2. Clutch housing          | 3. CSC (Concentric Slave Cylinder) |
| 4. Input shaft oil seal                          | 5. Oil channel             | 6. Oil gutter A                    |
| 7. Back-up lamp switch                           | 8. Plunger                 | 9. Gasket                          |
| 10. Plug   | 11. Bore plug              | 12. Striking rod oil seal          |
| 13. Transaxle case                               | 14. Oil gutter B           | 15. Air breather tube              |
| 16. Park/Neutral position (PNP) switch           | 17. Shifter lever oil seal | 18. Drain plug                     |
| 19. Magnet                                       | 20. O-ring                 | 21. Plug (With ABS models)         |
| 22. Speedometer pinion gear (Without ABS models) |                            |                                    |

Apply Genuine Silicone RTV or an equivalent. Refer to [GI-44, "Recommended Chemical Products and Sealants"](#).  
Refer to [GI-10, "Components"](#) for symbols not described on the above.

## Gear Components



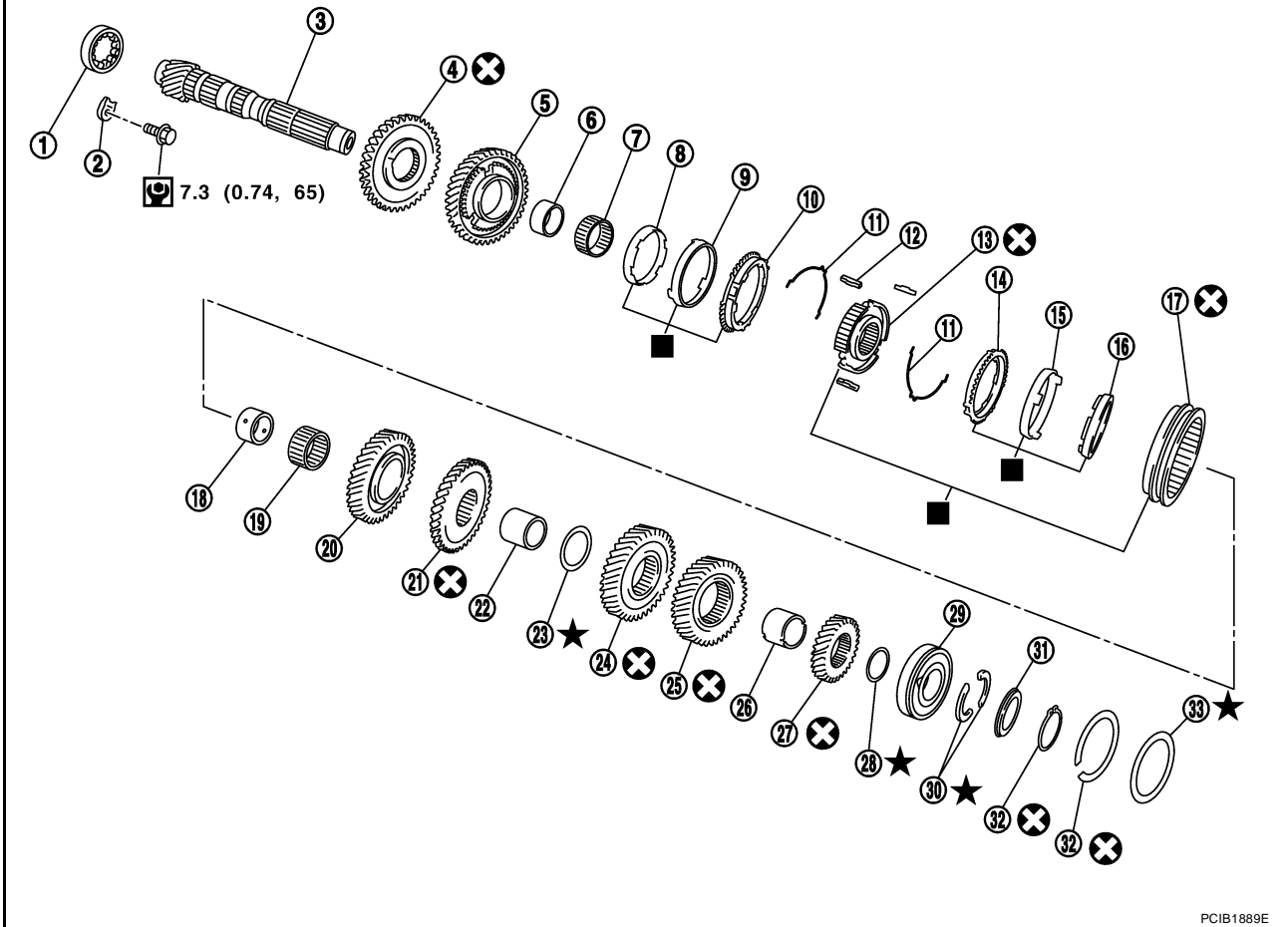
- |                              |   |                                       |
|------------------------------|---|---------------------------------------|
| 1. Input shaft front bearing | 2. Input shaft                              | 3. 3rd needle bearing                 |
| 4. 3rd input gear            | 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 baulk ring                |
| 40. Reverse coupling sleeve  | 41. Reverse idler gear (rear)               | 42. Reverse idler gear adjusting shim |

■: Replace the parts as a set.

Refer to [GI-10, "Components"](#) for symbols not described on the above.

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

## SEC. 322



PCIB1889E

- |                                  |                                  |   |
|----------------------------------|----------------------------------|---|
| 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. 5th-6th mainshaft spacer     | 27. 6th main gear                         |
| 28. 6th main gear adjusting shim | 29. Mainshaft rear bearing       | 30. Mainshaft C-ring                      |
| 31. C-ring holder                | 32. Snap ring                    | 33. Mainshaft rear bearing adjusting shim |

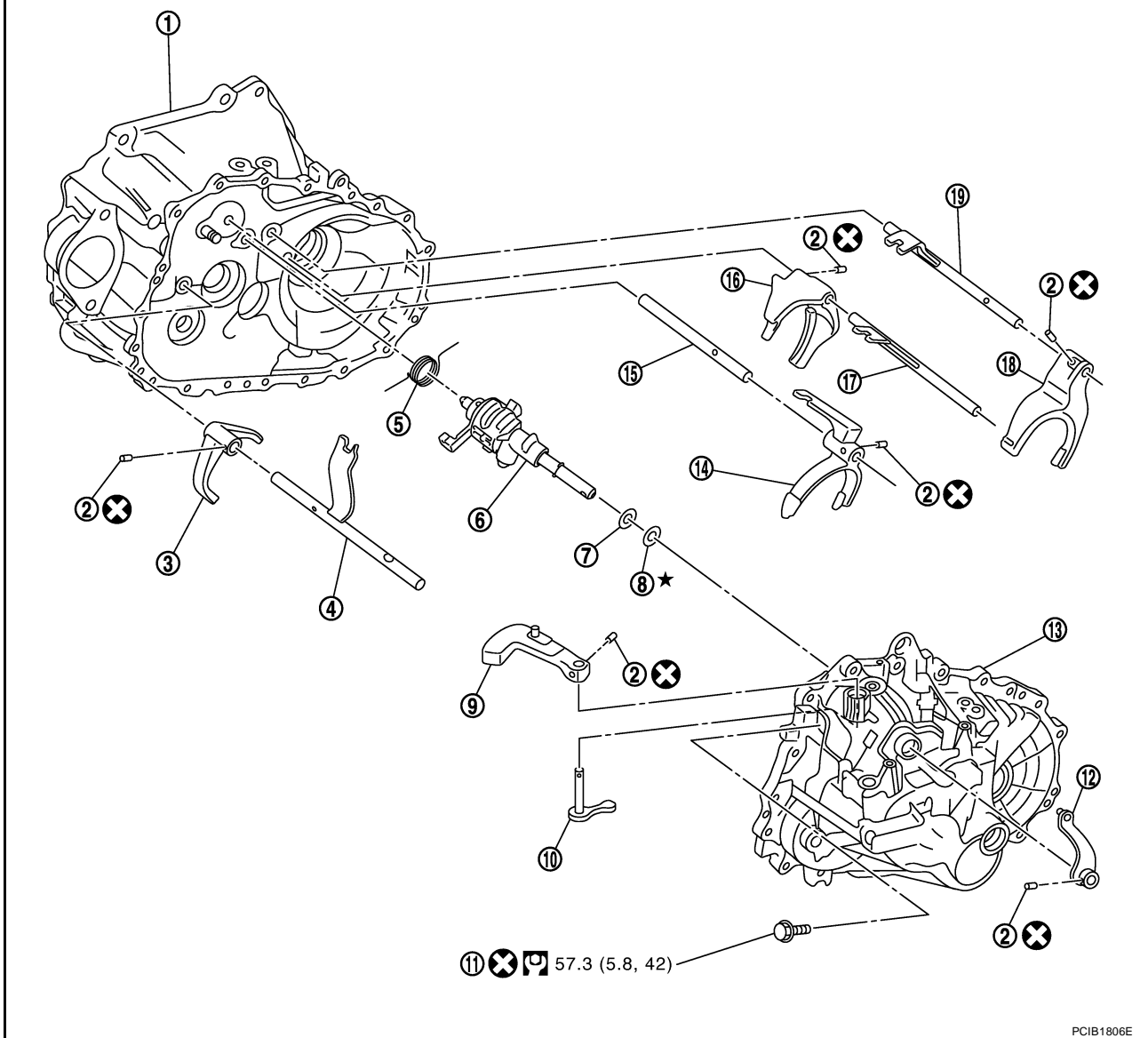
■: Replace the parts as a set.

Refer to [GI-10, "Components"](#) for symbols not described on the above.

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

## Shift Control Components

SEC. 328

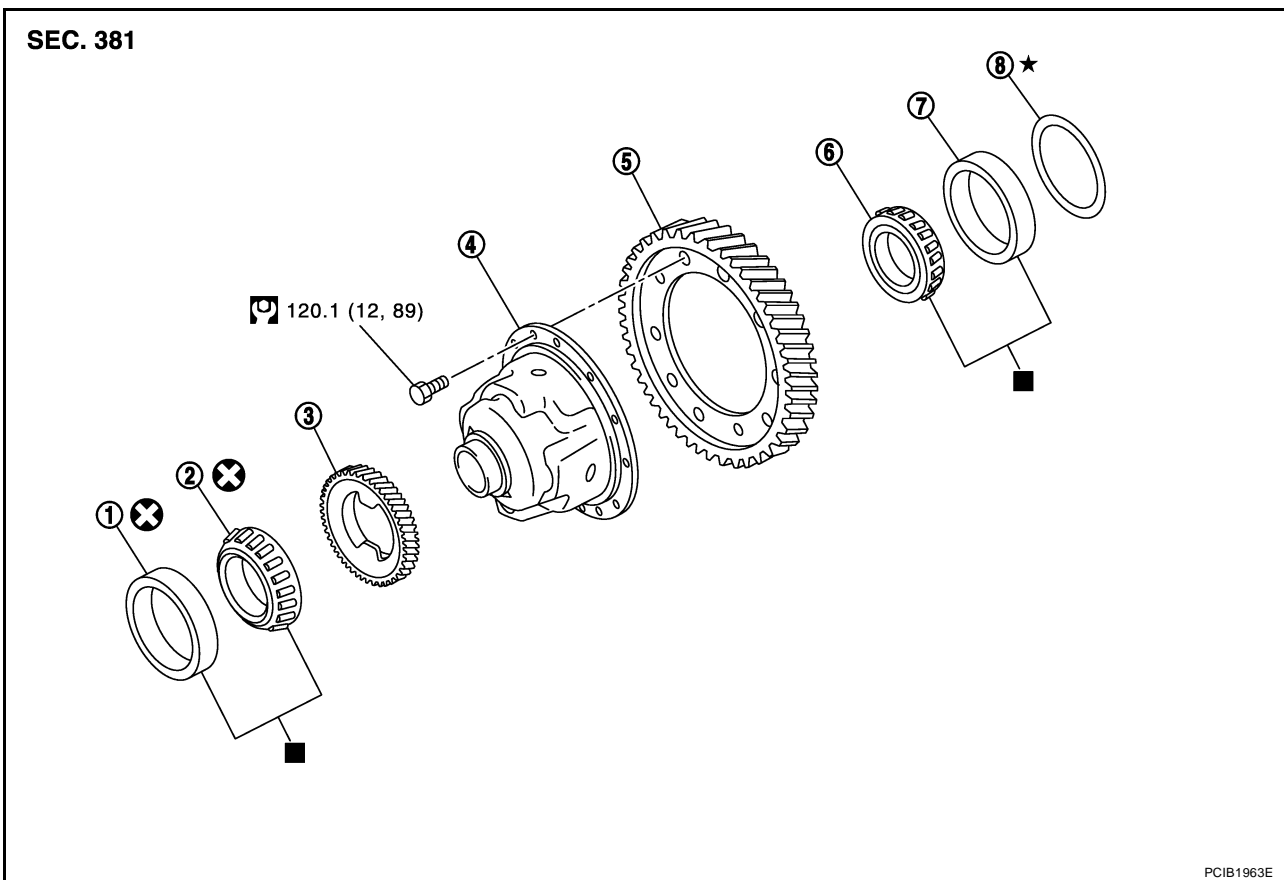


- |                        |                                |                          |
|------------------------|--------------------------------|--------------------------|
| 1. Clutch housing      | 2. Retaining pin               | 3. Reverse shift fork    |
| 4. Reverse fork rod    | 5. Return spring               | 6. Striking rod assembly |
| 7. Striking rod shim   | 8. Striking rod adjusting shim | 9. Shifter lever A       |
| 10. Shifter lever B    | 11. Guide bolt                 | 12. Selector lever       |
| 13. Transaxle case     | 14. 3rd-4th shift fork         | 15. 3rd-4th fork rod     |
| 16. 1st-2nd shift fork | 17. 1st-2nd fork rod           | 18. 5th-6th shift fork   |
| 19. 5th-6th fork rod   |                                |                          |

Refer to [GI-10, "Components"](#) for the symbols in the figure.

## Final Drive Components

### SEC. 381



PCIB1963E

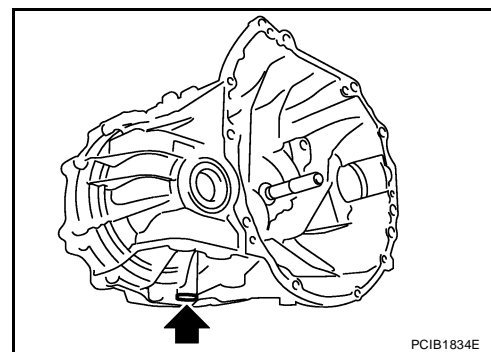
- |   |  |  |
|---|--|--|
| 1. Differential side bearing outer race (clutch housing side) | 2. Differential side bearing (clutch housing side) | 3. Speedometer drive gear                          |
| 4. Differential case assembly                                 | 5. Final gear                                      | 6. Differential side bearing (transaxle case side) |
| 7. Differential side bearing outer race (transaxle case side) | 8. Differential side bearing adjusting shim        |  |

■: Replace the parts as a set.

Refer to [GI-10, "Components"](#) for symbols not described on the above.

## DISASSEMBLY

1. Remove drain plug and gasket from clutch housing.

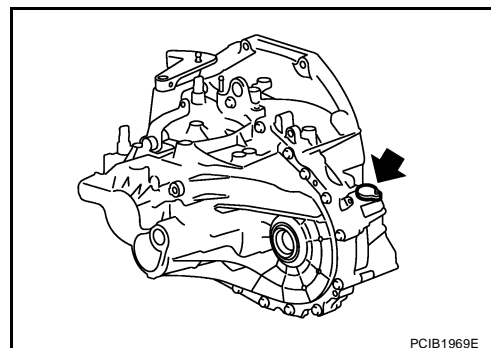


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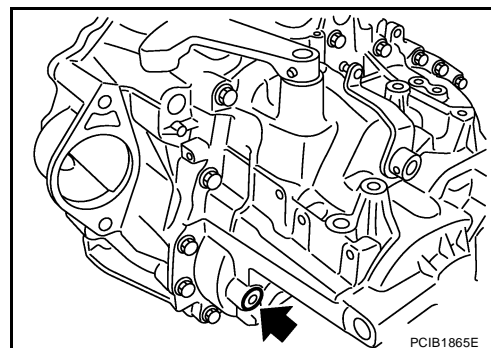
# TRANSAXLE ASSEMBLY

[RS6F52H]

2. Remove plug mounting bolt and then plug (with ABS models) or speedometer pinion gear (without ABS models) and O-ring from clutch housing.



3. Remove plug and gasket from transaxle case.

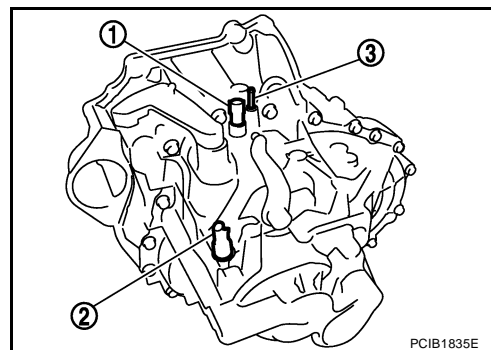


4. Remove park/neutral position (PNP) switch (1) from transaxle case.
5. Remove back-up lamp switch (2) and plunger from transaxle case.

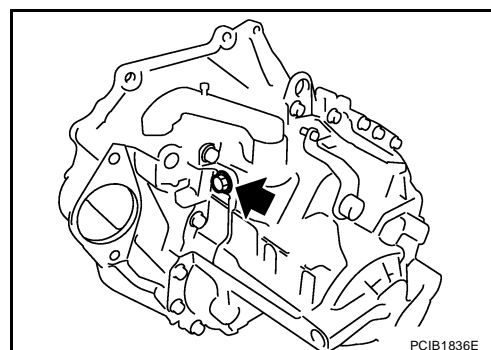
**CAUTION:**

**Never lose plunger.**

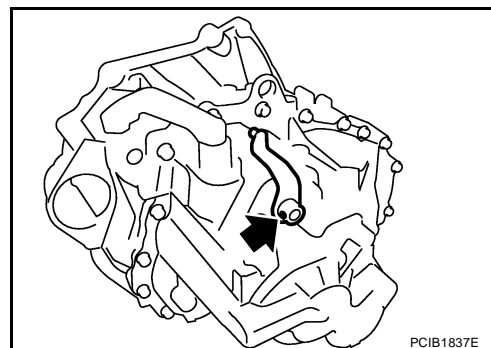
6. Remove air breather tube (3) from transaxle case.



7. Remove guide bolt from transaxle case.

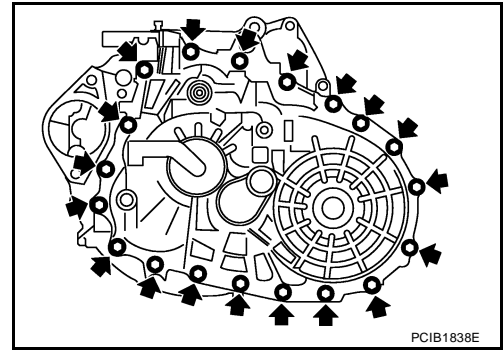


8. Remove retaining pin using a pin punch and then remove selector lever from transaxle case.



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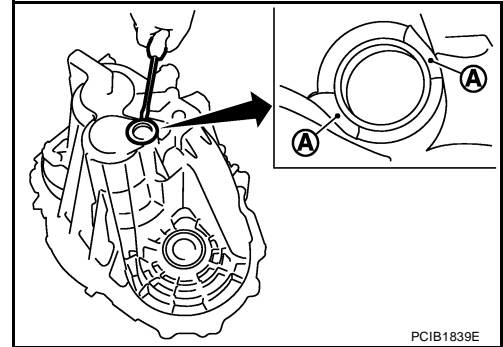
9. Remove transaxle case mounting bolts.



10. Remove bore plug from transaxle case.

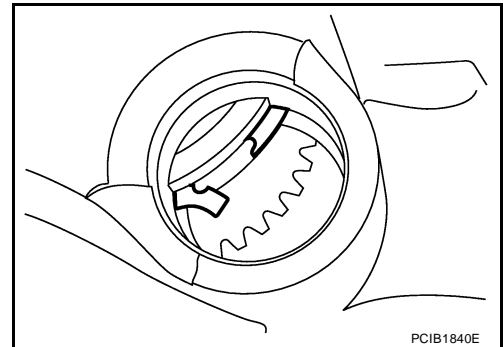
**CAUTION:**

- Never damage transaxle case.
- Access bore plug from cutout (A) of transaxle case when removing.



11. Remove transaxle case following the procedures below.

- a. Expand snap ring at mainshaft rear bearing accessing from the bore plug hole. Then pull up transaxle case from clutch housing until snap ring comes off.



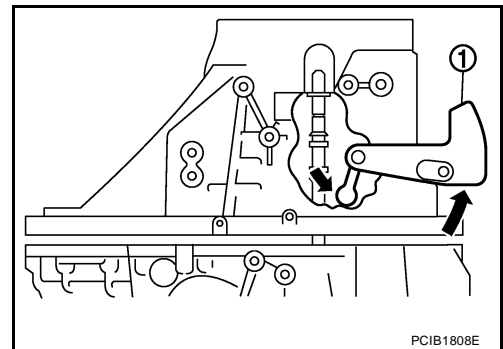
- b. With shifter lever A (1) held in the position shown in the figure, remove transaxle case from clutch housing.

**CAUTION:**

**Never drop each adjusting shim.**

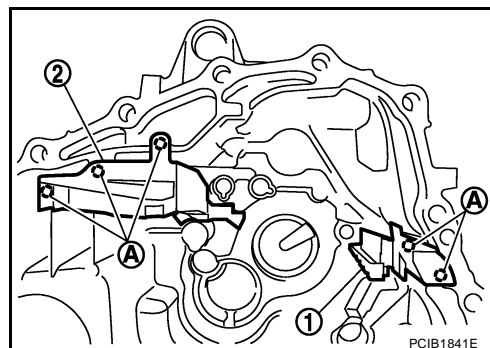
**NOTE:**

Make sure to hold shifter lever A in the position shown in the figure. Otherwise transaxle case cannot be removed from clutch housing.

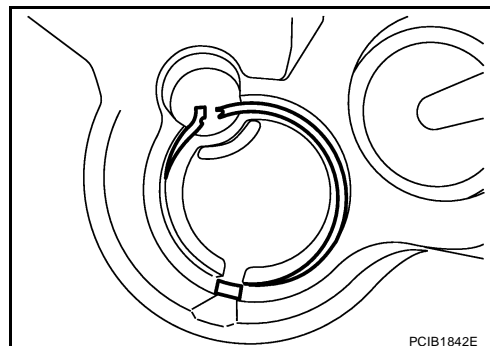


12. Remove oil gutter A (1) and oil gutter B (2) from transaxle case.

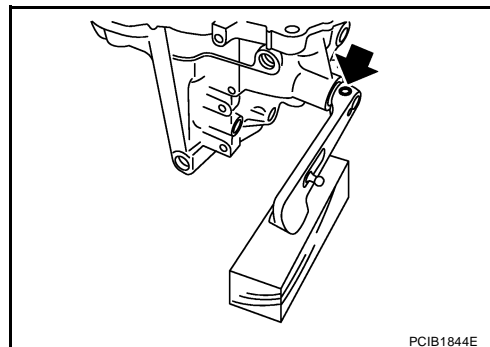
A : Tab of oil gutter



13. Remove snap ring from transaxle case.



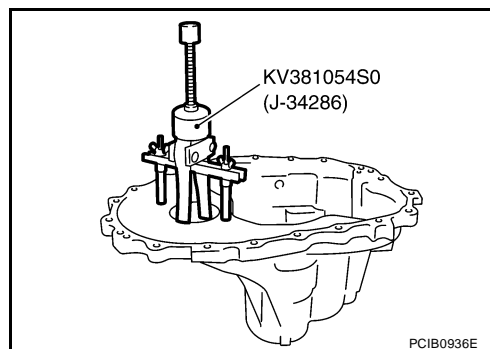
14. Remove retaining pin using a pin punch and then remove shifter lever A and shifter lever B from transaxle case.



15. Remove differential side bearing outer race (transaxle case side) from transaxle case using the puller and then remove differential side bearing adjusting shim from transaxle case.

**CAUTION:**

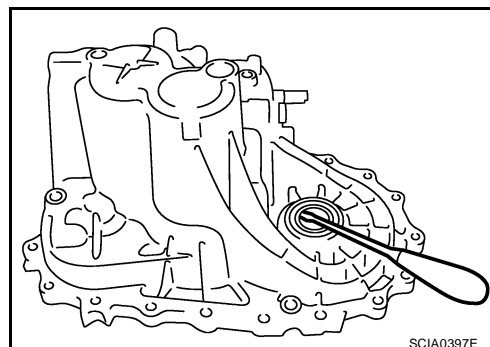
**Never damage transaxle case and differential side bearing outer race.**



16. Remove differential side oil seal from transaxle case.

**CAUTION:**

**Never damage transaxle case.**

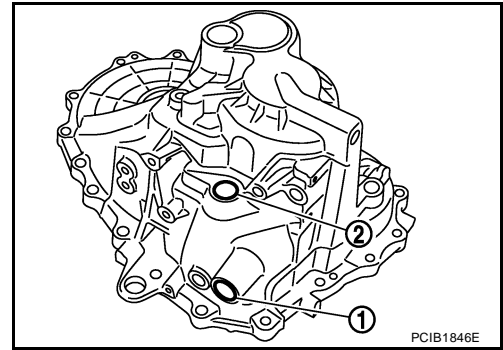




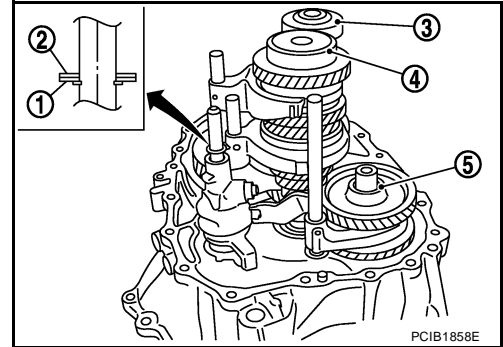
17. Remove shifter lever oil seal (1) and striking rod oil seal (2) from transaxle case.

**CAUTION:**

**Never damage transaxle case.**

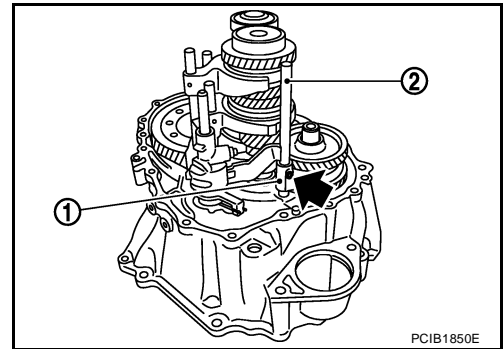


18. Remove striking rod shim (1), striking rod adjusting shim (2), mainshaft rear bearing adjusting shim (3), input shaft rear bearing adjusting shim (4), and reverse idler gear adjusting shim (5).



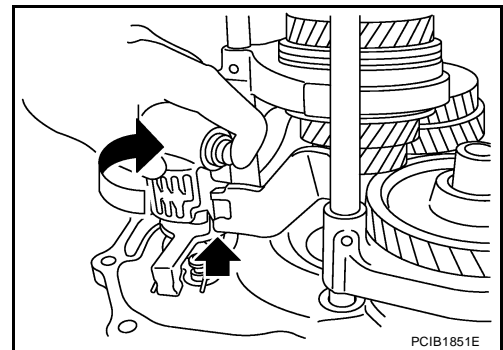
19. Remove retaining pin of reverse shift fork (1) using a pin punch.

2 : Reverse fork rod



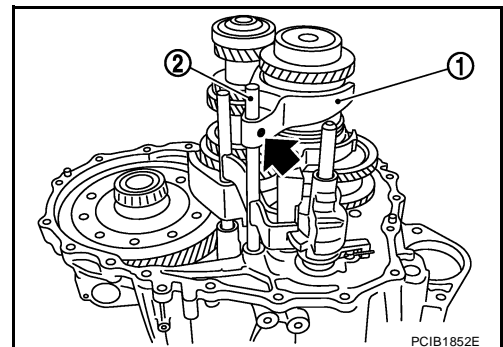
20. Rotate striking lever of striking rod assembly as shown in the figure. Then rotate reverse fork rod to a position where bracket of reverse fork rod does not interfere with striking lever of striking rod assembly.

21. Pull out reverse shift fork and reverse fork rod.

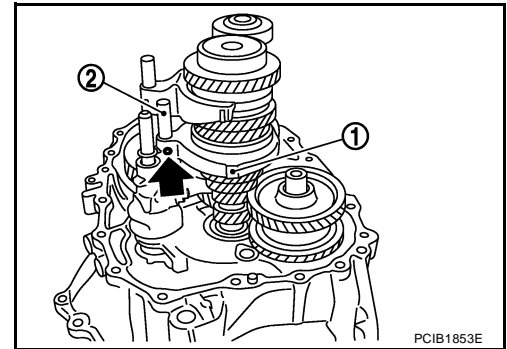


22. Remove retaining pin of 5th-6th shift fork (1) using a pin punch.

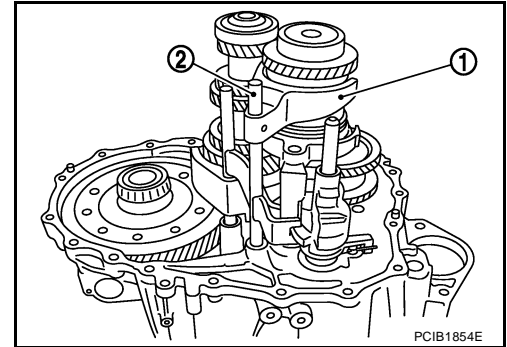
2 : 5th-6th fork rod



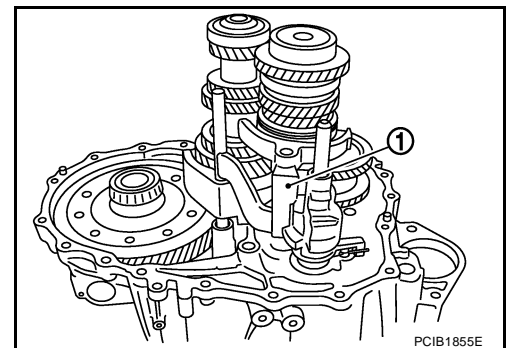
23. Remove retaining pin of 3rd-4th shift fork (1) using a pin punch.
24. Pull out 3rd-4th fork rod (2).



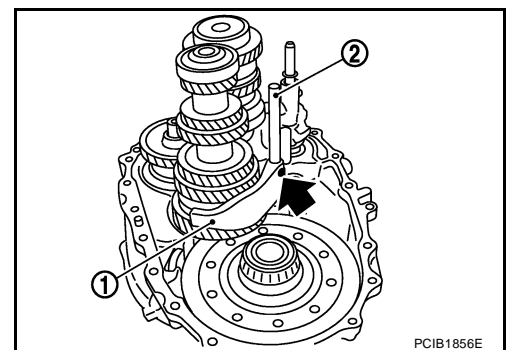
25. Pull out 5th-6th shift fork (1) and 5th-6th fork rod (2).



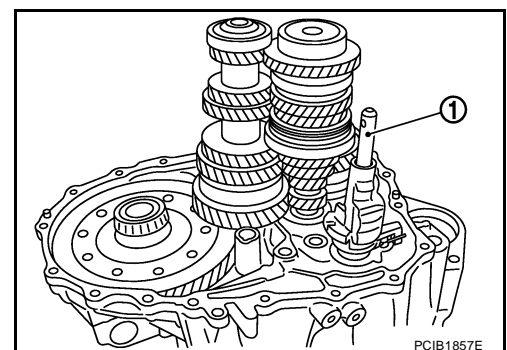
26. Pull out 3rd-4th shift fork (1).



27. Remove retaining pin of 1st-2nd shift fork (1) using a pin punch.
28. Pull out 1st-2nd shift fork and 1st-2nd fork rod (2).



29. Remove striking rod assembly (1).



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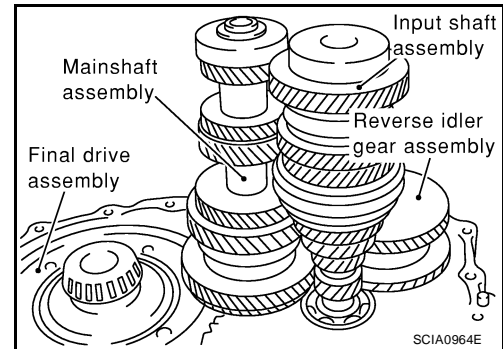
30. Remove gear components from clutch housing in the following procedure.

- a. Remove a set of input shaft assembly, mainshaft assembly, and reverse idler gear assembly by tapping the tip of input shaft from the back of the clutch housing with a plastic hammer.

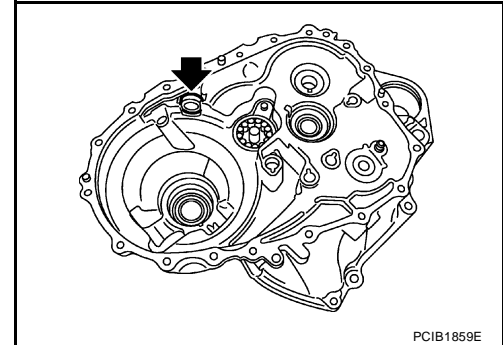
**CAUTION:**

**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 magnet from clutch housing.

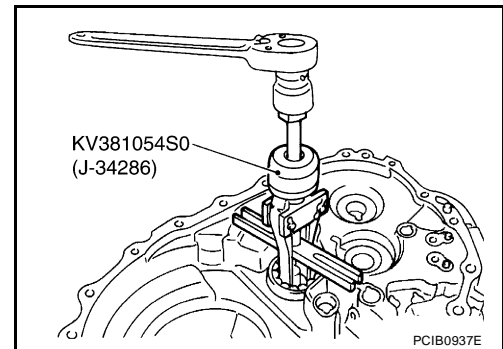


32. Remove mainshaft bearing retainer and then mainshaft front bearing from clutch housing using the puller.

**CAUTION:**

**Never damage clutch housing, mainshaft front bearing, and oil channel.**

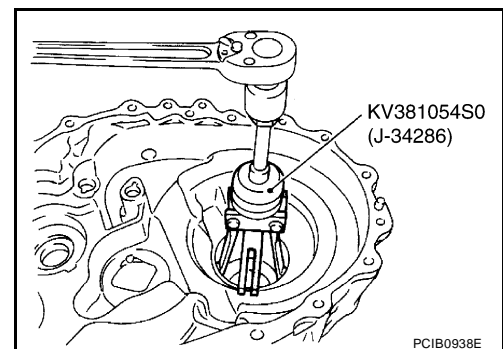
33. Remove oil channel from clutch housing.



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

**CAUTION:**

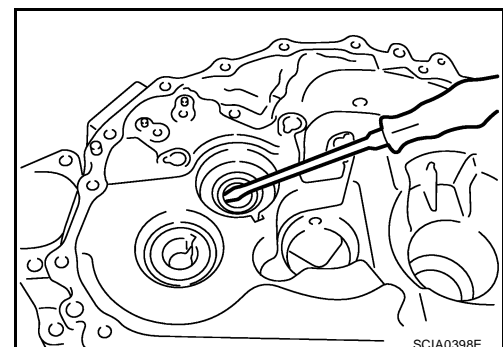
**Never damage clutch housing and differential side bearing outer race.**



35. Remove input shaft oil seal from clutch housing.

**CAUTION:**

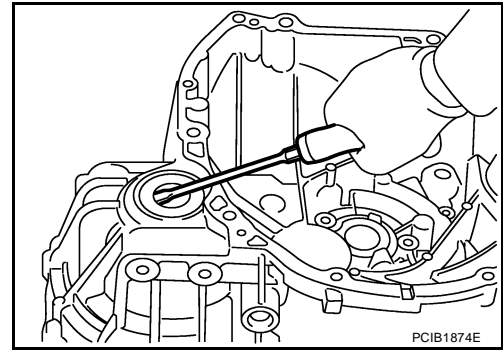
**Never damage clutch housing.**



36. Remove differential side oil seal from clutch housing.

**CAUTION:**

Never damage clutch housing.



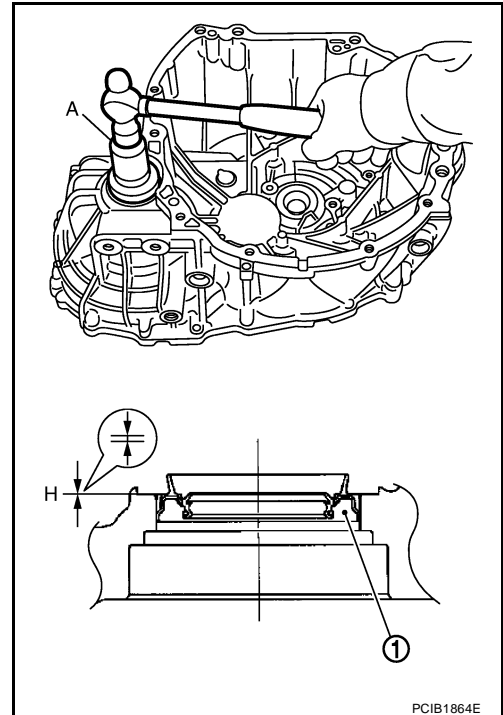
## ASSEMBLY

1. Install differential side oil seal (1) to clutch housing using the drift (A) [SST: ST33400001 (J-26082)].

Dimension "H" : -0.5 - 0.5 mm (-0.020 - 0.020 in)

**CAUTION:**

- Never reuse differential side oil seal.
- When installing, never incline differential side oil seal.
- Never damage clutch housing.



2. Install input shaft oil seal (1) to clutch housing using the drift (A) [SST: ST35321000 ( — )].

Dimension "H" : 1.1 - 2.1 mm (0.043 - 0.083 in)

**CAUTION:**

- Never reuse input shaft oil seal.
- When installing, never incline input shaft oil seal.
- Never damage clutch housing.

