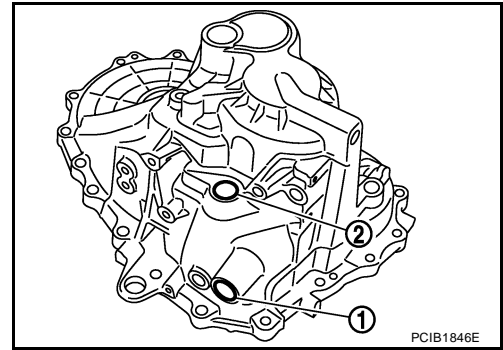


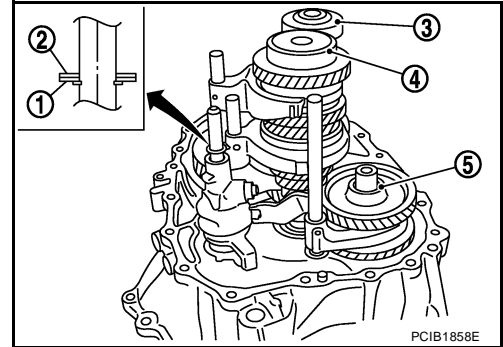
17. Remove shifter lever oil seal (1) and striking rod oil seal (2) from transaxle case.

CAUTION:

Never damage transaxle case.

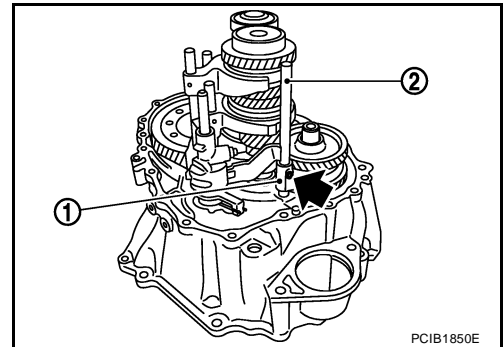


18. Remove striking rod shim (1), striking rod adjusting shim (2), mainshaft rear bearing adjusting shim (3), input shaft rear bearing adjusting shim (4), and reverse idler gear adjusting shim (5).



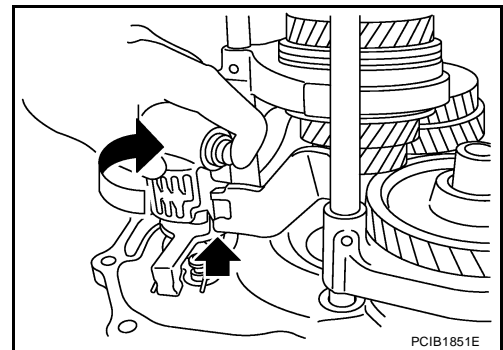
19. Remove retaining pin of reverse shift fork (1) using a pin punch.

2 : Reverse fork rod



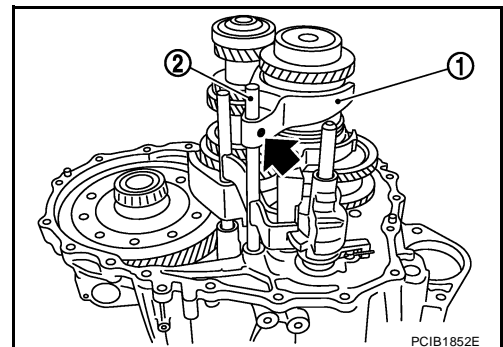
20. Rotate striking lever of striking rod assembly as shown in the figure. Then rotate reverse fork rod to a position where bracket of reverse fork rod does not interfere with striking lever of striking rod assembly.

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

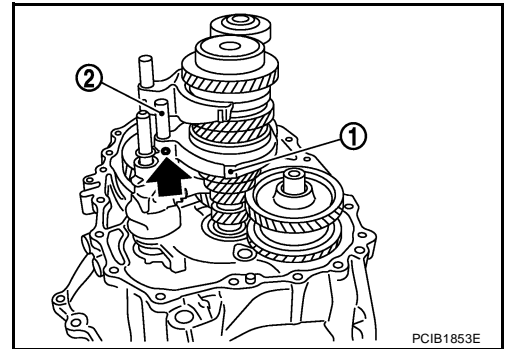


22. Remove retaining pin of 5th-6th shift fork (1) using a pin punch.

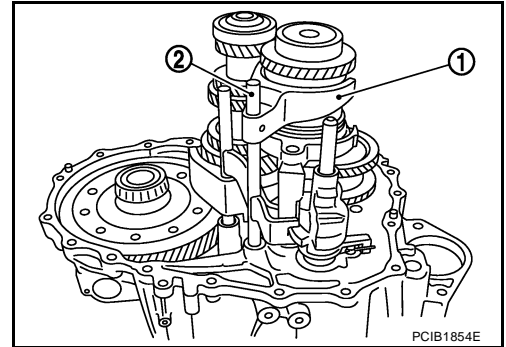
2 : 5th-6th fork rod



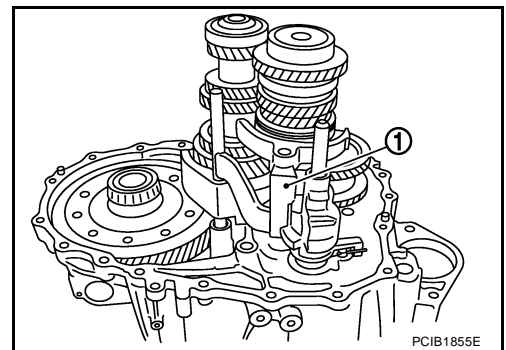
23. Remove retaining pin of 3rd-4th shift fork (1) using a pin punch.
24. Pull out 3rd-4th fork rod (2).



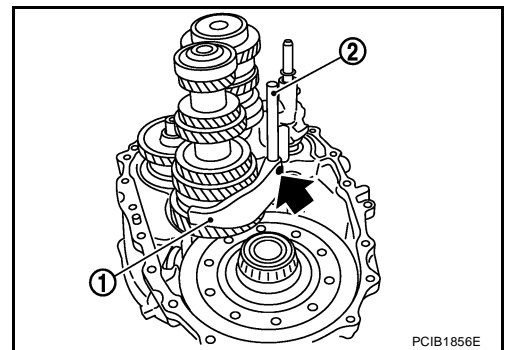
25. Pull out 5th-6th shift fork (1) and 5th-6th fork rod (2).



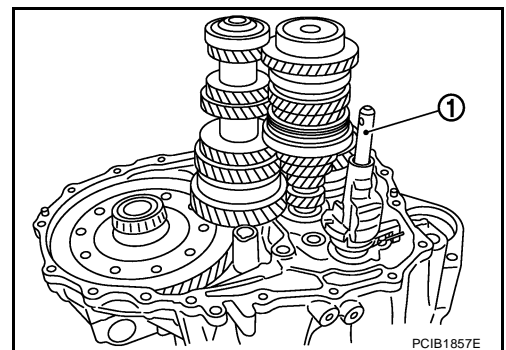
26. Pull out 3rd-4th shift fork (1).



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).



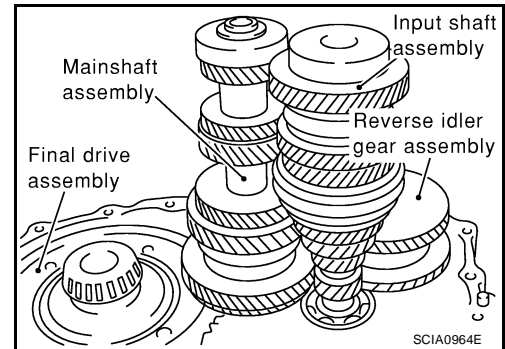
30. Remove gear components from clutch housing in the following procedure.

- 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.

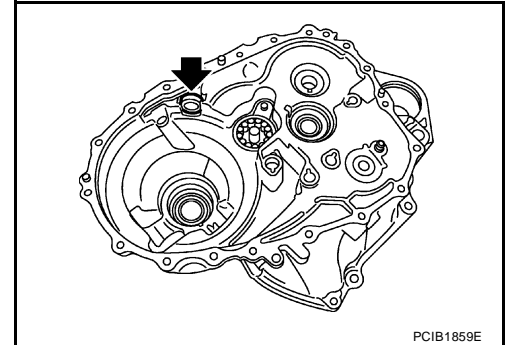
CAUTION:

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.

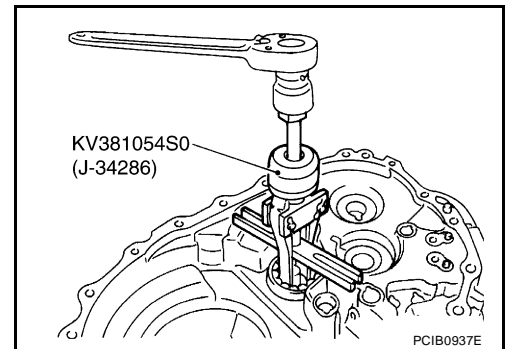


32. Remove mainshaft bearing retainer and then mainshaft front bearing from clutch housing using the puller.

CAUTION:

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

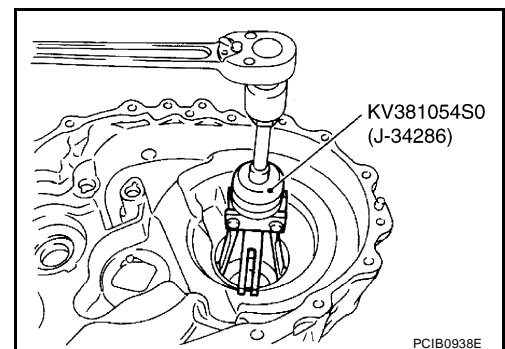
33. Remove oil channel from clutch housing.



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

CAUTION:

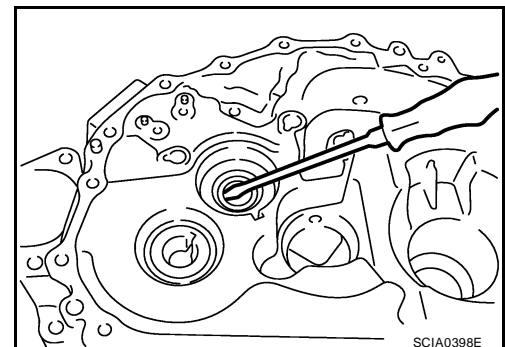
Never damage clutch housing and differential side bearing outer race.



35. Remove input shaft oil seal from clutch housing.

CAUTION:

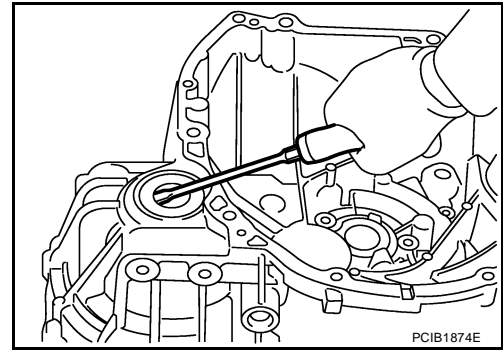
Never damage clutch housing.



36. Remove differential side oil seal from clutch housing.

CAUTION:

Never damage clutch housing.



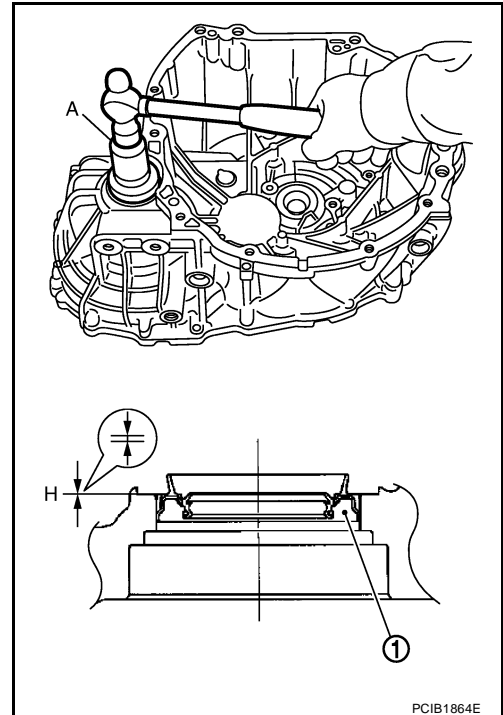
ASSEMBLY

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.

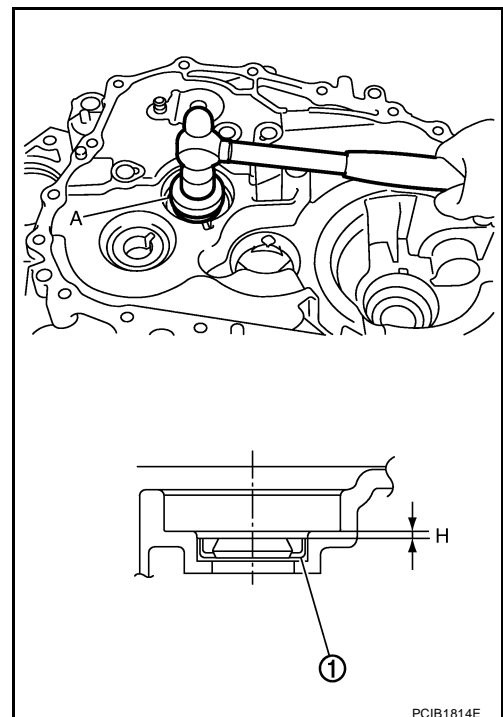


2. Install input shaft oil seal (1) to clutch housing using the drift (A) [SST: ST35321000 (—)].

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

CAUTION:

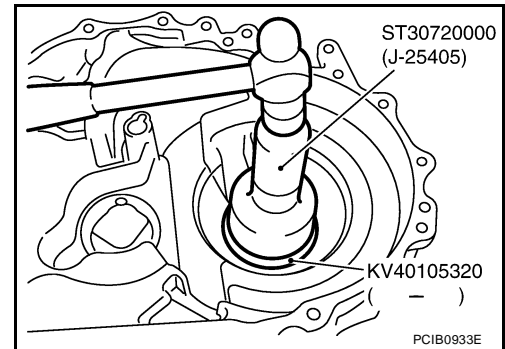
- Never reuse input shaft oil seal.
- When installing, never incline input shaft oil seal.
- Never damage clutch housing.



3. Install differential side bearing outer race (clutch housing side) to clutch housing using the drifts.

CAUTION:

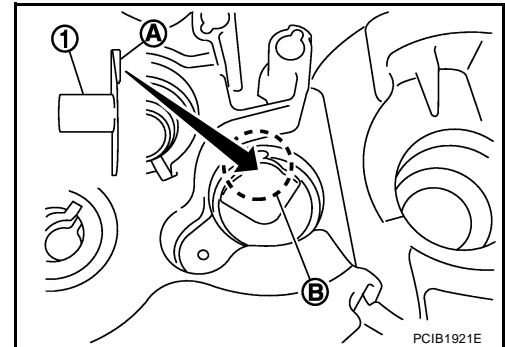
Replace differential side bearing and differential side bearing outer race as a set.



4. Install oil channel (1) on mainshaft side.

CAUTION:

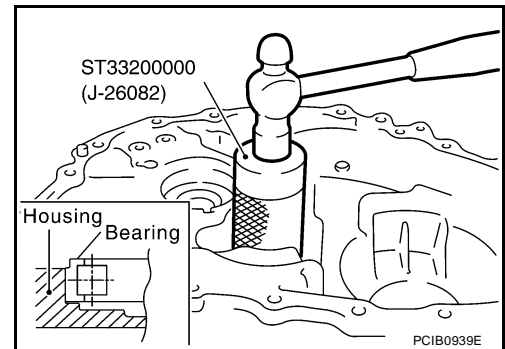
When installing oil channel, fit the rib (A) of oil channel into the processed area of the spot facing (B).



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

CAUTION:

Be careful with the orientation of mainshaft front bearing.



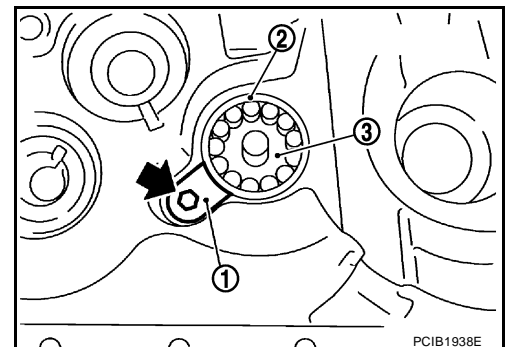
6. Install mainshaft bearing retainer (1) to clutch housing and tighten mounting bolt to the specified torque. Refer to [MT-69, "Gear Components"](#).

2 : Mainshaft front bearing

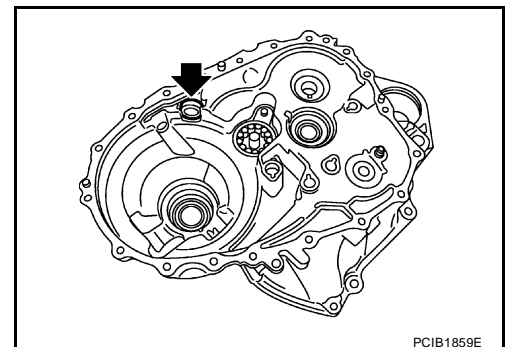
3 : Oil channel

CAUTION:

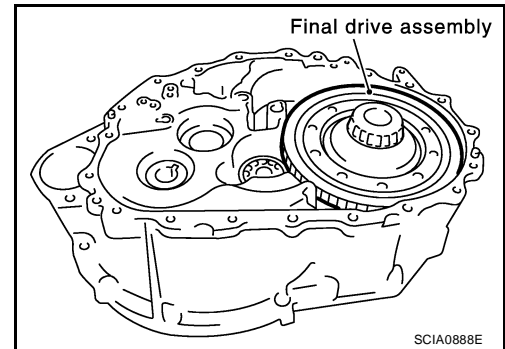
Install with punched surface facing up.



7. Install magnet to clutch housing.



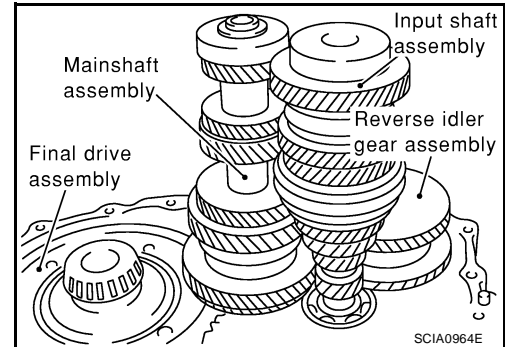
8. Install final drive assembly into clutch housing.



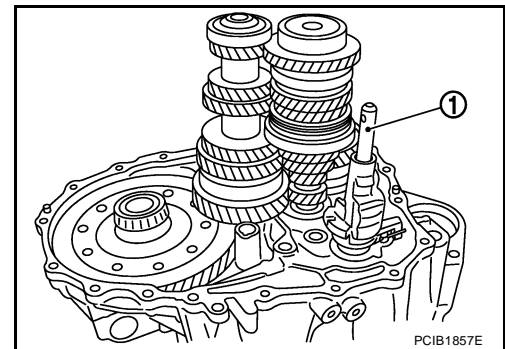
9. Install input shaft assembly, mainshaft assembly, and reverse idler gear assembly into clutch housing.

CAUTION:

- Wrap a tape, etc. to the spline of input shaft so as not to damage the input shaft oil seal.
- Be careful with the orientation of reverse idler shaft.

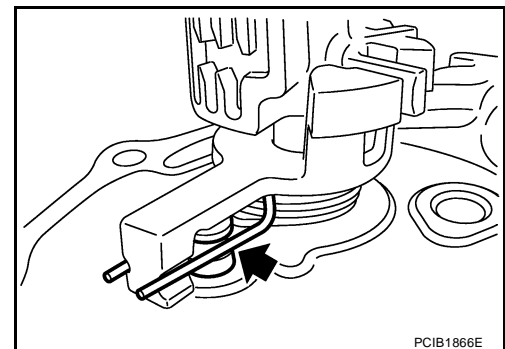


10. Install striking rod assembly (1) into clutch housing.



CAUTION:

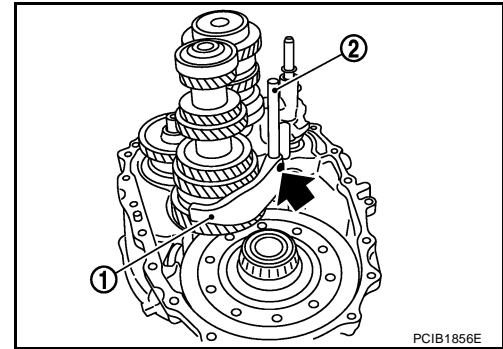
- Check that return spring is securely seated in the groove on return pin.



11. Install 1st-2nd shift fork (1) and 1st-2nd fork rod (2) and then install retaining pin to 1st-2nd shift fork.

CAUTION:

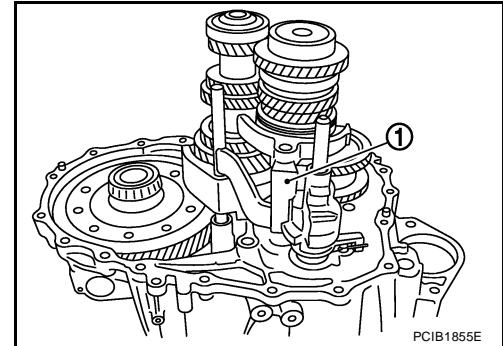
- Never reuse retaining pin.
- Be careful with the orientation of 1st-2nd shift fork and 1st-2nd fork rod.
- Assemble retaining pin from the direction shown by the arrow in the figure until it becomes flush with the end surface of 1st-2nd shift fork.



12. Install 3rd-4th shift fork (1) to 3rd-4th coupling sleeve.

CAUTION:

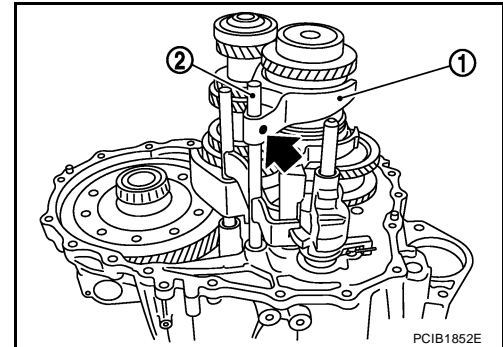
- Be careful with the orientation of 3rd-4th shift fork.



13. Install 5th-6th shift fork (1) and 5th-6th fork rod (2) and then install retaining pin to 5th-6th shift fork.

CAUTION:

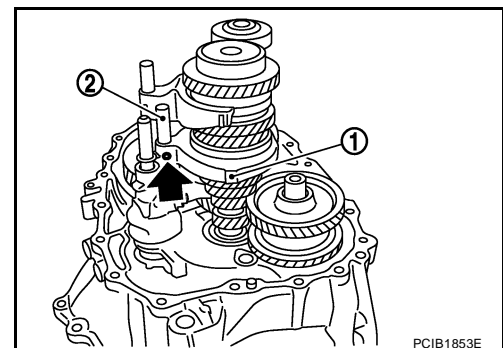
- Never reuse retaining pin.
- Be careful with the orientation of 5th-6th shift fork and 5th-6th fork rod.
- Assemble retaining pin from the direction shown by the arrow in the figure until it becomes flush with the end surface of 5th-6th shift fork.



14. Install 3rd-4th fork rod (2) and then install retaining pin to 3rd-4th shift fork (1).

CAUTION:

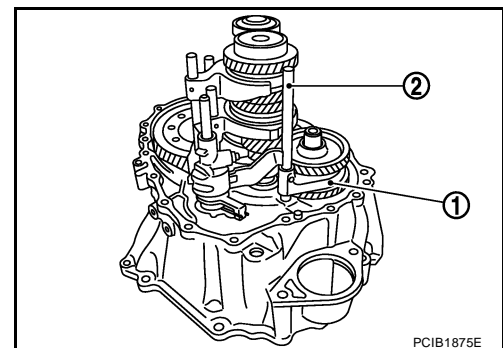
- Never reuse retaining pin.
- Be careful with the orientation of 3rd-4th fork rod.
- Assemble retaining pin from the direction shown by the arrow in the figure until it becomes flush with the end surface of 3rd-4th shift fork.



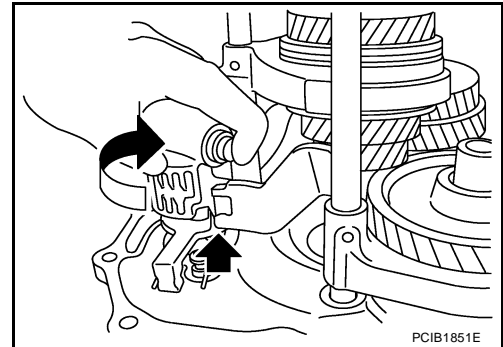
15. Install reverse shift fork (1) and reverse fork rod (2).

CAUTION:

- Be careful with the orientation of reverse shift fork and reverse fork rod.



16. 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.

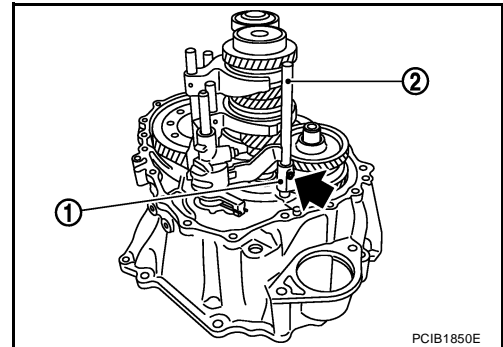


17. Install retaining pin to reverse shift fork (1).

2 : Reverse fork rod

CAUTION:

- Never reuse retaining pin.
- Assemble retaining pin from the direction shown by the arrow in the figure until it becomes flush with the end surface of reverse shift fork.



18. Install selected differential side bearing adjusting shim(s) and differential side bearing outer race (transaxle case side).

- For selection of adjusting shim(s), refer to [MT-89, "Differential Side Bearing Preload"](#) .

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

- For selection of adjusting shim, refer to [MT-90, "Reverse Idler Gear End Play"](#) .

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

- For selection of adjusting shim, refer to [MT-91, "Input Shaft End Play"](#) .

21. Install selected striking rod adjusting shim and striking rod shim onto striking rod assembly.

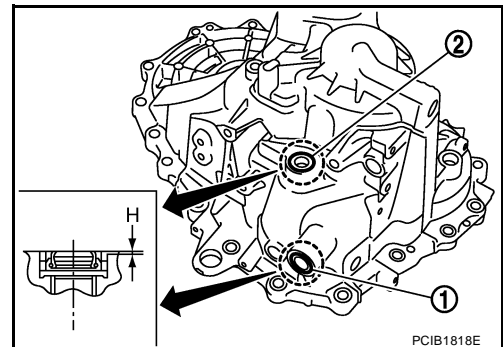
- For selection of adjusting shim, refer to [MT-92, "Striking rod End Play"](#) .

22. Install shifter lever oil seal (1) and striking rod oil seal (2) to transaxle case using the drift [Commercial service tool].

Dimension "H" : 0 - 1.0 mm (0 - 0.039 in)

CAUTION:

- Never reuse shifter lever oil seal and striking rod oil seal.
- When installing, never incline shifter lever oil seal and striking rod oil seal.
- Never damage transaxle case.

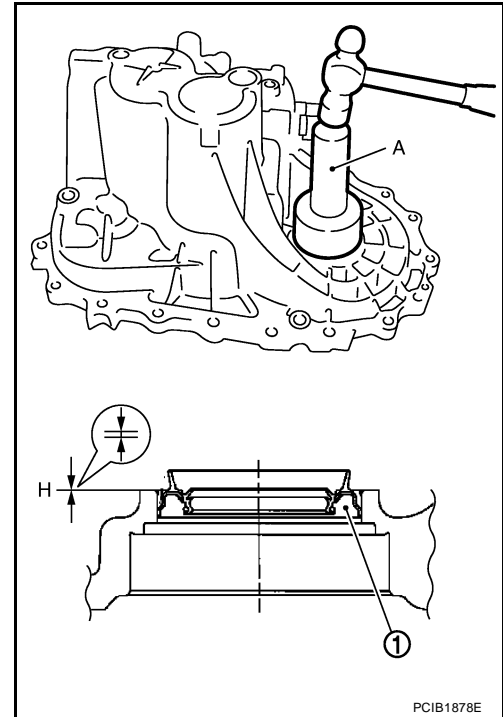


23. Install differential side oil seal (1) to transaxle case using the drift (A) [SST: ST30720000 (J-25405)].

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

CAUTION:

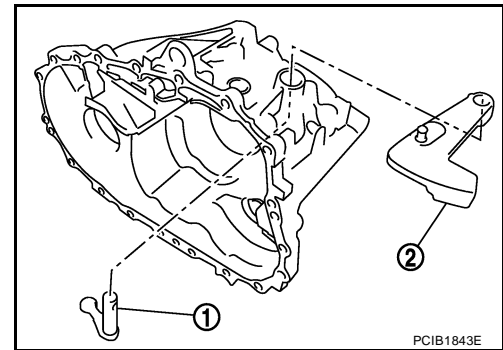
- Never reuse differential side oil seal.
- When installing, never incline differential side oil seal.
- Never damage transaxle case.



24. Install shifter lever B (1) and shifter lever A (2) to transaxle case.

CAUTION:

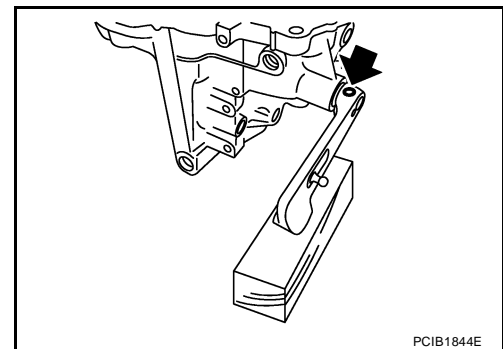
Be careful with the orientation of shifter lever B and shifter lever A.



25. Install retaining pin to shifter lever A.

CAUTION:

- Never reuse retaining pin.
- Assemble retaining pin from the direction shown by the arrow in the figure until it becomes flush with the end surface of shifter lever A.

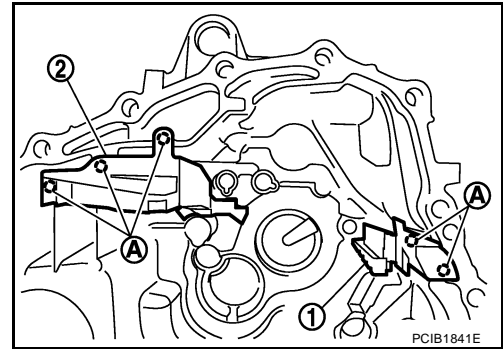


26. Install transaxle case following the procedures below.
- Install selected mainshaft rear bearing adjusting shim into transaxle case.
 - For selection of adjusting shim, refer to [MT-93. "Mainshaft End Play"](#).

- b. Install oil gutter A (1) and oil gutter B (2) to transaxle case.

CAUTION:

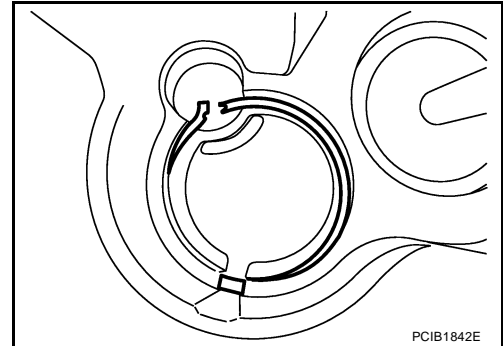
Insert the tab (A) of oil gutter A and oil gutter B into transaxle case.



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

CAUTION:

Never reuse snap ring.

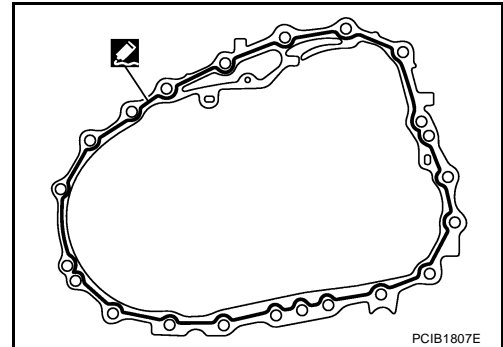


- d. Apply recommended sealant to mating surface of clutch housing as shown in the figure.

- Use Genuine Silicone RTV or an equivalent. Refer to [GI-44, "Recommended Chemical Products and Sealants"](#).

CAUTION:

- Remove old sealant adhering to the mounting surfaces. Also remove any moisture, oil, or foreign material adhering to both mounting surfaces.
- Apply sealant so as not to break the bead.
- The width of sealant bead is 1 - 2 mm (0.04 - 0.08 in).
- The height of sealant bead is 0.4 - 1 mm (0.016 - 0.04 in).
- The overlap length of both ends of sealant bead is 3 - 5 mm (0.12 - 0.20 in).



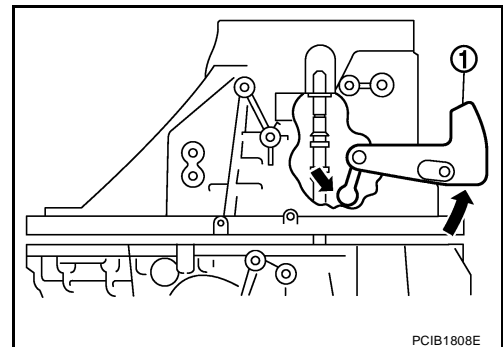
- e. With shifter lever A (1) held in the position shown in the figure, temporarily assemble transaxle case to clutch housing.

CAUTION:

Never damage striking rod oil seal.

NOTE:

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

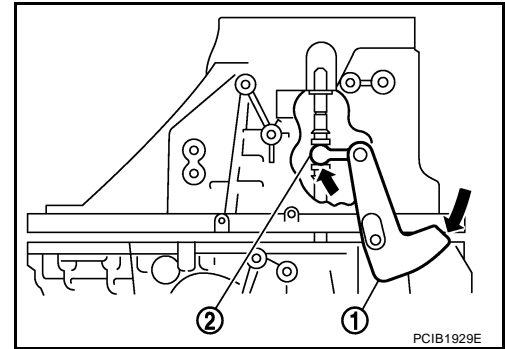


TRANSAXLE ASSEMBLY

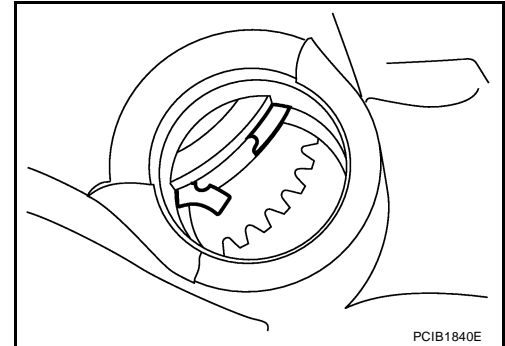
[RS6F52A]

- f. While rotating shifter lever A (1) in the direction of the arrow in the figure, assemble transaxle case to clutch housing.

2 : shifter lever B



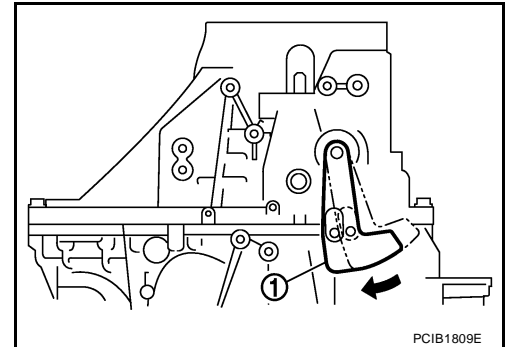
- g. Accessing from the bore plug hole, expand snap ring at mainshaft rear bearing so that the ring catches the periphery of mainshaft rear bearing.
- h. Temporarily tighten transaxle case mounting bolts.



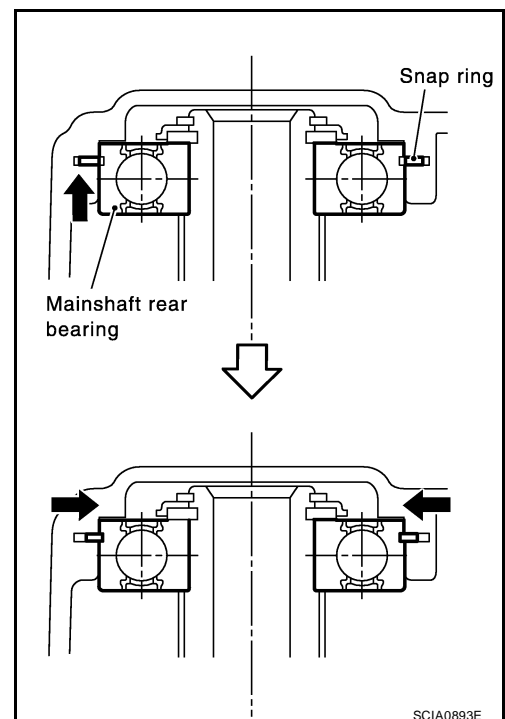
- i. Shift the shifter lever A (1) to 2nd gear position.

NOTE:

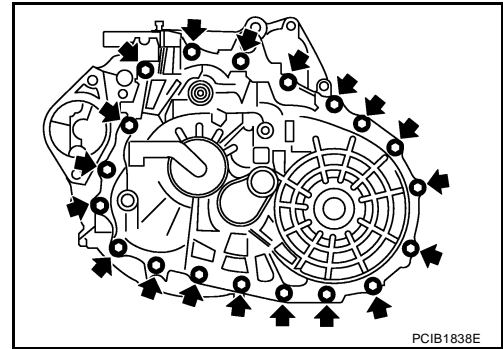
- The 2nd gear position is attained when shifter lever A is in the position shown in the figure.



- When transaxle is shifted to the 2nd gear position, mainshaft assembly is lifted.
- j. Seat snap ring in the groove on mainshaft rear bearing. If snap ring is not seated in the groove on mainshaft rear bearing, remove transaxle case and repeat the procedure from step d.



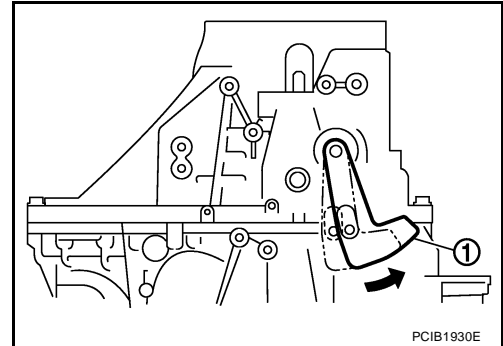
- k. Tighten transaxle case mounting bolts to the specified torque.
Refer to [MT-68, "Case and Housing Components"](#).



- l. Shift the shifter lever A (1) to neutral position.

NOTE:

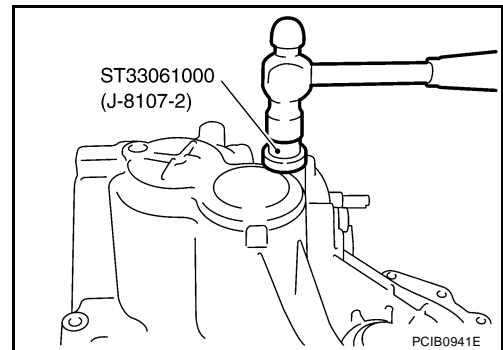
The neutral position is attained when shifter lever A is in the position shown in the figure.



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

CAUTION:

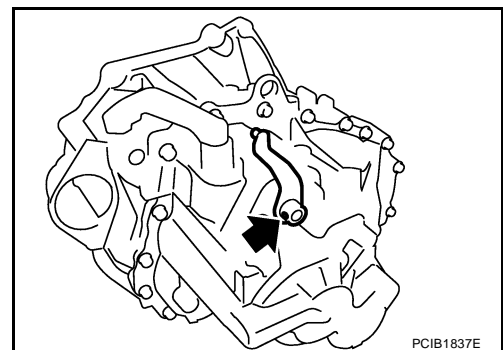
Never reuse bore plug.



28. Install selector lever to transaxle case and then install retaining pin to selector lever.

CAUTION:

- Never reuse retaining pin.
- Assemble retaining pin from the direction shown by the arrow in the figure until it becomes flush with the end surface of selector lever.



29. Install guide bolt following the procedures below.

- a. Shift the shifter lever A and selector lever to neutral position.

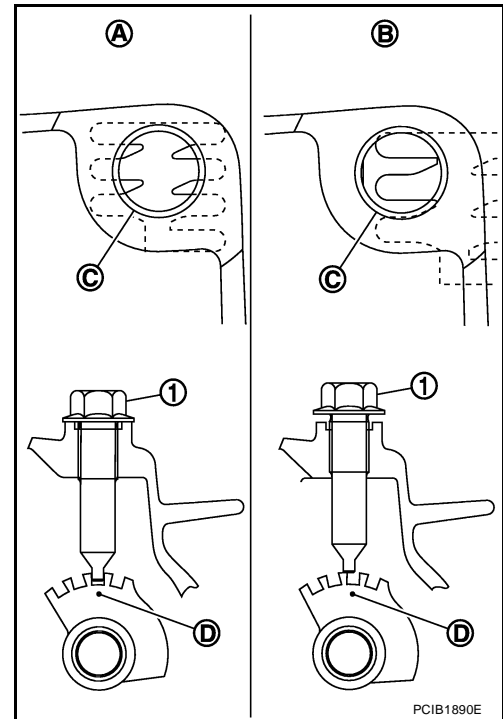
- b. Visually confirm from the guide bolt mounting hole (C) that the lever is securely set to neutral position (A). If it is not in the neutral position, repeat the procedure from step a.

1 : Guide bolt

CAUTION:

The guide groove (D) of striking rod assembly will be damaged when assembling guide bolt with the lever is in except neutral position (B).

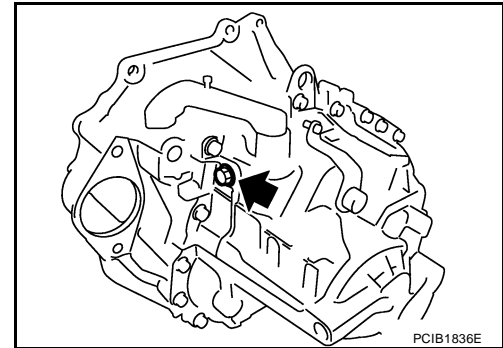
- c. Check continuity between terminals of park/neutral position (PNP) switch to confirm it in the neutral position. If it is not in the neutral position, remove park/neutral position (PNP) switch and repeat the procedure from step a. Refer to [MT-62, "Checking"](#).



- d. Install guide bolt to transaxle case and then tighten guide bolt to the specified torque. Refer to [MT-71, "Shift Control Components"](#).

CAUTION:

Never reuse guide bolt.



30. Apply recommended sealant to threads of park/neutral position (PNP) switch (1). Then install it to transaxle case and tighten to the specified torque. Refer to [MT-68, "Case and Housing Components"](#).

- Use Genuine Silicone RTV or an equivalent. Refer to [GI-44, "Recommended Chemical Products and Sealants"](#).

CAUTION:

Remove old sealant and oil adhering to threads.

31. Install plunger to transaxle case.

32. Apply recommended sealant to threads of back-up lamp switch (2). Then install it to transaxle case and tighten to the specified torque. Refer to [MT-68, "Case and Housing Components"](#).

- Use Genuine Silicone RTV or an equivalent. Refer to [GI-44, "Recommended Chemical Products and Sealants"](#).

CAUTION:

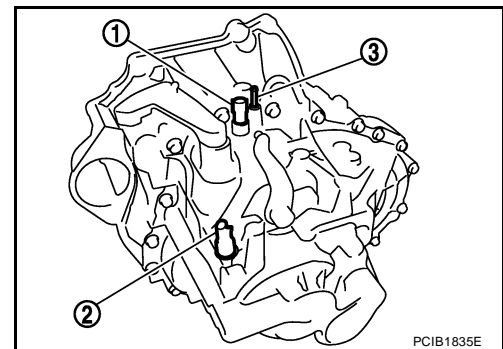
Remove old sealant and oil adhering to threads.

33. Install air breather tube (3) to transaxle case.

CAUTION:

- Never reuse air breather tube.

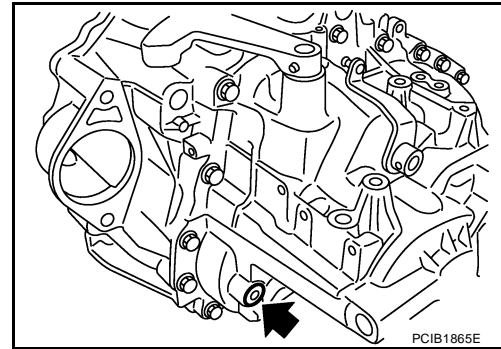
- Assemble air breather tube until its collar element contacts with transaxle case.



34. Install gasket onto plug and then install them into transaxle case. Tighten plug to the specified torque. Refer to [MT-68, "Case and Housing Components"](#).

CAUTION:

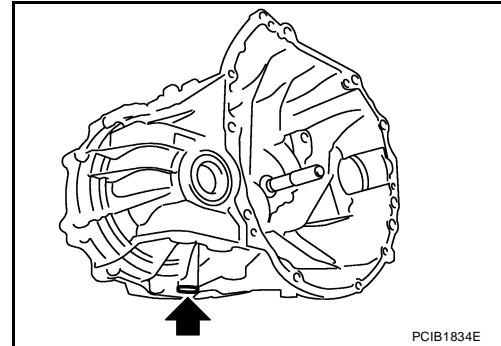
Never reuse gasket.



35. Install gasket onto drain plug and then install them into clutch housing. Tighten drain plug to the specified torque. Refer to [MT-68, "Case and Housing Components"](#).

CAUTION:

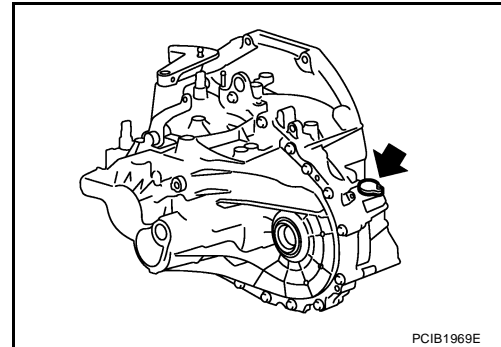
Never reuse gasket.



36. Install O-ring onto plug (with ABS models) or speedometer pinion gear (without ABS models) and then install it into clutch housing. Tighten mounting bolt to the specified torque. Refer to [MT-68, "Case and Housing Components"](#).

CAUTION:

- Never reuse O-ring.
- After oil is filled, tighten mounting bolt 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-127, "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.

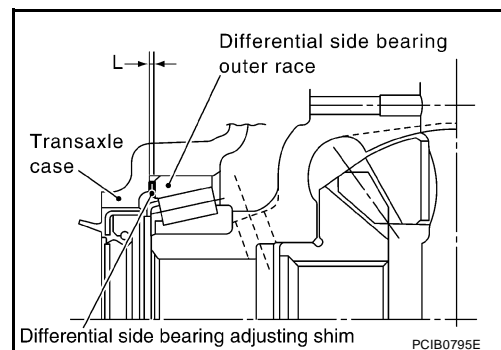
Preload : Refer to [MT-127, "BEARING PRELOAD"](#).

Dimension "L" = (L₁ - L₂) + Preload

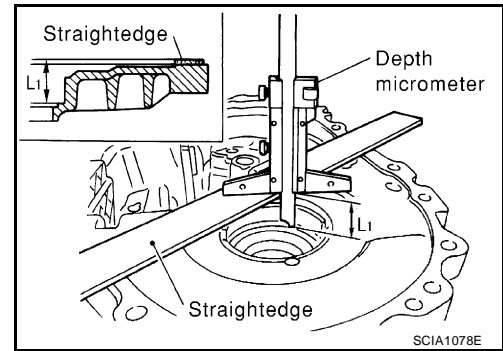
L : Thickness of adjusting shim

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



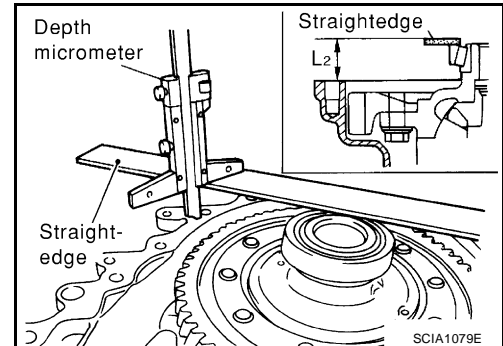
1. Using a depth micrometer and straightedge, measure dimension "L1" between transaxle case end face and mounting face of adjusting shim.
2. Install differential side bearing outer race onto differential side bearing on final gear side. Holding lightly differential side bearing outer race horizontally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



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

CAUTION:

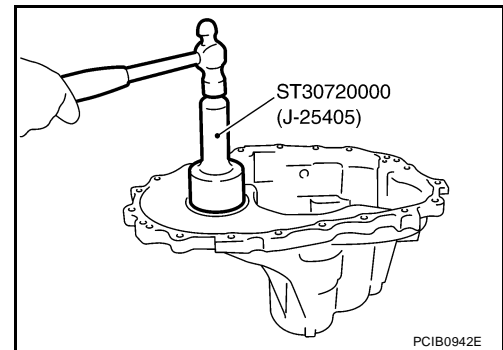
"L2" : Measure at 4 point by approximately 90 degrees and use the average value.



4. Install selected differential side bearing adjusting shim and then install differential side bearing outer race (transaxle case side) using the drift.

CAUTION:

Replace differential side bearing and differential side bearing outer race as a set.



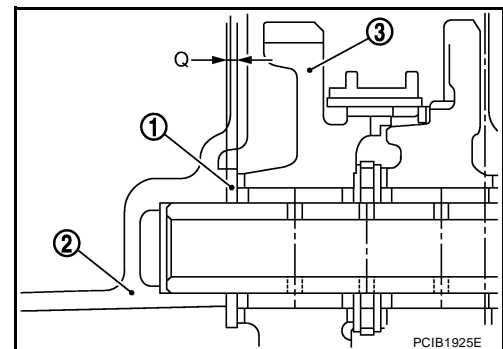
Reverse Idler Gear End Play

- When adjusting reverse idler gear end play, select adjusting shim for reverse idler gear. To select adjusting shim (1), measure clearance between transaxle case (2) and reverse idler gear (rear) (3). Refer to [MT-127, "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 : Refer to [MT-127, "REVERSE IDLER GEAR ADJUSTING SHIM"](#).

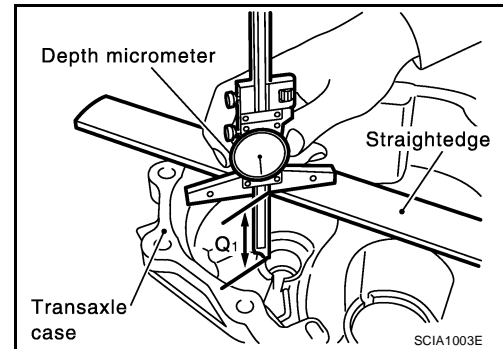
Dimension "Q" = (Q1 - Q2) - End play

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

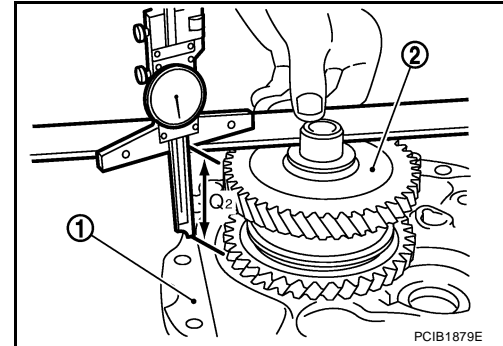


- Using a depth micrometer and straightedge as shown in the figure, measure dimension "Q2" between clutch housing (1) end face and end face of reverse idler gear (rear) (2).

CAUTION:

"Q2" : Measure at 4 point by approximately 90 degrees and use the average value.

- Install selected reverse idler gear adjusting shim onto reverse idler gear (rear).



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-126, "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.

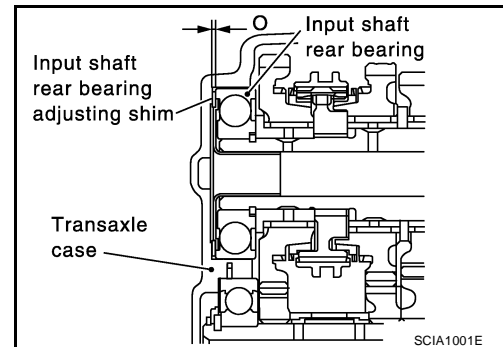
End play : Refer to [MT-126, "INPUT SHAFT REAR BEARING ADJUSTING SHIM"](#).

Dimension "O" = (O1 - O2) - End play

O : Thickness of adjusting shim

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

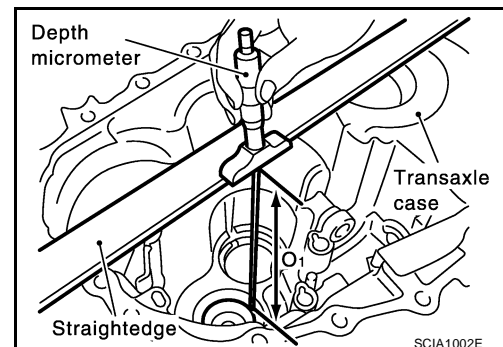
O2 : Distance between clutch housing end face and end face of input shaft rear bearing



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

CAUTION:

"O1" : Measure at 4 point by approximately 90 degrees and use the average value.

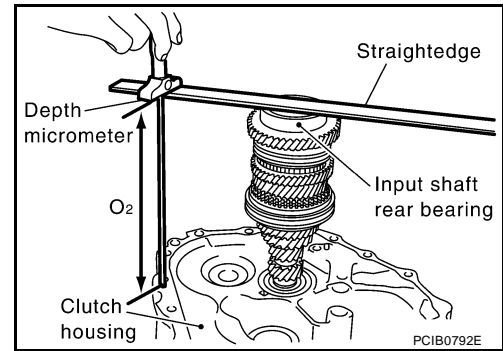


- Using a depth micrometer and straightedge as shown in the figure, measure dimension "O₂" between clutch housing end face and end face of input shaft rear bearing.

CAUTION:

"O₂" : Measure at 4 point by approximately 90 degrees and use the average value.

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



Striking rod End Play

- When adjusting striking rod end play, select adjusting shim (1) for striking rod (2). To select adjusting shim, measure clearance between transaxle case (3) and striking rod shim (4). Refer to [MT-127, "STRIKING ROD ADJUSTING SHIM"](#).

CAUTION:

Only 1 adjusting shim can be selected.

- Calculate dimension "R" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for striking rod.

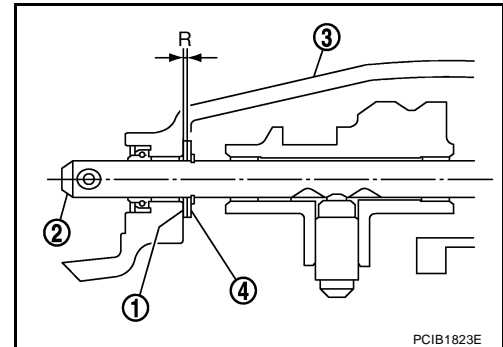
End play : Refer to [MT-127, "STRIKING ROD ADJUSTING SHIM"](#).

Dimension "R" = (R₁ - R₂) - End play

R : Thickness of adjusting shim

R₁ : Distance between transaxle case end face and mounting face of adjusting shim

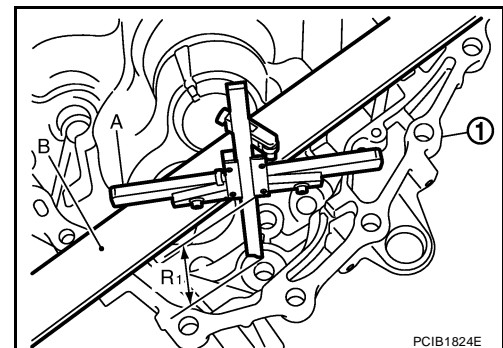
R₂ : Distance between clutch housing end face and end face of striking rod shim



- Using a depth micrometer (A) and straightedge (B), measure dimension "R₁" between transaxle case (1) end face and mounting face of adjusting shim.

CAUTION:

"R₁" : Measure at 4 point by approximately 90 degrees and use the average value.



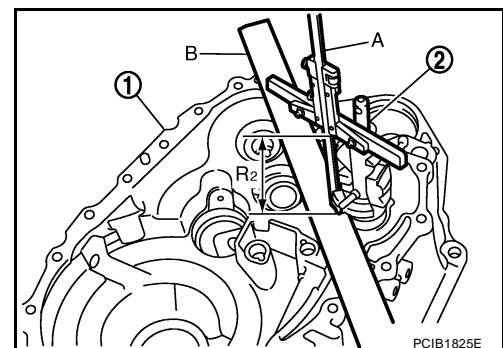
- Using a depth micrometer (A) and straightedge (B) as shown in the figure, measure dimension "R₂" between clutch housing (1) end face and end face of striking rod shim (2).

CAUTION:

- "R₂" : Measure at 4 point by approximately 90 degrees and use the average value.**

- When measuring, be careful for the inclination of striking rod assembly and striking rod shim.**

- Install selected striking rod adjusting shim onto striking rod assembly.



Mainshaft End Play

- When adjusting mainshaft end play, select adjusting shim (1) for mainshaft rear bearing (2). To select adjusting shim, measure clearance "M" between transaxle case (3) and dummy adjusting shim (4) on mainshaft rear bearing. Refer to [MT-126, "MAINSHAFT REAR BEARING ADJUSTING SHIM"](#).

5 : Snap ring

6 : Mainshaft

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 : Refer to [MT-126, "MAINSHAFT REAR BEARING ADJUSTING SHIM"](#).

Dimension "P" = (M + N) - End play

P : Thickness of adjusting shim

M : Distance between dummy adjusting shim on mainshaft rear bearing end face and transaxle case end face

N* : Thickness of dummy adjusting shim

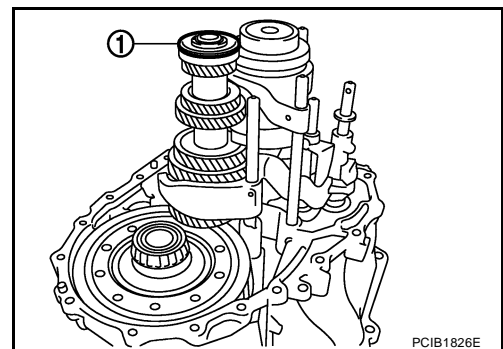
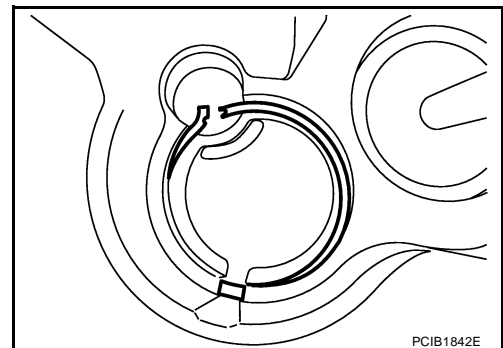
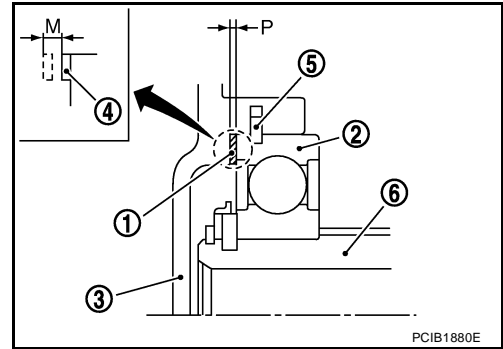
***:** Refer to the latest parts information to use a dummy adjusting shim of which part number is the thinnest in thickness. Refer to [MT-126, "MAINSHAFT REAR BEARING ADJUSTING SHIM"](#).

- Install transaxle case following the procedures below.
- Temporarily install snap ring of mainshaft rear bearing into transaxle case.

CAUTION:

Never reuse snap ring.

- Install dummy adjusting shim (1) to mainshaft assembly.



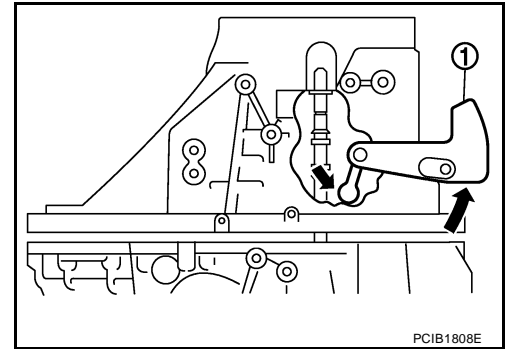
- c. With shifter lever A (1) held in the position shown in the figure, temporarily assemble transaxle case to clutch housing.

CAUTION:

Never damage striking rod oil seal.

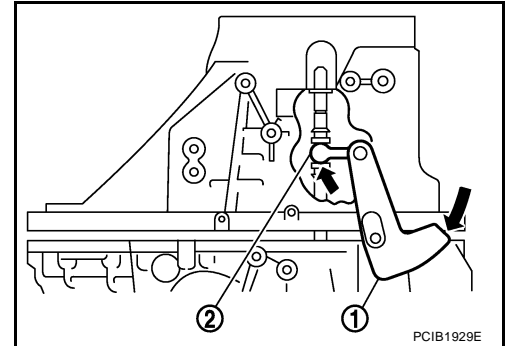
NOTE:

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

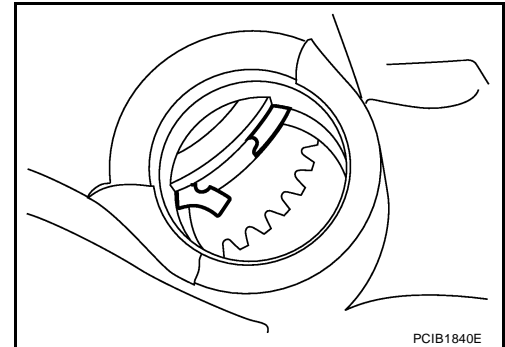


- d. While rotating shifter lever A (1) in the direction of the arrow shown in the figure, assemble transaxle case to clutch housing.

2 : shifter lever B



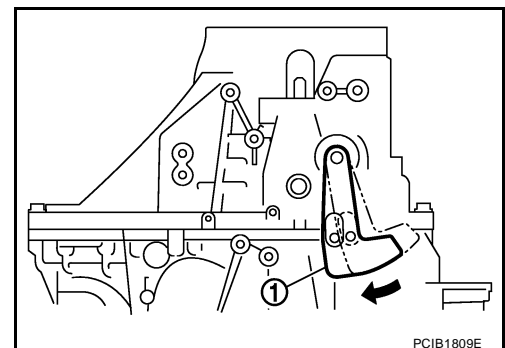
- e. Accessing from the bore plug hole, expand snap ring at mainshaft rear bearing so that the ring catches the periphery of mainshaft rear bearing.
- f. Temporarily tighten transaxle case mounting bolts.



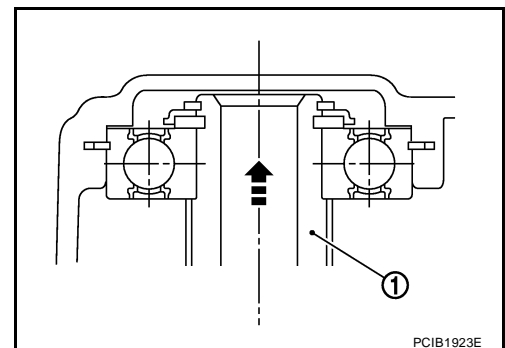
2. Shift the shifter lever A to 2nd gear position.

NOTE:

- The 2nd gear position is attained when shifter lever A (1) is in the position shown in the figure.



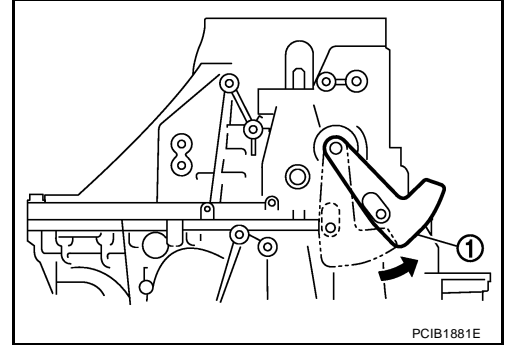
- When transaxle is shifted to the 2nd gear position, mainshaft assembly (1) is lifted.



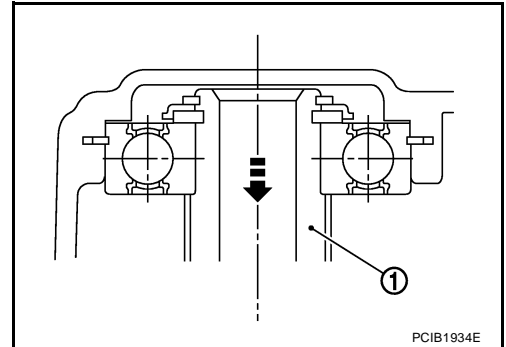
3. Seat snap ring in the groove on mainshaft rear bearing. If snap ring is not seated in the groove on mainshaft rear bearing, remove transaxle case and repeat the procedure 1 from step c.
4. Shift the shifter lever A to 1st gear position, and then shift it to 2nd gear position. Repeat 3 times.

NOTE:

- The mainshaft rear bearing position will be stabilized by shifting between 1st gear position and 2nd gear position alternately.
- The 1st gear position is attained when shifter lever A (1) is in the position shown in the figure.



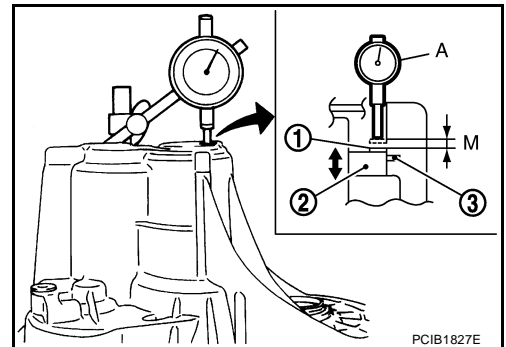
- When transaxle is shifted to the 1st gear position, mainshaft assembly (1) is declined.



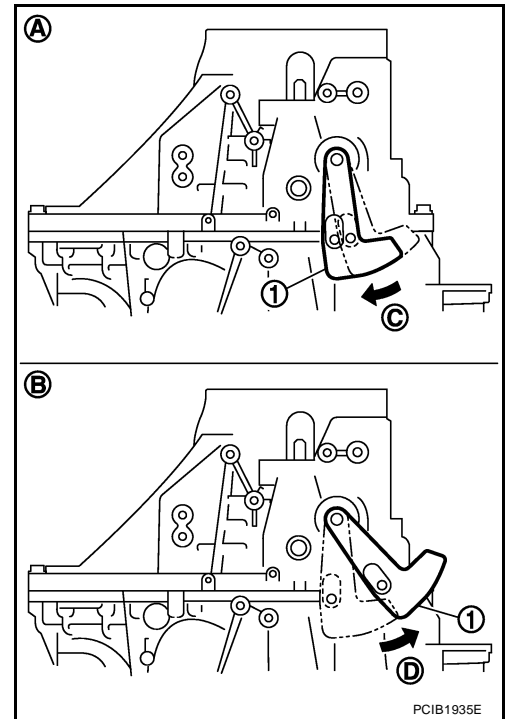
5. Set the dial indicator (A) to dummy adjusting shim (1) through the bore plug mounting hole.

2 : Mainshaft rear bearing

3 : Snap ring



6. Shift the shifter lever A (1) to 2nd gear position (A), and then rotate it in the direction of the arrow (C) in the figure until it stops. Using this position as the reference point, measure the amount of movement when shifting shifter lever A to 1st gear position (B) and rotating it in the direction of the arrow (D) in the figure until it stops. This measurement is the "M" dimension.
7. When measurement "M" is 0 - 0.06 mm (0 - 0.0024 in), adjustment terminates, and the dummy adjusting shim becomes regular adjusting shim. Select adjusting shim from the computed expressions when measurement "M" is over 0.06 mm (0.0024 in).



INPUT SHAFT AND GEARS

Disassembly and Assembly

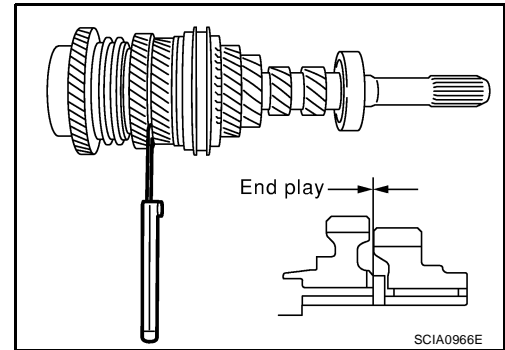
DISASSEMBLY

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

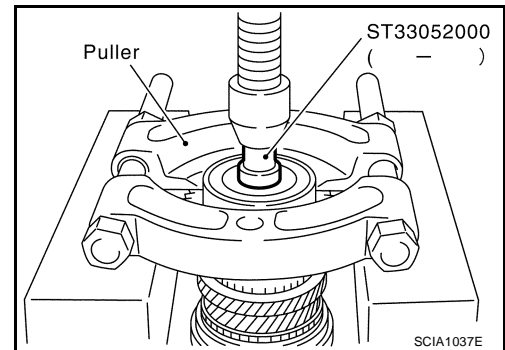
End play standard value

: Refer to [MT-124, "Gear End Play"](#) .

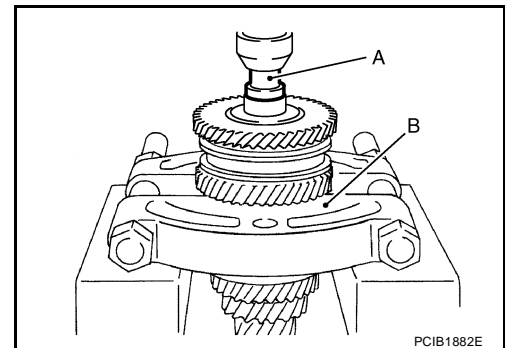
2. Remove oil channel.



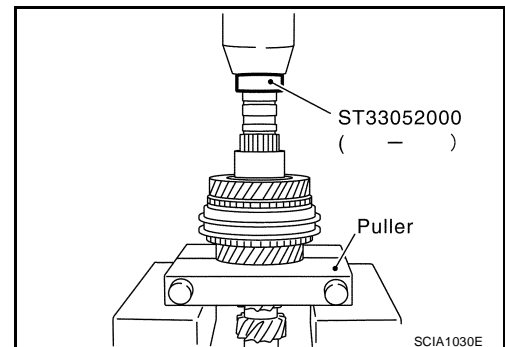
3. Press out input shaft rear bearing using the drift and a puller.
4. Remove snap ring.



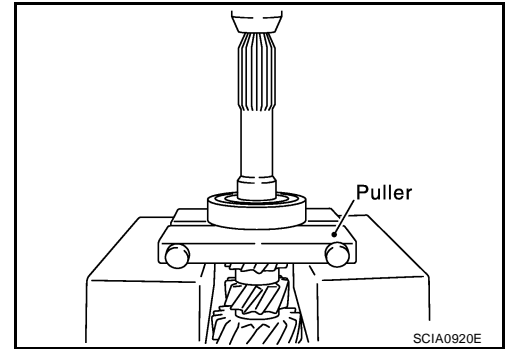
5. Press out 6th input gear, 6th needle bearing, 6th input gear bushing, 5th-6th synchronizer hub assembly, and 5th input gear using the drift (A) [SST: ST33052000 (—)] and a puller (B).
6. Remove 5th needle bearing.



7. 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.
8. Remove 3rd needle bearing.



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

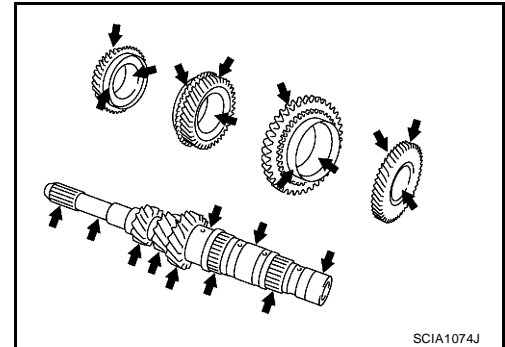


INSPECTION AFTER DISASSEMBLY

Input Shaft and Gears

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

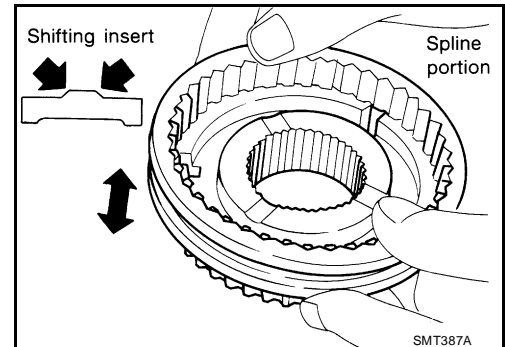
- Damage, peeling, dent, uneven wear, bending, etc. of shaft
- Excessive wear, damage, peeling, etc. of gears



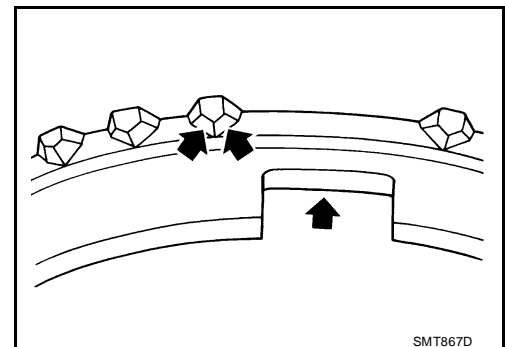
Synchronizer

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.



- 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

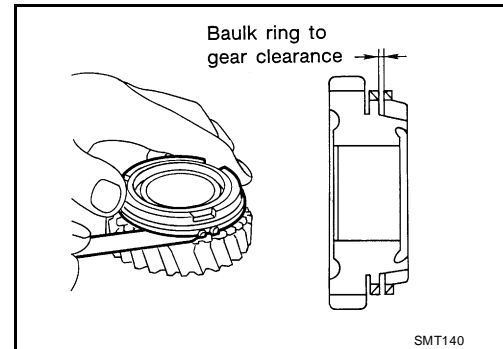
- Single-cone synchronizer (4th, 5th, and 6th)

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 : Refer to [MT-124, "Baulk Ring Clearance"](#) .

Limit value : Refer to [MT-124, "Baulk Ring Clearance"](#) .

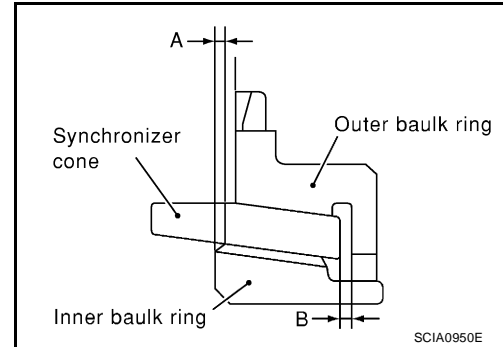


● Double-cone synchronizer (3rd)

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.

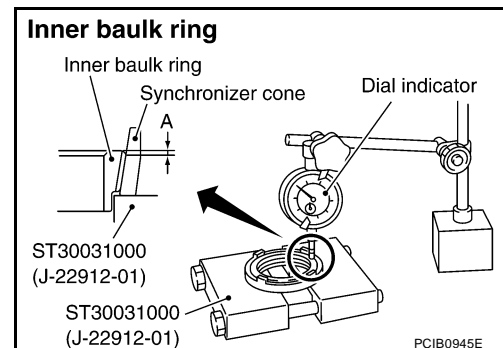


1. Measure the clearance "A" at 2 points or more diagonally opposite using a dial indicator. And then calculate mean value.

Clearance "A"

Standard value : Refer to [MT-124, "Baulk Ring Clearance"](#) .

Limit value : Refer to [MT-124, "Baulk Ring Clearance"](#) .

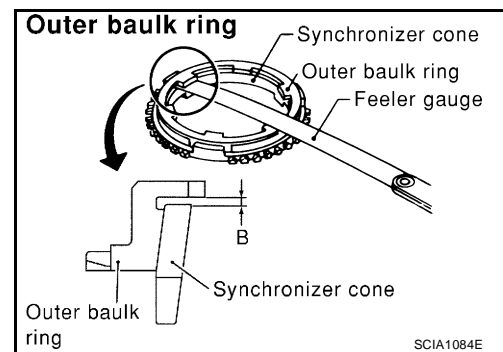


2. Measure the clearance "B" at 2 points or more diagonally opposite using a feeler gauge. And then calculate mean value.

Clearance "B"

Standard value : Refer to [MT-124, "Baulk Ring Clearance"](#) .

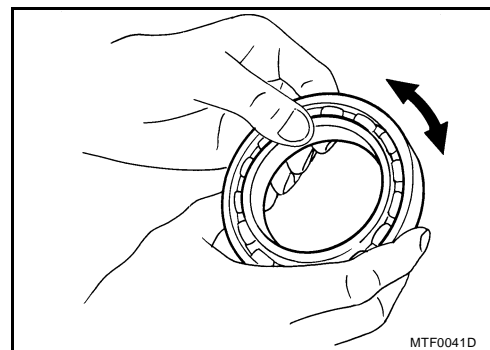
Limit value : Refer to [MT-124, "Baulk Ring Clearance"](#) .



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, 3rd inner baulk ring, 3rd synchronizer cone, and 3rd outer baulk ring to input shaft.

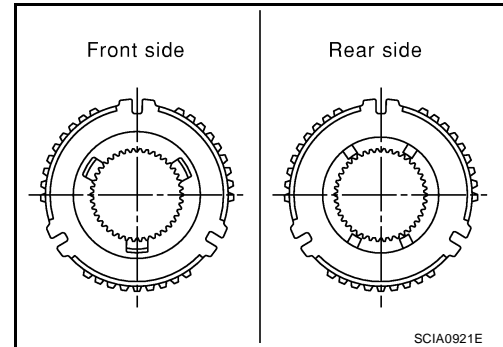
CAUTION:

Replace 3rd inner baulk ring, 3rd synchronizer cone, and 3rd outer baulk ring as a set.

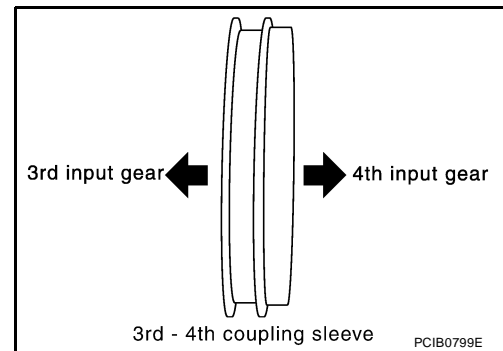
3. Install 3rd-4th spread springs, 3rd-4th shifting inserts, and 3rd-4th synchronizer hub onto 3rd-4th coupling sleeve.

CAUTION:

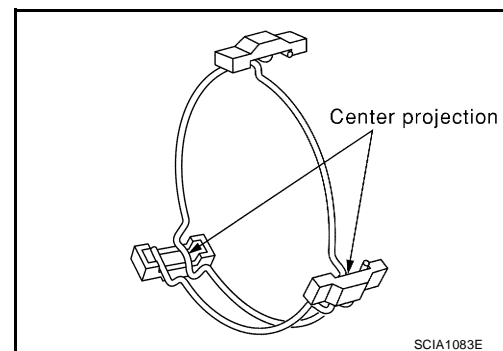
- Be careful with orientation of 3rd-4th synchronizer hub.
- Never reuse 3rd-4th synchronizer hub and 3rd-4th coupling sleeve.
- Replace 3rd-4th synchronizer hub and 3rd-4th coupling sleeve as a set.



- Be careful with orientation of 3rd-4th coupling sleeve.



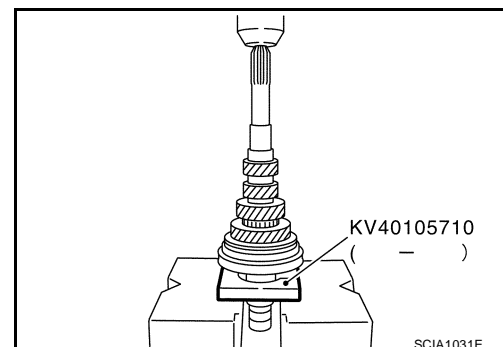
- Be sure not to hook center projection of 2 spread springs on same shifting insert.



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

CAUTION:

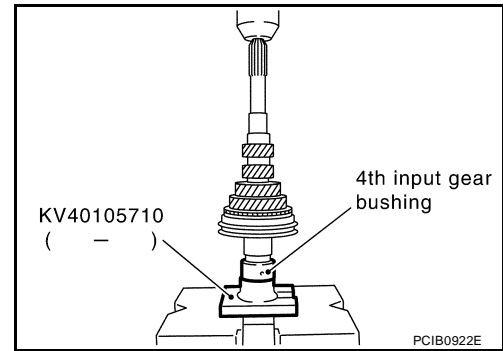
Align grooves of 3rd-4th shifting insert and 3rd outer baulk ring.



INPUT SHAFT AND GEARS

[RS6F52A]

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.



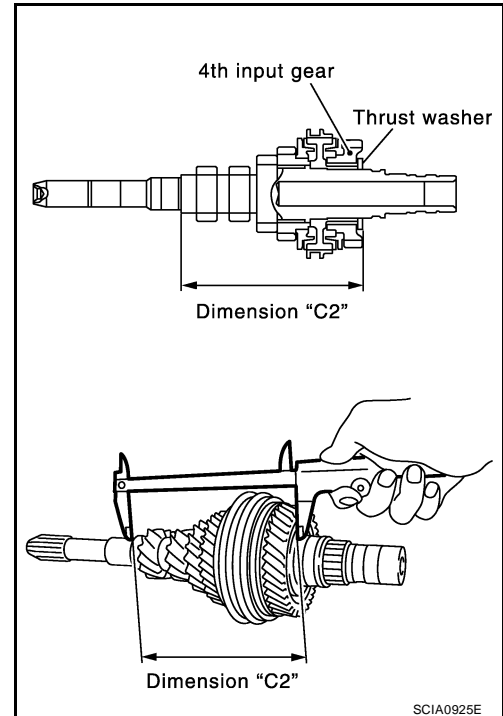
8. Select thrust washer so that dimension "C2" satisfies the standard value below. Then install thrust washer onto input shaft. Refer to [MT-125, "INPUT SHAFT THRUST WASHER"](#).

Standard value for dimension "C2"

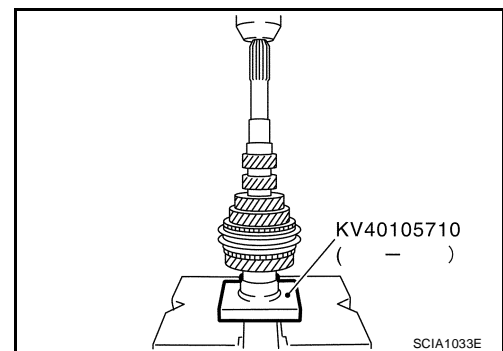
: Refer to [MT-125, "INPUT SHAFT THRUST WASHER"](#)

CAUTION:

Only one thrust washer can be selected.



9. Press in 5th input gear bushing using the press stand.
CAUTION:
Never 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 springs, and 5th-6th shifting inserts onto 5th-6th coupling sleeve.

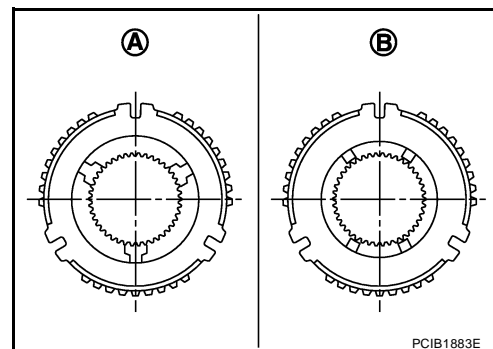
CAUTION:

- Be careful with orientation of 5th-6th synchronizer hub.

A : Front side

B : Rear side

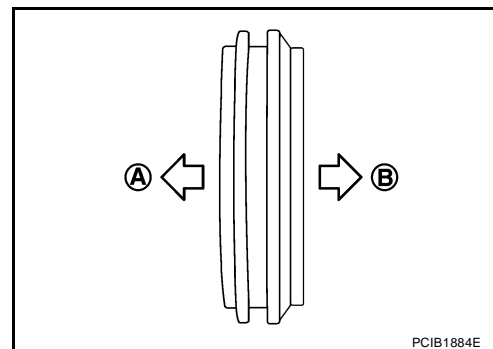
- Never reuse 5th-6th synchronizer hub and 5th-6th coupling sleeve.
- Replace 5th-6th synchronizer hub and 5th-6th coupling sleeve as a set.



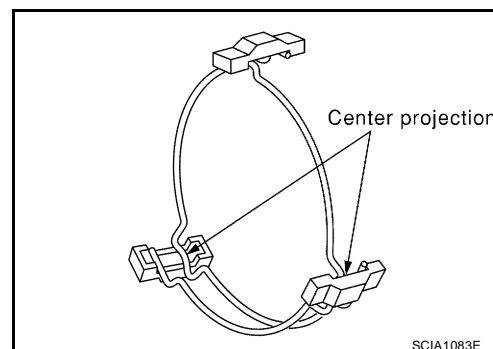
- Be careful with orientation of 5th-6th coupling sleeve.

A : 5th input gear side

B : 6th input gear side



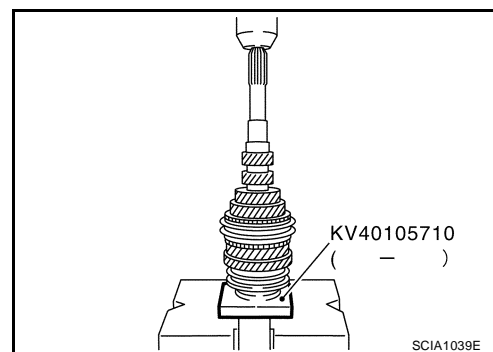
- Be sure not to hook center projection of 2 spread springs on same shifting insert.



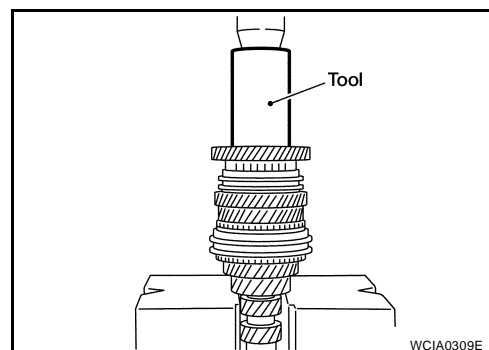
13. Press in 5th-6th synchronizer hub assembly using the press stand.

CAUTION:

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



14. Install 6th needle bearing, 6th input gear, 6th baulk ring onto 6th input gear bushing and then press in 6th input gear bushing onto input shaft using the drift [SST: ST33200000 (J-26082)].



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.

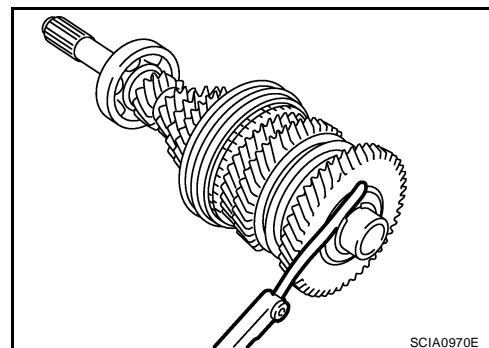
End play standard value

:Refer to [MT-125, "6TH INPUT GEAR BUSHING"](#) .

- If measurement is outside the standard range, select snap ring. Refer to [MT-125, "6TH INPUT GEAR BUSHING"](#) .

CAUTION:

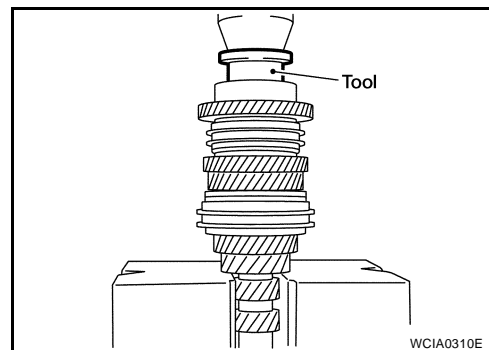
Never reuse snap ring.



16. Press in input shaft rear bearing using the drift [SST: ST30901000 (J-26010-01)].

CAUTION:

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

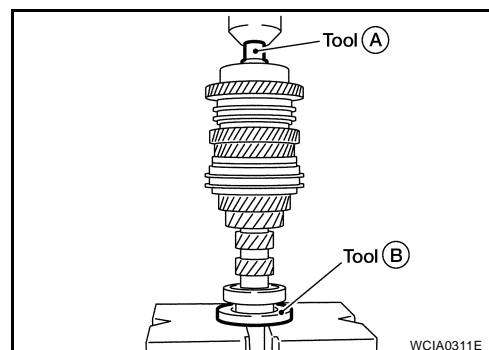


17. Press in input shaft front bearing using the drifts.

A: Drift [SST: ST33052000 (—)]

B: Drift [SST: ST30032000 (J-26010-01)]

18. Install oil channel onto input shaft.



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

End play standard value

: Refer to [MT-124, "Gear End Play"](#) .

