

Adjustment and Re-installation:

After disassembling, check if there is any distortion and make a record. Replace the attained parts, clean all the new parts and install.

1, **Installation** side gear, measure the clearance of side gear. Install the side gear.

side gear clearance: 0.03~0.40 mm。

Left Side:

Clip the differential case, put the end of the dial indicator on the top of the gear.

Use 2 screwdrivers to move the gear, read the reading on the dial indicator.

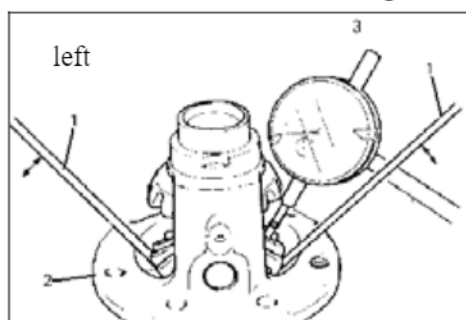


Fig.3-53

1-Screwdriver

2- Side gear

3-Dial indicator

Right Side:

According to the same process above, put the end of the dial indicator on the step of the side gear.

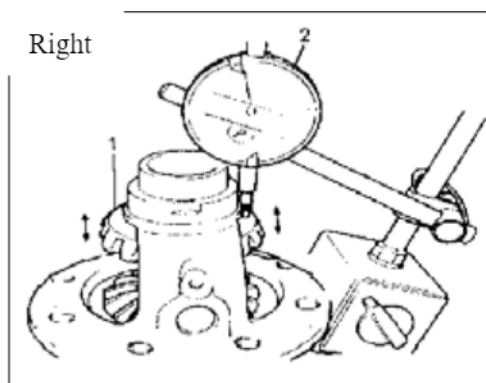


Fig.3-54

1- Side gear

2-Dial indicator

2, If the clearance exceed the regulations, please choose suitable side gear adjust gasket to install once more and test to obtain the right gear clearance.

Selectable gear adjust gasket	mm
	0.70
	0.80
	0.90
	1.00
	1.10

Notice: Spread lubricant on the contact surface of side gear adjust gasket, pinion gear, pinion gear and pinion gear shaft, side gear and differential case.

3, Dive in the slotted spring pin, till the end of pin enter into the differential case thoroughly.

4, Install the left-side bearing.

5, Refer to the fig., install the speedometer driven gear, use special tool to support bearing, drift the left-side bearing, and then install the right-side bearing according to the step 4.

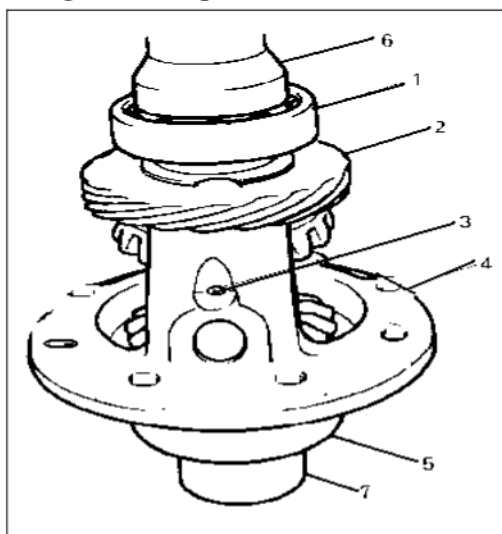


Fig.3-55

- 1-Differential right bearing
- 2-Speedometer driven gear
- 3-Slotted spring pin
- 4-Differential case
- 5-Differential left bearing
- 6-Special tool
- 7-special tool

6, Clip the differential case ,install the differential ring driven gear, screw tightly the 8 differential ring driven gear bolt according to the torque,

Caution: Forbid to use non-professional bolt.

Torque : 80~100N · m

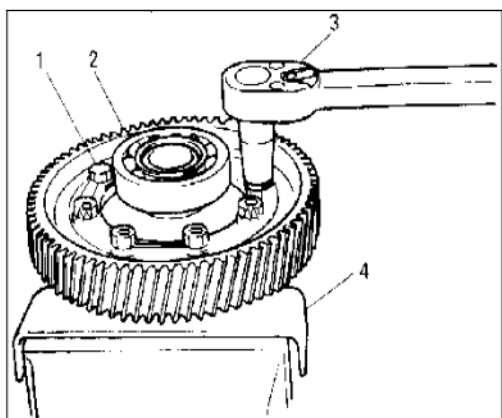


Fig.3-56

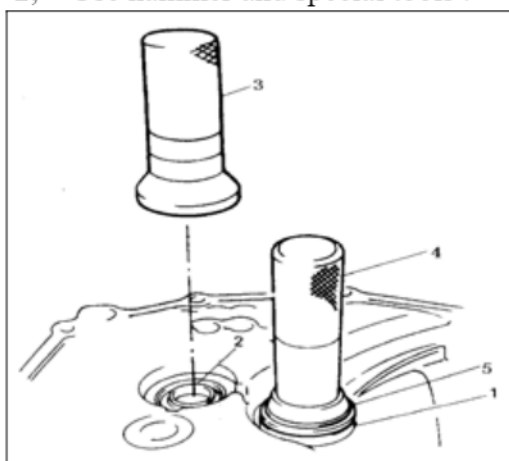
- 1-Driven gear bolt
- 2-Differential ring driven gear
- 3-Torque spanner
- 4-Support stand

II: Installation

(1) Clutch case assembly

1, Use hammer and special tools to install the input shaft oil seal, keep the oil seal spring side upward and spread lubricant on the oil seal.

2, Use hammer and special tools .



1-output shaft taper bearing outer ring

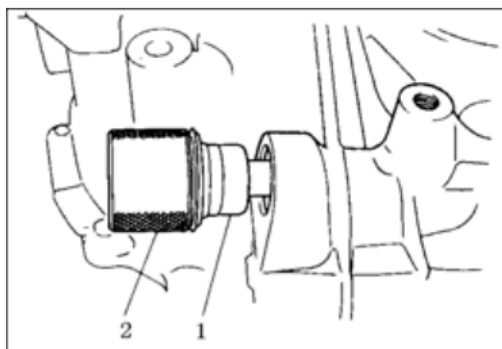
2-input shaft oil seal

3, 4, 5 -special tool

Fig.3-57

To install the right bearing outer ring of the output shaft.

3, Spread lubricant on the shift lever oil seal, use hammer and special tools to install the oil seal from the top down.



1-Shift lever oil seal

2-Special tool

Fig.3-58

4, Install the shift lever, boot, ball, spring and screw down the bolt tightly.
Torque : 10--16 N • m

Notice: Keep the blow hole of the shift lever oil seal boot downward.

5, Use hammer and special tools to install the starboard oil seal keep the oil seal surface equal with case surface, and then spread lubricant on the oil seal.

Notice: Keep the differential oil seal spring side inward

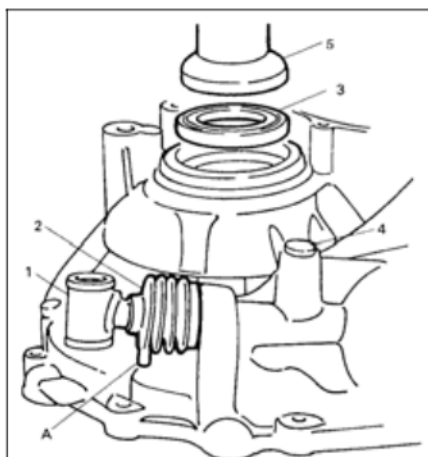


Fig.3-59

- 1- Shift lever
- 2-Oil seal boot
- 3-Differential right oil seal
- 4-Shift lever bolt
- 5-Special tool
- A: Blow hole (downward)

6, Install the shift head on the shift lever.

Torque: $31.5 \sim 35.5 \text{ N} \cdot \text{m}$

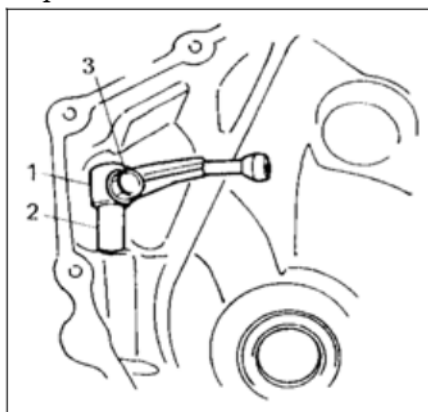


Fig.3-60

- 1-Shift head
- 2-Shift lever
- 3-Bolt

(2) Transmission case

1, If remove the oil guide slot, when re-installing, screw down the torque.

Torque: $8 \sim 12 \text{ N} \cdot \text{m}$

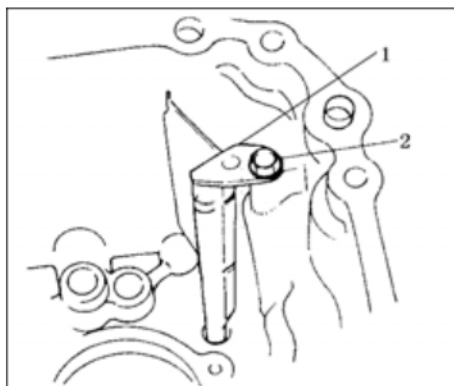
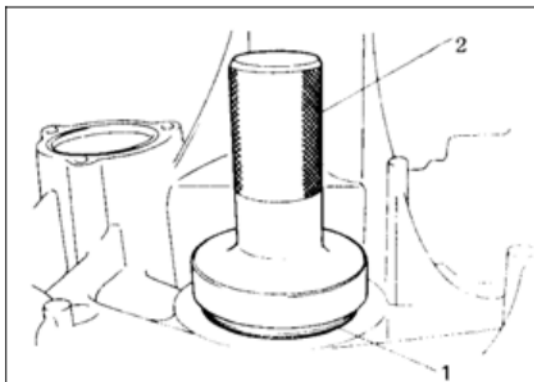


Fig.3-61

- 1-Oil guide slot assembly
- 2-Bolt

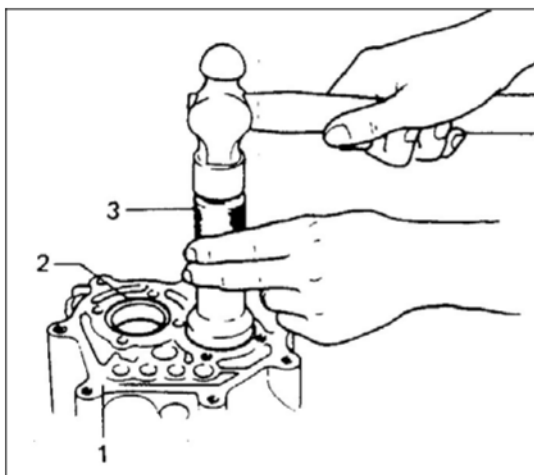
2, Use hammer and special tools to install the near side oil seal, keep the oil seal surface equal with the case surface and spread lubricant on the oil seal.



1-Differential left oil seal
2-Special tool

Fig.3-62

3, Use rubber hammer to knock the output shaft left bearing outer race and fix it.



1-Transmissan case
2-Bearing outer race
3-Special tool

Fig.3-63

(3) Transmission

1, Install the differential assembly on the clutch case.

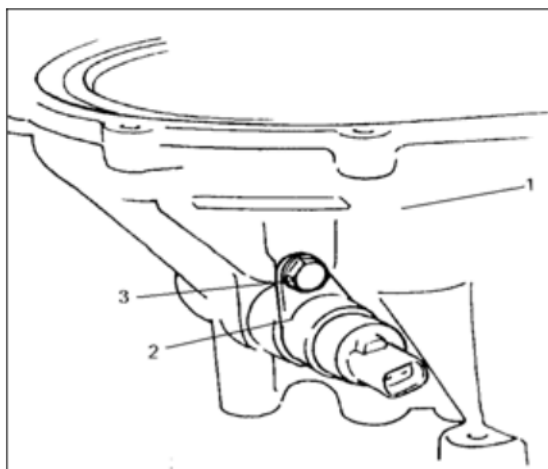


1-Differential assembly

Fig.3-64

2, Spread lubricant on the “O” ring and gear, install the speedometer driven gear assembly, and then screw down the torque.

Torque: $8 \sim 12 \text{ N} \cdot \text{m}$



- 1-Clutch case
- 2-Speedometer driven gear assembly
- 3-Bolt

Fig.3-65

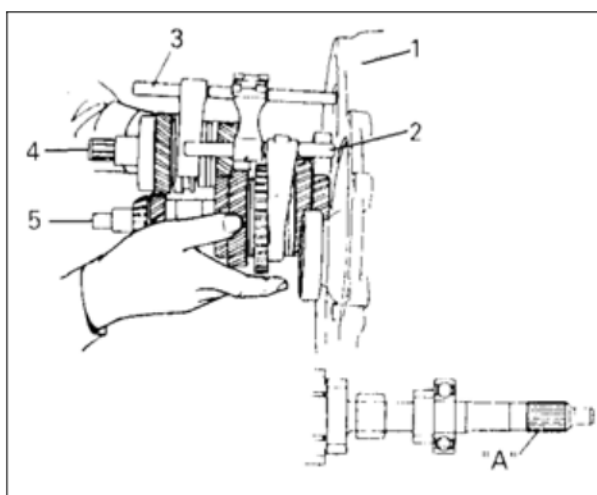
Notice: When installing speedometer driven gear, turn the differential ring driven gear lightly to joggle the gear. Do not knock the cracks on the speedometer case, otherwise the case may be broken.

3, Hold the input shaft assembly, output shaft assembly, 1st, 2nd shift fork assembly and 3rd, 4th Shift fork assembly and fix them on the clutch case.

Notice: Use hammer to rivet the input shaft right bearing into clutch case.

Be sure output shaft and differential ring driven gear are joggled.

Notice: In order to protect oil seal, twine the insulating tape to input shaft splined hub.



- 1-Clutch case
- 2-1st, 2nd Shift fork shaft assembly
- 3-3rd, 4th Shift fork shaft assembly
- 4-Input shaft assembly
- 5-Output shaft assembly

Fig.3-66

4, Install the reverse shift fork, screw down the bolt.

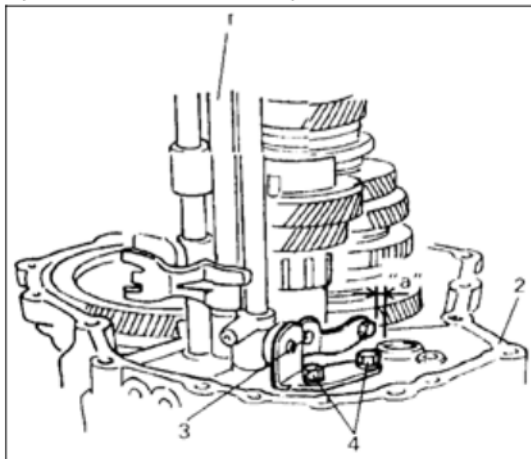
Torque : $18 \sim 28 \text{ N} \cdot \text{m}$

Notice: When installing the reverse shift fork, keep the distance 5mm from the end of shift fork and the shaft hole.

Distance “a” : 5mm

The distance “a” is 5mm, reverse shift fork end and reverse idle gear clearance is 1mm .

5, Install the reserve, 5th shift fork shaft assembly.



- 1-Reverse, 5th Shift fork shaft assembly
- 2-Clutch case
- 3-Reverse Shift fork assembly

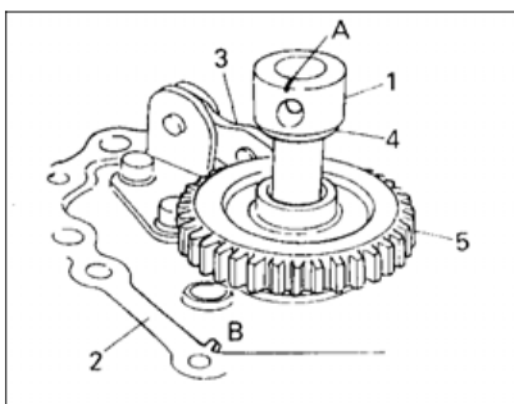
Fig.3-67

6, Install the reverse idle gear and reverse idle gear shaft, put the mark on the reverse idle gear shaft (Fig. A) and the step (Fig. B) on the clutch case in order.

Notice:

Be sure that reverse gear gasket has been fixed on the reverse gear.

Be sure that the distance between reverse shift fork free is 1mm



- 1-Reverse idle gear shaft assembly
- 2-Clutch case
- 3-Reverse Shift fork assembly
- 4-Reverse gear gasket

Fig.3-68

7, Clean the clutch and transmission surface, spread sealed adhesive on the surface of the transmission, and fix it with clutch.

Seal Adhesive: Seal adhesive (HZ1213Q/320222 YAP02-92)

8, Screw down the transmission bolt according to the correct torque .

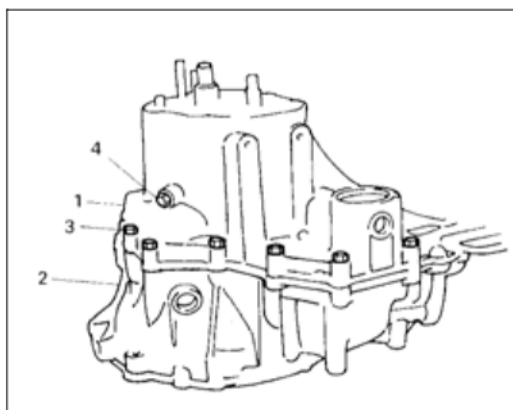
Torque: 15~22 N • m

9, Install the reverse gear shaft bolt and aluminum gasket, screw down the bolt.

Torque : 18~28 N • m

10, Screw down the other 3 transmission bolt in the clutch.

Torque : 15~22 N • m



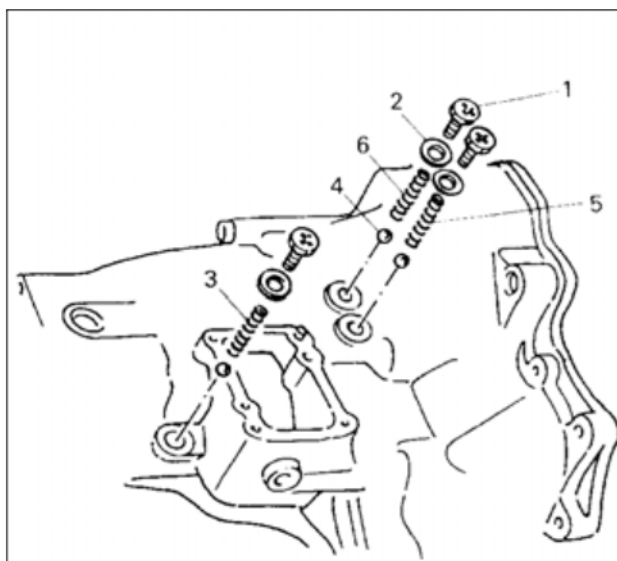
- 1-Transmissan case
- 2-Clutch case
- 3-Transmission bolt
- 4-Reverse idle gear shaft bolt

Fig3-69

11, Check-up shift fork shaft point spring worn.

Point spring free length	Standard	Use Limit
Reserve, 5th spring (Red)	33.8	32.7
Spring (Green)	33.6	32.5

12, Install the shift lever shift fork shaft ball, spring, bolt.
Torque : 10~16 N • m

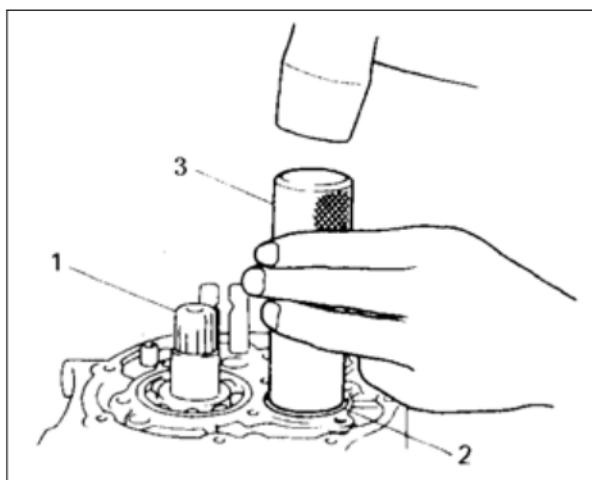


- 1-Bolt
- 2-Gasket
- 3- Point spring (Green)
- 4-Ball
- 5- Point spring (Green)
- 6-Reserve, 5th point spring (Red)

Fig.3-70

(4) 5th gear

1, Hammer the output shaft left bearing outer race lightly to the position of bearing.



- 1-Input shaft
- 2-Left bearing outer race
- 3-Special tool

Fig.3-71

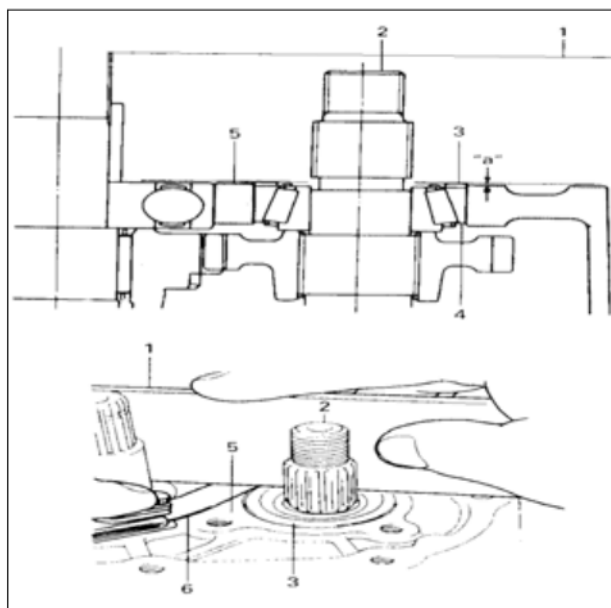
2, First put a adjust gasket on the bearing outer race and a ruler on the adjust gasket, use the press ruler to measure the clearance “a”(between case surface and the ruler)

Clearance “a” (adjust gasket): 0.08—0.12mm

3, Repeat the above steps, choose a suitable adjust gasket and put it on the bearing outer race.

Notice: Use 0.1mm Feeler gauge to determine if the gasket is suitable or not.

Bearing adjust gasket	0.40, 0.45, 0.50, 0.55, 0.60, 0.65,
Thickness	0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00,
	1.05, 1.10, 1.15



- 1-Ruler
- 2-Output shaft
- 3-Bearing adjust gasket
- 4-Bearing outer race
- 5- Case
- 6-Feeler gauge

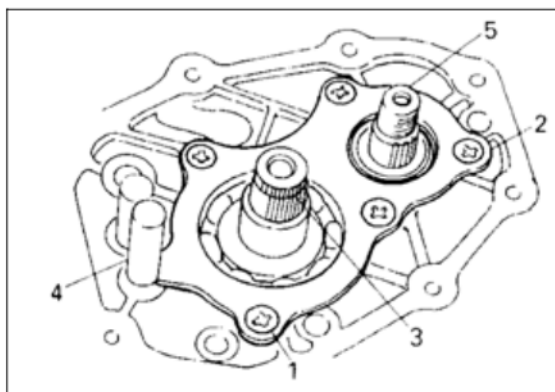
Fig.3-72

4, Install the bearing cover, insert the end of the bearing cover into the groove of the reserve, 5th guide shaft .Spread whorl glue on the bolt.

Notice: Turn the output shaft, to check if it turns smoothly.

Whorl glue: 262 glue

Torque : 8~12 N • m



- 1-Bolt
- 2-Transmissan case
- 3-Input shaft
- 4-Reserve, 5th guide shaft
- 5-Output shaft

Fig.3-73

5, Install the 5th hub sleeve, 5th clutch hub, 5th Synchronizer, insert and 5th snap ring.

Notice: Keep the synchronizer insert short C, clutch hub D and hub sleeve F inward (5th gear side) .

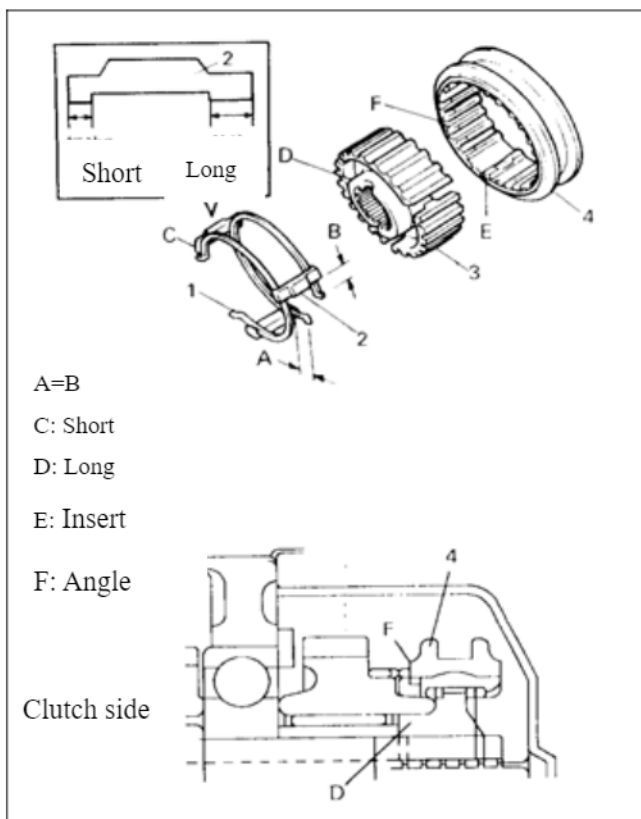


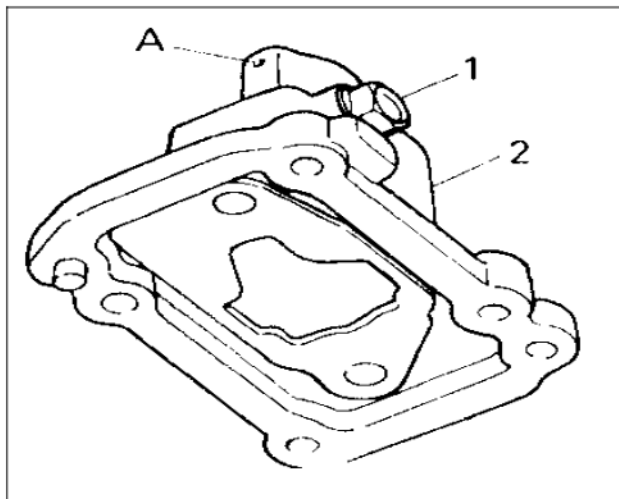
Fig.3-74

(5) Shift guide case assembly

1. In case of disassembly or installing, screw torque bolt, check-up blow hole straightway.

Torque : $8 \sim 12 \text{ N} \cdot \text{m}$

2. Clean case and transmission surface.



1-Reserve, 5th Interlock bolt

2-Shift guide case

A: Blow hole

Fig.3-81

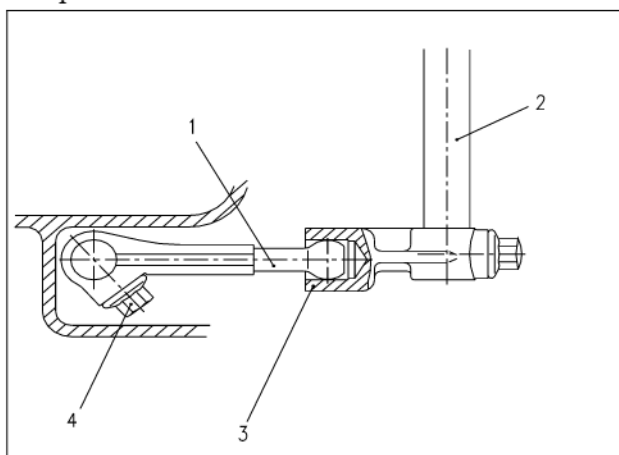
3. Install the select shaft assembly.

Notice: When installing shift select shaft assembly, keep the shift head in the middle position to prevent interlock bolt.

4. Connect the shift head and install the shift lever fork.

5. Screw down the shaft fork bolt.

Torque $32 \sim 36 \text{ N} \cdot \text{m}$



1-Shift head

2-Shift select shaft

3-Shift lever fork

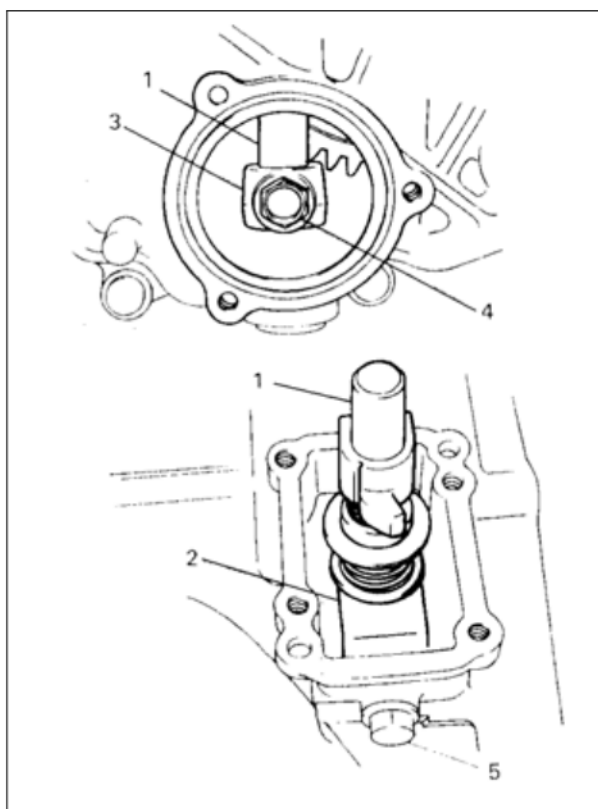
4-Fixup bolt

Fig.3-82

6. Fix the shaft restrict bolt.

Worm glue: 262glue

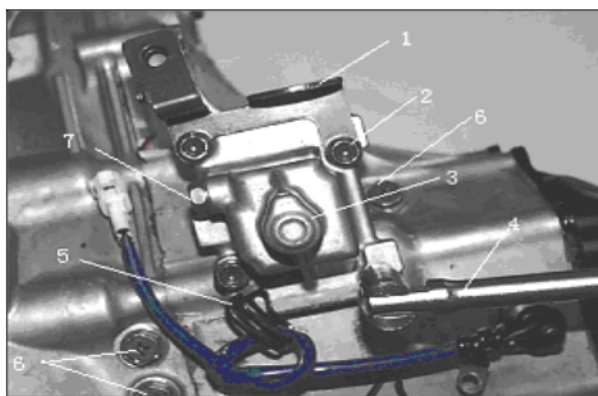
Torque $18 \sim 28 \text{ N} \cdot \text{m}$



- 1-Shift select shaft
- 2-Interlock
- 3-Shift lever fork
- 4- Bolt
- 5-Shaft restrict bolt

图 3-83

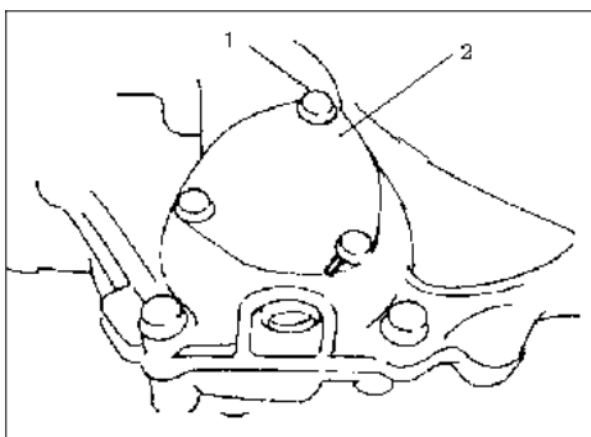
7. Clean the contacting interface and spread sealed adhesive evenly.
Sealed adhesive: seal glue (HZ1213Q/320222 YAP02-92)
8. Install the transmission case assembly, clip and hanger assembly,
Screw down the 4 bolt.
Torque 8~12N·m



- 1-Hang ring assembly
- 2-Bolt
- 3-Guide case assembly
- 4-Special tool
- 5-Clip
- 6-Shift Shift fork shaft bolt
- 7-Reserve, 5th Interlock bolt

Fig.3-84

9. Install the reserve backup light switch assembly reserve backup light switch
Torque 18~28N·m
10. Clean the interface of the transmission cover board and transmission, check
the “O” ring and screw down the three bolts.
Torque 8~12N·m



1-Bolt

2-Transmission cover
board

Fig.3-85

(6) Clutch release shaft system

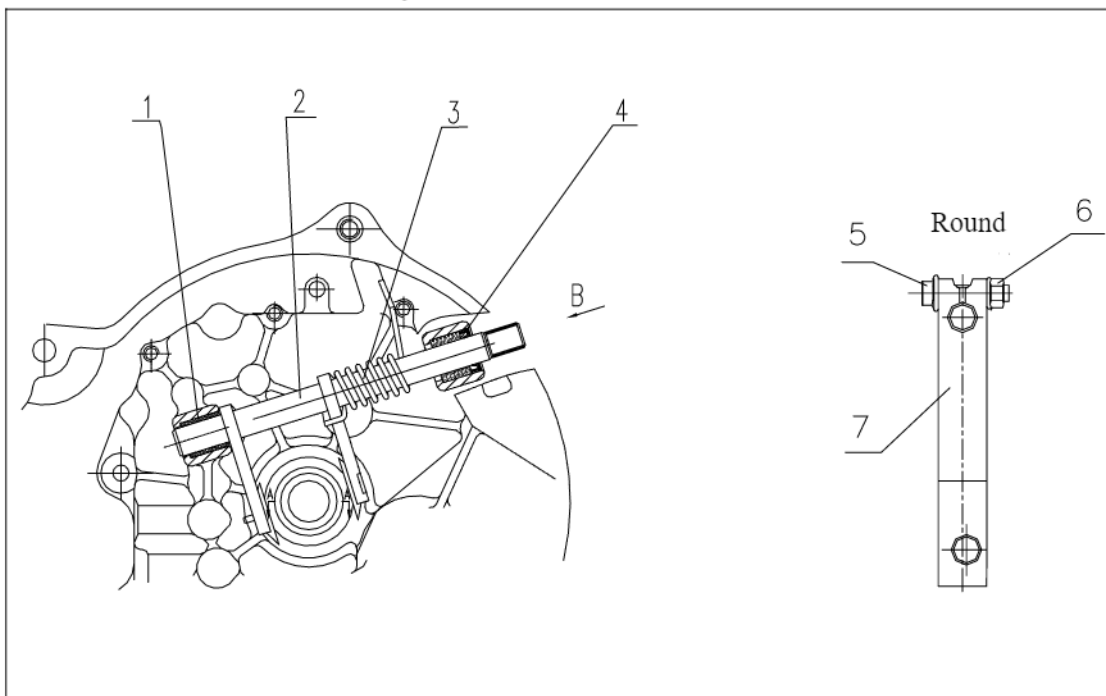


Fig.3-86 Clutch release shaft

1-Spacer 2-Release shaft assembly 3-Release spring 4-Spacer 5-Bolt 6-Nut
7-Clip

Disassemble:

- 1, Disassemble the clip, loosen the bolt, remove the clutch
- 2, Turn the release shaft, take out the release bearing.
- 3, Use plier disassembly release shaft return spring.

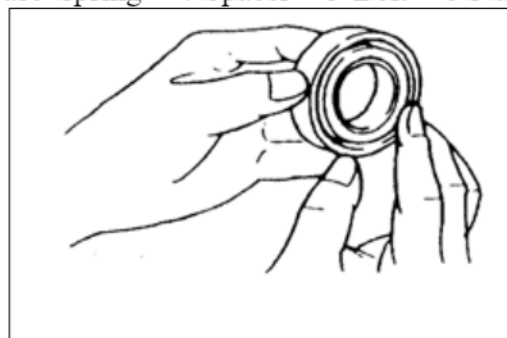


Fig.3-89

- 4, Use hammer to knock the spacer 2.
- 5, Remove the release shaft and return spring .

Clutch release shaft :

Check if the release shaft and slotted spring pin have been declined and broken.

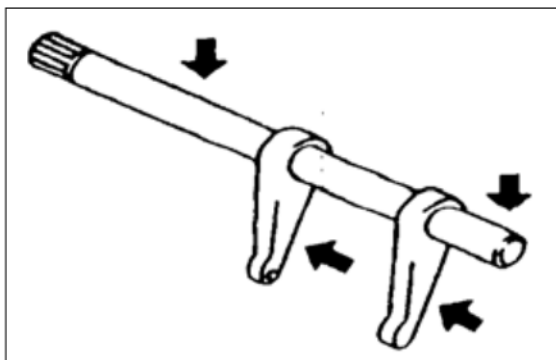
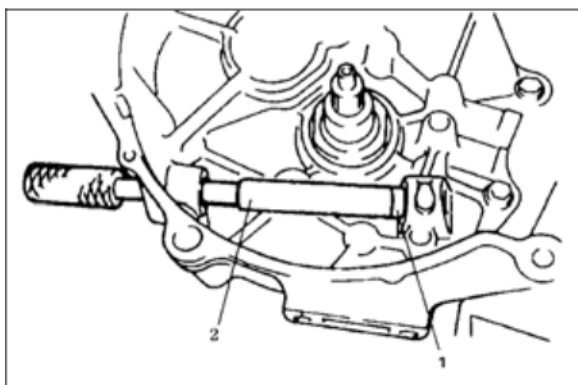


Fig.3-90

Installation:

- 1, Use special tool to drive in the sleeve 1 ,and spread lubricant.
- 2, Install the release shaft and return spring.

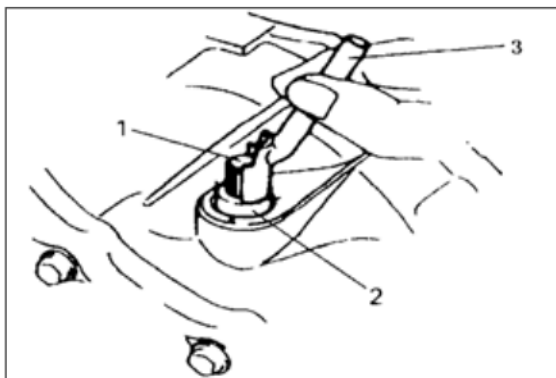


1-Spacer1

2-Special tool

Fig.3-91

- 3, Spread lubricant in the spacer2 and fix it.
- 4, Spread lubricant on the release shaft oil seal, keep the lip of oil seal downward and also keep the oil seal surface equal with the case.



1-Clutch release shaft

2-Release shaft spacer 2

3-Special tool

Fig.3-92

- 5, Use hammer or special tools to punch 3 small holes.

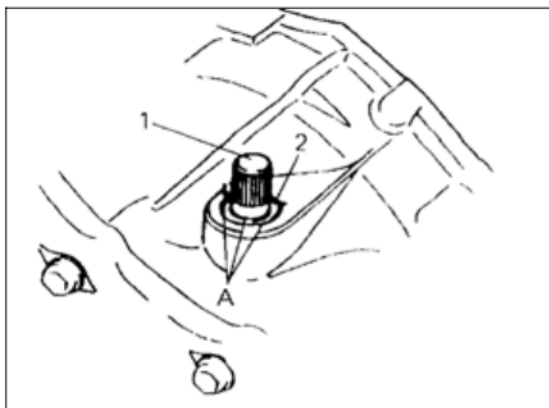


Fig.3-93

1-Release shaft

2-Oil seal

A : Plug

- 6, Hang the return spring.
 7, Spread lubricant inside the release bearing and on the release shaft, install the release bearing.
 8, Spread a small quantity of lubricant on the end face of the input shaft splined hub.

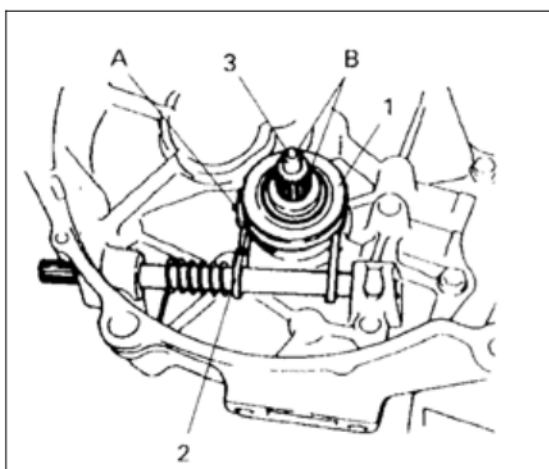


Fig.3-94

1-Release bearing

2-Release shaft

3-Input shaft

A, B : Baste

- 9, Put the marks of clutch fork and release shaft in order, and then screw down the bolt.

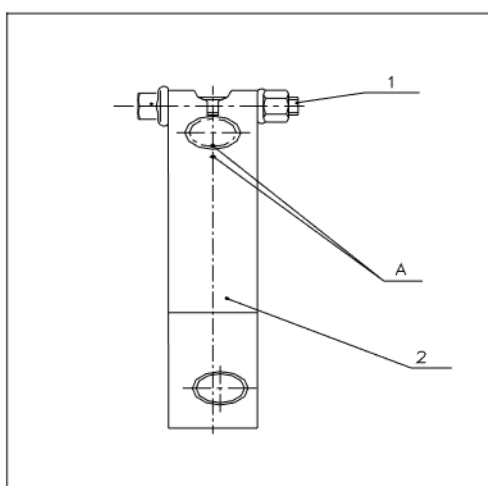


Fig.3-95

1-Bolt

2-Clutch fork

A : Punch

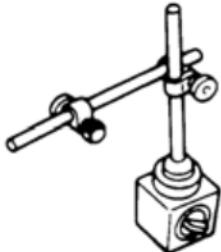
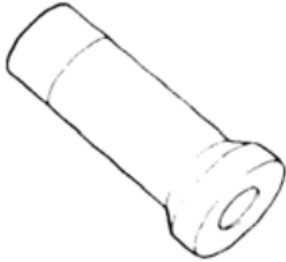
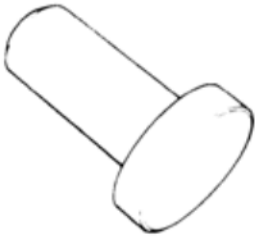
Chapter 3 Torque Stated

Position	Torque (N • m)
Drain plug	18—23
Shift lever bolt	32—36
Shift head bolt	31.5—35.5
Speedometer case bolt	8—12
Shift lever point bolt	10—16
Reverse Shift fork bolt	18—28
Transmission bolt	15—20
Guide case bolt (4)	8—12
Restrict bolt	18—28
Shift fork shaft point bolt (3)	10—16
Transmission bolt (14)	15—22
Transmission baffle bolt (3)	8—12
Bracket bolt	18—28
Bearing baffle bolt (5)	8—12
Output shaft lock nut	60—80
Gear box bolt (8)	8—12
Filler plug	18—23
Reverse output shaft bolt	18—28
Transmission oil baffle-wall bolt (3)	8—12
5 th Shift fork bolt	8—12
Oil baffle-wall bolt	8—12
Clutch fork nut	10—16

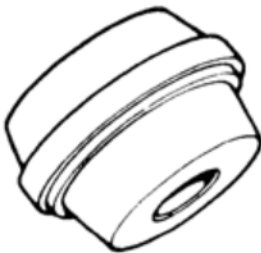
Chapter 4 Maintenance Materials Needed

Materials	Specifications	Use
Lubricant	Lithium 2# lubricant	● Oil seal ● Bearing ● Clutch release bearing ● Clutch Release shaft
	Lubricant	● Needle roller bearing ● Gear
Seal	Seal glue (HZ1213Q/320222 YAP02-92)	● Clutch case and transmission case surface ● Transmission case and gear case surface ● Transmission case and guide case surface
		● Filler plug ● Drain plug
Whorl glue	262glue	● 5th Shift fork bolt ● Restrict pin bolt ● Transmission bolt ● Bracket bolt ● Shift head bolt

Chapter 5 Special Tools

 Snap ring pliers	 Dial indicator	 Dial indicator bracket
 Bearing install tool	 Bearing install tool	 Bearing install tool
 Bearing install tool	 Slotted spring pin disassembly tool	 Bearing disassembly tool



		
Bearing tool	Bearing install tool	Oil seal install tool
		
Bearing outer race install tool	Slotted spring pin disassembly tool	Bearing install tool
		
Bearing install tool	Bearing disassembly tool	Spacer disassembly tool