

# TRANSFER

	Page
TRANSFER (H41 & H42) .....	4-2
TRANSFER (J30) .....	4-26

Fig. 4-1

SEE  
TRANSMISSION  
REMOVAL SECTION  
Fig. 3-2 to 3-5

## TRANSFER (H41 & H42)

### REMOVAL

Remove the transmission.

### DISASSEMBLY

1. Disassemble the parts in the numerical order shown in the figure.

Fig. 4-2

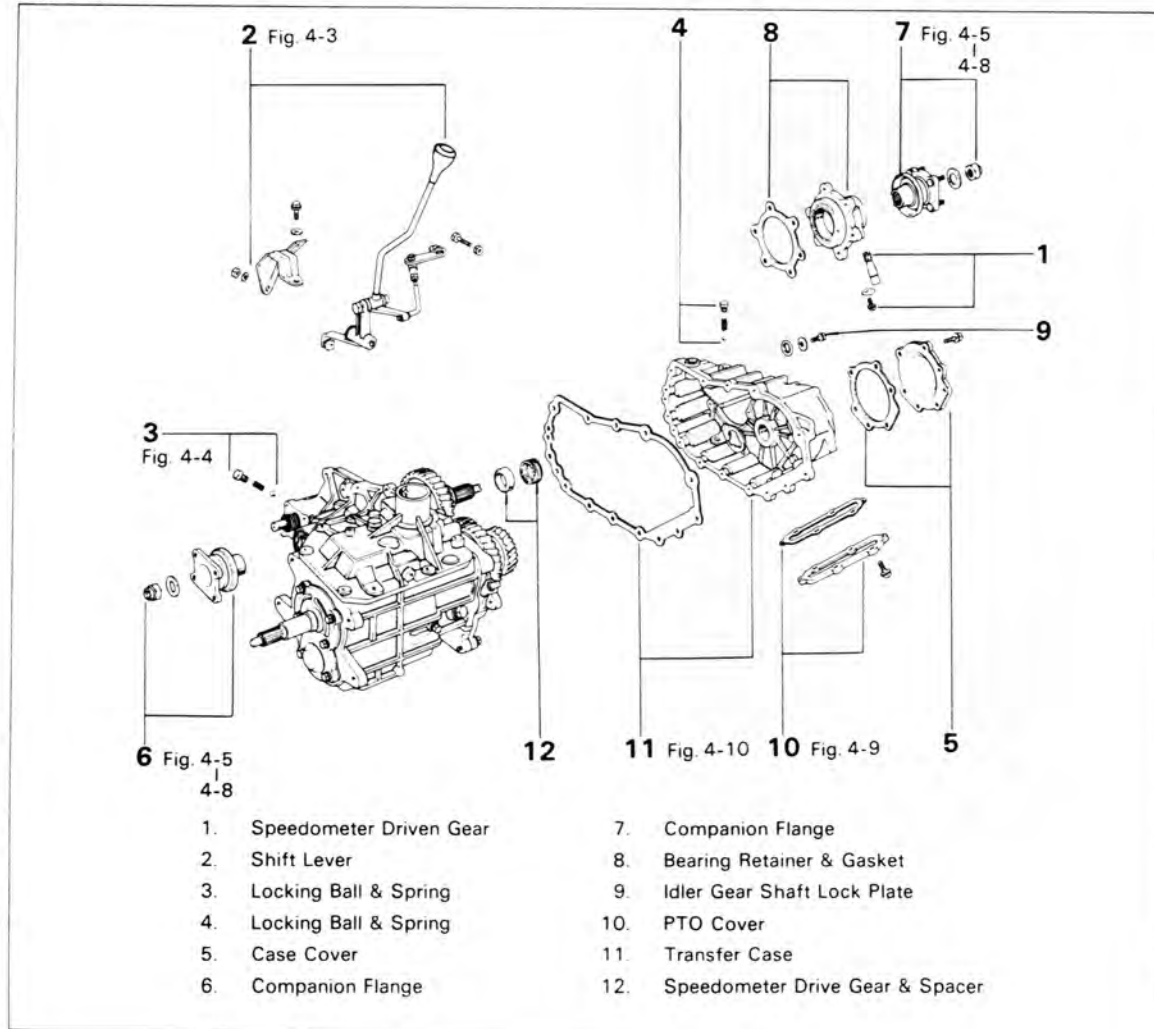


Fig. 4-3



Shift the shift lever into neutral position and measure the preload.

**Preload (starting):**

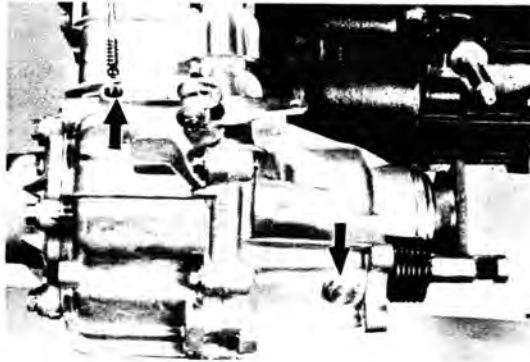
**New Bearing**

15 – 24.7 kg-cm  
(13.0 – 21.4 in.-lb)

**Reused Bearing**

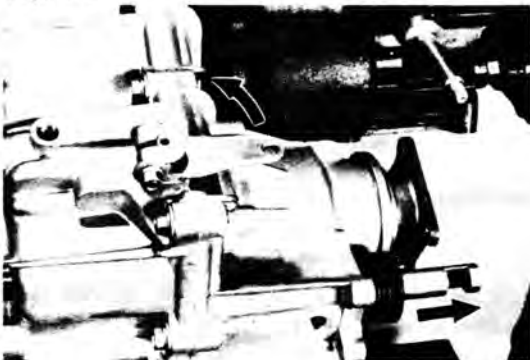
7 – 12 kg-cm  
(6.1 – 10.4 in.-lb)

Fig. 4-4



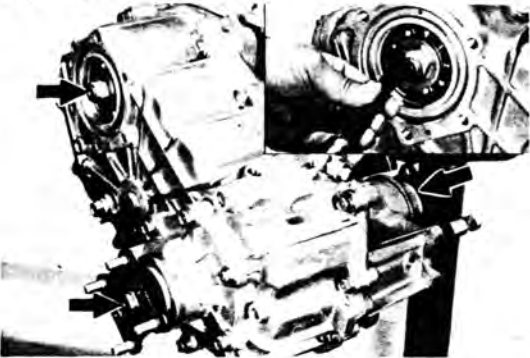
Remove the springs and the steel balls with a magnet.

Fig. 4-5



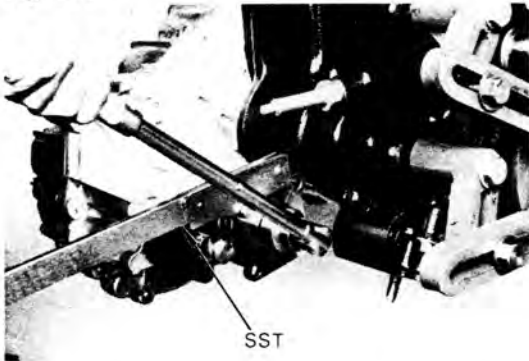
Shift the shift lever into 4L position before loosening the nuts.

Fig. 4-6



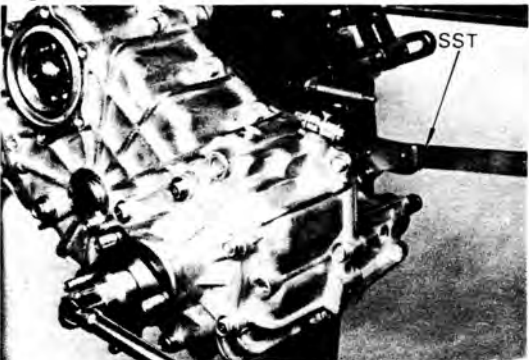
Partially loosen the nuts.

Fig. 4-7



Remove the nut with SST.  
SST [09330-00020]

Fig. 4-8



Remove the nut with SST.  
SST [09330-00020]

Fig. 4-9

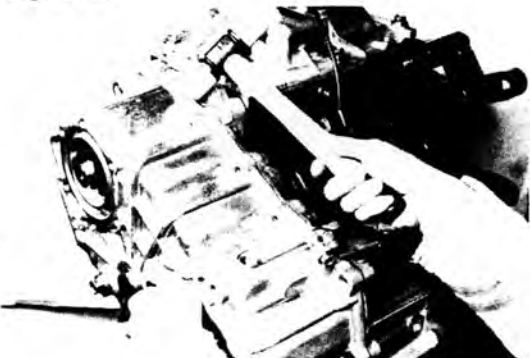


Measure the idler gear thrust clearance.

**Thrust clearance:**

**STD** 0.275 – 0.625 mm  
(0.0108 – 0.0246 in.)  
**Limit** 0.625 mm  
(0.0246 in.)

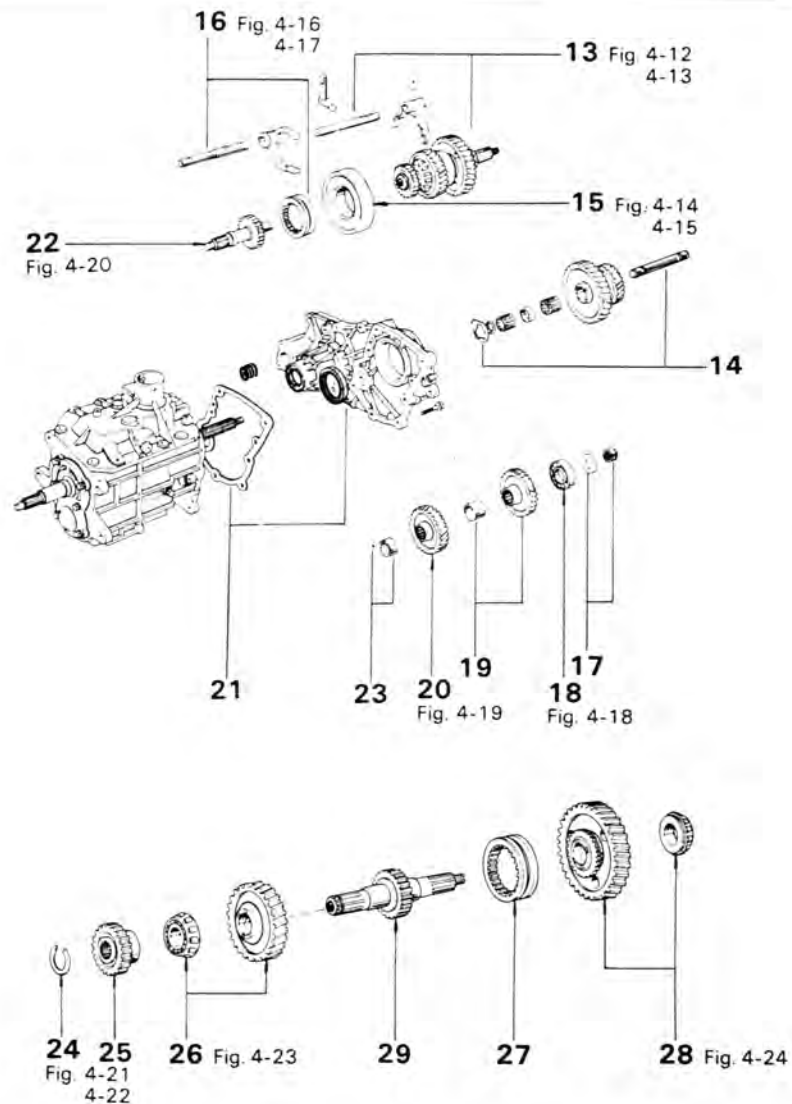
Fig. 4-10



Shift the shift select lever into high position.  
Tap on the case protrusion to separate the  
transfer case from intermediate plate.

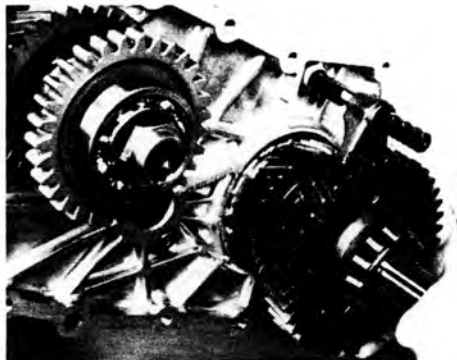
2. Disassemble the parts in the numerical order shown in the figure.

Fig. 4-11



- |    |                                     |    |                               |
|----|-------------------------------------|----|-------------------------------|
| 13 | Output Shaft, Shift Fork & Shaft    | 21 | Intermediate Plate & Gasket   |
| 14 | Idler Gear, Bearing & Thrust Washer | 22 | Front Output Shaft            |
| 15 | Bearing Retainer                    | 23 | Spacer & Ball                 |
| 16 | Shift Fork, Shaft & Sleeve          | 24 | Snap Ring                     |
| 17 | Lock Nut                            | 25 | Front Drive Clutch Hub        |
| 18 | Bearing                             | 26 | Bearing & High Speed Gear     |
| 19 | PTO Drive Gear & Spacer             | 27 | Front Drive Clutch Hub Sleeve |
| 20 | Transmission Output Gear            | 28 | Bearing & Low Speed Gear      |
|    |                                     | 29 | Rear Output Shaft             |

Fig. 4-12



Pull out the output shaft with gears from the intermediate plate.

— Note —

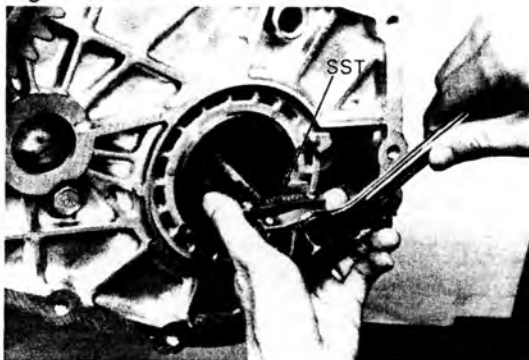
Pull out the output shaft together with the shift fork.

Fig. 4-13



Drive out the slotted spring pin.

Fig. 4-14



Remove the bearing retainer with SST.  
SST [09308-10010]

Fig. 4-15

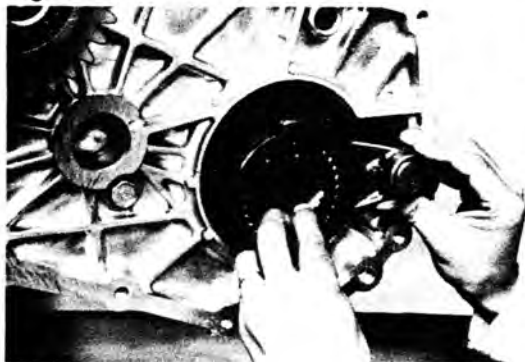


Remove the outer race.

— Note —

Heat the retainer to 80°C (176°F) and tap out the outer race.

Fig. 4-16



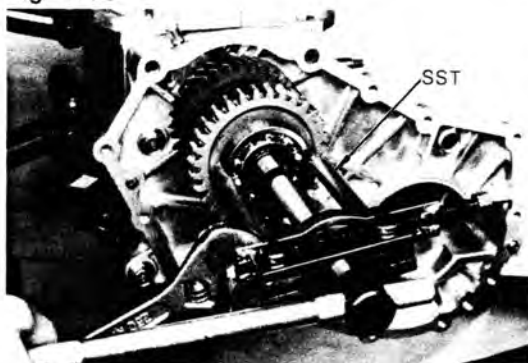
Pull out the clutch sleeve and shift fork with shaft.

Fig. 4-17



Drive out the slotted spring pin.

Fig. 4-18



Remove the bearing with SST.  
SST [09950-20014]

Fig. 4-19



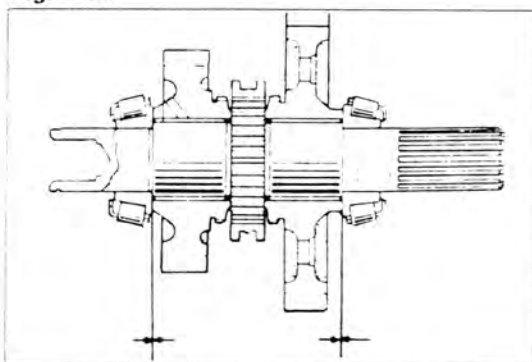
Using SST or suitable tool, pull out the gear.  
SST [09950-20014]

Fig. 4-20



Using a press, remove the front output shaft.

Fig. 4-21



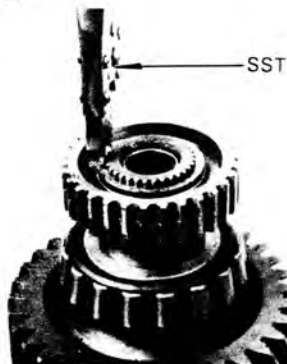
Measure the high and low gears thrust clearance.

**Thrust clearance:**

**STD** 0.10–0.25 mm  
(0.0039–0.0098 in.)

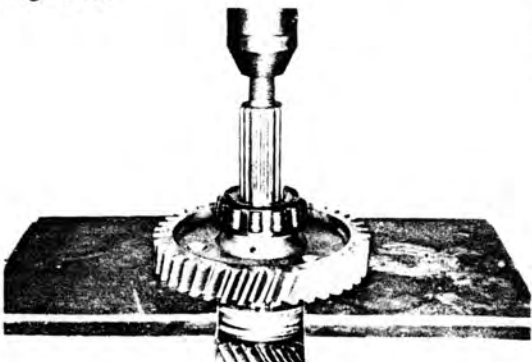
**Limit** 0.25 mm  
(0.0098 in.)

Fig. 4-22



Remove the snap ring with SST.  
SST [09905-00012]

Fig. 4-23



Using a press, remove the bearing.

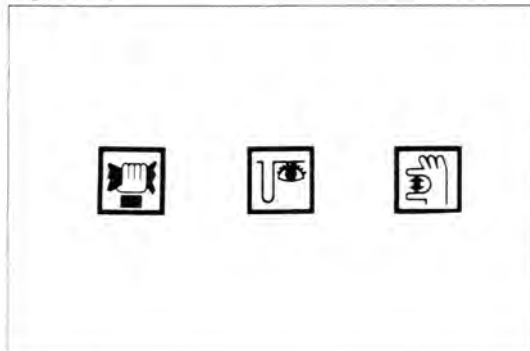


Fig. 4-24



Using a press, remove the bearing.

Fig. 4-25



### INSPECTION & REPAIR

Wash the disassembled parts and inspect them as described below. Replace any part found defective.

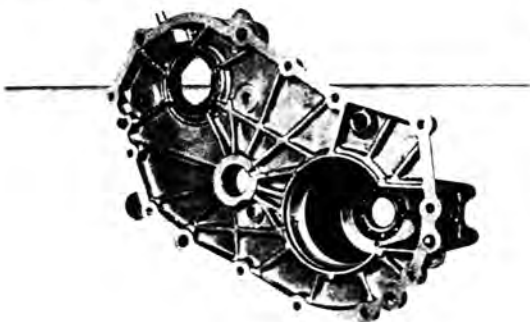
Fig. 4-26



### Transfer Case & Bearing Retainer

Inspect the case, oil seal and bearing retainer for cracks or damage.

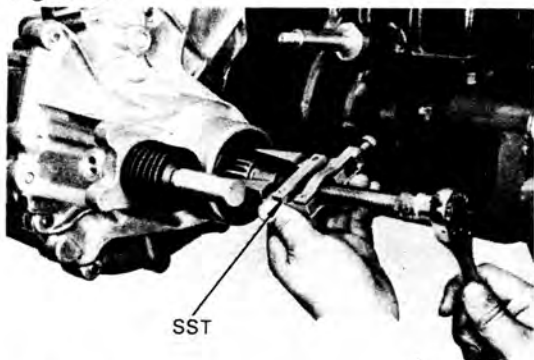
Fig. 4-27



### Intermediate Plate

Inspect the shaft, bearing, oil seal, and plate for wear, cracks or damage.

Fig. 4-28



### Replace The Output Shaft Front Bearing

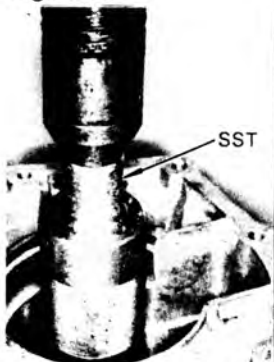
1. Remove the oil seal with SST.  
SST [09308-10010]

Fig. 4-29



2. Remove the snap ring.

Fig. 4-30



3. Remove the bearing with a press and SST.  
SST [09316-60010]

Fig. 4-31



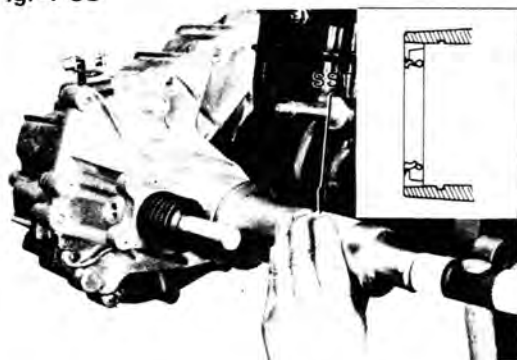
4. Install the bearing with a press and SST.  
SST [09316-60010]

Fig. 4-32



5. Install the snap ring.

Fig. 4-33



6. Install a new oil seal to the correct depth with SST.

SST [09316-60010]

**Oil seal depth:** 0 – 1 mm  
(0 – 0.04 in.)

Fig. 4-34

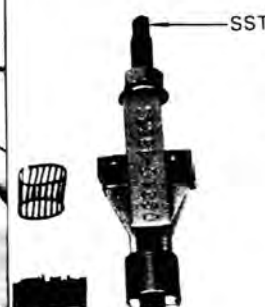


### Output Shaft

Inspect for wear or damage.



Fig. 4-35



### Replace The Output Shaft Pilot Bearing

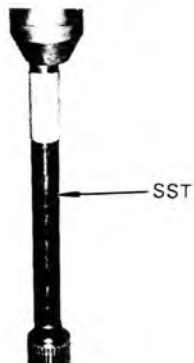
1. Remove the bearing with SST  
SST [09319-60020]



– Note –

If you remove the bearing, the bearing is broken.

Fig. 4-36



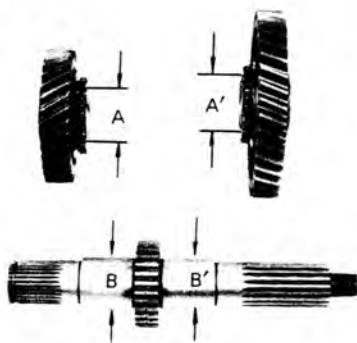
2. Press in the new bearing with SST.  
SST [09608-20011] No.2

Fig. 4-37

**Gear**

Inspect the teeth, thrust faces and inside diameter surfaces for wear or damage.

Fig. 4-38

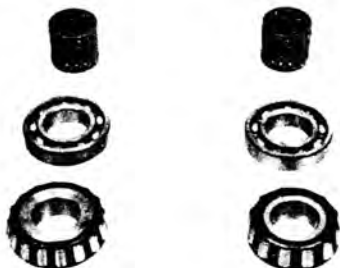


Measure the oil clearance.

**High & low speed output gear:**

<b>STD</b>	<b>0.035–0.081 mm</b> (0.0014–0.0032 in.)
<b>Limit</b>	<b>0.081 mm</b> (0.0032 in.)

Fig. 4-39

**Bearing**

Inspect for wear or damage.

Fig. 4-40

**Sleeve & Fork**

Check the clearance between the sleeves and the shift forks.

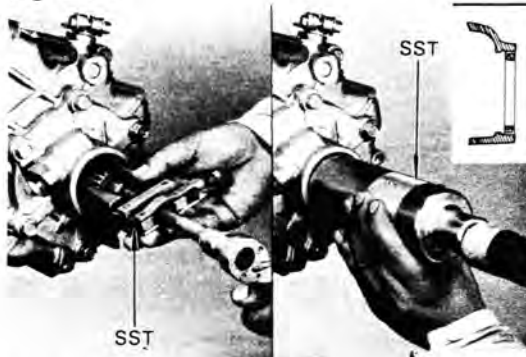
**Clearance:** 0.1–0.4 mm  
(0.004 – 0.016 in.)

Fig. 4-41

**Idler Gear**

Inspect for wear or damage

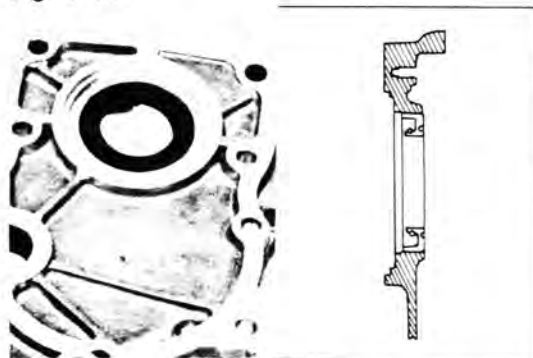
Fig. 4-42

**Replace The Transfer Rear Oil Seal**

1. Remove the oil seal with SST.  
SST [09308-10010]
2. Install the oil seal to the correct depth with SST.  
SST [09316-60010]

**Oil seal depth:** 0.5 – 1.5 mm  
(0.020 – 0.059 in.)

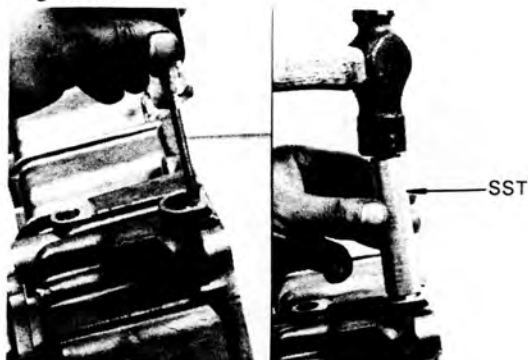
Fig. 4-43

**Replace The Transmission Rear Oil Seal**

1. Remove the oil seal with driver.
2. Install the oil seal to the correct depth with SST.  
SST [09316-60010]

**Oil Seal Depth:**  
7 – 8 mm  
(0.028 – 0.31 in.)

Fig. 4-44

**High & Low Gear Select Lever Oil Seal**

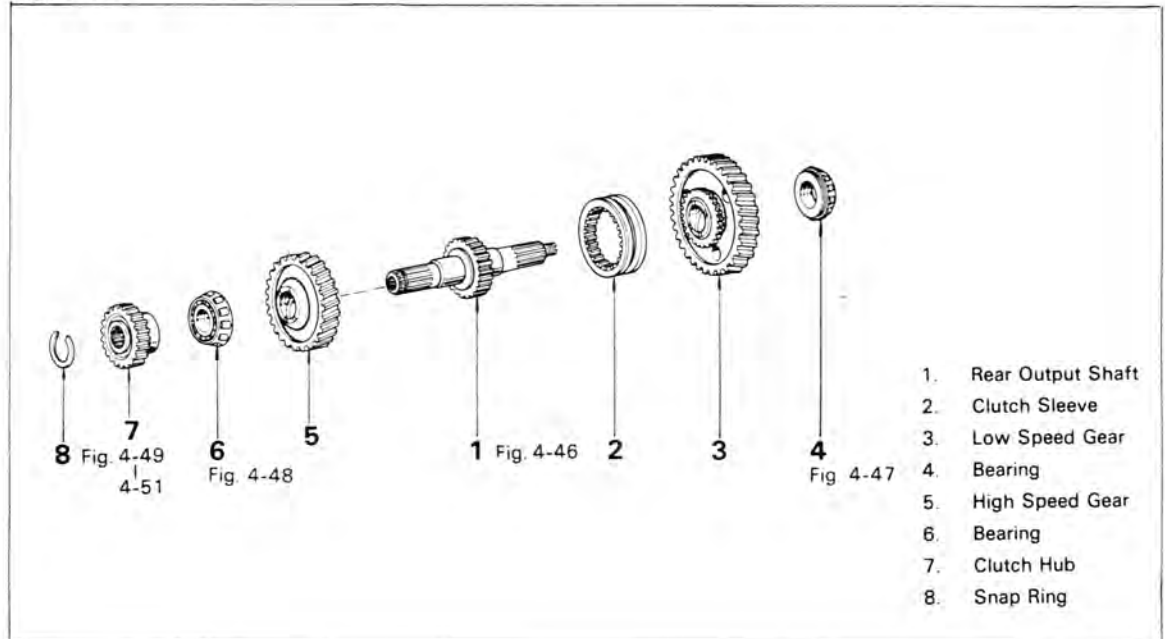
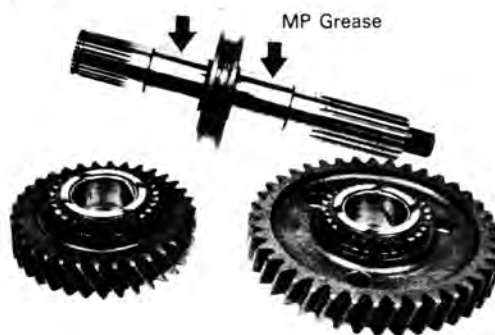
1. Remove the oil seal by prying it with a screwdriver.
2. Install the oil seal to the correct depth with SST.

SST [09608-20011] No.2

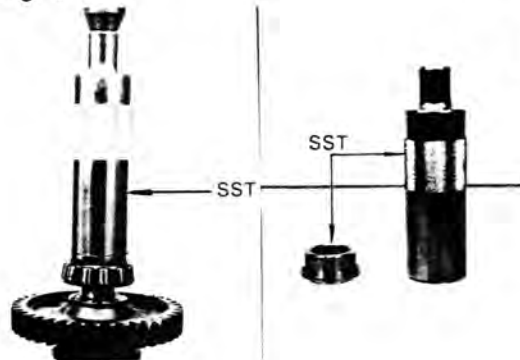
**Oil Seal depth: 0 – 1 mm**  
**(0 – 0.04 in.)**

**ASSEMBLY**

- 1 Assemble the parts in the numerical order shown in the figure.

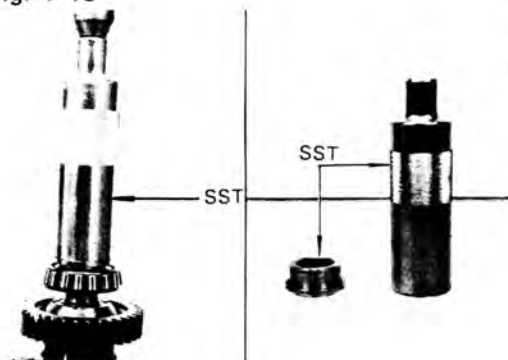
**Fig. 4-45****Fig. 4-46**

Coat MP grease on the shaft and install the high and low gears.

**Fig. 4-47**

Install a bearing with a press and SST.  
SST [09316-60010]

Fig. 4-48



Install a bearing with a press and SST.  
SST [09316-60010]

Fig. 4-49



Select a snap ring of a thickness that will allow minimum axial play.

**Axial play:**

**STD 0.003–0.299 mm)**  
**(0.0012–0.0118 in.)**

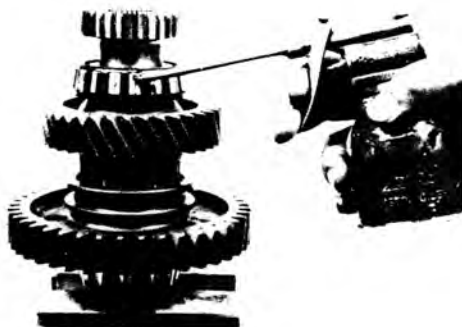
Mark	Thickness	mm (in.)
90520-33107	2.30 – 2.35 (0.0906 – 0.0925)	
90520-33110	2.60 – 2.65 (0.1024 – 0.1043)	

Fig. 4-50



Install the snap ring with SST  
SST [09905-00012]

Fig. 4-51



Apply gear oil on the assembled parts, gears, bearings and shaft.



2. Assemble the parts in the numerical order shown in the figure.

Fig. 4-52

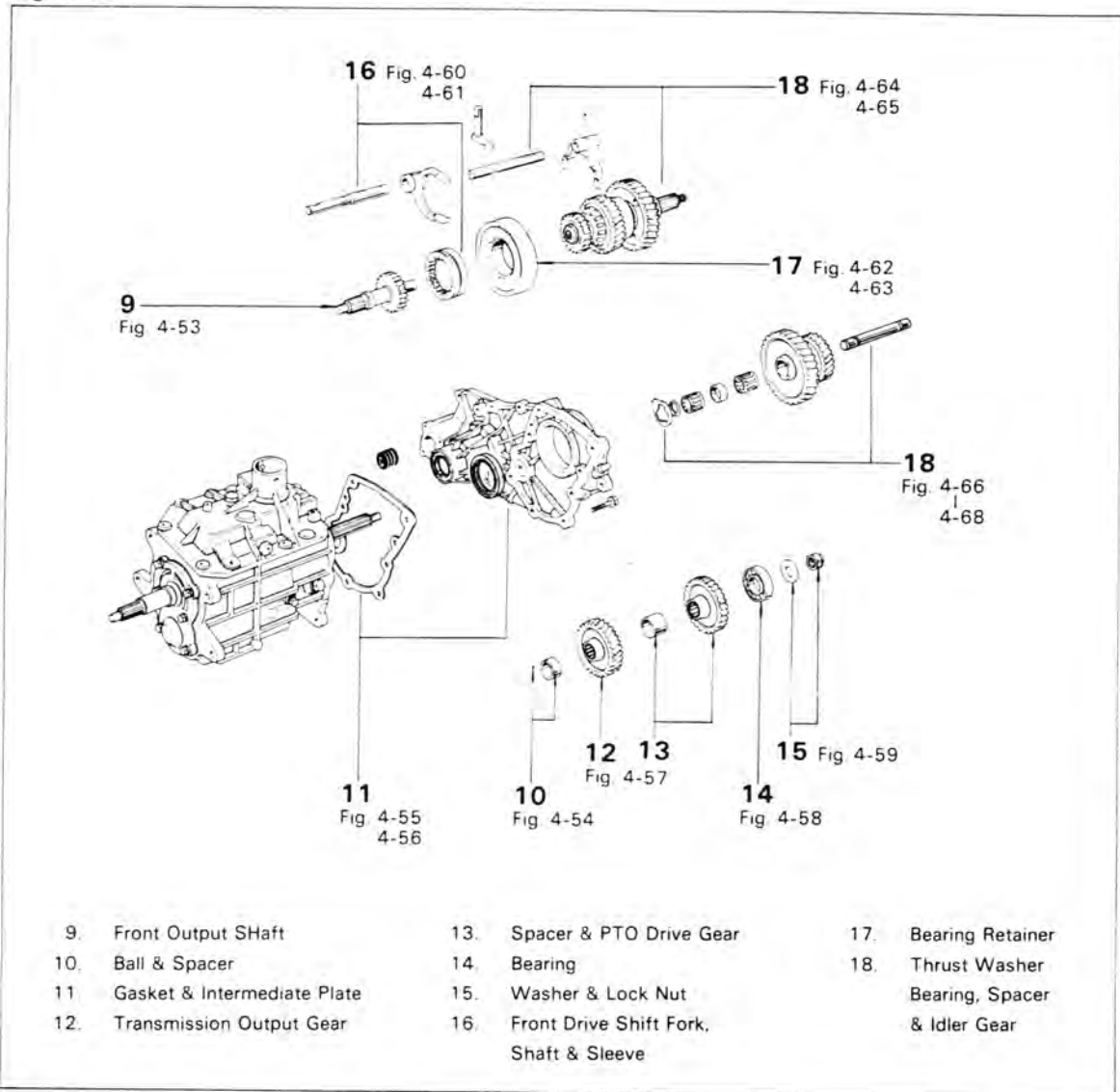


Fig. 4-53



Press in the shaft with SST.  
SST [09316-60010]

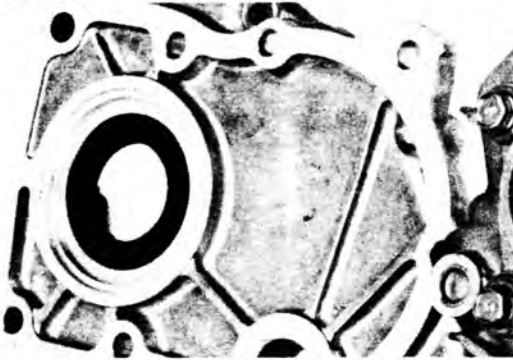


Fig. 4-54



Fit the collar groove securely over the locking ball.

Fig. 4-55



Coat MP grease on the oil seal.

Fig. 4-56

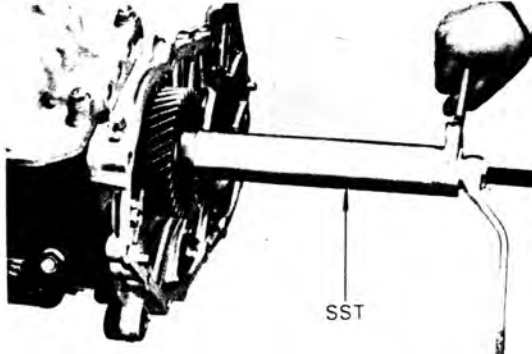


1. Apply liquid sealer to the bolts.
2. Install the intermediate plate mounting bolts in the position shown in the figure.

**Tightening torque:**

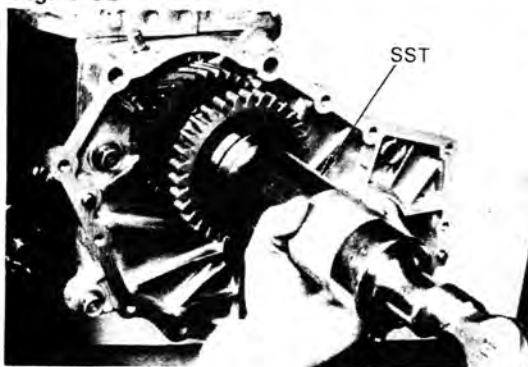
**5.0–8.0 kg-m  
(37–57 ft-lb)**

Fig. 4-57



Install the gear with SST.  
SST [09309-36032]

Fig. 4-58



Drive in the bearing with SST.  
SST [09316-60010]

Fig. 4-59



Temporarily tighten the lock nut.

Fig. 4-60



Drive in the slotted spring pin.

Fig. 4-61



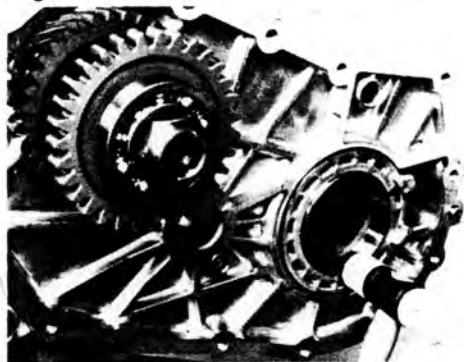
Install the shift fork, shaft and clutch hub sleeve.

Fig. 4-62



Install the outer races with SST.  
SST [09316-60010]

Fig. 4-63



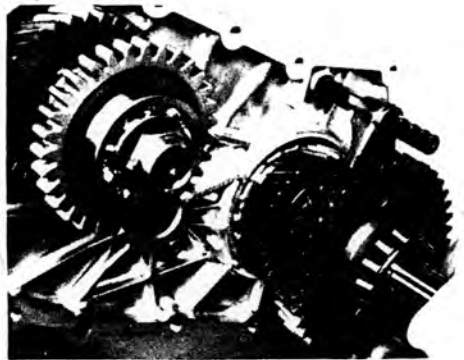
Install the bearing retainer by tapping with the  
plastic hammer.

Fig. 4-64



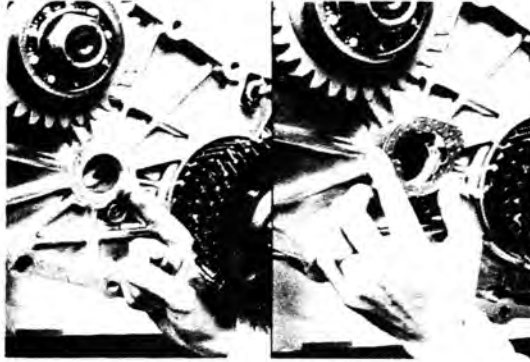
Drive in the slotted spring pin.

Fig. 4-65



Install the shift fork, shaft and output shaft  
together.

Fig. 4-66



Stick the thrust washer to the plate with MP grease.

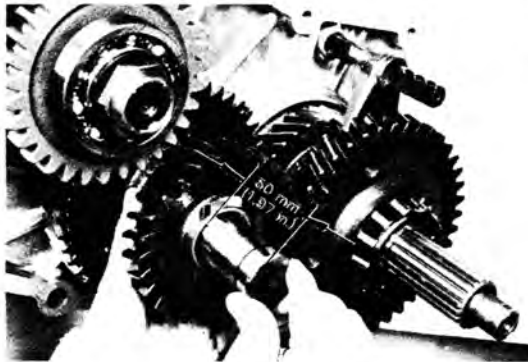


Fig. 4-67



Install the O ring on the shaft.

Fig. 4-68



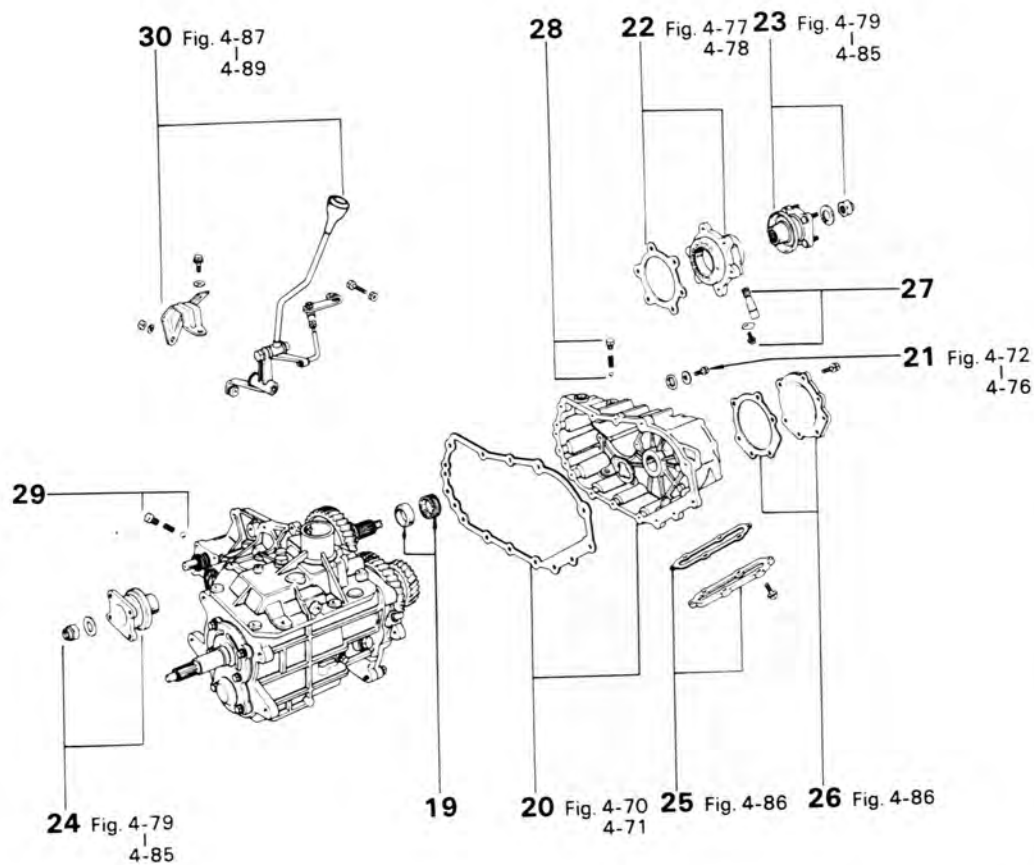
Do not completely insert the idler gear shaft.

—Note—

Do not install the rear side O ring on the shaft.

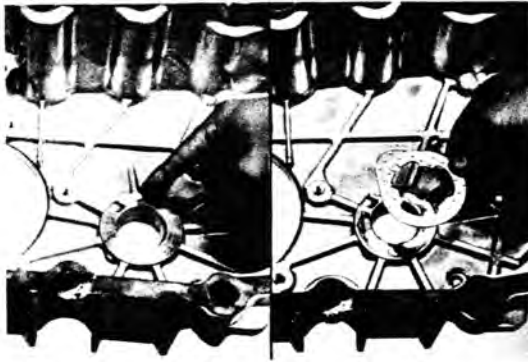
3. Assemble the parts in the numerical-order shown in the figure.

Fig. 4-69



- |                                     |                             |
|-------------------------------------|-----------------------------|
| 19. Spacer & Speedometer Drive Gear | 25. Cover                   |
| 20. Gasket & Transfer Case          | 26. Cover                   |
| 21. O Ring & Lock Plate             | 27. Speedometer Driven Gear |
| 22. Bearing Retainer                | 28. Locking Ball & Spring   |
| 23. Companion Flange                | 29. Locking Ball & Spring   |
| 24. Companion Flange                | 30. Shift Lever             |

Fig. 4-70



Stick the thrust washer to the case with MP grease.

Fig. 4-71



When installing the case, turn the select lever counterclockwise and engage the lever tip to the shaft groove.

Fig. 4-72



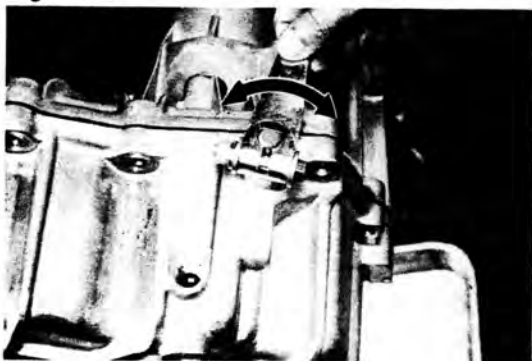
Align the shaft groove to the bolt hole.

Fig. 4-73



Install the O ring on the shaft and drive in the shaft by tapping with plastic hammer.

Fig. 4-74



After installing the case, check that shifting is smooth to high and low gears.

Fig. 4-75



Apply liquid sealer to the bolts.

**Tightening torque:**

10 mm $\phi$ bolt	3.5 – 4.5 kg-m (26 – 32 ft-lb)
12 mm $\phi$ bolt	5.0 – 8.0 kg-m (37 – 57 ft-lb)

Fig. 4-76



Measure the idler gear thrust clearance.

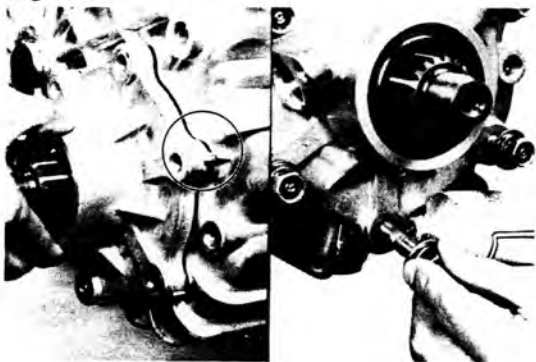
**Thrust clearance:**

STD	0.275 – 0.625 mm (0.0108 – 0.0246 in.)
Limit	0.625 mm (0.0246 in.)

– Note –

If over the limit, select proper size thrust washer.

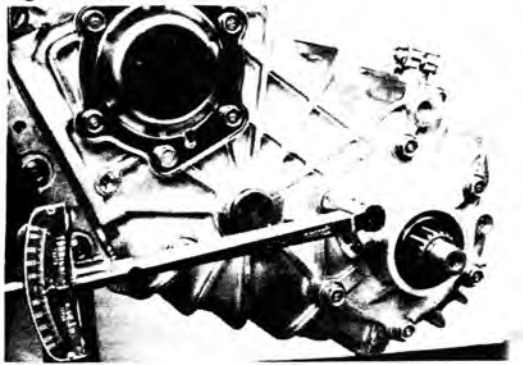
Fig. 4-77



Align the bearing retainer rib with case rib.  
Apply liquid sealer to the bolt.



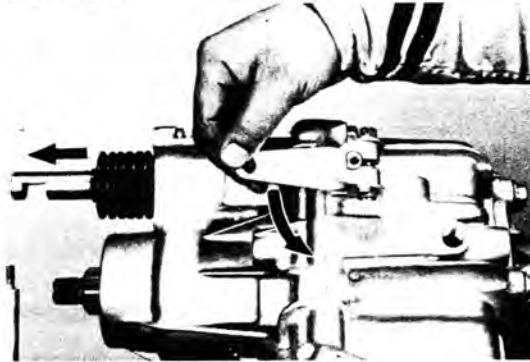
Fig. 4-78



Tighten the bearing retainer

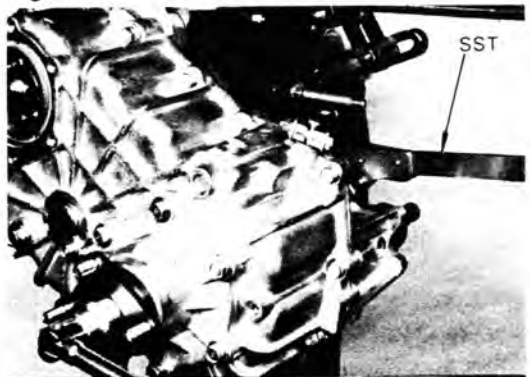
**Tightening torque:** 3.0 – 4.5 kg-m  
(22 – 23 ft-lb)

Fig. 4-79



Shift the shift lever into the L4 position.

Fig. 4-80



Tighten the front and rear companion flange nuts with SST

SST [09330-00020]

**Tightening torque:** 14.0 – 17.0 kg-m  
(102 – 122 ft-lb)



Tighten the transmission rear bearing lock nut with SST.

SST [09330-00020]

**Tightening torque:** 14.0 – 17.0 kg-m  
(102 – 122 ft-lb)

Fig. 4-81

## Preload adjusting procedure

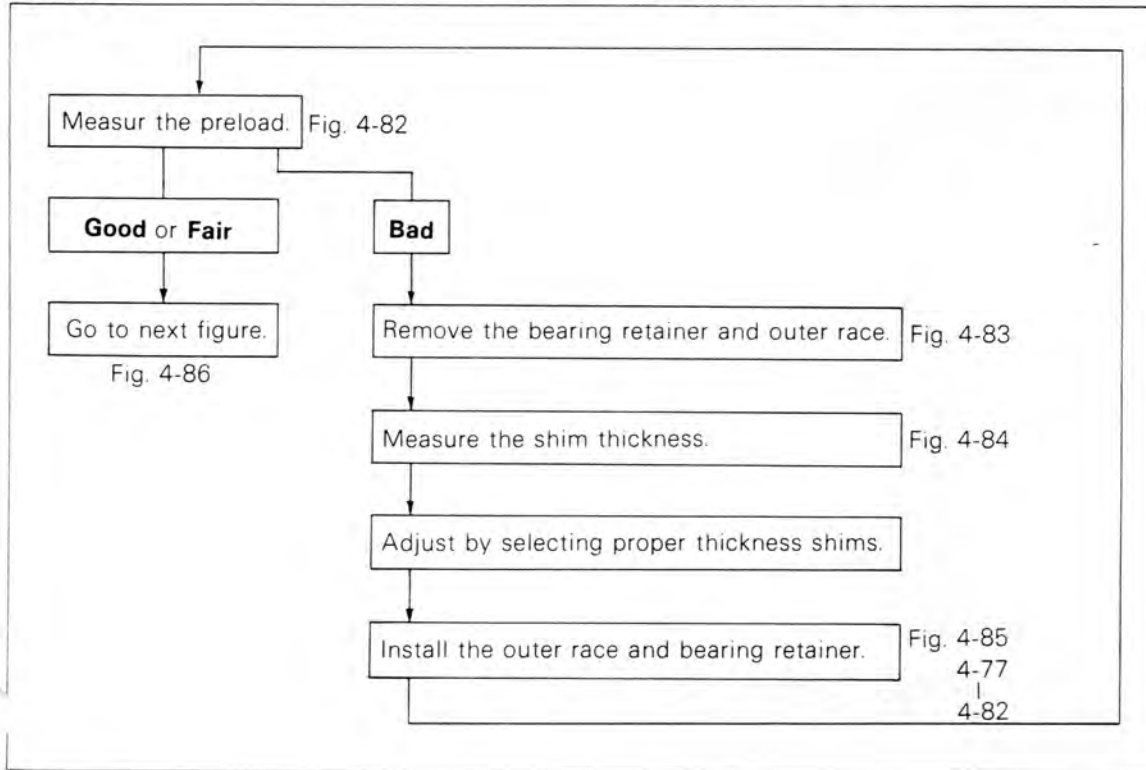
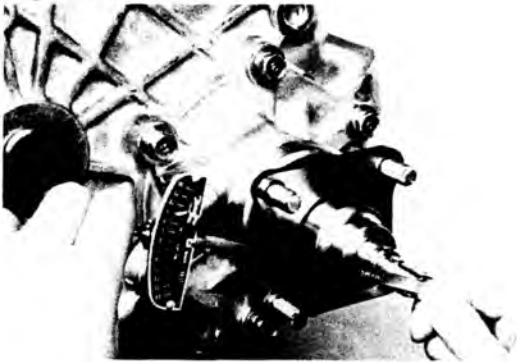


Fig. 4-82



Disengage the front drive.  
Using a spring scale, measure the output shaft bearing preload.

**Preload:****New bearing**

15 – 24.7 kg-cm  
(13.0 – 21.4 in.-lb)

**Reused bearing**

7 – 12 kg-cm  
(6.1 – 10.4 in.-lb)

**—Note—**

Shift into neutral position.

Fig. 4-83



If not within the preload adjust by selecting proper thickness shims.

1. Remove the bearing outer race.

Fig. 4-84



2. Select the shim.

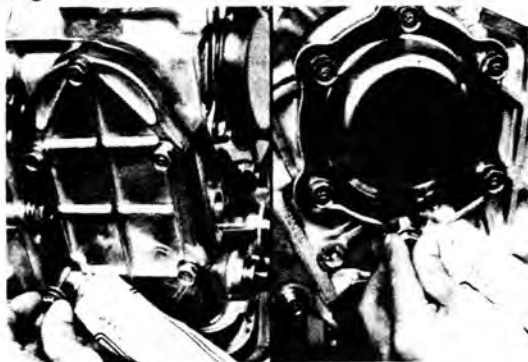
Shim thickness mm (in.)

Mark	Thickness	Mark	Thickness
0	0.15 (0.0059)	10	1.0 (0.039)
4	0.4 (0.016)	11	1.1 (0.043)
5	0.5 (0.020)	12	1.2 (0.047)
6	0.6 (0.024)	13	1.3 (0.051)
7	0.7 (0.028)	14	1.4 (0.055)
8	0.8 (0.031)	15	1.5 (0.059)
9	0.9 (0.035)		

Fig. 4-85

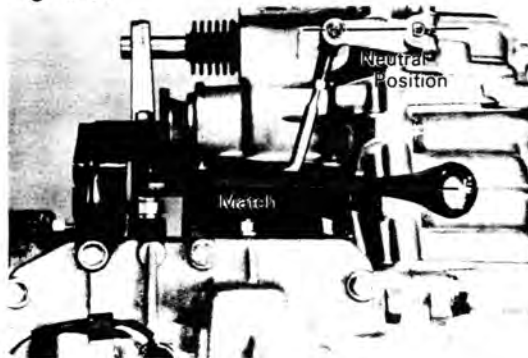
3. Install the outer race with SST.  
SST [09316-60010]

Fig. 4-86



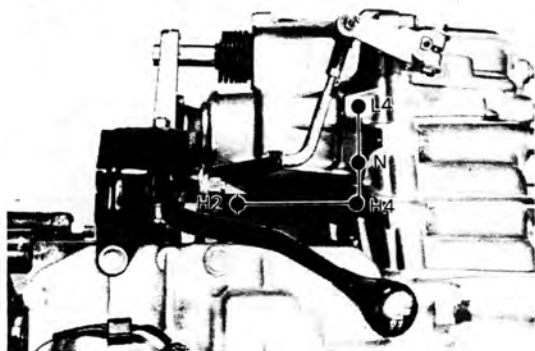
Apply liquid sealer to the thread

Fig. 4-87



Adjust the shift link as shown in the figure.

Fig. 4-88



Check to see that shifting is smooth to all positions.

Fig. 4-89

SEE  
TRANSMISSION  
INSTALLATION SECTION  
Fig. 3-103 to 3-108

Install the transmission.

## TRANSFER (J30)

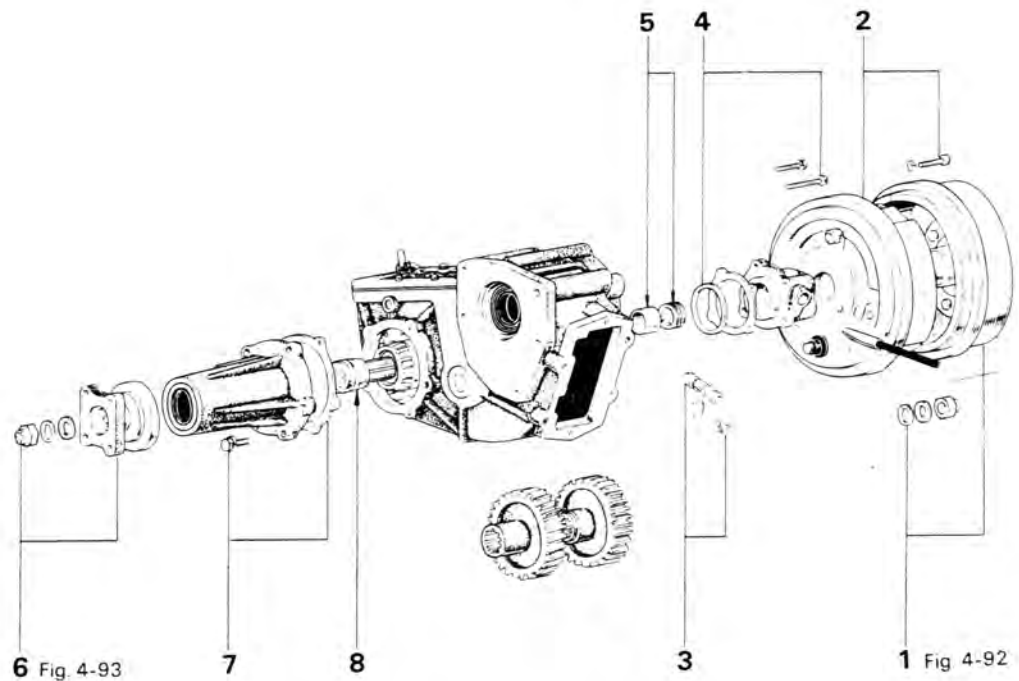
### REMOVAL

Refer to section on 3-Speed Transmission.

### DISASSEMBLY

1. Disassemble the parts in the numerical order shown in the figure.

Fig. 4-90

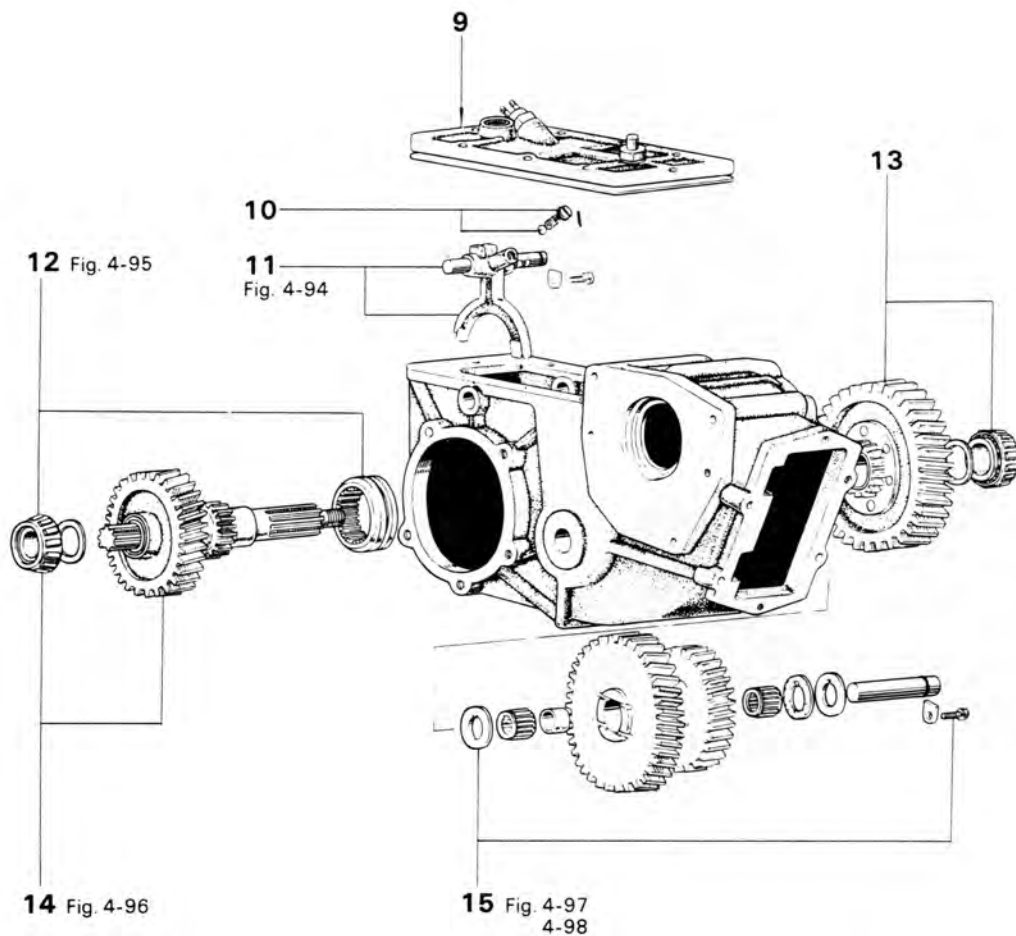


1. Brake Drum, Plate, Shim, Plate & Nut
2. Backing Plate
3. Driven Gear
4. Bearing Rear Retainer & Shim

5. Drive Gear & Spacer
6. Companion Flange
7. Extension Housing
8. Clutch Sleeve

2. Disassemble the parts in the numerical order shown in the figure.

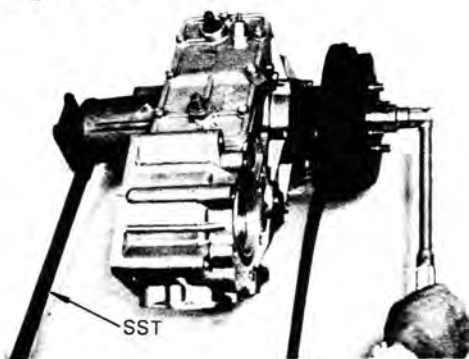
Fig. 4-91



- 9. Case Cover & Shift Inner Lever
- 10. Plug, Spring & Ball
- 11. Shift Fork & Shaft
- 12. Clutch Sleeve, Gear & Output Shaft

- 13. Low Speed Gear, Washer & Bearing
- 14. High Speed Gear, Washer & Bearing
- 15. Idler Gear & Shaft

Fig. 4-92

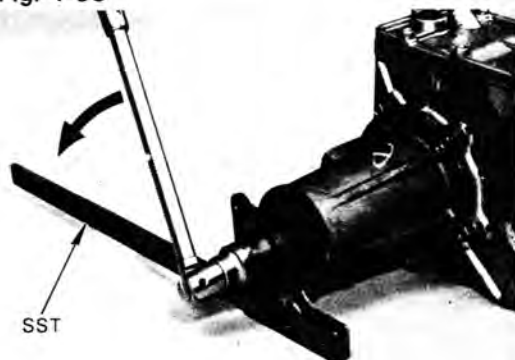


Loosen the staked parts of the nut.  
Using SST to keep the companion flange from turning, unscrew the nut.  
SST [09330-00020]

— Note —

Have the system in front drive at this time.

Fig. 4-93



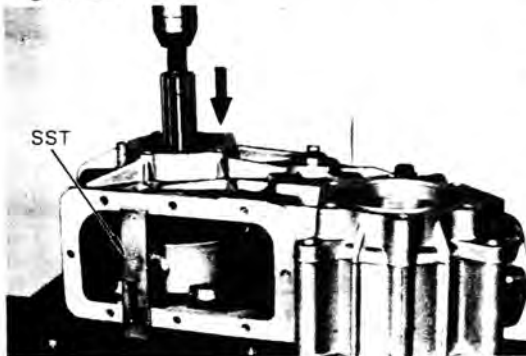
Loosen the staked parts of the nut.  
Using SST to keep the companion flange from turning, unscrew the nut.  
SST [09330-00020]

Fig. 4-94



Drive out the shaft toward the rear.

Fig. 4-95



Set the SST between the low speed gear and case front side.  
Force out the output shaft toward the front with a press.  
SST [09318-60011]

Fig. 4-96



Using a press, remove the bearing.

Fig. 4-97

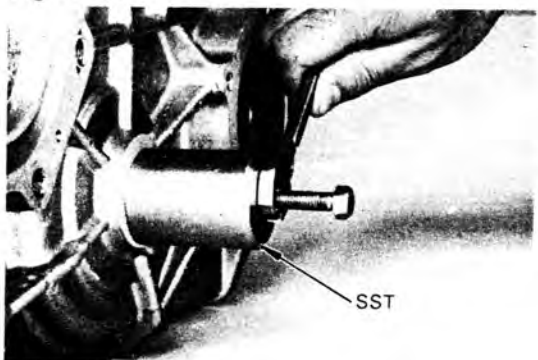


Measure the idler gear thrust clearance.

**Thrust clearance:**

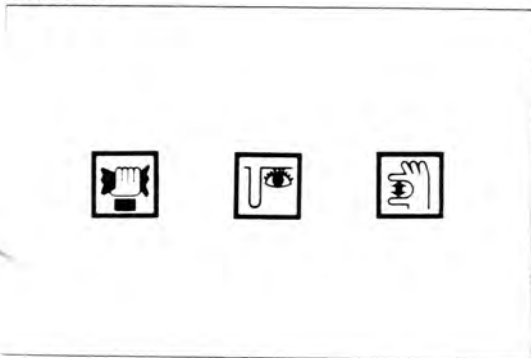
**Limit 0.475 mm**  
(0.0187 in.)

Fig. 4-98



Remove the shaft with SST.  
SST [09319-60010]

Fig. 4-99



### INSPECTION & REPAIR

Wash the disassembled parts and inspect them as instructed below. Replace all parts found defective.



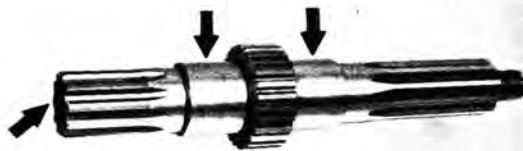
Fig. 4-100

**Transfer Case & Cover**

Inspect the case and cover for cracks or damage.

Inspect the oil seals and bushings for wear or damage.

Fig. 4-101

**Output Shaft**

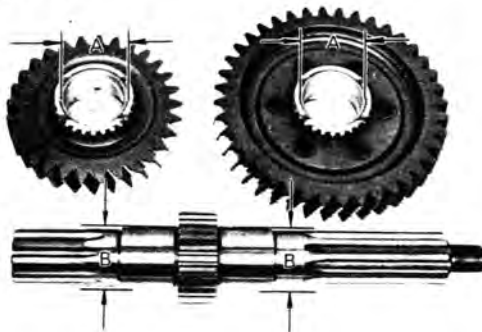
Inspect the parts indicated by arrows for wear or damage.

Fig. 4-102

**Gear**

1. Inspect the teeth, thrust faces, and inside surfaces, for wear or damage.

Fig. 4-103



2. Measure the oil clearance.

**High & low speed output gear:**

STD 0.035–0.081 mm  
(0.0014–0.0032 in.)

Limit 0.081 mm  
(0.0032 in.)

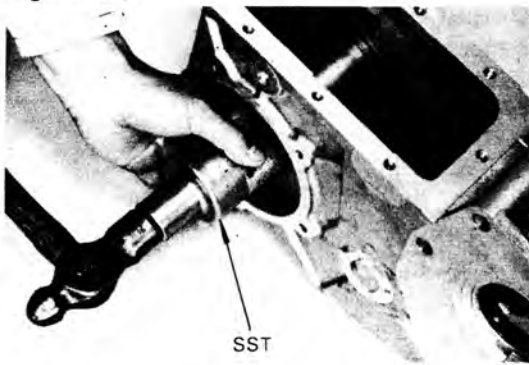
Fig. 4-104

**Bearing**

Inspect for wear or damage.

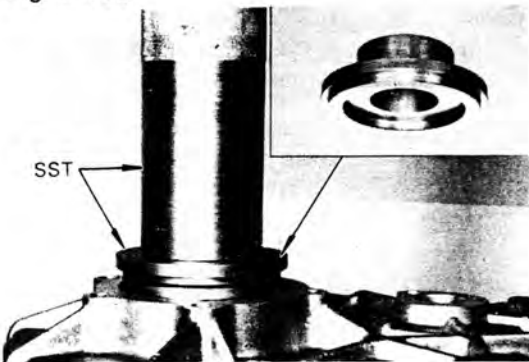


Fig. 4-105

**Replace The Bearing Race**

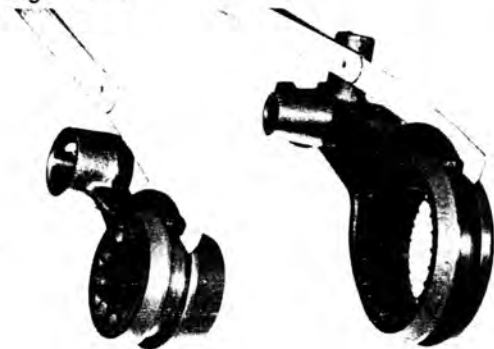
1. Drive out the outer race with SST.  
SST [09316-60010]

Fig. 4-106



2. Drive in the new outer race with SST.  
SST [09316-60010]

Fig. 4-107

**Sleeve & Fork**

Check the clearance between the sleeves and the shift forks.

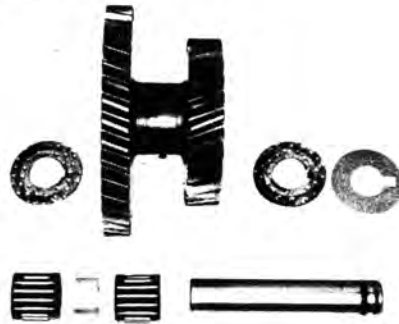
**High & low clearance:**

0.05 – 0.35 mm  
(0.0020 – 0.0138 in.)

**Front drive clearance:**

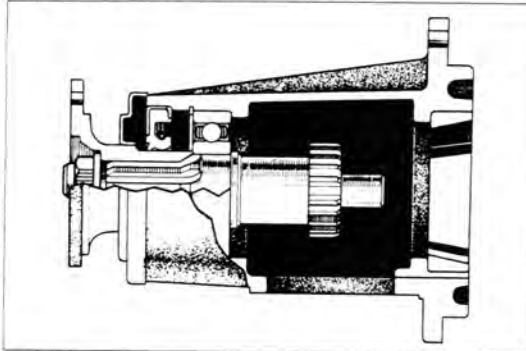
0.1 – 0.3 mm  
(0.004 – 0.012 in.)

Fig. 4-108

**Idler Gear**

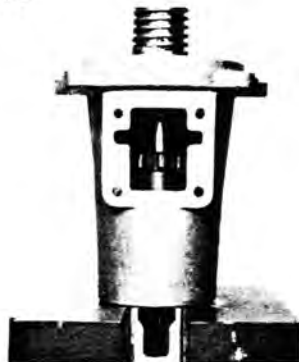
Inspect for wear or damage.

Fig. 4-109

**Extension Housing**

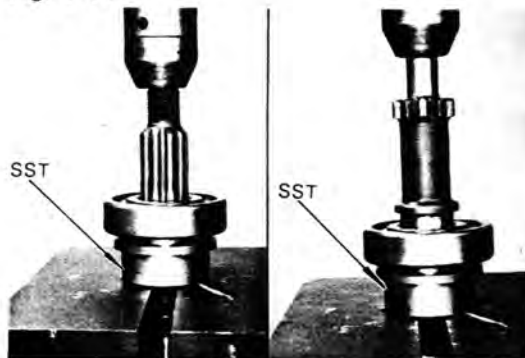
1. Inspect the shaft, bearing, and oil seal for wear or damage.

Fig. 4-110



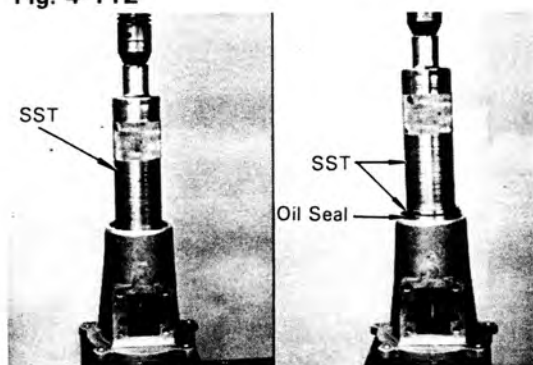
2. Replace the bearing.
  - (1) Remove the oil seal.
  - (2) Remove the snap ring.
  - (3) Using a press, remove the bearing together with the shaft.

Fig. 4-111



- (4) Replace the bearing with SST. SST [09316-60010]

Fig. 4-112

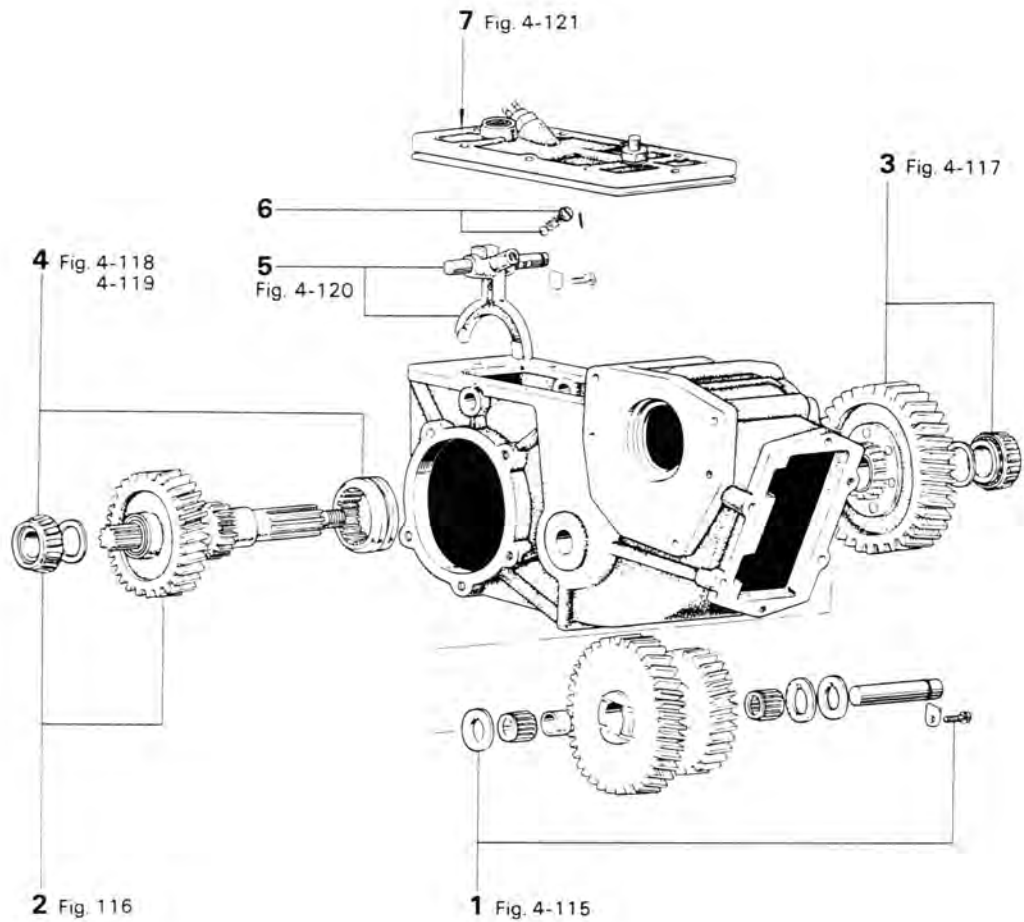


- (5) Using SST, install the bearing together with the shaft.  
SST [09316-60010]
- (6) Install the snap ring.
- (7) Install the oil seal with SST.  
SST [09316-60010]

## ASSEMBLY

1. Assemble the parts in the numerical order shown in the figure.

Fig. 4-113

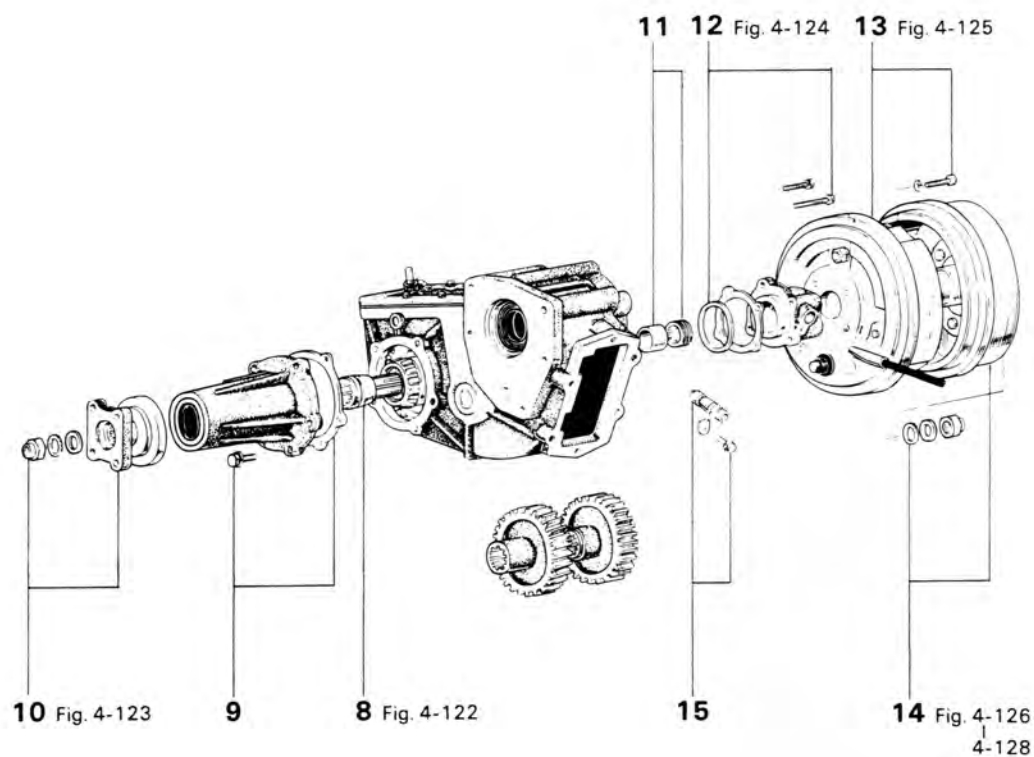


1. Idler Gear & Shaft
2. High Speed Gear, Washer & Bearing
3. Low Speed Gear, Washer & Bearing
4. Clutch Sleeve, Gear & Output Shaft

5. Shift Fork & Shaft
6. Ball, Spring & Plug
7. Case Cover & Shift Inner Lever

2. Assemble the parts in the numerical order shown in the figure.

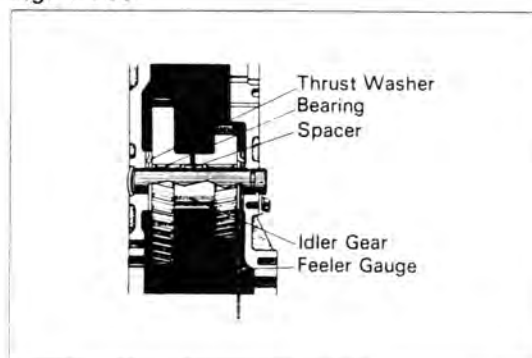
Fig. 4-114



- 8. Clutch Sleeve
- 9. Extension Housing
- 10. Companion Flange
- 11. Spacer & Drive Gear

- 12. Bearing Retainer & Shim
- 13. Backing Plate
- 14. Brake Drum, Plate & Nut
- 15. Drive Gear

Fig. 4-115



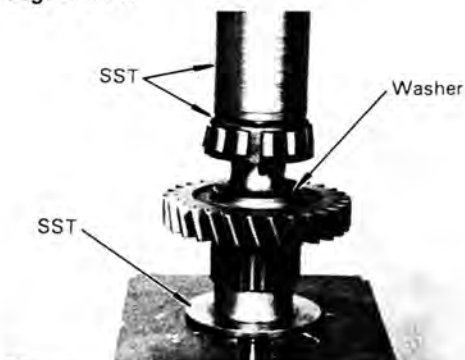
Install the idler gear assembly and shaft as illustrated.

**Thrust clearance:**

**STD** 0.125–0.475 mm  
(0.0049–0.0187 in.)

**Limit** 0.475 mm  
(0.0187 in.)

Fig. 4-116



Install the bearing with a press and a SST.  
SST [09316-60010]

**– Note –**

**Make sure that the gear is positioned in correct direction.**

Fig. 4-117

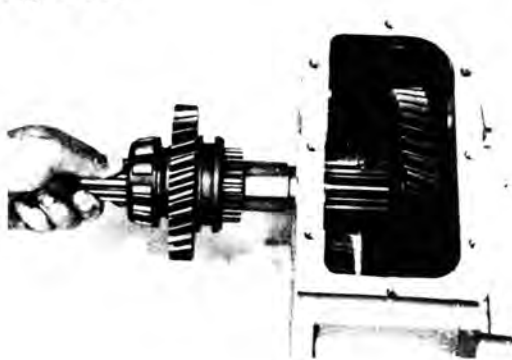


Place the low speed gear, washer and spacer inside the case.

**– Note –**

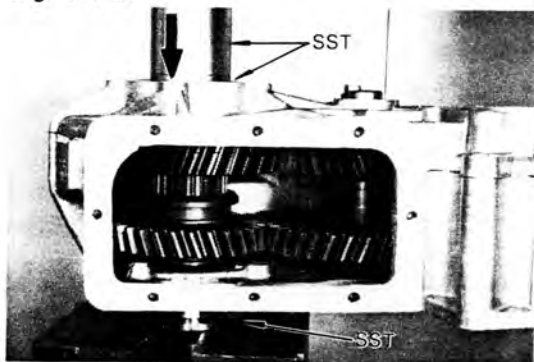
**Make sure that the gear is positioned in correct direction.**

Fig. 4-118



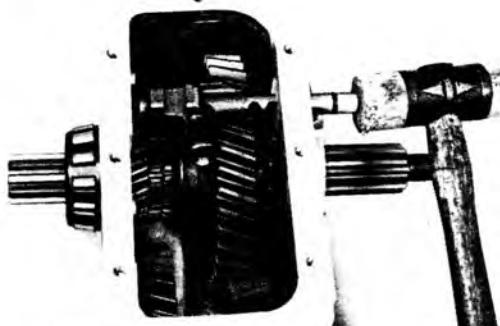
Install the clutch sleeve to the output shaft.  
Install the output shaft assembly to the case after inserting it through the low speed gear, washer and bearing.

Fig. 4-119



Fit the bearing to the output shaft with SST.  
SST [09316-60010]

Fig. 4-120



Drive in the shaft from the rear side of case.

— Note —

Position the fork in the direction shown in the figure.

Fig. 4-121



Position the lever tip to align it with the shift fork groove, and install the cover.

Fig. 4-122



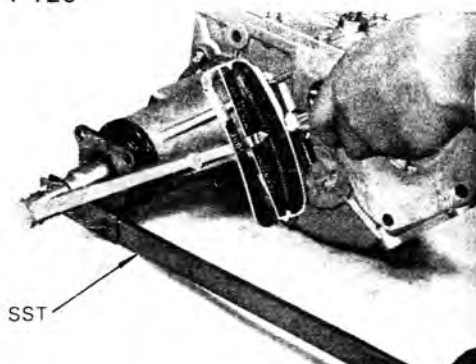
Install the clutch sleeve to the output shaft.

— Note —

Make sure that the clutch sleeve is positioned in the correct direction.



Fig. 4-123



Using SST to keep the companion flange from turning, screw on the nut. Stake the nut after installation.

SST [09330-00020]

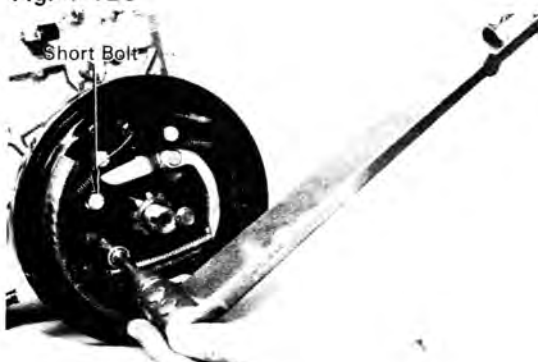
**Tightening torque: 14.0 – 17.0 kg-m  
(102 – 122 ft-lb)**

Fig. 4-124



Install the retainer, using the same thickness of shim as at disassembly.

Fig. 4-125



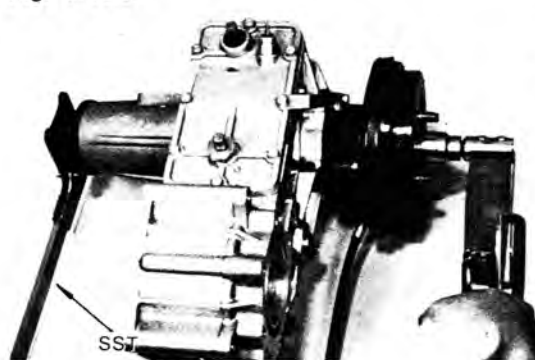
Install the backing plate assembly.

**Tightening torque: 3.0 – 4.5 kg-m  
(22 – 32 ft-lb)**

— Note —

Install the short bolt at upper left.

Fig. 4-126



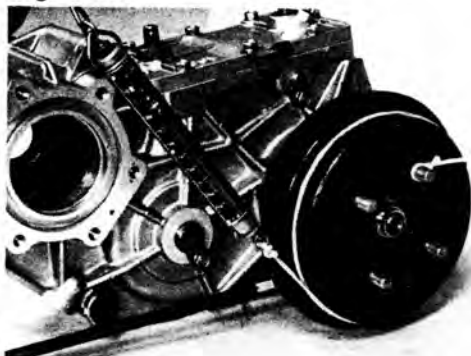
Set the system to front drive.

Using SST to keep the companion flange from turning, screw on the nut.

SST [09330-00020]

**Tightening torque: 14.0 – 17.0 kg-m  
(102 – 122 ft-lb)**

Fig. 4-127



Disengage the front drive.

Using a spring scale, measure the output shaft bearing preload.

**Preload:**

**New bearing** 1.2–4.1 kg  
(2.6–9.9 lb)

**Reused bearing**  
More than 0.47 kg  
(1.0 lb)

Fig. 4-128



If the preload is at standard, stake the nut to lock it in place. If not at standard, adjust by selecting proper thickness shims.

Adjust shim thickness

Part No.	Thickness mm (in.)
90564-64017	0.10 (0.0039)
90564-64023	0.15 (0.0059)
90564-64024	0.20 (0.0079)
90564-64025	0.25 (0.0098)

**INSTALLATION**

Refer to the instructions in the 3-Speed Transmission Section.