

## INDEX

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## INTRODUCTION

### A340H - A55 AWD

In the continuing process to keep the technician updated on the four wheel drive vehicles we now introduce the manual on the A350H transfer case which is found in Toyota and Isuzu models. This series of booklets cover the general information, operation tear down and assembly on these units. And in most cases a parts breakdown is shown which helps in ordering replacements parts. Also included in this manual is a breakdown and assembly of the all wheel drive found in the Tercel with the Asian A-55 automatic transmission. We thank Toyota for the information and illustrations that made this booklet possible

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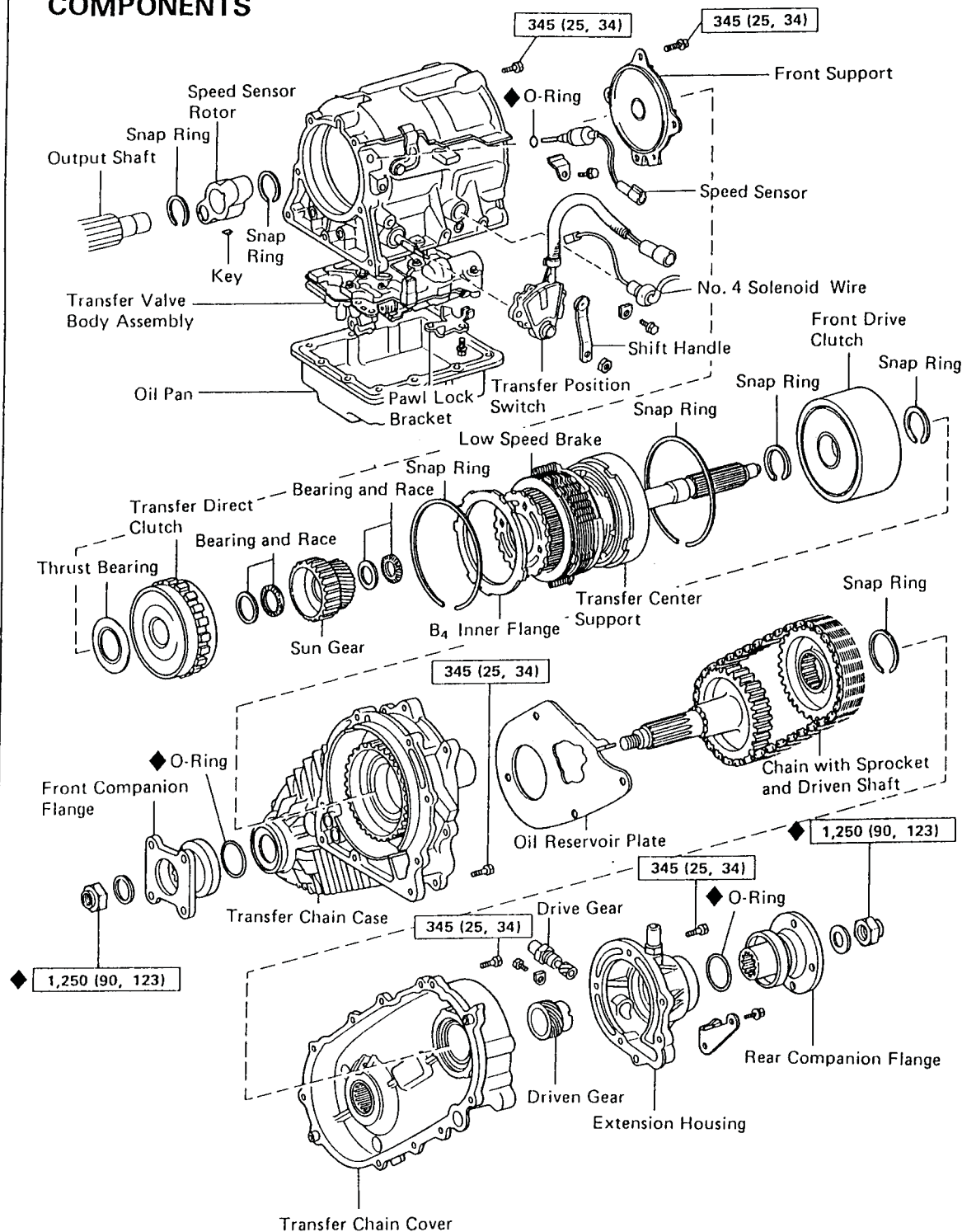
**ED KRUSE**  
LAY OUT

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## DISASSEMBLY OF TRANSFER

### COMPONENTS



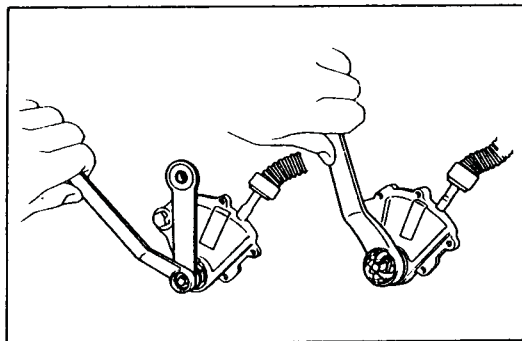
kg-cm (ft-lb, N-m) : Specified torque

◆ Non-reusable part

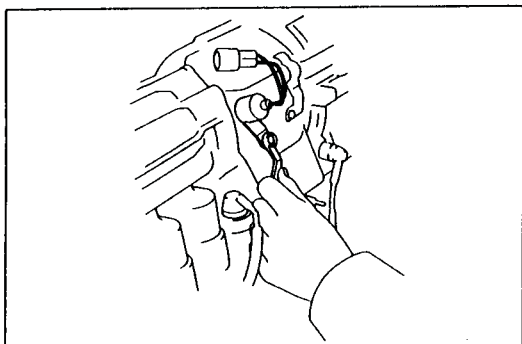


## Technical Service Information

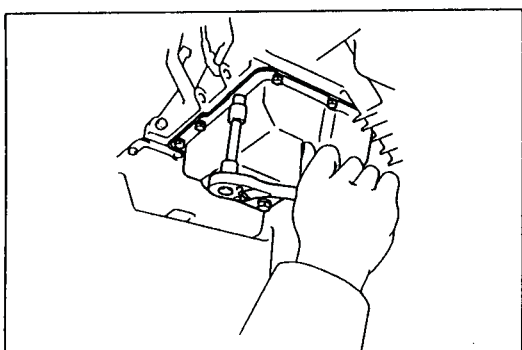
### SEPARATE BASIC SUBASSEMBLY



1. REMOVE CONVERTER
2. REMOVE TRANSFER POSITION SWITCH
  - (a) Remove the shift handle.
  - (b) Remove the switch mounting nut and bolt.
  - (c) Remove the wiring clamp and switch.



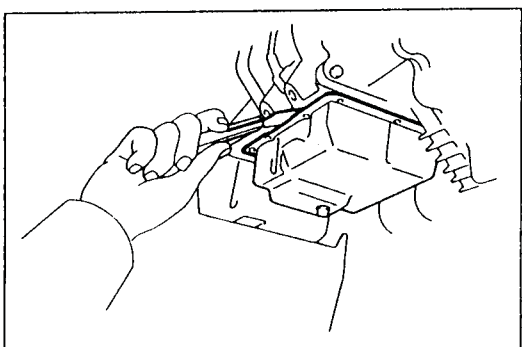
3. REMOVE SPEED SENSOR
  - (a) Disconnect the speed sensor wiring connector.
  - (b) Remove the clamp bolt and speed sensor.



4. REMOVE OIL PAN

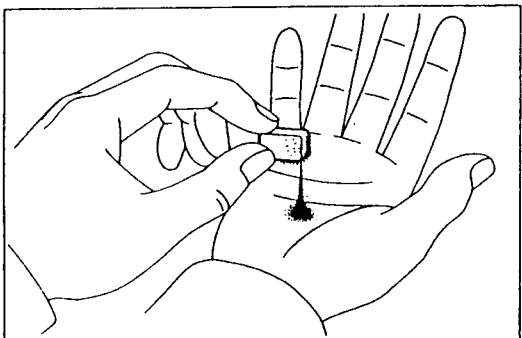
- (a) Remove the eleven bolts.

NOTE: Do not turn the transmission over as this will contaminate the valve body with foreign materials in the bottom of the pan.



- (b) Using a screwdriver or scraper, separate the oil pan from the transfer.

NOTE: When removing the oil pan, be careful not to damage the oil pan flange.

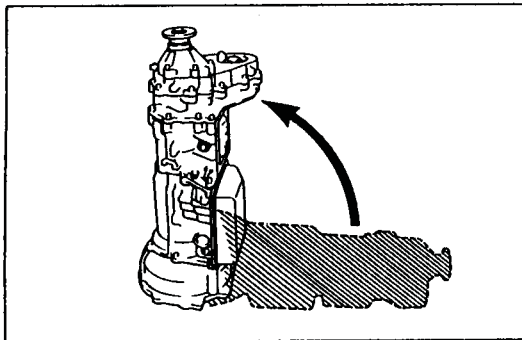


5. EXAMINE PARTICLES IN PAN

Remove the magnet and use it to collect any steel chips. Look carefully at the chips and particles in the pan and on the magnet to anticipate what type of wear you will find in the transfer:

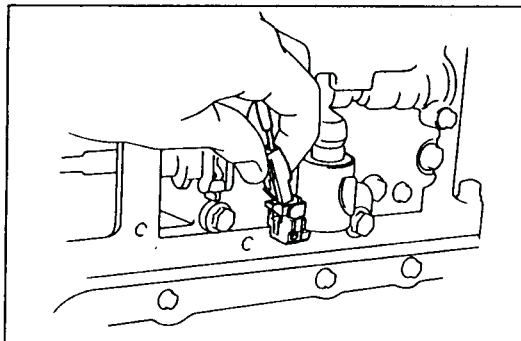
Steel (magnetic) = bearing, gear and clutch plate wear.

Brass (nonmagnetic) = bushing wear.

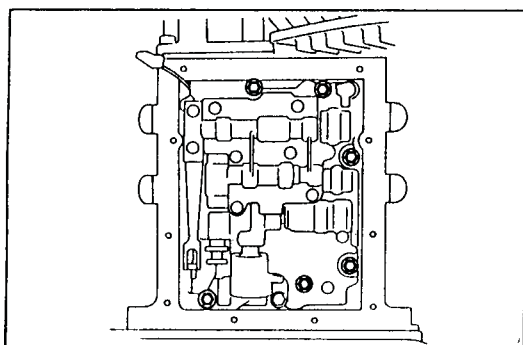


## 6. STAND TRANSMISSION ASSEMBLY

Place the converter housing below and stand the transmission assembly.



## 7. DISCONNECT NO. 4 SOLENOID CONNECTOR

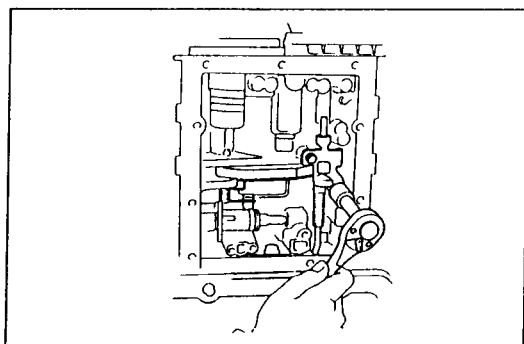


## 8. REMOVE TRANSFER VALVE BODY

NOTE: Remove the six bolts.

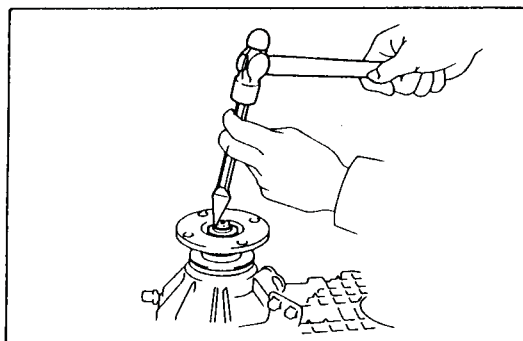
## 9. PULL OUT NO. 4 SOLENOID WIRE

- Remove the No. 4 solenoid wire clamp bolt.
- Pull out the No. 4 solenoid wire from the transfer.



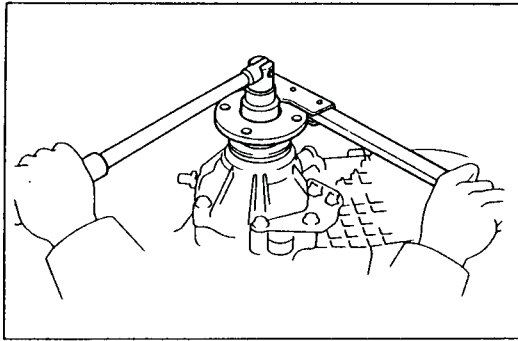
## 10. REMOVE PARKING LOCK PAWL BRACKET

## 11. REMOVE SPEEDOMETER DRIVEN GEAR FROM EXTENSION HOUSING



## 12. REMOVE REAR COMPANION FLANGE

- Using a hammer and chisel, loosen the staked part of the nut.



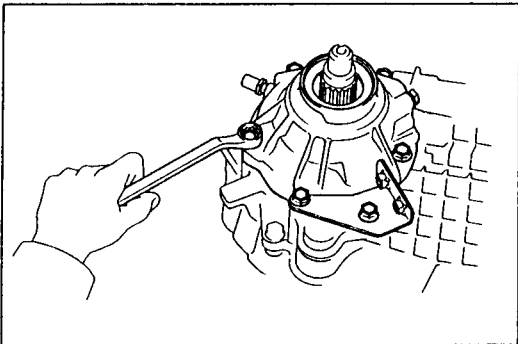
(b) Using SST to hold the flange, remove the nut and washer.

SST 09330-00021

(c) Remove the companion flange.

## 13. REMOVE FRONT COMPANION FLANGE

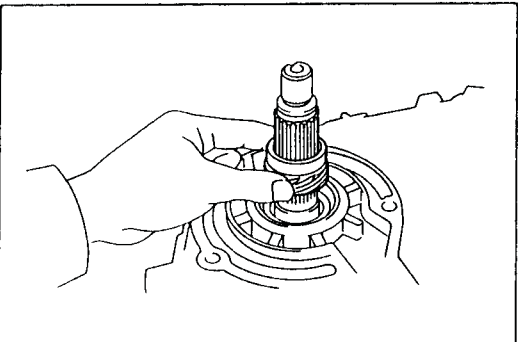
Remove the front companion flange in the same way as the rear companion flange. (See step 12)



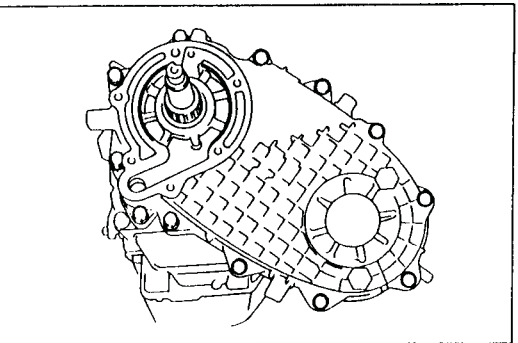
## 14. REMOVE EXTENSION HOUSING

(a) Remove the six bolts.

(b) Separate the extension housing.

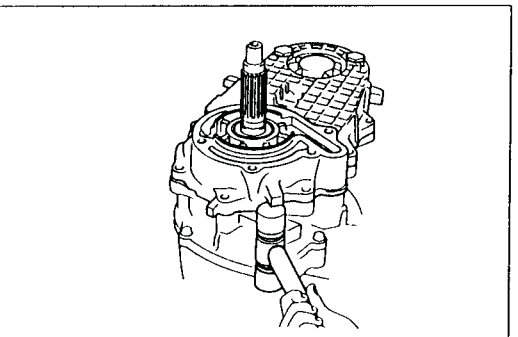


## 15. REMOVE SPEEDOMETER DRIVE GEAR

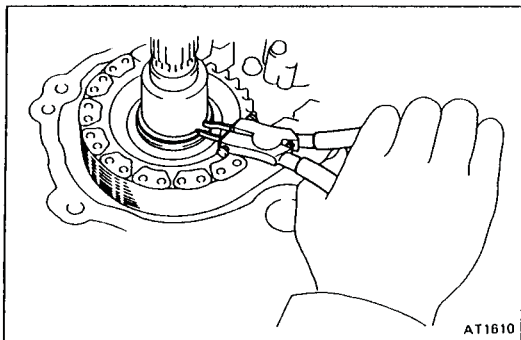


## 16. REMOVE TRANSFER CHAIN COVER

(a) Remove the twelve bolt.

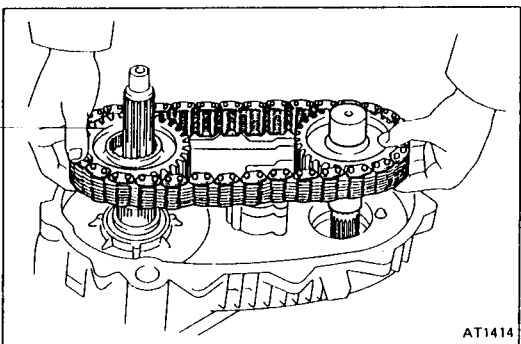


(b) Using a plastic hammer, separate the transfer chain cover from the transfer chain case.

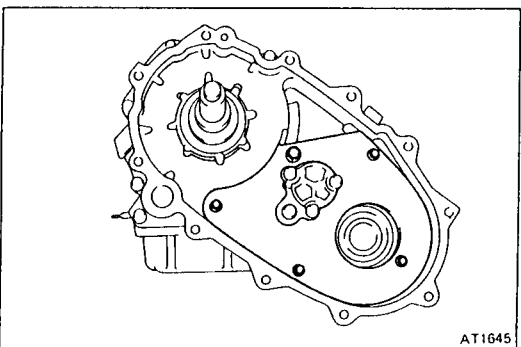


## 17. REMOVE DRIVE CHAIN WITH SPROCKET AND DRIVEN SHAFT

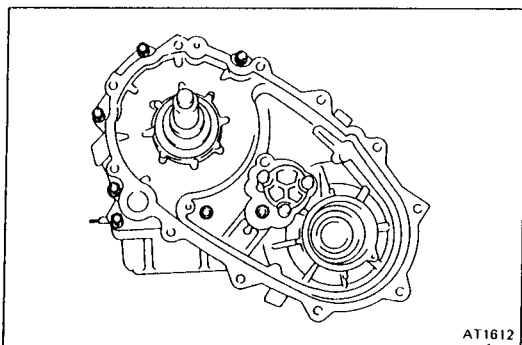
(a) Remove the snap ring.



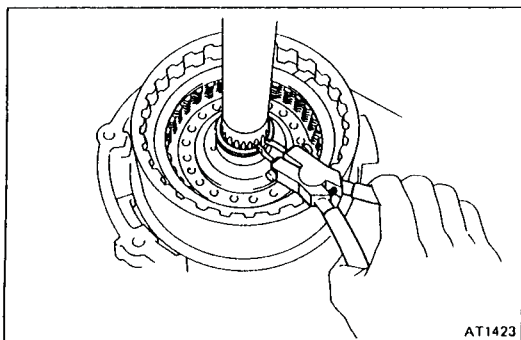
(b) Pull out the chain with the sprocket and driven shaft.



## 18. REMOVE TRANSFER OIL RESERVOIR PLATE



## 19. REMOVE TRANSFER CHAIN CASE

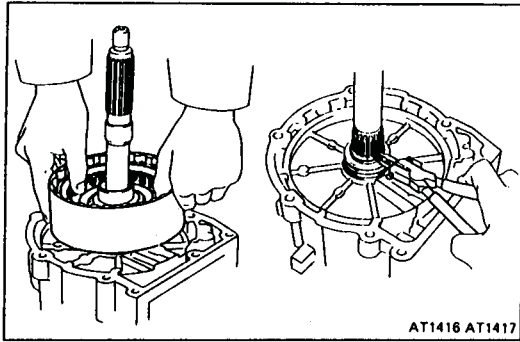


## 20. REMOVE TRANSFER DRIVE CLUTCH (C4)

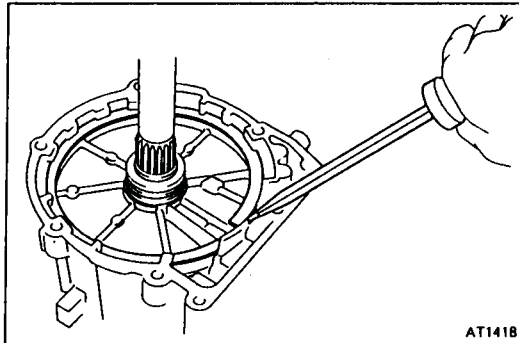
(a) Remove the snap ring.



## Technical Service Information

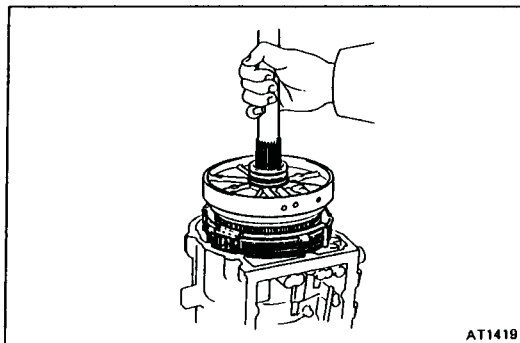


- (b) Grasp and pull out the front drive clutch.
- (c) Remove the snap ring from the output shaft.

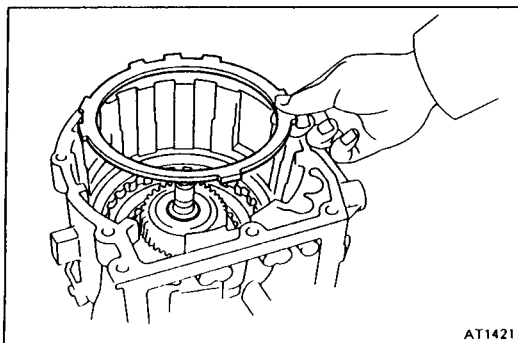


### 21. REMOVE TRANSFER CENTER SUPPORT AND TRANSFER LOW SPEED BRAKE (B4)

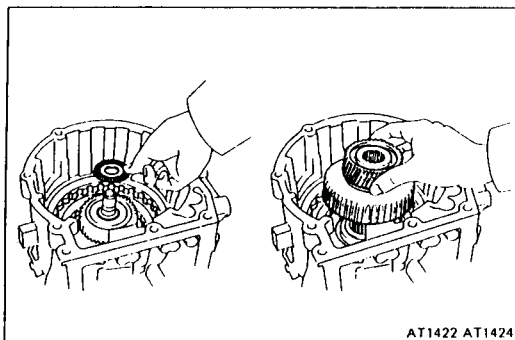
- (a) Remove the snap ring.



- (b) Grasp the shaft and pull out the transfer center support with transfer low speed brake assembly. Watch for race on the planetary gear.



- (c) Remove the B4 inner flange from the case.



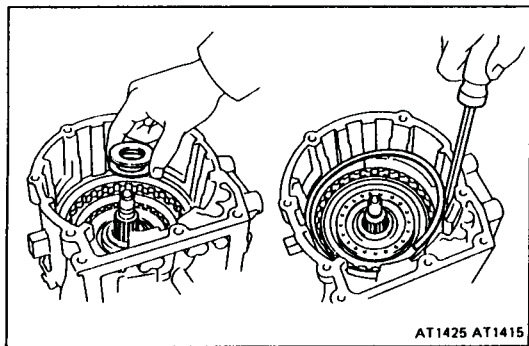
### 22. REMOVE SUN GEAR

- (a) Pull out the sun gear. Watch for race on rear side of the sun gear.
- (b) Watch for bearing on rear side of the sun gear.





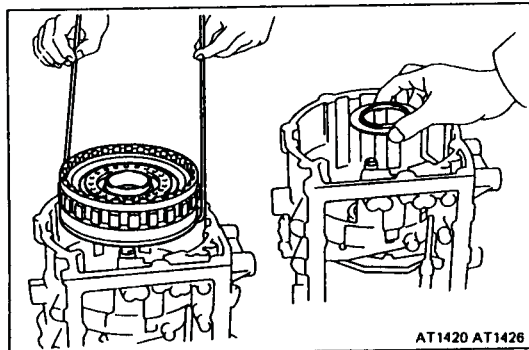
## Technical Service Information



AT1425 AT1415

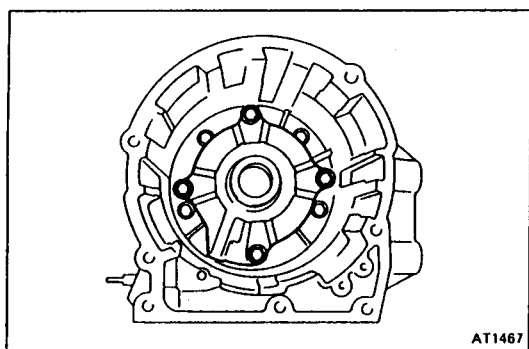
### 23. REMOVE TRANSFER DIRECT CLUTCH (C<sub>3</sub>)

- (a) Watch for bearing and race on the direct clutch.
- (b) Remove the snap ring.



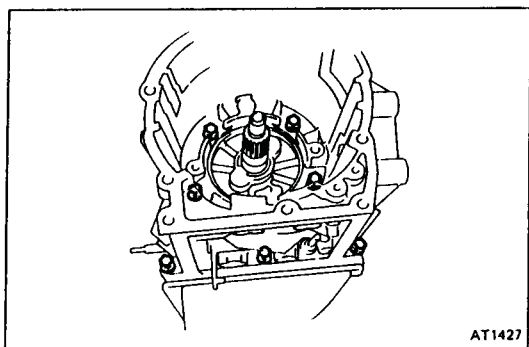
AT1420 AT1426

- (c) Using the hooks, lift the transfer direct clutch from the transfer. Watch for bearing on the front support.



AT1467

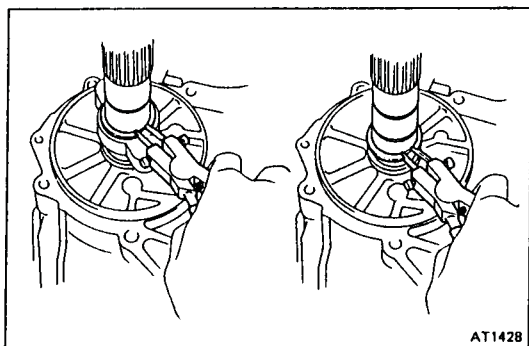
### 24. REMOVE FRONT SUPPORT FROM TRANSFER CASE



AT1427

### 25. REMOVE TRANSFER CASE

Remove the seven bolts and case.

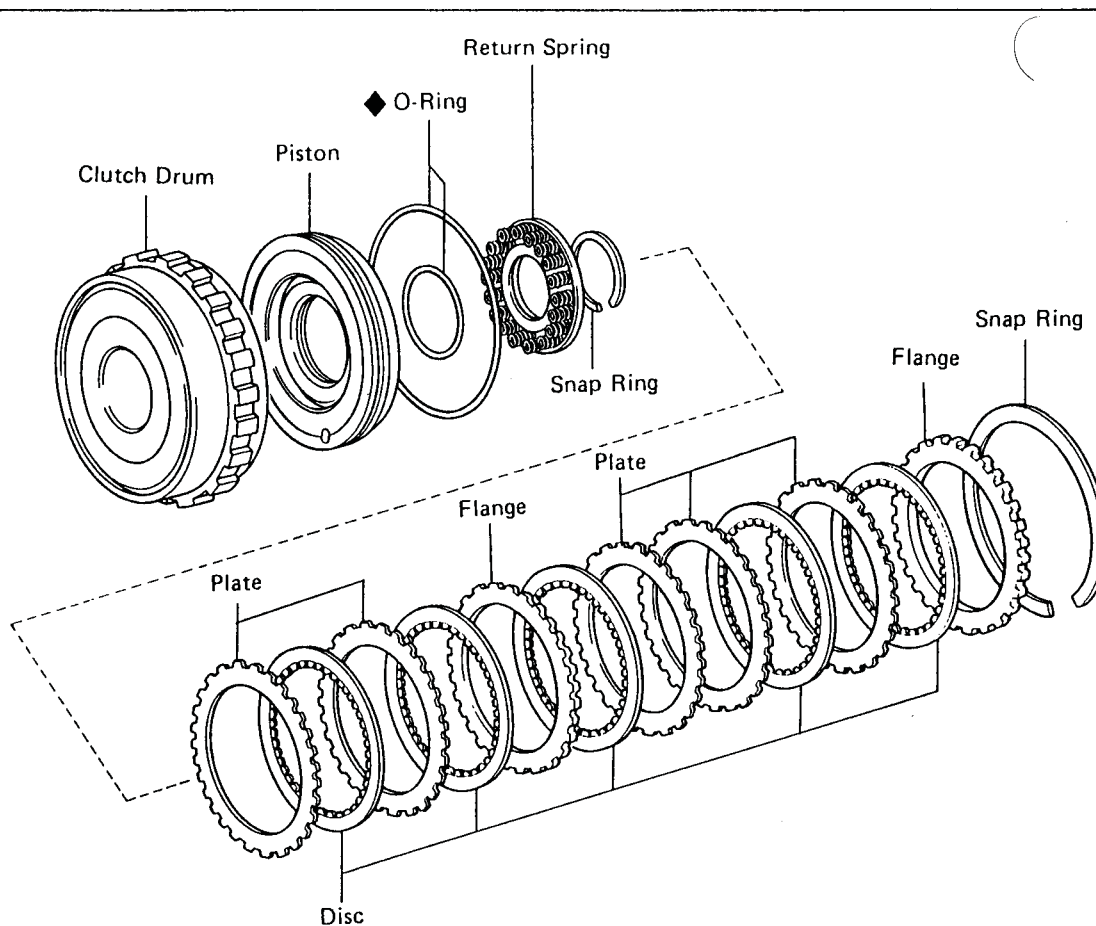


AT1428

### 26. REMOVE SPEED SENSOR ROTOR

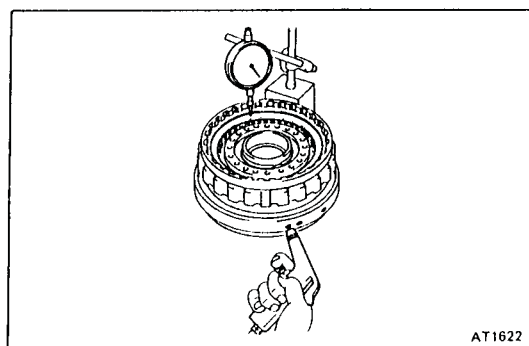
- (a) Remove the rear snap ring.
- (b) Remove the sensor rotor and key.
- (c) Remove the front snap ring.

## TRANSFER DIRECT CLUTCH(C3) COMPONENTS



◆ : Non-reusable part

AT1605



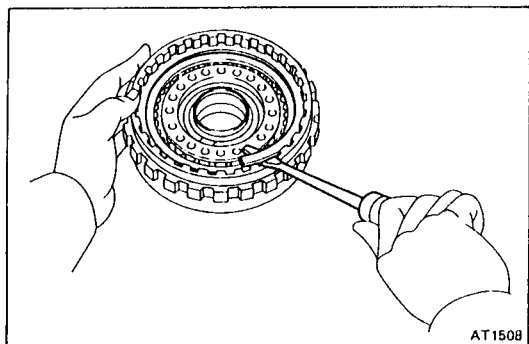
AT1622

### DISASSEMBLY OF DIRECT CLUTCH

#### 1. CHECK PISTON STROKE OF DIRECT CLUTCH

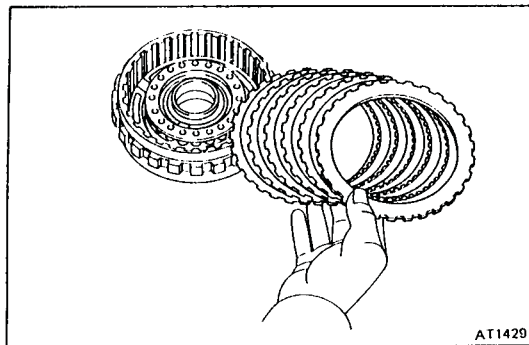
- Install the direct clutch onto the transfer center support.
- Using a dial indicator, measure the piston stroke while applying and releasing the compressed air (4–8 kg/cm<sup>2</sup>, 57–114 psi or 392–784 kPa) as shown.

Standard piston stroke: 2.00 – 2.40 mm  
(0.0787 – 0.0945 in.)



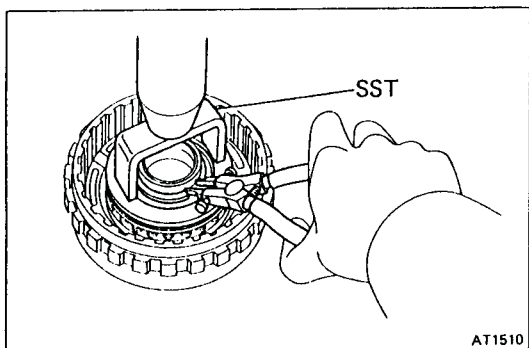
AT1508

#### 2. REMOVE SNAP RING FROM CLUTCH DRUM



## 3. REMOVE FLANGES, DISCS AND PLATES

Disc : 5 pieces  
Plate : 5 pieces  
Flange : 2 pieces

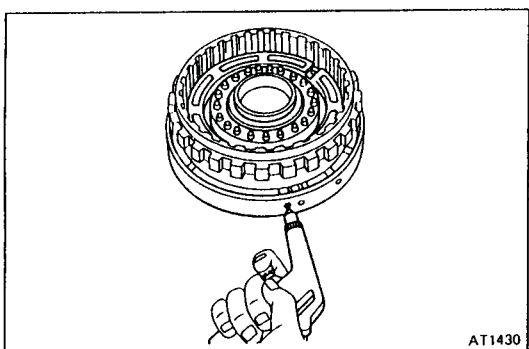


## 4. COMPRESS PISTON RETURN SPRINGS AND REMOVE SNAP RING

Place SST on the return spring and compress the springs with a shop press. Using snap ring pliers, remove the snap ring.

SST 09320-89010

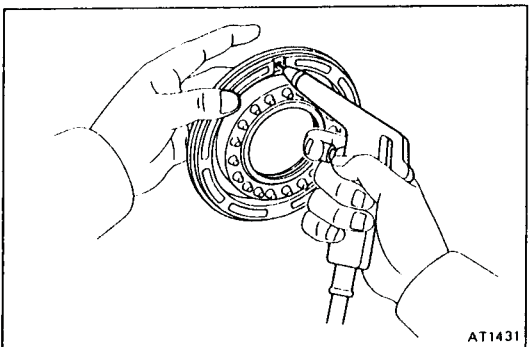
## 5. REMOVE RETURN SPRING



## 6. REMOVE DIRECT CLUTCH PISTON

- Place the direct clutch on the transfer center support.
- Apply compressed air to the center support to remove the piston. (If the piston does not come out completely, use needle-nose pliers to remove it.)
- Remove the direct clutch drum from the center support.

## 7. REMOVE CLUTCH PISTON O-RING



## INSPECTION OF DIRECT CLUTCH

### 1. INSPECT CLUTCH PISTON

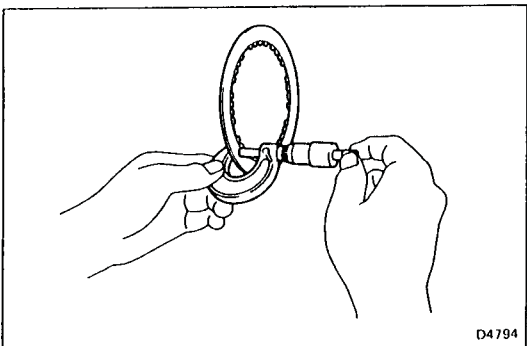
- Check that check ball is free by shaking the piston.
- Check that the valve does not leak by applying low-pressure compressed air.

### 2. CHECK DISCS

Using a micrometer, measure the thickness of the discs.

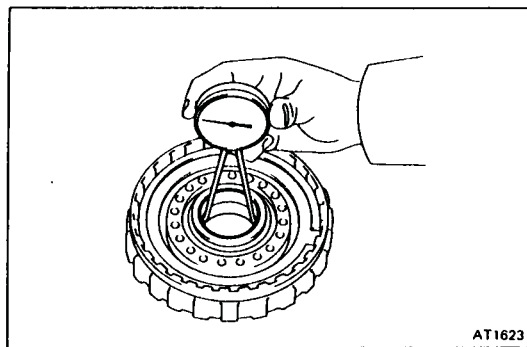
Minimum thickness: 1.50 mm (0.0591 in.)

If the thickness is less than the minimum, replace the discs.





## Technical Service Information

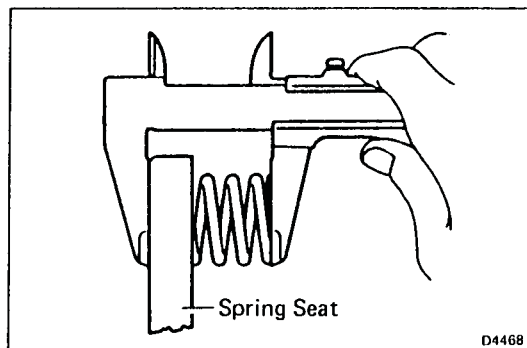


### 3. CHECK DIRECT CLUTCH BUSHING

Using a dial indicator, measure the inside diameter of the direct clutch bushing.

**Maximum inside diameter: 47.65 mm (1.8760 in.)**

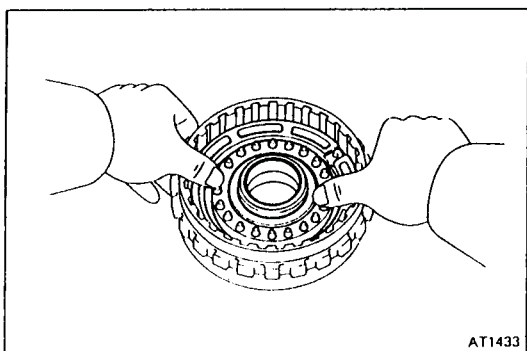
If the inside diameter is greater than the maximum, replace the direct clutch.



### 4. INSPECT RETURN SPRING

Check for damage, squareness, rust and collapsed coils. Measure the spring free length and replace it if less than specification.

**Free length: 24.0 mm (0.945 in.)**



## ASSEMBLY OF DIRECT CLUTCH

### 1. INSTALL CLUTCH PISTON IN DIRECT CLUTCH DRUM

- Install new O-ring on the piston. Coat the O-ring with ATF.
- Being careful not to damage the O-ring, press the piston into the drum with the cup side up.

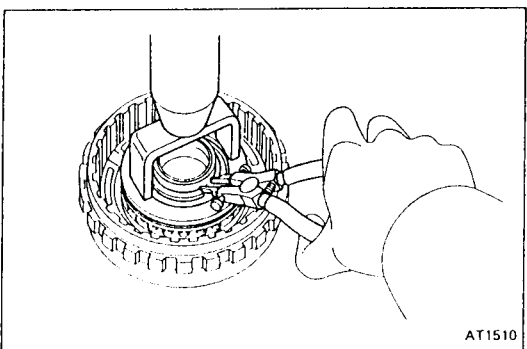
### 2. INSTALL PISTON RETURN SPRING AND SET RETAINER AND SNAP RING IN PLACE

### 3. COMPRESS RETURN SPRING AND INSTALL SNAP RING IN GROOVE

- Place SST on the spring retainer, and compress the springs with a shop press.

SST 09320-89010

- Install the snap ring with a snap ring pliers. Be sure the end gap of snap ring is not aligned with the spring retainer claw.

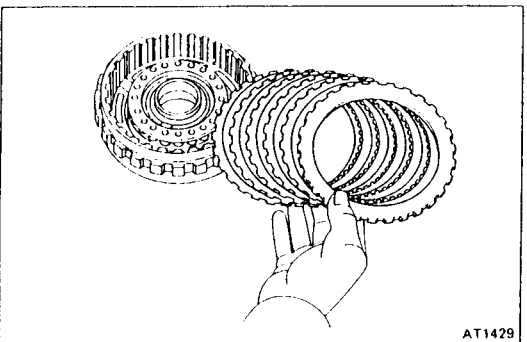


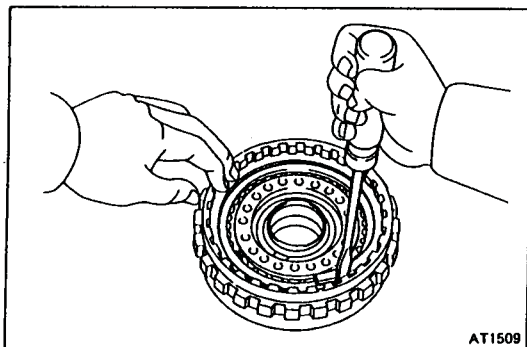
### 4. INSTALL PLATES, DISCS AND FLANGE

Install in order:

Plate-disc-plate-disc-plate-disc-plate-disc

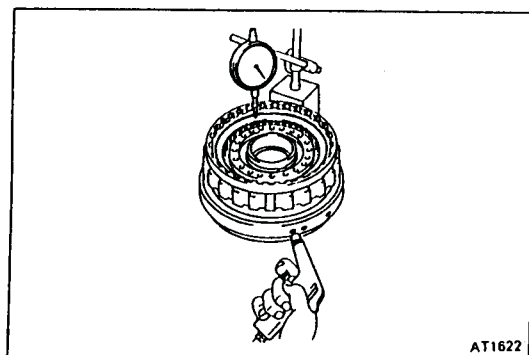
Then install the flange, facing the flat end downward.





## 5. INSTALL OUTER SNAP RING

Check that the end gap of the snap ring is not aligned with one of the cutouts.



## 6. RECHECK PISTON STROKE OF DIRECT CLUTCH

- Install the direct clutch onto the transfer center support.
- Using a dial indicator, measure the piston stroke applying and releasing the compressed air (4–8 kg/cm<sup>2</sup>, 57–114 psi or 392–784 kPa) as shown.

Standard piston stroke: 2.00 – 2.40 mm  
(0.0787 – 0.0945 in.)

If the piston stroke exceeds the limit, replace the discs and recheck the piston stroke.

If the piston stroke is less than the limit, parts may be mis-assembled and reinstall them.

If the piston stroke nonstandard, select another flange.

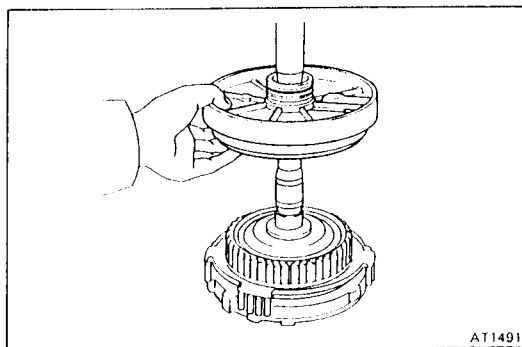
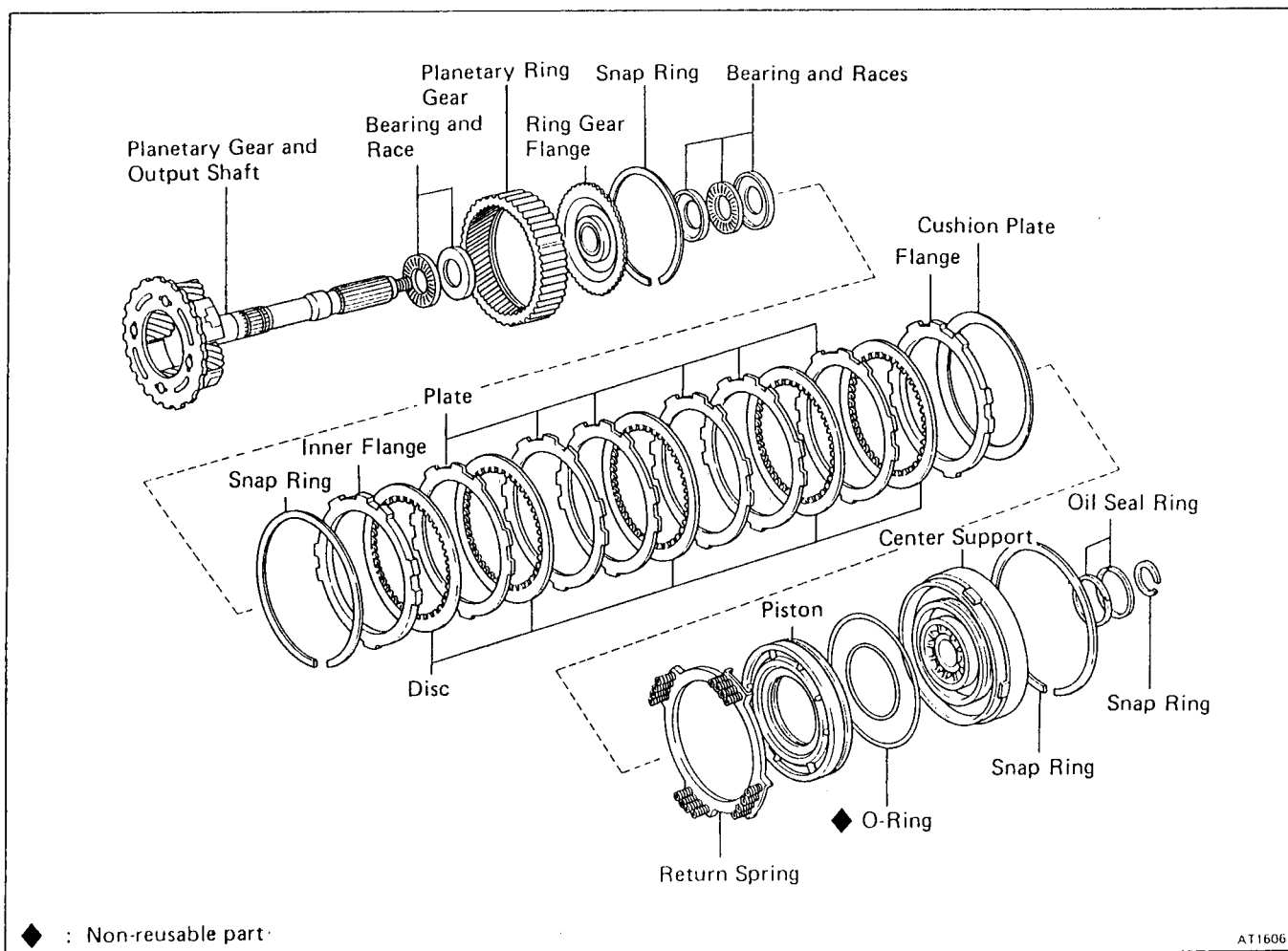
NOTE: There are four flanges. mm (in.)

Thickness	
3.9 (0.154)	4.3 (0.169)
4.1 (0.161)	4.5 (0.177)

## Torque Specifications

Part tightened	kg-cm	ft-lb	N-m
Extension housing x Chain cover	345	25	34
Chain cover x Chain case	345	25	34
Chain case x Transfer case	345	25	34
Transfer case x Transmission case	345	25	34
Valve body x Transfer case	100	7	10
Oil reservoir plate x Chain case	100	7	10
Valve body	70	61 in.-lb	6.9
Front and rear companion flanges	1,250	90	123
Oil pan x Transfer case	75	65 in.-lb	7.4
No. 4 solenoid x Valve body	100	7	10
Detent spring x Valve body	70	61 in.-lb	6.9
Parking lock pawl bracket	70	61 in.-lb	6.9
Transfer indicator switch	130	9	13
Speed sensor	75	65 in.-lb	7.4

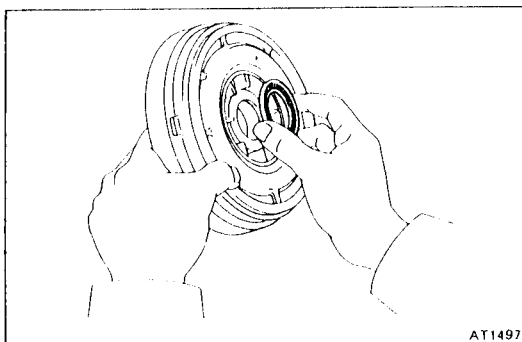
## TRANSFER LOW SPEED BRAKE(B<sub>4</sub>) AND CENTER SUPPORT COMPONENTS



### DISASSEMBLY OF TRANSFER LOW SPEED BRAKE AND CENTER SUPPORT

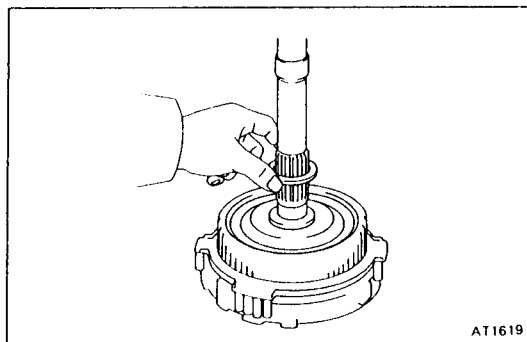
#### 1. REMOVE TRANSFER CENTER SUPPORT

(a) Remove the center support from the output shaft.

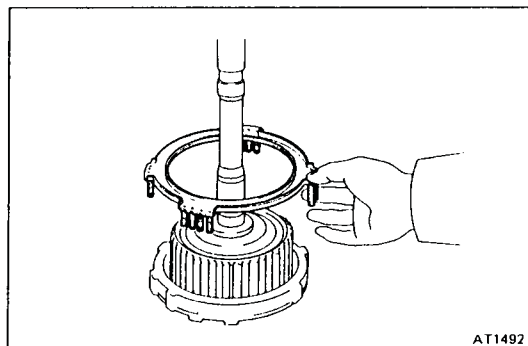


(b) Remove the bearing from the center support.

(c) Remove the bearing race from the output shaft.



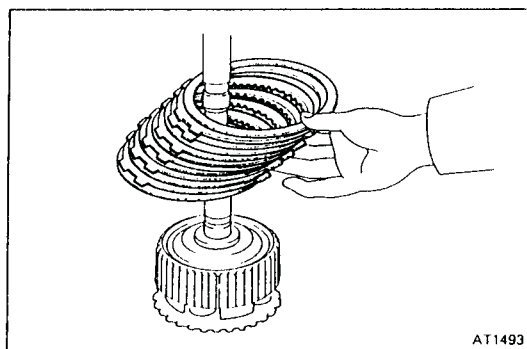
## 2. REMOVE RETURN SPRING



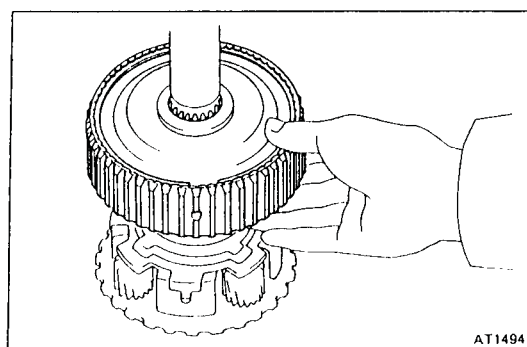
## 3. REMOVE CUSHION PLATE, OUTER FLANGE, PLATES AND DISCS

Disc : 5 pieces

Plate: 6 pieces



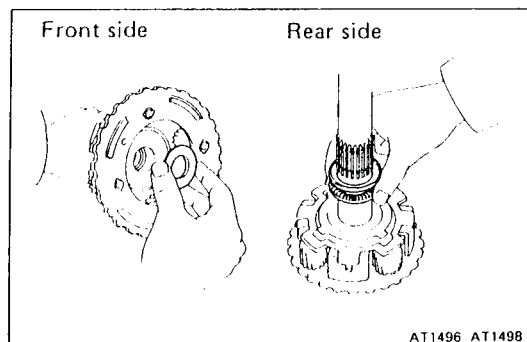
## 4. REMOVE PLANETARY RING GEAR FROM OUTPUT SHAFT



## 5. REMOVE BEARING AND RACES FROM BOTH SIDE OF PLANETARY GEAR

(a) Remove the race from front side of the planetary gear.

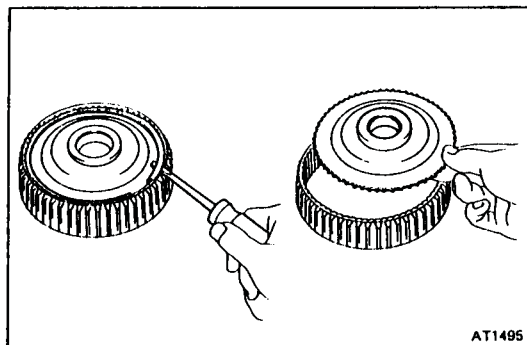
(b) Remove the bearing and race from rear side of the planetary gear:







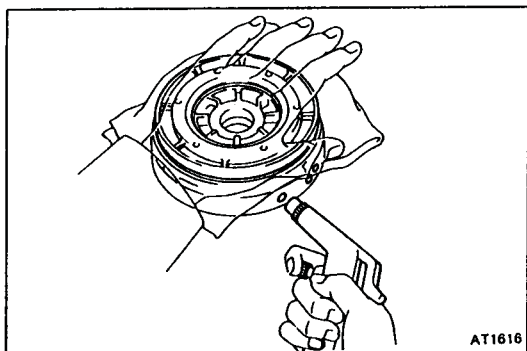
## Technical Service Information



AT1495

### 6. DISASSEMBLE PLANETARY RING GEAR

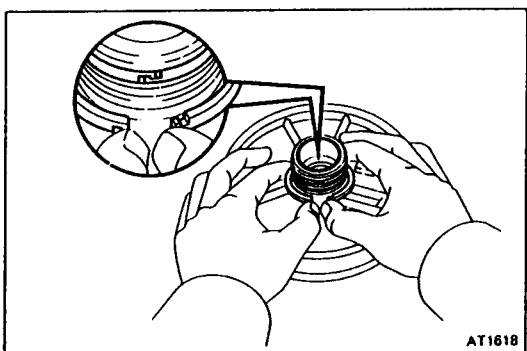
Remove the snap ring and separate the ring gear and flange.



AT1616

### 7. SEPARATE CENTER SUPPORT

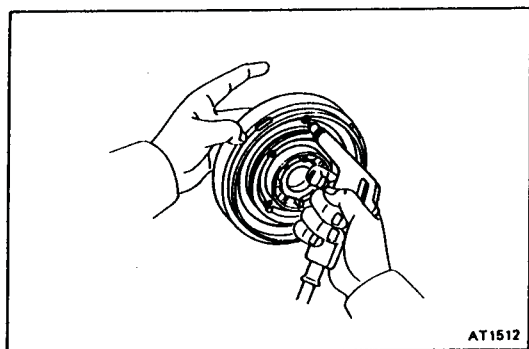
- (a) Apply compressed air into the center support and separate the piston and support.
- (b) Remove the O-ring from the piston.



AT1618

### 8. REMOVE TWO OIL SEAL RINGS FROM CENTER SUPPORT

Push one end of the ring into the groove and unhook both ends of the ring by hand. Spread the ring apart and remove it.

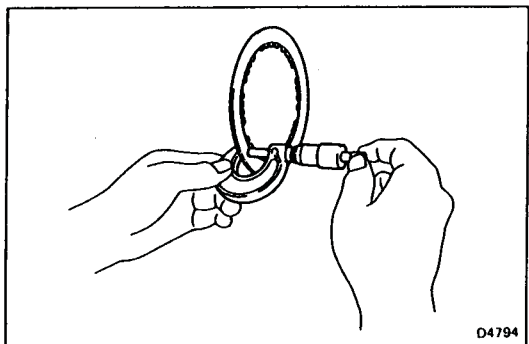


AT1512

## INSPECTION OF LOW SPEED BRAKE ASSEMBLY AND TRANSFER CENTER SUPPORT

### 1. INSPECT CENTER SUPPORT

- (a) Check that check ball is free by shaking the piston.
- (b) Check that the valve does not leak by applying low-pressure compressed air.



D4794

### 2. CHECK DISCS

Using a micrometer, measure the thickness of the discs.

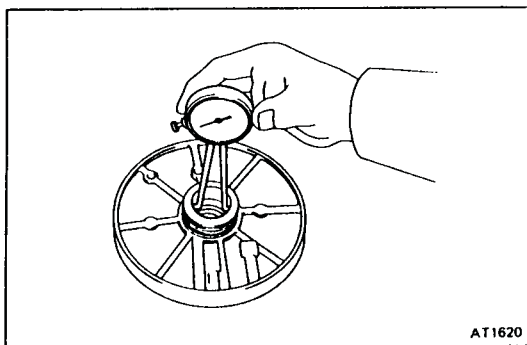
Minimum thickness: 1.50 mm (0.0591 in.)

If the thickness is less than the minimum, replace the discs.





## Technical Service Information



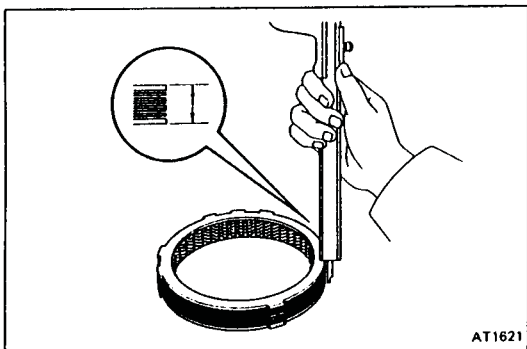
AT1620

### 3. CHECK CENTER SUPPORT BUSHING

Using a dial indicator, measure the inside diameter of the center support bushing.

**Maximum inside diameter: 35.08 mm (1.3811 in.)**

If the inside diameter is greater than the maximum, replace the center support.



AT1621

### 4. CHECK DISC AND PLATE

Assemble the two flanges, five discs and six plates, measure the assembly height.

**Height: 28.78 – 29.08 mm (1.1331 – 1.1149 in.)**

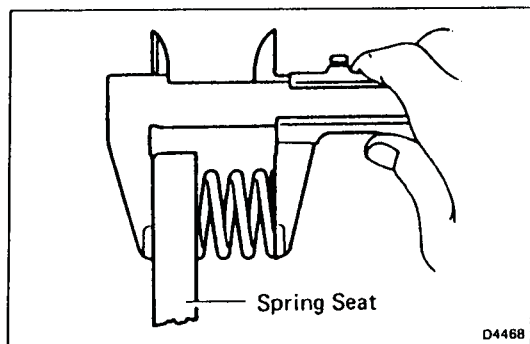
If the specification is less than the limit, replace the discs and recheck the specification.

If the specification exceeds the limit, parts may be mis-assembled and reinstall them.

If the specification nonstandard, select another flange.

**NOTE:** There are five flanges. mm (in.)

Thickness	
3.8 (0.150)	4.4 (0.173)
4.0 (0.157)	4.6 (0.181)
4.2 (0.165)	

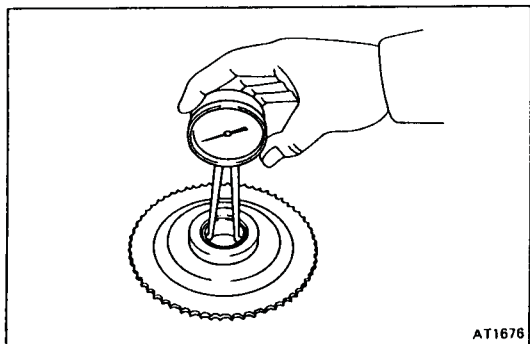


D4468

### 5. INSPECT RETURN SPRING

Check for damage, squareness, rust and collapsed coils. Measure the spring free length and replace it if less than specification.

**Free length: 26.1 mm (1.028 in.)**



AT1676

### 6. CHECK RING GEAR FLANGE BUSHING

Using a dial indicator, measure the inside diameter of the flange bushing.

**Maximum inside diameter: 35.08 mm (1.3811 in.)**

If the inside diameter is greater than the maximum, replace the flange.

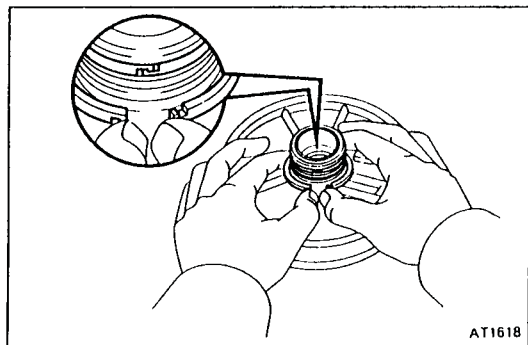


## Technical Service Information

### ASSEMBLY OF LOW SPEED BRAKE ASSEMBLY

#### 1. INSTALL TWO OIL SEAL RINGS TO CENTER SUPPORT

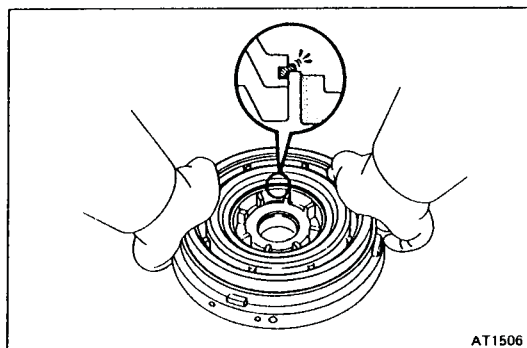
- Spread the ring apart and install it into the groove to the center support.
- Push the one end of the ring into the groove and hook both ends by hand.



#### 2. ASSEMBLE CENTER SUPPORT

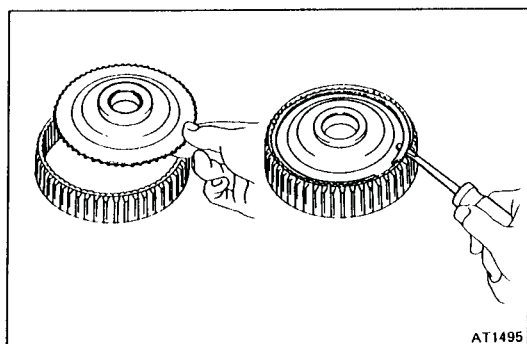
- Install new O-ring to the piston.
- Push in the center support and piston.

NOTE: Install taking care not to damage the screw in the O-ring.



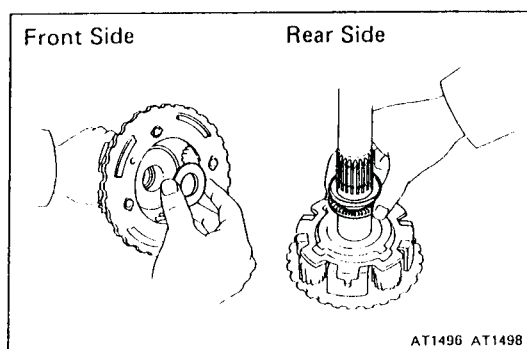
#### 3. ASSEMBLE PLANETARY RING GEAR

Install the flange into the ring gear and install the snap ring.

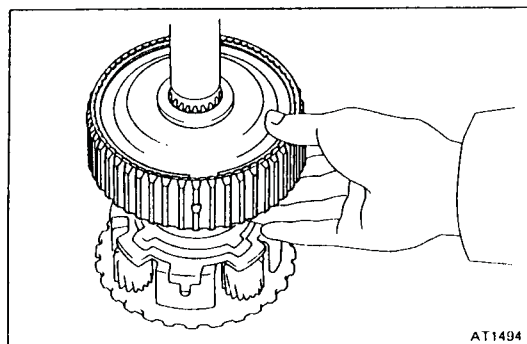


#### 4. INSTALL BEARING AND RACES TO BOTH SIDES OF PLANETARY GEAR

- Coat the race with petroleum jelly, and install them into the planetary gear front side.
- Install the bearing and race onto the planetary gear rear side.

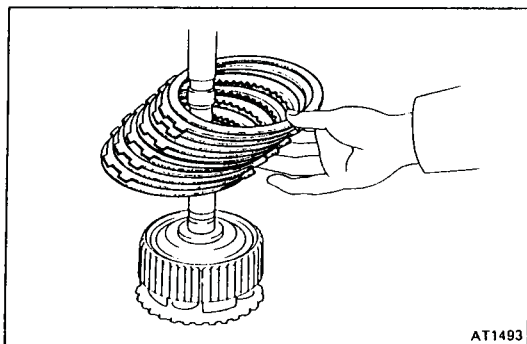


#### 5. INSTALL PLANETARY RING GEAR TO OUTPUT SHAFT





## Technical Service Information



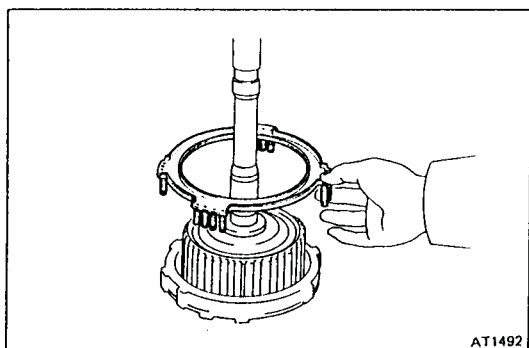
AT1493

### 6. INSTALL DISCS, PLATES, OUTER FLANGE AND CUSHION PLATE

Install in order:

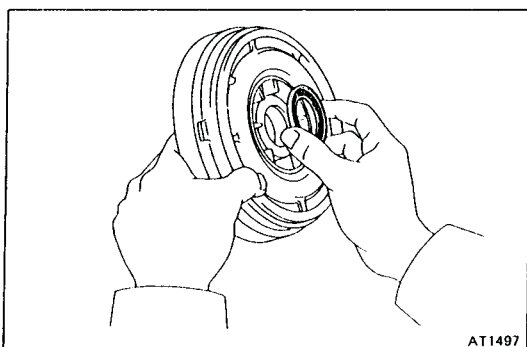
Disc-plate-disc-plate-plate-disc-plate-plate-disc-plate-disc-plate-flange-cushion plate

NOTE: Install the inner flange when assemble the transfer.



AT1492

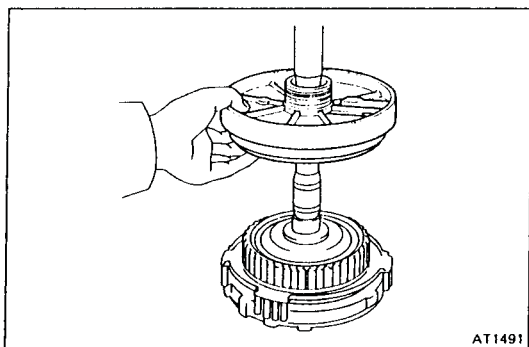
### 7. INSTALL RETURN SPRING



AT1497

### 8. INSTALL CENTER SUPPORT

- (a) Coat the bearing with petroleum jelly.
- (b) Install the bearing to the center support.



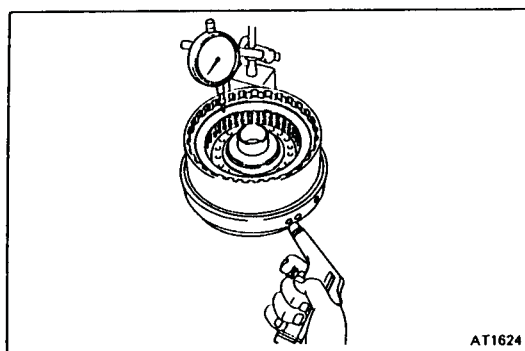
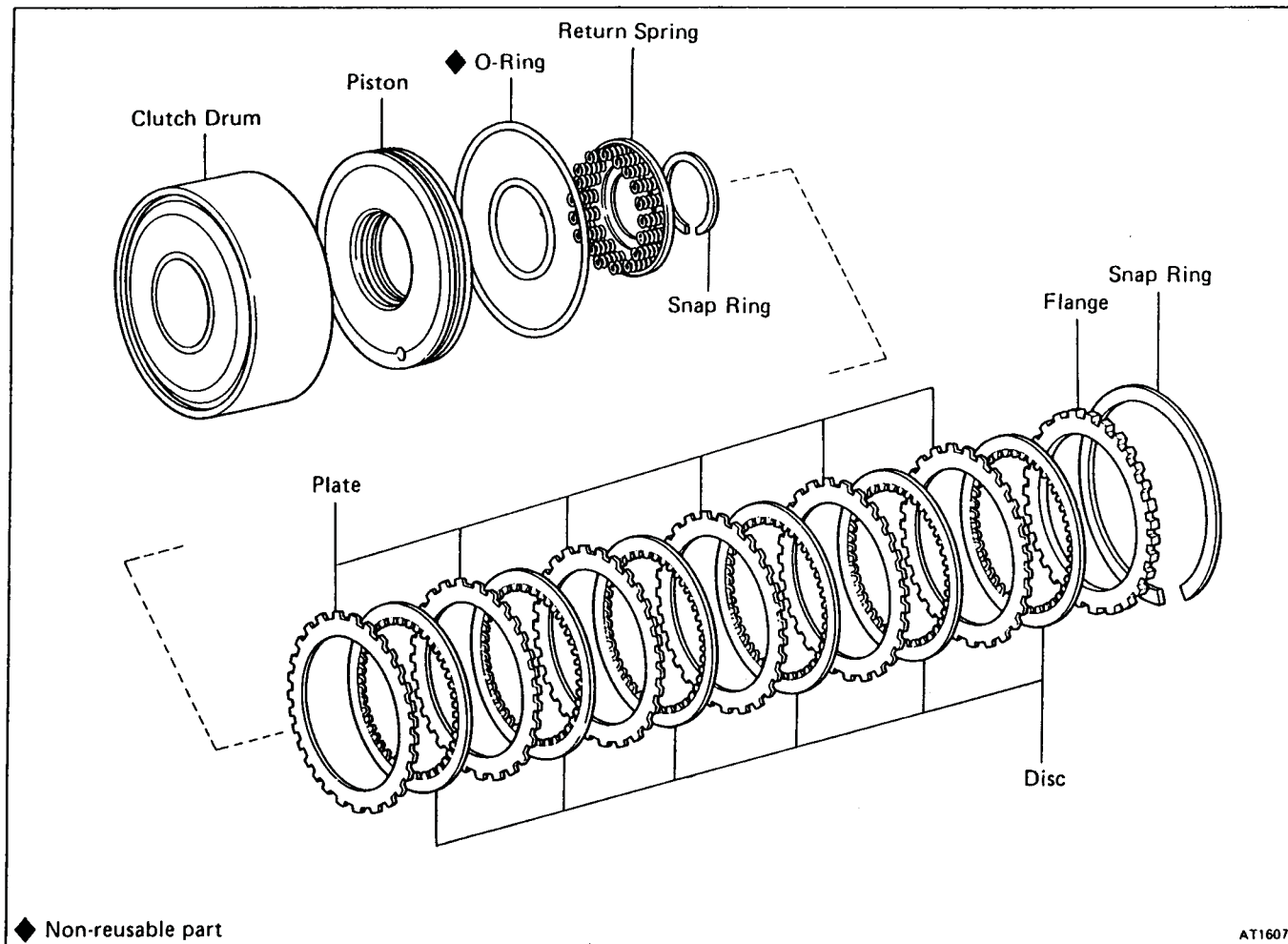
AT1491

- (c) Install the center support to the output shaft.

# Technical Service Information

## TRANSFER FRONT DRIVE CLUTCH (C4)

### COMPONENTS

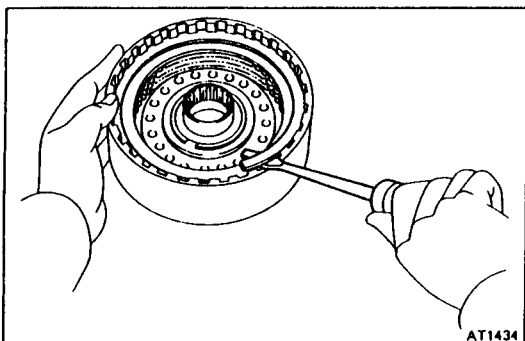


### DISASSEMBLY OF FRONT DRIVE CLUTCH

#### 1. CHECK PISTON STROKE OF FRONT DRIVE CLUTCH

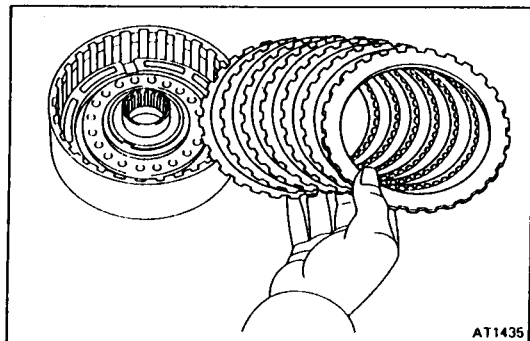
- Install the front drive clutch onto the transfer center support.
- Using a dial indicator, measure the piston stroke while applying and releasing compressed air (4–8 kg/cm<sup>2</sup>, 57–114 psi or 392–784 kPa) as shown.

Standard piston stroke: 2.38 – 3.22 mm  
(0.0937 – 0.1268 in.)



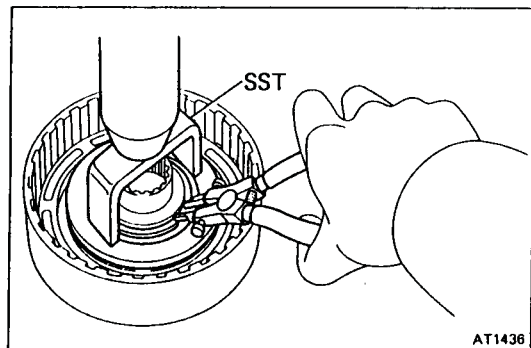
#### 2. REMOVE SNAP RING FROM CLUTCH DRUM

Using a screwdriver, remove the snap ring from the clutch drum.



## 3. REMOVE FLANGE, DISC AND PLATES

Disc : 6 pieces  
Plate: 6 pieces

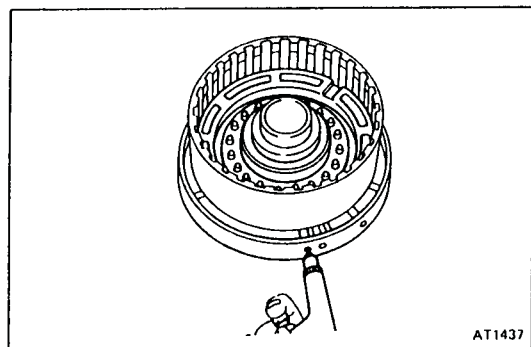


## 4. COMPRESS PISTON RETURN SPRINGS AND REMOVE SNAP RING

Place SST on the return spring and compress the springs with a shop press. Using snap ring pliers, remove the snap ring.

SST 09320-89010

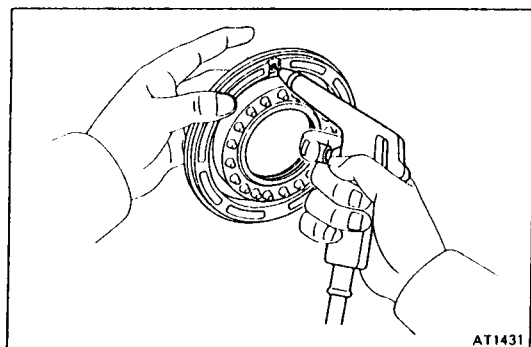
## 5. REMOVE RETURN SPRING



## 6. REMOVE FRONT DRIVE CLUTCH PISTON

- Place the direct clutch on the transfer center support.
- Apply compressed air to the center support to remove the piston. (If the piston does not come out completely, use needle-nose pliers to remove it.)
- Remove the front drive clutch drum from the center support.

## 7. REMOVE CLUTCH PISTON O-RING



## INSPECTION OF FRONT DRIVE CLUTCH

### 1. INSPECT CLUTCH PISTON

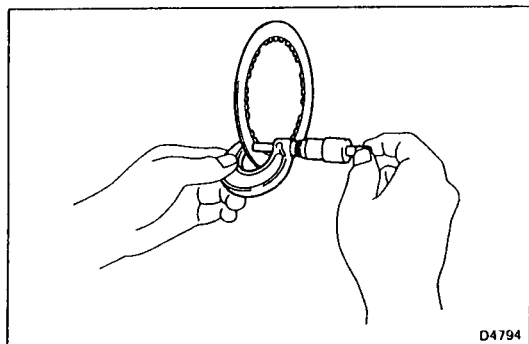
- Check that check ball is free by shaking the piston.
- Check that the valve does not leak by applying low-pressure compressed air.

### 2. CHECK DISCS

Using a micrometer, measure the thickness of the discs.

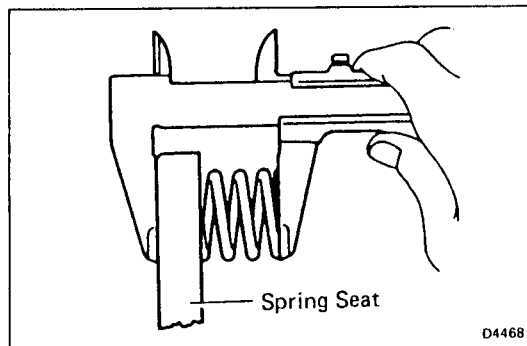
Minimum thickness: 1.50 mm (0.0591 in.)

If the thickness is less than the minimum, replace the discs.





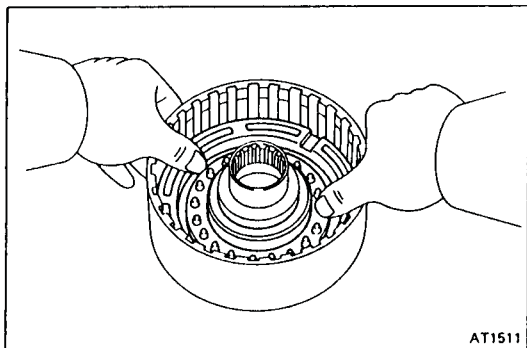
## Technical Service Information



### 3. INSPECT RETURN SPRING

Check for damage, squareness, rust and collapsed coils. Measure the spring free length and replace it if less than specification.

Free length: 23.9 mm (0.941 in.)



## ASSEMBLY OF FRONT DRIVE CLUTCH

### 1. INSTALL CLUTCH PISTON IN FRONT DRIVE CLUTCH DRUM

- Install new O-ring on the piston. Coat the O-ring with ATF.
- Being careful not to damage the O-ring, press the piston into the drum.

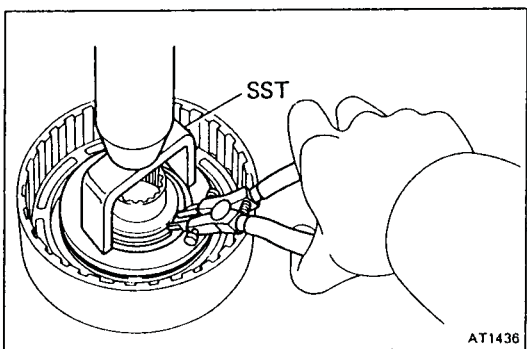
### 2. INSTALL PISTON RETURN SPRING AND SNAP RING IN PLACE

### 3. COMPRESS RETURN SPRING AND INSTALL SNAP RING IN GROOVE

- Place SST on the return spring, and compress the springs with a shop press.

SST 09320-89010

- Install the snap ring with snap ring pliers. Be sure the end gap of snap ring is not aligned with the spring seat claw.

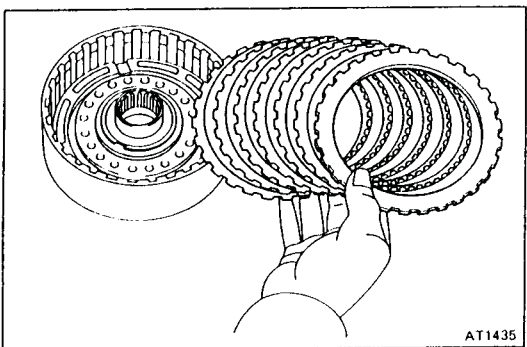


### 4. INSTALL PLATES, DISCS AND FLANGE

Install in order:

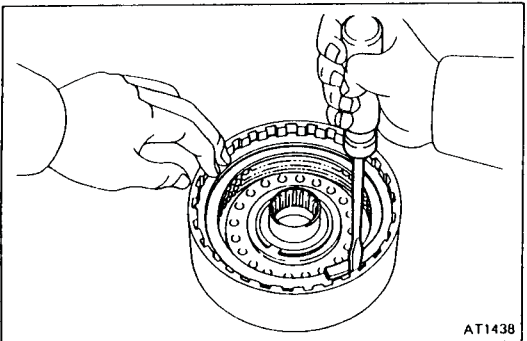
Plate-disc-plate-disc-plate-disc-plate-disc-plate

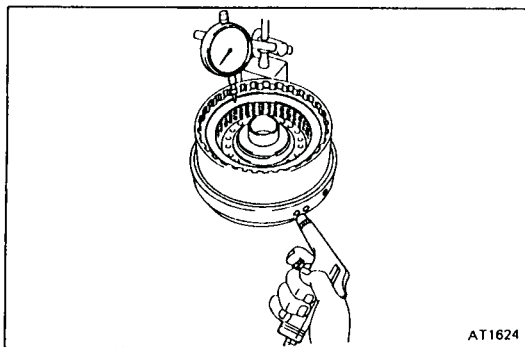
Then install the flange, facing the flat end downward.



### 5. INSTALL OUTER SNAP RING

Check that the end gap of the snap ring is not aligned with one of cutouts.





## 6. RECHECK PISTON STROKE OF FRONT DRIVE CLUTCH

- (a) Install the front drive clutch onto the transfer center support.
- (b) Using a dial indicator, measure the piston stroke applying and releasing the compressed air (4–8 kg/cm<sup>2</sup>, 57–114 psi or 392–784 kPa) as shown.

**Standard piston stroke:** 2.38 – 3.22 mm  
(0.0937 – 0.1268 in.)

If the piston stroke exceeds the limit, replace the discs and recheck the piston stroke.

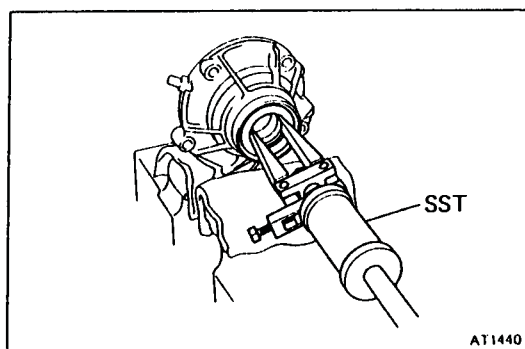
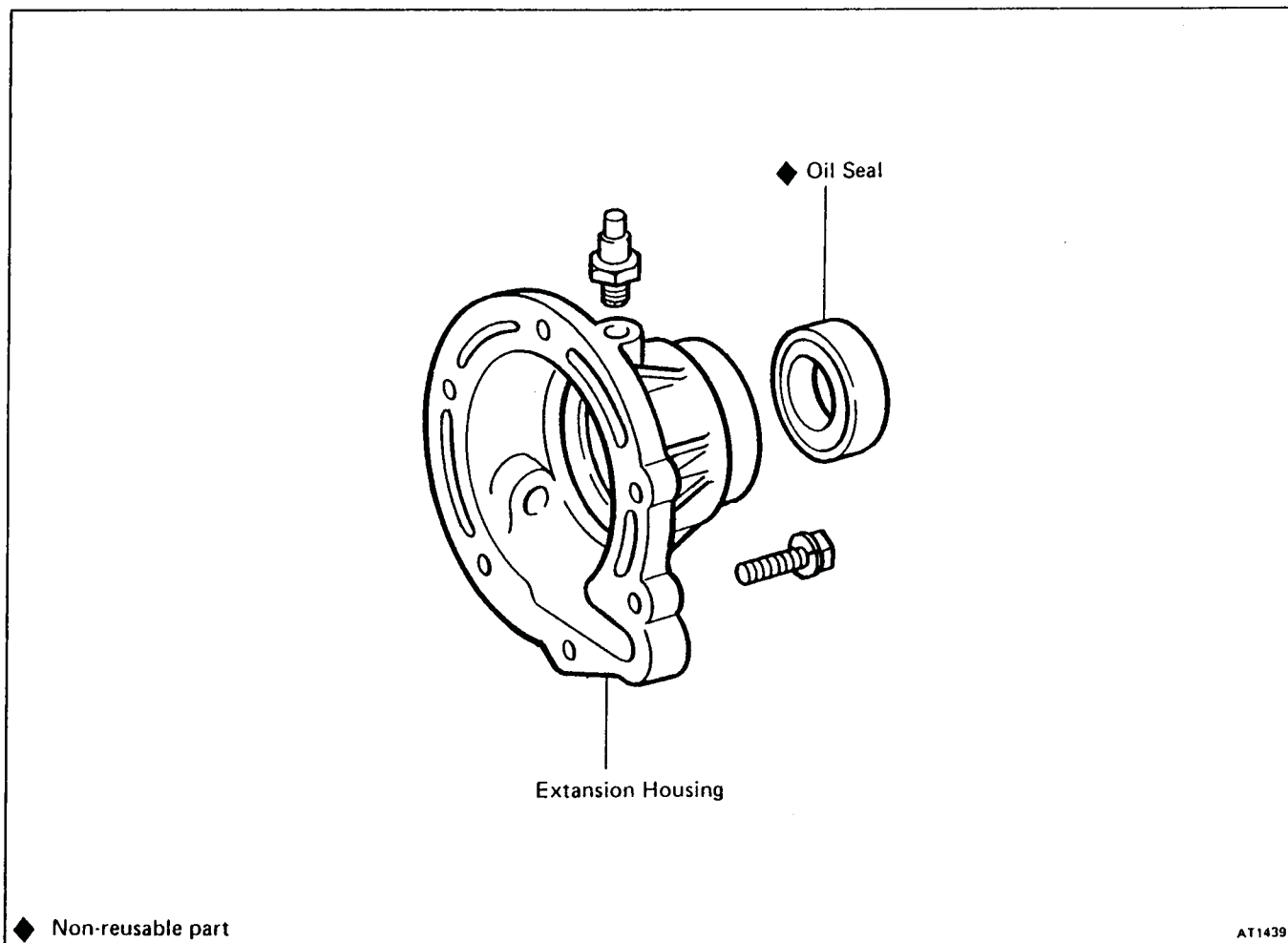
If the piston stroke is less than the limit, parts may be mis-assembled and reinstall them.



# Technical Service Information

## EXTENSION HOUSING

### COMPONENTS



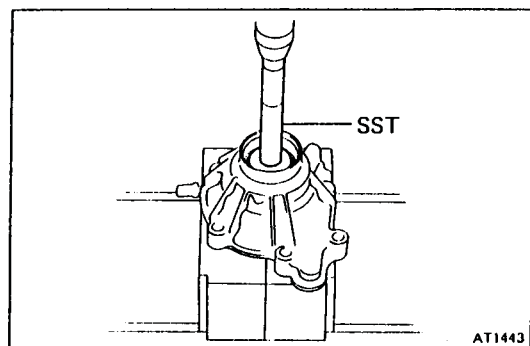
### DISASSEMBLY OF EXTENSION HOUSING

NOTE: If the bearing is worn replace the extension housing assembly.

#### REMOVE OUTPUT SHAFT REAR OIL SEAL

Using SST, remove the oil seal.

SST 09308-00010



### ASSEMBLY OF EXTENSION HOUSING

#### INSTALL OUTPUT SHAFT REAR OIL SEAL

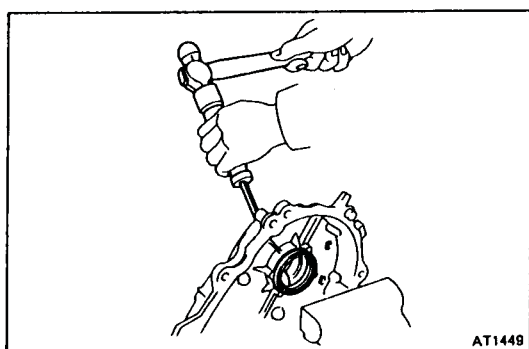
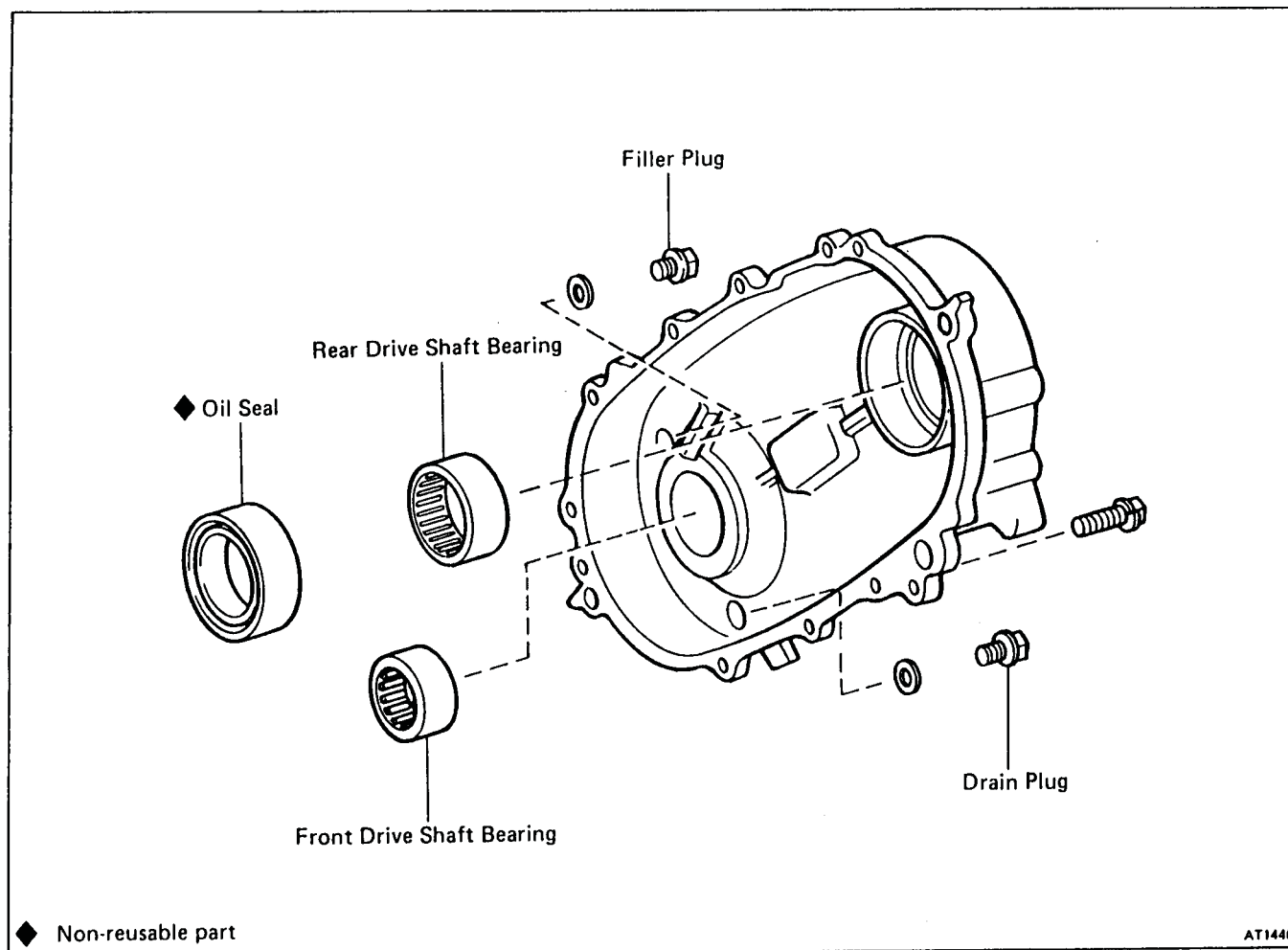
Using SST and press, install the oil seal to the extension housing.

SST 09608-35013



## TRANSFER CHAIN COVER

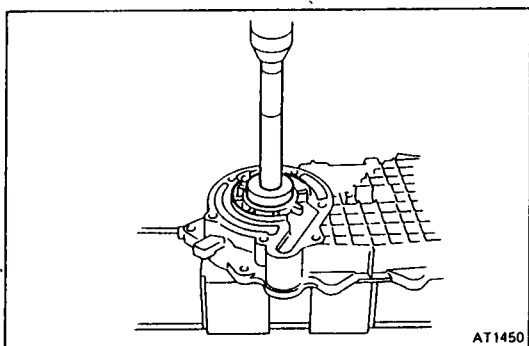
### COMPONENTS



### DISASSEMBLY OF TRANSFER CHAIN COVER

#### 1. REMOVE REAR DRIVE SHAFT OIL SEAL

Using a screwdriver, drive out the oil seal.



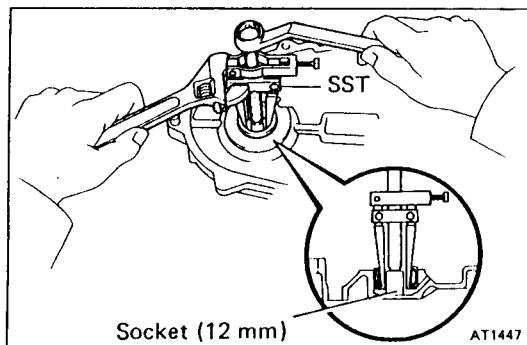
#### 2. REMOVE REAR DRIVE SHAFT BEARING

Using SST and a hammer, drive out the bearing.

SST 09608-35013

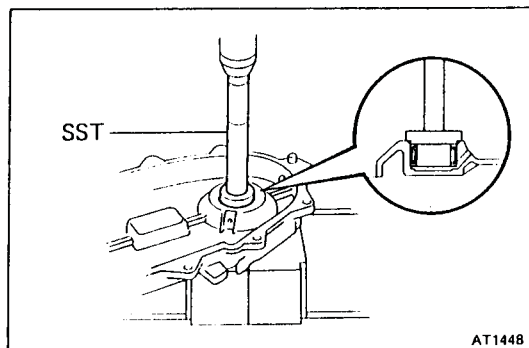


## Technical Service Information



### 3. REMOVE FRONT DRIVE SHAFT BEARING

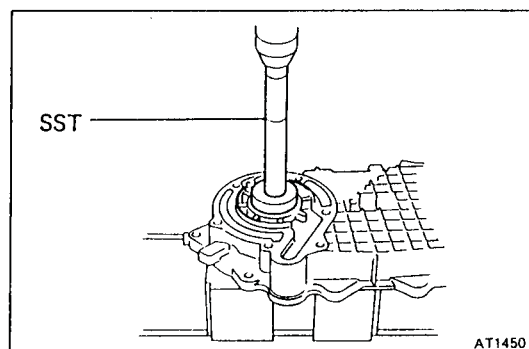
Using SST and socket (12 mm), remove the bearing.  
SST 09308-10010



## ASSEMBLY OF TRANSFER CHAIN COVER

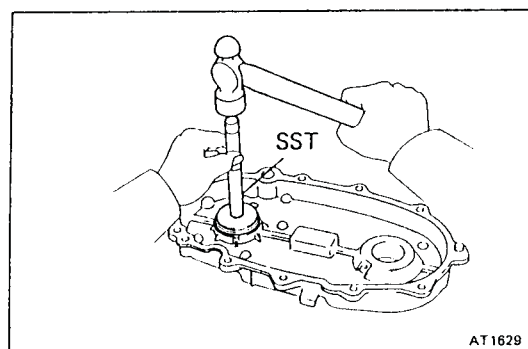
### 1. INSTALL FRONT DRIVE SHAFT BEARING

Using SST and press, press in the bearing to the transfer chain cover.  
SST 09608-20011



### 2. INSTALL REAR DRIVE SHAFT BEARING

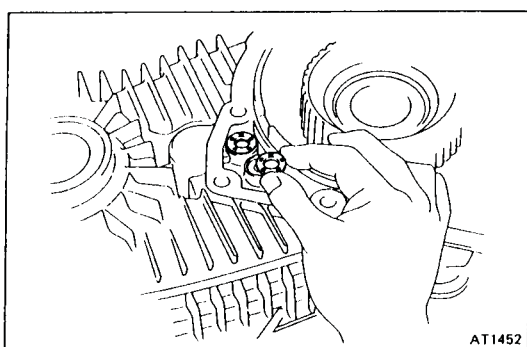
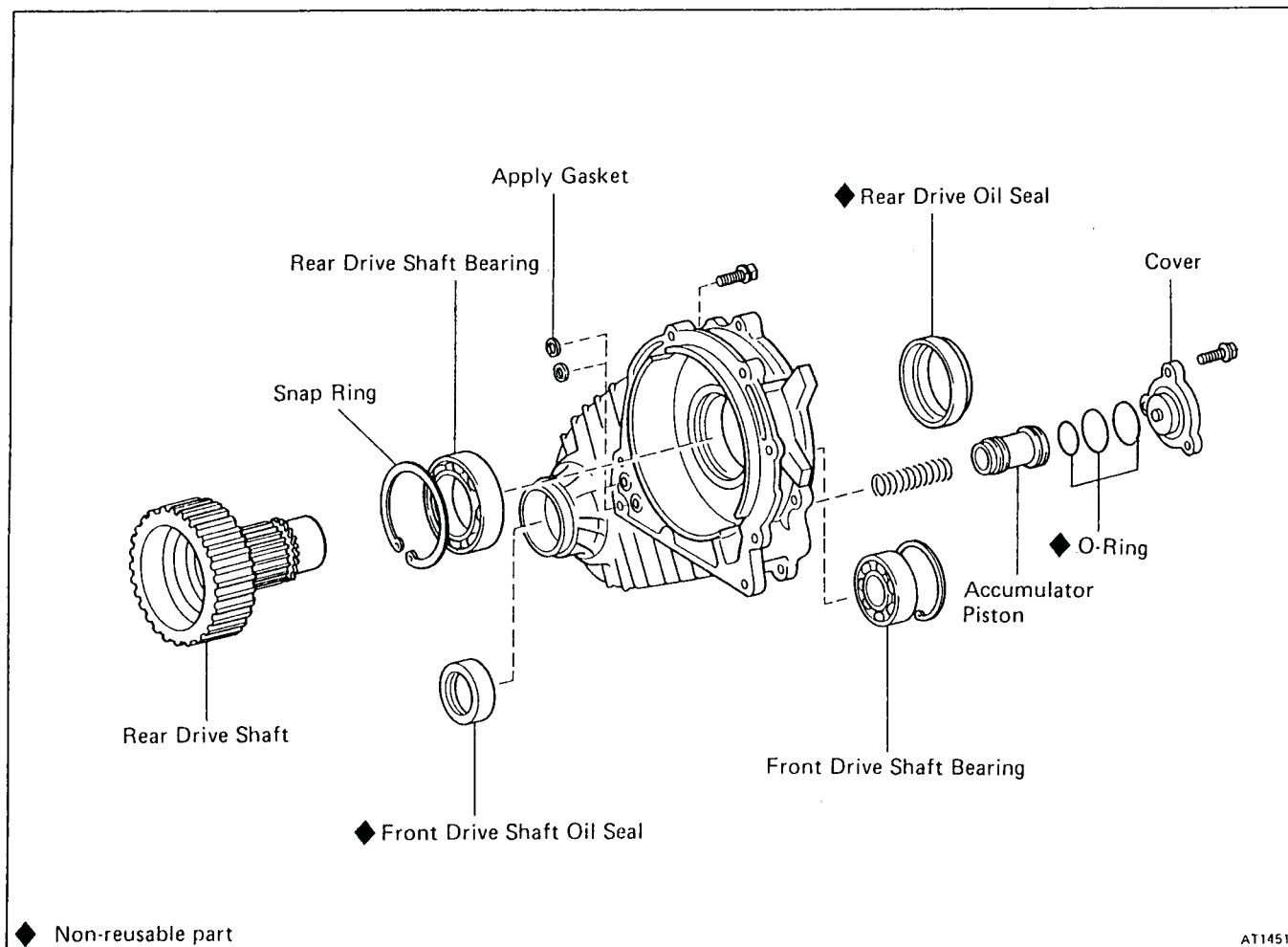
Using SST and press, press in the bearing to the transfer chain cover.  
SST 09608-12010



### 3. INSTALL REAR DRIVE SHAFT OIL SEAL

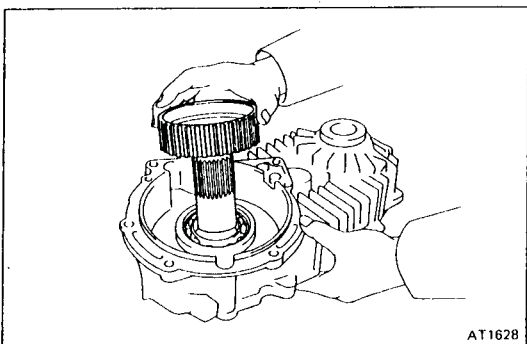
Using SST and a hammer, drive in the oil seal to the transfer chain cover.  
SST 09608-35013

## TRANSFER CHAIN CASE COMPONENTS



### DISASSEMBLY OF TRANSFER CHAIN CASE

#### 1. REMOVE TWO APPLY GASKETS

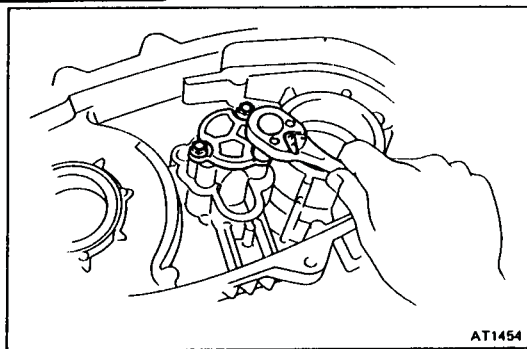


#### 2. REMOVE REAR DRIVE SHAFT

Push out the rear drive shaft from the transfer chain case.

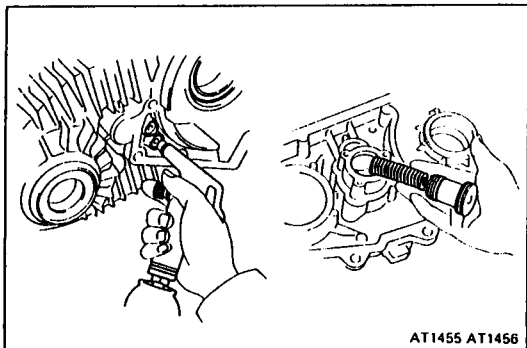


## Technical Service Information

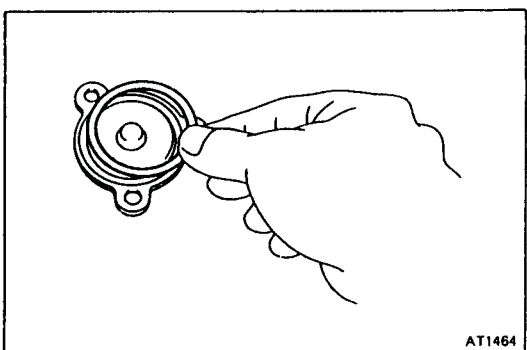


### 3. REMOVE B4 ACCUMULATOR PISTON

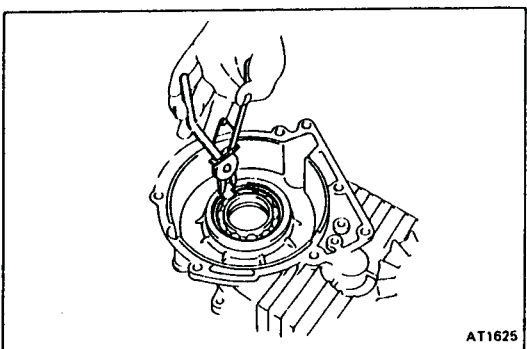
(a) Remove the three bolts and accumulator cover.



(b) Position a rag to catch piston. Using low-pressure compressed air (1 kg/cm<sup>2</sup> or 14 psi, 98 kPa max.) pop each piston into the rag. Force air holes shown, and remove the piston and spring.



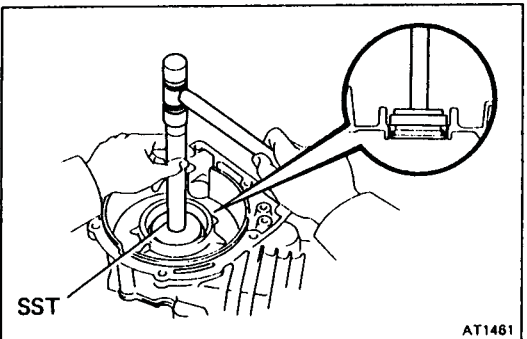
(c) Remove the O-ring from the accumulator cover.



### 4. REMOVE TRANSFER REAR DRIVE SHAFT BEARING

(a) Remove the snap ring.

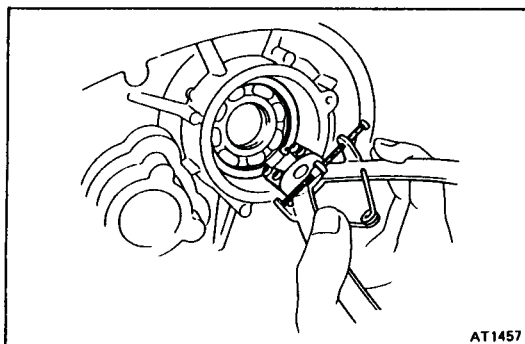
(b) Remove the bearing.



### 5. REMOVE TRANSFER REAR DRIVE SHAFT OIL SEAL

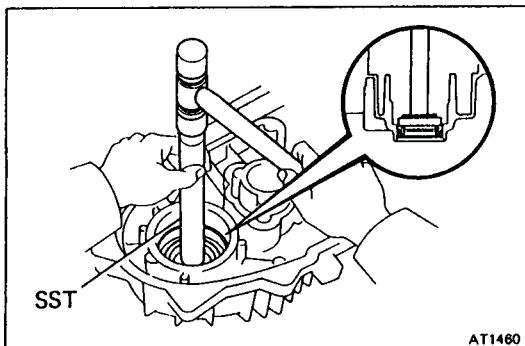
Using SST and a hammer, drive out the oil seal from the transfer chain case.

SST 09608-20011



## 6. REMOVE TRANSFER FRONT DRIVE SHAFT BEARING

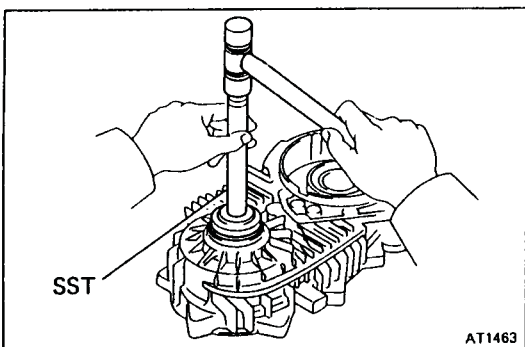
- (a) Remove the snap ring.
- (b) Remove the bearing.



## 7. REMOVE TRANSFER FRONT DRIVE SHAFT OIL SEAL

Using SST and a hammer, drive out the oil seal from the transfer chain case.

SST 09308-00010

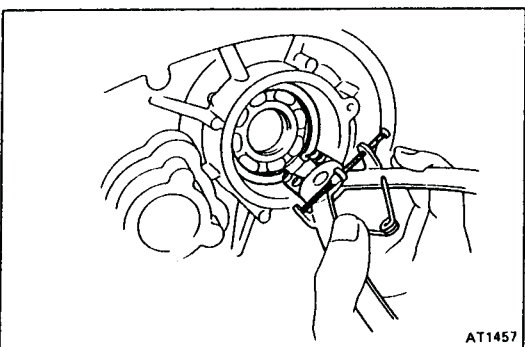


## ASSEMBLY OF TRANSFER CHAIN CASE

### 1. INSTALL TRANSFER FRONT DRIVE SHAFT OIL SEAL

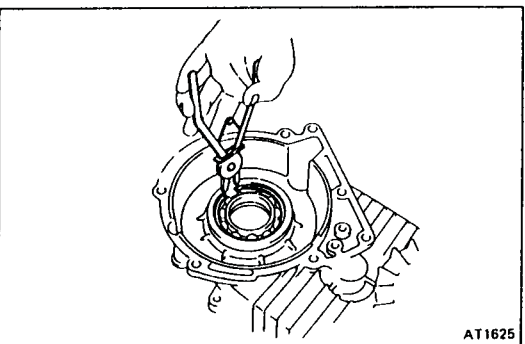
Using SST and a hammer, drive in the front oil seal.

SST 09608-35013



### 2. INSTALL TRANSFER FRONT DRIVE SHAFT BEARING

- (a) Install the bearing to the transfer chain case.
- (b) Install the snap ring to the transfer case.

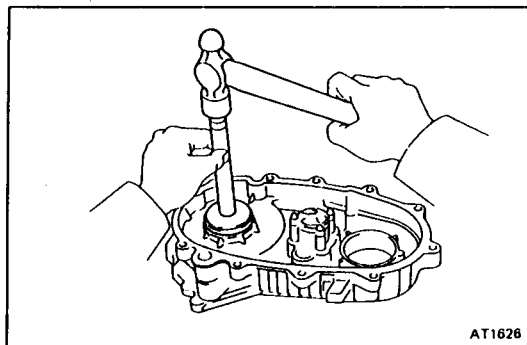


### 3. INSTALL REAR DRIVE SHAFT BEARING

- (a) Install the front bearing.
- (b) Install the snap ring.



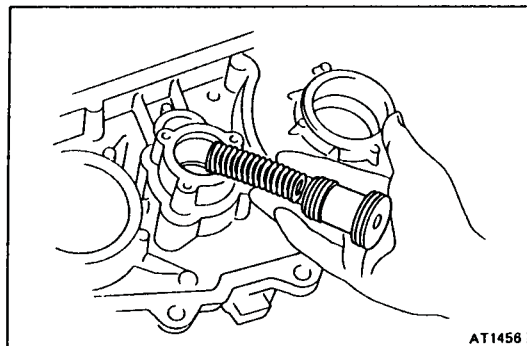
## Technical Service Information



### 4. INSTALL REAR DRIVE SHAFT OIL SEAL

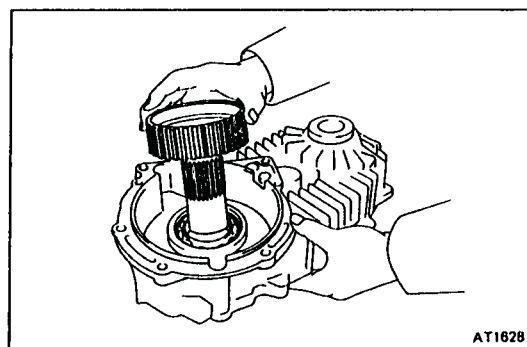
Using SST and a hammer, drive in the oil seal to the transfer case.

SST 09608-35013

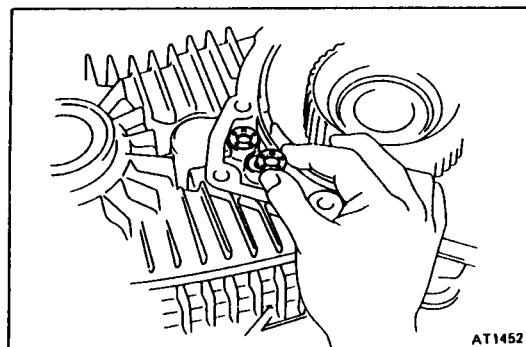


### 5. INSTALL B<sub>4</sub> ACCUMULATOR PISTON

- Install the new O-ring to the accumulator cover.
- Install the accumulator piston.
- Install the accumulator piston cover and torque the three bolts.

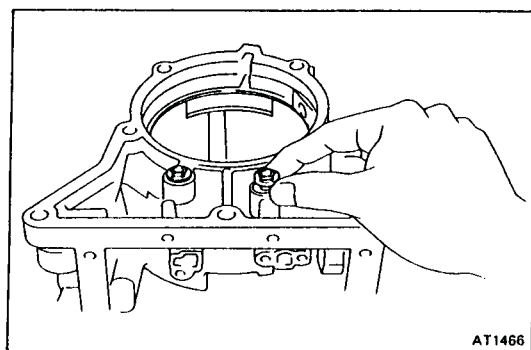
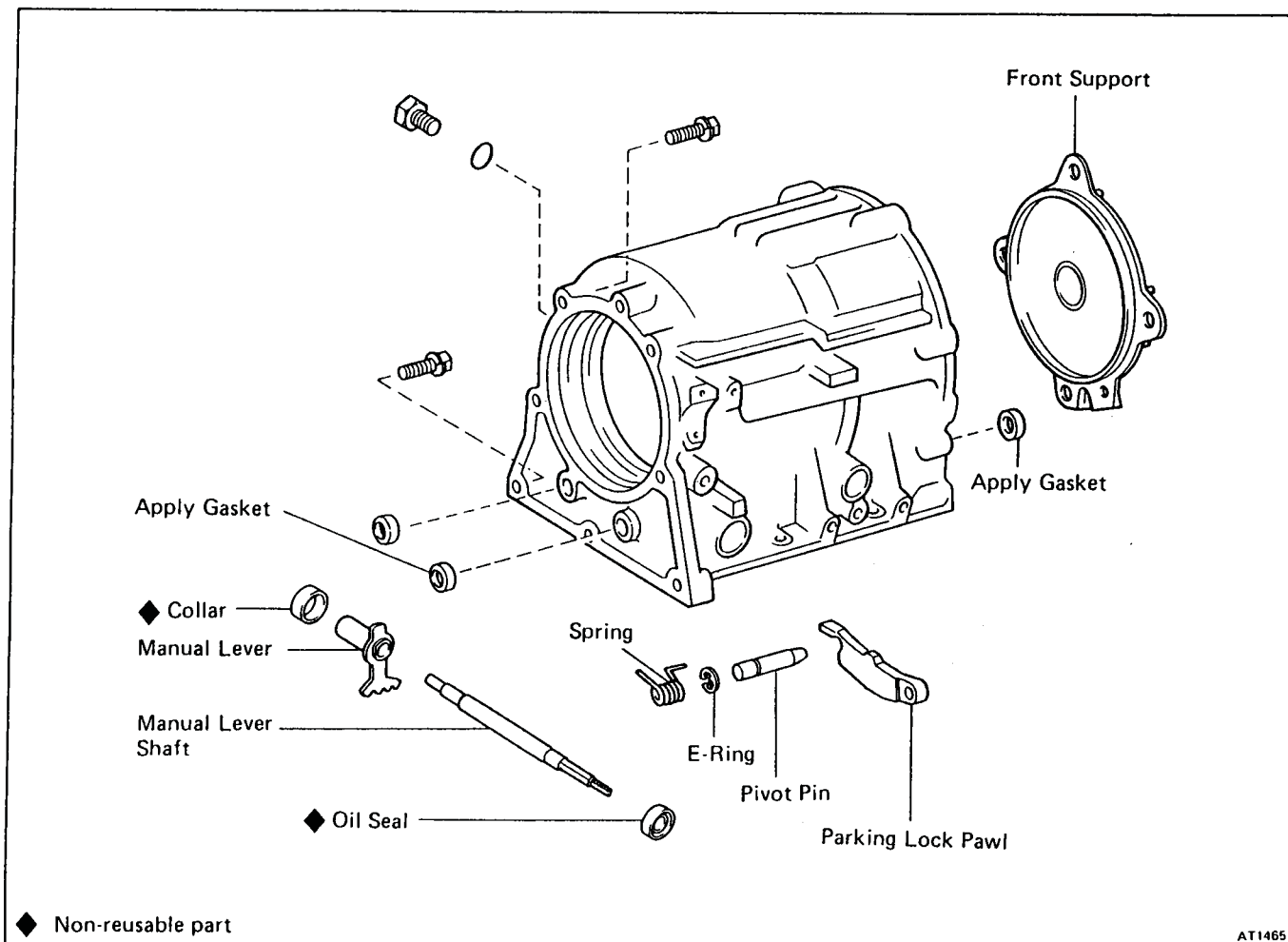


### 6. INSTALL REAR DRIVE SHAFT



### 7. INSTALL TWO APPLY GASKET

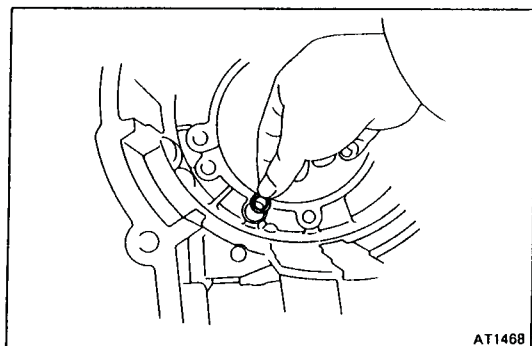
## TRANSFER CASE AND FRONT SUPPORT COMPONENTS



### DISASSEMBLY OF TRANSFER CASE AND FRONT SUPPORT

#### 1. REMOVE THREE APPLY GASKETS

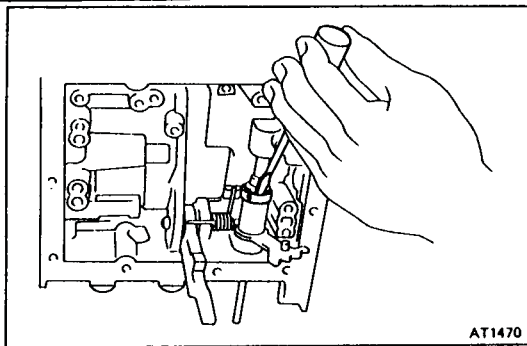
- (a) Remove the two apply gaskets from the transfer case front side.



- (b) Remove the apply gasket from the transfer case inner side.

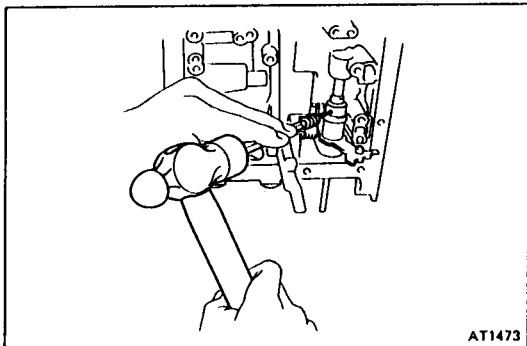


## Technical Service Information



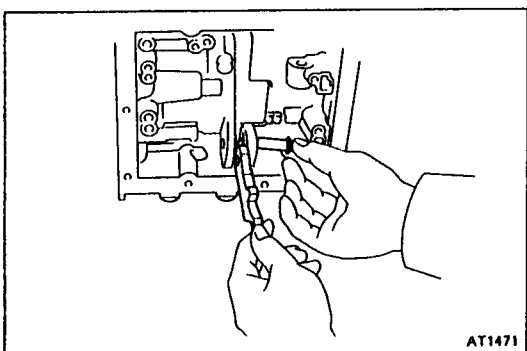
### 2. REMOVE TRANSFER MANUAL LEVER AND SHAFT

(a) Using a hammer and screwdriver, pry and shift the collar.

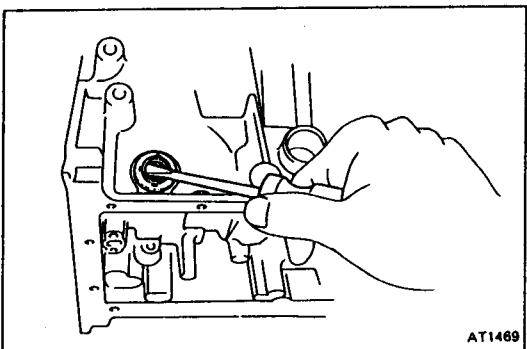


(b) Using a hammer and punch, drive out the pin.

(c) Slide the shaft out case and remove the manual lever.

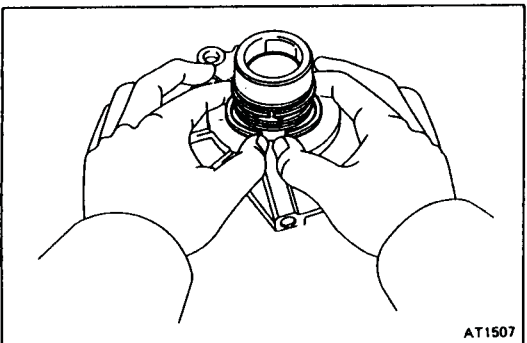


### 3. REMOVE SPRING, PIVOT PIN AND PARKING LOCK PAWL



### 4. REMOVE MANUAL LEVER SHAFT OIL SEAL

Using a screwdriver, remove the oil seal from the case.



### 5. REMOVE TWO OIL SEAL RINGS FROM FRONT SUPPORT



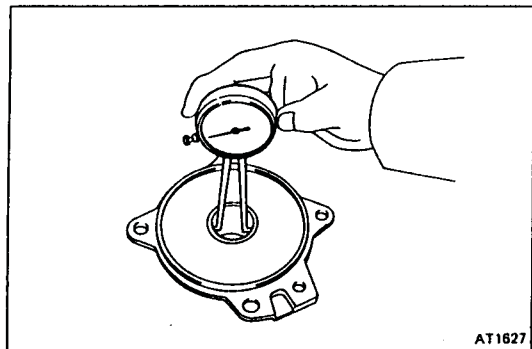
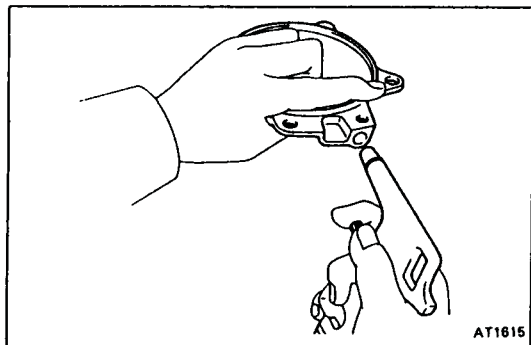


## Technical Service Information

### INSPECTION OF FRONT SUPPORT

#### INSPECT FRONT SUPPORT

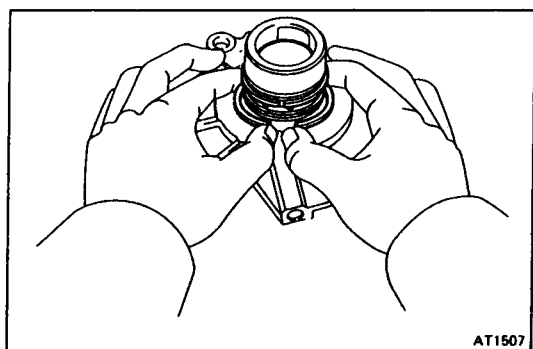
- (a) Check that check ball is free by shaking the front support.
- (b) Check that the valve does not leak by applying low pressure compressed air.



- (c) Using a dial indicator, measure the inside diameter of the front support bushing.

Maximum inside diameter: 31.40 mm (1.2362 in.)

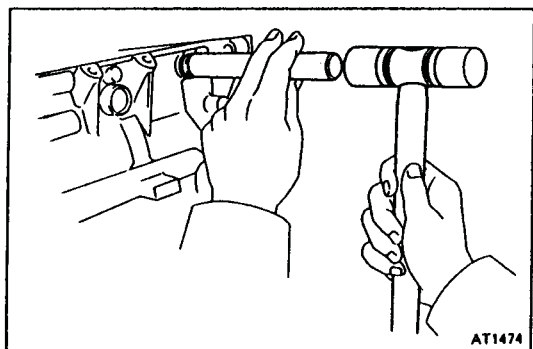
If the inside diameter is greater than the maximum, replace the front support.



### ASSEMBLY OF TRANSFER CASE AND FRONT SUPPORT

#### 1. INSTALL TWO OIL SEAL RINGS TO FRONT SUPPORT

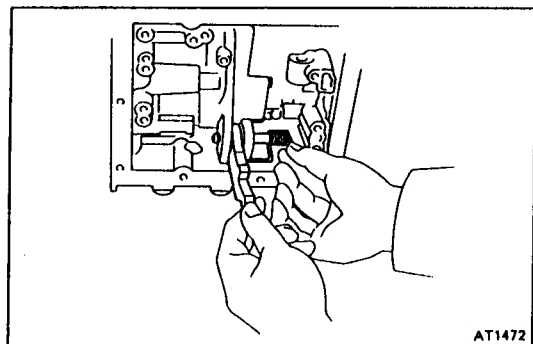
**CAUTION:** Do not spread the ring ends more than necessary.



#### 2. INSTALL MANUAL LEVER SHAFT OIL SEAL

Using SST and a hammer, drive in the new oil seal to the case.

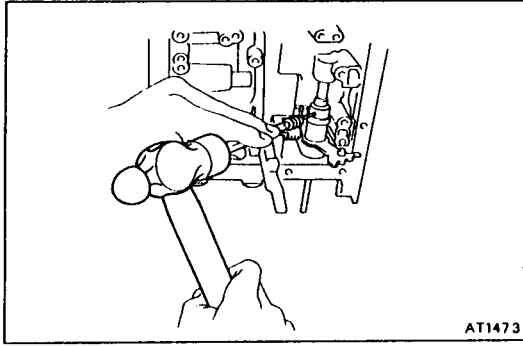
SST 09608-35013



#### 3. INSTALL PARKING LOCK PAWL, PIVOT PIN AND SPRING IN CASE



## Technical Service Information

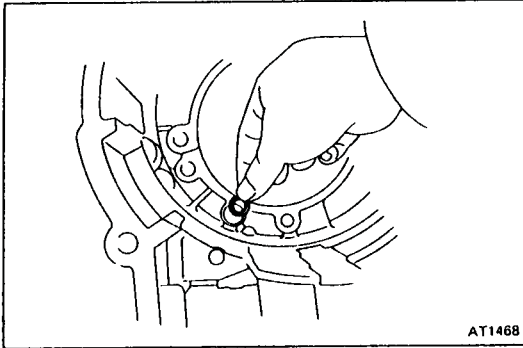


#### 4. INSTALL TRANSFER MANUAL VALVE LEVER SHAFT INTO CASE

- (a) Assemble the new collar to the manual lever.

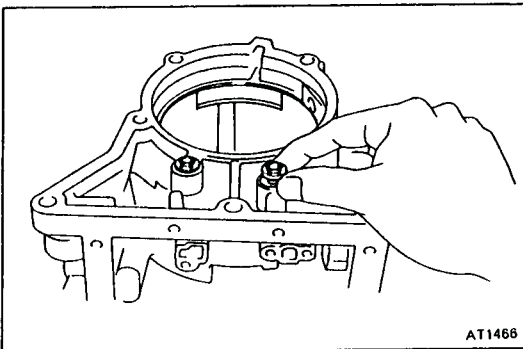
**NOTE:** Always replace the collar and roll pin with a new one. Never reuse a pin after it has been removed.

- (b) Install the manual valve lever shaft to the transfer mission case through the manual valve lever.
- (c) Drive in a new roll pin with the slot at a right angle to the shaft.
- (d) Match the collar hole to the lever calking hollow and calk the collar to the lever.



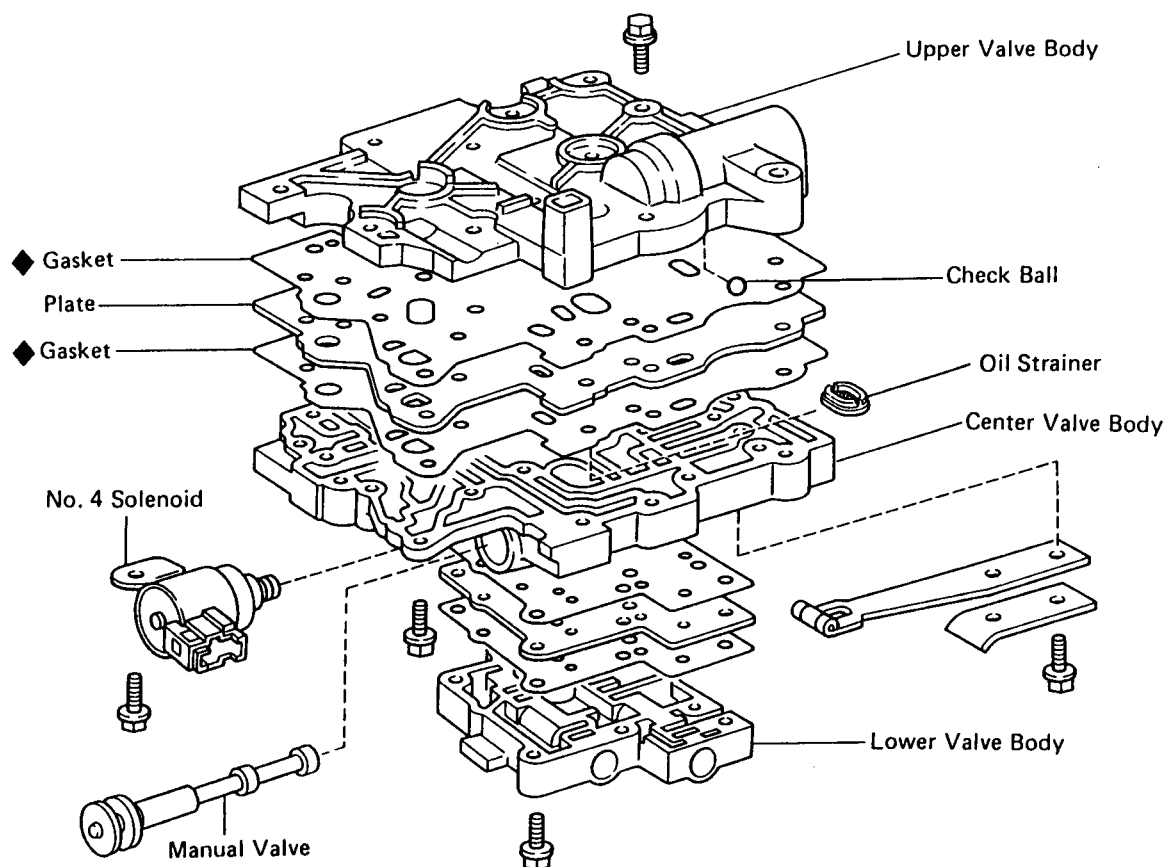
#### 5. INSTALL THREE APPLY GASKETS

- (a) Install the apply gasket to the transfer case inner side.



- (b) Install the two apply gaskets to the transfer case front side.

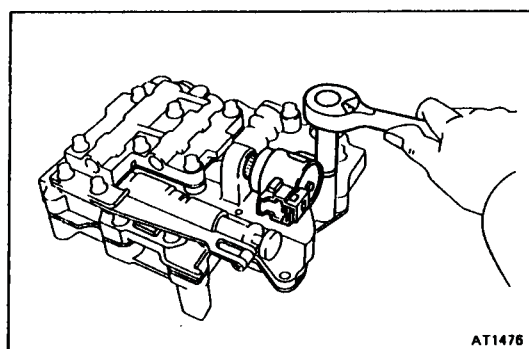
## TRANSFER VALVE BODY COMPONENTS



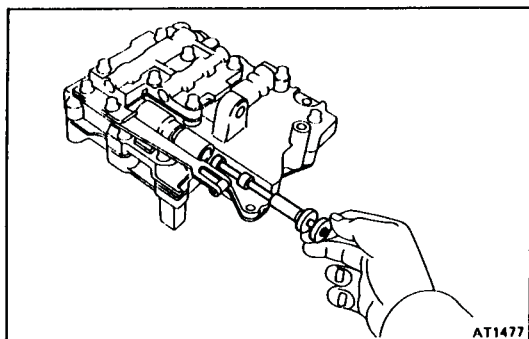
AT1475

### DISASSEMBLY OF TRANSFER VALVE BODY

1. REMOVE NO. 4 SOLENOID

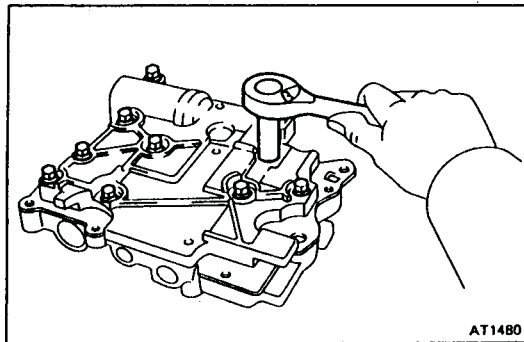


2. REMOVE MANUAL VALVE
3. REMOVE DETENT SPRING

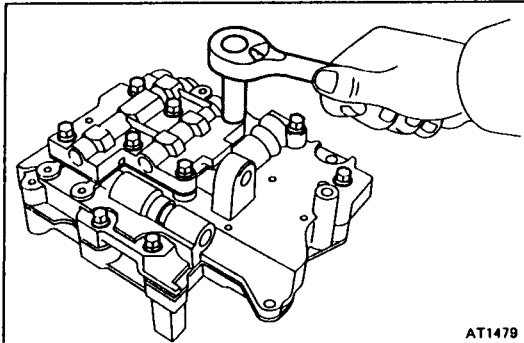




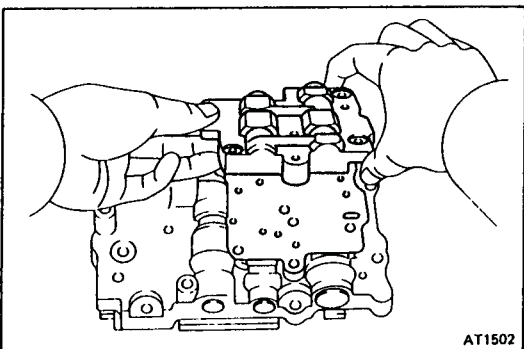
## Technical Service Information



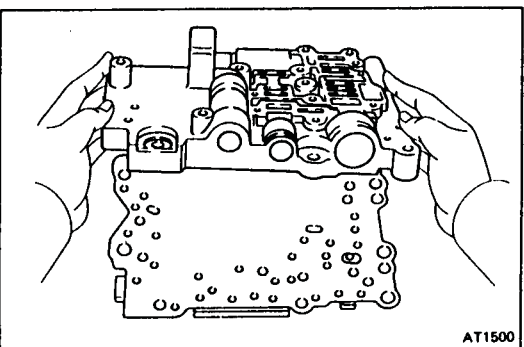
4. REMOVE NINE BOLTS FROM UPPER VALVE BODY



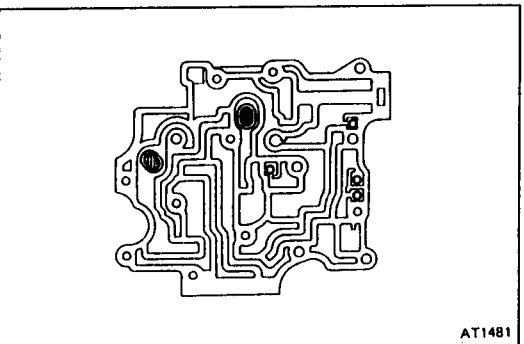
5. TURN ASSEMBLY OVER AND REMOVE TEN BOLTS FROM LOWER AND CENTER VALVE BODY



6. LIFT OFF LOWER VALVE BODY  
(a) Remove the lower valve body.  
(b) Remove the plate and two gaskets.



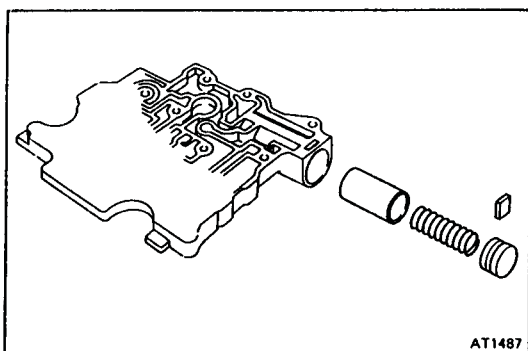
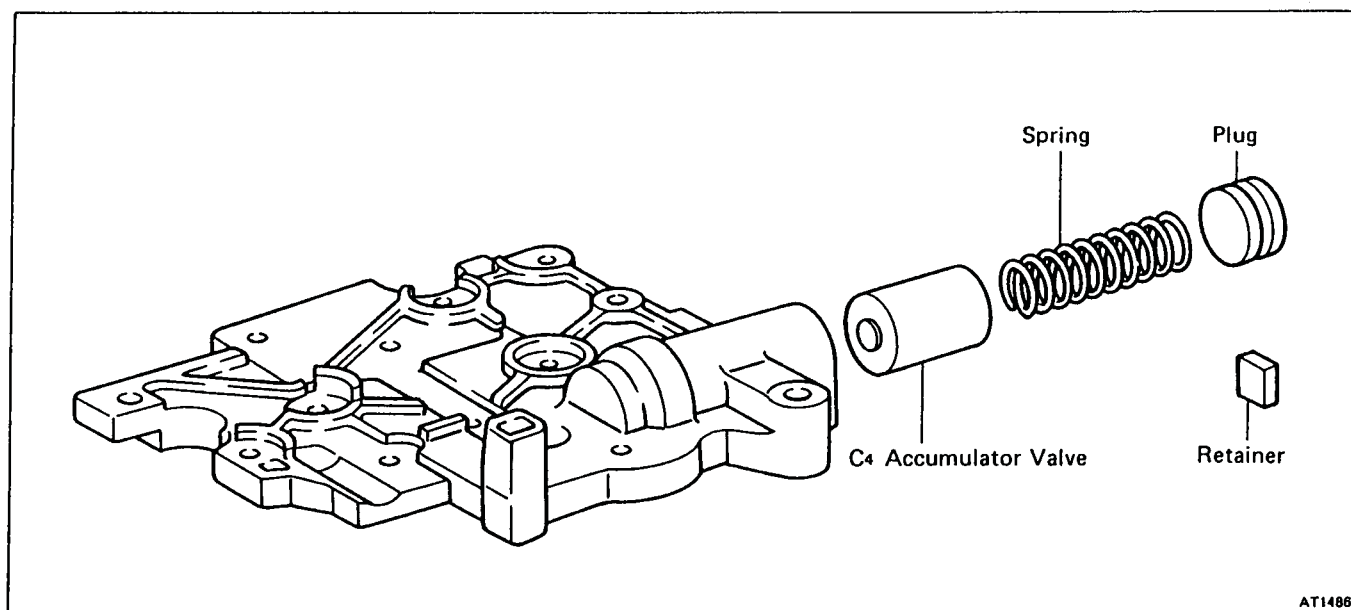
7. LIFT OFF CENTER VALVE BODY  
(a) Remove the center valve body.  
(b) Remove the plate and two gaskets.



8. REMOVE OIL STRAINER AND CHECK BALL  
Remove the two oil strainers and four check balls from the upper valve body.

## Upper Valve Body

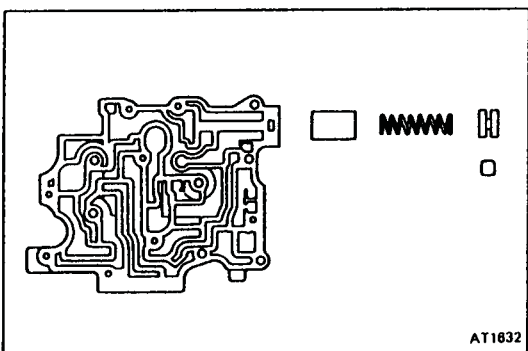
### COMPONENTS



### DISASSEMBLY OF UPPER VALVE BODY

#### REMOVE C<sub>3</sub> ACCUMULATOR VALVE

- Remove the retainer and plug.
- Remove the accumulator valve and spring.

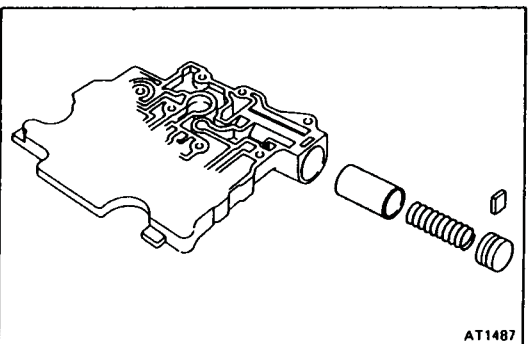


### INSPECTION OF UPPER VALVE BODY

#### INSPECT ACCUMULATOR VALVE SPRING

Check for damage, squareness, rust and collapsed coils. Measure the spring free height and replace it if less than that specification.

Free length: 55.7 mm (2.193 in.)



### ASSEMBLY OF UPPER VALVE BODY

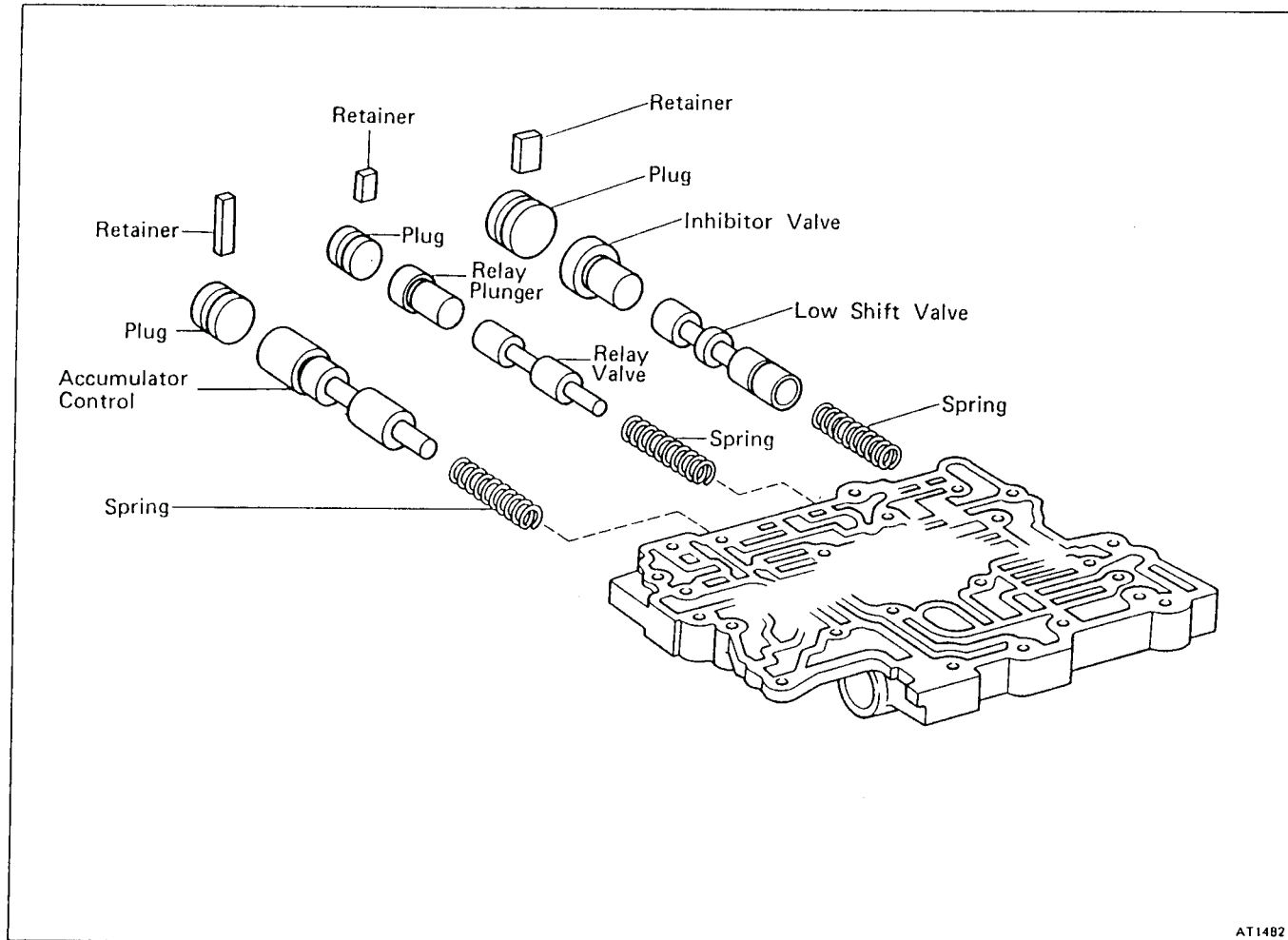
#### INSTALL C<sub>3</sub> ACCUMULATOR VALVE

- Install the accumulator valve and spring to the valve body.
- Install the retainer and plug.

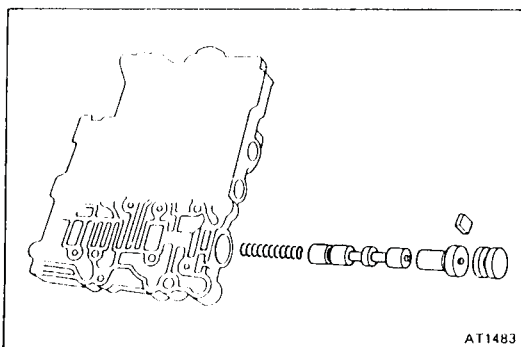
# Technical Service Information

## Center Valve Body

### COMPONENTS



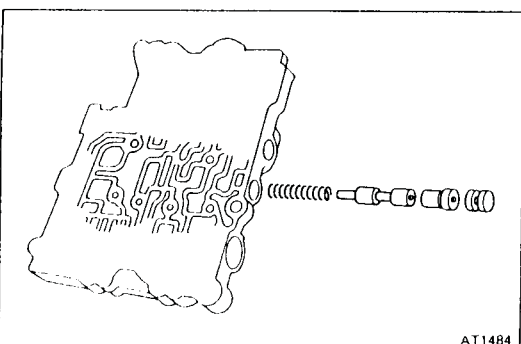
AT1482



### DISASSEMBLY OF CENTER VALVE BODY

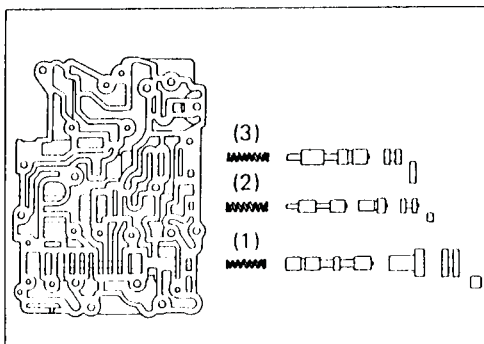
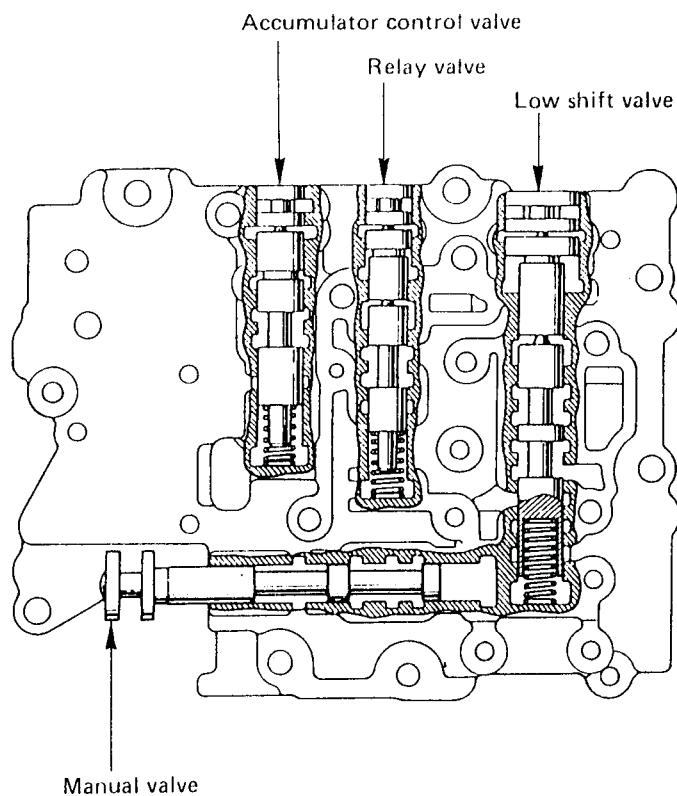
#### 1. REMOVE LOW SHIFT VALVE AND INHIBITOR VALVE

- (a) Remove the retainer and plug.
- (b) Remove the low shift valve and inhibitor valve.



#### 2. REMOVE RELAY VALVE AND RELAY PLUNGER

- (a) Remove the retainer and plug.
- (b) Remove the relay valve, relay plunger and spring.



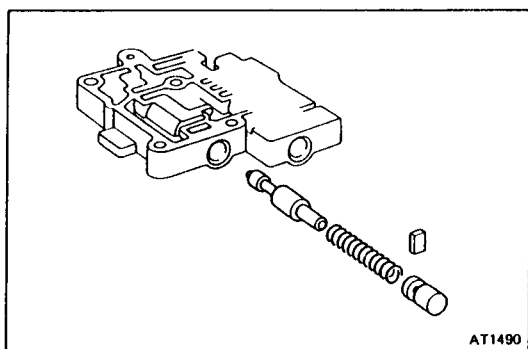
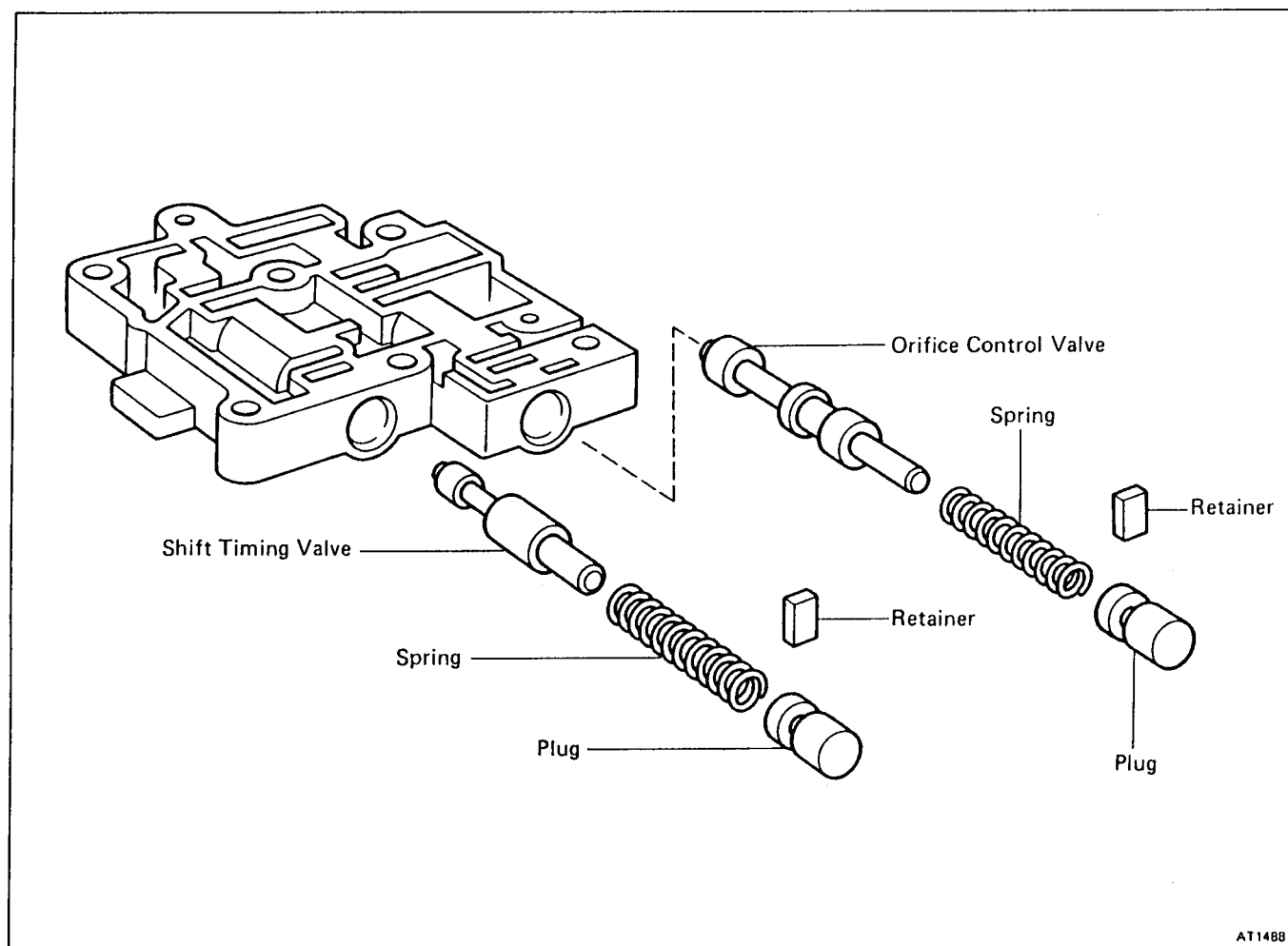
## INSPECTION AND REPAIR

### Inspect valve spring

Check for damage, squareness, rust and collapsed coils. Measure the spring free height and replace it if less than that shown below.

Spring	Free length mm(in.)
(1) Low shift valve	29.2 (1.150)
(2) Relay valve	31.7 (1.248)
(3) Accumulator control valve	29.3 (1.154)

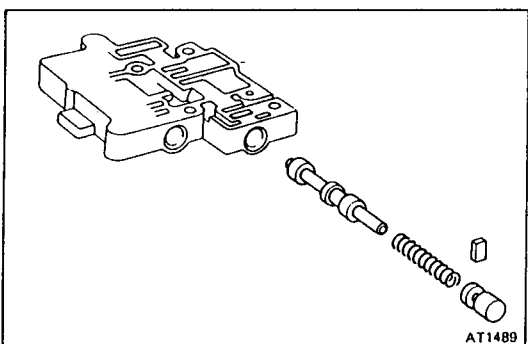
## Lower Valve Body COMPONENTS



### DISASSEMBLY OF LOWER VALVE BODY

#### 1. REMOVE SHIFT TIMING VALVE

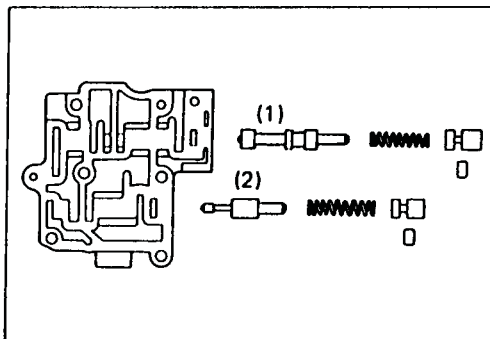
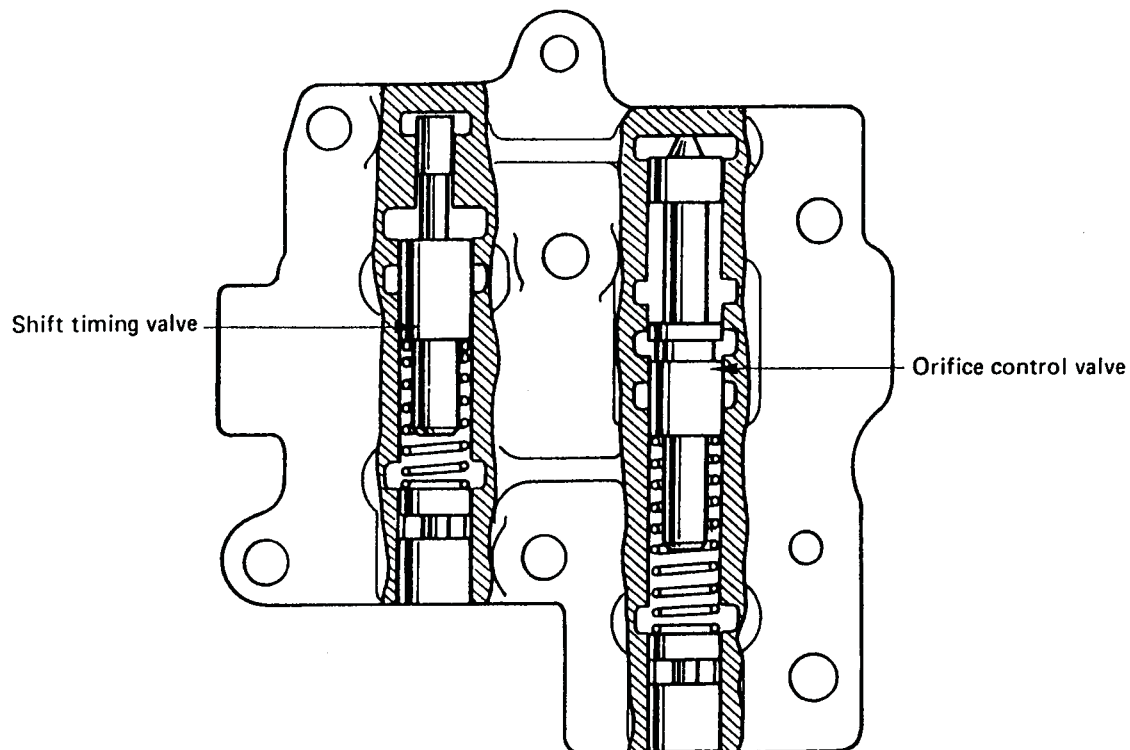
- (a) Remove the plug and retainer.
- (b) Remove the shift timing valve and spring from the lower valve body.



#### 2. REMOVE ORIFICE CONTROL VALVE

- (a) Remove the plug and retainer.
- (b) Remove the orifice control valve and spring from the lower valve body.





## INSPECTION AND REPAIR

### Inspect valve spring

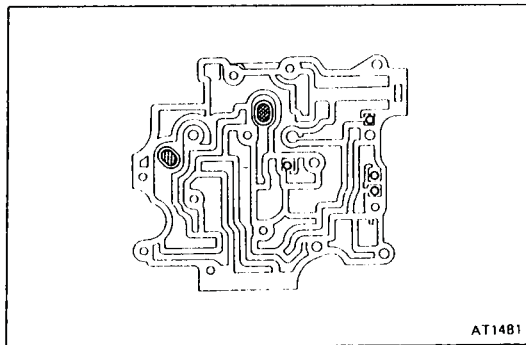
Check for damage, squareness, rust and distorted coils. Measure the spring free height and replace it if less than that shown below.

Free length	mm(in.)
(1) Orifice control valve	29.7 (1.169)
(2) Shift timing valve	33.1 (1.303)

## ASSEMBLY OF TRANSFER VALVE BODY

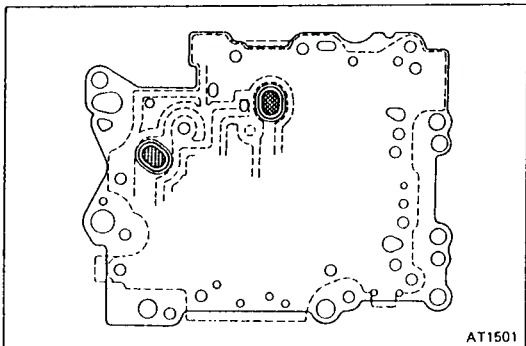
### 1. INSTALL OIL STRAINER AND CHECK BALL

Install the two oil strainer and four check balls to the upper valve body.

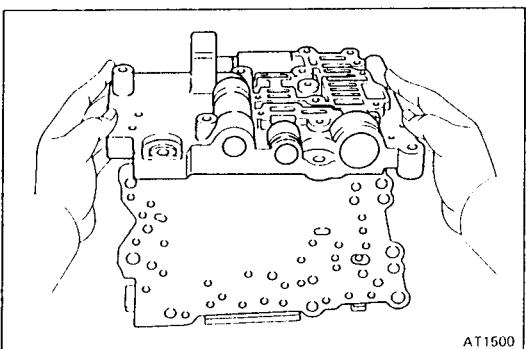


### 2. POSITION NEW GASKET AND PLATE ON UPPER VALVE BODY

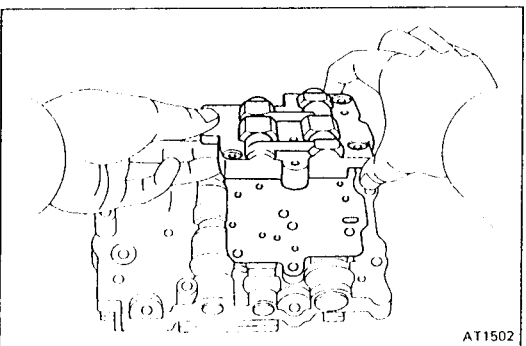
Make sure that the new gasket matches the old gasket before installation. Align the gasket at the lower right corner. And align the oil strainer and oil strainer hole of the gaskets and plate.



### 3. PLACE CENTER VALVE BODY ON TOP OF UPPER REAR VALVE BODY

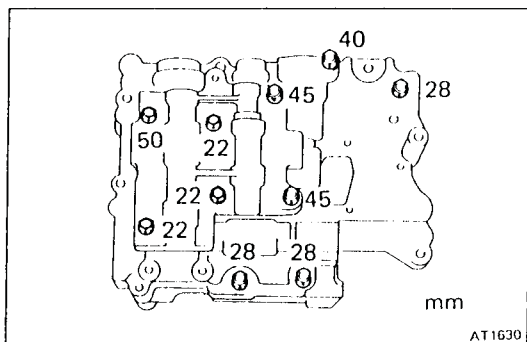


### 4. PLACE LOWER VALVE BODY WITH PLATE AND GASKETS ON TOP OF CENTER VALVE BODY



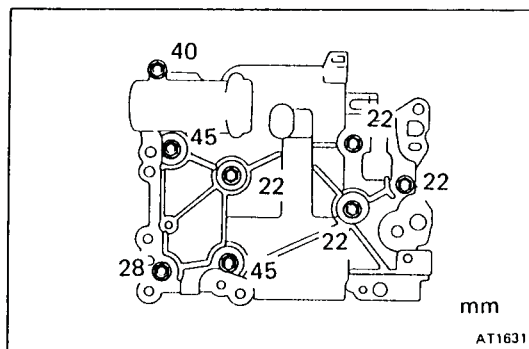
### 5. INSTALL AND HAND TIGHTEN TEN BOLTS IN LOWER AND CENTER VALVE BODY TO SECURE UPPER VALVE BODY

NOTE: Each bolt length (mm) is indicated in the figure.



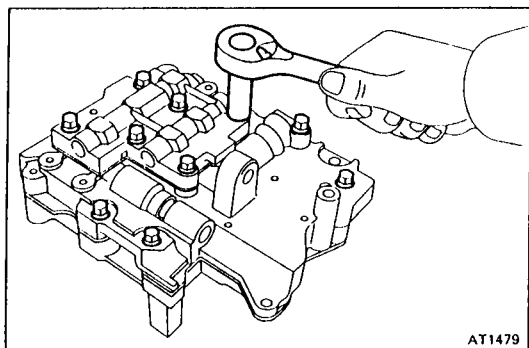


## Technical Service Information



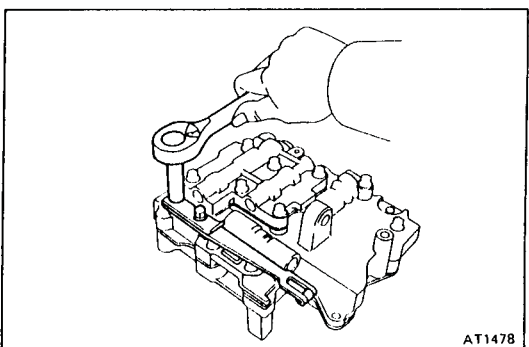
6. TURN ASSEMBLY OVER, CHECK GASKET ALIGNMENT AND HAND TIGHTEN EIGHT BOLTS IN UPPER VALVE BODY

NOTE: Each bolt length (mm) is indicated in the figure.



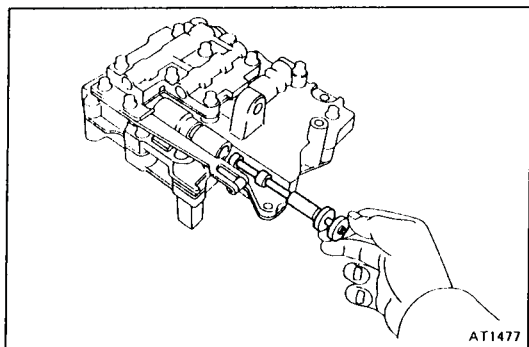
7. TIGHTEN BOLTS ON BOTH SIDES

Torque: 70 kg-cm (61 in.-lb, 6.9 N-m)

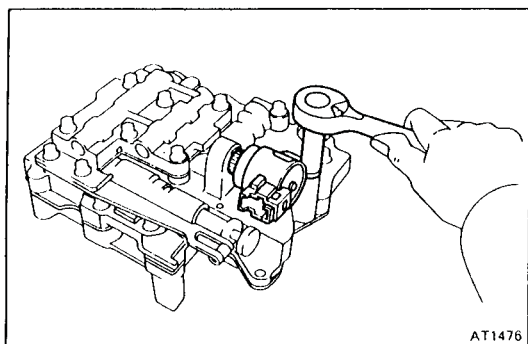


8. INSTALL DETENT SPRING

Torque: 70 kg-cm (61 in.-lb, 6.9 N-m)



9. INSERT MANUAL VALVE



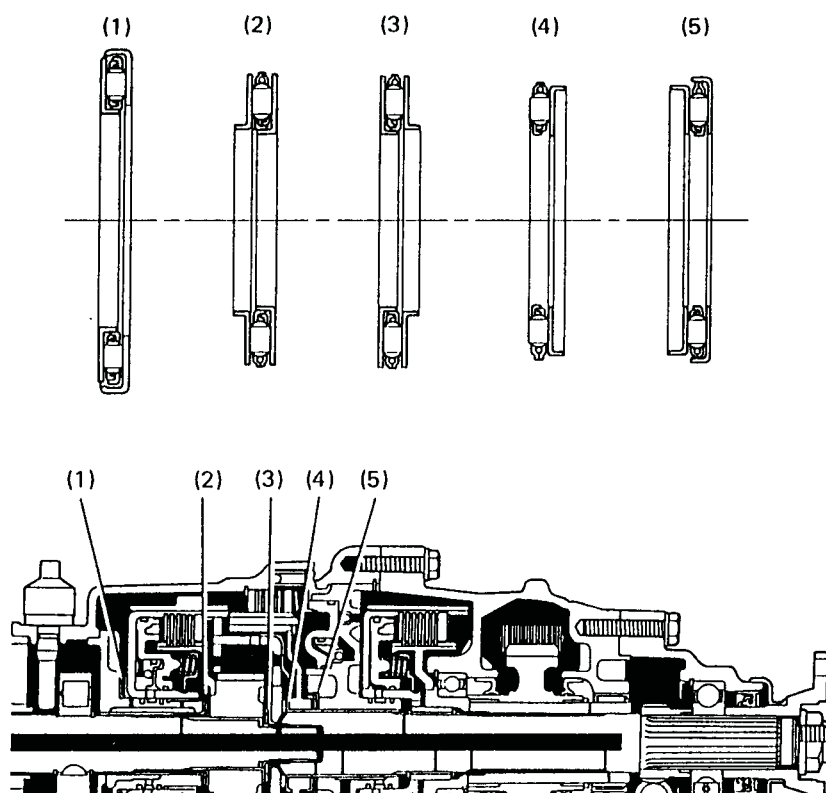
10. INSTALL NO. 4 SOLENOID

Torque: 100 kg-cm (7 ft.-lb, 10 N-m)

## ASSEMBLY OF TRANSFER (A340H)

### GENERAL ASSEMBLY NOTES:

Be sure to install the thrust bearings and races in the correct direction and position.

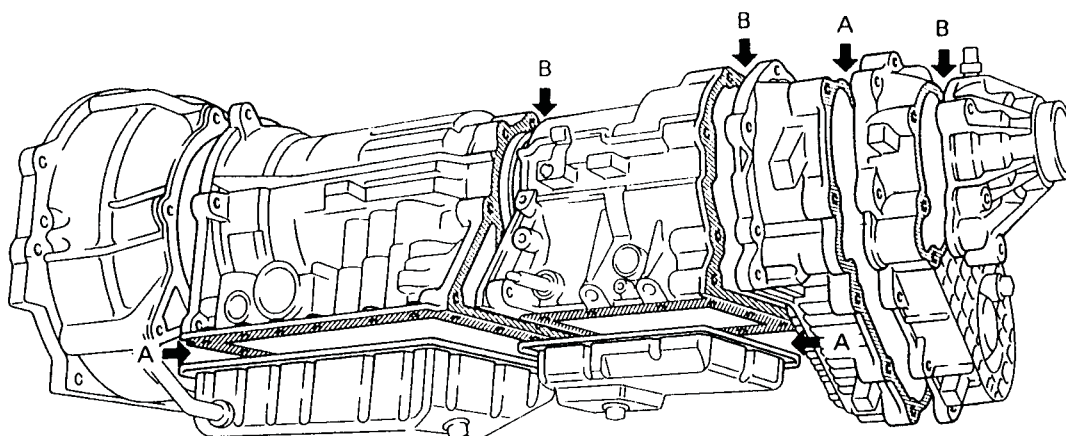


AT1499

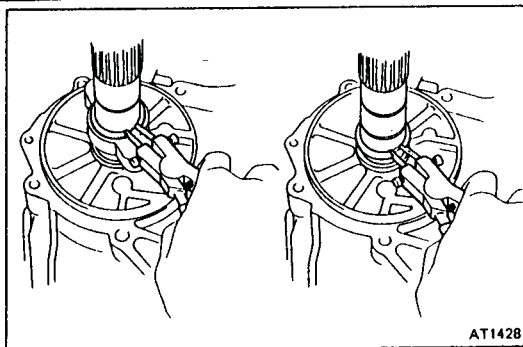
There are 2 types of seal packing on the A340H transmission. There are not interchangeable and care should be taken in selecting them.

A : THREE BOND TB 1281 (Part No. 08826-00090)

B : LOCTITE No. 518

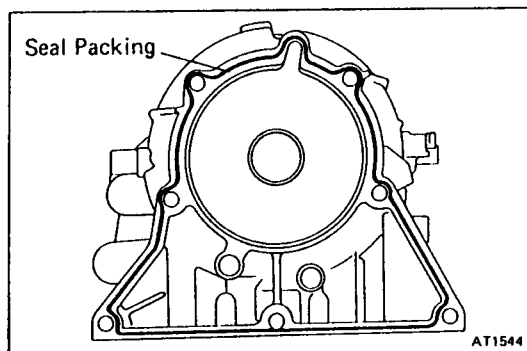


AT1608



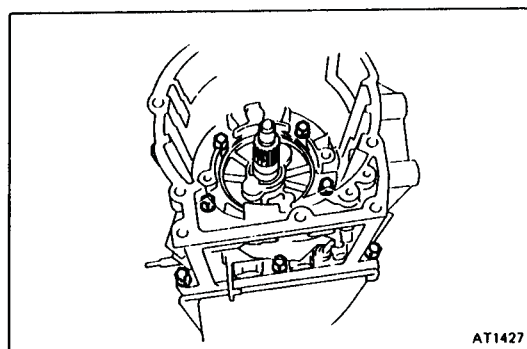
## 1. INSTALL SPEED SENSOR ROTOR

- Install the snap ring to the output shaft.
- Install the key and sensor rotor to the output shaft.
- Install the snap ring to the output shaft.



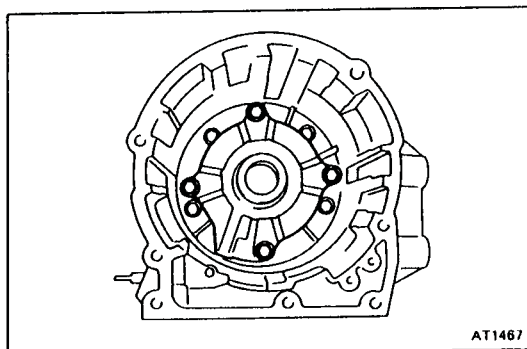
## 2. INSTALL TRANSFER CASE

- Clean contacting surfaces of any residual packing material using gasoline or alcohol.
- Apply to seal packing (LOCTITE No. 518) to the case.



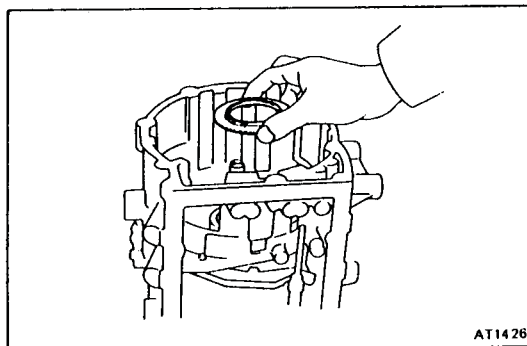
- Install the case and torque the seven bolts.

Torque: 345 kg-cm (25 ft-lb, 34 N·m)



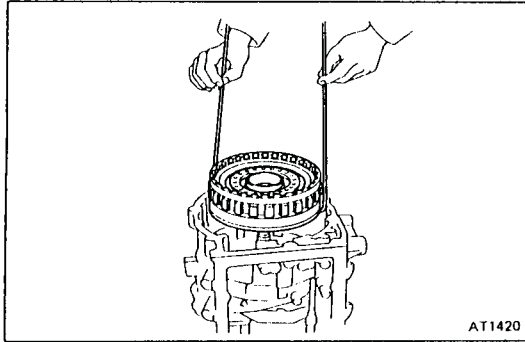
## 3. INSTALL FRONT SUPPORT TO TRANSFER CASE

Torque: 345 kg-cm (25 ft-lb, 34 N·m)

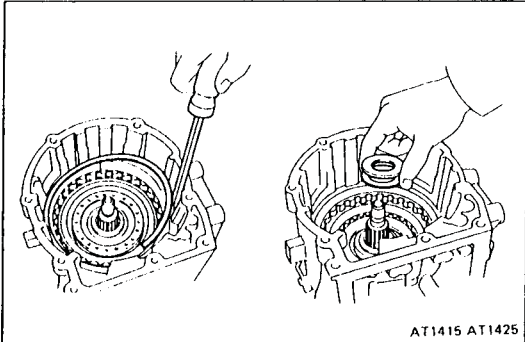


## 4. INSTALL TRANSFER DIRECT CLUTCH (C3)

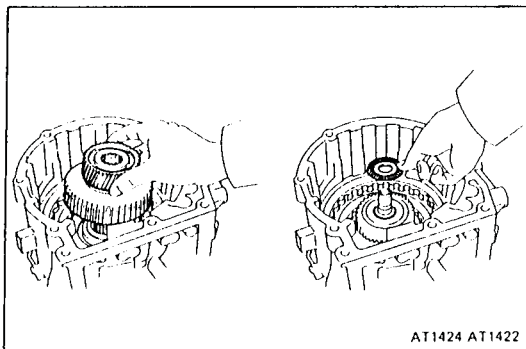
- Install the bearing to the front support.



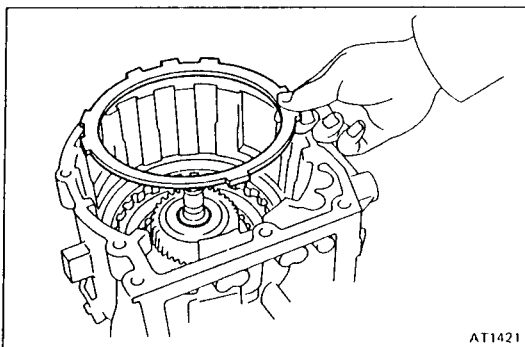
- (b) Using the hooks, install the direct clutch to the transfer case.



- (c) Install the snap ring.  
(d) Install the bearing and race.

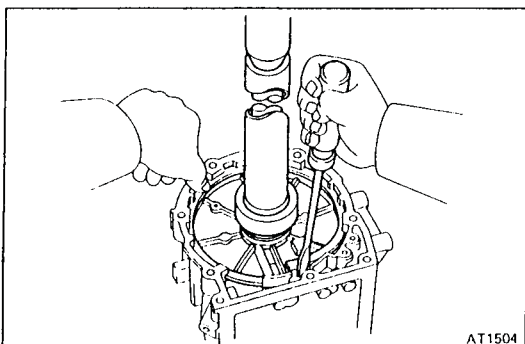


- (e) Install the sun gear.  
(f) Install the bearing to rear side of the sun gear.



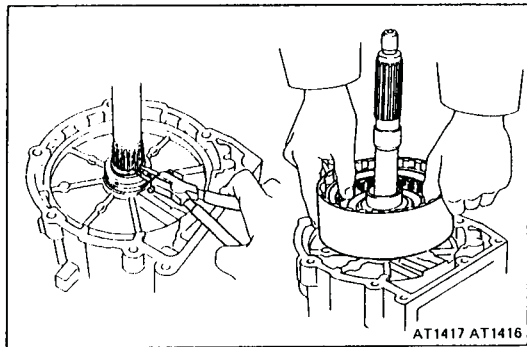
## 5. INSTALL LOW SPEED BRAKE (B4) AND TRANSFER CENTER SUPPORT

- (a) Install the B4 inner flange to the case.



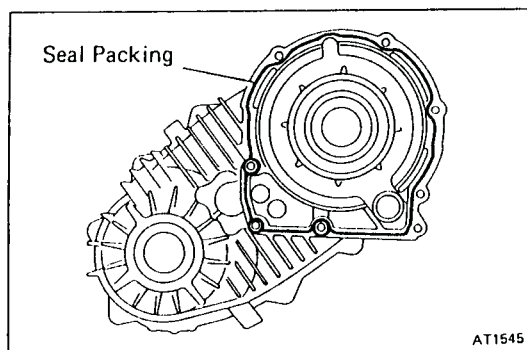
- (b) Install the low speed brake assembly and center support to the mission case.  
(c) Using SST and press, compress the center support and install the snap ring.

SST 09309-35010



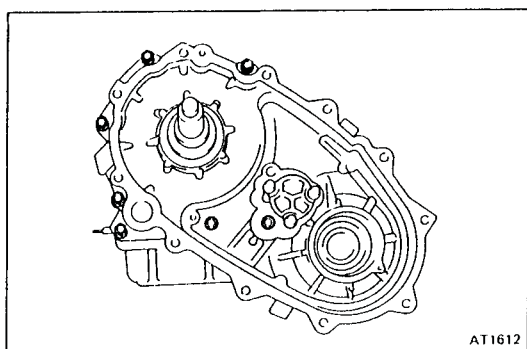
## 6. INSTALL TRANSFER FRONT DRIVE CLUTCH (C4)

- Install the snap ring to the output shaft.
- Install the front drive clutch and snap ring.



## 7. INSTALL TRANSFER CHAIN CASE

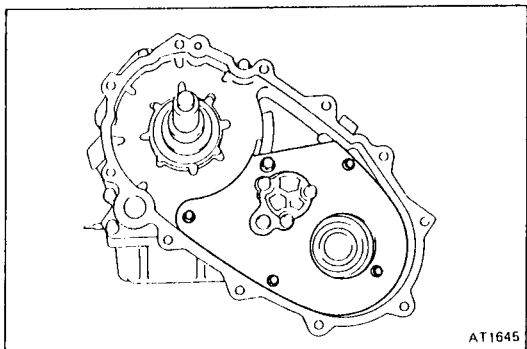
- Clean contacting surfaces of any residual packing material using gasoline or alcohol.
- Apply the seal packing (LOCTITE No. 518) to the transfer chain case.



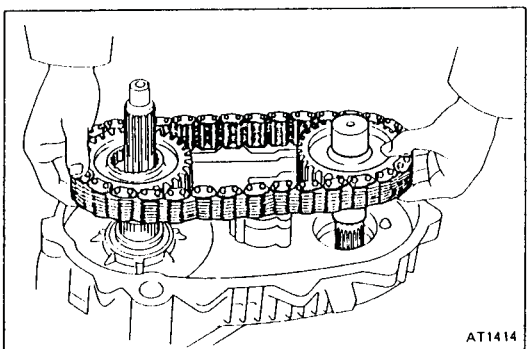
- Install the transfer chain case to the transfer case.

- Install and torque the bolts.

Torque: 345 kg-cm (25 ft-lb, 34 N·m)



## 8. INSTALL OIL RESERVOIR PLATE TO TRANSFER CASE

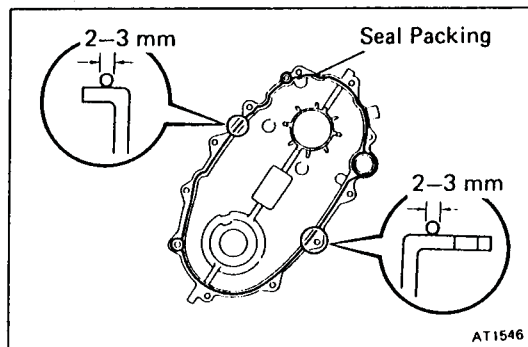


## 9. INSTALL DRIVE CHAIN WITH SPROCKET AND DRIVEN SHAFT

Install the chain with the sprocket and driven shaft to the transfer case. And install the snap ring.



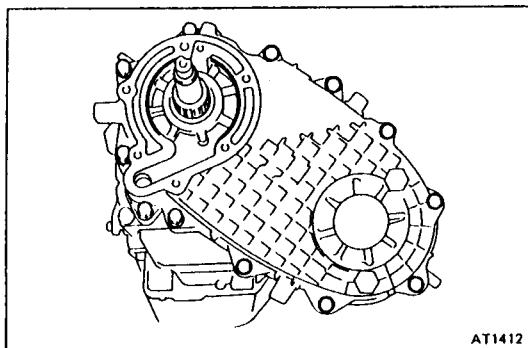
## Technical Service Information



### 10. INSTALL TRANSFER CHAIN COVER

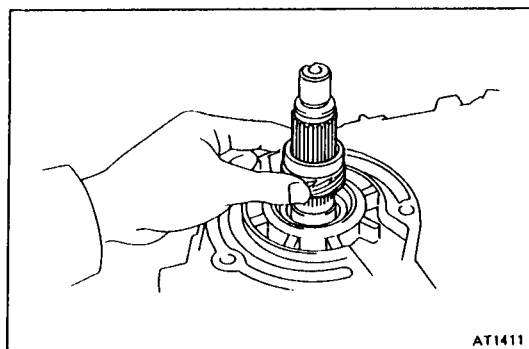
- (a) Remove any packing material.
- (b) Clean contacting surfaces of any residual packing material using gasoline or alcohol.
- (c) Apply seal packing THREE BOND TB 1281 (Part No. 08826-00090) to the chain cover.

NOTE: Install the chain cover within 10 minutes after applying seal packing.

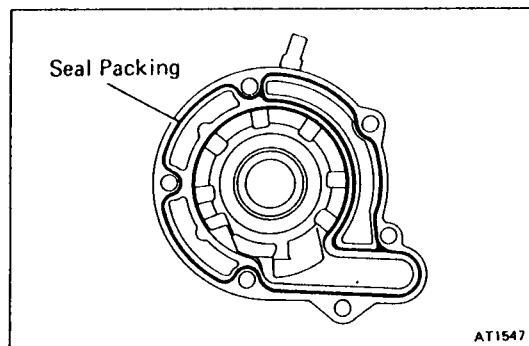


- (d) Install the chain cover to the transfer case.

Torque: 345 kg-cm (25 ft-lb, 34 N·m)

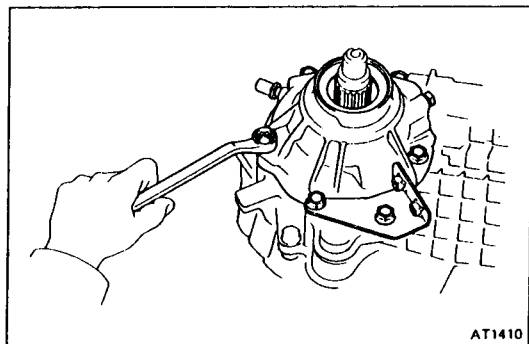


### 11. INSTALL SPEEDOMETER DRIVE GEAR



### 12. INSTALL EXTENSION HOUSING

- (a) Clean contacting surfaces of any residual packing material using gasoline or alcohol.
- (b) Apply seal packing (LOCTITE No. 518) to the extension housing.



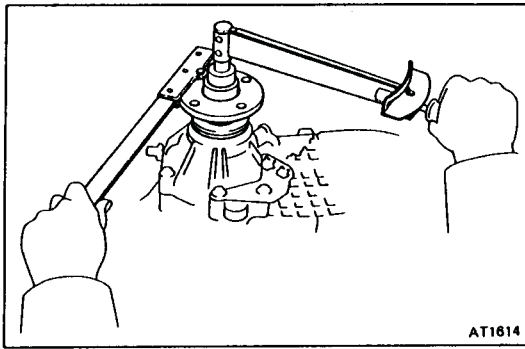
- (c) Install the extension housing to the transfer rear cover.

Torque: 345 kg-cm (25 ft-lb, 34 N·m)





## Technical Service Information



### 13. INSTALL REAR COMPANION FLANGE

- (a) Install the washer and companion flange to the shaft.
- (b) Using SST to hold the flange, torque the nut.

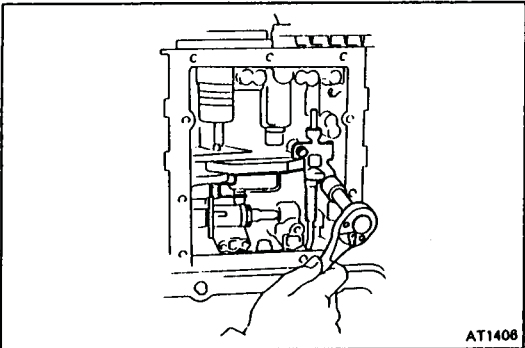
SST 09330-00021

Torque: 1,250 kg-cm (90 ft-lb, 123 N-m)

- (c) Using a hammer and punch, stake the nut.

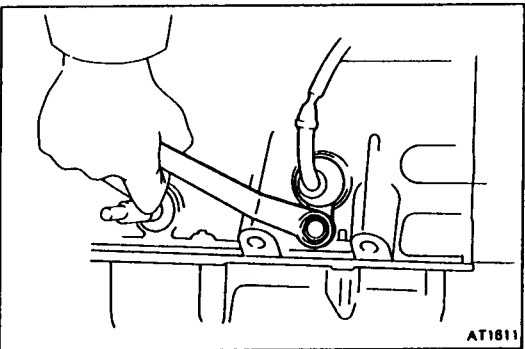
### 14. INSTALL FRONT COMPANION FLANGE

Install the front companion flange in the same way as the rear companion flange.



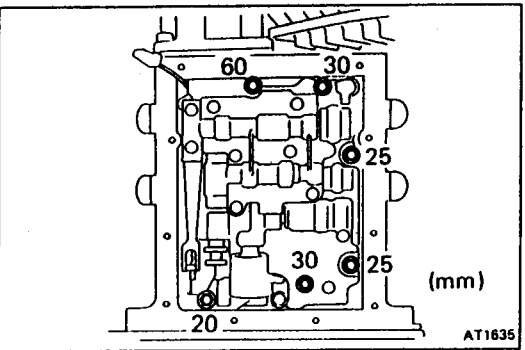
### 15. INSTALL PARKING LOCK PAWL BRACKET

Torque: 70 kg-cm (61 in.-lb, 6.9 N-m)



### 16. INSTALL NO. 4 SOLENOID WIRE TO TRANSFER CASE

- (a) Install the No. 4 solenoid wire into the transfer case.
- (b) Install the wire clamp bolt.

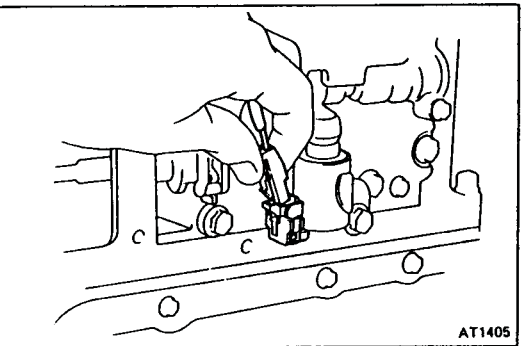


### 17. INSTALL TRANSFER VALVE BODY

Install and torque the six bolts.

Torque: 100 kg-cm (7 ft-lb, 10 N-m)

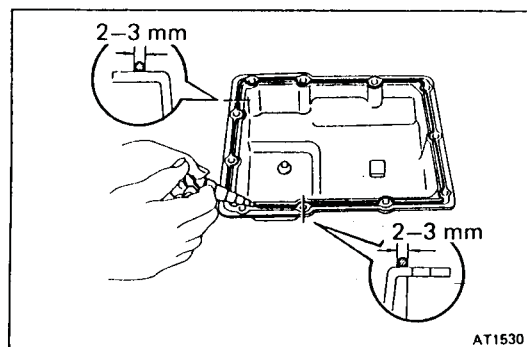
NOTE: Each bolt length (mm) is indicated in the figure.



### 18. CONNECT NO. 4 SOLENOID CONNECTOR



## Technical Service Information



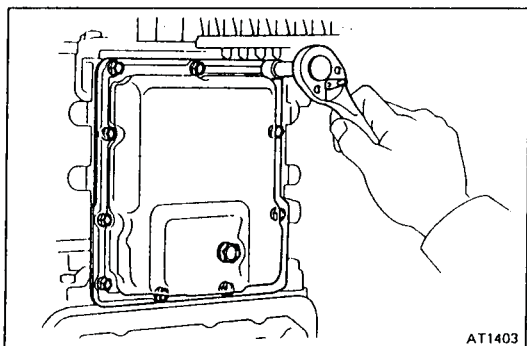
### 19. INSTALL OIL PAN

- Remove any packing material and be careful not to drop the oil on the contacting surfaces of the oil pan and transmission case.
- Clean contacting surfaces of any residual packing material using gasoline or alcohol.
- Apply seal packing THREE BOND TB 1281 (Part No. 08826-00090) to the oil pan.

**NOTE:** Install the oil pan within 10 minutes after applying seal packing.

- Install the oil pan and torque the eleven bolts.

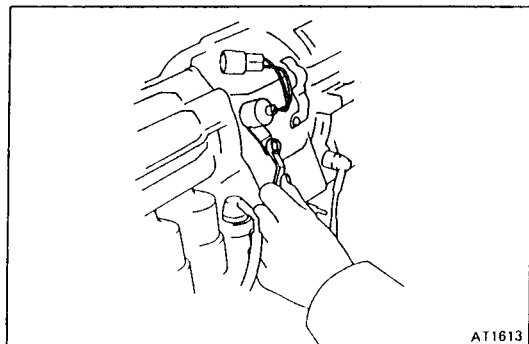
**Torque:** 75 kg-cm (65 in.-lb, 7.4 N-m)



### 20. LIE TRANSMISSION

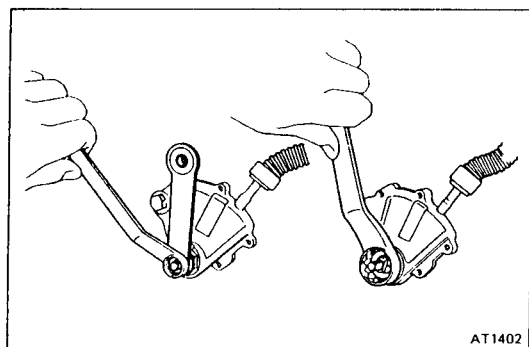
### 21. INSTALL SPEED SENSOR

- Install the speed sensor and clamp bolt.
- Connect the wiring connector.



### 22. INSTALL TRANSFER POSITION SWITCH

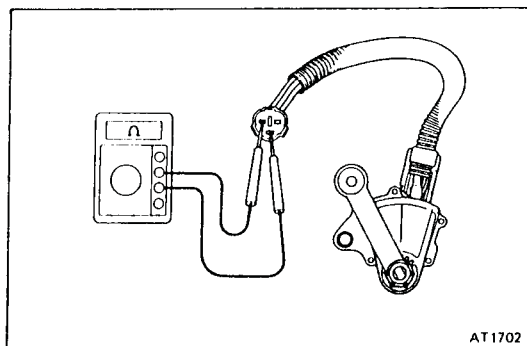
- Install the switch and wiring clamp.
  - Torque the mounting bolt and nut.
- Torque:** 130 kg-cm (9 ft-lb, 13 N-m)
- Install the shift handle.
  - Adjust the switch.

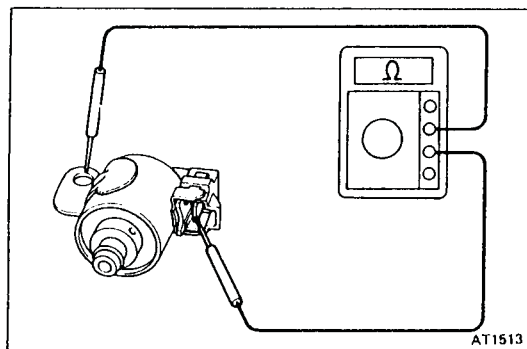


### 23. ADJUST TRANSFER POSITION SWITCH

- Connect an ohmmeter between terminals.
- Shift the lever into the "L4" position.
- Adjust the switch to the point where there is continuity between the terminals.
- Torque the mounting bolt.

**Torque:** 55 kg-cm (48 in.-lb, 5.4 N-m)



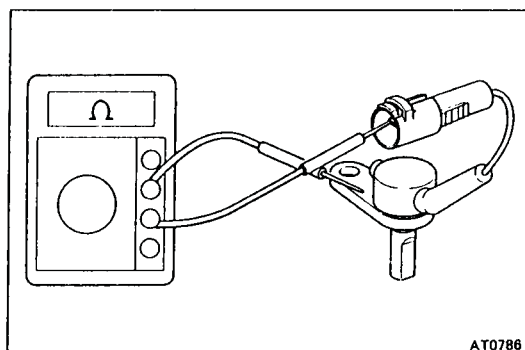


## ELECTRICAL PARTS

### 1. INSPECT NO. 4 SOLENOID

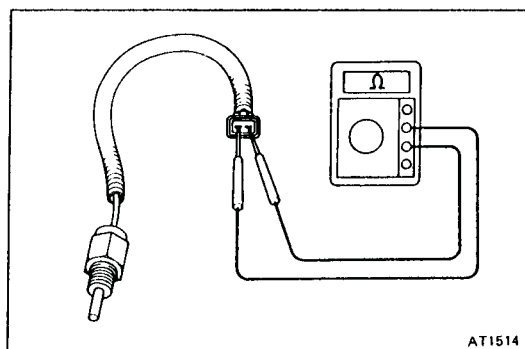
Using an ohmmeter, check the resistance between terminal and body.

Standard resistance: 11 – 15  $\Omega$



### 2. INSPECT SPEED SENSOR

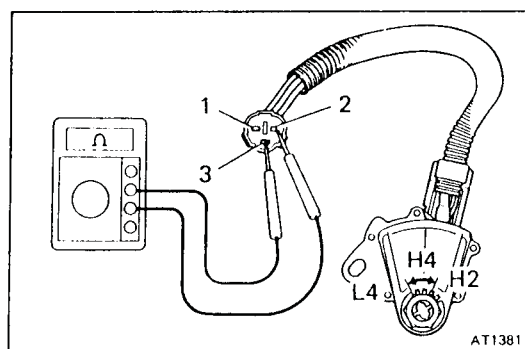
Connect an ohmmeter to the speed sensor and check that the meter deflects when the sensor is repeatedly brought close to the rotor sensor magnet and removed from it.



### 3. INSPECT FLUID THERMO SWITCH

Using an ohmmeter, measure the resistance between terminals.

Resistance: 5,000 – 20,000  $\Omega$



### 4. INSPECT TRANSFER POSITION SWITCH

Using an ohmmeter, check that there is continuity between each terminal.

Terminal	1	2	3
Shift position			
H2			
H4 and L4		○	○
L4	○		○



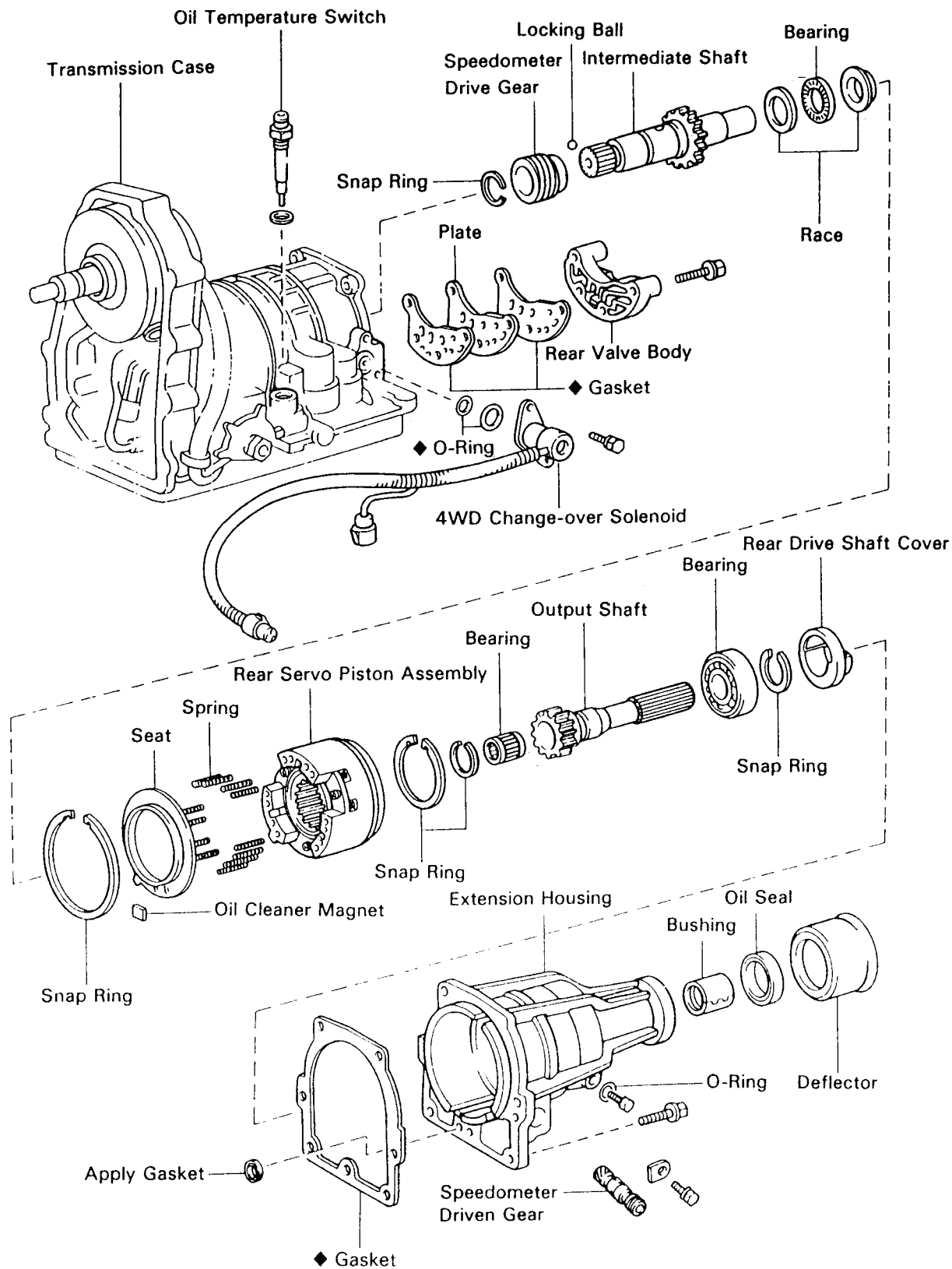
# Technical Service Information

## Transfer Specifications

Valve body spring mm (in.)	Spring	Free length	Coil outer diameter	No. coils	Wire diameter	Color
	Upper valve body C <sub>3</sub> accumulator valve	55.7 (2.193)	18.3 (0.720)	9.1	2.5 (0.098)	Blue
	Center valve body Low shift valve	29.2 (1.150)	8.2 (0.323)	11.0	0.9 (0.035)	Yellow
	Relay valve	31.7 (1.248)	8.5 (0.335)	9.2	0.7 (0.028)	Light blue
	Accumulator control valve	29.3 (1.154)	8.2 (0.323)	9.8	0.6 (0.024)	White
	Lower valve body Shift timing valve	33.1 (1.303)	8.7 (0.343)	13.0	0.7 (0.028)	Red
	Orifice control valve	29.7 (1.169)	9.0 (0.354)	10.3	1.0 (0.039)	Green
Accumulator piston spring mm (in.)	B <sub>4</sub> accumulator piston	66.5 (2.618)	19.0 (0.748)	13.0	2.9 (0.114)	Pink
Clutch and brake return spring mm (in.)	Direct clutch (C <sub>3</sub> )	24.0 (0.945)	10.2 (0.402)	6.2	1.1 (0.043)	None
	Low speed brake (B <sub>4</sub> )	26.1 (1.028)	8.0 (0.315)	8.8	1.0 (0.039)	None
	Front drive clutch (C <sub>4</sub> )	23.9 (0.941)	10.0 (0.394)	6.2	1.0 (0.039)	None
Piston stroke mm (in.)	Direct clutch (C <sub>3</sub> )	2.00 – 2.40 (0.0787 – 0.0945)				
	Front drive clutch (C <sub>4</sub> )	2.38 – 3.22 (0.0937 – 0.1268)				
Piston clearance mm (in.)	Low speed brake (B <sub>4</sub> )	0.97 – 2.13 (0.0382 – 0.0839)				
Discs, plates and flanges assembly height mm (in.)	Low speed brake (B <sub>4</sub> )	28.78 – 29.18 (1.1331 – 1.1448)				
Bushings bore mm (in.)	Direct clutch	Limit	47.65 (1.8760)			
	Center support	Limit	35.08 (1.3811)			
	Front support	Limit	31.40 (1.2362)			
	Ring gear flange	Limit	35.08 (1.3811)			
Disc thickness mm (in.)	Direct clutch (C <sub>3</sub> )	Limit	1.50 (0.0591)			
	Front drive clutch (C <sub>4</sub> )	Limit	1.50 (0.0591)			
	Low speed brake (B <sub>4</sub> )	Limit	1.50 (0.0591)			

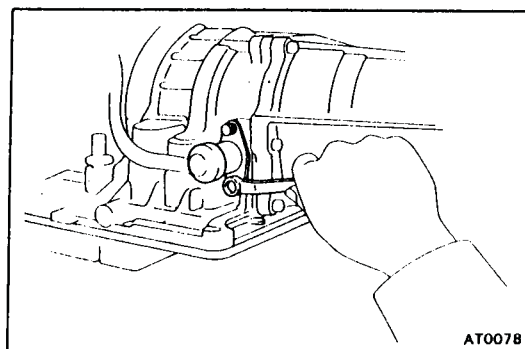
# Technical Service Information

## FOUR-WHEEL DRIVE CHANGE-OVER MECHANISM COMPONENT



◆ : Non-reusable part

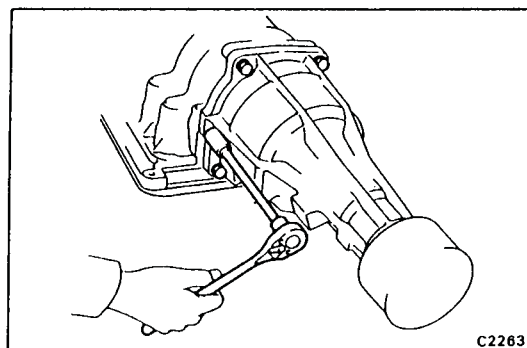
C2261



## Disassembly of 4WD Change-over Mechanism

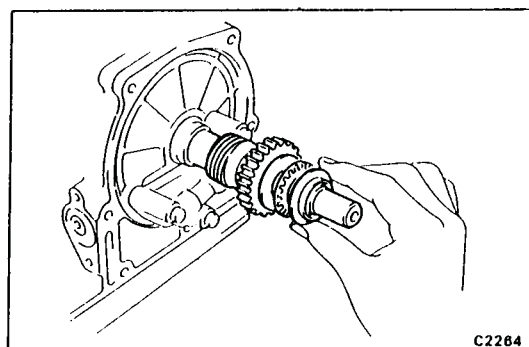
### 1. REMOVE 4WD CHANGE-OVER SOLENOID

- Remove the two bolts and solenoid.
- Remove the two O-rings.



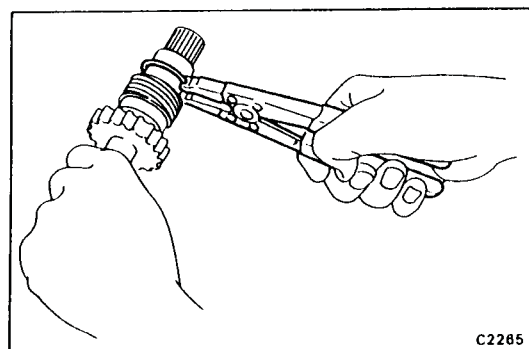
### 2. REMOVE SPEEDOMETER DRIVEN GEAR

### 3. REMOVE EXTENSION HOUSING AND GASKET



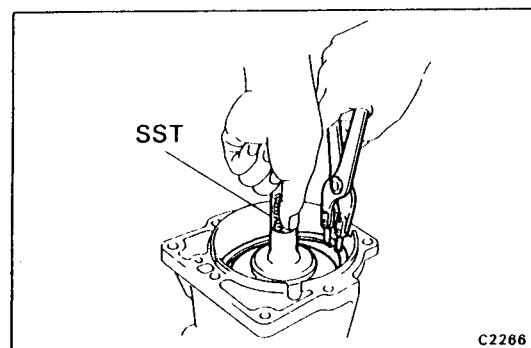
### 4. REMOVE INTERMEDIATE SHAFT

- Remove the thrust bearing and two races.
- Remove the intermediate shaft.



### 5. REMOVE SPEEDOMETER DRIVE GEAR

- Using snap ring pliers, remove the snap ring from the intermediate shaft.
- Remove the speedometer drive gear and locking ball.



### 6. REMOVE REAR SERVO PISTON ASSEMBLY

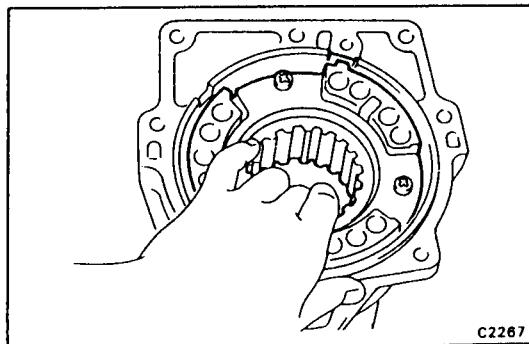
- Using SST, push down the piston spring seat and remove the snap ring.

SST 09223-41020

- Remove the piston spring seat and twelve springs from the rear servo piston.



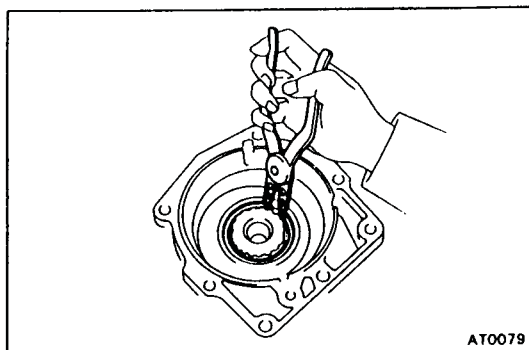
## Technical Service Information



(c) Remove the rear servo piston assembly from the extension housing.

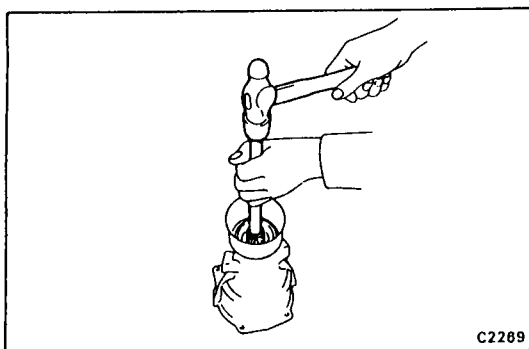
(d) Measure the compression spring free height.

**Free height: 56 mm (2.21 in.)**

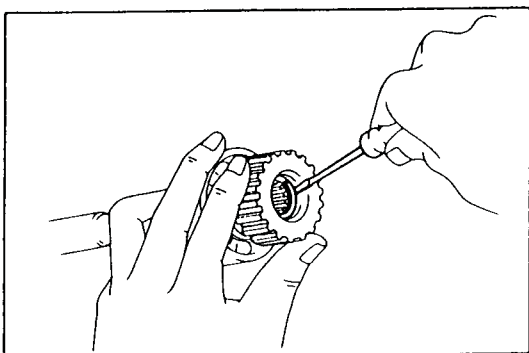


### 7. REMOVE REAR OUTPUT SHAFT

(a) Using snap ring pliers, remove the snap ring from the extension housing.



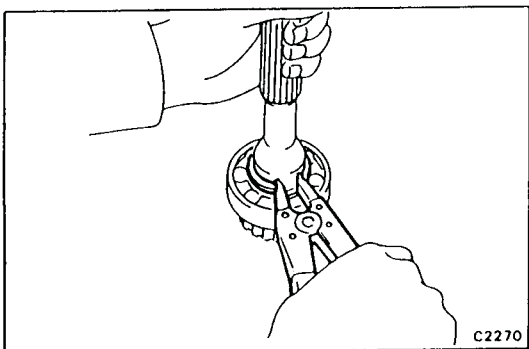
(b) Using a brass-bar and hammer, drive out the rear output shaft.



### 8. REMOVE NEEDLE ROLLER BEARING

(a) Using a screwdriver, remove the snap ring from the rear output shaft.

(b) Remove the needle roller bearing from the rear output shaft.

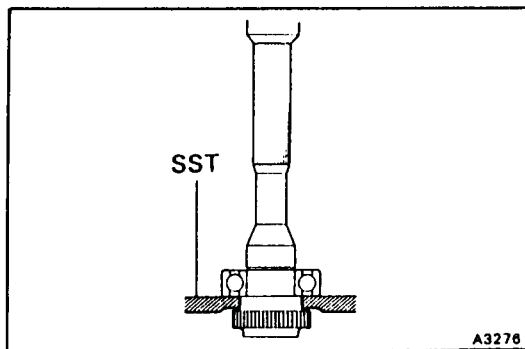


### 9. REMOVE RADIAL BALL BEARING

(a) Using snap ring pliers, remove the snap ring from the rear output shaft.

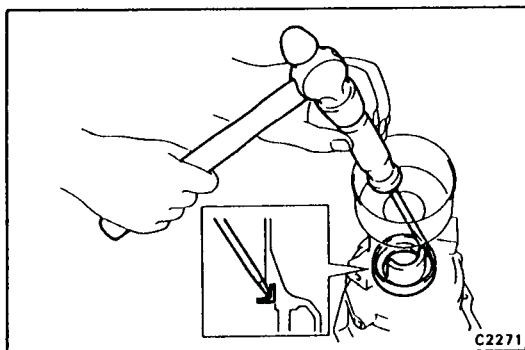


## Technical Service Information



- (b) Using SST and a press, remove the radial ball bearing from the rear output shaft.

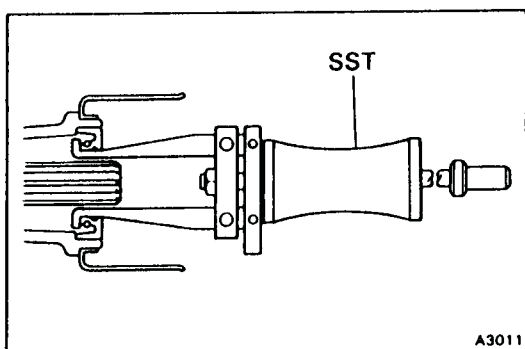
SST 09950-00020



### 10. REMOVE REAR DRIVE SHAFT COVER

Using a screwdriver and, drive out the rear drive shaft cover from the extension housing.

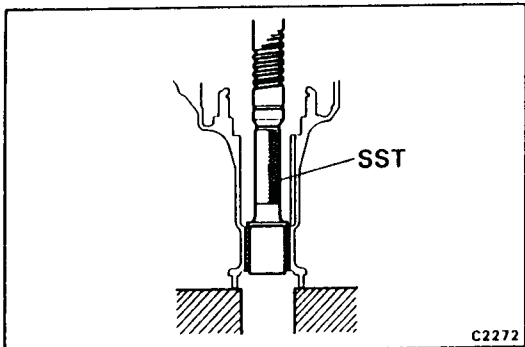
**CAUTION:** Without deforming the cover, tap the L-shaped circumference level.



### 11. REMOVE EXTENSION HOUSING OIL SEAL

Using SST, remove the oil seal from the extension housing.

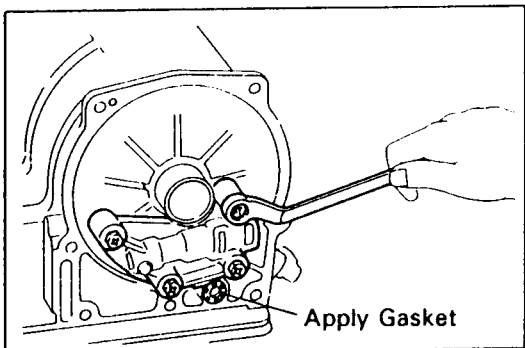
SST 09308-00010



### 12. REMOVE EXTENSION HOUSING BUSHING

- Remove the deflector from the extension housing.
- Heat the extension housing to 80° – 100°C (176 – 212°F).
- Using SST and a press, remove the bushing.

SST 09307-12010



### 13. REMOVE REAR VALVE BODY

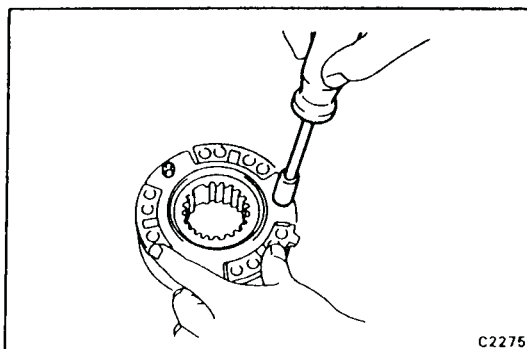
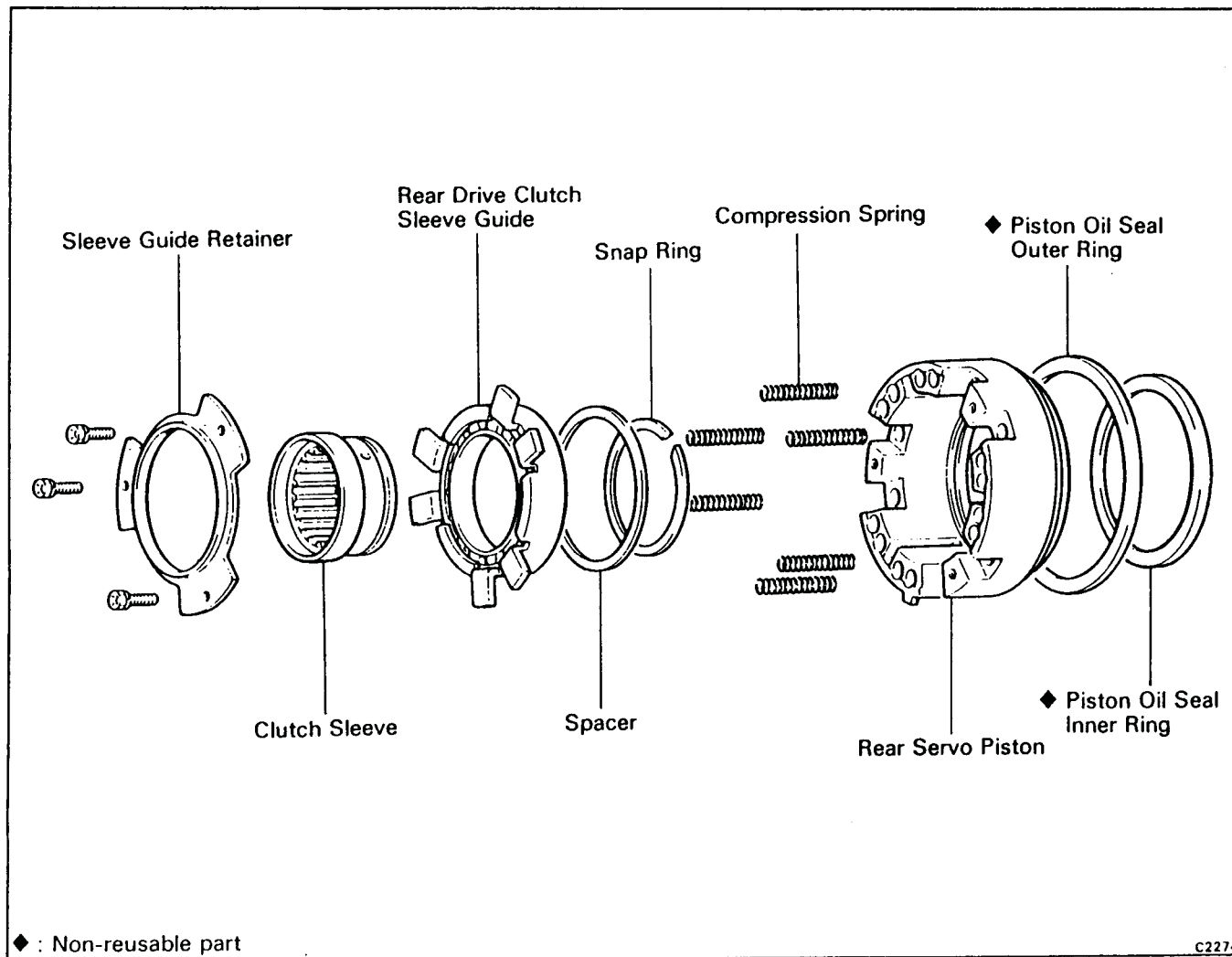
- Remove the four bolts.
- Remove the rear valve body with the plate and two gaskets.

### 14. REMOVE APPLY GASKET



# Technical Service Information

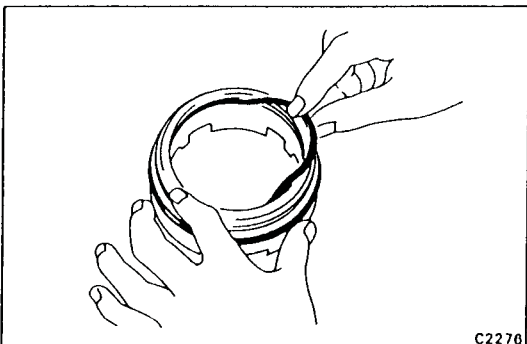
## Rear Servo Piston Assembly

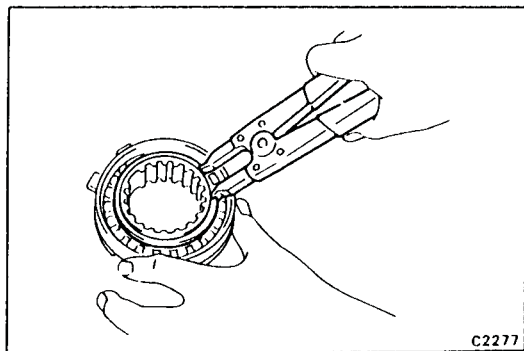


### DISASSEMBLY OF REAR SERVO PISTON ASSEMBLY

#### 1. REMOVE REAR SERVO PISTON

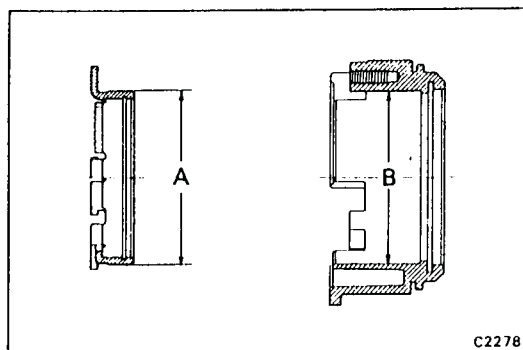
- Remove the three bolts and sleeve guide retainer.
- Remove the six compression springs.
- Remove the rear drive clutch sleeve guide with clutch sleeve from the rear servo piston.
- Remove the piston oil seal outer ring.
- Remove the piston oil seal inner ring.





## 2. REMOVE CLUTCH SLEEVE

- Using snap ring pliers, remove the snap ring.
- Remove the spacer.
- Remove the sleeve from the clutch sleeve guide.



## ASSEMBLY OF REAR SERVO PISTON ASSEMBLY

### 1. MEASURE DIAMETER OF REAR SERVO PISTON ASSEMBLY

- Measure the outer diameter of the sliding portion of the clutch sleeve guide and inner diameter of the servo piston.

**Standard A:** 84.69 – 84.73 mm  
(3.3342 – 3.3358 in.)

**B:** 85.00 – 85.04 mm  
(3.3465 – 3.3480 in.)

- Measure the outer diameter of the servo piston, inner diameter of the sliding part, inner diameter of the extension housing and outer diameter of the sliding part.

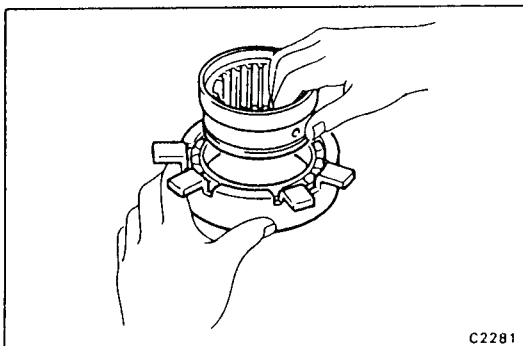
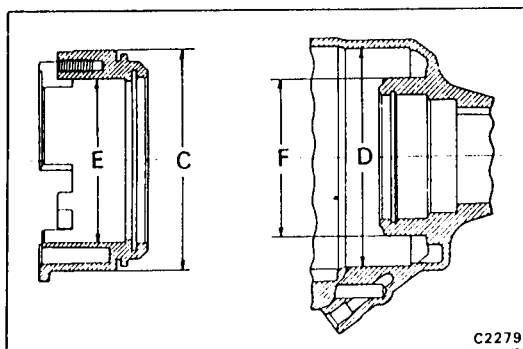
**Standard C:** 113.79 – 113.82 mm  
(4.4799 – 4.4811 in.)

**D:** 114.00 – 114.04 mm  
(4.4882 – 4.4898 in.)

**E:** 82.30 – 82.34 mm  
(3.2402 – 3.2417 in.)

**F:** 81.89 – 81.92 mm  
(3.2240 – 3.2252 in.)

- Check each sliding part for scoring or wear.

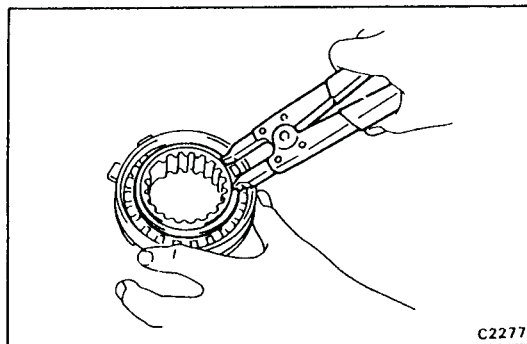


## 2. INSTALL CLUTCH SLEEVE TO CLUTCH SLEEVE GUIDE

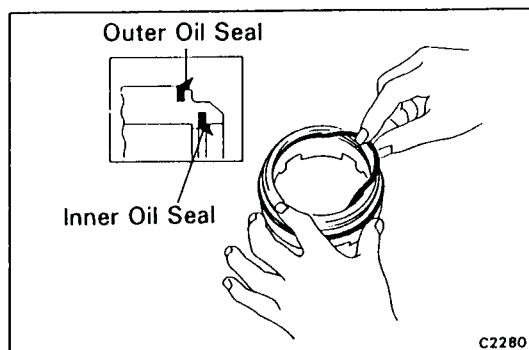
- Install the sleeve to the clutch sleeve guide.
- Install the spacer.



## Technical Service Information



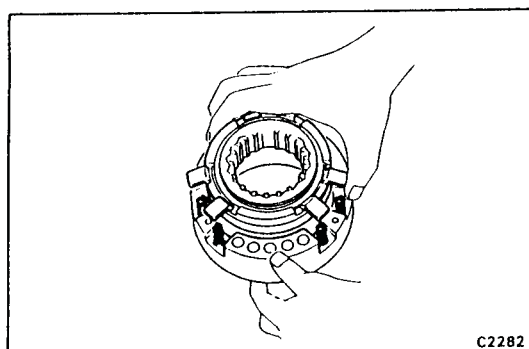
- (c) Using snap ring pliers, install the snap ring.



### 3. ASSEMBLY REAR SERVO PISTON

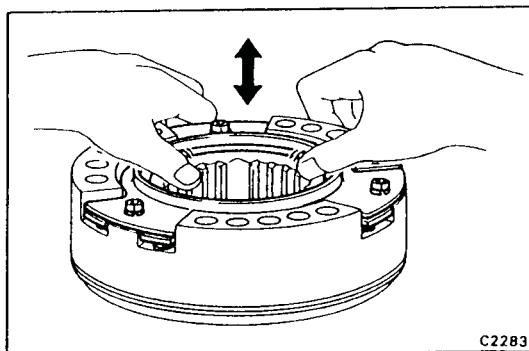
- (a) Apply ATF (DEXRON II) to new piston oil seal inner and outer rings.
- (b) Install the piston oil seal inner and outer rings to the servo piston.

NOTE: Be careful not to install new rings in the wrong direction.



- (c) Install the six compression springs to the servo piston.
- (d) Apply MP grease to the clutch sleeve guide.
- (e) Install the clutch sleeve guide and retainer to the servo piston.

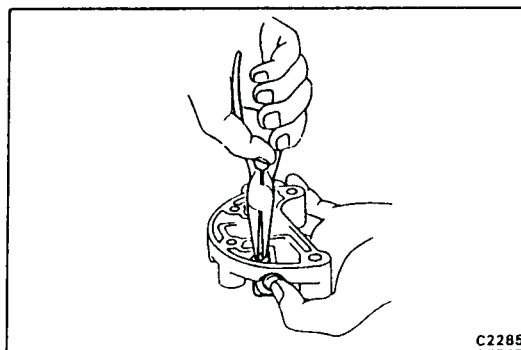
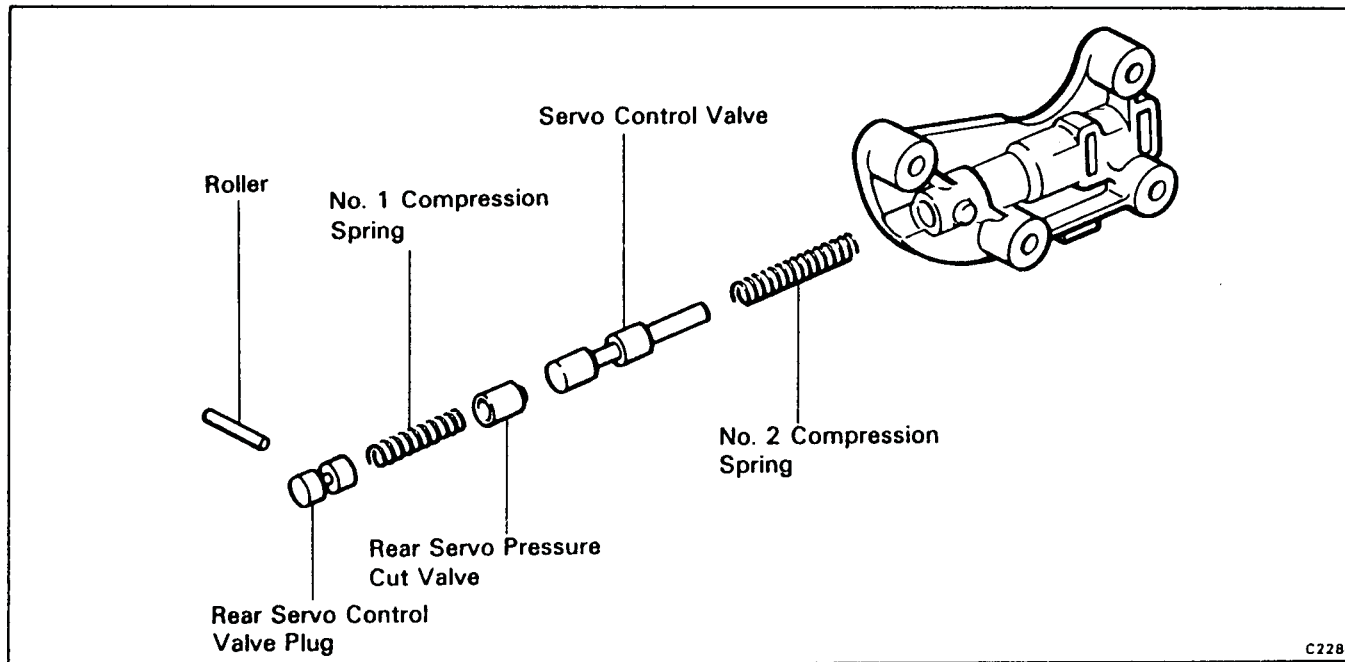
Torque: 50 kg-cm (43 in.-lb, 4.9 N·m)



### 4. INSPECT REAR SERVO ASSEMBLY

Push the sleeve by hand and check that clutch sleeve guide slides smoothly in the servo piston.

## Rear Valve Body

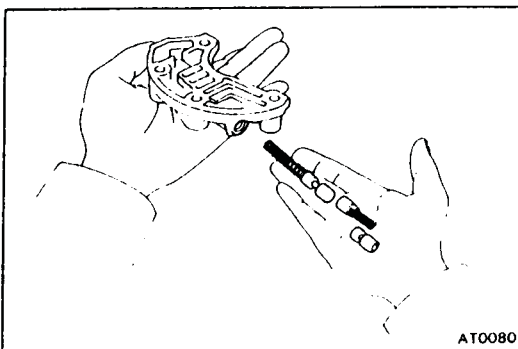


### DISASSEMBLY OF REAR VALVE BODY

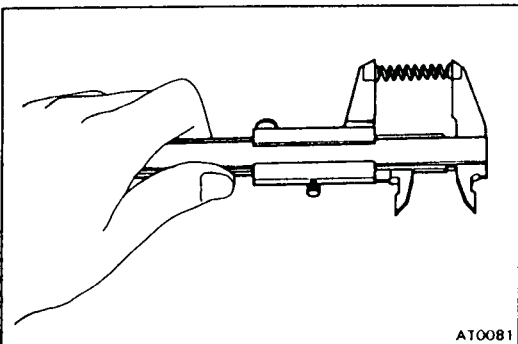
#### 1. REMOVE PLUG VALVES AND SPRINGS

- (a) Push the plug with your finger and remove the roller.

**CAUTION:** The spring is compressed so be careful that the valve does not fly out.



- (b) Remove the rear servo control valve plug.
- (c) Remove the No. 1 compression spring.
- (d) Remove the rear servo pressure cut valve.
- (e) Remove the servo control valve.
- (f) Remove the No. 2 compression spring.



#### 2. MEASURE TWO COMPRESSION SPRING FREE HEIGHT

- (a) Measure the No. 1 compression spring free height.

**Free length: 31.8 mm (1.252 in.)**

- (b) Measure the No. 2 compression spring free height.

**Free length: 48.4 mm (1.906 in.)**



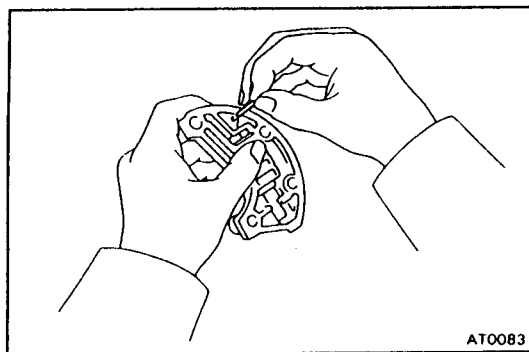
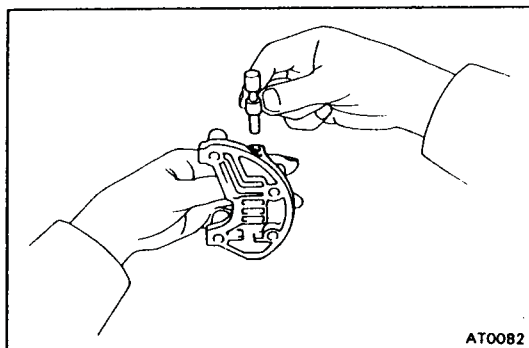
## Technical Service Information

### ASSEMBLY OF REAR VALVE BODY

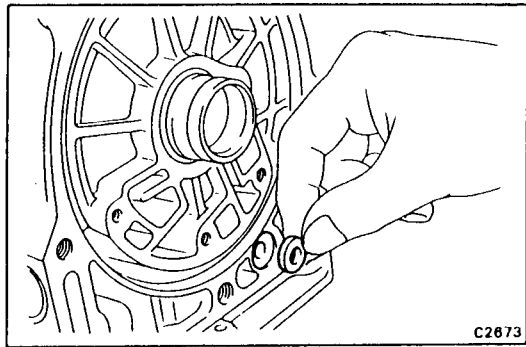
#### INSTALL SPRINGS, VALVES AND PLUG

- (a) Apply ATF DEXRON II to each valve.
- (b) Install the No. 2 compression spring.
- (c) Install the rear servo control valve.
- (d) Install the rear servo pressure cut valve.
- (e) Install the No. 1 compression spring.
- (f) Install the rear servo control valve plug.

**NOTE:** Be careful not to assemble the valve in the wrong direction. The valve should slide smoothly by its own weight.

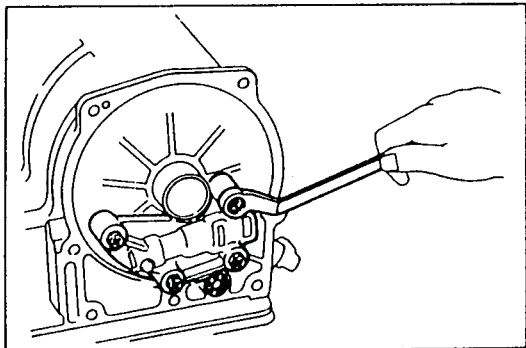


- (g) Push the valve by finger and install the roller.



## Assembly of 4WD Change-over Mechanism

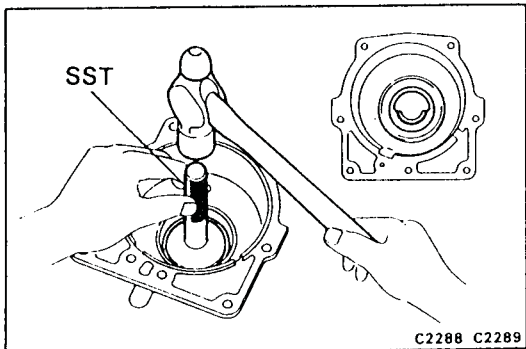
### 1. INSTALL APPLY GASKET



### 2. INSTALL REAR VALVE BODY

- Install the valve body with two gaskets and plate to the transmission.
- Torque the four bolts.

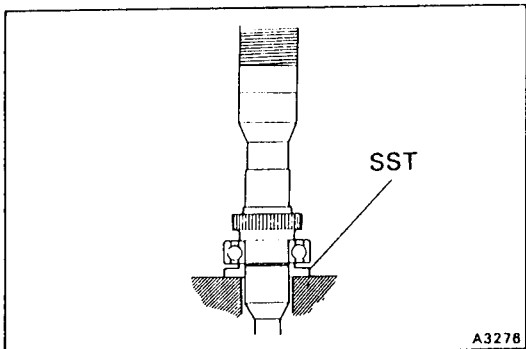
Torque: 55 kg-cm (48 in.-lb, 5.4 N·m)



### 3. INSTALL REAR DRIVE SHAFT COVER

Using SST and a hammer, drive the drive shaft cover into the extension housing.

SST 09608-30011



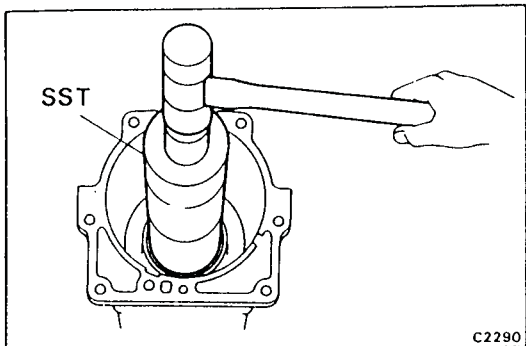
### 4. INSTALL OUTPUT SHAFT

- Using SST and a press, install the radial ball bearing to the output shaft.

SST 09506-30011

- Using snap ring pliers, install the snap ring to the output shaft.

- Install the needle roller bearing and snap ring to the output shaft.

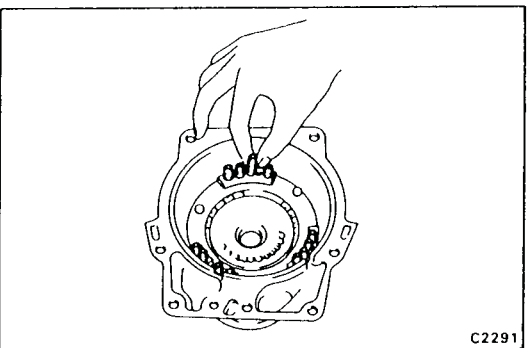
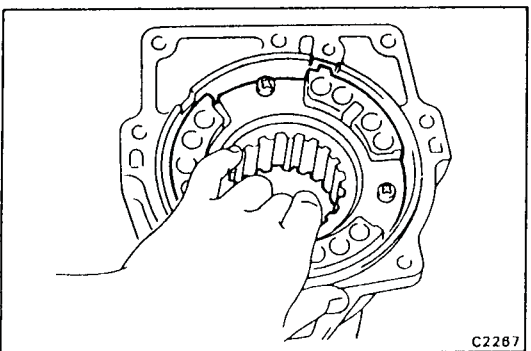
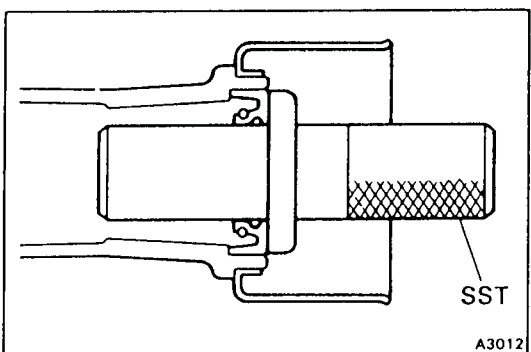
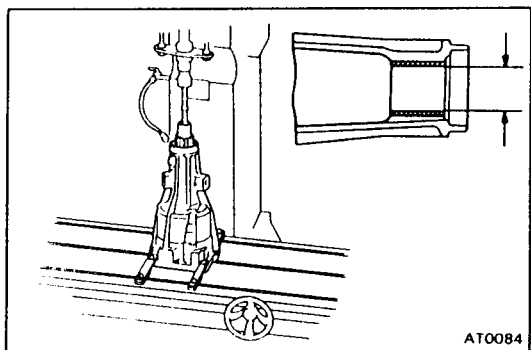
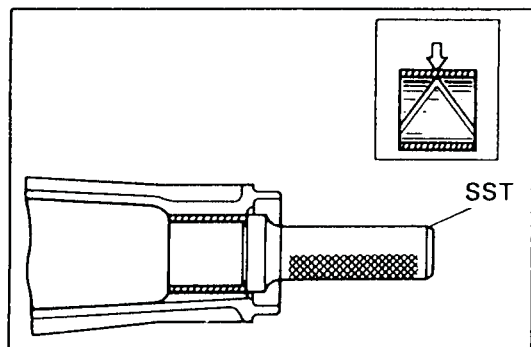


- Using SST and a plastic hammer, install the output shaft to the extension housing.

SST 09316-60010



## Technical Service Information



### 5. INSTALL EXTENSION HOUSING BUSHING

(a) Heat the extension housing to 80 – 100°C (176 – 212°F).

(b) Using SST and a hammer, install the bushing.  
SST 09307-12010

(c) Using a honing machine, hone the inner surface of the bushing until standard inner diameter is obtained.

**Standard inner diameter:**

**32.006 – 32.031 mm (1.2601 – 1.2611 in.)**

(d) Install the deflector to the extension housing.

### 6. INSTALL EXTENSION HOUSING OIL SEAL

(a) Using SST and a hammer, drive in the oil seal. (even with the surface of the housing)

SST 09325-12010

(b) Apply MP grease to the oil seal lip.

### 7. INSTALL REAR SERVO PISTON ASSEMBLY

(a) Apply ATF (DEXRON II) to the extension housing and piston sliding parts.

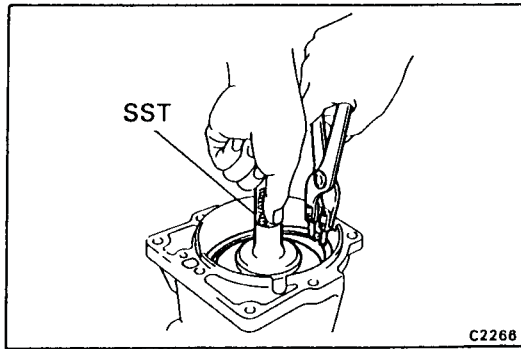
(b) Align the protruding part of the extension housing in the groove, and assemble the piston to the extension housing. Be careful not to damage the piston oil seal.

(c) Install the twelve compression springs to the servo piston.

(d) Clean the oil cleaner magnet and install it to the spring seat.

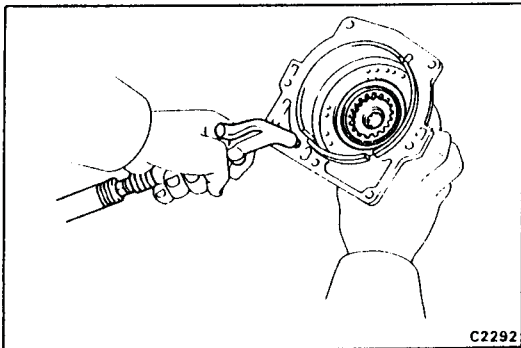


## Technical Service Information



- (e) Install the spring seat on the rear servo piston.
- (f) Using SST, push down the spring seat and install the snap ring.

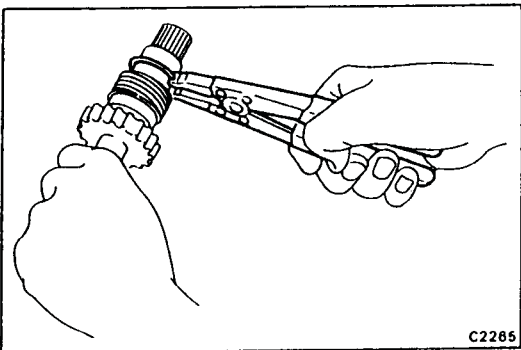
SST 09223-41020



### 8. CHECK OPERATION OF REAR SERVO PISTON

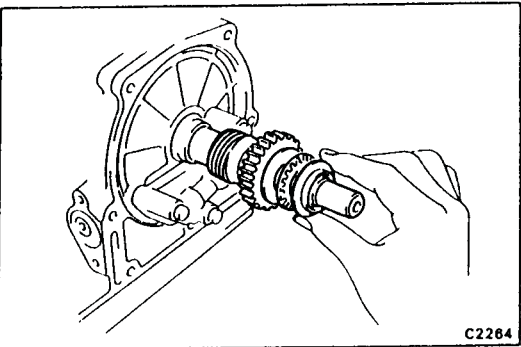
- (a) Using compressed air (approx. 2 kg/cm<sup>2</sup>, 28 psi or 196 kPa) confirm that the piston is fully seated against the return spring stopper.
- (b) Check the piston stroke.

Standard piston stroke: 10 mm (0.39 in.)



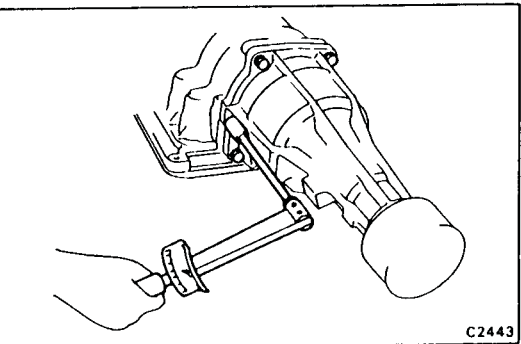
### 9. INSTALL SPEEDOMETER DRIVE GEAR

- (a) Install the locking ball and speedometer drive gear to the intermediate shaft.
- (b) Using snap ring pliers, install the snap ring.



### 10. INSTALL INTERMEDIATE SHAFT

- (a) Install the intermediate shaft to the transmission.
- (b) Install the bearing race, bearing and bearing race.



### 11. INSTALL EXTENSION HOUSING AND GASKET

Torque: 185 kg-cm (13 ft-lb, 18 N·m)

### 12. INSTALL SPEEDOMETER DRIVEN GEAR

### 13. INSTALL 4WD CHANGE-OVER SOLENOID