

TRANSFER

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(VF2A)**PRECAUTION**

TR00P-06

When working with FIPG material, you must observe the following.

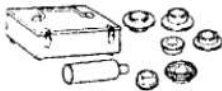
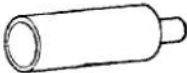
- Using a razor blade and gasket scraper, remove all the old FIPG material from the gasket surfaces.
- Thoroughly clean all components to remove all the loose material.
- Clean both sealing surfaces with a non-residue solvent.
- Apply FIPG in approx. 1 mm (0.04 in.) wide bead along the sealing surface.
- Parts must be assembled within 10 minutes of application. Otherwise, the FIPG material must be removed and reapplied.

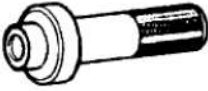
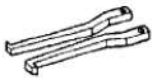
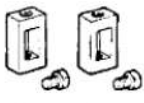
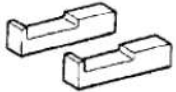
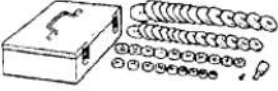
If the vehicle is equipped with a mobile communication system, refer to the precautions in the IN section.

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PREPARATION**SST (SPECIAL SERVICE TOOLS)**

TR036-07

	09223-15020 Oil Seal & Bearing Replacer	Planetary gear outer bearing
	09304-12012 Input Shaft Front Bearing Replacer	Shift fork shaft oil seal
	09316-60011 Transmission & Transfer Bearing Replacer	
	(09316-00011) Replacer Pipe	High and low clutch hub Rear output shaft bearing Front case oil seal
	(09316-00021) Replacer "A"	Driven sprocket front and rear bearing
	(09316-00071) Replacer "F"	Rear output shaft bearing
	09330-00021 Companion Flange Holding Tool	Companion flange
	09515-30010 Rear Wheel Bearing Replacer	Planetary gear outer bearing
	09554-22010 Differential Oil Seal Replacer	Extension housing oil seal

	09554-30011 Differential Oil Seal Replacer	Planetary gear outer bearing
	09555-55010 Differential Drive Pinion Bearing Replacer	Driven sprocket rear bearing Rear output shaft bearing Planetary gear outer bearing
	09612-65014 Steering Worm Bearing Puller	
	(09612-01030) Claw "C"	Planetary gear inner bearing
	(09612-01050) Hanger Pin with Nut	Planetary gear inner bearing
	09950-40010 Puller B Set	
	(09951-04020) Hanger 200	Companion flange
	(09952-04010) Slide Arm	Companion flange
	(09953-04030) Center Bolt 200	Companion flange
	(09954-04010) Arm 25	Companion flange
	(09955-04050) Claw No.5	Companion flange
	(09957-04010) Attachment	Companion flange
	(09958-04010) Holder	Companion flange
	09950-60010 Replacer Set	

	(09951-00220) Replacer 22	Companion flange oil seal
	(09951-00350) Replacer 35	Companion flange oil seal
	(09951-00570) Replacer 57	Planetary gear inner bearing
	(09951-00590) Replacer 59	Front bearing retainer oil seal
	(09952-06010) Adapter	Companion flange oil seal
	09950-70010 Handle Set	
	(09951-07100) Handle 100	Front bearing retainer oil seal Planetary gear outer bearing Planetary gear inner bearing Companion flange oil seal

RECOMMENDED TOOLS

MY012-0P

	09031-00030 Pin Punch .	
	09905-00012 Snap Ring No.1 Expander .	

EQUIPMENT

MX027-1B

Calipers	
Dial indicator	
Micrometer	
Torque wrench	
Feeler gauge	
Steel straight edge	

LUBRICANT

MX028-1E

Item	Capacity	Classification
Transfer oil	1.0 liter (1.1 US qts, 0.9 Imp.qts)	API GL-4 or GL-5 SAE 75W-90

SSM (SPECIAL SERVICE MATERIALS)

08826-00090	Seal Packing 1281, THREE BOND 1281 or equivalent (FIPG)	Front case x Rear case Rear companion flange Extension housing x Rear case Front retainer x Front case
08833-00080	Adhesive 1344, THREE BOND 1344, LOCTITE 242 or equivalent	Straight screw plug Extension housing set bolt Front retainer set bolt

TROUBLESHOOTING

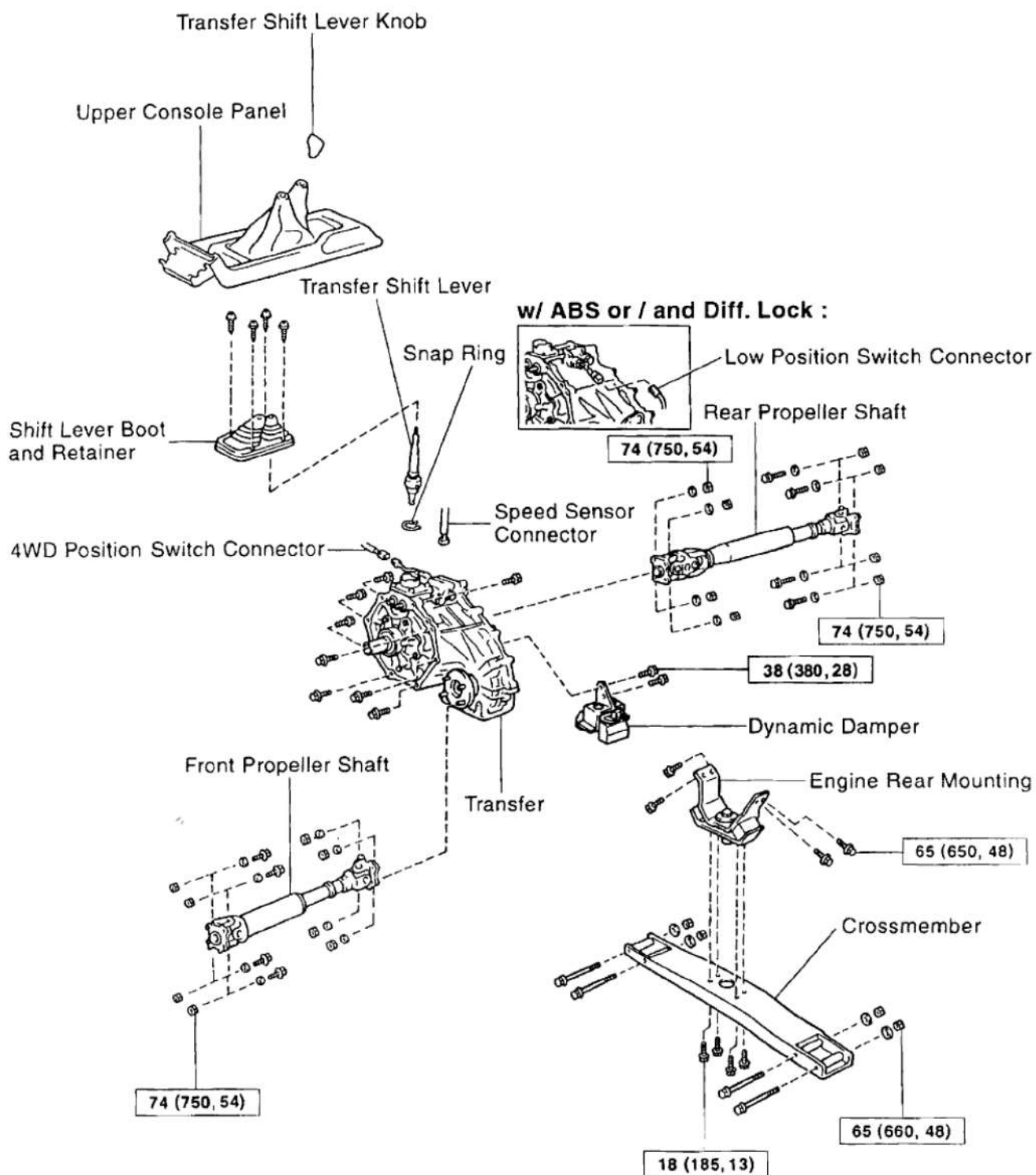
Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts. TRO03-07

See Page	TR-9	TR-4	TR-4	TR-4	TR-30	TR-9
Parts Name	Transfer faulty	Wrong oil grade	Oil level low	Oil level too high	Oil seal, O-ring or gasket worn or damaged	Center differential or transfer faulty
Trouble						
Noise	3	2	1			
Oil leakage				1	2	
Tight corner braking						1

ASSEMBLY REMOVAL AND INSTALLATION COMPONENTS

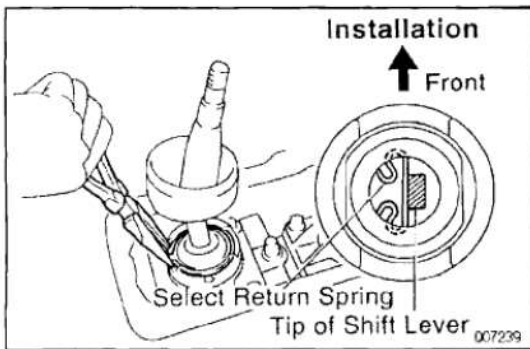
TR062-01

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N·m (kgf·cm, ft·lbf) : Specified torque

009955



TRANSFER REMOVAL

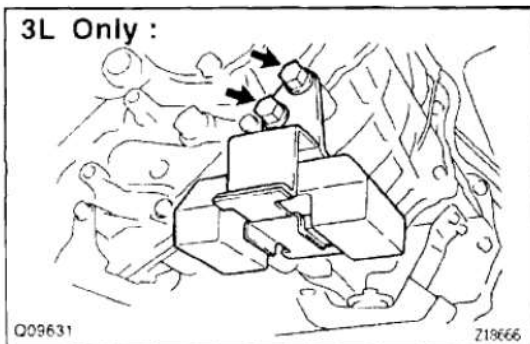
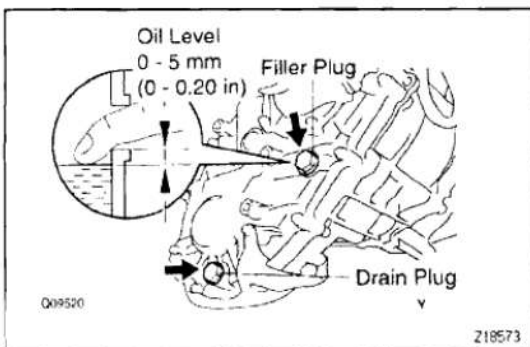
1. REMOVE TRANSFER SHIFT LEVER

- Remove the front console box.
- Remove the 4 screws, shift lever boot and retainer.
- Using pliers, remove the snap ring and pull out the shift lever.

HINT:

- Apply MP grease to the transfer adaptor oil seal.
- Shift the 2 shift fork shafts to the high-4 position.
- After installation, road test the vehicle.

INSTALLATION HINT: Apply MP grease to the tip of the shift lever.



2. REMOVE BREATHER HOSE

Disconnect the breather hose from transfer upper cover and transmission control retainer.

Hose depth: 13 mm (0.51 in.) or more

3. RAISE VEHICLE AND DRAIN TRANSFER OIL

Oil grade: API GL-4 or GL-5

Viscosity: SAE 75W-90

Capacity: 1.0 liter (1.1 US qts, 0.9 Imp.qts)

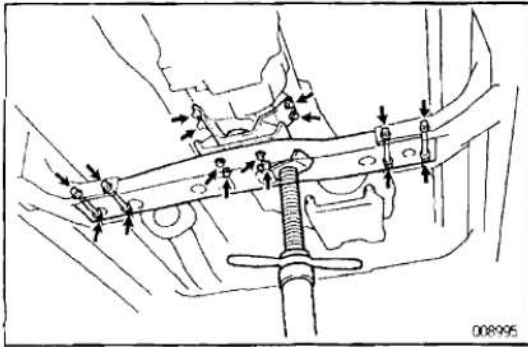
4. REMOVE FRONT AND REAR PROPELLER SHAFT (See page PR-3)

5. 3L Only:

REMOVE DYNAMIC DAMPER

Remove the 2 bolts and dynamic damper.

Torque: 38 N·m (380 kgf·cm, 28 ft·lbf)

**6. REMOVE CROSSMEMBER**

- (a) Support the transmission rear side with a jack.
- (b) Remove the 4 set bolts of the engine rear mounting.
Torque: 19 N·m (190 kgf·cm, 14 ft·lbf)
- (c) Remove the 4 bolts, nuts and crossmember.
Torque: 65 N·m (660 kgf·cm, 48 ft·lbf)

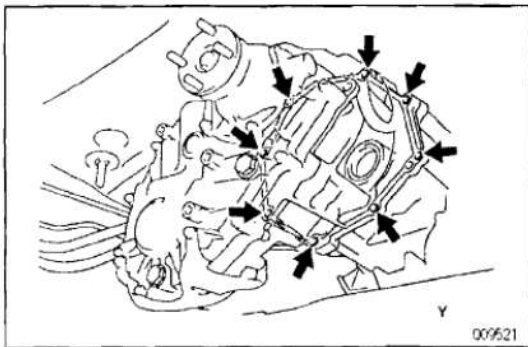
7. REMOVE ENGINE REAR MOUNTING

Remove the 4 bolts and engine rear mounting from the transmission.

Torque: 65 N·m (650 kgf·cm, 48 ft·lbf)

8. DISCONNECT VEHICLE SPEED SENSOR AND TRANSFER INDICATOR SWITCH CONNECTORS

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**9. REMOVE TRANSFER FROM TRANSMISSION**

- (a) Remove the 8 bolts of the transfer adaptor mounting.
Torque: 24 N·m (240 kgf·cm, 17 ft·lbf)
- (b) Pull out the transfer down and toward the rear.
HINT: Be careful not to damage the adaptor rear oil seal with the transfer input gear spline.

TRANSFER INSTALLATION

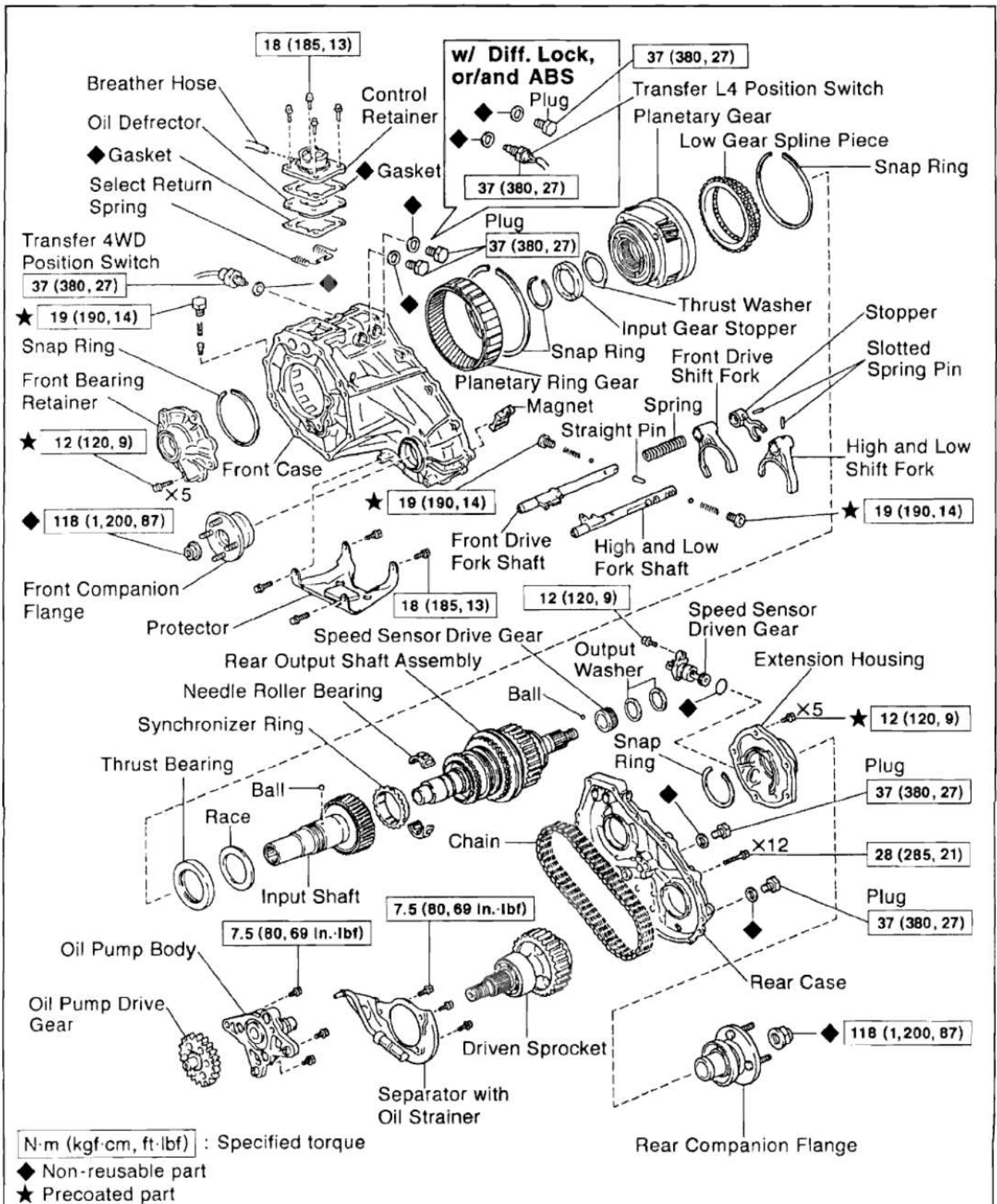
Installation is in the reverse order of removal.

TROS-03

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COMPONENT PARTS REMOVAL AND INSTALLATION COMPONENTS

TR084-01



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COMPONENT PARTS REMOVAL

1. REMOVE SPEED SENSOR DRIVEN GEAR

Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

2. w/ Diff. Lock or/and ABS

REMOVE L4 POSITION SWITCH

Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)

3. REMOVE 4WD POSITION SWITCH

Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)

4. REMOVE PLUGS OF FRONT CASE

Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)

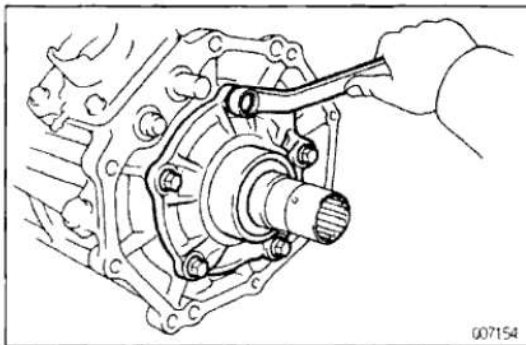
INSTALLATION HINT: Check the following items.

- The input and output shafts rotate smoothly.
- Shifting can be made smoothly to all positions.

5. REMOVE PROTECTOR

Remove the 4 bolts.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)



6. REMOVE FRONT BEARING RETAINER

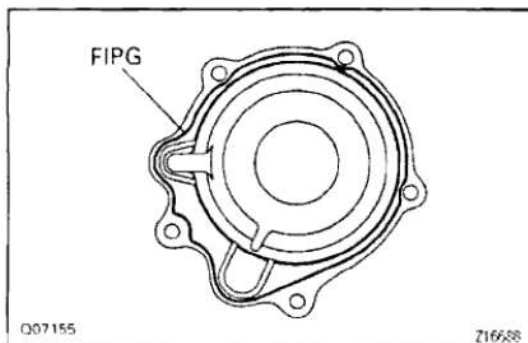
(a) Remove the 5 bolts.

Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

INSTALLATION HINT: Apply liquid sealer to the bolts.

Sealant: Part No. 08833 — 00080, THREE BOND 1344, LOCTITE 242 or equivalent

(b) Using a plastic hammer, tap the front bearing retainer and remove it.



INSTALLATION HINT:

- Remove any FIPG material and be careful not to drop oil on the contacting surfaces of the front bearing retainer.
- Apply FIPG to the front bearing retainer, as shown.

FIPG: Part No. 08826—00090, THREE BOND 1281 or equivalent

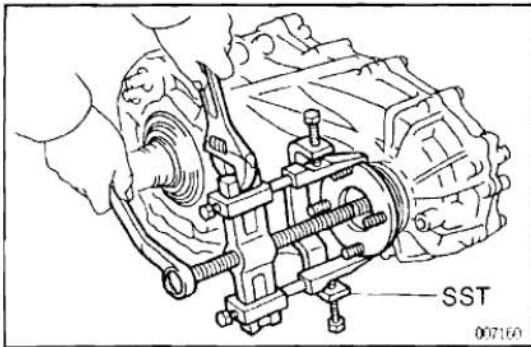
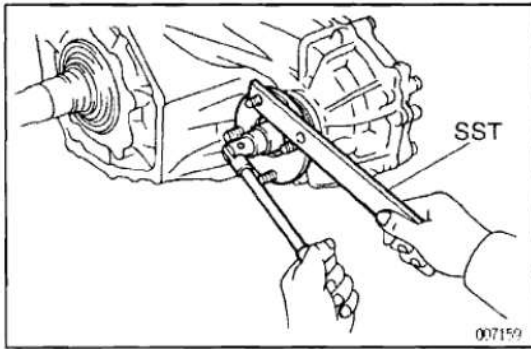
7. REMOVE CONTROL RETAINER AND OIL DEFLECTOR

(a) Remove the 4 bolts, control retainer and oil deflector.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

INSTALLATION HINT: Install 2 new gaskets and control retainer.

(b) Remove the select return spring from the control retainer.



8. REMOVE FRONT COMPANION FLANGE

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

INSTALLATION HINT: Stake a new lock nut.

- (b) Using SST to hold the flange, remove the companion flange lock nut.

SST 09330-00021

Torque: 118 N·m (1,200 kgf·cm, 87 ft·lbf)

- (c) Using SST, remove the companion flange.

SST 09950-40010 (09951-04020, 09952-04010, 09953-04030, 09954-04010, 09955-04050, 09958-04010)

INSTALLATION HINT: The diameter of the front companion flange is smaller than that of the rear companion flange.

9. REMOVE REAR COMPANION FLANGE

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

10. REMOVE EXTENSION HOUSING

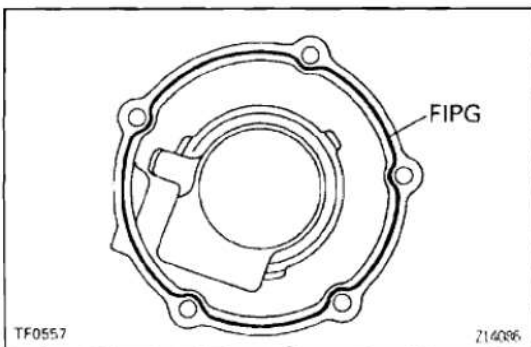
- (a) Remove the 5 bolts.

Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

INSTALLATION HINT: Apply liquid sealer to the bolts.

Sealant: Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

- (b) Using a plastic hammer, tap the extension housing and remove it.



INSTALLATION HINT:

- Remove any FIPG material and be careful not to drop oil on the contacting surfaces of the extension housing.
 - Apply FIPG to the extension housing, as shown.
- FIPG: Part No.08826-00090, THREE BOND 1281 or equivalent

11. REMOVE SPEED SENSOR DRIVE GEAR

- (a) Remove the 2 output washers and speed sensor drive gear.

INSTALLATION HINT: Make sure to install the speed sensor drive gear in the correct direction.

- (b) Using a magnetic finger, remove the ball from the rear output shaft.

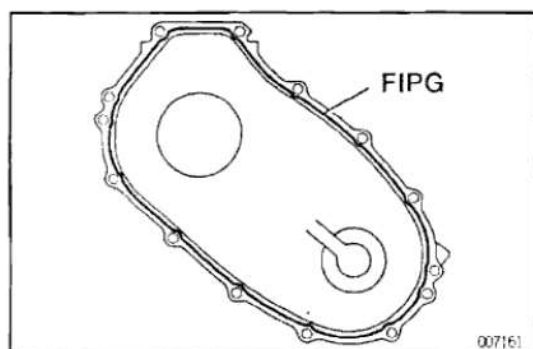
12. SEPARATE FRONT CASE AND REAR CASE

- (a) Remove the 12 bolts.

Torque: 28 N·m (285 kgf·cm, 21 ft·lbf)

- (b) Using a screwdriver, separate the front case and rear case.

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**INSTALLATION HINT:**

- Shift the high and low clutch sleeve to low side (rear side) and assemble the front case and rear case.
- Remove any FIPG material and be careful not to drop oil on the contacting surfaces of the rear case.
- Apply FIPG to the rear case, as shown.

FIPG: Part No.08826-00090, THREE BOND 1281 or equivalent

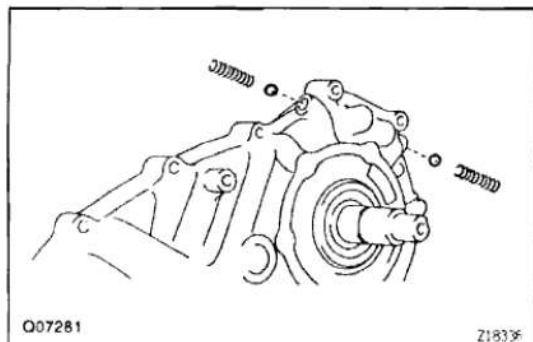
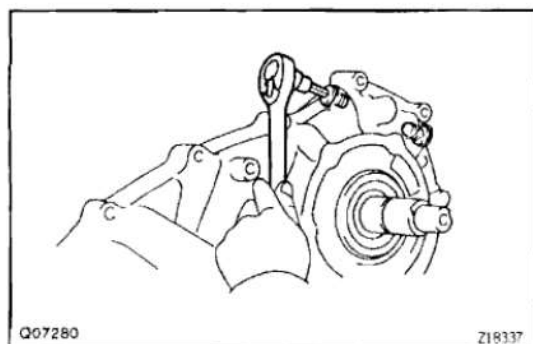
13. REMOVE STRAIGHT SCREW PLUG, SPRING AND LOCKING BALL

- (a) Using a hexagon wrench, remove the screw.

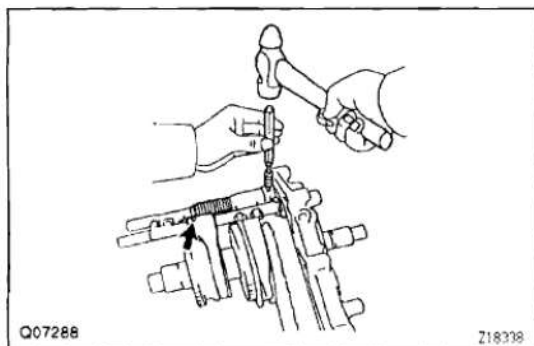
Torque: 19 N·m (190 kgf·cm, 14 ft·lbf)

INSTALLATION HINT: Apply liquid sealer to the plugs.

Sealant: Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent



- (b) Using a magnetic finger, remove the spring and ball from the both hole.

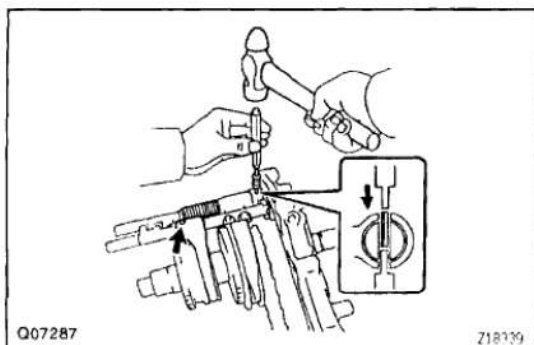


14. REMOVE FRONT DRIVE FORK SHAFT, SHIFT FORK, SPRING AND STOPPER

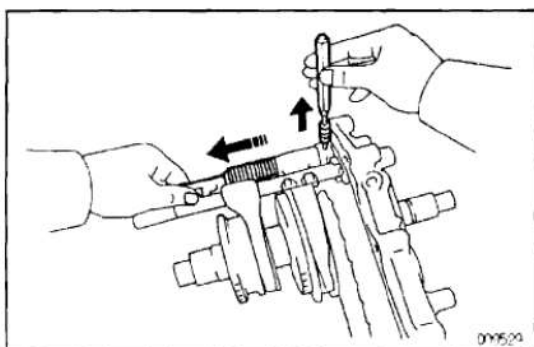
- (a) Mount the rear case in a vise.
- (b) Using a pin punch and hammer, drive out the 2 slotted spring pins.

NOTICE: Be careful not to damage the sealing surface.

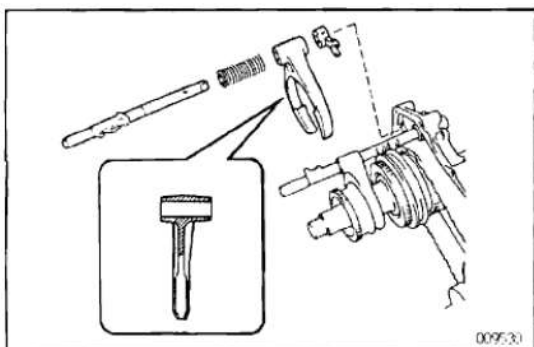
HINT: Keep the pin punch inserted in the shaft hole so that the shaft will not spring loose when the pin is removed from the front drive fork shaft.



INSTALLATION HINT: When installing the pin in the front drive fork shaft, push the shaft towards the rear case and install the pin while the spring is compressed.



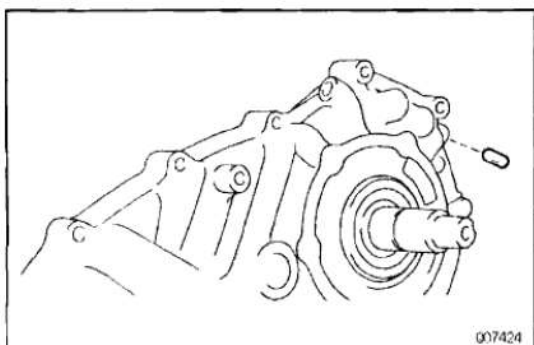
- (c) Hold the front drive fork shaft in place by hand, when removing the pin punch.



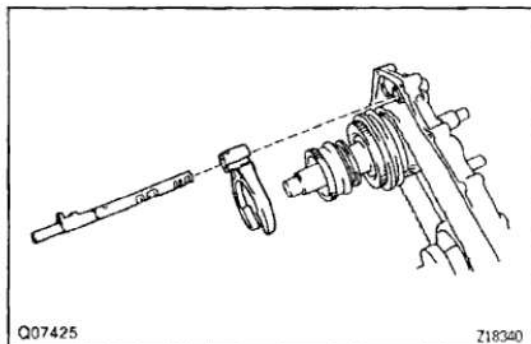
- (d) Remove the front drive fork shaft, shift fork, spring and stopper.

INSTALLATION HINT:

- Place the front drive shift fork into the groove of the clutch sleeve.
- Make sure to install the shift fork and stopper in the correct direction.



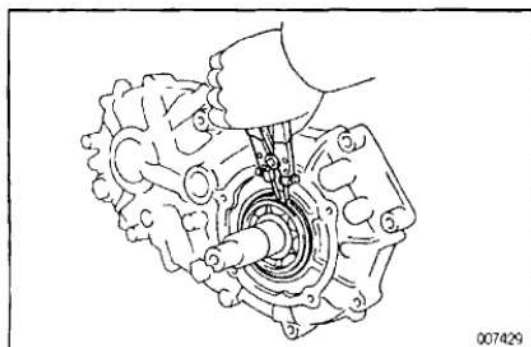
- (e) Using a magnetic finger, remove the straight pin.
- INSTALLATION HINT:** Apply gear oil to the straight pin and insert it into the case hole.



15. REMOVE HIGH AND LOW FORK SHAFT AND SHIFT FORK

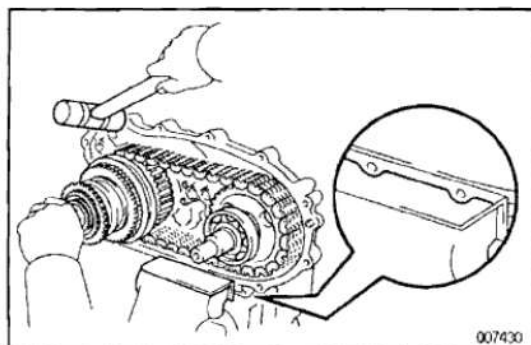
INSTALLATION HINT:

- Place the high and low shift fork into the groove of the clutch sleeve.
- Make sure to install the shift fork in the correct direction.



16. REMOVE REAR OUTPUT SHAFT, DRIVEN SPROCKET AND CHAIN

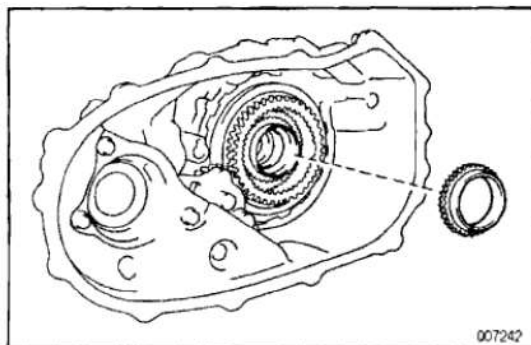
- (a) Using a snap ring expander, remove the snap ring.



- (b) Using a plastic hammer, tap the rear case with pulling the rear output shaft and driven sprocket.

INSTALLATION HINT: If necessary, heat the rear case to about 50 — 80 °C (122 — 176 °F).

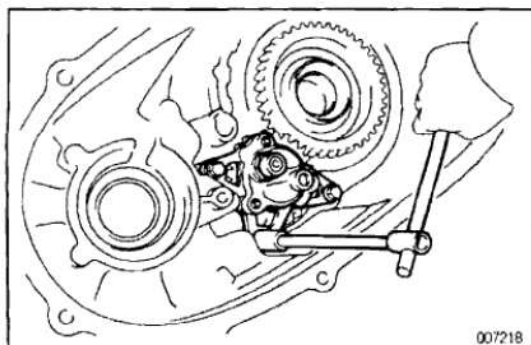
- (c) Remove the chain.



17. REMOVE SYNCHRONIZER RING FROM INPUT SHAFT

INSTALLATION HINT:

- Apply gear oil to the synchronizer ring.
- Align the synchronizer ring slots with the shifting keys, and install it on the high and low clutch hub.



18. REMOVE SEPARATOR WITH OIL STRAINER AND MAGNET

Remove the 3 bolts and the separator with the oil strainer and magnet.

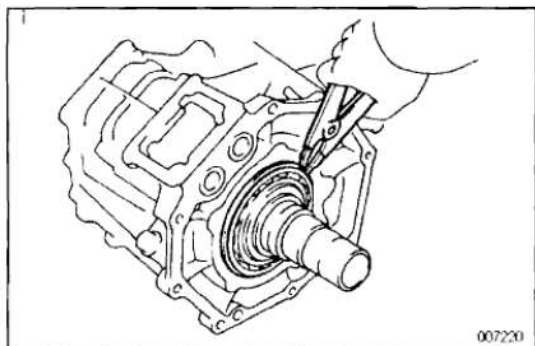
Torque: 7.5 N·m (80 kgf·cm, 69 in.lbf)

19. REMOVE OIL PUMP BODY ASSEMBLY

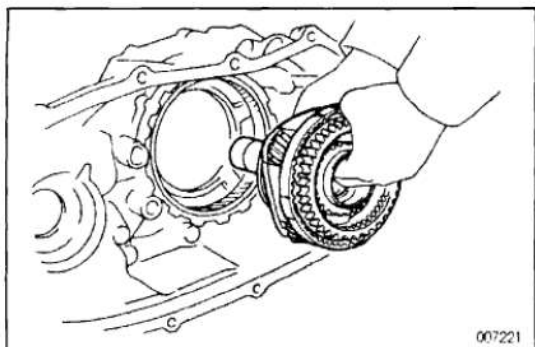
Remove the 3 bolts and the oil pump body assembly.

Torque: 7.5 N·m (80 kgf·cm, 69 in.lbf)

20. REMOVE OIL PUMP DRIVE GEAR

**21. REMOVE PLANETARY GEAR ASSEMBLY WITH INPUT SHAFT**

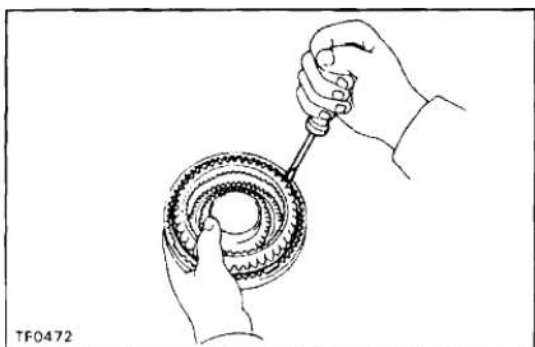
- (a) Using a snap ring expander, remove the snap ring.



- (b) Pull out the planetary gear assembly with the input shaft.

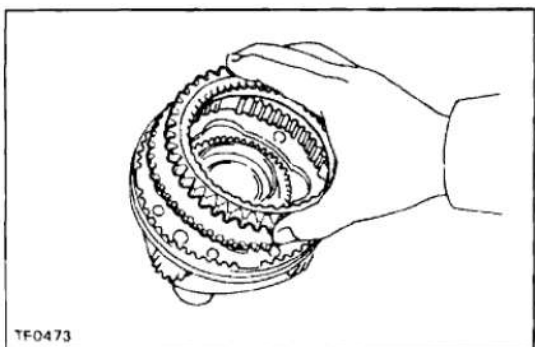
INSTALLATION HINT: If necessary, heat the front case to about 50 — 80 °C (122 — 176 °F).

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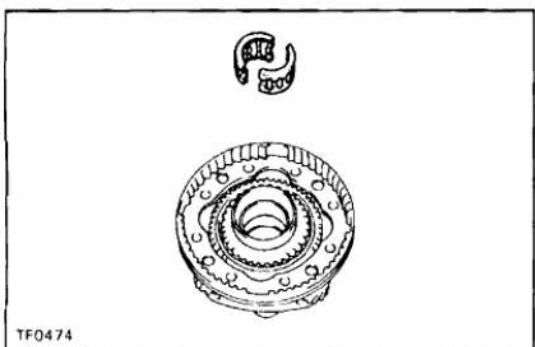
**22. REMOVE LOW GEAR SPLINE PIECE**

- (a) Using a screwdriver, remove the snap ring.

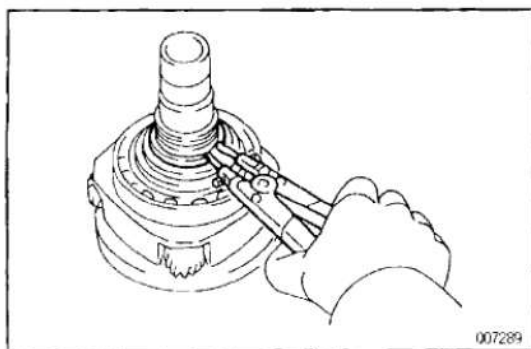
INSTALLATION HINT: Make sure the end gap of the snap ring is not aligned with cutout portion of the planetary carrier.



- (b) Remove the low gear spline piece.

**23. REMOVE NEEDLE ROLLER BEARING FROM INPUT SHAFT**

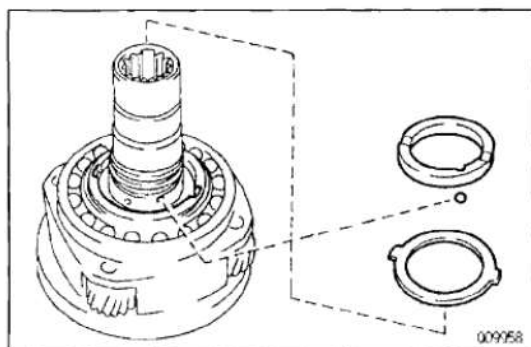
INSTALLATION HINT: Apply gear oil to the needle roller bearing.



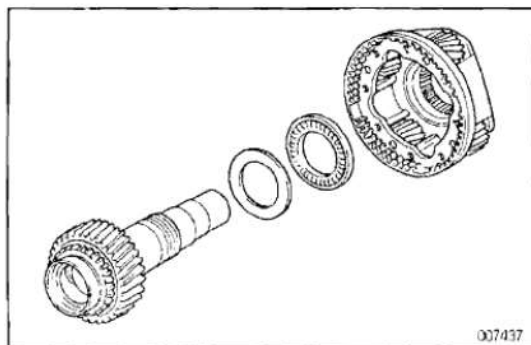
24. REMOVE INPUT SHAFT STOPPER AND THRUST BEARING

- (a) Using a snap ring expander, remove the snap ring.
INSTALLATION HINT: Select a snap ring that will allow 0.05–0.15 mm (0.0020–0.0059 in.) axial play.

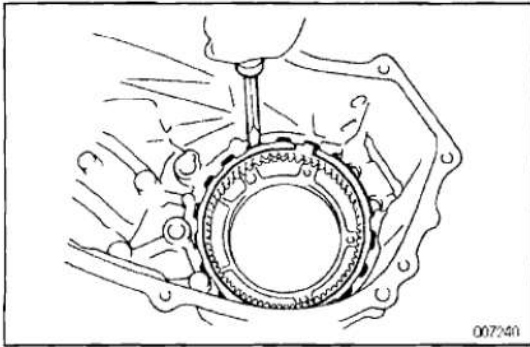
Mark	Thickness mm (in.)
A	2.10 – 2.15 (0.0827 – 0.0846)
B	2.15 – 2.20 (0.0846 – 0.0866)
C	2.20 – 2.25 (0.0866 – 0.0886)
D	2.25 – 2.30 (0.0886 – 0.0906)
E	2.30 – 2.35 (0.0906 – 0.0925)
F	2.35 – 2.40 (0.0925 – 0.0945)
G	2.40 – 2.45 (0.0945 – 0.0965)
H	2.45 – 2.50 (0.0965 – 0.0984)
J	2.50 – 2.55 (0.0984 – 0.1004)
K	2.55 – 2.60 (0.1004 – 0.1024)
L	2.60 – 2.65 (0.1024 – 0.1043)
M	2.65 – 2.70 (0.1043 – 0.1063)
N	2.70 – 2.75 (0.1063 – 0.1083)
P	2.75 – 2.80 (0.1083 – 0.1102)
Q	2.80 – 2.85 (0.1102 – 0.1122)
R	2.85 – 2.90 (0.1122 – 0.1142)
S	2.90 – 2.95 (0.1142 – 0.1161)
T	2.95 – 3.00 (0.1161 – 0.1181)
U	3.00 – 3.05 (0.1181 – 0.1201)



- (b) Remove the input gear stopper, thrust washer and ball.
INSTALLATION HINT: Apply gear oil to the input gear stopper and thrust washer.



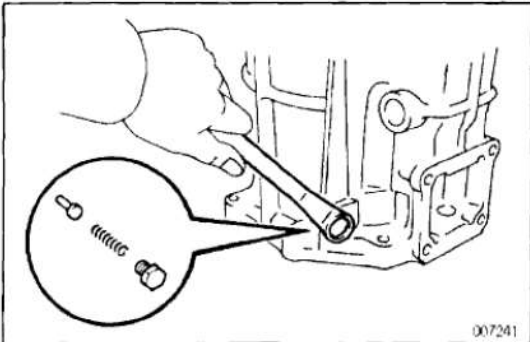
25. REMOVE INPUT SHAFT, THRUST RACE AND THRUST BEARING



26. REMOVE PLANETARY RING GEAR

- (a) Using a screwdriver, remove the snap ring.

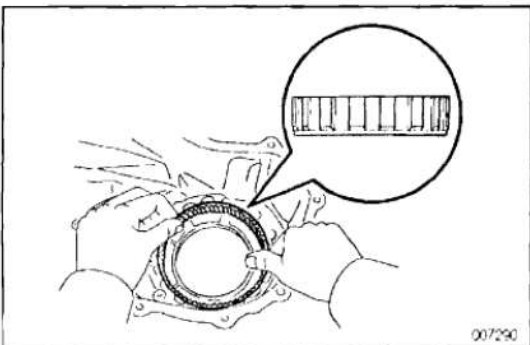
INSTALLATION HINT: Make sure the end gap of the snap ring is not aligned with the upper side of the case.



- (b) Remove the plug, spring and pin.

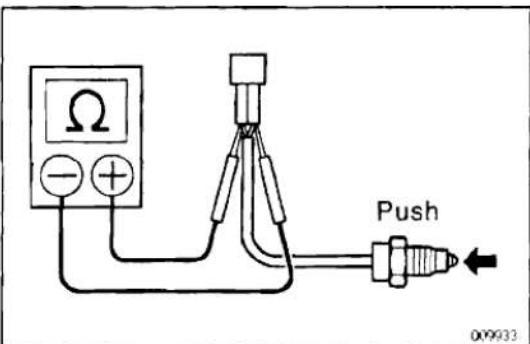
Torque: 19 N·m (190 kgf·cm, 14 ft·lbf)

INSTALLATION HINT: Apply liquid sealer to the plug.
Sealant: Part No. 08833 – 00080, THREE BOND 1344, LOCTITE 242 or equivalent



- (c) Remove the planetary ring gear.

INSTALLATION HINT: Make sure to install the ring gear in the correct direction.



27. INSPECT SWITCHES

Check that there is continuity between terminals as shown.

Switch Position	Specified Condition
Push	Continuity (0Ω)
Free	No continuity (∞Ω)

If continuity is not as specified, replace the switch.

COMPONENT PARTS INSTALLATION

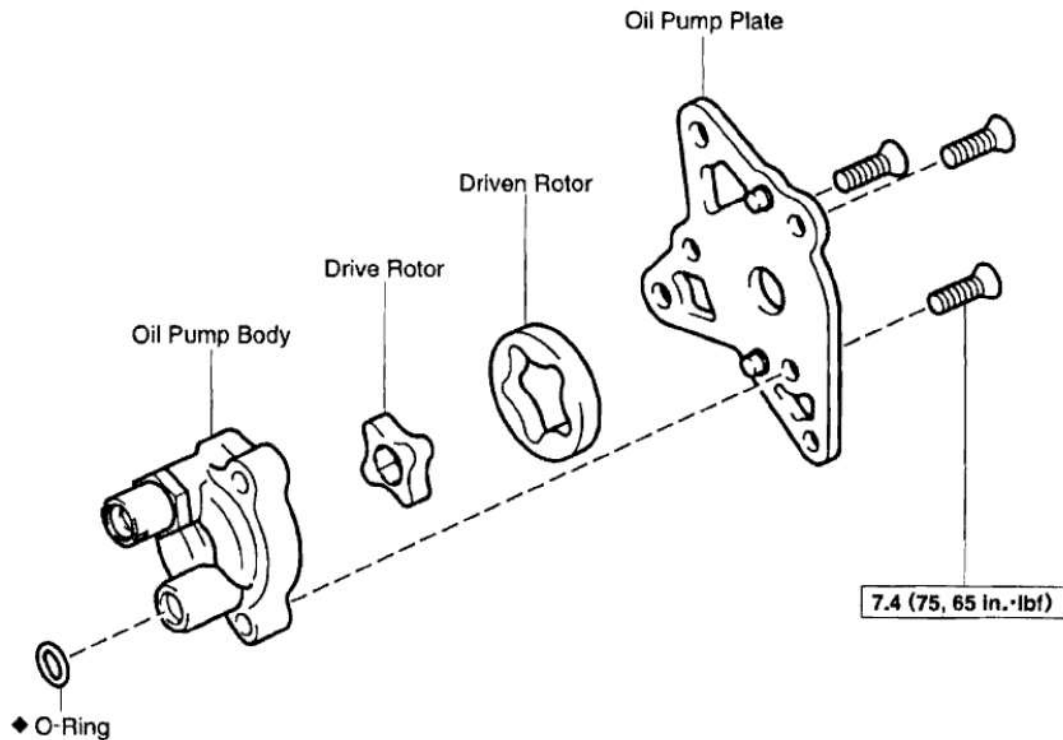
TR066-01

Installation is in the reverse order of removal.

HINT: Coat all of the sliding and rotating surfaces with gear oil before assembly.

OIL PUMP BODY COMPONENTS

TR00V-07



N·m (kgf·cm, ft·lbf): Specified torque
 ◆ Non-reusable part

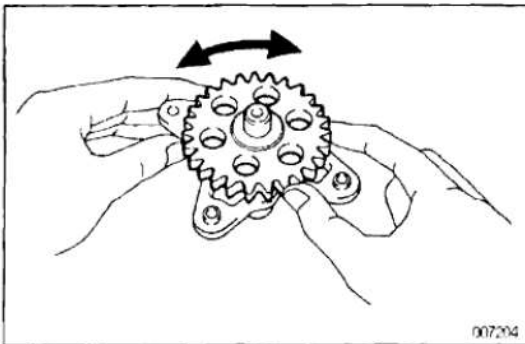
T 009535

TR067-01

OIL PUMP BODY DISASSEMBLY

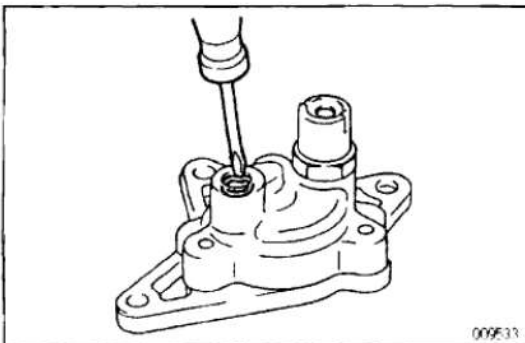
1. CHECK OIL PUMP OPERATION

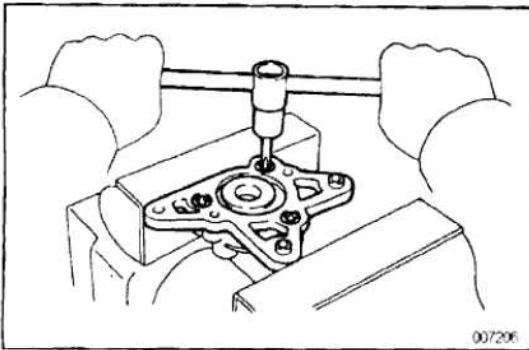
Install the oil pump drive gear to the drive rotor and check that the drive rotor turns smoothly.



2. REMOVE O-RING

Remove the O-ring from the oil pump body.
INSTALLATION HINT: Coat a new O-ring with gear oil and install it to the oil pump body.



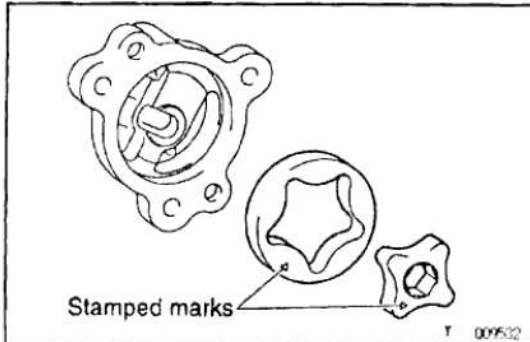


3. REMOVE OIL PUMP PLATE

- (a) Using a torx socket wrench T30, remove the 3 torx screws.

Torque: 7.4 N·m (75 kgf·cm, 65 in.lbf)

- (b) Remove the oil pump plate.

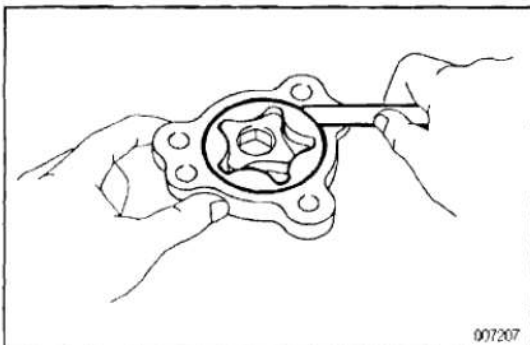


4. REMOVE DRIVE ROTOR AND DRIVEN ROTOR

INSTALLATION HINT:

- Apply gear oil to the both rotors.
- Align the stamped marks facing them upward.

TR



OIL PUMP BODY INSPECTION

TR00X-0C

1. INSPECT DRIVEN ROTOR BODY CLEARANCE

Push the driven rotor to one side of the body. Using a feeler gauge, measure the clearance.

Standard clearance:

0.09 – 0.16 mm (0.0035 – 0.0063 in.)

Maximum clearance: 0.16 mm (0.0063 in.)

If the clearance exceeds the maximum, replace the drive rotor, driven rotor or pump body.

2. INSPECT BOTH ROTOR TIPS CLEARANCE

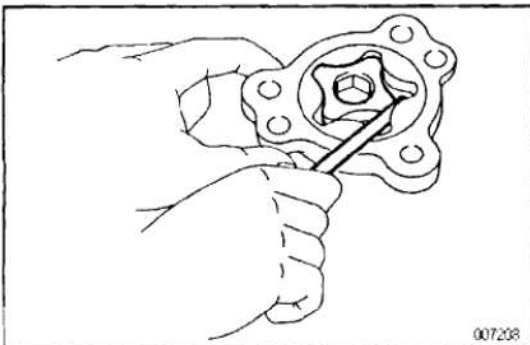
Using a feeler gauge, measure the clearance between both rotor tips.

Standard clearance:

0.05 – 0.15 mm (0.0020 – 0.0059 in.)

Maximum clearance: 0.15 mm (0.0059 in.)

If the clearance exceeds the maximum, replace the drive rotor, driven rotor or pump body.



3. INSPECT BOTH ROTORS SIDE CLEARANCE

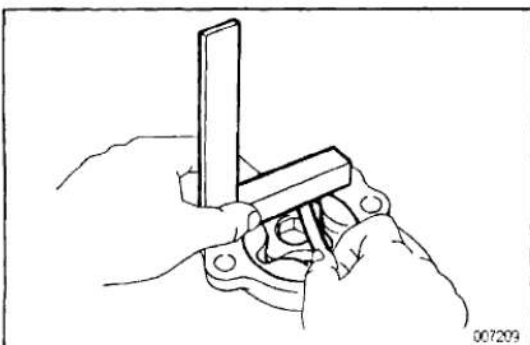
Using a steel straight edge and feeler gauge, measure the clearance between the rotors and straight edge.

Standard clearance:

0.03 – 0.10 mm (0.0012 – 0.0039 in.)

Maximum clearance: 0.10 mm (0.0039 in.)

If the clearance exceeds the maximum, replace the drive rotor, driven rotor or pump body.



OIL PUMP BODY ASSEMBLY

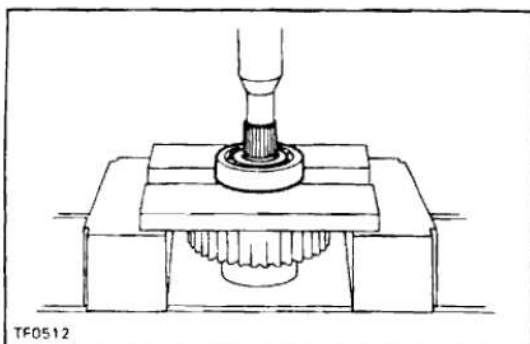
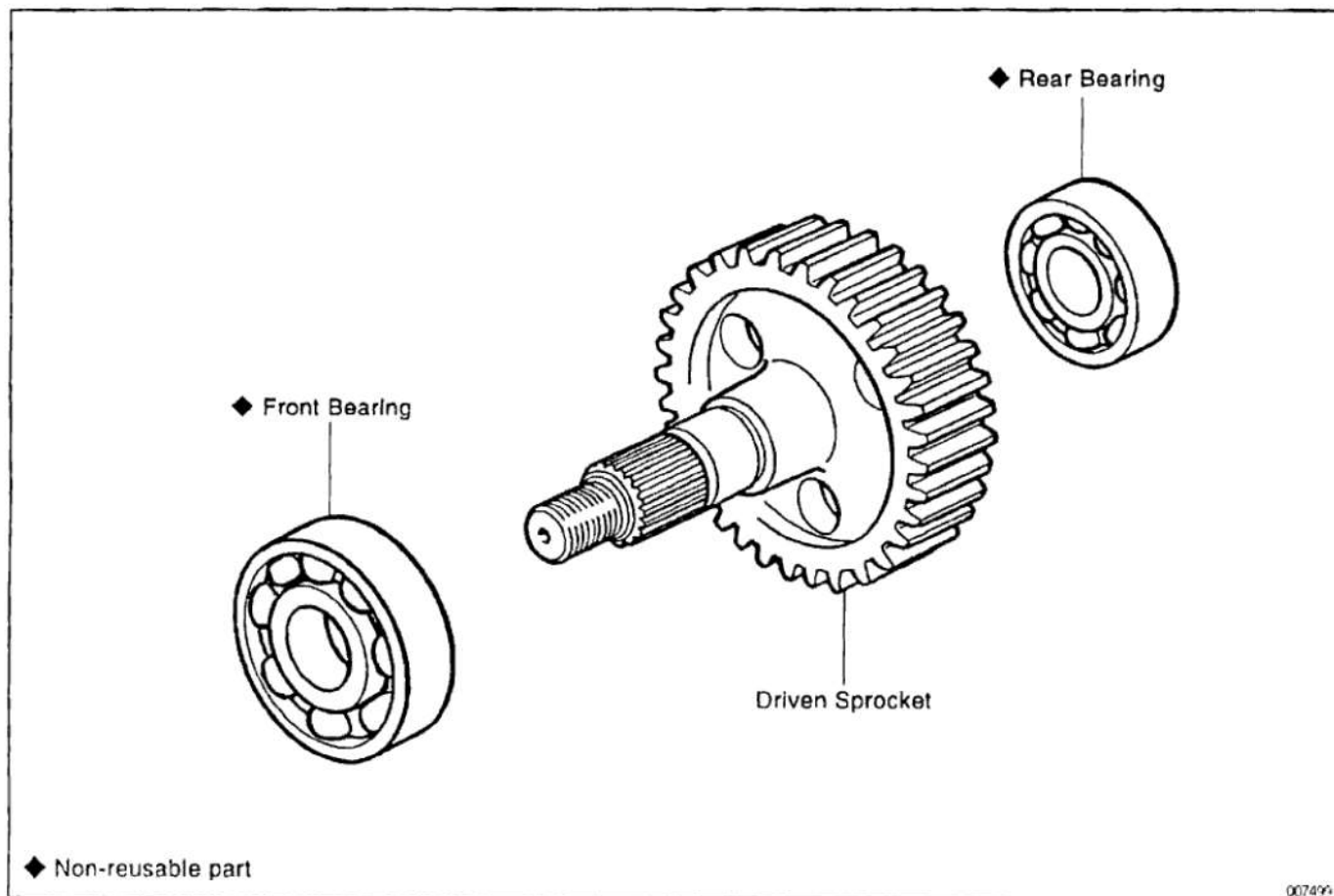
TR069-03

Assembly is in the reverse order of disassembly.

DRIVEN SPROCKET COMPONENTS

TR002-06

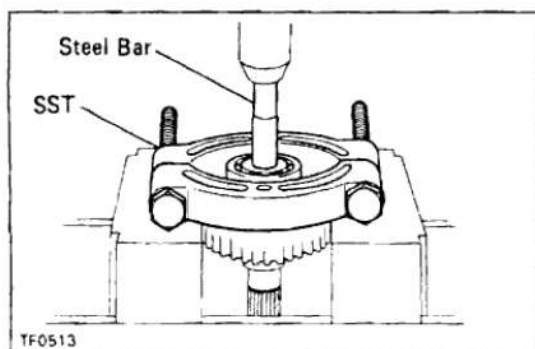
TR

**DRIVEN SPROCKET DISASSEMBLY**

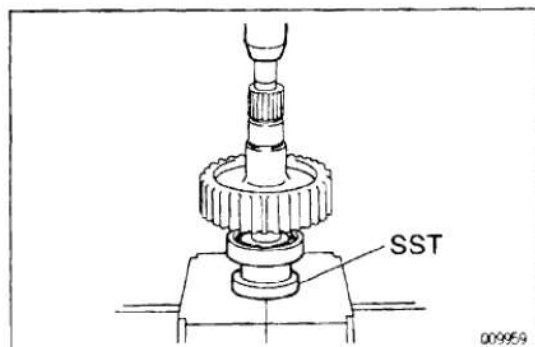
TR010-06

1. REMOVE FRONT BEARING

Using a press, remove the front bearing.

**2. REMOVE REAR BEARING**

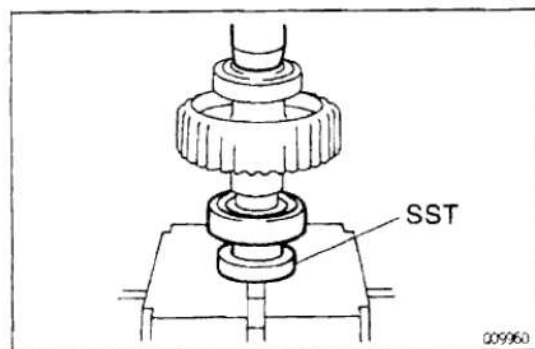
Using SST and a press, remove the rear bearing.
SST 09555–55010

**DRIVEN SPROCKET ASSEMBLY**

TR011–09

1. INSTALL REAR BEARING

Using SST and a press, install a new rear bearing.
SST 09316–00021

**2. INSTALL FRONT BEARING**

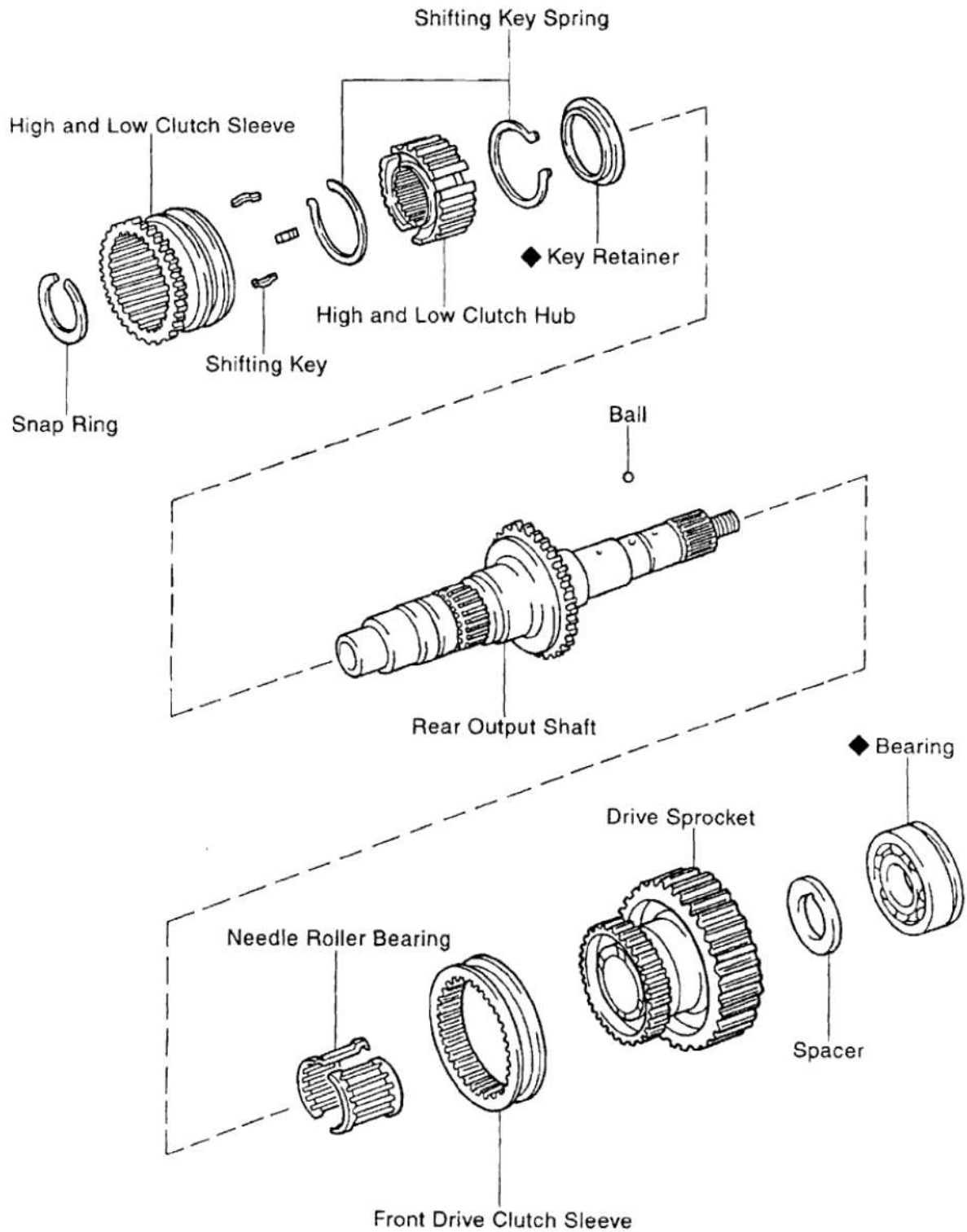
Using SST and a press, install a new front bearing.
SST 09316–00021

TR

REAR OUTPUT SHAFT COMPONENTS

TR088-01

TR



◆ Non-reusable part

027536

REAR OUTPUT SHAFT DISASSEMBLY**1. INSPECT DRIVE SPROCKET THRUST CLEARANCE**

Using a feeler gauge, measure the drive sprocket thrust clearance.

Standard clearance:

0.10 – 0.25 mm (0.0039 – 0.0098 in.)

Maximum clearance: 0.25 mm (0.0098 in.)

If the clearance exceeds the maximum, replace the drive sprocket.

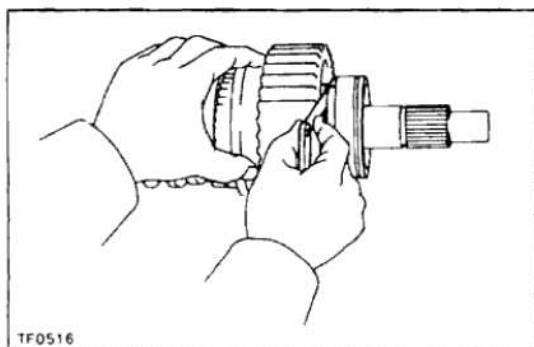
2. REMOVE HIGH AND LOW CLUTCH SLEEVE ASSEMBLY

- (a) Using a snap ring expander, remove the snap ring.
- (b) Remove the clutch sleeve and 3 shifting keys.
- (c) Using a press, remove the clutch hub, 2 key springs and key retainer.

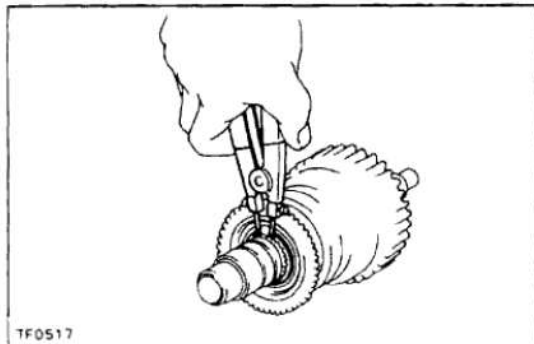
3. REMOVE BEARING, SPACER AND DRIVE SPROCKET WITH FRONT DRIVE CLUTCH SLEEVE

- (a) Using SST and a press, remove the bearing.
SST 09555–55010

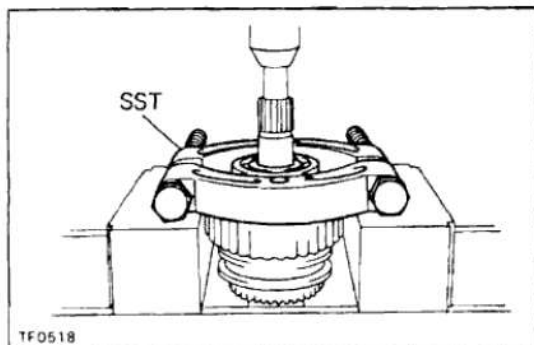
- (b) Remove these parts.
 - Spacer and ball
 - Drive sprocket with front drive clutch sleeve
 - Needle roller bearing
- (c) Remove the front drive clutch sleeve from the drive sprocket.



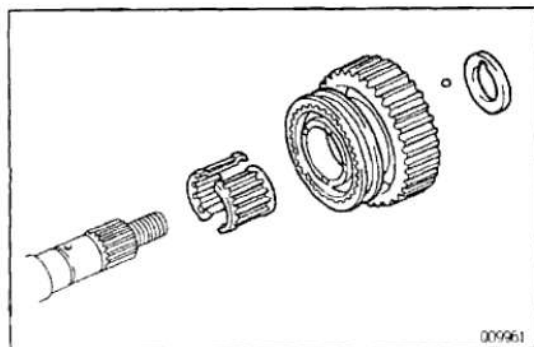
TF0516



TF0517

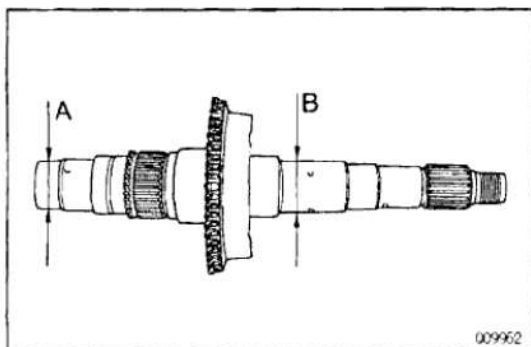


TF0518



009961

TR



REAR OUTPUT SHAFT INSPECTION

1. INSPECT REAR OUTPUT SHAFT

Using a micrometer, measure the outer diameter of the rear output shaft journal surface.

Minimum diameter:

Part A: 27.98 mm (1.1016 in.)

Part B: 36.98 mm (1.4561 in.)

If the clearance exceeds the minimum, replace the rear output shaft.

2. INSPECT DRIVE SPROCKET RADIAL CLEARANCE

Using a dial indicator, measure the radial clearance between the sprocket and shaft with the needle roller bearing installed.

Standard clearance:

0.010 — 0.055 mm (0.0004 — 0.0022 in.)

Maximum clearance: 0.055 mm (0.0022 in.)

If the clearance exceeds the maximum, replace the drive sprocket, rear output shaft or needle roller bearing.

3. INSPECT FRONT DRIVE SHIFT FORK AND CLUTCH SLEEVE CLEARANCE

Using a feeler gauge, measure the clearance between the front drive shift fork and clutch sleeve.

Maximum clearance: 1.0 mm (0.039 in.)

If the clearance exceeds the maximum, replace the shift fork or clutch sleeve.

4. INSPECT HIGH AND LOW SHIFT FORK AND CLUTCH SLEEVE CLEARANCE

Using a feeler gauge, measure the clearance between the high and low shift fork and clutch sleeve.

Maximum clearance: 1.0 mm (0.039 in.)

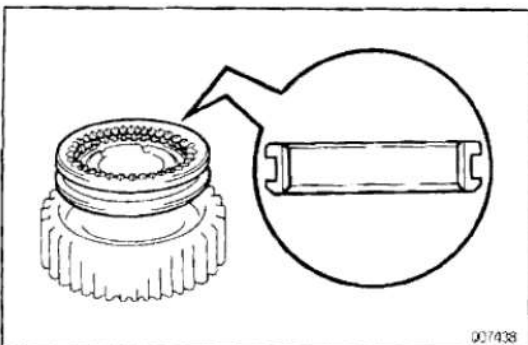
If the clearance exceeds the maximum, replace the shift fork or clutch sleeve.

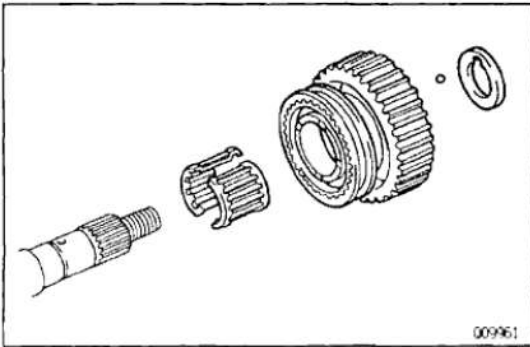
REAR OUTPUT SHAFT ASSEMBLY

1. INSTALL FRONT DRIVE CLUTCH SLEEVE ONTO DRIVE SPROCKET

Install the front drive clutch sleeve onto the drive sprocket.

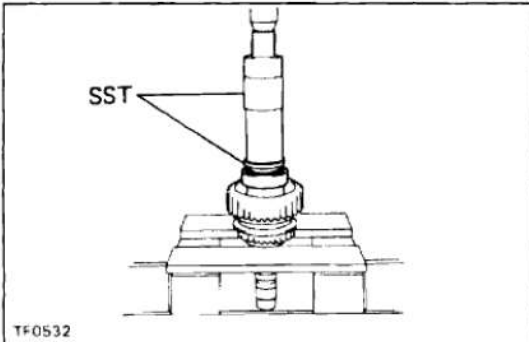
HINT: Make sure to install the clutch sleeve in the correct direction.





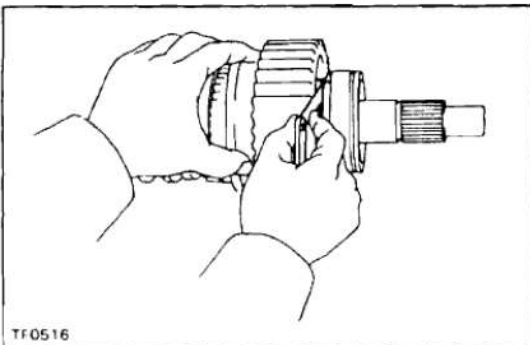
2. INSTALL DRIVE SPROCKET WITH FRONT DRIVE CLUTCH SLEEVE, SPACER AND BEARING

- Apply gear oil to the shaft and needle roller bearing.
- Install the needle roller bearing in the drive sprocket.
- Install the drive sprocket with the front drive clutch sleeve assembly.



- Install the spacer to align it with the ball.
- Using SST and a press, install a new bearing with the outer race snap ring groove toward the rear.
SST 09316-60011 (09316-00011, 09316-00071)

TR

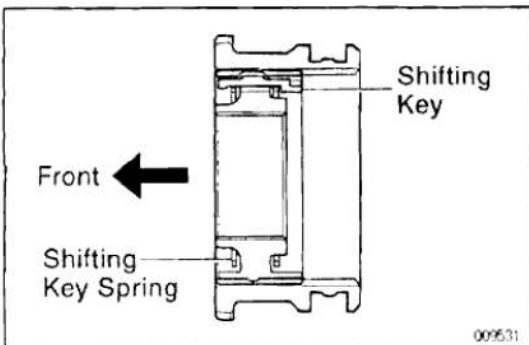


3. INSPECT DRIVE SPROCKET THRUST CLEARANCE

Using a feeler gauge, measure the drive sprocket thrust clearance.

Standard clearance:

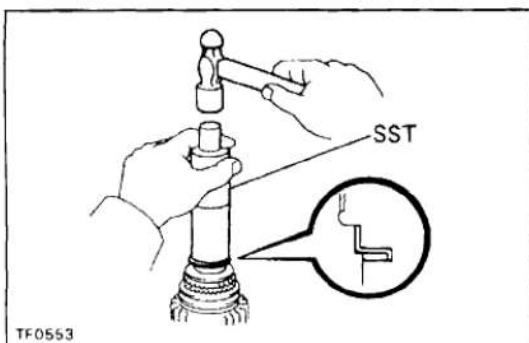
0.10 — 0.25 mm (0.0039 — 0.0098 in.)



4. INSERT HIGH AND LOW CLUTCH HUB ONTO CLUTCH SLEEVE

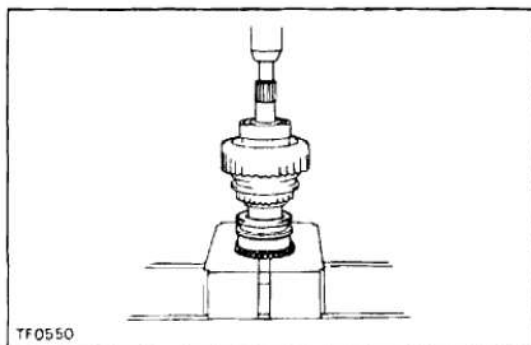
- Install the clutch hub and 3 shifting keys onto the clutch sleeve.
- Install the shifting 2 key springs under the shifting keys.

NOTICE: Install the key springs positioned so that their end gaps are not in line.



5. INSTALL HIGH AND LOW CLUTCH HUB ASSEMBLY

- Using SST and a hammer, drive in a new key retainer.
SST 09316-60011 (09316-00011)
NOTICE: Be careful not to deform or damage the key retainer.

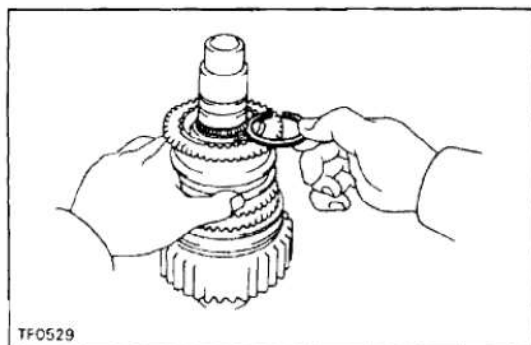


- (b) Using a press, install the high and low clutch hub assembly.

6. INSTALL SNAP RING

Select a snap ring that will allow minimum axial play and install it to the shaft.

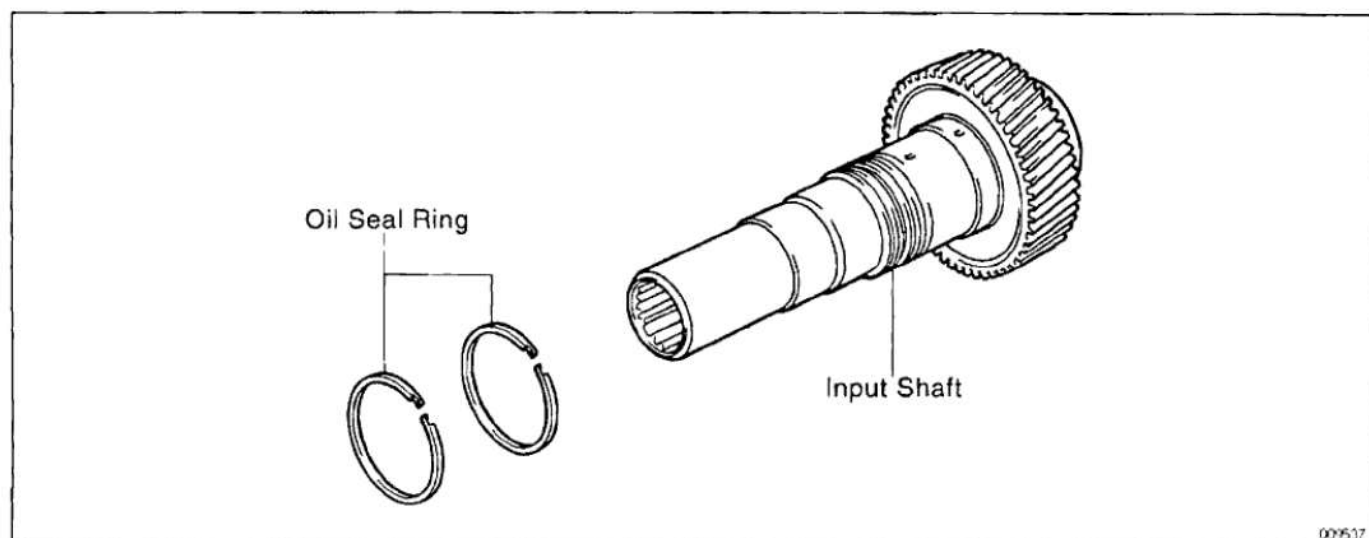
Mark	Thickness mm (in.)
A	2.10 – 2.15 (0.0827 – 0.0846)
B	2.15 – 2.20 (0.0846 – 0.0866)
C	2.20 – 2.25 (0.0866 – 0.0886)
D	2.25 – 2.30 (0.0886 – 0.0906)
E	2.30 – 2.35 (0.0906 – 0.0925)
F	2.35 – 2.40 (0.0925 – 0.0945)
G	2.40 – 2.45 (0.0945 – 0.0965)
H	2.45 – 2.50 (0.0965 – 0.0984)
J	2.50 – 2.55 (0.0984 – 0.1004)
K	2.00 – 2.05 (0.0787 – 0.0807)
L	2.05 – 2.10 (0.0807 – 0.0827)



TR

INPUT SHAFT COMPONENTS

TR016-07



INPUT SHAFT DISASSEMBLY

TR04L-04

REMOVE OIL SEAL RINGS

Remove the 2 oil seal rings.

INPUT SHAFT INSPECTION

1. INSPECT INPUT SHAFT

- (a) Using a micrometer, measure the outer diameter of the input shaft journal surface.

Minimum diameter: 47.59 mm (1.8736 in.)

- (b) Using a dial indicator, measure the inside diameter of the input shaft bushing.

Maximum inside diameter:

39.14 mm (1.5409 in.)

If the inside or outer diameter exceeds the maximum, replace the input shaft.

2. INSPECT SYNCHRONIZER RING

- (a) Turn the ring and push it in to check the braking action.

- (b) Measure the clearance between the synchronizer ring back and the input shaft spline end.

Standard clearance:

1.15 – 1.85 mm (0.0453 – 0.0728 in.)

Minimum clearance: 0.80 mm (0.0315 in.)

If the clearance is less than the minimum, replace the synchronizer ring.

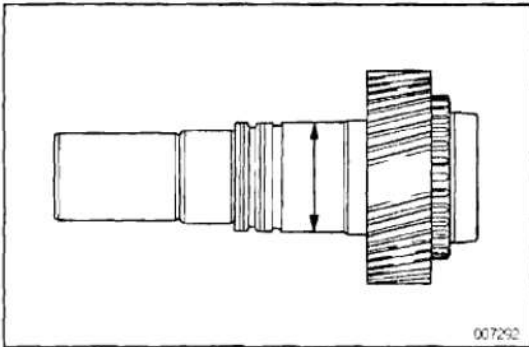
INPUT SHAFT ASSEMBLY

INSTALL OIL SEAL RINGS

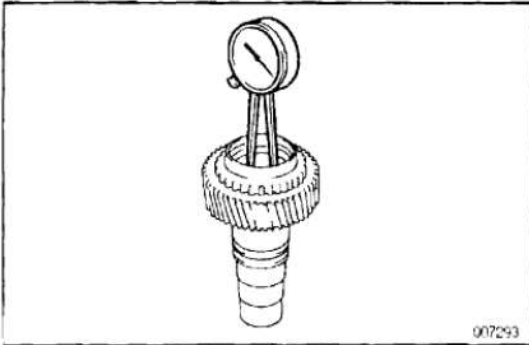
Install the 2 oil seal rings.

HINT:

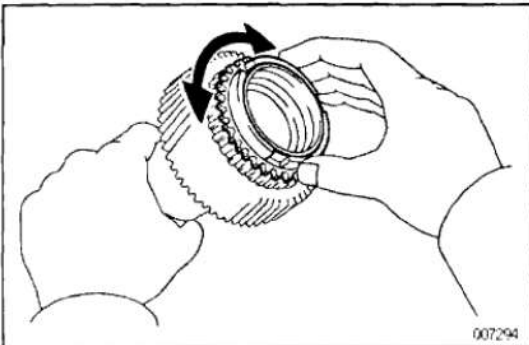
- Apply gear oil to the oil seal ring.
- Hang securely to eliminate clearance.



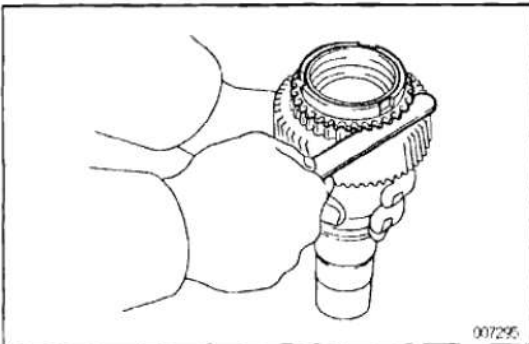
007292



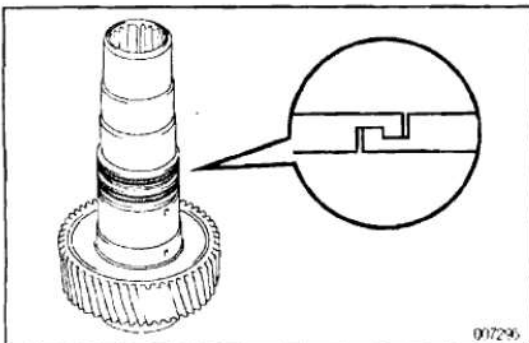
007293



007294



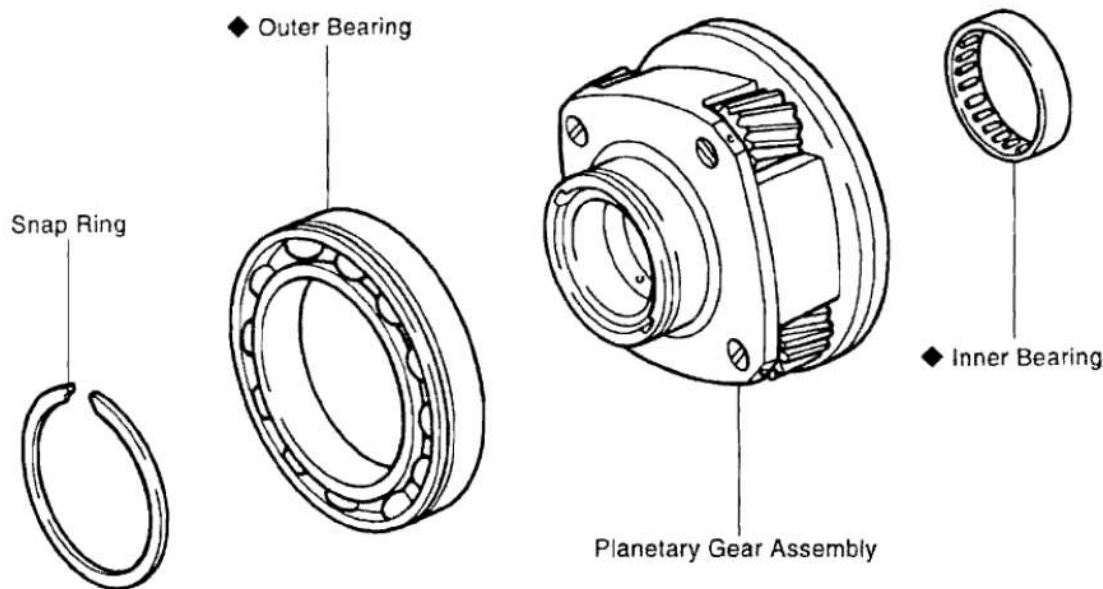
007295



007296

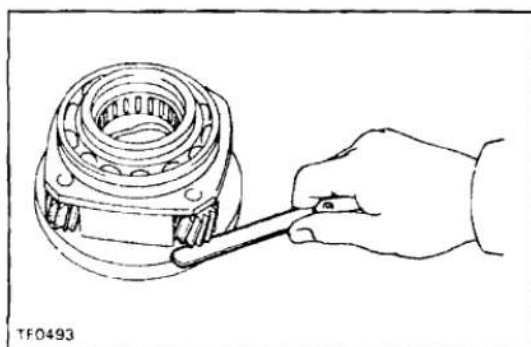
PLANETARY GEAR COMPONENTS

TR01A-07



◆ Non-reusable part

007455



PLANETARY GEAR INSPECTION

TR06H-03

1. INSPECT PINION GEAR THRUST CLEARANCE

Using a feeler gauge, measure the planetary pinion gear thrust clearance.

Standard clearance:

0.11 — 0.84 mm (0.0043 — 0.0331 in.)

Maximum clearance: 0.84 mm (0.0331 in.)

If the clearance exceeds the maximum, replace the planetary gear assembly

2. INSPECT PLANETARY PINION GEAR RADIAL CLEARANCE

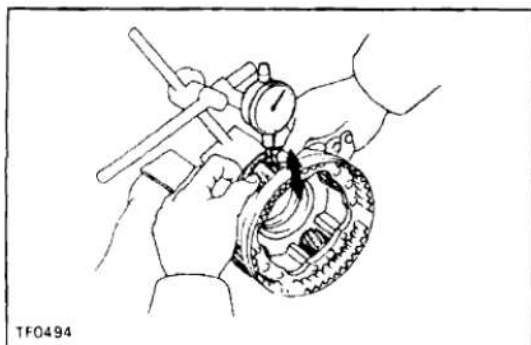
Using a dial indicator, measure the radial clearance of the planetary pinion gear.

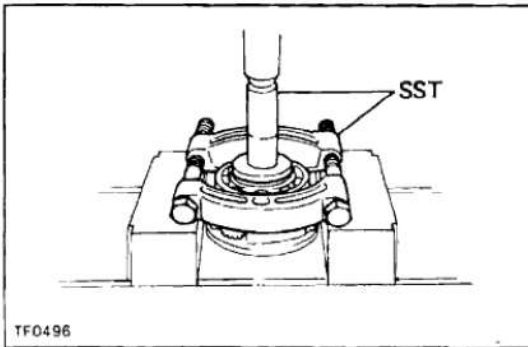
Standard clearance:

0.009 — 0.038 mm (0.0004 — 0.0015 in.)

Maximum clearance: 0.038 mm (0.0015 in.)

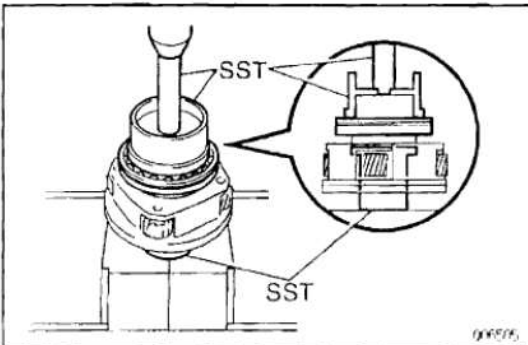
If the clearance exceeds the maximum, replace the planetary gear assembly.





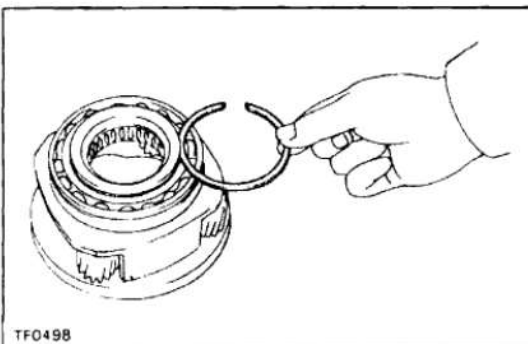
3. IF NECESSARY, REPLACE PLANETARY GEAR OUTER BEARING

- (a) Using a snap ring expander, remove the snap ring.
- (b) Using SST and a press, remove the outer bearing.
SST 09554-30011, 09555-55010



- (c) Using SST and a press, install a new bearing with the groove faced forward..

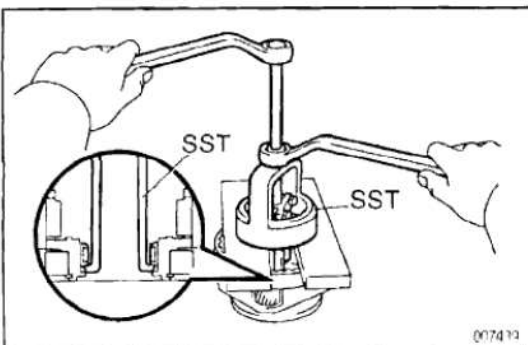
SST 09223-15020, 09515-30010, 09950-70010
(09951-07100)



- (d) Select a snap ring that will allow minimum axial play.

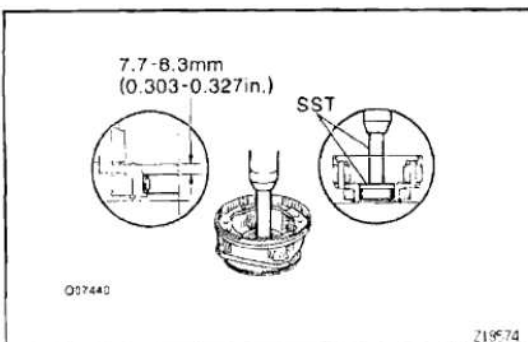
Mark	Thickness mm (in.)
1	1.45 - 1.50 (0.0571 - 0.0591)
2	1.50 - 1.55 (0.0591 - 0.0610)
3	1.55 - 1.60 (0.0610 - 0.0630)
4	1.60 - 1.65 (0.0630 - 0.0650)
5	1.65 - 1.70 (0.0650 - 0.0669)

- (e) Using a snap ring expander, install the snap ring.



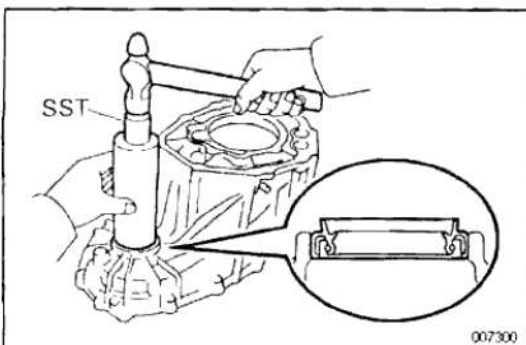
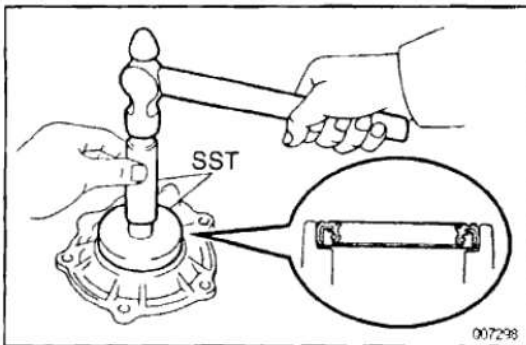
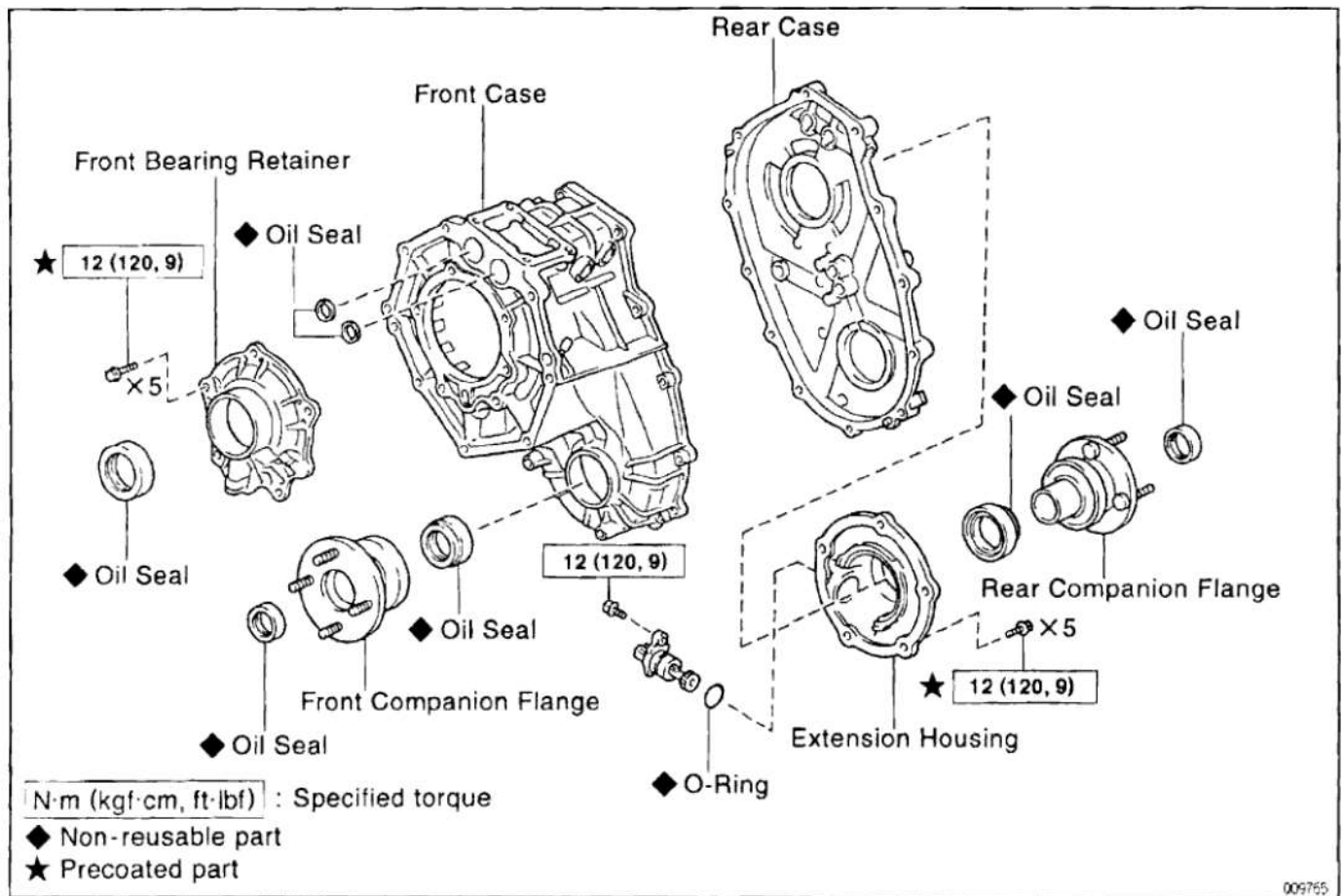
4. IF NECESSARY, REPLACE PLANETARY GEAR THRUST INNER BEARING

- (a) Using SST and a press, remove the inner bearing.
SST 09612-65014 (09612-01030, 09612-01050)
NOTICE: Hang the SST securely to the clearance between the thrust inner bearing and planetary gear.



- (b) Using SST and a press, install a new bearing.
SST 09950-60010 (09951-00570),
09950-70010 (09951-07100)
Bearing depth: 7.7 - 8.3 mm (0.303 - 0.327 in.)

OIL SEALS COMPONENTS



OIL SEALS REPLACEMENT

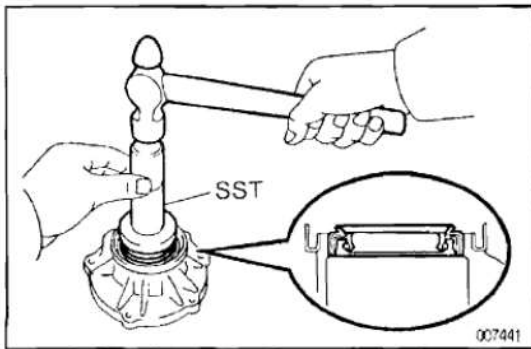
1. REPLACE FRONT BEARING RETAINER OIL SEAL

- (a) Using a screwdriver and hammer, drive out the oil seal.
- (b) Using SST and a hammer, drive in a new oil seal until its surface is flush with the retainer upper surface.
SST 09950-60010 (09951-00590),
09950-70010 (09951-07100)

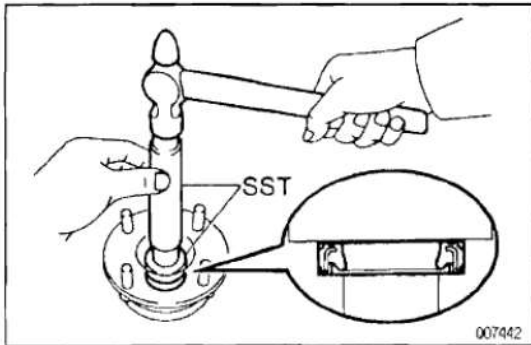
- (c) Coat the lip of the oil seal with MP grease.

2. REPLACE FRONT CASE OIL SEAL

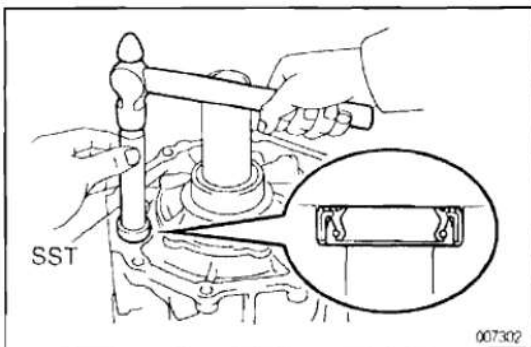
- Using a screwdriver and hammer, drive out the oil seal.
- Using SST and a hammer, drive in a new oil seal until its surface is flush with the case upper surface.
SST 09316-60011 (09316-00011)
- Coat the lip of the oil seal with MP grease.

**3. REPLACE EXTENSION HOUSING OIL SEAL**

- (a) Using a screwdriver and hammer, drive out the oil seal.
- (b) Using SST and a hammer, drive in a new oil seal until its surface is flush with the housing upper surface.
SST 09554-22010
- (c) Coat the lip of the oil seal with MP grease.

**4. REPLACE FRONT AND REAR COMPANION FLANGE OIL SEALS**

- (a) Using a screwdriver and hammer, drive out the oil seals from the 2 flanges.
- (b) Using SST and a hammer, drive in a new oil seal.
SST 09950-60010 (09951-00220, 09951-00350, 09952-06010), 09950-70010 (09951-07100)
- (c) Coat the lip of the oil seal with MP grease.

**5. REPLACE SHIFT FORK SHAFT OIL SEALS**

- (a) Using a screwdriver, pry out the oil seal.
- (b) Using SST and a hammer, drive in a new oil seal.
SST 09304-12012

Oil seal depth:

—0.5 ~ 0.5 mm (—0.020 ~ 0.020 in.)

SERVICE SPECIFICATIONS

SERVICE DATA

TR01F-08

Breather hose	Hose depth		13 mm	0.51 in.	
Oil pump body	Body clearance	STD	0.09 – 0.16 mm	0.0035 – 0.0063 in.	
		Max	0.16 mm	0.0063 in.	
	Tip clearance	STD	0.05 – 0.15 mm	0.0020 – 0.0059 in.	
		Max	0.15 mm	0.0059 in.	
	Side clearance	STD	0.03 – 0.10 mm	0.0012 – 0.0039 in.	
		Max	0.10 mm	0.0039 in.	
Rear output shaft assembly	Drive sprocket thrust clearance	STD	0.10 – 0.25 mm	0.0039 – 0.0098 in.	
		Max	0.25 mm	0.0098 in.	
	Rear output shaft journal diameter				
		Part A	Min	27.98 mm	1.1016 in.
		Part B	Min	36.98 mm	1.4561 in.
	Drive sprocket radial clearance	STD	0.010 – 0.055 mm	0.0004 – 0.0022 in.	
		Max	0.055 mm	0.0022 in.	
	Front drive shift fork to clutch sleeve clearance	Max	1.0 mm	0.039 in.	
	High and low shift fork to sleeve clearance	Max	1.0 mm	0.039 in.	
	Rear output shaft snap ring thickness		Mark		
			A	2.10 – 2.15 mm	0.0827 – 0.0846 in.
			B	2.15 – 2.20 mm	0.0846 – 0.0866 in.
			C	2.20 – 2.25 mm	0.0866 – 0.0886 in.
			D	2.25 – 2.30 mm	0.0886 – 0.0906 in.
			E	2.30 – 2.35 mm	0.0906 – 0.0925 in.
			F	2.35 – 2.40 mm	0.0925 – 0.0945 in.
		G	2.40 – 2.45 mm	0.0945 – 0.0965 in.	
		H	2.45 – 2.50 mm	0.0965 – 0.0984 in.	
		J	2.50 – 2.55 mm	0.0984 – 0.1004 in.	
	K	2.00 – 2.05 mm	0.0787 – 0.0807 in.		
	L	2.05 – 2.10 mm	0.0807 – 0.0827 in.		

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Input shaft	Input shaft journal outer diameter	Min	47.59 mm	1.8736 in.
	Input shaft bushing diameter	Max	39.14 mm	1.5409 in.
	Synchronizer ring to sprocket clearance	STD	1.15 — 1.85 mm	0.0453 — 0.0728 in.
		Min	0.80 mm	0.0315 in.
	Input shaft snap ring thickness	Mark		
		A	2.10 — 2.15 mm	0.0827 — 0.0846 in.
		B	2.15 — 2.20 mm	0.0846 — 0.0866 in.
		C	2.20 — 2.25 mm	0.0866 — 0.0886 in.
		D	2.25 — 2.30 mm	0.0886 — 0.0906 in.
		E	2.30 — 2.35 mm	0.0906 — 0.0925 in.
		F	2.35 — 2.40 mm	0.0925 — 0.0945 in.
		G	2.40 — 2.45 mm	0.0945 — 0.0965 in.
		H	2.45 — 2.50 mm	0.0965 — 0.0984 in.
		J	2.50 — 2.55 mm	0.0984 — 0.1004 in.
		K	2.55 — 2.60 mm	0.1004 — 0.1024 in.
		L	2.60 — 2.65 mm	0.1024 — 0.1043 in.
		M	2.65 — 2.70 mm	0.1043 — 0.1063 in.
		N	2.70 — 2.75 mm	0.1063 — 0.1083 in.
		P	2.75 — 2.80 mm	0.1083 — 0.1102 in.
		Q	2.80 — 2.85 mm	0.1102 — 0.1122 in.
		R	2.85 — 2.90 mm	0.1122 — 0.1142 in.
		S	2.90 — 2.95 mm	0.1142 — 0.1161 in.
		T	2.95 — 3.00 mm	0.1161 — 0.1181 in.
		U	3.00 — 3.05 mm	0.1181 — 0.1201 in.
Planetary gear	Pinion gear thrust clearance	STD	0.11 — 0.84 mm	0.0043 — 0.0331 in.
		Max	0.84 mm	0.0331 in.
	Pinion gear radial clearance	STD	0.009 — 0.038 mm	0.0004 — 0.0015 in.
		Max	0.038 mm	0.0015 in.
	Outer bearing snap ring thickness	Mark		
		1	1.45 — 1.50 mm	0.0571 — 0.0591 in.
		2	1.50 — 1.55 mm	0.0591 — 0.0610 in.
		3	1.55 — 1.60 mm	0.0610 — 0.0630 in.
		4	1.60 — 1.65 mm	0.0630 — 0.0650 in.
		5	1.65 — 1.70 mm	0.0650 — 0.0669 in.
	Thrust inner bearing depth		7.7 — 8.3 mm	0.303 — 0.327 in.
Oil seal	Shift fork shaft oil seal depth		−0.5 ~ 0.5 mm	−0.020 ~ 0.020 in.

TORQUE SPECIFICATIONS

Part tightened	N·m	kgf·cm	ft·lbf
Crossmember x Engine rear mounting	19	190	14
Crossmember x Frame	65	660	48
Transfer adaptor x Transfer	24	240	17
Speed sensor driven gear set bolt	12	120	9
4WD position switch	37	380	27
L4 position switch	37	380	27
Plug of front case	37	380	27
Protector	18	185	13
Front bearing retainer	12	120	9
Control retainer	18	185	13
Companion flange lock nut	118	1,200	87
Extension housing	12	120	9
Front case x Rear case	28	285	21
Straight screw plug for shift fork shaft	19	190	14
Separator with oil strainer x Front case	7.5	80	69 in.·lbf
Oil pump body x Front case	7.5	80	69 in.·lbf
Straight screw plug for ring gear	19	190	14
Oil pump plate x Oil pump body	7.4	75	65 in.·lbf

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