

TRANSFER

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PRECAUTION

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

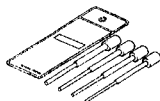
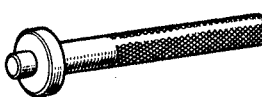
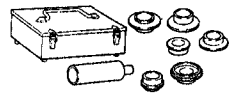
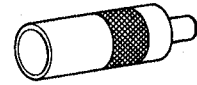
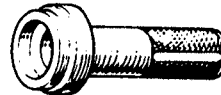
TROOP-0E

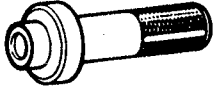
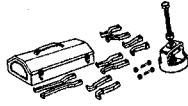
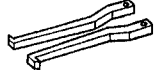
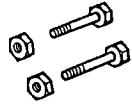
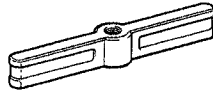
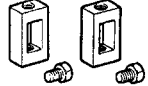
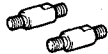
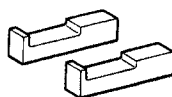
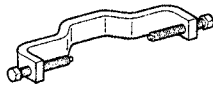
- Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces.
- Thoroughly clean all components to remove all the loose material.
- Clean both sealing surfaces with a non-residue solvent.
- Apply FIPG in approx. 1 mm (0.04 in.) wide bead along the sealing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

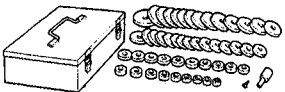
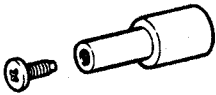
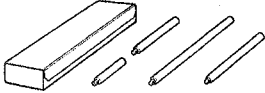
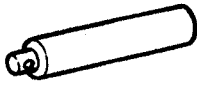
PREPARATION

SST (SPECIAL SERVICE TOOLS)

TROOP-0E

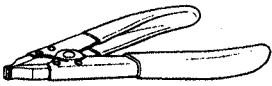
	09201-10000 Valve Guide Bushing Remover & Replacer Set	
	(09201-01080) Valve Guide Bushing Remover & Replacer 8	Speedometer driven gear oil seal
	09223-15020 Oil Seal & Bearing Replacer	Planetary gear outer bearing
	09304-12012 Input Shaft Front Bearing Replacer	Shift fork shaft oil seal
	09316-60011 Transmission & Transfer Bearing Replacer	
	(09316-00011) Replacer Pipe	High and low clutch hub Rear output shaft bearing Front case oil seal
	(09316-00071) 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
	09921-00010 Spring Tension Tool	Speedometer driven gear oil seal Oil pump spring seat
	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
	(09951-07150) Handle 150	Speedometer driven gear oil seal

MT013-OK

RECOMMENDED TOOLS

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

MX027-0Y

EQUIPMENT

Calipers	
Dial indicator	
Micrometer	
Torque wrench	
Feeler gauge	

LUBRICANT

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

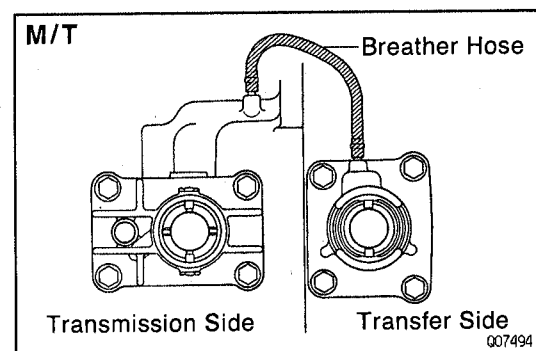
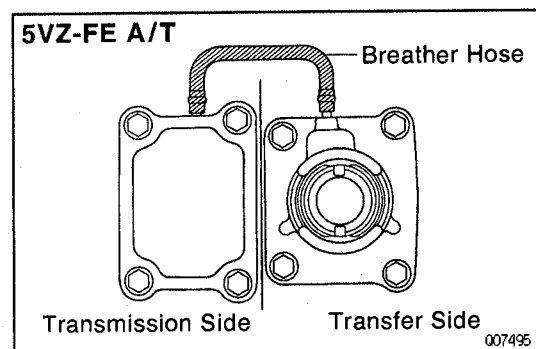
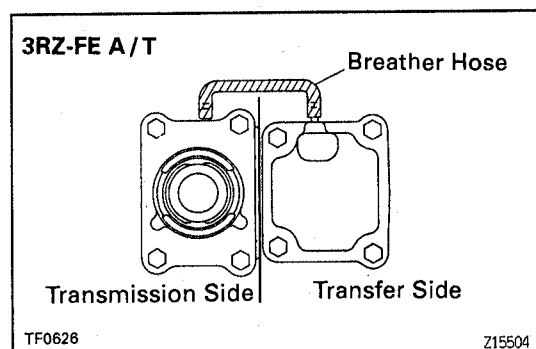
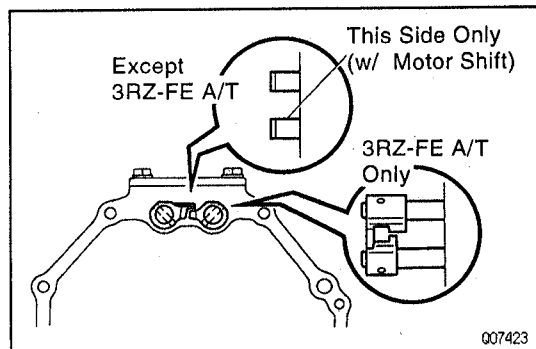
SSM (SPECIAL SERVICE MATERIALS)

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. TR003-06

See Page	TR-7, 8 9	TR-5	TR-5	TR-5	TR-37	TR-7, 8 9
Parts Name						
Trouble	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
Noise	3	2	1			
Oil leakage				1	2	
Tight corner braking						1



ASSEMBLY REMOVAL AND INSTALLATION

TR04E-02

ASSEMBLY REMOVAL

1. REMOVE TRANSFER WITH TRANSMISSION

M/T — See pages R150F MT-8 and W59 MT-8.

A/T — See page AT-19.

INSTALLATION HINT:

- Apply MP grease to the transfer adaptor oil seal.
- w/o One touch 2-4 selector system:
Shift the 2 shift fork shafts to the high-4 position.
- w/ One touch 2-4 selector system:
Shift the shift fork shaft to the high-2 position.

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

ASSEMBLY INSTALLATION

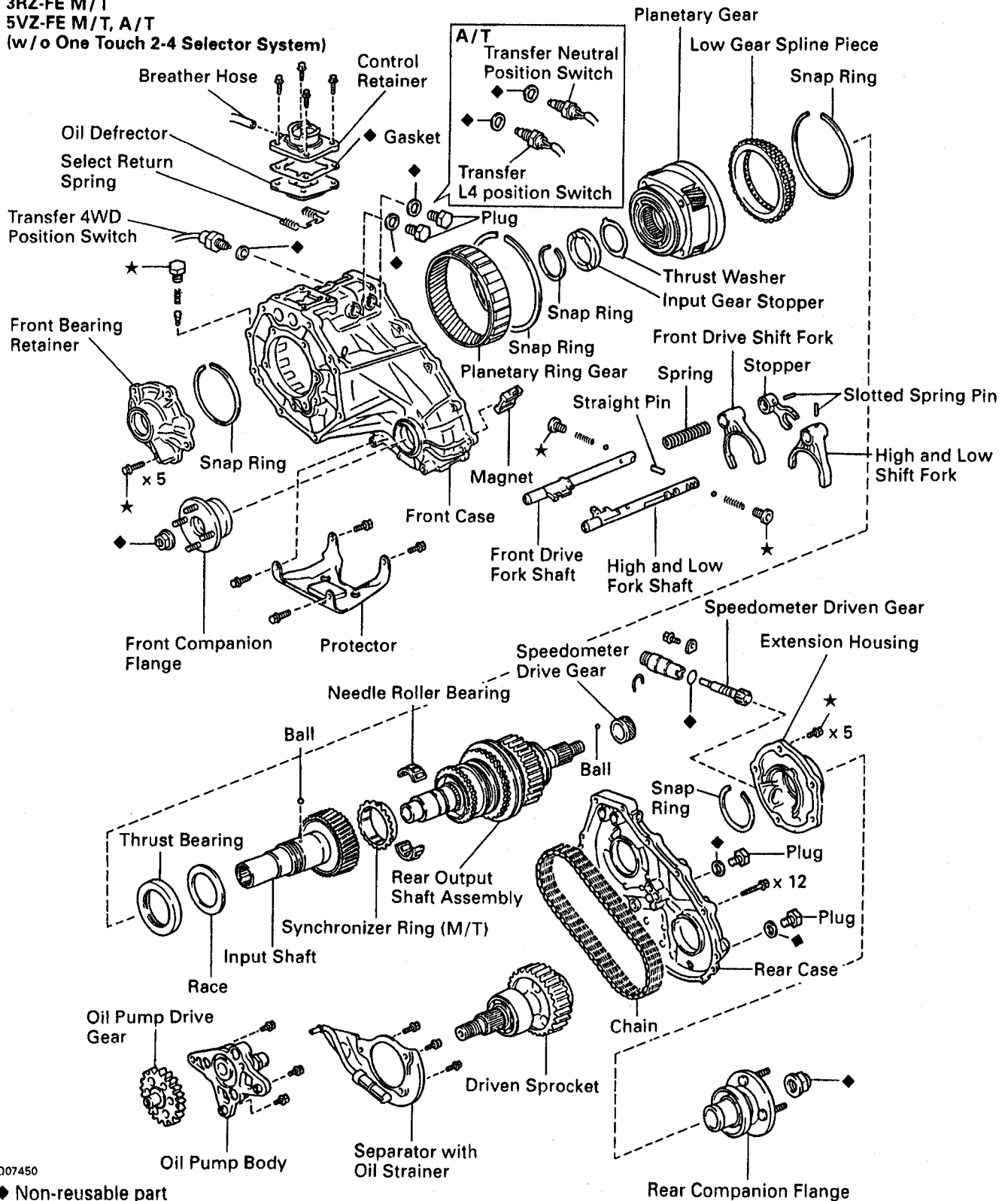
TR05D-01

Installation is in the reverse order of removal.

COMPONENT PARTS REMOVAL COMPONENTS

TMOSE-01

3RZ-FE M/T
5VZ-FE M/T, A/T
(w/o One Touch 2-4 Selector System)



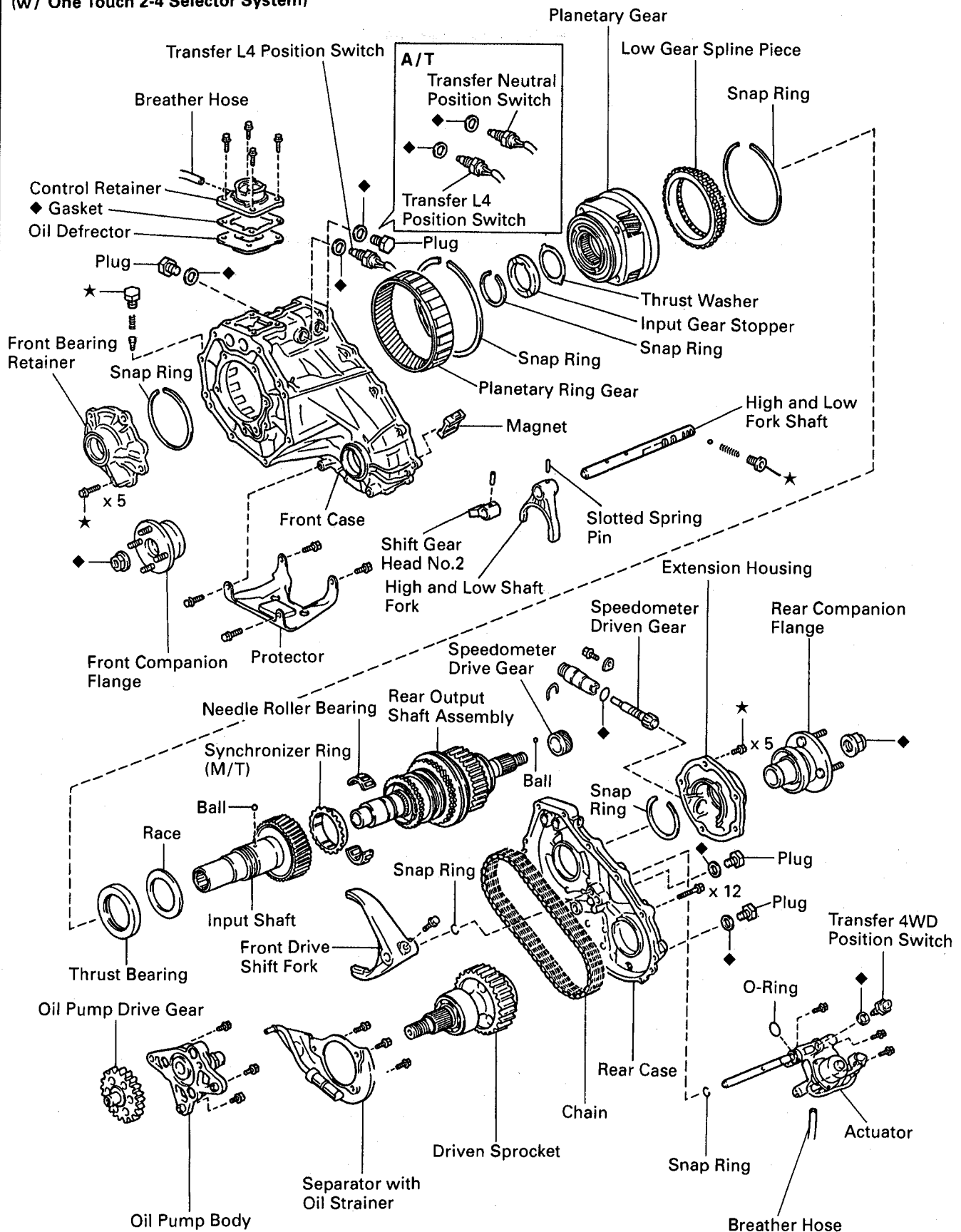
TR

007450

◆ Non-reusable part
★ Precoated part

Z16683

5VZ-FE M/T, A/T
(w/ One Touch 2-4 Selector System)



Q07453

◆ Non-reusable part
★ Precoated part

Z16686

BASIC SUBASSEMBLY SEPARATION

1. REMOVE SPEEDOMETER DRIVEN GEAR

Torque: 11.5 N·m (115 kgf·cm, 8 ft·lbf)

2. w/ One touch 2-4 selector system and A/T:
REMOVE L4 POSITION SWITCH

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

3. w/o One touch 2-4 selector system:
REMOVE 4WD POSITION SWITCH

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

4. A/T:
REMOVE NEUTRAL POSITION SWITCH

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

5. REMOVE PLUGS OF FRONT CASE

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

INSTALLATION HINT: Check the following items.

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

6. REMOVE PROTECTOR

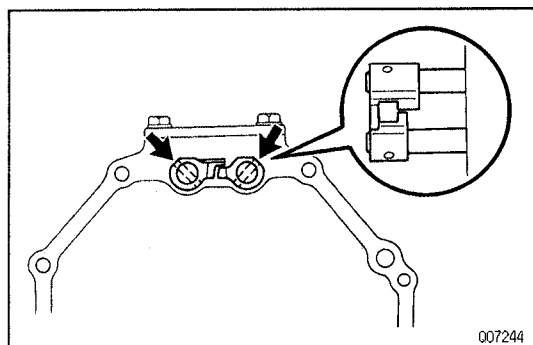
Remove the 4 bolts.

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

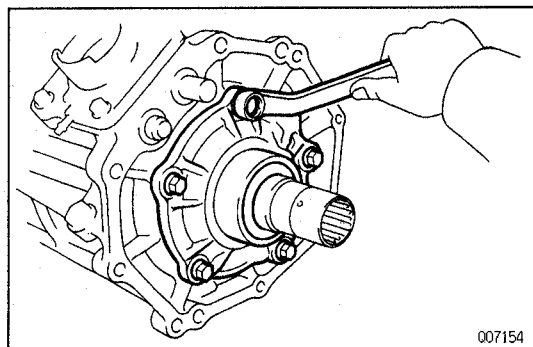
7. 3RZ-FE A/T:

REMOVE SHIFT GEAR HEAD NO.1 AND NO.2

- Using a pin punch and hammer, drive out the 2 slotted spring pins.
- Remove the 2 shift gear heads.



007244



007154

8. REMOVE FRONT BEARING RETAINER

- Remove the 5 bolts.

Torque: 11.5 N·m (115 kgf·cm, 8 ft·lbf)

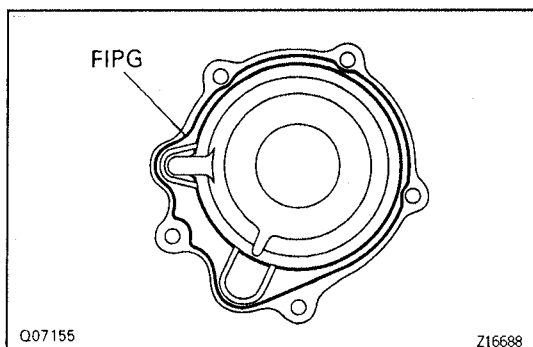
INSTALLATION HINT: Apply liquid sealer to the bolts.

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

- 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

Q07155

Z16688

9. 3RZ—FE A/T:**REMOVE UPPER COVER AND OIL DEFLECTOR**

Remove the 4 bolts and the upper cover and oil deflector.

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

INSTALLATION HINT: Install a new gasket and oil deflector.

10. Except 3RZ—FE A/T:**REMOVE CONTROL RETAINER AND OIL DEFLECTOR**

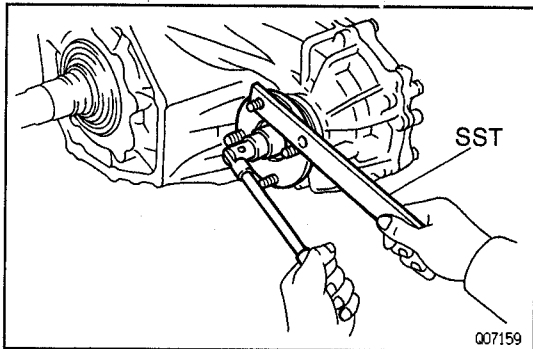
- (a) Remove the 4 bolts and the control retainer and oil deflector.

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

INSTALLATION HINT: Install a new gasket and control retainer.

- (b) w/o One touch 2—4 selector system:

Remove the select return spring from the control retainer.

**11. 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, 09957—04010, 09958—04010)

12. REMOVE REAR COMPANION FLANGE

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

INSTALLATION HINT:

- Front companion flange bolts are slim.
- Rear companion flange bolts are thick.

13. REMOVE EXTENSION HOUSING

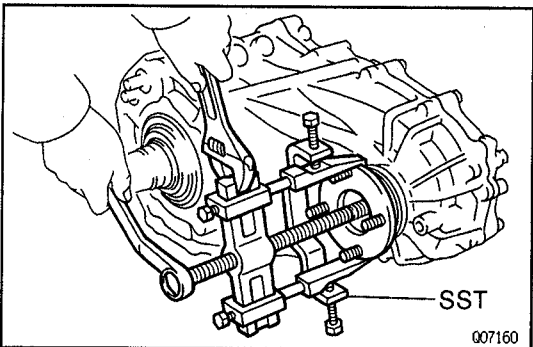
- (a) Remove the 5 bolts.

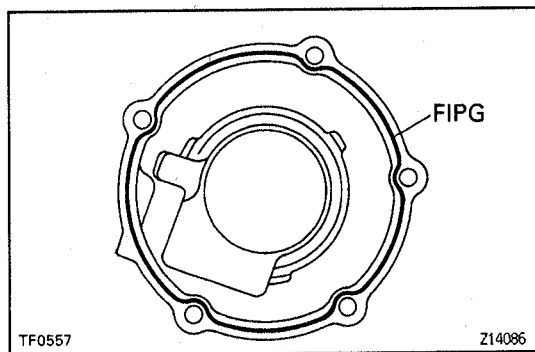
Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

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

14. REMOVE SPEEDOMETER DRIVE GEAR

- (a) Remove the speedometer drive gear.

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

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

15. SEPARATE FRONT CASE AND REAR CASE

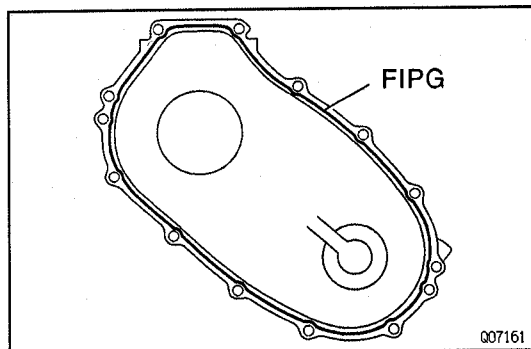
- (a) Remove the 12 bolts.

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

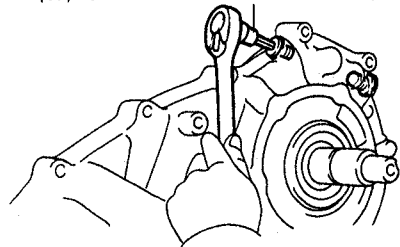
- (b) Using a screwdriver, separate the front case and rear case.

INSTALLATION HINT:

- Shift the high and low 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



This Side Only
(w/ One Touch 2-4 Selector System)

**16. REMOVE STRAIGHT SCREW PLUG, SPRING AND LOCKING BALL**

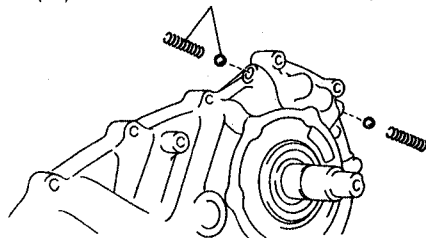
- (a) Using a hexagon wrench, remove the screw.

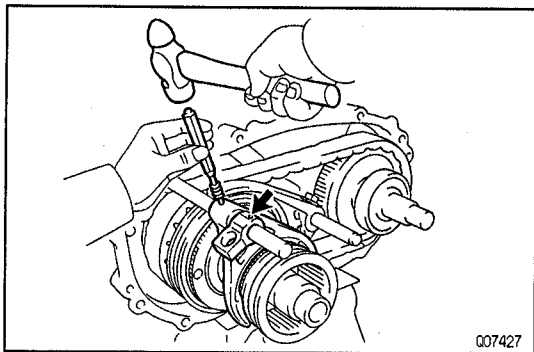
Torque: 18.6 N·m (190 kgf·cm, 14 ft·lbf)

INSTALLATION HINT: Apply liquid sealer to the plugs.

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

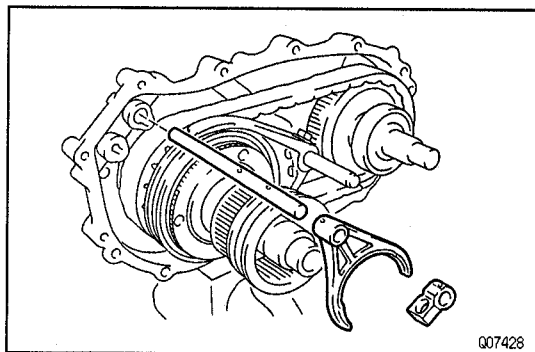
This Side Only
(w/ One Touch 2-4 Selector System)





**17. w/ One touch 2-4 selector system:
REMOVE HIGH AND LOW FORK SHAFT, SHIFT
FORK AND SHIFT HEAD NO.2**

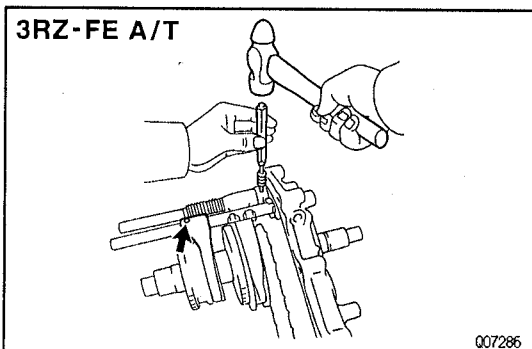
- (a) Mount the rear case in a vise.
NOTICE: Be careful not to damage the sealing surface.
- (b) Using a pin punch and hammer, drive out the 2 slotted spring pins.



- (c) Remove high and low fork shaft, shift fork and shift head No.2.

INSTALLATION HINT:

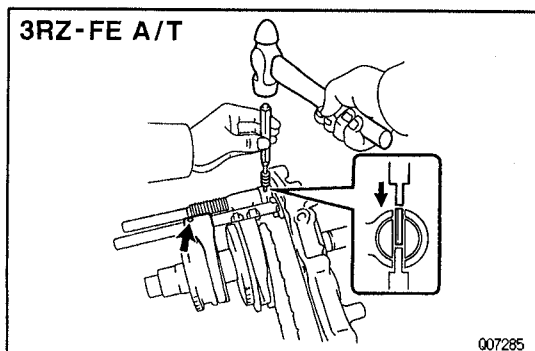
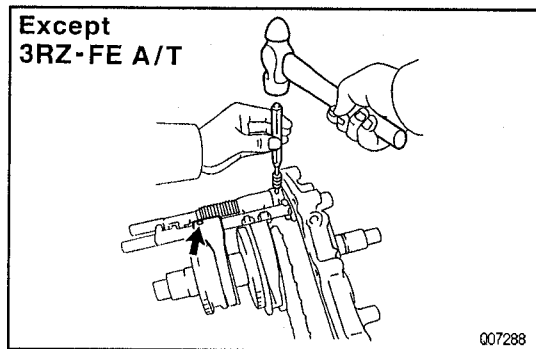
- Place the high and low shift fork into the groove of the clutch sleeve.
- Make sure to install the shift fork and shift head No.2 in the correct direction.



**18. w/o One touch 2-4 selector system:
REMOVE FRONT DRIVE FORK SHAFT, SHIFT
FORK, SPRING AND STOPPER**

- (a) Mount the rear case in a vise.
NOTICE: Be careful not to damage the sealing surface.
- (b) Using a pin punch and hammer, drive out the 2 slotted spring pins.

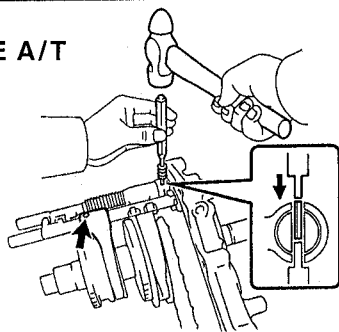
HINT: When the pin is removed from the front drive fork shaft, the shaft will spring loose if the pin punch is removed, so keep the pin punch inserted in the shaft hole.



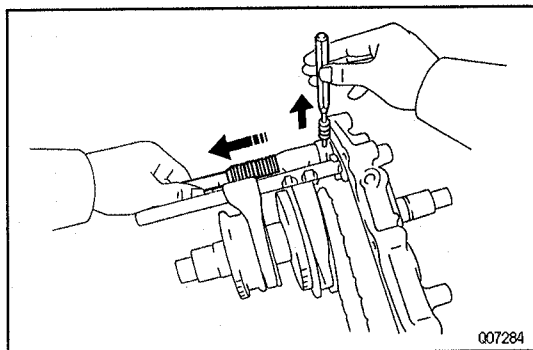
INSTALLATION HINT:

- Using a pin punch and hammer, drive in the 2 slotted spring pins.
- 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.

Except
3RZ-FE A/T



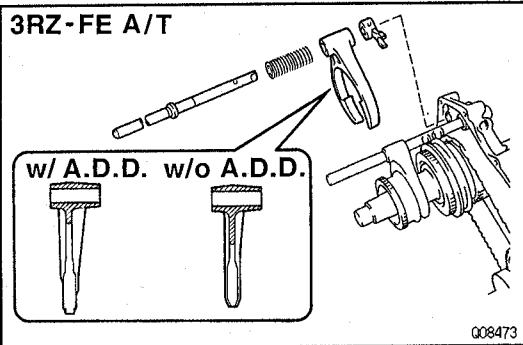
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007284

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

3RZ-FE A/T



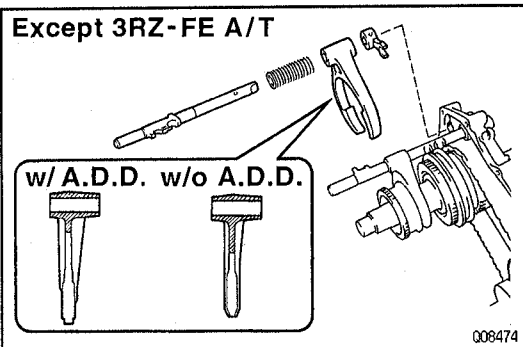
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- (d) Remove the front drive fork shaft, shift fork, spring and stopper.

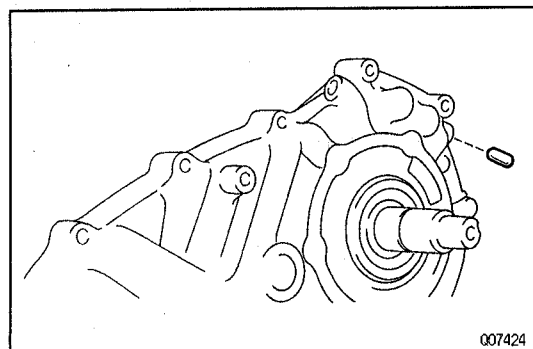
INSTALLATION HINT:

- 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.

Except 3RZ-FE A/T

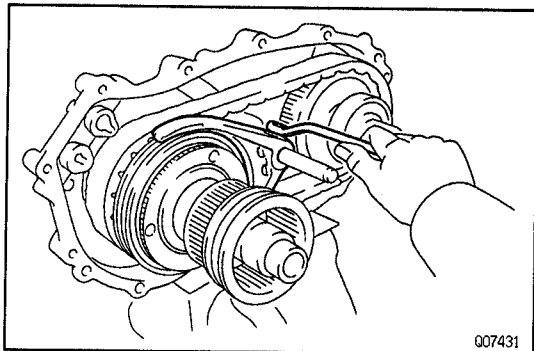


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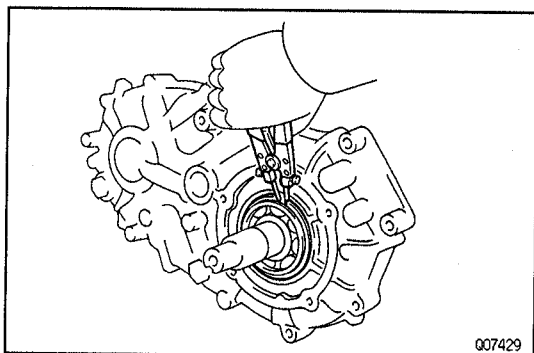
007424

- (e) w/o One touch 2-4 selector system:
Using a magnetic finger, remove the straight pin.
INSTALLATION HINT: Apply gear oil to the straight pin and insert it into the case hole.

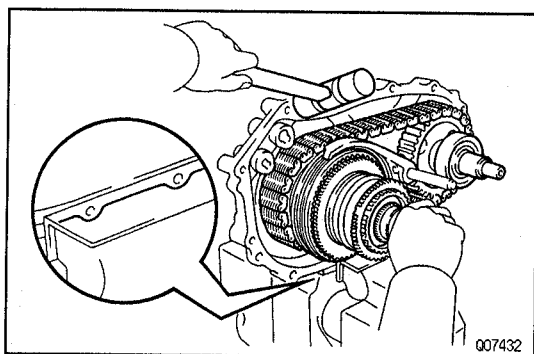


**19. w/ One touch 2-4 selector system:
REMOVE REAR OUTPUT SHAFT, DRIVEN SPROCKET,
CHAIN AND FRONT DRIVE SHIFT FORK**

- (a) Remove the shift fork bolt.
Torque: 24 N·m (240 kgf·cm, 17 ft·lbf)



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



- (c) Using a plastic hammer, tap the rear case with pulling the rear output shaft, driven sprocket and front drive shift fork.

INSTALLATION HINT:

- Place the front drive shift fork into the groove of the clutch sleeve.
- Make sure to install the shift fork in the correct direction.
- If necessary, heat the rear case to about 50 — 80 °C (122 — 176 °F).

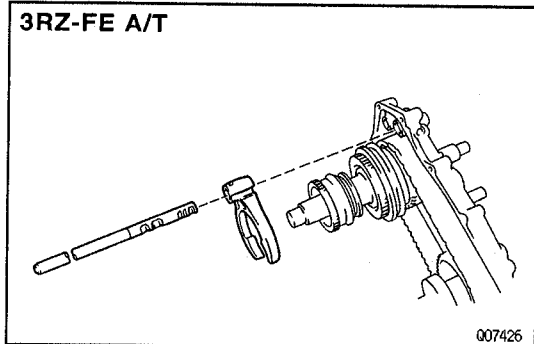
- (d) Remove the chain.

**20. w/o One touch 2-4 selector system:
REMOVE HIGH AND LOW FORK SHAFT AND SHIFT FORK**

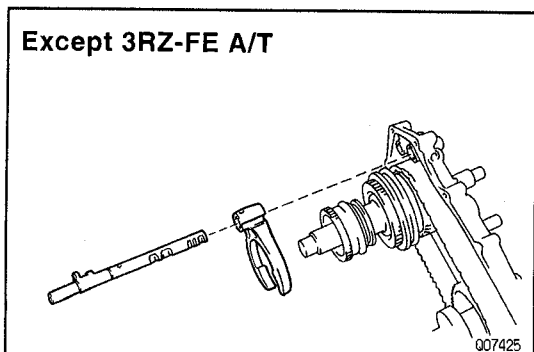
INSTALLATION HINT:

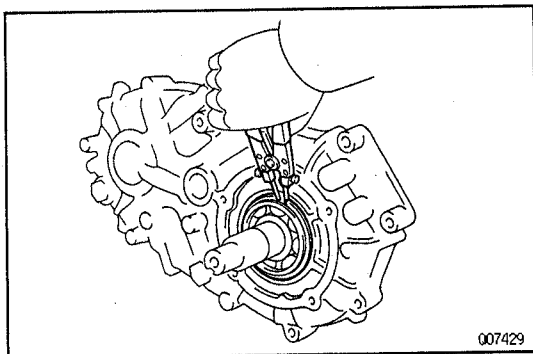
- Place the high and low shift fork into the groove of the clutch sleeve.
- Make sure to install the shift fork in the correct direction.

3RZ-FE A/T



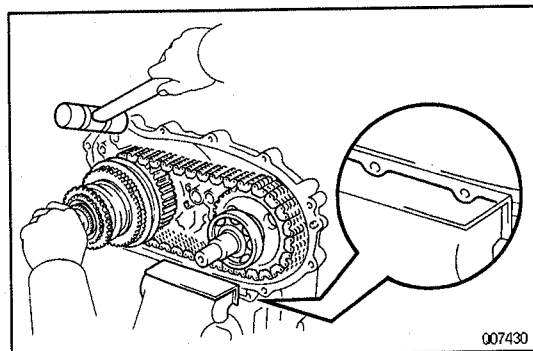
Except 3RZ-FE A/T



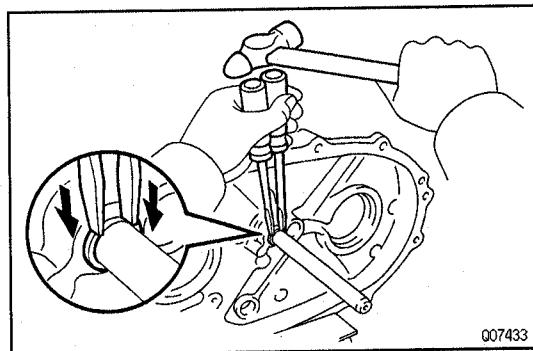


**21. w/o One touch 2-4 selector system:
REMOVE REAR OUTPUT SHAFT, DRIVEN SPROCKET
AND CHAIN**

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

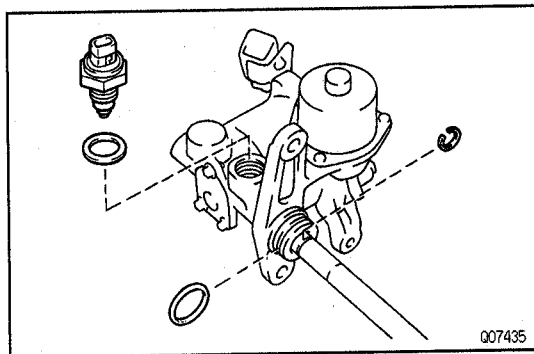


- (b) Using a plastic hammer, tap the rear case with pulling the rear output shaft and driven sprocket.
INSTALLATION HINT: If necessary, heat the rear case to about 50 – 80 °C (122 – 176 °F).
(c) Remove the chain.

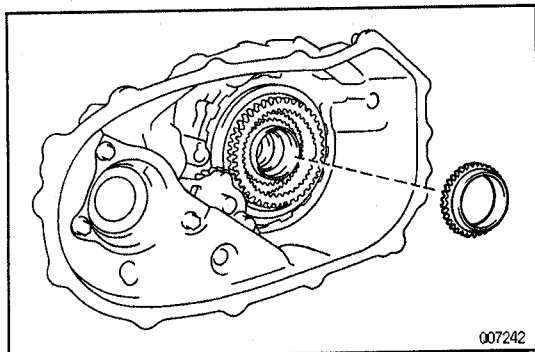


**22. w/ One touch 2-4 selector system:
REMOVE ACTUATOR ASSEMBLY**

- (a) Using 2 screwdrivers and a hammer, remove the snap ring.
(b) Remove the 3 bolts and the actuator assembly.
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)



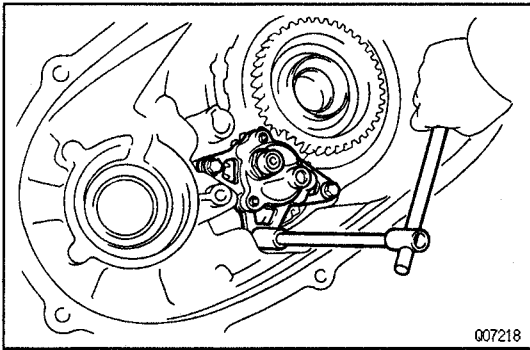
- (c) Remove the O-ring, 4WD position switch and snap ring from the actuator assembly.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)
INSTALLATION HINT: Coat a new O-ring with gear oil and install it to the actuator assembly.



**23. M/T:
REMOVE SYNCHRONIZER RING FROM INPUT
SHAFT**

INSTALLATION HINT:

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

**24. REMOVE SEPARATOR WITH OIL STRAINER AND MAGNET**

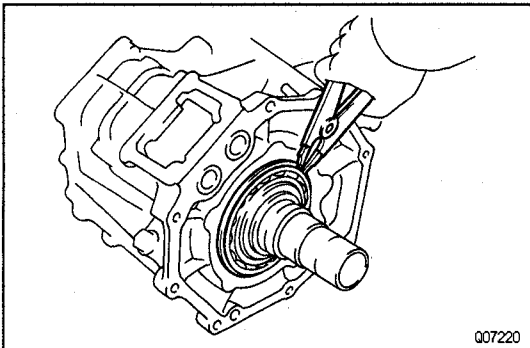
Remove the 3 bolts and the separator with the oil strainer and magnet.

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

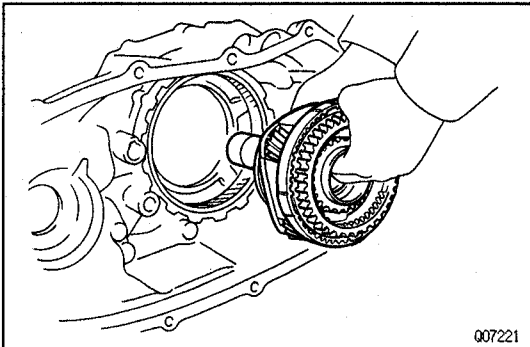
25. REMOVE OIL PUMP BODY ASSEMBLY

Remove the 3 bolts and the oil pump body assembly.

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

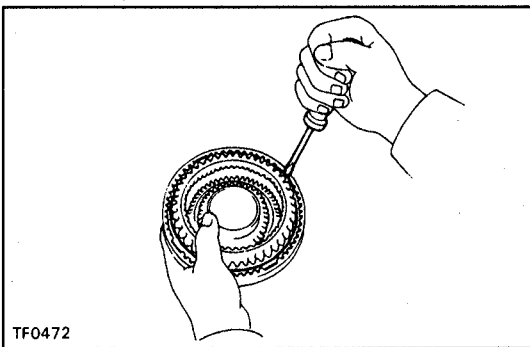
26. REMOVE OIL PUMP DRIVE GEAR**27. REMOVE PLANETARY GEAR ASSEMBLY WITH INPUT SHAFT**

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



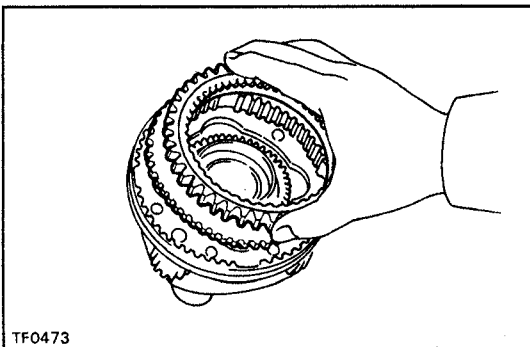
- (b) Pull out the planetary gear assembly with the input shaft.

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

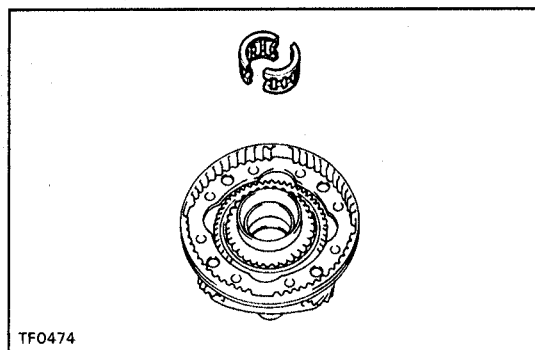
**28. REMOVE LOW GEAR SPLINE PIECE**

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

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

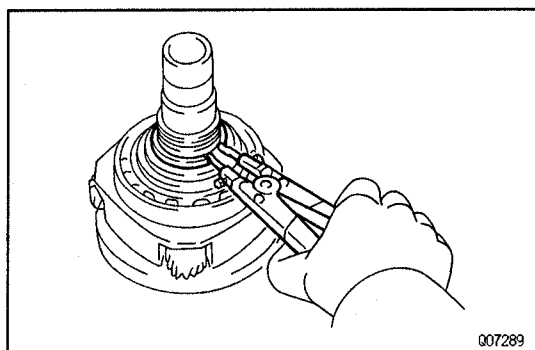


- (b) Remove the low gear spline piece.



29. REMOVE NEEDLE ROLLER BEARING FROM INPUT SHAFT

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

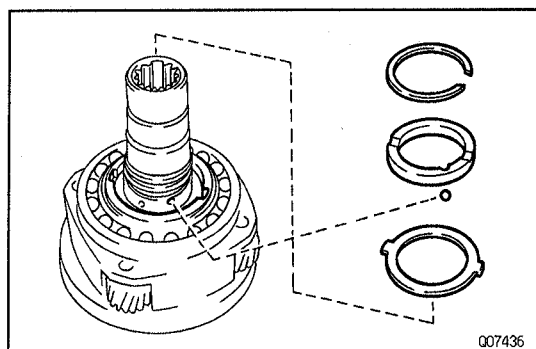


30. REMOVE INPUT SHAFT STOPPER AND THRUST BEARING

- (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.

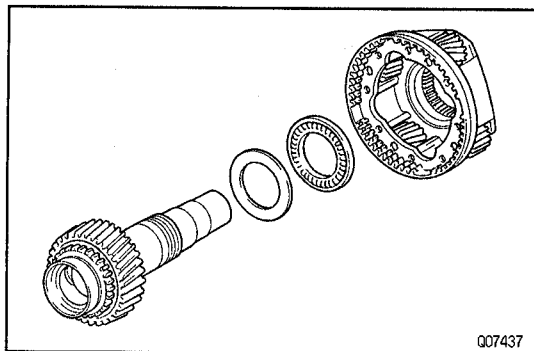
Mark	Thickness mm (in.)
A	2.10 – 2.15 (0.0827 – 0.0846)
B	2.15 – 2.20 (0.0846 – 0.0866)
C	2.20 – 2.25 (0.0866 – 0.0886)
D	2.25 – 2.30 (0.0886 – 0.0906)
E	2.30 – 2.35 (0.0906 – 0.0925)
F	2.35 – 2.40 (0.0925 – 0.0945)
G	2.40 – 2.45 (0.0945 – 0.0965)
H	2.45 – 2.50 (0.0965 – 0.0984)
J	2.50 – 2.55 (0.0984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

TR

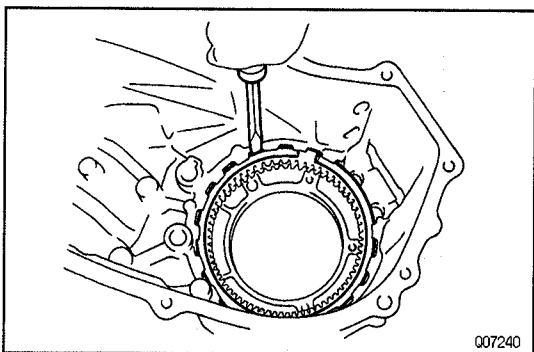


- (b) Remove the input gear stopper, thrust washer and ball.

INSTALLATION HINT: Apply gear oil to the input gear stopper and thrust washer.

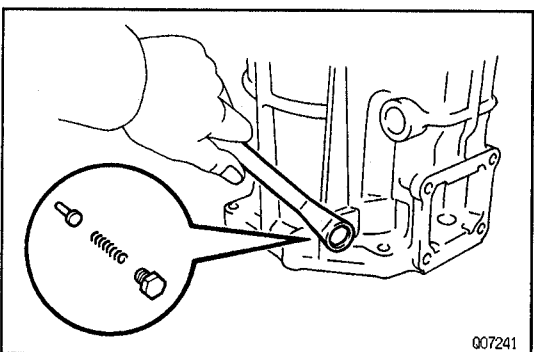


31. REMOVE INPUT SHAFT, THRUST NEEDLE ROLLER BEARING AND THRUST RACE

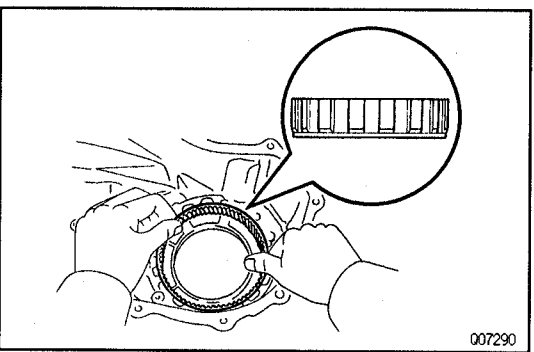


32. REMOVE PLANETARY RING GEAR

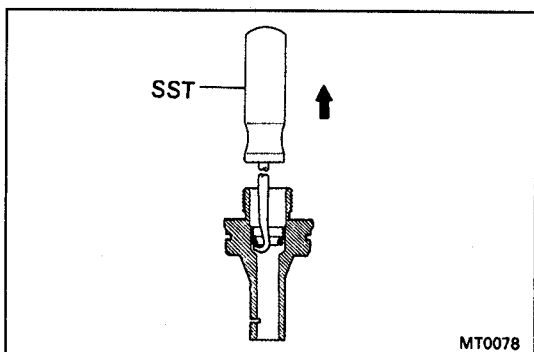
- (a) Using a screwdriver, remove the snap ring.
INSTALLATION HINT: Be sure the end gap of the snap ring is not aligned with the upper side of the case.



- (b) Remove the plug, spring and pin.
Torque: 18.6 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

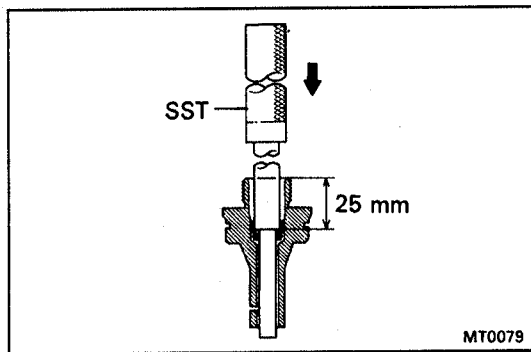


- (c) Remove the planetary ring gear.
INSTALLATION HINT: Make sure to install the ring gear in the correct direction.

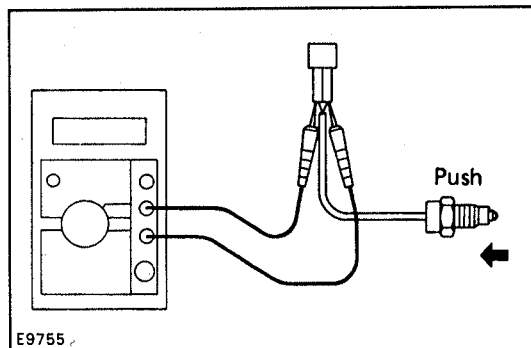


33. IF NECESSARY, REPLACE SPEEDOMETER DRIVEN GEAR OIL SEAL

- (a) Using SST, remove the oil seal.
SST 09921 — 00010



- (b) Coat the lip of oil seal with MP grease.
 (c) Using SST, drive in a new oil seal.
 SST 09201-10000 (09201-01080),
 09950-70010 (09951-07150)
 Drive in depth: 25 mm (0.98 in.)

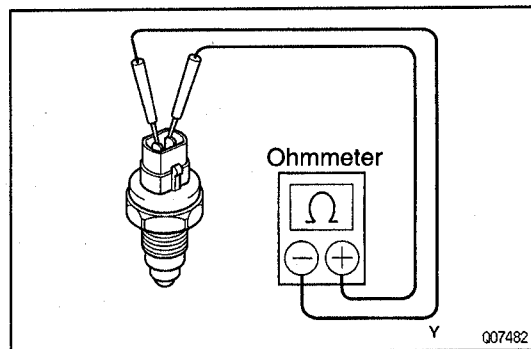


34. INSPECT SWITCHES

Check that there is continuity between terminals as shown.

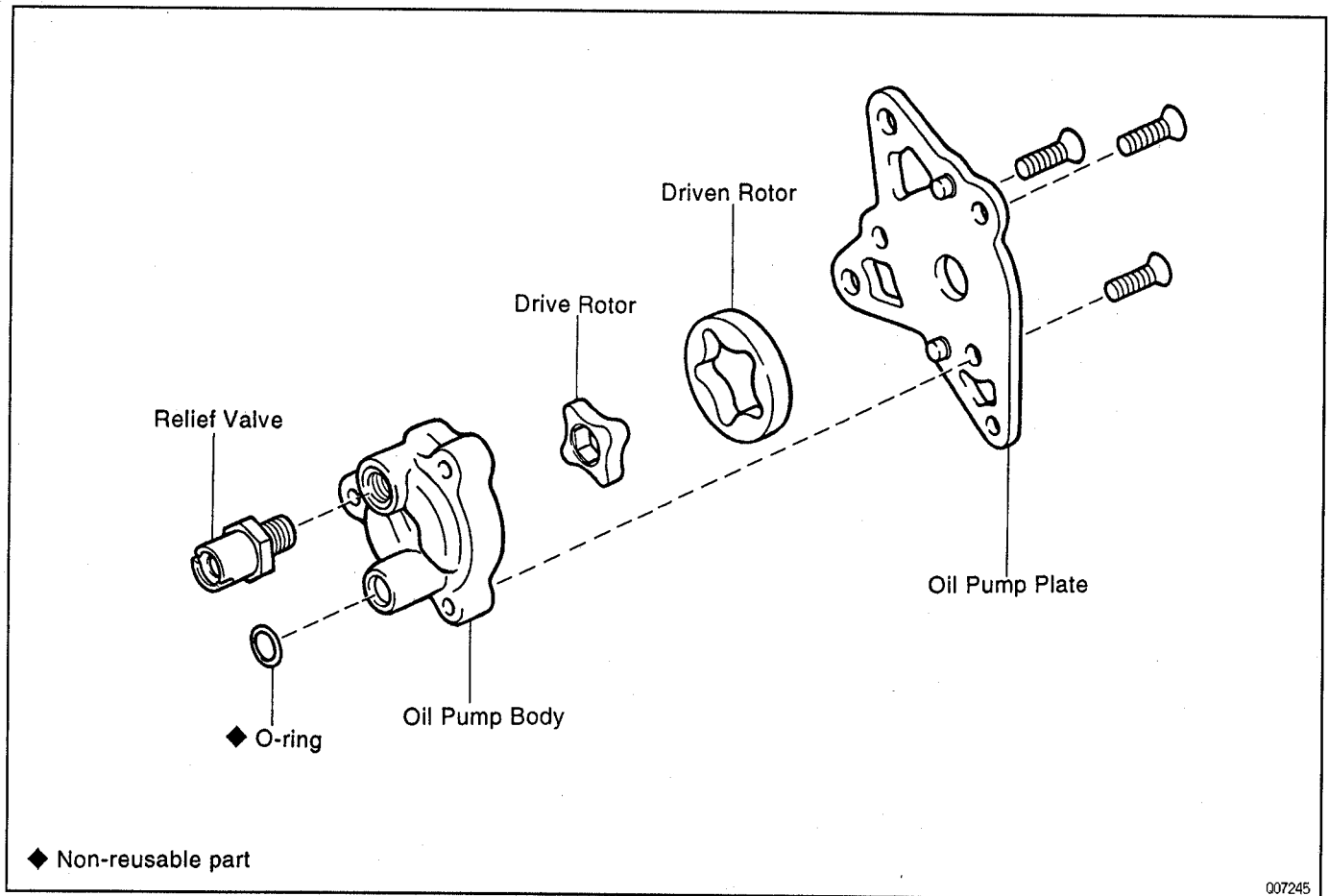
Switch Position	Specified Condition
Push	Continuity
Free	No continuity

If operation is not as specified, replace the switch.



OIL PUMP BODY COMPONENTS

TR00V-06



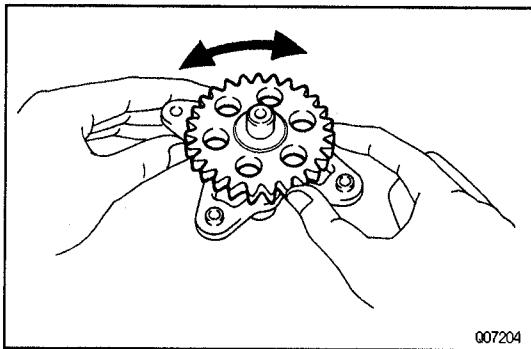
TR

TR04G-02

OIL PUMP BODY DISASSEMBLY

1. CHECK OIL PUMP OPERATION

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

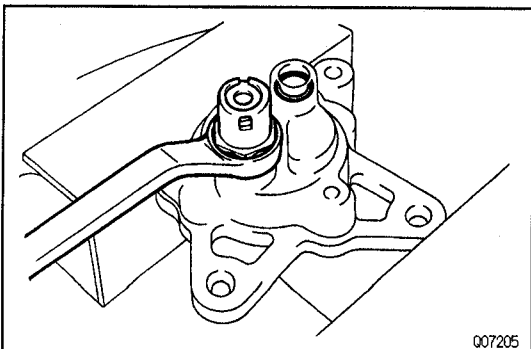


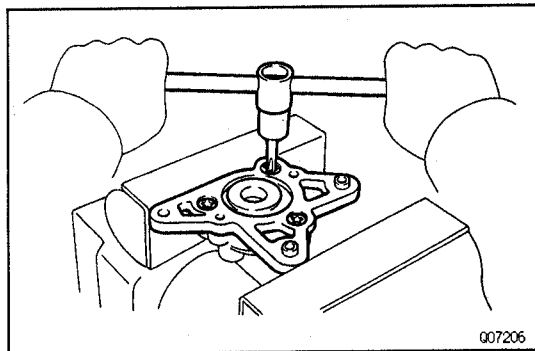
2. REMOVE RELIEF VALVE AND O-RING

- Mount the oil pump plate in a vise.
- Remove the relief valve and O-ring from the oil pump body.

Torque: 29.4 N·m (300 kgf·cm, 21 ft·lbf)

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, unscrew the 3 torx screws.

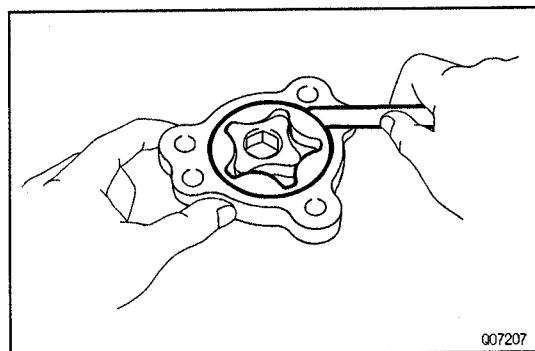
(Torx socket wrench T30 09042—00010).

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.



OIL PUMP BODY INSPECTION

TR00X-0A

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.

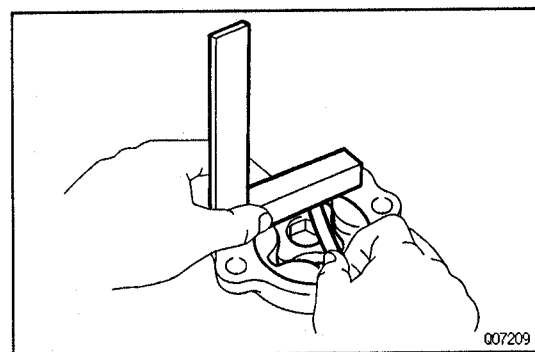
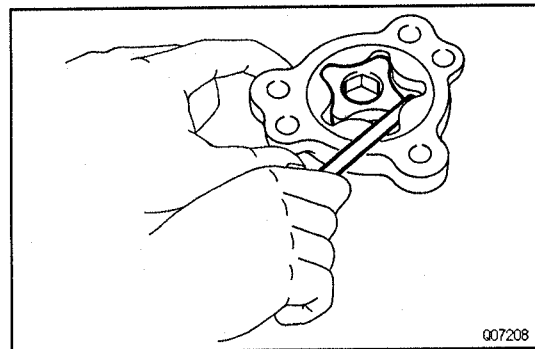
Standard clearance:

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.



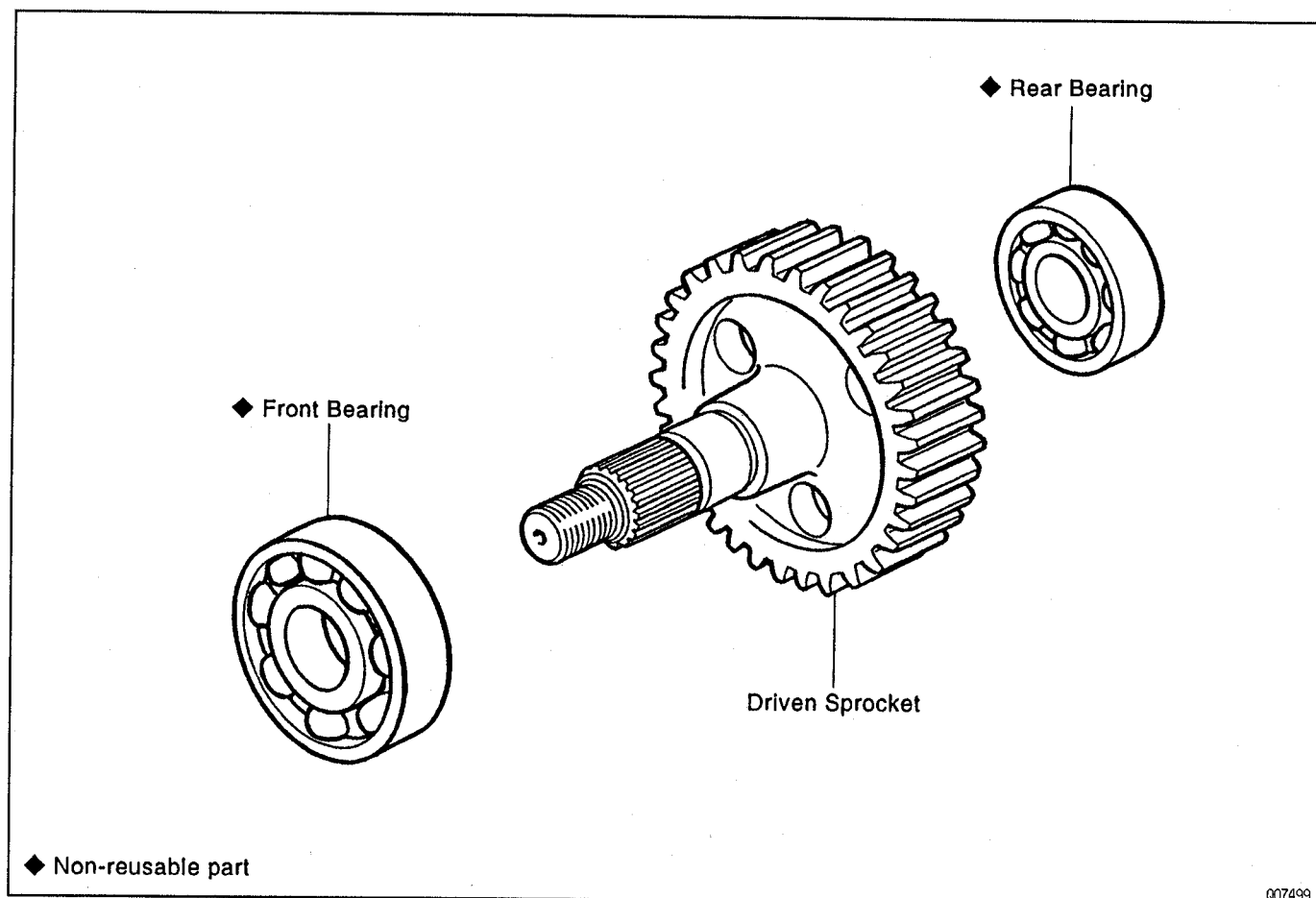
OIL PUMP BODY ASSEMBLY

TR05G-01

Assembly is in the reverse order of disassembly.

DRIVEN SPROCKET COMPONENTS

TR002-07



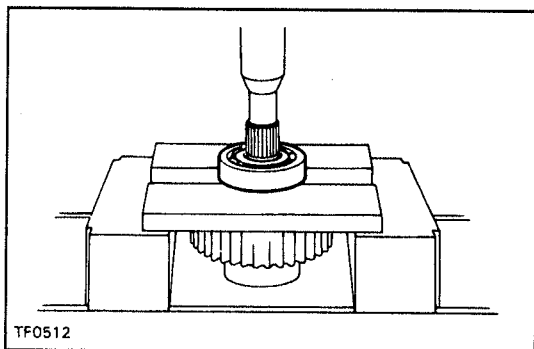
TR

TR010-06

DRIVEN SPROCKET DISASSEMBLY

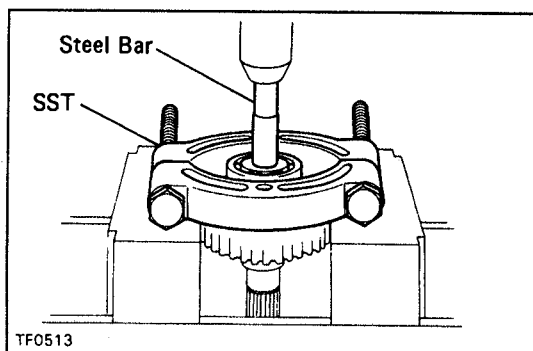
1. REMOVE FRONT BEARING

Using a press, remove the front bearing.



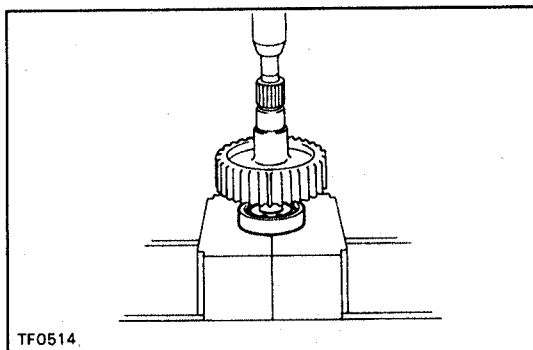
2. REMOVE REAR BEARING

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

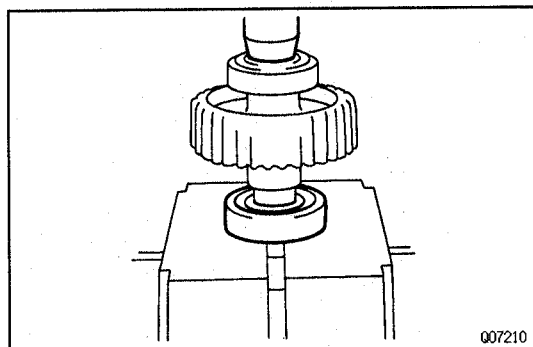


DRIVEN SPROCKET ASSEMBLY**1. INSTALL REAR BEARING**

Using a press, install a new rear bearing.

**2. INSTALL FRONT BEARING**

Using a press, install a new front bearing.



REAR OUTPUT SHAFT COMPONENTS

TR04H-02

w/ A.D.D.

A/T

High and Low Clutch Sleeve

High and Low Clutch Hub

Snap Ring

Shifting Key Spring

M/T

Shifting Key

◆ Key Retainer

High and Low Clutch Hub

High and Low Clutch Sleeve

Snap Ring

w/o One Touch 2-4
Selector System

Ball

Rear Output Shaft

w/ One Touch 2-4
Selector System

Ball

Rear Output Shaft

◆ Bearing

Drive Sprocket

Shifting Key

Synchronizer Ring

Spacer

Needle Roller Bearing

Shifting Key Spring

Front Drive Clutch
Sleevew/ One Touch 2-4
Selector SystemSynchronizer
Outer RingSynchronizer
Inner Ring

Synchronizer Center Ring

Q07451

◆ Non-reusable part

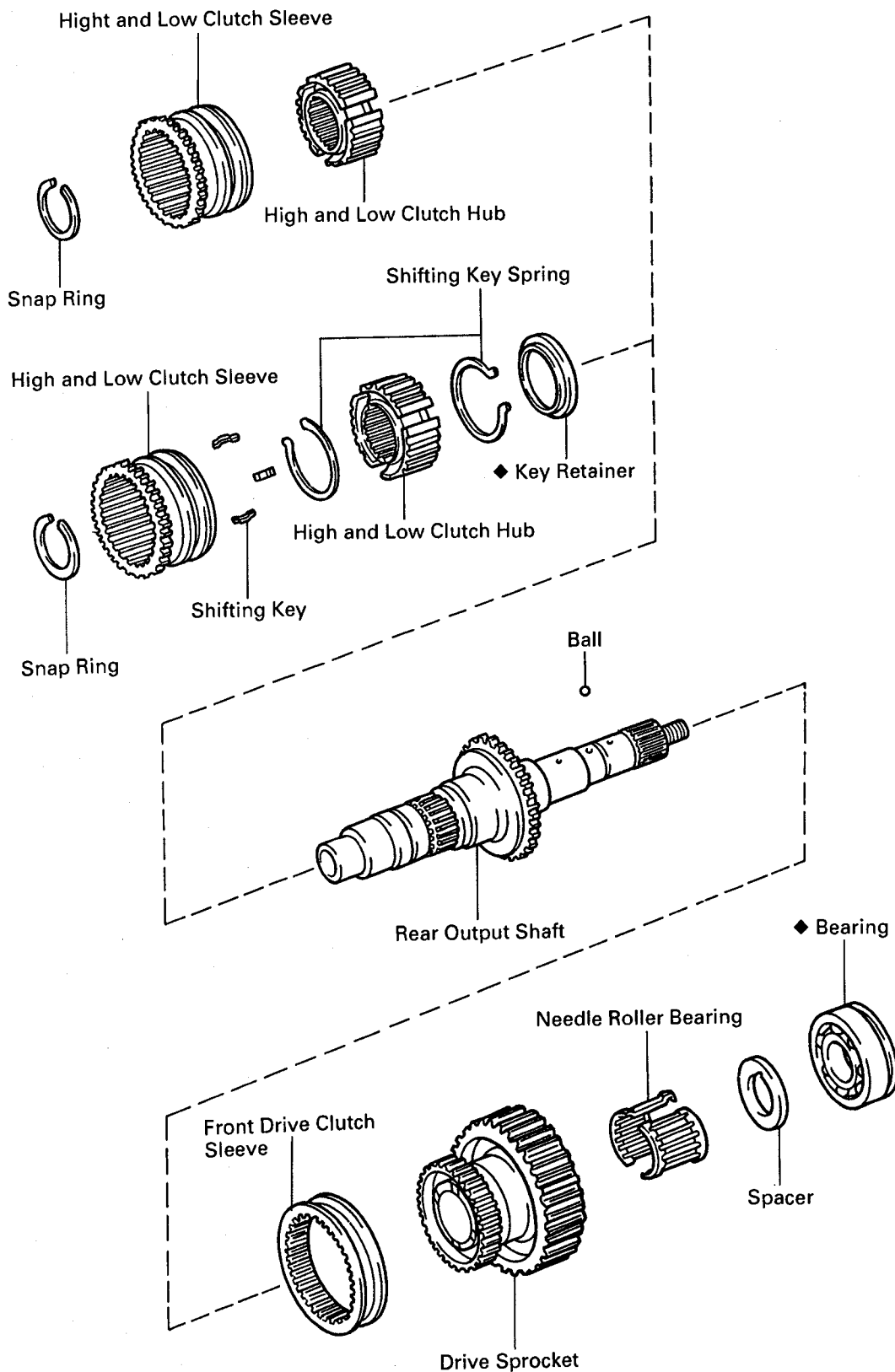
Z16684

TR

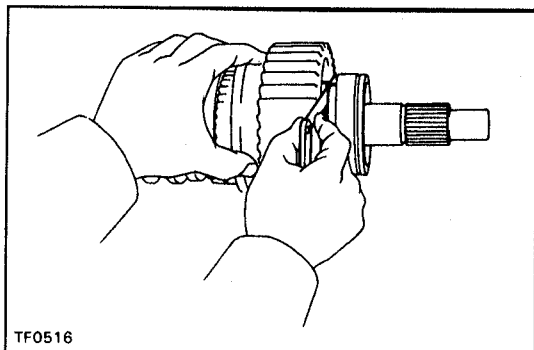
w/o A.D.D.

A/T

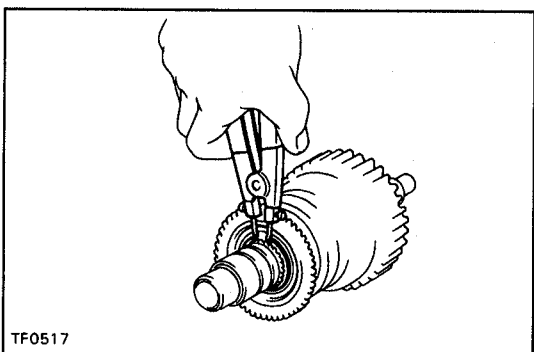
M/T



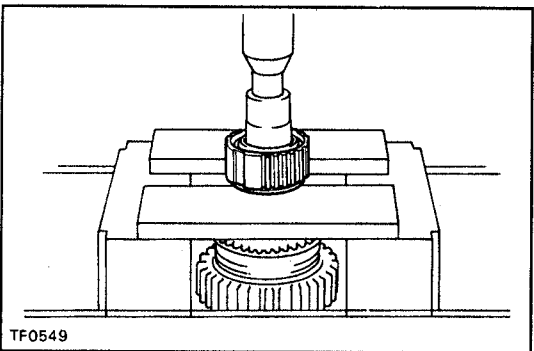
TR



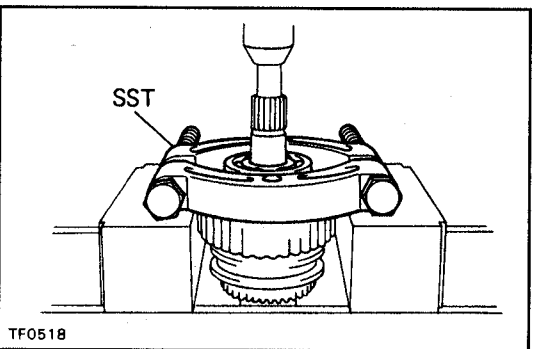
TF0516



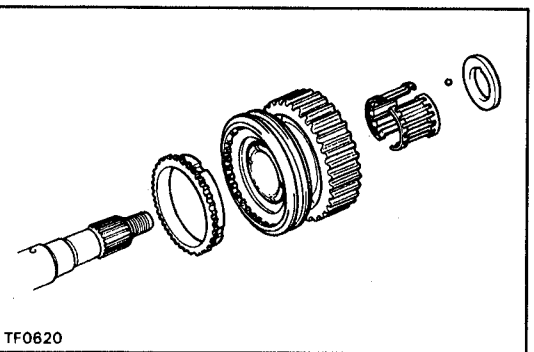
TF0517



TF0549



TF0518



TF0620

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. **M/T:**
REMOVE HIGH AND LOW CLUTCH SLEEVE ASSEMBLY

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

3. **A/T:**
REMOVE HIGH AND LOW CLUTCH SLEEVE ASSEMBLY

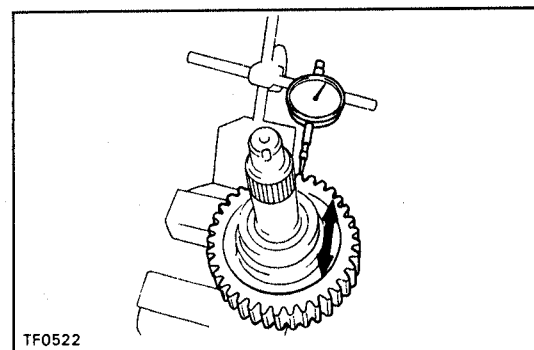
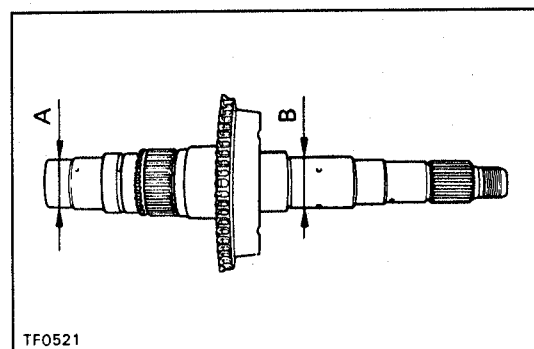
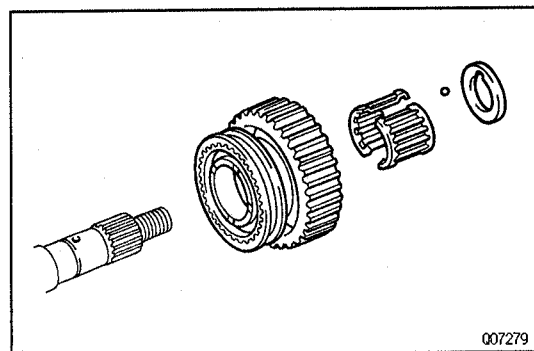
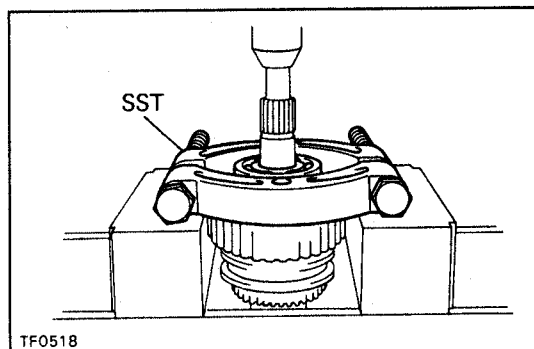
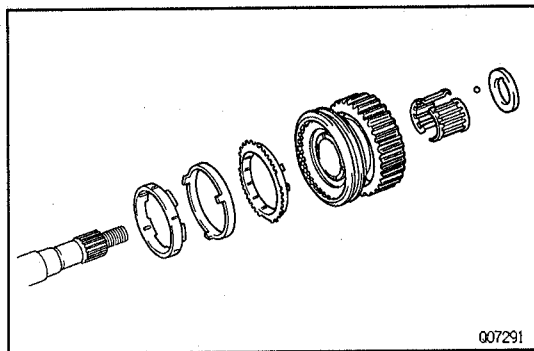
- (a) Using a snap ring expander, remove the snap ring.
- (b) Remove the clutch sleeve.
- (c) Using a press, remove the clutch hub.

4. **w/ A.D.D.:**
REMOVE BEARING, SPACER AND DRIVE SPROCKET WITH FRONT DRIVE CLUTCH SLEEVE ASSEMBLY

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

- (b) **w/o One touch 2—4 selector system:**
Remove these parts.

- Spacer and ball
- Drive sprocket with front drive clutch sleeve assembly
- Needle roller bearing
- Synchronizer ring



w/ One touch 2-4 selector system:

Remove these parts.

- Spacer and ball
- Drive sprocket with front drive clutch sleeve assembly
- Needle roller bearing
- Synchronizer outer ring, center ring and inner ring

- (c) Remove the front drive clutch sleeve assembly from the drive sprocket.

5. w/o A.D.D.:

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.

6. w/ A.D.D.:

REMOVE SHIFTING KEYS AND KEY SPRINGS FROM FRONT DRIVE CLUTCH SLEEVE

TR014-0A

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.)

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.

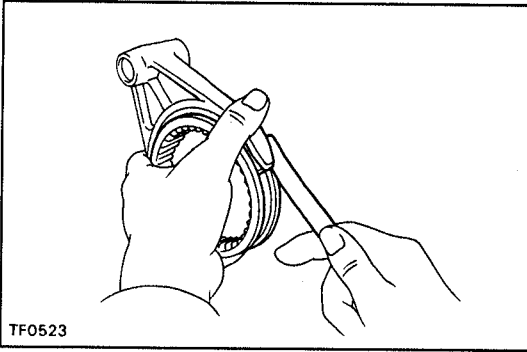
Standard clearance:

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.



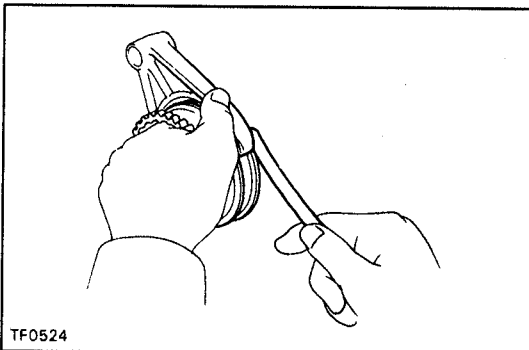
3. INSPECT FRONT DRIVE SHIFT FORK AND CLUTCH SLEEVE CLEARANCE

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.



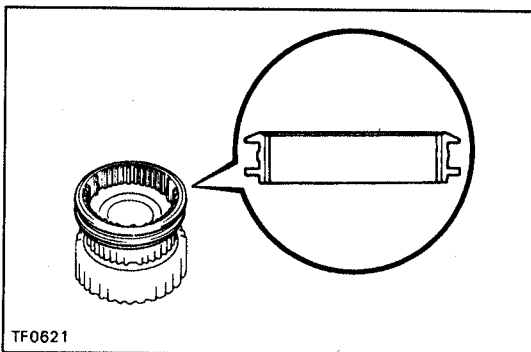
4. INSPECT HIGH AND LOW SHIFT FORK AND CLUTCH SLEEVE CLEARANCE

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

TR04K-02

1. w/ A.D.D.:

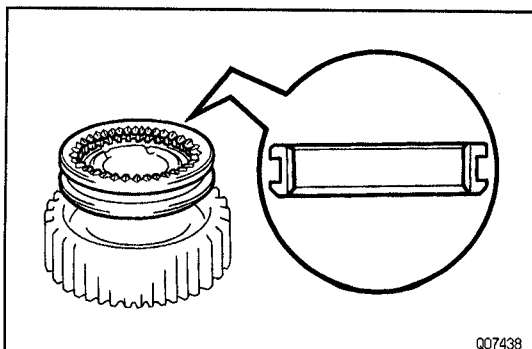
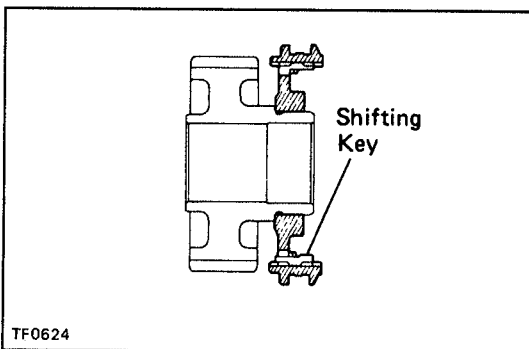
INSTALL FRONT DRIVE CLUTCH SLEEVE ONTO DRIVE SPROCKET

- (a) Install the front drive clutch sleeve onto the drive sprocket.

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

- (b) Install the shifting keys and springs.

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

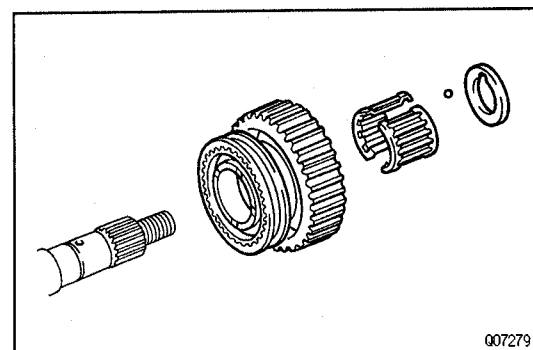
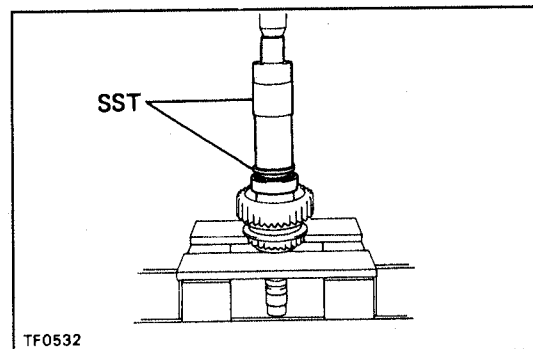
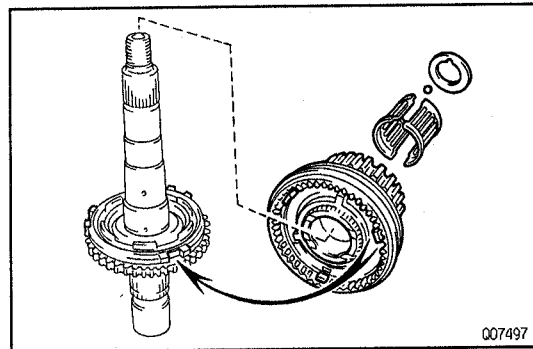
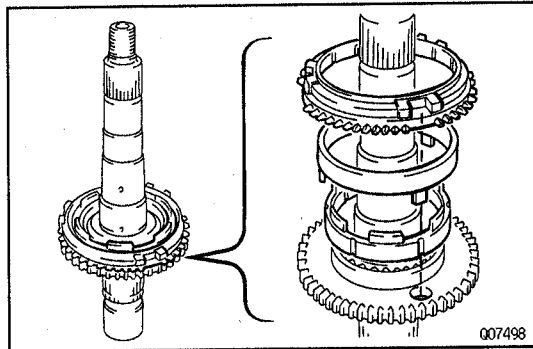
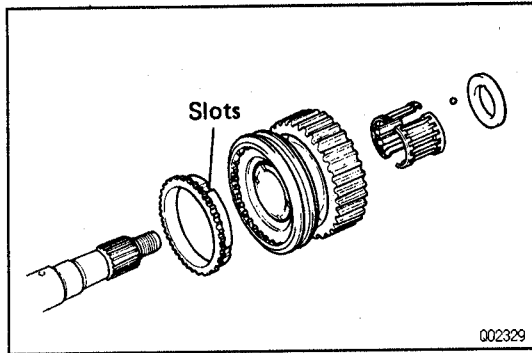


2. w/o A.D.D.:

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.



3. w/ A.D.D.: INSTALL DRIVE SPROCKET WITH FRONT DRIVE CLUTCH SLEEVE ASSEMBLY, SPACER AND BEARING

w/o One touch 2-4 selector system:

- Apply gear oil to the shaft and needle roller bearing.
- Place the synchronizer ring on the spline and align the ring slots with the shifting keys.
- Install the needle roller bearing in the drive sprocket.
- Install the drive sprocket with the front drive clutch sleeve assembly.

w/ One touch 2-4 selector system:

- Apply gear oil to the shaft and needle roller bearing.
- Install the synchronizer inner ring, center ring and outer ring.

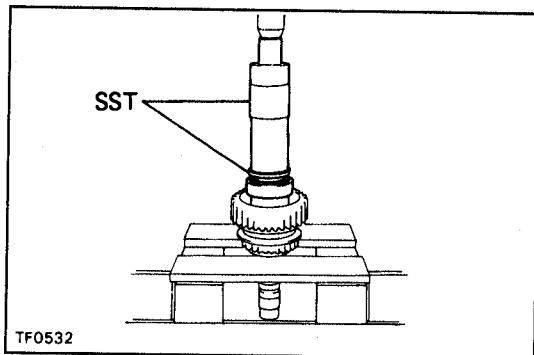
NOTICE: Align the slots of outer and inner rings.

- Install the needle roller bearing in the drive sprocket.
- Install the drive sprocket with the front drive clutch sleeve assembly.

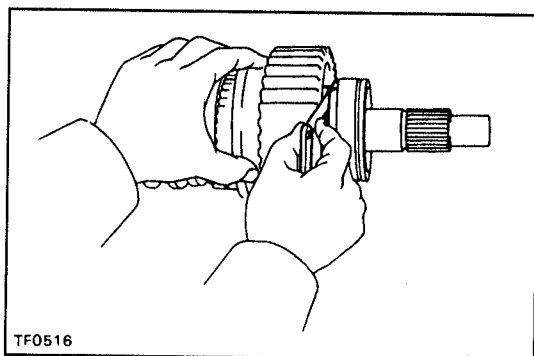
- Place the synchronizer ring on the gear and align the ring slots with the shifting keys.
 - Install the spacer to align it with the ball.
 - Using SST and a press, install a new bearing with the outer race snap ring groove toward the rear.
- SST 09316-60011 (09316-00011, 09316-00071)

4. w/o A.D.D.: INSTALL DRIVE SPROCKET WITH FRONT DRIVE CLUTCH SLEEVE, SPACER AND BEARING

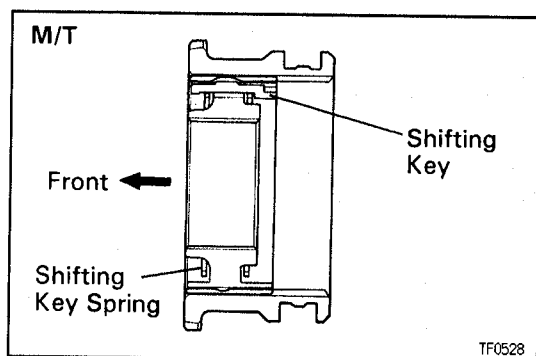
- Apply gear oil to the shaft and needle roller bearing.
- Install the needle roller bearing in the drive sprocket.
- Install the drive sprocket with the front drive clutch sleeve assembly.



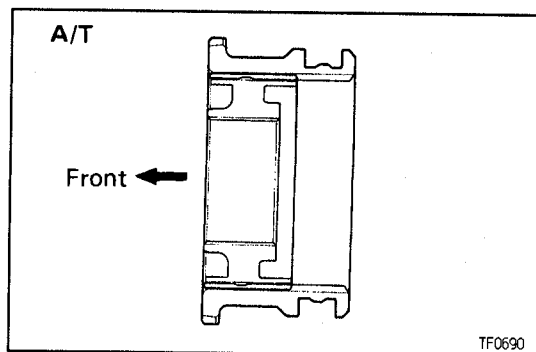
- (d) Install the spacer to align it with the ball.
- (e) Using SST and a press, install a new bearing with the outer race snap ring groove toward the rear.
SST 09316-60011 (09316-00011, 09316-00071)



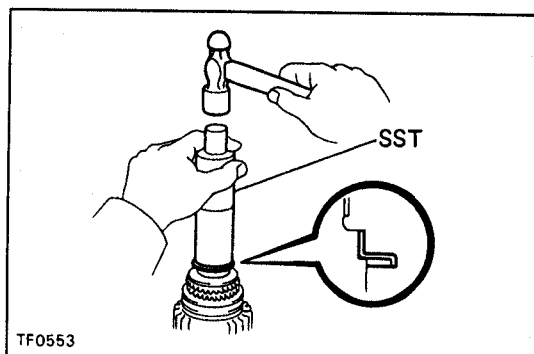
- 5. INSPECT DRIVE SPROCKET THRUST CLEARANCE**
Using a feeler gauge, measure the drive sprocket thrust clearance.
Standard clearance:
0.10 – 0.25 mm (0.0039 – 0.0098 in.)



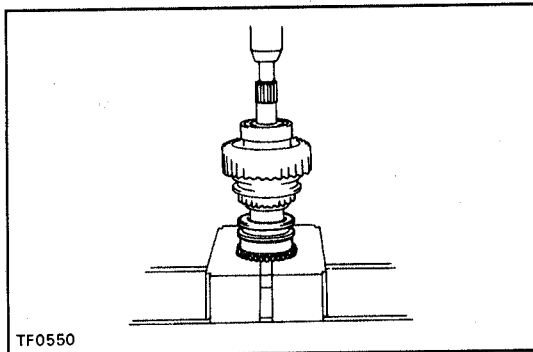
- 6. M/T:**
INSERT HIGH AND LOW CLUTCH HUB ONTO CLUTCH SLEEVE
- (a) Install the clutch hub and shifting keys onto the clutch sleeve.
 - (b) Install the shifting key springs under the shifting keys.
NOTICE: Install the key springs positioned so that their end gaps are not in line.



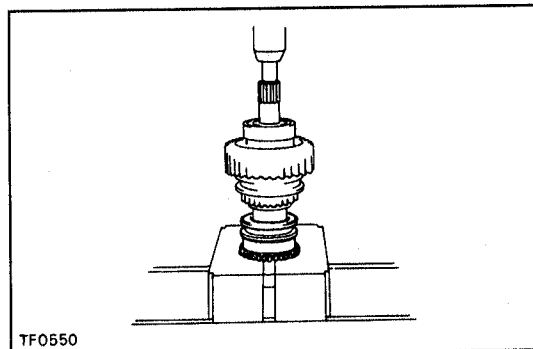
- 7. A/T:**
INSERT HIGH AND LOW CLUTCH HUB ONTO CLUTCH SLEEVE
Install the clutch hub onto the clutch sleeve.



- 8. M/T:**
INSTALL HIGH AND LOW CLUTCH HUB ASSEMBLY
- (a) 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.

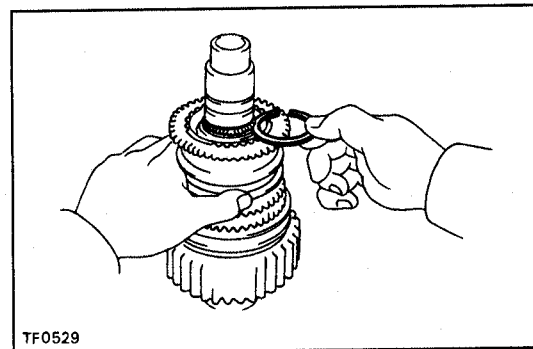


- (b) Using a press, install the high and low clutch hub assembly.



**9. A/T:
INSTALL HIGH AND LOW CLUTCH HUB ASSEMBLY**

Using a press, install the high and low clutch hub assembly.



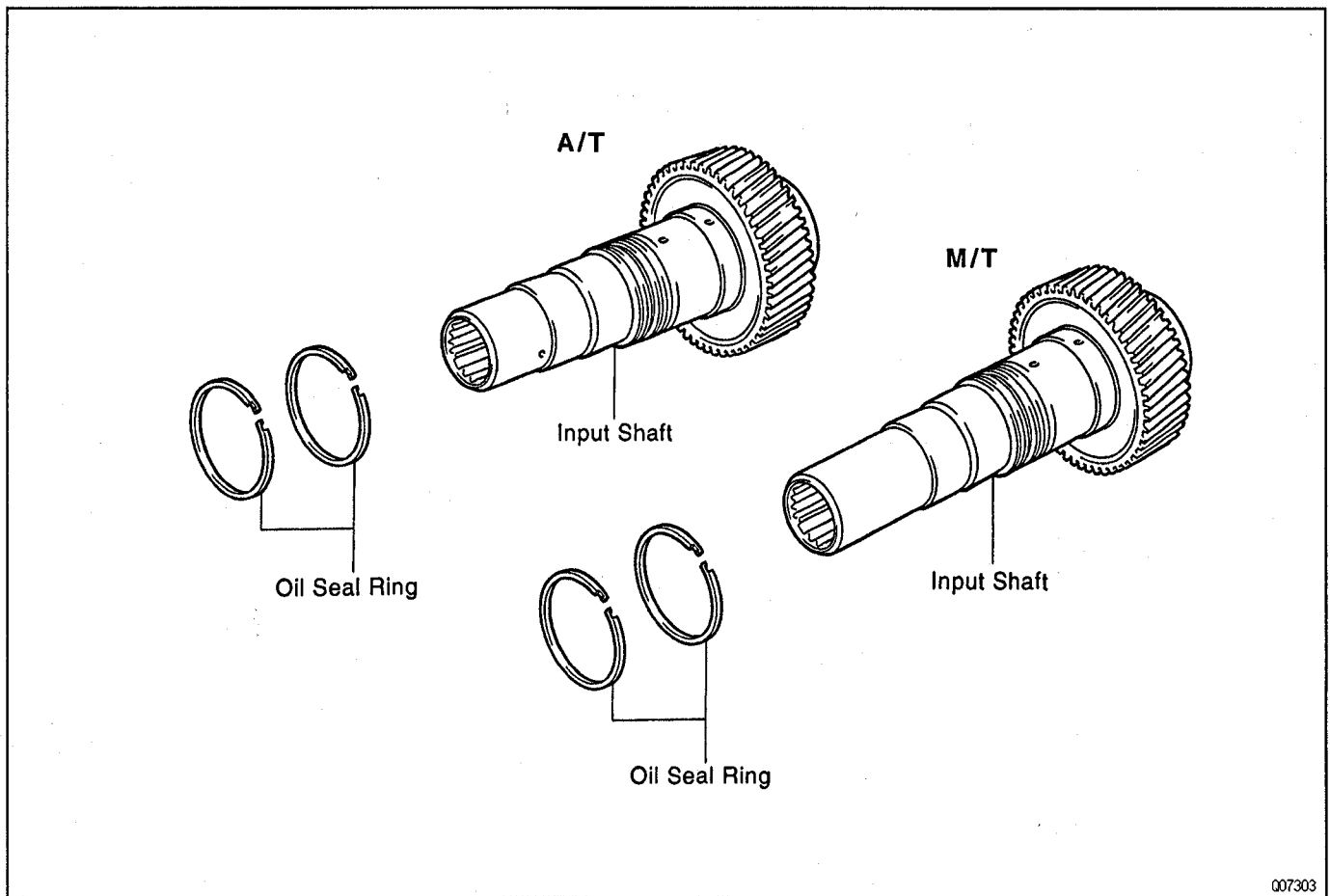
10. INSTALL SNAP RING

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)

INPUT SHAFT COMPONENTS

TR018-06



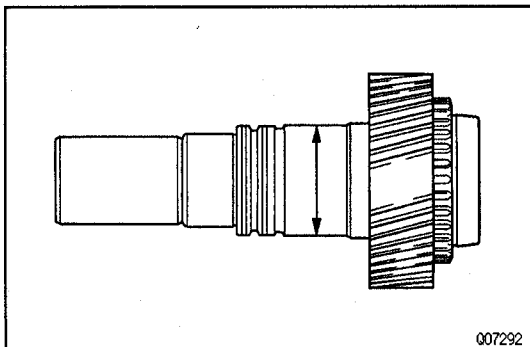
007303

INPUT SHAFT DISASSEMBLY

TR04L-02

REMOVE OIL SEAL RINGS

Remove the 2 oil seal rings.



007292

INPUT SHAFT INSPECTION

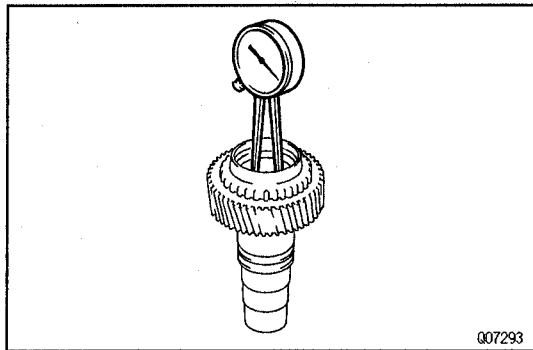
TR018-06

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.)

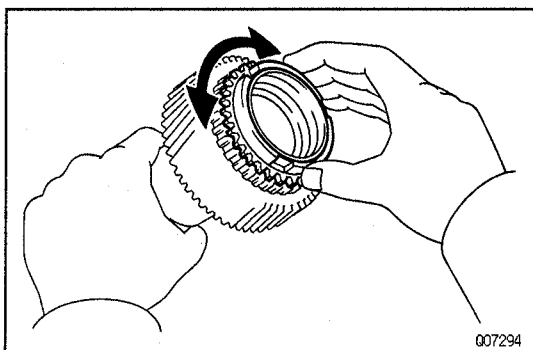


- (b) Using a dial indicator, measure the inside diameter of the input shaft bushing.

Maximum inside diameter:

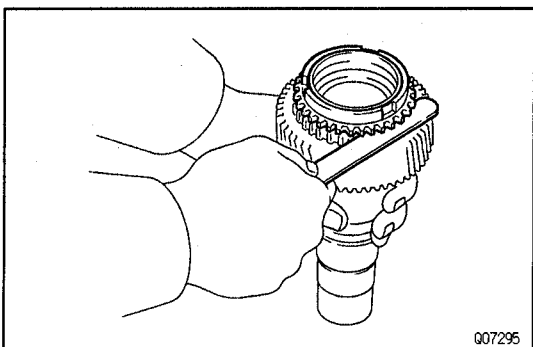
39.14 mm (1.5409 in.)

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



2. M/T: 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:

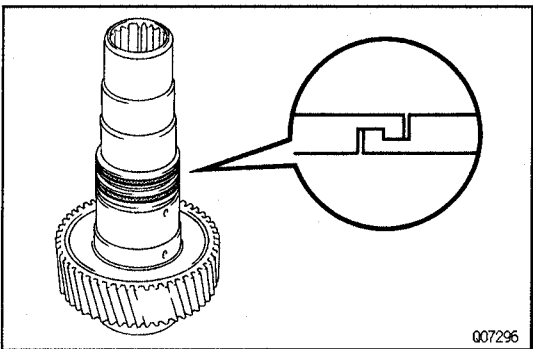
1.05 — 1.85 mm (0.0413 — 0.0728 in.)

Minimum clearance:

0.80 mm (0.0315 in.)

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

TR



INPUT SHAFT ASSEMBLY

TR04M-02

INSTALL OIL SEAL RINGS

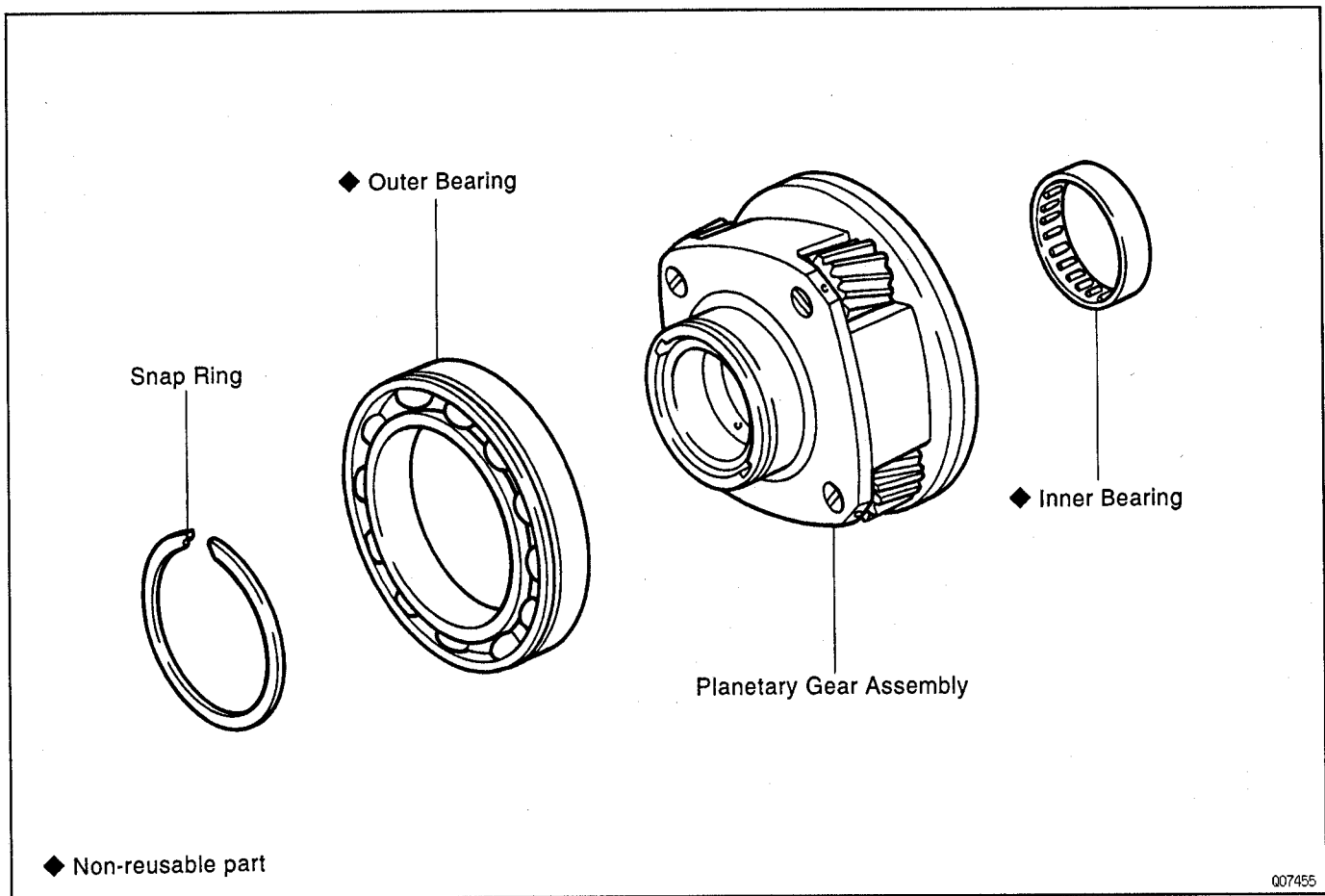
Install the 2 oil seal rings.

HINT:

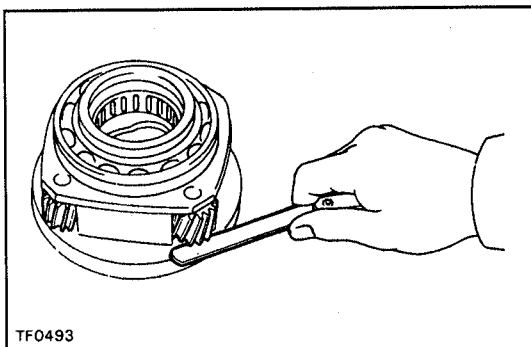
- Apply gear oil to the oil seal ring.
- Hang securely to eliminate clearance.

PLANETARY GEAR COMPONENTS

TRO1A-06



TR



PLANETARY GEAR INSPECTION

TROSH-01

1. INSPECT PINION GEAR THRUST CLEARANCE

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

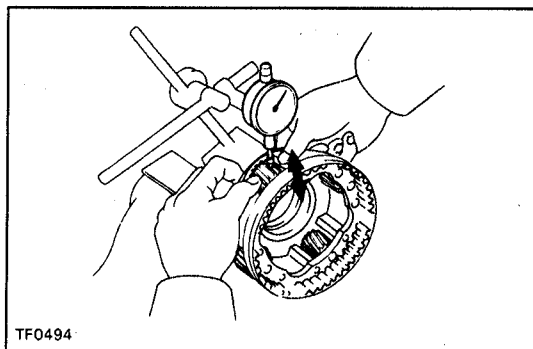
Standard clearance:

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.

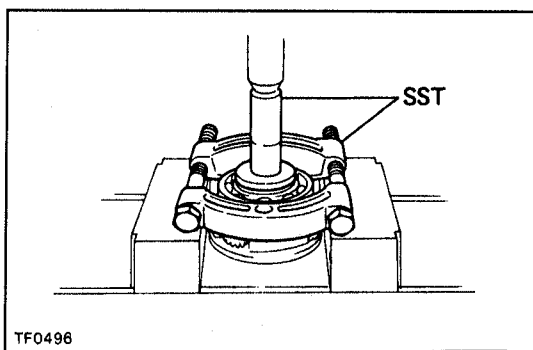
Standard clearance:

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.

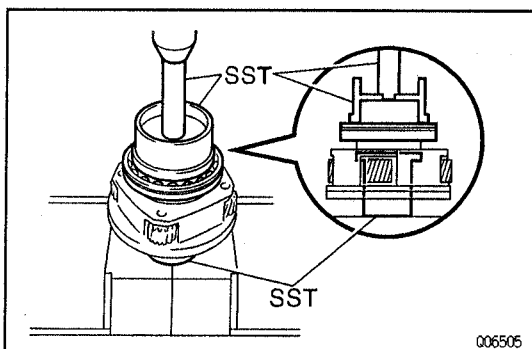


3. IF NECESSARY, REPLACE PLANETARY GEAR OUTER BEARING

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

(b) Using SST and a press, remove the bearing.

SST 09554–30011, 09555–55010



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

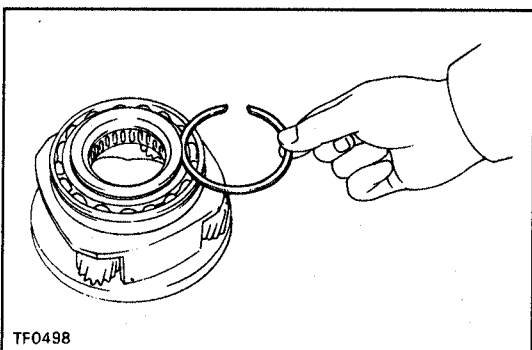
SST 09223–15020, 09515–30010, 09950–70010

(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.

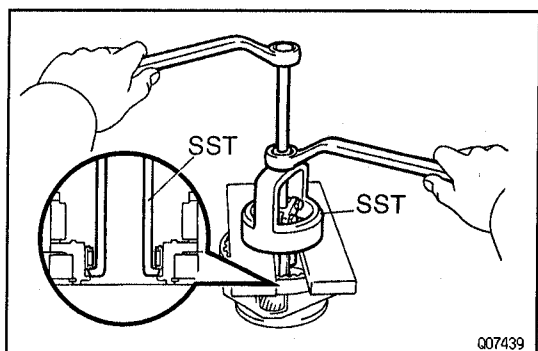


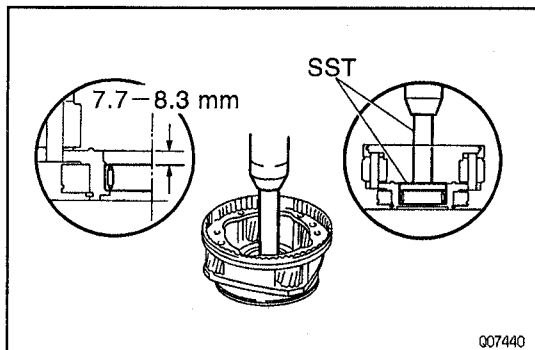
4. IF NECESSARY, REPLACE PLANETARY GEAR THRUST INNER BEARING

(a) Using SST and a press, remove the bearing.

SST 09612–65014 (09612–01030, 09612–01050)

NOTICE: Hang SST securely to the clearance between the thrust inner bearing and planetary gear.

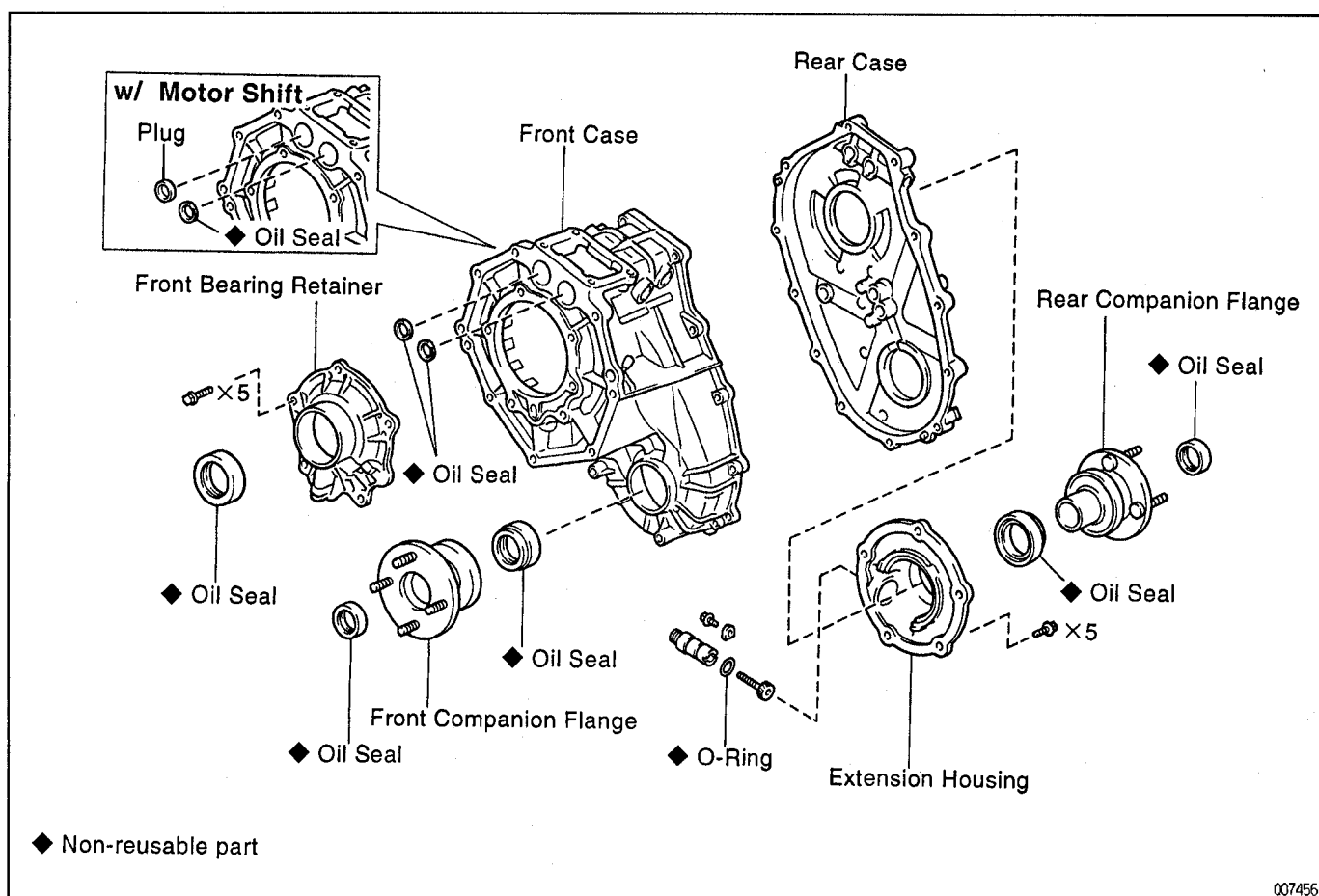




- (b) Using SST and a press, install a new bearing.
 SST 09950-60010 (09951-00570),
 09950-70010 (09951-07100)
Bearing depth:
 7.7 - 8.3 mm (0.303 - 0.327 in.)

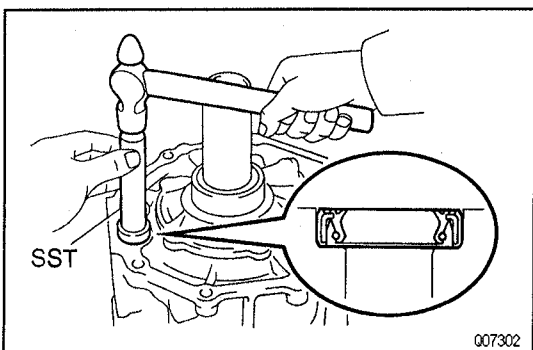
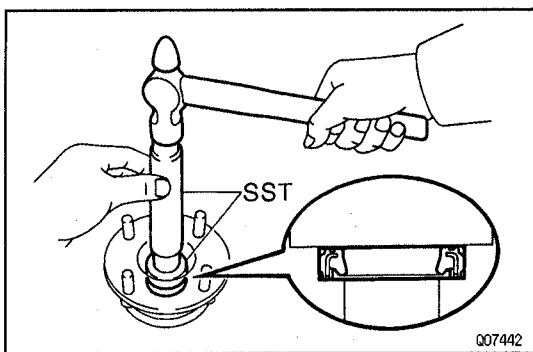
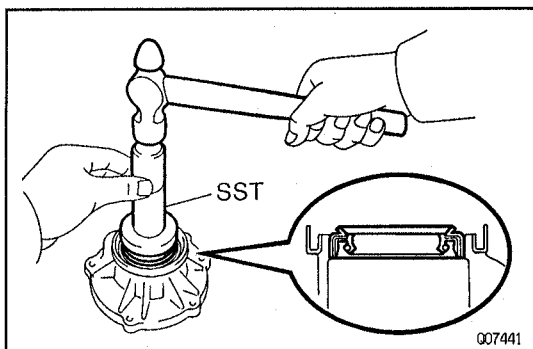
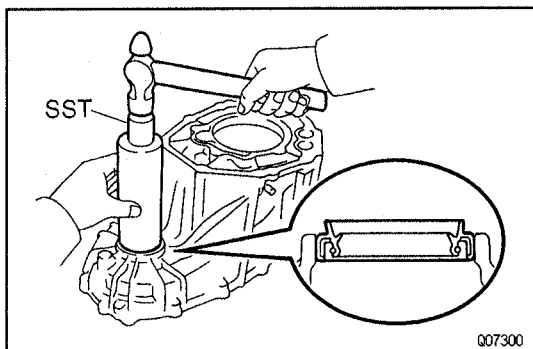
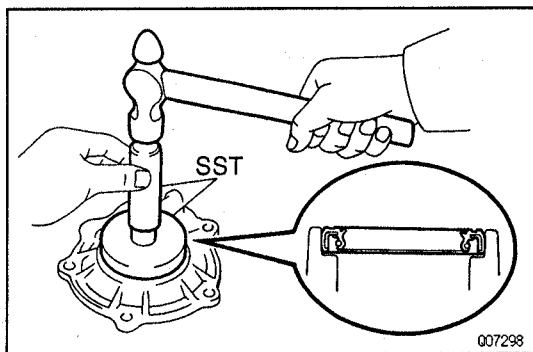
OIL SEALS COMPONENTS

TR01C-06



007456

TR



OIL SEALS REPLACEMENT

1. IF NECESSARY, REPLACE FRONT BEARING RETAINER 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 retainer upper surface.
SST 09950-60010 (09951-00590),
09950-70010 (09951-07100)
- Coat the lip of the oil seal with MP grease.

2. IF NECESSARY, 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. IF NECESSARY, REPLACE EXTENSION HOUSING 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 housing upper surface.
SST 09554-22010
- Coat the lip of the oil seal with MP grease.

4. IF NECESSARY, REPLACE FRONT AND REAR COMPANION FLANGE OIL SEALS

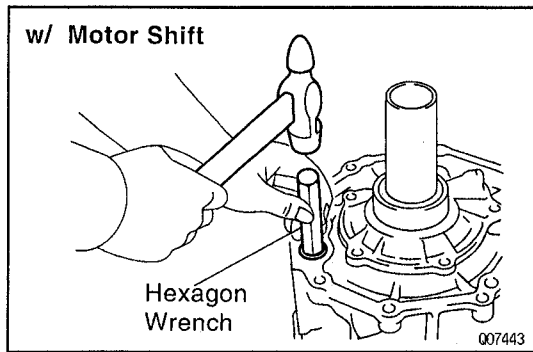
- Using a screwdriver and hammer, drive out the oil seals from the 2 flanges.
- Using SST and a hammer, drive in a new oil seal.
SST 09950-60010 (09951-00220, 09951-00350,
09952-06010), 09950-70010
(09951-07100)
- Coat the lip of the oil seal with MP grease.

5. IF NECESSARY, REPLACE SHIFT FORK SHAFT OIL SEALS

- Using a screwdriver, pry out the oil seal.
- 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.)



6. w/ One touch 2-4 selector system:
(Only when replacing the front case)
IF NECESSARY, REPLACE PLUG

Using a hexagon wrench (19 mm) and hammer, drive in a new plug.

COMPONENT PARTS INSTALLATION BASIC SUBASSEMBLY REASSEMBLY

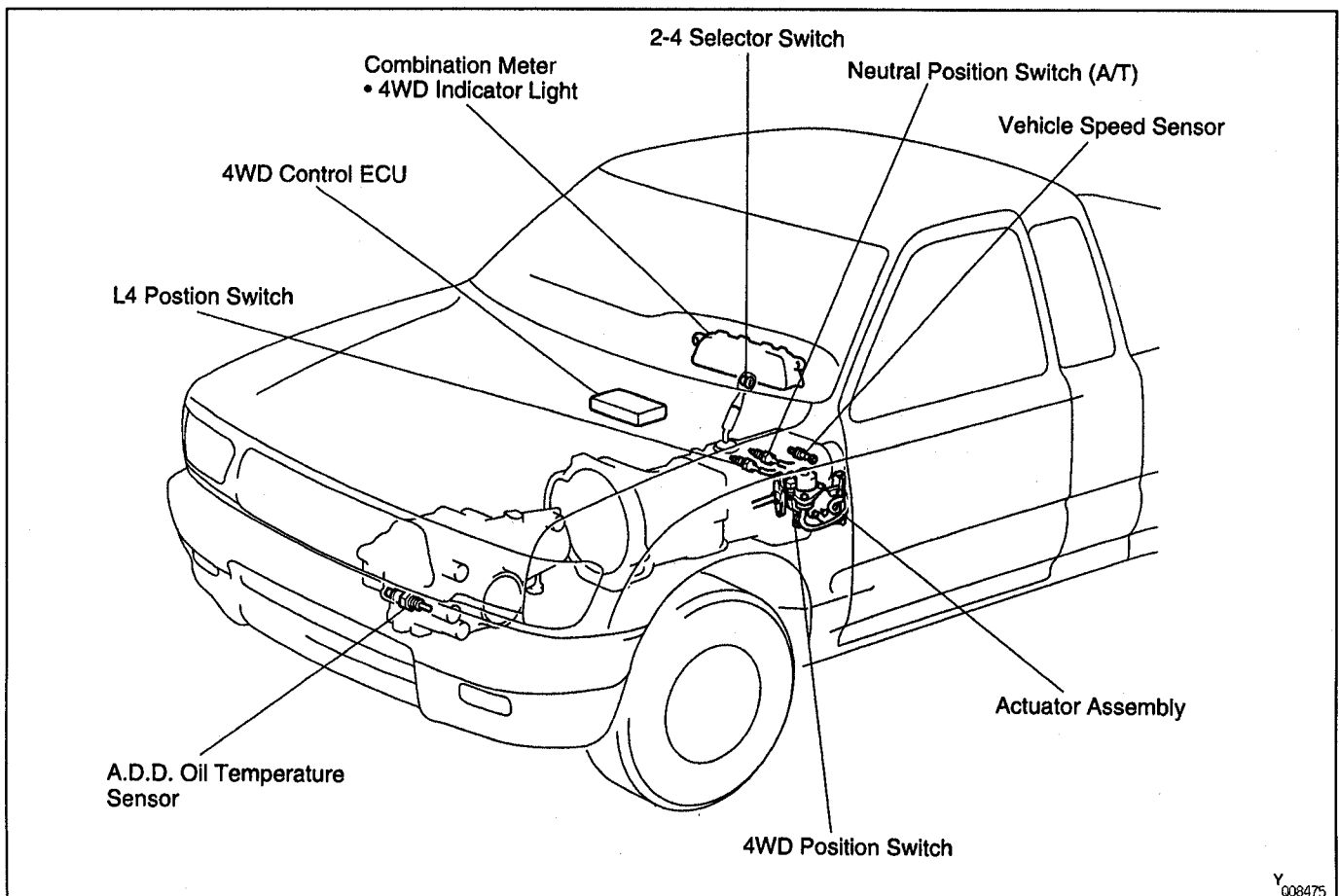
TROSK-01

Assembly is in the reverse order of separation.

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

ONE TOUCH 2-4 SELECTOR SYSTEM PARTS LOCATION

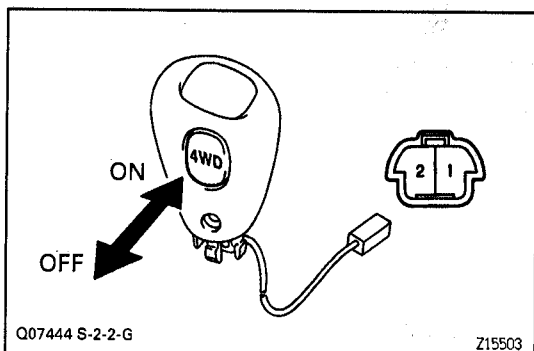
TRO4P-02

Y
008475

TR

MATRIX CHART OF PROBLEM SYMPTOMS

See page		—	TR-41	TR-20	TR-20	TR-41	BE-36	BE-31	TR-41	SA-60	TR-43	—	—
Parts name		4WD Fuse	2-4 Selector Switch	L4 Position Switch	4WD Position Switch	A.D.D. Oil Temp. Sensor	Vehicle Speed Sensor	4WD Indicator Light	Actuator Assembly	A.D.D. Control System	4WD Control ECU	Wire Harness	Transfer Assembly
Trouble													
2WD ↓ 4WD	Shift from 2WD to 4WD (H4 and L4) impossible	1			5	3	4	6	7	8	9	2	10
	Shift from 2WD to 4WD (H4) impossible		1								3	2	
	Shift from 2WD to 4WD (L4) impossible			1							3	2	
4WD ↓ 2WD	Shift from 4WD (H4 and L4) to 2WD impossible	1						3	4	5	6	2	7
	Shift from 4WD (H4) to 2WD impossible		1								3	2	
	Shift from 4WD (L4) to 2WD impossible			1							3	2	



2-4 SELECTOR SWITCH INSPECTION

TR04R-02

INSPECT 2-4 SELECTOR SWITCH CONTINUITY

Switch position	Tester connection to terminal number	Specified condition
OFF	1 - 2	No continuity
ON	1 - 2	Continuity

If continuity is not as specified, replace the shift lever knob.

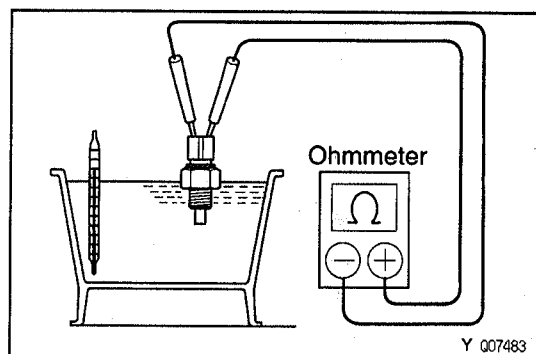
TR04R-02

A.D.D. OIL TEMPERATURE SENSOR INSPECTION

INSPECT SENSOR RESISTANCE

Measure the resistance between terminals.

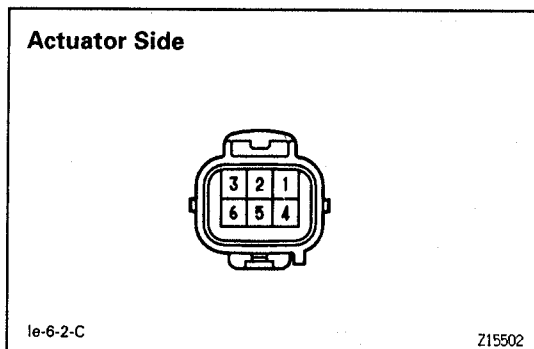
HINT: When checking, apply 0.1 mA current.



Temperature °C (°F)	Resistance (kΩ)
-25 (-13)	Approx. 20.5
5 (41)	Approx. 4.593
30 (86)	Approx. 1.660

If resistance value is not as specified, replace the sensor.

TR



ACTUATOR ASSEMBLY INSPECTION

TR04T-02

1. INSPECT RESISTANCE

- (a) Using an ohmmeter, measure the resistance between terminals 2 and 3.

Standard resistance:

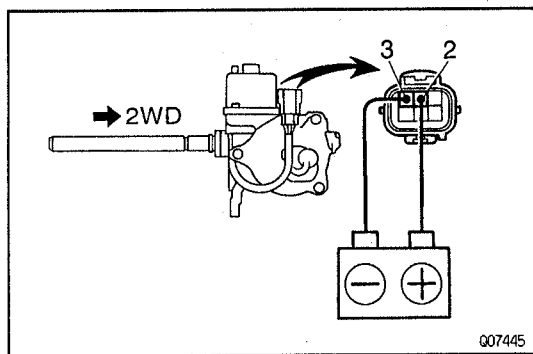
0.3 - 100 Ω

- (b) Using an ohmmeter, measure the resistance between terminals 2 or 3 and body ground.

Standard resistance:

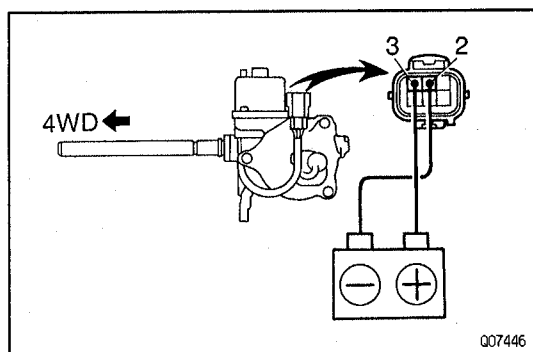
More than 0.5 MΩ

If resistance value is not as specified, replace the actuator assembly.

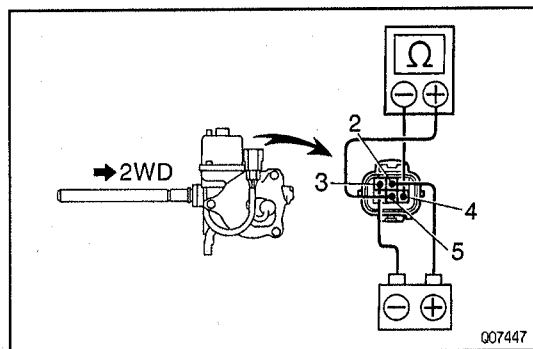


2. INSPECT OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3, then check that the actuator fork shaft moves to 2WD position.

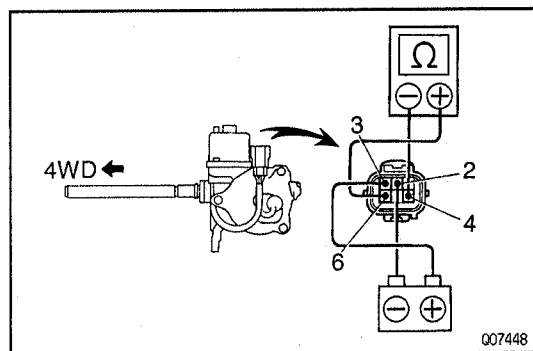


- (b) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2, then check that the actuator fork shaft moves to 4WD position.
If operation is not as specified, replace the actuator assembly.



3. INSPECT LIMIT SWITCH CONTINUITY

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3.
(b) Connect the positive (+) lead from the ohmmeter to terminal 5 and the negative (-) lead to terminal 4.
(c) Check that there is continuity between terminals 4 and 5.



- (d) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2.
(e) Connect the positive (+) lead from the ohmmeter to terminal 6 and the negative (-) lead to terminal 4.
(f) Check that there is continuity between terminal 4 and 6.
If continuity is not as specified, replace the actuator assembly.

NO.1 VEHICLE SPEED SENSOR INSPECTION

(See page BE-36)

TR04U-02

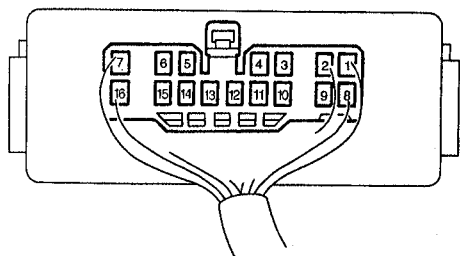
4WD INDICATOR LAMP INSPECTION

TR04V-02

CHECK COMBINATION METER

(See page BE-31)

From Back Side



Q07449

w/ One touch 2-4 selector system: 4WD CONTROL ECU INSPECTION

INSPECT 4WD CONTROL ECU

Connect the wire harness side connector to the ECU and inspect wire harness side connector from the back side, as shown.

STANDARD VALUE OF ECU TERMINAL

Terminals	Symbols	Condition		Standard Value
1-8	IND - GND	Engine Running. 2WD → 4WD (4WD Indicator light light up).		12 ~ 16 V → 1.2 V or less
3-2	M1 - M2	Ignition switch ON. 2WD → *1		0.5 V or less → *2
		→ *1 4WD (2-4 selector switch ON or transfer shift lever L4 position). → *3		→ *2 10 ~ 14 V (for about 5 second) then less than 0.5 V → *4
		→ *3 2WD (2-4 selector switch OFF and transfer shift lever H position).		→ *4 10 ~ 14 V (for about 5 second) then less than 0.5 V
4-8	V4 - GND	Ignition switch ON. 4WD (2-4 selector switch ON and transfer shift lever H position or 2-4 selector switch OFF and transfer shift lever L4 position).	A.D.D. VSV Temp. 20°C (68°F)	9 V or less (after 0.1 second)
			A.D.D VSV Temp. 120°C (248°F)	13 V or less (after 0.1 second)
5-8	SPD - GND	Ignition switch ON. During driving.		Repeatedly chages from Below 0.5 V or less to 4 V or more
6-8	4WD - GND	Ignition switch ON. 4WD (2-4 selector switch ON and transfer shift lever H position or 2-4 selector switch OFF and transfer shift lever L4 position)		2 V or less
8 - Body Ground	GND - Body Ground	Constant		Continuity
9-8	RL-2 - GND	Ignition switch ON. 4WD (2-4 selector switch ON or transfer shift lever L4 position) → 2WD (2-4 selector switch OFF and transfer shift lever H position)		0.5 V or less → 10 ~ 14 V then 0.5 V (after 5 second)
10-8	RL-1 - GND	Ignition switch ON. 2WD (2-4 selector switch OFF and transfer shift lever H position) → 4WD (2-4 selector switch ON or transfer shift lever L4 position)		0.5 V or less → 10 ~ 14 V then 0.5 (after 5 second)
11-8	V2 - GND	Ignition switch ON. 2WD (2-4 selector switch OFF and transfer shift lever H position)	A.D.D. VSV Temp. 20°C (68°F)	9 V or less (after 0.1 second)
			A.D.D VSV Temp. 120°C (248°F)	13 V or less (after 0.1 second)
13-12	TH+ - TH-	Oil temp. sensor	-20°C (-4°F)	13.36 ~ 18.02 kΩ
			-10°C (14°F)	8.07 ~ 10.61 kΩ
			-5°C (23°F)	6.47 ~ 8.43 kΩ
			5°C (41°F)	4.15 ~ 5.27 kΩ
14-8	L4 - GND	Transfer shift lever H2 (2-4 selector switch OFF and transfer shift lever H position) → L4		10 ~ 14 V → 0.5 V or less
15-8	2-4 - GND	2-4 selector switch OFF → ON		10 ~ 14 V → 2 V or less
16-8	IG - GND	Constant		10 ~ 14 V

TR

SERVICE SPECIFICATIONS

SERVICE DATA

TR01F-06

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.		

TR

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	1.05 — 1.85 mm	0.0413 — 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	Speedometer driven gear oil seal depth		25 mm	0.98 in.
	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
Speedometer driven gear set bolt	11.5	115	8
4WD position switch	37	380	27
L4 position switch	37	380	27
Neutral position switch	37	380	27
Protector	18	185	13
Front bearing retainer	11.5	115	8
Control retainer	18	185	13
Upper cover and oil deflector	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	18.6	190	14
Front drive shaft fork (w/ One touch 2—4 selector system)	24	240	17
Actuator assembly x Rear case (w/ One touch 2—4 selector system)	20	200	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	18.6	190	14
Relief valve x Oil pump body	29.4	300	21
Oil pump plate x Oil pump body	7.4	75	65 (in.lbf)