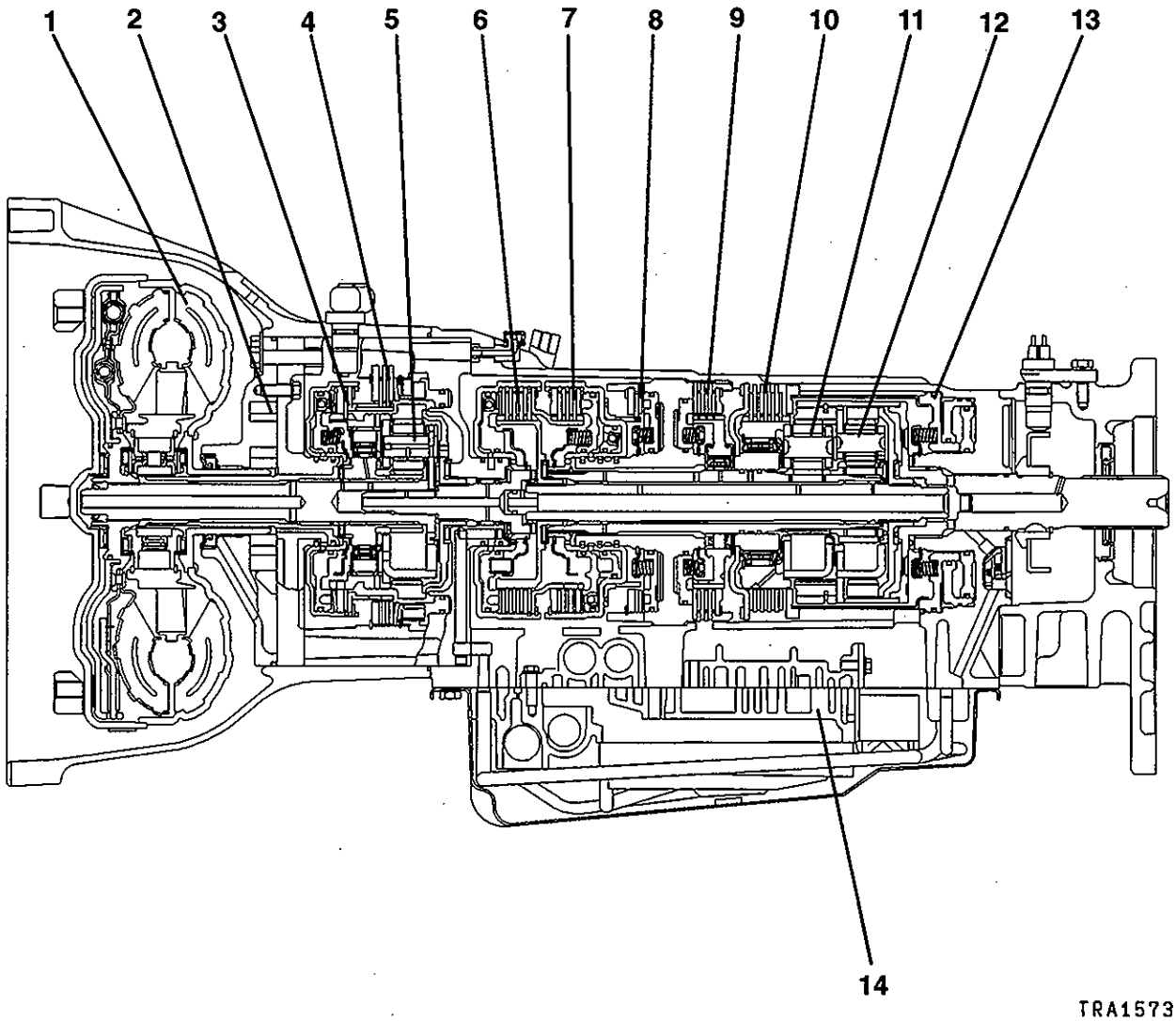
GENERAL INFORMATION

TRANSMISSION

This transmission is an Aisin AW, electronically-controlled, 4-speed, automatic transmission.

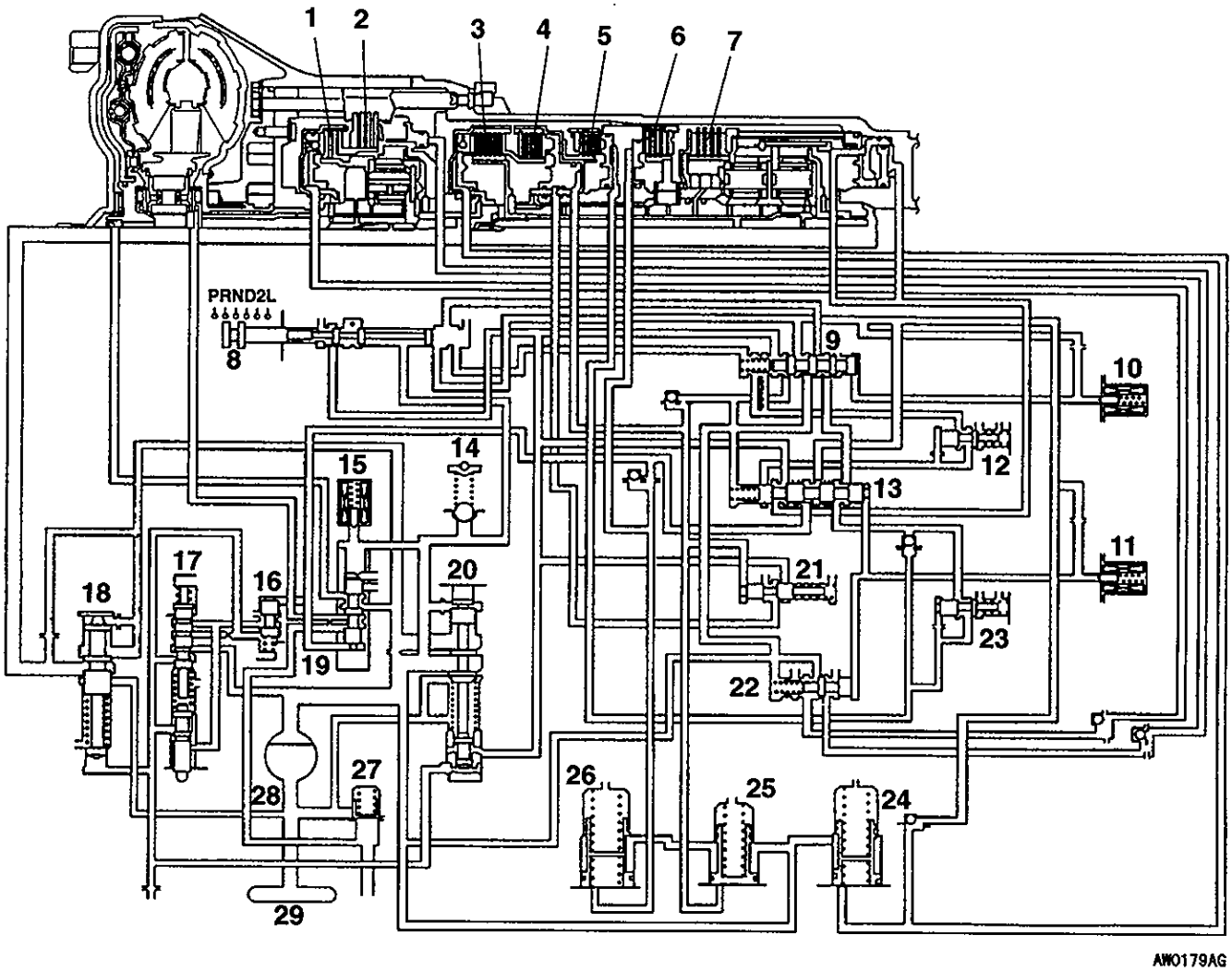
- It comprises three multiple-plate clutch assemblies, four multiple-plate brake assemblies, and three planetary gear assemblies.
- Two individual speed sensors are used to detect the input speed and the output speed.
- Holding three individual solenoid valves, the valve body regulates the control oil pressure and adjusts shaft timing.

SECTION VIEW



1. Torque convertor
2. Oil pump
3. Overdrive clutch
4. Overdrive brake
5. Overdrive planetary gear
6. Forward clutch
7. Direct clutch
8. No.1 brake
9. No.2 brake
10. No.3 brake
11. Front planetary gear
12. Rear planetary gear
13. No.3 brake piston
14. Valve body

HYDRAULIC CIRCUIT DIAGRAM



1. Overdrive clutch
2. Overdrive brake
3. Forward clutch
4. Direct clutch
5. No.1 brake
6. No.2 brake
7. No.3 brake
8. Manual valve
9. 2-3 shift valve
10. Solenoid valve No.1
11. Solenoid valve No.2
12. Low coast modulator valve
13. 1-2 shift valve
14. Pressure relief valve
15. Solenoid valve No.3
16. Cutback valve
17. Throttle valve
18. Secondary regulator valve
19. Lockup control valve
20. Primary regulator valve
21. Reverse clutch sequence valve
22. 3-4 shift valve
23. Intermediate modulator valve
24. C1 accumulator
25. C2 accumulator
26. B2 accumulator
27. Oil cooler bypass valve
28. Oil pump
29. Strainer

SNAP RINGS AND SPACERS FOR ADJUSTMENT

TRANSFER <Super select 4WD-i>

Snap ring (for adjustment of input gear end play)

Thickness mm	Identification color	Part number
2.70	Purple	MD704204
2.75	Pink	MD704205
2.80	Yellow	MD704206
2.85	White	MD704207
2.90	Blue	MD704208

Snap ring (for adjustment of input gear bearing clearance)

Thickness mm	Identification color	Part number
2.30	None	MD704199
2.35	Red	MD704200
2.40	White	MD704201
2.45	Blue	MD704202
2.50	Green	MD704203

Snap ring (for adjustment of Hi-Lo clutch hub end play)

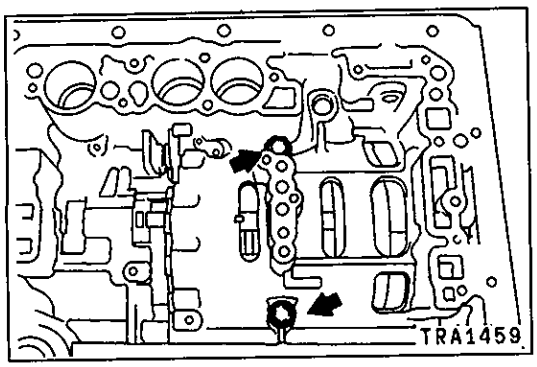
Thickness mm	Identification color	Part number
2.14	None	MD704212
2.21	Yellow	MD704213
2.28	White	MD704214
2.35	Blue	MD704215
2.42	Red	MD704216

Snap ring (for adjustment of differential lock hub end play)

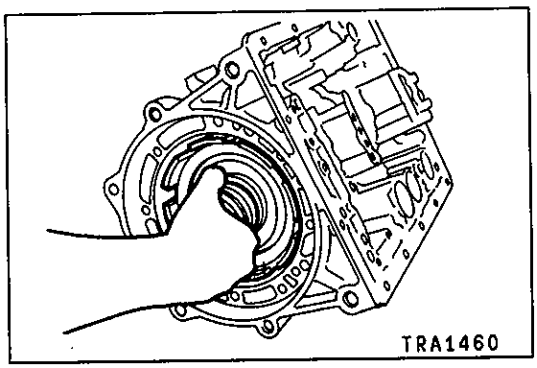
Thickness mm	Identification color	Part number
2.56	None	MD738386
2.63	Red	MD738387
2.70	White	MD738388
2.77	Blue	MD738389
2.84	Yellow	MD738390
2.91	Green	MD738391
2.98	Purple	MD738392

Snap ring (for adjustment of rear output shaft rear bearing clearance)

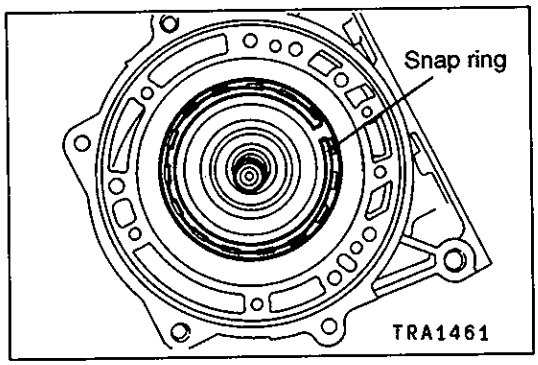
Thickness mm	Identification color	Part number
2.18	Blue	MR388669
2.25	None	MR388670
2.32	Brown	MR388671
2.39	White	MR388672



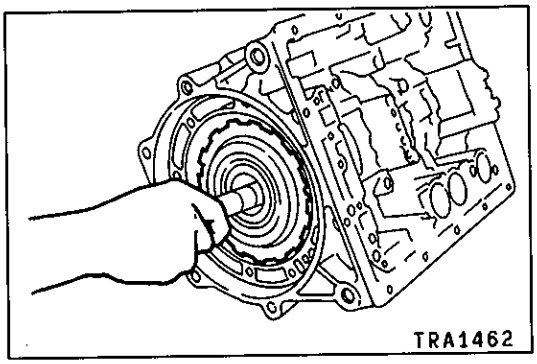
41. Remove the center support mounting bolts.



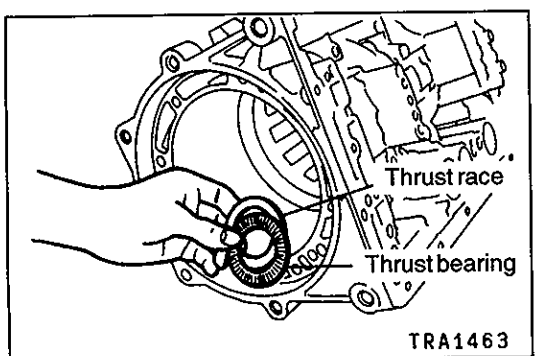
42. Remove the center support and the sun gear as a unit.



43. Remove the snap ring.



44. Hold the intermediate shaft and remove both the front planetary gear and the rear planetary gear.

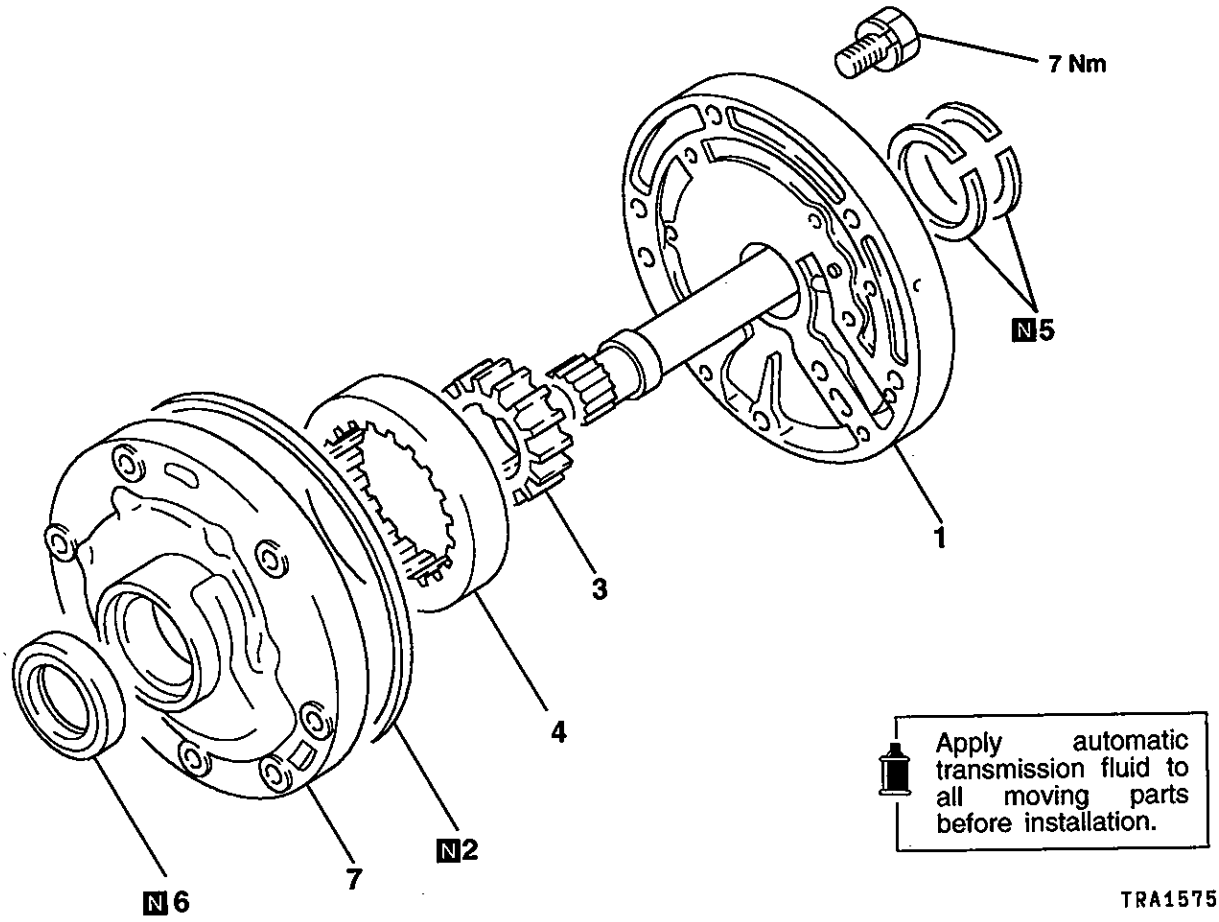


45. Remove the thrust bearing and the thrust race.

NOTE
There may be a case where the thrust bearing is stuck to the rear planetary carrier side.

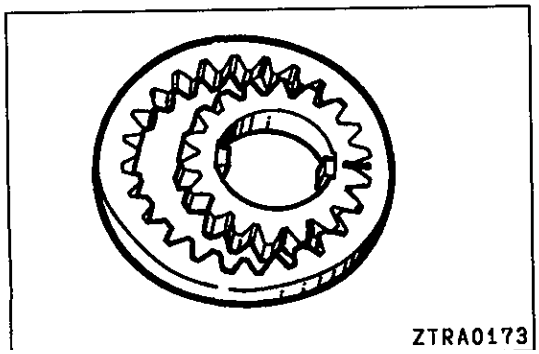
4. OIL PUMP

DISASSEMBLY AND REASSEMBLY



Disassembly steps

- ▶C◀ 1. Stator support
- 2. O-ring
- ◀A▶ ▶B◀ 3. Oil pump drive gear
- ◀A▶ ▶B◀ 4. Oil pump driven gear
- 5. Seal ring
- ▶A◀ 6. Oil seal
- 7. Oil pump body



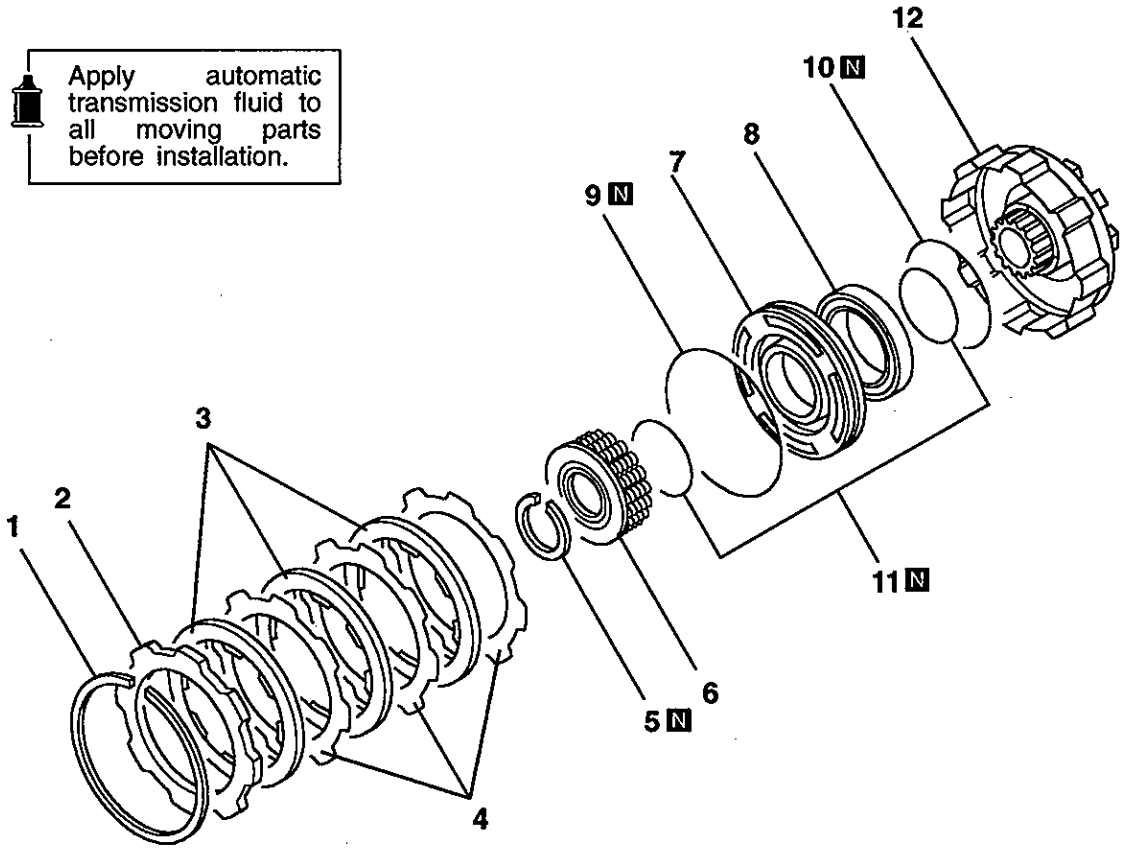
DISASSEMBLY SERVICE POINT

◀A▶ OIL PUMP DRIVE GEAR / OIL PUMP DRIVEN GEAR REMOVAL

(1) In order that the gears can be reassembled with the correct orientations, apply mating marks to the side of each one.

8. DIRECT CLUTCH

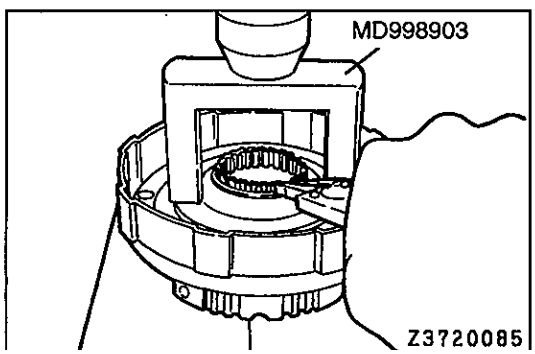
DISASSEMBLY AND REASSEMBLY



TRA1559

Disassembly steps

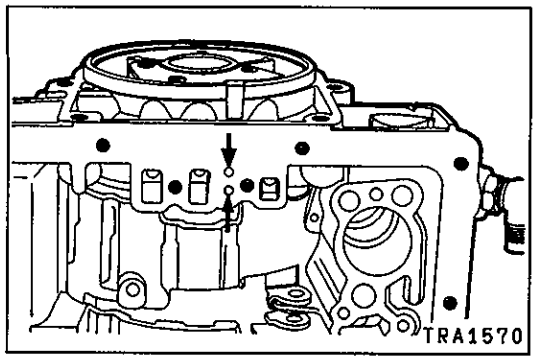
- ▶B◀ 1. Snap ring
- ▶B◀ 2. Backing plate
- ▶B◀ 3. Clutch discs
- ▶B◀ 4. Clutch plates
- ◀A▶ ▶A◀ 5. Snap ring
- 6. Spring retainer
- ◀B▶ 7. Direct clutch outer piston
- 8. Direct clutch inner piston
- 9. O-ring
- 10. O-ring
- 11. O-ring
- 12. Direct clutch cylinder



DISASSEMBLY SERVICE POINTS

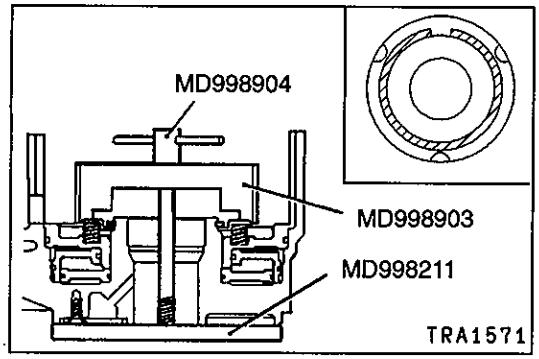
◀A▶ SNAP RING REMOVAL

(1) Compress the return spring using the indicated special tool and remove the snap ring.



◀B▶ NO.3 BRAKE PRIMARY PISTON / REACTION SLEEVE / NO.3 BRAKE SECONDARY PISTON REMOVAL

(1) Place the transmission case on the work surface with the front side facing downward. In order that the No.3 brake primary piston, reaction sleeve, and No.3 brake secondary piston are not damaged during this operation, several clean rags should be laid on this surface in advance.
(2) Blow air into both of the indicated oil holes to remove the No.3 brake primary piston, reaction sleeve, and No.3 brake secondary piston.



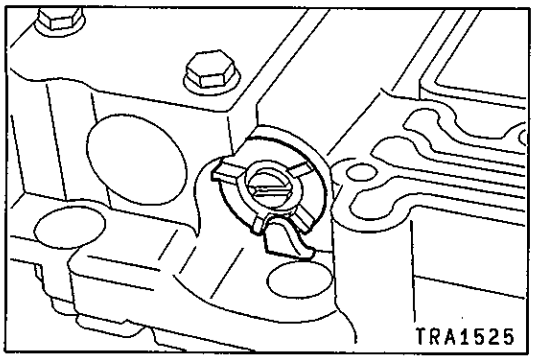
REASSEMBLY SERVICE POINT

▶A◀ SNAP RING INSTALLATION

(1) Compress the return spring using the indicated special tool and attach the snap ring.

Caution

- **Ensure that the end gap in the snap ring is not aligned with any of the spring retainer lugs.**



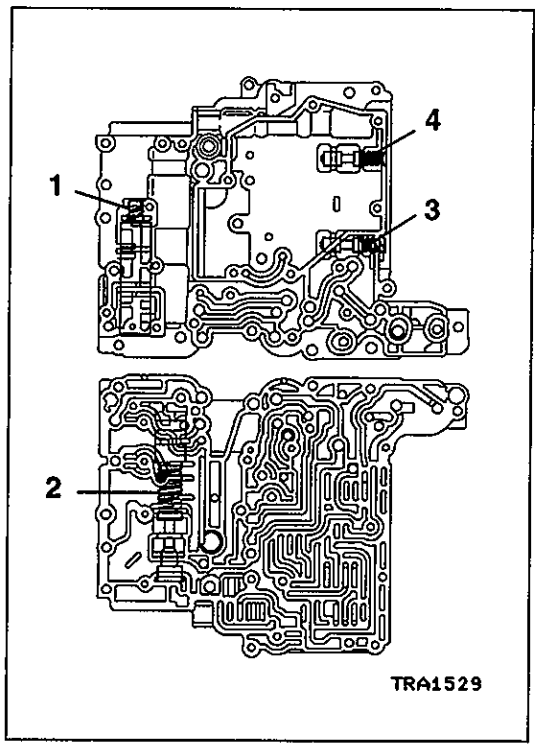
DISASSEMBLY SERVICE POINT

◀A▶ SLEEVE / PLATE REMOVAL

(1) Before proceeding with the disassembly, check what division of the sleeve the plate seats in.

Caution

- **The sleeve division in which the plate seats determines the line pressure: Always check this before disassembly.**

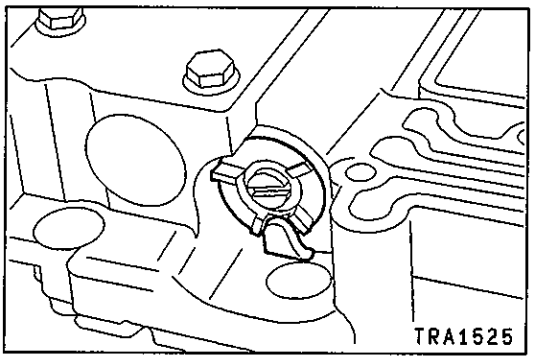


REASSEMBLY SERVICE POINTS

▶A◀ SPRINGS INSTALLATION

(1) Correctly install each spring.

	Installation location	Free height (mm)	Outside diameter (mm)
1	Lock-up relay valve	32.60	11.40
2	Pressure regulator valve	50.28	17.02
3	Intermediate modulator valve	27.26	9.04
4	Low coast modulator valve	42.35	9.24

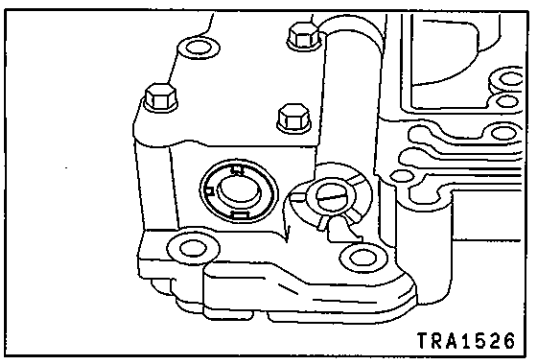


▶B◀ SLEEVE / PLATE INSTALLATION

(1) Install the plate in such a way that it may seat in the same sleeve position as prior to disassembly.

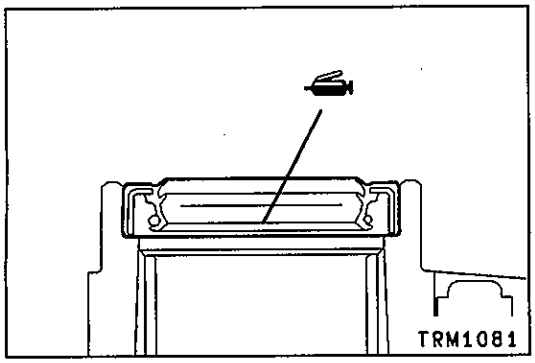
Caution

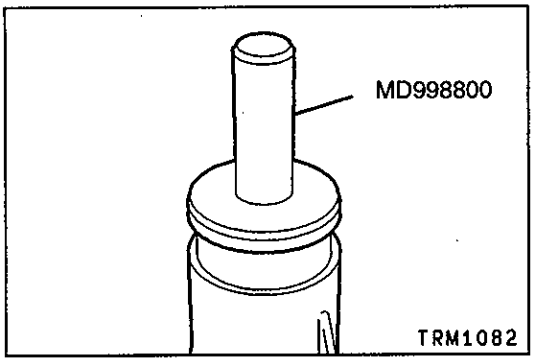
- **The sleeve division in which the plate seats determines the line pressure: Always let the plate seat on the sleeve in the division which was verified before disassembly.**



▶C◀ SLEEVE / PIN INSTALLATION

(1) Install the sleeve such that its three notches are located as illustrated, then secure with the pin.

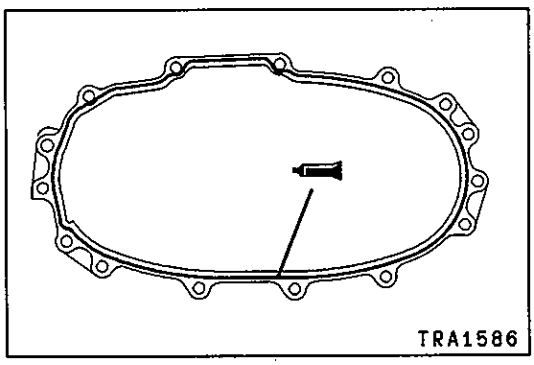




▶R◀ OIL SEAL INSTALLATION

(1) Apply grease to the lip of the oil seal; then assemble the seal using the indicated special tool.

Specified grease:
Mitsubishi genuine grease Part No. MD0101011 or equivalent

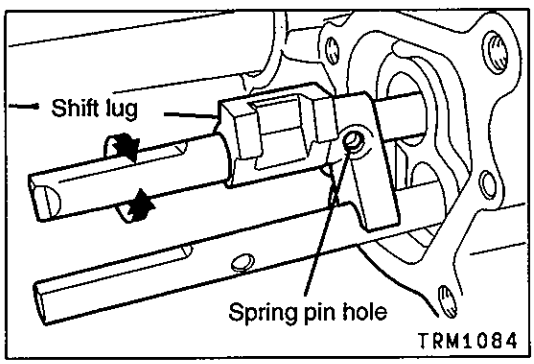


▶S◀ TRANSFER REAR COVER INSTALLATION

(1) Apply sealant to the transfer rear cover mounting surface of the transfer case.

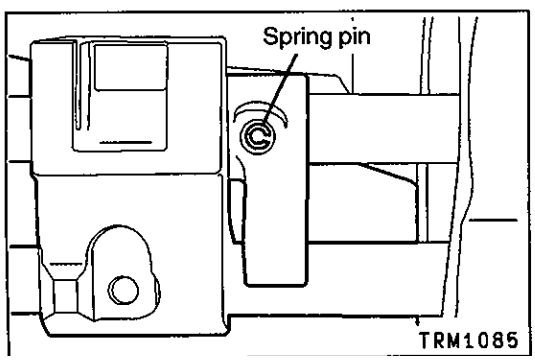
Specified sealant:
Mitsubishi genuine sealant Part No. MD997740 or equivalent

Caution
- **Squeeze the sealant out evenly to ensure that the bead is not broken and that over-application is not performed.**



▶T◀ 2WD/4WD SHIFT LUG INSTALLATION

(1) Rotate the 2WD/4WD shift rail to line up the spring pin hole in the 2WD/4WD shift lug with that in the shift rail.

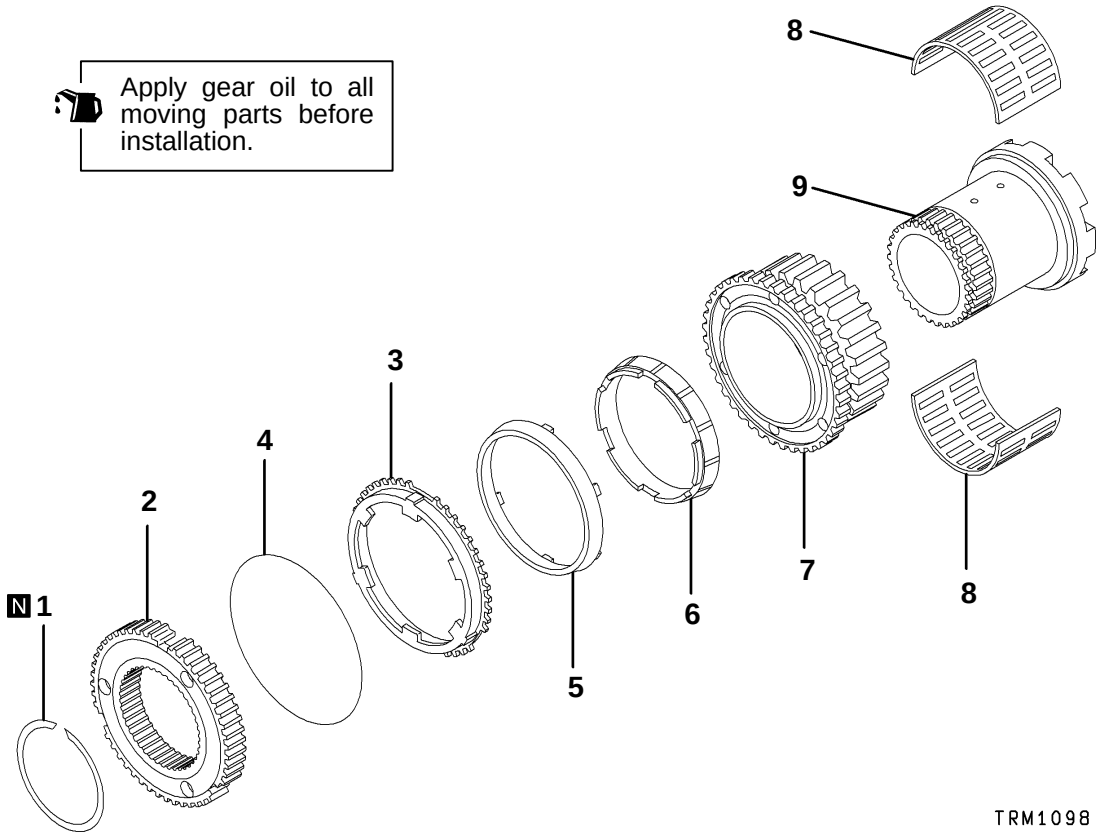


▶U◀ SPRING PIN INSTALLATION

(1) Drive in the spring pin in such a way that its slit is oriented as shown.

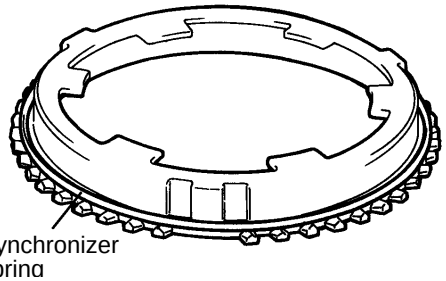
20. 2WD/4WD SYNCHRONIZER <SUPER SELECT 4WD-i>

DISASSEMBLY AND REASSEMBLY



Disassembly steps

- ▶C◀ 1. Snap ring
- ▶B◀ 2. 2WD/4WD clutch hub
- 3. Outer synchronizer ring
- ▶A◀ 4. Synchronizer spring
- 5. Synchronizer cone
- 6. Inner synchronizer ring
- 7. Drive sprocket
- 8. Needle bearing
- 9. Front input sleeve

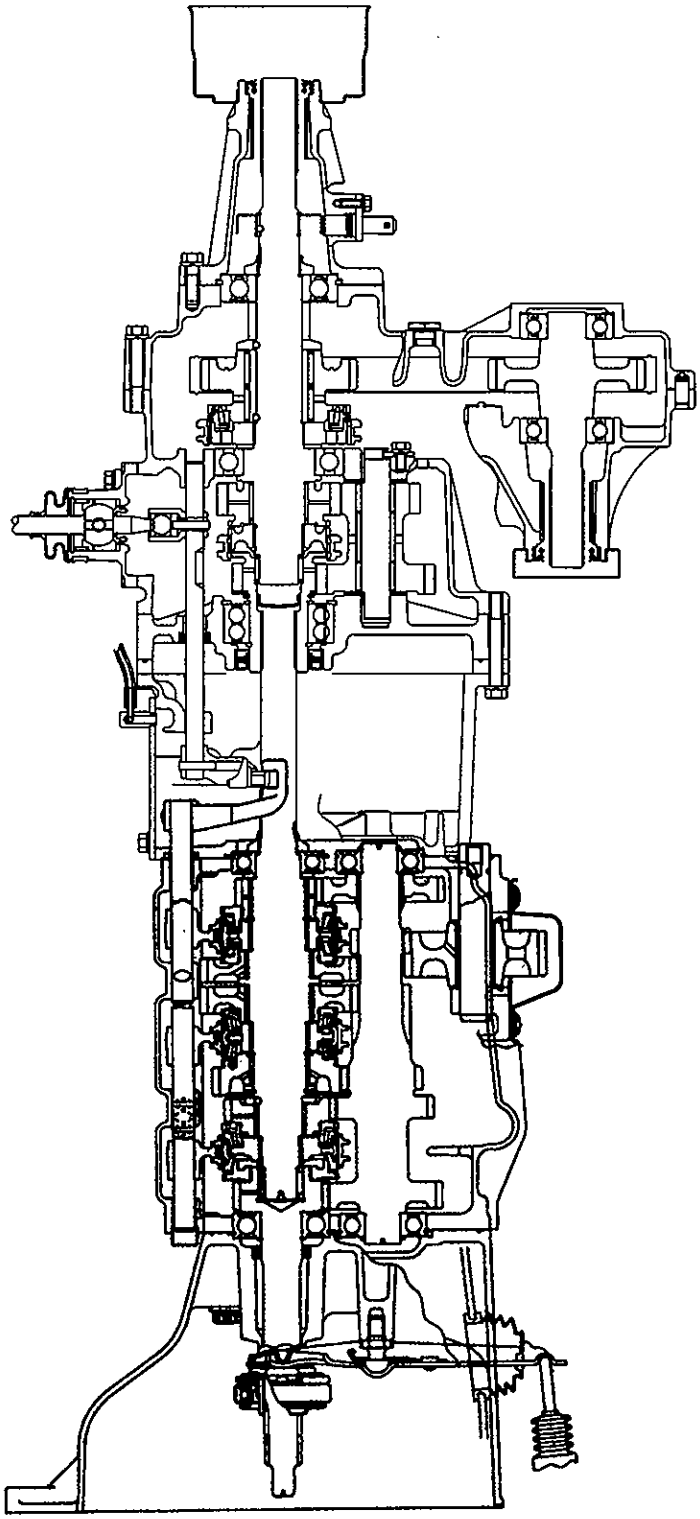


REASSEMBLY SERVICE POINTS

▶A◀ SYNCHRONIZER SPRING INSTALLATION

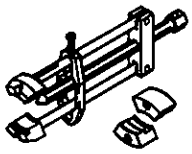
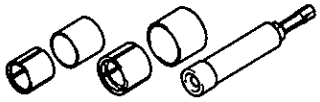
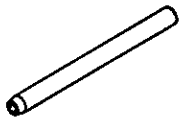
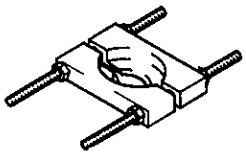
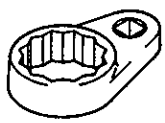
(1) Securely mount the synchronizer spring on the outer synchronizer ring.

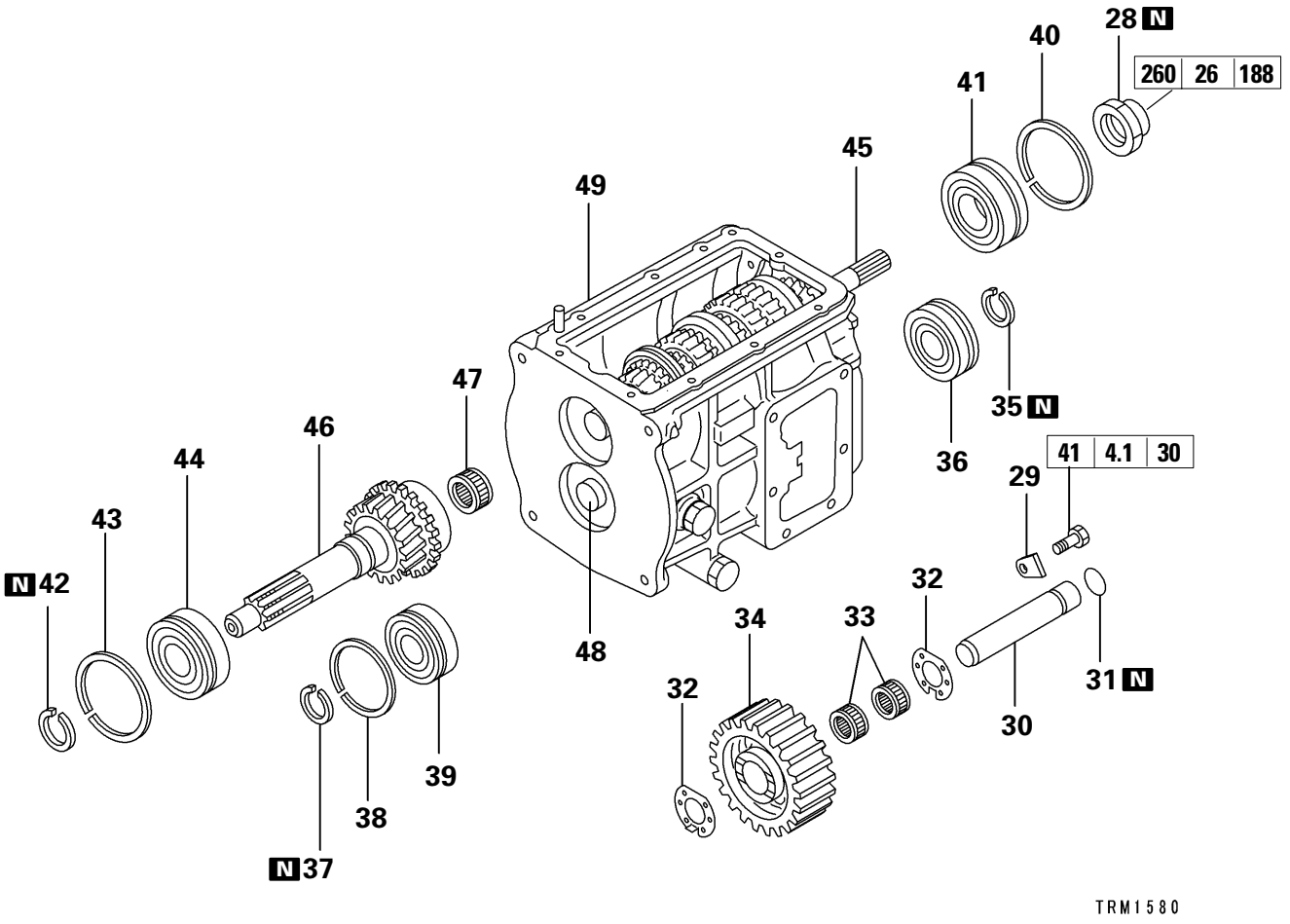
V5MT1-8 (PART TIME TYPE)



TRA1381

2. SPECIAL TOOLS

Tool	Number	Name	Use
	MD998019	Lock pin extractor	Driving out of the spring pin.
	MD998020	Bearing puller	Removal of bearing
	MD998192	Bearing puller	Installation of transfer drive shaft bearing
	MD998245	Lock pin installer	Driving in of the spring pin
	MD998801	Bearing puller	Removal and installation of transfer bearing and clutch hub
	MD998809	Lock nut wrench (41)	Removal and installation of mainshaft lock nut
	MD998811	Bearing puller adapter	Use with MD998020



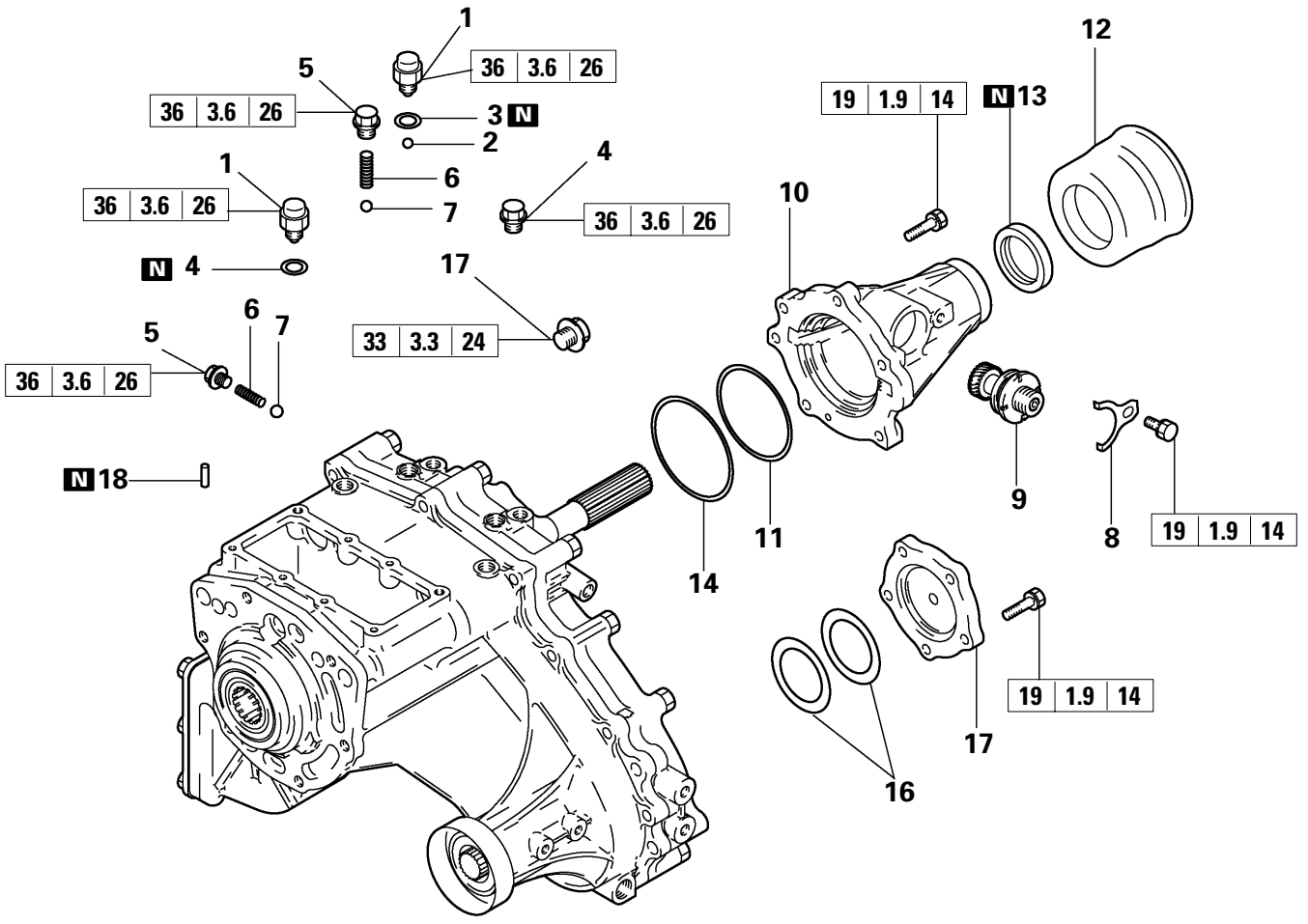
Disassembly steps

- Ⓒ 28. Lock nut
  29. Lock piece
- Ⓓ 30. Reverse shaft
  31. O-ring
  32. Side washer
  33. Needle bearing
  34. Reverse gear
  35. Snap ring
- Ⓔ 36. Ball bearing
  37. Snap ring
  38. Snap ring
- Ⓔ 39. Ball bearing
  40. Snap ring
- Ⓕ 41. Ball bearing
  42. Snap ring
  43. Snap ring
- Ⓕ 44. Ball bearing
- Ⓖ 45. Main shaft assembly
- Ⓖ 46. Drive pinion
  47. Pilot bearing
- Ⓗ 48. Counter shaft assembly
  49. Transmission case

Reassembly steps

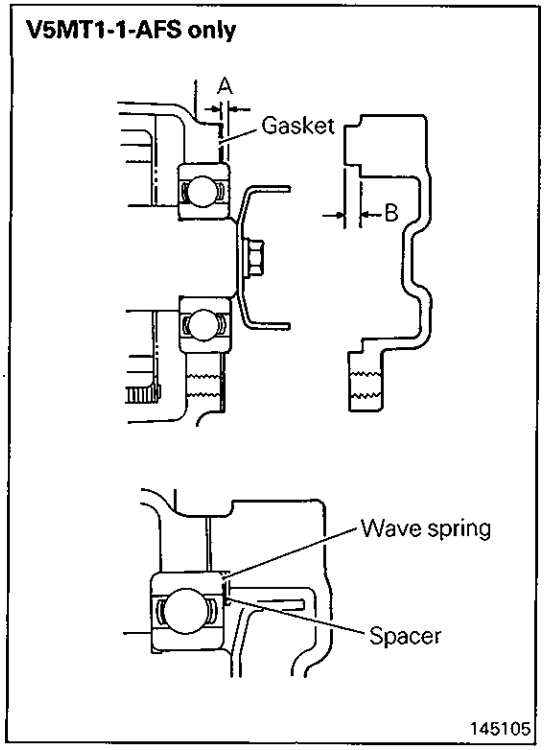
- 49. Transmission case
- A 48. Counter shaft assembly
- B 44. Ball bearing
  42. Snap ring
- C 46. Drive pinion
  43. Snap ring
- C 47. Pilot bearing
- C 45. Main shaft assembly
  40. Snap ring
- D 41. Ball bearing
  38. Snap ring
- E 39. Ball bearing
  37. Snap ring
- F 36. Ball bearing
  35. Snap ring
- Q 34. Reverse gear
  33. Needle bearing
- G 32. Side washer
  31. O-ring
  30. Reverse shaft
  29. Lock piece
- H 28. Lock nut

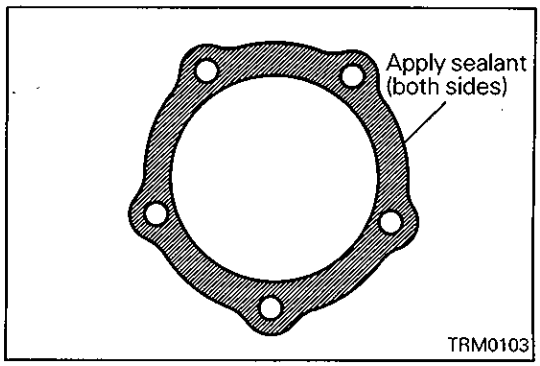
V5MT1-3, 6 (PART TIME TYPE – LHD)



Disassembly steps

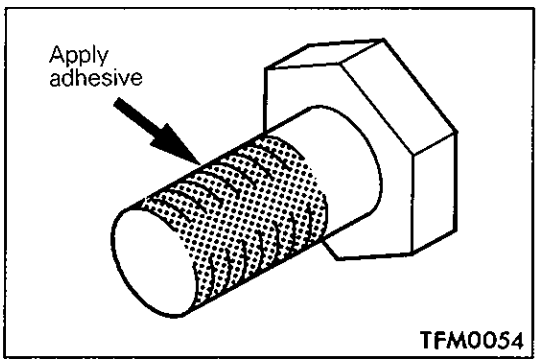
- ◗b◖ 1. Detection switch
- 2. Steel ball
- 3. Gasket
- ◗a◖ 4. Plug
- ◗Z◖ 5. Poppet plug
- 6. Poppet spring
- 7. Steel ball
- 8. Sleeve clamp
- ◗Y◖ 9. Speedometer gear
- ◗X◖10. Rear cover
- ◗V◖11. Spacer
- 12. Dust seal guard
- ◗U◖13. Oil seal
- 14. Snap ring
- ◗Q◖15. Cover
- ◗Q◖16. Wave spring
- 17. H-L shift rail plug
- ◗P◖18. Spring pin for H-L shift fork





(2) Apply specified sealant to both sides of the cover gasket.

Specified sealant:
Mitsubishi genuine sealant Part No. 997740 or equivalent



(3) Install the cover.
(4) Apply the specified adhesive to the threaded part of the cover installation bolt.

Specified adhesive:
3M STUD Locking No. 4170 or equivalent

(5) Tighten the cover installation bolt at the specified torque.