

# TRANSMISSION MANUAL AND AUTOMATIC

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N21AA--

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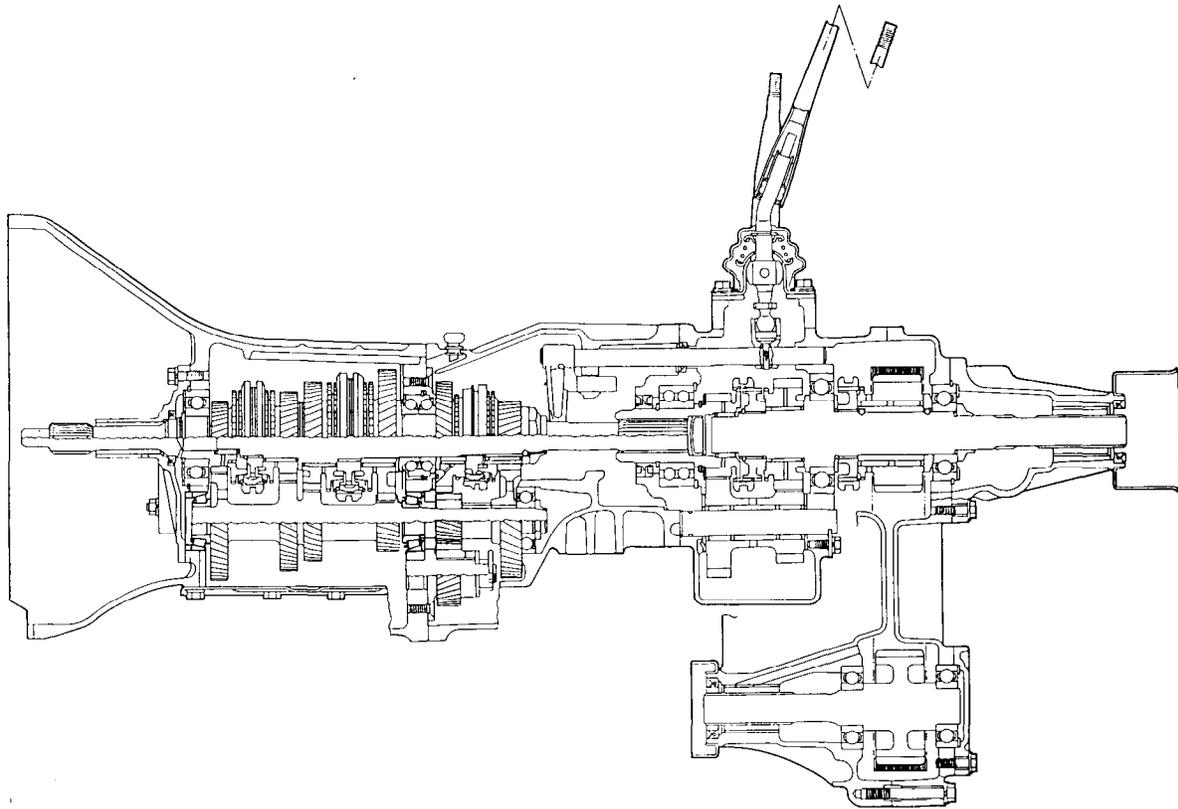
**GENERAL INFORMATION**

N21BAAF

The KM-145 5-speed transmission is composed of the 4WD transmission and the transfer. For the manual transmission, the shifting mechanism is coupled to unit 1, and is housed within an aluminum-diecast housing.

For the gear train, forward and reverse are the constantly engaged type.

The transfer is the part-time system; 2WD, 4WD-HIGH and 4WD-LOW can be selected.



145110

**SPECIFICATIONS**

**GENERAL SPECIFICATIONS**

N21CA--

Items	Specifications
Model	KM145
Transmission	
Type	5-speed 4-wheel drive
Gear ratio 1st	3.967
2nd	2.136
3rd	1.360
4th	1.000
5th	0.856
Reverse	3.578
Final gear ratio	4.625 4.875 (Option)
Speedometer gear ratio	26/8 ... Final gear ratio 4.625 27/8 ... Final gear ratio 4.875 (Option)
Transfer case	
Type	Constant mesh type
Gear ratio High	1.000
Low	1.944
Drive system Front wheel	Chain drive
Rear wheel	Direct drive
Adjustment spacer and snap ring	
Snap ring for main drive gear	
Thickness   mm (in.)-Ident. color-Part No.	2.30 (.091)-White-MD701729 2.35 (.093)-Brown-MD701730 2.40 (.094)-None-MD701731 2.45 (.096)-Blue-MD701732 2.50 (.098)-Yellow-MD701733
Spacer for main drive gear bearing to front retainer	
Thickness   mm (in.)-Ident. color-Part No.	0.84 (.033)-Black-MD701845 0.93 (.037)-None-MD701839 1.02 (.040)-Red-MD701840 1.11 (.044)-White-MD701841 1.20 (.047)-Yellow-MD701842 1.29 (.051)-Blue-MD701843 1.38 (.054)-Green-MD701844
Snap ring for mainshaft front end	
Thickness   mm (in.)-Ident. color-Part No.	2.15 (.085)-Blue-MD701761 2.22 (.087)-None-MD701762 2.29 (.090)-Brown-MD701763 2.36 (.093)-White-MD701764

Items	Specifications
Snap ring for input gear assembly Thickness mm (in.)–color	2.70 (.106)–Purple 2.75 (.108)–Pink 2.80 (.110)–Yellow 2.85 (.112)–White 2.90 (.114)–Blue
Snap ring for H-L clutch hub Thickness mm (in.)–color	2.14 (.084)–None 2.21 (.087)–Yellow 2.28 (.090)–White 2.35 (.093)–Blue 2.42 (.095)–Red
Snap ring for input gear bearing Thickness mm (in.)–color	2.30 (.091)–None 2.35 (.093)–Red 2.40 (.094)–White 2.45 (.096)–Blue 2.50 (.098)–Green
Spacer for rear output shaft bearing Thickness mm (in.)–color	0.84 (.033)–Black 0.93 (.037)–None 1.02 (.040)–Red 1.11 (.044)–White 1.20 (.047)–Yellow 1.29 (.051)–Blue 1.38 (.054)–Green

## SERVICE SPECIFICATIONS

N21CB--

Items	Specifications
Standard value	
Front bearing retainer and bearing clearance mm (in.)	0–0.1 (0–.004) ... Adjustment by spacer
Main drive gear end play mm (in.)	0–0.06 (0–.002) ... Adjustment by snap ring
Counter gear end play mm (in.)	0–0.05 (0–.002) ... Adjustment by spacer
Input gear end play mm (in.)	0–0.06 (0–.002) ... Adjustment by snap ring
Output shaft end play mm (in.)	0–0.1 (0–.004) ... Adjustment by spacer
Limit	
Synchronizer ring and gear clearance mm (in.)	0.5 (.020)

**TORQUE SPECIFICATIONS**

N21CC--

Items	Nm	ft.lbs.
Manual transmission		
Transmission mounting bolts	43-55	32-39
Starting motor mounting bolts	22-32	16-23
Mainshaft lock nut	250-270	181-195
Idler shaft lock nut	20-60	15-43
Under cover attaching bolt	8-10	5.8-7.2
Countershaft gear lock nut	160-190	116-137
Reverse idler gear shaft nut	20-60	15-43
Backup light switch	30	22
Oil drain plug	60	43
Oil filler plug	30-35	22-25
Rear bearing retainer attaching bolts	15-22	11-16
Reverse idler gear shaft attaching bolts	15-22	11-16
Front bearing retainer installation bolt	10-13	7.2-9.4
Bell housing attaching bolts	10-12	7-9
Stopper bracket assembly attaching bolt	15-22	11-16
Transfer adaptor and transmission case coupling bolt	15-22	11-16
Transmission control lever mounting bolt	15-22	11-16
Rear propeller shaft to rear differential	50-60	36-43
Front exhaust pipe mounting bolt	20-30	15-22
No. 2 crossmember to body	55-75	40-54
Clutch release cylinder mounting bolt	31-42	22-29
Engine mounting rear insulator to No. 2 crossmember	18-25	13-18
Engine mounting rear insulator to transmission	18-25	13-18
Transmission to engine     A, B	43-55	31-40
D, E	20-27	15-20

Items	Nm	ft.lbs.
Transfer case		
Pulse rotor installation bolt	15–22	11–16
Pulse generator bolt	10–13	7.2–9.4
Adapter to transfer case mounting bolts and nuts	30–42	22–30
Chain cover bolt	30–42	22–30
Side cover bolt	8–10	5.8–7.2
Rear cover bolt	15–22	11–16
Cover bolt	15–22	11–16
Control housing bolt	15–22	11–16
Oil filler plug	30–35	22–25
Drain plug	30–35	22–25
Select plunger plug	30–35	22–25
Lock plate bolt	15–22	11–16
Rear output shaft lock nut	100–130	72–94
Speedometer sleeve clamp bolt	15–22	11–16
Seal plug	30–42	22–30
4WD indicator light switch	30	22
Transfer control lever assembly	10–13	7–9
Front propeller shaft to front differential	50–60	36–43
Transfer mounting bracket to transmission	18–25	13–18
Transfer mounting bracket to body	18–25	13–18

**LUBRICANTS**

N21CD--

Items	Specified lubricant	Quantity
Transmission	Hypoid Gear Oil API classification GL-4 or higher SAE viscosity 80W, 75W-85W	2.2 lit. (4.7 U.S. pints, 3.9 Imp. pints)
Transfer case	Hypoid Gear Oil API classification GL-4 or higher SAE viscosity 80W, 75W-85W	2.2 lit. (4.7 U.S. pints, 3.9 Imp. pints)
Sliding parts of the transmission control lever	Multipurpose grease SAE J310, NLGI No. 2	As required
Sliding parts of the transfer control lever	Multipurpose grease SAE J310, NLGI No. 2	As required

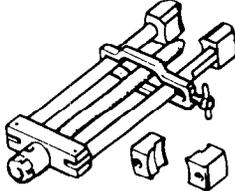
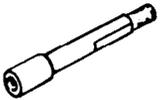
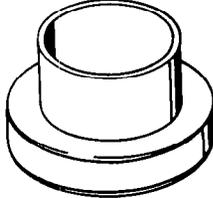
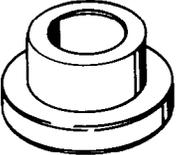
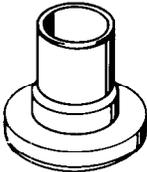
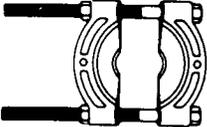
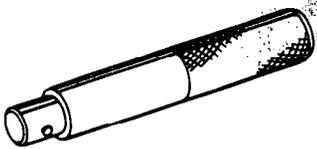
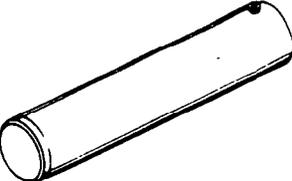
**SEALANTS AND ADHESIVES**

N21CE--

Items	Specified sealants and adhesives	Quantity
Control housing	3M ART Part No. 8001 or equivalent	As required
Control lever gasket	3M ART Part No. 8001 or equivalent	As required
Housing cover gasket	3M ART Part No. 8001 or equivalent	As required
Stopper bracket installation bolt	3M ART Part No. 8660 or equivalent	As required
Stopper bracket installation bolt (threads)	3M Scotch Grip No. 2353 or equivalent	As required
Extension gasket	3M ART Part No. 8001 or equivalent	As required
Adapter gasket	3M ART Part No. 8001 or equivalent	As required
Front bearing retainer	3M ART Part No. 8001 or equivalent	As required
Chain cover gasket	3M ART Part No. 8001 or equivalent	As required
Cover gasket	3M ART Part No. 8001 or equivalent	As required
Cover installation bolt (threads)	3M Adhesive Nut Locking 4171 or equivalent	As required
Rear cover gasket	3M ART Part No. 8001 or equivalent	As required

SPECIAL TOOLS

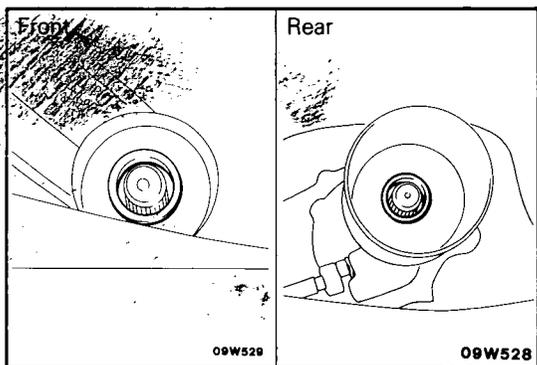
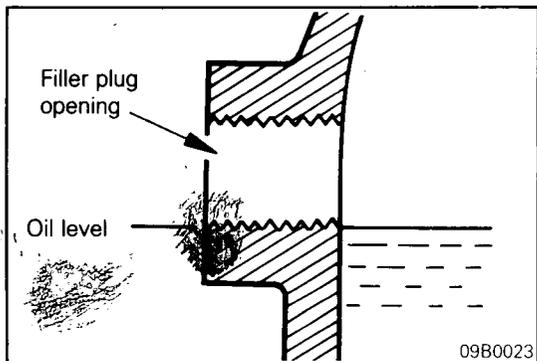
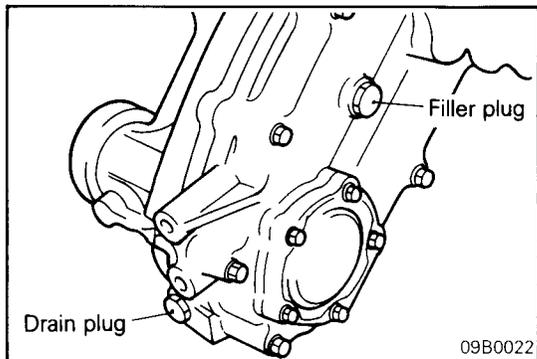
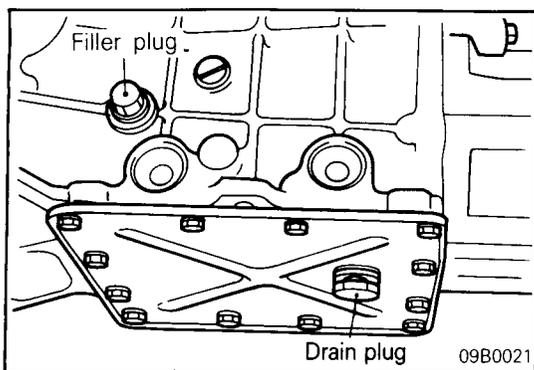
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Tool (Number and name)	Use	Tool (Number and name)	Use
<p>MD998245-01 Lock pin installer</p> 	<p>Driving in of lock pin and spring pin</p>	<p>MD998020 Bearing puller</p> 	<p>Removal of main drive gear and mainshaft bearing</p>
<p>MD998028 Bearing puller adapter</p> 	<p>Use with MD998020 Removal of mainshaft bearing</p>	<p>MD998067-01 Mainshaft bearing installer</p> 	<p>Driving in of mainshaft bearing</p>
<p>MD998029-01 Main drive gear bearing installer</p> 	<p>Driving in of main drive gear bearing</p>	<p>MD998200-01 Front bearing retainer oil seal installer</p> 	<p>Driving in of front oil seal</p>
<p>MD998348-01 Taper bearing puller</p> 	<p>Removal of counter shaft bearing</p>	<p>MB990938-01 Handle</p> 	<p>Use with MD998200 Driving in of front oil seal</p>
<p>MIT4336 Bearing driver handle</p> 	<p>Use with MD998067-01, MD998029-01 Driving in of main drive gear and mainshaft bearing</p>		

**TROUBLESHOOTING**

N21EAAC

Trouble	Cause	Service Operation	Page
Noise, Vibration	The transmission and engine mount is loose or damaged.	Tighten or replace the mount.	21-11
	The end play of each shaft is not proper.	Correct the end play.	–
	Gears are worn or damaged.	Replace the gears.	–
	The oil grade is improper.	Replace with the specified oil.	21-10
	The oil level is low.	Add oil.	21-10
	The engine's idling speed is not proper.	Adjust the idling speed.	–
Oil is leaking	The oil seal or O-ring is damaged.	Replace the oil seal or O-ring.	–
Shifting gears is hard or troublesome	The synchronizer ring and gear cones mesh poorly or are worn.	Repair or replace.	–
	The synchronizer spring is fatigued.	Replace the synchronizer ring.	–
	The oil grade is improper.	Replace with the specified oil.	21-10
Gears slip out	The gear shift forks are worn or the poppet spring is broken.	Replace the shift forks or poppet spring.	–
	The clearance between the synchronizer hub and sleeve is too large.	Replace the synchronizer hub and spring.	–



## SERVICE ADJUSTMENT PROCEDURES

N21FFAA

### CHANGING AND INSPECTION OF TRANSMISSION AND TRANSFER OIL

1. Raise vehicle on hoist
2. Remove the filler plug from the transmission or transfer and check that the transmission oil is up to the oil level. If it is lower, replenish specified transmission oil to the oil level and if it is higher, drain transmission oil as described below.
3. Remove drain plug to let oil drain.
4. Tighten the drain plug completely.
5. Replenish the specified transmission oil to the level.

#### Specified transmission oil :

**Hypoid Gear Oil API classification GL-4 or higher  
SAE viscosity 80W, 75W-85W**

#### Quantity :

Transmission	2.2 lit. (4.7 U.S. pints, 3.9 Imp. pints)
Transfer case	2.2 lit. (4.7 U.S. pints, 3.9 Imp. pints)

6. Tighten the filler plug.

## REPLACEMENT OF PROPELLER SHAFT OIL SEALS

N21FGABO

- (1) Using a screwdriver or a similar tool, remove the oil seals.
- (2) Install the oil seals.

#### Caution

**Use a new oil seal.**

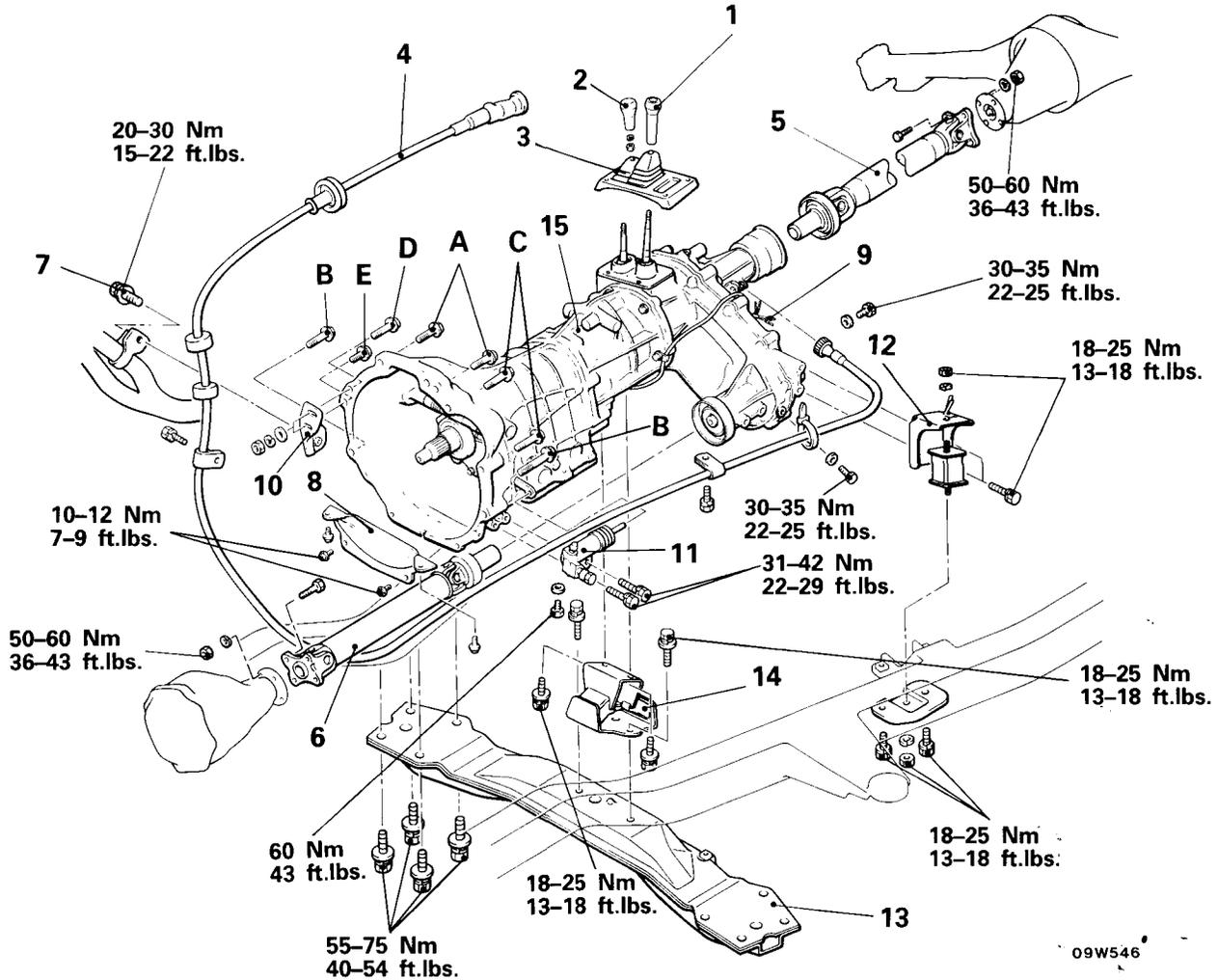
- (3) Apply a coating of the specified grease to the lip of the oil seals.

**Specified Grease : Multipurpose grease SAE J310,  
NLGI No. 2**

# TRANSMISSION AND TRANSFER ASSEMBLY

## REMOVAL AND INSTALLATION

N21MA--



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### Removal steps

1. Transmission shift lever knob
- ➡➡ 2. Transfer shift lever knob
3. Front floor console
4. Speedometer cable
- ↔↔↔ 5. Rear propeller shaft
- ↔↔↔ 6. Front propeller shaft
7. Front exhaust pipe mounting bolt
8. Bell housing cover
9. Connection of 4WD indicator light switch
- ↔↔↔ 10. Exhaust pipe mounting bracket
- ↔↔↔ 11. Clutch release cylinder
12. Transfer mounting bracket
13. No. 2 crossmember
14. Engine mounting rear insulator
- ↔↔↔ 15. Transmission and transfer assembly

### Pre-removal Operation

- Removal of Transfer Case Protector
- Bleeding of Transmission Oil and Transfer Oil (Refer to P.21-10.)

### Post-installation Operation

- Installation of Transfer Case Protector
- Supplying of Transmission Oil and Transfer Oil (Refer to P.21-10.)

### NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ↔↔↔ : Refer to "Service Points of Removal".
- (3) ↔↔↔ : Refer to "Service Points of Installation".

	Nm	ft.lbs.	O.D. x Length	mm (in.)	Bolt identification
A	43-55	31-40	⑦ 10 x 40	(.4 x 1.6)	 ⑦ D x L
B	43-55	31-40	⑦ 10 x 65	(.4 x 2.6)	
C	27-34	20-25	⑦ 10 x 60	(.4 x 2.4)	
D	20-27	15-20	⑦ 8 x 55	(.3 x 2.2)	
E	20-27	15-20	⑦ 8 x 25	(.3 x 1.0)	

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## SERVICE POINTS OF REMOVAL

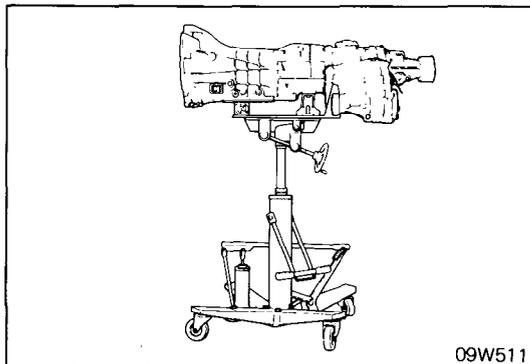
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### 5. REMOVAL OF REAR PROPELLER SHAFT/6. FRONT PROPELLER SHAFT

Refer to GROUP 16 PROPELLER SHAFT AND UNIVERSAL JOINTS – Propeller Shaft

### 11. REMOVAL OF CLUTCH RELEASE CYLINDER

Refer to GROUP 6 CLUTCH – Clutch Release Cylinder.

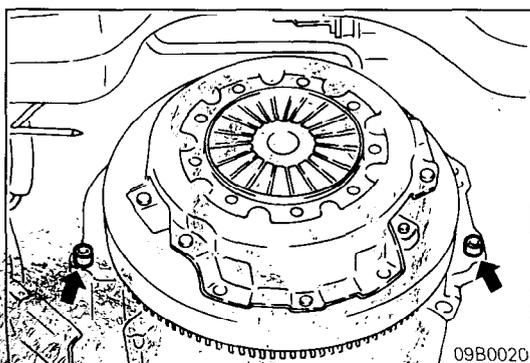


### 15. REMOVAL OF TRANSMISSION AND TRANSFER

#### Caution

When removing the transmission from the engine, care must be taken not to shake or rock with force, because to do so might cause damage to the end of the main drive gear, the pilot bearing, or the clutch disc, etc.

- (1) Disconnect the transmission and transfer assembly from the engine by pulling it slowly toward the rear of the vehicle.
- (2) When the transmission and transfer assembly are lowered, tilt the front of the transmission downward and slowly lower forward, while using care to make sure that the rear of the transmission does not interfere with the No. 4 crossmember.



## SERVICE POINTS OF INSTALLATION

N21MDAH

### 15. INSTALLATION OF TRANSMISSION AND TRANSFER ASSEMBLY

On the engine side, there are two centering locations. Make sure that the transmission mounting bolt holes are aligned with them before mounting the transmission and transfer assembly to the engine.

**11. INSTALLATION OF CLUTCH RELEASE CYLINDER**

Refer to GROUP 6 CLUTCH – Clutch Release Cylinder.

**6. INSTALLATION OF FRONT PROPELLER SHAFT/5. REAR PROPELLER SHAFT**

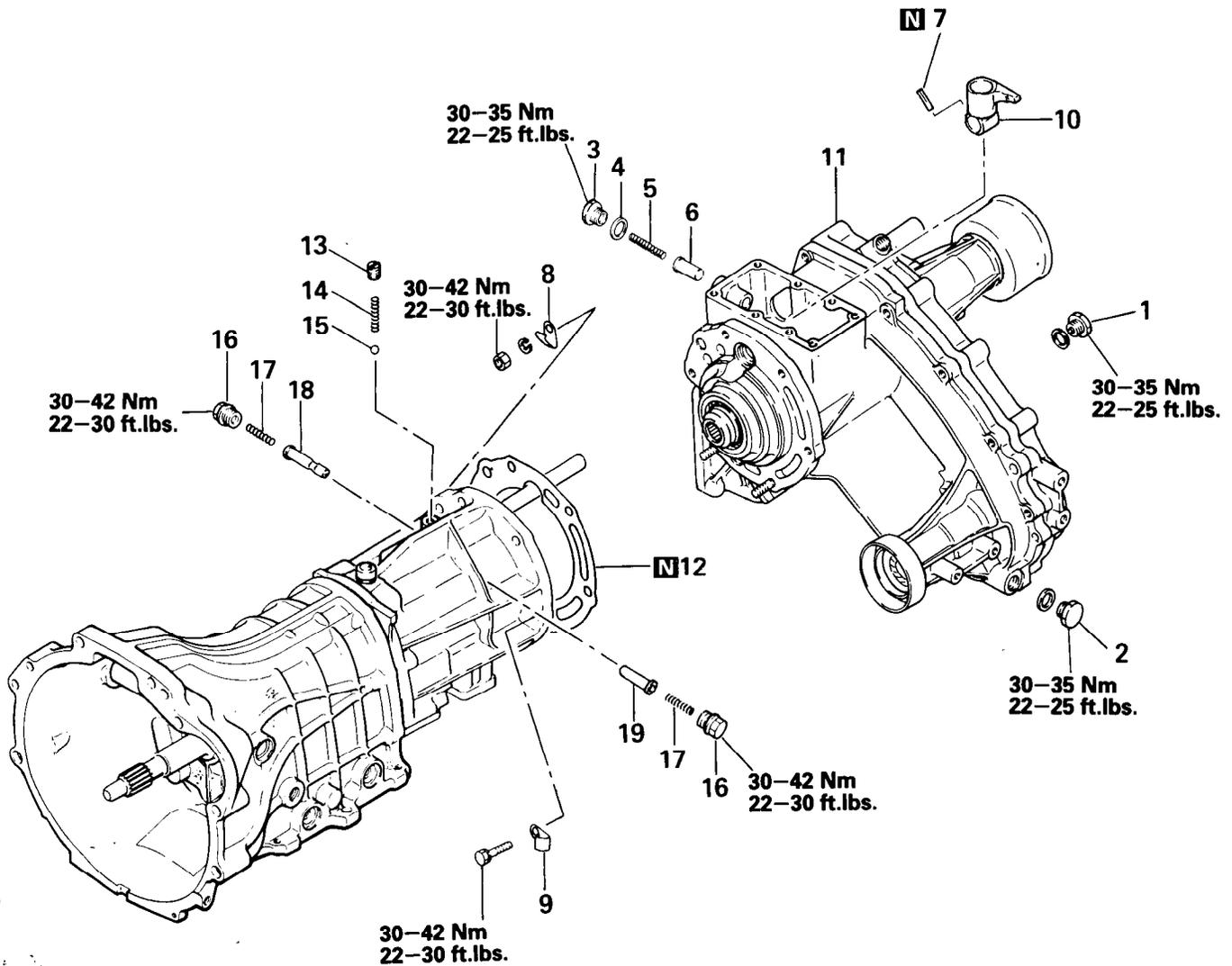
Refer to GROUP 16 PROPELLER SHAFT AND UNIVERSAL JOINTS – Propeller Shaft.

**2. INSTALLATION OF TRANSFER SHIFT LEVER KNOB**

Refer to P.21-43.

# TRANSMISSION AND TRANSFER ASSEMBLY

## DISASSEMBLY AND REASSEMBLY



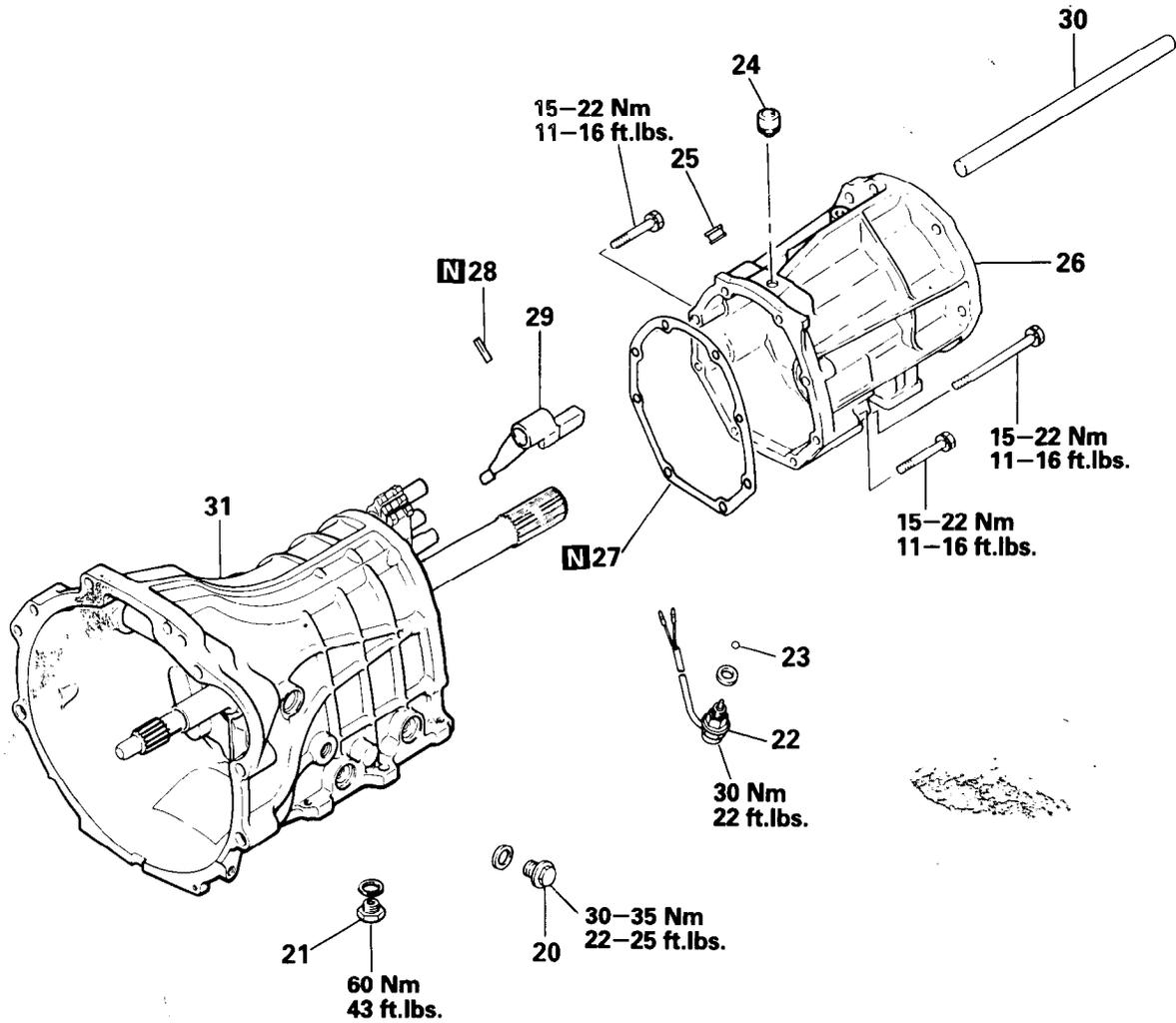
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### Disassembly steps

- |                           |                                |
|---------------------------|--------------------------------|
| 1. Oil filler plug        | 15. Steel ball                 |
| 2. Oil drain plug         | 16. Seal plug                  |
| 3. Select plunger plug    | 17. Neutral return spring      |
| 4. Gasket                 | 18. Neutral return plunger (B) |
| 5. Select spring          | 19. Neutral return plunger (A) |
| 6. Select plunger         |                                |
| ◆◆ 7. Spring pin          |                                |
| 8. Cord fastener          |                                |
| 9. Cord fastener          |                                |
| ◆◆◆ 10. Change shifter    |                                |
| ◆◆◆ 11. Transfer assembly |                                |
| ◆◆◆ 12. Adapter gasket    |                                |
| 13. Plug                  |                                |
| 14. Spring                |                                |

### NOTE

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆◆ : Refer to "Service Points of Reassembly".
- (3) N : Non-reusable parts



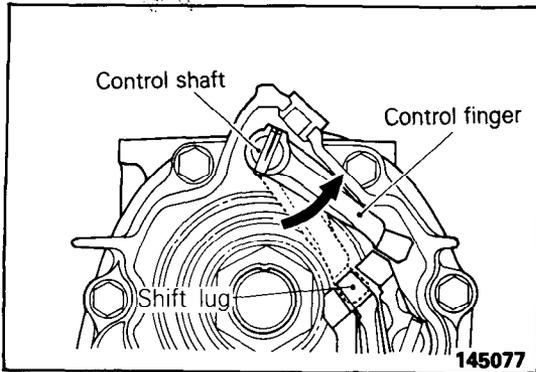
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**Disassembly steps**

- 20. Oil filler plug
- 21. Oil drain plug
- 22. Backup light switch
- 23. Steel ball
- ◆◆24. Breather
- ◆◆25. Plug
- ◆◆◆◆26. Transfer adapter
- ◆◆27. Extension gasket
- 28. Lock pin
- 29. Control finger
- 30. Control shaft
- 31. Transmission assembly

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆◆ : Refer to "Service Points of Reassembly".
- (4) N : Non-reusable parts



## SERVICE POINTS OF DISASSEMBLY

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### 26. REMOVAL OF TRANSFER ADAPTER

Turn the control shaft to the left and remove the control finger from the groove in the shift lug, then remove the transfer adapter from the transmission.

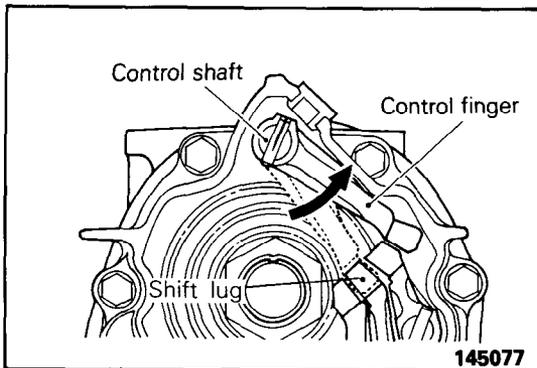
## SERVICE POINTS OF REASSEMBLY

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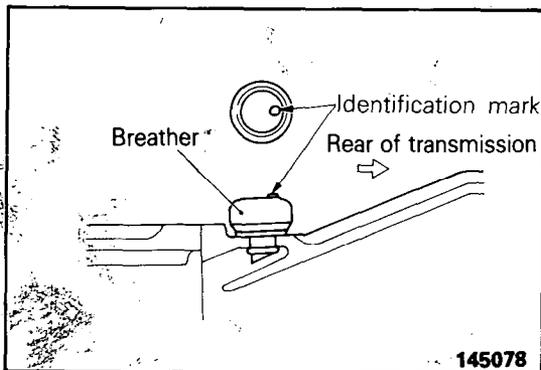
### 27. INSTALLATION OF EXTENSION GASKET/26. TRANSFER ADAPTER

- (1) Apply sealant to both sides of the extension gasket and affix the gasket to the rear surface of the transmission case.

**Specified sealant : 3M ART Part No. 8001 or equivalent**



- (2) Turn the control shaft to the left and install the transfer adapter.
- (3) Turn the control shaft to the right and insert the control finger in the groove of the shift lug.



### 24. INSTALLATION OF BREATHER

Install the breather with the identification mark toward the rear.

### 12. ASSEMBLY OF ADAPTER GASKET/11. TRANSFER CASE ASSEMBLY/10. CHANGE SHIFTER

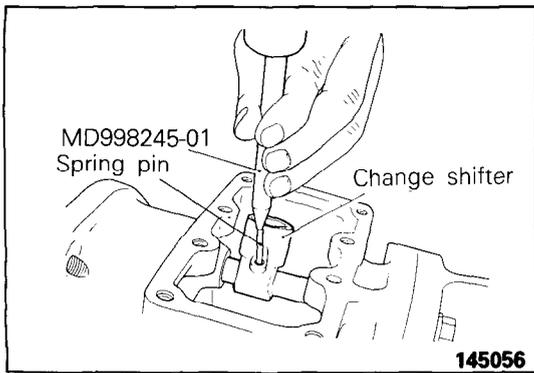
- (1) Apply sealant to both sides of the gasket and affix it to the rear surface of the adapter.

**Specified sealant : 3M ART Part No. 8001 or equivalent**

- (2) Install the transfer case installing the change shifter to the control shaft.

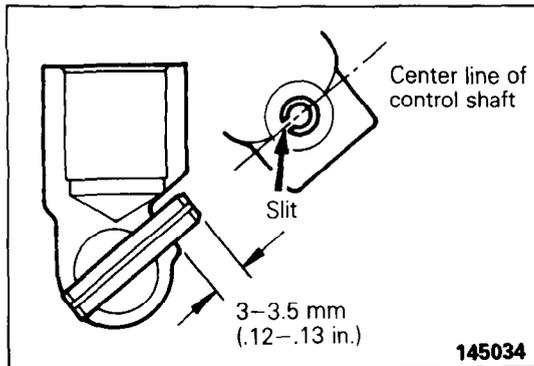
**7. DRIVING IN OF SPRING PIN**

(1) Use the special tool to drive in the spring pin.



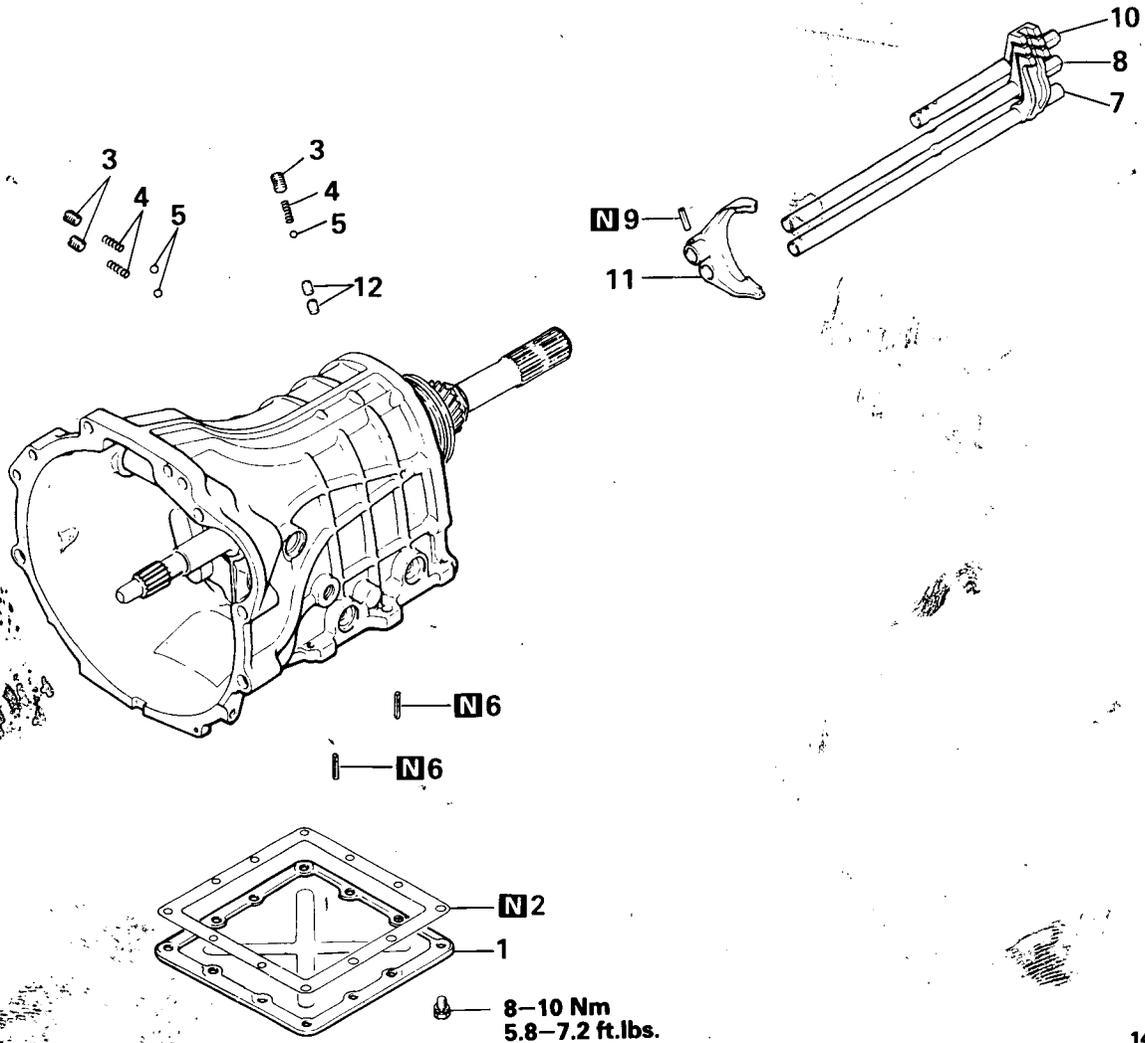
(2) Drive the spring pin in with the slit in the spring pin parallel to the shaft center of the shift rail, so that the dimensions are as shown in the illustration.

**NOTE**  
Do not reuse spring pin.



**TRANSMISSION ASSEMBLY  
DISASSEMBLY AND REASSEMBLY**

N21ME-D



145079

**Disassembly steps**

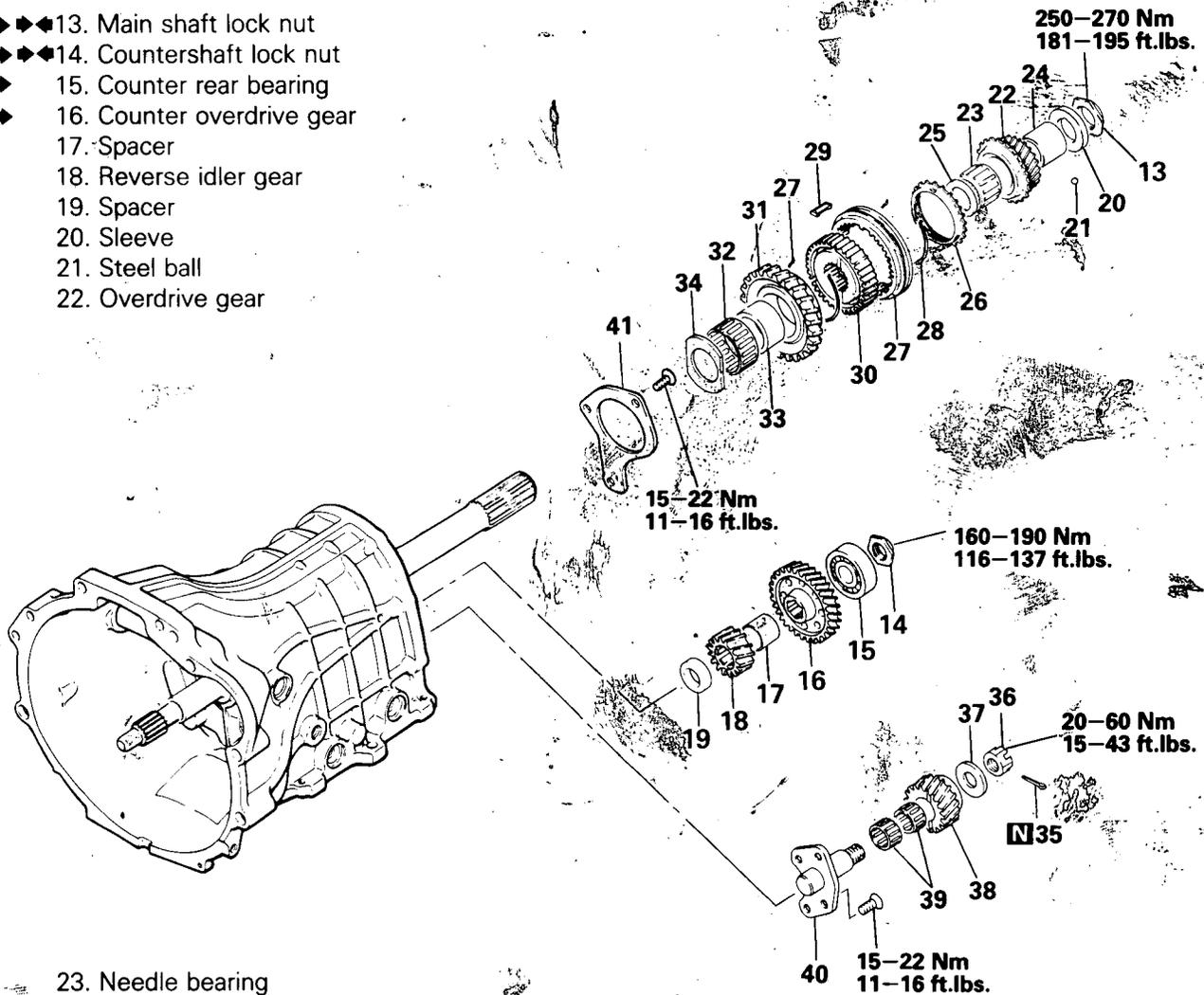
- 1. Under cover
- 2. Under cover gasket
- 3. Plug
- ◆◆ 4. Poppet spring
- ◆◆ 5. Steel ball
- ◆◆◆◆ 6. Spring pin
- 7. 1-2 speed shift rail
- 8. 3-4 speed shift rail
- ◆◆◆◆ 9. Spring pin
- 10. OD-R shift rail
- 11. OD-R shift fork
- 12. Interlock plunger

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆◆ : Refer to "Service Points of Reassembly".
- (4) [N] : Non-reusable parts

**Disassembly steps**

- ◆◆◆◆13. Main shaft lock nut
- ◆◆◆◆14. Countershaft lock nut
- ◆◆ 15. Counter rear bearing
- ◆◆ 16. Counter overdrive gear
- 17. Spacer
- 18. Reverse idler gear
- 19. Spacer
- 20. Sleeve
- 21. Steel ball
- 22. Overdrive gear

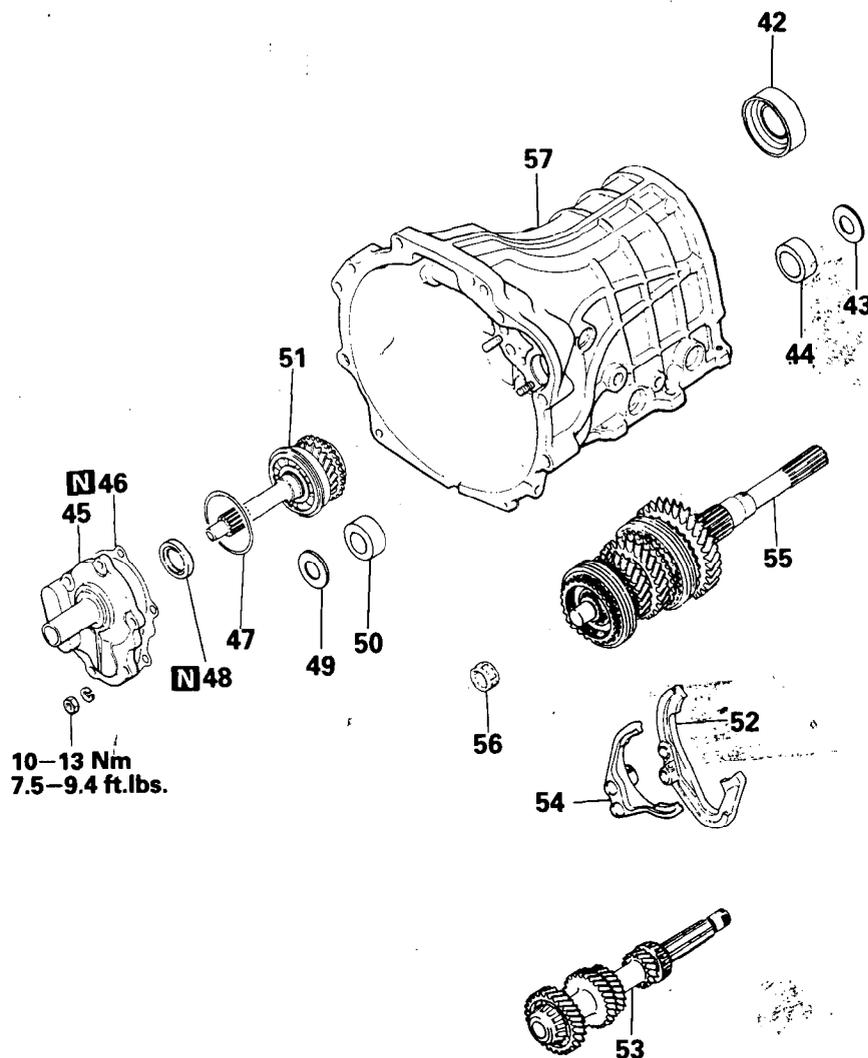


- 23. Needle bearing
- 24. Bearing sleeve
- 25. Bearing spacer
- ◆◆◆◆26. Synchronizer ring
- ◆◆◆◆27. OD-R synchronizer sleeve
- ◆◆◆◆28. Synchronizer spring
- ◆◆◆◆29. Synchronizer key
- ◆◆◆◆30. Synchronizer hub
- 31. Reverse gear
- 32. Needle bearing
- 33. Bearing sleeve
- 34. Spacer
- 35. Cotter pin
- 36. Slotted nut
- 37. Thrust washer
- 38. Reverse idler gear
- 39. Needle bearing
- ◆◆◆◆40. Reverse idler gear shaft
- 41. Rear bearing retainer

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly"
- (3) ◆◆◆ : Refer to "Service Points of Reassembly"
- (4) [N] : Non-reusable parts

145080



### Disassembly steps

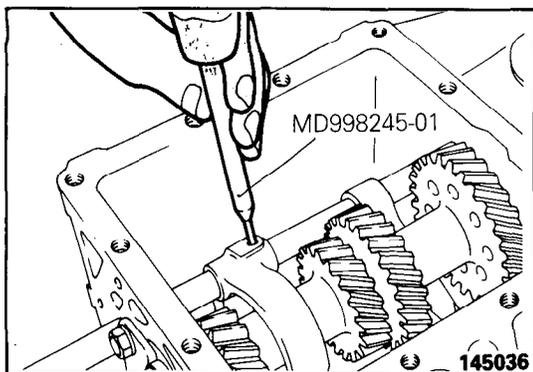
- ◆◆◆◆ 42. Main shaft bearing
- ◆◆◆ 43. Spacer
- 44. Counter rear bearing outer race
- ◆◆◆ 45. Front bearing retainer
- ◆◆◆ 46. Front bearing retainer gasket
- ◆◆◆ 47. Spacer
- ◆◆◆ 48. Oil Seal
- 49. Spacer
- 50. Counter front bearing outer race
- ◆◆◆◆ 51. Main drive gear assembly
- 52. 1-2 speed shift fork
- 53. Counter shaft assembly
- 54. 3-4 speed shift fork
- 55. Main shaft assembly
- 56. Needle bearing
- 57. Transmission case

### NOTE

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆◆ : Refer to "Service Points of Reassembly".
- (4) **N** : Non-reusable parts

145099

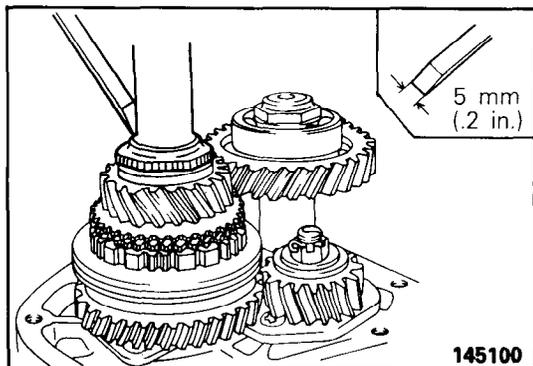
N21MFBE



**SERVICE POINTS OF DISASSEMBLY**

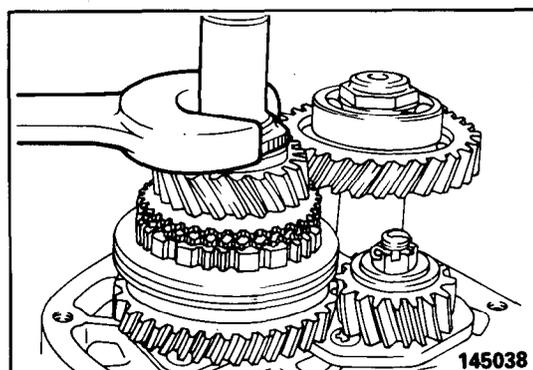
**6. /9. REMOVAL OF SPRING PIN**

Drive the spring pin out using the special tool.



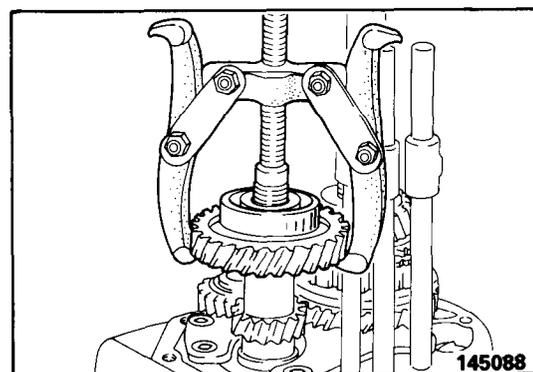
**13. REMOVAL OF MAIN SHAFT LOCK NUT/14. COUNTER SHAFT LOCK NUT**

- (1) As shown in the illustration, use the front edge of the blade of a chisel or a blunt punch to loosen the baffle on the main shaft and counter shaft lock nuts.
- (2) Shift the OD-R synchronizer sleeve to the reverse side, then shift the 1-2 synchronizer sleeve to the 2nd speed side.
- (3) Remove the main shaft lock nut and the counter shaft lock nut.



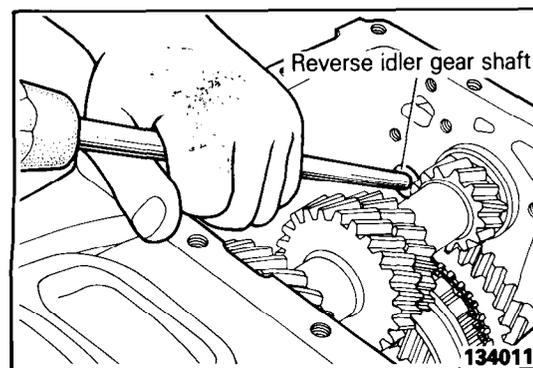
**15. REMOVAL OF COUNTER REAR BEARING/16. COUNTER OVERDRIVE GEAR**

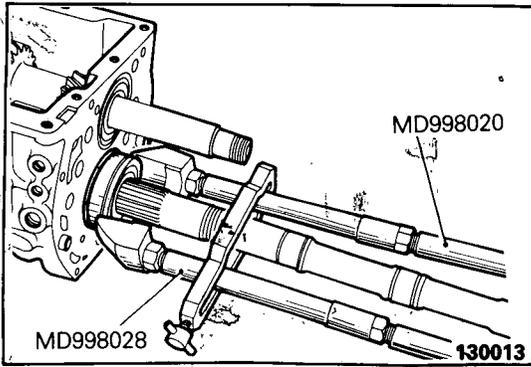
Pull off counter overdrive gear and ball bearing by using a suitable puller.



**40. REMOVAL OF REVERSE IDLER GEAR SHAFT**

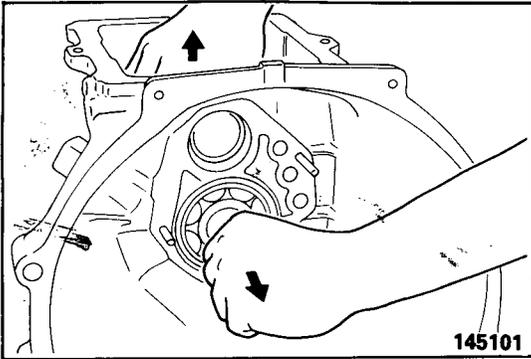
- (1) Remove four reverse idler gear shaft mounting bolts.
- (2) Drive reverse idler gear shaft from inside of case.





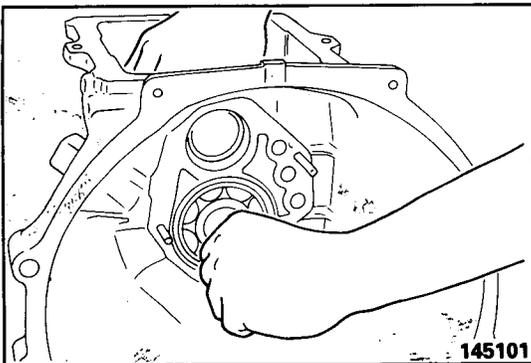
**42. REMOVAL OF MAIN SHAFT CENTER BEARING**

- (1) Remove main shaft bearing snap ring.
- (2) Using Special Tools remove main shaft rear bearing.



**51. REMOVAL OF MAIN DRIVE GEAR ASSEMBLY**

Pull the counter gear up in the case and remove the main drive gear with bearing toward front of case.

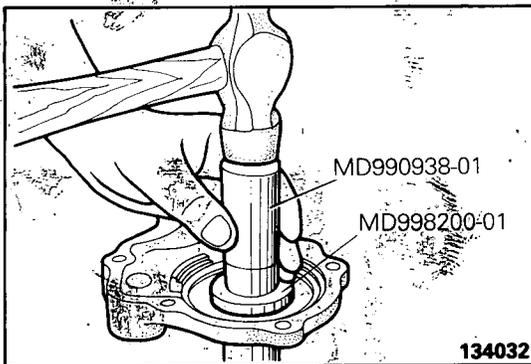


**SERVICE POINTS OF REASSEMBLY**

N21MGBH

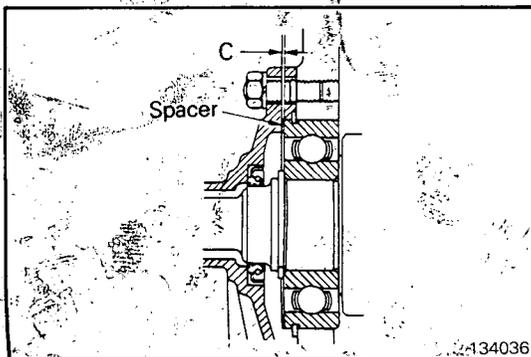
**51. INSTALLATION OF MAIN DRIVE GEAR ASSEMBLY**

Hold the counter gear upward in the case and install the main drive gear assembly.



**48. INSTALLATION OF OIL SEAL**

Apply transmission oil to the lip of the oil seal, then drive the oil seal into the front bearing retainer using the special tool.



**47. INSTALLATION OF SPACER/46. FRONT BEARING RETAINER GASKET/45. FRONT BEARING RETAINER**

- (1) Before installing the front bearing retainer, select a spacer which will bring the clearance (c) to the standard value.

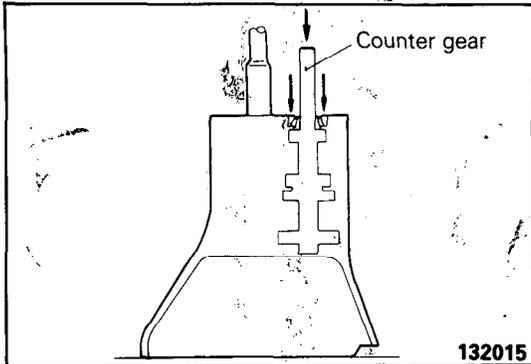
**Standard value : 0–0.1 mm (0–.004 in.)**

- (2) Apply sealant to both sides of the front bearing retainer gasket and affix it to the case. Then immediately set the spacer selected in (1) in place and install the bearing retainer.

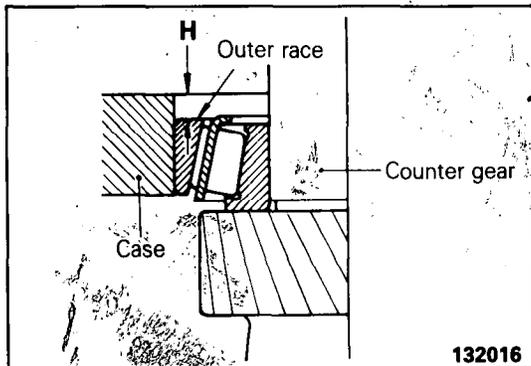
**Specified sealant : 3M ART Part No. 8001 or equivalent**

**43. INSTALLATION OF SPACER**

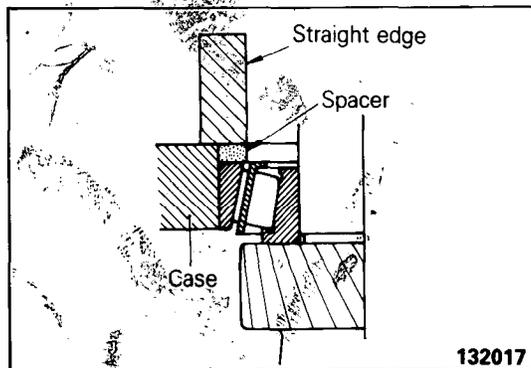
- (1) Hold down counter gear and bearing outer race (in the direction of arrow shown in illustration).



- (2) Put a spacer of proper thickness (slightly thinner than dimension "H" shown in illustration) on outer race.



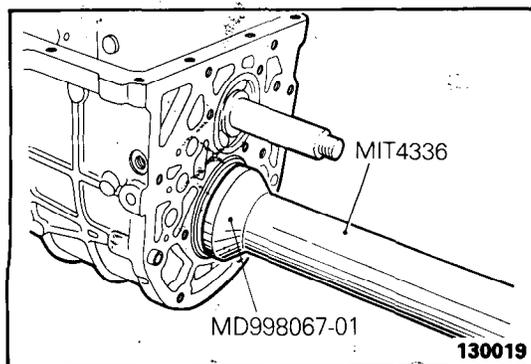
- (3) Put straight edge on spacer and try to turn spacer by index finger. If spacer turns lightly, replace it with spacer one rank [0.03 mm (.0012 in.)] thicker, and similarly turn this spacer. In this manner, choose and install a spacer which makes clearance between straight edge and spacer closest to 0. Make sure that the bearings are NOT preloaded.

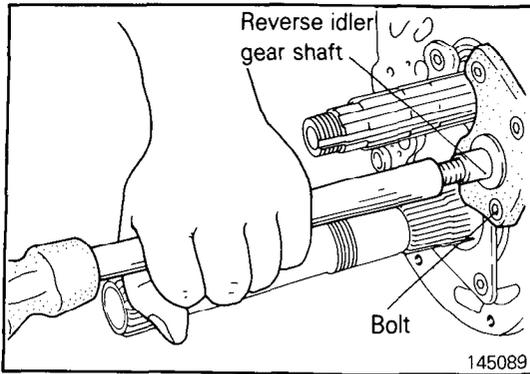


**Standard value : 0–0.05 mm (0–.0020 in.)**

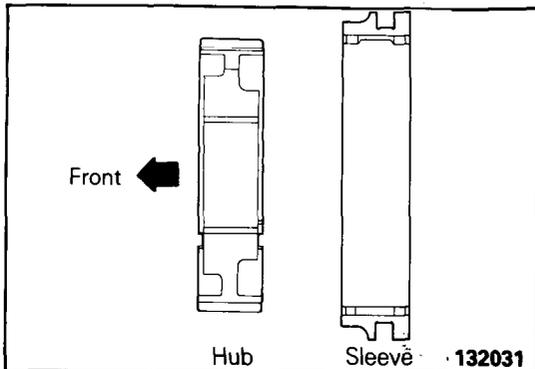
**42. INSTALLATION OF MAIN SHAFT BEARING**

After installing the snap ring on the main shaft bearing, drive the main shaft bearing into the transmission case using the special tool.

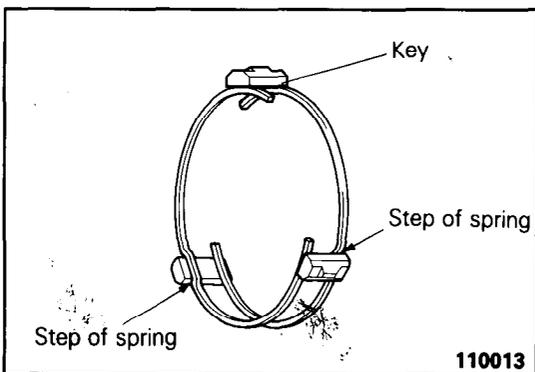


**40. INSTALLATION OF REVERSE IDLER GEAR SHAFT**

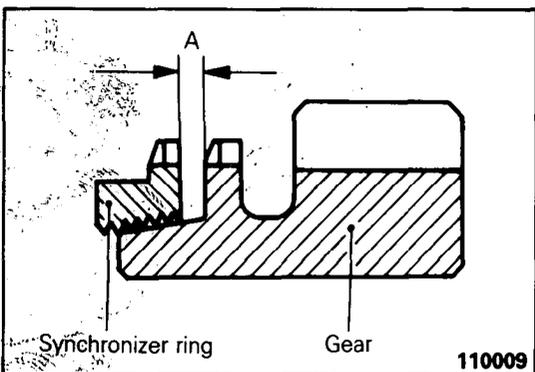
Position the reverse idler gear shaft with bolts and drive it in.

**30. INSTALLATION OF SYNCHRONIZER HUB/29. SYNCHRONIZER KEY/28. SYNCHRONIZER SPRING/27. OD-R SYNCHRONIZER SLEEVE**

- (1) Assemble synchronizer hub and sleeve. Make sure that hub and sleeve slide smoothly.
- (2) Insert three keys into groove of hub. Assemble hub and keys as shown in illustration since they have a definite direction to be assembled.



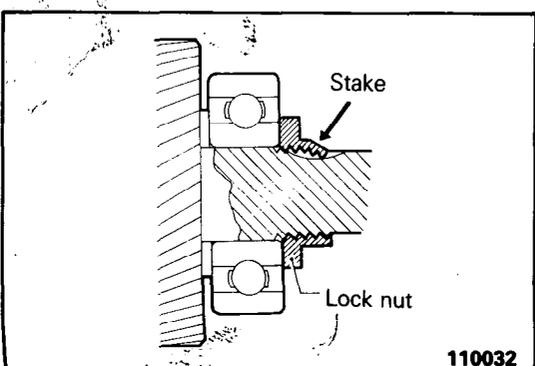
- (3) Install two synchronizer springs. When installing springs, make sure that steps of front and rear springs are positioned on synchronizer key, but not on the same key.

**26. INSTALLATION OF SYNCHRONIZER RING**

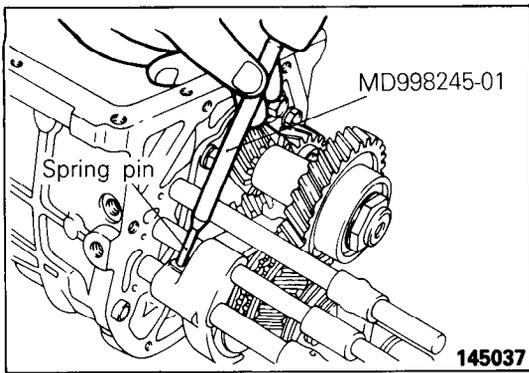
Engage synchronizer ring to OD gear as shown in illustration before installing OD gear and ensure that there is certain clearance "A".

If dimension "A" exceeds the limit, replace the ring and/or gear.

**Limit : 0.5 mm (.020 in.)**

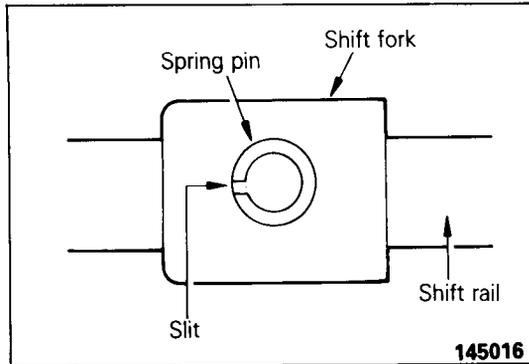
**14. INSTALLATION OF COUNTER SHAFT LOCK NUT/13. MAIN SHAFT LOCK NUT**

- (1) Tighten main shaft and counter gear lock nut to specified torque.
- (2) Stake the area as shown in illustration without fail to prevent lock nut from loosening.
- (3) Ensure that OD gear rotates smoothly.



**9. INSTALLATION OF SPRING PIN/6. SPRING PIN**

(1) Use the special tool to drive in OD-R shift fork spring pin.



(2) Drive in spring pin so as to place slit in direction of center line of shift rail. Drive in spring pin for 3–4 and 1–2 shift forks in the same manner.

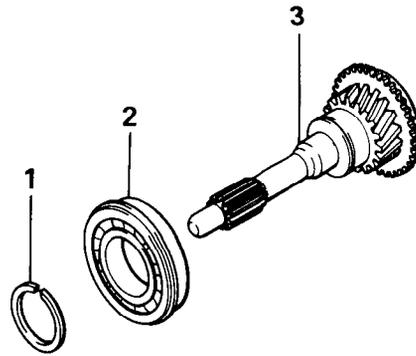
**NOTE**

Do not reuse spring pin.

**MAIN DRIVE GEAR ASSEMBLY**

N21MQAB

**DISASSEMBLY AND REASSEMBLY**



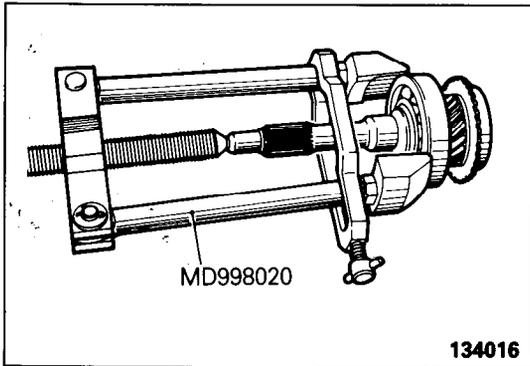
110038

**Disassembly steps**

- ◆◆1. Snap ring
- ◆◆◆◆2. Bearing
- 3. Main drive gear

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆ : Refer to "Service Points of Reassembly".

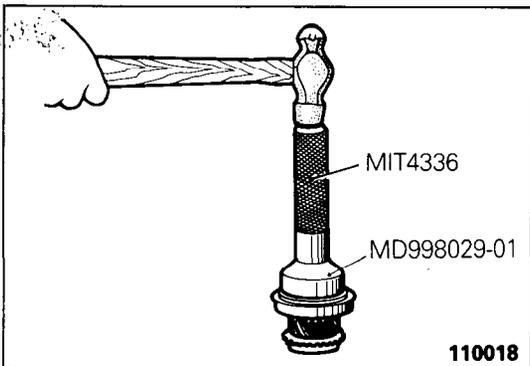


134016

**SERVICE POINTS OF DISASSEMBLY**

**2. REMOVAL OF BEARING**

- (1) Remove main drive gear snap ring.
- (2) Using Special Tool, pull ball bearing from main drive gear.

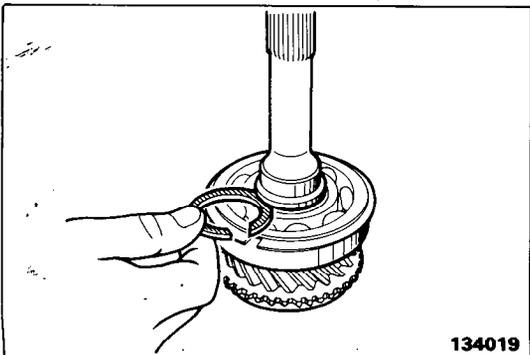


110018

**SERVICE POINTS OF REASSEMBLY**

**2. INSTALLATION OF BEARING**

With Special Tool, applied to main drive gear press bearing in by means of a hammer or a press.



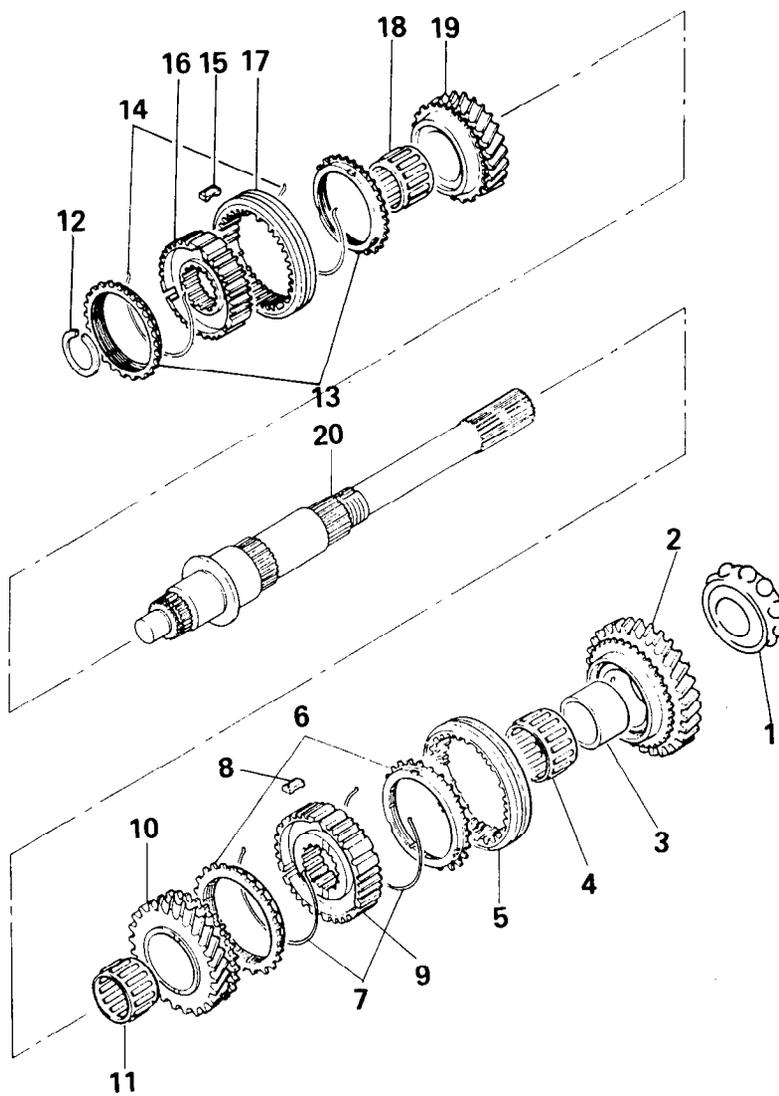
134019

**1. INSTALLATION OF SNAP RING**

Select and install main drive gear snap ring of such thickness that will minimize clearance between snap ring and bearing. In other words, install the thickest snap ring that can fit in snap ring groove.

**Standard value : 0–0.06 mm (0–.002 in.)**

**MAIN SHAFT ASSEMBLY**  
**DISASSEMBLY AND REASSEMBLY**



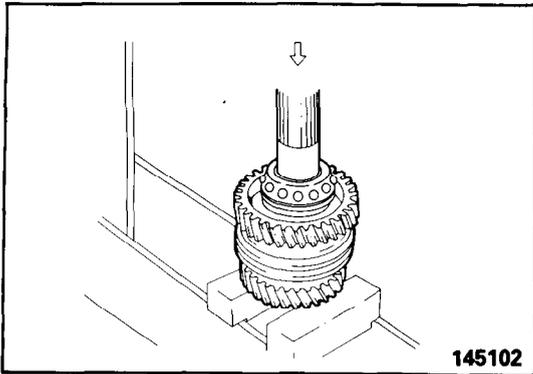
**Disassembly steps**

- ◄◄ 1. Ball bearing inner race
- 2. First speed gear
- 3. Bearing sleeve
- 4. Needle bearing
- ◆◆ 5. 1-2 speed synchronizer sleeve
- 6. Synchronizer ring
- ◆◆ 7. Synchronizer spring
- ◆◆ 8. Synchronizer key
- ◆◆ 9. 1-2 speed synchronizer hub
- ◄◄ 10. Second speed gear
- 11. Needle bearing
- ◆◆ 12. Snap ring
- 13. Synchronizer ring
- ◆◆ 14. Synchronizer spring
- ◆◆ 15. Synchronizer key
- ◆◆ 16. 3-4 speed synchronizer hub
- ◆◆ 17. 3-4 speed synchronizer sleeve
- 18. Needle bearing
- 19. Third speed gear
- 20. Main shaft

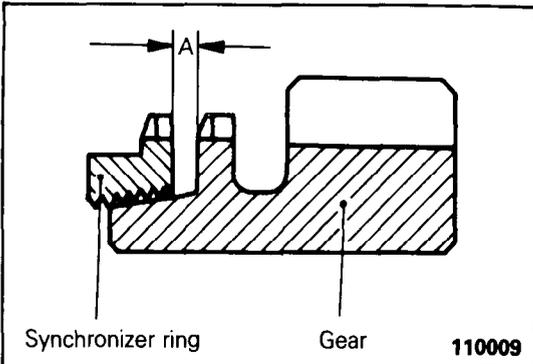
**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2)◆◆ : Refer to "Service Points of Disassembly".
- (3)◆◆ : Refer to "Service Points of Reassembly".

145103



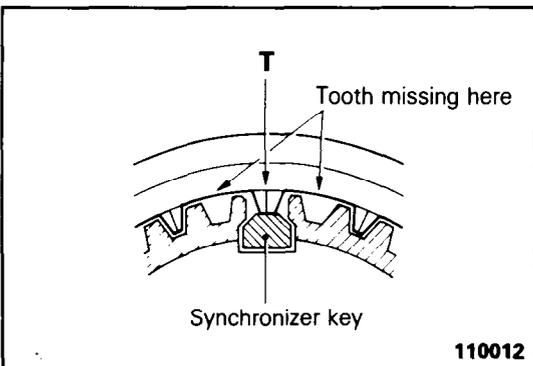
145102



Synchronizer ring

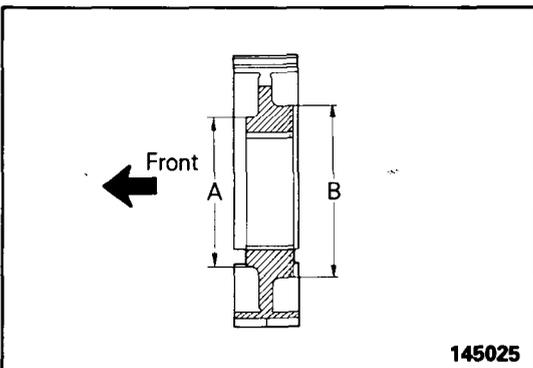
Gear

110009

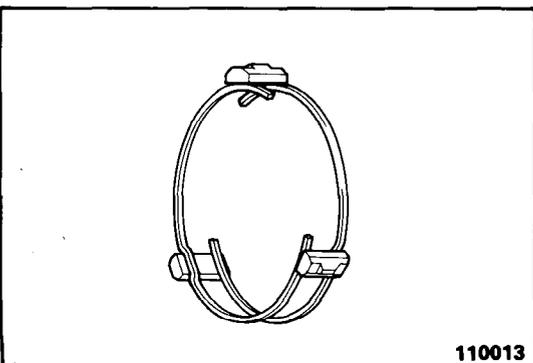


Synchronizer key

110012



145025



110013

**SERVICE POINTS OF DISASSEMBLY**

N21PFAA2

**1. INSTALLATION OF BALL BEARING INNER RACE/10. SECOND SPEED GEAR**

Holding second speed gear on press base, push rear end of main shaft to remove bearing inner race (double bearing only), gear bearing sleeve, first speed gear, 1-2 speed synchronizer and second speed gear.

**INSPECTION**

N21PGAA2

- Check synchronizer ring for worn and damaged internal threads.
- With synchronizer assembled to cone of each gear check dimension "A". If dimension "A" exceeds the limit, replace the synchronizer ring and/or gear.

**Limit : 0.5 mm (.020 in.)**

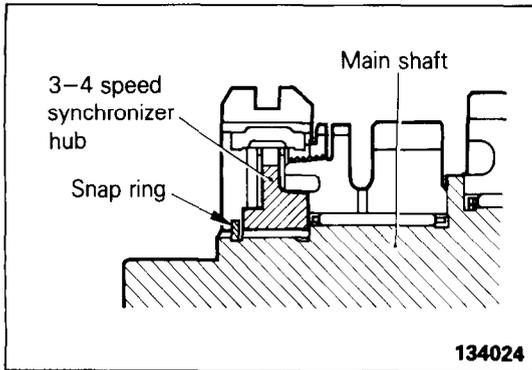
**SERVICE POINTS OF REASSEMBLY**

N21PHAA2

**17. ASSEMBLY OF 3-4 SPEED SYNCHRONIZER SLEEVE/16. 3-4 SPEED SYNCHRONIZER HUB/15. SYNCHRONIZER KEY/14. SYNCHRONIZER SPRING**

- (1) Mate synchronizer hub with sleeve using mark made at disassembly. Make sure that hub and sleeve slide smoothly. If they slide unsmoothly, replace hub and sleeve assembly.
- (2) 3-4 synchronizer sleeve has teeth missing at six portions. Assemble hub to sleeve in such a way that center tooth T between two missing teeth will touch synchronizer key.
- (3) Use care when installing 3-4 synchronizer hub since only 3-4 synchronizer is directional. Smaller diameter side "A" of center boss is front of 3-4 synchronizer hub.

- (4) Insert three keys into groove of synchronizer hub.
- (5) Install two synchronizer springs to synchronizer. When synchronizer springs are installed, make sure that front and rear ones are not faced in same direction.

**16. INSTALLATION OF 3-4 SYNCHRONIZER HUB/12. SNAP RING**

- (1) Assemble 3-4 synchronizer positioning hub toward correct direction.
- (2) As for main shaft front end snap ring, select and install one of such thickness that will minimize clearance between snap ring hub. In other words, install the thickest snap ring that fits in snap ring groove.
- (3) Make sure that 3rd speed gear turns smoothly.

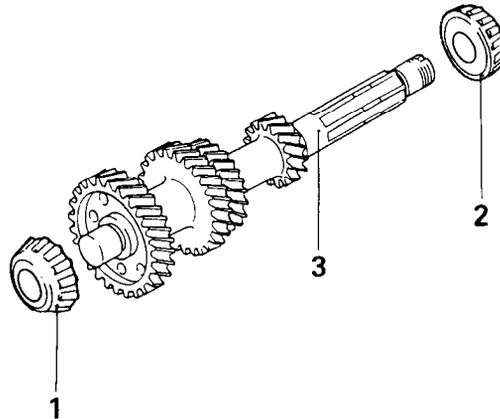
**9. ASSEMBLY OF 1-2 SPEED SYNCHRONIZER HUB/8. SYNCHRONIZER KEY/7. SYNCHRONIZER SPRING/5. 1-2 SPEED SYNCHRONIZER SLEEVE**

Assemble the 1-2 synchronizer by the same procedure as for the 3-4 synchronizer in the previous item.

**COUNTER SHAFT ASSEMBLY**

N21XE-B

**DISASSEMBLY AND REASSEMBLY**



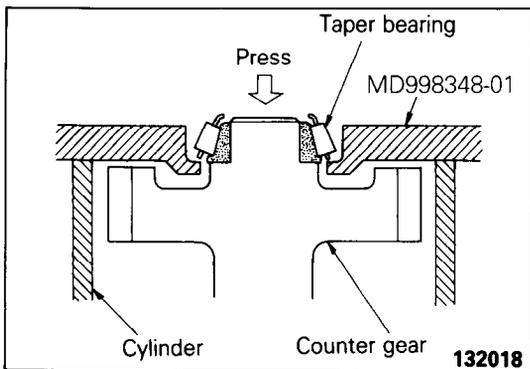
**Disassembly steps**

- ◆◆◆◆1. Counter front bearing
- ◆◆◆◆2. Counter center bearing
- 3. Counter shaft gear

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆ : Refer to "Service Points of Reassembly".

132069

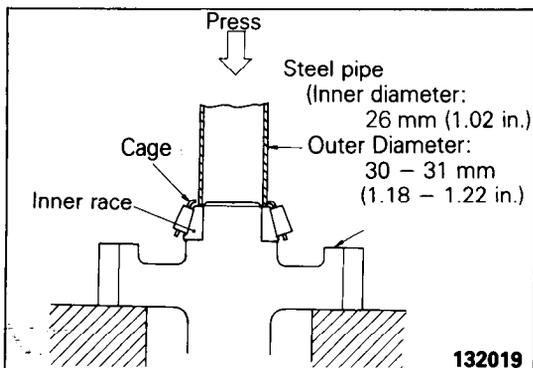


**SERVICE POINTS OF DISASSEMBLY**

N21XFAB

**1. REMOVAL OF COUNTER FRONT BEARING/2. COUNTER CENTER BEARING**

Removal the taper roller bearing from the end of the counter shaft gear using the special tool.



**SERVICE POINTS OF REASSEMBLY**

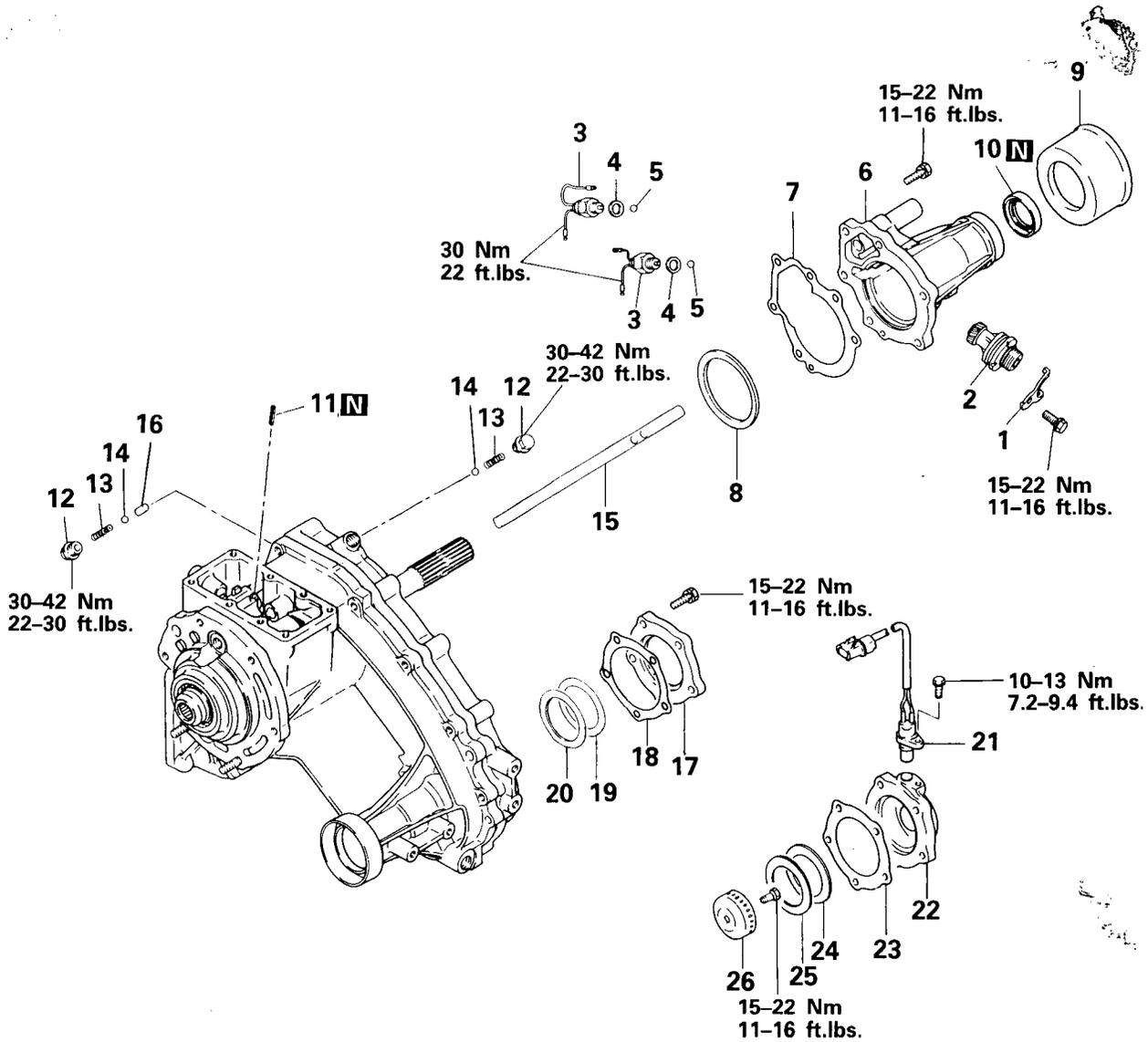
N21XHAA1

**1. PRESSURE INSERTION OF COUNTER FRONT BEARING/2. COUNTER CENTER BEARING**

Pressure insert the taper roller bearing using a steel pipe with the dimensions shown in the illustration.

Set the steel pipe so that it presses on the inner race only and doesn't contact the bearing cage.

**TRANSFER ASSEMBLY  
DISASSEMBLY AND REASSEMBLY**



**Disassembly steps**

- 1. Sleeve clamp
- ◆◆ 2. Speedometer gear assembly
- 3. 4WD indicator light switch
- 4. Gasket
- 5. Steel ball
- ◆◆ 6. Rear cover
- ◆◆ 7. Rear cover gasket
- ◆◆ 8. Spacer
- 9. Dust seal guard
- 10. Oil seal
- ◆◆ 11. Spring pin
- 12. Seal plug
- 13. Poppet spring
- 14. Steel ball
- 15. H-L shift rail

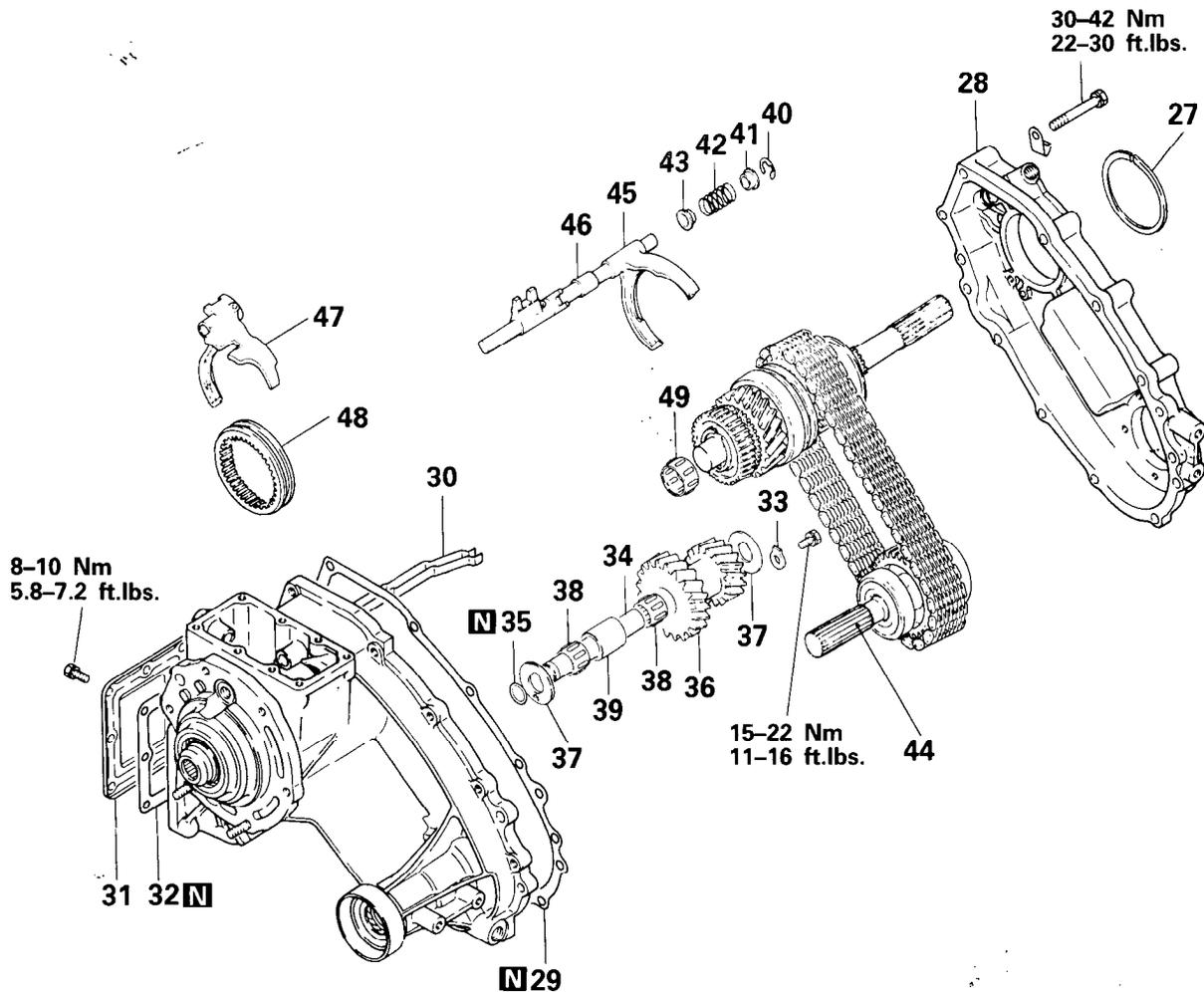
- 16. Interlock plunger
- ◆◆ 17. Cover
- ◆◆ 18. Cover gasket
- ◆◆ 19. Spacer
- ◆◆ 20. Wave spring
- 21. Pulse generator
- ◆◆ 22. Cover
- ◆◆ 23. Cover gasket
- ◆◆ 24. Spacer
- ◆◆ 25. Wave spring
- ◆◆ 26. Pulse rotor

KM145-9-FL

KM145-9-FSL

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Reassembly"
- (3) **N** : Non-reusable parts



145083

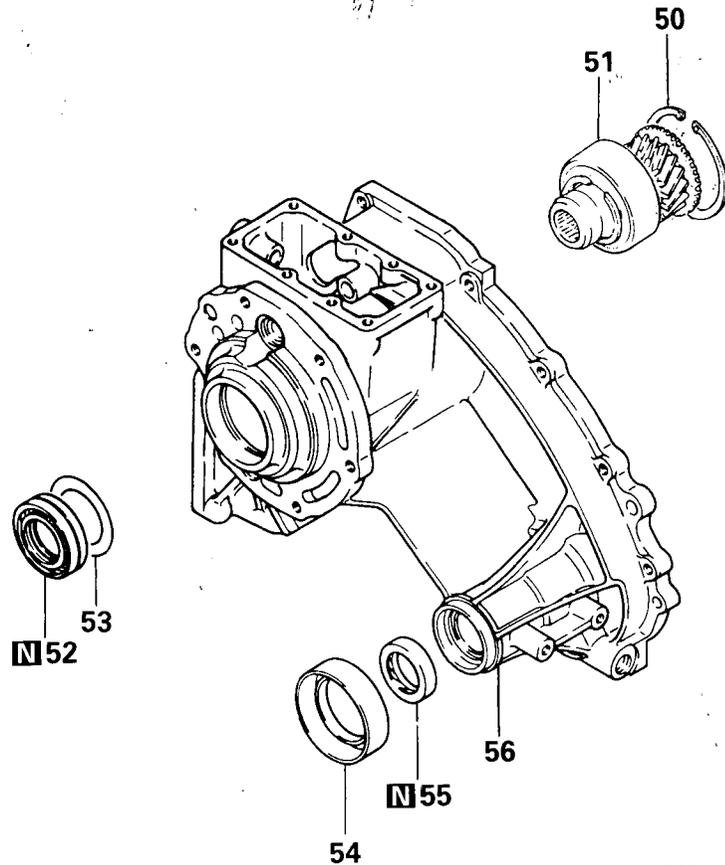
**Disassembly steps**

- 27. Snap ring
- ◆◆ 28. Chain cover
- ◆◆ 29. Chain cover gasket
- ◆◆ 30. Oil guide
- 31. Side cover
- 32. Side cover gasket
- ◀▶◆◆ 33. Lock plate
- ◀▶◆◆ 34. Counter gear shaft
- 35. O-ring
- ◀▶◆◆ 36. Counter gear
- ◀▶◆◆ 37. Thrust washer
- ◀▶◆◆ 38. Needle bearing
- ◀▶◆◆ 39. Bearing spacer
- 40. Snap ring

- 41. Spring retainer
- 42. Spring
- 43. Spring retainer
- ◀▶◆◆ 44. Output shaft assembly
- 45. 2-4WD shift fork
- 46. 2-4WD shift rail
- ◆◆ 47. H-L shift fork
- ◆◆ 48. H-L clutch sleeve
- 49. Needle bearing

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆◆ : Refer to "Service Points of Reassembly".
- (4) **N** : Non-reusable parts



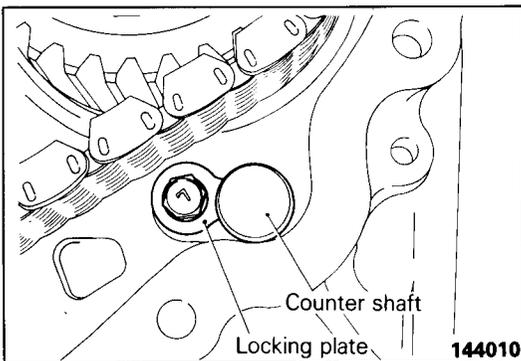
145084

**Disassembly steps**

- ◆◆ 50. Snap ring
- ◆◆ 51. Input gear assembly
- ◆◆ 52. Oil seal
- 53. Baffle plate
- 54. Dust seal guide
- ◆◆ 55. Oil seal
- 56. Transfer case

**NOTE**

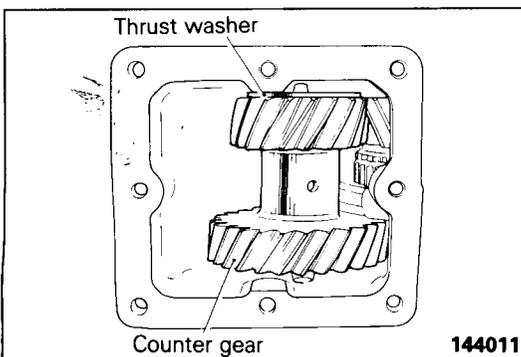
- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Reassembly".
- (3) N : Non-reusable parts



**SERVICE POINTS OF DISASSEMBLY**

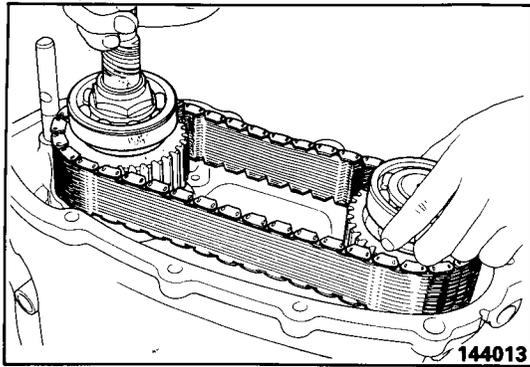
**33. REMOVAL OF LOCK PLATE/34. COUNTER GEAR SHAFT**

Remove the lock plate and pull out the counter gear shaft.

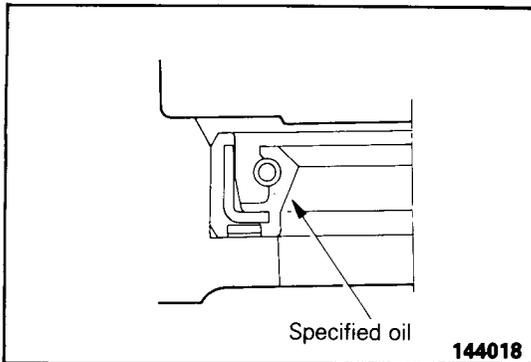


**36. REMOVAL OF COUNTER GEAR/37. THRUST WASHER/38. NEEDLE BEARING/39. BEARING SPACER**

Remove the counter gear, two thrust washers, two needle bearings and the spacer, through the side cover opening.

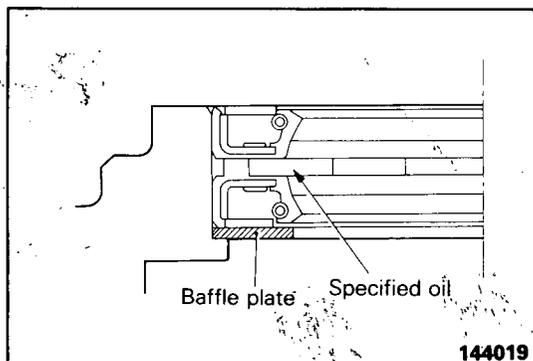
**44. REMOVAL OF OUTPUT SHAFT ASSEMBLY**

Remove the front output shaft, rear output shaft and chain together.

**SERVICE POINTS OF REASSEMBLY****55. INSTALLATION OF OIL SEAL (FRONT OUTPUT SHAFT)**

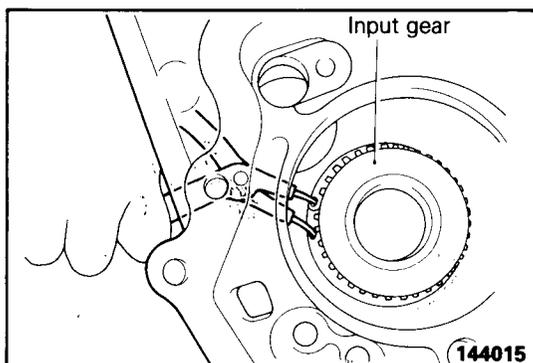
Apply the specified oil to the lip of the oil seal and pressure insert it.

**Specified oil : Hypoid Gear Oil API classification GL-4 or higher SAE viscosity 80W, 75W-85W**

**52. INSTALLATION OF OIL SEAL (INPUT GEAR)**

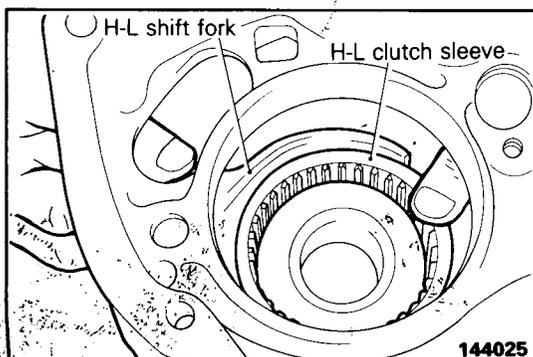
Apply the specified oil to the lip of the oil seal and pressure insert it.

**Specified oil : Hypoid Gear Oil API classification GL-4 or higher SAE viscosity 80W, 75W-85W**

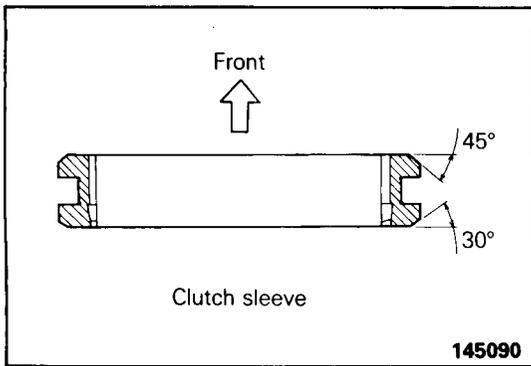
**51. INSTALLATION OF INPUT GEAR/50. SNAP RING**

- (1) Insert the input gear assembly into the transfer case and fasten it with the snap ring.
- (2) Select the thickest snap ring that will fit into the groove and install it.

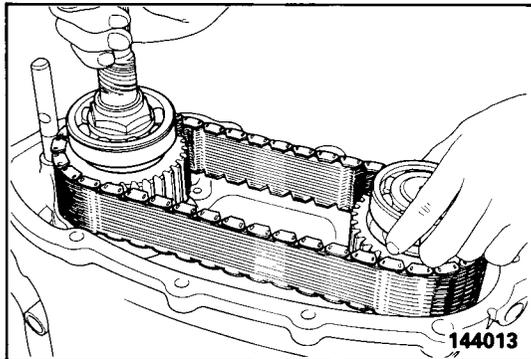
**Standard value : 0 – 0.06 mm (0 – .002 in.)**

**48. INSTALLATION OF H-L CLUTCH SLEEVE/47. H-L SHIFT FORK**

- (1) Install the H-L clutch sleeve and H-L shift fork.

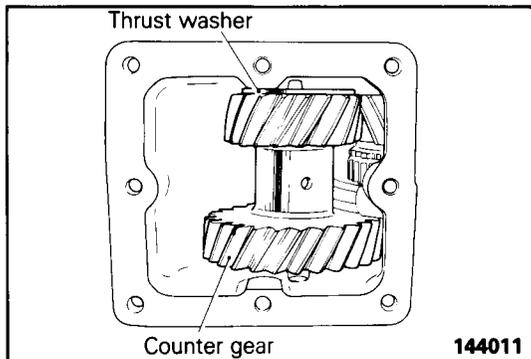


- (2) Make sure the direction of the sleeve is correct. The direction of the sleeve is the same for both 2WD and 4WD.



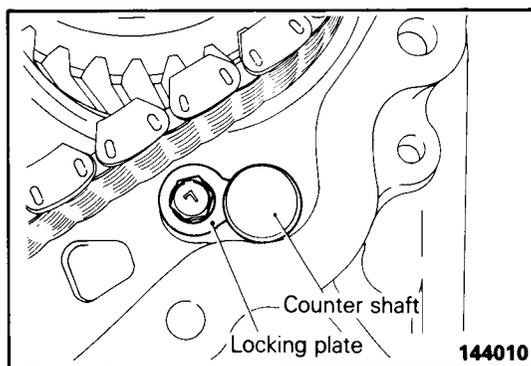
**44. INSTALLATION OF OUTPUT SHAFT ASSEMBLY**

- (1) Engage the chain precisely with the sprockets of the rear output shaft and the front output shaft.
- (2) Install the 2-4WD shift fork on the 2-4WD clutch sleeve. While passing them along the 2-4WD shift rail, install the rear and front output shaft and chain.



**39. INSTALLATION OF BEARING SPACER/38. NEEDLE BEARING/37. THRUST WASHER/36. COUNTER GEAR**

- (1) Assemble the needle bearings (2 pcs) in the counter gear, then after inserting the spacer, install the counter gear inside the transfer case.
- (2) Place thrust washers on the front and rear of the counter gear.



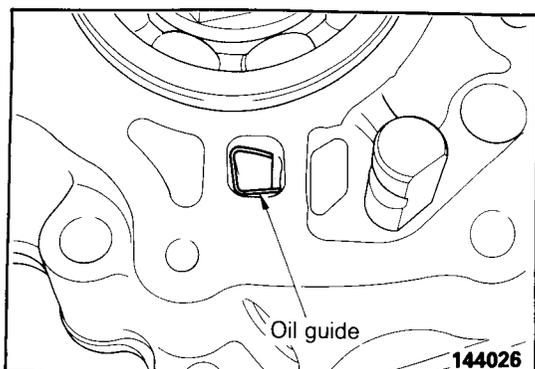
**34. INSTALLATION OF COUNTER GEAR SHAFT/33. LOCK PLATE**

- (1) Insert the counter shaft, being careful of the direction of the groove in the locking plate
- (2) Install the lock plate.

**30. INSTALLATION OF OIL GUIDE/29. CHAIN COVER GASKET/28. CHAIN COVER**

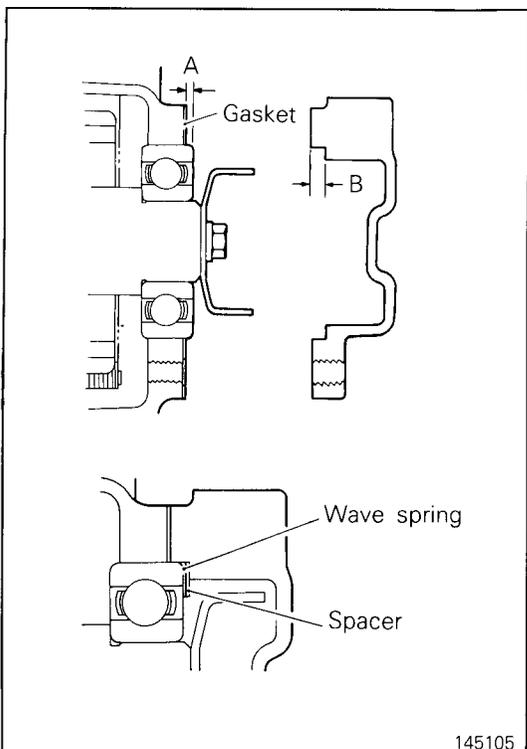
- (1) Install the oil guide.
- (2) Apply sealant to the gasket, then affix it to the transfer case.

**Specified sealant : 3M ART Part No. 8001 or equivalent**



- (3) Install the chain cover so that the end of the oil guide enters the window in the chain cover.

## 25. INSTALLATION OF THE WAVE SPRING/24. SPACER/23. COVER GASKET/22. COVER



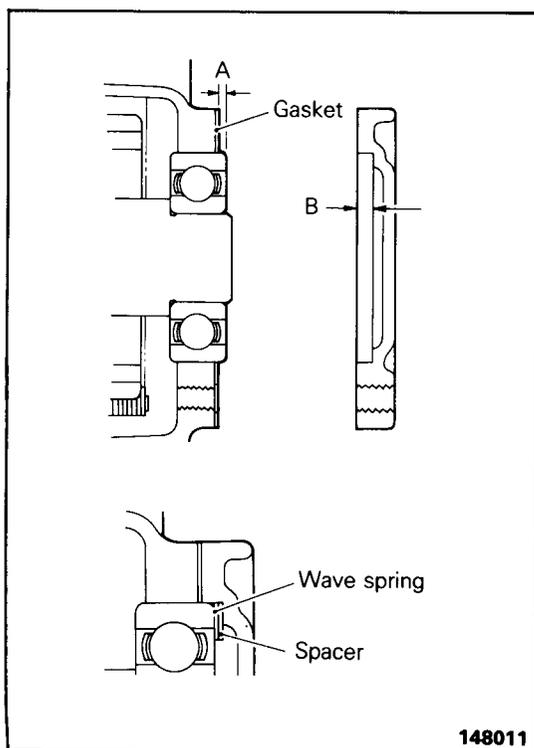
- (1) Measure the amount of front output shaft rear bearing thrust ("A") and the cover's indentation ("B"). If the clearance exceeds 2 mm (.08 in.), insert a spacer at the place shown in the figure.
- (2) Apply a coating of sealant to both surfaces of the cover gasket, and attach it to the chain cover.

**Specified sealant : 3M ART Part No. 8001 or equivalent**

- (3) Apply a coating of adhesive to the threaded part of the cover installation bolt, and then tighten it.

**Specified adhesive : 3M Adhesive Nut Locking 4171 or equivalent**

## 20. INSTALLATION OF WAVE SPRING/19. SPACER/18. COVER GASKET/17. COVER

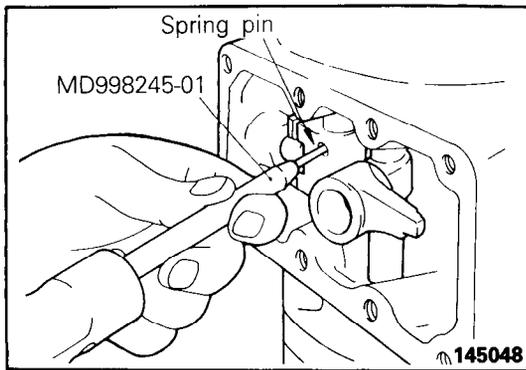


- (1) Measure the amount of protrusion of the front output shaft rear bearing "A" and the amount of inset in the cover "B". If the clearance is greater than 2 mm (.08 in.), insert a spacer in the location shown in the illustration.
- (2) Apply sealant to both sides of the cover gasket and affix the cover gasket to the chain cover.

**Specified sealant : 3M ART Part No. 8001 or equivalent**

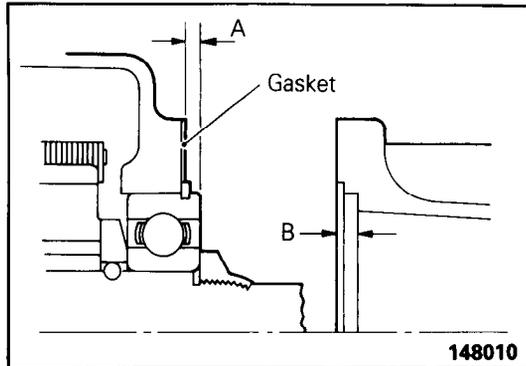
- (3) Apply adhesive to the threads of the cover installation bolts and tighten them.

**Specified adhesive : 3M Adhesive Nut Locking 4171 or equivalent**



**11. INSTALLATION OF SPRING PIN**

- (1) Align the H-L shift fork and shift rail spring pin hole, and then use the special tool to drive it in.
- (2) Drive in so that the slit is parallel with the axial direction of the shift rail.



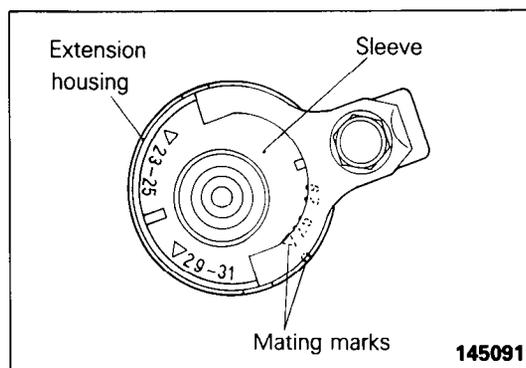
**8. INSTALLATION OF SPACER/7. REAR COVER GASKET/6. REAR COVER**

- (1) Measure the amount of protrusion of the rear output shaft rear bearing "A" and the amount of inset in the cover "B". Select a spacer which adjusts the end play to the standard value.

**Standard value : 0 – 0.1 mm (0 – .004 in.)**

- (2) Apply sealant to both sides of the rear cover gasket and affix the rear cover gasket to the chain cover.

**Specified sealant : 3M ART Part No. 8001 or equivalent**



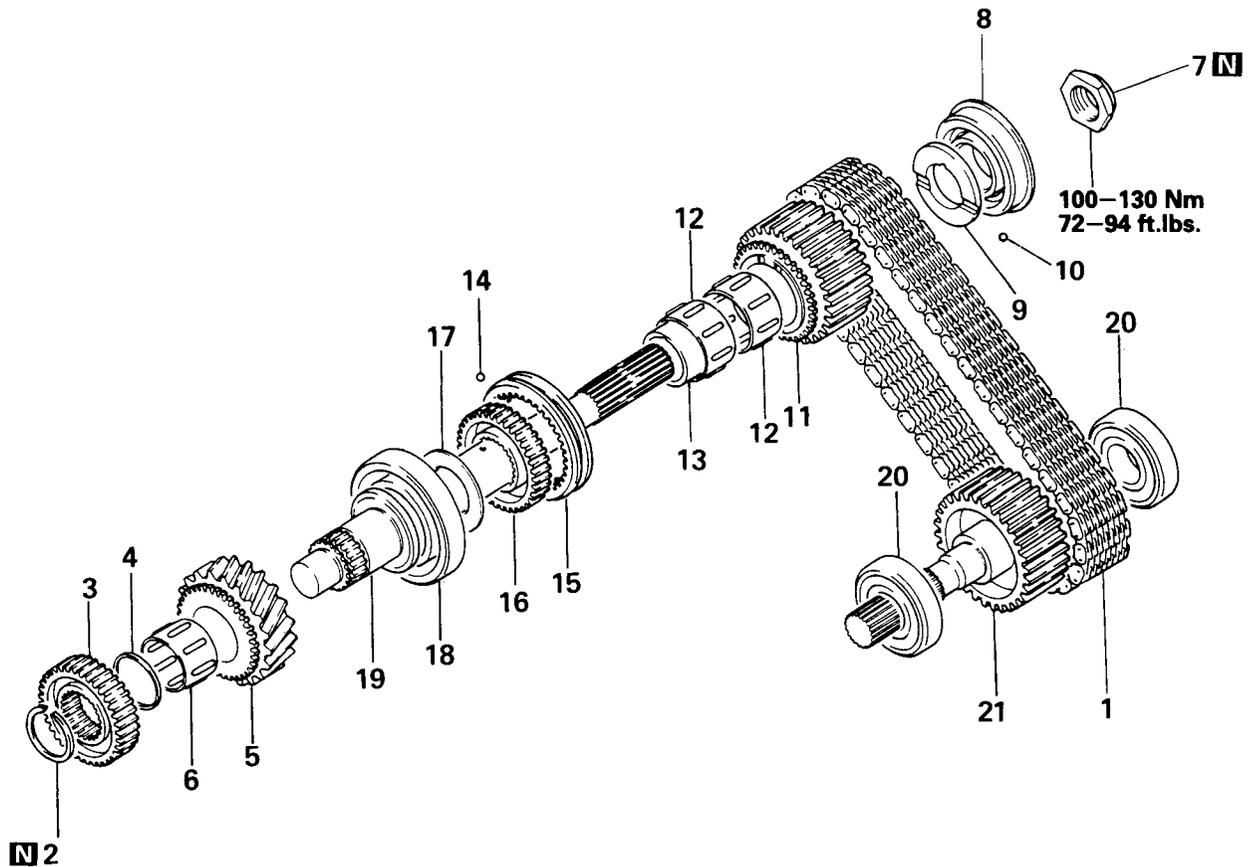
**2. INSTALLATION OF SPEEDOMETER GEAR ASSEMBLY**

Match the mating marks to the number of teeth on the speedometer driven gear and install the speedometer gear assembly.

## OUTPUT SHAFT ASSEMBLY

N21MKBA

## DISASSEMBLY AND REASSEMBLY



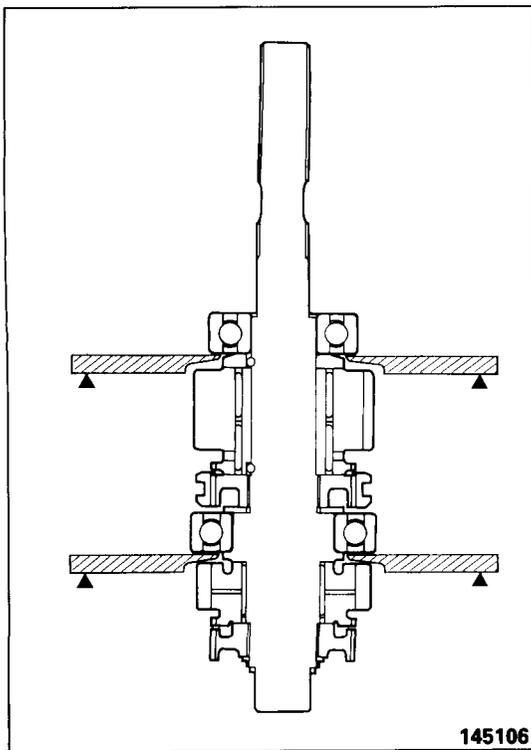
145085

## Disassembly steps

- |                           |                          |
|---------------------------|--------------------------|
| 1. Chain                  | ◆◆16. Clutch hub (2-4WD) |
| ◆◆ 2. Snap ring           | 17. Stopper plate        |
| ◆◆ 3. Clutch hub (H-L)    | ◆◆ 18. Bearing           |
| 4. Bearing spacer         | 19. Rear output shaft    |
| 5. Low speed gear         | ◆◆ 20. Bearing           |
| 6. Needle bearing         | 21. Front output shaft   |
| ◆◆ 7. Lock nut            |                          |
| ◆◆ 8. Radial ball bearing |                          |
| 9. Sprocket spacer        |                          |
| 10. Steel ball            |                          |
| 11. Drive sprocket        |                          |
| 12. Needle bearing        |                          |
| 13. Sprocket spacer       |                          |
| 14. Steel ball            |                          |
| ◆◆15. Clutch sleeve       |                          |

## NOTE

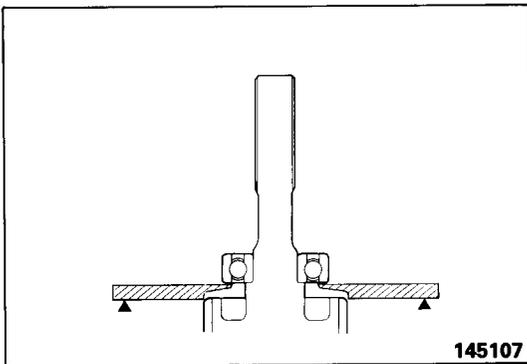
- (1) Reverse the disassembly procedures to reassemble.  
 (2) ◆◆ : Refer to "Service Points of Disassembly".  
 (3) ◆◆ : Refer to "Service Points of Reassembly".  
 (4) N : Non-reusable parts



**SERVICE POINTS OF DISASSEMBLY**

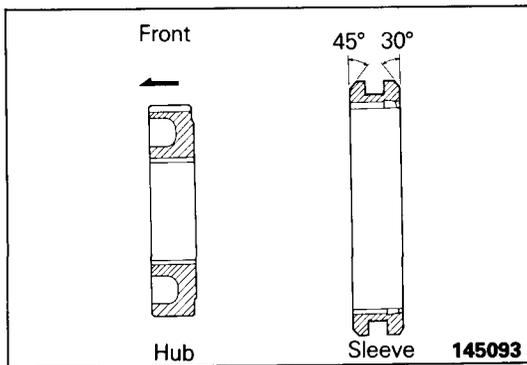
**8. REMOVAL OF RADIAL BALL BEARING/18. BEARING**

Pull the bearing out using a press.



**20. REMOVAL OF BEARING**

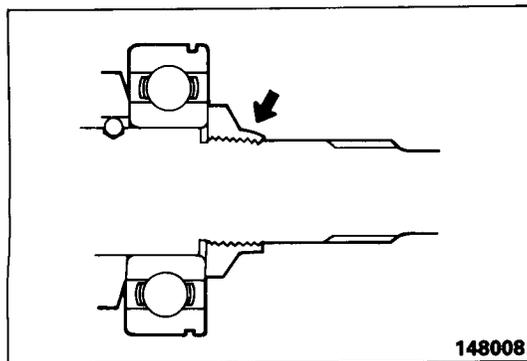
Pull out the bearing using a press.



**SERVICE POINTS OF REASSEMBLY**

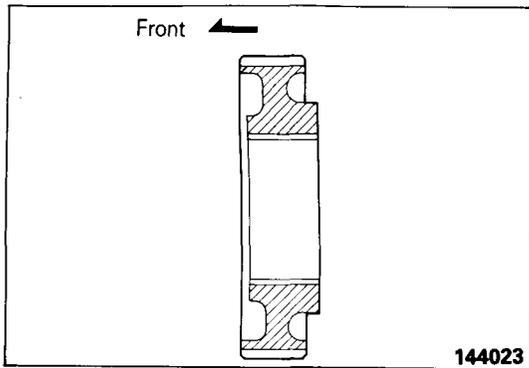
**16. INSTALLATION OF CLUTCH HUB (2-4WD)/15. CLUTCH SLEEVE**

Assemble the hub and sleeve as shown in the illustration.



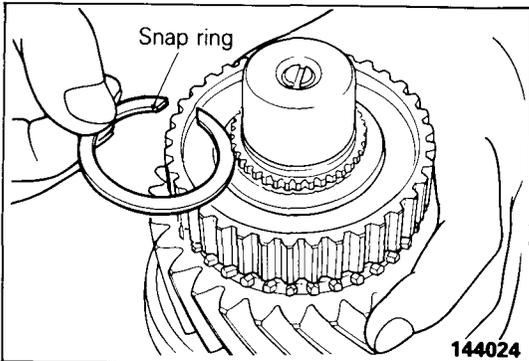
**7. INSTALLATION OF LOCK NUT**

After tightening the lock nut at the proper torque, crimp the lock nut in the groove in the output shaft at the location shown in the illustration.



### 3. INSTALLATION OF CLUTCH HUB (H-L)/2. SNAP RING

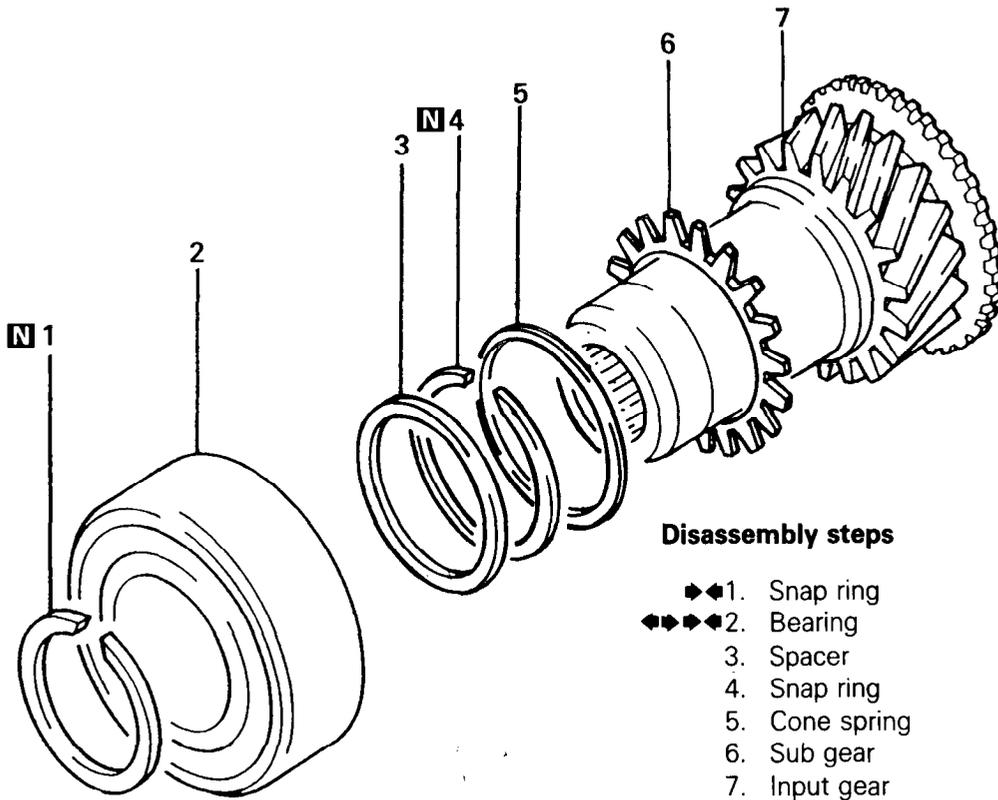
(1) Install the clutch hub in the direction shown in the illustration.



(2) Select the thickest snap ring that will fit into the groove in the front end of the rear output shaft and install it.

**INPUT SHAFT ASSEMBLY**

**DISASSEMBLY AND REASSEMBLY**



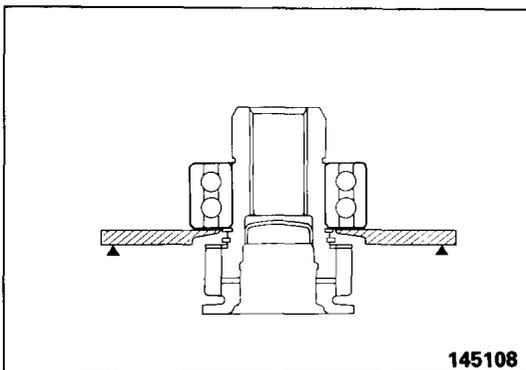
**Disassembly steps**

- ◆◆1. Snap ring
- ◆◆◆◆2. Bearing
- 3. Spacer
- 4. Snap ring
- 5. Cone spring
- 6. Sub gear
- 7. Input gear

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆ : Refer to "Service Points of Reassembly".
- (4) **N** : Non-reusable parts

145109

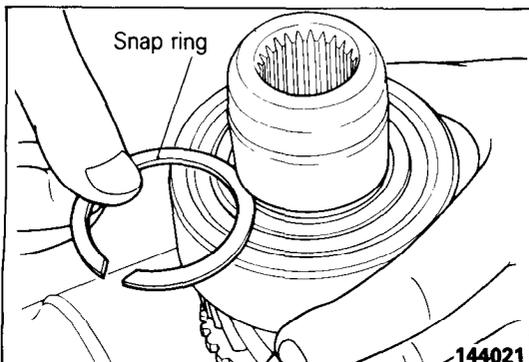


145108

**SERVICE POINTS OF DISASSEMBLY**

**2. REMOVAL OF BEARING**

Support the bearing on a press, then press on the front of the input gear and pull out the bearing.



144021

**SERVICE POINTS OF REASSEMBLY**

**2. PRESSURE INSERTION OF BEARING**

- (1) Pressure insert the bearing into the input gear. Be sure to press the inner face.
- (2) After pressure insertion, make sure that the bearing turns smoothly.

**1. INSTALLATION OF SNAP RING**

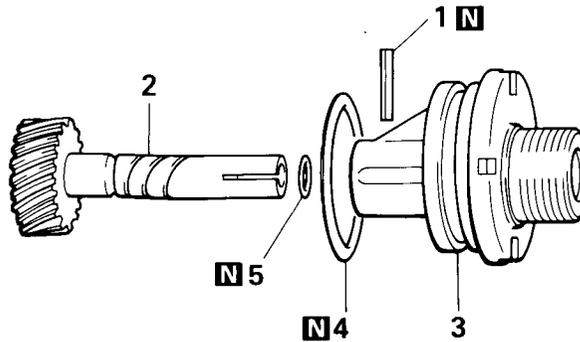
Select the thickest snap ring that will fit into the groove in the front end of the input gear and install it.

**SPEEDOMETER SLEEVE ASSEMBLY**

N21RE-C

**DISASSEMBLY AND REASSEMBLY****Disassembly steps**

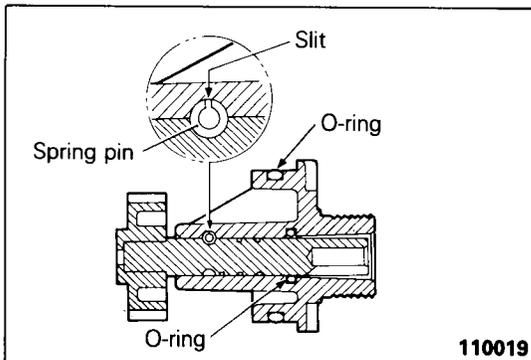
- ◆◆ 1. Spring pin
- 2. Driven gear
- 3. Sleeve
- 4. O-ring
- 5. O-ring



110008

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Reassembly".
- (3) N : Non-reusable parts



110019

**SERVICE POINTS OF REASSEMBLY**

N21RHAA2

**1. INSTALLATION OF SPRING PIN**

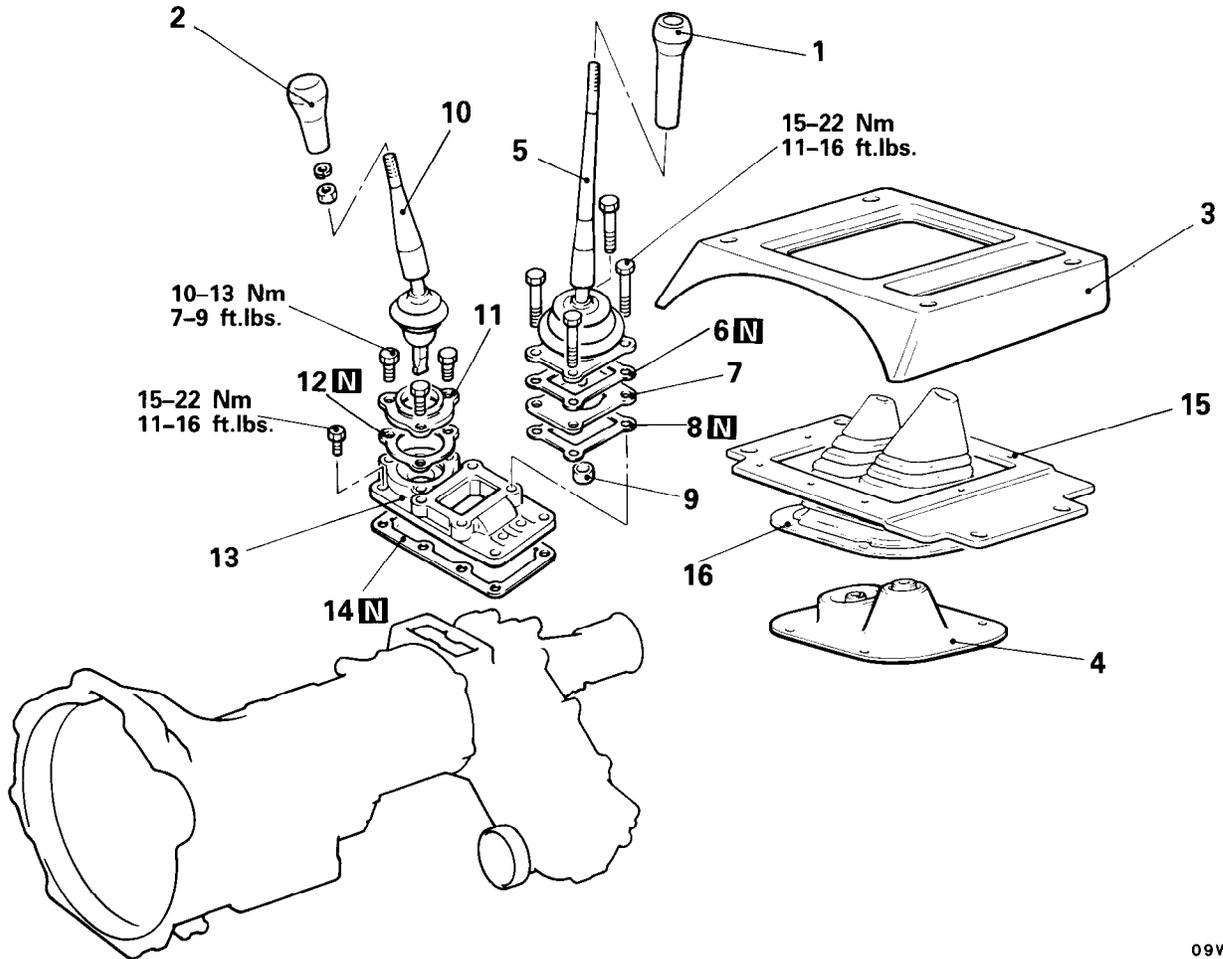
Drive spring pin in while making sure that slit does not face gear shaft.

**NOTE**

Do not reuse spring pin.

**GEARSHIFT LEVER ASSEMBLY  
REMOVAL AND INSTALLATION**

N21GA--



09W541

**Removal steps**

- 1. Transmission shift lever knob
- ◆◆ 2. Transfer shift lever knob
- 3. Front floor console
- 4. Control lever cover
- ◆◆◆◆ 5. Transmission control lever assembly
- 6. Gasket
- 7. Stopper plate
- 8. Gasket
- 9. Control lever bush
- ◆◆◆◆ 10. Transfer control lever assembly
- 11. Control housing cover
- 12. Gasket
- 13. Control housing
- 14. Gasket
- 15. Front floor console reinforcement
- 16. Shift lever boot

**NOTE**

- (1) Reverse the removal procedures to reinstall.
- (2) ◆◆ : Refer to "Service Points of Removal".
- (3) ◆◆◆◆ : Refer to "Service Points of Installation".
- (4) **N** : Non-reusable parts

**SERVICE POINTS OF REMOVAL**

N21GBAD

**5. REMOVAL OF TRANSMISSION CONTROL LEVER ASSEMBLY/10. TRANSFER CONTROL LEVER ASSEMBLY**

Remove the control lever attaching bolts and detach the control lever assembly.

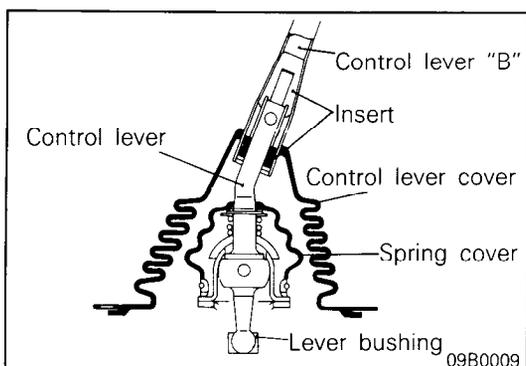
**Caution**

When the control lever assembly is removed, keep the transmission control lever and the transfer control lever in the following positions.

Transmission control lever – Neutral position

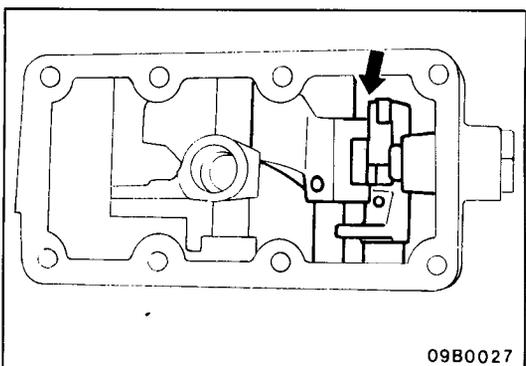
Transfer control lever – 2H (2-wheel drive – high range) position

After the control lever assembly has been removed, cover with a cloth to prevent entry of foreign substances into the extension housing.

**INSPECTION**

N21GCAA1

- Check for play between control lever and control lever "B". If play is evident, replace lever assembly.
- Push control lever in and check to ensure that it moves smoothly up and down.
- Check the cover for damage and replace if necessary. To remove cover, cut away with knife. To install new cover, first apply thin coat of oil to periphery of control lever "B". Then install by sliding it down from top of lever "B".
- Check the lever bushing for wear and replace if necessary.

**SERVICE POINTS OF INSTALLATION**

N21GDAF

**10. INSTALLATION OF TRANSFER CONTROL LEVER ASSEMBLY**

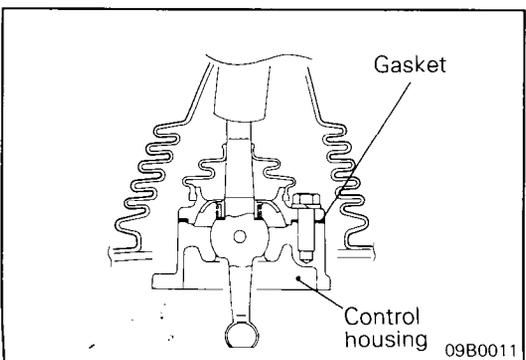
- (1) Check to be sure that the transfer lever assembly installation part (transmission side) is at the position shown in the illustration.

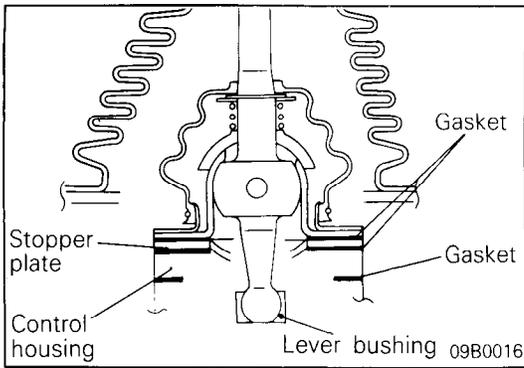
- (2) When assembling, replace the gaskets. Apply the specified sealant to both sides of gasket.

**Specified sealant : 3M ART Part No. 8001 or equivalent**

- (3) Apply the specified grease generously to transfer control lever sliding surface.

**Specified grease : Multipurpose grease SAE J310, NLGI No. 2**





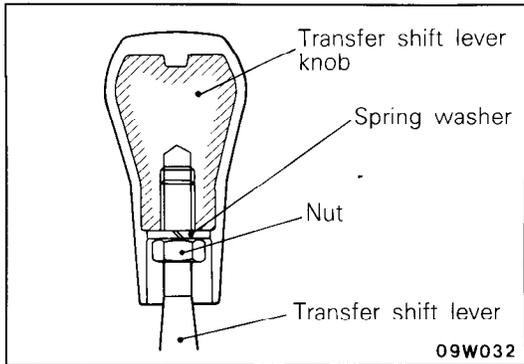
**5. INSTALLATION OF TRANSMISSION CONTROL LEVER ASSEMBLY**

- (1) When assembling, replace the gaskets.  
Apply specified sealant to both sides of each gasket.

**Specified sealant : 3M ART Part No. 8001 or equivalent**

- (2) Apply the specified grease generously to both inside and outside surfaces of lever bushing and control lever sliding surface.

**Specified grease : Multipurpose grease SAE J310, NLGI No. 2**



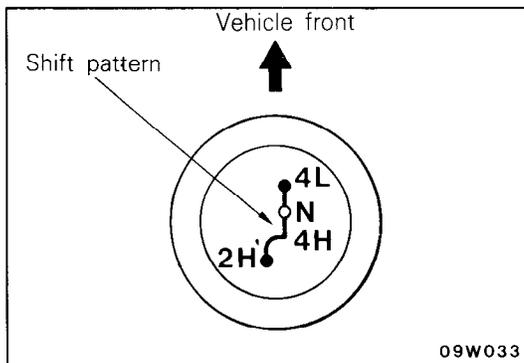
**2. INSTALLATION OF TRANSFER SHIFT LEVER KNOB**

- (1) After manually screwing the nut all the way to the end of the threaded part of the shift lever, return it about a half turn and install the spring washer.

- (2) After turning the shift lever knob about one turn beyond where the spring washer begins to yield, screw in further and adjust until the shift pattern on the knob faces the front of the vehicle.

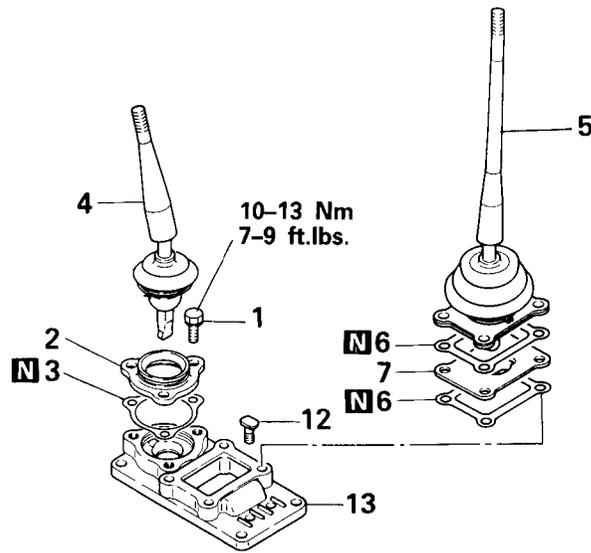
**NOTE**

If the adjustment cannot be made as described in (2) above, first screw the shift lever all the way in, and then return about one turn to make the adjustment.



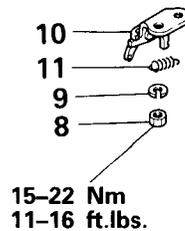
# CONTROL LEVER ASSEMBLY

## DISASSEMBLY AND REASSEMBLY



### Disassembly steps

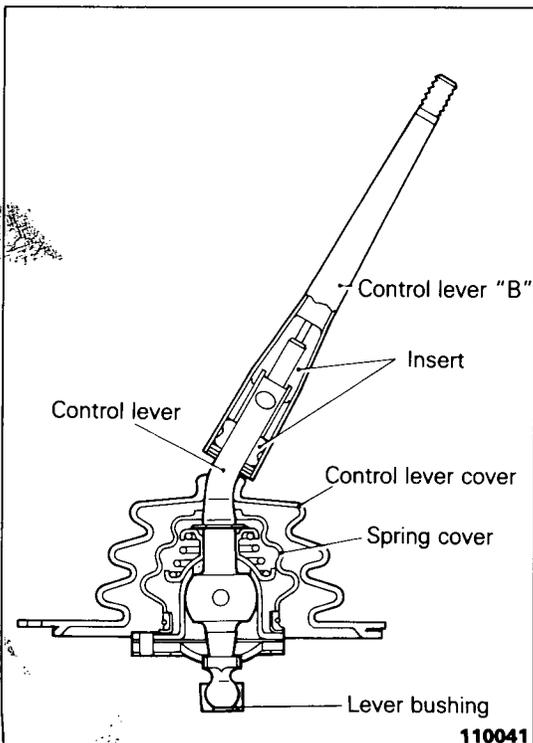
1. Bolt
2. Control housing cover
- ◆◆ 3. Control housing cover gasket
4. Transfer control lever
5. Transmission control lever
- ◆◆ 6. Gasket
7. Stopper plate
8. Nut
9. Spring washer
- ◆◆ 10. Stopper bracket assembly
11. Return spring
- ◆◆ 12. Special bolt
13. Control housing



145042

### NOTE

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Reassembly".
- (3) **N** : Non-reusable parts

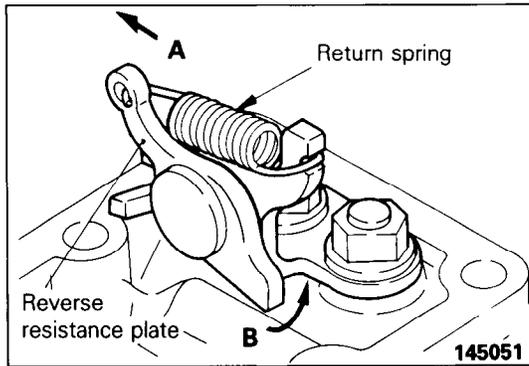
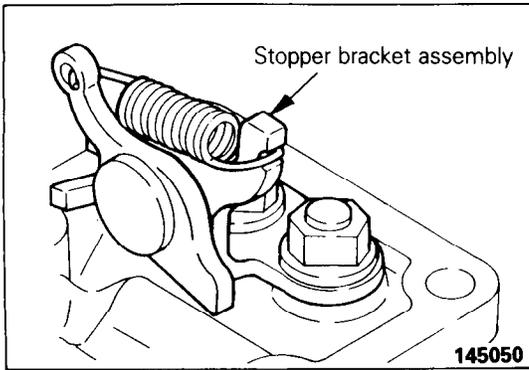


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## INSPECTION

N21GGAC

- Check for play between control lever and control lever "B". If play is evident replace lever assembly.
- Push control lever in and check to ensure that it moves smoothly up and down.
- Check cover for damage and replace if necessary. To remove cover, cut away with knife. To install new cover, first apply thin coat of oil to periphery of control lever "B". Then install by sliding it down from top of lever "B".
- Check lever bushing for wear and replace if necessary.



**SERVICE POINTS OF REASSEMBLY**

N21GHAF

**12. INSTALLATION OF SPECIAL BOLT/10. STOPPER BRACKET ASSEMBLY**

- (1) Apply sealant to peripheries (except threaded portions) of two special bolts and install them to cover. Do not wipe away excess sealant from cover.

**Specified sealant : 3M ART Part No. 8660 or equivalent**

- (2) Mount stopper bracket assembly and apply sealant to threaded portions of special bolts.

**Specified sealant : 3M Scotch Grip No. 2353 or equivalent**

- (3) Check to ensure that reverse resistance plate moves smoothly in directions A and B shown in illustration and is brought back by return spring.

**6. INSTALLATION OF GASKET/3. CONTROL HOUSING COVER GASKET**

- (1) Apply specified sealant to both surfaces of the gaskets.

**Specified sealant : 3M ART Part No. 8001 or equivalent**