

SECTION **TF**

CONTENTS

<p>PREPARATION2</p> <p style="padding-left: 20px;">Special Service Tools2</p> <p style="padding-left: 20px;">Commercial Service Tools3</p> <p>NOISE, VIBRATION AND HARSHNESS (NVH)</p> <p>TROUBLESHOOTING5</p> <p style="padding-left: 20px;">NVH Troubleshooting Chart5</p> <p style="padding-left: 40px;">TRANSFER5</p> <p>DESCRIPTION6</p> <p style="padding-left: 20px;">Cross-sectional View6</p> <p>ON-VEHICLE SERVICE7</p> <p style="padding-left: 20px;">Replacing Oil Seal7</p> <p style="padding-left: 40px;">CENTER CASE OIL SEAL7</p> <p style="padding-left: 40px;">SHIFT SHAFT OIL SEAL7</p> <p style="padding-left: 40px;">REAR OIL SEAL8</p> <p style="padding-left: 20px;">Position Switch Check8</p> <p>REMOVAL AND INSTALLATION9</p> <p style="padding-left: 20px;">Removal9</p> <p style="padding-left: 20px;">Installation9</p> <p style="padding-left: 40px;">M/T MODEL9</p> <p style="padding-left: 40px;">A/T MODEL9</p> <p>OVERHAUL10</p> <p style="padding-left: 20px;">Transfer Gear Control10</p> <p style="padding-left: 20px;">Case Components11</p> <p style="padding-left: 20px;">Gear Components12</p> <p style="padding-left: 20px;">Shift Control Components13</p> <p>DISASSEMBLY14</p> <p>REPAIR FOR COMPONENT PARTS18</p> <p style="padding-left: 20px;">Mainshaft18</p> <p style="padding-left: 40px;">DISASSEMBLY18</p> <p style="padding-left: 40px;">INSPECTION19</p> <p style="padding-left: 40px;">ASSEMBLY19</p> <p style="padding-left: 20px;">Front Drive Shaft20</p> <p style="padding-left: 40px;">DISASSEMBLY20</p> <p style="padding-left: 40px;">INSPECTION20</p>	<p style="padding-left: 20px;">ASSEMBLY20</p> <p style="padding-left: 20px;">Counter Gear20</p> <p style="padding-left: 20px;">DISASSEMBLY20</p> <p style="padding-left: 20px;">INSPECTION21</p> <p style="padding-left: 20px;">ASSEMBLY21</p> <p style="padding-left: 20px;">Main Gear21</p> <p style="padding-left: 40px;">DISASSEMBLY21</p> <p style="padding-left: 40px;">INSPECTION22</p> <p style="padding-left: 40px;">ASSEMBLY22</p> <p style="padding-left: 20px;">Front Case22</p> <p style="padding-left: 40px;">REMOVAL22</p> <p style="padding-left: 40px;">INSTALLATION23</p> <p style="padding-left: 20px;">Front Case Cover23</p> <p style="padding-left: 40px;">REMOVAL23</p> <p style="padding-left: 40px;">INSTALLATION23</p> <p style="padding-left: 20px;">Bearing Retainer23</p> <p style="padding-left: 40px;">REMOVAL23</p> <p style="padding-left: 40px;">INSTALLATION23</p> <p style="padding-left: 20px;">Rear Case24</p> <p style="padding-left: 40px;">REMOVAL24</p> <p style="padding-left: 40px;">INSTALLATION24</p> <p style="padding-left: 20px;">Shift Control Components24</p> <p style="padding-left: 40px;">INSPECTION24</p> <p>ASSEMBLY26</p> <p>SERVICE DATA AND SPECIFICATIONS (SDS)33</p> <p style="padding-left: 20px;">General Specifications33</p> <p style="padding-left: 20px;">Gear End Play33</p> <p style="padding-left: 20px;">Available Snap Ring33</p> <p style="padding-left: 40px;">MAINSHAFT FRONT BEARING33</p> <p style="padding-left: 40px;">MAINSHAFT REAR BEARING33</p> <p style="padding-left: 40px;">MAIN GEAR BEARING33</p> <p style="padding-left: 20px;">Available Shim34</p> <p style="padding-left: 40px;">COUNTER GEAR REAR BEARING34</p>
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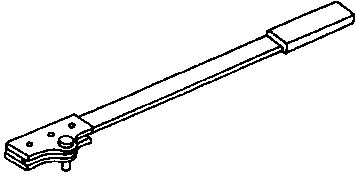
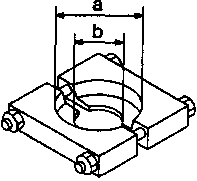
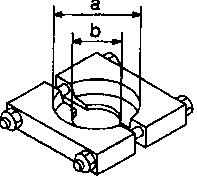
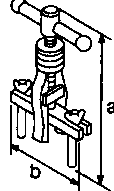
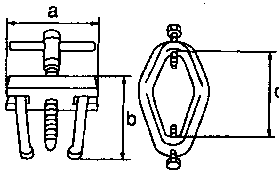
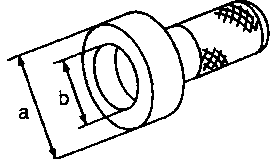
PREPARATION

Special Service Tools

Special Service Tools

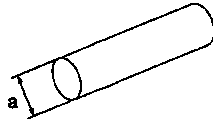

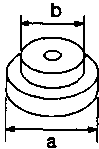
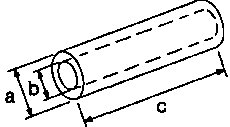
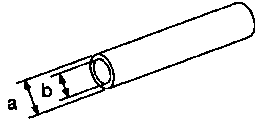
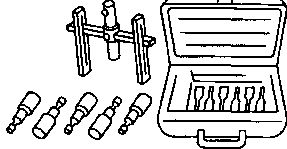
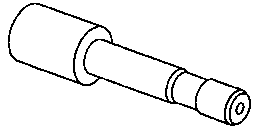
NATF0001

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description	
KV38108300 (—) Companion flange wrench		Removing companion flange nut Installing companion flange nut NT771
ST30021000 (J22912-01) Puller		Removing counter gear front bearing (Use with ST36710010) Removing L & H hub a: 110 mm (4.33 in) dia. b: 68 mm (2.68 in) dia. NT411
ST30031000 (J22912-01) Puller		Removing counter gear rear bearing (Use with ST36710010) a: 90 mm (3.54 in) dia. b: 50 mm (1.97 in) dia. NT411
ST33290001 (J25810-A) Puller		Removing center case oil seal Removing rear oil seal a: 250 mm (9.84 in) b: 160 mm (6.30 in) NT414
ST33051001 (J22888) Puller		Removing companion flange a: 135 mm (5.31 in) b: 100 mm (3.94 in) c: 130 mm (5.12 in) NT657
ST30720000 1 (J25273) 2 (J25405) Drift		1 Installing center case oil seal 2 Installing rear oil seal a: 77 mm (3.03 in) dia. b: 55.5 mm (2.185 in) dia. NT658

PREPARATION

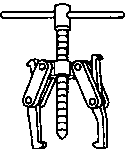
Special Service Tools (Cont'd)

Tool number (Kent-Moore No.) Tool name	Description		
ST36710010 (—) Drift		Removing counter gear front bearing (Use with ST30021000) Removing counter gear rear bearing (Use with ST30031000) a: 34.5 mm (1.358 in) dia.	GI MA EM LC
ST33061000 (J8107-2) Drift		Removing main gear bearing a: 28.5 mm (1.122 in) dia. b: 38 mm (1.50 in) dia.	EC FE
ST30613000 1 (J25742-3) 2 (J34339) Drift		1 Installing main gear bearing 2 Installing front case cover oil seal a: 72 mm (2.83 in) dia. b: 48 mm (1.89 in) dia.	CL MT
(J35864) Drift		Installing shift shaft oil seal a: 26 mm (1.02 in) dia. b: 20 mm (0.79 in) dia. c: 150 mm (5.91 in)	AT TF
(J26092) Drift		Seating counter gear assembly a: 44.5 mm (1.752 in) dia. b: 38.5 mm (1.516 in) dia.	PD AX
(J34291) Shim setting gauge set		Selecting counter gear rear bearing shim	SU BR
(J34291-20) Plunger-shim setting gauge		Selecting counter gear rear bearing shim	ST RS BT

Commercial Service Tools

NATF0002

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool name	Description		
Puller		Removing front drive shaft front bearing Removing front drive shaft rear bearing Removing main gear bearing	SC EL IDX

PREPARATION

Commercial Service Tools (Cont'd)

Tool name	Description
Drift	<div data-bbox="560 247 787 382" data-label="Image">A technical drawing of a cylindrical drift tool. It shows a perspective view of a cylinder with a central hole. Dimension 'a' is the diameter of the hole, 'b' is the diameter of the cylinder, and 'c' is the length of the cylinder.</div> <p data-bbox="409 403 467 424">NT117</p> <ul data-bbox="950 220 1307 445" style="list-style-type: none">1 Installing mainshaft rear bearing2 Installing L & H hub1 a: 50 mm (1.97 in) dia. b: 42 mm (1.65 in) dia. c: 180 mm (7.09 in)2 a: 60 mm (2.36 in) dia. b: 50 mm (1.97 in) dia. c: 60 mm (2.36 in)

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

NVH Troubleshooting Chart

NATF0039S01

Use the chart below to help you find the cause of the symptom. The numbers indicate the order of inspection. If necessary, repair or replace these parts.

TRANSFER

NATF0039S0101

Reference page		Refer to MA section ("Checking Transfer Fluid", "CHASSIS AND BODY MAINTENANCE").								
		TF-11	TF-11	TF-11, 13	TF-13	TF-12	TF-12			
SUSPECTED PARTS (Possible cause)		FLUID (Level low)	FLUID (Wrong)	FLUID (Level too high)	LIQUID GASKET (Damaged)	OIL SEAL (Worn or damaged)	CHECK SPRING AND CHECK BALL (Worn or damaged)	SHIFT FORK (Worn)	GEAR (Worn or damaged)	BEARING (Worn or damaged)
Symptom	Noise	1	2						3	3
	Fluid leakage		3	1	2	2				
	Hard to shift or will not shift		1	1						
	Jumps out of gear						1	2	2	

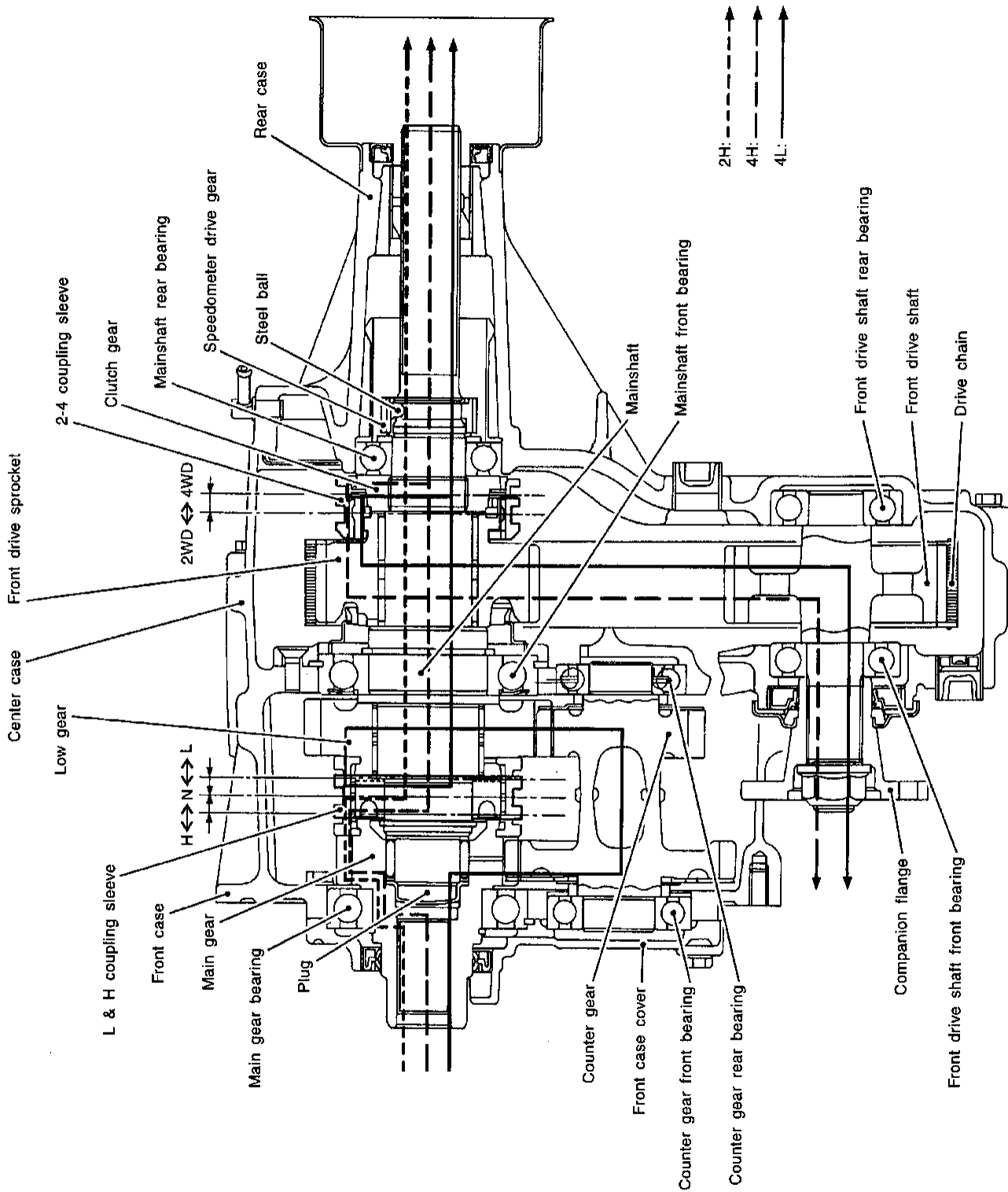
GI
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DESCRIPTION

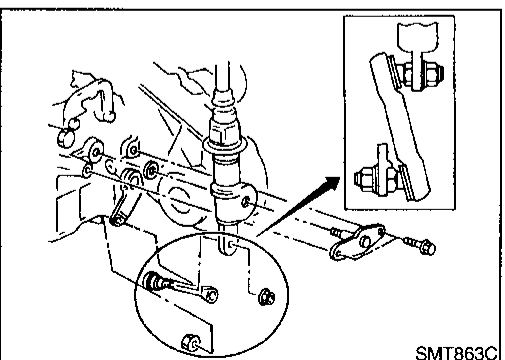
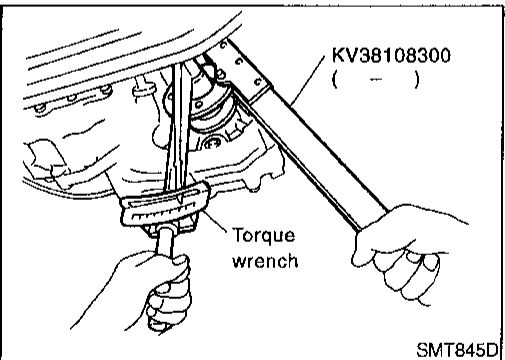
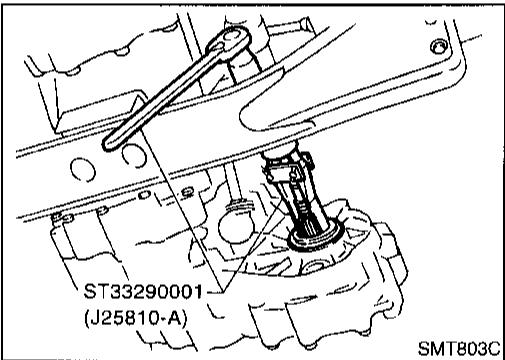
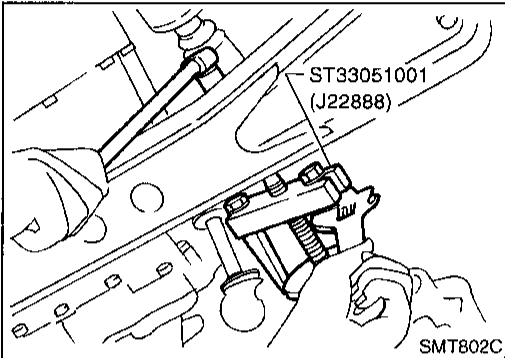
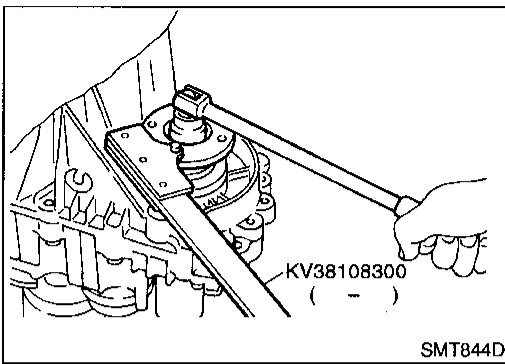
Cross-sectional View

Cross-sectional View

NATF0003



SMT820D



Replacing Oil Seal CENTER CASE OIL SEAL

1. Remove exhaust front tube and heat insulator. Refer to "Removal", TF-9.
2. Remove front propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
3. Remove companion flange nut.
4. Remove companion flange.
5. Remove center case oil seal.
6. Install center case oil seal.
 - **Before installing, apply multi-purpose grease to seal lip.**
7. Install companion flange.
8. Tighten nut to the specified torque.
9. Install front propeller shaft.

SHIFT SHAFT OIL SEAL

1. Remove front propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
2. Remove companion flange. Refer to center case oil seal, TF-7.
3. Remove transfer control lever from transfer outer shift lever. Then remove outer shift lever.

GI

NATF0004

MA

NATF0004S01

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NATF0004S02

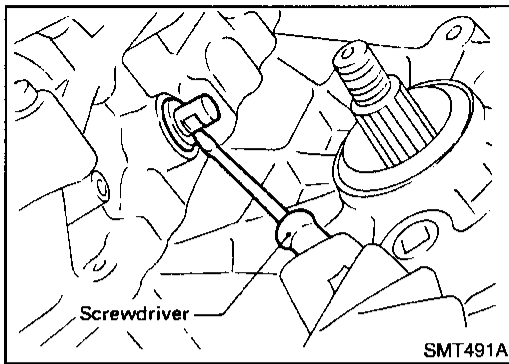
SC

EL

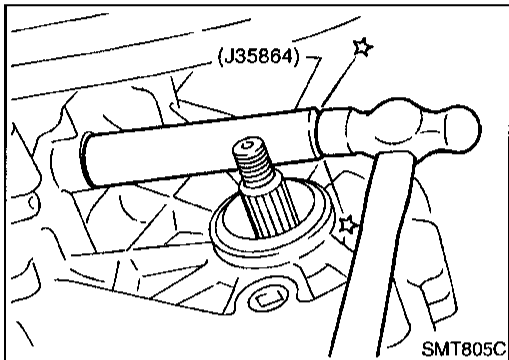
IDX

ON-VEHICLE SERVICE

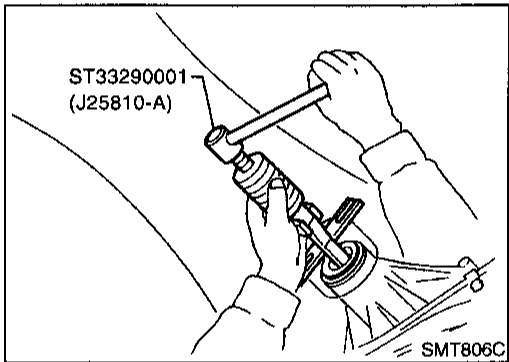
Replacing Oil Seal (Cont'd)



4. Remove shift shaft oil seal.
 - Be careful not to damage cross shaft.



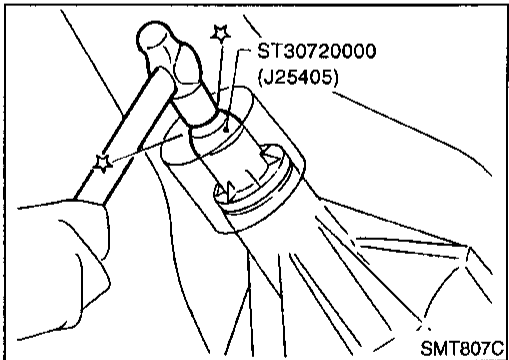
5. Install shift shaft oil seal.
 - Before installing, apply multi-purpose grease to seal lip.
6. Install transfer control linkage.
7. Install companion flange. Refer to center case oil seal, TF-7.
8. Install front propeller shaft.



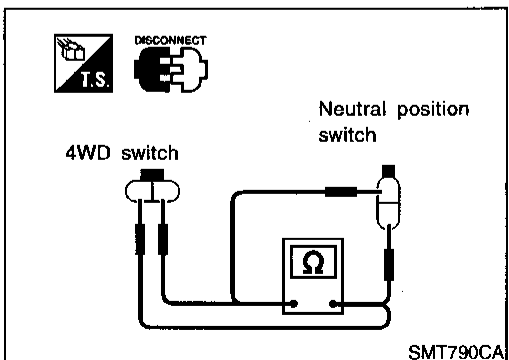
REAR OIL SEAL

NATF0004S03

1. Remove rear propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
2. Remove rear oil seal.



3. Install rear oil seal.
 - Before installing apply multi-purpose grease to seal lip.
4. Install rear propeller shaft.



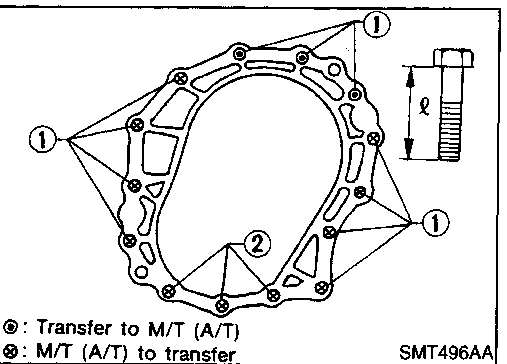
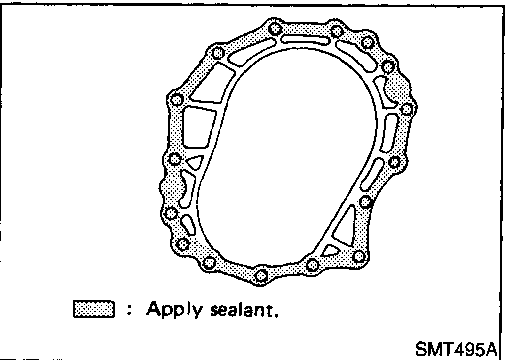
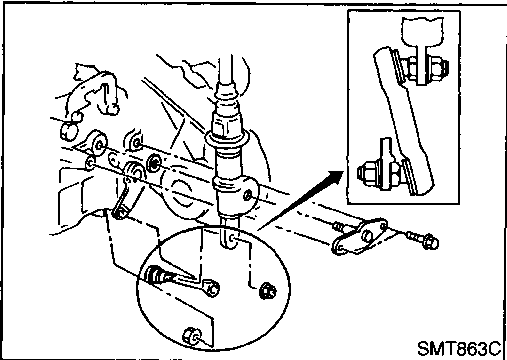
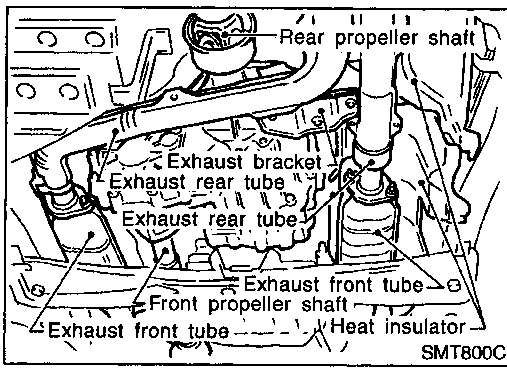
Position Switch Check

NATF0005

Switch	Gear position	Continuity
4WD switch	4WD	Yes
	Except 4WD	No
Neutral position switch	Neutral	No
	Except neutral	Yes

REMOVAL AND INSTALLATION

Removal



Removal

NATF0006

1. Drain fluid from transfer and oil from transmission.
2. Remove exhaust front and rear tubes. Refer to FE section ("EXHAUST SYSTEM").
3. Remove front and rear propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
4. Insert plug into rear oil seal after removing propeller shaft.
 - **Be careful not to damage spline, sleeve yoke and rear oil seal, when removing propeller shaft.**
5. Disconnect neutral position and 4WD switch harness connectors.
6. Remove transfer control lever from transfer outer shift lever.
7. Remove transfer from transmission.

WARNING:

Support transfer while removing it.

Installation

NATF0007

- Apply recommended sealant to mating surface to transmission. (M/T model only)

Recommended sealant:

Genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent

- Tighten bolts securing transfer.

M/T MODEL

NATF0007S01

Bolt No.	Tightening torque N·m (kg·m, ft·lb)	ℓ mm (in)
1	31 - 41 (3.2 - 4.2, 23 - 30)	45 (1.77)
2	31 - 41 (3.2 - 4.2, 23 - 30)	60 (2.36)

A/T MODEL

NATF0007S02

Bolt No.	Tightening torque N·m (kg·m, ft·lb)	ℓ mm (in)
1	31 - 41 (3.2 - 4.2, 23 - 30)	60 (2.36)
2	31 - 41 (3.2 - 4.2, 23 - 30)	60 (2.36)

GI

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OVERHAUL

Transfer Gear Control

SEC. 333

: N·m (kg-m, in-lb)

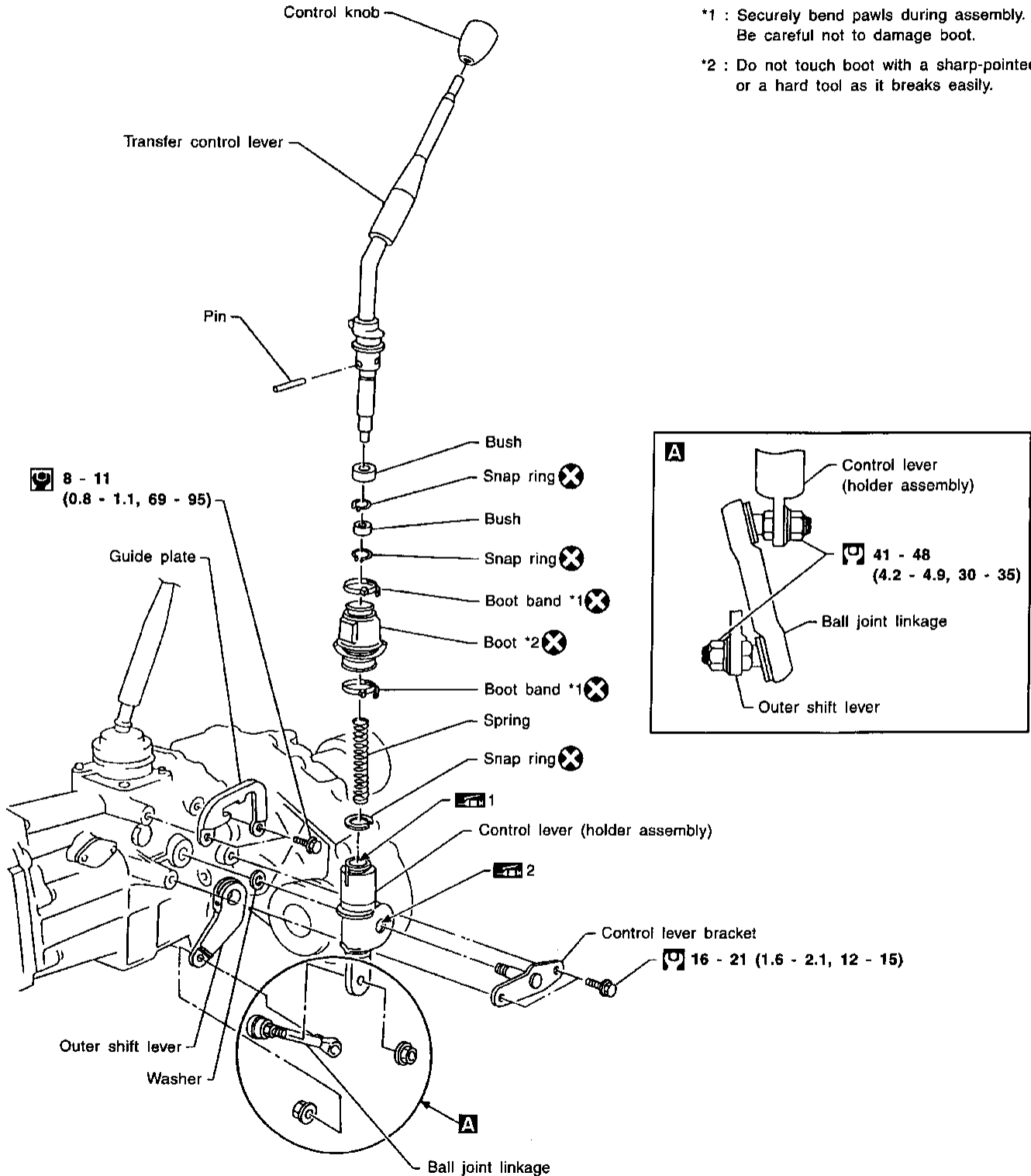
: N·m (kg-m, ft-lb)

1 : Fill multi-purpose grease up.

2 : Apply multi-purpose grease.

*1 : Securely bend pawls during assembly. Be careful not to damage boot.

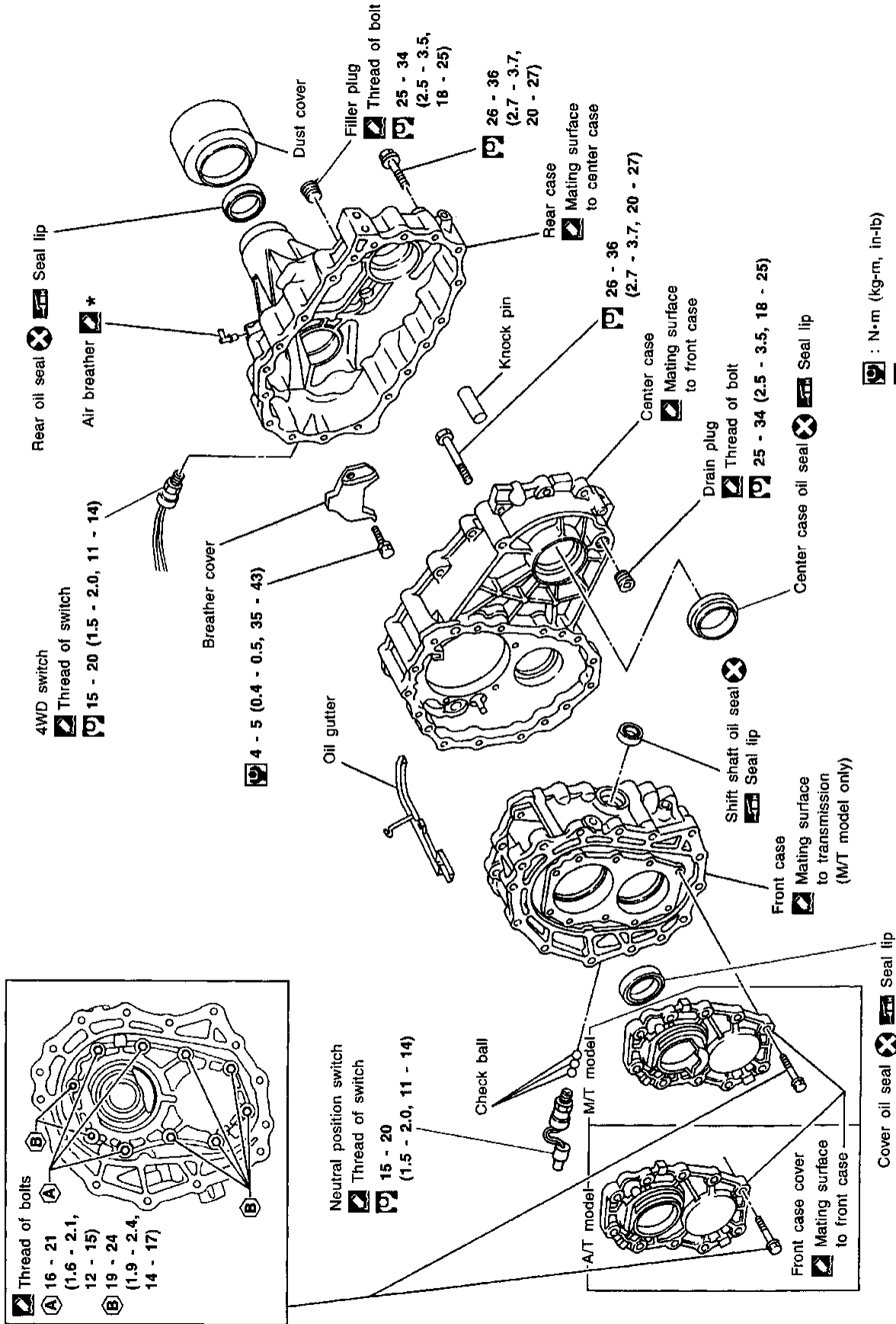
*2 : Do not touch boot with a sharp-pointed or a hard tool as it breaks easily.



Case Components

NATF0009

SEC. 331



: N·m (kg-m, in-lb)

: N·m (kg-m, ft-lb)

: Apply genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.

* : Apply genuine Three Bond TB1324, Loctite 271 or equivalent (locking sealant).

- GI
- MA
- EM
- LC
- EC
- FE
- CL
- MT
- AT
- TF**
- PD
- AX
- SU
- BR
- ST
- RS
- BT
- HA
- SC
- EL
- IDX

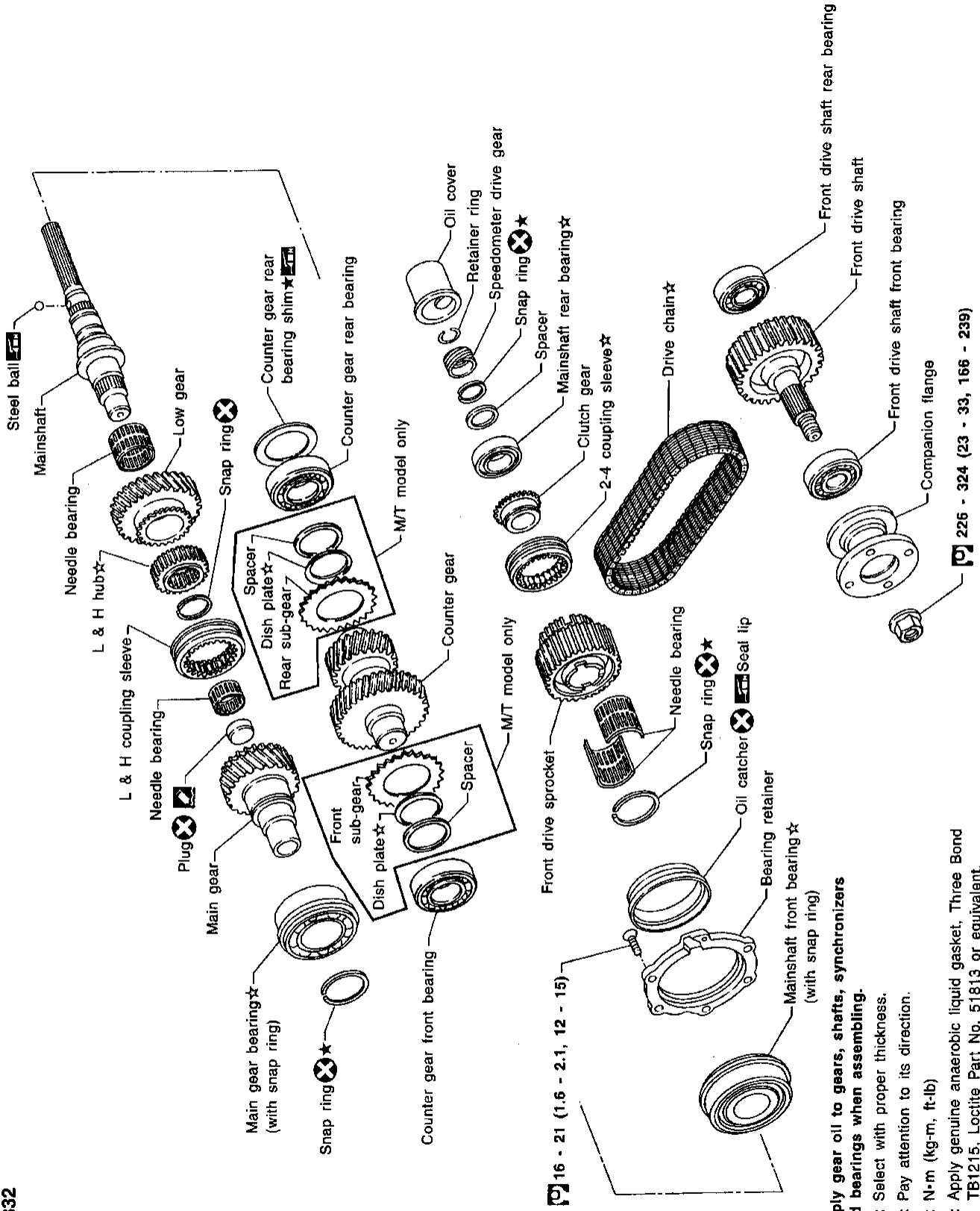
SMT821D

OVERHAUL

Gear Components

NATF0010

SEC. 332



Apply gear oil to gears, shafts, synchronizers and bearings when assembling.

★ : Select with proper thickness.

☆ : Pay attention to its direction.

□ : N-m (kg-m, ft-lb)

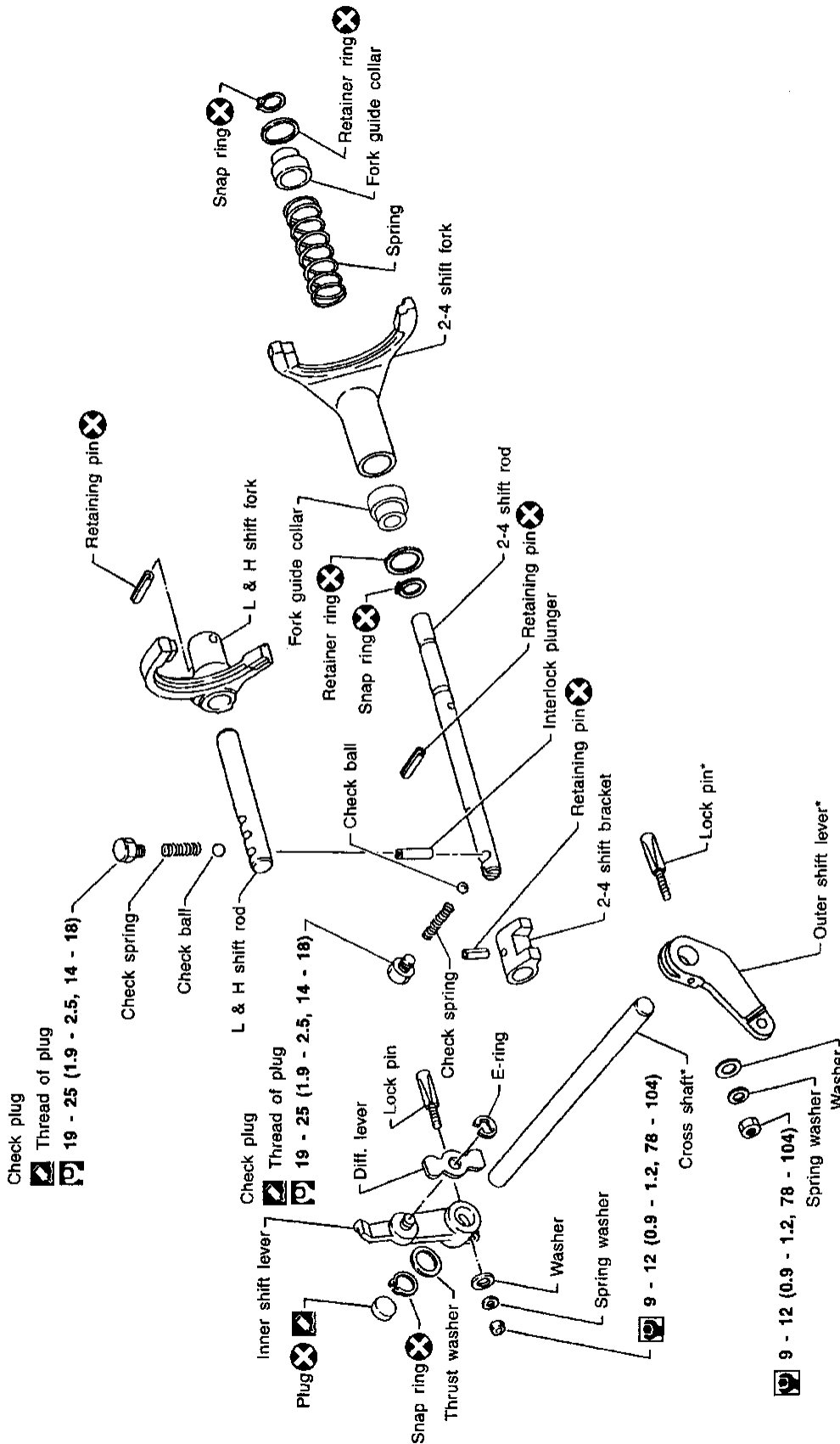
▣ : Apply genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.

▣ 225 - 324 (23 - 33, 166 - 239)

▣ 16 - 21 (1.6 - 2.1, 12 - 15)

Shift Control Components

NATF0011



* : If these parts require to be replaced, replace them as a set.

☐ : N·m (kg-m, in-lb)

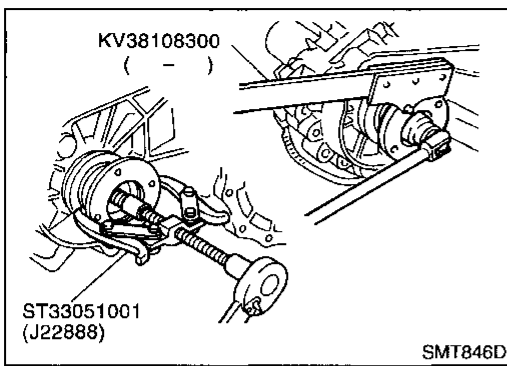
Ⓟ : N·m (kg-m, ft-lb)

☒ : Apply genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.

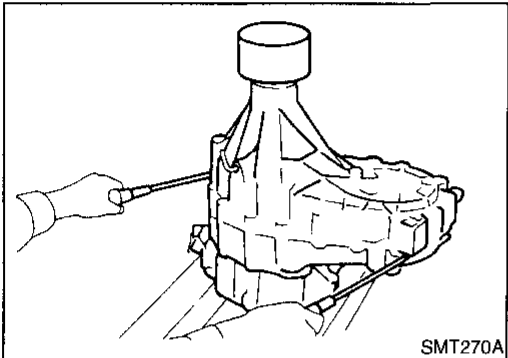
SEC. 333

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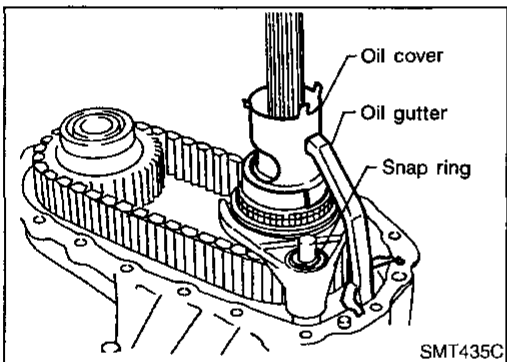
DISASSEMBLY



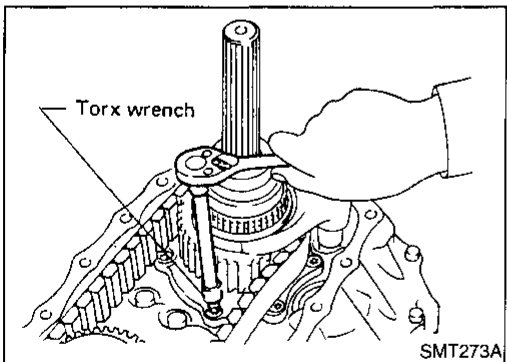
1. Remove nut of companion flange.
2. Remove companion flange.



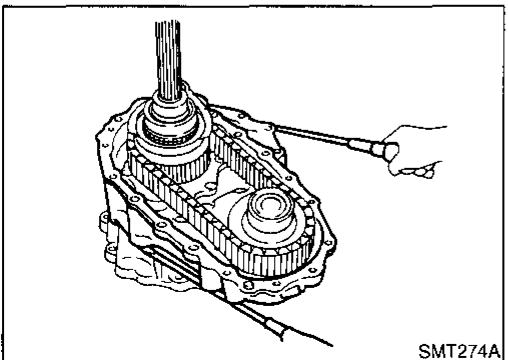
3. Remove 4WD switch.
4. Remove rear case.
 - Be careful not to damage the mating surface.



5. Remove oil cover and oil gutter.
6. Remove snap ring and retainer ring from 2-4 shift rod.

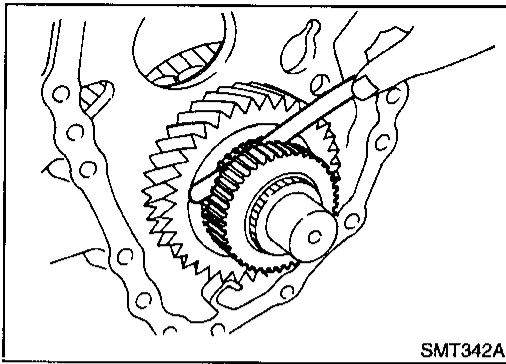


7. Remove bolts securing bearing retainer.
 - This step is necessary to remove mainshaft from center case.



8. Remove bolts securing center case to front case and then separate center case and front case.

DISASSEMBLY



9. Measure end play of low gear.

Standard:

0.2 - 0.35 mm (0.0079 - 0.0138 in)

- If end play is beyond the maximum value, check low gear and L & H hub for wear.

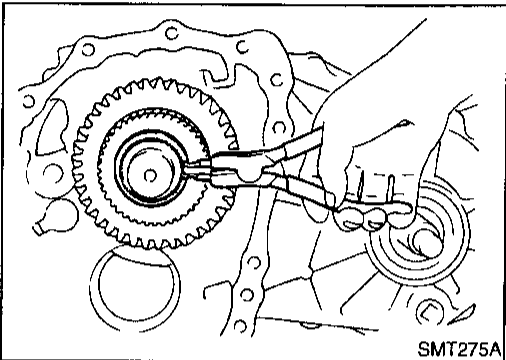
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LC

EC



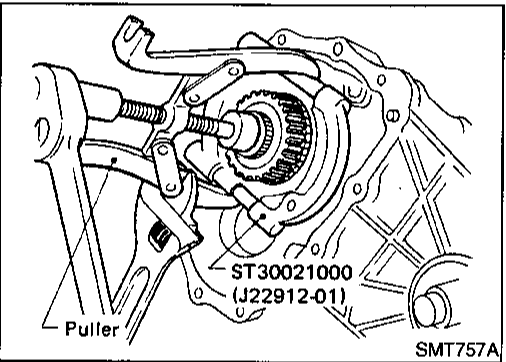
10. Disassemble center case assembly.

a. Remove snap ring from mainshaft.

FE

CL

MT



b. Pull out low gear with L & H hub.

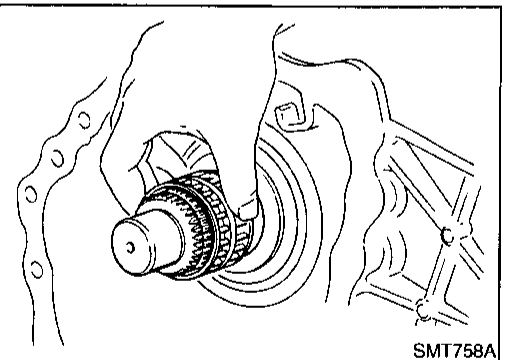
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AX

SU



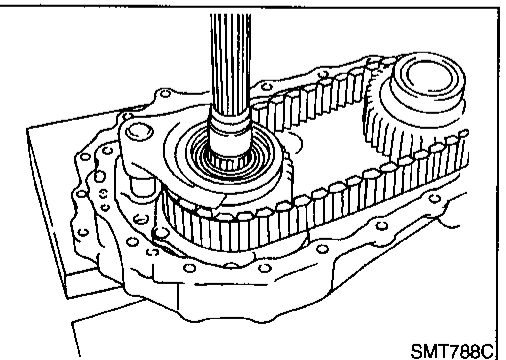
c. Remove needle bearing of low gear.

BR

ST

RS

BT



d. Make sure of the direction of the drive chain before removing it. (It must be reinstalled in the same direction.)

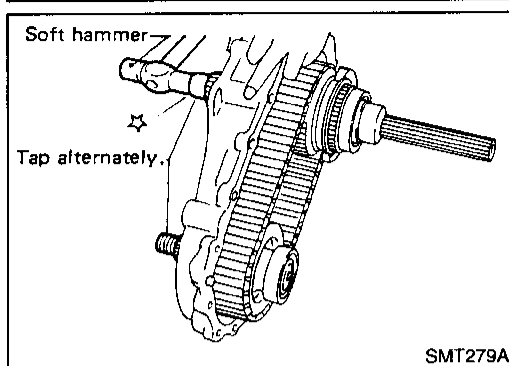
HA

SC

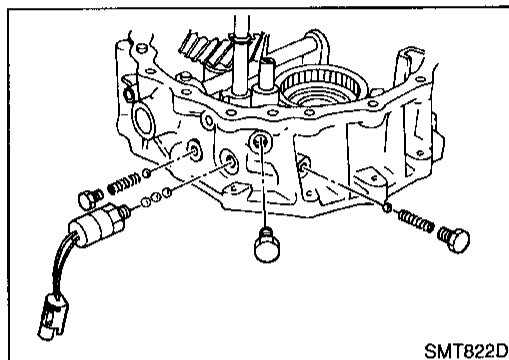
EL

IDX

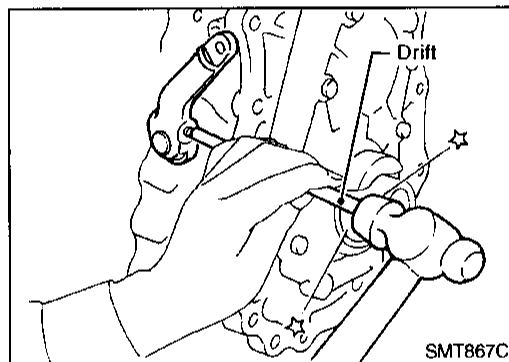
DISASSEMBLY



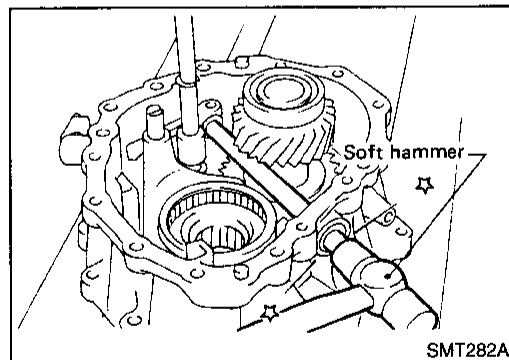
- e. Remove mainshaft, front drive and drive chain as a set by tapping front end of mainshaft and front drive shaft alternately.
- **Be careful not to bend drive chain.**



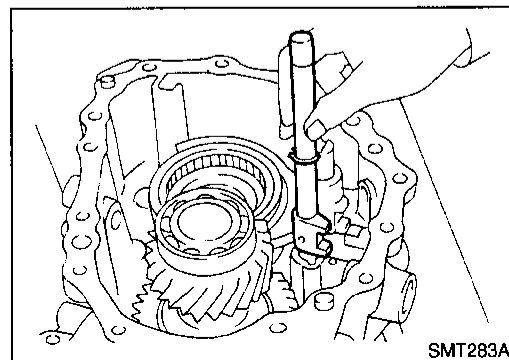
- 11. Disassemble front case assembly.
- a. Remove neutral position switch, plugs, check springs and check balls.



- b. Remove outer shift lever.

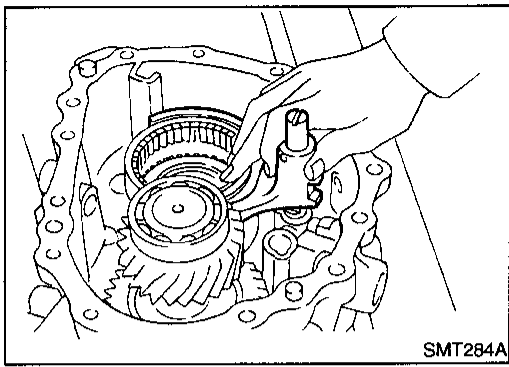


- c. Remove lock pin of inner shift lever and drive out cross shaft with plug.



- d. Remove 2-4 shift rod.

DISASSEMBLY



e. Remove L & H shift rod and fork assembly with coupling sleeve.

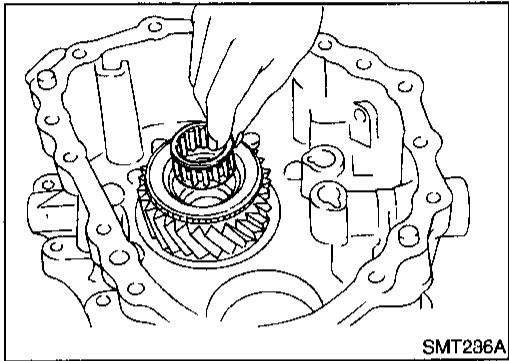
GI

MA

EM

LC

EC



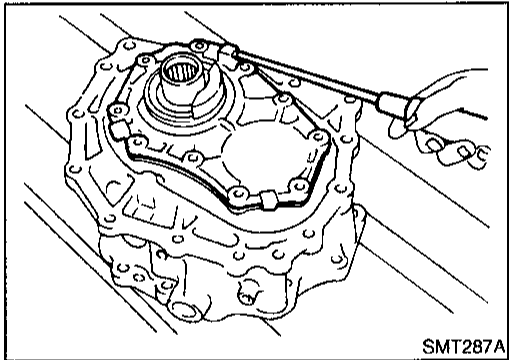
f. Remove needle bearing from main gear.

FE

CL

MT

AT



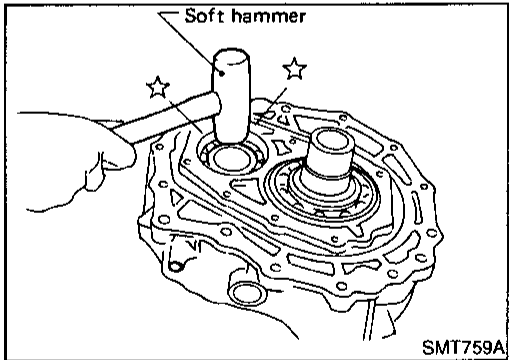
g. Remove bolts securing front case cover and then remove case.

TF

PD

AX

SU



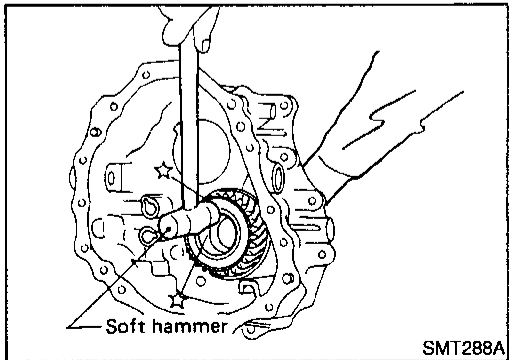
h. Remove counter gear by tapping lightly.

BR

ST

RS

BT



i. Remove main gear by tapping lightly.

HA

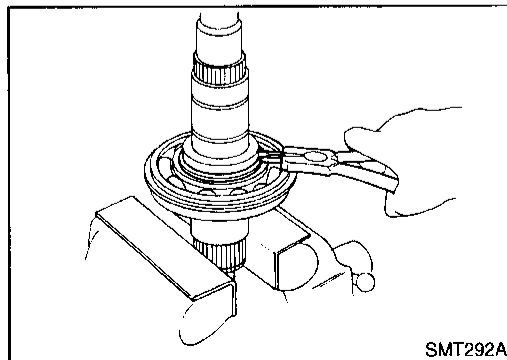
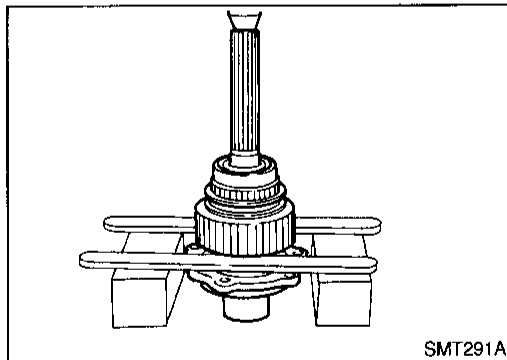
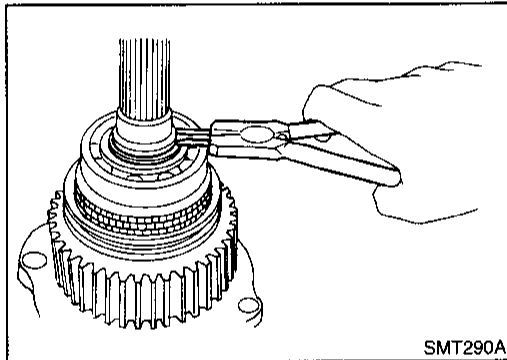
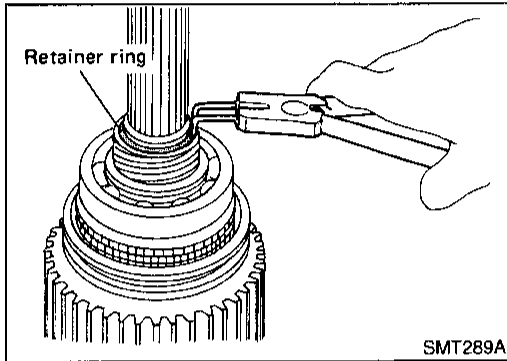
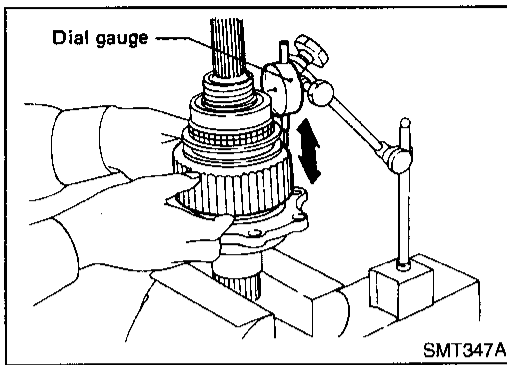
SC

EL

IDX

REPAIR FOR COMPONENT PARTS

Mainshaft

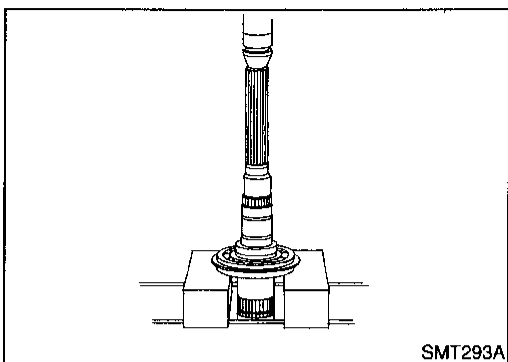


Mainshaft

DISASSEMBLY

NATF0013

1. Check end play of front drive sprocket.
Standard:
0.2 - 0.35 mm (0.0079 - 0.0138 in)
 - If end play is beyond the maximum value, check front drive sprocket and clutch gear for wear.
2. Remove retainer ring, speedometer drive gear and steel ball.
 - Be careful not to lose the steel ball.
3. Remove snap ring and spacer.
4. Press out front drive sprocket with mainshaft rear bearing and clutch gear together.
5. Remove needle bearing.
6. Remove bearing retainer and then remove snap ring.



7. Press out mainshaft front bearing from mainshaft.

GI

MA

EM

LC

EC

NATF0014

NATF0014S01

FE

CL

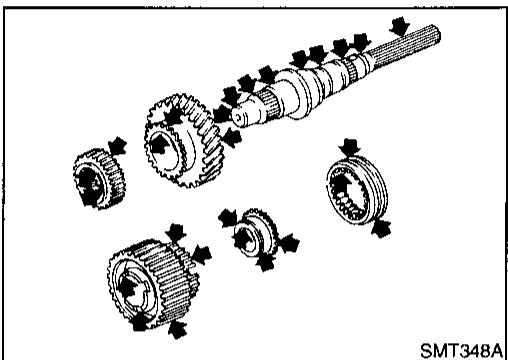
MT

AT

INSPECTION

Gear and Shaft

- Check gears for excessive wear, chips or cracks.
- Check shaft for cracks, wear or bending.
- Check coupling sleeve for wear or damage.



SMT348A

Bearing

- Make sure bearings roll freely and are free from noise, crack, pitting or wear.

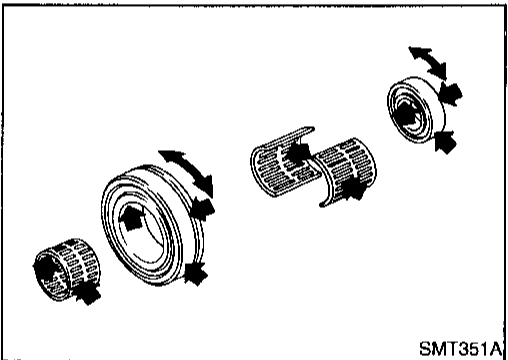
NATF0014S02

TF

PD

AX

SU



SMT351A

ASSEMBLY

1. Press mainshaft front bearing onto mainshaft.
 - Pay special attention to its direction.

NATF0015

BR

ST

RS

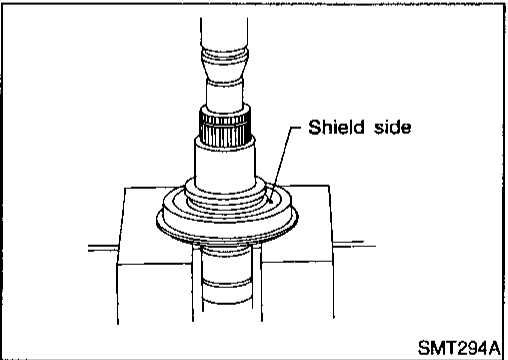
BT

HA

SC

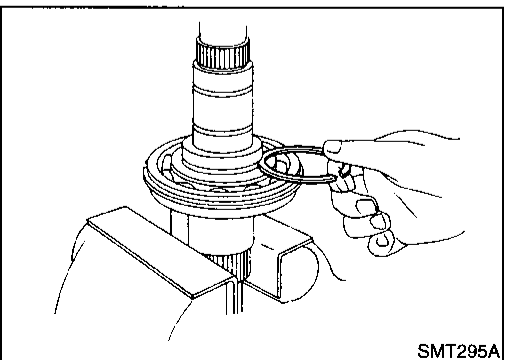
EL

IDX



SMT294A

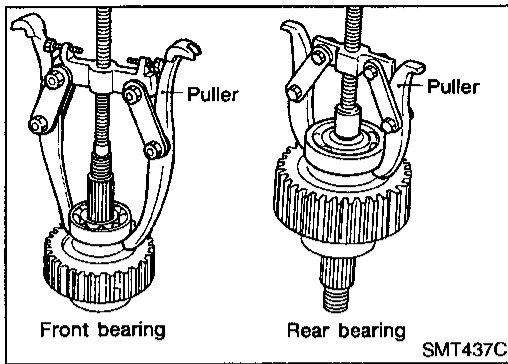
2. Select snap ring with proper thickness and install it.
 - Allowable clearance between snap ring and groove:
0 - 0.15 mm (0 - 0.0059 in)
 - Available snap ring for mainshaft front bearing:
Refer to SDS, TF-33.
3. Regarding to further procedures, refer to "ASSEMBLY", TF-26.



SMT295A

REPAIR FOR COMPONENT PARTS

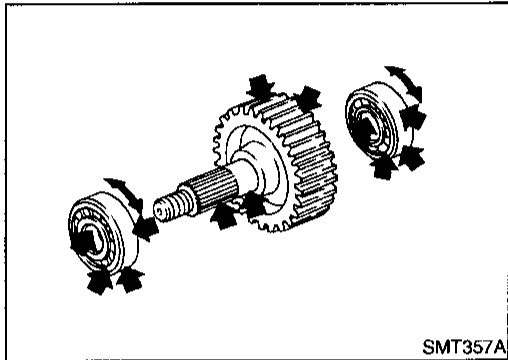
Front Drive Shaft



Front Drive Shaft DISASSEMBLY

- Front drive shaft front bearing and rear bearing

NATF0016



INSPECTION Sprocket and Shaft

- Check sprocket for excessive wear, chips or cracks.
- Check shaft for cracks or wear.

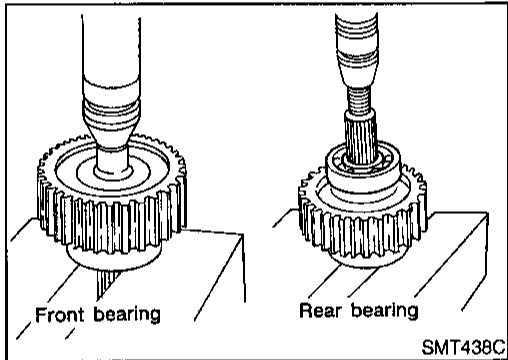
NATF0017

NATF0017S01

Bearing

- Make sure bearings roll freely and are free from noise, crack, pitting or wear.

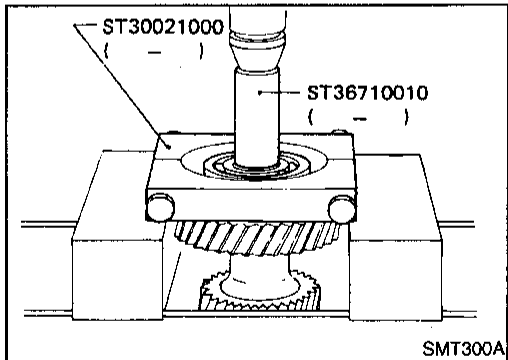
NATF0017S02



ASSEMBLY

- Press front drive shaft front bearing and rear bearing.

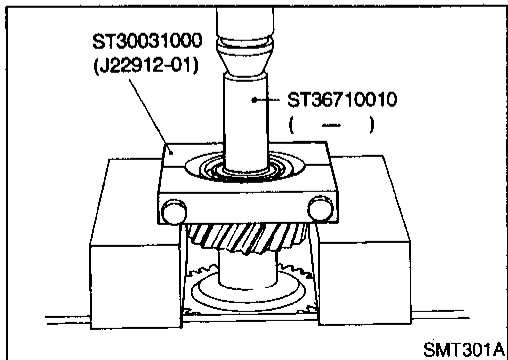
NATF0018



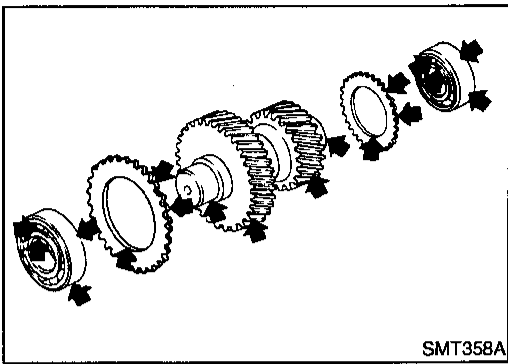
Counter Gear DISASSEMBLY

1. Press out counter gear front bearing.
- Remove front sub-gear, spacer and dish plate (M/T model only).

NATF0019



2. Press out counter gear rear bearing.
- Remove rear sub-gear, spacer and dish plate (M/T model only).



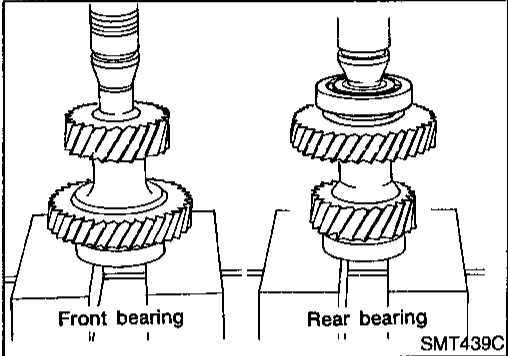
INSPECTION

Gear and Shaft

- Check gears for excessive wear, chips or cracks.
- Check shaft for cracks or wear.

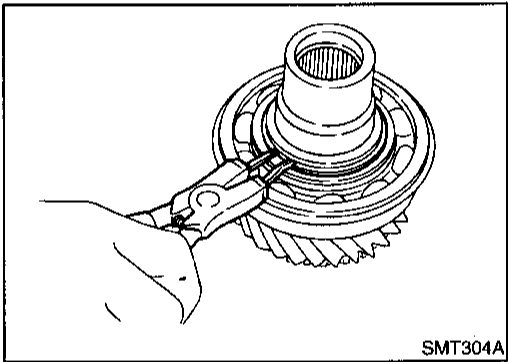
Bearing

- Make sure bearings roll freely and are free from noise, crack, pitting or wear.



ASSEMBLY

1. Install front sub-gear, dish plate and spacer (M/T model only).
 - Press on counter gear front bearing.
2. Install rear sub-gear, dish plate and spacer.
 - Press on counter gear rear bearing (M/T model only).

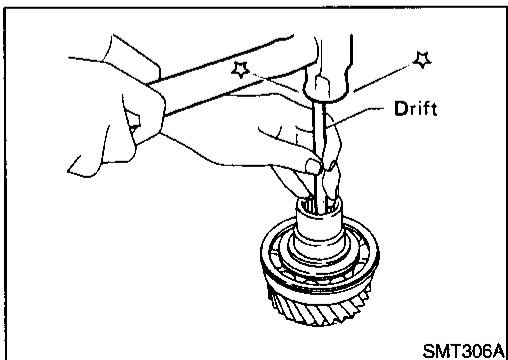
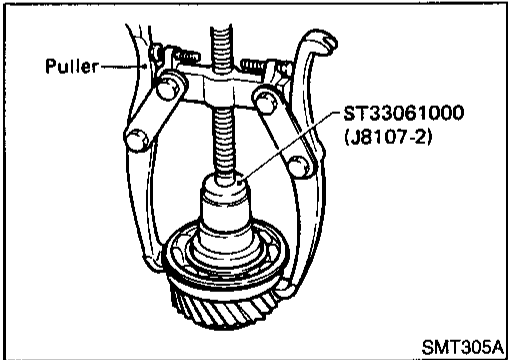


Main Gear

DISASSEMBLY

Main Gear Bearing

1. Remove snap ring.
2. Pull out main gear bearing.



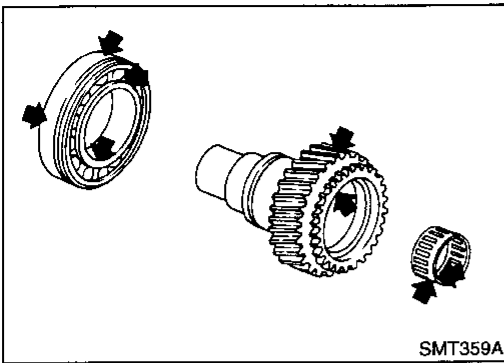
Plug

- Always replace it with new one whenever it is removed.

NATF0020 GI
 NATF0020S01 MA
 NATF0020S02 EM
 LC
 EC
 NATF0021 FE
 CL
 MT
 AT
 NATF0022 TF
 NATF0022S01 PD
 AX
 SU
 BR
 ST
 RS
 BT
 NATF0022S02 HA
 SC
 EL
 IDX

REPAIR FOR COMPONENT PARTS

Main Gear (Cont'd)



INSPECTION

Gear and Shaft

- Check gears for excessive wear, chips or cracks.
- Check shaft for cracks or wear.

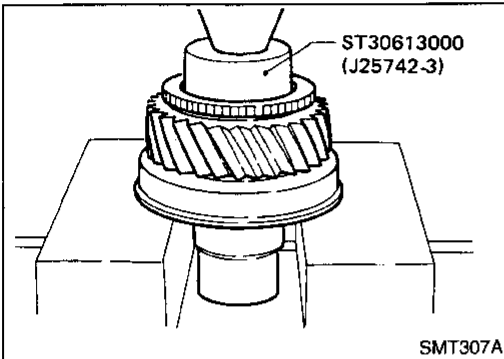
Bearing

- Make sure bearings roll freely and are free from noise, crack, pitting or wear.

NATF0023

NATF0023S01

NATF0023S02



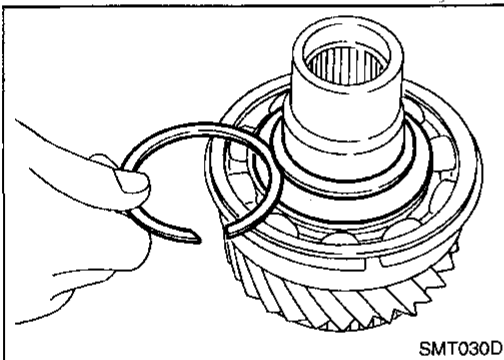
ASSEMBLY

Main Gear Bearing

1. Press on main gear bearing.

NATF0024

NATF0024S01



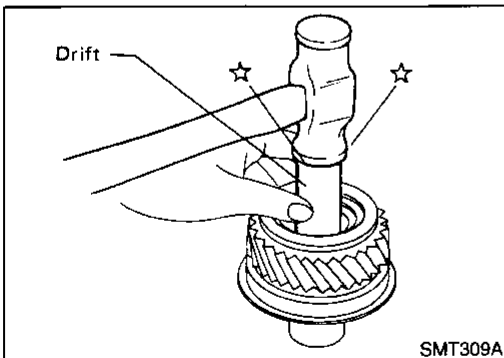
2. Select snap ring with proper thickness and install it.

Allowable clearance between snap ring and groove:

0 - 0.15 mm (0 - 0.0059 in)

Available snap ring for main gear bearing:

Refer to SDS, TF-33.



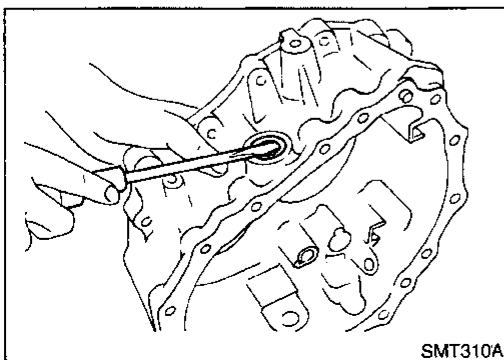
Plug

- Apply sealant to plug and install it.

Sealant:

Refer to Gear Components, TF-12.

NATF0024S02



Front Case

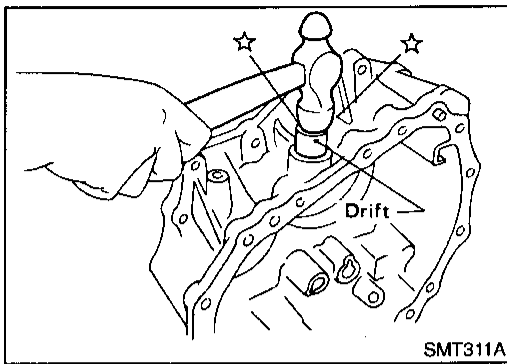
REMOVAL

Shift Shaft Oil Seal

- Use a screwdriver to pry out old seal.
- Be careful not to damage case.
- Always replace with a new one whenever it has been removed.

NATF0025

NATF0025S01



SMT311A

INSTALLATION

Shift Shaft Oil Seal

- Install new shift shaft oil seal until flush with case.
- Before installing, apply multi-purpose grease to seal lip.

NATF0026

NATF0026S01

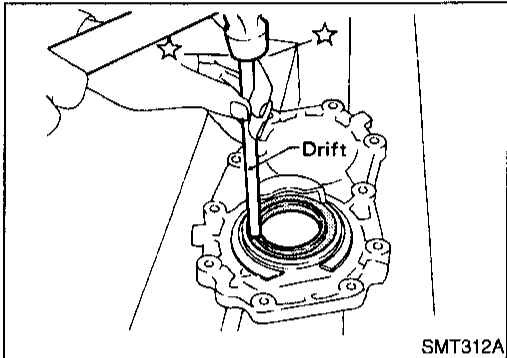
GI

MA

EM

LC

EC



SMT312A

Front Case Cover

REMOVAL

Cover Oil Seal

- Drive out old seal from inside of front case cover.
- Be careful not to damage front case cover.

NATF0027

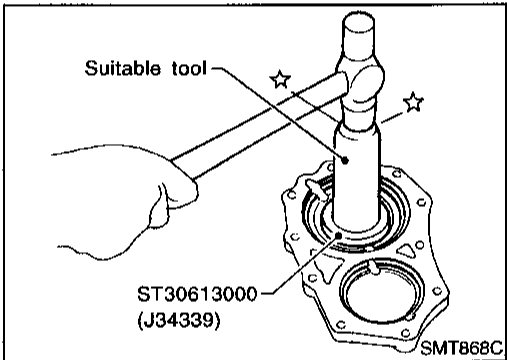
NATF0027S01

FE

CL

MT

AT



SMT868C

INSTALLATION

Cover Oil Seal

- Install new front case cover oil seal until it stops.
- Before installing, apply multi-purpose grease to seal lip.

NATF0028

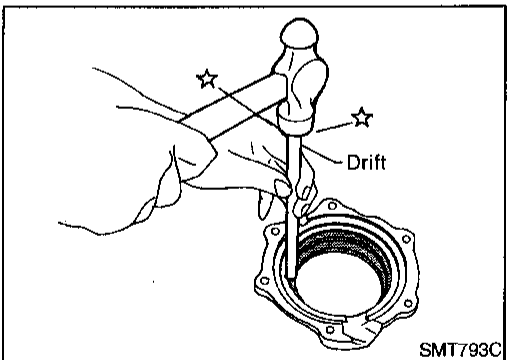
NATF0028S01

TF

PD

AX

SU



SMT793C

Bearing Retainer

REMOVAL

Oil Catcher

- Drive out oil catcher from inside of bearing retainer.
- Be careful not to damage bearing retainer.

NATF0029

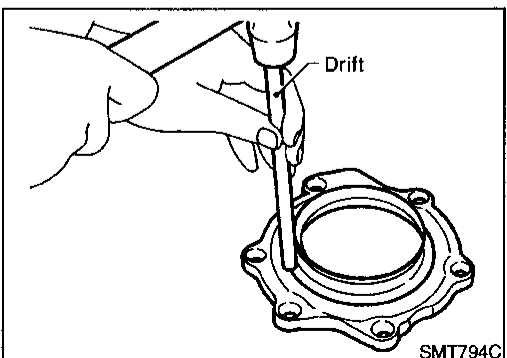
NATF0029S01

BR

ST

RS

BT



SMT794C

INSTALLATION

Oil Catcher

- Install oil catcher until it stops.
- Be careful not to damage or distort oil catcher or bearing retainer.
- Before installing, apply multi-purpose grease to seal lip.

NATF0030

NATF0030S01

HA

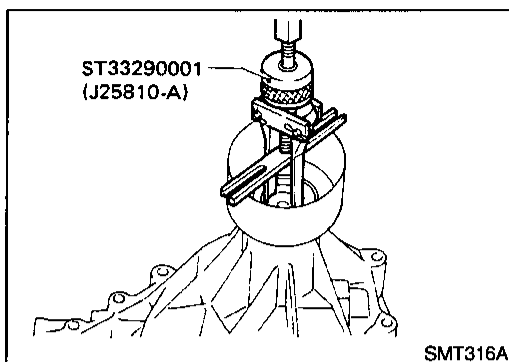
SC

EL

IDX

REPAIR FOR COMPONENT PARTS

Rear Case

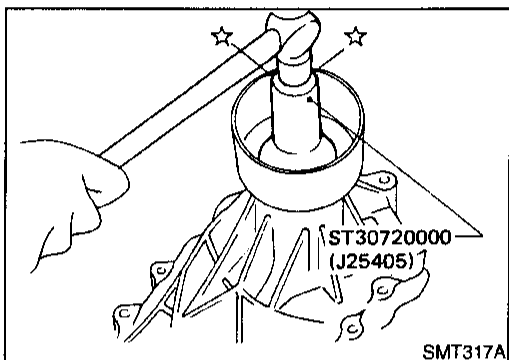


Rear Case REMOVAL Rear Oil Seal

- Pull out rear oil seal.

NATF0031

NATF0031501

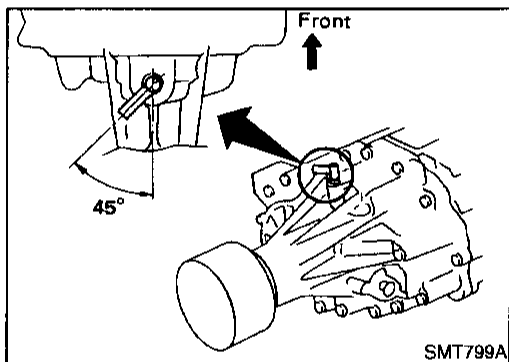


INSTALLATION Rear Oil Seal

- Install new rear oil seal until it stops.
- Before installing, apply multi-purpose grease to seal lip.

NATF0032

NATF0032501



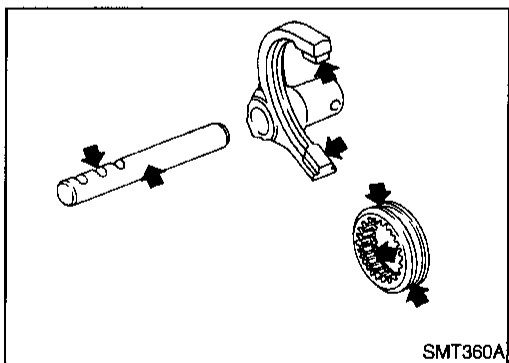
Air Breather

- Install as shown in illustration.

Locking sealant:

Refer to Case Components, TF-11.

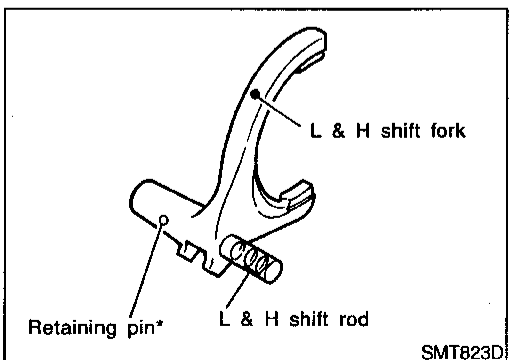
NATF0032502



Shift Control Components INSPECTION

- Check contact surface and sliding surface for wear, scratches, projections or other faulty conditions.

NATF0033



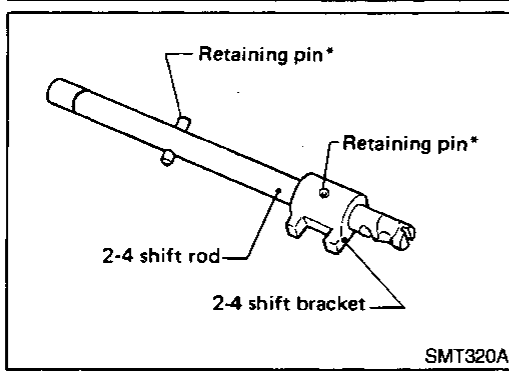
L & H Shift Rod & Fork

- Assemble as shown in illustration.
- * Retaining pin is the same size as the one for 2-4 shift rod.

NATF0033501

REPAIR FOR COMPONENT PARTS

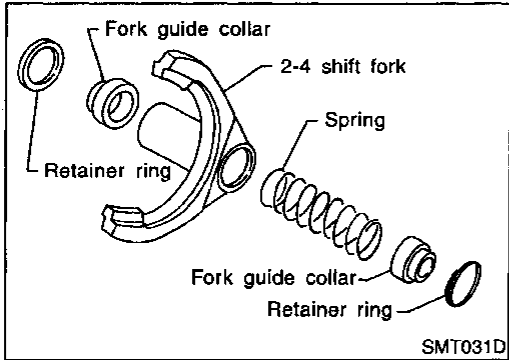
Shift Control Components (Cont'd)



2-4 Shift Rod & Fork

NATF0033902

- Assemble as shown in illustration.
- * Retaining pins are the same size.



- Pay special attention to the direction of fork guide collar.

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

AX

SU

BR

ST

RS

BT

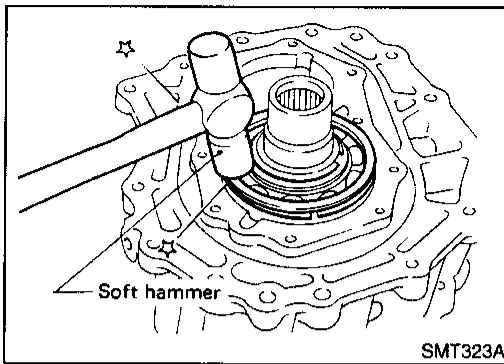
HA

SC

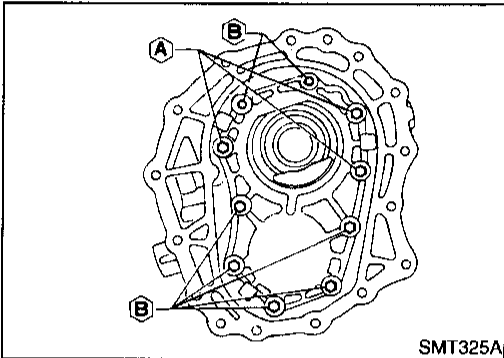
EL

IDX

ASSEMBLY



1. Assemble front case.
 - a. Install main gear assembly by tapping lightly.



- b. Apply sealant to the mating surface and bolts of front case cover and install it on front case.

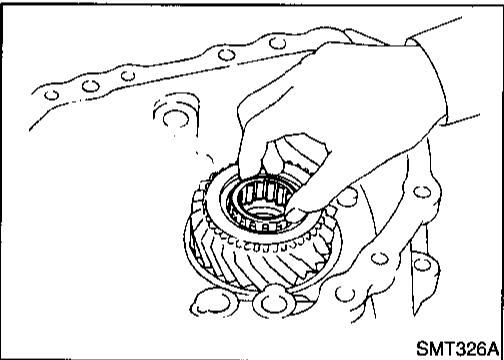
- These ten bolts should be coated with sealant.
- Tightening torque

A: 16 - 21 N·m (1.6 - 2.1 kg·m, 12 - 15 ft·lb)

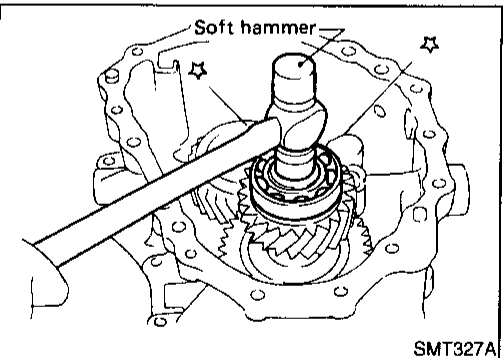
B: 19 - 24 N·m (1.9 - 2.4 kg·m, 14 - 17 ft·lb)

Sealant:

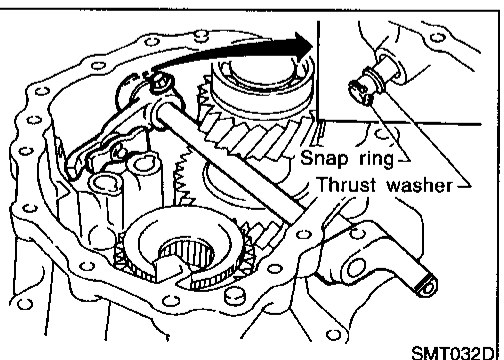
Refer to Case Components, TF-11.



- c. Apply gear oil to needle bearing and install it into main gear.

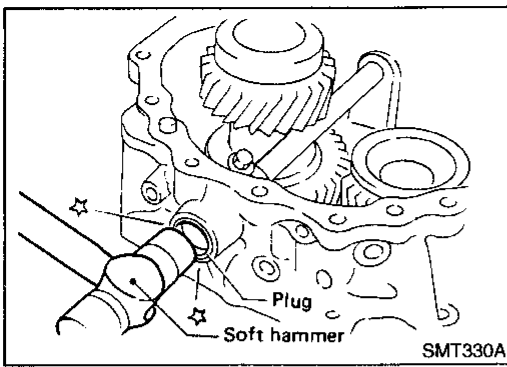


- d. Install counter gear assembly by tapping lightly.



- e. Install cross shaft and inner shift lever.
 - When replacing cross shaft, outer shift lever or lock pin of outer shift lever, replace them as a set.

ASSEMBLY



f. Apply sealant to plug and install it into front case.

Sealant:

Refer to Case Components, TF-11.

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

AX

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BR

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RS

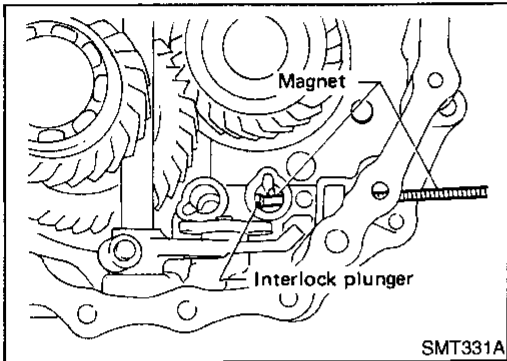
BT

HA

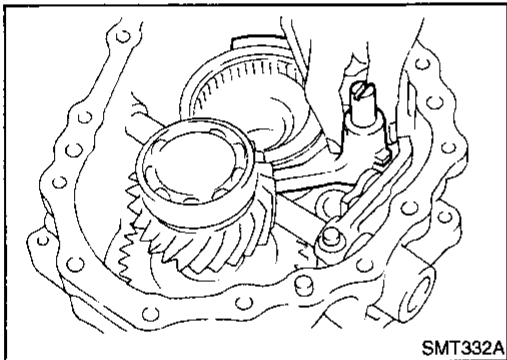
SC

EL

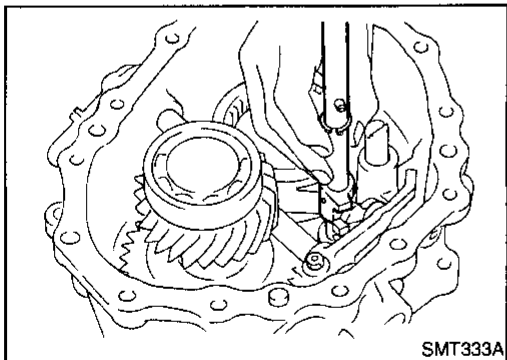
IDX



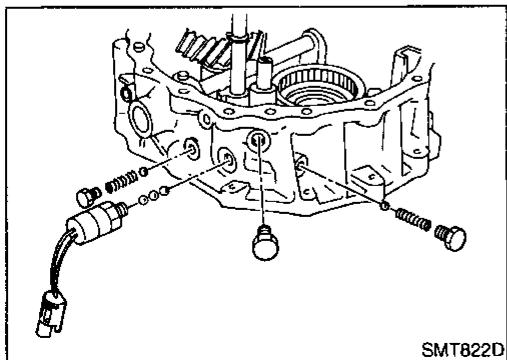
g. Insert interlock plunger into front case.



h. Install L & H shift rod and fork assembly with coupling sleeve.



i. Install 2-4 shift rod.



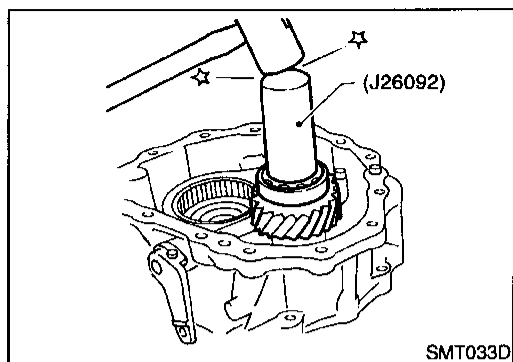
j. Install neutral position switch, check balls, check springs and plugs.

● **Apply sealant to switches and plugs.**

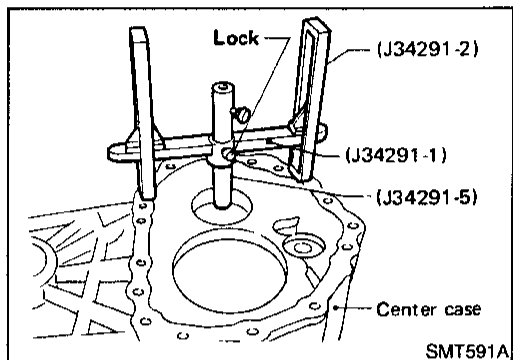
Sealant:

Refer to Case Components, TF-11.

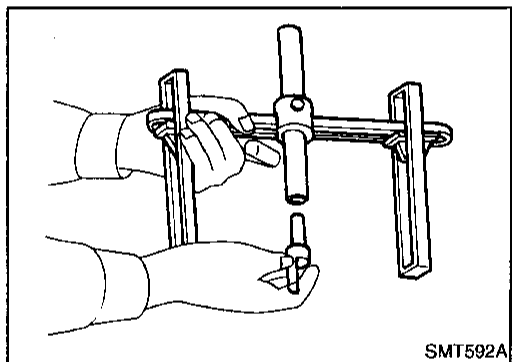
ASSEMBLY



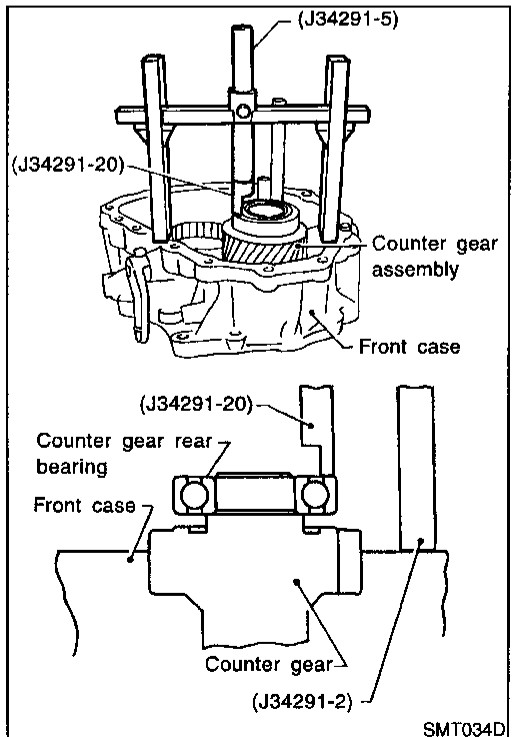
2. Select counter gear rear bearing shim.
 - a. Seat counter gear assembly.



- b. Place J34291-1 (bridge), J34291-2 (legs) and J34291-5 (gauging cylinder) on machined surface of center case and allow gauging cylinder to rest on top outer portion of counter gear rear bearing. Lock gauging cylinder in place.

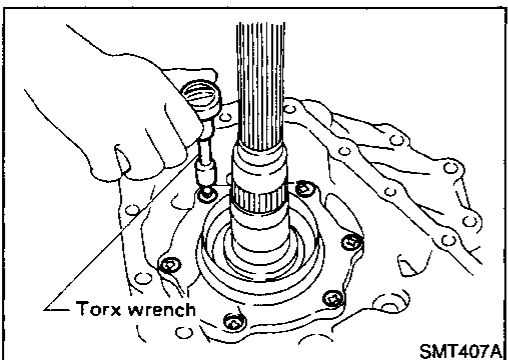
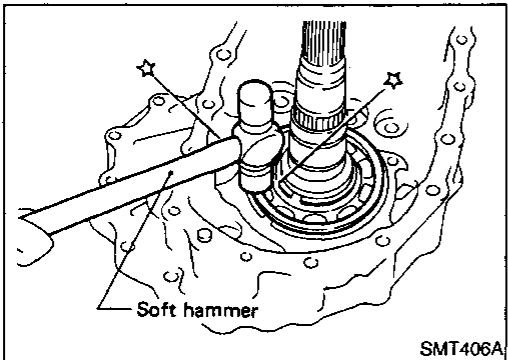
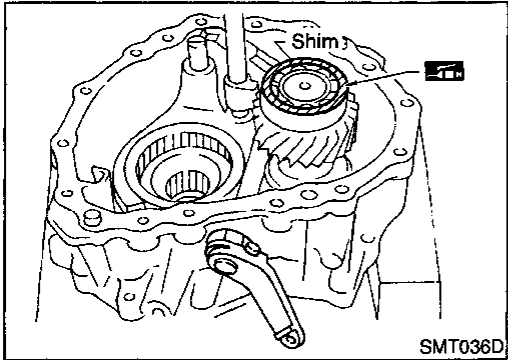
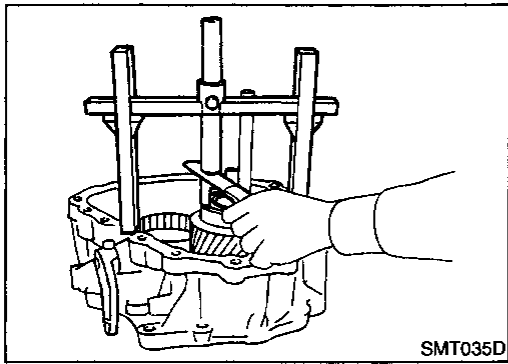


- c. Insert J34291-20 (gauging plunger) into J34291-5 (gauging cylinder).



- d. Place bridge, legs, gauging cylinder and gauging plunger onto machined surface of front case assembly, and allow gauging plunger to drop until it contacts counter gear rear bearing mating surface.

ASSEMBLY



- e. Lock gauging plunger in place and use feeler gauge to measure gap between gauging cylinder and gauging plunger.
- f. Use measured distance and following chart to select correct shim.

Counter gear end play:

0 - 0.2 mm (0 - 0.008 in)

Counter gear rear bearing shim:

Refer to SDS, TF-34.

- g. Select counter gear rear bearing shim.

- 3. Place suitable shim on counter gear rear bearing with grease.
- 4. Apply ATF to each part in front case.

- 5. Assemble center case assembly.
 - a. Install mainshaft on center case by tapping lightly.
 - **Apply ATF to mainshaft front bearing.**

- b. Install bearing retainer.

GI

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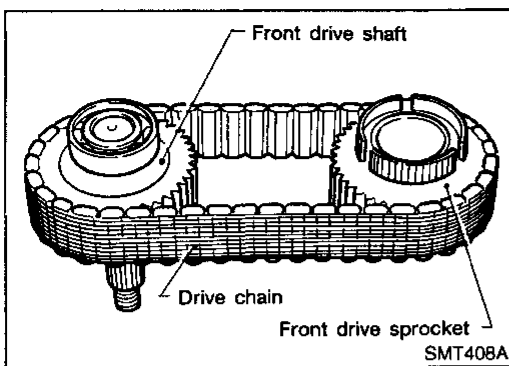
HA

SC

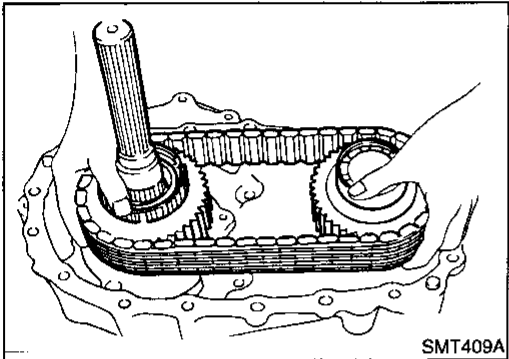
EL

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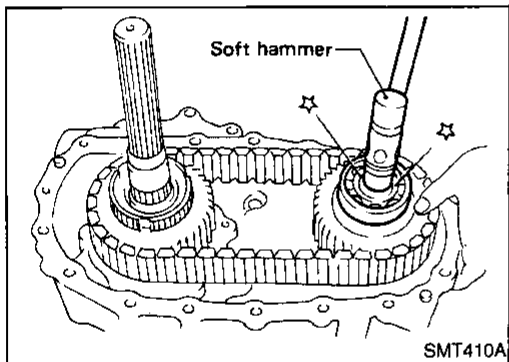
ASSEMBLY



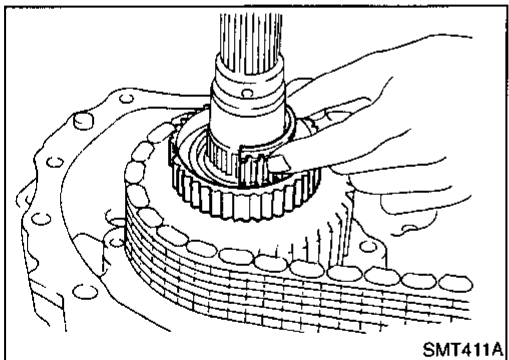
- c. Put drive chain onto the front drive sprocket and front drive shaft, and then put them in center case.



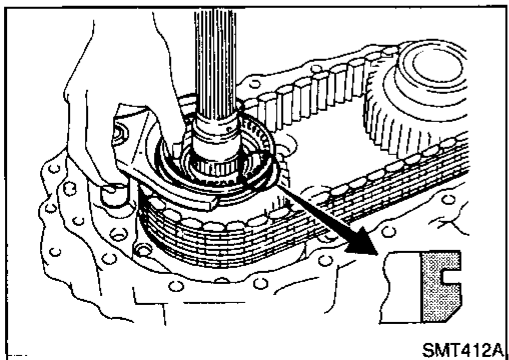
- d. Install front drive shaft by tapping lightly.
● **Make sure shafts are lined up in the case.**



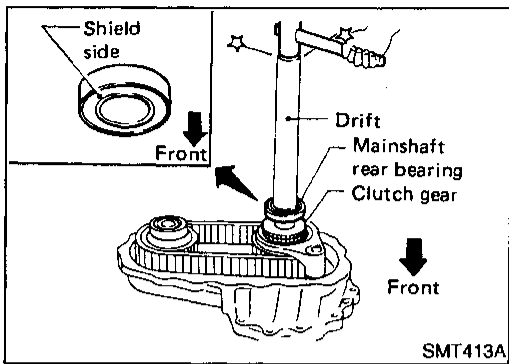
- e. Apply ATF to needle bearings and install them into front drive sprocket.
● **These needle bearings can be installed more easily if front drive sprocket is rotated while installing them.**



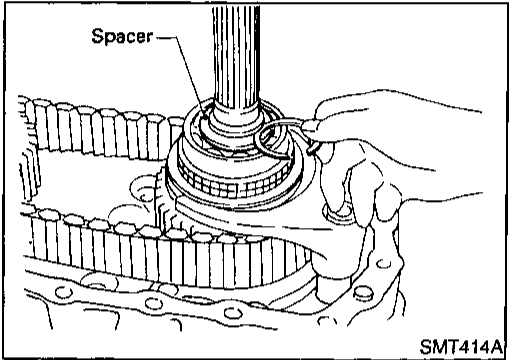
- f. Install 2-4 coupling sleeve with 2-4 shift fork.
● **Pay special attention to direction of coupling sleeve.**



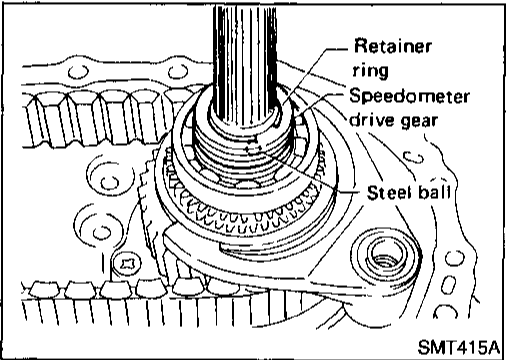
ASSEMBLY



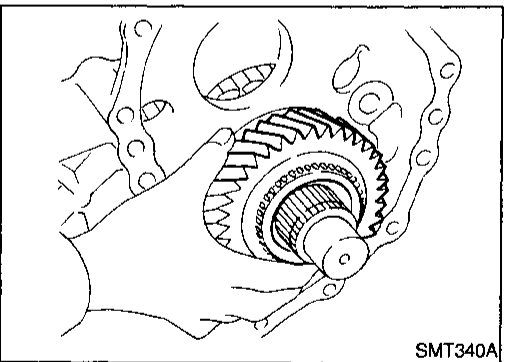
- g. Install clutch gear and mainshaft rear bearing.
- Place wooden block under mainshaft in order to protect mainshaft front bearing.



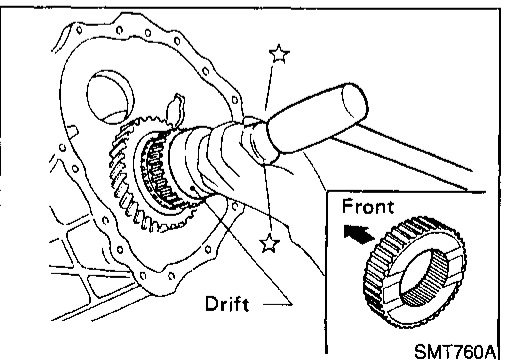
- h. Install spacer.
- i. Select snap ring with proper thickness and install it.
- Allowable clearance between snap ring and groove:
0 - 0.15 mm (0 - 0.0059 in)**
- Available snap ring for mainshaft rear bearing:
Refer to SDS, TF-33.**



- j. Install steel ball, speedometer drive gear and retainer ring.
- Steel ball is the smallest of check balls for this unit.



- k. Install low gear and its bearing to mainshaft.
- Apply ATF to needle bearing.



- l. Install L & H hub and snap ring to mainshaft.
- Pay special attention to direction of L & H hub.

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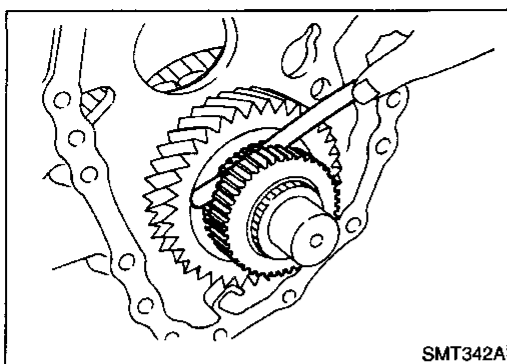
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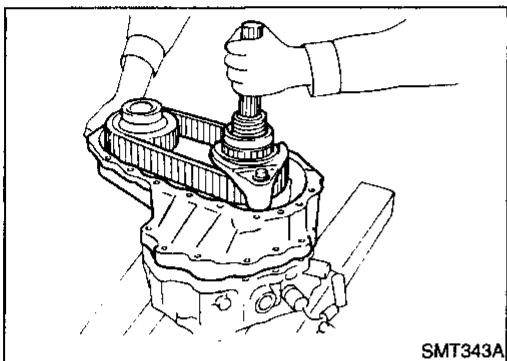
ASSEMBLY



m. Measure end play of low gear.

Standard:

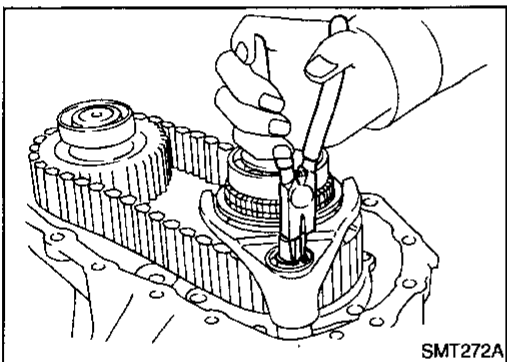
0.2 - 0.35 mm (0.0079 - 0.0138 in)



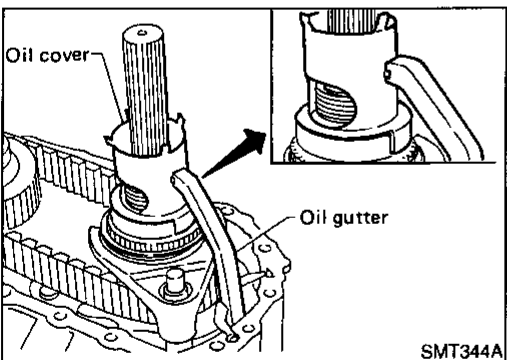
6. Apply sealant to mating surface and put center case assembly onto front case and tighten bolts.

Sealant:

Refer to Case Components, TF-11.

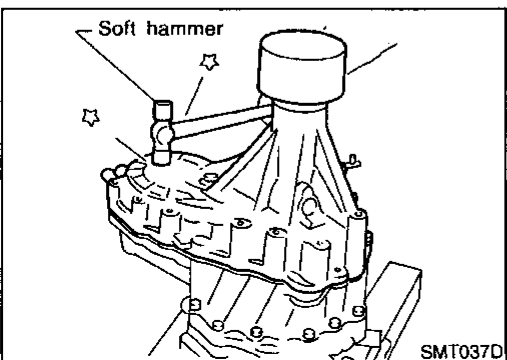


7. Install snap ring to 2-4 shift rod.



8. Install oil gutter and oil cover.

9. Apply ATF to each part in center case.



10. Apply sealant to mating surface and install rear case on center case.

11. Install 4WD switch.

● **Apply sealant to thread of switch.**

Sealant:

Refer to Case Components, TF-11.

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

General Specifications

NATF0035

Transfer model			TX10A
Gear ratio	High	1.000	
	Low	2.020	
Number of teeth	Main gear		29
	Low gear		37
	Counter gear	High	38
		Low	24
	Front drive sprocket		41
	Front drive shaft		41
Fluid capacity ℓ (US qt, Imp qt)			2.2 (2-3/8, 2)

Gear End Play

NATF0036
Unit: mm (in)

Front drive sprocket	0 - 0.54 (0 - 0.0213)
Low gear	0.2 - 0.35 (0.0079 - 0.0138)
Counter gear	0 - 0.2 (0 - 0.008)

Available Snap Ring

NATF0037

MAINSHAFT FRONT BEARING

NATF0037S01

Allowable clearance	0 - 0.15 mm (0 - 0.0059 in)	
Thickness mm (in)	Part number	
3.10 (0.1220)	33138-73P10	
3.19 (0.1256)	33138-73P11	
3.28 (0.1291)	33138-73P12	

MAINSHAFT REAR BEARING

NATF0037S02

Allowable clearance	0 - 0.15 mm (0 - 0.0059 in)	
Thickness mm (in)	Part number	
1.80 (0.0709)	33138-73P20	
1.89 (0.0744)	33138-73P21	
1.98 (0.0780)	33138-73P22	
2.07 (0.0815)	33138-73P23	
2.16 (0.0850)	33138-73P24	

MAIN GEAR BEARING

NATF0037S03

Allowable clearance	0 - 0.15 mm (0 - 0.0059 in)	
Thickness mm (in)	Part number	
2.60 (0.1024)	33114-73P00	
2.69 (0.1059)	33114-73P01	
2.78 (0.1094)	33114-73P02	

SERVICE DATA AND SPECIFICATIONS (SDS)

Available Shim

Available Shim

NATF0038

COUNTER GEAR REAR BEARING

NATF0038S01

Allowable clearance	0 - 0.2 mm (0 - 0.008 in)
Thickness mm (in)	Part number
0.1 (0.004)	33112-C6900
0.2 (0.008)	33112-C6901
0.3 (0.012)	33112-C6902
0.4 (0.016)	33112-C6903
0.5 (0.020)	33112-33G00
0.6 (0.024)	33112-33G01