

SECTION TF

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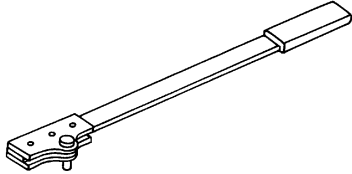
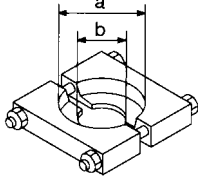
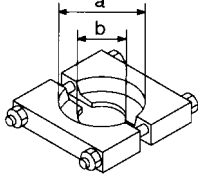
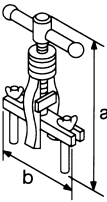
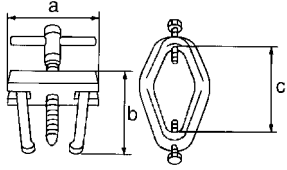
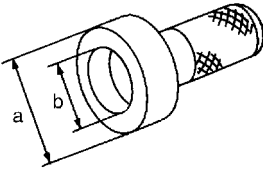
PREPARATION

Special Service Tools

Special Service Tools

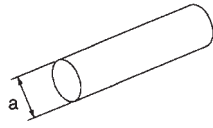
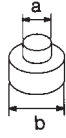
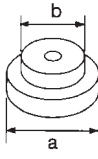
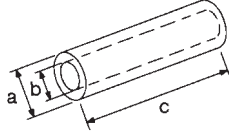
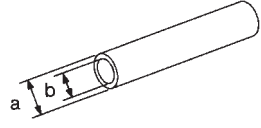
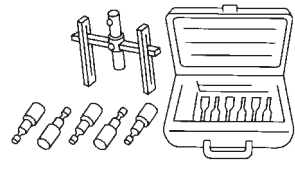
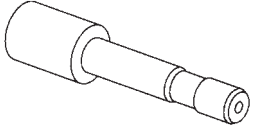
NATF0001

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 (J44195) Companion flange wrench		Removing companion flange nut Installing companion flange nut
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.
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.
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)
ST33051001 (J22888) Puller		Removing companion flange a: 135 mm (5.31 in) b: 100 mm (3.94 in) c: 130 mm (5.12 in)
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.

PREPARATION

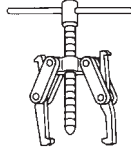
Special Service Tools (Cont'd)

Tool number (Kent-Moore No.) Tool name	Description	
ST36710010 (—) Drift	 NT063	Removing counter gear front bearing (Use with ST30021000) Removing counter gear rear bearing (Use with ST30031000) a: 34.5 mm (1.358 in) dia.
ST33061000 (J8107-2) Drift	 NT116	Removing main gear bearing a: 28.5 mm (1.122 in) dia. b: 38 mm (1.50 in) dia.
ST30613000 1 (J25742-3) 2 (J34339) Drift	 NT073	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.
(J35864) Drift	 NT117	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)
(J26092) Drift	 NT065	Seating counter gear assembly a: 44.5 mm (1.752 in) dia. b: 38.5 mm (1.516 in) dia.
(J34291) Shim setting gauge set	 NT101	Selecting counter gear rear bearing shim
(J34291-20) Plunger-shim setting gauge	 NT118	Selecting counter gear rear bearing shim

Commercial Service Tools

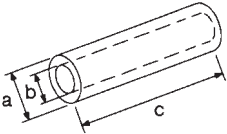
NATF0002

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

Tool name	Description	
Puller	 NT077	Removing front drive shaft front bearing Removing front drive shaft rear bearing Removing main gear bearing

PREPARATION

Commercial Service Tools (Cont'd)

Tool name	Description
Drift	<div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>1 Installing mainshaft rear bearing</p> <p>2 Installing L & H hub</p> <p>1 a: 50 mm (1.97 in) dia.</p> <p> b: 42 mm (1.65 in) dia.</p> <p> c: 180 mm (7.09 in)</p> <p>2 a: 60 mm (2.36 in) dia.</p> <p> b: 50 mm (1.97 in) dia.</p> <p> c: 60 mm (2.36 in)</p> </div> </div> <p>NT117</p>

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-25, "Checking Transfer Fluid".			TF-11	TF-11	TF-11, 13	TF-13	TF-12	TF-12
		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	

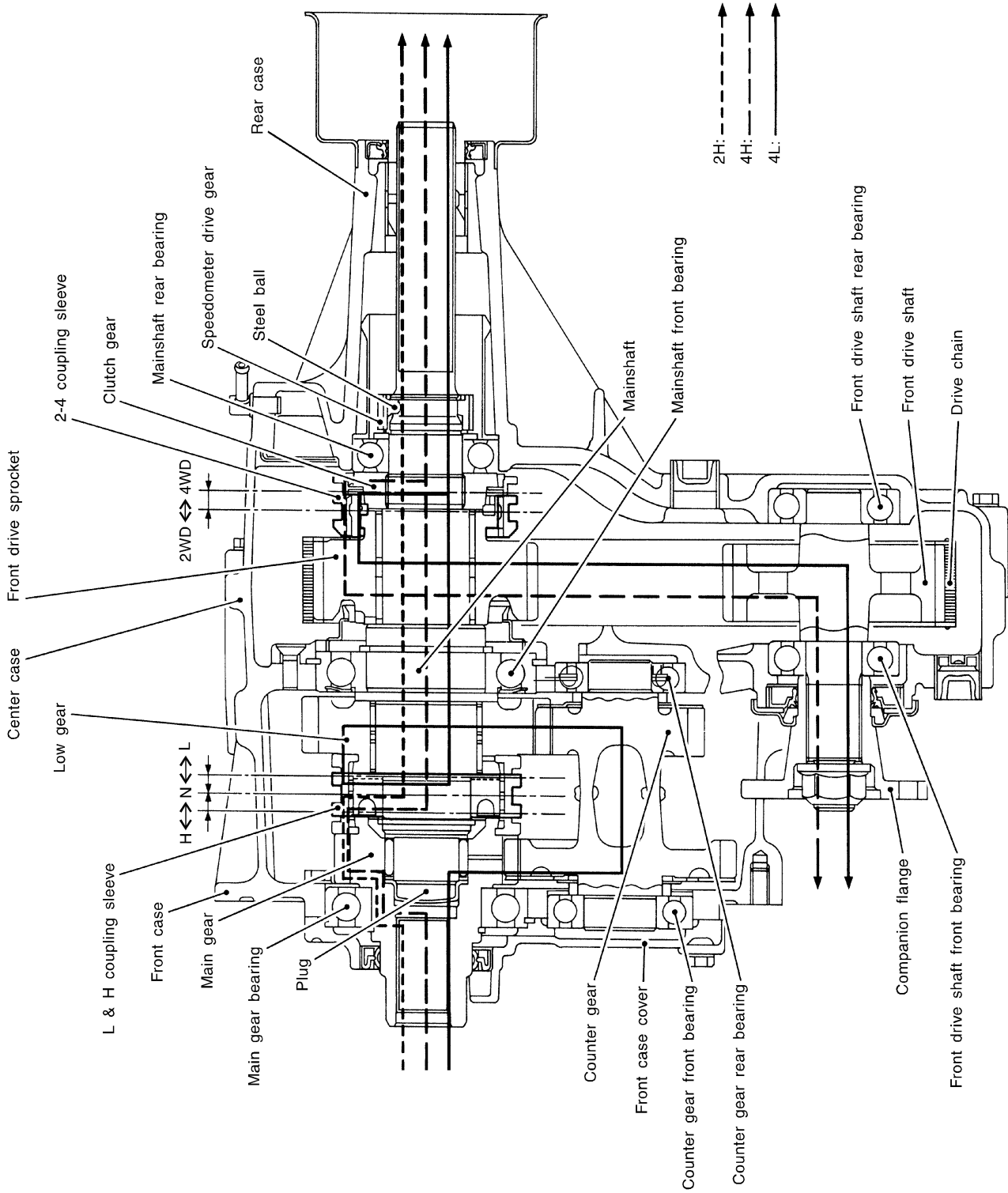
- GI
- MA
- EM
- LC
- EC
- FE
- CL
- MT
- AT
- TF**
- PD
- AX
- SU
- BR
- ST
- RS
- BT
- HA
- SC
- EL
- IDX

DESCRIPTION

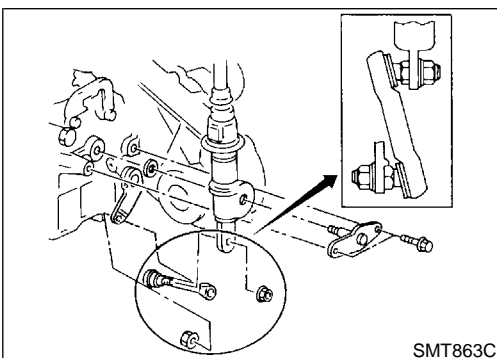
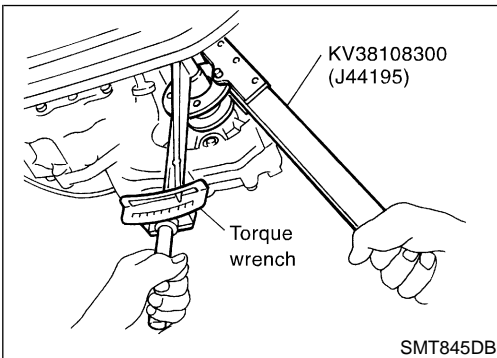
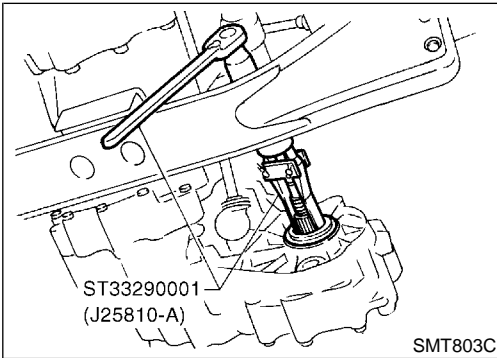
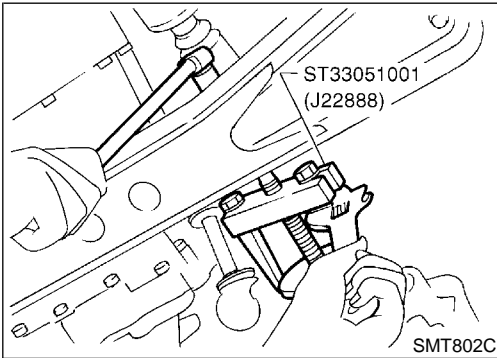
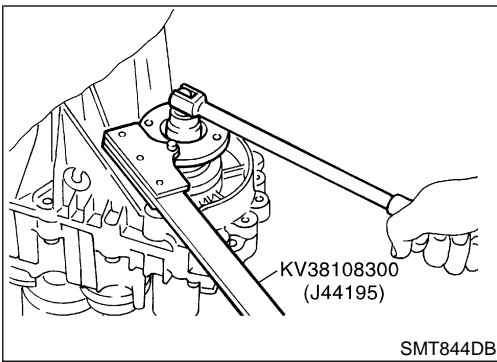
Cross-sectional View

Cross-sectional View

NATF0003



SMT820D



Replacing Oil Seal CENTER CASE OIL SEAL

NATF0004

NATF0004S01

1. Remove exhaust front tube and heat insulator. Refer to "Removal", TF-9.
2. Remove front propeller shaft. Refer to PD-8, "Removal and Installation".
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

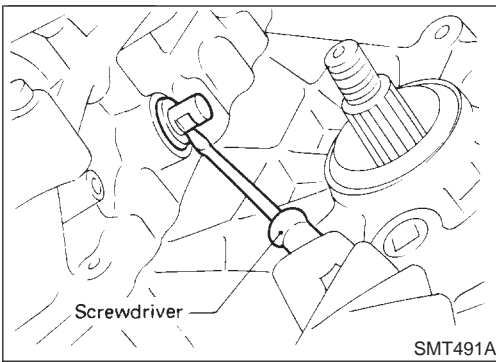
NATF0004S02

1. Remove front propeller shaft. Refer to PD-8, "Removal and Installation".
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.

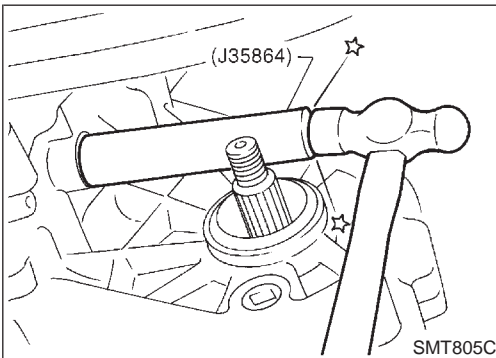
GI
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
AX
SU
BR
ST
RS
BT
HA
SC
EL
IDX

ON-VEHICLE SERVICE

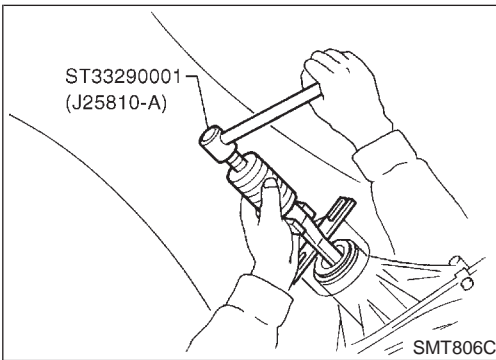
Replacing Oil Seal (Cont'd)



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



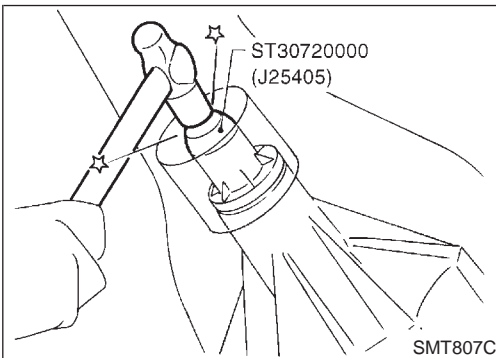
5. Install shift shaft oil seal.
 - **Before installing, apply multi-purpose grease to seal lip.**
6. Install transfer control linkage.
7. Install companion flange. Refer to center case oil seal, TF-7.
8. Install front propeller shaft.



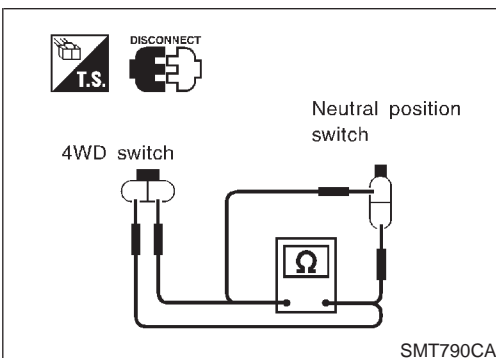
REAR OIL SEAL

NATF0004S03

1. Remove rear propeller shaft. Refer to PD-8, "Removal and Installation".
2. Remove rear oil seal.



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



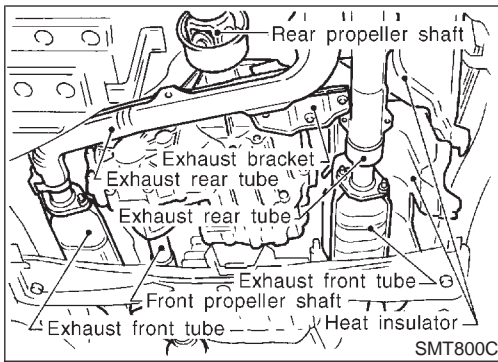
Position Switch Check

NATF0005

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

REMOVAL AND INSTALLATION

Removal



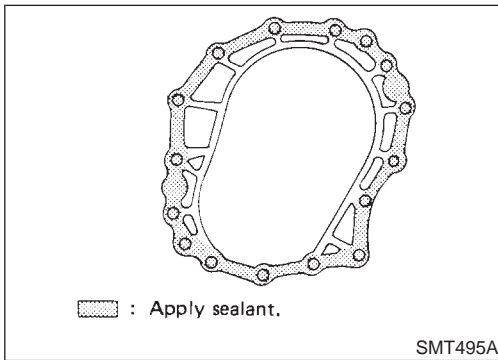
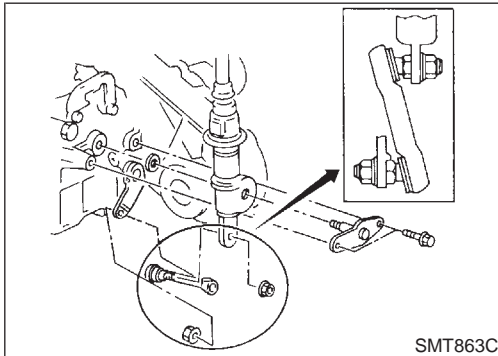
Removal

NATF0006

1. Drain fluid from transfer and oil from transmission.
2. Remove exhaust front and rear tubes. Refer to FE-8, "Removal and Installation".
3. Remove front and rear propeller shaft. Refer to PD-8, "Removal and Installation".
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.



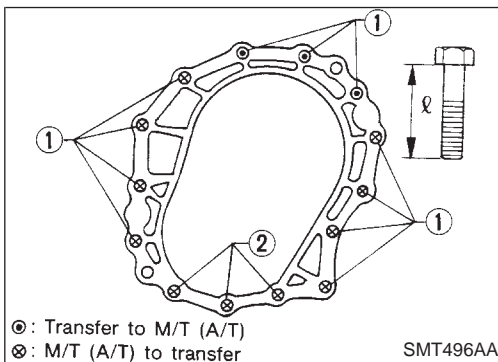
Installation

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
MA
EM
LC
EC
FE
CL
MT
AT
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IDX

Transfer Gear Control

NATF0008

SEC. 333

: N·m (kg-m, in-lb)

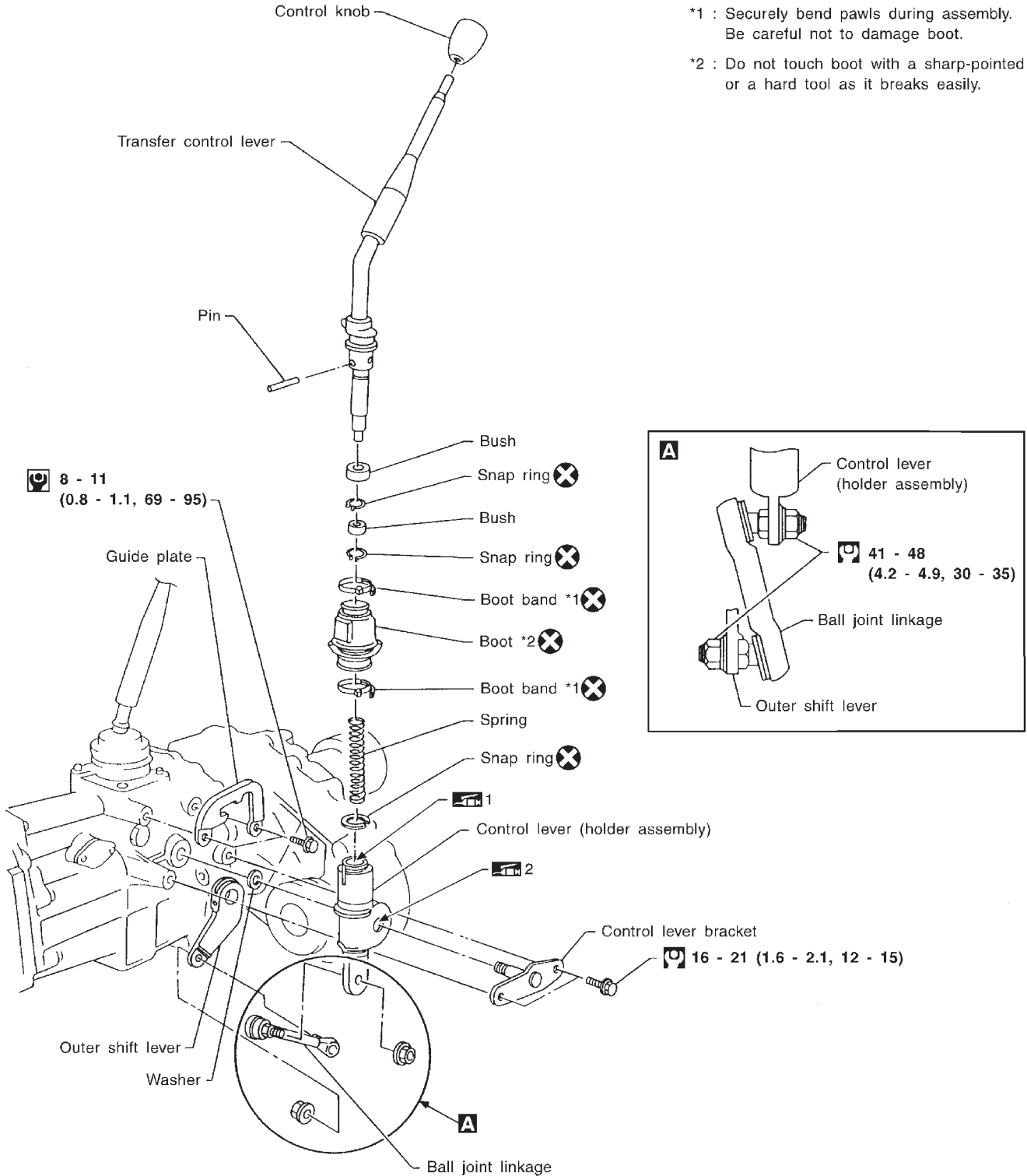
: N·m (kg-m, ft-lb)

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.

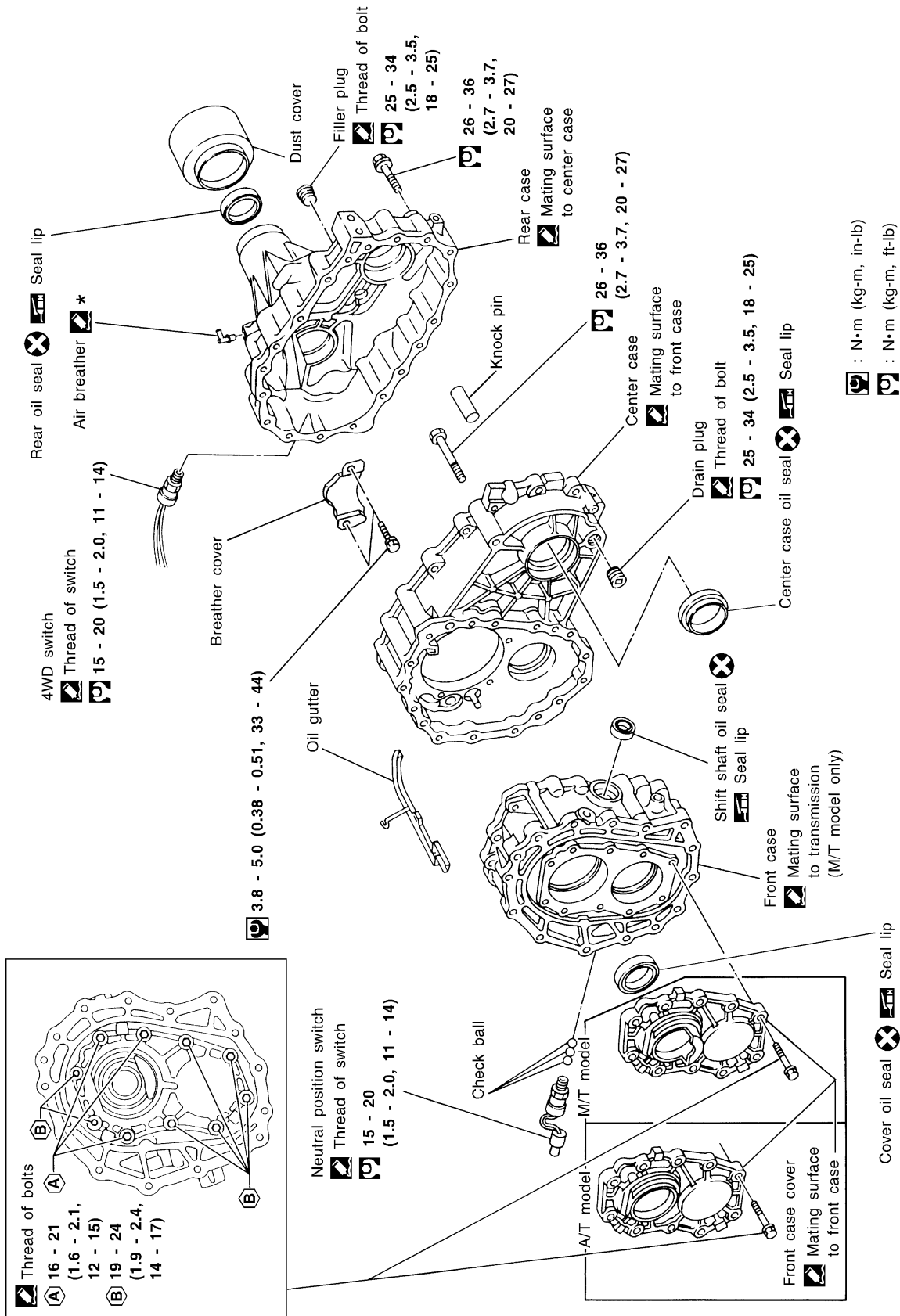


Case Components

NATF0009

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

SEC. 331



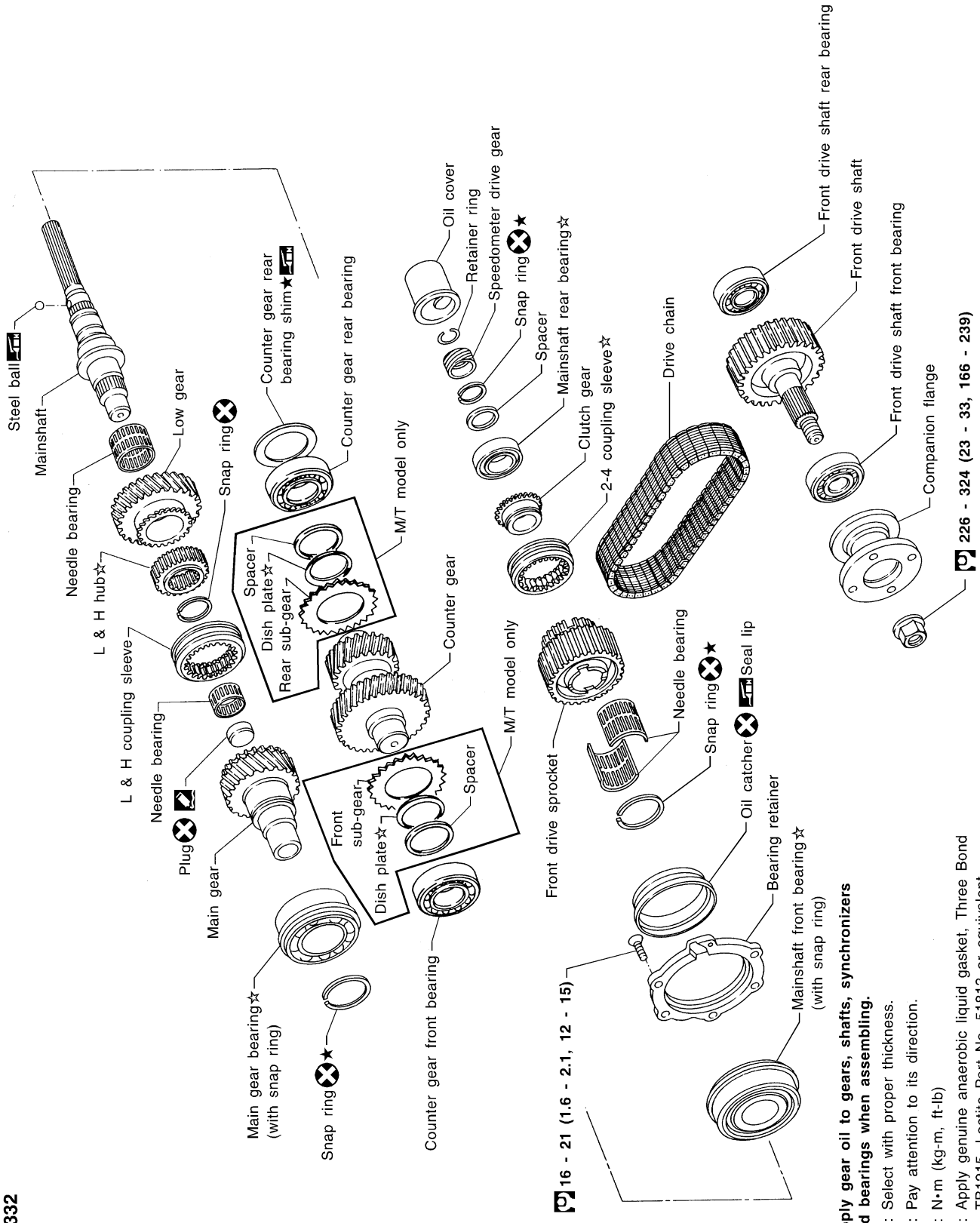
: N•m (kg-m, in-lb)
 : N•m (kg-m, ft-lb)

* : Apply genuine Three Bond TB1324, Loctite 271 or equivalent (locking sealant).
 : Apply genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.

Gear Components

NATF0010

SEC. 332



16 - 21 (1.6 - 2.1, 12 - 15)

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.

Ⓟ 226 - 324 (23 - 33, 166 - 239)

Shift Control Components

GI
NATF0011

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

AX

SU

BR

ST

RS

BT

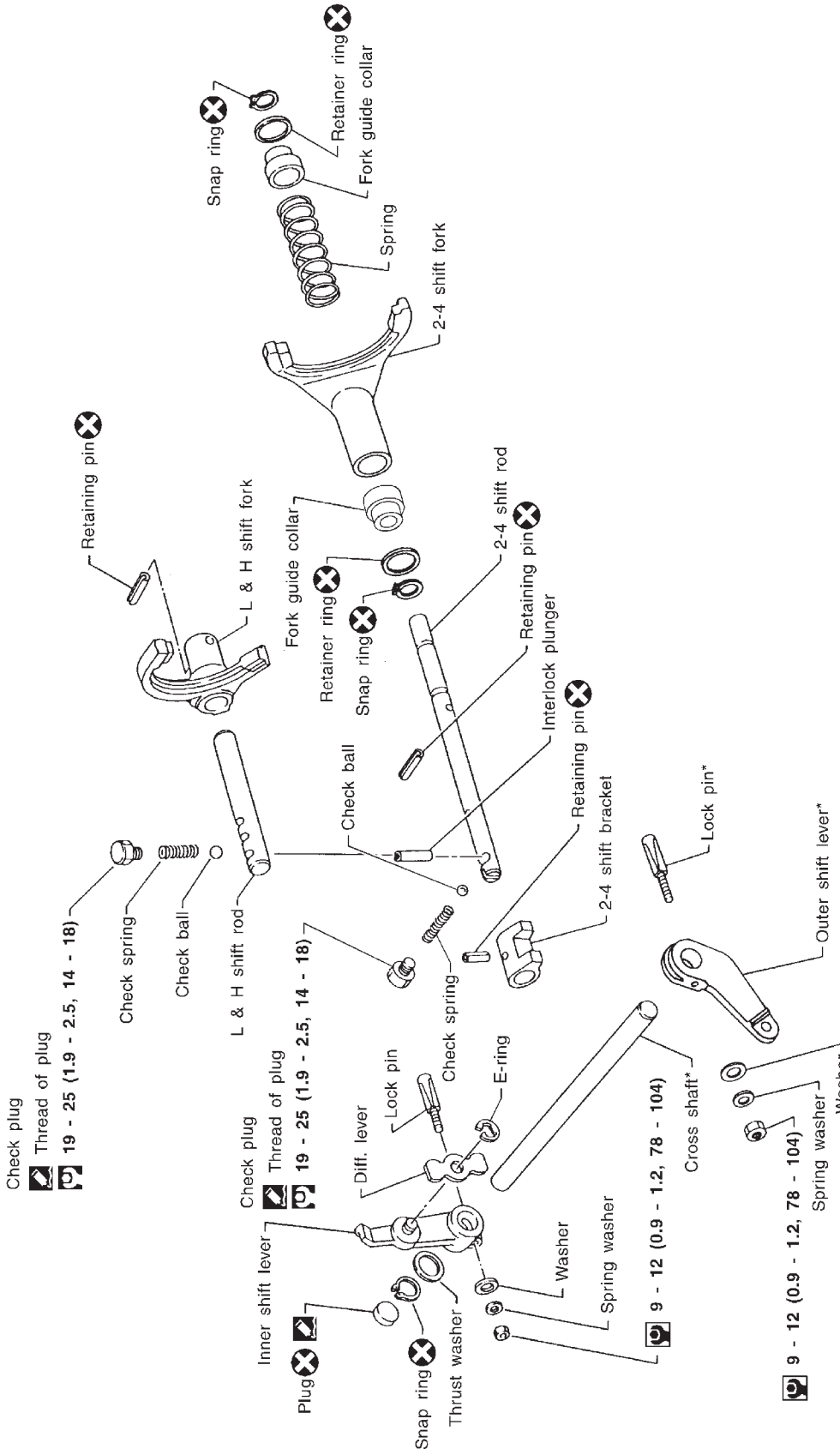
HA

SC

EL

IX

IDX



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

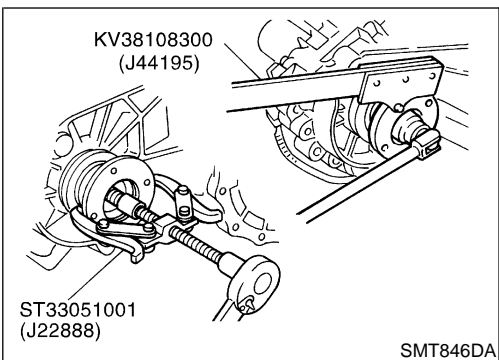
☞ : N•m (kg-m, in-lb)

☞ : N•m (kg-m, ft-lb)

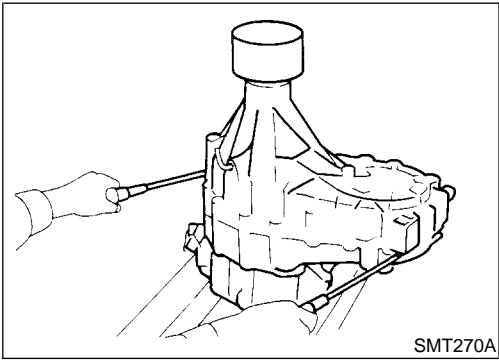
☞ : Apply genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.

SEC. 333

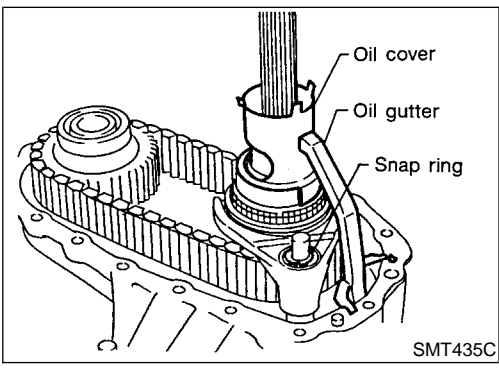
DISASSEMBLY



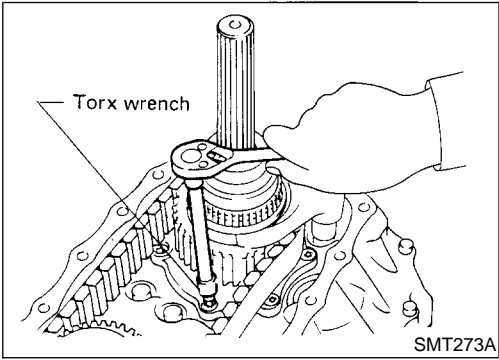
1. Remove nut of companion flange.
2. Remove companion flange.



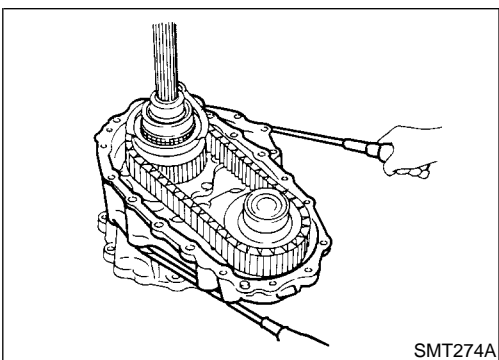
3. Remove 4WD switch.
4. Remove rear case.
 - Be careful not to damage the mating surface.



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

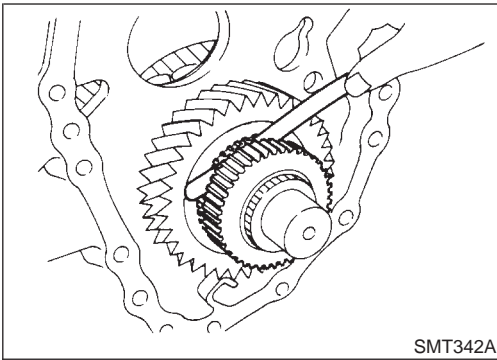


7. Remove bolts securing bearing retainer.
 - This step is necessary to remove mainshaft from center case.



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.

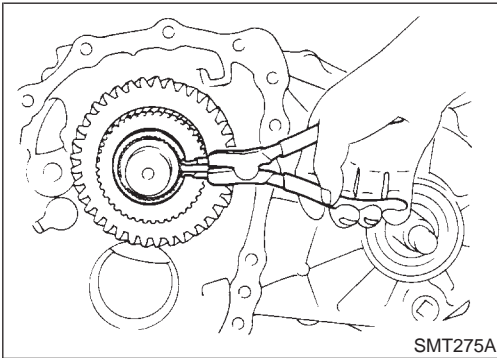
GI

MA

EM

LC

EC



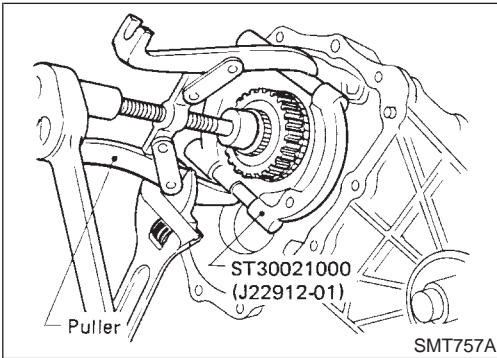
10. Disassemble center case assembly.

a. Remove snap ring from mainshaft.

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

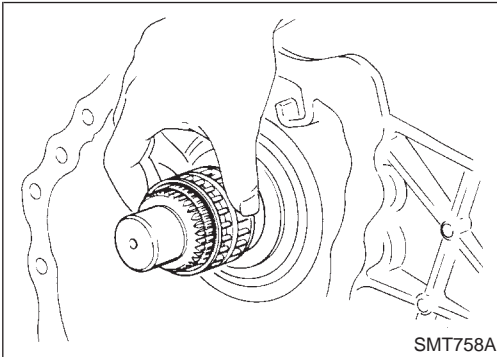
AT

TF

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SU



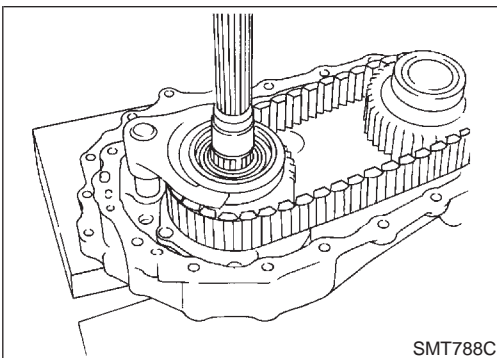
c. Remove needle bearing of low gear.

BR

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

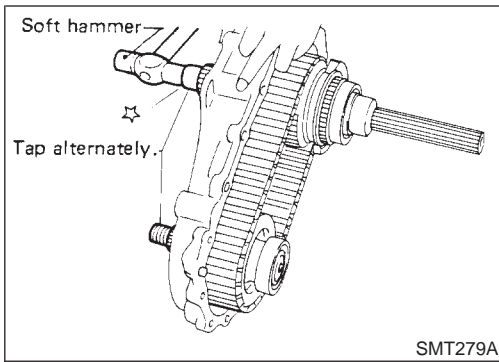
HA

SC

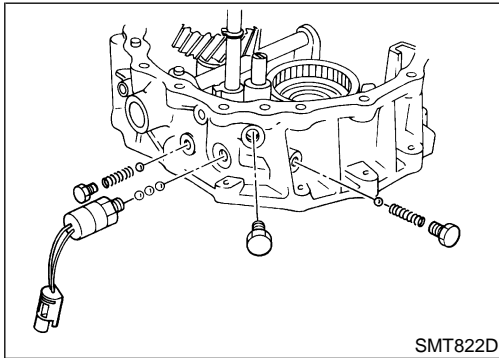
EL

IDX

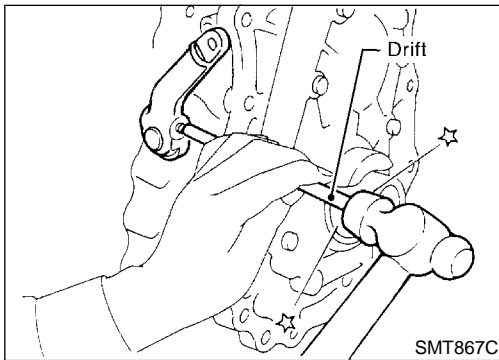
DISASSEMBLY



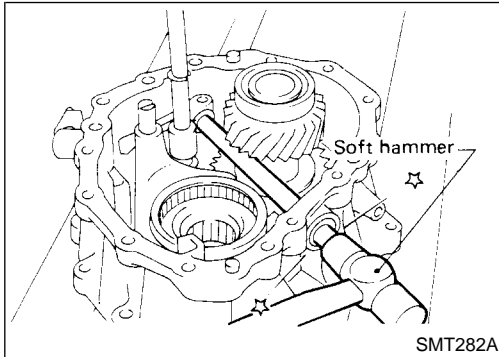
- e. Remove mainshaft, front drive and drive chain as a set by tapping front end of mainshaft and front drive shaft alternately.
- **Be careful not to bend drive chain.**



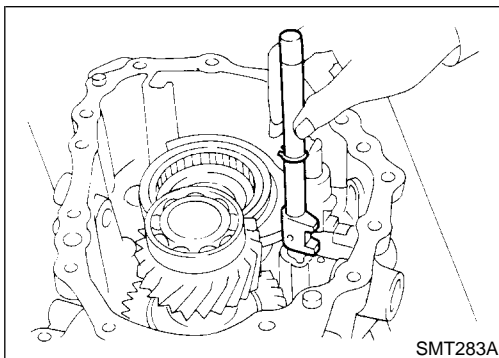
- 11. Disassemble front case assembly.
- a. Remove neutral position switch, plugs, check springs and check balls.



- b. Remove outer shift lever.

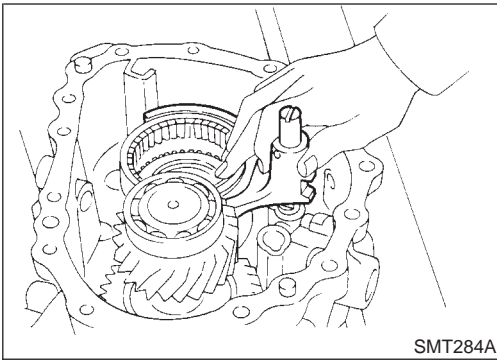


- c. Remove lock pin of inner shift lever and drive out cross shaft with plug.



- d. Remove 2-4 shift rod.

DISASSEMBLY



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

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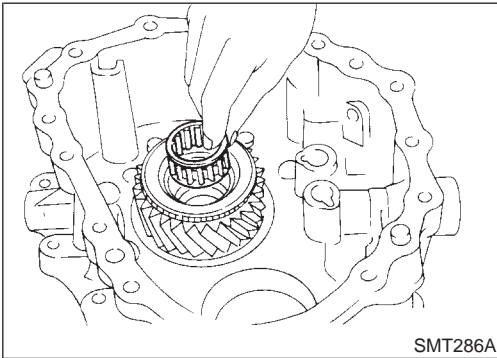
BT

HA

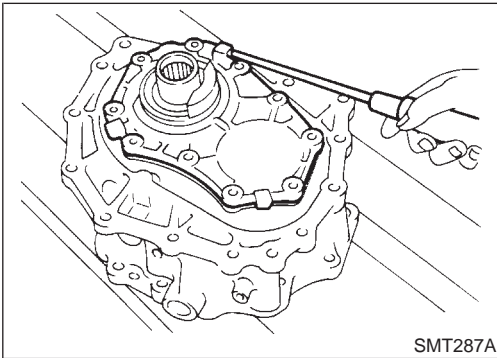
SC

EL

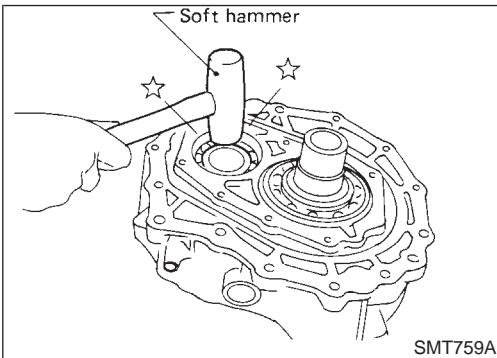
IDX



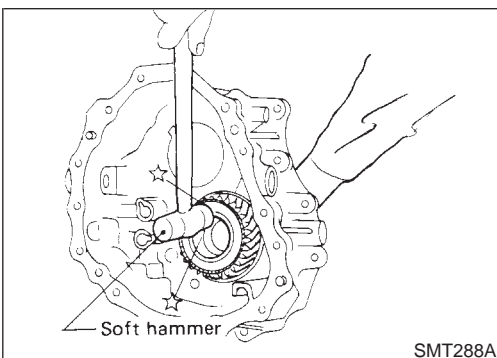
f. Remove needle bearing from main gear.



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



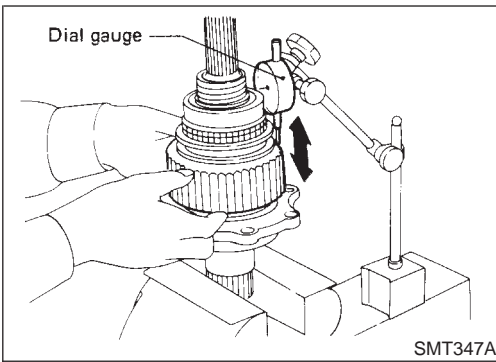
h. Remove counter gear by tapping lightly.



i. Remove main gear by tapping lightly.

REPAIR FOR COMPONENT PARTS

Mainshaft



Mainshaft DISASSEMBLY

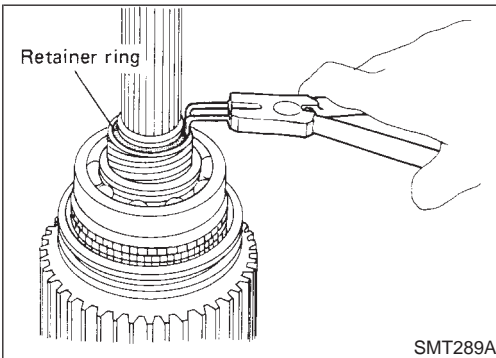
NATF0013

1. Check end play of front drive sprocket.

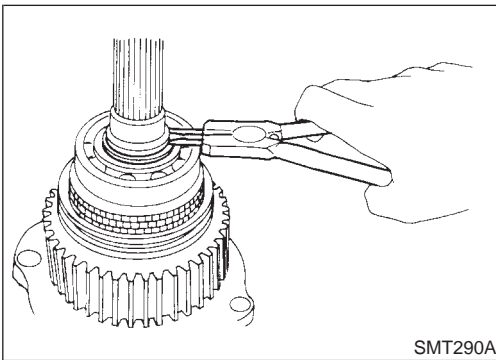
Standard:

0.2 - 0.35 mm (0.0079 - 0.0138 in)

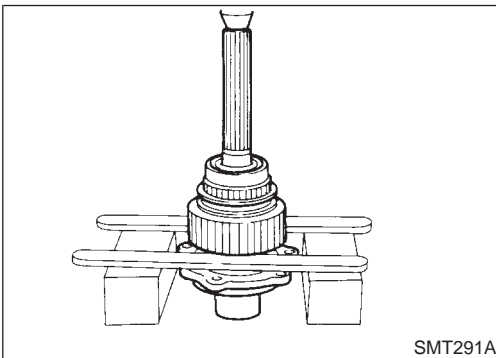
- If end play is beyond the maximum value, check front drive sprocket and clutch gear for wear.



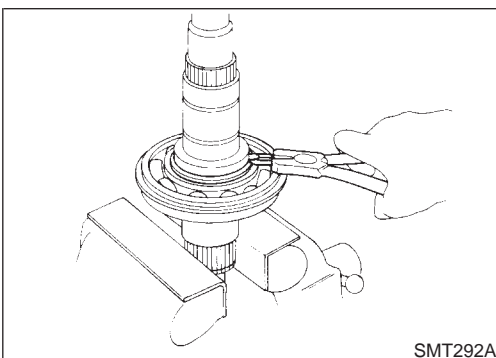
2. Remove retainer ring, speedometer drive gear and steel ball.
 - **Be careful not to lose the steel ball.**



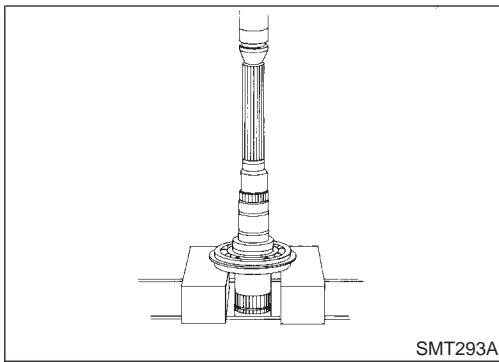
3. Remove snap ring and spacer.



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.

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NATF0014

NATF0014S01

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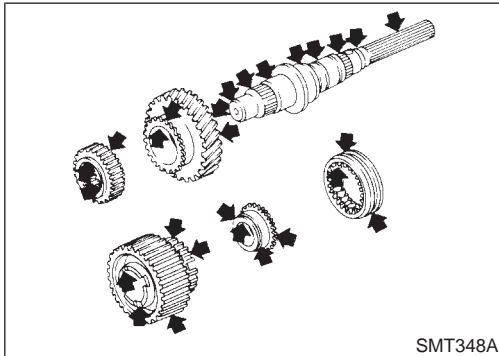
BT

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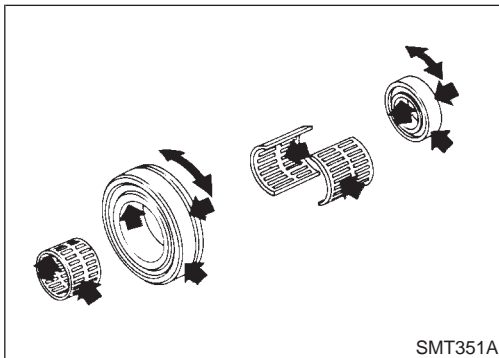
IDX



INSPECTION

Gear and Shaft

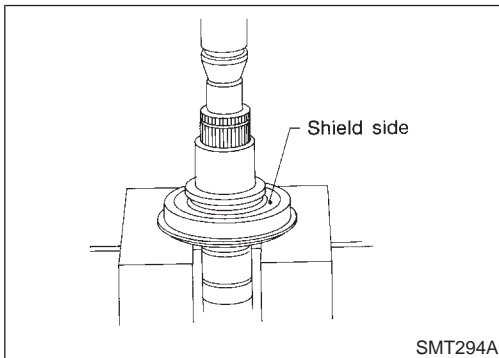
- Check gears for excessive wear, chips or cracks.
- Check shaft for cracks, wear or bending.
- Check coupling sleeve for wear or damage.



Bearing

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

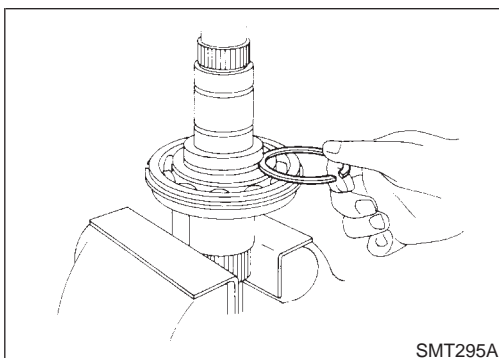
NATF0014S02



ASSEMBLY

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

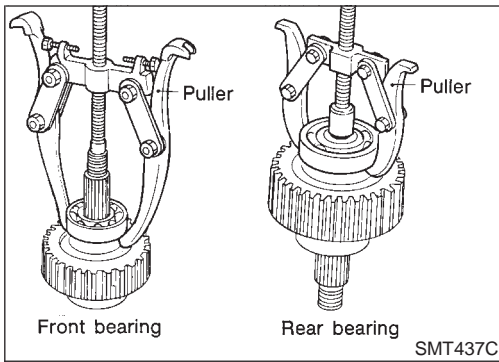
NATF0015



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.

REPAIR FOR COMPONENT PARTS

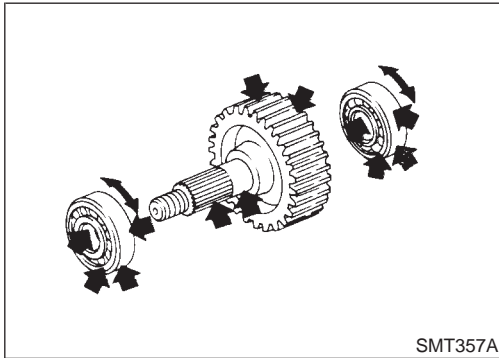
Front Drive Shaft



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.

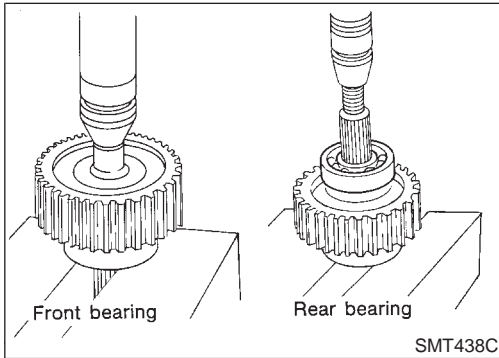
NATF0017

NATF0017S01

Bearing

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

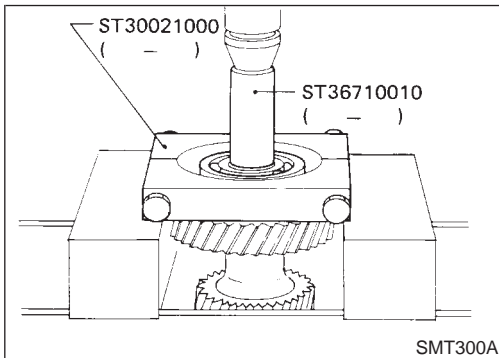
NATF0017S02



ASSEMBLY

- Press front drive shaft front bearing and rear bearing.

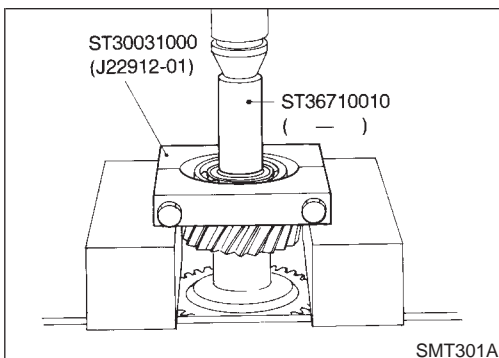
NATF0018



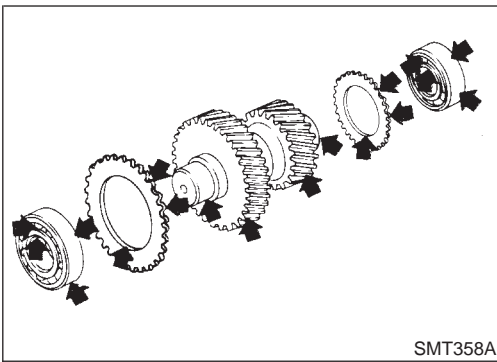
Counter Gear DISASSEMBLY

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).



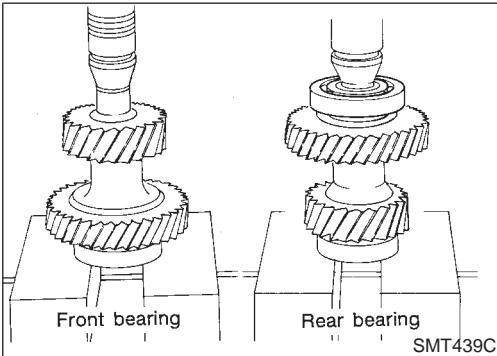
INSPECTION

Gear and Shaft

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

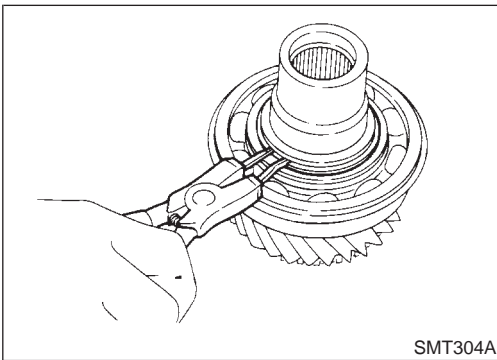
Bearing

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

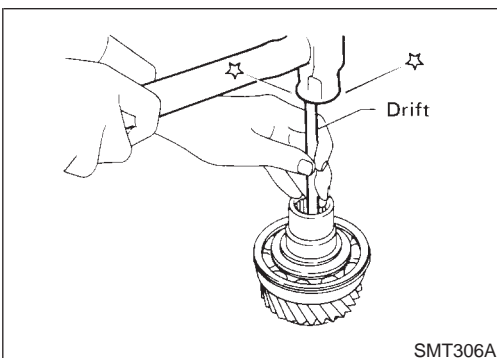
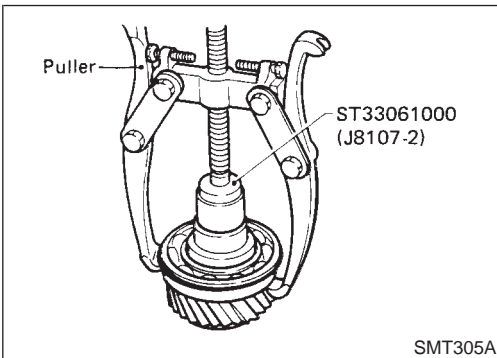


Main Gear

DISASSEMBLY

Main Gear Bearing

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



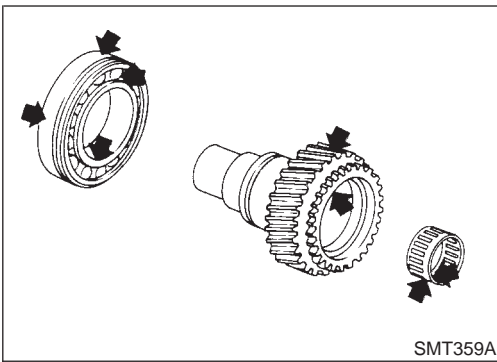
Plug

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

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REPAIR FOR COMPONENT PARTS

Main Gear (Cont'd)



SMT359A

INSPECTION

Gear and Shaft

NATF0023

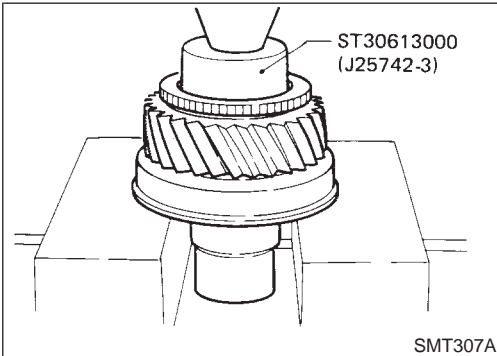
NATF0023S01

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

Bearing

NATF0023S02

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



SMT307A

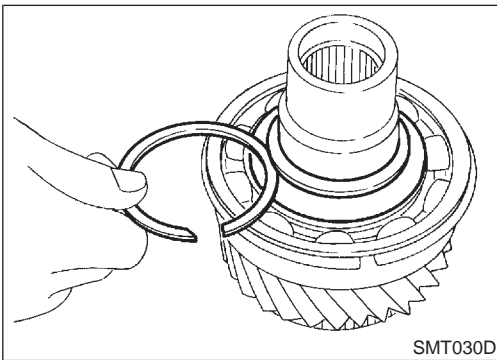
ASSEMBLY

Main Gear Bearing

NATF0024

NATF0024S01

1. Press on main gear bearing.



SMT030D

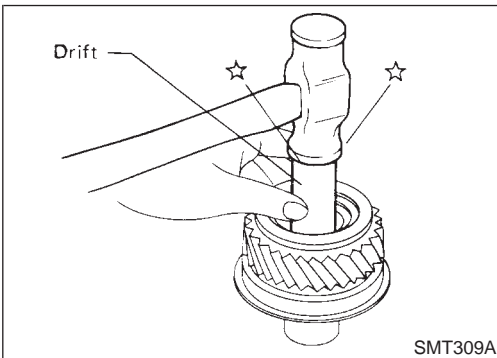
2. Select snap ring with proper thickness and install it.

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.



SMT309A

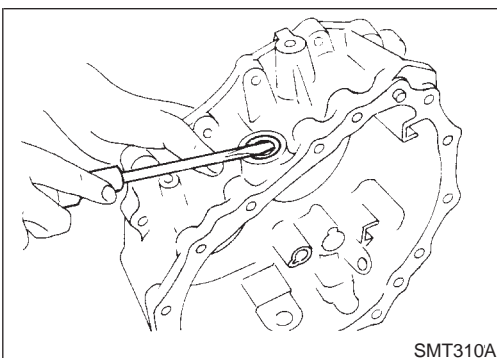
Plug

NATF0024S02

- Apply sealant to plug and install it.

Sealant:

Refer to Gear Components, TF-12.



SMT310A

Front Case

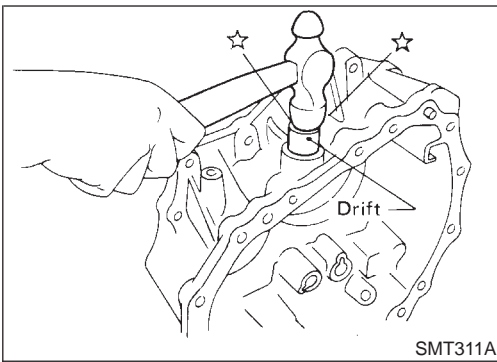
REMOVAL

NATF0025

Shift Shaft Oil Seal

NATF0025S01

- 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.



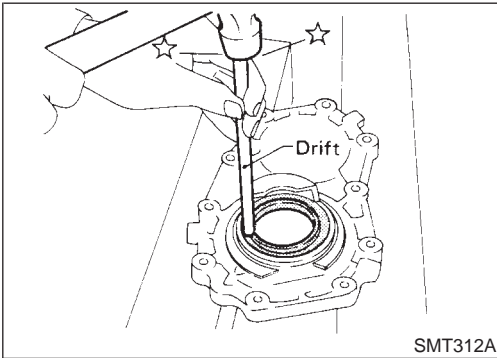
SMT311A

INSTALLATION Shift Shaft Oil Seal

NATF0026

NATF0026S01

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



SMT312A

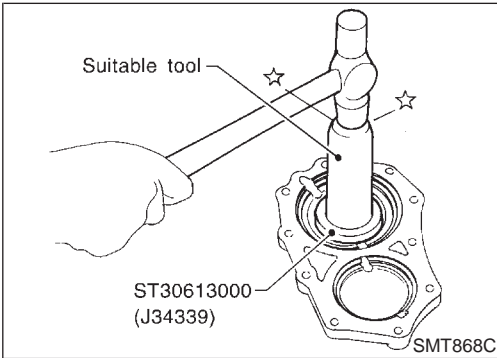
Front Case Cover REMOVAL

NATF0027

NATF0027S01

Cover Oil Seal

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



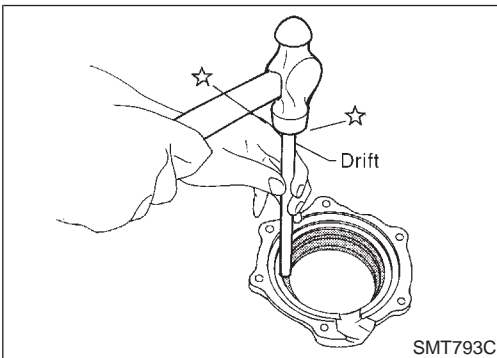
SMT868C

INSTALLATION Cover Oil Seal

NATF0028

NATF0028S01

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



SMT793C

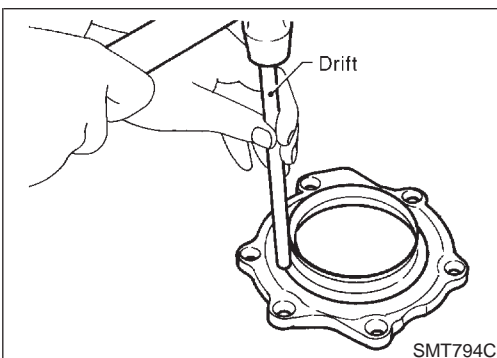
Bearing Retainer REMOVAL

NATF0029

NATF0029S01

Oil Catcher

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



SMT794C

INSTALLATION Oil Catcher

NATF0030

NATF0030S01

- 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.

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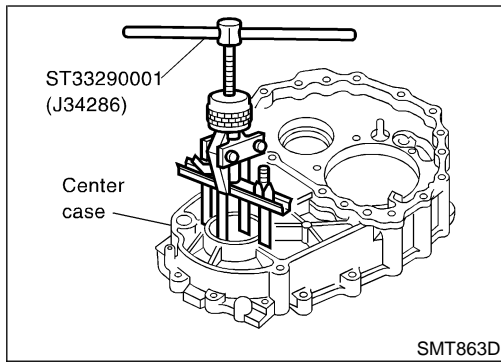
SC

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IDX

REPAIR FOR COMPONENT PARTS

Center Case



Center Case

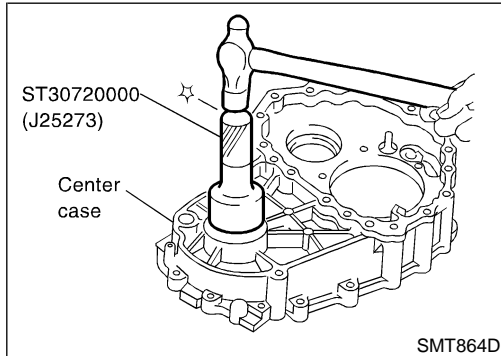
REMOVAL

Center Case Oil Seal

- Remove center case oil seal.

NATF0040

NATF0040S01



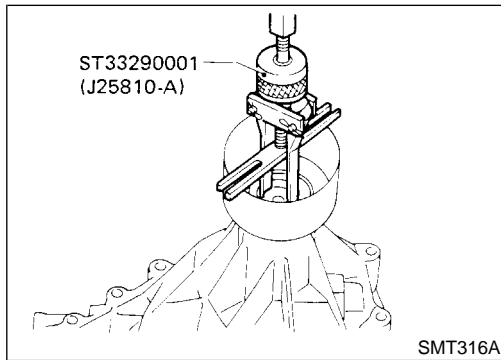
INSTALLATION

Center Case Oil Seal

- Install center case oil seal.

NATF0041

NATF0041S01



Rear Case

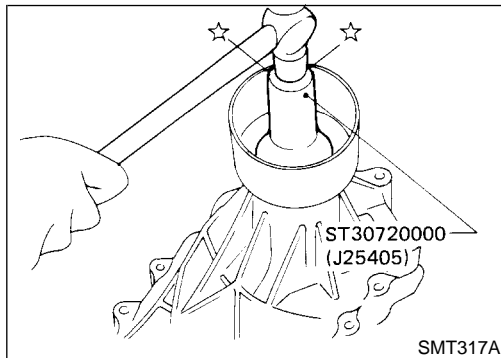
REMOVAL

Rear Oil Seal

- Pull out rear oil seal.

NATF0031

NATF0031S01



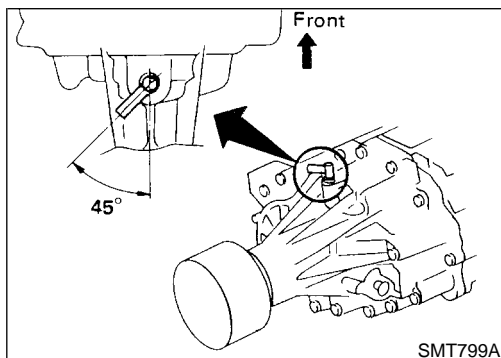
INSTALLATION

Rear Oil Seal

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

NATF0032

NATF0032S01



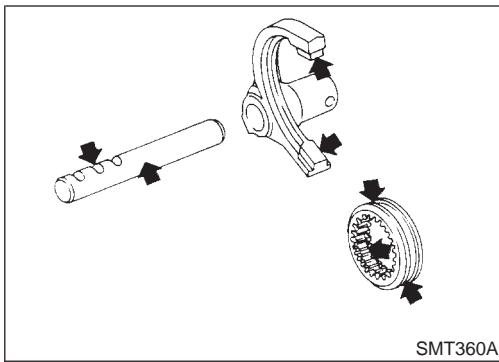
Air Breather

- Install as shown in illustration.

Locking sealant:

Refer to Case Components, TF-11.

NATF0032S02

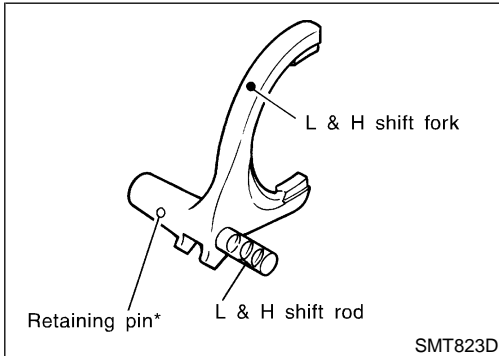


SMT360A

Shift Control Components

INSPECTION

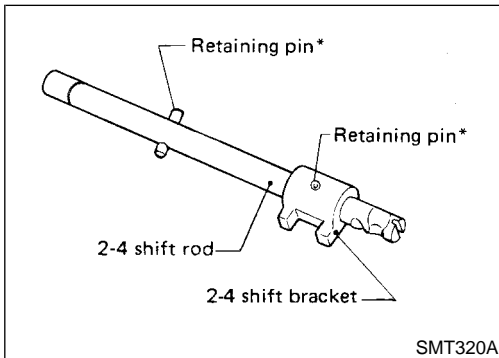
- Check contact surface and sliding surface for wear, scratches, projections or other faulty conditions. NATF0033



SMT823D

L & H Shift Rod & Fork

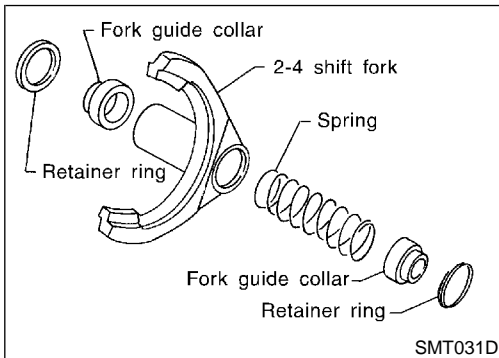
- Assemble as shown in illustration. NATF0033S01
* Retaining pin is the same size as the one for 2-4 shift rod.



SMT320A

2-4 Shift Rod & Fork

- Assemble as shown in illustration. NATF0033S02
* Retaining pins are the same size.



SMT031D

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

GI

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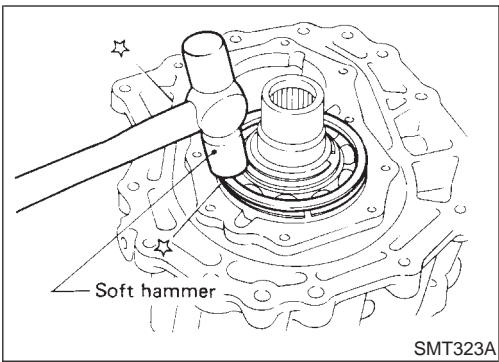
HA

SC

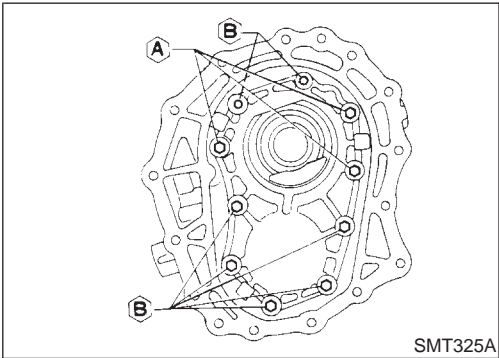
EL

IDX

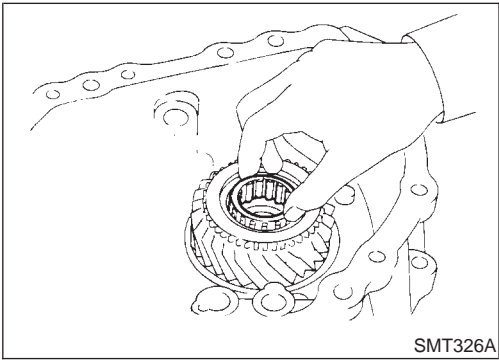
ASSEMBLY



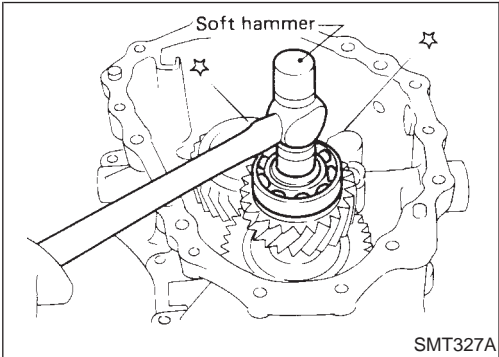
1. Assemble front case.
 - a. Install main gear assembly by tapping lightly.



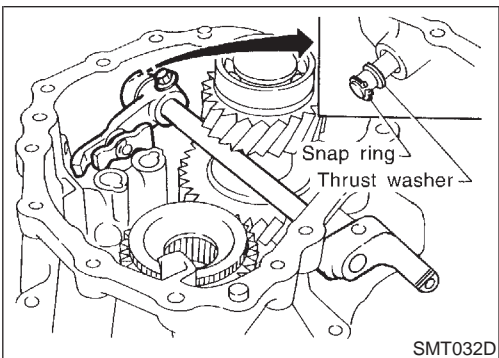
- b. Apply sealant to the mating surface and bolts of front case cover and install it on front case.
 - **These ten bolts should be coated with sealant.**
 - **Tightening torque**
 - A: 16 - 21 N·m (1.6 - 2.1 kg·m, 12 - 15 ft·lb)**
 - B: 19 - 24 N·m (1.9 - 2.4 kg·m, 14 - 17 ft·lb)**
 - Sealant:**
 - Refer to Case Components, TF-11.**



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

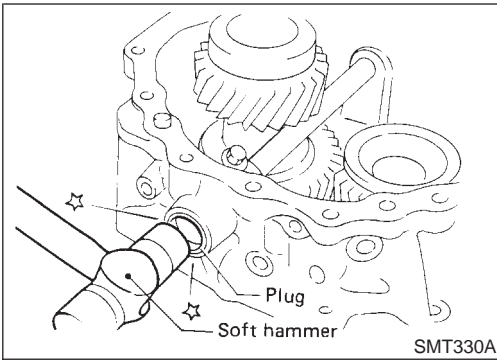


- d. Install counter gear assembly by tapping lightly.



- 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.

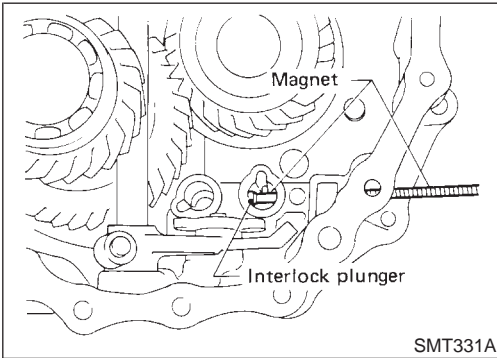
GI

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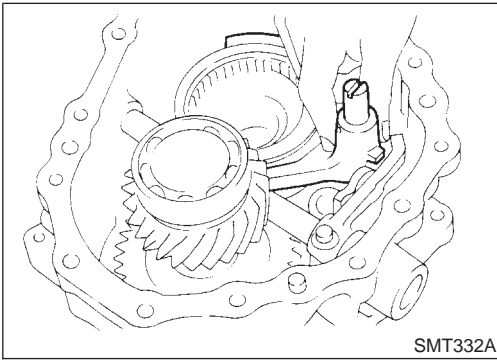
g. Insert interlock plunger into front case.

FE

CL

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AT



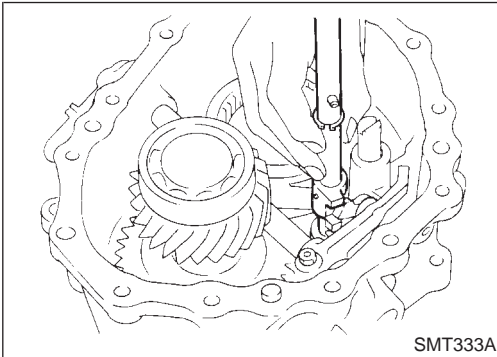
h. Install L & H shift rod and fork assembly with coupling sleeve.

TF

PD

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SU



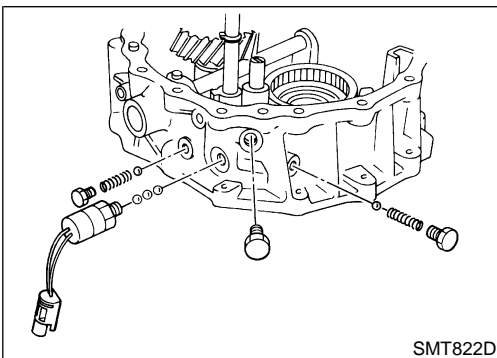
i. Install 2-4 shift rod.

BR

ST

RS

BT



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

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

Sealant:

Refer to Case Components, TF-11.

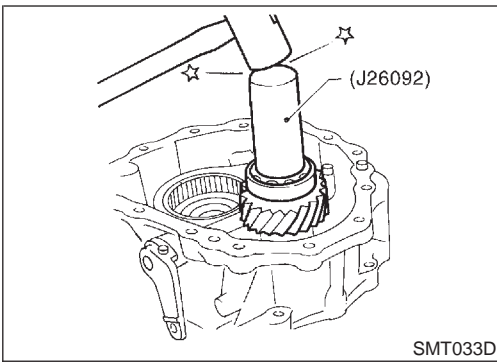
HA

SC

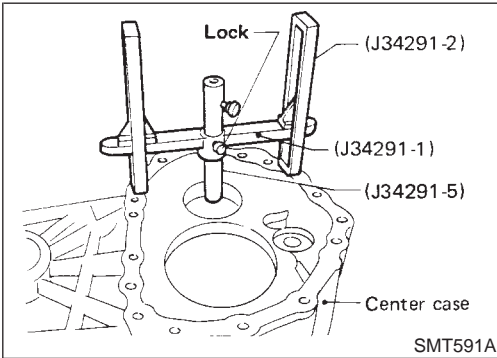
EL

IDX

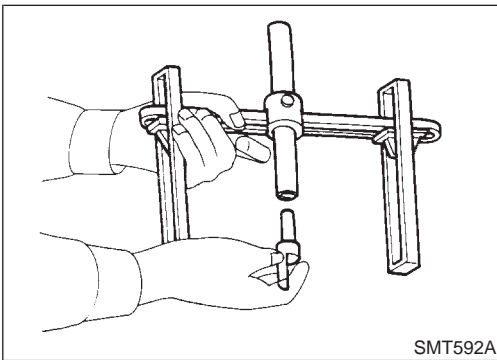
ASSEMBLY



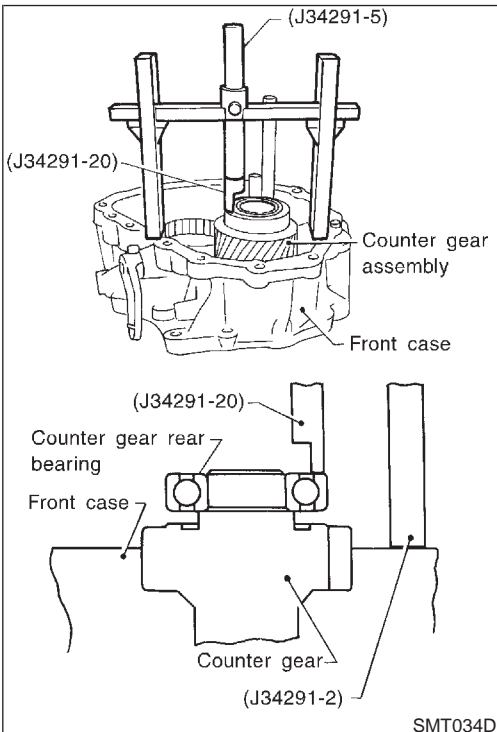
2. Select counter gear rear bearing shim.
 - a. Seat counter gear assembly.



- 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.

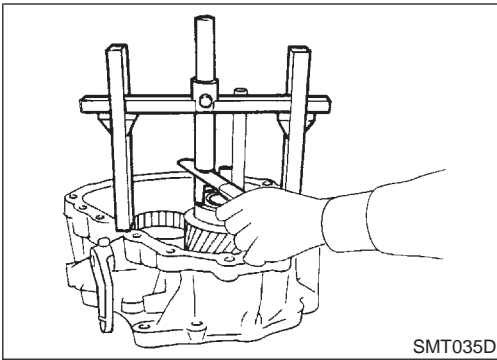


- c. Insert J34291-20 (gauging plunger) into J34291-5 (gauging cylinder).



- 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

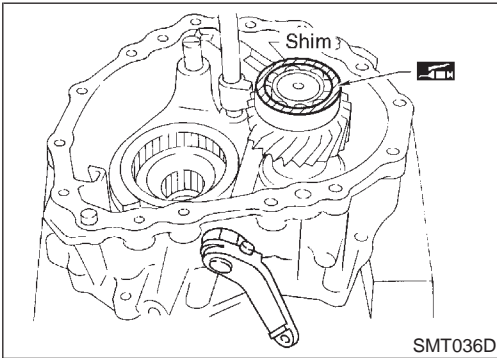


- e. Lock gauging plunger in place and use feeler gauge to measure gap between gauging cylinder and gauging plunger.
- f. Use measured distance and following chart to select correct shim.

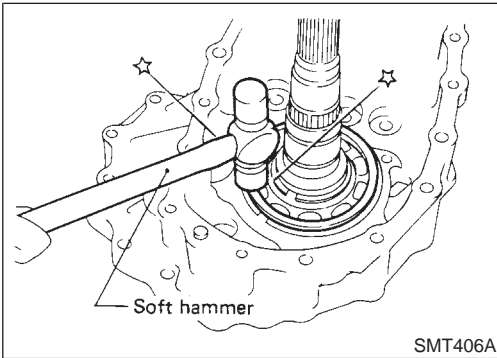
**Counter gear end play:
0 - 0.2 mm (0 - 0.008 in)**

**Counter gear rear bearing shim:
Refer to SDS, TF-34.**

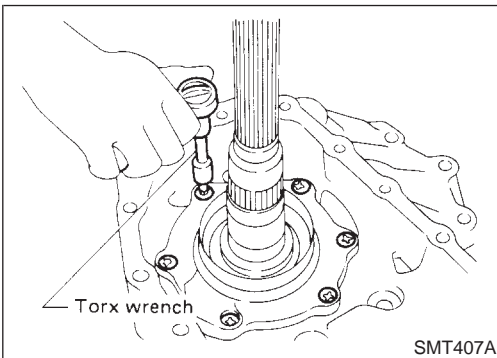
- g. Select counter gear rear bearing shim.



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



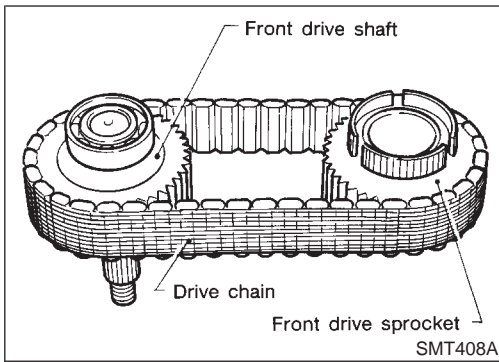
- 5. Assemble center case assembly.
 - a. Install mainshaft on center case by tapping lightly.
 - **Apply ATF to mainshaft front bearing.**



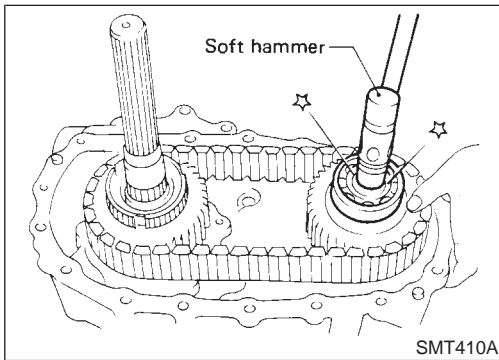
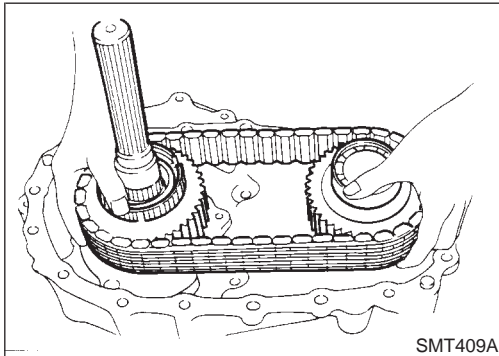
- b. Install bearing retainer.

GI
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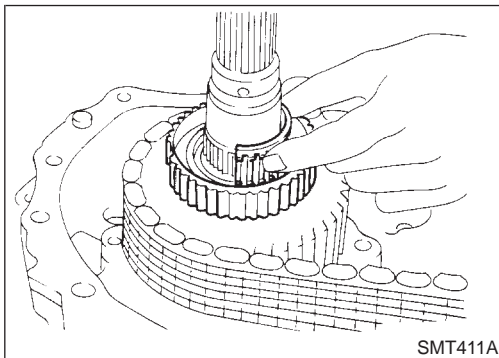
ASSEMBLY



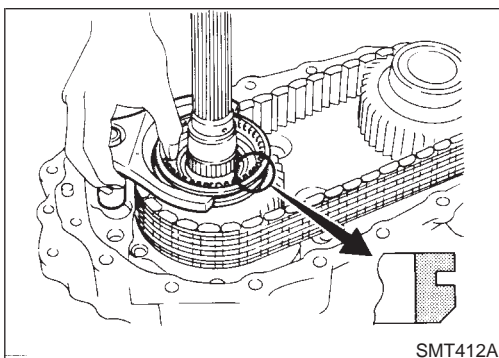
- c. Put drive chain onto the front drive sprocket and front drive shaft, and then put them in center case.



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

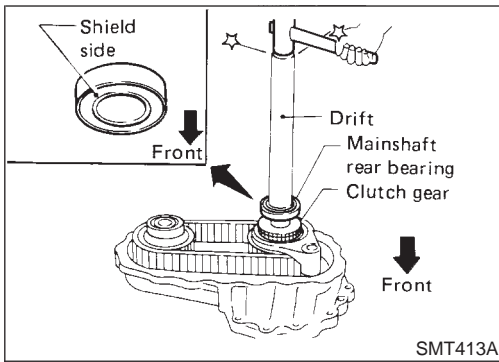


- e. Apply ATF to needle bearings and install them into front drive sprocket.
 ● **These needle bearings can be installed more easily if front drive sprocket is rotated while installing them.**



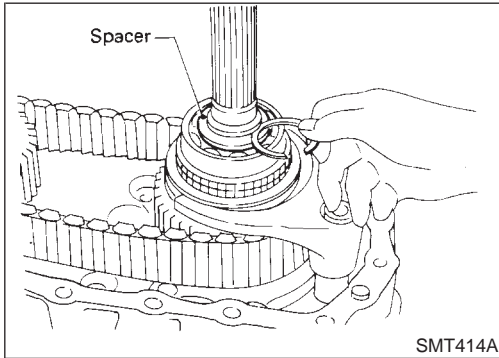
- f. Install 2-4 coupling sleeve with 2-4 shift fork.
 ● **Pay special attention to direction of coupling sleeve.**

ASSEMBLY



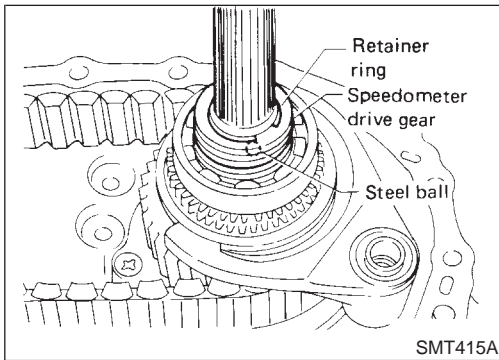
- g. Install clutch gear and mainshaft rear bearing.
- **Place wooden block under mainshaft in order to protect mainshaft front bearing.**

GI
MA
EM
LC



- 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.**

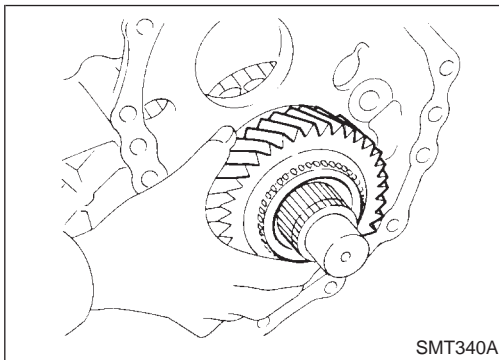
EC
FE
CL



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

MT
AT

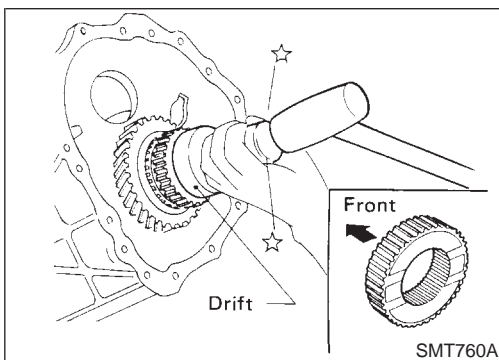
TF



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

PD
AX
SU

BR



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

ST
RS
BT

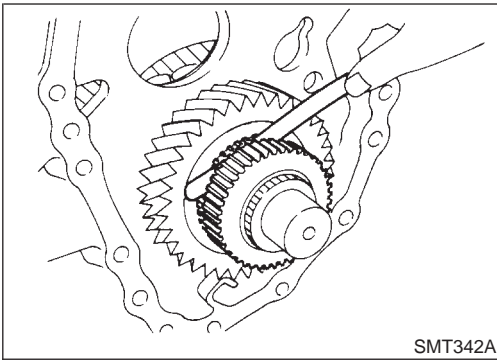
HA

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ASSEMBLY

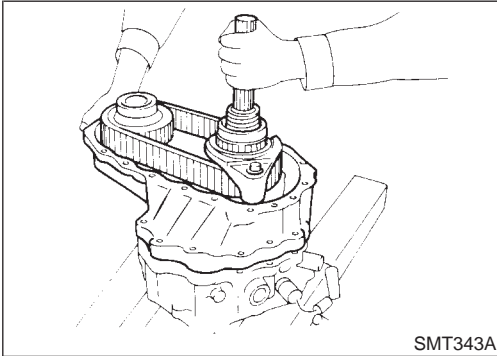


SMT342A

m. Measure end play of low gear.

Standard:

0.2 - 0.35 mm (0.0079 - 0.0138 in)

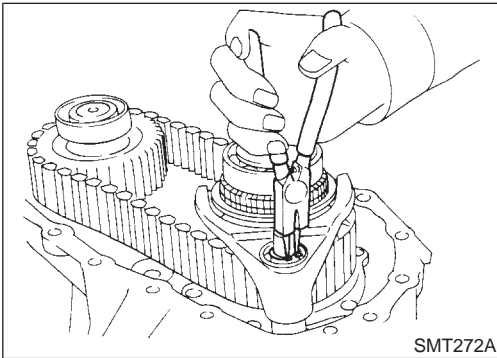


SMT343A

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

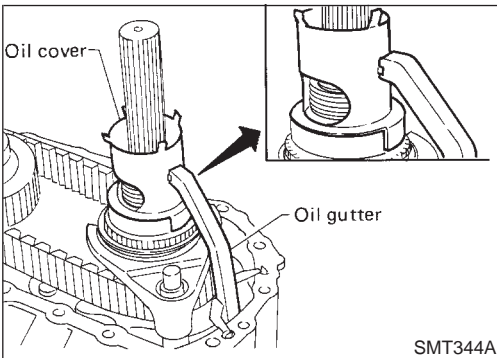
Sealant:

Refer to Case Components, TF-11.



SMT272A

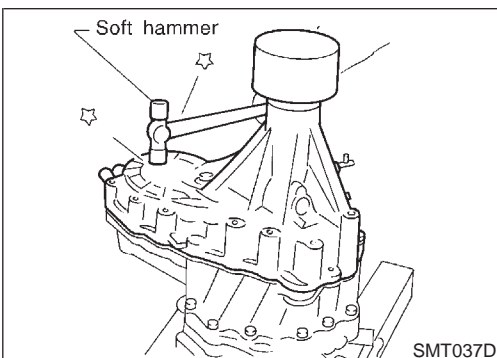
7. Install snap ring to 2-4 shift rod.



SMT344A

8. Install oil gutter and oil cover.

9. Apply ATF to each part in center case.



SMT037D

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

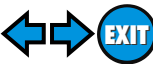
11. Install 4WD switch.

● **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	0.2 - 0.35 (0.0079 - 0.0138)
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	

*: Always check with the Parts Department for the latest parts information.

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	

*: Always check with the Parts Department for the latest parts information.

MAIN GEAR BEARING

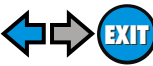
NATF0037S03

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	

*: Always check with the Parts Department for the latest parts information.

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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

*: Always check with the Parts Department for the latest parts information.