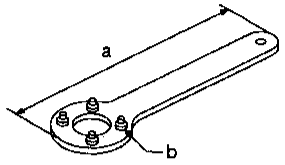
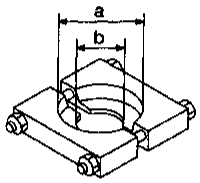
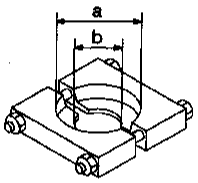
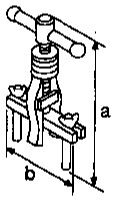
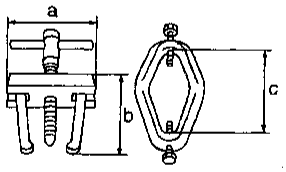
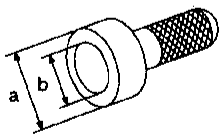
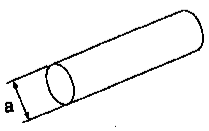
SECTION TF

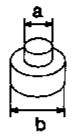
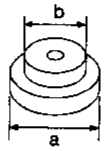
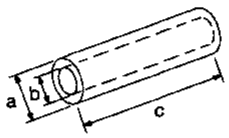
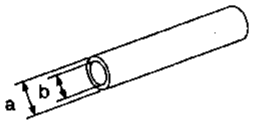
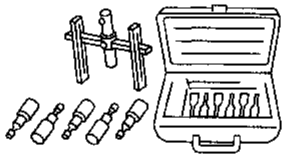
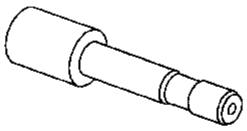
CONTENTS

Special Service Tools

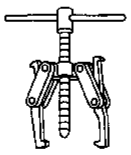
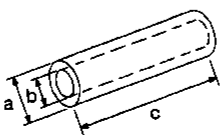
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description	
ST38060002 (J34311) Flange wrench	 NT428	Removing companion flange nut Installing companion flange nut **a: 480 mm (18.90 in)** **b: Pitch dia.: 75 mm (2.95 in)** **Pin dia.: 10 mm (0.39 in)**
ST30021000 (J22912-01) Puller	 NT411	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	 NT411	Removing counter gear rear bearing (Use with ST36710010) **a: 90 mm (3.54 in) dia.** **b: 50 mm (1.97 in) dia.**
ST33290001 (J34286) Puller	 NT414	Removing center case oil seal Removing rear oil seal **a: 250 mm (9.84 in)** **b: 160 mm (6.30 in)**
ST33051001 (J22888) Puller	 NT657	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	 NT115	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.**
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.**

Special Service Tools (Cont'd)

Tool number (Kent-Moore No.) Tool name	Description	
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 (Use with ST30611000) ② Installing cover oil seal (Use with ST30611000) **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

Tool name	Description	
Puller	 NT077	Removing front drive shaft front bearing Removing front drive shaft rear bearing Removing main gear bearing Removing companion flange
Drift	 NT117	① Installing mainshaft rear bearing ② Installing L & H hub ① **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)**

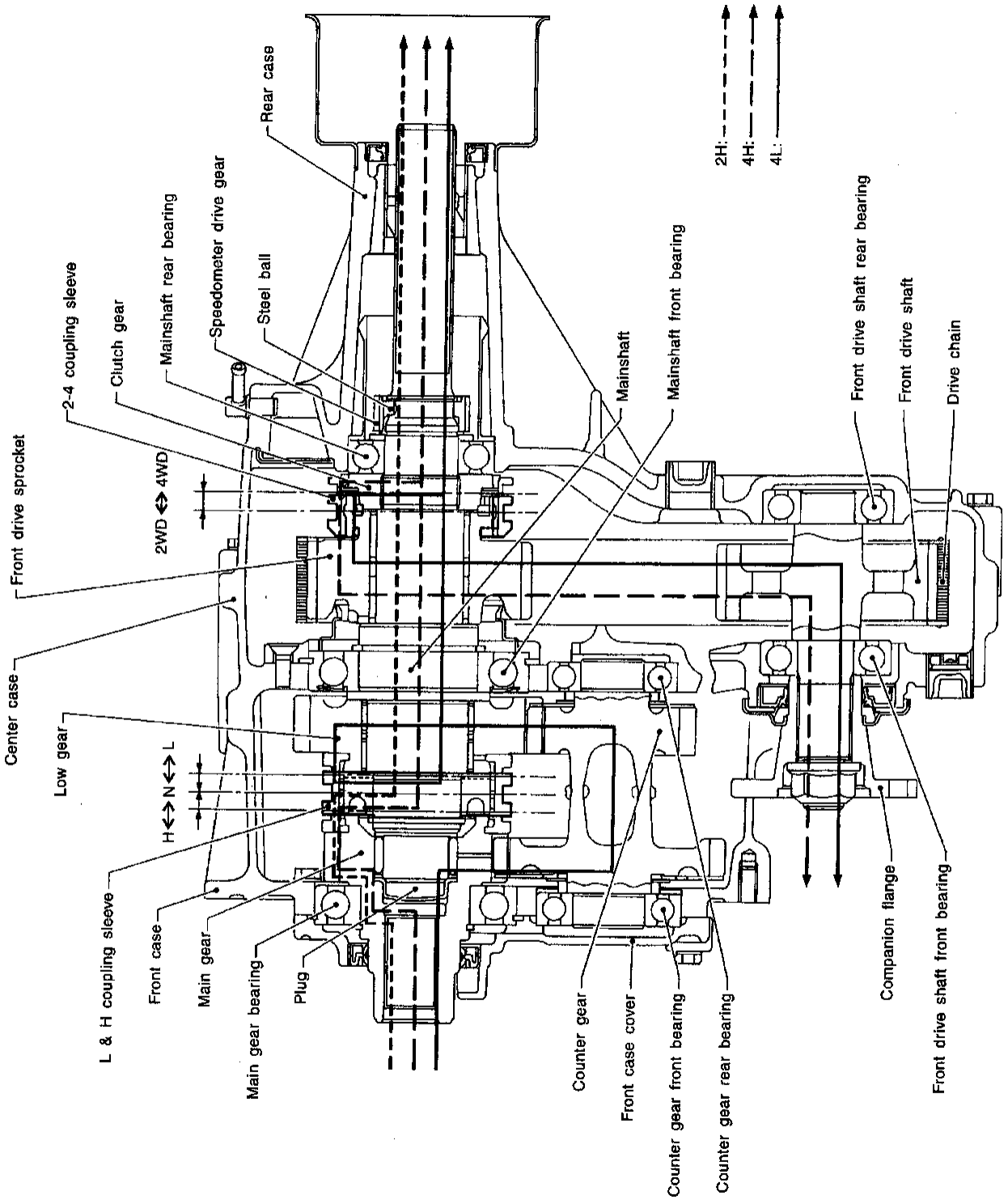
NVH Troubleshooting Chart

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.

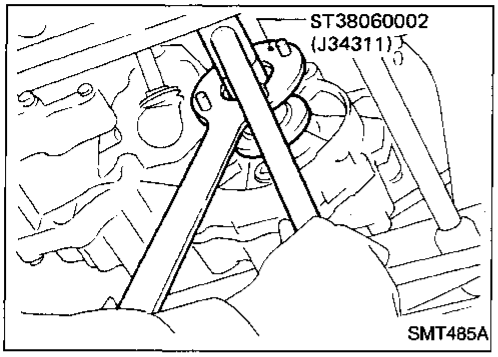
TRANSFER

		Refer to MA section ("Checking Transfer Fluid", "CHASSIS AND BODY MAINTENANCE").			TF-10	TF-10	TF-10, 12	TF-12	TF-11	TF-11	TF-11	TF-11
Reference page												
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)	BAULK RING (Worn or damaged)	SHIFTING INSERT (Damaged)
Symptom	Noise	1	2						3	3		
	Fluid leakage		3	1	2	2						
	Hard to shift or will not shift		1	1							2	2
	Jumps out of gear						1	2	2			

Cross-sectional View



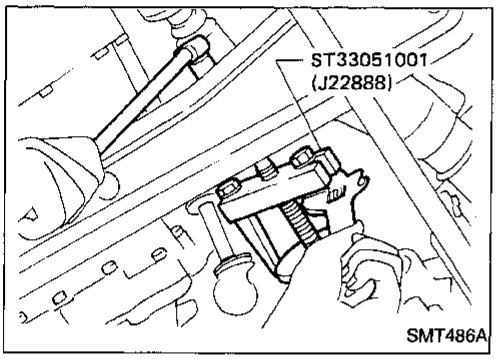
ATF006



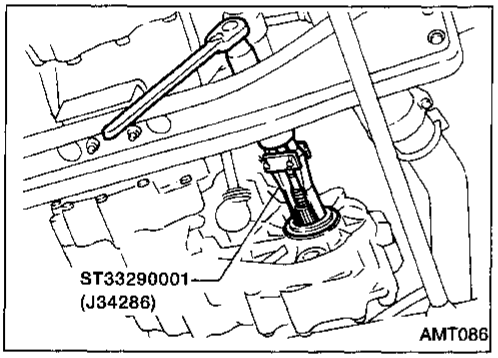
Replacing Oil Seal

CENTER CASE OIL SEAL

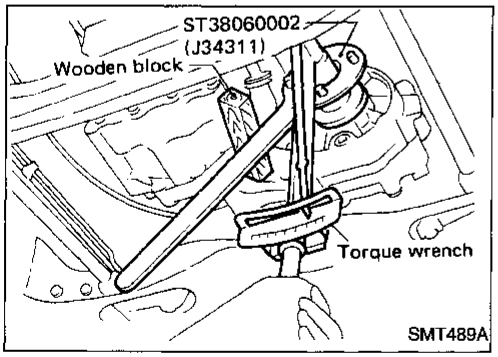
1. Remove front propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
2. Remove companion flange nut.



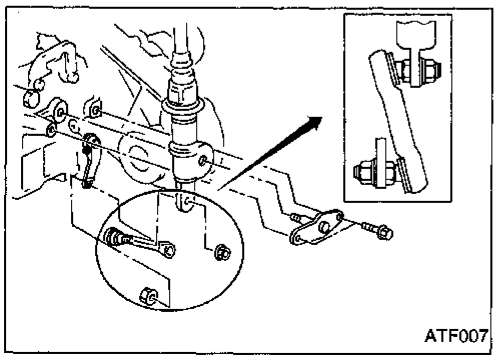
3. Remove companion flange.



4. Remove center case oil seal.
5. Install center case oil seal.
- **Before installing, apply multi-purpose grease to seal lip.**
6. Install companion flange.



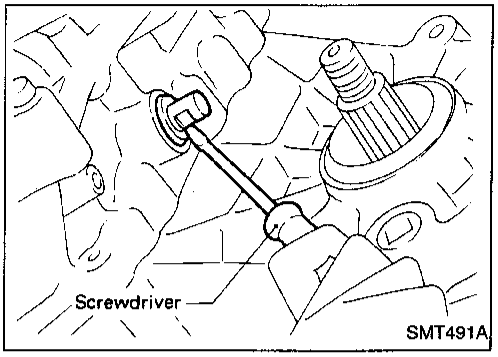
7. Tighten companion flange nut.
   : 226 - 324 N·m (23 - 33 kg-m, 166 - 239 ft-lb)
8. Install front propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").



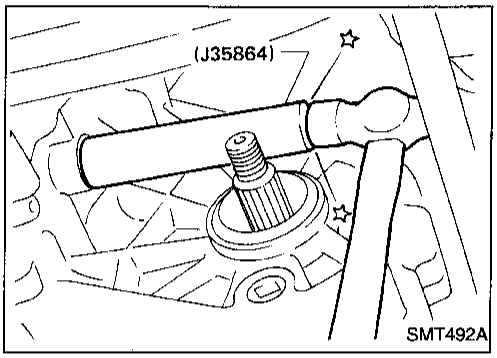
SHIFT SHAFT OIL SEAL

1. Remove front propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
2. Remove companion flange. Refer to "CENTER CASE OIL SEAL", above.
3. Remove transfer control lever from transfer outer shift lever. Then remove outer shift lever.

Replacing Oil Seal (Cont'd)

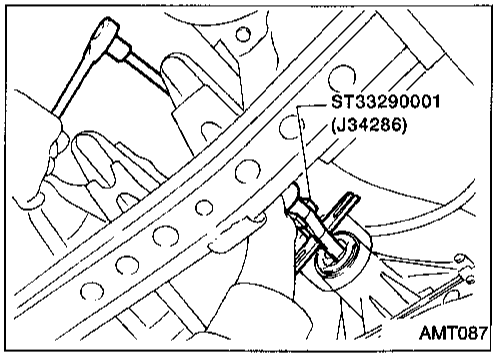


4. Remove shift shaft oil seal.
- **Be careful not to damage cross shaft.**

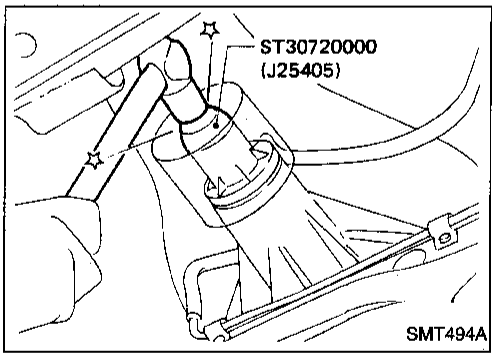


5. Install shift shaft oil seal.
- **Before installing, apply multi-purpose grease to seal lip.**
6. Install transfer control linkage.
7. Install companion flange. Refer to "CENTER CASE OIL SEAL", TF-6.
8. Install front propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").

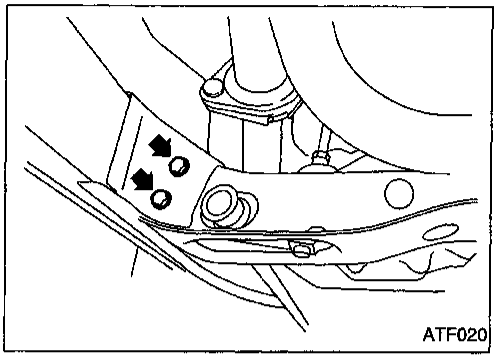
REAR OIL SEAL

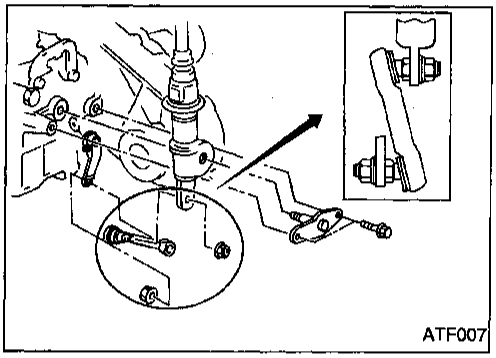


1. Remove rear propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
2. Remove rear oil seal.



3. Install rear oil seal.
- **Before installing apply multi-purpose grease to seal lip.**
4. Install rear propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").

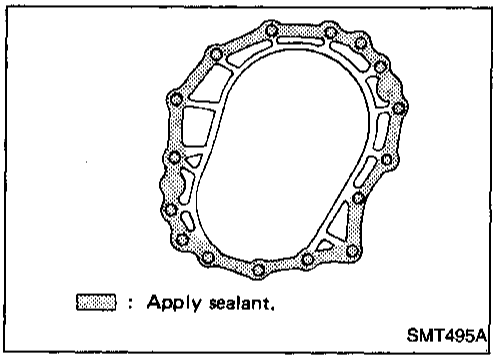

ATF020


ATF007

Removal

1. Drain oil from transfer and transmission.
2. Remove front and rear propeller shaft. Refer to PD section ("Removal and Installation", "PROPELLER SHAFT").
   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.**
3. Remove torsion bar spring. Refer to FA section ("Torsion Bar Spring", "FRONT SUSPENSION"). Then remove second crossmember.
4. Remove exhaust front and rear tubes. Refer to FE section ("EXHAUST SYSTEM").
5. Disconnect vehicle speed sensor, transfer neutral position switch and 4WD switch harness connectors.
6. Remove air breather hose.
7. Remove transfer control lever from transfer outer shift lever.
8. Separate transfer from transmission.

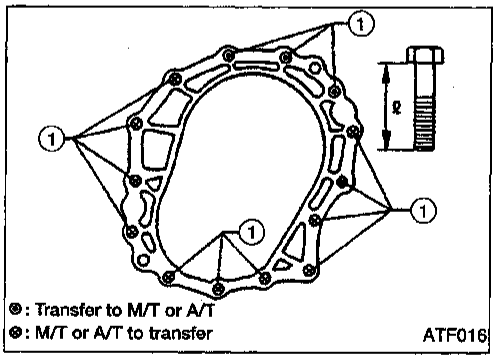
WARNING:
Support transfer while removing it.



SMT495A

Installation

- Apply sealant to mating surface of transfer case to transmission (M/T model only).
- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**



ATF016

- Tighten bolts securing transfer.

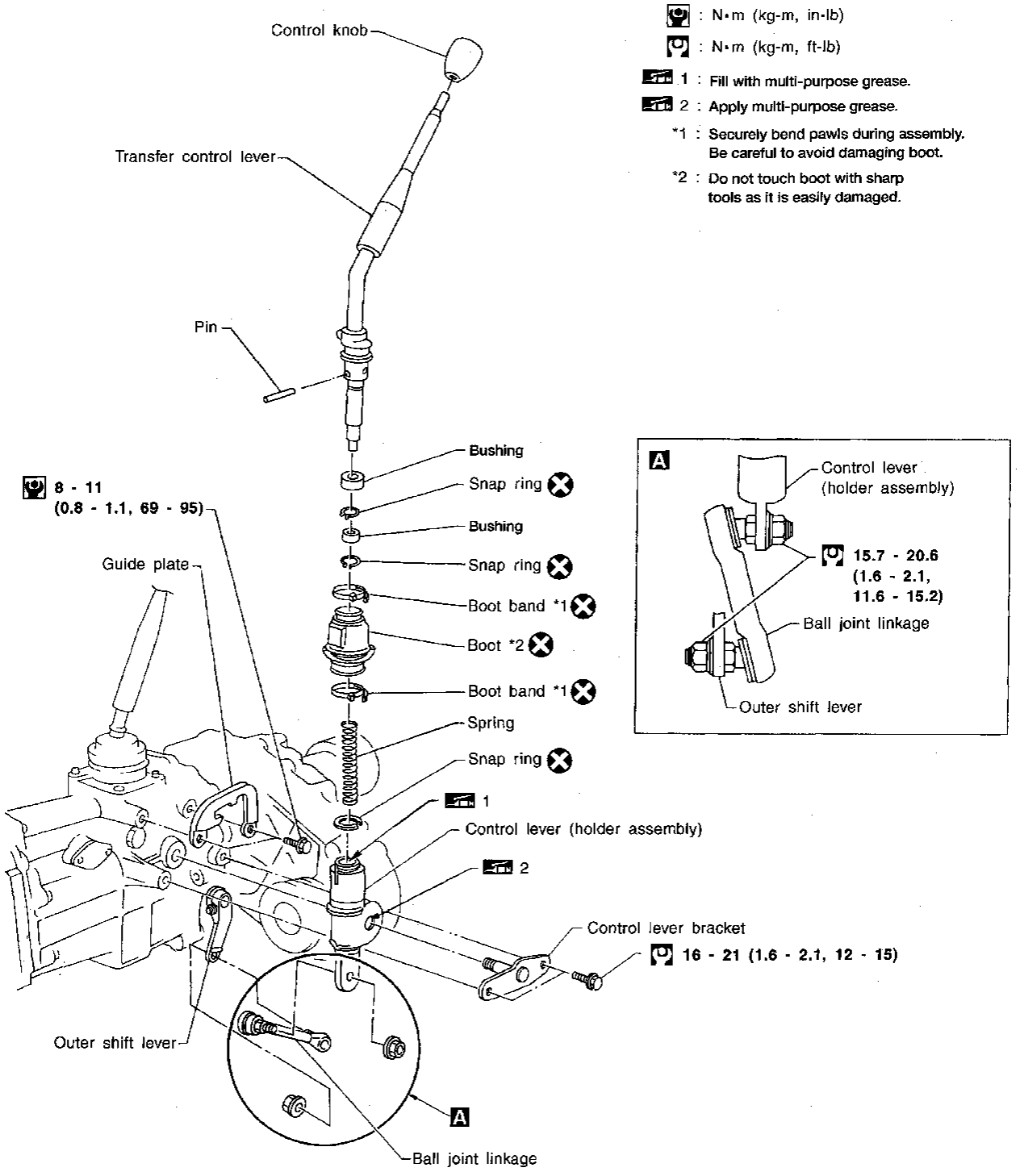
M/T model

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

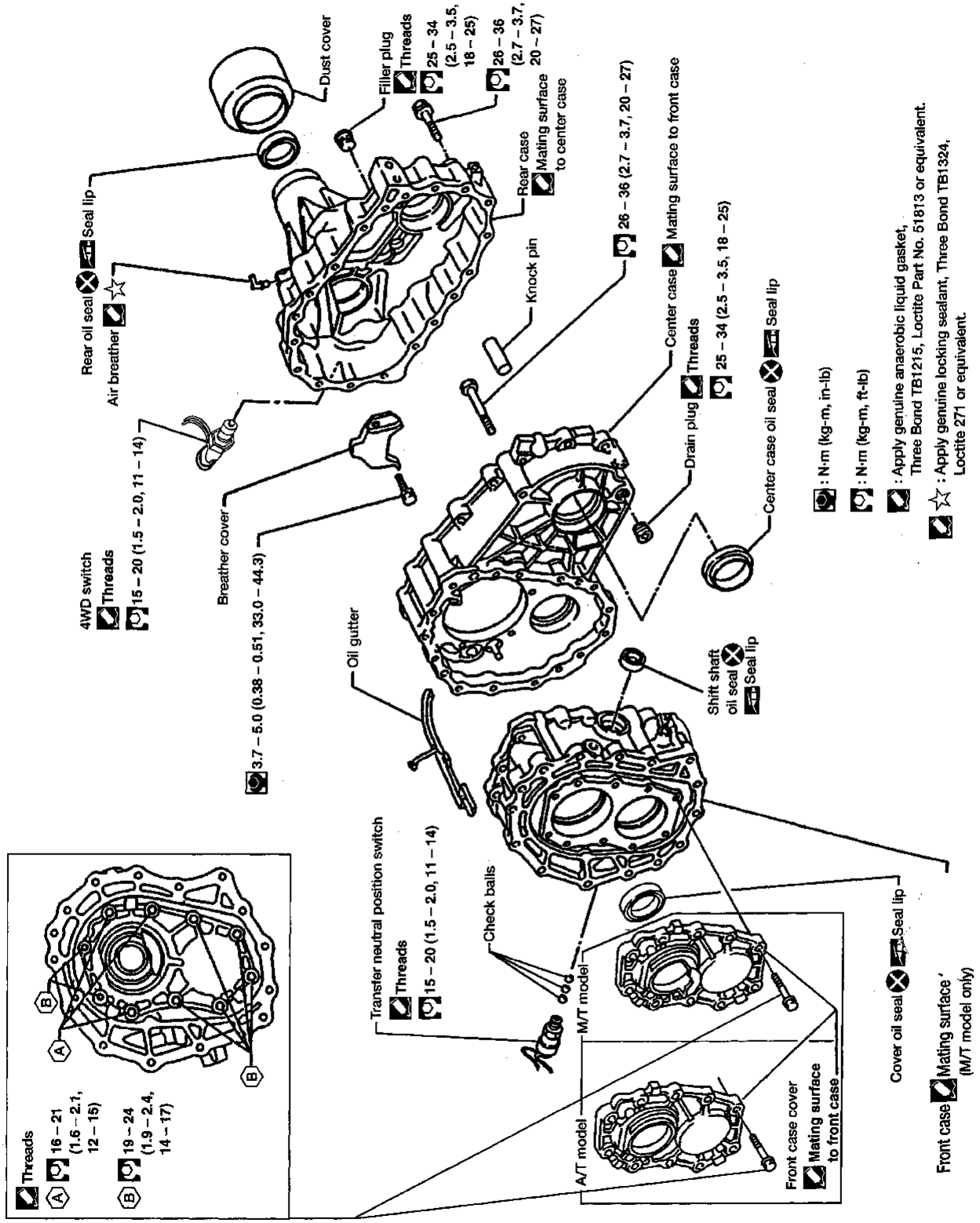
Bolt No.	Tightening torque N·m (kg-m, ft-lb)	ℓ mm (in)
①	31 - 41 (3.2 - 4.2, 23 - 30)	60 (2.36)
②	31 - 41 (3.2 - 4.2, 23 - 30)	60 (2.36)

SEC. 333



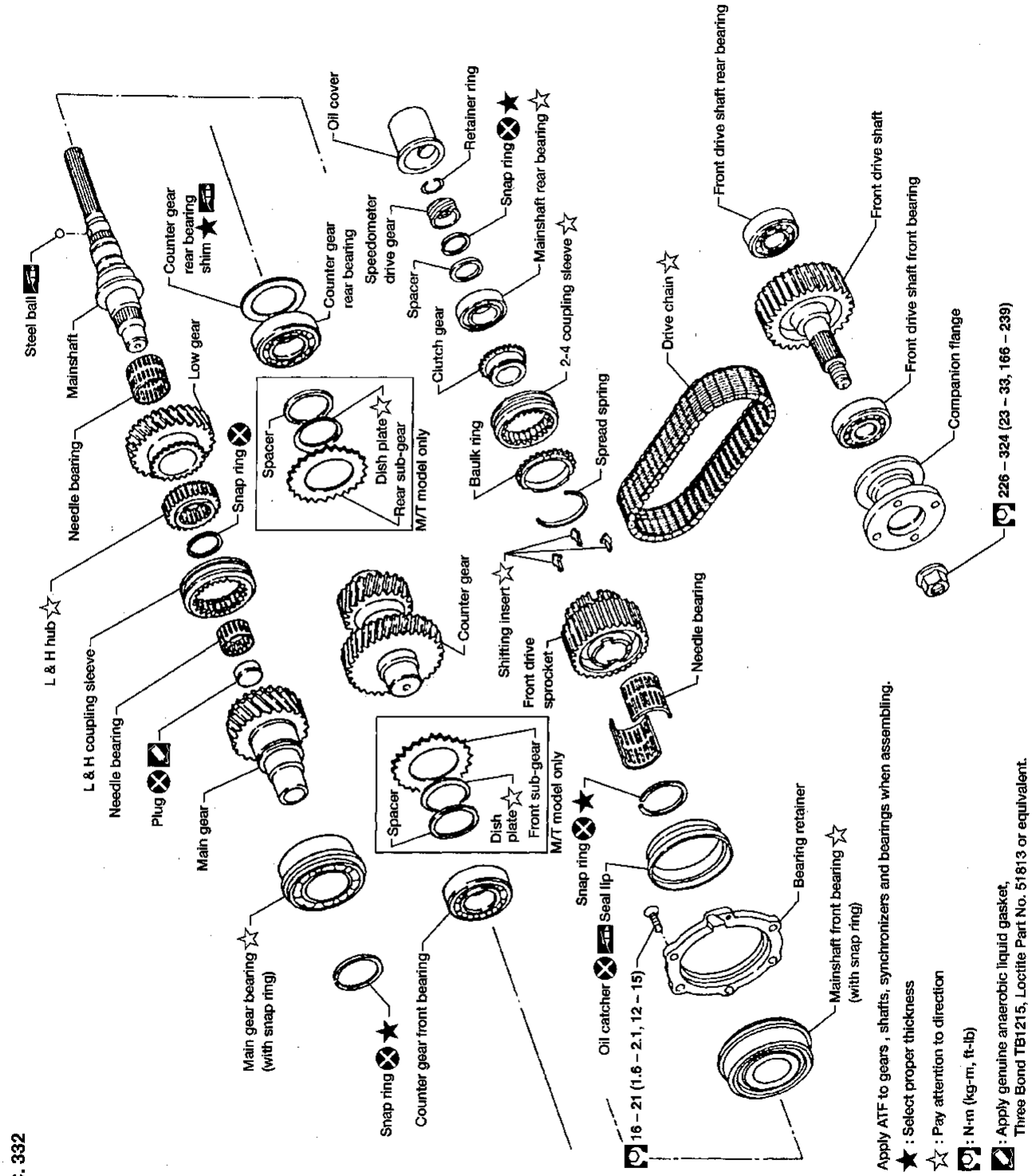
ATF008

Case Components



ATF017

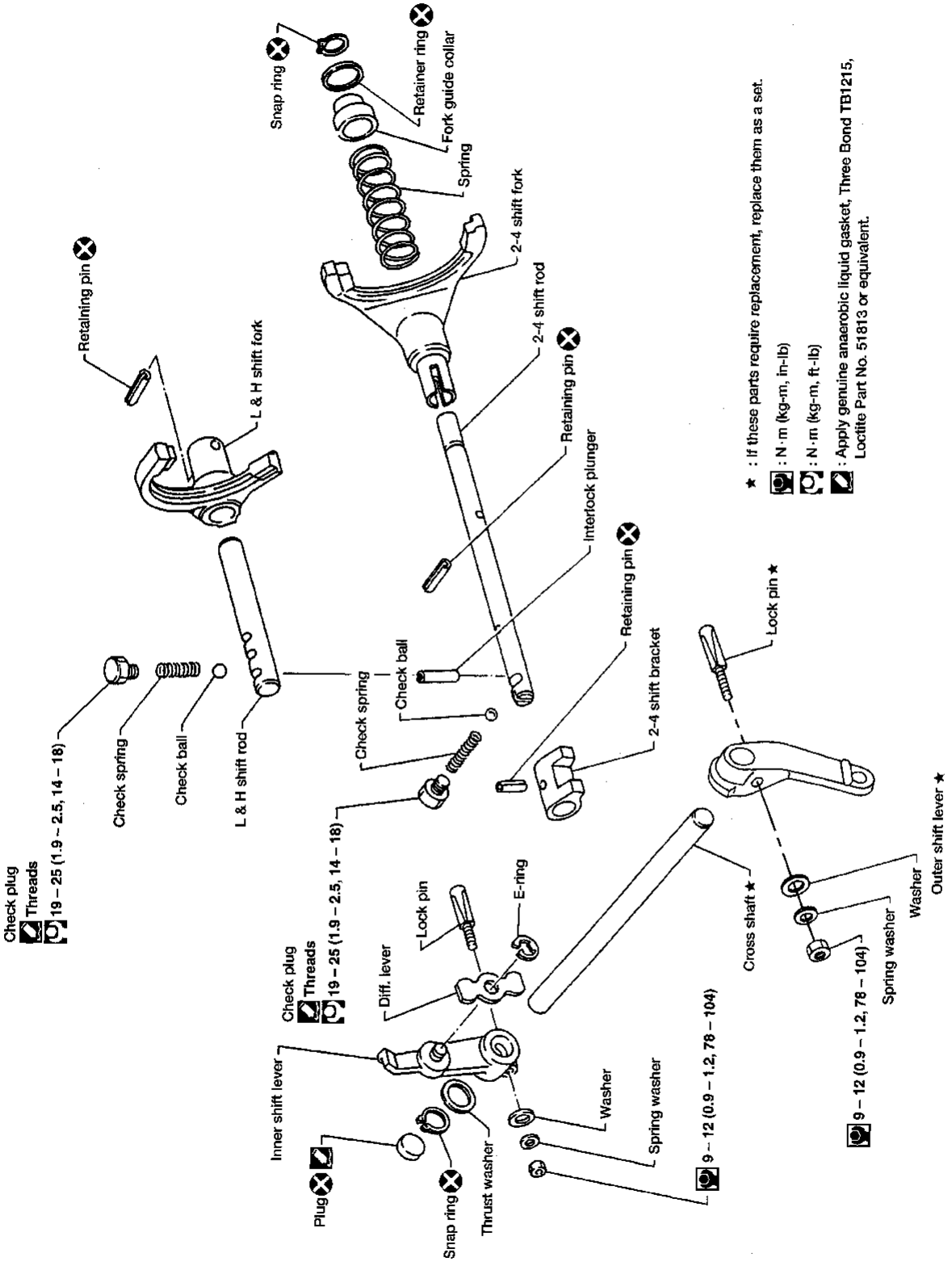
Gear Components



SEC. 332

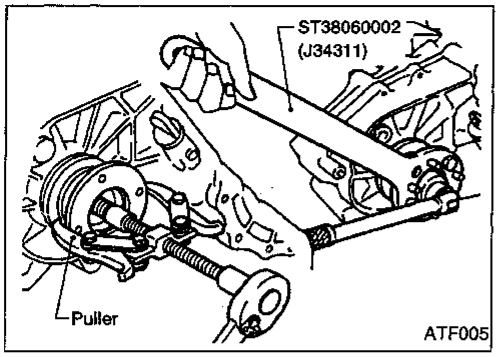
ATF018

Shift Control Components

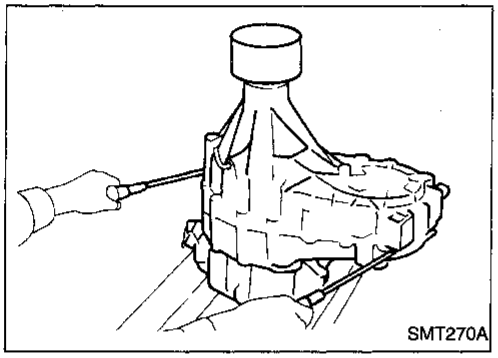


SEC. 333

ATF011

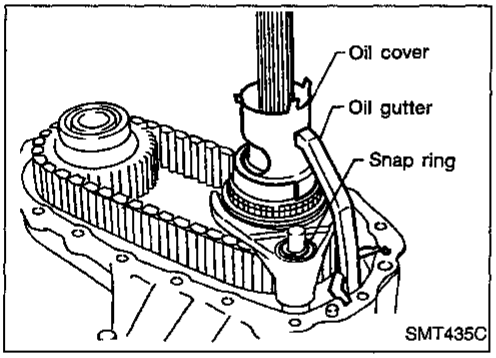


1. Remove companion flange nut.
2. Remove companion flange.

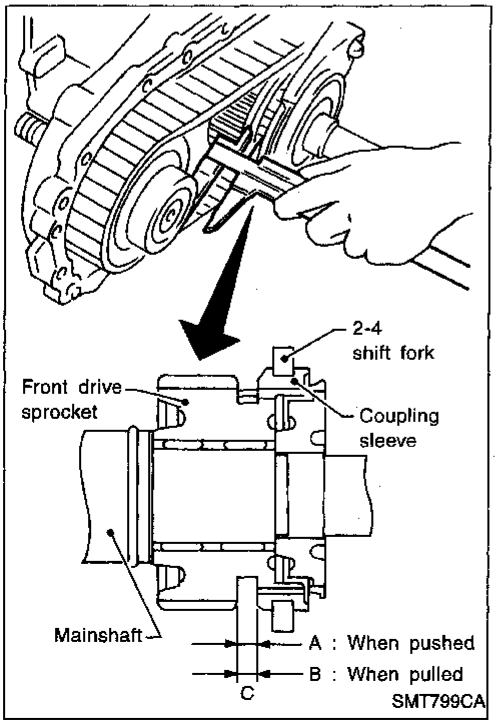


3. Remove 4WD switch.
4. Remove rear case.

- **Be careful not to damage the mating surface.**



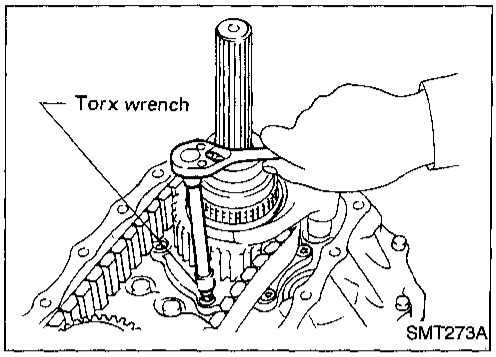
5. Remove oil cover and oil gutter.
6. Remove snap ring from 2-4 shift rod.



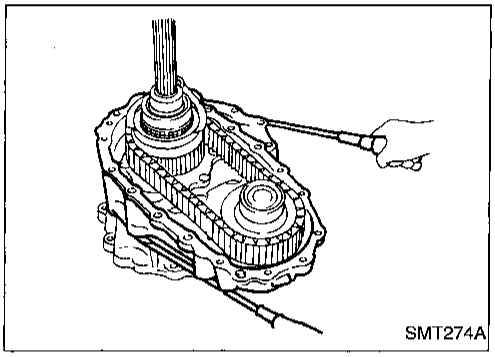
7. Using calipers, measure the difference between front drive sprocket and 2-4 coupling sleeve as outlined under Measuring method below. If it is outside specifications, check front drive sprocket, 2-4 coupling sleeve, clutch gear, 2-4 shift fork and 2-4 fork rod for abnormalities. Replace faulty part(s) as required.

Measuring method

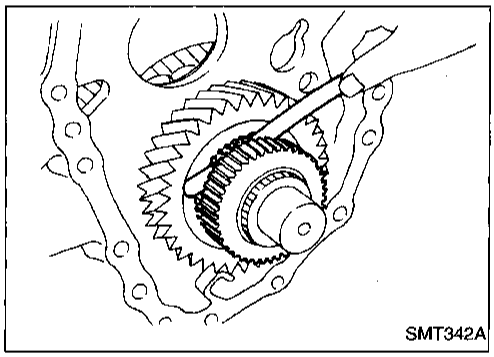
a. **Move coupling sleeve until it is in contact with sprocket, then measure dimension A. Move coupling sleeve until it is in contact with clutch gear, then measure dimension B. Obtain dimensional difference C between two measurements A and B.**
   C = A – B
b. **To determine dimension A, measure at 3 or 4 different points by rotating sprocket and obtain average value of 3 or 4 measurements.**
   Specification C:
   Refer to TF-33.



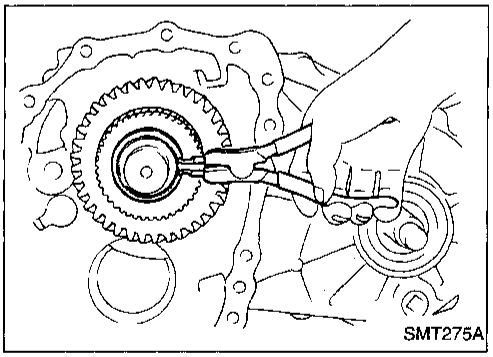
8. Remove bolts securing bearing retainer.
- **This step is necessary to remove mainshaft from center case.**



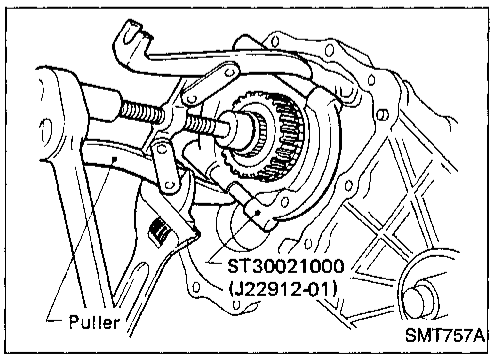
9. Remove bolts securing center case to front case, then separate center case from front case.



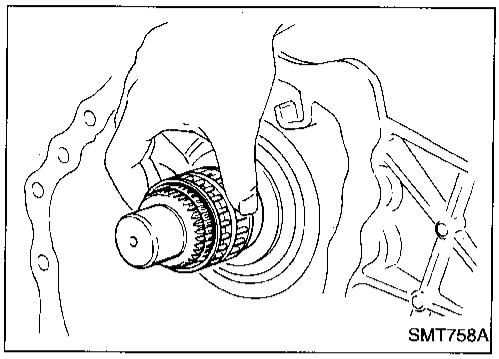
10. Measure low gear end play.
Standard:
0.2 - 0.35 mm (0.0079 - 0.0138 in)
- **If end play is not within specification, check low gear and L & H hub for wear.**



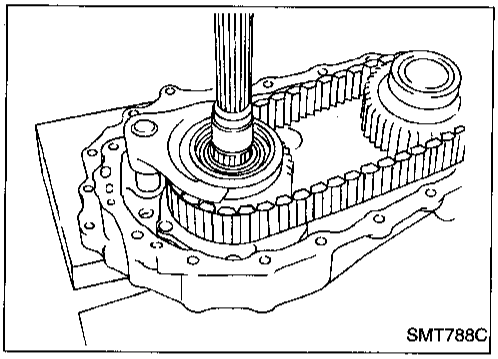
11. Disassemble center case assembly.
a. Remove snap ring from mainshaft.



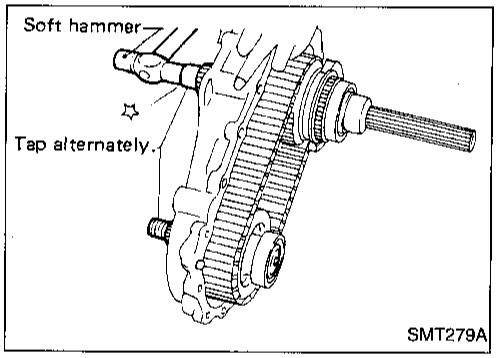
b. Remove low gear with L & H hub.


SMT758A

c. Remove needle bearing from main shaft.


SMT788C

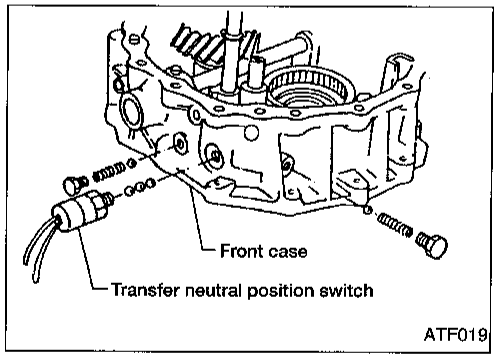
d. Make sure of the direction of the drive chain before removing it. (It must be reinstalled in the same direction.)



SMT279A

e. Remove mainshaft, front drive and drive chain as a set by tapping front end of mainshaft and front drive shaft alternately.

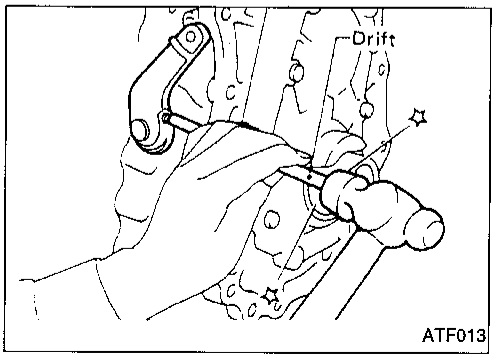
- **Be careful not to bend drive chain.**



ATF019

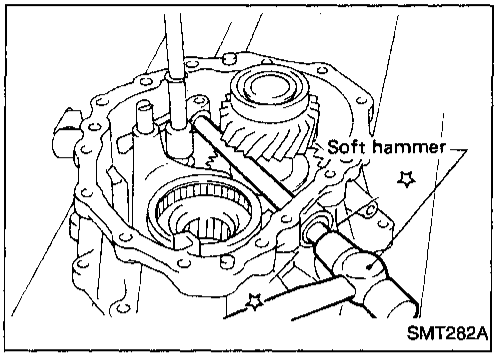
12. Disassemble front case assembly.

a. Remove transfer neutral position switch, plugs, check springs and check balls.

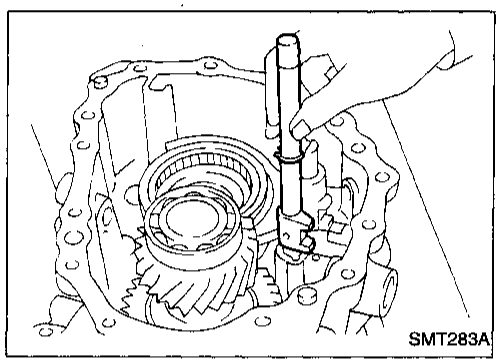


ATF013

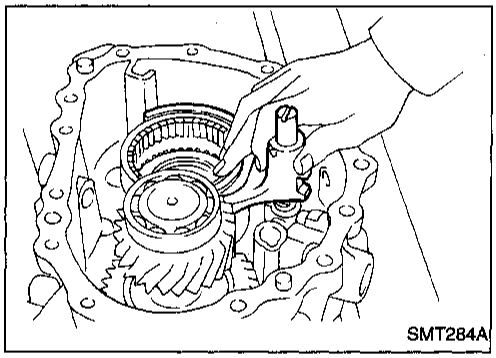
b. Remove lock pin from outer shift lever, then remove outer shift lever.



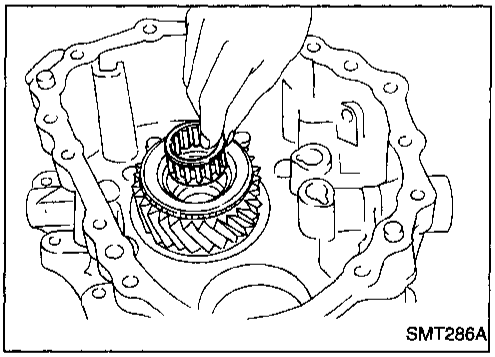
c. Remove lock pin from inner shift lever, then drive out cross shaft and plug together.



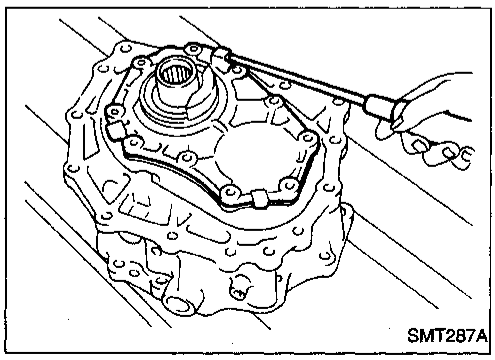
d. Remove 2-4 shift rod.



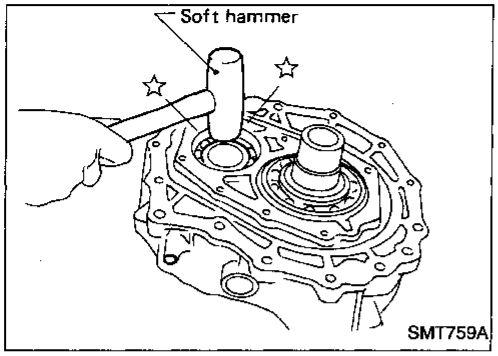
e. Remove L & H shift rod and fork assembly with coupling sleeve.



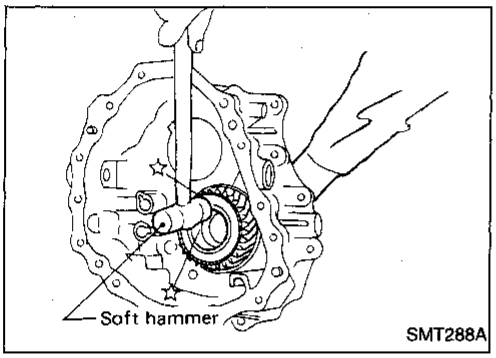
f. Remove needle bearing from main gear.



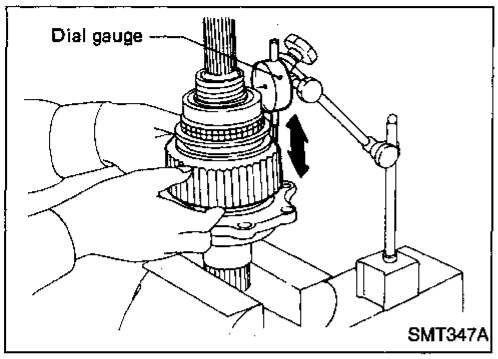
g. Remove bolts securing front case cover, then remove case cover.



h. Remove counter gear by tapping lightly.



i. Remove main gear by tapping lightly.

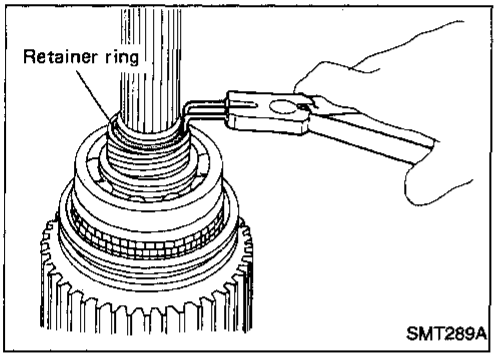


Mainshaft

DISASSEMBLY

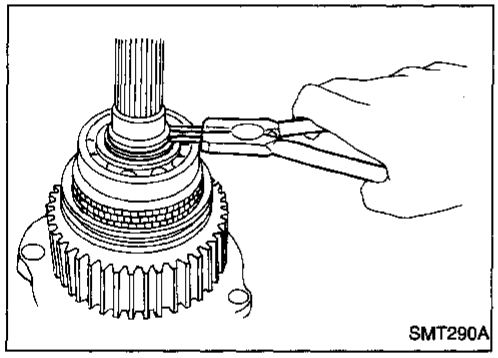
1. Check front drive sprocket end play.
   Standard:
   0.2 - 0.35 mm (0.0079 - 0.0138 in)

- **If end play is not within specification, check front drive sprocket and clutch gear for wear.**

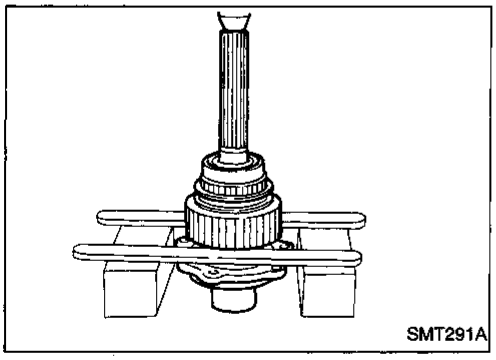


2. Remove retainer ring, speedometer drive gear and steel ball.

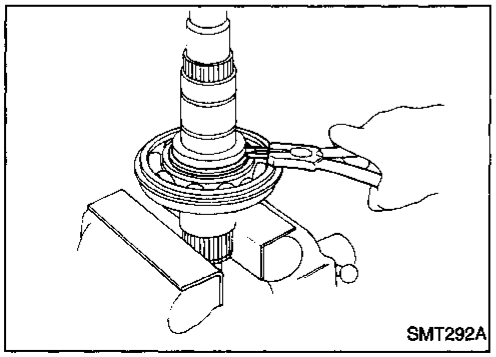
- **Be careful not to lose the steel ball.**



3. Remove snap ring and spacer.



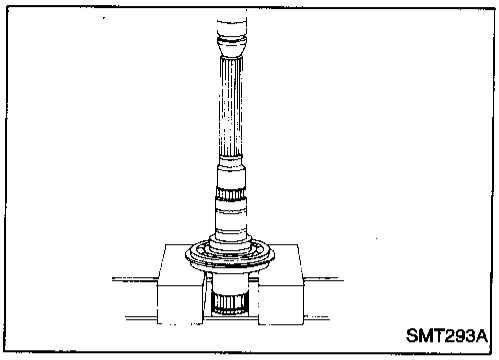
4. Use a press to remove front drive sprocket with mainshaft rear bearing and clutch gear together.
5. Remove needle bearing.

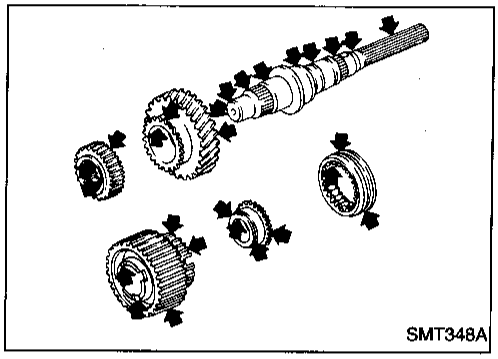


6. Remove bearing retainer, then remove snap ring.

Mainshaft (Cont'd)

7. Use a press to remove mainshaft front bearing from mainshaft.


SMT293A


SMT348A

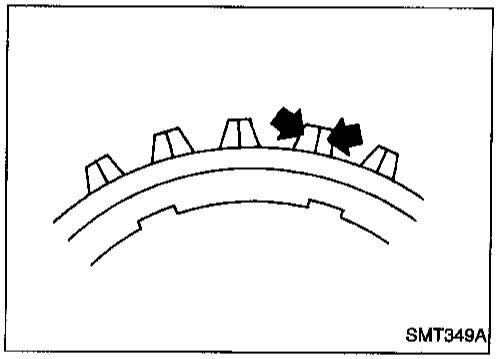
INSPECTION

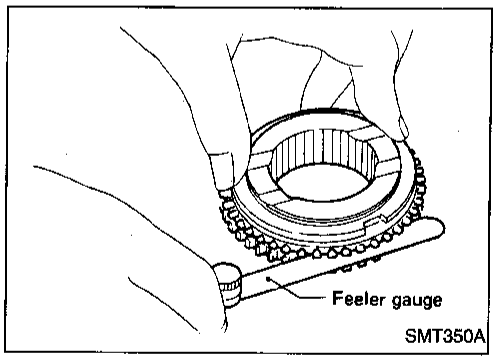
Gear and shaft

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

Baulk ring

- Check baulk ring for cracks or deformation.


SMT349A

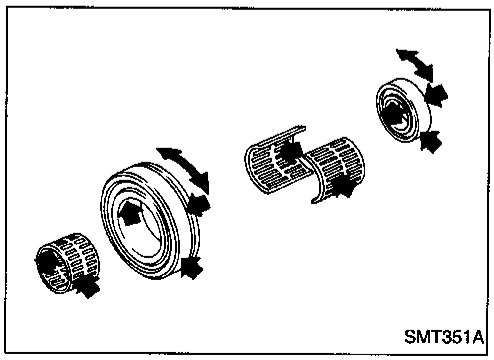


SMT350A

- Measure clearance between baulk ring and clutch gear.
  Baulk ring to clutch gear clearance:
  Refer to SDS, TF-33.

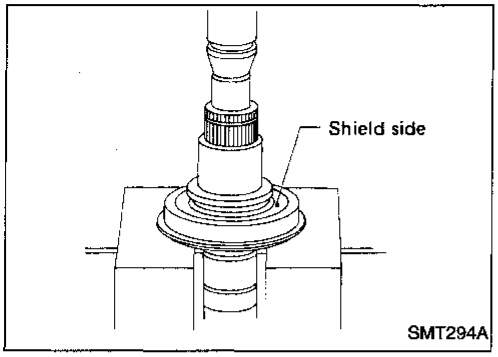
Bearing

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

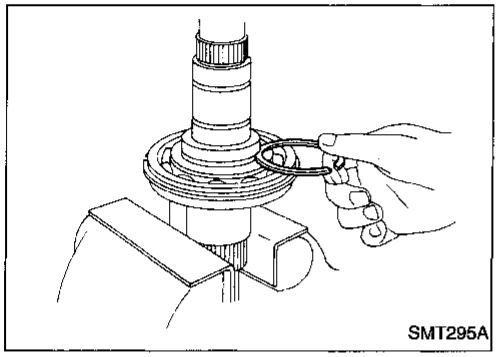

SMT351A

Mainshaft (Cont'd)

ASSEMBLY



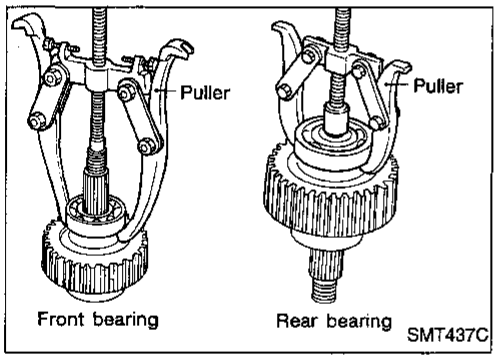
1. Press mainshaft front bearing onto mainshaft.
   - **Pay attention to its direction.**



2. Select and install snap ring with proper thickness.
   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. For further procedures, refer to "ASSEMBLY", TF-26.

Front Drive Shaft

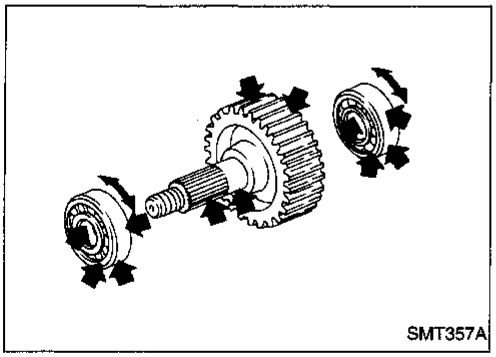
DISASSEMBLY



- Using a gear puller, remove front drive shaft front and rear bearings.

INSPECTION

Sprocket and shaft

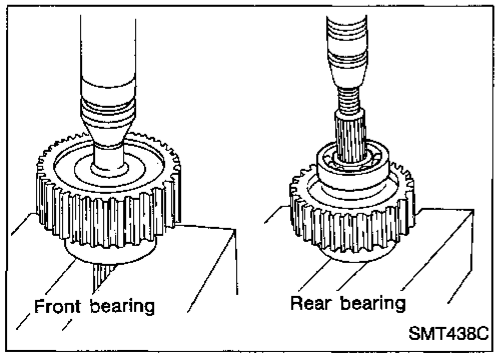


- Check sprocket for excessive wear, chips or cracks.
- Check shaft for cracks or wear.

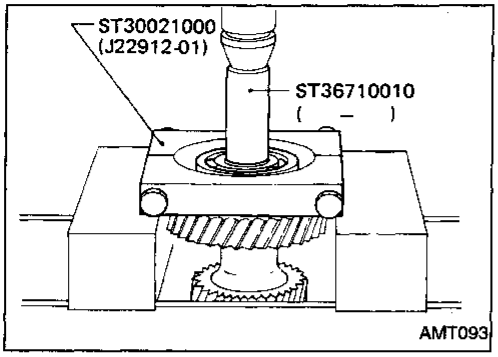
Bearing

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

ASSEMBLY



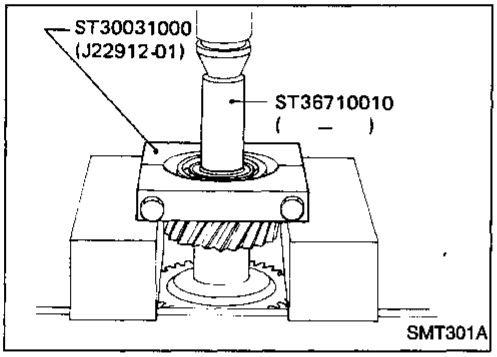
- Press front drive shaft front and rear bearings onto front drive shaft.



Counter Gear

DISASSEMBLY

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

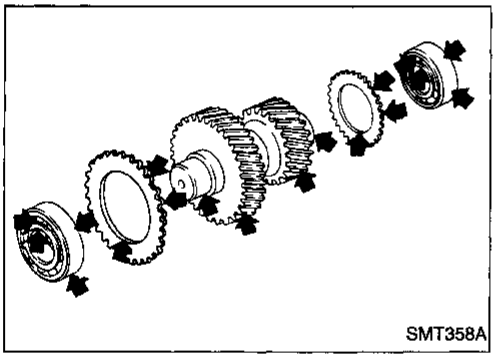


2. Press out counter gear rear bearing.
- Remove rear sub-gear, dish plate and spacer (M/T model only).

INSPECTION

Gear and shaft

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

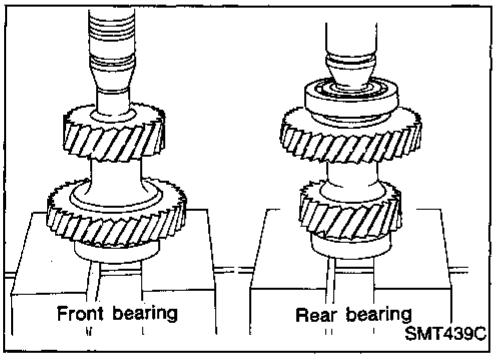


Bearing

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

ASSEMBLY

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

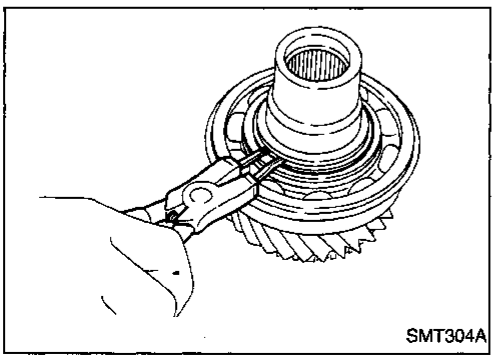


Main Gear

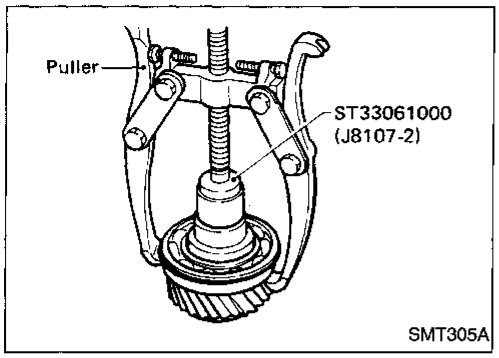
DISASSEMBLY

Main gear bearing

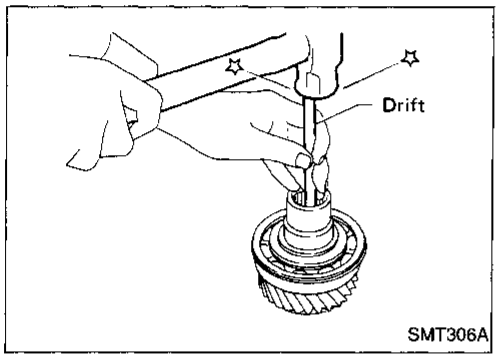
1. Remove snap ring.



Main Gear (Cont'd)

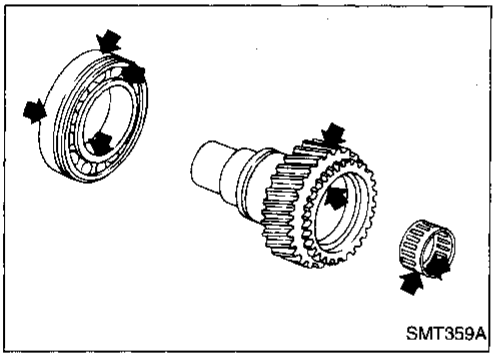


2. Pull out main gear bearing.



Plug

- **Always replace with a new one whenever it has been removed.**



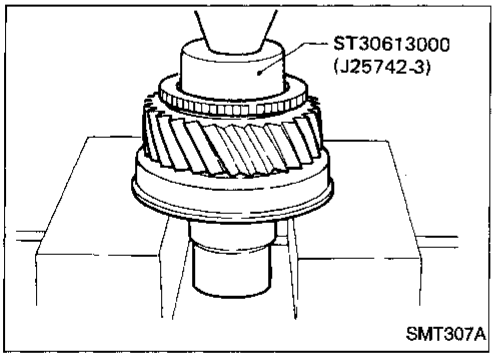
INSPECTION

Gear and shaft

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

Bearing

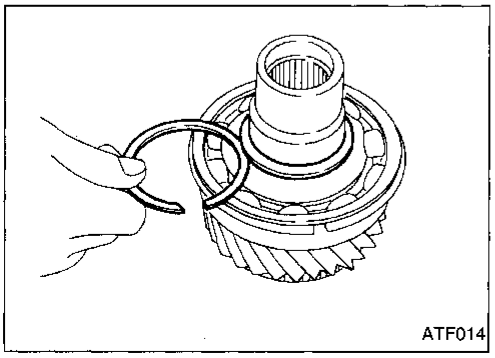
- Make sure bearings roll freely and are free from noise, cracks, pitting or wear.



ASSEMBLY

Main gear bearing

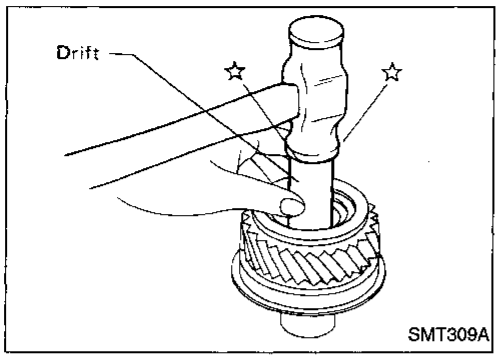
1. Press on main gear bearing.



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

Main Gear (Cont'd)

Plug

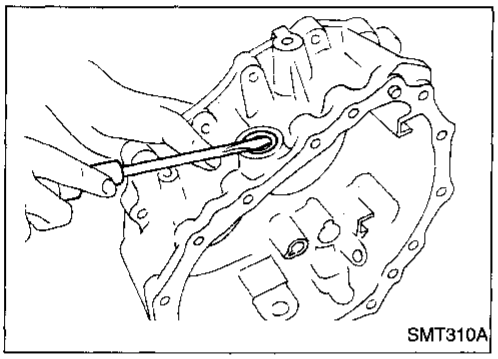


Apply sealant to plug, then install.

- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**

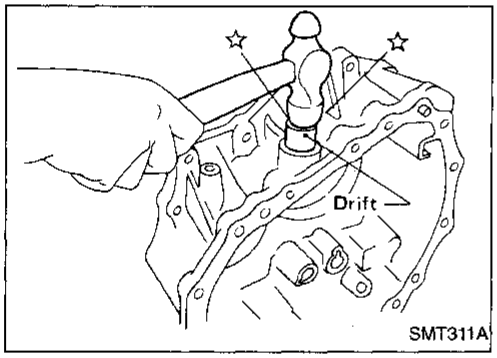
Front Case

SHIFT SHAFT OIL SEAL



Removal

- 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.

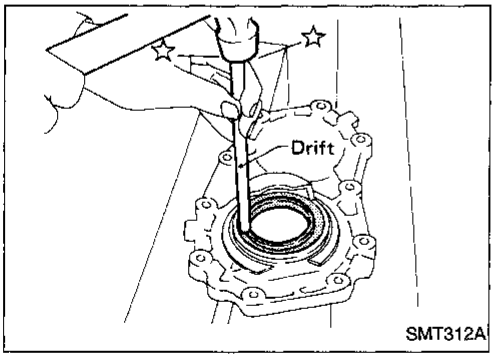


Installation

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

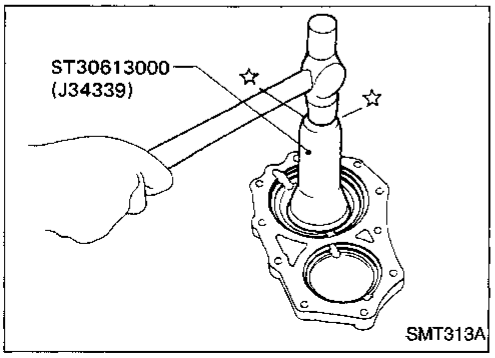
Front Case Cover

COVER OIL SEAL



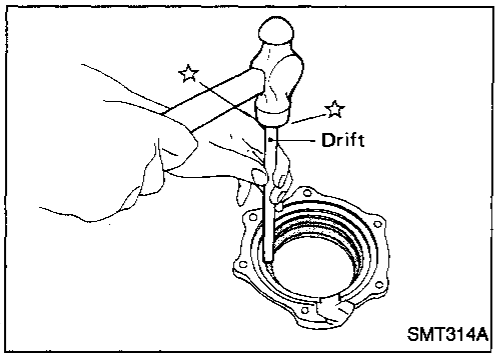
Removal

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



Installation

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

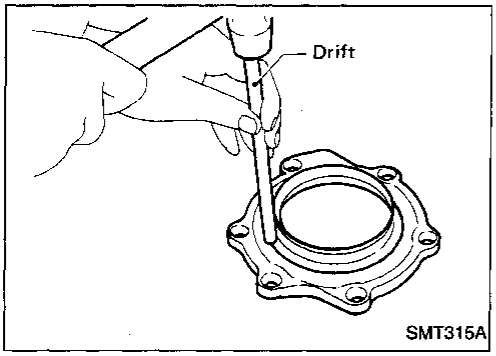


Bearing Retainer

OIL CATCHER

Removal

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



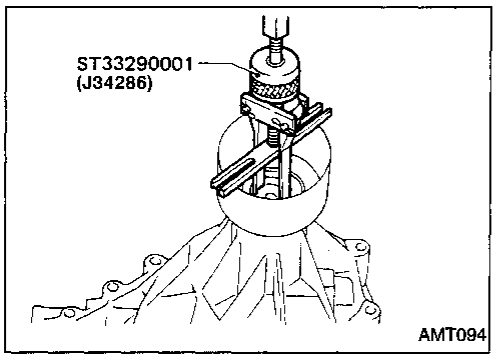
Installation

- 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.

Rear Case

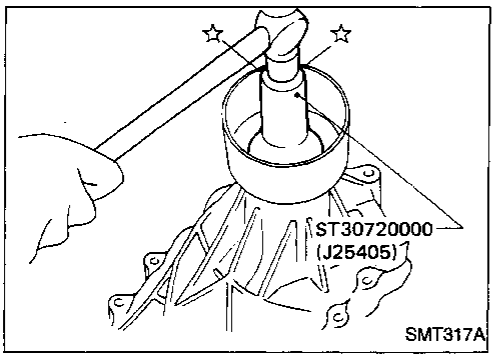
REAR OIL SEAL

Removal



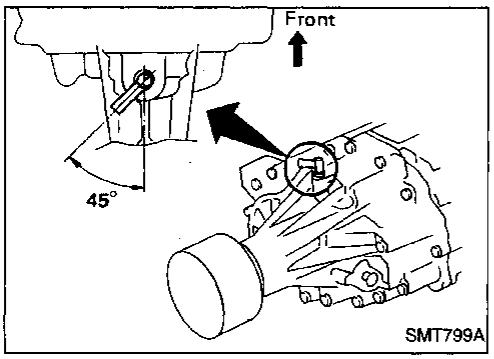
- Pull out rear oil seal.

Installation



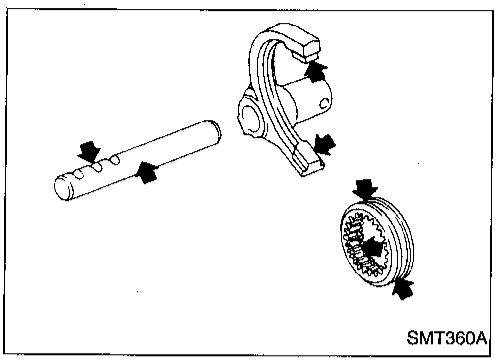
- Install new rear oil seal until it stops.
- Before installing, apply multi-purpose grease to seal lip.

AIR BREATHER



Install as shown in illustration.

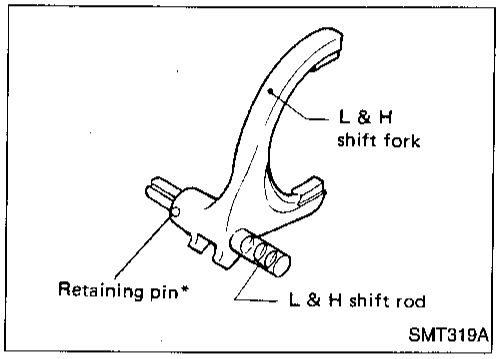
- **Use genuine thread locker, Three Bond TB1324, Loctite 271 or equivalent.**


SMT360A

Shift Control Components

INSPECTION

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

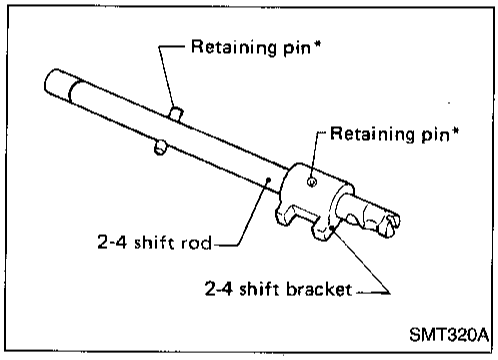


SMT319A

L & H SHIFT ROD & FORK

- Assemble as shown in illustration.

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



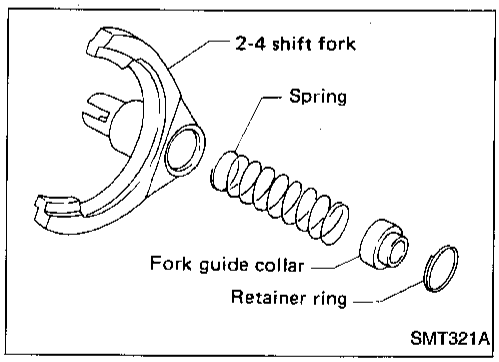
SMT320A

2-4 SHIFT ROD & FORK

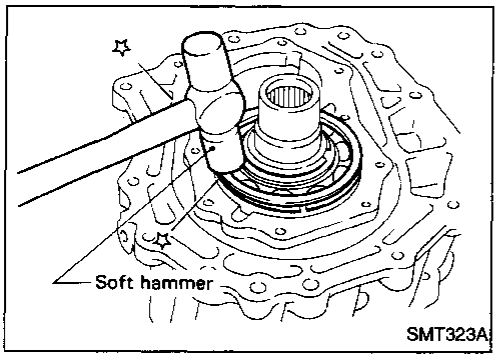
- Assemble as shown in illustration.

* Retaining pins are the same size.

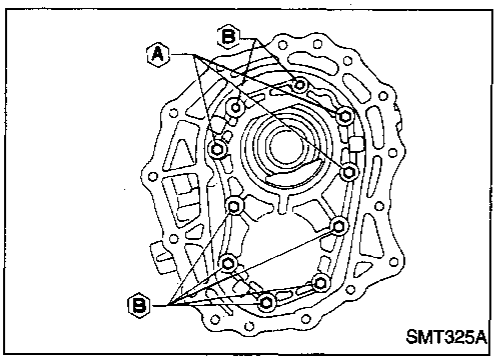
- **Pay special attention to the direction of fork guide collar.**



SMT321A



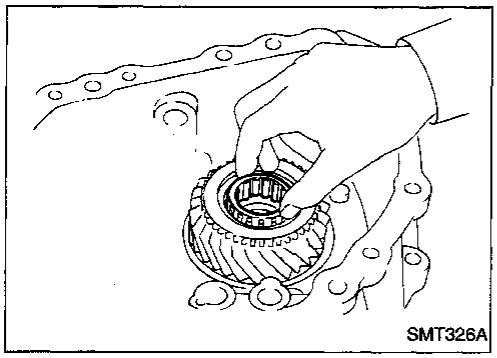
1. Assemble front case.
a. Install main gear assembly by tapping lightly.



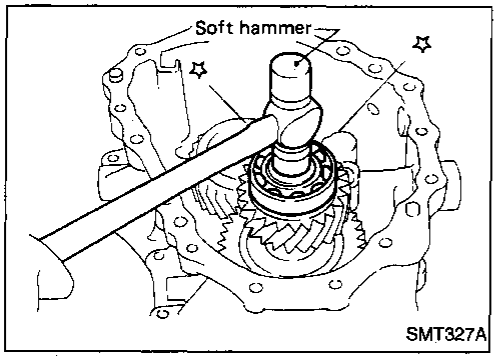
b. Apply sealant to the mating surface and bolts of front case cover, then attach it to the front case.

- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**
- **These ten bolts should be coated with sealant.**

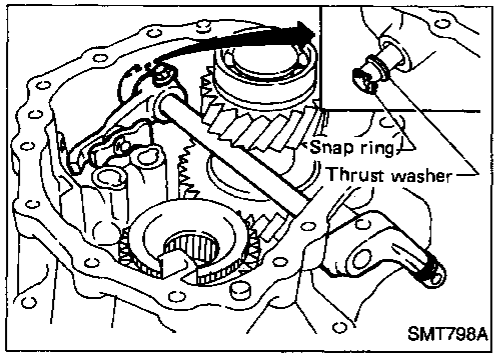
Bolts A:
: 16 - 21 N·m (1.6 - 2.1 kg-m, 12 - 15 ft-lb)
Bolts B:
: 19 - 24 N·m (1.9 - 2.4 kg-m, 14 - 17 ft-lb)



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

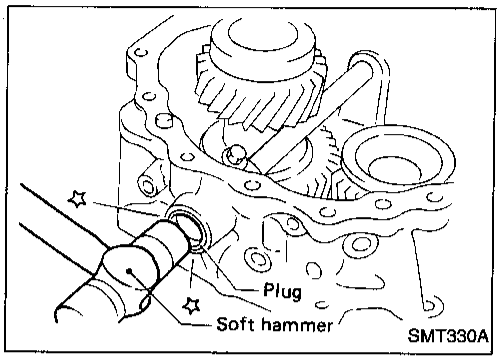


d. Install counter gear assembly by tapping lightly.

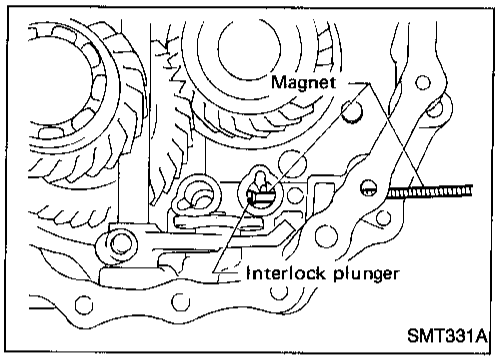


e. Install cross shaft and inner shift lever.

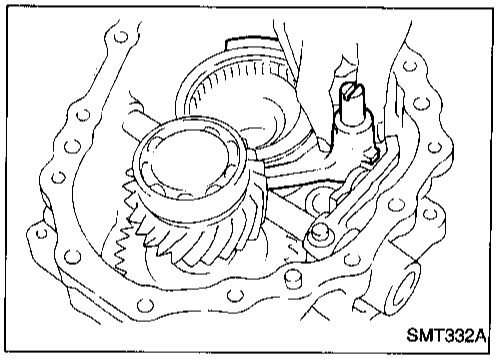
- **When replacing cross shaft, outer shift lever or outer shift lever lock pin, replace them as a set.**



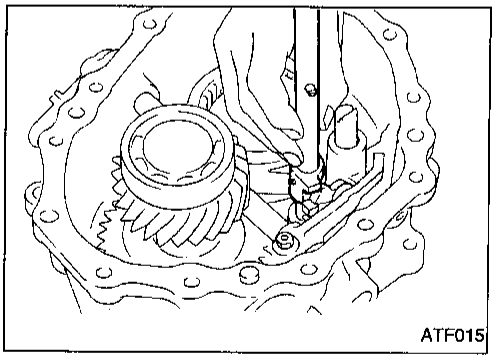
f. Apply sealant to plug, then install it into front case.
- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**



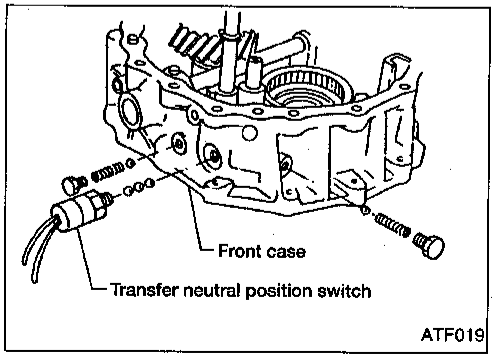
g. Insert interlock plunger into front case.



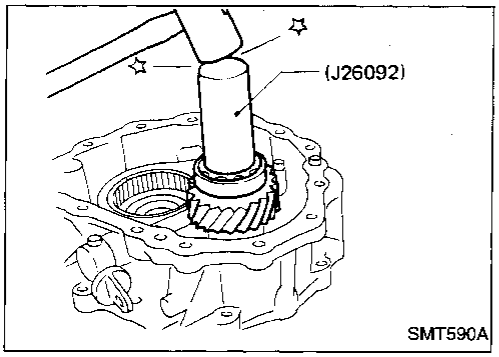
h. Install L & H shift rod and fork assembly with coupling sleeve.



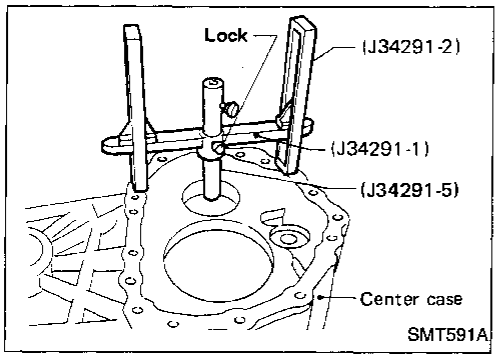
i. Install 2-4 shift rod.



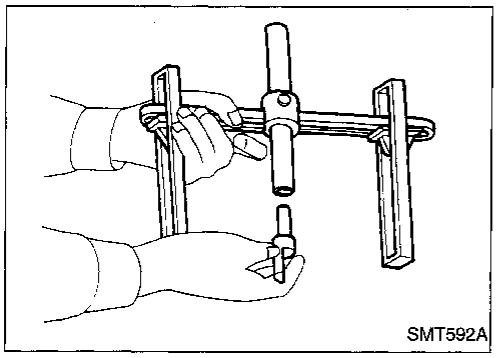
j. Install transfer neutral position switch, check balls, check springs and plugs.
- **Apply sealant to switches and plugs.**
- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**



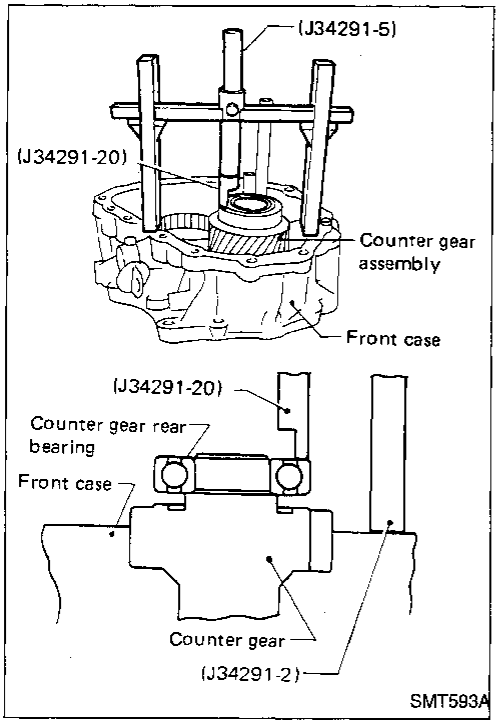
2. Select counter gear rear bearing shim.
a. Seat counter gear assembly.



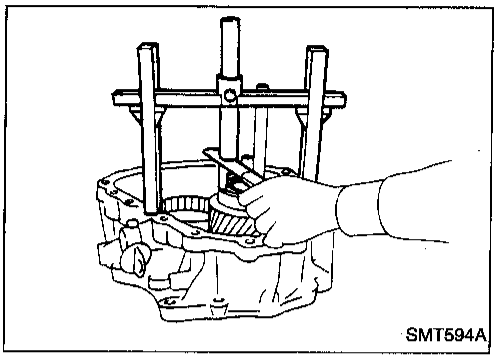
b. Place J34291-1 (bridge), J34291-2 (legs) and J34291-5 (gauging cylinder) on machined surface of center case, allowing gauging cylinder to rest on top outer portion of counter gear rear bearing. Lock gauging cylinder in place.



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

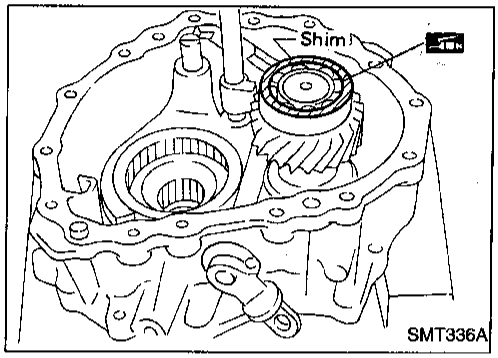


d. Place bridge, legs, gauging cylinder and gauging plunger onto machined surface of front case assembly, allowing gauging plunger to drop until it contacts counter gear rear bearing mating surface.


SMT594A

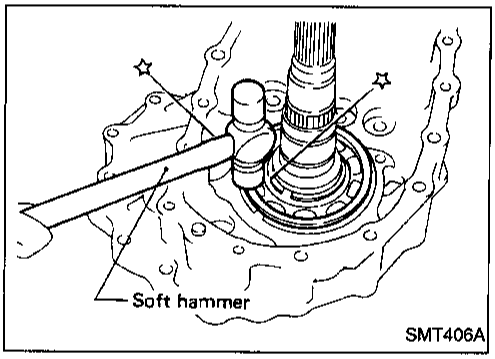
e. Lock gauging plunger in place and use feeler gauge to measure end play between gauging cylinder and gauging plunger.
f. Use measured distance to select correct counter gear rear bearing shim.

Allowable counter gear end play:
0 - 0.2 mm (0 - 0.008 in)
Available counter gear rear bearing shim:
Refer to SDS, TF-33.



SMT336A

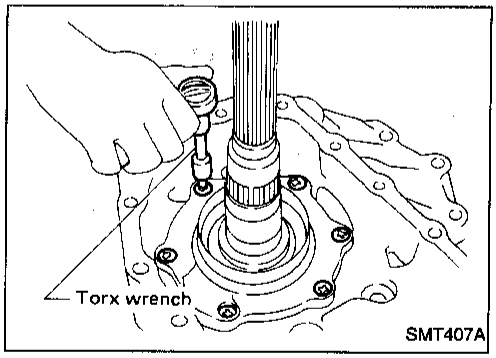
3. Place suitable shim with grease on counter gear rear bearing.
4. Apply ATF to each part in front case.



SMT406A

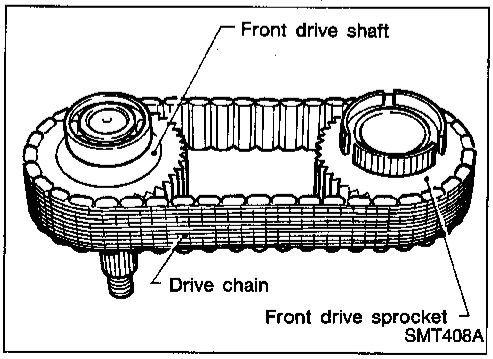
5. Assemble center case assembly.
a. Install mainshaft on center case by tapping lightly.

- **Apply ATF to mainshaft front bearing.**



SMT407A

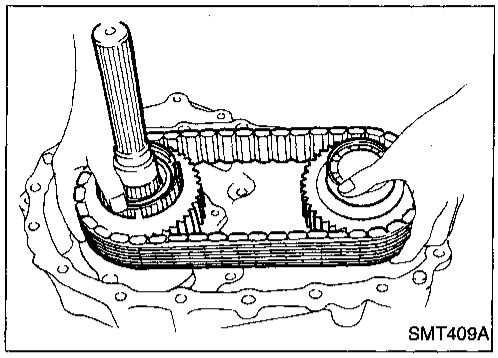
b. Install bearing retainer.
: 16 - 21 N·m (1.6 - 21 kg-m, 12 - 15 ft-lb)

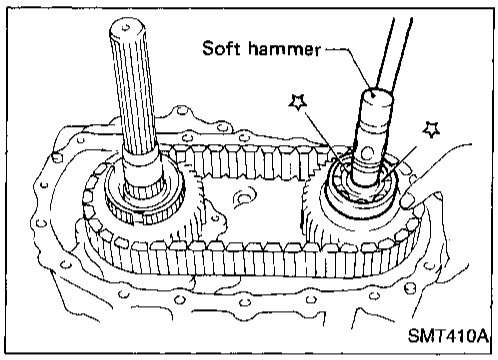


SMT408A

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

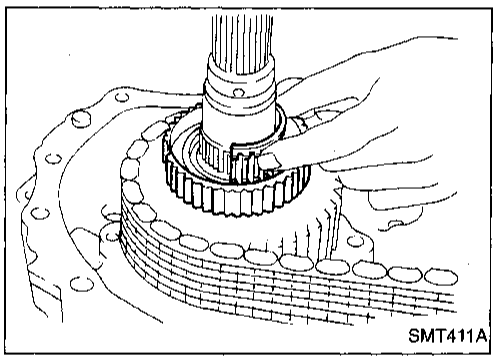
- **Be sure to install drive chain in same direction as removed.**


SMT409A

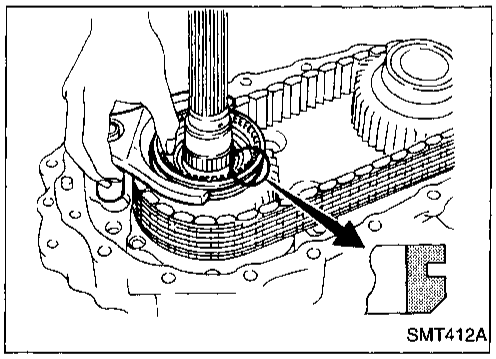


SMT410A

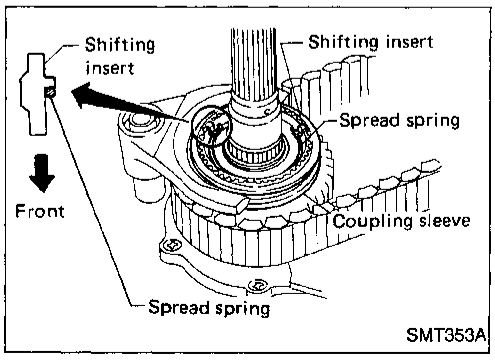
d. Install front drive shaft by tapping lightly.
- **Make sure shafts are aligned in the case.**


SMT411A

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

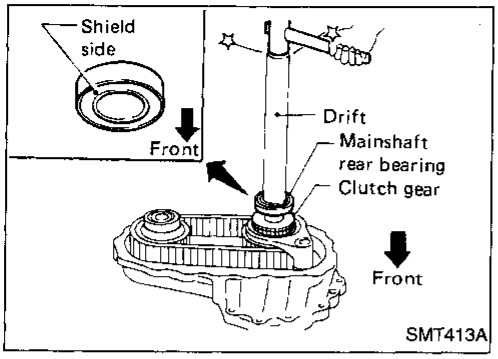

SMT412A

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



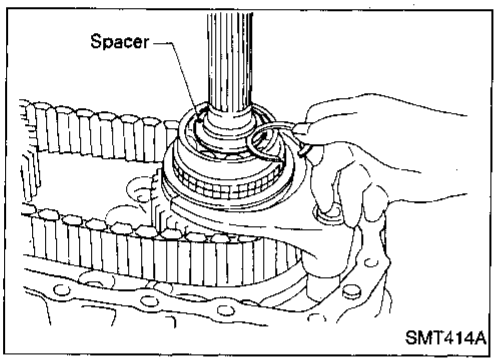
SMT353A

g. Install shifting inserts and spread spring.
- **Pay attention to the direction of shifting inserts.**



h. Install baulk ring, then install clutch gear and mainshaft rear bearing.

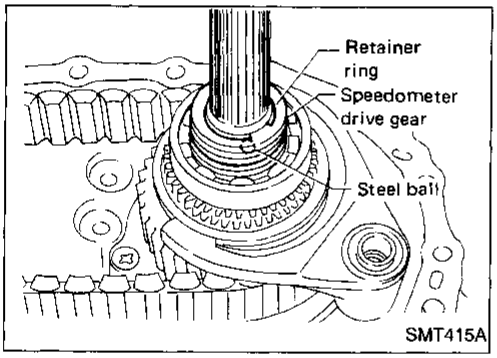
- **Place wooden block under mainshaft in order to protect mainshaft front bearing.**



i. Install spacer.

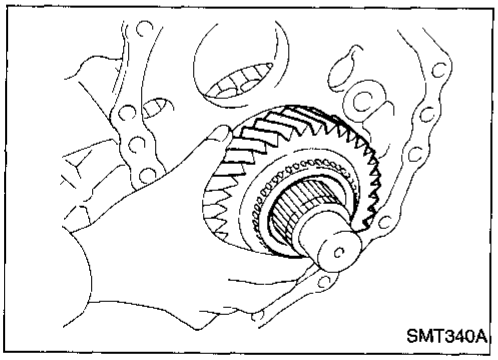
j. Select and install snap ring with proper thickness.

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.



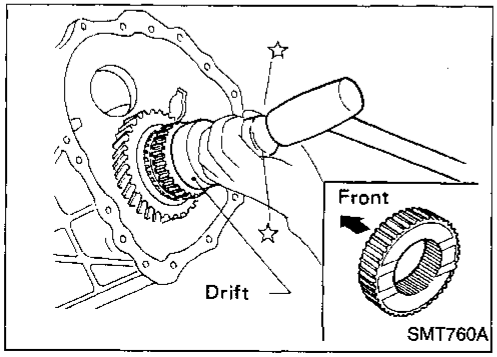
k. Install steel ball, speedometer drive gear and retainer ring.

- **Steel ball is the smallest check ball for this unit.**



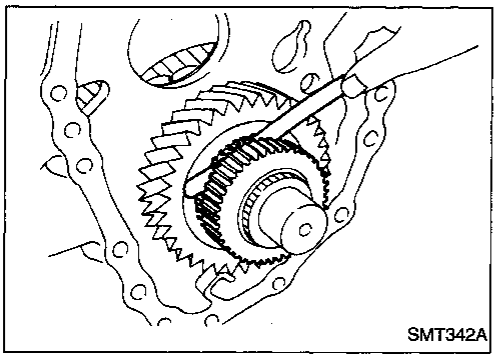
l. Install low gear and bearing onto mainshaft.

- **Apply ATF to needle bearing.**

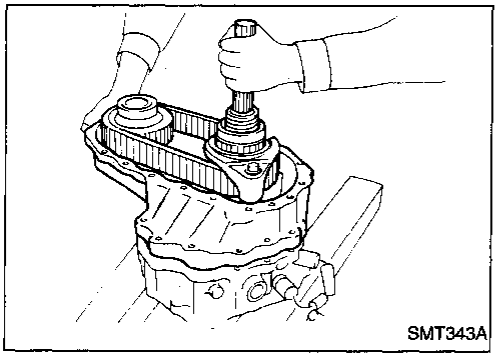


m. Install L & H hub and snap ring onto mainshaft.

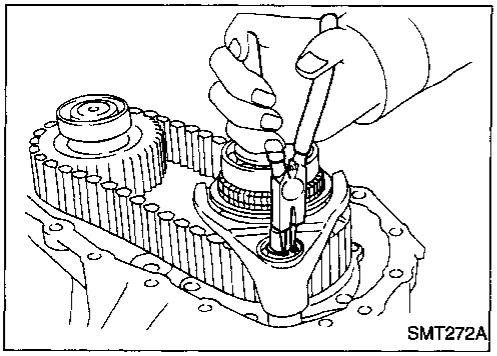
- **Pay attention to the direction of L & H hub.**


SMT342A

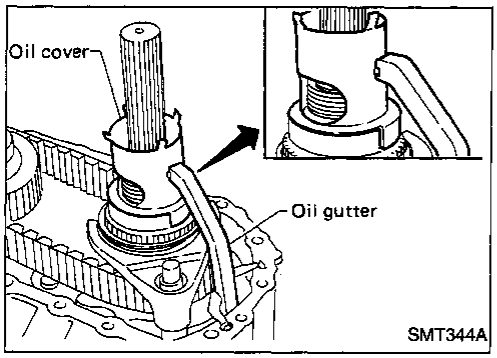
n. Measure low gear end play.
- **Standard: 0.2 - 0.35 mm (0.0079 - 0.0138 in)**


SMT343A

6. Apply sealant to mating surface of center case, then attach to front case and tighten bolts.
- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**

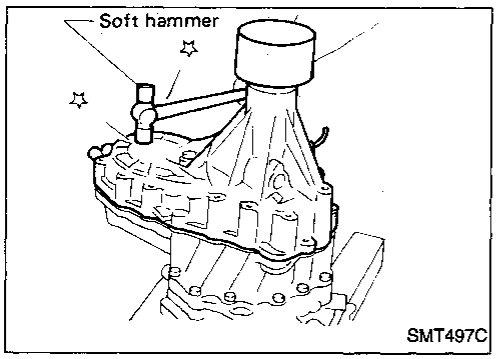

SMT272A

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.



SMT497C

10. Apply sealant to mating surface of rear case, then attach it to center case and tighten bolts.
- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**

11. Install 4WD switch.
- **Apply sealant to switch threads.**
- **Use genuine anaerobic liquid gasket, Three Bond TB1215, Loctite Part No. 51813 or equivalent.**

General Specifications

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)

Inspection and Adjustment

CLEARANCE BETWEEN FRONT DRIVE SPROCKET AND 2-4 COUPLING SLEEVE

Unit: mm (in)

Allowable clearance "C"	0.2 - 0.54 (0.008 - 0.0213)

GEAR END PLAY

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)

CLEARANCE BETWEEN BAULK RING AND CLUTCH GEAR

Unit: mm (in)

Standard	Wear limit
1.0 - 1.5 (0.039 - 0.059)	0.5 (0.020)

AVAILABLE SHIM

Counter gear rear bearing

Unit: mm (in)

Allowable clearance	0 - 0.2 (0 - 0.008)
Thickness	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

AVAILABLE SNAP RING

Mainshaft front bearing

Unit: mm (in)

Allowable clearance	0 - 0.15 (0 - 0.0059)
Thickness	Part number
3.1 (0.122)	33138-73P10
3.19 (0.126)	33138-73P11
3.28 (0.129)	33138-73P12

Main gear bearing

Unit: mm (in)

Allowable clearance	0 - 0.15 (0 - 0.0059)
Thickness	Part number
2.60 (0.102)	33114-73P00
2.69 (0.106)	33114-73P01
2.78 (0.109)	33114-73P02

Mainshaft rear bearing

Unit: mm (in)

Allowable clearance	0 - 0.15 (0 - 0.0059)
Thickness	Part number
1.8 (0.071)	33138-73P20
1.89 (0.074)	33138-73P21
1.98 (0.078)	33138-73P22
2.07 (0.081)	33138-73P23
2.16 (0.085)	33138-73P24