MANUAL TRANSMISSION

SECTION MT

DESCRIPTION

The newly developed manual transmission — model "FS5R30A" — has been applied on the vehicles equipped with the VG30ET engine.

Features — The FS5R30A transmission employs a single rail type shift control, reverse shift noise check mechanism and non-backlash mechanism.

Specifications

- Distance between mainshaft and counter gear: 81 mm (3.19 in)
- Type of synchromesh: Warner type
- No. of forward speeds: 5-speeds
- Type of control position: Floor shift

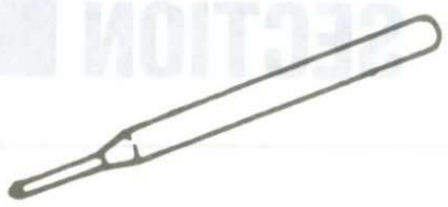
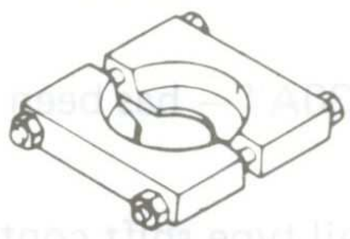
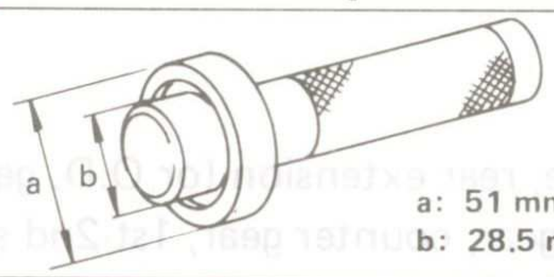
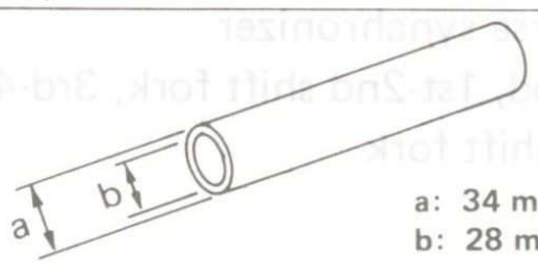
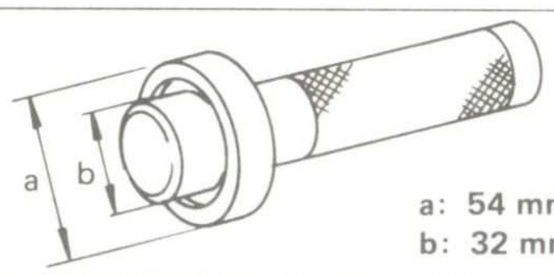
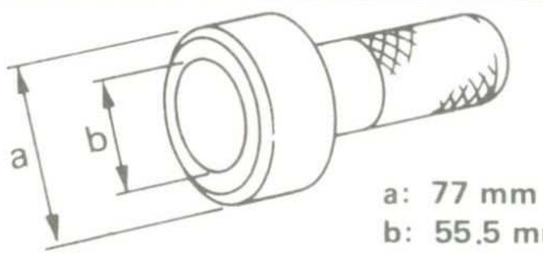
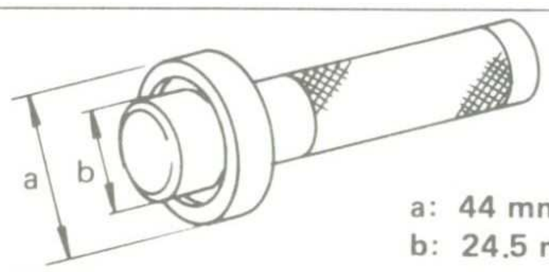
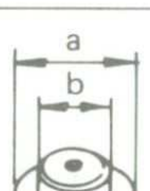
Main components

- Case components: Transmission case, adapter plate, rear extension (or O.D. gear case)
- Gear components: Main drive gear, mainshaft and gear, counter gear, 1st-2nd synchronizer, 3rd-4th synchronizer, O.D.-reverse synchronizer
- Shift control components: Control lever, striking rod, 1st-2nd shift fork, 3rd-4th shift fork, O.D. shift fork, reverse shift fork

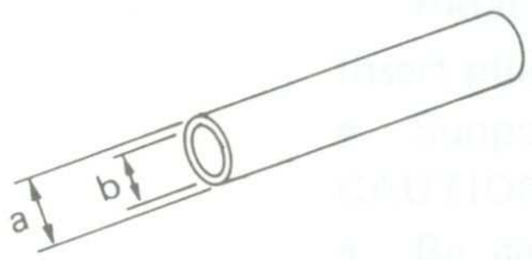
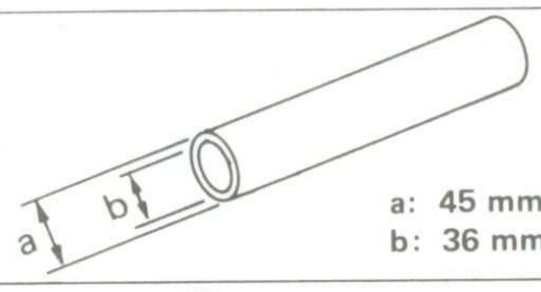
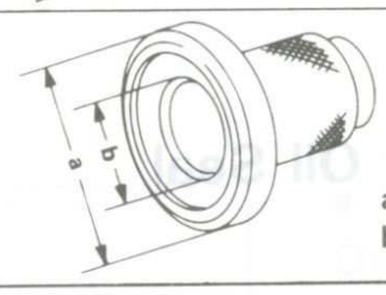
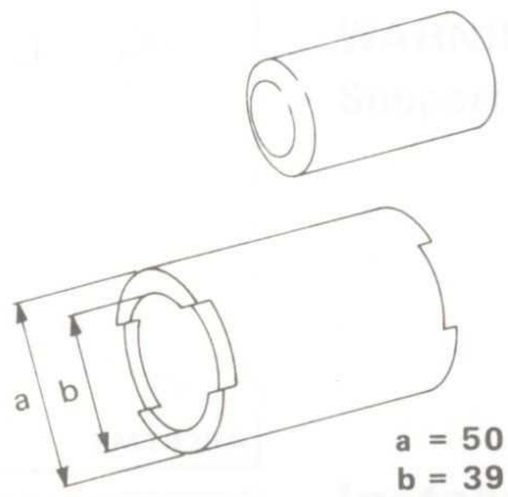
MT

SPECIAL SERVICE TOOLS – for FS5R30A

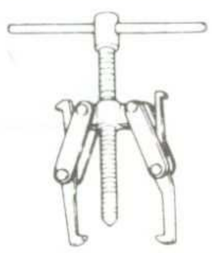
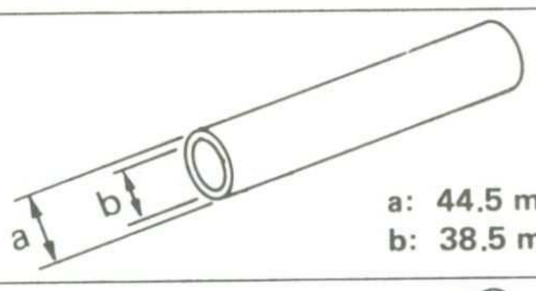
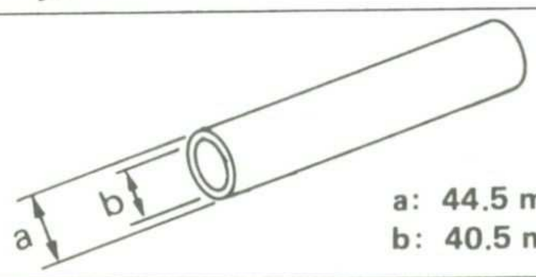
*: Special tools or commercial equivalent

Tool number Tool name	Description	
ST23540000* Pin punch		Removing and installing retaining pin
ST30031000* Puller		Removing 1st & 2nd synchronizer assembly Removing counter gear rear thrust bearing Removing main drive bearing
ST33290001* Puller		Removing rear oil seal
ST33230000* Drift	 a: 51 mm (2.01 in) dia. b: 28.5 mm (1.122 in) dia.	Removing mainshaft and counter gear
ST22350000* Drift	 a: 34 mm (1.34 in) dia. b: 28 mm (1.10 in) dia.	Removing counter gear front bearing (Use with KV38100300)
KV38100300* Drift	 a: 54 mm (2.13 in) dia. b: 32 mm (1.26 in) dia.	Removing counter gear front bearing (Use with ST22350000) Installing counter gear rear bearing
ST30720000* Drift	 a: 77 mm (3.03 in) dia. b: 55.5 mm (2.185 in) dia.	Removing mainshaft front bearing Installing mainshaft front bearing
ST33210000* Drift	 a: 44 mm (1.73 in) dia. b: 24.5 mm (0.94 in) dia.	Installing counter gear front bearing Installing front cover oil seal
ST30613000* Drift	 a: 72 mm (2.83 in) dia. b: 48 mm (1.89 in) dia.	Installing main drive gear bearing

*: Special tools or commercial equivalent

Tool number Tool name	Description	
ST37750000* Drift	 a: 40 mm (1.57 in) dia. b: 31 mm (1.22 in) dia.	Removing counter gear rear bearing Installing O.D. gear bushing Installing reverse cone Installing reverse counter gear Installing counter gear rear end bearing
ST22452000* Drift	 a: 45 mm (1.77 in) dia. b: 36 mm (1.42 in) dia.	Installing reverse hub Installing mainshaft rear bearing
ST33400001* Drift	 a: 60 mm (2.36 in) dia. b: 47 mm (1.85 in) dia.	Installing rear oil seal
ST36730000* Drift	 a = 50 mm (1.97 in) dia. b = 39 mm (1.54 in) dia.	Installing sub-gear on reverse idler gear

COMMERCIAL SERVICE TOOLS – FS5R30A

Tool name	Description	
Puller		Removing counter gear rear end bearing Removing mainshaft rear bearing Removing reverse synchronizer hub Removing reverse counter gear
Drift	 a: 44.5 mm (1.752 in) dia. b: 38.5 mm (1.516 in) dia.	Installing sub-gear snap ring
Drift	 a: 44.5 mm (1.752 in) dia. b: 40.5 mm (1.594 in) dia.	Installing O.D. main gear Installing reverse gear bushing

Removal

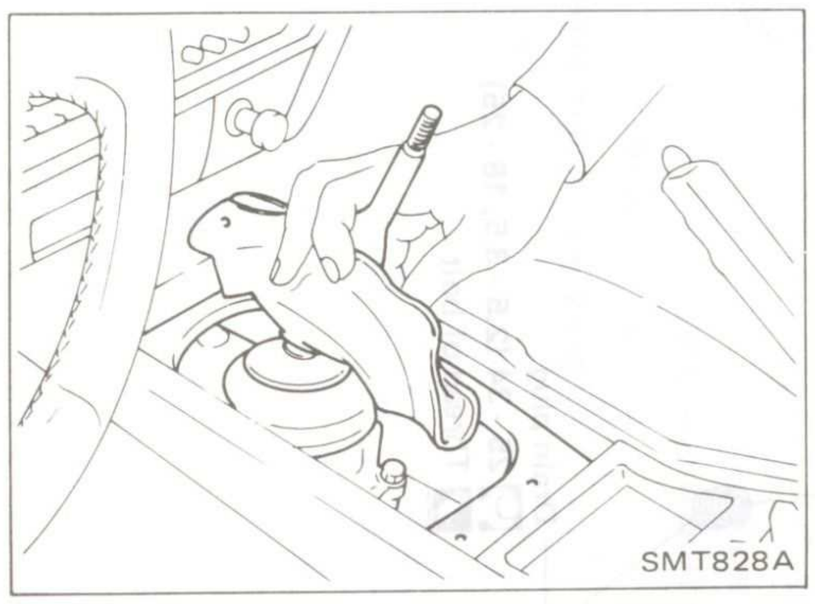
- Remove exhaust front tube, catalytic converter and exhaust manifold connecting tube.
  Refer to section EM.
- Remove propeller shaft.
  Refer to section PD.

Insert plug into rear oil seal after removing propeller shaft.

- Support engine by placing a jack under oil pan.

CAUTION:

- **Be careful not to damage spline, sleeve yoke and rear oil seal, when removing propeller shaft.**
- **Do not place jack under the oil pan drain plug.**

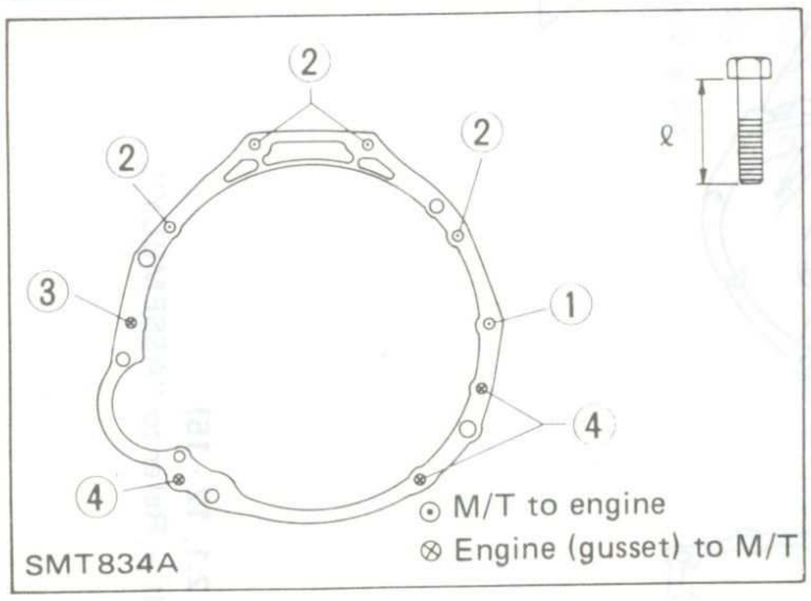

SMT828A

- Remove shift knob and console boot finisher.

Dust cover must not be removed from shift lever.

WARNING:

Support Manual Transmission, while removing it.

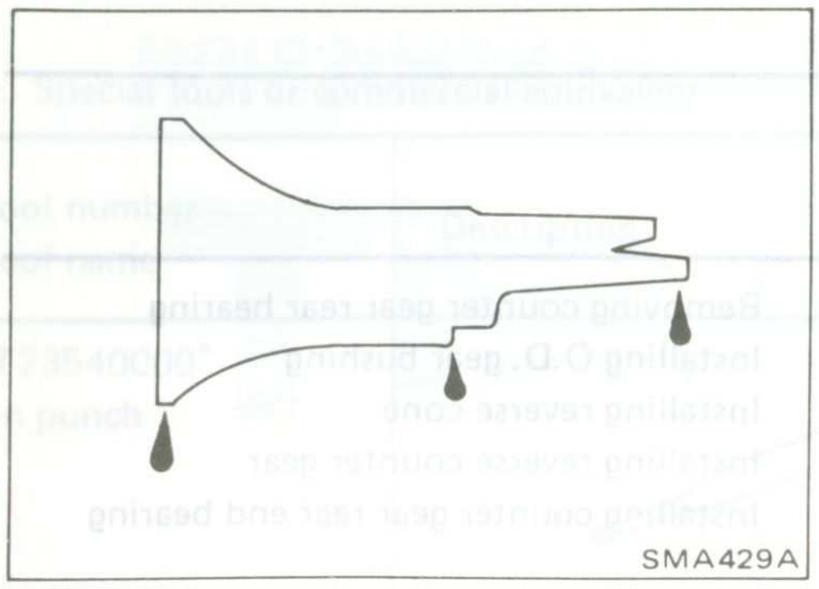


SMT834A

Installation

- Tighten bolt securing transmission.

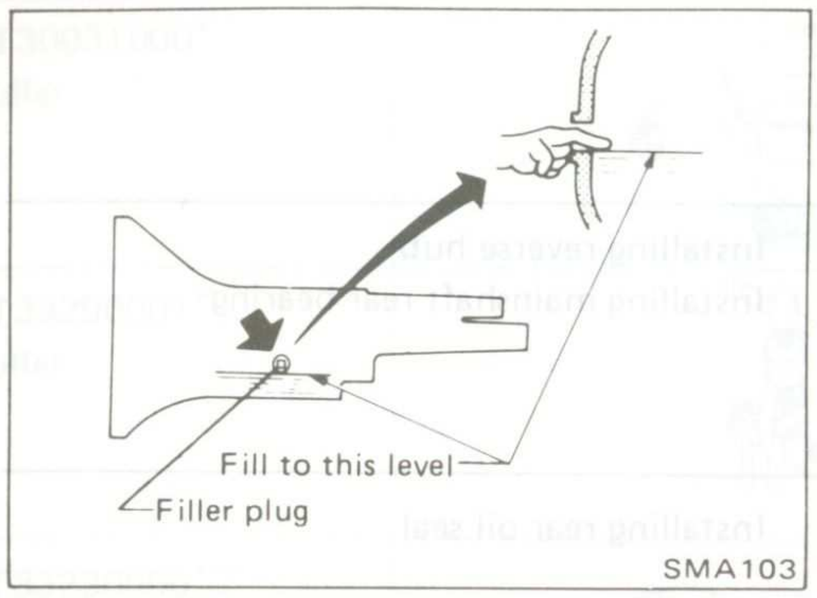
Bolt No.	Tightening torque N·m (kg-m, ft-lb)	ℓ mm (in)
1	39 - 49 (4.0 - 5.0, 29 - 36)	65 (2.56)
2	39 - 49 (4.0 - 5.0, 29 - 36)	60 (2.36)
3	29 - 39 (3.0 - 4.0, 22 - 29)	55 (2.17)
4	29 - 39 (3.0 - 4.0, 22 - 29)	25 (0.98)


SMA429A

Checking M/T Oil

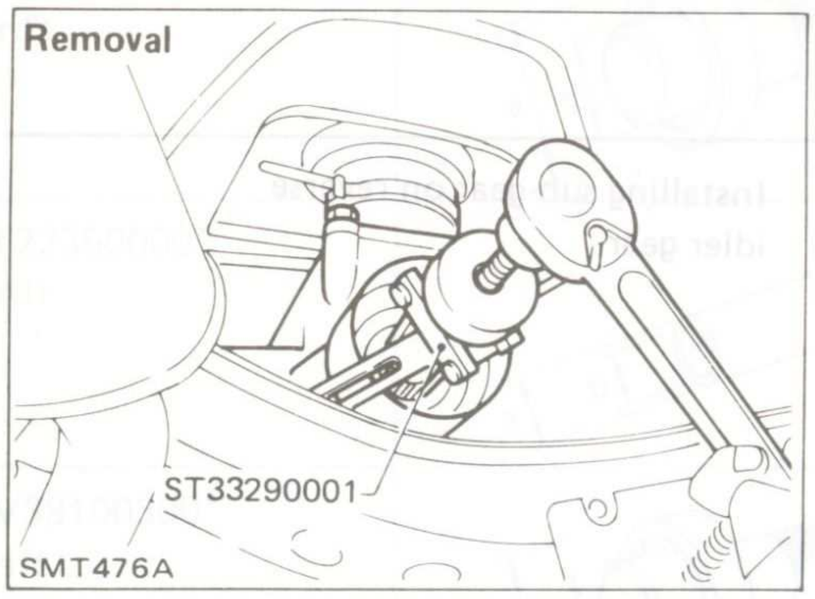
- Check manual transmission for leakage.

- Check oil level.

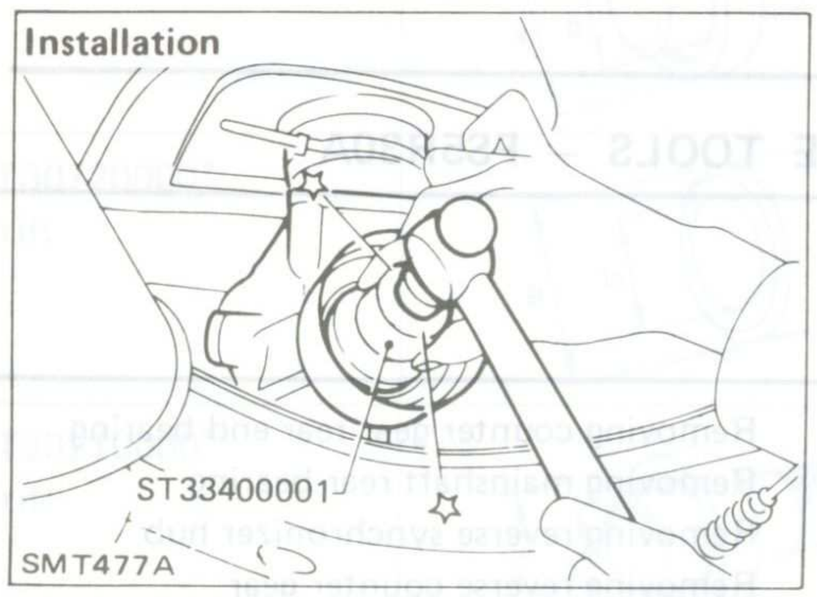


SMA103

Replacing Rear Oil Seal

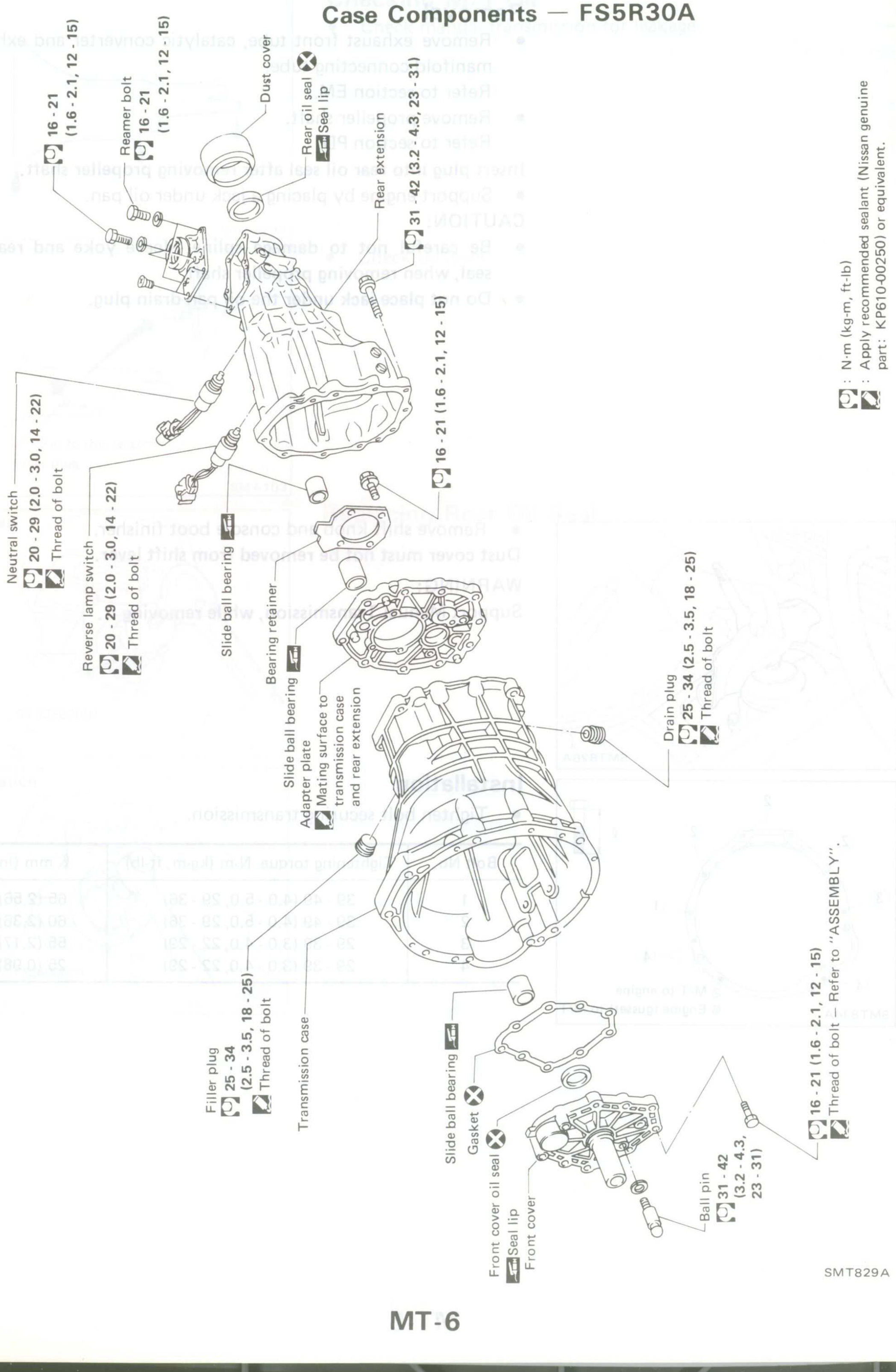


SMT476A

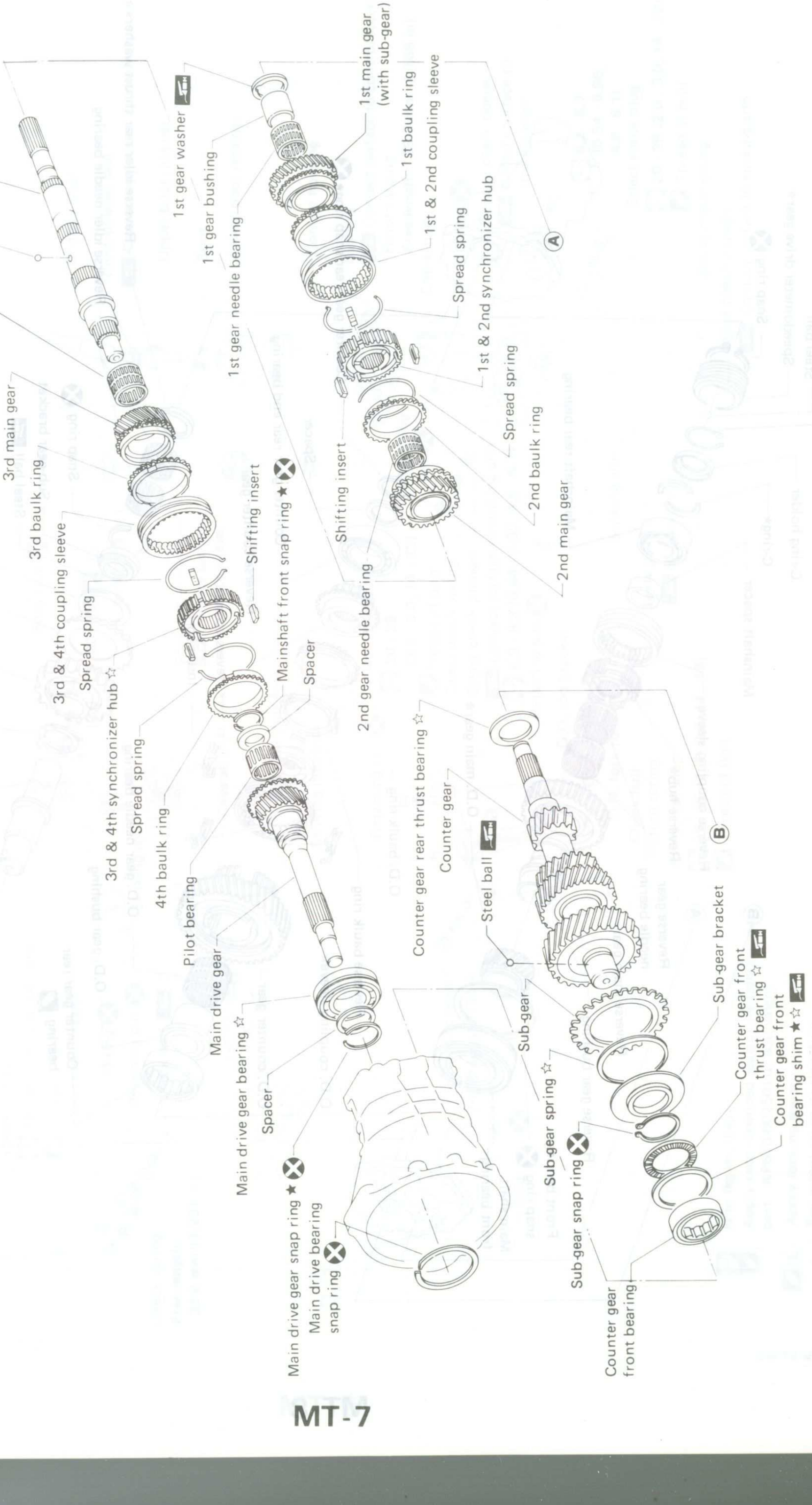


SMT477A

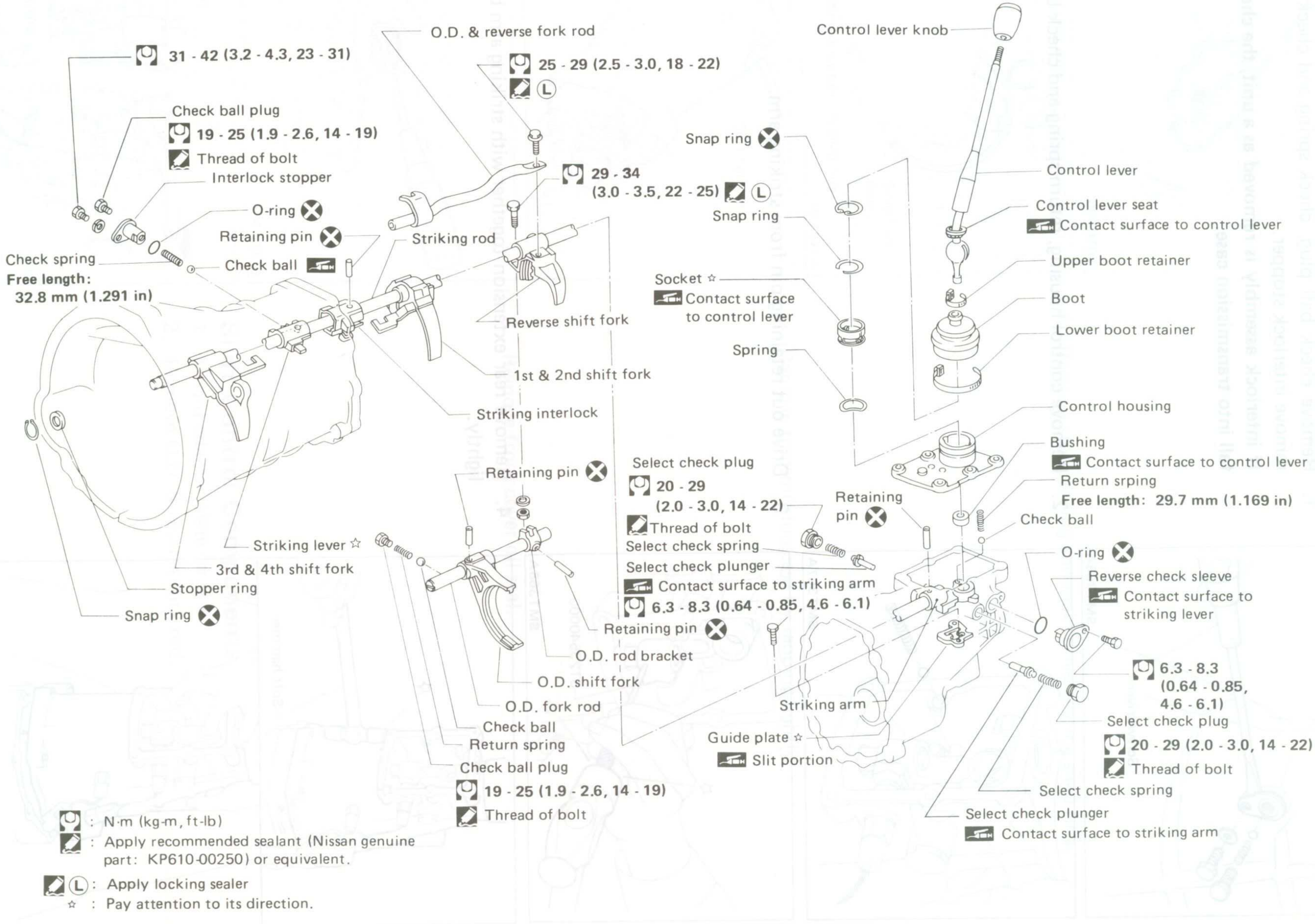
Case Components — FS5R30A



Gear Components — FS5R30A



Shift Control Components — FS5R30A



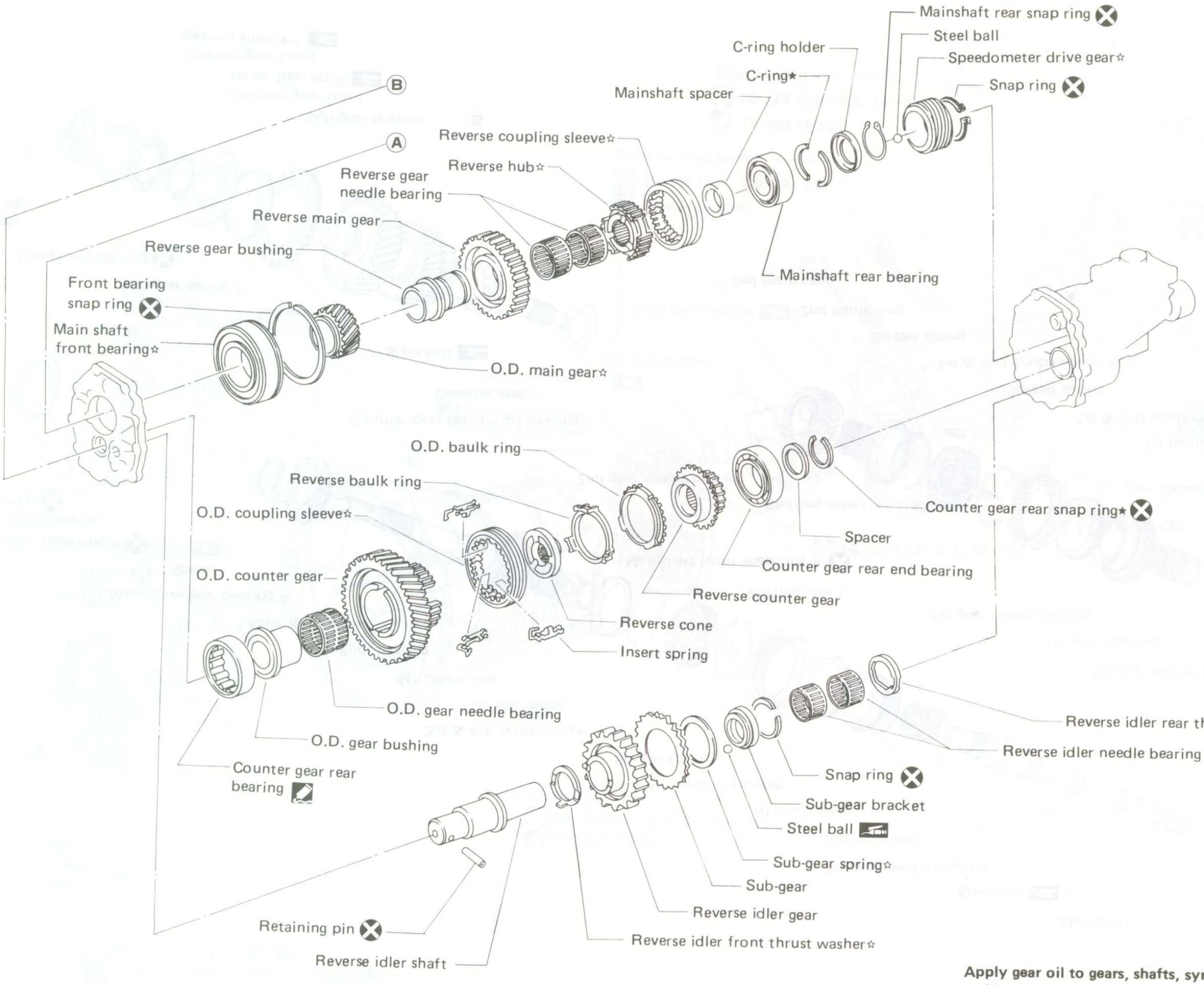
: N·m (kg-m, ft-lb)

: Apply recommended sealant (Nissan genuine part: KP610-00250) or equivalent.

L : Apply locking sealer

☆ : Pay attention to its direction.

SMT838A

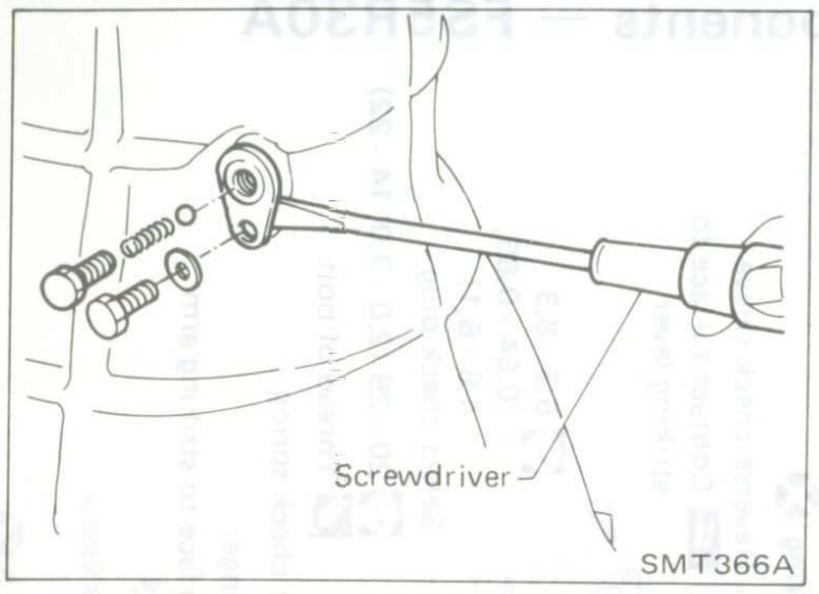


Apply gear oil to gears, shafts, synchronizers and bearings when assembling.

★ : Select with proper thickness

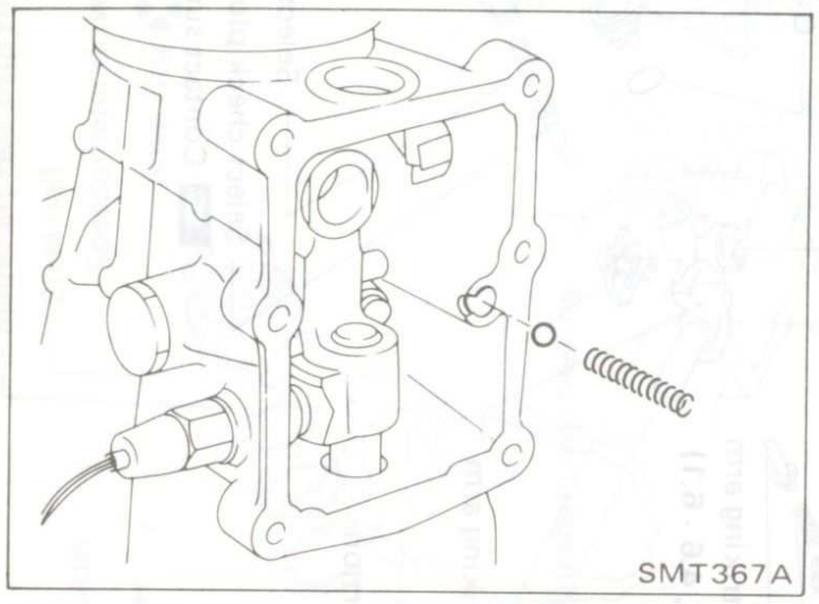
☆ : Pay attention to its direction

SMT830A

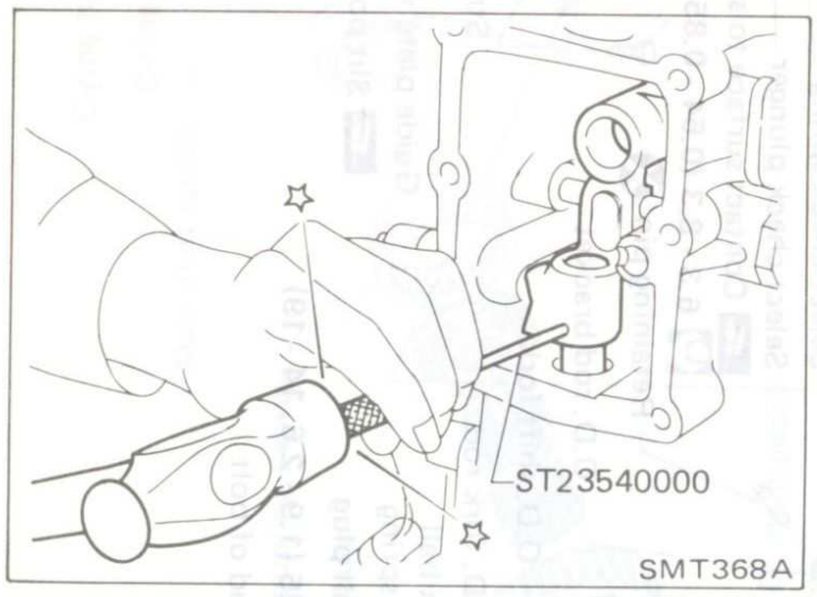


Case Components

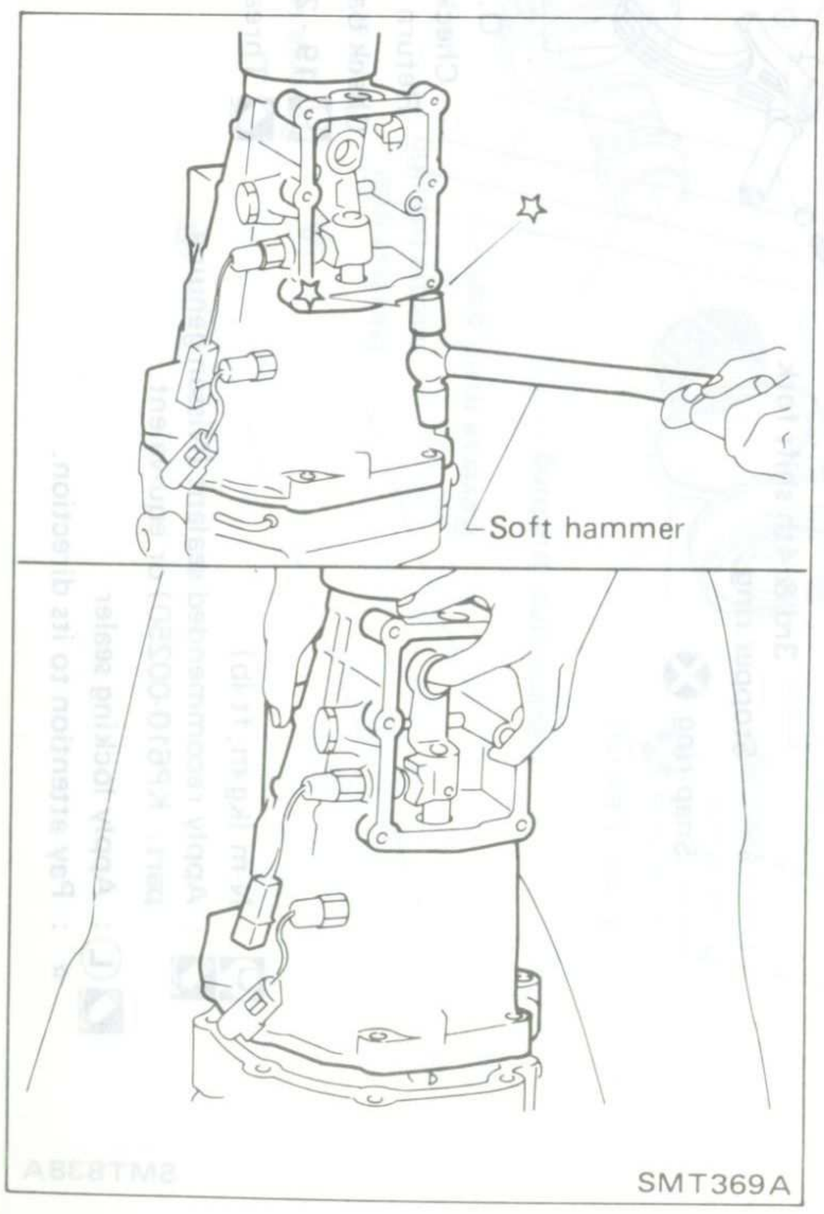
1. Remove check ball plug, check spring and check ball. Then remove interlock stopper.
   If interlock assembly is removed as a unit, the check ball can fall into transmission case.



2. Remove control housing, return spring and check ball.



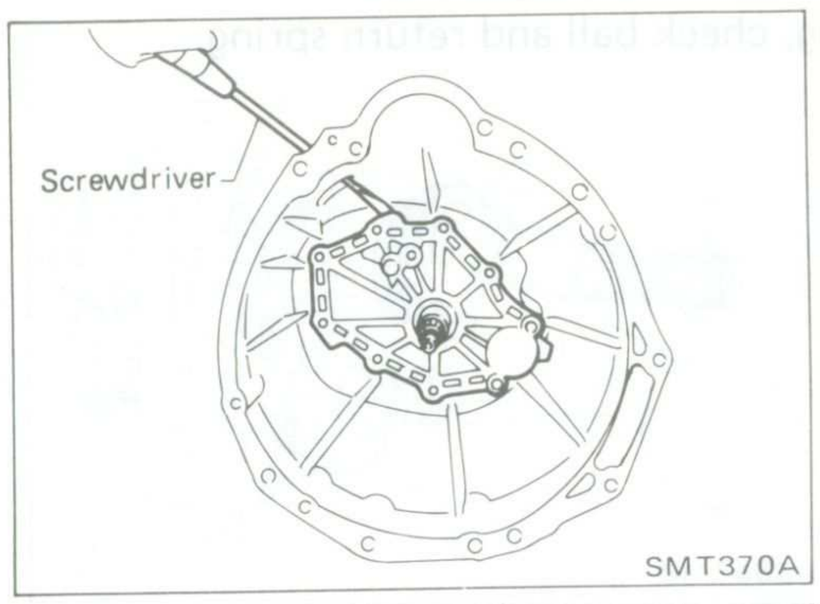
3. Drive out retaining pin from striking arm.



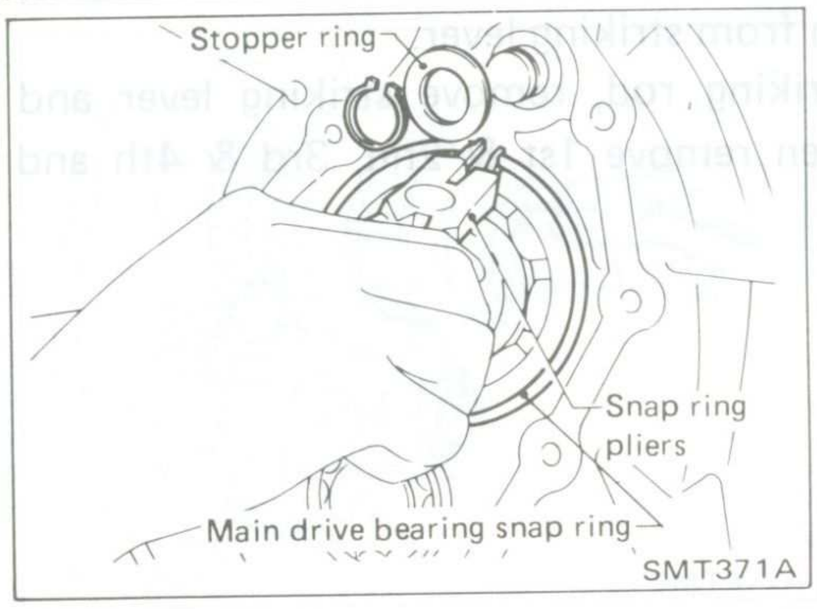
4. Remove rear extension together with striking arm by tapping lightly.

Case Components (Cont'd)

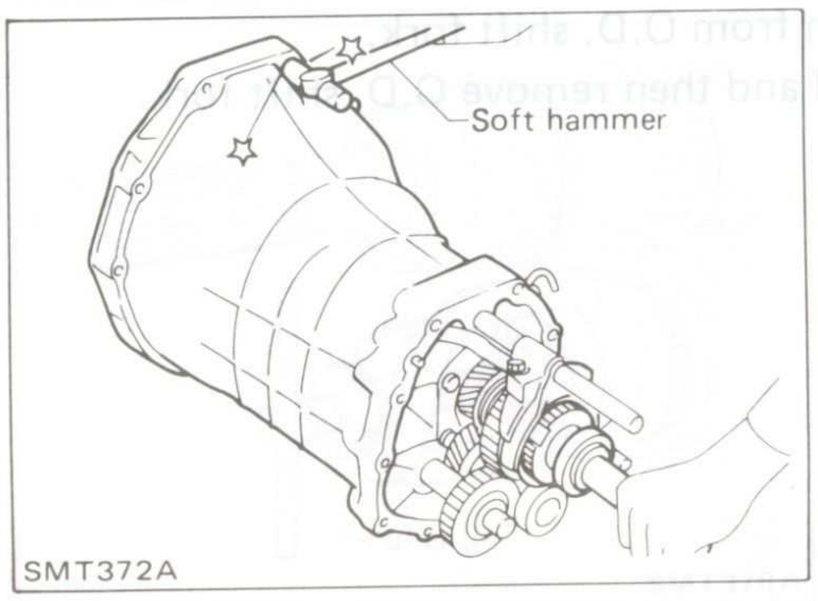
5. Remove front cover and gasket.



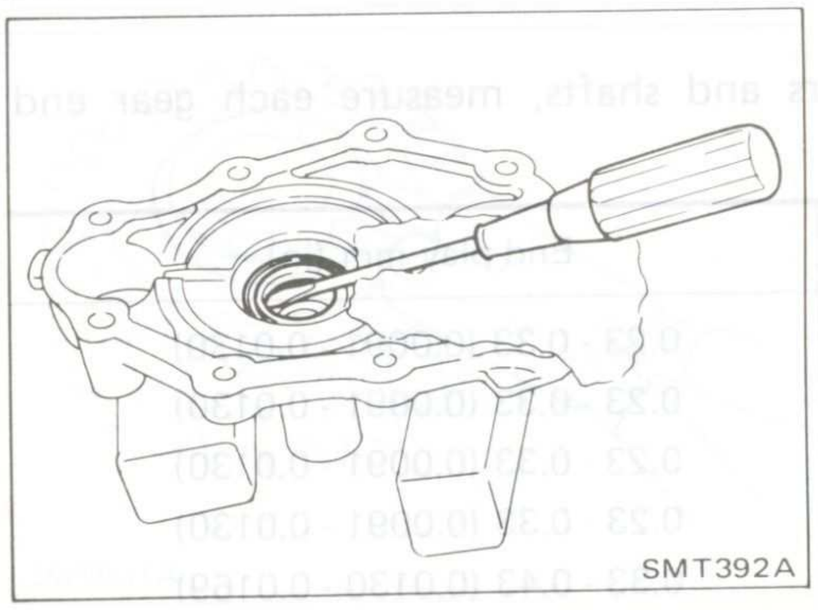
6. Remove stopper ring and main drive bearing snap ring.



7. Remove transmission case by tapping lightly.

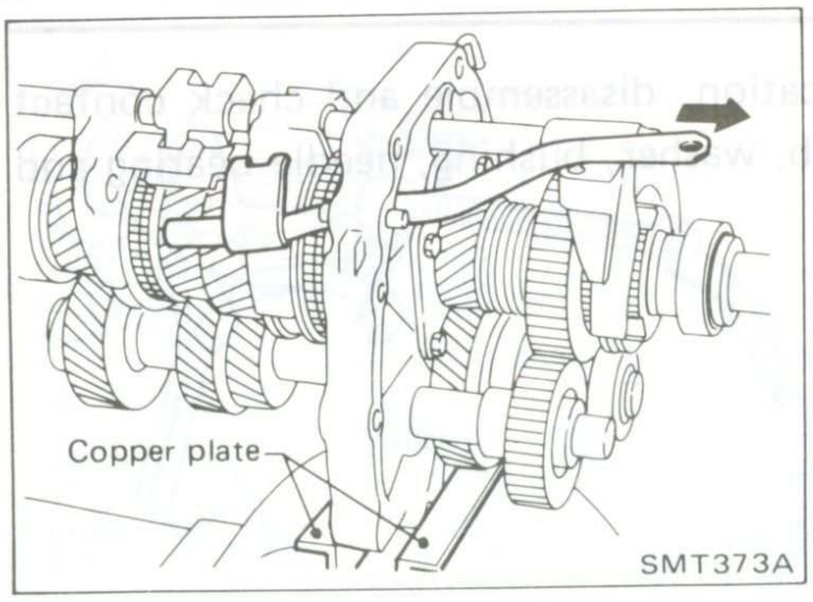


8. Remove front cover oil seal.

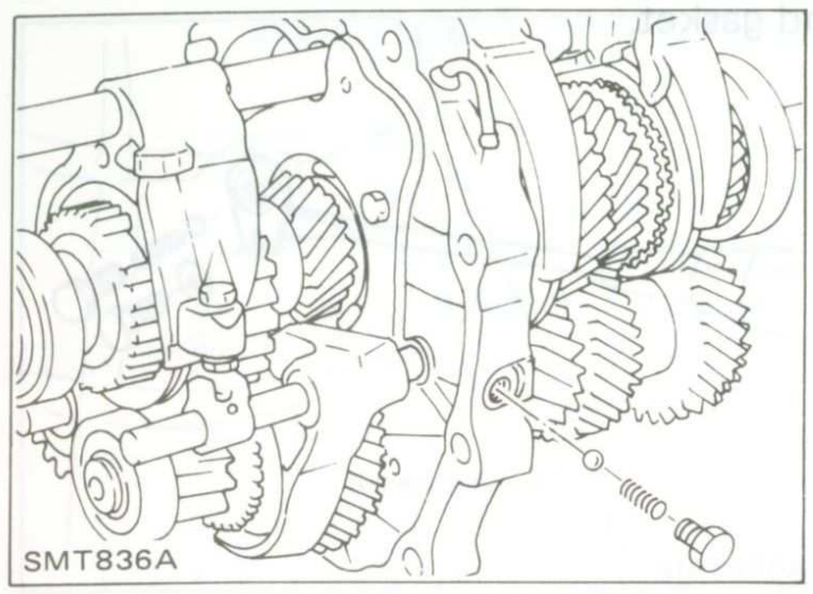


Shift Control Components

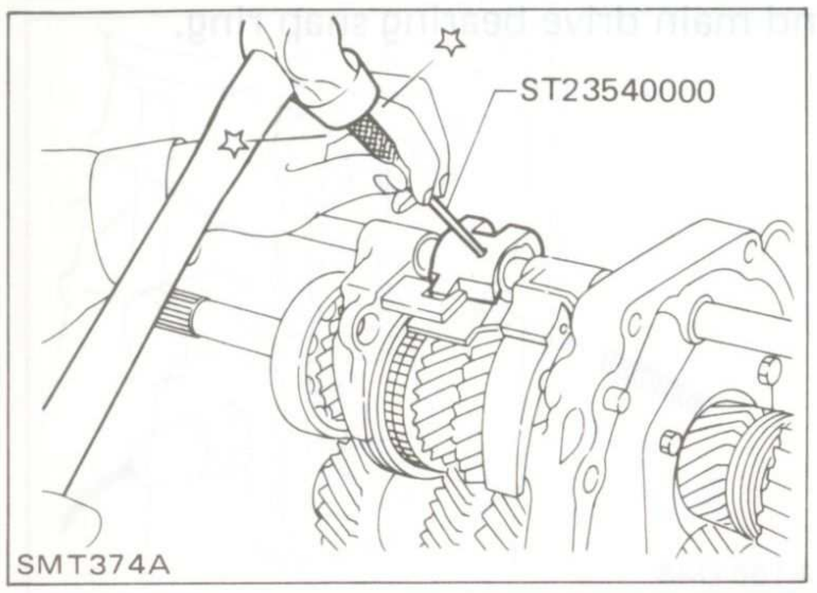
1. Mount adapter plate on vise.
2. Remove O.D. & reverse fork rod.



Shift Control Components (Cont'd)

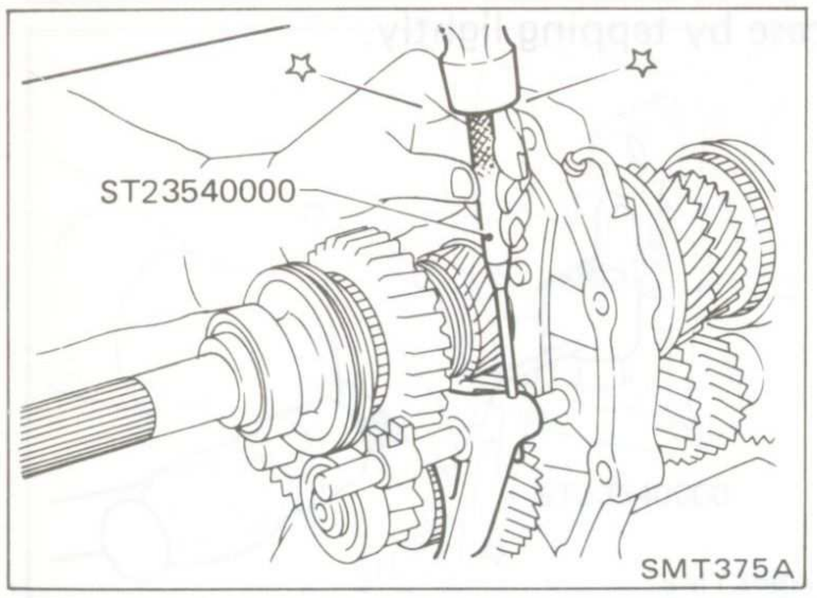

SMT836A

3. Remove check ball plug, check ball and return spring.



SMT374A

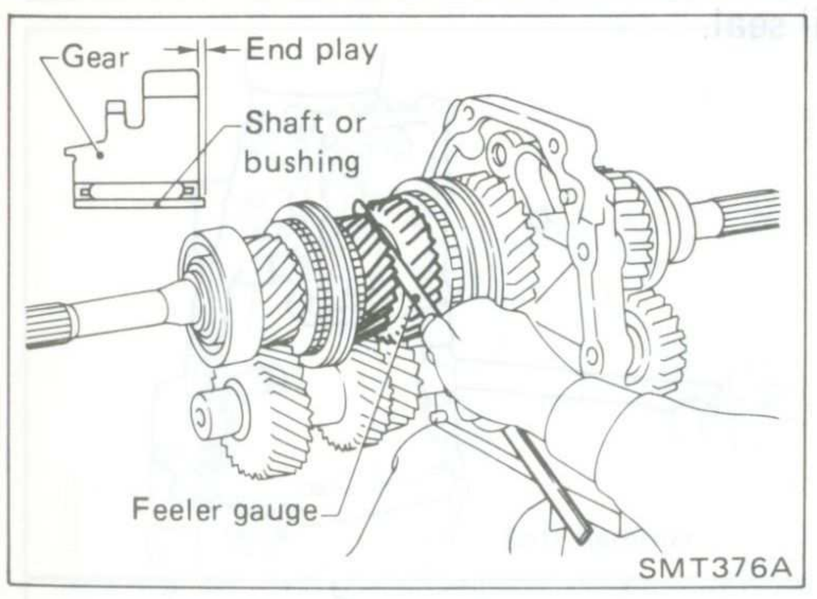
4. Drive out retaining pin from striking lever.
5. While pulling out striking rod, remove striking lever and striking interlock. Then remove 1st & 2nd, 3rd & 4th and reverse shift fork.



SMT375A

6. Drive out retaining pin from O.D. shift fork.
7. Pull out O.D. fork rod and then remove O.D. shift fork.

Gear Components



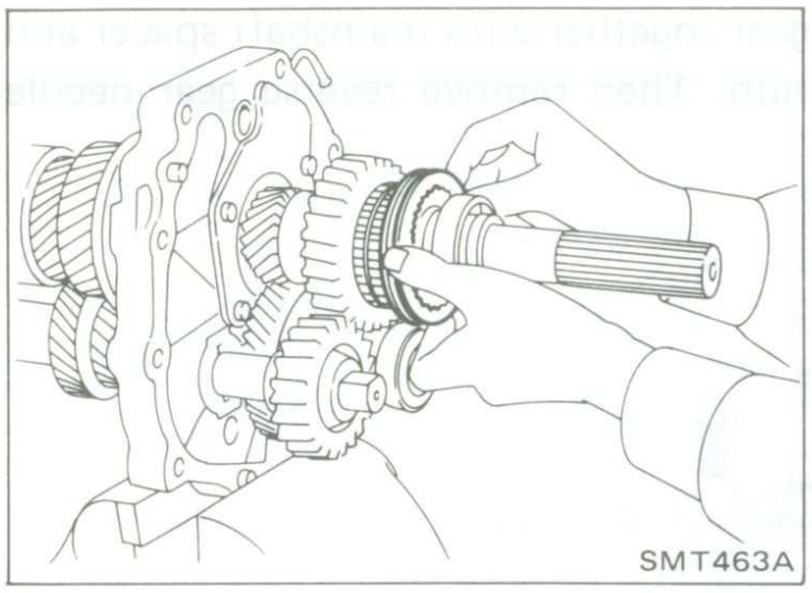
SMT376A

1. Before removing gears and shafts, measure each gear end play.

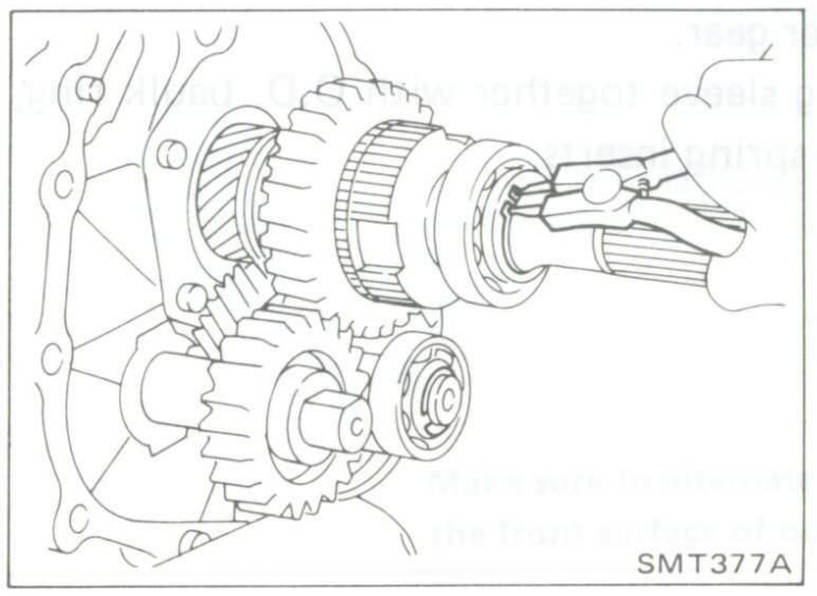
Gear	End play mm (in)
1st main gear	0.23 - 0.33 (0.0091 - 0.0130)
2nd main gear	0.23 - 0.33 (0.0091 - 0.0130)
3rd main gear	0.23 - 0.33 (0.0091 - 0.0130)
O.D. counter gear	0.23 - 0.33 (0.0091 - 0.0130)
Reverse main gear	0.33 - 0.43 (0.0130 - 0.0169)

- If not within specification, disassemble and check contact surface of gear to hub, washer, bushing, needle bearing and shaft.

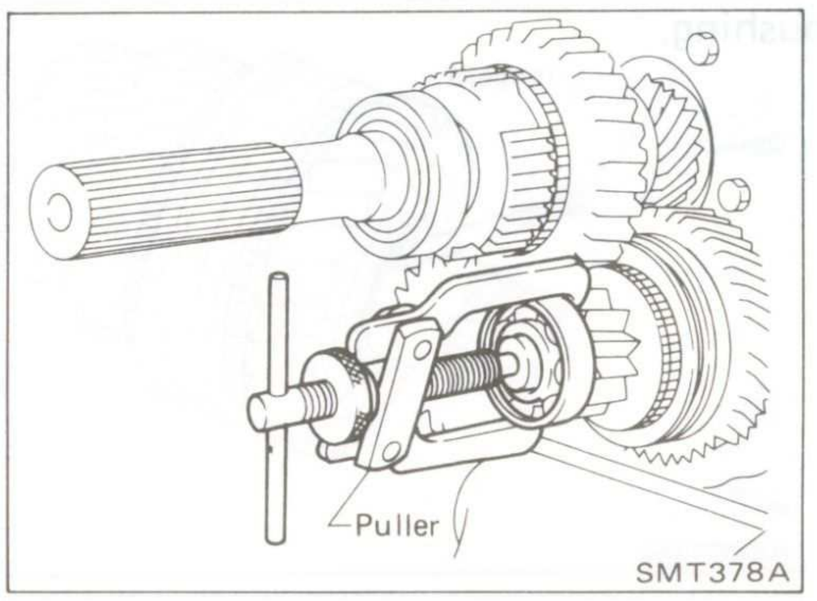
Gear Components (Cont'd)


SMT463A

2. Remove rear side components on mainshaft and counter gear.
a. Remove snap ring, speedometer drive gear and steel ball.
b. Remove reverse coupling sleeve.

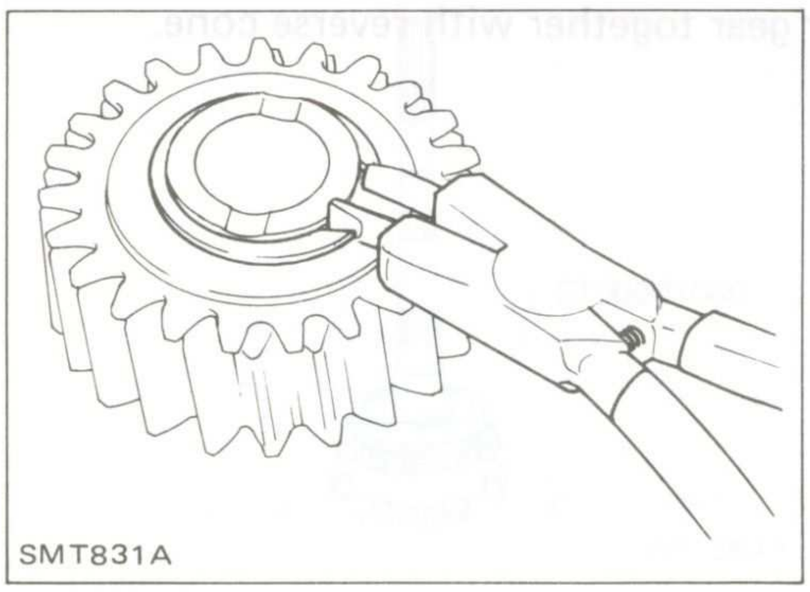

SMT377A

c. Remove mainshaft rear snap ring and counter gear rear snap ring.
d. Remove C-ring holder and mainshaft C-rings from mainshaft. Use punch and hammer to remove C-rings.

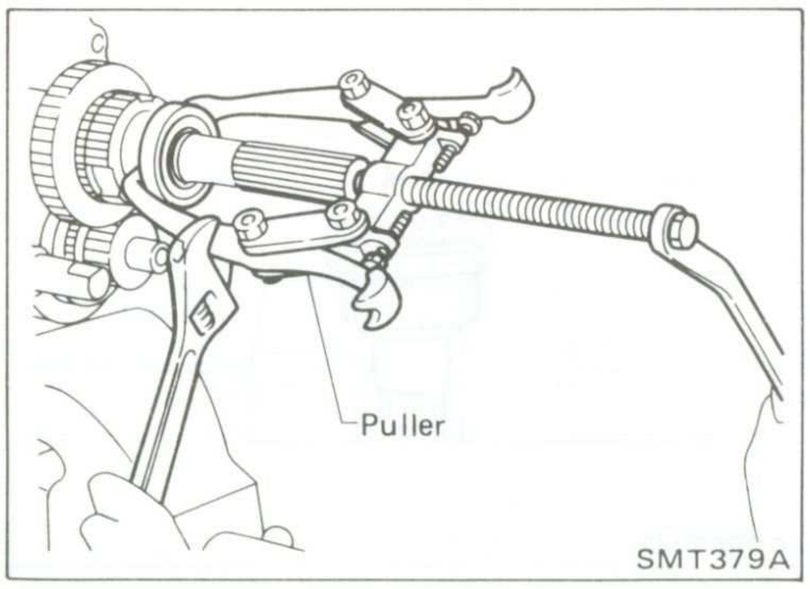


SMT378A

e. Pull out counter gear rear end bearing.
f. Remove reverse idler gear and reverse idler thrust washers.


SMT831A

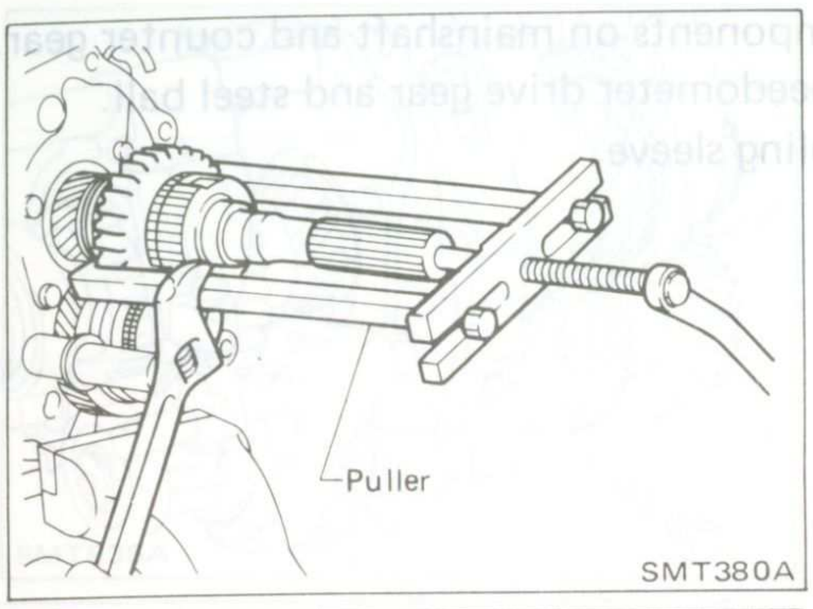
g. Remove sub-gear from reverse idler gear.



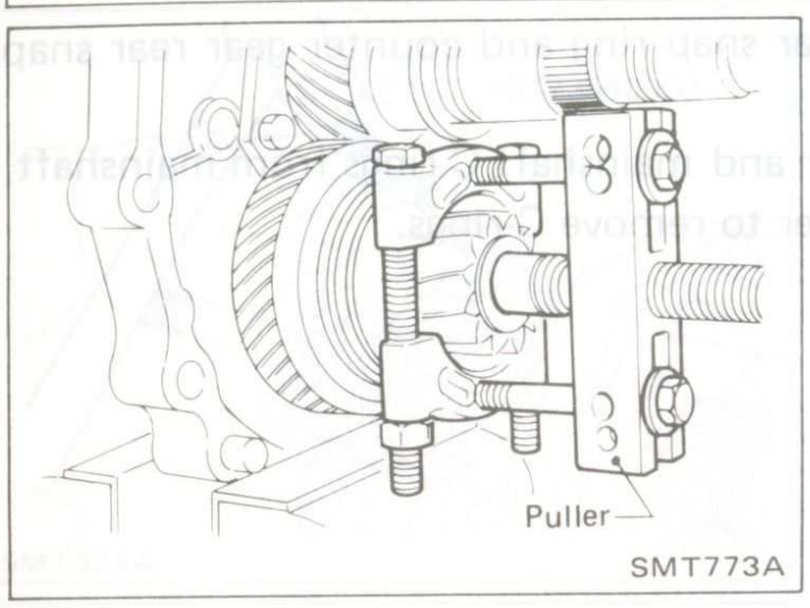
SMT379A

h. Pull out mainshaft rear bearing.

Gear Components (Cont'd)

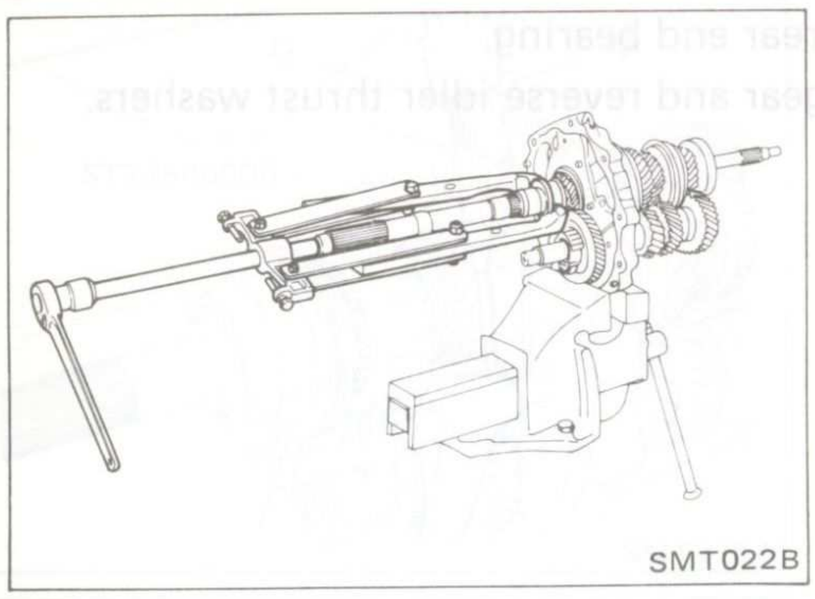


i. Pull out reverse main gear together with mainshaft spacer and reverse synchronizer hub. Then remove reverse gear needle bearings.

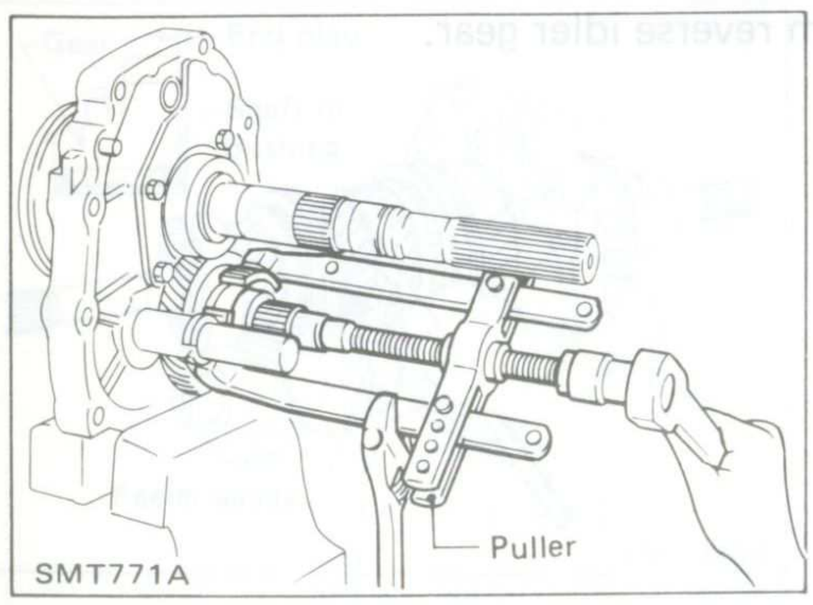


j. Pull out reverse counter gear.

k. Remove O.D. coupling sleeve together with O.D. baulk ring, reverse baulk ring and spring inserts.



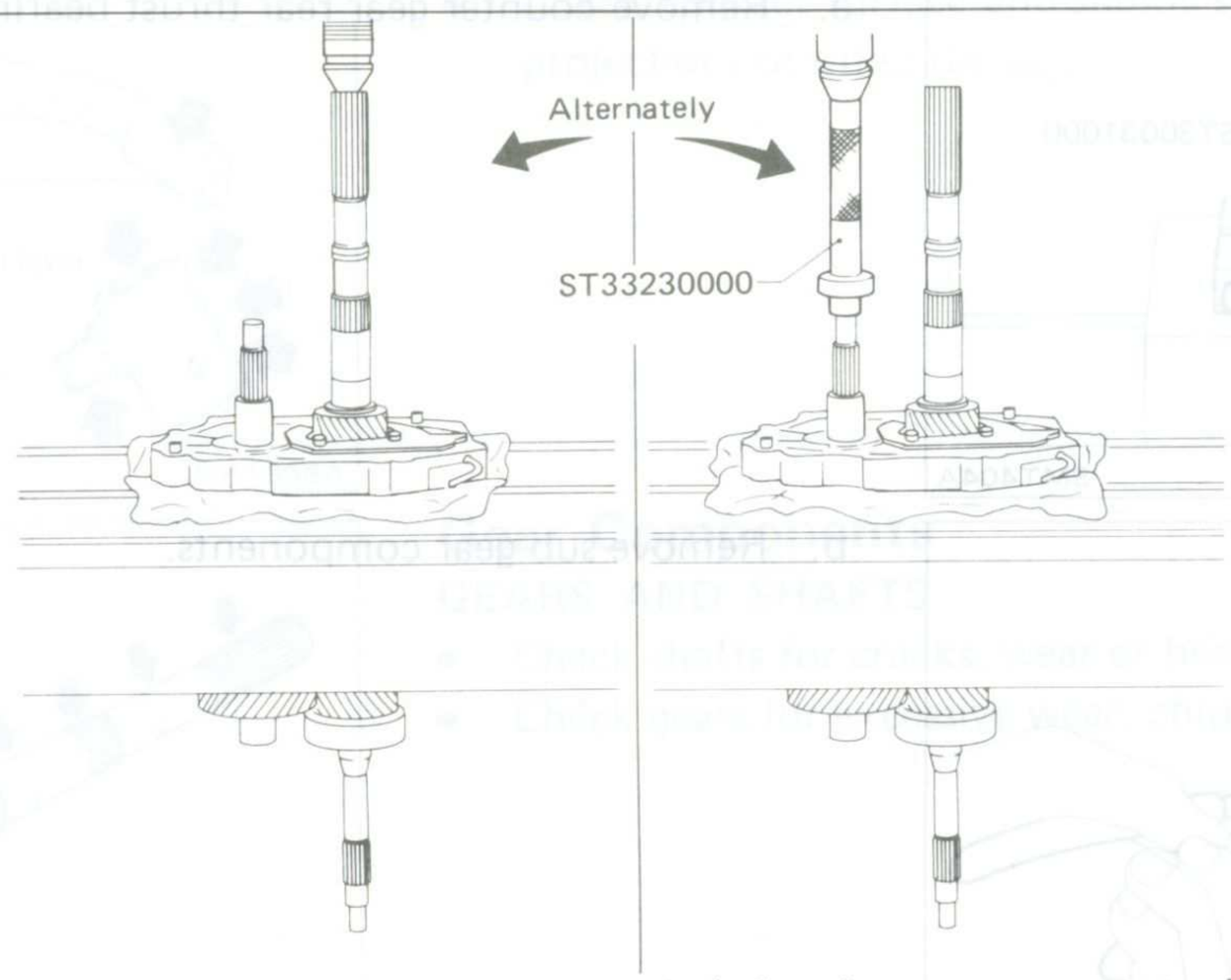
l. Pull out reverse gear bushing.



m. Pull out O.D. counter gear together with reverse cone.

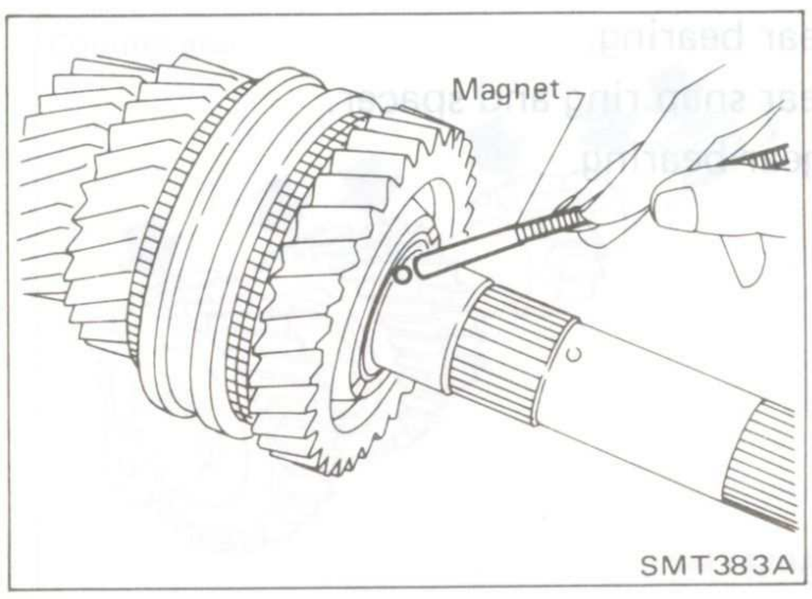
Gear Components (Cont'd)

3. Press out mainshaft and counter gear alternately.



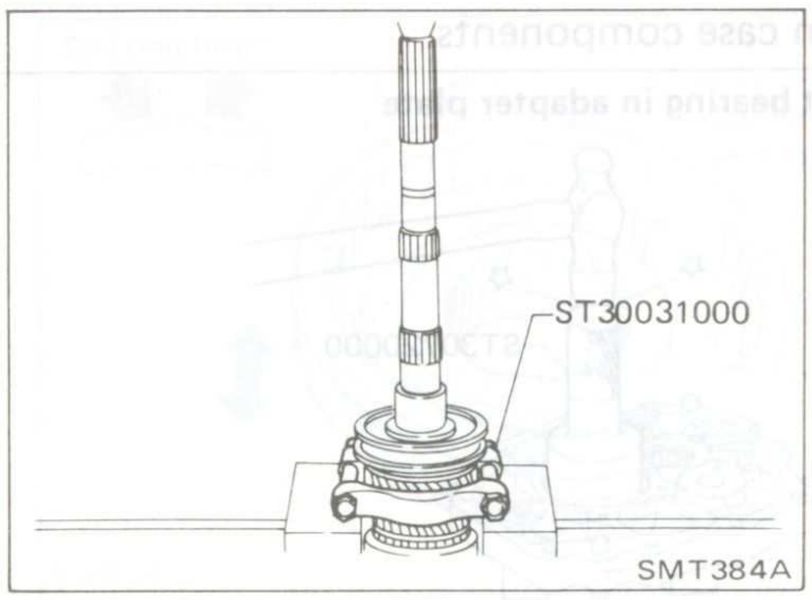
Make sure to alternate press between mainshaft and counter gear not to allow the front surface of one to contact the rear surface of the other.

SMT772A



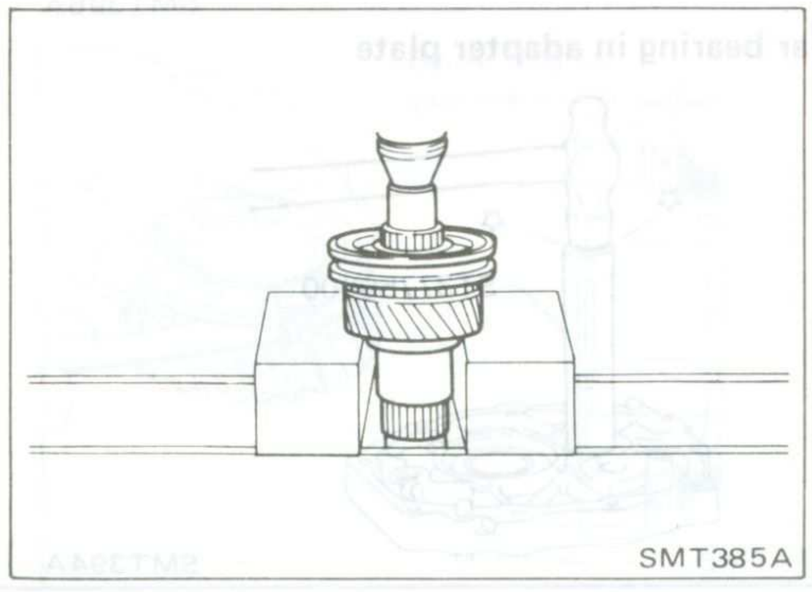
SMT383A

4. Remove front side components on mainshaft.
a. Remove 1st gear washer and steel ball.
b. Remove 1st main gear and 1st gear needle bearing.



SMT384A

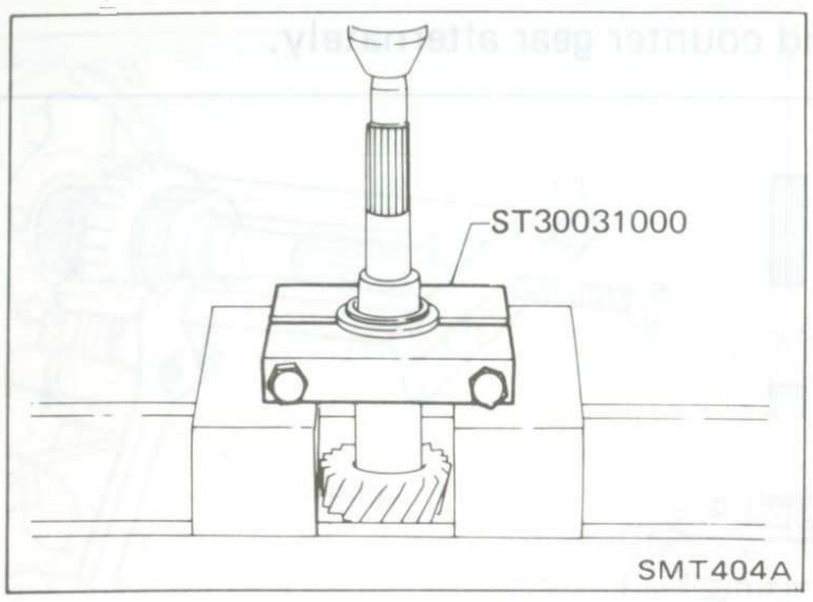
c. Press out 2nd main gear together with 1st gear bushing and 1st & 2nd synchronizer assembly.
d. Remove mainshaft front snap ring.



SMT385A

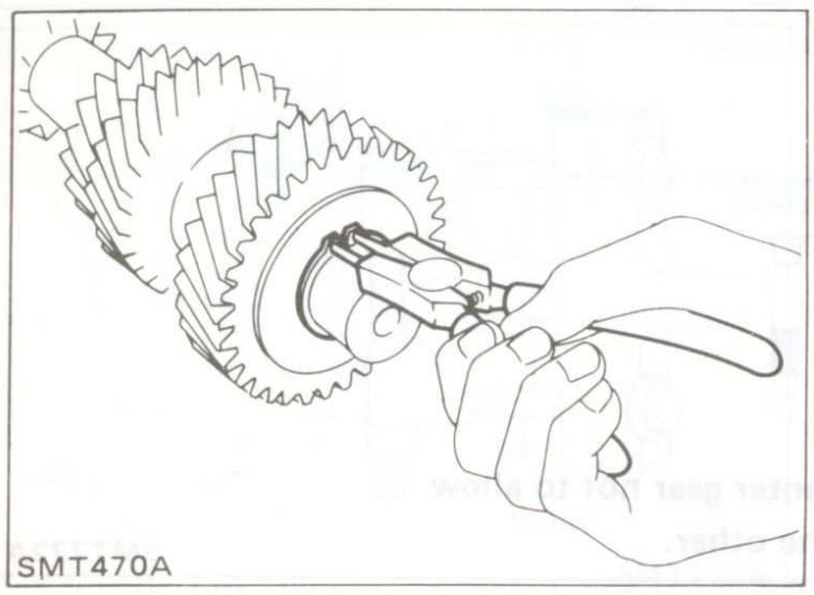
e. Press out 3rd main gear together with 3rd & 4th synchronizer assembly and 3rd gear needle bearing.

Gear Components (Cont'd)

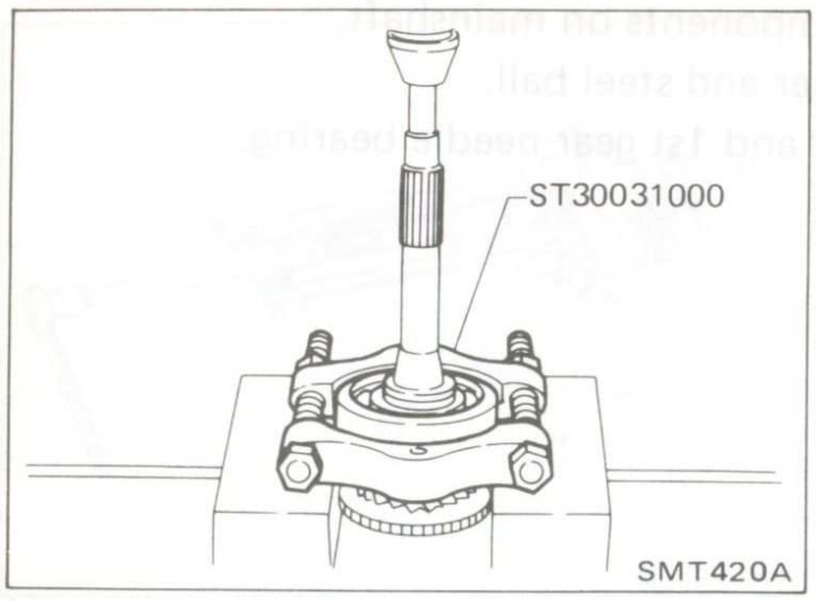


5. Remove front side components on counter gear.

a. Remove counter gear rear thrust bearing.



b. Remove sub gear components.



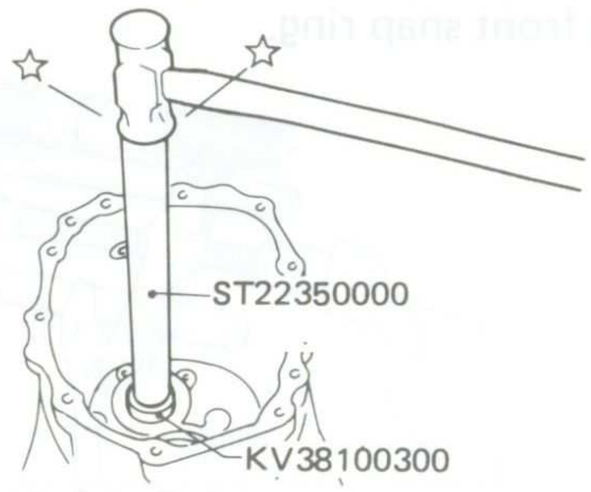
6. Remove main drive gear bearing.

a. Remove main drive gear snap ring and spacer.

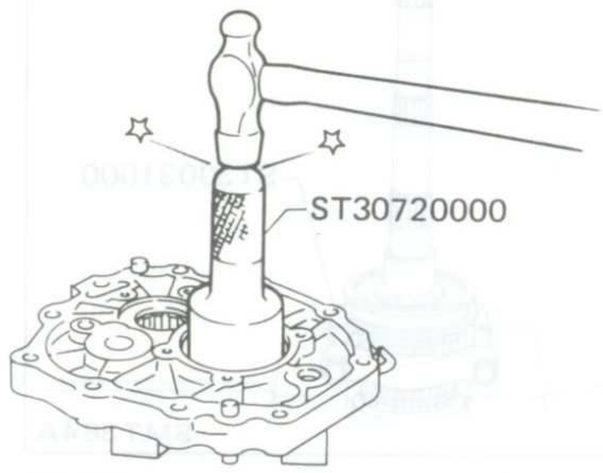
b. Press out main drive gear bearing.

7. Remove bearings from case components.

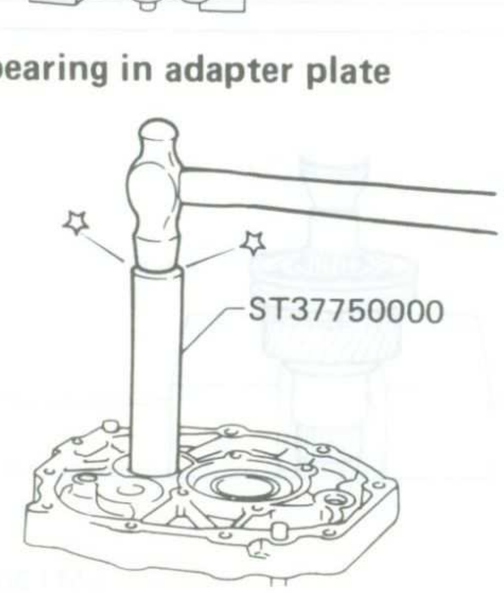
Counter gear front bearing in transmission case

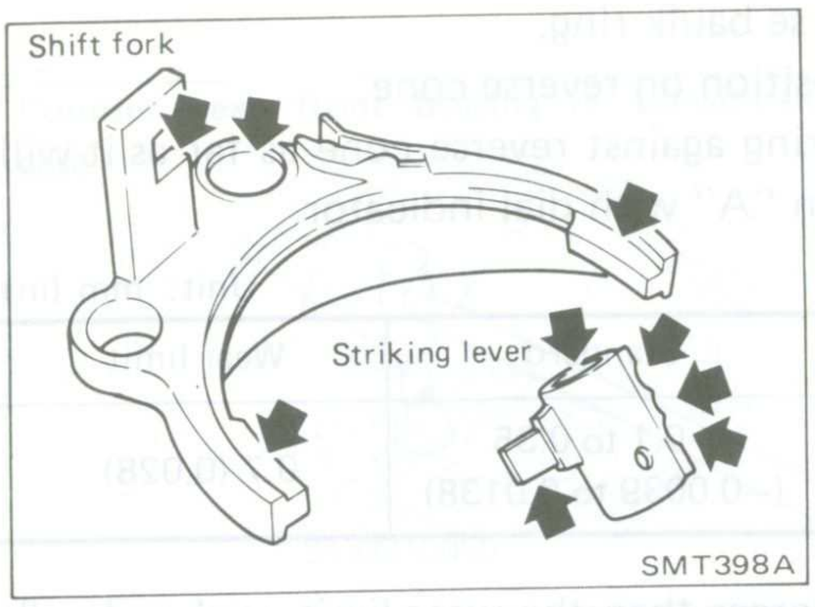


Mainshaft front bearing in adapter plate



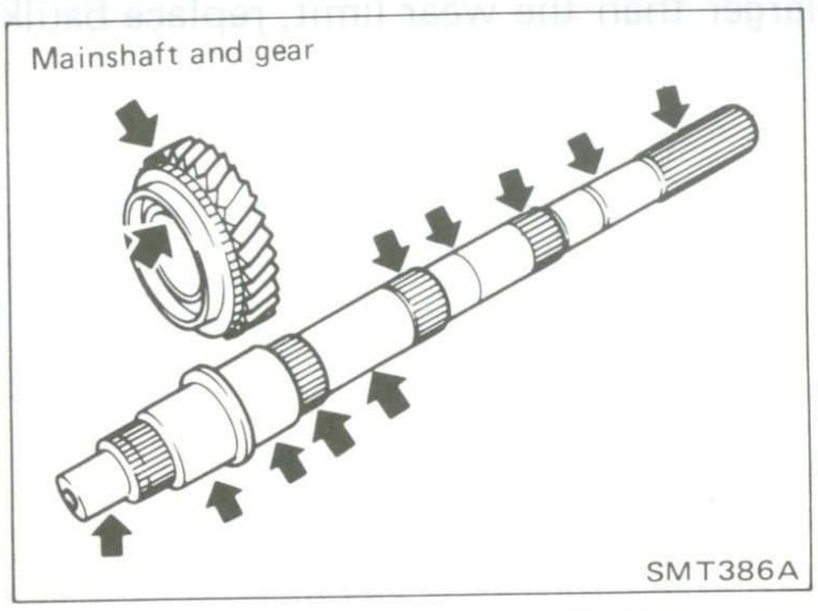
Counter gear rear bearing in adapter plate

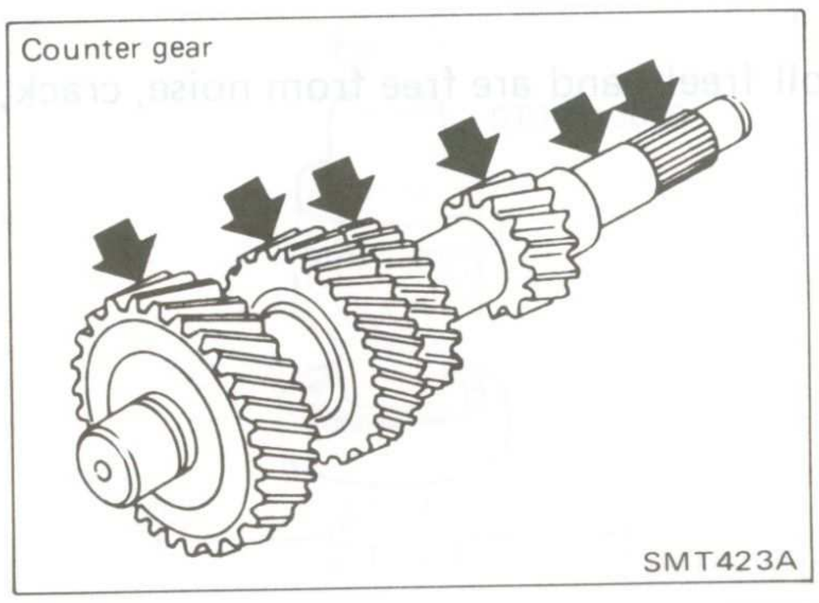




Shift Control Components

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

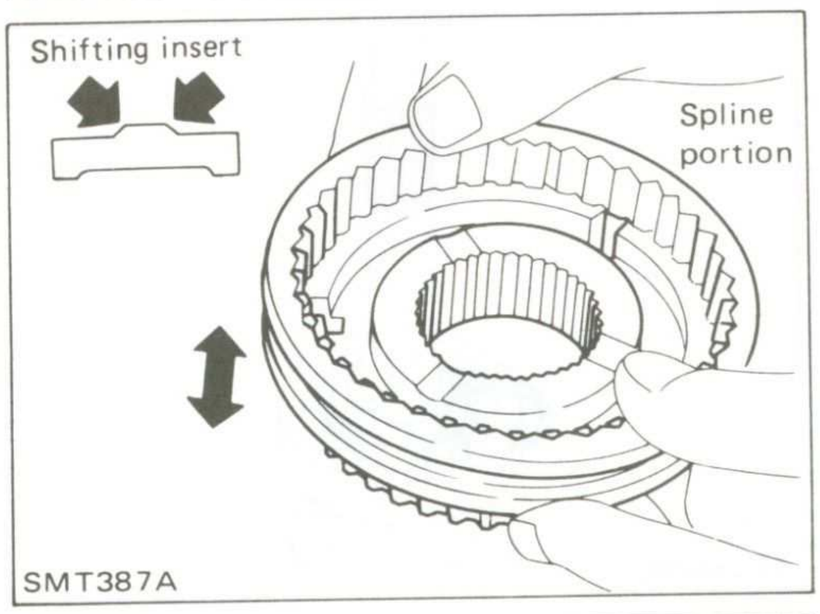




Gear Components

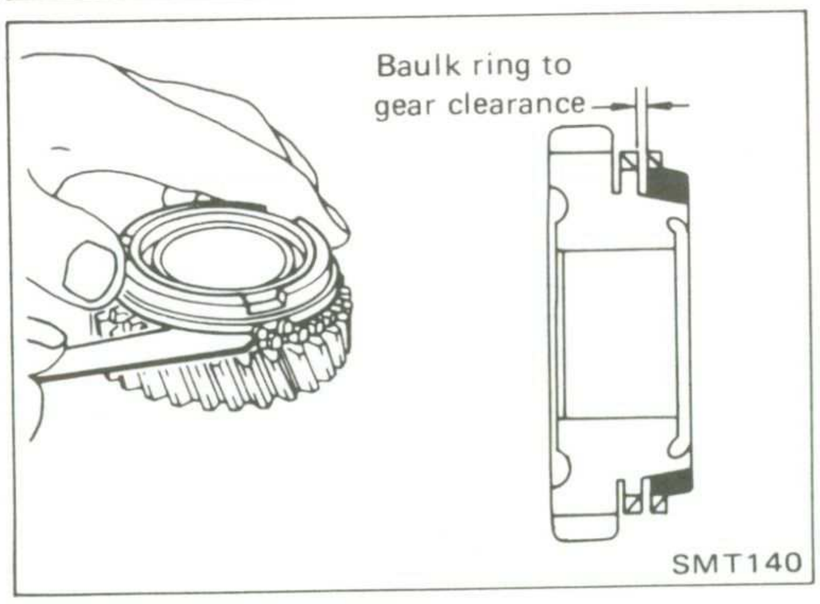
GEARS AND SHAFTS

- Check shafts for cracks, wear or bending.
- Check gears for excessive wear, chips or cracks.



SYNCHRONIZERS

- Check spline portion of coupling sleeves, hubs, and gears for wear or cracks.
- Check baulk rings for cracks or deformation.
- Check shifting inserts for wear or deformation.
- Check insert springs for deformation.

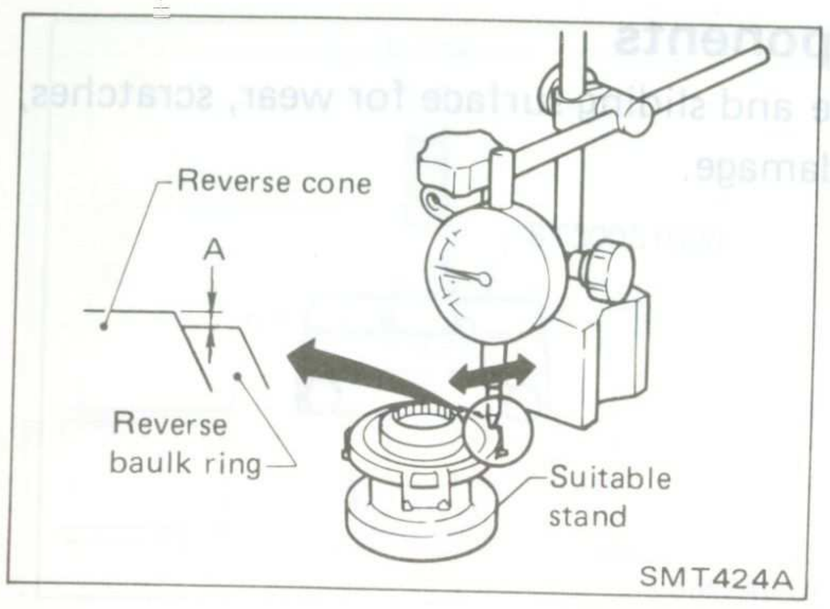


Clearance between baulk ring and gear

Unit: mm (in)

	Standard	Wear limit
1st & 2nd	1.05 - 1.3 (0.0413 - 0.0512)	0.7 (0.028)
3rd & main drive	1.05 - 1.3 (0.0413 - 0.0512)	0.7 (0.028)
O.D.	1.05 - 1.3 (0.0413 - 0.0512)	0.7 (0.028)

If the clearance is smaller than the wear limit, replace baulk ring.



Gear Components (Cont'd)

- Measure wear of reverse baulk ring.

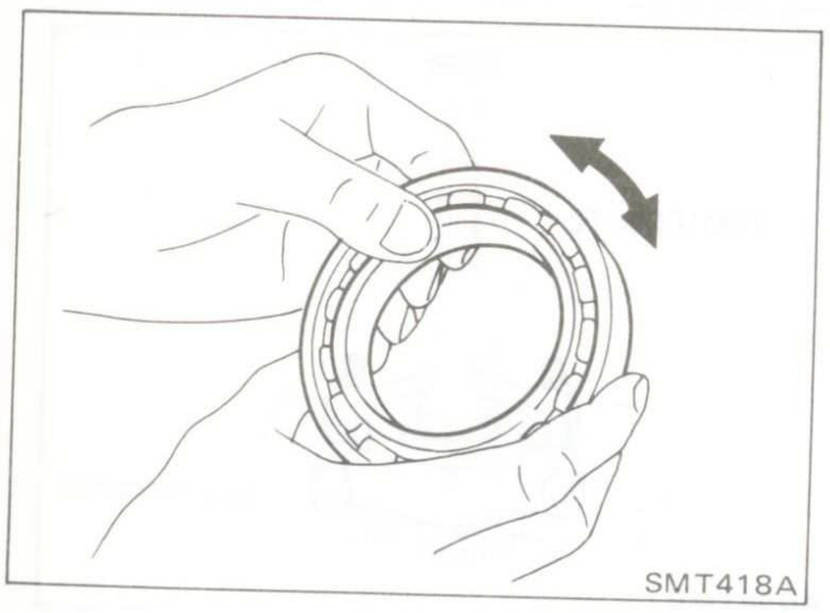
a. Place baulk ring in position on reverse cone.

b. While holding baulk ring against reverse cone as far as it will go, measure dimension "A" with dial indicator.

Unit: mm (in)

	Standard	Wear limit
Dimension "A"	−0.1 to 0.35 (−0.0039 to 0.0138)	0.7 (0.028)

c. If dimension "A" is larger than the wear limit, replace baulk ring.



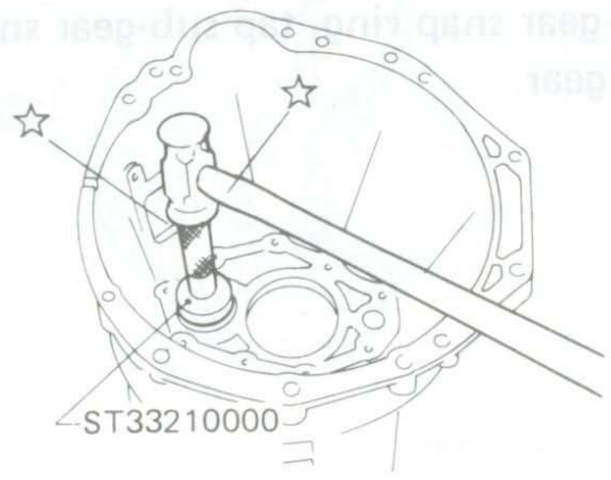
BEARINGS

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

Gear Components

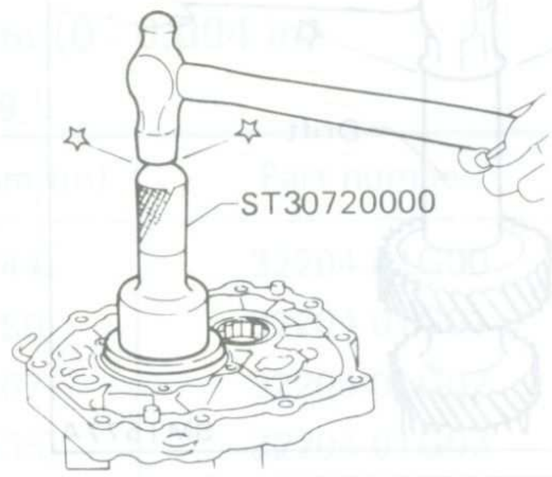
1. Install bearings into case components.

Counter gear front bearing in transmission case



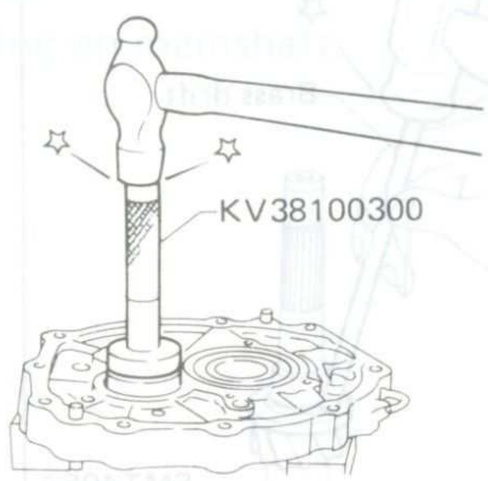
SMT389A

Mainshaft front bearing in adapter plate

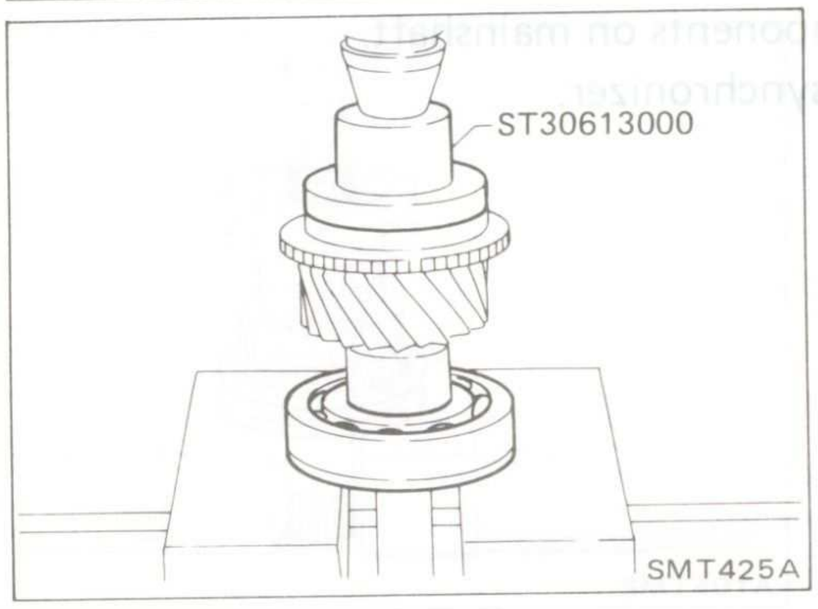


SMT397A

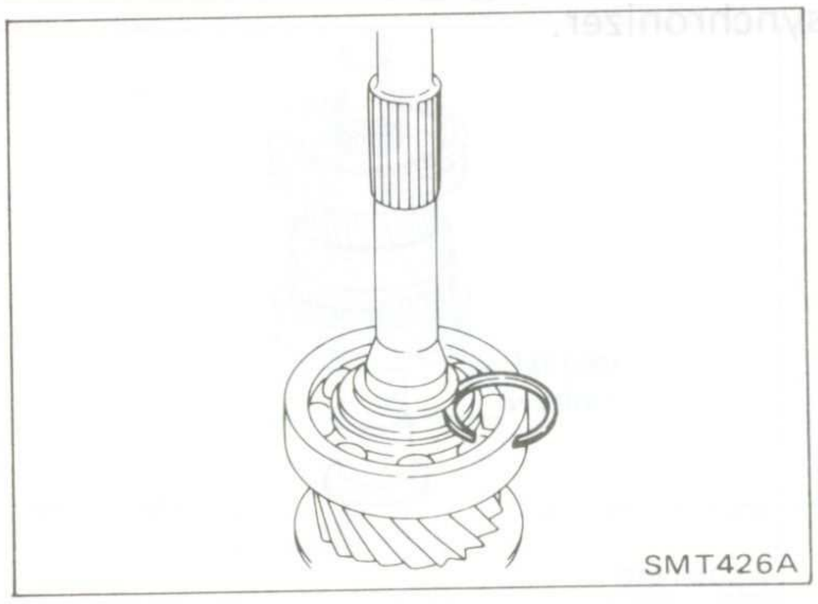
Counter gear rear bearing in adapter plate



SMT395A



SMT425A



SMT426A

2. Install main drive gear bearing.
   a. Press main drive gear bearing.
   b. Install main drive gear spacer.
   c. Select proper main drive gear snap ring to minimize clearance of groove.

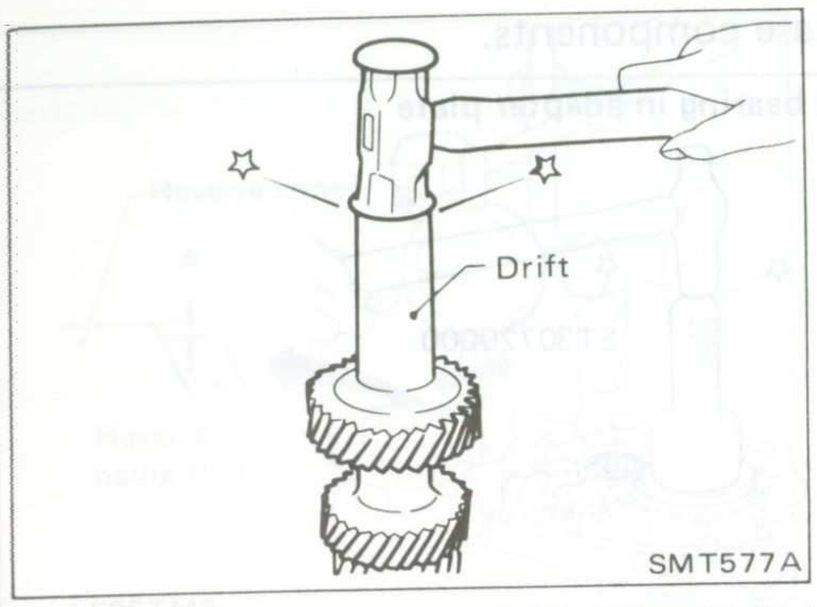
Allowable clearance of groove:
0 - 0.1 mm (0 - 0.004 in)

Main drive gear snap ring

Thickness mm (in)	Part number
1.89 (0.0744)	32204-01G00
1.98 (0.0780)	32204-01G01
2.05 (0.0807)	32204-01G02
2.12 (0.0835)	32204-01G03
2.19 (0.0862)	32204-01G04

   d. Install selected snap ring on main drive gear.

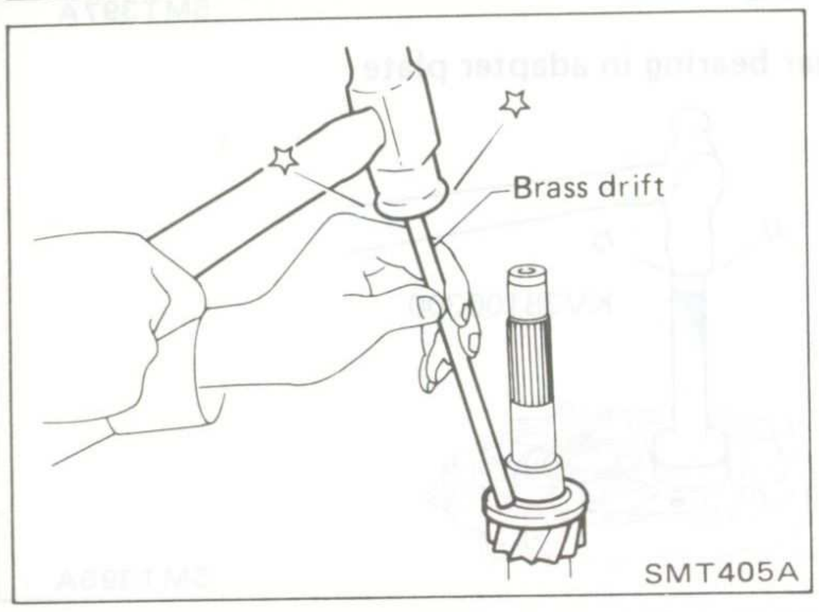
Gear Components (Cont'd)



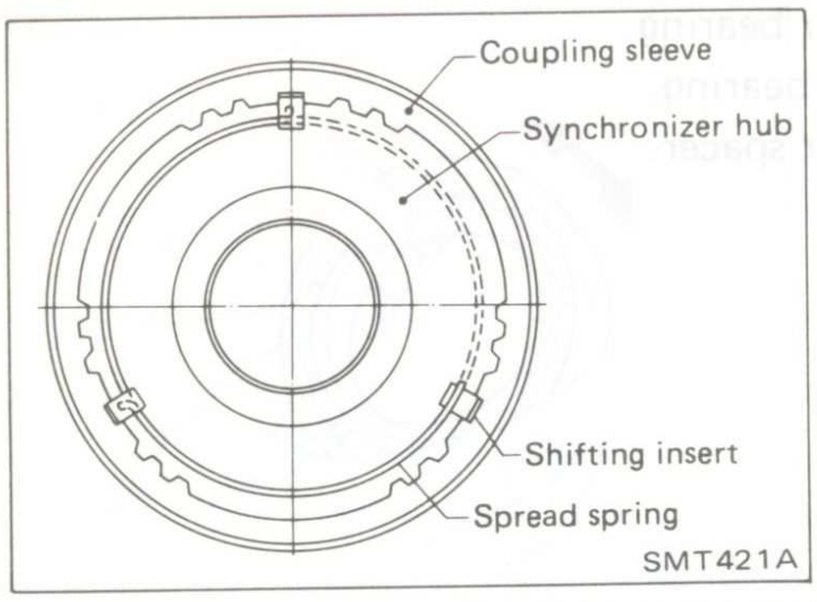
3. Install components on counter gear.

a. Install sub-gear components.

When installing sub-gear snap ring, tap sub-gear snap ring into position on counter gear.

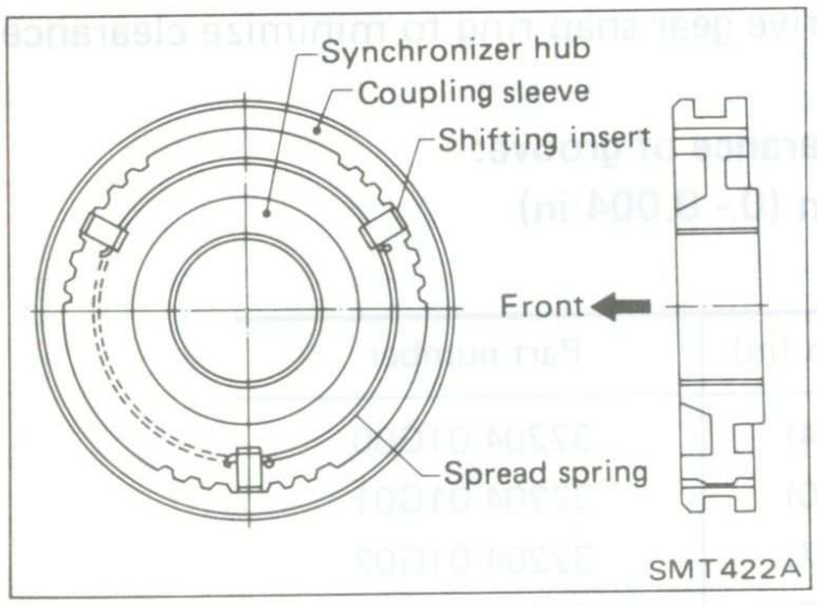


b. Install counter gear rear thrust bearing.

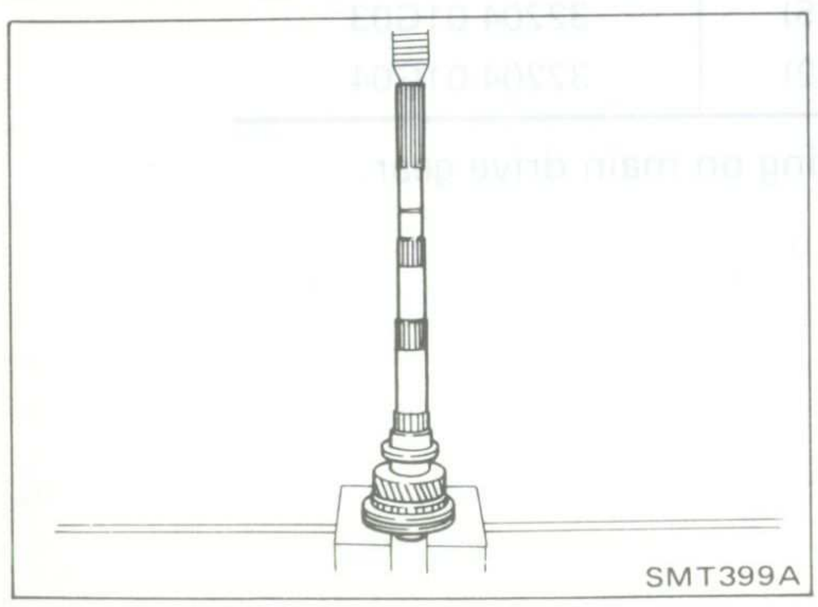


4. Install front side components on mainshaft.

a. Assemble 1st & 2nd synchronizer.



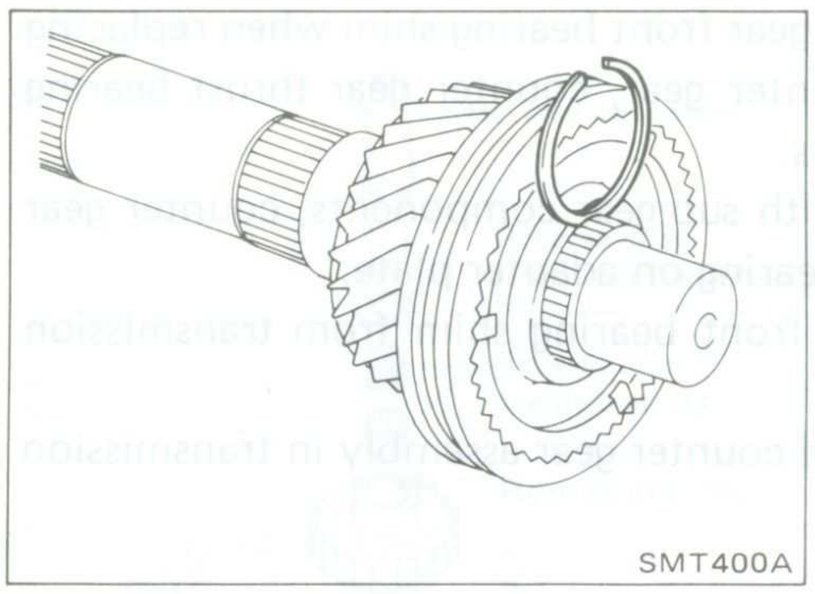
b. Assemble 3rd & 4th synchronizer.



c. Press on 3rd & 4th synchronizer assembly together with 3rd main gear and 3rd gear needle bearing.

Pay attention to direction of synchronizer assembly.

Gear Components (Cont'd)



d. Select proper snap ring to minimize clearance of groove.

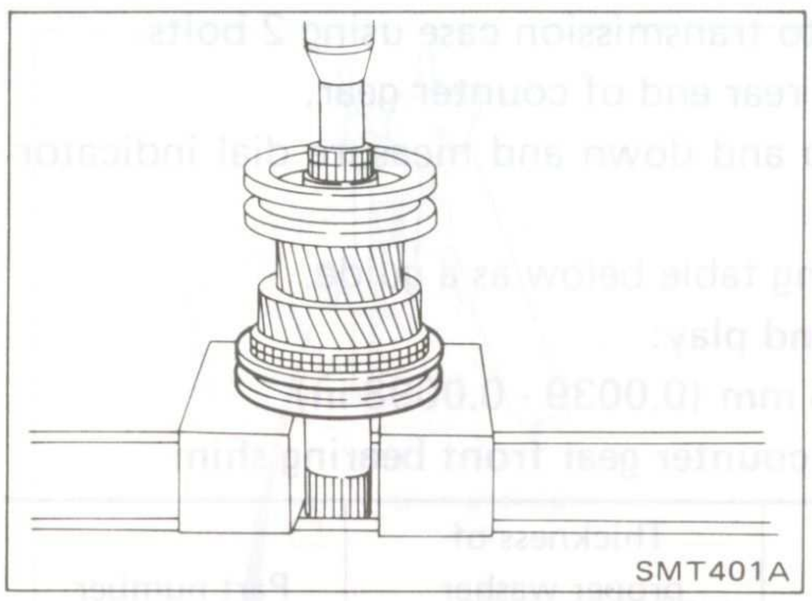
Allowable clearance of groove:

0 - 0.1 mm (0 - 0.004 in)

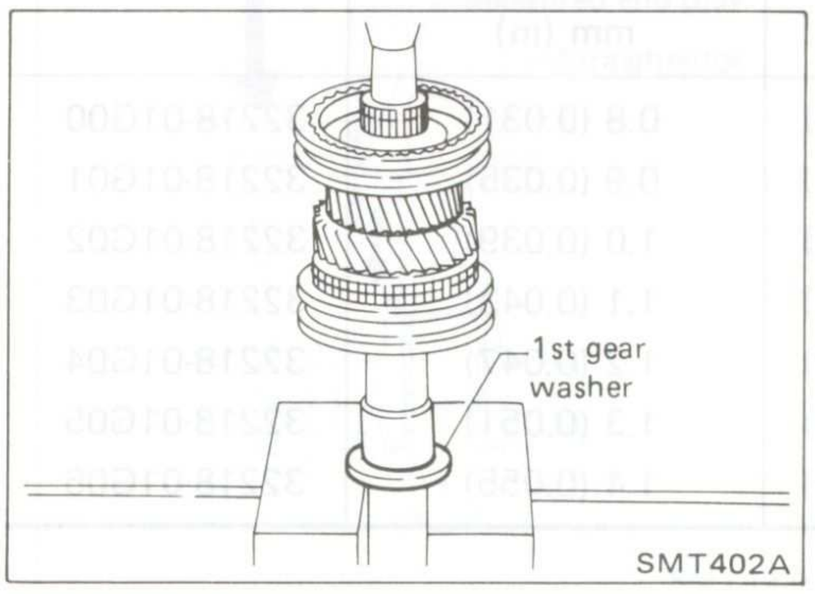
Mainshaft front snap ring

Thickness mm (in)	Part number
1.89 (0.0744)	32204-01G00
1.98 (0.0780)	32204-01G01
2.05 (0.0807)	32204-01G02
2.12 (0.0835)	32204-01G03
2.19 (0.0862)	32204-01G04

e. Install selected snap ring on mainshaft.

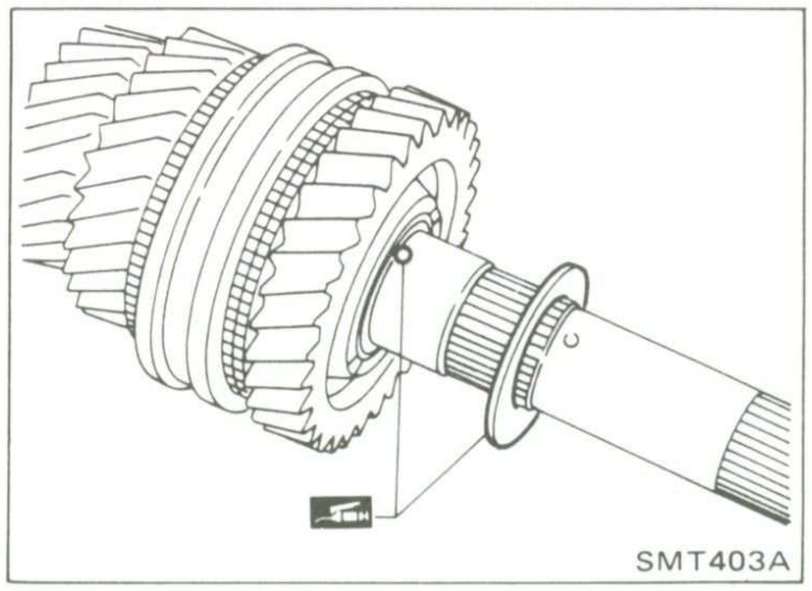


f. Press on 1st & 2nd synchronizer assembly together with 2nd main gear and 2nd gear needle bearing.



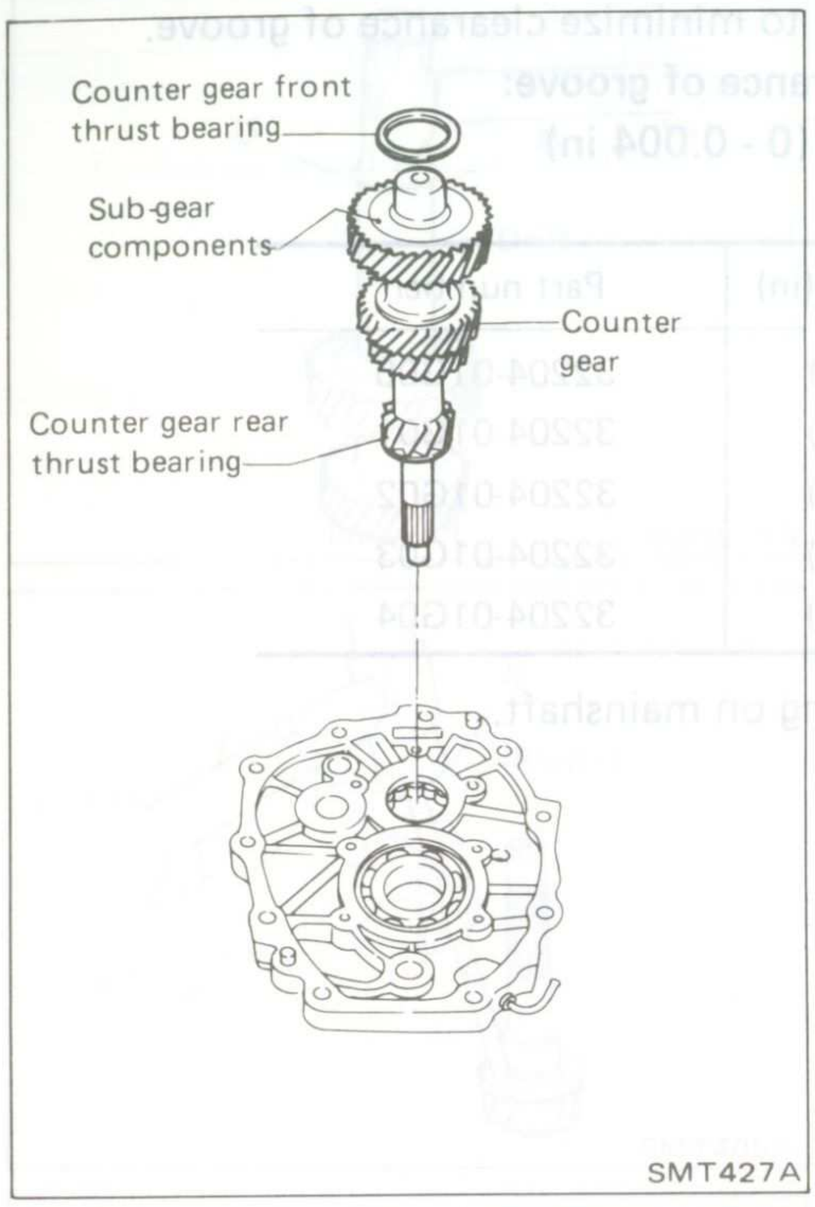
g. Press on 1st gear bushing using 1st gear washer.

h. Install 1st main gear and needle bearing.



i. Install steel ball and 1st gear washer.
Apply multi-purpose grease to steel ball and 1st gear washer before installing.

Gear Components (Cont'd)

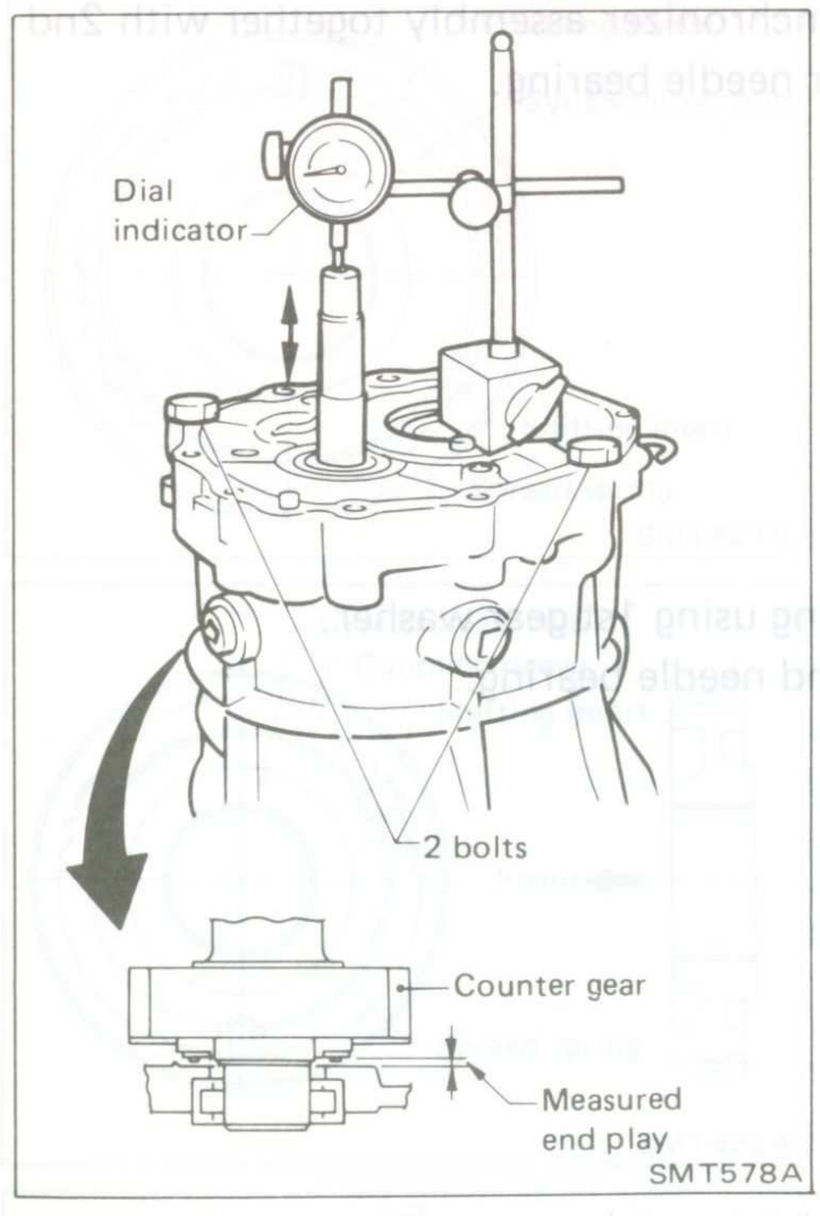


SMT427A

5. Select proper counter gear front bearing shim when replacing transmission case, counter gear, counter gear thrust bearing or sub-gear components.
   a. Install counter gear with sub-gear components, counter gear front and rear thrust bearing on adapter plate.
   b. Remove counter gear front bearing shim from transmission case.
   c. Place adapter plate and counter gear assembly in transmission case (case inverted).
   d. Tighten adapter plate to transmission case using 2 bolts.
   e. Place dial indicator on rear end of counter gear.
   f. Move counter gear up and down and measure dial indicator deflection.
   g. Select proper shim using table below as a guide.

Counter gear end play:

0.10 - 0.25 mm (0.0039 - 0.0098 in)



SMT578A

Table for selecting proper counter gear front bearing shim

Dial indicator deflection mm (in)	Thickness of proper washer mm (in)	Part number
0.93 - 1.02 (0.0366 - 0.0402)	0.8 (0.031)	32218-01G00
1.03 - 1.12 (0.0406 - 0.0441)	0.9 (0.035)	32218-01G01
1.13 - 1.22 (0.0445 - 0.0480)	1.0 (0.039)	32218-01G02
1.23 - 1.32 (0.0484 - 0.0520)	1.1 (0.043)	32218-01G03
1.33 - 1.42 (0.0524 - 0.0559)	1.2 (0.047)	32218-01G04
1.43 - 1.52 (0.0563 - 0.0598)	1.3 (0.051)	32218-01G05
1.53 - 1.62 (0.0602 - 0.0638)	1.4 (0.055)	32218-01G06

Gear Components (Cont'd)

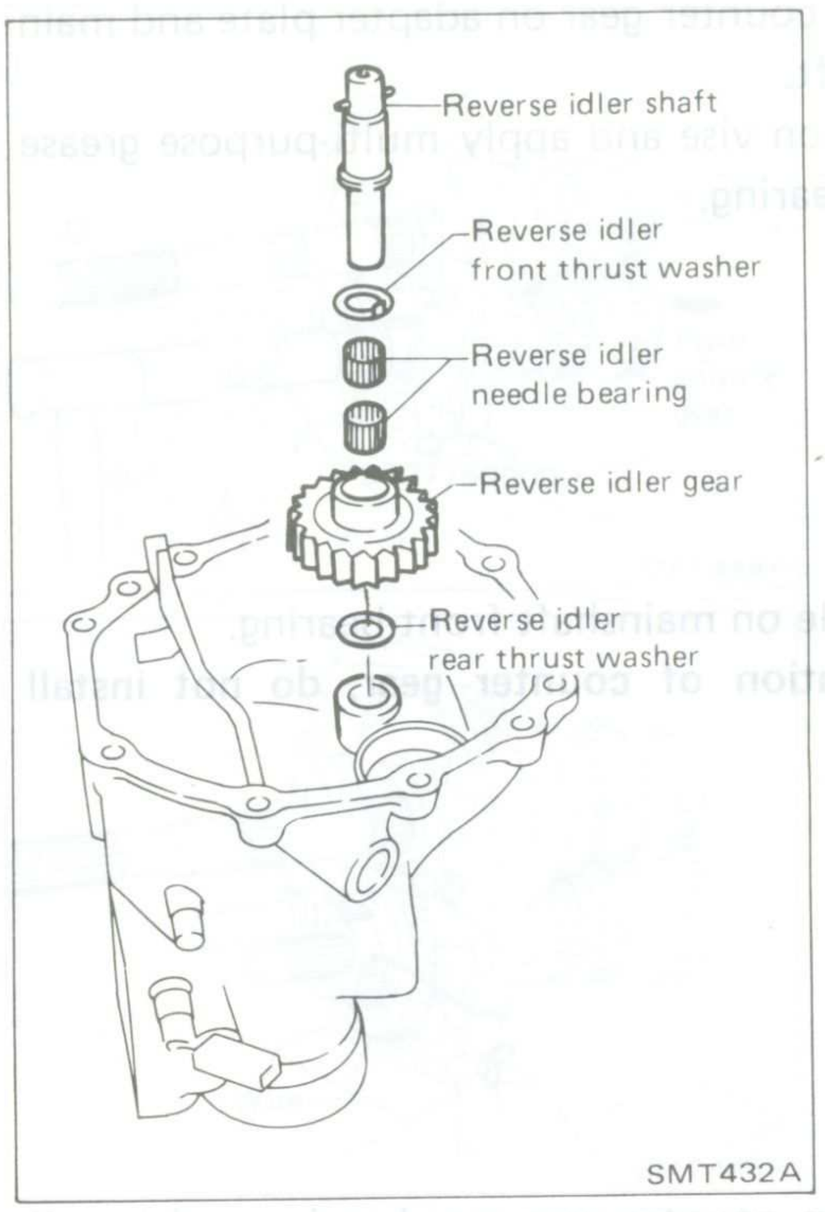
6. Select proper reverse idler rear thrust washer when replacing rear extension, reverse idler gear, reverse idler shaft or reverse idler thrust washer.

a. Install reverse idler gear, reverse idler needle bearings, reverse idler thrust washers and reverse idler shaft into rear extension.

When replacing reverse idler rear washer, install either A or B.

Reverse idler rear thrust washer

	Thickness mm (in)	Part number
A	1.97 (0.0776)	32284-01G10
B	2.07 (0.0815)	32284-01G11



SMT432A

b. Place dial indicator on front end of reverse idler shaft.

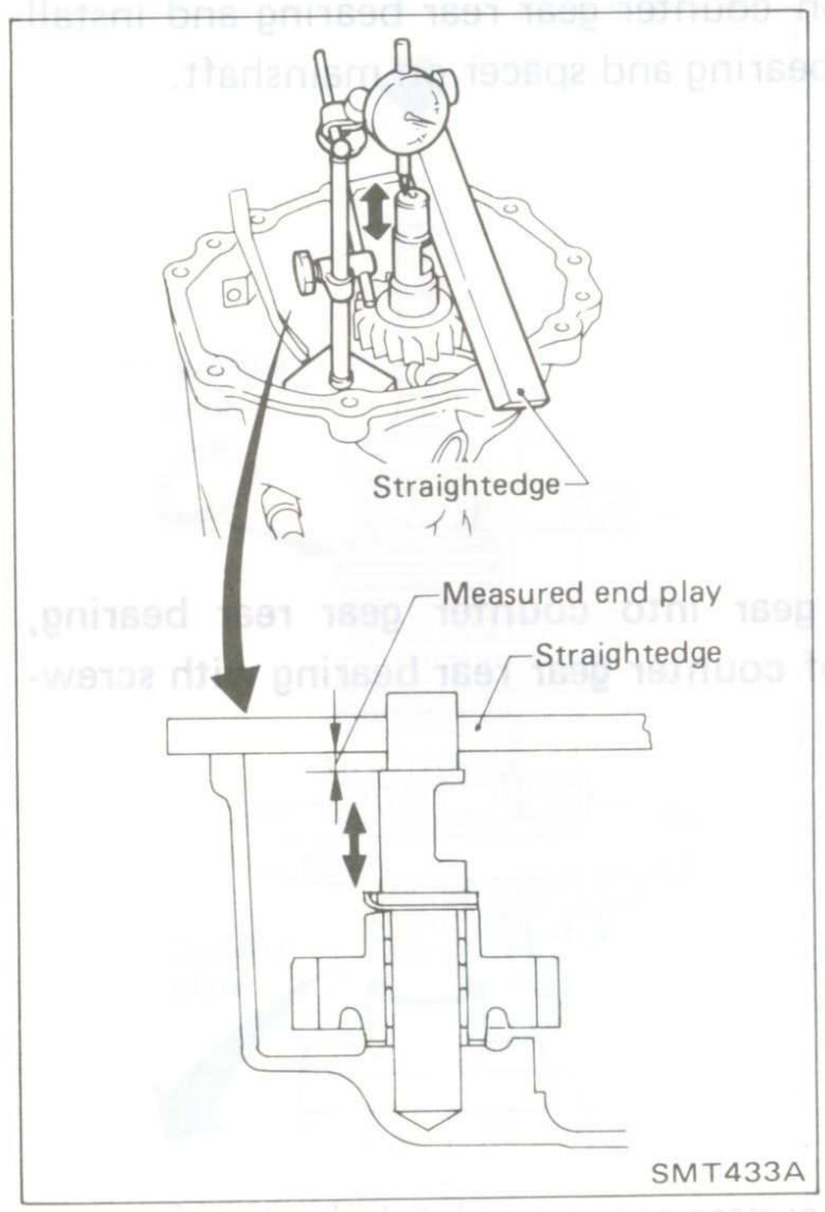
c. Put straightedge on front surface of rear extension as a stopper of reverse idler shaft.

d. Move reverse idler shaft up and down and measure reverse idler gear end play.

Reverse idler gear end play:

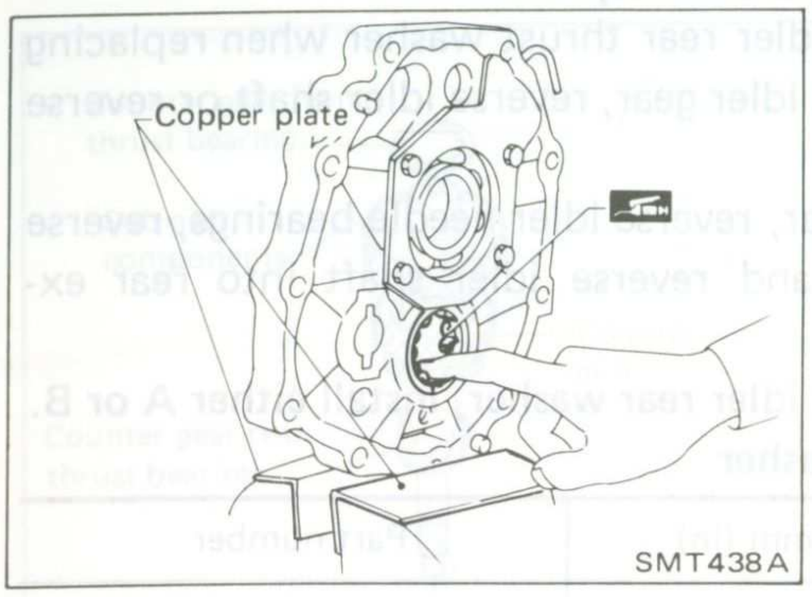
0.30 - 0.53 mm (0.0118 - 0.0209 in)

e. If not within specification, replace reverse idler rear thrust washer with the other (A or B) and check again.



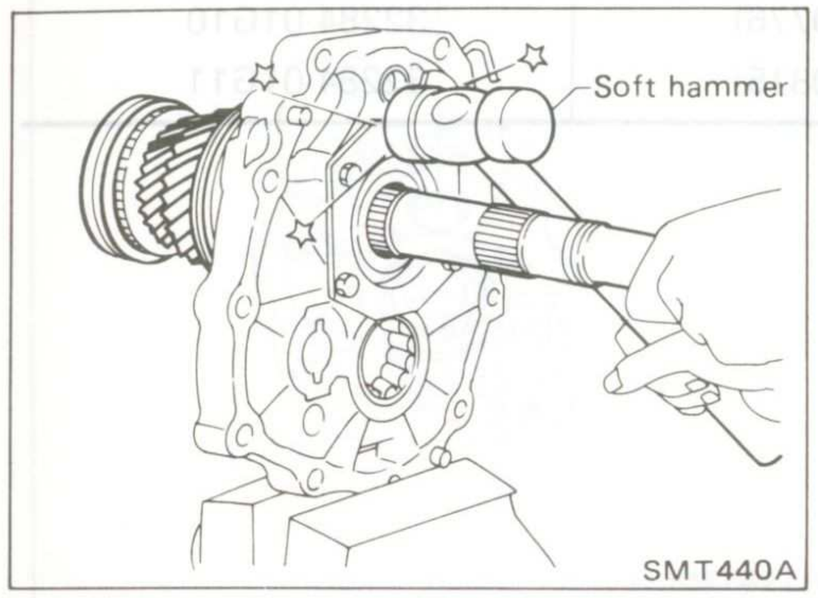
SMT433A

Gear Components (Cont'd)

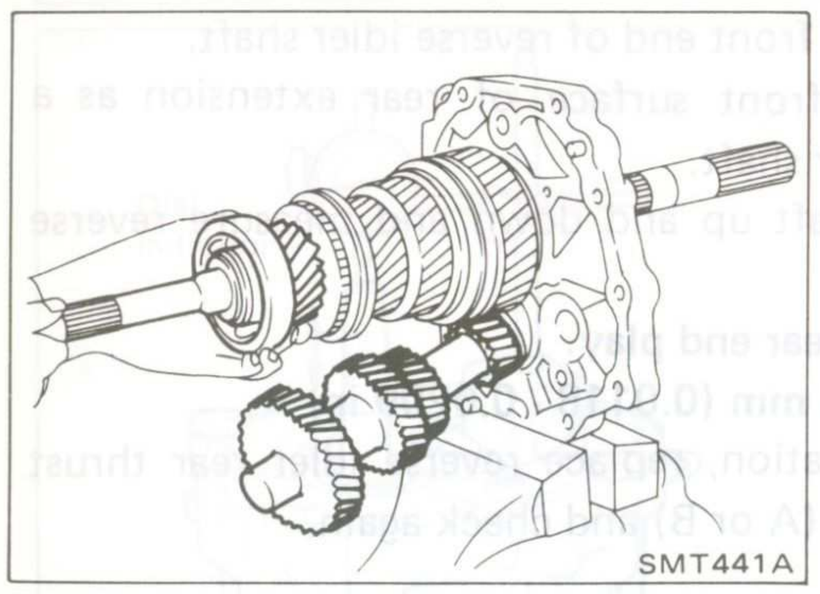


7. Install mainshaft and counter gear on adapter plate and main drive gear on mainshaft.

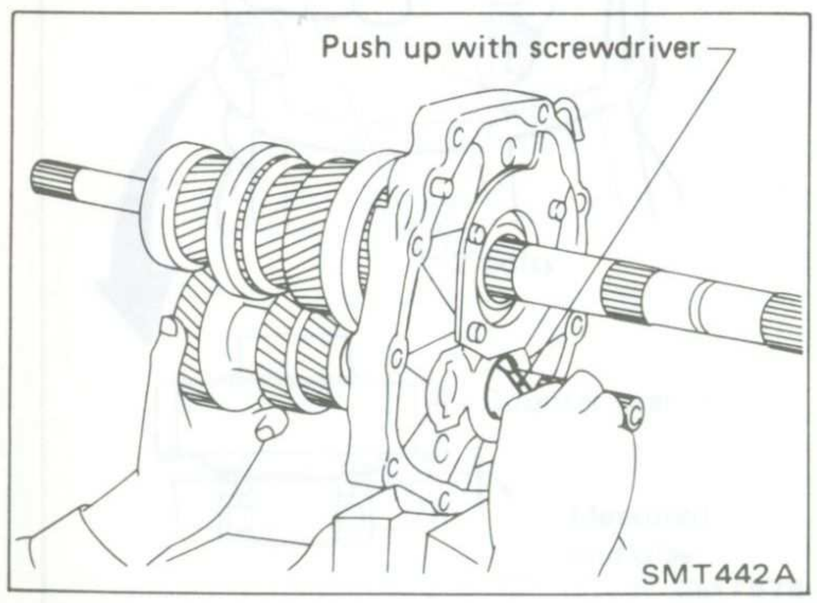
a. Mount adapter plate on vise and apply multi-purpose grease to counter gear rear bearing.



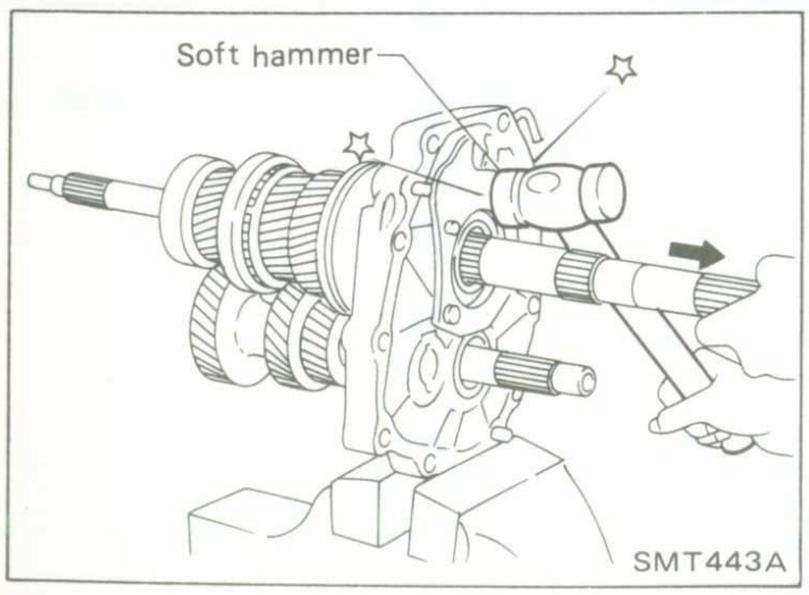
b. Install mainshaft a little on mainshaft front bearing.
To allow for installation of counter gear, do not install mainshaft completely.



c. Install counter gear on counter gear rear bearing and install main drive gear, pilot bearing and spacer on mainshaft.



When installing counter gear into counter gear rear bearing, push up on upper roller of counter gear rear bearing with screwdriver.

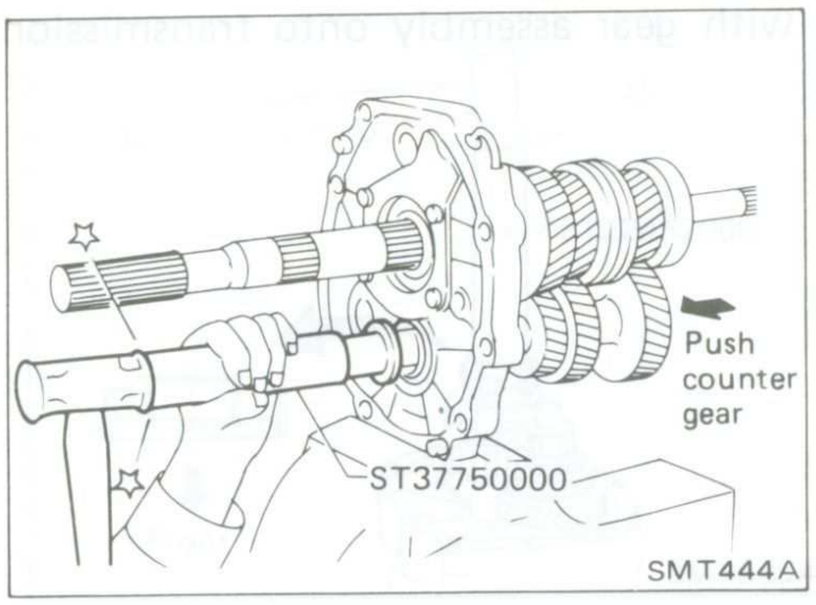


d. Install mainshaft and counter gear completely by tapping rear side of adapter plate and pulling mainshaft.

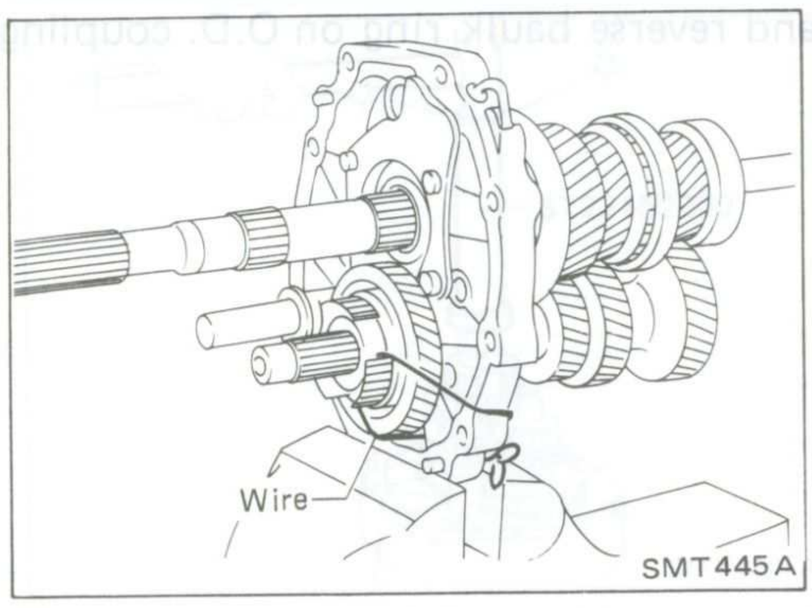
Gear Components (Cont'd)

8. Install rear side components on mainshaft and counter gear.

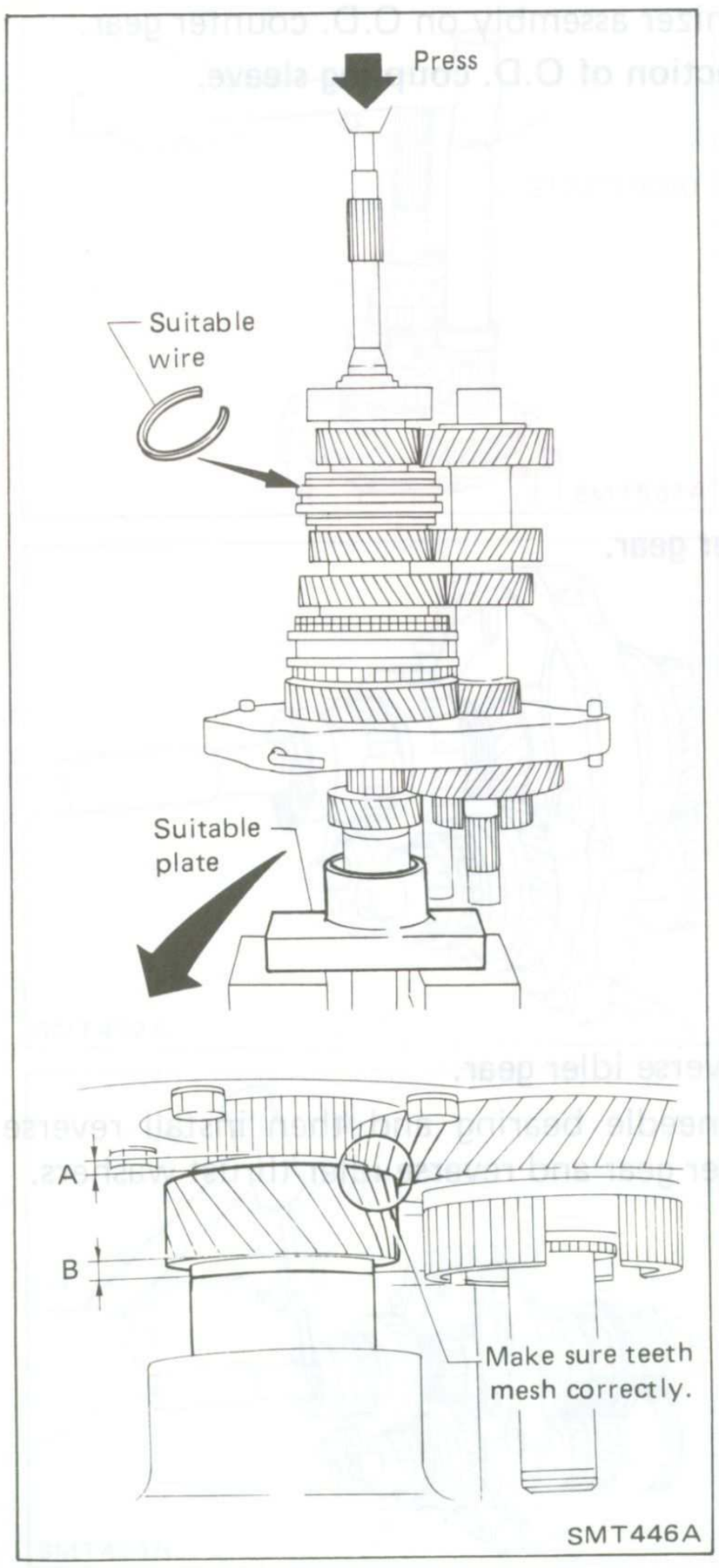
a. Install O.D. gear bushing while pushing on the front of counter gear.



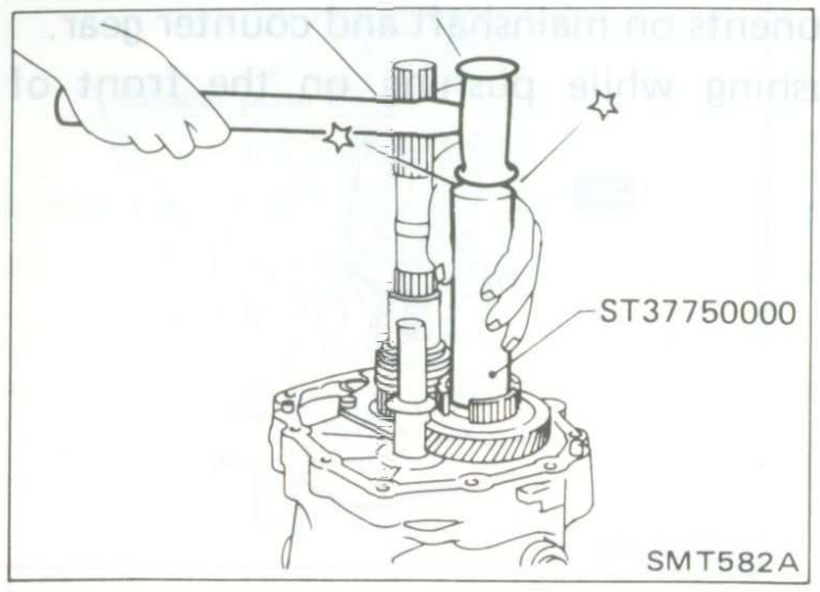
b. Install O.D. gear needle bearing and then install O.D. counter gear and reverse idler shaft.
Hold O.D. counter gear with a wire so it will not drop when placing adapter plate on press stand.



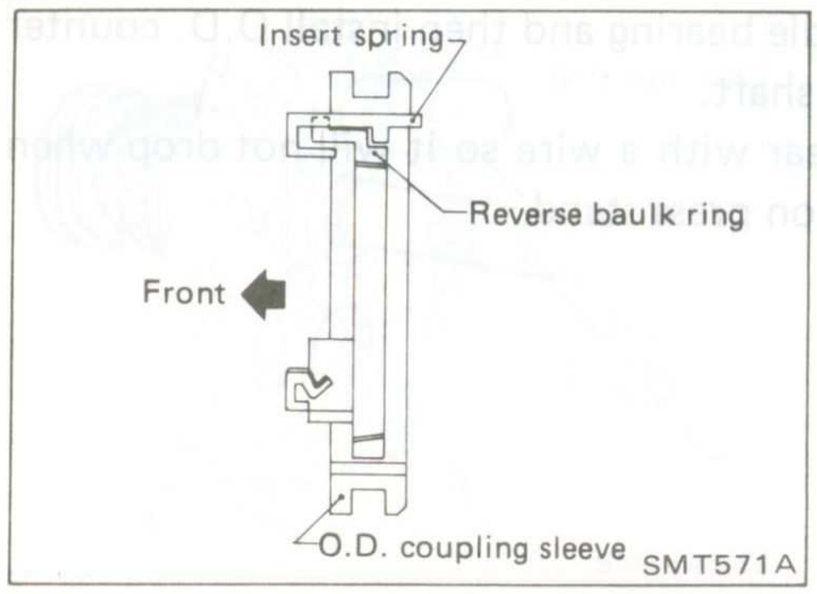
c. Press in O.D. main gear and reverse gear bushing.
Pay attention to direction of O.D. main gear (B is wider than A as shown at left.)
Place suitable wire between main drive gear and 4th baulk ring so that 4th baulk ring does not stick to main drive gear.
Make sure that the teeth of O.D. main gear mesh with that of O.D. counter gear correctly.



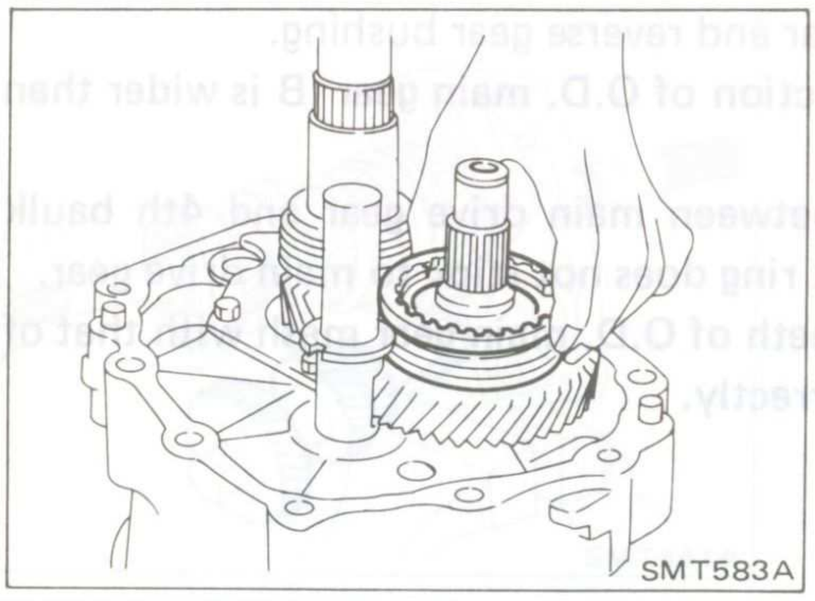
Gear Components (Cont'd)



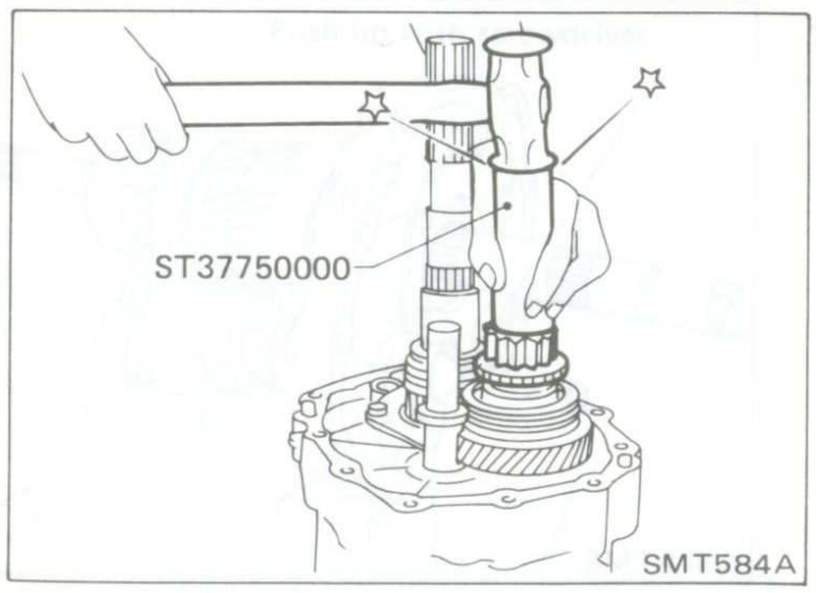
d. Install adapter plate with gear assembly onto transmission case.
e. Install reverse cone.



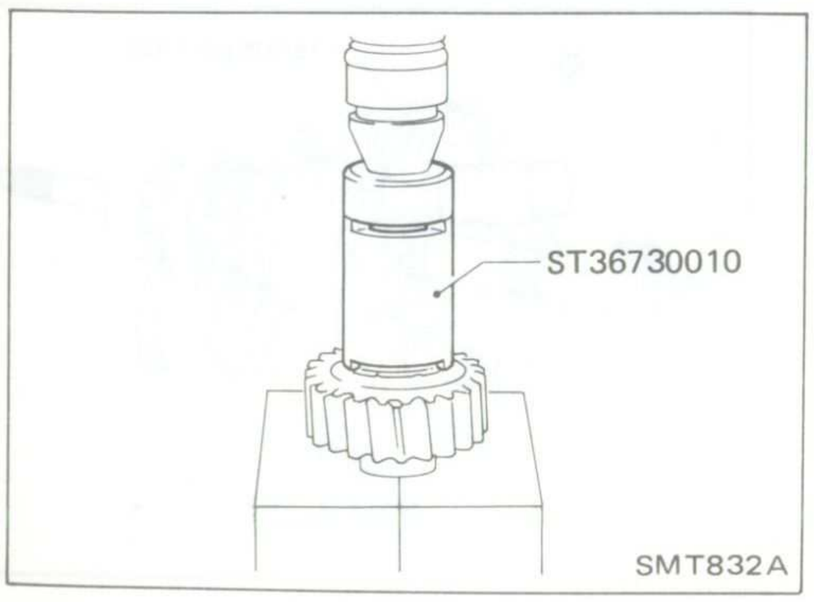
f. Install insert springs and reverse baulk ring on O.D. coupling sleeve.



g. Install O.D. synchronizer assembly on O.D. counter gear.
Pay attention to direction of O.D. coupling sleeve.

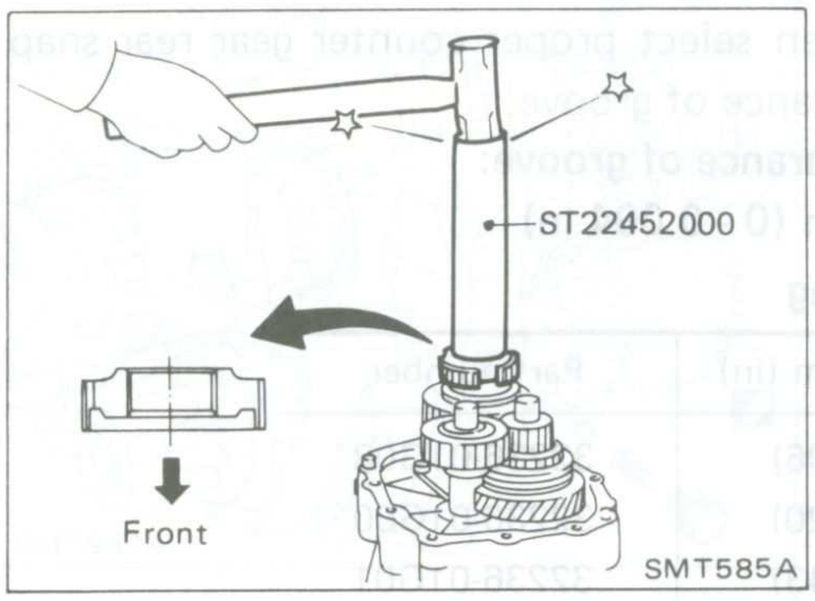


h. Install reverse counter gear.

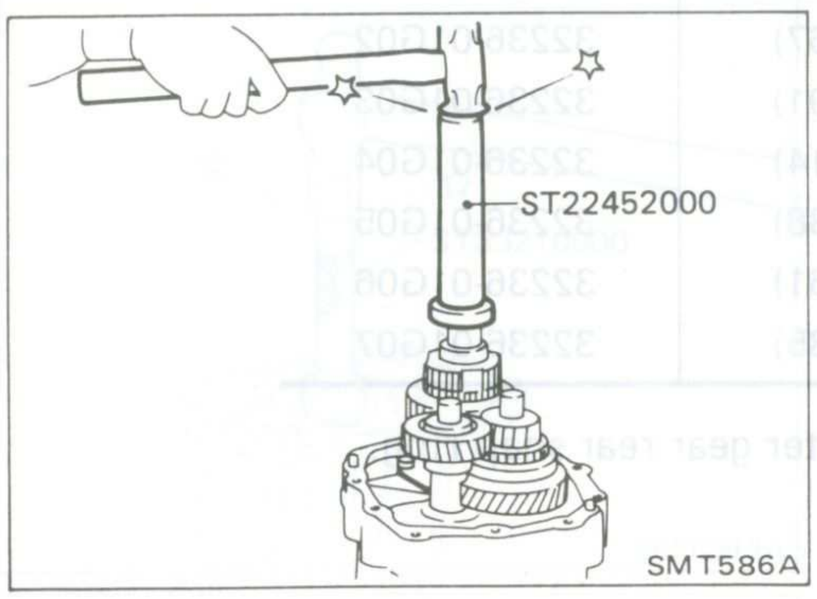


i. Install sub-gear on reverse idler gear.
j. Install reverse gear needle bearing and then install reverse main gear, reverse idler gear and reverse idler thrust washers.

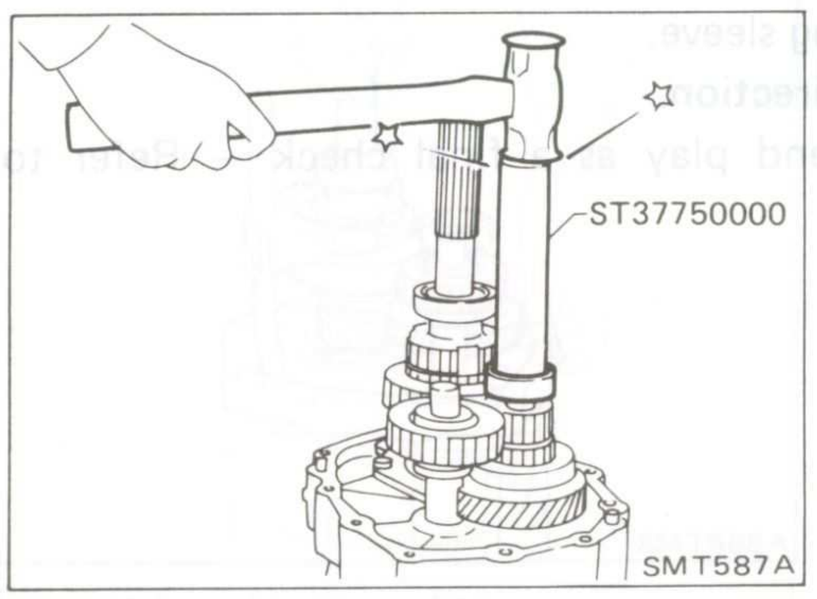
Gear Components (Cont'd)



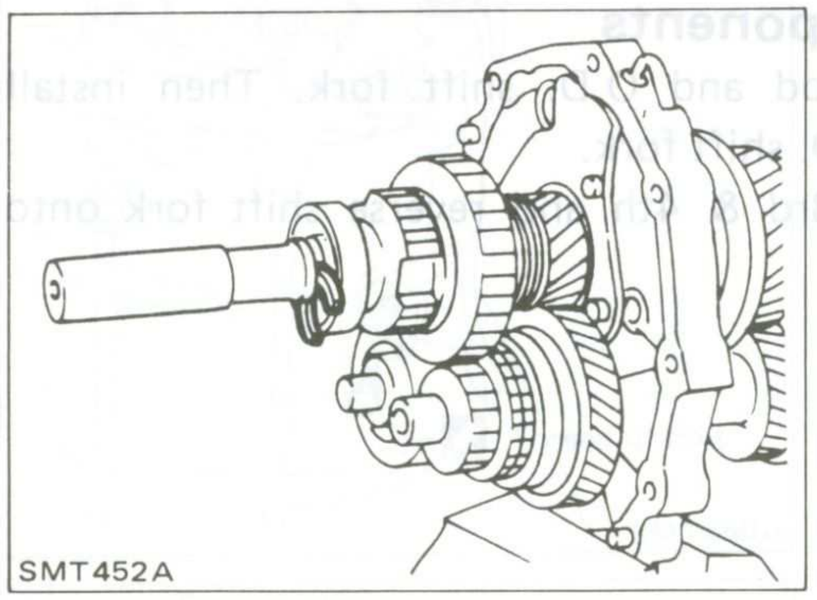
k. Install reverse hub.
Pay attention to its direction.



l. Install mainshaft spacer and mainshaft rear bearing.
m. Install speedometer drive gear.



n. Install counter gear rear end bearing.
o. Separate adapter plate from transmission case and mount adapter plate on vice again.

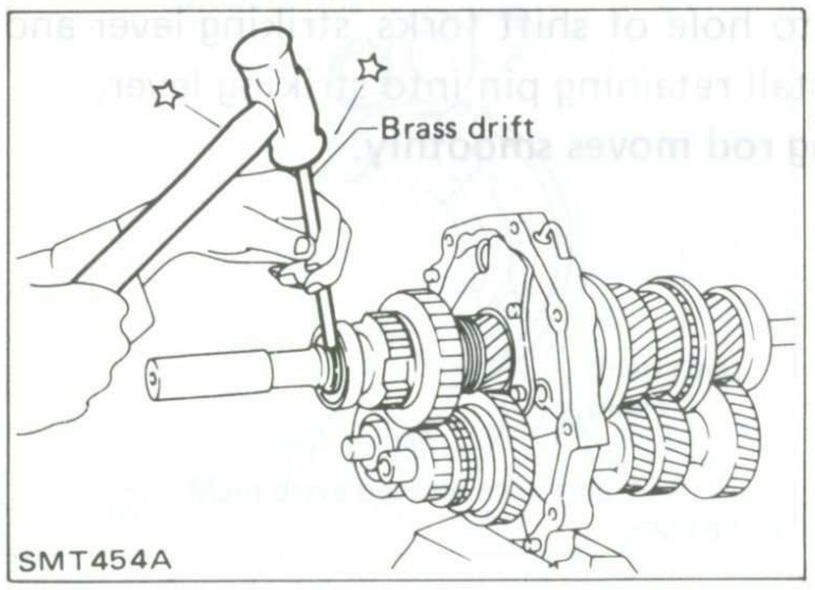


p. Select proper mainshaft C-ring to minimize clearance of groove.

Allowable clearance of groove:
0 - 0.1 mm (0 - 0.004 in)

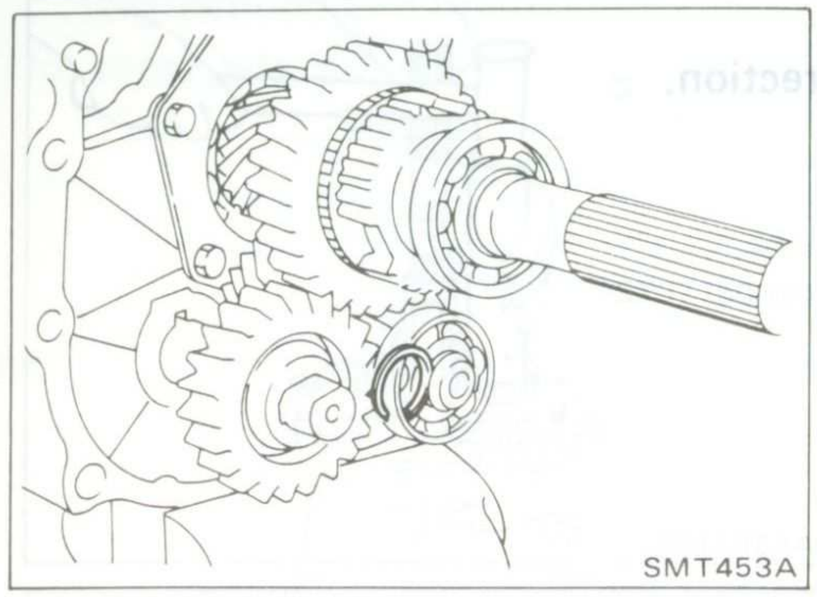
Mainshaft C-ring

Thickness mm (in)	Part number	Thickness mm (in)	Part number
2.63 (0.1035)	32348-01G15	3.19 (0.1256)	32348-01G07
2.70 (0.1063)	32348-01G00	3.26 (0.1283)	32348-01G08
2.77 (0.1091)	32348-01G01	3.33 (0.1311)	32348-01G09
2.84 (0.1118)	32348-01G02	3.40 (0.1339)	32348-01G10
2.91 (0.1146)	32348-01G03	3.47 (0.1366)	32348-01G11
2.98 (0.1173)	32348-01G04	3.54 (0.1394)	32348-01G12
3.05 (0.1201)	32348-01G05	3.61 (0.1421)	32348-01G13
3.12 (0.1228)	32348-01G06	3.68 (0.1449)	32348-01G14



q. Install selected C-ring, C-ring holder and mainshaft rear snap ring.

Gear Components (Cont'd)


SMT453A

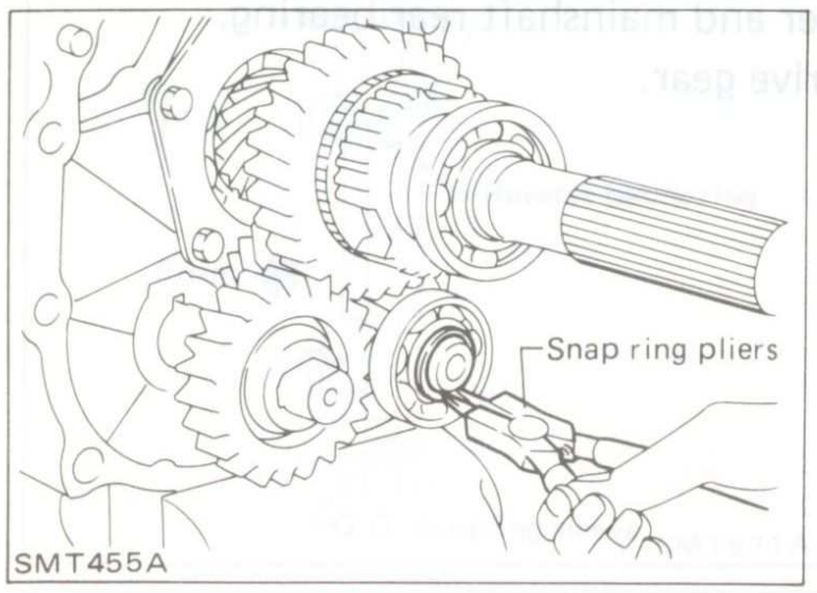
r. Install spacer and then select proper counter gear rear snap ring to minimize clearance of groove.

Allowable clearance of groove:

0 - 0.1 mm (0 - 0.004 in)

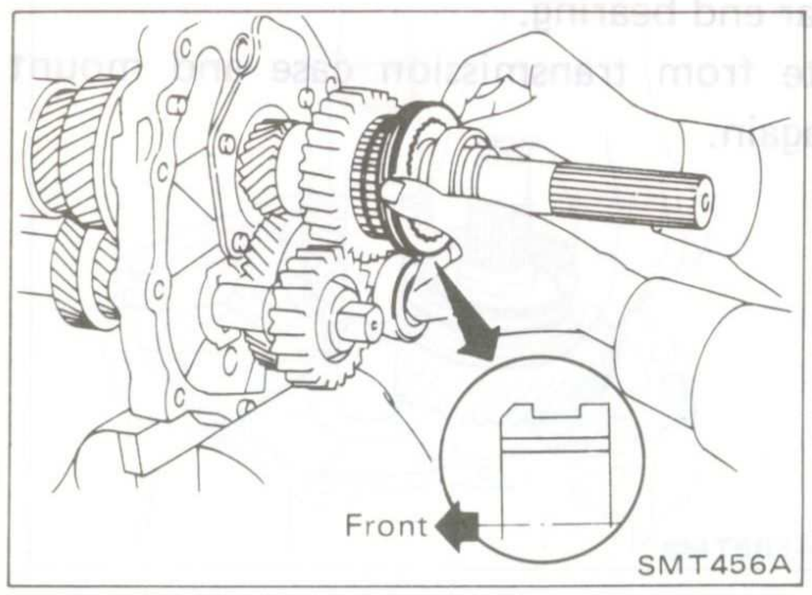
Counter gear rear snap ring

Thickness mm (in)	Part number
1.26 (0.0496)	32236-01G08
1.32 (0.0520)	32236-01G00
1.38 (0.0543)	32236-01G01
1.44 (0.0567)	32236-01G02
1.50 (0.0591)	32236-01G03
1.56 (0.0614)	32236-01G04
1.62 (0.0638)	32236-01G05
1.68 (0.0661)	32236-01G06
1.74 (0.0685)	32236-01G07



SMT455A

s. Install selected counter gear rear snap ring.

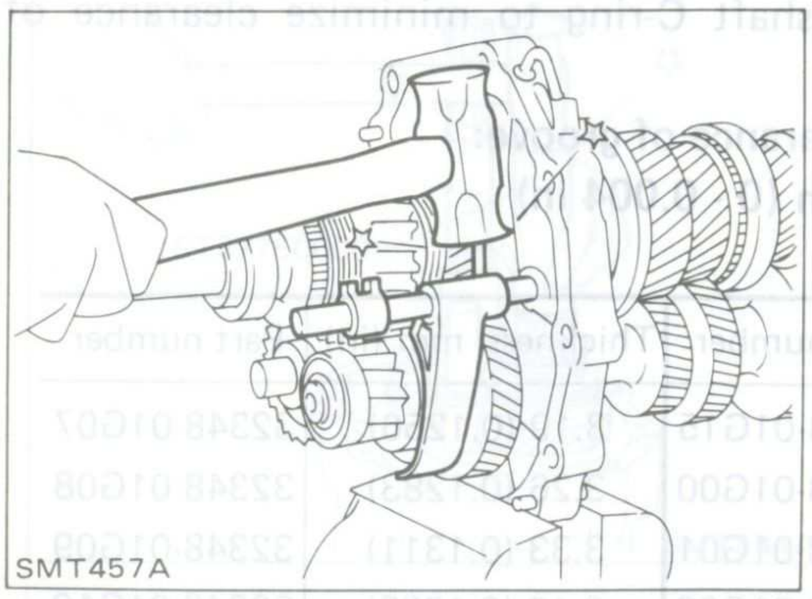


SMT456A

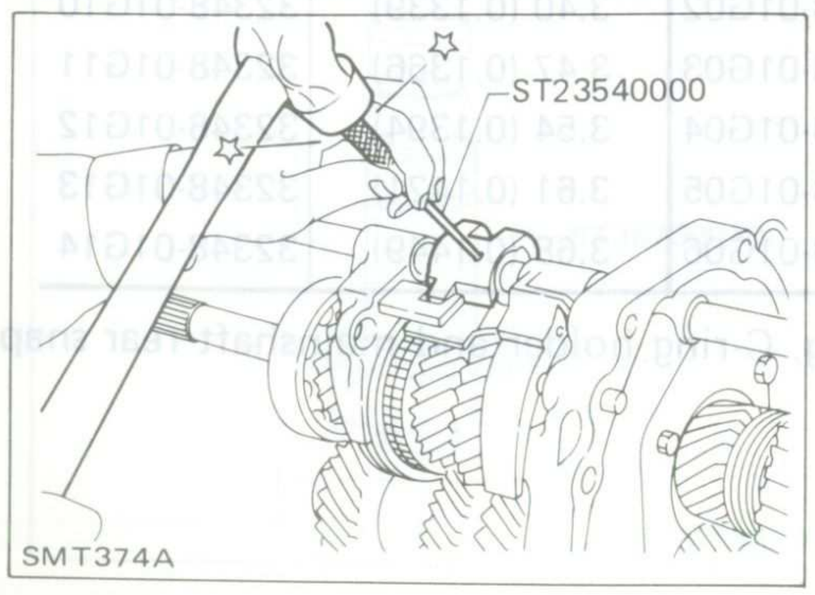
t. Install reverse coupling sleeve.
Pay attention to its direction.

u. Measure each gear end play as a final check — Refer to "DISASSEMBLY".

Shift Control Components


SMT457A

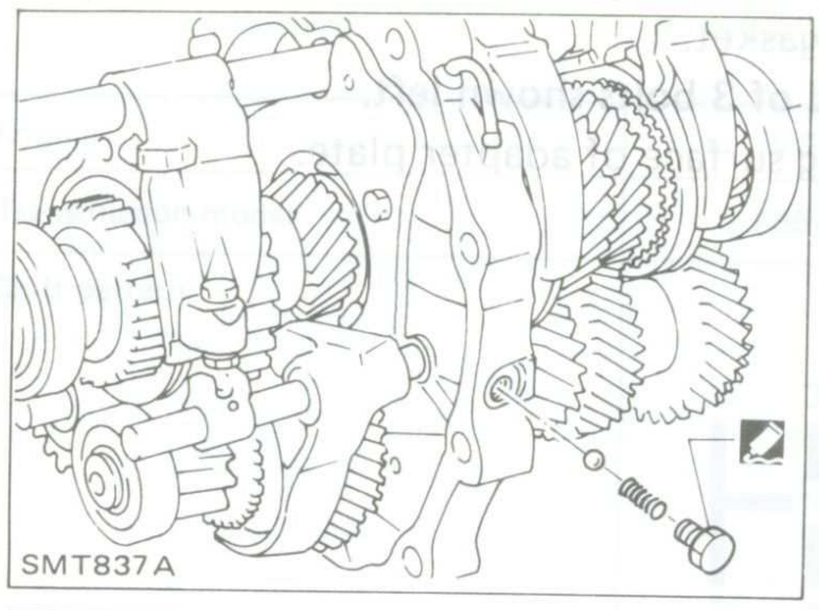
1. Install O.D. fork rod and O.D. shift fork. Then install retaining pin into O.D. shift fork.
2. Install 1st & 2nd, 3rd & 4th and reverse shift fork onto coupling sleeve.



SMT374A

3. Install striking rod into hole of shift forks, striking lever and interlock and then install retaining pin into striking lever.
Make sure that striking rod moves smoothly.

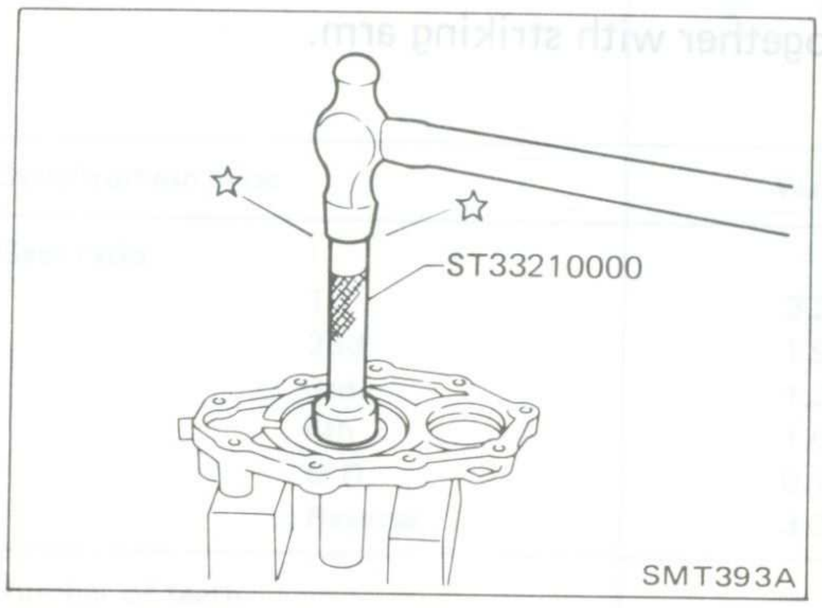
Shift Control Components (Cont'd)



4. Install check ball, return spring and check ball plug.

Apply sealant to thread of check ball plug.

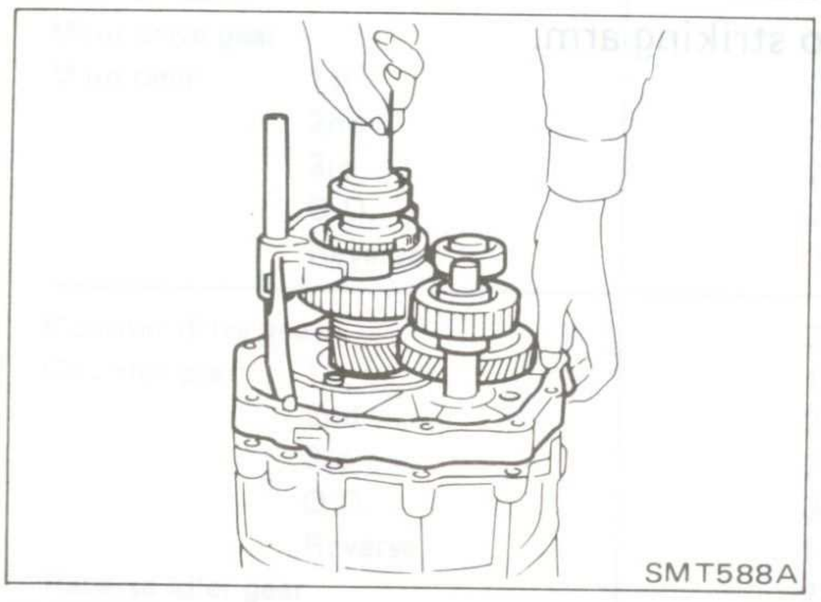
Case Components



1. Install front cover oil seal.

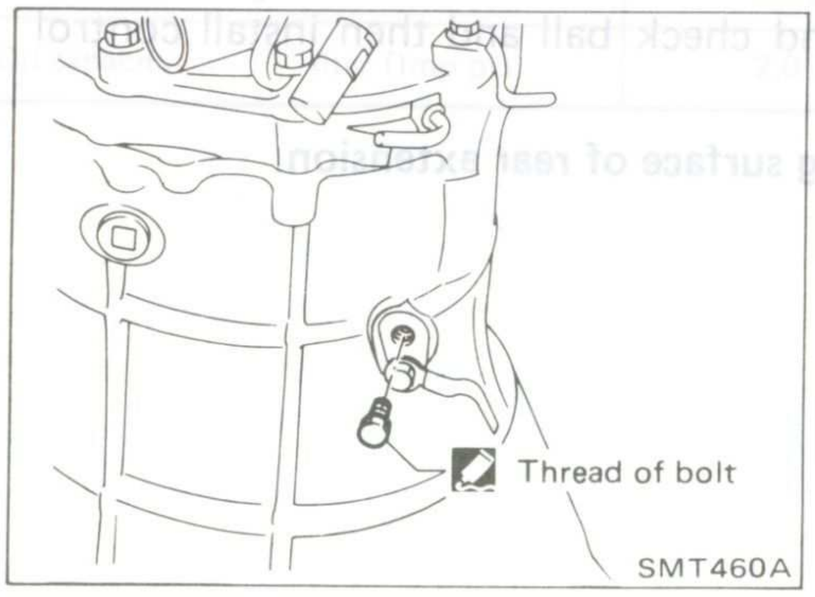
   Apply multi-purpose grease to seal lip.
2. Install selected counter gear front bearing shim onto transmission case.

   Apply multi-purpose grease.
3. Apply sealant to mating surface of transmission case.



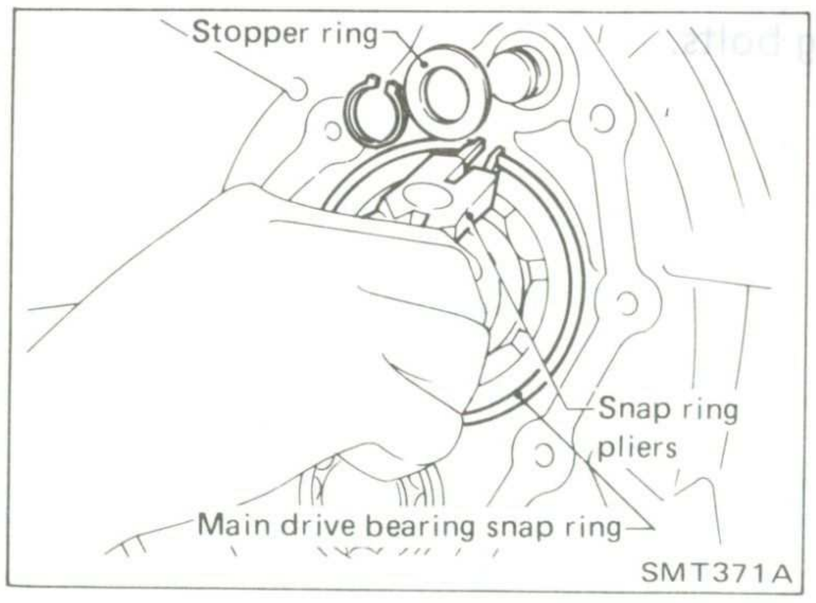
4. Install gear assembly onto transmission case.
5. Install check spring and check ball into interlock stopper.

   Apply multi-purpose grease to check ball.



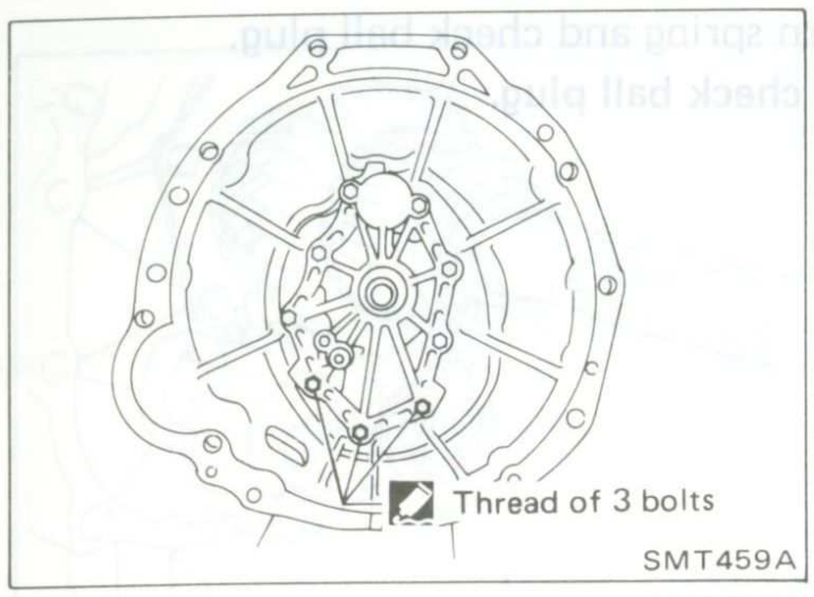
6. Install interlock stopper assembly and then tighten check ball plug.

   Apply sealant to thread of check ball plug.

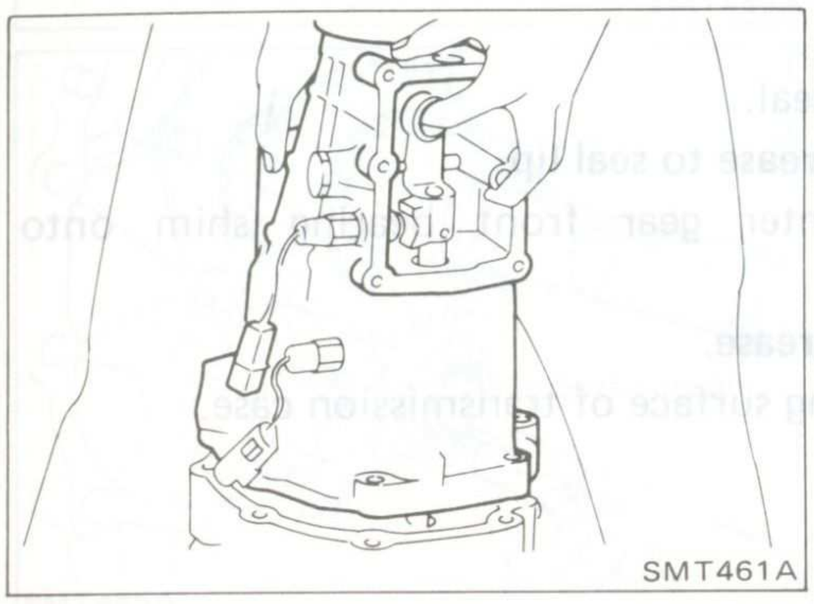


7. Install stopper ring and main drive bearing snap ring.

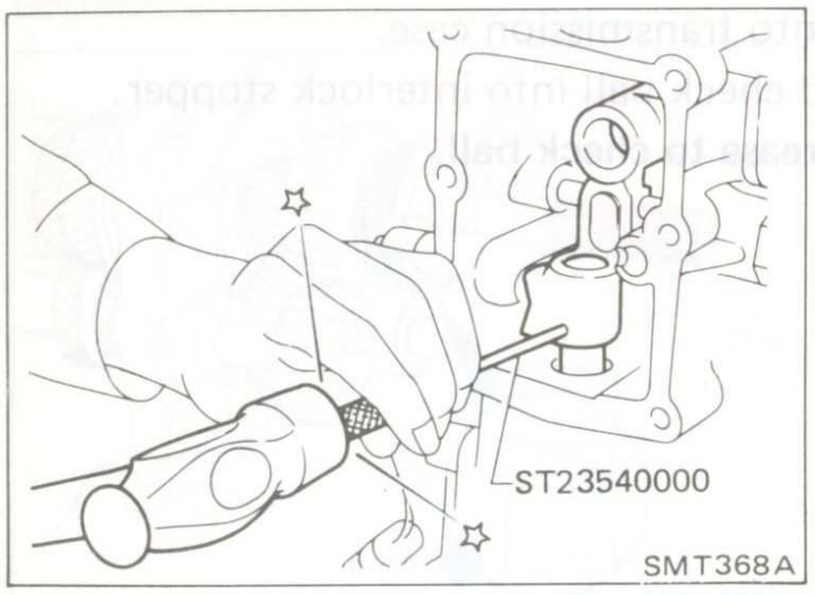
Case Components (Cont'd)



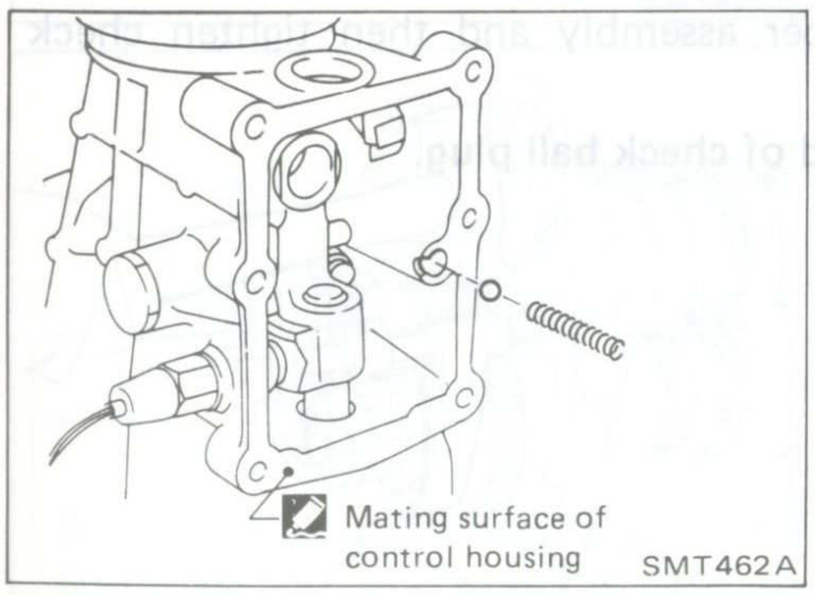
8. Install front cover and gasket.
   Apply sealant to thread of 3 bolts shown left.
9. Apply sealant to mating surface of adapter plate.



10. Install rear extension together with striking arm.

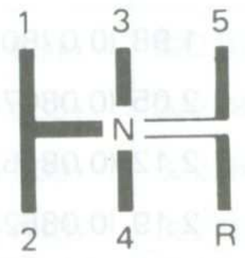


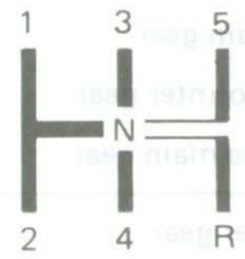
11. Install retaining pin into striking arm.



12. Install return spring and check ball and then install control housing.
    Apply sealant to mating surface of rear extension.
13. Tighten control housing bolts.

General Specifications

Engine		VG30E
Transmission model		FS5W71C
Shift pattern		
Synchromesh type		Warner
Gear ratio	1st	3.321
	2nd	1.902
	3rd	1.308
	4th	1.000
	O.D.	0.759
	Reverse	3.382
Number of teeth		
Main drive gear		22
Main bear	1st	33
	2nd	27
	3rd	26
	O.D.	21
	Reverse	36
Counter drive gear		31
Counter gear	1st	14
	2nd	20
	3rd	28
	O.D.	39
	Reverse	15
Reverse idler gear		21
Oil capacity	liter (Imp pt)	2.0 (3-1/2)

Engine		VG30ET
Transmission model		FS5R30A
Shift pattern		
Synchromesh type		Warner
Gear ratio	1st	3.325
	2nd	2.077
	3rd	1.360
	4th	1.000
	O.D.	0.760
	Reverse	3.636
Number of teeth		
Main drive gear		22
Main gear	1st	32
	2nd	30
	3rd	29
	O.D.	23
	Reverse	30
Counter drive gear		32
Counter gear	1st	14
	2nd	21
	3rd	31
	O.D.	44
	Reverse	12
Reverse idler gear		22
Oil capacity	liter (Imp pt)	2.4 (4-1/4)

Inspection and Adjustment — FS5R30A

GEAR END PLAY

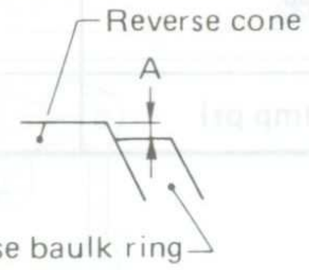
Gear	End play mm (in)
1st main gear	0.23 - 0.33 (0.0091 - 0.0130)
2nd main gear	0.23 - 0.33 (0.0091 - 0.0130)
3rd main gear	0.23 - 0.33 (0.0091 - 0.0130)
O.D. counter gear	0.23 - 0.33 (0.0091 - 0.0130)
Reverse main gear	0.33 - 0.43 (0.0130 - 0.0169)
Counter gear	0.10 - 0.25 (0.0039 - 0.0098)
Reverse idler gear	0.30 - 0.53 (0.0118 - 0.0209)

CLEARANCE BETWEEN BAULK RING AND GEAR

Unit: mm (in)

	Standard	Wear limit
1st & 2nd	1.05 - 1.3 (0.0413 - 0.0512)	0.7 (0.028)
3rd & main drive	1.05 - 1.3 (0.0413 - 0.0512)	0.7 (0.028)
O.D.	1.05 - 1.3 (0.0413 - 0.0512)	0.7 (0.028)

DISTANCE BETWEEN REAR SURFACE OF REVERSE CONE AND REVERSE BAULK RING



Unit: mm (in)

	Standard	Wear limit
Dimension "A"	−0.1 to 0.35 (−0.0039 to 0.0138)	0.7 (0.028)

AVAILABLE SNAP RING

Main drive gear snap ring

Allowable clearance	0 - 0.1 mm (0 - 0.004 in)
Thickness mm (in)	Part number
1.89 (0.0744)	32204-01G00
1.98 (0.0780)	32204-01G01
2.05 (0.0807)	32204-01G02
2.12 (0.0835)	32204-01G03
2.19 (0.0862)	32204-01G04

Mainshaft front snap ring

Allowable clearance	0 - 0.1 mm (0 - 0.004 in)
Thickness mm (in)	Part number
1.89 (0.0744)	32204-01G00
1.98 (0.0780)	32204-01G01
2.05 (0.0807)	32204-01G02
2.12 (0.0835)	32204-01G03
2.19 (0.0862)	32204-01G04

Counter gear rear snap ring

Allowable clearance	0 - 0.1 mm (0 - 0.004 in)
Thickness mm (in)	Part number
1.26 (0.0496)	32236-01G08
1.32 (0.0520)	32236-01G00
1.38 (0.0543)	32236-01G01
1.44 (0.0567)	32236-01G02
1.50 (0.0591)	32236-01G03
1.56 (0.0614)	32236-01G04
1.62 (0.0638)	32236-01G05
1.68 (0.0661)	32236-01G06
1.74 (0.0685)	32236-01G07

AVAILABLE C-RING

Mainshaft C-ring

Allowable clearance	0 - 0.1 mm (0 - 0.004 in)		
Thickness mm (in)	Part number	Thickness mm (in)	Part number
2.63 (0.1035)	32348-01G15	3.19 (0.1256)	32348-01G07
2.70 (0.1063)	32348-01G00	3.26 (0.1283)	32348-01G08
2.77 (0.1091)	32348-01G01	3.33 (0.1311)	32348-01G09
2.84 (0.1118)	32348-01G02	3.40 (0.1339)	32348-01G10
2.91 (0.1146)	32348-01G03	3.47 (0.1366)	32348-01G11
2.98 (0.1173)	32348-01G04	3.54 (0.1394)	32348-01G12
3.05 (0.1201)	32348-01G05	3.61 (0.1421)	32348-01G13
3.12 (0.1228)	32348-01G06	3.68 (0.1449)	32348-01G14

Inspection and Adjustment — FS5R30A (Cont'd)

AVAILABLE SHIM AND WASHER

Table for selecting proper counter gear front bearing shim

Dial indicator deflection mm (in)	Thickness of proper washer mm (in)	Part number
0.93 - 1.02 (0.0366 - 0.0402)	0.8 (0.031)	32218-01G00
1.03 - 1.12 (0.0406 - 0.0441)	0.9 (0.035)	32218-01G01
1.13 - 1.22 (0.0445 - 0.0480)	1.0 (0.039)	32218-01G02
1.23 - 1.32 (0.0484 - 0.0520)	1.1 (0.043)	32218-01G03
1.33 - 1.42 (0.0524 - 0.0559)	1.2 (0.047)	32218-01G04
1.43 - 1.52 (0.0563 - 0.0598)	1.3 (0.051)	32218-01G05
1.53 - 1.62 (0.0602 - 0.0638)	1.4 (0.055)	32218-01G06

Reverse idler rear thrust washer

Thickness mm (in)	Part number
1.97 (0.0776)	32284-01G10
2.07 (0.0815)	32284-01G11

Tightening Torque

TRANSMISSION INSTALLATION

Unit	N·m	kg-m	ft-lb
Clutch operating cylinder	30 - 40	3.1 - 4.1	22 - 30
Transmission securing bolt	Refer to Removal and Installation.		
Engine gusset to engine	29 - 39	3.0 - 4.0	22 - 29
Rear mounting insulator to rear extension	Refer to section EM.		
Starter motor fixing bolt	Refer to section EM.		

GEAR ASSEMBLY — FS5R30A

Unit	N·m	kg-m	ft-lb
Rear extension to transmission case	31 - 42	3.2 - 4.3	23 - 31
Front cover to transmission case	16 - 21	1.6 - 2.1	12 - 15
Control housing to rear extension	16 - 21	1.6 - 2.1	12 - 15
Ball pin	31 - 42	3.2 - 4.3	23 - 31
Filler plug	25 - 34	2.5 - 3.5	18 - 25
Drain plug	25 - 34	2.5 - 3.5	18 - 25
Speedometer pinion installation	4 - 5	0.4 - 0.5	2.9 - 3.6
Interlock stopper fixing bolt	31 - 42	3.2 - 4.3	23 - 31
Check ball plug	19 - 25	1.9 - 2.6	14 - 19
Select check plug	20 - 29	2.0 - 3.0	14 - 22
Reverse check sleeve fixing bolt	6.3 - 8.3	0.64 - 0.85	4.6 - 6.1
O.D. & reverse fork rod to reverse shift fork	25 - 29	2.5 - 3.0	18 - 22
O.D. and reverse shift fork connecting bolt	29 - 34	3.0 - 3.5	22 - 25
Guide plate to rear extension	6.3 - 8.3	0.64 - 0.85	4.6 - 6.1
Bearing retainer to adapter plate	16 - 21	1.6 - 2.1	12 - 15
Reverse lamp switch	20 - 29	2.0 - 3.0	14 - 22
Neutral switch	20 - 29	2.0 - 3.0	14 - 22