MANUAL TRANSAXLE

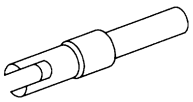
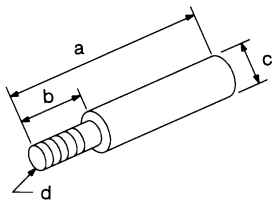
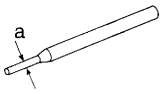
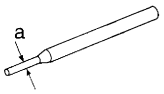
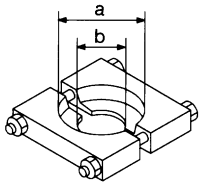
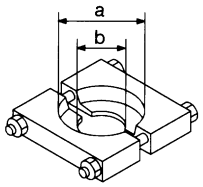
SECTION MT

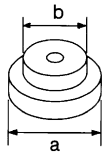
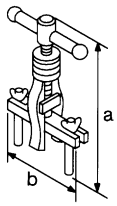
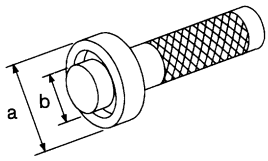
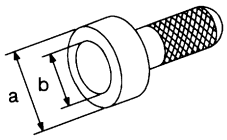
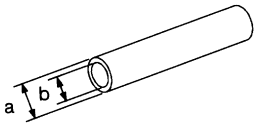
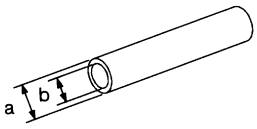
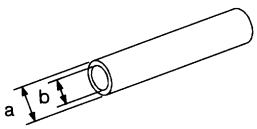
CONTENTS

Special Service Tools

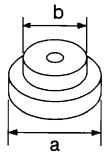
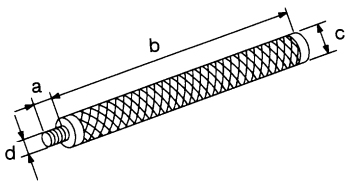
NIMT0001

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	
KV38107700 (J39027) Preload adapter	 NT087	Measuring turning torque of final drive assembly Measuring total turning torque Measuring clearance between side gear and differential case with washer Selecting differential side bearing adjusting shim [Use with KV38106000 (J34291-B).]
KV38106000 (J34291-B) Height gauge adapter (differential side bearing)	 NT418	Selecting differential side bearing adjusting shim [Use with KV38107700 (J39027).] **a: 140 mm (5.51 in)** **b: 40 mm (1.57 in)** **c: 16 mm (0.63 in) dia.** **d: M8 × 1.25P**
KV32101000 (J25689-A) Pin punch	 NT410	Removing and installing retaining pin Removing and installing lock pin Removing selector shaft Removing welch plug **a: 4 mm (0.16 in) dia.**
KV31100300 (J25689-A) Pin punch	 NT410	Removing and installing retaining pin **a: 4.5 mm (0.177 in) dia.**
ST30031000 (J22912-O1) Puller	 NT411	Removing 3rd, 5th input gear Removing 3rd & 4th and 5th & Rev synchronizer hub Removing mainshaft rear bearing Removing 2nd gear, 5th gear bush Removing 1st & 2nd synchronizer hub, 1st and 4th main gear Removing and installing differential side bearing **a: 90 mm (3.54 in) dia.** **b: 50 mm (1.97 in) dia.**
ST30021000 (J22912-O1) Puller	 NT411	Removing input shaft front and rear bearing Installing input shaft front and rear bearing Installing 5th input gear, 3rd main gear and 4th main gear Installing 1st & 2nd, 3rd & 4th and 5th & Rev synchronizer hub Installing 2nd gear bush, 5th gear bush, Rev gear bush Installing mainshaft rear bearing **a: 110 mm (4.33 in) dia.** **b: 68 mm (2.68 in) dia.**

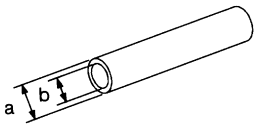
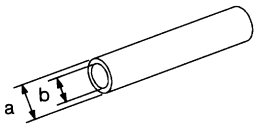
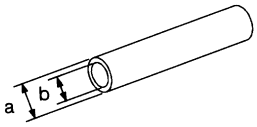
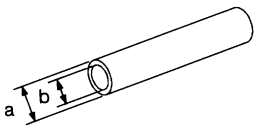
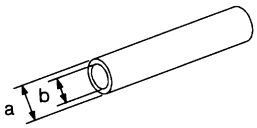
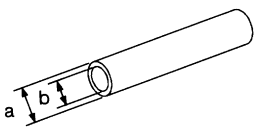
Tool number (Kent-Moore No.) Tool name	Description	
ST33061000 (J8107-2) Drift	 NT073	Removing differential side bearing **a: 39 mm (1.54 in) dia.** **b: 29.5 mm (1.16 in) dia.**
ST33290001 (J34286) Puller	 NT414	● Removing idler gear bearing outer race **a: 250 mm (9.84 in)** **b: 160 mm (6.30 in)**
ST33230000 (J25805-O1) Drift	 NT084	Removing differential oil seal Installing differential side bearing **a: 51 mm (2.01 in) dia.** **b: 28.5 mm (1.122 in) dia.**
ST30720000 (J25405) Drift	 NT115	Installing differential side bearing outer race (F70A and clutch housing side of F70V) **a: 77 mm (3.03 in) dia.** **b: 55.5 mm (2.185 in) dia.**
ST22350000 (J25678-O1) Drift	 NT065	Installing input shaft front and rear bearing **a: 34 mm (1.34 in) dia.** **b: 28 mm (1.10 in) dia.**
ST22452000 (J34335) Drift	 NT065	Installing 3rd and 4th main gear Installing 5th gear bush Installing 5th & Rev synchronizer hub Installing Rev gear bush Installing mainshaft rear bearing **a: 45 mm (1.77 in) dia.** **b: 36 mm (1.42 in) dia.**
ST37750000 (J34335) Drift	 NT065	Installing input shaft oil seal Installing 5th synchronizer Installing mainshaft rear bearing Installing 5th main gear Installing 3rd & 4th synchronizer hub Installing striking rod oil seal Installing clutch housing dust seal **a: 40 mm (1.57 in) dia.** **b: 31 mm (1.22 in) dia.**

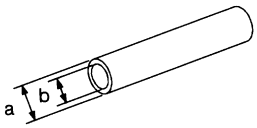
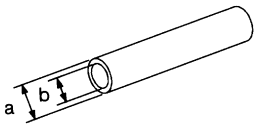
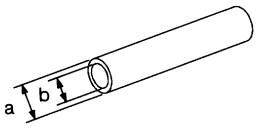
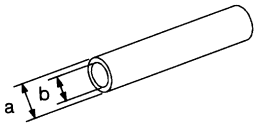
Special Service Tools (Cont'd)

Tool number (Kent-Moore No.) Tool name	Description	
ST30621000 (J35869) Drift	 NT073	Installing differential side bearing outer race [Use with ST30611000 (J25742-1).] (F70A and clutch housing side of F70V) **a: 79 mm (3.11 in) dia.** **b: 59 mm (2.32 in) dia.**
ST30611000 (J25742-1) Drift handle	 NT419	Installing differential side bearing outer race [Use with ST30621000 (J35869).] **a: 15 mm (0.59 in)** **b: 335 mm (13.19 in)** **c: 25 mm (0.98 in) dia.** **d: M12 × 1.5P**

Commercial Service Tools

NIMT0002

Tool name	Description	
Drift	 NT065	Installing differential side bearing inner race (F70A and except viscous coupling side of F70V) **a: 56 mm (2.20 in) dia.** **b: 50.5 mm (1.988 in) dia.**
Drift	 NT065	Installing differential oil seal (F70V transaxle case side) **a: 94 mm (3.70 in) dia.** **b: 72 mm (2.83 in) dia.**
Drift	 NT065	Installing differential side bearing outer race (F70V viscous coupling side) **a: 104 mm (4.09 in) dia.** **b: 98 mm (3.86 in) dia.**
Drift	 NT065	Installing differential side bearing inner race (F70V viscous coupling side) **a: 91 mm (3.58 in) dia.** **b: 81 mm (3.19 in) dia.**
Drift	 NT065	Removing input shaft rear bearing Removing mainshaft rear bearing **a: 22 mm (0.87 in) dia.** **b: 16 mm (0.63 in) dia.**
Drift	 NT065	Installing differential oil seal (Transaxle case side of F70A and clutch housing side of F70V) **a: 58 mm (2.28 in) dia.** **b: 50 mm (1.97 in) dia.**

Tool name	Description	
Drift	 NT065	Installing differential oil seal (Clutch housing side of F70A) **a: 54 mm (2.13 in) dia.** **b: 50 mm (1.97 in) dia.**
Drift	 NT065	Installing 2nd gear bush **a: 38 mm (1.50 in) dia.** **b: 33 mm (1.30 in) dia.**
Drift	 NT065	Installing 3rd & 4th and 1st & 2nd synchronizer hub Installing mainshaft front bearing **a: 50 mm (1.97 in) dia.** **b: 41 mm (1.61 in) dia.**
Drift	 NT065	Installing input shaft oil seal Installing 5th input gear **a: 39 mm (1.54 in) dia.** **b: 30 mm (1.18 in) dia.**

NVH Troubleshooting Chart

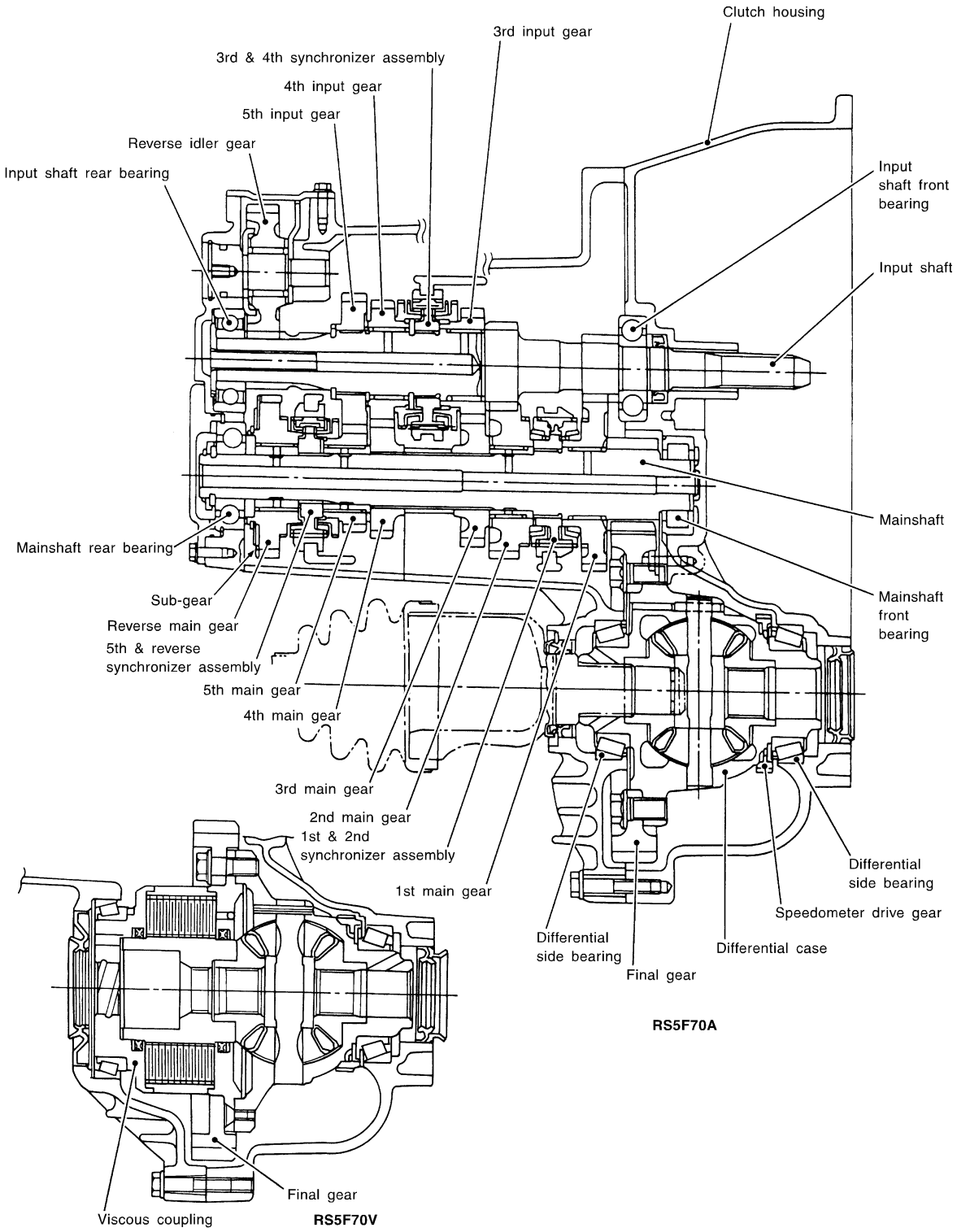
NIMT0003S01

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

Reference page		Refer to ***MA-35***, "Checking M/T Oil".			MT-17	MT-17	MT-17	MT-16	MT-19	MT-19	MT-18	MT-18	MT-18	MT-18
SUSPECTED PARTS (Possible cause)		(Oil level is low.)	(Wrong oil)	(Oil level is high.)	GASKET (Damaged)	OIL SEAL (Worn or damaged)	O-RING (Worn or damaged)	CONTROL ROD (Worn)	CHECK PLUG RETURN SPRING AND CHECK BALL (Worn or damaged)	SHIFT FORK (Worn)	GEAR (Worn or damaged)	BEARING (Worn or damaged)	BAULK RING (Worn or damaged)	INSERT SPRING, SHIFTING INSERT (Damaged)
Symptom	Noise	1	2								3	3		
	Oil leakage		3	1	2	2	2							
	Hard to shift or will not shift		1	1				2					3	3
	Jumps out of gear							1	2	3	3			

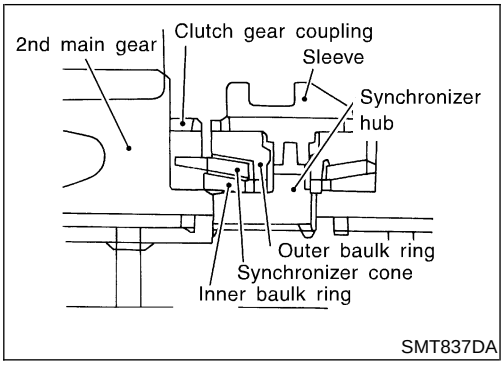
Cross-sectional View

NIMT0004S01



SMT902D

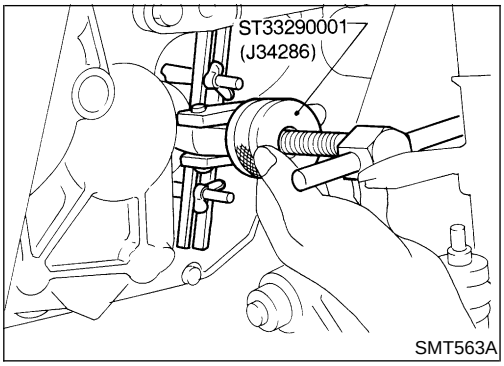
Cross-sectional View (Cont'd)



DOUBLE-CONE SYNCHRONIZER

NIMT0004S0101

Double-cone synchronizer is adopted for 1st and 2nd gears to reduce operating force of the shift lever.



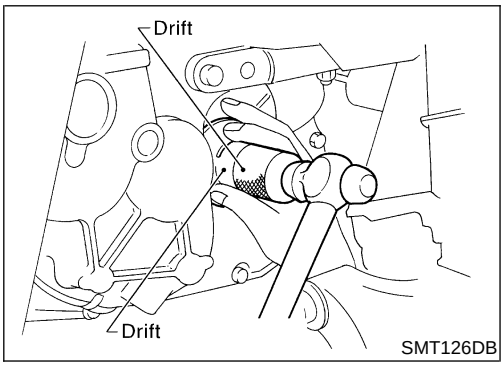
Replacing Oil Seal

NIMT0005

DIFFERENTIAL OIL SEAL

NIMT0005S01

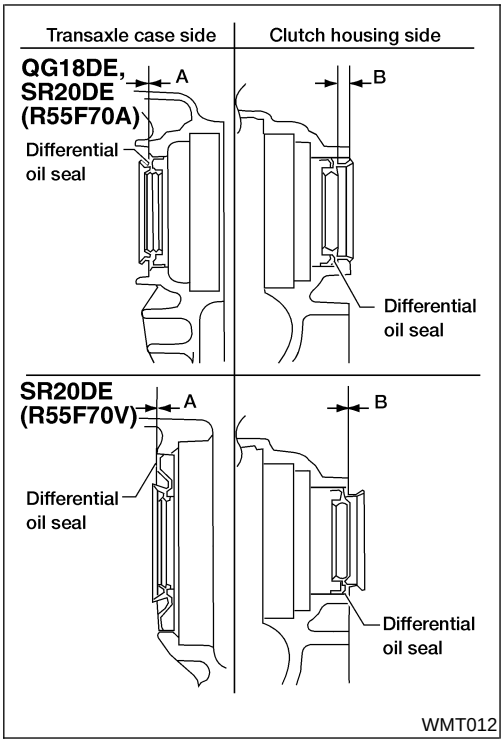
1. Remove drain plug and drain gear oil from transaxle.
2. Remove drive shafts. Refer to ***AX-12***, “Removal”.
3. Remove differential oil seal using Tool.



4. Install differential oil seal with a suitable tool.

- **Apply multi-purpose grease to seal lip of oil seal before installing.**

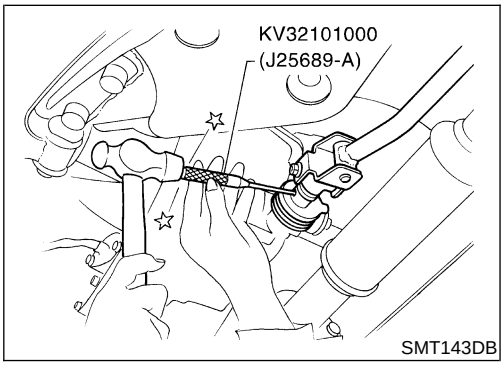
5. Install drive shafts. Refer to ***AX-13***, “Installation”.



- **Install differential oil seal so that dimension “A” and “B” are within specifications.**

Unit: mm (in)

Item	Model	A	B
Dimension	QG18DE SR20DE (RS5F70A)	0.5 (0.020) or less	5.5 - 6.5 (0.217 - 0.256)
	SR20DE (RS5F70V)		0.5 (0.020) or less



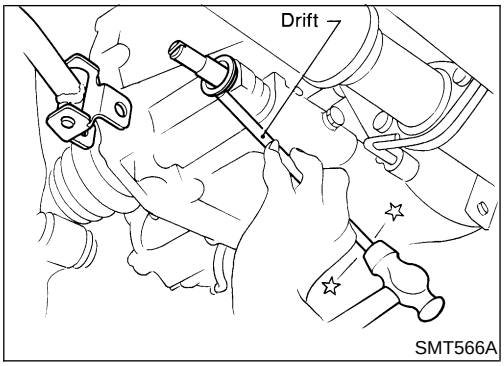
STRIKING ROD OIL SEAL

NIMT0005S02

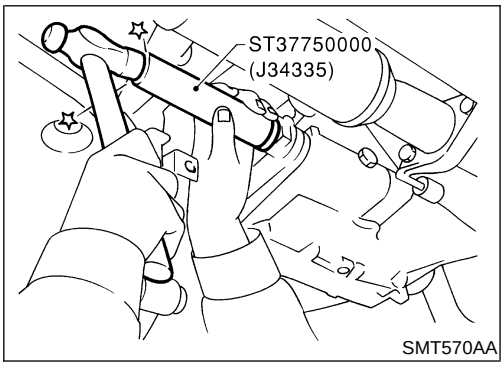
1. Remove transaxle control rod from yoke.
2. Remove retaining pin of yoke using Tool.

- **Be careful not to damage boot.**

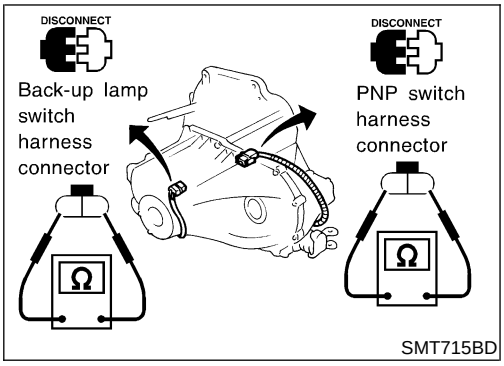
3. Remove the boot.



4. Remove striking rod oil seal with a suitable tool.



5. Install striking rod oil seal using Tool.
- **Apply multi-purpose grease to seal lip of oil seal before installing.**
6. Install the boot.
7. Install yoke and retaining pin.
8. Connect the transaxle control rod to the yoke.



Position Switch Check

NIMT0006

BACK-UP LAMP SWITCH

NIMT0006S01

- Check continuity.

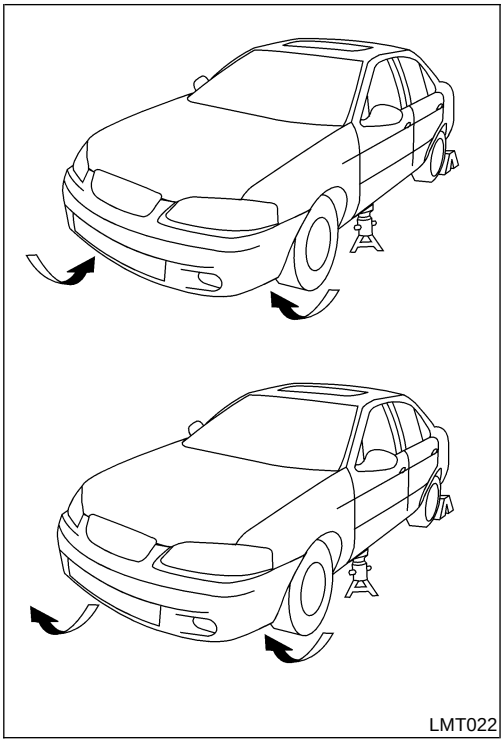
Gear position	Continuity
Reverse	Yes
Except reverse	No

PNP SWITCH

NIMT0006S02

- Check continuity.

Gear position	Continuity
Neutral	Yes
Except neutral	No


LMT022

Viscous Coupling Check

NIMT0039

1. Apply parking brake firmly and place shift lever in the neutral position.
2. Jack up front wheels.
3. Rotate one front wheel and check turning direction of the other front wheel.

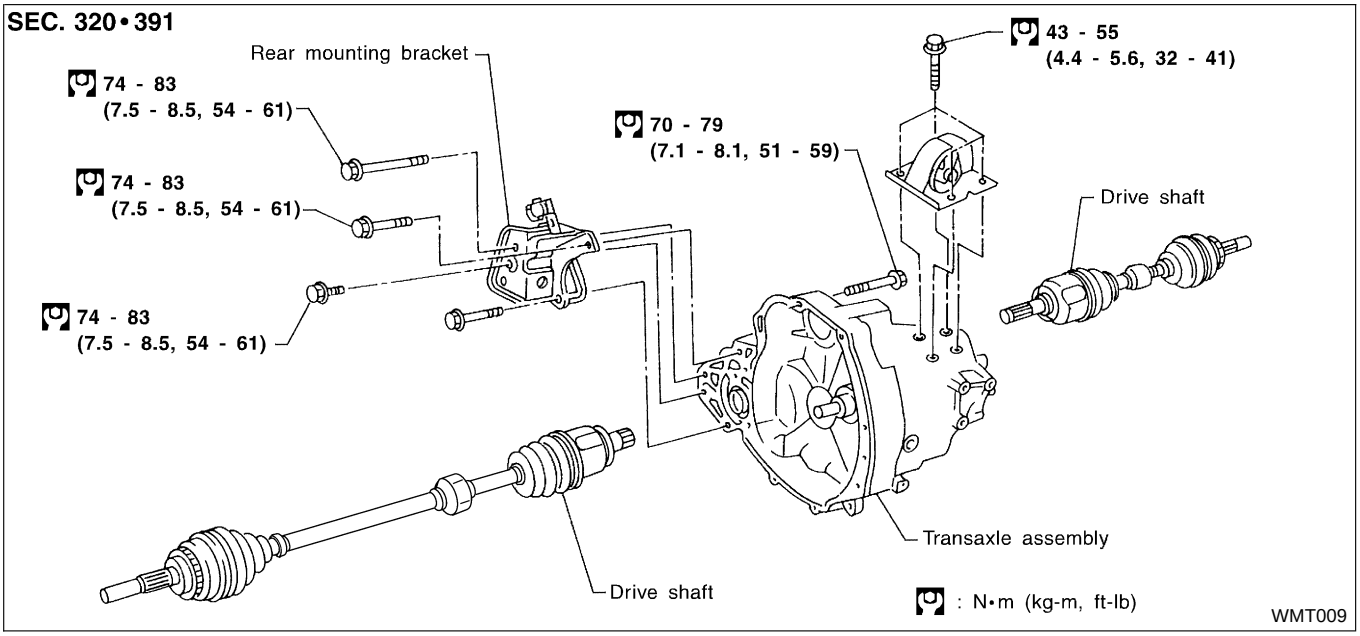
Turning direction of the two wheels is opposite:
The viscous coupling is not functioning normally.
Turning direction of the two wheels is the same:
If differential side gear and pinion mate gear thrust washers are OK, viscous coupling is functioning normally.

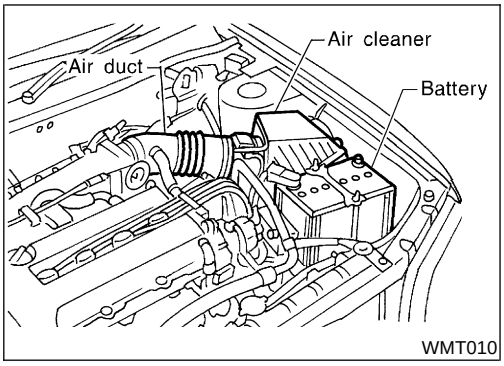
REMOVAL AND INSTALLATION

Removal

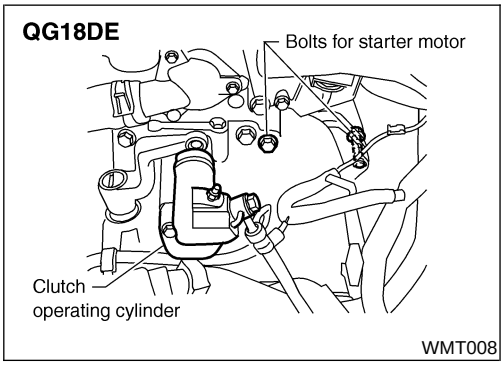
Removal

NIMT0007S01

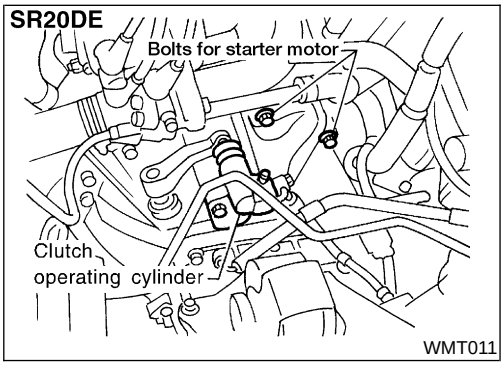


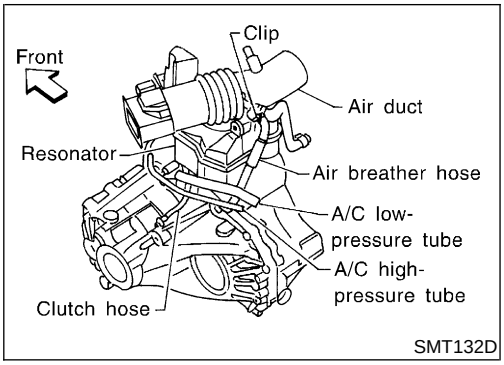


1. Remove battery negative terminal.
2. Remove air cleaner and air duct.
3. Remove clutch operating cylinder from transaxle. Refer to ***CL-11***, “Removal”.
4. Disconnect back-up lamp switch, speedometer sensor, PNP switch and ground harness connectors.

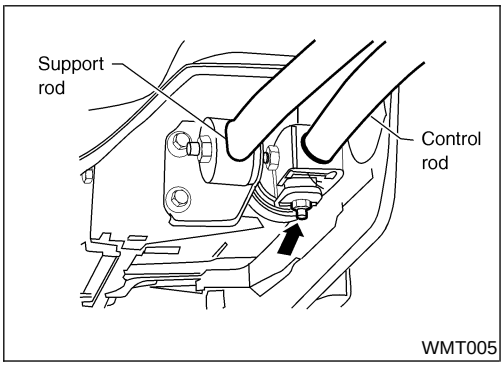


5. Remove starter motor from transaxle. Refer to ***SC-21***, “Removal and Installation”.

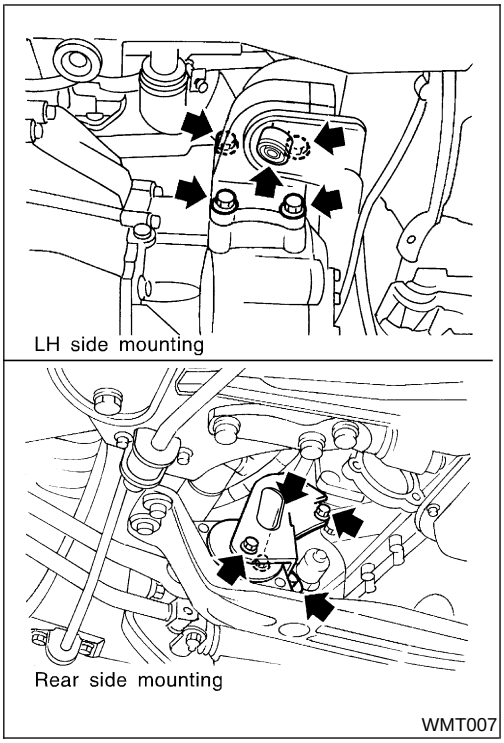




6. Remove air breather hose.



7. Remove shift control rod and support rod from transaxle.
8. Remove the drain plug and drain gear oil from transaxle.
9. Draw out drive shafts from transaxle. Refer to ***AX-12***, "Removal".

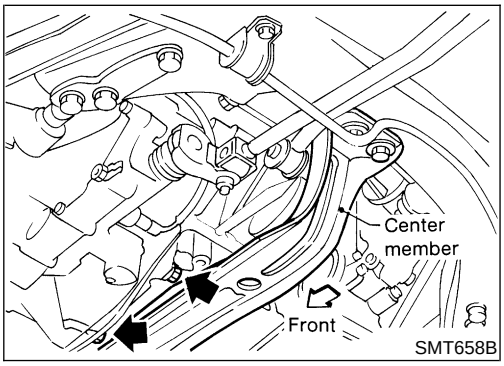


10. Support engine by placing a jack under oil pan.

CAUTION:

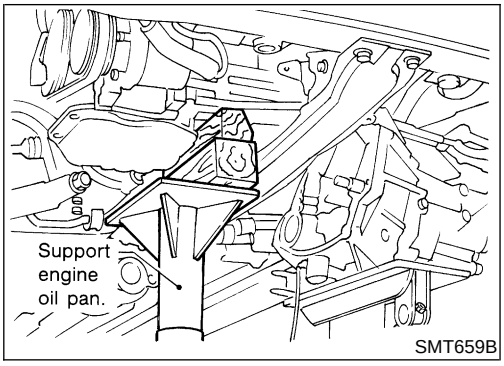
Do not place jack under oil pan drain plug.

11. Remove LH side and rear side mounting bolts.

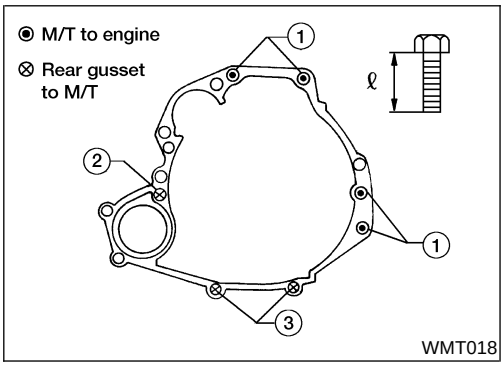


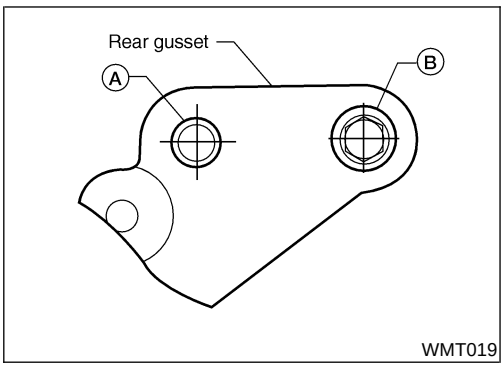
12. Remove lower housing bolts.

Removal (Cont'd)



13. Remove bolts securing transaxle.
14. Lower transaxle while supporting it with a jack.





Installation

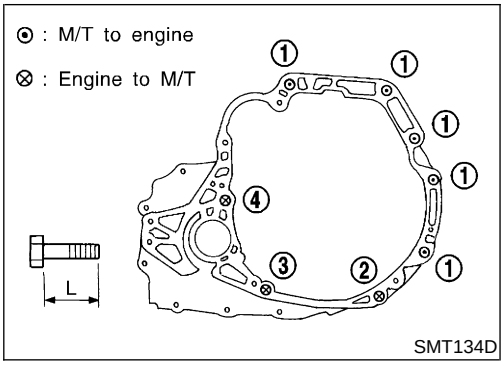
NIMT0007S03

— QG ENGINE —

NIMT0007S0301

- Tighten starter motor to transaxle.
  : 31 - 42 N·m (3.2 - 4.3 kg-m, 23 - 31 ft-lb)
- Tighten LH and rear mounts to the specified torque. Refer to ***EM-50***, "REMOVAL".
- Install transaxle and any part removed.

Bolt No.		Tightening torque N·m (kg-m, ft-lb)	"ℓ" mm (in)
1		30 - 40 (3.1 - 4.1, 22 - 30)	50 (1.97)
2		30 - 40 (3.1 - 4.1, 22 - 30)	30 (1.18)
3		16 - 21 (1.6 - 2.1, 12 - 15)	25 (0.98)
Front gusset to engine		30 - 40 (3.1 - 4.1, 22 - 30)	20 (0.79)
Rear gusset to engine	A	16 - 21 (1.6 - 2.1, 12 - 15)	17.5 (0.689)
	B		20 (0.79)



Installation

NIMT0007S02

— SR ENGINE —

NIMT0007S0201

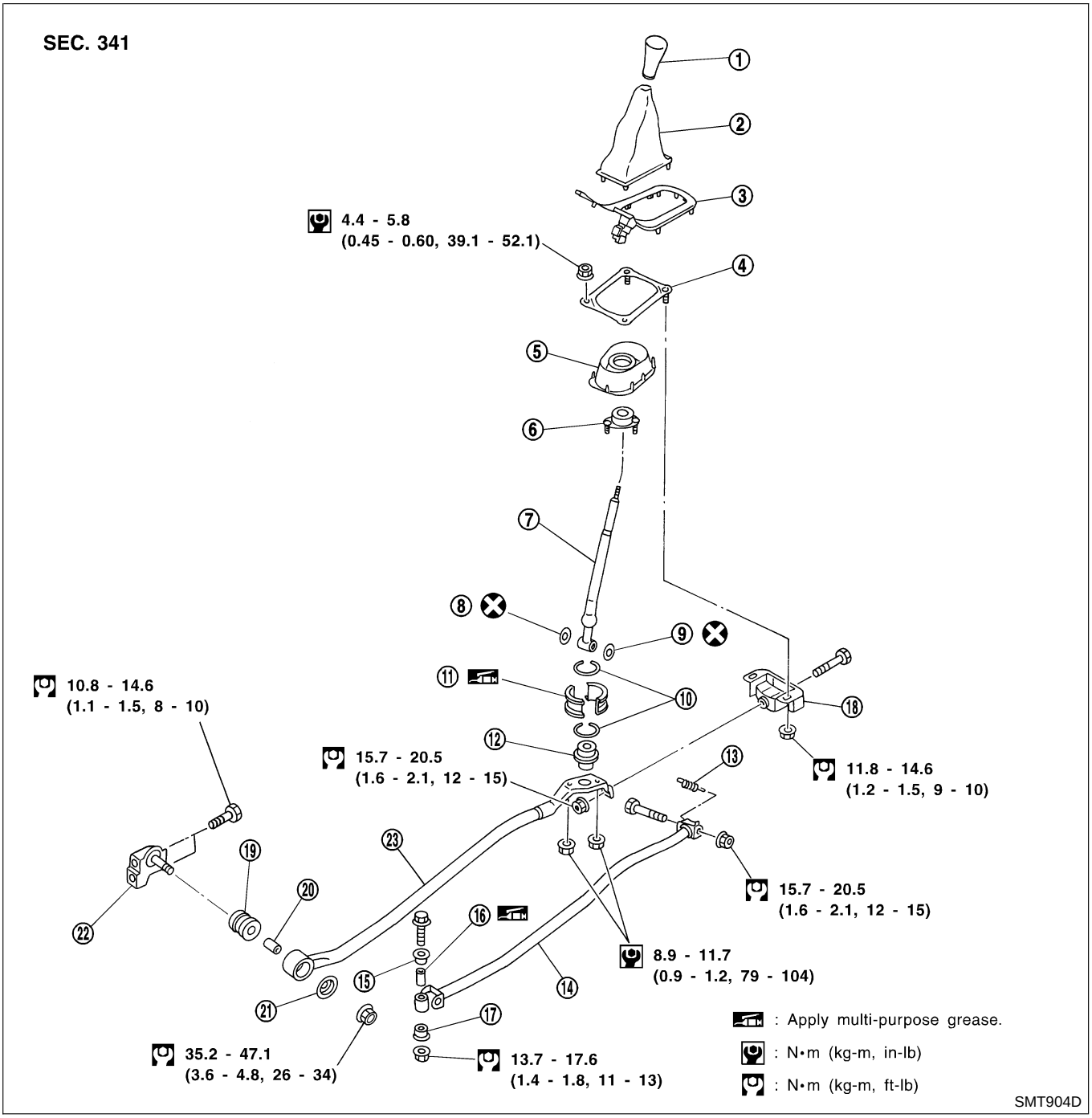
- Tighten bolts securing transaxle and install any part removed.
- Tighten starter motor bolts.

: 41 - 52 N·m (4.2 - 5.3 kg-m, 30 - 38 ft-lb)

Bolt No.	1	2	3	4
Q'ty	5	1		
L in mm (in)	55 (2.17)	35 (1.38)	45 (1.77)	65 (2.56)
Tightening torque N·m (kg-m, ft-lb)	70 - 79 (7.1 - 8.1, 51 - 59)	30 - 40 (3.1 - 4.1, 22 - 30)		70 - 79 (7.1 - 8.1, 51 - 59)

Transaxle Gear Control

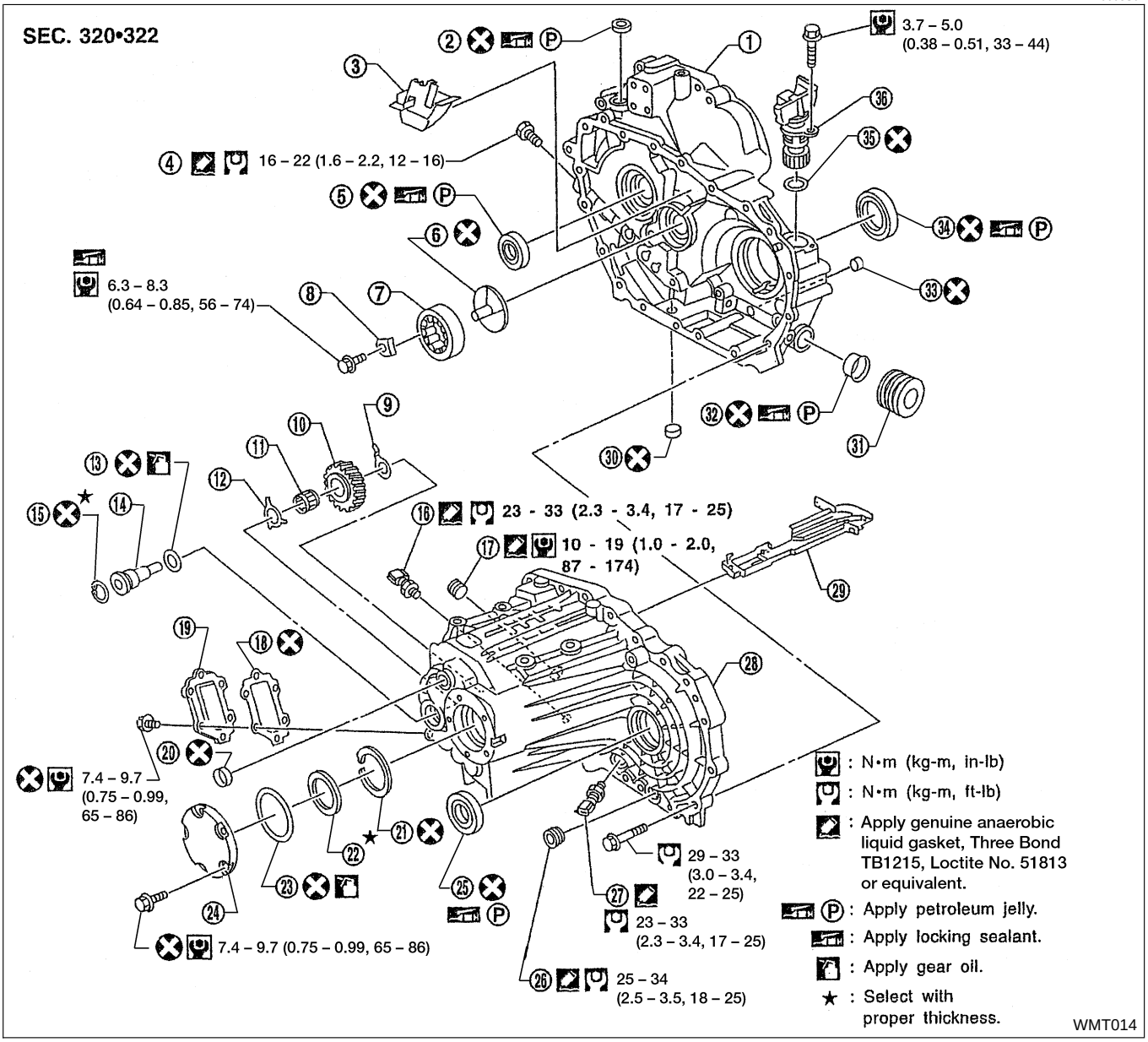
NIMT0008S01



1. Control lever knob
2. Boot
3. Finisher
4. Control lever bracket
5. Dust cover
6. Socket
7. Control lever
8. O-ring
9. O-ring
10. Ring spring
11. Bearing seat
12. Seat
13. Return spring
14. Control rod
15. Bushing
16. Collar
17. Bushing
18. Bracket
19. Bushing
20. Collar
21. Washer
22. Support rod bracket
23. Support rod

Case Components

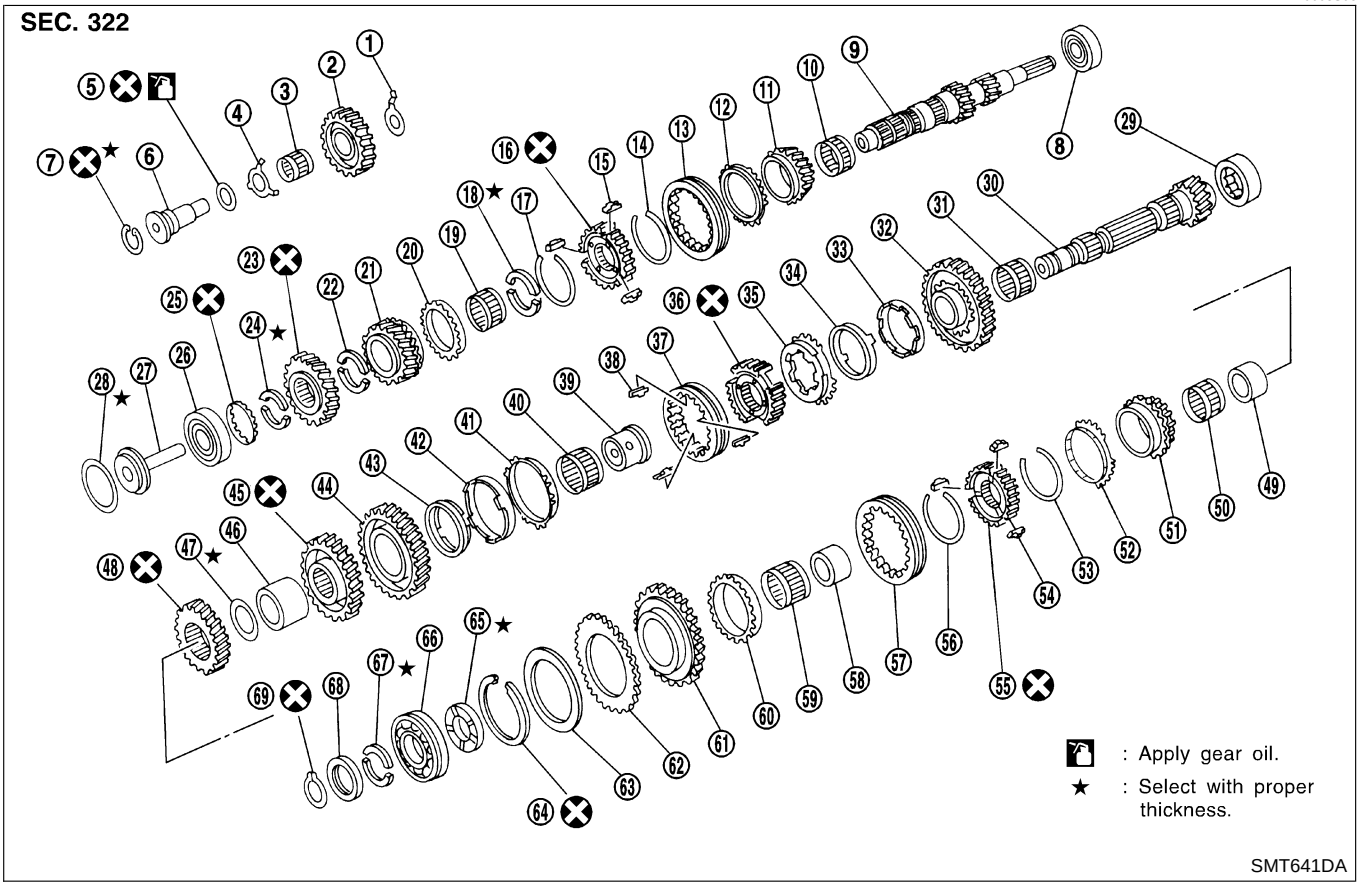
=NIMT0008S02



1. Clutch housing
2. Dust seal
3. Oil pocket
4. Check plug
5. Input shaft oil seal
6. Oil channel
7. Mainshaft front bearing
8. Bearing retainer
9. Reverse idler gear front thrust washer
10. Reverse idler gear
11. Reverse idler gear bearing
12. Reverse idler gear rear thrust washer
13. O-ring
14. Reverse idler gear shaft
15. Snap ring
16. Back-up lamp switch
17. Filler plug
18. Side cover gasket
19. Side cover
20. Welch plug
21. Mainshaft bearing snap ring
22. Mainshaft rear bearing adjusting shim
23. O-ring
24. Rear cover
25. Differential oil seal
26. Drain plug
27. PNP switch
28. Transmission case
29. Oil gutter
30. Welch plug
31. Boot
32. Striking rod oil seal
33. Welch plug
34. Differential oil seal
35. O-ring
36. Speedometer pinion

Gear Components

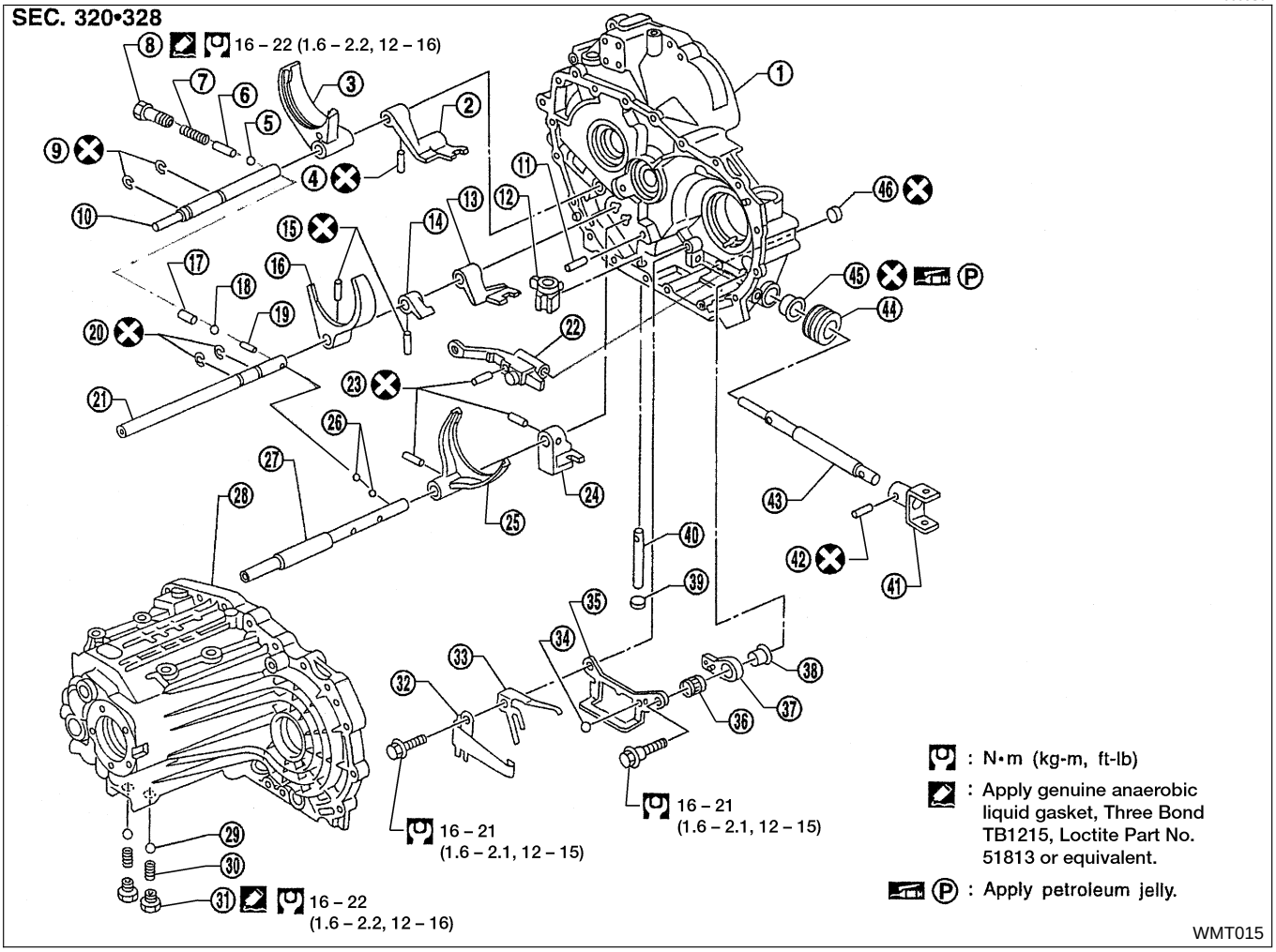
=NIMT0008S03



1. Reverse idler gear front thrust washer
2. Reverse idler gear
3. Reverse idler gear bearing
4. Reverse idle gear rear thrust washer
5. O-ring
6. Reverse idler gear shaft
7. Snap ring
8. Input shaft front bearing
9. Input shaft
10. 3rd gear needle bearing
11. 3rd input gear
12. 3rd gear baulk ring
13. Coupling sleeve
14. Spread spring
15. Shifting insert
16. 3rd & 4th synchronizer hub
17. Spread spring
18. 4th gear C-ring
19. 4th gear needle bearing
20. 4th gear baulk ring
21. 4th input gear
22. 5th gear front C-ring
23. 5th input gear
24. 5th gear rear C-ring
25. C-ring holder
26. Input shaft rear bearing
27. Oil channel
28. Input shaft rear bearing adjusting shim
29. Mainshaft front bearing
30. Mainshaft
31. 1st gear needle bearing
32. 1st main gear
33. 1st inner baulk ring
34. 1st synchronizer cone
35. 1st outer baulk ring
36. 1st & 2nd synchronizer hub
37. Coupling sleeve
38. Insert spring
39. 2nd gear bush
40. 2nd gear needle bearing
41. 2nd gear outer baulk ring
42. 2nd gear synchronizer cone
43. 2nd inner baulk ring
44. 2nd main gear
45. 3rd main gear
46. Spacer
47. Mainshaft adjusting shim
48. 4th main gear
49. 5th gear bush
50. 5th gear needle bearing
51. 5th main gear
52. 5th gear baulk ring
53. Spread spring
54. Shifting insert
55. 5th & reverse synchronizer hub
56. Spread spring
57. Coupling sleeve
58. Reverse gear bush
59. Reverse gear needle bearing
60. Reverse gear baulk ring
61. Reverse main gear
62. Sub-gear
63. Sub-gear washer
64. Snap ring
65. Mainshaft thrust washer
66. Mainshaft rear bearing
67. Mainshaft C-ring
68. C-ring holder
69. Snap ring

Shift Control Components

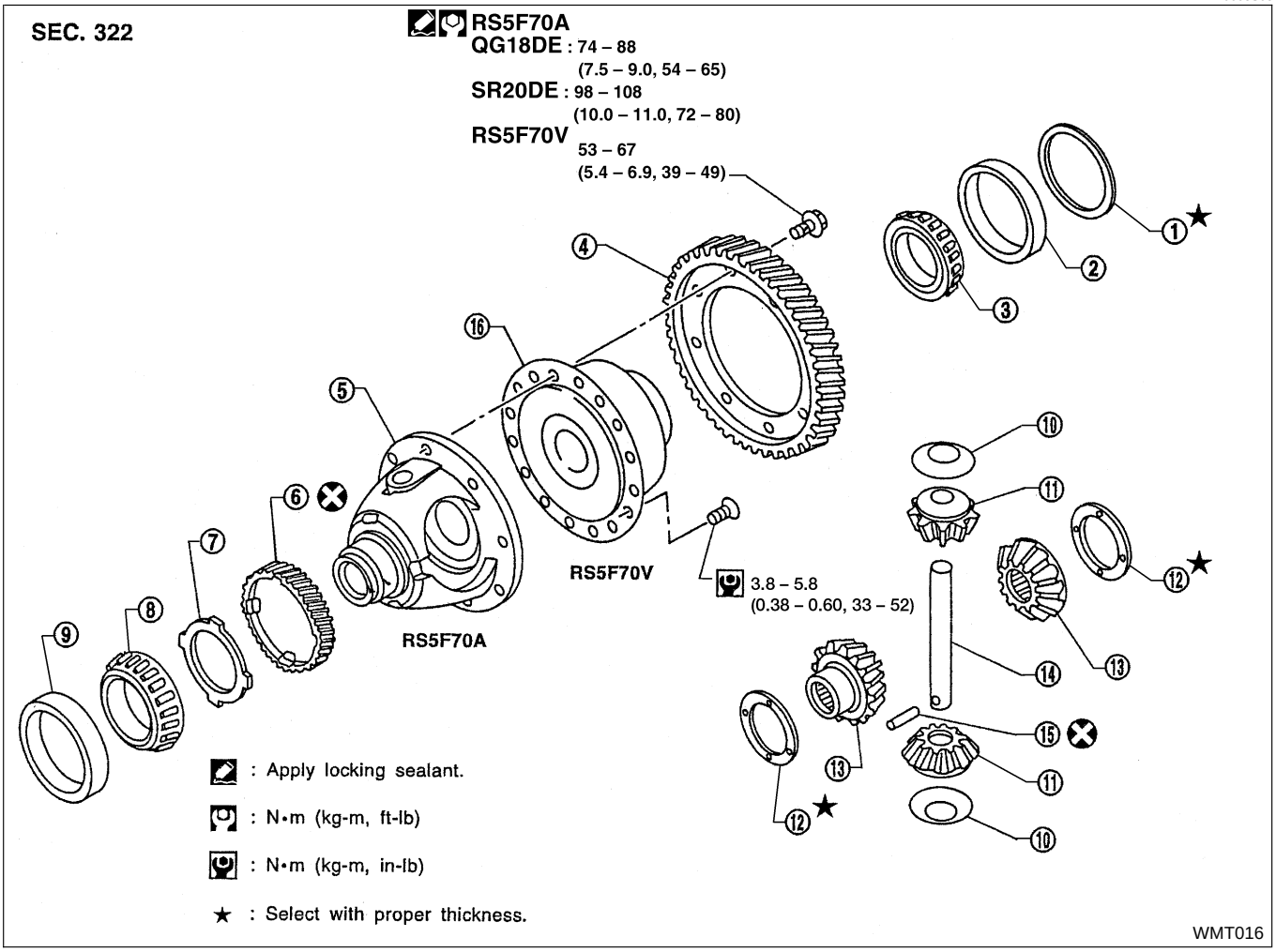
=NIMT0008S04



1. Clutch housing
2. 3rd & 4th bracket
3. 3rd & 4th shift fork
4. Retaining pin
5. Check ball
6. Check pin
7. Check spring
8. Check plug
9. Stopper ring
10. 3rd & 4th fork rod
11. Selector shaft pin
12. Selector
13. 5th & reverse bracket
14. Reverse switch bracket
15. Retaining pin
16. 5th & reverse shift fork
17. Interlock plunger
18. Check ball
19. Interlock pin
20. Stopper ring
21. 5th & reverse fork rod
22. Striking lever
23. Retaining pin
24. 1st & 2nd bracket
25. 1st & 2nd shift fork
26. Check ball
27. 1st & 2nd fork rod
28. Transaxle case
29. Check ball
30. Check spring
31. Check plug
32. Select check leaf spring
33. Return spring
34. Steel ball
35. Reverse gate
36. Return bearing
37. Selector arm
38. Bushing
39. Welch plug
40. Selector shaft
41. Striking yoke
42. Retaining pin
43. Striking rod
44. Dust boot
45. Striking rod oil seal
46. Welch plug

Final Drive Components

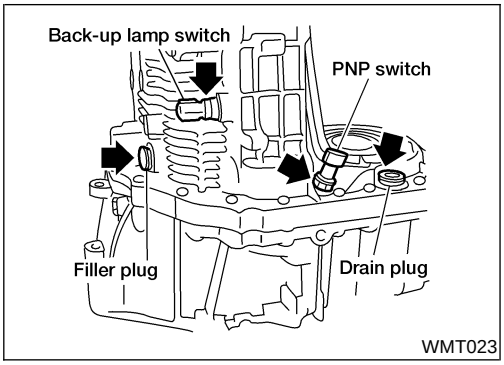
=NIMT0008S05



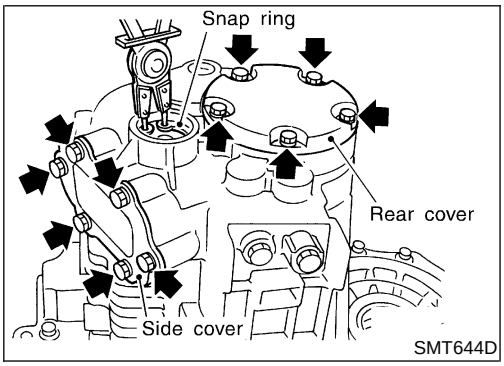
1. Differential side bearing adjusting shim
2. Differential side bearing outer race
3. Differential side bearing
4. Final gear
5. Differential case
6. Speedometer drive gear
7. Speedometer stopper
8. Differential side bearing
9. Differential side bearing outer race
10. Pinion mate thrust washer
11. Pinion mate gear
12. Side gear thrust washer
13. Side gear
14. Pinion mate shaft
15. Lock pin
16. Viscous coupling

Transaxle Case

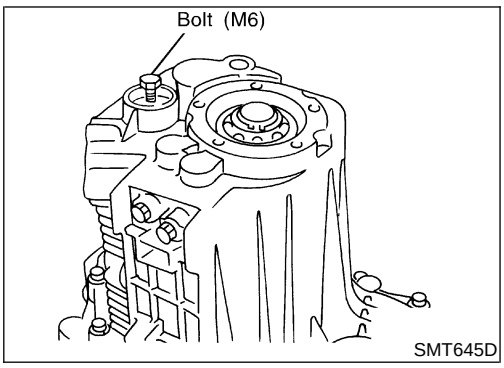
NIMT0009S01



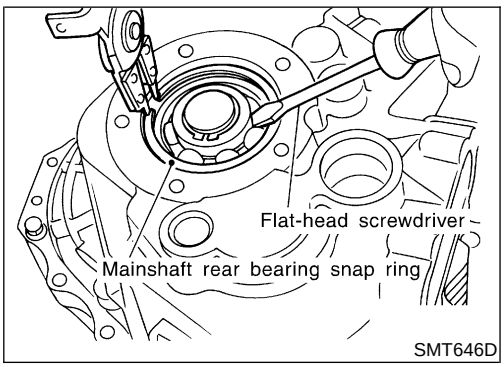
1. Remove back-up lamp switch, PNP switch, drain plug, and filler plug from transaxle case.



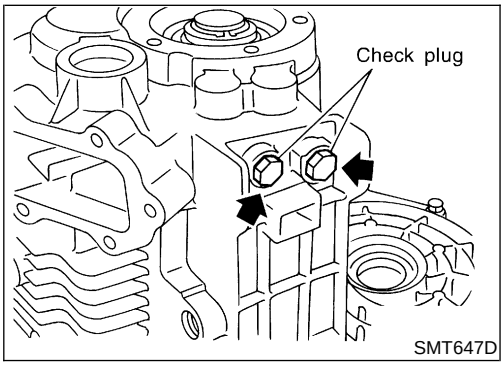
2. Remove snap rings from reverse idler shaft.
3. Remove side cover and rear cover from case.
4. Remove O-ring and mainshaft bearing adjusting shim.



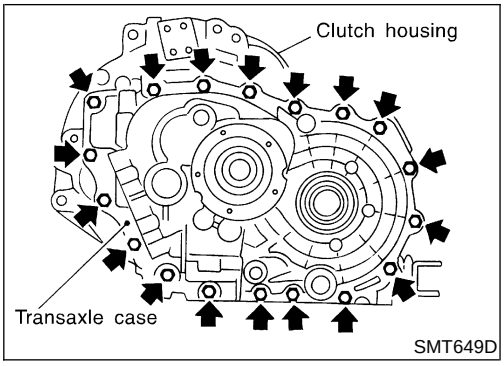
5. Remove reverse idler gear shaft.
   a. Attach bolt (M6) to thread of reverse idler gear shaft end.
   b. Pull out the attached bolt, and remove reverse idler gear shaft from case.
6. Remove reverse idler gear, thrust washer (front, rear), and bearing from case.



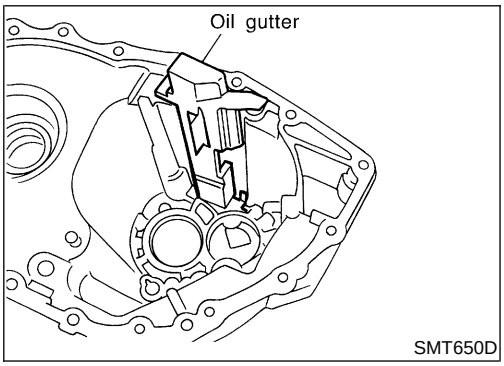
7. Remove snap ring of mainshaft bearing from case.



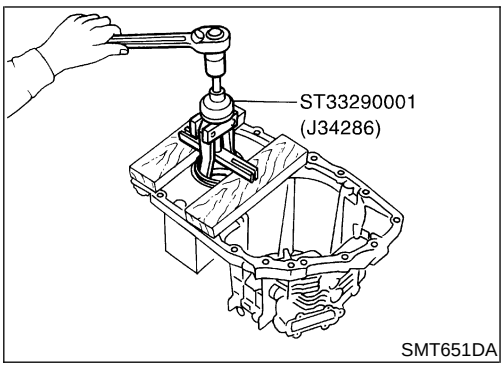
8. Remove check plugs, springs, and check balls from case.



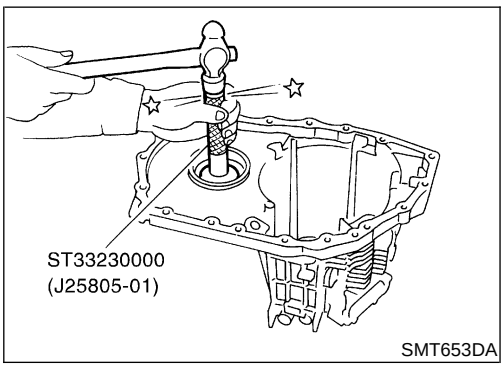
9. Remove mounting bolts.
10. Remove input shaft rear bearing adjusting shim from transaxle case.



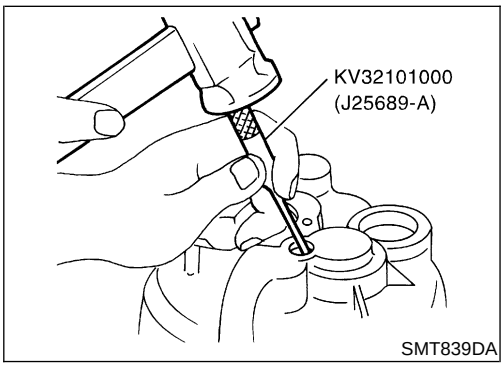
11. Remove oil gutter from case.



12. Remove differential side bearing outer race and adjusting shim from case using Tool.



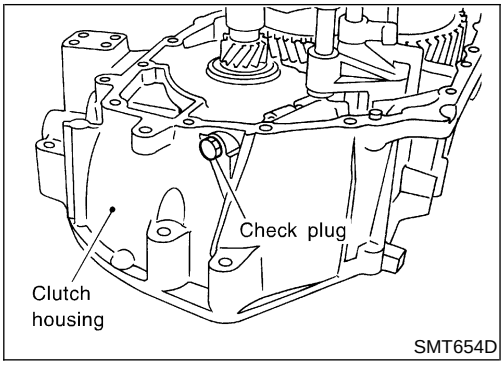
13. Remove differential oil seal from case using Tool.



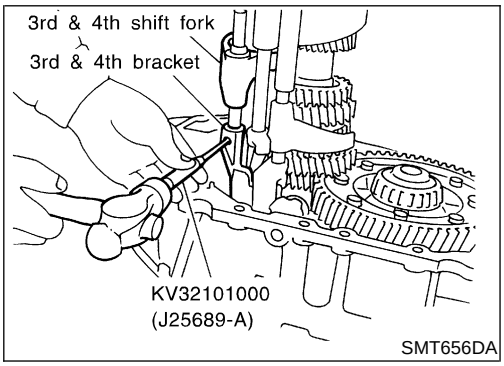
14. Remove welch plugs from case using Tool.

Clutch Housing

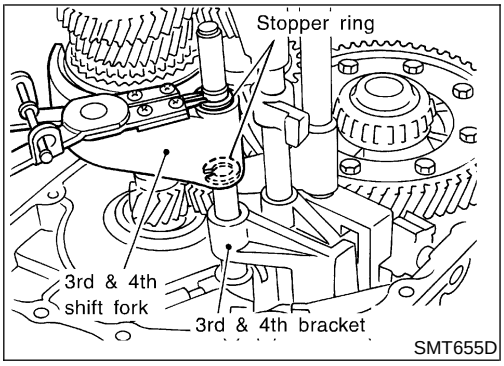
NIMT0009S02



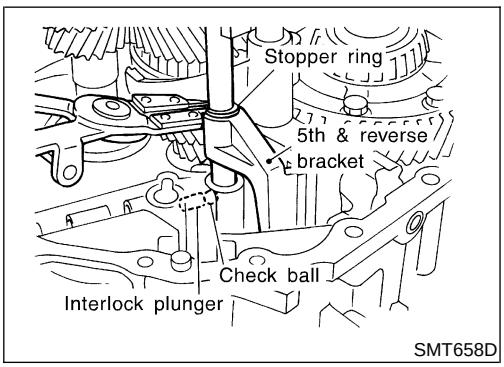
1. Remove transaxle case from clutch housing.
2. Remove check plugs, check springs, check pins, and check balls from housing.



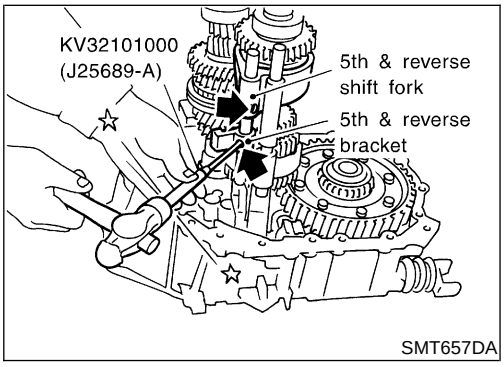
3. Remove 3rd & 4th bracket retaining pin using Tool.



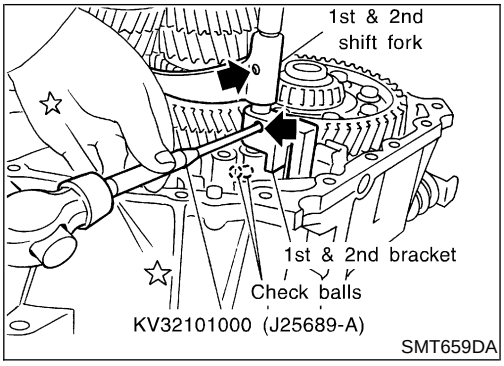
4. Remove 3rd & 4th shift fork stopper ring.
5. Remove 3rd & 4th fork rod.
6. Remove 3rd & 4th shift fork and bracket.



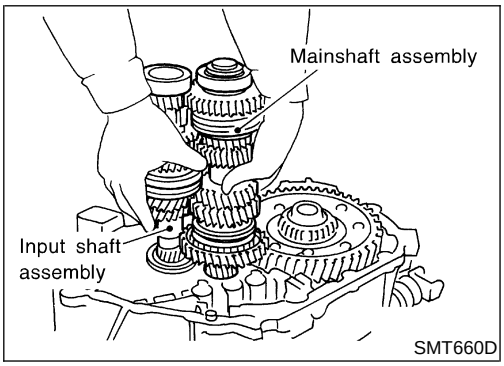
7. Remove interlock plunger and check ball.
8. Remove 5th & reverse bracket stopper ring.



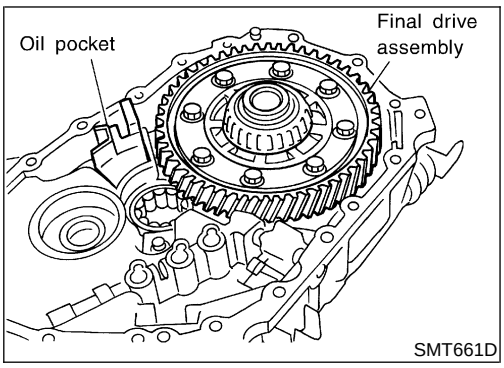
9. Remove retaining pin from 5th & reverse shift fork and reverse switch bracket using Tool.
10. Remove 5th & reverse fork rod.
11. Remove interlock pin from 5th & reverse fork rod using Tool.
12. Remove reverse switch bracket and 5th & reverse bracket.



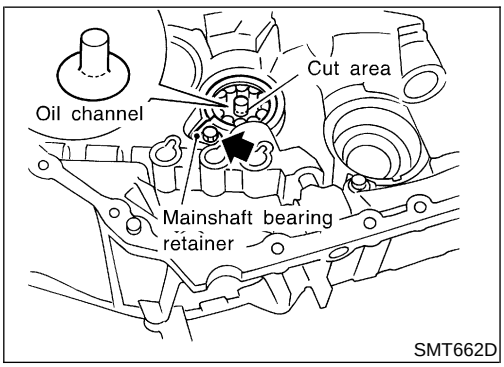
13. Remove check ball from housing.
14. Remove retaining pin for 1st & 2nd shift fork and bracket using Tool.
15. Remove 1st & 2nd fork rod.
16. Remove 5th & reverse and 1st & 2nd shift forks, and 1st & 2nd bracket.



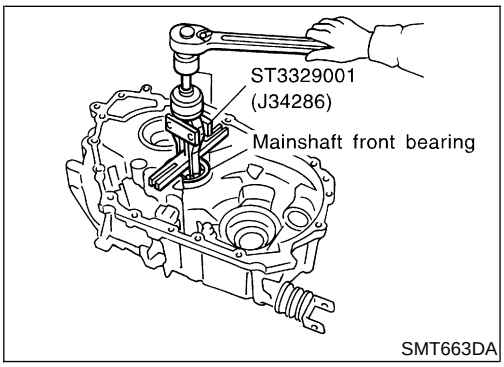
17. Remove both input shaft and mainshaft assemblies from housing.



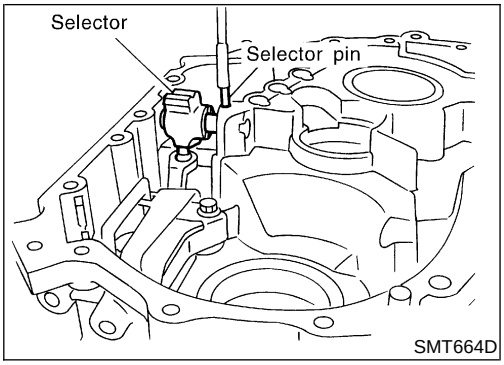
18. Remove final drive assembly from housing.
19. Remove oil pocket from housing.



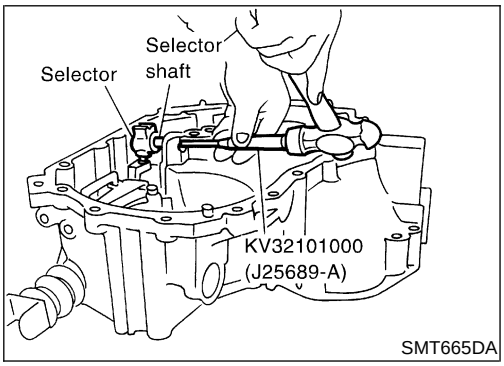
20. Remove mainshaft bearing retainer from housing.
21. Cut off oil channel using a cutter as shown in the figure.



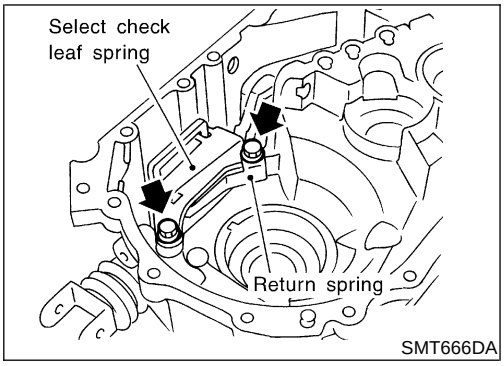
22. Remove mainshaft front bearing from housing using Tool.



23. Using a magnet or other suitable tool, remove selector pin from selector shaft.



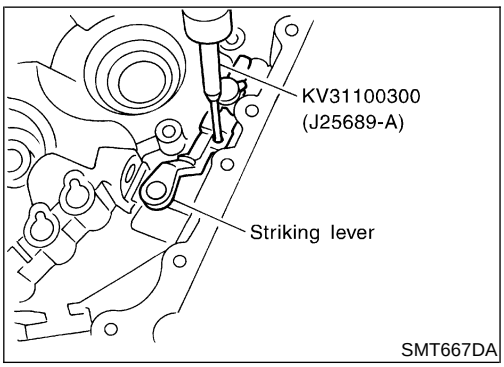
24. Remove selector shaft and plug, then remove selector using Tool.



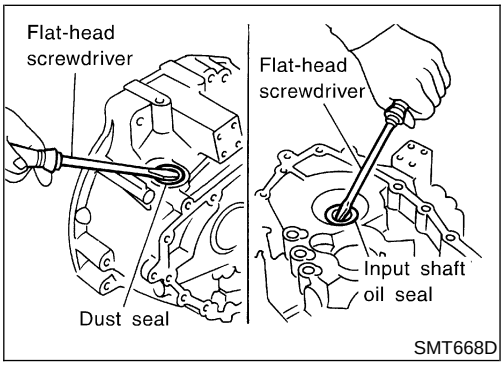
25. Remove reamer bolts, then remove select check leaf spring, return spring, steel ball, reverse gate, selector arm, bearing, and bushing.

CAUTION:

Be careful not to lose the steel ball.



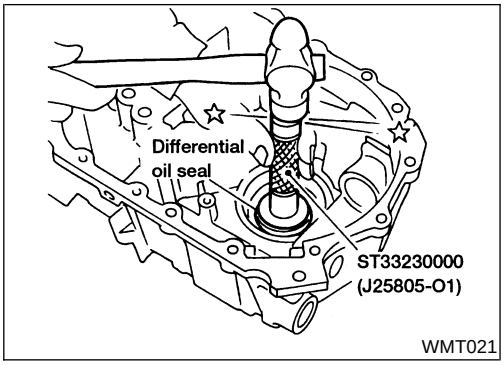
26. Remove retaining pin and plug from striking lever using Tool.
27. Remove striking rod, then striking lever from housing.



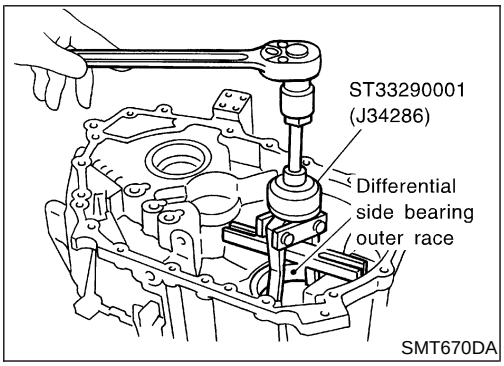
28. Using a flat-head screwdriver or other suitable tool, remove dust seal, input shaft oil seal, and striking rod oil seal from housing.

CAUTION:

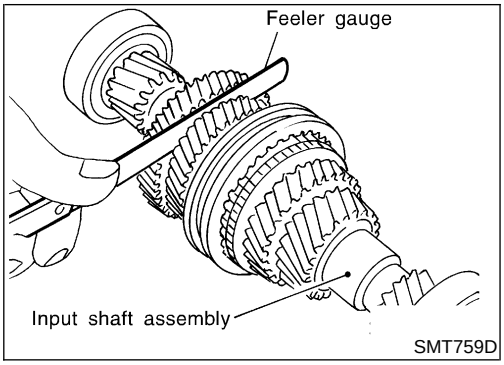
When removing dust and oil seals, be careful not to damage mounting surfaces of dust seal and oil seal.



29. Remove differential oil seal from housing using Tool.



30. Remove differential side outer race from housing using Tool.



Input Shaft and Gears

DISASSEMBLY

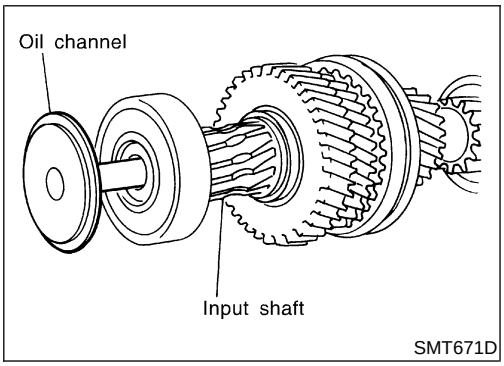
NIMT0010

1. Before disassembly, measure the end plays of 3rd and 4th input gears with a suitable tool.

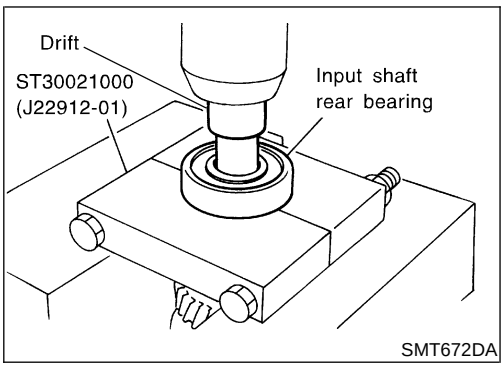
Gear end play:

Refer to “Gear End Play”, MT-57.

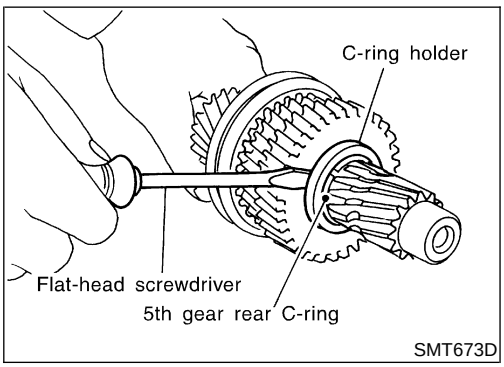
- If end play is not within specification, disassemble and check the parts.



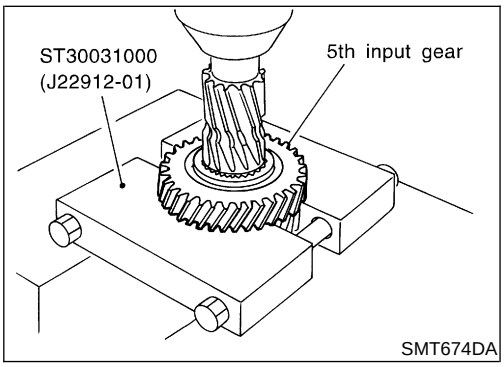
2. Remove oil channel from input shaft rear bearing.



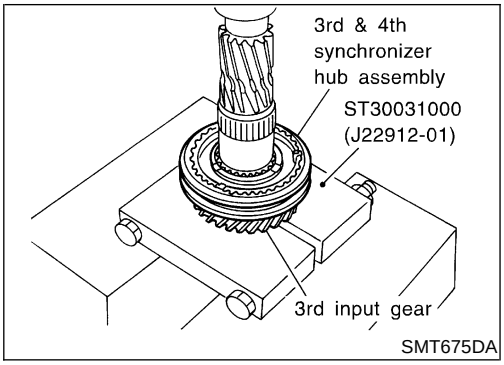
3. Press out input shaft rear bearing using Tool.



4. Remove C-ring holder.
5. Remove 5th gear rear C-ring.

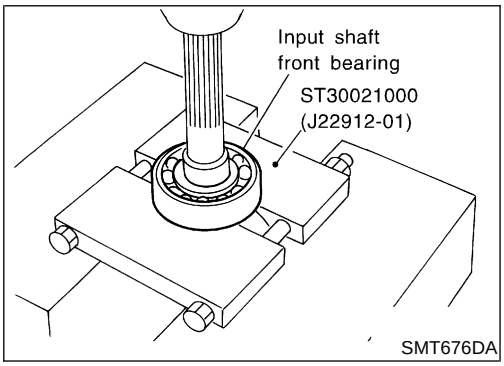


6. Remove 5th input gear from input shaft using Tool.
7. Remove 5th gear front C-ring.



SMT675DA

8. Remove 4th input gear, baulk ring, 4th gear needle bearing, and 4th gear C-ring from input shaft.
9. Press out both 3rd & 4th synchronizer hub assembly and 3rd input gear from input shaft using Tool.
10. Remove 3rd gear needle bearing.



SMT676DA

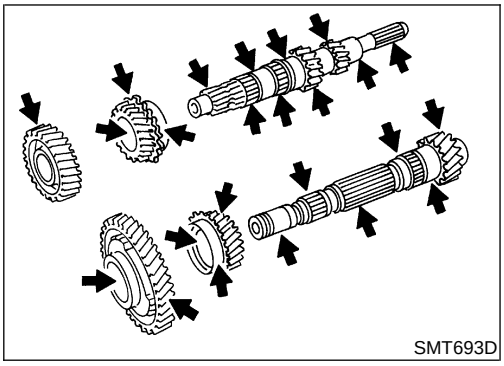
11. Press out input shaft front bearing from input shaft using Tool.

INSPECTION

NIMT0011

Gear and Shaft

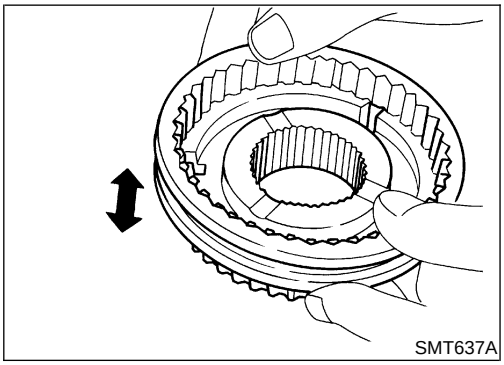
NIMT0011S01


SMT693D

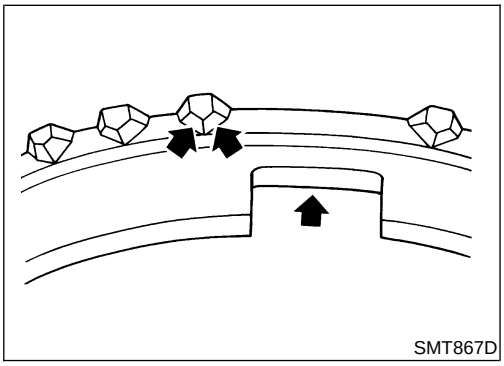
- Check shaft for cracks, wear or bending.
- Check gears for excessive wear, chips or cracks.

Synchronizers

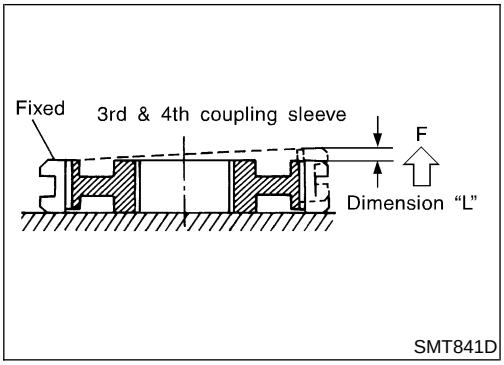
NIMT0011S02


SMT637A

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


SMT867D

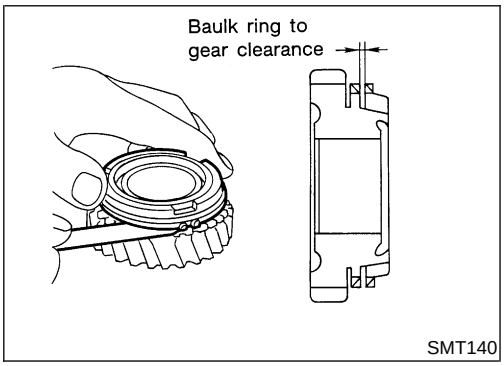
- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



SMT841D

- Measure the movement (play, dimension "L") of 3rd & 4th coupling sleeve with the end fixed and the other end lifted as shown in the figure. If the movement exceeds specification, replace the sleeve.

Coupling sleeve	Length "L"
3rd & 4th	0 - 0.95 mm (0 - 0.0374 in)

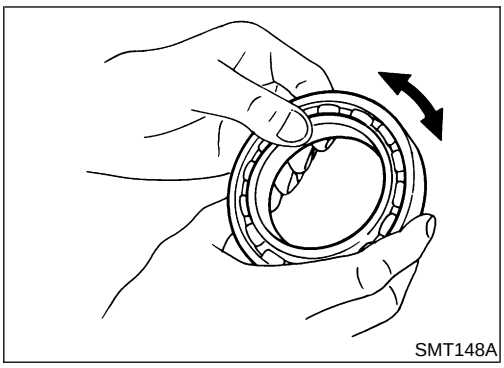


SMT140

- Measure clearance between baulk ring and gear.

Clearance between baulk ring and gear:

Refer to "Clearance Between Baulk Ring and Gear", MT-57.


SMT148A

Bearing

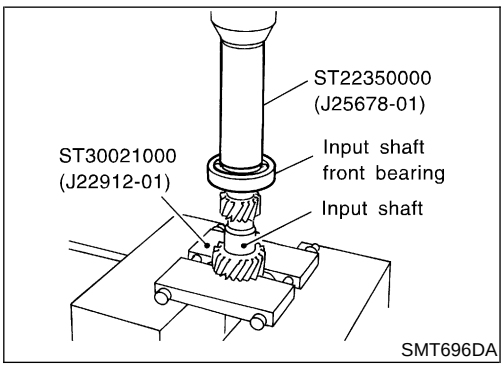
NIMT0011S03

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

ASSEMBLY

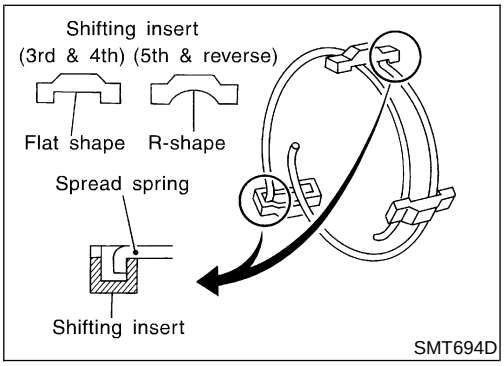
NIMT0012

1. Press on input shaft front bearing using Tool.
2. Install 3rd gear needle, 3rd input gear and 3rd gear baulk ring bearing to input shaft.



SMT696DA

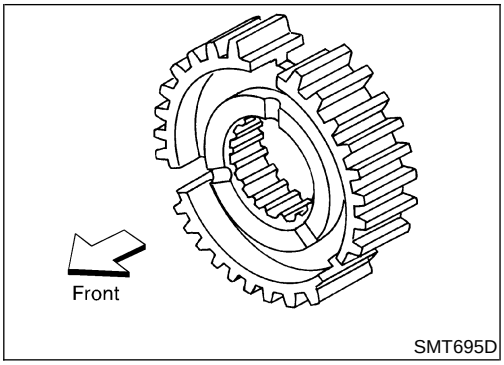
3. Install spread spring, shifting insert, and 3rd & 4th synchronizer hub onto 3rd & 4th coupling sleeve.
- Pay attention to the shape of spread spring and shifting insert for correct assembly.
  Do not install spread spring hook onto the same shifting insert.



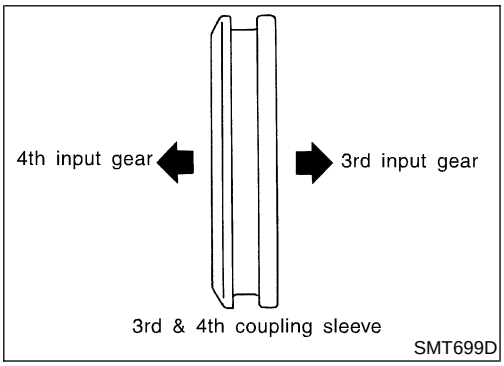
SMT694D

CAUTION:

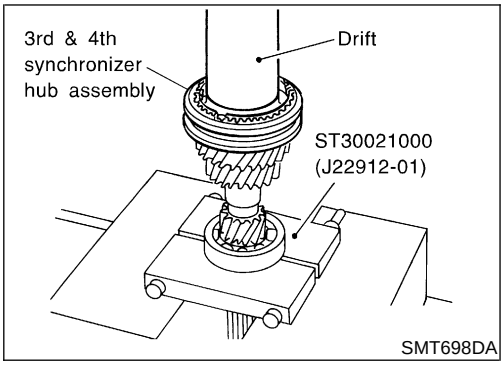
Do not reuse 3rd & 4th synchronizer hub.



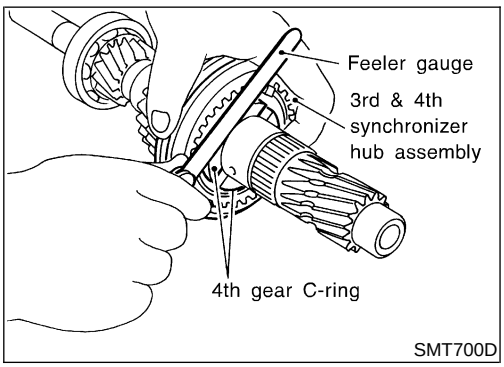
- Install synchronizer hub with its three grooves facing the front side (3rd input gear side).



- Install 3rd & 4th coupling sleeve with its chamfered surface facing the 4th input gear side.



4. Position bearing replacer to the front side of input shaft front bearing.
- Align grooves of shifting insert and 3rd gear baulk ring. Then, press it onto 3rd & 4th synchronizer hub assembly using a drift.
5. Install 4th gear C-ring onto input shaft using Tool.



6. Measure the end play of 3rd & 4th synchronizer hub with a suitable tool, and check if it is within allowable specification below.

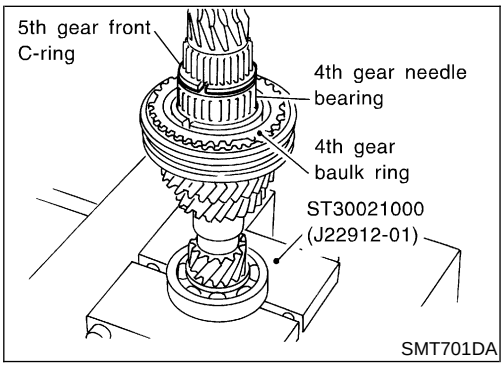
End play:

0 - 0.06 mm (0 - 0.0024 in)

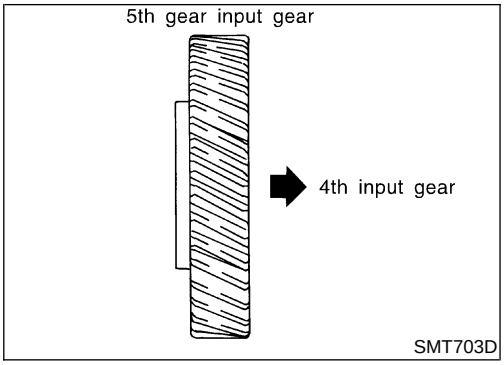
7. If not within specification, adjust the end play by changing thickness of 4th (input) gear C-ring.

4th (input) gear C-ring:

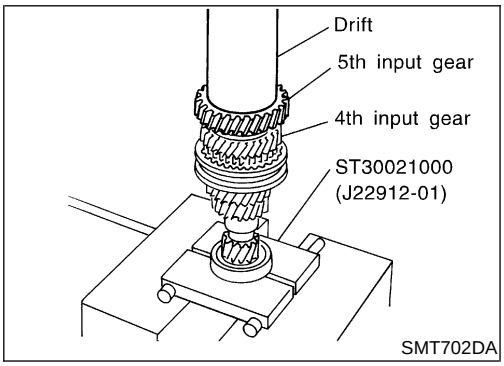
Refer to "Available C-rings", MT-58.



8. Install 4th gear needle bearing, 4th gear baulk ring, and 5th gear front C-ring.
9. Install 4th input gear using Tool.



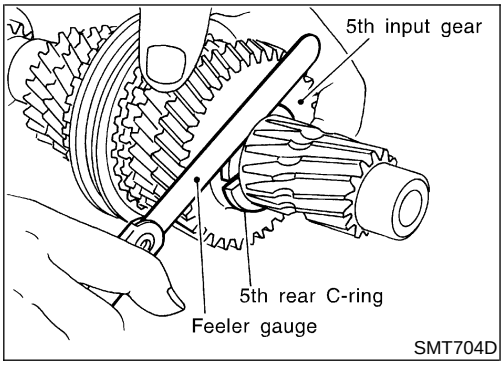
10. Position 5th input gear as shown in the figure, and install it on input shaft.



11. Install 5th input gear.

CAUTION:
Do not reuse 5th input gear.

12. Install 5th gear rear C-ring onto input shaft using Tool.

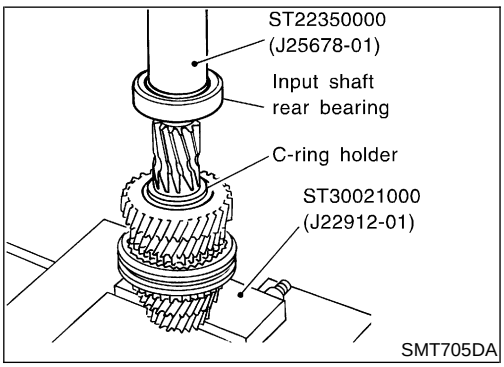


13. Measure the end play of 5th input gear with a suitable tool, and check if it is within the allowable specification below.

End play:
0 - 0.06 mm (0 - 0.0024 in)

14. If not within specification, adjust the end play by changing thickness of the 5th (input gear) rear C-ring.

5th (input gear) rear C-ring:
Refer to "Available C-rings", MT-58.

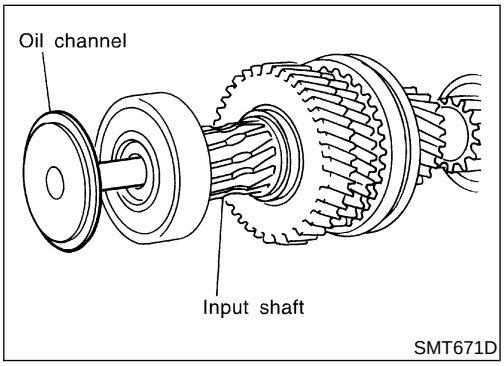


15. Install C-ring holder onto 5th gear rear C-ring using Tool.

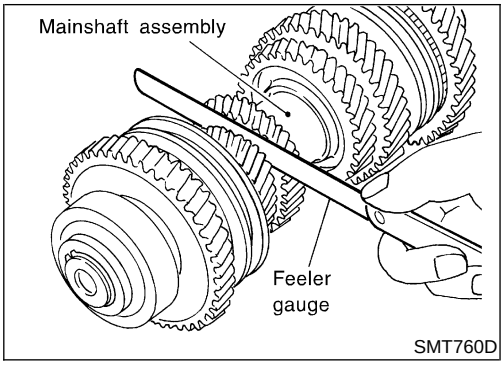
CAUTION:
Do not reuse C-ring holder.

16. Install input shaft rear bearing using Tool.

CAUTION:
Install input shaft rear bearing with its brown surface facing the input gear side.



17. Install oil channel onto input shaft.
18. Measure gear end play as a final check. Refer to "Gear End Play", MT-57.



Mainshaft and Gears

DISASSEMBLY

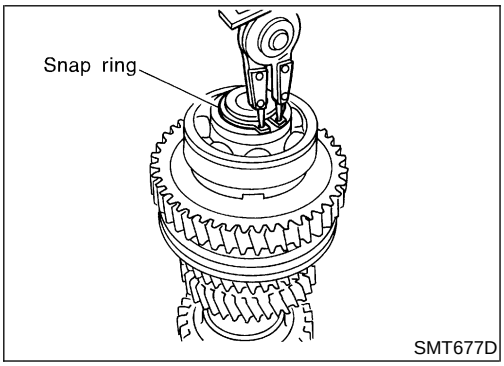
NIMT0013

1. Before disassembly, measure gear end play with a suitable tool.

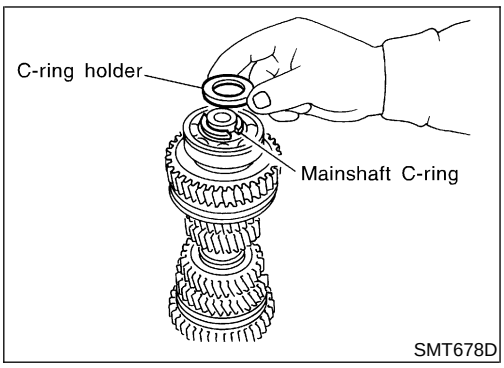
Gear end play:

Refer to “Gear End Play”, MT-57.

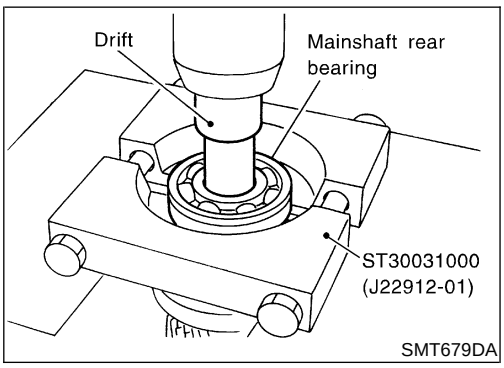
- If end play is not within the specified limit, disassemble and check the parts.



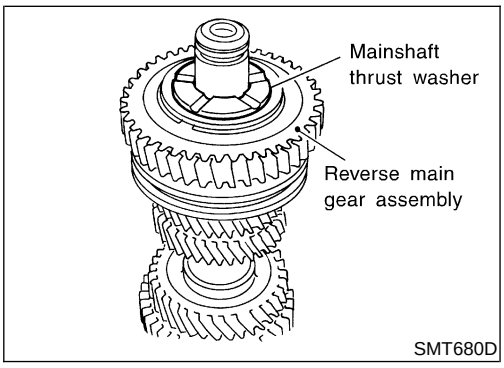
2. Remove snap ring with a suitable tool.



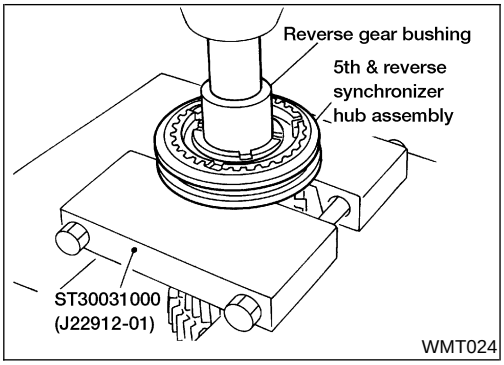
3. Remove C-ring holder and mainshaft C-ring.



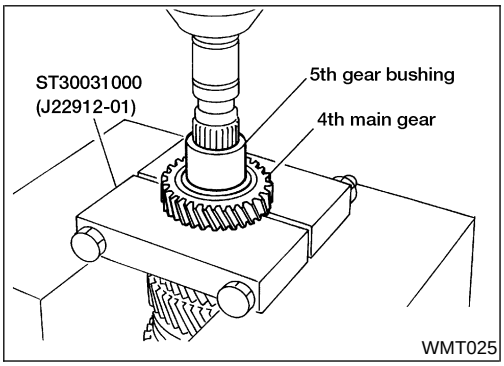
4. Press out mainshaft rear bearing from mainshaft using Tool.



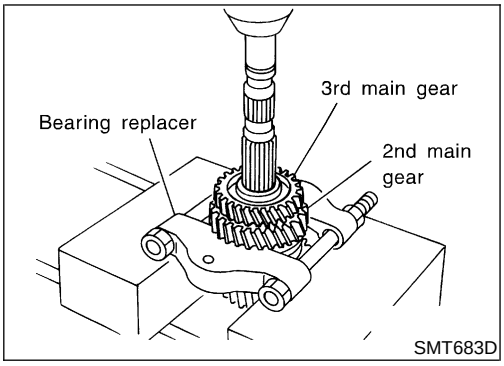
5. Remove mainshaft thrust washer.
6. Remove snap ring from mainshaft. Then, remove reverse main gear assembly, reverse gear needle bearing, and reverse gear baulk ring.



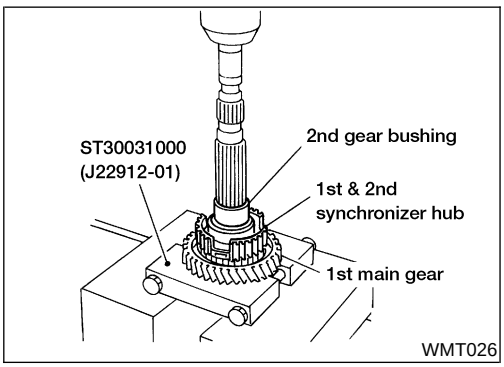
7. Place bearing replacer between 5th & reverse synchronizer hub and 5th main gear, and press out both reverse gear bushing and 5th & reverse synchronizer assembly using Tool.
8. Remove 5th main gear, 5th gear baulk ring, and 5th gear needle bearing.



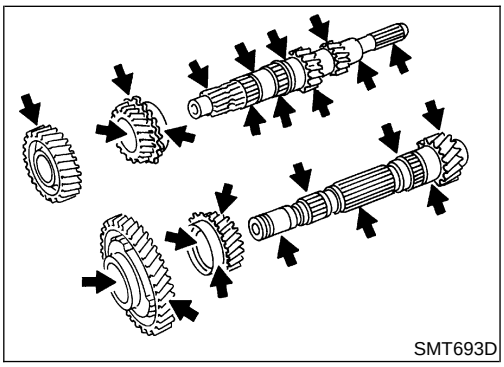
9. Place bearing replacer between 3rd and 4th main gears, and press out both 5th gear bushing and 4th main gear using Tool.



10. Remove mainshaft adjusting shim and spacer.
11. Place bearing replacer between 2nd main gear and 1st & 2nd synchronizer hub, and press out both 3rd and 2nd main gears.



12. Remove 2nd double cone assembly, 2nd gear bushing, and coupling sleeve assembly.
13. Place bearing replacer on 1st gear front side, and press out all of 2nd gear bushing, 1st & 2nd synchronizer hub, 1st main gear, and 1st double cone using Tool.
14. Remove 1st gear needle bearing.



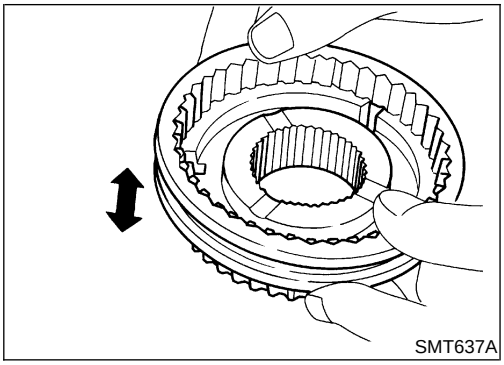
INSPECTION

NIMT0014

Gear and Shaft

NIMT0014S01

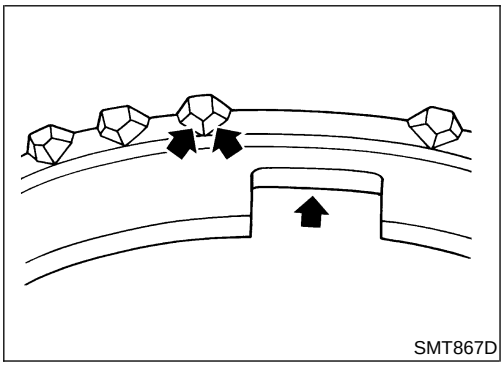
- Check shaft for cracks, wear or bending.
- Check gears for excessive wear, chips or cracks.


SMT637A

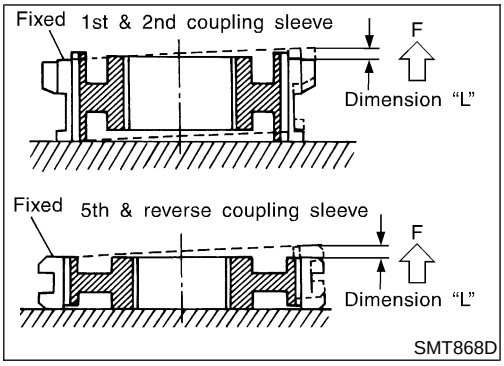
Synchronizers

NIMT0014S02

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


SMT867D

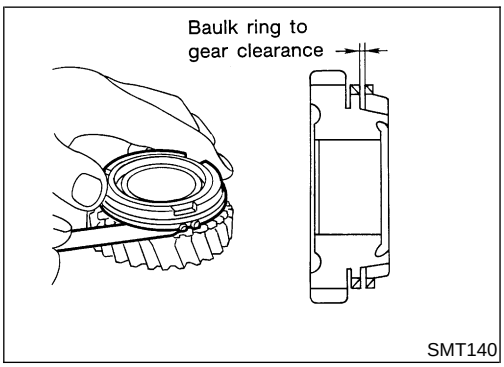
- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



SMT868D

- Measure the movement (play, dimension "L") of 1st & 2nd coupling sleeve and 5th & reverse coupling sleeve with their end fixed and the other end lifted as shown in the figure. If the movement exceeds specification, replace the sleeve.

Coupling sleeve	Length "L"
1st & 2nd	0 - 0.68 mm (0 - 0.0268 in)
5th & Reverse	0 - 0.89 mm (0 - 0.0350 in)

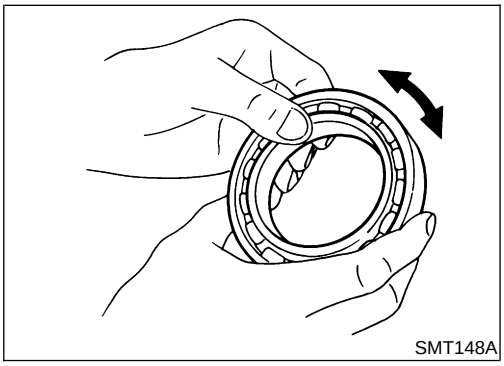


SMT140

- Measure clearance between baulk ring and gear.

Clearance between baulk ring and gear:

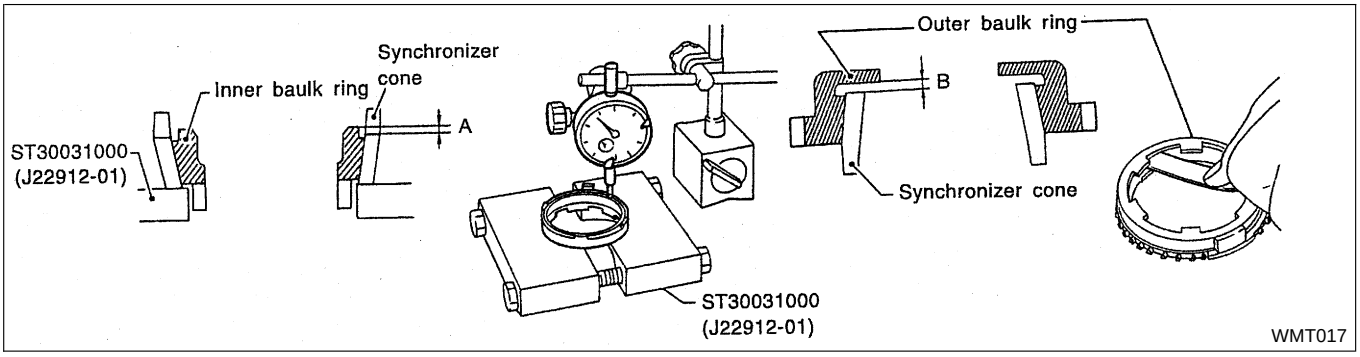
Refer to "Clearance Between Baulk Ring and Gear", MT-57.


SMT148A

Bearing

NIMT0014S03

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



- Measure wear of inner and outer baulk ring.

a) Place baulk rings in position on synchronizer cone.

b) While holding baulk ring against synchronizer cone as far as it will go, measure dimensions "A" and "B" using Tool.

Standard:

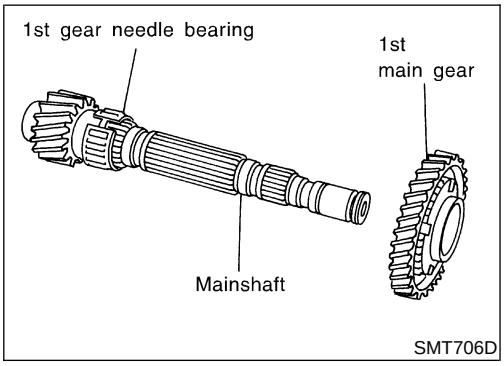
A 0.6 - 0.8 mm (0.024 - 0.031 in)

B 0.6 - 1.1 mm (0.024 - 0.043 in)

Wear limit:

0.2 mm (0.008 in)

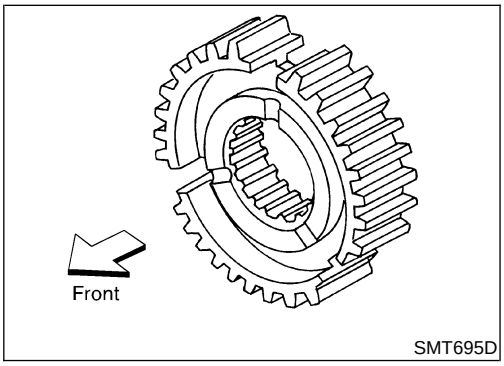
- **If dimension "A" or "B" is smaller than the wear limit, replace outer baulk ring, inner baulk ring and synchronizer cone as a set.**



ASSEMBLY

NIMT0015

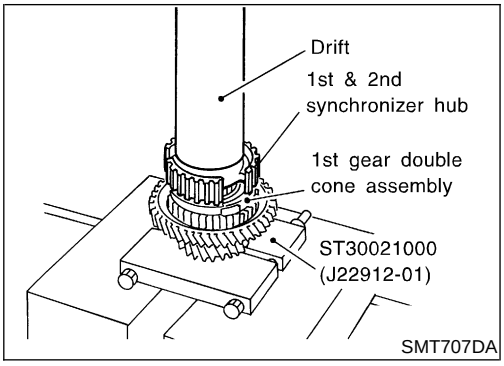
1. Install 1st gear needle bearing and 1st main gear onto mainshaft.
2. Install 1st double cone assembly onto mainshaft.



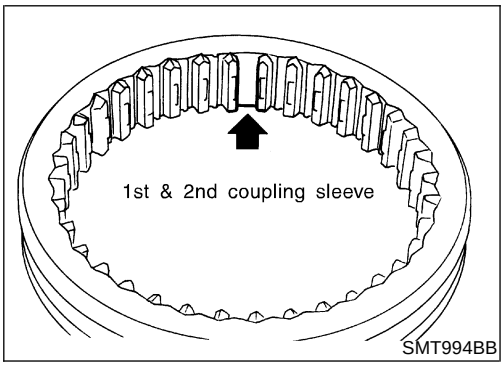
3. Install 1st & 2nd synchronizer hub with its three grooves facing the front side (1st main gear side) onto mainshaft.

CAUTION:

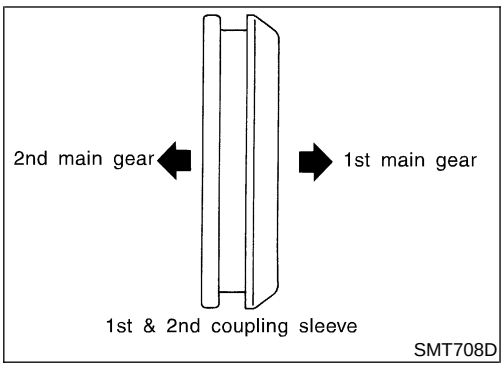
Do not reuse 1st & 2nd synchronizer hub.



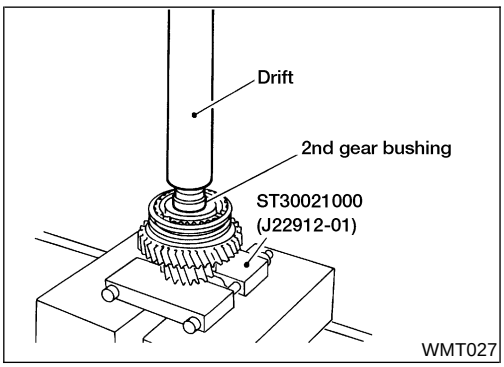
4. Install 1st & 2nd synchronizer hub using Tool.



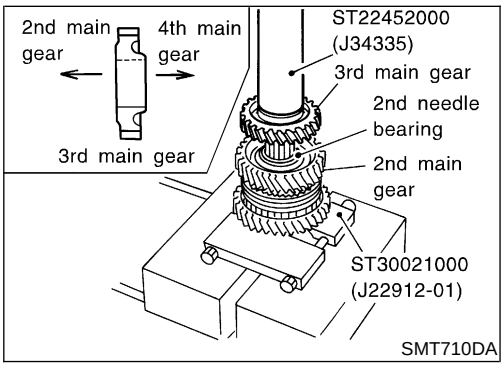
5. Install insert spring onto 1st & 2nd coupling sleeve.



6. Install 1st & 2nd coupling sleeve with its chamfered surface facing the 1st main gear side onto 1st & 2nd synchronizer hub.

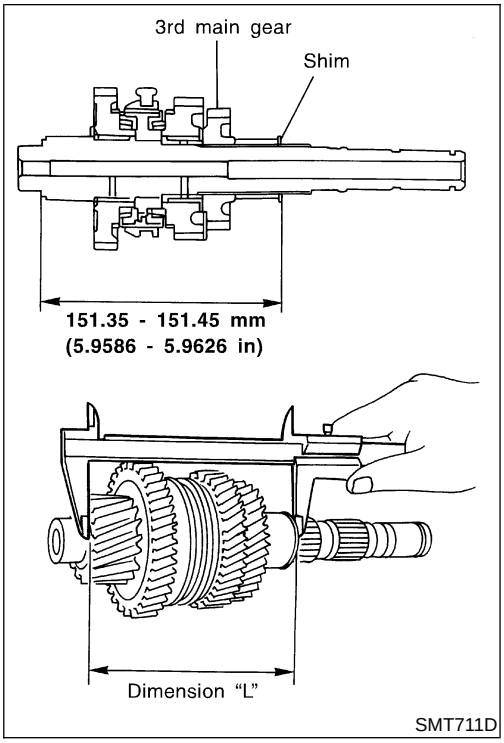


7. Install 2nd gear bushing with its flange surface facing 1st & 2nd synchronizer hub side using Tool.



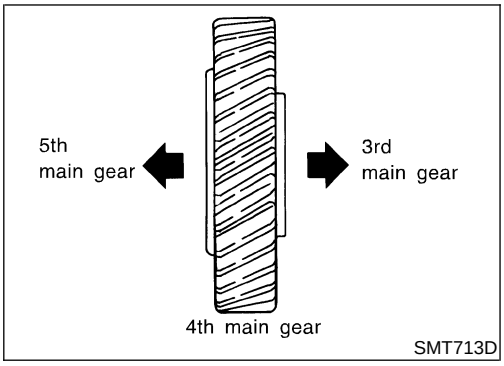
8. Install 2nd needle bearing, 2nd double cone assembly, and 2nd main gear onto mainshaft using Tool.
9. Position 3rd main gear as shown in the figure, and install it using Tool.

CAUTION:
Do not reuse 3rd main gear.

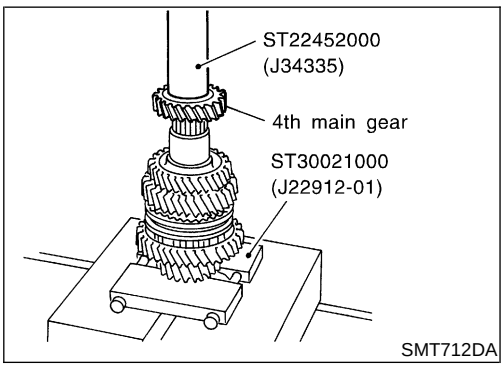


10. Install spacer and mainshaft adjusting shim onto mainshaft.
11. Select a mainshaft adjusting shim suitable to satisfy the following specification of dimension "L" and install it onto mainshaft.

Specification of dimension "L":
151.35 - 151.45 mm (5.9586 - 5.9626 in)
Mainshaft adjusting shims:
Refer to "MAINSHAFT ADJUSTING SHIM", MT-60.

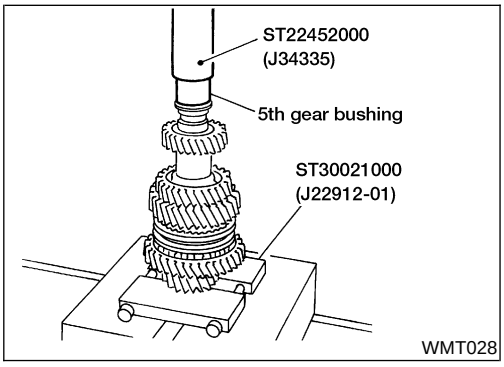


12. Position 4th main gear as shown in the figure, and install it onto mainshaft.

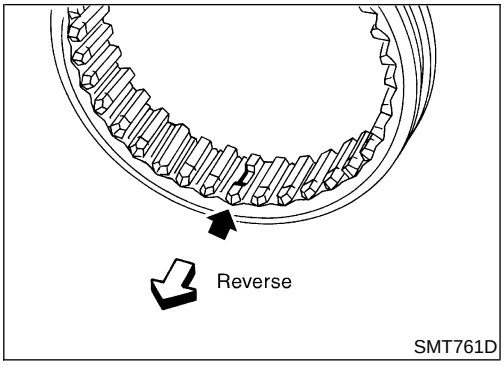


13. Install 4th main gear onto mainshaft using Tool.

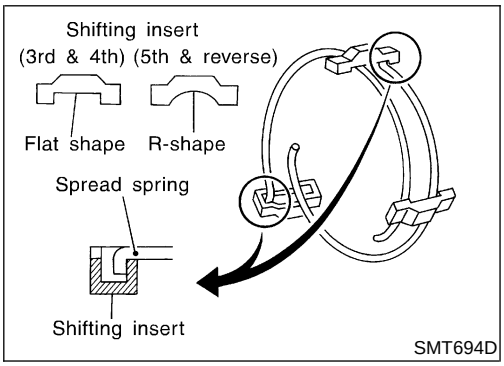
CAUTION:
Do not reuse 4th main gear.



14. Install 5th gear bushing with its flange surface facing the 4th main gear side using Tool.

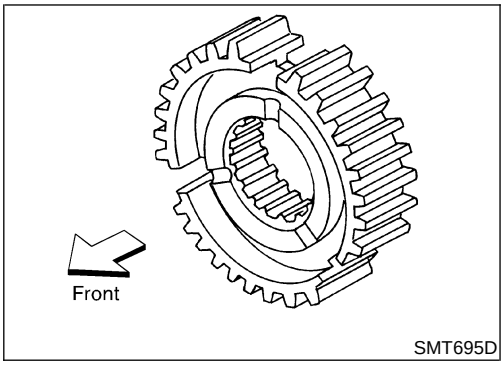


15. Install 5th needle bearing, 5th main gear, and 5th gear baulk ring onto mainshaft.



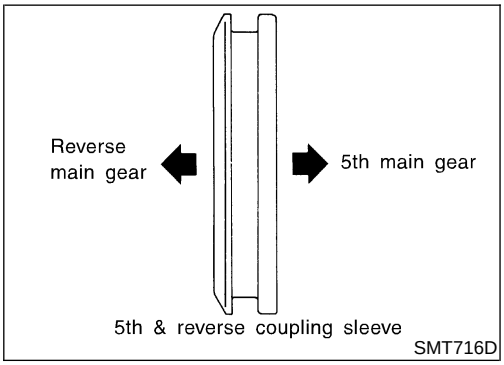
16. Being careful of the following points, install spread spring, shifting insert, and 5th & reverse synchronizer hub onto 5th & reverse coupling sleeve.

- Pay attention to the shape of spread spring and shifting insert for correct assembly.
  Do not install spread spring hook onto the same shifting insert.

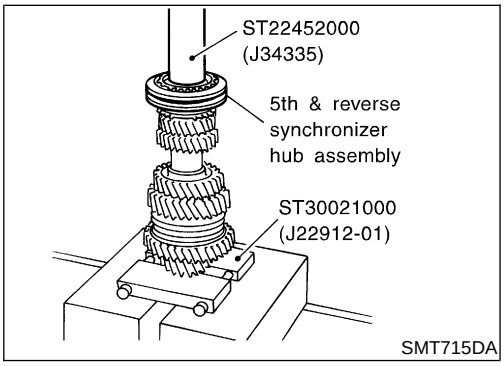


- Install synchronizer hub with its three grooves facing the front side (5th main gear side).

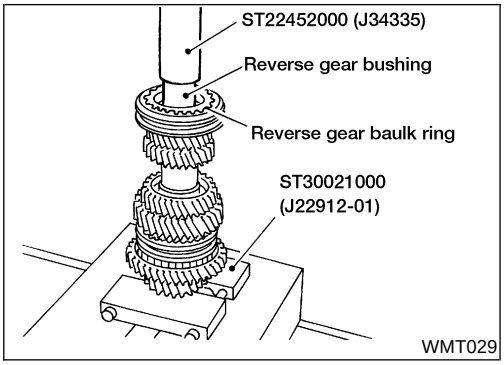
CAUTION:
Do not reuse 5th & reverse synchronizer hub.



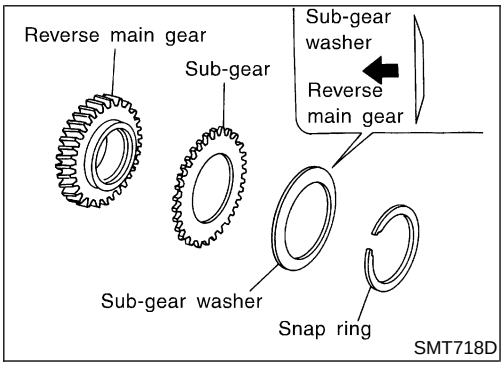
- Install 5th & reverse coupling sleeve with its chamfered surface facing the reverse main gear side.



17. Install 5th & reverse synchronizer hub assembly using Tool.



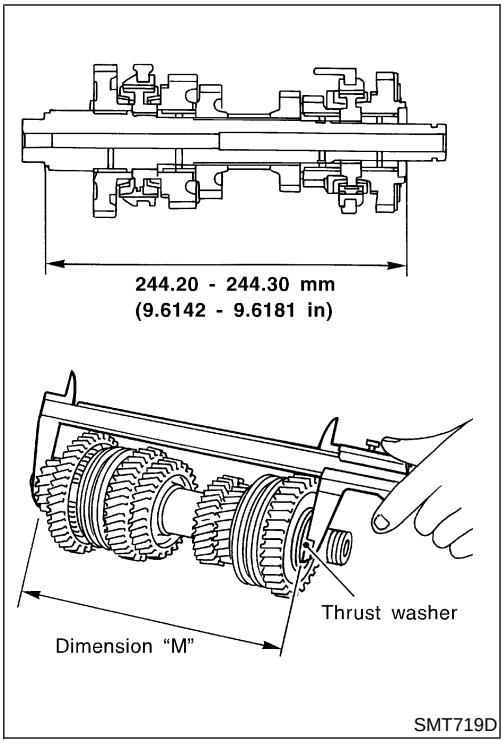
18. Install reverse gear baulk ring using Tool.
19. Install reverse gear bushing using Tool.
20. Install reverse gear needle bearing using Tool.



21. Install sub-gear, sub-gear washer, and snap ring onto reverse main gear.

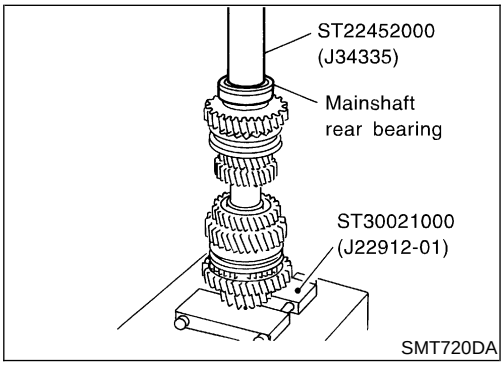
CAUTION:

- **Pay attention to direction of sub-gear washer.**
- **Do not reuse snap ring.**

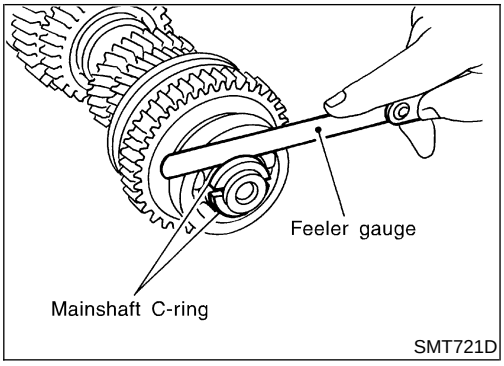


22. Install reverse main gear assembly onto mainshaft.
23. Select a thrust washer suitable to satisfy the following specification of dimension "M" (as shown in the figure), and install it onto mainshaft.

Specification of dimension "M":
244.20 - 244.30 mm (9.6142 - 9.6181 in)
Available thrust washers:
Refer to "Available Thrust Washer", MT-61.



24. Install mainshaft rear bearing using Tool.



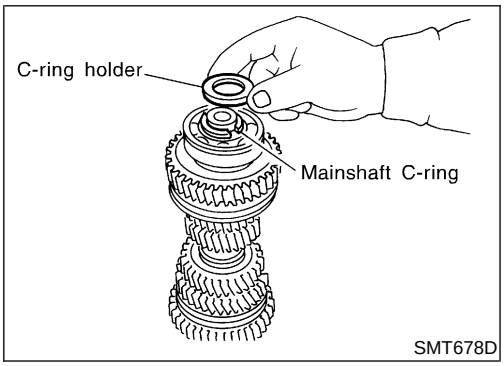
25. Install mainshaft C-ring.
26. Using feeler gauge, measure the end play of mainshaft rear bearing with a suitable tool, and check if it satisfies the following specification.

    End play:

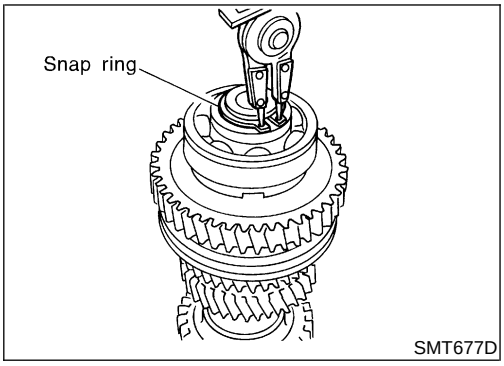
    0 - 0.06 mm (0 - 0.0024 in)

    Mainshaft C-rings:

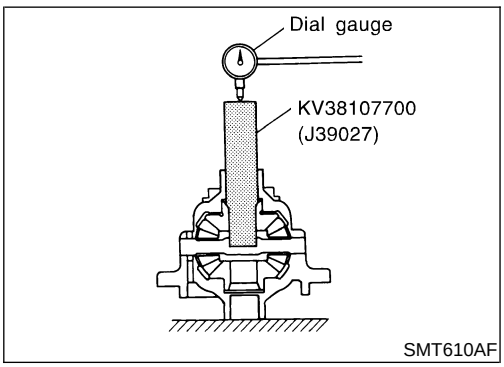
    Refer to "Available C-rings", MT-58.



27. Install C-ring holder.



28. Install snap ring with a suitable tool.
29. Measure gear end play as a final check. Refer to "Gear End Play", MT-57.



Final Drive

PRE-INSPECTION

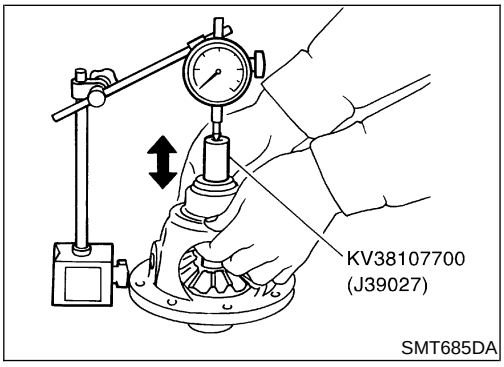
NIMT0036

— RS5F70A & RS5F70V (Differential case side) —

NIMT0036S01

- Check the clearance between side gear and differential case as follows using Tool.

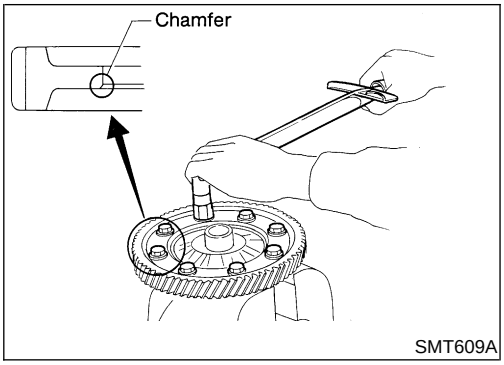
1. Clean final drive assembly sufficiently to prevent side gear thrust washer, differential case, side gear, and other parts from sticking by gear oil.



2. Upright the differential case so that the side gear to be measured faces upward.
3. Place final drive adapter and dial gauge onto side gear. Move side gear up and down, and measure the clearance using Tool.

   Clearance between side gear and differential case:

   0.1 - 0.2 mm (0.004 - 0.008 in)
4. If not within specification, adjust the clearance by changing thrust washer thickness.
5. Turn differential case upside down, and measure the clearance between side gear and differential case on the other side in the same way using Tool.

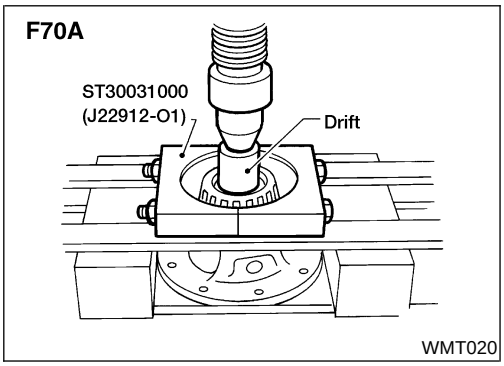


DISASSEMBLY

NIMT0016

1. Remove mounting bolts. Then, separate the final gear from differential case.
2. Make a notch and remove speedometer drive gear using a scraper or other suitable tool.

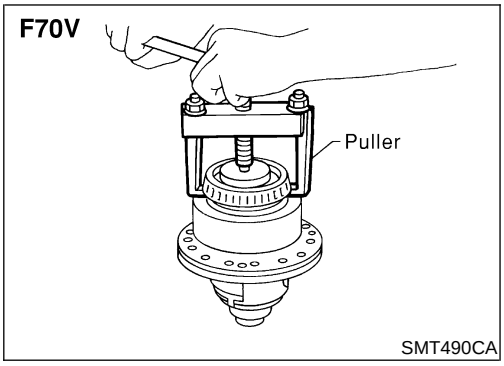
- **Bearing replacer cannot be positioned unless speedometer drive gear is removed.**

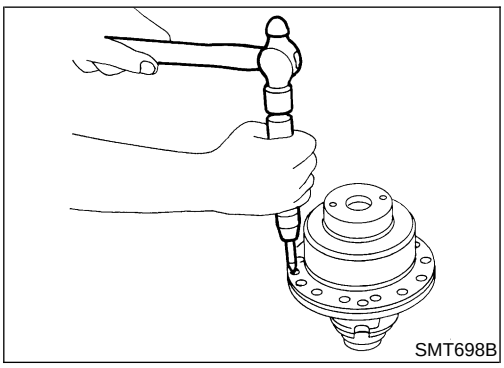


3. Remove differential side bearing of final gear side using Tool.
4. Turn differential case upside down, and remove differential side bearing of speedometer drive gear side using Tool.

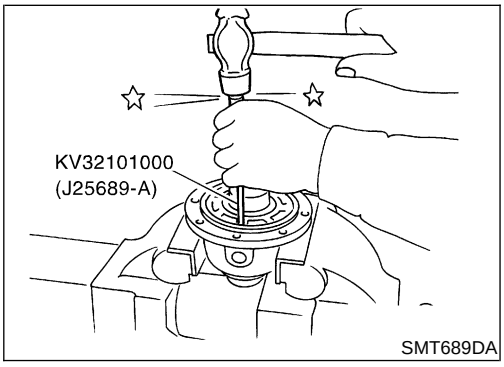
- **Be careful not to mix up the differential side bearings — RS5F70A.**

5. Remove speedometer stopper.

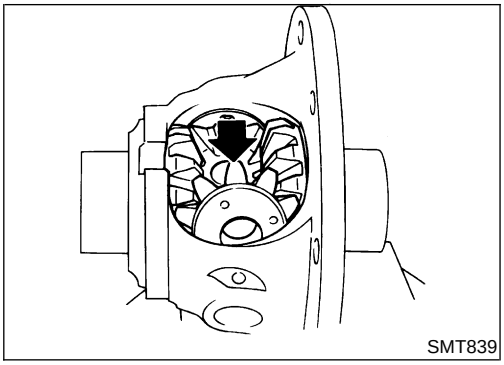




6. Remove viscous coupling — RS5F70V.

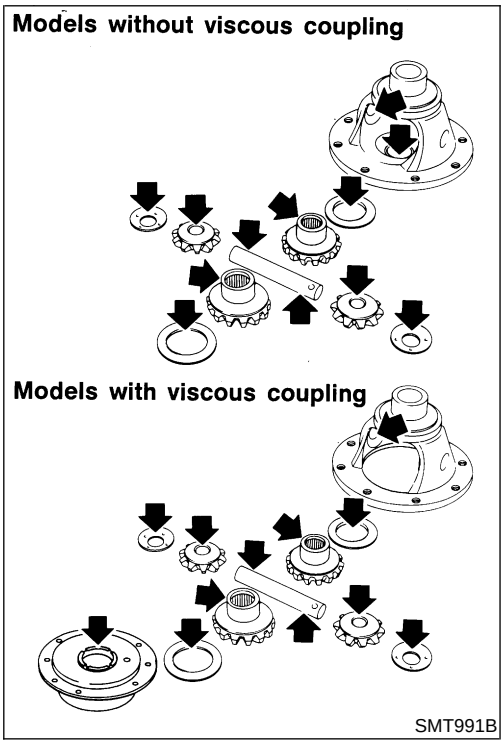


7. Remove lock pins from pinion mate shaft using Tool.



SMT839

8. Remove pinion mate shaft.
9. Rotate pinion mate gear, and remove pinion mate gear, pinion mate thrust washer, side gear, and side gear thrust washer from differential case.



SMT991B

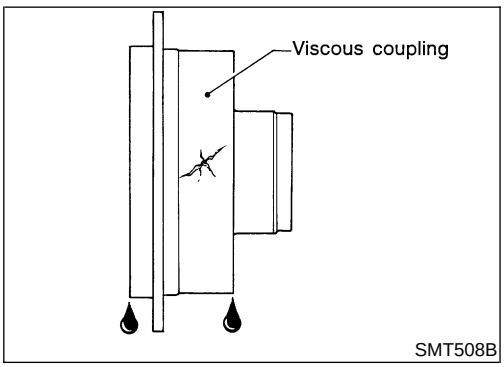
INSPECTION

NIMT0017

Gear, Washer, Shaft and Case

NIMT0017S01

- Check mating surfaces of differential case, side gears and pinion mate gears — RS5F70A and RS5F70V.
- Check viscous coupling — RS5F70V.
- Check washers for wear.

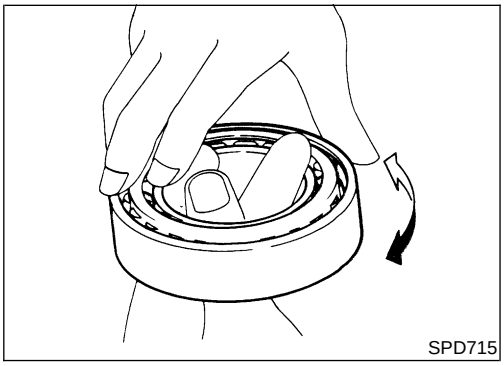


SMT508B

Viscous Coupling — RS5F70V

NIMT0017S05

- Check case for cracks.
- Check silicone oil for leakage.

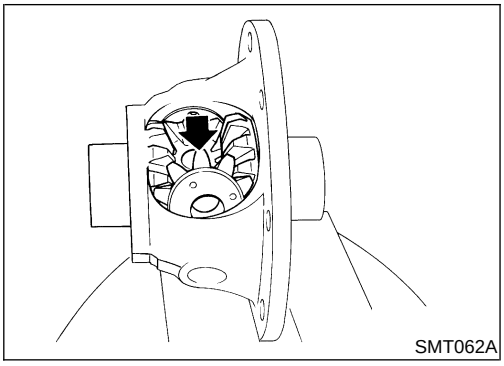


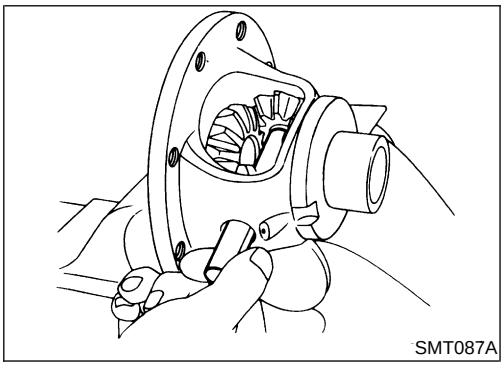
SPD715

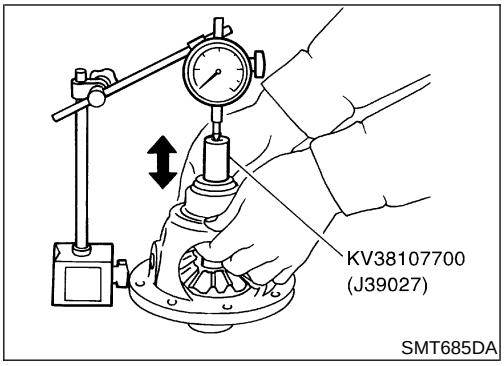
Bearing

NIMT0017S02

- Make sure bearings roll freely and are free from noise, cracks, pitting or wear.
- **When replacing tapered roller bearing, replace outer and inner race as a set.**


SMT062A


SMT087A



SMT685DA

ASSEMBLY

NIMT0018

— RS5F70A & RS5F70V —

NIMT0018S03

1. Apply gear oil to sliding area of differential case, each gear, and thrust washer.
2. Install side gear thrust washer and side gear into differential case.
3. Position pinion mate gear and pinion mate thrust washer diagonally, and install them into differential case while rotating.
4. Insert pinion mate shaft into differential case.

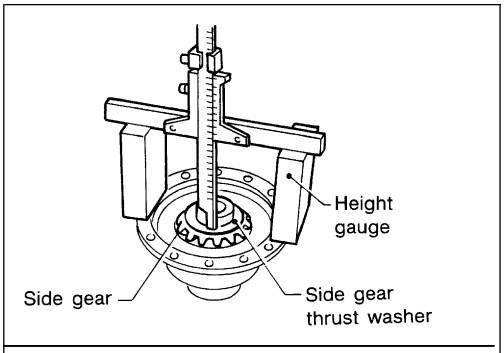
— RS5F70A & RS5F70V (Differential case side) —

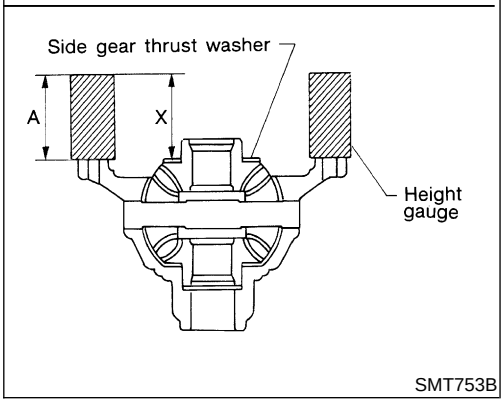
NIMT0018S04

1. Upright the differential case so that its side gear to be measured faces upward.
2. Place preload adapter and dial gauge onto side gear. Move side gear up and down, and measure the clearance using Tool.
3. Turn differential case upside down, and measure the clearance between side gear and differential case on the other side in the same way using Tool.

Clearance of side gear and differential case:
0.1 - 0.2 mm (0.004 - 0.008 in)

Differential side gear thrust washers:
Refer to "Available Washers", MT-61.





SMT753B

— RS5F70V (Viscous coupling side) —

NIMT0018S05

1. Measure clearance between side gear and viscous coupling with washers with a suitable tool following the procedure below.

a. Set remaining side gear with washer on pinion mate gears.

b. Measure distance "X".

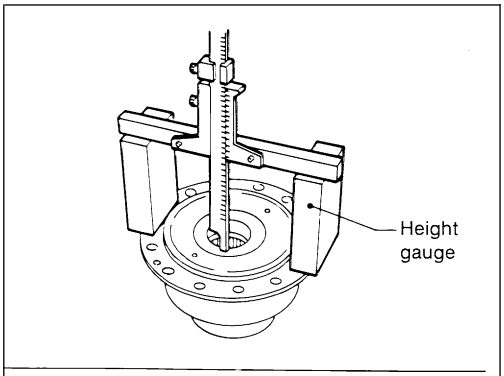
- **Measure in at least 4 places around the edge of the side gear and take an average. At least 4 measurements are needed because the side gear may be uneven.**

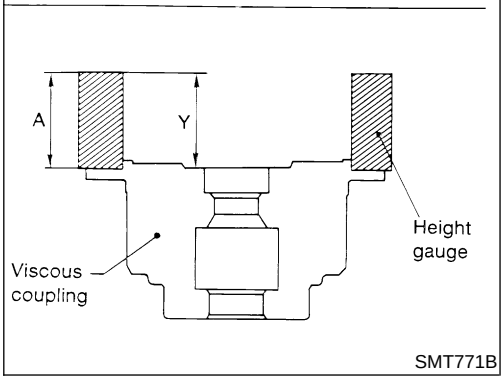
c. Measure dimension "Y".
Clearance between side gear and viscous coupling with washers can be obtained by "X + Y − 2A".

Clearance between side gear and viscous coupling:
0.1 - 0.2 mm (0.004 - 0.008 in)

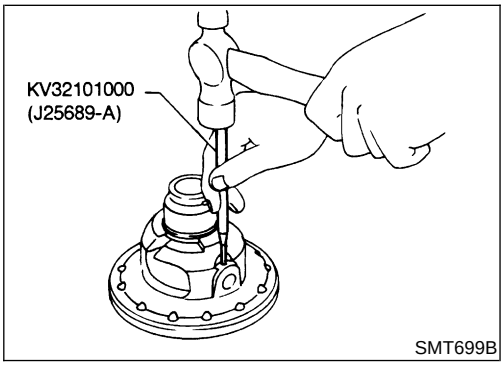
d. If not within specification, adjust clearance by changing thickness of side gear thrust washer.

Differential side gear thrust washers:
Refer to "Available Washers", MT-61.





SMT771B



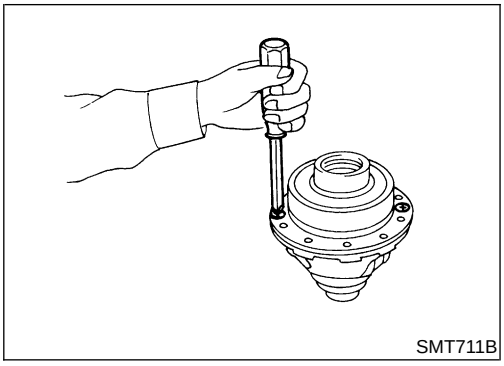
SMT699B

— RS5F70A & RS5F70V —

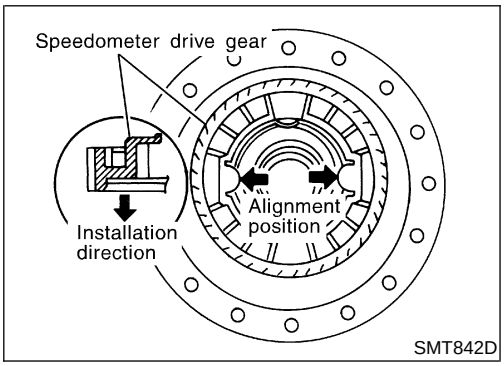
NIMT0018S06

1. Install retaining pin using Tool.

- **Make sure that retaining pin is flush with case.**

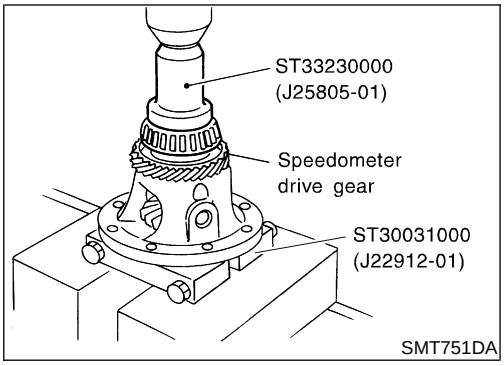

SMT711B

2. Install viscous coupling — RS5F70V.



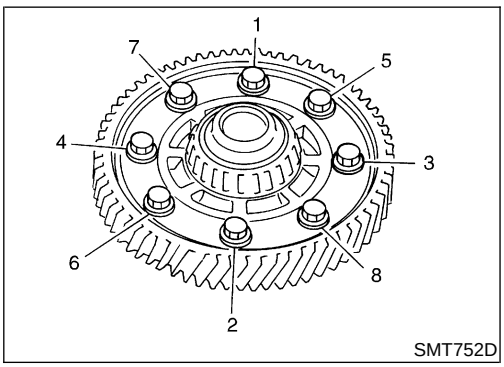
SMT842D

3. Align and install speedometer drive gear into differential case.
4. Install speedometer stopper.



SMT751DA

5. Install differential side bearing using Tool.
6. Turn differential case upside down, and install another differential side bearing on the other side in the same way using Tool.

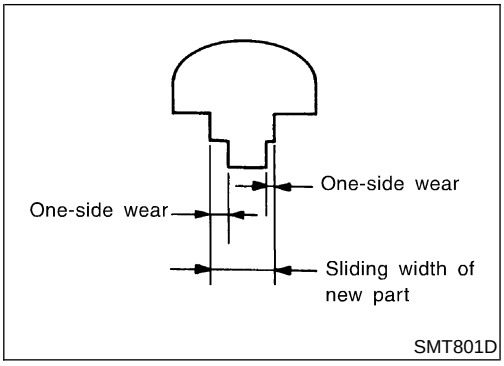


SMT752D

7. Install differential gear into differential case. Apply sealant onto mounting bolts, and tighten them in order as shown in the figure with specified torque.

Tightening torque:

Refer to "Final Drive Components", MT-20.



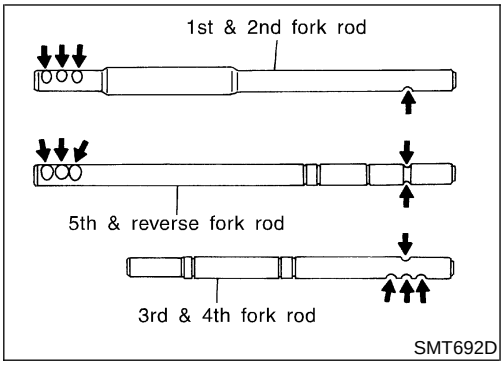
Shift Control Components

INSPECTION

=NIMT0019

- Check if the width of shift fork hook (sliding area with coupling sleeve) is within allowable specification below.

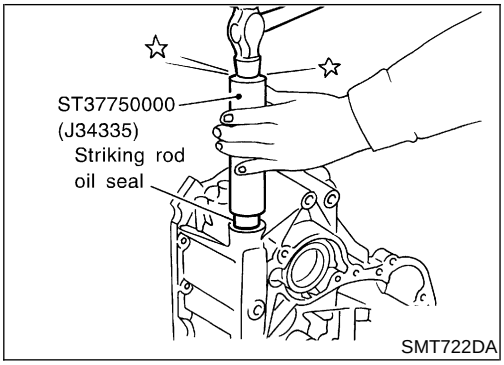
Item	One-side wear specification	Sliding width of new part
1st & 2nd	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
3rd & 4th	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
5th & reverse	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)



- Check if shift check groove of fork rod or 5th & reverse check groove is worn, or has any other abnormalities.

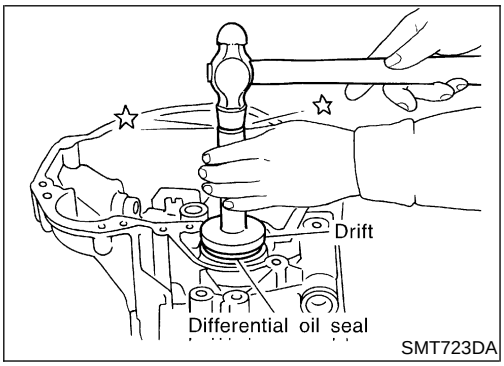
Clutch Housing

NIMT0023S01



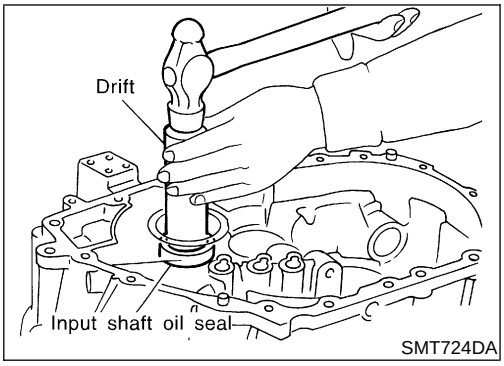
1. Hammer the striking rod oil seal into clutch housing as far as it will go using Tool.

CAUTION:
Do not reuse striking rod oil seal.



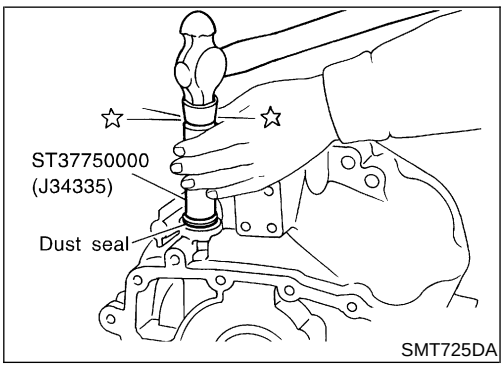
2. Hammer the differential oil seal into clutch housing with a suitable tool until it becomes flush with clutch housing end face.

CAUTION:
Do not reuse differential oil seal.



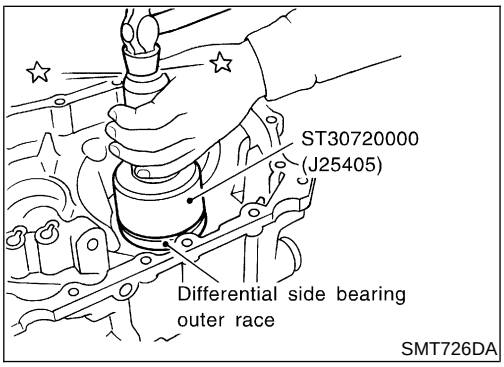
3. Hammer input shaft oil seal into clutch housing as far as it will go with a suitable tool.

CAUTION:
Do not reuse input shaft oil seal.

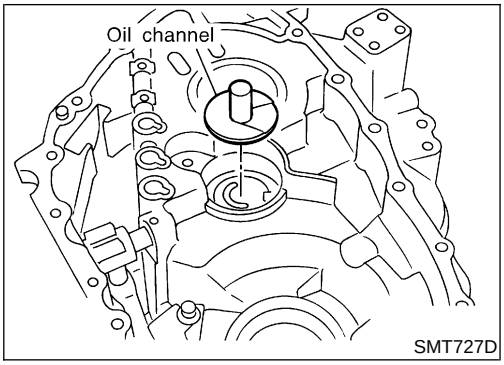


4. Hammer the dust seal into clutch housing as far as it will go using Tool.

CAUTION:
Do not reuse dust seal.



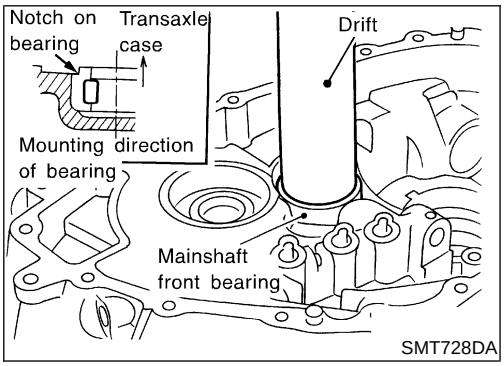
5. Install outer race of differential side bearing using Tool.



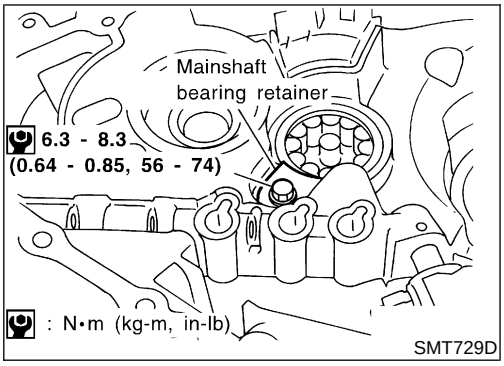
6. Install new oil channel (mainshaft).

CAUTION:

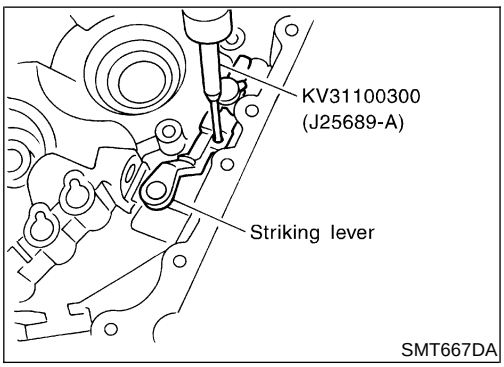
Pay attention to installation direction of oil channel.



7. Align the notches on mainshaft front bearing and transaxle case. Then, install mainshaft front bearing with a suitable tool.



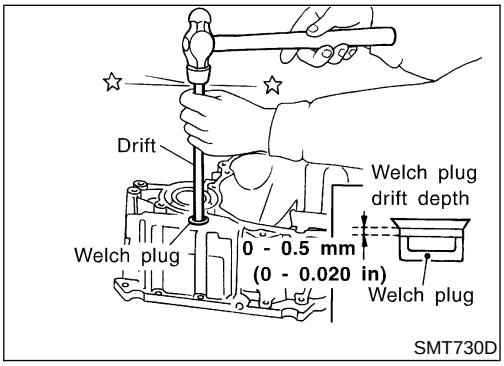
8. Install mainshaft bearing retainer, and tighten bolts with specified torque.



9. Attach boot, striking rod, and striking lever to clutch housing. And install retaining pin for selector lever using Tool.

CAUTION:

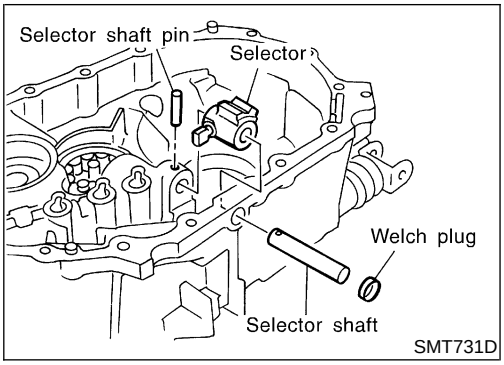
- **Before installing striking rod, wrap the end with a vinyl tape or similar product to prevent oil seal from being damaged.**
- **Do not reuse retaining pin.**



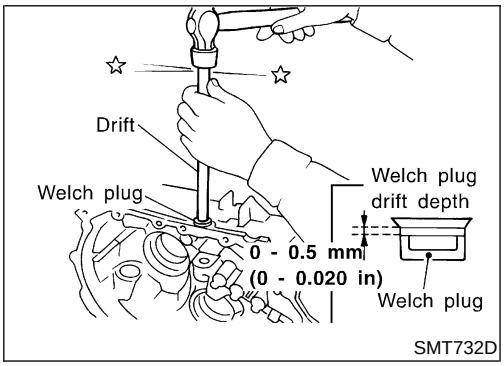
10. Hammer the welch plug (striking lever side) with a general-purpose drift [OD: 12 mm (0.47 in)] with a suitable tool.

CAUTION:

Do not reuse welch plug.

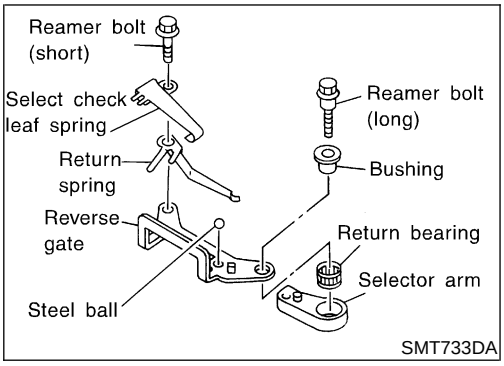


11. Install selector, selector shaft, and selector shaft pin into clutch housing.



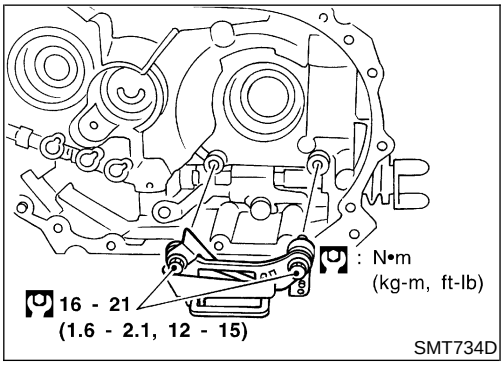
12. Hammer the welch plug (selector shaft side) with a general-purpose drift [OD: 12 mm (0.47 in)] with a suitable tool.

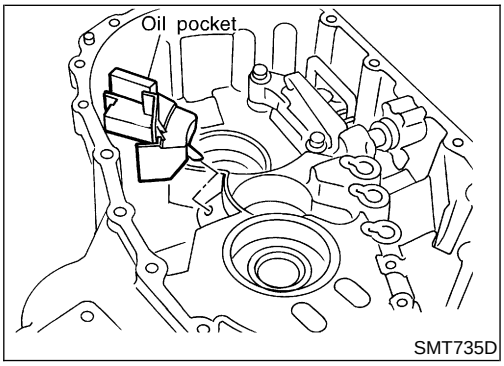
CAUTION:
Do not reuse welch plug.



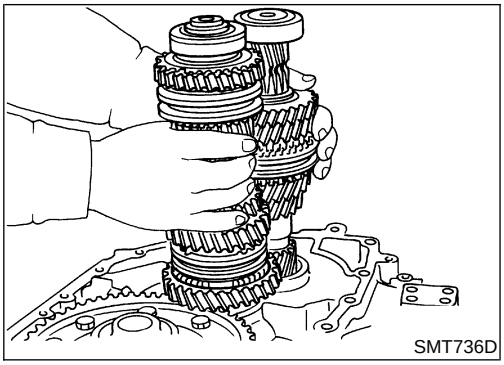
13. Install select check leaf spring, return spring, steel ball, reverse gate, selector arm, bushing, and return bearing. Then, tighten two reamer bolts with specified torque.

CAUTION:
Use correct reamer bolts for each installation point, because each bolt has a different length.





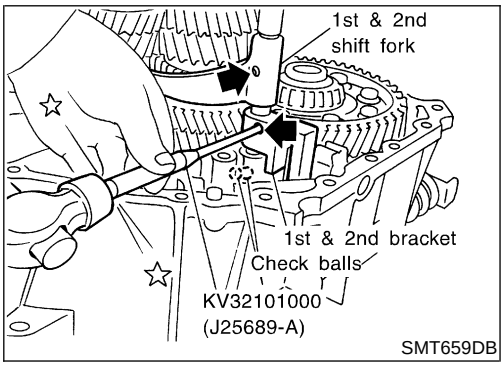
14. Install oil pocket.


SMT736D

15. Install differential assembly, input shaft assembly, and mainshaft assembly into clutch housing.

CAUTION:

Be careful not to damage input shaft oil seal during installation of input shaft assembly.



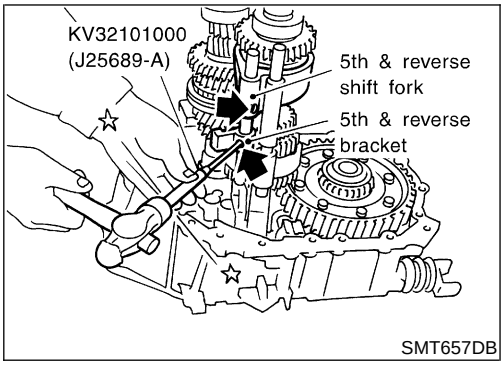
SMT659DB

16. Install 5th & reverse shift fork.
17. Install 1st & 2nd shift fork, bracket, and fork rod using Tool.
18. Install retaining pin for 1st & 2nd bracket.

CAUTION:

Do not reuse retaining pin.

19. Install two check balls.



SMT657DB

20. Install interlock pin into 5th & reverse fork rod using Tool.
21. Install reverse switch bracket, 5th & reverse bracket, and fork rod using Tool.
22. Install retaining pin for 5th & reverse shift fork and reverse switch bracket using Tool.

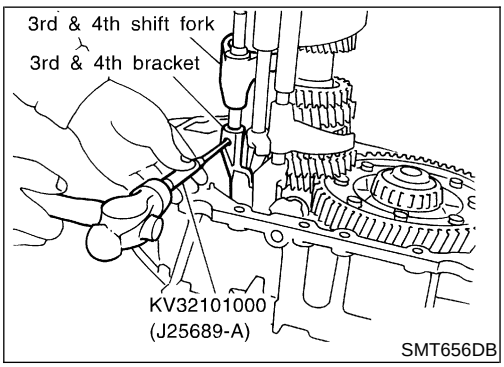
CAUTION:

Do not reuse retaining pin.

23. Install 5th & reverse bracket stopper ring.

CAUTION:

Do not reuse stopper pin.

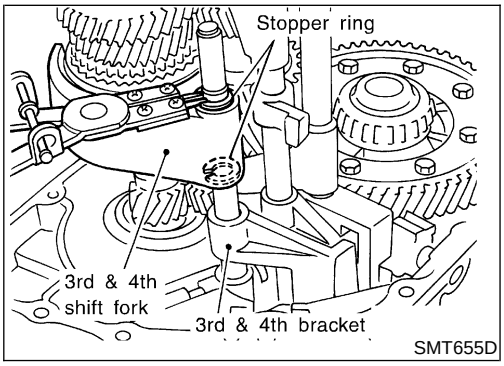


SMT656DB

24. Install check ball and interlock plunger.
25. Install 3rd & 4th shift fork, bracket, and fork rod using Tool.
26. Install 3rd & 4th bracket retaining pin.

CAUTION:

Do not reuse retaining pin.



SMT655D

27. Install 3rd & 4th shift fork stopper ring.

CAUTION:

Do not reuse stopper ring.

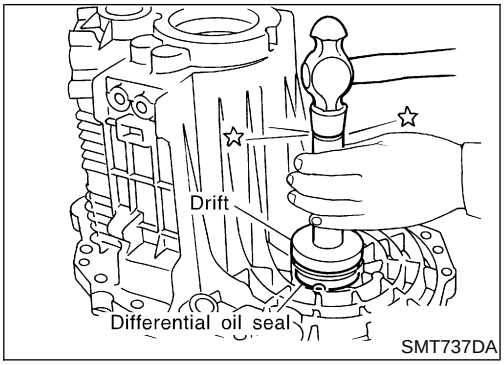
28. Install check ball, check pin, and check spring, and apply Three Bond TB1215, Loctite Part No. 51813 or equivalent onto check plug. Then, tighten it with specified torque.

Tightening torque:

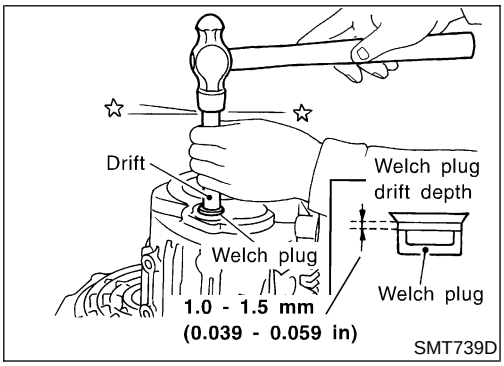
Refer to "Shift Control Components", MT-19.

Transaxle Case

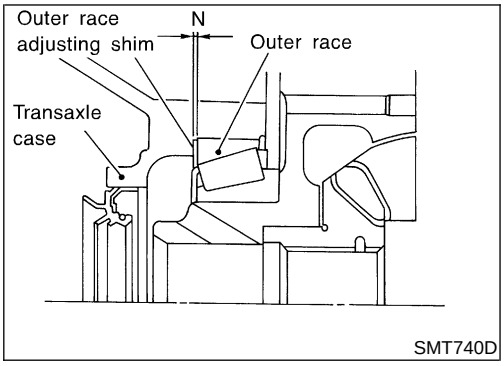
NIMT0023S02



1. Insert differential oil seal into differential case with a suitable tool until it becomes flush with case end face.



2. Install welch plug into transaxle case with a suitable tool.



3. Calculate dimension “N” (thickness of adjusting shim) using the following procedure to satisfy specification of end play for differential side bearing.

End play: 0.15 - 0.21 mm (0.0059 - 0.0083 in)

Dimension “N” = (N1 – N2) + End play

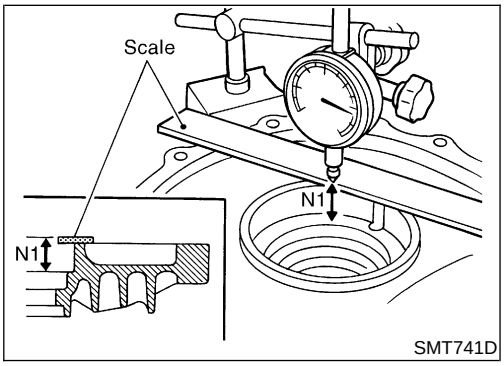
N: Thickness of adjusting shim

N1: Distance between clutch housing case end face and mounting face of adjusting shim

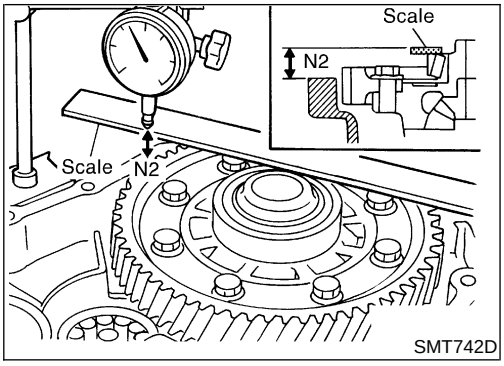
N2: Distance between differential side bearing and transaxle case

Differential side bearing adjusting shims:

Refer to “DIFFERENTIAL SIDE BEARING ADJUSTING SHIMS”, MT-62.

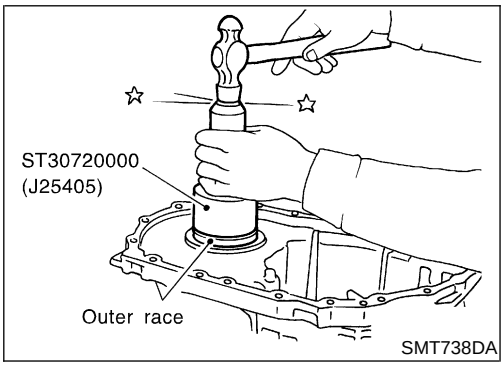


a. Using dial gauge and scale, measure dimension “N1” between clutch housing case end face and mounting face of adjusting shim.

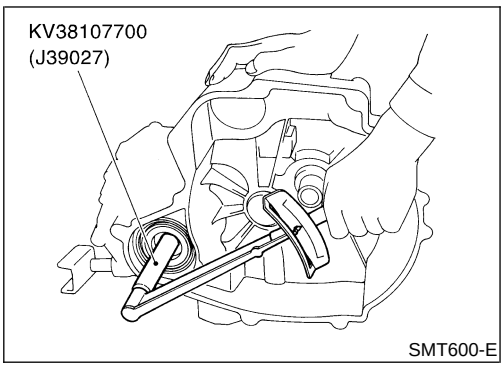


b. Install outer race onto differential side bearing on final gear side. Holding lightly the outer race horizontally by hand, rotate final gear five times or more (for smooth movement of bearing roller).

c. Using dial gauge and scale as shown in the figure, measure dimension "N2" between differential side bearing outer race and transaxle case end face.



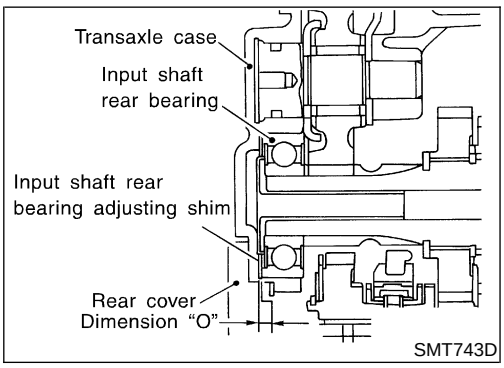
4. Install selected shim and bearing outer race using Tool.



5. Measure turning torque of final drive assembly using Tool.

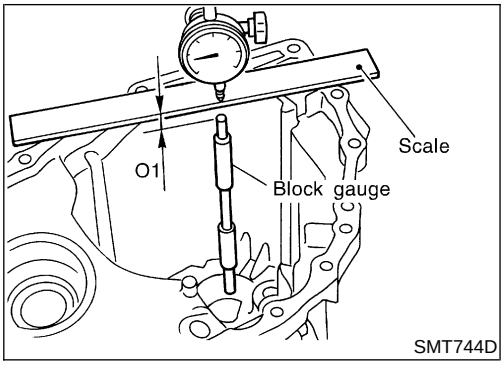
Turning torque of final drive assembly
(New bearing):
2.9 - 6.9 N·m (30 - 70 kg-cm, 26 - 61 in-lb)

- **When old bearing is used again, turning torque will be slightly less than the above.**
- **Make sure torque is close to the specified range.**
- **Changes in turning torque of final drive assembly per revolution should be within 1.0 N·m (10 kg-cm, 8.7 in-lb) without binding.**

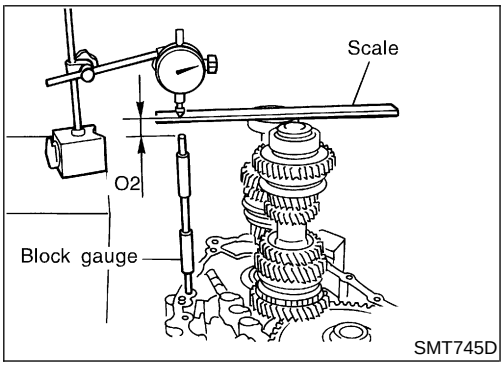


6. Calculate dimension "O" (thickness of adjusting shim) using the following procedure to satisfy specification of end play for input shaft rear bearing.

End play: 0 - 0.06 mm (0 - 0.0024 in)
Dimension "O" = (O1 – O2) + End play
O: Thickness of adjusting shim
O1: Distance between transaxle case end face and mounting face of adjusting shim
O2: Distance between clutch housing case end face and end face of input shaft rear bearing
Input shaft rear bearing adjusting shims:
Refer to "INPUT SHAFT REAR BEARING ADJUSTING SHIM", MT-59.

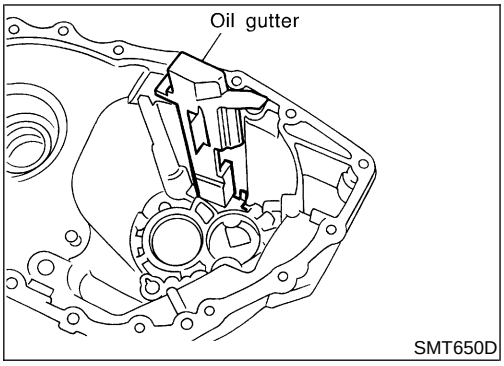


a. Using block gauge, scale, and dial gauge, measure dimension "O1" between transaxle case end face and mounting face of adjusting shim.

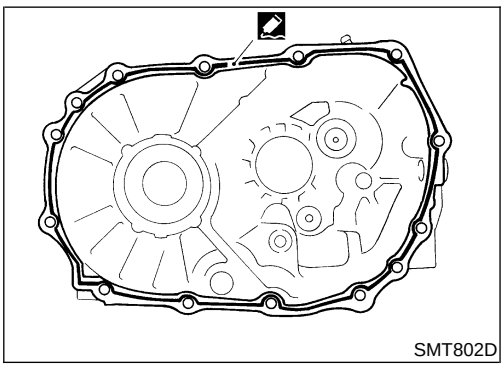


b. Using block gauge, scale, and dial gauge as shown in the figure, measure dimension "O2" between clutch housing case end face and end face of input shaft rear bearing.

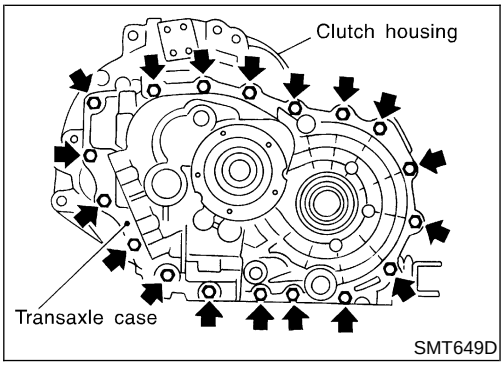
7. Install selected input shaft rear bearing adjusting shim onto input shaft.



8. Install oil gutter into transaxle case.



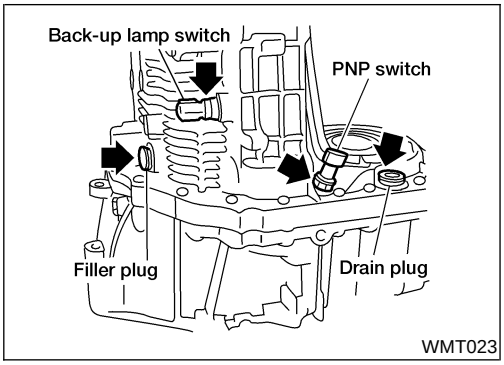
9. Clean mating surfaces of clutch housing and transaxle case. Check for cracks and damage. Then, apply Three Bond TB1215, Loctite Part No. 51813 or equivalent.



10. Install transaxle case onto clutch housing, and tighten mounting bolts with specified torque.

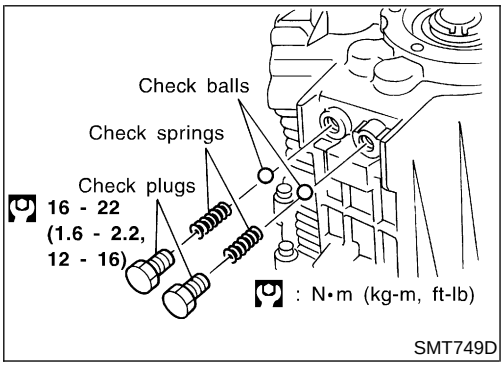
Tightening torque:

Refer to "Case Components", MT-17.

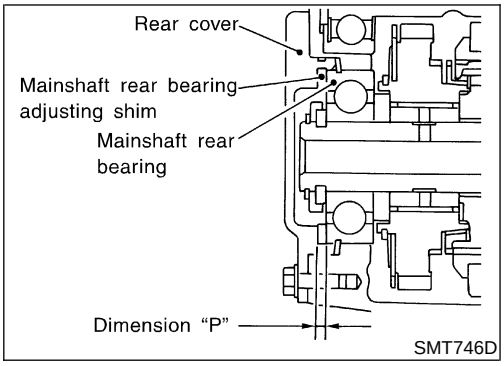


11. Apply Three Bond TB1215, Loctite Part No. 51813 or equivalent to threads of back-up lamp switch, PNP switch, and drain plug, and install them. (Fill the case with oil before installation of filler plug.)
12. Install speedometer pinion assembly.

CAUTION:
Do not reuse O-ring.



13. Install check springs and check balls. Apply sealant to the thread on the check plug, and install it.



14. Calculate thickness of adjusting shim using the following procedure to satisfy specification of end play for mainshaft rear bearing.

End play: 0 - 0.06 mm (0 - 0.0024 in)

Dimension "P" = (P1 – P2) + End play

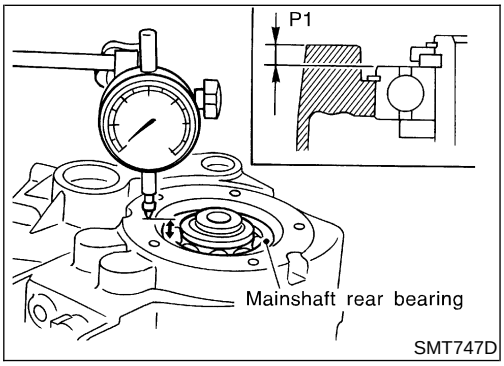
P: Thickness of adjusting shim

P1: Distance between transaxle case end face and mainshaft rear bearing

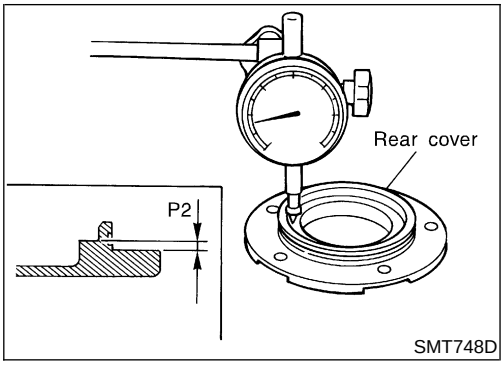
P2: Distance between adjusting shim end face of rear cover and transaxle mounting face

Mainshaft rear bearing adjusting shims:

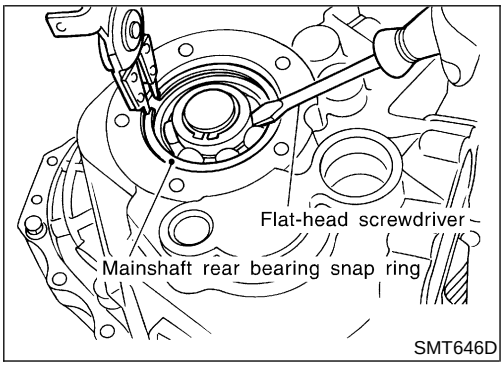
Refer to "Available Adjusting Shims", MT-59.



a. Using dial gauge as shown in the figure, measure dimension "P1" between transaxle case end face and mainshaft rear bearing.



b. Using dial gauge as shown in the figure, measure dimension "P2" between adjusting shim mounting face of rear cover and transaxle mounting face.

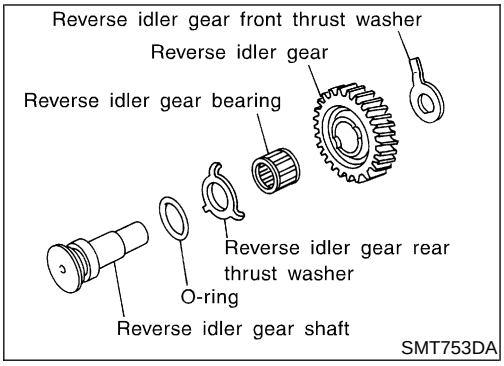


15. Using snap ring pliers and flat-head screwdriver as shown in the figure, install snap ring.

CAUTION:

Do not reuse snap ring.

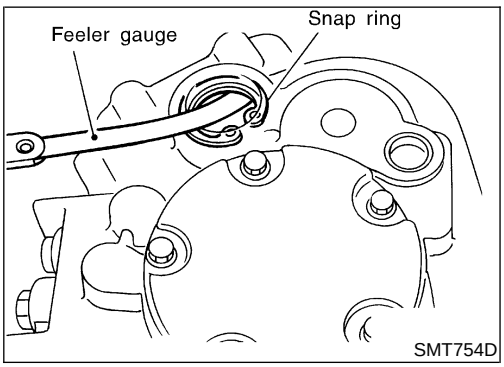
16. Install selected mainshaft adjusting shim.



17. Install reverse idler gear, O-ring, thrust washers (front, rear), and bearing onto reverse idler shaft.
18. Install snap ring into transaxle case using snap ring pliers.

CAUTION:

- **Do not reuse snap ring.**
- **Do not reuse O-ring.**
- **Before installation, apply gear oil to O-ring.**



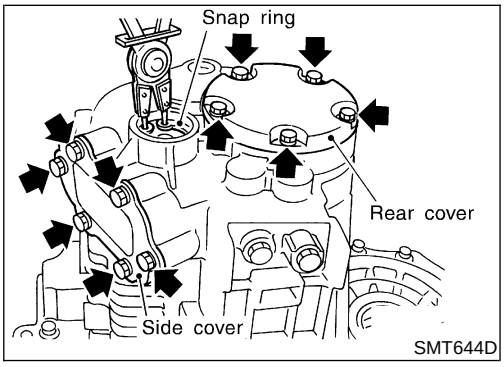
19. Using feeler gauge, measure the end play of snap ring, and select a snap ring suitable to satisfy the following specification.

End play:

0.05 - 0.25 mm (0.0020 - 0.0098 in)

Available snap ring:

Refer to "SNAP RING", MT-57.



20. Install selected snap ring with a suitable tool.

CAUTION:

Do not reuse snap ring.

21. Apply gear oil to rear cover O-ring, and install rear cover, side cover gasket, and side cover. Then tighten mounting bolts with specified torque.

Tightening torque:

Refer to "Case Components", MT-17.

CAUTION:

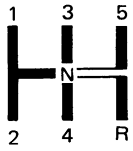
Do not reuse mounting bolts for rear cover and side cover.

General Specifications

NIMT0024

TRANSAXLE

NIMT0024S01

Engine			QG18DE	SR20DE	
Transaxle model			RS5F70A	RS5F70A	RS5F70V
Number of speeds			5		
Synchromesh type			Warner		
Shift pattern					
Gear ratio	1st		3.333	3.333	
	2nd		1.955	1.955	
	3rd		1.286	1.286	
	4th		0.926	0.926	
	5th		0.756	0.733	
	Reverse		3.417	3.153	
Number of teeth	Input gear	1st	15	15	
		2nd	22	22	
		3rd	28	28	
		4th	41	41	
		5th	45	45	
		Rev.	14	14	
	Main gear	1st	50	50	
		2nd	43	43	
		3rd	36	36	
		4th	38	38	
		5th	34	33	
		Rev.	45	45	
	Reverse idler gear		37	37	
Oil level (Reference) mm (in)*1			75.5 - 80.5 (2.972 - 3.169)	56.5 - 61.0 (2.224 - 2.402)	56.5 - 62.0 (2.224 - 2.441)
Oil capacity ℓ (US pt, Imp pt)*1			3.0 (6-3/8, 5-1/4)		
Remarks			1st & 2nd double baulk ring type synchronizer		
			Reverse sub-gear		

*1: Refer to ***MA-13***, “Fluid and Lubricants”.

FINAL GEAR

NIMT0024S02

Engine		QG18DE	SR20DE	
Transaxle model		RS5F70A	RS5F70A	RS5F70V
Final gear ratio		4.176	4.437	
Number of teeth	Final gear/Pinion	71/17	71/16	
	Side gear/Pinion mate gear	16/10	14/10	

Gear End Play

NIMT0025

Unit: mm (in)

Gear	End play
1st main gear	0.18 - 0.31 (0.0071 - 0.0122)
2nd main gear	
5th main gear	
Reverse main gear	
3rd input gear	
4th input gear	0.17 - 0.44 (0.0067 - 0.0173)

Clearance Between Baulk Ring and Gear

NIMT0026

3RD, 4TH, 5TH, REVERSE BAULK RING

NIMT0026S01

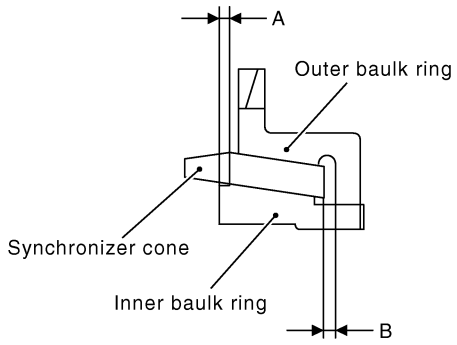
Unit: mm (in)

Standard		Wear limit
3rd	0.90 - 1.45 (0.0354 - 0.0571)	0.7 (0.028)
4th		
5th		
Reverse	0.9 - 1.35 (0.0354 - 0.0531)	

1ST AND 2ND BAULK RING

NIMT0026S02

Unit: mm (in)



SMT906D

Dimension	Standard	Wear limit
A	0.6 - 0.8 (0.024 - 0.031)	0.2 (0.008)
B	0.6 - 1.1 (0.024 - 0.043)	

Available Snap Rings

NIMT0028

SNAP RING

NIMT0028S04

End play	0.05 - 0.25 mm (0.0020 - 0.0098 in)
Thickness	Part number*
1.45 mm (0.0571 in)	32204-6J000
1.55 mm (0.0610 in)	32204-6J001
1.65 mm (0.0650 in)	32204-6J002
1.75 mm (0.0689 in)	32204-6J003
1.85 mm (0.0728 in)	32204-6J004

*: Always check with the parts department for the latest information.

Available C-rings

NIMT0029

4TH INPUT GEAR C-RING

NIMT0029S02

End play	0 - 0.06 mm (0 - 0.0024 in)
Thickness	Part number*
3.00 mm (0.1181 in)	32205-6J000
3.03 mm (0.1193 in)	32205-6J001
3.06 mm (0.1205 in)	32205-6J002
3.09 mm (0.1217 in)	32205-6J003
3.12 mm (0.1228 in)	32205-6J004

*: Always check with the parts department for the latest information.

5TH INPUT GEAR REAR C-RING

NIMT0029S03

End play	0 - 0.06 mm (0 - 0.0024 in)
Thickness	Part number*
2.59 mm (0.1020 in)	32205-6J005
2.62 mm (0.1031 in)	32205-6J006
2.65 mm (0.1043 in)	32205-6J007
2.68 mm (0.1055 in)	32205-6J008
2.71 mm (0.1067 in)	32205-6J009
2.74 mm (0.1079 in)	32205-6J010

*: Always check with the parts department for the latest information.

MAINSHAFT C-RING

NIMT0029S01

End play	0 - 0.06 mm (0 - 0.0024 in)
Thickness	Part number*
3.48 mm (0.1370 in)	32348-6J000
3.51 mm (0.1382 in)	32348-6J001
3.54 mm (0.1394 in)	32348-6J002
3.57 mm (0.1406 in)	32348-6J003
3.60 mm (0.1417 in)	32348-6J004
3.63 mm (0.1429 in)	32348-6J005
3.66 mm (0.1441 in)	32348-6J006
3.69 mm (0.1453 in)	32348-6J007
3.72 mm (0.1465 in)	32348-6J008
3.75 mm (0.1476 in)	32348-6J009
3.78 mm (0.1488 in)	32348-6J010
3.81 mm (0.1500 in)	32348-6J011
3.84 mm (0.1512 in)	32348-6J012
3.87 mm (0.1524 in)	32348-6J013
3.90 mm (0.1535 in)	32348-6J014
3.93 mm (0.1547 in)	32348-6J015
3.96 mm (0.1559 in)	32348-6J016

*: Always check with the parts department for the latest information.

Available Adjusting Shims

NIMT0037

INPUT SHAFT REAR BEARING ADJUSTING SHIM

NIMT0037S01

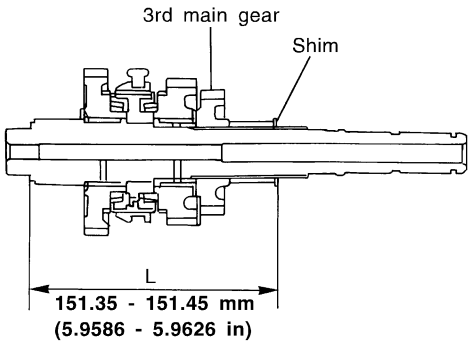
End play	0 - 0.06 mm (0 - 0.0024 in)
Thickness	Part number*
0.74 mm (0.0291 in)	32225-6J003
0.78 mm (0.0307 in)	32225-6J004
0.82 mm (0.0323 in)	32225-6J005
0.86 mm (0.0339 in)	32225-6J006
0.90 mm (0.0354 in)	32225-6J007
0.94 mm (0.0370 in)	32225-6J008
0.98 mm (0.0386 in)	32225-6J009
1.02 mm (0.0402 in)	32225-6J010
1.06 mm (0.0417 in)	32225-6J011
1.10 mm (0.0433 in)	32225-6J012
1.14 mm (0.0449 in)	32225-6J013
1.18 mm (0.0465 in)	32225-6J014
1.22 mm (0.0480 in)	32225-6J015
1.26 mm (0.0496 in)	32225-6J016
1.30 mm (0.0512 in)	32225-6J017
1.34 mm (0.0528 in)	32225-6J018
1.38 mm (0.0543 in)	32225-6J019
1.42 mm (0.0559 in)	32225-6J020
1.46 mm (0.0575 in)	32225-6J021
1.50 mm (0.0591 in)	32225-6J022
1.54 mm (0.0606 in)	32225-6J023
1.58 mm (0.0622 in)	32225-6J024
1.62 mm (0.0638 in)	32225-6J060
1.66 mm (0.0654 in)	32225-6J061

*: Always check with the parts department for the latest information.

Available Adjusting Shims (Cont'd)

MAINSHAFT ADJUSTING SHIM

NIMT0037S02



SMT907D

Standard length "L"	151.35 - 151.45 mm (5.9586 - 5.9626 in)
Thickness	Part number*
0.48 mm (0.0189 in)	32238-6J000
0.56 mm (0.0220 in)	32238-6J001
0.64 mm (0.0252 in)	32238-6J002
0.72 mm (0.0283 in)	32238-6J003
0.80 mm (0.0315 in)	32238-6J004
0.88 mm (0.0346 in)	32238-6J005

*: Always check with the parts department for the latest information.

MAINSHAFT REAR BEARING ADJUSTING SHIM

NIMT0037S03

End play	0 - 0.06 mm (0 - 0.0024 in)
Thickness	Part number*
2.99 mm (0.1177 in)	32238-6J010
3.03 mm (0.1193 in)	32238-6J011
3.07 mm (0.1209 in)	32238-6J012
3.11 mm (0.1224 in)	32238-6J013
3.15 mm (0.1240 in)	32238-6J014
3.19 mm (0.1256 in)	32238-6J015
3.23 mm (0.1272 in)	32238-6J016
3.27 mm (0.1287 in)	32238-6J017
3.31 mm (0.1303 in)	32238-6J018
3.35 mm (0.1319 in)	32238-6J019
3.39 mm (0.1335 in)	32238-6J020
3.43 mm (0.1350 in)	32238-6J021
3.47 mm (0.1366 in)	32238-6J022
3.51 mm (0.1382 in)	32238-6J023

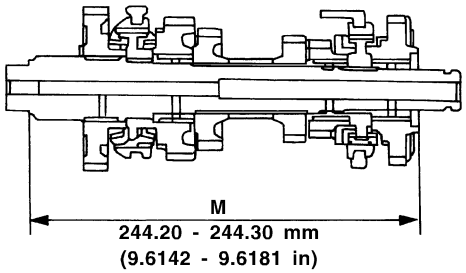
*: Always check with the parts department for the latest information.

Available Thrust Washer

NIMT0038

MAINSHAFT THRUST WASHER

NIMT0038S01



SMT843D

Standard length “M”	244.20 - 244.30 mm (9.6142 - 9.6181 in)
Thickness	Part number*
6.04 mm (0.2378 in)	32246-6J000
6.12 mm (0.2409 in)	32246-6J001
6.20 mm (0.2441 in)	32246-6J002
6.28 mm (0.2472 in)	32246-6J003
6.36 mm (0.2504 in)	32246-6J004

*: Always check with the parts department for the latest information.

Available Washers

NIMT0031

DIFFERENTIAL SIDE GEAR THRUST WASHER

NIMT0031S01

— RS5F70A —

NIMT0031S0103

Clearance between side gear and differential case	0.1 - 0.2 mm (0.004 - 0.008 in)
Thickness mm (in)	Part number*
0.75 - 0.80 (0.0295 - 0.0315)	38424-D2111
0.80 - 0.85 (0.0315 - 0.0335)	38424-D2112
0.85 - 0.90 (0.0335 - 0.0354)	38424-D2113
0.90 - 0.95 (0.0354 - 0.0374)	38424-D2114
0.95 - 1.00 (0.0374 - 0.0394)	38424-D2115

*: Always check with the parts department for the latest information.

— RS5F70V —

NIMT0031S0104

Clearance between side gear and differential case of viscous coupling		0.1 - 0.2 mm (0.004 - 0.008 in)
	Thickness mm (in)	Part number*
Differential case side	0.75 - 0.80 (0.0295 - 0.0315)	38424-D2111
	0.80 - 0.85 (0.0315 - 0.0335)	38424-D2112
	0.85 - 0.90 (0.0335 - 0.0354)	38424-D2113
	0.90 - 0.95 (0.0354 - 0.0374)	38424-D2114
	0.95 - 1.00 (0.0374 - 0.0394)	38424-D2115

Available Washers (Cont'd)

Viscous coupling side	0.70 - 0.75 (0.0276 - 0.0295)	38424-D2110
	0.75 - 0.80 (0.0295 - 0.0315)	38424-D2111
	0.80 - 0.85 (0.0315 - 0.0335)	38424-D2112
	0.85 - 0.90 (0.0335 - 0.0354)	38424-D2113
	0.90 - 0.95 (0.0354 - 0.0374)	38424-D2114
	0.95 - 1.00 (0.0374 - 0.0394)	38424-D2115
	1.00 - 1.05 (0.0394 - 0.0413)	38424-D2116
	1.05 - 1.10 (0.0413 - 0.0433)	38424-D2117
	1.10 - 1.15 (0.0433 - 0.0453)	38424-D2118
	1.15 - 1.20 (0.0453 - 0.0472)	38424-D2119
	1.20 - 1.25 (0.0472 - 0.0492)	38424-D2120
	1.25 - 1.30 (0.0492 - 0.0512)	38424-D2121
	1.30 - 1.35 (0.0512 - 0.0531)	38424-D2122

*: Always check with the parts department for the latest information.

Available Shims — Differential Side Bearing Preload and Adjusting Shim

NIMT0032

BEARING PRELOAD

NIMT0032S01

Unit: mm (in)

Differential side bearing preload: T*	0.15 - 0.21 (0.0059 - 0.0083)

* Install shims which are "deflection of differential case" + "T" in thickness.

DIFFERENTIAL SIDE BEARING ADJUSTING SHIMS — RS5F70A —

NIMT0032S03

NIMT0032S0303

Thickness mm (in)	Part number*
0.44 (0.0173)	38454-M8000
0.48 (0.0189)	38454-M8001
0.52 (0.0205)	38454-M8002
0.56 (0.0220)	38454-M8003
0.60 (0.0236)	38454-M8004
0.64 (0.0252)	38454-M8005
0.68 (0.0268)	38454-M8006
0.72 (0.0283)	38454-M8007
0.76 (0.0299)	38454-M8008
0.80 (0.0315)	38454-M8009
0.84 (0.0331)	38454-M8010
0.88 (0.0346)	38454-M8011

*: Always check with the parts department for the latest information.

— RS5F70V —

=NIMT0032S0304

Thickness mm (in)	Part number
0.28 (0.0110)	31439-31X00
0.32 (0.0126)	31439-31X01
0.36 (0.0142)	31439-31X02
0.40 (0.0157)	31439-31X03
0.44 (0.0173)	31439-31X04
0.48 (0.0189)	31439-31X05
0.52 (0.0205)	31439-31X06
0.56 (0.0220)	31439-31X07
0.60 (0.0236)	31439-31X08
0.64 (0.0252)	31439-31X09
0.68 (0.0268)	31439-31X10
0.72 (0.0283)	31439-31X11
0.76 (0.0299)	31439-31X12
0.80 (0.0315)	31439-31X13
0.84 (0.0331)	31439-31X14
0.88 (0.0346)	31439-31X15
0.92 (0.0362)	31439-31X16
0.96 (0.0378)	31439-31X17
1.44 (0.0567)	31439-31X18

*: Always check with the parts department for the latest information.

NOTES