

DAIHATSU

F73, F78

(F70, F75, F77)

☆ MANUAL TRANSMISSION

OUTLINES MT- 2 SHIFT LEVER & TRANSMISSION SHIFT SYSTEM MT- 3 SHIFT LEVER MT- 3 TRANSMISSION SHIFT SYSTEM MT- 3 TRANSMISSION & TRANSFER SPECIFICATIONS MT- 4 REMOVAL FROM THE VEHICLE MT- 5 TRANSMISSION (5-Speed) MT-10 COMPONENTS MT-10 REMOVAL MT-14 DISASSEMBLY OF OUTPUT SHAFT .. MT-18 DISASSEMBLY OF INPUT SHAFT MT-20 DISASSEMBLY OF COUNTER GEAR SHAFT MT-20 REVERSE IDLER GEAR BIMETAL FORMED BUSH REMOVAL MT-20 REMOVAL OF CLUTCH HOUSING OIL SEAL MT-20 INSPECTION MT-21 ASSEMBLY OF REVERSE IDLER GEAR BIMETAL FORMED BUSH MT-24 ASSEMBLY OF COUNTER GEAR SHAFT MT-25 INSTALLATION OF CLUTCH HOUSING OIL SEAL MT-25 ASSEMBLY OF INPUT SHAFT MT-25 ASSEMBLY OF OUTPUT SHAFT MT-26 INSTALLATION MT-28 TRANSMISSION CASE COVER (5-Speed) MT-34 COMPONENTS MT-34 REMOVAL MT-36 INSPECTION MT-39 INSTALLATION MT-41 SHIFT LEVER RELATED PARTS (4-Speed & 5-Speed) MT-47 COMPONENTS MT-47	REMOVAL MT-48 INSPECTION MT-48 INSTALLATION MT-49 INSTALLATION TO THE VEHICLE (T/M Ay) MT-50 TRANSMISSION (4-Speed) MT-55 COMPONENTS MT-55 REMOVAL MT-59 DISASSEMBLY OF OUTPUT SHAFT ... MT-61 DISASSEMBLY OF INPUT SHAFT MT-62 DISASSEMBLY OF COUNTER GEAR SHAFT MT-63 REVERSE IDLER GEAR FORMED BUSH REMOVAL MT-63 REMOVAL OF CLUTCH HOUSING OIL SEAL MT-63 INSPECTION MT-63 ASSEMBLY OF COUNTER GEAR SHAFT MT-66 INSTALLATION OF REVERSE IDLER GEAR BIMETAL FORMED BUSH MT-67 ASSEMBLY OF COUNTER GEAR SHAFT MT-67 INSTALLATION OF CLUTCH HOUSING OIL SEAL MT-67 ASSEMBLY OF INPUT SHAFT MT-68 ASSEMBLY OF OUTPUT SHAFT MT-68 INSTALLATION MT-71 TRANSMISSION CASE COVER (4-Speed) MT-74 COMPONENTS MT-74 REMOVAL MT-76 INSPECTION MT-79 INSTALLATION MT-81 SSTs MT-86 SERVICE SPECIFICATIONS MT-87 TIGHTENING TORQUE MT-89
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MT

In the sections bearing "☆" marks, the model codes "F70, 75, 77" should read as "F73 and F78".

After checking the contents of the relevant sections of the F73, F78 manual, we found that the contents remained the same.

Therefore, we are using the sections as they are in this manual.

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MANUAL TRANSMISSION

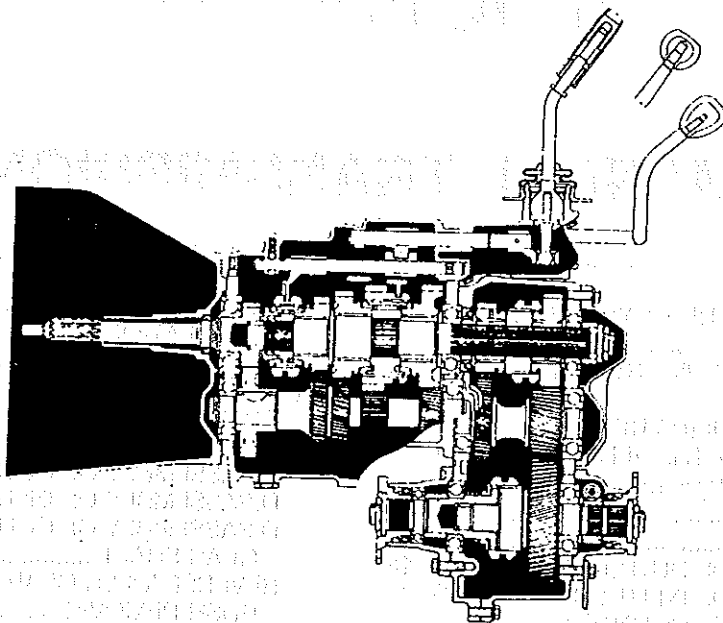
OUTLINES

There are two transmission types, 4VH (4 speeds) and 5VH (5 speeds).

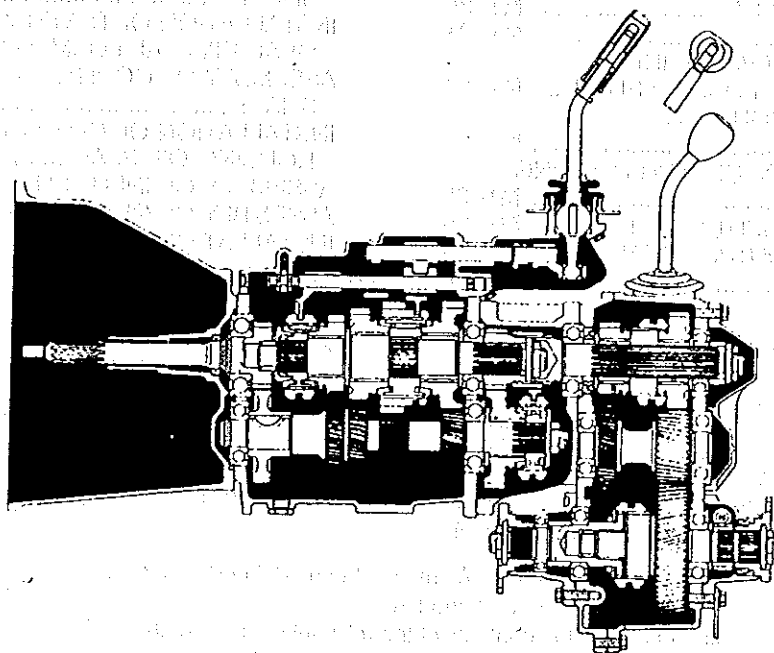
The shift lever incorporating vibration-proof system provides smoother and more quiet steering. The 5VH type is equipped with a mis-shift preventive mechanism to prevent direct shifting from the 5th speed to Reverse.

On the transfer, two rows of front output bearings are mounted to provide operational quietness. Further, the adoption of the transfer delay mechanism enables easier operation.

4VH (Model: F70, F75)



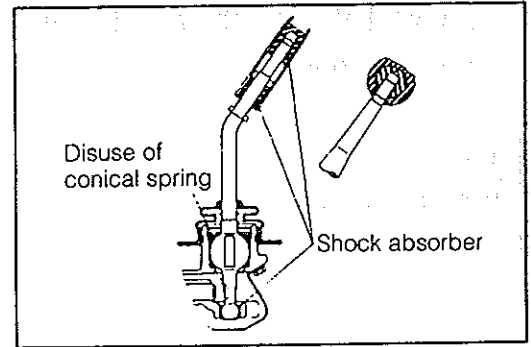
5VH (Model: F70, F75, F77)



SHIFT LEVER & TRANSMISSION SHIFT SYSTEM

SHIFT LEVER

The shift lever is composed of two levers, No. 1 and No. 2, and a shock absorber between them to provide smooth action.

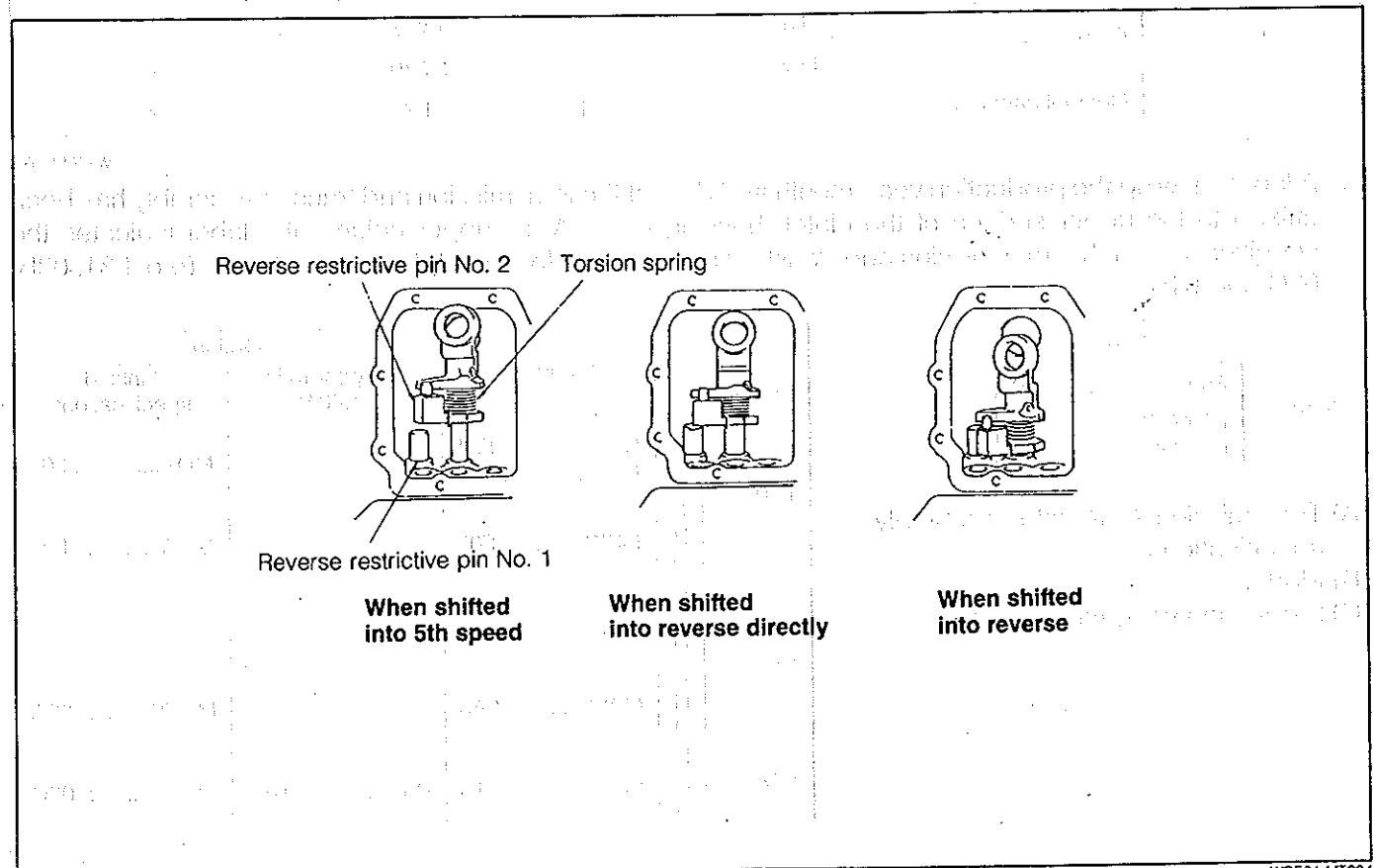


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TRANSMISSION SHIFT SYSTEM

1. 5th-Reverse mis-shift preventive mechanism

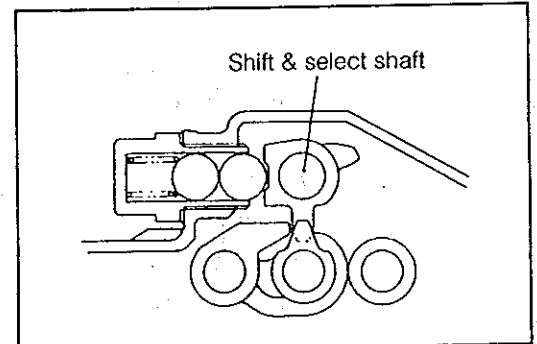
Shifting into the 5th speed causes the torsion spring to turn the reverse restrictive pin No. 2 to hit the pin No. 1, thus making the attempt to move the lever continuously into the Reverse position impossible. This can be released by returning the shift lever once to the neutral, which brings the reverse restrictive pin No. 2 back to the home position. Then, operate the lever to the Reverse.



WRE91-MT004

2. Select-return method

The lock ball method is adopted to stabilize transmission operation.



WRE91-MT005

MANUAL TRANSMISSION

TRANSMISSION & TRANSFER SPECIFICATIONS

1. Specifications

[]: Turbo-charger equipped

Item			Model	F70, F75, F77	
Transmission model				4VH	5VH
Transmission	Type			Constant-mesh type	←
	Gear ratio	1st		3.647	3.647 [3.477]
		2nd		2.136	2.136 [2.037]
		3rd		1.484	1.484 [1.317]
		4th		1.000	←
		5th		—	0.860 [0.820]
	Reverse		4.351	4.351 [4.148]	
Gear oil capacity		L	2.2	2.9	
Transfer	Type			Constant-mesh type	←
	Gear ratio	High		1.297	←
		Low		2.370	←
	Gear oil capacity		L	1.3	←

WRE91-MT006

2. A label showing the production year, month and date of the transmission and transfer assembly has been affixed to the upper surface of the clutch housing case. At its upper column the label indicates the specifications of the transmission and transfer assembly in a form of alphanumeric letters (e.g. F31, 03B, 03C and 01B).

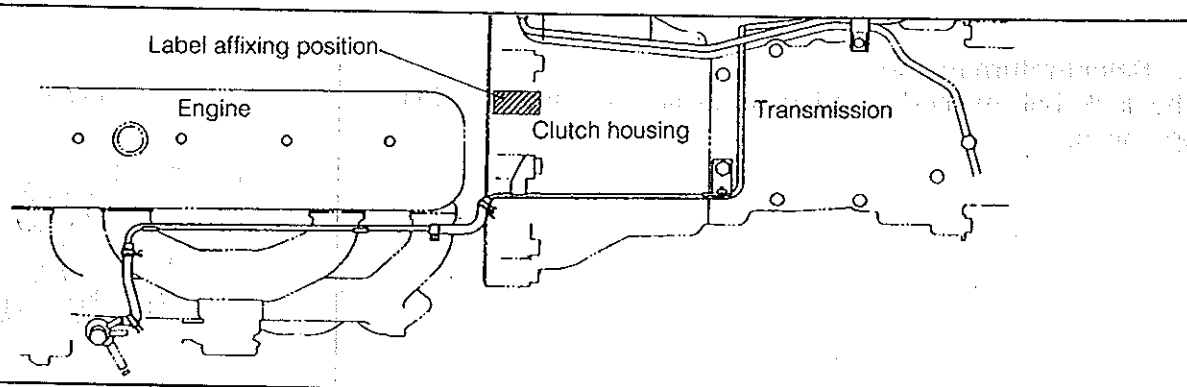
Label

Example

65A		(A)
F70MDW		(B)
07C058		(C)

- (A) Transmission & transfer assembly specifications
(B) Model
(C) Production year, month, date

Model		Standard	Option	
			3rd gear ratio (1.484)	Finland specifications
F70	R H D	R F31 MDT F65		MDT F66
	L H D	MDW F03		MDW F08
F75	R H D			
	L H D	MBHW 3A3		MBHW 08A
F77	R H D	PR 01B	PR 03B	PR 03C

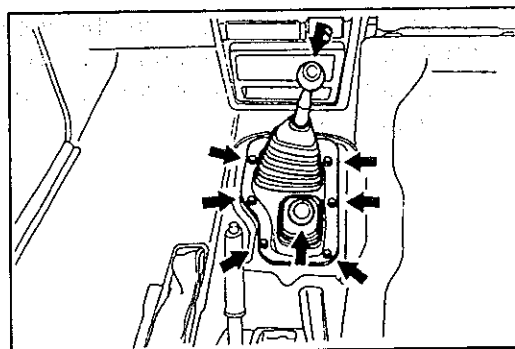


WRE91-MT007

REMOVAL FROM THE VEHICLE

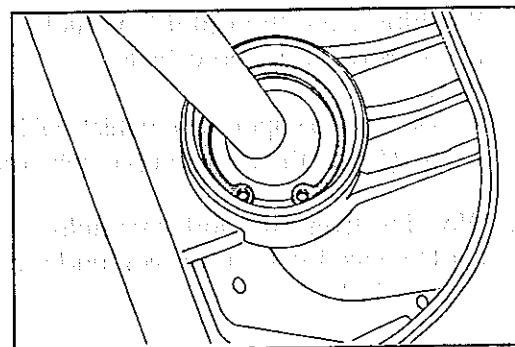
1. Working from the vehicle interior

- (1) Remove the transmission and transfer control lever knobs.
- (2) Remove the console box (Refer BO-section).
- (3) Turn over the floor carpet.
- (4) Remove the shift lever boot by removing the six bolts.
- (5) Shift the transfer control lever in 2H position.



WRE91-MT008

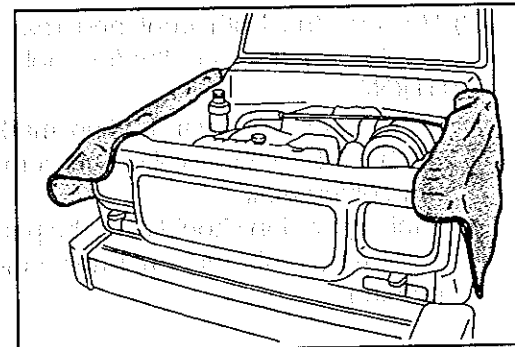
- (6) Remove the transmission control lever by detaching the hole snap ring, using the standard tool of snap ring plier.



WRE91-MT009

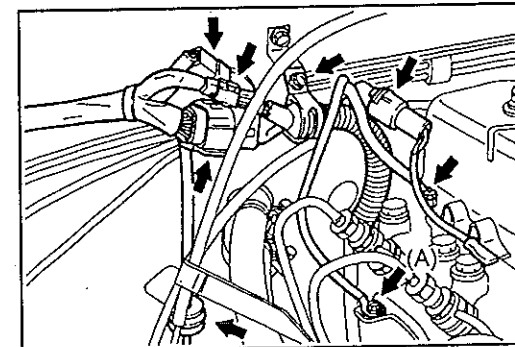
2. Working from the engine compartment room

- (1) Install the fender cover to the fender on both left and right sides so that no scratch may be made.



WRE91-MT010

- (2) Remove the ground earth cable from the negative terminal of the battery.
- (3) Disconnect the atmosphere hose and breather tube on the dash panel clamp.

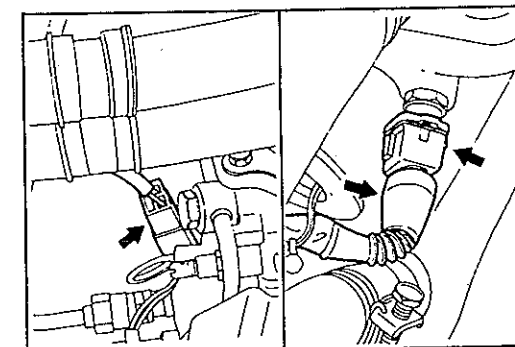


WRE91-MT011

- (4) Remove the bolt on the clamp.
- (5) Remove the earth bolt (A).
- (6) Disconnect the couplers.

WARNING:

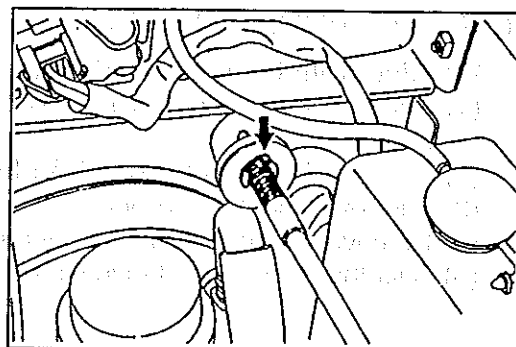
- Be sure to carefully disconnect the couplers because the engine may be still hot while after the engine has stopped.



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MANUAL TRANSMISSION

- (7) Detach the "E" ring from the clutch release cable.
- (8) Detach the vacuum hose clip on the upper side of the clutch housing. (Only for the equipped with power shift vehicles)



WRE91-MT013

3. Working from the outside vehicle

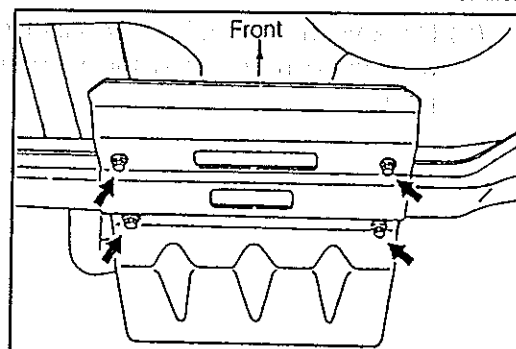
- (1) Jack or lift up the vehicle.

NOTE:

- Be sure to support the vehicle with safety stands securely. (As for the jacking up points, refer GI-section.)

4. Working from the under vehicle

- (1) Remove the transmission under cover by removing the four bolts.

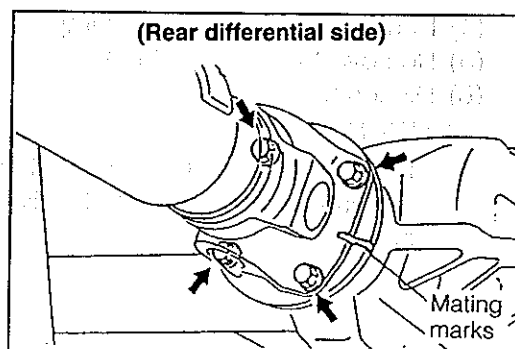
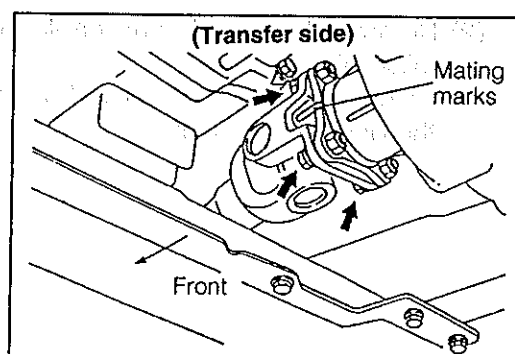
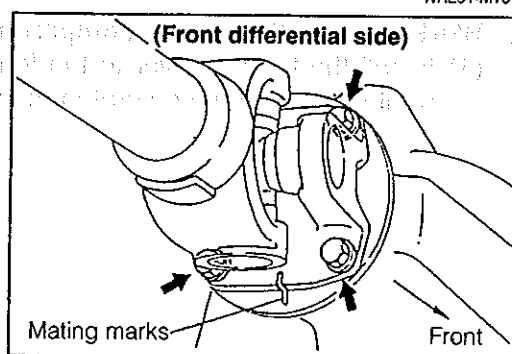


WRE91-MT014

- (2) Remove the both front and rear propeller shafts assembly by removing the four bolts.

CAUTION:

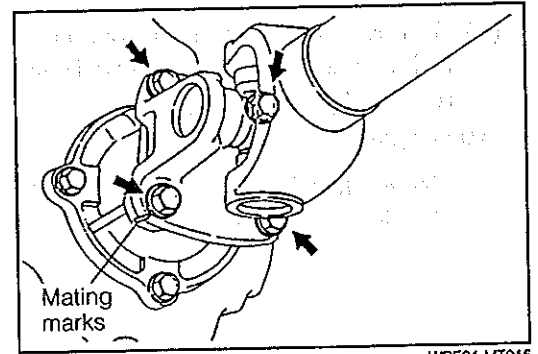
- Prior to the removal, mating marks should be put on each of the flange yoke and companion flange of the front differential.
- If this operation should fail to be performed, the propeller shaft may emit abnormal noise or vibration during the running.



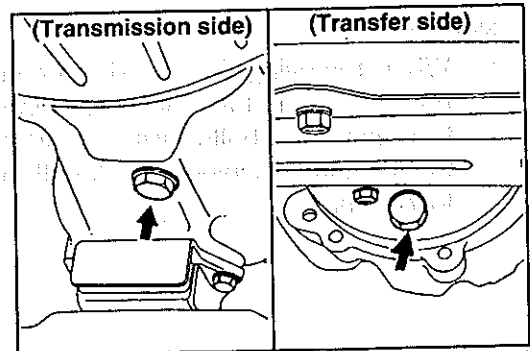
- (3) Drain the transmission and transfer oil by removing the drain plugs with gasket.

NOTE:

- Never reuse the removed gasket.
- After drain the oil completely, temporarily tighten the drain plugs with your fingers.



WRE91-MT015

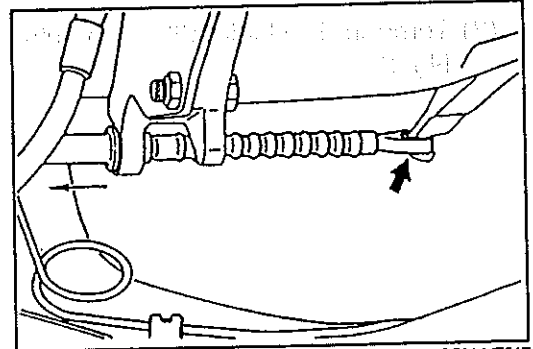


WRE91-MT016

- (4) Disconnect the clutch release cable assembly from the clutch release fork assembly at the lower part of the clutch housing.

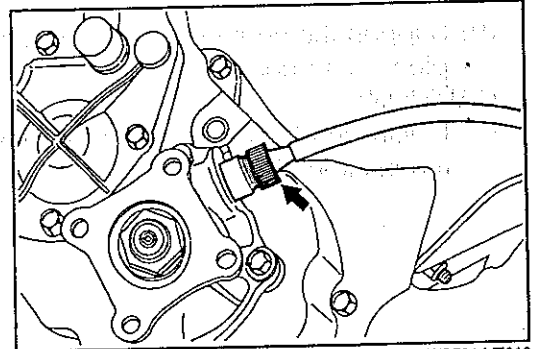
NOTE:

- While removing the clutch release cable assembly, care must be exercised not to damage the boot section of the clutch release cable assembly.



WRE91-MT017

- (5) Remove the speedometer cable, using the standard tool of plier.

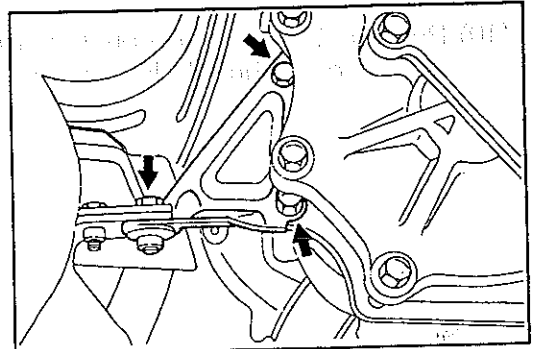


WRE91-MT018

- (6) Remove exhaust support pipe bracket by removing the three bolts.

WARNING:

- Be sure to not touch the exhaust pipe because it may be still hot while after the engine has stopped.



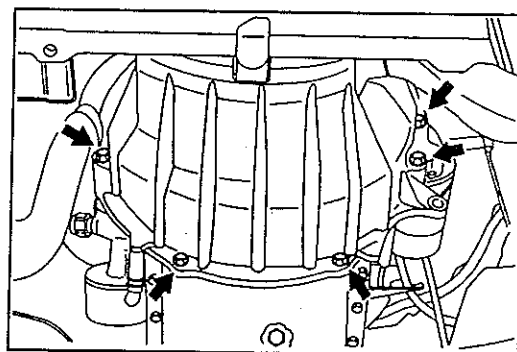
WRE91-MT019

MANUAL TRANSMISSION

- (7) Remove the seven transmission direct-connecting bolts. Also, remove the two bolts and two nuts of the rear end plate.

WARNING:

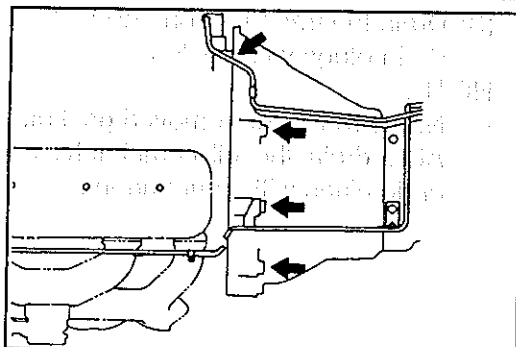
- Never touch the exhaust pipe because it may be still hot for a while after the engine stopped.



WRE91-MT020

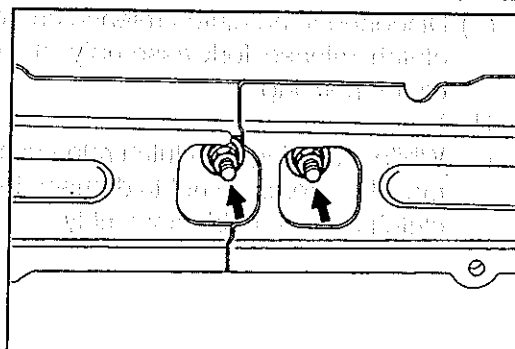
NOTE:

- When removing the five direct-connecting bolts at the upper section of the clutch housing, it is recommended to remove the bolts, using standard extension bars or the like that are joined to a length of approximately 650 to 700 mm.



WRE91-MT021

- (8) Temporarily slacken the two nuts at the cross member No. 2.

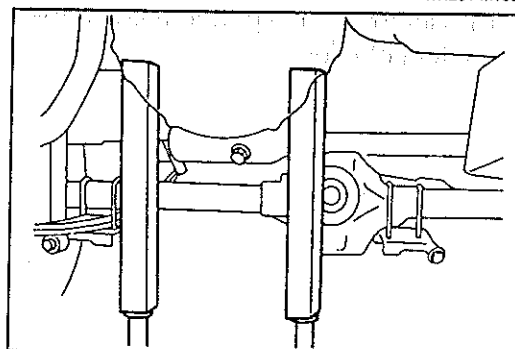


WRE91-MT022

- (9) Support the engine, using a jack, with suitable wooden pieces interposed.

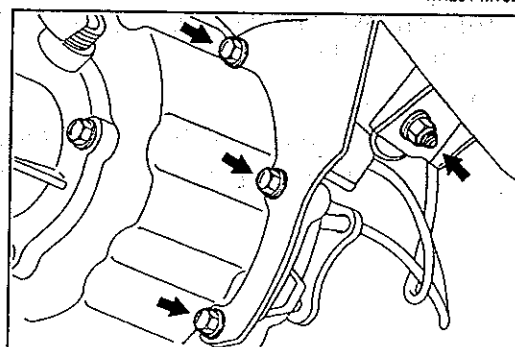
CAUTION:

- Failure to observe this caution may deform the engine mounting rubber.



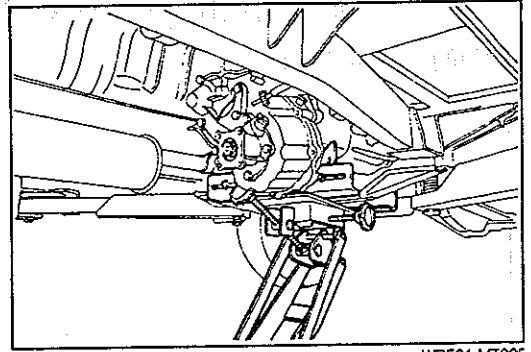
WRE91-MT023

- (10) Remove the transmission rear mounting bracket by removing the three bolts and nut.



WRE91-MT024

- (11) Support the transmission and transfer Ay with the suitable transmission jack or the like.
- (12) Remove the both left and right sides of the four bolts at the crossmember No. 2.
- (13) Remove the transmission and transfer Ay from the vehicle with installed the crossmember No. 2.

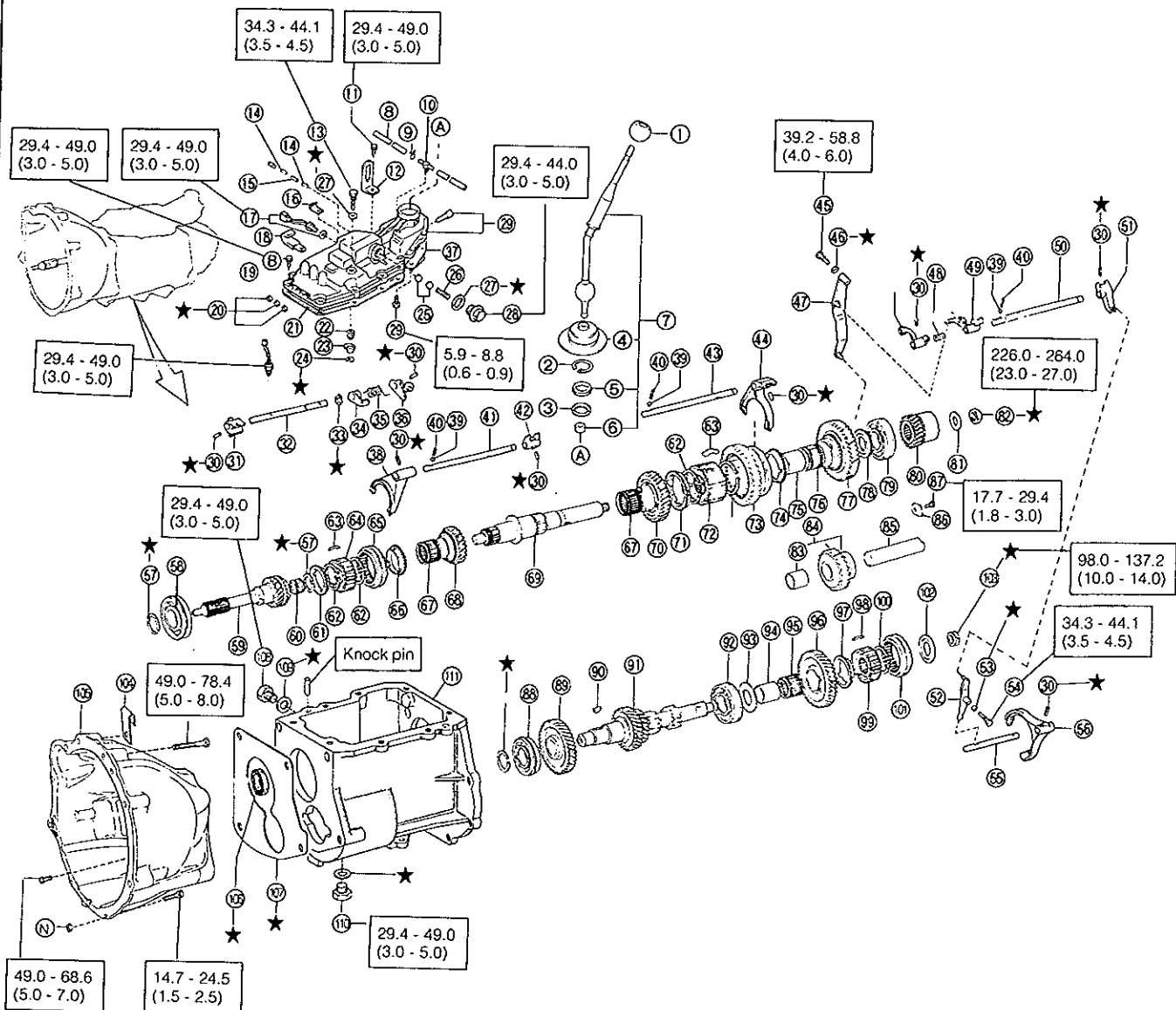


WRE91-MT025

MANUAL TRANSMISSION

TRANSMISSION (5-Speed) COMPONENTS

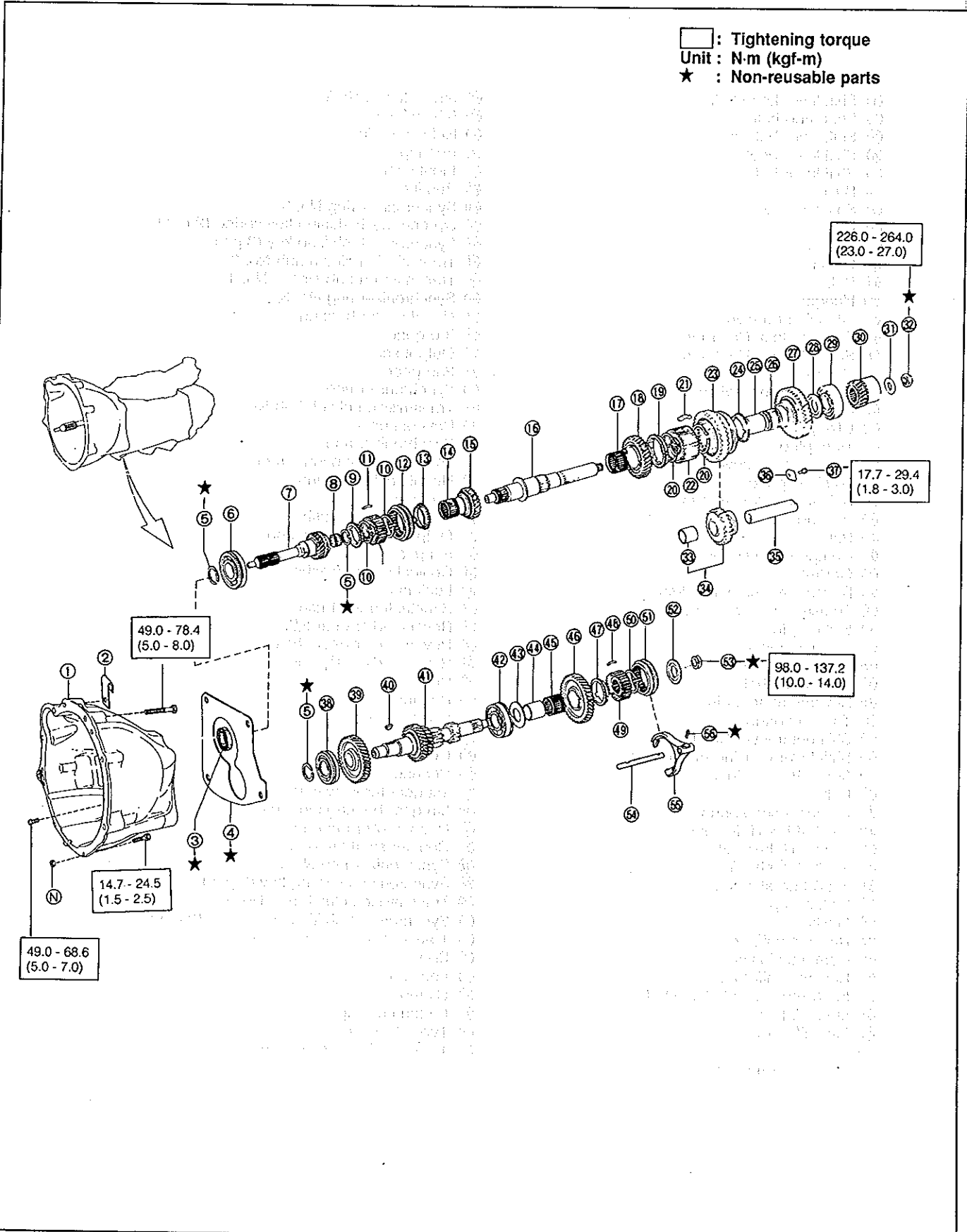
 : Tightening torque
 Unit : N·m (kgf·m)
 ★ : Non-reusable parts



- ① Shift lever knob S/A
- ② Snap ring hole
- ③ Shift lever ball seat
- ④ Shift lever boots
- ⑤ Shift lever ball seat
- ⑥ Bush
- ⑦ Shift lever Ay
- ⑧ Hose
- ⑨ Clamp
- ⑩ Union
- ⑪ Bolt
- ⑫ Hanger
- ⑬ 5th shift arm pivot
- ⑭ Shift interlock No. 1 pin
- ⑮ Shift interlock No. 2 pin
- ⑯ Clamp
- ⑰ Back-up lamp switch
- ⑱ Clamp
- ⑲ Clamp
- ⑳ Tight plug
- ㉑ Mission case cover gasket
- ㉒ Torsion spring
- ㉓ Shift fork lock plate S/A
- ㉔ "E"-ring
- ㉕ Ball
- ㉖ Compression spring
- ㉗ Gasket
- ㉘ Reverse restrict pin holder
- ㉙ Transmission case cover
- ㉚ Slotted pin
- ㉛ Shift inner lever
- ㉜ Shift lever shaft
- ㉝ Snap ring shaft
- ㉞ Reverse restrict pin
- ㉟ Torsion spring
- ㊱ Shift outer lever No. 1
- ㊲ Shift lever housing dust cover
- ㊳ 3rd & 4th shift fork
- ㊴ Ball
- ㊵ Compression spring
- ㊶ 3rd & 4th shift fork shaft
- ㊷ Gear shift head No. 2
- ㊸ 1st & 2nd shift fork shaft
- ㊹ 1st & 2nd shift fork
- ㊺ Shift arm pivot
- ㊻ Gasket
- ㊼ Reverse shift arm
- ㊽ Compression spring
- ㊾ Reverse shift fork
- ㊿ 5th & reverse shift fork shaft
- 1 5th shift head
- 2 5th shift arm
- 3 Gasket
- 4 5th shift arm pivot
- 5 5th shift arm shaft
- 6 5th shift fork
- 7 Hole snap ring
- 8 Bearing
- 9 Input shaft
- 10 Bearing
- 11 Synchronizer ring No. 3
- 12 Synchromesh shifting key spring (2 pcs)
- 13 Synchromesh shifting key (3 pcs)
- 14 Transmission clutch hub No. 2
- 15 Transmission hub sleeve No. 1
- 16 Synchronizer ring No. 3
- 17 Needle roller bearing
- 18 3rd gear
- 19 Output shaft
- 20 2nd gear
- 21 Synchronizer ring
- 22 Transmission clutch hub No. 1
- 23 Reverse gear
- 24 Synchronizer ring
- 25 1st gear bearing inner race
- 26 Needle roller bearing
- 27 1st gear
- 28 1st gear thrust washer
- 29 Output shaft rear bearing
- 30 5th gear
- 31 Conical spring washer
- 32 Lock nut
- 33 Bimetal formed bush
- 34 Reverse idler gear S/A
- 35 Reverse idler gear shaft
- 36 Reverse idler stopper
- 37 Bolt
- 38 Bearing
- 39 Counter gear
- 40 Woodruff key
- 41 Counter gear shaft
- 42 Bearing
- 43 1st gear thrust washer
- 44 5th gear bearing inner race
- 45 Needle roller bearing
- 46 Counter shaft 5th gear
- 47 Synchronizer ring No. 3
- 48 Synchromesh shifting key (3 pcs)
- 49 Transmission clutch hub No. 2
- 50 Synchromesh shifting key spring (2 pcs)
- 51 Transmission hub sleeve No. 1
- 52 Spacer
- 53 Lock nut
- 54 Clamp
- 55 Clutch housing
- 56 Type "S" oil seal
- 57 Transmission case gasket

MANUAL TRANSMISSION

COMPONENTS OF INPUT SHAFT & COUNTER GEAR SHAFT RELATED PARTS (5-Speed)



- ① Clutch housing
- ② Clamp
- ③ Type "S" oil seal
- ④ Transmission case gasket
- ⑤ Snap ring hole
- ⑥ Bearing
- ⑦ Input shaft
- ⑧ Needle roller bearing
- ⑨ Synchronizer ring No. 3
- ⑩ Synchromesh shifting key spring (2 pcs)
- ⑪ Synchromesh shifting key (3 pcs)
- ⑫ Transmission hub sleeve No. 1
- ⑬ Synchronizer ring No. 3
- ⑭ Needle roller bearing
- ⑮ 3rd gear
- ⑯ Output shaft
- ⑰ Needle roller bearing
- ⑱ 2nd gear
- ⑲ Synchronizer ring
- ⑳ Synchromesh shifting key spring (2 pcs)
- ㉑ Synchromesh shifting key (3 pcs)
- ㉒ Transmission clutch hub No. 1
- ㉓ Reverse gear
- ㉔ Synchronizer ring
- ㉕ 1st gear bearing inner race
- ㉖ Needle roller bearing
- ㉗ 1st gear
- ㉘ 1st gear thrust washer

- ㉙ Output shaft rear bearing
- ㉚ 5th gear
- ㉛ Conical spring washer
- ㉜ Lock nut
- ㉝ Bimetal formed bush
- ㉞ Reverse idler gear S/A
- ㉟ Reverse idler gear shaft
- ㊱ Reverse idler stopper
- ㊲ Bolt
- ㊳ Bearing
- ㊴ Counter gear
- ㊵ Woodruff key
- ㊶ Counter gear shaft
- ㊷ Bearing
- ㊸ 1st gear thrust washer
- ㊹ 5th gear bearing inner race
- ㊺ Needle roller bearing
- ㊻ Counter shaft 5th gear
- ㊼ Synchronizer ring No. 3
- ㊽ Synchromesh shifting key (3 pcs)
- ㊾ Transmission clutch hub No. 2
- ㊿ Synchromesh shifting key spring (1 piece)
- 1 Transmission hub sleeve No. 1
- 2 Spacer
- 3 Lock nut
- 4 5th shift arm shaft
- 5 5th shift fork
- 6 Slotted pin

MANUAL TRANSMISSION

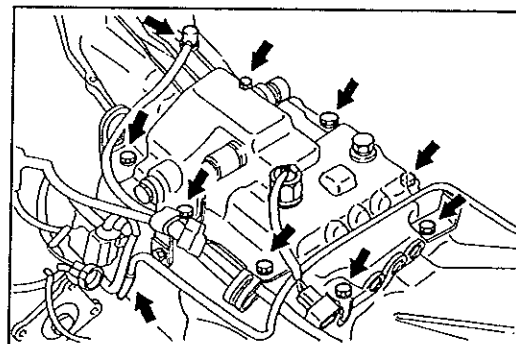
REMOVAL

1. Remove the clutch related parts.
(Refer CL-section.)
2. Separate the bleether hose and atmosphere tube.
3. Remove the transmission case cover by removing the eight bolts.
4. Remove the mission case cover gasket, using the standard tool of scraper.

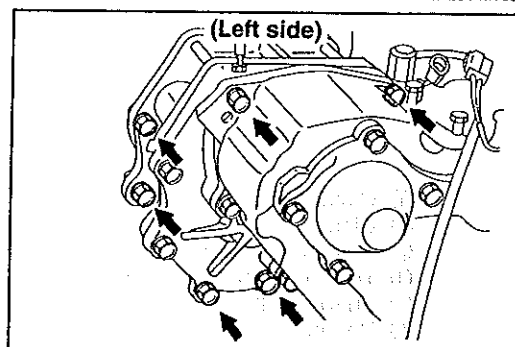
NOTE:

- Never reuse the removed gasket.

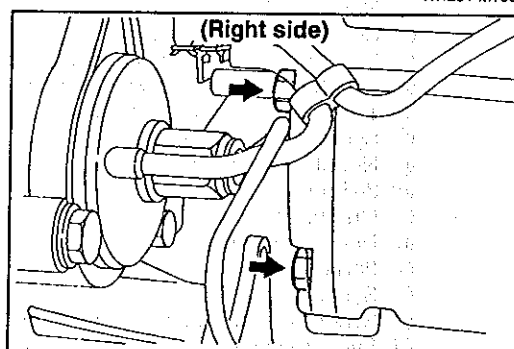
5. Remove the eight bolts at the transfer connecting to the transmission case assembly.



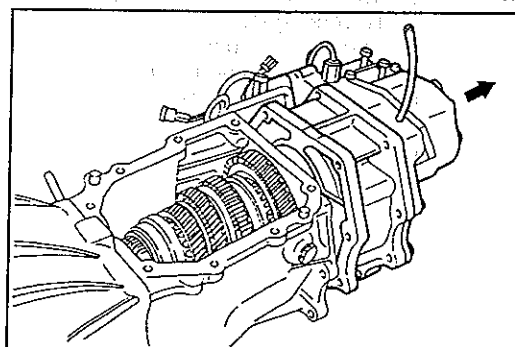
WRE91-MT030



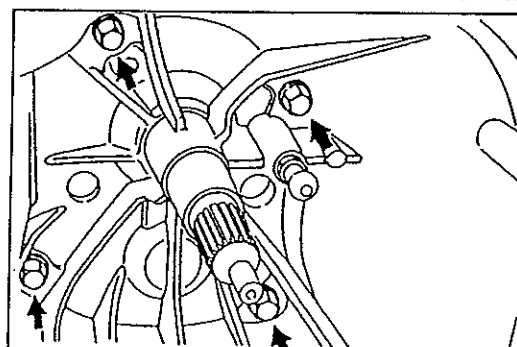
WRE91-MT031



WRE91-MT032



WRE91-MT033



WRE91-MT034

8. Remove the clutch housing case by removing the four bolts.
9. Remove the transmission gasket, using the standard tool of scraper.

NOTE:

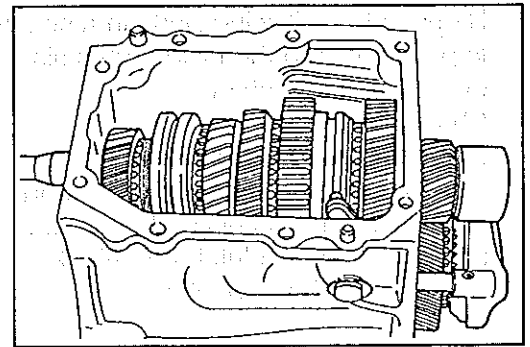
- Never reuse the removed gasket.

10. Make sure to measure and record the observed backlash and thrust clearance of the each gears for later reference at time of installation, prior to remove the gears.

(1) Backlash (use a dial gauge)

Unit: mm

	1st	2nd	3rd	4th	5th
Specified value	0.06 – 0.20	0.06 – 0.20	0.06 – 0.20	0.06 – 0.20	0.06 – 0.20
Allowable limit	0.25	0.25	0.25	0.25	0.25



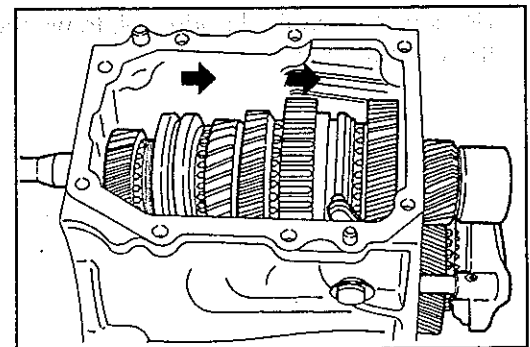
WRE91-MT035

(2) Thrust clearance (use the filler gauge)

Unit: mm

	1st	2nd	3rd	5th
Specified value	0.11 – 0.29	0.10 – 0.30	0.13 – 0.57	0.12 – 0.28
Allowable limit	0.35	0.35	0.6	0.35

11. Interlock the 1st and 3rd gears.



WRE91-MT036

12. Remove the transfer case front gasket.

NOTE:

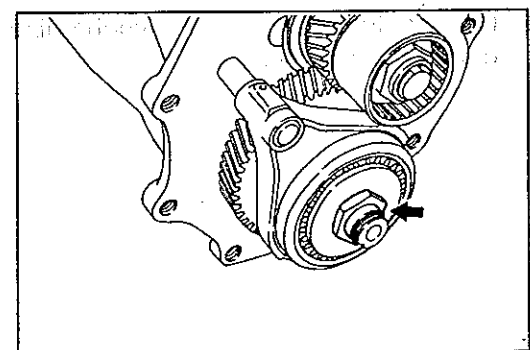
- Never reuse the removed gasket.

13. Raise the lock section of the lock nut.

14. Remove the lock nut of the counter gear shaft.

NOTE:

- Never reuse the removed lock nut.

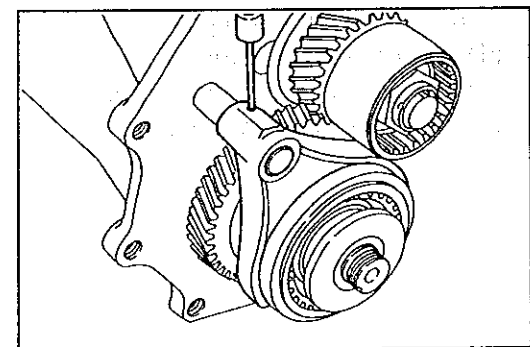


WRE91-MT037

15. Drive off the slotted pin of the 5th shift fork.

NOTE:

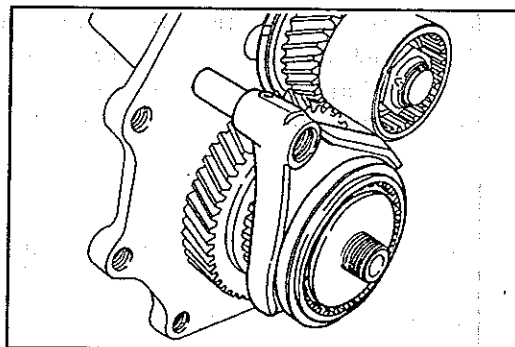
- Never reuse the removed slotted pin.



WRE91-MT038

MANUAL TRANSMISSION

16. Remove the following parts in a set, while the 5th shift arm is pulled toward the inside transmission.
- (1) 5th shift arm shaft
 - (2) 5th shift fork
 - (3) Transmission hub sleeve No. 1
 - (4) Synchromesh shifting key spring 1 piece
 - (5) Synchromesh shifting key 3 pcs
 - (6) Transmission clutch hub No. 2
 - (7) 1st gear thrust washer

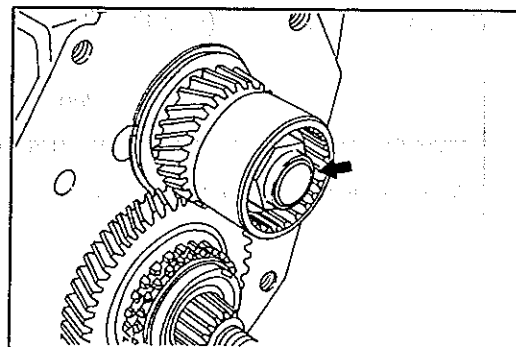


WRE91-MT039

17. Raise the lock section of the lock nut.
18. Remove the lock nut of the output shaft.

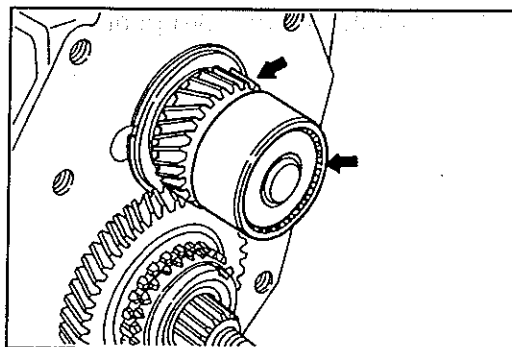
NOTE:

- Never reuse the removed lock nut.



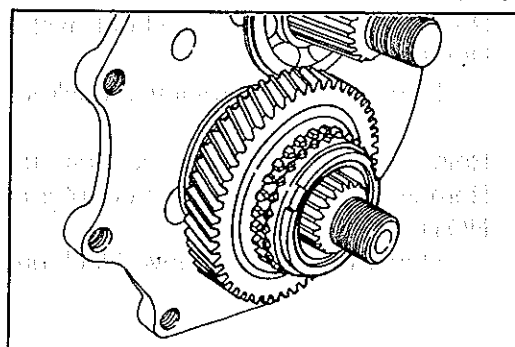
WRE91-MT040

19. Remove the conical spring plate washer and 5th gear from the output shaft.



WRE91-MT041

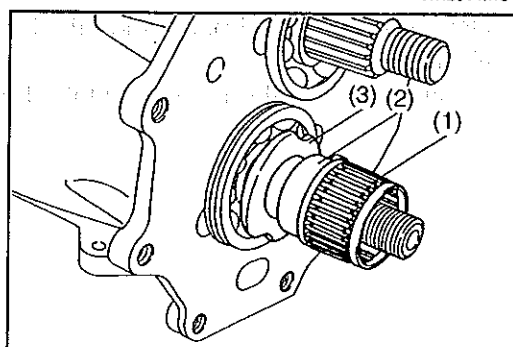
20. Remove the 5th gear and synchronizer ring NO. 3 from the counter gear shaft.



WRE91-MT042

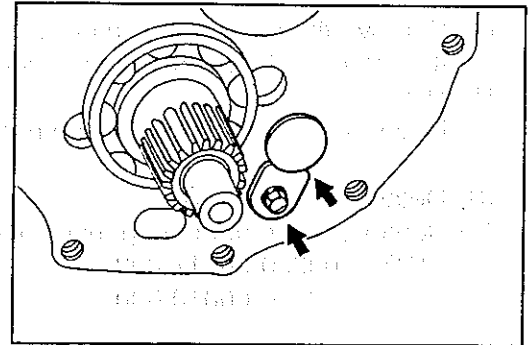
21. Remove the following parts.

- (1) Needle roller bearing
- (2) 5th gear bearing inner race
- (3) 5th gear thrust washer



WRE91-MT043

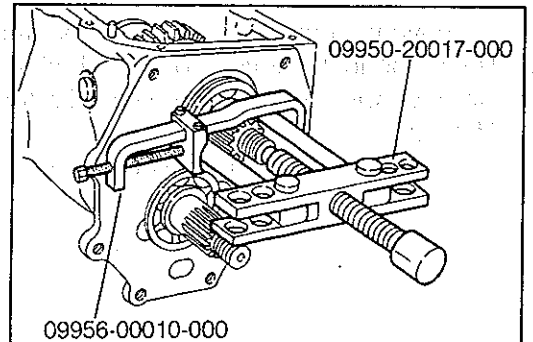
22. Remove the reverse idler gear stopper by removing a bolt.
23. Pull-out the reverse idler gear shaft toward you.



WRE91-MT044

24. Detach the stop ring of the output shaft rear bearing.
25. Remove the output shaft rear bearing, using the following SSTs.

SSTs: 09950-20017-000
09956-00010-000



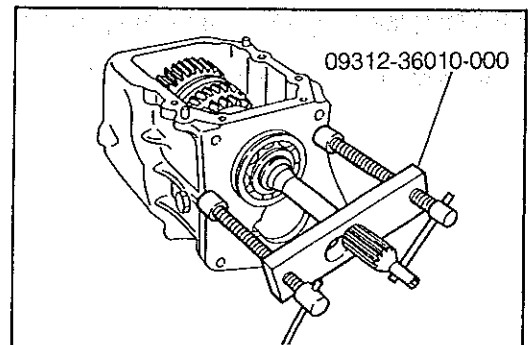
WRE91-MT045

26. Remove the input shaft with the snap ring shaft and bearing installed, using the following SST.

SST: 09312-36010-000

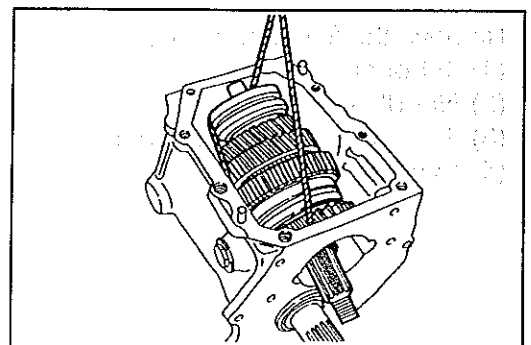
NOTE:

- Ensure that the input shaft gear cut-out section faces toward the bottom side of transmission case, prior to remove.



WRE91-MT046

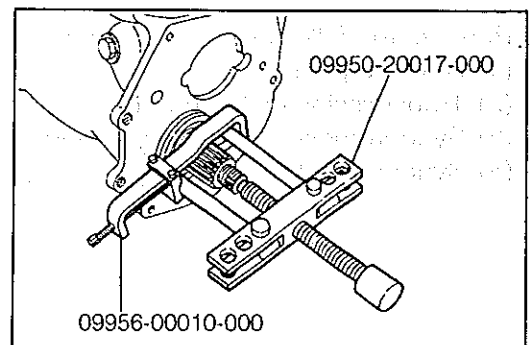
27. Using an operation rope (outer diameter about 3 mm), remove the output shaft assembly from the transmission case.



WRE91-MT047

28. Remove the reverse idler gear S/A from the transmission case.
29. Counter gear shaft bearings removal.
(1) Remove the rear bearing, using the following SSTs.

SSTs: 09950-20017-000
09956-00010-000



WRE91-MT048

MANUAL TRANSMISSION

- (2) Remove the snap ring shaft of the front bearing, using the standard tool of snap ring plier.

NOTE:

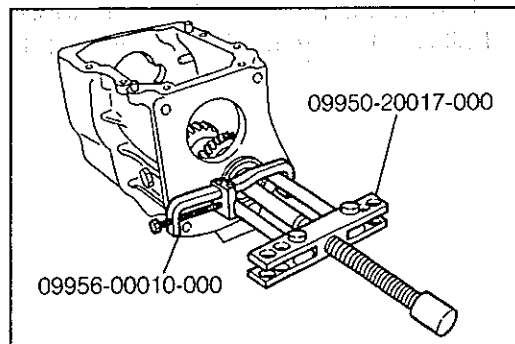
- Never reuse the removed snap ring shaft.

- (3) Detach the stop ring.

- (4) Remove the front bearing, using the following SSTs.

SSTs: 09950-20017-000

09956-00010-000

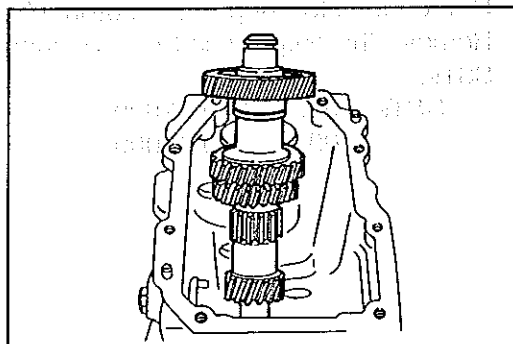


WRE91-MT049

30. Remove the counter gear shaft from the transmission case.
 31. Raise the lock sections of the 5th shift arm pivot.
 32. Remove the 5th shift arm pivot with the gasket.

NOTE:

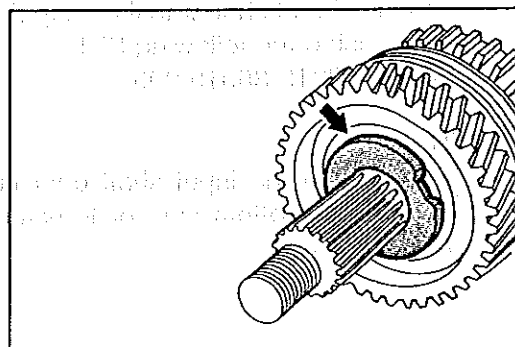
- Never reuse the removed gasket.



WRE91-MT050

DISASSEMBLY OF OUTPUT SHAFT

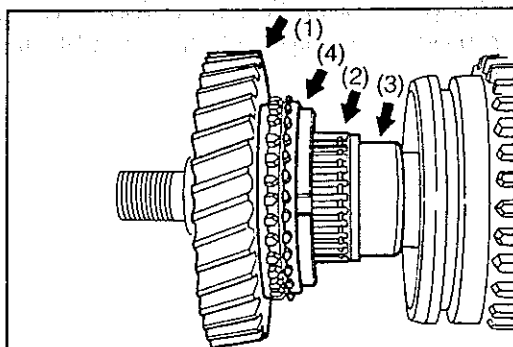
1. Remove the 1st gear thrust washer.



WRE91-MT051

2. Remove the following parts.

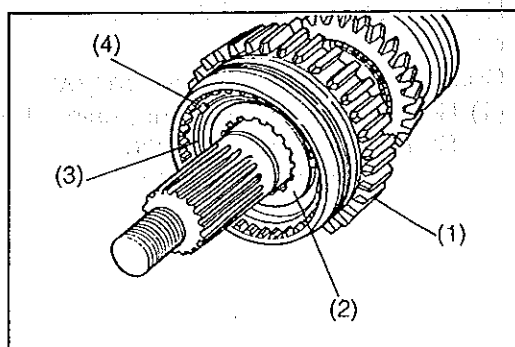
- (1) 1st gear
- (2) Needle roller bearing
- (3) 1st gear bearing inner race
- (4) Synchronizer ring



WRE91-MT052

3. Remove the following parts in a set.

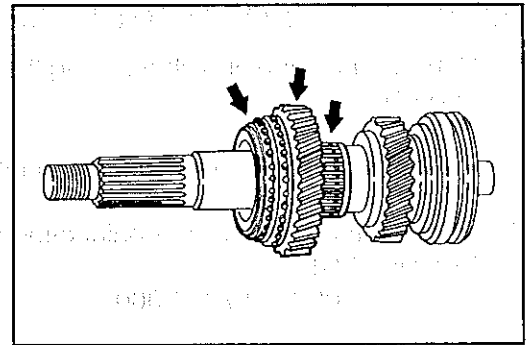
- (1) Reverse gear
- (2) Transmission clutch hub No. 1
- (3) Synchromesh shifting key spring 2 pcs
- (4) Synchromesh shifting key 3 pcs



WRE91-MT053

MANUAL TRANSMISSION

4. Remove the synchronizer ring.
5. Remove the 2nd gear.
6. Remove the needle roller bearing.

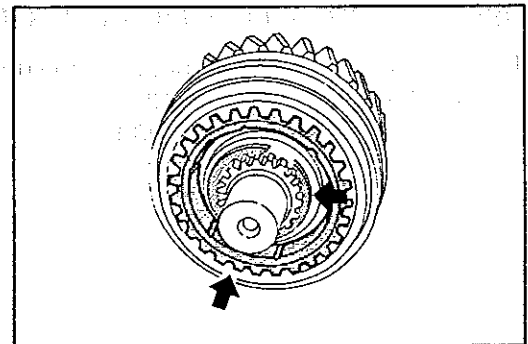


WRE91-MT054

7. Remove the synchronizer ring and the snap ring shaft, using the standard tool of snap ring plier.

NOTE:

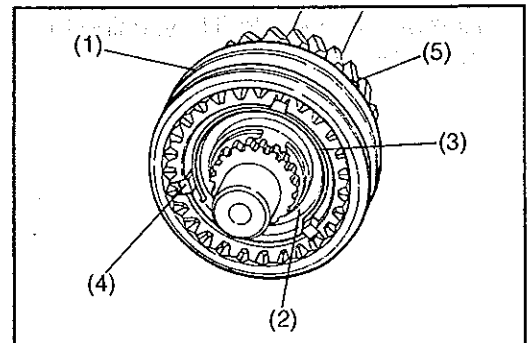
- Never reuse the removed snap ring shaft.



WRE91-MT055

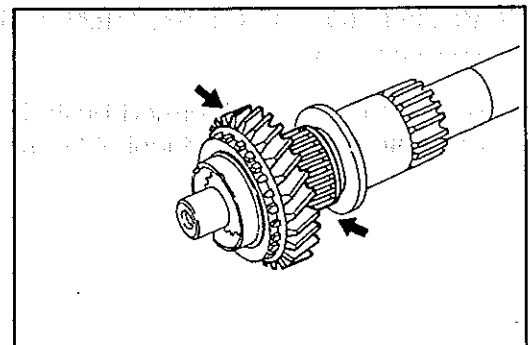
8. Remove the following parts in a set.

(1) Transmission hub sleeve No. 1	
(2) Transmission clutch hub No. 2	
(3) Synchromesh shifting key spring	2 pcs
(4) Synchromesh shifting key	3 pcs
(5) Synchronizer ring	



WRE91-MT056

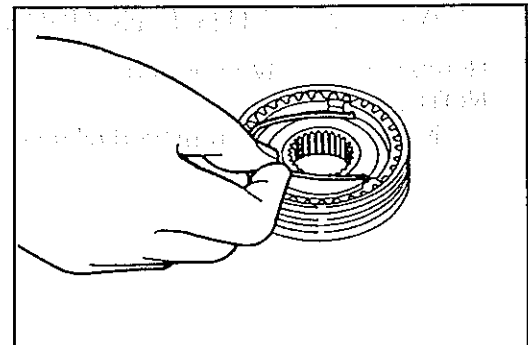
9. Remove the 3rd gear.
10. Remove the needle roller bearing.



WRE91-MT057

11. Remove the synchromesh shifting key spring and synchromesh shifting key from the following parts.

- | | |
|--------------------------|---------------------|
| (1) T/M clutch hub No. 1 | 1st & 2nd gear |
| (2) T/M clutch hub No. 2 | 3rd, 4th & 5th gear |



WRE91-MT058

MANUAL TRANSMISSION

DISASSEMBLY OF INPUT SHAFT

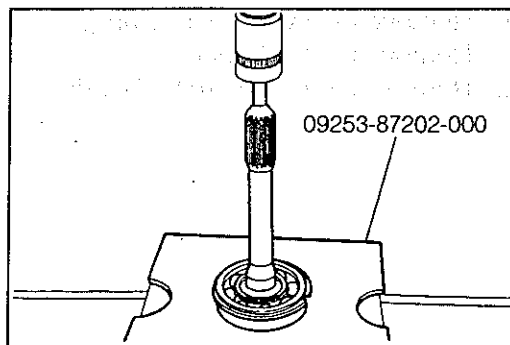
1. Remove the snap ring shaft, using the standard tool of snap ring plier.

NOTE:

- Never reuse the removed snap ring shaft.

2. Remove the bearing, in conjunction with a press and the following SST.

SST: 09253-87202-000

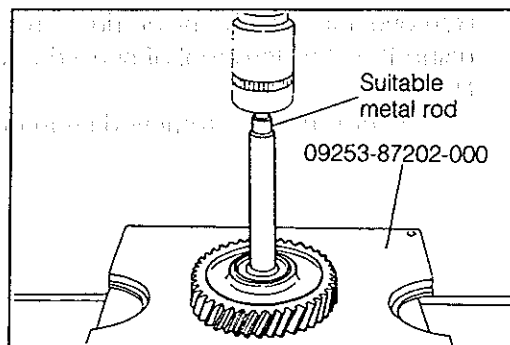


WRE91-MT059

DISASSEMBLY OF COUNTER GEAR SHAFT

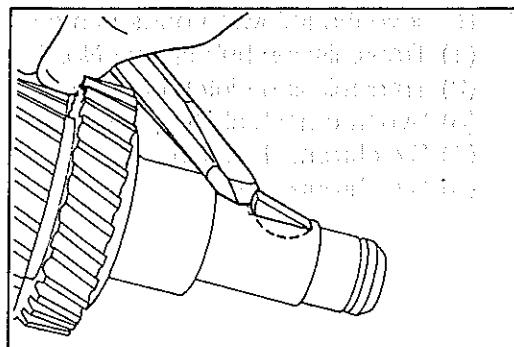
1. Press the counter gear shaft, in conjunction with the suitable metal rod and following SST.

SST: 09253-87202-000



WRE91-MT060

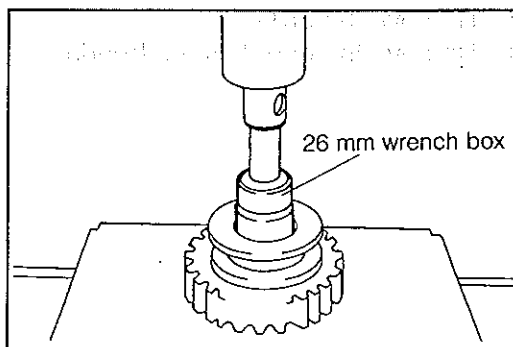
2. Remove the woodruff key, using the standard tool of chisel or the like.



WRE91-MT061

REVERSE IDLER GEAR BIMETAL FORMED BUSH REMOVAL

1. Remove the bimetal formed bush, in conjunction with the press and the standard tool of 26 mm wrench box.



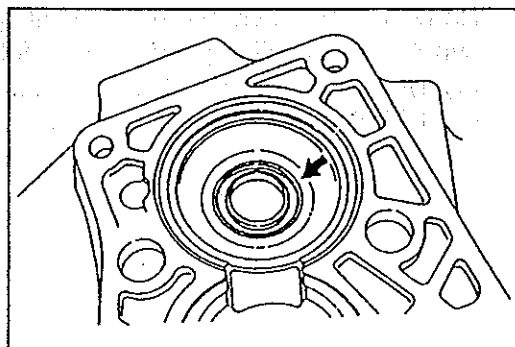
WRE91-MT062

REMOVAL OF CLUTCH HOUSING OIL SEAL

1. Remove the "S" type oil seal.

NOTE:

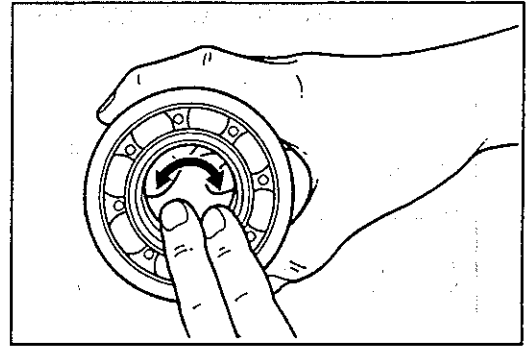
- Never reuse the removed oil seal.



WRE91-MT063

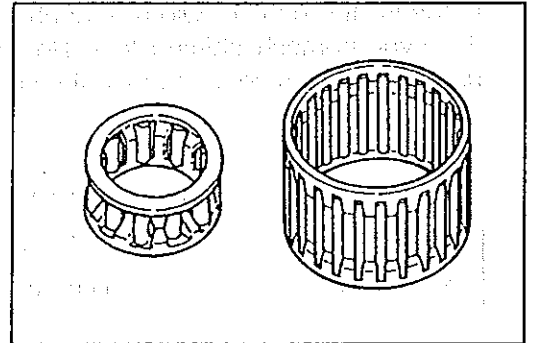
INSPECTION

1. Each ball bearings.
Rotate the bearing inner race by applying a force with your finger. Check to see if the bearing inner race rotates smoothly without any sticking.



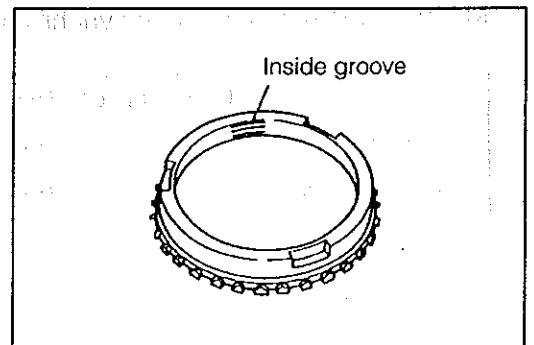
WRE91-MT064

2. Each needle roller bearings.
Check each needle roller bearing for wear or damage.



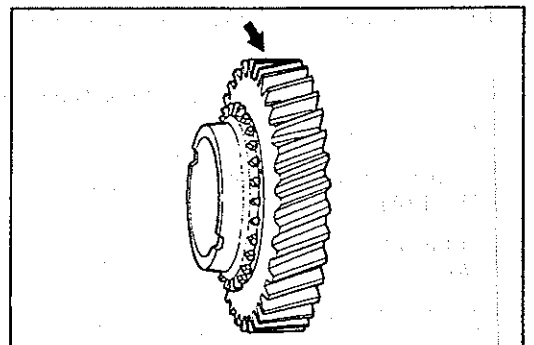
WRE91-MT065

3. Check the inside groove of the synchronizer ring for wear or damage.



WRE91-MT066

4. Check each gears for wear or damage.



WRE91-MT067

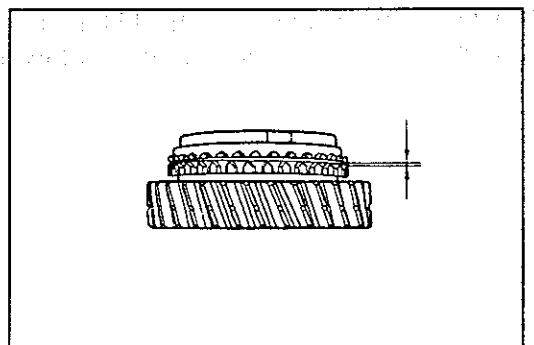
5. Measure the clearance between each gear and the synchronizer rings, using the standard tool of filler gauge.

Unit: mm

Item	Specified value	Allowable limit
All gears	1.3 - 1.7	0.8

NOTE:

- The measurement should be performed at several points for each gears. The minimum value is regarded as the clearance for the said gear.



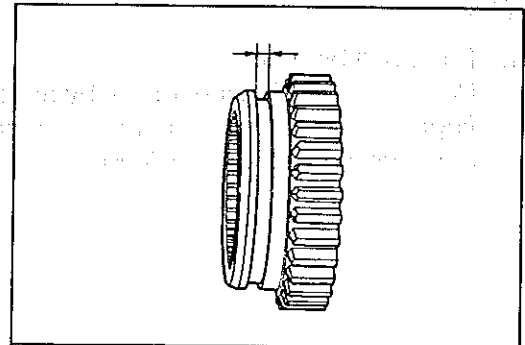
WRE91-MT068

MANUAL TRANSMISSION

6. Measure the contact width (A) of the following parts with the shift fork.

Unit: mm

Measuring point	Item	Specified value	Allowable limit
Reverse gear		$7^{+0}_{-0.058}$	7.3
Transmission hub sleeve No. 1, No. 2		$7^{+0}_{-0.058}$	7.3

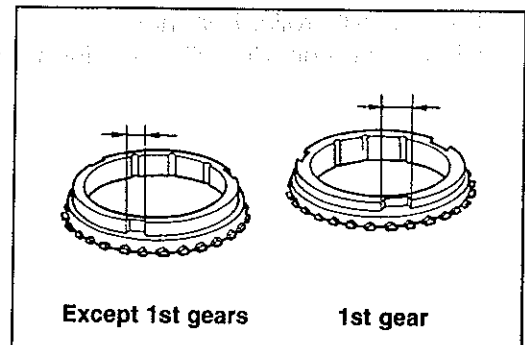


WRE91-MT069

7. Measure the contact width of each synchronizer ring with the synchromesh shifting key. Replace the synchronizer ring which does not confirm to the specifications with new one.

Unit: mm

Item	Specified value	Allowable limit
1st gear	8.4 ± 0.1	8.5
Except 1st gear	11.0 ± 0.1	11.1

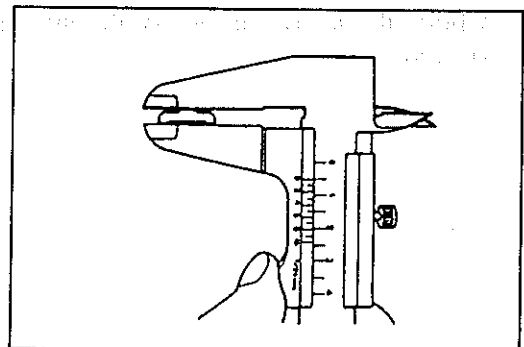


WRE91-MT070

8. Measure the height of each synchromesh shifting key.

Unit: mm

Item	Specified value	Allowable limit
1st and 2nd	6 ± 0.15	5.6
3rd, 4th and 5th	5.8 ± 0.15	5.4

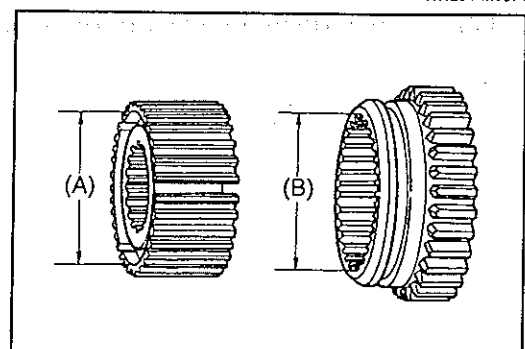


WRE91-MT071

9. Measure the bore and outer diameter of the following parts.

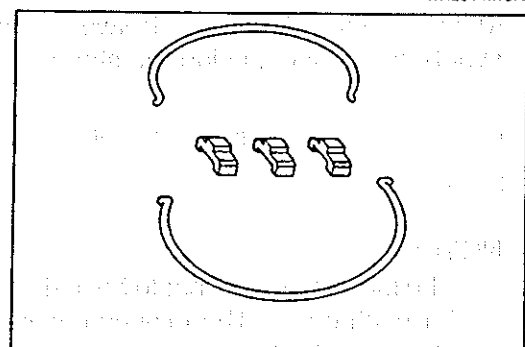
Unit: mm

Item	Specified value	Allowable limit
Reverse gear (B)	$87.5^{+0.038}_{-0.073}$	87.5
Transmission clutch hub No. 1 (A)	$87.5^{+0.120}_{-0.155}$	87.3
Transmission hub sleeve No. 1 (B)	$72.5^{+0}_{-0.2}$	72.7
Transmission clutch hub No. 2 (A)	$72.5^{+0.10}_{-0.17}$	72.3



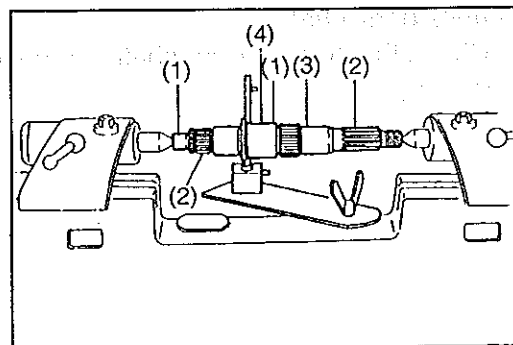
WRE91-MT072

10. Check the synchromesh shifting key and synchromesh shifting key spring for evidence of wear or damage.



WRE91-MT073

11. Check the output shaft for the following items.
- (1) Needle roller bearing race section for wear or damage
 - (2) Spline section for damage
 - (3) Fitting section of bearing inner race for wear
 - (4) Measure the runout of the output shaft at the 2nd gear section
- Allowable Limit: 0.05 mm

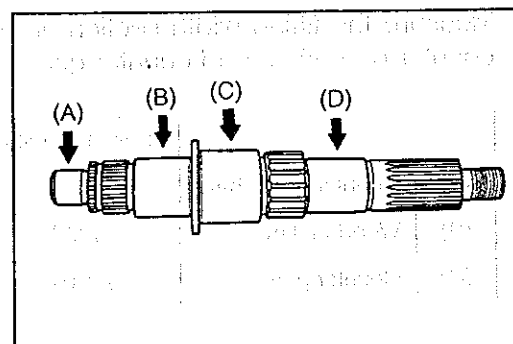


WRE91-MT074

12. Measure the following section of the output shaft.

Unit: mm

Measuring point	Item	Specified value	Allowable limit
(A) Section		23.0 $\begin{smallmatrix} -0.007 \\ -0.020 \end{smallmatrix}$	22.98
(B) Section		40.0 $\begin{smallmatrix} -0.015 \\ -0.030 \end{smallmatrix}$	39.97
(C) Section		48.0 $\begin{smallmatrix} -0.015 \\ -0.030 \end{smallmatrix}$	47.97
(D) Section		38.0 $\begin{smallmatrix} -0.005 \\ -0.021 \end{smallmatrix}$	37.98

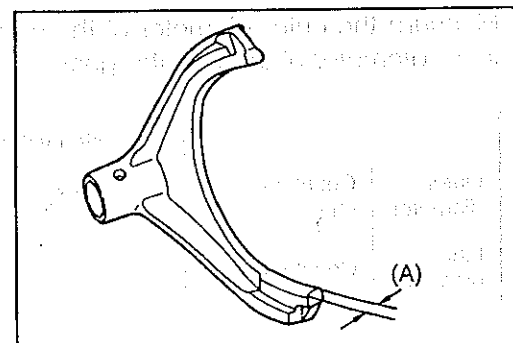


WRE91-MT075

13. Measure the contact width 5th shift fork (A) with the transmission hub sleeve No. 1.

Unit: mm

Measuring point	Item	Specified value	Allowable limit
(A) Section		7 $\begin{smallmatrix} -0.1 \\ -0.2 \end{smallmatrix}$	6.3

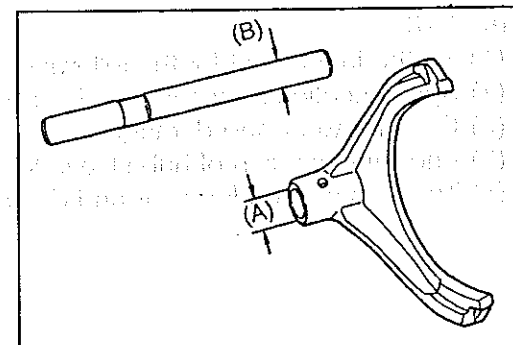


WRE91-MT076

14. Measure the following sections.

Unit: mm

Measuring point	Item	Specified value	Allowable limit
5th shift fork (A)		14 $\begin{smallmatrix} +0 \\ +0.027 \end{smallmatrix}$	13.97
5th shift arm shaft (B)		14 $\begin{smallmatrix} +0.027 \\ +0 \end{smallmatrix}$	14.03

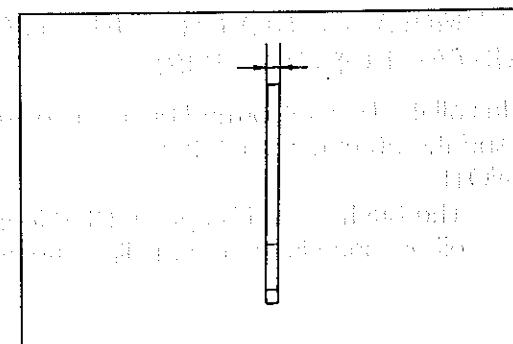


WRE91-MT077

15. Measure the thickness of 1st gear thrust washer.

Unit: mm

Measuring point	Item	Specified value	Allowable limit
Thickness		4 ± 0.1	3.85



WRE91-MT078

MANUAL TRANSMISSION

Counter gear shaft

1. Check the counter gear shaft and counter gear for wear or damage.

2. Measure the fitting width section of the woodruff key with counter gear shaft and counter gear.

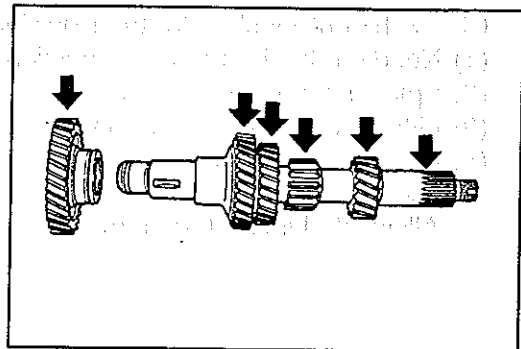
Unit: mm

		Specified value	Allowable limit
(A)	Counter gear shaft	$7^{+0.02}_{-0.05}$	7.02
(B)	Woodruff key	$7^{+0.015}_{+0}$	7.0
(C)	Counter gear	7 ± 0.02	7.02

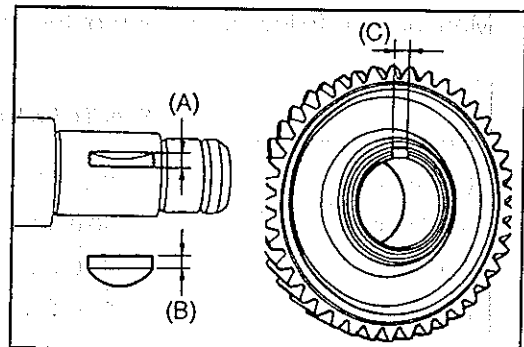
3. Measure the outer diameter of the counter gear shaft and inner diameter of the counter gear.

Unit: mm

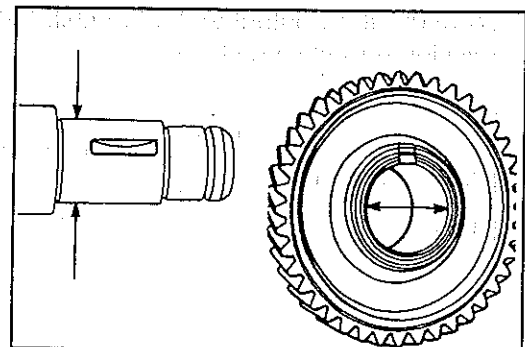
		Specified value	Allowable limit
Outer diameter	Counter gear shaft	$35^{+0.050}_{+0.031}$	35.05
Inner diameter	Counter gear	$35^{+0.025}_{+0}$	35.0



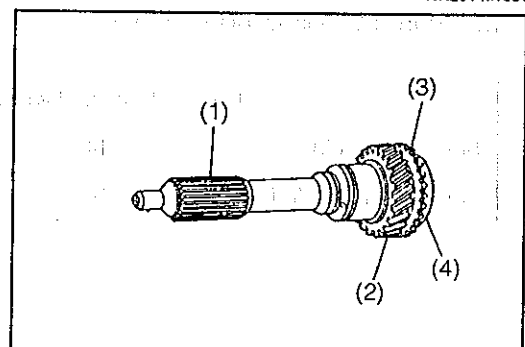
WRE91-MT079



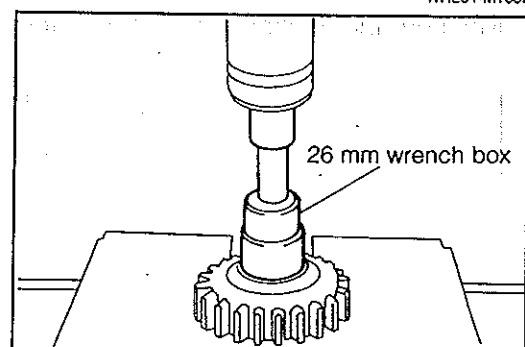
WRE91-MT080



WRE91-MT081



WRE91-MT082



WRE91-MT083

Input shaft

1. Check the input shaft for the following items.
 - (1) Spline section for wear and damage
 - (2) Gear for wear and damage
 - (3) Engaging section of hub sleeve for wear and damage
 - (4) Tapered section for wear and damage

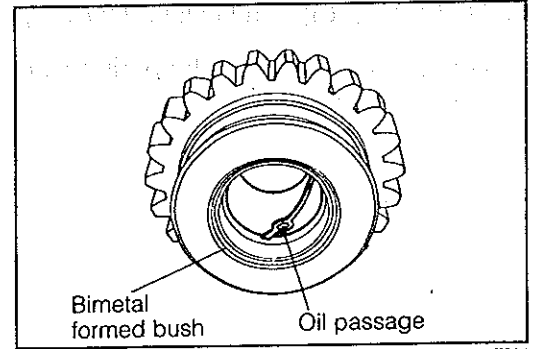
ASSEMBLY OF REVERSE IDLER GEAR BIMETAL FORMED BUSH

1. Install the bimetal formed bush, in conjunction with a press and the 26 mm wrench box.

NOTE:

- The bush should be press-fitted in such a way that the oil passage in the gear is lined up with that in bush.

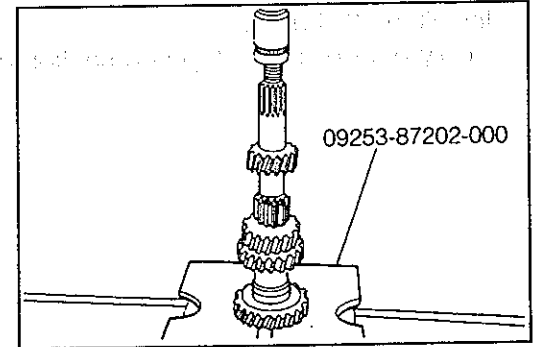
- After the bush has press-fitted securely, each edge of the bush should be recessed 1 mm from the edge of gear, respectively.
- If the above operation should fail to be performed, failure to observe this notice causes emanating of noise or seizure of bimetal formed bush.



WRE91-MT084

ASSEMBLY OF COUNTER GEAR SHAFT

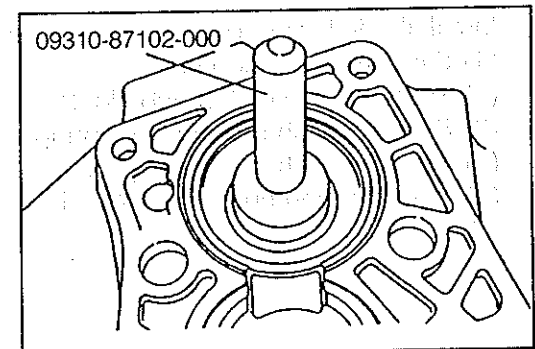
1. Install the woodruff key into place.
 2. Press the counter gear to the counter gear shaft, using the following SST.
- SST: 09253-87202-000



WRE91-MT085

INSTALLATION OF CLUTCH HOUSING OIL SEAL

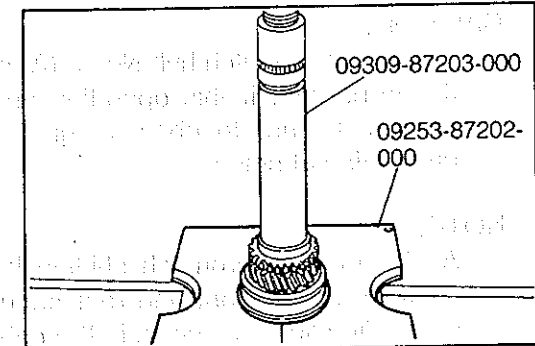
1. Install the new "S" type oil seal, using the following SST.
- SST: 09310-87102-000



WRE91-MT086

ASSEMBLY OF INPUT SHAFT

1. Press the bearing, using the following SSTs.
- SSTs: 09253-87202-000
09309-87203-000

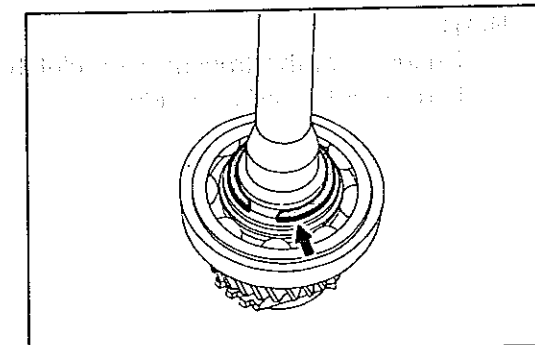


WRE91-MT087

2. Install the new shaft snap ring.

NOTE:

- Ensure that the shaft snap ring should be installed to the groove section of the input shaft securely.

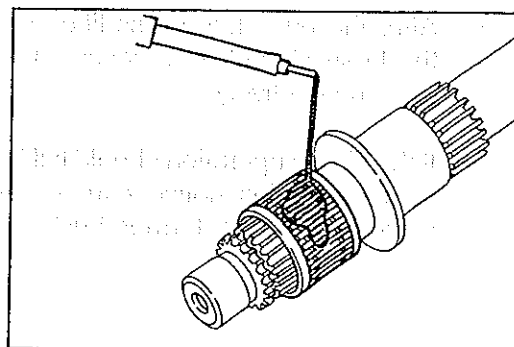


WRE91-MT088

MANUAL TRANSMISSION

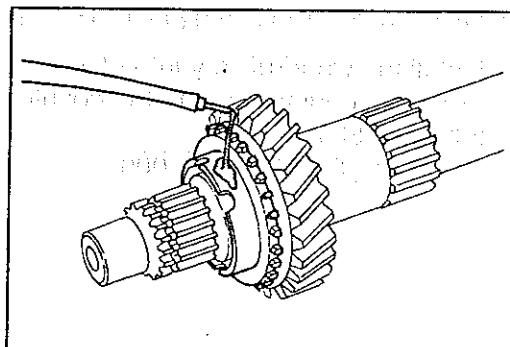
ASSEMBLY OF OUTPUT SHAFT

1. Apply gear oil to the outer periphery of needle roller bearing and output shaft.



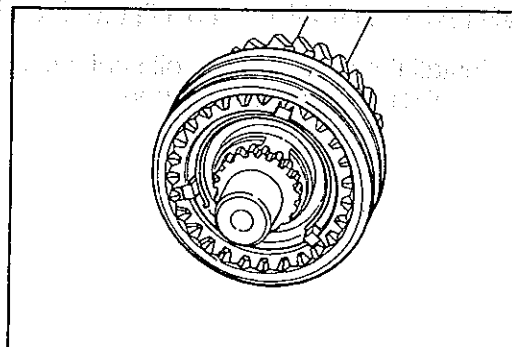
WRE91-MT089

2. Install the 3rd gear.
3. Apply gear oil to the tapered section of 3rd gear.



WRE91-MT090

4. Install the following parts in this sequence.
 - (1) Synchronizer ring No. 3
 - (2) Transmission clutch hub No. 2
 - (3) Synchromesh shifting key spring 2 pcs
 - (4) Synchromesh shifting key 3 pcs
 - (5) Transmission hub sleeve No. 1



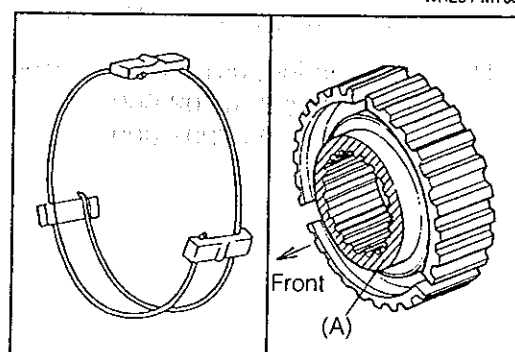
WRE91-MT091

CAUTION:

- Transmission clutch hub No. 2 (A) section faces toward the front side. If this operation should fail to be performed, Failure to observe this caution may causes emanating of noise.

NOTE:

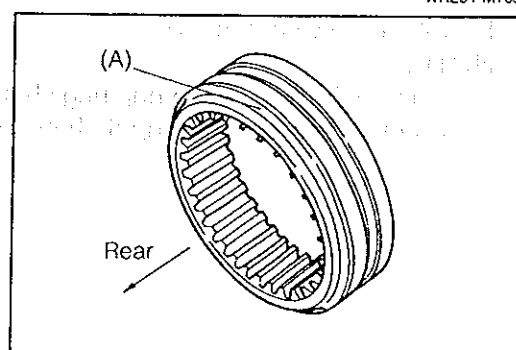
- As for the synchromesh shifting key spring, the bent sections at the front and rear should not come at the same direction, as shown in the right figure illustration.



WRE91-MT092

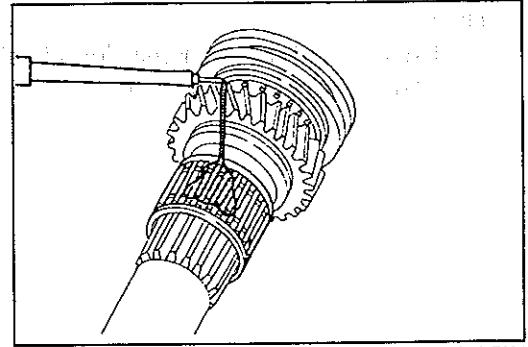
NOTE:

- Ensure that the transmission clutch hub No. 2 (A) section faces toward rear side.



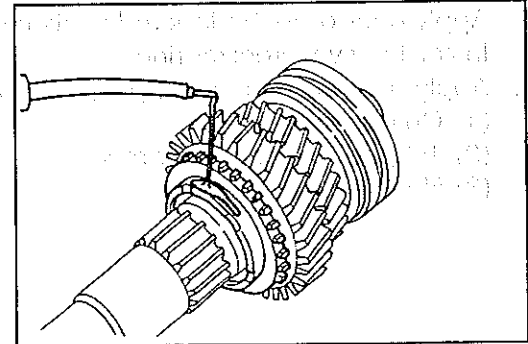
WRE91-MT093

5. Apply gear oil to the outer periphery of needle roller bearing and output shaft.



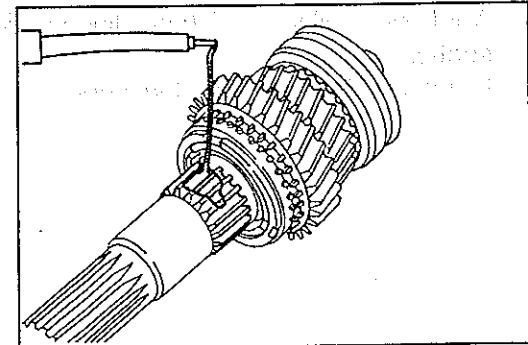
WRE91-MT094

6. Install the 2nd gear.
7. Apply gear oil to the tapered section of the 2nd gear.



WRE91-MT095

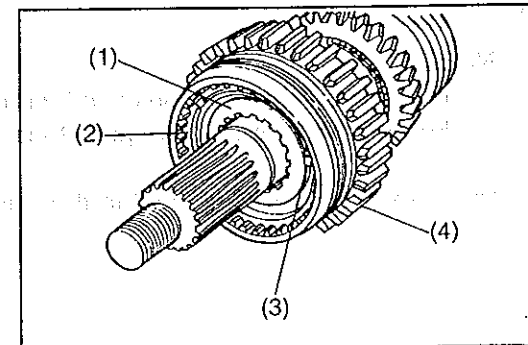
8. Install the synchronizer ring.
9. Apply gear oil to the spline section of the output shaft.



WRE91-MT096

10. Install the following parts in this sequence.

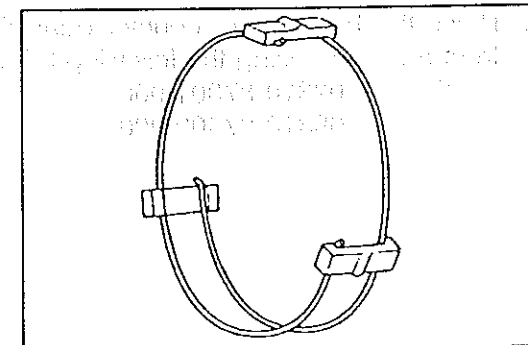
- | | |
|-------------------------------------|-------|
| (1) Transmission clutch hub No. 1 | |
| (2) Synchromesh shifting key spring | 2 pcs |
| (3) Synchromesh shifting key | 3 pcs |
| (4) Reverse gear | |



WRE91-MT097

NOTE:

- As for the synchromesh shifting key spring, the bent sections at the front and rear should not come at the same direction, as shown in the right figure.

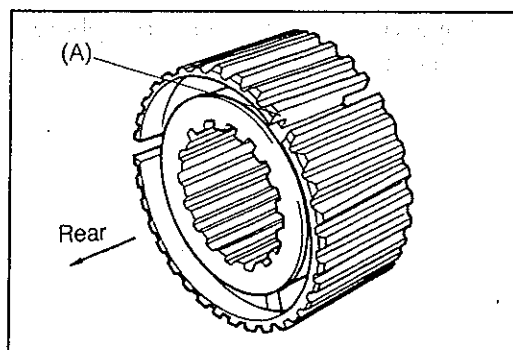


WRE91-MT098

MANUAL TRANSMISSION

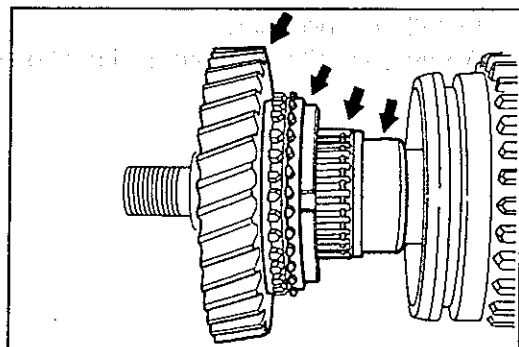
NOTE:

- Ensure that the transmission clutch hub No. 1 (A) section faces toward rear side.



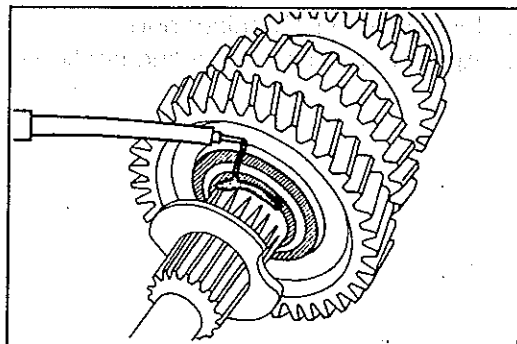
WRE91-MT099

11. Apply gear oil to the tapered section of the 1st gear.
12. Install the synchronizer ring.
13. Apply gear oil to the outer periphery of the following parts.
 - (1) Output shaft
 - (2) 1st gear bearing inner race
 - (3) Needle roller bearing



WRE91-MT100

14. Apply gear oil to the A (slant line section in the right figure) section.
15. Install the 1st gear thrust washer.



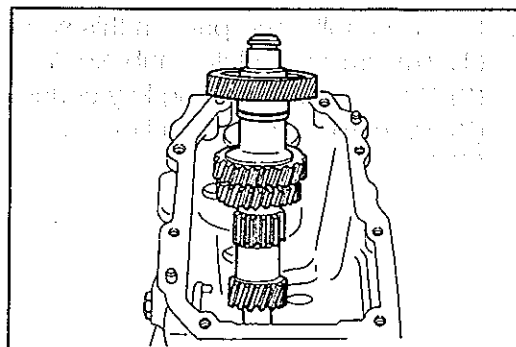
WRE91-MT101

INSTALLATION

NOTE:

- Clean the transmission case by removing any dirt, gasket materials or the like, prior to install the gears etc..

1. Place the counter gear shaft to the transmission case.

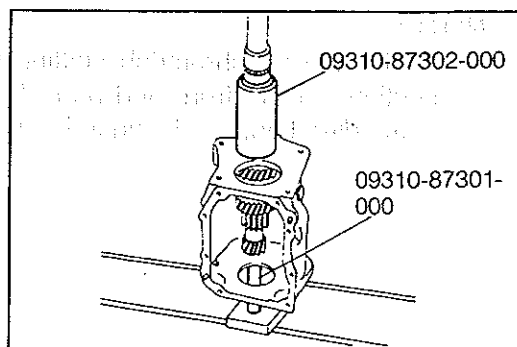


WRE91-MT102

2. Press the bearings of counter gear shaft provided at the front and rear, using the following SSTs.

SSTs: 09310-87301-000

09310-87302-000



WRE91-MT103

3. Install the new snap ring shaft on the front end of counter gear shaft.

NOTE:

- Ensure that the snap ring shaft should be installed to the groove section of the counter gear shaft securely.

4. Attach the stop ring.

NOTE:

- Ensure that the end gap (A) section of the stop ring faces toward the installation hole of input shaft bearing as right figure illustration.

5. Install the reverse idler gear S/A by instating the reverse idler gear shaft.

NOTE:

- Apply gear oil to the outer periphery of reverse idler gear shaft, prior to insert.

6. Tighten the idler gear stopper with a bolt.

Tightening Torque: 9.8 - 15.6 N·m (1.0 - 1.6 kgf·m)

7. Using an operation rope, install the output shaft assembly to the transmission case.

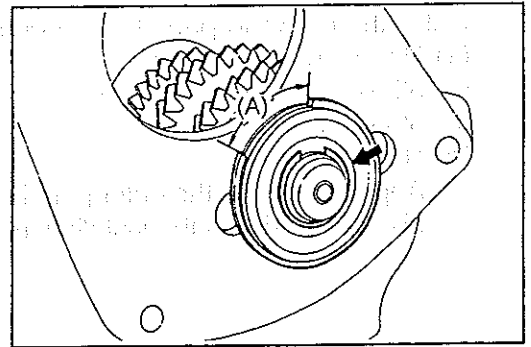
8. Press the rear bearing of the output shaft.

9. Apply gear oil to the following parts.

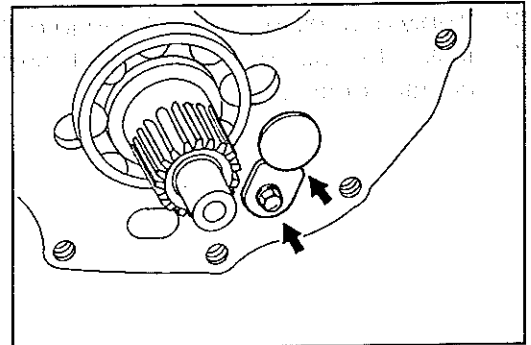
- (1) Outer periphery of needle roller bearing
- (2) Tapered section of input gear

10. Press the input shaft with the bearing and snap ring shaft installed, using the following SST.

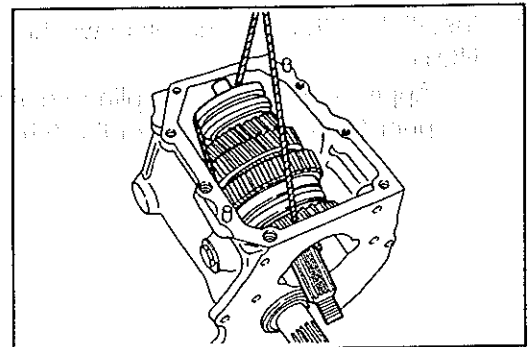
SST: 09309-87301-000



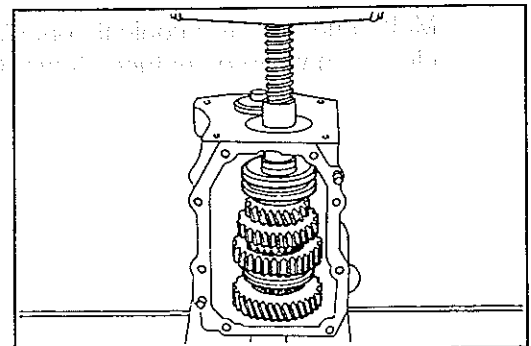
WRE91-MT104



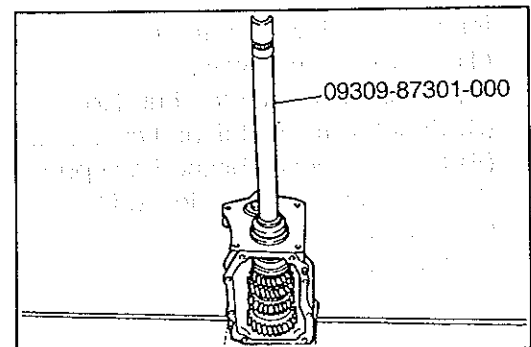
WRE91-MT105



WRE91-MT106



WRE91-MT107



WRE91-MT108

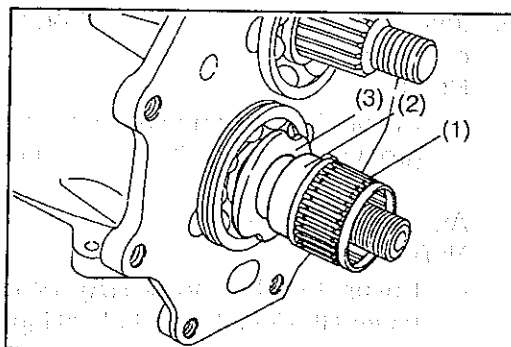
MANUAL TRANSMISSION

11. Install the following parts to the counter gear shaft.

- (1) Needle roller bearing
- (2) 5th gear bearing inner race
- (3) 5th gear thrust washer

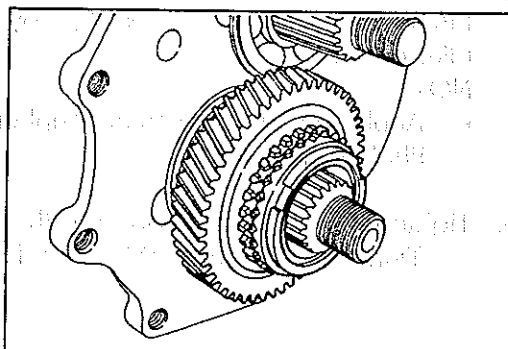
NOTE:

- Apply gear oil to the outer periphery of the parts (1) and (2) above prior to the installation.



WRE91-MT109

12. Apply gear oil to the rear bearing of the counter gear shaft.
13. Install the 5th gear and synchronizer ring No. 3 to the counter gear shaft.

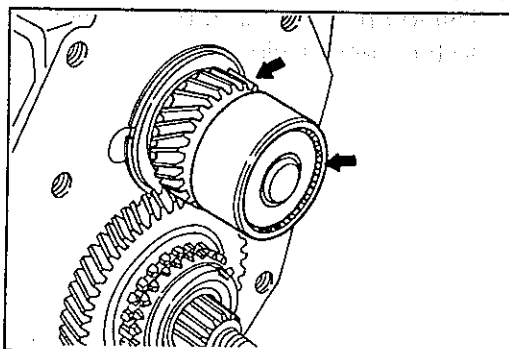


WRE91-MT110

14. Install the 5th gear and plate washer to the output shaft.

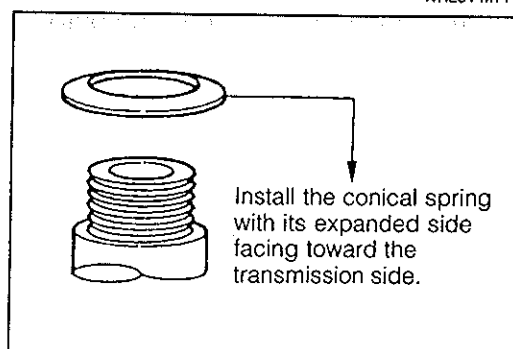
NOTE:

- Apply gear oil to the spline section of the output shaft prior to the installation of the 5th gear.



WRE91-MT111

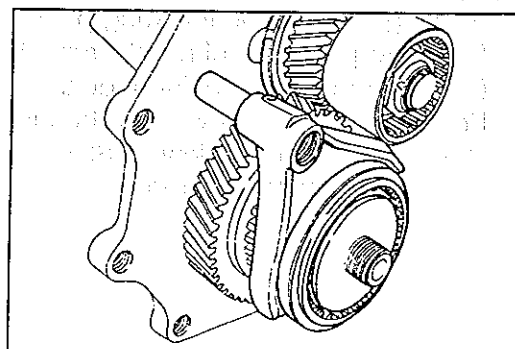
- Make sure that the conical spring's surface entirely applied with white paint faces toward the lock nut side.



WRE91-MT112

15. Install the following parts in a set.

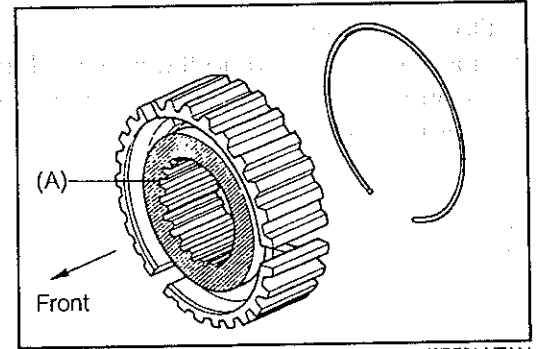
- (1) 1st gear thrust washer
- (2) Transmission clutch hub No. 2
- (3) Synchromesh shifting key 3 pcs
- (4) Synchromesh shifting key spring 1 piece
- (5) Transmission hub sleeve No. 1
- (6) 5th shift fork
- (7) 5th shift arm shaft



WRE91-MT113

NOTE:

- Ensure that the wider (A) section of transmission hub sleeve No. 1 faces toward the front side.
- Make sure that the location of synchromesh shifting key spring faces toward the lock nut side.



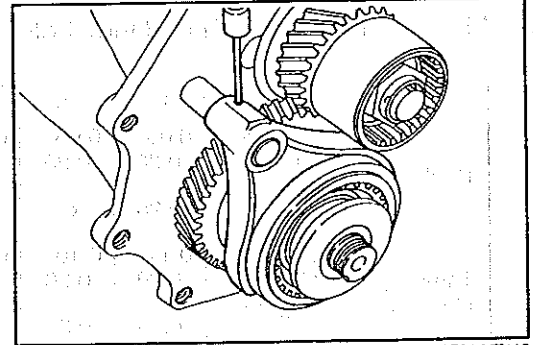
WRE91-MT114

17. Drive the new slotted pin to the 5th shift fork.
18. Tighten the 5th shift arm (use new gasket) with the shift arm pivot.

Tightening Torque: 39.2 - 58.8 N·m (4.0 - 6.0 kgf·m)

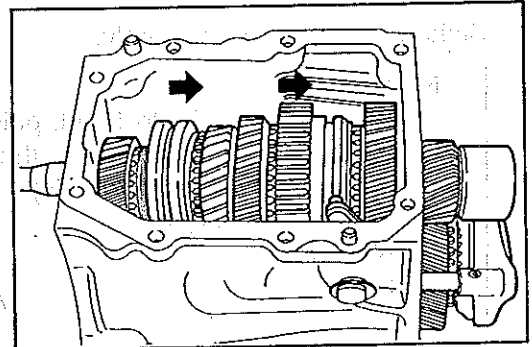
NOTE:

- Be sure to stake the gasket sincerely.



WRE91-MT115

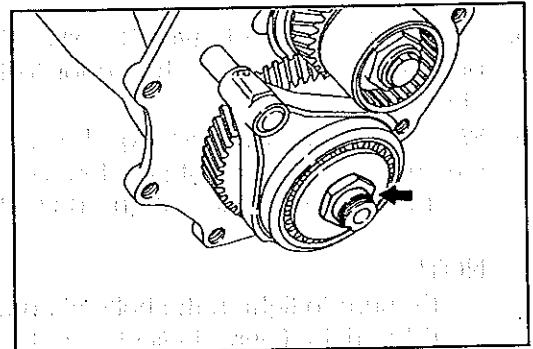
19. Interlock the 1st and 3rd gears.



WRE91-MT116

20. Tighten a new lock nut of the counter gear shaft.

Tightening Torque: 98.0 - 137.2 N·m
(10.0 - 14.0 kgf·m)



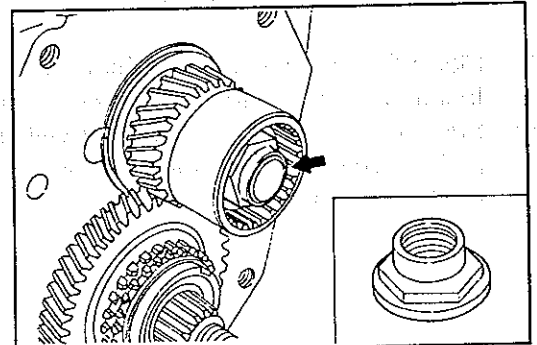
WRE91-MT117

21. Tighten a new lock nut of the output shaft.

Tightening Torque: 226.0 - 264.0 N·m
(23.0 - 27.0 kgf·m)

NOTE:

- When installing the lock nut for the output shaft, it should be noted that the lock nut is integrated with the collar. (As indicated in the right figure)

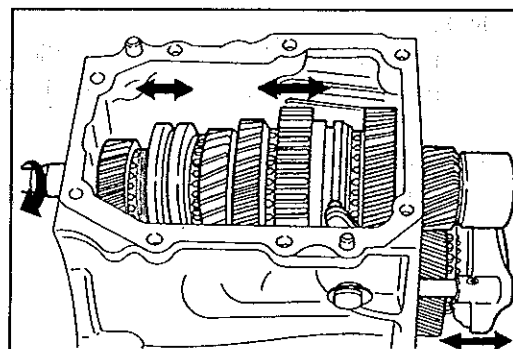


WRE91-MT118

MANUAL TRANSMISSION

22. Operation check

Tighten the lock nut to the specified torque. While turning the input shaft clockwise, manually check to see if each gear is engaged smoothly.

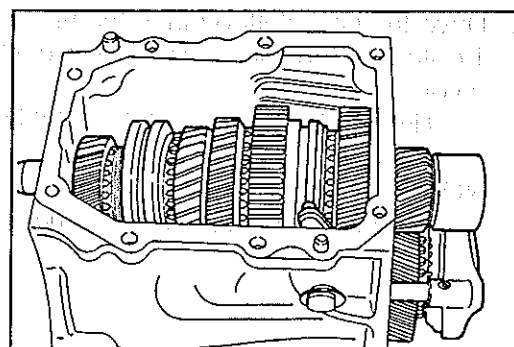


WRE91-MT119

23. Measure the backlash and thrust clearance.

Unit: mm

		1st	2nd	3rd	4th	5th
Backlash	Specified value	0.06 - 0.20	0.06 - 0.20	0.06 - 0.20	0.06 - 0.20	0.06 - 0.20
	Allowable limit	0.25	←	←	←	←
Thrust clearance	Specified value	0.11 - 0.29	0.10 - 0.30	0.13 - 0.57		0.12 - 0.28
	Allowable limit	0.35	0.35	0.6		0.35



WRE91-MT120

24. Stake a new lock nut securely.

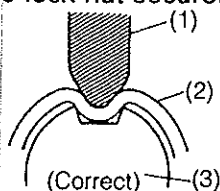
NOTE:

- When staking the lock nut, point a suitable staking tool toward the output shaft, counter gear shaft axis center and stake the lock nut securely, as shown in the figure below. (Poor staking may cause abnormal noise.)

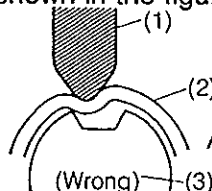
(1) Suitable staking tool

(2) New nut

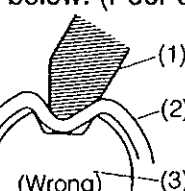
(3) Shaft



(Correct) (3)



(Wrong) (3)



(Wrong) (3)

WRE91-MT121

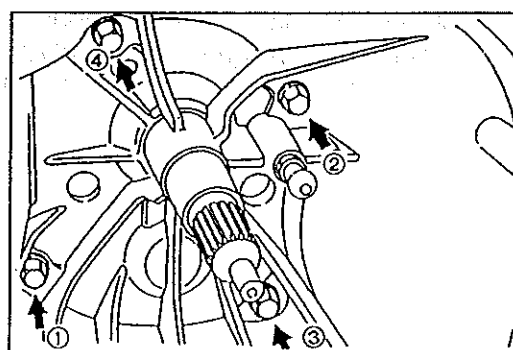
25. Apply gear oil to both type "S" oil seal lip section and outer periphery of the input shaft prior to the installation of the clutch housing case.

26. With a new transmission gasket interposed, tighten the clutch housing case with the four bolts.

Tightening Torque: 49.0 - 68.6 N·m (5.0 - 7.0 kgf·m)

NOTE:

- Be sure to tighten the bolts alternately and diagonally. (The right figure indicates a typical example of the tightening sequence.)

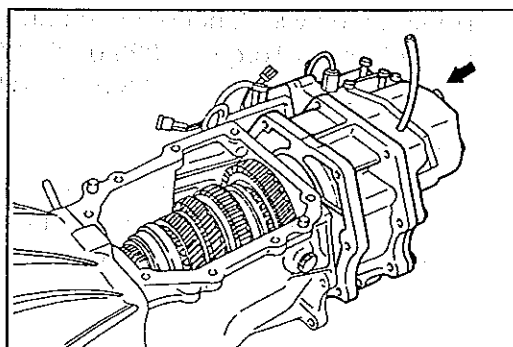


WRE91-MT122

27. Place the shift lever in the 1st gear.

28. Install a new transfer front case gasket.

29. Support the transfer assembly with suitable transmission jacks. While slowly turning the input shaft to the right or left, push the transfer assembly to the transmission side.



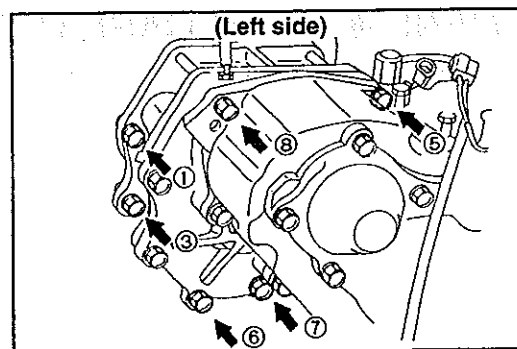
WRE91-MT123

30. Tighten the transmission and transfer assembly with the eight bolts.

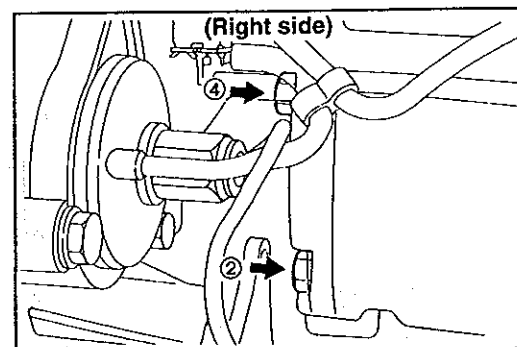
Tightening Torque: 24.4 - 44.0 N·m (3.0 - 5.0 kgf·m)

NOTE:

- Be sure to tighten the bolts diagonally and evenly. (The right figure indicates a typical example of the tightening sequence.)



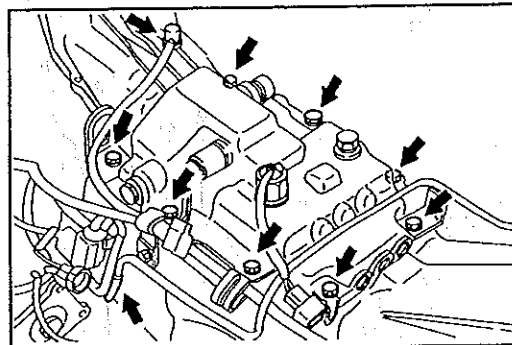
WRE91-MT124



WRE91-MT125

31. With a new transmission case cover gasket interposed, tighten the transmission case cover with the eight bolts.

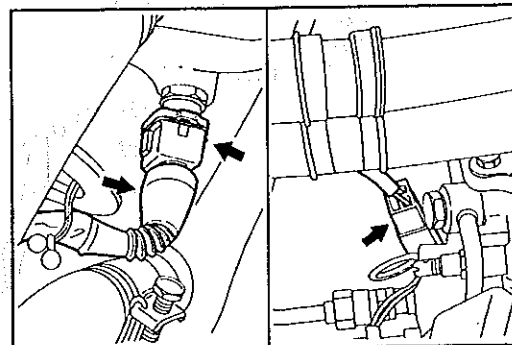
Tightening Torque: 9.8 - 15.6 N·m (1.0 - 1.6 kgf·m)



WRE91-MT126

32. Connect the bleether hose and atmosphere tube.

33. Connect the couplers and the bolts.
(one is earth bolt.)

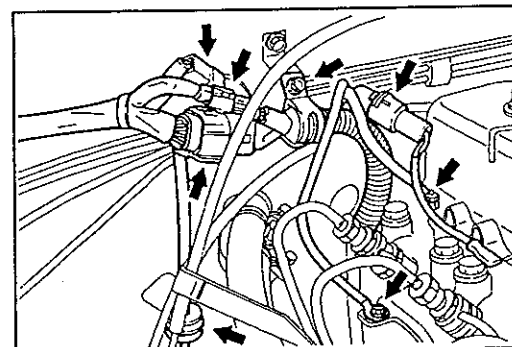


WRE91-MT127

34. Install the clutch related pares.
(Refer CL-section.)

35. Install the transmission and transfer Ay to the vehicle body.
(See page MT-50 to MT-54.)

36. Fill the transmission and transfer oil.
(See page MT-53)

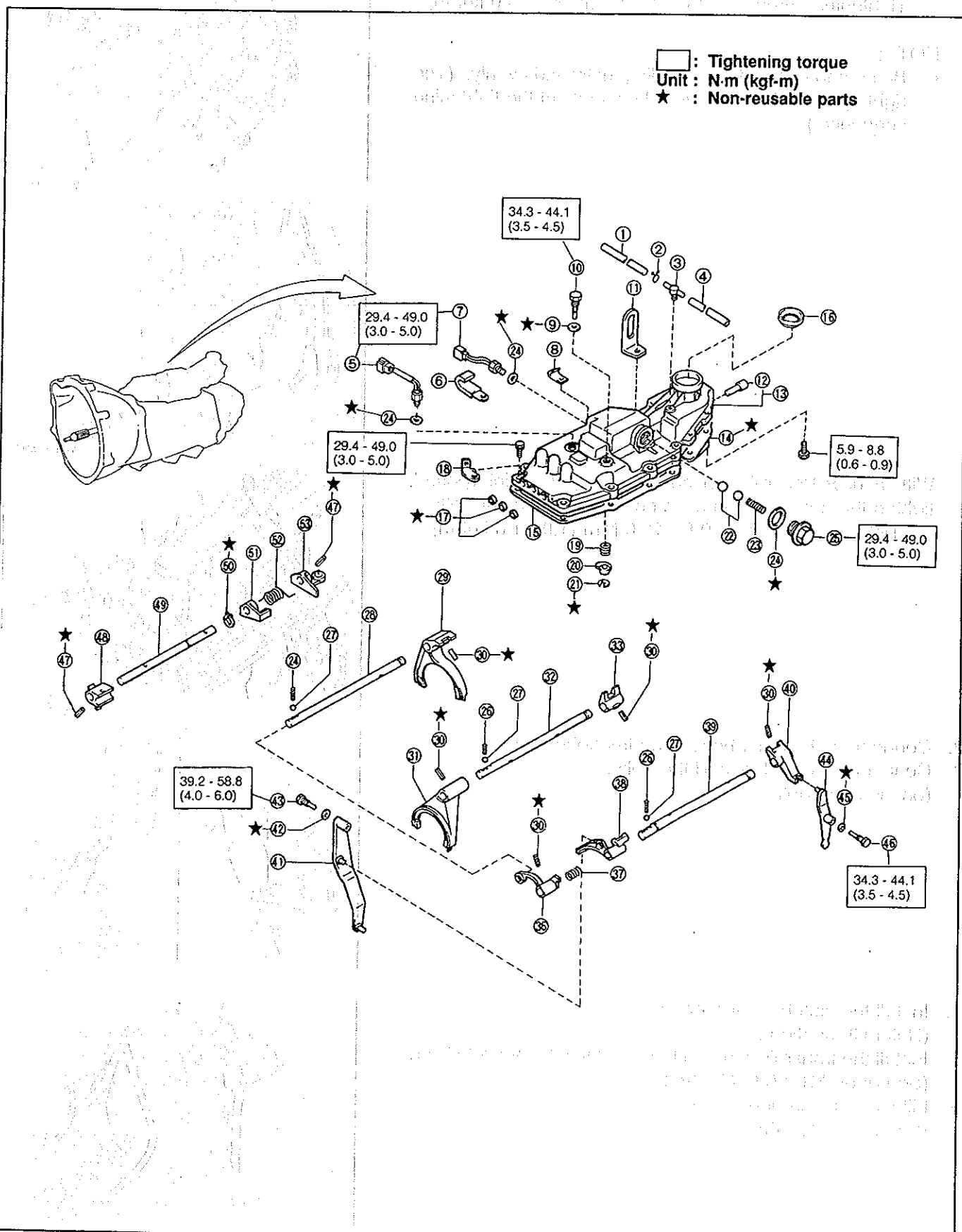


WRE91-MT128

MANUAL TRANSMISSION

TRANSMISSION CASE COVER (5-Speed)

COMPONENTS



WRE91-MT129

- ① Hose
- ② Clip
- ③ Union
- ④ Hose No. 1
- ⑤ Transmission position detect switch
- ⑥ Clamp (for breather hose)
- ⑦ Back-up lamp switch
- ⑧ Clamp (for breather hose)
- ⑨ Gasket
- ⑩ 5th shift arm pivot
- ⑪ Hanger
- ⑫ Reverse restrict pin
- ⑬ Transmission case cover
- ⑭ Shift lever housing dust cover
- ⑮ Mission case cover gasket
- ⑯ Shift lever ball seat
- ⑰ Tight plug
- ⑱ Clamp
- ⑲ Torsion spring
- ⑳ Shift fork lock plate S/A
- ㉑ "E"-ring
- ㉒ Ball (for reverse restrict ... 2 pcs)
- ㉓ Compression spring
- ㉔ Gasket
- ㉕ Reverse restrict pin holder
- ㉖ Compression spring
- ㉗ Ball

- ㉘ 1st & 2nd shift fork shaft
- ㉙ 1st & 2nd shift fork
- ㉚ Slotted spring pin
- ㉛ 3rd & 4th shift fork
- ㉜ 3rd & 4th shift fork shaft
- ㉝ Gear shift head No. 2
- ㉞ Shift inter lock pin No. 2
- ㉟ Shift inter lock pin No. 1
- ㊱ Gear shift head No. 3
- ㊲ Compression spring
- ㊳ Reverse shift fork
- ㊴ 5th & reverse shift fork shaft
- ㊵ 5th shift head
- ㊶ Reverse shift arm
- ㊷ Gasket
- ㊸ Shift arm pivot
- ㊹ 5th shift arm
- ㊺ Gasket
- ㊻ Shift arm pivot
- ㊼ Slotted spring pin (longer)
- ㊽ Shift inner lever
- ㊾ Shift lever shaft
- ㊿ Shaft snap ring
- ① Reverse restrict pin
- ② Torsion spring
- ③ Shift outer lever No. 1

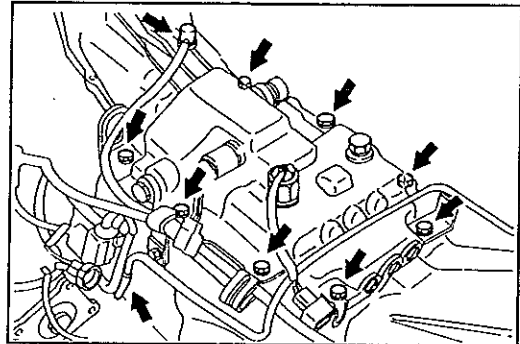
MANUAL TRANSMISSION

REMOVAL

1. Remove the transmission and transfer assembly from the vehicle. (See page MT-5 to MT-9.)
2. Remove the transmission case cover with the gasket by removing the eight bolts.

NOTE:

- Never reuse the removed gasket.

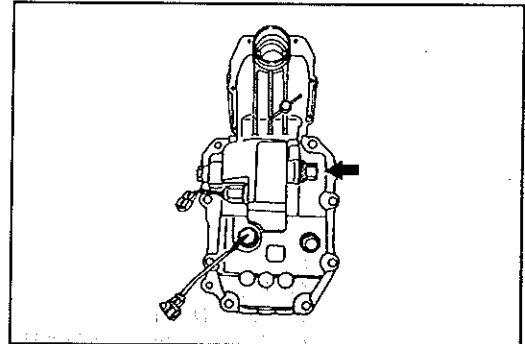


WRE91-MT131

3. Remove the reverse restrict pin holder, gasket, compression spring and two balls.

NOTE:

- Never reuse the removed gaskets.

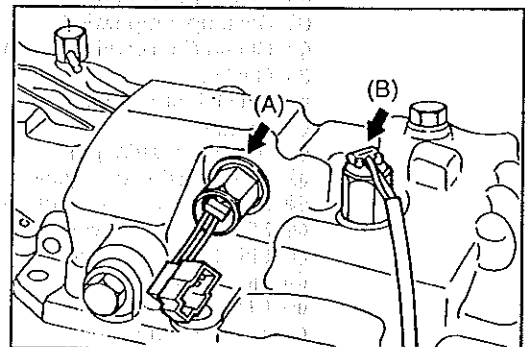


WRE91-MT132

4. Remove the backup lamp (A) and transmission position detect switch (B) with gasket.

NOTE:

- Never reuse the removed gasket.

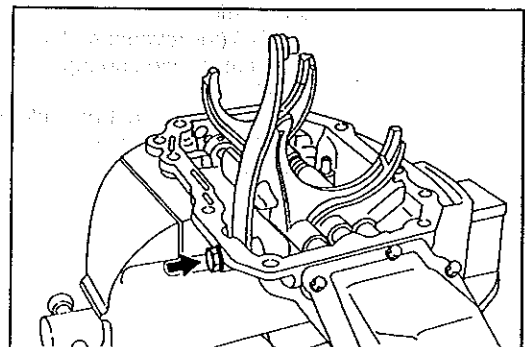


WRE91-MT133

5. Remove the reverse shift arm by removing the shift arm pivot with the gasket.

NOTE:

- Never reuse the removed gasket.

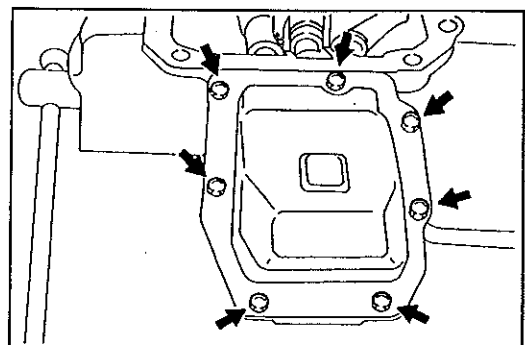


WRE91-MT134

6. Remove the shift lever housing dust cover by removing the seven bolts.

NOTE:

- The shift lever housing dust cover is adhered to the transmission case cover with adhesive agent. Therefore, after removing the seven bolts, use a standard gasket scraper or the like to remove the shift lever housing dust cover.

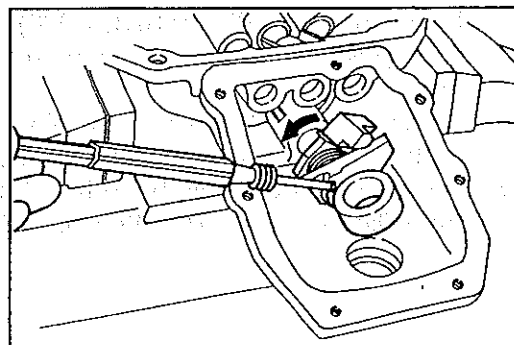


WRE91-MT135

7. Drive off the slotted spring pin of the shift outer lever No.1, using a standard pin punch or the like, while tilting the shift outer lever No.1 at the largest possible angle.

NOTE:

- Never reuse the removed slotted spring pin.



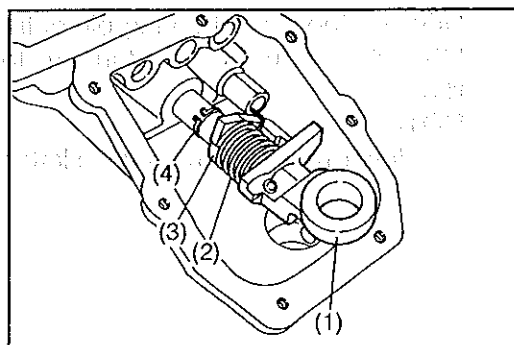
WRE91-MT136

8. Remove the following parts from the shift lever shaft:

- (1) Shift outer lever No.1
- (2) Torsion spring
- (3) Reverse restrict pin
- (4) "E" ring

NOTE:

- Never reuse the removed "E" ring.



WRE91-MT137

9. Remove the all tight plugs.

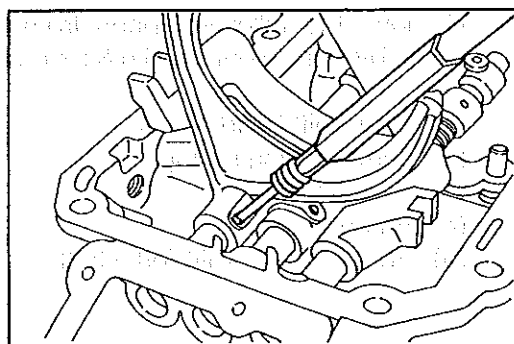
NOTE:

- Never reuse the removed tight plugs.

10. Drive off the slotted spring pin of the 1st & 2nd shift fork, using a standard pin punch or the like.

NOTE:

- Never reuse the removed slotted spring pin.



WRE91-MT138

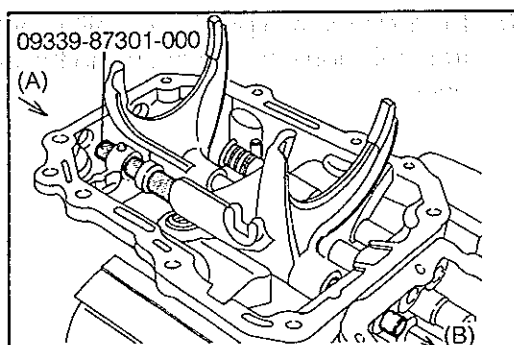
11. Insert the following SST into the 1st & 2nd shift fork shaft guide in the direction (A).

SST: 09339-87301-000

12. Remove the 1st & 2nd shift fork shaft by pulling it out toward your side in the direction (B).

NOTE:

- The SST above is used for preventing the ball and compression spring from being lost during the removal of the shift fork shaft.



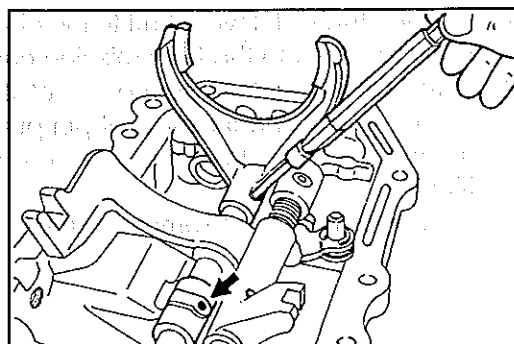
WRE91-MT139

13. Remove the 1st & 2nd shift fork.

14. Drive off the slotted spring pin of the gear shift head No. 2 and 3rd & 4th shift fork, using a standard pin punch or the like.

NOTE:

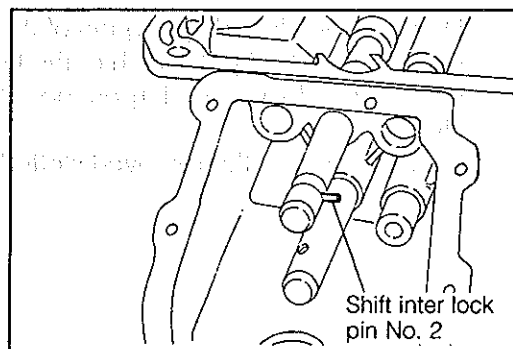
- Never reuse the removed slotted spring pin.



WRE91-MT140

MANUAL TRANSMISSION

15. Insert the SST (09339-87301-000) to the 3rd & shift fork shaft guide as well as the same manner of 1st & 2nd shift fork.
16. Remove the shift inter lock pin No. 2 by pulling out the 3rd & shift fork shaft toward you slightly.
17. Remove the gear shift head No. 2 and 3rd & 4th shift fork by pulling out the 3rd & 4th shift fork shaft toward you.

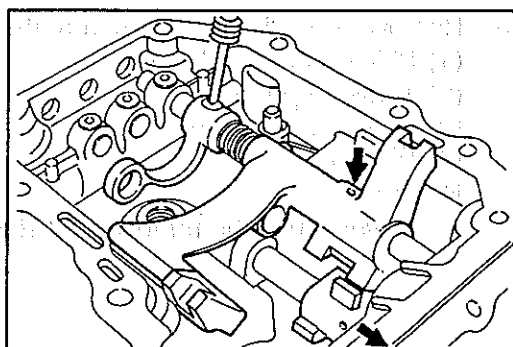


WRE91-MT141

18. Drive off the slotted spring pin of the reverse shift fork and 5th shift arm, using the standard tool of pin punch or the like.

NOTE:

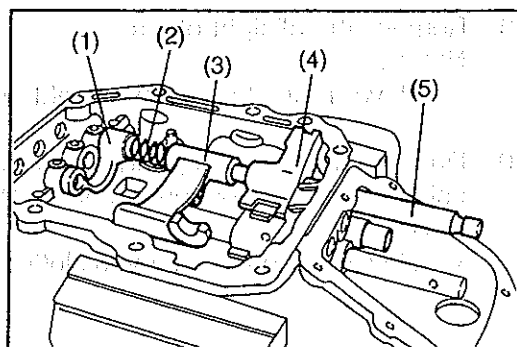
- Never reuse the removed slotted spring pin.



WRE91-MT142

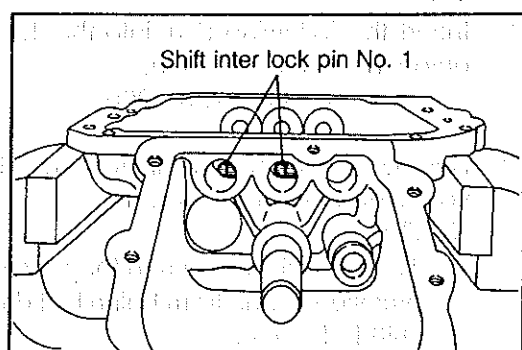
19. Remove the following parts from the transmission case cover by pulling out the 5th & reverse shift fork shaft toward you.

- (1) Gear shift head No. 3
- (2) Compression spring
- (3) Reverse shift fork
- (4) 5th shift head
- (5) 5th & reverse shift fork shaft



WRE91-MT143

20. Remove the two pieces of shift inter lock pin No. 1 from the transmission case cover, using the standard tool of magnet hand.

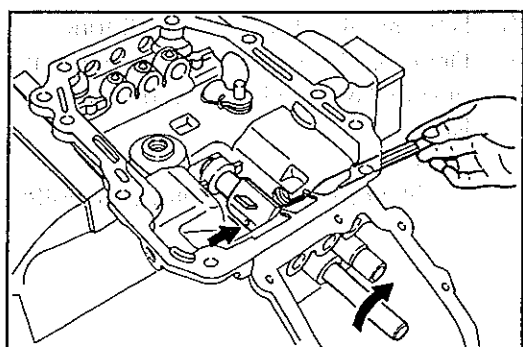


WRE91-MT144

21. Rotates the shift lever shaft to the clock wise until shift inner lever touched to the transmission case cover.
22. Drive off the slotted spring pin of the shift inner lever by inserting the standard tool of pin punch or the like through the installation hole of the reverse restrict pin holder.

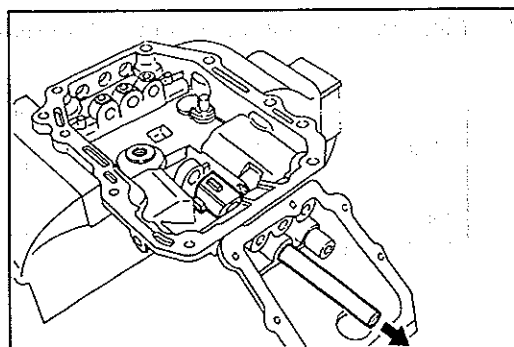
NOTE:

- Never reuse the removed slotted spring pin.



WRE91-MT145

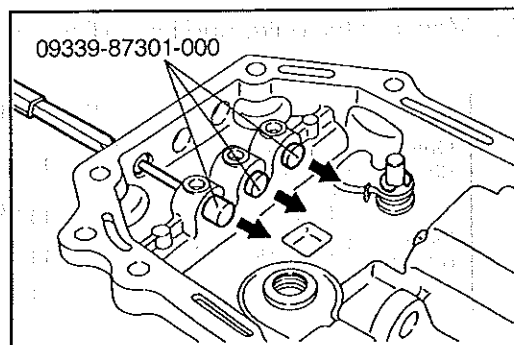
23. Remove the shift inner lever by pulling out the shift lever shaft toward you.



WRE91-MT146

24. Remove the ball and compression spring from the transmission case cover in the following shift fork shaft guide by pushing the SST (09339-87301-000), using the pin punch or the suitable metal rod.

- (1) 1st & 2nd shift fork shaft guide
- (2) 3rd & 4th shift fork shaft guide
- (3) 5th & reverse shift for shaft guide

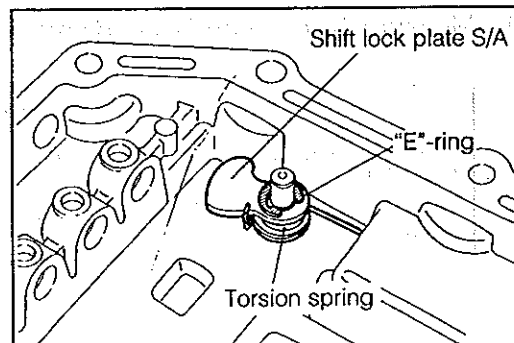


WRE91-MT147

25. Remove the shift lock plate S/A and torsion spring by removing the "E"-ring.

NOTE:

- Never reuse the removed "E"-ring.

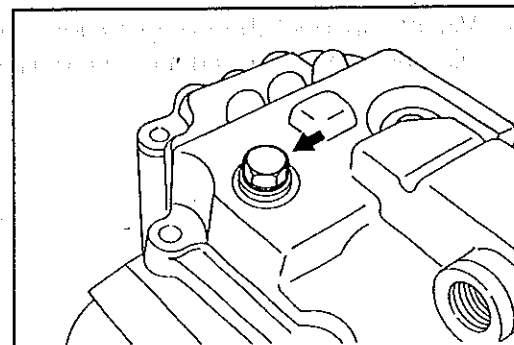


WRE91-MT148

26. Remove the 5th shift arm pivot with gasket.

NOTE:

- Never reuse the removed gasket.



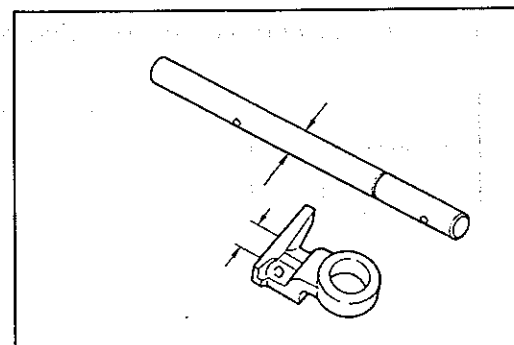
WRE91-MT149

INSPECTION

1. Measure the outer and inner diameter of the following parts.

Unit: mm

		Specified value	Allowable limit
Outer diameter	Shift lever shaft	16 $^{+0}_{-0.027}$	15.97
Inner diameter	Shift outer lever	16 $^{+0.033}_{-0.006}$	16.03



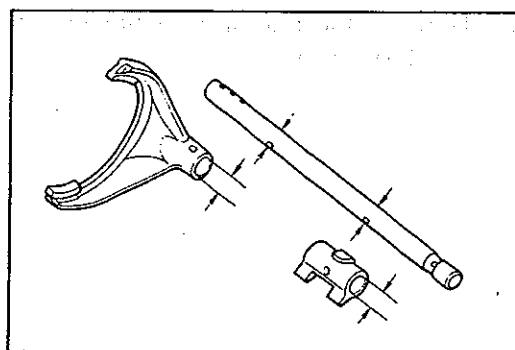
WRE91-MT150

MANUAL TRANSMISSION

2. Measure the outer and inner diameter of the following parts.

Unit: mm

		Specified value	Allowable limit
Outer diameter	3rd & 4th shift fork shaft	$14^{+0}_{-0.027}$	13.97
Inner diameter	3rd & 4th shift fork	$14^{+0.033}_{+0.006}$	14.03
	Gear shift head No. 2		

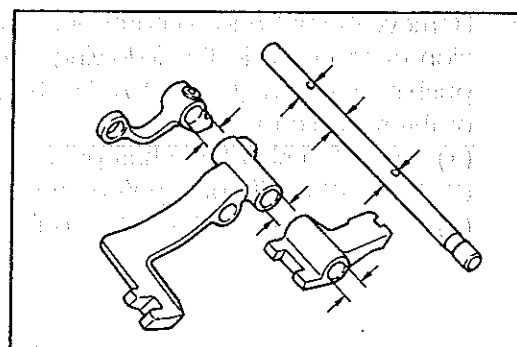


WRE91-MT151

3. Measure the outer and inner diameter of the following parts.

Unit: mm

		Specified value	Allowable limit
Outer diameter	5th & reverse shift fork shaft	$14^{+0}_{+0.027}$	13.97
Inner diameter	5th & reverse shift fork	$14^{+0.069}_{+0.032}$	14.06
	Gear shift head No. 3	$14^{+0.033}_{+0.006}$	14.03
	5th shift head	$14^{+0.033}_{+0.006}$	↑

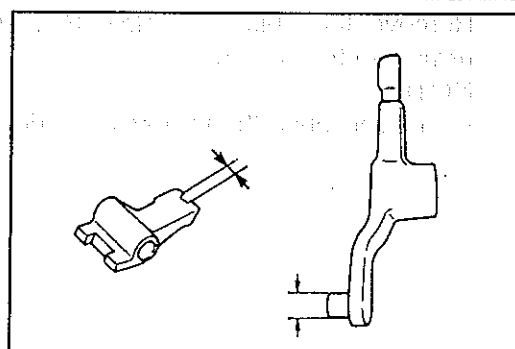


WRE91-MT152

4. Measure the outer and inner diameter of the following parts.

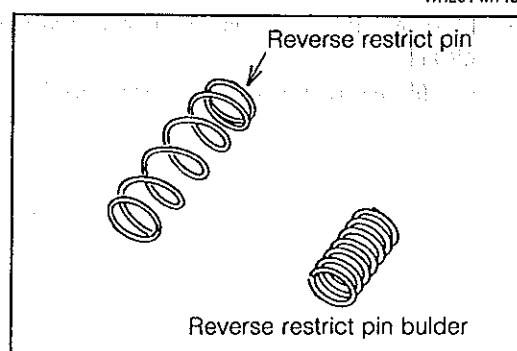
Unit: mm

		Specified value	Allowable limit
Outer diameter	5th shift arm	$8^{+0}_{-0.1}$	7.9
Inner diameter	5th shift head	$8^{+0.2}_{+0.1}$	8.2



WRE91-MT153

5. Visually inspect the compression springs (Reverse restrict pin and Reverse restrict pin holder) for wear or damage.

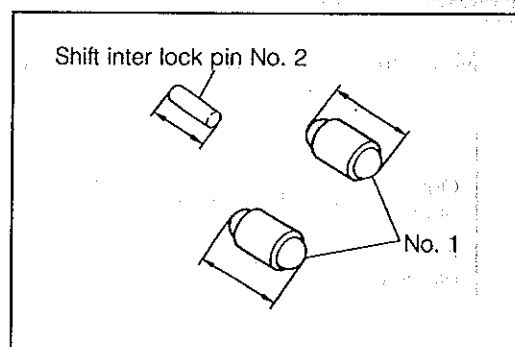


WRE91-MT154

6. Measure the length of the following parts.

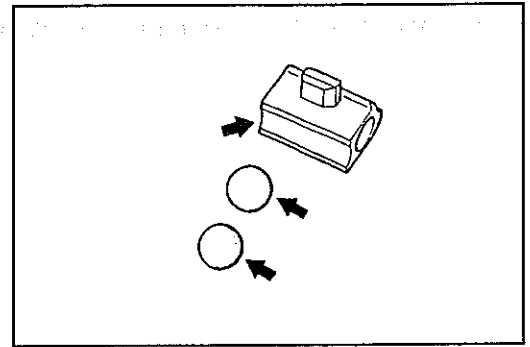
Unit: mm

	Specified value	Allowable limit
Shift inter lock pin No. 1	$13.9^{+0}_{-0.2}$	13.7
Shift inter lock pin No. 2	$11.8^{+0}_{-0.2}$	11.6



WRE91-MT155

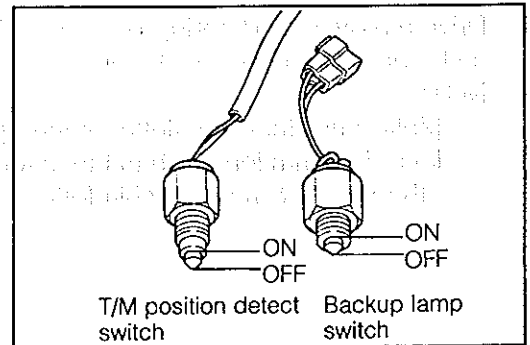
7. Visually inspect the contact sections of the shift inner lever and ball with the reverse restrict pin holder for wear and damage.



WRE91-MT156

8. Check to see if continuity exists as to each of the following parts, using a tester.

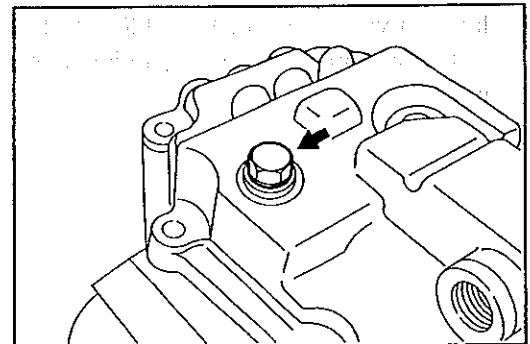
Turn switch	ON	OFF
Backup lamp switch	Continuity exists.	No continuity exists.
Transmission position detect switch	↑	↑



WRE91-MT157

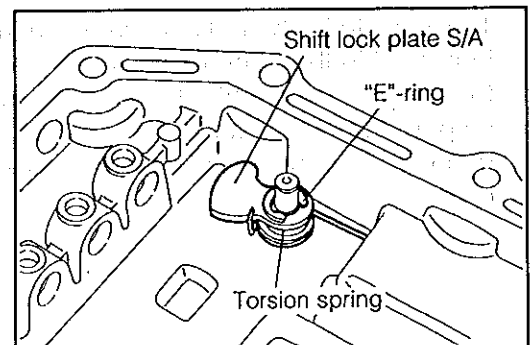
INSTALLATION

1. Tighten the 5th shift arm pivot with a new gasket interposed.
Tightening Torque: 34.3 - 44.1 N·m (3.5 - 4.5 kgf·m)



WRE91-MT158

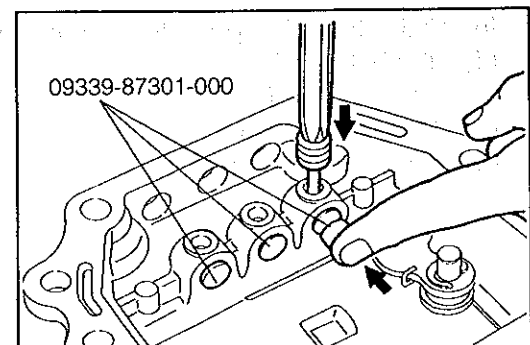
2. Install the torsion spring and shift lock plate subassembly.
3. Install a new "E" ring.



WRE91-MT159

4. Insert the following SST with your fingers while pushing down the ball and compression spring, using a standard pin punch or the like.

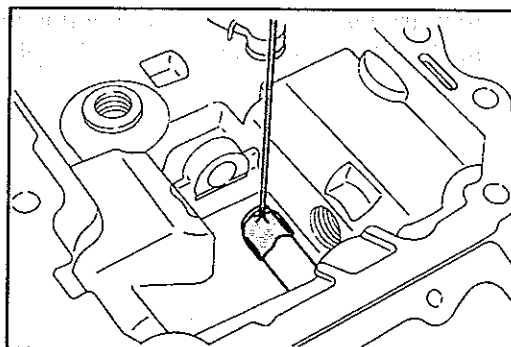
SST: 09339-87301-000



WRE91-MT160

MANUAL TRANSMISSION

5. Apply gear oil to the outer periphery of the shift lever shaft.

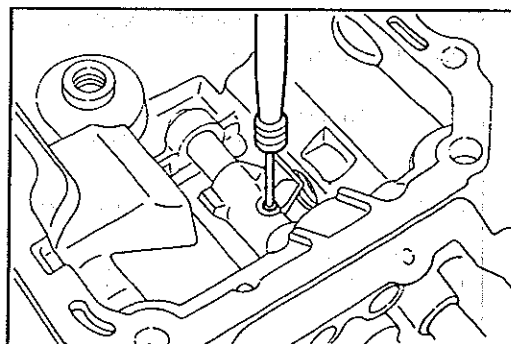


WRE91-MT161

6. Drive a new slotted spring pin of the shift inner lever, using a standard pin punch or the like.

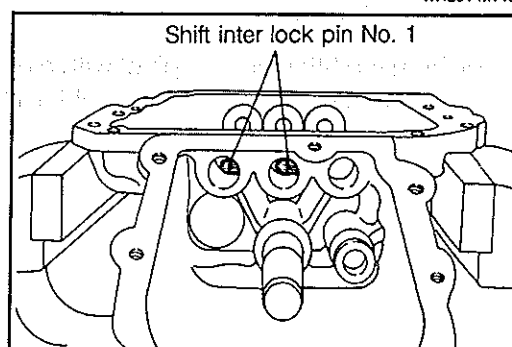
NOTE:

- Make sure that the slotted spring pin for the shift inner lever is 2 mm longer than those for the 1st & 2nd, 3rd & 4th and 5th & reverse shift forks.



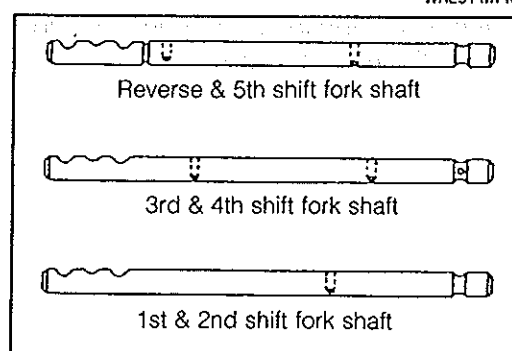
WRE91-MT162

7. Install two pieces of the shift interlocking pin No. 1 to the transmission case cover, using a standard magnet hand tool.



WRE91-MT163

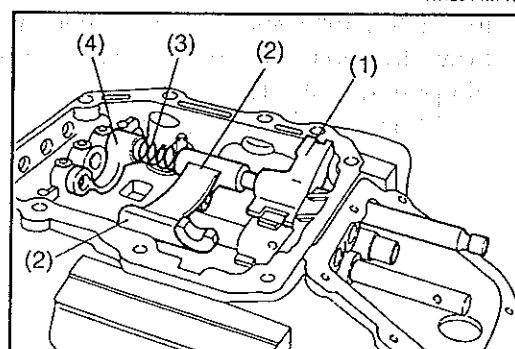
8. The shift fork shaft differs from each other in shape as indicated in the right figure. It is, therefore, recommended to arrange each shift fork shaft together with the corresponding shift fork so that they may be identified readily during the installation of the shafts to the transmission case cover.



WRE91-MT164

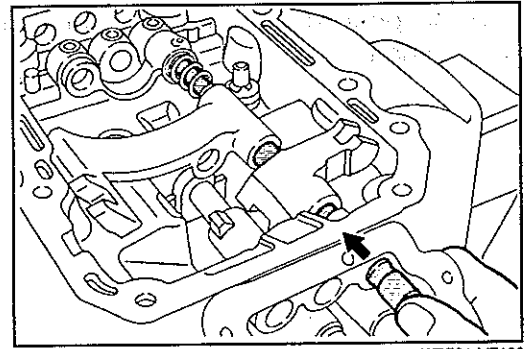
9. Install the following parts to the shift lever shaft.

- (1) 5th shift head
- (2) Reverse shift fork
- (3) Compression spring
- (4) Gear shift head No. 3



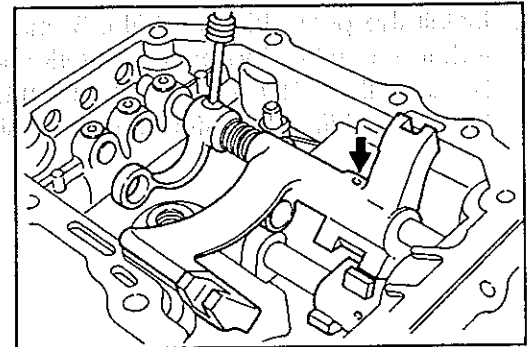
WRE91-MT165

10. Remove the SST (09339-87301-000) by pushing the 5th & reverse shift fork shaft toward front side with your fingers.



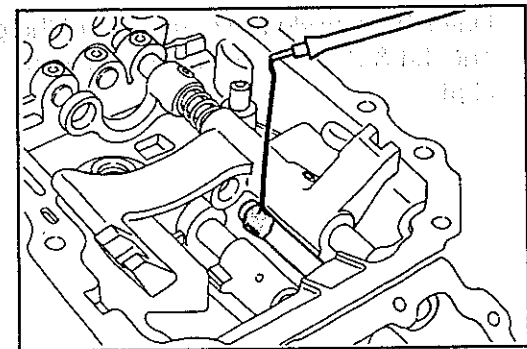
WRE91-MT166

11. Drive the new slotted spring pin of the 5th shift head and gear shift head No. 3 to the 5th & reverse shift fork shaft, using the standard tool of pin punch or the like.



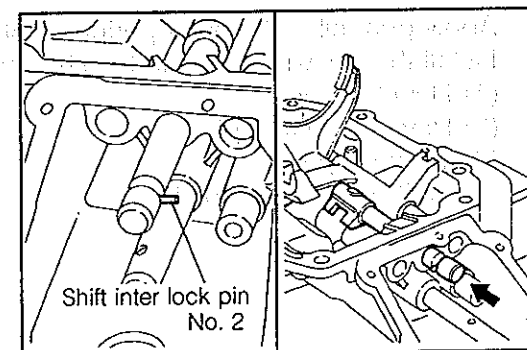
WRE91-MT167

12. Apply gear oil to the outer periphery of the 3rd & 4th shift fork shaft.



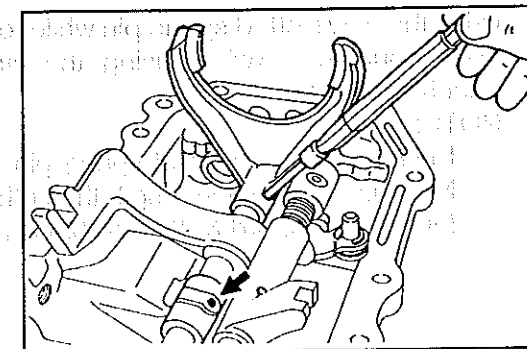
WRE91-MT168

13. Insert the shift inter lock pin No. 2 to the 3rd & 4th shift fork shaft.
14. Install the 3rd & 4th shift fork and gear shift head No. 2 to the 3rd & 4th shift fork shaft.
15. Remove the SST (09339-87301-000) by pushing the 3rd & 4th shift fork shaft toward front side with your fingers.



WRE91-MT169

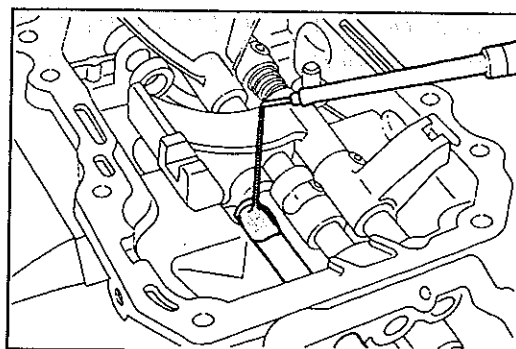
16. Drive the new slotted spring pin of the 3rd & 4th shift fork and gear shift head No. 2 to the 3rd & 4th shift fork shaft.



WRE91-MT170

MANUAL TRANSMISSION

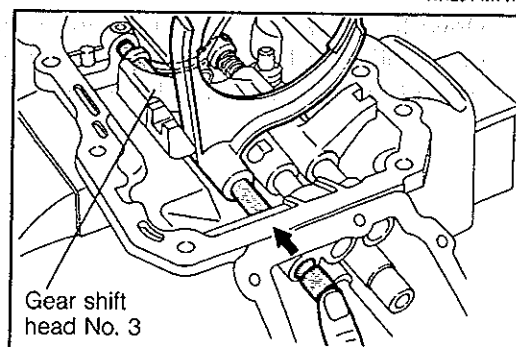
17. Apply gear oil to the outer periphery of the 1st & 2nd shift fork shaft.



WRE91-MT171

18. Install the gear shift head No. 3 and 1st & 2nd gear shift fork to the 1st & 2nd gear shift fork shaft.

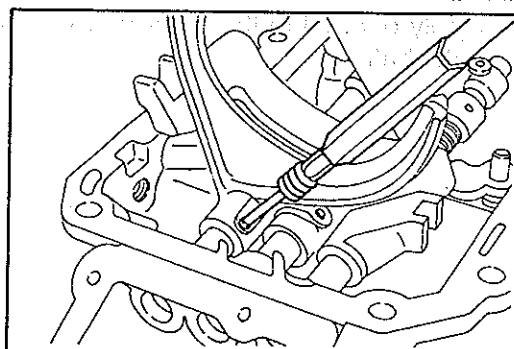
19. Remove the SST (09339-87301-000) by pushing the 1st & 2nd gear shift fork shaft toward front side with your fingers.



Gear shift head No. 3

WRE91-MT172

20. Drive the new slotted spring pin of the gear shift head No. 3 and 1st & 2nd gear shift fork to the 1st & 2nd gear shift fork shaft.

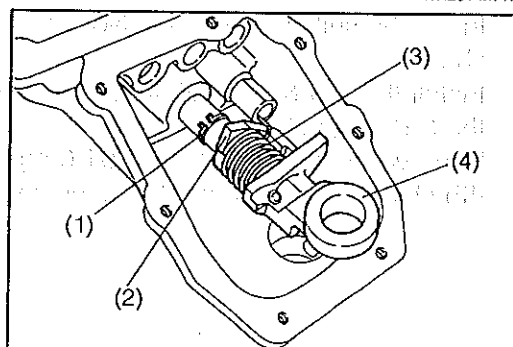


WRE91-MT173

21. Apply gear oil to the outer periphery of the shift lever shaft.

22. Install the following parts to the shift lever shaft.

- (1) New "E"-ring
- (2) Reverse restrict pin
- (3) Torsion spring
- (4) Shift outer lever No. 1

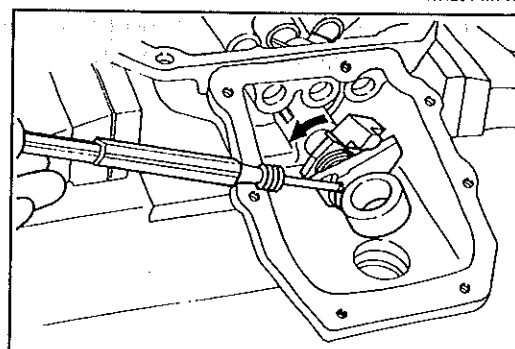


WRE91-MT174

23. Drive the new slotted spring pin while rotating the shift outer lever counterclockwise, using the standard tool of pin punch or the like.

NOTE:

- Ensure that the slotted spring pin for shift outer lever No. 1 is 2 mm longer length than other slotted spring pin for 1st & 2nd, 3rd & 4th and 5th & reverse shift fork.

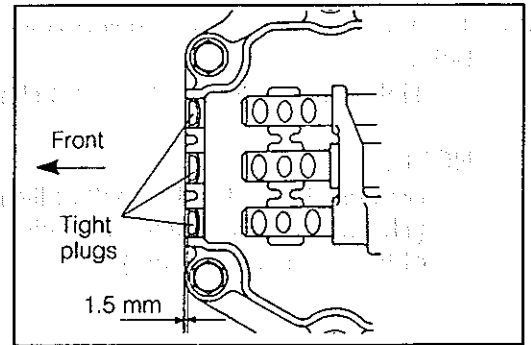


WRE91-MT175

24. Install new tight plugs.

NOTE:

- Make sure that the tight plugs has been driven to a point 1.5 mm deep from the edge surface of the transmission case cover.

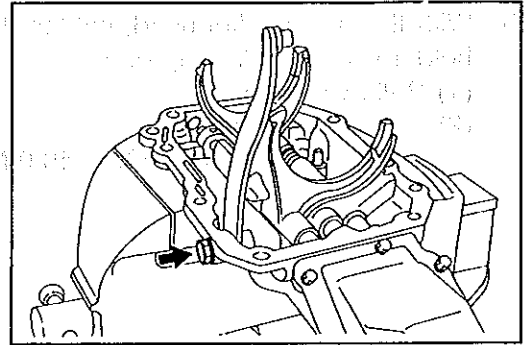


WRE91-MT176

25. Install the reverse shift arm.

26. Tighten the shift arm pivot with a new gasket interposed.

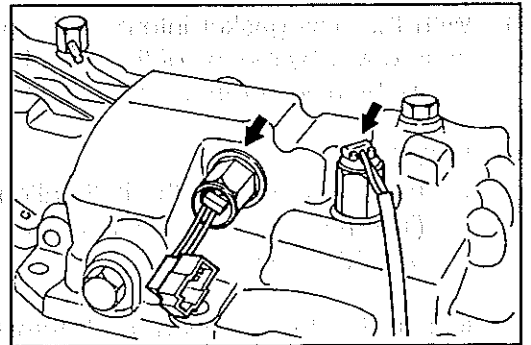
Tightening Torque: 39.2 - 58.8 N·m (4.0 - 6.0 kgf·m)



WRE91-MT177

27. Tighten the backup lamp switch and transmission position detect switch with new gaskets interposed.

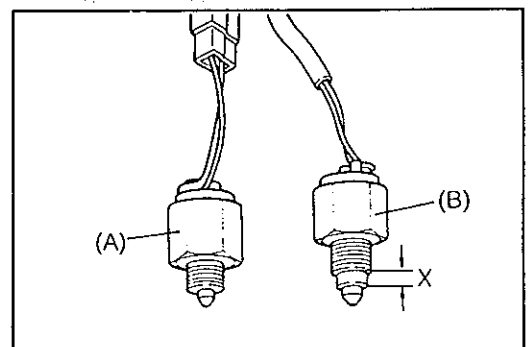
Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf·m)



WRE91-MT178

NOTE:

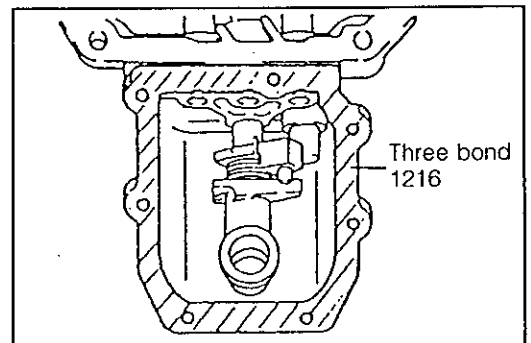
- The backup lamp switch (A) and the transmission position detect switch (B) differ in shape from each other as to the length of the section X, as indicated in the right figure. Make sure that these parts are installed correctly.



WRE91-MT179

28. Apply the following liquid gasket to the seal surface of the shift lever housing dust cover in the transmission case cover. (Slant line section in the right figure)

Three Bond 1216 (made by Three Bond)



WRE91-MT180

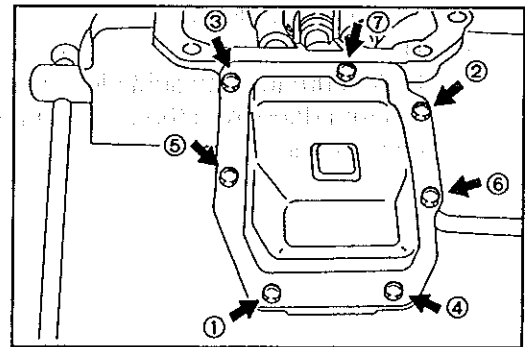
MANUAL TRANSMISSION

29. Tighten the shift lever housing dust cover with the seven bolts.

Tightening Torque: 5.9 - 8.8 N·m (0.6 - 0.9 kgf-m)

NOTE:

- Be sure to tighten the bolts alternately and diagonally. (The right figure illustration indicates a typical example of tightening sequence.)

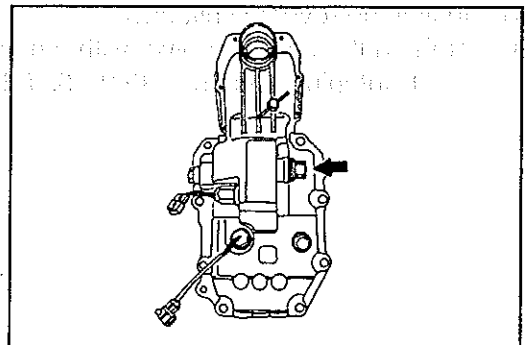


WRE91-MT181

30. With the new gasket used, tighten the reverse restrict pin holder with the following parts.

- (1) Ball (two pieces)
- (2) Compression spring

Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf-m)



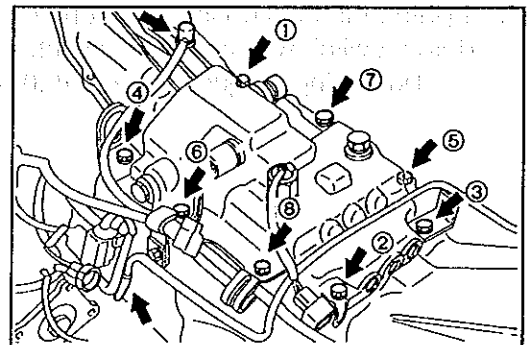
WRE91-MT182

31. With the new gasket interposed, tighten the transmission case cover by means of the eight bolts.

Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf-m)

NOTE:

- Be sure to tighten the bolts alternately and diagonally. (The right figure illustration indicates a typical example of tightening sequence.)

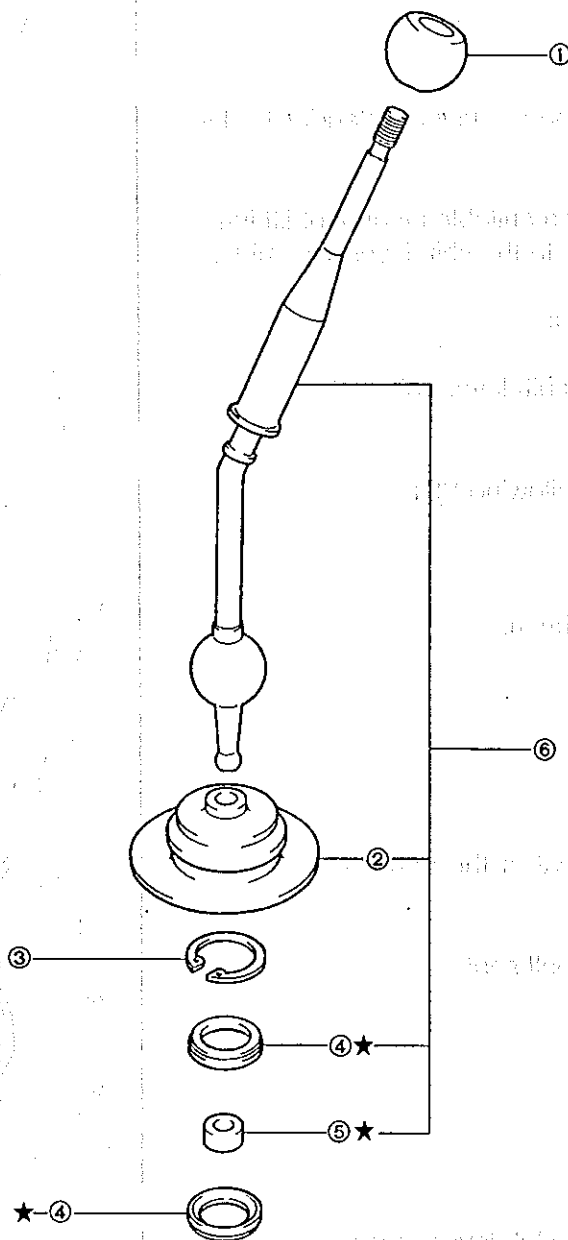


WRE91-MT183

32. Install the transmission and transfer assembly to the vehicle. (See page MT-50 to MT-54.)

SHIFT LEVER RELATED PARTS (4-Speed & 5-Speed) COMPONENTS

★ : Non-reusable parts



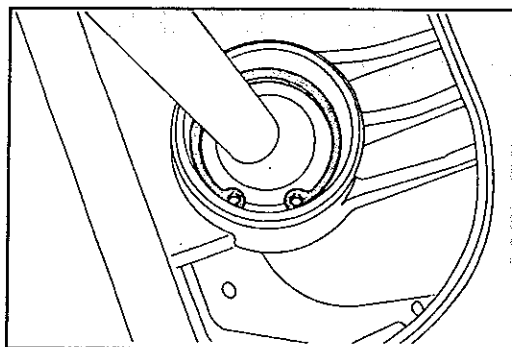
- ① Shift lever knob S/A
- ② Shift lever boot
- ③ Hole snap ring

- ④ Shift lever ball seat
- ⑤ Bush (for control shift lever retainer support)
- ⑥ Shift lever Ay

MANUAL TRANSMISSION

REMOVAL

1. Remove the hole snap ring, using standard snap ring pliers.



WRE91-MT185

2. Remove the shift lever boot, using standard flat screwdrivers.

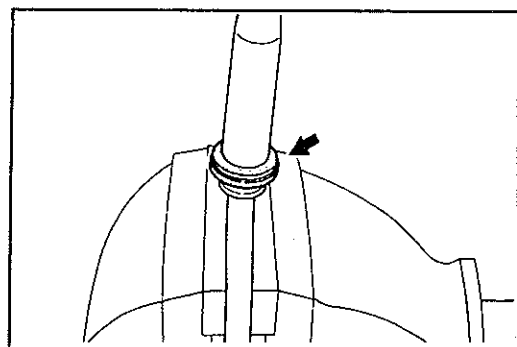
NOTE:

- Prior to the removal, apply a suitable amount of lithium-base multi-purpose grease to the shift lever assembly.

3. Remove the shift lever ball seat.

NOTE:

- Never reuse the removed shift lever ball seat.



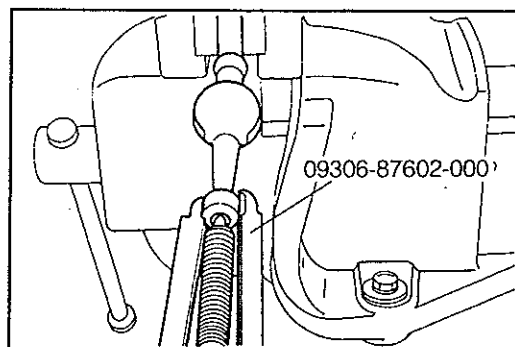
WRE91-MT186

4. Remove the bush, using the following SST.

SST: 09306-87602-000

NOTE:

- Never reuse the removed bush.

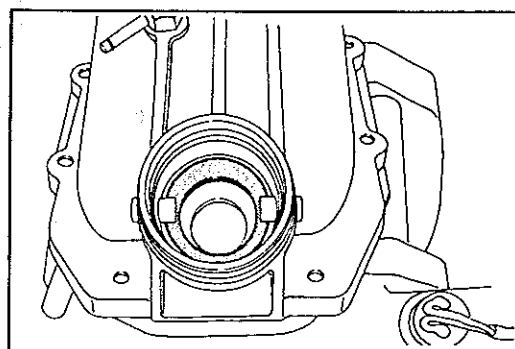


WRE91-MT187

5. Remove the shift lever ball seat at the transmission case cover.

NOTE:

- Never reuse the removed ball seat.



WRE91-MT188

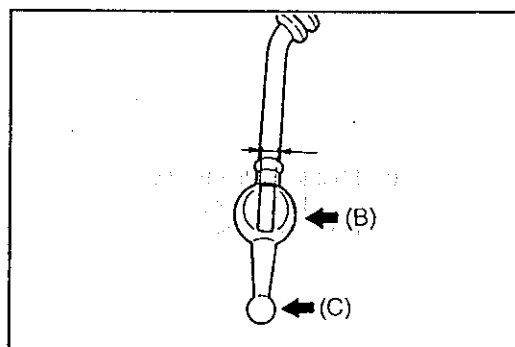
INSPECTION

1. Measure the section (A) of the shift lever assembly.

Unit: mm

Section (A)	Specified value	Allowable limit
For 5-speed	9.8 ± 0.05	9.85
For 4-speed	$\uparrow$	$\uparrow$

2. Visually inspect the sections (B) and (C) of the shift lever retainer assembly for damage or wear due to lack of grease.

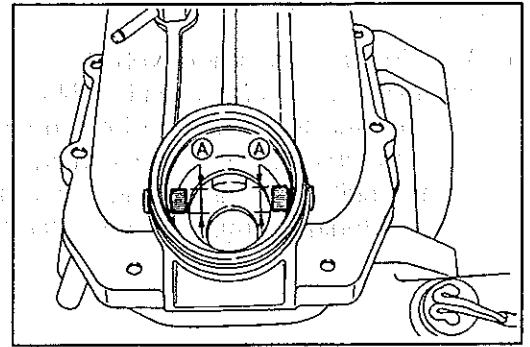


WRE91-MT189

- Measure the outer diameter (section A) of the shift lever retainer pin.

Unit: mm

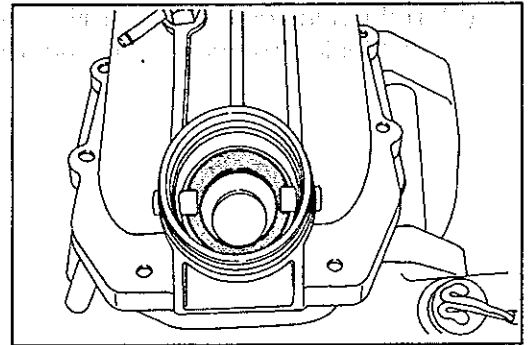
Section (A)	Specified value	Allowable limit
For 5-speed	$9 \begin{smallmatrix} -0.2 \\ -0.3 \end{smallmatrix}$	8.7
For 4-speed	↑	↑



WRE91-MT190

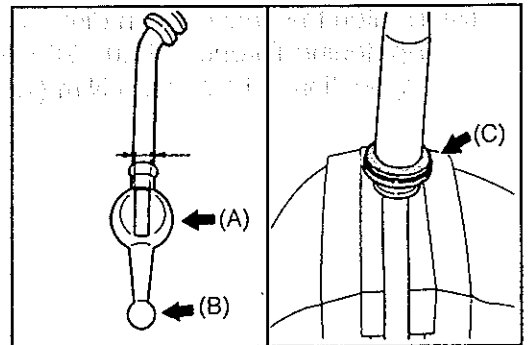
INSTALLATION

- Apply a suitable amount of lithium-base multi-purpose grease to the inner and outer peripheries of new shift lever ball seats.
- Place a new shift ball seat on the transmission case cover.



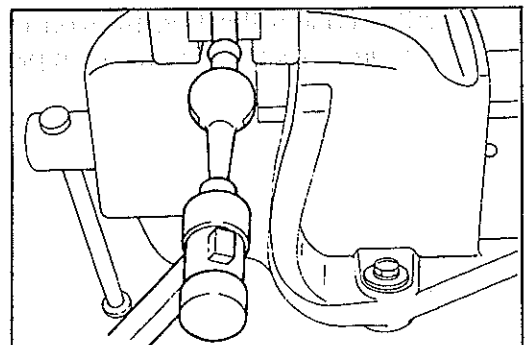
WRE91-MT191

- Apply a suitable amount of lithium-base multi-purpose grease to the sections (A), (B) and (C) of the shift lever assembly.
- Install a new shift lever ball seat.
- Install the shift lever boot.



WRE91-MT192

- Install a new bush by lightly tapping it with a standard plastic hammer or the like.
- Apply a suitable amount of lithium-base multi-purpose grease to the outer periphery of the bush.

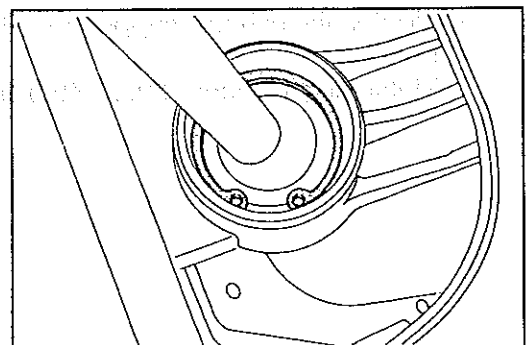


WRE91-MT193

- Install the shift lever assembly with the hole snap ring, using standard snap ring pliers.

NOTE:

- Make sure that the hole snap ring is installed to the groove section of the transmission case cover.



WRE91-MT194

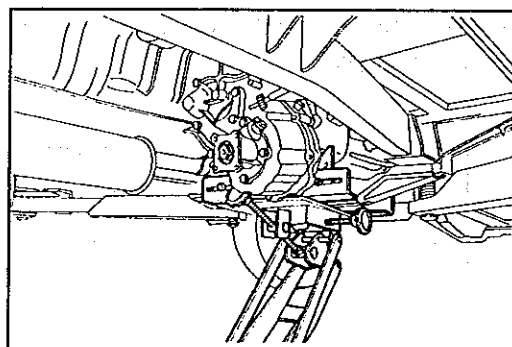
MANUAL TRANSMISSION

INSTALLATION

1. Working from the under vehicle

- (1) Tighten the crossmember No. 2 to the chassis frame with the four bolts on both right and left sides, while supporting the transmission and transfer assembly with the suitable transmission jack or the like.

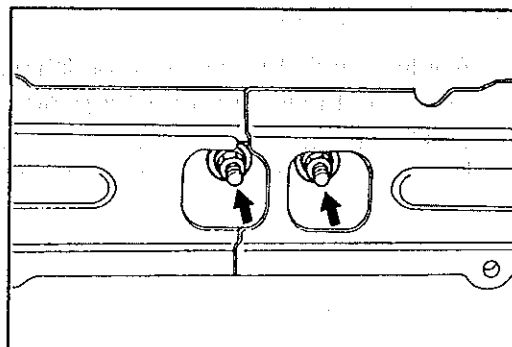
Tightening Torque: 49.0 - 68.6 N·m (5.0 - 7.0 kgf-m)



WRE91-MT195

- (2) Tighten the crossmember No. 2 with the two nuts.

Tightening Torque: 49.0 - 68.6 N·m (5.0 - 7.0 kgf-m)

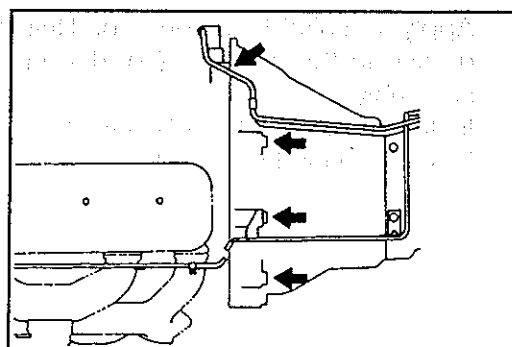


WRE91-MT196

- (3) Tighten the transmission direct-connecting bolts.

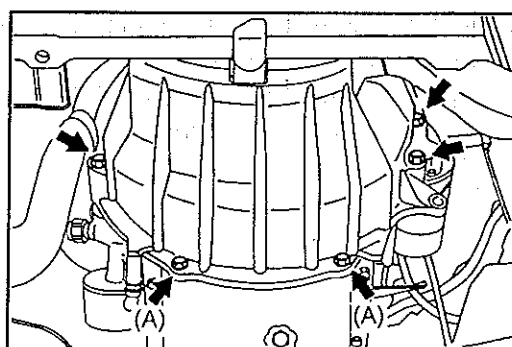
Tightening Torque: 49.0 - 78.4 N·m (5.0 - 8.0 kgf-m)

(A) section: 14.7 - 24.5 N·m (1.5 - 2.5 kgf-m)



WRE91-MT197

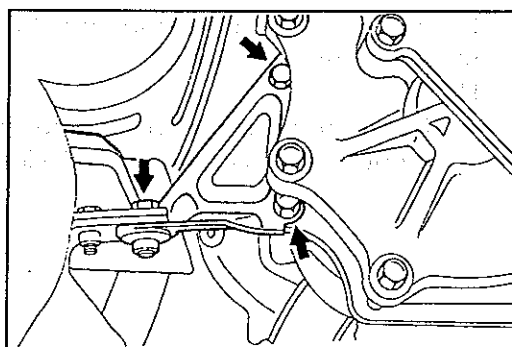
- (4) After tighten the transmission direct-connecting bolts securely, remove the wooden pieces.



WRE91-MT198

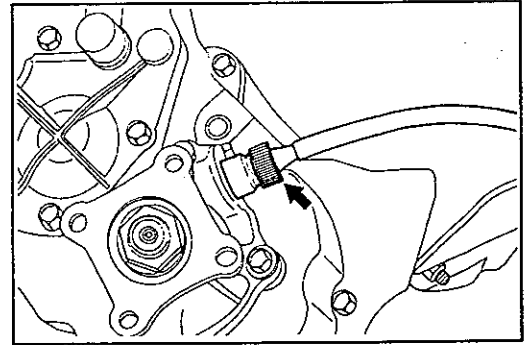
- (5) Tighten the exhaust support pipe bracket with the three bolts.

Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf-m)



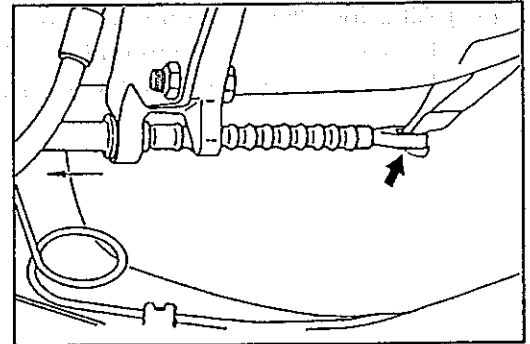
WRE91-MT199

- (6) Install the speedometer cable, using the standard tool of plier.



WRE91-MT200

- (7) Apply lithium base multi-purpose grease to the connecting section between the clutch release fork and the clutch release cable.
- (8) Connect the clutch release cable assembly at the clutch housing side.



WRE91-MT201

NOTE:

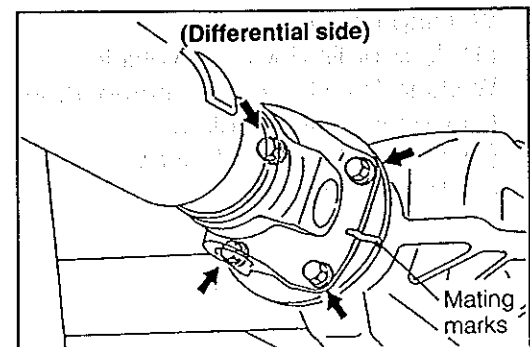
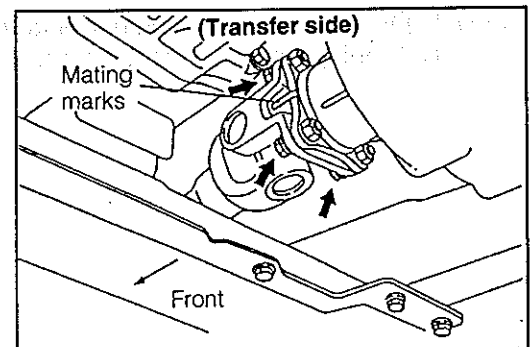
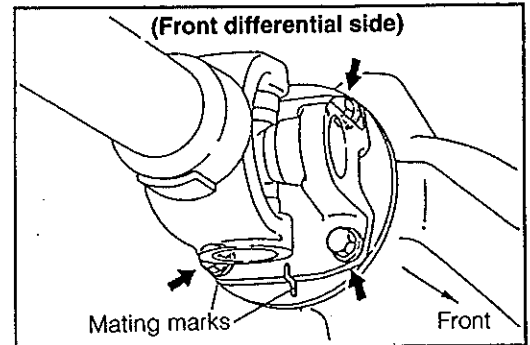
- While installing the clutch release cable assembly, care must be exercised not to damage the boot section of the clutch release cable assembly.

- (9) Install the both front and rear propeller shafts with the mating marks that were put during the removal of the propeller shaft aligned with each other.

Tightening Torque: 58.8 - 78.5 N·m (6.0 - 8.0 kgf·m)

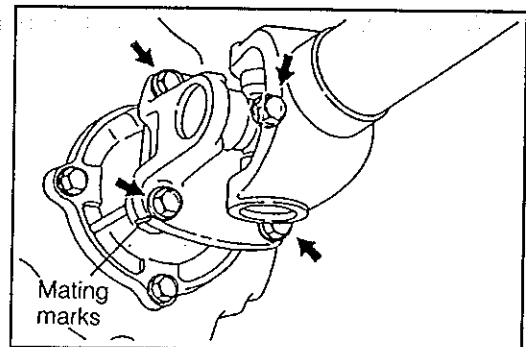
CAUTION:

- Make sure to line up those mating marks that were put during the removal of the front propeller shaft. If this caution should fail to be observed, the propeller shaft may emit abnormal noise or vibration.

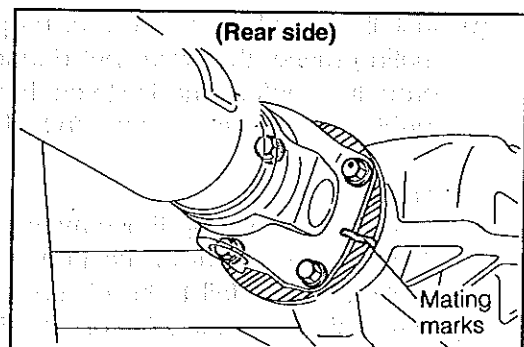
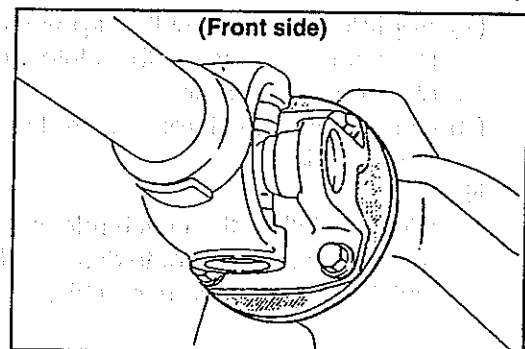


MANUAL TRANSMISSION

- (10) After installing the propeller shaft, apply black paint to the exposed machined surface of the differential (slant line section in the right figure) as a rust preventive measure.

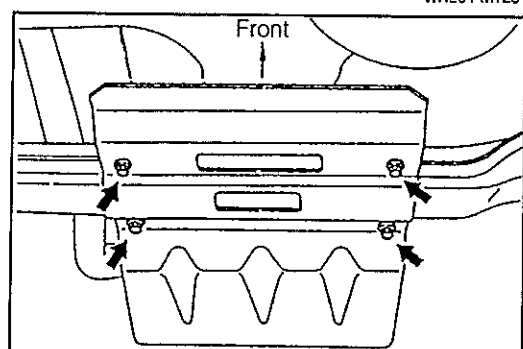


WRE91-MT202

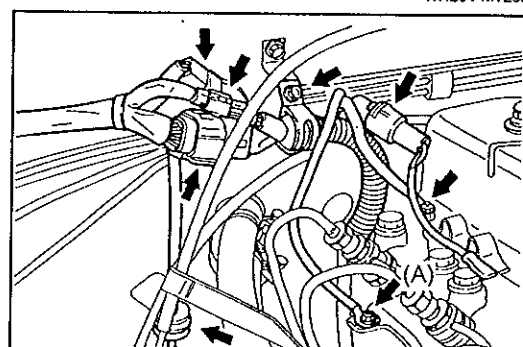


WRE91-MT204

- (11) Tighten the transmission under cover with the four bolts.
Tightening Torque: 15.7 - 23.5 N·m (1.6 - 2.4 kgf·m)



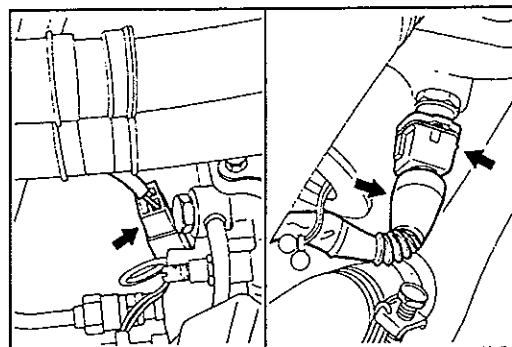
WRE91-MT205



WRE91-MT206

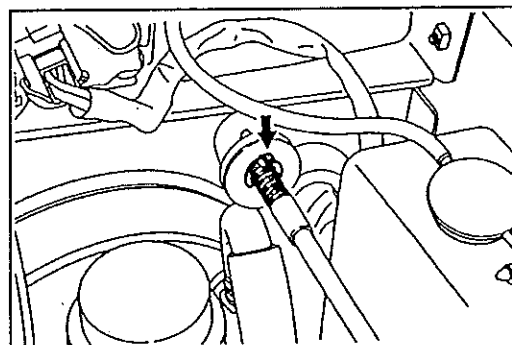
2. Working from the outside
 - (1) Jack or lift down the vehicle.
3. Working from the engine compartment room.
 - (1) Connect the couplers.
 - (2) Tighten the earth bolt (A).
 - (3) Tighten the bolt.

- (4) Connect the atmosphere hose and breather tube.
- (5) Connect the battery minus terminal.



WRE91-MT207

- (6) Attach the "E" ring to the clutch release cable.
(As for the clutch height and adjustment, Refer to CL-section.)



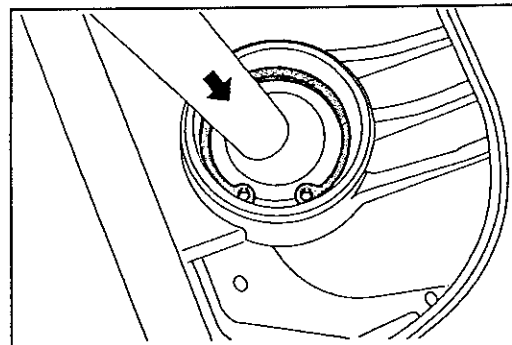
WRE91-MT208

4. Working from the vehicle interior

- (1) Install the hole snap ring while the pushing down of the transmission control lever.

NOTE:

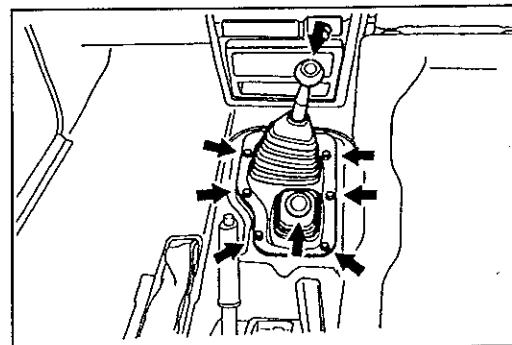
Make sure that the hole snap ring should be installed to the groove section of the transmission case cover.



WRE91-MT209

- (2) Tighten the shift lever boot with the six bolts.
Tightening Torque: 9.8 - 15.6 N·m (1.0 - 1.6 kgf·m)

- (3) Place the floor carpet.
- (4) Install the console box. (Refer BO-section.)
- (5) Install the transmission and transfer control lever knobs.



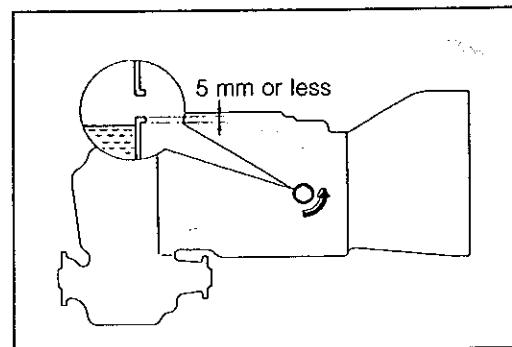
WRE91-MT210

- (6) Fill the transmission and transfer oil.

	Oil capacity	API	SAE
T/M	2.9L	GL-3	90
T/F	1.3L	GL-3	75W-90 or 75W-85

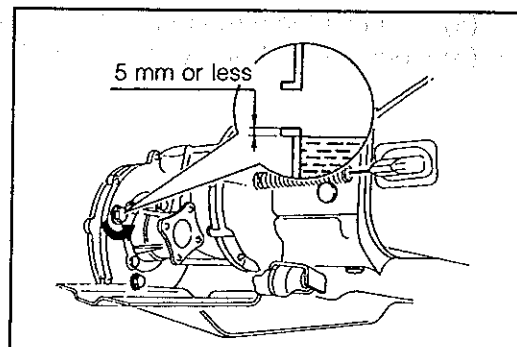
Tighten the both transmission and transfer filler plugs with new gasket.

Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf·m)



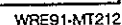
WRE91-MT211

MANUAL TRANSMISSION



WRE91-MT203

1. Remove the shift lever from the transmission housing. (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) (AA) (AB) (AC) (AD) (AE) (AF) (AG) (AH) (AI) (AJ) (AK) (AL) (AM) (AN) (AO) (AP) (AQ) (AR) (AS) (AT) (AU) (AV) (AW) (AX) (AY) (AZ) (BA) (BB) (BC) (BD) (BE) (BF) (BG) (BH) (BI) (BJ) (BK) (BL) (BM) (BN) (BO) (BP) (BQ) (BR) (BS) (BT) (BU) (BV) (BW) (BX) (BY) (BZ) (CA) (CB) (CC) (CD) (CE) (CF) (CG) (CH) (CI) (CJ) (CK) (CL) (CM) (CN) (CO) (CP) (CQ) (CR) (CS) (CT) (CU) (CV) (CW) (CX) (CY) (CZ) (DA) (DB) (DC) (DD) (DE) (DF) (DG) (DH) (DI) (DJ) (DK) (DL) (DM) (DN) (DO) (DP) (DQ) (DR) (DS) (DT) (DU) (DV) (DW) (DX) (DY) (DZ) (EA) (EB) (EC) (ED) (EE) (EF) (EG) (EH) (EI) (EJ) (EK) (EL) (EM) (EN) (EO) (EP) (EQ) (ER) (ES) (ET) (EU) (EV) (EW) (EX) (EY) (EZ) (FA) (FB) (FC) (FD) (FE) (FF) (FG) (FH) (FI) (FJ) (FK) (FL) (FM) (FN) (FO) (FP) (FQ) (FR) (FS) (FT) (FU) (FV) (FW) (FX) (FY) (FZ) (GA) (GB) (GC) (GD) (GE) (GF) (GG) (GH) (GI) (GJ) (GK) (GL) (GM) (GN) (GO) (GP) (GQ) (GR) (GS) (GT) (GU) (GV) (GW) (GX) (GY) (GZ) (HA) (HB) (HC) (HD) (HE) (HF) (HG) (HH) (HI) (HJ) (HK) (HL) (HM) (HN) (HO) (HP) (HQ) (HR) (HS) (HT) (HU) (HV) (HW) (HX) (HY) (HZ) (IA) (IB) (IC) (ID) (IE) (IF) (IG) (IH) (II) (IJ) (IK) (IL) (IM) (IN) (IO) (IP) (IQ) (IR) (IS) (IT) (IU) (IV) (IW) (IX) (IY) (IZ) (JA) (JB) (JC) (JD) (JE) (JF) (JG) (JH) (JI) (JJ) (JK) (JL) (JM) (JN) (JO) (JP) (JQ) (JR) (JS) (JT) (JU) (JV) (JW) (JX) (JY) (JZ) (KA) (KB) (KC) (KD) (KE) (KF) (KG) (KH) (KI) (KJ) (KK) (KL) (KM) (KN) (KO) (KP) (KQ) (KR) (KS) (KT) (KU) (KV) (KW) (KX) (KY) (KZ) (LA) (LB) (LC) (LD) (LE) (LF) (LG) (LH) (LI) (LJ) (LK) (LL) (LM) (LN) (LO) (LP) (LQ) (LR) (LS) (LT) (LU) (LV) (LW) (LX) (LY) (LZ) (MA) (MB) (MC) (MD) (ME) (MF) (MG) (MH) (MI) (MJ) (MK) (ML) (MM) (MN) (MO) (MP) (MQ) (MR) (MS) (MT) (MU) (MV) (MW) (MX) (MY) (MZ) (NA) (NB) (NC) (ND) (NE) (NF) (NG) (NH) (NI) (NJ) (NK) (NL) (NM) (NN) (NO) (NP) (NQ) (NR) (NS) (NT) (NU) (NV) (NW) (NX) (NY) (NZ) (OA) (OB) (OC) (OD) (OE) (OF) (OG) (OH) (OI) (OJ) (OK) (OL) (OM) (ON) (OO) (OP) (OQ) (OR) (OS) (OT) (OU) (OV) (OW) (OX) (OY) (OZ) (PA) (PB) (PC) (PD) (PE) (PF) (PG) (PH) (PI) (PJ) (PK) (PL) (PM) (PN) (PO) (PP) (PQ) (PR) (PS) (PT) (PU) (PV) (PW) (PX) (PY) (PZ) (QA) (QB) (QC) (QD) (QE) (QF) (QG) (QH) (QI) (QJ) (QK) (QL) (QM) (QN) (QO) (QP) (QQ) (QR) (QS) (QT) (QU) (QV) (QW) (QX) (QY) (QZ) (RA) (RB) (RC) (RD) (RE) (RF) (RG) (RH) (RI) (RJ) (RK) (RL) (RM) (RN) (RO) (RP) (RQ) (RR) (RS) (RT) (RU) (RV) (RW) (RX) (RY) (RZ) (SA) (SB) (SC) (SD) (SE) (SF) (SG) (SH) (SI) (SJ) (SK) (SL) (SM) (SN) (SO) (SP) (SQ) (SR) (SS) (ST) (SU) (SV) (SW) (SX) (SY) (SZ) (TA) (TB) (TC) (TD) (TE) (TF) (TG) (TH) (TI) (TJ) (TK) (TL) (TM) (TN) (TO) (TP) (TQ) (TR) (TS) (TT) (TU) (TV) (TW) (TX) (TY) (TZ) (UA) (UB) (UC) (UD) (UE) (UF) (UG) (UH) (UI) (UJ) (UK) (UL) (UM) (UN) (UO) (UP) (UQ) (UR) (US) (UT) (UU) (UV) (UW) (UX) (UY) (UZ) (VA) (VB) (VC) (VD) (VE) (VF) (VG) (VH) (VI) (VJ) (VK) (VL) (VM) (VN) (VO) (VP) (VQ) (VR) (VS) (VT) (VU) (VV) (VW) (VX) (VY) (VZ) (WA) (WB) (WC) (WD) (WE) (WF) (WG) (WH) (WI) (WJ) (WK) (WL) (WM) (WN) (WO) (WP) (WQ) (WR) (WS) (WT) (WU) (WV) (WW) (WX) (WY) (WZ) (XA) (XB) (XC) (XD) (XE) (XF) (XG) (XH) (XI) (XJ) (XK) (XL) (XM) (XN) (XO) (XP) (XQ) (XR) (XS) (XT) (XU) (XV) (XW) (XX) (XY) (XZ) (YA) (YB) (YC) (YD) (YE) (YF) (YG) (YH) (YI) (YJ) (YK) (YL) (YM) (YN) (YO) (YP) (YQ) (YR) (YS) (YT) (YU) (YV) (YW) (YX) (YZ) (ZA) (ZB) (ZC) (ZD) (ZE) (ZF) (ZG) (ZH) (ZI) (ZJ) (ZK) (ZL) (ZM) (ZN) (ZO) (ZP) (ZQ) (ZR) (ZS) (ZT) (ZU) (ZV) (ZW) (ZX) (ZY) (ZZ)

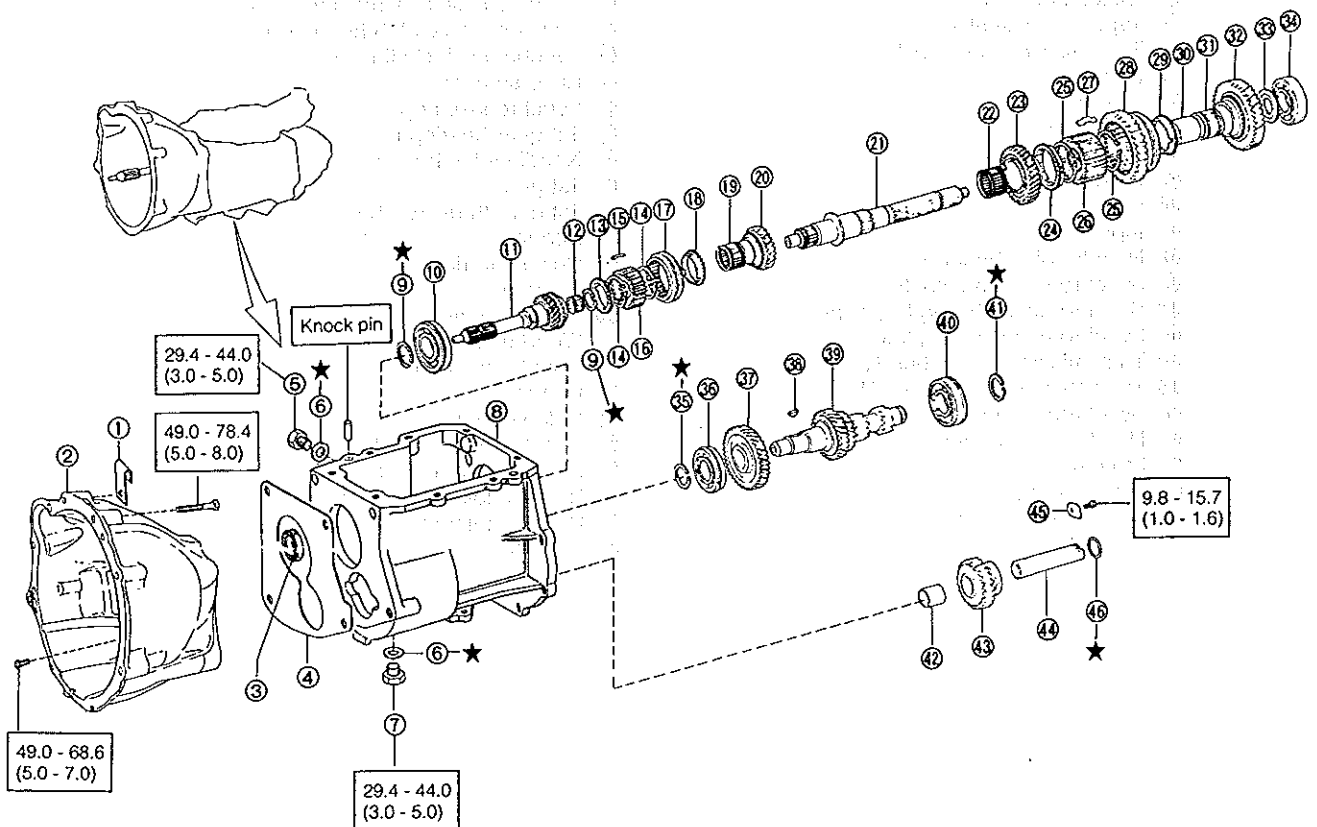


MANUAL TRANSMISSION

- ① Hose
- ② Clip
- ③ Union
- ④ Hose No. 1
- ⑤ Hanger
- ⑥ Pin
- ⑦ Shift inter lock pin No. 1
- ⑧ Shift inter lock pin No. 2
- ⑨ Clamp
- ⑩ Back-up lamp switch
- ⑪ Gasket
- ⑫ Clamp
- ⑬ Bolt
- ⑭ Tight plug
- ⑮ Mission case cover gasket
- ⑯ Transmission case cover
- ⑰ Shift lever housing dust cover
- ⑱ Ball
- ⑲ Compression spring
- ⑳ Gasket
- ㉑ Reverse restrict pin holder
- ㉒ Slotted spring pin
- ㉓ Shift inner lever
- ㉔ Shift lever shaft
- ㉕ Shift outer lever No. 1
- ㉖ Slotted spring pin
- ㉗ Ball
- ㉘ Compression spring
- ㉙ 1st & 2nd shift fork shaft
- ㉚ Gear shift head No. 2
- ㉛ 1st & 2nd shift fork
- ㉜ 3rd & 4th shift fork shaft
- ㉝ 3rd & 4th shift fork
- ㉞ Clutch housing
- ㉟ Clamp
- ㊱ "S" type oil seal
- ㊲ Transmission case gasket
- ㊳ Filler plug
- ㊴ Transmission case
- ㊵ Gasket
- ㊶ Drain plug
- ㊷ Hole snap ring
- ㊸ Bearing
- ㊹ Input shaft
- ㊺ Needle roller bearing
- ㊻ Hole snap ring
- ㊼ Synchronesh shifting key spring
- ㊽ Synchronesh shifting key
- ㊾ Transmission clutch hub No. 2
- ㊿ Transmission hub sleeve No. 1
- ① Synchronizer ring No. 3
- ② Needle roller bearing
- ③ 3rd gear
- ④ Output shaft
- ⑤ Needle roller bearing
- ⑥ 2nd gear
- ⑦ Synchronizer ring
- ⑧ Synchronesh shifting key spring
- ⑨ Synchronesh shifting key
- ⑩ Transmission clutch hub No. 1
- ⑪ Reverse gear
- ⑫ Synchronizer ring
- ⑬ 1st gear bearing inner race
- ⑭ Needle roller bearing
- ⑮ 1st gear
- ⑯ 1st gear thrust washer
- ⑰ Bearing
- ⑱ Shaft snap ring
- ⑲ Bearing
- ㉑ Counter gear
- ㉒ Woodruff key
- ㉓ Counter gear shaft
- ㉔ Bearing
- ㉕ Shaft snap ring
- ㉖ Shift arm pivot
- ㉗ Gasket
- ㉘ Reverse shift arm
- ㉙ "E"-ring
- ㉚ 5th & reverse shift fork shaft
- ㉛ Bimetal formed bush
- ㉜ Reverse idler gear S/A
- ㉝ Reverse idler gear shaft
- ㉞ Reverse idler gear stopper
- ㉟ "O"-ring
- ㊱ Synchronizer ring No. 3
- ㊲ Shift lever knob S/A
- ㊳ Shift lever boots
- ㊴ Hole snap ring
- ㊵ Shift lever ball seat
- ㊶ Bush
- ㊷ Shift lever Ay
- ㊸ Reverse shift fork

INPUT SHAFT & COUNTER GEAR SHAFT RELATED PARTS COMPONENTS

 : Tightening torque
 Unit : N·m (kgf·m)
 ★ : Non-reusable parts



MANUAL TRANSMISSION

- ① Clamp
- ② Clutch housing
- ③ Type "S" oil seal
- ④ Transmission case gasket
- ⑤ Filler plug
- ⑥ Gasket
- ⑦ Drain plug
- ⑧ Transmission case
- ⑨ Hole snap ring
- ⑩ Bearing
- ⑪ Input shaft
- ⑫ Needle roller bearing
- ⑬ Synchronizer ring No. 3
- ⑭ Synchromesh shifting key spring
- ⑮ Synchromesh shifting key
- ⑯ Transmission clutch hub No. 2
- ⑰ Transmission hub sleeve No. 1
- ⑱ Synchronizer ring No. 3
- ⑲ Needle roller bearing
- ⑳ 3rd gear
- ㉑ Output shaft
- ㉒ Needle roller bearing
- ㉓ 2nd gear

- ㉔ Synchronizer ring
- ㉕ Synchromesh shifting key spring
- ㉖ Transmission clutch hub No. 1
- ㉗ Synchromesh shifting key
- ㉘ Reverse gear
- ㉙ Synchronizer ring
- ㉚ 1st gear bearing inner race
- ㉛ Needle roller bearing
- ㉜ 1st gear
- ㉝ 1st gear thrust washer
- ㉞ Bearing
- ㉟ Hole snap ring
- ㊱ Bearing
- ㊲ Counter gear
- ㊳ Woodruff key
- ㊴ Counter gear shaft
- ㊵ Bearing
- ㊶ Hole snap ring
- ㊷ Bimetal formed bush
- ㊸ Reverse idler gear S/A
- ㊹ Reverse idler gear shaft
- ㊺ Reverse idler stopper
- ㊻ "O"-ring

REMOVAL

1. Remove the transmission and transfer assembly from the vehicle.
2. Remove the transfer-related parts. (Refer to the TR section.)
3. Remove the transmission case cover with the transmission case cover gasket by removing the eight bolts.

NOTE:

- Never reuse the removed gasket.

4. Remove the clutch-related parts. (Refer to the CL section.)
5. Remove the clutch housing, with the type "S" oil seal installed, and transmission case gasket by removing the four bolts.

NOTE:

- Never reuse the removed transmission case gasket.

6. Remove the reverse idler gear stopper by removing the bolt.

NOTE:

- Since the threaded portion of this bolt has been coated with resin, thoroughly wash and wipe off the resin of the threaded portion in advance if the removed bolt is reused or a new bolt of the replacement parts is used.

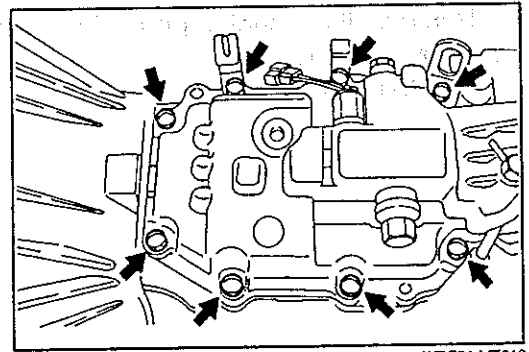
7. Pull out the reverse idler gear shaft toward your side, using standard pliers or the like.

8. Detach the stop ring of the output shaft rear bearing.
9. Remove the shaft snap ring of the counter gear rear bearing, using standard snap ring pliers.

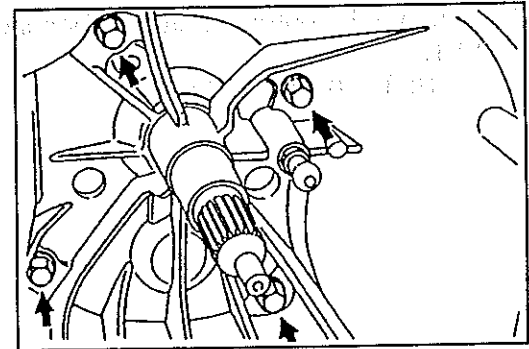
NOTE:

- Never reuse the removed shaft snap ring.

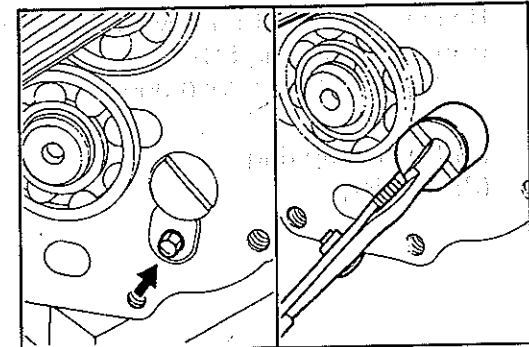
10. Lightly tap the counter gear shaft surface with a plastic hammer, facing toward the front side.
11. Lightly tap the counter gear shaft surface from the front side with a plastic hammer so that the position of the counter gear shaft rear bearing may slightly move toward the rear side to hook the SST.



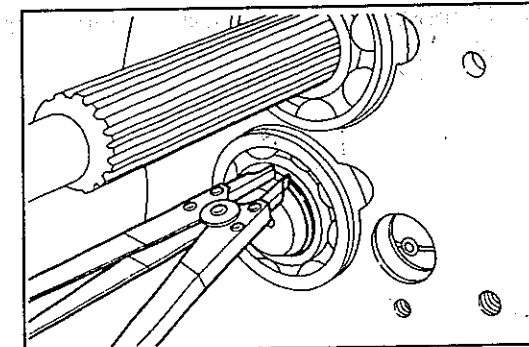
WRE91-MT216



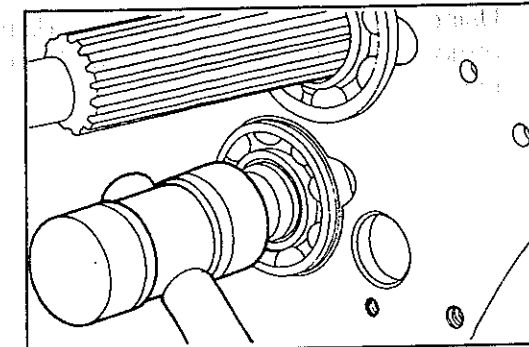
WRE91-MT217



WRE91-MT218



WRE91-MT219

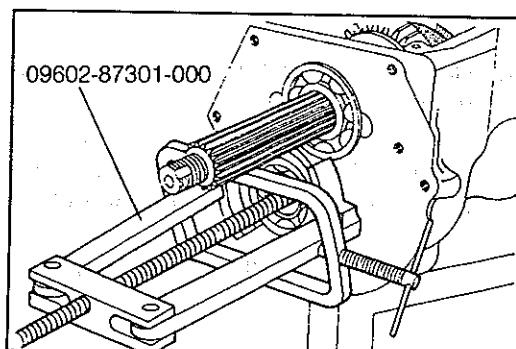


WRE91-MT220

MANUAL TRANSMISSION

12. Remove the counter gear shaft rear bearing, using the following SST.

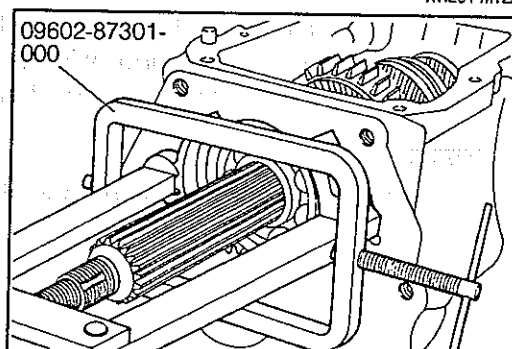
SST: 09602-87301-000



WRE91-MT221

13. Remove the output shaft rear bearing, using the following SST.

SST: 09602-87301-000

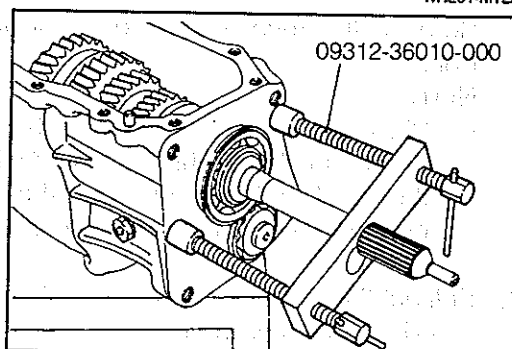


WRE91-MT222

14. Remove the input shaft with the following parts installed, using the following SST.

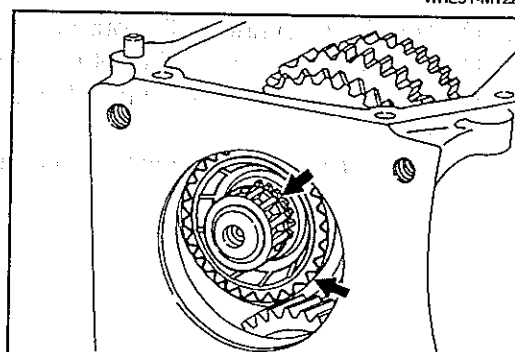
SST: 09312-36010-000

- (1) Shaft snap ring
- (2) Bearing



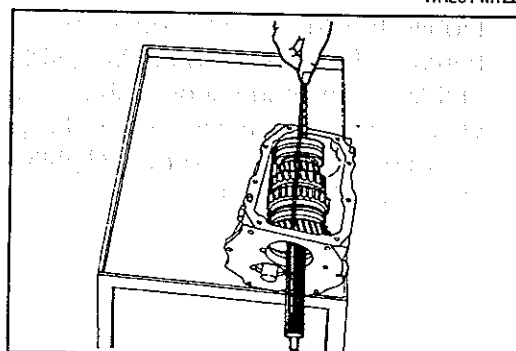
WRE91-MT223

15. Remove the needle roller bearing and synchronizer ring No. 3.



WRE91-MT224

16. Using an operation rope (outer diameter about 3 mm), remove the output shaft assembly from the transmission case.



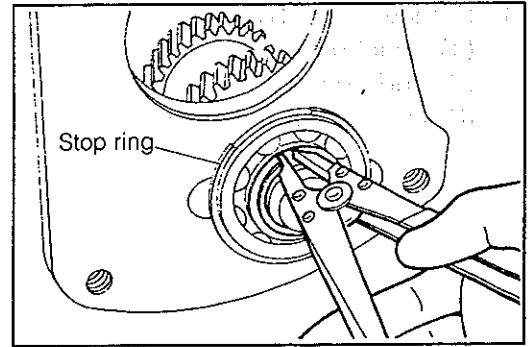
WRE91-MT225

17. Remove the shaft snap ring of the counter gear bearing, using the standard tool of snap ring plier.

NOTE:

- Never reuse the removed shaft snap ring.

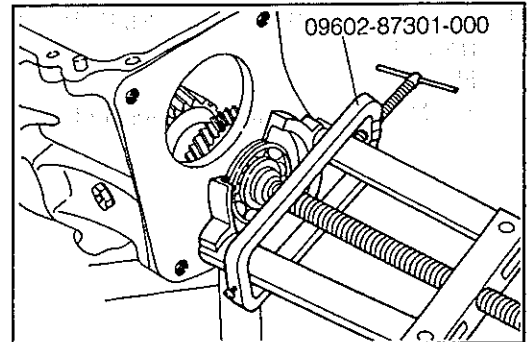
18. Detach the stop ring of the counter gear bearing.



WRE91-MT226

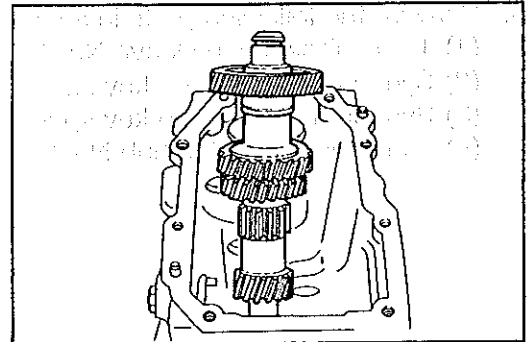
19. Lightly tap the counter gear shaft with a plastic hammer faces toward the rear.

20. Remove the counter gear bearing, using the following SST.
SST: 09602-87301-000



WRE91-MT227

21. Remove the counter gear shaft from the transmission case.

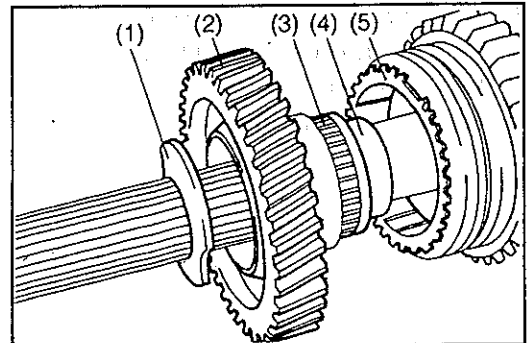


WRE91-MT228

DISASSEMBLY OF OUTPUT SHAFT

1. Remove the following parts.

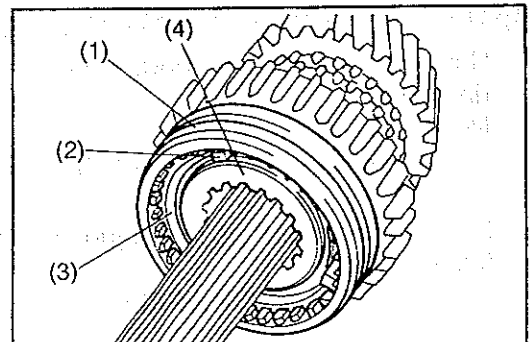
- (1) 1st gear thrust washer
- (2) 1st gear
- (3) Needle roller bearing
- (4) 1st gear bearing inner race
- (5) Synchronizer ring



WRE91-MT229

2. Remove the following parts in a set.

- (1) Reverse gear
- (2) Synchromesh shifting key (3 pcs)
- (3) Synchromesh shifting key spring (2 pcs)
- (4) Transmission clutch hub No. 1

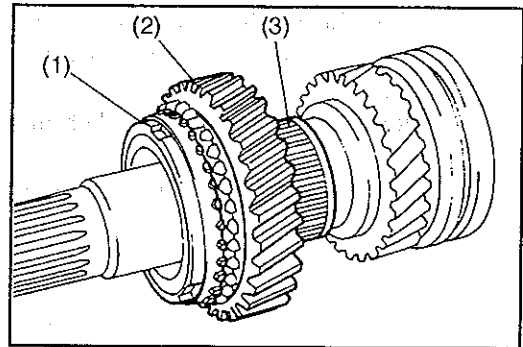


WRE91-MT230

MANUAL TRANSMISSION

3. Remove the following parts.

- (1) Synchronizer ring
- (2) 2nd gear
- (3) Needle roller bearing

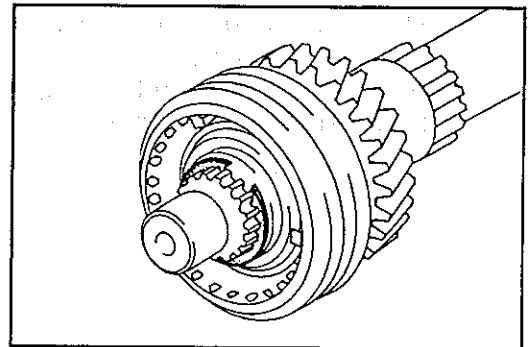


WRE91-MT231

4. Remove the shaft snap ring, using the standard tool of snap ring plier.

NOTE:

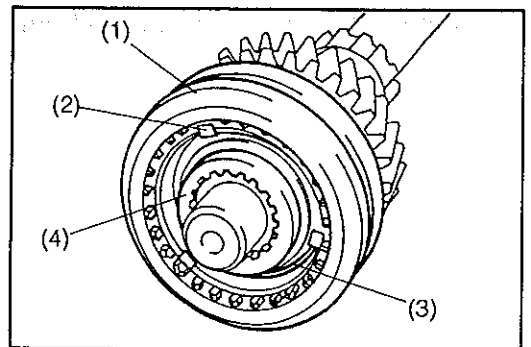
- Never reuse the removed shaft snap ring.



WRE91-MT232

5. Remove the following parts in a set.

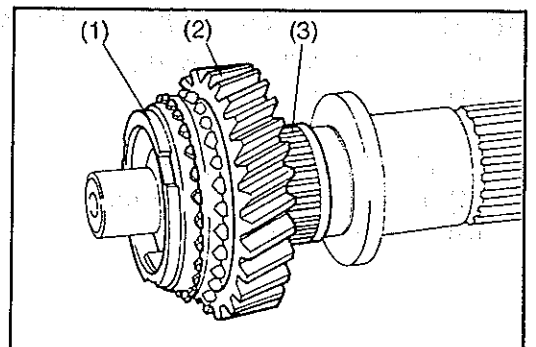
- (1) Transmission hub sleeve No. 1
- (2) Synchromesh shifting key (3 pcs)
- (3) Synchromesh shifting key spring (2 pcs)
- (4) Transmission clutch hub No. 2



WRE91-MT233

6. Remove the following parts.

- (1) Synchronizer ring No. 3
- (2) 3rd gear
- (3) Needle roller bearing



WRE91-MT234

DISASSEMBLY OF INPUT SHAFT

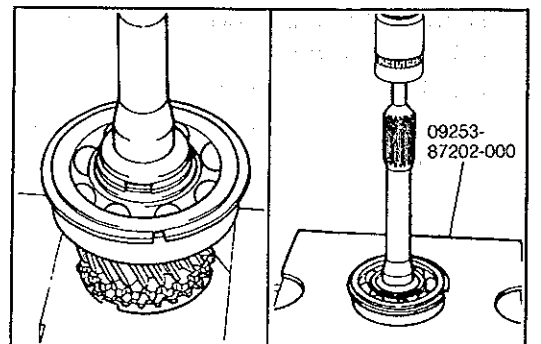
1. Remove the shaft snap ring, using the standard tool of snap ring plier.

NOTE:

- Never reuse the removed shaft snap ring

2. Remove the bearing, in conjunction with a press and the following SST.

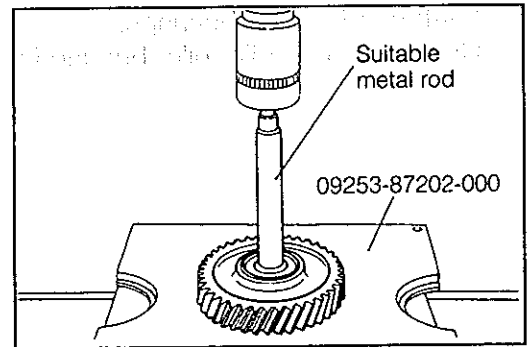
SST: 09253-87202-000



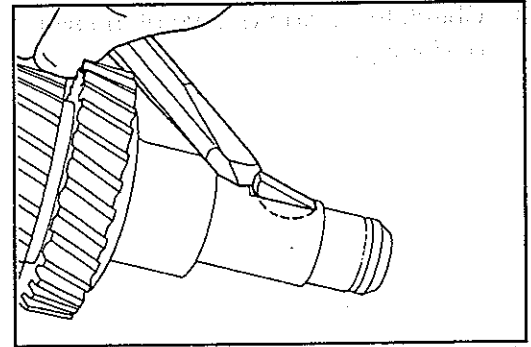
WRE91-MT235

DISASSEMBLY OF COUNTER GEAR SHAFT

1. Press the counter gear shaft, in conjunction with the suitable metal rod and the following SST.
SST: 09253-87202-000

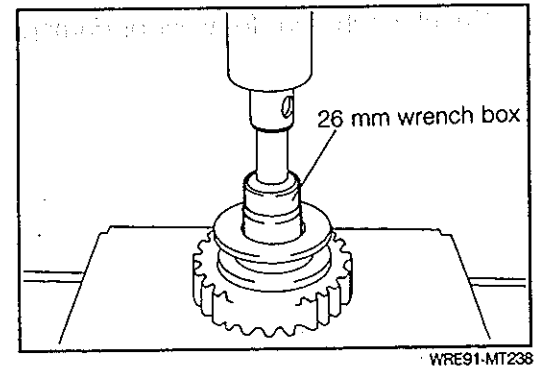


2. Remove the woodruff key, using the standard tool of chisel or the like.



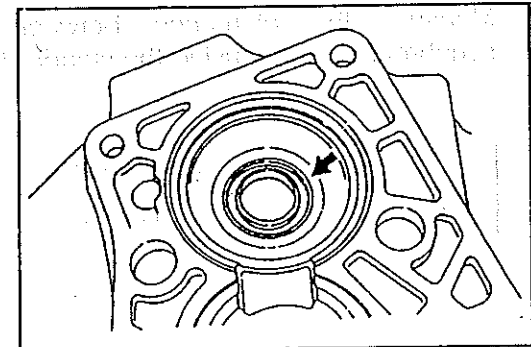
REVERSE IDLER GEAR FORMED BUSH REMOVAL

1. Remove the bimetal formed bush, in conjunction with the press and the standard tool of 26 mm wrench box.



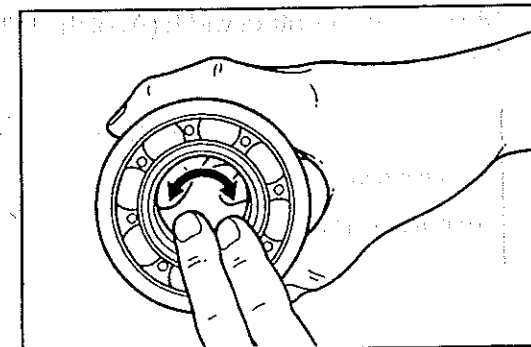
REMOVAL OF CLUTCH HOUSING OIL SEAL

1. Remove the "S" type oil seal.
NOTE:
 - Never reuse the removed oil seal.



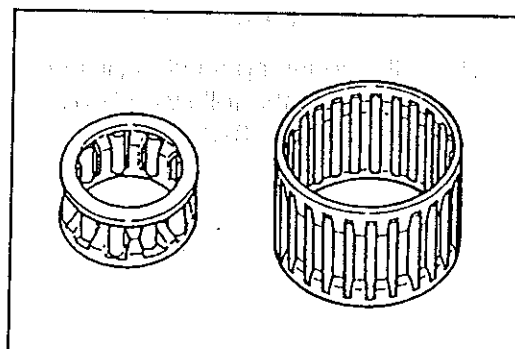
INSPECTION

1. Each ball bearings
Rotate the bearing inner race by applying a force with your finger. Check to see if the bearing inner race rotates smoothly without any sticking.



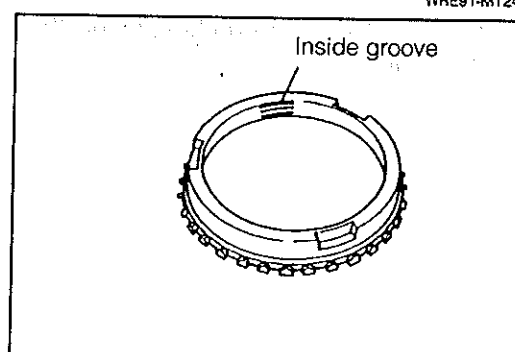
MANUAL TRANSMISSION

2. Each needle roller bearings.
Check each needle roller bearing for wear or damage.



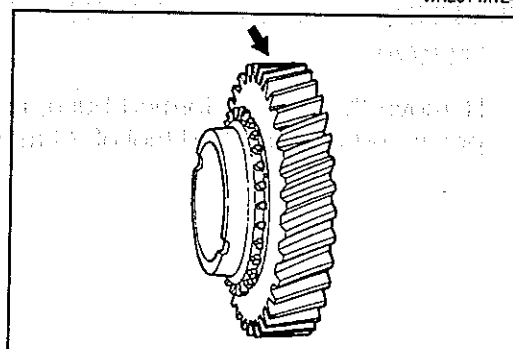
WRE91-MT241

3. Check the inside groove of the synchronizer rings for wear or damage.



WRE91-MT242

4. Check each gear for wear or damage.

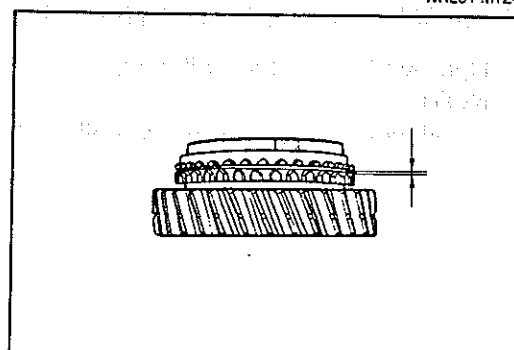


WRE91-MT243

5. Measure the clearance between each gear and synchronizer rings, using the standard tool of filler gauge.

Unit: mm

	Specified value	Allowable limit
All gears	1.3 - 1.7	0.8

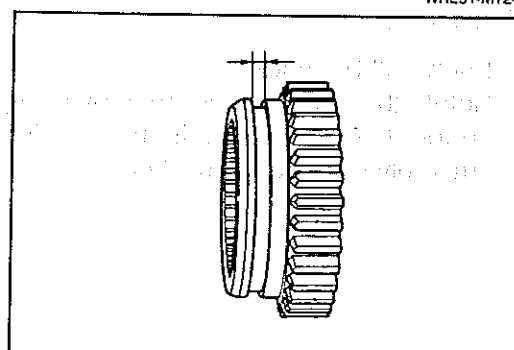


WRE91-MT244

6. Measure the contact width (A) of the following parts with the shift fork.

Unit: mm

	Specified value	Allowable limit
Reverse gear	$7^{+0}_{-0.053}$	7.3
Transmission hub sleeve No. 1	$7^{+0}_{-0.053}$	7.3

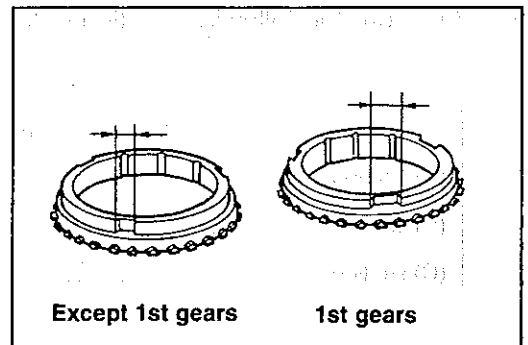


WRE91-MT245

7. Measure the contact width of each synchronizer ring with the synchromesh shifting key. Replace the synchronizer ring which does not confirm to the specifications with new one.

Unit: mm

	Specified value	Allowable limit
1st gear	8.4 ± 0.1	8.5
Except 1st gear	11.0 ± 0.1	11.1

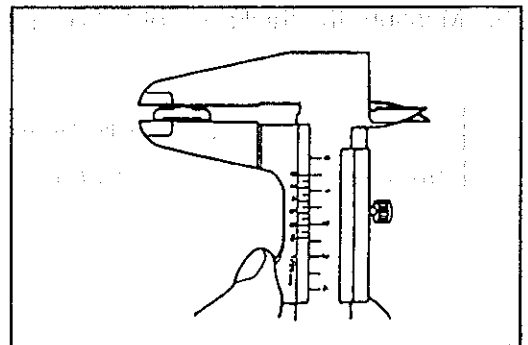


WRE91-MT246

8. Measure the height of each synchromesh shifting key.

Unit: mm

	Specified value	Allowable limit
1st & 2nd	6 ± 0.15	5.6
3rd & 4th	5.8 ± 0.15	5.4

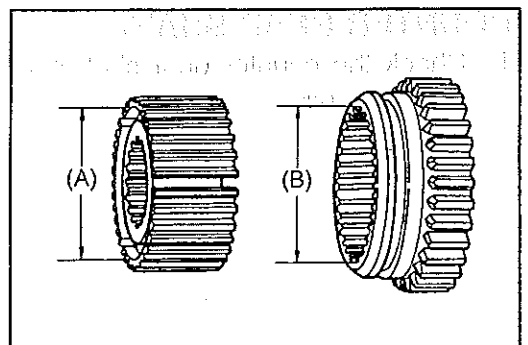


WRE91-MT247

9. Measure the bore and outer diameter of the following parts.

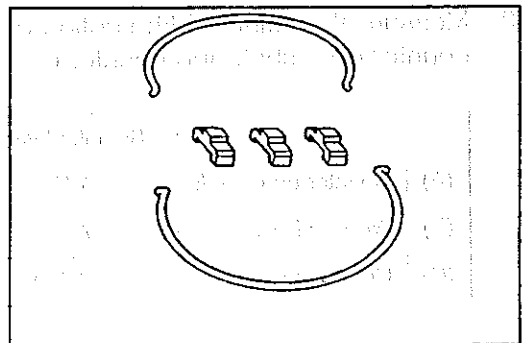
Unit: mm

	Specified value	Allowable limit
Reverse gear	$87.5^{+0.033}_{-0.078}$	87.5
Transmission clutch hub No. 1	$87.5^{+0.120}_{-0.155}$	87.3
Transmission hub sleeve No. 1	$72.5^{+0}_{-0.2}$	72.7
Transmission clutch hub No. 2	$72.5^{+0.10}_{-0.17}$	72.3



WRE91-MT248

10. Check the synchromesh shifting key and synchromesh shifting key spring for evidence of wear or damage.

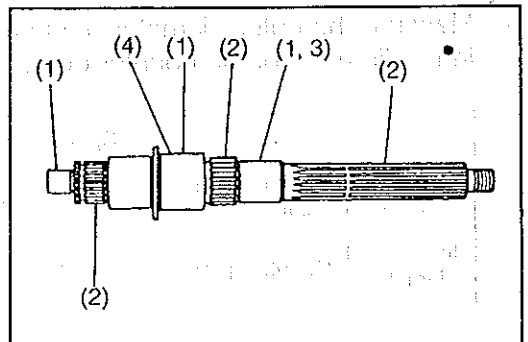


WRE91-MT249

11. Check the output shaft for the following items.

- (1) Needle roller bearing race section for wear or damage
- (2) Spline section for damage
- (3) Fitting section of bearing inner race for wear
- (4) Measure the runout of the output shaft at the 2nd gear section

Allowable Limit: 0.05 mm



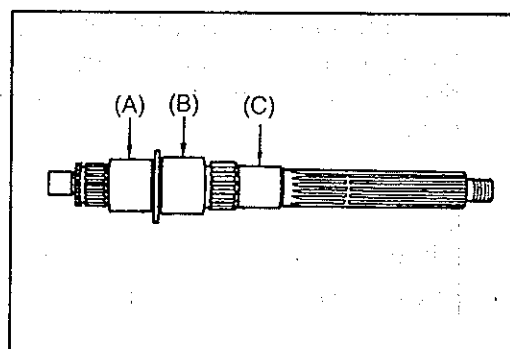
WRE91-MT250

MANUAL TRANSMISSION

12. Measure the following section of the output shaft.

Unit: mm

	Specified value	Allowable limit
(A) section	40 $\begin{smallmatrix} -0.015 \\ -0.030 \end{smallmatrix}$	39.97
(B) section	48 $\begin{smallmatrix} -0.015 \\ -0.030 \end{smallmatrix}$	47.97
(C) section	38 $\begin{smallmatrix} -0.005 \\ -0.021 \end{smallmatrix}$	37.98

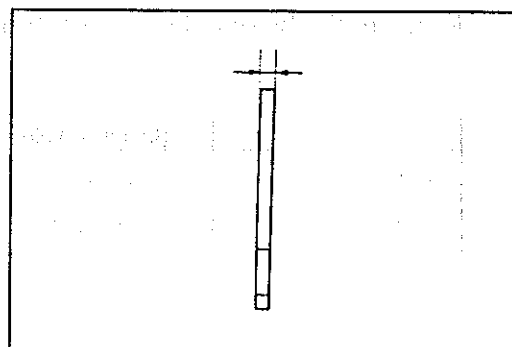


WRE91-MT251

13. Measure the thickness of 1st gear thrust washer.

Unit: mm

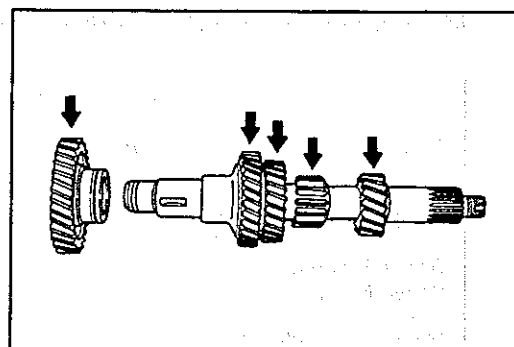
	Specified value	Allowable limit
Thickness	4 ± 0.1	3.85



WRE91-MT252

COUNTER GEAR SHAFT

1. Check the counter gear shaft and counter gear for wear and damage.

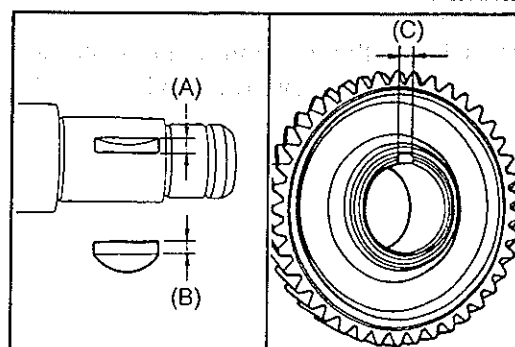


WRE91-MT253

2. Measure the fitting width section of the woodruff key with counter gear shaft and counter gear.

Unit: mm

	Specified value	Allowable limit
(A) Counter gear shaft	7 $\begin{smallmatrix} +0.02 \\ -0.05 \end{smallmatrix}$	7.02
(B) Woodruff key	7 $\begin{smallmatrix} +0.015 \\ +0 \end{smallmatrix}$	7.0
(C) Counter gear	7 ± 0.02	7.02

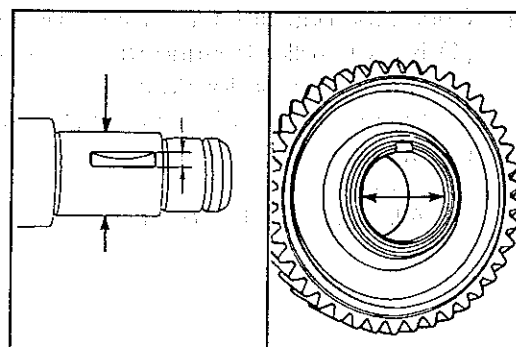


WRE91-MT254

3. Measure the outer diameter of the counter gear shaft and inner diameter of the counter gear.

Unit: mm

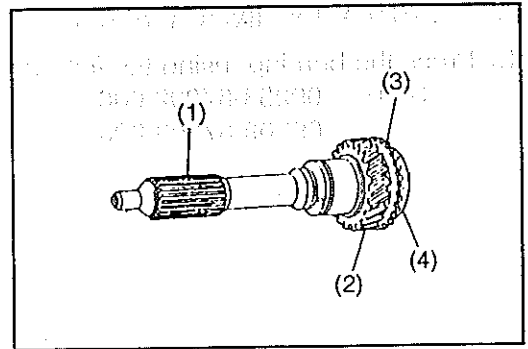
	Specified value	Allowable limit
Outer diameter Counter gear shaft	35 $\begin{smallmatrix} +0.050 \\ +0.034 \end{smallmatrix}$	35.0
Inner diameter Counter gear	35 $\begin{smallmatrix} +0.025 \\ +0 \end{smallmatrix}$	35.05



WRE91-MT255

INPUT SHAFT

1. Check the input shaft for the following items.
 - (1) Spline section for wear and damage
 - (2) Gear for wear and damage
 - (3) Engaging section of hub sleeve for wear and damage
 - (4) Tapered section for wear and damage



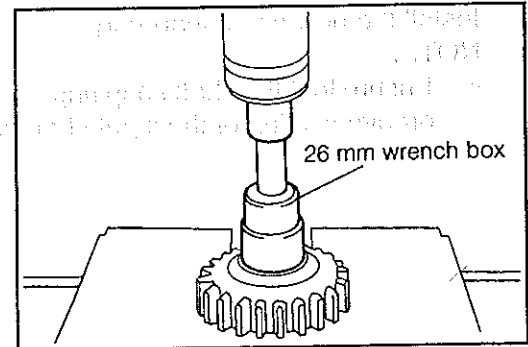
WRE91-MT256

INSTALLATION OF REVERSE IDLER GEAR BIMETAL FORMED BUSH

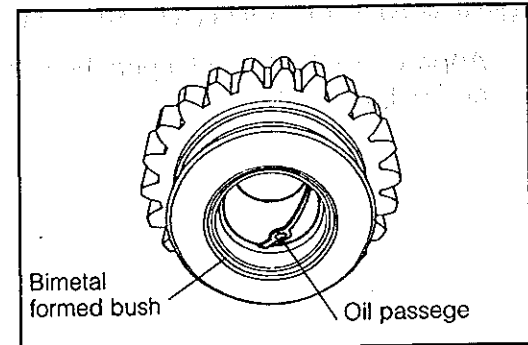
1. Install the bimetal formed bush, in conjunction with a press and the 26 mm wrench box.

NOTE:

- The bush should be press-fitted in such a way that the oil passage in the gear is lined up with that in bush.
- After the bush has press fitted securely, each edge of the bush should be recessed 1 mm from the edge of gear, respectively.
- If the above operation should fail to be performed, Failure to observe this notice causes emanating of noise or seizure of bimetal formed bush.



WRE91-MT257

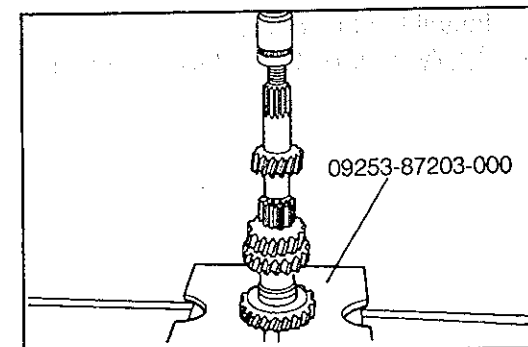


WRE91-MT258

ASSEMBLY OF COUNTER GEAR SHAFT

1. Install the woodruff key into place.
2. Press the counter gear to the counter gear shaft, using the following SST.

SST: 09253-87202-000

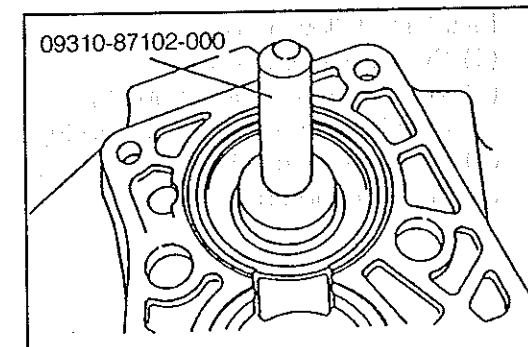


WRE91-MT259

INSTALLATION OF CLUTCH HOUSING OIL SEAL

Install the new "T" type oil seal, using the following SST.

SST: 09310-87102-000



WRE91-MT260

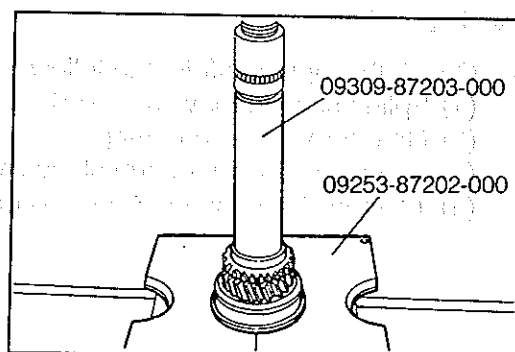
MANUAL TRANSMISSION

ASSEMBLY OF INPUT SHAFT

1. Press the bearing, using the following SSTs.

SSTs: 09253-87202-000

09309-87203-000

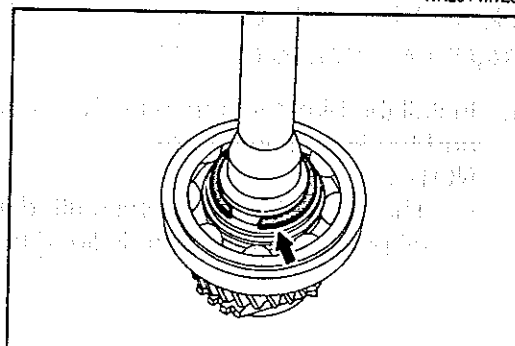


WRE91-MT261

2. Install the new shaft snap ring.

NOTE:

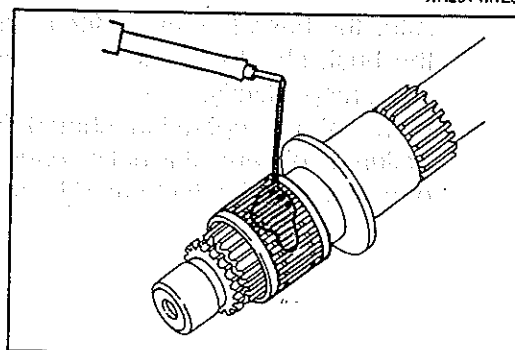
- Ensure that the shaft snap ring should be installed to the groove section of the input shaft securely.



WRE91-MT262

ASSEMBLY OF OUTPUT SHAFT

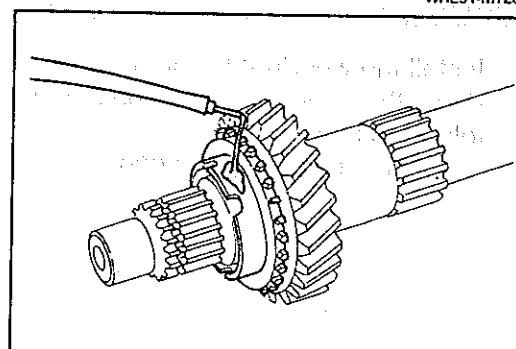
1. Apply gear oil to the outer periphery of needle roller bearing and output shaft.



WRE91-MT263

2. Install the 3rd gear.

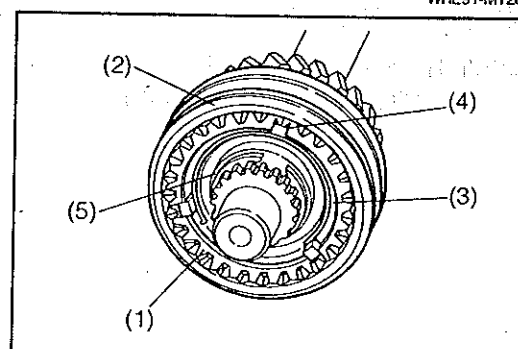
3. Apply gear oil to the tapered section of 3rd gear.



WRE91-MT264

4. Install the following parts in this sequence.

- (1) Synchronizer ring No. 3
- (2) Transmission clutch hub No. 2
- (3) Synchromesh shifting key spring (2 pcs)
- (4) Synchromesh shifting key (3 pcs)
- (5) Transmission hub sleeve No. 1



WRE91-MT265

CAUTION:

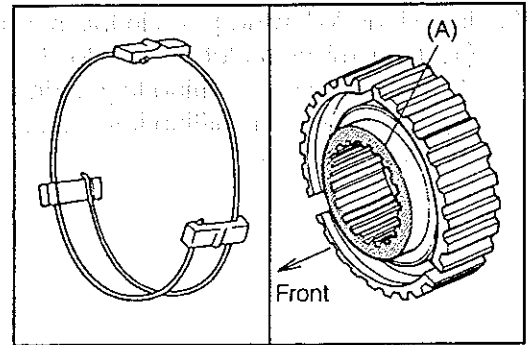
- Ensure that the transmission clutch hub No. 2 (A) section faces toward the front side. If this operation should fail to be performed, Failure to observe this caution may causes emanating of noise.

NOTE:

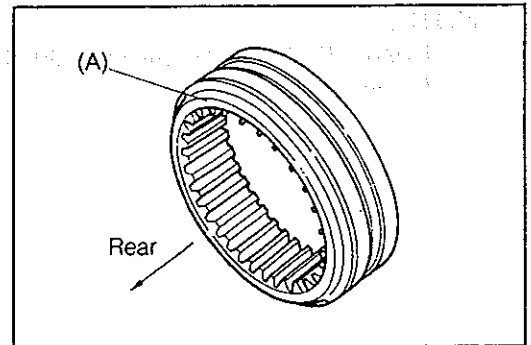
- As for the synchromesh shifting key spring, the bent sections at the front and rear should not come at the same direction, as shown in the right figure.

NOTE:

- Ensure that the transmission clutch hub No. 2 (A) section faces toward the rear side.

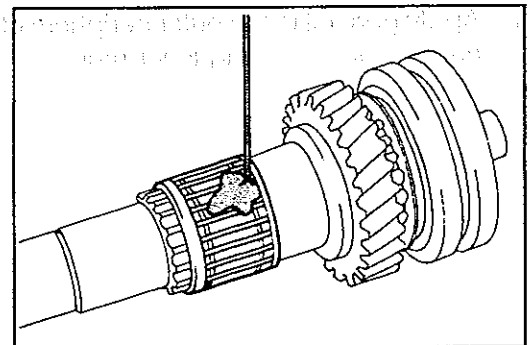


WRE91-MT266



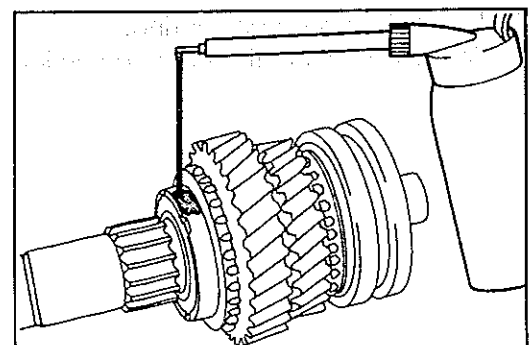
WRE91-MT267

5. Apply gear oil to the outer periphery of needle roller bearing and the output shaft.



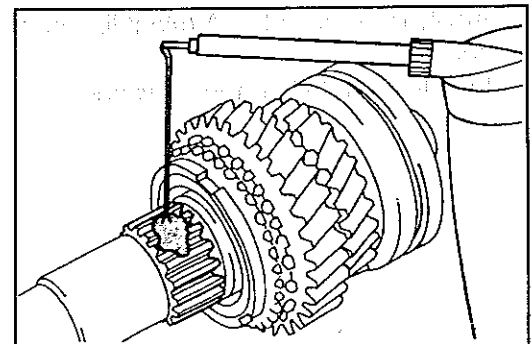
WRE91-MT268

6. Install the 2nd gear.
7. Apply gear oil to the tapered section of the 2nd gear.



WRE91-MT269

8. Install the synchronizer ring.
9. Apply gear oil to the spline section of the output shaft.

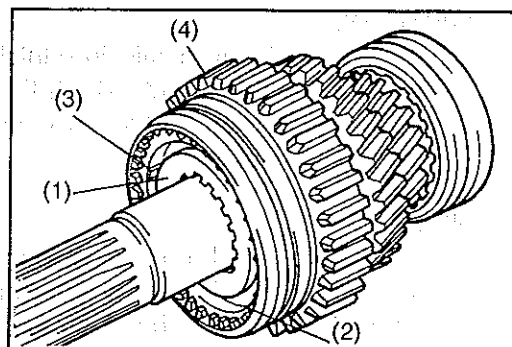


WRE91-MT270

MANUAL TRANSMISSION

10. Install the following parts in this sequence.

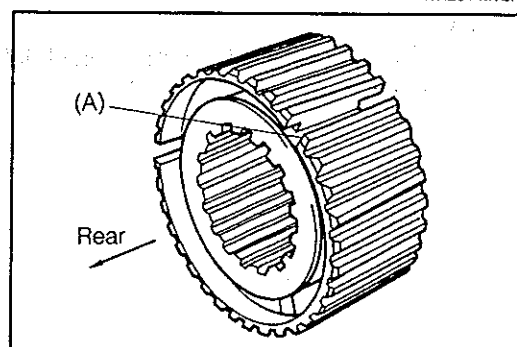
- (1) Transmission clutch hub No. 1
- (2) Synchromesh shifting key spring (2 pcs)
- (3) Synchromesh shifting key (3 pcs)
- (4) Reverse gear



WRE91-MT271

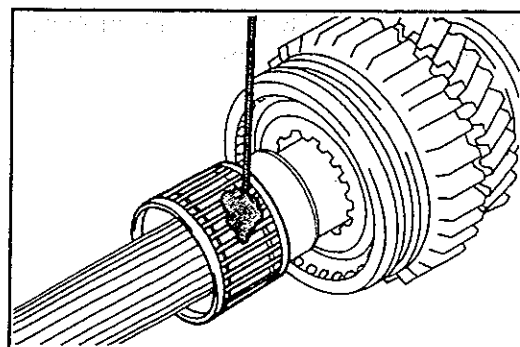
NOTE:

- Ensure that the transmission clutch hub No. 1 (A) section faces toward rear side.



WRE91-MT272

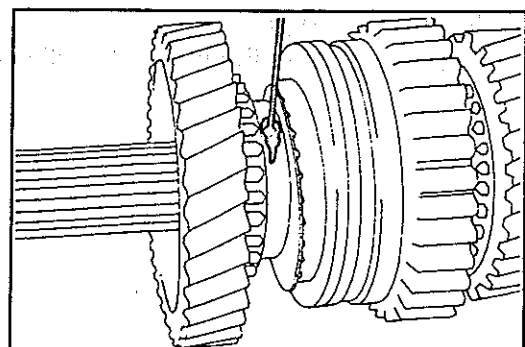
11. Apply gear oil to the outer periphery of needle roller bearing and 1st gear bearing inner race.



WRE91-MT273

12. Install the synchronizer ring.

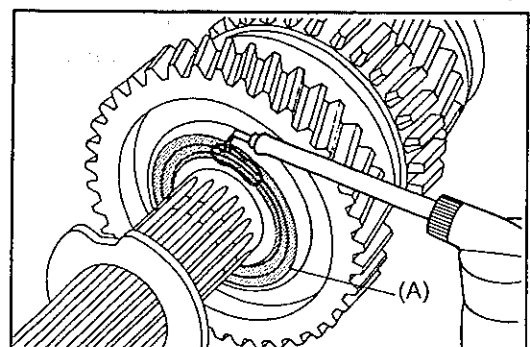
13. Apply gear oil to the tapered section of the 1st gear.



WRE91-MT274

14. Apply gear oil to the A (slant line section in the right figure) section.

15. Install the 1st gear thrust washer.



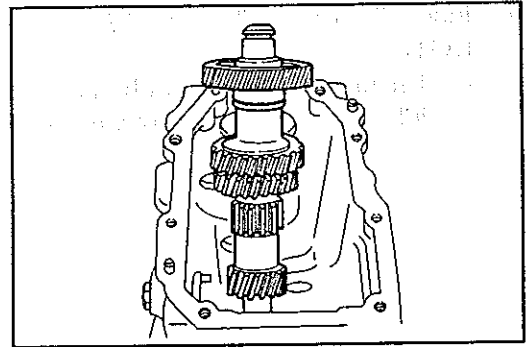
WRE91-MT275

INSTALLATION

NOTE:

- Clean the transmission case by removing any dirt, gasket materials or the like, prior to install the gears etc..

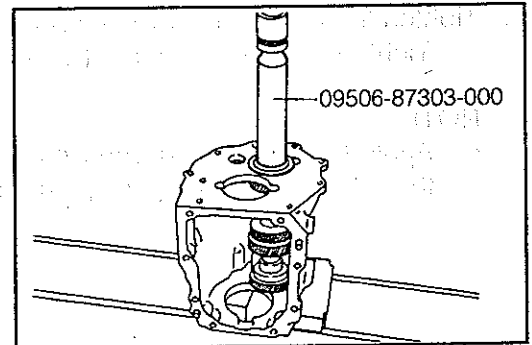
1. Place the counter gear shaft to the transmission case.



WRE91-MT276

2. Press the counter gear rear bearing, using the following SST.

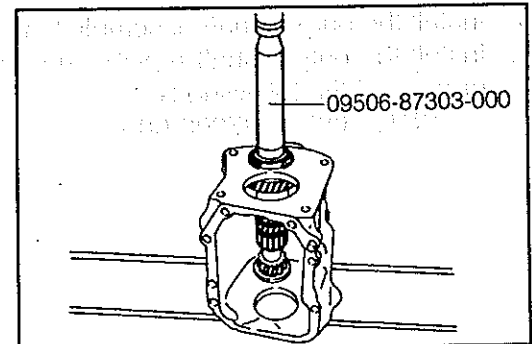
SST: 09506-87303-000



WRE91-MT277

3. Attach the stop ring of the counter gear bearing.
4. Press the counter gear bearing, using the following SST.

SST: 09506-87303-000

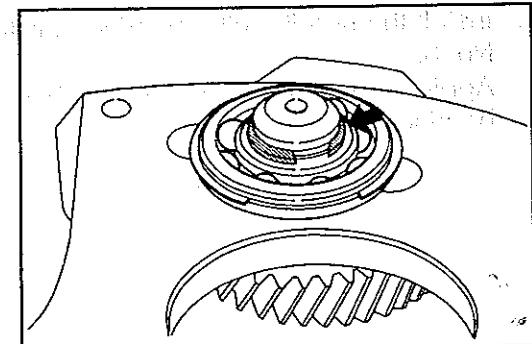


WRE91-MT278

5. Install the new shaft snap ring, using the standard tool of snap ring plier or the like.

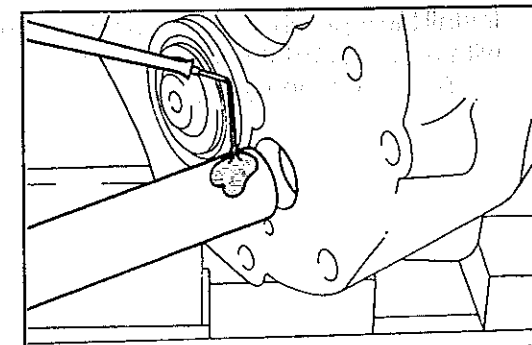
NOTE:

- Ensure that the shaft snap ring should be installed to the groove section of the counter gear shaft securely.



WRE91-MT279

6. Apply gear oil to the outer periphery of the reverse idler gear shaft.



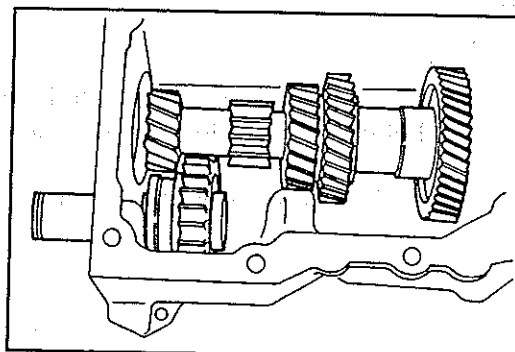
WRE91-MT280

MANUAL TRANSMISSION

7. Install the reverse idler gear S/A.

NOTE:

- Ensure that the gear chambered section of the reverse idler gear S/A faces toward the front side.

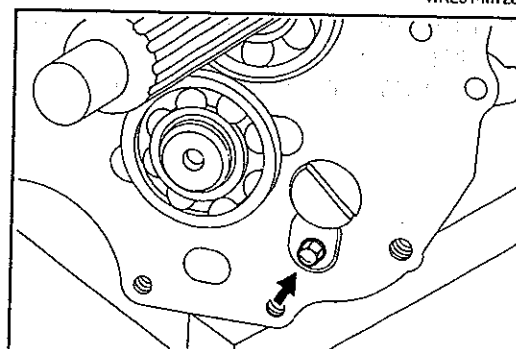


WRE91-MT281

8. Tighten the reverse idler gear stopper with a bolt.
Tightening Torque: 9.8 - 15.7 N·m (1.0 - 1.6 kgf·m)

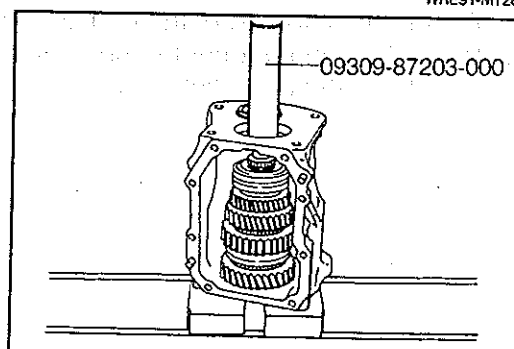
NOTE:

- Apply the three bond 1326 (Three bond made) to the threaded section of the bolt, prior to use them.



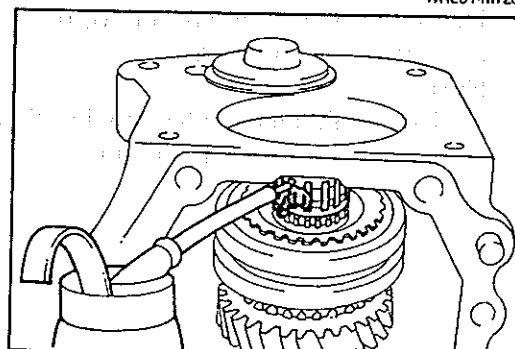
WRE91-MT282

9. Install the output shaft assembly to the transmission case.
10. Install the output shaft rear bearing, in conjunction with a press and the following SST.
SST: 09309-87203-000



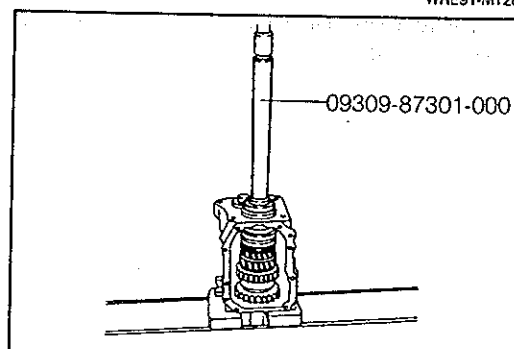
WRE91-MT283

11. Install the needle roller bearing and the synchronizer ring No. 3.
12. Apply gear oil to the outer periphery of the needle roller bearing.



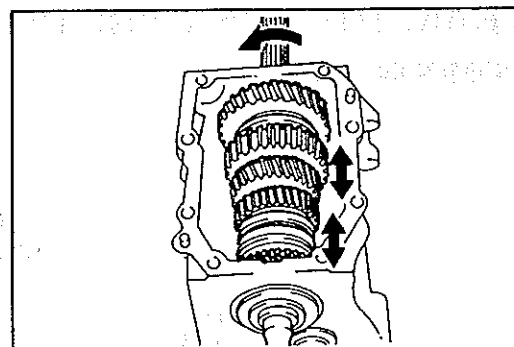
WRE91-MT284

13. Install the input shaft to the transmission case in conjunction with a press and the following SST.
SST: 09309-87301-000



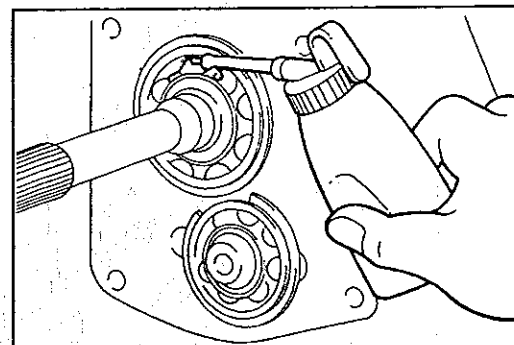
WRE91-MT285

14. While turning the input shaft clockwise, manually place the shift lever in each of the gears from 1st to 4th and reverse gear. Ensure that each gear is engaged smoothly.



WRE91-MT286

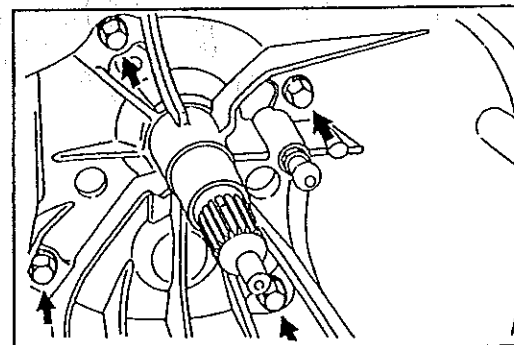
15. Apply gear oil to the roller section of the rear bearing for the output shaft and counter gear shaft.



WRE91-MT287

16. With a new gasket interposed, tighten the clutch housing by means of the four bolts.

Tightening Torque: 49.0 - 68.6 N·m (5.0 - 7.0 kgf·m)



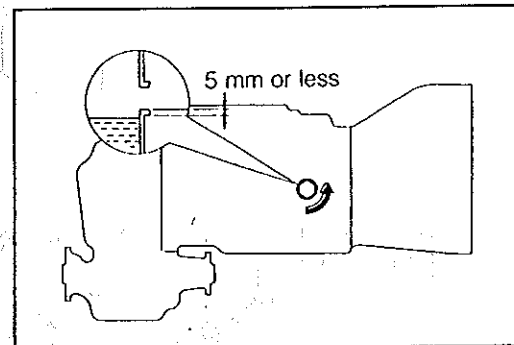
WRE91-MT288

17. Install the clutch-related parts. (Refer to the CL section.)
 18. Install the transfer-related parts. (Refer to the TR section.)
 19. Install the transmission and transfer assembly to the vehicle.
 20. Fill the transmission and transfer with oil.

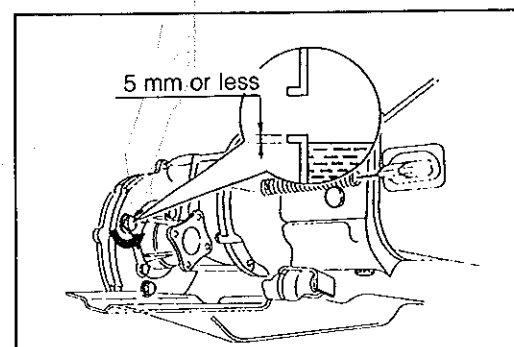
	Oil capacity	API	SAE
T/M	2.2L	GL-3	90
T/F	1.3L	GL-3	75W-90 or 75W-85

Tighten the both transmission and transfer filler plugs with new gasket.

Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf·m)



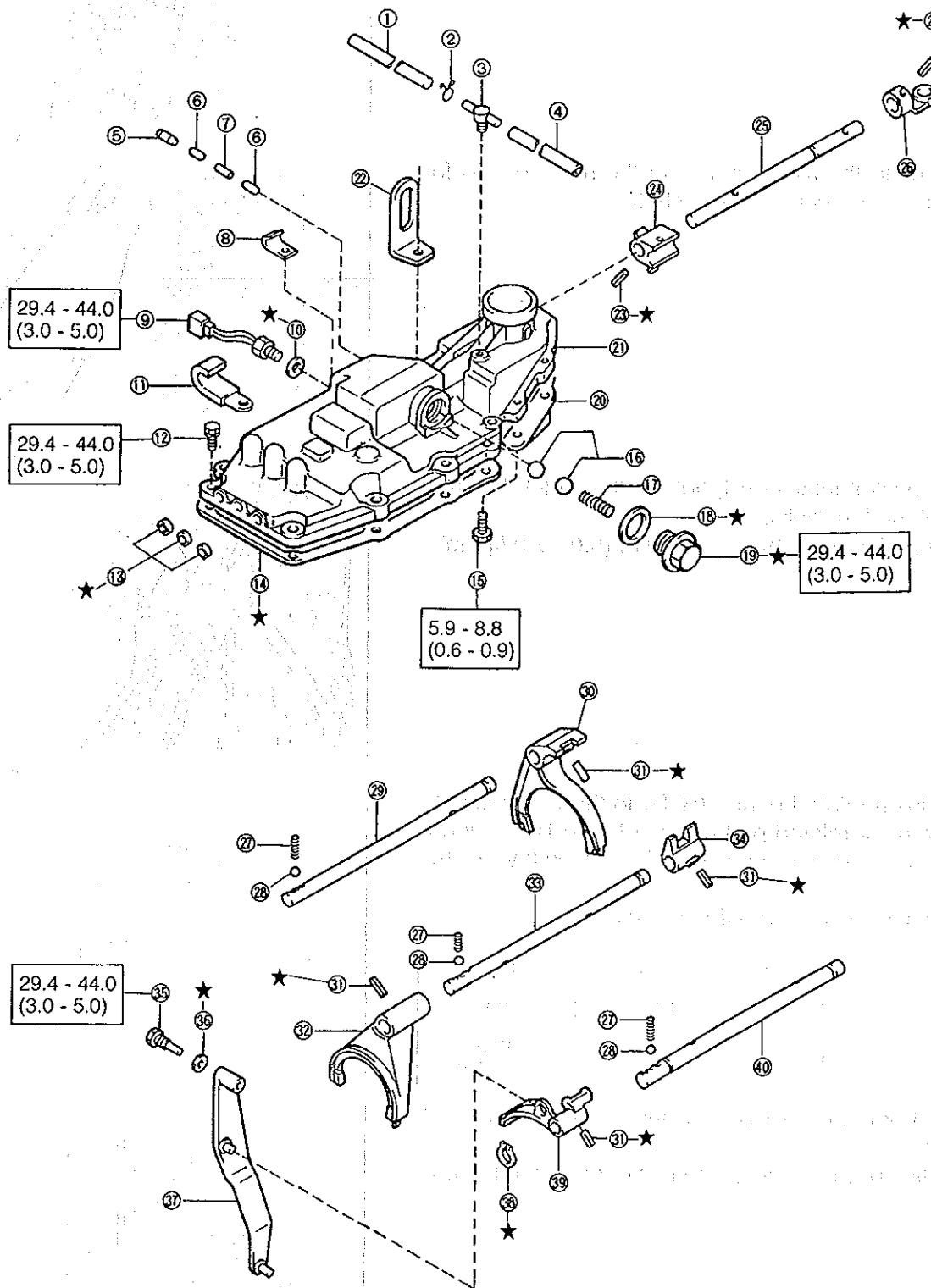
WRE91-MT289



WRE91-MT346

MANUAL TRANSMISSION

TRANSMISSION CASE COVER (4-Speed) COMPONENTS



- ① Hose
- ② Clip
- ③ Union
- ④ Hose No. 1
- ⑤ Pin (only for N.A engine)
- ⑥ Shift inter lock pin No. 1
- ⑦ Shift inter lock pin No. 2
- ⑧ Clamp (for breather hose)
- ⑨ Back-up lamp switch A/y
- ⑩ Gasket
- ⑪ Clamp
- ⑫ Bolt
- ⑬ Tight plug
- ⑭ Mission case cover gasket
- ⑮ Bolt
- ⑯ Ball
- ⑰ Compression spring
- ⑱ Gasket
- ⑲ Reverse restrict pin holder
- ⑳ Shift lever housing dust cover

- ㉑ Transmission case cover
- ㉒ Hanger
- ㉓ Slotted spring pin (longer)
- ㉔ Shift inner lever
- ㉕ Shift lever shaft
- ㉖ Shift outer lever No. 1
- ㉗ Compression spring
- ㉘ Ball
- ㉙ 1st & 2nd shift fork shaft
- ㉚ 1st & 2nd shift fork
- ㉛ Slotted spring pin
- ㉜ 3rd & 4th shift fork
- ㉝ 3rd & 4th shift fork shaft
- ㉞ Gear shift head No. 2
- ㉟ Shift arm pivot
- ㊱ Gasket
- ㊲ Reverse shift arm
- ㊳ "E"-ring
- ㊴ Reverse shift fork
- ㊵ 5th & reverse shift fork shaft

MANUAL TRANSMISSION

REMOVAL

1. Remove the transmission and transfer assembly from the vehicle.
2. Remove the transmission case cover with gasket by removing the eight bolts.

3. Remove the back-up lamp switch A/y and reverse restrict pin holder (compression spring and two balls) with gaskets.

NOTE:

- Never reuse the removed gasket.

4. Remove the reverse shift arm by removing the shift arm pivot with gasket.

NOTE:

- Never reuse the removed gasket.

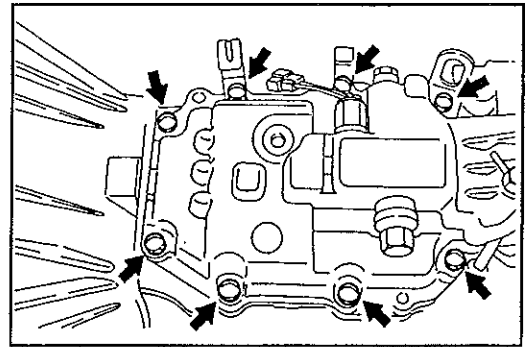
5. Remove the shift lever housing dust cover by removing the seven bolts.

6. Using the standard tool of gasket scraper, remove the seal contacting surface of the shift lever housing dust cover.

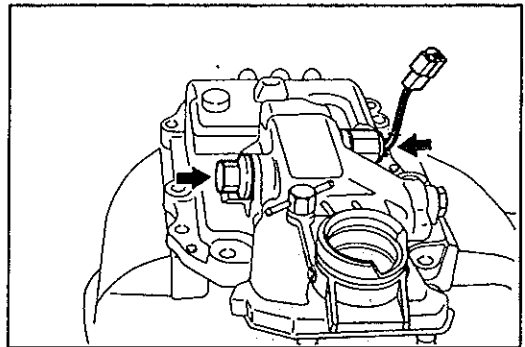
7. While the shift outer lever No. 1 is being tilted as wide as possible, drive off the the slotted spring pin using the standard tool of pin pounce or the like.

NOTE:

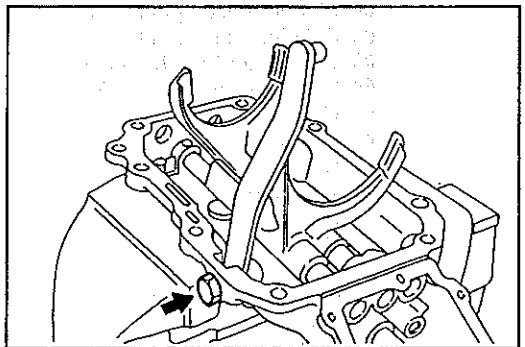
- Never reuse the removed slotted spring pin.



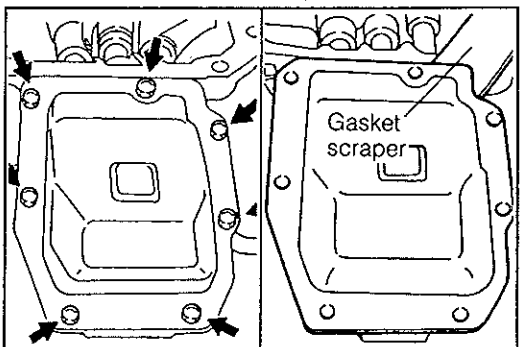
WRE91-MT292



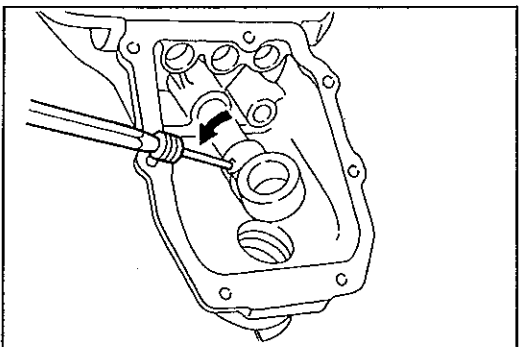
WRE91-MT293



WRE91-MT294



WRE91-MT295

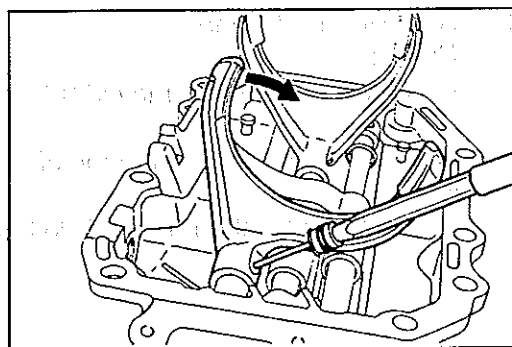


WRE91-MT296

8. While tilting the 1st & 2nd shift at the largest possible angle, drive off the slotted sprig pin, using a standard pin punch or the like.

NOTE:

- Never reuse the removed slotted spring pin.



WRE91-MT297

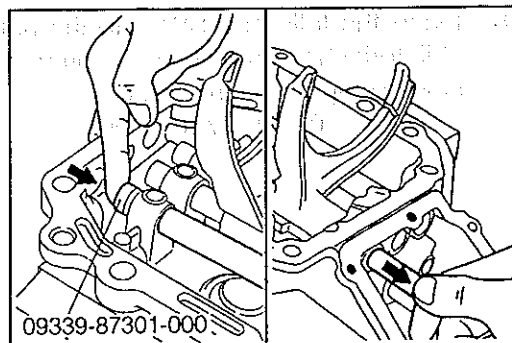
9. Remove the three tight plugs.

NOTE:

- Never reuse the removed tight plugs.

10. Insert the following SST into the hole of the 1st & 2nd shift fork shaft guide so as to prevent the ball and compression spring from jumping out.

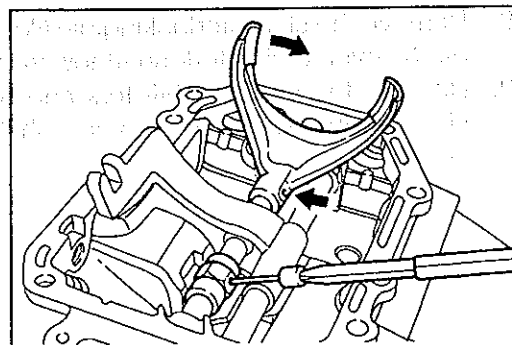
SST: 09339-87301-000



WRE91-MT298

11. Remove the 1st & 2nd shift fork by pulling the 1st & 2nd shift fork shaft toward your side.

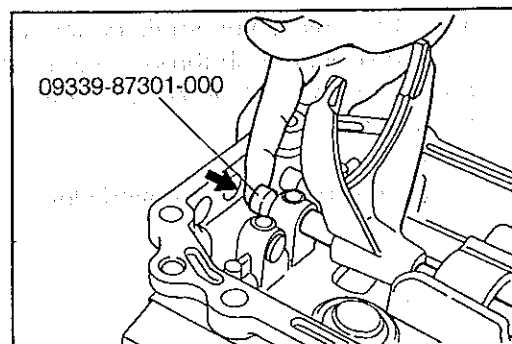
12. With the 3rd & 4th shift fork tilted at the largest possible angle in the arrowheaded direction, drive off the slotted spring pin of the 3rd & 4th shift fork and gear shift head No. 2.



WRE91-MT299

13. Insert the following SST into the hole of the 3rd & 4th shift fork shaft guide so as to prevent the ball and compression spring from jumping out.

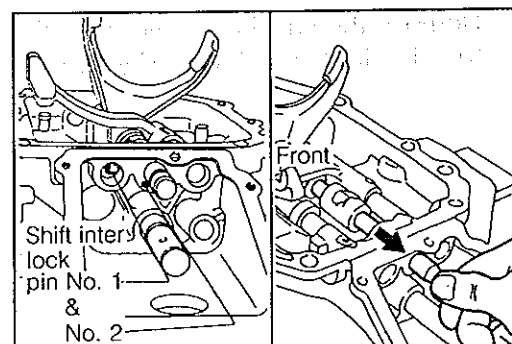
SST: 09339-87301-000



WRE91-MT300

14. Remove the shift interlocking pins No. 1 and No. 2 by slightly pulling the 3rd & 4th shift fork shaft toward your side.

15. Remove the 3rd & 4th shift fork and gear shift head No. 2 by pulling the 3rd & 4th shift fork shaft toward your side.



WRE91-MT301

MANUAL TRANSMISSION

16. Remove the "E" ring.

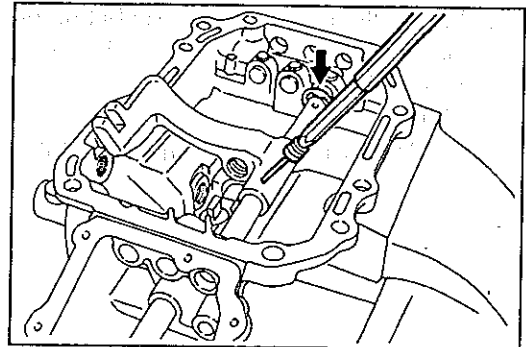
NOTE:

- Never reuse the removed "E" ring.

17. Drive off the slotted spring pin of the reverse shift fork.

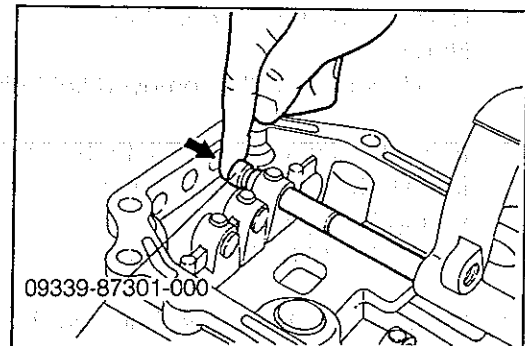
NOTE:

- Never reuse the removed slotted spring pin.



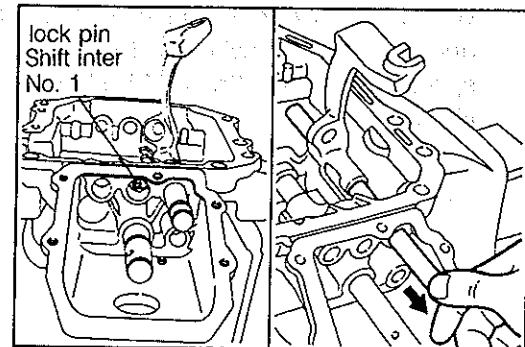
18. Insert the following SST into the hole of the 5th & reverse shift fork shaft guide so as to prevent the ball and compression spring from jumping out.

SST: 09339-87301-000



19. Remove the shift interlocking pin No. 1 by slightly pulling the 5th & reverse shift fork shaft toward your side.

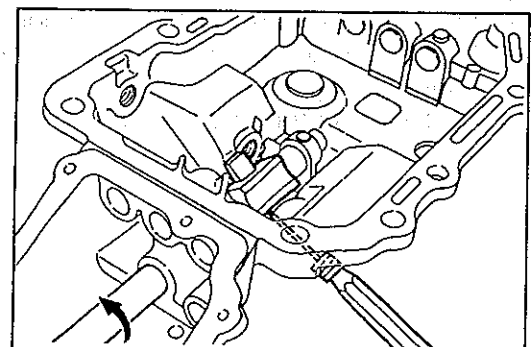
20. Remove the reverse shift fork and 5th & reverse shift fork shaft by pulling the 5th & reverse shift fork shaft toward your side.



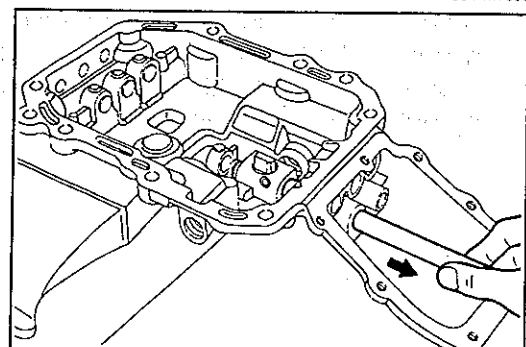
21. Turn the shift lever shaft counterclockwise and insert a standard pin punch through the reverse restrict pin holder attaching hole. Drive off the slotted spring pin of the shift inner lever.

NOTE:

- Never reuse the removed slotted spring pin.



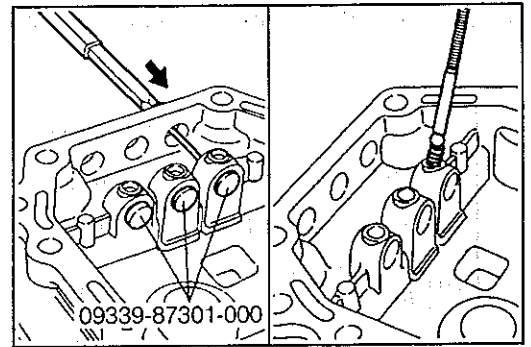
22. Remove the shift inner lever and shift lever shaft by pulling the shift lever shaft toward your side.



23. Remove the following SST, using a standard pin punch or the like.

SST: 09339-87301-000

24. Remove the ball and compression spring by means of a standard magnet hand tool.



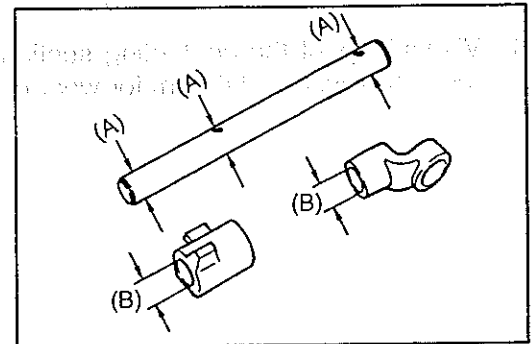
WRE91-MT307

INSPECTION

1. Measure the outer (section A) and inner diameters (B) of the following parts.

Unit: mm

		Specified value	Allowable limit
Outer diameter	Shift lever shaft	$16^{+0}_{-0.027}$	15.97
Inner diameter	Shift inner lever	$16^{+0.033}_{+0.006}$	16.03
	Shift outer lever No. 1	↑	↑

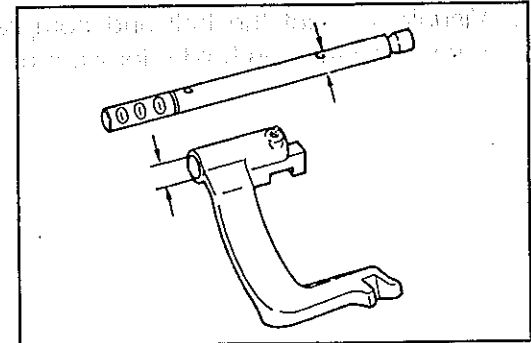


WRE91-MT308

2. Measure the outer and inner diameters of the following parts.

Unit: mm

		Specified value	Allowable limit
Out diameter	5th & reverse shift fork shaft	$14^{+0}_{-0.027}$	13.97
Inner diameter	Reverse shift fork	$14^{+0.033}_{+0.006}$	14.03

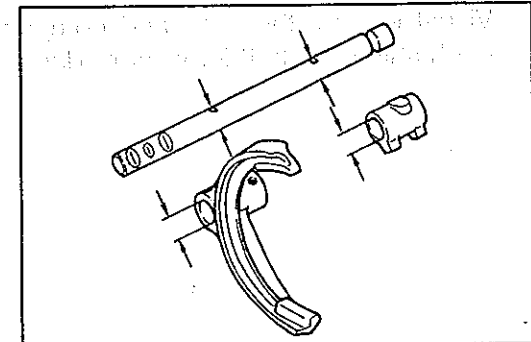


WRE91-MT309

3. Measure the outer and inner diameters of the following parts.

Unit: mm

		Specified value	Allowable limit
Outer diameter	3rd & 4th shift fork shaft	$14^{+0}_{-0.027}$	13.97
Inner diameter	3rd & 4th shift fork	$14^{+0.033}_{+0.006}$	14.03
	Gear shift head No. 2	↑	↑

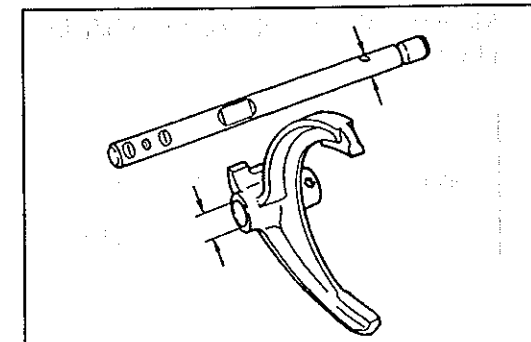


WRE91-MT310

4. Measure the outer and inner diameters of the following parts.

Unit: mm

		Specified value	Allowable limit
Outer diameter	1st & 2nd shift fork shaft	$14^{+0}_{-0.027}$	13.97
Inner diameter	1st & 2nd shift fork	$14^{+0.033}_{+0.006}$	14.03



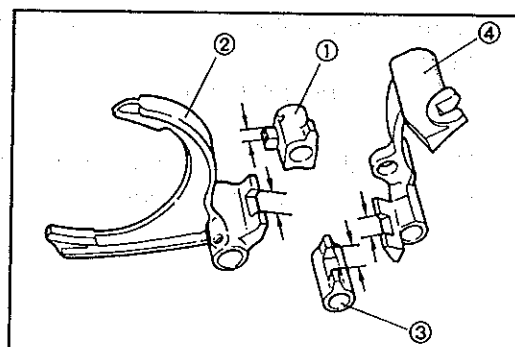
WRE91-MT311

MANUAL TRANSMISSION

5. Measure the contacting sections of the following parts.

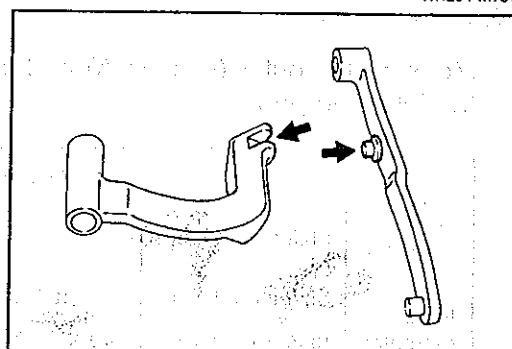
Unit: mm

		Specified value	Allowable limit
①	Shift inner lever	$16^{+0.10}_{-0}$	15.7
②	1st & 2nd shift fork	$16^{+0.1}_{-0}$	16.3
③	Gear shift head No. 2	↑	↑
④	Reverse shift fork	↑	↑



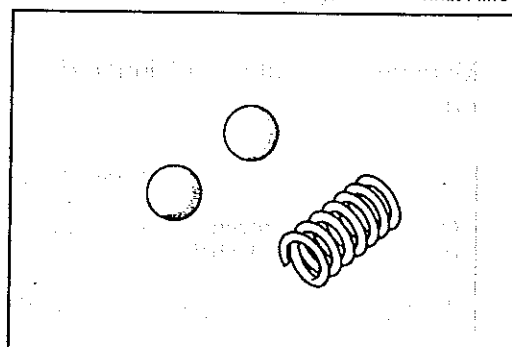
WRE91-MT312

6. Visual inspect the contacting sections of the reverse shift fork and reverse shift arm for wear or damage.



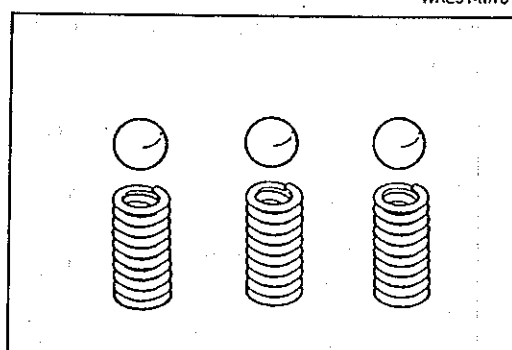
WRE91-MT313

7. Visually inspect the ball and compression spring of the reverse restrict pin holder for wear or damage.



WRE91-MT314

8. Visual inspect the balls and compression springs of the each shift fork shaft for wear or damage.

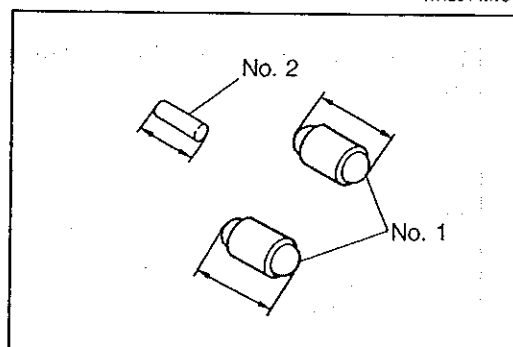


WRE91-MT315

9. Measure the length of the shift inter lock pin No. 1 and No. 2.

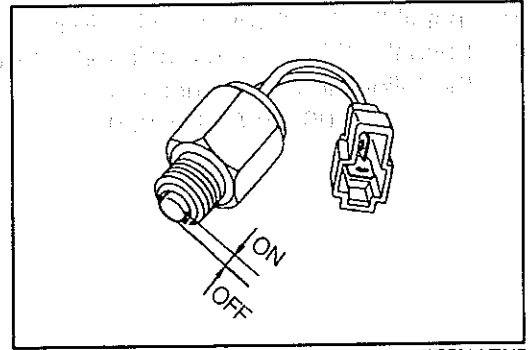
Unit: mm

	Specified value	Allowable limit
Shift inter lock pin No. 1	$13.9^{+0.2}_{-0}$	13.7
No. 2	$11.8^{+0.2}_{-0}$	11.6



WRE91-MT316

10. Check the backup lamp for continuity.

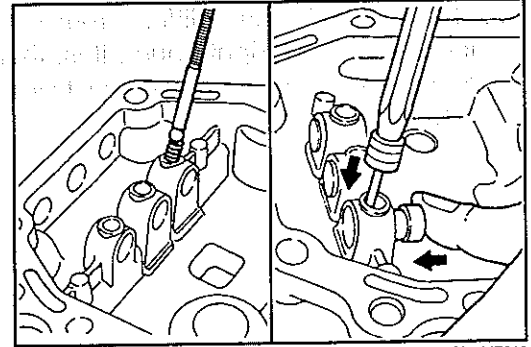


WRE91-MT317

INSTALLATION

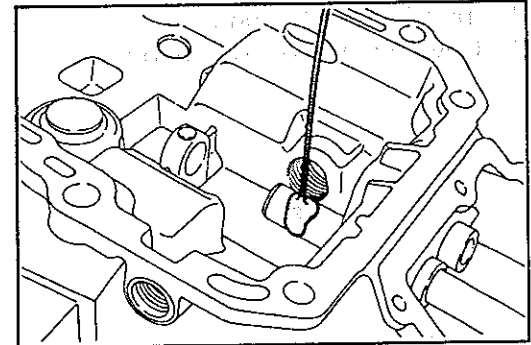
1. Place the compression spring and ball of each shift fork shaft guide, using a standard magnet hand tool.
2. Push the following SST, while lowering the ball and compression spring with a standard pin punch or the like.

SST: 09339-87301-000



WRE91-MT318

3. Apply gear oil to the outer periphery of the shift lever shaft.



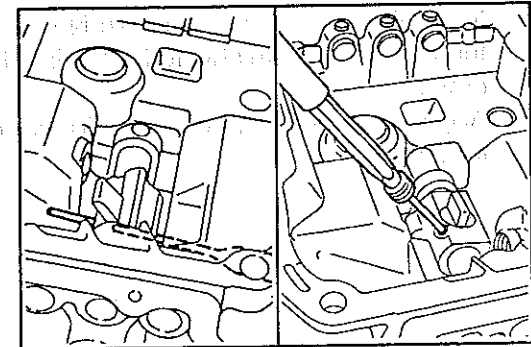
WRE91-MT319

4. Temporarily install a new slotted spring pin to the shift inner lever.
5. Insert a standard pin punch through the reverse restrict pin holder hole, until the new slotted spring pin installation holes of the shift lever shaft and shift inner lever meet with each other.

6. Drive a new slotted spring pin.

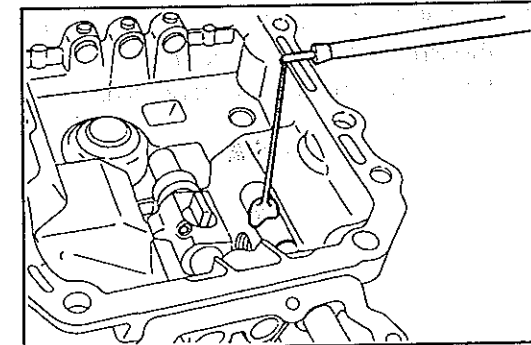
NOTE:

- For the shift inner lever, be sure to use a slotted spring pin 2 mm longer than that for each shift fork.



WRE91-MT320

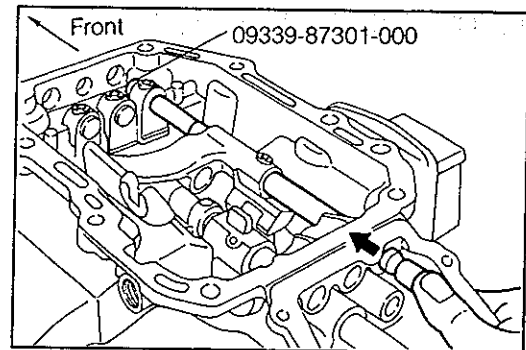
7. Insert the 5th & reverse shift fork shaft into the transmission case cover.
8. Apply gear oil to the outer periphery of the 5th & reverse shift fork shaft.



WRE91-MT321

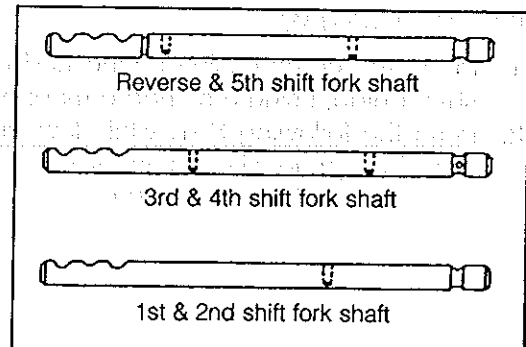
MANUAL TRANSMISSION

9. Install the 5th & reverse shift fork.
10. Push the 5th & reverse shift fork shaft to the front side, until the following SST comes out.
SST: 09339-87301-000



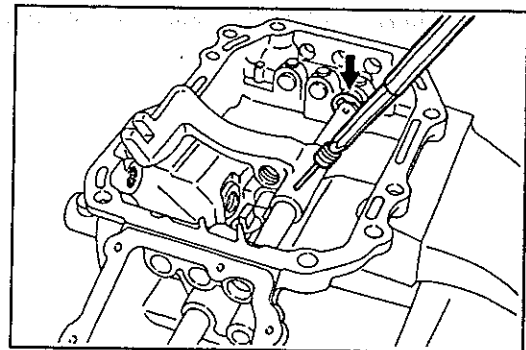
WRE91-MT322

11. The shift fork shaft differs from each other in shape as indicated in the right figure. It is, therefore, recommended to arrange each shaft before installing them to the transmission case cover.



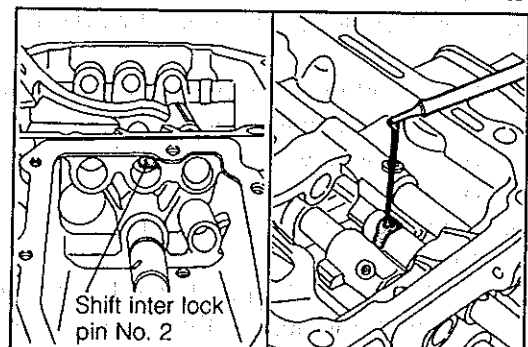
WRE91-MT323

12. Install a new "E" ring.
13. Drive a new slotted spring pin.



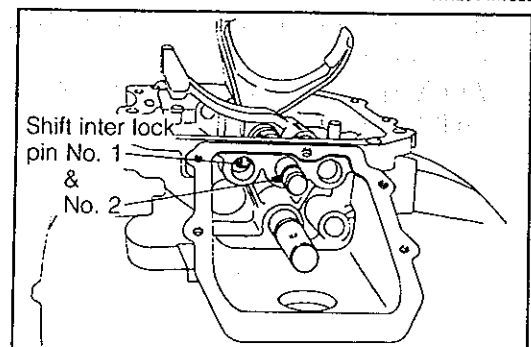
WRE91-MT324

14. Insert the shift interlocking pin No. 2.
15. Insert the 3rd & 4th shift fork shaft into the transmission case cover.
16. Apply gear oil to the outer periphery of the 3rd & 4th shift fork shaft.



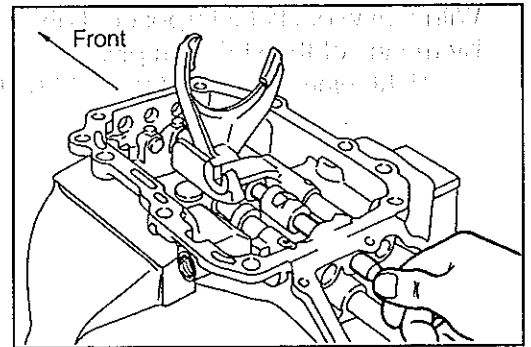
WRE91-MT325

17. Install the 3rd & 4th shift fork and gear shift head No. 2 to the 3rd & 4th shift fork shaft.
18. Insert the shift interlocking pins No. 1 and No. 2.



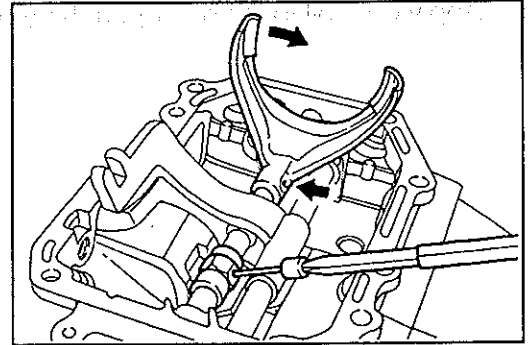
WRE91-MT326

19. Push the 3rd & 4th shift fork shaft to the front side until the SST (09339-87301-000) comes out.



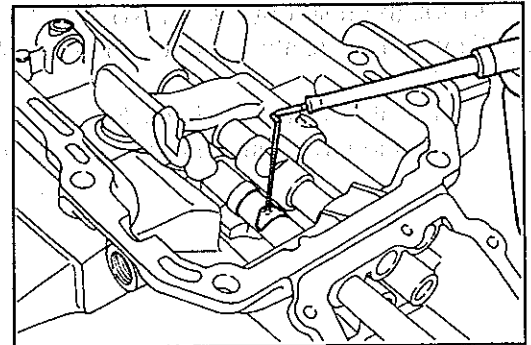
WRE91-MT327

20. Drive the new slotted spring pin of the 3rd & 4th shift fork and gear shift head No. 2, using the standard tool of pin punch or the like.



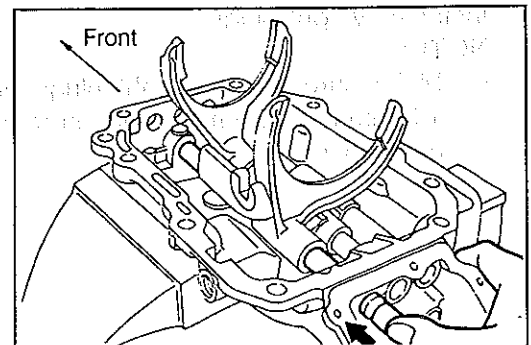
WRE91-MT328

21. Apply gear oil to the outer periphery of the 1st & 2nd shift fork shaft.



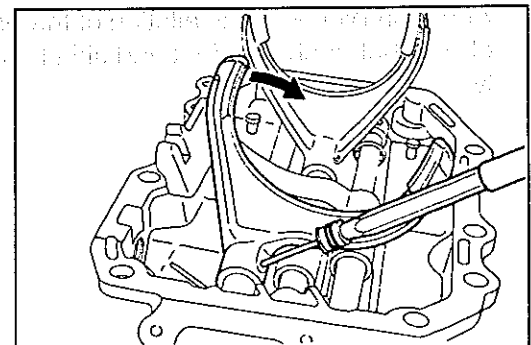
WRE91-MT329

22. Install the 1st & 2nd shift fork to the 1st & 2nd shift fork shaft.
23. Push the 1st & 2nd shift fork shaft to the front side until the SST (09339-87301-000) comes out.



WRE91-MT330

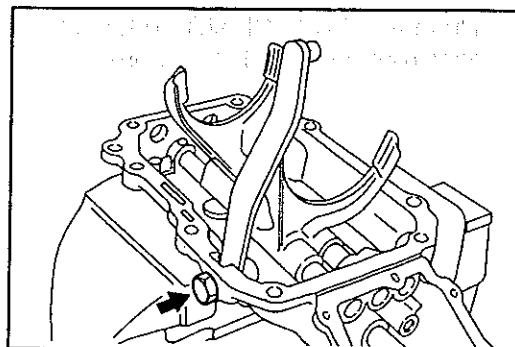
24. Drive the new slatted spring pin of the 1st & 2nd shift fork, using the standard tool of pin punch or the like.



WRE91-MT331

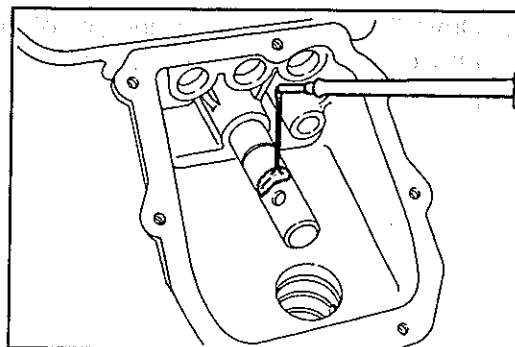
MANUAL TRANSMISSION

25. With a new gasket interposed, tighten the reverse shift arm by means of the shift arm pivot.
Tightening Torque: 29.4 - 44.0 N·m (3.0 - 5.0 kgf-m)



WRE91-MT332

26. Apply gear oil to the outer periphery of the shift lever shaft.

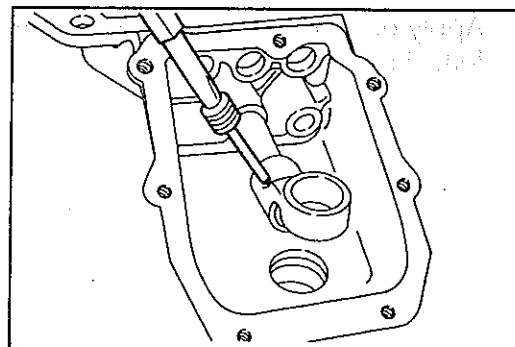


WRE91-MT333

27. Install the shift outer lever No. 1 to the shift lever shaft.
28. Drive a new slotted spring pin of the shift outer lever No. 1.

NOTE:

- For the shift outer lever No. 1, be sure to use a slotted spring pin 2 mm longer than that for each fork shaft.

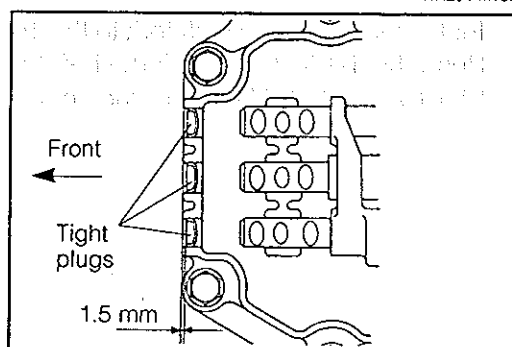


WRE91-MT334

29. Install new tight plugs.

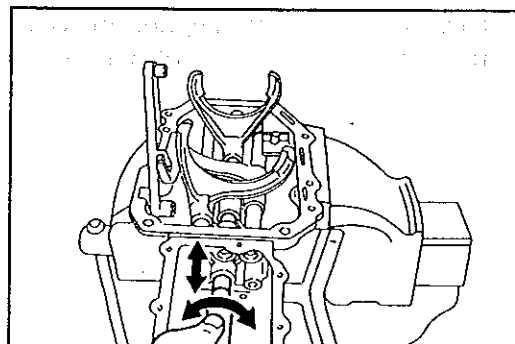
NOTE:

- Make sure that the tight plugs are driven to a point 1.5 mm deep from the edge surface of the transmission case cover.



WRE91-MT335

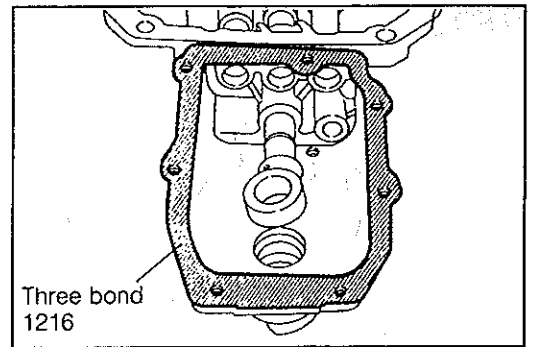
30. After completion of installation of the parts above, manually check that each shift fork and shift fork shaft move smoothly.



WRE91-MT336

31. Apply following bond (slant line section in the right figure) to the seal surface of the shift lever dust housing cover in the transmission case cover.

:THREE BOND 1216 (Three bond made)



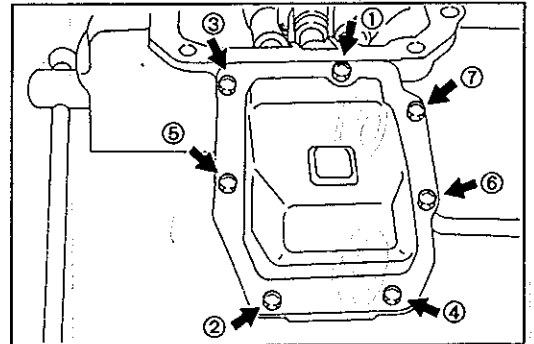
WRE91-MT337

32. Tighten the shift lever dust housing cover with the seven bolts.

Tightening Torque: 5.9 - 8.8 N·m (0.6 - 0.9 kgf·m)

NOTE:

- Be sure to tighten the bolts alternately and diagonally. (The right figure illustration indicates a typical example of the tightening sequence.)



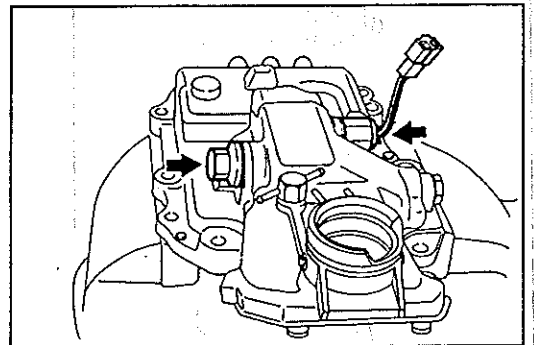
WRE91-MT338

33. Tighten the back-up lamp switch Ay with new gasket.

Tightening Torque: 29.4 - 44.0 N·m (3.0 - 5.0 kgf·m)

34. Install the compression spring and two balls, tighten the reverse restrict pin holder with new gasket.

Tightening Torque: 29.4 - 44.0 N·m (3.0 - 5.0 kgf·m)



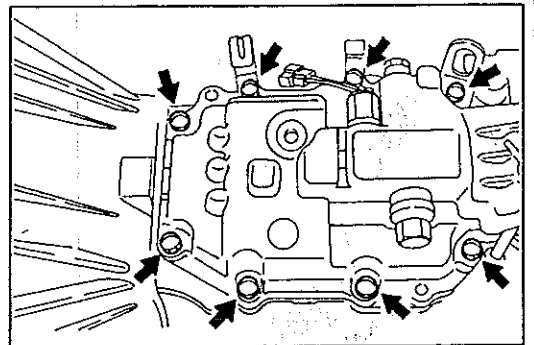
WRE91-MT339

35. With the new gasket interposed, tighten the transmission case cover by means of the eight bolts.

Tightening Torque: 29.4 - 44.0 N·m (3.0 - 5.0 kgf·m)

NOTE:

- Be sure to tighten the bolts alternately and diagonally. (The right figure illustration indicates a typical example of the tightening sequence.)



WRE91-MT340

36. Install the transmission and transfer assembly to the vehicle.

37. Fill the gear oil to the transmission and transfer.

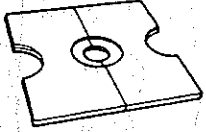
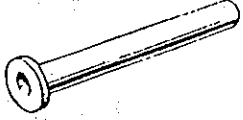
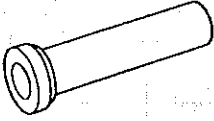
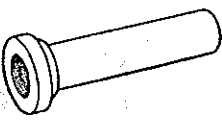
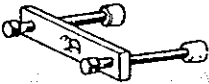
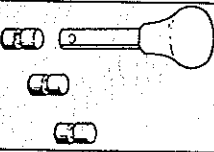
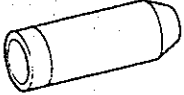
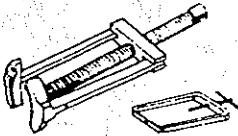
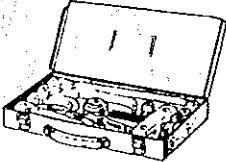
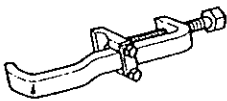
	Oil capacity	API	SAE
T/M	2.2L	GL-3	90
T/F	1.3L	GL-3	75W-90 or 75W-85

38. Tighten the both transmission and transfer filler plugs with new gasket.

Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf·m)

MANUAL TRANSMISSION

SSTs

Shape	Parts number	Parts name
	09253-87202-000 (09253-87201-000)	Water pump bearing anvil (Crankshaft center bearing anvil)
	09309-87301-000	Output shaft bearing replacer
	09310-87301-000	Counter shaft front bearing replacer
	09310-87302-000	Counter shaft rear bearing replacer
	09312-36010-000	Input shaft remover
	09339-87301-000	Shift fork shaft guide
	09506-87303-000	Differential drive pinion bearing cone front replacer
	09602-87301-000	Counter gear bearing puller
	09950-20017-000 (09950-20016-000) (09950-20014-000) (09950-20013-000) (09950-20012-000) (09950-20011-000) (09950-20010-000)	Universal puller
	09956-00010-000	Tightening piece

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SERVICE SPECIFICATIONS

Unit: mm

			Specified value	Allowable limit	Remarks
Clearance between each gears and synchronizer rings			1.3 - 1.7	0.8	Using the filler gage
Contact width	Reverse gear		$7^{+0}_{+0.058}$	7.3	Using the micro meter
	Transmission hub sleeve No. 1, No. 2		$7^{+0}_{+0.058}$	7.3	
Contact width of each synchronizer ring and synchromesh shifting key	1st gear		8.4 ± 1	8.5	Using the vernier caliper gage
	Except 1st gear		11.0 ± 1	11.1	
Height of synchromesh shifting key		1st & 2nd gear	6 ± 0.15	5.6	Using the vernier caliper gage
		3rd, 4th & 5th gear	5.8 ± 0.15	5.4	
Bore diameter	Reverse gear		$87.5^{+0.038}_{-0.073}$	87.5	
	Transmission clutch hub No. 1		$87.5^{+0.120}_{-0.155}$	87.3	
Outer diameter	Transmission hub sleeve No. 1		$72.5^{+0}_{-0.2}$	72.7	
	Transmission clutch hub No. 2		$72.5^{+0.10}_{-0.17}$	72.3	
Outer diameter of output shaft		(A) section	$23.0^{+0.007}_{-0.020}$	22.98	
		(B) section	$40.0^{+0.015}_{-0.030}$	39.97	
		(C) section	$48.0^{+0.015}_{-0.030}$	47.97	
		(D) section	$38.0^{+0.005}_{-0.021}$	37.98	
Contact width	5th shift fork		$14^{+0}_{-0.027}$	13.97	
Thickness	1st gear thrust washer		4 ± 0.1	3.85	
Fitting width section		Counter gear shaft	$7^{+0.02}_{-0.06}$	7.02	
		Woodruff key	$7^{+0.015}_{+0}$	7.0	
		Counter gear	7 ± 0.02	7.02	
Diameter	Outer	Counter gear shaft	$35^{+0.050}_{+0.034}$	35.05	
	Inner	Counter gear	$35^{+0.025}_{+0}$	35.0	
Backlash	1st gear		0.06 - 0.20	0.25	
	2nd gear		0.06 - 0.20	↑	
	3rd gear & 4th gear		0.06 - 0.20	↑	
	5th gear		0.06 - 0.20	↑	
Thrust clearance	1st gear		0.11 - 0.29	0.35	
	2nd gear		0.10 - 0.30	0.35	
	3rd gear		0.13 - 0.57	0.60	
	5th gear		0.12 - 0.28	0.35	
Diameter	Outer	Shift lever shaft	$16^{+0}_{-0.027}$	15.97	
	Inner	Shift outer lever	$16^{+0.038}_{+0.006}$	16.03	

MANUAL TRANSMISSION

Unit: mm

			Specified value	Allowable limit	Remarks
Diameter	Outer	3rd & 4th shift fork shaft	$14^{+0}_{-0.027}$	13.97	
	Inner	3rd & 4th shift fork	$14^{+0.033}_{+0.006}$	14.03	
		Gear shift head No. 2	↑	↑	
Diameter	Outer	5th & reverse shift fork shaft	$14^{+0}_{-0.027}$	13.97	
	Inner	5th & reverse shift fork	$14^{+0.059}_{+0.032}$	14.06	
		Gear shift head No. 3	$14^{+0.033}_{+0.006}$	14.03	
		5th shift head	↑	↑	
Height	No. 1	Shift inter lock pin	$13.9^{+0}_{-0.2}$	13.7	
	No. 2	↑	$11.8^{+0}_{-0.2}$	11.6	

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TIGHTENING TORQUE

TRANSMISSION CASE COVER (5-Speed)

Tightening components	Tightening torque		
	N-m	kgf-m	ft-lb
Transmission case cover × Transmission	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Transmission position detect switch × Transmission case cover	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Back-up lamp switch × Transmission case cover	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
5th shift arm pivot × Transmission case cover	34.3 - 44.1	3.5 - 4.5	25.3 - 32.5
Shift lever housing dust cover × Transmission case cover	5.9 - 8.8	0.6 - 0.9	4.3 - 6.5
Reverse restrict pin holder × Transmission case cover	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Shift arm pivot (for reverse) × Transmission case cover	39.2 - 58.8	4.0 - 6.0	28.9 - 43.4
Shift arm pivot (for 5th) × Transmission case cover	34.3 - 44.1	3.5 - 4.5	25.3 - 32.5

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TRANSMISSION CASE COVER (4-Speed)

Tightening components	Tightening torque		
	N-m	kgf-m	ft-lb
Transmission case cover × Transmission	29.4 - 44.0	3.0 - 5.0	21.7 - 36.2
Back-up lamp switch × Transmission case cover	29.4 - 44.0	3.0 - 5.0	21.7 - 36.2
Shift lever housing dust cover × Transmission case cover	5.9 - 8.8	0.6 - 0.9	4.3 - 6.5
Reverse restrict pin holder × Transmission case cover	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Shift arm pivot (for reverse) × Transmission case cover	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2

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TRANSMISSION (5-Speed)

Tightening components	Tightening torque		
	N-m	kgf-m	ft-lb
Clutch housing × Engine	49.0 - 78.5	5.0 - 8.0	36.2 - 57.9
Clutch housing × Rear end plate	14.7 - 24.5	1.5 - 2.5	10.8 - 18.1
Clutch housing × Transmission case	49.0 - 68.6	5.0 - 7.0	36.2 - 50.6
Transmission × Exhaust support pipe bracket	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Crossmember No. 2 × Chassis frame	49.0 - 68.6	5.0 - 7.0	36.2 - 50.6
Crossmember No. 2 × Transmission	49.0 - 68.6	5.0 - 7.0	36.2 - 50.6
Shift lever boot × Front floor panel	9.8 - 15.6	1.0 - 1.6	7.2 - 11.6
Transmission case × Drain, filler plugs	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Output shaft × Lock nut	226.0 - 264.0	23.0 - 27.0	166.0 - 194.4
Counter gear shaft × Lock nut	98.0 - 137.0	10.0 - 14.0	72.0 - 101.0
Transmission case × Reverse idler stopper	17.7 - 29.4	1.8 - 3.0	13.0 - 21.7
Transmission rear mounting bracket × Chassis frame	49.0 - 68.6	5.0 - 7.0	36.2 - 50.6

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