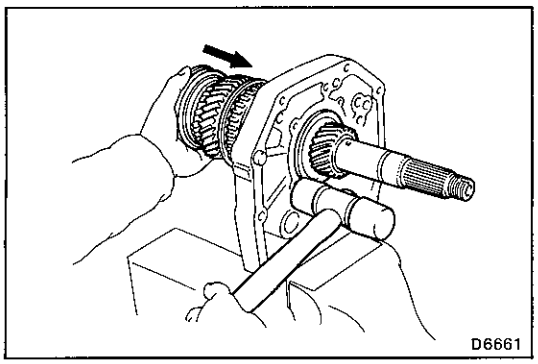
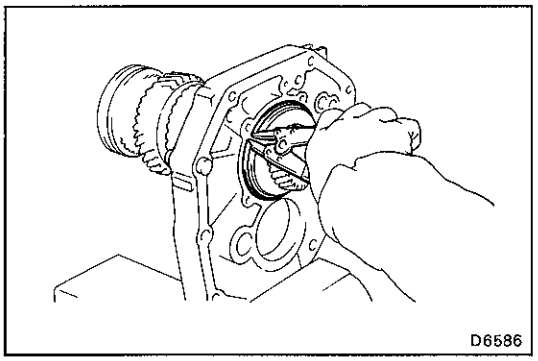
ASSEMBLY OF TRANSMISSION

(See page MT-99, 100)

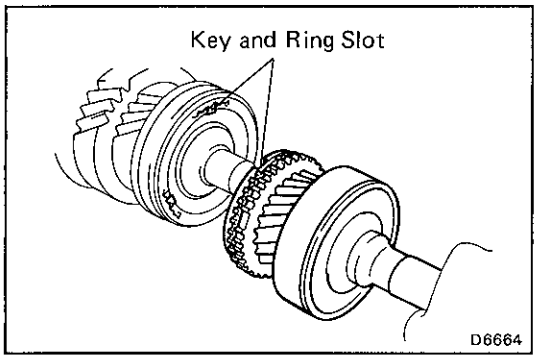


1. INSTALL OUTPUT SHAFT TO INTERMEDIATE PLATE

(a) Install the output shaft into the intermediate plate by pushing on the output shaft and tapping on the intermediate plate.



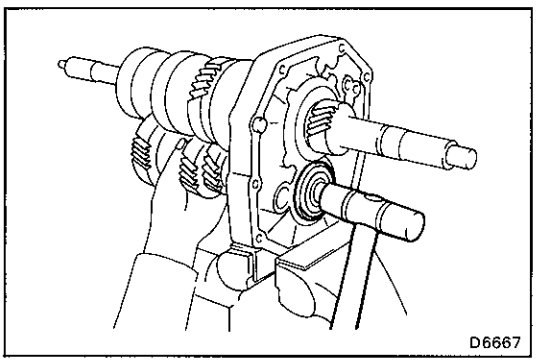
(b) Using snap ring pliers, install the snap ring.



2. INSTALL INPUT SHAFT

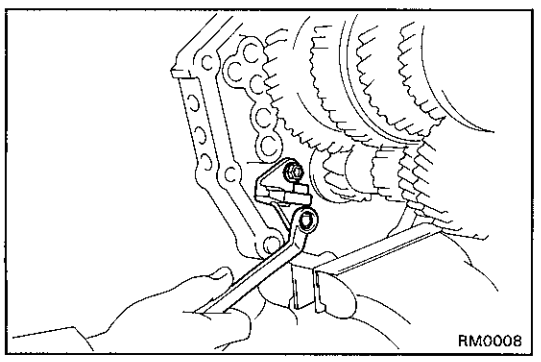
(a) Apply gear oil to the needle roller bearing and install it into the input shaft.

(b) Install the input shaft to the output shaft with the synchronizer ring slots aligned with the shifting keys.



3. INSTALL COUNTER GEAR

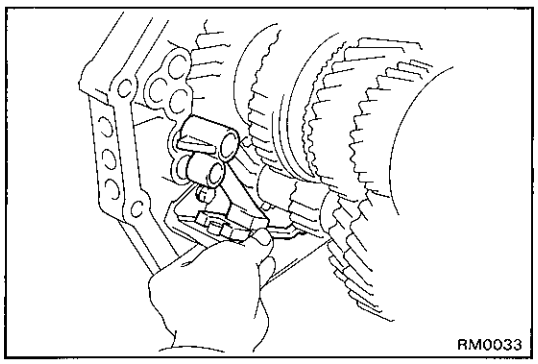
Install the counter gear into the intermediate plate while holding the counter gear, and install the counter rear bearing with a plastic hammer.



4. INSTALL REVERSE SHIFT ARM BRACKET

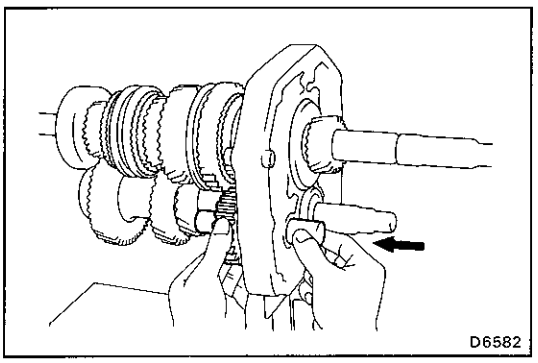
Install the reverse shift arm bracket and torque the bolts.

Torque: 185 kg-cm (13 ft-lb, 18 N·m)



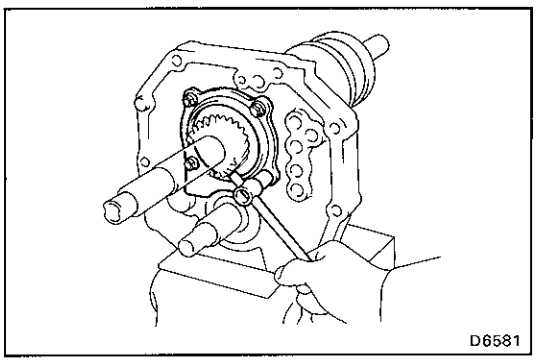
5. INSTALL REVERSE SHIFT ARM TO REVERSE SHIFT ARM BRACKET

Install the reverse shift arm to the pivot of the reverse shift arm bracket.



6. INSTALL REVERSE IDLER GEAR AND SHAFT

Align the reverse shift arm shoe to the reverse idler gear groove and insert the reverse idler gear shaft to the intermediate plate.

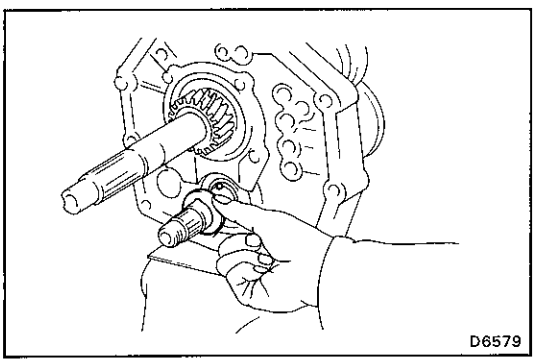


7. INSTALL REAR BEARING RETAINER

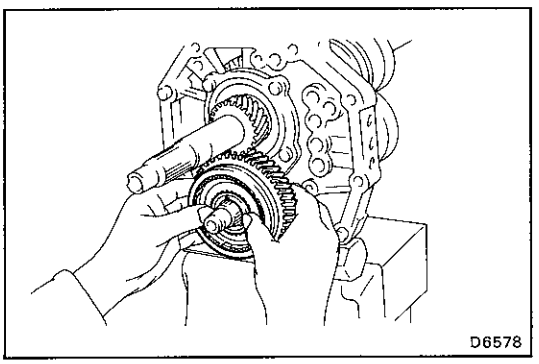
(a) Align the rear bearing retainer to the reverse idler gear shaft groove.

(b) Install and torque the four bolts.

Torque: 185 kg-cm (13 ft-lb, 18 N·m)



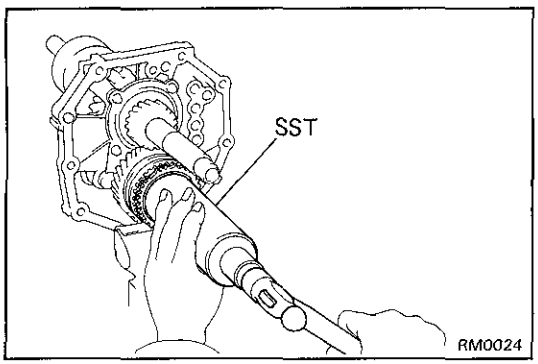
8. INSTALL BALL AND THRUST WASHER



9. INSTALL COUNTER FIFTH GEAR WITH HUB SLEEVE NO.3 ASSEMBLY AND NEEDLE ROLLER BEARINGS

(a) Apply gear oil to the needle roller bearings.

(b) Install the counter 5th gear with hub sleeve No.3 and needle roller bearings.



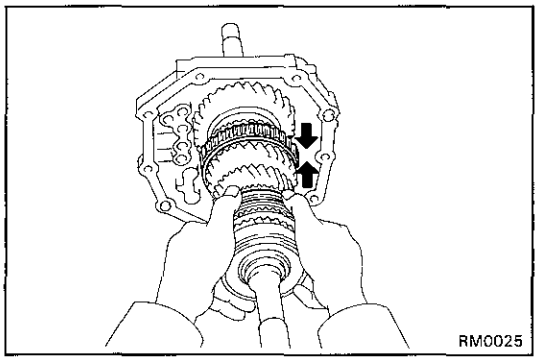
10. INSTALL SYNCHRONIZER RING AND GEAR SPLINE PIECE NO.5

(a) Install the synchronizer ring on gear spline piece No.5.

(b) Using SST, drive in No.5 gear spline piece with the synchronizer ring slots aligned with the shifting keys.

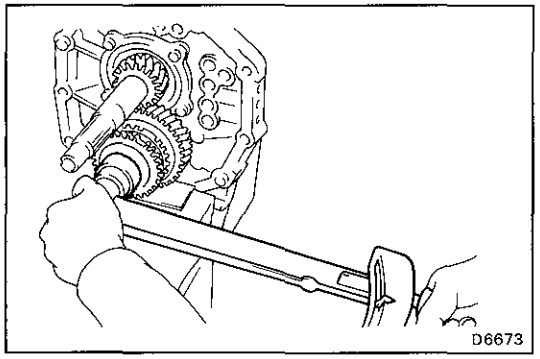
SST 09316-60010 (09316-00010)

HINT: When installing gear spline piece No.5, support the counter gear in front with a 3-5 lb hammer or equivalent.



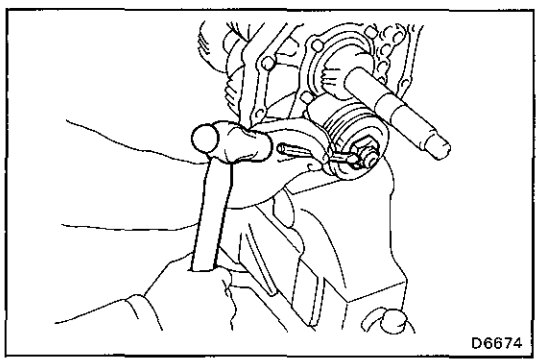
11. INSTALL LOCK NUT

(a) Engage the gear double meshing.



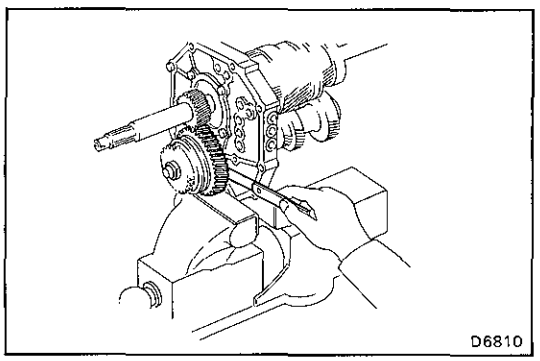
(b) Install and torque the lock nut.

Torque: 1,300 kg-cm (94 ft-lb, 127 N·m)



(c) Stake the lock nut.

(d) Disengage the gear double meshing.

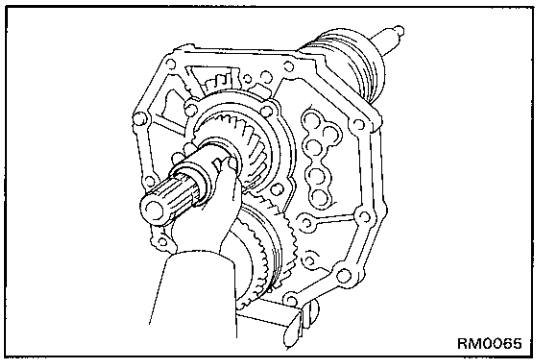


12. MEASURE COUNTER FIFTH GEAR THRUST CLEARANCE

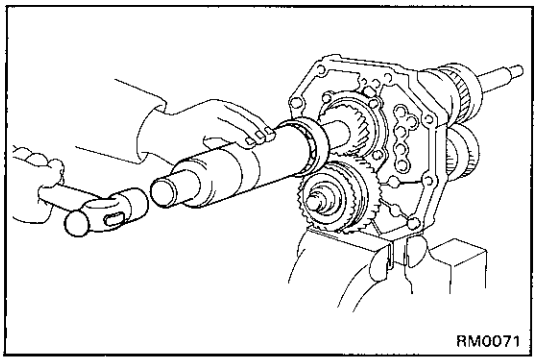
Using a feeler gauge, measure the counter 5th gear thrust clearance.

Standard clearance: 0.10 — 0.35 mm (0.0039 — 0.0138 in.)

Maximum clearance: 0.35 mm (0.0138 in.)



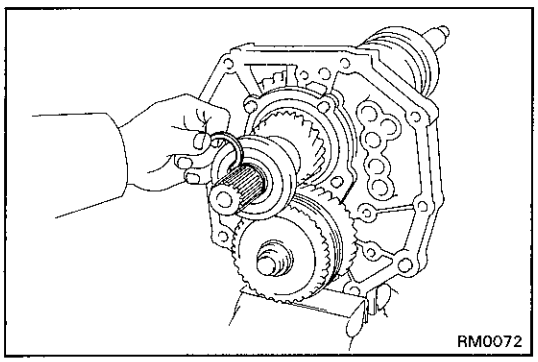
13. INSTALL SPACER



14. INSTALL OUTPUT SHAFT REAR BEARING

Using SST, drive in the rear bearing.

SST 09316-60010 (09316-00010, 09316-00070)

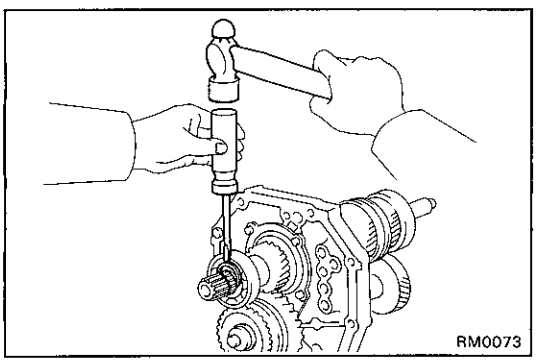


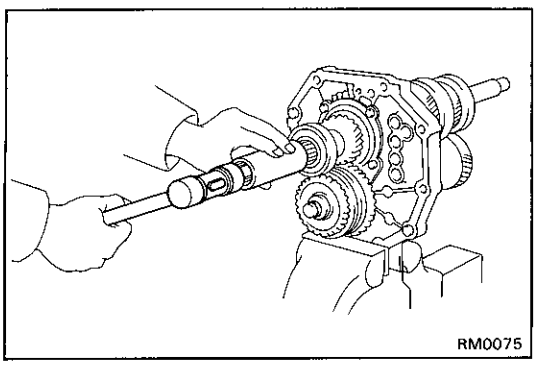
15. INSTALL SNAP RING

(a) Select a snap ring that will allow minimum axial play.

Mark	Thickness mm (in.)	Mark	Thickness (in.)
A	2.65 – 2.70 (0.1043 – 0.1063)	K	3.10 – 3.15 (0.1220 – 0.1240)
B	2.70 – 2.75 (0.1063 – 0.1083)	L	3.15 – 3.20 (0.1240 – 0.1260)
C	2.75 – 2.80 (0.1083 – 0.1102)	M	3.20 – 3.25 (0.1260 – 0.1280)
D	2.80 – 2.85 (0.1102 – 0.1122)	N	3.25 – 3.30 (0.1280 – 0.1299)
E	2.85 – 2.90 (0.1122 – 0.1142)	P	3.30 – 3.35 (0.1299 – 0.1319)
F	2.90 – 2.95 (0.1142 – 0.1161)	Q	3.35 – 3.40 (0.1319 – 0.1339)
G	2.95 – 3.00 (0.1161 – 0.1181)	R	3.40 – 3.45 (0.1339 – 0.1358)
H	3.00 – 3.05 (0.1181 – 0.1201)	S	3.45 – 3.50 (0.1358 – 0.1378)
J	3.05 – 3.10 (0.1201 – 0.1220)		

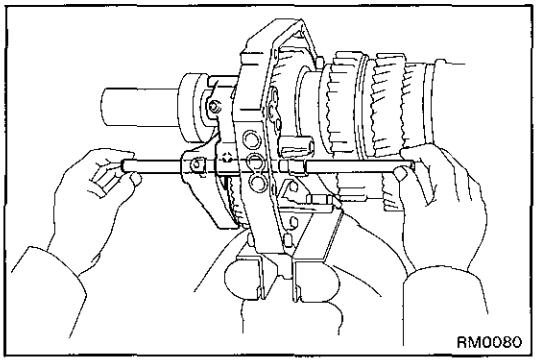
(b) Using a screwdriver and hammer, install the snap ring.





16. INSTALL SLEEVE TO OUTPUT SHAFT

Using a plastic hammer, tap the sleeve onto the output shaft.

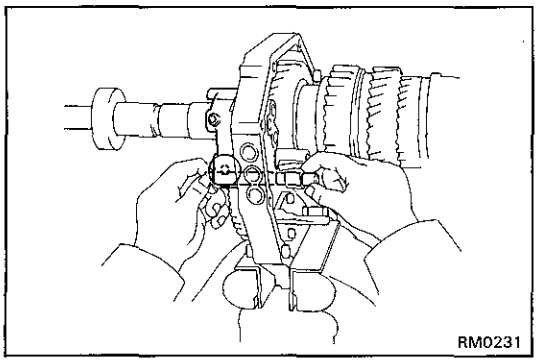

RM0080

17. **(R150F and R151F)**
INSTALL SHIFT FORK SHAFT NO.4, REVERSE SHIFT HEAD AND SHIFT FORK NO.3

(a) Place shift fork No.3 into the groove of hub sleeve No.3.

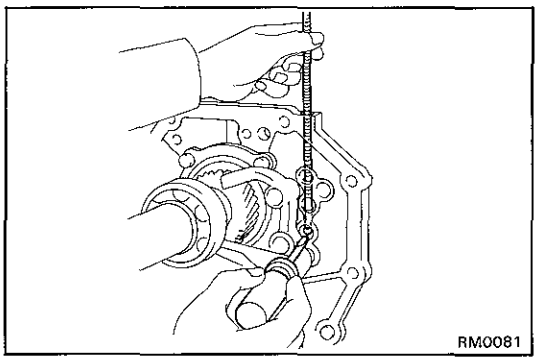
(b) Install shift fork shaft No.4 to shift fork No.3, reverse shift head and shift fork through the intermediate plate.

(c) Install the locking ball into the reverse shift head.


RM0231

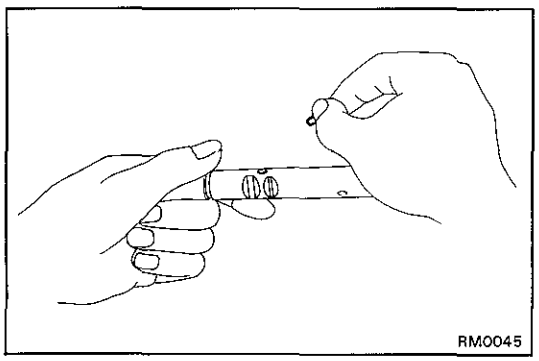
(R141F)
INSTALL SHIFT FORK SHAFT NO.4 AND REVERSE SHIFT HEAD

Install shift fork shaft No.4 to reverse shift head and shift fork through the intermediate plate.

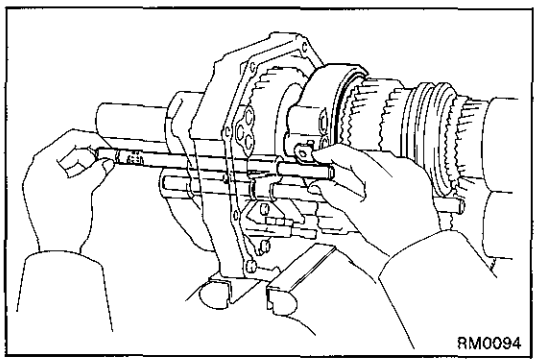

RM0081

18. **INSTALL SHIFT FORK SHAFT NO.3 AND SHIFT FORK NO.1**

(a) Using a magnetic finger and screwdriver, install the locking ball into the intermediate plate.

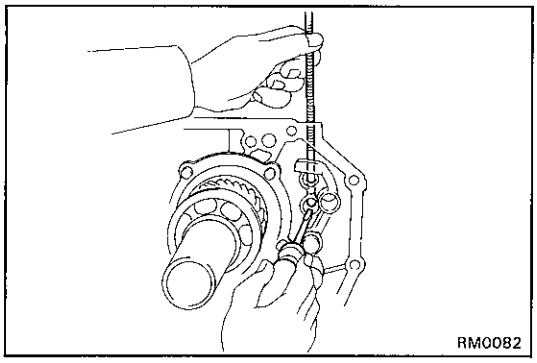

RM0045

(b) Install the interlock pin into the shaft hole.


RM0094

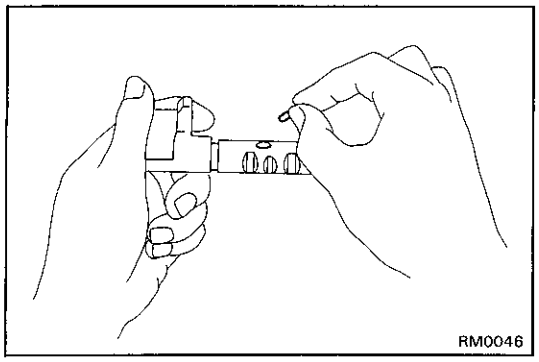
(c) Place shift fork No.1 into the groove of hub sleeve No.1.

(d) Install fork shaft No.3 to the reverse shift fork and shift head through the intermediate plate.

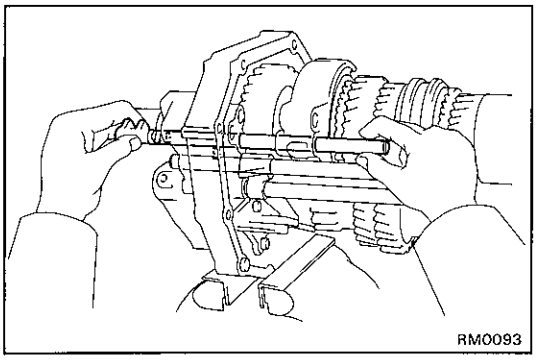


19. INSTALL SHIFT FORK SHAFT NO.1

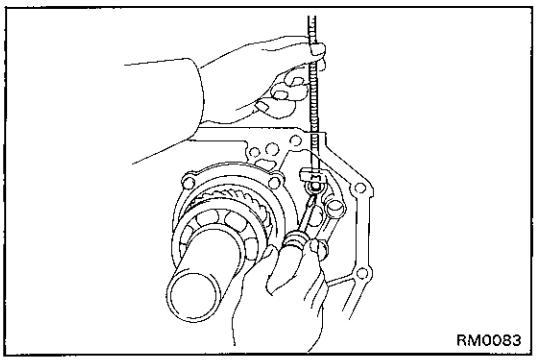
(a) Using a magnetic finger and screwdriver, install the interlock pin into the intermediate plate.



(b) Install the interlock pin into the shaft hole.

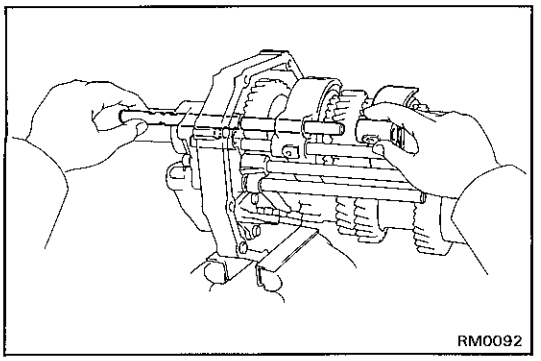


(c) Install fork shaft No.1 to shift fork No.1 through the intermediate plate.



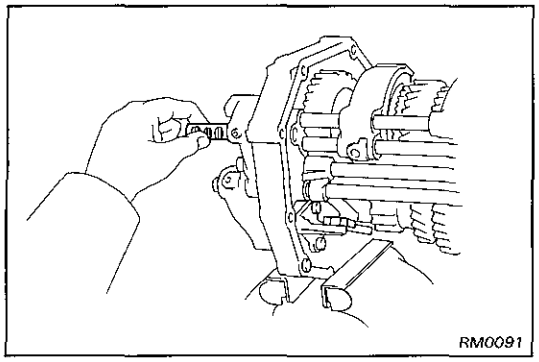
20. INSTALL SHIFT FORK SHAFT NO.2 AND SHIFT FORK

(a) Using a magnetic finger and screwdriver, install the interlock pin into the intermediate plate.



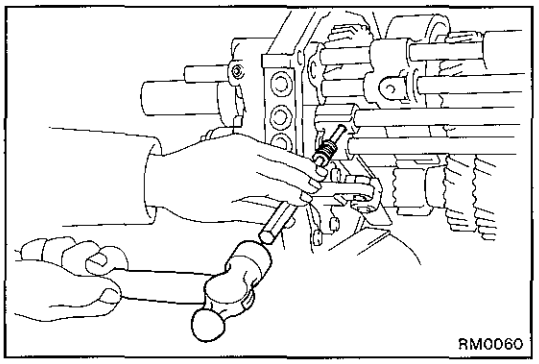
(b) Place shift fork No.2 into the groove of hub sleeve No.2.

(c) Install fork shaft No.2 to shift fork No.1 and No.2 through the intermediate plate.



21. INSTALL SHIFT FORK SHAFT NO.5

Install shift fork shaft No.5 to the reverse shift head through the intermediate plate.



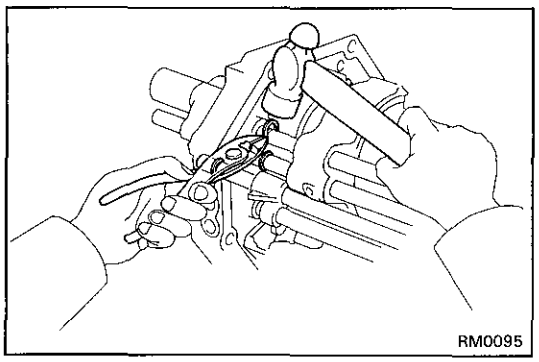
22. INSTALL SLOTTED SPRING PINS

Using a pin punch and hammer, drive in the two slotted spring pins to the reverse shift head and shift fork.

23. CHECK INTERLOCK

(a) Shift No.1 fork shaft to the 1st speed position.

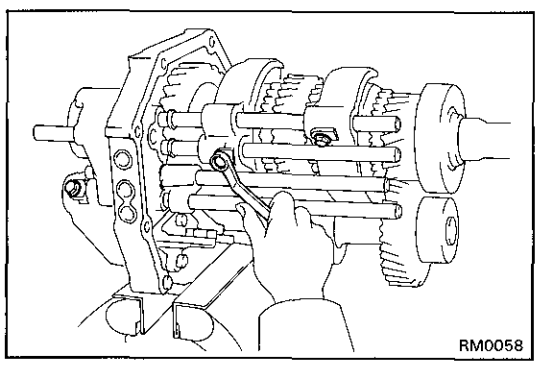
(b) No.2, No.3, No.4 and No.5 fork shafts should not move.



24. INSTALL SNAP RINGS

(R150F and R151F)
Using pliers and a hammer, install the three snap rings.

(R141F)
Using pliers and a hammer, install the six snap rings.

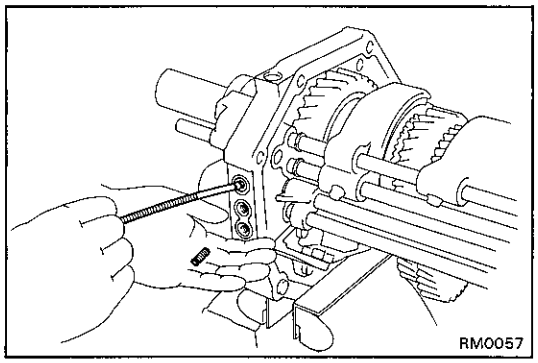


25. INSTALL SET BOLTS

(R150F and R151F)
Install and torque the three bolts.

(R141F)
Install and torque the two bolts.

Torque: 200 kg-cm (14 ft-lb, 20 N·m)



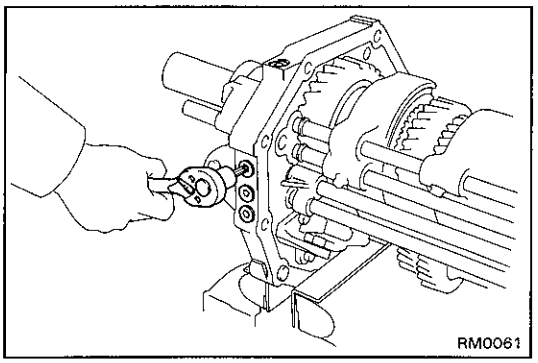
26. INSTALL LOCKING BALLS, SPRINGS AND SCREW PLUGS

(a) Apply liquid sealer to the plug threads.

Sealant: Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

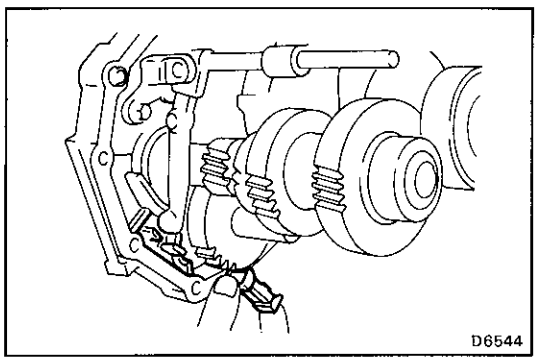
(b) (R150F and R151F)
Install the four locking balls, springs and screw plugs.

(R141F)
Install the three locking balls, springs and screw plugs.



(c) Using a torx socket wrench, torque the screw plugs.

Torque: 190 kg-cm (14 ft-lb, 19 N·m)

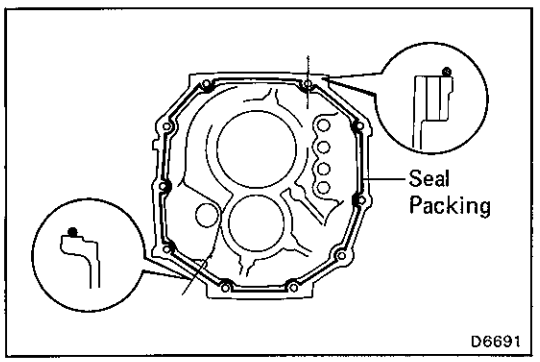


27. INSTALL MAGNET TO INTERMEDIATE PLATE

28. DISMOUNT INTERMEDIATE PLATE FROM VISE

(a) Dismount the intermediate plate from the vise.

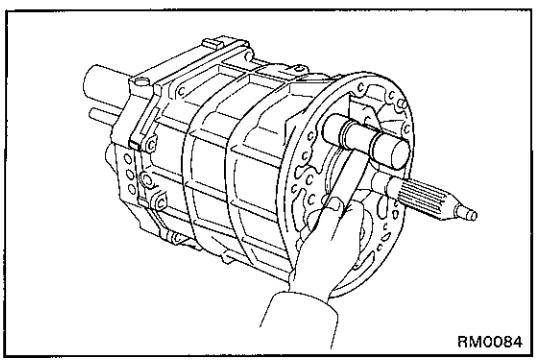
(b) Remove the bolts, nuts and plate washers.



29. INSTALL TRANSMISSION CASE

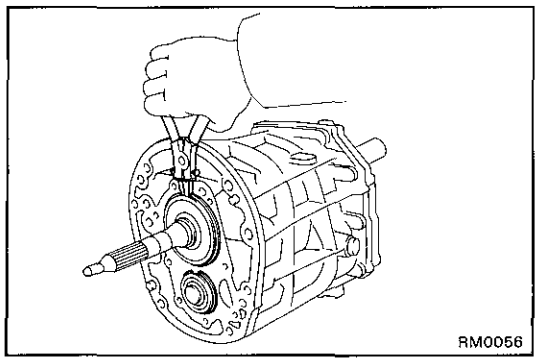
(a) Apply seal packing to the transmission case as shown.

Seal packing: Part No.08826-00090, THREE BOND 1281 or equivalent



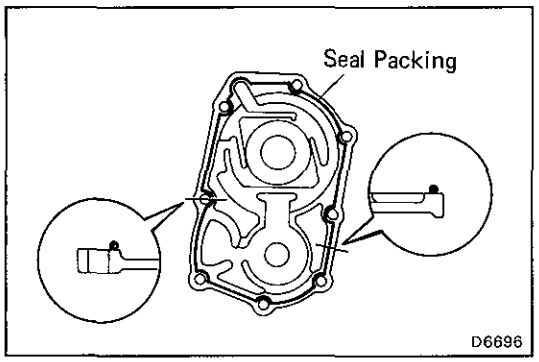
(b) Align each bearing outer race, each fork shaft end and reverse idler gear shaft end with the case installation holes, and install the case.

If necessary, tap on the case with a plastic hammer.



30. INSTALL BEARING SNAP RINGS

Using snap ring pliers, install the two snap rings to the input shaft bearing and counter gear front bearing.



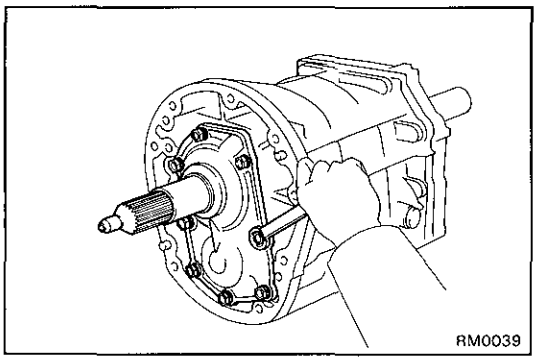
31. INSTALL FRONT BEARING RETAINER

(a) Remove any packing material and be careful not to drop oil on the contacting surfaces of the transmission case or front bearing retainer.

(b) *Apply seal packing to the transmission case as shown.*

Seal packing: Part No.08826-00090, THREE BOND 1281 or equivalent

HINT: Install the front bearing retainer as soon as the seal packing is applied.

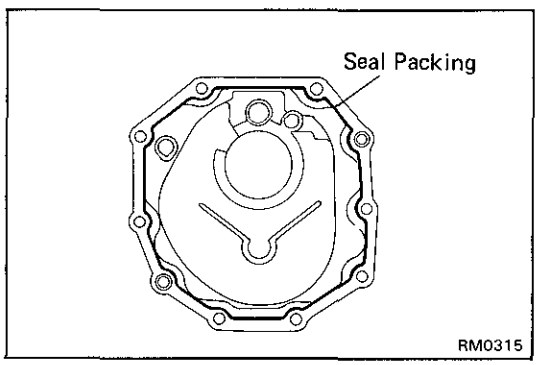


(c) *Apply liquid sealer to the bolt threads.*

Sealant: Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

(d) Install and torque the bolts.

Torque: 170 kg-cm (12 ft-lb, 17 N·m)



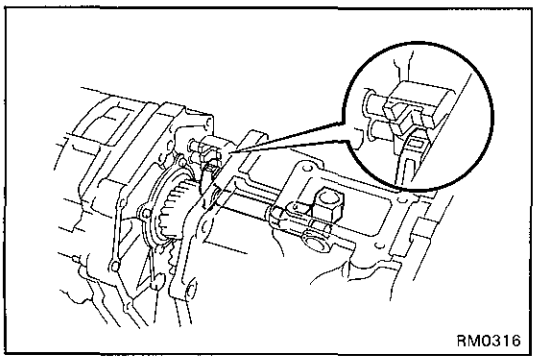
32. INSTALL TRANSFER ADAPTOR, SHIFT LEVER SHAFT AND SHIFT LEVER HOUSING

(a) Remove any packing material and be careful not to drop oil on the contacting surfaces of the transmission case or transfer adaptor.

(b) Apply seal packing to the transfer adaptor as shown.

Seal packing: Part No.08826-00090, THREE BOND 1281 or equivalent

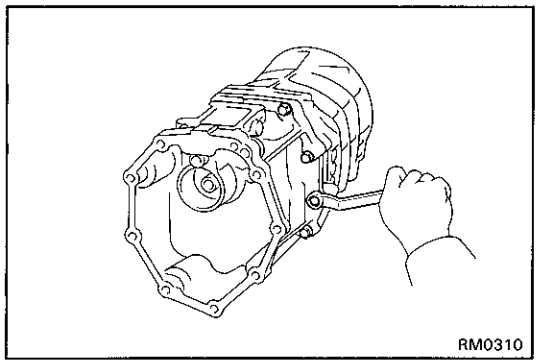
HINT: Install the transfer adaptor as soon as the seal packing is applied.



(c) Insert the shift and select lever into the transfer adaptor.

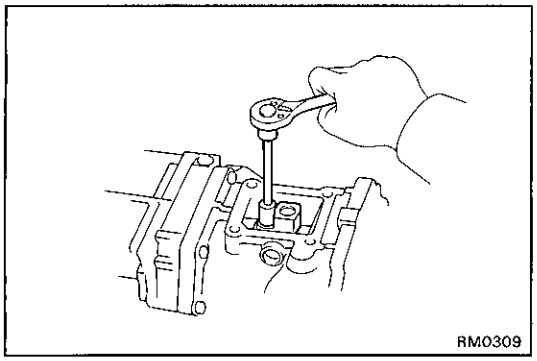
(d) Connect the shift and select lever to the fork shaft and put in the shift lever housing.

(e) Align No.5 fork shaft to the transfer adaptor installation hole and push in the transfer adaptor.


RM0310

(f) Install and torque the bolts.

Torque: 380 kg-cm (27 ft-lb, 37 N·m)

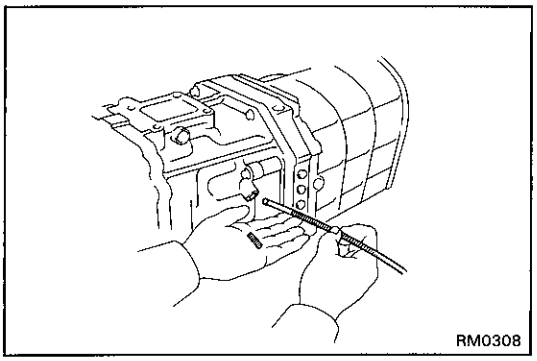

RM0309

(g) Install and torque the shift lever housing bolt.

Torque: 390 kg-cm (28 ft-lb, 38 N·m)

(h) Apply liquid sealer to the plug threads.

Sealant: Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

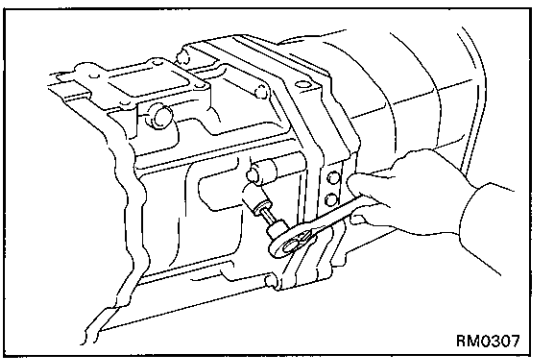

RM0308

33. INSTALL LOCKING BALL, SPRING AND SCREW PLUG

(a) Install the locking ball, spring and plug.

(b) Apply liquid sealer to the plug threads.

Sealant: Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent


RM0307

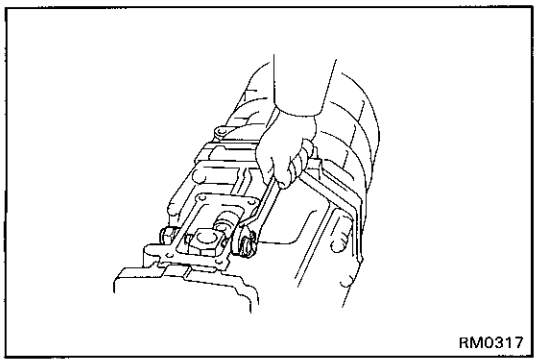
(c) Install and torque the plug.

Torque: 190 kg-cm (14 ft-lb, 19 N·m)

34. AFTER INSTALLING TRANSFER ADAPTOR CHECK FOLLOWING ITEMS

(a) Check to see that the input and output shafts rotate smoothly.

(b) Check to see that shifting can be made smoothly to all positions.

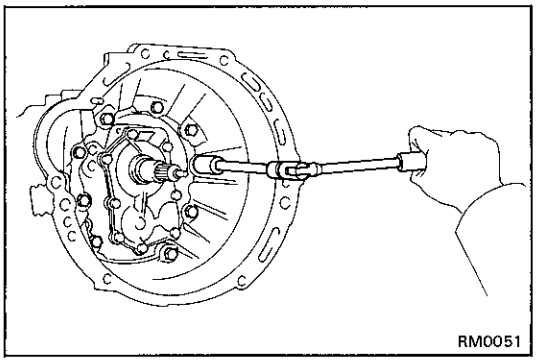

RM0317

35. INSTALL RESTRICT PINS

(a) Install the black pin on the reverse gear/5th gear side.

(b) Install another pin and torque the pins.

Torque: 380 kg-cm (27 ft-lb, 37 N·m)

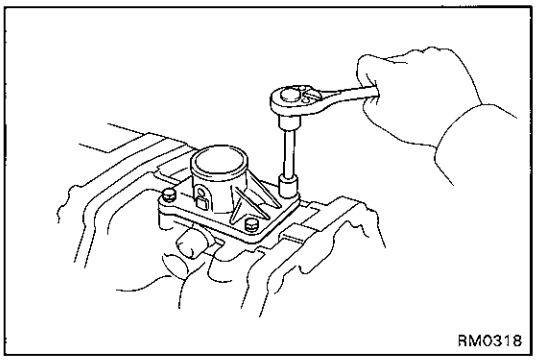

RM0051

36. INSTALL CLUTCH HOUSING

(a) Install the clutch housing.

(b) Install and torque the nine bolts.

Torque: 370 kg-cm (27 ft-lb, 36 N·m)


RM0318

37. INSTALL SHIFT LEVER RETAINER WITH NEW GASKET

(a) Apply liquid sealer to the bolt threads.

Sealant: Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

(b) Install and torque the four bolts.

Torque: 185 kg-cm (13 ft-lb, 18 N·m)

38. INSTALL BACK-UP LIGHT SWITCH

Torque: 380 kg-cm (27 ft-lb, 37 N·m)

39. INSTALL RELEASE FORK AND BEARING