CLUTCH UNIT (MTM)(2TR–FE/1GR–FE/1KD–FTV)

4209L–01

OVERHAUL

1. REMOVE MANUAL TRANSMISSION UNIT ASSY

HINT:

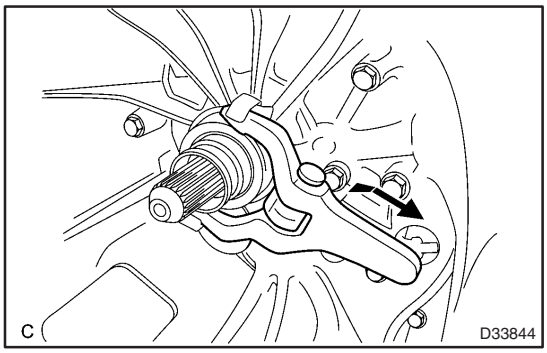
- R150F (2TR–FE): See page 41–5.
- RA61F (1GR–FE): See page 41–14.
- RA61F (1KD–FTV): See page 41–26.

2. REMOVE CLUTCH RELEASE FORK BOOT (2TR–FE ENGINE TYPE)

(a) Remove the clutch release fork boot from the manual transmission unit assy.

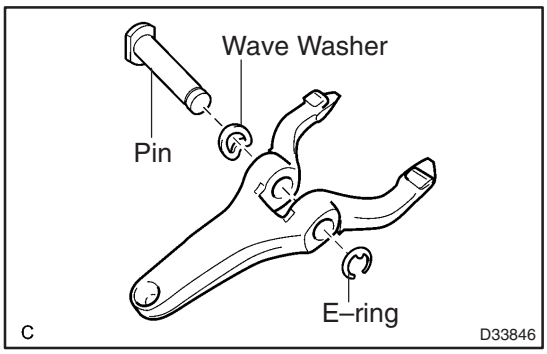
3. REMOVE CLUTCH RELEASE FORK SUB–ASSY (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Remove the clutch release fork sub–assy with the clutch release bearing assy.



4. REMOVE CLUTCH RELEASE FORK SUB–ASSY (1KD–FTV ENGINE TYPE)

(a) Remove the clutch release fork sub–assy as shown in the illustration.



(b) Remove the E–ring, pin and wave washer from the clutch release fork.

5. REMOVE CLUTCH RELEASE BEARING ASSY (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Remove the clutch release bearing assy from the clutch release fork sub–assy.

6. REMOVE CLUTCH RELEASE BEARING ASSY (1KD–FTV ENGINE TYPE)

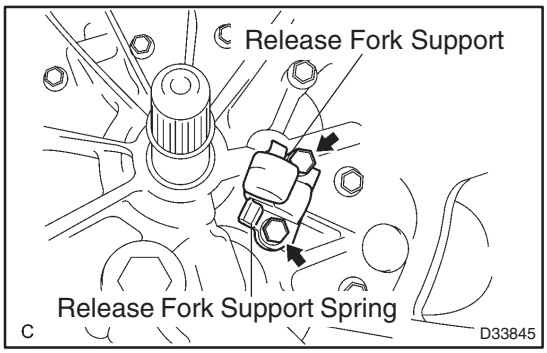
(a) Remove the clutch release bearing assy from the input shaft.

7. REMOVE RELEASE BEARING HUB CLIP (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Remove the release bearing hub clip from the clutch release bearing assy.

8. REMOVE RELEASE FORK SUPPORT (2TR–FE, 1GR–FE ENGINE TYPE)

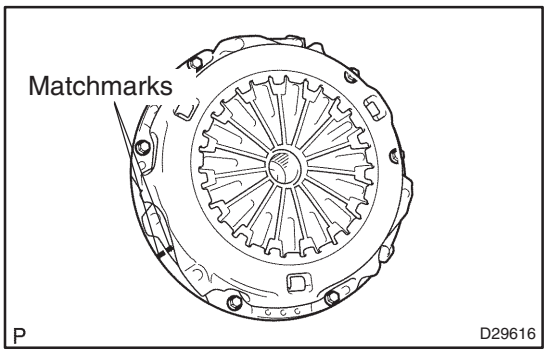
(a) Remove the release fork support from the manual transmission unit assy.



9. REMOVE RELEASE FORK SUPPORT (1KD–FTV ENGINE TYPE)

(a) Remove the 2 bolts and release fork support.

(b) Remove the release fork support spring from the release fork support.



10. REMOVE CLUTCH COVER ASSY

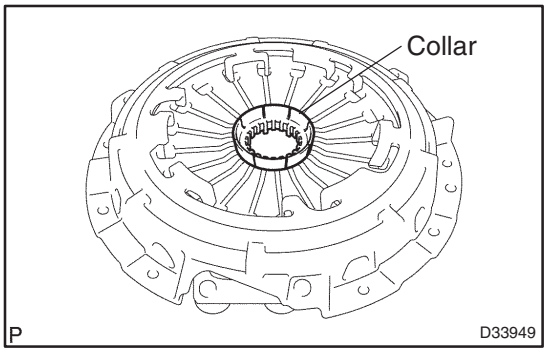
(a) Put matchmarks on the clutch cover and flywheel.

(b) Loosen each set bolt one turn at a time until spring tension is released.

(c) Remove the set bolts, and pull off the clutch cover.

NOTICE:

- **Do not drop the clutch disc.**

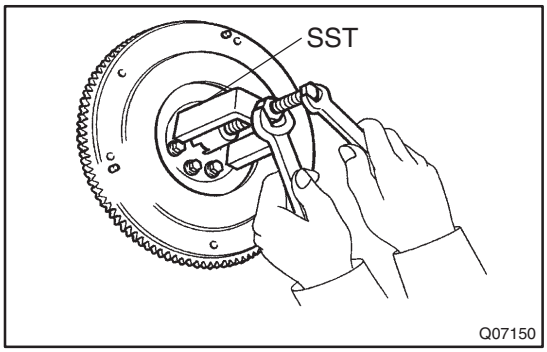


- **Engine type 2KD–FTV:**
  Do not touch the collar.

11. REMOVE CLUTCH DISC ASSY

NOTICE:

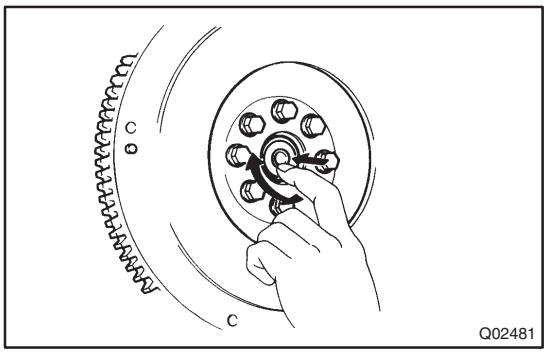
Keep the lining of the clutch disc assy, the pressure plate and the surface of the flywheel away from oil and foreign matter.



12. REMOVE INPUT SHAFT BEARING (2TR–FE ENGINE TYPE)

(a) Remove 2 bolts located diagonally opposite.

(b) Using SST, remove the input shaft bearing.
SST 09303–35011



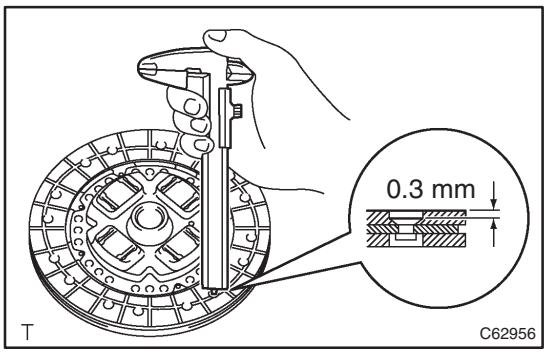
13. INSPECT INPUT SHAFT BEARING (2TR–FE ENGINE TYPE)

(a) Turn the bearing by hand while applying force in the direction of rotation.

If the bearing sticks or there is too much resistance, replace the input shaft bearing.

HINT:

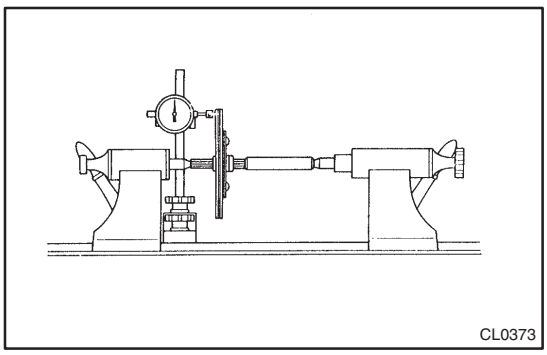
The bearing is permanently lubricated and requires no cleaning or lubrication.



14. INSPECT CLUTCH DISC ASSY

(a) Using vernier calipers, measure the rivet head depth.
Minimum rivet depth: 0.3 mm (0.012 in.)

If necessary, replace the clutch disc.



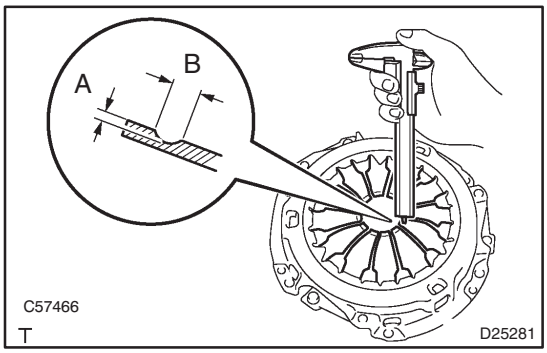
(b) Install the clutch disc to the transmission unit assy.

NOTICE:

Take care not to insert the clutch disc in the wrong direction.

(c) Using a dial indicator, check the disc runout.
Minimum runout: 0.8 mm (0.031 in.)

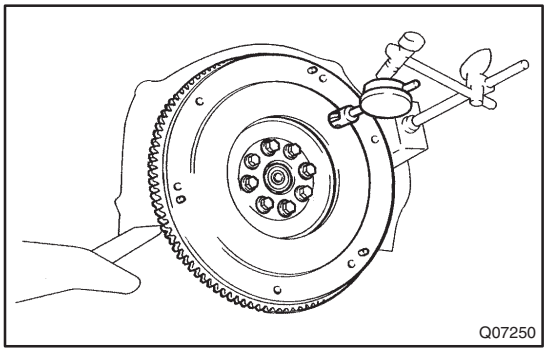
If necessary, replace the clutch disc.



15. INSPECT CLUTCH COVER ASSY (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Using vernier calipers, inspect the diaphragm spring for the depth and width of wear.
Maximum:
A (Depth): 0.5 mm (0.020 in.)
B (Width): 6.0 mm (0.236 in.)

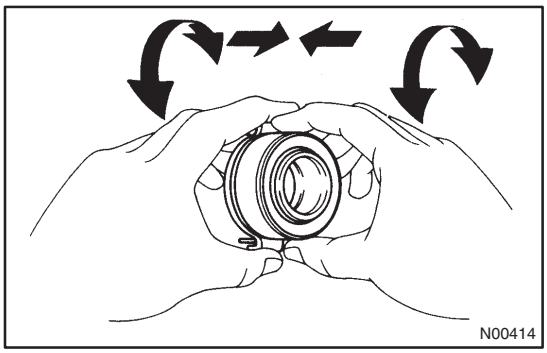
If necessary, replace the clutch cover assy.



16. INSPECT FLYWHEEL SUB–ASSY

(a) Using a dial indicator, inspect the flywheel runout.
Maximum runout: 0.1 mm (0.004 in.)

If necessary, replace the flywheel.



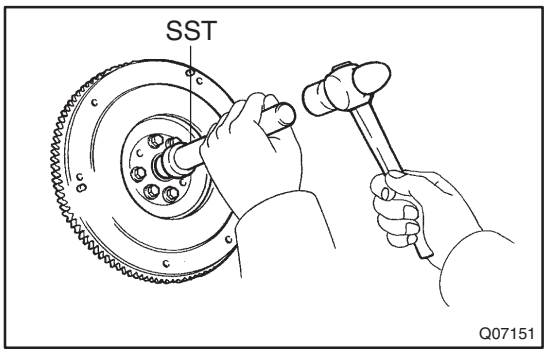
17. INSPECT CLUTCH RELEASE BEARING ASSY

(a) Check that the clutch release bearing assy moves smoothly without abnormal resistance by turning the sliding parts of the clutch release bearing assy (contact surfaces with the clutch cover) while applying force in the axial direction.

(b) Inspect the clutch release bearing assy for damage or wear.

HINT:

Replace the release bearing assy as necessary.



18. INSTALL INPUT SHAFT BEARING (2TR–FE ENGINE TYPE)

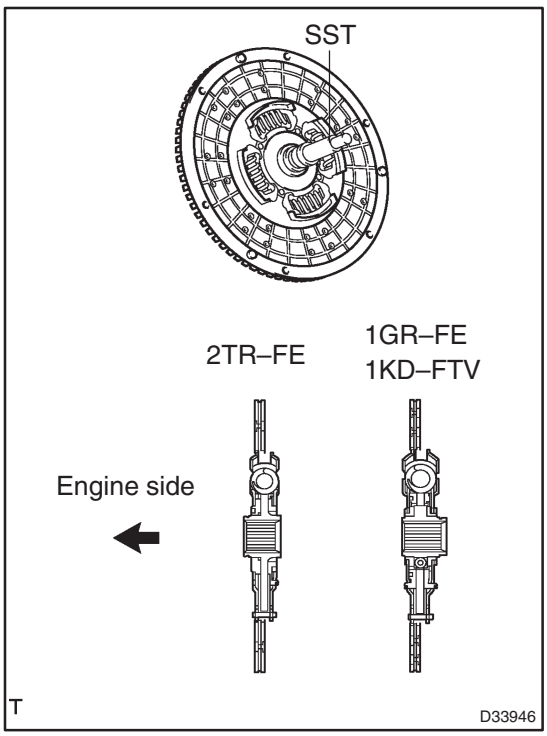
(a) Using SST and a hammer, install a new input shaft bearing.

SST 09304–12012

HINT:

After installing the input shaft bearing to the hub, make sure that it rotates smoothly.

(b) Install 2 new bolts. (see page 14–19)



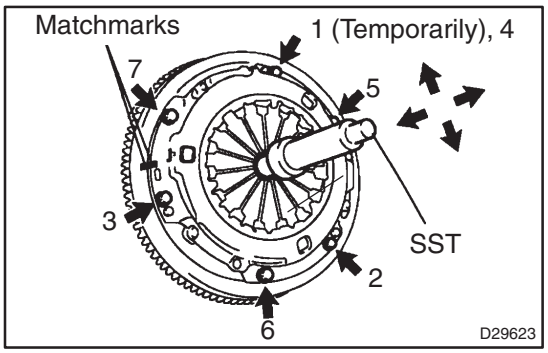
19. INSTALL CLUTCH DISC ASSY

(a) Insert SST in the clutch disc, then insert them in the flywheel.

SST 09301–00131

NOTICE:

Take care not to insert the clutch disc in the wrong direction.



20. INSTALL CLUTCH COVER ASSY

(a) Align the matchmarks on the clutch cover and flywheel.

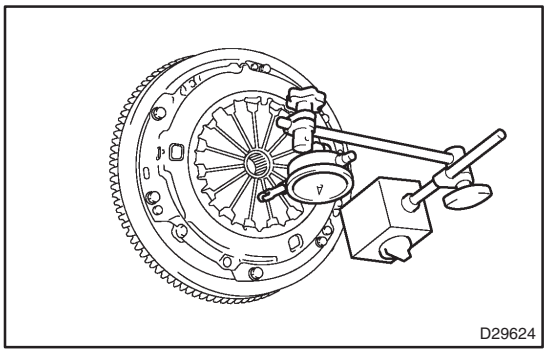
(b) Following the order shown in the illustration, tighten the 6 bolts starting from the bolt located near the knock pin on the top.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

HINT:

- Tighten the bolts after checking that the disc is in the center by lightly moving the SST up and down, left and right.
- Evenly tighten the bolts by following the order shown in the illustration.

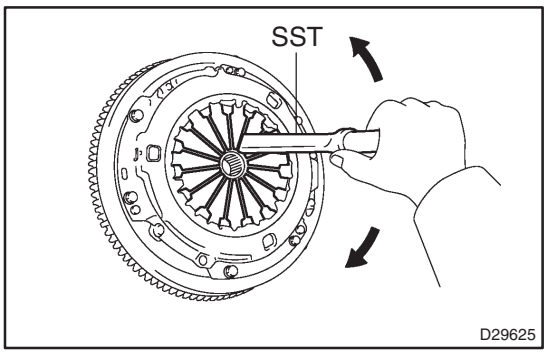
  SST 09301–00131



21. INSPECT AND ADJUST CLUTCH COVER ASSY (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Using a dial indicator with a roller instrument, check the diaphragm spring tip alignment.

Maximum non–alignment: 0.5 mm (0.020 in.)



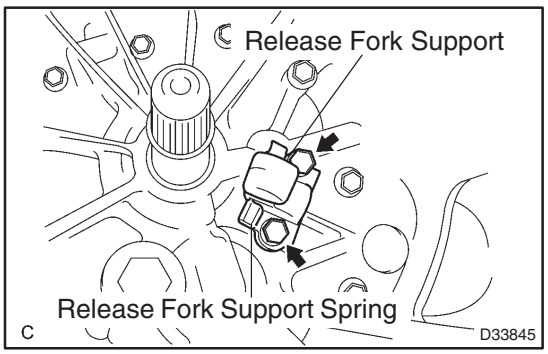
(b) If alignment is not as specified, using SST, adjust the diaphragm spring tip alignment.

SST 09333–00013

22. INSTALL RELEASE FORK SUPPORT (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Install the release fork support to the manual transmission unit assy.

Torque: 47 N·m (479 kgf·cm, 35 ft·lbf)



23. INSTALL RELEASE FORK SUPPORT (1KD–FTV ENGINE TYPE)

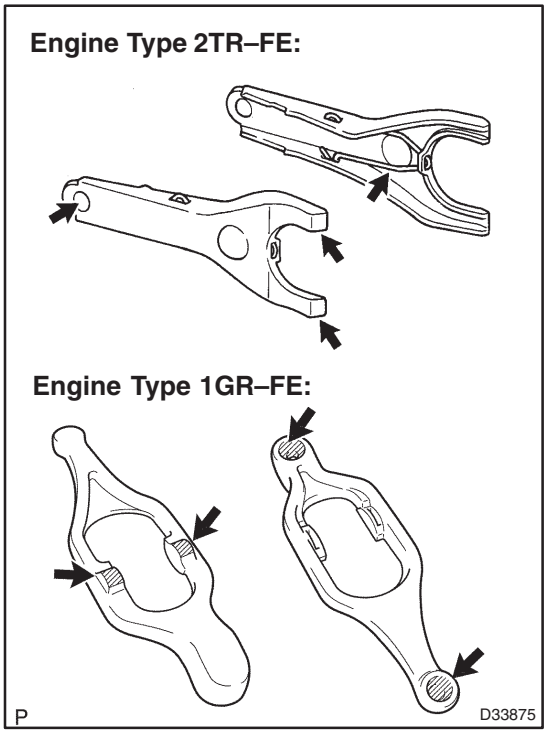
(a) Install the release fork support spring to the release fork support.

(b) Install the release fork support to the manual transmission unit assy with the 2 bolts.

Torque: 26 N·m (260 kgf·cm, 19 ft·lbf)

24. INSTALL RELEASE BEARING HUB CLIP (2TR–FE, 1GR–FE ENGINE TYPE)

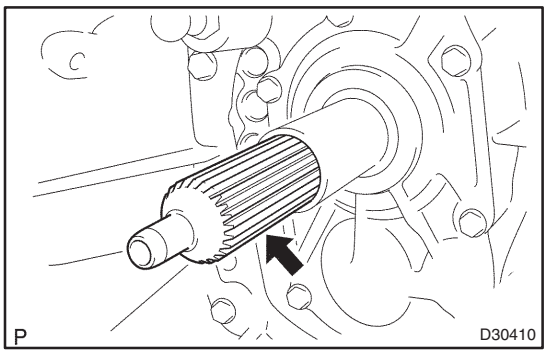
(a) Install the release bearing hub clip to the release bearing assy.



25. INSTALL CLUTCH RELEASE FORK SUB–ASSY (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Apply release hub grease to the contact surfaces of, the release fork and release bearing assy, the release fork and push rod, and the release fork pivot points.
Sealant:
Part No. 08887–01806, RELEASE HUB GREASE or equivalent

(b) Install the release fork to the release bearing assy.

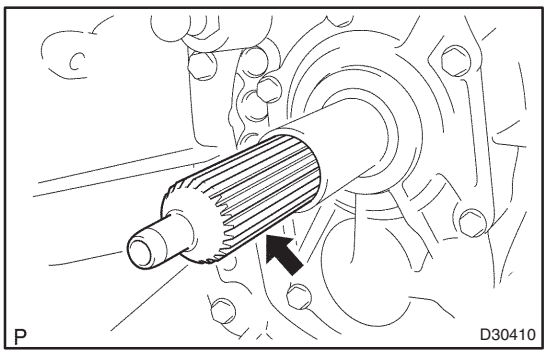


26. INSTALL CLUTCH RELEASE BEARING ASSY (2TR–FE, 1GR–FE ENGINE TYPE)

(a) Apply clutch spline grease to the input shaft spline.
Sealant:
Part No. 08887–01706, CLUTCH SPLINE GREASE or equivalent

(b) Install the release fork with the release bearing assy to the manual transmission assy.

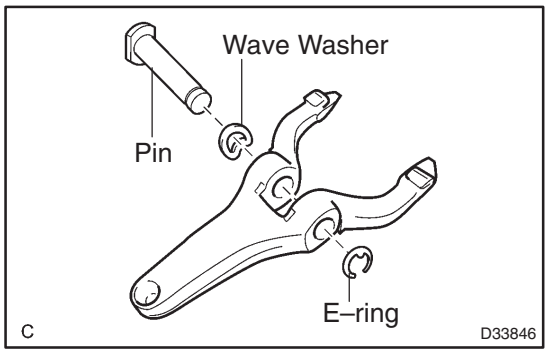
NOTICE:
After installation, move the fork back and forth to check that the release bearing slides smoothly.



27. INSTALL CLUTCH RELEASE BEARING ASSY (1KD–FTV ENGINE TYPE)

(a) Apply clutch spline grease to the input shaft spline.
Sealant:
Part No. 08887–01706, CLUTCH SPLINE GREASE or equivalent

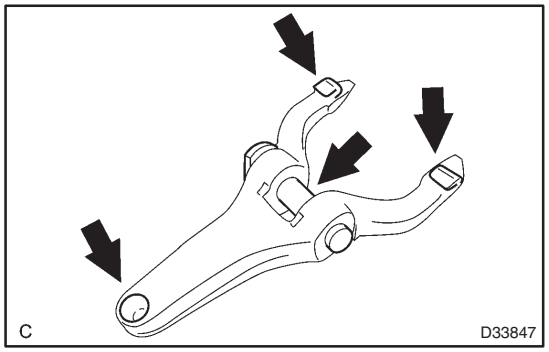
(b) Install the release bearing assy to the manual transmission assy.



28. INSTALL CLUTCH RELEASE FORK SUB–ASSY (1KD–FTV ENGINE TYPE)

(a) Install the pin and wave washer to the clutch release fork.

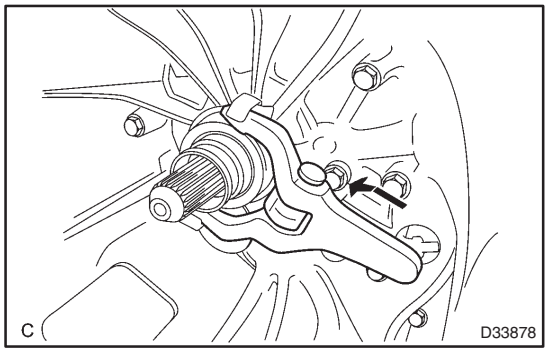
(b) Install a new E–ring.



(c) Apply release hub grease to the contact surfaces of, the release fork and release bearing assy, the release fork and push rod, and the release fork pivot points.

Sealant:

Part No. 08887–01806, RELEASE HUB GREASE or equivalent



(d) Install the release fork to the release bearing assy as shown in the illustration.

NOTICE:

After installation, move the fork back and forth to check that the release bearing slides smoothly.

29. INSTALL CLUTCH RELEASE FORK BOOT (2TR–FE ENGINE TYPE)

30. INSTALL MANUAL TRANSMISSION UNIT ASSY

HINT:

- R150F (2TR–FE): See page 41–5.
- RA61F (1GR–FE): See page 41–14.
- RA61F (1KD–FTV): See page 41–26.