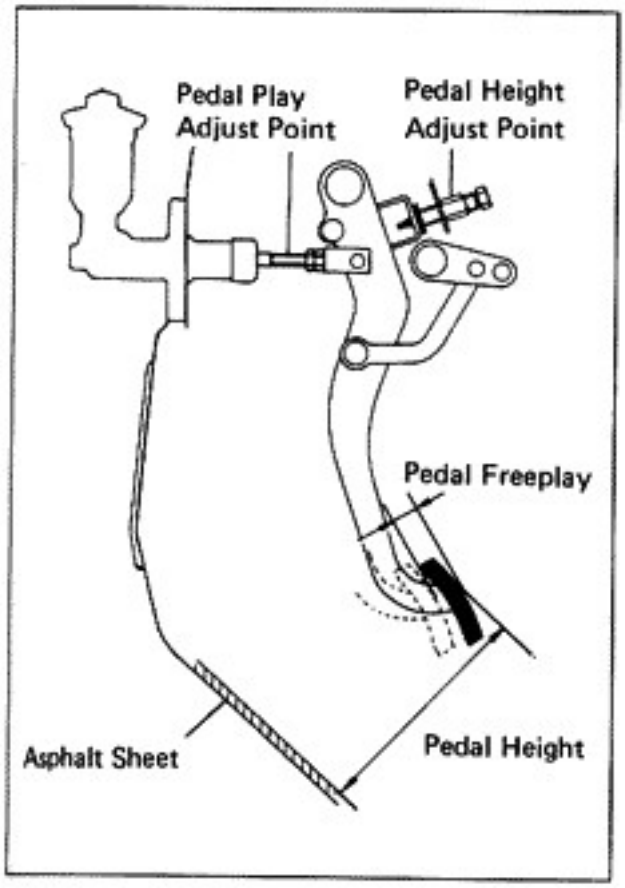
CLUTCH

C

TROUBLESHOOTING

Problem	Possible cause	Remedy	Pag
Hard to shift or will not shift	Clutch pedal freeplay excessive	Adjust pedal freeplay	CL-
	Air in clutch lines	Bleed clutch system	CL-
	Clutch release cylinder faulty	Repair release cylinder	CL-
	Clutch master cylinder faulty	Repair master cylinder	CL-
	Clutch disc out of true, runout is excessive or lining broken	Inspect clutch disc	CL-
	Splines on input shaft or clutch disc dirty or burred	Repair as necessary	CL-
	Clutch pressure plate faulty	Replace pressure plate	CL-
Transmission jumps out of gear	Clutch pilot bearing worn	Replace pilot bearing	CL-
Clutch slips	Clutch pedal freeplay insufficient	Adjust pedal freeplay	CL
	Clutch disc lining oily or worn out	Inspect clutch disc	CL
	Pressure plate faulty	Replace pressure plate	CL
	Release fork binding	Inspect release fork	CL
Clutch grabs/chatters	Clutch disc lining oily or worn out	Inspect clutch disc	CL
	Pressure plate faulty	Replace pressure plate	CL
	Clutch diaphragm spring bent	Align clutch diaphragm	CL
	Engine mounts loose	Repair as necessary	
Clutch pedal spongy	Air in clutch lines	Bleed clutch system	CL
	Clutch release cylinder faulty	Repair release cylinder	CL
	Clutch master cylinder faulty	Repair master cylinder	CL
Clutch noisy	Loose part inside housing	Repair as necessary	
	Release bearing worn or dirty	Replace release bearing	CL
	Pilot bearing worn	Replace pilot bearing	CL
	Release fork or linkage sticks	Repair as necessary	



CHECK AND ADJUSTMENT OF CLUTCH PEDAL

1. CHECK THAT PEDAL HEIGHT IS CORRECT AS SPECIFIED

   Pedal height: 154 – 164 mm (6.06 – 6.46 in.)

2. IF NECESSARY, ADJUST PEDAL HEIGHT

   (a) Loosen the lock nut and turn the adjusting bolt until the height is correct.

   (b) Tighten the lock nut.

   (c) After adjusting the pedal height, check the pedal freeplay.

3. CHECK THAT PEDAL FREEPLAY IS CORRECT AS SPECIFIED

   Push in on the pedal until initial clutch resistance is felt.

   Pedal freeplay: 5 – 15 mm (0.20 – 0.59 in.)
   [Push rod play at pedal: 1 – 5 mm (0.04 – 0.20 in.)]

4. IF NECESSARY, ADJUST PEDAL FREEPLAY

   (a) Loosen the lock nut and turn the push rod until the freeplay is correct.

   (b) Tighten the lock nut.

   (c) After adjusting the pedal freeplay, check the pedal height.

5. CHECK PEDAL OPERATION

   While gently depressing and releasing the pedal, check that engagement and disengagement is smooth.

   NOTE: With a pedal stroke of 125 – 135 mm (4.92 – 5.31 in.), the pedal should return in 3 – 4 seconds.

BLEEDING OF CLUTCH SYSTEM

NOTE: If any work is done on the clutch system or if air is suspected in the clutch lines, bleed the system of air.

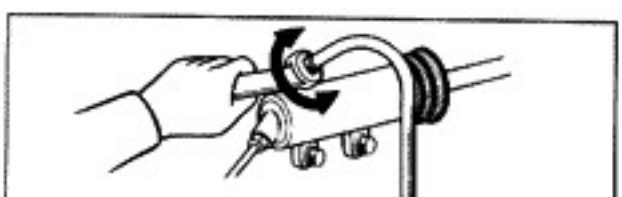
CAUTION: Do not let brake fluid remain on a painted surface. Wash it off immediately.

1. FILL CLUTCH RESERVOIR WITH BRAKE FLUID

   Check the reservoir frequently. Add fluid if necessary.

2. CONNECT VINYL TUBE TO BLEEDER PLUG

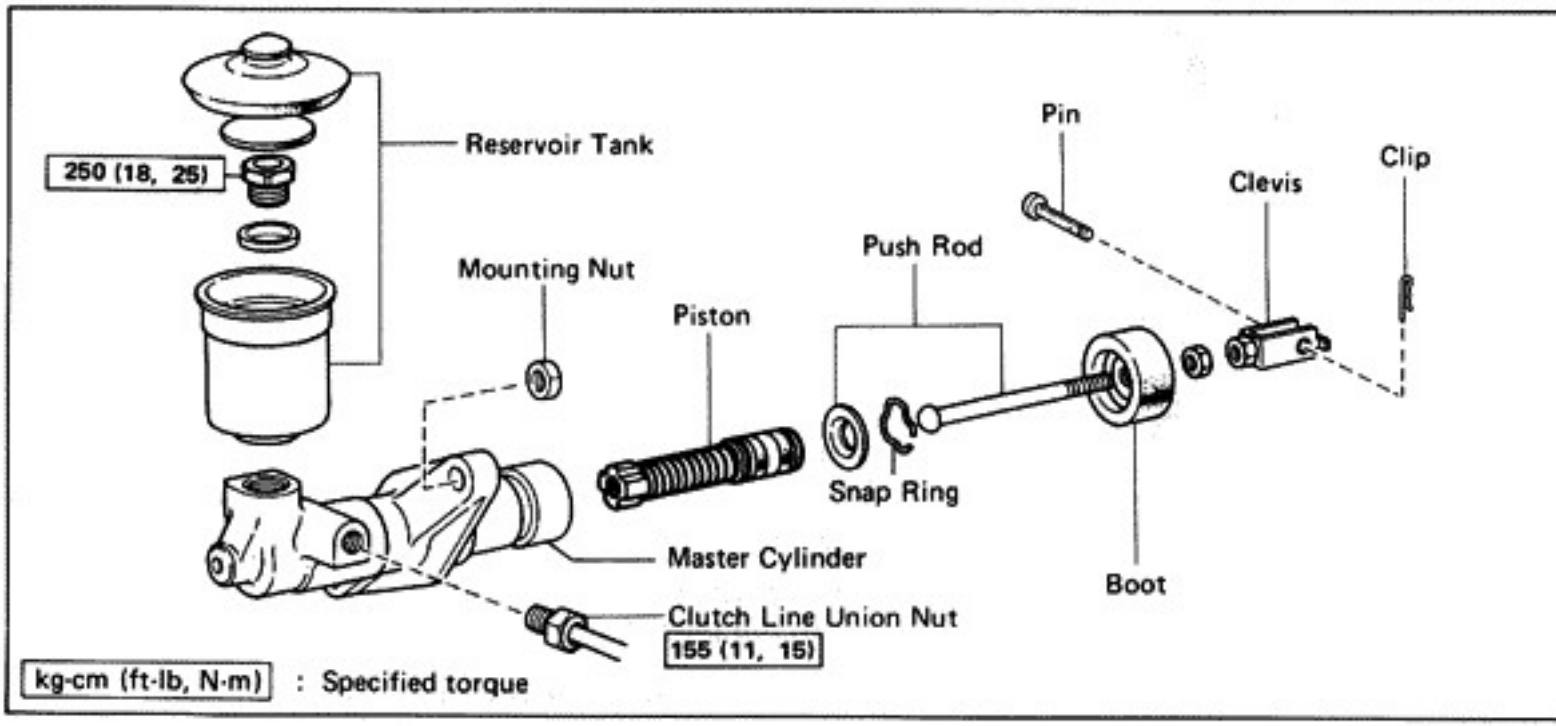
   Insert the other end of the tube in a half-full container of brake fluid.



3. BLEED CLUTCH LINE

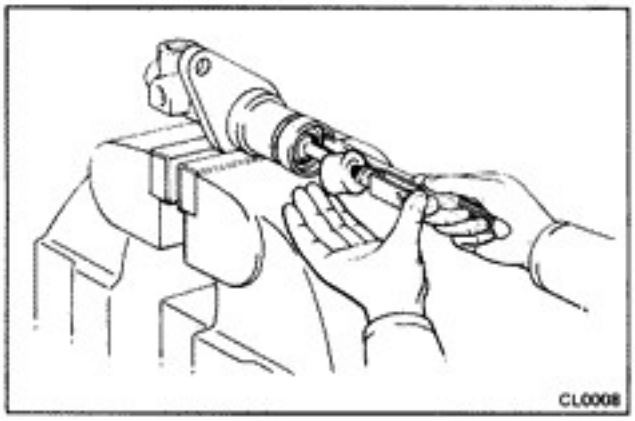
CLUTCH MASTER CYLINDER

COMPONENTS



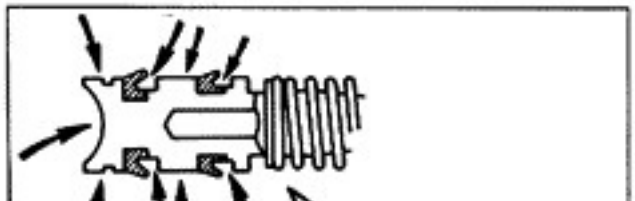
REMOVAL OF MASTER CYLINDER

1. REMOVE CLEVIS PIN AND CLIP
2. DISCONNECT CLUTCH LINE UNION
   Using SST, disconnect the union nut.
   SST 09751-36011
3. REMOVE MASTER CYLINDER
   (a) Remove the mounting nut and bolt.
   (b) Pull out the master cylinder.



DISASSEMBLY OF MASTER CYLINDER

1. REMOVE RESERVOIR TANK
   Remove the hold-down bolt and pull off the reservoir ta
2. REMOVE PUSH ROD AND PISTON
   (a) Pull back the boot and, using a screwdriver, rem
   the snap ring.
   (b) Pull out the push rod, washer and piston.



ASSEMBLY OF MASTER CYLINDER

1. COAT PARTS WITH LITHIUM SOAP BASE GLY
   GREASE, AS SHOWN
2. INSERT PISTON INTO CYLINDER

INSTALLATION OF MASTER CYLINDER

(See page CL-4)

1. INSTALL MASTER CYLINDER

   Install the mounting nut and bolt and torque the nut and bolt.

   Torque: 250 kg-cm (18 ft-lb, 25 N·m)

2. CONNECT CLUTCH LINE UNION

   Using SST, connect the union.

   SST 09751-36011

   Torque: 155 kg-cm (11 ft-lb, 15 N·m)

3. CONNECT PUSH ROD AND INSTALL PIN

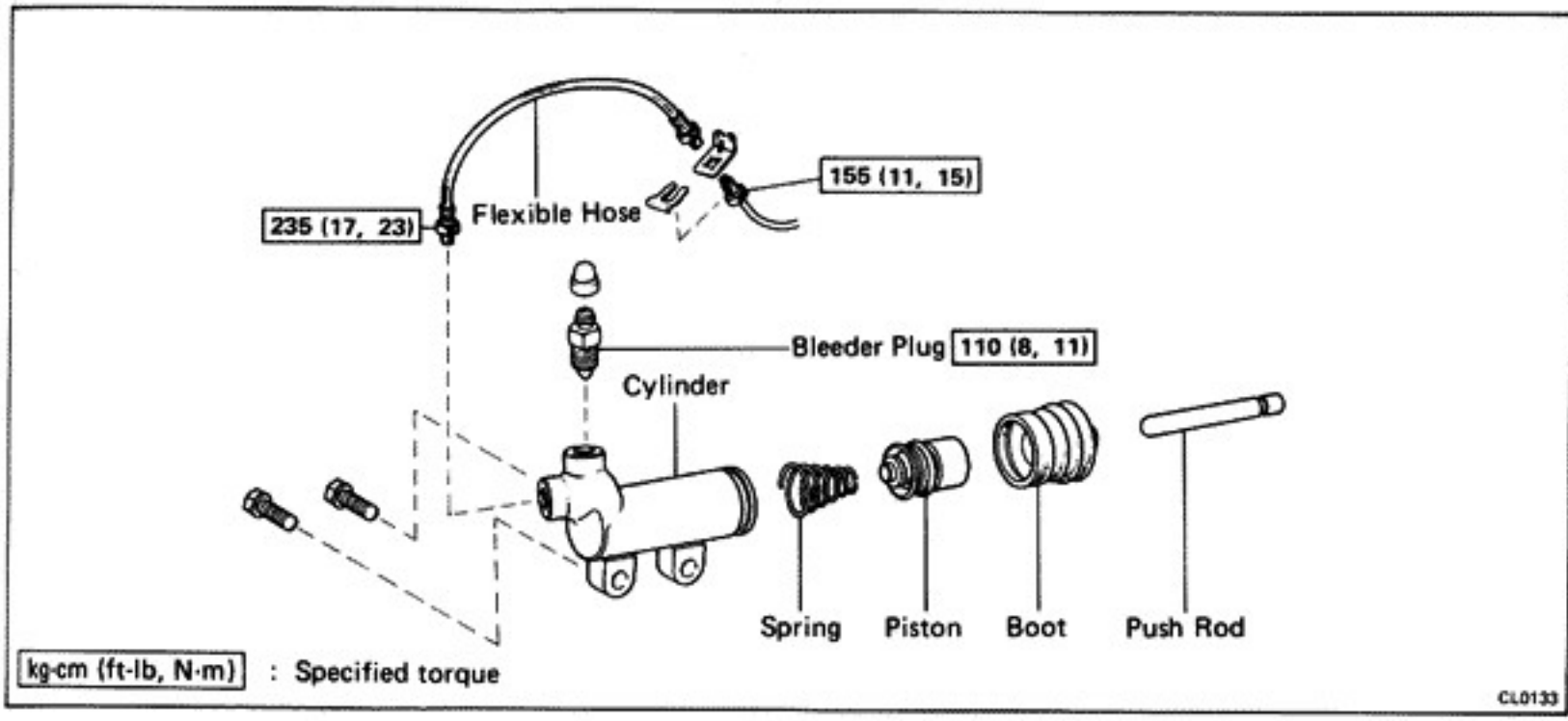
   Install a clip in the push rod pin.

4. BLEED SYSTEM AND ADJUST CLUTCH PEDAL

   (See page CL-3)

CLUTCH RELEASE CYLINDER

COMPONENTS



REMOVAL OF RELEASE CYLINDER

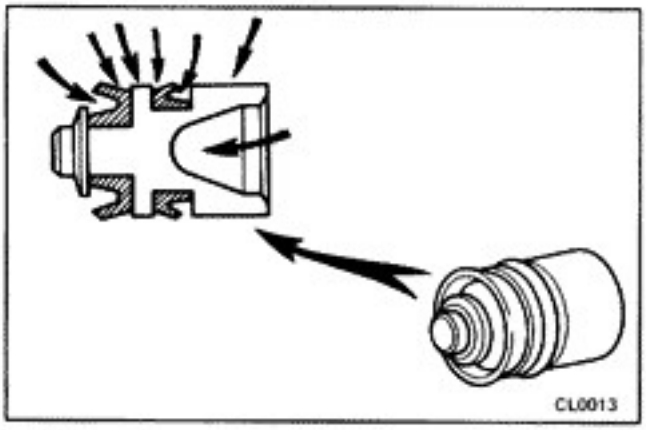
1. DISCONNECT FLEXIBLE HOSE

   Using SST, disconnect the union.

DISASSEMBLY OF RELEASE CYLINDER

(See page CL-5)

1. PULL OUT PUSH ROD
2. REMOVE BOOT
3. PULL OUT PISTON AND SPRING



ASSEMBLY OF RELEASE CYLINDER

(See page CL-5)

1. COAT PISTON WITH LITHIUM SOAP BASE GLYCOL GREASE, AS SHOWN
2. INSERT SPRING AND PISTON INTO CYLINDER
3. INSTALL BOOT AND INSERT PUSH ROD

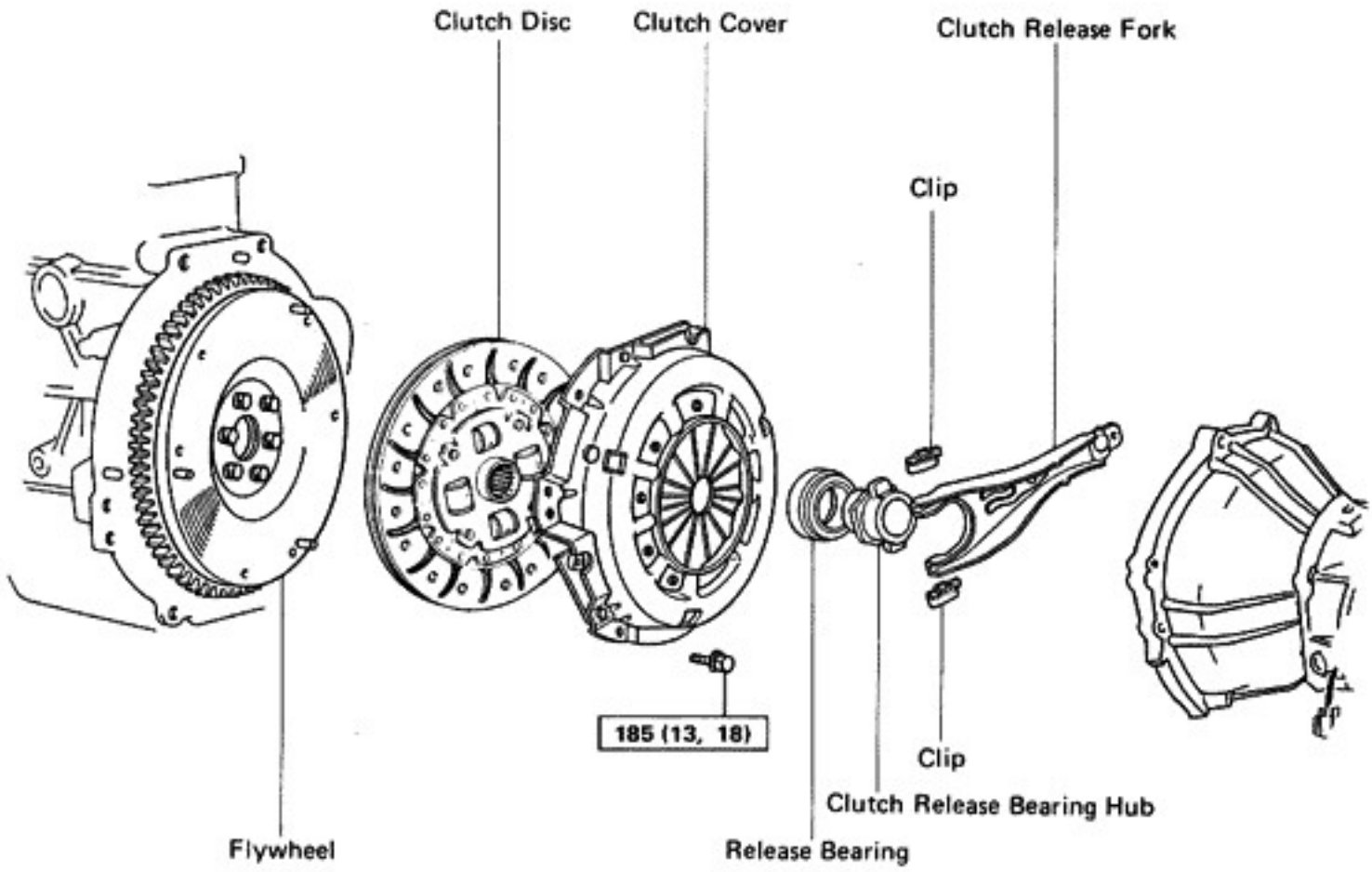
INSTALLATION OF RELEASE CYLINDER

(See page CL-5)

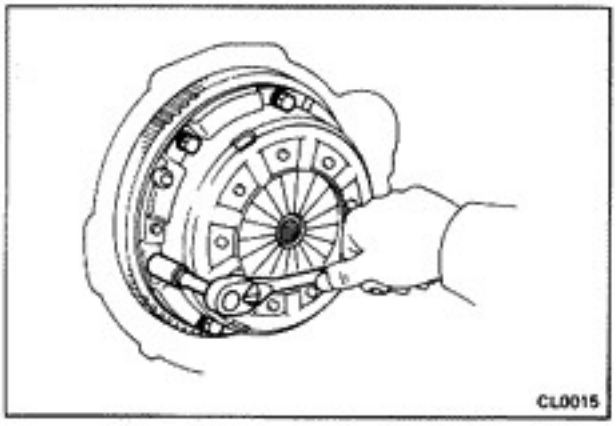
1. INSTALL RELEASE CYLINDER
2. CAREFULLY CONNECT FLEXIBLE HOSE
3. BLEED CLUTCH SYSTEM (See page CL-3)

CLUTCH UNIT

COMPONENTS



kg-cm (ft-lb, N-m) : Specified torque



REMOVAL OF CLUTCH UNIT

1. REMOVE TRANSMISSION (See pages MT-3, 4)

   NOTE: Do not drain the transmission oil.

2. REMOVE CLUTCH COVER AND DISC

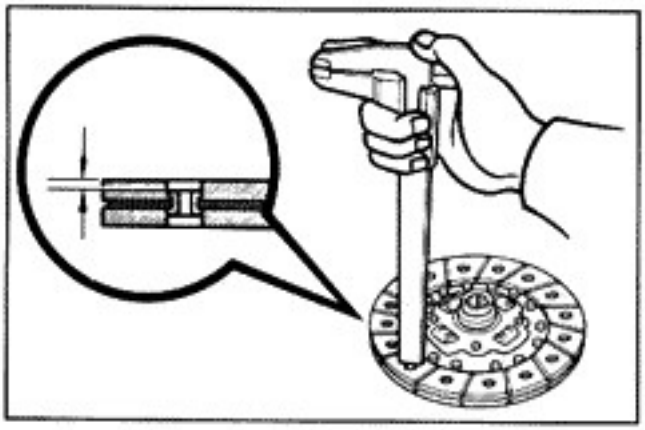
   (a) Loosen the set bolts one turn at a time until spring tension is released.

   (b) Remove the set bolts, and pull off the clutch assembly.

3. REMOVE BEARING, HUB AND FORK FROM TRANSMISSION

   (a) Remove the clips, and pull off the bearing and hub.

   (b) Remove the fork and boot.



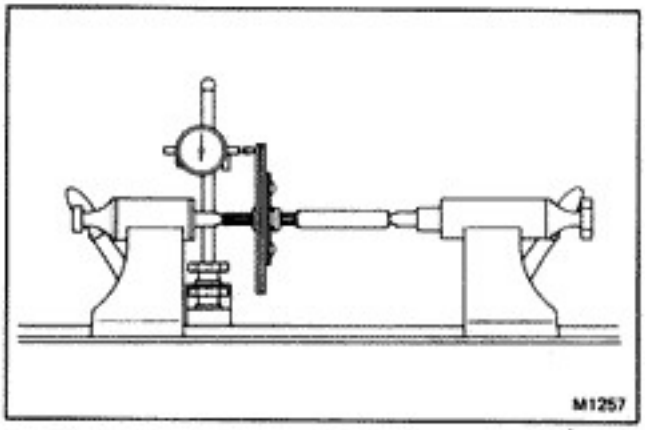
INSPECTION OF CLUTCH PARTS

1. INSPECT CLUTCH DISC FOR WEAR OR DAMAG

Using calipers, measure the rivet head depth.

Minimum rivet depth: 0.3 mm (0.012 in.)

If a problem is found, repair or replace the clutch disc.

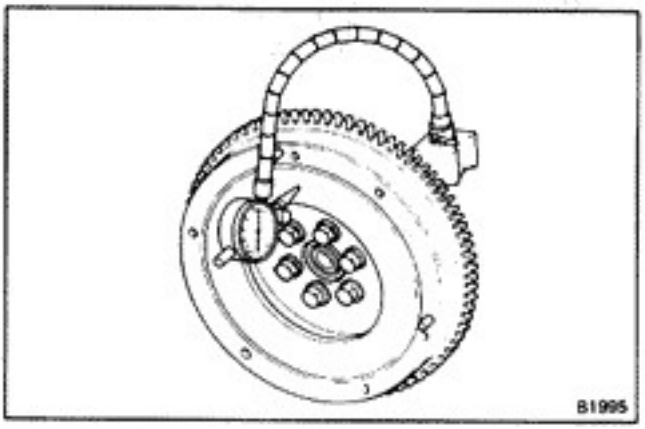


2. INSPECT CLUTCH DISC RUNOUT

Using a dial indicator, check the disc runout.

Maximum runout: 0.8 mm (0.031 in.)

If runout is excessive, replace the disc.

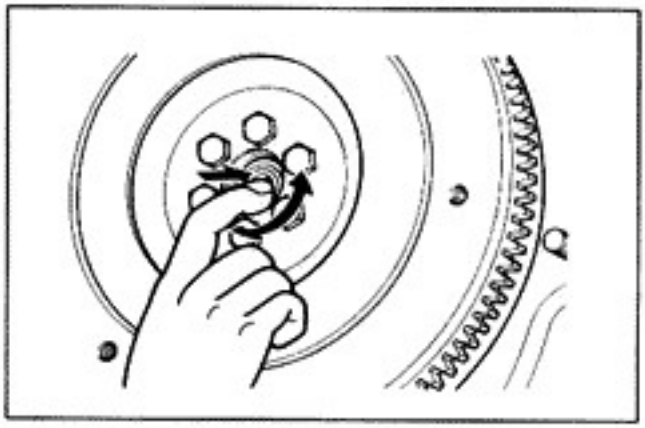


3. INSPECT FLYWHEEL RUNOUT

Using a dial indicator, check the flywheel runout.

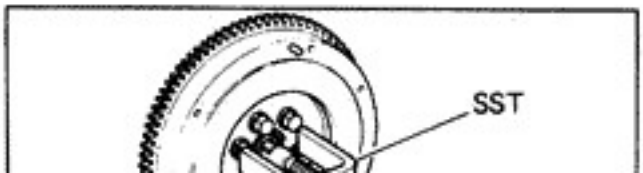
Maximum runout: 0.2 mm (0.008 in.)

If runout is excessive, repair or replace the flywheel.



4. INSPECT PILOT BEARING

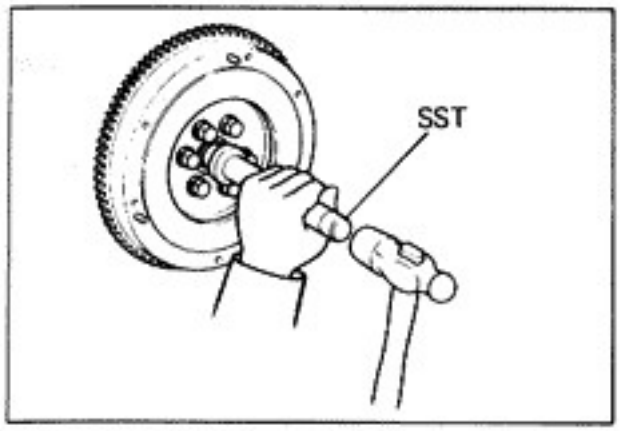
Turn the bearing by hand while applying force in the ro
ing direction.



5. IF NECESSARY, REPLACE PILOT BEARING

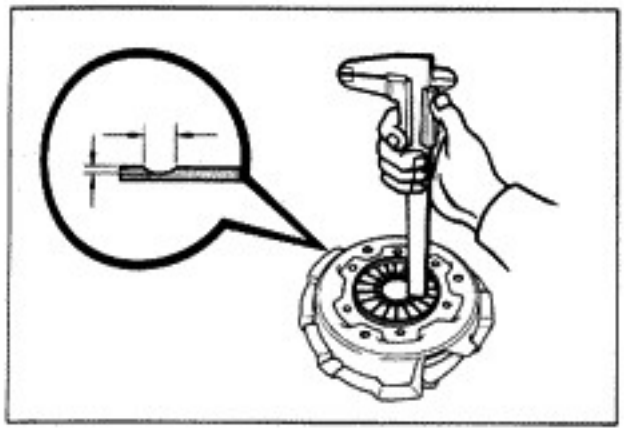
(a) Using SST, remove the pilot bearing.

SST 09303-35011



(b) Using SST, install the pilot bearing.

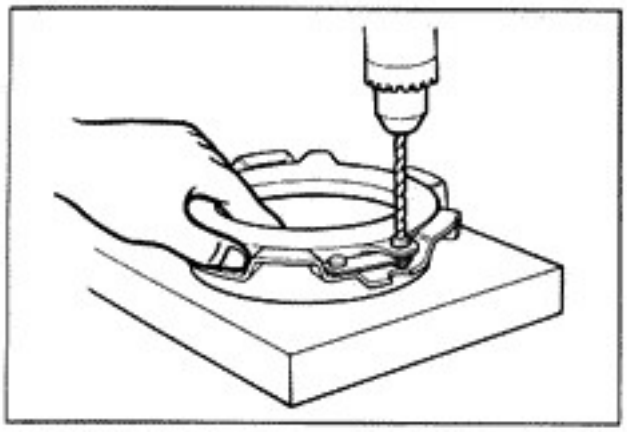
SST 09304-30012



6. **INSPECT DIAPHRAGM SPRING FOR WEAR**

Using calipers, measure the diaphragm spring for depth and width of wear.

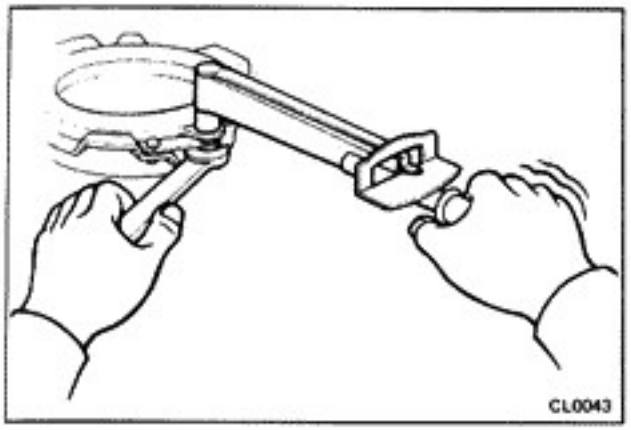
Limit: Depth 0.6 mm (0.024 in.)
Width 5.0 mm (0.197 in.)



7. **IF NECESSARY, REPLACE PRESSURE PLATE**

(a) Drill out the rivet heads.

(b) Using a punch, drive out the rivets.



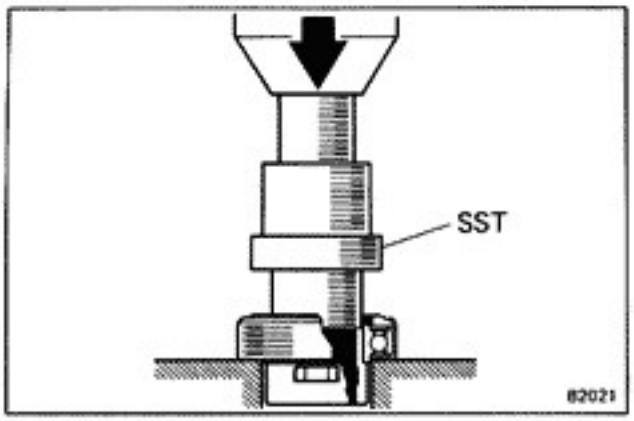
(c) Install a new pressure plate with special pressure plate bolts and nuts. Torque the nuts.

Torque: 250 kg-cm (18 ft-lb, 25 N·m)

(d) Stake the nuts.

8. **INSPECT RELEASE BEARING**

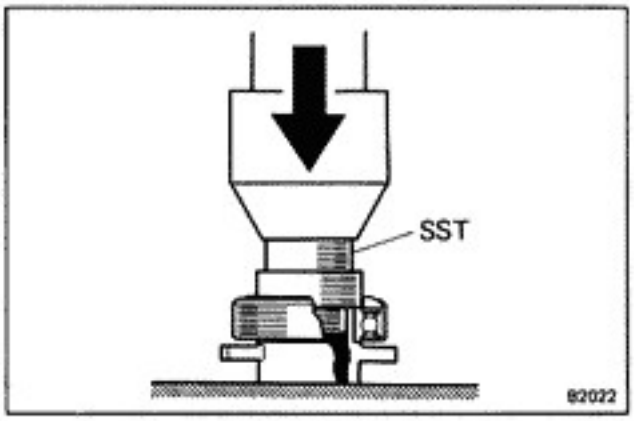
Turn the bearing by hand while applying force in the axial direction.



9. IF NECESSARY, REPLACE RELEASE BEARING

(a) Using a press and SST, press the release bearing fr the hub.

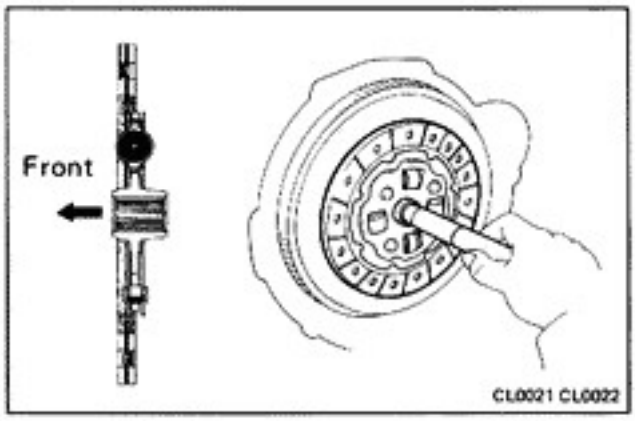
SST 09315-00010



(b) Using a press and SST, press a new release bear into the hub.

SST 09315-00010

(c) After installing the bearing, check that there is drag on the bearing when it is turned under press



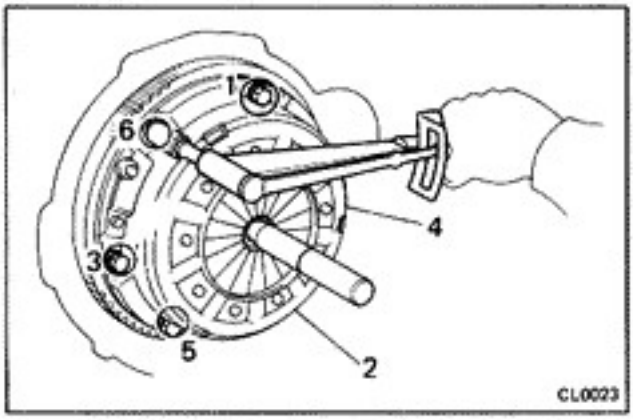
INSTALLATION OF CLUTCH UNIT

(See page CL-7)

1. INSTALL DISC ON FLYWHEEL

Using SST, install the disc on the flywheel.

SST 09301-20020



2. INSTALL CLUTCH COVER

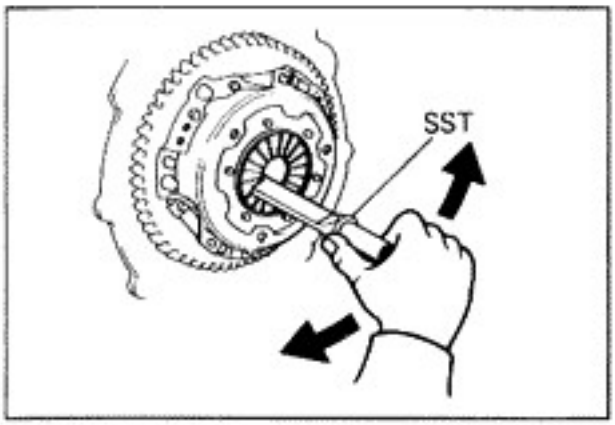
Tighten the bolts evenly and gradually. Make several pa around the cover until the cover is snug. Torque the bo

Torque: 185 kg-cm (13 ft-lb, 18 N-m)

3. CHECK DIAPHRAGM SPRING TIP ALIGNMENT

Using a feeler gauge and SST, measure the gap between spring tips and the tool.

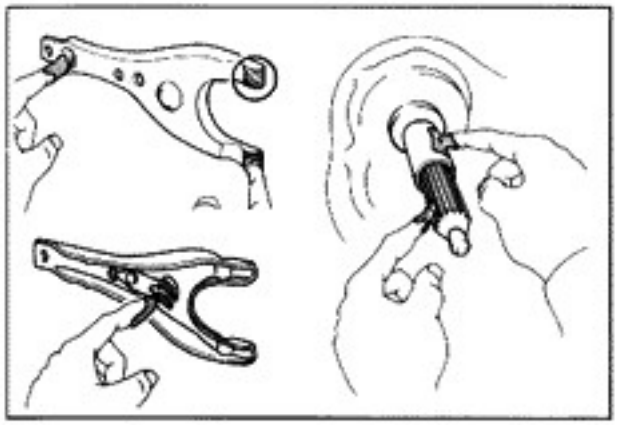
SST 09302-30031



4. **IF NECESSARY, ADJUST SPRINGS**

Using SST, bend the springs until alignment is correct.

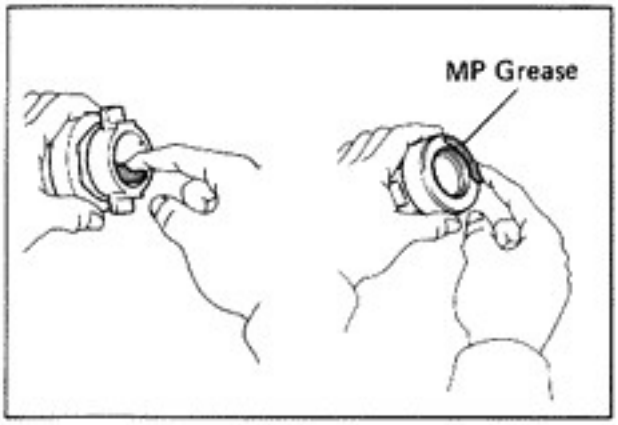
SST 09333-00012



5. **APPLY MOLYBDENUM DISULPHIDE LITHIUM BASE GREASE (NLGI NO.2) OR MP GREASE**

(a) Apply molybdenum disulphide lithium base grease to the following parts:

- Release fork and hub contact point
- Release fork and push rod contact point
- Release fork pivot point
- Clutch disc spline
- Release bearing hub inside groove



(b) Apply MP grease to the front of the release bearing.

6. **INSTALL BOOT, FORK, HUB AND BEARING ON TRANSMISSION**

7. **INSTALL TRANSMISSION** **(See pages MT-23, 24)**