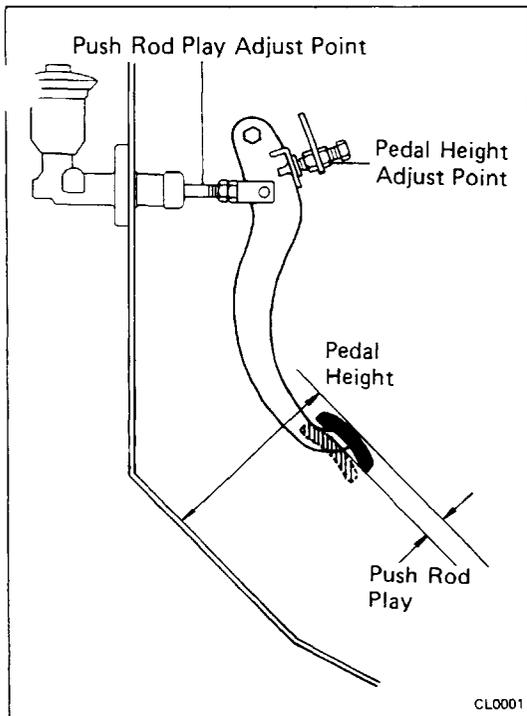

CLUTCH

| | Page |
|---|------|
| TROUBLESHOOTING | CL-2 |
| CHECK AND ADJUSTMENT OF CLUTCH PEDAL | CL-3 |
| BLEEDING OF CLUTCH SYSTEM | CL-3 |
| CLUTCH MASTER CYLINDER | CL-4 |
| CLUTCH RELEASE CYLINDER | CL-5 |
| CLUTCH UNIT | CL-7 |

TROUBLESHOOTING

| Problem | Possible cause | Remedy | Page |
|---------------------------------|---|-------------------------|-------|
| Hard to shift or will not shift | Clutch pedal freeplay excessive | Adjust pedal freeplay | CL-3 |
| | Air in clutch lines | Bleed clutch system | CL-3 |
| | Clutch release cylinder faulty | Repair release cylinder | CL-5 |
| | Clutch master cylinder faulty | Repair master cylinder | CL-4 |
| | Clutch disc out of true, runout is excessive or lining broken | Inspect clutch disc | CL-8 |
| | Splines on input shaft or clutch disc dirty or burred | Repair as necessary | CL-7 |
| | Clutch pressure plate faulty | Replace pressure plate | CL-9 |
| Transmission jumps out of gear | Clutch pilot bearing worn | Replace pilot bearing | CL-9 |
| Clutch slips | Clutch pedal freeplay insufficient | Adjust pedal freeplay | CL-3 |
| | Clutch disc lining oily or worn out | Inspect clutch disc | CL-8 |
| | Pressure plate faulty | Replace pressure plate | CL-9 |
| | Release fork binding | Inspect release fork | |
| Clutch grabs/chatters | Clutch disc lining oily or worn out | Inspect clutch disc | CL-8 |
| | Pressure plate faulty | Replace pressure plate | CL-9 |
| | Clutch diaphragm spring bent | Align clutch diaphragm | CL-11 |
| | Engine mounts loose | Repair as necessary | |
| Clutch pedal spongy | Air in clutch lines | Bleed clutch system | CL-3 |
| | Clutch release cylinder faulty | Repair release cylinder | CL-5 |
| | Clutch master cylinder faulty | Repair master cylinder | CL-4 |
| Clutch noisy | Loose part inside housing | Repair as necessary | |
| | Release bearing worn or dirty | Replace release bearing | CL-10 |
| | Pilot bearing worn | Replace pilot bearing | CL-9 |
| | Release fork or linkage sticking | Repair as necessary | |

A01171



CHECK AND ADJUSTMENT OF CLUTCH PEDAL

1. CHECK THAT PEDAL HEIGHT AND PUSH ROD PLAY ARE CORRECT

Pedal height from asphalt sheet: 144 mm

(5.67 in.)

Push rod play at pedal top: 1.0 – 5.0 mm

(0.039 – 0.197 in.)

If incorrect, adjust the pedal height and push rod play.

2. IF NECESSARY, ADJUST PEDAL HEIGHT AND PUSH ROD PLAY

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

(b) Loosen the lock nut and turn the push rod until the push rod play is correct. Tighten the lock nut.

3. CHECK THAT PEDAL FREEPLAY IS CORRECT

Push in on the pedal until the beginning of clutch resistance is felt.

Pedal freeplay: 5 – 15 mm (0.20 – 0.59 in.)

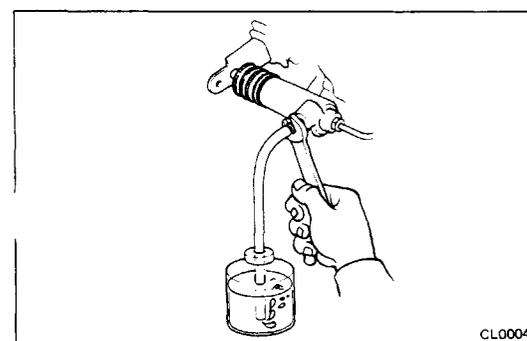
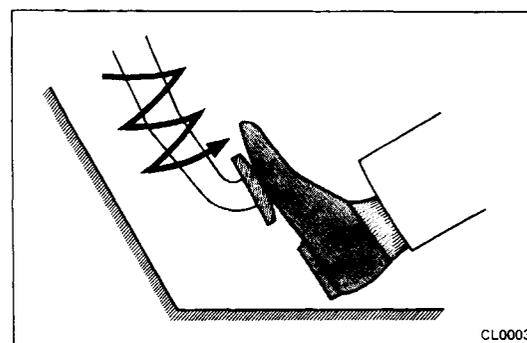
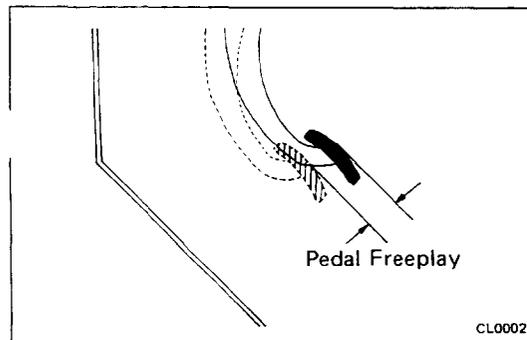
4. IF NECESSARY, ADJUST PEDAL FREEPLAY

(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.

A01172



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.

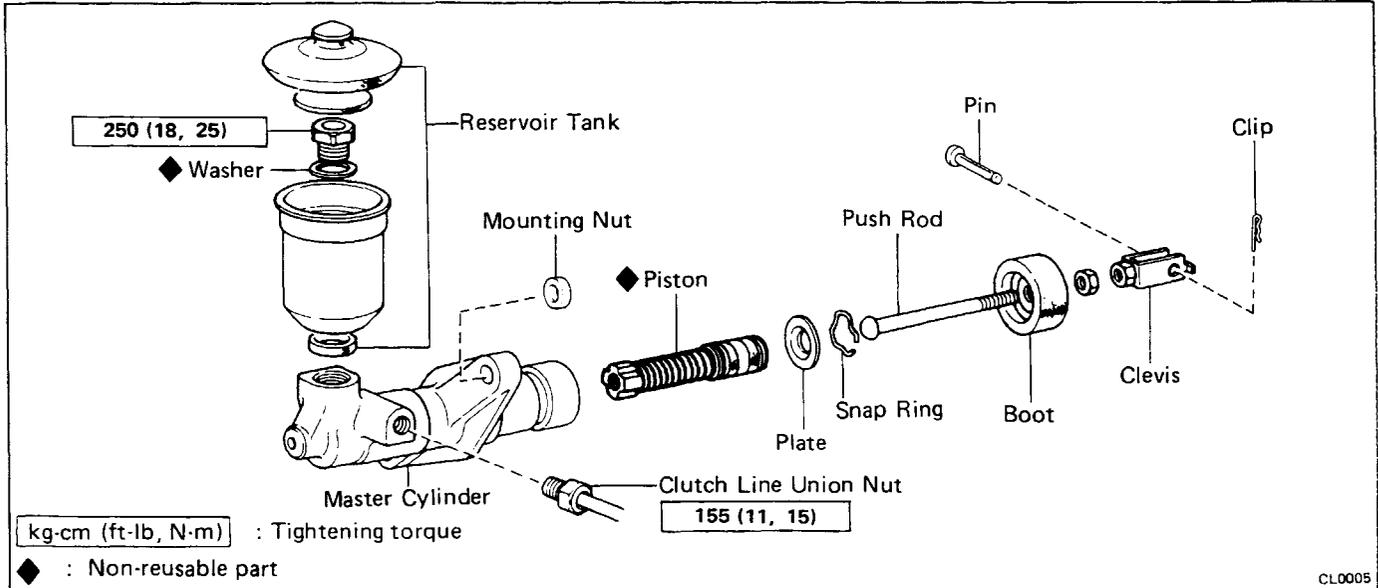
3. BLEED CLUTCH LINE

(a) Slowly pump the clutch pedal several times.

(b) While pressing on the pedal, loosen the bleeder plug until the fluid starts to run out. Then close the bleeder plug.

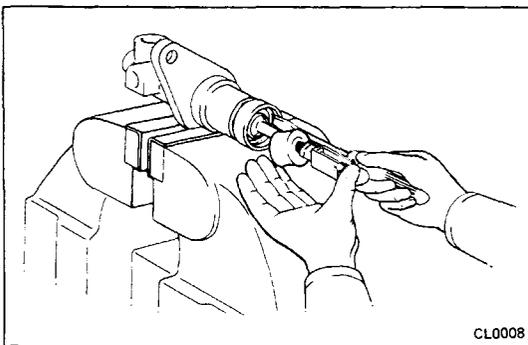
(c) Repeat this procedure until there are no more air bubbles in the fluid.

CLUTCH MASTER CYLINDER COMPONENTS



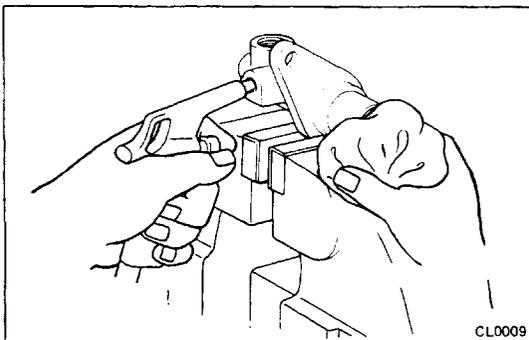
REMOVAL OF MASTER CYLINDER

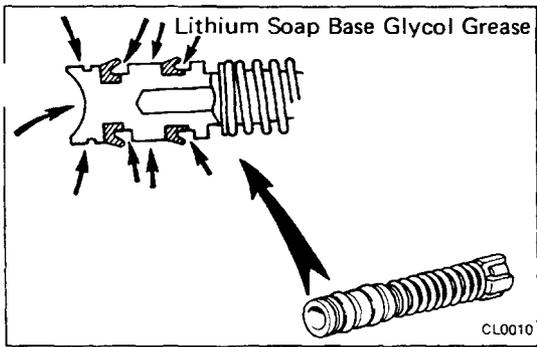
1. REMOVE PUSH ROD PIN
2. DISCONNECT CLUTCH LINE UNION
Using SST, disconnect the union nut.
SST 09751-36011
3. REMOVE MASTER CYLINDER
 - (a) Remove the mounting nut and bolt.
 - (b) Pull out the master cylinder.



DISASSEMBLY OF MASTER CYLINDER

1. REMOVE RESERVOIR TANK
Remove the hold-down bolt and pull off the reservoir tank.
2. REMOVE PUSH ROD
 - (a) Pull back the boot and, using a screwdriver, remove the snap ring.
 - (b) Pull out the push rod and washer.
3. REMOVE PISTON
Using compressed air, remove the piston from the cylinder.





ASSEMBLY OF MASTER CYLINDER

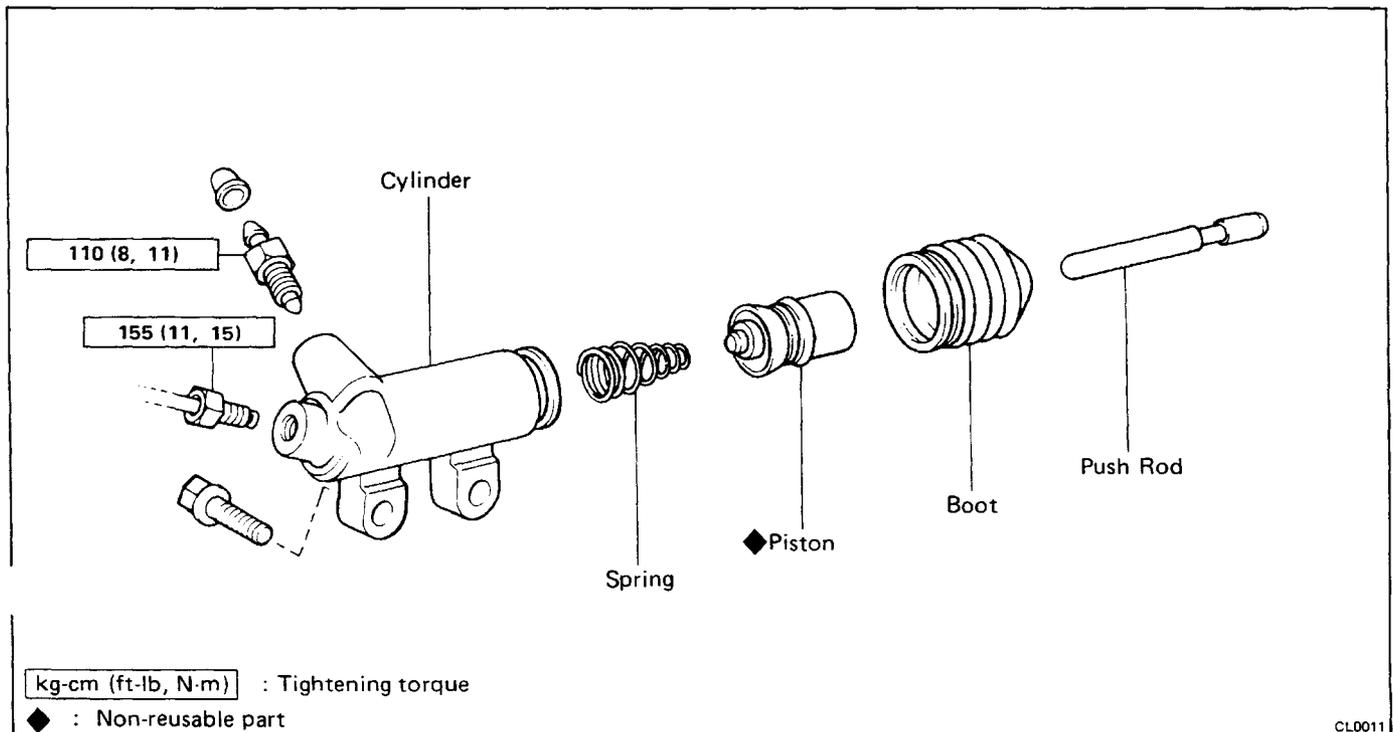
1. COAT PARTS WITH LITHIUM SOAP BASE GLYCOL GREASE, AS SHOWN
2. INSERT PISTON INTO CYLINDER
3. INSTALL PUSH ROD ASSEMBLY WITH SNAP RING
4. INSTALL RESERVOIR TANK
Torque: 250 kg-cm (18 ft-lb, 25 N-m)

INSTALLATION OF MASTER CYLINDER

(See page CL-4)

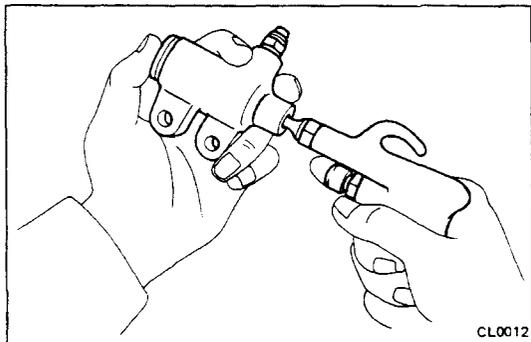
1. **INSTALL MASTER CYLINDER**
Install the mounting nut and bolt, and torque them.
Torque: 130 kg-cm (9 ft-lb, 13 N-m)
2. **CONNECT CLUTCH LINE UNION**
Using SST, connect the union.
SST 09751-36011
3. **CONNECT PUSH ROD AND INSTALL PIN**
Install a new cotter pin in the push rod pin.
4. **BLEED SYSTEM AND ADJUST CLUTCH PEDAL**
(See page CL-3)

CLUTCH RELEASE CYLINDER COMPONENTS



REMOVAL OF RELEASE CYLINDER

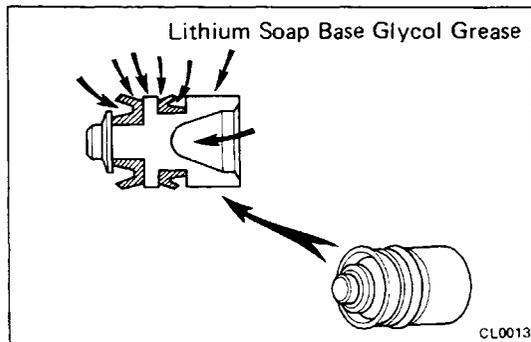
1. **DISCONNECT CLUTCH LINE UNION**
Using SST, disconnect the union.
SST 09751-36011
2. **REMOVE TWO BOLTS AND PULL OFF RELEASE CYLINDER**



CL0012

DISASSEMBLY OF RELEASE CYLINDER

1. **PULL OUT PUSH ROD**
2. **REMOVE BOOT**
3. **REMOVE PISTON**



CL0013

ASSEMBLY OF RELEASE CYLINDER

(See page CL-5)

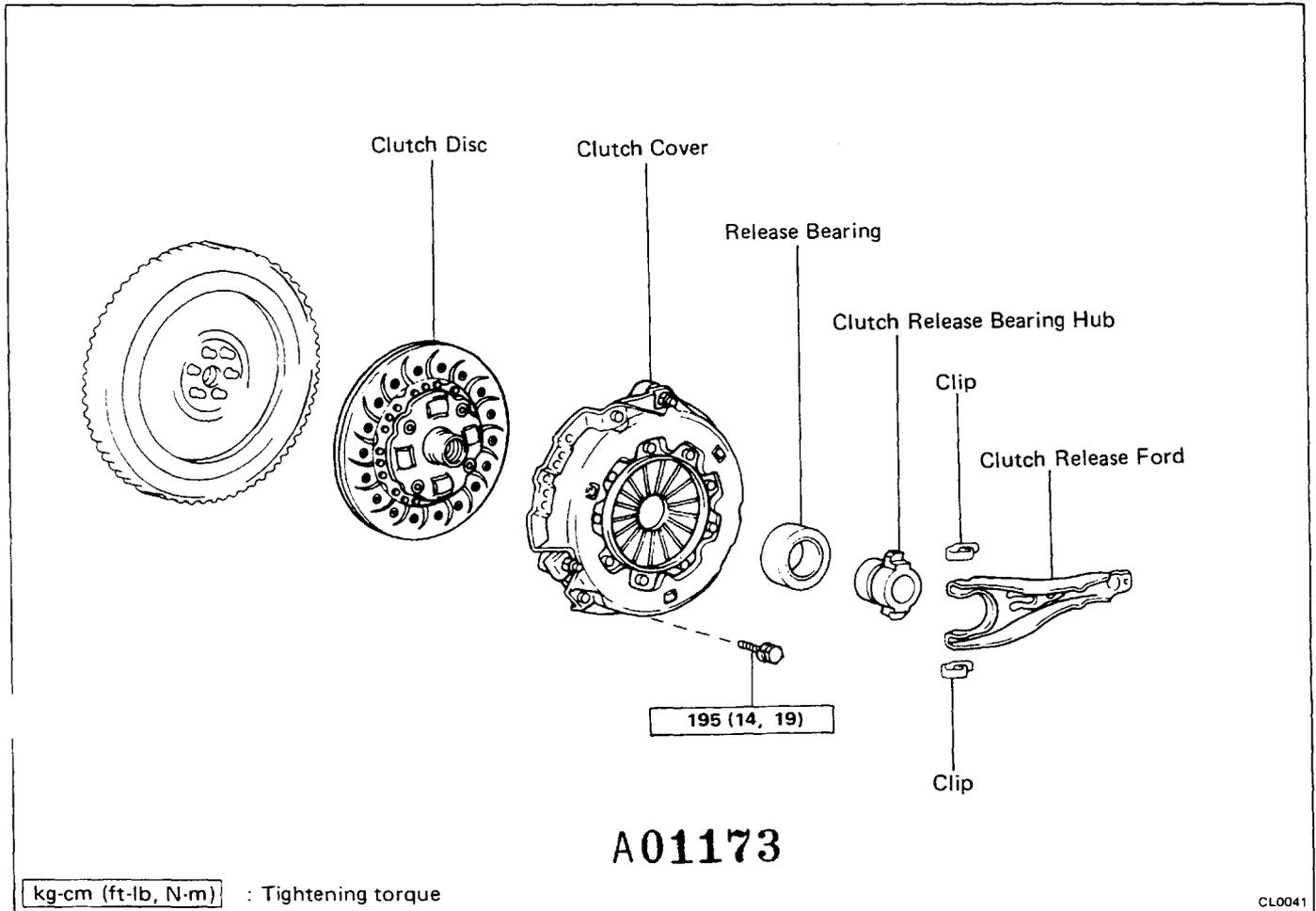
1. **COAT PISTON WITH LITHIUM SOAP BASE GLYCOL GREASE, AS SHOWN**
2. **INSTALL PISTON**
3. **INSTALL BOOT AND INSERT PUSH ROD**

INSTALLATION OF RELEASE CYLINDER

(See page CL-5)

1. **INSTALL RELEASE CYLINDER WITH TWO BOLTS**
2. **CONNECT CLUTCH LINE UNION**
Using SST, connect the union.
SST 09751-36011
3. **BLEED CLUTCH SYSTEM**
(See page CL-3)

CLUTCH UNIT COMPONENTS



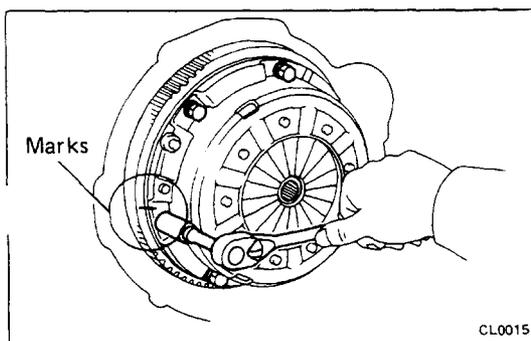
REMOVAL OF CLUTCH UNIT

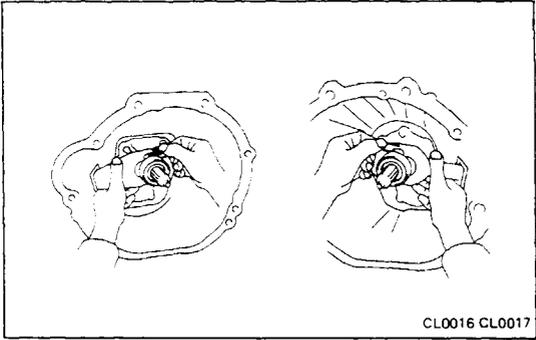
1. REMOVE TRANSMISSION (See pages MT-3, 4)

NOTE: Do not drain the transmission oil.

2. REMOVE CLUTCH COVER AND DISC

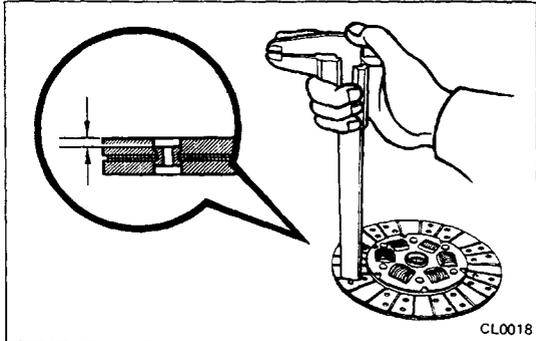
- (a) Put alignment marks on the clutch cover and flywheel.
- (b) Loosen the set bolts one turn at a time until spring tension is released.
- (c) Remove the set bolts and pull off the clutch cover and disc.





3. REMOVE BEARING, HUB AND FORK FROM TRANSMISSION

- (a) Remove the retaining clip and pull off the bearing and hub.
- (b) Remove the fork and boot.



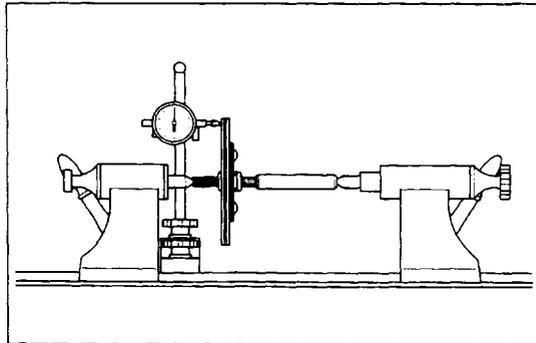
INSPECTION OF CLUTCH PARTS

1. INSPECT CLUTCH DISC FOR WEAR OR DAMAGE

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.

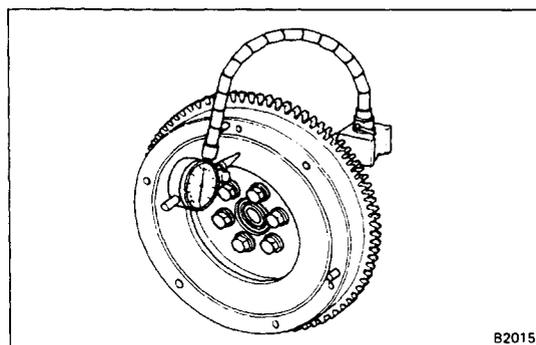


2. INSPECT CLUTCH DISC RUNOUT

Using a dial indicator, check the disc runout.

Maximum runout: 0.8 mm (0.031 in.)

If runout is excessive, replace the disc.

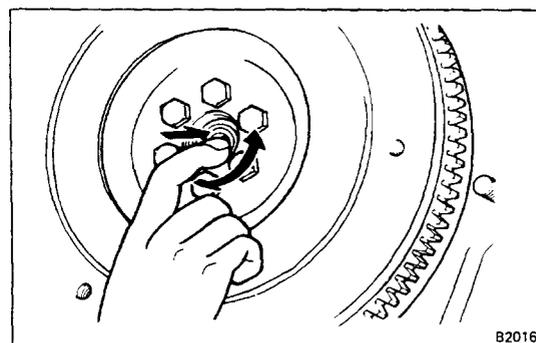


3. INSPECT FLYWHEEL RUNOUT

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.

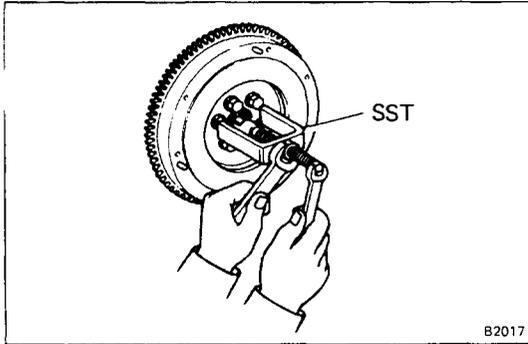


4. INSPECT PILOT BEARING

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

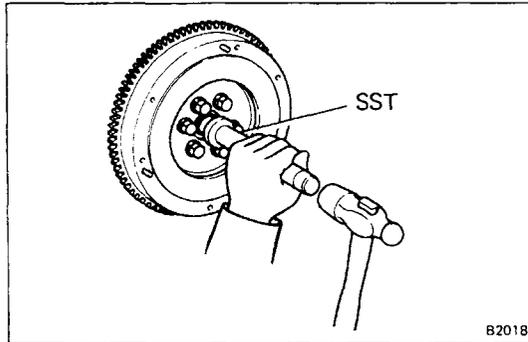
If the bearing sticks or has much resistance, replace the pilot bearing.

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



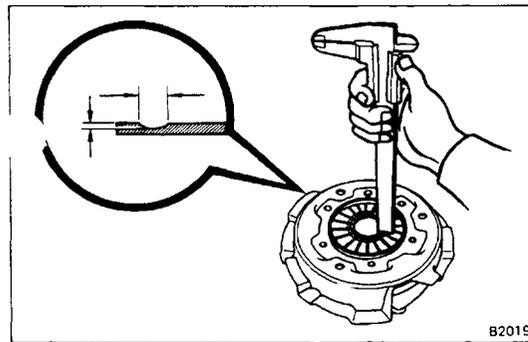
5. IF NECESSARY, REPLACE PILOT BEARING

- (a) Using SST, remove the pilot bearing.
SST 09303-35011



- (b) Using SST, install the pilot bearing.
SST 09304-30012

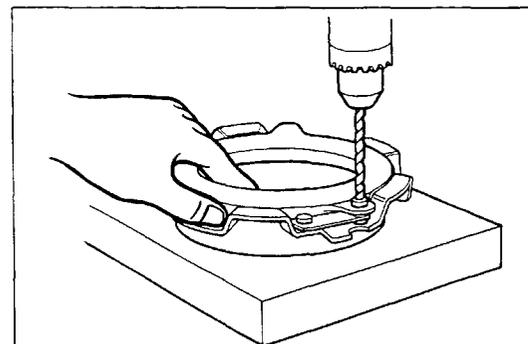
NOTE: After assembling the pilot bearing to the hub, insure that it rotates smoothly.



6. INSPECT DIAPHRAGM SPRING FOR WEAR

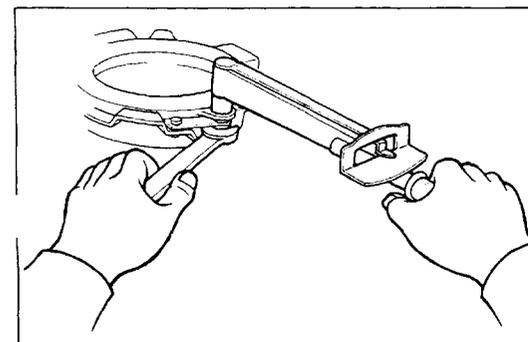
Using calipers, measure the diaphragm spring for depth and width of wear.

| | | |
|-----------------|--------------|---------------------------|
| Maximum: | Depth | 0.6 mm (0.024 in.) |
| | Width | 5.0 mm (0.197 in.) |



7. IF NECESSARY, REPLACE PRESSURE PLATE

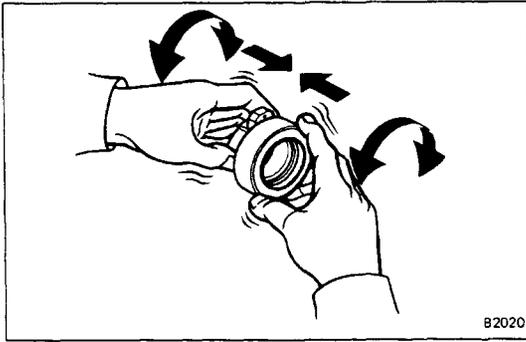
- (a) Remove the retracting spring.
(b) Drill out the rivet heads.
(c) Using a punch, drive out the rivets.
(d) Apply molybdenum disulphide lithium base grease (NLGI No.2) to the contact surface of the pressure plate and cover.



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

Torque: 195 kg-cm (14 ft-lb, 19 N·m)

- (f) Using a punch, stake the nuts.

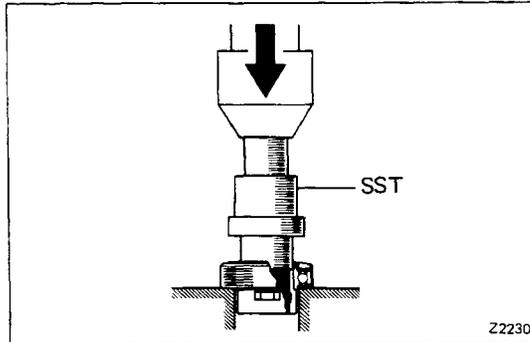


8. INSPECT RELEASE BEARING

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

If bearing sticks or has much resistance, replace the release bearing.

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



9. IF NECESSARY, REPLACE RELEASE BEARING

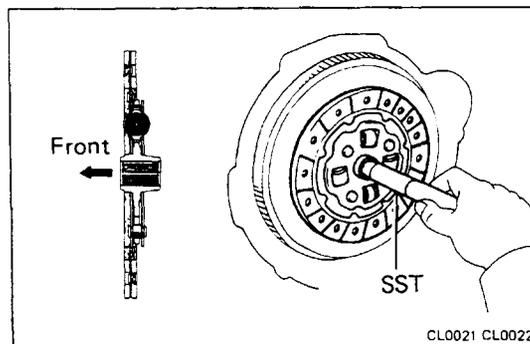
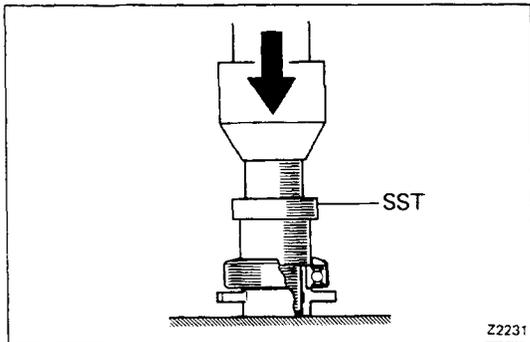
(a) Using a press and SST, press the release bearing from the hub.

SST 09315-00010

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

SST 09315-00021

(c) After installing the bearing, check that there is no drag on the bearing when it is turned under pressure.



INSTALLATION OF CLUTCH UNIT

(See page CL-7)

1. INSTALL DISC ON FLYWHEEL

Using SST, install the disc on the flywheel.

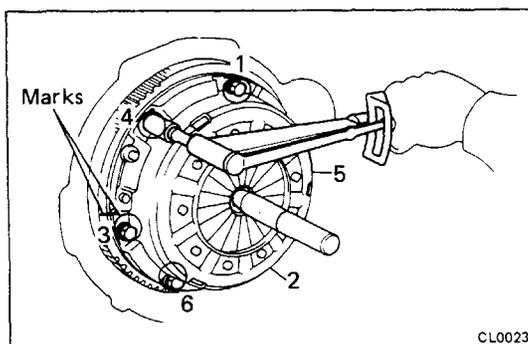
SST 09301-20020

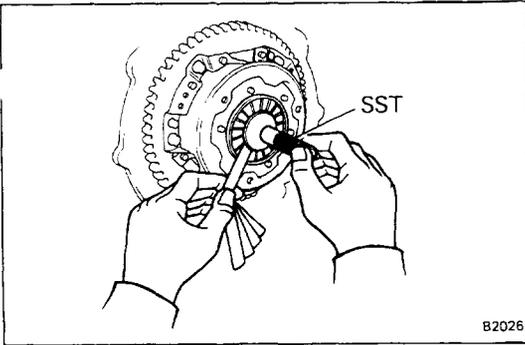
2. INSTALL CLUTCH COVER

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

(b) Tighten the bolts evenly. Make several passes around the cover until it is snug. Torque the bolts.

Torque: 195 kg-cm (14 ft-lb, 19 N·m)





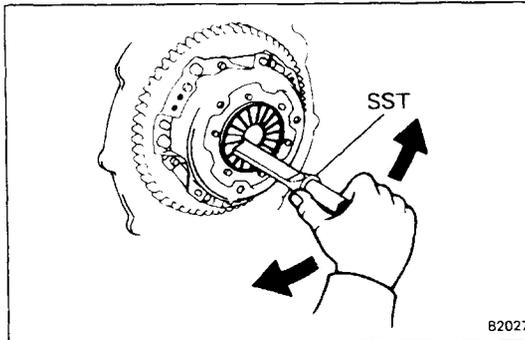
3. CHECK DIAPHRAGM SPRING TIP ALIGNMENT

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

SST 09302-30031

Maximum gap: 0.5 mm (0.020 in.)

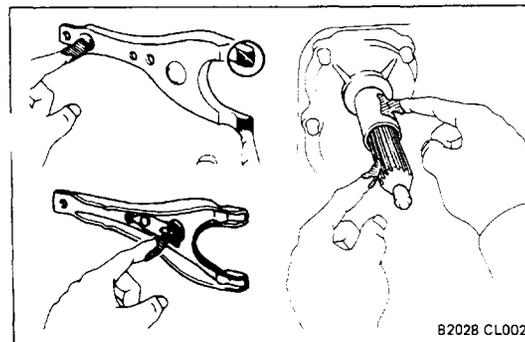
If the gap is excessive, adjust as follows.



4. IF NECESSARY, ADJUST SPRINGS

Using SST, bend the springs to correct alignment.

SST 09333-00012

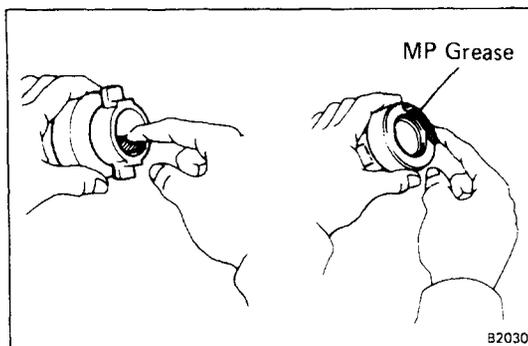


5. APPLY MOLYBDENUM DISULPHIDE LITHIUM BASE GREASE (NLGI NO.2) OR MP GREASE

(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 release bearing.



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

7. INSTALL TRANSMISSION

