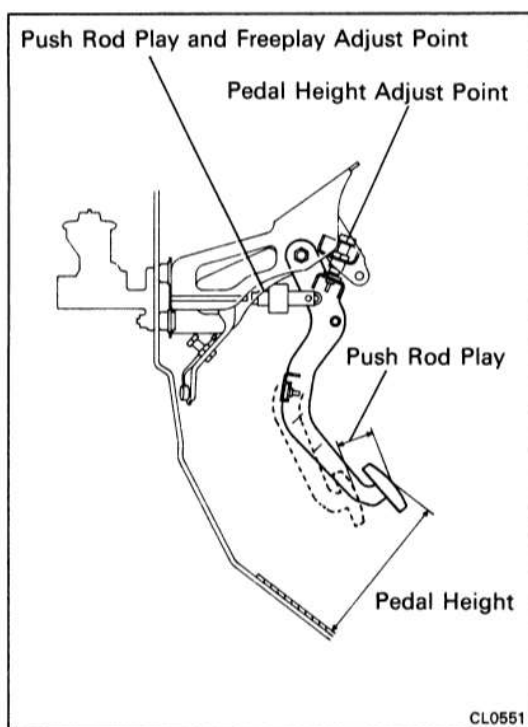


CLUTCH

	Page
TROUBLESHOOTING	CL-2
CHECK AND ADJUSTMENT OF CLUTCH	
PEDAL	CL-3
BLEEDING OF CLUTCH SYSTEM	CL-4
INSPECTION OF CLUTCH START SYSTEM	CL-5
CLUTCH MASTER CYLINDER	CL-6
CLUTCH RELEASE CYLINDER	CL-9
CLUTCH UNIT	CL-13

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-4
	Clutch release cylinder faulty	Repair release cylinder	CL-8
	Clutch master cylinder faulty	Repair master cylinder	CL-5
	Clutch disc out of true, runout is excessive or lining broken	Inspect clutch disc	CL-13
	Splines on input shaft or clutch disc dirty or burred	Repair as necessary	CL-12
	Clutch pressure plate faulty	Replace clutch cover	CL-12
Clutch slips	Clutch pedal freeplay insufficient	Adjust pedal freeplay	CL-3
	Clutch disc lining oily or worn out	Inspect clutch disc	CL-13
	Pressure plate faulty	Replace clutch cover	CL-12
	Release fork binding	Inspect release fork	
Clutch grabs/ chatters	Clutch disc lining oily or worn out	Inspect clutch disc	CL-13
	Pressure plate faulty	Replace clutch cover	CL-12
	Clutch diaphragm spring bent	Align clutch diaphragm	CL-14
	Engine mounts loose	Repair as necessary	
Clutch pedal spongy	Air in clutch lines	Bleed clutch system	CL-4
	Clutch release cylinder faulty	Repair release cylinder	CL-8
	Clutch master cylinder faulty	Repair master cylinder	CL-5
Clutch noisy	Loose part inside housing	Repair as necessary	
	Release bearing worn or dirty	Replace release bearing	CL-14
	Release fork or linkage sticking	Repair as necessary	



CHECK AND ADJUSTMENT OF CLUTCH PEDAL

1. CHECK THAT PEDAL HEIGHT IS CORRECT

Pedal height from asphalt sheet: **184 – 194 mm**
(7.2 – 7.6 in.)

2. IF NECESSARY, ADJUST PEDAL HEIGHT

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

3. CHECK THAT PEDAL FREEPLAY AND PUSH ROD PLAY ARE CORRECT

(Pedal Freeplay)

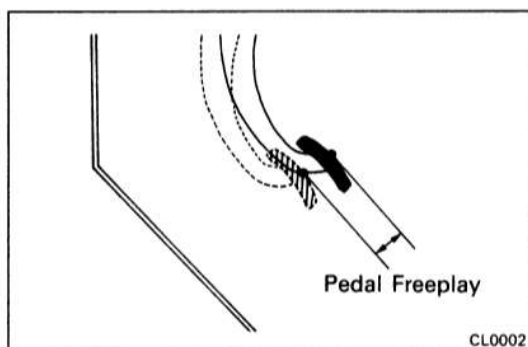
Push in on the pedal until the beginning of clutch resistance is felt.

Pedal freeplay: **5.0 – 15.0 mm**
(0.197 – 0.591 in.)

(Push rod play)

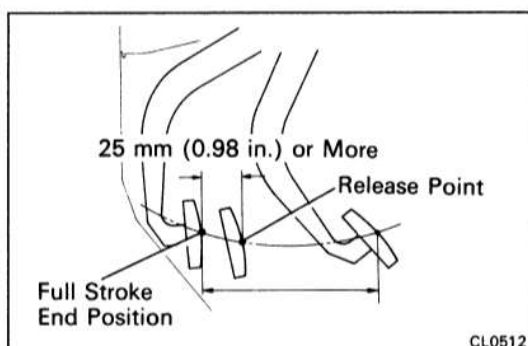
Push in on the pedal with a finger softly until the resistance begins to increase a little.

Push rod play at pedal top: **1.0 – 5.0 mm**
(0.039 – 0.197 in.)



4. IF NECESSARY, ADJUST PEDAL FREEPLAY AND PUSH ROD PLAY

- Loosen the lock nut and turn the push rod until the freeplay and push rod play are correct.
- Tighten the lock nut.
- After adjusting the pedal freeplay, check the pedal height.



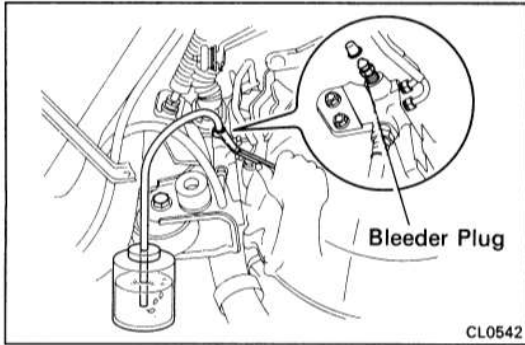
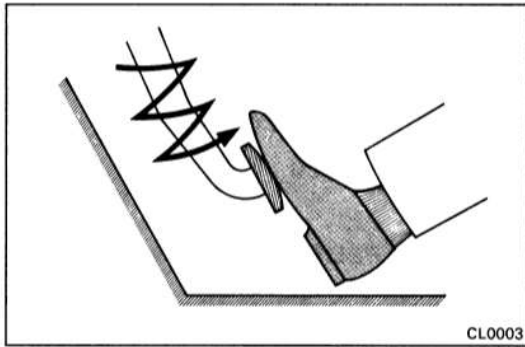
5. INSPECT CLUTCH RELEASE POINT

- Pull the parking brake lever and install wheel stopper.
- Start the engine and idle the engine.
- Without depressing the clutch pedal, slowly shift the shift lever into reverse position until the gears contact.
- Gradually depress the clutch pedal and measure the stroke distance from the point the gear noise stops (release point) up to the full stroke end position.

Standard distance: 25 mm (0.98 in.) or more
(From pedal stroke end position to release point)

If the distance is not as specified, perform the following operation.

- Inspect pedal height.
- Inspect push rod play and pedal freeplay.
- Bleed the clutch line.
- Inspect the clutch cover and disc.



BLEEDING OF CLUTCH SYSTEM

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

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

1. FILL CLUTCH RESERVOIR WITH BRAKE FLUID

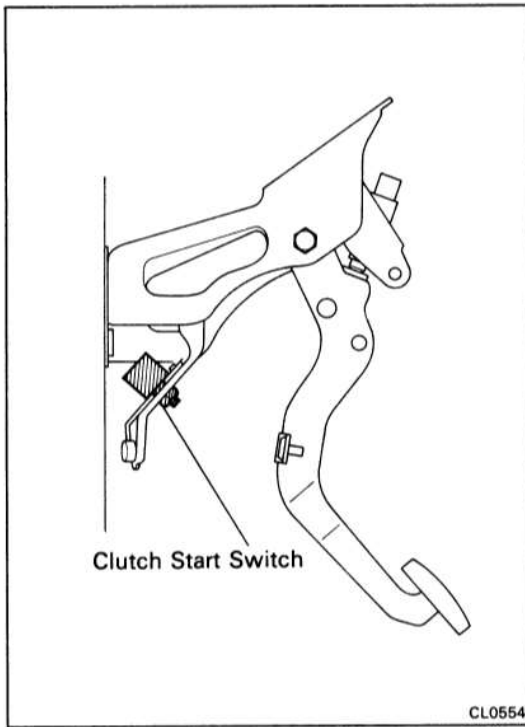
Check the reservoir frequently. Add fluid if necessary.

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

- Slowly pump the clutch pedal several times.
- While pressing on the pedal, loosen the bleeder plug until the fluid starts to run out. Then close the bleeder plug.
- Repeat this procedure until there are no more air bubbles in the fluid.



INSPECTION OF CLUTCH START SYSTEM

CHECK CLUTCH PEDAL

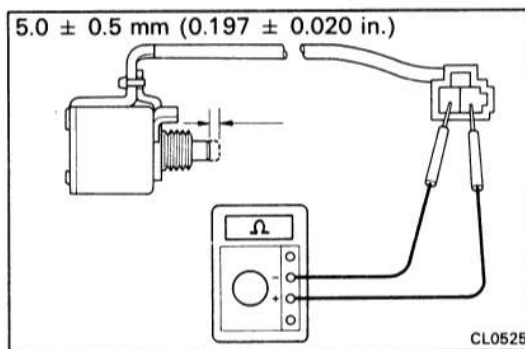
1. CHECK THAT PEDAL HEIGHT IS CORRECT
(See page CL-3)
2. CHECK THAT PEDAL FREEPLAY AND PUSH ROD PLAY ARE CORRECT
(See page CL-3)

CHECK CLUTCH START SYSTEM

CHECK CLUTCH START SYSTEM

- (a) Check that the engine does not start when the clutch pedal is released.
- (b) Check that the engine starts when the clutch pedal is fully depressed.

If necessary, adjust or replace the clutch start switch.



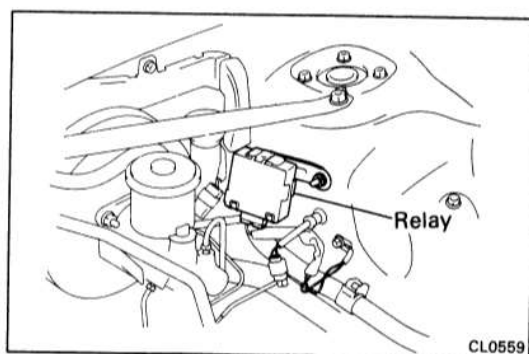
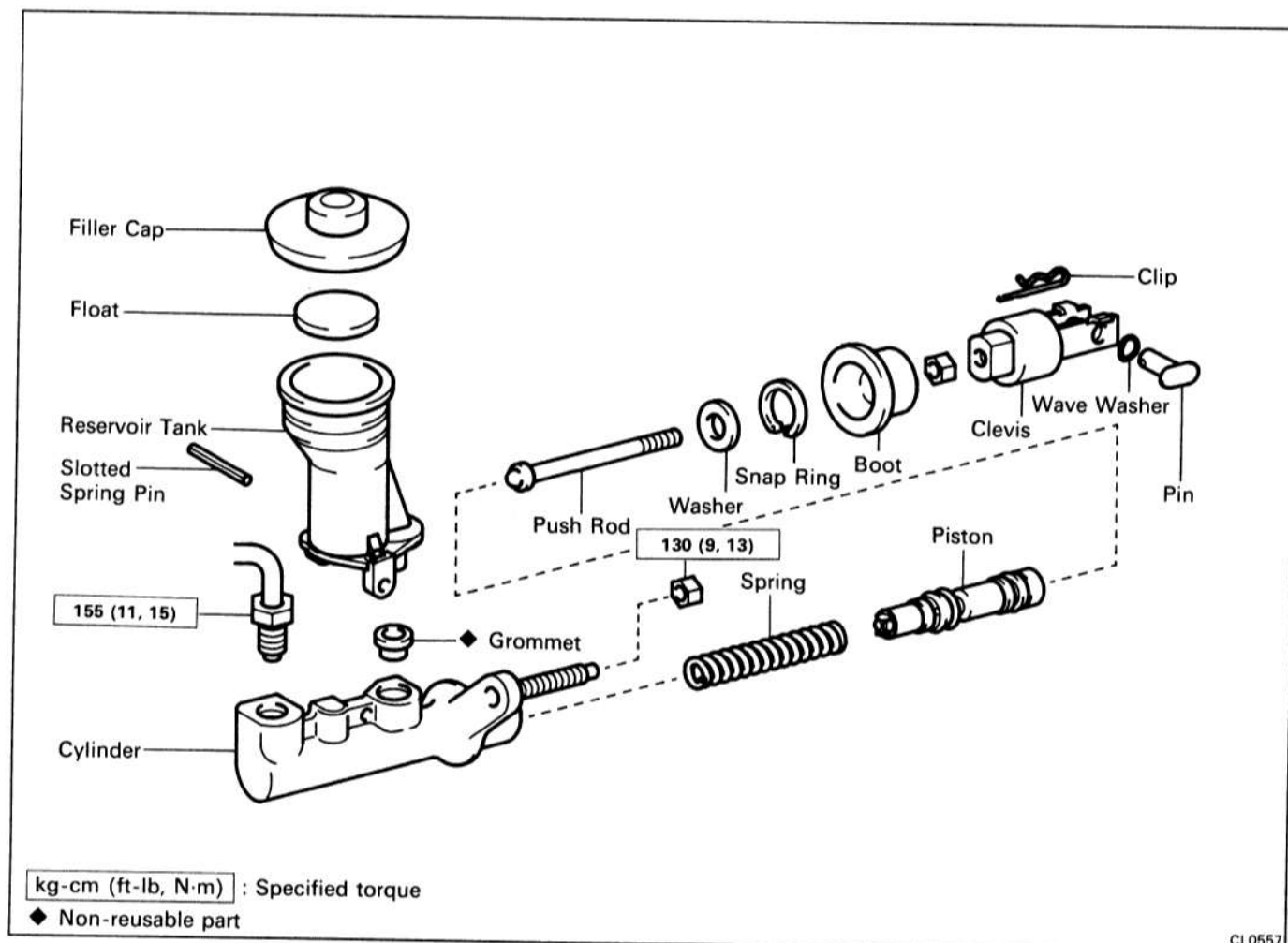
INSPECTION OF CLUTCH START SWITCH

INSPECT CONTINUITY OF CLUTCH START SWITCH

- (a) Check that there is continuity between terminals when the switch is ON (pushed).
- (b) Check that there is no continuity between terminals when the switch is OFF (free).

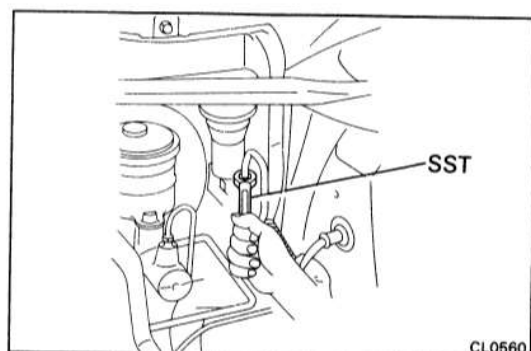
If continuity is not as specified, replace the switch.

CLUTCH MASTER CYLINDER COMPONENTS

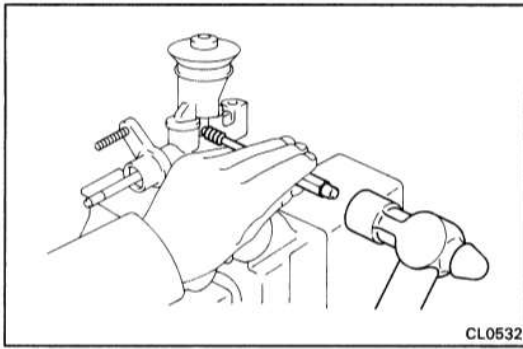


REMOVAL OF MASTER CYLINDER

1. REMOVE PUSH ROD PIN
2. REMOVE RETRACTOR CONTROL RELAY



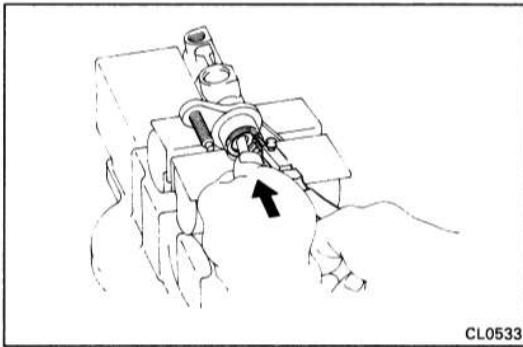
3. **DISCONNECT CLUTCH LINE UNION**
 Using SST, disconnect the union nut.
 SST 09751-36011
4. **REMOVE MASTER CYLINDER**
 - (a) Remove the two mounting nuts.
 - (b) Pull out the master cylinder.



DISASSEMBLY OF MASTER CYLINDER

1. REMOVE RESERVOIR TANK

- (a) Using a pin punch and a hammer, drive out the slotted spring pin.
- (b) Remove reservoir tank and grommet.



2. REMOVE PUSH ROD

- (a) Pull back the boot and, using snap ring pliers, remove the snap ring.
- (b) Pull out the push rod and washer.
- (c) Remove the piston from the cylinder.

INSPECTION OF MASTER CYLINDER

HINT: Clean the disassembled parts with compressed air.

1. INSPECT MASTER CYLINDER BORE FOR SCORING OR CORROSION.

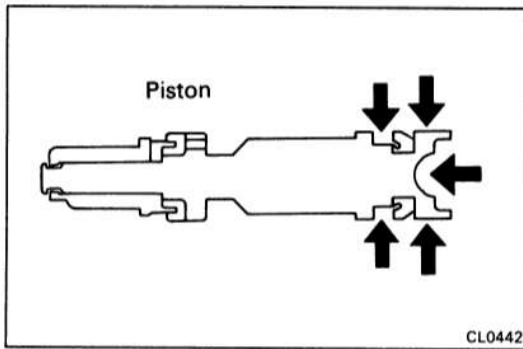
If a problem is found, clean or replace the cylinder.

2. INSPECT PISTON AND CUPS FOR WEAR, SCORING, CRACKS OR SWELLING

If either one requires replacement, use the parts from the cylinder kit.

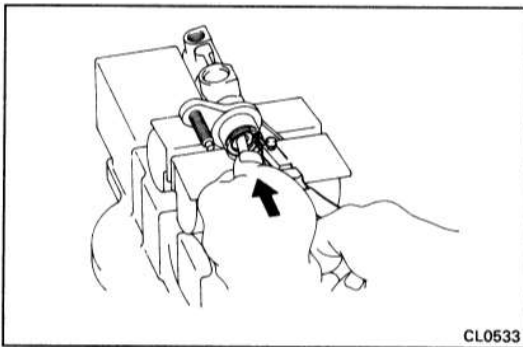
3. INSPECT PUSH ROD FOR WEAR OR DAMAGE

If necessary, replace the push rod.

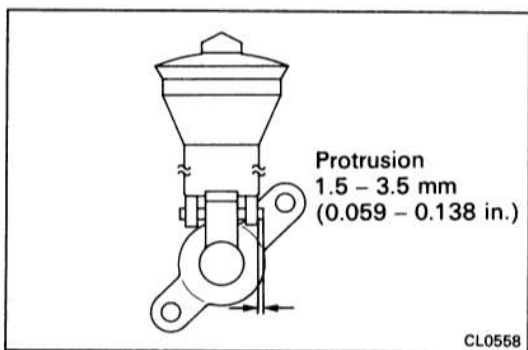


ASSEMBLY OF MASTER CYLINDER

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



3. INSTALL PUSH ROD ASSEMBLY WITH SNAP RING



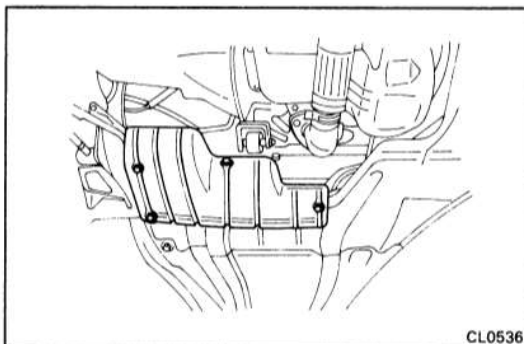
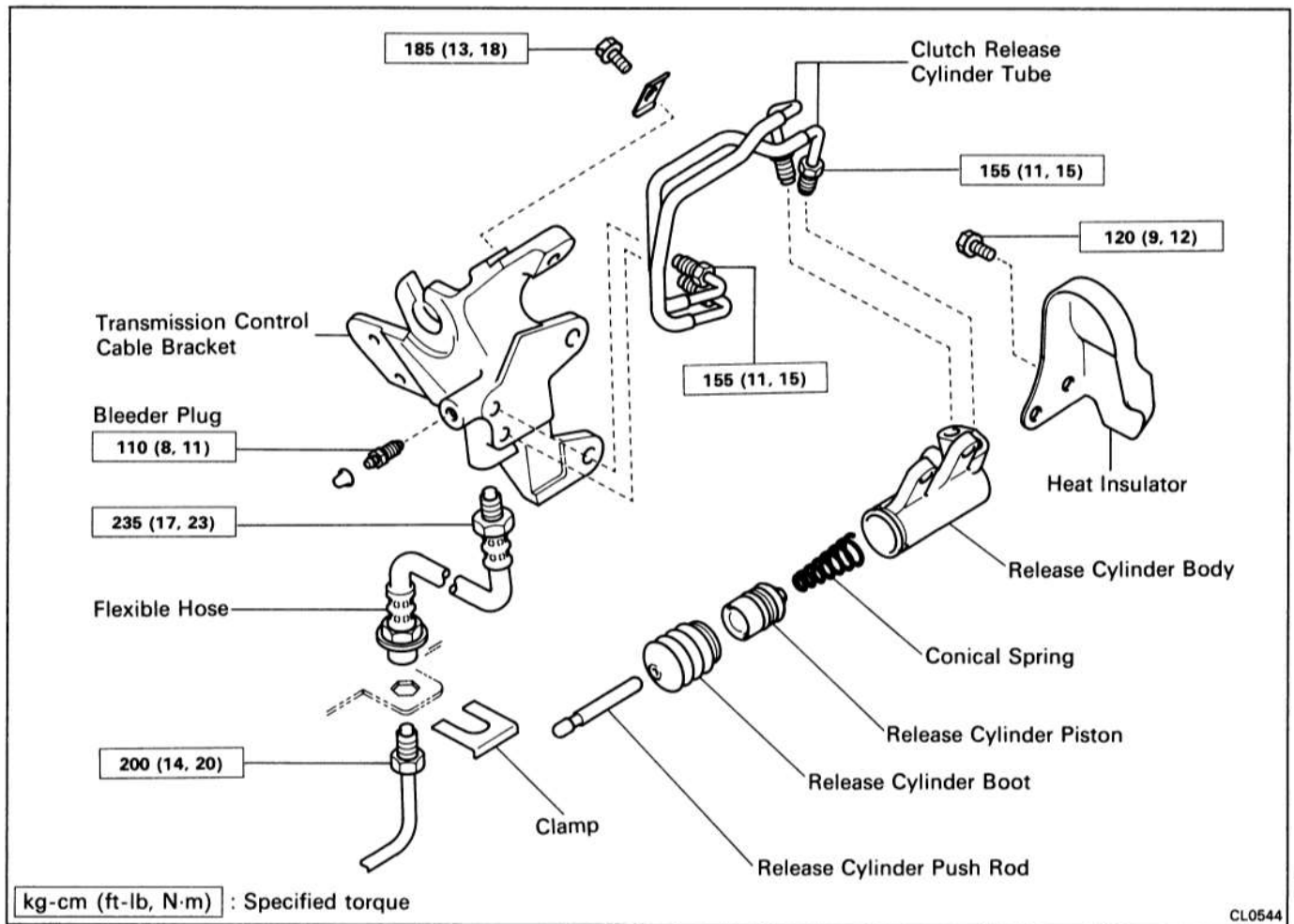
4. INSTALL RESERVOIR TANK
 - (a) Install reservoir tank and new grommet.
 - (b) Using a pin punch and a hammer, drive in the slotted spring pin.

INSTALLATION OF MASTER CYLINDER

(See page CL-5)

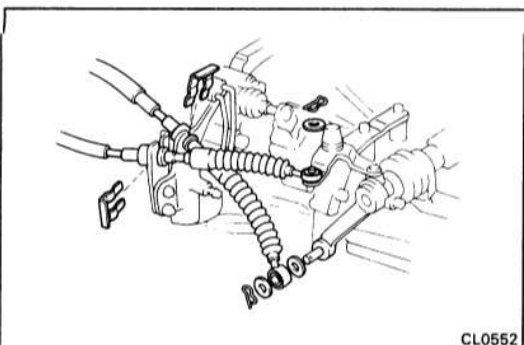
1. **INSTALL MASTER CYLINDER**
Install the two mounting nuts, and torque them.
Torque: 130 kg-cm (9 ft-lb, 13 N·m)
2. **CONNECT CLUTCH LINE UNION**
Using SST, connect the union.
SST 09751-36011
3. **INSTALL RETRACTOR CONTROL RELAY**
4. **CONNECT PUSH ROD AND INSTALL PIN**
Install the clip in the push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

CLUTCH RELEASE CYLINDER COMPONENTS



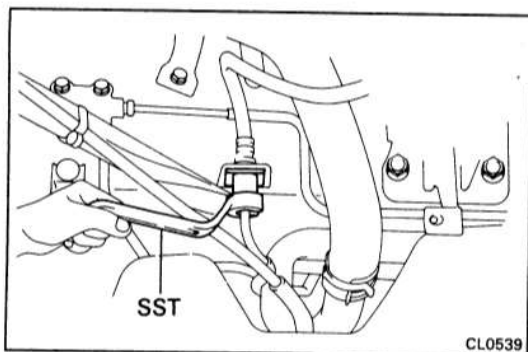
REMOVAL OF RELEASE CYLINDER

1. REMOVE NO.1 ENGINE UNDER COVER



2. DISCONNECT CONTROL CABLE

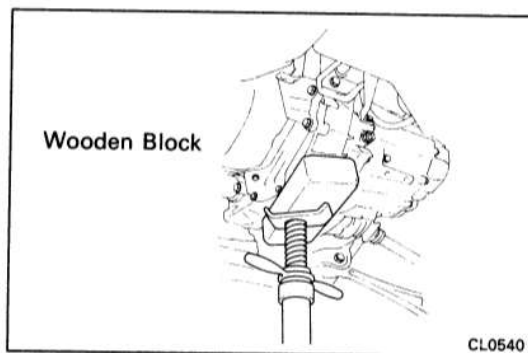
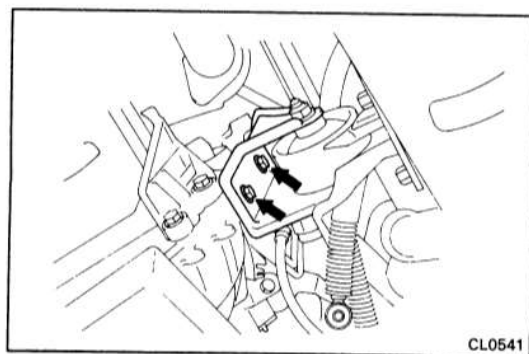
- Remove the clip and washers.
- Remove the retainer from the cable.

**3. DISCONNECT CLUTCH LINE UNION**

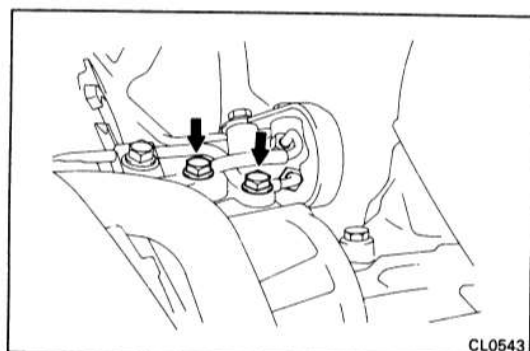
- (a) Using SST, disconnect the union. Use a container to catch the brake fluid.

SST 09751-36011

- (b) Remove the retainer

**4. SUPPORT ENGINE AND TRANSMISSION****5. REMOVE ENGINE FRONT MOUNTING BRACKET SET BOLTS**

Remove the two bolts from engine side.

**6. REMOVE BOLT AND PULL OUT RELEASE CYLINDER ASSEMBLY****DISASSEMBLY OF RELEASE CYLINDER****1. PULL OUT PUSH ROD****2. REMOVE BOOT****3. REMOVE PISTON**

Using compressed air, remove the piston and spring from the cylinder.

INSPECTION OF RELEASE CYLINDER

HINT: Clean the disassembled parts with compressed air.

1. INSPECT RELEASE CYLINDER BORE FOR SCORING OR CORROSION

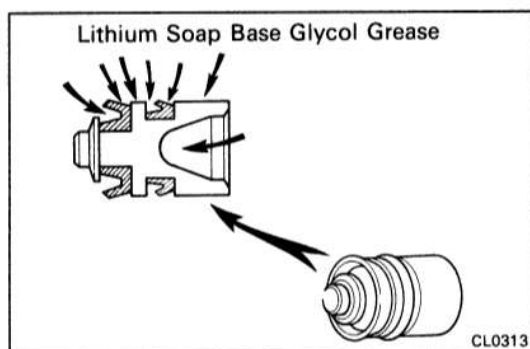
If a problem is found, clean or replace the cylinder.

2. INSPECT PISTON AND CUPS FOR WEAR, SCORING, CRACKS OR SWELLING

If either one requires replacement, use the parts from the cylinder kit.

3. INSPECT PUSH ROD FOR WEAR OR DAMAGE

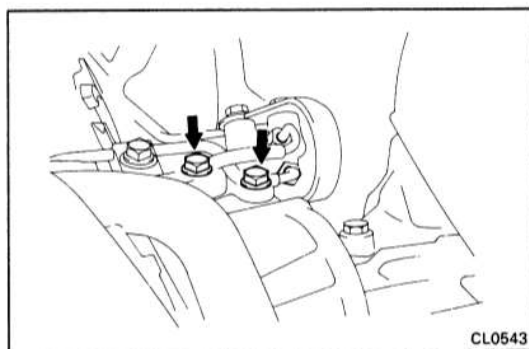
If necessary, replace the push rod.



ASSEMBLY OF RELEASE CYLINDER

(See page CL-8)

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

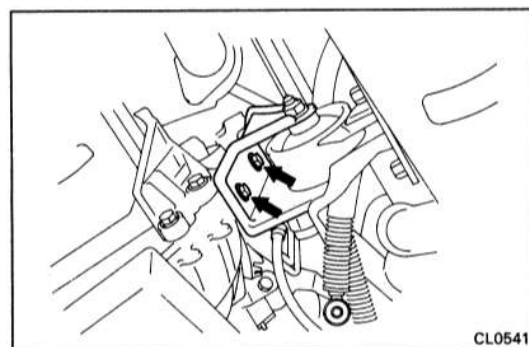


INSTALLATION OF RELEASE CYLINDER

(See page CL-8)

1. INSTALL RELEASE CYLINDER

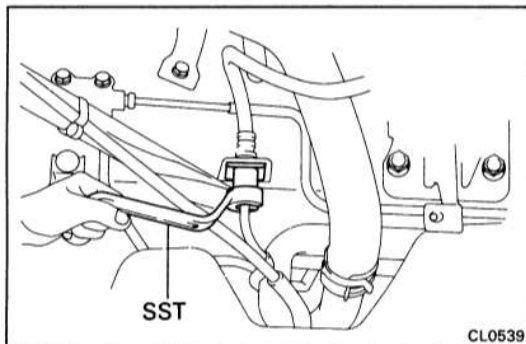
Torque: 120 kg-cm (9 ft-lb, 12 N·m)



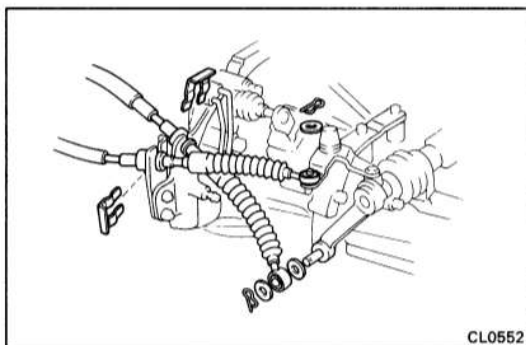
2. INSTALL ENGINE FRONT MOUNTING BRACKET SET BOLTS

Torque: 790 kg-cm (57 ft-lb, 77 N·m)

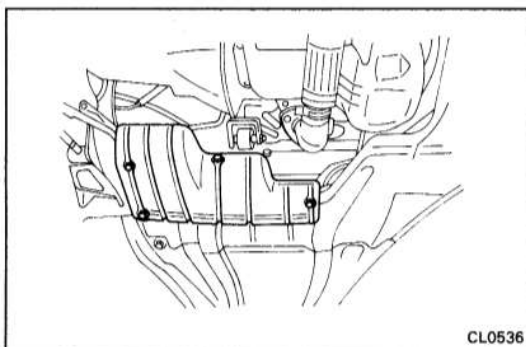
3. REMOVE SUPPORTS FOR ENGINE AND TRANSAXLE

**4. CONNECT CLUTCH LINE UNION**

- (a) Using SST, connect the union.
SST 09751-36011
- (b) Install the retainer.

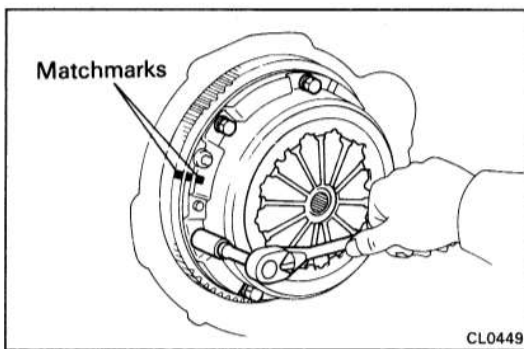
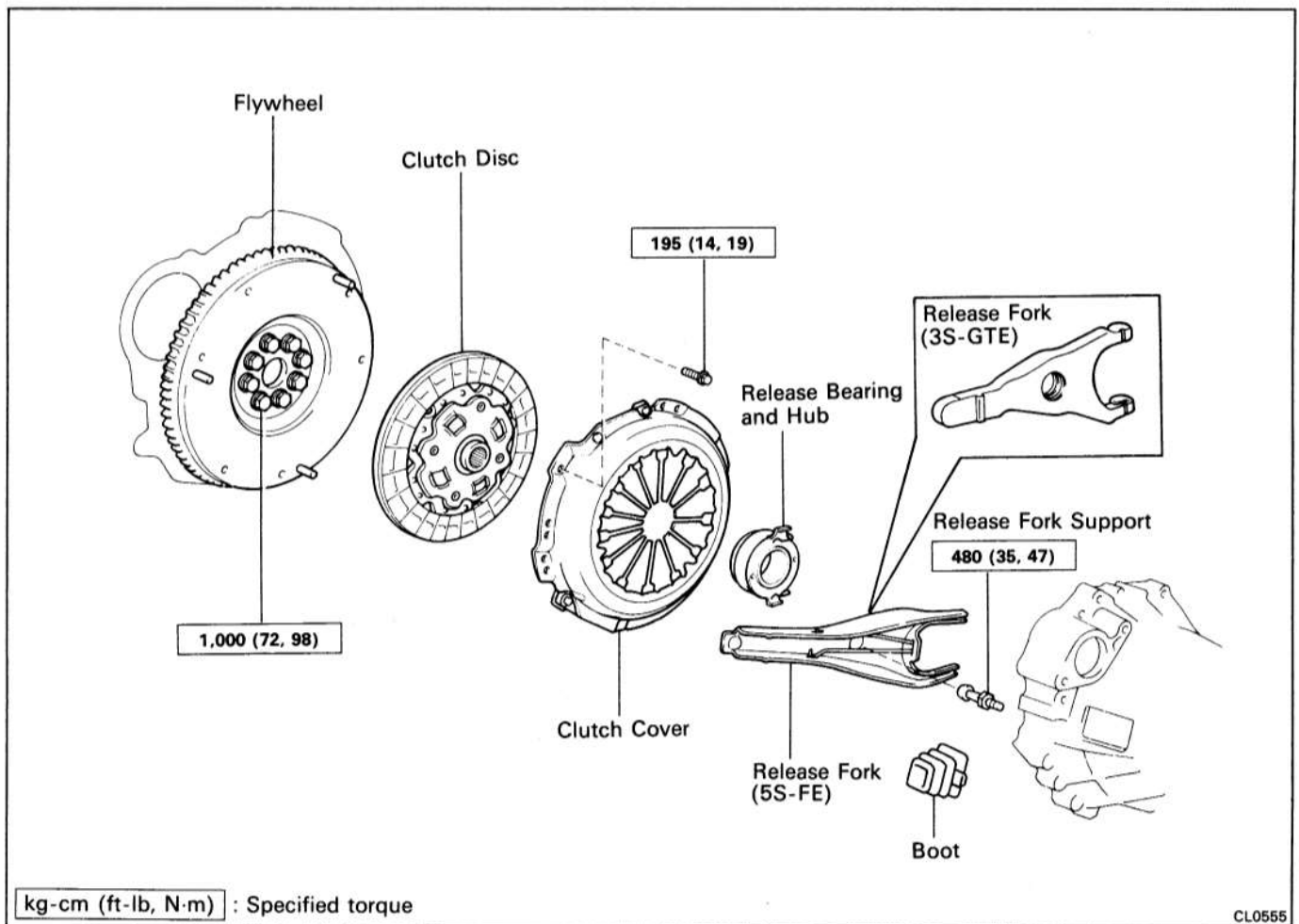
**5. CONNECT CONTROL CABLE**

- (a) Install the cable and retainer.
- (b) Install the washers and clip.

**6. INSTALL NO.1 ENGINE UNDER COVER****7. BLEED CLUTCH SYSTEM**

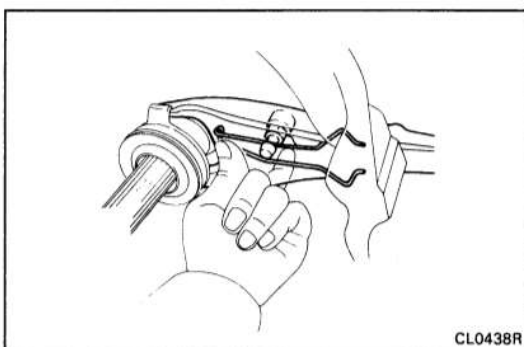
(See page CL-4)

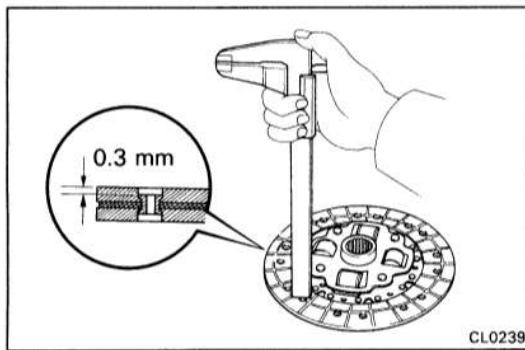
CLUTCH UNIT COMPONENTS



REMOVAL OF CLUTCH UNIT

1. REMOVE TRANSAXLE (See page MT-5)
2. REMOVE CLUTCH COVER AND DISC
 - (a) Put matchmarks 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 TRANSAXLE
 - (a) Remove the retaining clip, pull off the bearing.
 - (b) Remove the fork and boot.





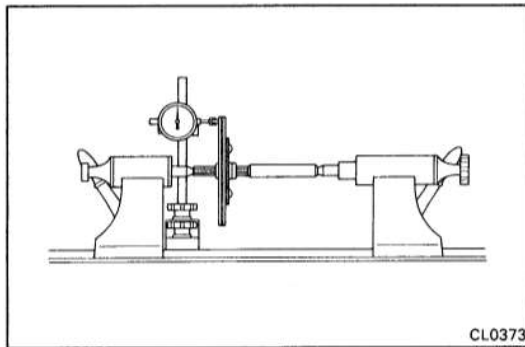
INSPECTION OF CLUTCH PARTS

1. INSPECT CLUTCH DISC FOR WEAR 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.

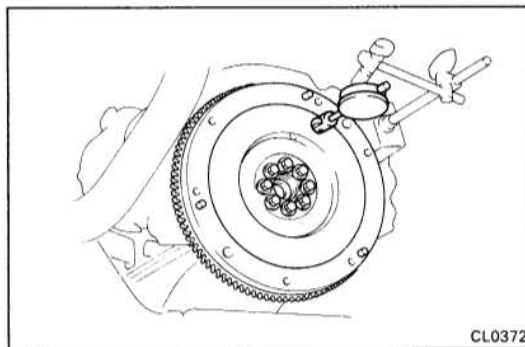


2. INSPECT CLUTCH DISC RUNOUT

Using a dial indicator, check the disc runout.

Maximum runout: 0.8 mm (0.031 in.)

If runout is excessive, replace the disc.

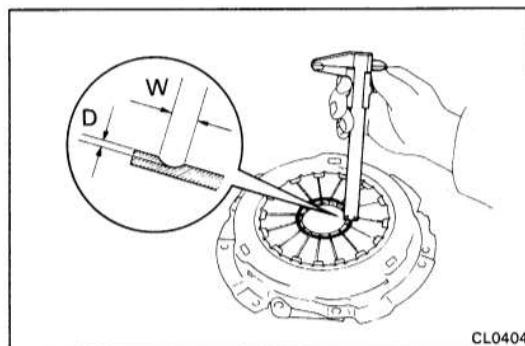


3. INSPECT FLYWHEEL RUNOUT

Using a dial indicator, check the flywheel runout.

Maximum runout: 0.1 mm (0.004 in.)

If runout is excessive, repair or replace flywheel.



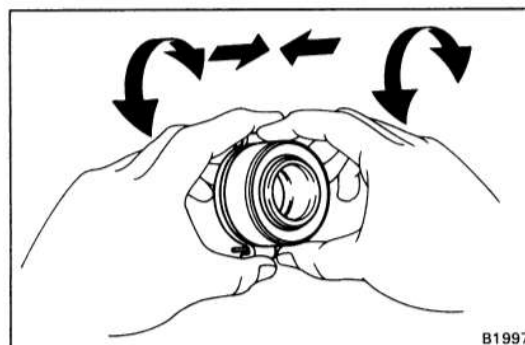
4. INSPECT DIAPHRAGM SPRING FOR WEAR

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.)

If necessary, replace the clutch cover.

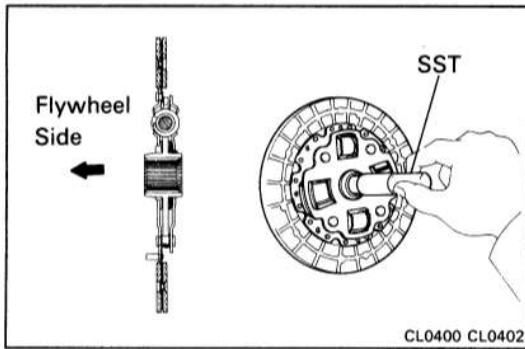


5. INSPECT RELEASE BEARING

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

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

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



INSTALLATION OF CLUTCH UNIT

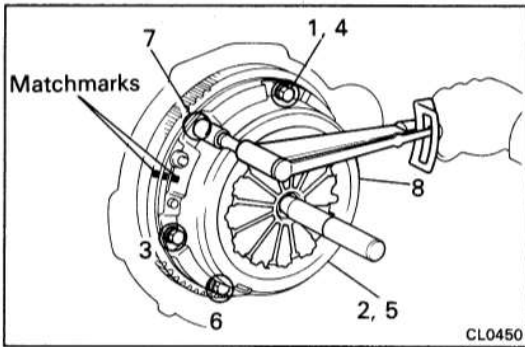
(See page CL-12)

1. INSTALL DISC ON FLYWHEEL

Using SST, install the disc on the flywheel.

SST 09301-32010 (5S-FE)

09301-17010 (3S-GTE)



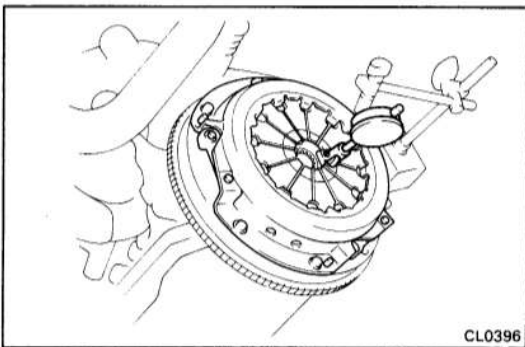
2. INSTALL CLUTCH COVER

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

(b) Torque the bolts on the clutch cover in the order shown.

Torque: 195 kg-cm (14 ft-lb, 19 N·m)

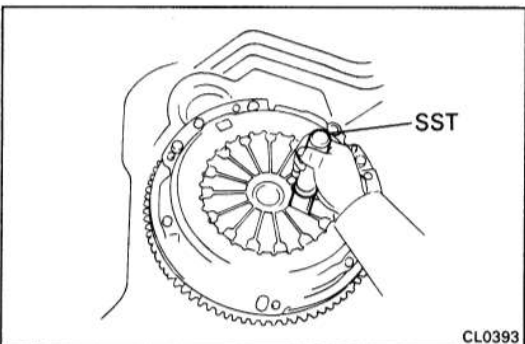
HINT: Temporarily tighten the No.1 and No.2 bolts.



3. CHECK DIAPHRAGM SPRING TIP ALIGNMENT

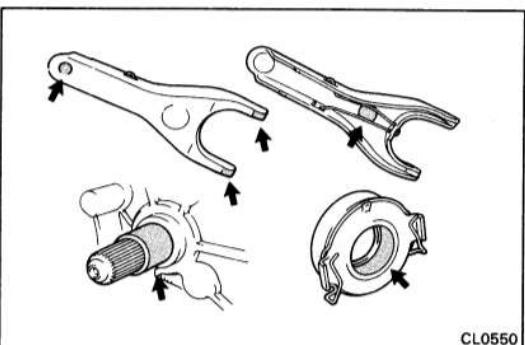
Using a dial indicator with roller instrument, check the diaphragm spring tip alignment.

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



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

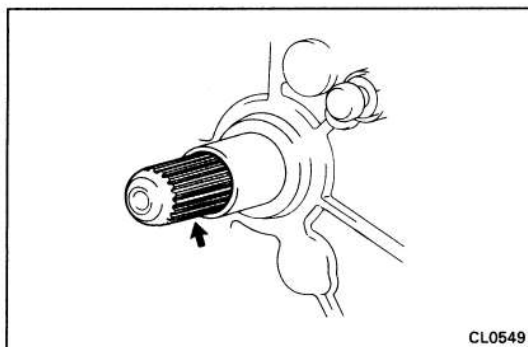
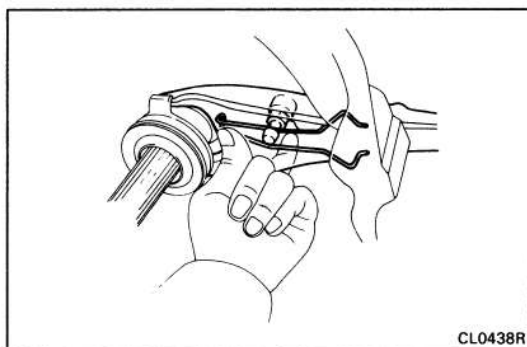
SST 09333-00013



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

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
- Release bearing retainer
- Release bearing hub.

**5. APPLY SPLINE GREASE TO INPUT SHAFT SPLINE****6. INSTALL BOOT, FORK, HUB AND BEARING ON TRANSAXLE****7. INSTALL TRANSAXLE
(See page MT-5)**