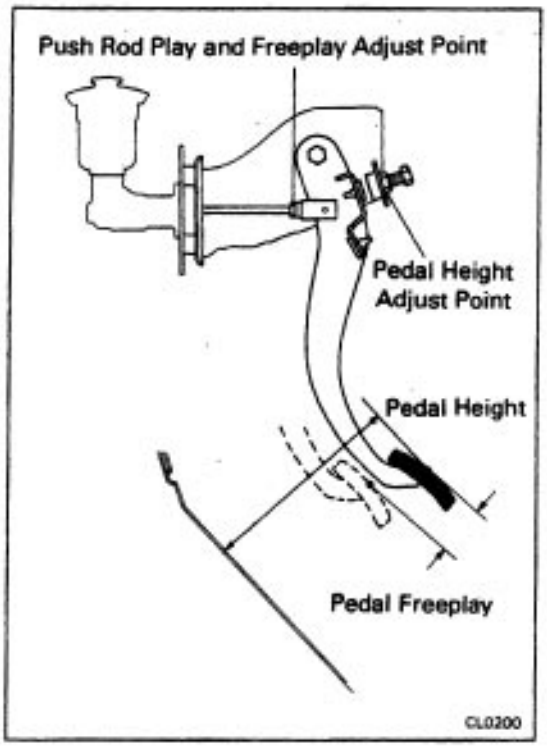
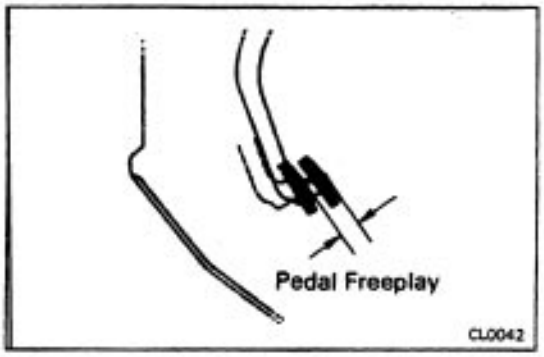
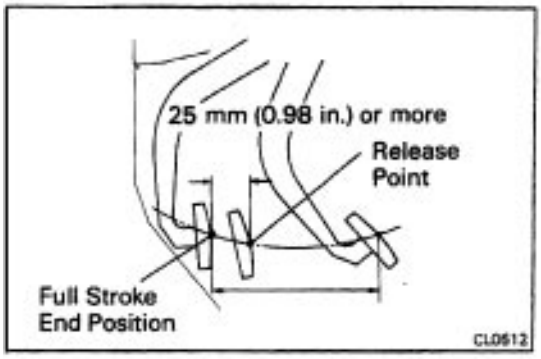
CLUTCH

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–7
	Clutch master cylinder faulty	Repair master cylinder	CL–5
	Clutch disc out of true, runout is excessive or lining broken	Inspect clutch disc	CL–9
	Splines on input shaft or clutch disc dirty or burred	Repair as necessary	CL-9
	Clutch pressure plate faulty	Replace clutch cover	CL-9
Clutch slips	Clutch pedal freeplay insufficient	Adjust pedal freeplay	CL–3
	Clutch disc lining oily or worn out	inspect clutch disc	CL–9
	Pressure plate faulty	Replace clutch cover	CL–9
	Release fork binding	inspect release fork	CL–9
Clutch grabs/ chatters	Clutch disc lining oily or worn out	Inspect clutch disc	CL–9
	Pressure plate faulty	Replace clutch cover	CL–9
	Clutch diaphragm spring bent	Align clutch diaphragm spring	CL–9
	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–7
	Clutch master cylinder faulty	Repair master cylinder	CL–5
Clutch noisy	Loose part inside housing	Repair as necessary	CL-9
	Release bearing worn or dirty	Replace release bearing	







CHECK AND ADJUSTMENT OF CLUTCH PEDAL

1. CHECK THAT PEDAL HEIGHT IS CORRECT

Pedal height from asphalt shaft 181 – 191 mm (7:13 – 7.52 in.)

2. IF NECESSARY, ADJUST PEDAL HEIGHT

(a) Remove the instrument lower finish panel and disconnect the air duct.

(b) Loosen the lock nut and turn the stopper bolt (w/o Cruise control system) or clutch switch (w/ Cruise control system) until the height is correct. Tighten the lock nut.

HINT: Before rotating the clutch switch for pedal height adjustment, disconnect the clutch switch connector.

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

(Pedal Freeplay)

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

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

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

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

(b) Tighten the lock nut.

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

(d) Connect the air duct and install the lower finish panel.

5. INSPECT CLUTCH RELEASE POINT

(a) Pull the parking brake lever and install wheel stopper.

(b) Start the engine and idle the engine.

(e) Without depressing the clutch pedal, slowly shift the shift lever into reverse position until the gears contact.

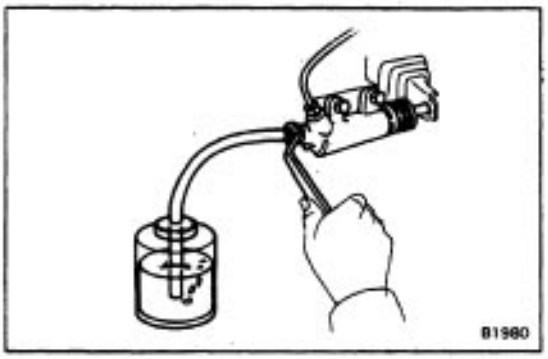
(d) Gradually depress the clutch pedal and measure the stroke distance from the point the gear noise stops (release point) up to the full stroke end position.

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 free play.
- 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.
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

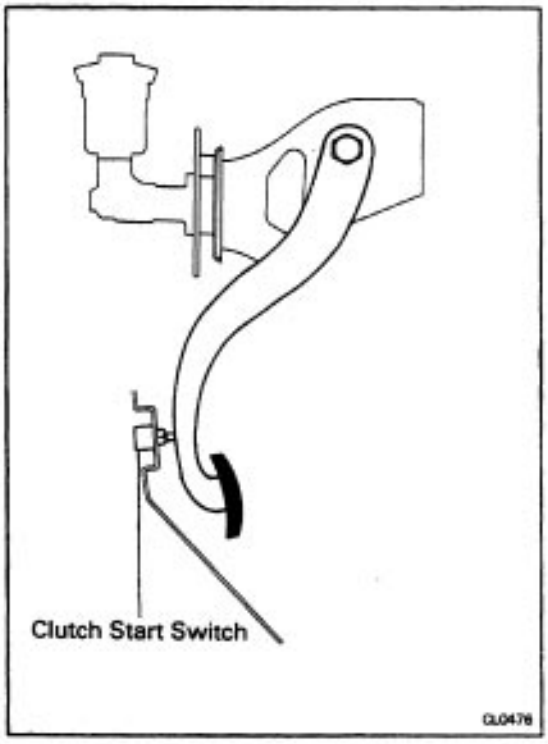
Insert the other of the tube in a half–filled container of brake fluid.

3. BLEED CLUTCH LINE

(a) Slowly pump the clutch pedal several times.

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

(e) 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

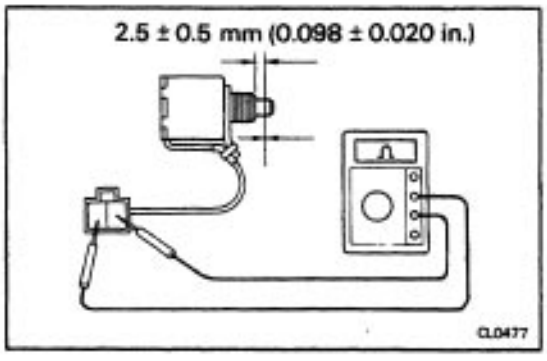
(See page CL–3**)**

CHECK CLUTCH START SYSTEM

(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, inspect the clutch start switch.



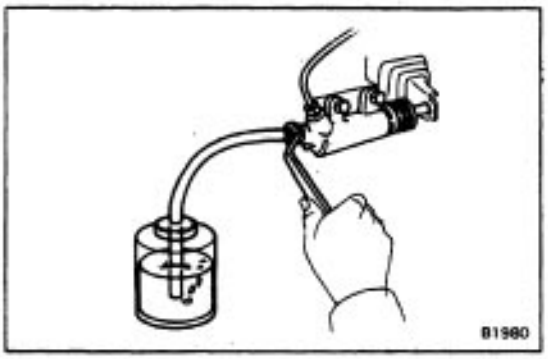
INSPECTION OF CLUTCH START SWITCH

INSPECT CONTINUITY OF CLUTCH START SWITCH

(a) Check that there is continuity between terminals when the switch in ON (pushed).

(b) Check that there is no continuity between terminals when the switch is OFF (released).

If continuity is not as specified, replace the switch.



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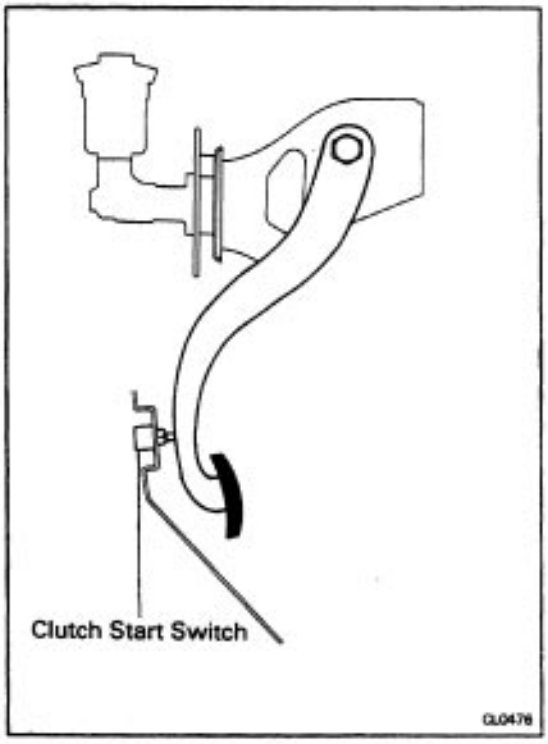

INSPECTION OF CLUTCH START SYSTEM

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**)**

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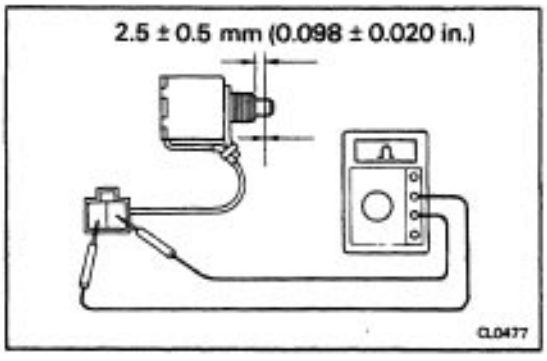

INSPECTION OF CLUTCH START SWITCH

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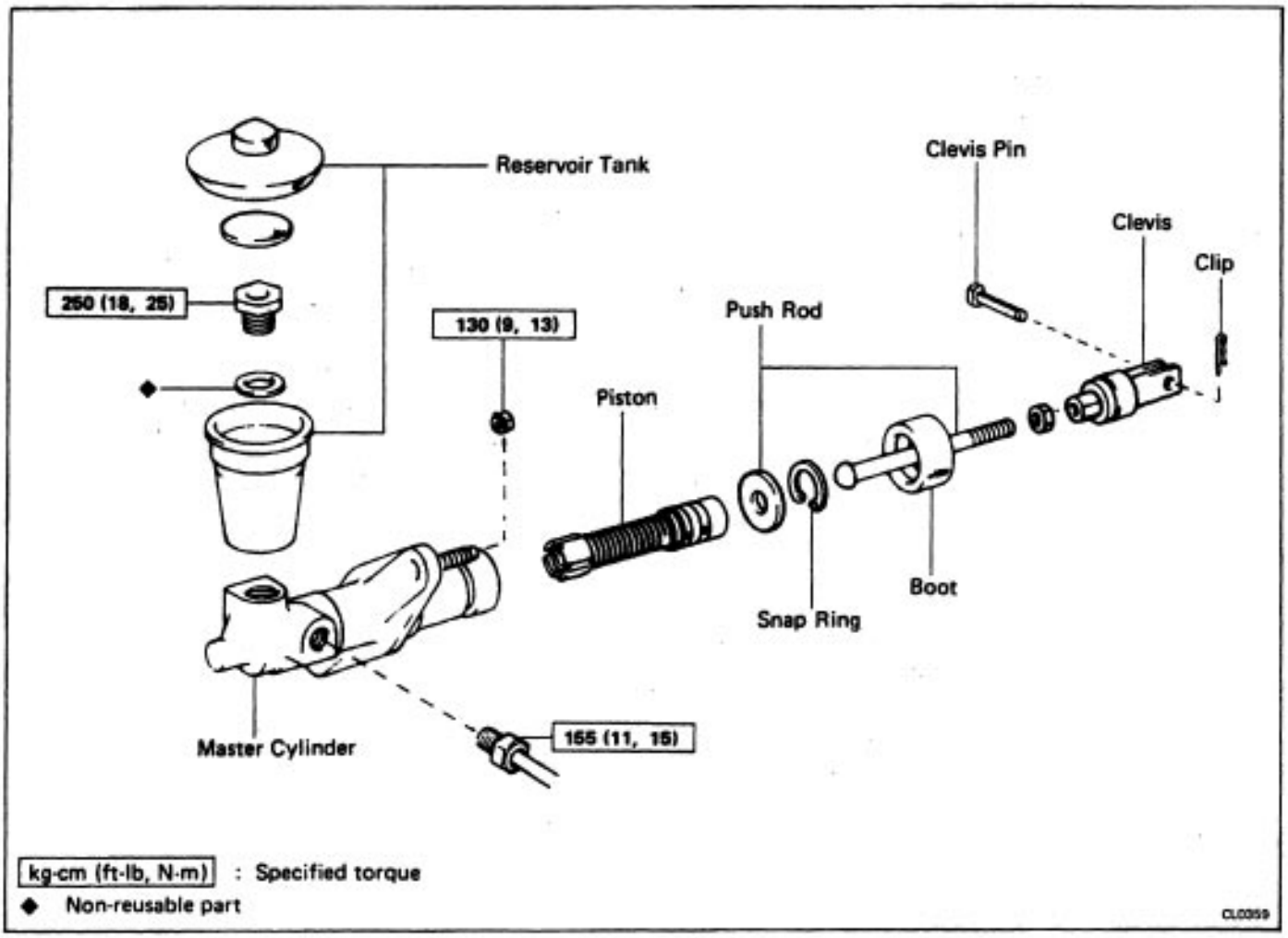
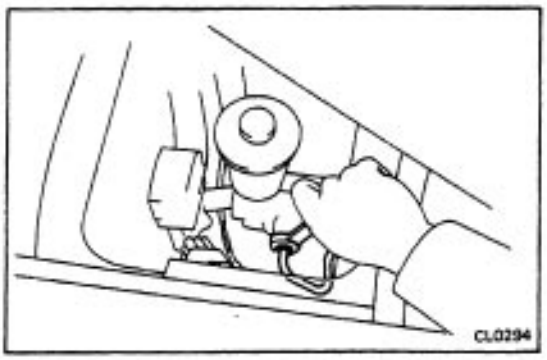
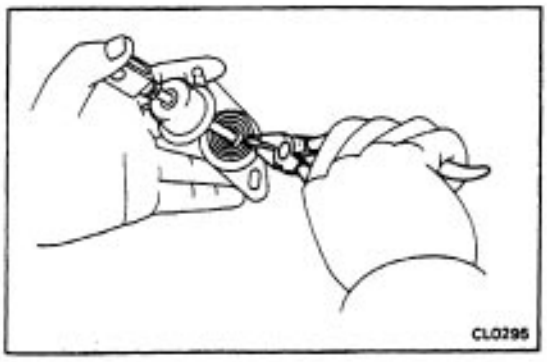
CLUTCH MASTER CYLINDER

COMPONENTS







REMOVAL OF MASTER CYLINDER

1. DRAW OUT FLUID WITH SYRINGE

2. DISCONNECT CLUTCH LINE TUBE

3. REMOVE INSTRUMENT LOWER FINISH PANEL

Remove the lower instrument lower finish panel and disconnect the air duct from the instrument lower finish panel.

4. REMOVE CLEVIS PIN AND CLIP WITH SPRING WASHER

Remove the clip and clevis pin with the spring washer.

5. REMOVE MOUNTING NUTS AND PULL OUT MASTER CYLINDER

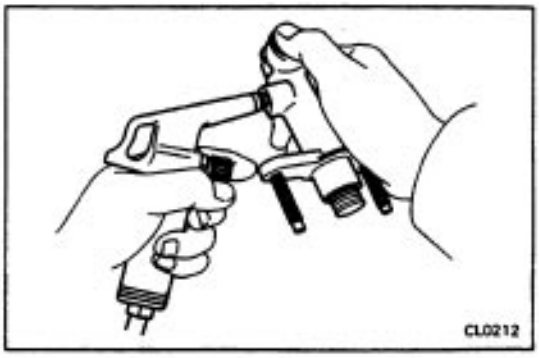
DISASSEMBLY OF MASTER CYLINDER

1. REMOVE RESERVOIR TANK

2. REMOVE PUSH ROD AND PISTON

(a) Pull back the boot and, using snap ring pliers, remove the snap ring.

(b) Pull out the push rod.



3. REMOVE PISTON

Using compressed air, 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.

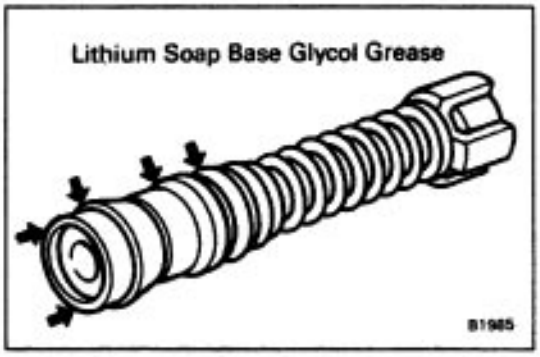
2. INSPECT PISTON AND CUPS FOR WEAR, SCORING, CRACKS OR SWELLING

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



(See page CL–5)

1. COAT PARTS WITH LITHIUM SOAP BASE GLYCOL GREASE, AS SHOWN

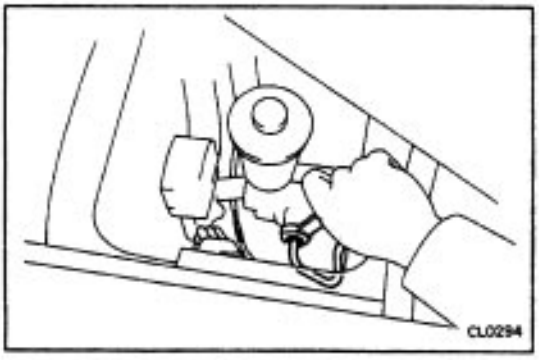
2. INSERT PISTON INTO CYLINDER

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–5)

1. INSTALL MASTER CYLINDER WITH MOUNTING NUTS

2. CONNECT CLUTCH LINE TUBE

3. CONNECT CLEVIS, AND INSTALL CLEVIS PIN AND CLIP

Secure the clevis pin with the clip.

4. FILL CLUTCH RESERVOIR WITH BRAKE FLUID AND BLEED CLUTCH SYSTEM (See page CL–4)

5. CHECK FOR LEAKS

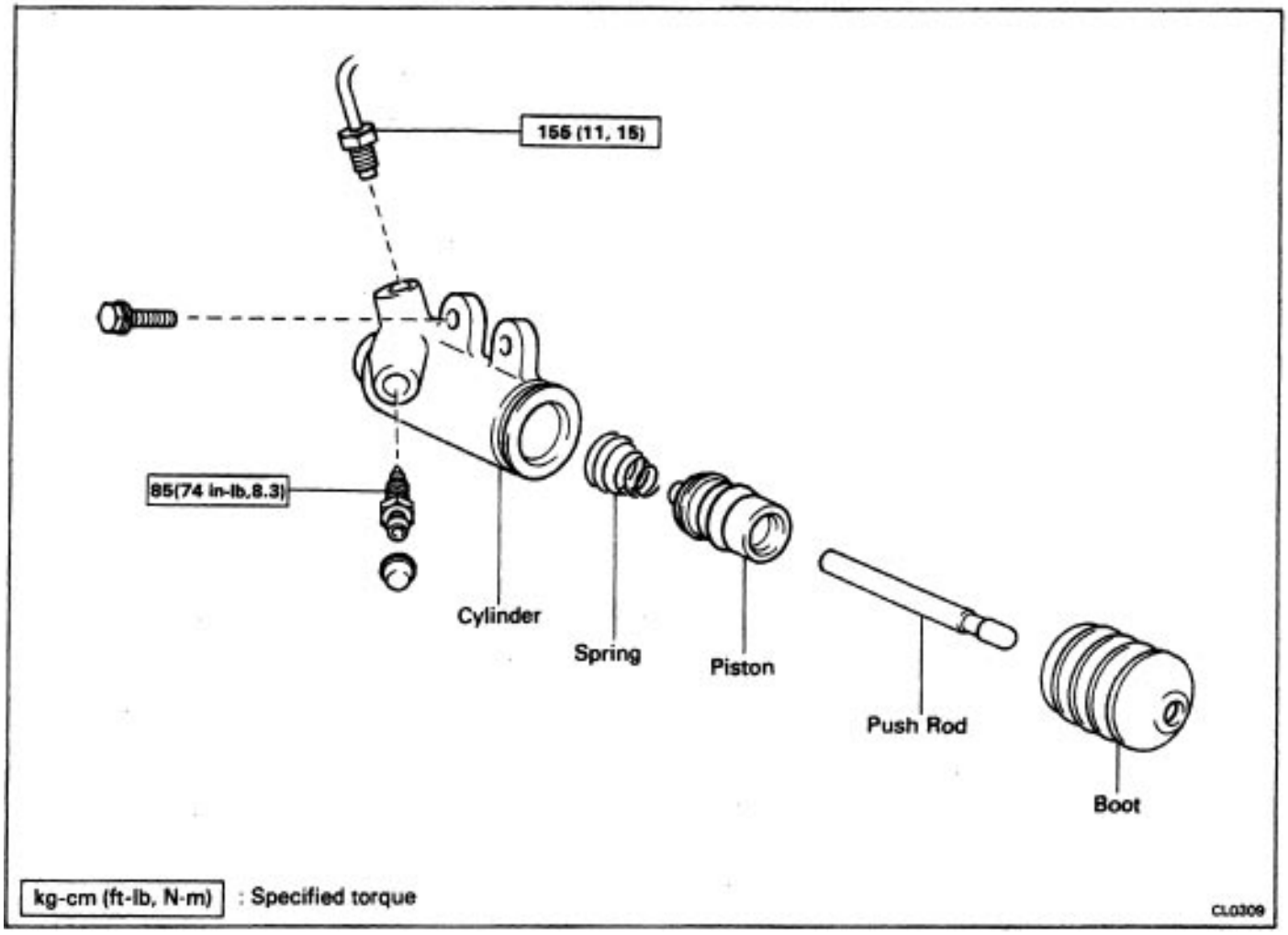
6. CHECK AND ADJUST CLUTCH PEDAL (See page CL–3)

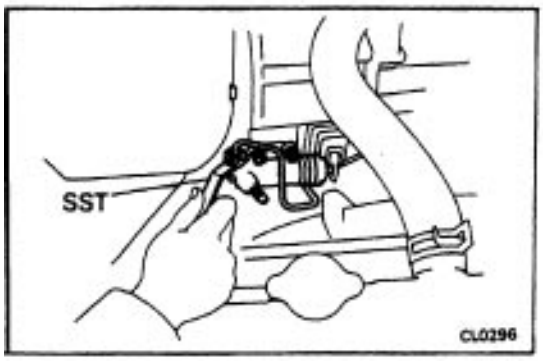
7. INSTALL INSTRUMENT LOWER FINISH PANEL

Connect the air duct to the instrument lower finish panel and install the instrument lower panel.

CLUTCH RELEASE CYLINDER

COMPONENTS





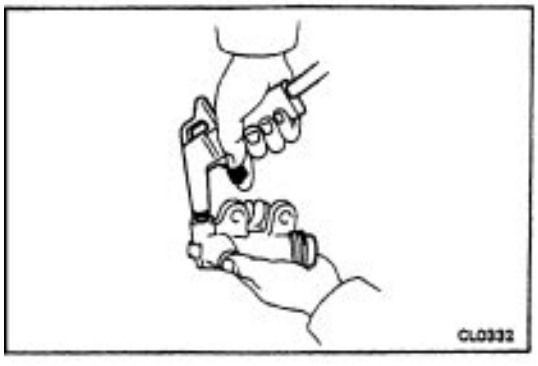
REMOVAL OF RELEASE CYLINDER

1. DISCONNECT CLUTCH LINE TUBE

Using SST, disconnect the tube. Use a container to catch the brake fluid.

SST 09751–36011

2. REMOVE TWO BOLTS AND PULL OUT RELEASE CYLINDER



3. REMOVE PISTON WITH SPRING

(a) Remove the boot and push rod from the cylinder.

(b) Using compressed air, remove the piston with spring from the cylinder.

INSPECTION OF RELEASE CYLINDER

HINT: Clean the disassembled part 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.

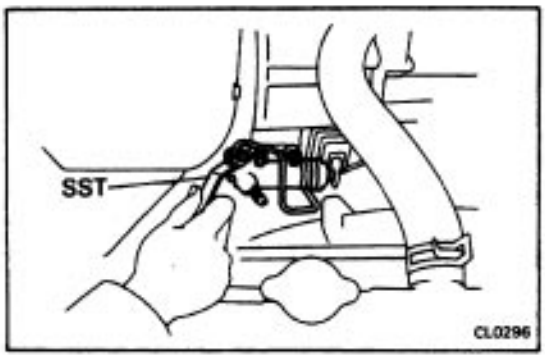
ASSEMBLY OF RELEASE CYLINDER

(see page CL–7)

1. COAT PISTON WITH LITHIUM SOAP BASE GLYCOL GREASE, AS SHOWN

2. INSERT PISTON WITH SPRING

3. INSTALL BOOT AND INSERT PUSH ROD



INSTALLATION OF RELEASE CYLINDER

(see page CL–7)

1. INSTALL RELEASE CYLINDER WITH TWO BOLTS

2. CONNECT CLUTCH LINE TUBE

Using SST, connect the tube.

SST. 09751–36011

Torque: 155 kg–cm (11 ft–lb, 15 N–m)

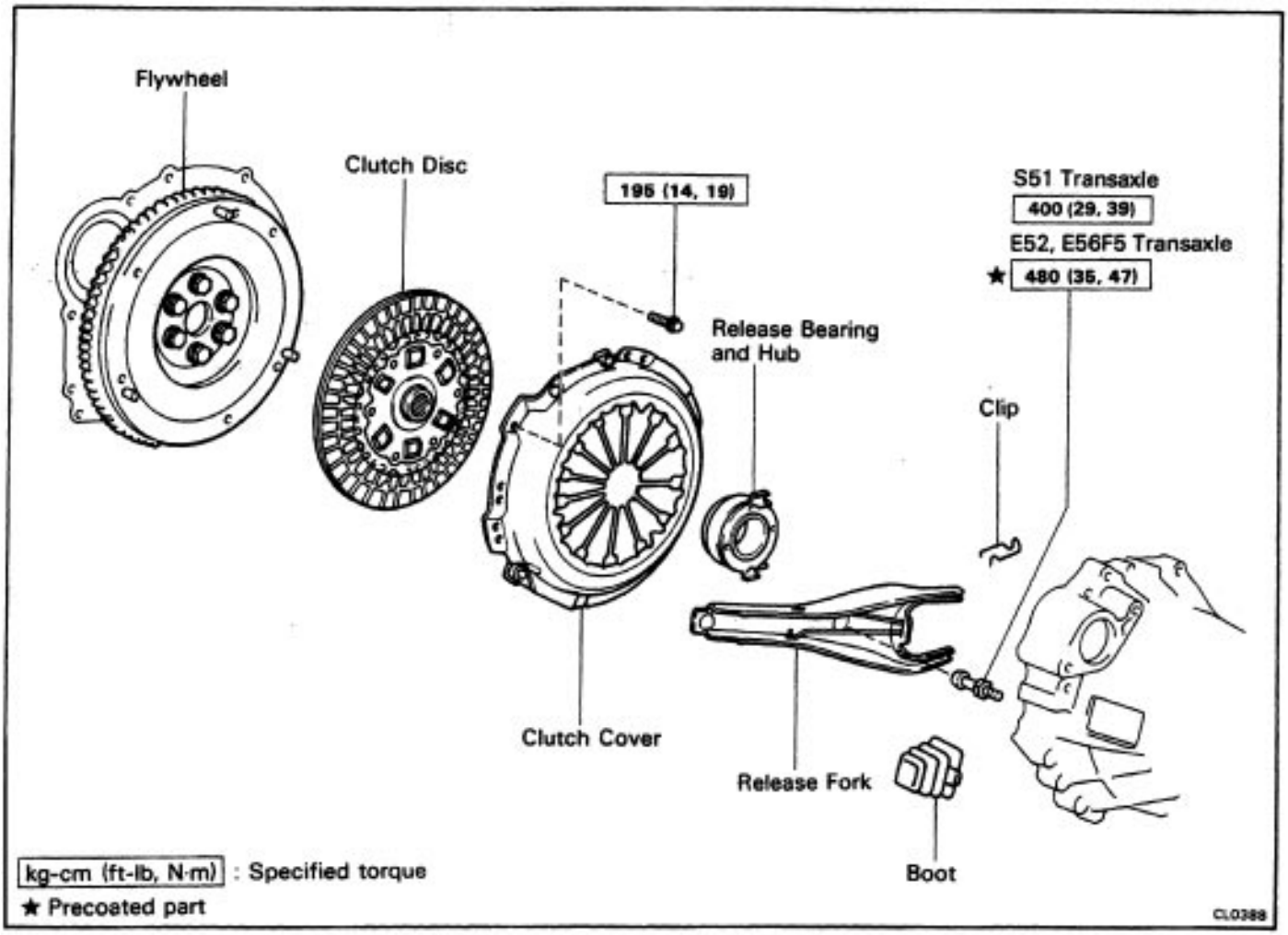
3. FILL CLUTCH RESERVOIR WITH BRAKE FLUID AND BLEED CLUTCH SYSTEM

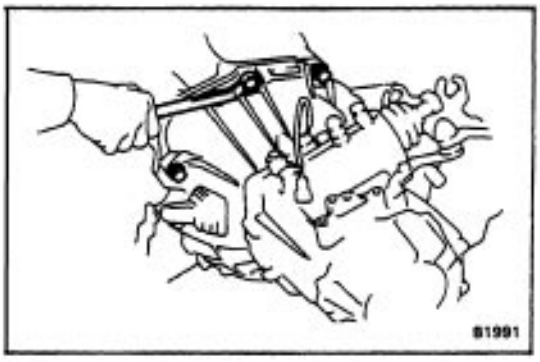
(See page CL–4)

4. CHECK FOR LEAKS

CLUTCH UNIT

COMPONENTS

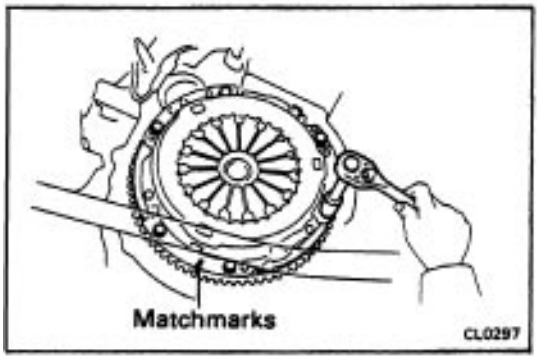




REMOVAL OF CLUTCH UNIT

1. REMOVE TRANSAXLE FROM ENGINE

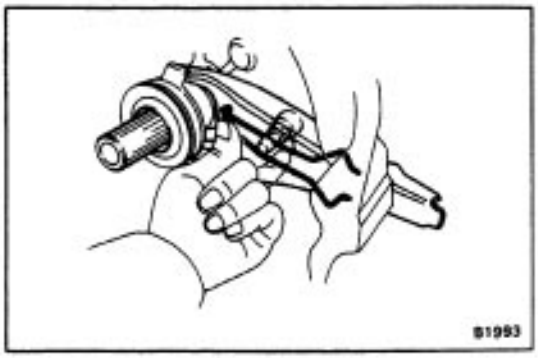
Transaxle	See page
S51 Transaxle (SV series/2WD)	MT–4
E52 Transaxle 1VZV series)	MT–45
E56F5 Transaxle (SV series/4WD)	MT–116



2. REMOVE CLUTCH COVER AND DISC

(a) Place rnatchmarks on the flywheel and clutch cover.
(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 with the clutch disc.

NOTICE: Do not drop the clutch disc.

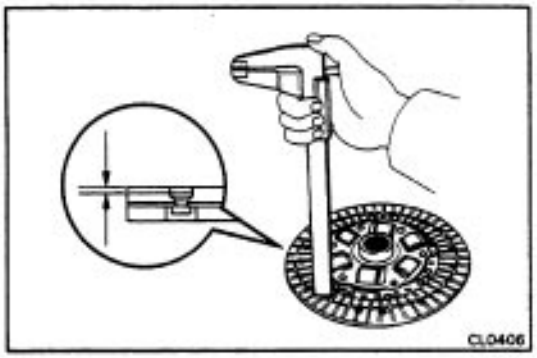


3. REMOVE RELEASE BEARING, FORK AND BOOT FROM TRANSAXLE

(a) Remove the bearing assembly together with the fork, and then separate them.

(b) Remove the boot.

INSPECTION AND REPAIR OF CLUTCH PARTS

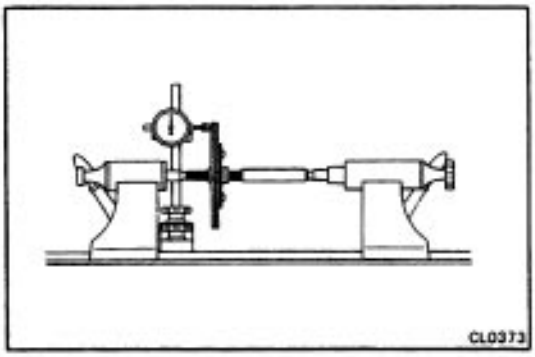


1. INSPECT CLUTCH DISC FOR WEAR OR DAMAGE

Using calipers, measure the rivet head depth.

Maximum rivet depth: 0.3 mm (0.012 in.)

If a problem is found, replace the clutch disc.

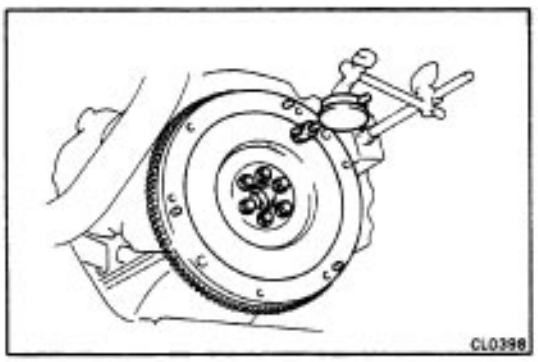


2. INSPECT CLUTCH DISC RUNOUT

Using a dial indicator, check the disc runout.

Maximum runout: 0.8 mm (0.031 in.)

If runout is excessive, replace the clutch disc.

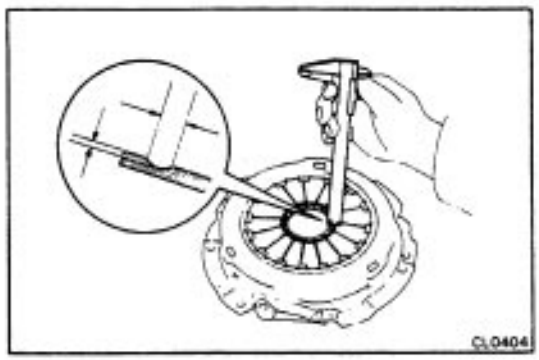


3. INSPECT FLYWHEEL RUNOUT

Using a dial indicator, check the flywheel runout.

Maximum runout: 0.1 mm (0.004 in.)

If runout is excessive, replace the flywheel.



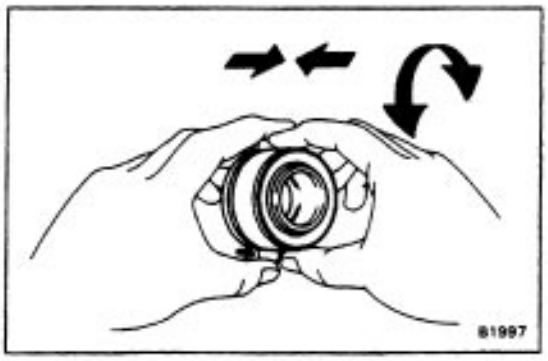
4. INSPECT DIAPHRAGM SPRING FOR WEAR

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 axial direction.

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

If a problem is found, replace the bearing together with the hub.

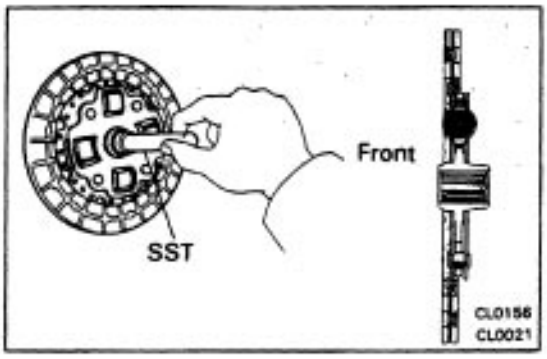
INSTALLATION OF CLUTCH UNIT

(See page CL–8)

1. INSTALL CLUTCH DISC AND COVER ON FLYWHEEL

(a) Insert SST in the clutch disc, and then set them and the cover in position.

SST S51 Transaxle
09301–32010
E52, E56F5 Transaxle
09301–17010

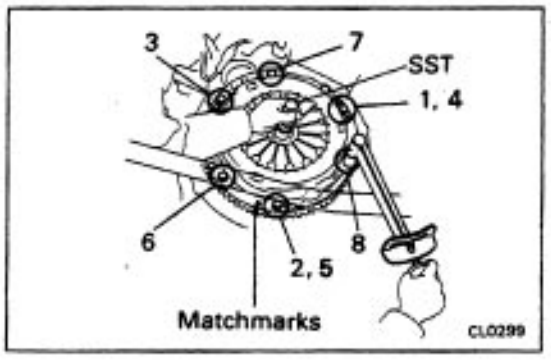


(b) Align the matchmarks on the clutch cover and flywheel.

(e) 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.



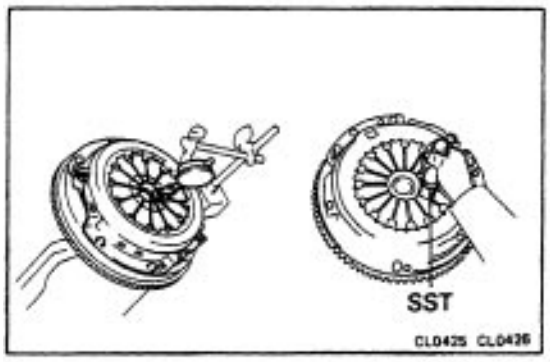
2. CHECK DIAPHRAGM SPRING TIP ALIGNMENT

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

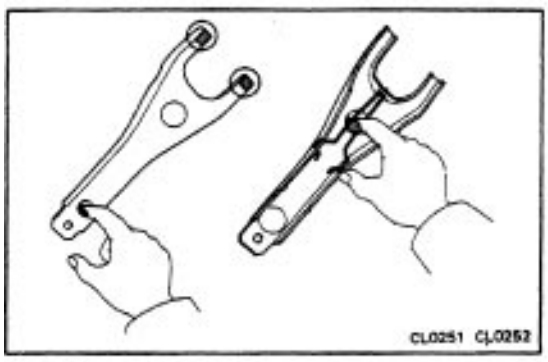


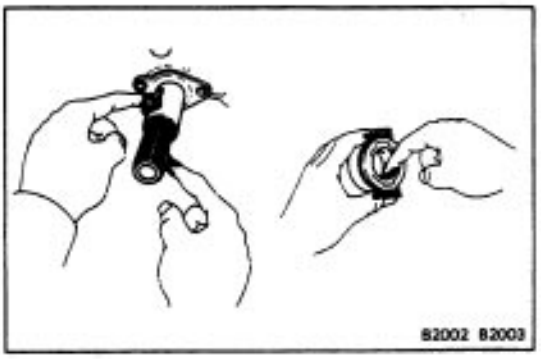
3. APPLY MOLYBDENUM DISULPHIDE LITHIUM BASE GREASE(NLGI N0.2) TO FOLLOWING PARTS:

(a) Release fork and hub contact points.

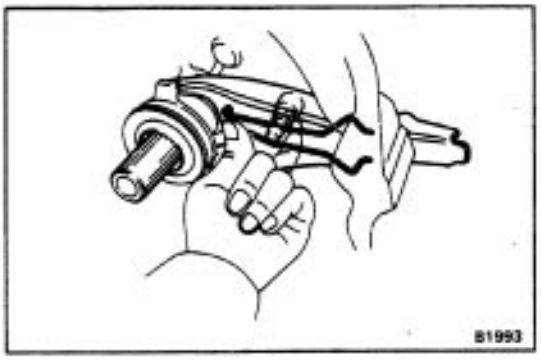
(b) Release fork and push rod contact point.

(e) Release fork pivot point.



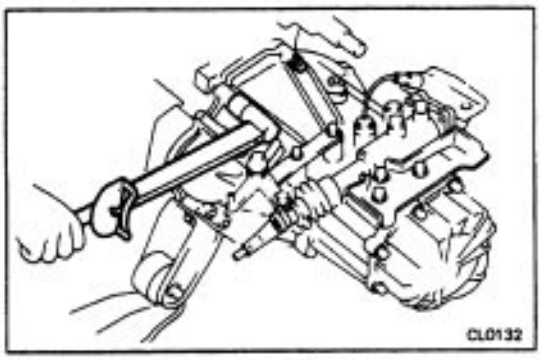


(d) Clutch disc spline.
(e) (S51 Transaxle)
Release bearing hub inside groove.



4. INSTALL RELEASE BEARING, FORK AND BOOT FROM TRANSAXLE

(a) Install the bearing assembly to the fork, and then install them to the transaxle.
(b) Install the boot.



5. INSTALL TRANSAXLE TO ENGINE

Transaxle	See page
S51 Transaxle (SV series/2WD)	MT–38
E52 Transaxle (M series)	MT–45
E56F5 Transaxle (SV series/4WD)	MT– 116