TROUBLESHOOTING

CL034–01

PROBLEM SYMPTOMS TABLE

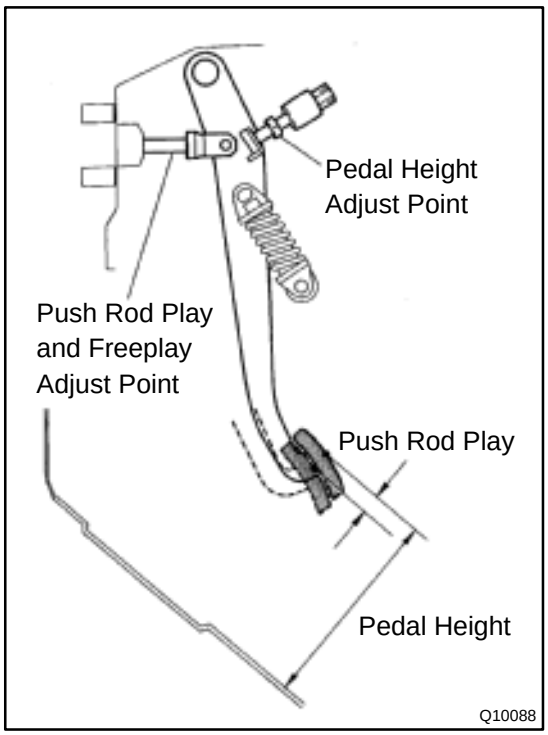
Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	See page
Clutch grabs/chatters	1. Engine mounting (Loosen)	–
	2. Clutch disc (Runout is excessive)	CL–17
	3. Clutch disc (Oily)	CL–17
	4. Clutch disc (Worn out)	CL–17
	5. Clutch disc torsion rubber (Damaged)	CL–17
	6. Clutch disc (Glazed)	CL–17
	7. Diaphragm spring (Out of tip alignment)	CL–19
Clutch pedal spongy	1. Clutch line (Air in line)	–
	2. Master cylinder cup (Damaged)	CL–4
	3. Release cylinder cup (Damaged)	CL–9
Clutch noisy	1. Release bearing (Worn, dirty, or damaged)	CL–19
	2. Clutch disc torsion rubber (Damaged)	CL–17
Clutch slips	1. Clutch pedal (Freeplay out of adjustment)	CL–2
	2. Clutch disc (Oily)	CL–17
	3. Clutch disc (Worn out)	CL–17
	4. Diaphragm spring (Damaged)	CL–17
	5. Pressure plate (Distortion)	CL–17
	6. Flywheel (Distortion)	–
Clutch does not disengage	1. Clutch pedal (Freeplay out of adjustment)	CL–2
	2. Clutch line (Air in line)	–
	3. Master cylinder cup (Damaged)	CL–4
	4. Release cylinder cup (Damaged)	CL–9
	5. Clutch disc (out of true)	CL–17
	6. Clutch disc (Runout is excessive)	CL–17
	7. Clutch disc (Lining broken)	CL–17
	8. Clutch disc (Dirty or burned)	CL–17
	9. Clutch disc (Oily)	CL–17
	10. Clutch disc (Lack of spline grease)	CL–19
	11. Diaphragm spring (Damaged)	CL–17
	12. Diaphragm spring (Out of tip alignment)	CL–19
	13. Pressure plate (Distortion)	CL–17

CLUTCH PEDAL

CL035–01

INSPECTION



1. CHECK THAT PEDAL HEIGHT IS CORRECT

Pedal height from asphalt sheet:
1MZ–FE: 161.8 – 171.8 mm (6.370 – 6.764 in.)
5S–FE: 156.8 – 166.8 mm (6.173 – 6.567 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.

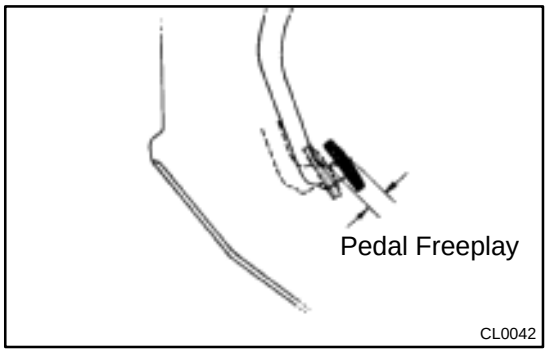
3. CHECK THAT PEDAL FREEPLAY AND PUSH ROD PLAY ARE CORRECT

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.)

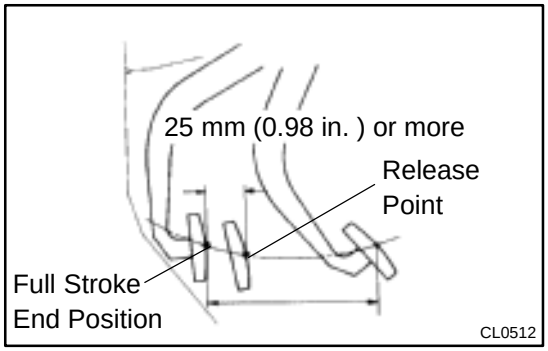
Gently push the pedal until the resistance begins to increase a little.

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

(a) Loosen the lock nut and turn the push rod until the free-play and push rod play are correct.
(b) Tighten the lock nut.
(c) After adjusting the pedal freeplay, check the pedal height.
(d) Connect the air duct and install the lower finish panel.



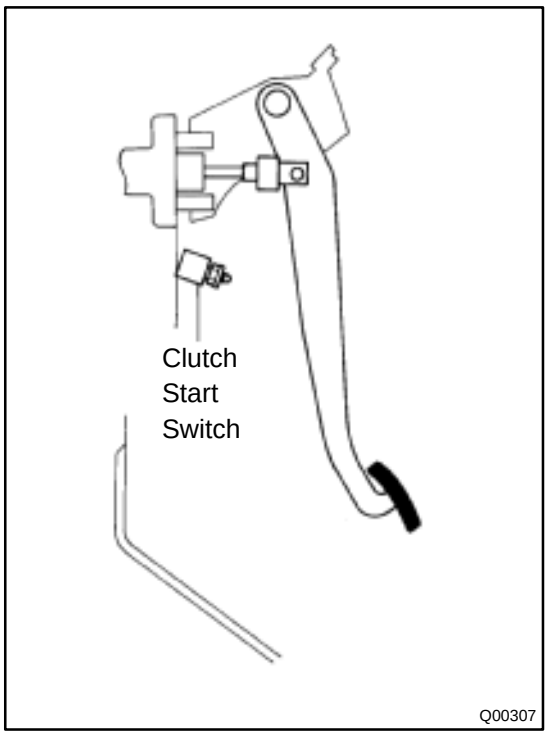
5. INSPECT CLUTCH RELEASE POINT

(a) Pull the parking brake lever and install wheel stopper.
(b) Start the engine and idle the engine.
(c) 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 not as specified, do the following operation.

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

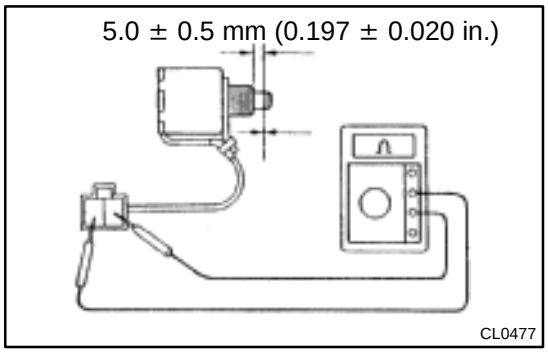


6. CHECK CLUTCH START SYSTEM

(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, replace the clutch start switch.



7. INSPECT CONTINUITY OF CLUTCH START SWITCH

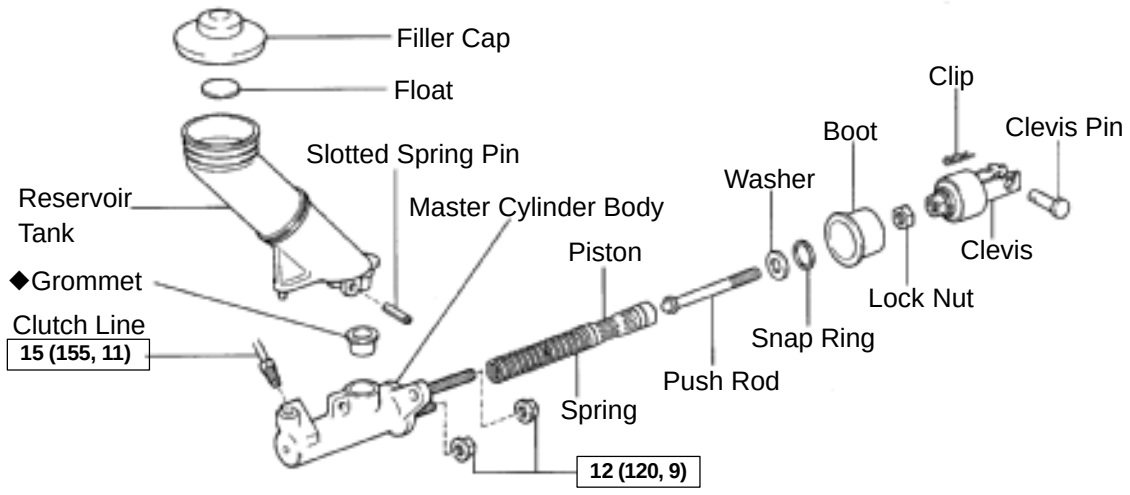
Check the continuity between terminals when the switch is ON and OFF.

Switch position	Condition
ON (pushed)	Continuity
OFF (free)	No continuity

CLUTCH MASTER CYLINDER

COMPONENTS

CL036–01

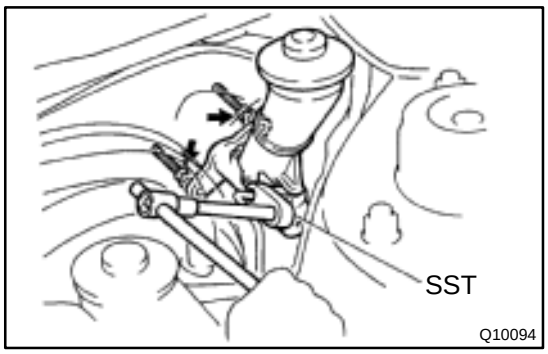


◆Non–reusable part

N·m (kgf·cm, ft·lbf): Specified torque

Q10085

CL037–01



REMOVAL

1. DRAW OUT FLUID WITH SYRINGE

2. DISCONNECT CLUTCH LINE

Using SST, disconnect the clutch line. Use a container to catch the fluid.

SST 09023–00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

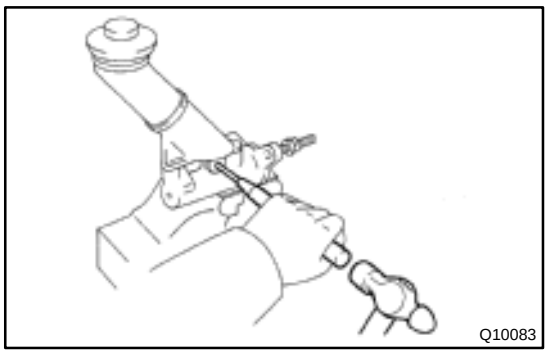
3. REMOVE CLIP AND CLEVIS PIN

4. REMOVE 2 MOUNTING NUTS AND PULL OUT MASTER CYLINDER

Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

CL038–01

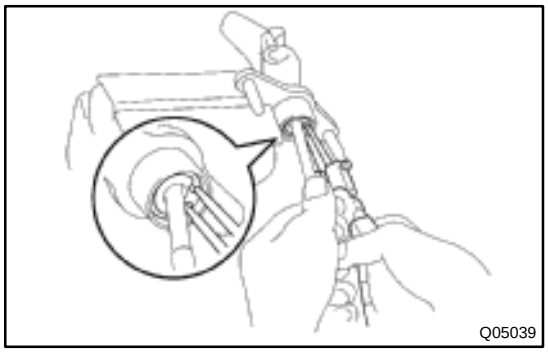
DISASSEMBLY



1. REMOVE RESERVOIR TANK

(a) Using a pin punch and hammer, drive out the slotted spring pin.

(b) Remove the reservoir tank and grommet.



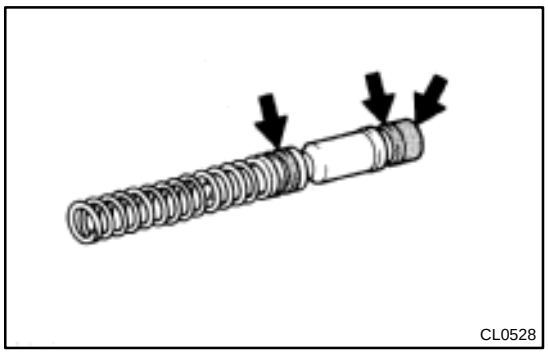
2. REMOVE PUSH ROD

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

3. REMOVE PISTON

CL039–01

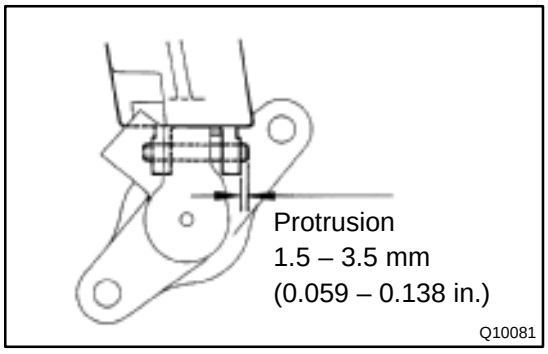
REASSEMBLY


CL0528

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

2. INSERT PISTON INTO CYLINDER

3. INSTALL PUSH ROD ASSEMBLY WITH SNAP RING



Q10081

4. INSTALL RESERVOIR TANK

(a) Install the reservoir tank and a new grommet.

(b) Using a pin punch and hammer, drive in the slotted spring pin.

CL03A–01

INSTALLATION

Installation is in the reverse order of removal (See page CL–5).

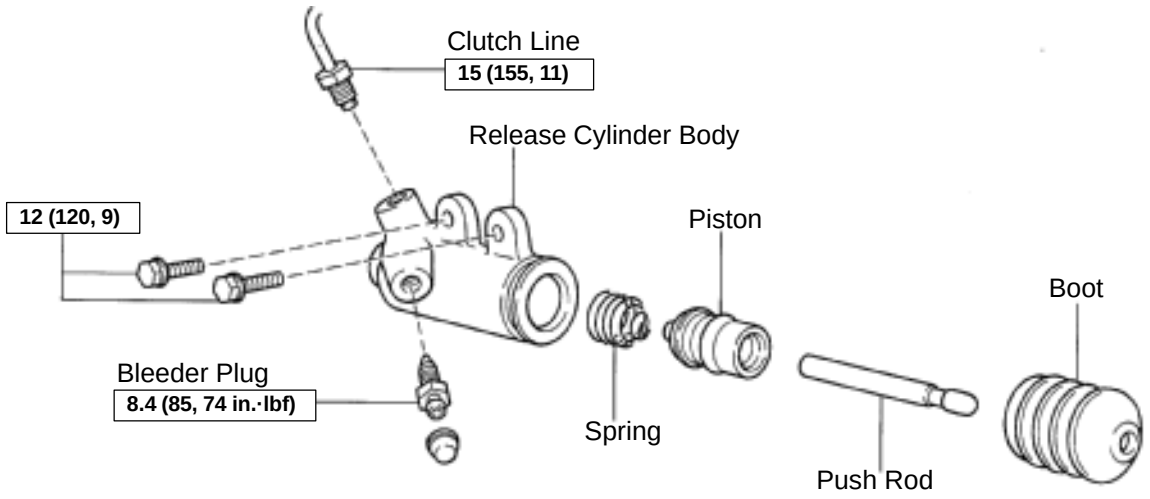
HINT:

After installation, bleed system and adjust clutch pedal (See page CL–2).

CLUTCH RELEASE CYLINDER

CL03B–01

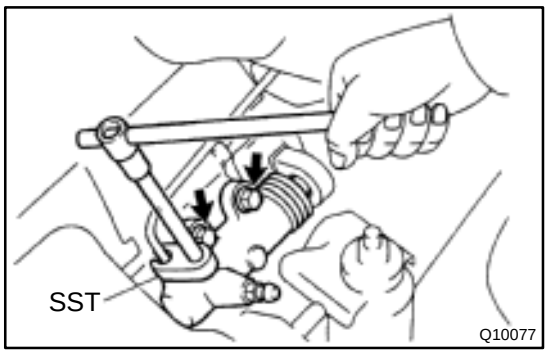
COMPONENTS



N·m (kgf·cm, ft·lbf) : Specified torque

Q10016

CL03C–01



REMOVAL

1. DISCONNECT CLUTCH LINE

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

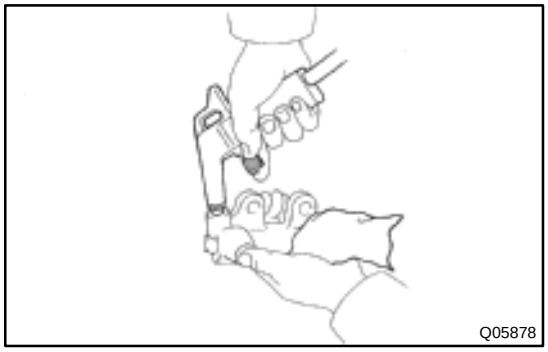
SST 09023–00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

2. REMOVE 2 BOLTS AND PULL OUT RELEASE CYLINDER

Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

CL03D–01


Q05878

DISASSEMBLY

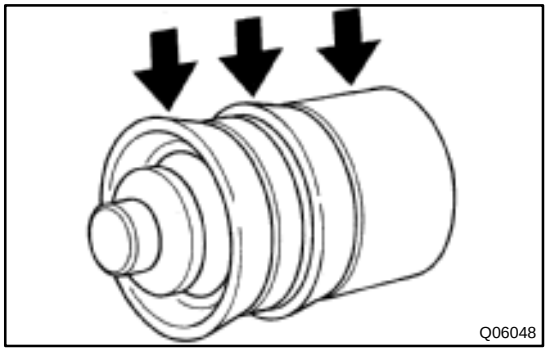
1. REMOVE BLEEDER PLUG

2. PULL OUT BOOT WITH PUSH ROD

3. REMOVE PISTON

Blow compressed air into the release cylinder and remove the piston with spring.

CL03E–01



REASSEMBLY

1. **COAT PISTON WITH LITHIUM SOAP BASE GLYCOL GREASE, AS SHOWN**
2. **INSTALL PISTON WITH SPRING INTO CYLINDER**
3. **INSTALL BOOT WITH PUSH ROD TO CYLINDER**
4. **INSTALL BLEEDER PLUG**
   Torque: 8.4 N·m (85 kgf·cm, 74 in.·lbf)

CL03F–01

INSTALLATION

Installation is in the reverse order of removal (See page CL–10).

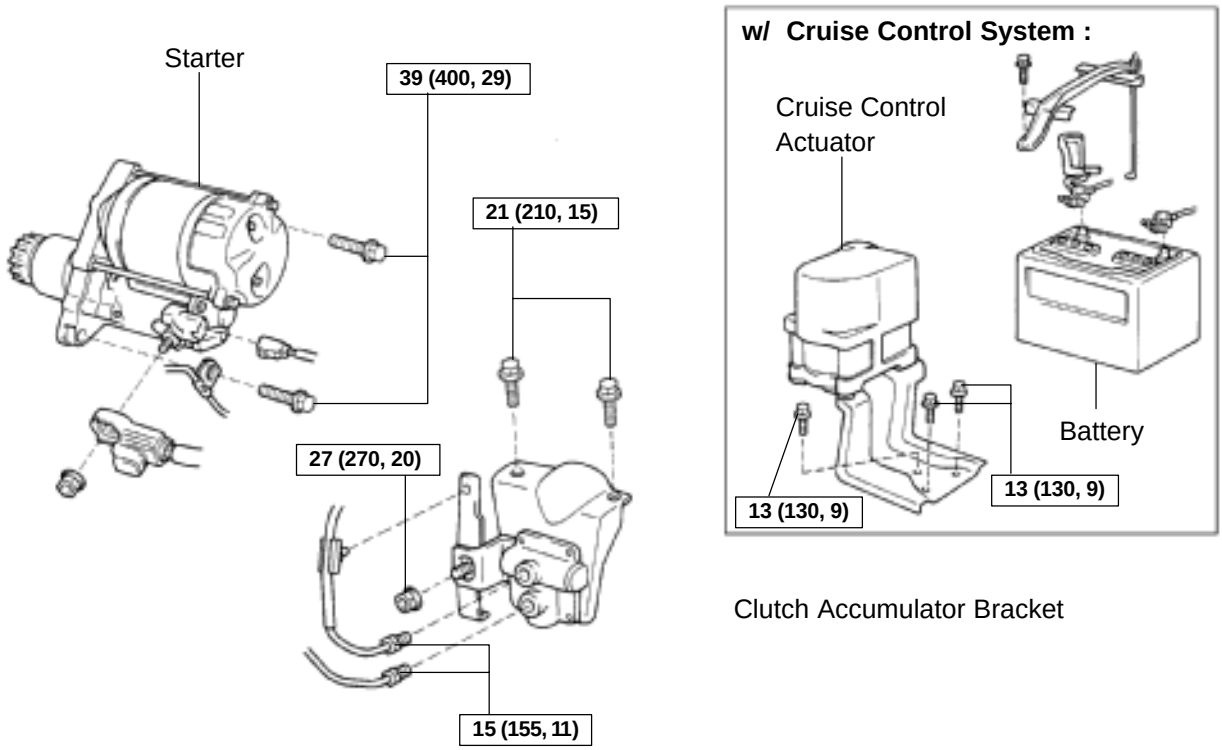
HINT:

After installation, bleed clutch system.

CLUTCH ACCUMULATOR (1MZ–FE)

CL03G–01

COMPONENTS

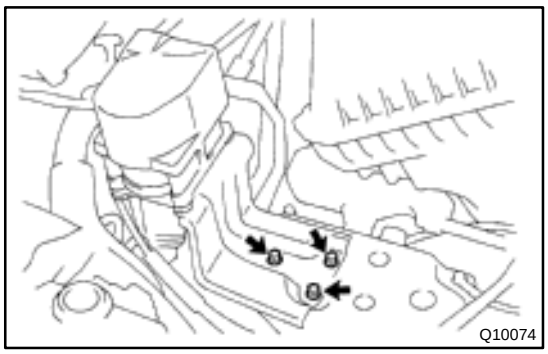


N·m (kgf·cm, ft·lbf) : Specified torque

Q10092

CL03H–01

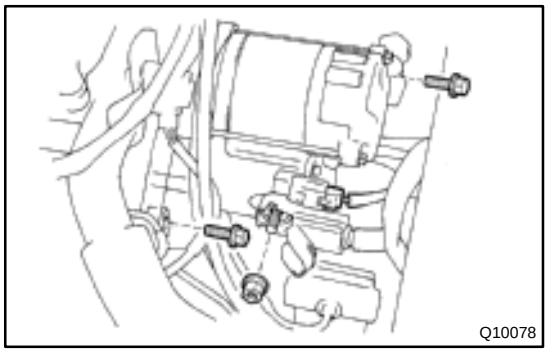
REMOVAL



1. w/ Cruise Control System:
REMOVE CRUISE CONTROL ACTUATOR

(a) Remove the battery.

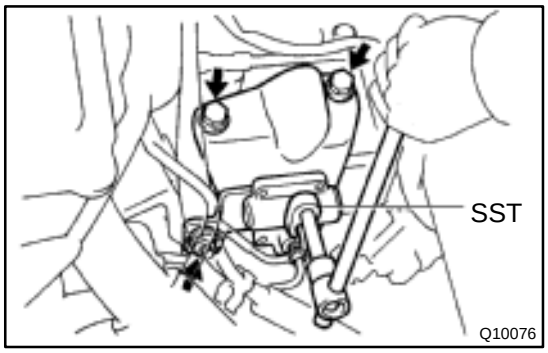
(b) Remove the 3 bolts and cruise control actuator with bracket.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)



2. REMOVE STARTER

(a) Remove the nut and disconnect the connectors.

(b) Remove the 2 bolt and clamp.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)



3. REMOVE CLUTCH ACCUMULATOR WITH BRACKET

(a) Using SST, disconnect the clutch lines from the clutch accumulator.
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
SST 09023–00100

(b) Remove the 2 bolts and nut.
Torque:
Bolt: 21 N·m (210 kgf·cm, 15 ft·lbf)
Nut: 27 N·m (270 kgf·cm, 20 ft·lbf)

CL03I–01

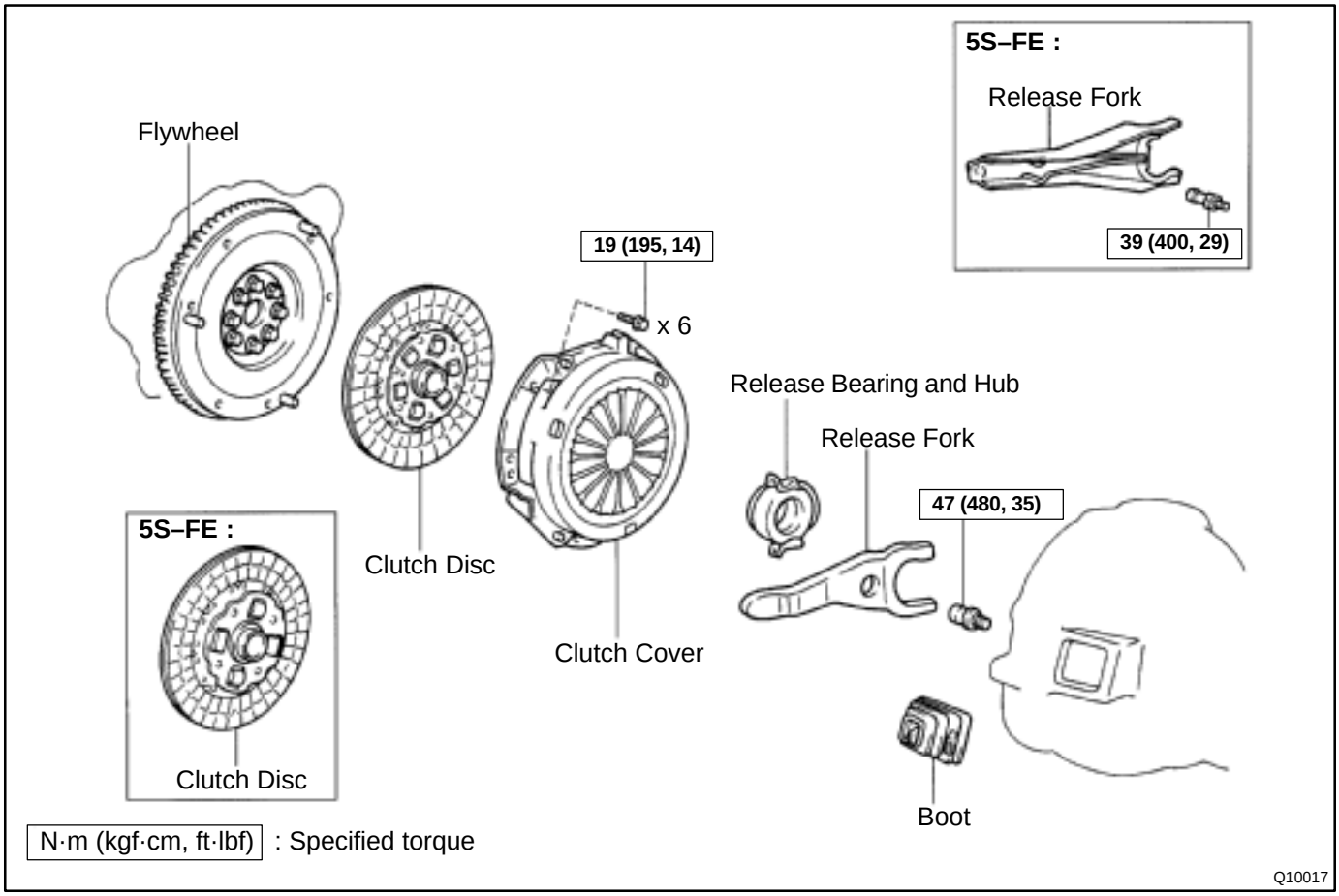
INSTALLATION

Installation is in the reverse order of removal (See page CL–15).

CLUTCH UNIT

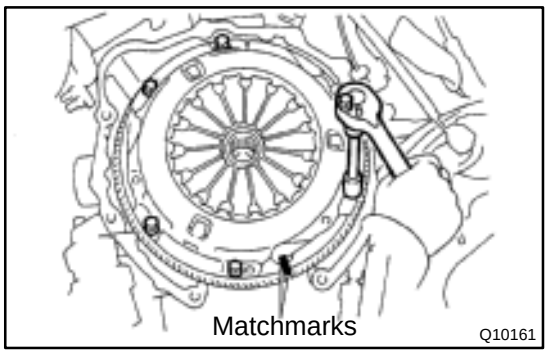
COMPONENTS

CL03J–01



CL03K–01

REMOVAL



1. REMOVE TRANSAXLE FROM ENGINE
(See page E153 MX–4, S51 MX–4)

2. REMOVE CLUTCH COVER AND DISC

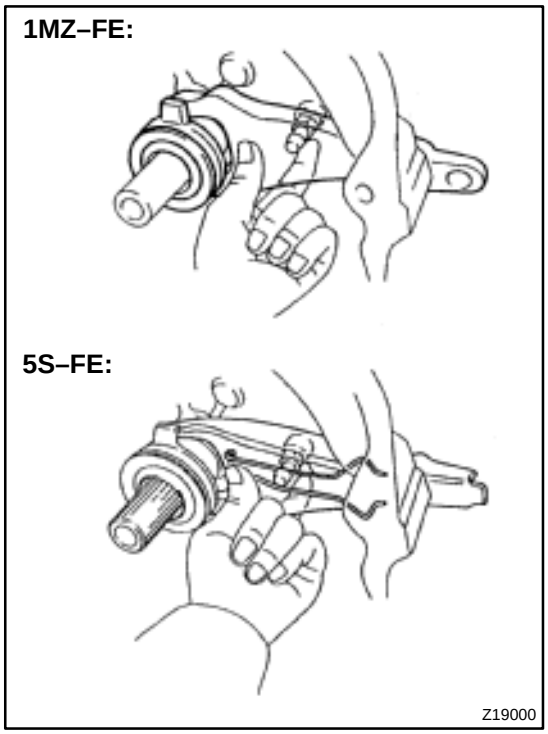
(a) Place matchmarks on the flywheel and clutch cover.

(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.



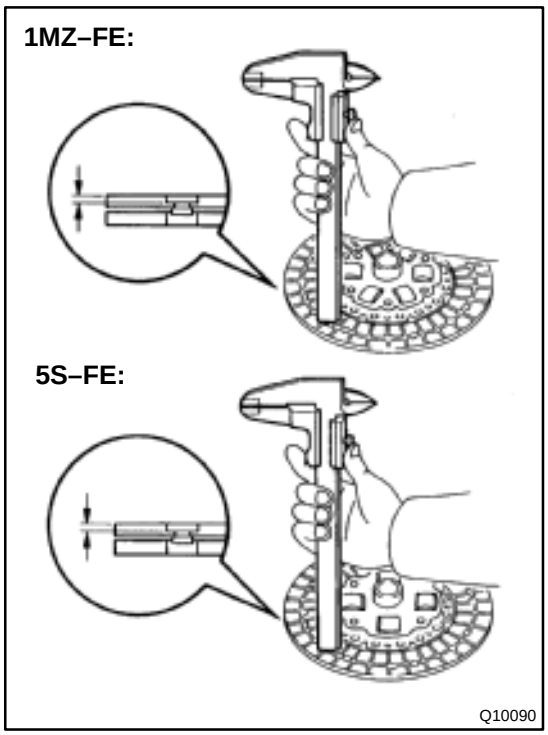
3. REMOVE RELEASE BEARING AND FORK FROM TRANSAXLE

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

(b) Remove the boot.

CL03L–01

INSPECTION

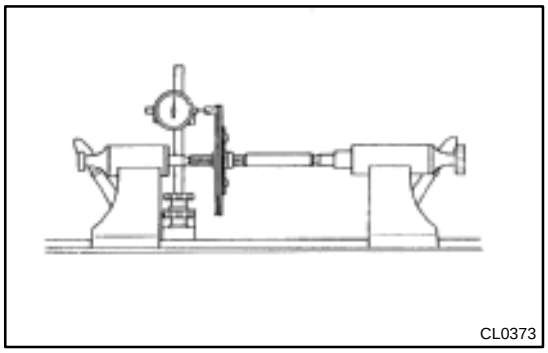


1. INSPECT CLUTCH DISC FOR WEAR OR DAMAGE

Using calipers, measure the rivet head depth.

Minimum rivet depth: 0.3 mm (0.012 in.)

If necessary, replace the clutch disc.

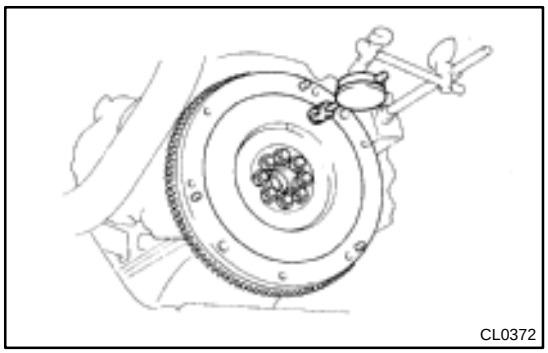


2. INSPECT CLUTCH DISC RUNOUT

Using a dial indicator, check the disc runout.

Maximum runout: 0.8 mm (0.031 in.)

If necessary, replace the clutch disc.

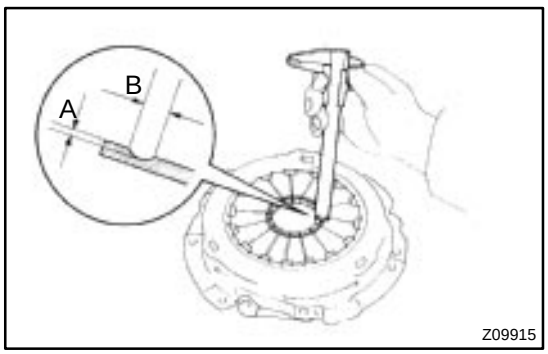


3. INSPECT FLYWHEEL RUNOUT

Using a dial indicator, check the flywheel runout.

Maximum runout: 0.1 mm (0.004 in.)

If necessary, replace the flywheel.



4. INSPECT DIAPHRAGM SPRING FOR WEAR

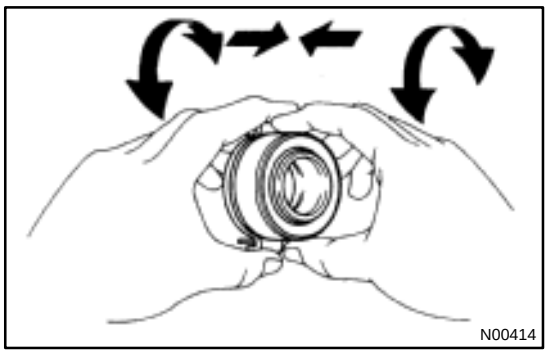
Using calipers, measure the diaphragm spring for depth and width of wear.

Maximum:

Depth A: 0.6 mm (0.024 in.)

Width B: 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.

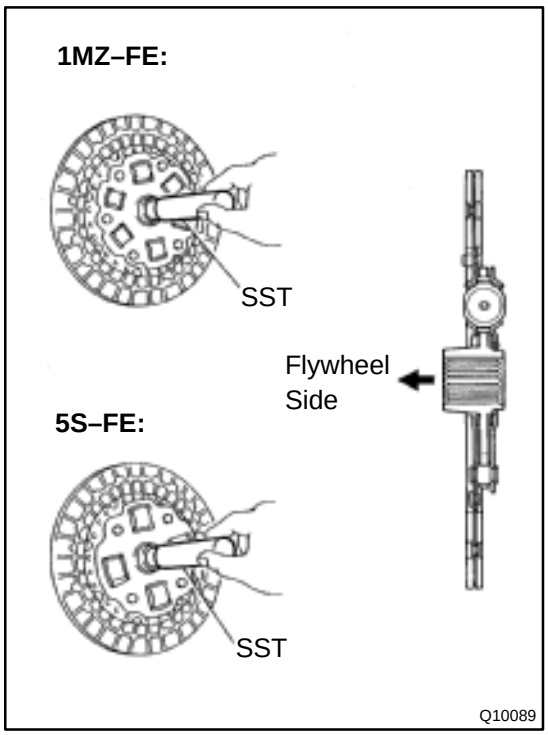
HINT:

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

If necessary, replace the bearing.

CL03M–02

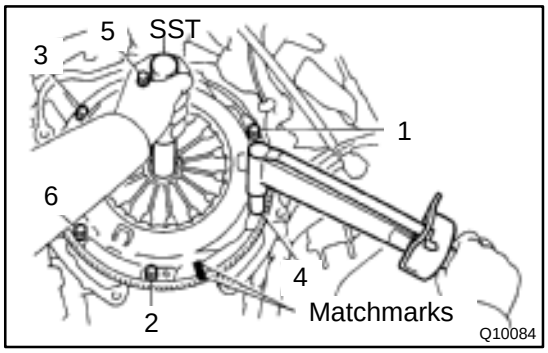
INSTALLATION



1. INSTALL CLUTCH DISC AND CLUTCH COVER ON FLYWHEEL

(a) 1MZ–FE:
Insert SST in the clutch disc, and then set them.
SST 09301–00220

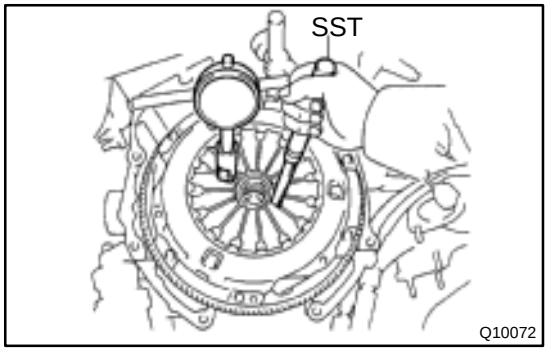
(b) 5S–FE:
Insert SST in the clutch disc, and then set them.
SST 09301–00210



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

(d) Torque the bolts on the clutch cover in the order shown.
Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

HINT:
Temporarily tighten the No.3 bolt.



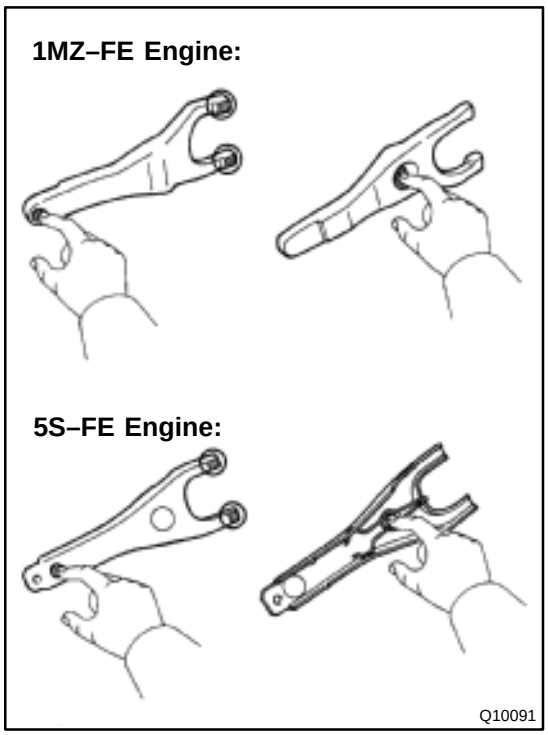
2. CHECK DIAPHRAGM SPRING TIP ALIGNMENT

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 NO.2)

(a) Apply release hub grease to these parts:
- Release fork and hub contact point
- Release fork and push rod contact point
- Release fork pivot point

(b) Apply clutch spline grease:
- Clutch disc spline

HINT:

Recommended grease part number 08887–01706 (100 g).

4. INSTALL RELEASE BEARING AND FORK TO TRANSAXLE

Install the bearing to the release fork, and then install them to the transaxle.

5. INSTALL TRANSAXLE TO ENGINE
(See page E153 MX–9, S51 MX–8)