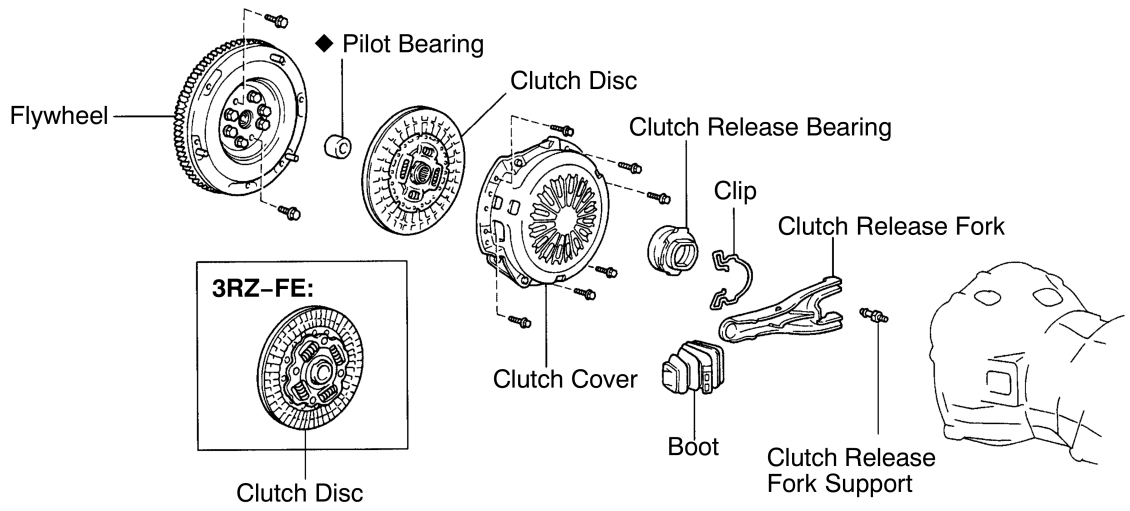
CLUTCH UNIT

COMPONENTS

CL02I–03

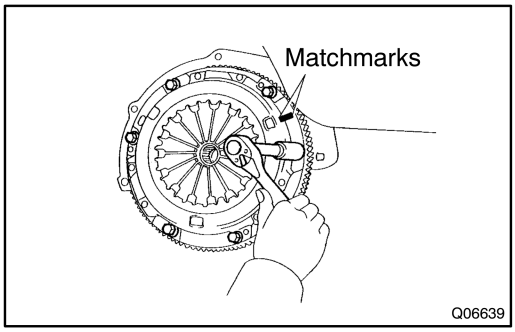


◆ Non–reusable part

Q08025

CL02J–01

REMOVAL



1. REMOVE TRANSMISSION FROM ENGINE

W59: See page MT–3
R150 (2WD): MT–3
R150F (4WD): MT–6

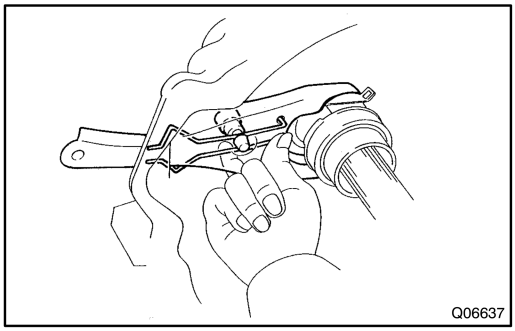
2. REMOVE CLUTCH COVER AND DISC

(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.

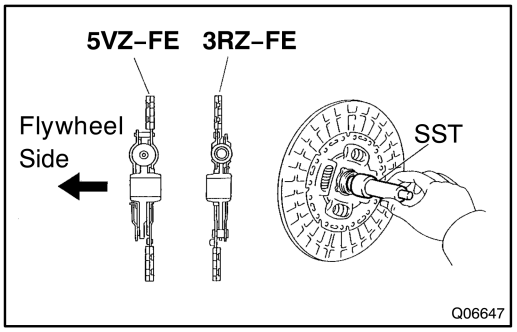


3. REMOVE BOOT, RELEASE BEARING AND FORK FROM TRANSMISSION

Remove the boot and release bearing together with the fork and then separate them.

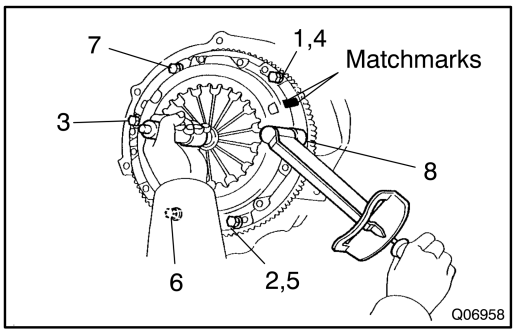
CL02L–01

INSTALLATION



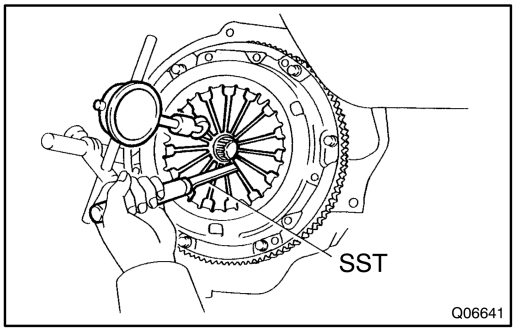
1. INSTALL CLUTCH DISC AND CLUTCH COVER ON FLYWHEEL

(a) Insert SST in the clutch disc, and then set them and the clutch cover in position.
SST 09301–00110



(b) Align the matchmarks on the clutch cover and flywheel.
(c) Torque the 6 bolts on the clutch cover in the order shown.
Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

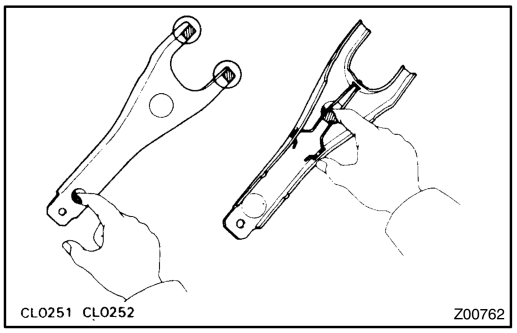
HINT:
Temporarily tighten the No.1 and No.2 bolts.



2. CHECK DIAPHRAGM SPRING TIP ALIGNMENT

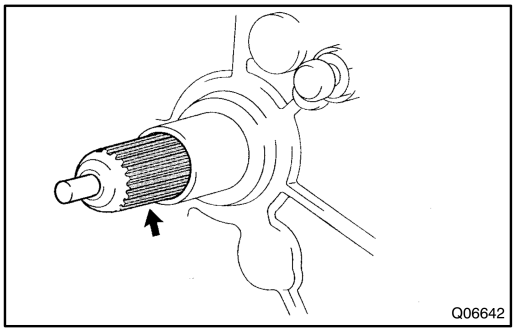
Using a dial indicator with roller instrument, check the diaphragm spring tip alignment.
Maximum non–alignment: 0.5 mm (0.020 in.)

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 NO.2)

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

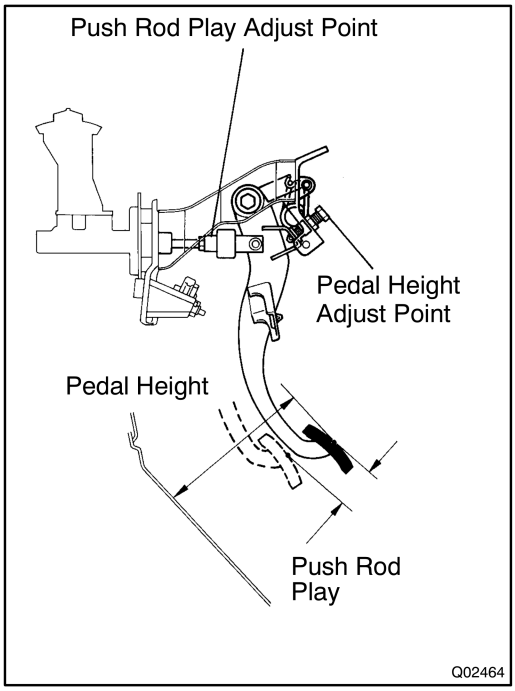


(b) Apply clutch spline grease.
- Clutch disc spline

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

4. INSTALL BOOT, RELEASE BEARING AND FORK TO TRANSMISSION

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



CLUTCH PEDAL

CL027-01

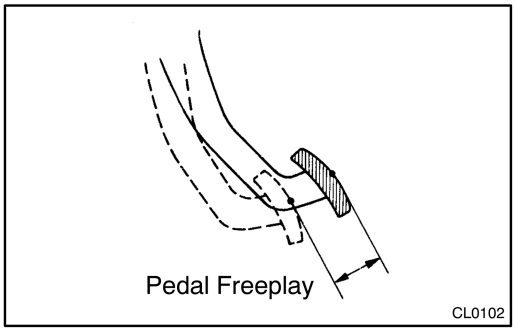
INSPECTION

1. CHECK THAT PEDAL HEIGHT IS CORRECT

Pedal height from floor panel:
154.6 – 164.6 mm (6.087 – 6.480 in.)
Pedal height from asphalt sheet:
Extra Cab (4WD): 150.1 – 160.1 mm (5.909 – 6.303 in.)
Others: 153.1 – 163.1 mm (6.027 – 6.421 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

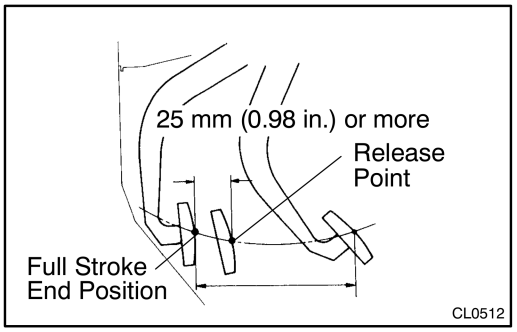
- Push in on the pedal until the beginning of clutch resistance is felt.
  Pedal freeplay: 5.0 – 15.0 mm (0.197 – 0.591 in.)
- Gently push on the pedal until the resistance begins to increase a little.
  Push rod play at pedal top:
  1.0 – 5.0 mm (0.039 – 0.197 in.)

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

(a) Loosen the lock nut and turn the push rod until the freeplay 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. CHECK CLUTCH RELEASE POINT

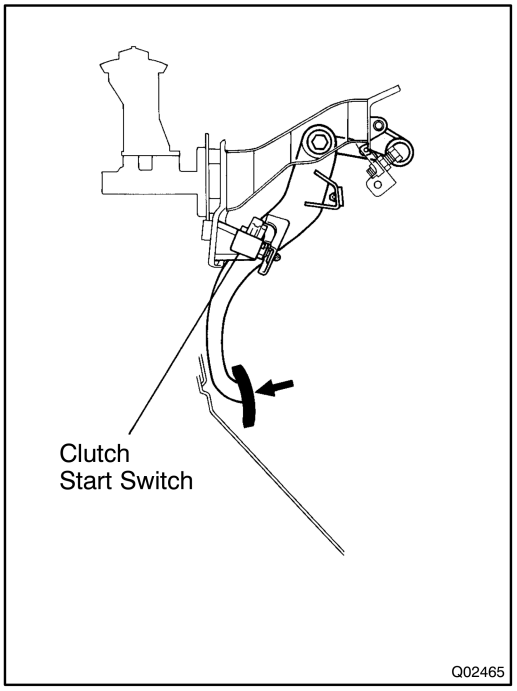
(a) Pull the parking brake lever and install wheel stopper.
(b) Start the engine and idle the engine.
(c) Without depressing the clutch pedal, slowly shift the shift lever into reverse position until the gears contact.



(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, perform the following operation.

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

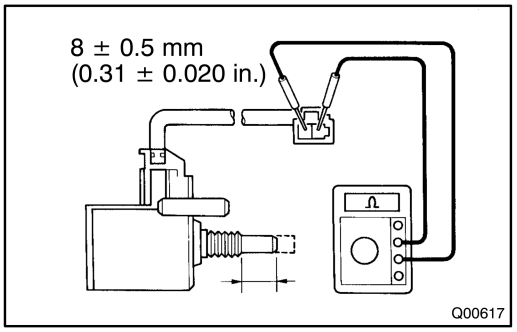


6. CHECK CLUTCH START SYSTEM

(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.

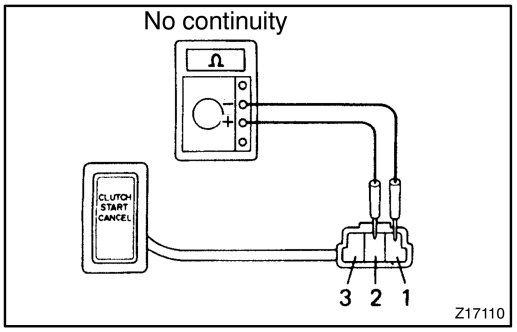


7. CHECK CONTINUITY OF CLUTCH START SWITCH

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

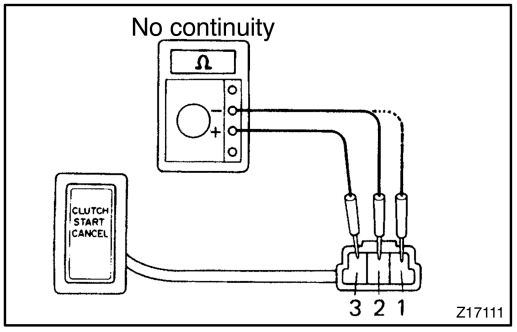
Switch position	Condition
ON (pushed)	Continuity
OFF (free)	No Continuity

If continuity is not as specified, replace the switch.



8. CHECK CONTINUITY OF CLUTCH START CANCEL SWITCH

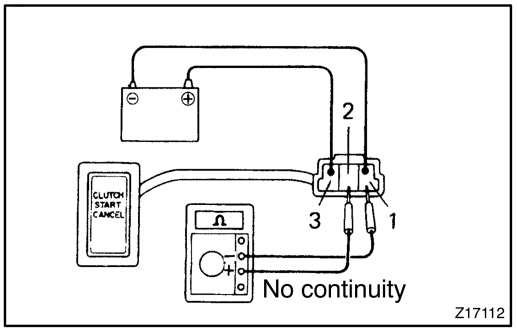
(a) Check that there is no continuity when connecting the positive (+) lead from the ohmmeter to terminal 2 and the negative (–) lead to terminal 1.



(b) Check that there is no continuity when connecting the positive (+) lead from the ohmmeter to terminal 3 and the negative (–) lead to terminal 1.

(c) Check the there is no continuity between terminals 2 and 3.

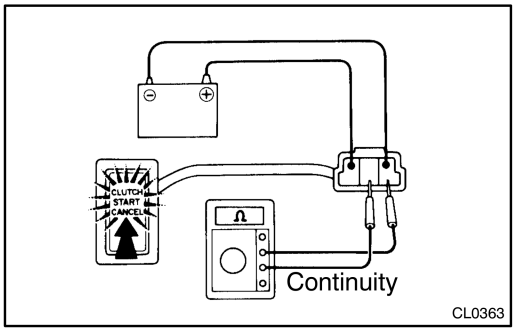
If continuity is not as specified, replace the clutch start cancel switch.



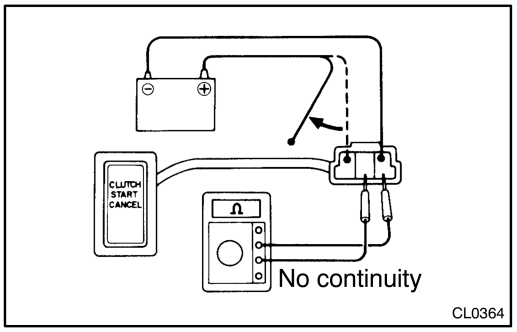
9. CHECK OPERATION OF CLUTCH START CANCEL SWITCH

(a) Connect positive (+) lead from the battery to terminal 3 and connect negative (–) lead to terminal 1.

(b) Check that there is no continuity when connecting the positive (+) lead from the ohmmeter to terminal 2 and the negative (–) lead to terminal 1.



(c) When pushing the switch, check that the indicator light connect on and there is continuity between terminal 1 and 2.



(d) Check that there is no continuity between terminals 1 and 2 when disconnect the battery lead.

If continuity is not as specified, replace the clutch start cancel switch.

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

CL026–01

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–15
	3. Clutch disc (Oily)	CL–15
	4. Clutch disc (Worn out)	CL–15
	5. Clutch disc (Damaged torsion rubber)	CL–15
	6. Clutch disc (Glazed)	CL–15
	7. Diaphragm spring (Out of tip alignment)	CL–19
Clutch pedal spongy	1. Clutch line (Air in line)	–
	2. Master cylinder cup (Damaged)	CL–5
	3. Release cylinder cup (Damaged)	CL–10
Clutch noisy	1. Release bearing (Worn, dirty or damaged)	CL–15
	2. Input shaft bearing (Worn, dirty or damaged)	–
	3. Clutch disc torsion rubber (Damaged)	CL–15
Clutch slips	1. Clutch pedal (Freeplay out of adjustment)	CL–2
	2. Clutch disc (Oily)	CL–15
	3. Clutch disc (Worn out)	CL–15
	4. Diaphragm spring (Damaged)	CL–15
	5. Pressure plate (Distortion)	CL–15
	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–5
	4. Release cylinder cup (Damaged)	CL–10
	5. Input shaft bearing (Worn, dirty or damaged)	–
	6. Clutch disc (Out of true)	CL–15
	7. Clutch disc (Runout is excessive)	CL–15
	8. Clutch disc (Lining broken)	CL–15
	9. Clutch disc (Dirty or burred)	CL–15
	10. Clutch disc (Oily)	CL–15
	11. Clutch disc (Lack of spline grease)	CL–19
	12. Diaphragm spring (Damaged)	CL–15
	13. Diaphragm spring (Out of tip alignment)	CL–19
	14. Pressure plate (Distortion)	CL–15