

## CLUTCH SYSTEM (for R155F)

### PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the ranked order of probability of each of the possible causes. Check each part in the order suggested. If necessary, replace these parts.

CL

| Symptom                   | Suspected area                                | See page |
|---------------------------|-----------------------------------------------|----------|
| Clutch grabs/chatters     | 1. Engine mounting (Loose)                    | -        |
|                           | 2. Clutch disc (Excessive runout)             | CL-36    |
|                           | 3. Clutch disc (Oily)                         | CL-36    |
|                           | 4. Clutch disc (Worn out)                     | CL-36    |
|                           | 5. Clutch disc torsion rubber (Damaged)       | CL-36    |
|                           | 6. Clutch disc (Glazed)                       | CL-36    |
|                           | 7. Diaphragm spring (Tip out of alignment)    | CL-36    |
| Clutch pedal spongy       | 1. Clutch line (Air in line)                  | -        |
|                           | 2. Release cylinder rubber (Damaged)          | CL-18    |
| Clutch noisy              | 1. Release bearing (Worn, dirty or damaged)   | CL-36    |
|                           | 2. Clutch disc torsion rubber (Damaged)       | CL-36    |
| Clutch slips              | 1. Clutch pedal (Free play out of adjustment) | CL-6     |
|                           | 2. Clutch disc (Oily)                         | CL-36    |
|                           | 3. Clutch disc (Worn out)                     | CL-36    |
|                           | 4. Diaphragm spring (Damaged)                 | CL-36    |
|                           | 5. Flywheel (Distorted)                       | CL-36    |
| Clutch does not disengage | 1. Clutch pedal (Free play out of adjustment) | CL-6     |
|                           | 2. Clutch line (Air in line)                  | -        |
|                           | 3. Release cylinder cup (Damaged)             | CL-18    |
|                           | 4. Clutch disc (Out of line)                  | CL-36    |
|                           | 5. Clutch disc (Runout excessive)             | CL-36    |
|                           | 6. Clutch disc (Lining broken)                | CL-36    |
|                           | 7. Clutch disc (Dirty or burned)              | CL-36    |
|                           | 8. Clutch disc (Oily)                         | CL-36    |
|                           | 9. Clutch disc (Lack of spline grease)        | CL-36    |

## CLUTCH SYSTEM (for RA60)

### PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the ranked order of probability of each of the possible causes. Check each part in the order suggested. If necessary, replace these parts.

CL

| Symptom                   | Suspected area                                | See page |
|---------------------------|-----------------------------------------------|----------|
| Clutch grabs/chatters     | 1. Engine mounting (Loose)                    | -        |
|                           | 2. Clutch disc (Excessive runout)             | CL-41    |
|                           | 3. Clutch disc (Oily)                         | CL-41    |
|                           | 4. Clutch disc (Worn out)                     | CL-41    |
|                           | 5. Clutch disc torsion rubber (Damaged)       | CL-41    |
|                           | 6. Clutch disc (Glazed)                       | CL-41    |
|                           | 7. Diaphragm spring (Tip out of alignment)    | CL-41    |
| Clutch pedal spongy       | 1. Clutch line (Air in line)                  | -        |
|                           | 2. Release cylinder rubber (Damaged)          | CL-21    |
| Clutch noisy              | 1. Release bearing (Worn, dirty or damaged)   | CL-41    |
|                           | 2. Clutch disc torsion rubber (Damaged)       | CL-41    |
| Clutch slips              | 1. Clutch pedal (Free play out of adjustment) | CL-6     |
|                           | 2. Clutch disc (Oily)                         | CL-41    |
|                           | 3. Clutch disc (Worn out)                     | CL-41    |
|                           | 4. Diaphragm spring (Damaged)                 | CL-41    |
|                           | 5. Flywheel (Distorted)                       | CL-41    |
| Clutch does not disengage | 1. Clutch pedal (Free play out of adjustment) | CL-6     |
|                           | 2. Clutch line (Air in line)                  | -        |
|                           | 3. Release cylinder cup (Damaged)             | CL-21    |
|                           | 4. Clutch disc (Out of line)                  | CL-41    |
|                           | 5. Clutch disc (Runout excessive)             | CL-41    |
|                           | 6. Clutch disc (Lining broken)                | CL-41    |
|                           | 7. Clutch disc (Dirty or burned)              | CL-41    |
|                           | 8. Clutch disc (Oily)                         | CL-41    |
|                           | 9. Clutch disc (Lack of spline grease)        | CL-41    |

## CLUTCH SYSTEM (for RA60F)

### PROBLEM SYMPTOMS TABLE

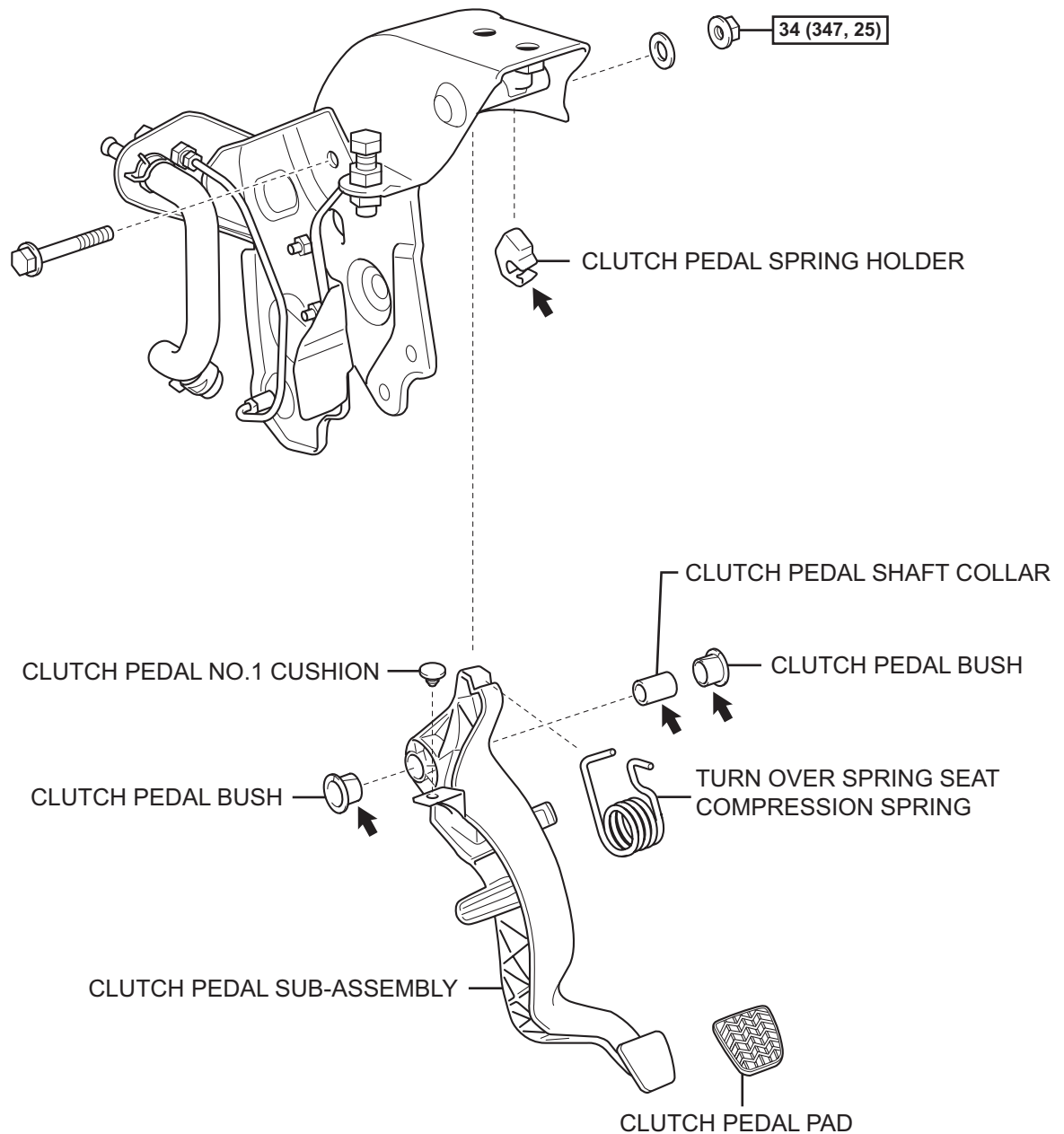
Use the table below to help you find the cause of the problem. The numbers indicate the ranked order of probability of each of the possible causes. Check each part in the order suggested. If necessary, replace these parts.

CL

| Symptom                   | Suspected area                                | See page |
|---------------------------|-----------------------------------------------|----------|
| Clutch grabs/chatters     | 1. Engine mounting (Loose)                    | -        |
|                           | 2. Clutch disc (Excessive runout)             | CL-45    |
|                           | 3. Clutch disc (Oily)                         | CL-45    |
|                           | 4. Clutch disc (Worn out)                     | CL-45    |
|                           | 5. Clutch disc torsion rubber (Damaged)       | CL-45    |
|                           | 6. Clutch disc (Glazed)                       | CL-45    |
|                           | 7. Diaphragm spring (Tip out of alignment)    | CL-45    |
| Clutch pedal spongy       | 1. Clutch line (Air in line)                  | -        |
|                           | 2. Release cylinder rubber (Damaged)          | CL-24    |
| Clutch noisy              | 1. Release bearing (Worn, dirty or damaged)   | CL-45    |
|                           | 2. Clutch disc torsion rubber (Damaged)       | CL-45    |
| Clutch slips              | 1. Clutch pedal (Free play out of adjustment) | CL-6     |
|                           | 2. Clutch disc (Oily)                         | CL-45    |
|                           | 3. Clutch disc (Worn out)                     | CL-45    |
|                           | 4. Diaphragm spring (Damaged)                 | CL-45    |
|                           | 5. Flywheel (Distorted)                       | CL-45    |
| Clutch does not disengage | 1. Clutch pedal (Free play out of adjustment) | CL-6     |
|                           | 2. Clutch line (Air in line)                  | -        |
|                           | 3. Release cylinder cup (Damaged)             | CL-24    |
|                           | 4. Clutch disc (Out of line)                  | CL-45    |
|                           | 5. Clutch disc (Runout excessive)             | CL-45    |
|                           | 6. Clutch disc (Lining broken)                | CL-45    |
|                           | 7. Clutch disc (Dirty or burned)              | CL-45    |
|                           | 8. Clutch disc (Oily)                         | CL-45    |
|                           | 9. Clutch disc (Lack of spline grease)        | CL-45    |

# CLUTCH PEDAL COMPONENTS

CL



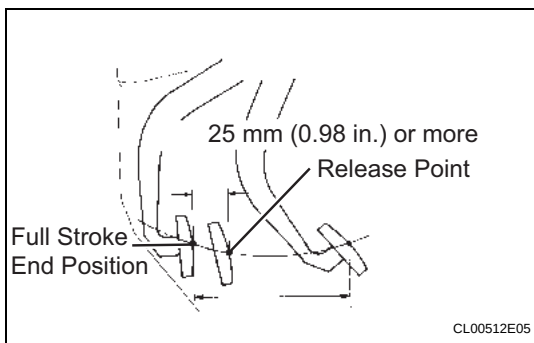
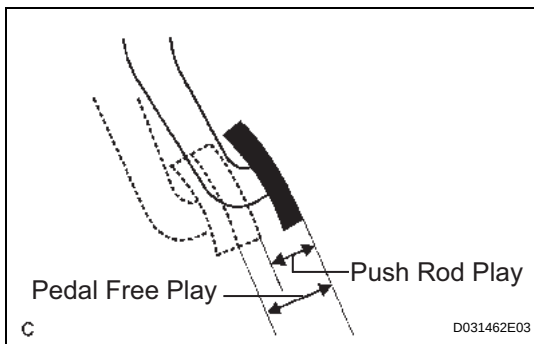
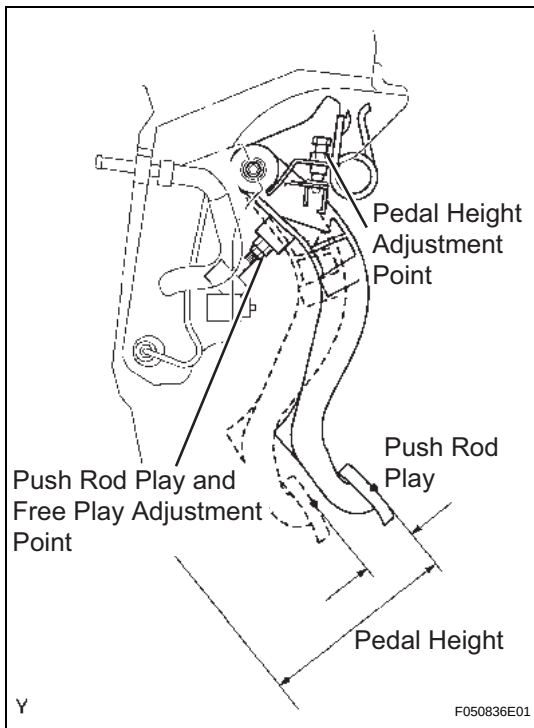
N\*m (kgf\*cm, ft\*lb) :Specified torque

← Apply MP grease

## ON-VEHICLE INSPECTION

### 1. INSPECT AND ADJUST CLUTCH PEDAL SUB-ASSEMBLY

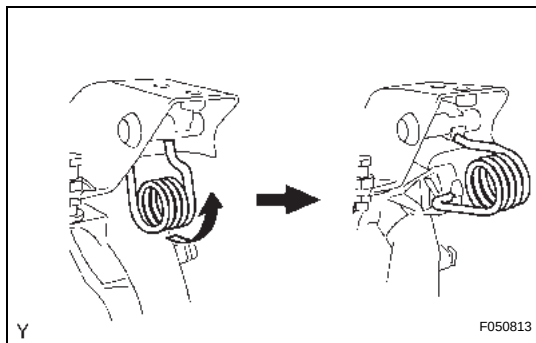
- (a) Lift the floor carpet.
- (b) Check that the pedal height is correct.  
**Pedal height from asphalt sheet:**  
**168.5 to 178.5 mm (6.634 to 7.028 in.)**
- (c) Adjust the pedal height.
  - (1) Loosen the lock nut and turn the stopper bolt until the height is correct. Tighten the lock nut.  
**Torque: 25 N\*m (250 kgf\*cm, 18 ft.\*lbf)**
- (d) Check that the pedal free play and push rod play are correct.
  - (1) Depress the pedal until the clutch resistance begins to be felt.  
**Pedal free play:**  
**5.0 to 15.0 mm (0.197 to 0.591 in.)**
  - (2) Gently depress the pedal until the resistance begins to increase a little.  
**Push rod play at pedal top:**  
**1.0 to 5.0 mm (0.039 to 0.197 in.)**
- (e) Adjust the pedal free play and push rod play.
  - (1) Loosen the lock nut and turn the push rod until the free play and push rod play are correct.
  - (2) Tighten the lock nut.
  - (3) After adjusting the pedal free play, check the pedal height.
  - (4) Connect the air duct and install the lower finish panel.
- (f) Check the clutch release point.
  - (1) Pull the parking brake lever and use wheel chocks.
  - (2) Start the engine and allow it to idle.
  - (3) Without depressing the clutch pedal, slowly move the shift lever into the reverse position until the gears engage.
  - (4) Gradually depress the clutch pedal and measure the stroke distance from the point that the gear noise stops (release point) up to the full stroke end position.  
**Standard distance:**  
**25 mm (0.984 in.) or more**  
**(From pedal stroke end position to release point)**  
If the distance is not as specified, perform the following operations.



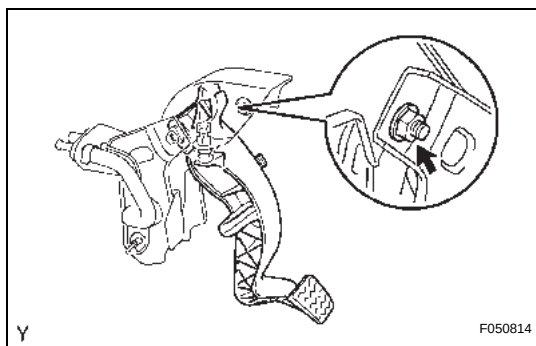
- Check the pedal height.
- Check the push rod play and pedal free play.
- Bleed the clutch line.
- Check the clutch cover assembly and disc assembly.

## REMOVAL

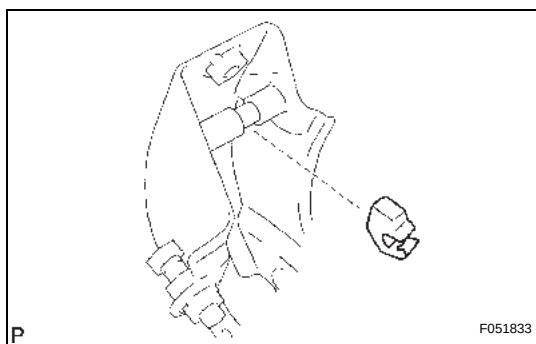
1. **REMOVE CLUTCH MASTER CYLINDER ASSEMBLY**  
(See page [CL-11](#))
2. **REMOVE TURN OVER SPRING SEAT COMPRESSION SPRING**
  - (a) Remove the compression spring.



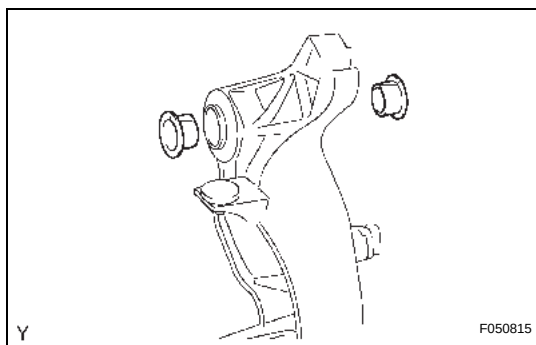
3. **REMOVE CLUTCH PEDAL SUB-ASSEMBLY**
  - (a) Remove the bolt and nut.
  - (b) Remove the clutch pedal from the clutch pedal support.

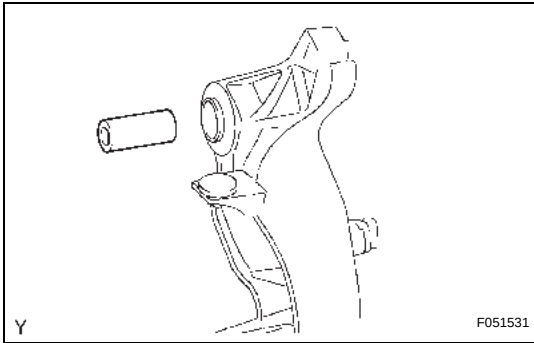


4. **REMOVE CLUTCH PEDAL SPRING HOLDER**
  - (a) Remove the clutch pedal spring holder from the clutch pedal support.

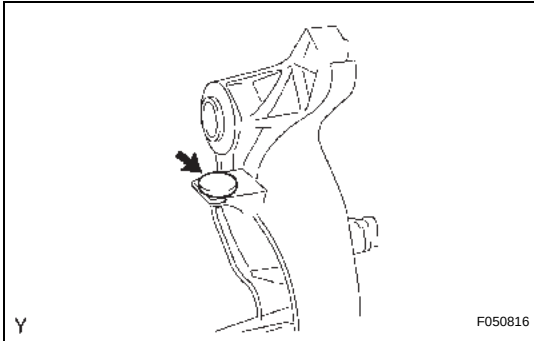


5. **REMOVE CLUTCH PEDAL PAD**
6. **REMOVE CLUTCH PEDAL BUSH**
  - (a) Remove the 2 bushes from the clutch pedal.



**7. REMOVE CLUTCH PEDAL SHAFT COLLAR**

- (a) Remove the clutch pedal shaft collar.

**8. REMOVE CLUTCH PEDAL NO.1 CUSHION**

- (a) Using needle-nose pliers, remove the No. 1 cushion from the clutch pedal.

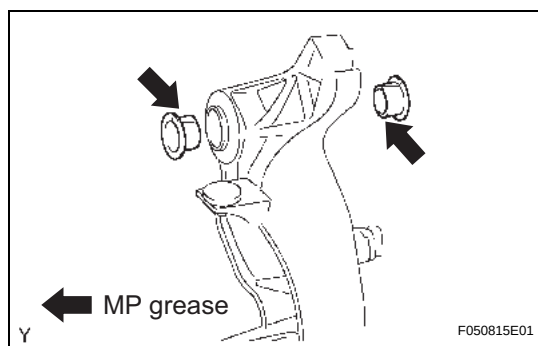
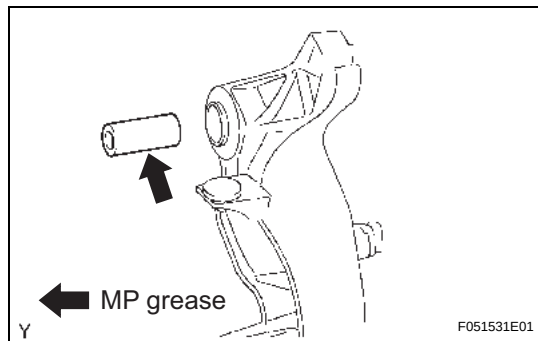
## INSTALLATION

### 1. INSTALL CLUTCH PEDAL NO.1 CUSHION

- (a) Install the No. 1 cushion onto the clutch pedal.

### 2. INSTALL CLUTCH PEDAL SHAFT COLLAR

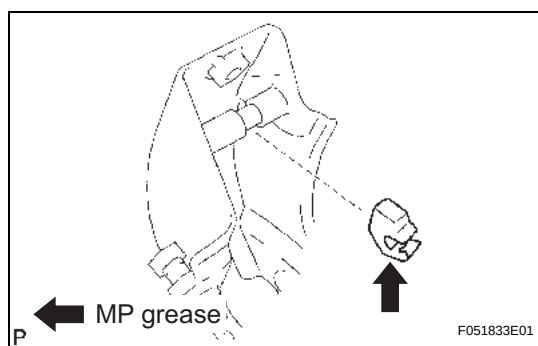
- (a) Apply MP grease to the clutch pedal shaft collar.  
(b) Install the clutch pedal shaft collar onto the clutch pedal.



### 3. INSTALL CLUTCH PEDAL BUSH

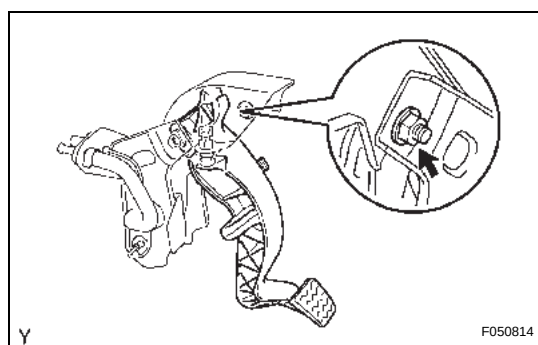
- (a) Apply MP grease to 2 new bushes.  
(b) Install the 2 bushes onto the clutch pedal.

### 4. INSTALL CLUTCH PEDAL PAD



### 5. INSTALL CLUTCH PEDAL SPRING HOLDER

- (a) Apply MP grease to the contact surface of the clutch pedal spring holder.  
(b) Install the clutch pedal spring holder.



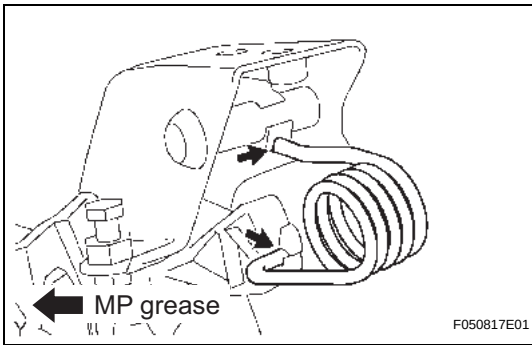
### 6. INSTALL CLUTCH PEDAL SUB-ASSEMBLY

- (a) Install the clutch pedal onto the clutch pedal support with the bolt and nut.

**Torque: 34 N\*m (347 kgf\*cm, 25 ft.\*lbf)**

**HINT:**

Install the bolt from the left side of the vehicle.

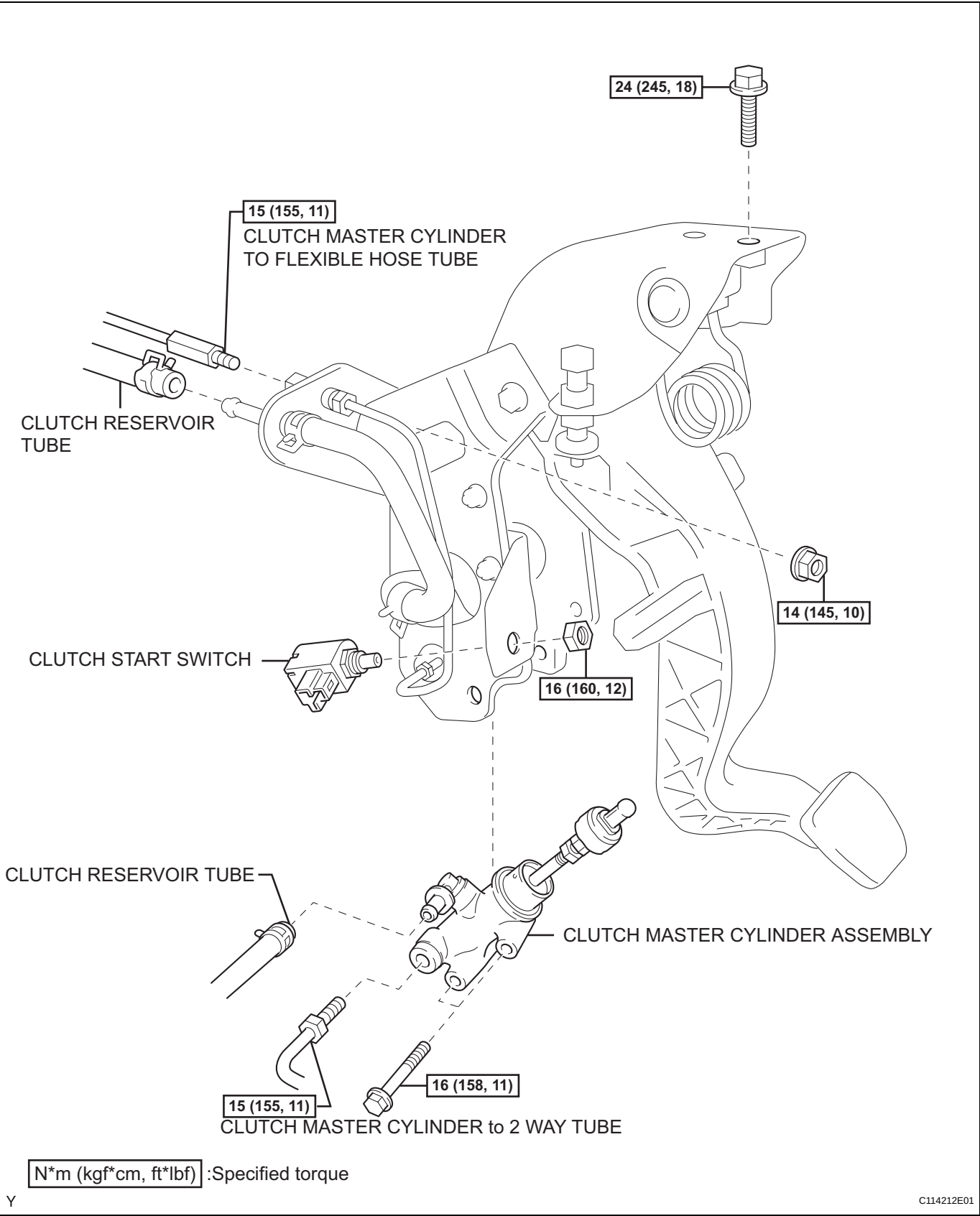


7. **INSTALL TURN OVER SPRING SEAT COMPRESSION SPRING**
  - (a) Apply MP grease to the contact surfaces of the spring holder, clutch pedal and spring.
  - (b) Install the spring onto the clutch pedal and spring holder.
8. **INSTALL CLUTCH MASTER CYLINDER ASSEMBLY**  
(See page [CL-12](#))
9. **BLEED BRAKE LINE (w/o VSC)**
10. **BLEED CLUTCH PIPE LINE**
11. **INSPECT AND ADJUST CLUTCH PEDAL SUB-ASSEMBLY** (See page [CL-6](#))
12. **CHECK BRAKE FLUID LEAKAGE (w/o VSC)**
13. **CHECK FOR CLUTCH FLUID LEAKAGE**
14. **CHECK FLUID LEVEL IN RESERVOIR**

# CLUTCH MASTER CYLINDER

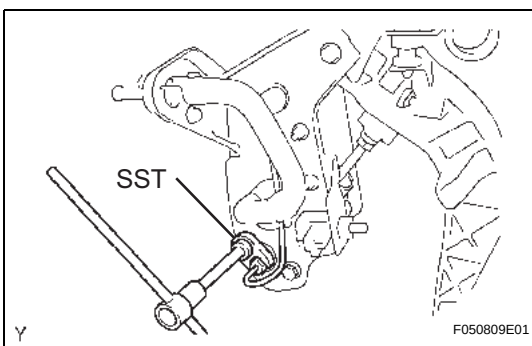
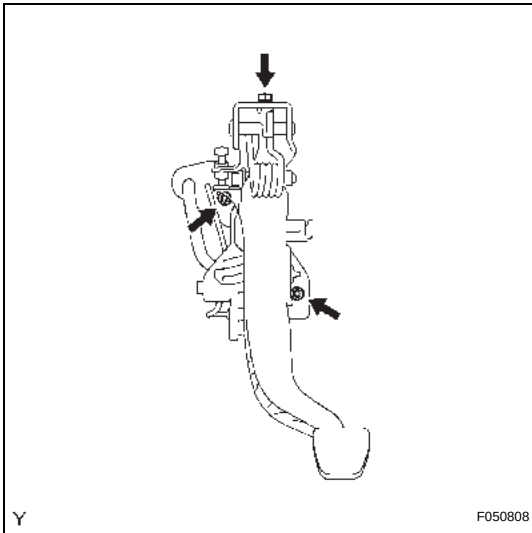
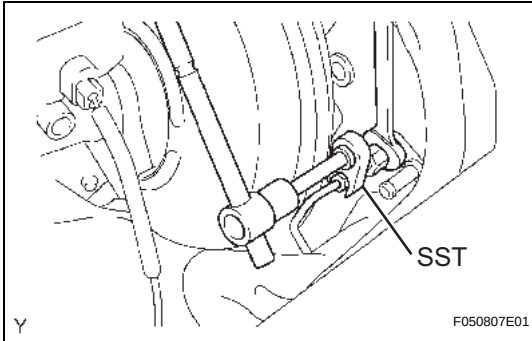
## COMPONENTS

CL



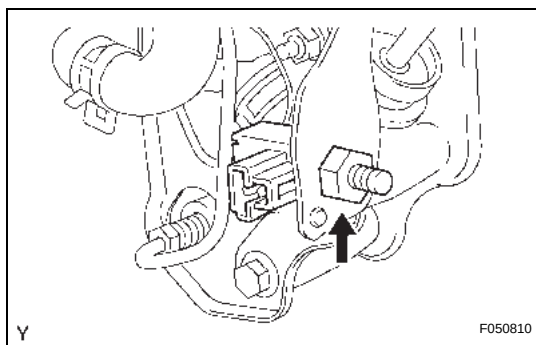
## REMOVAL

1. DRAIN CLUTCH FLUID
2. DISCONNECT CLUTCH RESERVOIR TUBE
3. DISCONNECT CLUTCH MASTER CYLINDER TO FLEXIBLE HOSE TUBE
  - (a) Using SST, disconnect the flexible hose tube.  
SST 09023-00101
4. REMOVE FRONT DOOR SCUFF PLATE LH
5. REMOVE COWL SIDE TRIM BOARD LH
6. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL (See page [IP-12](#))
7. SEPARATE DRIVER SIDE JUNCTION BLOCK
8. REMOVE CLUTCH PEDAL WITH CLUTCH MASTER CYLINDER
  - (a) Disconnect the clutch start switch connector.
  - (b) Remove the 2 nuts and bolt, then remove the clutch pedal with clutch master cylinder.
9. REMOVE CLUTCH MASTER CYLINDER ASSEMBLY
  - (a) Disconnect the clutch reservoir tube.

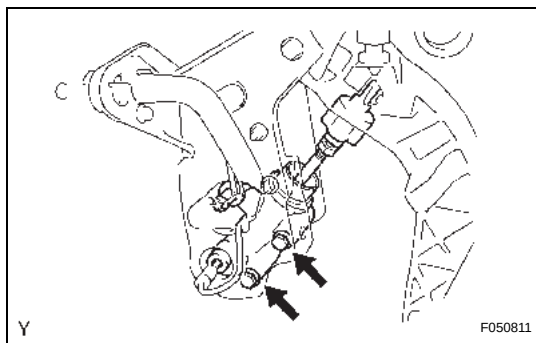


- (b) Using SST, disconnect the 2 way tube from the clutch master cylinder.  
SST 09023-00101

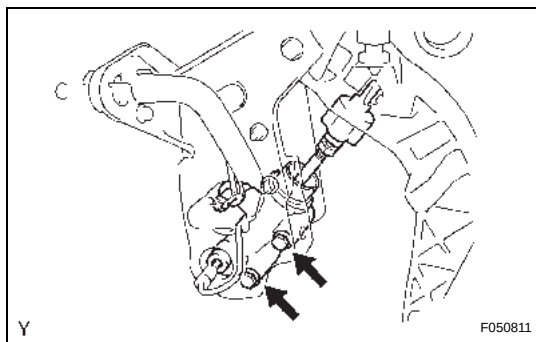
CL



- (c) Remove the nut and clutch start switch from the clutch pedal support.



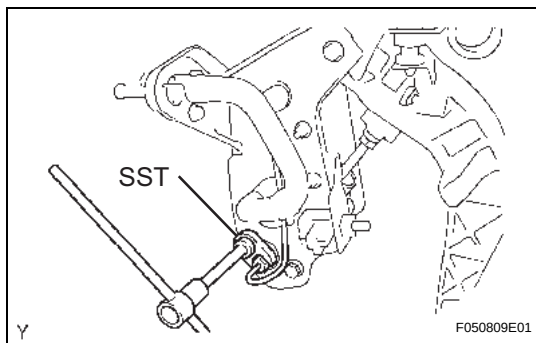
- (d) Remove the 2 bolts, then remove the clutch master cylinder.



## INSTALLATION

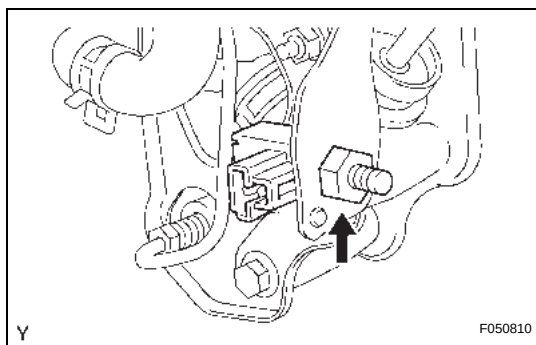
### 1. INSTALL CLUTCH MASTER CYLINDER ASSEMBLY

- (a) Install the clutch master cylinder with the 2 bolts.  
**Torque: 16 N\*m (158 kgf\*cm, 11 ft.\*lbf)**
- (b) Install the clutch start switch with the nut.  
**Torque: 16 N\*m (160 kgf\*cm, 12 ft.\*lbf)**

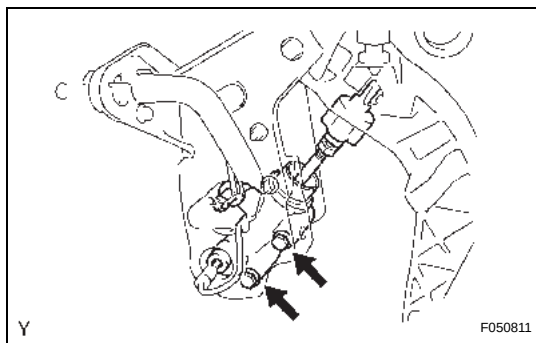


- (c) Using SST, connect the clutch master cylinder to 2 way tube.  
**SST 09023-00101**  
**Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)**
- (d) Connect the clutch reservoir tube.

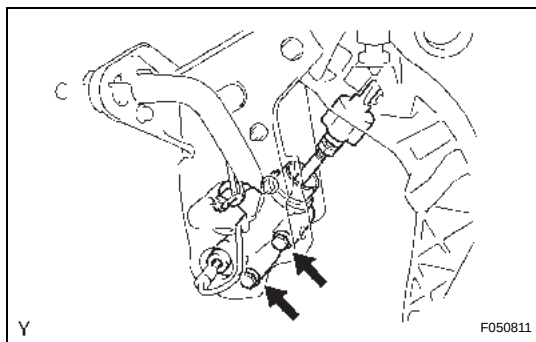
CL



- (c) Remove the nut and clutch start switch from the clutch pedal support.



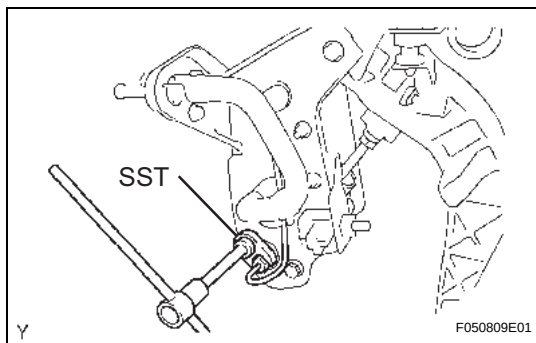
- (d) Remove the 2 bolts, then remove the clutch master cylinder.



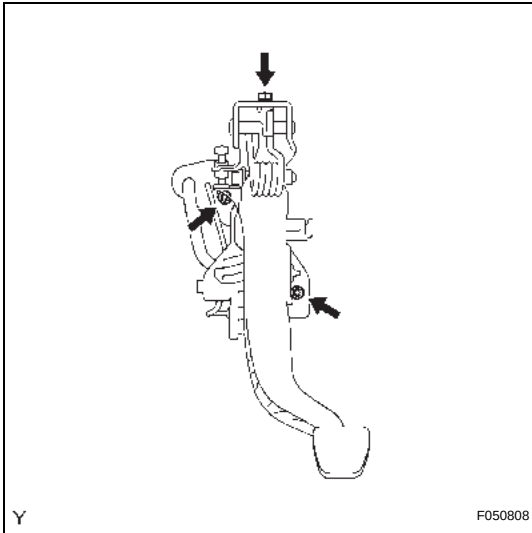
## INSTALLATION

### 1. INSTALL CLUTCH MASTER CYLINDER ASSEMBLY

- (a) Install the clutch master cylinder with the 2 bolts.  
**Torque: 16 N\*m (158 kgf\*cm, 11 ft.\*lbf)**
- (b) Install the clutch start switch with the nut.  
**Torque: 16 N\*m (160 kgf\*cm, 12 ft.\*lbf)**



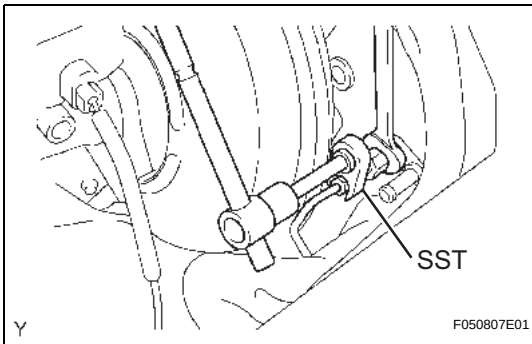
- (c) Using SST, connect the clutch master cylinder to 2 way tube.  
**SST 09023-00101**  
**Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)**
- (d) Connect the clutch reservoir tube.

**2. INSTALL CLUTCH PEDAL WITH CLUTCH MASTER CYLINDER**

- (a) Install the clutch pedal with clutch master cylinder onto the vehicle with the 2 nuts and bolt.

**Torque: 14 N\*m (145 kgf\*cm, 10 ft.\*lbf) for nut  
24 N\*m (245 kgf\*cm, 18 ft.\*lbf) for bolt**

- (b) Connect the clutch start switch connector.

**3. CONNECT DRIVER SIDE JUNCTION BLOCK****4. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL (See page [IP-22](#))****5. INSTALL COWL SIDE TRIM BOARD LH****6. INSTALL FRONT DOOR SCUFF PLATE LH****7. CONNECT CLUTCH MASTER CYLINDER TO FLEXIBLE HOSE TUBE**

- (a) Using SST, connect the flexible hose tube.

**SST 09023-00101**

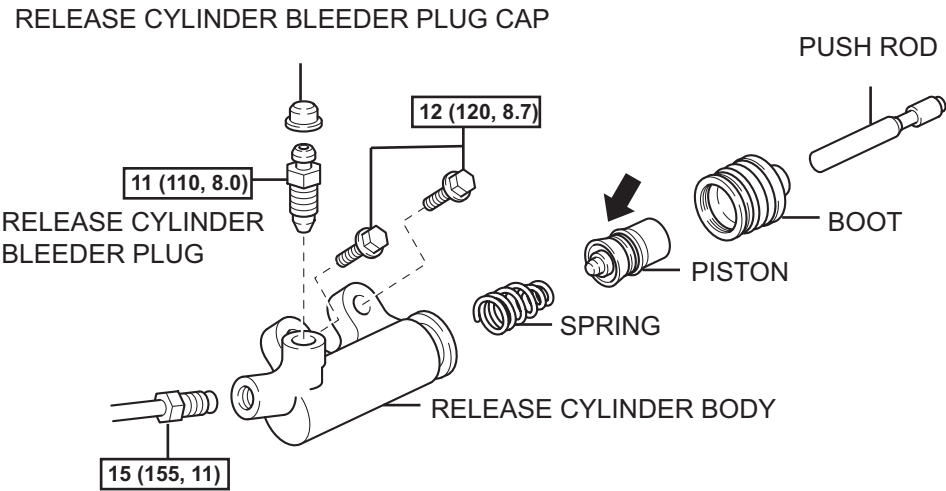
**Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)**

**8. CONNECT CLUTCH RESERVOIR TUBE****9. BLEED BRAKE LINE (w/o VSC)****10. BLEED CLUTCH PIPE LINE****11. INSPECT AND ADJUST CLUTCH PEDAL SUB-ASSEMBLY (See page [CL-6](#))****12. CHECK BRAKE FLUID LEAKAGE (w/o VSC)****13. CHECK FOR CLUTCH FLUID LEAKAGE****14. CHECK FLUID LEVEL IN RESERVOIR**

# CLUTCH RELEASE CYLINDER (for R155)

## COMPONENTS

CL



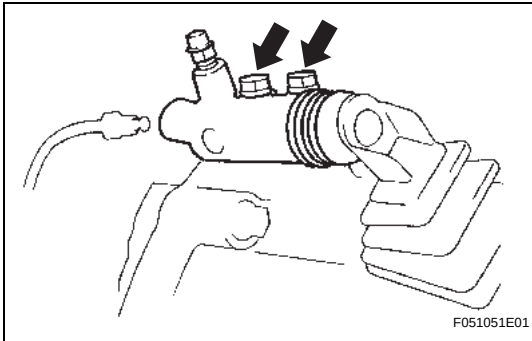
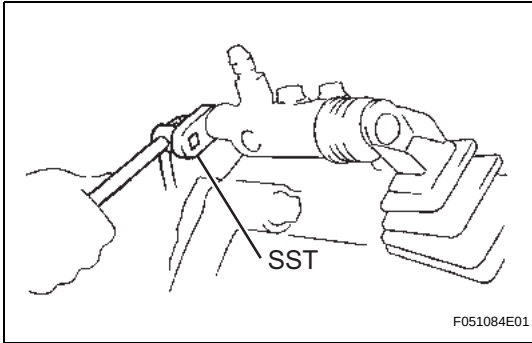
N\*m (kgf\*cm, ft\*lbf) :Specified torque

← Lithium soap base glycol grease

## REMOVAL

1. DRAIN CLUTCH FLUID
2. DISCONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE

(a) Using SST, disconnect the flexible hose tube.  
SST 09023-00101



3. REMOVE CLUTCH RELEASE CYLINDER ASSEMBLY

(a) Remove the 2 bolts and pull out the clutch release cylinder.

## DISASSEMBLY

### 1. REMOVE CLUTCH RELEASE CYLINDER KIT

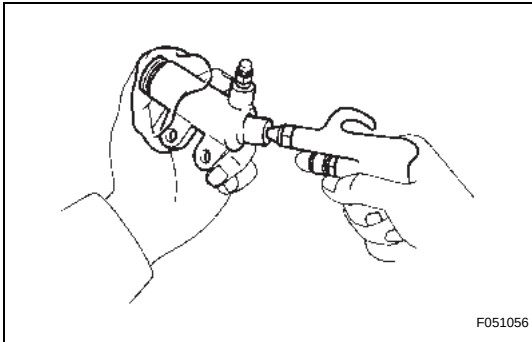
- (a) Remove the boot from the cylinder body.
- (b) Remove the push rod from the cylinder body.
- (c) Using compressed air, remove the piston together with the spring from the cylinder.

**NOTICE:**

**Be careful not to damage the inside of the cylinder body.**

- (d) Remove the bleeder plug cap from the bleeder plug.

### 2. REMOVE RELEASE CYLINDER BLEEDER PLUG



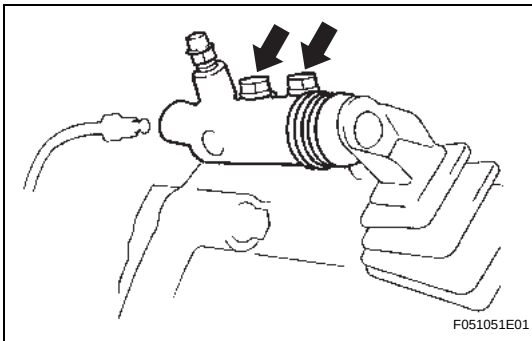
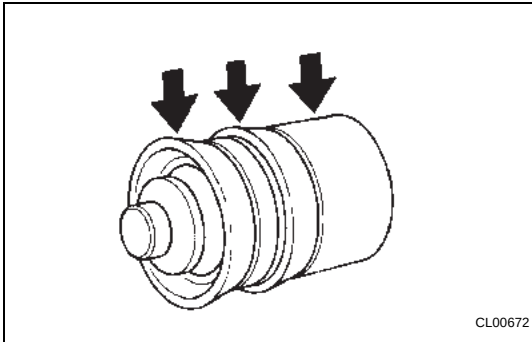
## REASSEMBLY

1. **INSTALL RELEASE CYLINDER BLEEDER PLUG**  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)
2. **INSTALL CLUTCH RELEASE CYLINDER KIT**
  - (a) Install the bleeder plug cap onto the bleeder plug.
  - (b) Install the spring onto the cylinder body.
  - (c) Apply lithium soap base glycol grease to the portions shown in the illustration.
  - (d) Install the piston onto the cylinder body.

**NOTICE:**

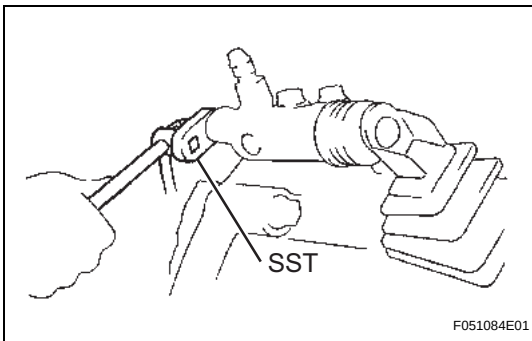
**Be careful not to damage the inside of the cylinder body.**

- (e) Install the push rod into the cylinder body.
- (f) Install the boot onto the cylinder body.



## INSTALLATION

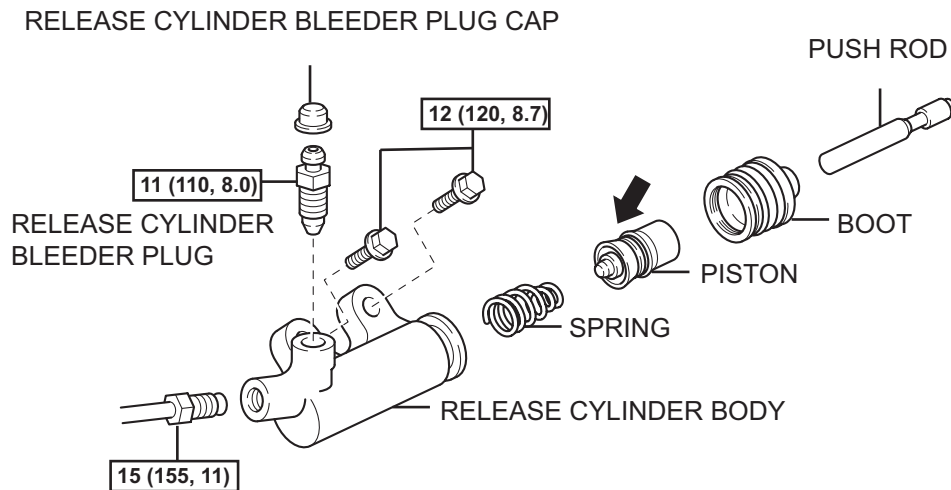
1. **INSTALL CLUTCH RELEASE CYLINDER ASSEMBLY**
  - (a) Install the clutch release cylinder with the 2 bolts.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)



2. **CONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE**
  - (a) Using SST, connect the flexible hose tube.  
**SST 09023-00101**  
Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)
3. **BLEED CLUTCH PIPE LINE**
  - (a) Fill the brake reservoir tank with brake fluid and bleed the clutch system.  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)
4. **CHECK FOR CLUTCH FLUID LEAKAGE**

# CLUTCH RELEASE CYLINDER (for R155F)

## COMPONENTS



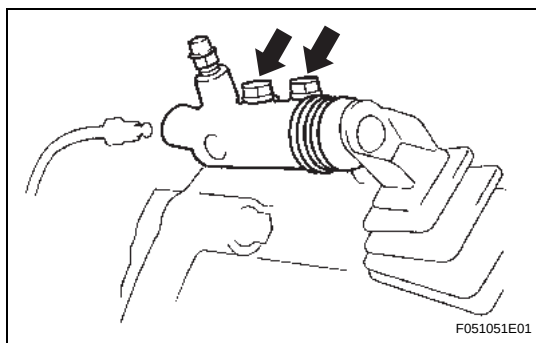
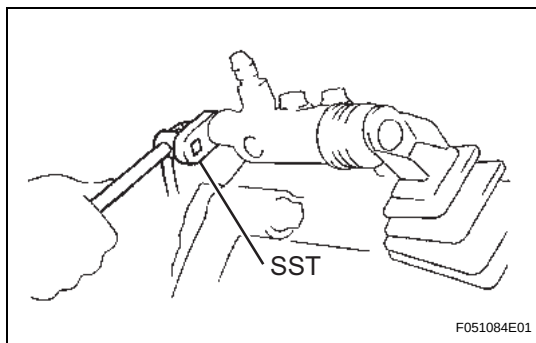
CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE

$\boxed{\text{N}\cdot\text{m (kgf}\cdot\text{cm, ft}\cdot\text{lbf)}}$  :Specified torque

 Lithium soap base glycol grease

## REMOVAL

1. DRAIN CLUTCH FLUID
2. DISCONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE
  - (a) Using SST, disconnect the flexible hose tube.  
**SST 09023-00101**



3. REMOVE CLUTCH RELEASE CYLINDER ASSEMBLY
  - (a) Remove the 2 bolts and pull out the clutch release cylinder.

## DISASSEMBLY

### 1. REMOVE CLUTCH RELEASE CYLINDER KIT

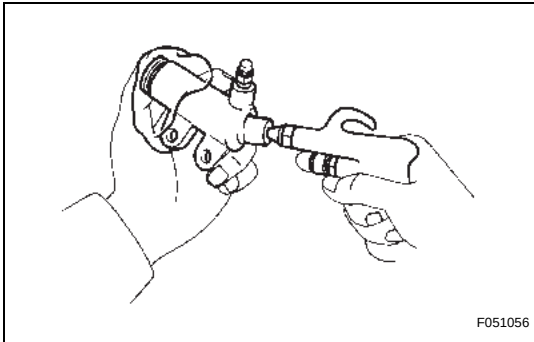
- (a) Remove the boot from the cylinder body.
- (b) Remove the push rod from the cylinder body.
- (c) Using compressed air, remove the piston together with the spring from the cylinder.

**NOTICE:**

**Be careful not to damage the inside of the cylinder body.**

- (d) Remove the bleeder plug cap from the bleeder plug.

### 2. REMOVE RELEASE CYLINDER BLEEDER PLUG

**CL**

CL

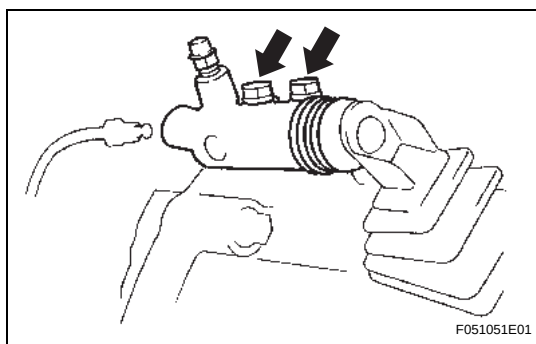
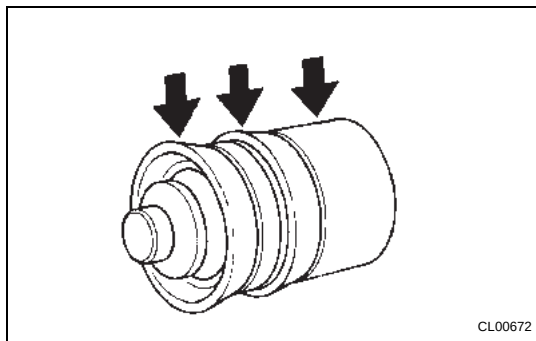
## REASSEMBLY

1. **INSTALL RELEASE CYLINDER BLEEDER PLUG**  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)
2. **INSTALL CLUTCH RELEASE CYLINDER KIT**
  - (a) Install the bleeder plug cap onto the bleeder plug.
  - (b) Install the spring onto the cylinder body.
  - (c) Apply lithium soap base glycol grease to the portions shown in the illustration.
  - (d) Install the piston onto the cylinder body.

**NOTICE:**

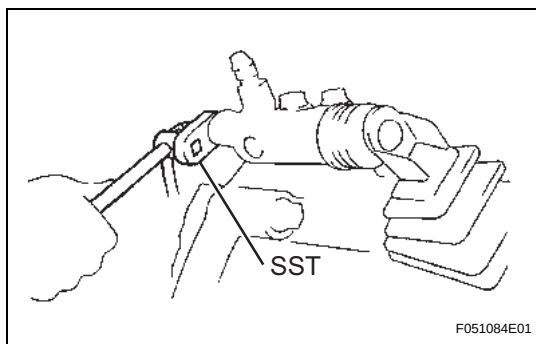
**Be careful not to damage the inside of the cylinder body.**

- (e) Install the push rod into the cylinder body.
- (f) Install the boot onto the cylinder body.



## INSTALLATION

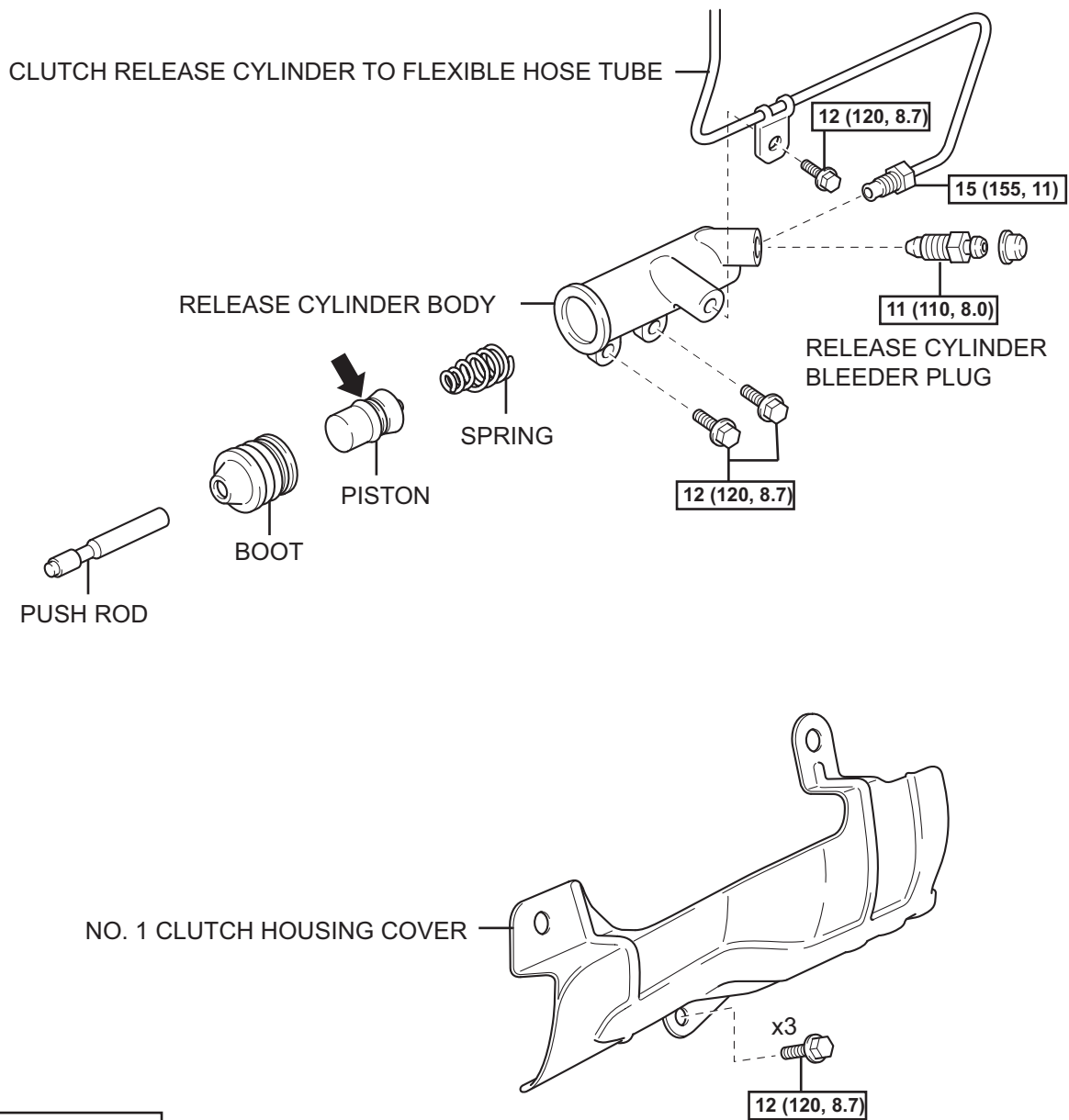
1. **INSTALL CLUTCH RELEASE CYLINDER ASSEMBLY**
  - (a) Install the clutch release cylinder with the 2 bolts.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)



2. **CONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE**
  - (a) Using SST, connect the flexible hose tube.  
**SST 09023-00101**
3. **BLEED CLUTCH PIPE LINE**
  - (a) Fill the brake reservoir tank with brake fluid and bleed the clutch system.  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)
4. **CHECK FOR CLUTCH FLUID LEAKAGE**

# CLUTCH RELEASE CYLINDER (for RA60)

## COMPONENTS



N\*m (kgf\*cm, ft\*lb) :Specified torque

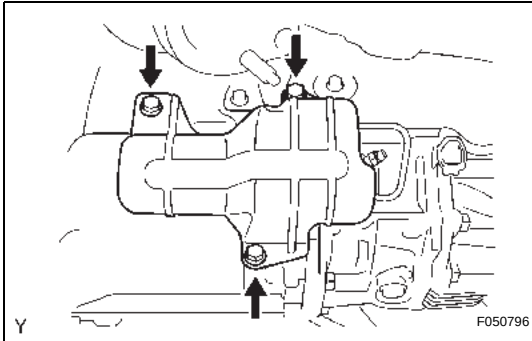
← Lithium soap base glycol grease

## REMOVAL

### 1. DRAIN CLUTCH FLUID

### 2. REMOVE NO. 1 CLUTCH HOUSING COVER

- (a) Remove the 3 bolts and clutch housing cover No. 1.



### 3. DISCONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE

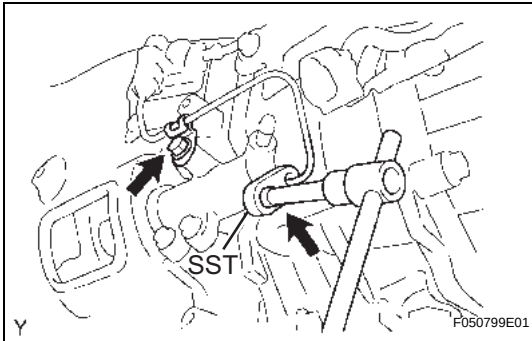
- (a) Using SST, disconnect the flexible hose tube.

**SST 09023-00101**

- (b) Remove the bolt and clutch line bracket.

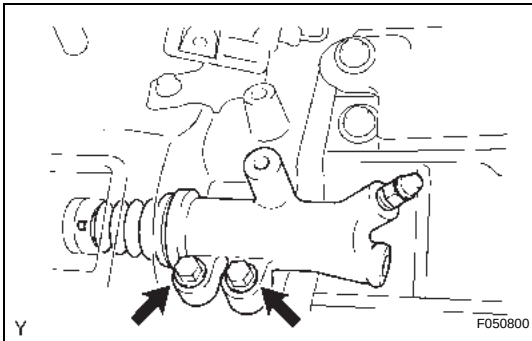
HINT:

Use a container to catch the fluid.



### 4. REMOVE CLUTCH RELEASE CYLINDER ASSEMBLY

- (a) Remove the 2 bolts and pull out the clutch release cylinder.



## DISASSEMBLY

### 1. REMOVE CLUTCH RELEASE CYLINDER KIT

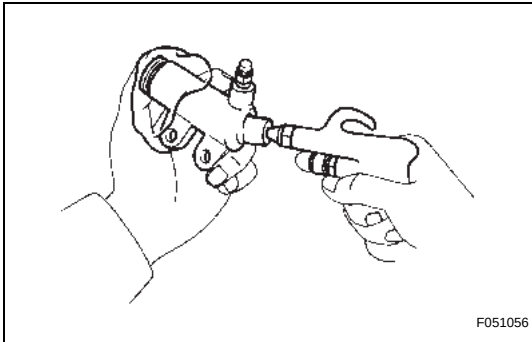
- (a) Remove the boot from the cylinder body.
- (b) Remove the push rod from the cylinder body.
- (c) Using compressed air, remove the piston together with the spring from the cylinder.

**NOTICE:**

**Be careful not to damage the inside of the cylinder body.**

- (d) Remove the bleeder plug cap from the bleeder plug.

### 2. REMOVE RELEASE CYLINDER BLEEDER PLUG



F051056

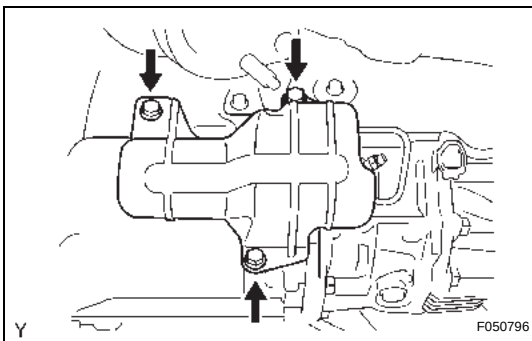
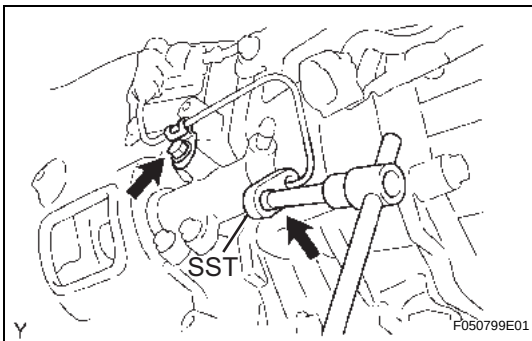
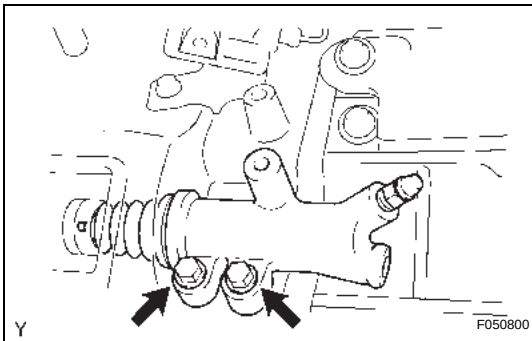
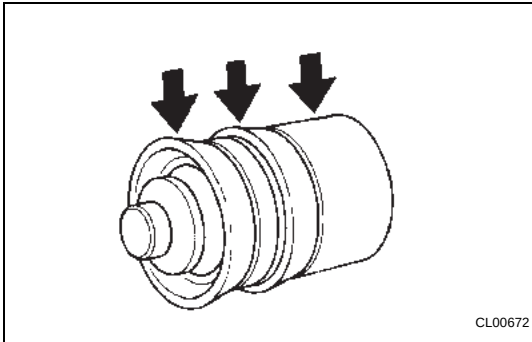
## REASSEMBLY

1. **INSTALL RELEASE CYLINDER BLEEDER PLUG**  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)
2. **INSTALL CLUTCH RELEASE CYLINDER KIT**
  - (a) Install the bleeder plug cap onto the bleeder plug.
  - (b) Install the spring onto the cylinder body.
  - (c) Apply lithium soap base glycol grease to the portions shown in the illustration.
  - (d) Install the piston onto the cylinder body.

**NOTICE:**

**Be careful not to damage the inside of the cylinder body.**

- (e) Install the push rod into the cylinder body.
- (f) Install the boot onto the cylinder body.

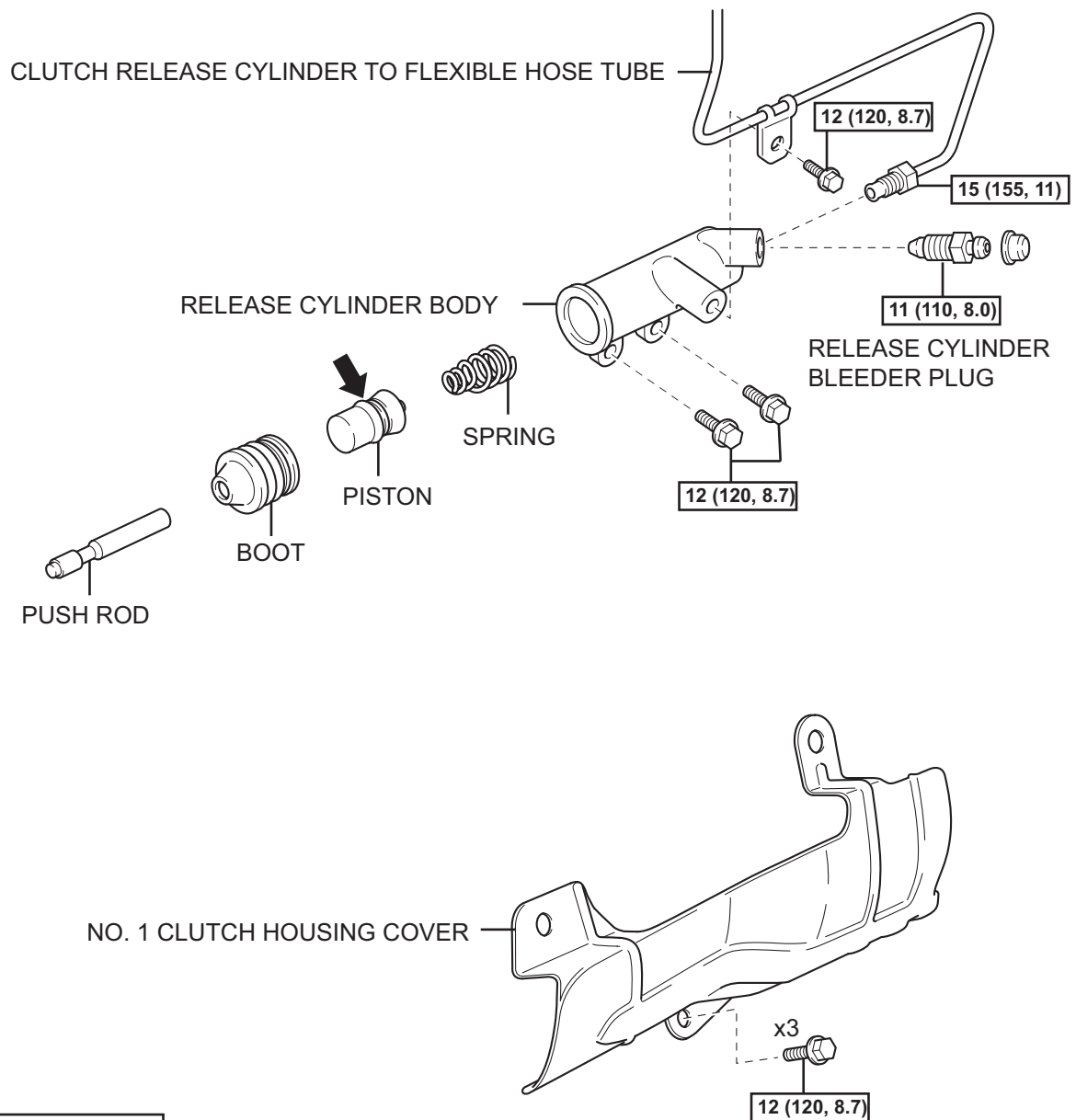


## INSTALLATION

1. **INSTALL CLUTCH RELEASE CYLINDER ASSEMBLY**
  - (a) Install the clutch release cylinder with the 2 bolts.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)
2. **CONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE**
  - (a) Using SST, connect the flexible hose tube.  
**SST 09023-00101**  
Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)
  - (b) Install the clutch line bracket.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)
3. **BLEED CLUTCH PIPE LINE**
  - (a) Fill the brake reservoir tank with brake fluid and bleed the clutch system.  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)
4. **CHECK FOR CLUTCH FLUID LEAKAGE**
5. **INSTALL NO. 1 CLUTCH HOUSING COVER**
  - (a) Install the clutch housing cover No. 1 with the 3 bolts.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)

# CLUTCH RELEASE CYLINDER (for RA60F)

## COMPONENTS



**N\*m (kgf\*cm, ft\*lb)** :Specified torque

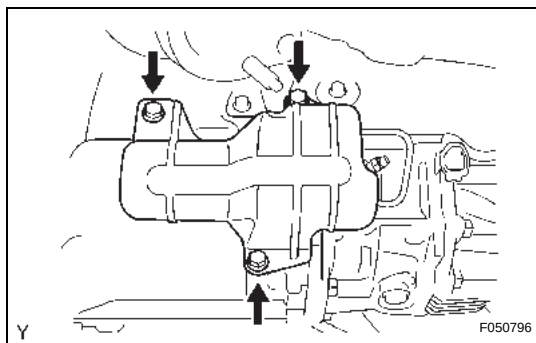
Lithium soap base glycol grease

## REMOVAL

### 1. DRAIN CLUTCH FLUID

### 2. REMOVE NO. 1 CLUTCH HOUSING COVER

- (a) Remove the 3 bolts and clutch housing cover No. 1.



### 3. DISCONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE

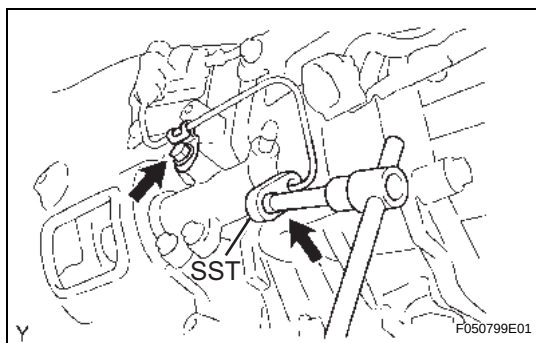
- (a) Using SST, disconnect the flexible hose tube.

**SST 09023-00101**

- (b) Remove the bolt and clutch line bracket.

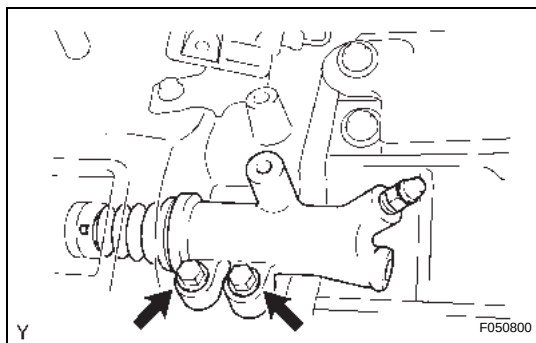
HINT:

Use a container to catch the fluid.



### 4. REMOVE CLUTCH RELEASE CYLINDER ASSEMBLY

- (a) Remove the 2 bolts and pull out the clutch release cylinder.



## DISASSEMBLY

### 1. REMOVE CLUTCH RELEASE CYLINDER KIT

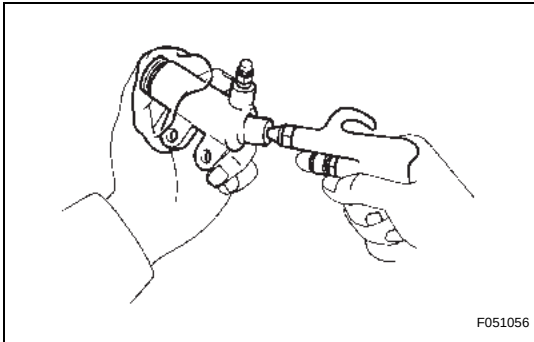
- (a) Remove the boot from the cylinder body.
- (b) Remove the push rod from the cylinder body.
- (c) Using compressed air, remove the piston together with the spring from the cylinder.

**NOTICE:**

**Be careful not to damage the inside of the cylinder body.**

- (d) Remove the bleeder plug cap from the bleeder plug.

### 2. REMOVE RELEASE CYLINDER BLEEDER PLUG

**CL**

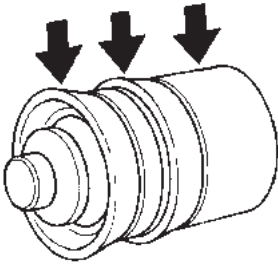
## REASSEMBLY

1. **INSTALL RELEASE CYLINDER BLEEDER PLUG**  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)
2. **INSTALL CLUTCH RELEASE CYLINDER KIT**
  - (a) Install the bleeder plug cap onto the bleeder plug.
  - (b) Install the spring onto the cylinder body.
  - (c) Apply lithium soap base glycol grease to the portions shown in the illustration.
  - (d) Install the piston onto the cylinder body.

**NOTICE:**

**Be careful not to damage the inside of the cylinder body.**

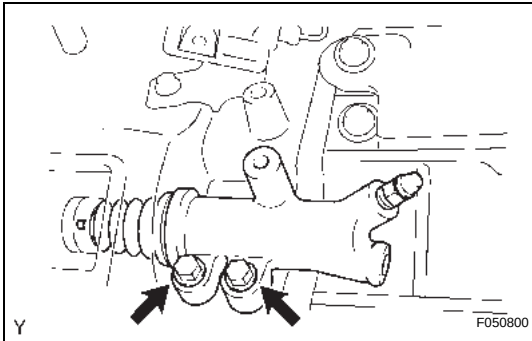
- (e) Install the push rod into the cylinder body.
- (f) Install the boot onto the cylinder body.



CL00672

## INSTALLATION

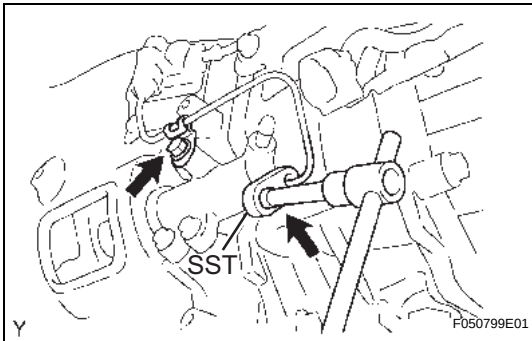
1. **INSTALL CLUTCH RELEASE CYLINDER ASSEMBLY**
  - (a) Install the clutch release cylinder with the 2 bolts.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)



F050800

2. **CONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE**

- (a) Using SST, connect the flexible hose tube.  
**SST 09023-00101**  
Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)
- (b) Install the clutch line bracket.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)



F050799E01

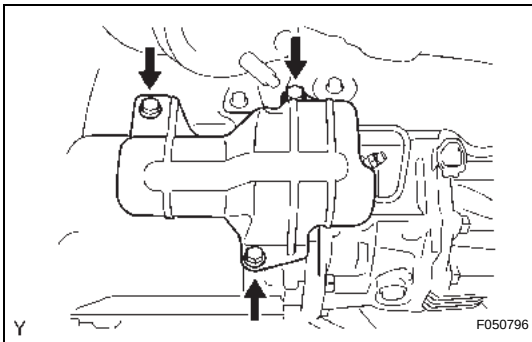
3. **BLEED CLUTCH PIPE LINE**

- (a) Fill the brake reservoir tank with brake fluid and bleed the clutch system.  
Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)

4. **CHECK FOR CLUTCH FLUID LEAKAGE**

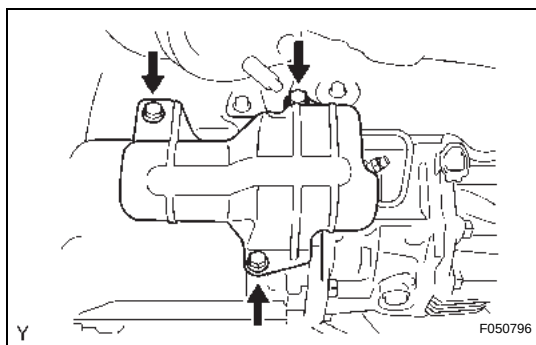
5. **INSTALL NO. 1 CLUTCH HOUSING COVER**

- (a) Install the clutch housing cover No. 1 with the 3 bolts.  
Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)



F050796

CL

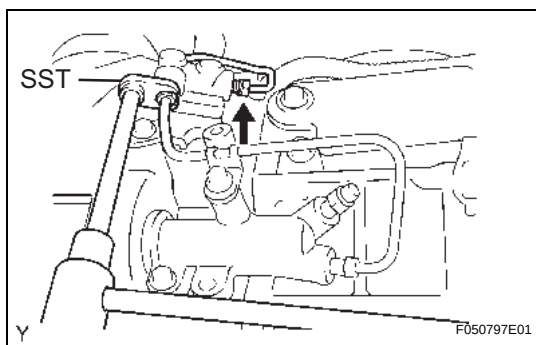


## CLUTCH ACCUMULATOR (for RA60)

### REMOVAL

#### 1. REMOVE NO. 1 CLUTCH HOUSING COVER

- (a) Remove the 3 bolts and clutch housing cover No. 1.



#### 2. REMOVE CLUTCH ACCUMULATOR ASSEMBLY

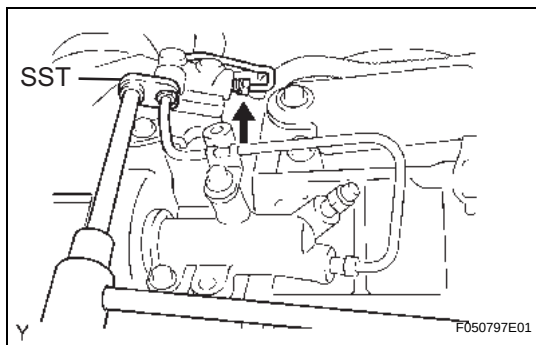
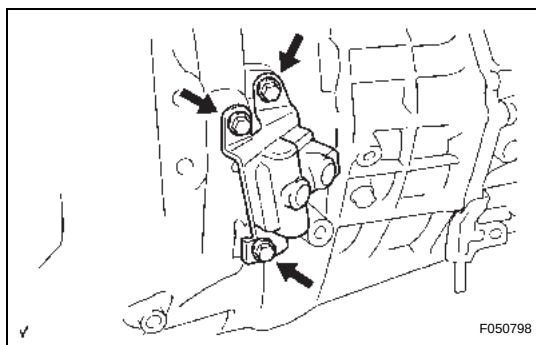
- (a) Using SST, disconnect the 2 flexible hose tubes from the clutch accumulator.

**SST 09023-00101**

**HINT:**

Use a container to catch the fluid.

- (b) Remove the 3 bolts and clutch accumulator.



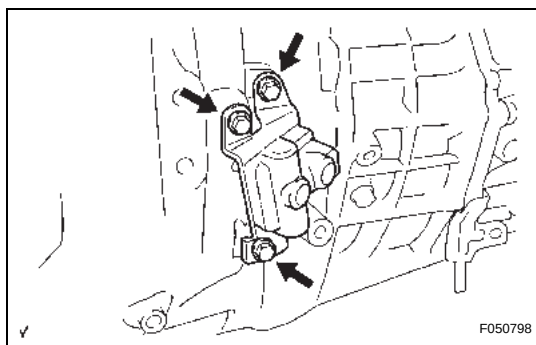
### INSTALLATION

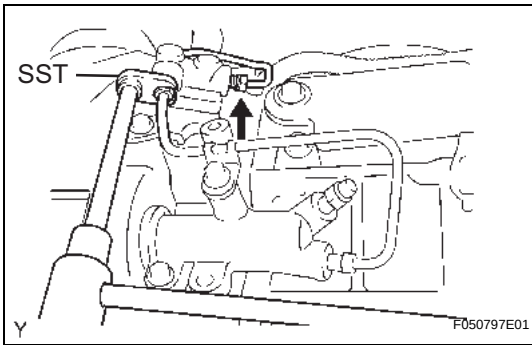
#### 1. INSTALL CLUTCH ACCUMULATOR ASSEMBLY

- (a) Using SST, connect the 2 flexible hose tubes to the clutch accumulator.

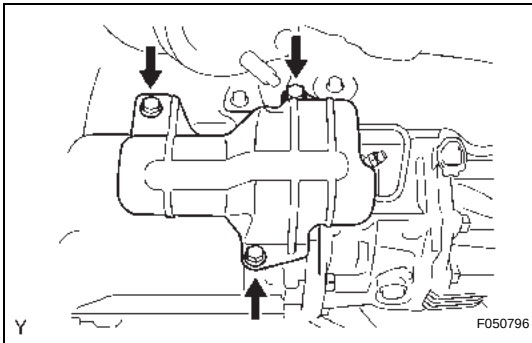
**SST 09023-00101**

- (b) Install the clutch accumulator with the 3 bolts.  
**Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)**





- (c) Using SST, tighten the 2 flexible hose tubes.  
**SST 09023-00101**  
**Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)**



**2. INSTALL NO. 1 CLUTCH HOUSING COVER**

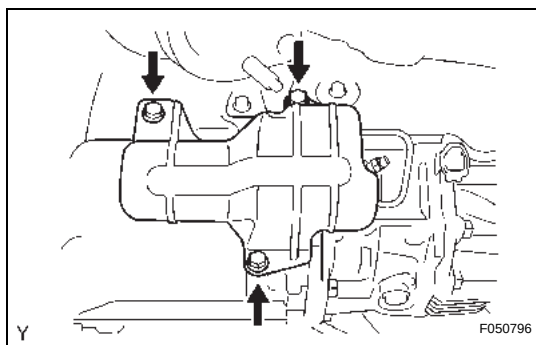
- (a) Install the clutch housing cover No. 1 with the 3 bolts.  
**Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)**

**3. BLEED CLUTCH PIPE LINE**

- (a) Fill the brake reservoir tank with the brake fluid and bleed the clutch system.  
**Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)**

**4. CHECK FOR CLUTCH FLUID LEAKAGE**

CL

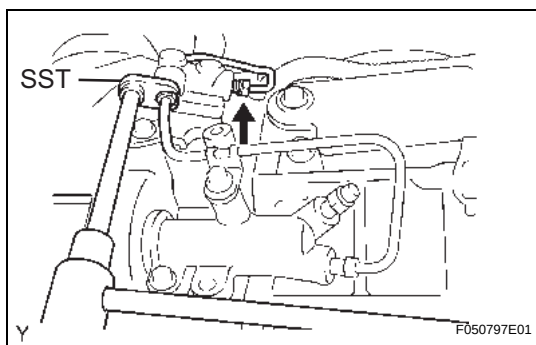


## CLUTCH ACCUMULATOR (for RA60F)

### REMOVAL

#### 1. REMOVE NO. 1 CLUTCH HOUSING COVER

- (a) Remove the 3 bolts and clutch housing cover No. 1.



#### 2. REMOVE CLUTCH ACCUMULATOR ASSEMBLY

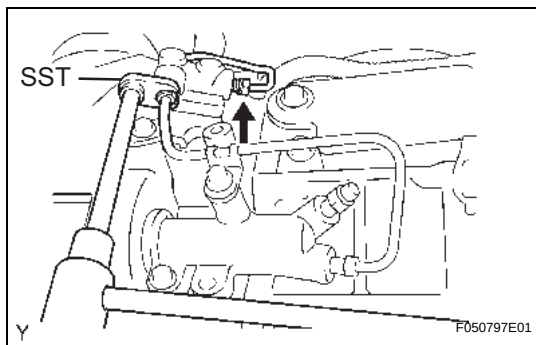
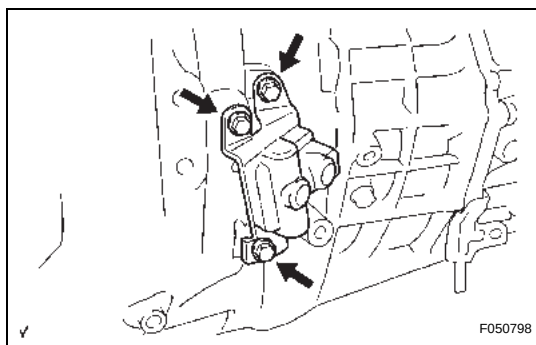
- (a) Using SST, disconnect the 2 flexible hose tubes from the clutch accumulator.

**SST 09023-00101**

**HINT:**

Use a container to catch the fluid.

- (b) Remove the 3 bolts and clutch accumulator.



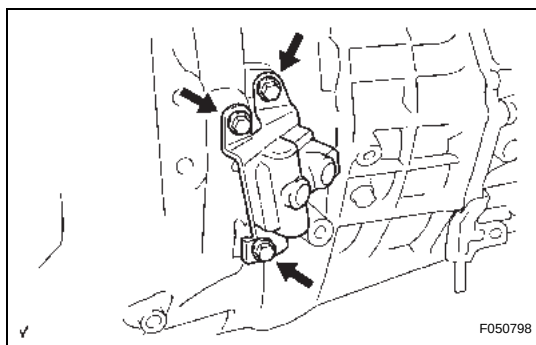
### INSTALLATION

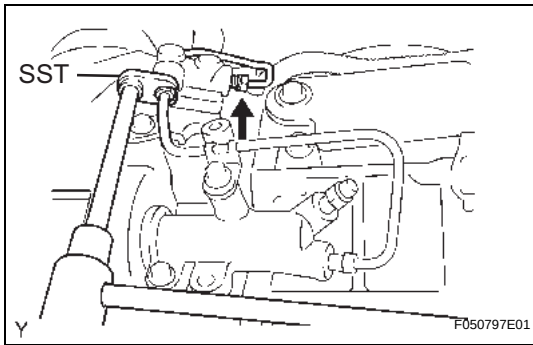
#### 1. INSTALL CLUTCH ACCUMULATOR ASSEMBLY

- (a) Using SST, connect the 2 flexible hose tubes to the clutch accumulator.

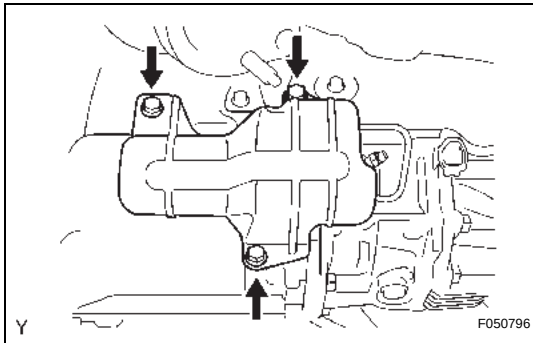
**SST 09023-00101**

- (b) Install the clutch accumulator with the 3 bolts.  
**Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)**





- (c) Using SST, tighten the 2 flexible hose tubes.  
**SST 09023-00101**  
**Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)**



**2. INSTALL NO. 1 CLUTCH HOUSING COVER**

- (a) Install the clutch housing cover No. 1 with the 3 bolts.  
**Torque: 12 N\*m (120 kgf\*cm, 8.7 ft.\*lbf)**

**3. BLEED CLUTCH PIPE LINE**

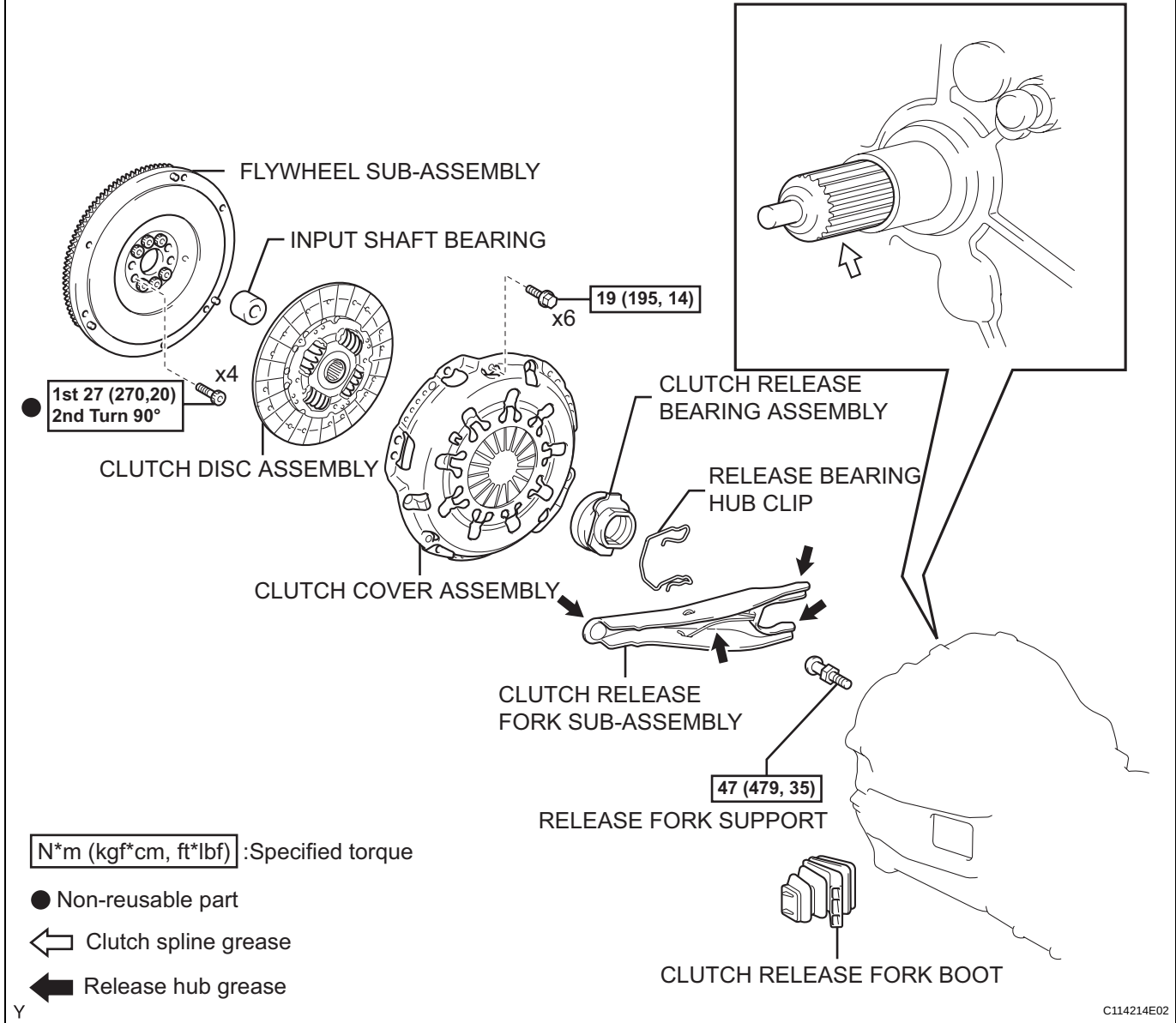
- (a) Fill the brake reservoir tank with the brake fluid and bleed the clutch system.  
**Torque: 11 N\*m (110 kgf\*cm, 8.0 ft.\*lbf)**

**4. CHECK FOR CLUTCH FLUID LEAKAGE**

# CLUTCH UNIT (for R155)

## COMPONENTS

CL



## REMOVAL

### 1. REMOVE MANUAL TRANSMISSION UNIT ASSEMBLY

(See page [MT-6](#))

### 2. REMOVE CLUTCH RELEASE FORK SUB-ASSEMBLY

- (a) Remove the clutch release fork together with the clutch release bearing from the transmission assembly.

### 3. REMOVE CLUTCH RELEASE BEARING ASSEMBLY

- (a) Remove the clutch release bearing assembly from the clutch release fork.

### 4. REMOVE RELEASE FORK SUPPORT

- (a) Remove the release fork support from the transaxle assembly.

### 5. REMOVE RELEASE BEARING HUB CLIP

### 6. REMOVE CLUTCH RELEASE FORK BOOT

### 7. REMOVE CLUTCH COVER ASSEMBLY

- (a) Align the matchmark on the clutch cover assembly with the one on the flywheel sub-assembly.  
 (b) Loosen each set bolt one turn at a time until the spring tension is released.  
 (c) Remove the 6 bolts and clutch cover assembly.

#### NOTICE:

**Do not drop the clutch disc assembly.**

### 8. REMOVE CLUTCH DISC ASSEMBLY

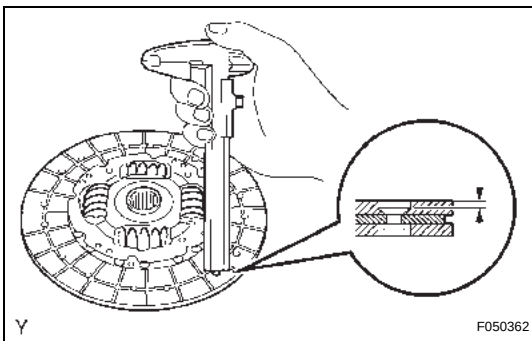
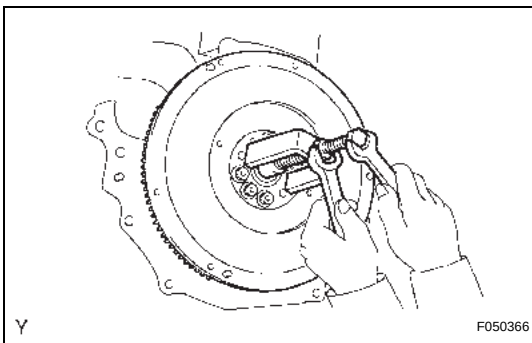
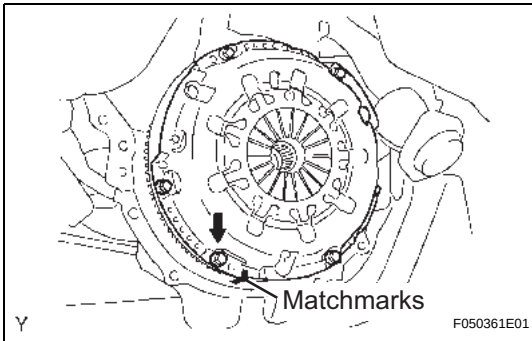
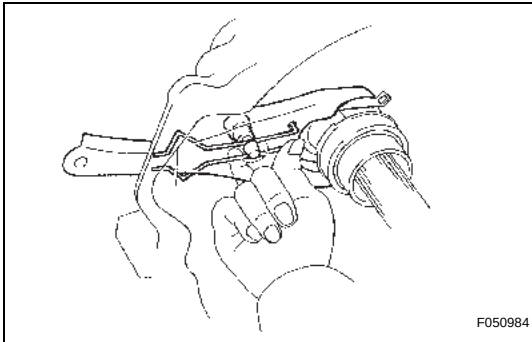
#### NOTICE:

**Keep the lining part of the clutch disc assembly, pressure plate and surface of the flywheel sub-assembly free from oil and foreign matter.**

### 9. REMOVE INPUT SHAFT BEARING

- (a) Remove the 4 bolts at diametrically opposite points.  
 (b) Using SST, remove the pilot bearing.

**SST 09303-35011**



## INSPECTION

### 1. INSPECT CLUTCH DISC ASSEMBLY

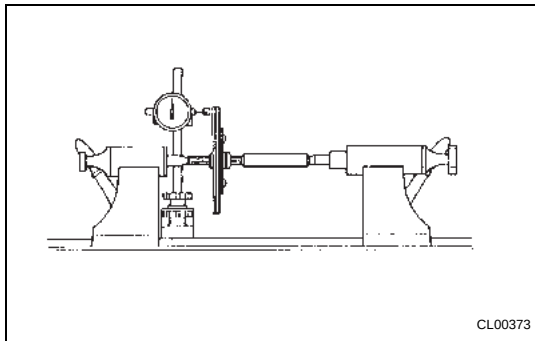
- (a) Using vernier calipers, measure the rivet head depth.

**Maximum rivet depth:**

**0.3 mm (0.012 in.)**

If necessary, replace the clutch disc assembly.

CL



- (b) Install the clutch disc assembly onto the transaxle assembly.

**NOTICE:**

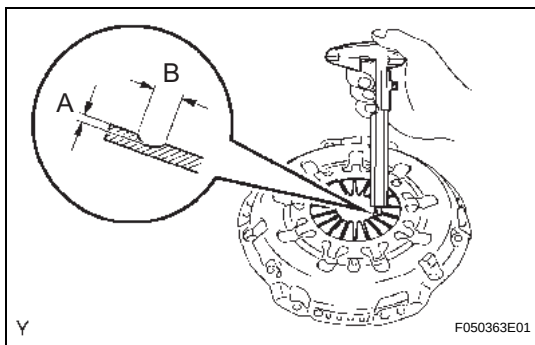
**Take care not to insert the clutch disc assembly in the wrong orientation.**

- (c) Using a dial indicator, check the clutch disc assembly runout.

**Minimum runout:**

**0.8 mm (0.031 in.)**

If necessary, replace the clutch disc assembly.

**2. INSPECT CLUTCH COVER ASSEMBLY**

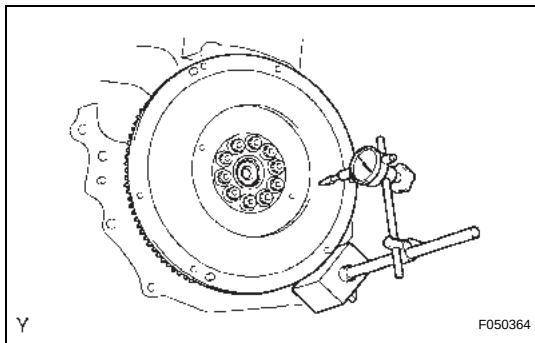
- (a) Using vernier calipers, inspect the depth and width of wear of the diaphragm spring.

**Minimum:**

**A (Depth): 0.5 mm (0.020 in.)**

**B (Width): 6.0 mm (0.236 in.)**

If necessary, replace the clutch cover assembly.

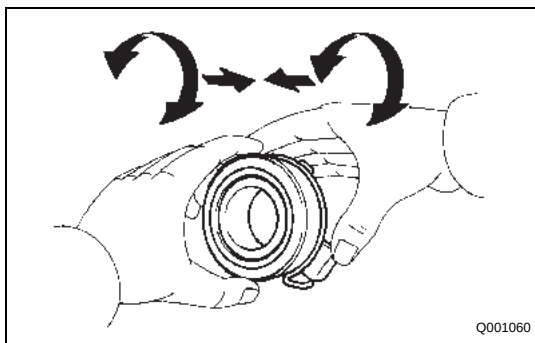
**3. INSPECT FLYWHEEL SUB-ASSEMBLY**

- (a) Using a dial indicator, inspect the flywheel sub-assembly runout.

**Maximum runout:**

**0.1 mm (0.004 in.)**

If necessary, replace the flywheel sub-assembly.

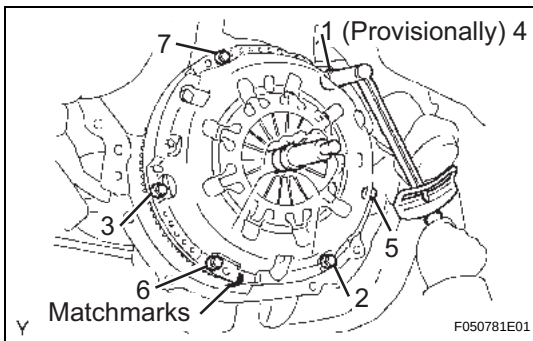
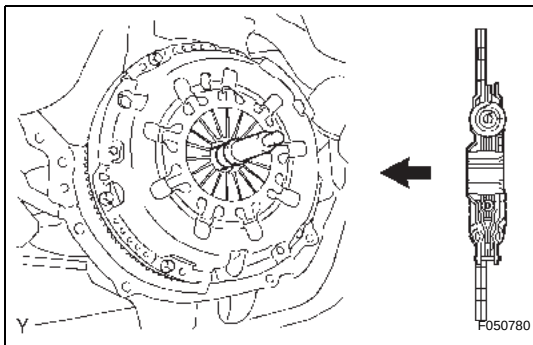
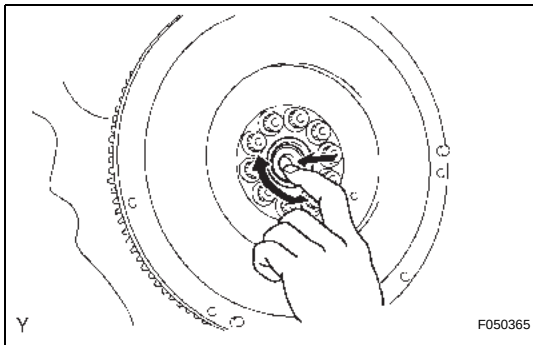
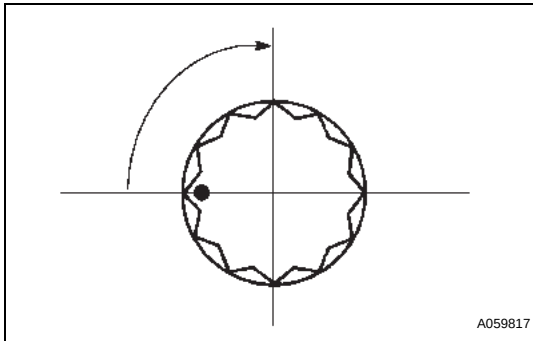
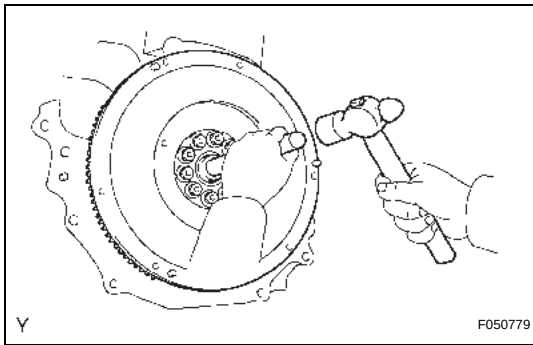
**4. INSPECT CLUTCH RELEASE BEARING ASSEMBLY**

- (a) Turn the release 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 release bearing assembly.



## INSTALLATION

### 1. INSTALL INPUT SHAFT BEARING

- (a) Using SST and a hammer, install the input shaft bearing.

**SST 09304-30012**

**HINT:**

After assembling the input shaft bearing to the hub, make sure that it rotates smoothly.

- (b) Install 4 new bolts.

**Torque: 27 N\*m (270 kgf\*cm, 20 ft.\*lbf)**

- (c) Mark each bolt with paint as shown in the illustration.

- (d) Retighten each bolt by 90°.

- (e) Check that the mark on each bolt is at a 90° angle from its original position.

### 2. INSPECT INPUT SHAFT BEARING

- (a) Turn the bearing by hand while applying force in the rotation direction.

If the bearing is stuck or difficult to turn, replace the input shaft bearing.

**HINT:**

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

### 3. INSTALL CLUTCH DISC ASSEMBLY

- (a) Insert SST into the clutch disc assembly, then insert them into the flywheel sub-assembly.

**SST 09301-00210**

**NOTICE:**

**Take care not to insert clutch disc assembly in the wrong orientation.**

### 4. INSTALL CLUTCH COVER ASSEMBLY

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

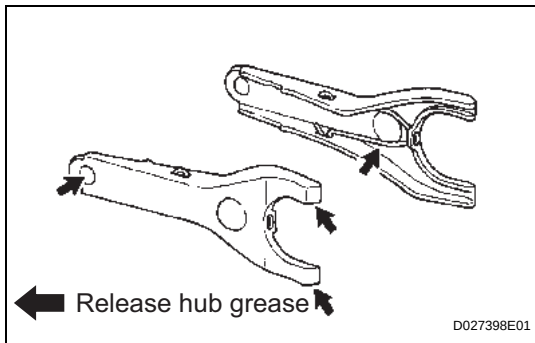
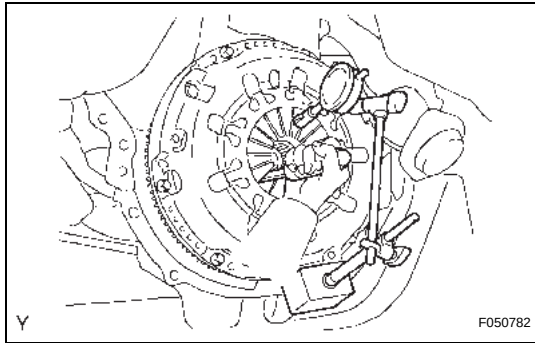
- (b) Tighten the 6 bolts, in the order shown in the illustration, starting with the bolt located near the knock pin on the top.

**Torque: 19 N\*m (195 kgf\*cm, 14 ft.\*lbf)**

**HINT:**

- Following the order in the illustration, uniformly tighten the bolts.

CL



- Move SST up and down, right and left gently after checking that the disc is in the center, and tighten the bolts.

## 5. INSPECT AND ADJUST CLUTCH COVER ASSEMBLY

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

**Maximum non-alignment:**

**0.5 mm (0.020 in.)**

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

**SST 09333-00013**

## 6. INSTALL RELEASE FORK SUPPORT

- Install the release fork support onto the transaxle assembly.

**Torque: 47 N\*m (479 kgf\*cm, 35 ft.\*lbf)**

## 7. INSTALL RELEASE BEARING HUB CLIP

## 8. INSTALL CLUTCH RELEASE FORK SUB-ASSEMBLY

- Apply release hub grease to the release fork and release bearing assembly contact surfaces, release fork and push rod contact surface and release fork pivot point.

**Sealant:**

**Part No. 08887-01806, RELEASE HUB GREASE or equivalent**

- Install the release fork onto the release bearing assembly.

## 9. INSTALL CLUTCH RELEASE BEARING ASSEMBLY

- Apply clutch spline grease to the input shaft spline.

**Sealant:**

**Part No. 08887-01706, CLUTCH SPLINE GREASE or equivalent**

- Install the bearing onto the release fork, and then install them onto the transaxle assembly.

**NOTICE:**

**After installation, move the fork forward and backward to check that the release bearing slides smoothly.**

## 10. INSTALL CLUTCH RELEASE FORK BOOT

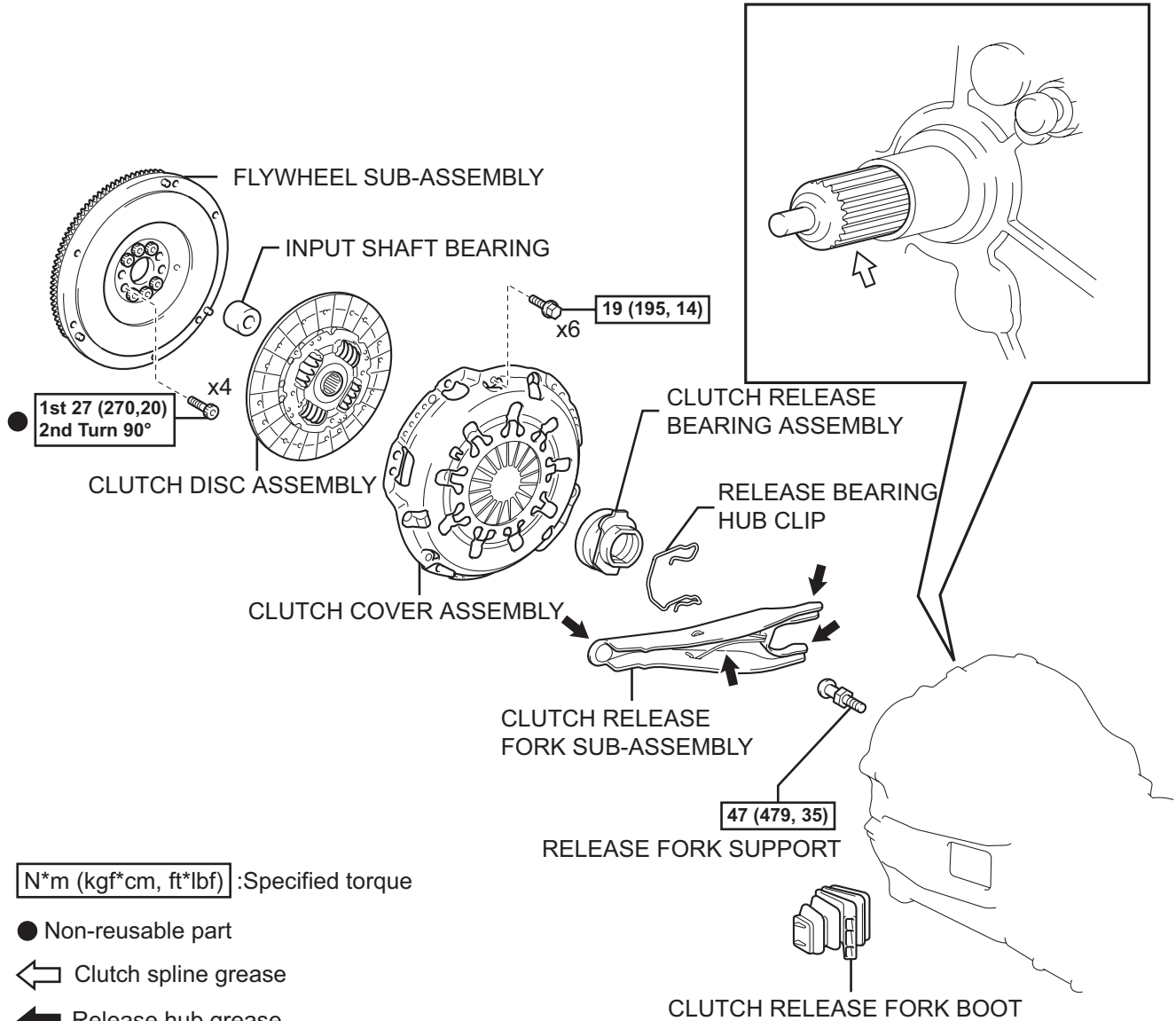
## 11. INSTALL MANUAL TRANSMISSION UNIT ASSEMBLY

(See page [MT-9](#))

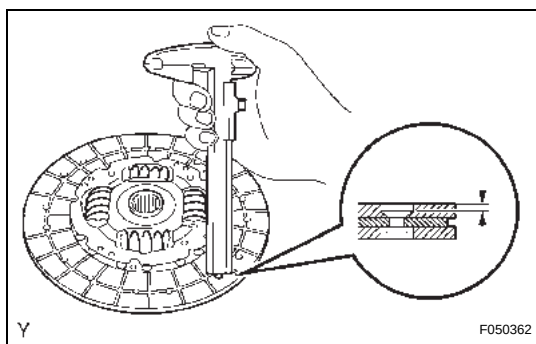
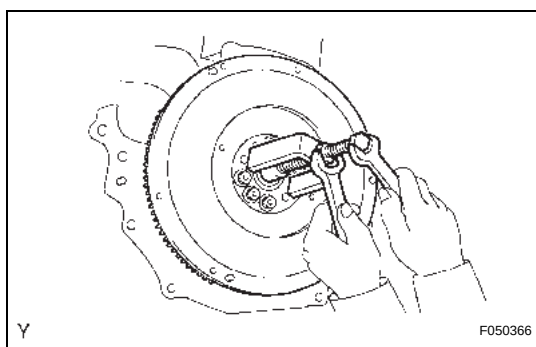
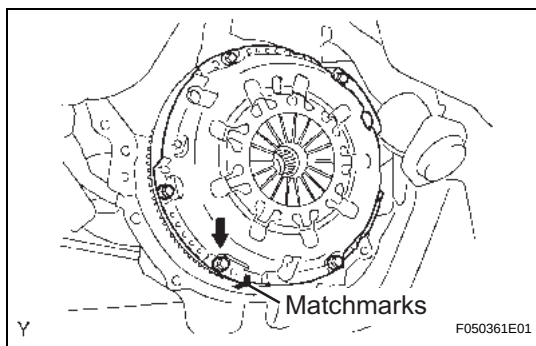
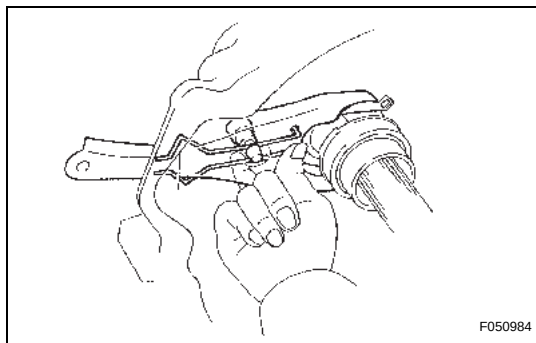
# CLUTCH UNIT (for R155F)

## COMPONENTS

CL



CL



## REMOVAL

1. **REMOVE MANUAL TRANSMISSION UNIT ASSEMBLY**  
(See page [MT-8](#))
2. **REMOVE CLUTCH RELEASE FORK SUB-ASSEMBLY**  
(a) Remove the clutch release fork together with the clutch release bearing from the transmission assembly.
3. **REMOVE CLUTCH RELEASE BEARING ASSEMBLY**  
(a) Remove the clutch release bearing assembly from the clutch release fork.
4. **REMOVE RELEASE FORK SUPPORT**  
(a) Remove the release fork support from the transaxle assembly.
5. **REMOVE RELEASE BEARING HUB CLIP**
6. **REMOVE CLUTCH RELEASE FORK BOOT**
7. **REMOVE CLUTCH COVER ASSEMBLY**  
(a) Align the matchmark on the clutch cover assembly with the one on the flywheel sub-assembly.  
(b) Loosen each set bolt one turn at a time until the spring tension is released.  
(c) Remove the 6 bolts and clutch cover assembly.  
**NOTICE:**  
**Do not drop the clutch disc assembly.**
8. **REMOVE CLUTCH DISC ASSEMBLY**  
**NOTICE:**  
**Keep the lining part of the clutch disc assembly, pressure plate and surface of the flywheel sub-assembly free from oil and foreign matter.**
9. **REMOVE INPUT SHAFT BEARING**  
(a) Remove the 4 bolts at diametrically opposite points.  
(b) Using SST, remove the pilot bearing.  
**SST 09303-35011**

## INSPECTION

1. **INSPECT CLUTCH DISC ASSEMBLY**  
(a) Using vernier calipers, measure the rivet head depth.  
**Maximum rivet depth:**  
**0.3 mm (0.012 in.)**  
If necessary, replace the clutch disc assembly.

- (b) Install the clutch disc assembly onto the transaxle assembly.

**NOTICE:**

**Take care not to insert the clutch disc assembly in the wrong orientation.**

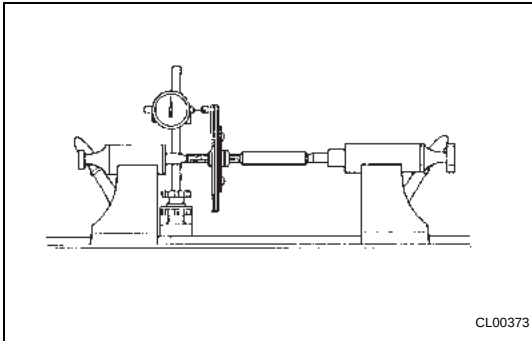
- (c) Using a dial indicator, check the clutch disc assembly runout.

**Minimum runout:**

**0.8 mm (0.031 in.)**

If necessary, replace the clutch disc assembly.

CL



## 2. INSPECT CLUTCH COVER ASSEMBLY

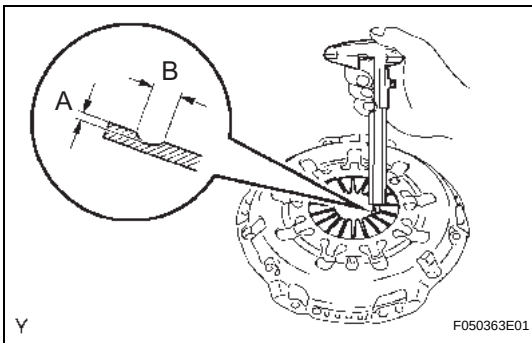
- (a) Using vernier calipers, inspect the depth and width of wear of the diaphragm spring.

**Minimum:**

**A (Depth): 0.5 mm (0.020 in.)**

**B (Width): 6.0 mm (0.236 in.)**

If necessary, replace the clutch cover assembly.



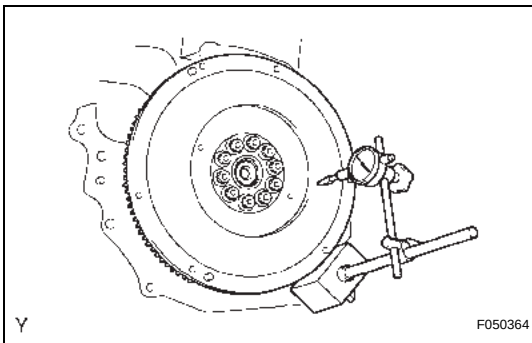
## 3. INSPECT FLYWHEEL SUB-ASSEMBLY

- (a) Using a dial indicator, inspect the flywheel sub-assembly runout.

**Maximum runout:**

**0.1 mm (0.004 in.)**

If necessary, replace the flywheel sub-assembly.



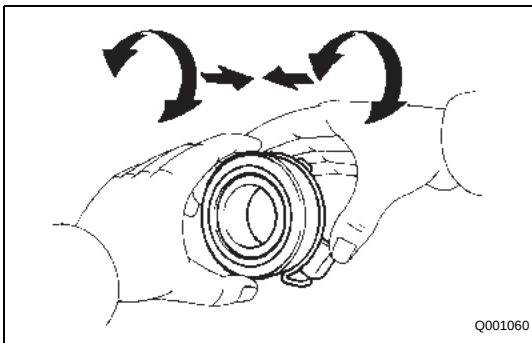
## 4. INSPECT CLUTCH RELEASE BEARING ASSEMBLY

- (a) Turn the release bearing by hand while applying force in the axial direction.

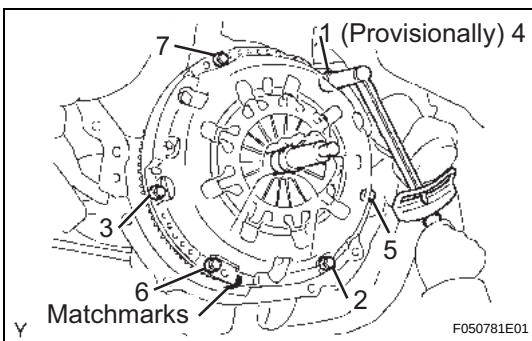
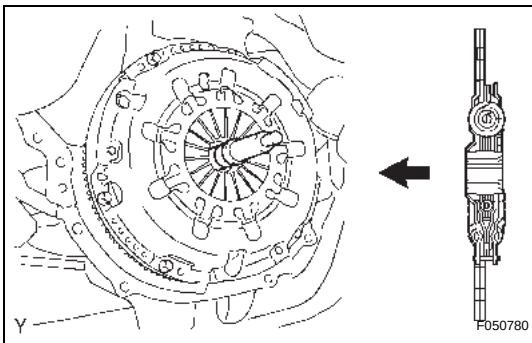
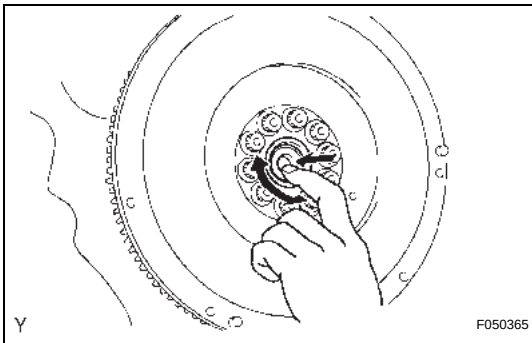
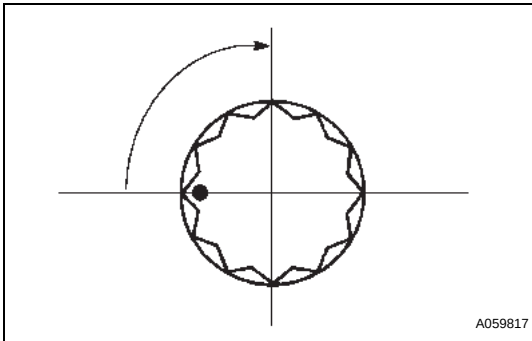
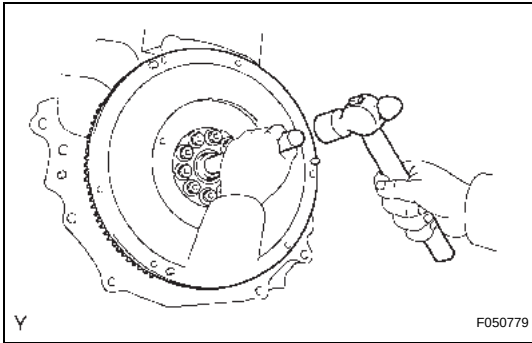
**HINT:**

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

If necessary, replace the release bearing assembly.



CL



## INSTALLATION

### 1. INSTALL INPUT SHAFT BEARING

- (a) Using SST and a hammer, install the input shaft bearing.

**SST 09304-30012**

**HINT:**

After assembling the input shaft bearing to the hub, make sure that it rotates smoothly.

- (b) Install 4 new bolts.

**Torque: 27 N\*m (270 kgf\*cm, 20 ft.\*lbf)**

- (c) Mark each bolt with paint as shown in the illustration.

- (d) Retighten each bolt by 90°.

- (e) Check that the mark on each bolt is at a 90° angle from its original position.

### 2. INSPECT INPUT SHAFT BEARING

- (a) Turn the bearing by hand while applying force in the rotation direction.

If the bearing is stuck or difficult to turn, replace the input shaft bearing.

**HINT:**

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

### 3. INSTALL CLUTCH DISC ASSEMBLY

- (a) Insert SST into the clutch disc assembly, then insert them into the flywheel sub-assembly.

**SST 09301-00210**

**NOTICE:**

**Take care not to insert clutch disc assembly in the wrong orientation.**

### 4. INSTALL CLUTCH COVER ASSEMBLY

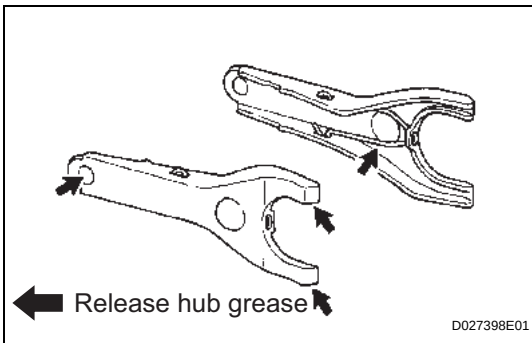
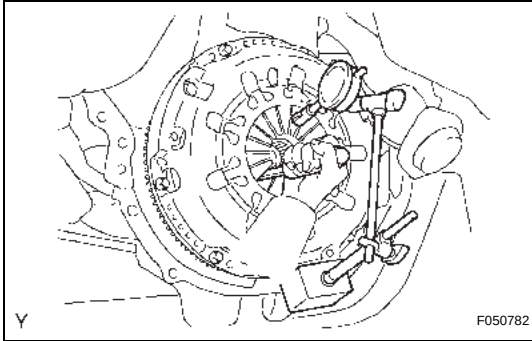
- (a) Align the matchmarks on the clutch cover assembly and flywheel sub-assembly.

- (b) Tighten the 6 bolts, in the order shown in the illustration, starting with the bolt located near the knock pin on the top.

**Torque: 19 N\*m (195 kgf\*cm, 14 ft.\*lbf)**

**HINT:**

- Following the order in the illustration, uniformly tighten the bolts.



- Move SST up and down, right and left gently after checking that the disc is in the center, and tighten the bolts.

## 5. INSPECT AND ADJUST CLUTCH COVER ASSEMBLY

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

**Maximum non-alignment:**

**0.5 mm (0.020 in.)**

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

**SST 09333-00013**

## 6. INSTALL RELEASE FORK SUPPORT

- Install the release fork support onto the transaxle assembly.

**Torque: 47 N\*m (479 kgf\*cm, 35 ft.\*lbf)**

## 7. INSTALL RELEASE BEARING HUB CLIP

## 8. INSTALL CLUTCH RELEASE FORK SUB-ASSEMBLY

- Apply release hub grease to the release fork and release bearing assembly contact surfaces, release fork and push rod contact surface and release fork pivot point.

**Sealant:**

**Part No. 08887-01806, RELEASE HUB GREASE or equivalent**

- Install the release fork onto the release bearing assembly.

## 9. INSTALL CLUTCH RELEASE BEARING ASSEMBLY

- Apply clutch spline grease to the input shaft spline.

**Sealant:**

**Part No. 08887-01706, CLUTCH SPLINE GREASE or equivalent**

- Install the bearing onto the release fork, and then install them onto the transaxle assembly.

**NOTICE:**

**After installation, move the fork forward and backward to check that the release bearing slides smoothly.**

## 10. INSTALL CLUTCH RELEASE FORK BOOT

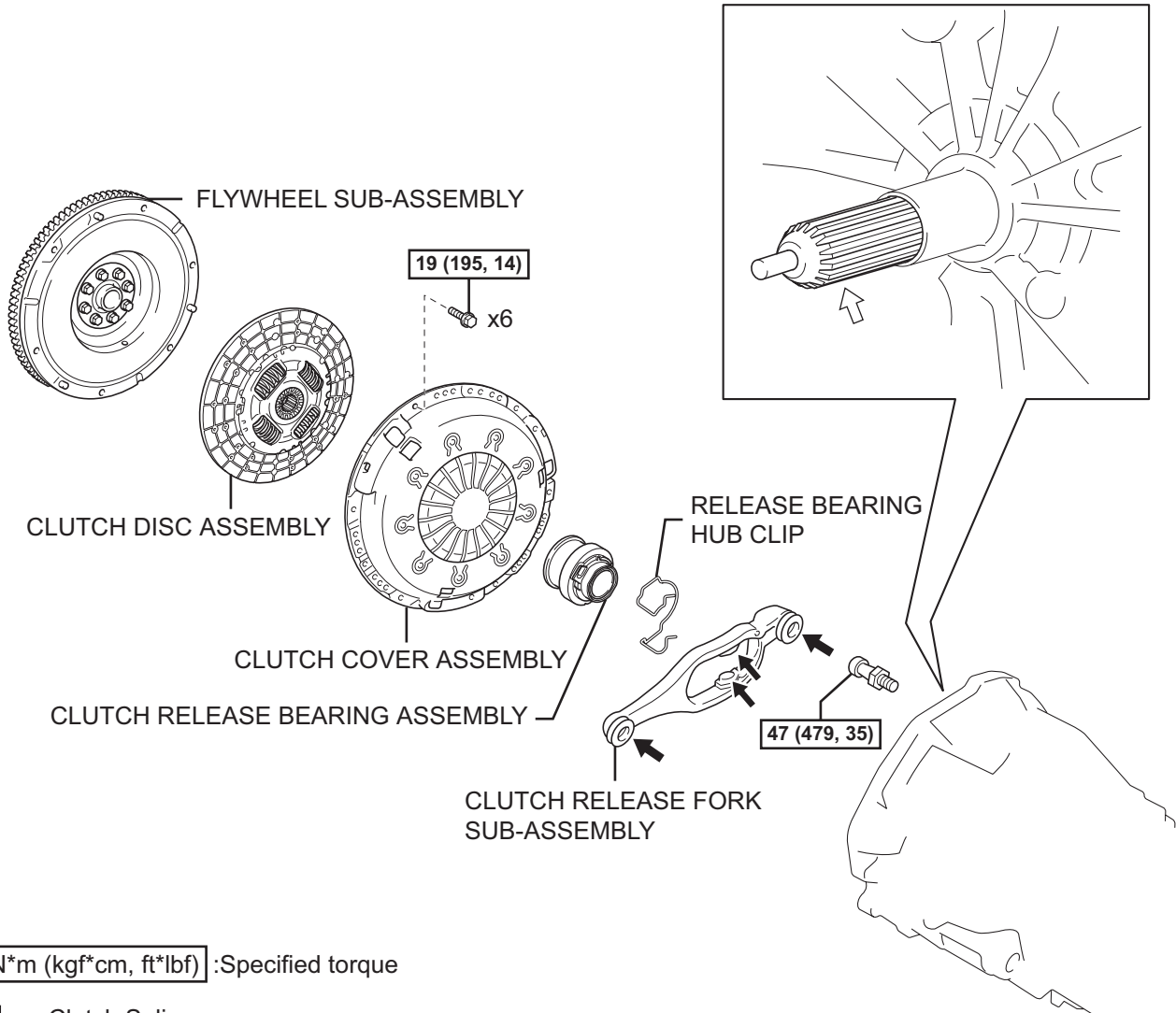
## 11. INSTALL MANUAL TRANSMISSION UNIT ASSEMBLY

(See page [MT-11](#))

# CLUTCH UNIT (for RA60)

## COMPONENTS

CL



$\boxed{\text{N}\cdot\text{m (kgf}\cdot\text{cm, ft}\cdot\text{lbf)}}$  :Specified torque

← Clutch Spline grease

← Release hub grease

Y

C114215E01

## REMOVAL

### 1. REMOVE MANUAL TRANSMISSION UNIT ASSEMBLY

(See page [MT-7](#))

### 2. REMOVE CLUTCH RELEASE FORK SUB-ASSEMBLY

- (a) Remove the clutch release fork together with the clutch release bearing from the transmission assembly.

### 3. REMOVE CLUTCH RELEASE BEARING ASSEMBLY

- (a) Remove the clutch release bearing assembly from the clutch release fork.

### 4. REMOVE RELEASE FORK SUPPORT

- (a) Remove the release fork support from the transaxle assembly.

### 5. REMOVE RELEASE BEARING HUB CLIP

### 6. REMOVE CLUTCH COVER ASSEMBLY

- (a) Align the matchmark on the clutch cover assembly with the one on the flywheel sub-assembly.  
 (b) Loosen each set bolt one turn at a time until the spring tension is released.  
 (c) Remove the 6 bolts and clutch cover assembly.

**NOTICE:**

**Do not drop the clutch disc assembly.**

### 7. REMOVE CLUTCH DISC ASSEMBLY

**NOTICE:**

Keep the lining part of the clutch disc assembly, pressure plate and surface of the flywheel sub-assembly free from oil and foreign matter.

## INSPECTION

### 1. INSPECT CLUTCH DISC ASSEMBLY

- (a) Using vernier calipers, measure the rivet head depth.

**Maximum rivet depth:**

**0.3 mm (0.012 in.)**

If necessary, replace the clutch disc assembly.

- (b) Install the clutch disc assembly onto the transaxle assembly.

**NOTICE:**

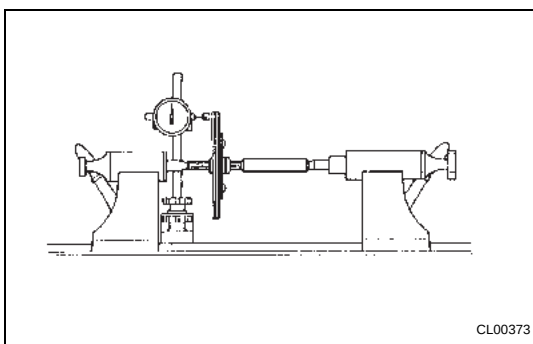
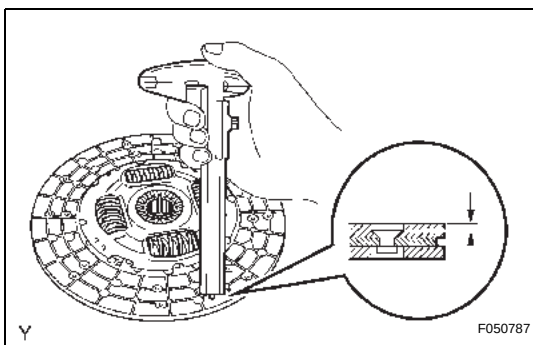
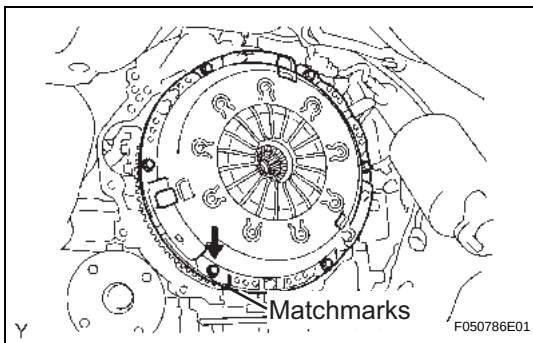
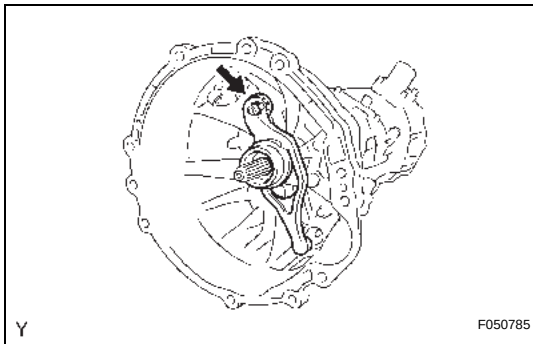
**Take care not to insert the clutch disc assembly in the wrong orientation.**

- (c) Using a dial indicator, check the clutch disc assembly runout.

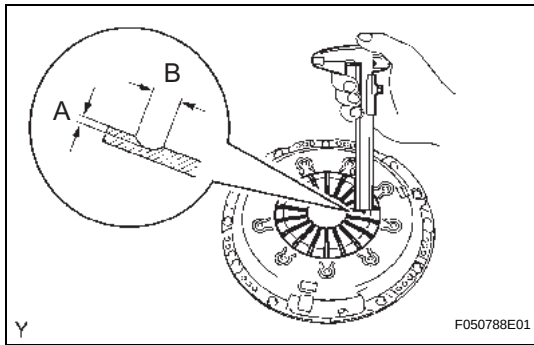
**Minimum runout:**

**1.0 mm (0.039 in.)**

If necessary, replace the clutch disc assembly.



CL



## 2. INSPECT CLUTCH COVER ASSEMBLY

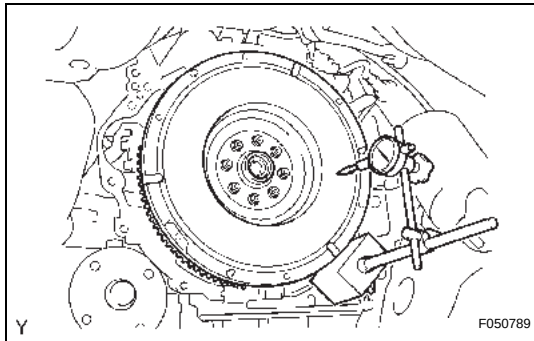
- (a) Using vernier calipers, inspect the depth and width of wear of the diaphragm spring.

**Minimum:**

**A (Depth): 0.5 mm (0.020 in.)**

**B (Width): 6.0 mm (0.236 in.)**

If necessary, replace the clutch cover assembly.



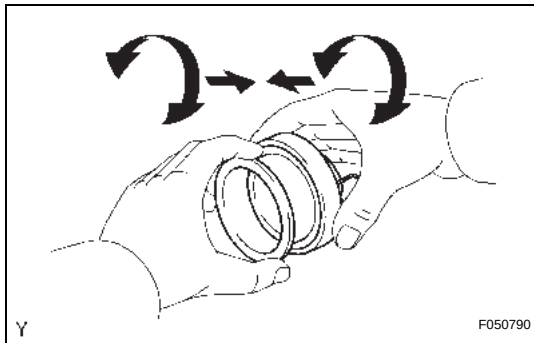
## 3. INSPECT FLYWHEEL SUB-ASSEMBLY

- (a) Using a dial indicator, inspect the flywheel sub-assembly runout.

**Maximum runout:**

**0.1 mm (0.004 in.)**

If necessary, replace the flywheel sub-assembly.



## 4. INSPECT CLUTCH RELEASE BEARING ASSEMBLY

- (a) Turn the release 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 release bearing assembly.

# INSTALLATION

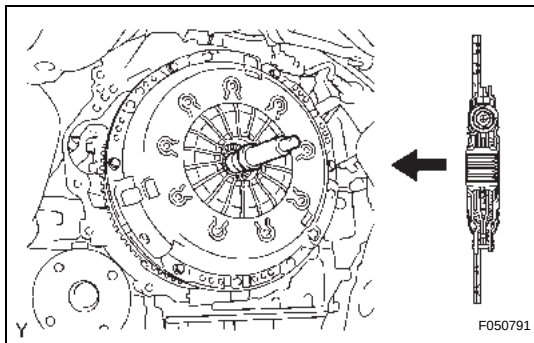
## 1. INSTALL CLUTCH DISC ASSEMBLY

- (a) Insert SST into the clutch disc assembly, then insert them into the flywheel sub-assembly.

**SST 09301-00220**

**NOTICE:**

**Take care not to insert the clutch disc assembly in the wrong orientation.**



## 2. INSTALL CLUTCH COVER ASSEMBLY

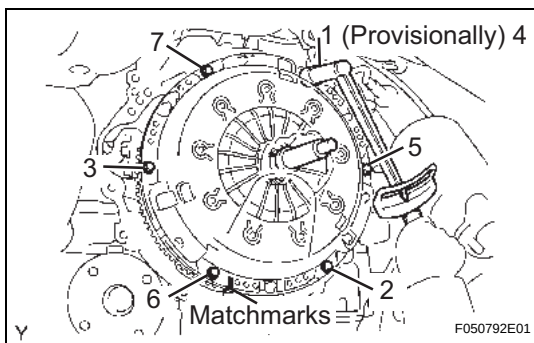
- (a) Align the matchmarks on the clutch cover assembly and flywheel sub-assembly.

- (b) Following the procedures shown in the illustration, tighten the 6 bolts, in the order starting with the bolt located near the knock pin on the top.

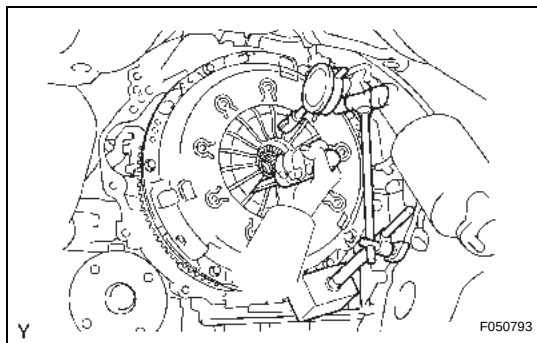
**Torque: 19 N\*m (195 kgf\*cm, 14 ft.\*lbf)**

**HINT:**

- Following the order in the illustration, uniformly tighten the bolts.



- Move SST up and down, right and left lightly, after checking that the disc is in the center, and tighten the bolts.



### 3. INSPECT AND ADJUST CLUTCH COVER ASSEMBLY

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

**Maximum non-alignment:**

**0.5 mm (0.020 in.)**

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

**SST 09333-00013**

CL

### 4. INSTALL RELEASE FORK SUPPORT

- (a) Install the release fork support onto the transaxle assembly.

**Torque: 47 N\*m (479 kgf\*cm, 35 ft.\*lbf)**

### 5. INSTALL RELEASE BEARING HUB CLIP

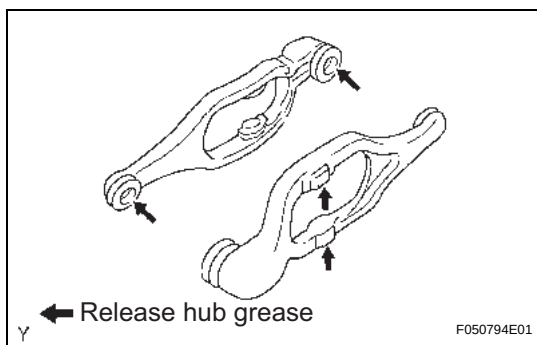
### 6. INSTALL CLUTCH RELEASE FORK SUB-ASSEMBLY

- (a) Apply release hub grease to the release fork and release the bearing assembly contact surfaces, release fork and push rod contact surface and release fork pivot point.

**Sealant:**

**Part No. 08887-01806, RELEASE HUB GREASE or equivalent**

- (b) Install the release fork onto the release bearing assembly.



### 7. INSTALL CLUTCH RELEASE BEARING ASSEMBLY

- (a) Apply clutch spline grease to the input shaft spline.

**Sealant:**

**Part No. 08887-01706, CLUTCH SPLINE GREASE or equivalent**

- (b) Install the bearing onto the release fork, and then install them onto the transaxle assembly.

**NOTICE:**

**After installation, move the fork forward and backward to check that the release bearing slides smoothly.**

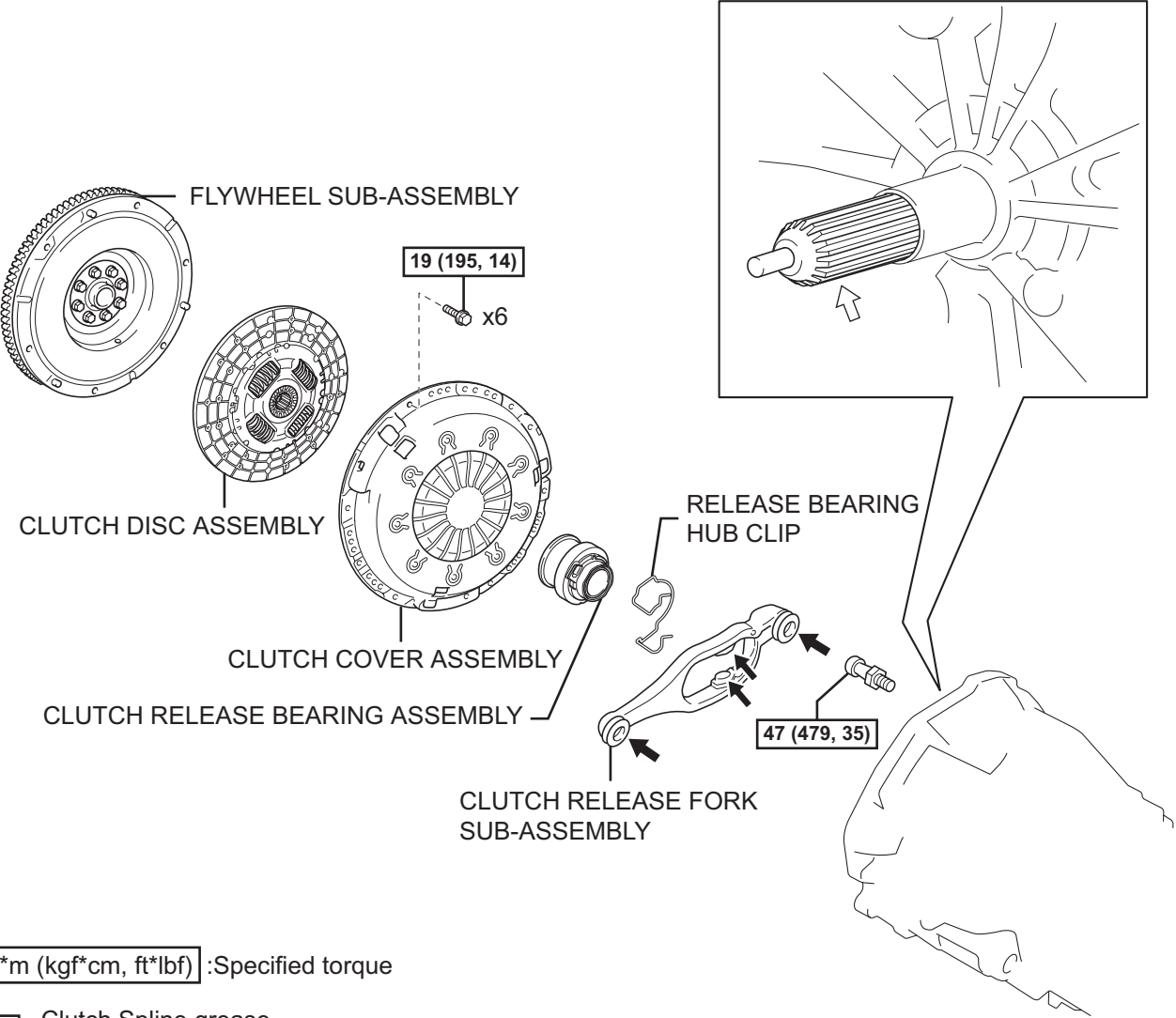
### 8. INSTALL MANUAL TRANSMISSION UNIT ASSEMBLY

(See page [MT-9](#))

# CLUTCH UNIT (for RA60F)

## COMPONENTS

CL



**N\*m (kgf\*cm, ft\*lb)** :Specified torque

← Clutch Spline grease

→ Release hub grease

Y

## REMOVAL

### 1. REMOVE MANUAL TRANSMISSION UNIT ASSEMBLY

(See page [MT-6](#))

### 2. REMOVE CLUTCH RELEASE FORK SUB-ASSEMBLY

- Remove the clutch release fork together with the clutch release bearing from the transmission assembly.

### 3. REMOVE CLUTCH RELEASE BEARING ASSEMBLY

- Remove the clutch release bearing assembly from the clutch release fork.

### 4. REMOVE RELEASE FORK SUPPORT

- Remove the release fork support from the transaxle assembly.

### 5. REMOVE RELEASE BEARING HUB CLIP

### 6. REMOVE CLUTCH COVER ASSEMBLY

- Align the matchmark on the clutch cover assembly with the one on the flywheel sub-assembly.
- Loosen each set bolt one turn at a time until the spring tension is released.
- Remove the 6 bolts and clutch cover assembly.

**NOTICE:**

**Do not drop the clutch disc assembly.**

### 7. REMOVE CLUTCH DISC ASSEMBLY

**NOTICE:**

Keep the lining part of the clutch disc assembly, pressure plate and surface of the flywheel sub-assembly free from oil and foreign matter.

## INSPECTION

### 1. INSPECT CLUTCH DISC ASSEMBLY

- Using vernier calipers, measure the rivet head depth.

**Maximum rivet depth:**

**0.3 mm (0.012 in.)**

If necessary, replace the clutch disc assembly.

- Install the clutch disc assembly onto the transaxle assembly.

**NOTICE:**

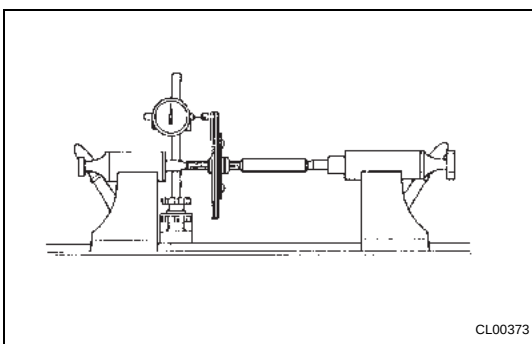
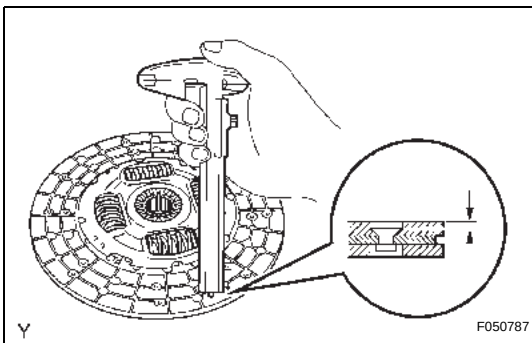
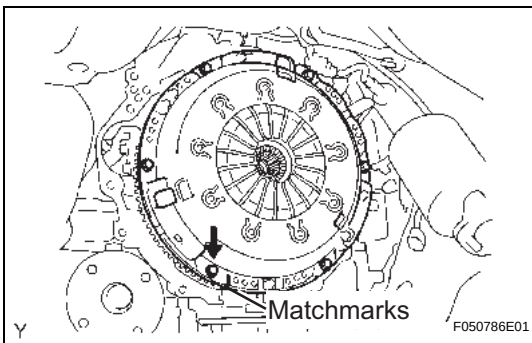
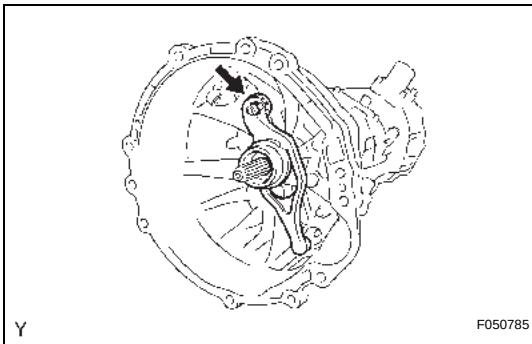
**Take care not to insert the clutch disc assembly in the wrong orientation.**

- Using a dial indicator, check the clutch disc assembly runout.

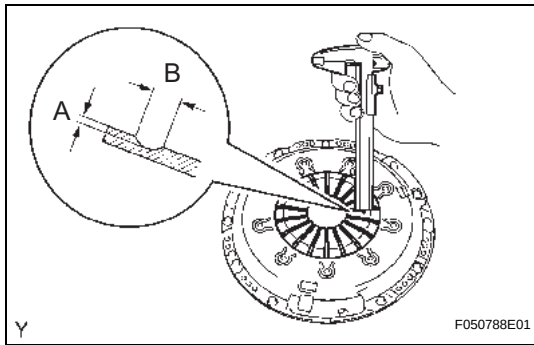
**Minimum runout:**

**1.0 mm (0.039 in.)**

If necessary, replace the clutch disc assembly.



CL



## 2. INSPECT CLUTCH COVER ASSEMBLY

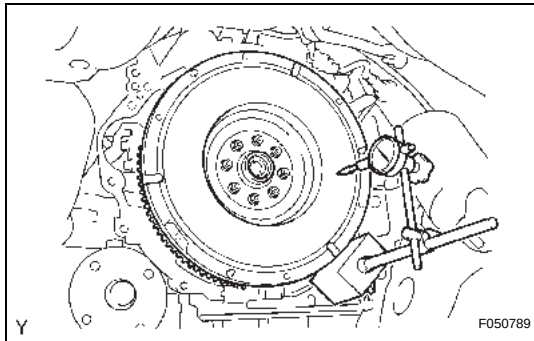
- (a) Using vernier calipers, inspect the depth and width of wear of the diaphragm spring.

**Minimum:**

**A (Depth): 0.5 mm (0.020 in.)**

**B (Width): 6.0 mm (0.236 in.)**

If necessary, replace the clutch cover assembly.



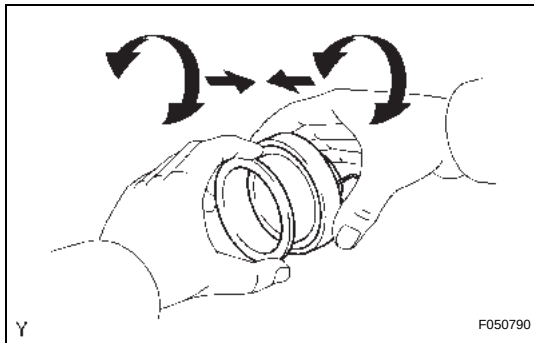
## 3. INSPECT FLYWHEEL SUB-ASSEMBLY

- (a) Using a dial indicator, inspect the flywheel sub-assembly runout.

**Maximum runout:**

**0.1 mm (0.004 in.)**

If necessary, replace the flywheel sub-assembly.



## 4. INSPECT CLUTCH RELEASE BEARING ASSEMBLY

- (a) Turn the release 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 release bearing assembly.

# INSTALLATION

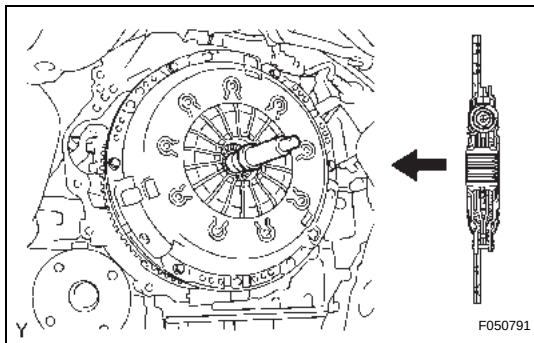
## 1. INSTALL CLUTCH DISC ASSEMBLY

- (a) Insert SST into the clutch disc assembly, then insert them into the flywheel sub-assembly.

**SST 09301-00220**

**NOTICE:**

**Take care not to insert the clutch disc assembly in the wrong orientation.**



## 2. INSTALL CLUTCH COVER ASSEMBLY

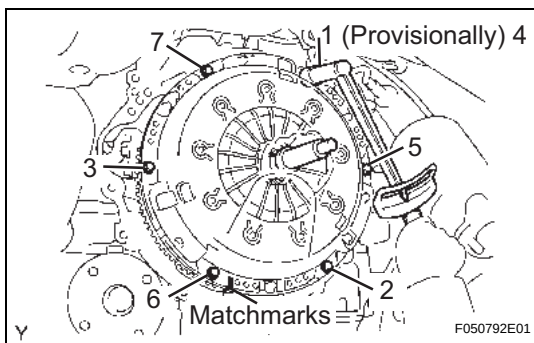
- (a) Align the matchmarks on the clutch cover assembly and flywheel sub-assembly.

- (b) Following the procedures shown in the illustration, tighten the 6 bolts, in the order starting with the bolt located near the knock pin on the top.

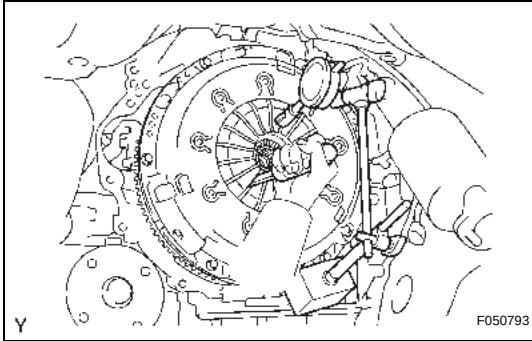
**Torque: 19 N\*m (195 kgf\*cm, 14 ft.\*lbf)**

**HINT:**

- Following the order in the illustration, uniformly tighten the bolts.



- Move SST up and down, right and left lightly, after checking that the disc is in the center, and tighten the bolts.



### 3. INSPECT AND ADJUST CLUTCH COVER ASSEMBLY

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

**Maximum non-alignment:**

**0.5 mm (0.020 in.)**

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

**SST 09333-00013**

CL

### 4. INSTALL RELEASE FORK SUPPORT

- (a) Install the release fork support onto the transaxle assembly.

**Torque: 47 N\*m (479 kgf\*cm, 35 ft.\*lbf)**

### 5. INSTALL RELEASE BEARING HUB CLIP

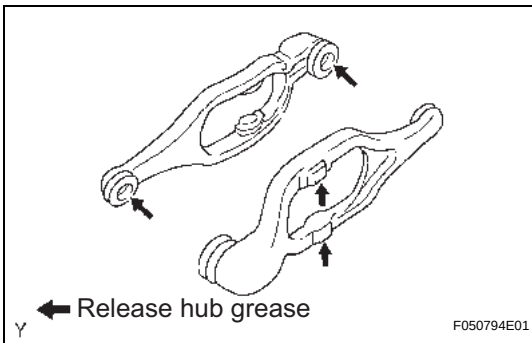
### 6. INSTALL CLUTCH RELEASE FORK SUB-ASSEMBLY

- (a) Apply release hub grease to the release fork and release the bearing assembly contact surfaces, release fork and push rod contact surface and release fork pivot point.

**Sealant:**

**Part No. 08887-01806, RELEASE HUB GREASE or equivalent**

- (b) Install the release fork onto the release bearing assembly.



### 7. INSTALL CLUTCH RELEASE BEARING ASSEMBLY

- (a) Apply clutch spline grease to the input shaft spline.

**Sealant:**

**Part No. 08887-01706, CLUTCH SPLINE GREASE or equivalent**

- (b) Install the bearing onto the release fork, and then install them onto the transaxle assembly.

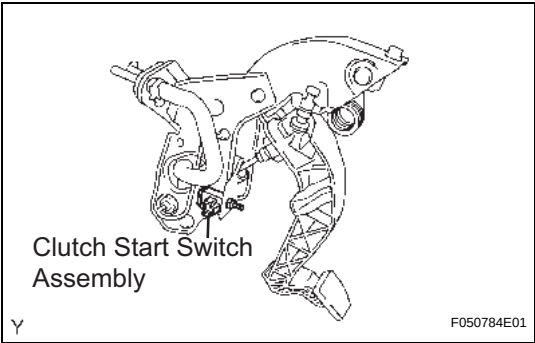
**NOTICE:**

**After installation, move the fork forward and backward to check that the release bearing slides smoothly.**

### 8. INSTALL MANUAL TRANSMISSION UNIT ASSEMBLY

(See page [MT-8](#))

CL



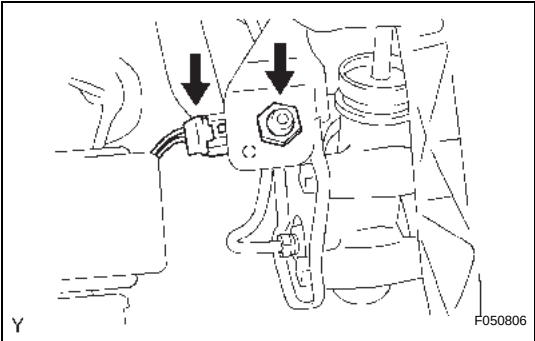
# CLUTCH START SWITCH

## ON-VEHICLE INSPECTION

- 1. 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 assembly.

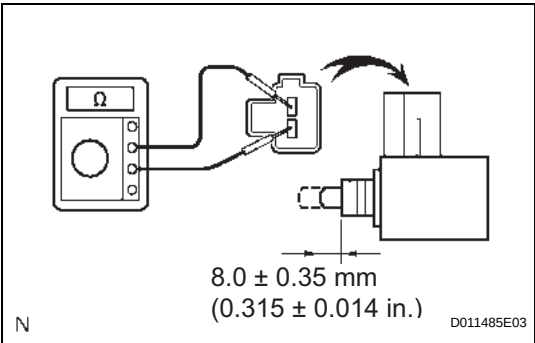
## REMOVAL

- 1. REMOVE CLUTCH START SWITCH ASSEMBLY
  - (a) Disconnect the clutch start switch assembly connector.
  - (b) Remove the nut and clutch start switch assembly from the clutch pedal support.



## INSPECTION

- 1. INSPECT CLUTCH START SWITCH ASSEMBLY
  - (a) Measure the resistance between the terminals when the switch is ON and OFF.

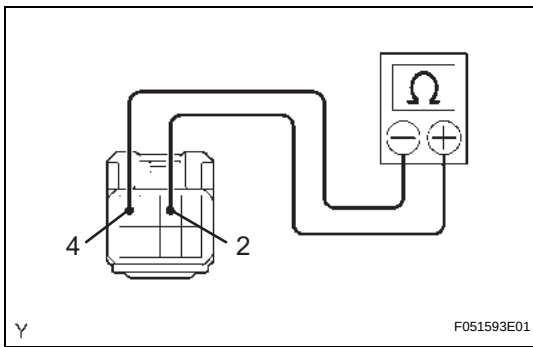


| Switch Position | Specified Condition |
|-----------------|---------------------|
| ON (pushed)     | Below 1Ω            |
| OFF (free)      | 10 kΩ or higher     |

---

## INSTALLATION

1. **INSTALL CLUTCH START SWITCH ASSEMBLY**
  - (a) Install the clutch start switch assembly with the nut.  
**Torque: 16 N\*m (160 kgf\*cm, 12 ft.\*lbf)**
  - (b) Connect the clutch start switch assembly connector.
2. **INSPECT CLUTCH START SWITCH ASSEMBLY (See page [CL-48](#))**



## CLUTCH START CANCEL SWITCH INSPECTION

### 1. INSPECT CLUTCH START CANCEL SWITCH ASSEMBLY

- (a) Using an ohmmeter, check that there is resistance between terminals 2 and 4.

**Standard:**

**10 k $\Omega$  or higher**

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

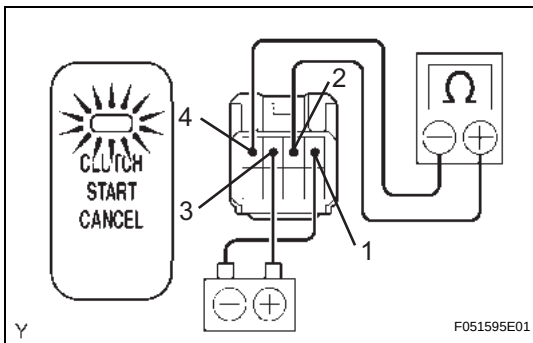
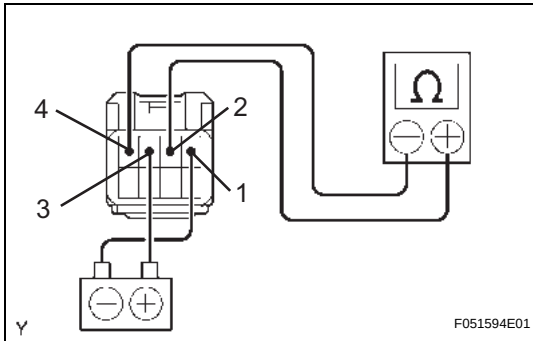
- (b) Connect the positive (+) lead from the battery to terminal 3 and connect negative (-) lead to terminal 1.

- (c) Using an ohmmeter, check that there is resistance between terminals 2 and 4.

**Standard:**

**10 k $\Omega$  or higher**

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

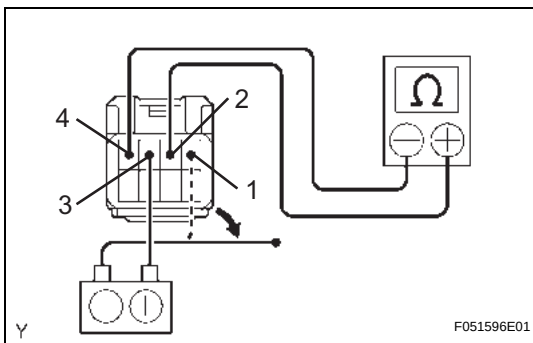


- (d) Check that the indicator light comes on and there is resistance between terminals 2 and 4 when the switch is pressed.

**Standard:**

**Blow 1  $\Omega$**

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



- (e) Using an ohmmeter, check that there is resistance between terminals 2 and 4 when the battery lead is disconnected.

**Standard:**

**10 k $\Omega$  or higher**

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