CHAPTER CC

CLUTCH CONTROL

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DATA AND SPECIFICATIONS

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main cylinder inside diameter</td>
<td>19.05 mm (3/4 in)</td>
</tr>
<tr>
<td>Slave cylinder inside diameter</td>
<td>22.22 mm (7/8 in)</td>
</tr>
<tr>
<td>Release bearing type</td>
<td>Single thrust ball</td>
</tr>
</tbody>
</table>

DESCRIPTION

1. Clutch pedal
2. Switch
3. Main cylinder
4. Spring assembly
5. Release bearing
6. Pivot
7. Release lever
8. Slave cylinder
SPECIAL TOOLS

Prior to starting a clutch control overhaul, it is necessary to have these special tools.

BASE

09655-1080
Tightening torque: kg-cm (lb-ft)

Flare nut
- 6.35 mm dia. pipe: 160–240 (12–17)
- 8 mm dia. pipe: 330–360 (24–26)
- 10 mm dia. pipe: 400–500 (29–36)

Joint with copper washer
- 450–550 (33–39)

Bolt and nut
- 8 mm dia.: 190–260 (14–18)
- 10 mm dia.: 380–500 (28–36)
- 12 mm dia.: 650–870 (47–62)

1. Friction plate
2. Control tube bushing
3. Clutch pedal bracket
4. Pedal stopper
5. Connector
6. Main cylinder
7. Cotter pin
8. Plain washer
9. Clutch pedal
10. Pin
11. Switch
12. Tension spring
13. Pedal pad
14. Setting plate
15. Spring retainer
16. Adjuster rod
17. Spring seat
18. Compression spring
19. Clip
20. Clutch pedal buffer
21. Bushing
22. Release fork
23. Needle roller bearing
24. Pivot
25. Internal tooth lockwasher
26. Release bearing
27. Clutch bearing
28. Boot
29. Push rod
30. Slave cylinder
31. Antirattle spring

T = Tightening torque kg-cm (lb-ft)
IMPORTANT POINTS - ASSEMBLY

INSTALL THE CLUTCH PEDAL AND MAIN CYLINDER.

NOTE: Coat the bushing and clevis with lithium base grease.

INSTALL THE SPRING ASSEMBLY.

1. Assemble the spring and related parts.

NOTE: Coat the sliding surface with the chassis grease.

2. Install the spring assembly on the pedal pin and pedal bracket.

3. Adjust the spring height with the nut, when the pedal is released.

Assembly Standard: 31.7 mm (1.248 in)

4. Secure the nut with the nut.

REPLACE THE RELEASE FORK BEARING.

1. Remove the release fork bearings.

2. Using a special tool and a press, press in the bearing to the release fork.

Special Tool: Base (09655-1060)

3. Check the distance between both bearing.

Assembly Standard: More than 50 mm (1.968 in)
COAT CHASSIS GREASE OR HEAT RESISTANCE GREASE IN THE FOLLOWING POINTS.
1. Chassis grease
   a. Release fork and release bearing contact point.
   b. Release bearing hub inner groove.
   c. Release fork pivot bushing.
   d. Release fork and push rod contact point.
2. Heat resistance grease
   a. Transmission input shaft spline.

NOTE: Coat a small amount of grease to the spline.

### INSPECTION AND REPAIR

<table>
<thead>
<tr>
<th>Inspection Item</th>
<th>Standard</th>
<th>Limit</th>
<th>Remedy</th>
<th>Inspection Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release bearing improper rotation</td>
<td>–</td>
<td>–</td>
<td>Replace, if necessary.</td>
<td>Visual check</td>
</tr>
<tr>
<td>Pivot, pivot bushing wear and damage.</td>
<td>–</td>
<td>–</td>
<td>Replace, if necessary.</td>
<td>Visual check</td>
</tr>
<tr>
<td>Release fork bearing improper rotation, wear and damage.</td>
<td>–</td>
<td>–</td>
<td>Replace, if necessary.</td>
<td>Visual check</td>
</tr>
<tr>
<td>Release fork and push rod contact point, wear and damage.</td>
<td>–</td>
<td>–</td>
<td>Replace, if necessary.</td>
<td>Visual check</td>
</tr>
</tbody>
</table>
CLUTCH MAIN CYLINDER

1. Control rod end
2. Lock nut
3. Push rod
4. Boot
5. Retaining ring
6. Thrust washer
7. Piston seal
8. Piston
9. Piston cup
10. Piston assembly
11. Return spring
12. Hose joint
13. Body
14. O-ring
15. Soft washer
16. Bolt

T = 150–200 (11–14)
T = 117–172 (9–12)
T = 25–45 (1.81–3.25)

T = Tightening torque kg-cm (lb-ft)

IMPORTANT POINT (S) — DISMOUNTING

REMOVE THE MAIN CYLINDER.

NOTE: ○ Before remove the main cylinder, drain the clutch fluid from the hydraulic line.
○ Place a small drain pan under the main cylinder to catch the hydraulic fluid. Do not let clutch fluid remain on a painted floor. Wash it off immediately.

IMPORTANT POINT (S) — ASSEMBLY

INSTALL THE RETURN SPRING AND PISTON TO THE MAIN CYLINDER.

NOTE: Lubricate the cylinder bore and piston with clean clutch fluid.

<table>
<thead>
<tr>
<th>Inspection Item</th>
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<th>Limit</th>
<th>Remedy</th>
<th>Inspection Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piston seal and cup wear, damage.</td>
<td></td>
<td></td>
<td>Replace the piston assembly and/or cylinder body, if necessary.</td>
<td>Visual check</td>
</tr>
<tr>
<td>Cylinder bore scoring, corrosion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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CC-7

CLUTCH CONTROL
CLUTCH SLAVE CYLINDER

1. Boot
2. Piston seal
3. Piston
4. Piston cup
5. Conical spring
6. Cylinder
7. Bleeder screw
8. Bleeder screw cup

\[ T = 80-110 \ (5.8-7) \]

\[ T = \text{Tightening torque: kg-cm (lb-ft)} \]

IMPORTANT POINT (S) — DISMOUNTING

REMOVE THE SLAVE CYLINDER.

NOTE: ○ Before remove the slave cylinder, drain the clutch fluid from the hydraulic line.

IMPORTANT POINT (S) — ASSEMBLY

1. REPLACE SLAVE CYLINDER PISTON CUP AND PISTON SEAL.

NOTE: ○ Lubricate the new piston with clean clutch fluid. Take care not to damage the piston cup and seal, when installing them on the piston.

2. INSTALL THE PISTON TO THE SLAVE CYLINDER.

NOTE: Lubricate the cylinder bore and piston with clean clutch fluid.

<table>
<thead>
<tr>
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<th>Limit</th>
<th>Remedy</th>
<th>Inspection Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piston cup and seal wear, damage.</td>
<td></td>
<td></td>
<td>Replace the cup, seal, and/or cylinder body, if necessary.</td>
<td>Visual check</td>
</tr>
<tr>
<td>Cylinder bore scoring, corrosion.</td>
<td></td>
<td></td>
<td></td>
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</table>
BLEEDING AND ADJUSTMENT

BLEED THE AIR FROM HYDRAULIC LINE.

NOTE: ○ Do not mix the clutch fluid with different types or brands.
○ Be careful not to spill clutch fluid from the reservoir or from the air bleeder during air bleeding. Clutch fluid can damage the paint finish on the body or floor.
○ There are two methods of air bleeding, gravity air bleeding and pressure air bleeding. If a pressure air bleeding equipment is on hand, its use is recommended.

Gravity bleeding
1. Connect a funnel to a bleeder hose.
2. Connect the other end of the bleeder hose to the bleeder screw.
3. Hold the funnel about 1.5m (4.92 ft) higher than the reservoir tank.
4. Loosen the bleeder screw and pour the clutch fluid into the funnel.
5. Observe the flow of clutch fluid into the reservoir tank.
6. When the air bubbles cease, close the bleeder screw.
7. Check the fluid level. If necessary, add or remove clutch fluid in order to match the "MAX" level.

AFTER BLEEDING, MAKE SURE THE TRAVEL OF THE SLAVE CYLINDER PUSH ROD IS AS SPECIFIED.

Depress the clutch pedal fully and measure the push rod travel. If travel is less than standard, re-bleed the hydraulic system.

Standard: More than 21 mm (0.827 in)

CHECK THE PUSH ROD PLAY. IF NECESSARY, ADJUST THE PUSH ROD PLAY.

Standard:
- Clearance Between Push Rod and Piston: 0.5 mm (0.0197 in)
- Push Rod Play at Pedal Top: 2—4 mm (0.079—0.157 in)
CHECK THE CLUTCH PEDAL PLAY.

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

Assembly Standard: 15–30 mm (1.969–2.559 in)

NOTE: The clutch pedal play is automatically maintained at normal operating conditions.

CHECK THE CLUTCH PEDAL HEIGHT AND STROKE.

Assembly Standard:

Pedal Height: 182–196 mm (7.166–7.716 in)
Pedal Stroke: 180–200 mm (7.087–7.874 in)

CHECK THE LENGTH "A". IF ITS LENGTH IS BELOW THE SERVICE LIMIT, IT IS TIME TO REPLACE THE CLUTCH FACING.

Service Limit: 23 mm (0.906 in)