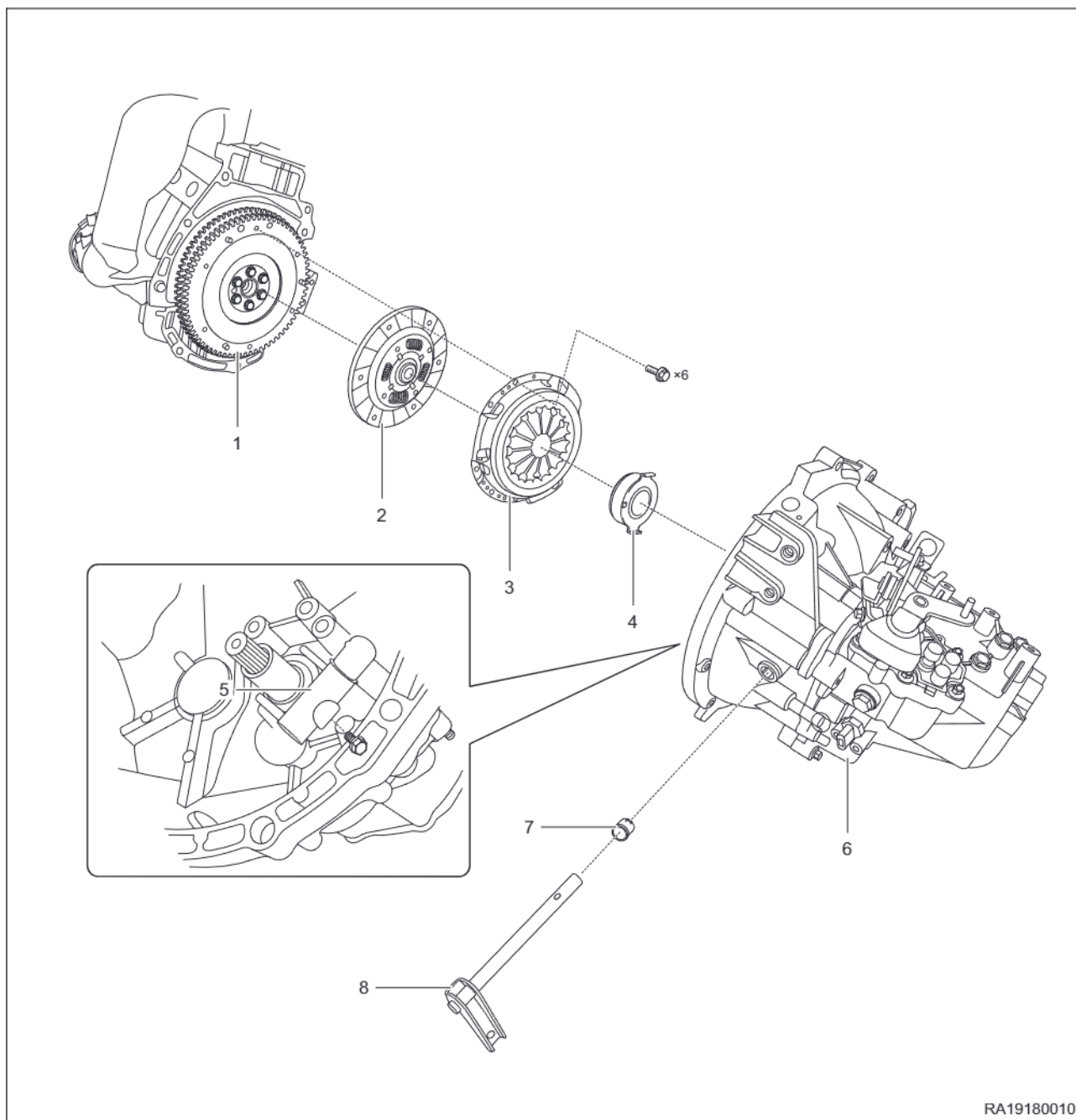

CLUTCH

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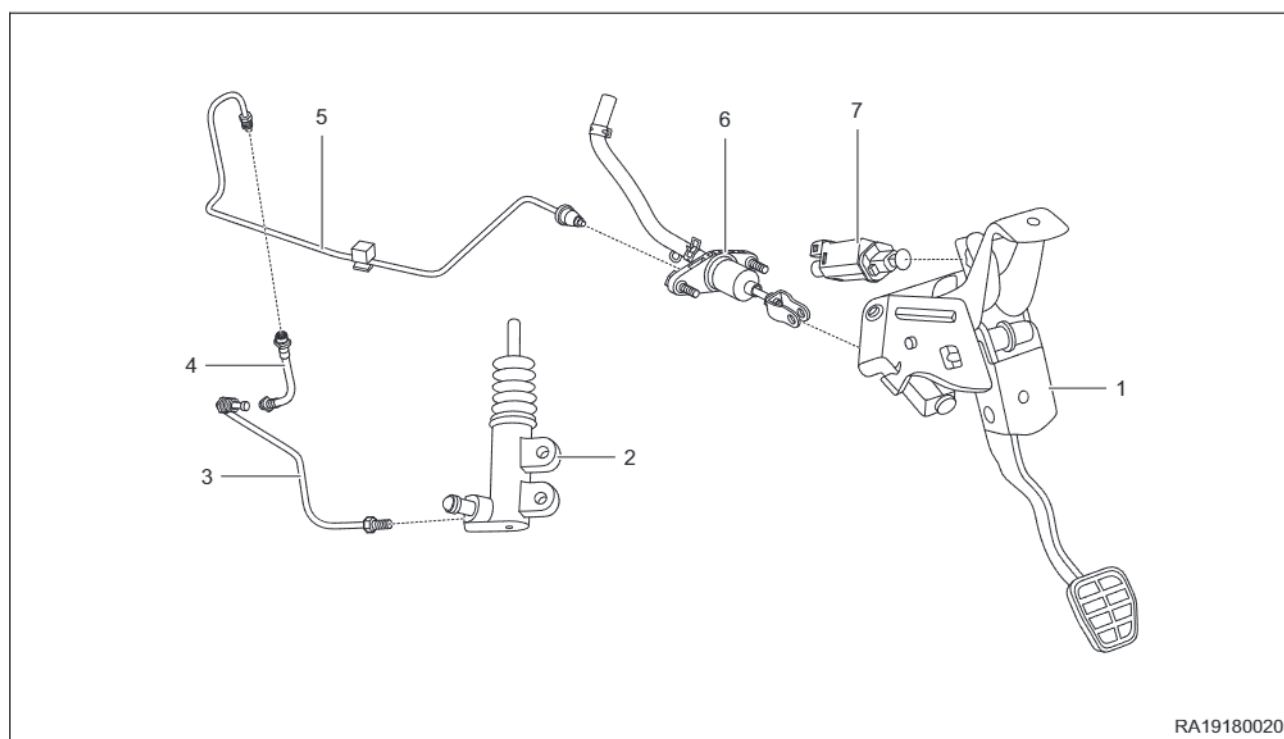
GENERAL INFORMATION

Description



18

1 - Flywheel	2 - Clutch Driven Disc
3 - Clutch Pressure Plate	4 - Release Bearing
5 - Release Fork	6 - Return Spring
7 - Wear Bushing	8 - Clutch Arm



RA19180020

1 - Clutch Pedal Assembly Clutch Master Cylinder Inlet Hose Assembly	2 - Clutch Release Cylinder Assembly
3 - Pipe Assembly II	4 - Hose Assembly
5 - Pipe Assembly I	6 - Clutch Master Cylinder Assembly
7 - Clutch Switch	

Operation

The hydraulic clutch system mainly consists of clutch pedal, clutch master cylinder, clutch release cylinder, clutch hydraulic line, etc. When depressing the clutch pedal, the clutch master cylinder generates pressure, and this pressure is transmitted to the release bearing which is fitted with the pressure plate diaphragm spring. As the external force is applied, the release bearing presses the release finger of diaphragm spring inward until it reaches the fulcrum. The operation makes pressure plate move backward, thus releasing the clamping force from the clutch driven disc.

Clutch Master Cylinder Assembly

The clutch master cylinder consists of piston, cylinder block, push rod and hydraulic line. When depressing the pedal, the push rod pushes the piston in the master cylinder and the fluid in the hydraulic line is drained into the release cylinder.

Specifications

Torque Specifications

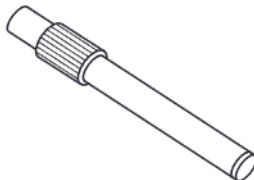
Description	Torque (N·m)
Clutch Pressure Plate Fixing Bolt	23 ± 2
Clutch Fork Fixing Bolt	32 ± 3
Clutch Master Cylinder Fixing Nut	25 ± 4
Clutch Release Cylinder and Oil Pipe II	18 ± 2
Fixing Bolt Between Clutch Release Cylinder and Transmission	25 ± 4
Clutch Pedal Upper Fixing Bolt	20 ± 3

Clutch Driven Plate Specifications

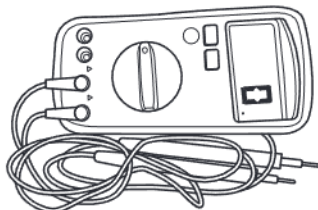
Measurement Item	Specification (mm)
Clutch Driven Disc Standard Thickness	7.3 ± 0.3
Minimum Rivet Depth	0.8

Tools

Special Tool

Clutch Pressure Plate Installer	 RCH0000018
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General Tools

Vernier Caliper	 RCH0000019
Digital Multimeter	 RCH0000002

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust them as necessary.

Symptoms	Possible Causes	See page
Clutch chatters	Engine mounting (loose)	07-58
	Clutch driven disc (oily)	18-16
	Clutch driven disc (worn)	18-16
	Clutch driven disc torsion spring (damaged)	18-16
	Clutch driven disc (glazed)	18-16
	Diaphragm spring (tip is out of alignment)	18-16
Clutch is noisy	Clutch release bearing (worn, dirty, or damaged)	18-16
	Clutch driven disc torsion spring (damaged)	18-16
Clutch slips	Clutch pedal (free play is out of adjustment)	18-9
	Clutch driven disc (oily)	18-16
	Clutch driven disc (worn)	18-16
	Diaphragm spring (damaged)	18-16
	Pressure plate (distorted)	18-16
	Flywheel (distorted)	-
Clutch does not disengage completely	Clutch driven disc (out of true)	18-16
	Clutch driven disc (runout is excessive)	18-16
	Clutch driven disc (lining is broken)	18-16
	Clutch driven disc (dirty or burned)	18-16
	Clutch driven disc (oily)	18-16
	Clutch pedal (free play out of adjustment)	18-9

ON-VEHICLE SERVICE

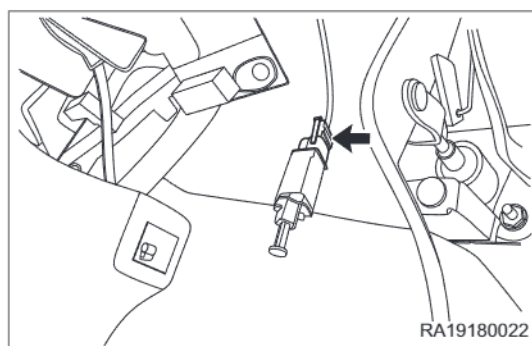
Clutch Switch

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the clutch switch.
 - a. Turn the clutch switch in the direction of arrow as shown in the illustration, and remove it.



- b. Disconnect the clutch switch connector (arrow).

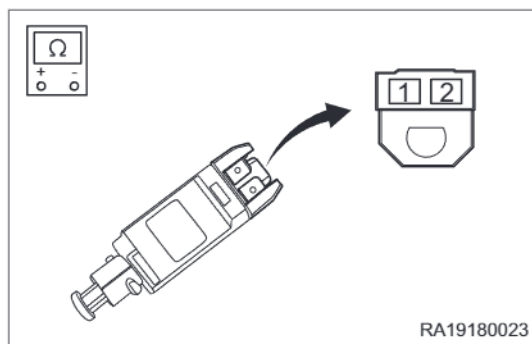


Inspection

Check the continuity between terminals when the clutch switch is turned on or off.

18

Multimeter Connection	Switch Position	Continuity State
Terminal 1 and Terminal 2	ON (not pushed)	Continuity
Terminal 1 and Terminal 2	OFF (pushed)	No continuity



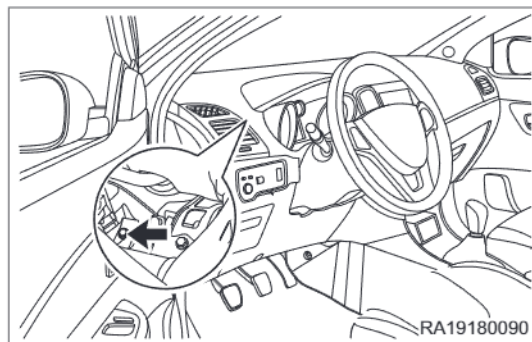
Installation

Installation is in the reverse order of removal.

Clutch Pedal

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the clutch master cylinder ([See page 18-10](#)).
4. Remove the clutch switch ([See page 18-8](#)).
5. Remove the clutch pedal upper fixing bolt (arrow).
(Tightening torque: $20 \pm 3 \text{ N}\cdot\text{m}$)



6. Remove the clutch pedal.

Installation

Installation is in the reverse order of removal.

Clutch Master Cylinder

Removal

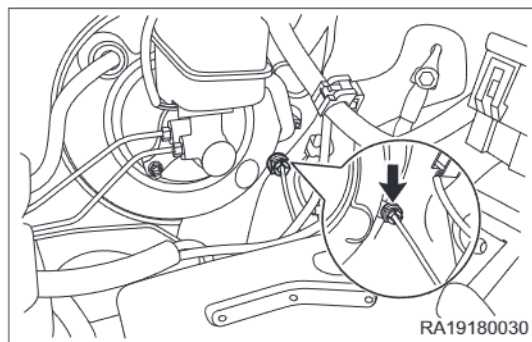
⚠ WARNING

- The brake fluid in the clutch master cylinder is harmful to your skin, be sure to wear protective gloves before operation.
- Once the brake fluid contacts with your skin, wash it off with water immediately.

👁 CAUTION

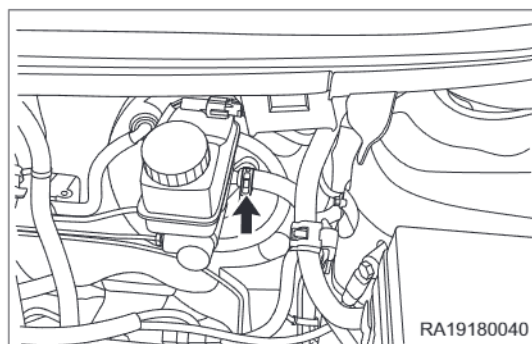
- Collect the brake fluid with a container while servicing.
- Make sure the fluid level in the reservoir is at "MAX" after replacing the release cylinder.
- DO NOT allow the brake fluid to spray onto the body surface, or it will damage the painted surfaces; if any brake fluid is get onto the painted surfaces, wash it off with water immediately.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the battery ([See page 16-7](#)).
4. Remove the clutch master cylinder.
 - a. Disconnet the joint (arrow) from the clutch master cylinder hydraulic pipe assembly I.

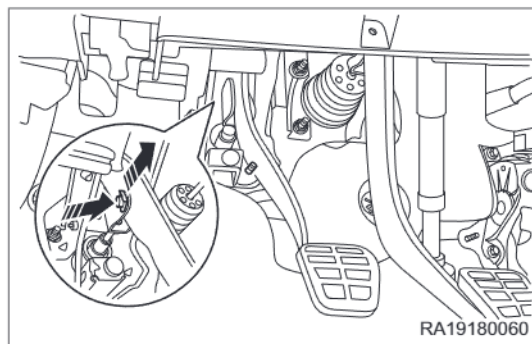


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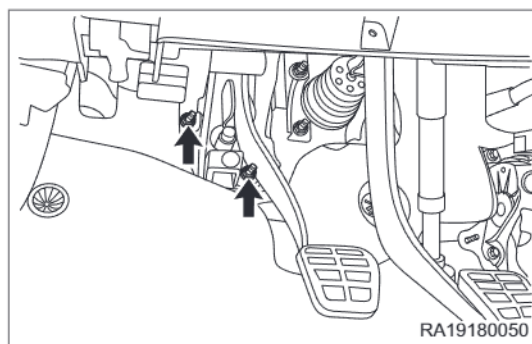
- b. Remove the rubber hose clamp (arrow) from the reservoir, and disconnect the rubber hose.



- c. Remove the set lock plate connecting the clutch master cylinder and clutch pedal, and take out the set shaft.



- d. Remove the fixing nuts (arrow) from the clutch master cylinder, and remove the clutch master cylinder. (Tightening torque: 25 ± 4 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

- After installation, perform the bleeding procedure for hydraulic clutch and check the brake fluid for leakage.

Clutch Release Cylinder

Removal

⚠ WARNING

- The brake fluid in the release cylinder is harmful to your skin, be sure to wear protective gloves before operation.
- Once the brake fluid contacts with your skin, wash it off with water immediately.

👁 CAUTION

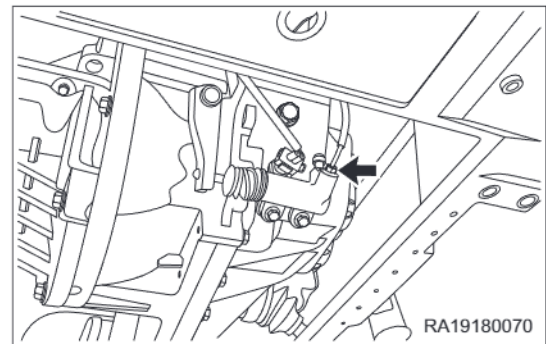
- Collect the brake fluid with a container while servicing.
- Make sure the fluid level in the reservoir is at "MAX" after replacing the release cylinder.
- DO NOT allow the brake fluid to spray onto the body surface, or it will damage the painted surfaces; If any brake fluid is get onto the painted surfaces, wash it off with water immediately.

1. Raise the vehicle with a lifter.

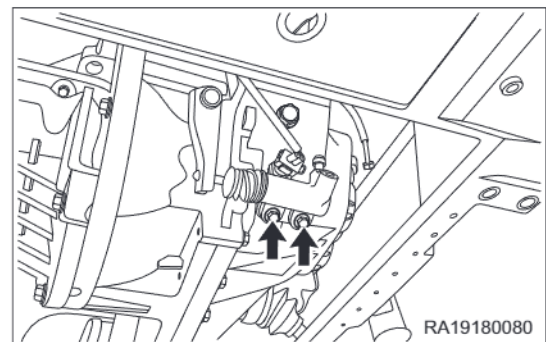
👁 CAUTION

- Be sure to wear the necessary safety equipment to prevent accidents.
- Check if the safety lock of lifter is locked when repairing the chassis parts.

2. Loosen the joint (arrow) from the clutch release cylinder pipe assembly II.
(Tightening torque: $18 \pm 2 \text{ N}\cdot\text{m}$)



3. Remove the fixing bolts (arrow) between clutch release cylinder and transmission.
(Tightening torque: $25 \pm 4 \text{ N}\cdot\text{m}$)



4. Remove the clutch release cylinder.

Installation

Installation is in the reverse order of removal.

CAUTION

- Connect the pipe joint of pipe assembly II to the clutch release cylinder assembly first, then tighten it after installation.
- Be sure to align the push rod of clutch release cylinder assembly with the hole in the transmission case release fork, and tighten the bolts to the specified value.
- After installation, perform the bleeding procedure for hydraulic clutch and check the system line for leakage.

Bleeding Hydraulic Clutch

WARNING

- The brake fluid is harmful to your skin, be sure to wear protective gloves before operation.
- Once the brake fluid contacts with your skin, wash it off with water immediately.

CAUTION

- Collect the brake fluid with a container.
- DO NOT allow the brake fluid to spray onto the body surface, or it will damage the painted surface; if any brake fluid is get onto the painted surfaces, wash it off with water immediately.
- Only use the brake fluid recommended by Chery Automobile Co., Ltd, or the line may be subjected to a severe corrosion.
- The brake fluid type should be DOT4.

HINT:

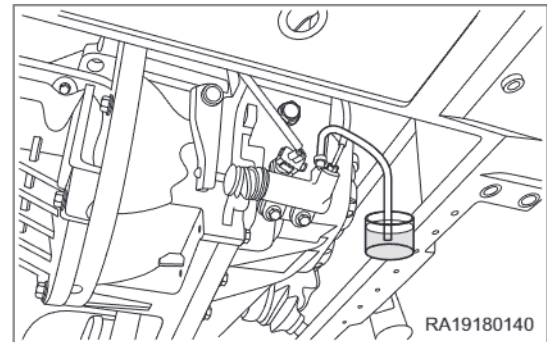
An assistant will be required to assist when bleeding the hydraulic clutch.

1. Turn off all the electrical equipment and ignition switch.
2. Confirm the level in the reservoir, and add DOT4 brake fluid as necessary. Keep the cap open.

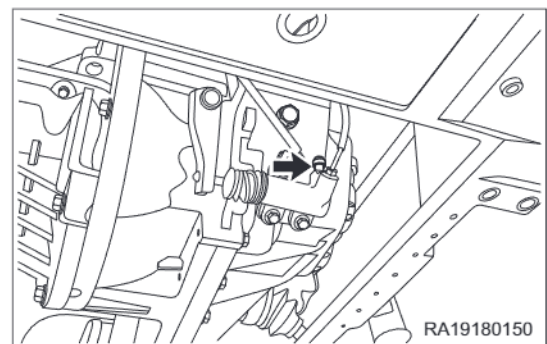
CAUTION

- Before bleeding, make sure that there is sufficient brake fluid in the reservoir.

3. Remove the discharge port protective cap and connect a clear plastic hose to the bleeder screw, and submerge the end of hose into the clear container which is full of new brake fluid.



4. Release the discharge port (arrow).



5. Depress the clutch pedal until the brake fluid is drained from the discharge port.

**ENVIRONMENTAL PROTECTION**

- Collect the brake fluid with a container.

6. Fully depress the clutch pedal and tighten the discharge port.
7. Depress the clutch pedal until there is pressure in the clutch system.
8. Depress the clutch pedal, then release the discharge port and bleed the clutch system.
9. Repeat steps from 6 to 8 for several times, until there is no air in the hydraulic clutch system any more.

**CAUTION**

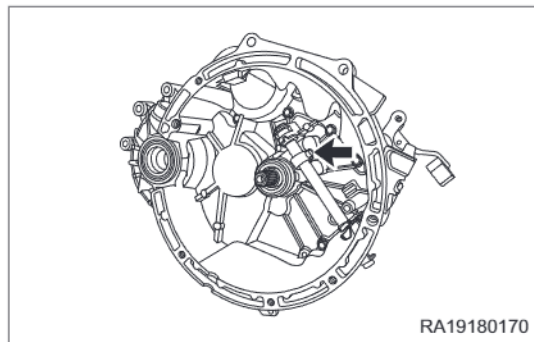
- Never drain the brake fluid in the reservoir while bleeding the hydraulic clutch.
- During bleeding, make sure the level in the reservoir is always at "MAX".

10. Close the hydraulic discharge port, then remove the discharge hose and replace the discharge port dust cover.
11. Check the brake fluid in the brake master cylinder, and add DOT4 brake fluid up to "MAX" as necessary, then tighten the reservoir cap.
12. Check the clutch pedal stroke. If there is excessive clutch pedal stroke, or the condition does not improve, the air may be still in the system. Bleed the clutch again as necessary.
13. Test the vehicle again and make sure the clutch operates normally and the depressing feel is good.

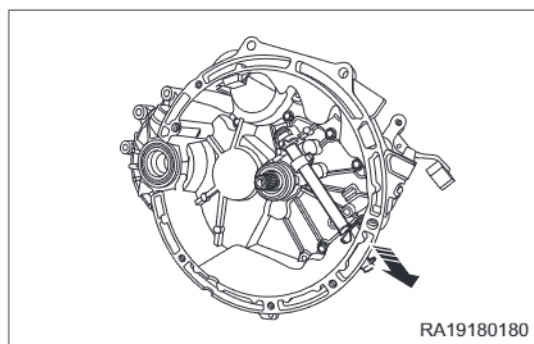
Clutch Unit

Removal

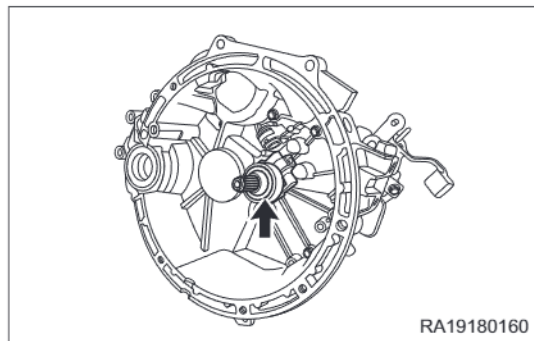
1. Remove the transmission assembly (See page 17-21).
2. Remove the release fork fixing bolt (arrow).



3. Pull out the clutch arm in the direction of arrow.

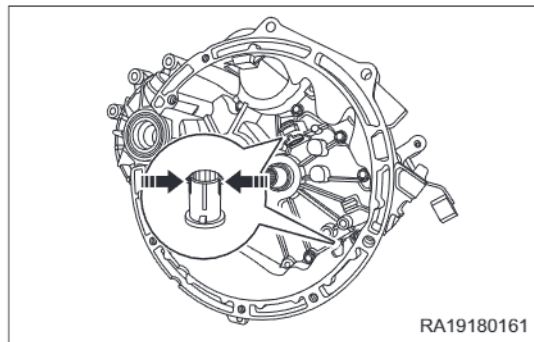


4. Remove the clutch fork and release bearing (arrow).

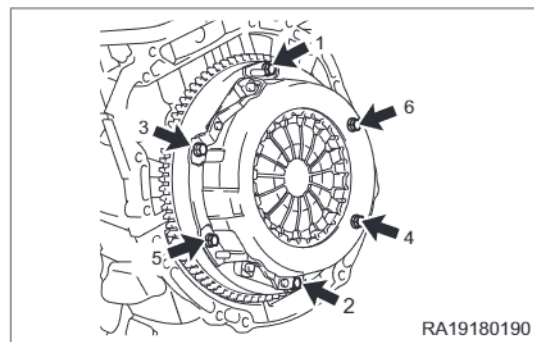


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5. Remove the wear bushing.



6. Remove the clutch pressure plate bolts (arrow), and remove the clutch pressure plate and clutch driven disc.



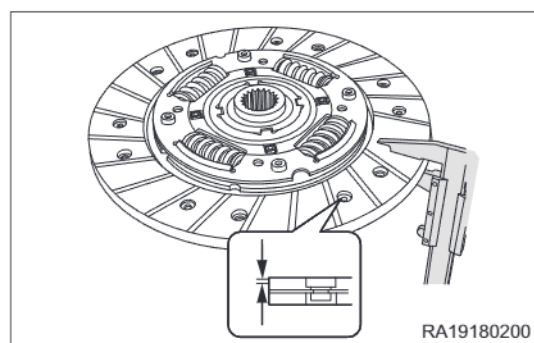
Inspection

1. Check the clutch driven disc.
 - a. Visually check the clutch driven disc for dirt or glazing. Clean or replace the clutch driven disc as necessary.
 - b. Use a vernier caliper to measure the thickness of clutch driven disc.

Standard thickness: 7.3 ± 0.3 mm

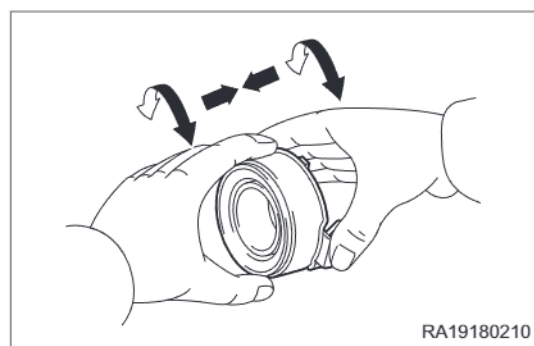
Minimum rivet depth: 0.8 mm

If the result is not as specified, replace the clutch driven disc.



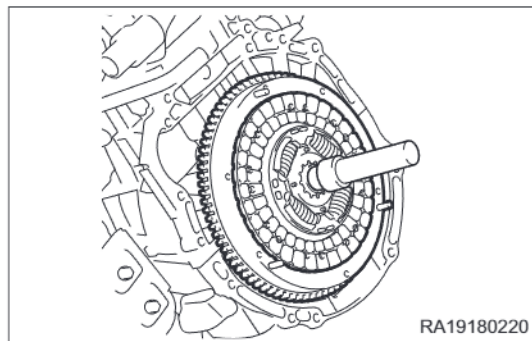
2. Check the clutch release bearing assembly.
 - a. Visually check the surface of release bearing for dirt, glazing or damage. Clean or replace the release bearing assembly as necessary.
 - b. Check that the bearing operates smoothly by rotating the sliding part of bearing (the side contacting with clutch).

Replace the release bearing assembly if necessary.

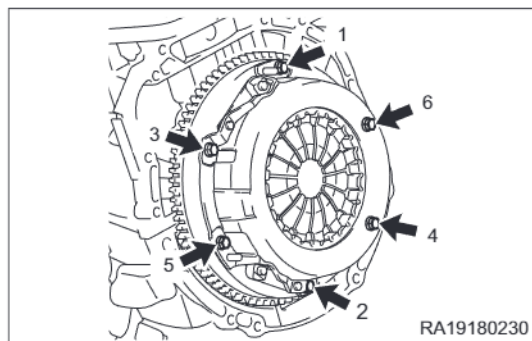


Installation

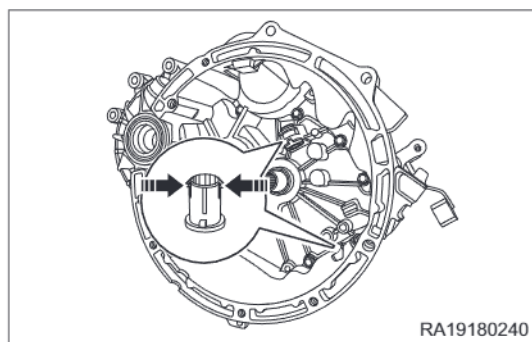
1. Insert the special tool into the clutch driven disc, and insert it into the flywheel.



2. Install the clutch pressure plate and install the clutch pressure plate fixing bolts (arrow).
(Tightening torque: $23 \pm 2 \text{ N}\cdot\text{m}$)

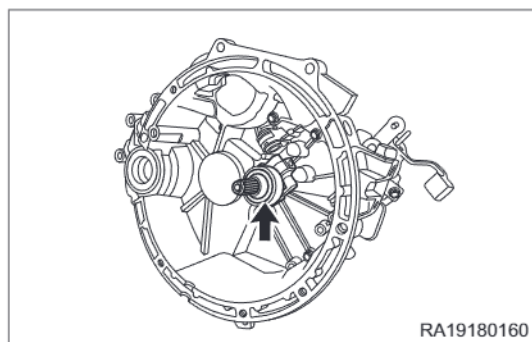


3. Install the wear bushing.



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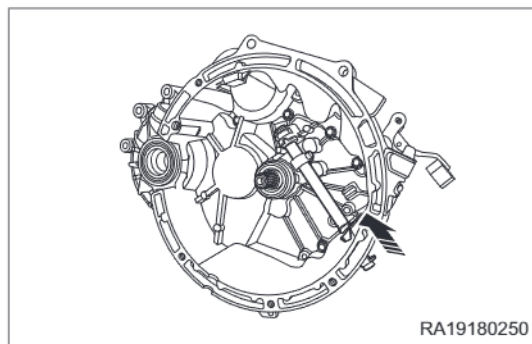
4. Install the clutch fork and release bearing (arrow).



CAUTION

- DO NOT install the clutch fork in reverse, and secure it in place.
- Apply a proper amount of grease to the release bearing cone during installation.

5. Insert the clutch arm in the direction of arrow.



6. Install the release fork fixing bolt (arrow).
(Tightening torque: $32 \pm 3 \text{ N}\cdot\text{m}$)

