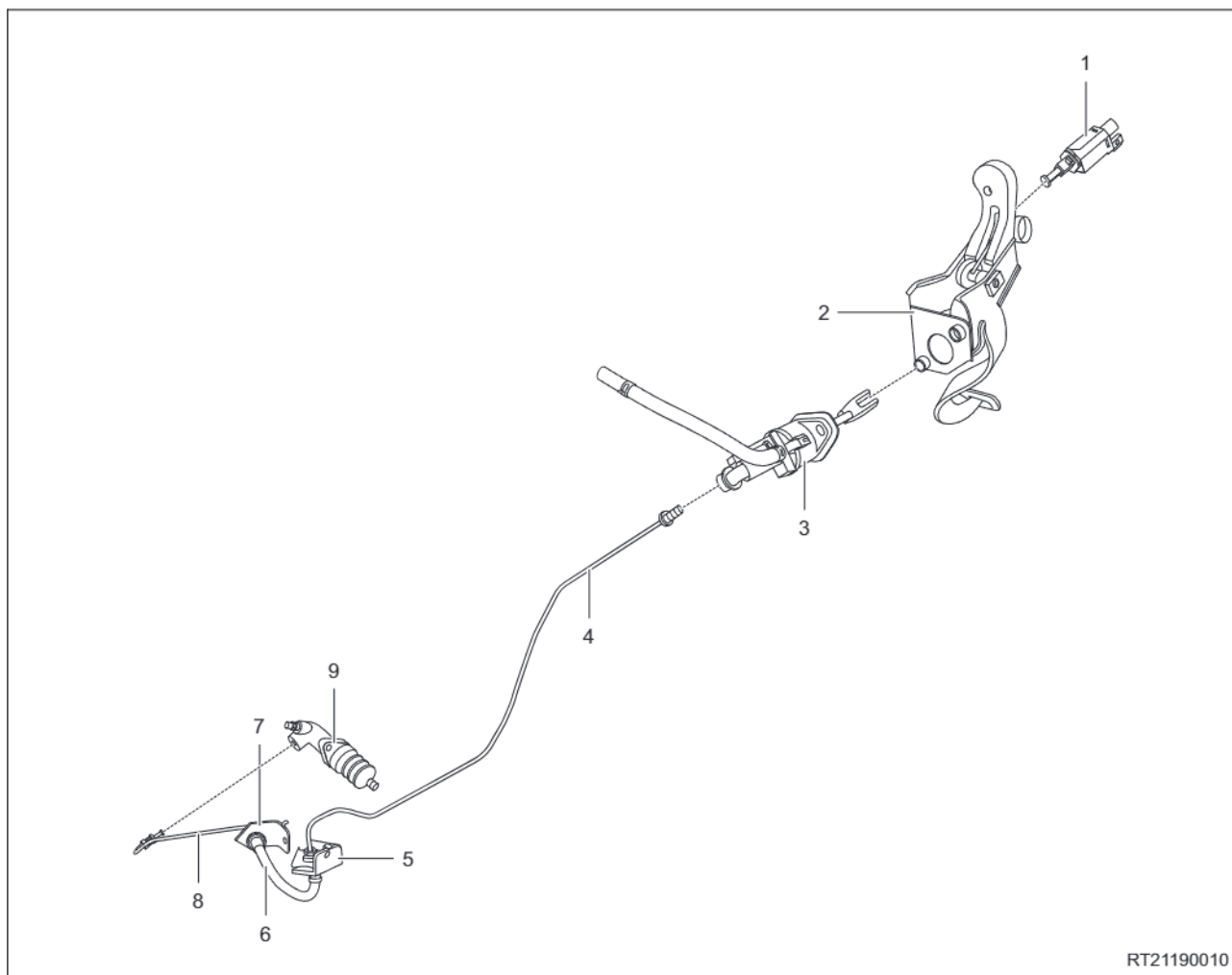

CLUTCH

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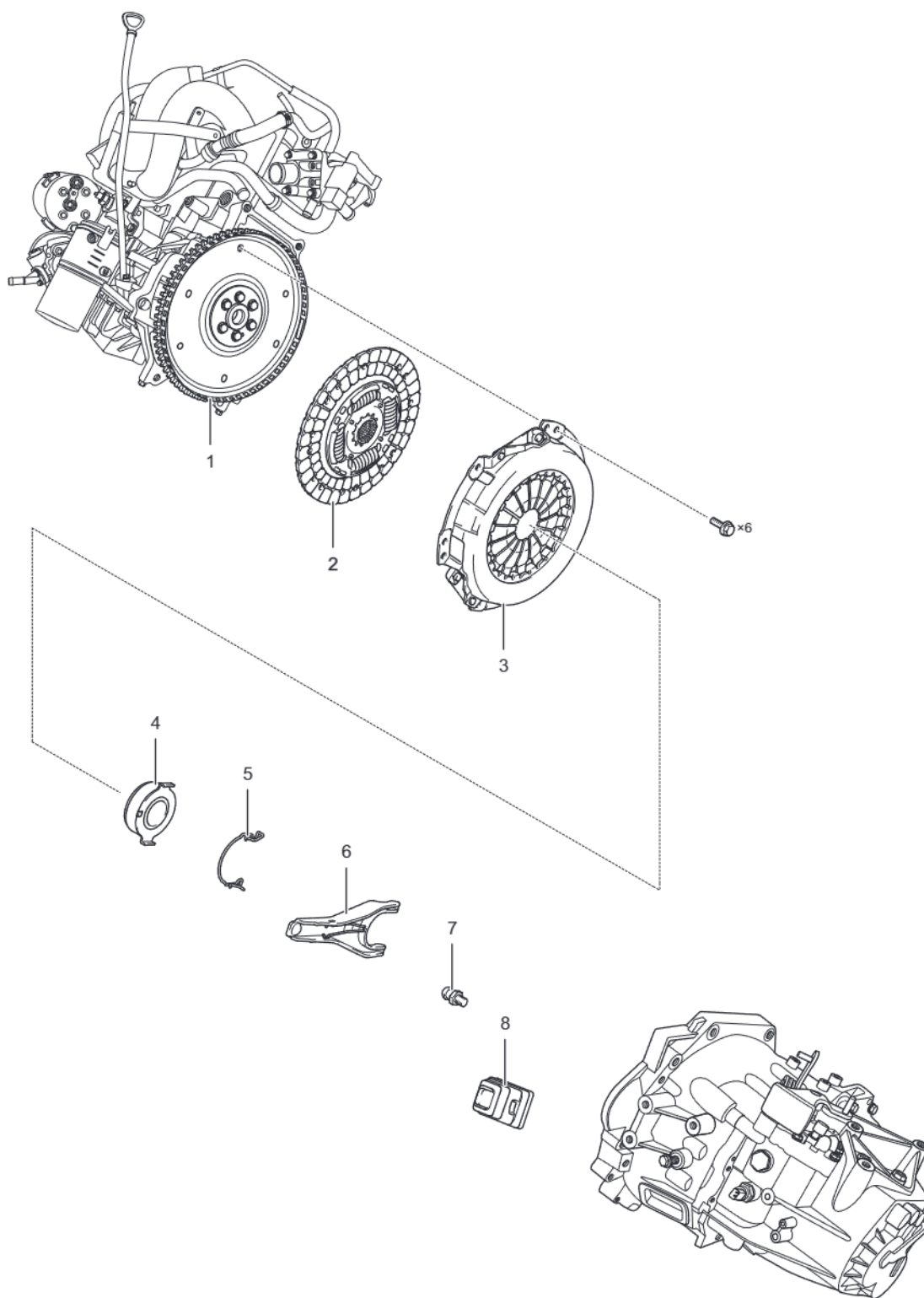
GENERAL INFORMATION

Description



RT21190010

1 - Clutch Switch	2 - Clutch Pedal Assembly
3 - Clutch Master Cylinder with Inlet Hose Assembly	4 - Pipe Assembly I
5 - Bracket I	6 - Hose Assembly
7 - Bracket II	8 - Pipe Assembly II
9 - Clutch Release Cylinder Assembly	



RT21190020

1 - Flywheel	2 - Clutch Driven Disc
3 - Clutch Pressure Plate	4 - Release Bearing
5 - Release Bearing Clip	6 - Clutch Release Fork
7 - Release Fork Ball Seat	8 - Dust Boot

Operation

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

Clutch master cylinder consists of piston, cylinder block, push rod and hydraulic line. When depressing pedal, push rod pushes the piston in master cylinder to discharge fluid in hydraulic line into release cylinder.

Specifications

Torque Specifications

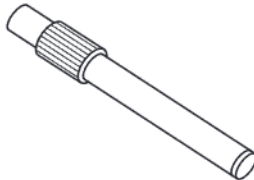
Description	Torque (N·m)
Clutch Pedal Fixing Nut	25 ± 2
Pipe Assembly II Joint	16 ± 2
Clutch Release Cylinder Fixing Bolt	22 ± 2
Clutch Pressure Plate	25 ± 2

Clutch Driven Disc Specifications

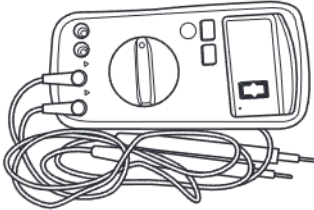
Measurement Item	Specification (mm)
Clutch Driven Disc Standard Thickness	7.6 ± 0.2
Minimum Rivet Depth	1.2

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.

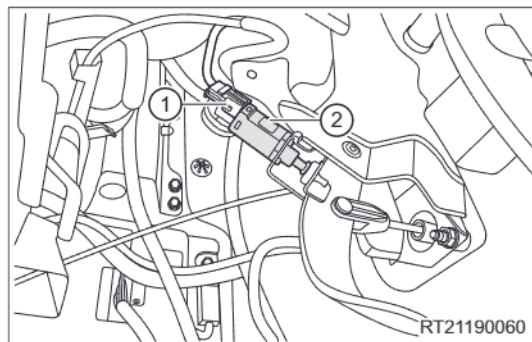
Symptom	Suspected Area	See page
Clutch chatters	Engine mounting (loose)	07-64
	Clutch driven disc (oily)	19-14
	Clutch driven disc (worn)	19-14
	Clutch driven disc torsion spring (damaged)	19-14
	Clutch driven disc (glazed)	19-14
	Diaphragm spring (tip is out of alignment)	19-14
Clutch is noisy	Clutch release bearing (worn, dirty or damaged)	19-14
	Clutch driven disc torsion spring (damaged)	19-14
Clutch slips	Clutch driven disc (oily)	19-14
	Clutch driven disc (worn)	19-14
	Diaphragm spring (damaged)	19-14
	Pressure plate (distorted)	19-14
	Flywheel (distorted)	-
Clutch does not disengage completely	Clutch driven disc (improperly installed)	19-14
	Clutch driven disc runout (excessive)	19-14
	Clutch driven disc lining (broken)	19-14
	Clutch driven disc (dirty or burned)	19-14
	Clutch driven disc (oily)	19-14

ON-VEHICLE SERVICE

Clutch Switch

Removal

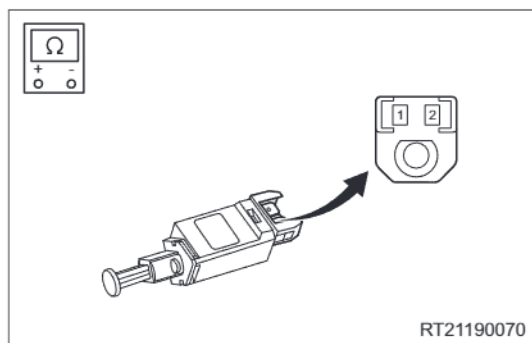
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the clutch switch.
 - a. Disconnect the clutch switch connector (1) and remove the clutch switch (2).



Inspection

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

Switch Condition	Specified Condition
ON (not pushed)	Continuity
OFF (pushed)	No continuity



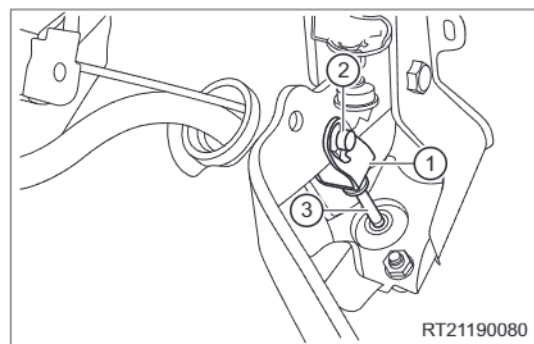
Installation

Installation is in the reverse order of removal.

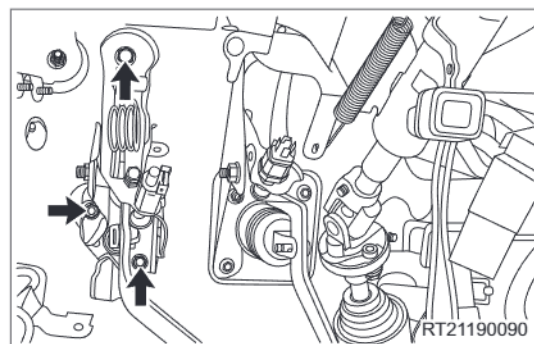
Clutch Pedal

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the clutch switch ([See page 19-8](#)).
4. Remove the clutch pedal.
 - a. Remove the fork retainer (1), pull out the center pin (2) and disconnect the clutch master cylinder push rod (3) from clutch pedal.



- b. Remove 3 nuts (arrow) from clutch. (Tightening torque for nut: $25 \pm 2 \text{ N}\cdot\text{m}$)



- c. Remove the clutch pedal.

Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure to adjust clutch pedal to standard height before installation.
- Be sure to tighten nuts to specified torque.
- Check fluid level in reservoir after installation.

Clutch Master Cylinder Assembly

Removal

⚠ WARNING

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

👁 CAUTION

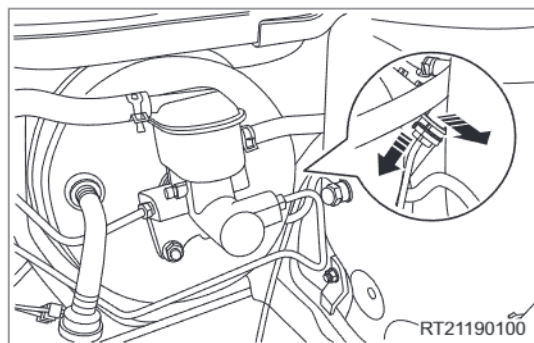
- Be careful when removing clutch master cylinder from engine compartment. Incorrect operation may damage the hydraulic line, also cause clutch to separate improperly.
- DO NOT allow brake fluid to spray onto body surface. Brake fluid may damage the painted surfaces. If any brake fluid is get onto the painted surfaces, wash it off with water immediately.

1. Disconnect the negative battery cable.
2. Drain the brake fluid ([See page 26-13](#)).

HINT:

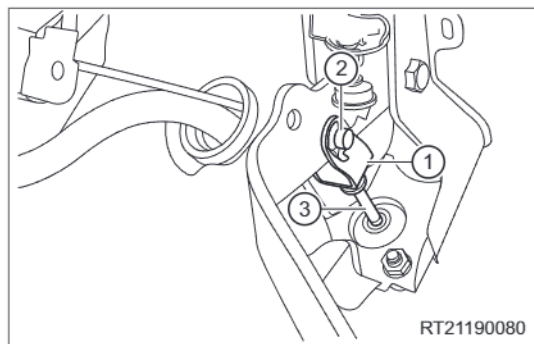
Collect brake fluid with a container.

3. Loosen the elastic clamp and disconnect the master cylinder inlet hose.
4. Remove the clutch master cylinder.
 - a. Push the locating clip in the direction of arrow, and pull out the pipe from clutch master cylinder.

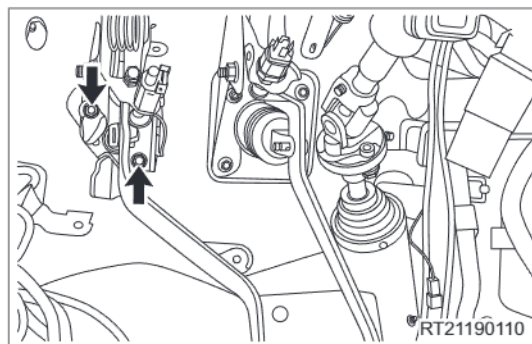


19

- b. Remove the fork retainer (1) and pull out the center pin (2).



- c. Remove 2 fixing nuts (arrow) from clutch master cylinder.
(Tightening torque: 25 ± 2 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

- Add brake fluid to "MAX".
- Perform bleeding procedure for hydraulic clutch and check brake fluid for leakage after installation.

Clutch Release Cylinder Assembly

Removal

⚠ WARNING

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

👁 CAUTION

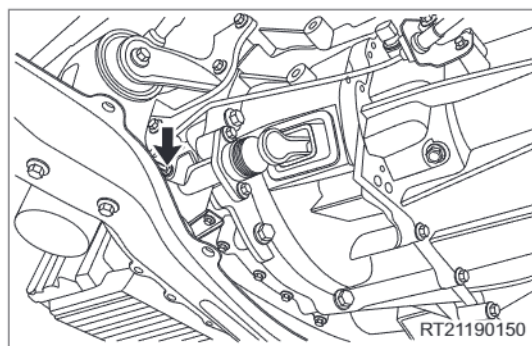
- Collect brake fluid with a container while servicing.
- Make sure fluid level in reservoir is at "MAX" after replacing release cylinder.
- DO NOT allow brake fluid to spray onto body surface, or it will damage the painted surfaces. If any brake fluid is get onto the painted surfaces, wash it off with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

1. Disconnect the negative battery cable.
2. Drain the brake fluid ([See page 26-13](#)).

HINT:

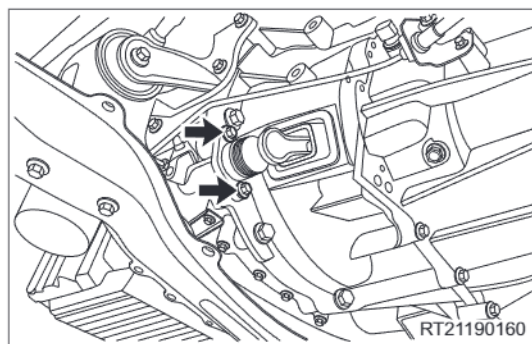
Collect brake fluid with a container.

3. Remove the clutch release cylinder.
 - a. Remove the pipe joint and pipe assembly II from clutch release cylinder.
(Tightening torque: $16 \pm 2 \text{ N}\cdot\text{m}$)



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- b. Remove the clutch release cylinder fixing bolts (arrow) and then remove the clutch release cylinder.
(Tightening torque: $22 \pm 2 \text{ N}\cdot\text{m}$)



Installation

Installation is in the reverse order of removal.

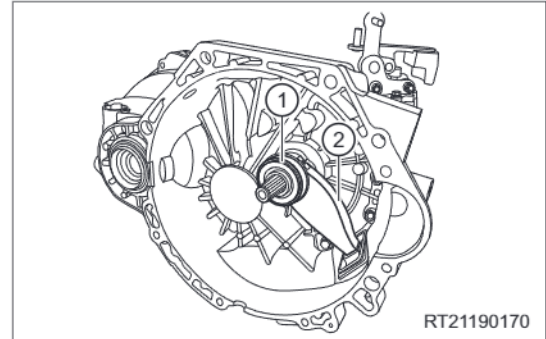
CAUTION

- Add brake fluid to "MAX".
- Connect 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 hole in transmission case release fork, and tighten bolts to specified torque.
- Perform bleeding procedure for hydraulic clutch and check system line for leakage after installation.

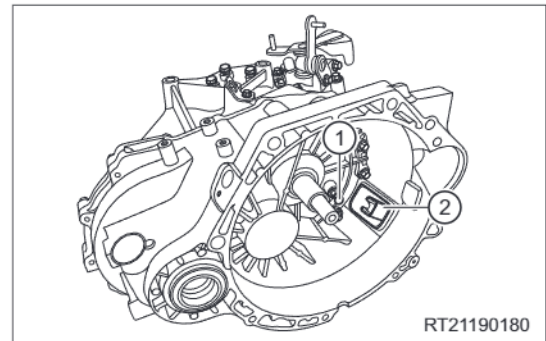
Clutch Unit

Removal

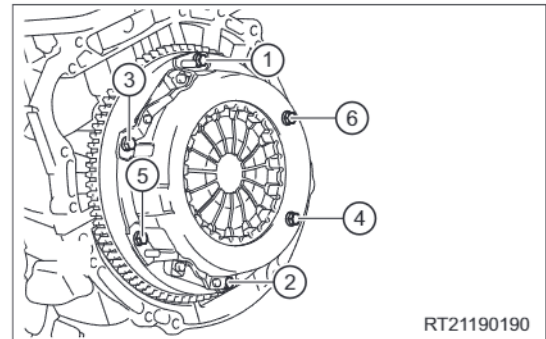
1. Remove the transmission assembly (See page 17-21).
2. Remove the clutch release bearing (1).
3. Remove the release fork (2) from clutch cover.



4. Remove the release fork ball seat (1).
5. Remove the release fork dust boot (2).



6. Remove the clutch pressure plate bolts.
7. Remove the clutch pressure plate and clutch driven disc.



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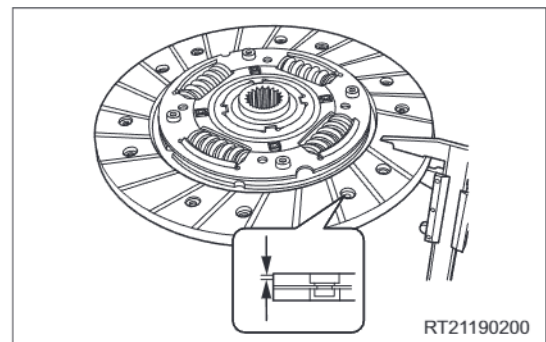
Inspection

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

Standard thickness: 7.6 ± 0.2 mm

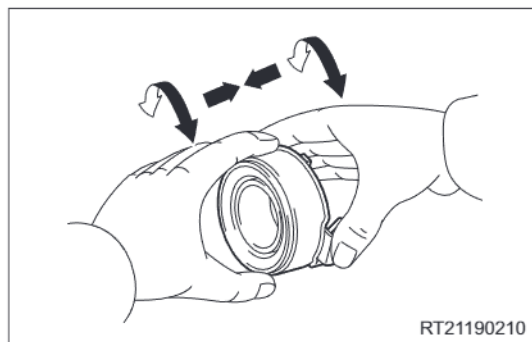
Minimum rivet depth: 1.2 mm

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



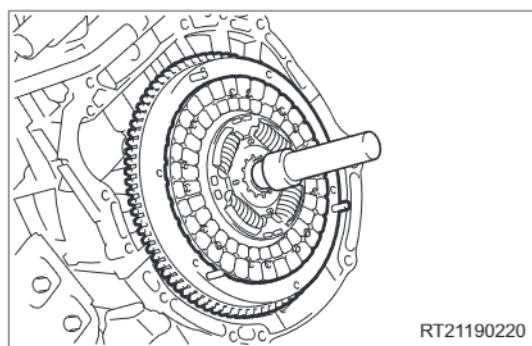
3. Check clutch release bearing assembly.

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

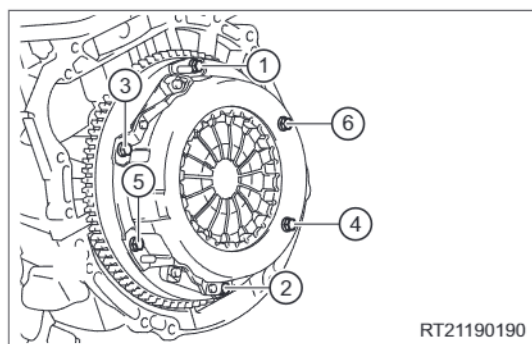


Installation

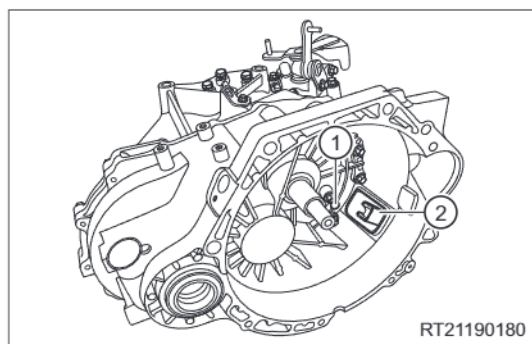
1. Insert a special tool into the clutch driven disc, and insert it into the flywheel.



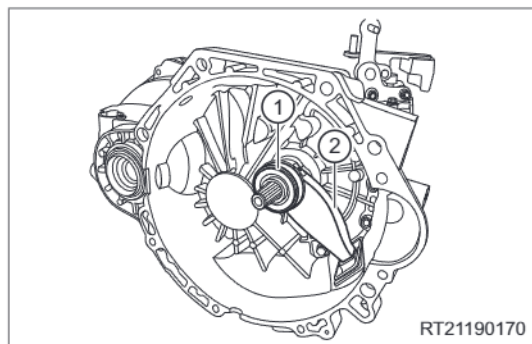
2. Install the clutch pressure plate and tighten the bolts.
(Tightening torque: $25 \pm 2 \text{ N}\cdot\text{m}$)



3. Install the release fork ball seat (1).
4. Install the dust boot (2).



5. Install the release fork (2).
6. Install the release bearing (1).



Bleeding Hydraulic Clutch

⚠ WARNING

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

👁 CAUTION

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

HINT:

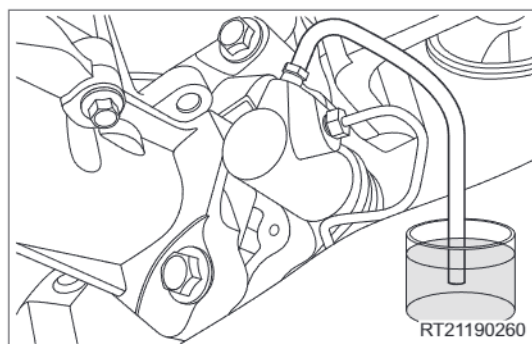
An assistant will be required to assist when bleeding hydraulic clutch.

1. Turn off all the electrical equipment and ignition switch.
2. Check the fluid level in brake master cylinder, add DOT4 brake fluid as necessary, and keep the cap open.

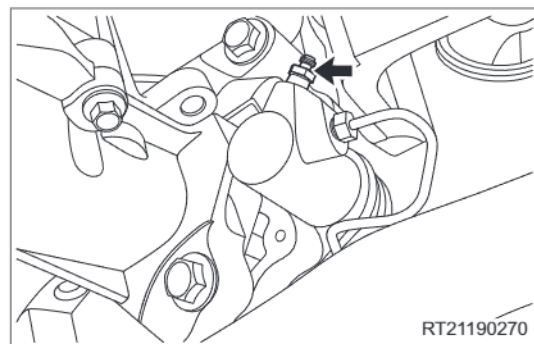
👁 CAUTION

- Make sure that there is sufficient brake fluid in reservoir before bleeding.

3. Raise the vehicle with a lifter.
4. 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.



5. Release the discharge port (arrow).



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

 CAUTION

- Never drain brake fluid when bleeding hydraulic clutch.
- Make sure brake level is always at "MAX" during bleeding.

11. Tighten the discharge port, then remove the discharge hose and replace the discharge port dust cover.
12. Check the brake fluid level, add DOT4 brake fluid up to "MAX" as necessary, and then tighten the reservoir cap.
13. Check clutch pedal stroke. If clutch pedal stroke is excessive, or the condition does not improve, it indicates that some air is still kept in the system. Bleed the clutch again as necessary.
14. Test the vehicle again and make sure clutch operates normally and depressing feel is good.

