CLUTCH SYSTEM

1. General

A: NON-TURBO MODELS

● The clutch control operates the release fork using the hydraulic pressure generated in the master cylinder when the pedal is depressed. This ensures smooth and reliable clutch control with minimum frictional resistance.

● The clutch itself is a push type clutch. When the clutch pedal is depressed, the self-aligning release bearing is caused to slide on a guide pressing the center of the diaphragm spring. The warped diaphragm spring disengages the pressure plate from the clutch disc. The clutch using a diaphragm spring has the advantage of little variation in push load even when the clutch disc facing is worn. The diaphragm spring is located inside the clutch cover.

● The clutch has a clutch disc between the flywheel and the pressure plate.

● Inside the clutch cover, there is a diaphragm spring and a pressure plate combined with each other by means of strap plates, which also serve to prevent the pressure plate from turning.

B: TURBO MODELS

● On turbo models, a hydraulic control which is appropriate for increased clutch load is adopted, and a clutch orifice is added to the clutch master cylinder.

● The clutch control operates the release fork using the hydraulic pressure generated in the master cylinder when the clutch pedal is depressed.

● The clutch itself is a pull type clutch. When the clutch pedal is depressed, the self-aligning release bearing is caused to slide on a guide pulling the center of the diaphragm spring.
The warped diaphragm spring disengages the pressure plate from the clutch disc. The clutch using a diaphragm spring has the advantage of little variation in push load even when the clutch disc facing is worn.
The diaphragm spring is located inside the clutch cover.

● The clutch has a clutch disc between the flywheel and the pressure plate.

● Inside the clutch cover, there is a diaphragm spring and a pressure plate combined with each other by means of strap plates, which also serve to prevent the pressure plate from turning with respect to the clutch cover.

CLUTCH

2. Clutch

A: CONSTRUCTION

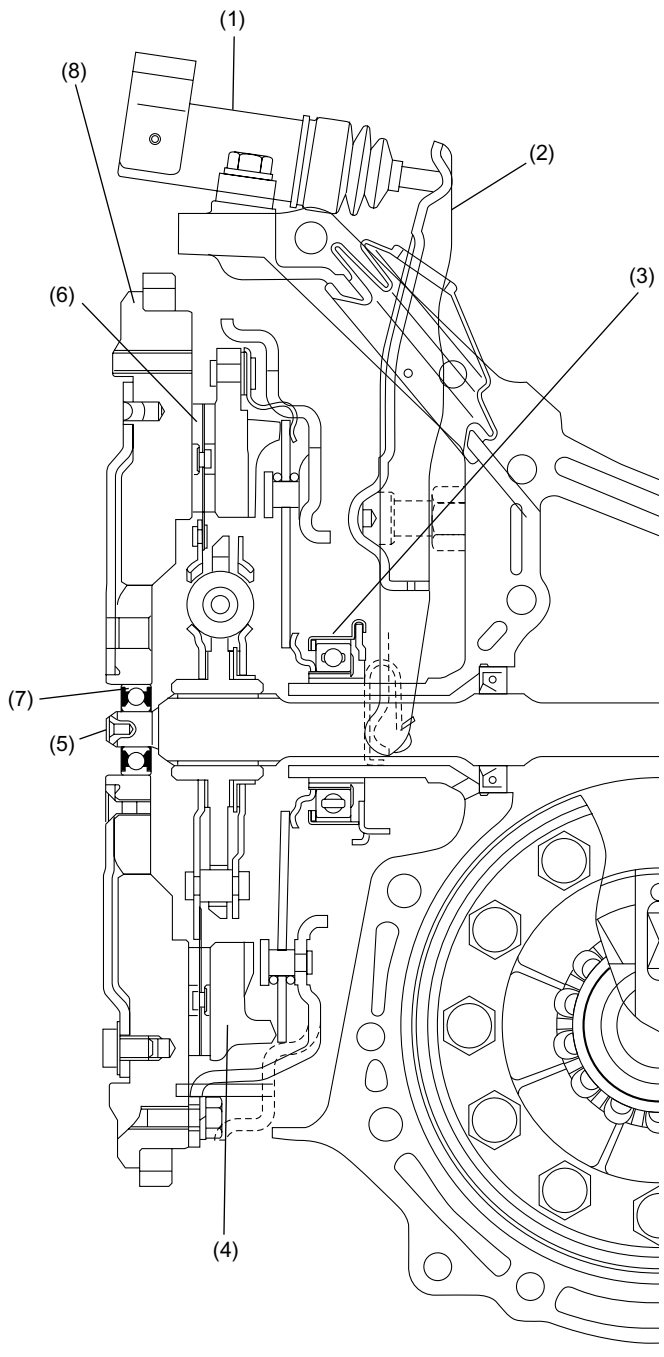
1. NON-TURBO MODELS

Applying foot pressure to the clutch pedal moves the release lever. This causes the release bearing to slide on the guide, pressing the center of the diaphragm spring. The diaphragm spring is warped and the force having pressed the pressure plate is lost. As a result, the flywheel, clutch disc and pressure plate are disengaged, disconnecting the driving power.

The push type clutch has the point of action at the tips of the diaphragm spring fingers, through which the pressure plate is pressed to the clutch disc. When the power transmission is to be interrupted, the diaphragm spring is forced to warp using the pivots established on the inward side of the spring finger tips (on the principle of the lever and fulcrum) to disengage the pressure plate from the clutch disc.

CLUTCH

• Non-turbo models



CL-00085

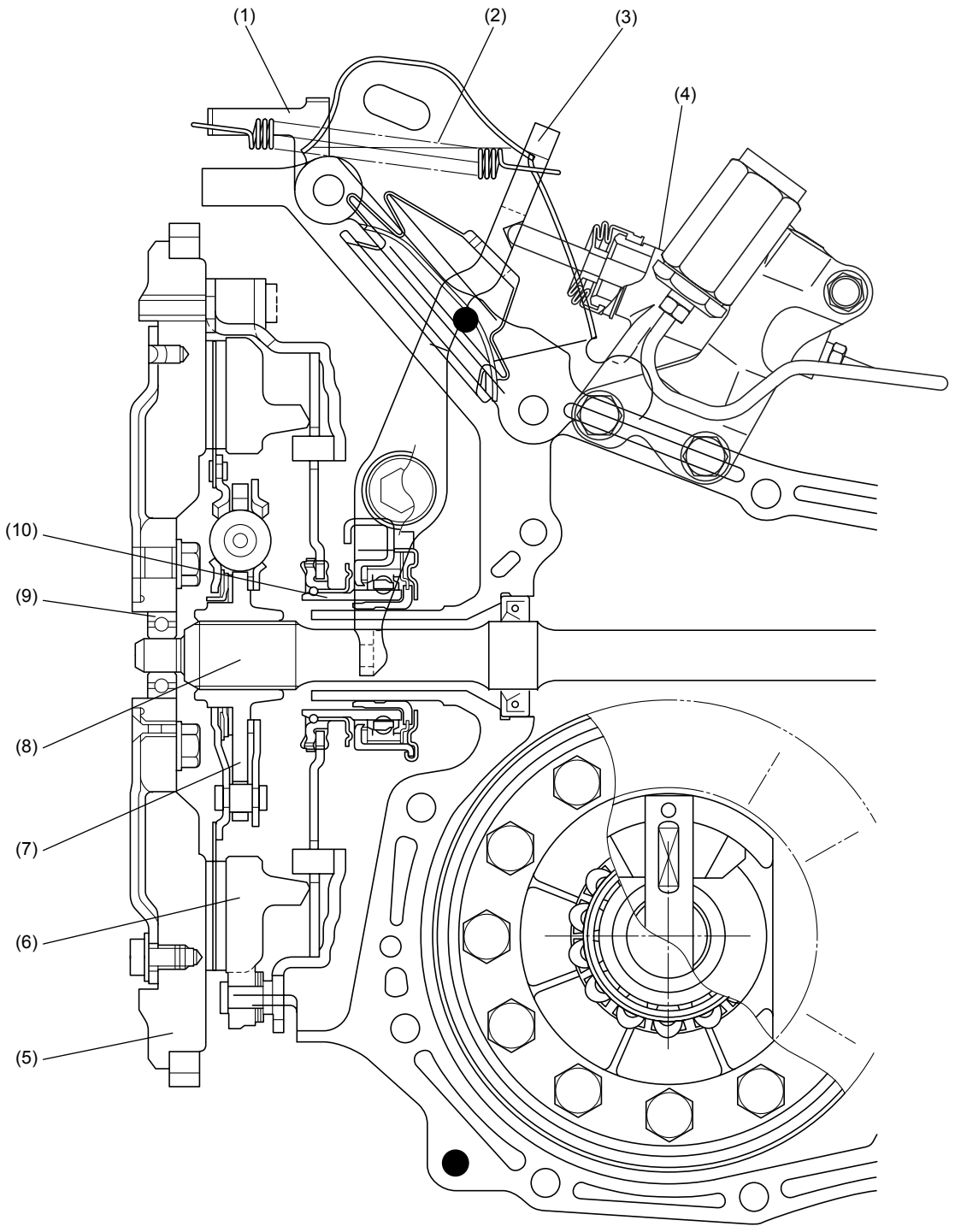
(1) Operating cylinder
(2) Release lever
(3) Release bearing
(4) Clutch cover
(5) Transmission main shaft
(6) Clutch disc
(7) Ball bearing
(8) Flywheel

2. TURBO MODELS

Applying foot pressure to the clutch pedal moves the release lever. This causes the release bearing to slide on the guide, pulling the center of the diaphragm spring. The diaphragm spring is warped and the force having pressed the pressure plate is lost. As a result, the flywheel, clutch disc and pressure plate are disengaged, disconnecting the driving power.

In the pull type clutch, the diaphragm spring has the point of action located inward from the tip, through which the pressure plate is pressed against the clutch disc. When the power transmission is to be interrupted, the diaphragm spring is forced to pivot on the tip and warp away from the pressure plate (on the principle of lever and fulcrum).

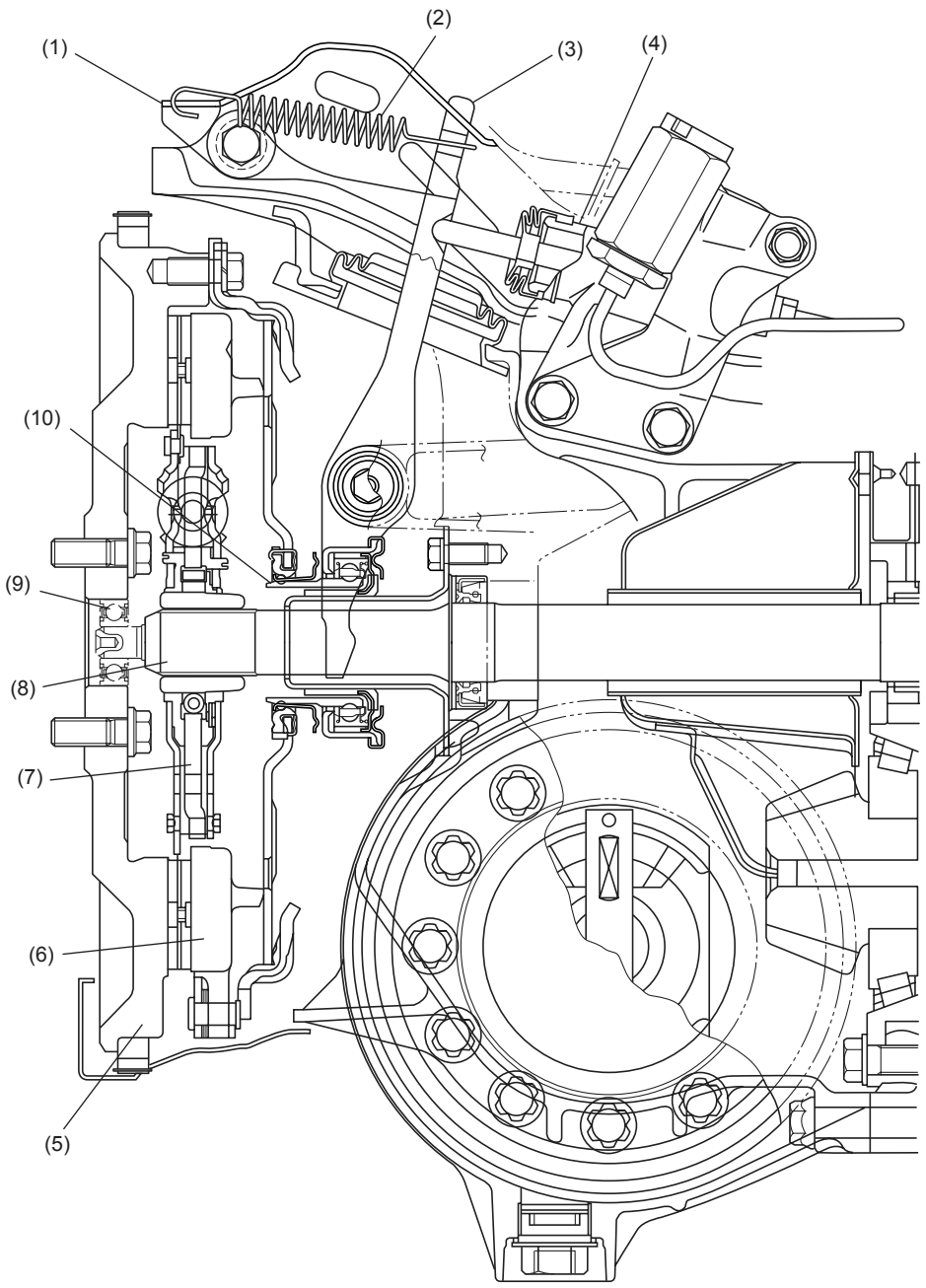
• 2.0 L turbo model



CL-00245

(1) Spring bracket
(2) Spring
(3) Release lever
(4) Operating cylinder
(5) Flywheel
(6) Clutch cover
(7) Clutch disc
(8) Transmission main shaft
(9) Ball bearing
(10) Release bearing

- **STi models**



CL-00237

(1) Spring bracket
(2) Spring
(3) Release lever
(4) Operating cylinder
(5) Flywheel
(6) Clutch cover
(7) Clutch disc
(8) Transmission main shaft
(9) Ball bearing
(10) Release bearing

3. Flywheel

A: GENERAL

1. STi MODELS

The flywheel is a conventional type which is directly connected to the crankshaft. It performs the functions of absorbing crankshaft rotational fluctuation and transmitting the engine torque to the clutch disc.

2. 2.5 L NON-TURBO AND 2.0 L TURBO MODELS

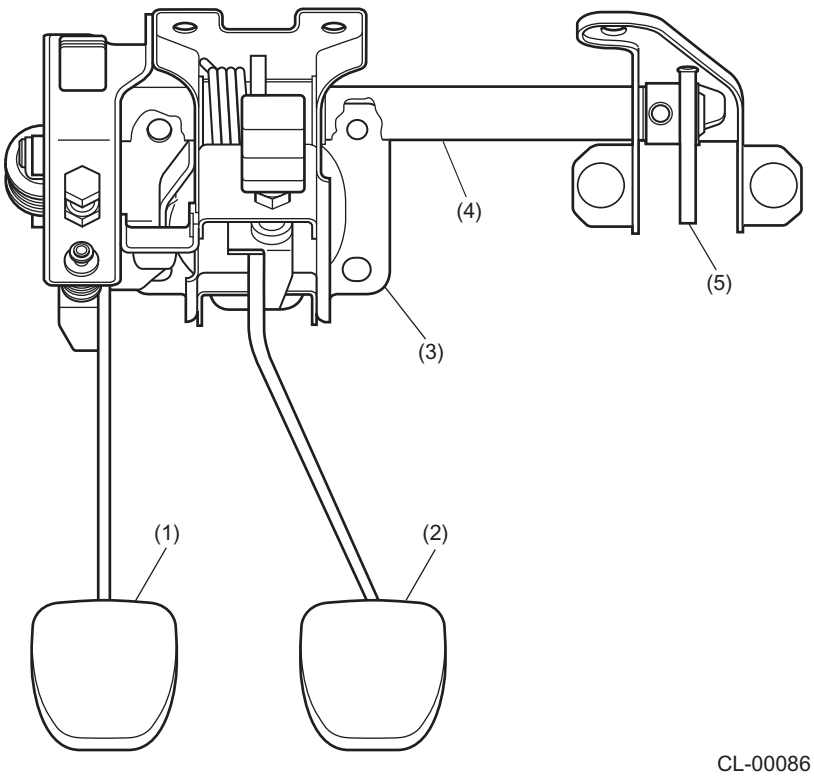
The flywheel is of a flexible type consisting of a drive plate, reinforcement, and mass flywheel.

This type of flywheel is characterized by less vibration and less noise, since it transmits the engine power from the crankshaft to the clutch disc through the drive plate and mass flywheel.

4. Hydraulic Clutch Pedal System

A: CONSTRUCTION

- The hydraulic clutch pedal is connected to the master cylinder via a rod.
- The clutch pedal and brake pedal are mounted on the same bracket.



CL-00086

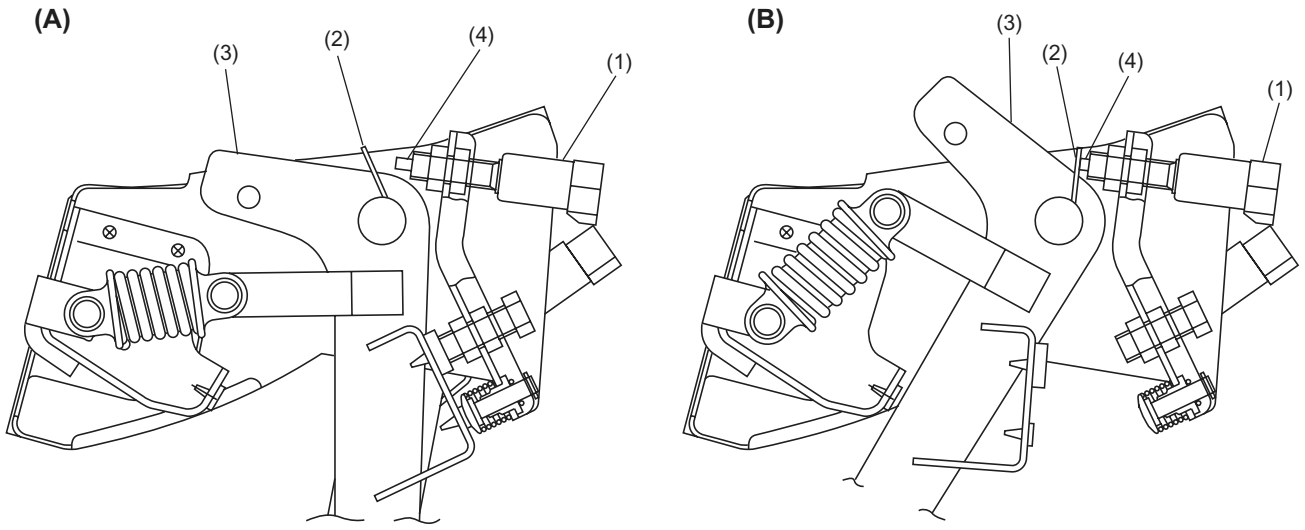
(1) Clutch pedal
(2) Brake pedal
(3) Brake and clutch pedal bracket
(4) Rod
(5) Lever

- The clutch pedal has a mechanism that reduces the initial force required to depress the clutch pedal.
- A starter interlock mechanism is provided to prevent the engine from starting unless the clutch pedal is pressed.

B: OPERATION

1. STARTER INTERLOCK MECHANISM

When the clutch pedal is fully depressed, the stopper on the pedal pushes the clutch switch pushrod inwards.
When the pushrod is pressed in, the switch turns ON and connects the ignition switch to the starter circuit enabling engine start.

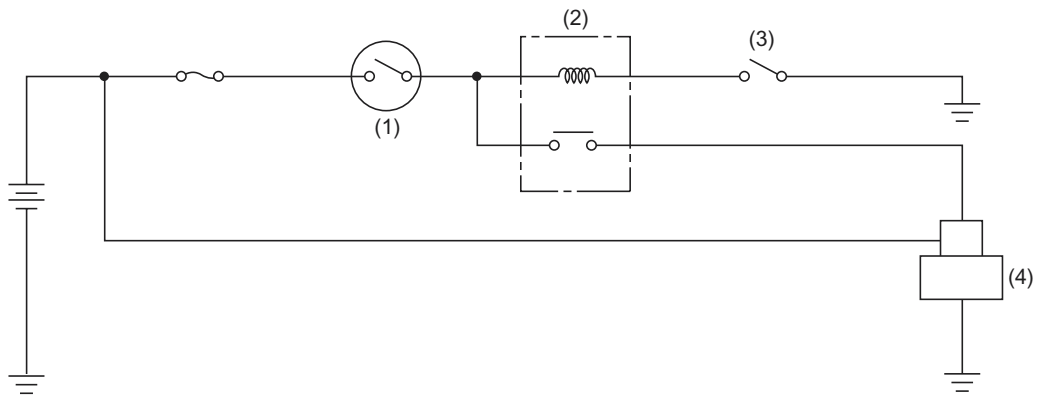


CL-00138

(A) When clutch switch is OFF
(1) Clutch switch
(2) Stopper

(B) When clutch switch is ON
(3) Clutch pedal
(4) Pushrod

- CIRCUIT DIAGRAM



CL-00137

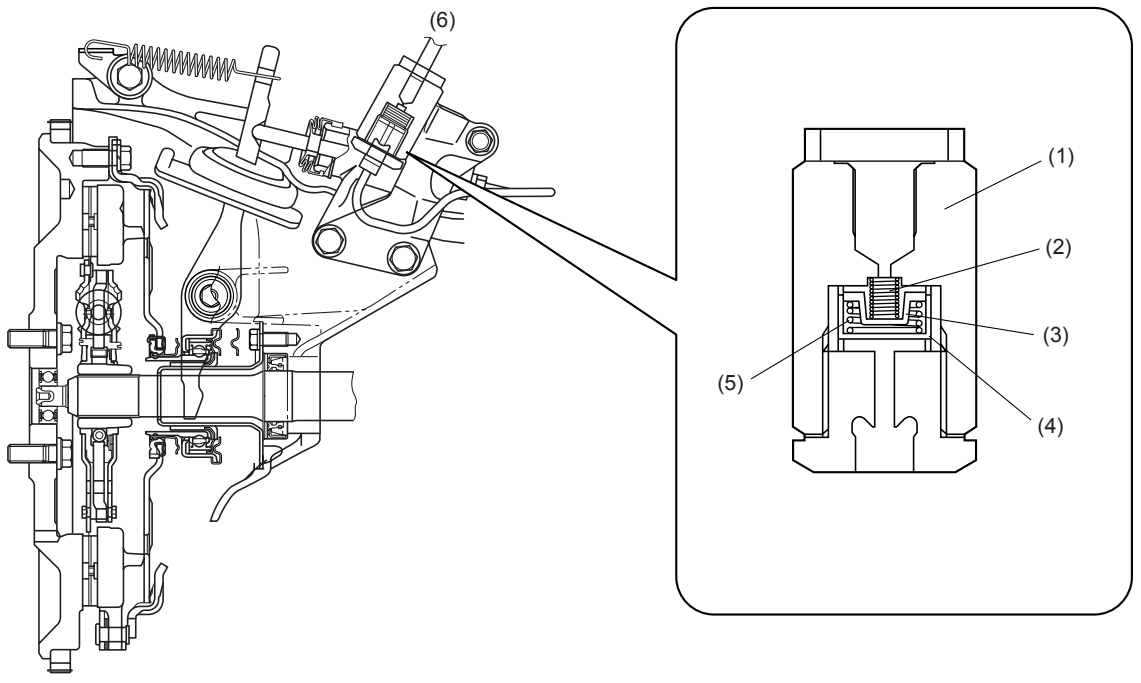
(1) Ignition switch
(2) Starter relay
(3) Clutch switch
(4) Starter motor

5. Fluid Control System (DOHC Turbo Models)

The clutch operating cylinder incorporates a temperature sensitive orifice unit which controls the clutch engaging speed depending on the fluid temperature to ensure smooth standing starts irrespective of atmospheric temperatures.

A: CONSTRUCTION

The orifice unit consists of an orifice retainer, an orifice valve, and two springs that support the orifice valve.
One of the springs is made of the shape memory alloy that prevents a delay in clutch response when the weather is cold and the oil viscosity is high.

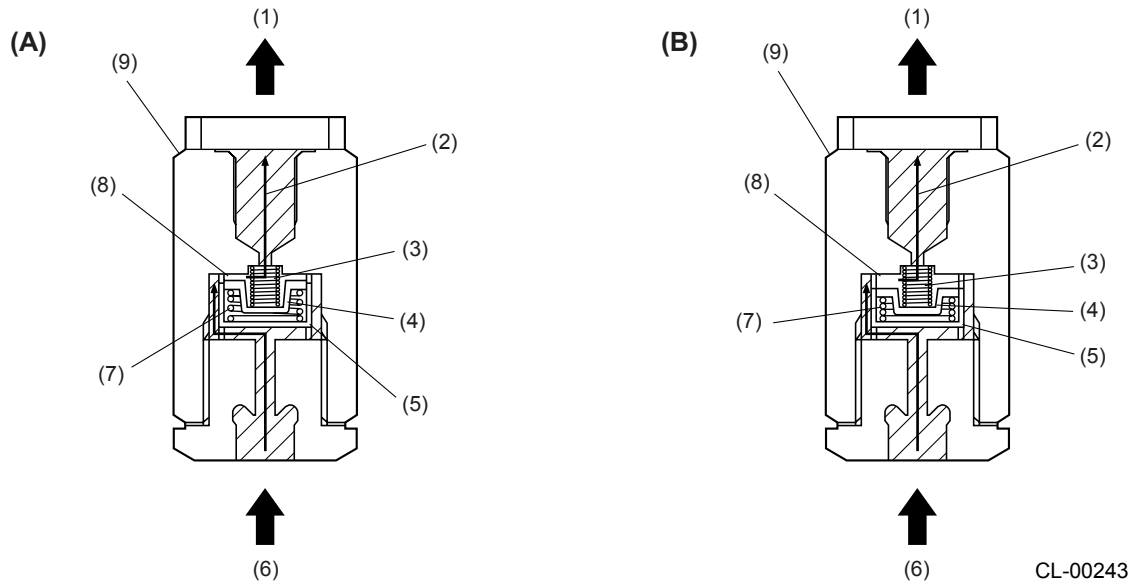


CL-00242

(1) Body
(2) No. 2 spring
(3) Orifice valve
(4) Orifice retainer
(5) No. 1 spring
(6) To master cylinder

B: OPERATION

The No. 1 spring is made of a shape memory alloy that contracts and loses the tension when the temperature is low.
When the temperature is high, the orifice valve is kept in a raised position by the No. 1 spring, so the fluid passage is narrow. When the temperature drops, the No. 1 spring contracts, allowing the orifice valve to be pushed down by the No. 2 spring. Now, the fluid passage in the orifice unit opens wide.



(A) In high temperatures
(B) In low temperatures

(1) To master cylinder
(2) Flow of fluid with clutch pedal released
(3) No. 2 spring
(4) Orifice valve
(5) Orifice retainer
(6) From operating cylinder
(7) No. 1 spring
(8) Orifice gap
(9) Body

MEMO