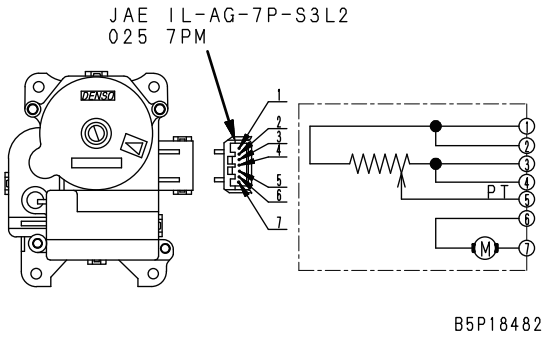
Servomotor *(ALL-K5D2-042-K-00-A)*



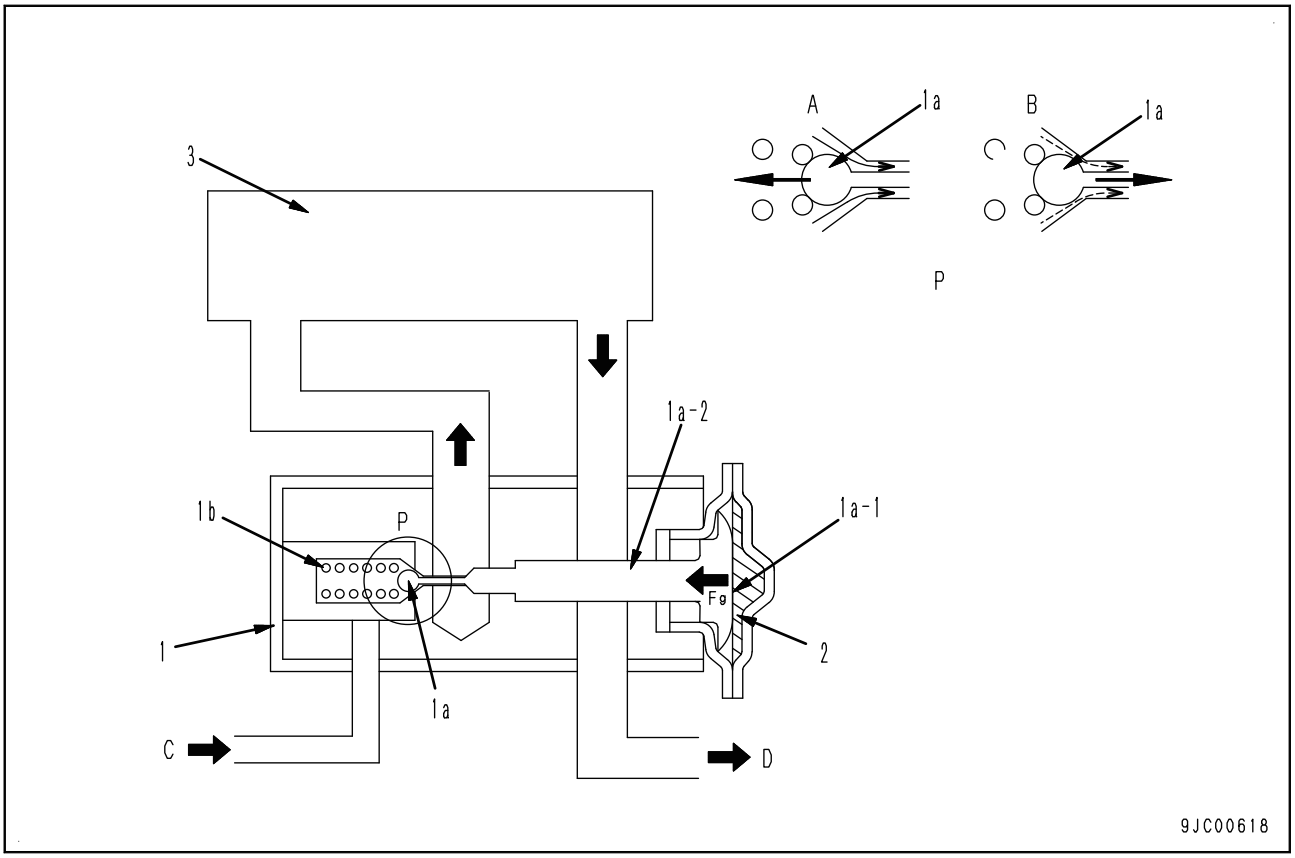
★ Servomotors are used to adjust the temperature (air mix) and to perform vent (mode) changeover.

- When a switch on the machine monitor is operated, the air conditioner controller applies 24V power between servomotor terminal B (6) and servomotor terminal A (7). (Rotation direction switches according to the polarity of supply voltage.))
- The servomotor contains a variable resistor, and its resistance value changes as the motor rotates.
- The air conditioner controller applies a voltage of 5 V to the variable resistor and determines the motor rotation angle from the potential difference.
- When the door (damper) reaches the position specified by each switch, the air conditioner controller stops the supply of current to the servomotor, then the corresponding door stops.
- When the air conditioner controller cannot recognize the potential difference that corresponds to the command to the servomotor, it generates a air conditioner failure code to inform the machine monitor of failure in air conditioner system. Failure code [879EMC] or [879FMC] is displayed on the electrical system failure record screen of the machine monitor.

  ★ FRESH/RECIRC air changeover servo motor does not feature a variable resistance, and therefore, does not have a self-diagnosis function.

★ Do not try to drive a servomotor by supplying power directly between servomotor terminals (6) and (7) during inspection.

Expansion valve *(ALL-K548-041-K-00-A)*



A: When evaporator outlet temperature is high
B: When evaporator outlet temperature is low
C: From capacitor (high-pressure refrigerant)
D: To compressor (low-pressure refrigerant)
1. Expansion valve
1a. Needle valve
1a-1. Diaphragm
1a-2. Thermoprobe
1b. Spring
2. Refrigerant gas
3. Evaporator

Structure
- Box-type expansion valve (1) consists of needle valve (1a), spring (1b), etc.
- Refrigerant gas (2) is sealed in the diaphragm chamber (hatched area) outside diaphragm (1a-1) of needle valve (1a).

Function *(ALL-K548-042-K-00-A)*
- The expansion valve (1) converts high-pressure and high-temperature liquid refrigerant from the receiver drier to low-pressure, low-temperature misty refrigerant through the throttle action.
- It controls the flow rate of refrigerant by changing the level of throttling depending on the temperature in the cab.
- The temperature of the air blown out of the air vent is adjusted depending on the flow rate of refrigerant circulating in the evaporator (3).

Operation *(ALL-K548-044-K-00-A)*
- Thermoprobe (1a-2) senses the refrigerant temperature after it passes through the evaporator (3).