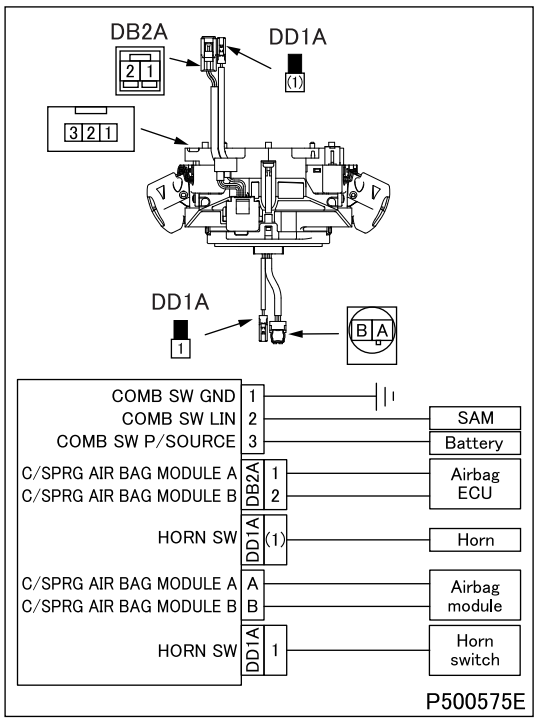
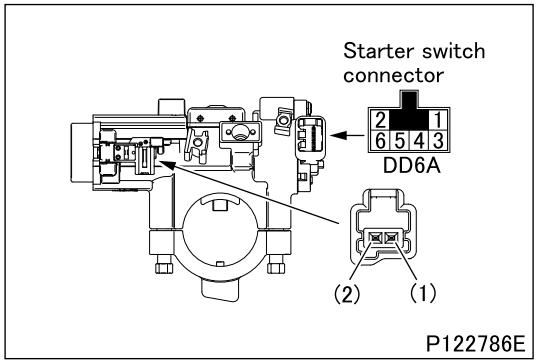
GROUP 54-11
INSPECTION OF ELECTRICAL EQUIPMENT



#001 Inspection of combination switch

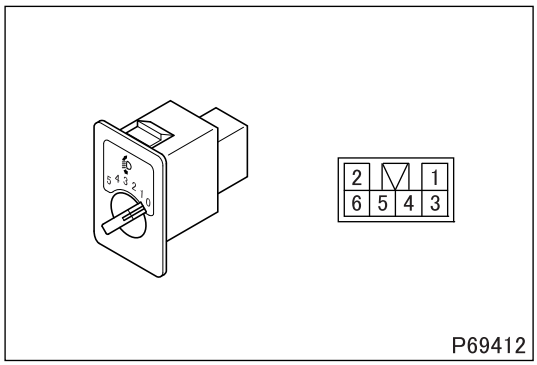
- Because it is not easy to independently check the switch for the function, determine the quality of the switch indirectly by checking the related parts, such as the harness, horn switch, etc. in the system.
- If there is nothing abnormal in the related parts, but the problem remains in the system, then replace the switch. (See Gr37.)
- Inspection of horn switch with SRS airbag. (See #762.)



#002 Inspection of starter switch

- Perform the following checks, and if any fault is found, replace the switch. (See Gr37.)

Switch position		Continuity terminal
LOCK	without key	–
	with key	(1)–(2)
ACC		(1)–(2), 4–5
ON		(1)–(2), 4–5–6
START		(1)–(2), 3–4–5–6

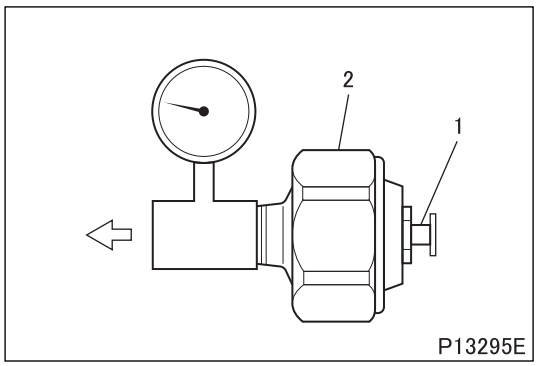


#008 Inspection of headlamp leveling switch

- Measure the resistance between terminals 1 and 6 at each switch position.

Switch position	Standard value	Night illumination
0	Approx. 1265 Ω	(+) 4–3 (–)
1	Approx. 1145 Ω	
2	Approx. 1025 Ω	
3	Approx. 905 Ω	
4	Approx. 785 Ω	
5	Approx. 665 Ω	

- If any fault found, replace the switch.



#023 Inspection of vacuum switch

- Perform the following checks, and if any fault is found, replace the switch. (See Gr35.)

(1) Inspection without applying negative pressure

- Make sure that there is continuity between terminals 1 and 2 (body).

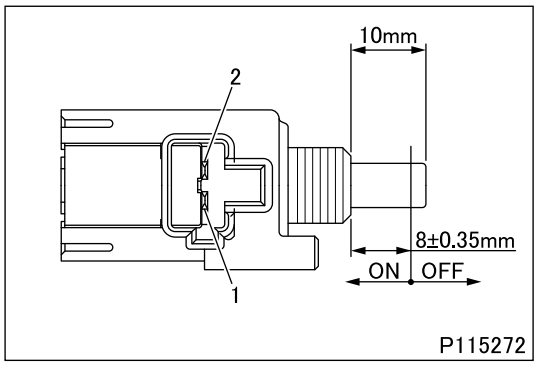
(2) Inspection by applying negative pressure

- Gradually apply negative pressure to the switch starting from 0 kPa {0 kgf/cm^2}.
- Measure the degree of air pressure at the moment when continuity is not detected between terminals 1 and 2 (body), and make sure to confirm if the value meets the standard.

Standard value	$-(47\ ^{+3.3}_{-4.0})$ kPa {$-(350\ ^{+25}_{-30})$ mmHg}

#027 Inspection of power window switch

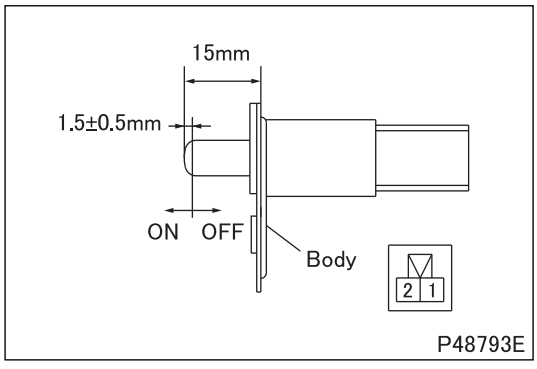
- Because it is not easy to check these switches individually, determine the quality of the switches indirectly by checking related parts, such as harnesses, power window motor, etc. in the system.
- If there is nothing abnormal in related parts, but there is still something wrong with the system, then replace the switches. (See Gr43.)



#031 Inspection of clutch switch

Switch position	Continuity terminal
OFF	–
ON	1–2

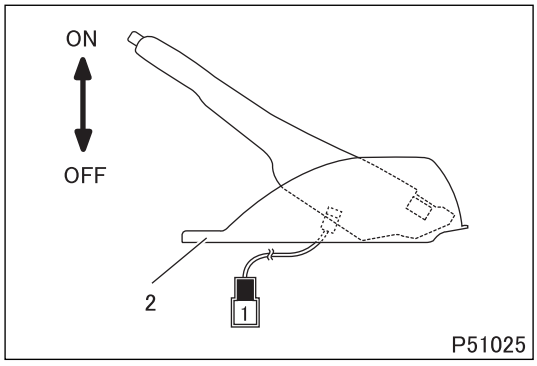
- If any fault is found, replace the switch. (See Gr21.)



#035 Inspection of door switch

Switch position	Continuity terminal
OFF	–
ON	1-body, 2-body

- If any fault is found, replace the switch. (See Gr43.)

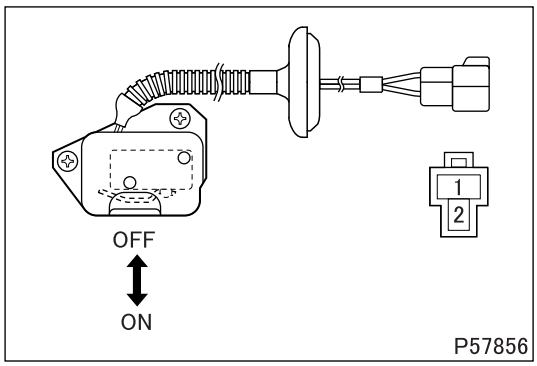


#038 Inspection of parking brake switch

- Measure continuity between terminals 1 and 2 (body) ground.

Pull the parking brake lever	Continuity exists
Release the parking brake lever	Continuity does not exist

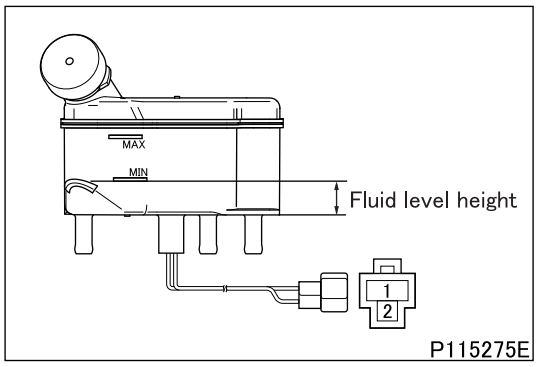
- If any fault is found, replace the switch. (See Gr36.)



#039 Inspection of cab tilt lock switch

Switch position	Continuity terminal
OFF	–
ON	1–2

- If any fault is found, replace the switch. (See Gr42.)



#041 Inspection of brake fluid level switch

- Gradually drain brake fluid from the brake fluid reservoir.

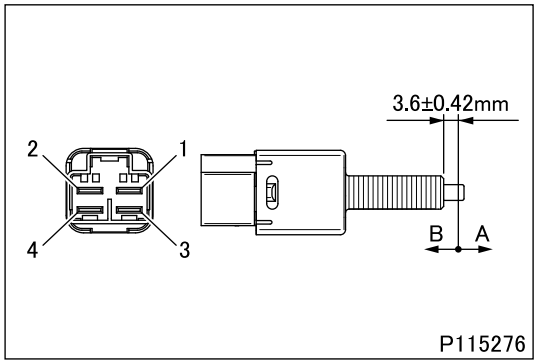
CAUTION ⚠

- **Brake fluid contains ingredients that dissolve the vehicle's paint. Quickly wipe off brake fluid when it is spilled.**

- Measure height of the switch when continuity is detected between terminals 1 and 2.

Standard value	18 to 20 mm

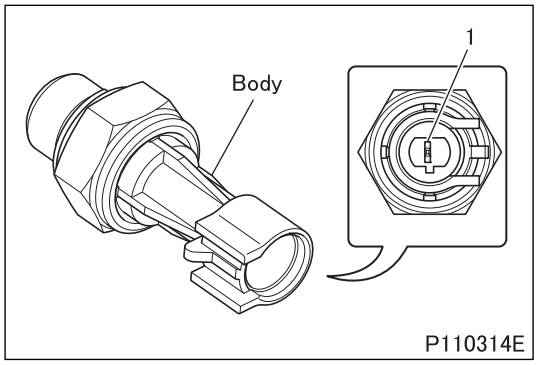
- If the measured value deviates from the standard value, replace the brake fluid reservoir. (See Gr52.)



#042 Inspection of stop lamp switch

Switch position	Continuity terminal
A	1–2
B	3–4

- If any fault is found, replace the switch. (See Gr35.)



#044 Inspection of oil pressure switch

- Perform the following checks, and if any fault is found, replace the switch. (See Gr12.)

(1) Inspection without applying air pressure

- Make sure that there is continuity between terminals 1 and the body.

(2) Inspection by applying air pressure

- Gradually apply air pressure to the switch starting from 0 kPa {0 kgf/cm^2}.

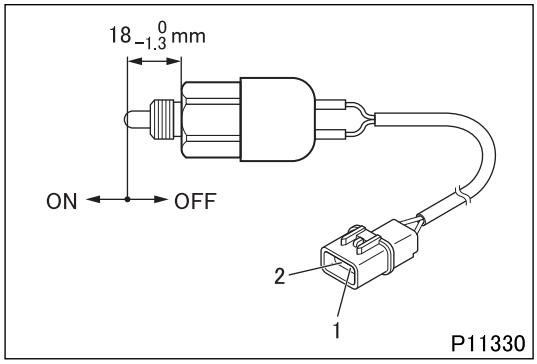
- Measure the degree of air pressure at the moment when continuity is not detected between terminals 1 and body, and make sure to confirm if the value meets the standard.

Standard value (operating pressure)	50 ± 10 kPa {0.5 ± 0.1 kgf/cm^2}

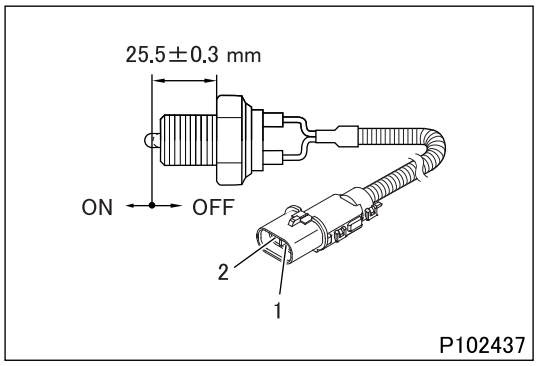
#054 Inspection of switch

- Perform the following checks, and if any fault is found, replace the switch.

Switch position	Continuity terminal
OFF	–
ON	1–2



- Backup lamp switch. (See Gr22.)

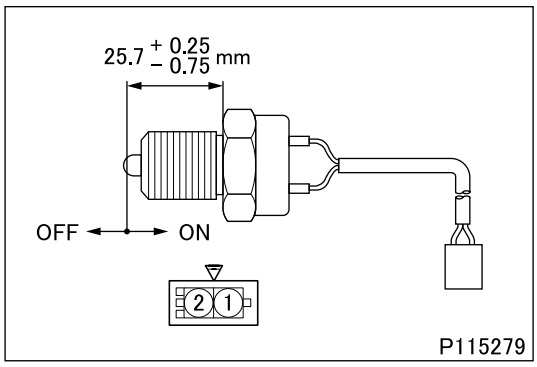


- Power take-off control switch. (See Gr22.)
- Transmission neutral switch. (See Gr22.)

#056 Inspection of torque limit switch

Switch position	Continuity terminal
OFF	–
ON	1–2

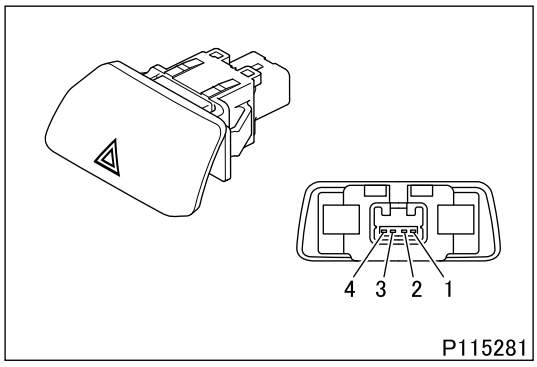
- If any fault is found, replace the switch. (See Gr22.)

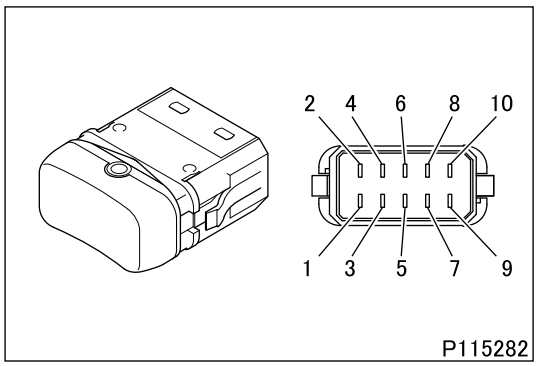


#081 Inspection of hazard switch

Switch position	Continuity terminal	Night illumination
OFF	–	(+) 4-1 (–)
ON	2–3	

- If any fault is found, replace the switch. (See Gr52.)





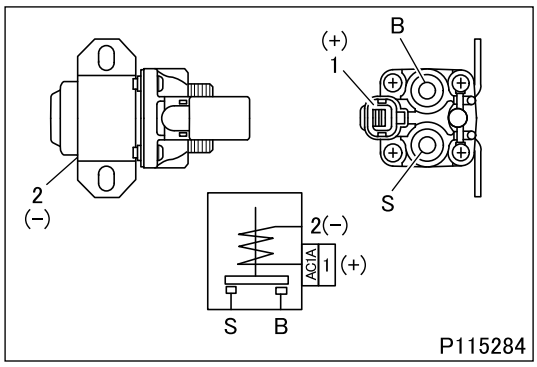
#089 Inspection of switch

- Perform the following checks, and if any fault is found, replace the switch.
  - DPF cleaning switch
  - Transmission power take-off switch

Switch position	Continuity terminal	Night illumination
OFF	–	(+) 1–10 (–)
ON	3–7	

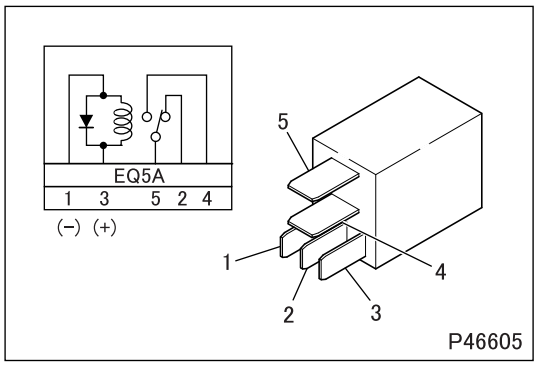
  - ISS cut switch

Switch position	Continuity terminal	Operation illumination	Night illumination
OFF	–	–	(+) 1–10 (–)
ON	3–7	(+) 9–10 (–)	



#187 Inspection of starter relay

- Perform continuity and operation checks, and if any fault is found, replace the relay.

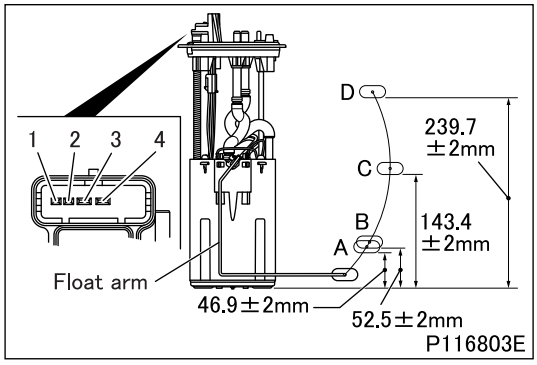


#201 Inspection of relay (normally open type 5 pin)

- Perform continuity and operation checks, and if any fault is found, replace the relay.

#252 Inspection of sensor

- Because it is not easy to check these switches individually, determine quality of the sensors indirectly by checking related parts, such as harnesses, etc. in the system.
- If any fault is not found in the related parts, and the problem still remains in the system, replace the sensors.

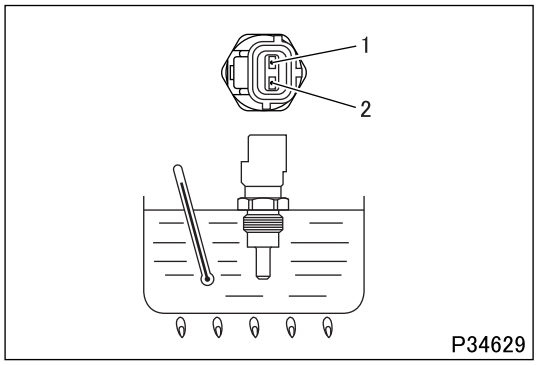


#258 Inspection of fuel level sensor

- Measure resistance values between terminals 1 and 2 when bringing the float arm into contact with stoppers (at A and C positions) and placing it at B position.

Standard value	at D position	9 ± 2 Ω
	at C position	50 ± 2 Ω
	at B position	130 ± 3.5 Ω
	at A position	135 ± 3.5 Ω

- If the measured value deviates from the standard value, replace the sensor. (See Gr13.)

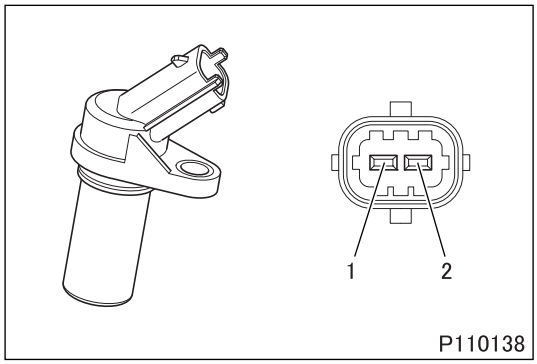


#262 Inspection of water temperature sensor

- Dip the sensor in a container filled with engine oil.
- Raise the oil temperature to each specification below while stirring the oil.
- Measure resistance values between terminals 1 and 2.

Standard value (at 20 ± 1.5°C)	2.262 to 2.760 kΩ

- If the measured value deviates from the standard value, replace the sensor. (See Gr14.)

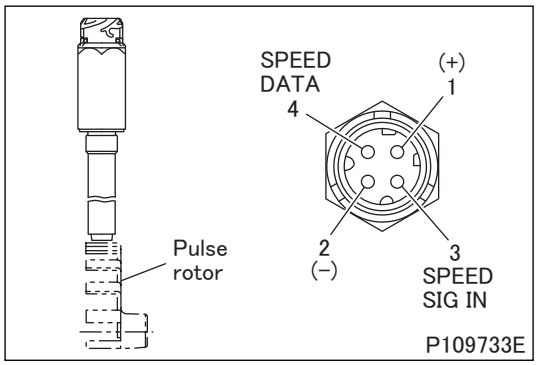


#263 Inspection of engine speed sensor

- Measure the resistance value between terminals 1 and 2.

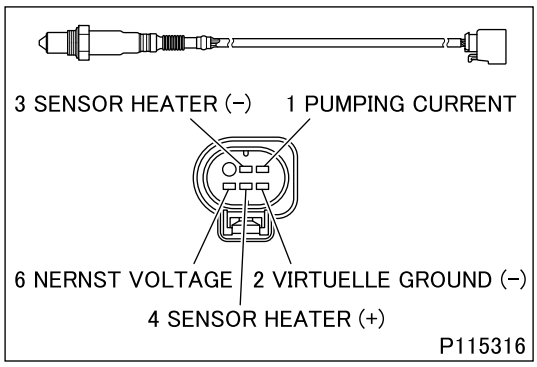
Standard value (at 20°C)	860 ± 86 Ω

- If the measured value deviates from the standard value, replace the sensor. (See Gr11.)



#265 Inspection of vehicle speed sensor

- While applying a voltage of 6.5 to 9 V between terminals 1 and 2, rotate the pulse rotor.
- Check the signals of terminal 3 (SPEED SIG IN) and terminal 4 (SPEED DATA). If no signals are found, replace the sensor. (See Gr22.)

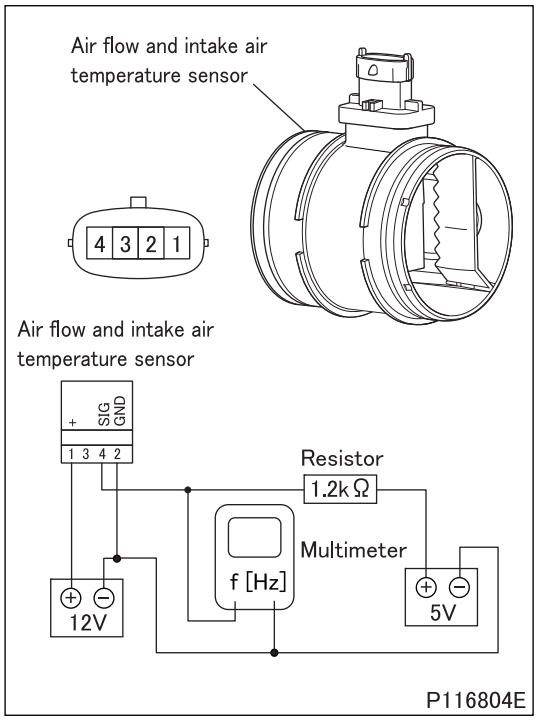


#297 Inspection of lambda sensor

- Measure the resistance value between terminals 2 and 6.

Standard value (at room temperature)	2 to 5 Ω

- If the measured value deviates from the standard value, replace the sensor. (See Gr15.)



#306 Inspection of air flow and intake air temperature sensor

<Inspection of on-vehicle condition>

- Using the FUSO Diagnostics, check if its service data changes in accordance with changes in the engine speed.
- Replace the sensor if the service data is not changed. (See Gr15.)

<Inspection of standalone condition>

(1) Inspection of air temperature sensor

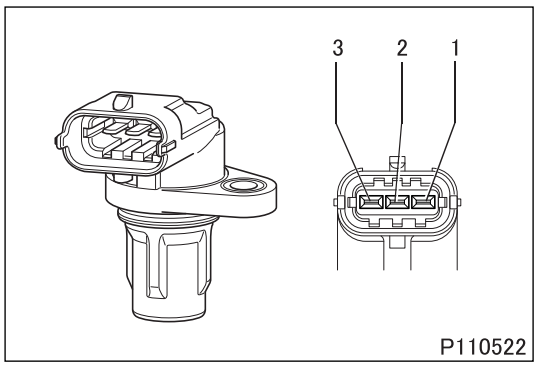
- Measure the resistance value between terminals 1 and 3.

Standard value (at 20°C {68°F})	2309 to 2530 Ω

- If the measurement is out of specification, replace the fuel filter.(See Gr15.)

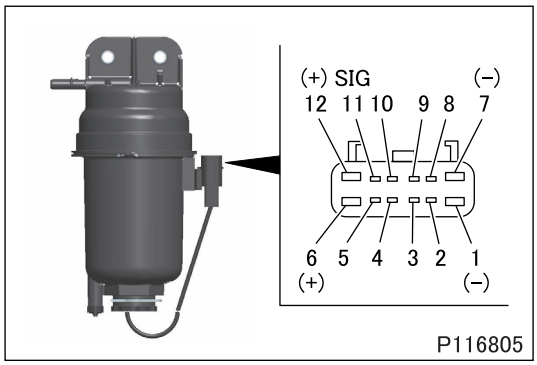
(2) Inspection of air flow sensor

- Connect the air flow and intake air temperature sensor, multimeter capable of measuring frequency output, resistor and batteries as shown in the illustration.
- Blow air against the sensor and check if the frequency is changed.
- Replace the sensor if the frequencies not changed. (See Gr15.)



#320 Inspection of camshaft timing sensor

- Apply 5 volts DC to terminals 3 and 1 and measure, using a multimeter the output from terminal 2 and 1.
- With no metallic part close to sensor tip the output should be 5 V.
- Approach the sensor tip to a metallic part. The output should become 0V when it comes to approx.1mm to the part.
- If the measurement is out of specification, replace the sensor. (See Gr11.)
- This kind of test is made in static condition, and it isn't able to detect all sensor failure mode on the engine during normal functioning.



#323 Inspection of fuel filter

(1) Inspection of fuel temperature sensor

- Measure the resistance between terminals 8 and 9.

Standard value	–30°C	26.114 ± 2.533 Ω
	0°C	5.896 ± 0.430 Ω
	25°C	2.057 ± 0.115 Ω
	60°C	596 ± 23 Ω
	100°C	186 ± 4 Ω
	110°C	144 ± 3.456 Ω

- If the measurement is out of specification, replace the fuel filter. (See Gr13.)

(2) Inspection of water separator sensor

- Drain water from fuel filter.
- Apply 12 volts DC between the terminal 6 and 1.
- Measure the output voltage of terminal 11 and 1.

Standard value	11.8 V or more

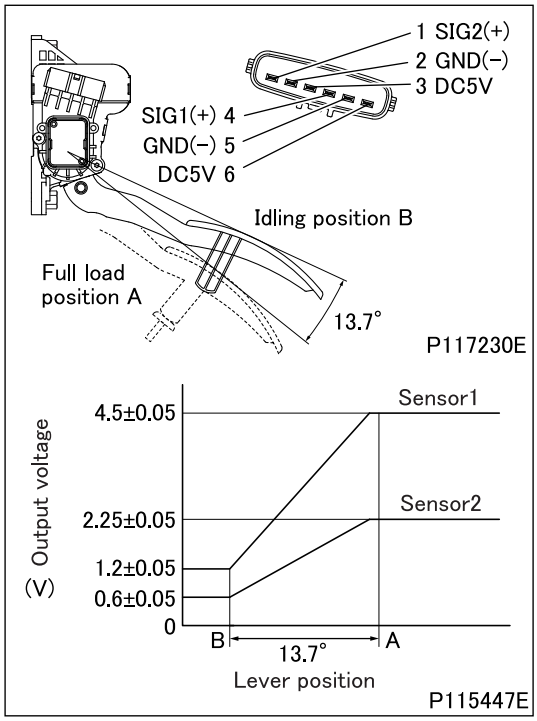
- If the measured value deviates from the standard value, replace the fuel filter. (See Gr13.)

(3) Inspection of fuel heater

- Measure the resistance value between terminals 7 and 12.

Standard value	0.6 to 0.8 Ω

- If the measured value deviates from the standard value, replace the fuel filter. (See Gr13.)

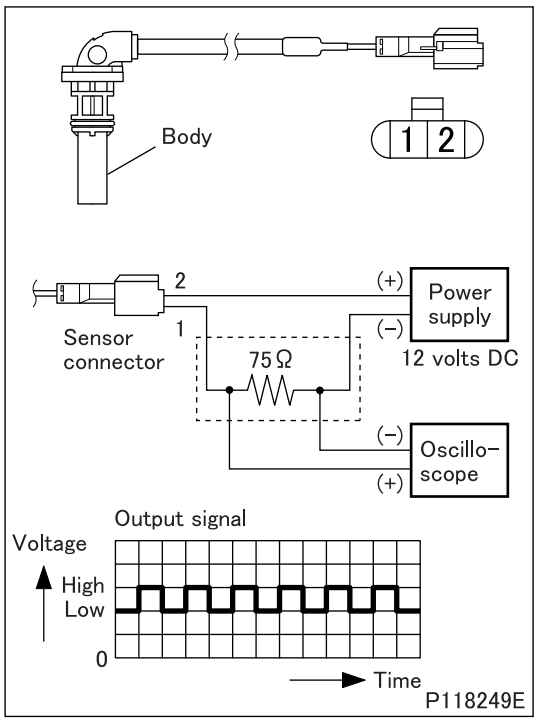


#324 Inspection of accelerator pedal position sensor

- Apply 5 volts DC to terminals 6 and 5 (sensor 1) and terminals 3 and 2 (sensor 2) of the accelerator pedal position sensor.
- Measure the output voltage at terminals 4 and 5 (sensor 1) and the output voltage at terminals 1 and 2 (sensor 2) with the accelerator lever in each specified position.

	Lever position	Output voltage	
Standard value	Full load position A	Sensor 1	4.5 ± 0.05 V
		Sensor 2	2.25 ± 0.05 V
	Idling position B	Sensor 1	1.2 ± 0.05 V
		Sensor 2	0.6 ± 0.05 V

- If the measurement is out of specification, replace the sensor.



#329 Inspection of wheel speed sensor

- Perform the following check. Replace the wheel speed sensor if any fault is found.

CAUTION ⚠

- **The wheel speed sensor has a magnet in it. Be careful not to allow metal pieces to attach the sensor.**

(1) Output voltage

- Because output check using the anti-lock brake system rotor is required, follow the steps below to measure the output voltage with the sensor mounted on the vehicle.
- Jack up the wheel to be measured, then remove the connector of the wheel speed sensor.
- Connect the terminals of the removed connector to an oscilloscope as shown in the circuit diagram, then check the voltage on the oscilloscope while rotating the wheel by hand at a constant speed.

Standard value	High	$1.05^{+0.21}_{-0.16}$ V
	Low	$0.53^{+0.10}_{-0.09}$ V

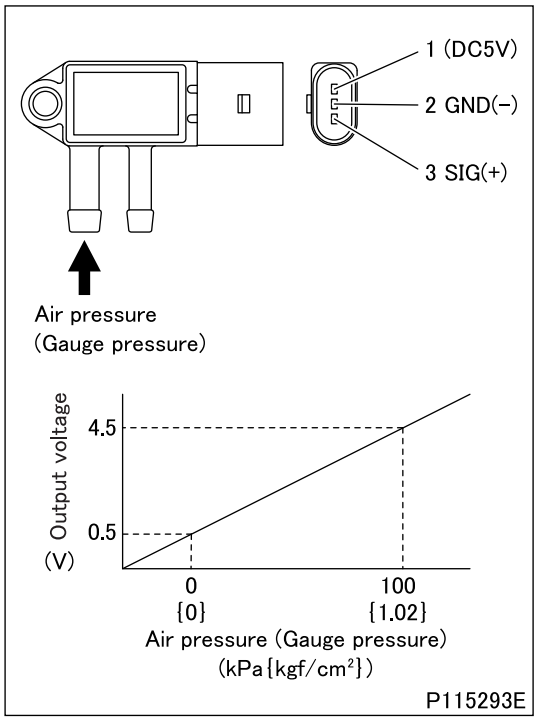
(2) Insulation resistance

- Measure the resistance between terminal 1 and body and between terminal 2 and body.

Standard value	5 MΩ or above

(3) Open circuit

- If there is an open circuit, remove the clamp on the harness from the vehicle, then check for transient open circuit while bending and stretching the harness at the clamp. Also, check the connection conditions of the connector terminals.

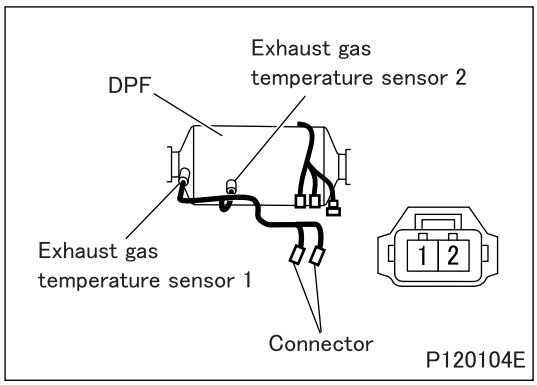


#334 Inspection of DPF differential pressure sensor

- Apply 5 volts DC to terminals 1 and 2.
- Apply air pressure (gauge pressure) and measure the output voltage occurring at terminals 2 and 3 (left figure).

Standard value	0 kPa {0 kgf/cm^2}	0.5 V
	100 kPa {1.02 kgf/cm^2}	4.5 V

- If the measurement is out of specification, replace the sensor. (See Gr17.)

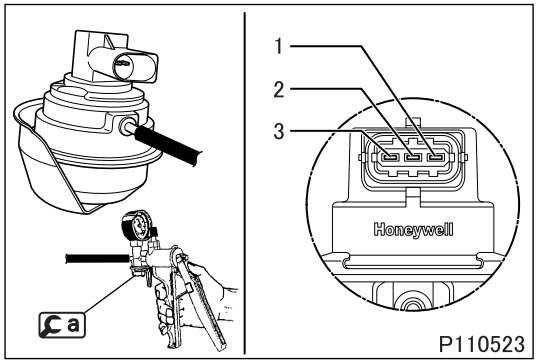


#336 Exhaust gas temperature sensor 1, 2

- Measurement must be carried out with DPF (diesel particulate filter) cooled enough.
- Unplug electrical connector, but do not remove sensor from DPF.
- Measure the resistance between terminals 1 and 2.
- See the chart below for normal resistance versus temperature.

Standard value	Exhaust gas temperature sensor	25°C	It should be near to 220.1 Ω

- Check if the measured value is within the standard value by comparing the measured value with the value according to the chart and outside temperature.
- Measure resistance between each pin to sensor body. Resistance should be greater than 1 MΩ (open circuit).
- If the measurement is out of standard value, replace the sensor. (See Gr17.)



#345 Inspection of VGT position sensor

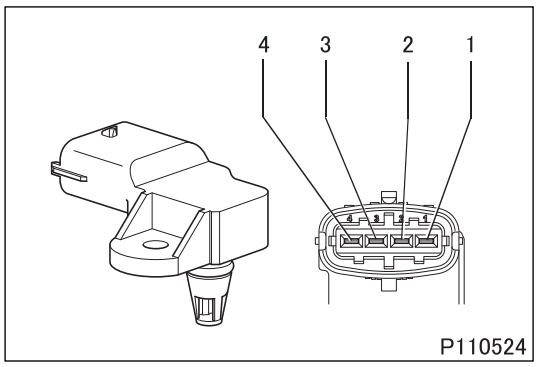
- Apply 5 volts DC between terminals 3 and 1.
- Make sure that the actuator rod is not displaced.
- Measure the output voltage between terminals 2 and 1.

Standard value	1 ± 0.2 V

- Using vacuum meter part a (MH063970), apply negative pressure until the rod mechanically stops. The pressure should be approximately 60 kPa {0.6 kgf/cm^2}.
- Measure the output voltage between terminals 2 and 1.

Standard value	3.7 ± 0.2 V

- If the measurement is out of the standard value, replace the turbocharger. (See Gr15.)
- If the purpose of this inspection is only to check the diaphragm for damage, you can determine that it is damaged if the rod does not move when negative pressure ($60\ ^{+2.7}_{0}$ kPa {$0.6\ ^{+0.03}_{0}$ kgf/cm^2}) is applied to the actuator capsule. (If the actuator operates normally, the rod will move with a minimum amount of flow.)



#346 Inspection of boost pressure and temperature sensor

(1) Boost pressure sensor inspection

- Apply 5 volts DC to terminals 3 and 1.
- Apply air pressure and gradually increase it, measuring the output voltage occurring at terminals 2 and 1.

	Air pressure (gauge)	Voltage
Standard value	Barometric pressure	3 V
	250 kPa {2.5 kgf/cm^2}	4.35 V

- If the measured value deviates from the standard value, replace the sensor. (See Gr15.)

(2) Boost temperature sensor inspection

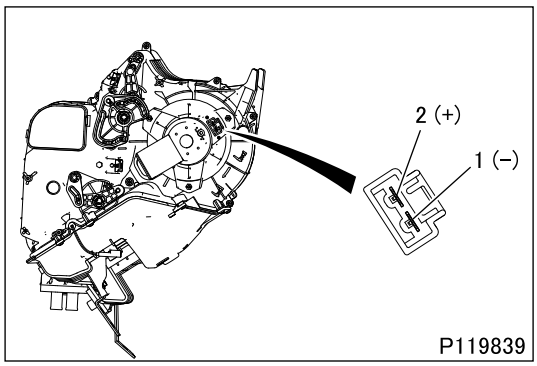
- Place the sensor in ambient with temperature controlled to 20°C for 15 min.
- Measure the resistance between terminals 2 and 1.

Standard value	0°C	5895 ± 250 Ω
	20°C	2499 ± 80 Ω
	40°C	1174 ± 30 Ω

- If the measured value deviates from the standard value, replace the sensor. (See Gr15.)

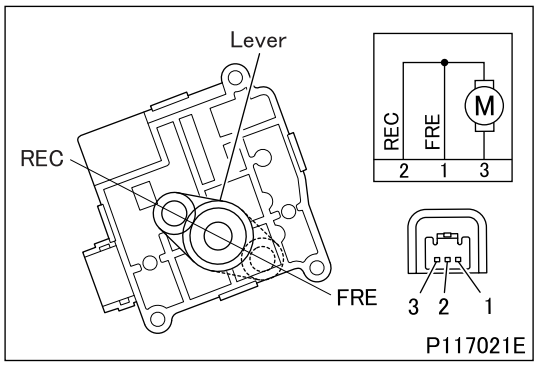
#350 Inspection of control unit and other units

- Since the units alone cannot be readily checked off the vehicle, check the harness, switch and other related parts in each system.
- If any unit is found giving out diagnosis output, checked the issued diagnosis code to identify the cause of existing fault, and replace such unit or electronic control unit, if its malfunction is determined.
- If faults are not found in the related parts, and the problem still remains in the system, replace the control units or other units.



#411 Inspection of blower motor

- Make sure that the motor operates when 12 volts DC is applied between each terminal.
- If any fault is found, replace the motor. (See Gr55.)



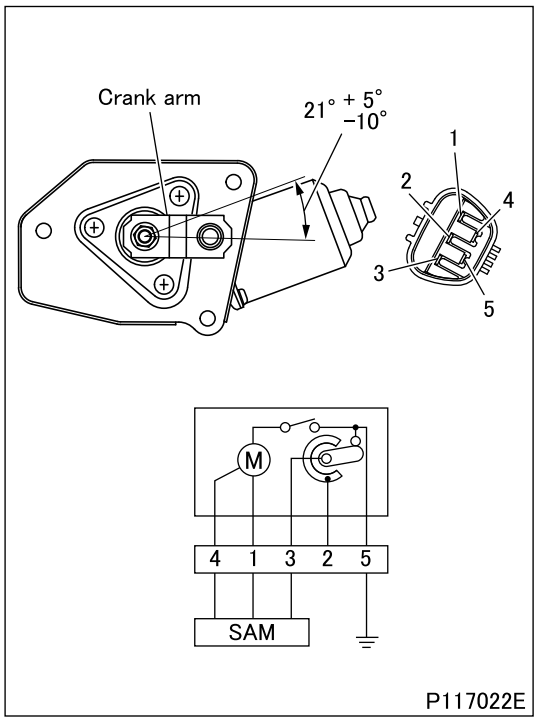
#415 Inspection of fresh/recirculation changeover motor

- Perform the following checks, and if any fault is found, replace the motor. (See Gr55.)
- Make sure that the motor operates when 12 volts DC is applied between each terminal.

Lever position	Continuity terminal
REC (inside air)	(+) 3–2 (–)
FRE (outside air)	(+) 3–1 (–)

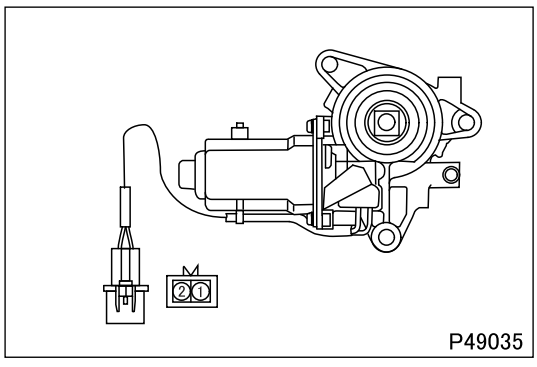
CAUTION ⚠

- **Stop applying 12 volts DC if the lever stops spontaneously at the REC or FRE position.**



#422 Inspection of wiper motor

- Because it is not easy to check these switches individually, determine the quality of the motor indirectly by checking related parts, such as harnesses, power window motor, etc. in the system.
- If there is nothing abnormal in related parts, but there is still something wrong with the system, then replace the motor. (See Gr51.)

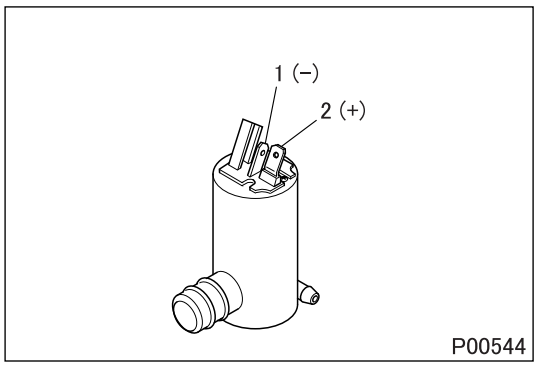


#423 Inspection of power window motor

- Make sure that the motor operates when 12 volts DC is applied between each terminal.

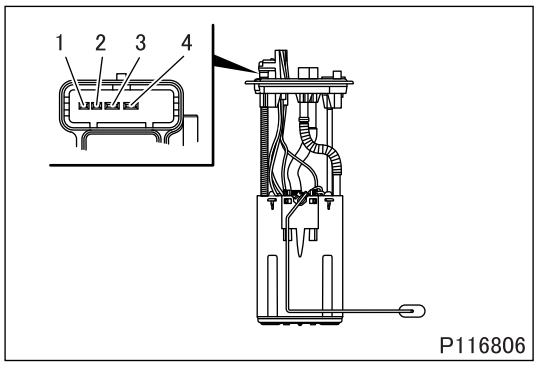
Rotation direction	Continuity terminal
Left	(+) 2–1 (–)
Right	(+) 1–2 (–)

- If any fault is found, replace the motor and the regulator as a set. (See Gr43.)



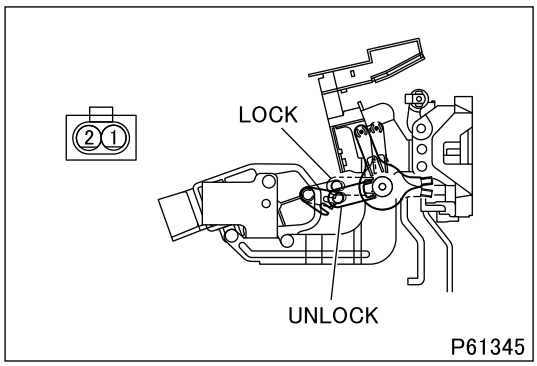
#428 Inspection of windshield washer motor

- Make sure that the motor operates when 12 volts DC is applied between each terminal.
- If any fault is found, replace the motor. (See Gr51.)



#497 Inspection of fuel pump

- Make sure that the motor operates when battery voltage is applied between terminals 3 and 4.
- If any fault is found, replace the fuel pump. (See Gr13.)

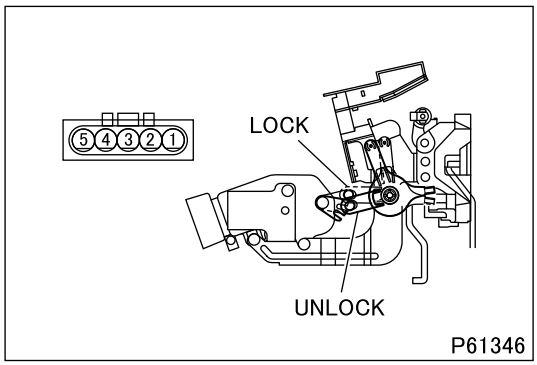


#510 Inspection of door lock actuator (passenger's seat side)

- Make sure that the actuator operates when 12 volts DC is applied between each terminal.

Switch position	Terminal
LOCK	(+) 1–2 (–)
UNLOCK	(+) 2–1 (–)

- If any fault is found, replace the actuator. (See Gr43.)

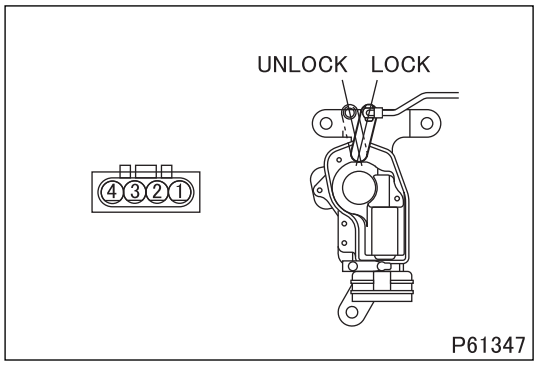


#511 Inspection of door lock actuator (driver's seat side)

- Make sure that the actuator operates when 12 volts DC is applied between each terminal.

Switch position	Continuity terminal	Terminal
LOCK	1–2	(+) 3–4 (–)
UNLOCK	1–5	(+) 4–3 (–)

- If any fault is found, replace the actuator. (See Gr43.)

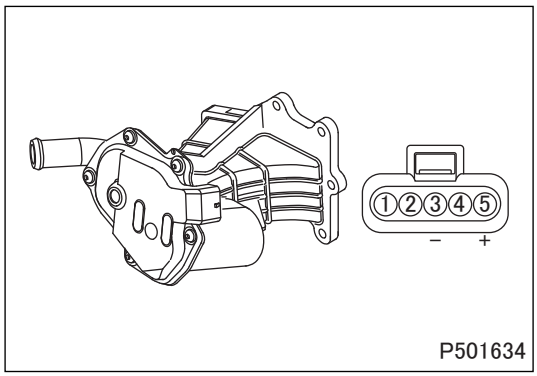


#512 Inspection of rear door lock actuator

- Make sure that the actuator operates when 12 volts DC is applied between each terminal.

Switch position	Terminal
LOCK	(+) 2–3 (–)
UNLOCK	(+) 3–2 (–)

- If any fault is found, replace the actuator. (See Gr43.)



#530 Inspection of EGR actuator

<EGR motor>

- Perform the following checks, and if any fault is found, replace the actuator. (See Gr17.)

(1) Inspection of insulation resistance.

- Measure the resistance between terminals 1 and body, and terminals 2 and body.

Standard value	1 M Ω or more

(2) Inspection of continuity.

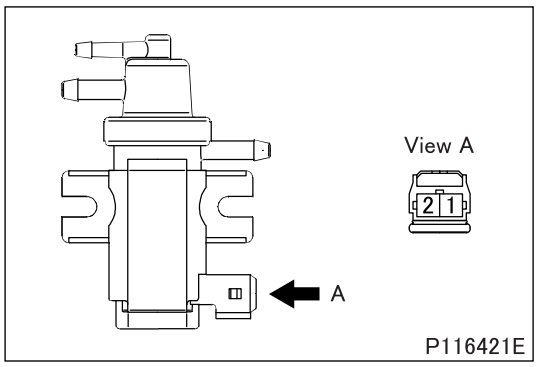
- Make sure that there is no continuity between terminals 1 and body, and 2 and body.

<EGR position sensor>

- Make sure that the valve remain closed.
- Apply 5 volts DC to terminals 5 and 3.
- Measure the output voltage occurring at terminals 3 and 4.

Standard value	0.85 to 1.04 V

- If the measured value deviates from the standard value, replace the actuator. (See Gr17.)

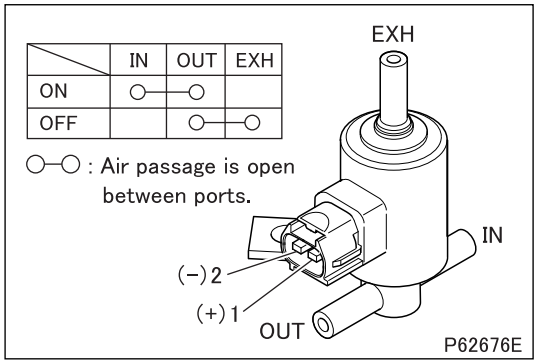


#536 Inspection of vacuum modulator

- Measure the resistance value between terminals 1 and 2.

Standard value (at 20°C)	14.8 to 16.2 Ω

- If the measured value deviates from the standard value, replace the vacuum modulator. (See Gr15.)



#565 Inspection of 3-way magnetic valve

- Perform the following checks, and if any fault is found, replace the 3-way magnetic valve.

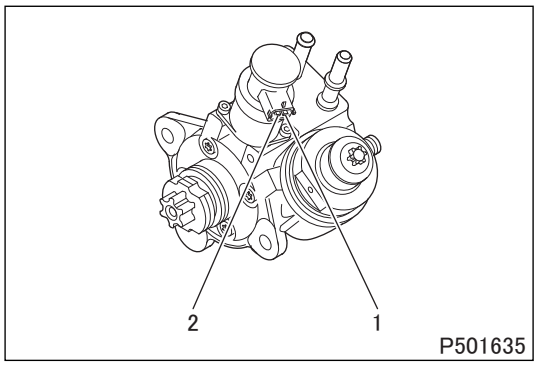
(1) Operation check

- Gradually apply DC current between each terminal starting from 0 V.
- Measure the voltage when the 3-way magnetic valve operates. (Determine ON/OFF of the magnetic valve by operating noises.)

Standard value (minimum operating voltage)	11 V or less

(2) Inspection of continuity and air tightness

- Negative pressure when inspected: –99.99 kPa {–750 mmHg}

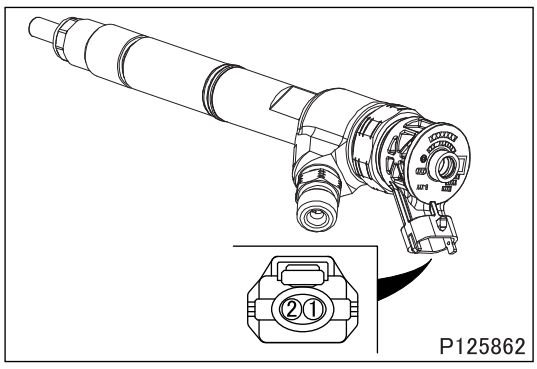


#572 Inspection of FMU (fuel metering unit)

- Measure the resistance value between terminals 1 and 2.

Standard value	2.8 to 3.2 Ω

- If the measured value deviates from the standard value, replace the actuator. (See Gr13.)

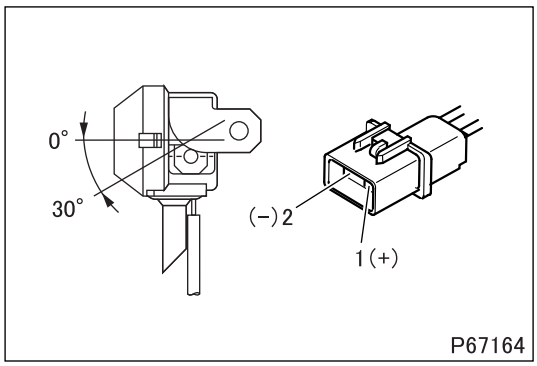


#582 Inspection of injector

- Measure the resistance between terminals 1 and 2.

Standard value (at 20°C)	0.39 ± 0.04 Ω

- If the measurement is out of specification, replace the injector. (See Gr13.)
- If an injector was replaced with a new one, the data must be written and reset in the engine electronic control unit.
- For the data writing and resetting work, consult your nearest authorized dealer or distributor.



#614 Inspection of back buzzer

[Inspection]

- Make sure to confirm if the buzzer intermittently sounds by applying the 12 volts DC between each terminal.
- If any fault is found, replace the buzzer.

[Installation]

- Install the back buzzer to the frame in the range of angles as illustrated.

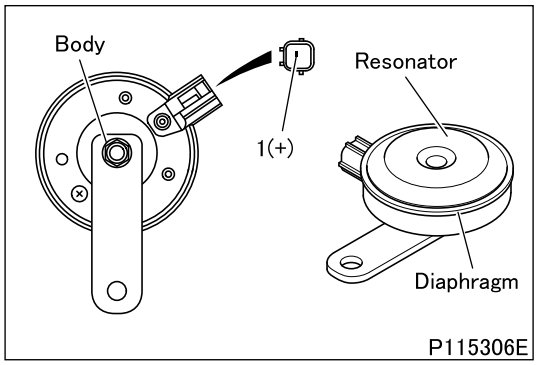
CAUTION ⚠

- **Be aware that if the installed angle of the buzzer is out of the range as illustrated, water in the buzzer will not drain normally.**

#615 Inspection of electric horn

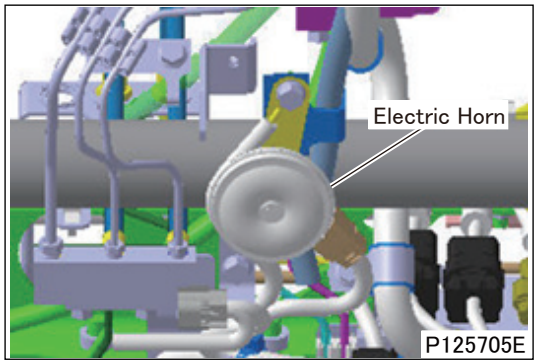
CAUTION ⚠

- **Bending the stay changes the sound quality of the horn, degrading the horn performance.**
- **Never bend or damage the stay.**



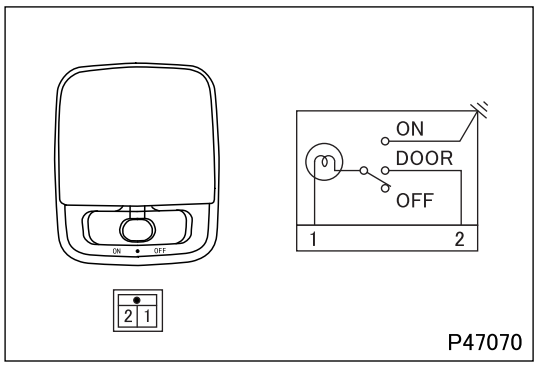
[Inspection]

- Make sure to confirm whether the horn sounds by applying the 12 volts DC between terminals 1 and body.
- Remove foreign substances adhered to the resonator and diaphragm.
- If any fault is found, replace the horn.



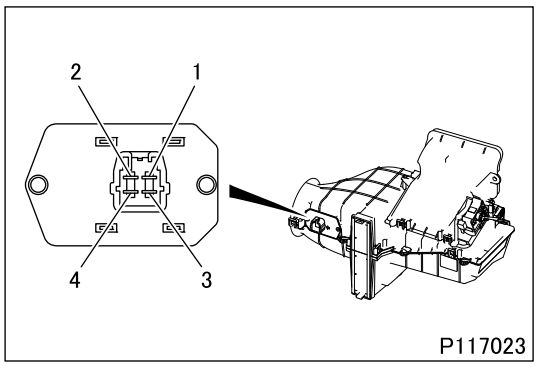
[Installation]

- Install in the direction as illustrated.



#656 Inspection of cab lamp

- If any fault is found, replace the lamp.

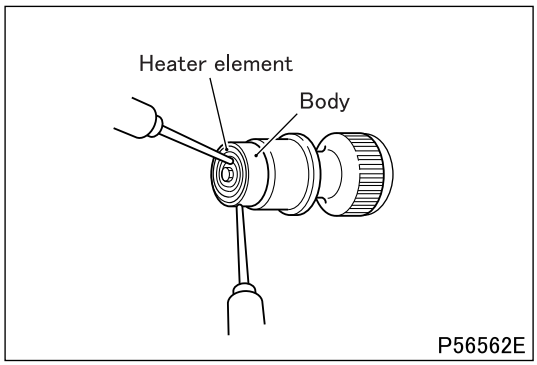


#750 Inspection of blower resistor

- Measure resistance values between each terminals.

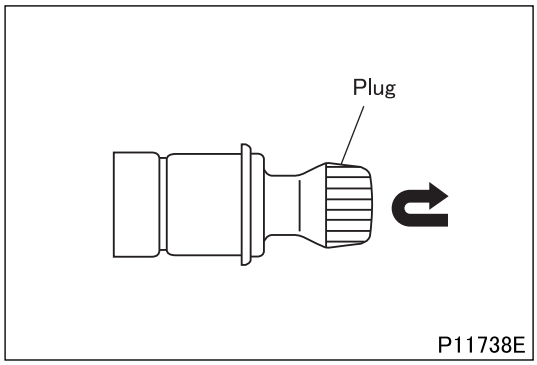
Fan speed	Terminal	Standard value
MEDIUM HIGH	2–4	0.56 ± 0.0392 Ω
MEDIUM LOW	3–4	1.56 ± 0.109 Ω
LOW	1–4	3.36 ± 0.235 Ω

- If the measured value deviates from the standard value, replace the blower resistor. (See Gr55.)



#754 Inspection of cigarette lighter

- Perform the following checks, and if any fault is found, replace the cigarette lighter. (See Gr52.)
- Make sure that there is continuity between heater element and body.



- Make sure that when plug is pushed in by hand, it immediately returns to its original position.
- Place the starter switch at ACC or ON position.
- Push plug into the socket in the cab.
- Measure the time required for plug to automatically return.

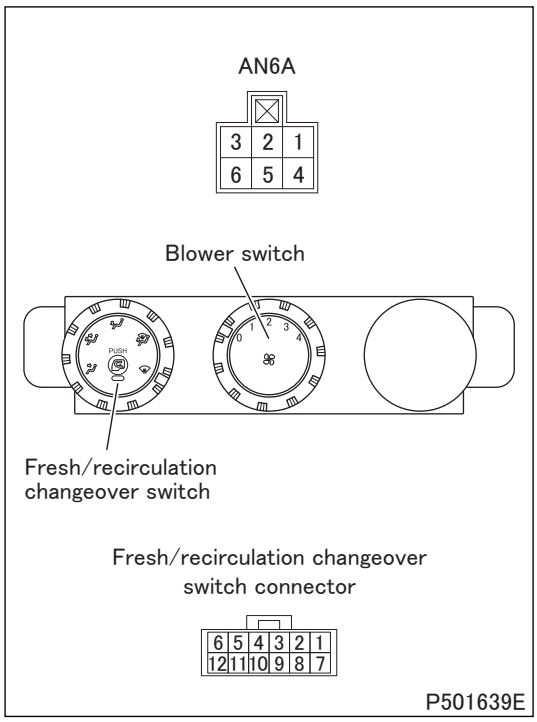
Standard value	15 ± 5 seconds

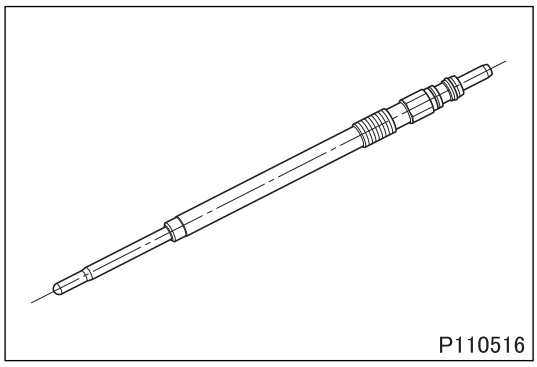
- Check to see that heater element is red-hot.

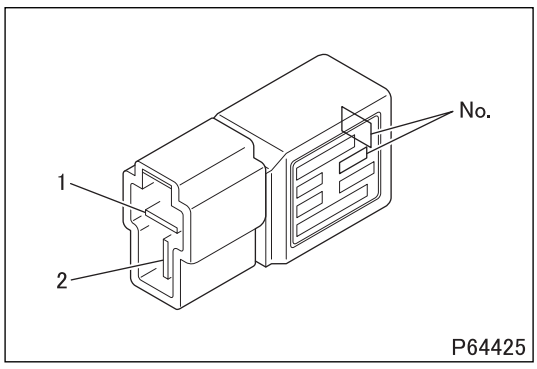
#762 Inspection of squib and horn switches, and clock spring (See Gr52.)

DANGER ⚠

- **Never allow the tester to touch the connector. If the tester touches the connector any minute electric current given off by the tester may flow into the airbag ignition circuit.**







#763 Inspection of heater control panel

- Perform the following checks, and if any fault is found, replace the heater control panel. (See Gr52.)

(1) Blower switch <AN6A connector>

Switch position	Continuity terminal
0: OFF	–
1: LO (LOW)	1–2–4
2: ML (MEDIUM LOW)	1–3–4
3: MH (MEDIUM HIGH)	1–4–6
4: HI (HIGH)	1–4–5

(2) Fresh/recirculation changeover switch

Switch position	Continuity terminal	Operation illumination	Night illumination
OFF: Fresh air	6–12	–	(+) 9–10 (–)
ON: Recirculation air	5–12	(+) 1–12 (–)	

#764 Inspection of glow plug

- Measure the resistance between the housing and the connection pin using a multimeter.

Standard value (at 20°C)	0.6 to 1.0 Ω

- If the measured value deviates from the standard value, replace the glow plug. (See Gr11.)

#828 Inspection of controller area network resistor

- Measure the resistance of the resistor number marked on the controller area network resistor.

Standard value (at 20°C)	Resistor No.	1	270 ± 13.5 Ω
		2	510 ± 25.5 Ω
		3	820 ± 41 Ω
		4	1300 ± 65 Ω
		5	2000 ± 100 Ω
		6	3300 ± 165 Ω
		7	5600 ± 280 Ω
		8	15000 ± 750 Ω
		9	390 ± 19.5 Ω
		10	4300 ± 215 Ω
		11	9100 ± 455 Ω
		12	120 ± 6 Ω

- If the measurement is out of specification, replace the controller area network resistor with one that has the same resistor number and same specified resistance.

CAUTION ⚠

- **The controller area network resistor are matched to the engine. If you replace any of them, be sure to replace it with one that has the same resistor number.**

DANGER ⚠

- **Since flammable hydrogen gas is generated by the battery be sure to obey the following warnings:**
  - **Do not short-circuit the (+) and (–) terminals on the battery.**
  - **Keep sparks and lit cigarettes away from the battery.**
  - **Do not wear metal objects on your arms and lean over battery.**
- **Because the battery electrolyte is made of diluted sulfuric acid and is corrosive, when handling battery wear safety glasses and rubber gloves to protect the eyes and hands.**

WARNING ⚠

- **Make sure that you disconnect battery cable (–) first when you disconnect battery cables.**

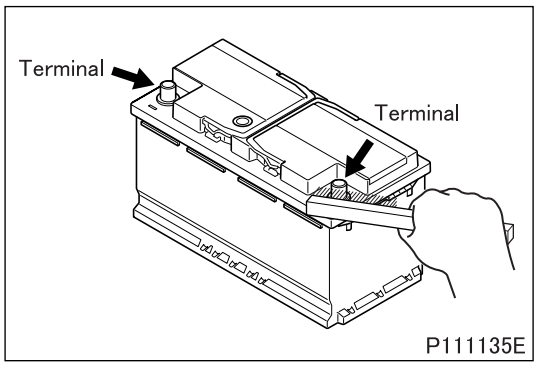
CAUTION ⚠

- **Make sure that all electrical switches of the vehicle are OFF before connecting battery cables.**
- **Make sure that you connect battery cable (+) before you connect battery cable (–).**
- **To prevent a short-circuit be sure that disconnected battery cables do not accidentally touch the battery terminals.**

Service standards

Location	Maintenance item	Standard value	Limit	Remedy
–	Specific gravity of battery electrolyte (20°C)	1.280	1.220	Charge or replace

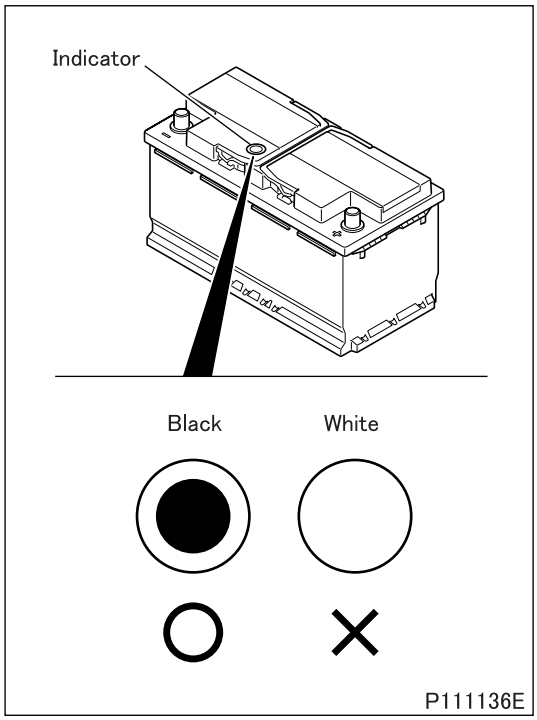
◆ Service procedure ◆



■ Inspection: Battery

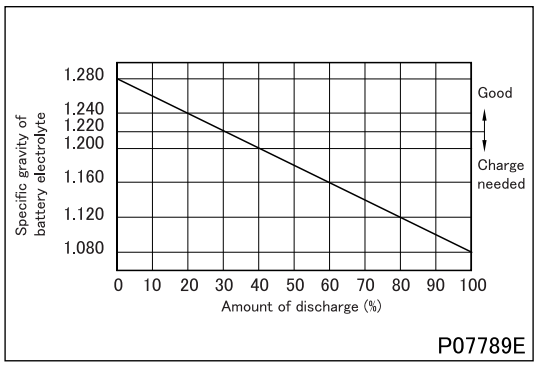
(1) Visual inspection

- If terminal is corroded, scrub off the corrosion from it using a wire brush.
- If cracks or defects are found on battery, replace it since the cracks or defects can cause liquid spills.



(2) Inspection of fluid level

- Check the battery electrolyte level using the indicator on top of the battery.
- If the indicator is black, the electrolyte level is proper. If the indicator is white, the electrolyte level is low. Replace the battery.



(3) Charging

- Although, as a rule, battery charging should be done with the battery removed from the vehicle, if you have to charge the battery while it is on the vehicle, make sure that you stop the engine and disconnect battery cable (–).
- Remove vent plug before charging the battery.
- For the recommended charge time and current, see the following table to avoid overcharging.

	Charge current (A)	Charge time (H)	Upper limit of fluid temperature (°C)
Normal charge	Value of 5-hour rating capacity / 10	*Amount of discharge (Ah) / Charge current (A) ×1.2 (to 1.5)	45
Quick charge	Value of 5-hour rating capacity / 1.5	0.5	55

* Amount of discharge (Ah) =

$$\text{5-hour rating capacity (Ah)} \times \frac{\text{Amount of discharge (\%)}}{100}$$

- Use the graph shown on the left to calculate the amount of discharge (%).
- Use diluted sulfuric acid, made up of sulfuric acid and refined or distilled water, as the battery electrolyte.

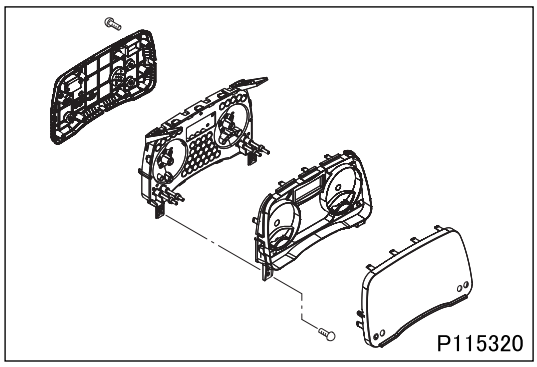
DANGER ⚠

- **Keep open flame away from the battery while charging to prevent explosion.**
- **It is dangerous to generate sparks while charging the battery.**
- **Do not charge battery if the electrolyte level is below min level, since it can cause early deterioration, heating, or explosion. Make sure to add the fluid to the specified level before charging.**

WARNING ⚠

- **Do not let the battery electrolyte level rise and overflow while charging the battery.**
- **After charging the battery, tighten vent plug, wash away sulfuric acid from the battery using water, and dry the surface.**

#890 METER



#890 Meter cluster

- Check the meter cluster by the actuator test of FUSO Diagnostics.(See Gr54EM.)
- Check for meter cluster faults with diagnosis codes. (See Gr54EM.)
- When the meter cluster is replaced, be sure to rewrite data in the electronic control unit using FUSO Diagnostics.

CAUTION ⚠

- **The replacement of the meter cluster should be performed only when the meter cluster is judged as faulty after performing the following inspections.**
- **Check the connectors, harnesses and fuses.**
- **Perform the actuator test.**
- **Temporarily install the said meter cluster to other vehicle and check if the same problem occurs.**