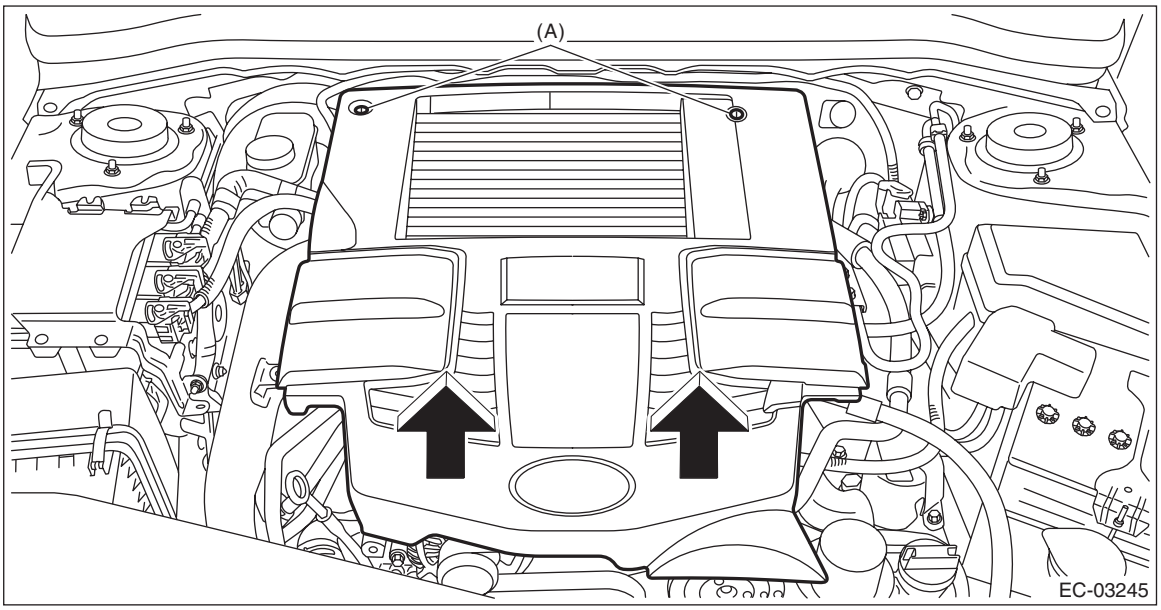
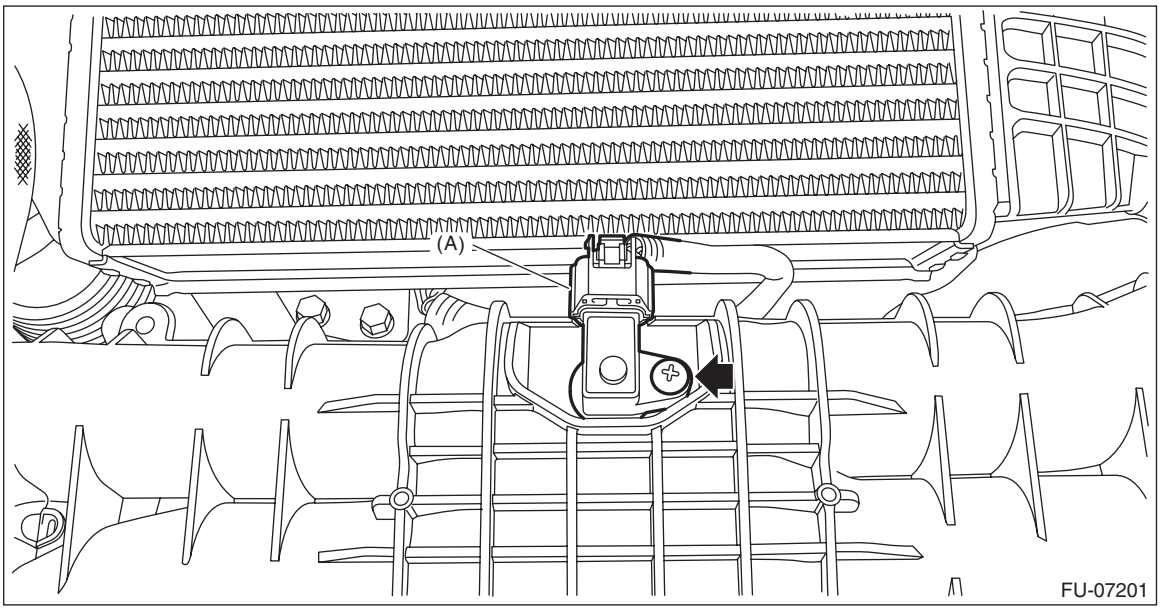
20.Manifold Absolute Pressure and Intake Air Temperature Sensor

A: REMOVAL

1) Remove the clip (A), lift the front of the collector cover in the direction of arrow, and then remove the collector cover.



2) Disconnect the ground cable from battery.
3) Disconnect the connector (A) from the manifold absolute pressure & intake air temperature sensor, and remove the manifold absolute pressure & intake air temperature sensor from the intake manifold.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Use new O-rings.

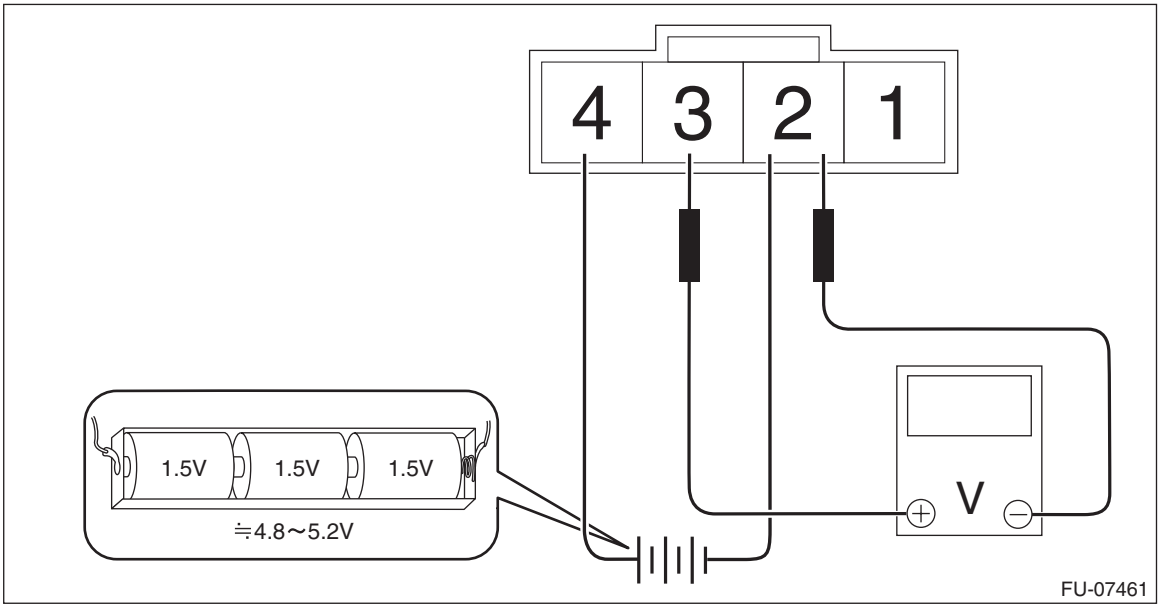
Tightening torque:
3.5 N·m (0.4 kgf-m, 2.6 ft-lb)

C: INSPECTION

1. CHECK MANIFOLD ABSOLUTE PRESSURE SENSOR

1) Connect dry-cell battery positive terminal to terminal No. 4 and dry-cell battery ground terminal to terminal No. 2, circuit tester positive terminal to terminal No. 3, and the circuit tester negative terminal to terminal No. 2.

NOTE:
- Use new dry-cell batteries.
- Using circuit tester, check the voltage of a single dry-cell battery is 1.6 V or more. And also check the voltage of three batteries in series is between 4.8 V and 5.2 V.

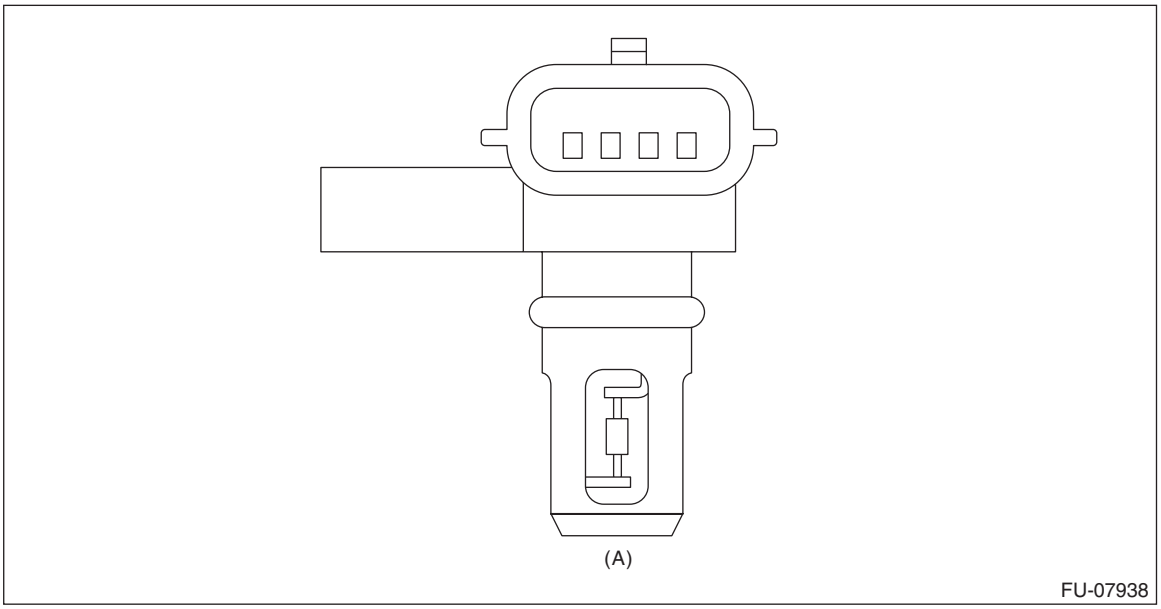


2) Check the voltage at a normal atmospheric pressure.

NOTE:
The atmospheric pressure at higher altitude is lower than normal. Therefore, the voltage is lower than the standard value.

Terminal No.	Standard
3 (+) and 2 (–)	Approx. 4.2 V (when 25°C (77°F))

3) Connect the Mighty Vac to the pressure port (A) of manifold absolute pressure & intake air temperature sensor.



4) Check the voltage when generating vacuum and positive pressure using Mighty Vac.

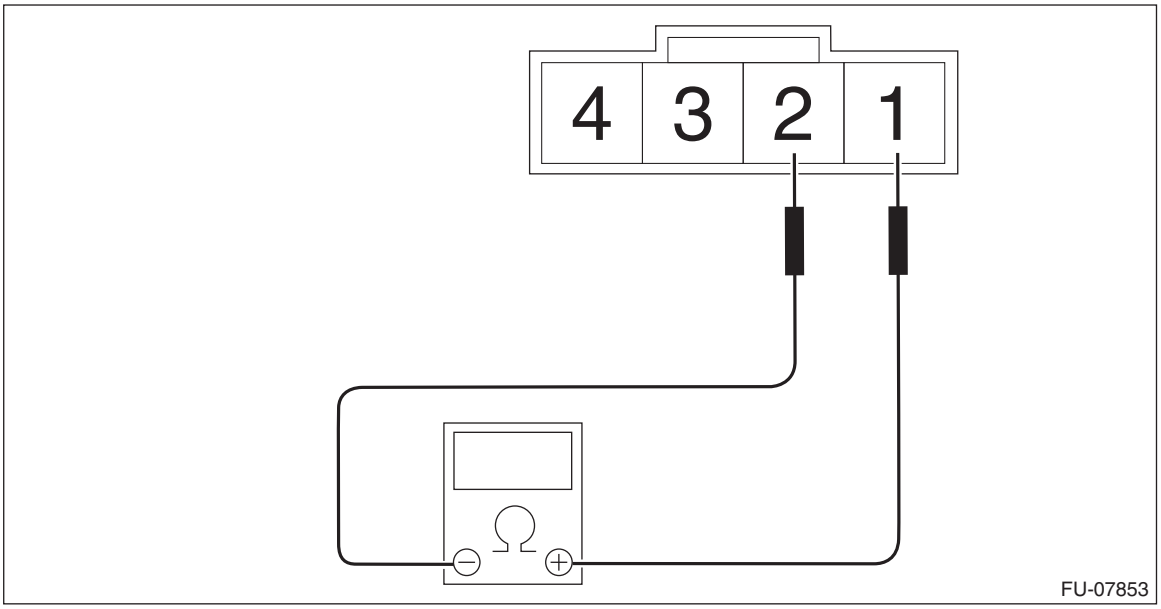
CAUTION:
Do not apply vacuum of less than –88 kPa (–0.9 kgf/cm^2, –12.8 psi). Doing so may damage the manifold absolute pressure& intake air temperature sensor.

NOTE:
When vacuum occurs at the pressure port of manifold absolute pressure & intake air temperature sensor, the voltage will drop from the value as in step 3). When positive pressure occurs, on the other hand, the voltage will rise.

Pressure	Terminal No.	Standard
–88 kPa (–0.9 kgf/cm^2, –12.8 psi)	3 (+) and 2 (–)	Approx. 1 V (when 25°C (77°F))

2. CHECK MANIFOLD TEMPERATURE SENSOR UNIT

1) Measure the resistance between engine coolant temperature sensor terminals.



Temperature	Terminal No.	Standard
–20°C (–4°F)	1 and 2	Approx. 14.7±2.2 kΩ
25°C (77°F)		Approx. 2.0±0.2 kΩ
60°C (140°F)		Approx. 0.59±0.09 kΩ

3. OTHER INSPECTIONS

Check that the manifold pressure & intake air temperature sensor has no deformation, cracks or other damages.