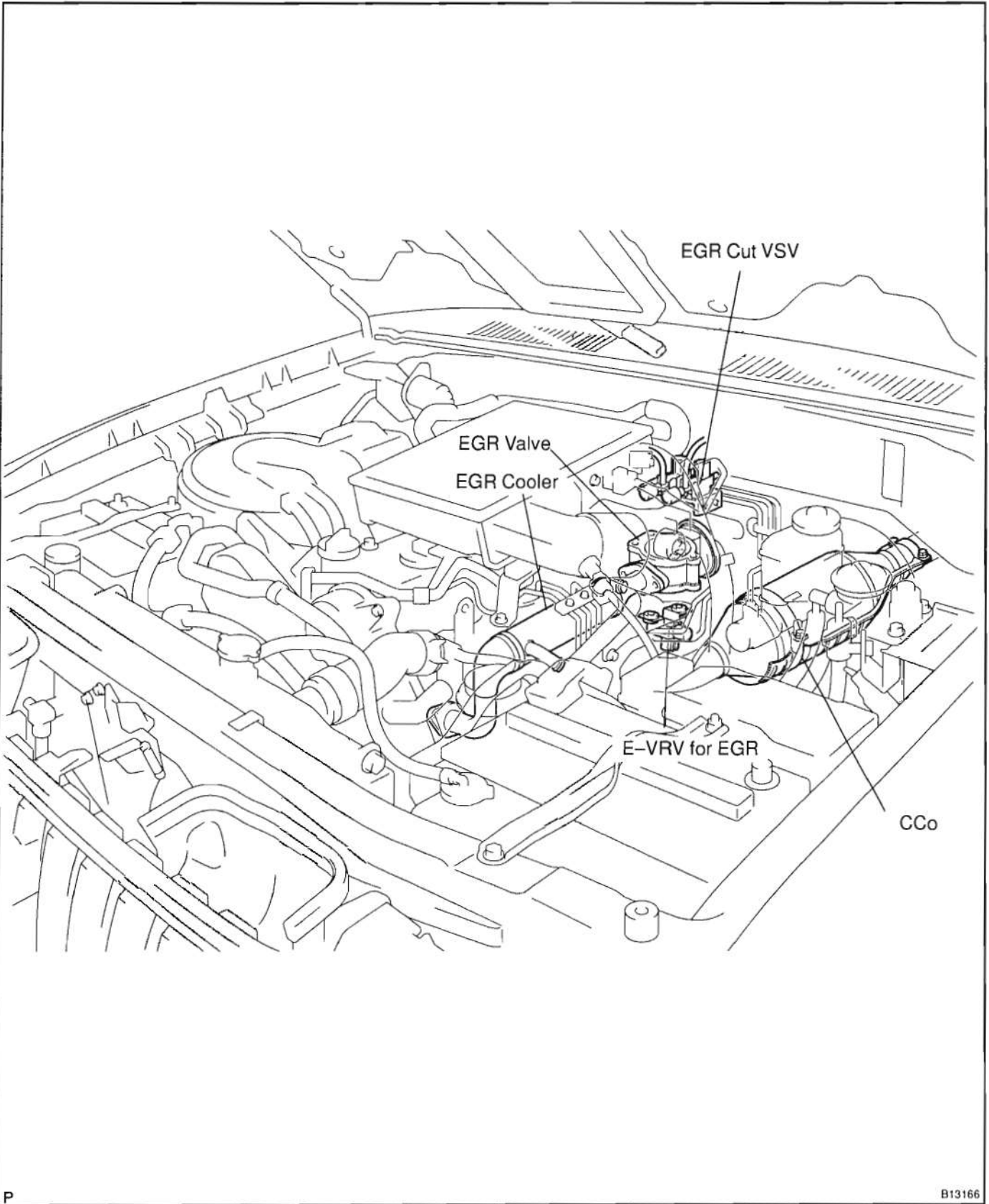

EMISSION CONTROL

PARTS LAYOUT AND SCHEMATIC	
DRAWING	EC-1
POSITIVE CRANKCASE VENTILATION (PCV)	
SYSTEM	EC-3
EXHAUST GAS RECIRCULATION	
(EGR) SYSTEM	EC-4
CATALYTIC CONVERTER FOR OXIDATION	
(CCo) SYSTEM	EC-8

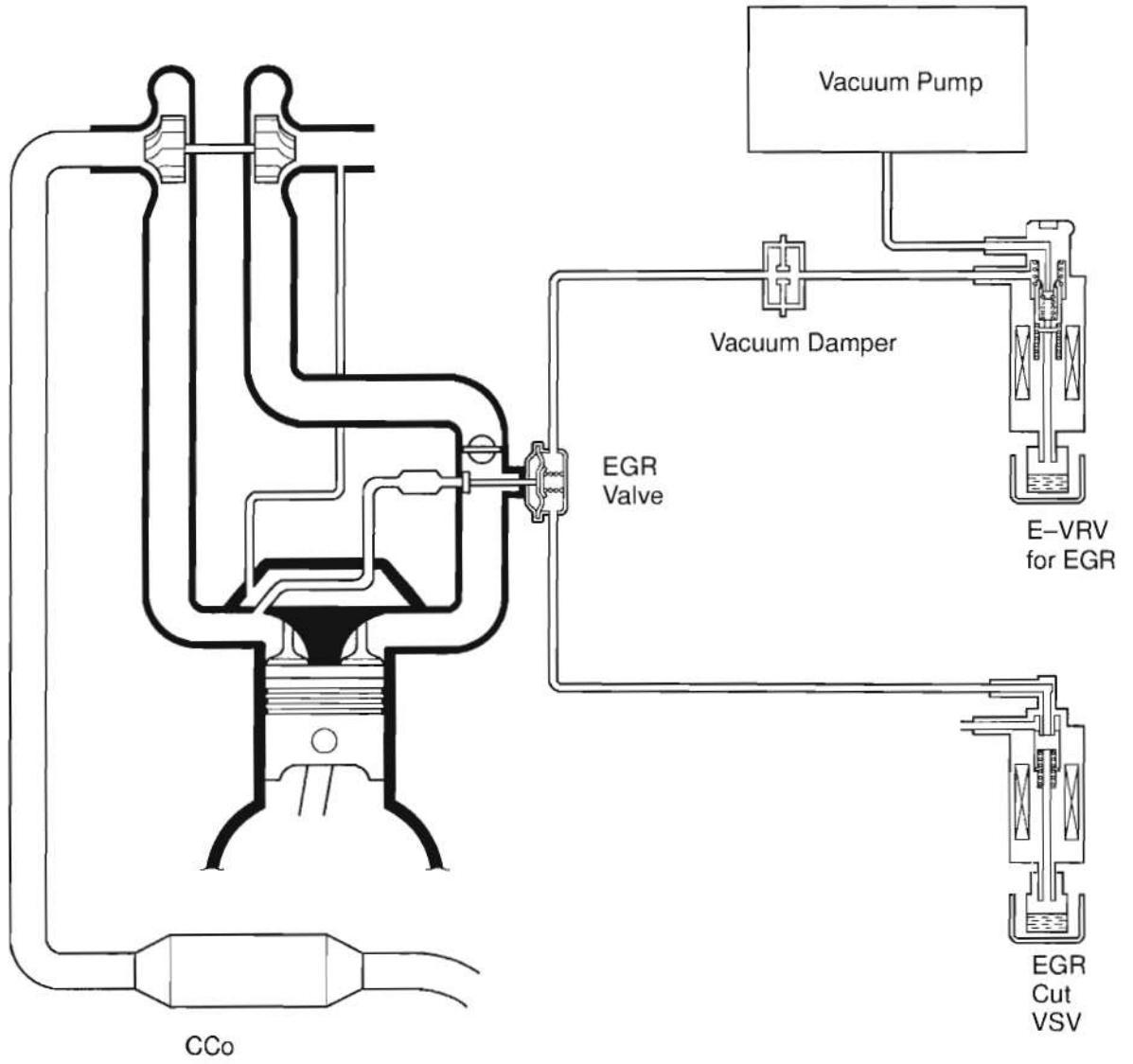
PARTS LAYOUT AND SCHEMATIC DRAWING

LOCATION

EC000-03



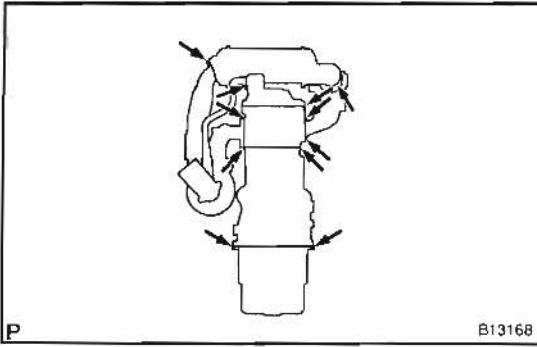
DRAWING



EC

P

B13167



POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM INSPECTION

ECPCS-02

VISUALLY INSPECT HOSE AND CONNECTION

Check for cracks, leaks or damage.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM ON-VEHICLE INSPECTION

EGRV-01

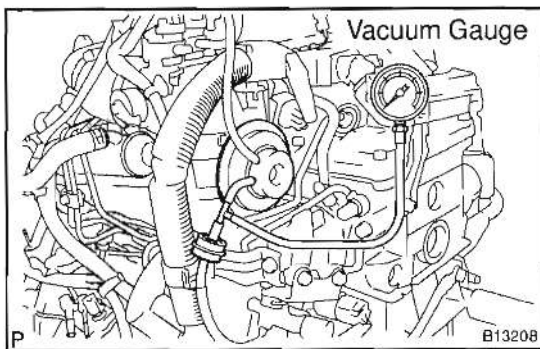
HINT:

In a malfunction where the EGR system is always on, black smoke or white smoke may be output from the exhaust pipe. If this occurs, inspect the EGR system also.

NOTICE:

Always stop the engine when installing or removing the vacuum gauge, or removing the vacuum hose.

EC



1. INSTALL VACUUM GAUGE

Using a 3 way connector, connect a vacuum gauge to the hose between the EGR valve and E-VRV.

2. INSPECT SEATING OF EGR VALVE

Start the engine and check that the engine starts and run at idle.

3. INSPECT COLD ENGINE CONDITION

- (a) The coolant temperature should be below 15°C (59°F).
- (b) Check that the vacuum gauge indicates 0 at idle.

4. INSPECT HOT ENGINE CONDITION

- (a) Warm up the engine, the coolant temperature should be above 75°C (109°F) and below 90°C (194°F).
- (b) Check that the vacuum gauge indicates about more than 28.0 kPa (210 mmHg, 8.3 in.Hg) at idle.
- (c) Check that the vacuum gauge indicator increases about more than 28.0 kPa (210 mm Hg, 8.3 in.Hg) at 1,500 rpm.
- (d) When the accelerator pedal is quickly depress to the full open, check that the vacuum gauge indicator drops momentarily.
- (e) Keep the engine speed at more than 4,000 rpm.
- (f) Check that the vacuum gauge indicates 0.
- (g) When the accelerator pedal is released, check that the vacuum gauge indicator drops momentarily while the engine speed decreases from more than 4,000 rpm to idle.

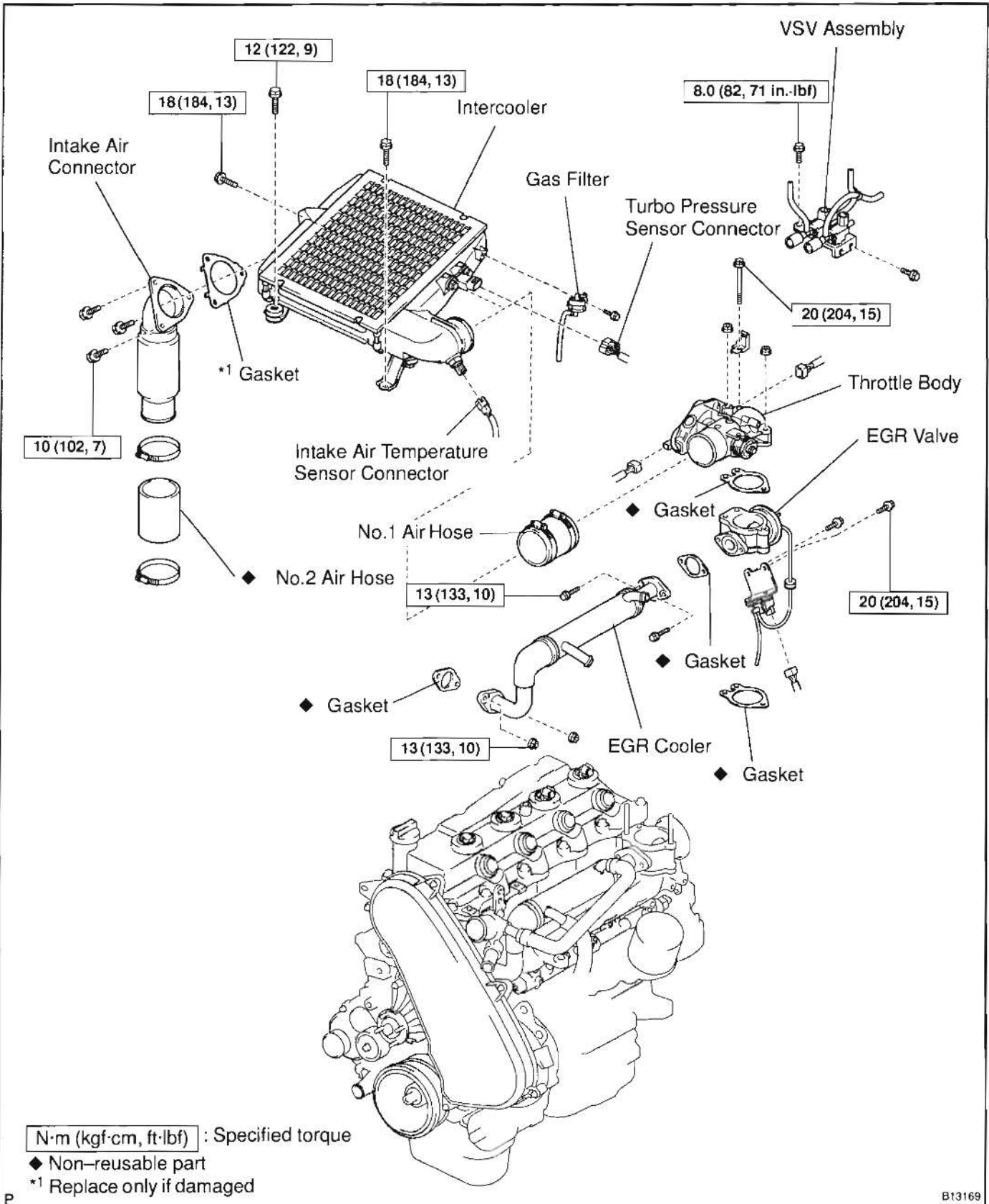
5. REMOVE VACUUM GAUGE

6. CHECK OUTPUT VACUUM WITH VACUUM GAUGE

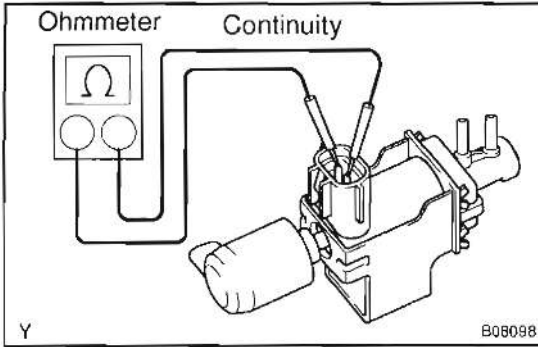
- (a) Connect a vacuum gauge to the output pipe.
- (b) Warm up the engine and check that the vacuum gauge indicates above 86.7 kPa (650 mmHg, 25.59 in.Hg).

If a problem is found, repair the vacuum pump.

COMPONENTS



EC



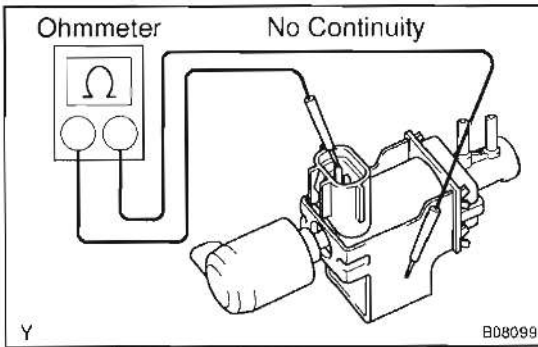
INSPECTION

1. INSPECT E-VRV

- (a) Inspect the E-VRV for open circuit.
Using an ohmmeter, measure the resistance between terminals as shown.

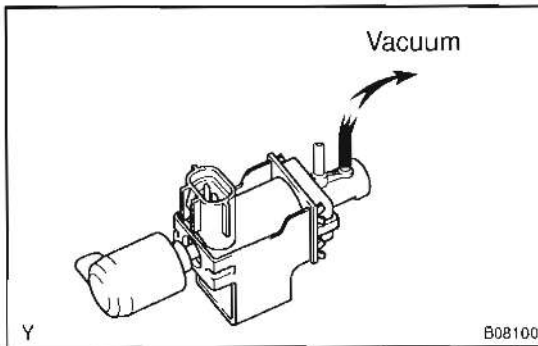
Resistance: 11 – 13 Ω at 20°C (68°F)

If the resistance is not specified, replace the E-VRV.



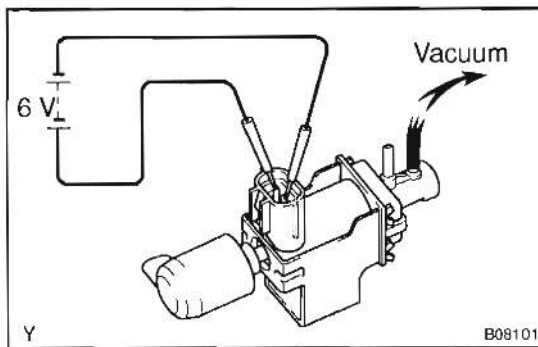
- (b) Inspect the E-VRV for ground.
Using an ohmmeter, check that there is no continuity between terminals and E-VRV body.

If there is continuity, replace the E-VRV.



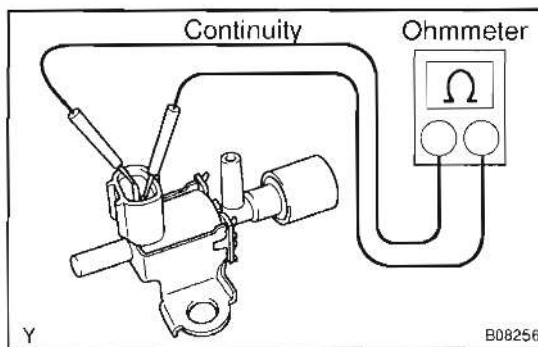
- (c) Inspect the E-VRV for air tightness.
Check that when vacuum is applied to the vacuum outlet port shown, the needle of vacuum pump indicates an increase of 66.7 kPa (500 mmHg, 19.7 in. Hg) or more.

If a problem is found, replace the E-VRV



- (d) Inspect the E-VRV operation.
(1) Apply about 6 V of DC power to the terminals.
(2) Check that when vacuum is applied to the vacuum outlet port shown, the need does not move.

If operation is not as specified, replace the E-VRV.

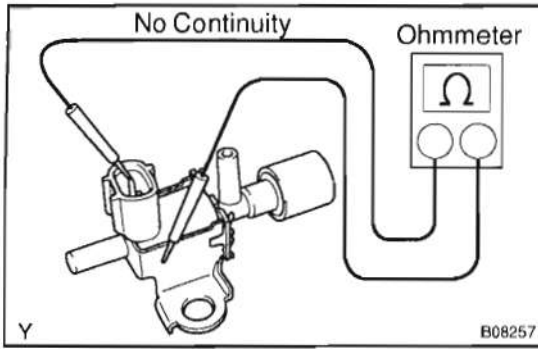


2. INSPECT VSV

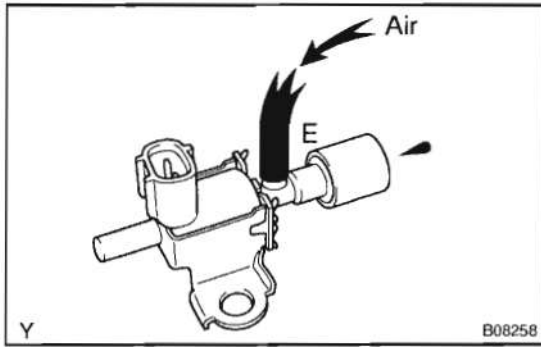
- (a) Inspect the VSV for open circuit.
Using an ohmmeter, check that there is continuity between terminals.

Resistance: 33 – 39 Ω at 20°C (68°F)

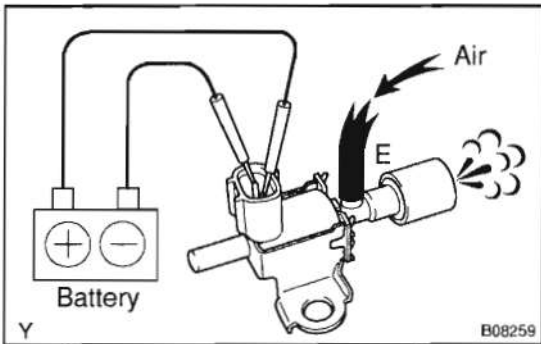
If there is no continuity, replace the VSV



- (b) Inspect the VSV for ground.
Using an ohmmeter, check that there is no *continuity* between terminals and body.
If there is continuity, replace the VSV.



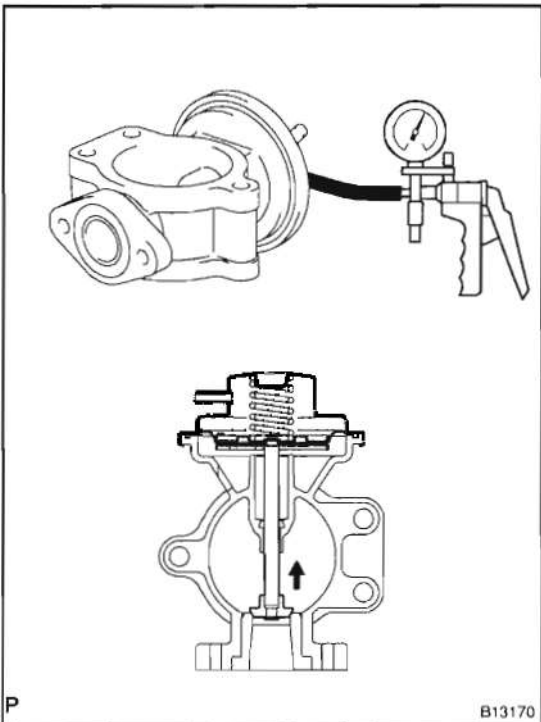
- (c) Inspect the VSV operation.
(1) Check that air does not flow from port E to the filter.



- (2) Apply battery voltage across the terminals.
(3) Check that air flows from port E to filter.
If operation is not as specified, replace the VSV.

3. INSPECT EGR VALVE

- (a) Remove the EGR valve.



- (b) When a vacuum of 26.7 kPa (200 mmHg, 7.87 in.Hg) is applied to the diaphragm chamber, check that the shaft rises up and that air flows from IN to OUT.
(c) Maintain the above conditions, and check again that there are no leaks.
(d) Check the valve for sticking and heavy carbon deposits.
If a problem is found, replace it.
(e) Reinstall the EGR valve with the new gasket.
4. **INSPECT ACCELERATOR POSITION SENSOR**
(See page DI-28, DI-34 and ED-20)
 5. **INSPECT INTAKE AIR TEMPERATURE SENSOR**
(See page ED-13)
 6. **INSPECT WATER TEMPERATURE SENSOR**
(See page ED-11)
 7. **INSPECT CAMSHAFT POSITION SENSOR**
(See page ED-17)
 8. **INSPECT CRANKSHAFT POSITION SENSOR**
(See page ED-18)
 9. **INSPECT AIR FLOW METER** (See page ED-3)

CATALYTIC CONVERTER FOR OXIDATION (CCo) SYSTEM

ON-VEHICLE INSPECTION

EC00W-01

1. CHECK CONNECTIONS FOR LOOSENESS OR DAMAGE
2. CHECK CLAMPS FOR WEAKNESS, CRACKS OR DAMAGE
3. CHECK FOR DENTS OR DAMAGE

If any part of the protector is damaged or dented to the extent that it contacts the CCo, repair or replace it.

4. CHECK HEAT INSULATOR FOR DAMAGE
5. CHECK FOR ADEQUATE CLEARANCE BETWEEN CATALYTIC CONVERTER AND HEAT INSULATOR

COMPONENTS

EC

