

EXHAUST GAS RECIRCULATION (EGR) SYSTEM INSPECTION

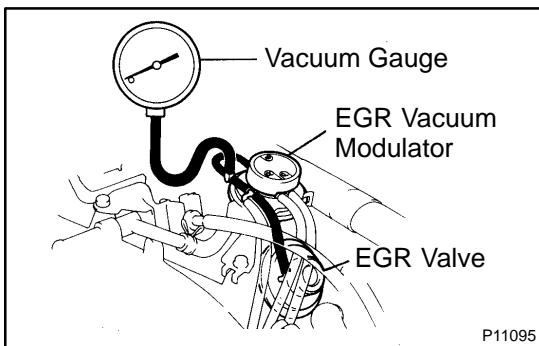
EC0G7-01

1. INSPECT EGR SYSTEM

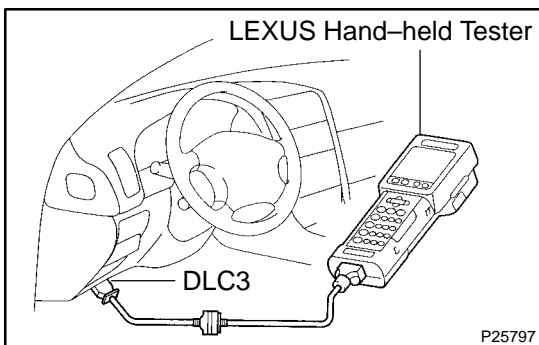
- (a) Inspect and the clean filter in the EGR vacuum modulator.
 - (1) Remove the cap and filter.
 - (2) Check the filter for contamination or damage.
 - (3) Using compressed air, clean the filter.
 - (4) Reinstall the filter and cap.

HINT:

Install the filter with the coarser surface facing the atmospheric side outward.

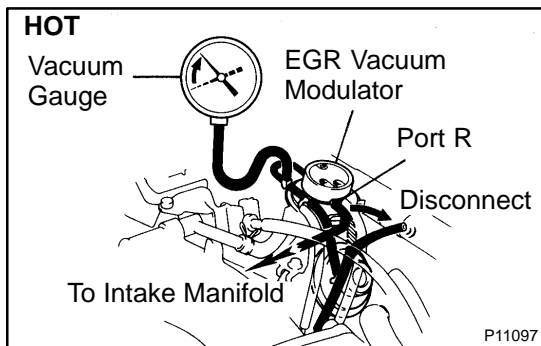


- (b) Install the vacuum gauge. Using a 3-way connector, connect A vacuum gauge to the hose between the EGR valve and EGR vacuum modulator.
- (c) Inspect the seating of the EGR valve. Check that the engine starter and runs at idle.
- (d) Inspect the VSV operation with the cold engine.
 - (1) The engine coolant temperature should be below 45°C (113°F).
 - (2) Check the 4 wheels.
 - (3) fully apply the paring brake.



- (4) Connect the LEXUS hand-held tester or OBD II scan tool the DLC3.
- (5) Starter the engine and check idle.
- (6) Keep your foot pressed firmly on the brake pedal.
- (7) Shift into the D position. Press the accelerator pedal slowly and hold the engine speed at 1,200 – 1,600 rpm.
- (8) Check that the vacuum gauge indicates zero.
- (e) Inspect the operation of the VSV and EGR vacuum modulator with the hot engine.

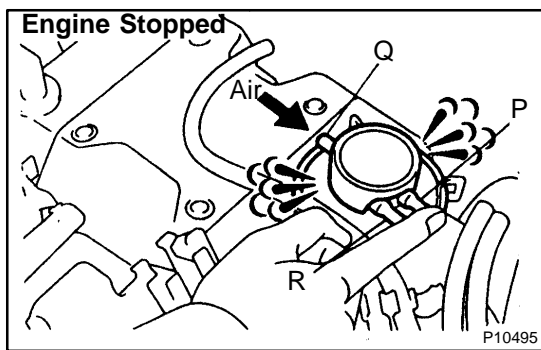
- (1) Warm up the engine to above 45°C (122°F)
 - (2) Chock the 4 wheels.
 - (3) Fully apply the parking brake.
 - (4) Connect the LEXUS hand-held tester or OBD II scan tool the DLC3.
 - (5) Start the engine and check idle.
 - (6) Keep your foot pressed firmly on the brake pedal.
 - (7) Shift into the D position. Press the accelerator pedal slowly and hold the engine speed at 1,200 – 1,600 rpm.
 - (8) Check that the vacuum gauge indicates low vacuum.
- (f) Remove the vacuum gauge.
Remove the vacuum gauge, and reconnect the vacuum hoses to their proper locations.



- (g) Inspect the EGR valve.
- (1) Apply vacuum directly to the EGR valve with the engine idling.
 - (2) Check that the engine runs rough or dies.
 - (3) Reconnect the vacuum hoses to their proper locations.

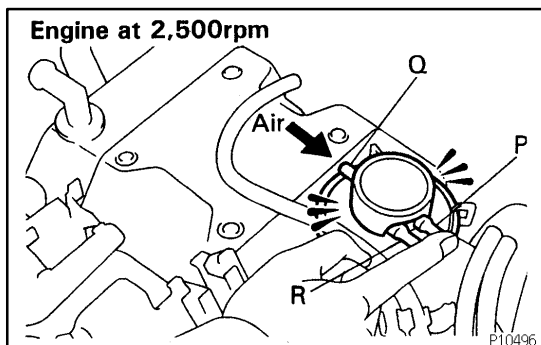
If no problem is found during this inspection, system is normal; otherwise inspect each part.

2. INSPECT VSV FOR EGR (See page SF-66)

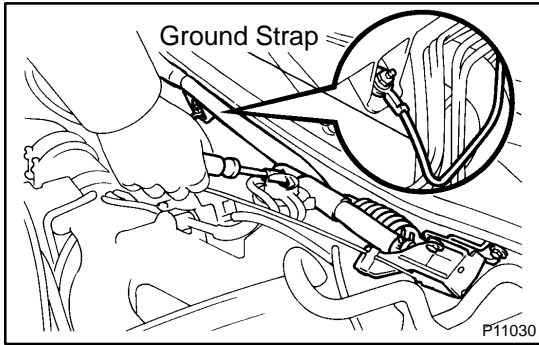


3. INSPECT EGR VACUUM MODULATOR

- (a) Disconnect the vacuum hoses from the EGR vacuum modulator.
Disconnect the 3 vacuum hoses from ports P,Q and R of the EGR vacuum modulator.

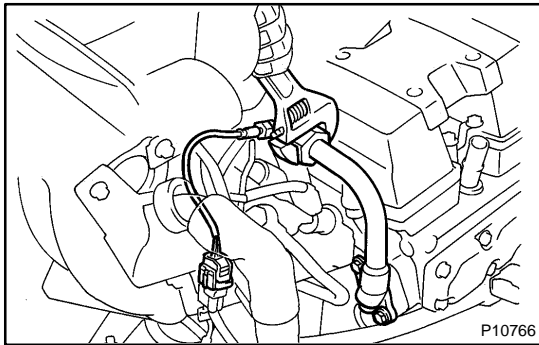


- (b) Inspect the EGR vacuum modulator operation.
- (1) Block ports P and R with your finger.
 - (2) Blow air into port Q, and check that the air passes through to the air filter side freely.
 - (3) Start the engine, and maintain speed at 2,500 rpm.
 - (4) Repeat the above test. Check that there is a strong resistance to air flow.
- (c) Reconnect the 3 vacuum hoses to the proper locations.

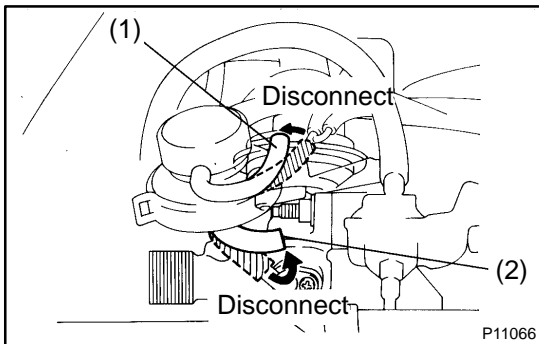


4. INSPECT EGR VALVE

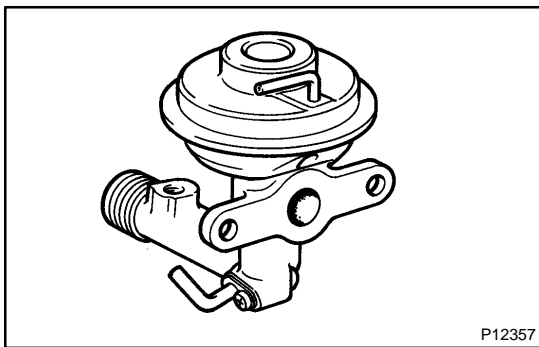
- (a) Disconnect the engine wire and heater water valve from the cowl panel.
 - (1) Remove the 2 nut, and disconnect the engine wire protector and ground strap.
 - (2) Remove the 2 bolts, and disconnect the heater water valve.
 - (3) Pull out the engine wire protector and heater water hose from the cowl panel.



- (b) Remove the EGR pipe.
 - (1) Loosen the union nut of the EGR pipe.
 - (2) Remove the 2 bolts, EGR pipe and gasket.
- (c) Remove the EGR gas temperature sensor.



- (d) Remove the EGR valve.
 - (1) Disconnect the vacuum hose from EGR valve.
 - (2) Disconnect the pressure hose from EGR valve.
 - (3) Remove the 2 nuts, EGR valve and gasket.



- (e) Inspect the EGR valve.
Check for sticking and heavy carbon deposits.
If a problem is found, replace the EGR valve.
- (f) Reinstall the EGR valve.
 - (1) Place a new gasket on the intake air connector.
 - (2) Install the EGR valve with the 2 nuts.
Torque: 21 N·m (210 kgf-cm, 15 ft-lbf)
 - (3) Connect the vacuum hose to EGR valve.
 - (4) Connect the pressure hose to EGR valve.
- (g) Reinstall the EGR gas temperature sensor .
Torque: 20 N·m (200 kgf-cm, 14 ft-lbf)
- (h) Reinstall the EGR pipe.
 - (1) Temporarily install the union nut of the EGR pipe.
 - (2) Install a new gasket and the EGR pipe with the 2 bolts.
Torque: 27 N·m (280 kgf-cm, 20 ft-lbf)
 - (3) Tighten the union nut of the EGR pipe.
Torque: 64 N·m (650 kgf-cm, 47 ft-lbf)
- (i) Reinstall the engine wire and heater water valve to the cowl panel.

- (1) Install the heater water valve with the 2 bolts.
- (2) Install the engine wire protector and ground strap with the 2 nuts.