

## EXHAUST GAS RECIRCULATION (EGR) SYSTEM INSPECTION

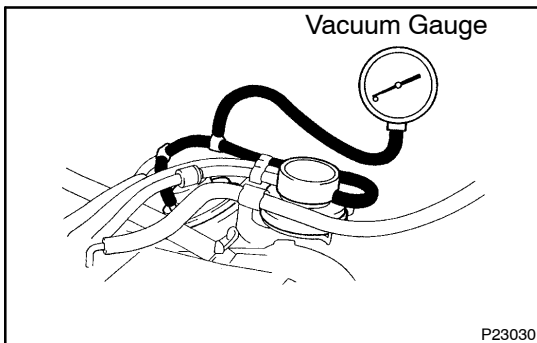
EC00G-03

### 1. INSPECT AND CLEAN FILTER IN EGR VACUUM MODULATOR

- (a) Remove the cap and filter.
- (b) Check the filter for contamination or damage.
- (c) Using compressed air, clean the filter.
- (d) Reinstall the filter and cap.

#### HINT:

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

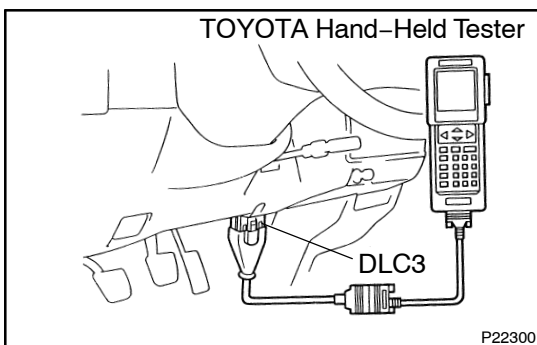


### 2. INSTALL VACUUM GAUGE

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

### 3. INSPECT SEATING OF EGR VALVE

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



### 4. CONNECT TOYOTA HAND-HELD TESTER OR OBDII SCAN TOOL

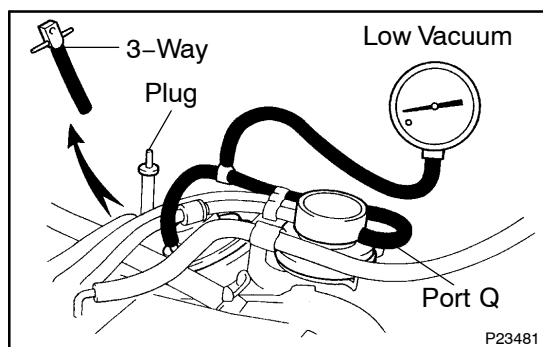
- (a) Connect the TOYOTA hand-held tester or OBDII scan tool to the DLC3.
- (b) Please refer to the TOYOTA hand-held tester or OBDII scan tool operators manual for further details.

### 5. INSPECT VSV OPERATION WITH COLD ENGINE

- (a) The engine coolant temperature should be below 50°C (122°F).
- (b) Check that the vacuum gauge indicates zero at 3,500 rpm.
- (c) Check that the EGR pipe is not hot.

### 6. INSPECT OPERATION OF VSV AND EGR VACUUM MODULATOR

- (a) Select the ACTIVE TEST mode on the TOYOTA hand-held tester (VSV is closed.).

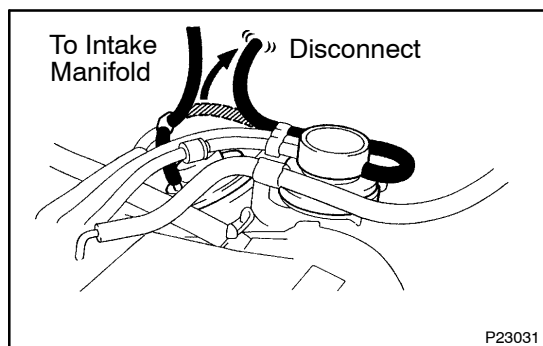


- (b) If you have no TOYOTA hand-held tester, check these procedures:
- (1) Remove the 3-way connector with the vacuum hose.
  - (2) Connect the vacuum hose (from port Q of EGR vacuum modulator) to the EGR valve.
  - (3) Plug the vacuum hose (from VSV for EGR).
- (c) Check that the vacuum gauge indicates low vacuum at 3,500 rpm.

## 7. DISCONNECT TOYOTA HAND-HELD TESTER OR OBDII SCAN TOOL

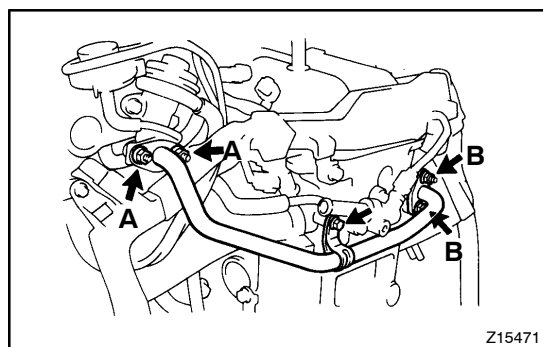
## 8. REMOVE VACUUM GAUGE

Remove the vacuum gauge, and reconnect the vacuum hoses to the proper locations.



## 9. INSPECT EGR VALVE

- (a) Apply vacuum directly to the EGR valve with the engine idling.
  - (b) Check that the engine runs rough or dies.
  - (c) Reconnect the vacuum hoses to the proper locations.
- If no problem is found with this inspection, system is normal; otherwise inspect each part.



## 10. REMOVE EGR PIPE

Remove the bolt, 4 nuts, EGR pipe and 2 gaskets.

HINT:

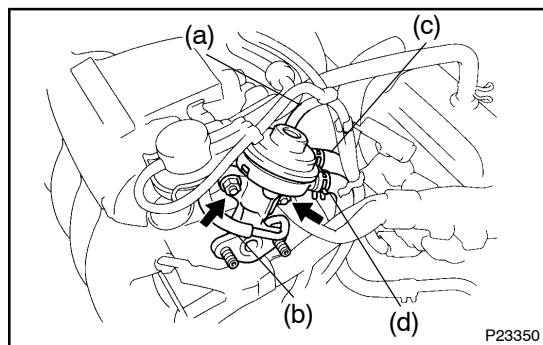
Install 2 new gaskets.

**Torque:**

**Bolt: 18 N·m (185 kgf·cm, 13 ft·lbf)**

**Nut A: 19 N·m (195 kgf·cm, 14 ft·lbf)**

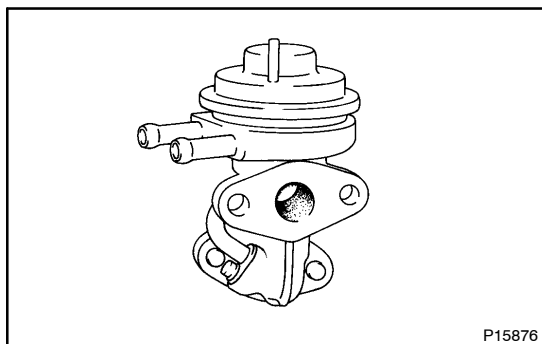
**Nut B: 20 N·m (200 kgf·cm, 15 ft·lbf)**



## 11. REMOVE EGR VALVE

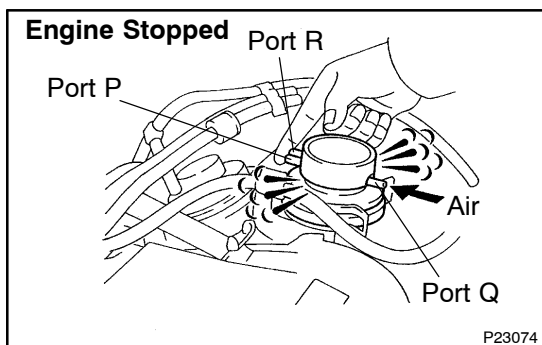
- (a) Disconnect the vacuum hose.
- (b) Disconnect the EGR hose.
- (c) Disconnect the water bypass hose (from IAC valve).
- (d) Disconnect the water bypass hose (from water bypass pipe).
- (e) Remove the 2 nuts, EGR valve and gasket.

**Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)**



## 12. INSPECT EGR VALVE

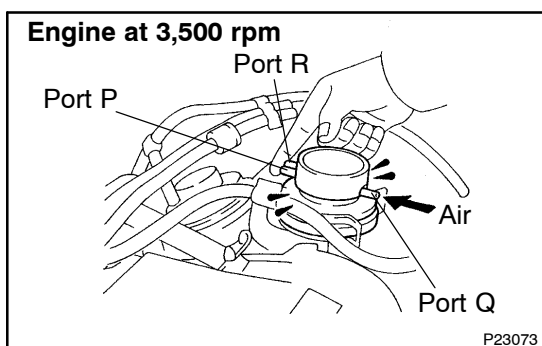
Check for sticking and heavy carbon deposits.  
If a problem is found, replace the EGR valve.



## 13. DISCONNECT VACUUM HOSES FROM EGR VACUUM MODULATOR

## 14. INSPECT EGR VACUUM MODULATOR OPERATION

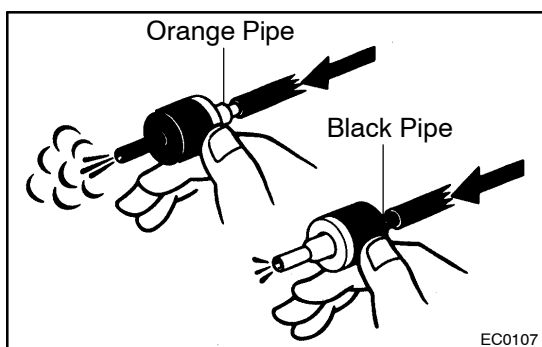
- Block ports P and R with your finger.
- Blow air into port Q, and check that the air passes through to the air filter side freely.



- Start the engine, and maintain speed at 3,500 rpm.
- Repeat the above test. Check that there is a strong resistance to air flow.

If operation is not as specified, replace the EGR vacuum modulator.

## 15. RECONNECT VACUUM HOSES TO EGR VACUUM MODULATOR



## 16. REMOVE CHECK VALVE

## 17. INSPECT CHECK VALVE

- Check that air flows from the orange pipe to the black pipe.
- Check that air does not flow from the black pipe to the orange pipe.

If operation is not as specified, replace the check valve.

## 18. INSTALL CHECK VALVE

HINT:

Install the check valve with the orange pipe facing the EGR vacuum modulator side.

## 19. INSPECT VSV FOR EGR

(See page [SF-43](#))