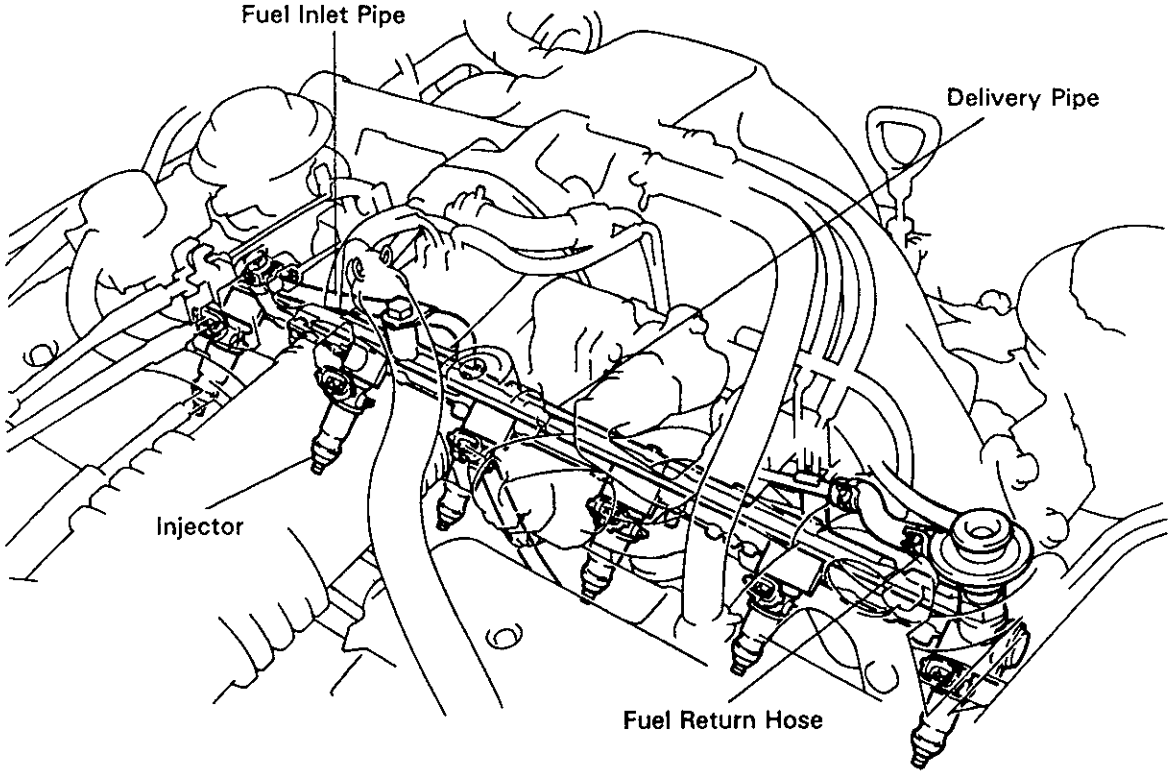
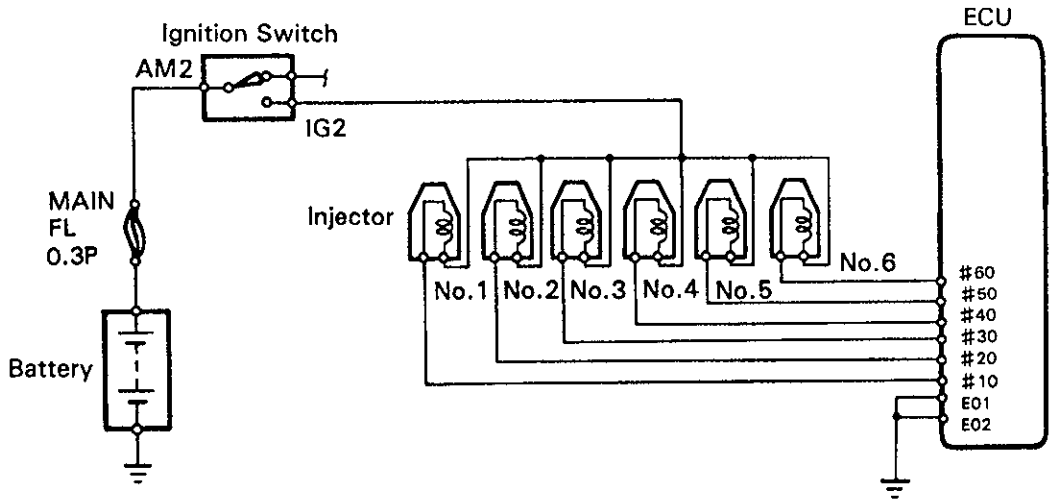
INJECTOR

EG12Y–06

EG



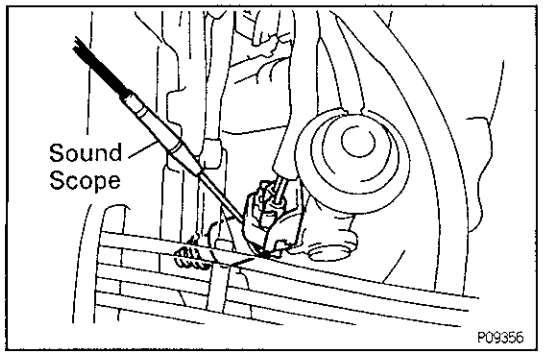


P09371
P09298

Z06690

EG0D8–09

ON–VEHICLE INSPECTION

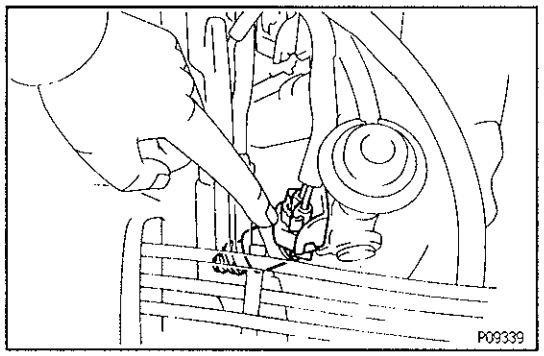


1. INSPECT INJECTOR OPERATION

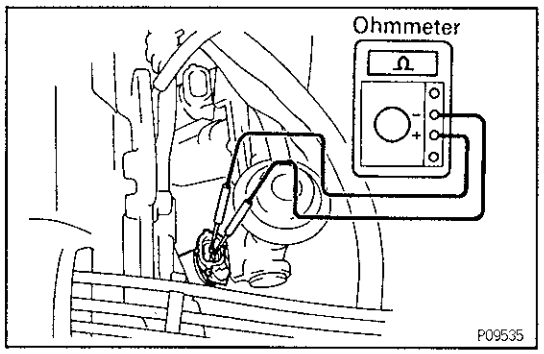
Check operation sound from each injector.

(a) With the engine running or cranking, use a sound scope to check that there is normal operating noise in proportion to engine speed.

EG



(b) If you have no sound scope, you can check the injector transmission operation with your finger.
If no sound or unusual sound is heard, check the wiring connector, injector or injection signal from the ECU.



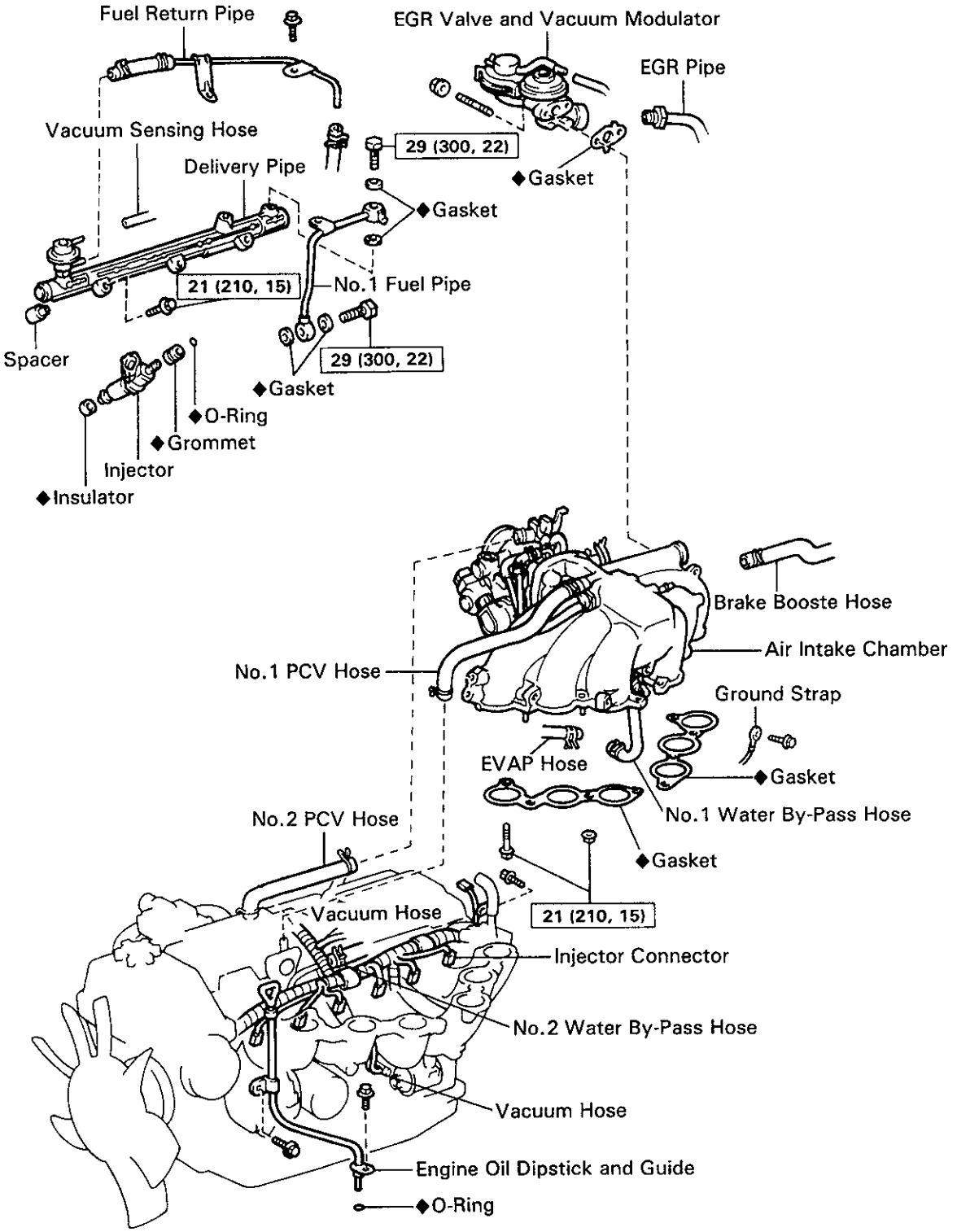
2. INSPECT INJECTOR RESISTANCE

(a) Remove the throttle body. (See page EG–262)
(b) Disconnect the injector connectors.
(c) Using an ohmmeter, measure the resistance between the terminals.
Resistance:
12 to 16 Ω
If the resistance is not as specified, replace the injector.
(d) Reconnect the injector connectors.
(e) Reinstall the throttle body. (See page EG–265)

EG130-06

COMPONENTS FOR REMOVAL AND INSTALLATION

EG



N·m (kgf·cm, ft·lbf) : Specified torque

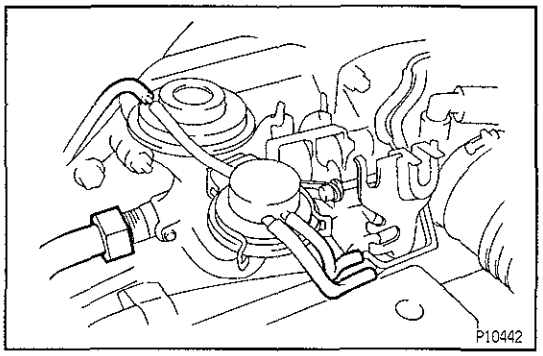
◆ Non-reusable part

P10443

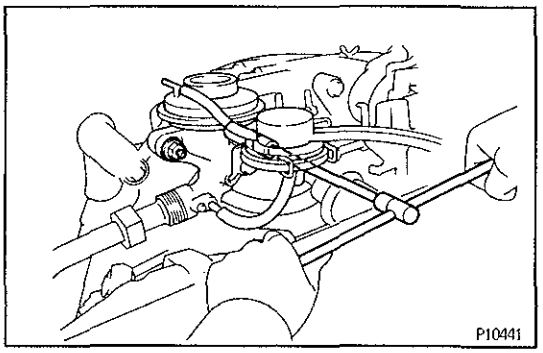
EG27W-01

INJECTORS REMOVAL

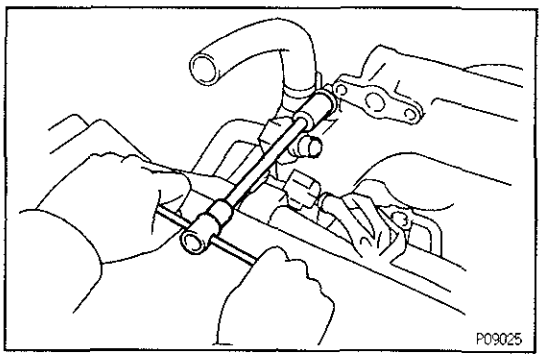
1. **DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY**
2. **DRAIN ENGINE COOLANT**



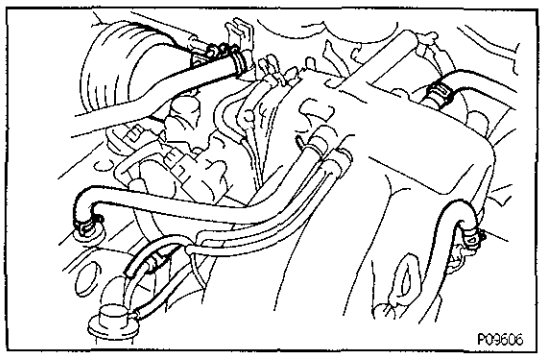
3. **(For Europe)**
   REMOVE EGR VALVE AND VACUUM MODULATOR
   (a) Disconnect three vacuum hoses.
   (b) Loosen the EGR pipe union nut.



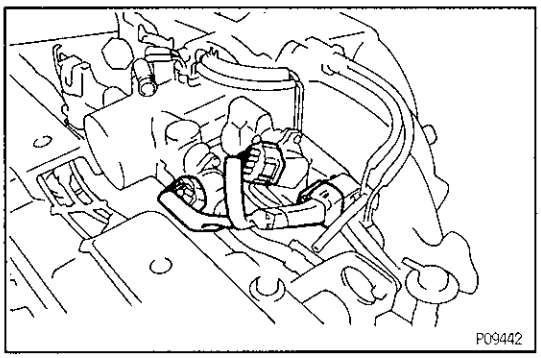
   (c) Remove the two nuts holding the EGR valve and air intake chamber.
   (d) Remove the two stud bolts, EGR valve and vacuum modulator assembly and gasket.



4. **REMOVE BOLT HOLDING HEATER INLET PIPE AND AIR INTAKE CHAMBER**



5. **DISCONNECT NO.1 AND NO.2 PCV HOSES**
6. **DISCONNECT VACUUM HOSES**
7. **DISCONNECT NO.2 WATER BY–PASS HOSE**
8. **DISCONNECT EVAP HOSE**



EG

9. DISCONNECT THROTTLE POSITION SENSOR CONNECTOR

10. DISCONNECT IDLE SPEED CONTROL VALVE CONNECTOR

11. DISCONNECT CONNECTOR FOR EMISSION CONTROL VALVE SET ASSEMBLY

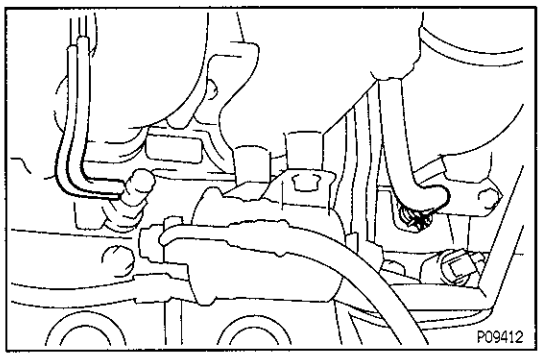
12. REMOVE ENGINE OIL DIPSTICK AND GUIDE

(a) Remove the two mounting bolts.

(b) Pull out the dipstick together with dipstick guide.

(c) Remove the O–ring from the dipstick guide.

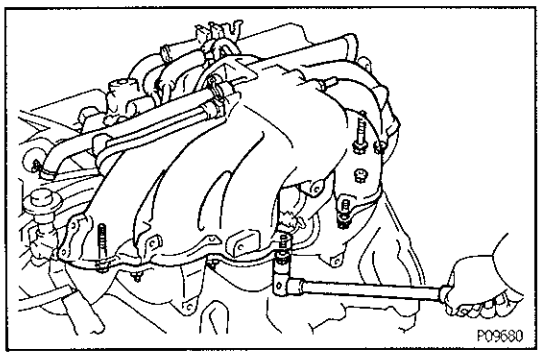
13. DISCONNECT GROUND STARP



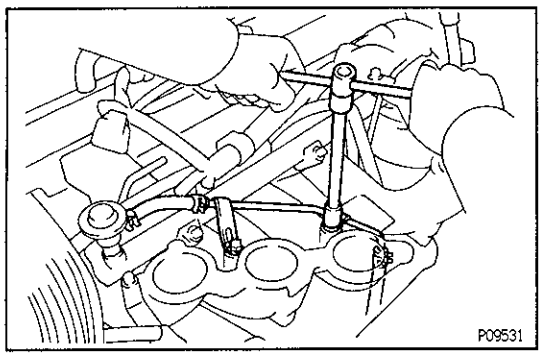
14. REMOVE AIR INTAKE CHAMBER

(a) Disconnect the two vacuum hoses from the BVSV.

(b) Disconnect the No.1 water by–pass hose from the cylinder head.



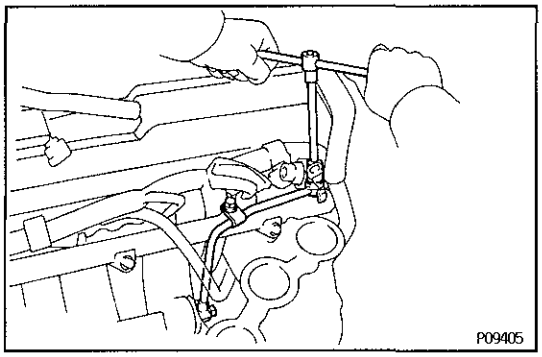
(c) Remove the four bolts, four nuts, air intake chamber and two gaskets.



15. REMOVE RETURN PIPE

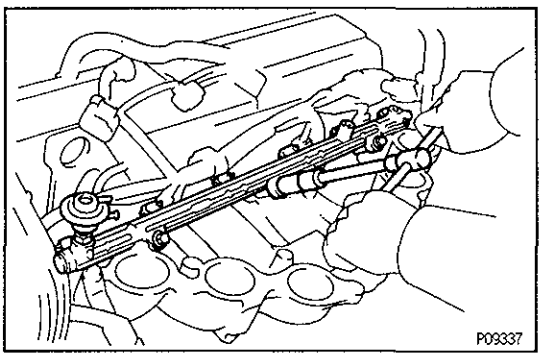
(a) Disconnect the fuel hose from the fuel pressure regulator.

(b) Remove the two bolts and fuel return pipe.



16. REMOVE NO.1 FUEL PIPE

Remove the two union bolts, bolt, four gaskets and No.1 fuel pipe.



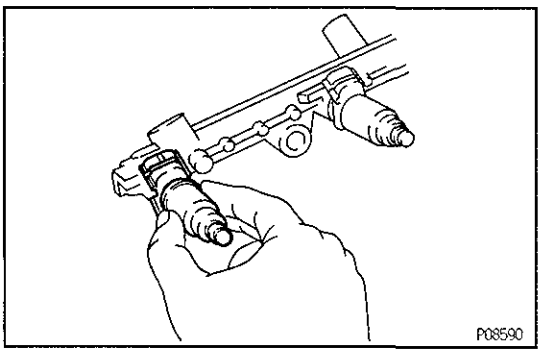
17. REMOVE DELIVERY PIPE AND INJECTORS

(a) Disconnect the six injector connectors.

(b) Remove the three bolts and delivery pipe together with the six injectors.

NOTICE: Be careful not to drop the injectors when removing the delivery pipe.

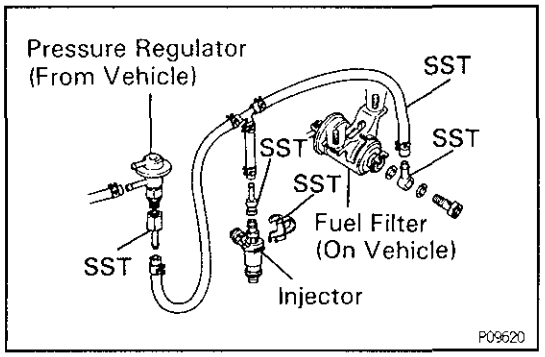
(c) Remove the six insulators and three spacers from the intake manifold.



(d) Pull out the six injectors from the delivery pipe.

(e) Remove the O–ring and grommet from each injector.

EG

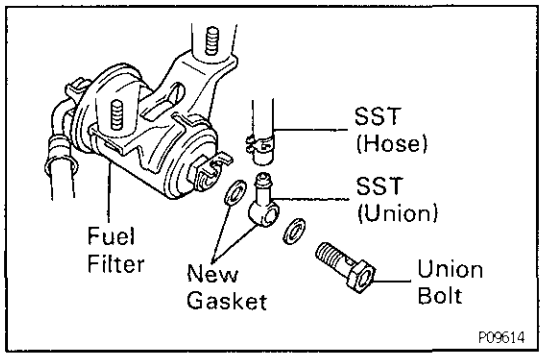


EG1S3-02

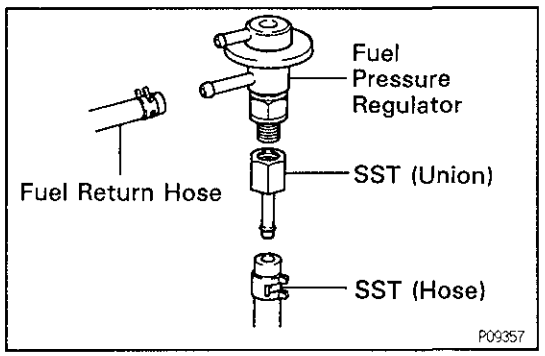
INJECTORS INSPECTION

1. INSPECT INJECTOR INJECTION

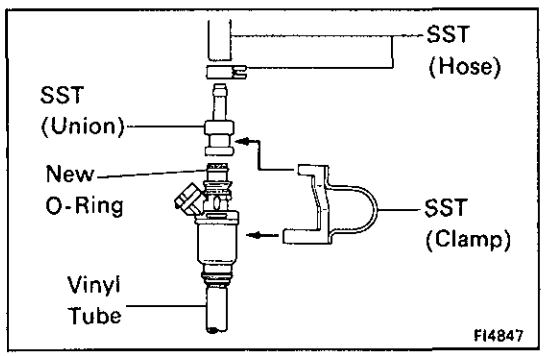
CAUTION: Keep injector clean of sparks during the test.



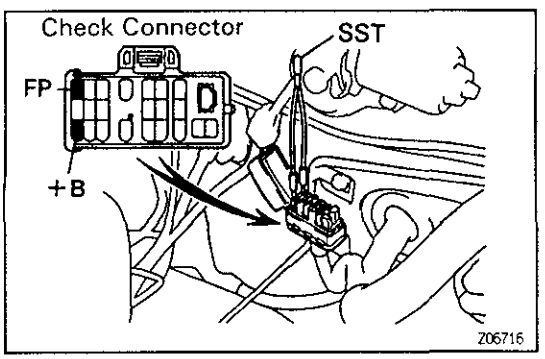
(a) Connect SST (union and hose) to the fuel filter outlet with two new gaskets and the union bolt.
SST 09268–41045 (90405–09015)
Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)



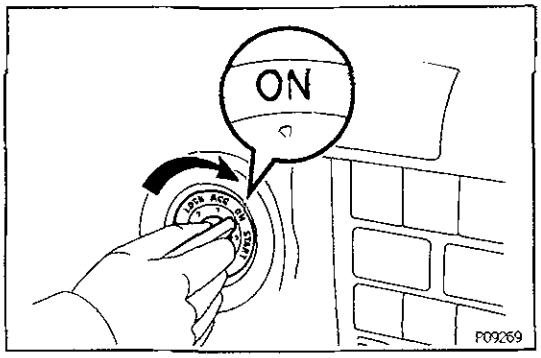
(b) Remove the fuel pressure regulator.
(c) Install a new O–ring to the fuel inlet of pressure regulator.
(d) Connect SST (hose) to the fuel inlet of the pressure regulator with SST (union).
SST 09268–41045 (09268–52010)
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
(e) Connect the fuel return hose to the fuel outlet of the pressure regulator.



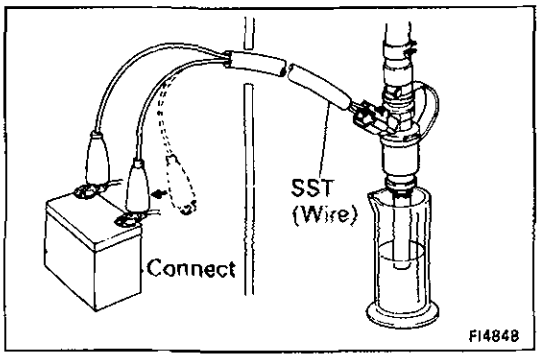
(f) Install the grommet and a new O–ring to the injector.
(g) Connect SST (union and hose) to the injector, and hold the injector and union with SST (clamp).
SST 09268–41045
(h) Put the injector into the graduated cylinder.
HINT: Install a suitable vinyl hose onto the injector to prevent gasoline from splashing out.



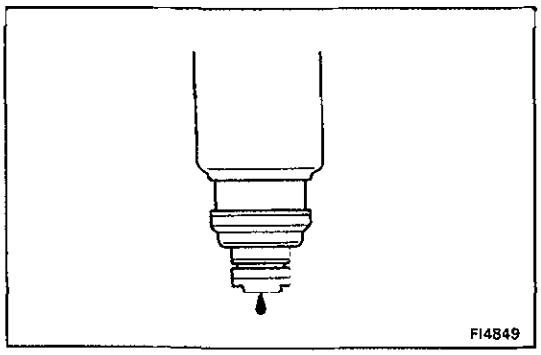
(i) Using SST, connect terminals +B and FP of the check connector.
SST 09843–18020
(j) Reconnect the battery negative (–) cable.



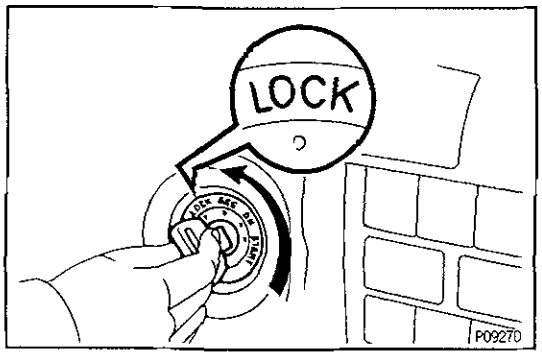
(k) Turn the ignition switch ON.
NOTICE: Do not start the engine.



(l) Connect SST (wire) to the injector and battery for 15 seconds, and measure the injection volume with a graduated cylinder. Test each injector two or three times.
SST 09842–30070
Volume:
66 – 82 cm³ (4.0 – 5.0 cu in.) per 15 seconds
Difference between each injector:
5 cm³ (0.3 cu in.) or less
If the injection volume is not as specified, replace the injector.



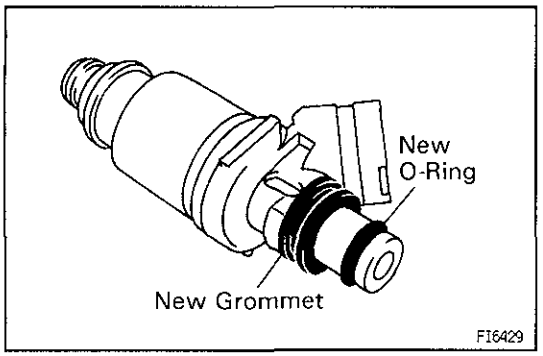
2. INSPECT LEAKAGE
(a) In the condition above, disconnect the test probes of SST (wire) from the battery and check the fuel leakage from the injector.
SST 09842–30070
Fuel drop:
One drop or less per minute



(b) Turn the ignition switch OFF.
(c) Disconnect the battery negative (–) cable.
(d) Remove SST.
SST 09268–41045, 09843–18020
(e) Reinstall the fuel pressure regulator to the delivery pipe.

EG27X–01

INJECTORS INSTALLATION

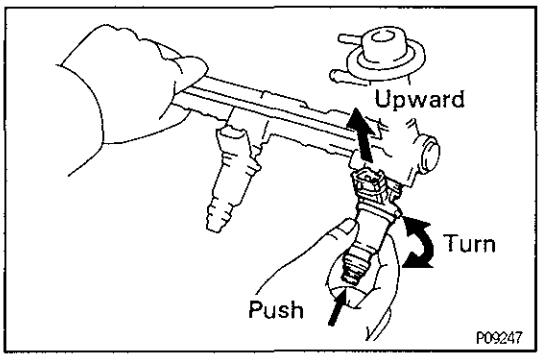


(See Components for Removal and Installation)

1. INSTALL INJECTORS AND DELIVERY PIPE

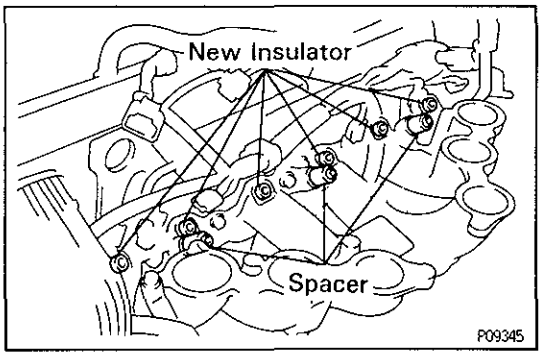
(a) Install a new grommet to the injector.

(b) Apply a light coat of gasoline to a new O–ring and install it to the injector.

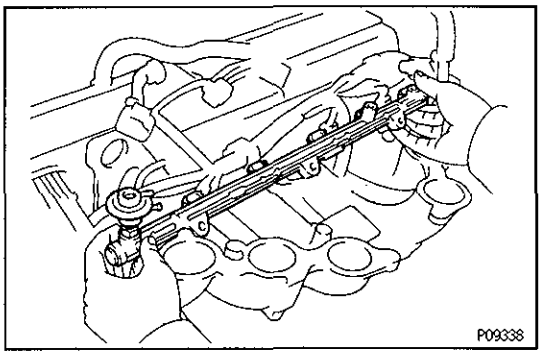


(c) While turning the injector left and right, install it to the delivery pipe. Install the six injectors.

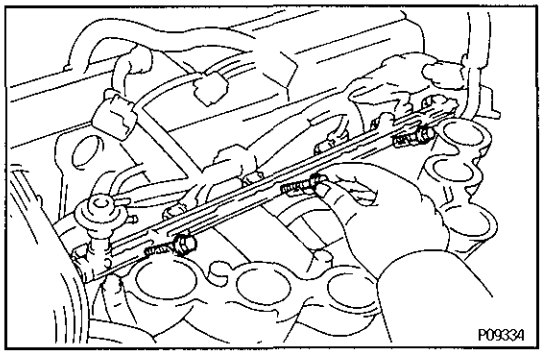
(d) Position the injector connector upward.



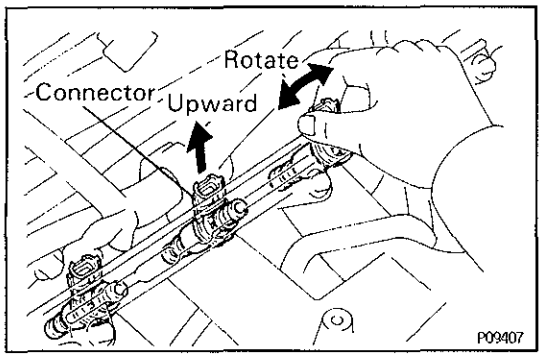
(e) Place six new insulators and the three spacers in position on the intake manifold.



(f) Place the six injectors together with the delivery pipe in position on the intake manifold.

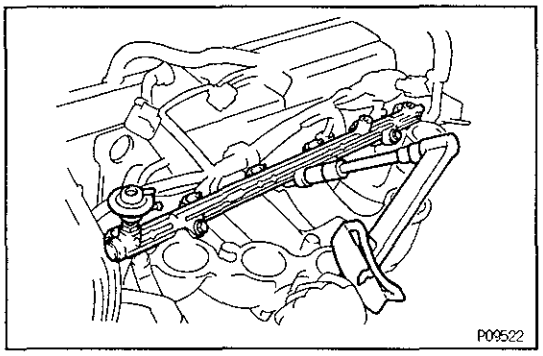


(g) Temporarily install the three bolts holding the delivery pipe to the intake manifold.

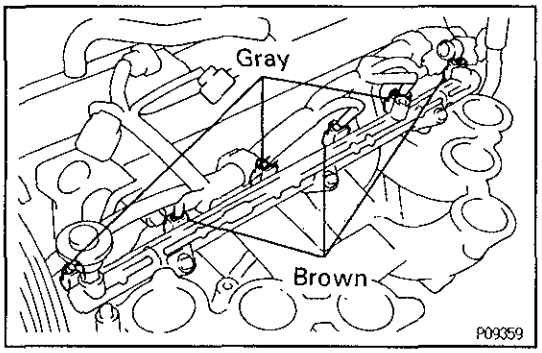


(h) Check that the injectors rotate smoothly.
HINT: If injectors do not rotate smoothly, the probable cause is incorrect installation of O–rings. Replace the O–rings.

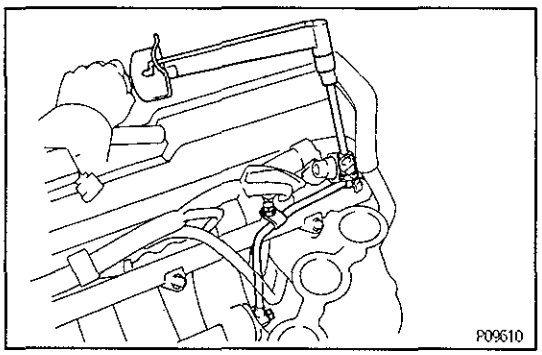
(i) Position the injector connector upward.



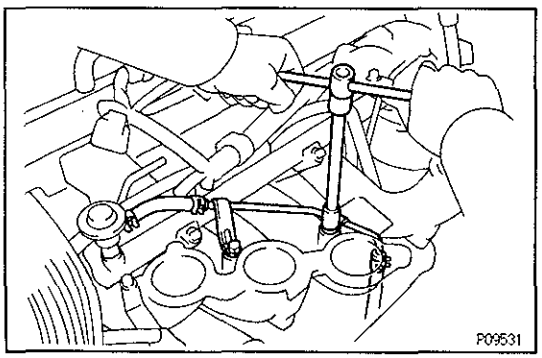
(j) Tighten the three bolts holding the delivery pipe to the intake manifold.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)



(k) Connect the six injector connectors as shown.

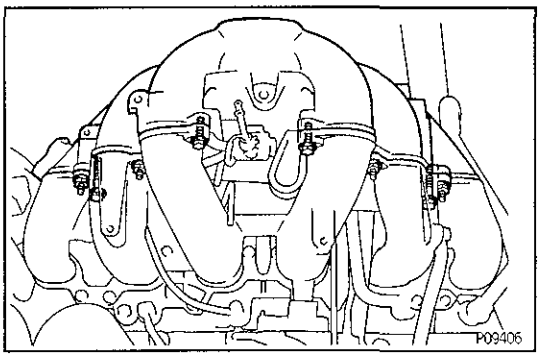


2. INSTALL NO.1 FUEL PIPE
Install the No.1 fuel pipe with four new gaskets, the two union bolts and bolt.
Torque: 29 N·m (300 kgf·cm, 22 ft·lbf) for Union bolt
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf) for Bolt



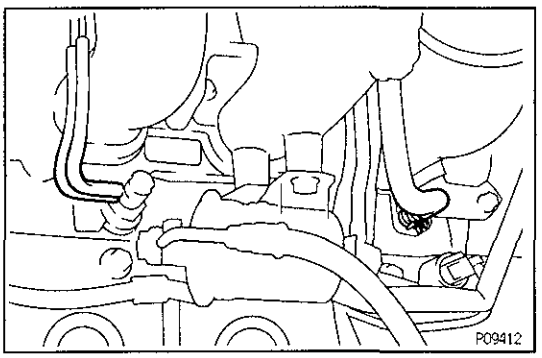
3. INSTALL RETURN PIPE
(a) Install the fuel return pipe with the two bolts.
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)

(b) Connect the fuel hose to the fuel pressure regulator.



4. INSTALL AIR INTAKE CHAMBER

(a) Install two new gaskets and the air intake chamber with the four bolts and four nuts.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)

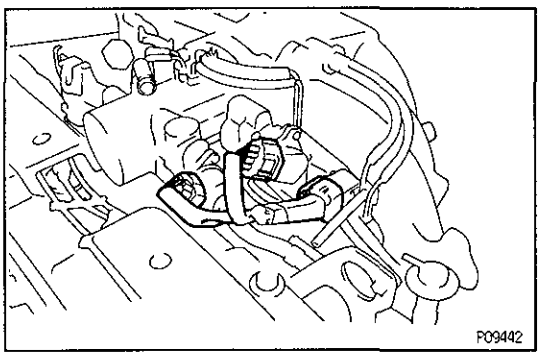


(b) Connect the No.1 water by–pass hose to the cylinder head.
(c) Connect the two vacuum hoses to the BVSV.

5. CONNECT GROUND STARP

6. INSTALL ENGINE OIL DIPSTICK AND GUIDE

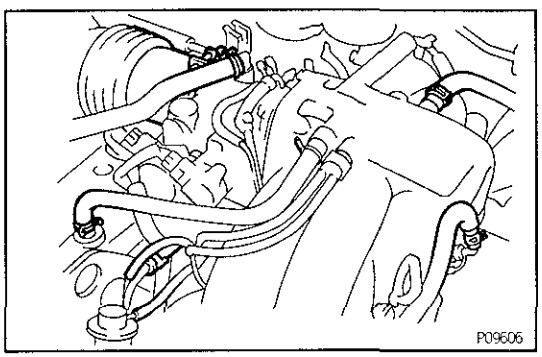
(a) Install a new O–ring to the dipstick guide.
(b) Apply light coat of engine oil on the O–ring.
(c) Push in the dipstick guide into the guide hole of the oil pan.
(d) Install the dipstick guide with the two bolts.
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)



7. CONNECT CONNECTOR FOR EMISSION CONTROL VALVE SET ASSEMBLY

8. CONNECT IDLE AIR CONTROL VALVE CONNECTOR

9. CONNECT THROTTLE POSITION SENSOR CONNECTOR

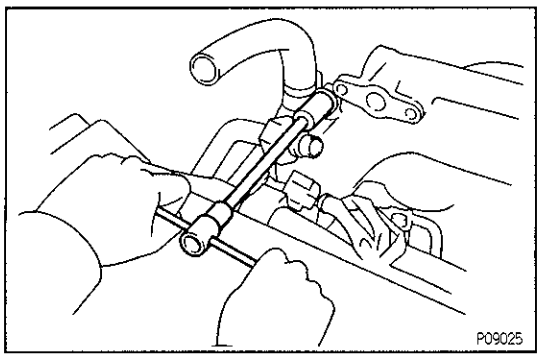


10. CONNECT EVAP HOSE

11. CONNECT NO.2 WATER BY–PASS HOSE

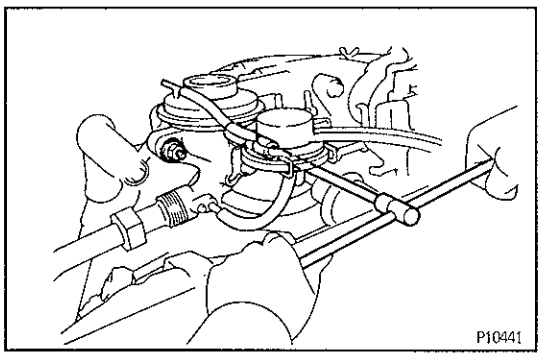
12. CONNECT VACUUM HOSES

13. CONNECT NO.1 AND NO.2 PCV HOSES



14. INSTALL BOLT HOLDING HEATER INLET PIPE AND AIR INTAKE CHAMBER

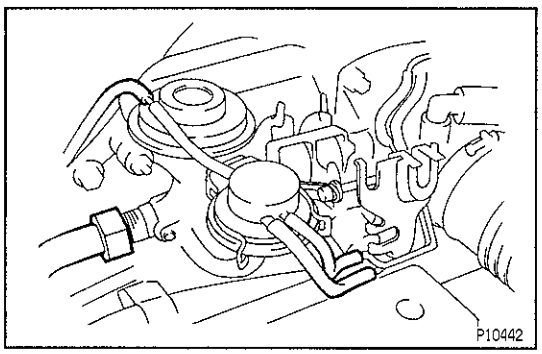
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)



15. (For Europe)
INSTALL EGR VALVE AND VACUUM MODULATOR

(a) Temporarily install a new gasket, and EGR valve and vacumm modulator assembly with the two stud bolts.
Torque: 10 N·m (105 kgf·cm, 8 ft·lbf)

(b) Install the two nuts holding the EGR valve and air intake chamber.
Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)



(c) Tighten the union nut of the EGR pipe.
Torque: 64 N·m (650 kgf·cm, 47 ft·lbf)

(d) Connect the three vacuum hoses.