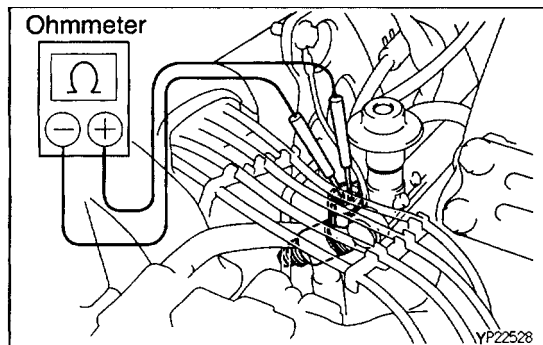




INJECTOR ON-VEHICLE INSPECTION

1. **REMOVE THROTTLE BODY**
(See throttle body removal)
2. **INSPECT INJECTOR RESISTANCE**
 - (a) Disconnect the 6 injector connectors.
 - (b) Using an ohmmeter, measure the resistance between the terminals.

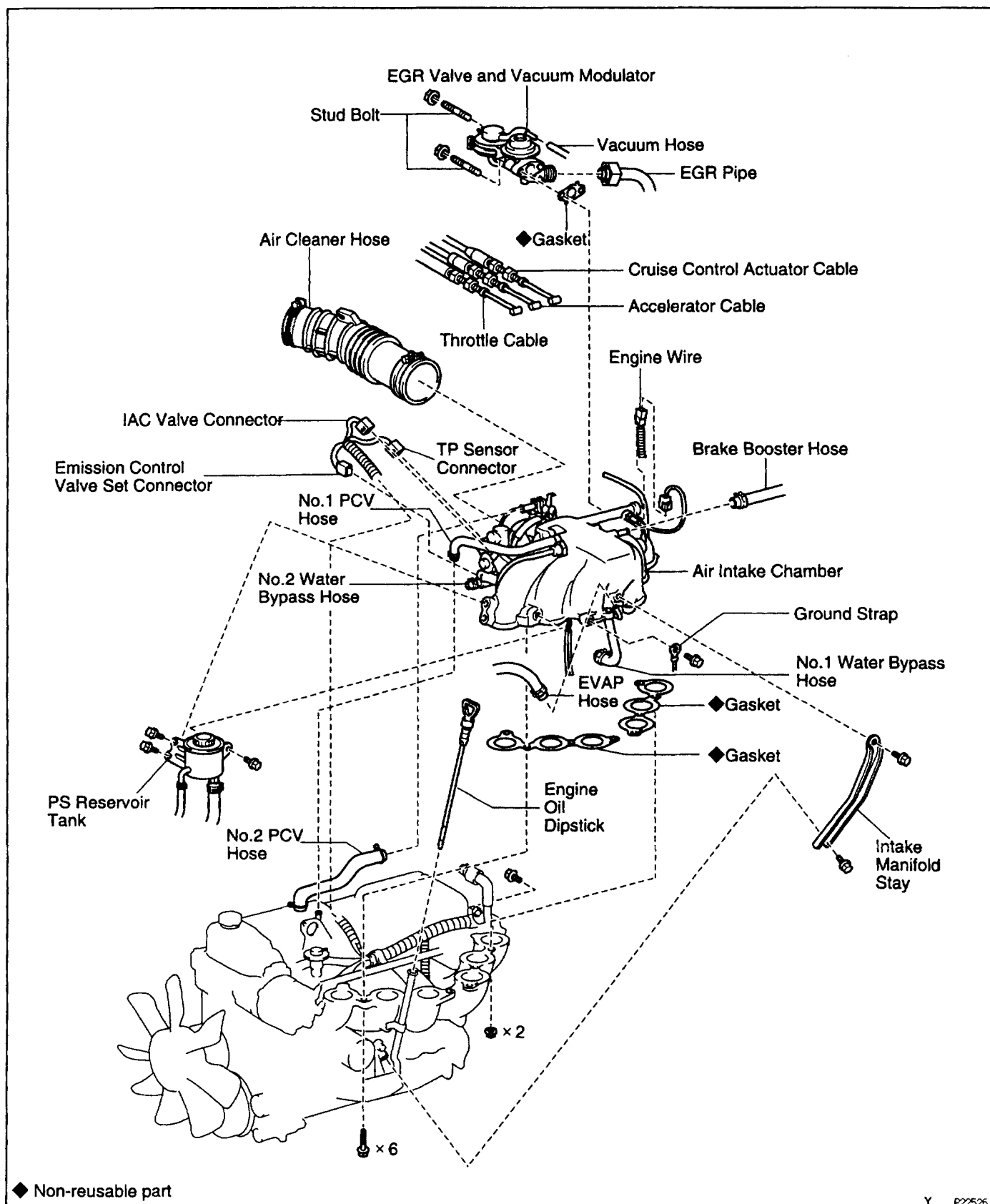
Resistance:

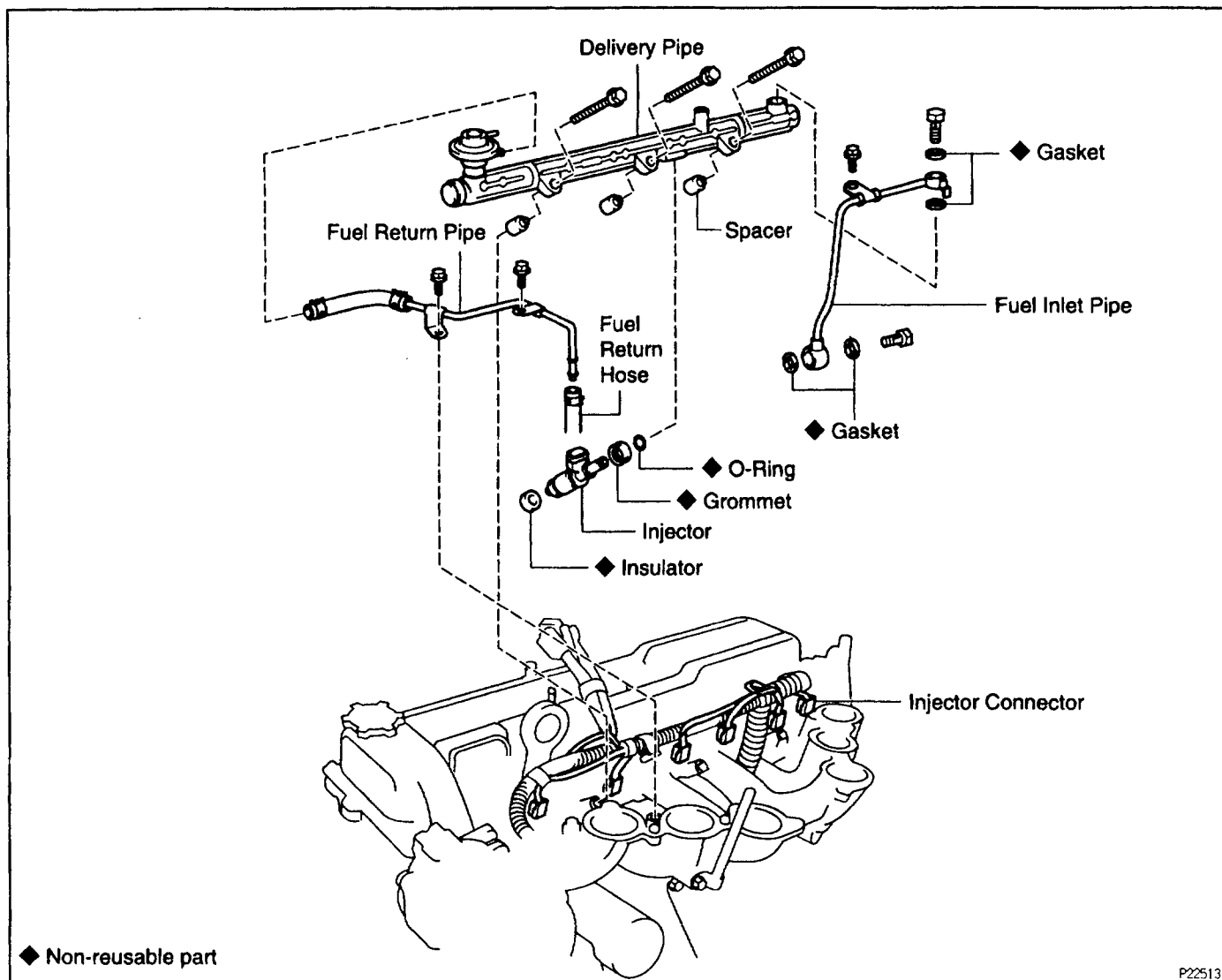
At 20°C (68°F): 13.4 – 14.2 Ω

If the resistance is not as specified, replace the injector.

- (c) Reconnect the 6 injector connectors.
3. **REINSTALL THROTTLE BODY**
(See throttle body installation)

COMPONENTS FOR REMOVAL AND INSTALLATION

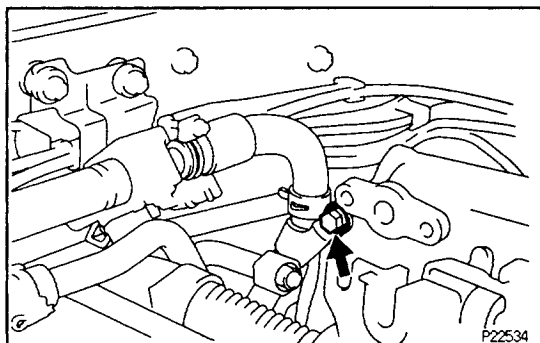


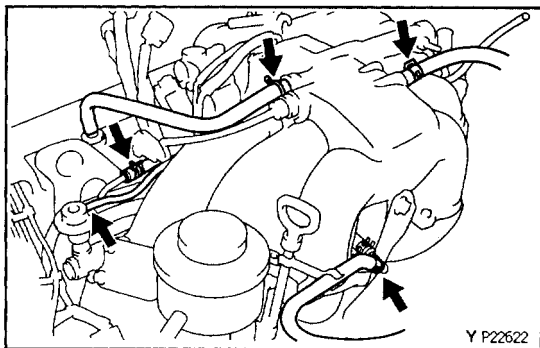


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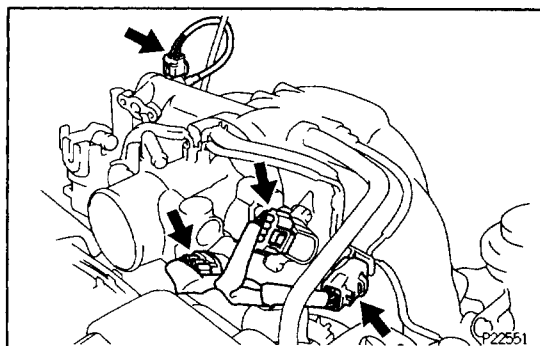
INJECTORS REMOVAL

1. DRAIN ENGINE COOLANT
2. DISCONNECT CRUISE CONTROL ACTUATOR CABLE
3. DISCONNECT ACCELERATOR CABLE
4. DISCONNECT THROTTLE CABLE
5. DISCONNECT NO.2 PCV HOSE
6. DISCONNECT AIR CLEANER HOSE
7. REMOVE EGR VACUUM MODULATOR AND VALVE
(See EGR valve inspection in Emission Control System)
8. REMOVE BOLT HOLDING HEATER INLET PIPE AND AIR INTAKE CHAMBER

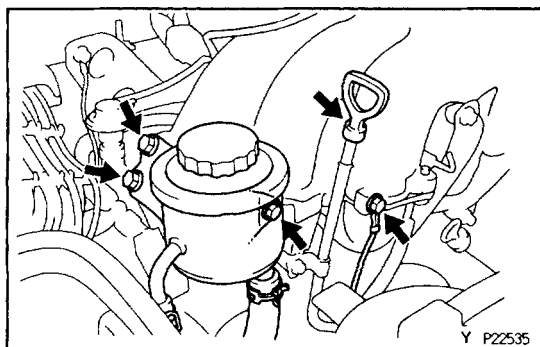




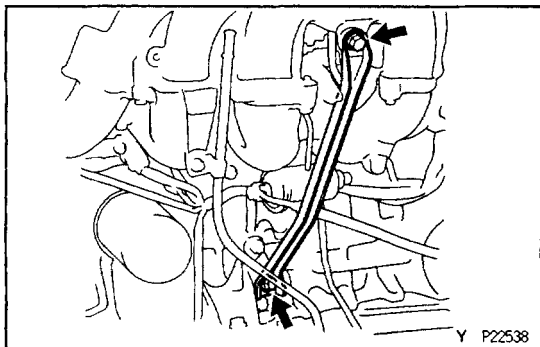
9. DISCONNECT NO.1 PCV HOSE
10. DISCONNECT VACUUM SENSING HOSE
11. DISCONNECT NO.2 WATER BYPASS HOSE
12. DISCONNECT EVAP HOSE
13. DISCONNECT BRAKE BOOSTER HOSE



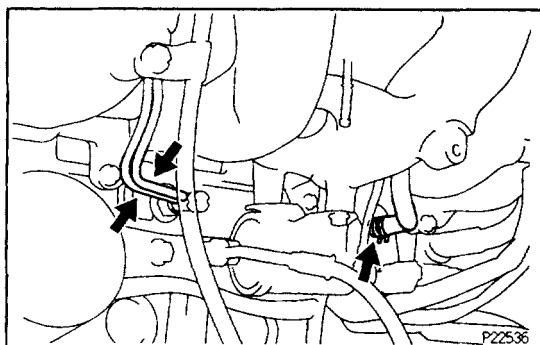
14. DISCONNECT THROTTLE POSITION SENSOR CONNECTOR
15. DISCONNECT IDLE AIR CONTROL VALVE CONNECTOR
16. DISCONNECT CONNECTOR FOR EMISSION CONTROL VALVE SET ASSEMBLY
17. DISCONNECT EGR GAS TEMP. SENSOR CONNECTOR



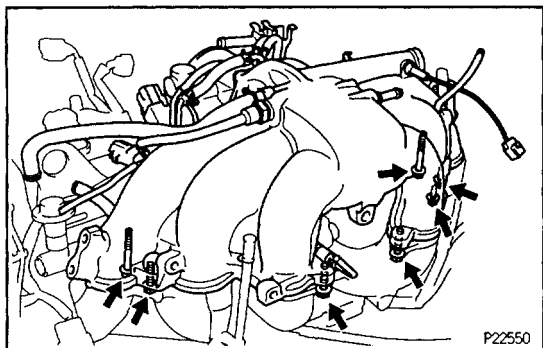
18. DISCONNECT PS RESERVOIR TANK
Remove the 3 bolts and disconnect the reservoir tank.
19. REMOVE ENGINE OIL DIPSTICK
20. DISCONNECT GROUND STRAP



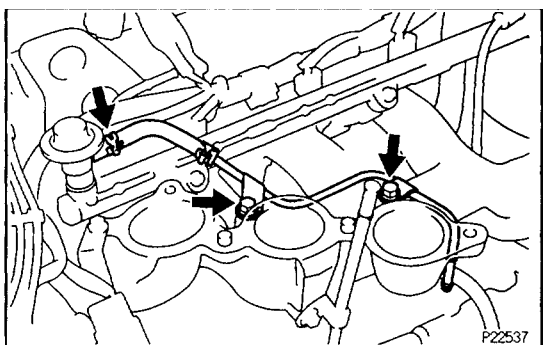
21. REMOVE INTAKE MANIFOLD STAY
Remove the 2 bolts and intake manifold stay.



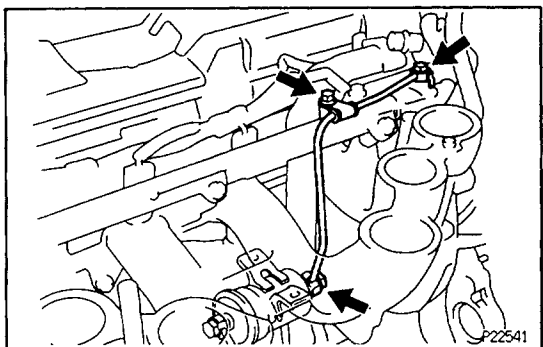
22. DISCONNECT VACUUM HOSES FROM TVV
23. DISCONNECT NO.1 WATER BYPASS HOSE FROM CYLINDER HEAD

**24. REMOVE AIR INTAKE CHAMBER**

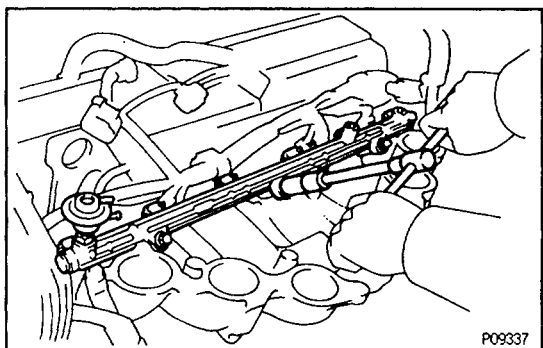
Remove the 6 bolts, 2 nuts, air intake chamber and 2 gaskets.

**25. REMOVE FUEL RETURN PIPE**

- (a) Disconnect the fuel hose from the fuel pressure regulator.
- (b) Remove the 2 bolts and fuel return pipe.

**26. REMOVE FUEL INLET PIPE**

Remove the 2 union bolts, bolt, 4 gaskets and fuel pipe.

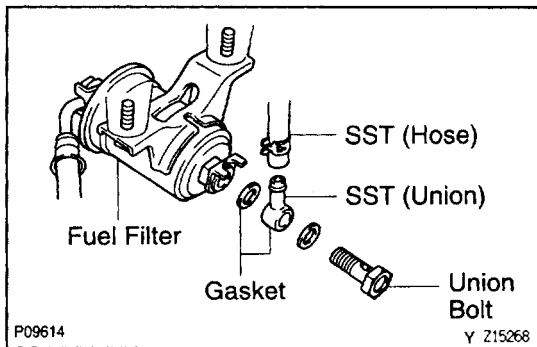
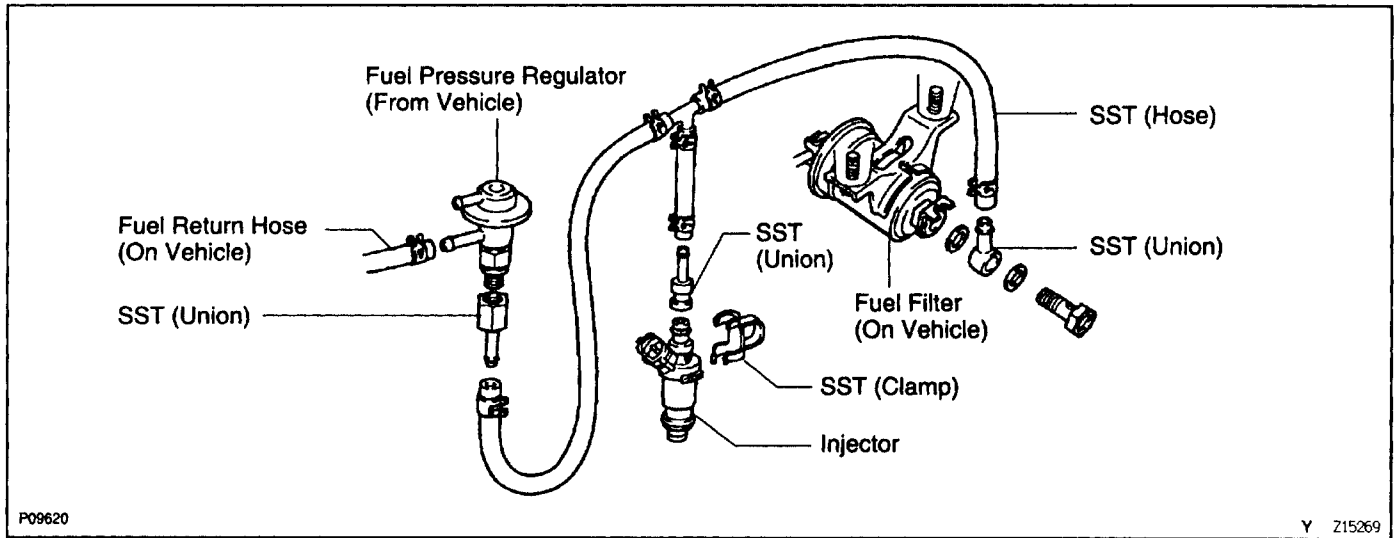
**27. REMOVE DELIVERY PIPE AND INJECTORS**

- (a) Disconnect the 6 injector connectors.
- (b) Remove the 3 bolts and delivery pipe together with the 6 injectors.
NOTICE: Be careful not to drop the injectors when removing the delivery pipe.
- (c) Remove the 6 insulators and 3 spacers from the intake manifold.
- (d) Pull out the 6 injectors from the delivery pipe.
- (e) Remove the O-ring and grommet from each injector.

INJECTORS INSPECTION

1. INSPECT INJECTOR INJECTION

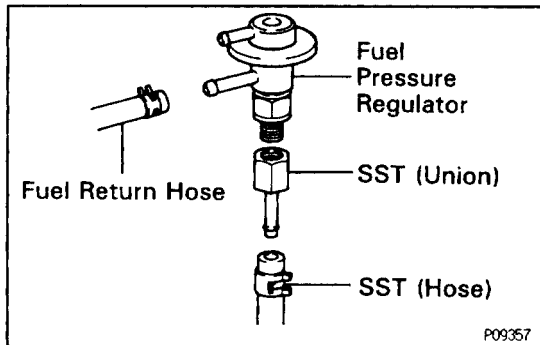
CAUTION: Keep injector clean of sparks during the test.



- (a) Connect SST (union and hose) to the fuel filter outlet with the 2 gaskets and union bolt.

SST 09268-41045 (90405-09015)

Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)



- (b) Remove the fuel pressure regulator.
(See fuel pressure regulator removal)

- (c) Install the 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.

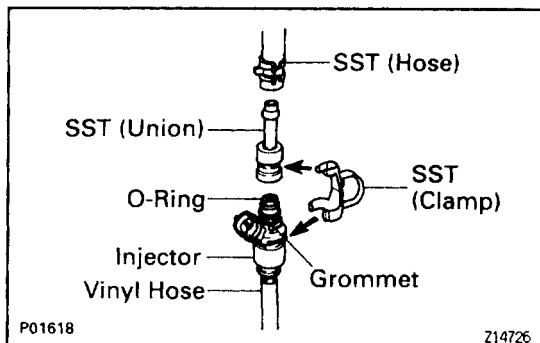
- (f) Install the grommet and O-ring to the injector.

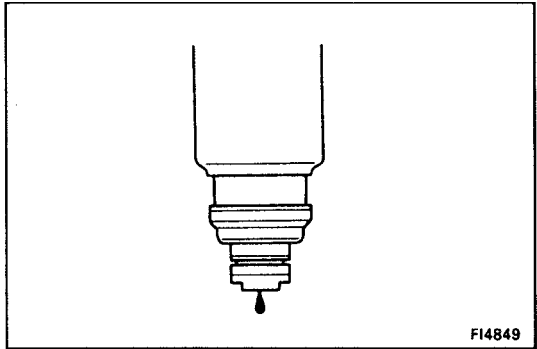
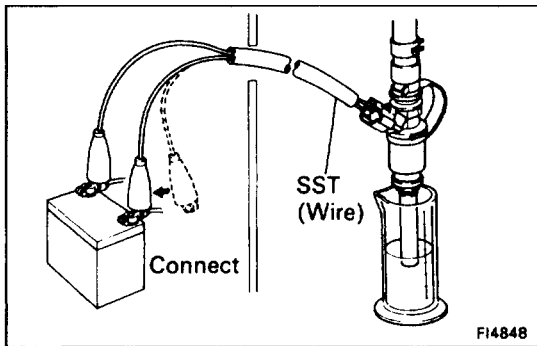
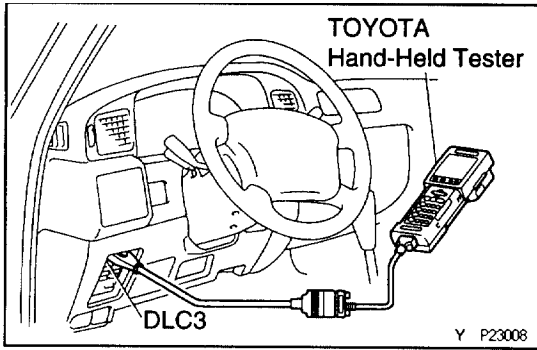
- (g) Connect SST (union and hose) to the injector, and hold the injector and union with SST (clamp).
SST 09268-41045

- (h) Put the injector into the graduated cylinder.

HINT: Install a suitable vinyl hose onto the injector to prevent gasoline from splashing out.

- (i) Remove the fuse cover on the instrument panel.





- (j) Connect the TOYOTA hand-held tester to the DLC3.
- (k) Turn the ignition switch ON and TOYOTA hand-held tester main switch ON.

NOTICE: Do not start the engine.

- (l) Select the active test mode on the TOYOTA handheld tester.
- (m) Please refer to the TOYOTA hand-held tester operator's manual for further details.
- (n) If you have no TOYOTA hand-held tester, connect the positive (+) and negative (-) leads from the battery to the fuel pump connector.

(See step 8 in fuel pump inspection)

- (o) Connect SST (wire) to the injector and battery for 15 seconds, and measure the injection volume with a graduated cylinder. Test each injector 2 or 3 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:

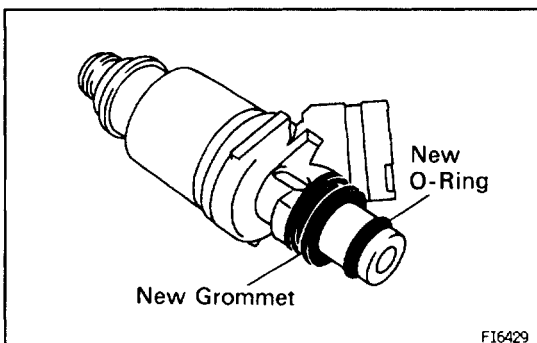
One drop or less per minute

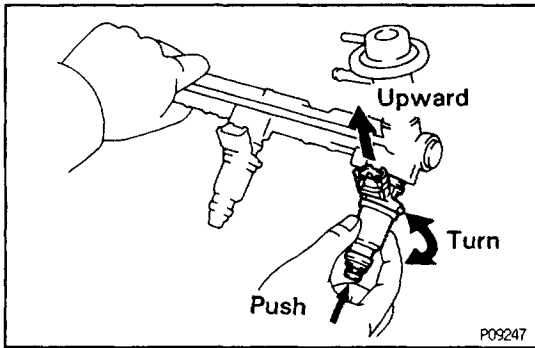
- (b) Turn the ignition switch to LOCK.
- (c) Disconnect the negative (-) terminal cable from the battery.
- (d) Remove SST.
- (e) Reinstall the fuel pressure regulator to the delivery pipe. (See fuel pressure regulator removal)
- (f) Disconnect the TOYOTA hand-held tester from the DLC3.
- (g) Reinstall the fuse cover on the instrument panel.

INJECTORS INSTALLATION

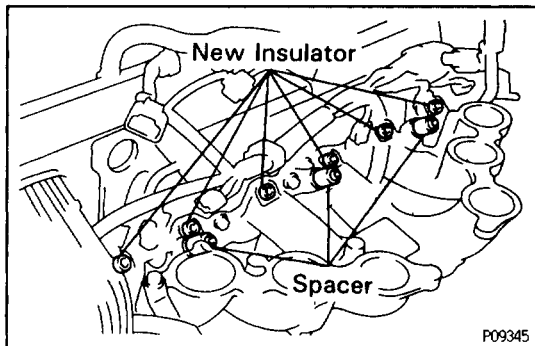
1. INSTALL INJECTORS AND DELIVERY PIPE

- (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.

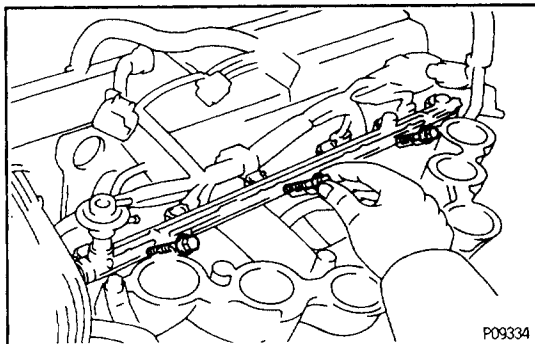




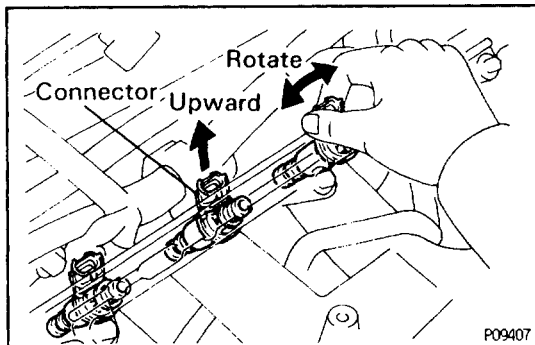
- (c) While turning the injector left and right, install it to the delivery pipe. Install the 6 injectors.
- (d) Position the injector connector upward.



- (e) Place 6 new insulators and the 3 spacers in position on the intake manifold.

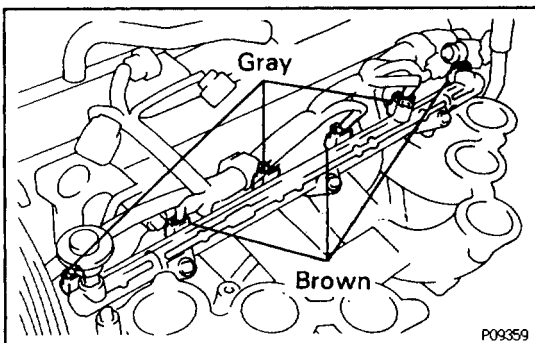


- (f) Place the 6 injectors together with the delivery pipe in position on the intake manifold.
- (g) Temporarily install the 3 bolts holding the delivery pipe to the intake manifold.

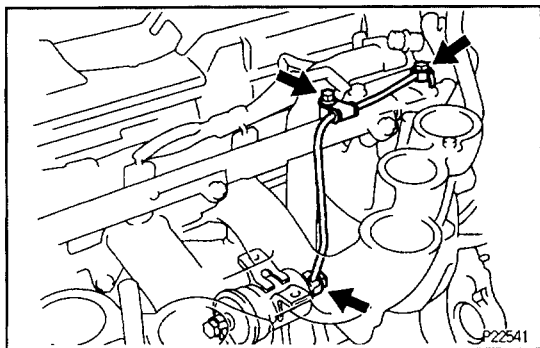


- (h) Check that the injectors rotate smoothly.
HINT: If injectors do not rotate smoothly, the probable cause is incorrect installation of O-rings. Replace the O-rings.
- (i) Position the injector connector upward.
- (j) Tighten the 3 bolts holding the delivery pipe to the intake manifold.

Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)



- (k) Connect the 6 injector connectors as shown.



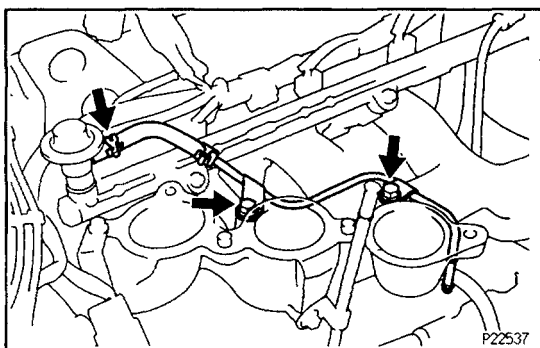
2. INSTALL FUEL INLET PIPE

Install the fuel inlet pipe with 4 new gaskets, the 2 union bolts and bolt.

Torque:

Union bolt: 29 N·m (300 kgf·cm, 22 ft·lbf)

Bolt: 20 N·m (200 kgf·cm, 14 ft·lbf)

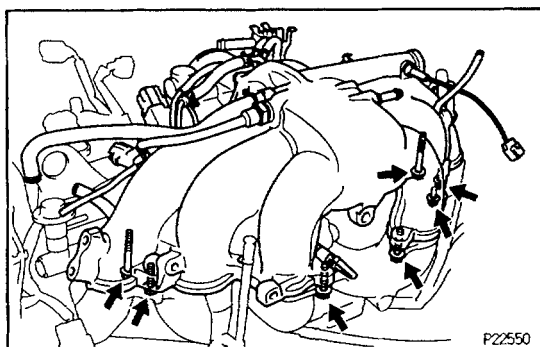


3. INSTALL FUEL RETURN PIPE

(a) Install the fuel return pipe with the 2 bolts.

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

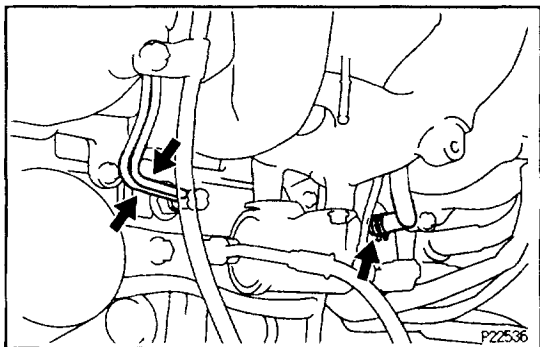
(b) Connect the fuel hose to the fuel pressure regulator.



4. INSTALL AIR INTAKE CHAMBER

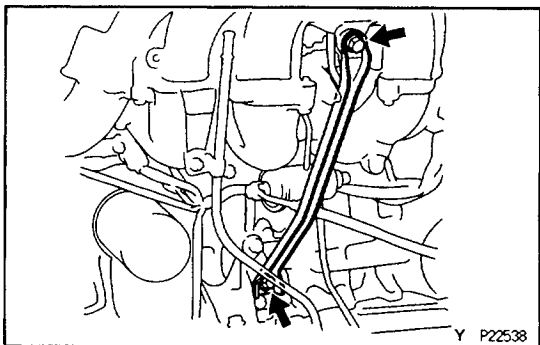
Install 2 new gaskets and the air intake chamber with the 6 bolts and 2 nuts.

Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)



5. CONNECT NO.1 WATER BYPASS HOSE TO CYLINDER HEAD

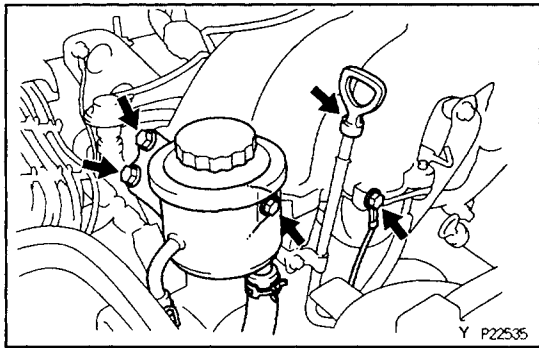
6. CONNECT VACUUM HOSES TO TVV



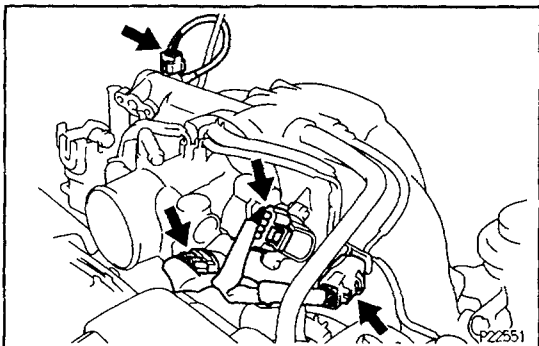
7. INSTALL INTAKE MANIFOLD STAY

Install the intake manifold stay with the 2 bolts.

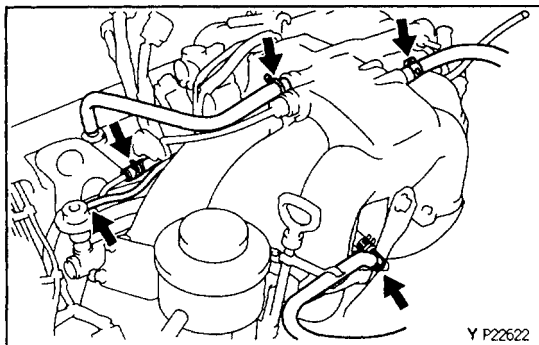
Torque: 36 N·m (360 kgf·cm, 26 ft·lbf)



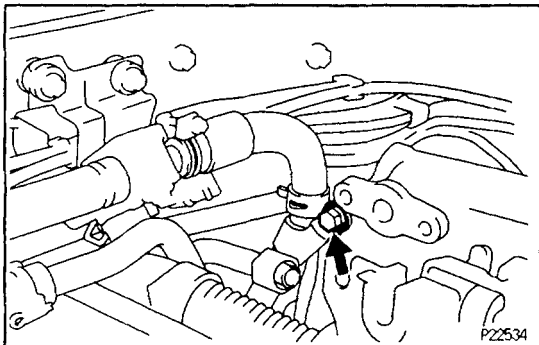
8. **CONNECT GROUND STRAP**
9. **INSTALL ENGINE OIL DIPSTICK**
10. **CONNECT PS RESERVOIR TANK**
Connect the reservoir tank with the 3 bolts.
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)



11. **CONNECT EGR GAS TEMP. SENSOR CONNECTOR**
12. **CONNECT CONNECTOR FOR EMISSION CONTROL VALVE SET ASSEMBLY**
13. **CONNECT IDLE AIR CONTROL VALVE CONNECTOR**
14. **CONNECT THROTTLE POSITION SENSOR CONNECTOR**



15. **CONNECT BRAKE BOOSTER HOSE**
16. **CONNECT EVAP HOSE**
17. **CONNECT NO.2 WATER BYPASS HOSE**
18. **CONNECT VACUUM SENSING HOSE**
19. **CONNECT NO.1 PCV HOSE**



20. **INSTALL BOLT HOLDING HEATER INLET PIPE AND AIR INTAKE CHAMBER**
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)
21. **INSTALL EGR VALVE AND VACUUM MODULATOR**
(See EGR valve inspection in Emission Control System)
22. **CONNECT THROTTLE CABLE**
23. **CONNECT ACCELERATOR CABLE**
24. **CONNECT CRUISE CONTROL ACTUATOR CABLE**
25. **CONNECT AIR CLEANER HOSE**
26. **CONNECT NO.2 PCV HOSE**
27. **FILL WITH ENGINE COOLANT**