

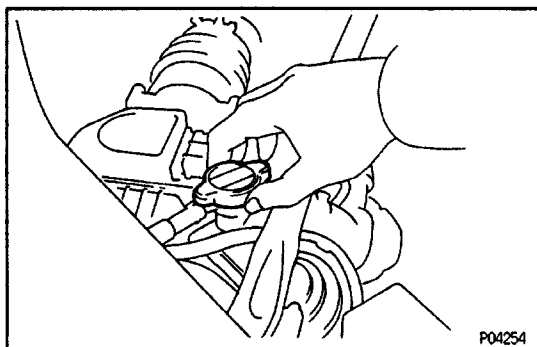
TUNE-UP

EG0VY-01

ENGINE COOLANT INSPECTION

1. CHECK ENGINE COOLANT LEVEL AT RESERVOIR TANK

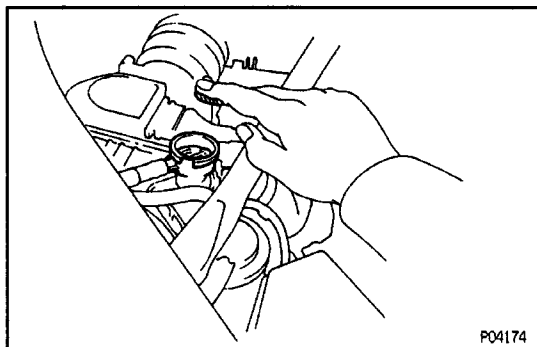
The engine coolant level should be between the "LOW" and "FULL" lines at low temperature. If low, check for leaks and add engine coolant up to the "FULL" line.



2. CHECK ENGINE COOLANT QUALITY

(a) Remove the radiator (water filler) cap.

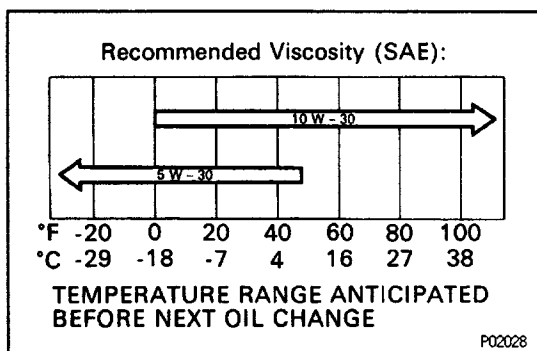
CAUTION: To avoid the danger of being burned, do not remove it while the engine and radiator are still hot, as fluid and steam can be blown out under pressure.



(b) There should not be any excessive deposits of rust or scales around the radiator cap or radiator filler hole, and the coolant should be free from oil.

If excessively dirty, replace the coolant.

(c) Reinstall the radiator (water filler) cap.



ENGINE OIL INSPECTION

EG0B4-03

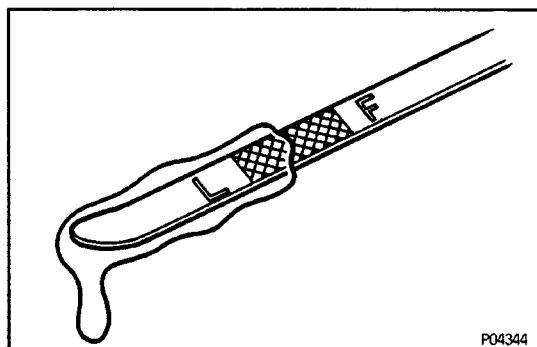
1. CHECK OIL QUALITY

Check the oil for deterioration, entry of water, discoloring or thinning.

If oil quality is poor, replace it.

Oil grade:

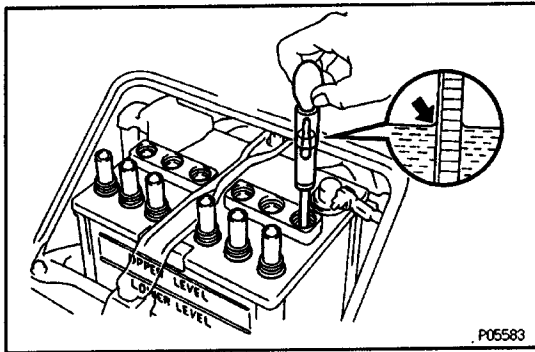
API grade SG Energy-Conserving II multigrade engine oil. Recommended viscosity is as shown.



2. CHECK ENGINE OIL LEVEL

The oil level should be between the "L" and "F" marks on the dipstick.

If low, check for leakage and add oil up to the "F" mark.



P05583

BATTERY INSPECTION

1. CHECK BATTERY SPECIFIC GRAVITY AND ELECTROLYTE LEVEL

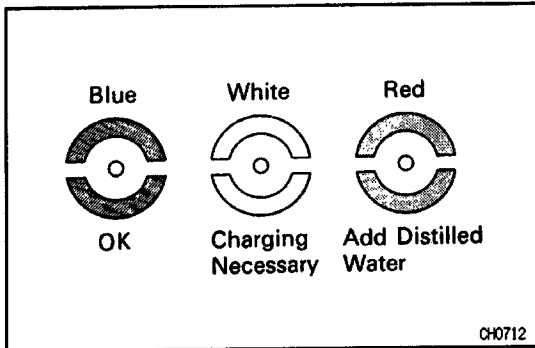
- Check the electrolyte quantity of each cell.
If insufficient, refill with distilled (or purified) water.
- Check the specific gravity of each cell.

Standard specific gravity at 20°C (68°F):

1.25– 1.27

If not within specifications, charge the battery.

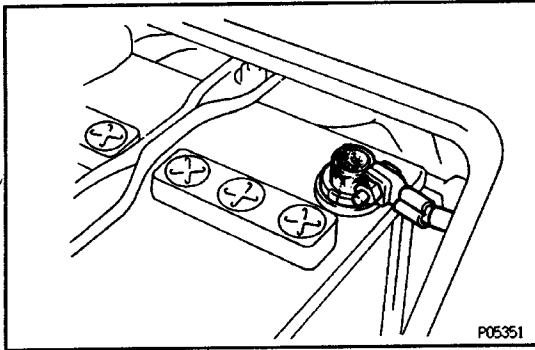
HINT: Check the indicator as shown in the illustration.



CH0712

2. CHECK BATTERY TERMINALS, FUSIBLE LINK AND FUSES

- Check that the battery terminals are not loose or corroded.
- Check the fusible link and fuses for continuity.

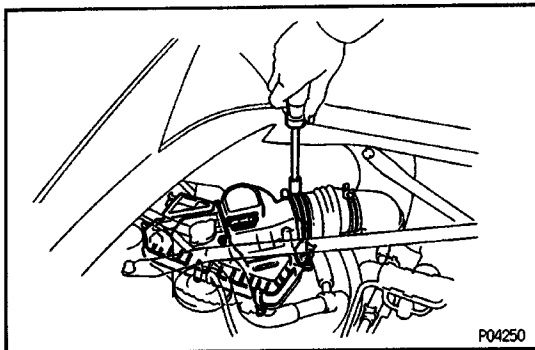


P05351

AIR FILTER INSPECTION AND CLEANING

1. REMOVE AIR FILTER

Remove the air cleaner cap and air filter.

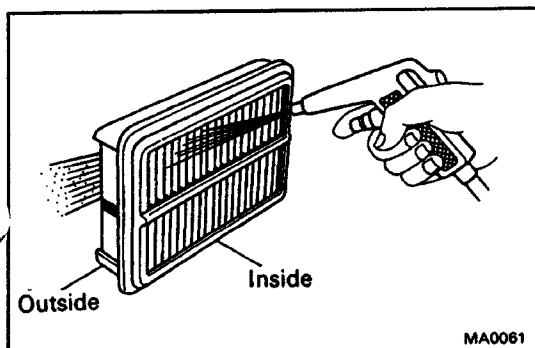


P04250

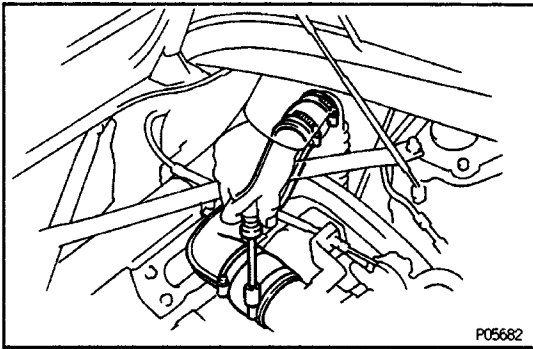
2. INSPECT AND CLEAN AIR FILTER

- Visually check that the air filter is not excessively damaged or only.
If necessary, replace the air filter.
- Clean the air filter with compressed air.
First blow from the inside thoroughly, then blow off the outside of the air filter.

3. REINSTALL AIR FILTER

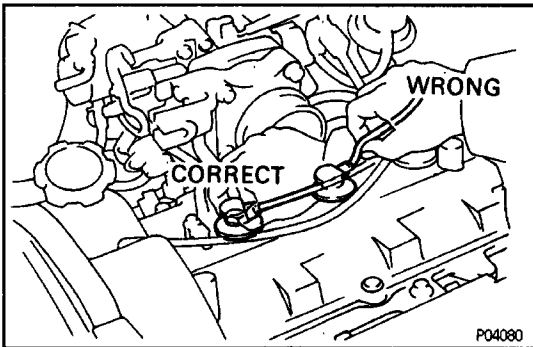


MA0061



HIGH-TENSION CORDS INSPECTION

1. REMOVE NO.1 INTAKE AIR CONNECTOR FROM THROTTLE BODY

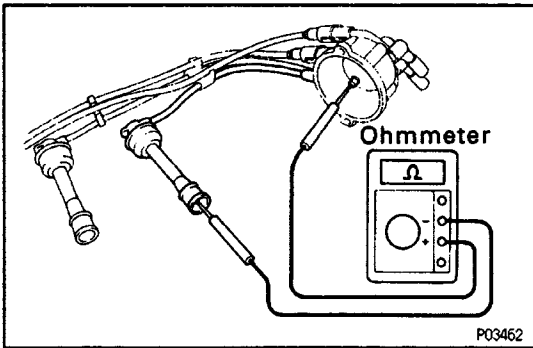


2. DISCONNECT HIGH-TENSION CORDS FROM SPARK PLUGS

Disconnect the high - tension cords at the rubber boot. Do not pull on the cords.

NOTICE: Pulling on or bending the cords may damage the conductor inside.

3. REMOVE DISTRIBUTOR CAP WITHOUT DISCONNECTING HIGH-TENSION CORDS



4. INSPECT HIGH-TENSION CORD RESISTANCE

Using an ohmmeter, measure the resistance without disconnecting the distributor cap.

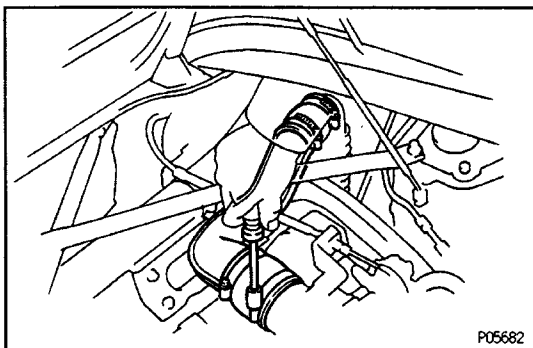
Maximum resistance:

25 k Ω per cord

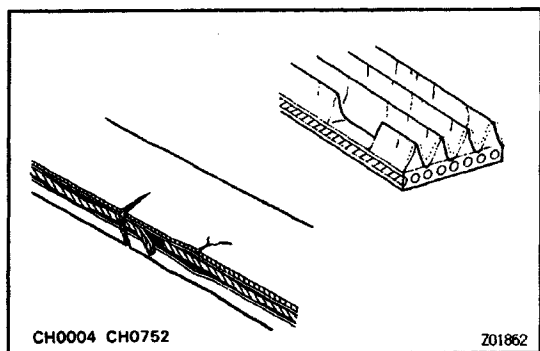
If the resistance is greater than maximum, check the terminals. If necessary, replace the high-tension cord and/or distributor cap.

5. REINSTALL DISTRIBUTOR CAP AND HIGH-TENSION CORDS

6. RECONNECT HIGH -TENSION CORDS TO SPARK PLUGS



7. REINSTALL NO.1 INTAKE AIR CONNECTOR



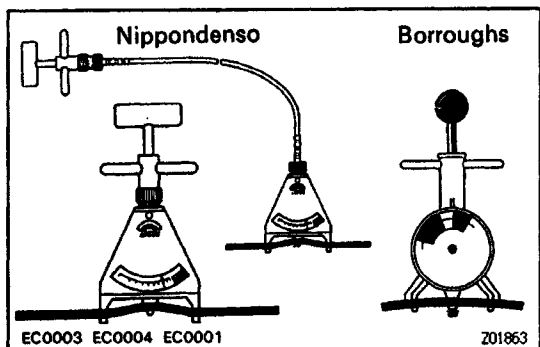
ALTERNATOR DRIVE BELT INSPECTION

INSPECT DRIVE BELTS

- (a) Visually check the belt for excessive wear, frayed cords etc.

If necessary, replace the drive belt.

HINT: Cracks on the rib side of a belt are considered acceptable. If the belt has chunks missing from the ribs, it should be replaced.



- (b) Using a belt tension gauge, measure the belt tension.

Belt tension gauge:

Nippondenso BTG-20 (95506-00020)

Borroughs No. BT-33-73F

Drive belt tension:

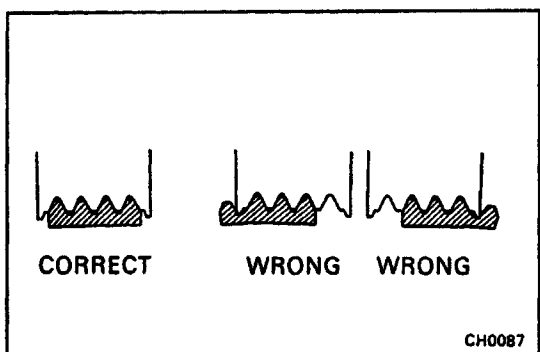
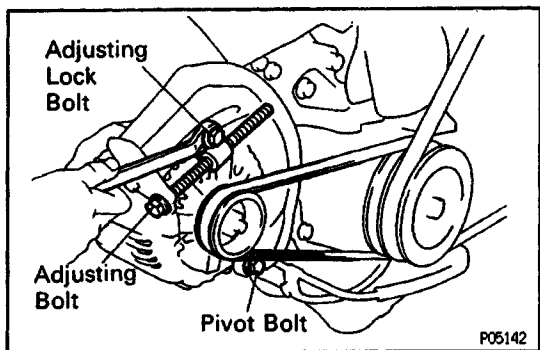
New belt

120 t 20 lbf

Used belt

104 ± 20 lbf

If necessary, adjust the belt tension.

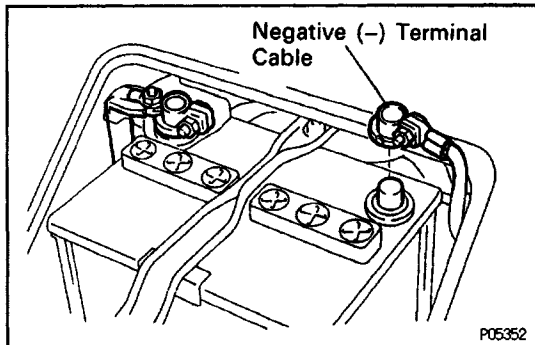


HINT:

- "New belt" refers to a belt which has been used less than 5 minutes on a running engine.
- "Used belt" refers to a belt which has been used on a running engine for 5 minutes or more.
- After installing the belt, check that it fits properly in the ribbed grooves.
- Check by hand to confirm that the belt has not slipped out of the groove on the bottom of the pulley.
- After installing a new belt, run the engine for about 5 minutes and recheck the belt tension.

VALVE CLEARANCE INSPECTION AND ADJUSTMENT

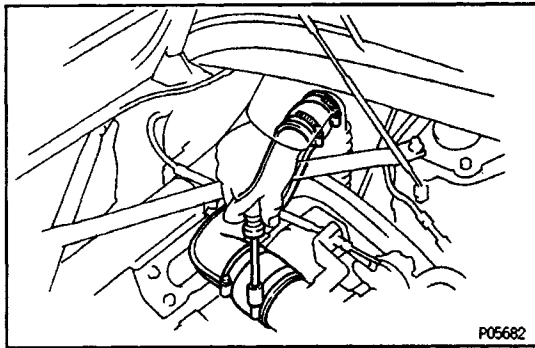
HINT: Inspect and adjust the valve clearance when the engine is cold.



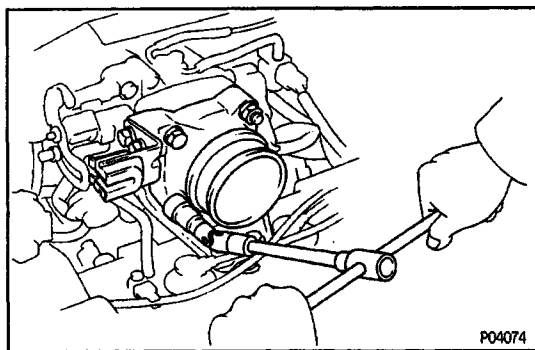
1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY

CAUTION: Turn the ignition switch to "LOCK". Disconnect the negative terminal from the battery. Wait at least 20 seconds before proceeding with work.

2. DISCONNECT ACCELERATOR LINKAGE FROM THROTTLE BODY

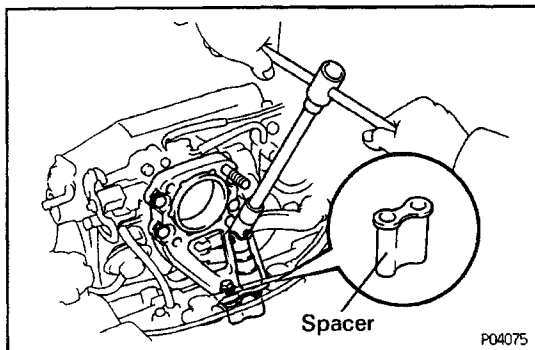


3. REMOVE N0.1 INTAKE AIR CONNECTOR



4. REMOVE INTAKE AIR CONNECTOR

Remove the two bolts, two nuts and intake air connector.

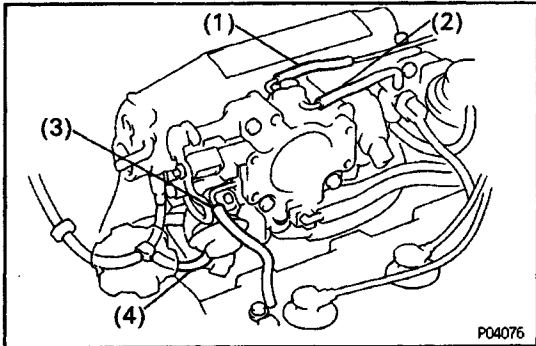


5. REMOVE INTAKE AIR CONNECTOR STAY

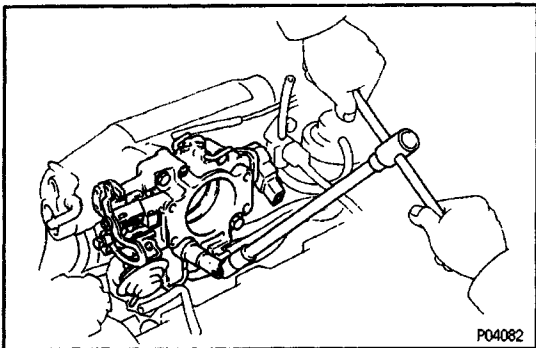
- (a) Remove the six bolts and intake air connector stay.
- (b) Remove the spacer.

6. REMOVE THROTTLE BODY

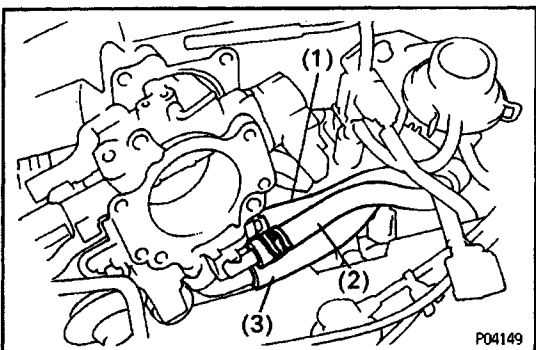
- (a) Disconnect the following connector:
 Throttle position sensor connector
 IACV connector



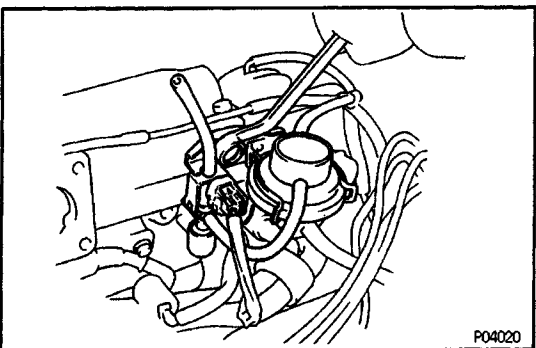
- (b) Disconnect the following hoses:
 (1) Vacuum hose from port "P" of throttle body
 (2) Vacuum hose from port "E" of throttle body
 (3) PCV hose from port PCV of throttle body
 (4) Vacuum hose from throttle body opener



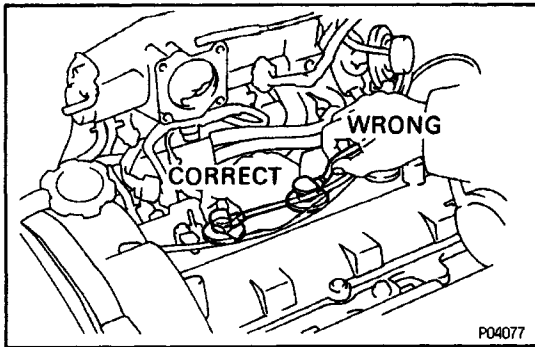
- (c) Remove the four bolts, and disconnect the throttle body from the intake manifold.
 (d) Remove the throttle body gasket.



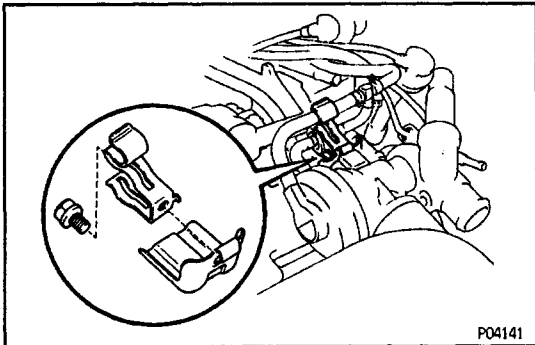
- (e) Disconnect the following hoses from the throttle body, and remove the throttle body:
 (1) Water by-pass hose (from upper side of No. 1 air tube)
 (2) Water by-pass hose (from lower side of No. 1 air tube)
 (3) Air hose (from No. 1 air tube)

**7. REMOVE CYLINDER HEAD COVER**

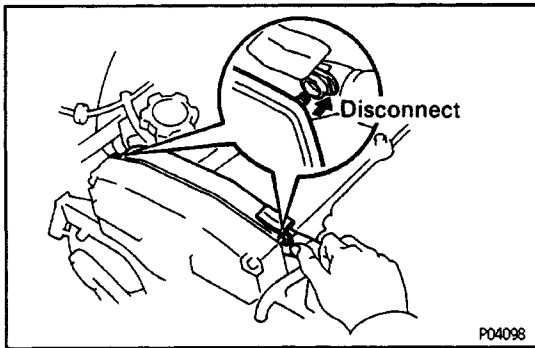
- (a) Remove the bolt, and disconnect the VSV and EGR vacuum modulator assembly from the intake manifold.



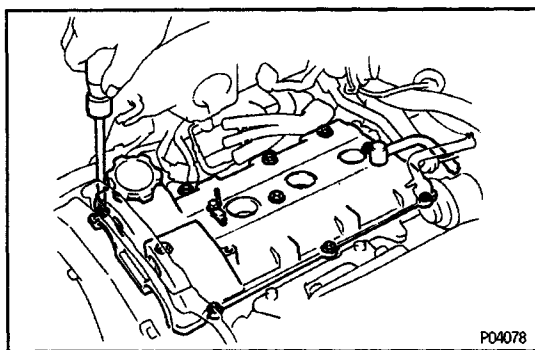
- (b) Disconnect the high – tension cords at the rubber boot. Do not pull on the high–tension cords.
NOTICE: Pulling on or bending the cords may damage the conductor inside.



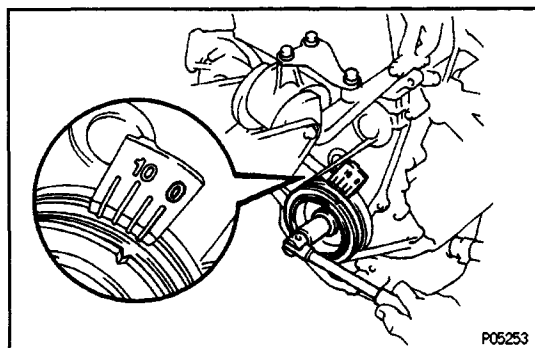
- (c) Disconnect the hose and VTV from the clamps.
 (d) Remove the bolt and two clamps.



- (e) Disconnect the engine wire protector between the No. 3 timing belt cover and cylinder head cover.

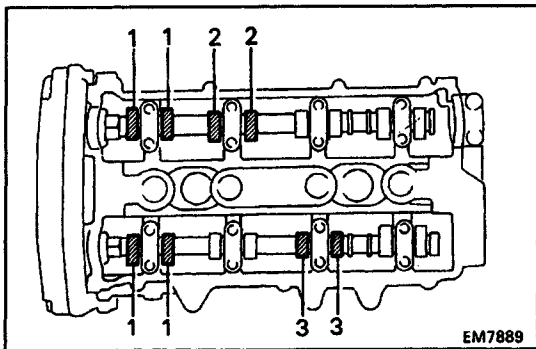


- (f) Remove the ten screws, seal washers bolts, head cover and two gaskets.



8. SET NO.1 CYLINDER TO TDC/COMPRESSION

- (a) Turn the crankshaft pulley and align its groove with timing mark "0" of the No.1 timing belt cover.
 (b) Check that the valve lifters on the No.1 cylinder are loose and valve lifters on the No.4 are tight.
 If not, turn the crankshaft one revolution (360°) and align the mark as above.



9. INSPECT VALVE CLEARANCE

(a) Check only the valves indicated.

- Using a feeler gauge, measure the clearance between the valve lifter and camshaft.
- Record the out-of-specification valve clearance measurements. They will be used later to determine the required replacement adjusting shim.

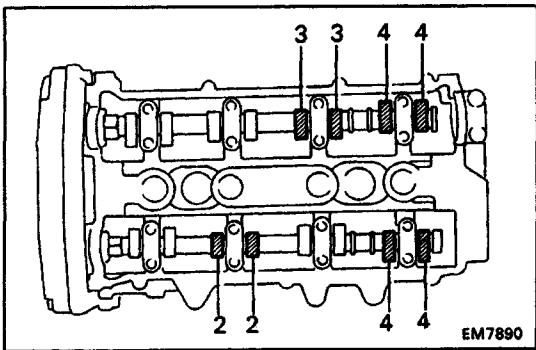
Valve clearance (Cold):

Intake

0.15 – 0.25 mm (0.006 – 0.010 in.)

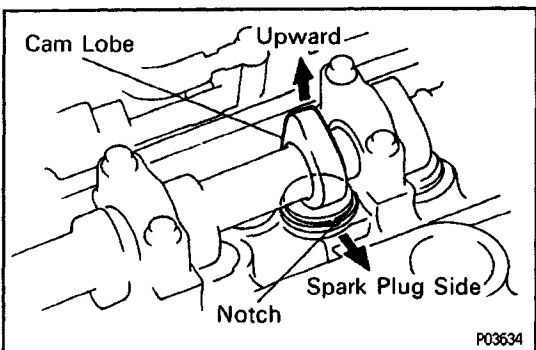
Exhaust

0.28 – 0.38 mm (0.011 – 0.015 in.)



(b) Turn the crankshaft one revolution (360°) and align the mark as above. (See procedure in step 8)

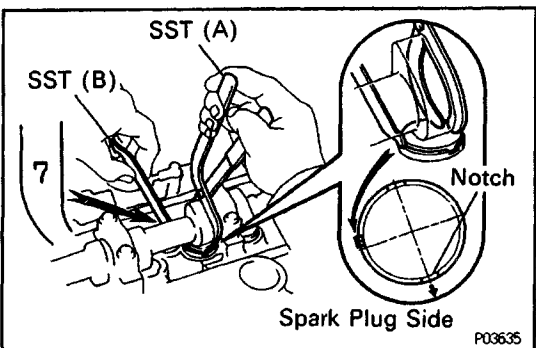
(c) Check only the valves indicated as shown. Measure the valve clearance. (See procedure in step (a))



10. ADJUST VALVE CLEARANCE

(a) Remove the adjusting shim.

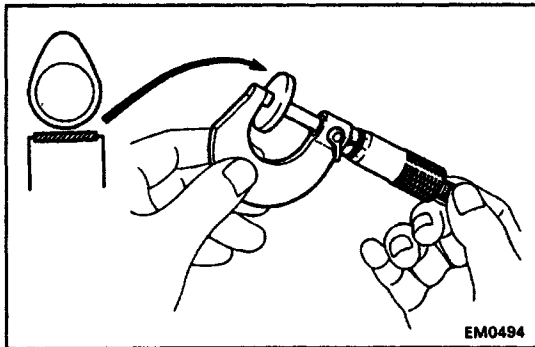
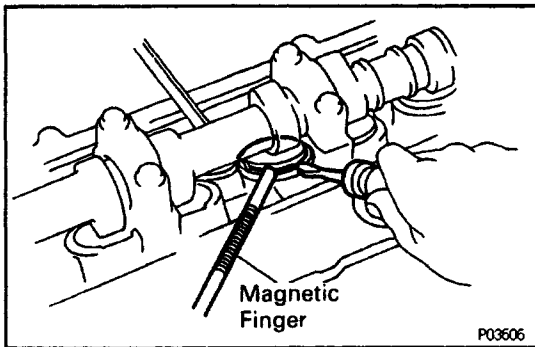
- Turn the crankshaft so that the cam lobe of the camshaft on the adjusting valve upward.
- Position the notch of the valve lifter facing the spark plug side.



- Using SST (A), press down the valve lifter and place SST (B) between the camshaft and valve lifter. Remove SST (A).

SST 09248-55020 (09248-05011, 09248-05021)

HINT: Apply SST (B) at slight angle on the side marked with "7", at the position shown in the illustration.



- Remove the adjusting shim with a small screwdriver and magnetic finger.

(b) Determine the replacement adjusting shim size by following the Formula or Charts:

- Using a micrometer, measure the thickness of the removed shim.
- Calculate the thickness of a new shim so that the valve clearance comes within specified value.
 T Thickness of removed shim
 A Measured valve clearance
 N Thickness of new shim

Intake:

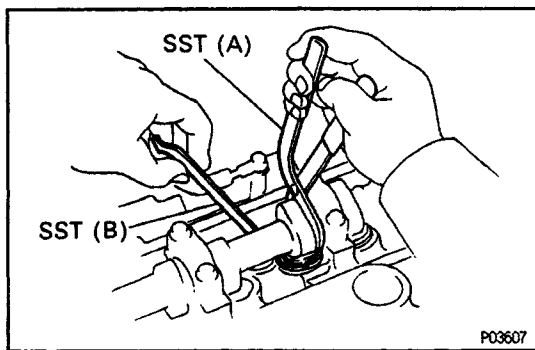
$$N = T + (A - 0.20 \text{ mm (0.008 in.)})$$

Exhaust:

$$N = T + (A - 0.33 \text{ mm (0.013 in.)})$$

- Select a new shim with a thickness as close as possible to the calculated value.

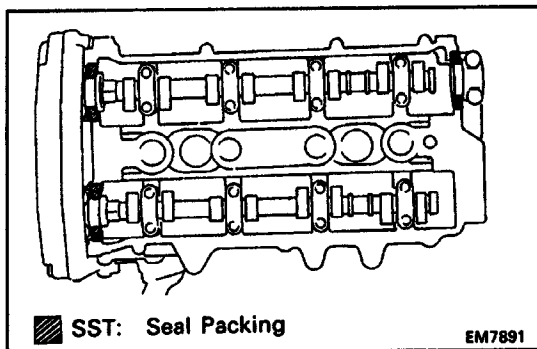
HINT: Shims are available in seventeen sizes in increments of 0.05 mm (0.0020 in.), from 2.50 mm (0.0984 in.) to 3.30 mm (0.1299 in.).



(c) Install a new adjusting shim.

- Place a new adjusting shim on the valve lifter. Using SST (A), press down the valve lifter and remove SST (B).
- SST 09248 - 55020 (09248 - 05011, 09248 - 05021)

(d) Recheck the valve clearance.

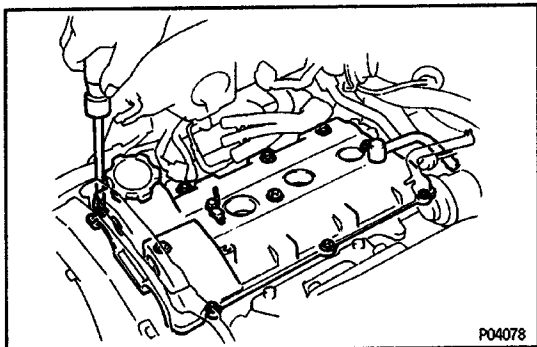


11. REINSTALL CYLINDER HEAD COVER

- (a) Remove any old packing (FIPG) material.
- (b) Apply seal packing to the cylinder head as shown in the illustration.

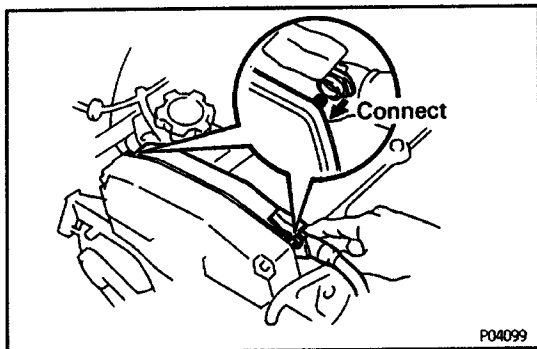
Seal packing:

Part No. 08826-00080 or equivalent

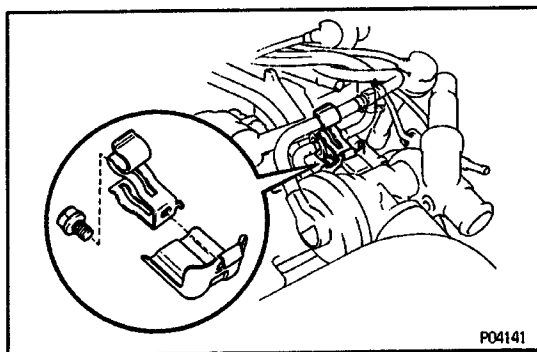


- (c) Install the two gaskets to the cylinder head cover.
- (d) Install the cylinder head cover with the ten seal washers and screws.

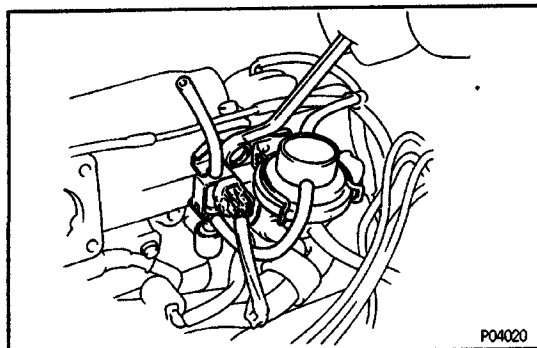
Torque: 2.5 N-m (25 kgf-cm, 21 in-lbf)



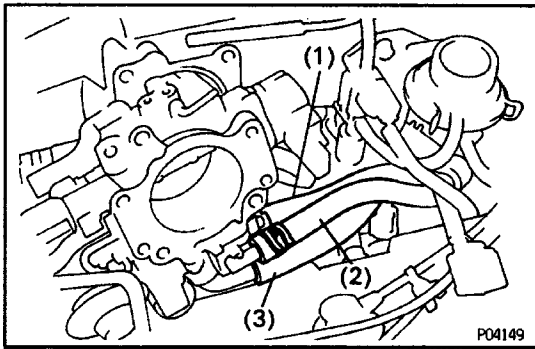
- (e) Install the two clamps of the engine wire protector to each bolt.



- (f) Install the two clamps.
- (g) Connect the VTV and hose to the clamp.
- (h) Connect the high-tension cords.

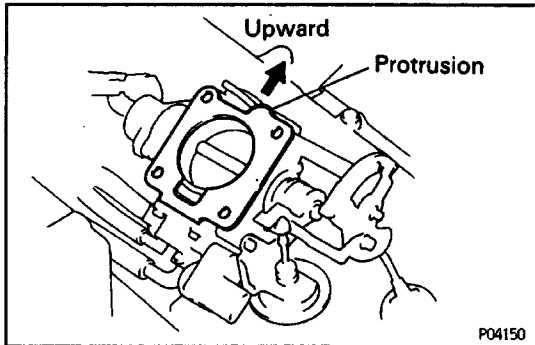


- (i) Install the VSV and EGR vacuum modulator assembly with the bolt.

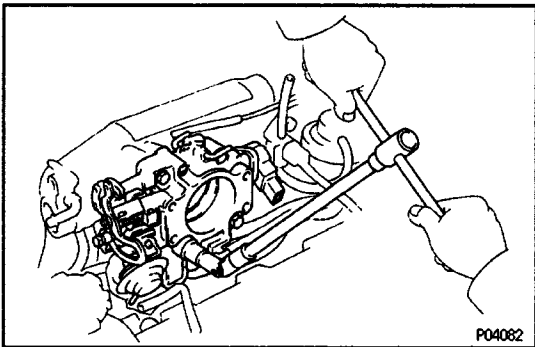


12. REINSTALL THROTTLE BODY

- (a) Connect the following hoses to the throttle body:
- (1) Water by-pass hose (from upper side of No. 1 air tube)
 - (2) Water by-pass hose (from lower side of No. 1 air tube)
 - (3) Air hose (from No. 1 air tube)



- (b) Install a new gasket to the throttle body.



- (c) Install the throttle body with the four bolts.

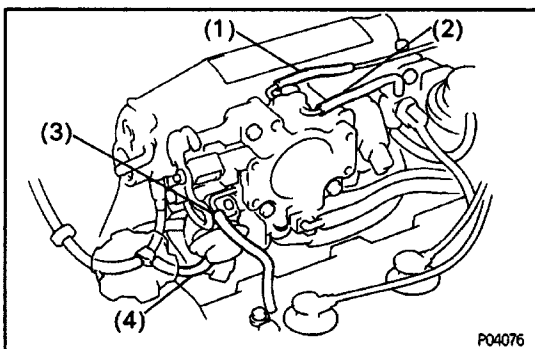
Torque: 19 N-m (195 kgf-cm, 14 ft-lbf)

HINT: Different bolt lengths are used for the upper and lower sides.

Bolt length:

45 mm (1.77 in.) for upper side

70 mm (2.76 in.) for lower side

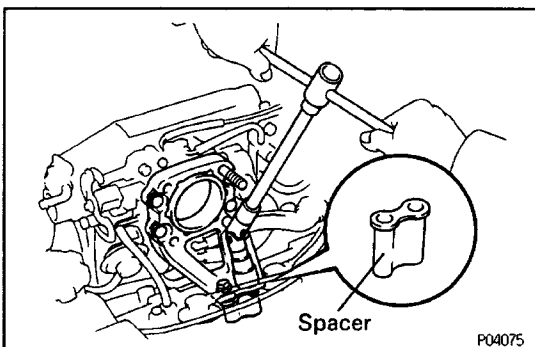


- (d) Connect the following hoses:

- (1) Vacuum hose to port "P" of throttle body
- (2) Vacuum hose to port "E" of throttle body
- (3) PCV hose to port PCV of throttle body
- (4) Vacuum hose to throttle body opener

- (e) Connect the following connector:

- Throttle position sensor connector
- IACV connector



13. REINSTALL INTAKE AIR CONNECTOR STAY

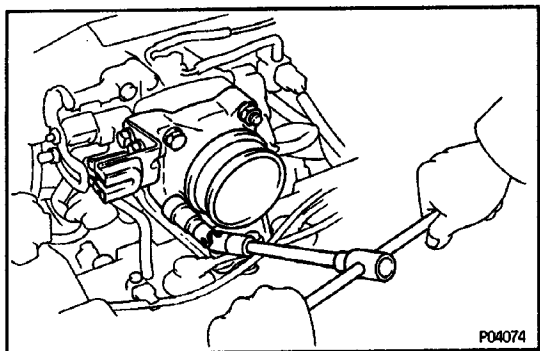
- (a) Install the spacer.

- (b) Install the intake air connector stay with the six bolts.

Torque:

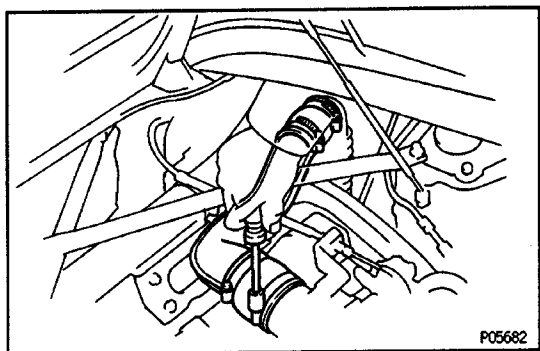
7.8 N-m (80 kgf-cm, 69 in.-lbf) for 10 mm head

19 N-m (195 kgf-cm, 14 ft-lbf) for 12 mm head

**14. REINSTALL INTAKE AIR CONNECTOR**

Install the intake air connector with the two bolts and two nuts.

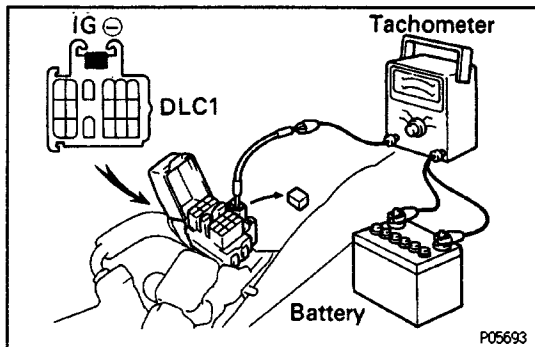
Torque: 19 N-m(195 kgf-cm, 14 ft-lbf)

15. RECONNECT ACCELERATOR LINKAGE TO THROTTLE BODY**16. REINSTALL NO.1 INTAKE AIR CONNECTOR****17. RECONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY**

IGNITION TIMING INSPECTION AND ADJUSTMENT

1. REMOVE RH ENGINE HOOD SIDE PANEL
2. WARM UP ENGINE

Allow the engine to warm up to normal operating temperature.



3. CONNECT TACHOMETER AND TIMING LIGHT TO ENGINE

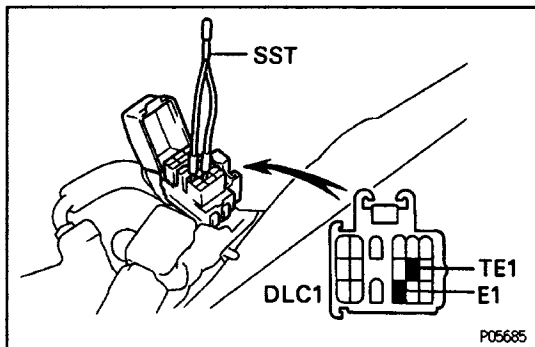
Connect the test probe of a tachometer to terminal IG - of the data link connector 1.

NOTICE:

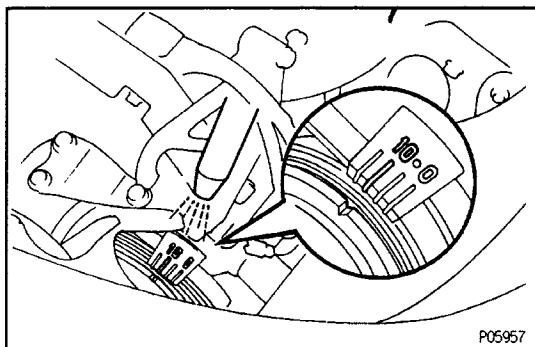
- Never allow the tachometer terminal to touch ground as it could result in damage to the igniter and/or ignition coil.
- As some tachometers are not compatible with this ignition system, we recommend that you confirm the compatibility of your unit before use.

4. ADJUST IGNITION TIMING

- (a) Using SST, connect terminals TE1 and E1 of the the data link connector 1.
SST 09843-18020

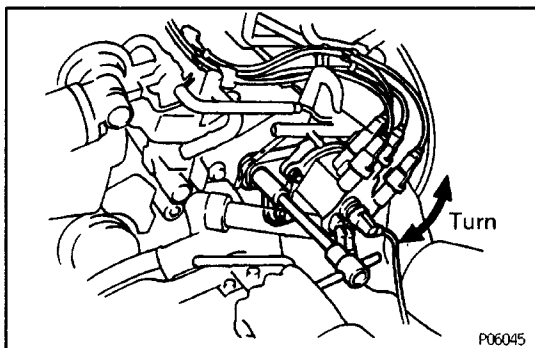


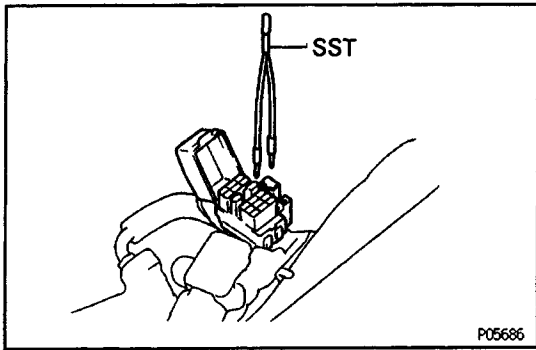
- (b) Using a timing light, check the ignition timing.
Ignition timing:
10° BTDC @ idle
(Transmission in neutral position)



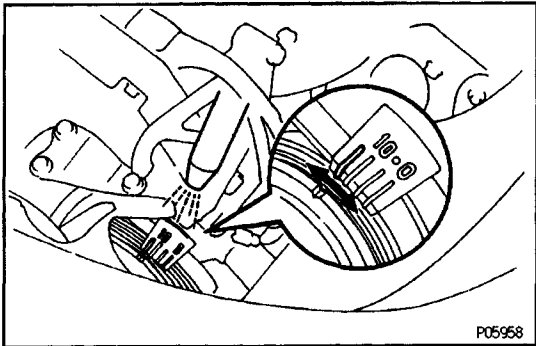
- (c) Loosen the two mounting bolts, and adjust the ignition timing by turning the distributor.
- (d) Tighten the two mounting bolts, and recheck the ignition timing.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)





- (e) Remove the SST from the data link connector 1.
SST 09843-18020



5. FURTHER CHECK IGNITION TIMING

Ignition timing:

12 – 21° BTDC @ idle

(Transmission in neutral position)

HINT: The timing mark moves in a range between 12° and 21°.

6. DISCONNECT TACHOMETER AND TIMING LIGHT FROM ENGINE

7. REINSTALL RH ENGINE HOOD SIDE PANEL

IDLE SPEED INSPECTION

1. INITIAL CONDITIONS

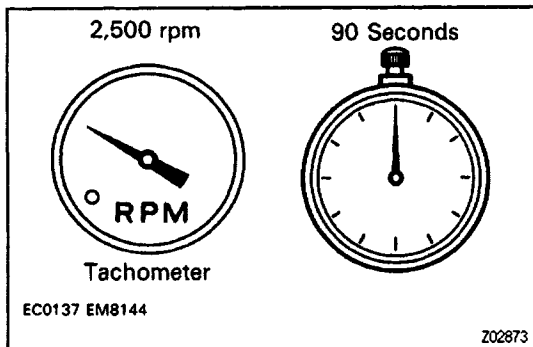
- (a) Engine at normal operating temperature
- (b) Air cleaner installed
- (c) All pipes and hoses of air induction system connected
- (d) All accessories switched OFF
- (e) All vacuum lines properly connected

HINT: All vacuum hoses for EGR systems, etc. should be properly connected.

- (f) SMPI system wiring connectors fully plugged
- (g) Ignition timing set correctly
- (h) Transmission in neutral position

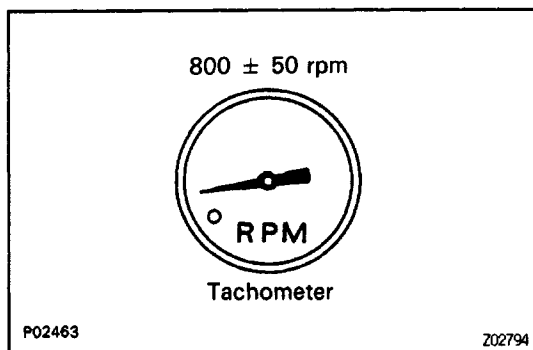
2. CONNECT TACHOMETER

(See step 2 in Ignition Timing Inspection and Adjustment)



3. INSPECT IDLE SPEED

- (a) Race the engine speed at 2,500 rpm for approx. 90 seconds.



- (b) Check the idle speed.

Idle speed:

800 ± 50 rpm

If the idle speed is not as specified, check the IACV.

4. DISCONNECT TACHOMETER