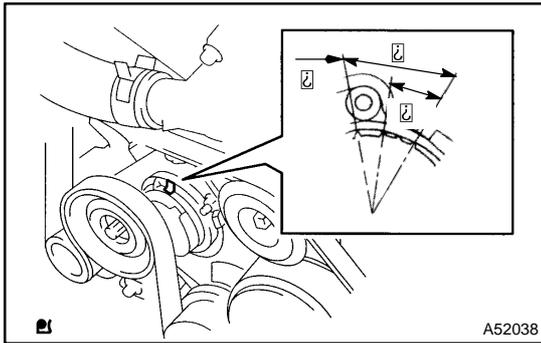


ENGINE (2UZ-FE)

140ZF-01

ADJUSTMENT

1. INSPECT COOLANT (See page 16-1)
2. INSPECT ENGINE OIL (See page 17-1)
3. INSPECT BATTERY SPECIFIC GRAVITY (See page 19-13)
4. INSPECT ELEMENT SUB-ASSY, AIR CLEANER FILTER



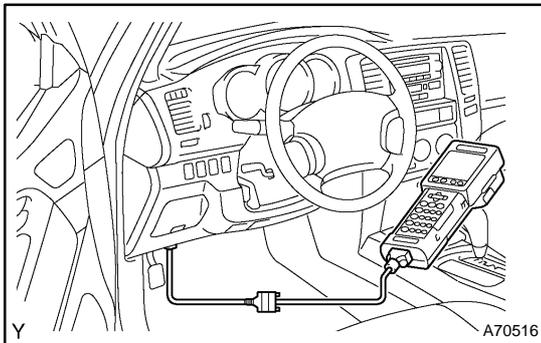
5. INSPECT BELT, V-RIBBED

HINT:

Use of the automatic tensioner has made the tension and flexibility measurements unnecessary.

- (a) Check that the indicator mark on the automatic tensioner is within the A range as shown in the illustration.
- (b) When the mark is out of the standard range, exchange the V belt with new one.

6. INSPECT TENSIONER ASSY, V-RIBBED BELT (See page 14-5)
7. WARM UP ENGINE

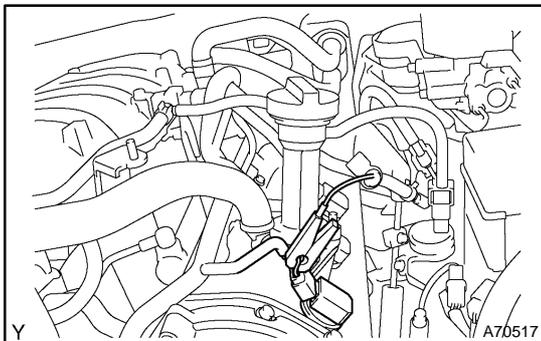


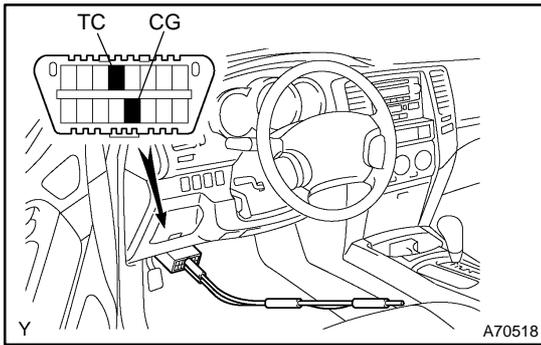
8. INSPECT IGNITION TIMING

- (a) When using hand-held tester or OBD II scan tool.
 - (1) Connect the hand-held tester or OBD II scan tool to the DLC3.
 - (2) Please refer to the hand-held tester or OBD II scan tool operator's for further details.

**Ignition timing: 8 - 12° BTDC @ idle
(Transmission in neutral position)**

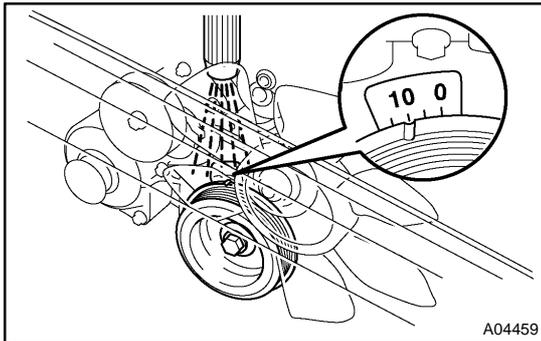
- (3) Disconnect the hand-held tester or OBD II scan tool from the DLC3.
- (b) When not using hand-held tester or OBD II scan tool.
 - (1) Connect the tester probe of a timing light to the wire of the ignition coil connector for No. 1 cylinder.





- (2) Using SST, connect the terminals TC and CG of the DLC3.

SST 09843-18040

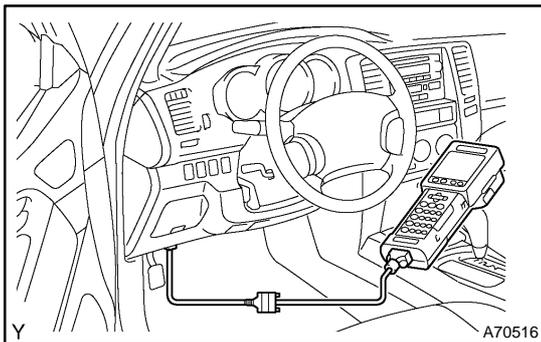


- (3) Using the timing light, check the ignition timing.

Ignition timing: 8 - 12° BTDC @ idle

(Transmission in neutral position)

- (4) Remove the SST from the DLC3.
 (5) Disconnect the timing light from the engine.



9. INSPECT ENGINE IDLE SPEED

- (a) Connect the hand-held tester or OBD II scan tool to the DLC3.
 (b) Please refer to the hand-held tester or OBD II scan tool operators for further details.
 (c) Race the engine speed at 2,500 rpm for approx. 90 seconds.
 (d) Check the idle speed.

Idle speed: 700 ± 50 rpm

If the idle speed is not as specified, check the air intake system.

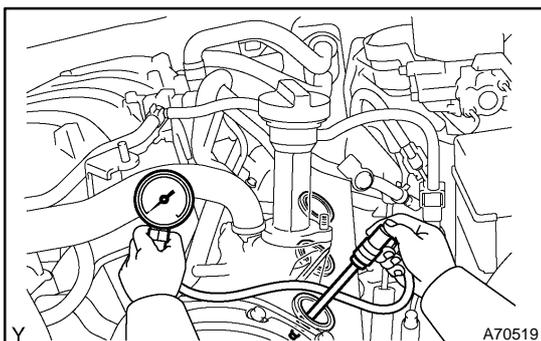
- (e) Disconnect the hand-held tester or OBD II scan tool from the DLC3.

10. INSPECT COMPRESSION

- (a) Remove the throttle body cover sub-assy.
 (b) Remove the air cleaner hose assy.
 (c) Disconnect the throttle control motor connector.
 (d) Remove the 8 ignition coils.
 (e) Remove the 8 spark plugs.
 (f) Disconnect the 8 injector connectors.
 (g) Inspect the cylinder compression pressure.
 (1) Insert a compression gauge into the spark plug hole.
 (2) Fully open the throttle forcibly by hand.
 (3) While cranking the engine, measure the compression pressure.

HINT:

Always use a fully charged battery to obtain engine speed of 250 rpm or more.



- (4) Repeat steps (1) through (3) for each cylinder.

NOTICE:

This measurement must be done in as short a time as possible.

Compression pressure:

1,226 kPa (12.5 kgf/cm², 178 psi) or more

Minimum pressure: 981 kPa (10.0 kgf/cm², 142 psi)

Difference between each cylinder:

98 kPa (1.0 kgf/cm², 14 psi) or less

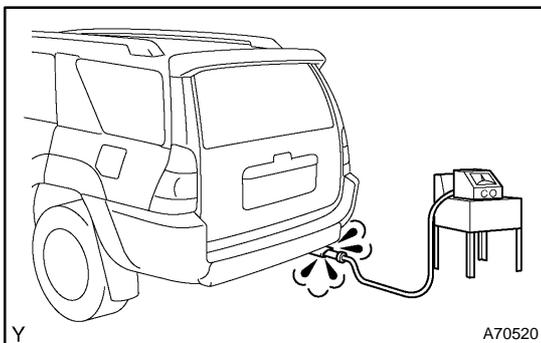
- (5) If the cylinder compression in one or more cylinders is low, pour small amount of engine oil into the cylinder through the spark plug hole and repeat steps (1) through (3) for cylinders with low compression.
- If adding oil helps the compression, chances are that the piston rings and/or cylinder bore are worn or damaged.
 - If pressure stays low, a valve may be sticking or seating is improper, or there may be leakage past the gasket.

- (h) Connect the 8 injector connectors.
 (i) Install the 8 spark plugs.
 (j) Install the 8 ignition coils.
 (k) Connect the throttle control motor connector.
 (l) Install the air cleaner hose assy.
 (m) Install the throttle body cover sub-assy.

11. INSPECT CO/HC**HINT:**

This check is used only to determine whether or not the idle CO/HC complies with regulations.

- (a) Start the engine.
 (b) Hold the engine at 2,500 rpm for approx. 180 seconds.



- (c) Insert CO/HC meter testing probe at least 40 cm (1.3 ft) into tailpipe during idling.
 (d) Immediately check CO/HC concentration at idle and/or 2,500 rpm.

HINT:

When performing the 2 mode (2,500 rpm and idle) test, follow the measurement order are prescribed by the applicable local regulations.

If the CO/HC concentration does not comply with regulations, troubleshoot in the order given below.

- (1) Check the heated oxygen sensor operation (See page 05-60 and 05-80).
- (2) See the table below for possible causes, then inspect and correct the applicable causes if necessary.

CO	HC	Symptom	Causes
Normal	High	Rough idle	1. Faulty ignitions: <ul style="list-style-type: none"> • Incorrect timing • Fouled, shorted or improperly gapped plugs 2. Incorrect valve clearance 3. Leaky intake and exhaust valves 4. Leaky cylinder
Low	High	Rough idle (Fluctuating HC reading)	1. Vacuum leaks: <ul style="list-style-type: none"> • PCV hose • Intake manifold • Throttle body 2. Lean mixture causing misfire
High	High	Rough idle (Black smoke from exhaust)	1. Restricted air filter 2. Faulty SFI system: <ul style="list-style-type: none"> • Faulty pressure regulator • Defective ECT sensor • Faulty ECM • Faulty injector • Faulty throttle position sensor • Faulty MAF sensor