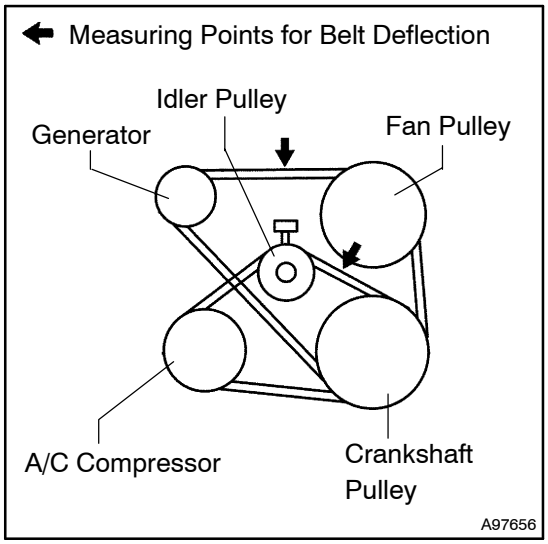
# ENGINE (N04C–TF)

141UI–01

## INSPECTION

1. INSPECT COOLANT (See page 16–3)
2. INSPECT ENGINE OIL (See page 17–3)
3. INSPECT BATTERY
4. INSPECT AIR CLEANER FILTER ELEMENT SUB–ASSY




5. INSPECT DRIVE BELT

(a) Check the belt deflection by pressing on the belt at the points indicated by the arrow marks in the illustration with 98 N·m (10 kgf·cm, 22 ft·lbf).

**Deflection:**

| Item | | Specified Condition |
|---|---|---|
| Belt (for generator) | New belt | 10.5 to 12.5 mm (0.413 to 0.492 in.) |
| Belt (for generator) | Used belt | 12.5 to 16 mm (0.413 to 0.629 in.) |
| Belt (for A/C compressor) | New belt | 8.5 to 10 mm (0.334 to 0.393 in.) |
| Belt (for A/C compressor) | Used belt | 10 to 12 mm (0.393 to 0.472 in.) |

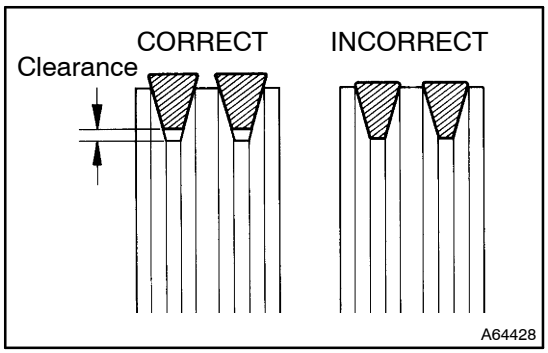
If the belt deflection is not as specified, adjust it.

(b) Reference:
Using a tension gauge, check the belt tension.

**Tension:**

| Item | | Specified Condition |
|---|---|---|
| Belt (for generator) | New belt | 370 to 490 N·m (38 to 50 kgf·cm, 84 to 110 ft·lbf) |
| Belt (for generator) | Used belt | 245 to 315 N·m (25 to 32 kgf·cm, 55 to 71 ft·lbf) |
| Belt (for A/C compressor) | New belt | 345 to 390 N·m (35 to 40 kgf·cm, 77 to 88 ft·lbf) |
| Belt (for A/C compressor) | Used belt | 225 to 295 to N·m (23 to 30 kgf·cm, 51 to 66 ft·lbf) |

If the belt tension is not as specified, adjust it.




HINT:

- After installing the belt, check that it fits properly in the ribbed grooves. Check with your hand to confirm that the belt has not slipped out of the groove on the bottom of the crank pulley.
- A ”new belt” is a belt which has been used for less than 5 minutes on a running engine.
- A ”used belt” is a belt which has been used on a running engine for 5 minutes or more.

- After installing a new belt, run the engine for approximately 5 minutes and then recheck the tension.

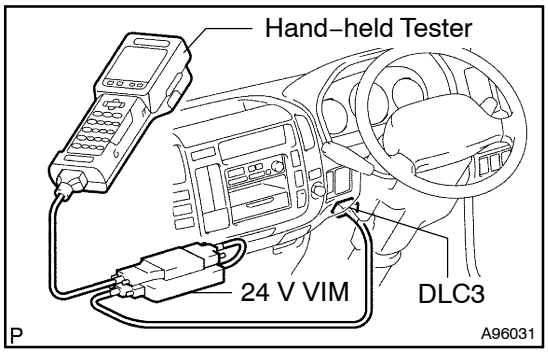
**6. CHECK TAPPET FOR ABNORMAL NOISE**

**7. INSPECT IDLE SPEED AND MAXIMUM SPEED**

HINT:

The check should be done under the following conditions:

- Engine at normal operating temperature
- Air cleaner installed
- All pipes and hoses of air induction system connected
- All accessories switched OFF
- All vacuum lines properly connected
- ECD system wiring connectors fully plugged
- Valve clearance set correctly




(a) Connect the hand–held tester (with 24 V VIM) to the DLC3.

HINT:

Refer to the hand–held tester operator's manual for further details.

**NOTICE:**

**Be sure to use the 24 V VIM, because the hand–held tester will be damaged if you do not use the 24 V VIM.**

(b) Inspect the idle speed.

(1) Start the engine and check the idle speed.

**Idle speed: 600 to 700 rpm**

If the maximum speed is not as specified, check the problem symptoms table in the diagnostic section.

(c) Inspect the maximum speed.

(1) Start the engine.

(2) Fully depress the accelerator pedal.

(3) Check the maximum speed.

**Maximum speed: 3,600 to 3,700 rpm**

If the idle speed is not as specified, check the problem symptoms table in the diagnostic section.

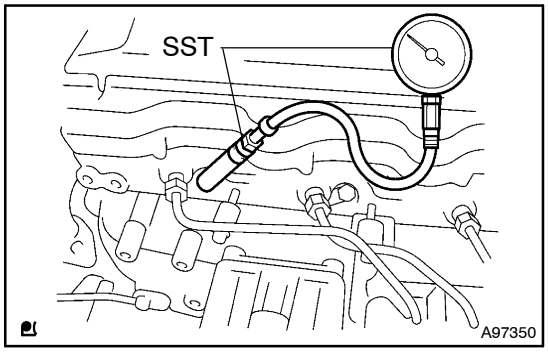
(d) Disconnect the hand–held tester from the DLC3.

**8. INSPECT COMPRESSION**

HINT:

If the power is short, the oil consumption is excessive and the fuel economy is poor, measure the compression pressure.

(a) Allow the engine to warm up to the normal operating temperature.




(b) Check the compression pressure.

(1) Install the gasket and SST (attachment) to the injection nozzle hole with the holder clamp and bolt.

SST S0955–21060, S0955–21090

**Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)**

(2) Connect a SST (compression gauge) to the SST (attachment).

SST 09992–00025 (09992–00211)

(3) While cranking the engine, measure the compression pressure.

HINT:

Always use a fully charged battery when the engine is running at 280 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:**
**3,200 kPa (33 kgf/cm$^2$, 469 psi)**
**Minimum pressure: 2,700 kPa (28 kgf/cm$^2$, 398 psi)**
**Difference between each cylinder:**
**290 kPa (3.0 kgf/cm$^2$, 43 psi) or less**

(5) If the cylinder compression in one or more cylinders is low, pour a small amount of engine oil into the cylinder through the injector hole and repeat steps (2) through (4) for the cylinder with low compression.

- If the compression becomes high by adding oil, it shows that the piston rings and/or cylinder bore are worn or damaged.
- If the pressure remains low, a valve may be sticking or seated improperly, or there may be leakage through the gasket.

(6) Remove the SST.

(c) Start the engine and check for leaks.

**9. INSPECT DIESEL SMOKE**

**Standard (Black smoke): 10 % or less**