# ENGINE CONTROL SYSTEM

## SERVICE DATA

031D8–04

### 2TR–FE:

| | | |
|---|---|---|
| Camshaft timing oil control valve assy | | |
| Specified condition | | |
| | OCV off | Normal engine speed |
| | OCV on | Rough idling engine stalls |
| Throttle body | | |
| Standard throttle valve opening percentagr | | 60% or more |
| Accelerator pedal position sensor | | |
| ACCEL POS #1 | Released | 0.4 to 1.4 V |
| | Depressed | 3.0 to 4.6 V |
| ACCEL POS #2 | Released | 0.9 to 2.3 V |
| | Depressed | 3.4 to 5.5 V |
| Intake air flow meter sub–assy | | |
| Resistance | at –20°C(–4°F) | 12.5 to 16.9 kΩ |
| | at 20°C(68°F) | 2.19 to 2.67 kΩ |
| | at 60°C(140°F) | 0.50 to 0.68 kΩ |
| Camshaft timing oil control valve assy | | |
| Resistance | at 20°C (68°F) | 6.9 to 7.9 Ω |
| Throttle w/ motor body assy | M– to M+ | 0.3 to 100 Ω |
| Resistance | VC – E2 | 2.5 to 6.0 kΩ |
| EFI engine coolant temperature sensor | | |
| Resistance | at 20°C (68°F) | 2.32 to 2.59 kΩ |
| | at 80°C (176°F) | 0.310 to 0.326 kΩ |
| Knock control sensor | at 20°C (68°F) | 120 to 280 kΩ |
| Circuit opening relay | | |
| Specified condition | 3 – 5 | 10 kΩ or higher |
| | 3 – 5 | Below 1 Ω (Apply battery voltage to terminals 1 and 2) |
| EFI relay | | |
| Specified condition | 3 – 5 | 10 kΩ or higher |
| | 3 – 5 | Below 1 Ω (Apply battery voltage to terminals 1 and 2) |

### 1KD–FTV:

| | | |
|---|---|---|
| Accelerator pedal position sensor | | |
| Voltage (ACCEL POS) | Accelerator pedal released | 0.3 to 0.9 V |
| | Accelerator pedal depress | 3.2 to 4.8 V |
| Voltage (ACCEL POS#2) | Accelerator pedal released | 1.8 to 2.7 V |
| | Accelerator pedal depress | 4.5 to 5.5 V |
| Mass air flow meter | | |
| Resistance | at –20°C(–4°F) | 13.6 to 18.4 kΩ |
| | at 20°C(68°F) | 2.21 to 2.69 kΩ |
| | at 60°C(140°F) | 0.49 to 0.67 kΩ |
| Engine coolant temperature sensor | | |
| Resistance | at 20 °C (68 °F) | 2.31 to 2.59 kΩ |
| | at 80 °C (176 °F) | 0.310 to 0.326 kΩ |
| Diesel turbo inlet air temperature sensor | | |
| Resistance | at 20 °C (68 °F) | 2.21 to 2.65 Ω |
| Crankshaft position sensor | | |
| Resistance | at cold | 835 to 1400 Ω |
| | at hot | 1060 to 1645 Ω |
| Camshaft position No.2 sensor | | |
| Resistance | at cold | 1630 to 2740 Ω |
| | at hot | 2065 to 3225 Ω |
| Diesel turbo main relay | | |
| Specified condition | 3 – 5 | 10 kΩ or higher |
| | 3 – 5 | Below 1 Ω (Apply battery voltage to terminals 1 and 2) |

| | | |
|---|---|---|
| Diesel ECU relay | | |
| Specified condition | 1 – 2 | 10 kΩ or higher |
| | 3 – 5 | Below 1 Ω (Apply battery voltage to terminals 1 and 2) |
| Throttle valve sw | | |
| Specified condition | Throttle valve (Fully open) | Continuity |
| | Throttle valve (Fully close) | No continuity |