

1GR-FE ENGINE CONTROL SYSTEM

SERVICE DATA

| | | | |
|--|-----------------------|--|--|
| Camshaft timing oil control valve assembly | | VVT system is OFF (OCV is OFF) | Normal engine speed |
| | | VVT system is ON (OCV is ON) | Rough idle or engine stalled |
| Throttle body | | Standard throttle valve opening percentage | 60 % or more |
| Accelerator pedal position sensor | Voltage (ACCEL POS#1) | Accelerator pedal released | 0.5 to 1.1 V |
| | | Accelerator pedal depress | 2.5 to 4.5 V |
| | Voltage (ACCEL POS#2) | Accelerator pedal released | 1.2 to 2.0 V |
| | | Accelerator pedal depress | 3.4 to 5.0 V |
| Camshaft timing oil control valve assembly | Resistance | at 20°C (68°F) | 6.9 to 7.9 Ω |
| 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) | 0.493 to 0.667 kΩ |
| 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 |
| Throttle With Motor body | Resistance | 1 (M-) - 2 (M+) | 0.3 to 100 Ω at 20 °C (68 °F) |
| Knock sensor | Resistance | at 20°C (68°F) | 120 to 180 kΩ |
| Circuit opening relay | Resistance (3 - 5) | Standard | 10 kΩ or higher |
| | | | Below 1 Ω (Apply battery voltage to terminals 1 and 2) |
| EFI relay | Specified condition | Standard | 10 kΩ or higher |
| | Resistance (3 - 5) | | Below 1 Ω (Apply battery voltage to terminals 1 and 2) |

TORQUE SPECIFICATIONS

| Part Tightened | N*m | kgf*cm | ft.*lbf |
|---|-----|--------|------------|
| Throttle with motor body assembly x Intake air surge tank | 11 | 112 | 9 |
| Air cleaner assembly x Cylinder head cover sub-assembly | 8.0 | 82 | 71 in.*lbf |
| Air cleaner assembly x Intake air surge tank | 8.0 | 82 | 71 in.*lbf |
| V-bank cover x Air cleaner assembly | 7.5 | 76 | 66 in.*lbf |
| V-bank cover x Intake air surge tank | 7.5 | 76 | 66 in.*lbf |
| Knock sensor x Cylinder block sub-assembly | 20 | 204 | 15 |
| Water outlet pipe No. 1 x Cylinder block sub-assembly | 9.0 | 92 | 80 in.*lbf |
| Camshaft timing oil control valve x Cylinder head | 9.0 | 92 | 80 in.*lbf |
| E.F.I. engine coolant temperature sensor x Cylinder block | 20 | 204 | 15 |
| Manifold stay x Exhaust manifold | 40 | 408 | 30 |
| Manifold stay x Transmission | 40 | 408 | 30 |
| Cool air inlet No. 1 x Body | 12 | 122 | 9.0 |
| ECM bracket x ECM | 3 | 32 | 28 in.*lbf |
| ECM bracket No. 2 x ECM | 3 | 32 | 28 in.*lbf |
| ECM x Body | 13 | 133 | 10 |
| Accelerator pedal rod assembly x Body | 5.0 | 51 | 44 in.*lbf |
| Negative battery terminal | 3.9 | 40 | 35 in.*lbf |

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