

1GR-FE ENGINE CONTROL SYSTEM

SERVICE DATA

Camshaft timing oil control valve assembly	OCV OFF	Standard		Normal engine speed
	OCV ON			Rough idle or engine stalled
Throttle body	Throttle POS value	Standard		60 % or more
	Resistance	1 (M-) - 2 (M+)	Standard	0.3 to 100 Ω at 20°C (68°F)
Accelerator pedal position sensor (ACCEL POS#1)	Voltage	Accelerator pedal released	Standard	0.5 to 1.1 V
		Accelerator pedal depress		2.5 to 4.5 V
Accelerator pedal position sensor (ACCEL POS#2)	Voltage	Accelerator pedal released	Standard	1.2 to 2.0 V
		Accelerator pedal depress		3.4 to 5.0 V
Camshaft timing oil control valve assembly	Resistance	1 (+B) - 2 (GND)	Standard	6.9 to 7.9 Ω at 20°C (68°F)
Mass air flow meter			Standard	0.72 g/sec
Engine coolant temperature sensor	Resistance	1 (E2) - 2 (THW)	Standard	2.32 to 2.59 k Ω at 20°C (68°F)
				0.310 to 0.326 k Ω at 80°C (176°F)
Knock sensor	Resistance	1 (Ground) - 2 (Out put)		120 to 180 k Ω at 20°C (68°F)
Circuit opening relay	Resistance	3 - 5	Standard	10 k Ω or higher
		1 - 2		Below 1 Ω
EFI relay	Resistance	3 - 5	Standard	Below 1 Ω (Apply battery voltage to terminals 1 and 2)
Crankshaft position sensor	Resistance	1 - 2	Standard	1,850 to 2,450 Ω at 20°C (68°F)
Fuel pump relay	Resistance	1 - 2	Standard	Below 1 Ω
		3 - 4		Below 1 Ω
		3 - 5		10 k Ω or higher
		3 - 4		10 k Ω or higher (Battery voltage applied to terminal 1 and 2)
		3 - 5		Below 1 Ω (Battery voltage applied to terminal 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

SS