

1NZ-FE ENGINE CONTROL SYSTEM

SERVICE DATA

Camshaft timing oil control valve

Camshaft Timing Oil Control Valve	Condition	Specified Condition
Standard resistance	20°C (68°F)	6.9 to 7.9 Ω

SS

Camshaft position sensor

Camshaft Position Sensor	Coolant Temperature	Specified Condition
Standard resistance	Hot	1.630 to 2.740 Ω
	Cold	2.065 to 3.225 Ω

Engine coolant temperature sensor

Engine Coolant Temperature Sensor	Condition	Specified Condition
Standard resistance	20°C (68°F)	2.29 to 2.60 Ω
	80°C (176°F)	0.301 to 0.327 Ω

Knock sensor

Knock Sensor	Condition	Specified Condition
Standard resistance	20°C (68°F)	120 to 280 Ω

Throttle position sensor

Throttle Position Sensor	Tester Connection	Throttle Valve Position	Specified Condition
Standard resistance	1 (VC) - 2 (E2)	-	2.5 to 6.0 Ω
	3 (VTA) - 2 (E2)	Fully close	0.2 to 11.0 Ω
	3 (VTA) - 2 (E2)	Fully open	2.0 to 16.0 Ω

EFI relay

EFI Relay	Tester Connection	Specified Condition
Standard resistance	3 - 5	10 kΩ or higher
	3 - 5	Below 1 Ω (when battery voltage is applied to terminal 1 and 2)

Circuit opening relay

Circuit Opening Relay	Tester Connection	Specified Condition
Standard resistance	3 - 5	10 kΩ or higher
	3 - 5	Below 1 Ω (when battery voltage is applied to terminal 1 and 2)

TORQUE SPECIFICATIONS

Camshaft timing oil control valve

Part Tightened	N*m	kgf*cm	ft.*lbf
Camshaft timing oil control valve x Cylinder head	7.5	76	66 in.*lbf

Camshaft position sensor

Part Tightened	N*m	kgf*cm	ft.*lbf
Camshaft position sensor x Cylinder head	8.0	82	71 in.*lbf

Crankshaft position sensor

Part Tightened	N*m	kgf*cm	ft.*lbf
Crankshaft position sensor x Cylinder bock	7.5	76	66 in.*lbf

Engine coolant temperature sensor

Part Tightened	N*m	kgf*cm	ft.*lbf
Engine coolant temperature sensor x Cylinder bock	20	204	15

Throttle body

Part Tightened	N*m	kgf*cm	ft.*lbf
Throttle body x Cylinder bock	30	306	22
Transmission oil filter tube sub-assembly x Cylinder head	5.5	56	49 in.*lbf
Oil cooler tube x Transmission oil filter tube sub-assembly	5.5	56	49 in.*lbf
Accelerator control valve cable x Throttle body	13	133	10
Air cleaner assembly x Body	7.8	80	69 in.*lbf
Air cleaner inlet x Body	7.5	76	66 in.*lbf

Knock sensor

Part Tightened	N*m	kgf*cm	ft.*lbf
Knock sensor x Cylinder block	20	204	15

Idle air control valve

Part Tightened	N*m	kgf*cm	ft.*lbf
Idle air control valve x Throttle body	3.4	35	30 in.*lbf

Throttle position sensor

Part Tightened	N*m	kgf*cm	ft.*lbf
Throttle position sensor x Throttle body	2.0	20	18 in.*lbf

ECM

Part Tightened	N*m	kgf*cm	ft.*lbf
Idle air control valve x Throttle body	3.0	31	27 in.*lbf