SERVICE SPECIFICATIONS

SERVICE DATA

Pressure regulator	Fuel pressure	at No vacuum	265 – 304 kPa 2.7 – 3.1 kgf/cm² 38 – 44 psi	
Cold start injector	Resistance Fuel leakage		2 – 4 Ω One drop or less per minute	
Injector	Resistance Injection volume Difference between each injector Fuel leakage		13.4 – 14.2 Ω 45 – 55 cm³/15 sec. (2.7 – 3.4 cu in.) 6 cm³ (0.37 cu in.) or less One drop or less per minute	
Volume Air Flow Meter	Resistance	E_2 – Vs	20 – 400 Ω (Measuring plate fully closed) 20 – 1,200 Ω (Measuring plate fully open)	
		E_2 – Vc	100 – 300 Ω	
		E_2 – V_B	200 – 400 Ω	
		E_1 – Fc	∞ (Measuring plate fully closed) 0 Ω (Measuring plate open)	
		E_2 – THA	10 – 20 kΩ (–20°C, –4°F) 4 – 7 kΩ (0°C, 32°F) 2 – 3 kΩ (20°C, 68°F) 0.9 – 1.3 kΩ (40°C, 104°F) 0.4 – 0.7 kΩ (60°C, 140°F)	
Throttle body	Throttle valve fully closed angle		6°	
Throttle position sensor	Clearance between lever and stop screw		Between terminals	Resistance
	0 mm	0 in.	VTA – E_2	0.47 – 6.1 kΩ
	0.57 mm	0.0224 in.	IDL – E_2	2.3 kΩ or less
	0.85 mm	0.0335 in.	IDL – E_2	Infinity
	Throttle valve fully open position		VTA – E_2	3.1 – 12.1 kΩ
	–		Vcc – E_2	3.9 – 9.0 kΩ
Start injector time switch	Resistance	STA – STJ	30 – 50 Ω (below 10°C, 50°F) 65 – 90 Ω (above 30°C, 86°F)	
		STA – Ground	30 – 90 Ω	
Engine coolant temp. sensor	Resistance		10 – 20 kΩ (–20°C, –4°F) 4 – 7 kΩ (0°C, 32°F) 2 – 3 kΩ (20°C, 68°F) 0.9 – 1.3 kΩ (40°C, 104°F) 0.4 – 0.7 kΩ (60°C, 140°F) 0.2 – 0.4 kΩ (80°C, 176°F)	
VSV (FPU)	Resistance	at 20°C (68°F)	30 – 50 Ω	

Specifications (Cont'd)

Oxygen sensor heater	Resistance at 20°C (68°F)		6 – 7 Ω	
EGR gas temperature sensor	Resistance		69 – 89 kΩ (55°C, 122°F) 11 – 15 kΩ (100°C, 212°F) 2 – 4 kΩ (150°C, 302°F)	
Fuel cut rpm	Fuel cut rpm 2WD M/T (stop light switch ON) Others Fuel return rpm 2WD M/T (stop light switch ON) Others .		1,300 rpm 1,900 rpm 1,000 rpm 1,600 rpm	
ECM (Voltage)	HINT: Do all voltage and resistance measurements witch the ECM connected. • Verify that the battery voltage is 11 V or above when the ignition switch is ON. The testing probes must not make contact with the ECM oxygen VF terminals.			
	Terminals	**STD voltage**	**Condition**	
	BATT – E_1	9 – 14	–	
	+B – E_1		Ignition SW ON	
	+B – E_1			
	IDL – E_2 (E_{21})	9 – 14	Ignition SW ON	Throttle valve open
	Vcc – E_2 (E_{21})	4.5 – 5.5		–
	VTA – E_2 (E_{21})	0.3 – 0.8		Throttle valve fully open
		3.2 – 4.9		Throttle valve fully open
	Vc – E_2 (E_{21})	6 – 10	Ignition SW ON	–
	Vs – E_2 (E_{21})	0.5 – 2.5		Measuring plate fully closed
		5 – 10		Measuring plate fully open
		2 – 8	Idling	
	THA – E_2 (E_{21})	0.5 – 3.4	Ignition SW ON	Intake air temperature 20°C (68°F)
	THW – E_2 (E_{21})	0.2 – 1.0		Coolant temperature 8o°C (176°F)
	STA – E_1	6 – 12	Ignition SW START position	
	No.10 – E_{01} No.20 – E_{02}	9 – 14	Ignition SW ON	
	IGt – E_1	0.7 – 1.0	Cranking or idling	
	W – E_1	9 – 14	No trouble (MIL off) and engine running	
	STJ – E_1	6 – 12	Ignition SW START position	Coolant temperature 80°C (176°F)
	STP – E_1	7.5 – 14	Stop light switch ON	

Specifications (Cont'd)

ECM (Resistance)	Terminals	Resistance (kΩ)	Condition
	IDL – E_2 (E_{21})	Infinity	Throttle valve open
		2.3 or less	Throttle valve fully closed
	VTA – E_2 (E_{21})	3.1 – 12.1	Throttle valve fully open
		0.47 – 6.1	Throttle valve fully closed
	Vcc – E_2 (E_{21})	3.9 – 9.0	–
	THA – E_2 (E_{21})	2 – 3	Intake air temperature 20 °C (68 °F)
	THW – E_2 (E_{21})	0.2 – 0.4	Coolant temperature 80 °C 0 (176 °F)
	+B – E_2 (E_{21})	0.2 – 0.4	–
	Vc – E_2 (E_{21})	0.1 – 0.3	–
	Vs – E_2 (E_{21})	0.02 – 0.4	Measuring plate fully closed
		0.02 – 1.00	Measuring plate fully open
	Ne – E_1	0.185 – 0.275	Cold
		0.240 – 0.325	Hot
	STJ – E_1	Infinity	–
	FPU – E_1	Infinity	–
	HT – E_1	Infinity	–

TORQUE SPECIFICATIONS

Part tightened	N–m	kgf–cm	ft–lbf
Fuel hose x Fuel filter	30	310	22
Fuel hose x Fuel main tube	30	310	22
Fuel filter x Fuel filter bracket	19	195	14
Delivery pipe x Pressure regulator	30	300	22
Delivery pipe x Intake manifold	19	195	14
Delivery pipe x Fuel tube	44	450	33
Delivery pipe x Fuel pipe	17	175	13
Fuel pipe x Cold start injector	17	175	13
Air intake chamber x Cold start injector	7.8	80	69 in.·lbf
Air intake chamber x Throttle body	19	195	14
Fuel pump	3.9	40	35 in.·lbf
Fuel drain plug	6.4	65	56 in.·lbf
Fuel tank x Body	29	300	22