SERVICE SPECIFICATIONS
SERVICE DATA

Pressure regulator	Fuel pressure at No vacuum		265–304 kPa 2.7–3.1 kgf/cm^2 38–44 psi
Cold start injector	Resistance Fuel leakage		2–4Ω One drop or less per minute
Injector	Resistance Injection volume Difference between each injector Fuel leakage		13.4–14.2 Ω 45–55 cm^3/15 sec. (2.7–3.4 cu in.) 6 cm^3 (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	ω (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)			5 – 7 Ω
EGR gas temp. sensor	Resistance			69 – 89 Ω (50°C), 122°F) 11 – 15 Ω (100°C), 212°F) 2 – 4 Ω (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: • Perform 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 V_F terminals.			
	Terminals	**STD Voltage**	**Condition**	
	$BATT - E_1$	9 – 14	–	
	$+B - E_1$		Ignition SW ON	
	$+B_1 - E_1$			
	$IDL - E_2 (E_{21})$	9 – 14	Ignition SW ON	Throttle valve open
	$V_{CC} - E_2 (E_{21})$	4.5 – 5.5		–
	$VTA - E_2 (E_{21})$	0.3 – 0.8		Throttle valve fully closed
		3.2 – 4.9		Throttle valve fully open
	$V_C - E_2 (E_{21})$	6 – 10	Ignition SW ON	–
	$V_S - E_2 (E_{21})$	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 80°C (176°F)
	$STA - E_1$	6 – 12	Ignition SW START position	
	NO. 10/No. 20 – E_{01}/E_{02}	9 – 14	Ignition SW ON	
	$IG_t - E_1$	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 (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