

CHECK AT THE ENGINE CONTROL MODULE (ECM)

TERMINAL VOLTAGE CHECK CHART

CAUTION: Connecting the positive (+) probe between a connector terminal and ground could damage the vehicle connector terminal and g. connector terminal

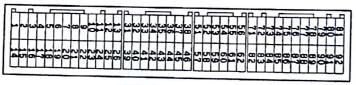
(1) Connect a needle-nosed wire probe (paper clip etc.) to

NOTE: Measure voltage with the ECM connectors connected. NOTE: You may find it convenient to pull out the ECM to make it easier to reach the connector terminals.

NOTE: Checks don't have to be carried out in the order given in the chart.

- (2) Insert the needle-nosed wire probe into each of the ECM connector terminals from the wire side, and measure the voltage while referring to the check chart.
- (3) If voltmeter shows deviation from standard value, check the corresponding sensor, actuator and related electrical wiring, then repair or replace.
- (4) Then recheck with the voltmeter to confirm that the repair has corrected the problem.

Engine Control Module (ECM) Connector Terminal Arrangement



9FU0393

TERMI- NAL NO.	CHECK ITEM	CHECK CONDITION (ENGINE CONDITION)	NORMAL CONDITION
T WEB-REI	NO.1 INJECTOR	ENGINE: WARM, IDLE	FROM 11 – 14 V MOMENTARILY
14	NO.2 INJECTOR	SUDDENLY DEPRESS THE ACCELERATOR PEDAL	
2	NO.3 INJECTOR		DROPS SLIGHTLY
15	NO.4 INJECTOR	MINO STATE OF THE PROPERTY OF	GIZIAS MOSTINES
3	NO.5 INJECTOR	DJUSTMENT BJUSTMENT	Detwir
16	NO.6 INJECTOR	CILENOID VALVE (GNITION SWITCHCOM" CILC	ASCHALE
4	STEPPER MOTOR COIL <a1></a1>	ENGINE: WARM, IDLE CHECK IMMEDIATELY AFTER HOT RESTART	B+++0-3V
17	STEPPER MOTOR COIL <a2></a2>	nutes. Cen on released by pressing the CLEAR hey.	(CHANGES REPEATEDLY)
5	STEPPER MOTOR COIL <b1></b1>		
18	STEPPER MOTOR COIL <b2></b2>		

6	CHECK ITEM	CHECK CONDITION		
TERMI- NAL NO.	mayo.	CHECK CONDITION (ENGINE CONDITION)		NORMAL CONDITION
6	EGR SOLENOID <federal></federal>	IGNITION SWITCH:	- 15 cm - 17 c	B+
		ENGINE: IDLESUDDENLY DE PEDAL.	FROM B + , DROPS MOMENTARILY	
FUEL PUMP RELAY MODULE		IGNITION SWITCH: "ON"		0 – 0.5 V
	MODOLL	ENGINE: CRANKIN	4 – 6 V	
		ENGINE: IDLE, WAI STARTING ENGINE	0.7 – 2.8 V	
10	IGNITION POWER TRANSISTOR UNIT A	ENGINE: 3,000 r/min		0.3 – 3.0 V
23	IGNITION POWER TRANSISTOR UNIT B			
11	IGNITION POWER TRANSISTOR UNIT C			5 3 5 5 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
12	POWER SUPPLY	IGNITION SWITCH: "ON"		B+
25	VOLUME AIR ELOW	ENCINE: IDLE	The state of the s	0 – 1 V
19	VOLUME AIR FLOW SENSOR RESET	ENGINE: IDLE		6-9V
	SIGNAL	ENGINE: 3,000 r/min		
22	A/C COMPRESSOR CLUTCH RELAY	 ENGINE: IDLE A/C SWITCH: "OFF" → "ON" (A/C COMPRESSOR IS OPERATING) 		B + OR MO- MENTARILY 6 V OR MORE → 0 – 3 V AS A/C CLUTCH CYCLES
32	EVAPORATIVE	IGNITION SWITCH	: "ON"	B+
390	EMISSION PURGE SOLENOID	ENGINE: WARM, 3,000 r/min		0-3V
34	HEATED OXYGEN SENSOR HEATER (FRONT) <federal></federal>	ENGINE: WARM, IC	DLE MOTTERS TO BELL	0-3 V _A
LEFT BANK H OXYGEN SEN	LEFT BANK HEATED OXYGEN SENSOR HEATER (FRONT)	ENGINE: 5,000 r/min		B+
<california></california>		ENGINE: WARM, IDLE		0-3V
35	RIGHT BANK HEATED OXYGEN SENSOR HEATER (FRONT) <california></california>	4 - 12 CAN F. V.		B+
		ENGINE: 5,000 r/min		
36	CHECK ENGINE/ MALFUNCTION INDICATOR LAMP	IGNITION SWITCH: "OFF" → "ON"		0 – 3 V → 9 – 13 \ (AFTER SEVERAL SECONDS HAVE ELAPSED)
POWER STEERING		ENGINE: WARM, IDLE	WHEN STEERING WHEEL IS STATIONARY	B+
PRI	PRESSURE SWITCH	IDLE	WHEN STEERING WHEEL IS TURNED	0-3V

TERMI- NAL NO.	CHECK ITEM	CHECK CONDITIO	NORMAL CONDITION B+		
38	MFIRELAY	IGNITION SWITCH	ON SWITCH: "OFF"		
	(POWER SUPPLY)	IGNITION SWITCH	0-3V		
41 EVAPORATIVE		IGNITION SWITCH: "ON"		B+	
Y. H.P.	EMISSION VENTILATION SOLENOID	AFTER THE ENGIN VEHICLE AT A CO mph). (OBD-II MON	MOMENTARILY (
42	HEATED OXYGEN SENSOR HEATER (REAR) <federal></federal>	ENGINE: WARM, IDLE		0-3V	
	LEFT BANK HEATED OXYGEN SENSOR HEATER (REAR) <california></california>	ENGINE: 5,000 r/m	B+		
43	RIGHT BANK HEATED	ENGINE: WARM, II	OLE	0-3V	
	OXYGEN SENSOR HEATER (REAR) <california></california>	ENGINE: 5,000 r/m	B+		
44	ANTI-LOCK BRAKE	ENGINE: IDLE		B+	
	SIGNAL <m t=""></m>	 ENGINE START FIRST TIME FROM ENGINE START VEHICLE SPEED: 0 → 10 km/h (0 → 0.6 mph) 		CHANGES B + TO 0 - 3 V (TEMPORARILY)	
45	A/C SWITCH	ENGINE: IDLE	TURN THE A/C SWITCH "OFF"	0-3V	
45	AC SWITCH		TURN THE A/C SWITCH "ON" (A/C COMPRESSOR IS OPERATING)	B+	
51	SPARK CHECK SIGNAL	ENGINE: 3,000 r/min		0.3 – 3.0 V	
71	IGNITION SWITCH-ST	ENGINE: CRANKING		8 V OR MORE	
72	INTAKE AIR TEMPERATURE	IGNITION SWITCH: "ON"	WHEN INTAKE AIR TEMPERATURE IS 0°C (32°F)	3.2 – 3.8 V	
No.	SENSOR			WHEN INTAKE AIR TEMPERATURE IS 20°C (68°F)	2.3 – 2.9 V
	V 5 - 0		WHEN INTAKE AIR TEMPERATURE IS 40°C (104°F)	1.5 – 2.1 V	
	3		WHEN INTAKE AIR TEMPERATURE IS 80°C (176°F)	0.4 – 1.0 V	
73	RIGHT BANK HEATED OXYGEN SENSOR (REAR) <california></california>	 TRANSMISSION: 2ND GEAR <m t="">, "L" RANGE</m> DRIVE AT WIDE OPEN THROTTLE ENGINE: 3,500 r/min OR MORE 		A 11	
74	MANIFOLD	ENGINE: IDLE		0.8 - 2.4 V	
74	DIFFERENTIAL PRESSURE SENSOR <federal></federal>	ENGINE: IDLE SUDDENLY DI PEDAL.	RISES FROM 0.8 - 2.4 V SUDDENLY		

TERMI-	CHECK ITEM	CHECK CONDITION	(ENGINE CONDITION)	NODMAL
NAL NO.	RIGHT BANK		NORMAL CONDITION	
75 (YJC)	HEATED OXYGEN SENSOR (FRONT) <california></california>	ENGINE: WARM, 2,500 r/min (CHECK USING A DIGITAL VOLTMETER)		0 ↔ 0.8 V (CHANGES REPEATEDLY)
76	HEATED OXYGEN SENSOR (FRONT) <federal> LEFT BANK HEATED OXYGEN SENSOR (FRONT) <california></california></federal>	ENGINE: WARM, 2,500 r/min (CHECK USING A DIGITAL VOLTMETER)		0 ↔ 0.8 V (CHANGES REPEATEDLY)
77	FUEL TANK DIFFER- ENTIAL PRESSURE SENSOR	ENGINE: IDLE		1.2 – 3.8 V
79	HEATED OXYGEN SENSOR (REAR) <california> LEFT BANK HEATED OXYGEN SENSOR (REAR) <california></california></california>	 TRANSMISSION: 2ND GEAR <m t="">, "L" RANGE </m> DRIVING WITH THE THROTTLE WIDELY OPEN ENGINE: 3,500 r/min or more 		0.6 – 1.0 V
80	BACKUP POWER SUPPLY	IGNITION SWITCH: "OFF"		B+
81	SENSOR SUPPLIED VOLTAGE	IGNITION SWITCH: "ON"		4.5 – 5.5 V
82	IGNITION SWITCH-IG	IGNITION SWITCH: "ON"		B +
83	ENGINE COOLANT IGNITION SWITCH: "ON"		WHEN ENGINE COOLANT TEMPERATURE IS 0°C (32°F)	3.2 – 3.8 V
14 12	SENSOR	OTOR TOR	WHEN ENGINE COOLANT TEMPERATURE IS 20°C (68°F)	2.3 – 2.9 V
2 12 15 - 18	NO 4 INC.		WHEN ENGINE COOLANT TEMPERATURE IS 40°C (104°F)	1.3 – 1.9 V
12	NO 8 94, 1	TOR TO	WHEN ENGINE COOLANT TEMPERATURE IS 80°C (176°F)	0.3 – 0.9 V
84	THROTTLE POSITION SENSOR	IGNITION SWITCH: "ON" (CHECK FOR SMOOTH VOLTAGE	IDLE 8 - 188 (47.86 (488 F))	0.3 – 1.0 V
10	INCREASE AS THROTTLE IS MOVED FROM IDLE POSITION TO WIDE OPEN THROTTLE)	WIDE OPEN THROTTLE	4.5 – 5.5 V	
BAROMETRIC IGNITION SWITCH: "C		IGNITION SWITCH: "ON"	WHEN ALTITUDE IS 0 m (0 ft)	3.7 – 4.3 V
			WHEN ALTITUDE IS 1,200 m (3,937 ft)	3.2 – 3.8 V

MFI <3.0L Engine> - Diagnosis

TERMI-	CHECK ITEM	CHECK CONDITION (ENGINE CONDITION)		NORMAL CONDITION
NAL NO.	VEHICLE SPEED SENSOR	IGNITION SWITCH: "ON" MOVE THE VEHICLE SLOWLY FORWARD		0 ↔ 5 V (CHANGES REPEATEDLY)
	CLOSED THROTTLE	IGNITION SWITCH: "ON"	SET THROTTLE VALVE TO IDLE POSITION	0-1 V
	POSITION SWITCH	SVVITOTI. SIV	OPEN THROTTLE SLIGHTLY	4 V OR MORE
OAMOUATT		ENGINE: CRANKING		0.4 – 3.0 V
88	CAMSHAFT POSITION SENSOR	ENGINE: IDLE		0.5 – 2.0 V
	CDANICCHAET	ENGINE: CRANKING		0.4 – 4.0 V
89	CRANKSHAFT POSITION SENSOR	ENGINE: IDLE		1.5 – 2.5 V
90	VOLUME AIR FLOW	ENGINE: IDLE		2.2 – 3.2 V
	SENSOR	ENGINE: 2,500 r/min		
91	PARK/NEUTRAL POSITION SWITCH 	IGNITION SWITCH: "ON"	MOVE THE SELECTOR LEVER TO "P" OR "N."	0-3 V
		73:	MOVE THE SELECTOR LEVER TO "D", "2", "L" OR "R."	8 – 14 V

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		The second secon		KANITION
	78.E-S.E	WHEN ENGINE (* 15) ANT TEMPERATURE AS OFCE (82°E), AND		ENGINE COOLANT TEMPCENTURE
	Vestes	WHEN EVER BEDOUGNT JEMPT BUCKER 20°C (BB°F)		ROSM38
	7.1 (A. 17.17) V 27.18.11	THE TWA 1000 BRIGHT W.		
		A Commence of the Commence of	WHEN INTAKE AFT	
Stradesport	V 80°-100	MHEN ENGINE COOLANT TEMPERATURE IS 80°C (178°F)	INTAKS A	
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San Selventing the second			ESTABLE BASE STOKE	
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