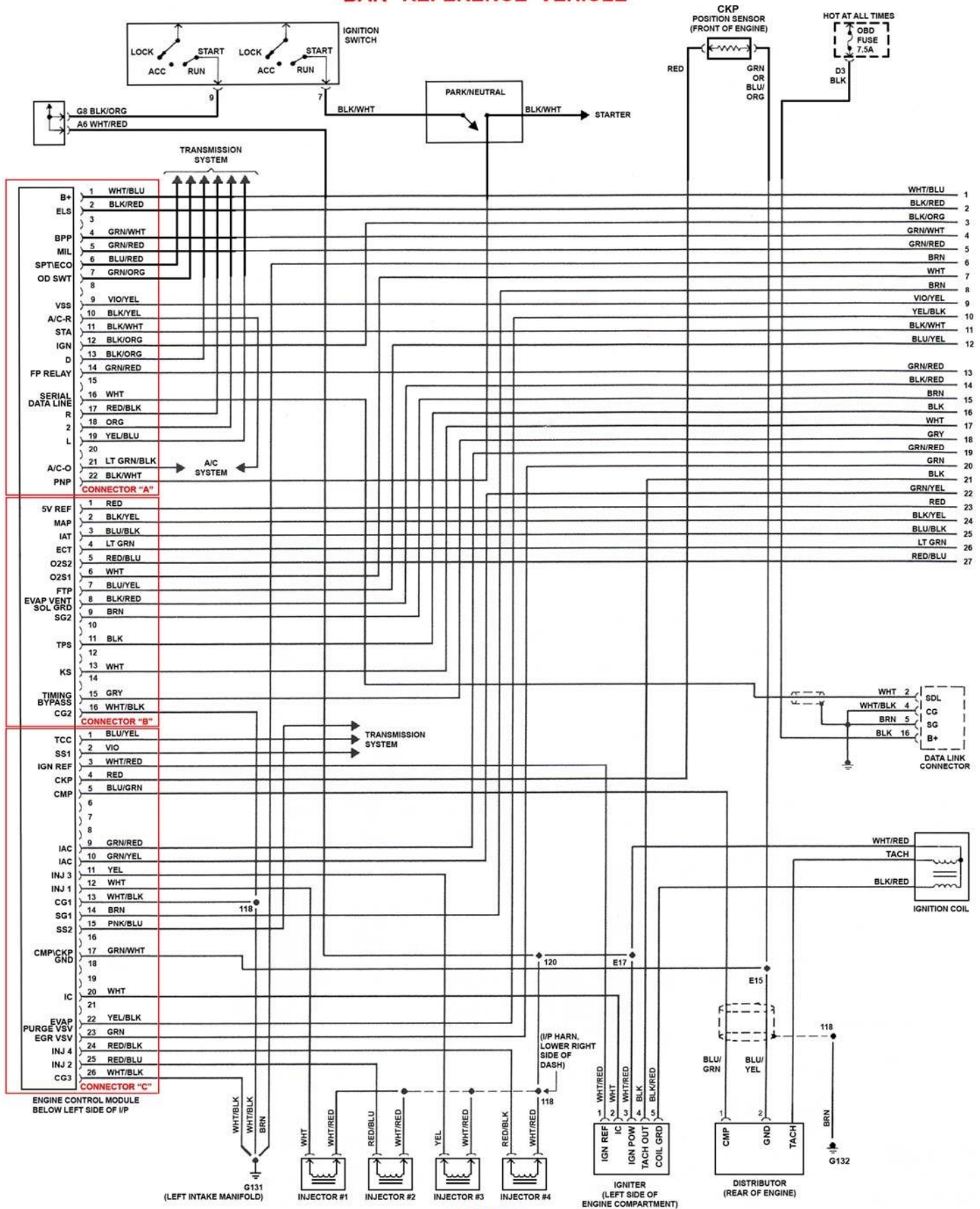
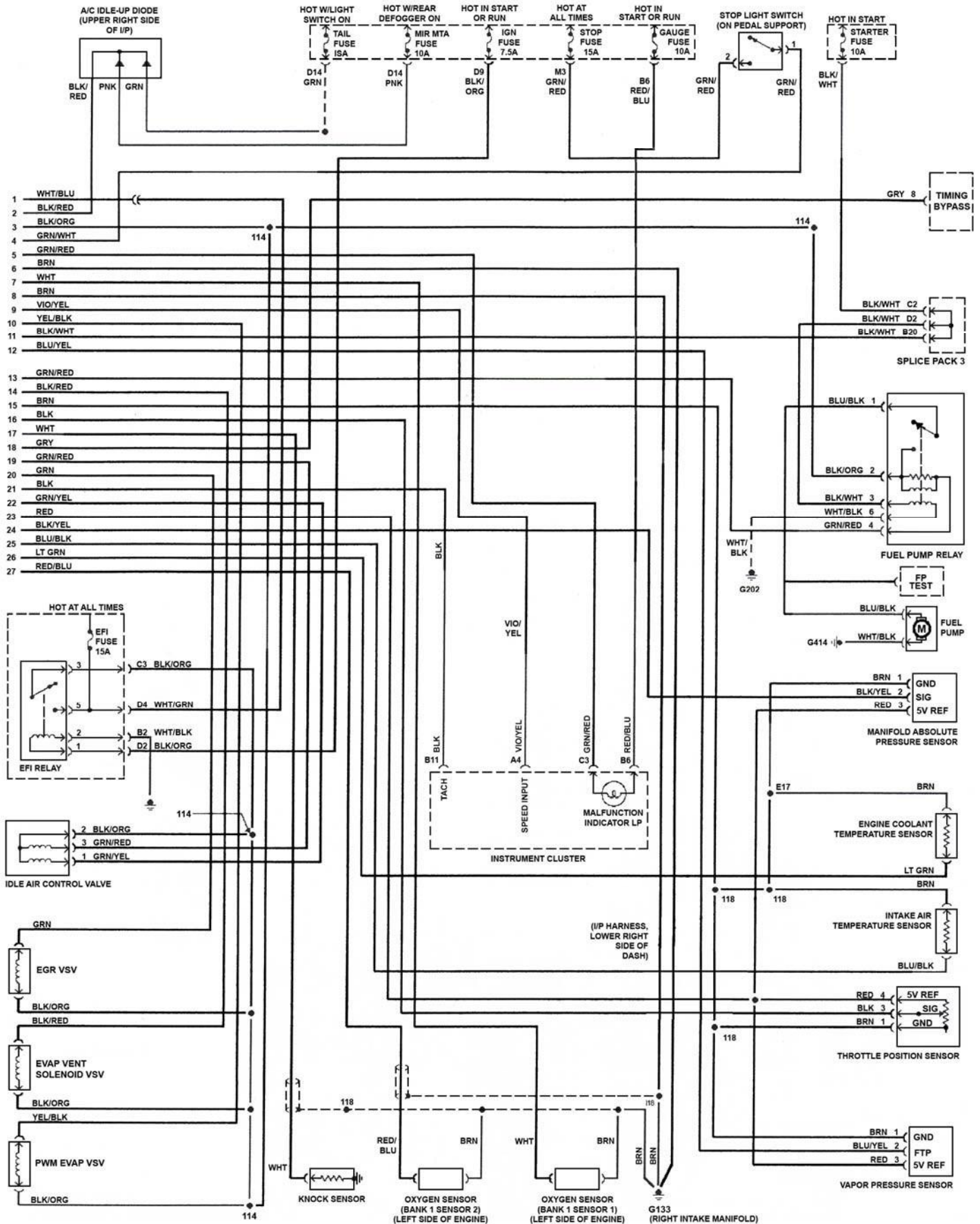
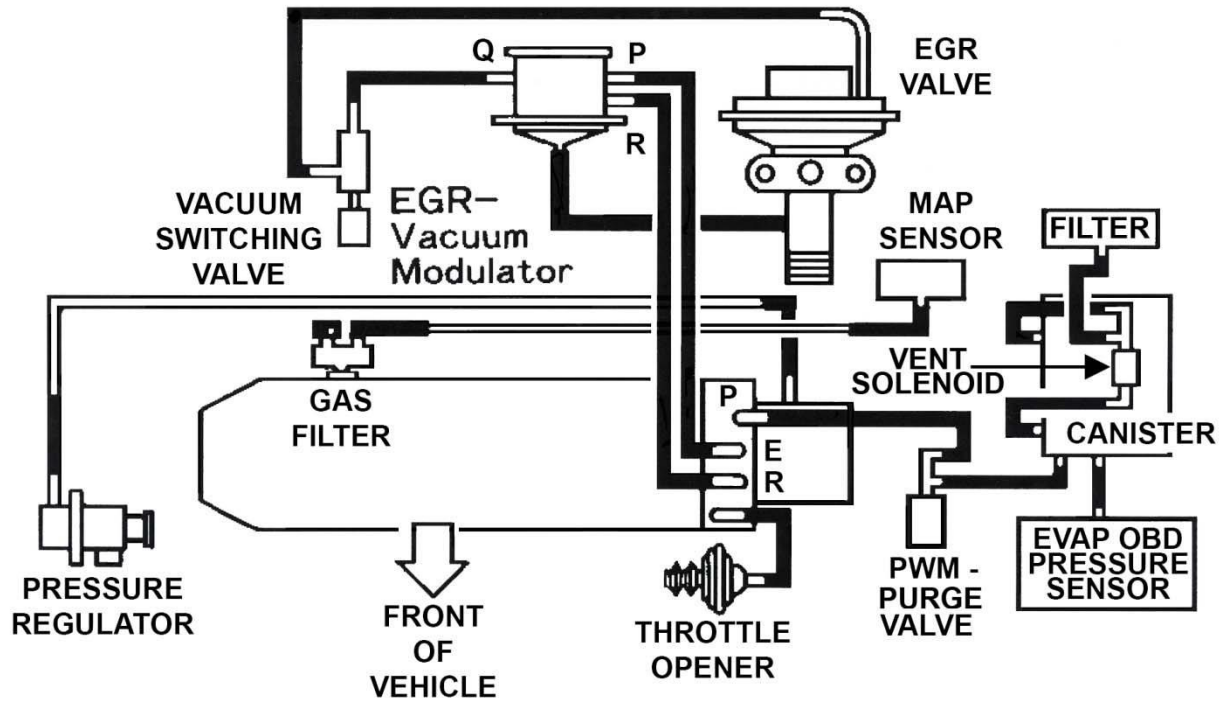


BAR REFERENCE VEHICLE

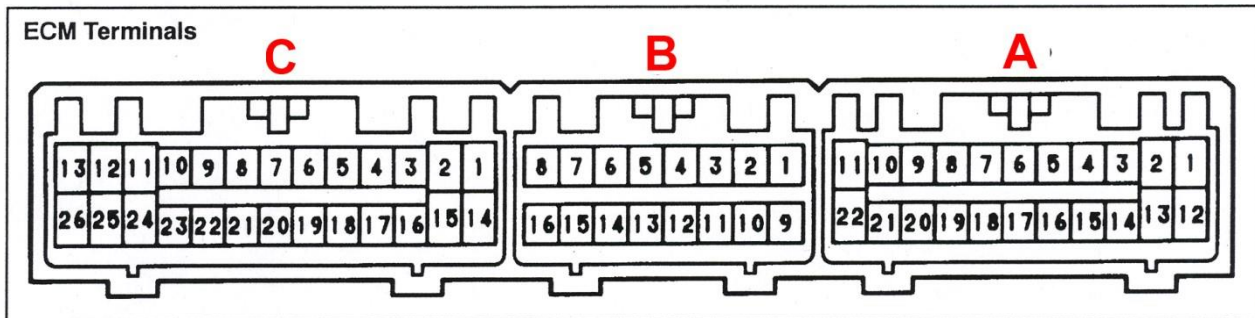


BAR REFERENCE VEHICLE





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Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
CONNECTOR "A"			
B+ = A1	WHT/BLU	Always	9 - 14
ELS = A2	BLU/RED	Defogger switch and taillight switch ON	Below 1.5
		Defogger switch and taillight switch OFF	Below 1.5
MIL = A5	GRN/RED	Idling	9 - 14
		IG switch ON	Below 3.0
OD SWT = A7	GRN/ORG	IG switch ON	O/D main switch pushed out 9 - 14
		IG switch ON	O/D main switch pushed in 0.0 - 2.0
VSS = A9	VIO/YEL	IG switch ON	Rotate driving wheel slowly Pulse generation
AC-R = A10	BLK/YEL	Idling	A/C switch ON Below 1.0
		Idling	A/C switch OFF 9 - 14
STA = A11	BLK/WHT	Cranking	6.0 or more
IGN = A12	BLK/ORG	IG switch ON	9 - 14
FP RELAY = A14	GRN/RED	IG switch ON	9 - 14
SDL = A16	WHT	During transmission	Pulse generation
AC-O = A21	LT GRN/BLK	Idling	A/C switch ON 9 - 14
		Idling	A/C switch OFF Below 1.0
PNP = A22	BLK/WHT	IG switch ON	Shift position P of N 0.0 - 3.0
		IG switch ON	Other shift position in P or N 9 - 14

CONNECTOR "B"

5 VOLT REF = B1	RED	IG switch ON	4.5 – 5.5
MAP = B2	BLK/YEL	IG switch ON	3.3 – 3.9
		Apply vacuum 26.7 kPa (200 mmHg, 7.9 IN. Hg)	2.6 – 3.0
IAT = B3	BLU/BLK	Idling Intake air temp. 20° C (68° F)	0.5 – 3.4
ECT = B4	LT GRN	Idling Engine coolant temp. 80° C (176° F)	0.2 – 1.0
O2S2 = B5	RED/BLU	Maintain engine speed at 2500 rpm for 2 min. after warming up	0.0 – 1.0
O2S1 = B6	WHT	Maintain engine speed at 2500 rpm for 2 min. after warming up	0.0 – 1.0
FTP SENSOR = B7	BLU/YEL	IG switch ON Disconnect hose from vapor pressure sensor	2.9 – 3.7
		Apply vacuum (less than 66.7 kPa (500 mmHg, 19.7 IN. Hg)	Below 0.5
EVAP VENT = B8	BLU/RED	IG switch ON	9 – 14
SG2 = B9	BRN	Always	0.0
TPS = B11	BLK	IG switch ON Throttle valve fully closed	0.3 – 1.0
		IG switch ON Throttle valve fully open	3.2 – 4.9
KS = B13	WHT	Idling	1.0
TIMING BYPASS = B15	GRY	IG switch ON	9 – 14

CONNECTOR "C"

ING REF = C3	WHT/RED	IG switch ON	4.5 – 5.5
		Idling	Pulse generation
CKP = C4	RED	Idling	Pulse generation
CMP = C5	BLU/GRY	Idling	Pulse generation
IAC = C9	GRN/RED	IG switch ON Disconnect "C" connector from ECM	9 - 14
IAC = C10	GRN/YEL		
INJ #1 = C12 INJ #2 = C25 INJ #3 = C11 INJ #4 = C24	WHT RED/BLU YEL RED/BLK	IG switch ON	9 - 14
		Idling	Pulse generation
CG1 = C13	WHT/BLK	Always	0.0
SG1 = C14	BRN	Always	0.0
IGT = C20	WHT	Idling	Pulse generation
EVAP PURGE = C22	YEL/BLK	IG switch ON	9 – 14
EGR = C23	GRN	IG switch ON	0 – 3
CG3 = C26	WHT/BLK	Always	0.0

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IGNITION COIL RESISTANCE

Application	Primary	Secondary
2.0 L 4-cylinder	0.36 – 0.65	8000 – 16,000

DISTRIBUTOR PICK-UP COIL IR GAP

Application	In. (mm)
2.0 L 4-cylinder	0.008 – 0.016 (0.20 – 0.40)

DISTRIBUTOR PICK-UP COIL RESISTANCE

Application	Pick-Up Coil Terminals	Ohms
2.0 L 4-cylinder	Measure resistance between terminals on pick-up coil.	125 – 275

CRANKSHAFT POSITION SENSOR RESISTANCE

Application	Ohms
2.0 L 4-cylinder	800 – 1500

SPARK PLUG SPECIFICATIONS

Application	Gap: In. (mm)	Torque: Ft. Lbs. (N.m)
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2.0 L 4-cylinder	0.043 (1.10)	13 (18)
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FIRING ORDER

Application	Firing Order
2.0 L 4-cylinder	1 – 3 – 4 - 2
Cylinder number one is located at timing belt or timing chain end of the engine. Cylinder number 4 is located at the flywheel end of the engine.	

IGNITION TIMING

Application	Specification
Base timing	10
ECM controlled timing	0 – 20
Check with engine at normal operating temperature, transmission in park/neutral with parking brake applied, electric cooling fan off and all accessories off.	
Check Base timing with timing bypass grounded..	

FUEL PUMP PERFORMANCE

Application	Pressure – psi (Kg/cm ²)
2.0 L 4-cylinder	38 – 44 (2.7 – 3.1)
Check fuel pressure with engine off and using scan tester connected to data link connector ignition on to activate fuel pump; or by connecting battery voltage to FP Test lead.	

REGULATED FUEL PRESSURE

Application	Specification
At idle with vacuum	40 – 45
At idle without vacuum	45 - 50

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FUEL PUMP RESISTANCE

Application	Ohms
2.0 L 4-cylinder	0.2 – 3.0

FUEL INJECTOR RESISTANCE

Application	Ohms
2.0 L 4-cylinder	13.8

IDLE SPEED SPECIFICATIONS

Application	RPM
2.0 L 4-cylinder	700 – 800
Check with engine at normal operating temperature, transmission in Park or Neutral, parking brake applied, ignition timing properly set, electric cooling fan off and all accessories off.	

THROTTLE OPENER SPECIFICATION

Application	RPM
2.0 L 4-cylinder	1300 – 1500
Check with engine at normal operating temperature and with electric cooling fan off.	

THROTTLE POSITION (TP) SENSOR

Application	Clearance: In. (mm)	Terminals	Volt
2.0 L 4-cylinder	0 (0)	3 & 1	0.6 – 4.6
2.0 L 4-cylinder	100%, WOT	3 & 1	4.6
2.0 L 4-cylinder	100%, WOT	4 & 1	5.0

Apply vacuum to throttle opener before checking TP sensor.