Charging System: Testing and Inspection
Pinpoint Tests

Test Note

CAUTION:

- Do not make jumper connections except as directed. Incorrect connections may damage the voltage regulator test terminals, fuses, or fuse links.
- Do not allow any metal object to come in contact with the generator housing and internal diode cooling fins.

NOTE:

- While carrying out any pinpoint test, disregard any DTCs set while following any specific pinpoint test. After the completion of any test, be sure to clear all codes in the PCM.
- All voltage measurements are referenced to the negative (-) battery post unless otherwise specified.

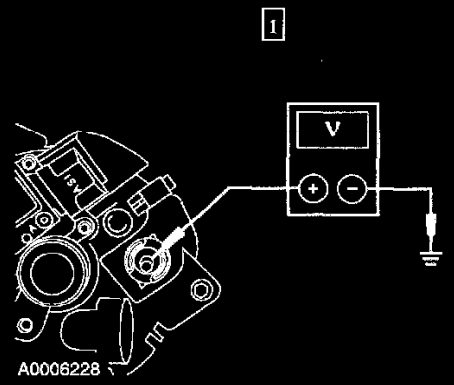
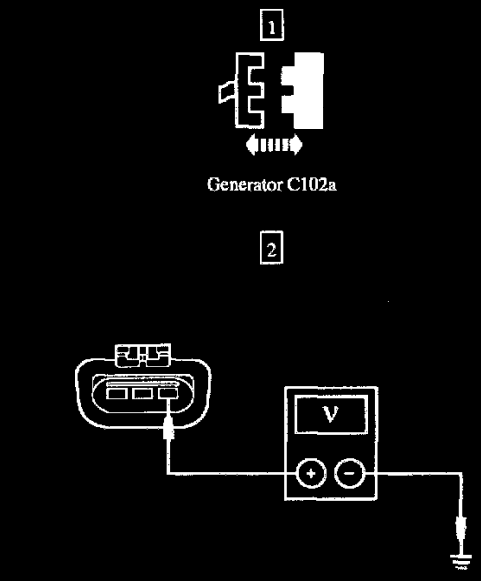
DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: BATTERY IS DISCHARGED OR VOLTAGE IS LOW

CONDITIONS	DETAILS/RESULTS/ACTIONS
A1 CHECK BATTERY CONDITION	
	1 Carry out the Battery—Condition Test to determine if the battery can hold a charge and is OK for use. Refer to Battery. • Is the battery OK? → **Yes** GO to **A2**. → **No** INSTALL a new battery. REFER to Battery. TEST the system for normal operation.
A2 CHECK THE GENERATOR OUTPUT	
	1 Carry out the On-Vehicle Generator Load/No Load Test. Refer to Component Tests. • Is the generator OK? → **Yes** GO to **A3**. → **No** GO to Pinpoint Test B.
A3 CHECK FOR CURRENT DRAINS	
	1 Carry out the Battery—Drain Test. Refer to Component Tests. • Are there any excessive current drains? → **Yes** REPAIR as necessary. TEST the system for normal operation. → **No** GO to **A4**.
A4 CHECK FOR CURRENT DRAINS WHICH SHUT OFF WHEN THE BATTERY IS DISCONNECTED	
	1 Carry out the Battery—Electronic Drains Which Shut Off When the Battery Cable is Disconnected Test. Refer to Component Tests. • Are there any current drains which shut off when the battery is disconnected? → **Yes** REPAIR as necessary. TEST the system for normal operation. → **No** GO to Pinpoint Test B.

DIAGNOSIS AND TESTING (Continued)

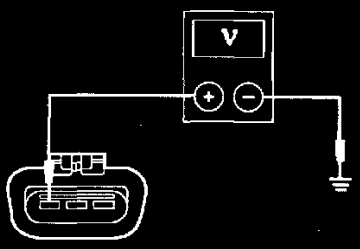
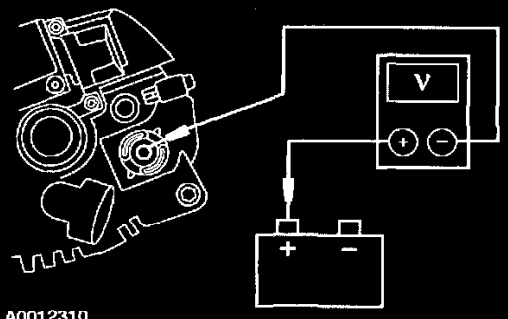
PINPOINT TEST B: THE CHARGING SYSTEM WARNING INDICATOR IS ON WITH THE ENGINE RUNNING (THE SYSTEM VOLTAGE DOES NOT INCREASE)

CONDITIONS	DETAILS/RESULTS/ACTIONS
B1 CHECK GENERATOR B+ CIRCUIT 36 (YE/WH)	
	1 Measure the voltage between generator C102b, B+ terminal circuit 36 (YE/WH), component side and ground. • Is the voltage equal to battery voltage (B+)? → **Yes** GO to **B2**. → **No** REPAIR the circuit. TEST the system for normal operation.
B2 CHECK GENERATOR A CIRCUIT 112 (BK/YE)	
	2 Measure the voltage between generator C102a pin 3, circuit 112 (BK/YE), harness side and ground. • Is the voltage equal to battery positive voltage (B+)? → **Yes** GO to **B3**. → **No** REPAIR the circuit. TEST the system for normal operation.
B3 CHECK I CIRCUIT 904 (LG/RD) FOR AN OPEN	
	

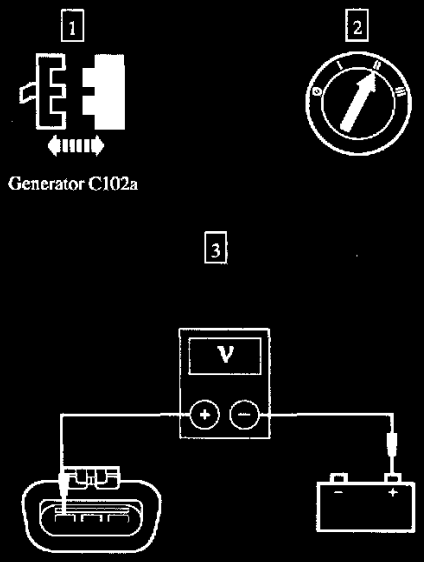
(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: THE CHARGING SYSTEM WARNING INDICATOR IS ON WITH THE ENGINE RUNNING (THE SYSTEM VOLTAGE DOES NOT INCREASE) (Continued)

CONDITIONS	DETAILS/RESULTS/ACTIONS
B3 CHECK I CIRCUIT 904 (LG/RD) FOR AN OPEN (Continued)	
3  A0006229	3 With the ignition switch in the RUN position and the engine off, measure the voltage between generator C102a pin 1, circuit 904 (LG/RD), harness side and ground. • Is the voltage equal to battery positive voltage (B+)? → **Yes** GO to **B4**. → **No** REPAIR the circuit. TEST the system for normal operation.
B4 CHECK FOR VOLTAGE DROP IN B+ CIRCUIT 36 (YE/WH)	
1  2  A0012310	2 With the engine at 2,000 rpm, measure the voltage drop between the generator C102b B+ terminal, circuit 36 (YE/WH), component side and positive battery terminal. • Is the voltage drop less than 0.5 volt? → **Yes** INSTALL a new generator. REFER to Alternator. TEST the system for normal operation. → **No** REPAIR high resistance in the B+ circuit 36 (YE/WH). TEST the system for normal operation.

PINPOINT TEST D: THE SYSTEM OVERCHARGES (BATTERY VOLTAGE IS GREATER THAN 15.5 VOLTS)

CONDITIONS	DETAILS/RESULTS/ACTIONS
D1 CHECK FOR VOLTAGE DROP IN A CIRCUIT 112 (BK/YE)	
	3 Measure the voltage drop between generator C102a pin 3, circuit 112 (BK/YE), harness side and positive battery terminal. • Is the voltage drop less than 0.5 volt? → **Yes** GO to **D2**. → **No** REPAIR the high resistance in A circuit 112 (BK/YE). TEST the system for normal operation.

(Continued)

D1

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: THE SYSTEM OVERCHARGES (BATTERY VOLTAGE IS GREATER THAN 15.5 VOLTS) (Continued)

CONDITIONS	DETAILS/RESULTS/ACTIONS
D2 CHECK GENERATOR AND BATTERY GROUND CONNECTIONS	
	2 Check the ground connections between the voltage regulator, generator and engine, and the battery and engine. • Are all good connections clean and tight? → **Yes** INSTALL a new generator. REFER to Alternator. TEST the system for normal operation. → **No** REPAIR ground connections as necessary. TEST the system for normal operation.

D2

PINPOINT TEST F: THE CHARGING SYSTEM WARNING INDICATOR IS ON WITH THE ENGINE RUNNING AND THE BATTERY INCREASES VOLTAGE

CONDITIONS	DETAILS/RESULTS/ACTIONS
F1 CHECK I CIRCUIT 904 (LG/RD) FOR A SHORT TO GROUND	
1  Generator C102a 2 	3 With the ignition switch in the RUN position, check the charging system warning indicator. • Is the charging system warning indicator illuminated? → **Yes** REPAIR I circuit 904 (LG/RD) for a short to ground. TEST the system for normal operation. → **No** INSTALL a new generator. REFER to Alternator. TEST the system for normal operation.

F1

PINPOINT TEST H: THE CHARGING SYSTEM WARNING INDICATOR IS OFF WITH THE IGNITION SWITCH IN THE RUN POSITION AND THE ENGINE OFF

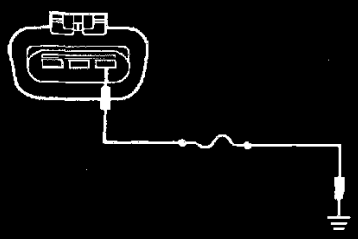
CONDITIONS	DETAILS/RESULTS/ACTIONS
H1 CHECK THE CHARGING SYSTEM WARNING INDICATOR LAMP	
1  Generator C102a	

(Continued)

H1

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: THE CHARGING SYSTEM WARNING INDICATOR IS OFF WITH THE IGNITION SWITCH IN THE RUN POSITION AND THE ENGINE OFF (Continued)

CONDITIONS	DETAILS/RESULTS/ACTIONS
H1 CHECK THE CHARGING SYSTEM WARNING INDICATOR LAMP (Continued)	
2  A0006236 3 	2 With the engine off, connect a fused (15A) jumper wire between the generator C102a pin 1, circuit 904 (LG/RD), harness side and ground. • Is the charging system warning indicator lamp illuminated? → **Yes** INSTALL a new generator. REFER to Alternator. TEST the system for normal operation. → **No** REFER to Instrument Panel, Gauges and Warning Indicators for diagnosis and testing of the instrument cluster.

H1

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: THE CHARGING SYSTEM WARNING INDICATOR FLICKERS OR IS INTERMITTENT

CONDITIONS	DETAILS/RESULTS/ACTIONS
J1 CHECK FOR LOOSE CONNECTIONS	
	[1] Check all generator, battery, and power distribution connections for looseness, corrosion, loose or bent terminals, or loose eyelets. • Are all connections clean and tight? → **Yes** GO to **J2**. → **No** REPAIR as necessary. TEST the system for normal operation.
J2 CHECK FUSES	
	[2] With the engine running, check BJB fuse 11 (15A) circuit 12 (BK/YE), for looseness by wiggling the fuse and noting the charging system warning indicator lamp operation. • Does the charging system warning indicator lamp flicker? → **Yes** REPAIR loose fuse connections as necessary. TEST the system for normal operation. → **No** GO to **J3**.
J3 CHECK A CIRCUIT 112 (BK/YE) CONNECTIONS	
	

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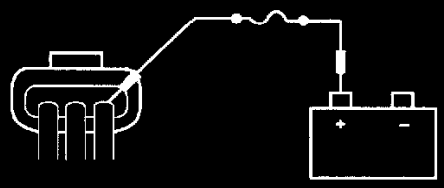
DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: THE CHARGING SYSTEM WARNING INDICATOR FLICKERS OR IS INTERMITTENT (Continued)

CONDITIONS	DETAILS/RESULTS/ACTIONS
J3 CHECK A CIRCUIT 112 (BK/YE) CONNECTIONS (Continued)	
2  A0006237 3 	2 Connect a fused jumper wire between generator C102a, pin 3, circuit 112 (BK/YE), harness side and the positive battery terminal. 4 With the engine running, note the charging system warning indicator operation. • Does the charging system warning indicator lamp flicker? → **Yes** REFER to Alternator. TEST the system for normal operation. → **No** REPAIR loose connection(s) in circuits. TEST the system for normal operation.

PINPOINT TEST L: THE GENERATOR IS NOISY

CONDITIONS	DETAILS/RESULTS/ACTIONS
L1 CHECK FOR ACCESSORY DRIVE NOISE	
	1 Check the accessory drive belt for damage and correct installation. Check the accessory mounting brackets and generator pulley for looseness or misalignment. • Is the accessory drive OK? → **Yes** GO to **L2**. → **No** REPAIR as necessary. REFER to Drive Belts, Mounts, Brackets and Accessories for diagnosis and testing of the accessory drive system. TEST the system for normal operation.
L2 CHECK GENERATOR MOUNTING	
	1 Check the generator mounting for loose bolts or misalignment. • Is the generator mounted correctly? → **Yes** GO to **L3**. → **No** REPAIR as necessary. TEST the system for normal operation.

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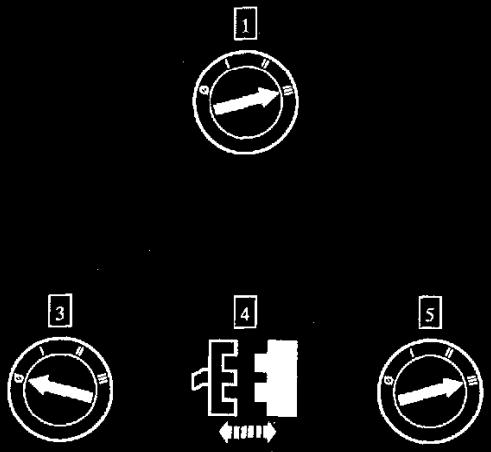
DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: THE GENERATOR IS NOISY (Continued)

CONDITIONS	DETAILS/RESULTS/ACTIONS
L3 CHECK GENERATOR FOR ELECTRICAL NOISE	
 Generator C102a	3 With the engine running, turn the headlights on, the rear defroster on, and the blower motor to the HI position. • Is the noise still present? → **Yes** GO to **L4**. → **No** INSTALL a new generator. REFER to Alternator. TEST the system for normal operation.
L4 CHECK GENERATOR FOR MECHANICAL NOISE	
 Generator C102a	4 Turn all accessories OFF. With the engine running, use a stethoscope or equivalent listening device to probe the generator for unusual mechanical noise. • Is the generator the noise source? → **Yes** INSTALL a new generator. REFER to Alternator. TEST the system for normal operation. → **No** REFER to Engine to diagnose the source of engine noise.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: RADIO INTERFERENCE

CONDITIONS	DETAILS/RESULTS/ACTIONS
M1 VERIFY GENERATOR IS SOURCE OF RADIO INTERFERENCE	
 Generator C102a	2 With the engine running, tune the radio to a station where the interference is present. 6 With the engine running, note any radio interference. • Is the interference present with the generator disconnected? → **Yes** REFER to Radio, Stereo, and Compact Disc for diagnosis and testing of the in-vehicle entertainment system. → **No** INSTALL a new generator. REFER to Alternator. TEST the system for normal operation.

M1