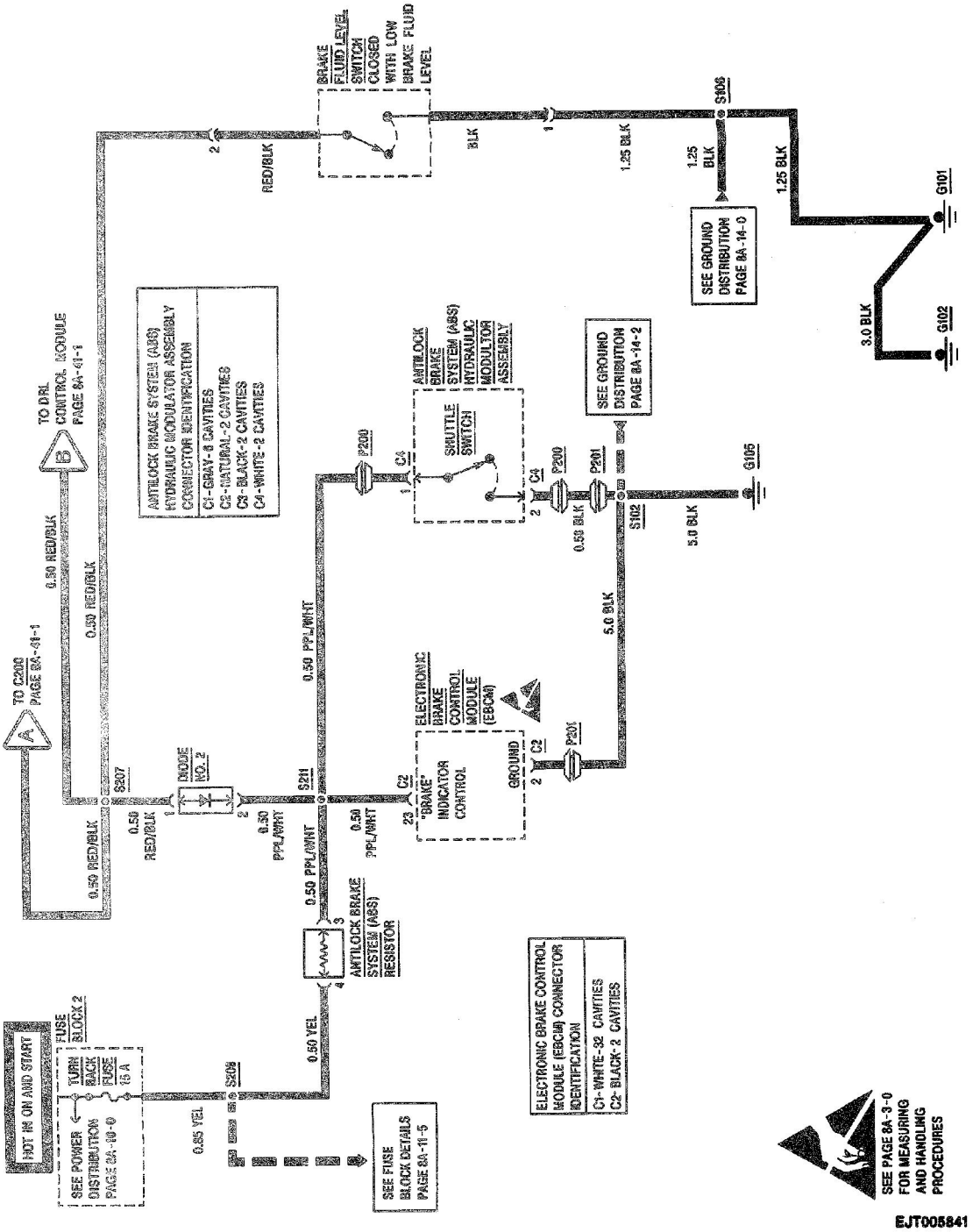
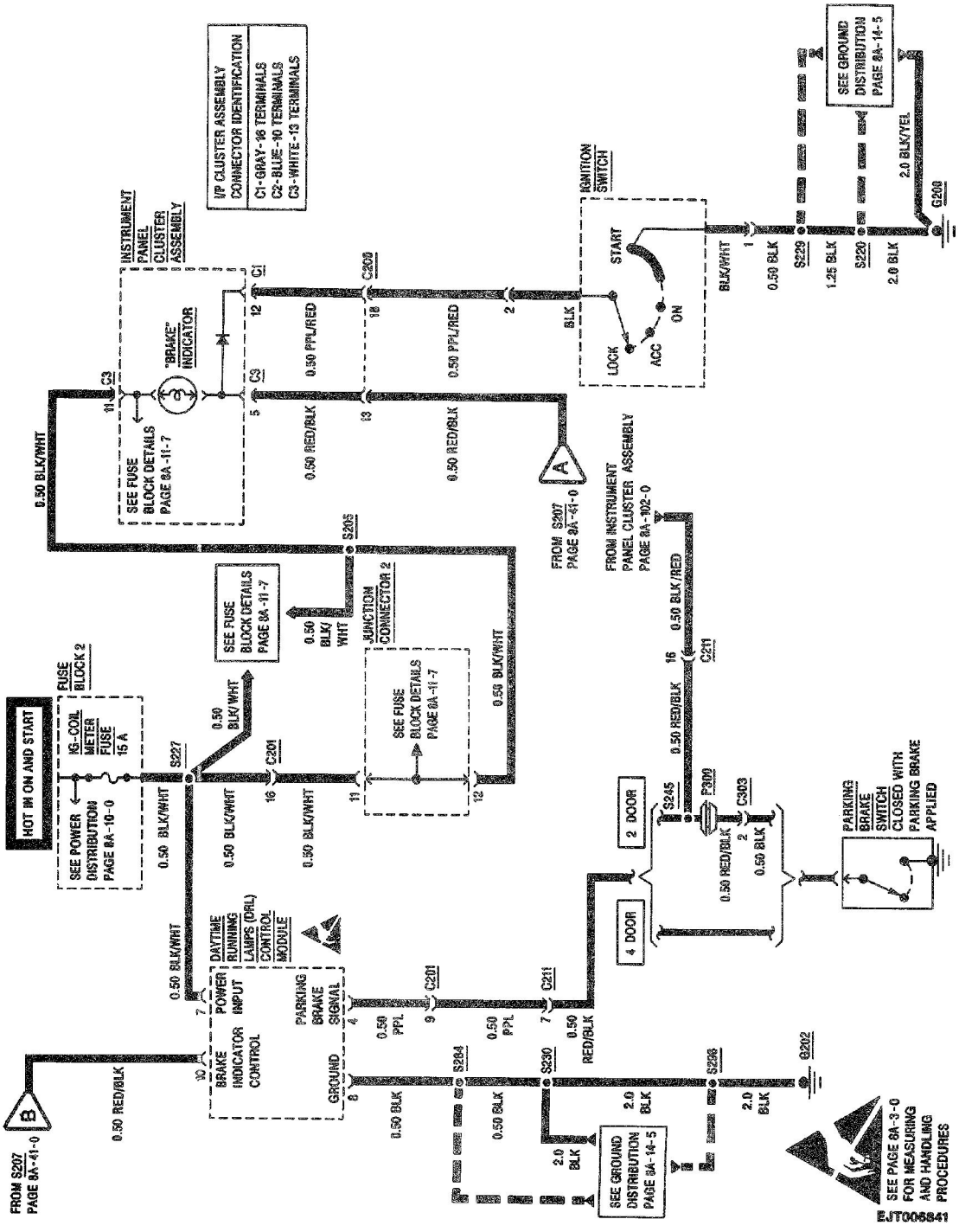
BRAKE WARNING



EJT005841


HOT IN ON AND START
FUSE BLOCK 2
IG-COIL METER FUSE 15 A
SEE POWER DISTRIBUTION PAGE 8A-10-0
S227
0.50 BLK/WHT
C201
SEE FUSE BLOCK DETAILS PAGE 8A-11-7
JUNCTION CONNECTOR 2
S205
0.50 BLK/WHT
0.50 BLK/WHT
INSTRUMENT PANEL CLUSTER ASSEMBLY
I/P CLUSTER ASSEMBLY CONNECTOR IDENTIFICATION
C1-GRAY-16 TERMINALS
C2-BLUE-10 TERMINALS
C3-WHITE-13 TERMINALS
"BRAKE" INDICATOR
C1
C3
C209
0.50 PPL/RED
0.50 RED/BLK
IGNITION SWITCH
START
LOCK
ACC
ON
BLK/WHT
0.50 BLK
S229
1.25 BLK
S220
2.0 BLK
2.0 BLK/YEL
G200
SEE GROUND DISTRIBUTION PAGE 8A-14-5
FROM S207 PAGE 8A-41-0
FROM INSTRUMENT PANEL CLUSTER ASSEMBLY PAGE 8A-102-0
0.50 BLK/RED
C211
2 DOOR
4 DOOR
S245
P300
C303
0.50 RED/BLK
0.50 BLK
PARKING BRAKE SWITCH CLOSED WITH PARKING BRAKE APPLIED
DAYTIME RUNNING LAMPS (DRL) CONTROL MODULE
BRAKE INDICATOR CONTROL
POWER INPUT
PARKING BRAKE SIGNAL
GROUND
0.50 PPL
0.50 RED/BLK
S284
S230
S296
G202
0.50 BLK
2.0 BLK
SEE GROUND DISTRIBUTION PAGE 8A-14-5
SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES
EJT0065841

BRAKE WARNING

COMPONENT	LOCATION	201-PG	FIG.	CONN
Antilock Brake System (ABS) Hydraulic Modulator Assembly	LH Rear Engine Compartment			
C4 (2 Cavities)	Main Harness to Shuttle Switch, LH Rear Engine Compartment	00	A	
Antilock Brake System (ABS) Resistor	RH I/P, behind I/P Compartment taped to Main Harness			
Brake Fluid Level Switch	LH rear of Engine Compartment in Brake Fluid Reservoir	04	A	
Daytime Running Lamps (DRL) Control Module	Behind I/P, left of Steering Column on Engine Control Module (ECM) mounting Bracket			102-02
Electronic Brake Control Module (EBCM) (with ABS)	Under LH I/P, right of Steering Column			
C2 (2 Cavities)	Main Harness to EBCM, behind I/P right of Steering Column	06	A	
Fuse Block 2	Under LH I/P	06	A	
Ignition Switch	On Steering Column	06	A	
Instrument Panel Cluster Assembly	LH I/P	07	A	
C1 (16 Terminals)	I/P Harness to I/P Cluster Assembly, behind I/P Cluster Assembly	07	A	81-03
C3 (13 Terminals)	I/P Harness to I/P Cluster Assembly, behind I/P Cluster Assembly	07	A	81-05
Junction Connector 2 (20 Cavities)	I/P Harness, LH side of I/P, behind Illumination Controller			
Parking Brake Switch	In Center Console, left of Parking Brake Lever			
C200 (22 Cavities)	Main Harness to I/P Harness, LH I/P near Fuse Block 2	06	A	202-06A1
C201 (16 Cavities)	Main Harness to I/P Harness, LH I/P near Fuse Block 2	06	A	202-07A1
C211 (16 Cavities)	I/P Harness to Floor Harness, LH I/P, near "A" Pillar	07	A	202-09A1
C303 (4 Cavities) (2-Door)	Floor Harness to Sub-Floor Harness, behind LH Rear Passenger Compartment Trim Panel	08	A	202-15A1
G101	On Bulkhead behind Distributor	04	A	
G102	RH Rear of Engine near Distributor			
G105 (ABS)	RH Inner Fender, near Battery	01	A	
G200	Behind LH I/P, above Fuse Block 2	06	A	
G202	Behind Center I/P on Bulkhead			
P200	LH Engine Compartment on Bulkhead, near Brake Master Cylinder	04	A	
P201	RH Rear Engine Compartment on Bulkhead, near Battery	01	A	
P300 (2-Door)	LH "A" Pillar, under I/P, behind LH Kick Panel	08	A	
S102	Main Harness, near P201			
S106	Main Harness, at Bulkhead near Ignition Coil			

COMPONENT	LOCATION	201-PG FIG. CONN
S205	I/P Harness, behind center of I/P	
S207	Main Harness, LH rear of Engine Compartment	
S208	Main Harness, near Fuse Block 2	
S211	I/P Harness, near I/P near LH Front Speaker	
S220	Main Harness, near I/P left of Steering Column	
S227	Main Harness, near Fuse Block 2	
S229	Main Harness, near I/P left of Steering Column	
S230	Main Harness, near I/P left of Steering Column	
S245	Floor Harness, near C211 connector breakout	
S284	Main Harness, left of Steering Column	
S298	Main Harness, at Blower Speed Selector Switch connector breakout	

TROUBLESHOOTING HINTS

1. Check the IG-COIL METER Fuse by starting the vehicle.
2. Check that the brake fluid level is adequate.
3. Check that the parking brake is fully released.
4. Check that the brake pipes and hoses are securely fastened and not leaking.
5. Check that grounds G101, G102, G105, G200, G201, and G202 are clean and tight.

SYSTEM DIAGNOSIS

TEST	RESULT	ACTION
1. Turn IGNITION SWITCH to "ON."	Brake Indicator does not light.	GO to step 2
	Brake Indicator lights.	GO to step 5.
2. Remove brake fluid reservoir cap and strainer. Manually hold down reservoir float.	Brake Indicator lights.	GO to step 3.
	Brake Indicator does not light.	GO to step 14.
3. Reinstall strainer and cap. Engage Parking Brake.	Brake Indicator lights.	GO to step 4.
	Brake Indicator does not light.	GO to step 18.
4. Release Parking Brake. Turn IGNITION SWITCH to BULB TEST.	Brake Indicator lights.	All systems diagnosed in this Section are functioning normally.
	Brake Indicator does not light.	GO to step 23.
5. Disconnect PARKING BRAKE SWITCH connector.	Brake Indicator goes out.	Replace PARKING BRAKE SWITCH.
	Brake Indicator remains lit.	GO to step 6.
6. Disconnect DAYTIME RUNNING LAMPS (DRL) CONTROL MODULE connector.	Brake Indicator goes out.	GO to step 7.
	Brake Indicator remains lit.	GO to step 10.

BRAKE WARNING

TEST	RESULT	ACTION
7. Connect a digital multimeter from DRL CONTROL MODULE connector cavity 4 to chassis ground. Measure resistance.	Less than infinite.	Repair short to ground in PPL or RED/BLK wire between DRL CONTROL MODULE and PARKING BRAKE SWITCH.
	Infinite.	GO to step 8.
8. Connect a digital multimeter from DRL CONTROL MODULE connector cavity 8 to chassis ground. Measure resistance.	More than 3.0 ohms.	Repair open in BLK ground wire between DRL CONTROL MODULE and G202.
	Less than 3.0 ohms.	GO to step 9.
9. Connect a test lamp from DRL CONTROL MODULE connector cavity 7 to chassis ground.	Test lamp does not light.	Repair open in BLK/WHT wire between DRL CONTROL MODULE and FUSE BLOCK 2.
	Test lamp lights.	Replace DRL CONTROL MODULE.
10. Disconnect BRAKE FLUID LEVEL SWITCH connector.	Brake Indicator goes out.	Replace BRAKE FLUID LEVEL SWITCH.
	Brake Indicator remains lit.	GO to step 11.
11. Disconnect INSTRUMENT PANEL CLUSTER ASSEMBLY connector C3.	Brake Indicator goes out.	GO to step 12.
	Brake Indicator remains lit.	GO to step 13.
12. Disconnect ELECTRONIC BRAKE CONTROL MODULE (EBCM) connector. Connect a digital multimeter from EBCM connector C2 cavity 23 to chassis ground. Measure resistance.	Less than infinite.	Repair short to ground in RED/BLK wire between INSTRUMENT PANEL CLUSTER ASSEMBLY, EBCM, and BRAKE FLUID LEVEL SWITCH.
	Infinite.	Refer to SECTION 5E1 for EBCM diagnosis.
13. Disconnect INSTRUMENT PANEL CLUSTER ASSEMBLY connector C1. Connect a digital multimeter from connector C1 terminal 12 to chassis ground. Measure resistance.	Less than infinite.	Check for a short to ground in PPL/RED wire. If OK, replace IGNITION SWITCH.
	Infinite.	Repair/replace INSTRUMENT PANEL CLUSTER ASSEMBLY PRINTED CIRCUIT.
14. Disconnect BRAKE FLUID LEVEL SWITCH connector. Connect a digital multimeter from connector cavity 1 to chassis ground. Measure resistance.	More than 0.3 ohms.	Repair open in BLK wire between BRAKE FLUID LEVEL SWITCH and G101.
	Less than 0.3 ohms.	GO to step 15.
15. Connect a digital multimeter from BRAKE FLUID LEVEL SWITCH connector cavity 2 to chassis ground. Measure voltage.	More than 10 volts.	Replace BRAKE FLUID LEVEL SWITCH.
	Less than 10 volts.	GO to step 16.
16. Backprobe INSTRUMENT PANEL CLUSTER ASSEMBLY connector C3 with a digital multimeter from terminal 5 to chassis ground. Measure voltage.	More than 10 volts.	Repair open in RED/BLK wire between INSTRUMENT PANEL CLUSTER ASSEMBLY and BRAKE FLUID LEVEL SWITCH.
	Less than 10 volts.	GO to step 17.
17. Backprobe INSTRUMENT PANEL CLUSTER ASSEMBLY connector C3 with a test lamp from terminal 11 to chassis ground.	Test lamp lights.	Repair/replace INSTRUMENT PANEL CLUSTER ASSEMBLY PRINTED CIRCUIT.
	Test lamp does not light.	Repair open in BLK/WHT wire between FUSE BLOCK and INSTRUMENT PANEL CLUSTER ASSEMBLY.

TEST	RESULT	ACTION
18. Disconnect PARKING BRAKE SWITCH connector. Connect a fused jumper from PARKING BRAKE SWITCH connector to chassis ground.	Brake Indicator lights.	Replace PARKING BRAKE SWITCH.
	Brake Indicator does not light.	GO to step 19.
19. Disconnect DRL CONTROL MODULE connector. Connect a digital multimeter from connector cavity 4 to chassis ground. Measure resistance with Parking Brake applied.	More than 5.0 ohms.	Repair open in PPL or RED/BLK wire between DRL CONTROL MODULE and PARKING BRAKE SWITCH.
	Less than 5.0 ohms.	GO to step 20.
20. Connect a digital multimeter from DRL CONTROL MODULE connector cavity 8 to chassis ground. Measure resistance.	More than 3.0 ohms.	Repair open in BLK ground wire between DRL CONTROL MODULE and G202.
	Less than 3.0 ohms.	GO to step 21.
21. Connect a test lamp from DRL CONTROL MODULE connector cavity 7 to chassis ground.	Test lamp does not light.	Repair open in BLK/WHT wire between DRL CONTROL MODULE and FUSE BLOCK 2.
	Test lamp lights.	GO to step 22.
22. Connect a digital multimeter from DRL CONTROL MODULE connector cavity 10 to chassis ground. Measure voltage.	More than 10 volts.	Replace DRL CONTROL MODULE.
	Less than 10 volts.	Repair open in RED/BLK wire between DRL CONTROL MODULE and S207.
23. Disconnect IGNITION SWITCH connector. Connect a digital multimeter from IGNITION SWITCH connector cavity 1 to chassis ground. Measure resistance.	More than 0.3 ohms.	Repair open in BLK ground wire between IGNITION SWITCH and G200.
	Less than 0.3 ohms.	GO to step 24.
24. Connect a digital multimeter from IGNITION SWITCH connector terminal 2 to terminal 1 (switch side). Measure resistance with IGNITION SWITCH in "BULB TEST."	More than 1.0 ohm.	Replace IGNITION SWITCH.
	Less that 1.0 ohm.	GO to step 25.
25. Disconnect INSTRUMENT PANEL CLUSTER ASSEMBLY connector C3. Connect a digital multimeter from C3 terminal 5 to IGNITION SWITCH connector cavity 2. Measure resistance.	More than 0.3 ohms	Repair open in PPL/RED wire between INSTRUMENT PANEL CLUSTER ASSEMBLY and IGNITION SWITCH.
	Less than 0.3 ohms.	Repair/Replace INSTRUMENT PANEL CLUSTER ASSEMBLY PRINTED CIRCUIT.

BRAKE WARNING

COMPONENT REPLACEMENT INFORMATION

For component replacement procedures, refer to the section listed below.

CIRCUIT OPERATION

With the IGNITION SWITCH in either "ON" or "START," voltage is applied through the IG-COIL METER Fuse to the "BRAKE" Indicator in the INSTRUMENT PANEL CLUSTER ASSEMBLY. Whenever the PARKING BRAKE is engaged, the BRAKE FLUID LEVEL SWITCH senses a low brake fluid condition, the SHUTTLE SWITCH senses unequal pressure in the brake pipes and hoses, or the ELECTRONIC BRAKE CONTROL MODULE (EBCM) senses a malfunction in the brake system, the "BRAKE" Indicator is provided with a ground and lights. The Brake Indicator can also be grounded through the IGNITION SWITCH when the key is turned to the BULB TEST position.

BLANK