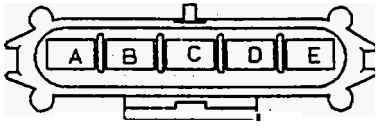
HARNESS CONNECTOR FACES

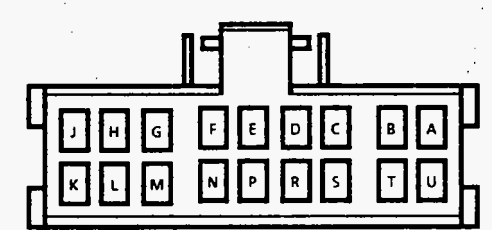
BLK 12034125
Cruise Control Module



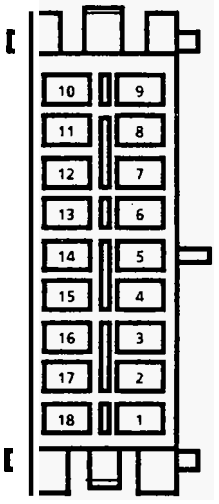
GRY 12020646
Cruise Control Servo

BLU 12015197
Brake Switch

S668 (VIN 7)	Engine harness, near relay bracket	201- 8-B
S668 (VIN A)	CCC harness, near blower motor.	201-20-B
S668 (VIN Y)	CCC harness, near barometric pressure sensor	201-17-B



C2 BLK



C1 BLK

V00017.0
Instrument Panel

TROUBLESHOOTING HINTS

- **Try the following checks before doing the System Check.**

1. Check Vacuum Hose for leaks, kinks, and/or restrictions. Also check Cruise Control Servo linkage. Refer to Section 9 for vacuum hose routing and servo linkage adjustments.
2. If the system works except for the Tap-Up and Tap-Down functions, replace the Cruise Control Module.

- **Go to System Check for a guide to normal operation.**
- **Go to System Diagnosis for diagnostic tests.**

SYSTEM CHECK (ROAD TEST)

- **Use the System Check Table as a guide to normal operation.**
- **Refer to System Diagnosis for a list of symptoms and diagnostic steps.**

SYSTEM CHECK TABLE

ACTION	NORMAL RESULT
Drive car faster than 25 mph Turn Cruise Switch ON Depress Set button at the end of the Multi-Function Lever	Cruise Indicator should light Car should maintain speed
Hold Set button in, foot off accelerator	Car should coast to a slower speed
Release Set button	Cruise Control should engage and hold a slower speed, if the new speed remains above 25 mph
Slide Cruise Switch to RIA and hold it there	Car should accelerate
Release Cruise Switch back to ON	Car should hold new faster speed
Tap brake pedal	Car should coast slower Cruise Indicator should go out
Slide Cruise Switch momentarily to RIA	Cruise Indicator should light Car should accelerate to former set speed
While cruising, accelerate, then remove foot from accelerator	Car should coast back to set speed
While cruising, tap Cruise Switch to RIA	Car speed should increase 1 mph for each tap, up to ten taps, then system must be reset to a new speed
While cruising, tap Set button	Car speed decreases 1 mph for each tap, until 25 mph is reached when Cruise Control will not operate
Slide Cruise Switch to OFF	Cruise Control turns off Cruise Indicator goes out

- Refer to System Diagnosis when a result is not normal.

(Continued on facing page)

- Test with Quick Checker or Digital Meter

Test	Action	With Quick Checker, Correct Response	Without Quick Checker, Using a Digital Meter			For Different Response, do Repair Action
			Meter Range	Connector Terminals	Correct Response	
1	Cruise Switch OFF	LAMP light on	200 VDC	B & J	Battery voltage	Q
		All other Lights off	200 VDC	A & J	0 volts	A
			200 VDC	M & J	0 volts	
2	Cruise Switch ON	ONIOFF light on	200 VDC	A & J	Battery voltage	B
		BRK light on	200 VDC	G & J	Battery voltage	C
		VENT light on	200 ohms	C & J	30 to 55 ohms	D
		VAC light on	200 ohms	K & J	30 to 55 ohms	E
		SPS light on	200 ohms	F & H	15 to 25 ohms	F
		RIA light off	200 VDC	M & J	0 volts	A
		SC light off	200 VDC	L & J	0 volts	A

(Continued from previous page)

Action		With Quick Checker, Correct Response	Without Quick Checker, Using a Digital Meter			For Different Response, do Repair Action
			Meter Range	Connector Terminals	Correct Response	
3	Cruise Switch ON, Set Switch pressed	SC light on	200 VDC	L & J	Battery voltage	G
		VAC & SHORT lights off	200 ohms	K & J	30 to 55 ohms	H
4	Cruise Switch in RIA	ONIOFF light on	200 VDC	A & J	Battery voltage	A
		RIA light on	200 VDC	M & J	Battery voltage	I
		VENT & SHORT lights off	200 ohms	C & J	30 to 55 ohms	J
5	Cruise Switch ON, drive wheels turned by hand	VSS light flashes on and off	200 VDC	A & D	Pulses between approximately battery voltage and less than 7 volts	K, L
6	Run engine for one minute, then turn it off With Ignition Switch in RUN and holding Cruise Switch in RIA, press and release Set Switch	Vacuum holds the servo at wide open throttle position	Connect fused jumper from C to M and from K to L before operating switches		Vacuum holds the servo at wide open throttle position	M
7	Quick Checker not connected		200 ohms	F & J	Over range	N
8	Quick Checker not connected		200 ohms	F & H	15 to 25 ohms	O

- If all results are correct, do Repair Action P.

REPAIR ACTION A: CRUISE SWITCH SHORT

Check for shorts to voltage in the wires to terminals G, A, M and L of the Module (see schematic).

- If the wires are good, replace the Multi-Function Lever.

REPAIR ACTION B: POWER CIRCUIT OPEN

1. Check the Cruise Fuse.
2. Check that terminal J is grounded.
3. Disconnect connector C235 and check for battery voltage at terminal A of the socket half with the Ignition in RUN.
   - If battery voltage is missing, check/repair PNK/BLK (139) wire.
4. Check continuity between terminals A and B of the pin half of connector C235 with the Cruise Switch ON.
   - If the Switch is open, replace the Multi-Function Lever.
5. Check for an open in GRY (397) wire between terminal B of connector C235 and terminal A of the module connector.

REPAIR ACTION C: BRAKE CIRCUIT OPEN

1. Check for an open Brake Switch (see schematic).
2. Check for an open in the BRN (86) wire to terminal G of the Module.

/ (Continued on facing page)

(Continued from facing page)

REPAIR ACTION D: VENT CIRCUIT OPEN

If you measured less than 30 ohms, perform Repair Action J. Otherwise, proceed to the following action.

Remove the connector from the Cruise Control Servo. Measure the resistance between terminals A and C of the Servo.

- If it is greater than 55 ohms, replace the Cruise Control Servo.
- If it is 55 ohms or less, check for an open DK BLU or DK BLU/WHT (403) wire between terminal C of the Module and terminal A of the Cruise Control Servo. Check that terminal C of the Servo connector is grounded (*see* schematic).

REPAIR ACTION E: VAC CIRCUIT OPEN

If you measured less than 30 ohms, perform Repair Action H. Otherwise, proceed to the following action.

Remove the connector from the Cruise Control Servo. Measure the resistance between terminals E and C of the Servo.

- If it is more than 55 ohms, replace the Servo.
- If it is 55 ohms or less, check for an open in the LT GRN (402) wire between terminal K of the Module and terminal E of the *Servo.* Check that terminal C of the Servo connector is grounded (see schematic).

REPAIR ACTION F: SPS CIRCUIT OPEN

If you measured less than 15 ohms, perform Repair Action N. Otherwise, proceed to the following action.

Remove the connector from the Cruise Control Servo. Measure the resistance between terminals B and D of the Servo.

- If it is more that 25 ohms, replace the Cruise Control Servo.
- If it is 25 ohms or less, check for an open in the LT BLUIBLK (399) wire between terminal H of the Module and terminal D of the Servo. Check for an open in the TAN (398) wire between terminal F of the Module and terminal B of the Servo.

REPAIR ACTION G: SC CIRCUIT OPEN

Disconnect C235 and check the switch continuity between terminals B and D of the pin half with the Set Switch pressed.

- If the Switch is open, replace the Multi-Function Lever.
- If the Switch is not open, check for an open in the DK BLU (84) wire between terminal D of connector C235 and terminal L of the Module.

REPAIR ACTION H: VAC CIRCUIT SHORT

Remove the connector from the Cruise Control Servo and measure the resistance between terminals C and E of the Servo.

- If it is less than 30 ohms, replace the Servo.
- If it is 30 ohms or more, check for a short to ground in the wire from terminal K of the Module to terminal E of the Servo.

REPAIR ACTION I: R/A CIRCUIT OPEN

Disconnect C235 and check Switch continuity between terminals A and C of the pin half with the Cruise Switch in RIA.

- If the Switch is open, replace the Multi-Function Lever.
- If the Switch is not open, check for an open in the GRY/BLK (87) wire between terminal C of connector C235 and terminal M of the Module.

REPAIR ACTION J: VENT CIRCUIT SHORT

Remove the connector from the Servo and measure resistance between terminals A and C of the Servo.

- If it is less than 30 ohms, replace the Servo.
- If it is 30 ohms or more, check for a short to ground in the wire from terminal C of the Module to terminal A of the Servo.

REPAIR ACTION K: VSS CIRCUIT OPEN

If the VSS light does not come on, or the voltage between terminals A and D remains less than 7 volts, check for an open in the RED (381) wire from the Vehicle Speed Sensor Buffer. Refer to page 33-0 for diagnosis of the Vehicle Speed Sensor.

(Continued on next page)

(Continued from previous page)

REPAIR ACTION L: VSS CIRCUIT SHORT

If the VSS light does not go off or battery voltage remains between terminals A and D, check for a short to ground on the RED (381) wire from the Vehicle Speed Sensor Buffer. Refer to page 33-0 for diagnosis of the Vehicle Speed Sensor.

REPAIR ACTION M: VACUUM SYSTEM

Check for a blocked or leaking Vacuum Source.

- If the vacuum source is good, plug the Vacuum Release Port and repeat Test 6 of the Test Directory.
- If the Vacuum now holds the throttle wide open, repair or replace the Vacuum Release Valve or the hose to it.
- If the test still fails, replace the Cruise Control Servo.

REPAIR ACTION N: SPS CIRCUIT SHORT

Disconnect the Cruise Control Servo connector and repeat Test 7 of the Test Directory.

- If the resistance is now over range, replace the Cruise Control Servo.
- If the resistance is still low, find and repair the short in the wire from terminal F of the Cruise Control Module to terminal B of the Cruise Control Servo.

REPAIR ACTION O: SPS SHORT

If all other tests were OK, replace the Cruise Control Servo.

REPAIR ACTION P: CRUISE MODULE

1. Check the resistance between G100 and G121.
   - If it is more than 0.1 ohm, clean and tighten both grounds and the negative battery cable. In cases where the ground circuit is suspect, add a ground strap between the engine block and the bulkhead.
2. Connect a new Cruise Control Module and check for normal operation.
   - If the Cruise Control operates normally, leave the new Module in permanently.
   - If the Cruise Control still does not operate normally, refer to the AC Custom Cruise 3 Systems Service Manual for further diagnostic procedures.

REPAIR ACTION Q: CRUISE INDICATOR OPEN

1. Check the GAGES Fuse.
2. Check the Cruise Indicator bulb.
3. Check the connections and wiring to the indicator for an open.
4. Check that terminal J of the Cruise Control Module connector is grounded.

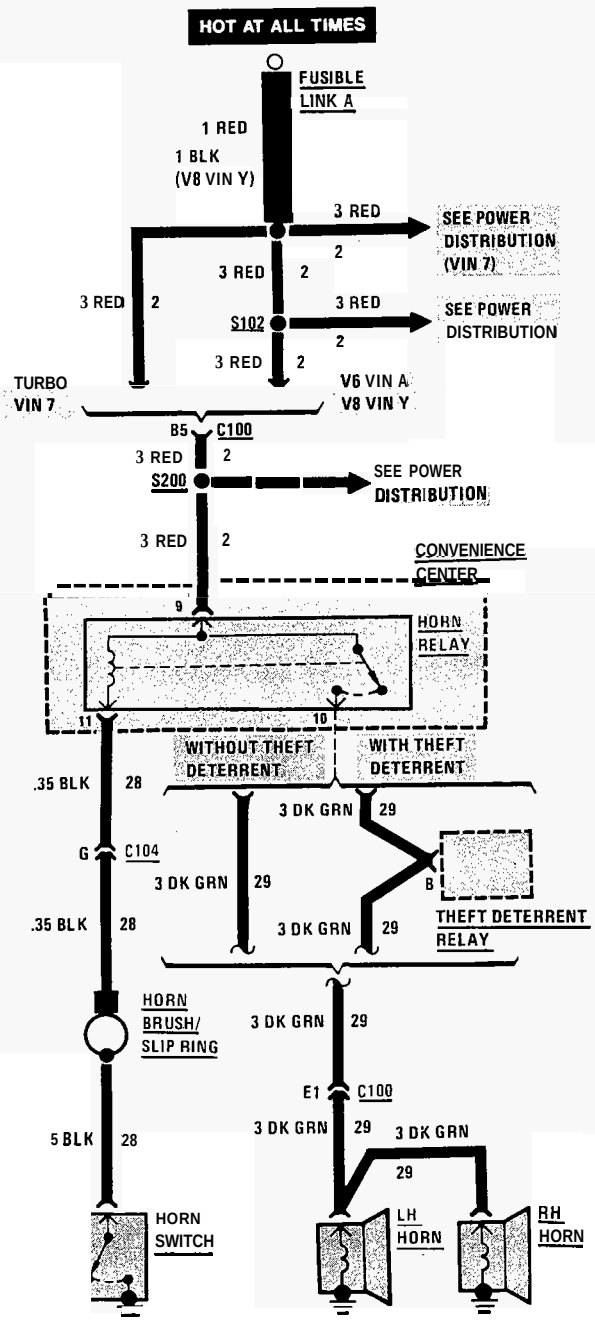
CIRCUIT OPERATION

The Cruise Control System operates a mechanical linkage to the throttle by means of a Vacuum Motor. This is a diaphragm moved by a vacuum applied to one side. A solenoid operated valve connects the Vacuum Motor to a Vacuum Tank. Another solenoid valve vents the vacuum to reduce the suction. The Cruise Control Module controls the vaccum motor and the throttle by pulsing these solenoid valves on and off.

One input to the Module is the vehicle speed. This input comes from the Vehicle Speed Sensor and Buffer Amplifier. If the actual speed signal is different from the speed that was set into and remembered by the module, the module generates pulses to change the vacuum and return the vehicle to the set speed. Other inputs to the Module are from the Cruise Switch and the Set Switch. A disconnect input to the Module comes from a switch on the brake pedal. A separate vacuum shut-down of the Cruise Control comes from the Vacuum Release Valve on the brake pedal.

The two outputs of the Module operate the coils of the Vacuum Valve and the Vent Valve. Both valves are located in the Cruise Control Servo. These valves move the Throttle by means of the Vacuum Motor. The Servo Position Sensor coil senses the position and motion of the Vacuum Motor. It feeds this information back to the module to provide smooth acceleration while the vehicle is in Cruise Control.

BLANK

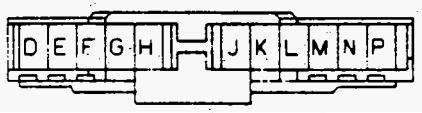

HOT AT ALL TIMES
FUSIBLE LINK A
1 RED
1 BLK (V8 VIN Y)
3 RED
2
SEE POWER DISTRIBUTION (VIN 7)
3 RED
2
3 RED
2
S102
3 RED
2
SEE POWER DISTRIBUTION
3 RED
2
TURBO VIN 7
V6 VIN A
V8 VIN Y
B5
C100
3 RED
2
S200
SEE POWER DISTRIBUTION
3 RED
2
CONVENIENCE CENTER
9
HORN RELAY
11
10
WITHOUT THEFT DETERRENT
WITH THEFT DETERRENT
.35 BLK
28
3 DK GRN
29
G
C104
3 DK GRN
29
B
THEFT DETERRENT RELAY
.35 BLK
28
3 DK GRN
29
HORN BRUSH/ SLIP RING
3 DK GRN
29
E1
C100
5 BLK
28
3 DK GRN
29
3 DK GRN
29
HORN SWITCH
LH HORN
RH HORN

HARNESS CONNECTOR FACES

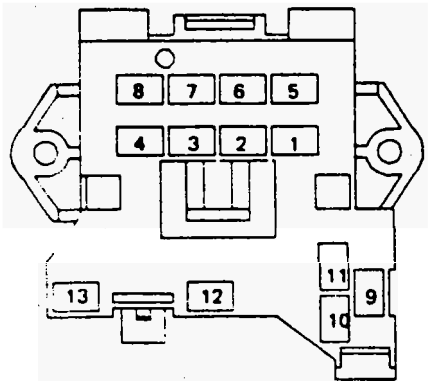
C100, See Page 202-0

COMPONENT LOCATION

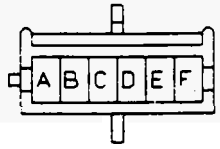
		Page-Figure
Convenience Center	Behind IIP, left of radio	201-15-A
Fusible Link A (VIN 7)	Engine harness, near starter solenoid	201- 6-B
Fusible Link A (VIN A)	Engine harness, near starter solenoid	201- O-A
Fusible Link A (VIN Y)	Engine harness, near starter solenoid	201- 5-A
Horn Brush/Slip Ring	Under hub of steering wheel	201-ll-C
Theft Deterrent Relay	Behind I/P, left of steering column	201-ll-A
C100 (45 cavities)	LH rear of engine compartment	201- 9-B
C104 (11 cavities)	Attached to RH side of steering column	201-13-A
S102 (VIN A)	Engine harness, near front of RH valve cover	201- 2-A
S102 (VIN Y)	Engine harness, rear of LH valve cover	201- 2-C
S200	IIP harness, to left of steering column	201-13-B



BLK 12004147
C104



BLK 12034299
Convenience Center
(Horn Relay)



BLK 8917540
Theft Deterrent Relay

TROUBLESHOOTING HINTS

- Try the following check before doing the System Diagnosis.

  If the Horns do not sound at all, check Fusible Link A by operating the Wipers.
- Go to System Diagnosis for diagnostic tests.

SYSTEM DIAGNOSIS

- Do the tests listed for your symptom in the Symptom Table below.
- Tests follow the Symptom Table.

SYMPTOM TABLE

SYMPTOM	FOR DIAGNOSIS
Horns sound continuously	Do Test A
None of the Horns sound	Do Test B
One of the Horns does not sound	Check the Horn and the DK GRN (29) wire for an open (see schematic)

A: HORN RELAY SHORT TEST

Connect: TEST LAMP
At: HORN RELAY CONNECTOR (Disconnected)

Connect Between	Correct Display	For Diagnosis
RED (2)& BLK (28)	Test Lamp OFF	See 1
DK GRN (29) & Ground	Test Lamp OFF	See 2

- If all results are correct, replace the Horn Relay.

1. Check BLK (28)wire and Horn Switch for a short (seeschematic).
2. Refer to Cell 133(Theft Deterrent only).

B: NONE OF THE HORNS SOUND (TABLE 1)

Connect: TEST LAMP
At: CONVIENENCE CENTER
Conditions:
- Hornrelay disconnected

Connect Between	Correct Display	For Diagnosis
RED (2) & Ground	Test Lamp ON	See 1
■ Horn Switch: ON		
RED (2) & BLK (28)	Test Lamp ON	See 2

- If all results are correct, ***go*** to Table 2.

1. Check the RED (2)wire for an open (see schematic).
2. Check the BLK **(28)** wire and the Hom Switch for an open (seeschematic).

B: NONE OF THE HORNS SOUND (TABLE 2)

Connect: FUSED JUMPER
At: HORN RELAY CONNECTOR (Disconnected)

Connect Between	Correct Result	For Diagnosis
9 (RED) & 10 (DK GRN)	Horns Sound	See 1

- If the test is good, replace the Horn Relay.

1. Go To Table 3

B: NONE OF THE HORNS SOUND (TABLE 3)

Connect: TEST LAMP
At: HORN CONNECTORS (Disconnected)
Condition:
- Fused Jumper from Table 2 connected

Connect Between	Correct Result	For Diagnosis
LH Horn Connector & Ground	Lamp ON	See 1
RH Horn Connector & Ground	Lamp ON	See 1

- If all the results are correct, replace the suspect Horn(s).

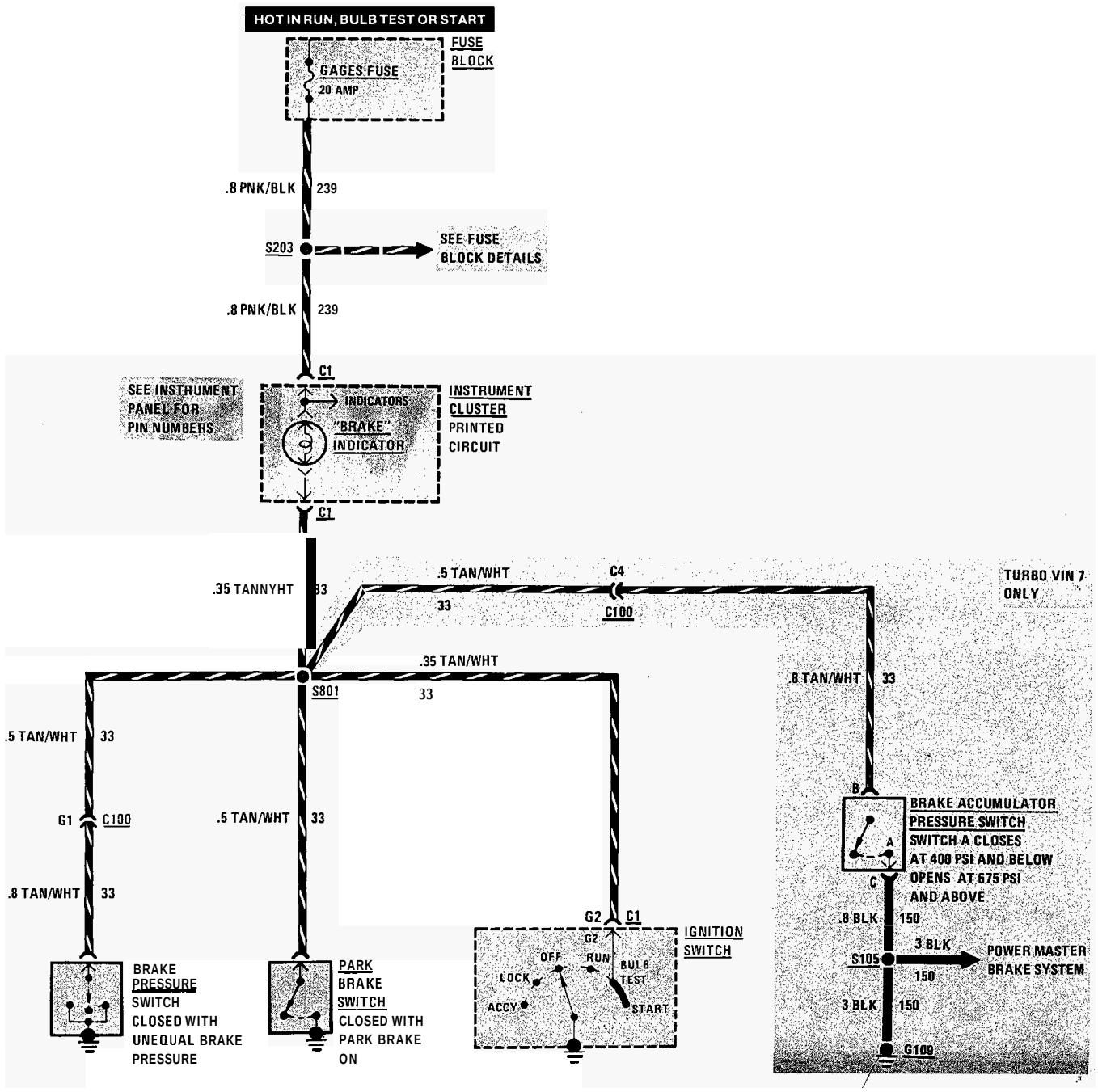
1. Check DK GRN (29)wire for an open (see schematic).

CIRCUIT OPERATION

When the Horn Switch is depressed, one side of the coil of the Horn Relay is grounded. The Relay is energized. It contacts close and battery is applied to the Horns.

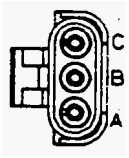
BLANK

BRAKE WARNING SYSTEM



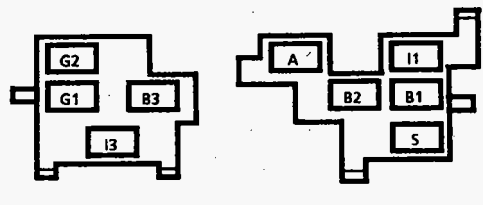
HARNESS CONNECTOR FACES

C100, See Page 202-0



BLK 12015793

Brake Accumulator Pressure Switch



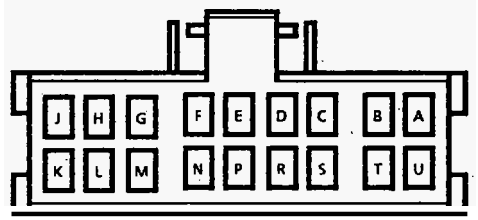
C1 BLK C2 BLU

V00019.0

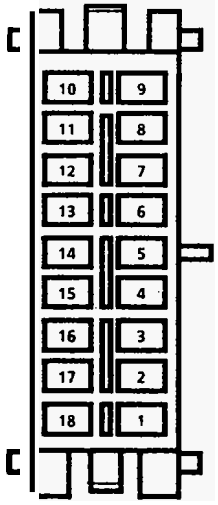
Ignition Switch

COMPONENT LOCATION

		Page-Figure
Brake Accumulator Pressure Switch (VIN 7).	LH rear of engine compartment, on brake master cylinder.	201- 9-A
Brake Pressure Switch.	Lower LH rear of engine compartment, on framerail..	201- 9-B
Fuse Block.	Under LH side of I/P.	201-12-A
Ignition Switch.	Base of steering column	201-13-A
Park Brake Switch	On park brake pedal support	201-12-C
C100 (45 cavities)	LH rear of engine compartment.	201- 9-B
G109	Rear of engine compartment, right of brake master cylinder.	201- 9-A
S105.	Engine harness, left of brake master cylinder	201- 9-A
S203.	I/P harness, above steering column	201-13-B
S801.	I/P harness, above fuse block.	201-12-A



C2 BLK



C1 BLK

V00017.0

Instrument Panel

TROUBLESHOOTING HINTS

- Try the following check before doing the System Check.

  Check the Gages Fuse and PNK/BLK (239) wire by observing other indicators in the Instrument Cluster with the Ignition Switch in RUN.
- Go to System Check for a guide to normal operation.
- Go to System Diagnosis for diagnostic tests.

SYSTEM CHECK

- Use the System Check Table as a guide to normal operation.
- Refer to System Diagnosis for a list of symptoms and diagnostic steps.

SYSTEM CHECK TABLE

ACTION	NORMAL RESULT
With the Park Brake released, turn the Ignition Switch slowly past the RUN position	BRAKE Indicator lights.
Release the Ignition Switch to the RUN position	BRAKE Indicator does not light
With the Ignition Switch in RUN, apply the Park Brake	BRAKE Indicator lights
Release the Park Brake	BRAKE Indicator does not light

- Refer to System Diagnosis when a result is not normal.

SYSTEM DIAGNOSIS

- Diagnostic steps for the symptoms listed in the following table are listed after the table.

SYMPTOM TABLE

A. BRAKE Indicator remains on with the Ignition Switch in RUN and the Park Brake off
B. BRAKE Indicator does not light at all
C. BRAKE Indicator does not operate for one or more warning functions (see schematic and System Check) but does operate for at least one warning function

A: BRAKE INDICATOR REMAINS ON WITH THE IGNITION SWITCH IN RUN AND THE PARK BRAKE OFF (TABLE 1)

Disconnect: CONNECTOR
At: BRAKE PRESSURE SWITCH
Conditions:
- Ignition Switch: RUN
- Park Brake: OFF

Disconnect	Correct Result	For Diagnosis
Brake Pressure Switch connector	BRAKE Indicator does not light	see 1

- If the result is correct, refer to Section 5 of the Chassis Service Manual to test the Brake Hydraulic System. Replace the Brake Pressure Switch if the Brake Hydraulic System is OK.

1. Go to Table 2 (Turbo Vin 7); Go to Table 3 (Except Turbo Vin 7).

Disconnect	Correct Result	For Diagnosis
Brake Accumulator Pressure Switch connector	..BRAKE Indicator does not light	See 1

A: BRAKE INDICATOR REMAINS ON WITH THE IGNITION SWITCH IN RUN AND THE PARK BRAKE OFF (TABLE 3)

Disconnect: CONNECTOR
At: PARK BRAKE SWITCH
Conditions:
- **Ignition Switch: RUN**
- **Park Brake: OFF**

Disconnect	Correct Result	For Diagnosis
Park Brake Switch connector	BRAKE Indicator does not light	See 1

- If the result is correct, replace the Park Brake Switch.

1. Go to Table 4.

A: BRAKE INDICATOR REMAINS ON WITH THE IGNITION SWITCH IN RUN AND THE PARK BRAKE OFF (TABLE 4)

Measure: RESISTANCE
At: IGNITION SWITCH (Disconnected)
Condition:
- **Ignition Switch: RUN**

Measure Between	Correct Resistance	For Diagnosis
G2 & Ground	Infinite Ohms	See 1

- If the result is correct, check/repair TAN/WHT (33) wires and Instrument Cluster Printed Circuit for a short to ground.

1. Replace the Ignition Switch.

B: BRAKE INDICATOR DOES NOT LIGHT AT ALL

Connect: FUSED JUMPER
At: CONNECTOR C100
Condition:
- **Ignition Switch: RUN**

Connect Between	Correct Result	For Diagnosis
C4 (TAN/WHT) & Ground	BRAKE Indicator lights	See 1

C: BRAKE INDICATOR DOES NOT OPERATE FOR ONE OR MORE WARNING FUNCTIONS (SEE SCHEMATIC AND SYSTEM CHECK) BUT DOES OPERATE FOR AT LEAST ONE WARNING FUNCTION

Turn the Ignition Switch to RUN. Connect a fused jumper to ground at the connector of the suspect switch.

- If the BRAKE Indicator comes on, replace the suspect switch.
- If the BRAKE Indicator doesn't come on, check the TAN/WHT (33) wire and associated connector for an open.

(Continued on next page)

(Continued from previous page)

CIRCUIT OPERATION

Battery voltage is applied to the BRAKE Indicator when the Ignition Switch is in RUN, BULB TEST, or START. Four switches are connected to the BRAKE Indicator. When any one of these switches closes, ground is provided and the Indicator lights.

The Ignition Switch provides a ground when it is in the BULB TEST and START positions. The BRAKE Indicator lights.

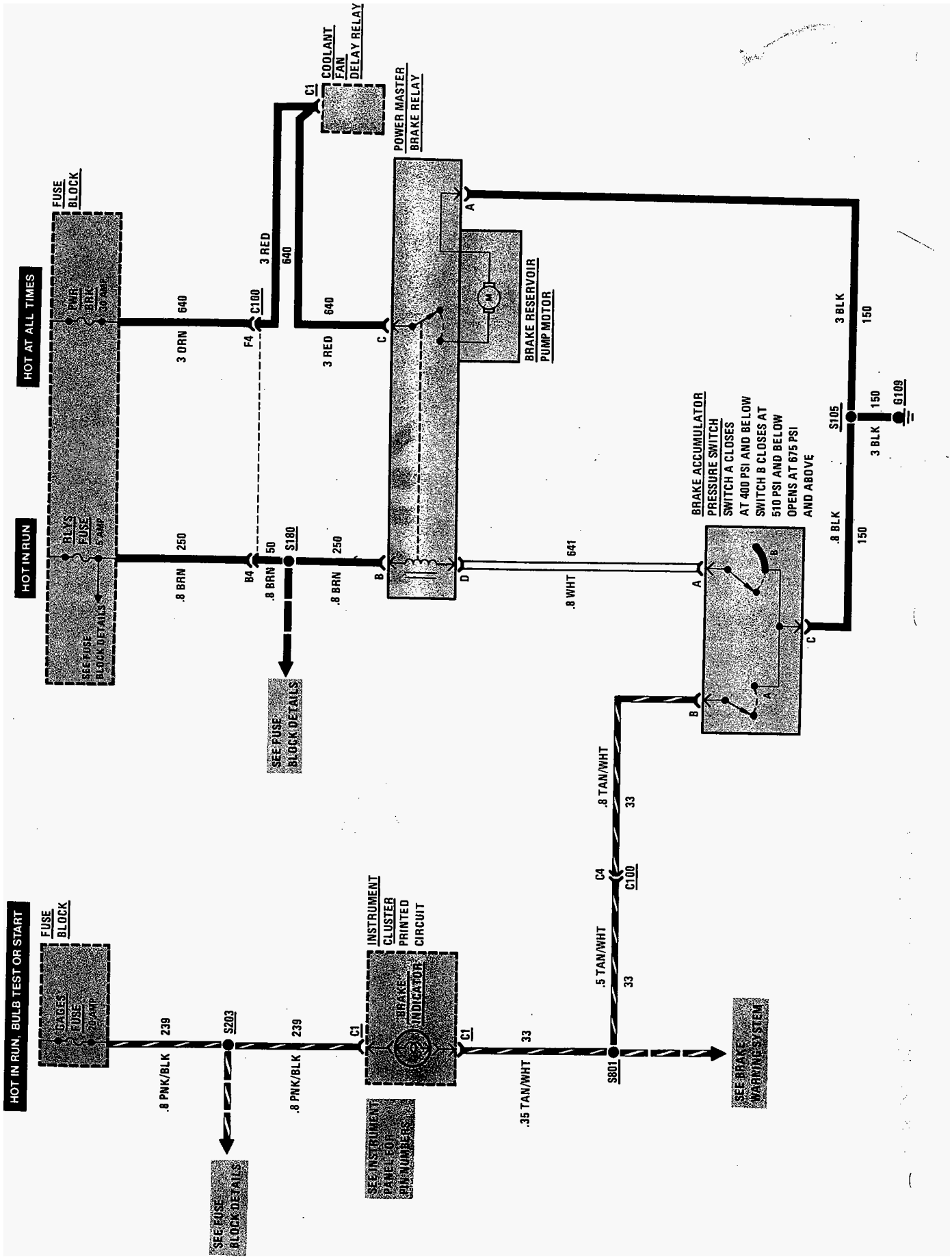
The Park Brake Switch provides a ground when the Park Brake is applied. The BRAKE Indicator lights to alert the driver.

The Brake Pressure Switch closes to light the BRAKE Indicator when there is low brake fluid in one of the two hydraulic brake systems. This could be caused by a leak in one of the brake lines. The Fluid Level Switch remains closed so that the Indicator comes on in the event of a hydraulic leak. The switch can be reset to an open condition by refilling the reservoir. This can only be accomplished after the faulty system has been repaired.

The Brake Accumulator Pressure Switch (TurboVin 7) closes to ground when the hydraulic pressure in the Power Master Brake System is low. The BRAKE Indicator lights to alert the driver.

BLANK

POWER MASTER BRAKE SYSTEM: TURBO VIN 7



POWER MASTER BRAKE SYSTEM: TURBO VIN 7

HARNESS CONNECTOR FACES

C100, See Page 202-0

V00025.0
Coolant Fan Delay Relay

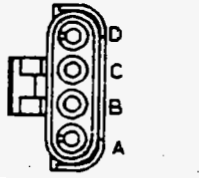
BLK 12015793
Brake Accumulator Pressure Switch

COMPONENT LOCATION

		Page-Figure
Brake Accumulator Pressure Switch.	LH rear of engine compartment, on brake master cylinder.	201- 9-A
Brake Reservoir Pump Motor (VIN 7)	LH front of dash, below brake master cylinder.	201- 9-A
Coolant Fan Delay Relay.	LH rear of engine compartment, above wheel well	201- 9-A
Fuse Block	Under LH side of I/P	201-12-A
Power Master Brake Relay	LH front of dash, below brake master cylinder.	201- 9-A
C100 (45 cavities)	LH rear of engine compartment.	201- 9-B
G109	Rear of engine compartment, right of brake master cylinder	201- 9-A
S105.	Engine harness, left of brake master cylinder.	201- 9-A
S180.	Engine harness, under brake master cylinder.	201- 9-A
S203.	I/P harness, above steering column	201-13-B
S801.	I/P harness, above fuse block	201-12-A

Instrument Cluster Connector (Digital), See Page 82-5

Instrument Cluster Connector (Indicators), See Page 80-6



BLK 12015797
Power Master Brake Relay

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Check.

1. Check the RLYS Fuse.
2. Check the PWR BRK Fuse.
3. Check the Brake Indicator bulb by turning the Ignition Switch to BULB TEST.

- Go to System Check for a guide to normal operation.
- Go to System Diagnosis for diagnostic tests.

SYSTEM CHECK

- Use the System Check Table as a guide to normal operation. Refer to the diagnosis given if other results occur.
- Tests follow in System Diagnosis.

ACTION	NORMAL RESULT	FOR DIAGNOSIS
With the Ignition Switch OFF, apply and release the Brake Pedal several times until pedal resistance increases (Park Brake OFF)	The BRAKE Indicator Light comes on	Do Test A
	The BRAKE Reservoir Pump Motor operates	Do Test B
Turn the Ignition Switch to RUN	The BRAKE Indicator light goes out	Do Test C
	The Brake Reservoir Pump Motor shuts off	Do Test D

- If all results are normal, the system is OK.

SYSTEM DIAGNOSIS

- Do the tests below when directed by the System Check

A: BRAKE INDICATOR OPEN CIRCUIT TEST

Measure: VOLTAGE
At: BRAKE ACCUMULATOR PRESSURE SWITCH CONNECTOR (Disconnected)
Conditions:
- Ignition Switch: RUN
- Park Brake: RELEASED

Measure Between	Correct Voltage	For Diagnosis
B (TAN/WHT) & Ground	Battery	See 1
B (TAN/WHT & C (BLK)	Battery	See2

- If the voltages are correct, replace the Brake Accumulator Pressure Switch.

1. Check TAN/WHT (33) wire for an open (see schematic).
2. Check BLK **(150)** wire for an open to ground (see schematic).

B: POWER MASTER BRAKE RELAY TEST (TABLE 1)

Connect: FUSED JUMPER
At: BRAKE ACCUMULATOR PRESSURE SWITCH CONNECTOR (Disconnected)
Conditions:
- Ignition Switch: RUN
- Power Master Brake System: DEPRESSURIZED (See System Check Table)

CAUTION: Do not allow the Brake Pump Motor to run for more than 20 seconds.

Jumper Between	Correct Results	For Diagnosis
A (WHT) & C (BLK)	Reservoir Pump Motor operates	

- If the result is correct, replace the Brake Accumulator Pressure Switch.

1. Go to Table **2.**

B: POWER MASTER BRAKE RELAY TEST (TABLE 2)

Measure: VOLTAGE
At: POWER MASTER BRAKE RELAY CONNECTOR (Disconnected)
Conditions:
- Ignition Switch: RUN
- Fused Jumper from Table 1 still connected

Measure Between	Correct Voltage	For Diagnosis
B (BRN) & Ground	Battery	See 1
C (RED) & Ground	Battery	See2
C (RED) & D (WHT)	Battery	See 3
C (RED) & A (BLK)	Battery	See4

- If all voltages are correct, remove Power Master Brake Relay/Brake Reservoir Pump Motor for repair.

1. Check BRN (250) wire for an open.
2. Check RED (640) wire for an open.
3. Check WHT (641) wire for an open.
4. Check BLK **(150)** for an open to ground (see schematic).

(Continued on next page)

(Continued from previous page)

C: BRAKE INDICATOR SHORT CIRCUIT TEST

Separate: CONNECTOR
At: BRAKE ACCUMULATOR PRESSURE SWITCH
Conditions:
- **Ignition Switch: RUN**
- **Park Brake: RELEASED**

Action	Correct Result	For Diagnosis
Remove Connector	BRAKE Indicator light shuts off	See **1**

- If the result is correct, refer to Section **5D4** of the Chassis Service Manual for Power Master diagnosis.

1. Check TAN/WHT **(33)** wire for a short to ground. Refer to Brake Warning System for futher diagnosis (see index).

D: POWER MASTER BRAKE CIRCUIT TEST

Remove: CONNECTOR
At: BRAKE ACCUMULATOR PRESSURE SWITCH
Conditions:
- **Ignition Switch: RUN**

Action	Correct Result	For Diagnosis
Remove Connector	Brake Reservoir Pump Motor shuts off	See 1

- If the result is correct, refer to Section **5D4** of the Chassis Service Manual for Power Master diagnosis.

1. Check WHT **(641)** wire for a short to ground. Remove the Power Master Brake Relay/Brake Reservoir Pump Motor for repair if the WHT **(641)** wire is **OK.**

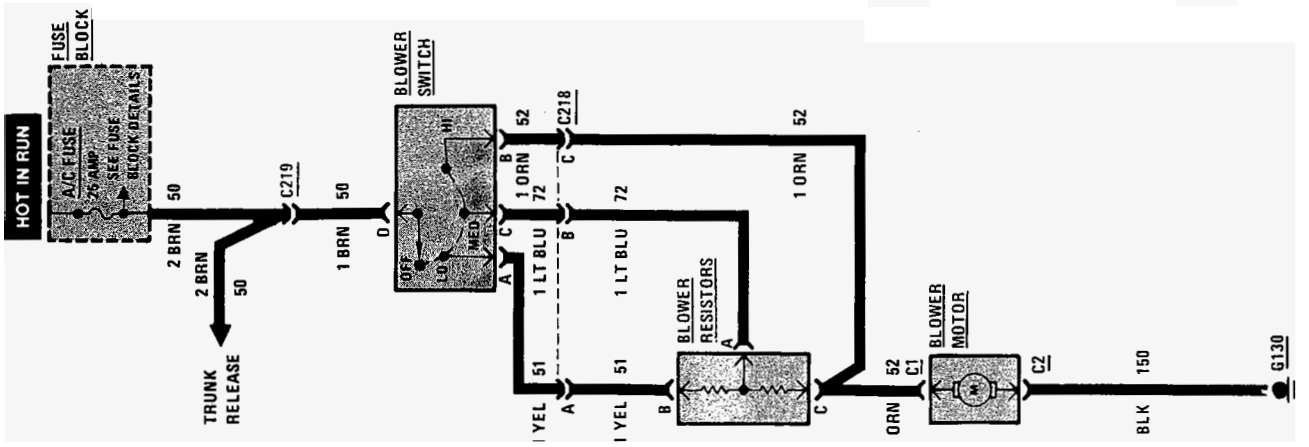
CIRCUIT OPERATION

The Power Master Brake System provides proper fluid pressure for the brake fluid accumulator. When the brake pedal is depressed, fluid from the accumulator acts on the booster power piston to apply the master cylinder.

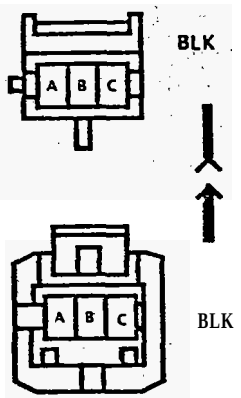
With the Ignition Switch in RUN, voltage is applied to the Power Master Brake Relay/Pump Motor Assembly. When the Brake Accumulator Pressure Switch senses accumulator pressure below **510** psi, switch B closes providing a path to ground for the Power Master Brake Relay. The relay contacts close, and the Brake Reservior Pump Motor operates to increase the accumulator fluid pressure. If the accumulator pressure drops below 400 psi, the Brake Accumulator Pressure Switch (switch A) closes providing a path to ground for the Brake Warning Light. The Brake Warning Light comes on.

BLANK

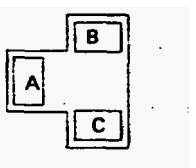
HEATER: WITHOUT AIR CONDITIONING



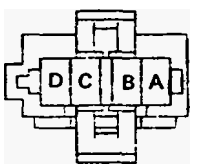
HARNESS CONNECTOR FACES



V03003.0
C218



WHT 08905646
Blower Resistors



BLK 12004067
Blower Switch

COMPONENT LOCATION

		Page-Figure
Blower Motor (VIN 7)	RH rear of engine compartment	201-19-B
Blower Motor (VIN A) (VIN Y)	RH rear of engine compartment	201-20-A
Blower Resistors	A/C module, left of blower motor	201-19-B
Fuse Block	Under LH side of I/P	201-12-A
C218 (3 cavities)	Under far RH side of IIP	201-17-A
C219 (1 cavity)	Behind I/P, near control head	201-17-A
G130	Behind RH side of IIP	201-20-A

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Check.

1. If the Blower Motor does not operate at all, check the A/C Fuse.
2. If the Blower Motor does not operate at all, check that **G130** is clean and tight.
3. If the Blower Motor does not turn **off,** install a new Blower Swtich.

- Go to System Check for a guide to normal operation.
- Go to System Diagnosis for diagnostic tests.

SYSTEM CHECK

- Use the System Check Table as a guide to normal operation.
- Refer to System Diagnosis for a list of Symptoms and Diagnostic Steps.

SYSTEM CHECK TABLE

ACTION	NORMAL RESULT
1. With the Ignition Switch in Run, set the Blower Switch to **OFF.**	Blower Motor does not operate.
2. Set the Blower Switch to LO.	Blower Motor operates at low speed.
3. Set the Blower Switch to MED.	Blower Motor operates faster at Medium **speed.**
4. Set the Blower Switch to HI.	Blower Motor operates faster at High speed.

- Refer to System Diagnosis when a result is not normal.

SYSTEM DIAGNOSIS

- **Do** the tests listed for your symptom in the Symptom Table below.
- Tests follow the Symptom Table.

SYMPTOM TABLE

SYMPTOM	FOR DIAGNOSIS
Blower Motor operates with the Blower Switch in OFF	Replace Blower Switch.
Blower Motor does not operate at all	**Test A** **Do Test C**
Blower Motor does not operate in HI but operates in LO and/or MED	Do Test A • Check ORN **(52)** wire for an open (see schematic)
Blower Motor does not operate in LO and/or MED but operates in HI	Do Test A Do Test B

- If your symptom does not appear in the Symptom Table perform all of the Tests.

A: BLOWER SWITCH TEST

Measure: VOLTAGE
At: BLOWER SWITCH CONNECTOR (Connected)
Condition:
- **Ignition Switch: RUN**

Measure Between	**Correct** Voltage	For Diagnosis
D (BRN) & Ground	Battery	See 1
• Set the Blower Switch to LO		
A (YEL) & Ground	Battery	**See2**
• Set the Blower Switch to MED		
C (LT BLU) & Ground	Battery	**See2**
• **Set** the Blower Switch to HI		
B (ORN) & Ground	Battery	**See2**

If all results are correct, **go** to the **Symp**tom Table.

1. Check/repair BRN **(50)** wire for **an** open (see schematic).
2. **Replace the Blower Switch.**

B: BLOWER RESISTORS TEST

Measure: VOLTAGE
At: BLOWER RESISTORS CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Blower Switch: LO**

Measure Between	Correct Voltage	For Diagnosis
B (YEL) & Ground	Battery	See 1
• Blower Switch MED		
A (LT BLU) & Ground	Battery	See2

- If all results are correct, replace the Blower Resistors.

1. Checklrepair YEL (51) wire for an open (seeschematic).
2. Check/repair LT BLU (72) wire for an open (seeschematic).

C: BLOWER MOTOR TEST

Measure: VOLTAGE
At: BLOWER MOTOR CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Blower Switch: HI**

Measure Between	Correct Voltage	For Diagnosis
ORN wire & Ground	Battery	See 1
ORN wire & BLK wire	Battery	See 2

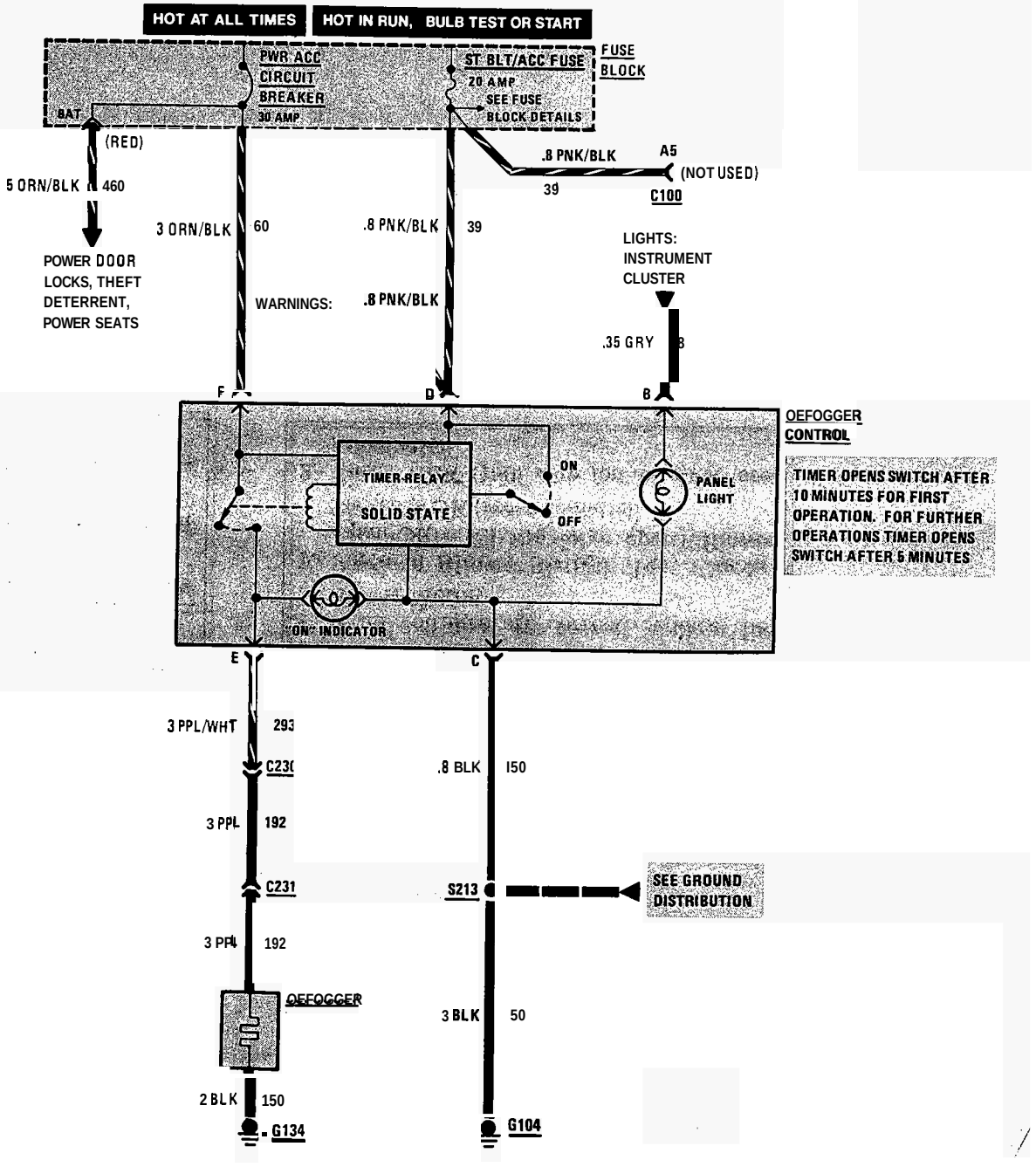
- If all voltages are correct, replace the Blower Motor.

1. Perform Blower Switch Test. Check/repair ORN **(52)** wire for an open if Blower Switch is OK (seeschematic).
2. Check BLK (150) wire for an open (see schematic).

CIRCUIT OPERATION

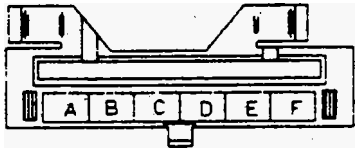
The Blower Motor delivers air to the interior of the vehicle. Its speed is controlled by the Blower Switch **and** the Blower Resistors. When the Ignition Switch is in RUN, battery voltage is applied to the Blower Switch. With the Blower Switch in LO, voltage is applied across both Blower Resistors and the Blower Motor. The Blower Motor runs at its slowest speed. With the Blower Switch in MED, one of the Blower Resistors is bypassed and the Blower Motor **runs** faster. When the Blower Switch is set to HI, battery voltage is applied directly to the Blower Motor, the Blower Motor **runs** at its fastest speed.

DEFOGGER


HOT AT ALL TIMES
HOT IN RUN, BULB TEST OR START
PWR ACC CIRCUIT BREAKER 30 AMP
ST BLT/ACC FUSE 20 AMP SEE FUSE BLOCK DETAILS
FUSE BLOCK
BAT
(RED)
5 ORN/BLK
460
POWER DOOR LOCKS, THEFT DETERRENT, POWER SEATS
3 ORN/BLK
60
.8 PNK/BLK
39
.8 PNK/BLK
39
A5
(NOT USED)
C100
WARNINGS:
.8 PNK/BLK
LIGHTS: INSTRUMENT CLUSTER
.35 GRY
F
D
B
DEFOGGER CONTROL
TIMER RELAY
SOLID STATE
ON
OFF
PANEL LIGHT
TIMER OPENS SWITCH AFTER 10 MINUTES FOR FIRST OPERATION. FOR FURTHER OPERATIONS TIMER OPENS SWITCH AFTER 5 MINUTES
"ON" INDICATOR
E
C
3 PPL/WHT
293
C230
3 PPL
192
C231
3 PPL
192
DEFOGGER
2 BLK
150
G134
.8 BLK
150
S213
SEE GROUND DISTRIBUTION
3 BLK
50
G104

HARNESS CONNECTOR FACES

C100, See Page *202-0*



WHT 12020031

Defogger Control

COMPONENT LOCATION

		Page-Figure
Fuse Block.	Under LH side of I/P.	201-12-A
C100 (45 cavities)	LH rear of engine compartment.	201- 9-B
C230 (1 cavity)	Under LH side of I/P, above fuse block	201-13-C
C231 (1 cavity)	In LH sail panel, near defogger	
G104	Behind I/P, to left of steering column.	201-15-A
G134	Above rear window	
S213.	I/P harness, above radio.	201-16-A

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Check.

1. Check the PWR/ACC Circuit Breaker by operating the Power Seats (if equipped).
2. Check the ST BLT/ACC Fuse by operating the Illuminated Entry system.

- Go to System Check for a guide to normal

SYSTEM CHECK

- Use the System Check Table as a guide to normal operation. Refer to the diagnosis given if other results occur.
- Tests follow in System Diagnosis.

ACTION	NORMAL RESULT	FOR DIAGNOSIS OF OTHER RESULTS
With the Ignition Switch in RUN, depress the Rear Defogger Switch	The switch button returns to the rest position and the ON indicator in the center of the Defogger Control glows	Do Test A
	The rear window becomes warm	Do Test B
	The ON Indicator and the Defogger turn off after approximately 10 minutes	Replace the Defogger Control
Depress the Rear Defogger Switch again	The ON Indicator and the Defogger turn off after approximately 5 minutes	Replace the Defogger Control
Turn the Headlight Switch to HEAD or PARK	The Panel Light comes on	Do Test C

SYSTEM DIAGNOSIS

- Do the tests below when directed by the System Check.

A: DEFOGGER CONTROL TEST

Measure: VOLTAGE
At: DEFOGGER CONTROL CONNECTOR (Disconnected)
Condition:
- Ignition Switch: RUN

Measure Between	Correct Result	For Diagnosis
F (ORN/BLK) & Ground	Battery	See 1
D (PNK/BLK)	Battery	See 2
D (PNK/BLK) & C (BLK)	Battery	See 3

- If all results are correct, replace the Defogger Control.

1. Check ORN/BLK (60) wire for an open (see schematic).
2. Check PNK/BLK (39) wire for an open (see schematic).
3. Check BLK (150) wire for an open to ground (see schematic).

(Continued on next page)

(Continued from previous page)

B: DEFOGGER TEST (TABLE 1)

Measure: VOLTAGE
At: DEFOGGER CONTROL CONNECTOR (Connected)
Conditions:
- **Ignition Switch: RUN**
- **Defogger Switch: ON**
- **Instrument Panel lights at full brightness**

Measure Between	Correct Voltage	For Diagnosis
E (PPL/WHT) & Ground	Battery	See 1

- If the voltage is correct, go to Table 2.

1. Replace the Defogger Control.

B: DEFOGGER TEST (TABLE 2)

Measure: VOLTAGE
At: DEFOGGER CONNECTOR C231 HARNESS HALF (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Defogger Switch: ON**

Measure Between	Correct Voltage	For Diagnosis
(PPL) wire & Ground	Battery	For Diagnosis

- If the voltage is correct, repair the Defogger. Refer to section 2 of the Body Service Manual for repair procedures.

1. Check PPL (192) wire and PPL/WHT (293) wire for an open (see schematic).

): PANEL LIGHT TEST

Measure: VOLTAGE
At: DEFOGGER CONTROL CONNECTOR (Connected)
Condition:
- **Headlight Switch: HEAD**

Measure Between	Correct Voltage	For Diagnosis
B (GRY) & Ground	Battery	See 1

- If the voltage is correct, check bulb. Replace the Defogger Control if the bulb is OK.

1. Check GRY (8) wire for an open (see schematic).

CIRCUIT OPERATION

With the Ignition Switch in RUN, voltage is applied to the Defogger Control. When the Defogger Control Switch is moved to the ON position, voltage is then applied to the Defogger Timer Relay. The contact closes which provides voltage to the ON Indicator and the Defogger. The rear window will become warm to remove fog from the surface of the window.

The contact in the Defogger Control will stay closed until the Defogger Control Switch is turned off, or the timer cycle is complete.

The first time the Rear Defogger Switch is pushed in, the Timer-Relay will allow the Defogger to operate 10 minutes. Each time after the Rear Defogger Switch is pushed in, the Timer-Relay will allow the Defogger to operate for a maximum of 5 minutes. The Timer-Relay will reset to 10 minutes when the Ignition Switch is turned OFF and then back to the RUN position.

The timer also shuts off at any time when the Defogger Control On-Off Switch is depressed OFF. In order to reset the Defogger Timer-Relay for the initial 10 minute time interval, the Ignition Switch must be turned OFF and then back to RUN position before activating the Defogger.

- Use the System Check Table as a guide to normal operation. All of the checks can be performed without the use of tools or disassembly of components.
- Even though one or more checks may not give the normal result, complete the entire system check to reveal all symptoms which may exist.

AIR CONDITIONING: C60

- Temperature outside car at **60°F(16°C)** or Higher.

SET A/C Controls	Normal Result	Refer to Section
1. OFF Fan LO	Blower is not running	8A-63 Blower Controls
2. Move Temperature lever rapidly back and forth	Temperature Door hits stop in each direction	8A-65 Air Delivery
3. HEATER Temperature lever at HOT	Blower runs at low speed Warm air flows from floor outlets Slight air flow at windshield outlets	8A-63 Blower Controls 8A-65 Air Delivery
4. Move Fan Switch through M1, M2, to HI	Increased air flow at each step	8A-63 Blower Controls
5. DEF	Warm air flows from windshield outlets Compressor turns on and may cycle ON and OFF Engine Idle speed increases	8A-65 Air Delivery 88-64 Compressor Controls 6E Driveability and Emissions
6. VENT	Outside air flows from Instrument Panel outlets Compressor remains OFF	8A-65 Air Delivery
7. BI-LEVEL Set Temperature Lever to "COLD"	Air flows from Instrument Panel and floor outlets Compressor turns on Engine cooling fan may run Air flow becomes cold	8A-65 Air Delivery 8A-64 Compressor Controls 8A-31 Cooling Fans 8A-64 Compressor Controls
8. NORMAL	Air flows from Instrument Panel outlets Compressor continues to run	8A-65 Air Delivery 8A-64 Compressor Controls
9. MAX	Blower noise increases as outside air door closes	8A-65 Air Delivery
10. Quickly rotate steering wheel to stop	Compressor momentarily turns off	8A-64 Compressor Controls
11. OFF	Blower and compressor turn off	8A-63 Blower Controls 8A-64 Compressor Controls

AIR CONDITIONING: SYSTEM CHECK

- **If all the steps in the previous table can be completed as described, the C60 Air conditioning and heating system is operating normally.**

AIR CONDITIONING: C68, ELECTRONIC

SYSTEM CHECK TABLE

Conditions:
- **Engine warm and running at idle**
- **Temperature outside car at 60°F (16°C) or higher**

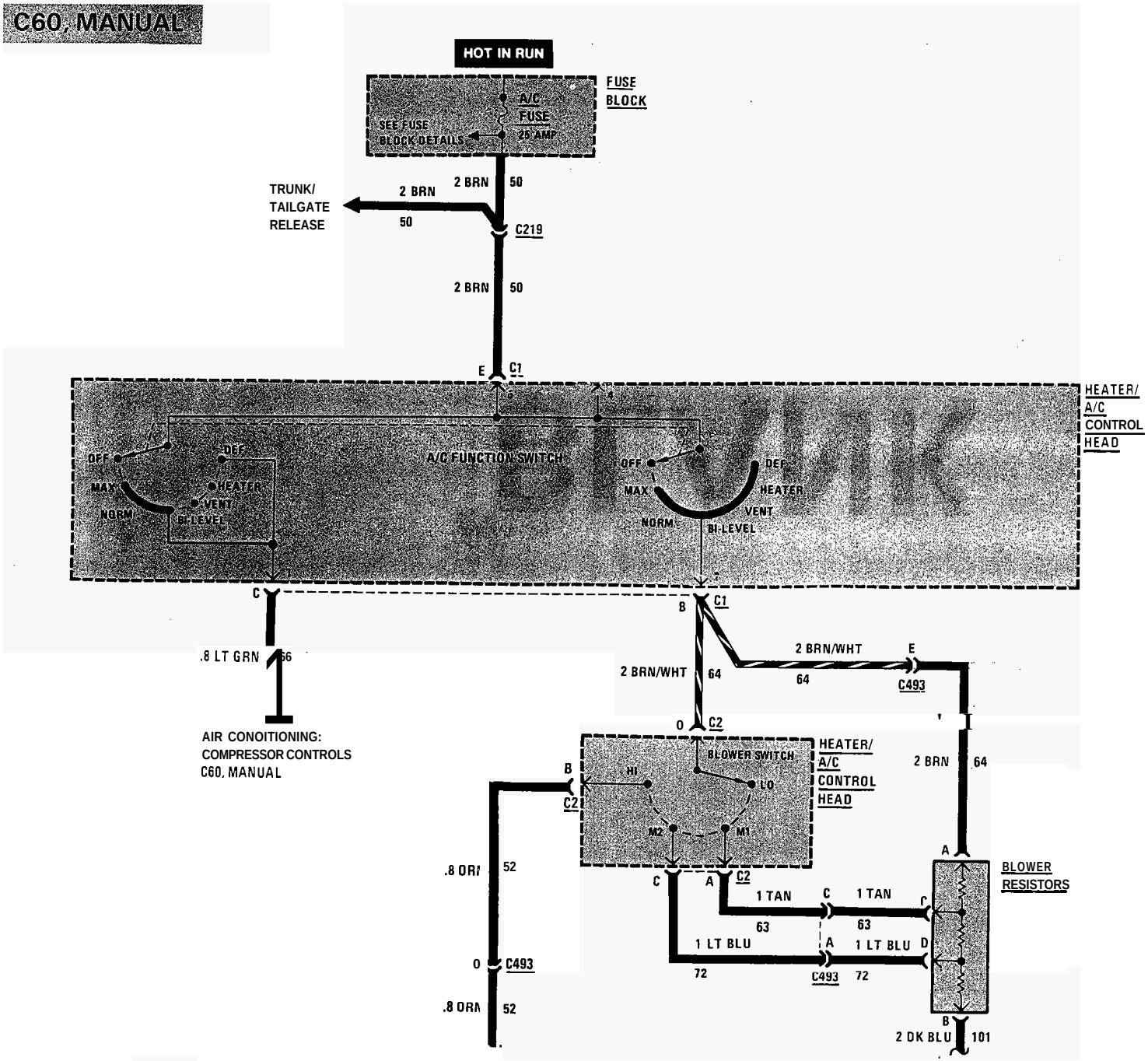
Set A/C Controls	Normal Result	Refer To Section
1. OFF	Blower is not running	8A-66 Blower Controls
WARM (Set Temperature)	Temperature display advances one degree at a time to 85°F	8A-66 Blower Controls
2. HTR	Blower runs and speed increases to maximum Air flows from floor outlets Air flow becomes warm	8A-66 Blower Controls 8A-68 Air Delivery and Temperature Controls
3. DEF	Air flows from windshield outlets A/C compressor turns on	8A-68 Air Delivery and Temperature Controls 8A-67 Compressor Controls
4. AUTO	Compressor turns off Air flows from floor outlets	8A-67 Compressor Controls 8A-68 Air Delivery and Temperature Controls
5. LO (Fan)	Blower speed reduces to minimum	8A-66 Blower Controls
6. HI (Fan)	Blower speed increase to maximum	8A-66 Blower Controls
7. COOL (Set Temperature)	Temperature display drops one degree at a time to 65°F Outside Air Inlet Door closes Air flows from panel outlets Compressor turns on	8A-66 Blower Controls 8A-68 Air Delivery and Temperature Controls 8A-68 Air Delivery and Temperature Controls 8A-67 Compressor Controls
8. ECON	Compressor turns off Outside Air Inlet Door opens	8A-67 Compressor Controls 8A-68 Air Delivery and Temperature Controls
9. BI-LEV	Air flows from both panel and floor outlets Compressor turns on	8A-68 Air Delivery and Temperature Controls 8A-67 Compressor Controls

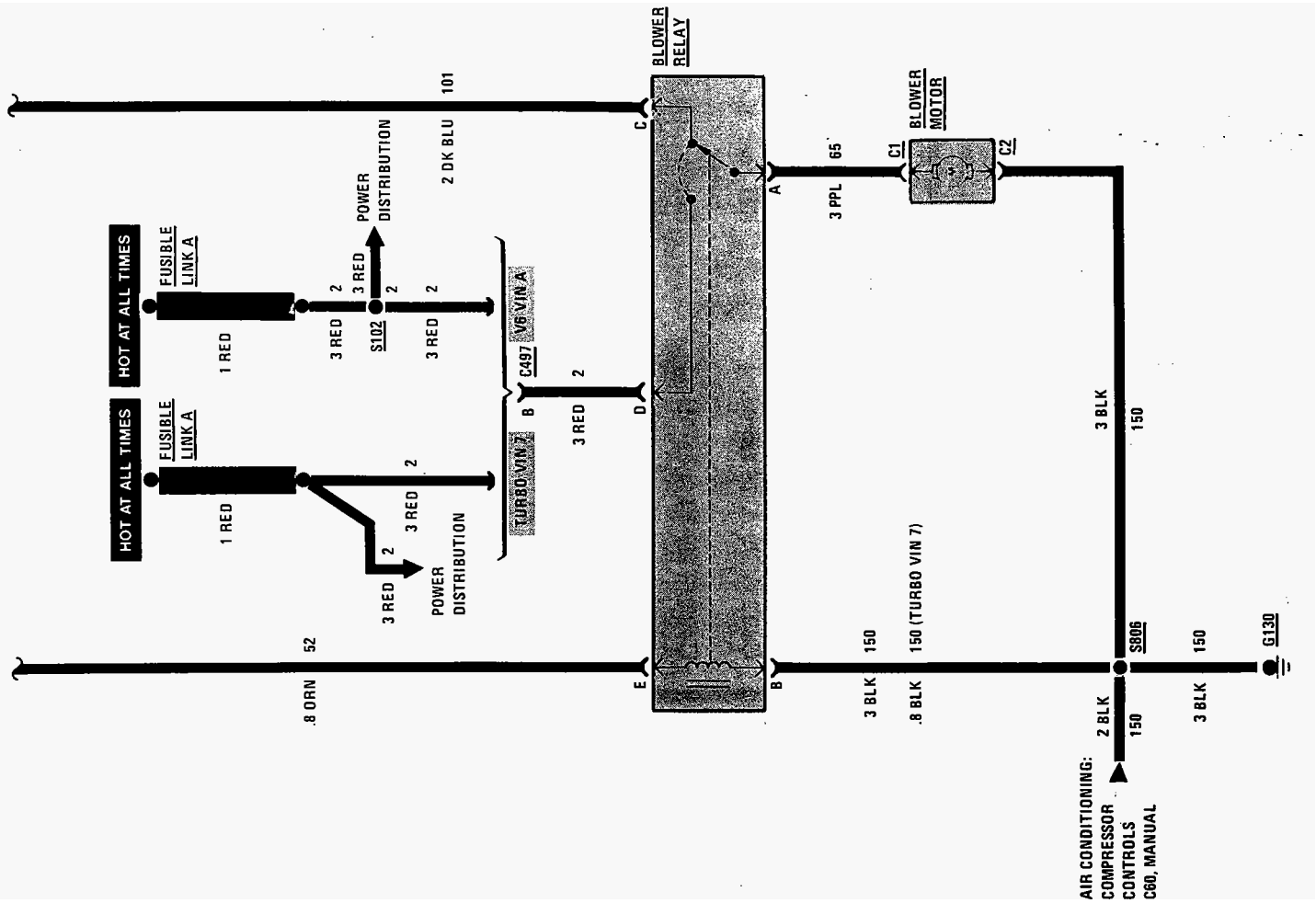
10. WARM (Set Temperature to 75°F) Close car doors and windows	Temperature display advances (Stop at 75°F) System maintains in-car temperature at approximately 75°F Blower speed reduces to minimum as temperature nears 75°F	8A-66 Blower Controls 8A-68 Air Display & Temperature Control 8A-66 Blower Controls
11. Turn Ignition Switch to OFF for several seconds then return it to RUN	A/C Control Head returns to same setting as before ignition turn-off	8A-66 Blower Controls
12. RDEF	Rear defrost relay operates and warms rear glass	8A-66 Blower Controls
13. OFF	Blower turns off	8A-66 Blower Controls

BLANK

AIR CONDITIONING: BLOWER CONTROLS

C60, MANUAL



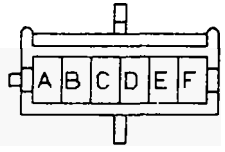

HOT AT ALL TIMES
FUSIBLE LINK A
1 RED
HOT AT ALL TIMES
FUSIBLE LINK A
1 RED
3 RED
2
POWER DISTRIBUTION
3 RED
2
3 RED
2
S102
3 RED
2
POWER DISTRIBUTION
2 DK BLU
101
C
TURBO VIN 7
V6 VIN A
C497
B
3 RED
2
D
BLOWER RELAY
A
3 PPL
65
C1
BLOWER MOTOR
C2
3 BLK
150
52
.8 ORN
E
B
3 BLK
150
.8 BLK
150 (TURBO VIN 7)
S806
2 BLK
150
3 BLK
150
G130
AIR CONDITIONING: COMPRESSOR CONTROLS C60, MANUAL

B

AIR CONDITIONING: BLOWER CONTROLS

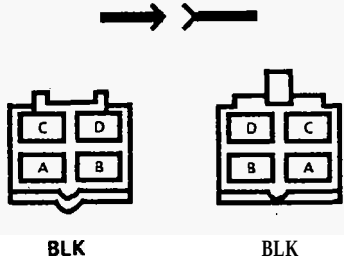
C60, MANUAL

HARNESS CONNECTOR FACES



BLK 8917540

c493



V04000.0

c497

COMPONENT LOCATION

		Page-Figure
Blower Motor (VIN 7)	RH rear of engine compartment	201-19-B
Blower Motor (VIN A) (VIN Y)	RH rear of engine compartment	201-20-A
Blower Relay	RH rear of engine compartment, on A/C accumulator	201-19-B
Blower Resistors	AIC module, left of blower motor	201-19-B
Fuse Block	Under LH side of I/P	201-12-A
Fusible Link A (VIN 7)	Engine harness, near starter solenoid	201- 6-B
Fusible Link A (VIN A)	Engine harness, near starter solenoid	201- 0-A
Fusible Link A (VIN Y)	Engine harness, near starter solenoid	201- 5-A
C219 (1cavity)	Behind I/P, near control head	201-17-A
C493 (6 cavities)	Behind I/P, near middle of radio	201-15-D
C497 (VIN 7) (4 cavities)	RH rear of engine compartment, near blower motor	201- 7-C
C497 (VIN A) (4 cavities)	RH rear of engine compartment, below valve cover	201- 2-A
C497 (VIN Y) (4 cavities)	Behind RH side of I/P, right of radio	201-16-B
G130	Behind RH side of I/P	201-20-A
S102 (VIN A)	Engine harness, near front of RH valve cover	201- 2-A
S102 (VIN Y)	EEngine harness, rear of LH valve cover	201- 2-C
S806 (VIN 7)	A/C harness, behind blower motor	201-19-B
S806 (VIN A) (VIN Y)	AIC harness, forward of blower motor	201-19-C

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Diagnosis

1. Check the A/C Fuse by visual inspection.
2. Check that G130 is clean and tight.
3. Check that Blower Motor Connectors and Blower Relay are mated correctly and firmly seated.

- Go to the A/C System Check in 8A-62 for a guide to normal operation. Refer to the diagnosis if other results occur.
- Go to System Diagnosis for blower control diagnostic tests..

SYSTEM DIAGNOSIS

- Do the Tests listed for your symptom in the Symptom Table below.
- Tests follow the Symptom Table.

SYSTEM TABLE

SYMPTOM	DO TEST
Blower runs all the time	D: Blower Relay Test B: A/C Mode Selector Test
Blower will not run in any mode	A: Blower Motor Test B: A/C Mode Selector Test
No low speed operation	C: Blower Resistors Test
No high speed operation	D: Blower Relay Test E: Blower Switch Test
High speed only	D: Blower Relay Test E: Blower Switch Test
Blower runs in LO at M1 or M2	E: Blower Switch Test
Symptom other than those listed	A, B, C, D and E.

(Continued in next column)

A: BLOWER MOTOR TEST

Measure: VOLTAGE
At: BLOWER MOTOR CONNECTOR (Disconnected)
Conditions:
- Ignition Switch: RUN
- AIC Mode: VENT
- Blower Switch: HI

Measure Between	Correct Voltage	For Diagnosis
PPL (65) & Ground	Battery	See 1
PPL (65) & BLK (150)	Battery	See 2

- If the voltages are correct but the blower does not run, install a new Blower Motor.

1. Check the PPL (65) wire for an open. If wire is good do Test D and Test E.
2. Check the BLK (150) wire for an open and that G130 is clean and tight.

Measure Between	Correct Voltage	For Diagnosis
E (BRN) & Ground.	Battery	See 1
B (BRN/WHT) & Ground	0 Volts	See 2
• A/C Mode: All positions except OFF		
B (BRN/WHT) & Ground	Battery	See 3

- If all 'voltages are correct, A/C Mode Selector is operating normally. Return tc Symptom Table.

1. Check BRN (50) wire for an open back tc A/C Fuse.
2. Replace A/C Control Head.
3. If battery voltage is present at terminal E but is not present at terminal B, replace the A/C Control Head.

(Continued on next page)

(Continued from previous page)

C: BLOWER RESISTORS TEST

Measure: RESISTANCE
At: BLOWER RESISTORS CONNECTOR (Disconnected)
Condition:
- **Ignition Switch: OFF**

Measure Between	Correct Resistance	For Diagnosis
A & C	1.5 ± 1 ohm	See 1
C & D	0.7 ± .5 ohm	See 1
D & B	0.2 ± .1 ohm	See 1

- If resistances are correct, Blower Resistors are operating normally. Return to Symptom Table.

1. Install new Blower Resistors.

D: BLOWER RELAY TEST (TABLE 1)

Measure: VOLTAGE
At: BLOWER RELAY CONNECTOR (Disconnected).
Conditions:
- **Ignition Switch: RUN**
- **A/C Mode: VENT**
- **Blower Switch: HI**

Measure Between	Correct Voltage	For Diagnosis
D (RED) & Ground	Battery	See 1
C (DK BLU) & Ground	Battery	See 2

(Continued in next column)

(Continued from previous column)

E (ORN) & Ground	Battery	See 3

- If voltages are correct, proceed to Table 2.

1. Check RED (2) wire for an open back to Fusible Link A.
2. Check DK BLU (101) wire for an open: If wire is good, do Test C.
3. Check ORN (52) wire for an open. If wire is good do Test E.

D: BLOWER RELAY TEST (TABLE 2)

Measure: RESISTANCE
At: BLOWER RELAY CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: OFF**
- **Negative Battery Terminal Disconnected**

Measure Between	Correct Resistance	For Diagnosis
B (BLK) & Ground	0 ohms	See 1
A (PPL) & Ground	Less than 3 ohms	See 2

E: BLOWER SWITCH TEST (TABLE 1)

Measure: VOLTAGE
At: BLOWER RESISTOR CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **A/C Mode: VENT**
- **Blower Switch: LO**

Measure Between	Correct Voltage	For Diagnosis
A (BRN) & Ground	Battery	See 1
C (TAN) & Ground	0 Volts	See 2
• Blower Switch: M1		
C (TAN) & Ground	Battery	See 3 & 5
D (LT BLU) & Ground	0 Volts	See 2
• Blower Switch: M2		
D (LT BLU) & Ground	Battery	See 4 & 5

- If all voltages are correct go to Table 2.

1. Check BRN (64) wire for an open. If wire is good do Test B.
2. If battery voltage is present, check for a wire to wire short to voltage. If wire is good, replace the Blower Switch.

(Continued on next page)

Continued from previous page)

3. Check TAN *(63)* wire for an open.
4. Check LT BLU (72) Wire for an open.
5. If voltage is present at terminal A but is not present at either terminal C or D, check the BRN/WHT *(64)* wire for an open between the A/C Control Head terminal B and the Blower Switch terminal D.

E: BLOWER SWITCH TEST (TABLE 2)

Measure: VOLTAGE
At: BLOWER RELAY CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **A/C Mode: VENT**
- **Blower Switch: M2**

Measure Between	Correct Voltage	For Diagnosis
E (ORN) & Ground	0 Volts	See 1
• Blower Switch: HI		
E (ORN) & Ground	Battery	See 2

- If voltages are correct, Blower Switch is operating normally. Return to Symptom Table.

1. Check ORN (52) wire for an open or wire to wire short to voltage. If wire is good, replace the Blower Switch.
2. Check ORN (52) Wire for an open. If wire is good, replace the Blower Switch.

CIRCUIT OPERATION

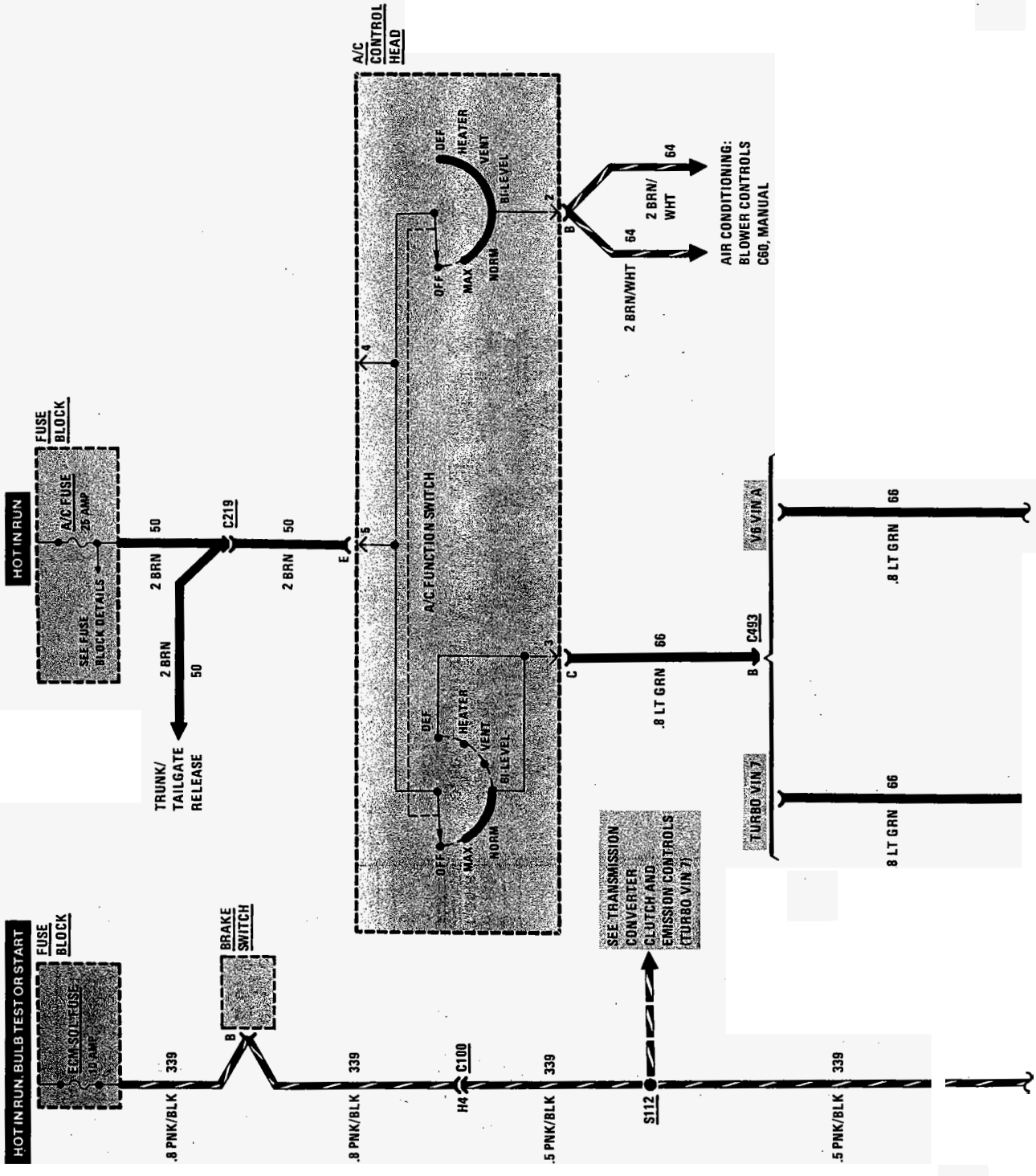
The Blower Motor speed is controlled by the Blower Switch in the A/C Control Head. With the switch in the LO position all of the blower resistors are in the circuit with the motor so that it runs slowly. In the M1 and M2 position the Blower Switch bypasses some of the resistors, increasing the motor speed.

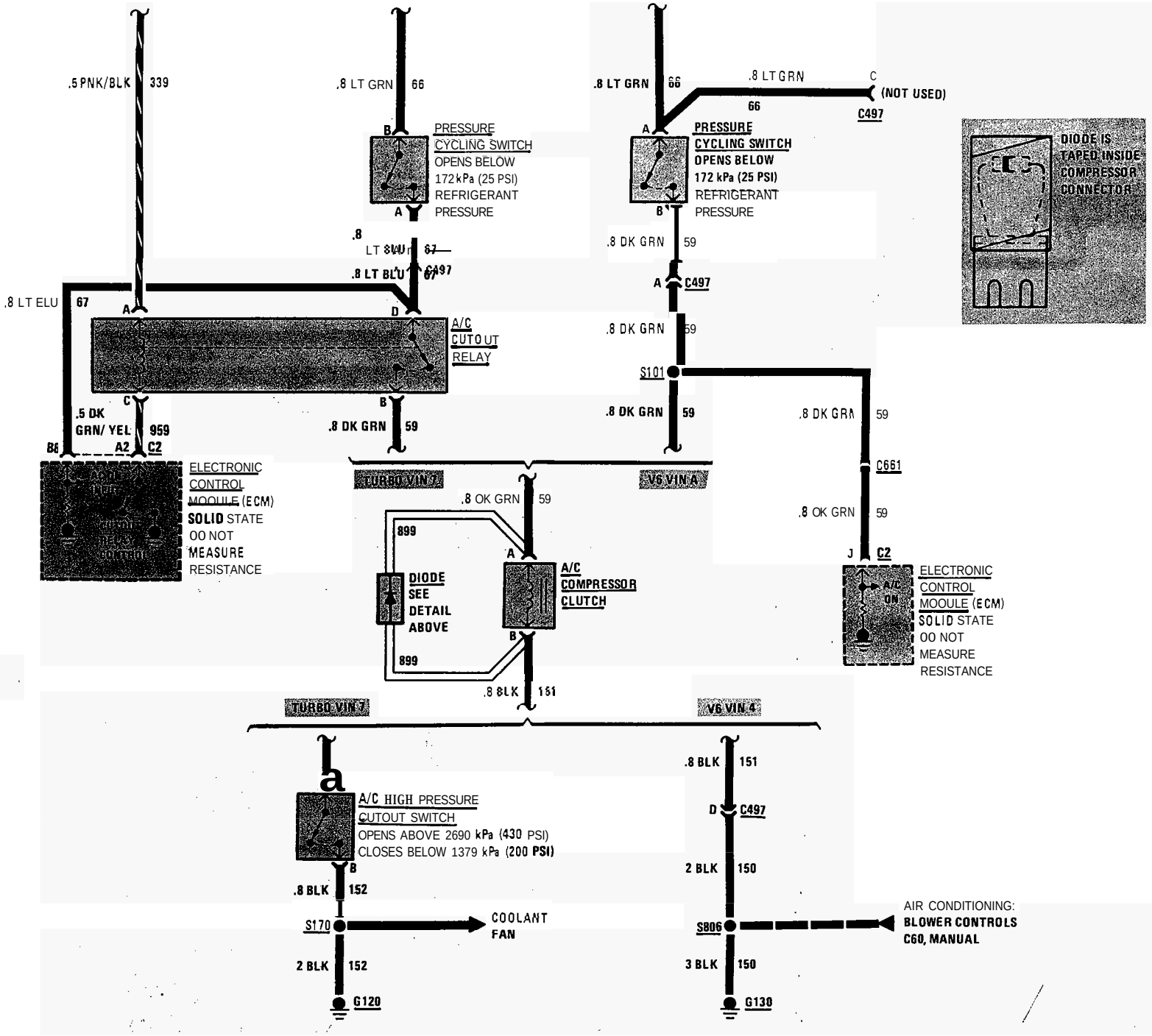
The Blower Motor is fed through the contacts of the Blower Relay. When the Blower Switch is in the HI position, battery voltage is supplied through the ORN wire to the coil of the Blower Relay. The relay is energized and its contacts supply battery voltage directly to the Blower Motor from Fusible Link A.

When the Mode Selector is in the OFF position, no voltage is applied to the Blower Switch and motor so the blower does not run. In all other positions the blower will operate as described.

AIR CONDITIONING: COMPRESSOR CONTROLS

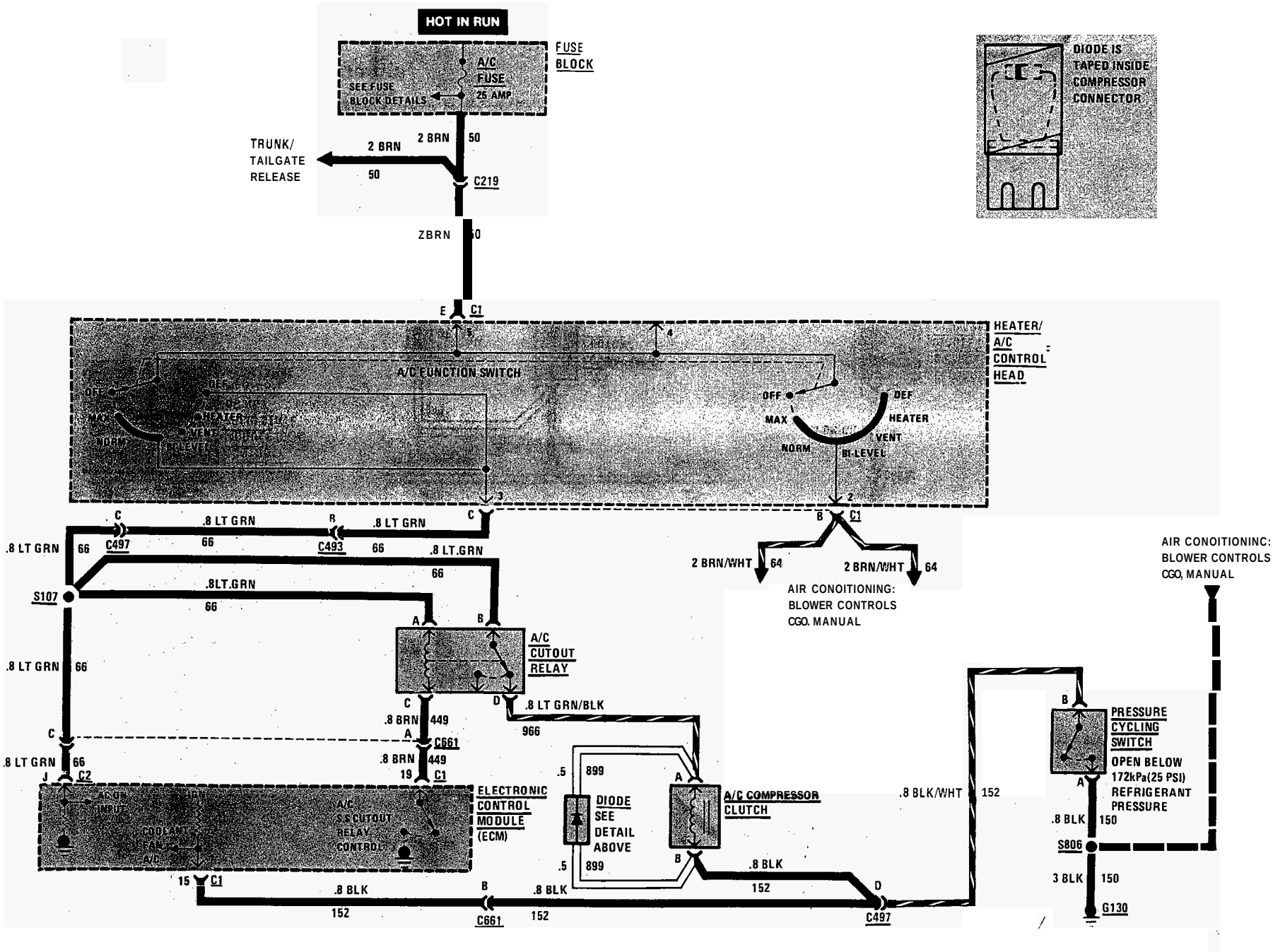
C60, MANUAL, V6 VIN A, TURBO VIN 7




.5 PNK/BLK 339
.8 LT GRN 66
PRESSURE CYCLING SWITCH OPENS BELOW 172 kPa (25 PSI) REFRIGERANT PRESSURE
.8 LT BLU 67
C497
.8 LT ELU 67
A/C CUTOUT RELAY
.5 DK GRN/ YEL 959
C2
ELECTRONIC CONTROL MODULE (ECM) SOLID STATE DO NOT MEASURE RESISTANCE
.8 DK GRN 59
TURBO VIN 7
V6 VIN A
.8 LT GRN 66
.8 LT GRN 66
C
(NOT USED)
C497
PRESSURE CYCLING SWITCH OPENS BELOW 172 kPa (25 PSI) REFRIGERANT PRESSURE
DIODE IS TAPED INSIDE COMPRESSOR CONNECTOR
.8 DK GRN 59
C497
.8 DK GRN 59
S101
.8 DK GRN 59
.8 DK GRN 59
C661
.8 OK GRN 59
.8 OK GRN 59
899
DIODE SEE DETAIL ABOVE
A/C COMPRESSOR CLUTCH
899
.8 BLK 151
C2
ELECTRONIC CONTROL MODULE (ECM) SOLID STATE DO NOT MEASURE RESISTANCE
TURBO VIN 7
V6 VIN 4
A/C HIGH PRESSURE CUTOUT SWITCH OPENS ABOVE 2690 kPa (430 PSI) CLOSES BELOW 1379 kPa (200 PSI)
.8 BLK 152
S170
COOLANT FAN
2 BLK 152
G120
.8 BLK 151
C497
2 BLK 150
S806
AIR CONDITIONING: BLOWER CONTROLS C60, MANUAL
3 BLK 150
G130

AIR CONDITIONING: COMPRESSOR CONTROLS

C60, MANUAL, V8 VIN Y

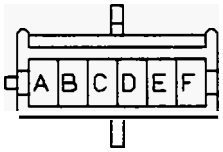


AIR CONDITIONING: COMPRESSOR CONTROLS

C60, MANUAL

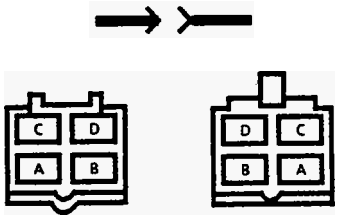
HARNESS CONNECTOR FACES

C100, See Page *202-0*



BLK 08917540

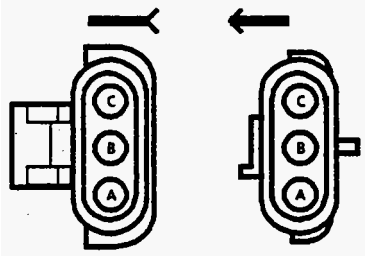
c493



BLK BLK

V04000.0

c497



BLK BLK

V03001.2

C661

COMPONENT LOCATION

		Page-Figure
AIC Compressor Clutch (VIN 7)	LH front of engine, part of A/C compressor.	201- 7-B
AIC Compressor Clutch (VIN A)	RH front of engine, part of AIC compressor.	201- 2-A
AIC Compressor Clutch (VIN Y)	RH front of engine, part of AIC compressor.	201- 5-C
AIC Cut-Out Relay (VIN 7)	On RH front fender, above wheel well	201- 8-C
AIC Cut-Out Relay (VIN Y)	RH rear of engine compartment, below A/C Module	201- 3-C
A/C High Pressure Cut-Out Switch (VIN 7)	In AIC line, below generator	201- 8-A
Brake Switch (VIN 7)	Top of brake pedal support	201-12-A
Diode (A/C Clutch)	Taped inside A/C compressor clutch connector	
Electronic Control Module (ECM)	RH shroud, near lower access hole.	201-17-B
Fuse Block.	Under LH side of I/P.	201-12-A
Pressure Cycling Switch (VIN 7)	RH rear of engine compartment, on A/C accumulator	201-19-B
Pressure Cycling Switch (VIN A) (VIN Y)	RH rear of engine compartment, on A/C accumulator	201-19-C
C100 (45 cavities)	LH rear of engine compartment.	201- 9-B
C219 (1 cavity).	Behind IIP, near control head.	201-17-A
C493 (6 cavities)	Behind I/P, near middle of radio.	201-15-D
C497 (VIN 7) (4 cavities).	RH rear of engine compartment, near blower motor..	201- 7-C
C497 (VIN A) (4 cavities)	RH rear of engine compartment, below valve cover	201- 2-A
C661 (VIN A) (1 cavity).	RH side of engine, behind A/C compressor	201- 2-A
C661 (VIN Y) (3 cavities)	RH rear of engine compartment, above valve cover	201- 4-A
G120 (VIN 7).	RH rear of engine, on cylinder head.	201- 7-A
G130	Behind RH side of I/P.	201-20-A
S101.	Engine harness, near generator	201- 2-A
S107.	Engine harness, near AIC cut-out relay	201- 5-C
S112.	Engine'harness, near rear of RH cylinder head	201- 7-A
S170.	Engine harness, near mass air flow sensor.	201-10-A
S806 (VIN A) (VIN Y).	A/C harness, forward of blower motor	201-19-C

INFORMATION ON AIR CONDITIONING: COMPRESSOR CONTROLS IS CONTINUED ON THE FOLLOWING PAGE (8A-64-5)

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Check.

1. Check the A/C Fuse by visual inspection.
2. Check that A/C Compressor Clutch Connector is firmly seated.
3. **Check that ground G120 (or G130) is clean and tight.**

- Go to System Check for a guide to normal compressor control operation.
- Go to System Diagnosis for Compressor Controls diagnostic tests.

SYSTEM CHECK

- Complete the A/C System Check in 8A-62 as a guide to normal operation of the entire A/C System. Refer to the diagnosis given if other results occur.
- Tests for Compressor Controls follow in System Diagnosis.

SYSTEM CHECK TABLE

ACTION	EXPECTED RESULT
1. Turn Ignition Switch to **RUN** and start engine Put A/C Mode Selector to **OFF** then to MAX	• A click can be heard when clutch engages.
2. Move Mode Selector between OFF and **MAX** several times	• Verify that clutch engages in MAX position • Clutch plate movement can be seen on the front of the compressor pulley. • If clutch does not engage proceed to step 4. • If clutch operates as expected continue to step 3.
3. Put Mode Selector in MAX to engage clutch	• Check that air from coolant fan can move freely through condenser. • Feel the input (cool) and output (warm) pipes to the A/C Compressor. If there is not a wide temperature difference after the compressor has run for several seconds, see Section 1B for refrigerant and compressor diagnostics.
4. Turn off ignition Check refrigerant charge according to procedure in Section 1B	• If refrigerant charge is low, follow procedures in Section 1B for refrigerant diagnosis. • If refrigerant charge is normal, isolate conditions using the procedures which follow in System Diagnosis.

(Continued on next page)

(Continued from previous page)

SYSTEM DIAGNOSIS

TURBO VIN 7

- Use the Isolation Test below to choose the proper diagnostic test.
- Tests follow the Isolation Test.

ISOLATION TEST (TABLE 1)

Measure Between	Correct Voltage	For Diaanosis
A (PNK/BLK) & Ground	Battery	Check ECM-SOL Fuse and PNW BLK **(339)** wire for an open.
D (LT/BLU) & Ground	Battery	**1.** Check LT BLU **(67)** wire for an open back to Pressure Cycling Switch. **2.** Check that Pressure Cycling Switch is closed. If switch is open refer to Section **1** for procedure to check for low refrigerant pressure. If refrigerant pressure is normal replace the Pressure Cycling Switch **3.** Do Test C.

- If voltages are correct, leave A/C Cutout Relay disconnected and go to Table 2.

ISOLATION TEST (TABLE 2)

Connect: FUSED JUMPER
At: A/C Cutout Relay (Disconnected)
Conditions:
- Ignition Switch: RUN (Engine need not be running)
- A/C Mode: NORM
- Temperature Outside Car: Above 60°F (16°C)

Jumper Between	Correct Action	For Diagnosis
B **(DK** GRN) & D (LT BLU)	Clutch engages	Do Test B

- If action is correct, do Test **A.**

A: ECM COMPRESSOR CONTROL TEST (TABLE 1)

Measure: VOLTAGE
At: ECM (Disconnected)
Conditions:
- Ignition Switch: RUN (Engine not running)
- A/C Mode: NORM
- A/C Cutout Relay Reconnected
- Temperature Outside Car: Above 60°F (16°C)

Measure Between	Correct Voltage	For Diagnosis
B8 on Conn C2 (LT BLU) & Ground	Battery	See 1
42 on Conn C2))K GRN/YEL) & Ground	Battery	See **2**

A: ECM COMPRESSOR CONTROL TEST (TABLE 1) (Continued from facing page)

- If voltages are correct, proceed to Table 2.

1. Check for an open in the LT BLU (67) wire.
2. Check for an open in the DK GRN/YEL wire (959). If wire is good, replace A/C Cut-out Relay.

A: ECM COMPRESSOR CONTROL TEST (TABLE 2)

Connect: FUSED JUMPER
At: ECM
(Disconnected)
Conditions:
- Ignition Switch: RUN (Engine not running)
- A/C Mode: NORM
- Temperature Outside Car: Above 60°F (16°C)

Jumper Between	Correct Action	For Diagnosis
A2 on Conn C2 (DK GRN/YEL) and Ground	A/C Cutout Relay operates and A/C Clutch engages	See 1

B: A/C COMPRESSOR CLUTCH TEST

Measure: VOLTAGE
At: COMPRESSOR CLUTCH
(Disconnected)
Conditions:
- Ignition Switch: RUN (Engine not running)
- A/C Mode: NORM
- Temperature Outside Car: Above 60°F (16°C)
- A/C Cutout Relay: DISCONNECTED
- A/C Cutout Relay Terminals D and B jumpered

Measure Between	Correct Voltage	For Diagnosis
A (DK GRN) & Ground	Battery	See 1
A (DK GRN) & B (BLK)	Battery	See 2

- If voltages are correct but clutch does not engage, replace the Compressor Clutch.

1. Check for an open in the DK GRN (59) wire.
2. Check for an open in the BLK (151) wire, and BLK (152) wire to ground. The High Pressure Cutout Switch should be closed. If it is open, replace it.

Measure: VOLTAGE
At: A/C CONTROL HEAD
Conditions:
- Ignition Switch: RUN
- A/C Mode: NORM
- Temperature Outside Car: Above 60°F (16° C)

Measure Between	Correct Voltage	For Diagnosis
E (BRN) & Ground	Battery	See 1
C (LT GRN) & Ground	Battery	Replace A/C Control Head

- If voltages are correct, check for an open in the LT GRN (66) wire.

1. Check for an open A/C Fuse or open BRN (50) wire.

SYSTEM DIAGNOSIS

V6 VIN A

- Use the Isolation Tests below to choose the proper diagnostic test.
- Tests follow the Isolation Tests.

(Continued on next page)

(Continued from previous page)

ISOLATION TEST (TABLE 1)

Measure Between	Correct Voltage	For Diagnosis
A (LT GRN) & Ground	Battery	Do Test B

- If voltage is correct, leave Pressure Cycling Switch disconnected and go to Table 2.

ISOLATION TEST (TABLE 2)

Connect: FUSED JUMPER
At: PRESSURE CYCLING SWITCH CONNECTOR (Disconnected)
Conditions:
- Ignition Switch: RUN (Engine need not be running)
- A/C Mode: NORM
- Temperature Outside Car: Above 60°F (16°C)

Jumper Between	Correct Action	For Diagnosis
A (LT GRN) & B (DK GRN)	Clutch engages	Do Test A

- If action is correct, refer to Section 1B for procedure to check refrigerant pressure. If refrigerant pressure is normal, replace the Pressure Cycling Switch.

A: A/C COMPRESSOR CLUTCH TEST

Measure Between	Correct Voltage	For Diagnosis
A (DK GRN) & Ground	Battery	See 1
A (DK GRN) & B (BLK)	Battery	See 2

- If voltages are correct but clutch does not engage, replace the Compressor Clutch.

1. Check for an open in the DK GRN (59) wire.
2. Check for an open in the BLK (151) wire.

B: A/C COMPRESSOR FUNCTION CONTROL TEST

Measure Between	Correct Voltage	For Diagnosis
E (BRN) & Ground	Battery	See 1
C (LT GRN) & Ground	Battery	Replace A/C Control Head

- If voltages are correct, check for an open in the LT GRN (66) wire.

1. Check for an open A/C Fuse or open BRN (50) wire.

SYSTEM DIAGNOSIS

V8 VIN Y

- Use the Isolation Tests below to choose the proper diagnostic tests.
- Tests follow the Isolation Tests.