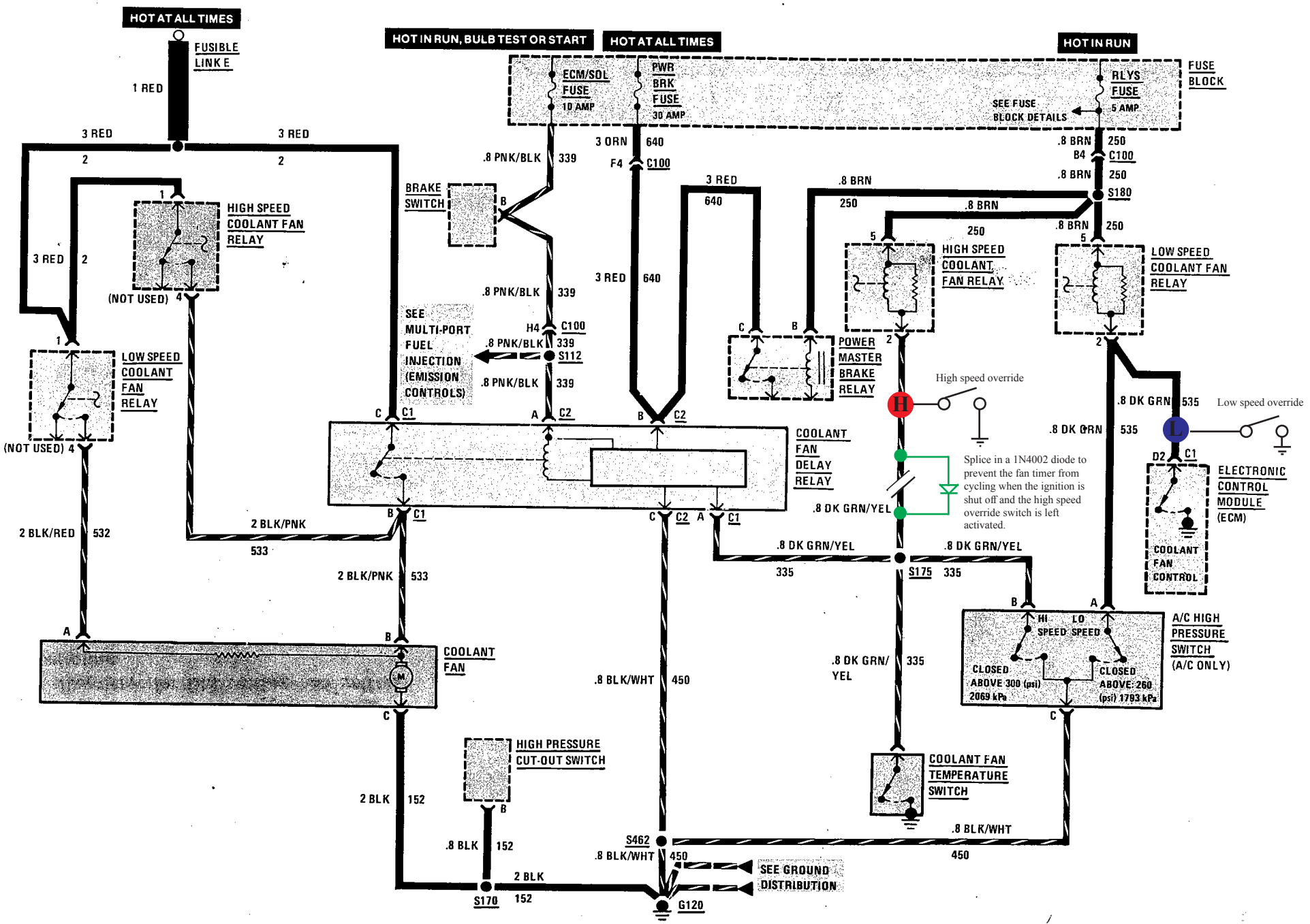
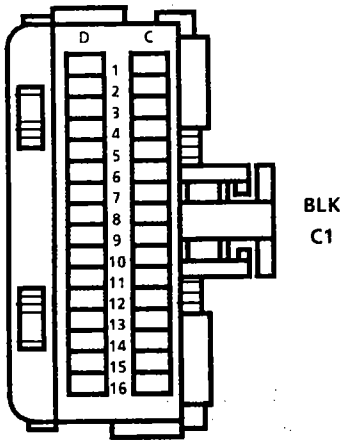
COOLANT FANS: TURBO VIN 7

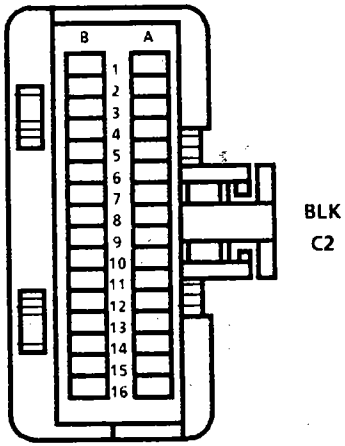


COOLANT FANS: TURBO VIN 7

HARNESS CONNECTOR FACES

C100, See Page 202-0

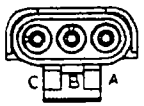




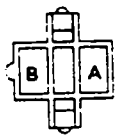
V00005.0
Electronic Control Module

COMPONENT LOCATION

		Page-Figure
A/C High Pressure Cut-Out Switch	In A/C line, below generator	201- 8-A
Brake Switch	Top of brake pedal support	201-12-A
Coolant Fan Delay Relay	LH rear of engine compartment, above wheel well	201- 9-A
Coolant Fan Temperature Switch	LH front of engine, left of throttle body	201- 6-A
Electronic Control Module (ECM)	RH shroud, near lower access hole	201-17-B
Fuse Block	Under LH side of I/P	201-12-A
Fusible Link E (VIN 7)	RH side of engine, near starter solenoid	201- 6-B
High Speed Coolant Fan Relay	LH side of engine compartment, above wheel well	201- 9-A
Low Speed Coolant Fan Relay	LH side of engine compartment, above wheel well	201- 9-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
G120 (VIN 7)	RH rear of engine, on cylinder head	201- 7-A
S170	Engine harness, near mass air flow sensor	201-10-A
S175	Engine harness, near brake master cylinder	201- 9-A
S180	Engine harness, under brake master cylinder	201- 9-A
S462 (VIN 7)	Engine harness, near rear of LH valve cover	201- 7-A



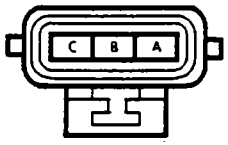
GRY 12015384
A/C High Pressure Switch



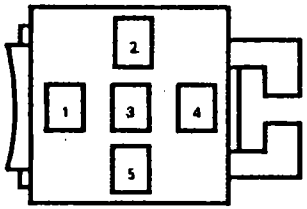
WHT 12010649
Brake Switch

COOLANT FANS: TURBO VIN 7

HARNESS CONNECTOR FACES



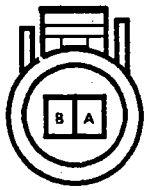
BLK 12015664
Coolant Fan



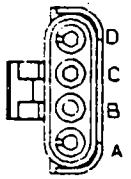
BLK 12034003
High Speed Coolant Fan Relay

V00025.0
Coolant Fan Delay Relay

Low Speed Coolant Fan Relay, See High Speed Coolant Fan Relay



V00026.0
High Pressure Cut-Out Switch



BLK 12015797
Power Master Brake Relay

COOLANT FANS: TURBO VIN 7

TROUBLESHOOTING HINTS

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

  Check the ECM/SOL Fuse by operating Brake lights.
- **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 OPERATION
With the engine cold and idling, move the A/C Selector Switch to NORM (if equipped with A/C)	The Coolant Fan turns on
With engine coolant below operating temperature, move the A/C Selector Switch to OFF	The Coolant Fan turns off
Run the engine at a fast idle for several minutes	The Coolant Fan turns on and runs at low speed and then the fan will run at high speed before the Coolant Temperature Indicator in the Instrument Panel comes on or before the Coolant Temperature Gage needle reaches H
Run the engine for a few more minutes, and then turn the engine off	The Coolant Fan continues to run at high speed until the Coolant Temperature lowers (if equipped with Coolant Fan Delay Relay)

SYSTEM DIAGNOSIS

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

SYMPTOM TABLE

A. Coolant Fan does not run at Low Speed
B. Coolant Fan does not run at High Speed
C. Coolant Fan does not turn off
D. Coolant Fan does not run for a delay period after the Ignition Switch is turned OFF (engine coolant hot) but Fan does run when the Ignition Switch is in RUN

A: COOLANT FAN DOES NOT RUN AT LOW SPEED (TABLE 1)

Connect: FUSED JUMPER
At: ALDL CONNECTOR
Conditions:
- **Ignition Switch: RUN**

Connect Between	Correct Result	For Diagnosis
Terminal B & Ground	Coolant Fan runs	See 1

- If the Coolant Fan runs, refer to Section 6E for ECM diagnosis.

1. Go to A1.

(Continued on next page)

COOLANT FANS: TURBO VIN 7

(Continued from previous page)

A1. With the Ignition Switch in RUN, connect a fused jumper between the DK GRN (535) wire and ground at either the ECM connector C1 terminal D2, or the A/C High Pressure Switch terminal A (see schematic).

- If the fan does not run, go to Table 2.
- If the fan runs, replace suspect switch or refer to Section 6E for ECM diagnosis as necssary.

A: COOLANT FAN DOES NOT RUN AT LOW SPEED (TABLE 2)

Connect: TEST LAMP
At: LOW SPEED COOLANT FAN RELAY (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Fused jumper in place from A1**

Connect Between	Correct Result	For Diagnosis
5 (BRN) & Ground	Test Lamp lights	See 1
5 (BRN) & 2 (DK GRN)	Test Lamp lights	See 2
1 (RED) & Ground	Test Lamp lights	See 3

- If all the results are correct, go to Table 3.

1. Check A/C Fuse and BRN (250) wire for an open.
2. Check DK GRN (535) wire for an open.
3. Check Fusible Link E and RED (2) wire for an open.

A: COOLANT FAN DOES NOT RUN AT LOW SPEED (TABLE 3)

Connect: FUSED JUMPER
At: COOLANT FAN RELAY CONNECTOR (Disconnected)

Connect Between	Correct Result	For Diagnosis
1 (RED) & 4 (BLK/RED)	Coolant Fan runs	See 1

- If Coolant Fan runs, replace Coolant Fan Relay.

1. Go to Table 4.

A: COOLANT FAN DOES NOT RUN AT LOW SPEED (TABLE 4)

Connect: TEST LAMP
At: COOLANT FAN CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Fused jumper connected between terminals 1 (RED) and 4 (BLK/RED) of the Low Speed Coolant Fan Relay Connector and ground.**

Connect Between	Correct Result	For Diagnosis
A (BLK/RED) & Ground	Test Lamp lights	See 1
A (BLK/RED) & C (BLK)	Test Lamp lights	See 2

- If above results are correct, replace the Coolant Fan.

1. Check BLK/RED (532) wire for an open.
2. Check BLK (152) wire for an open.

B:COOLANT FAN DOES NOT RUN AT HIGH SPEED

Turn the Ignition Switch to RUN and connect a fused jumper between DK GRN/YEL (335) wire and ground at either the Coolant Fan Temperature Switch or the A/C High Pressure Switch terminal B (if equipped).

- If the fan does not run at high speed, go to Table 1.
- If the fan does run at high speed, replace the suspect switch.

B: COOLANT FAN DOES NOT RUN AT HIGH SPEED (TABLE 1)

Connect: TEST LAMP
At: HIGH SPEED COOLANT FAN RELAY CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Fused jumper in place from B1.**

Connect Between	Correct Result	For Diagnosis
5 (BRN) & Ground	Test Lamp lights	See 1
5 (BRN) & 2 (DK GRN/ YEL)	Test Lamp lights	See 2
1 (RED) & Ground	Test Lamp lights	See 3

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

1. Check A/C Fuse and BRN (250) wire for an open.
2. Check DK GRN/YEL (335) wire for an open.
3. Check Fusible Link E and RED (2) wire for an open.

B: COOLANT FAN DOES NOT RUN AT HIGH SPEED (TABLE 2)

Connect: FUSED JUMPER
At: HIGH SPEED COOLANT FAN RELAY CONNECTOR (Disconnected)

Connect Between	Correct Result	For Diagnosis
1 (RED) & 4 (BLK/PNK)	Coolant Fan runs at high speed	See 1

- If the above result is correct, replace the High Speed Coolant Fan Relay.

1. Go to Table 3.

B: COOLANT FAN DOES NOT RUN AT HIGH SPEED (TABLE 3)

Connect: TEST LAMP
At: COOLANT FAN CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Fused jumper connected between terminals 1 (RED) and 4 (BLK/PNK) of the High Speed Coolant Fan Relay Connector.**

Connect Between	Correct Result	For Diagnosis
B (BLK/PNK) & Ground	Test Lamp lights	See 1
B (BLK/PNK) & C (BLK)	Test Lamp lights	See 2

- If all results are correct, replace High Speed Coolant Fan.

1. Check BLK/PNK (533) wire for an open.
2. Check BLK (152) wire for an open.

C: COOLANT FAN DOES NOT TURN OFF

1. Disconnect Coolant Fan Temperature Switch.
- If Fan stops, replace Coolant Fan Switch.
- If Fan does not stop, go to step 2.
2. Disconnect A/C High Pressure Switch (A/C only).
- If Fan stops, replace A/C High Pressure Switch.
- If Fan does not stop, go to step 3.
3. With Ignition Switch off, disconnect High Speed Coolant Fan Relay (if equipped).
- If Fan stops, replace High Speed Coolant Fan Relay.
- If Fan does not stop, proceed to Step 4.
4. With Ignition Switch off disconnect Low Speed Coolant Fan Relay.
- If Fan stops, go to step 5.
- If Fan does not stop, replace Coolant Fan Delay Relay.
5. Connect a Test Lamp between terminals 5 (BRN) and 2 (DK GRN) of the Low Speed Coolant Fan Relay Connector.
- If the test lamp lights, check the DK GRN (535) wire for a short to ground. Refer to Section 6E for ECM diagnosis if wire is OK.
- If the test lamp does not light, replace the Low Speed Coolant Fan Relay.

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D: COOLANT FAN DOES NOT RUN FOR A DELAY PERIOD AFTER THE IGNITION SWITCH IS TURNED OFF (ENGINE COOLANT HOT) BUT THE FAN DOES RUN WHEN THE IGNITION SWITCH IS IN RUN

Connect: TEST LAMP
At: COOLANT FAN DELAY RELAY CONNECTOR (Disconnected)
Conditions:
- **Ignition Switch: RUN**
- **Coolant Fan Relay: DISCONNECTED**
- **Engine Coolant: HOT**

Connect Between	Correct Result	For Diagnosis
C1/C (RED) & Ground	Test Lamp lights	See 1
C1/C (RED) & C2/C (BLK/WHT)	Test Lamp lights	See 2
C2/B (RED) & Ground	Test Lamp lights	See 3
C2/B (RED) & C1/A (DK GRN/YEL)	Test Lamp lights	See 4
C2/B (RED) & C1/B (BLK/PNK)	Test Lamp lights	See 5
C2/A (PNK/BLK) & Ground	Test Lamp lights	See 6

- If all results are correct, replace Coolant Fan Delay Relay.

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1. Check Fusible Link E and RED (2) wire for an open.
2. Check BLK/WHT (450) wire for an open.
3. Check PWR BRK Fuse and RED (640) wire for an open.
4. Check DK GRN/YEL (335) wire for an open. If wire is OK, replace Coolant Fan Temperature Switch.
5. Check BLK/PNK (533) wire for an open.
6. Check ECM/SOL Fuse and PNK/BLK (339) wire for an open.

CIRCUIT OPERATION

The Coolant Fan is electrically operated and is turned on when the engine coolant becomes hot enough to require cooling.

The Low Speed Coolant Fan is controlled by the Low Speed Coolant Fan Relay. This relay is controlled by the ECM and the Low Speed contact of the A/C High Pressure Switch. The High Speed Coolant Fan is controlled by the High Speed Coolant Fan Relay. This Relay is controlled by the Coolant Fan Temperature Switch and the Hi Speed contact of the A/C High Pressure Switch. When any one of these components grounds the coil of one of the relays, that particular fan runs.

On all cars, the Coolant Fan Delay Relay operates the Coolant Fan for a short period of time after the engine is turned off. A Solid State timer relay removes the path to ground for the Coolant Fan Delay Relay coil to turn off the fan. Refer to Section 6E for conditions that will cause the ECM to turn the fan ON or OFF.