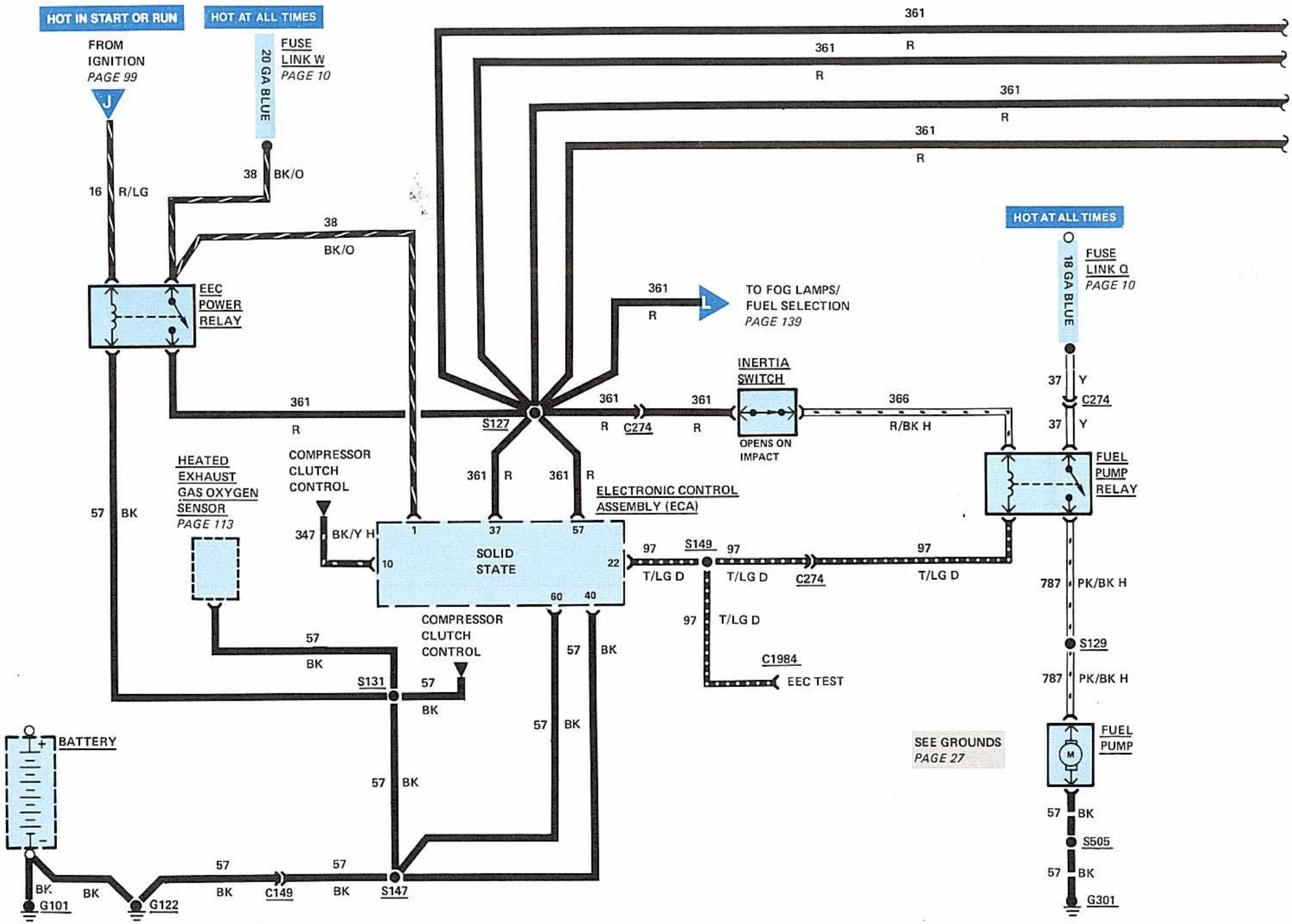
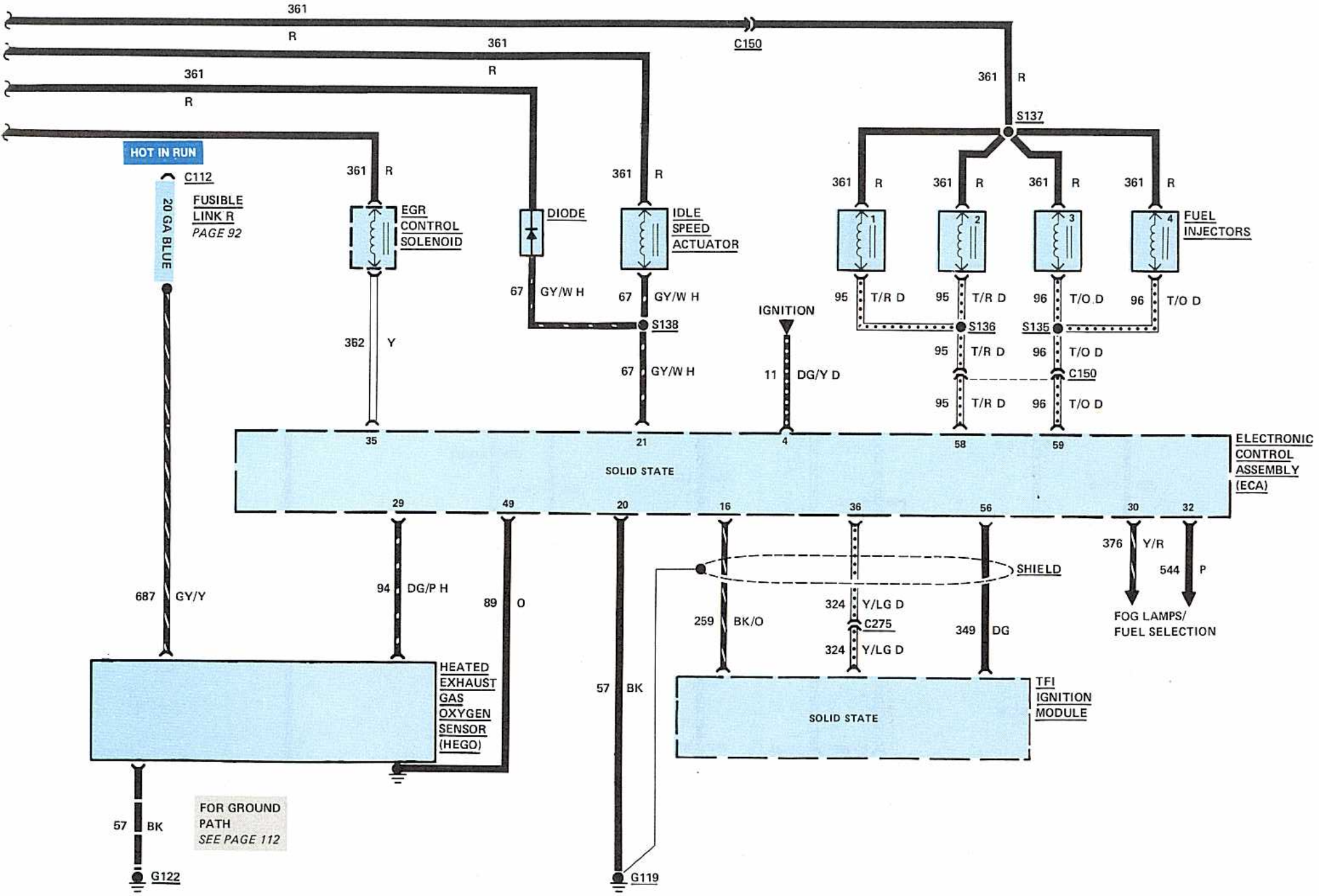
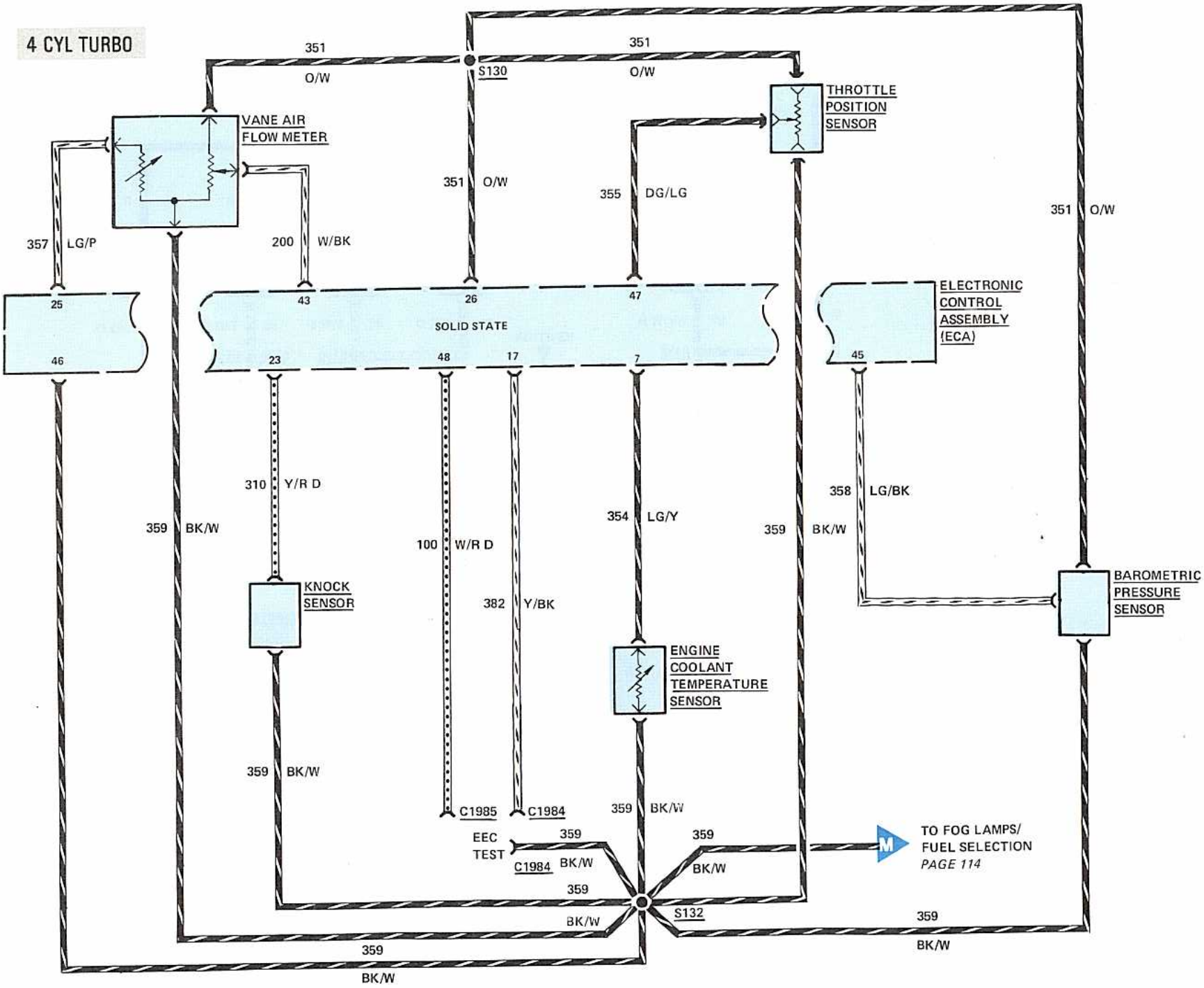

HOT IN START OR RUN
FROM IGNITION
PAGE 99
J
HOT AT ALL TIMES
FUSE LINK W
PAGE 10
20 GA BLUE
16 R/LG
38 BK/O
38 BK/O
EEC POWER RELAY
361 R
361 R
361 R
361 R
361 R
TO FOG LAMPS/ FUEL SELECTION
PAGE 139
L
INERTIA SWITCH
OPENS ON IMPACT
366 R/BK H
HOT AT ALL TIMES
FUSE LINK Q
PAGE 10
18 GA BLUE
37 Y
C274
37 Y
FUEL PUMP RELAY
S127
361 R
C274
361 R
361 R
361 R
HEATED EXHAUST GAS OXYGEN SENSOR
PAGE 113
COMPRESSOR CLUTCH CONTROL
347 BK/Y H
ELECTRONIC CONTROL ASSEMBLY (ECA)
1
37
57
10
SOLID STATE
22
60
40
97 T/LG D
S149
97 T/LG D
C274
97 T/LG D
97 T/LG D
C1984
EEC TEST
787 PK/BK H
S129
787 PK/BK H
FUEL PUMP
M
57 BK
S505
57 BK
G301
57 BK
S131
57 BK
57 BK
COMPRESSOR CLUTCH CONTROL
57 BK
57 BK
57 BK
BATTERY
BK
G101
BK
G122
57 BK
C149
57 BK
S147
SEE GROUNDS
PAGE 27


361 R
C150
361 R
361 R
361 R
S137
HOT IN RUN
C112
20 GA BLUE
FUSIBLE LINK R
PAGE 92
361 R
EGR CONTROL SOLENOID
DIODE
361 R
IDLE SPEED ACTUATOR
361 R
361 R
361 R
361 R
FUEL INJECTORS
67 GY/W H
67 GY/W H
S138
IGNITION
95 T/R D
95 T/R D
96 T/O D
96 T/O D
S136
S135
95 T/R D
96 T/O D
C150
95 T/R D
96 T/O D
362 Y
11 DG/Y D
35
21
4
58
59
SOLID STATE
ELECTRONIC CONTROL ASSEMBLY (ECA)
29
49
20
16
36
56
30
32
687 GY/Y
94 DG/P H
89 O
SHIELD
376 Y/R
544 P
259 BK/O
324 Y/LG D
C275
324 Y/LG D
349 DG
FOG LAMPS/ FUEL SELECTION
HEATED EXHAUST GAS OXYGEN SENSOR (HEGO)
57 BK
SOLID STATE
TFI IGNITION MODULE
FOR GROUND PATH
SEE PAGE 112
57 BK
G122
G119


4 CYL TURBO
351 O/W
S130
351 O/W
THROTTLE POSITION SENSOR
VANE AIR FLOW METER
351 O/W
355 DG/LG
351 O/W
357 LG/P
200 W/BK
25
43
26
47
SOLID STATE
ELECTRONIC CONTROL ASSEMBLY (ECA)
46
23
48
17
7
45
310 Y/R D
359 BK/W
100 W/R D
354 LG/Y
359 BK/W
358 LG/BK
KNOCK SENSOR
382 Y/BK
BAROMETRIC PRESSURE SENSOR
ENGINE COOLANT TEMPERATURE SENSOR
359 BK/W
C1985
C1984
359 BK/W
EEC TEST
359
C1984 BK/W
359
BK/W
TO FOG LAMPS/ FUEL SELECTION
PAGE 114
359
S132
359
BK/W
359
BK/W

HOW THE CIRCUIT WORKS

The **Electronic Engine Control System (EEC IV)** includes an **Electronic Control Assembly (ECA)** that receives inputs from various sensors. The ECA uses this information to provide improved fuel economy and performance, and lower exhaust emissions.

The **EEC SYSTEM** has a special **Distributor** that has no magnetic pickup or advance mechanisms. Instead, all ignition timing is controlled by the **ECA**.

The **ECA** receives engine timing information from the **Distributor** through the **TFI Ignition Module**. The **ECA** uses this information for spark timing and advance.

4 CYL 50 STATES

Carburetion

The 4 CYL 50 STATES EEC system applies the precision of electronic control to the basic principles of carburetion. Fuel/air ratio is controlled by the **Control Solenoid**, which positions the fuel control rod on command of the **ECA**. The **Idle Speed Motor** controls fuel flow in idle conditions.

The **Canister Purge Solenoid** controls the flow of vapors from the canister to the intake manifold during various engine operating modes.

Thermactor Air

The efficiency of the catalytic converter is dependent upon the temperature and chemical make-up of the exhaust gases. To meet these requirements, an air supply system called **Thermactor Air** is provided. Depending on engine conditions sensed by the **ECA**, thermactor air is sent to one of three places.

With the **Thermactor Air Diverter Solenoid** in normal (operated) position, thermactor air flows to the catalytic converter. During engine warmup, the **Thermactor Air Diverter Solenoid** does not operate. Thermactor air is then diverted to the exhaust manifold.

When the **Thermactor Air Bypass Solenoid** is operated, thermactor air is dumped to the atmosphere rather than to the catalytic converter or exhaust manifold.

Sensing Devices

Various sensing devices are used to determine engine operating conditions. They provide the **ECA** with throttle, pressure, temperature, and exhaust gas information. The **Throttle Position Sensor** sends one of three

COMPONENT LOCATION

		Page-Figure	Color	Terminals
Barometric Pressure Sensor	RH front fender apron	124-1		
Canister Purge Solenoid	LH side of engine			
Control Solenoid	Mounted on rear of carburetor			
EEC Power Relay	Attached to lower RH cowl near ECA	123-1		
EGR Control Solenoid	RH front fender apron	123-2		
EGR Valve Position Sensor	At top of RH front of engine			
EGR Vent Solenoid	RH front fender apron			
Electronic Control Assembly	Attached to lower RH cowl	123-1		
Engine Coolant Temperature Sensor	Top of engine in front of carburetor	121-1		
Exhaust Gas Oxygen (EGO) Sensor	LH rear of engine	121-1		
Exhaust Heat Control Solenoid	RH side of engine compartment			
Fuel Injectors	Upper LH side of engine	121-1		
Fuel Pump	At top of fuel tank	122-4		
Fuel Pump Relay	Under driver's seat			
Fuse Link P,W,Q	At starter relay	5-4, 20-1		
Heated Exhaust Gas Oxygen Sensor	Lower RH side of engine on manifold			
Idle Speed Motor	Attached to LH side of carburetor	9-1		
Inertia Switch	In floor of trunk, to left of tire well			
Knock Sensor	At bottom of LH rear of engine	121-1		
Manifold Charge Temperature Sensor	RH side of engine on manifold	9-1		
Thermactor Air Solenoids	RH front fender apron			
Throttle Kicker Solenoid	Upper RH dash panel			
TFI Ignition Module	Connected to RH side of distributor	121-1		

(continued on next page)

(Continued from page 115)

signals to the **ECA** to indicate closed, partially open, or wide open throttle.

The **Barometric Pressure Sensor** measures atmospheric pressure (changes with altitude) when the Ignition Switch is turned to START or when throttle is wide open. At other times the sensor measures manifold absolute pressure.

The **Exhaust Gas Oxygen Sensor** provides a voltage to the **ECA** for regulating the air/fuel ratio by sensing the oxygen content of the exhaust gases. Oxygen shows a lean exhaust gas mixture while no oxygen shows a rich mixture.

6 AND 8 CYL CFI

Fuel Flow

The 6 and 8 CYL CFI engines use **EEC III Central Fuel Injection** (CFI). Fuel is injected directly into the engine through the fuel charging assembly (Fuel Injectors #1 and #2). Fuel pressure is built up by the **Electric Fuel Pump**. With the **Ignition Switch** in START or RUN, the **EEC Power Relay** applies voltage to the circuit. When controlled by the **Electronic Control Assembly**, and with the **Inertia Switch** closed, the **Fuel Pump Relay** operates, applying power to the **Fuel Pump** through the **Inertia Switch**.

The Idle Speed Motor (found on 8 cyl CFI engines) controls fuel flow in idle conditions.

When the **Throttle Kicker Solenoid** (found on 8 cyl CFI engines) is grounded by the **ECA**, the engine idle is increased.

The **Canister Purge Solenoid** (also on 8 cyl CFI engines) controls the flow of fuel vapors from the canister to the intake manifold during various engine operating modes.

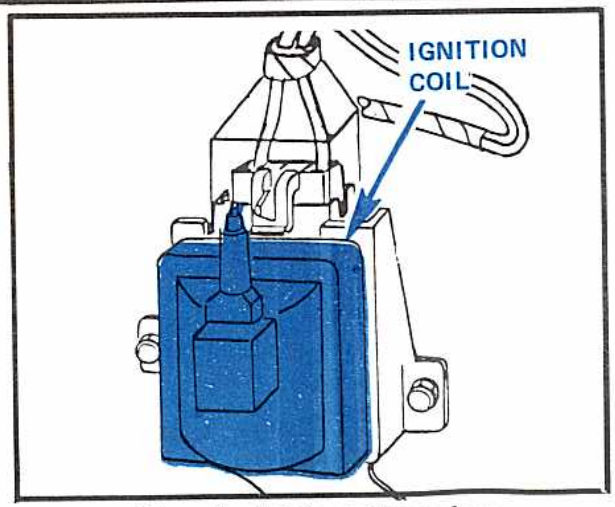
Thermactor Air

The efficiency of the catalytic converter is dependent upon the temperature and chemical make-up of the exhaust gases. To meet these requirements an air supply system called **Thermactor Air** is provided. Depending on engine conditions sensed by the **ECA**, thermactor air is sent to one of three places.

With the **Thermactor Air Diverter Solenoid** in normal (operated) position, thermactor air flows to the catalytic converter. During engine warmup, the **Thermactor Air Diverter Solenoid** does not operate. Thermactor air is then diverted to the exhaust manifold.

When the **Thermactor Air Bypass Solenoid** is operated, thermactor air is dumped to the atmosphere rather than to the catalytic converter or exhaust manifold.

		Page-Figure	Color	Terminals
Throttle Position Sensor				
Turbo	At upper rear center of engine	115-1		
Non-Turbo	Attached to RH side of carburetor	9-1		
Vane Air Flow Meter	Inside front RH fender apron	124-1		
Connector C149	Near battery		BK	1
Connector C162	Upper LH rear side of engine		BK	4
Connector C163	Rear of LH shock tower		BK	4
Connector C166	Rear side of RH valve cover		BK	4
Connector C274	LH cowl below access hole		GY	3
Connector C275	LH side of engine		N	2
Connector C358	Near ignition coil		BR	1
Connector C1984	Near ignition coil	20-1	GY	6
Connector C1985	Near ignition coil	20-1	GY	1
Ground G101	Lower LH front of engine	124-2		
Ground G116	RH fender apron, by battery	13-1		
Ground G118	At electronic control assembly	123-1		
Ground G119	RH front of engine at air scoop	124-1		
Ground G301	LH side of trunk lid striker	35-2		
Splice S127	In 12A581, near T/O to 19D887			
Splice S129	In 14405, between T/O to fuel pump relay and T/O to 13B440			
Splice S130	In 12A581, near T/O to EGR solenoid			
Splice S131	In 12A581, near connector to battery ground terminal			
Splice S132	In 12A581, near T/O to EEC power relay			
Splice S149	In 12A581, near T/O to EEC power relay			
Splice S505	In 14405, near T/O to inertia switch			



EGR (Exhaust Gas Recirculation)

THE **EGR Vent** and **Control Solenoids** control EGR valve movement. The ECA receives data from seven sensors. It also checks existing valve position through the **EGR Valve Position Sensor**, and calculates if the present EGR flow should be increased, maintained or decreased. The **ECA** then determines which **EGR** solenoids will be operated or not operated to control emissions.

Sensing Devices

Various sensing devices are used to determine engine operating conditions. They provide the **ECA** with throttle, pressure, temperature, and exhaust gas information. The Throttle Positon Sensor sends one of three signals to the **ECA** to indicate closed, partially open, or wide open throttle.

The **Manifold Charge Temperature Sensor** measures the air temperature in the air cleaner and sends the signal to the ECA.

The **Barometric Pressure Sensor** measures atmospheric pressure (changes with altitude) when the Ignition Switch is turned to START or when throttle is wide open. At other times the sensor measures manifold absolute pressure.

The **Exhaust Gas Oxygen Sensor** (Heated EGO Sensor - 8 cyl CFI) provides a voltage to the **ECA** for regulating the air/fuel ratio by sensing the oxygen content of the exhaust gases. Oxygen shows a lean exhaust gas mixture while no oxygen shows a rich mixture. The heated EGO sensor provides better emission control during cold weather operation.

The **Knock Sensor** (found on 6 cyl CFI engines) detects engine knock so that timing can be retarded by the **ECA**.

The **ECA** grounds the **Heat Exhaust Control Solenoid** (found on 6 cyl CFI engines) when the engine is cold. The solenoid enables hot exhaust gases to flow around and warm the intake manifold.

The ECA ground the **Heat Exhaust Control Solenoid** (found on 6 cyl CFI engines) when the engine is cold. The solenoid enables hot exhaust gases to flow ground and warm the intake manifold.

EFI TURBO

The 2.3L EFI Turbo engine uses **EEC IV** Electronic Fuel Injection (EFI). Fuel is injected directly into each cylinder through the **Fuel Injectors**. A carburetor is not used. Fuel pressure is built up by the **Electric Fuel Pumps**. With the **Ignition Switch** in START or RUN, the **EEC Power Relay** applies voltage to the circuit. When controlled by the **Electronic Control Assembly**, and with the **Inertia Switch** closed, the **Fuel Pump Relay** operates, applying power to the **Fuel Pumps** through the **Inertia Switch**.

Current to the **Rear Fuel Pump** passes through a ballast **Resistance Wire**, and this pump, mounted in the fuel tank, pumps fuel at low pressure. Pressure is boosted by the **Front Fuel Pump**.

The **Idle Speed Actuator** controls air flow to increase idle speed on low temperature. It adjusts for load when the A/C and power steering operate.

Exhaust Gas Recirculation (EGR)

The **EGR Control Solenoid** sends vacuum to the ported EGR valve, which allows exhaust gases to recirculate. The solenoid operates at a time after the engine starts. With higher coolant temperature at start, the time delay is shorter. It turns off at high temperature, high load (boost) and high engine speed.

Sensing Devices

Various sensing devices are used to determine engine operating conditions. They provide the **ECA** with throttle pressure, temperature, and exhaust gas information. The Throttle Position Sensor sends one of three signals to the **ECA** to indicate closed, partially open, or wide open throttle.

The **Engine Coolant Temperature Sensor** measures engine temperature.

The **Barometeric Pressure Sensor** measures atmospheric pressure (changes with altitude).

The **Exhaust Gas Oxygen Sensor** provides a voltage to the **ECA** for regulating the air/fuel ratio by sensing the oxygen content of the exhaust gases. Oxygen shows a lean exhaust gas mixture while no oxygen shows a rich mixture.

The **Vane Air Flow Meter** measures both the temperature and flow rate of inlet air. The **ECA** computer uses these signals to calculate mass air flow.

The **Knock Sensor** detects engine knock so that timing can be changed.

TROUBLESHOOTING HINTS

If the **EEC** engine operates with 10° BTDC constant spark timing, and the EGR system does not operate, there is a problem in either the calibration assembly or the **ECA** (LOS mode).

The constant 10° advance is a fail-safe mode which permits the car to be driven in for service when the electronics are not operating correctly. When this happens, it is necessary to go into the full electronics diagnosis routine.

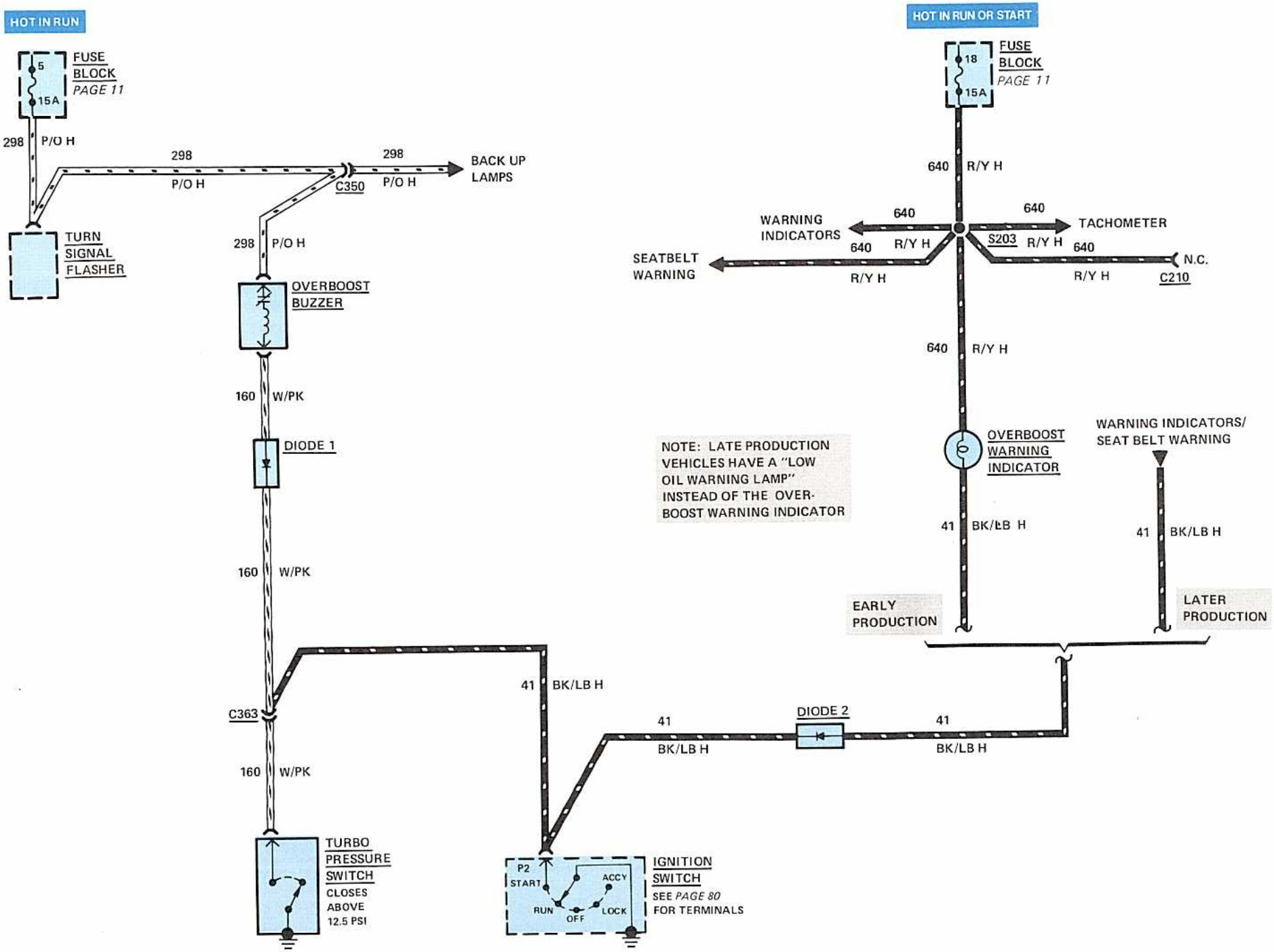
Read the Shop Manual and special service bulletins for complete **EEC** test procedures using special Rotunda test equipment.

NOTE

The Voltage Regulator with BLACK connector is used with Alternator Warning Indicator;
GRAY connector with Ammeter;
CLEAR connector with either.

NOTE

If engine does not operate after a collision, it is possible the **Inertia Switch** has opened. Switch can be reset by pushing down on plunger of switch.


HOT IN RUN
FUSE BLOCK PAGE 11
5
15A
298 P/O H
298 P/O H
298 P/O H
298 P/O H
C350
BACK UP LAMPS
TURN SIGNAL FLASHER
298 P/O H
OVERBOOST BUZZER
160 W/PK
DIODE 1
160 W/PK
C363
160 W/PK
TURBO PRESSURE SWITCH CLOSES ABOVE 12.5 PSI
41 BK/LB H
41 BK/LB H
DIODE 2
41 BK/LB H
IGNITION SWITCH
SEE PAGE 80 FOR TERMINALS
P2
START
ACCY
RUN
OFF
LOCK
HOT IN RUN OR START
FUSE BLOCK PAGE 11
18
15A
640 R/Y H
WARNING INDICATORS
640 R/Y H
640
640 R/Y H
S203 R/Y H
640 R/Y H
TACHOMETER
SEATBELT WARNING
640 R/Y H
N.C.
C210
640 R/Y H
OVERBOOST WARNING INDICATOR
41 BK/LB H
WARNING INDICATORS/ SEAT BELT WARNING
41 BK/LB H
NOTE: LATE PRODUCTION VEHICLES HAVE A "LOW OIL WARNING LAMP" INSTEAD OF THE OVER-BOOST WARNING INDICATOR
EARLY PRODUCTION
LATER PRODUCTION

HOW THE CIRCUIT WORKS

The **Turbo Boost System** is powered by engine exhaust gases. The gases rotate the turbine, which rotates the compressor. The compressor increases pressure in the engine intake manifold. As engine speed increases, the turbine and compressor rotate faster and the intake manifold pressure increases.

When the manifold pressure exceeds about 12.5 psi, the engine is overboosted. The HI **Turbo Pressure Switch** closes. The **Overboost Buzzer** sounds, and the **Overboost Warning Indicator** goes on (for vehicles with **Overboost Warning Indicator**).

When the Ignition Switch is in the START position, ground is connected to the **Overboost Buzzer** and the **Overboost Warning Indicator** to test these circuits.

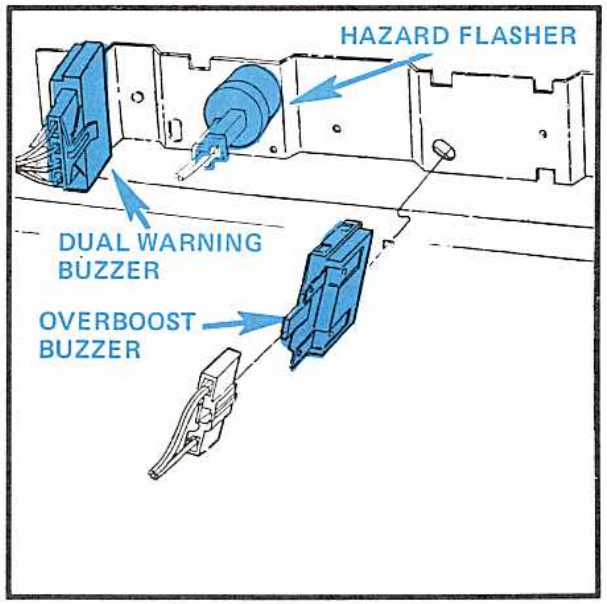


Figure 1 - Above Glove Box

COMPONENT LOCATION

		Page-Figure	Color	Terminals
Diode 1	Near takeout to overboost buzzer, in harness			
Diode 2	Near radio receiver, in harness			
Ignition Switch	Lower RH side of steering column	53-1		
Overboost Buzzer	On bracket above glove box	119-1		
Overboost Warning Indicator	At LH side of I/P	119-1		
Turbo Pressure Switch	Rear face of RH shock tower	123-2		
Connector C350	Behind center of I/P		BK	8
Connector C363	Behind RH corner of I/P		GR	8
Splice S203	In 14401, near T/O to horn switch			

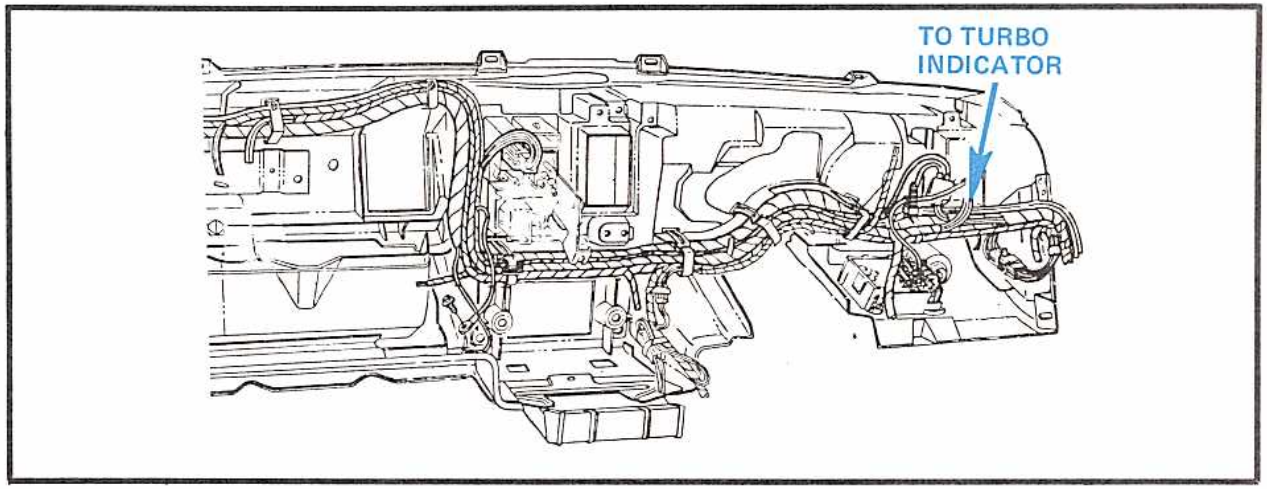
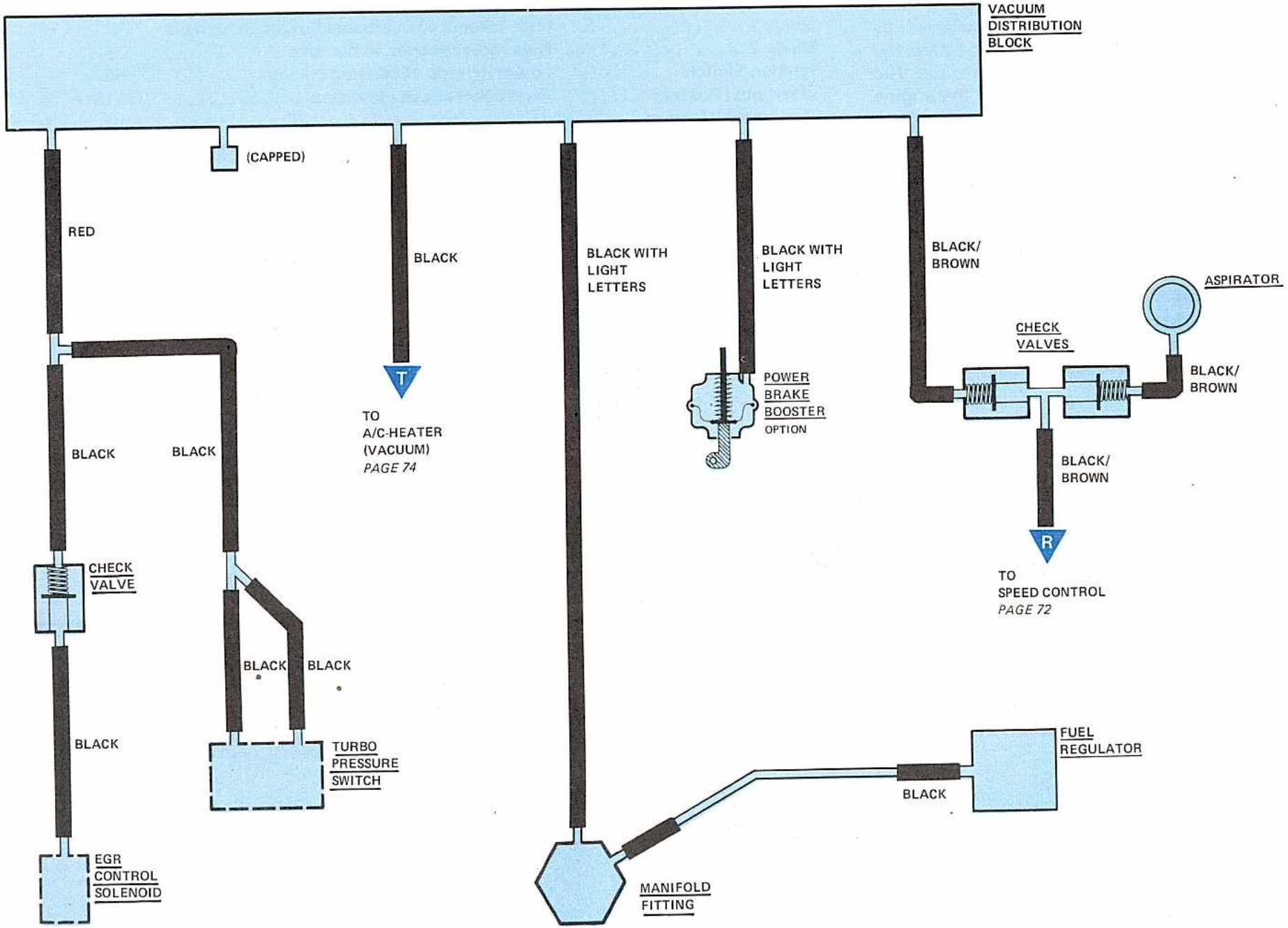


Figure 2 - Rear View Of Instrument Panel

NOTE: Late production vehicles do not have an overboost warning indicator.

4 CYL TURBO


VACUUM DISTRIBUTION BLOCK
(CAPPED)
RED
BLACK
BLACK WITH LIGHT LETTERS
BLACK WITH LIGHT LETTERS
BLACK/ BROWN
ASPIRATOR
CHECK VALVES
BLACK/ BROWN
T
TO A/C-HEATER (VACUUM)
PAGE 74
POWER BRAKE BOOSTER
OPTION
BLACK
BLACK
BLACK/ BROWN
R
TO SPEED CONTROL
PAGE 72
CHECK VALVE
BLACK
BLACK
BLACK
TURBO PRESSURE SWITCH
FUEL REGULATOR
BLACK
EGR CONTROL SOLENOID
MANIFOLD FITTING

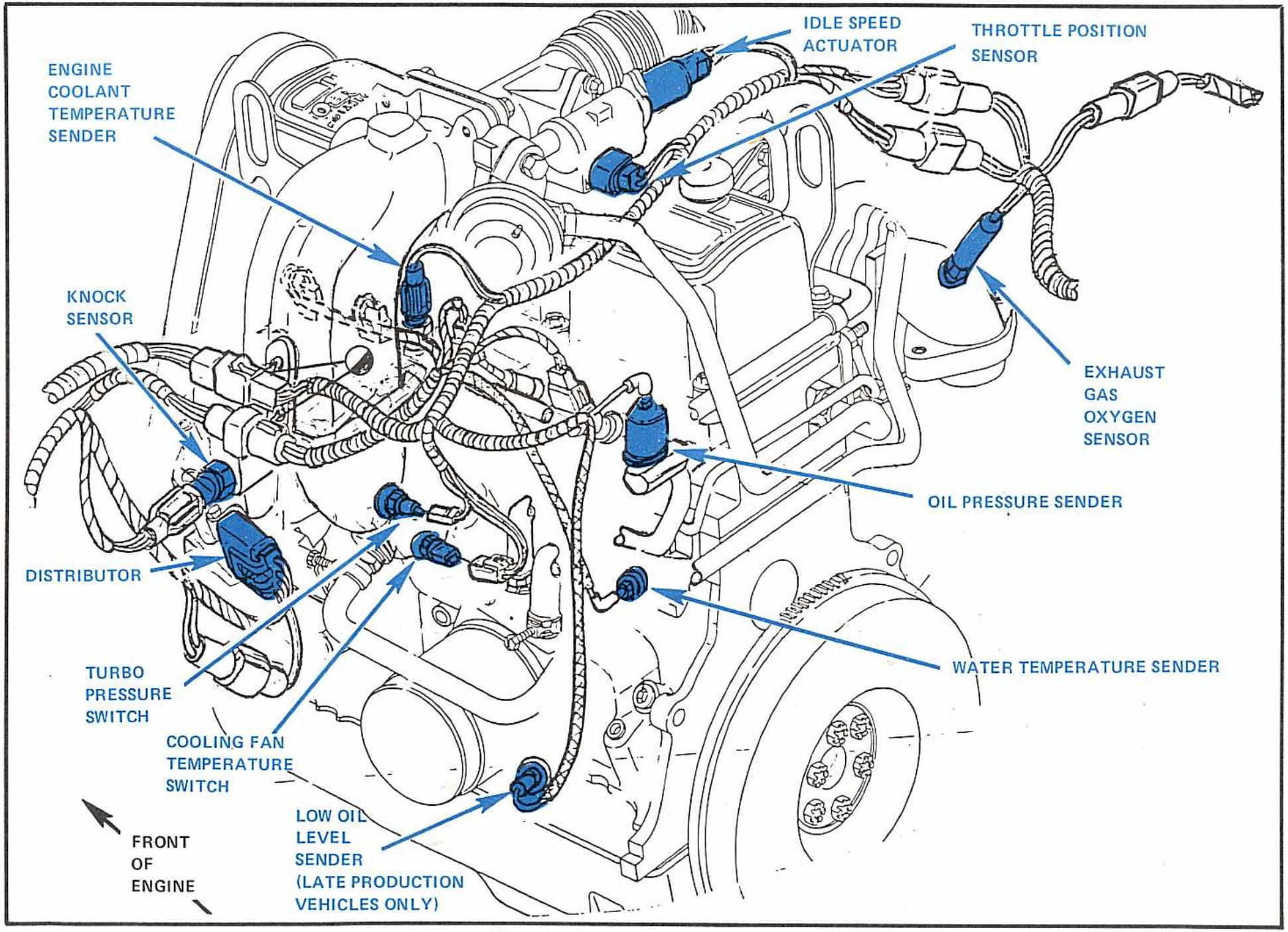


Figure 1 - LH Side Of 2.3L EFI Turbo Engine

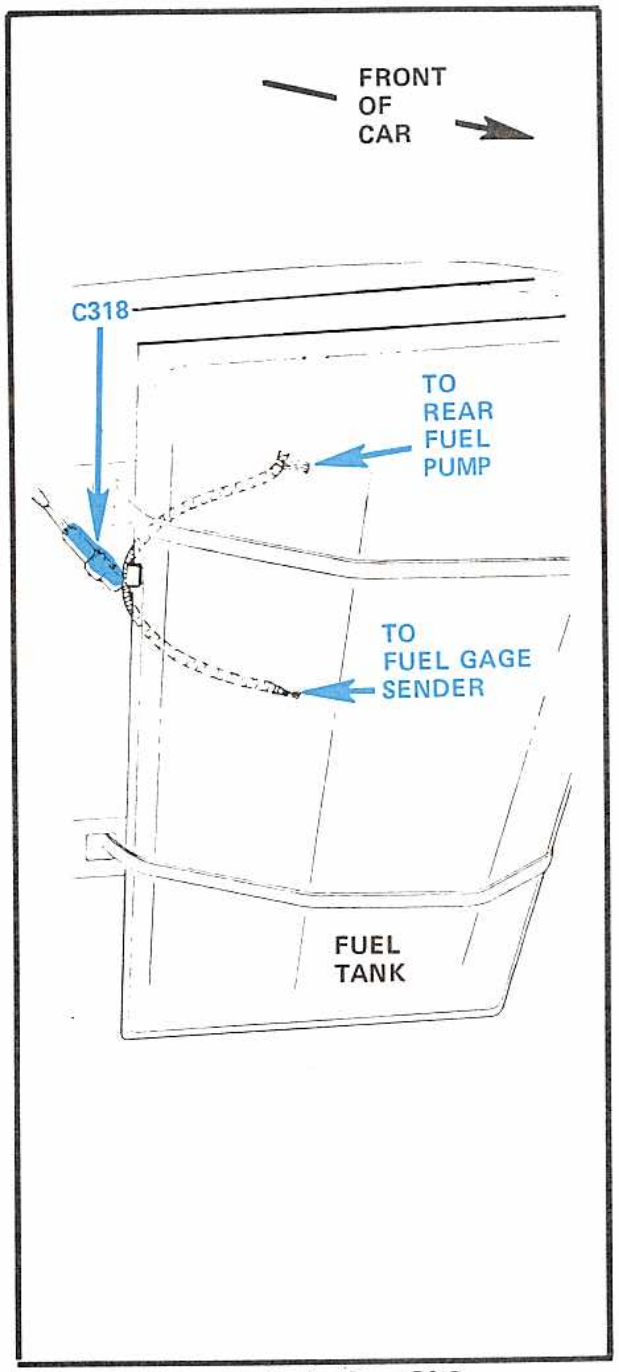


Figure 1 - Under Rear Of Car

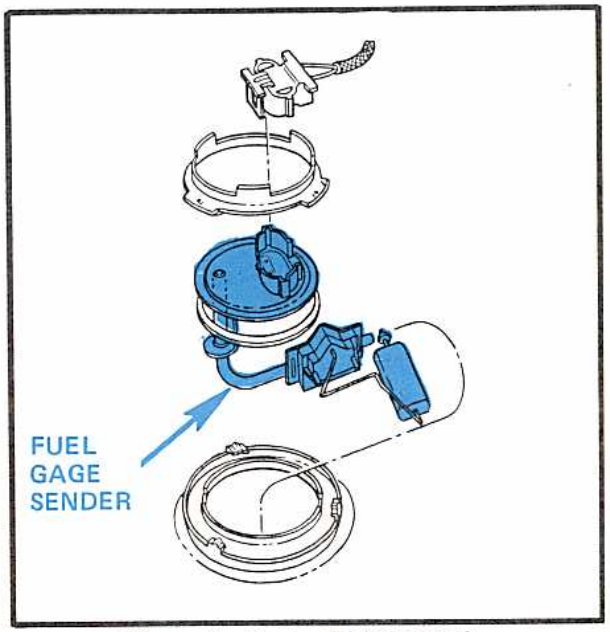


Figure 2 - Center Of Fuel Tank

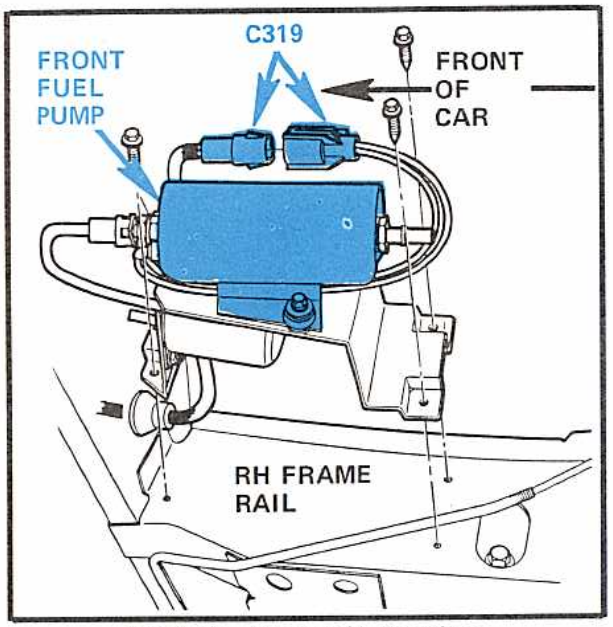


Figure 3 - Under RH Rear Seat

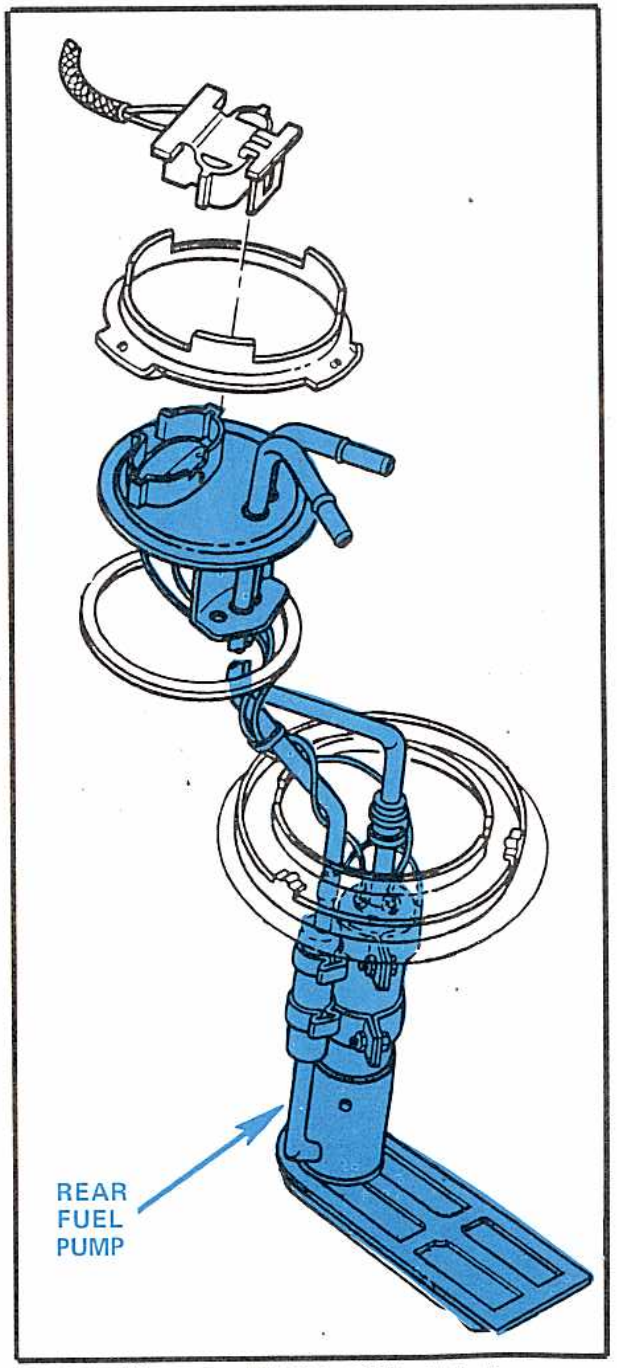


Figure 4 - RH Side Of Fuel Tank

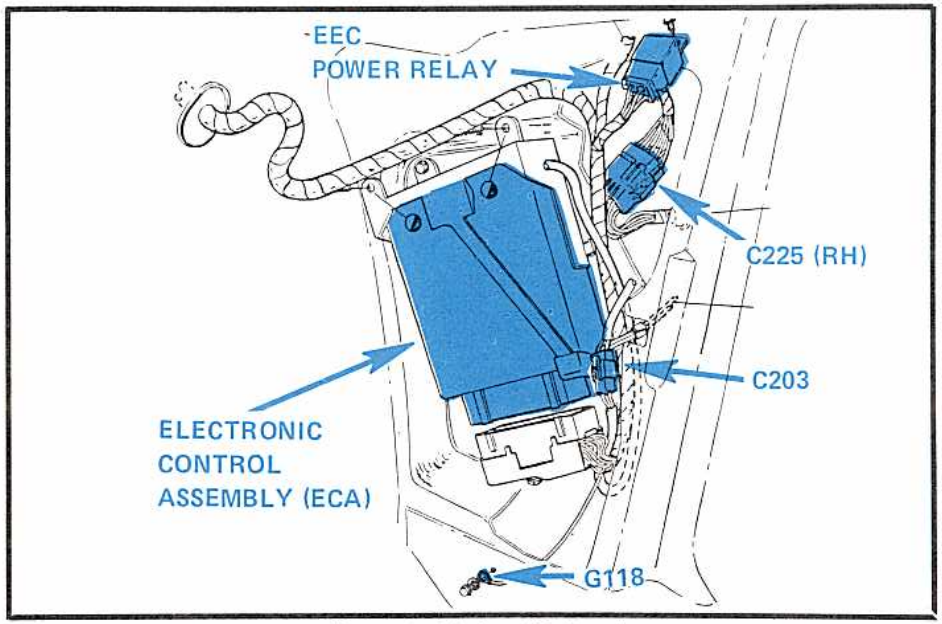


Figure 1 - Under RH Cowl

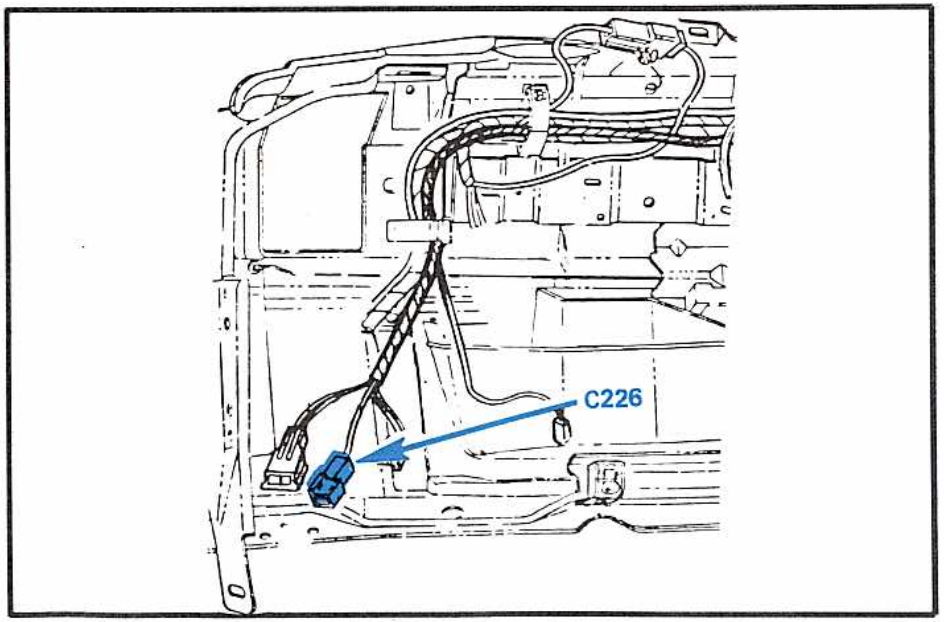


Figure 3 - Behind RH Side Of I/P

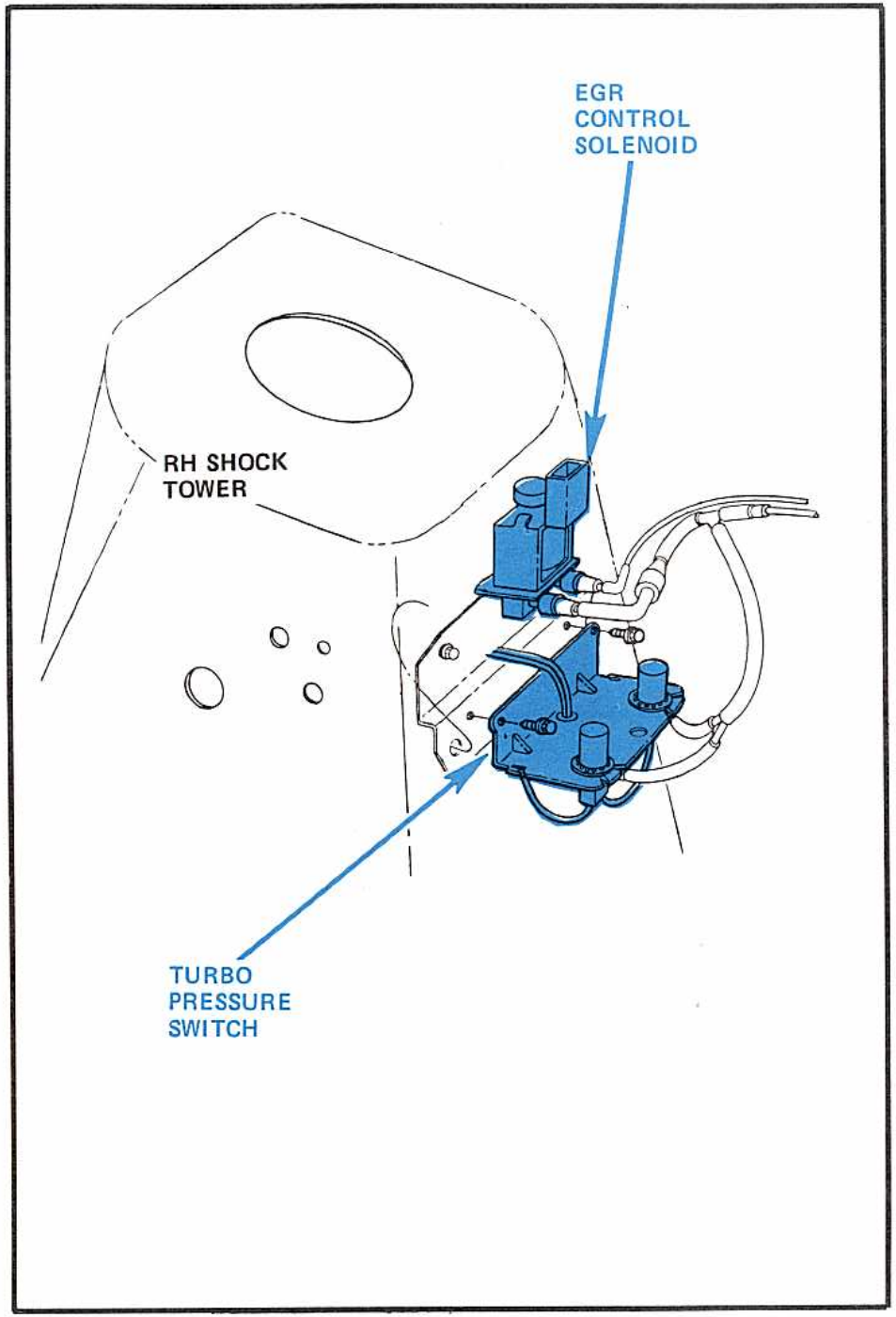


Figure 2 - RH Rear Of Engine Compartment

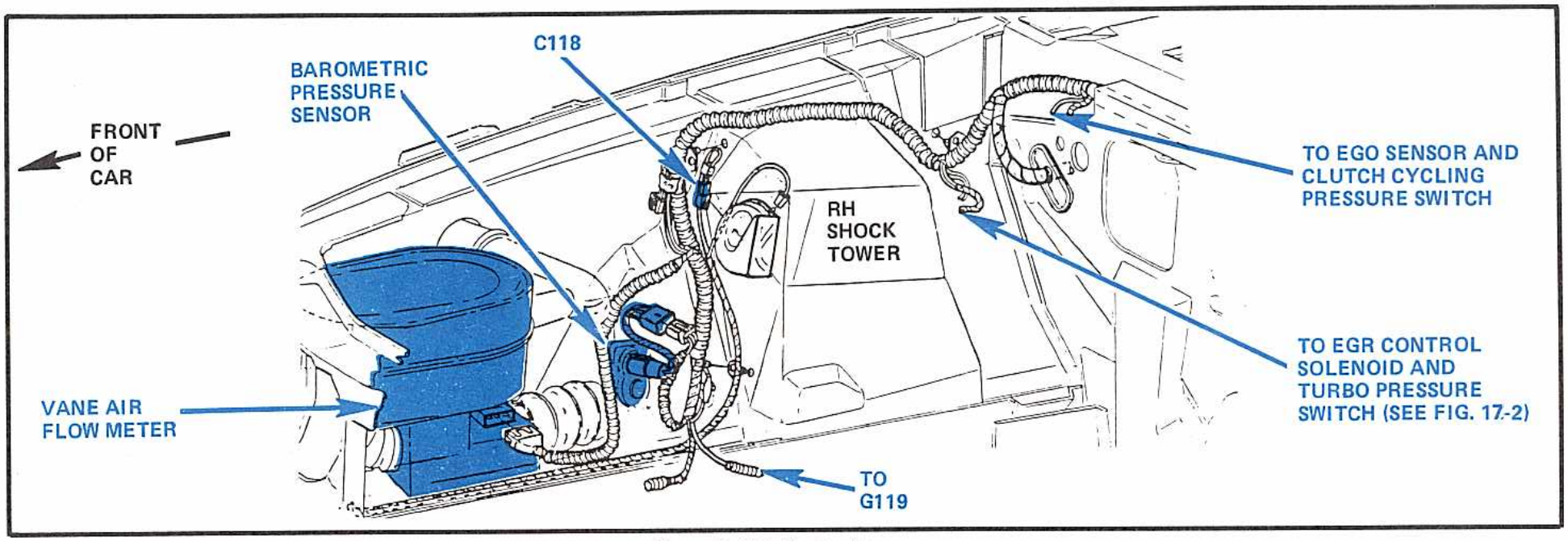


Figure 1 - RH Fender Apron

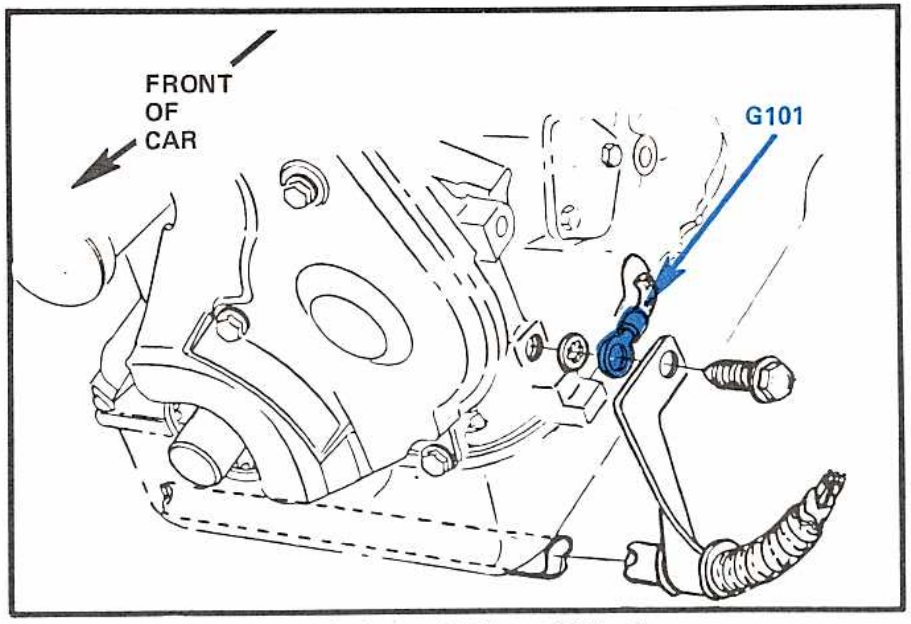


Figure 2 - Lower LH Front Of Engine

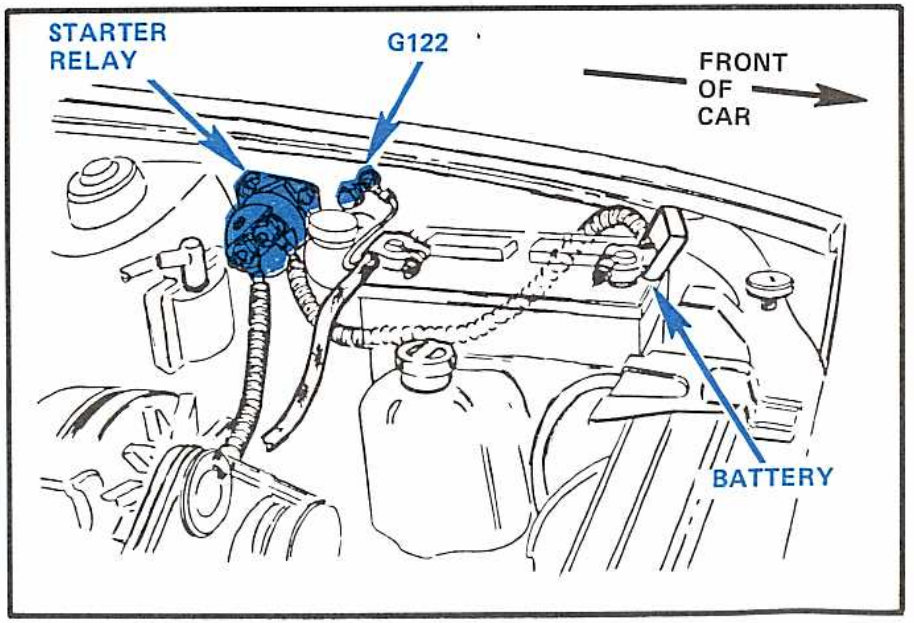


Figure 3 - LH Fender Apron