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SCHEMATIC WIRING DIAGRAMS

ACTIVE NOISE CANCELLATION WIRING SCHEMATICS

Active Noise Cancellation

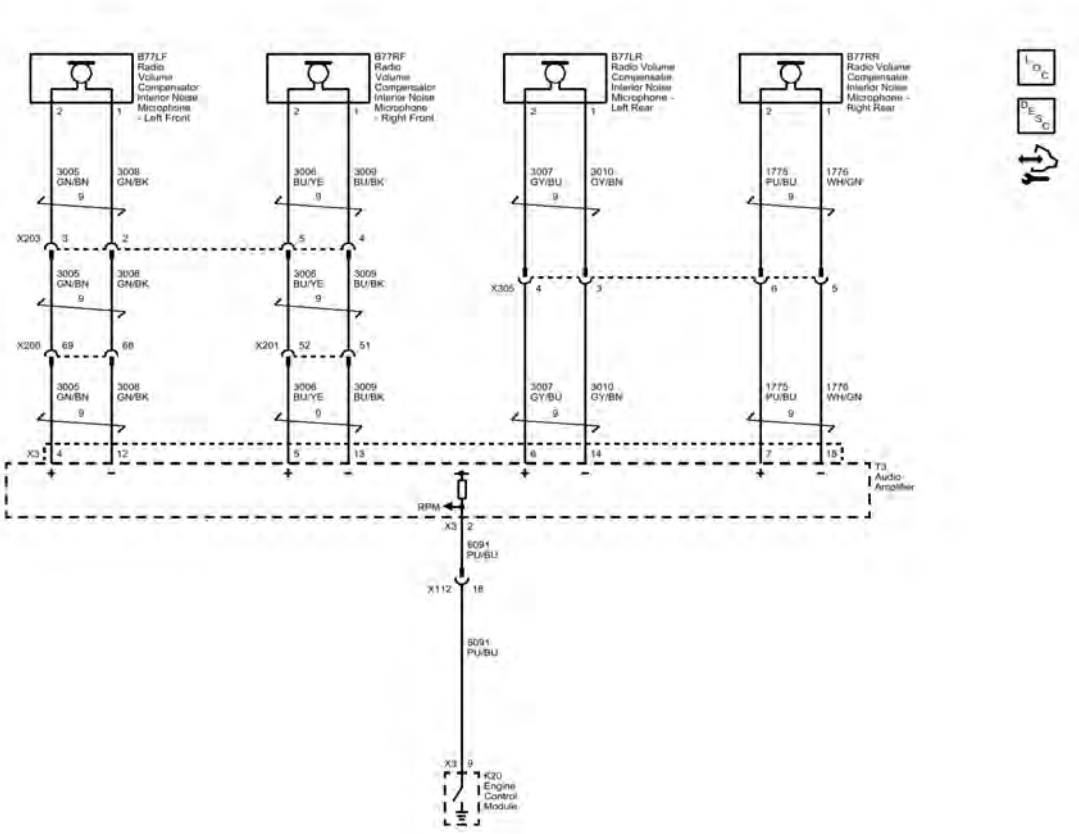

Fig. 1: Active Noise Cancellation
Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DTC B0560: ENGINE RPM INPUT CIRCUIT SIGNAL INVALID

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- Refer to **Diagnostic Procedure Instructions** to provide an overview of each diagnostic category.

DTC Descriptor

DTC B0560 08

Engine RPM Input Circuit Signal Invalid

Circuit/System Description

The Audio Amplifier receives a discrete pulse-width modulated engine speed signal from the Engine Control Module. The Audio Amplifier uses the engine RPM signal for operating active noise

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DIAGNOSTIC INFORMATION AND PROCEDURES

AIR/WIND NOISE

Air/Wind Noise-Diagnosis and Tests

Tools

- Stethoscope
- Duct tape, foam, etc.

WARNING: **Refer to Assistant Driving Warning .**

Overview

To analyze a reported wind noise condition, use the following outline:

- Speak with the customer to obtain as much information as possible.
- Perform a static evaluation of the vehicle to identify potential areas of concern.
- Test drive the vehicle to determine the source of the noise.
- Select the appropriate solution.
- After repair, re-evaluate the vehicle to confirm the customer's complaint is resolved.

When test driving the vehicle, choose a regular route with smooth and straight roads. The area should have little traffic and little noise in order to minimize interference with the test. Drive the vehicle at the speed in which the noise was noticed, or until the noise is heard. Maintain safe and legal speeds.

You can diagnose the following types of wind noise:

- Wind whistle/wind leaks
- Wind rush

When moving at highway speeds, air pressure inside the vehicle becomes greater than the air pressure outside. When a leak occurs, the escaping air causes a hiss or a whistle. Wind whistle/wind leaks are repairable when properly root caused.

Wind rush occurs when air presses over the vehicle's body, and is related to the aerodynamics of the vehicle. Some wind rush is repairable as it relates to part fits and body panel fits. A thorough root cause analysis is required before concluding that the wind noise is not repairable.

Air/Wind Noise - Diagnostic Procedure

Use the following procedure in order to diagnose wind noise:

1. It is important to obtain as many details from the customer as possible in order to assure that you are addressing the issue that the customer hears. Note the following details:
    - The perceived location (B-pillar, mirror, roof, rear of vehicle, front of vehicle, high or low in vehicle)
    - The location where the noise is loudest (specific location along the door header, front edge of sunroof, etc.)
    - The volume of the noise (very loud, can only hear when radio is off and no ambient noises)
    - The ambient conditions (temperature, windy, direction of wind, quiet)
    - The road surface (rough, smooth, smooth concrete, ribbed concrete, asphalt)
    - The vehicle speed (city, highway, all speeds)

DTC B2476 59

Cellular Phone Select Service Switch Protection Time-out

DTC B2482 00

Cellular Phone Select Service Switch Range/Performance

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
10 V Reference	B2476 02	B2476 04	B2476 04	-
Signal Terminal 17	B2476 02	B2476 04	B2476 59	B2476 59, B2482 00
Ground	-	B2476 04	-	-

Circuit/System Description

The OnStarÂ® button assembly consists of 3 buttons: Call/Answer, OnStarÂ® Call Center, and OnStarÂ® Emergency. The telematics communication interface control module supplies the OnStarÂ® button assembly with 10 V via the 10 V reference circuit. Each of the buttons, when pressed, completes the circuit across a resistor allowing a specific voltage to be returned to the telematics communication interface control module over the keypad signal circuit. Depending upon the voltage range returned, the telematics communication interface control module is able to identify which button has been pressed.

Conditions for Running the DTC

- Vehicle in Service Mode/Ignition ON.
- Battery voltage must be between 9 - 16 V.

Conditions for Setting the DTC

B2476 04

The telematics communication interface control module detects an open/high resistance on the keypad supply voltage circuit.

B2482 and B2476 59

The telematics communication interface control module detects a valid signal on the keypad signal circuit for longer than 15 s. If one of the OnStarÂ® buttons is held or stuck for 15 s or greater, the telematics communication interface control module will set this DTC.

Action Taken When the DTC Sets

- The OnStarÂ® status LED turns red.
- No calls can be placed.
- The telematics communication interface control module will ignore all inputs from the OnStarÂ® button assembly.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- A history DTC will clear once 50 consecutive malfunction-free ignition cycles have occurred.

Diagnostic Aids

After any repair is made to the 10 V reference circuit or button signal circuit the fuse to the telematics communication interface control module must be removed for 30 s to reset the control module. Failure to do so could result in incorrect diagnosis.

Reference Information

Schematic Reference

- **If not the specified state**

  Test or replace the component:S79RR Window Switch - Right Rear

- **If the specified state**

13. Operate the component:S79RR Window Switch - Right Rear - Pressed & Pulled

    Verify the scan tool parameter:

    - Right Rear Window Switch at Door=Up
    - Right Rear Window Switch at Door=Down
    - Right Rear Window Switch at Door=Express Down
    - **If not the specified state**

      Test or replace the component:S79RR Window Switch - Right Rear

    - **If the specified state**

14. All OK.

Circuit/System Testing

Test 1

> **NOTE:** **It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.**

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector:S79D Window Switch - Driver
3. Test for less than 10 ohms between the test points:Ground circuit terminal 24 & Ground
    - **If 10 ohms or greater**
    1. Ground Connection - Disconnect
    2. Test for less than 2 ohms between the test points:Ground circuit terminal 24 @Component harness & Ground Connection
        - If 2 ohms or greater - Repair the open/high resistance in the circuit.
        - If less than 2 ohms - Repair the open/high resistance in the ground connection.
    - **If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify a test lamp turns On between the test points: B+ circuit terminal 23 & Ground
    - **If the test lamp does not turn On and the circuit fuse is OK**
    1. Ignition/Vehicle - Off & Remove - Test lamp
        - If 2 ohms or greater - Repair the open/high resistance in the circuit.
        - If less than 2 ohms - Verify the fuse is OK and there is voltage at the fuse.
    - **If the test lamp does not turn On and the circuit fuse is open**
    1. Ignition/Vehicle - Off & Remove - Test lamp
    2. Test for infinite resistance between the test points:B+ circuit terminal 23 & Ground
        - If less than infinite resistance - Repair the short to ground on the circuit.
        - If infinite resistance - Replace the component:S79D Window Switch - Driver
    - **If the test lamp turns On**
6. Verify the scan tool parameter:Driver Window Main Control Down Switch=Inactive
    - **If not the specified state**
    1. Ignition/Vehicle - Off
    2. Disconnect the electrical connector:M35D Window Motor Module - Driver

- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition ON, headlamps ON.
2. Verify the scan tool Rear Fog Lamps Switch parameter changes between Active and Inactive while commanding the rear fog lamp ON and OFF with the rear fog lamp switch.
   - **If the parameter does not change**

     Refer to Rear Fog Lamp Switch Malfunction.

   - **If the parameter changes**
3. Verify the rear fog lamp turns ON and OFF when commanding the Rear Fog Lamps ON and OFF with a scan tool.
   - **If the rear fog lamp does not turn ON and OFF**

     Refer to Rear Fog Lamp Malfunction.

   - **If the rear fog lamp turns ON and OFF**
4. All OK.

Circuit/System Testing

Rear Fog Lamp Switch Malfunction

1. Ignition OFF, scan tool disconnected, all doors closed, all accessories OFF, open and close drivers door, disconnect the harness connector at the S78 Turn Signal/Multifunction Switch. It may take up to 2 min for all vehicle systems to power down.
2. Test for less than 10 Ω between the ground circuit terminal 3 and ground.
   - **If 10 Ω or greater**
   1. Ignition OFF.
   2. Test for less than 2 Ω in the ground circuit end to end.
      - If 2 Ω or greater, repair the open/high resistance in the circuit.
      - If less than 2 Ω, repair the open/high resistance in the ground connection.
   - **If less than 10 Ω**
3. Ignition ON.
4. Verify the scan tool Rear Fog Lamp Switch parameter is Inactive.
   - **If not Inactive**
   1. Ignition OFF, disconnect the X1 harness connector at the K9 Body Control Module.
   2. Test for infinite resistance between the signal circuit terminal 8 and ground.
      - If less than infinite resistance, repair the short to ground on the circuit.
      - If infinite resistance, replace the K9 Body Control Module.
   - **If Inactive**
5. Install a 3 A fused jumper wire between the signal circuit terminal 8 and ground.
6. Verify the scan tool Rear Fog Lamp Switch parameter is Active.
   - **If not Active**
   1. Ignition OFF, disconnect the X1 harness connector at the K9 Body Control Module, ignition ON.
   2. Test for less than 1 V between the signal circuit terminal 8 and ground.
      - If 1 V or greater, repair the short to voltage on the circuit.
      - If less than 1 V

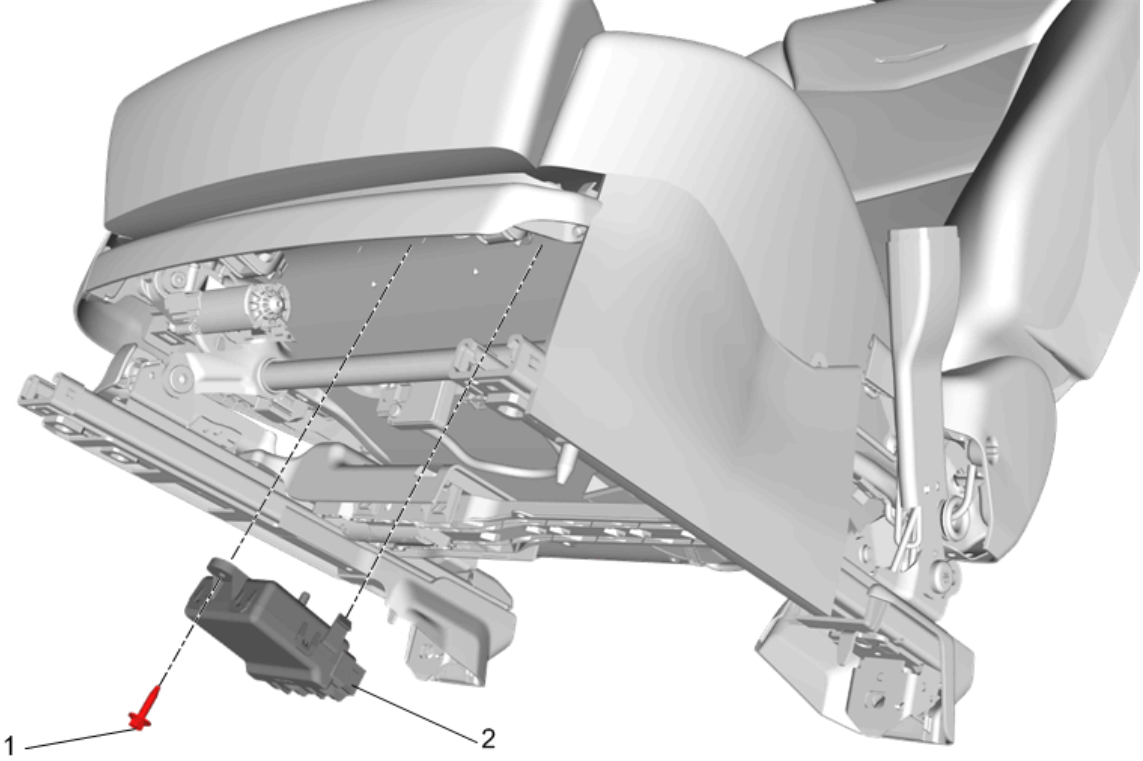


Fig. 14: Front Seat Heater Vent Control Module
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Reposition **Driver or Passenger Seat Removal and Installation**	
1	Front Seat Heater Vent Control Module Fastener **CAUTION:** **Refer to Fastener Caution .** **Tighten** 2.5 N.m (22 lb in)
2	Front Seat Heater Vent Control Module **Procedure** 1. Disconnect the electrical connectors. 2. Release the retaining tabs.

DRIVER OR PASSENGER SEAT BACK HEATER REPLACEMENT

- **If the M75 Windshield Wiper Motor high speed is activated**

1. Ignition OFF, disconnect the X2 harness connector at the X50A Fuse Block - Underhood, ignition ON.
2. Test for infinite resistance between the control circuit terminal 14 and ground.
    - If less than infinite resistance, repair the short to ground on the circuit.
    - If infinite resistance, replace the X50A Fuse Block - Underhood.

- **If the M75 Windshield Wiper Motor high speed is not activated**

18. Connect a 10 A fused jumper wire between the control circuit terminal 16 X4 and B+.
19. Verify the M75 Windshield Wiper Motor activates.
    - **If the M75 Windshield Wiper Motor does not activate**

    1. Ignition OFF, remove the jumper wire, disconnect the X2 harness connector at the X50A Fuse Block - Underhood.
    2. Test for infinite resistance between the control circuit and ground.
        - If less than infinite resistance, repair the short to ground on the circuit.
        - If less than infinite resistance
    3. Test for less than 2 Ω in the control circuit end to end.
        - If 2 Ω or greater, repair the open/high resistance in the circuit.
        - If less than 2 Ω, test or replace the X50A Fuse Block - Underhood.

    - **If the M75 Windshield Wiper Motor activates**

20. Connect a 10 A fused jumper wire between the control circuit terminal 24 X5 and ground.
21. Verify the M75 Windshield Wiper Motor activates.
    - **If the M75 Windshield Wiper Motor does not activate**

    1. Ignition OFF, remove the jumper wire, disconnect the X2 harness connector at the X50A Fuse Block Underhood.
    2. Test for less than 1 V between the control circuit and ground.
        - If 1 V or greater, repair the short to voltage on the circuit.
        - If less than 1 V
    3. Test for less than 2 Ω in the control circuit end to end.
        - If 2 Ω or greater, repair the open/high resistance in the circuit.
        - If less than 2 Ω, test or replace the X50A Fuse Block - Underhood.

    - **If the M75 Windshield Wiper Motor activates**

22. Replace the K9 Body Control Module.

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

- **Fuse Block Replacement**
- **Control Module References** for body control module replacement, programming and setup.

DTC B371A: WINDSHIELD WIPER MOTOR INTERNAL MALFUNCTION

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptor

DTC B371A 39

Windshield Wiper Motor Internal Malfunction

Circuit/System Description

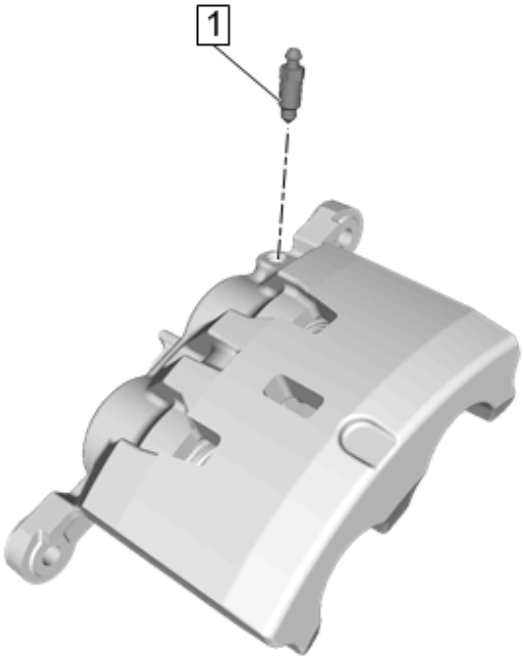


Fig. 82: Brake Caliper Bleeder Valve
Courtesy of GENERAL MOTORS COMPANY

CAUTION: **Refer to Fastener Caution .**

14. Install the brake caliper bleeder valve (1) and tighten to 8 N.m (71 lb in).

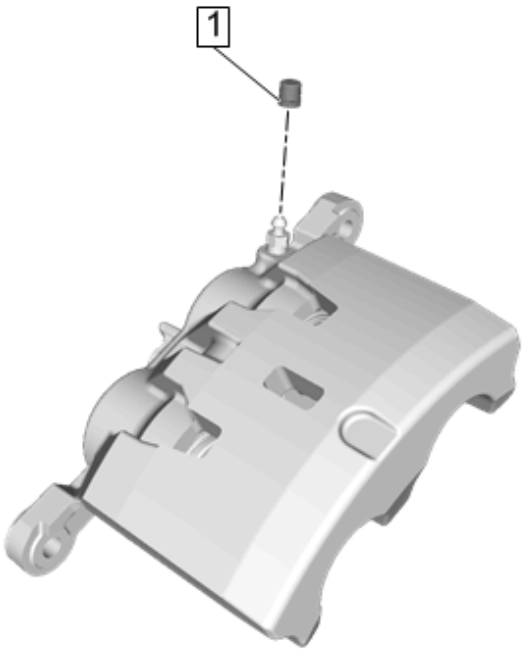


Fig. 83: Brake Caliper Bleeder Valve Cap
Courtesy of GENERAL MOTORS COMPANY

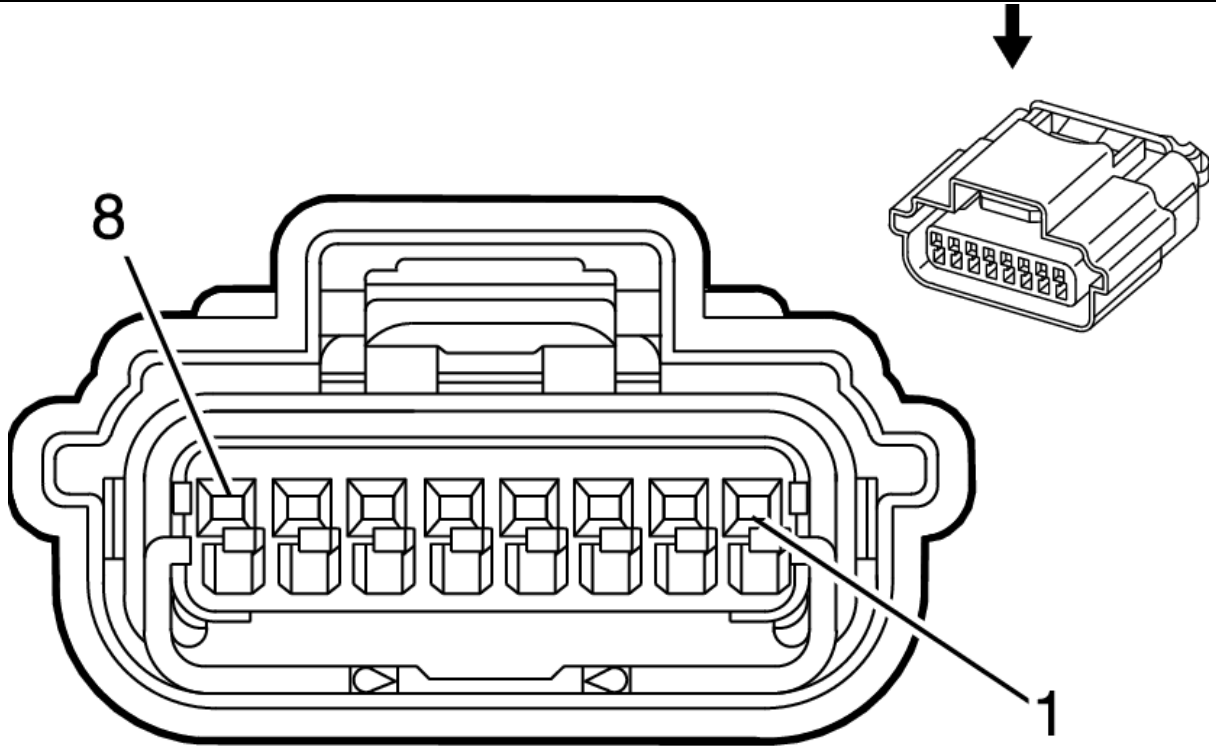
15. Install the brake caliper bleeder valve cap (1).
16. Install the front brake caliper. Refer to **Front Brake Caliper Replacement**

FRONT BRAKE CALIPER BRACKET REPLACEMENT

Removal Procedure

WARNING: **Refer to Brake Dust Warning**

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**
2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation**



Connector Part Information

- Harness Type: Rear Fascia
- OEM Connector: 13591765
- Service Connector: Service by Harness - See Part Catalog
- Description: 8-Way F 0.64 Series, Sealed (BK)

Terminal Part Information

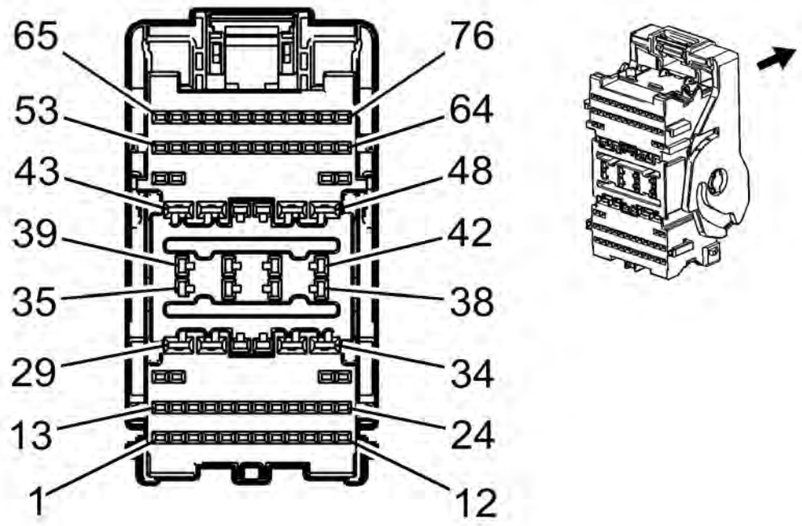
Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray Name	Core Crimp	Insulation Crimp
I	Not Required	J-35616-64B (LT BU)	No Tool Required	Not Required	Not Required	Not Required	Not Required

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.35	GN	5060	Low Speed GMLAN Serial Data	I	-
2 - 3	-	-	-	Not Occupied	-	-
4	0.5	BU/WH	3812	High Speed GMLAN Serial Data (+) 5	I	-
5	0.5	BU/YE	3810	High Speed GMLAN Serial Data (-) 5	I	-
6	-	-	-	Not Occupied	-	-
7	0.35	BK	2050	Ground	I	-
8	0.35	RD/BN	4940	Battery Positive Voltage	I	-

B218R SIDE OBJECT SENSOR MODULE - RIGHT

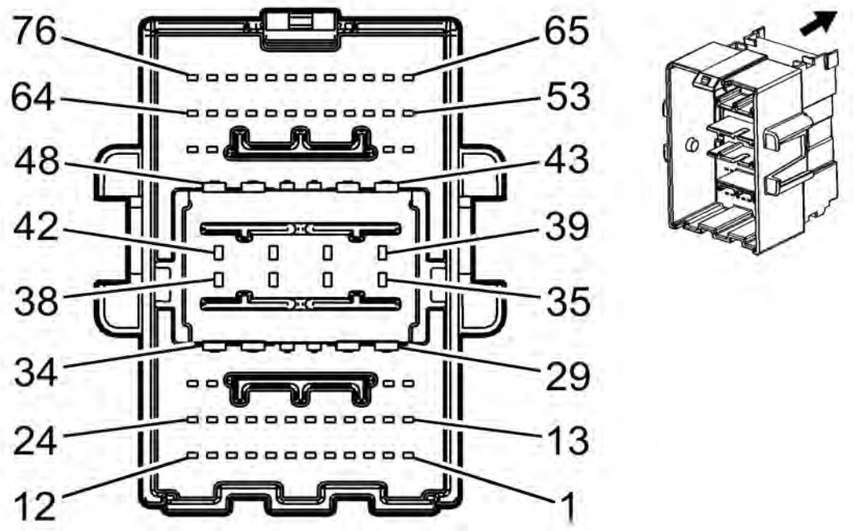
Pin	Size	Color	Circuit	Terminal Type ID	Option	Function	Pin	Size	Color	Circuit	Terminal Type ID	Option
11	0.5	BN/RD	2917	I	-	Fuel Rail Pressure Sensor 5V Reference	11	0.5	BN/RD	2917	II	-
12	0.5	BU/WH	2918	I	-	Fuel Rail Pressure Sensor Signal	12	0.5	BU/WH	2918	II	-

X200 INSTRUMENT PANEL HARNESS TO BODY HARNESS



Connector Part Information

- Harness Type: Instrument Panel
- OEM Connector: 13592940
- Service Connector: 19330680
- Description: 76-Way F 1.2, 1.5, 2.8 YESC Series (BK)



Connector Part Information

- Harness Type: Body
- OEM Connector: 6098-8295
- Service Connector: 19355187
- Description: 76-Way M 1.2 MCON-CB, 1.5, 2.8 YESC Series (BK)

Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray Name	Core Crimp	Insulation Crimp
I	13575832	J-35616-4A (PU)	J-38125-11A	7116-4112-02	Yazaki 9	C	D
II	13575845	J-35616-64B (LT BU)	J-38125-215A	Not Available	Not Available	Not Available	Not Available
III	13575850	J-35616-2A (GY)	J-38125-11A	Not Available	Not Available	Not Available	Not Available
IV	13575867	J-35616-64B (LT BU)	J-38125-215A	SAIT-A03T-M064	Yazaki 14	P	P
V	13578891	J-35616-2A (GY)	J-38125-11A	7116-4112-02	Yazaki 9	C	D
VI	13580025	J-35616-4A (PU)	J-38125-11A	7116-4112-02	Yazaki 9	C	D
VII	13580025	J-35616-4A (PU)	J-38125-11A	Not Available	Not Available	Not Available	Not Available
VIII	19300649	J-35616-64B (LT BU)	J-38125-11A	7116-4112-02	Yazaki 9	C	D
IX	19300649	J-35616-64B (LT BU)	J-38125-11A	Not Available	Not Available	Not Available	Not Available
X	13575818	J-35616-3 (GY)	J-38125-553	Not Available	Not Available	Not Available	Not Available
XI	13575824	J-35616-5 (PU)	J-38125-11A	7114-4112-02	Yazaki 9	C	D
XII	13575824	J-35616-5 (PU)	J-38125-11A	Not Available	Not Available	Not Available	Not Available
XIII	13575824	J-35616-5 (PU)	J-38125-11A	Not Required	Not Required	Not Required	Not Required
XIV	13578908	J-35616-5 (PU)	J-38125-11A	7114-4112-02	Yazaki 9	C	D
XV	13578908	J-35616-5 (PU)	J-38125-11A	Not Required	Not Required	Not Required	Not Required
XVI	19333325	J-35616-13 (BU)	J-38125-12A	Not Required	Not Required	Not Required	Not Required
XVII	19352074	J-35616-17 (L-GN)	J-38125-12A	Not Available	Not Available	Not Available	Not Available
XVIII	19352075	J-35616-13 (BU)	J-38125-12A	Not Available	Not Available	Not Available	Not Available
XIX	19352075	J-35616-13 (BU)	J-38125-12A	Not Required	Not Required	Not Required	Not Required

Pin	Size	Color	Circuit	Terminal Type ID	Option	Function	Pin	Size	Color	Circuit	Terminal Type ID	Option
1	0.35	PU/GY	1039	VIII	-	Run/Crank Ignition 1 Voltage	1	0.35	PU/GY	1039	XIX	-
2	0.35	PU/GY	139	VIII	-	Run/Crank Ignition 1 Voltage	2	0.35	PU/GY	139	XIX	-
3	0.5	PU/WH	1139	IX	UVD	Run/Crank Ignition 1 Voltage	3	0.5	PU/WH	1139	XVI	UVD
4	0.35	PU/GY	539	VIII	UEU-UV6	Run/Crank Ignition 1 Voltage	4	0.5	PU/GY	539	XVII	UEU-UV6
5	-	-	-	-	-	Not Occupied	5	-	-	-	-	-
6	0.35	RD/BU	3940	VIII	-	Battery Positive Voltage	6	0.35	RD/BU	3940	XVIII	-
7	0.35	RD/GN	3140	VIII	-	Battery Positive Voltage	7	0.35	RD/GN	3140	XIX	-
8	0.35	GY/GN	5996	VIII	TSP	Driver Outside Rear View Mirror Puddle Lamp Control	8	0.35	GY/GN	5996	XVIII	TSP
9	0.35	BARE	6974	VIII	UVH	Camera Low Reference	9	0.35	BARE	6974	XVIII	UVH
10	0.5	WH/GN	5380	IX	-	Brake Position Sensor Signal	10	0.5	WH/GN	5380	XVII	-
11	0.5	BK/YE	5382	IX	-	Brake Position Sensor Low Reference	11	0.5	BK/YE	5382	XVII	-
12	0.5	WH/RD	5381	IX	-	Brake Position S or 5V Reference	12	0.5	WH/RD	5381	XVII	-
13	0.35	BU/PU	1134	VIII	-	Park Brake Swit Signal	13	0.35	BU/PU	1134	XIX	-
14	0.35	GY/RD	7684	VIII	-	Park Brake Appl witch Voltage Referenc	14	0.35	GY/RD	7684	XVIII	-
15	0.35	BN	6107	VIII	-	Park Brake Appl witch Signal	15	0.35	BN	6107	XVIII	-
16	0.35	BU/BK	6108	VIII	-	Park Brake Relea Switch Signal	16	0.35	BU/BK	6108	XVIII	-
17	0.35	YE/RD	7683	VIII	-	Park Brake Relea Switch Voltage Reference	17	0.35	YE/RD	7683	XVIII	-
18	0.5	WH	6106	IX	-	High Speed GMLAN Serial Data (-) 2	18	0.35	WH	6106	XIX	-
19	0.5	BU/YE	6105	IV	-	High Speed GMLAN Serial Data (+) 2	19	0.35	BU/YE	6105	XIX	-
20	-	-	-	-	-	Not Occupied	20	-	-	-	-	-
21	0.35	GY/YE	6972	VIII	UVH	Camera Signal 2 +	21	0.35	GY/YE	6972	XVIII	UVH
22	0.35	WH/BU	6973	VIII	UVH	Camera Signal 2	22	0.35	WH/BU	6973	XVIII	UVH
23	0.35	BU/YE	6105	VIII	-	High Speed GMLAN Serial Data (+) 2	23	0.35	BU/YE	6105	XVIII	-
24	0.35	WH	6106	VIII	-	High Speed GMLAN Serial Data (-) 2	24	0.35	WH	6106	XIX	-
25	0.35	YE	1492	VIII	-	Park Brake Switch Supply Voltage	25	0.35	YE	1492	XVIII	-
26	0.35	GN/WH	7530	VIII	-	Local Interconnect Network Serial Data Bus 8	26	0.35	GN/WH	7530	XVIII	-
27	-	-	-	-	-	Not Occupied	27	-	-	-	-	-
28	0.35	BN/WH	419	VIII	-	Check Engine Indicator Control	28	0.35	BN/WH	419	XVIII	-
29	1.5 1.5	RD/GY RD/GY	1342 1342	VII VII	- KA1	Battery Positive Voltage Battery Positive Voltage	29	1.5	RD/GY	1342	XII	KA1

EVAPORATIVE EMISSION CONTROL SYSTEM DESCRIPTION

Typical Evaporative Emission (EVAP) System Hose Routing Diagram

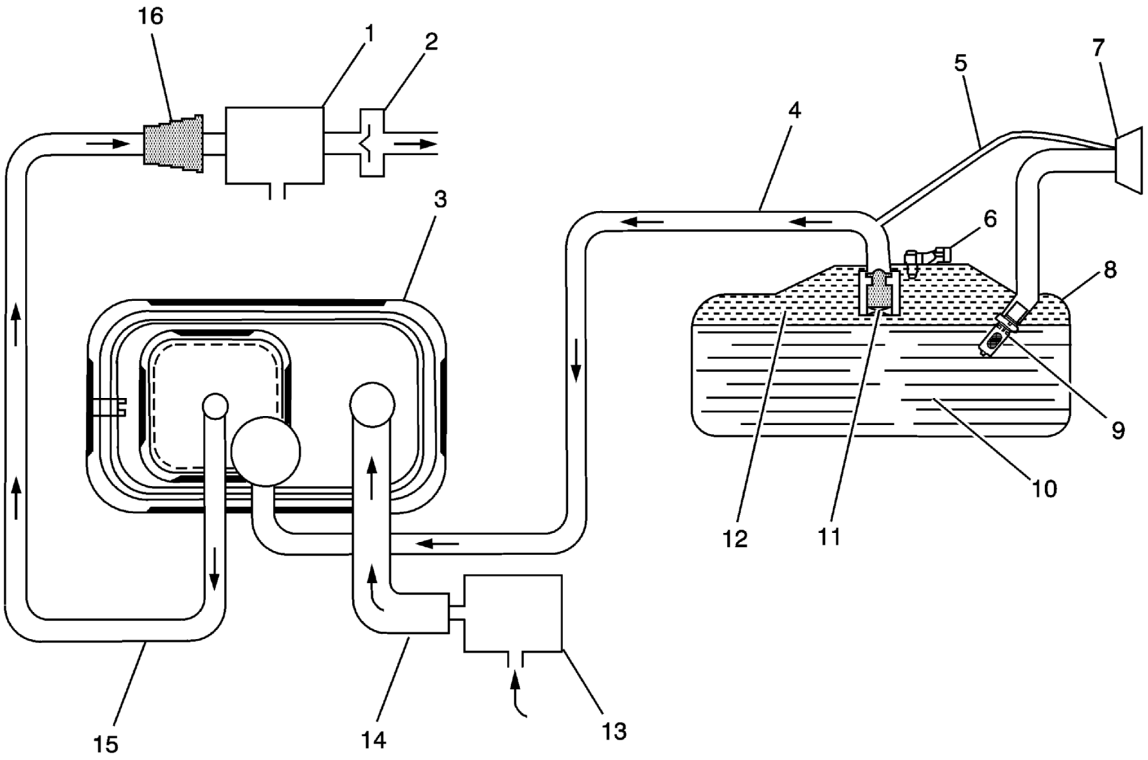


Fig. 2: View Of Typical Evaporative Emission (EVAP) System Hose Routing Diagram
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Evaporative Emissions (EVAP) Purge Solenoid Valve
2	Purge Tube Check Valve, Turbo-Charged Applications Only
3	EVAP Canister
4	EVAP Vapor Tube
5	Vapor Recirculation Tube (ORVR)
6	Fuel Tank Pressure Sensor
7	Fuel Filler Cap (Some Vehicles May Have A Capless Design)
8	Fuel Tank
9	Fuel Fill Pipe Inlet Check Valve
10	Liquid Fuel
11	Fill Limit Vent Valve (FLVV)
12	Fuel Vapor
13	EVAP Canister Vent Solenoid Valve
14	Vent hose
15	EVAP Purge Tube
16	EVAP Canister Purge Tube Connector

EVAP System Operation

The EVAP control system limits fuel vapors from escaping into the atmosphere. Fuel tank vapors are allowed to move from the fuel tank, due to pressure in the tank, through the EVAP vapor tube, into the

- Fuel System Description
- Immobilizer Description and Operation

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

Scan Tool Reference

Control Module References for scan tool information

Special Tools

J 26792 HEI Spark Tester

Circuit/System Verification

NOTE: **This diagnostic assumes the following:**

- **The battery is completely charged.**
- **There is adequate fuel in the fuel tank.**

1. Crank the engine for up to 15 s.
2. Verify DTC P0116, P0118, P0119, P0191, P0192, P0193, P0201 - P0206, P0232, P023F, P025A, P0261, P0262, P0264, P0265, P0267, P0268, P0270, P0271, P0273, P0274, P0276, P0277, P0335, P0336, P0351 - P0356, P0601, P0602, P0603, P0604, P0606, P06A6, P062B, P062F, P069E, P0627, P0628, P0629, P0630, P0641, P064A, P1255, P1631, P16F3, P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P2534, P262B, P2635, or U0109 is not set.
   - **If any of the DTCs are set**

     Refer to Diagnostic Trouble Code (DTC) List - Vehicle .
   - **If none of the DTCs are set**
3. Ignition ON.
4. Verify the Security Indicator on the instrument cluster illuminates momentarily.
   - **If the security indicator stays ON or is flashing**

     Review the scan tool DTC information for Immobilizer system DTCs--Refer to Diagnostic Trouble Code (DTC) List - Vehicle . For additional information, refer to Immobilizer Description and Operation .
   - **If the security indicator does not stay ON and is not flashing**
5. Verify the scan tool Engine Speed parameter displays greater than 0 RPM while cranking the engine.
   - **If 0 RPM**

     Refer to DTC P0335 or P0336 .
   - **If greater than 0 RPM**

NOTE: **A condition with the MAF sensor or MAF sensor circuits may cause an Engine Cranks But Does Not Run condition without setting a DTC.**

Callout	Component Name
5	Camshaft Position Sensor Bolt (Qty: 2) **Tighten** 10 N.m (89 lb in)
6	Positive Crankcase Ventilation Valve **NOTE:** **These components have tamper-proof connections and cannot be disassembled.**

INTAKE MANIFOLD DISASSEMBLE

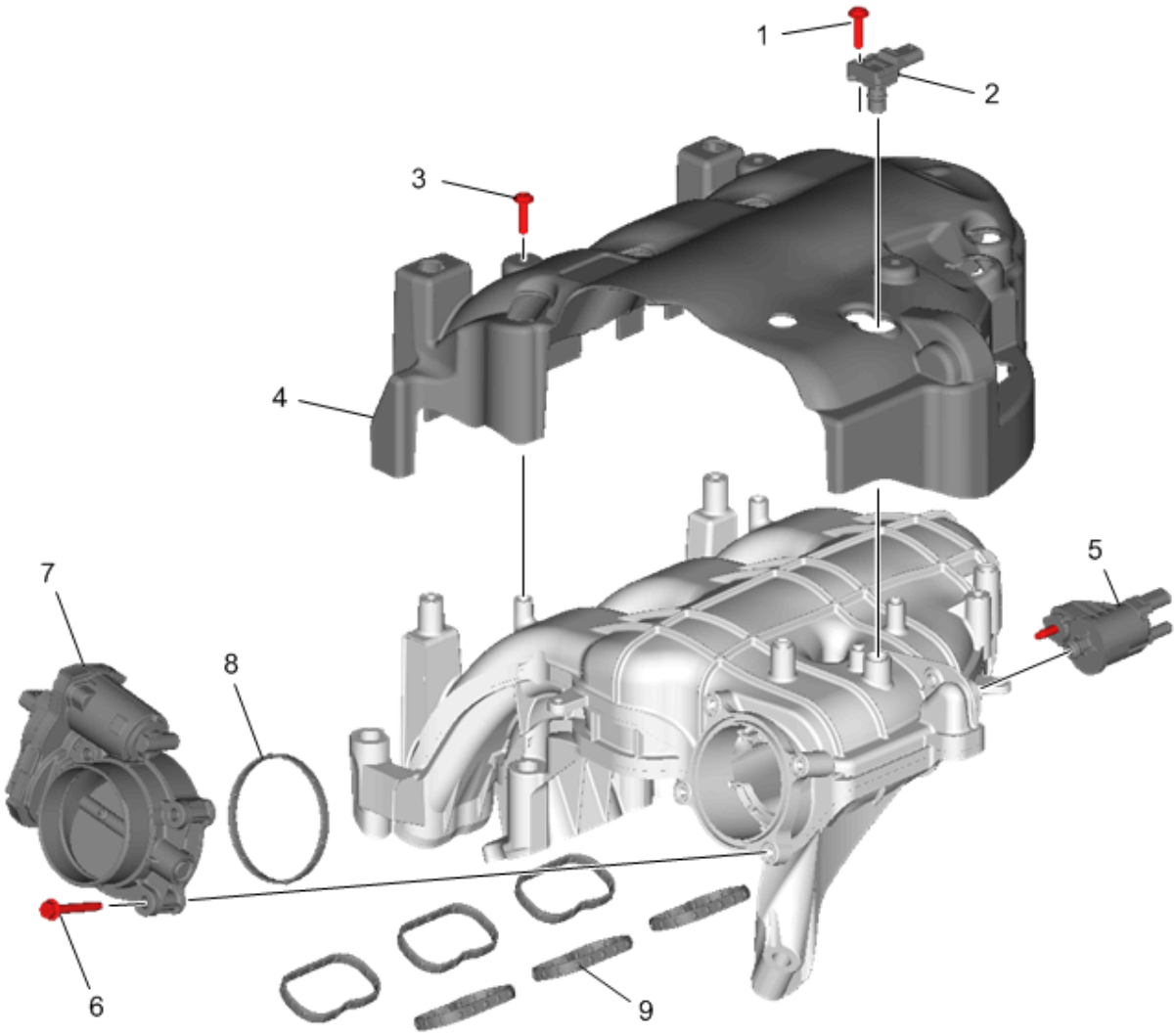


Fig. 201: Intake Manifold Components
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Manifold Absolute Pressure Sensor Bolt
2	Manifold Absolute Pressure Sensor
3	Intake Manifold Insulator Retainer (Qty: 3)
4	Intake Manifold Insulator
5	Evaporative Emission Canister
6	Throttle Body Bolt (Qty: 4)
7	Throttle Body

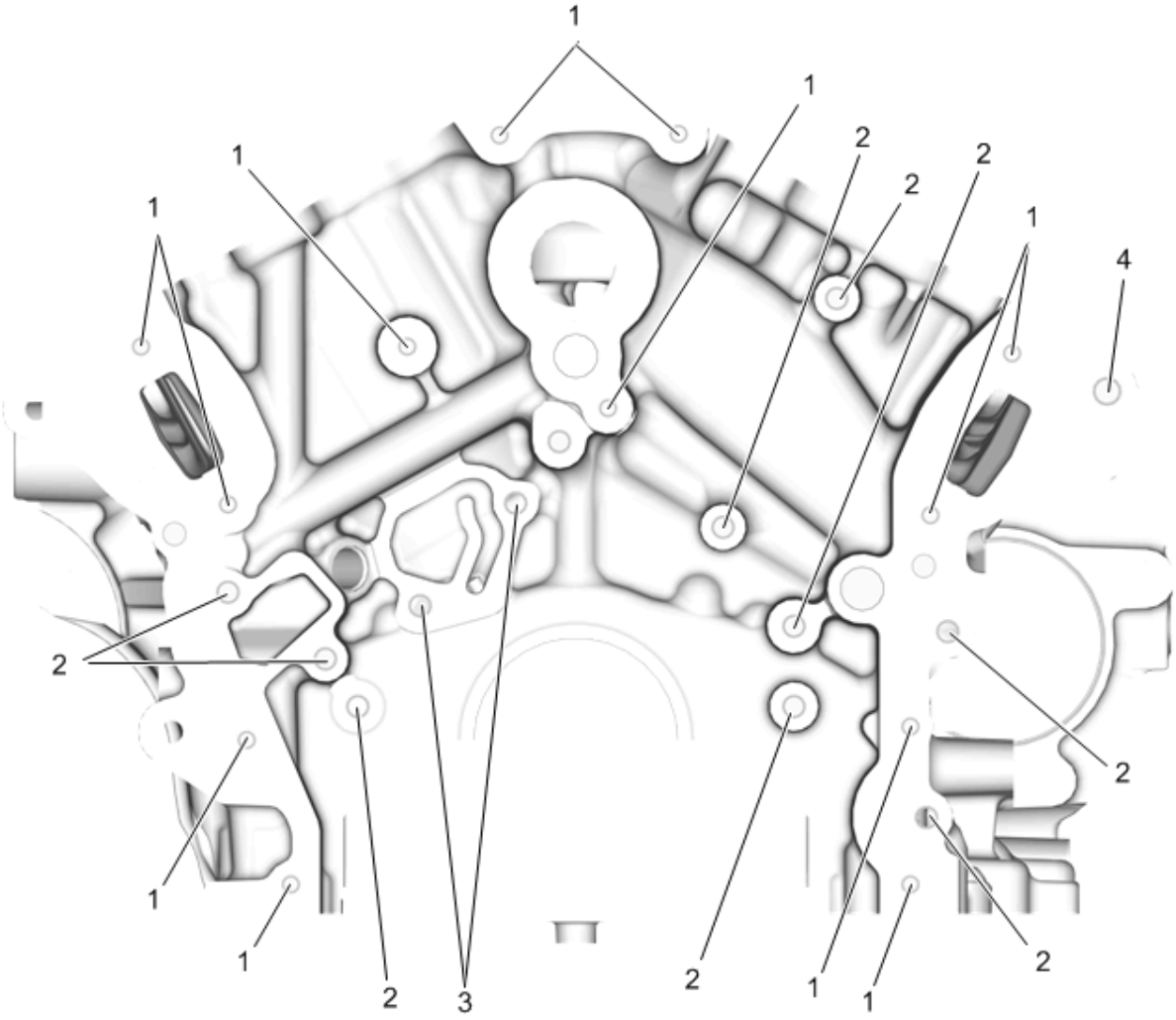


Fig. 18: Engine Block Front Face
Courtesy of GENERAL MOTORS COMPANY

Engine Block Front Face

Hole Location	Thread Size	Drill	Counter Bore Tool	Stop Collar	Tap	Driver	Insert	Drill Depth (Maximum)		Tap Depth (Minimum)	
Ã‚Â	Ã‚Â	J 42385 -						MM	(IN)	MM	(IN)
1	M6 x 1.0	201	202	N/A	203	204	63	23.0	.907	23.0	.907
2	M8 x 1.25	206	207	N/A	208	209	61	29.0	1.14	29.0	1.14
3	M8 x 1.25	206	207	N/A	208	209	210	23.0	.905	23.0	.905
4	M10 x 1.5	211	212	N/A	213	214	215	34.0	1.35	34.0	1.35

Engine Block Left Face

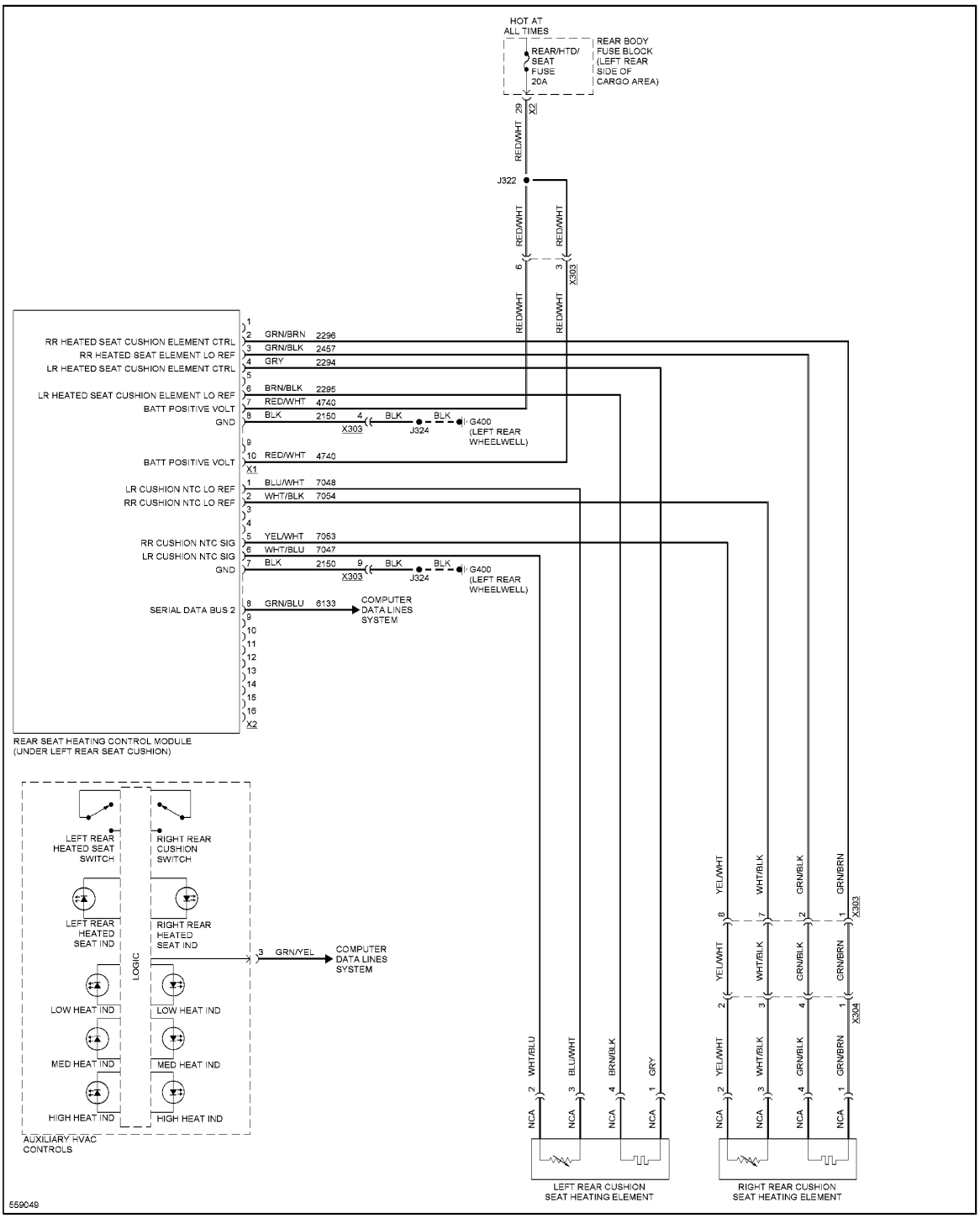


Fig. 102: Rear Heated Seats Circuit

POWER TOP/SUNROOF