

***2019 – 2022  
RAM 1500  
Special Service Vehicle  
Upfit Guide***



# SAFETY NOTICE

This publication's purpose is to provide technical training information to individuals in the automotive trade. All test and repair procedures must be performed in accordance with manufacturer's service and diagnostic manuals. All warnings, cautions, and notes must be observed for safety reasons. The following is a list of general guidelines:

- Proper service and repair is critical to the safe, reliable operation of all motor vehicles.
- The information in this publication has been developed for service personnel, and can help when diagnosing and performing vehicle repairs.
- Some service procedures require the use of special tools. These special tools must be used as recommended throughout this Technical Training Publication, the diagnostic manual, and the service manual.
- Special attention should be exercised when working with spring- or tension-loaded fasteners and devices such as E-Clips, circlips, snap rings, etc. Careless removal may cause personal injury.
- Always wear safety goggles when working on vehicles or vehicle components.
- Improper service methods may damage the vehicle or render it unsafe.
- Observe all warnings to avoid the risk of personal injury.
- Observe all cautions to avoid damage to equipment and vehicles.
- Notes are intended to add clarity and should help make your job easier.

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## ABOUT THIS GUIDE



**Figure 1: RAM 1500 SSV Interior with aftermarket equipment**

This guide has been assembled to give facilities technical information on the RAM 1500 Special Service Vehicle (SSV) that may be required when installing accessories or equipment for use in fleet applications. Not all vehicles purchased are equipped with the same accessories, so there may be items covered in this guide that are not featured on the vehicle purchased by your organization.

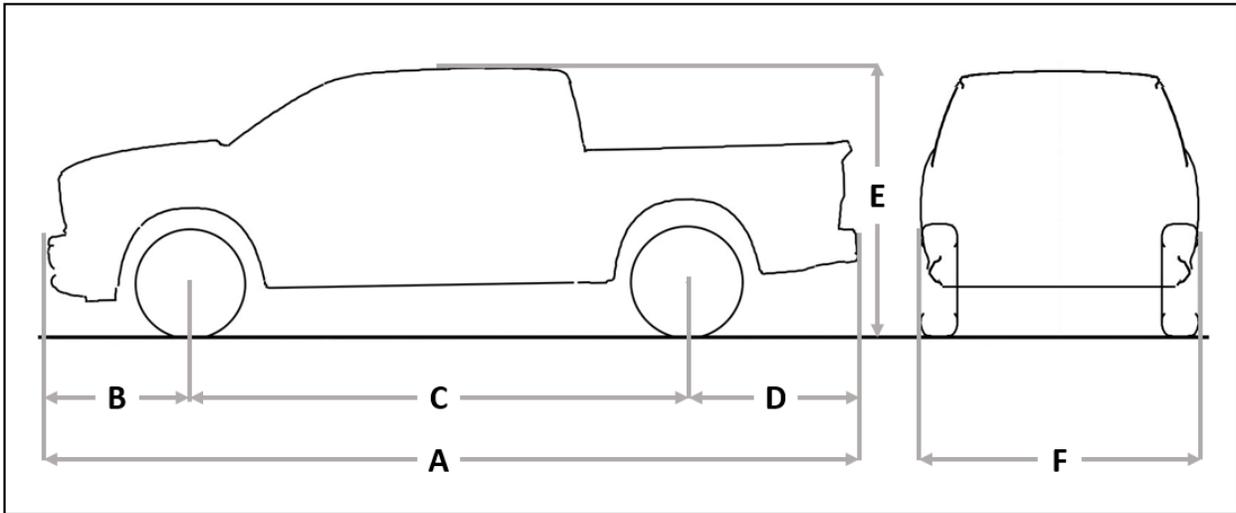
## FLEET WEBSITE



**Figure 2: Fleet Website, aftermarket equipment shown**

The Fleet website is another resource for up-to-date specification information on the RAM 1500 SSV and other fleet vehicles. An electronic copy of additional upfitter information, as well as options and service recommendations, are also found at [www.fcausfleet.com](http://www.fcausfleet.com).

## VEHICLE DIMENSIONS



**Figure 3: Vehicle Dimensions**

A. Length	5819.4 mm (229.1 in.)
B. Front overhang	1017.3 mm (40.1 in.)
C. Wheelbase	3569.2 mm (140.5 in.)
D. Rear overhang	1233 mm (48.5 in.)
E. Height	1942.8 mm (76.5 in.)
F. Width	2008.7 mm (79.1 in.)

## ELECTRICAL

### CAN Communication and Cybersecurity

The vehicle security gateway blocks unauthorized CAN communication from the vehicle diagnostic connector. Legislated/regulated diagnostic modes \$01-\$0A under SAE J1979 are still fully supported for aftermarket tools.

### Radar or other aftermarket CAN bus connections

Radar speed measuring equipment or other police equipment may require a connection to the vehicle to determine the police vehicle's speed. The RAM 1500 SSV provides two connection methods for this purpose:

1. A hardwired output from the Vehicle Systems Interface Module (VSIM) which gives vehicle speed as a square wave output. Refer to the section on the [16-way Black upfitter connector](#) cavity 16 for more details on this signal.
2. A CAN output from the VSIM upfitter bus which gives vehicle speed as a J1939 CAN signal. Refer to the section [Upfitter CAN bus](#) for more details on this connection.

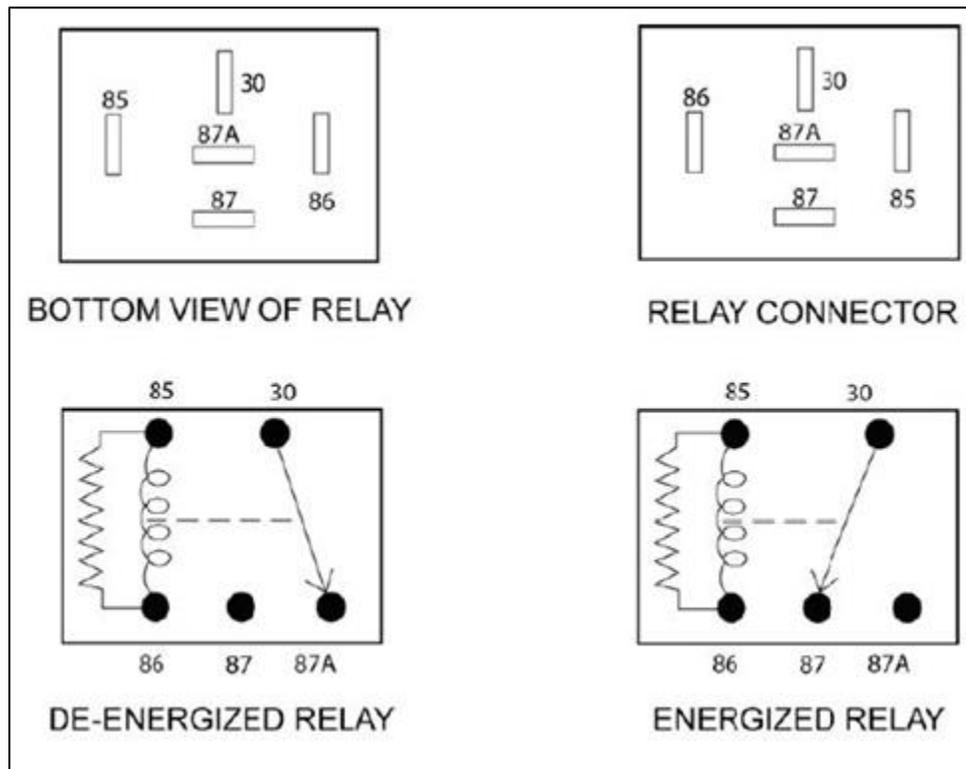
**CAUTION:** Do not connect a radar unit or any other police equipment to the vehicle's diagnostic connector or the vehicle operating CAN bus. These connections are designed only for authorized service tools during vehicle maintenance. Other equipment connected to the vehicle in this manner can induce unexpected faults and/or degraded vehicle performance and will not be covered by the vehicle's manufacturer warranty.

**NOTE:** There are sensors for the keyless entry and antilock brake systems, and an occupant restraint controller located between the front seats. If the vehicle is equipped with a front row center seat section, they are below that center section. Make sure during upfit that the sensors are not repositioned. Sensor placement is critical for proper system operation.

**NOTE:** Do not remove the occupant restraint controller without first disconnecting the battery and waiting two minutes. Follow information in the Mopar Service Library for disabling the restraint system. Failure to do so could cause airbag deployment.

## Basic Electrical Tips

### ISO Relays



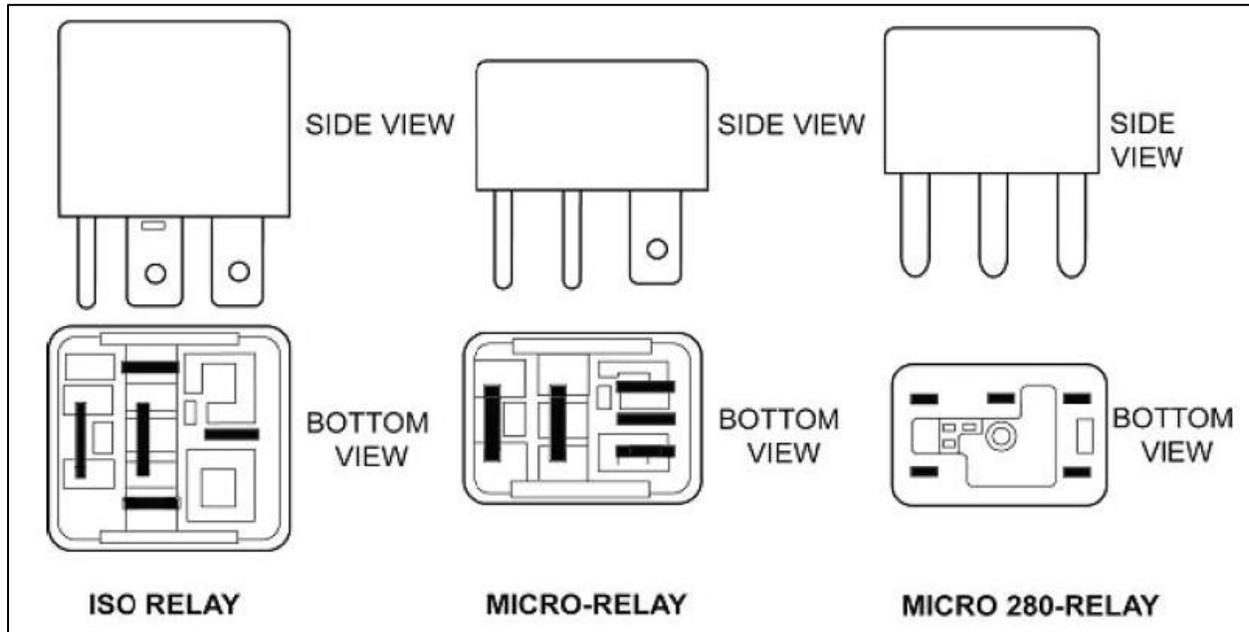
**Figure 4: ISO Relays**

ISO relays conform to the specifications of the International Organization for Standardization for common size and terminal pattern. ISO relays are used in many applications such as the starter, horn, electric fan, air conditioning clutch, auto shut down, and fuel pump circuits.

Relay connection terminals are defined as follows:

- Terminal 30 is usually connected to battery voltage. This battery voltage source can be switched on or off by the ignition switch, or un-switched, connected directly to the battery.
- Terminal 87A is connected to Terminal 30 in the de-energized position.
- Terminal 87 is connected to Terminal 30 in the energized position. When energized, the relay supplies battery voltage to Terminal 87, or removes battery voltage from a device connected to Terminal 87A.
- Terminal 86 is connected to the electromagnet and is usually connected to a switched battery voltage source.
- Terminal 85 is connected to the electromagnet and is usually connected to a switched or unswitched ground

## Micro Relays



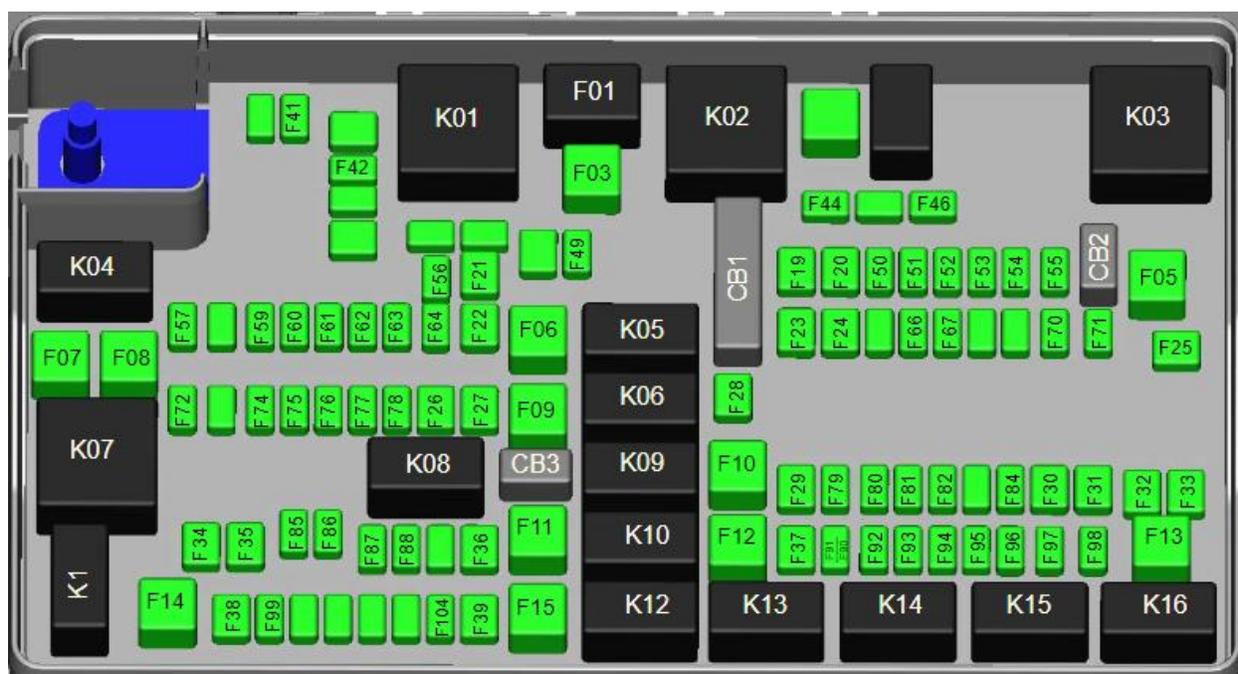
**Figure 5: Micro Relays**

Micro relays and micro 280 relays perform the same function as ISO relays but are smaller in size and have different terminal patterns. A map of the pattern and terminal identification is usually located on the top or side of the relay.

## Fuses / Power Distribution Center

There are two fuse and relay locations on the vehicle for the standard electrical systems. The fuse values and positions for the standard electrical systems are described below.

**CAUTION:** When installing the Power Distribution Center (PDC) cover, make sure it is properly positioned and latched to prevent water from getting into the PDC and causing an electrical system failure. When replacing a blown fuse, use only a fuse having the correct amperage rating. The use of a fuse with a rating other than indicated may result in an electrical system overload. If a properly rated fuse continues to blow, it indicates a problem in the circuit that must be corrected.



**Figure 6: Underhood PDC**

**Table 1: Underhood Fuses**

**Note:** Fuse specifications may vary slightly from the table below and based on vehicle content, refer to the vehicle service information for the most current information.

FUSE	FUNCTION	RATING
F01	RADIATOR FAN CONTROL MODULE – IF EQUIPPED	80A
F03	RADIATOR FAN – IF EQUIPPED	60A
F05	AUX CONNECTOR RELAY OUTPUT 1	50A
F06	ANTI-LOCK BRAKES/ELECTRONIC STABILITY CONTROL PUMP	40A
F07	STARTER SOLENOID	40A
F08	AUX CONNECTOR RELAY OUTPUT 4	40A
F09	AUX CONNECTOR RELAY OUTPUT 3	40A
F10	BODY CONTROLLER / EXTERIOR LIGHTING #2	40A
F104	POWER OUTLETS (INSTRUMENT PANEL / CENTER CONSOLE)	20A
F11	INTEGRATED TRAILER BRAKE MODULE – IF EQUIPPED	30A

<b>FUSE</b>	<b>FUNCTION</b>	<b>RATING</b>
F12	BODY CONTROLLER #3 / POWER LOCKS	40A
F13	BLOWER MOTOR	40A
F14	BODY CONTROLLER #4 / INTERIOR LIGHTING	40A
F15	SPARE - (SPECIAL SERVICE VEHICLE)	30A
F19	SCR – IF EQUIPPED	20A
F20	PASSENGER DOOR MODULE	30A
F21	DRIVE TRAIN CONTROL MODULE	30A
F22	ENGINE CONTROL MODULE	20A
F23	BODY CONTROLLER #1 / INTERIOR LIGHTING	30A
F24	DRIVER DOOR MODULE	30A
F25	FRONT WIPER	30A
F26	ANTI-LOCK BRAKES / STABILITY CONTROL MODULE/VALVES	30A
F27	SPARE – (SPECIAL SERVICE VEHICLE)	25A
F28	TRAILER TOW BACKUP LIGHTS – IF EQUIPPED	20A
F29	TRAILER TOW PARKING LIGHTS – IF EQUIPPED	20A
F30	TRAILER TOW RECEPTACLE	30A
F31	UREA HEATER CONTROL – IF EQUIPPED (SPECIAL SERVICE VEHICLE)	20A
F32	SPARE	20A
F33	SPECIAL SERVICE VEHICLE ONLY	20A
F34	VEHICLE SYSTEM INTERFACE MODULE (VSIM)	30A
F35	RED/WHITE DOME LAMP	30A
F36	REAR DEFROSTER– IF EQUIPPED	30A
F37	AUX CONNECTOR RELAY OUTPUT 2	30A
F38	POWER INVERTER 115V AC – IF EQUIPPED	30A
F39	POWER OUTLET – (SPECIAL SERVICE VEHICLE)	20A
F41	ACTIVE GRILL SHUTTER IF EQUIPPED	10A
F42	HORN	20A
F44	DIAGNOSTIC PORT	10A
F46	UPFITTER – IF EQUIPPED	10A
F49	INSTRUMENT PANEL CLUSTER (EXCEPT SPECIAL SERVICE VEHICLES)	10A
F50	AIR SUSPENSION CONTROL MODULE – IF EQUIPPED	20A
F51	IGNITION NODE MODULE / KEYLESS IGNITION (INSTRUMENT PANEL CLUSTER – SPECIAL SERVICE VEHICLE)	10A
F52	BATTERY SENSOR	5A
F53	TRAILER TOW – LEFT TURN/STOP LIGHTS	20A
F54	ADJUSTABLE PEDALS	20A
F55	SPOT LAMPS	25A
F56	ADDITIONAL DIESEL CONTENT – IF EQUIPPED	15A
F57	TRANSMISSION	20A
F59	SCR RELAY – IF EQUIPPED	10A
F60	UNDERHOOD LAMP	15A
F61	PM SENSOR – IF EQUIPPED	10A
F62	AIR CONDITIONING CLUTCH	10A
F63	IGNITION COILS	20A
F64	FUEL INJECTORS / POWERTRAIN	25A

<b>FUSE</b>	<b>FUNCTION</b>	<b>RATING</b>
F66	SUNROOF / PASSENGER WINDOW SWITCHES / RAIN SENSOR	10A
F67	CD / DVD / BLUETOOTH HANDS-FREE MODULE – IF EQUIPPED	10A
F70	FUEL PUMP MOTOR	30A
F71	AMPLIFIER	25A
F72	PCM – IF EQUIPPED	10A
F74	BRAKE VACUUM PUMP GAS / DIESEL – IF EQUIPPED	20A
F75	COOLANT TEMPERATURE VALVE ACTUATOR	10A
F76	ANTI-LOCK BRAKES / ELECTRONIC STABILITY CONTROL	10A
F77	DRIVETRAIN CONTROL MODULE / FRONT AXLE DISCONNECT MODULE	10A
F78	ENGINE CONTROL MODULE / ELECTRIC POWER STEERING	10A
F79	CLEARANCE LIGHTS	15A
F80	UNIVERSAL GARAGE DOOR OPENER / COMPASS	10A
F81	TRAILER TOW RIGHT TURN / STOP LIGHTS	20A
F82	STEERING COLUMN CONTROL MODULE / CRUISE CONTROL	10A
F84	SWITCH BANK / INSTRUMENT CLUSTER	15A
F85	AIRBAG MODULE	10A
F86	AIRBAG MODULE	10A
F87	AIR SUSPENSION – IF EQUIPPED / TRAILER TOW / STEERING COLUMN CONTROL MODULE	10A
F88	INSTRUMENT PANEL CLUSTER	15A
F90	POWER OUTLET (REAR SEATS) CUSTOMER SELECTABLE	20A
F91	POWER OUTLET (REAR SEATS) CUSTOMER SELECTABLE	20A
F92	SPARE	10A
F93	CIGAR LIGHTER	20A
F94	SHIFTER / TRANSFER CASE MODULE	10A
F95	REAR CAMERA / PARK ASSIST	10A
F96	REAR SEAT HEATER SWITCH	10A
F97	REAR HEATED SEATS & HEATED STEERING WHEEL – IF EQUIPPED	25A
F98	FRONT HEATED SEATS – IF EQUIPPED	25A
F99	CLIMATE CONTROL	10A

**Table 2: Underhood Relays**

**Note:** Relay specifications may vary slightly from the table below and based on vehicle content, refer to the service information for the most current information.

RELAY	DESCRIPTION	POPULATION
K01	RAD FAN LO SPD	PLUG IN
K02	RAD FAN HI SPD	PLUG IN
K03	AUXILIARY 1	PLUG IN
K04	AUXILIARY 4	PLUG IN
K05	AUTO SHUT DOWN (ASD)	PLUG IN
K06	RUN / ACCESSORY 1	PLUG IN
K07	STARTER SOLENOID 2	PLUG IN
K08	RUN / START	PLUG IN
K09	AUXILIARY 3	PLUG IN
K10	REAR WINDOW DEFOGGER	PLUG IN
K12	RUN 2	PLUG IN
K13	AUXILIARY 2	PLUG IN
K14	RUN / ACCESSORY 2	PLUG IN
K15	RUN 1	PLUG IN
K16	BLOWER MOTOR	PLUG IN
K17	TRAILER TOW – LEFT	INTERNAL
K18	ADJUSTABLE PEDALS	INTERNAL
K19	HORN	INTERNAL
K21	POWERTRAIN MODULE	INTERNAL
K23	A/C CLUTCH	INTERNAL
K24	SCR 1	INTERNAL
K25	TRAILER TOW BACKUP LAMP	INTERNAL
K26	TRAILER TOW PARK LAMP	INTERNAL
K28	TRAILER TOW – RIGHT	INTERNAL
K29	FUEL PUMP	INTERNAL
K30	WIPER HIGH / LOW	INTERNAL
K31	WIPER ON / OFF	INTERNAL
K33	VACUUM PUMP	INTERNAL

## Power and Ground

**NOTE:** All equipment circuits connecting to vehicle circuits should be protected with fuses and use industry accepted connection methods including weatherproofing where appropriate.

**NOTE:** Any circuits connecting to existing vehicle signal wires should be high impedance and/or isolated with relays to prevent unwanted interference with the vehicle signal. Wiring locations described herein are for information only and it is up to the installer to ensure that circuits chosen are suitable for the desired application and do not have a negative impact on vehicle operation.

The following five power circuits are provided for aftermarket equipment. See the section for the [26-way upfitter connector](#) for more details:

- (1) 10A circuit powered with ignition in ACCY or RUN
- (1) 20A circuit powered with ignition in ACCY or RUN. This circuit can be converted to battery fed.
- (3) 20A battery fed

Four circuits in the underhood aux connector provide relay controlled power for aftermarket equipment. See the section for the [4-way Underhood Aux Connector](#) for more details:

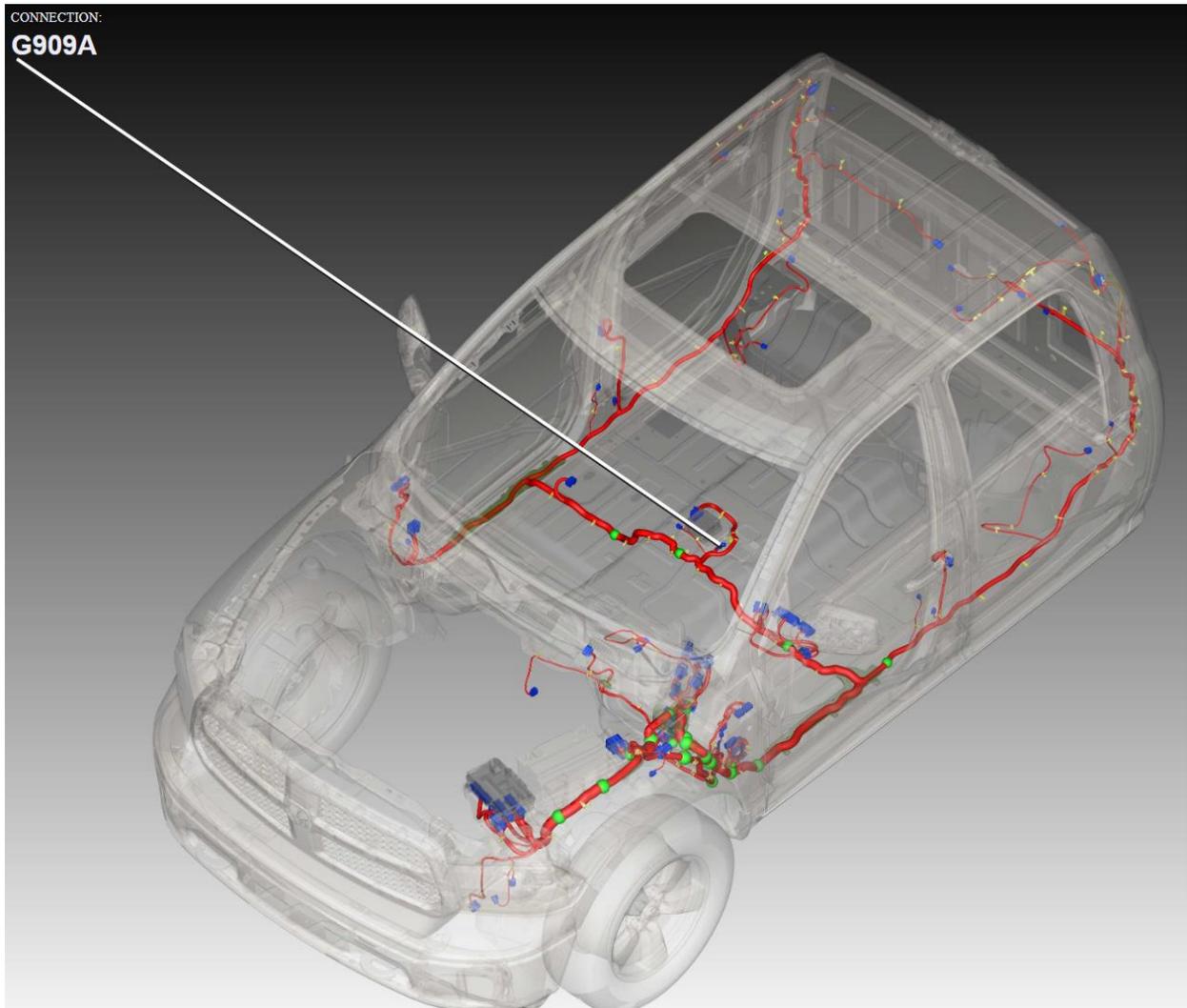
- (1) 30A customer driven
- (1) 40A customer driven
- (1) 40A driven with ignition in RUN or CRANK
- (1) 50A customer driven

12V power can also be obtained at the vehicle battery, underhood.

Multiple grounding locations can be found and are visible underhood. In the cabin, grounding locations can be found behind trim in the following locations:

1. Ring terminals within the instrument panel primarily on the driver's side
2. Between the front seats or under front row center seat section, if equipped

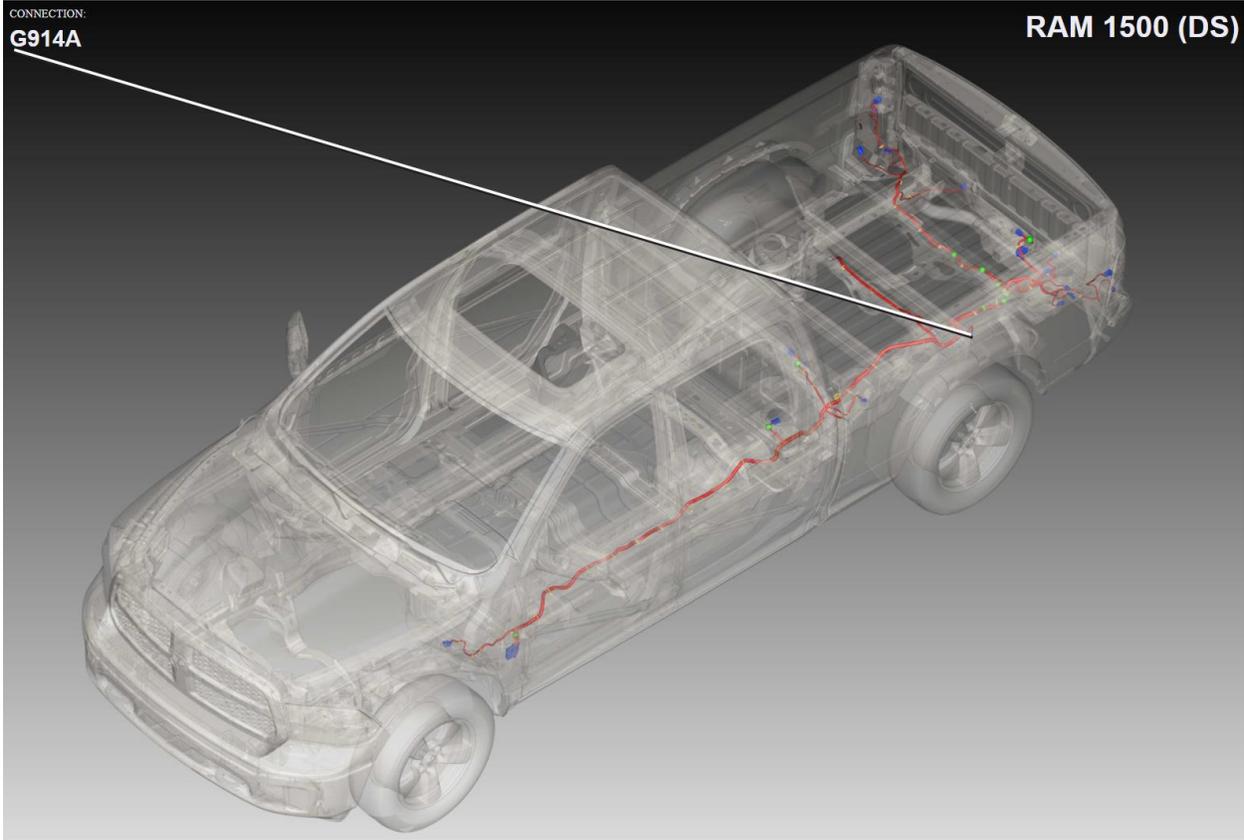
A ground terminal is also at the rear of the vehicle on the frame, driver's side just rearward of the stabilizer link mount.



**Figure 7: Grounding location between front seats**

CONNECTION:  
**G914A**

**RAM 1500 (DS)**



**Figure 8: Grounding location at rear frame**

## Pass Through Circuits

There are (6) unused 18 gauge wires available to the upfitter that are blunt cut in the underhood area underneath the power distribution center (PDC) with the other end terminated in the 26-way upfitter connector. See the [26-way Upfitter connector](#) section for more information. These wires are the preferred method to get power/signal circuits for aftermarket equipment between the underhood area and the vehicle interior.

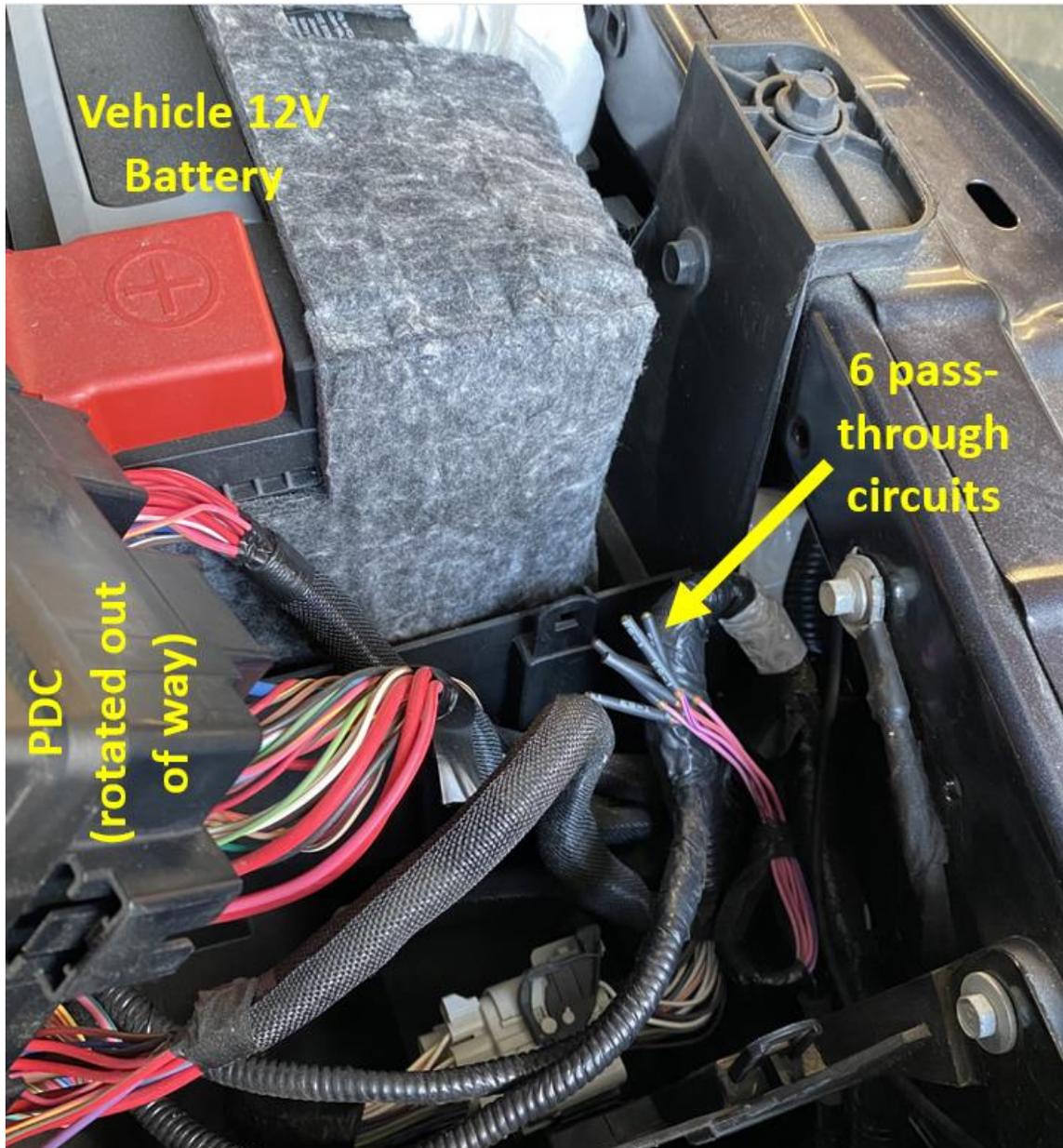


Figure 9: Pass-through circuits underhood

In the event additional pass-through capacity is necessary, most models have an unused port in an existing grommet through the front of dash that can be used for passing through additional wires for customer use. The port is currently sealed, if the tip is cut to pass additional wires then it must be fully weather sealed afterward.

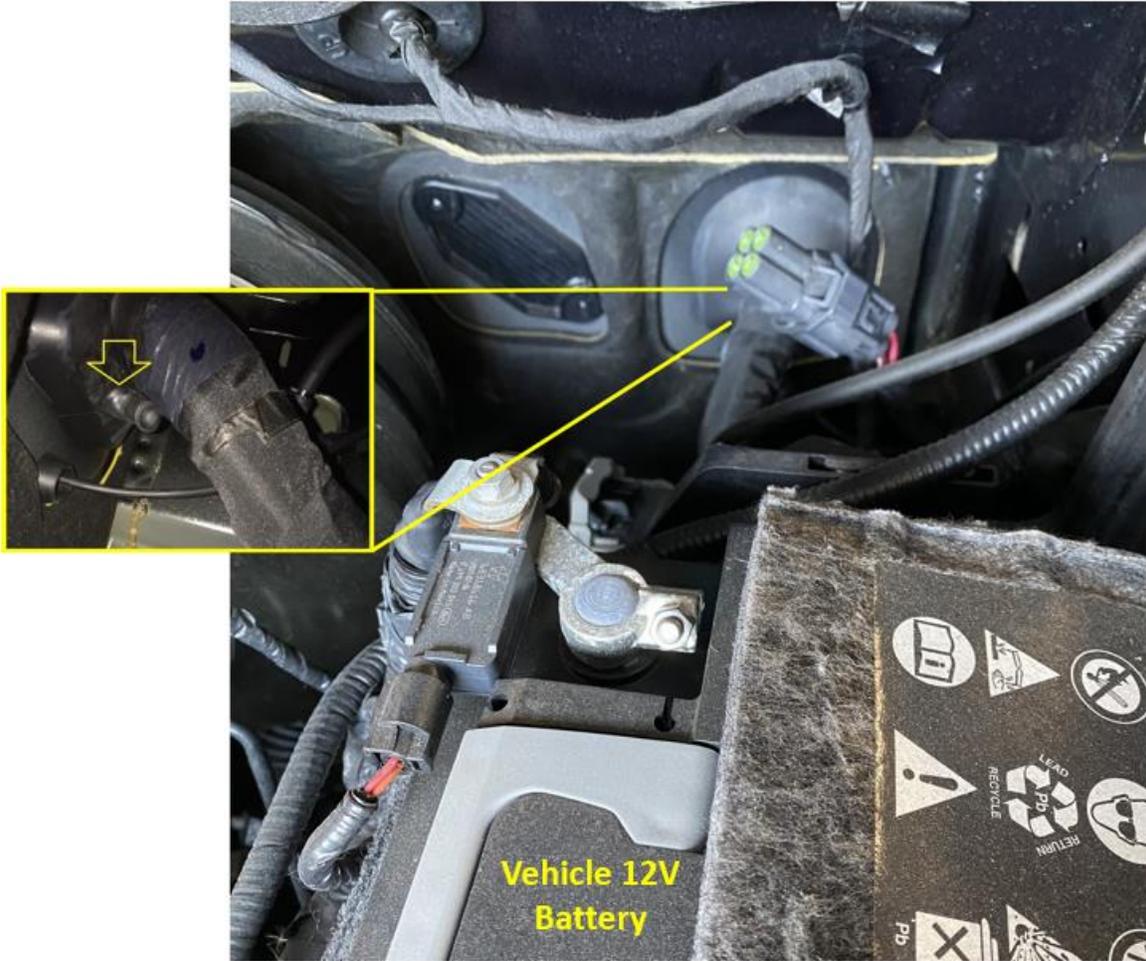


Figure 10: Grommet unused port

## 4-way Underhood Aux Connector

Four circuits at the underhood aux connector provide relay controlled power for aftermarket equipment. Packaged with the 26-way connector are 4 individual terminated wires that are provided for use with this aux connector.

The mating connector is populated with 4 plugs and comes attached to the underhood aux connector to provide weather sealing. To use any of these 4 circuits, remove the mating connector from underhood, remove the plug(s) for the cavities desired, and populate those cavities with the provided terminated wires.

Power capacity and details where the coil circuits are to energize each relay are shown in the table below. The mechanization of the output at cavity 3 is such that it is energized anytime the vehicle ignition is in RUN or CRANK.



Provided mating connector  
(view of wire entry side)

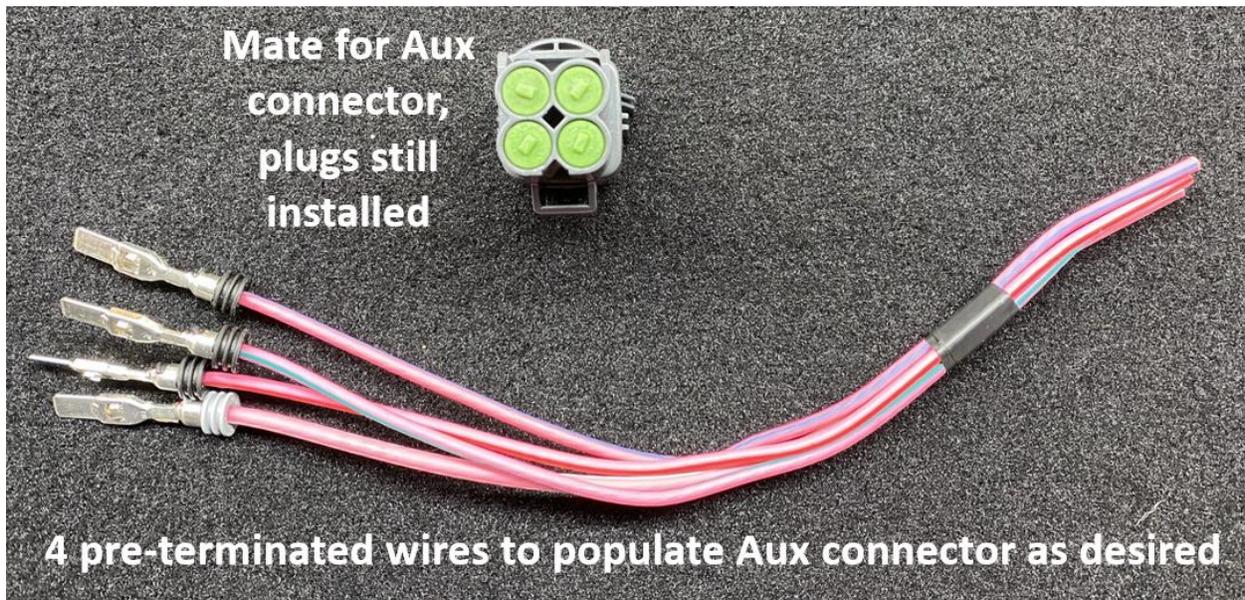


Vehicle harness connector  
(view of mating side)

**Figure 11: 4-way Underhood Aux Connector**

**Table 3: 4-way Underhood Aux Connector**

Cavity	Max Amperage Output	Fuse # in PDC	Relay # in PDC	High side of relay coil	Low side of relay coil
1	50	5	K03	26-way cavity 8	26-way cavity 7
2	30	37	K13	26-way cavity 6	26-way cavity 5
3	40	9	K09	Hardwired to RUN/CRANK circuit	Hardwired to GND
4	40	8	K04	26-way cavity 1	Hardwired to GND



**Figure 12: 4 pre-terminated wires, come packaged with 26-way jumper**

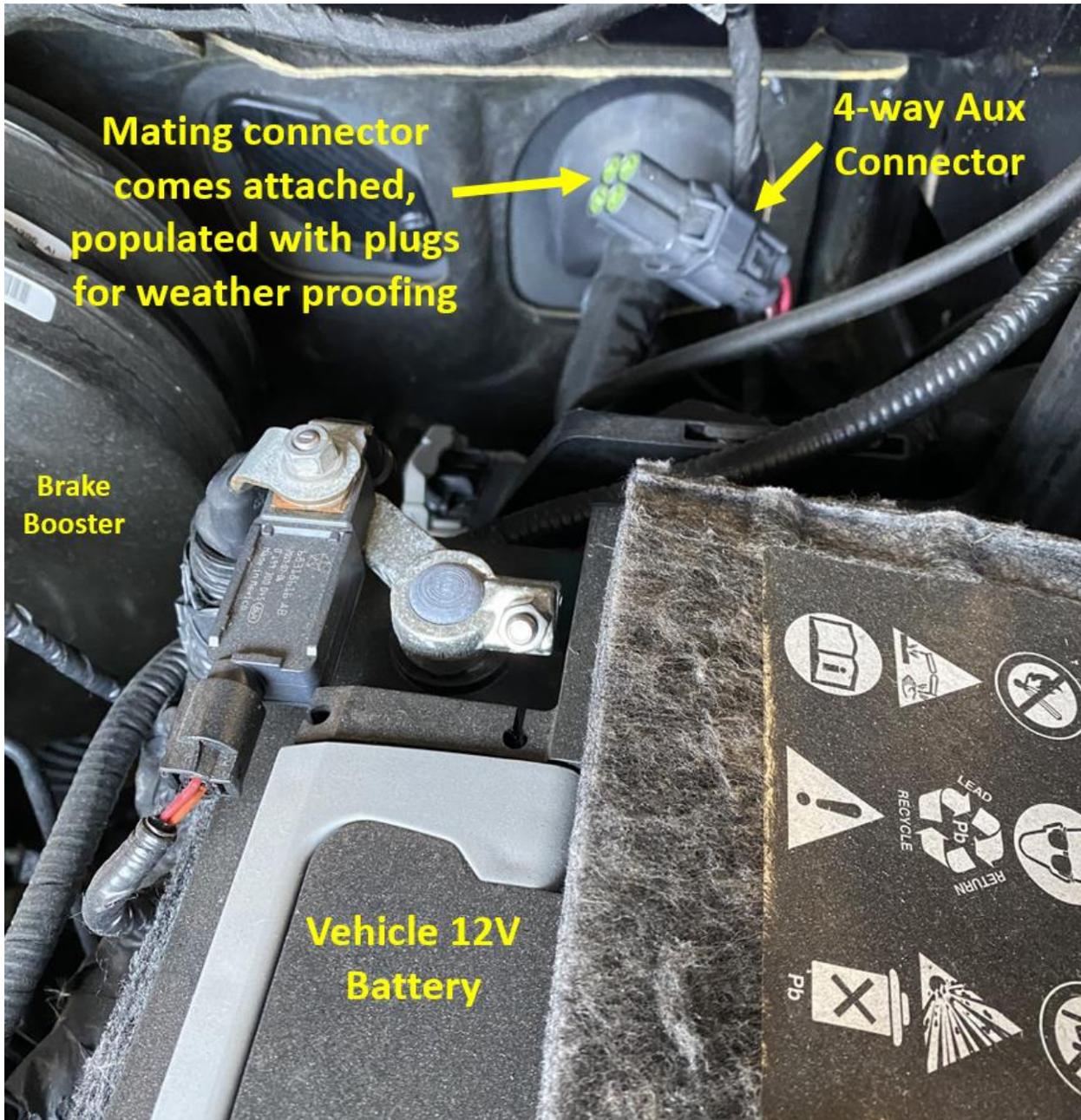
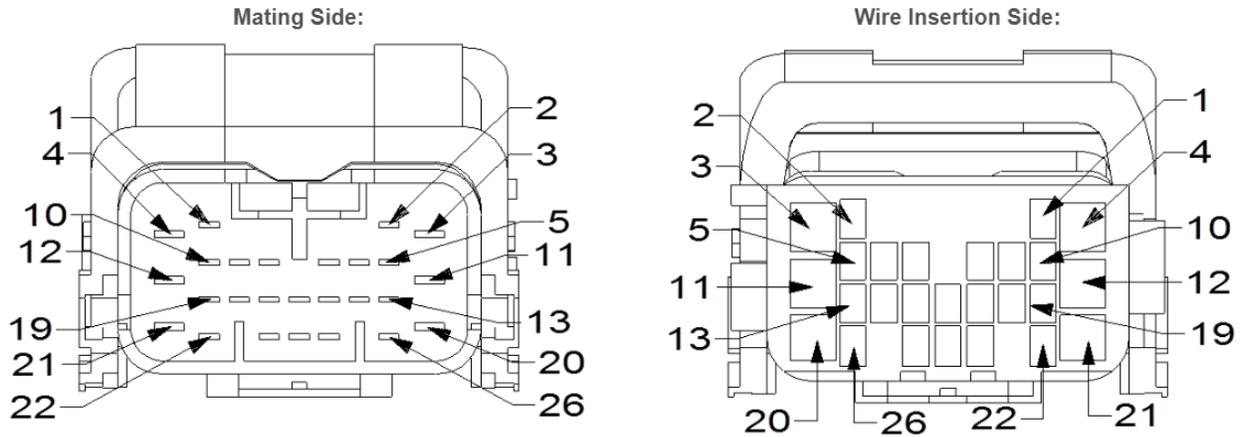


Figure 13: 4-way underhood Aux connector

## 26-way Upfitter connector



Note: This is the view of the vehicle harness connector, not the mating jumper/pigtail

**Figure 14: 26-way upfitter connector**

Included mating jumper/pigtail 68225708AB (has 26-way white connector), package includes 4 individual terminated wires to use with 4-way underhood aux connector.

**Table 4: 26-way upfitter connector pinout**

CAVITY	SIGNAL	USER DESCRIPTION	MAX AMPS	GAUGE	CIRCUIT #	WIRE COLOR
1	NO CONNECT					
2	RELAY 4 COIL HIGH-SIDE CONTROL	When 12V is applied here, relay 4 in the PDC is activated. The low side of relay coil is already tied to ground within the PDC. Relay 4 provides power at the 4-way aux connector underhood.	9.5	20	P31	TN/YL
3	10A RUN/ACCY FEED	Provides fused power when ignition is in RUN or ACCY (Fuse F92)	10	16	F13	PK
4	20A RUN/ACCY FEED	Provides fused power when ignition is in RUN or ACCY. Note: if fuse 91 in the PDC is moved to its alternate position, this circuit will provide a 20A battery feed. (Fuse F91)	20	16	F30	PK/YL
5	RELAY 2 COIL LOW-SIDE CONTROL	When ground is applied to the low side of the coil and 12V is applied to the high side, relay 2 in the PDC is activated. Relay 2 provides power at the 4-way aux connector underhood.	9.5	20	P675	TN/BK
6	RELAY 2 COIL HIGH-SIDE CONTROL		9.5	20	P674	TN
7	RELAY 1 COIL LOW-SIDE CONTROL	When ground is applied to the low side of the coil and 12V is applied to the high side, relay 1 in the PDC is activated. Relay 1 provides power at the 4-way aux connector underhood.	9.5	20	P711	LG
8	RELAY 1 COIL HIGH-SIDE CONTROL		9.5	20	P712	LG/WT
9	NO CONNECT					
10	NO CONNECT					
11	20A BATTERY FEED	Provides fused battery power (Fuse F32)	20	16	A988	RD/WT
12	20A BATTERY FEED	Provides fused battery power (Fuse F31)	20	16	A984	RD/YL
13	NO CONNECT					
14	PASS-THROUGH CIRCUIT	Pass through wires that terminate under the underhood PDC	13.5	18	F601	PK/DB
15	PASS-THROUGH CIRCUIT		13.5	18	F602	PK/DG
16	PASS-THROUGH CIRCUIT		13.5	18	F603	PK/VT
17	PASS-THROUGH CIRCUIT		13.5	18	F604	PK/TN
18	PASS-THROUGH CIRCUIT		13.5	18	F605	PK/BR
19	PASS-THROUGH CIRCUIT		13.5	18	F606	PK
20	20A BATTERY FEED	Provides fused battery power (Fuse F33)	20	16	A983	RD/LG
21	NO CONNECT					

CAVITY	SIGNAL	USER DESCRIPTION	MAX AMPS	GAUGE	CIRCUIT #	WIRE COLOR
22	AUX SWITCH 1	Circuits terminate at the IP switch bank connector. Note: these cavities are not populated on the provided mating jumper harness.	9.5	20	P820	BR/OR
23	AUX SWITCH 2		9.5	20	P821	BR/VT
24	AUX SWITCH 3		9.5	20	P822	BR/WT
25	AUX SWITCH 4		9.5	20	P823	BR/GY
26	AUX SWITCH 5		9.5	20	P824	TN/BR

## VEHICLE SYSTEMS INTERFACE MODULE (VSIM)

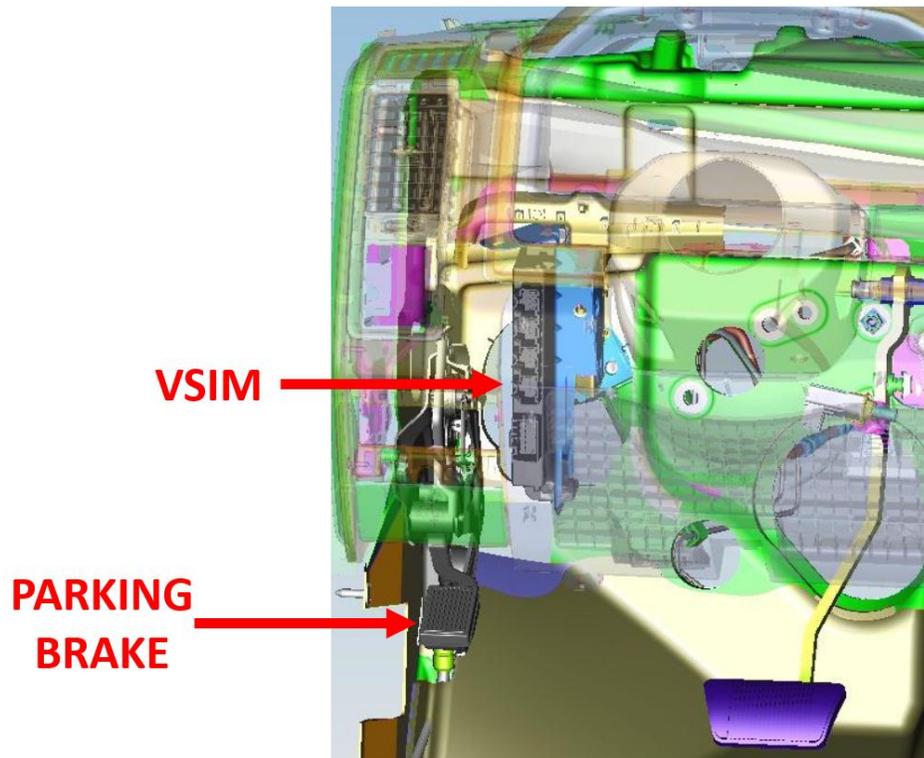
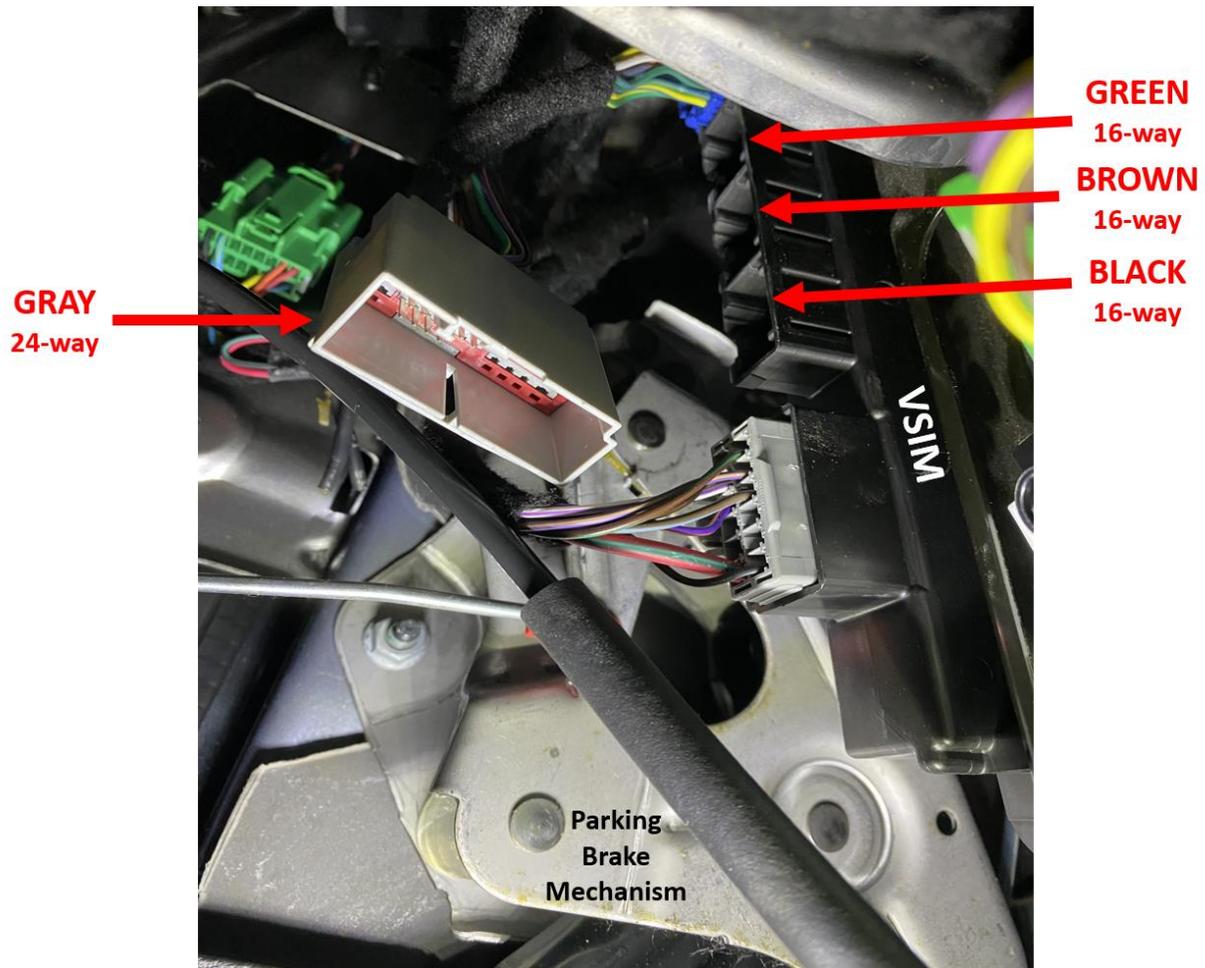


Figure 15: VSIM Location



Figure 16: VSIM upfitter harness kit part number 68319578AA – gray, brown, green, black



**Figure 17: VSIM upfitter harness connection locations**

The microcontroller-based electronic Vehicle Systems Interface Module (VSIM) is located in the instrument panel to the right of the parking brake mechanism. The VSIM contains the electronic logic circuitry and software that enable many of the aftermarket equipment and systems typically installed on police or fleet vehicles to communicate with and be integrated with the electronic control modules and features already installed in the vehicle. It can communicate with aftermarket modules or with other electronic modules in the vehicle using the Controller Area Network (CAN) data bus.

The VSIM awakens or sleeps based upon the status of the CAN data bus network. The module monitors both active and stored Diagnostic Trouble Codes (DTC) through On-Board Diagnostics (OBD) and communicates with a diagnostic scan tool using the CAN data bus.

NOTE: The 12V and GND signals provided by the VSIM are low current I/O intended only to drive very small loads (such as an automotive relay) or provide input signals to your aftermarket equipment. For sourcing or sinking higher current, use the higher amperage circuits described within the [Power and Ground](#) section.

#### Upfitter CAN bus

The VSIM upfitter J1939 CAN bus (cavities 10 and 11 in the [24-way Gray VSIM connector](#)) supports the signals on the following pages. Not all signals are available in all applications.

**Table 5: VSIM upfitter bus standard SAE J1939 Output Messages**  
 Signals provided by the VSIM to indicate current operating conditions

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Destination Address	Transmission Repetition Rate (ms)	Transmission Type	RAM Specific Information
61441	Electronic Brake Controller 1	561	ASR Engine Control Active	11	0xFF	100	Cyclic	ASR is RAM equivalent of Electronic Stability Control. There is no differentiation between engine and braking control, both signals will be active at the same time.
61441	Electronic Brake Controller 1	562	ASR Brake Control Active	11	0xFF	100	Cyclic	ASR is RAM equivalent of Electronic Stability Control. There is no differentiation between engine and braking control, both signals will be active at the same time.
61441	Electronic Brake Controller 1	563	Antilock Braking Active	11	0xFF	100	Cyclic	
61441	Electronic Brake Controller 1	1438	ABS Amber Warning Signal	11	0xFF	100	Cyclic	This signal will be active lamp indicator check that occurs at key on from off.
61443	Electronic Engine Controller 2	91	Accelerator Pedal Position 1	0	0xFF	50	Cyclic	
61444	Electronic Engine Controller 1	190	Engine Speed	0	0xFF	speed dependent	Cyclic	
64791	Beltlock and Airbag Deactivation Switch Information	4952	Driver Belt Lock Status	53	0xFF	250	Cyclic	
64791	Beltlock and Airbag Deactivation Switch Information	4953	Passenger Belt Lock Status	53	0xFF	250	Cyclic	
64972	Operators External Light Controls Message	2875	Hazard Light Switch	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2348	High Beam Headlight Data	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2350	Low Beam Headlight Data	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2368	Left Turn Signal Lights	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2370	Right Turn Signal Lights	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2372	Left Stop Light	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2374	Right Stop Light	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2376	Center Stop Light	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2392	Back - Up Light and Alarm Horn	33	0xFF	1000	Cyclic & On Change	
65088	Lighting Command	2404	Running Light	33	0xFF	1000	Cyclic & On Change	
65217	High Resolution Vehicle Distance	917	High Resolution Total Vehicle Distance	33	0xFF	1000	Cyclic & On Change	
65226	Active Diagnostic Trouble Codes	3038 (flash)	Flash Malfunction Indicator Lamp	0	0xFF	100	Cyclic	

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Destination Address	Transmission Repetition Rate (ms)	Transmission Type	RAM Specific Information
65226	Active Diagnostic Trouble Codes	1213 (on/off)	Malfunction Indicator Lamp Status	0	0xFF	100	Cyclic	
65248	Vehicle Distance	245	Total Vehicle Distance	33	0xFF	100	Cyclic	
65260	Vehicle Identification	237	Vehicle Identification Number (VIN)	33	0xFF	~ 300	Cyclic	Timing is not exact due to bus translations.
65262	Engine Temperature 1	110	Engine Coolant Temperature	0	0xFF	500	Cyclic	
65263	Engine Fluid Level/Pressure 1	100	Engine Oil Pressure	0	0xFF	200	Cyclic	
65265	Cruise Control/Vehicle Speed	70	Parking Brake Switch	0	0xFF	100	Cyclic	
65265	Cruise Control/Vehicle Speed	84	Wheel-Based Vehicle Speed	0	0xFF	100	Cyclic	
65265	Cruise Control/Vehicle Speed	86	Cruise Control Set Speed	0	0xFF	100	Cyclic	The last set speed value is broadcast in this message whether the cruise control is active or not.
65265	Cruise Control/Vehicle Speed	595	Cruise Control Active	0	0xFF	100	Cyclic	When the value of this signal is '01' cruise control system is actively controlling vehicle speed.
65265	Cruise Control/Vehicle Speed	596	Cruise Control Enable Switch	0	0xFF	100	Cyclic	When the value of this signal is '01' the cruise control enable switch is depressed.
65265	Cruise Control/Vehicle Speed	597	Brake Switch	0	0xFF	100	Cyclic	
65265	Cruise Control/Vehicle Speed	599	Cruise Control Set Switch	0	0xFF	100	Cyclic	
65265	Cruise Control/Vehicle Speed	600	Cruise Control Coast Switch	0	0xFF	100	Cyclic	
65265	Cruise Control/Vehicle Speed	601	Cruise Control Resume Switch	0	0xFF	100	Cyclic	
65265	Cruise Control/Vehicle Speed	602	Cruise Control Accelerate Switch	0	0xFF	100	Cyclic	
65266	Fuel Economy (Liquid)	183	Engine Fuel Rate	0	0xFF	100	Cyclic	
65269	Ambient Conditions	108	Barometric Pressure	33	0xFF	100	Cyclic	
65269	Ambient Conditions	171	Ambient Air Temperature	33	0xFF	100	Cyclic & On Change	
65269	Ambient Conditions	172	Engine Air Intake Temperature	33	0xFF	100	Cyclic	
65271	Vehicle Electrical Power 1	167	Charging System Potential	33	0xFF	1000	Cyclic & On Change	
65272	Transmission Fluids 1	177	Transmission Oil Temperature	3	0xFF	1000	Cyclic & On Change	
65274	Brakes	619	Parking Brake Actuator	33	0xFF	1000	Cyclic	

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Destination Address	Transmission Repetition Rate (ms)	Transmission Type	RAM Specific Information
65276	Dash Display	96	Fuel Level	33	0xFF	1000	Cyclic & On Change	
64933	Door Control 2	3412	Lock Status Of Door 1	33	0xFF	100	Cyclic	
64933	Door Control 2	3413	Open Status Of Door 1	33	0xFF	100	Cyclic	
64933	Door Control 2	3415	Lock Status Of Door 2	33	0xFF	100	Cyclic	
64933	Door Control 2	3416	Open Status Of Door 2	33	0xFF	100	Cyclic	
64933	Door Control 2	3418	Lock Status Of Door 3	33	0xFF	100	Cyclic	
64933	Door Control 2	3419	Open Status Of Door 3	33	0xFF	100	Cyclic	
64933	Door Control 2	3421	Lock Status Of Door 4	33	0xFF	100	Cyclic	
64933	Door Control 2	3422	Open Status Of Door 4	33	0xFF	100	Cyclic	
64933	Door Control 2	3424	Lock Status Of Door 5	33	0xFF	100	Cyclic	
64933	Door Control 2	3425	Open Status Of Door 5	33	0xFF	100	Cyclic	
53248	Cab Illumination Message	1487	Illumination Brightness Percent	33	0xFF	1000	Cyclic & On Change	
64773	Direct Lamp Control Data 1	5099	Engine Oil Pressure Low Lamp Data	33	0xFF	1000	Cyclic	
65266	Fuel Economy (Liquid)	184	Instantaneous Fuel Economy	0	0xFF	100	Cyclic	
65253	Hours	247	Eng Total Hours Of Operation	0	0xFF	1000	Cyclic	
65254	Time/Date	961	Hour	33	0xFF	1000	Cyclic	
65254	Time/Date	960	Minutes	33	0xFF	1000	Cyclic	
65102	Position of Doors	1821	Used to indicate the actual position of the doors.	33	0xFF	100	Cyclic	

**Table 6: VSIM upfitter bus RAM Specific Output Signals**  
 Signals provided by the VSIM to indicate current operating conditions

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Destination Address	Priority	Starting Position (bit)	Size (bits)	Data Description	Data Resolution	Data Range	Transmission Repetition Rate (ms)	Transmission Type	Signal Description
65280	Chrysler Interior	100000	A/C Clutch Engaged	33	0xFF	7	0	1	00' off 01' clutch engaged	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Active when A/C clutch is engaged
65280	Chrysler Interior	100001	A/C Select	33	0xFF	7	1	1	00' off 01' A/C requested	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Active when A/C is requested either by VSIM, MTC or ATC HVAC
65280	Chrysler Interior	100002	Ignition Position	33	0xFF	7	3	3	'000' IGN_LK '011' IGN_OFF_ACC '100' IGN_RUN '101' IGN_START '111' SNA	3 bits = 8 states	0 to 7	1000	Cyclic & On Change	Provides status of ignition: off, accessory, run, start
65280	Chrysler Interior	100003	Air Bag Deployed	33	0xFF	7	2	1	00' no Airbag deployed 01' any Airbag deployed	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follow "any impact" signal from ORC
65280	Chrysler Interior	100004	Passenger Occupant Detection System	33	0xFF	7	6	2	00' not occupied '01' occupied '10' error '11' sna	2 bits = 4 states	0 to 3	1000	Cyclic & On Change	Follows Passenger Occupant detect sensor Sts from ORC

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Destination Address	Priority	Starting Position (bit)	Size (bits)	Data Description	Data Resolution	Data Range	Transmission Repetition Rate (ms)	Transmission Type	Signal Description
62581	Chrysler Exterior Lights	100005	Front Wig Wag	33	0xFF	7	0	1	If X = 0 then y = 0 If X=1 then y shall toggle between 1 and 0 with f=1.5Hz and duty cycle = 50 %	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follows duty cycle of Wig Wags like VSIM output
62581	Chrysler Exterior Lights	100006	Rear Wig Wag	33	0xFF	7	1	1	If X = 0 then y = 0 If X=1 then y shall toggle between 1 and 0 with f=1.5Hz and duty cycle = 50 %	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follows duty cycle of Wig Wags like VSIM output
65281	Chrysler Exterior Lights and Horn	100007	Howler Siren Disable	33	0xFF	7	3	1	00' under 25 mph 01' over 25 mph	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Active when vehicle speed is over 25mph
65281	Chrysler Exterior Lights and Horn	100008	Horn	33	0xFF	7	2	1	00' Horn off 01' Horn on	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	
65282	Chrysler Doors and Locks	100009	Door Lock Command	33	0xFF	7	0	1	00' no door lock command 01' door lock command active	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follow VSIM Logic
65282	Chrysler Doors and Locks	100010	Door Unlock Command	33	0xFF	7	1	1	00' no door unlock command 01' door unlock command active	1 bit = 2 states	0 to 1	1000	Input signal from external device to VSIM to vehicle systems	Follow VSIM Logic

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Destination Address	Priority	Starting Position (bit)	Size (bits)	Data Description	Data Resolution	Data Range	Transmission Repetition Rate (ms)	Transmission Type	Signal Description
65283	Chrysler Interior Command	2551	CHY_INT_CMD.ACSelect	0xFF	0xFF	7	0	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command A/C select on
65283	Chrysler Interior Command	2551	CHY_INT_CMD.RadioMute	0xFF	0xFF	7	1	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to mute all entertainment audio
65284	Chrysler Exterior Lights and Horn Command	2551	CHY_ExLH_CMD.RrWigWag	0xFF	0xFF	7	0	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command rear wig wags on
65284	Chrysler Exterior Lights and Horn Command	2551	CHY_ExLH_CMD.FtWigWag	0xFF	0xFF	7	1	1	0 No Command 1 Command		0 to 1	1000	Cyclic & On Change	Command front wig wags on
65284	Chrysler Exterior Lights and Horn Command	2551	CHY_ExLH_CMD.HornMute	0xFF	0xFF	7	2	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to mute all horn requests. Remote keyless entry horn chirps can only be disabled via the menu settings in the radio
65285	Chrysler Doors and Locks	2551	CHY_DrLk.LockCommand	0xFF	0xFF	7	0	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to lock door
65285	Chrysler Doors and Locks	2551	CHY_DrLk.UnLockCommand	0xFF	0xFF	7	1	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to unlock door

## 24-way Gray VSIM connector

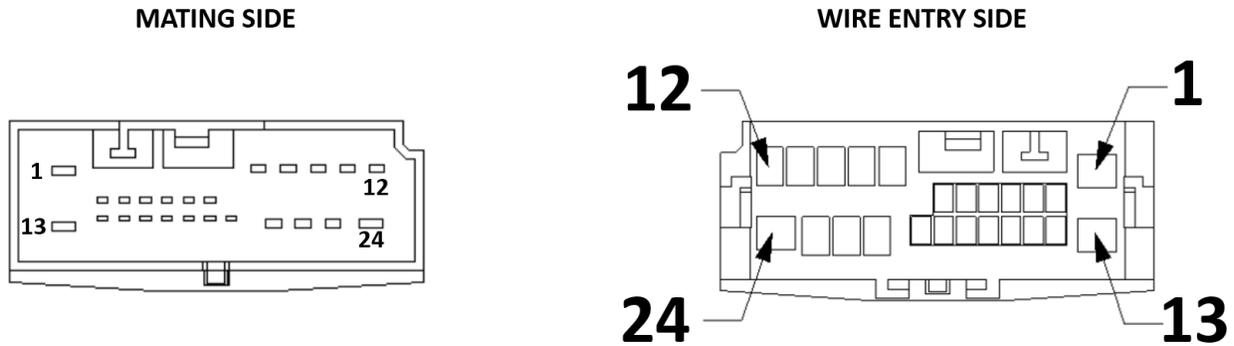


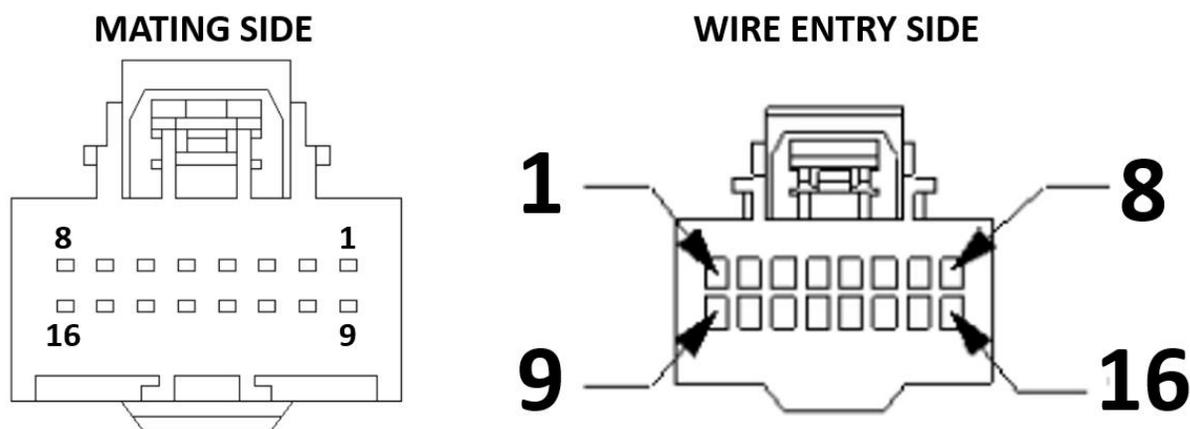
Figure 18: 24-way Gray VSIM connector

Included with VSIM wiring harness kit part number 68319578AA

Table 7: 24-way Gray VSIM connector pinout

CAVITY	SIGNAL	TYPE	USER DESCRIPTION	CIRCUIT #	COLOR
1	NO CONNECT				
2	HAZARD INDICATOR ON	OUTPUT	Get 12V max 500mA when hazard lamps are activated	W719	WH/BU
3	TRANSMISSION NOT IN PARK	OUTPUT	Get 12V max 500mA when transmission is in any gear besides Park	W504	BN
4	RIGHT TURN SIGNAL ON	OUTPUT	Get 12V max 500mA when right turn signal is illuminated	W681	WH/DG
5	NO CONNECT				VT/BG
6	MIL LAMP ON	OUTPUT	Get 12V max 500mA when engine MIL is on (including non-fault conditions such as IGN ON with ENG OFF)	W540	DG
7	TRANSMISSION PARK SIGNAL	OUTPUT	Get GND when transmission is in Park	W700	YE/DB
8	TRANSMISSION NEUTRAL SIGNAL	OUTPUT	Get GND when transmission is in Neutral	W701	DG/YE
9	A/C CLUTCH ENGAGED SIGNAL	OUTPUT	Get GND when A/C Clutch is engaged	W652	BU/BN
10	VSIM UPFITTER BUS +	CAN	250 Kbps CAN+, refer to <a href="#">VSIM upfitter bus</a> section	W533	BN/DB
11	VSIM UPFITTER BUS -	CAN	250 Kbps CAN-, refer to <a href="#">VSIM upfitter bus</a> section	W535	BN/BU
12	TRANSMISSION REVERSE SIGNAL	OUTPUT	Get GND when transmission is in Reverse	W702	DG/DB
13	NOT USED		Not Used		
14	A/C SELECTED SIGNAL	OUTPUT	Get GND when A/C has been selected ON by the operator	W689	BU/DG
15	NO CONNECT				
16	TRANSMISSION DRIVE SIGNAL	OUTPUT	Get GND when transmission is in Drive	W703	DG/BU
17	ANY DOOR AJAR SIGNAL	OUTPUT	Get 12V max 500mA when any door is ajar	W720	VT/OG
18	PASSENGER SEAT BELT NOT LATCHED	OUTPUT	Get GND when passenger seat belt is not latched	W706	DG/GY
19	PASSENGER SEAT OCCUPIED SIGNAL	OUTPUT	Get GND when passenger seat is occupied	W554	DG/VT
20	NO CONNECT				
21	NO CONNECT				
22	NO CONNECT				
23	NO CONNECT				
24	NO CONNECT				

## 16-way Black VSIM connector



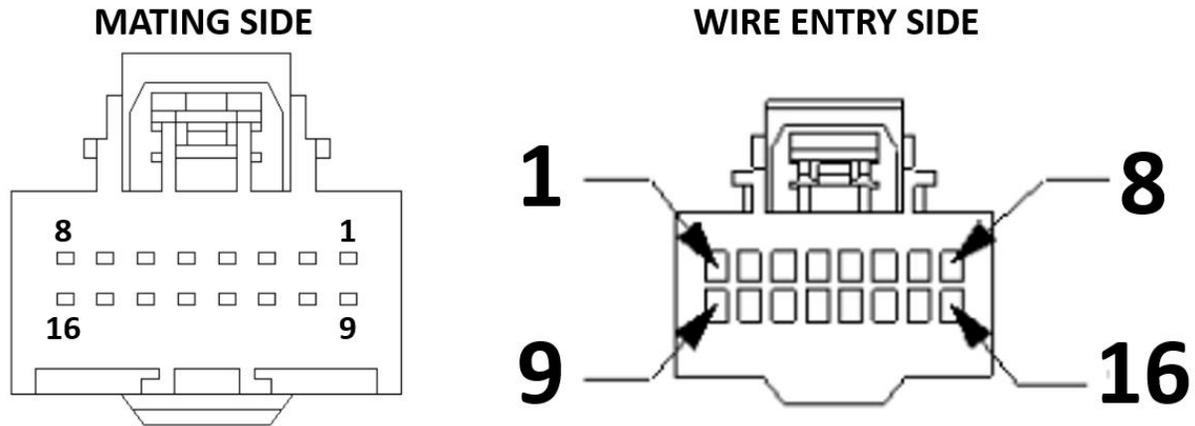
**Figure 19: 16-way Black VSIM connector**

Included with VSIM wiring harness kit part number 68319578AA

**Table 8: 16-way Black VSIM connector pinout**

CAVITY	SIGNAL	TYPE	USER DESCRIPTION	CIRCUIT #	COLOR
1	25MPH SPEED SIGNAL	OUTPUT	Get 12V when vehicle speed is 25 MPH or above	W505	GN
2	HORN PAD SENSE	OUTPUT	Get 12V max 500mA when horn pad is pressed	W513	BN/GY
3	LEFT TURN SIGNAL	OUTPUT	Get 12V max 500mA when left turn signal is illuminated	W682	WH/BU
4	HIGH BEAM SIGNAL	OUTPUT	Get 12V max 500mA when high beams are illuminated	W684	WH/VT
5	IGNITION OFF	OUTPUT	Get 12V max 500mA when ignition is OFF	W735	PK
6	DRIVER SEAT BELT NOT LATCHED	OUTPUT	Get 12V max 500mA when driver's seat belt is not latched (IGN must be in RUN)	W710	GN/VT
7	OIL PRESSURE SIGNAL	OUTPUT	Pulse Width Modulated (PWM) between open circuit and ground, 100 Hz, linear with 0% PWM = 0 PSI, and 100% PWM = 147 PSI.	W707	VT/GY
8	VOLTAGE GAUGE PWM	OUTPUT	Pulse Width Modulated (PWM) between open circuit and ground, 100 Hz, linear with 0% PWM = 5V, and 100% PWM = 18V.	W733	VT
9	AIRBAG DEPLOYED	OUTPUT	Get 12V max 500mA when airbag deployment has occurred during current ignition cycle. Subject to vehicle electrical system being intact after an impact.	W685	GN/VT
10	VEHICLE THEFT ALARM (VTA) ALARMING	OUTPUT	Get 12V max 500mA when VTA is armed and alarming (horn sounding and lamps blinking). VSIM will wake up and output will activate if alarm is triggered.	W515	VT/BU
11	BRAKE PEDAL PRESSED	OUTPUT	Get 12V max 250mA when the brake pedal (service brake) is pushed	W726	DG/OG
12	POWER FEED ACCESSORY	OUTPUT	Get 12V max 500mA when ignition is in ACCY position	W734	PK/GY
13	POWER FEED RUN/CRANK	OUTPUT	Get 12V max 500mA when ignition is in RUN or CRANK position	W736	PK/YE
14	FUEL LEVEL SIGNAL	OUTPUT	Pulse Width Modulated (PWM) between open circuit and ground, 100 Hz, linear with 0% PWM = empty tank, and 100% PWM = full tank	W538	DB/GN
15	ENGINE RPM SIGNAL	OUTPUT	Pulse Width Modulated (PWM) between open circuit and ground, 0.2 Hz/RPM (12 pulses per minute per 1 RPM) @ 50% duty cycle	W744	BN/WT
16	VEHICLE MPH SPEED SIGNAL	OUTPUT	Modulation between open circuit and ground, output with 10 Hz/MPH (600 pulses per minute per MPH) @ 50% duty cycle	W524	BN/YE

## 16-way Brown VSIM connector



**Figure 20: 16-way Brown VSIM connector**

Included with VSIM wiring harness kit part number 68319578AA

**Table 9: 16-way Brown VSIM connector pinout**

CAVITY	SIGNAL	TYPE	USER DESCRIPTION	CIRCUIT #	COLOR
1	CLUSTER DIMMING SIGNAL	OUTPUT	Pulse Width Modulated (PWM) output between open circuit and ground, 100Hz, linear with 0% PWM = zero intensity, and 100% PWM = full intensity.	W521	OG/GY
2	DOOR UNLOCK ALL SIGNAL	OUTPUT	Get GND for 500ms when a vehicle unlock all request is made. The vehicle need not be awake. For unlock requests initiated by a FOB, this output only activates with a 2x press of unlock on the FOB.	W722	DG/BG
3	AUXILIARY FRONT WIG WAG FLASHING SIGNAL	OUTPUT	Get GND cycling at 80 flashes per minute (1.333Hz square wave @ 50% duty cycle) when front wig wags (cavity 12) are requested on	W503	BG/VT
4	DOOR LOCK REQUEST	INPUT	Apply GND to lock doors. This input will wake up the vehicle and lock the doors as well as activate the VSIM lock output (cavity 9)	W686	BG/DG
5	DOOR UNLOCK REQUEST	INPUT	Apply GND to unlock doors. This input will wake up the vehicle and unlock the doors as well as activate the VSIM unlock output (cavity 2)	W687	BG/BU
6	RADIO MUTE	INPUT	Apply GND to mute entertainment audio. Limited availability - works on sales code UA1, UAV and UAX radios.	W640	GY/DG
7	NO CONNECT				DB/GN
8	NO CONNECT				
9	DOOR LOCK SIGNAL	OUTPUT	Get GND for 500ms when a vehicle door lock request is made. The vehicle need not be awake.	W721	GN/BG
10	AUXILIARY REAR WIG WAG FLASHING SIGNAL	OUTPUT	Get GND cycling at 80 flashes per minute (1.333Hz square wave @ 50% duty cycle) when rear wig wags (cavity 14) are requested on	W502	BG/BN
11	PARK BRAKE SIGNAL	OUTPUT	Get GND when park brake is set	W725	DG/WH
12	FRONT WIG WAGS	INPUT	Apply GND to actuate front wig wag lamps, vehicle front high beams, 80 flashes per minute (1.3 Hz square wave @ 50% duty cycle). Also actuates circuit W503 (cavity 3)	W500	BN/OG
13	HORN MUTE	INPUT	Apply GND to mute the horn during panic alarm, vehicle theft alarm and normal horn pad function. Does not mute horn for remote keyless chirps.	W537	DB/YE
14	REAR WIG WAGS	INPUT	Apply GND to actuate rear wig wag lamps. Also activates circuit W502 (cavity 10)	W501	BN/VT
15	NO CONNECT				
16	GROUND	INPUT	For use on VSIM digital inputs only	W709	BK

## 16-way Green VSIM connector

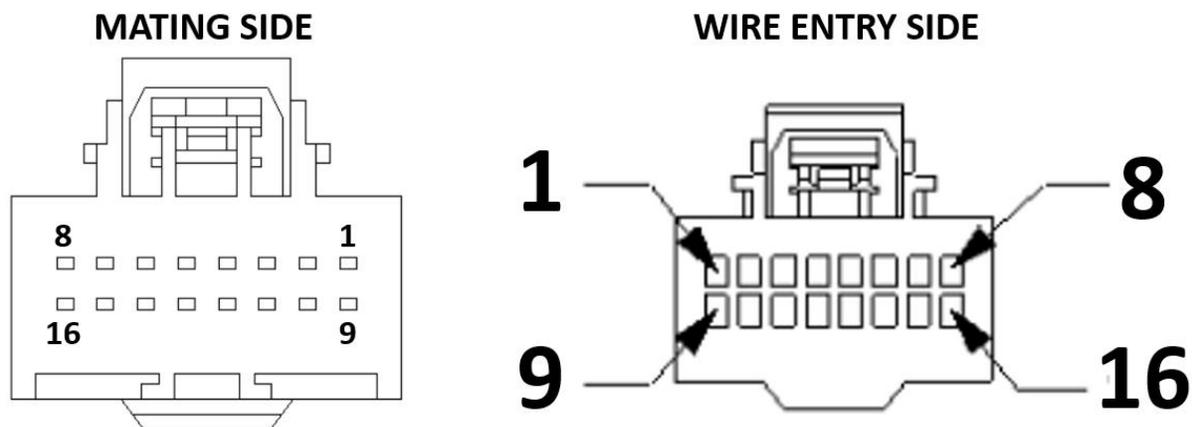


Figure 21: 16-way Green VSIM connector

Included with VSIM wiring harness kit part number 68319578AA

Table 10: 16-way Green VSIM connector pinout

CAVITY	SIGNAL	TYPE	USER DESCRIPTION	CIRCUIT #	COLOR
1	NO CONNECT				
2	NO CONNECT				GY
3	NO CONNECT				
4	REAR BULB OUT DETECTION OFF	INPUT	Apply GND to turn off rear Turn/Tail/Brake/License/Reverse/CHMSL/Cargo) bulb fault detection. Allows the use of rear LEDs in place of incandescent bulbs. May be grounded before or after disconnecting the vehicles OEM incandescent bulbs.	W509	WH/BN
5	NO CONNECT				GY/OG
6	NO CONNECT				GY/YE
7	LOW BEAM SIGNAL		Get 12V when high beams are illuminated	W683	WH/BN
8	NO CONNECT				
9	NO CONNECT				GN/DB
10	NO CONNECT				
11	A/C TURN ON	INPUT	Apply GND to command the vehicle A/C system to be activated. If the A/C isn't on, this input will activate the A/C compressor and turn the vehicle HVAC blower to low speed. While this input is activated the vehicle's blower speed control can be used to control but the blower, but A/C system cannot be turned completely off. When this input is deactivated (ground removed), the vehicle's A/C controls returns to normal operation.	W656	BU
12	SEPARATED REAR TAIL LIGHTING	INPUT	Apply GND to change rear stop/turn lamps to turn only	W546	BG/GY
13	NO CONNECT				GY/BN
14	ENGINE RUNNING HOUR METER	OUTPUT	Get 12V max 500mA when engine RPM > 450	W522	DB/BG
15	PARK LAMP SIGNAL	OUTPUT	Get 12V when park lamps are illuminated	W699	WH/GN
16	NO CONNECT				

## LIGHTING

### Red/White Dome Lamp



**Figure 22: Dome Lamp**

The RAM 1500 SSV is equipped with a red/white dome lamp. The dome lamp switch has three positions. One side of the switch turns on white LED lights, the other side turns on red LED lights, and the center position turns the lamp OFF. Always remember to return the dome light switch to the OFF (center) position to prevent the vehicle battery from discharging.

## Spot Lamps



**Figure 23: Spot Lamp**

If you choose to install spot lamp(s), you can find electrical connectors at the base of each A-pillar with the connector taped back to the harness. See the figures below. There are electrical connectors on both driver and passenger sides, and they include a ground and battery feed. They are powered through a shared 25A fuse #55 in the underhood PDC.

**CAUTION:** The side curtain airbag is tethered in the area of the spot lamp. If drilling and installing your own lamp, make sure the tether is not damaged during the install and is properly reattached when the installation is complete.

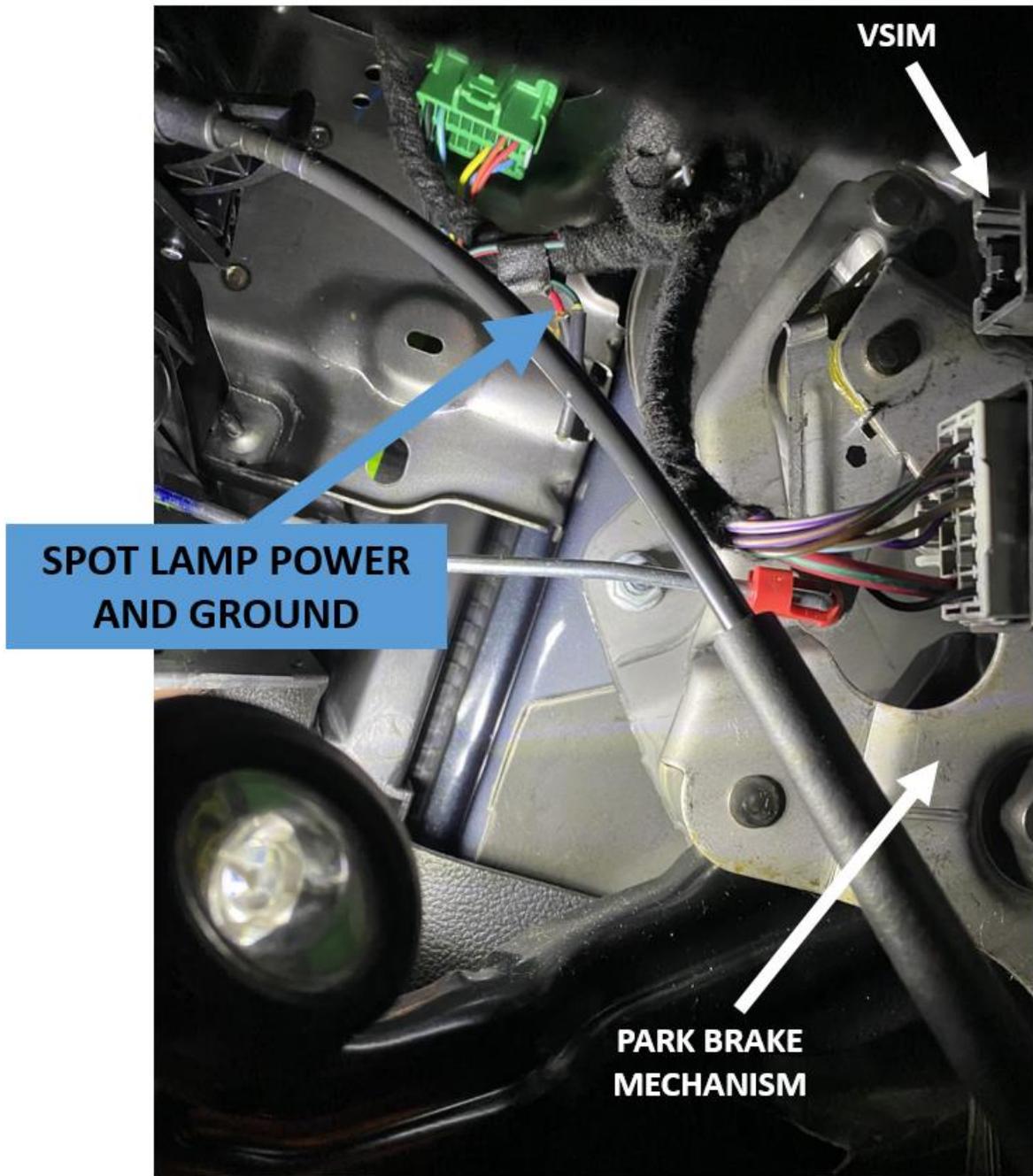


Figure 24: Driver side spot lamp blunt cut circuits (view with trim panel below steering wheel removed, looking from center of vehicle towards outboard left side)

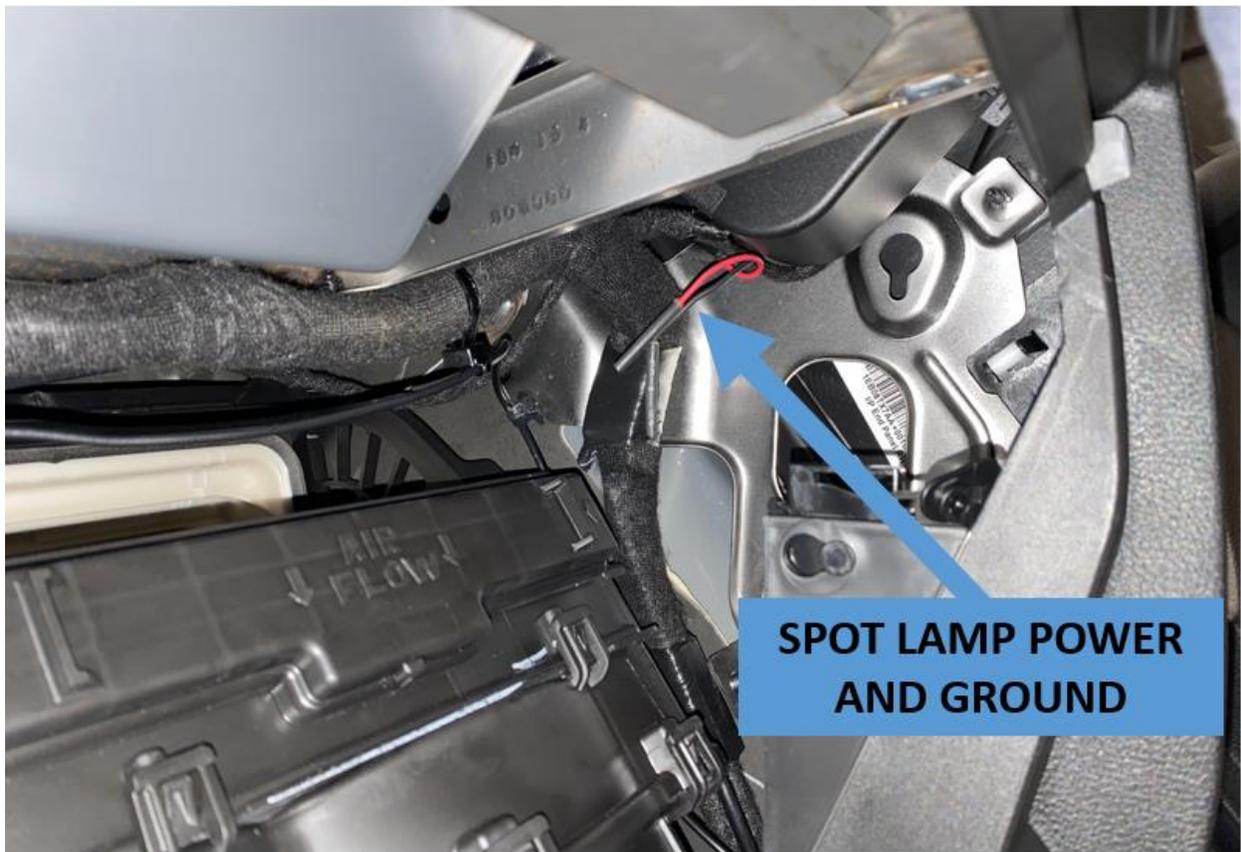


Figure 25: Passenger side spot lamp blunt cut circuits (view with glove box removed, looking from center of vehicle towards outboard right side)

# RESTRAINTS

## Occupant Restraint System Overview

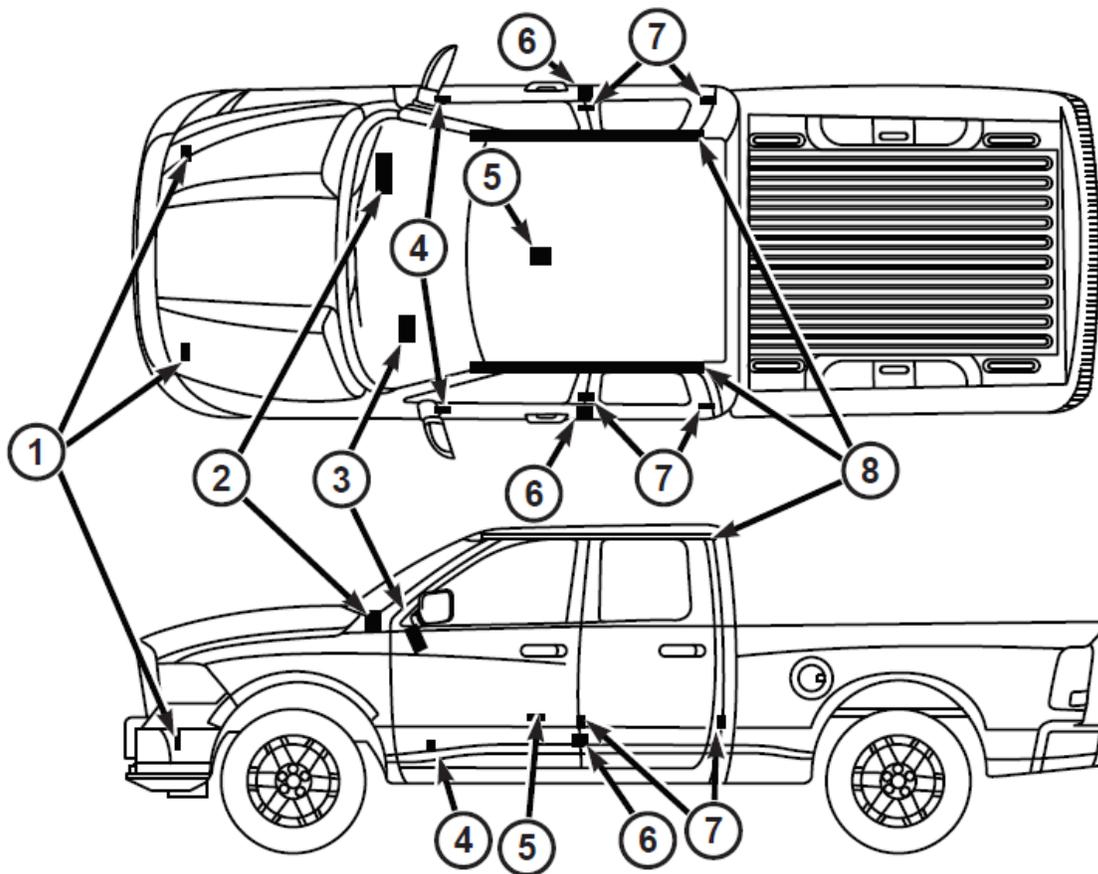
- WARNING:** INSTALLING A CONVENTIONAL PRISONER PARTITION IS NOT RECOMMENDED ON VEHICLES EQUIPPED WITH LEFT AND RIGHT SIDE CURTAIN AIRBAGS, AS POLICE CAGES MAY INTERFERE WITH THE DEPLOYING AIRBAG. THE AREA WHERE THE SIDE CURTAIN AIRBAG IS LOCATED SHOULD REMAIN FREE FROM ANY OBSTRUCTIONS. ONLY INSTALL A PARTITION THAT IS DESIGNED TO BE COMPATIBLE WITH SIDE CURTAIN AIRBAGS.
- WARNING:** YOUR VEHICLE IS EQUIPPED WITH LEFT AND RIGHT SIDE CURTAIN AIRBAGS, AND CARE MUST BE TAKEN WHEN INSTALLING ANY TYPE OF ROOF EQUIPMENT. DRILLING AND INSTALLATION OF FASTENERS OR OTHER EQUIPMENT THAT MAY INTERFERE WITH THE SIDE CURTAIN AIRBAGS AND AIRBAG WIRING HARNESES IS NOT PERMITTED. MAKE SURE THAT NO EQUIPMENT OR FASTENERS ARE LOCATED IN THE AIRBAG DEPLOYMENT ZONE.
- WARNING:** DO NOT PLACE OBJECTS, OR MOUNT EQUIPMENT, IN FRONT OF THE AIRBAG MODULE COVER OR IN FRONT OF THE SEAT AREAS THAT MAY COME IN CONTACT WITH A DEPLOYING AIRBAG. FAILURE TO FOLLOW THIS INSTRUCTION COULD RESULT IN PERSONAL INJURY.
- WARNING:** DO NOT PLACE DASH, TUNNEL, OR CONSOLE-MOUNTED EQUIPMENT OUTSIDE OF THE SPECIFIED ZONE. FAILURE TO FOLLOW THIS INSTRUCTION COULD RESULT IN PERSONAL INJURY.

The occupant restraint system contains the following components:

- Occupant restraint controller (ORC) module
- Front and side impact sensors
- Seat belt tensioners
- Airbags:
  - Driver airbag
  - Driver side curtain airbag
  - Passenger airbag
  - Passenger side curtain airbag

There are four interior zones to be aware of:

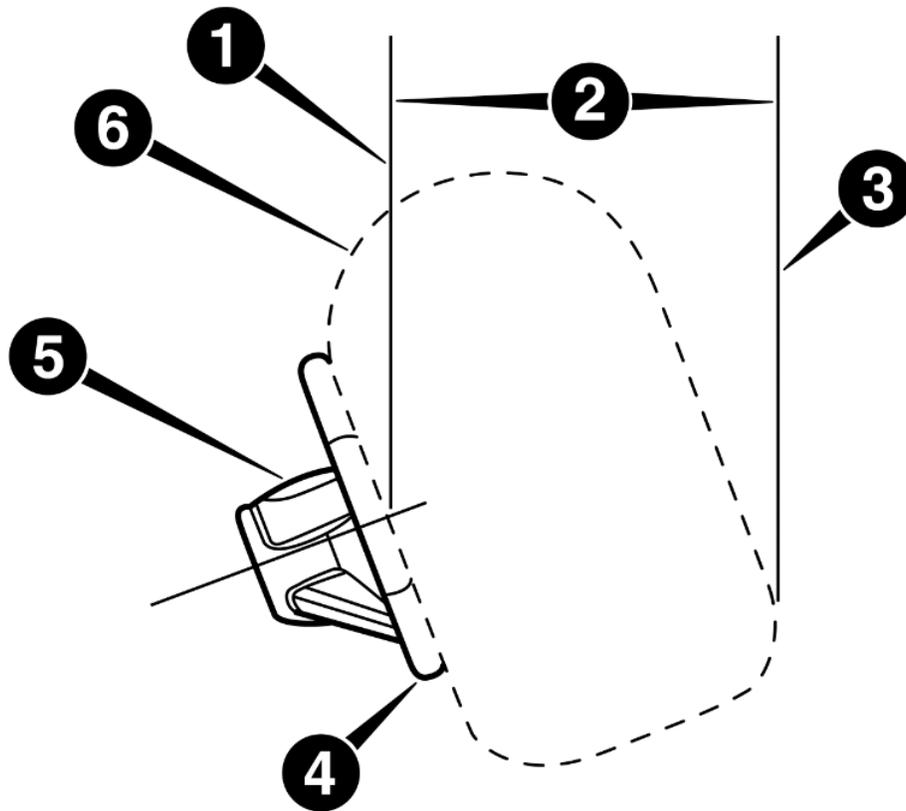
- Driver airbag deployment zone
- Passenger airbag deployment zone
- Two side curtain airbag deployment zones



1	Front Impact Sensor	5	Occupant Restraint Controller (ORC)
2	Passenger Air Bag	6	Seat Belt Tensioner
3	Driver Air Bag	7	Acceleration Sensor
4	Pressure Sensor	8	Side Curtain Air Bag

**Figure 26: Occupant Restraint System Components**

## Driver Airbag (DAB) Deployment Zone



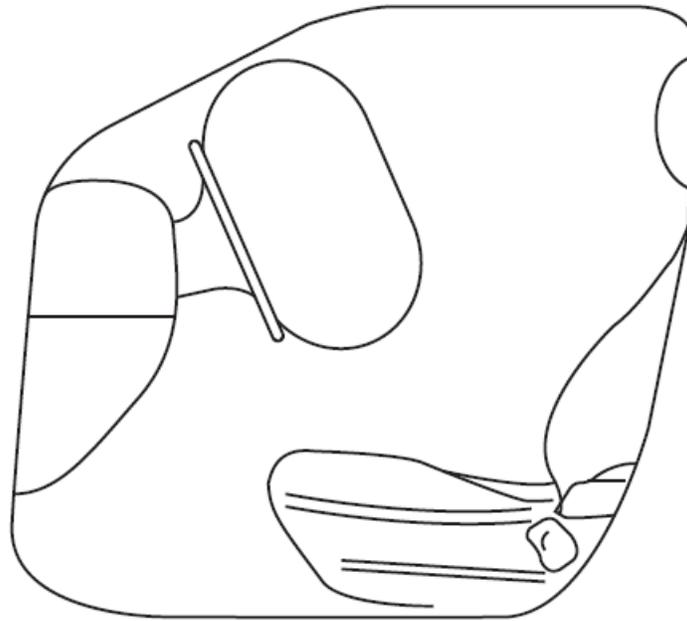
1	Vertical Plane Passing Through the Center of the Steering Wheel	4	Steering Wheel
2	331 mm (13 in.)	5	Driver Airbag Retainer/Housing
3	Vertical Plane Passing Through the Maximum Rearward Point that the Driver Airbag Cushion Reaches	6	Driver Airbag Cushion

**Figure 27: Driver Airbag Dimensions**

**NOTE:** The illustration represents the maximum dynamic deployment shape.

**Table 11: Driver Airbag Cushion Position**

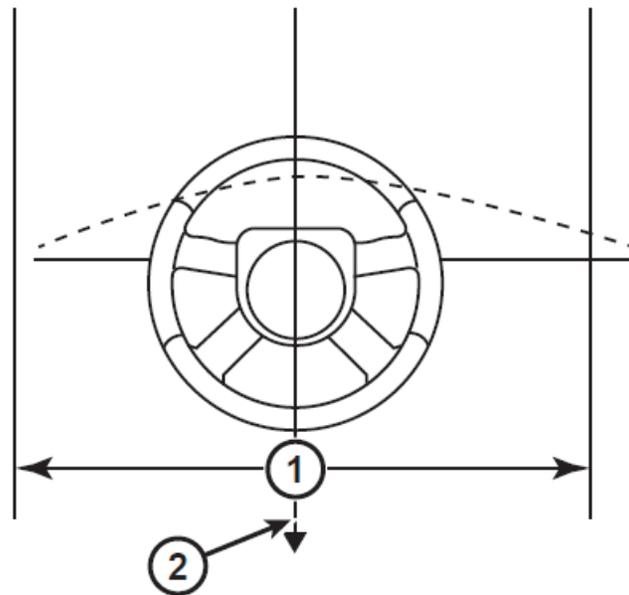
DAB (Driver Airbag) diameter when full	661 mm (26 in.)
DAB depth when full	305 mm (12 in.)
Maximum rearward displacement during fill	407 mm (16 in.)



**Figure 28: Driver Airbag Deployed Shape**

**Table 12: Steering Column Tilt Position Range**

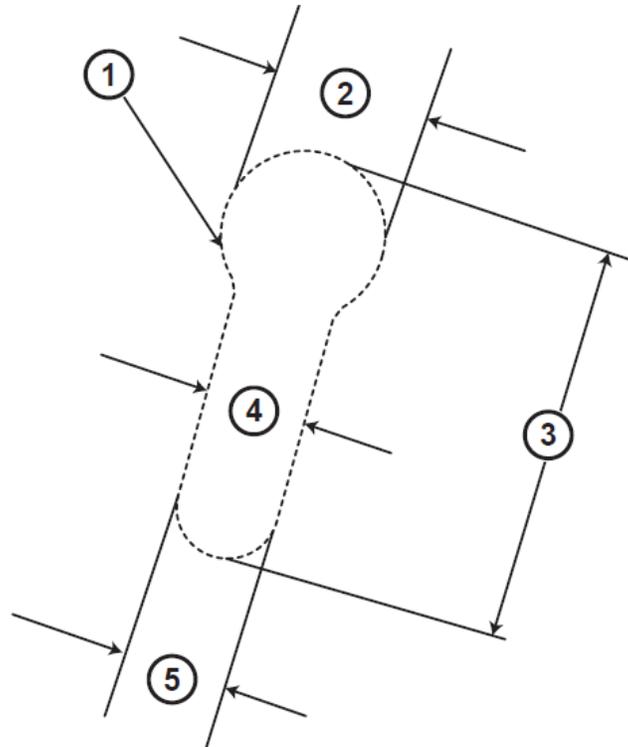
$\pm 2$ degrees from steering column tilt pivot point
$\sim 22.0$ degrees from vertical is the normal position



1	Driver Airbag Cushion Lateral Deployment Zone 686mm (27 in.)	2	Driver Seating Reference
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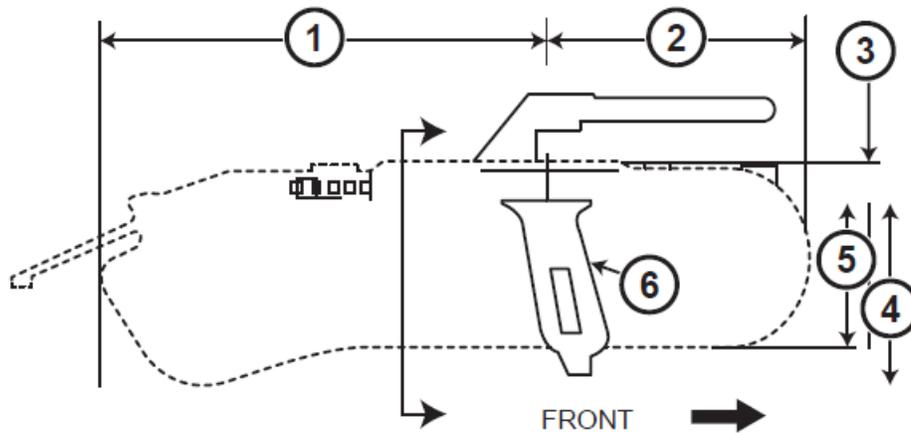
**Figure 29: Deployment Zone**

Side Curtain Deployment Zone



1	Cross Sectional Area Side View	4	120 mm (4.75 in.)
2	120 mm (4.75 in.)	5	120 mm (4.75 in.)
3	508 mm (20 in.)		

Figure 30: Side Curtain



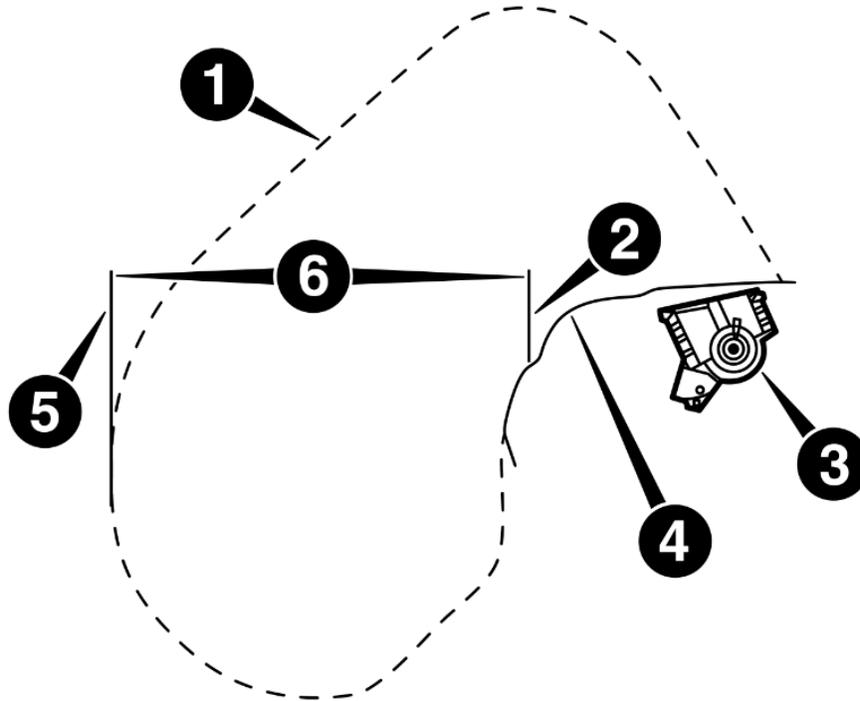
1	560 mm (22.1 in.)	4	508 mm (20 in.)
2	955 mm (37.6 in.)	5	508 mm (20 in.)
3	80 mm (3.2 in.)	6	B-pillar

Figure 31: Side Curtain Deployment Zone

Use caution when installing equipment along the roof side rails to avoid drilling or installing fasteners in the side curtain airbag area. Also make sure that no equipment interferes with the airbag deployment areas.

If additional wiring needs to be routed on the sides of the roof, take care that the installed harness does not impede the airbag deployment. Point fasteners used to attach roof-mounted equipment outward from the passenger compartment to minimize risk of head injury and to avoid altering the head impact protection system (FMVSS 201) that is standard on these vehicles. Do not allow fasteners to extend into the passenger compartment, even between the roof and headliner.

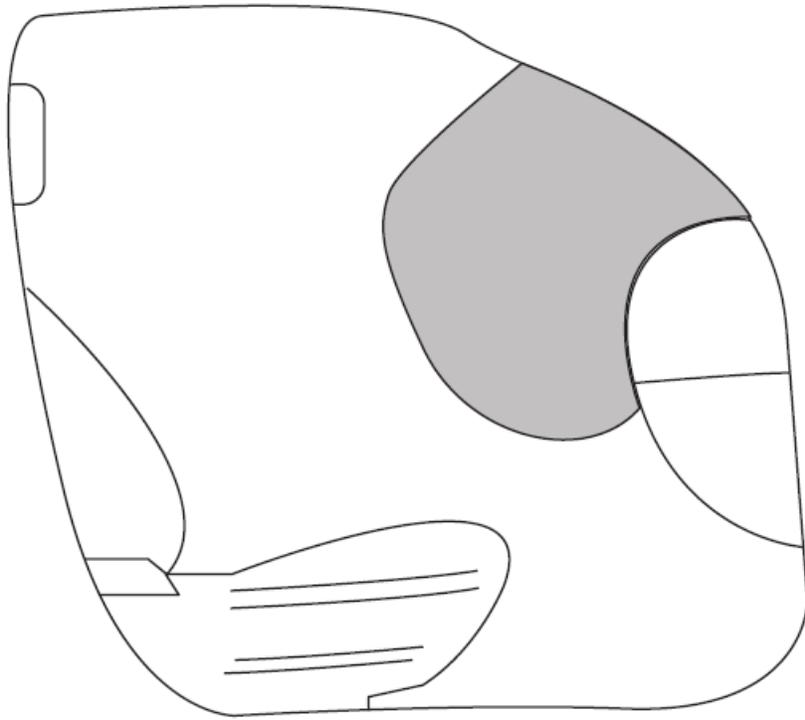
## Passenger Airbag Deployment Zone



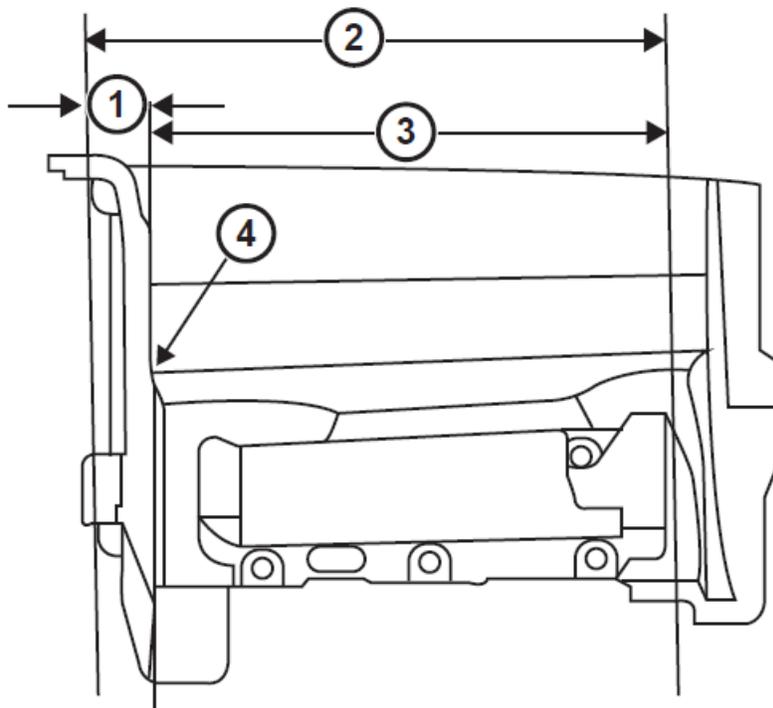
1	Passenger Airbag Cushion	4	Instrument Panel
2	Vertical Plane from Point of Instrument Panel	5	Vertical Plane Passing Through the Maximum Rearward Point that the Passenger Airbag Cushion Reaches
3	Passenger Airbag Module	6	675 mm (26.6 in.)

**Figure 32: Passenger Airbag Deployment Zone**

**NOTE:** The illustration represents the maximum dynamic deployment shape.

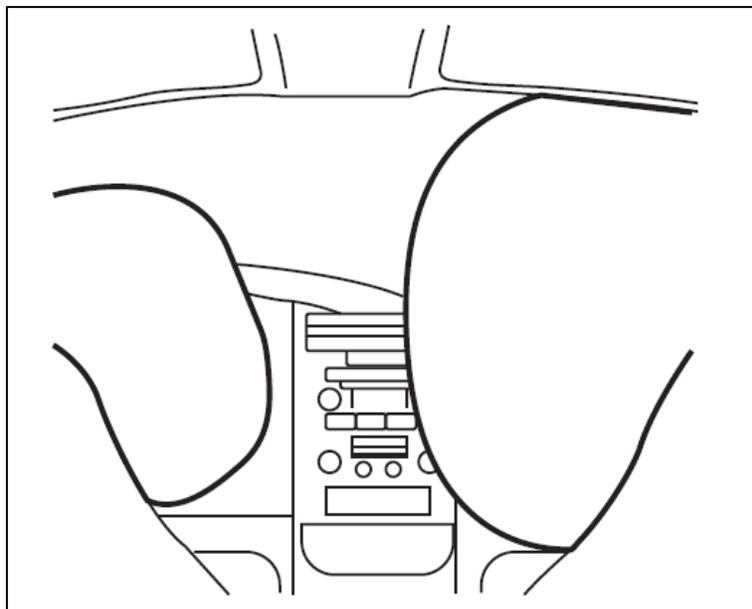


**Figure 33: Final Passenger Airbag Deployment Shape**



1	119 mm (4.7 in.)	3	756 mm (29.8 in.)
2	Passenger Airbag Deployment Zone	4	Reference Point

**Figure 34: Deployment Zone**



**Figure 35: Center Interior Area**

**WARNING: MAKE SURE ADEQUATE SPACE IS AVAILABLE FOR AIRBAG DEPLOYMENT. MOUNTING ACCESSORIES AND EQUIPMENT INSIDE THE DEPLOYMENT ZONES IMPEDES AIRBAG DEPLOYMENT.**

**CAUTION:** It is imperative that all occupant restraint system components remain in their original location and orientation. Any modification, removal, or relocation of components may be detrimental to the occupant restraint system performance and is prohibited. Any vehicle modifications that may affect the occupant restraint system characteristics should be verified through vehicle calibration/impact testing.

#### Occupant Restraint System Wiring

All occupant restraint system wiring must remain intact and may not be used for any other purpose. This includes the driver and front passenger seat wiring. Any electrical connector that is yellow is part of the occupant restraint system and should not be modified or used for other purposes.

#### Occupant Restraint System Verification

After any modification work is complete, confirm the occupant restraint system readiness as follows: turn the ignition key to the ON position. The airbag lamp in the instrument cluster illuminates for 6 to 8 seconds, and then turns off. If the airbag lamp fails to illuminate, repeatedly cycles on and off, or does not turn off, have the condition corrected by an authorized dealership before shipping the vehicle to the customer.

## VEHICLE STORAGE

### General Storage Recommendations

If a vehicle is not immediately delivered to the customer, store the vehicle according to the following guidelines:

- Store the vehicle indoors, in a clean and dry place.
- Check the engine coolant and anti-freeze protection.
- Leave the parking brake in the OFF position
- Check the vehicle tire pressures and inflate them to the maximum recommended levels. To help avoid flat spotting, move the vehicle at least once a month so that a different portion of the tire tread contacts the ground

If vehicles must be stored outside:

- Avoid storage locations near obvious sources of industrial or environmental contamination (such as trees, factories, steam or vapor vents, railroad tracks, etc.).
- Maintain tight security to help prevent vandalism. Inspect the vehicle regularly to check for such damage.
- If the vehicle must be parked on an incline, park it with the front end higher than the rear.
- This prevents hydrostatic lock caused by fuel draining into the engine.
- Rinse the vehicle at least once a week. Wash away the snow more often because it can trap harmful contaminants. Dry all horizontal surfaces.
- Remove the negative battery cable by removing the ground connection nut to prevent battery drain and possible damage.
- Keep all windows closed, all doors locked, and all trim covers intact and in place.
- Do not use chalk, crayon, or any marker containing abrasives on painted, plated, or glass surfaces.
- Use protective, thin, plastic film to avoid soiling seats when moving a vehicle.

## Battery Maintenance

The negative battery cable should be removed from the intelligent battery sensor to prevent draining the battery during extended vehicle storage. Only loosen the ground connection nut from the intelligent battery sensor to remove the negative battery cable.

**WARNING: THE BATTERY IN THIS VEHICLE HAS A VENT HOSE THAT SHOULD NOT BE DISCONNECTED AND SHOULD ONLY BE REPLACED WITH A BATTERY OF THE SAME TYPE (VENTED). FAILURE TO FOLLOW THIS WARNING CAN RESULT IN SERIOUS OR FATAL INJURY.**

Once a month:

- Check the battery state for charge (at least 12.4 volts). Charge the battery as necessary to help prevent freezing and deterioration.
- Make sure that the battery vent tube is properly connected to the battery and to the floor pan.

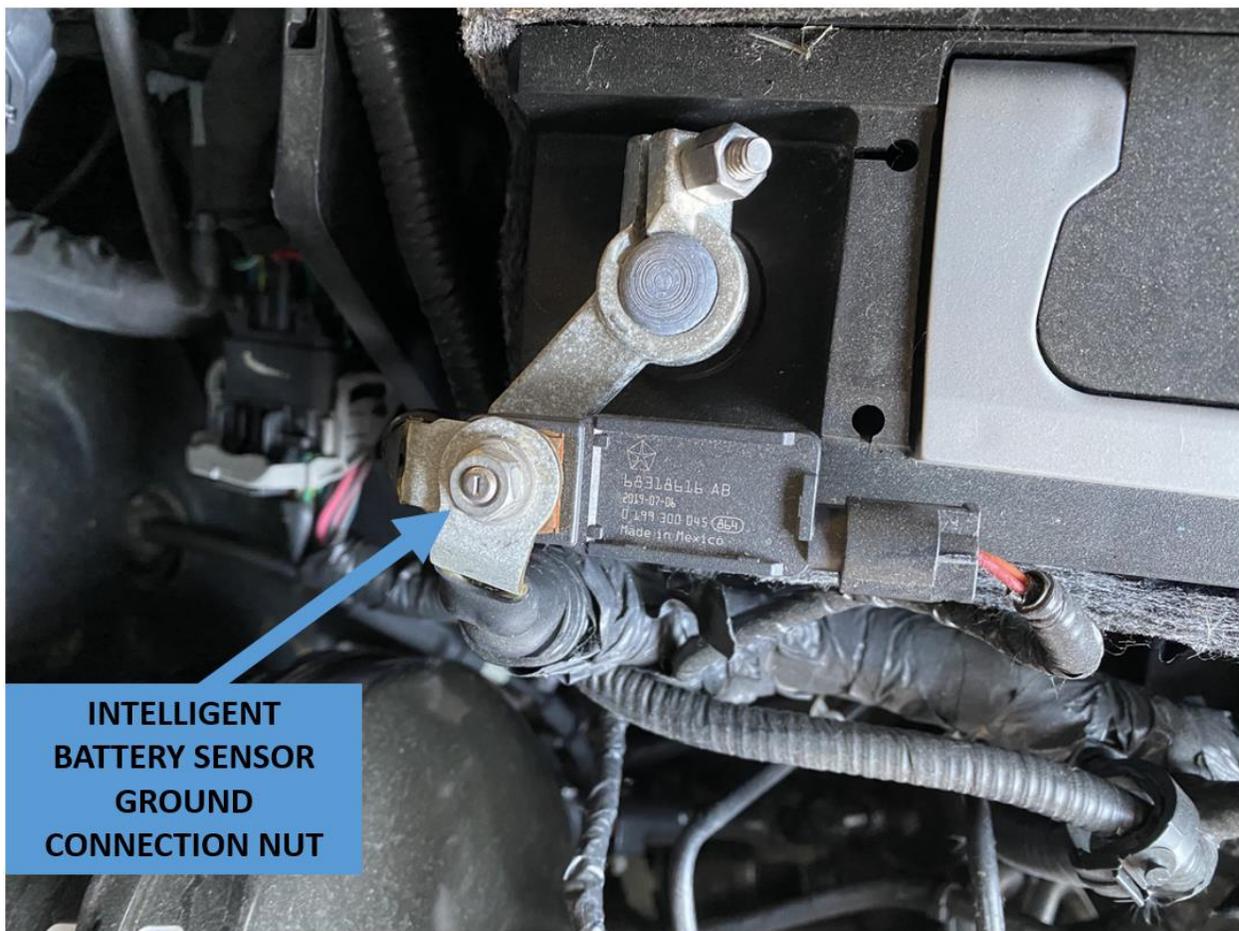


Figure 36: Intelligent Battery Sensor

## Shipping Mode

The RAM 1500 SSV body control module has a Shipping Mode for transporting or storing for a long period of time, and for the time between when the vehicle leaves the factory and is ready for use by the customer. The vehicle will come from the factory in Shipping mode.

Turn the hazard lamps on and press/hold the up arrow on the steering wheel electronic vehicle information center (EVIC) controls until the vehicle enters or exits shipping mode. Note that this procedure is only possible while the vehicle has relatively low mileage. If the procedure fails, threshold mileage has most likely been exceeded. You can also enable/disable the vehicle from Shipping Mode by using the scan tool: go to BCM then Misc. functions.

In all cases, if shipping mode is no longer available for a vehicle, to reduce battery drain follow the battery disconnection recommendation described in the battery maintenance section above.



# STELLANTIS

The special service tools referred to herein are required for certain service operations. These special service tools or their equivalent, if not obtainable through a local source, are available through the following outlet:

## **Mopar Essential Tools and Service Equipment**

Snap-on Business Solutions

Telephone 1-855-298-2687

2801-80th Street Kenosha, WI 53143, U.S.A.

FAX 1-855-303-8985



## **ESSENTIAL TOOLS AND SERVICE EQUIPMENT**

[www.moparesentialtools.com](http://www.moparesentialtools.com)



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