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RAM 1500 Special Service Vehicle

2012 - 2014 Upfitter 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, Cir-clips, 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.

Cautions and ***warnings*** cover only the situations and procedures Chrysler Group LLC has encountered and recommended. Neither Chrysler Group LLC nor its subsidiaries or affiliates cannot know, evaluate, and advise the service trade of all conceivable ways in which service may be performed, or of the possible hazards for each. Consequently, Chrysler Group LLC and its subsidiaries and affiliates have not undertaken any such broad service review. Accordingly, anyone who used a service procedure or tool that is not recommended in this publication, must be certain that neither personal safety, nor vehicle safety, is jeopardized by the service methods they select.

MASTERTECH

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Notes:

LESSON 1 UPFITTER GUIDE

The information in this supplement is intended to be used with the current RAM 1500 SSV. This section provides dimensions for the truck and electrical upgrades provided for the benefit of the fleet installer. Passive restraint warnings, cautions, and component locations are shown.

VEHICLE DIMENSIONS

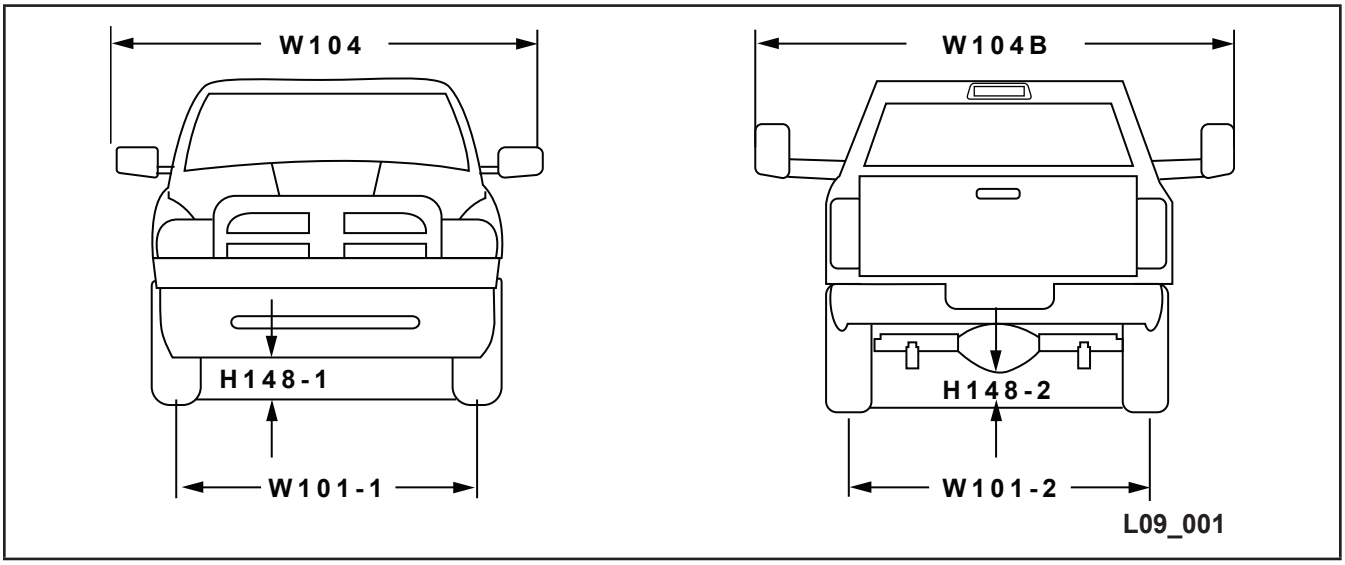


Figure 1 Front and Rear View

Vehicle dimensions are provided in three graphics. Front and rear, top, and side images. There is a table provided that corresponds with each of the given measurements. To use the images and table, locate the measurement in the graphic, then locate the measurement in the table. The measurements are provided in both English and the metric equivalence.

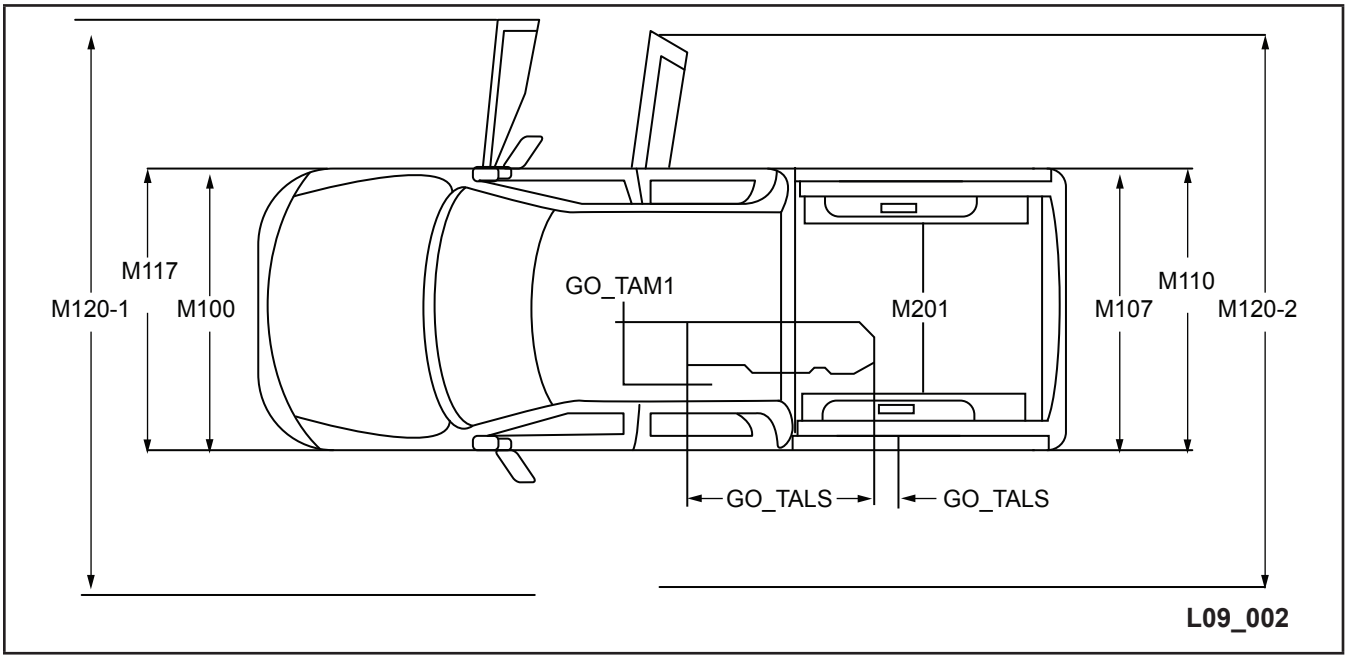


Figure 2 Top View

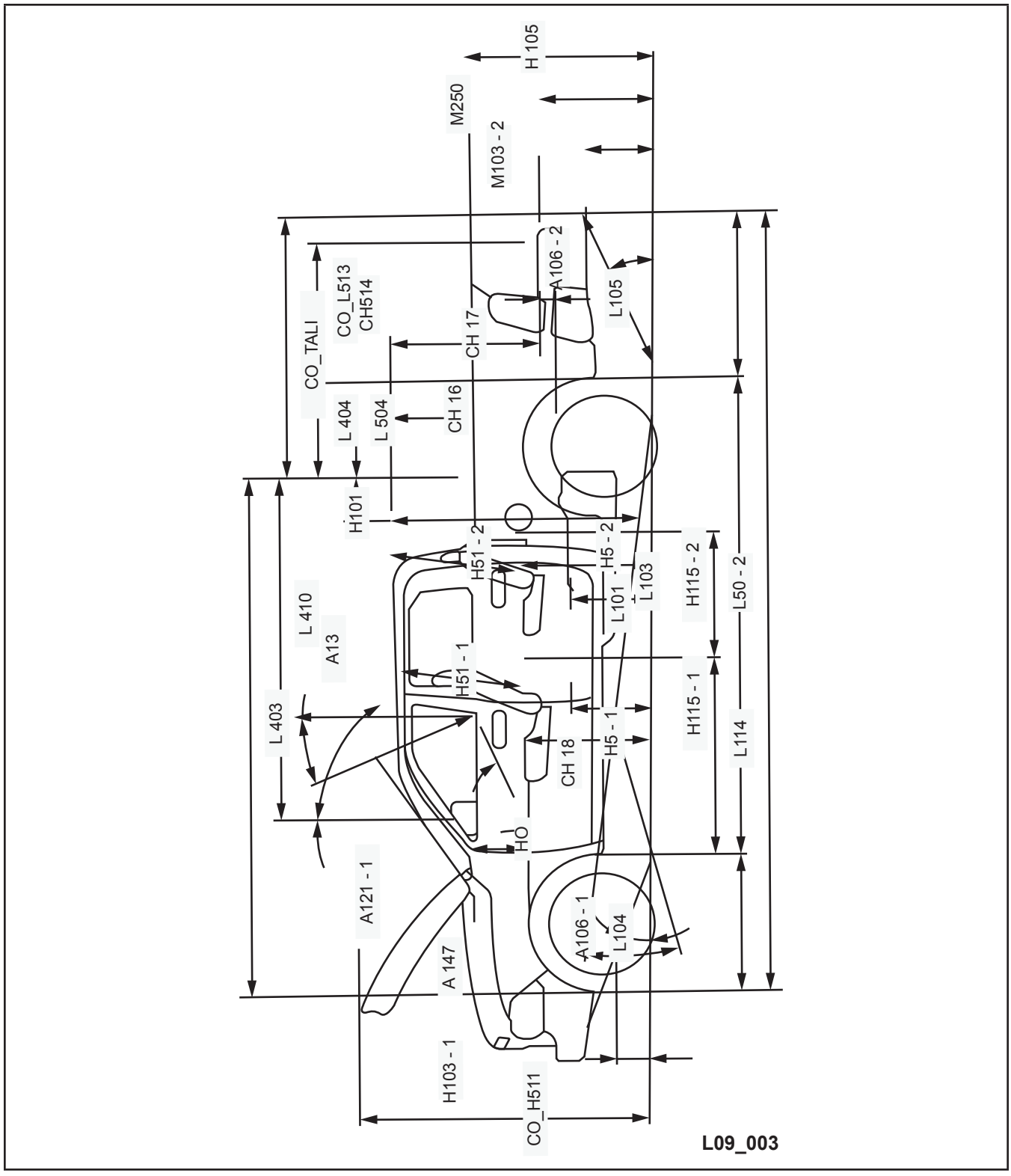


Figure 3 Side View

Table 1 Frame Dimensions

Location Number	Description	Metric	English
A106-1	Angle of Approach	19.2 deg	19.2 deg
A106-2	Angle of Departure	25.4 deg	25.4 deg
A147	Ramp Breakover Angle	16.6 deg	16.6 deg
CG H511	Bottom of Open Hood to Ground	2134.0 mm	84.0 in.
CG L513	Rear Axle to Inside Box at Rear	1016.1 mm	40.0 in.
CG TRL3	Rear Wheel Center Line to Fuel Tank	170.6 mm	6.7 in.
CG TT18	Turn Circle Diameter	13.8 m	45.4 ft.
H5-1	SgRP to Ground - First	948.4 mm	37.3 in.
H5-2	SgRP to Ground - Second	981.3 mm	36.6 in.
H101	Vehicle Height (Curb Load)	1923.0 mm	75.7 in.
H103-1	Fascia (Bumper) to Ground - Front	236.5 mm	9.3 in.
H103-2	Fascia (Bumper) to Ground - Rear	487.6 mm	19.2 in.
H108-1	Static Load Radius - Front Tire	378.5 mm	14.9 in.
H108-2	Static Load Radius - Rear Tire	386.1 mm	15.2 in.
H115-1	Step Height - Front	597.9 mm	23.5 in.
H115-2	Step Height - Second	602.0 mm	23.7 in.
H148-1	Suspension or Axle to Ground - Front	228.0 mm	9.0 in.
H148-2	Suspension or Axle to Ground - Rear	219.5 mm	8.6 in.
H195	Liftover Height	1398.8 mm	55.1 in.
H250	Open Tailgate to Ground	885.3 mm	34.9 in.
L101	Wheelbase	3570.5 mm	140.6 in.
L104	Overhang - Front	1016.0 mm	40.0 in.
L105	Overhang - Rear	1230 mm	48.4 in.
L114	Front Wheel Centerline to SgRP - Front	1475.8 mm	58.1 in.
L404	Cab to Rear Axle (CA)	710.4 mm	28.0 in.
W101-1	Tread Width - Front Tires	1732.3 mm	68.2 in.
W101-2	Tread Width - Rear Tires	1714.7 mm	67.5 in.

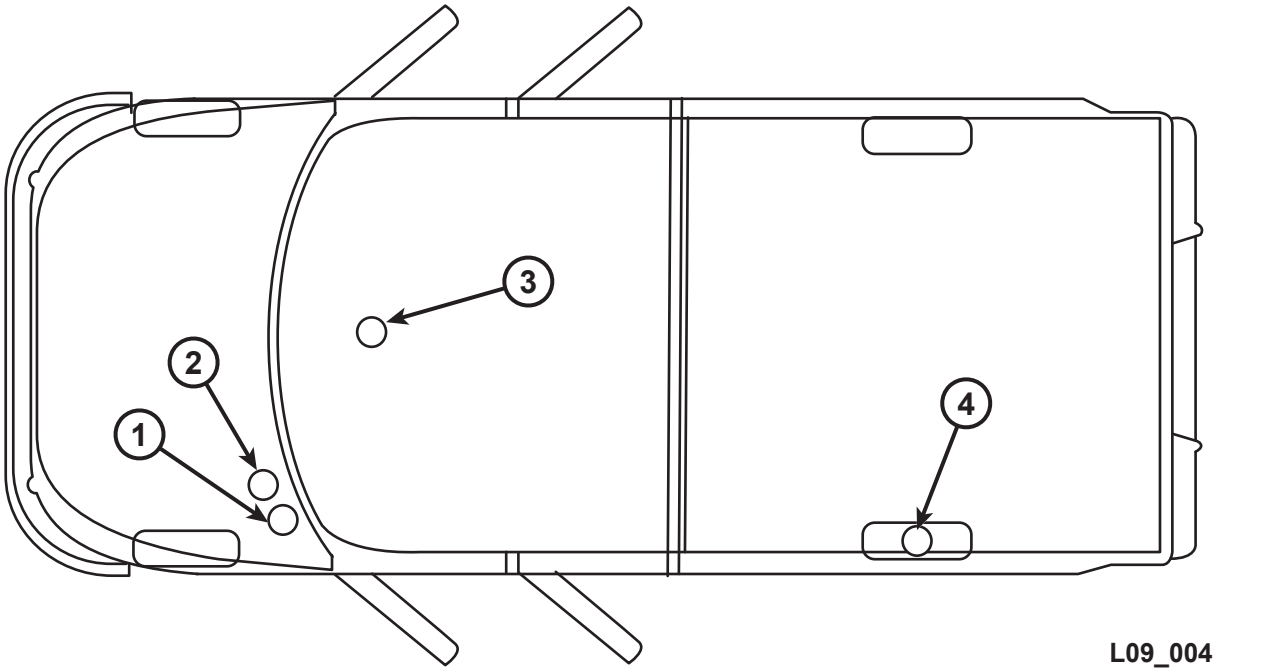
Table 2 Body Dimensions

Code	RAM Crew Cab - 5.5 Box -140.5 WB	Metric	English
CG TRL1	Rear Bumper to Back of Cab	1940.6 mm	78.4 in.
CG TRL2	Fuel Tank Length	1317.5 mm	51.9 in.
L50-2	SgRP Couple Distance, Front to Second	939.8 mm	37.0 in.
L403	Front Bumper to Back of Cab (BBC)	3876.0 mm	152.6 in.
L410	Cab Length	2573.6 mm	101.3
L504	Cab to Pickup Body	16.0 mm	0.6 in.
A121-1	Win.dow Slope Angle-Windshield	55.1 deg	55.1 deg
CG A18	Steering Wheel Angle	23.4 deg	23.4 deg
CH16	Top of Box to Cab Roof	585.5 mm	23.1 in.
CH17	Box Floor to Cab Roof	1105.8 mm	43.5 in.
CH18	Steering Column Angle	22.9 deg	22.9 deg
CH514	Box Floor to Top of Fuel Tank	108.5 mm	4.3 in.
H6	SgRP - Front to Windshield Lower DLO	405.8 mm	16.0 in.
H61-1	Effective Head Room - Front	1041.4 mm	41.0 in.
H61-2	Effective Head Room - Second	1012.8 mm	39.9 in.
CG TRW1	Outside Rail to Fuel Tank (inside)	442.4 mm	17.4 in.
W104	Vehicle Width-Mirrors (std)	2464.4 mm	97.0 in.
W104B	Vehicle Width-Mirrors (trailer)	2776.1 mm	109.3 in.
W106	Fender Width - Front	2003.7 mm	78.9 in.
W107	Fender Width - Rear	2014.4 mm	79.3 in.
W116	Body Width - Maximum	2017.4 mm	79.4 in.
W117	Body Width at SgRP - Front	2008.7 mm	79.1 in.
W120-1	Vehicle Width, Doors Open - Front	4076.6 mm	160.5 in.
W120-2	Vehicle Width, Doors Open - Rear Row	3883.7 mm	152.9 in.
W201	Cargo Width-Wheelhouse	1295.4 mm	51.0 in.

Table 3 Acronyms Used in the Measurement Table

Acronym	Definition
SgRP	Seating Reference Point (H-point typically measured at the center of the occupants hip joint with the occupant in the seated position)
DLO	Day Light Opening

ELECTRICAL COMPONENT LOCATIONS



1	PDC Underhood	3	Upfitter connector Located in Dash
2	2 Upfitter Connectors Underhood	4	Ground Point (50A total max load) Note-GND (frame rail)

Figure 4 Component Locations

There are four major components provided to assist the fleet upfitter in adding equipment. The power distribution center (PDC) that is located underhood, two connectors also located underhood for connecting to power from the PDC, an upfitter connector located in the center stack of the dash to connect switches that operate the relays in the PDC and a ground terminal located in the rear of the frame.

Auxiliary Power Distribution Center (PDC) - 2012 Only

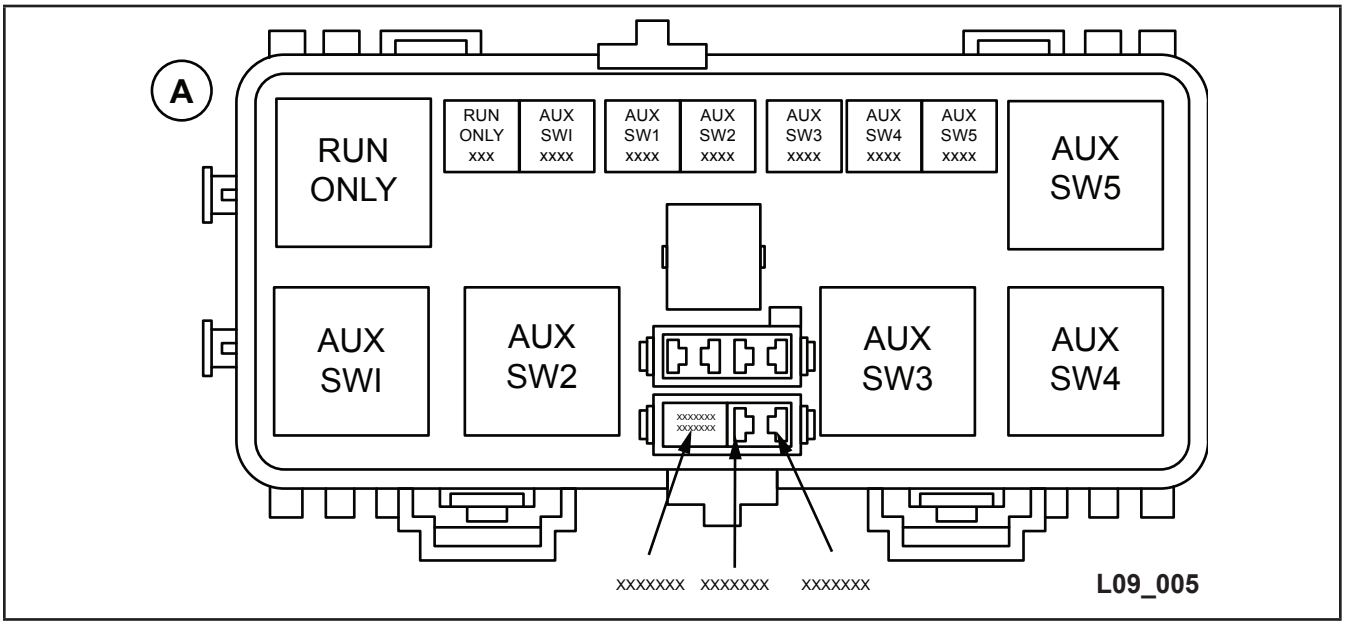


Figure 5 Upfitter PDC

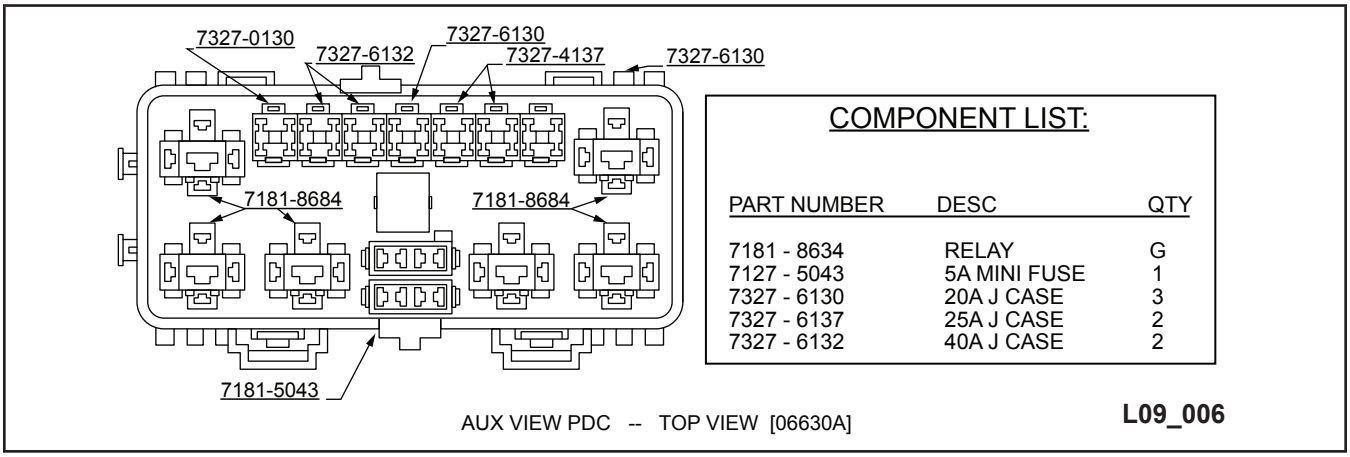


Figure 6 Upfitter PDC Connector View

An auxiliary power distribution center (PDC) for upfitters is located under the hood. The PDC contains fuses and relays that provide power to the dash-mounted auxiliary switches. Attached to the PDC bracket are two four-way connectors. The upper dark gray connector contains the four 12-volt outputs for the dash-mounted switches. The lower, light gray connector contains circuits for an add-on PTO system. An available upfitter wiring kit contains wires with crimped on blades that fit into the connector sockets to allow for factory-sealed connections.

ELECTRICAL SCHEMATIC 2012 MODEL

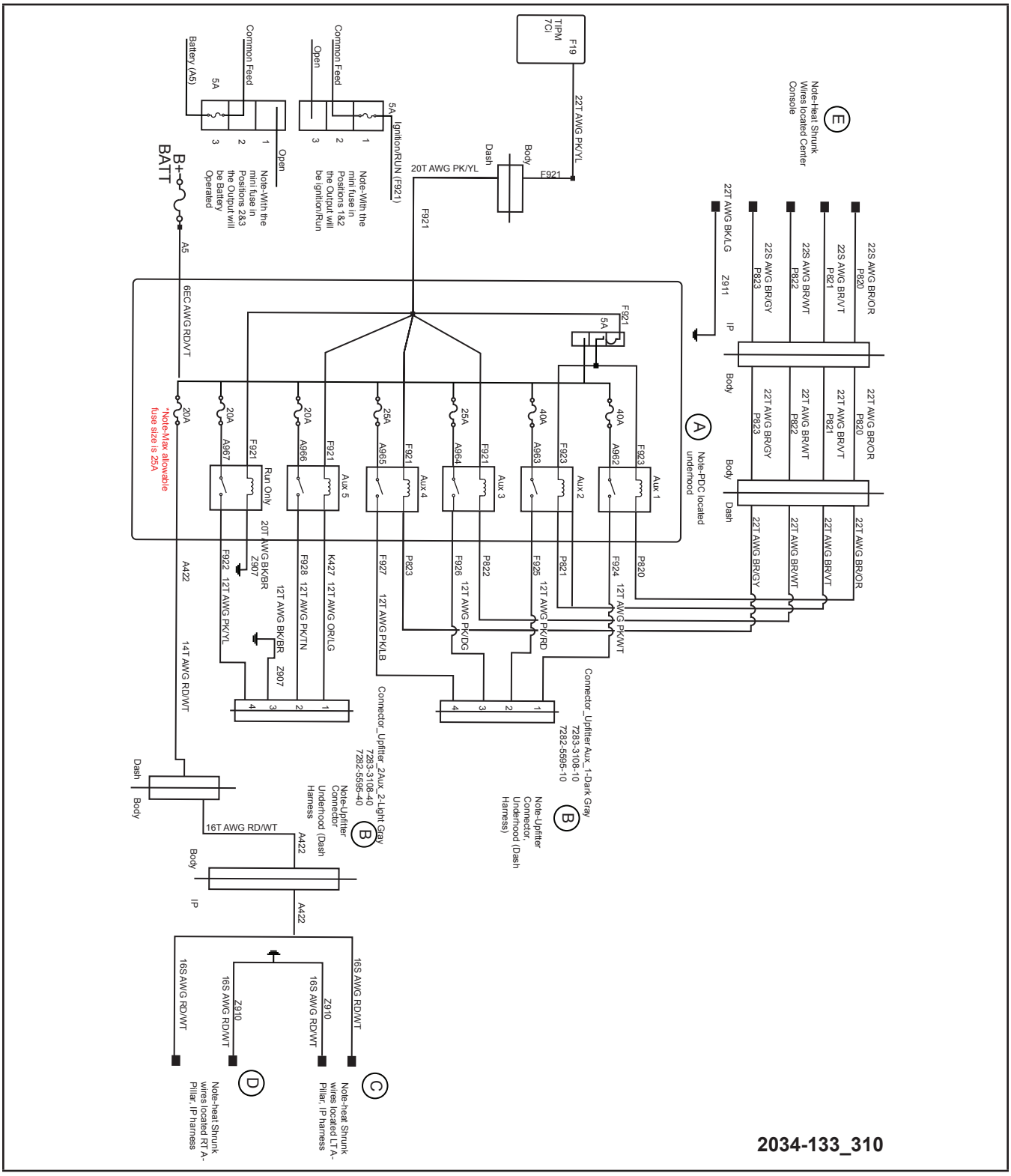


Figure 7 2012 PDC Schematic

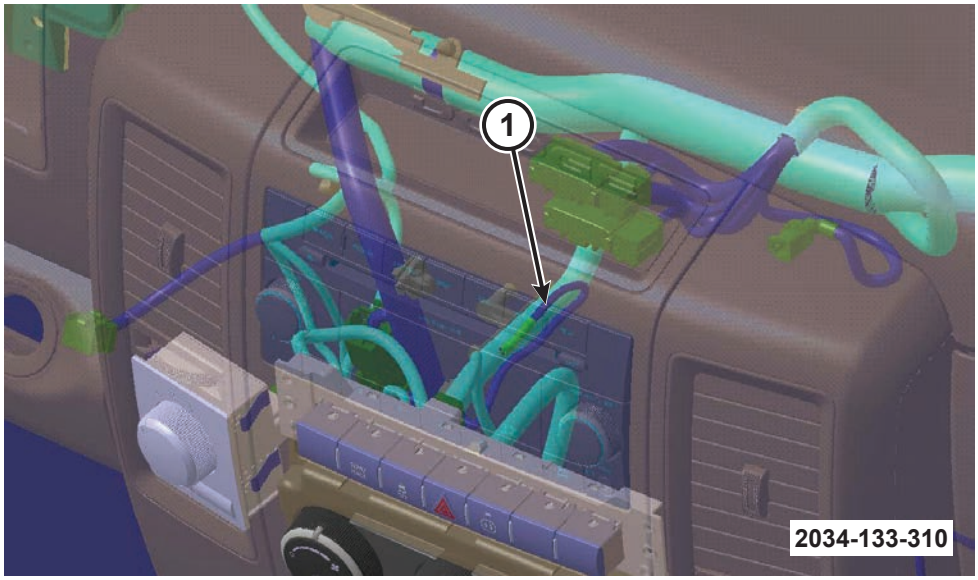
Table 4 Schematic Legend

A	PDC Located Underhood	D	Heat Shrunk Wires Located in the Right A Pillar
B	Upfitter Connector	E	Open connector Located in the I/P Center Stack
C	Underhood Heat Shrunk Wires Located in the Left A Pillar		

Interior Upfitter Accessory Wiring

Figure 8 Interior PDC Upfitter Connector

There are two possible locations for the auxiliary PDC relay control connection point. Some vehicles have the wires terminate in a connector body attached to the rear of the center stack. The connector plugs into an empty port on the back of the cover. In other instances, they are taped to the center stack harness.



1	Control Wire Location	

Figure 9 Alternative Auxiliary Wire Connection

Some early vehicles have the control circuits for the relays terminated and taped to the air conditioning control head harness behind the center stack.

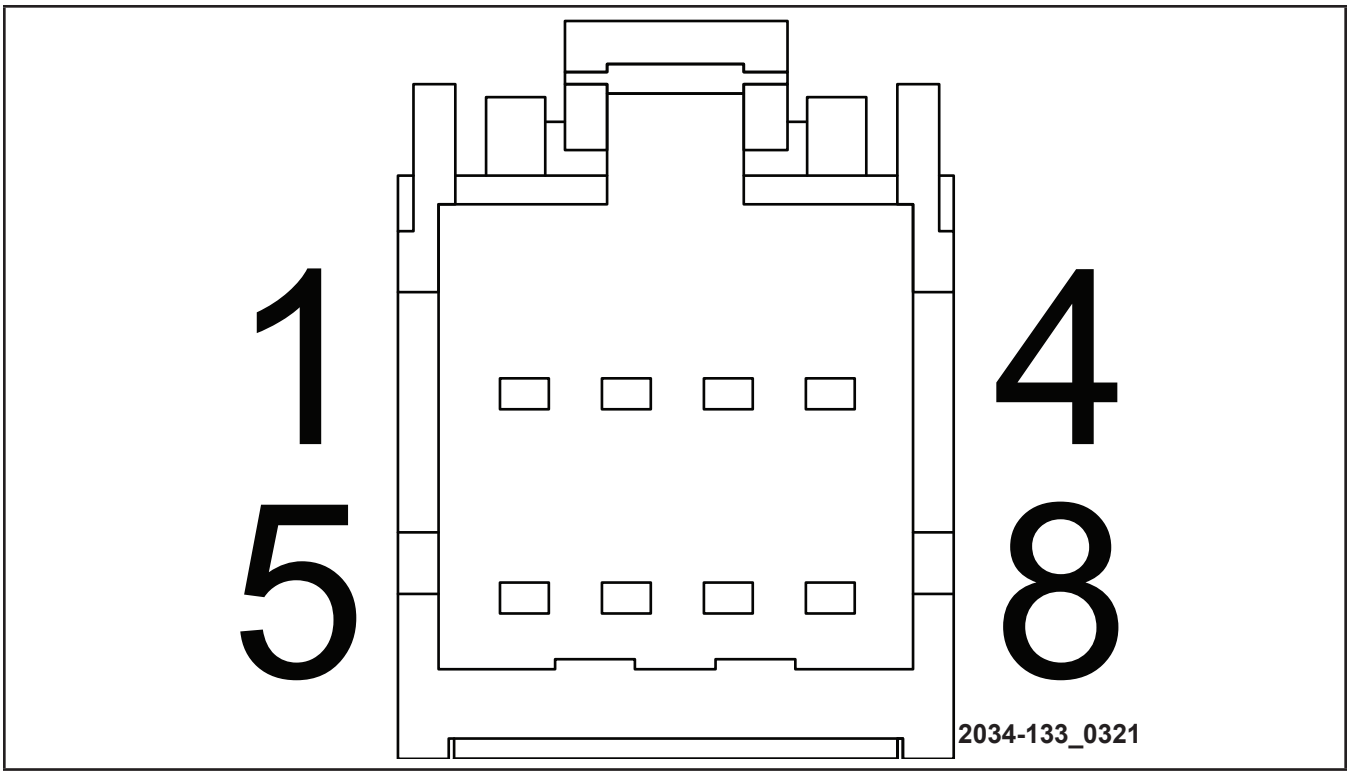


Figure 10 PDC Auxiliary Connector

Table 5 PDC I/P Auxiliary Connector Pin-out

Pin	Circuit	Wire Color	Gauge/Size	Function
A1	F921	Pink/Yellow	22	Fused Ignition Run Control Output
A2	Z911	Black/Light Green	22	Ground
A3	P821	Brown/Violet	22	Auxiliary 2 Relay Control Signal
A4	P820	Brown/Orange	22	Auxiliary 1 Relay Control Signal
A5	P923	Pink/Dark Brown	22	Run Relay Control
A6				No Connection
A7	P823	Brown/Gray	22	Auxiliary 4 Relay Control Signal
A8	P822	Brown/White	22	Auxiliary 3 Relay Control Signal

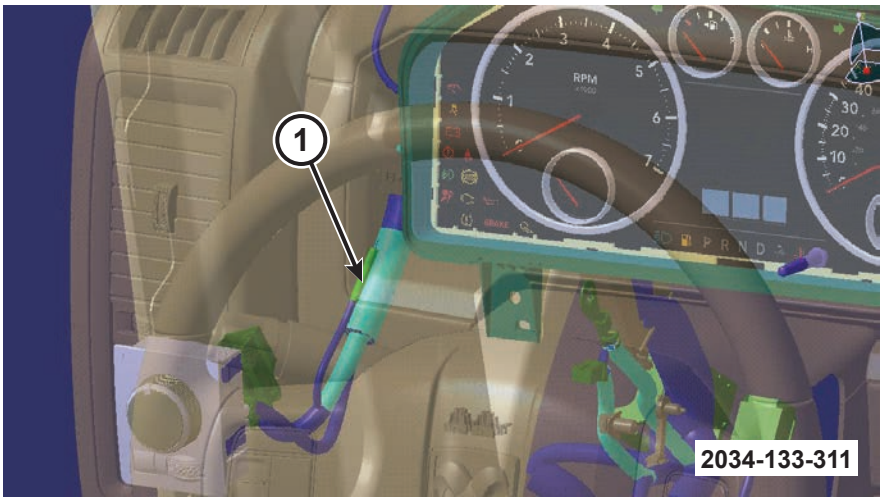
Power Access Points

Figure 11 2012 Underhood PDC

In the engine compartment there are two upfitter connectors (light grey and dark grey) that allow easy access to the fuse box relay outputs. Mating terminated circuits are included in the kit as needed.

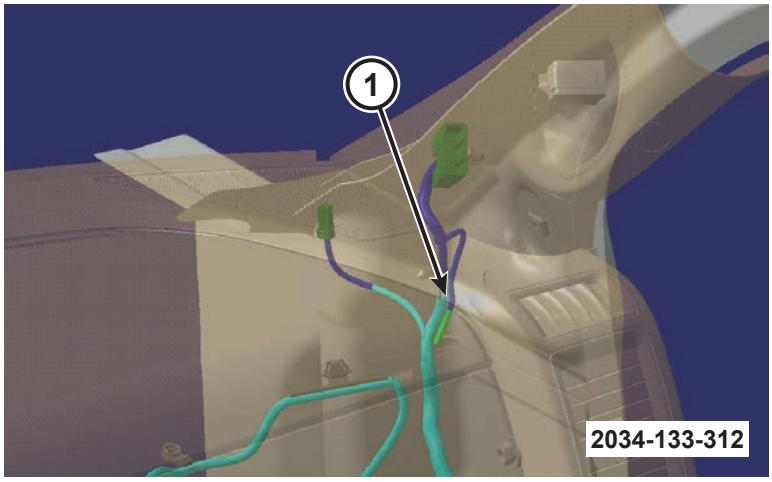
WARNING: AN AUXILIARY BATTERY MAY BE USED, HOWEVER A BATTERY ISOLATION UNIT IS NOT SUPPLIED. THE AUXILIARY BATTERY MAY DISCHARGE THE TRUCK BATTERY WHEN THE ENGINE IS NOT RUNNING.

Spot Lamp Connections (All Models)



1	Spot Lamp Wiring	

Figure 12 Left Side Spot Lamp Connector

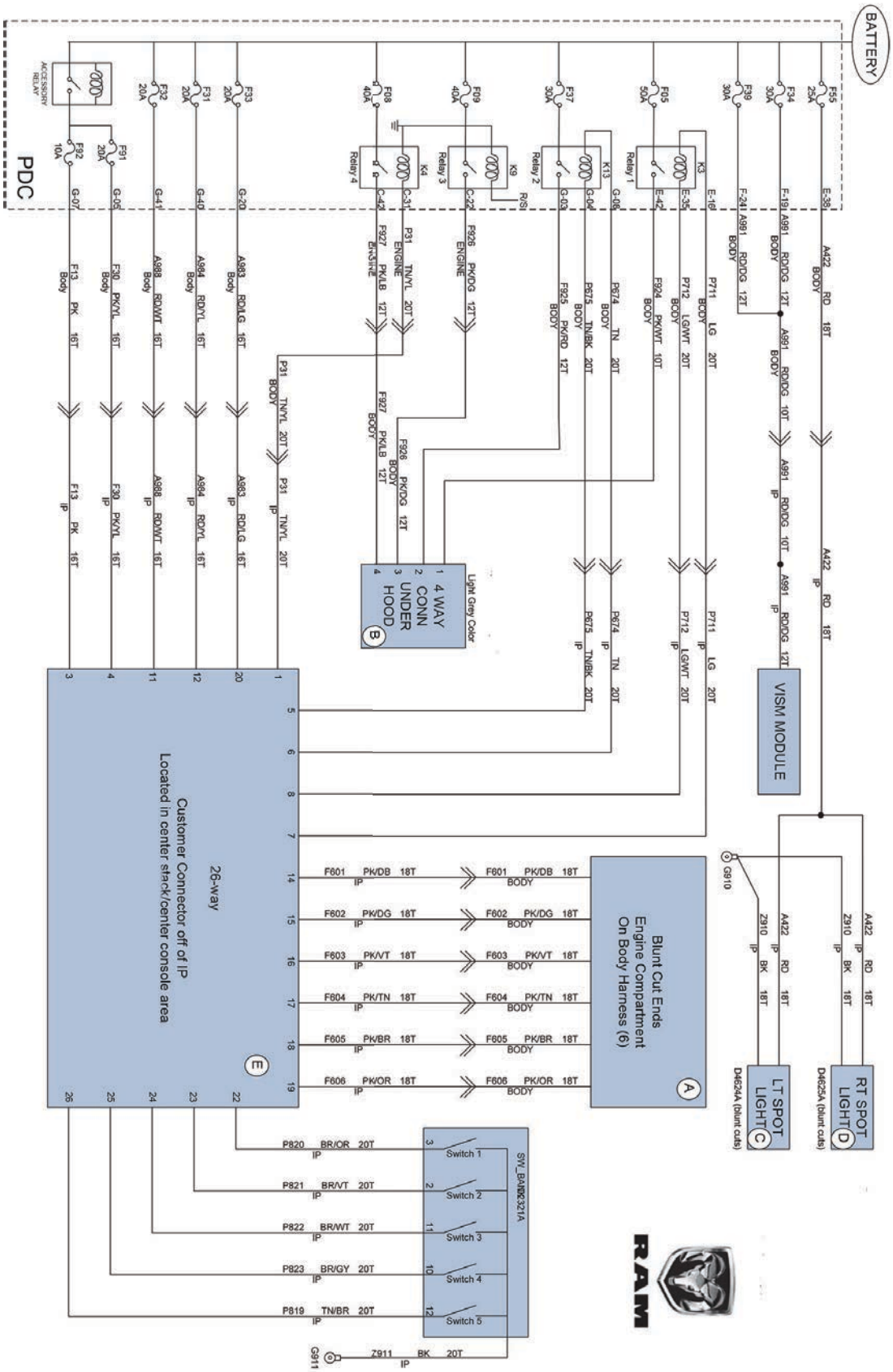


1	Spot Lamp Connector	

Figure 13 Right Hand Spot Lamp Connector

The spot lamp connection points for the left and right side spot lamps are located at the base of the A-pillar for both sides, taped to the harness.

ELECTRICAL SCHEMATIC 2013 - CURRENT



Underhood Power Distribution Center (2014 - newer)

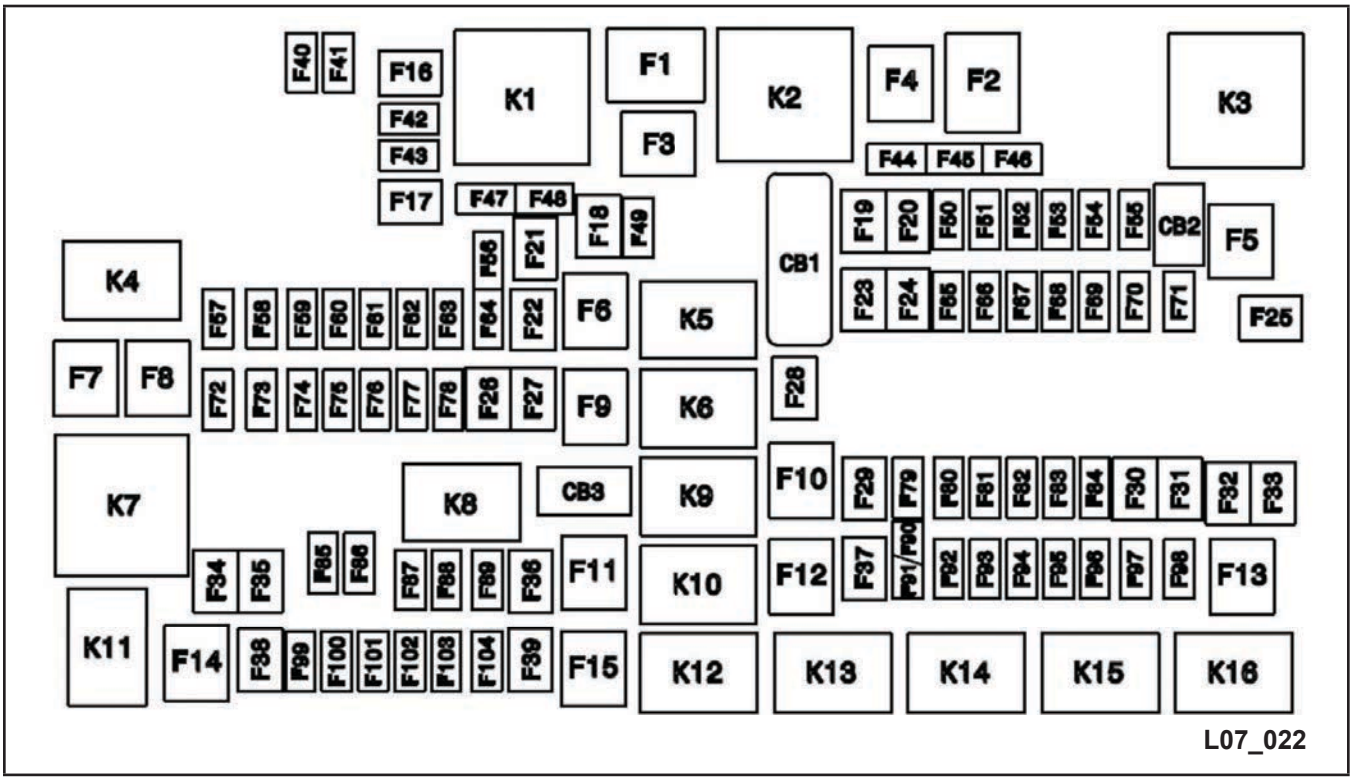


Figure 14 Underhood PDC (2014 - newer)

The fuses listed below apply to the upfitter package on the RAM 1500 SSV. Other fuses not listed in this chart can be found in the owner's manual.

Cavity	Cartridge Fuse	Mini-fuse	Description
F01			Not Used
F02			Not Used
F03	60 Amp Yellow		Radiator Fan
F04			Not Used
F05	50 Amp Red		Auxiliary Relay 1 Fused Output
F06	40 Amp Green		Antilock Brakes
F07	40 Amp Green		Starter Solenoid
F08	40 Amp Green		Auxiliary Relay 4 Fused Output
F09	40 Amp Green		Auxiliary Relay 3 Fused Output
F10	40 Amp Green		Body Controller / Exterior Lighting #2
F11	20 Amp Pink		Integrated Trailer Brake Module
F12	40 Amp Green		Body Controller #3 / Interior Lights
F13	40 Amp Green		Blower Motor
F14	40 Amp Green		Body Controller #4 / Power Door Locks
F15	40 Amp Green		Spare

Cavity	Cartridge Fuse	Mini-fuse	Description
F16			Not Used
F17			Not Used
F18			Not Used
F19	25 Amp Violet		Spare
F20	30 Amp Pink		Passenger Door Module
F21	30 Amp Pink		Drivetrain Control Module
F22	20 Amp Blue		Powertrain Control Module
F23	30 Amp Pink		Body Controller #1
F24	30 Amp Pink		Driver Door Module
F25	30 Amp Pink		Front Wiper High Speed
F26	30 Amp Pink		Antilock Brakes/Stability Control Module/ Valves
F28	20 Amp Blue		Trailer Tow Backup Lights
F29	20 Amp Blue		Trailer Tow Parking Lights
F30	30 Amp Pink		Trailer Tow Receptacle
F31	20 Amp Blue		26-way Upfitter Connector Pin 12
F32	20 Amp Blue		26-way Upfitter Connector Pin 11
F33	20 Amp Blue		26-way Upfitter Connector Pin 20
F34	30 Amp Pink		VSIM B+ Battery Feed
F35	30 Amp Pink		Sunroof - If Equipped
F36	30 Amp Pink		Rear Defroster - If Equipped
F37	30 Amp Pink		Auxiliary Relay 2 Fused Output
F38	30 Amp Pink		Power Inverter 115V AC - If Equipped
F39	30 Amp Pink		VSIM B+ Battery Feed
F41		10 Amp Red	Active Grill Shutter
F42		20 Amp Yellow	Horn
F43			Spare
F44		10 Amp Red	Diagnostic Port
F46		10 Amp Red	Tire Pressure Monitor
F47		10 Amp Red	
F48			Not Used
F49		10 Amp Red	Instrument Panel
F50		20 Amp Yellow	Air Suspension (Spare on RAM SSV)
F51		10 Amp Red	Ignition Node Module
F52		5 Amp Tan	Battery Sensor
F53		20 Amp Yellow	Trailer Tow - Left Turn /Stop Lamps
F54		20 Amp Yellow	Adjustable Pedals (Spare on RAM SSV)

Cavity	Cartridge Fuse	Mini-fuse	Description
F55		25 Amp Natural	Left/Right Spot Lamps
F56			Not Used
F57		20 Amp Yellow	Transmission
F58		20 Amp Yellow	Aux Coolant Pump
F59			Not Used
F60		15 Amp Blue	Underhood Lamp
F61			Not Used
F62		10 Amp Red	A/C Clutch
F63		20 Amp Yellow	Ignition Coils
F64		25 Amp Natural	Injectors/PCM
F65		10 Amp Red	USB Interface
F66		10 Amp Red	Passenger Window Switch
F67		10 Amp Red	Bluetooth Hands-free Module - If Equipped
F68			Not Used
F69			Not Used
F70		30 Amp Green	Fuel Pump
F71		25 Amp Natural	Amplifier - If Equipped
F72		10 Amp Red	PCM (Starter Engaged Signal)
F73			Not Used
F74			Aux Feed
F75		10 Amp Red	Coolant Temp Valve Actuator
F76		10 Amp Red	ABS
F77		10 Amp Red	DTCM
F78		10 Amp Red	Electric Power Steering
F79		15 Amp Blue	Clearance Lights - If Equipped
F80		10 Amp Red	Garage Door Opener - If Equipped
F81		20 Amp Yellow	Trailer Tow Right Turn/Stop Lights
F82		10 Amp Red	Steering Column Control Module/Cruise
F83			Not Used
F84		15 Amp Blue	Switch Bank/Instrument Cluster
F85		10 Amp Red	Airbag Module
F86		10 Amp Red	Airbag Module
F87		10 Amp Red	Trailer Tow Module
F88		15 Amp Blue	Instrument Panel Cluster
F89			Not Used
F90/ F91		20 Amp Yellow	Upfitter Connector Pin 3 or 4 (Customer Selectable)

Cavity	Cartridge Fuse	Mini-fuse	Description
F92		10 Amp Red	Spare
F93		20 Amp Yellow	Power Outlet
F94		10 Amp Red	Transfer Case Module
F95		10 Amp Red	Rear Camera - If Equipped
F96		10 Amp Red	Rear Seat Heater Switch
F97		25 Amp Natural	Rear Seat Heater
F98		25 Amp Natural	Front Heated Seats - If Equipped
F99		10 Amp Red	Climate Control
F100			Not Used
F101		15 Amp Blue	Electrochromatic Mirror
F102			Not Used
F103			Not Used
F104		20 Amp Yellow	Power Outlets

Upfitter Relays	
Cavity	**Description**
K03	Auxiliary Relay 1
K13	Auxiliary Relay 2
K09	Auxiliary Relay 3
K04	Auxiliary Relay 4

Upfitter Provisions

There are several provisions provided by RAM for the 2014 and newer 1500 SSV. These include the items in the table below.

Table 6 Upfitter Provision

Item on Diagram (p. 296)	Upfitter Provision
A	6-blunt cut circuits located under the power distribution center
B	4-way connector located near the master cylinder
C	Spot lamp connector in the left-hand A-pillar
D	Spot lamp connector in the right-hand A-pillar
E	26-way connector harness near center of IP assembly
	5-blunt cut wires behind IP center stack for control of upfitter relays in PDC

- 6 Blunt-cut circuits that pass from the engine compartment to the upfitter 26-pin connector
- 4-way connector underhood
- Spot lamp connectors in the A- and B-pillar area
- Upfitter 26-pin connector that provides power and access to circuits routed through the cabin to the engine compartment

Upfitter Connector

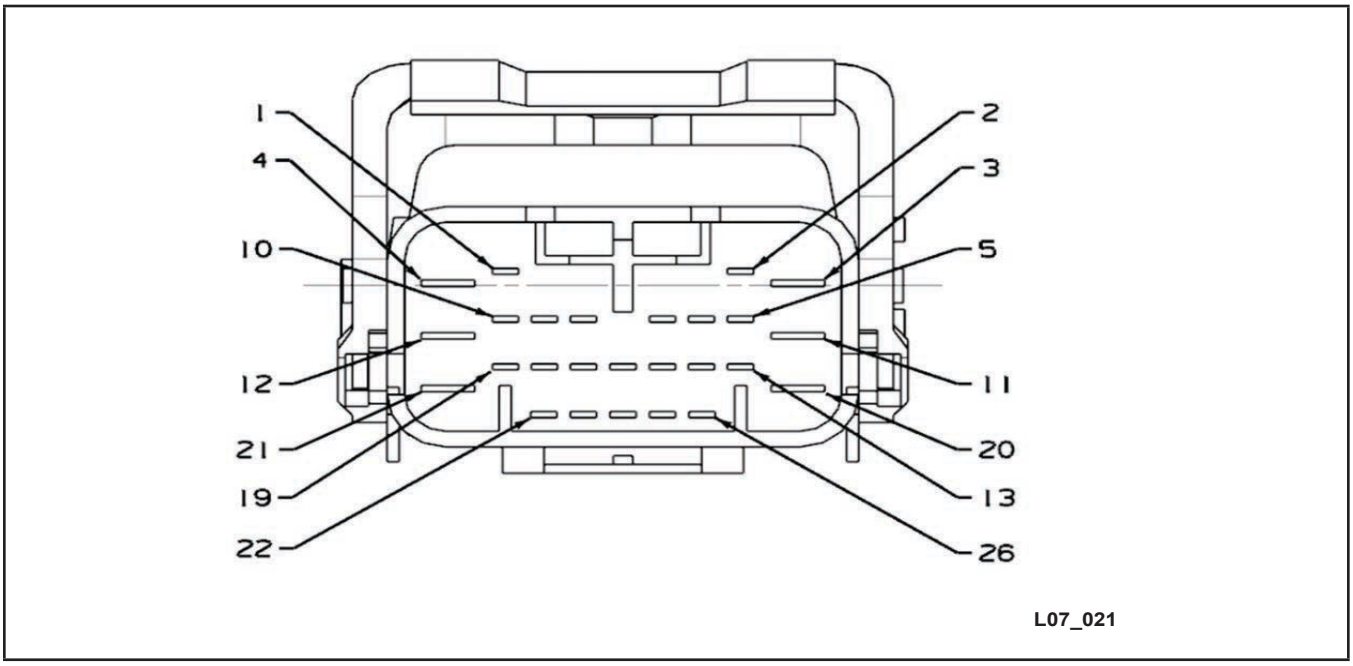


Figure 15 Upfitter Connector (Vehicle-side)

Table 7 Upfitter Connector (26-pin)

Cavity	Wire Color	Circuit Number	Wire Gauge	Circuit Description	Max Amps	Function
1	TN/YL	P31	20	Relay 4 High-side Control	9.5	When power is applied to circuit, enables Relay 4 in underhood PDC
2				Not Used		
3	PK	F13	16	10A Accessory Feed	*10	Provides fused power to connected circuits (10A fuse F92 in underhood PDC)
4	PK/YL	F30	16	20A Accessory Feed	**20	Provides fused power to connected circuits (20A fuse F91 in underhood PDC)
5	TN/BK	P675	20	Relay 2 Low-side Control	9.5	Allows low-side control of Relay 2 in underhood PDC
6	TN	P674	20	Relay 2 High-side Control	9.5	Allows high-side control of Relay 2 in underhood PDC
7	LG	P711	20	Relay 1 Low-side Control	9.5	Allows low-side control of Relay 1 in underhood PDC
8	LG/WT	P712	20	Relay 1 High-side Control	9.5	Allows high-side control of Relay 1 in underhood PDC
9				Not Used		
10				Not Used		

Cavity	Wire Color	Circuit Number	Wire Gauge	Circuit Description	Max Amps	Function
11	RD/WT	A988	16	20A Batt Feed	**20	Provides fused power to connected circuits (20A fuse F32 in underhood PDC)
12	RD/YL	A984	16	20A Batt Feed	**20	Provides fused power to connected circuits (20A fuse F31 in underhood PDC)
13				Not Used		
14	PK/DB	F601	18	Blunt-cut Pass Through	13.5	Pass through wire that terminates under the underhood PDC
15	PK/DG	F602	18	Blunt-cut Pass Through	13.5	Pass through wire that terminates under the underhood PDC
16	PK/VT	F603	18	Blunt-cut Pass Through	13.5	Pass through wire that terminates under the underhood PDC
17	PK/TN	F604	18	Blunt-cut Pass Through	13.5	Pass through wire that terminates under the underhood PDC
18	PK/BR	F605	18	Blunt-cut Pass Through	13.5	Pass through wire that terminates under the underhood PDC
19	PK	F606	18	Blunt-cut Pass Through	13.5	Pass through wire that terminates under the underhood PDC
20	RD/LG	A983	16	20A Battery Feed	**20	Provides fused power to connected circuits (20A fuse F33 in underhood PDC)
21				Not Used		
22	BR/OR	P820	20	Aux Switch 1	9.5	Circuit that terminates behind the IP switchbank to allow for upfitter-installed switch to connect the circuit to power or ground
23	BR/VT	P821	20	Aux Switch 2	9.5	Circuit that terminates behind the IP switchbank to allow for upfitter-installed switch to connect the circuit to power or ground

Cavity	Wire Color	Circuit Number	Wire Gauge	Circuit Description	Max Amps	Function
24	BR/WT	P822	20	Aux Switch 3	9.5	Circuit that terminates behind the IP switchbank to allow for upfitter-installed switch to connect the circuit to power or ground
25	BR/GY	P823	20	Aux Switch 4	9.5	Circuit that terminates behind the IP switchbank to allow for upfitter-installed switch to connect the circuit to power or ground
26	TN/BR	P824	20	Aux Switch 5	9.5	Circuit that terminates behind the IP switchbank to allow for upfitter-installed switch to connect the circuit to power or ground

* Max current 7A after temperature derating

** Max current 14A after temperature derating

Four-way Upfitter Connector

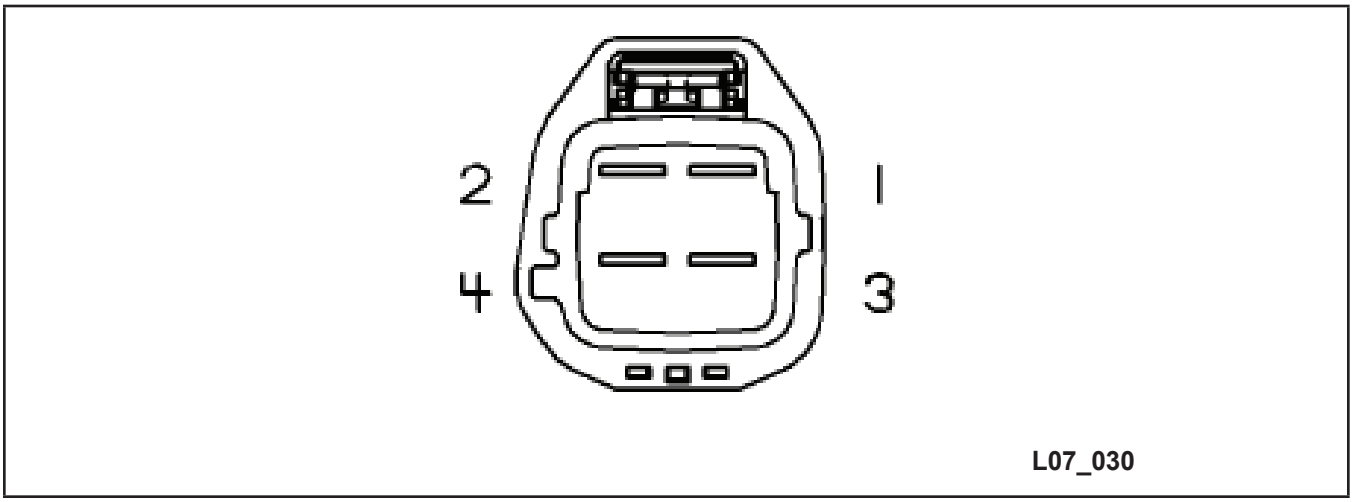


Figure 16 Four-way Upfitter Connector

Table 8 Four-way Upfitter Connector

Cavity	Wire Color	Circuit Number	Wire Gauge	Circuit Description	Max Amps (Output)	Function
1	PK/WT	F924	10	Aux 1 Customer Driven Relay Output	***50	Fused output from Relay 1 in underhood PDC
2	PK/RD	F925	12	Aux 2 Customer Driven Relay Output	*30	Fused output from Relay 2 in underhood PDC
3	PK/DG	F926	12	Aux 3 Run/Start Driven Relay Output	**40	Fused output from Relay 3 in underhood PDC
4	PK/LB	F927	12	Aux 4 Customer Driven Relay Output	**40	Fused output from Relay 4 in underhood PDC

* Max current 21A after temperature derating

** Max current 28A after temperature derating

*** Max current 35A after temperature derating

GROUND LOCATIONS

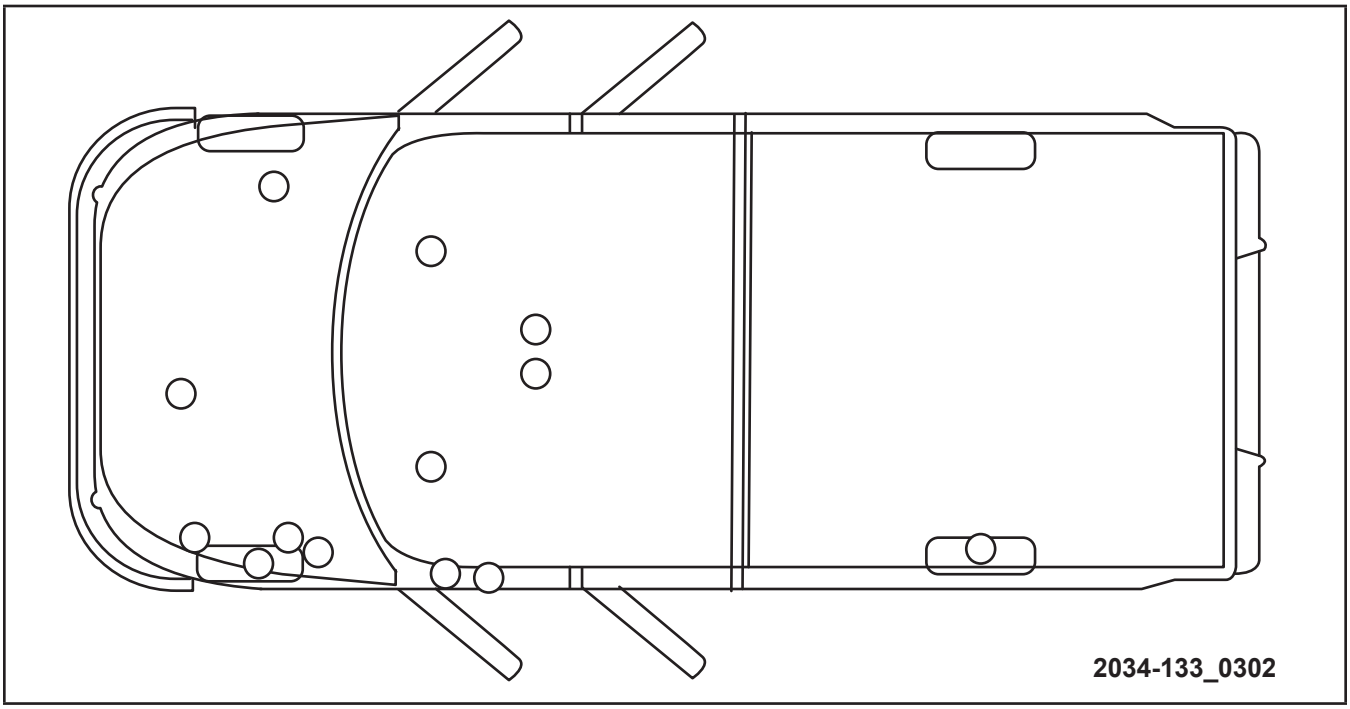


Figure 17 Ground Locations

There are multiple ground locations throughout the vehicle. Six grounds are located underhood, seven grounds are located within the interior and one designated upfitter ground located on the rear frame. The ground stud at the rear of frame may be utilized as a grounding point with a 50A maximum total load.

NOTE: When adding a component ground to vehicle ground, care should be taken not to interrupt the integrity of the manufacturer's installation. It is possible to create electronic malfunctions as a result if improper handling of the ground attachment.

CAUTION: Before opening or adding a ground consult the service information. Certain components have dedicated grounds that should not have additional components added to them (such as PCM and passive restraint circuits).

VEHICLE SYSTEMS INTERFACE MODULE

Figure 18 VSIM

The RAM Truck engineered upfitter module called the VSIM (Vehicle System Interface Module) is an available option. Its sales code is “XXS” and is standard with Ambulance Prep (sales code AH2), a “must have” option with PTO Prep (sales codes LBN or LBV), SSV models, and is available as a stand-alone option. It provides a multitude of useful I/O’s to increase upfitter friendliness and upfit simplification. Vehicles not ordered with this option from the factory cannot be retrofitted.

The VSIM serves as a communication gateway between aftermarket or upfitter control modules and various control modules in the vehicle via CAN-C BUS and makes some of the inputs and outputs of said modules available for specific applications on the VSIM’s interface connector.

There are a few notes that apply to the VSIM and harness:

- The VSIM includes an upfitter wire harness kit (part number 68211680AA or 68211680AB) consisting of four separate color coded harness bundles. Each individual color harness must only be plugged into its corresponding VSIM connector cavity.
- Note that in a few instances an individual wire color is duplicated within a bundle – these duplications are further identified with a paper "flag" showing its circuit number. It's recommended that the upfitter, upon harness bundle routing direction determination(s), install additional harness bundle abrasion protection over each bundle (such as harness convolute).
- The chart on the next page delineates the circuits within each color harness bundle, circuit number, signal, wire insulation colors, maximum allowable amperage per circuit, and circuit function.
- The chart on the next page delineates the available 125 kbaud CAN bus messages. If downloadable "DBC" files are needed, they should be requested via the website rambbg@chrysler.com.
- Six output circuits require pull-up resistors for proper function if the circuit output is to be used. These circuits are flagged in the VSIM chart with a pound sign (#) in front of the circuit number. These circuits require a dedicated 1K-2.2KΩ, ≥0.5W resistor for each individual circuit. See Figure 129 for the VSIM chart delineating the circuits requiring a pull-up resistor and the accompanying appropriate circuit diagram.

VSIM Connector (Black)

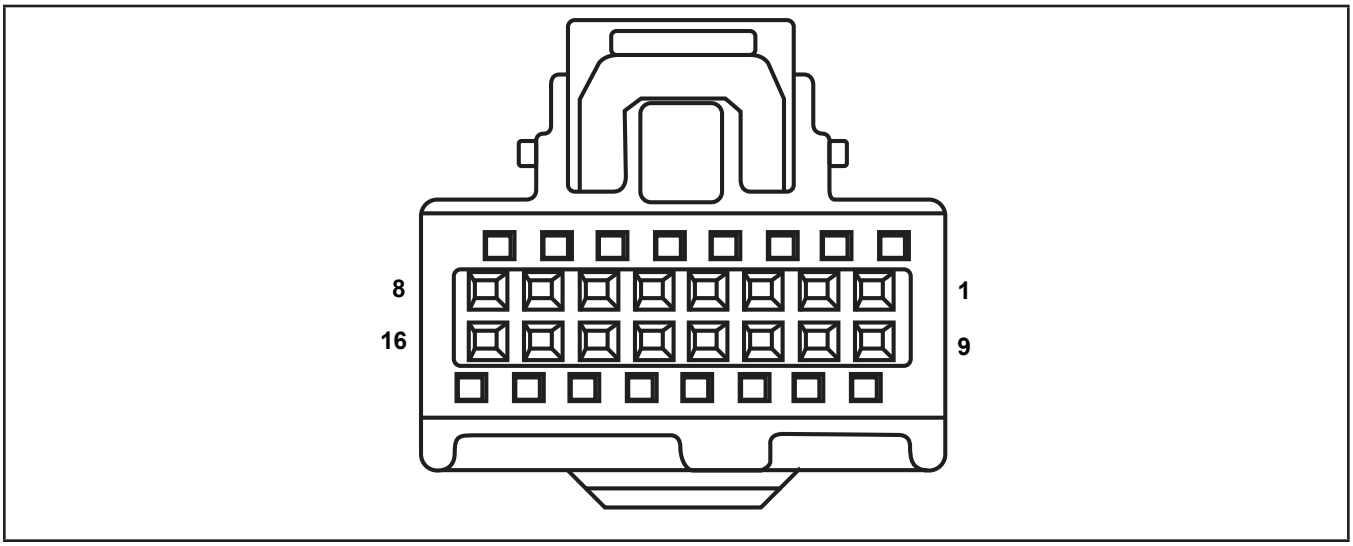


Figure 19 VSIM Connector (Black)

Table 9 VSIM Connector (Black)

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
1	LG	W505	Howler Siren Disable - HSD Output	0.25	Open circuit when vehicle speed is below 25MPH, battery positive voltage (12V) when vehicle speed is 25MPH or above
2	BR/GY	W513	Horn Activation - HSD Output	0.5	Open circuit when horn not pressed (not energized), battery positive voltage (12V) when pressed (energized)
3	BR/LG	W517	Side Airbag Deployed - HSD Output	0.5	Open circuit when side airbags have not deployed during current key cycle, battery positive voltage (12V) upon airbag deployment during current key cycle
4	VT/YL	W662	Tire Pressure Monitor Active - HSD Output	0.5	Open circuit when the tire pressure monitor (TPM) indicator lamp is off, battery positive voltage (12V) when the TPM indicator lamp is active
5	PK	W735	Power Feed, “OFF” - HSD Output	0.5	Open circuit when key position is in “Accessory/Run/Start”, battery positive voltage (12V) when key position is in “OFF”

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
6	LG/VT	W710	Driver Seat Belt Not Latched - HSD Output	0.25	Open circuit when the driver seat belt is latched, battery positive voltage (12V) when the driver seat belt is not latched
7	VT/GY	#W707	Oil Pressure warning signal - LSD Digital Output	0.1	Oil pressure signal: Pulse Width Modulation {PWM) between open circuit and battery negative voltage {OV), 100Hz,, linear with 0% PWM and 100% PWM=147PSI
8	VT	#W733	Voltage Gauge - LSD Digital Output	0.5	Battery voltage signal: Pulse Width Modulation {PWM) between open circuit and battery negative voltage {OV), 100Hz, Linear with O% PWM =5V, and 100% PWM=18V
9	BR/DG	W518	Front Airbag Deployed - HSD Output	0.5	Open circuit when front airbags have not deployed during current key cycle, battery positive voltage (12V) upon airbag deployment during current key cycle
10	BR/LB	W515	Panic Alarm Activation - HSD Output	0.5	Open circuit when panic alarm is not active, battery positive voltage {12V) when panic alarm is active
11	DG/OR	W726	Service Brake Pedal Depressed - HSD Output	0.25	Open circuit when the service brake pedal is not pressed, battery positive voltage (12v) when the pedal is pressed
12	PK/GY	W734	Power Feed, “RUN” - HSD Output	0.5	Open circuit when key position is in “Off/Run/Start”, battery positive voltage (12V) when key position is in “Accessory”
13	PK/YL	W736	Power Feed, “RUN” - HSD Output	0.5	Open circuit when key position is in “Off/Accessory/Start”, battery positive voltage (12V) when key position is in “Run”

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
14	BR/OR	#W538	Fuel Level Signal - LSD Output	0.1	Fuel level signal: Pulse Width Modulation (PWM) between open circuit and battery negative voltage (OV), 100Hz, Linear with 0% PWM =empty tank, and 100% PWM = full tank
15	BR/WT	#W744	Engine RPM Signal - LSD Digital Output	0.25	Engine RPM signal: modulation between open circuit and battery negative voltage (0V), output with 0.2Hz/RPM (12 pulses per minute per 1 RPM) @ 50% duty cycle
16	BR/YL	#W524	Vehicle MPH Speed Signal - LSD Digital Output	0.1	Vehicle speed signal: modulation between open circuit and battery negative voltage (0V), output with 10Hz/MPH (600 pulses per minute per 1 MPH) 50% duty cycle

See pull-up resistor chart

VSIM Connector (Gray)

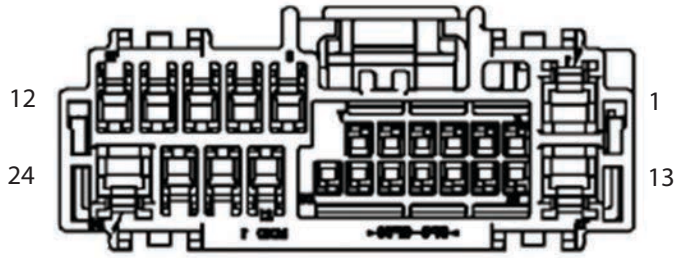


Figure 20 VSIM Connector (Gray)

Table 10 VSIM Connector (Gray)

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
1			Not Used		
2	WT/VT	W719	Hazard Indicator On - HSD Output	0.5	Open circuit when hazard flashers are off, battery positive voltage (12V) when hazard flashers selected
3	BR	W504	Transmission Out Of Park - HSD Output	0.5	Open circuit when gear selector is in Park, battery positive voltage (12V) when gear selector is in any other position
4	BR/LB	W545	Diesel Regeneration (DPF) On - HSD Output	0.5	Open circuit when diesel regeneration is not energized, battery positive voltage (12V) when energized
5	VT/TN	W743	PTO ON Indicator - HSD Output	1.0	Open circuit when PTO is not energized, battery positive voltage (12V) when PTO is energized
6	BR/DG	W540	MIL On - HSD output	0.5	Open circuit when MIL is off, battery positive voltage (12V) when MIL is on
7	YL/DB	W700	Transmission PARK Position - LSD Output	0.5	Open circuit when gear selector is not in Park, negative voltage (0V) when in Park
8	DG/YL	W701	Transmission NEUTRAL Position - LSD Output	0.5	Open circuit when gear selector is not in Neutral, battery negative voltage (0V) when in Neutral

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
9	LB/BR	W652	A/C Clutch Engaged - LSD Output	0.5	Open circuit when A/C clutch is not engaged, battery negative voltage (0V) when engaged
10	BR/DB	W532	CAN (+) Communication	--	125kbps CAN+, use in conjunction with W534
11	BR/LB	W534	CAN (-) Communication	--	125kbps CAN-, use in conjunction with W532
12	DG/DB	W702	Transmission REVERSE Position - LSD Output	0.5	Open circuit when gear selector is not in Reverse, battery negative voltage (0V) when in Reverse
13			Not Used		
14	BL/OR				This wire is included in the upfitter harness, but is not used
15	WT/TN	W711	Cargo Lamp Output - LSD Output	0.5	Activated via W506, relay driver, open circuit when W506 is OFF, battery negative voltage (0V) when W506 is ON, times out after 30-minutes, re-enabled by cycling W506 switch
16	DG/LB	W703	Transmission DRIVE Position - LSD Output	0.5	Open circuit when gear selector is not in Drive, battery negative voltage (0V) when in Drive
17	VT/OR	W720	Any Door Ajar - HSD Output	0.5	Open circuit when all doors are closed, battery positive voltage (12V) when any door is ajar
18			Not Used		
19			Not Used		
20			Not Used		
21			Not Used		
22			Not Used		
23			Not Used		
24			Not Used		

VSIM Connector (Brown)

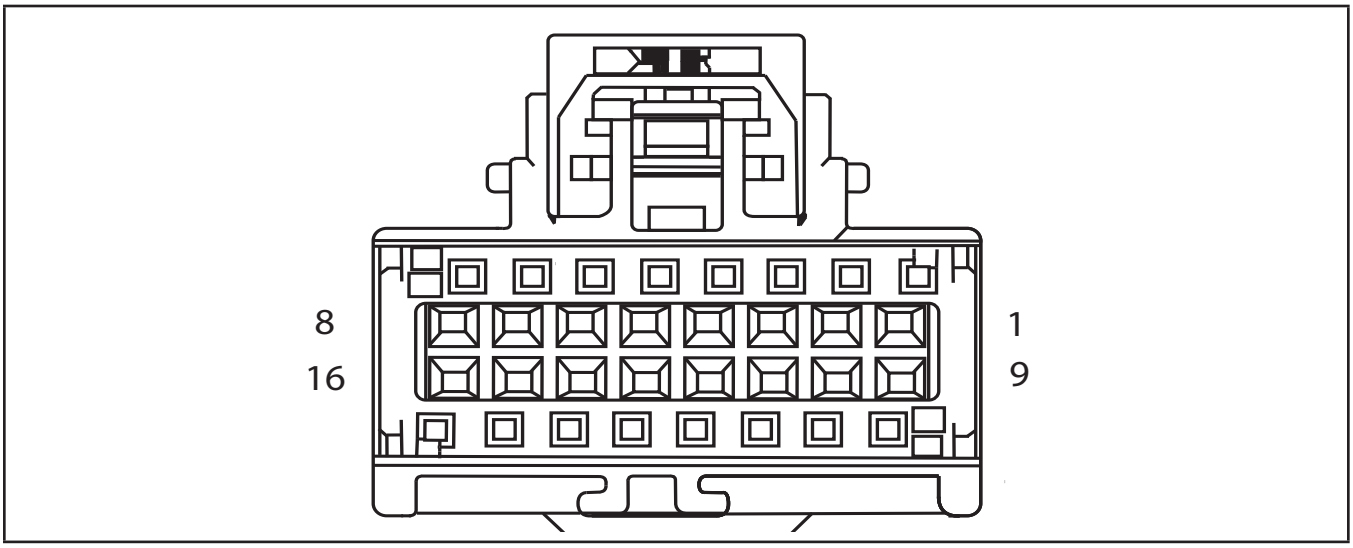


Figure 21 VSIM Connector (Brown)

Table 11 VSIM Connector (Brown)

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
1	BR/WHT	#W521	Cluster/Auxiliary Lighting Dimmer - LSD Output	0.1	Using the vehicle instrument dimmer control - will dim auxiliary lighting PWM between open circuit and battery negative voltage (0V), 100Hz, linear with 0%PWM = zero intensity, and 100%PWM = full intensity
2	DG/TN	W722	Door Lock Double-lock Function - Unlock All, LSD Output	0.5	Relay driver, mirrors vehicle unlock request with a battery negative voltage (0V) for 500ms
3	TN/VT	W503	Auxiliary Upfitter Added Flasher Lights Front Output - LSD Output	0.25	Relay driver for front auxiliary light(s), open circuit when W500 is OFF, flash on/off at 80 flashes per minute (1.33Hz square-wave @50% duty cycle) when W500 is ON
4	WT	W506	Auxiliary Cargo Lamp Switch Signal - Digital Input	--	Cargo lamp ON/OFF, use normally-open switch to ground to activate a relay via W711, times out after 30 minutes, re-enable by cycling switch

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
5	BR/VT	W501	Wig Wag Switch Signal Rear - Digital Input	--	When grounded, actuates Wig Wag vehicle rear stop/turn lamps, 80 flashes per minute (1.3Hz square wave @ 50% duty cycle), also actuates circuit W502
6	GY				This wire is included in the upfitter harness, but is not used
7			Not Used		
8	OR/BR	W708	PTO Pressure Switch - Digital Output	--	**MANDATORY CIRCUIT FOR PTO USAGE** When grounded via PTO pressure switch, provides feedback to the vehicle that the PTO has pressure; controls PTO actuation and vehicles dash PTO switch LED illumination status
9	LG/TN	W721	Door Lock Double Lock Function - Lock All - LSD Output	0.5	Relay driver, mirrors vehicle lock request with a battery negative voltage (0V) for 500ms
10	TN/BR	W502	Auxiliary Upfitter Added Flashing Lights Rear Output - LSD Output	0.25	Relay driver for rear auxiliary light(s), open circuit when W501 is OFF, flash on/off at 80 flashes per minute (1.33Hz square wave @ 50% duty cycle) when W501 is ON
11	DG/WT	W725	Park Brake Applied - LSD Output	0.5	Relay driver, open circuit when park brake not set, battery negative voltage (0V) when park brake set
12	BR/OR	W500	*Wig Wag Switch Signal Front Lights - Digital Input	--	When grounded, actuates Wig Wag vehicle front high beams, 80 flashes per minute (1.3Hz square wave @ 50% duty cycle), also actuates circuit W503

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
13	BR/OR	W537	Panic Alarm Mute Switch Signal - Digital Input	--	When grounded, mutes the vehicle horns during Panic Alarm active (via vehicle CAN messaging)
14	BR/YL	W536	Horn Switch Mute - Digital Input	--	When grounded, mutes the vehicle horns (via vehicle CAN messaging)
15	OR				This wire is included in the upfitter harness, but is not used
16	BK	W709	Ground - Ground Return	--	A source for negative battery voltage (0V) **For use on VSIM switched digital inputs only**

* NOTE: this function must NOT be used on Laramie, Long Horn, nor 7X91 sales code Power Wagon - all of which are equipped with projector headlamps (sales code LMC).

See pull-up resistor chart

VSIM Connector (Green)

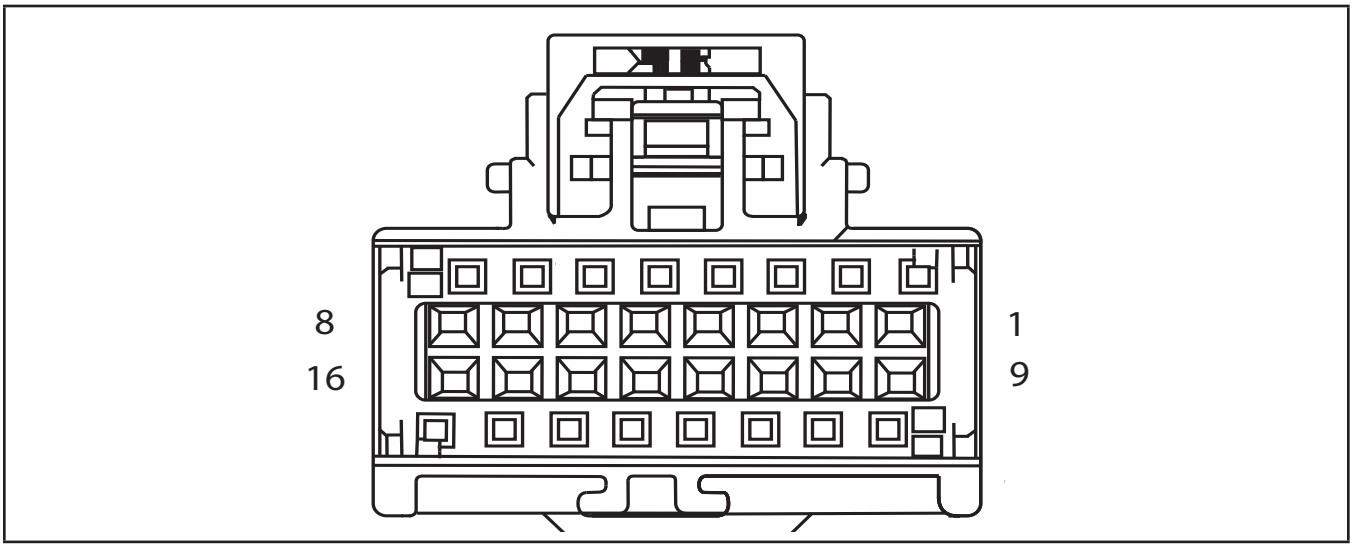


Figure 22 VSIM Connector (Green)

Table 12 VSIM Connector (Green)

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
1			Not Used		
2	GY	W544	Split-shaft PTO - Digital Output	--	When grounded, signals the controller that it is okay to initiate split shaft PTO
3	DB				This wire is included in the upfitter harness, but is not used

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
4	WT/BR	W509	Rear Bulb Out Detection Off - Digital Input	--	When grounded, turns off rear (turn/ run/brake) bulb fault detection; allows use of rear LED's in place of incandescent bulbs; must be grounded BEFORE disconnecting the OEM incandescent bulbs {If the OEM incandescent bulbs are disconnected before this circuit is grounded and fast flash/ faults are indicated, simply reconnect the OEM incandescent bulbs, unground this circuit, turn the vehicle switch to the run position and wait for the fast flash to cease, ground rear Bulb Out detection off - this circuit, and remove the OEM incandescent bulbs/connect the LEDs)
5	GY/OR	W541	*PTO Idle Speed 1 - Digital Input	--	When grounded, sets the PTO Remote 1 RPM {Set the desired RPM for this circuit by using the instrument cluster programing screen, select: PTO/ Remote/ RPM Preset 1 - then set the desired RPM); speed 1 trumps F425 @ 900RPM and speeds 2&3; RPM up/down ramp rate is 200RPM/sec
6	GY/YL	W543	*PTO Idle Speed 3 - Digital Input	--	When grounded, sets the PTO Remote 3 RPM {Set the desired RPM for this circuit by using the instrument cluster programing screen, select: PTO/Remote/ RPM Preset 3 - then set the desired RPM), speed 3 trumps F425 @ 900RPM; is trumped by speeds 1 or 2; rpm up/down ramp rate is 200rpm/sec

Cavity	Wire Color	Circuit Number	Upfitters Signal	Max Amps	Function
7	BR/OR	W742	Throttle Valve Actuator Signal - HSD Output	0.5	Open circuit when electronic throttle indicator is not illuminated, battery positive voltage (12V) when electronic throttle indicator is illuminated
8			Not Used		
9			Not Used		
10			Not Used		
11	LB	W656	Rear A/C Request - Digital Input	--	When grounded, actuates the vehicle A/C system, allows A/C actuation from a remote location (i.e. rear ambulance box); turns front blower to LOW
12	TN/GY	W546	Separated Rear Tail Lighting - Digital Input	--	When grounded, rear stop/ turn lamps become turn only (via CAN message)
13	GY/BR	W542	PTO Idle Speed 2 - Digital Input	--	When grounded, sets the PTO Remote 2RPM (Set the desired RPM for this circuit by using the instrument cluster programming screen, select: PTO/Remote/ RPM Preset 2 - then set the desired RPM); speed 2 trumps F425 @ 900RPM, is trumped by speed 1 but trumps speed 3; RPM up/ down ramp rate is 200RPM/ sec.
14	BR/VT	W522	Engine Running Hour Meter - HSD Output	0.5	Open circuit when engine rpm < 450, battery positive voltage (12V) when rpm > 450
15	WT/LG	W699	Park Lamp On - HSD Output	0.5	Open circuit when park lamps are not on, battery positive voltage (12V) when park lamps are on
16			Not Used		

*** NOTE: VEHICLE MUST HAVE BEEN BUILT WITH PTO OPTION SALES CODE LBN OR LBV FOR THE CLUSTER TO HAVE THE NECESSARY PROGRAMING SOFTWARE FOR THIS FEATURE.**

Pull-up Resistors

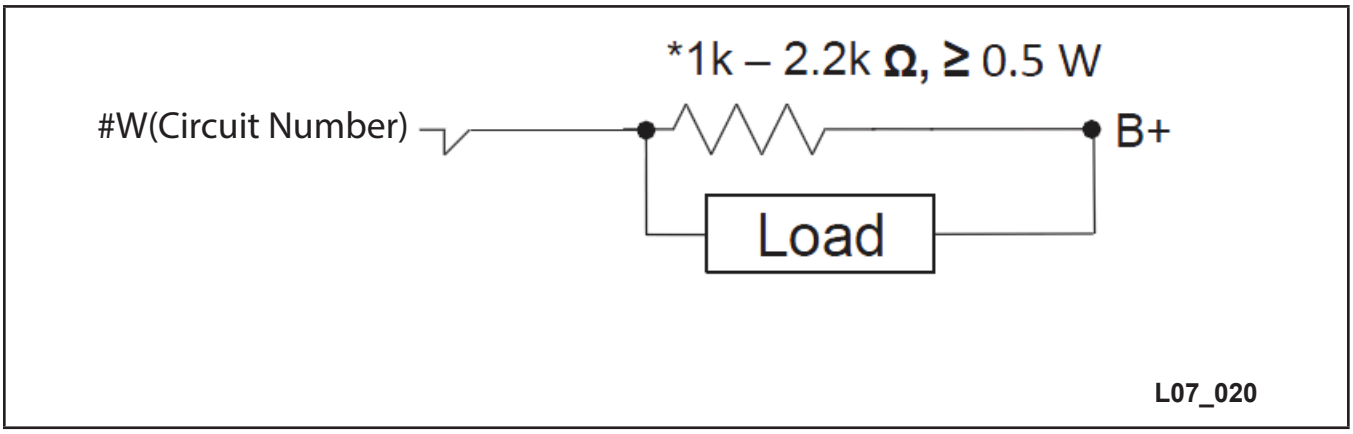


Figure 23 Pull-up Resistor Connection

Circuits identified in the charts that include a pound sign (#) require a dedicated 1K-2.2KO, 20.5W pull-up resistor connected from this circuits wire to a +12V source. For the RAM 1500 SSV, +12V can be obtained at the wiring to the 12V Power Outlet or another +12V source.

NOTE: Each circuit requiring a pull-up resistor must use a resistor dedicated only to one circuit.

PASSIVE RESTRAINTS

WARNING: **TO AVOID SERIOUS OR FATAL INJURY ON VEHICLES EQUIPPED WITH THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS), NEVER ATTEMPT TO REPAIR THE ELECTRICALLY CONDUCTIVE CIRCUITS OR WIRING COMPONENTS RELATED TO THE SRS FOR WHICH THERE IS NO MOPAR WIRING REPAIR KIT. IT IS IMPORTANT TO USE ONLY THE RECOMMENDED SPLICING KIT AND PROCEDURE. FOR APPLICABLE AND AVAILABLE MOPAR WIRING REPAIR KITS, PLEASE VISIT THE MOPAR CONNECTOR WEB SITE AT THE FOLLOWING ADDRESS ON THE INTERNET: (HTTP://DTO.VFTIS.COM/MOPAR/DISCLAIMER.ASP). INAPPROPRIATE REPAIRS CAN COMPROMISE THE CONDUCTIVITY AND CURRENT CARRYING CAPACITY OF THOSE CRITICAL ELECTRICAL CIRCUITS, WHICH MAY CAUSE SRS COMPONENTS NOT TO DEPLOY WHEN REQUIRED, OR TO DEPLOY WHEN NOT REQUIRED. ONLY MINOR CUTS OR ABRASIONS OF WIRE AND TERMINAL INSULATION WHERE THE CONDUCTIVE MATERIAL HAS NOT BEEN DAMAGED, OR CONNECTOR INSULATORS WHERE THE INTEGRITY OF THE LATCHING AND LOCKING MECHANISMS HAVE NOT BEEN COMPROMISED MAY BE REPAIRED USING APPROPRIATE METHODS.**

WARNING: **TO AVOID SERIOUS OR FATAL INJURY DURING AND FOLLOWING ANY SEAT BELT OR CHILD RESTRAINT ANCHOR SERVICE, CAREFULLY INSPECT ALL SEAT BELTS, BUCKLES, MOUNTING HARDWARE, RETRACTORS, TETHER STRAPS, AND ANCHORS FOR PROPER INSTALLATION, OPERATION, OR DAMAGE. REPLACE ANY BELT THAT IS CUT, FRAYED, OR TORN. STRAIGHTEN ANY BELT THAT IS TWISTED. TIGHTEN ANY LOOSE FASTENERS. REPLACE ANY BELT THAT HAS A DAMAGED OR INEFFECTIVE BUCKLE OR RETRACTOR. REPLACE ANY BELT THAT HAS A BENT OR DAMAGED LATCH PLATE OR ANCHOR PLATE. REPLACE ANY CHILD RESTRAINT ANCHOR OR THE UNIT TO WHICH THE ANCHOR IS INTEGRAL THAT HAS BEEN BENT OR DAMAGED. NEVER ATTEMPT TO REPAIR A SEAT BELT OR CHILD RESTRAINT COMPONENT. ALWAYS REPLACE DAMAGED OR INEFFECTIVE SEAT BELT AND CHILD RESTRAINT COMPONENTS WITH THE CORRECT, NEW, AND UNUSED REPLACEMENT PARTS LISTED IN THE CHRYSLER MOPAR® PARTS CATALOG. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN POSSIBLE SERIOUS OR FATAL INJURY.**

WARNING: **TO AVOID SERIOUS OR FATAL INJURY ON VEHICLES EQUIPPED WITH THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS), NEVER ATTEMPT TO REPAIR THE ELECTRICALLY CONDUCTIVE CIRCUITS OR WIRING COMPONENTS RELATED TO THE SRS FOR WHICH THERE IS NO MOPAR WIRING REPAIR KIT. IT IS IMPORTANT TO USE ONLY THE RECOMMENDED SPLICING KIT AND PROCEDURE. FOR APPLICABLE AND AVAILABLE MOPAR WIRING REPAIR KITS, PLEASE VISIT THE MOPAR CONNECTOR WEB SITE AT THE FOLLOWING ADDRESS ON THE INTERNET: (HTTP://DTO.VFTIS.COM/MOPAR/DISCLAIMER.ASP). INAPPROPRIATE REPAIRS CAN COMPROMISE THE CONDUCTIVITY AND CURRENT CARRYING CAPACITY OF THOSE CRITICAL ELECTRICAL CIRCUITS, WHICH MAY CAUSE SRS COMPONENTS NOT TO DEPLOY WHEN REQUIRED, OR TO DEPLOY WHEN NOT REQUIRED. ONLY MINOR CUTS OR ABRASIONS OF WIRE AND TERMINAL INSULATION WHERE THE CONDUCTIVE MATERIAL HAS NOT BEEN DAMAGED, OR CONNECTOR INSULATORS WHERE THE INTEGRITY OF THE LATCHING AND LOCKING MECHANISMS HAVE NOT BEEN COMPROMISED MAY BE REPAIRED USING APPROPRIATE METHODS.**

WARNING: **TO AVOID SERIOUS OR FATAL INJURY DURING AND FOLLOWING ANY SEAT BELT OR CHILD RESTRAINT ANCHOR SERVICE, CAREFULLY INSPECT ALL SEAT BELTS, BUCKLES, MOUNTING HARDWARE, RETRACTORS, TETHER STRAPS, AND ANCHORS FOR PROPER INSTALLATION, OPERATION, OR DAMAGE. REPLACE ANY BELT THAT IS CUT, FRAYED, OR TORN. STRAIGHTEN ANY BELT THAT IS TWISTED. TIGHTEN ANY LOOSE FASTENERS. REPLACE ANY BELT THAT HAS A DAMAGED OR INEFFECTIVE BUCKLE OR RETRACTOR. REPLACE ANY BELT THAT HAS A BENT OR DAMAGED LATCH PLATE OR ANCHOR PLATE. REPLACE ANY CHILD RESTRAINT ANCHOR OR THE UNIT TO WHICH THE ANCHOR IS INTEGRAL THAT HAS BEEN BENT OR DAMAGED. NEVER ATTEMPT TO REPAIR A SEAT BELT OR CHILD RESTRAINT COMPONENT. ALWAYS REPLACE DAMAGED OR INEFFECTIVE SEAT BELT AND CHILD RESTRAINT COMPONENTS WITH THE CORRECT, NEW, AND UNUSED REPLACEMENT PARTS LISTED IN THE CHRYSLER MOPAR® PARTS CATALOG. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN POSSIBLE SERIOUS OR FATAL INJURY.**

WARNING: **WARNING: TO AVOID SERIOUS OR FATAL INJURY ON VEHICLES EQUIPPED WITH AIRBAGS, DISABLE THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS) BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, AIRBAG, SEAT BELT TENSIONER, IMPACT SENSOR, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE, THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE PERFORMING FURTHER DIAGNOSIS OR SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE SRS. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT.**

WARNING: **TO AVOID POTENTIAL PHYSICAL INJURY OR DAMAGE TO SENSITIVE ELECTRONIC CIRCUITS AND SYSTEMS, ALWAYS DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE AND THE POSITIVE CABLE, THEN GROUND THE POSITIVE CABLE TO DISCHARGE THE OCCUPANT RESTRAINT CONTROLLER (ORC) CAPACITOR BEFORE PERFORMING ANY WELDING OPERATIONS ON THE VEHICLE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT, POSSIBLE DAMAGE TO THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS) CIRCUITS AND COMPONENTS, AND POSSIBLE DAMAGE TO OTHER ELECTRONIC CIRCUITS AND COMPONENTS. WHENEVER A WELDING PROCESS IS BEING PERFORMED WITHIN 12 INCHES (30 CENTIMETERS) OF AN ELECTRONIC MODULE OR WIRING HARNESS, THEN THAT MODULE OR HARNESS SHOULD BE RELOCATED OUT OF THE WAY, OR DISCONNECTED. ALWAYS PROTECT AGAINST COMPONENT OR VEHICLE DAMAGE FROM WELD SPATTER BY USING WELD BLANKETS AND SCREENS.**

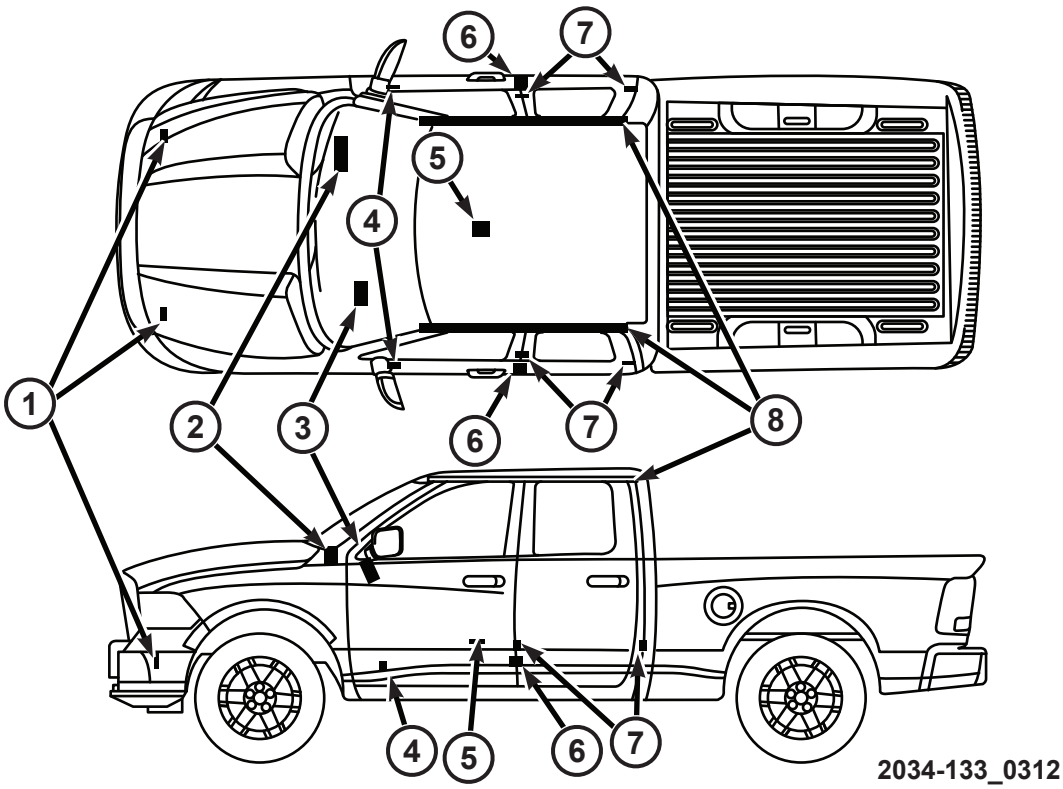
WARNING: **WARNING: TO AVOID SERIOUS OR FATAL INJURY, REPLACE ALL SUPPLEMENTAL RESTRAINT SYSTEM (SRS) COMPONENTS ONLY WITH PARTS SPECIFIED IN THE CHRYSLER MOPAR® PARTS CATALOG. SUBSTITUTE PARTS MAY APPEAR INTERCHANGEABLE, BUT INTERNAL DIFFERENCES MAY RESULT IN INFERIOR OCCUPANT PROTECTION.**

WARNING: **TO AVOID SERIOUS OR FATAL INJURY, DO NOT ATTEMPT TO DISMANTLE AN AIRBAG UNIT OR TAMPER WITH ITS INFLATOR. DO NOT PUNCTURE, INCINERATE OR BRING INTO CONTACT WITH ELECTRICITY. DO NOT STORE AT TEMPERATURES EXCEEDING 93° C (200° F). AN AIRBAG INFLATOR UNIT MAY CONTAIN SODIUM AZIDE AND POTASSIUM NITRATE. THESE MATERIALS ARE POISONOUS AND EXTREMELY FLAMMABLE. CONTACT WITH ACID, WATER, OR HEAVY METALS MAY PRODUCE HARMFUL AND IRRITATING GASES (SODIUM HYDROXIDE IS FORMED IN THE PRESENCE OF MOISTURE) OR COMBUSTIBLE COMPOUNDS. AN AIRBAG INFLATOR UNIT MAY ALSO CONTAIN A GAS CANISTER PRESSURIZED TO OVER 17.24 KPA (2500 PSI). FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN POSSIBLE SERIOUS OR FATAL INJURY.**

WARNING: **TO AVOID SERIOUS OR FATAL INJURY WHEN HANDLING A SEAT BELT TENSIONER RETRACTOR. EXERCISE PROPER CARE TO KEEP FINGERS OUT FROM UNDER THE RETRACTOR COVER AND AWAY FROM THE SEAT BELT WEBBING WHERE IT EXITS FROM THE RETRACTOR COVER. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN POSSIBLE SERIOUS OR FATAL INJURY.**

WARNING: **TO AVOID SERIOUS OR FATAL INJURY WHEN A STEERING COLUMN HAS AN AIRBAG UNIT ATTACHED, NEVER PLACE THE COLUMN ON THE FLOOR OR ANY OTHER SURFACE WITH THE STEERING WHEEL OR AIRBAG UNIT FACE DOWN. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN POSSIBLE SERIOUS OR FATAL INJURY.**

WARNING: **TO AVOID SERIOUS OR FATAL INJURY, THE FASTENERS, SCREWS, AND BOLTS ORIGINALLY USED FOR THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS) COMPONENTS MUST NEVER BE REPLACED WITH ANY SUBSTITUTES. THESE FASTENERS HAVE SPECIAL COATINGS AND ARE SPECIFICALLY DESIGNED FOR THE SRS. ANYTIME A NEW FASTENER IS NEEDED, REPLACE IT WITH THE CORRECT FASTENERS PROVIDED IN THE SERVICE PACKAGE OR SPECIFIED IN THE CHRYSLER MOPAR® PARTS CATALOG.**

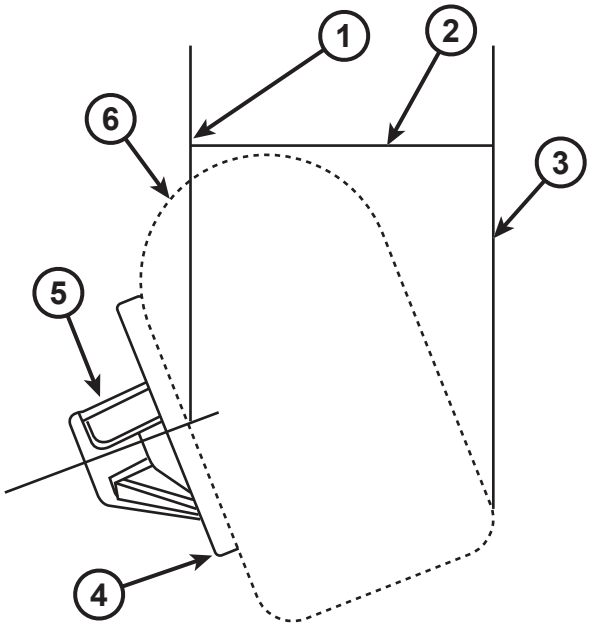


1	Front Impact Sensor	5	Occupant Restraint Controller (ORC)
2	Passenger Air Bag	6	Seat Belt Tensioner
3	Driver Air Bag	7	Acceleration Sensor
4	Pressure Sensor	8	Side Curtain Air Bag

Figure 24 SRS Component Locations

Airbag Dimensions

Steering Wheel



1	Vertical Plane Passing Through the Center of the Steering Wheel	4	Steering Wheel
2	331mm (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 25 Drivers Airbag Dimensions

NOTE: Illustration represents the maximum dynamic deployment shape

Table 13 Driver Airbag Cushion Position

Description	Dimension
Driver Airbag (DAB) Diameter when Full	661 mm (26 in.)
Driver Airbag (DAB) Depth when Full	305 mm (12 in.)
Maximum Rearward Displacement During Fill	407mm (16 in.)

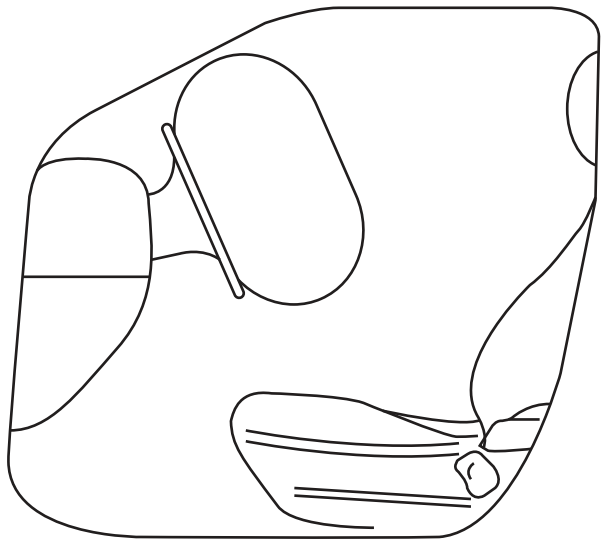
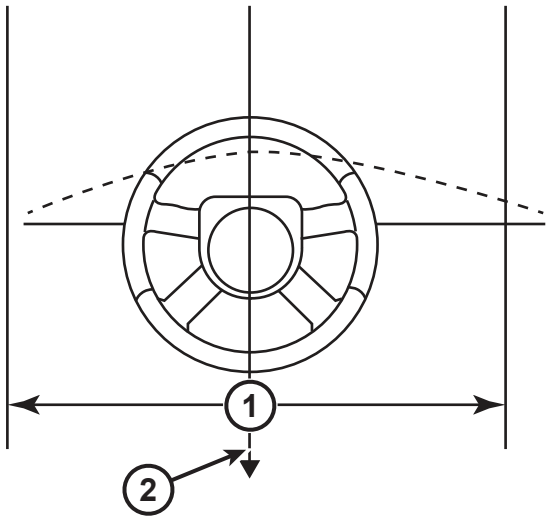


Figure 26 Driver Airbag Deployed Shape

Table 14 Steering Column Tilt Position Range

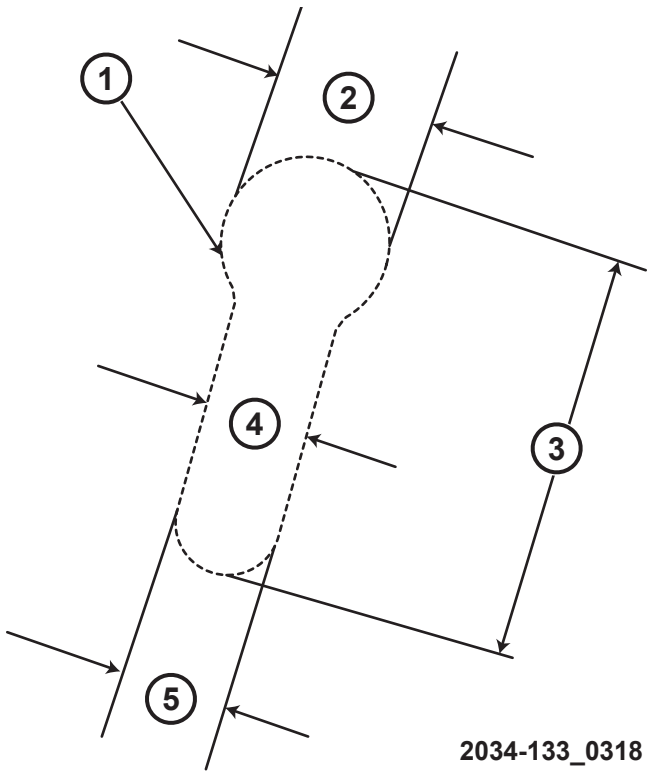
± 2 degrees from steering column tilt pivot point
~ 22.0 degrees from vertical is the normal position



1	Driver Airbag Cushion Lateral Deployment Zone ~ 686 mm (27.0 in.)	2	Driver Seating Reference

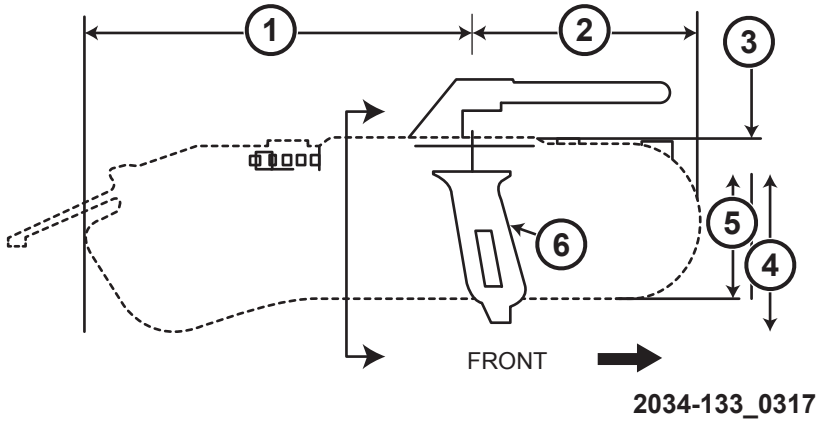
Figure 27 Deployment Zone

Side Curtain



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

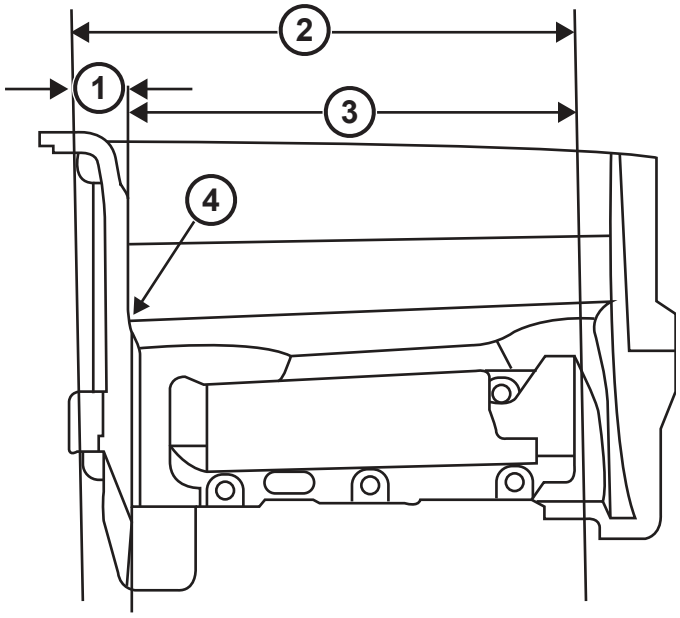
Figure 28 Side Curtain



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

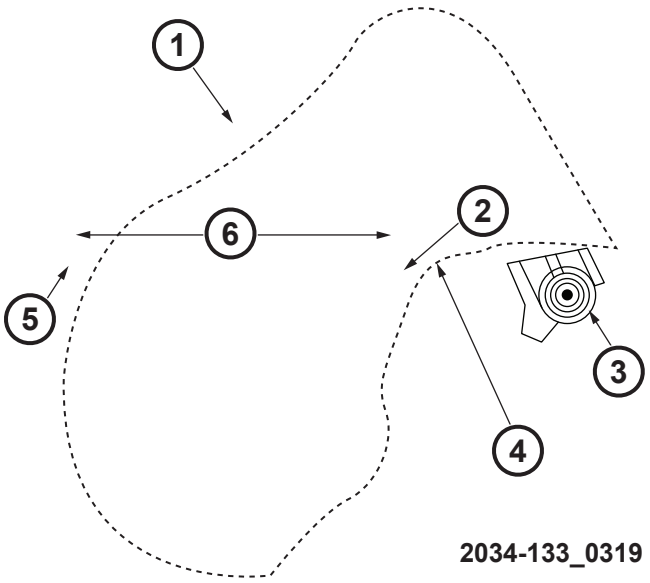
Figure 29 Side Curtain Deployment Zone

Passenger Side Instrument Panel



1	119 mm (4.70 in.)	3	756 mm (29.8 in.)
2	Passenger Airbag Deployment Zone	4	Reference Point

Figure 30 Deployment Zone



1	Passenger Air 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 Air Bag Module	6	675 mm (26.6 in.)

Figure 31 Passenger Airbag Deployment Zone

NOTE: The illustration represents the maximum dynamic deployment shape.

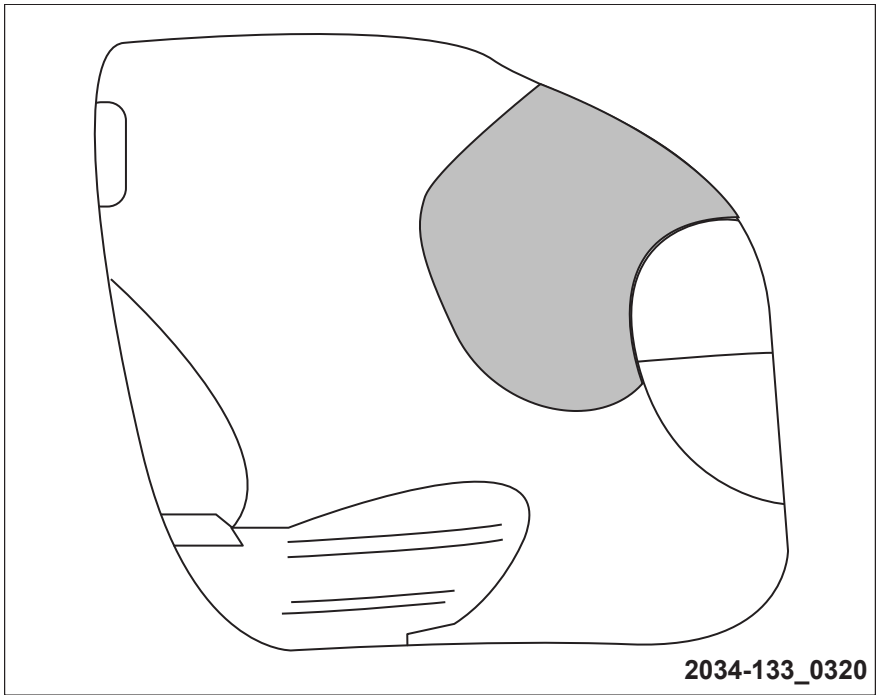


Figure 32 Final Passenger Airbag Deployment Shape

NOTE: The illustration represents the maximum dynamic deployment shape.

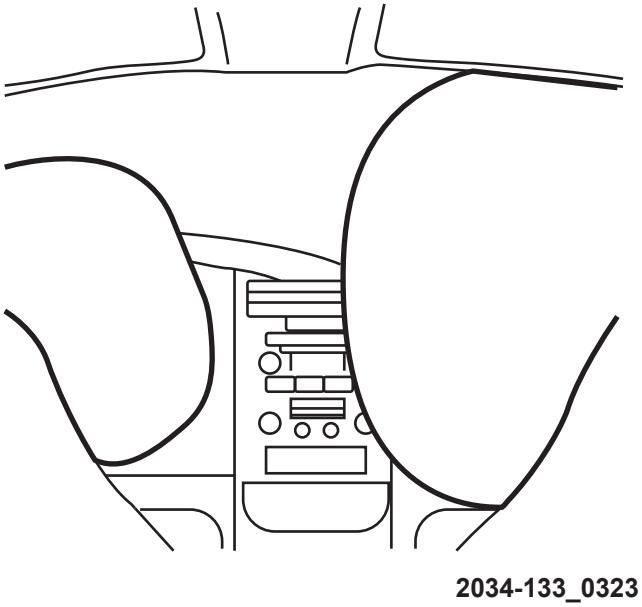


Figure 33 Center Interior Area

VEHICLE STORAGE

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

If possible, store the vehicle indoors, in a clean and dry place. 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

IGNITION-OFF DRAW (IOD) FUSE - 2012 MODEL

Figure 34 IOD Fuse

The 2012 RAM 1500 SSV is equipped with an ignition-OFF draw (IOD) fuse that is disconnected within the totally integrated power module (TIPM) when the vehicle is shipped from the factory. A laser printed fuse layout map is integral to the TIPM cover to ensure proper fuse identification. The IOD fuse is a 60-amp FMX series cartridge fuse. The fuse is secured within a white molded plastic fuse holder and puller unit that serves both as a tool for disconnecting and reconnecting the fuse in the TIPM cavity, and as a fuse holder that conveniently stores the fuse in the same cavity after it has been disconnected.

Circuits included with the IOD fuse are:

- A/C and heater control
- Amplifier
- Cluster (CCN)
- Compass
- Hands-free module (HFM)
- Multifunction switch
- Radio
- Underhood lamp
- Video screen module

Operation

The term ignition-OFF draw (IOD) identifies a normal condition where power is being drained from the battery with the ignition switch in the OFF position. The IOD fuse feeds the memory and sleep mode functions for some of the electronic modules in the vehicle as well as various other accessories that require battery current when the ignition switch is in the OFF position. The only reason the IOD fuse is disconnected is to reduce the normal IOD of the vehicle electrical system during new vehicle transportation and pre-delivery storage to reduce battery depletion, while still allowing vehicle operation so that the vehicle can be loaded, unloaded, and moved as needed by both vehicle transportation company and dealer personnel.

The IOD fuse is disconnected from totally integrated power module (TIPM) fuse cavity # J15 when the vehicle is shipped from the assembly plant. Dealer personnel must reconnect the IOD fuse when the vehicle is being prepared for delivery in order to restore full electrical system operation. After the vehicle is prepared for delivery, the IOD function of this fuse becomes transparent and the fuse that has been assigned the IOD designation becomes only another Fused B(+) circuit fuse.

The IOD fuse can be used by the vehicle owner as a convenient means of reducing battery depletion when a vehicle is to be stored for periods not to exceed about 30 days. However, it must be remembered that disconnecting the IOD fuse will not eliminate IOD, but only reduce this normal condition. If a vehicle will be stored for more than about 30 days, the battery negative cable should be disconnected to eliminate normal IOD, and the battery should be tested and recharged at regular intervals during the vehicle storage period to prevent the battery from becoming discharged or damaged.

SHIPPING MODE - 2013 AND NEWER

Vehicle equipped with the PowerNet architecture do not have a TIPM, or an IOD fuse. These vehicles are shipped in a logistics mode, which disables most of the items on the CAN-IHS bus (i.e. radio, HVAC, etc). The vehicle will remain in logistics (Ship) Mode until the odometer reaches 177 km (110 miles),

To move the vehicle to Customer Mode:

- Turn the ignition ON
- Enable the hazard lamps
- Press and hold the Up arrow button on the steering wheel for five seconds, or until the Ship Mode message on the EVIC goes away.

If the vehicle was in Ship Mode, the radio will begin working and all accessories should function correctly.

NOTE: If the odometer registers over 177 km (110 miles), the vehicle can be put back into Ship Mode through the same procedure listed above, but will automatically shift into Customer Mode at the next key cycle.

Notes:

CHRYSLER

WORLDWIDE

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

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