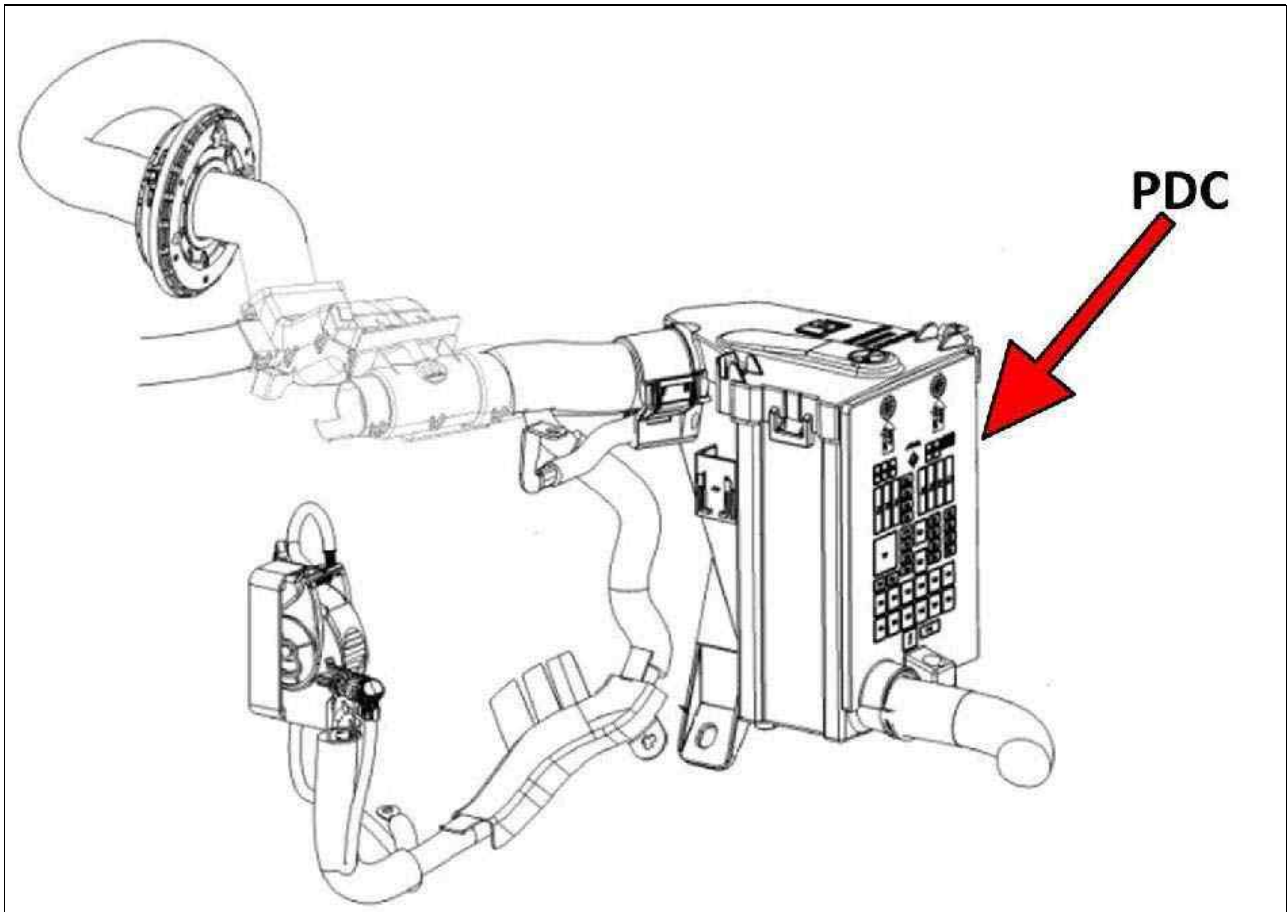


Service Manual: POWER DISTRIBUTION

DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

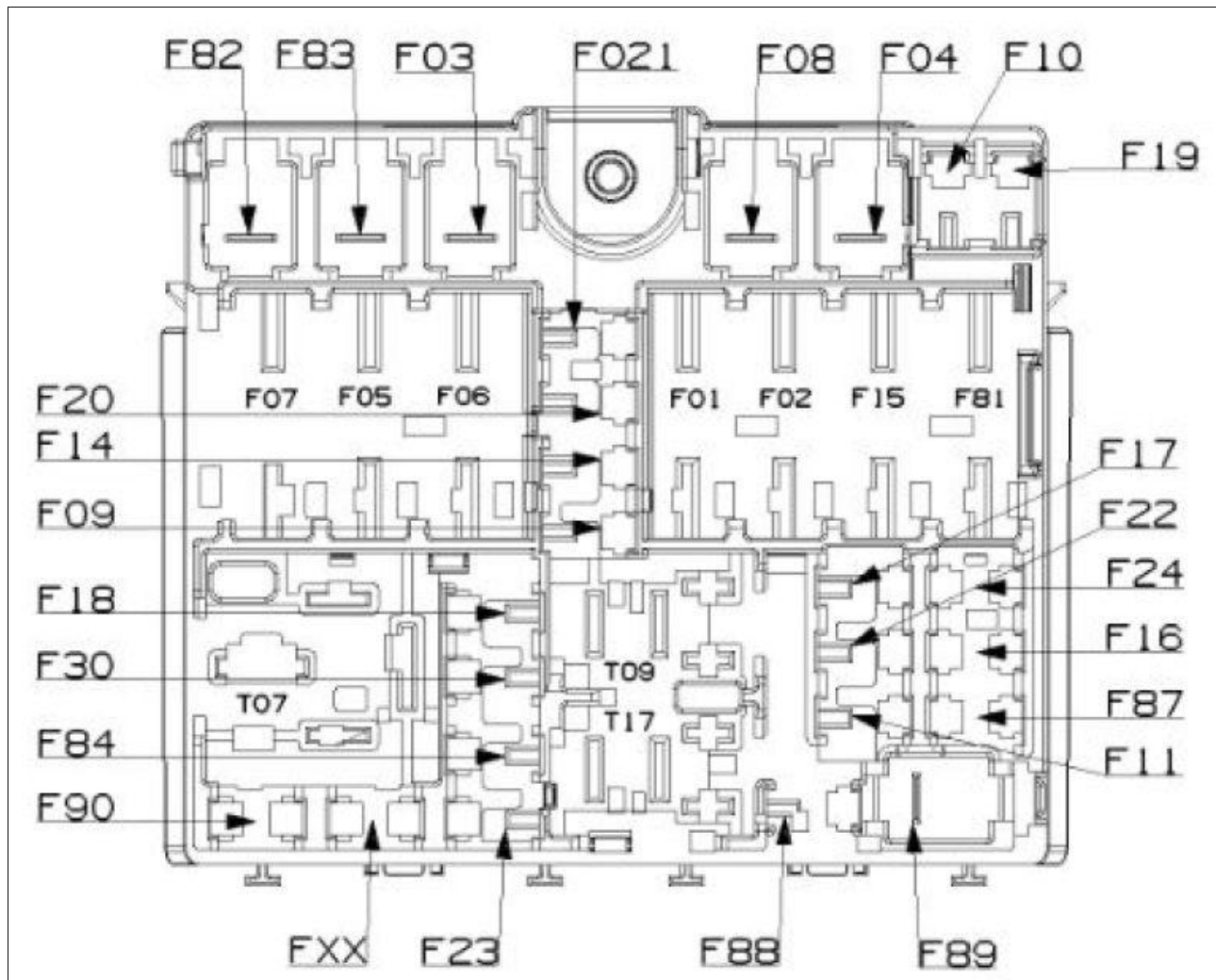
Fig 1: Front PDC



Courtesy of CHRYSLER GROUP, LLC

FRONT PDC - The front PDC is inserted on the front vehicle wiring harness and fixed to the front left wing.

Fig 2: Front PDC Fuse And Relay Locations



Courtesy of CHRYSLER GROUP, LLC

The location of the fuses and relays fitted on the PDC.

Fuse	Type	AMP	Protection
01	Maxi fuse	70	from +30 for BCM
02	Maxi fuse	70	from +30 for BCM
03	J case	20	from +30 for BCM
04	J case	30	from +30 for ESC valves
05	Maxi fuse	70	from +30 for EPS
06	Maxi fuse	40 / 20	for Engine cooling fan
07	Maxi fuse	30/40/50	for 86 T07 engine cooling fan
08	J case	20 / 30	from +30 for DDCT, GCM / +30 for ATX, GSM
09	Mini fuse	5	from +30 for ECM / DDCT

10	Mini fuse	10	from +30 for horn
11	Mini fuse	10/15 /25	from T09 for secondary engine loads
14	Mini fuse	7.5 / 5	from +30 for blow-by relay / after-run pump
15	Maxi fuse	40	from +30 for ESC pump
16	Mini fuse	5	from kl15 for ECM, ATX, DDCT
17	Mini fuse	10 / 15	from T09 for primary engine loads
18	Mini fuse	20	from +30 for luggage compartment power socket
19	Mini fuse	7.5	from +30 for A/C relay
20	Mini fuse	5	from +30 for DTCM
21	Mini fuse	15	from +30 for fuel pump
22	Mini fuse	7.5 / 20	from T09 for ECM supply
23	Mini fuse	30	from +30 for windscreen heater
24	Mini fuse	7.5 / 15	from KL 15 for DDCT / ATX GSM
30	Mini fuse	from +30 for power socket setup	
81	J case	40 / 60	from +30 from DDCT SDU / Heater plugs
82	J case	40	from +30 for diesel filter heater
83	J case	40	from +30 for HAVC
84	Mini fuse	30	from +30 for AWD
87	Mini Fuse	5	from KL 15 for DDCT gear selector unit
88	Mini fuse	7.5	from T17 for mirror heater
89	J case	7.5	from T17 for rear window defroster
90	Mini fuse	5	from KL 15 for IBS

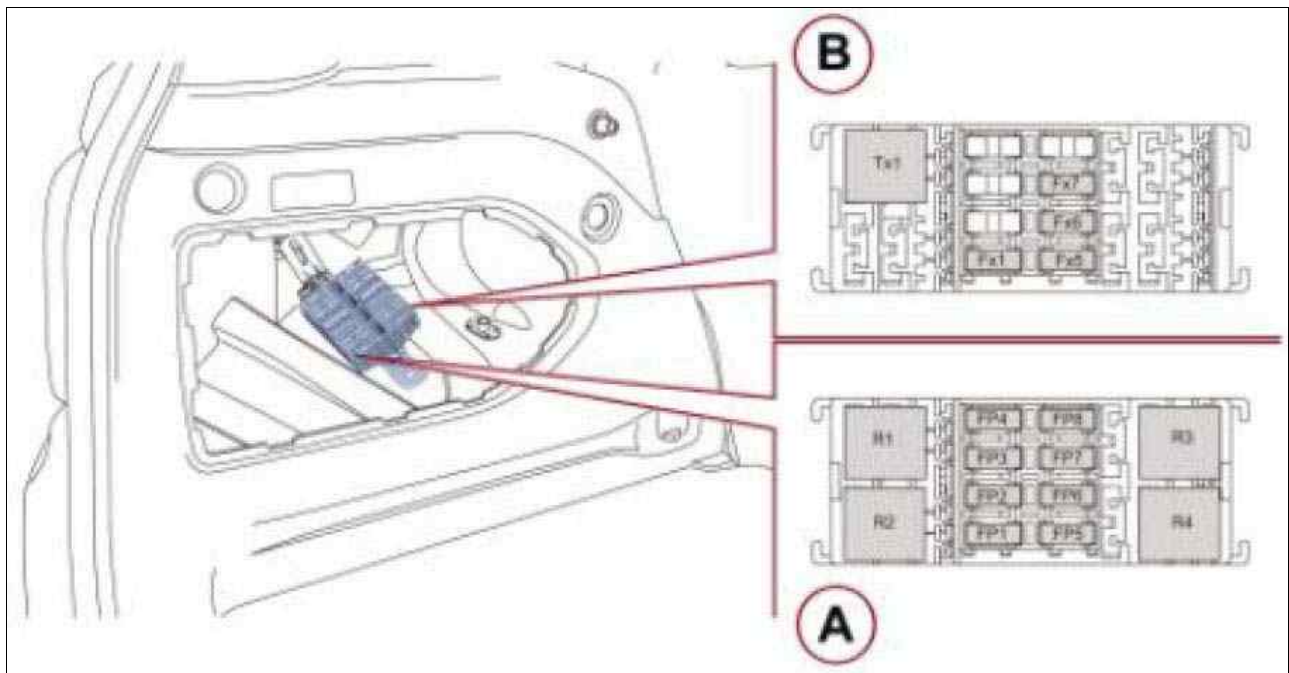
List of T Relays in the front PDC

T Relay	Function
03	Horn
05	A/C compressor
06	engine cooling fans
07	Engine cooling fan
08	HVAC fan
09	ECM / Primary and secondary engine loads
10	Rear power socket
17	Rear view mirror heater / Rear window defroster

19	After-Run Pump or Blow-By Heater
20	Starter
31	Fuel pump
89	DIESEL fuel filter heater
90	Windscreen heater

REAR PDC - Some relay switches and a series of fuses are located in the luggage compartment on the rear left side panel, in a dedicated box called rear PDC. These fuses are used for a series of optional content: sun roof, electric seat movement, Hi-Fi system, etc.

Fig 3: Rear PDC & Additional PDC



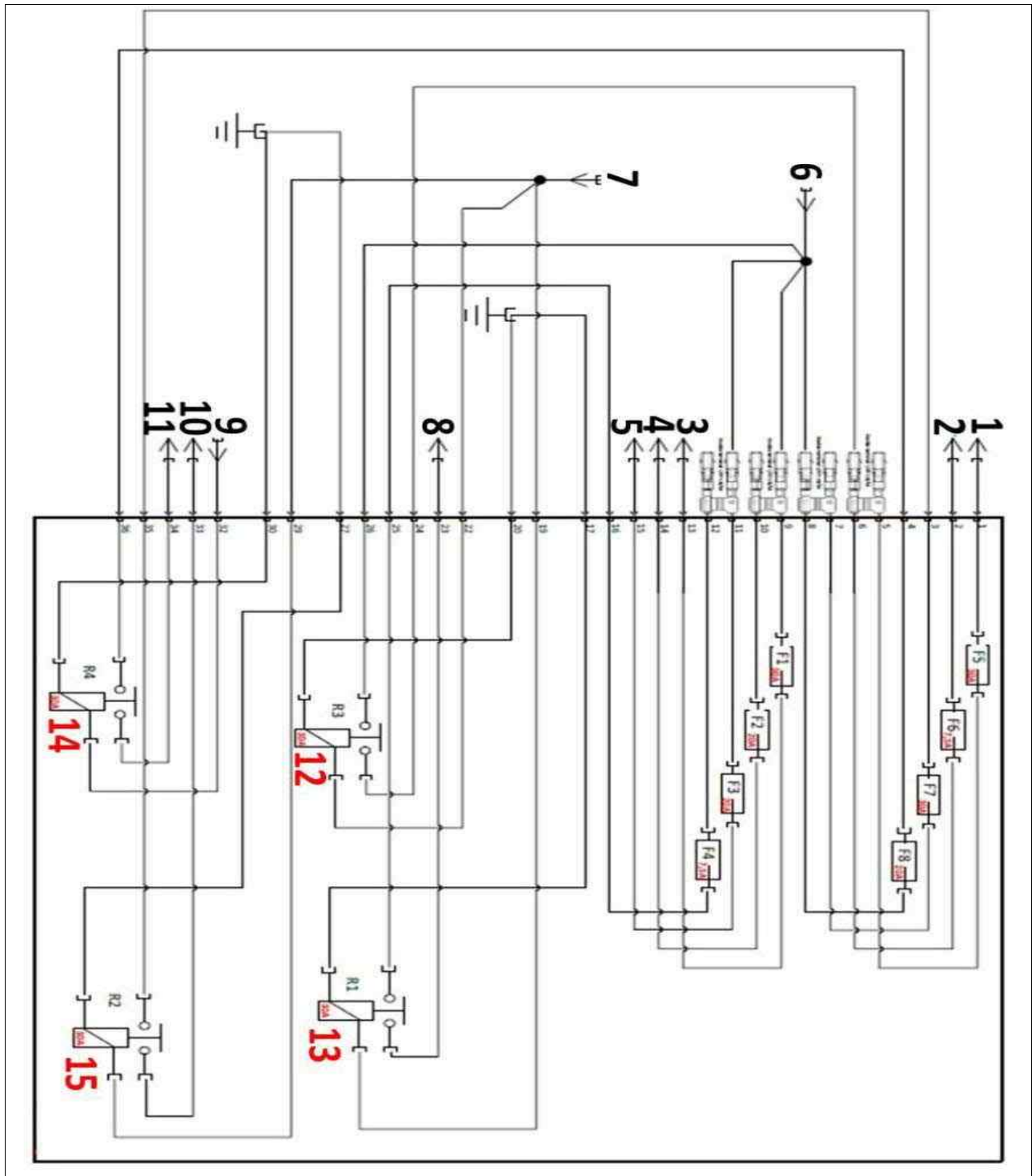
Courtesy of CHRYSLER GROUP, LLC

A. Rear PDC

B. Additional PDC for TTM

The rear PDC is wired directly to the rear cable and does not have connections that can be disconnected; it can only be replaced by disconnecting the individual terminals.

Fig 4: Rear PDC Circuit Diagram



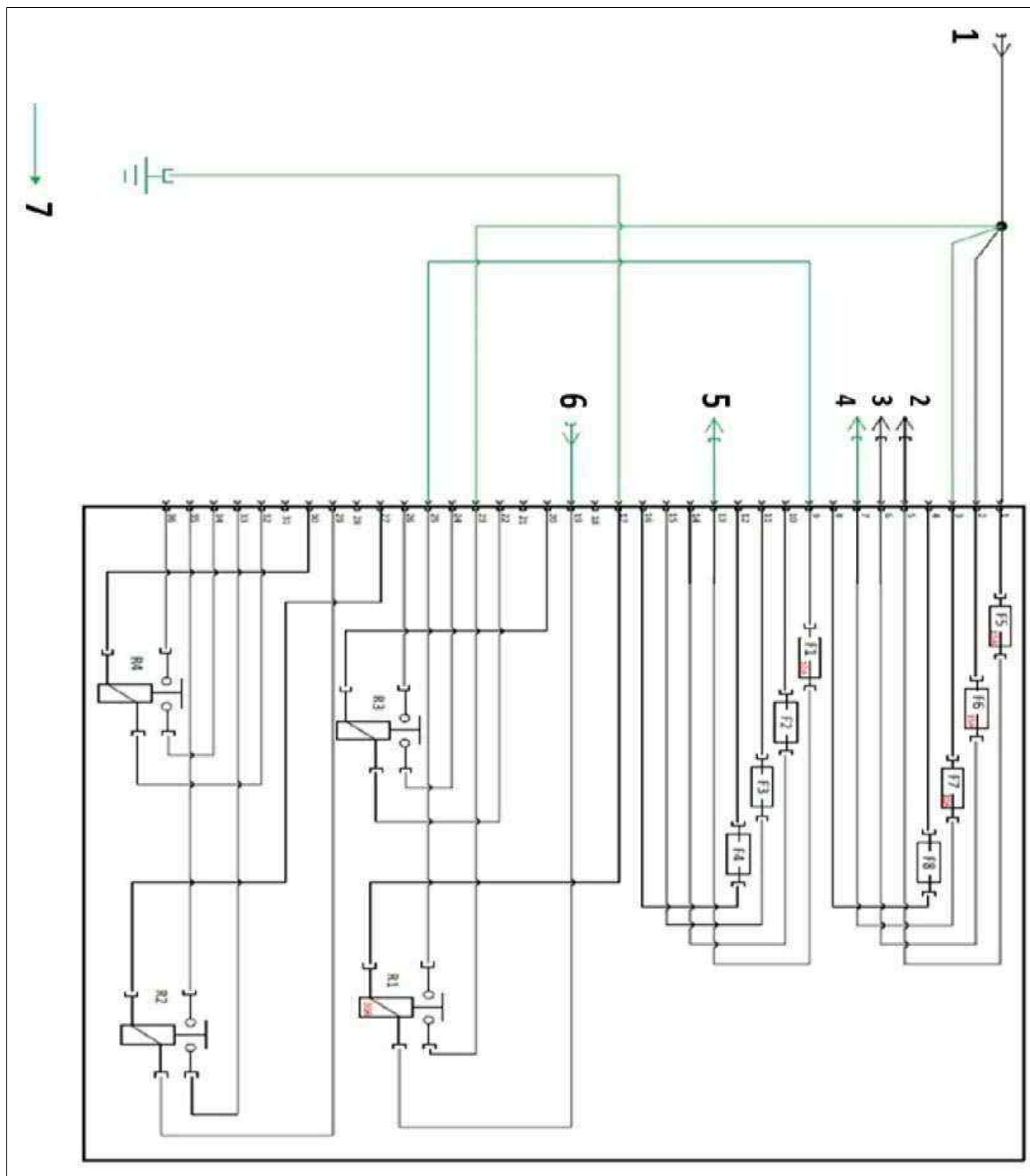
Courtesy of CHRYSLER GROUP, LLC

1. +30 Passenger seat movement
2. INT/A supply for electric driver seat movement
3. +30 for Inverter
4. +30 for Hi-Fi

5. +30 for electric roof
6. +30 from F02
7. INT/A from f31
8. INT/A passenger side only electric lumbar adjustment
9. INT from F49
10. INT/A supply for driver / passenger side electric seat movement
11. INT for front seat heater pad control unit
12. Driver side seat movement
13. Lumbar adjustment
14. Heated seats
15. INT/A for driver and passenger side seat movement

Additional PDC for TTM

Fig 5: Additional PDC Circuit Diagram



Courtesy of CHRYSLER GROUP, LLC

1. +30
2. +30 TTM
3. +30 TTM
4. +30 TTM for hook connector

5. INT TTM for hook connector
6. INT from BCM
7. Only for EMEA market

DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > POWER AND WIRING

The electrical system is designed to increase the car's safety level and prevent the possibility of fires and other consequences of electrical malfunctions. State-of-the-art connectors have been introduced to rule out the possibility of many connection defects.

The power distribution is supplied via control units and / or fuses, connected to the control elements (relay pressure transducers) to ensure the highest level of power protection and the minimum degree of wiring complexity.

The main security solutions are adopted:

- Power supply protection by maxifuse for the interruption of the electrical system, in case of short circuit
- The lay-out of the entire system is optimized for the reduction of risk of damage in case of damage or accident
- The laying of the cables has been optimized by reducing incorrect placements, and noise due to vibration
- All cables are high abrasion resistance
- In the engine compartment cables are of special, high temperature resistance and are protected with sheaths or pipes
- The cables in the passenger compartment are protected by corrugated tubes and tapes with micro-fleece to reduce noise
- The main connections are equipped with anti-slip device terminals (secondary lock) and a safety lock (lock lever) which avoids any deformation of the terminals.

All systems and electrical systems are supplied by the battery with the voltage of 12 V. The battery in turn is recharged during operation of the generator.

The versions with Start & Stop, the battery status is monitored continuously by a special sensor battery (Intelligent Battery Sensor / IBS) located on the negative pole of the battery.

The main supply lines are protected by a "MAXIFUSE", contained in the box on the positive battery terminal.

Some circuits employ "J-House" fuses: this is a cartridge type fuse with the characteristics to ensure a lower voltage drop for the protection of circuits that absorb high current.

Other circuits are fed by turning the key in the ignition switch in different positions:

- Inserting and turning the key to the first click goes to ON and feeds many circuits, which are, in

fact, called "locked" (line "INT")

- The second detent - AVV - instead feeds the starter, however, by disconnecting some circuits (those that absorb more power), thus ensuring the maximum flow of current to the starter motor itself (line "INT / A").

MODULE, POWER INVERTER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Power Inverter Module



Courtesy of CHRYSLER GROUP, LLC

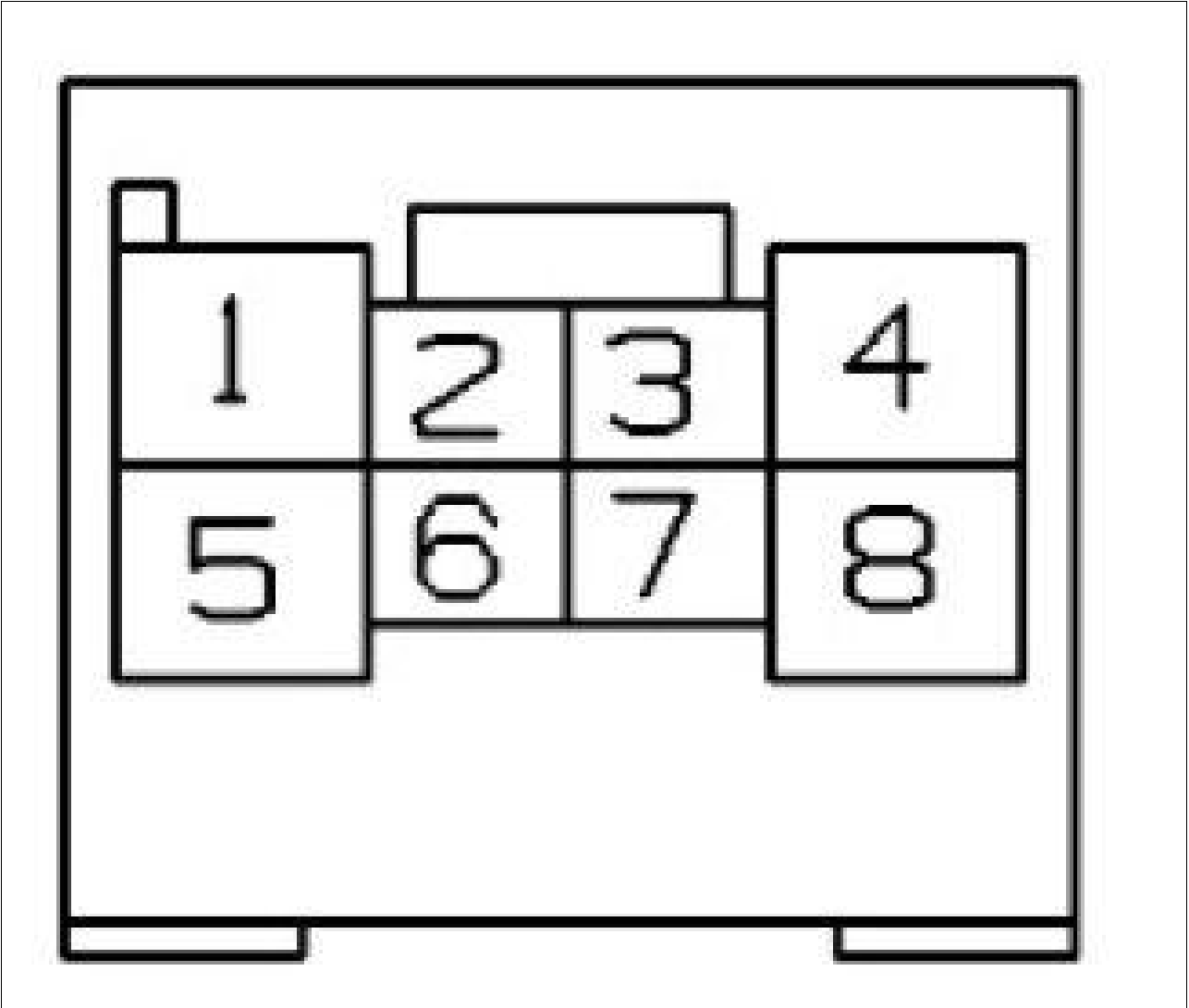
The inverter module can be installed as an optional on the car to convert direct current to alternating current (DC/AC inverter).

The inverter is a device that uses diodes and transistors to create an alternating current. The US market versions operate at 110 V and the European market versions operate at 220 V. Both inverters are rated at 150 W. The inverter can provide approximately 300 W for up to two seconds to compensate for the power surge that may occur as a device is plugged in. To prevent blowing of the fuse, the inverter will automatically shut down if a device draws more than the rated power. The module transforms the DC 12V voltage in the correct value of output alternating current. The BCM activates the inverter module, sending it a positive command, when the power status is ON and when the car is started and no errors can be found on the alternator. The inverter module senses this positive control and switches on the

power to the A/C outlet. The inverter is located behind the front glove compartment.

MODULE, POWER INVERTER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

Fig 1: Power Inverter Module Connector End View

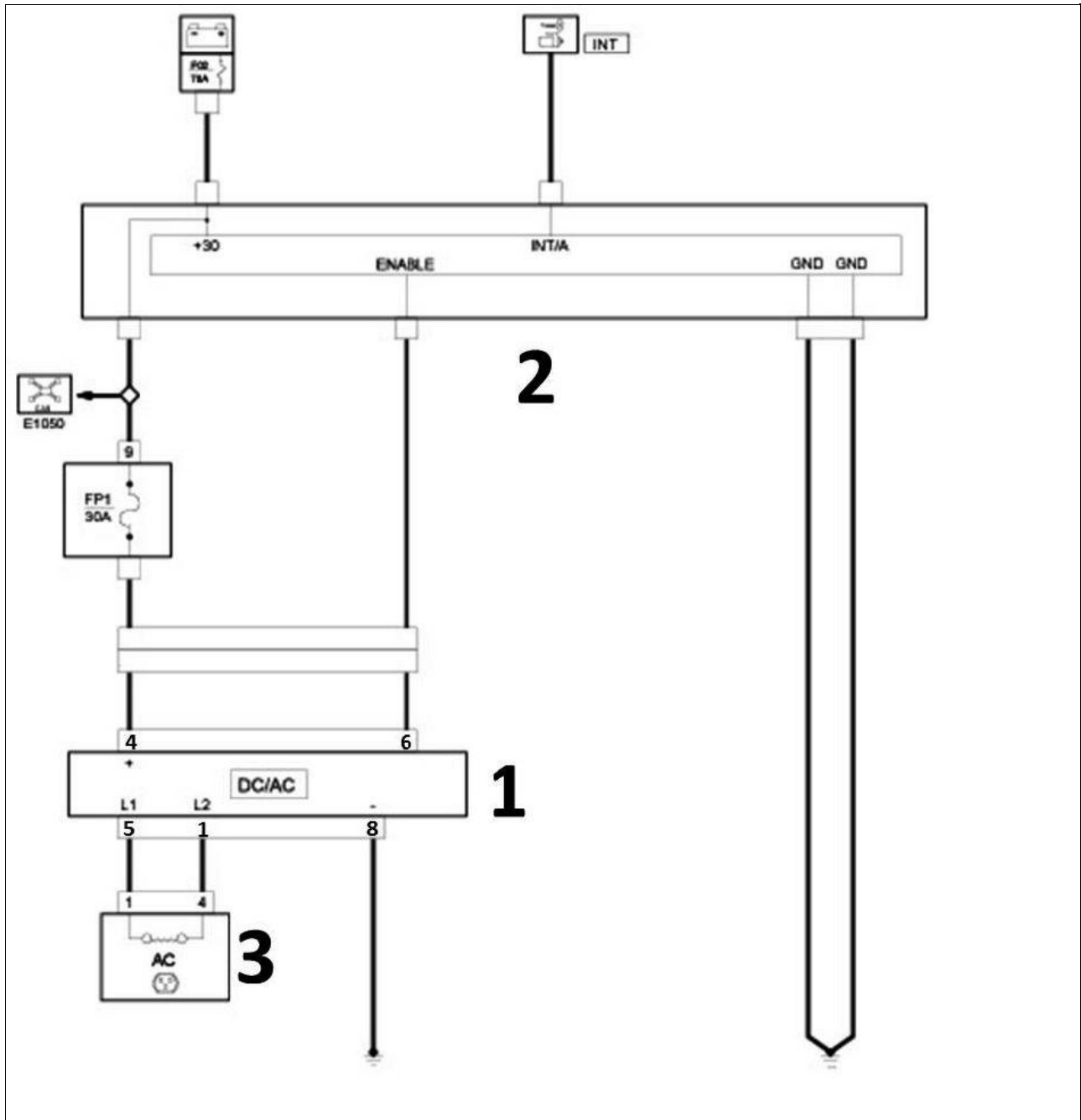


Courtesy of CHRYSLER GROUP, LLC

Pin	Function
1	CA2 (Output 2 in A.C.)
2	N.C.
3	N.C.
4	+30
5	CA1 (Output 1 in A.C.)

6	EL (enabling pin)
7	N.C.
8	Earth

Fig 2: Power Inverter Module, BCM & Power Socket Circuit Diagram



Courtesy of CHRYSLER GROUP, LLC

KEY

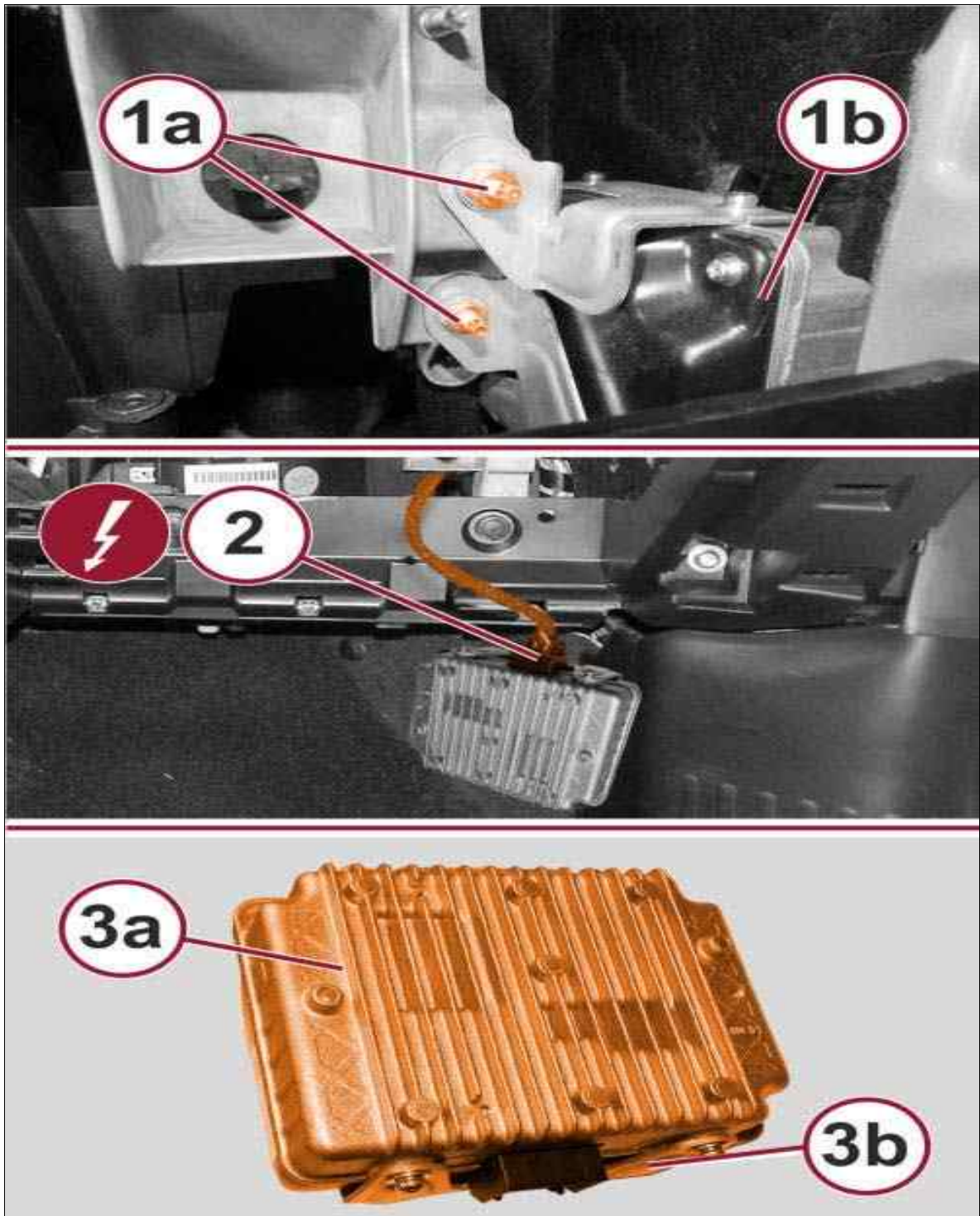
1. Inverter module
2. BCM

3. Power socket

MODULE, POWER INVERTER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > POWER INVERTER MODULE - REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the glove box. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

Fig 1: Power Inverter Module, Bracket, Connector & Nuts



Courtesy of CHRYSLER GROUP, LLC

3. Working within the storage compartment, remove the nuts (1a) and remove the power inverter module with support bracket (1b).
4. Disconnect the electrical connection (2) from the power inverter module.
5. Separate the power inverter module from the bracket.

MODULE, POWER INVERTER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > POWER INVERTER MODULE - INSTALLATION

1. Check that the power inverter module is not damaged.
2. Connect the module electrical connector.
3. Position the inverter module and tighten the screws.
4. Install the glove box. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
5. Connect the negative battery cable.

OUTLET, POWER > DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - POWER OUTLET

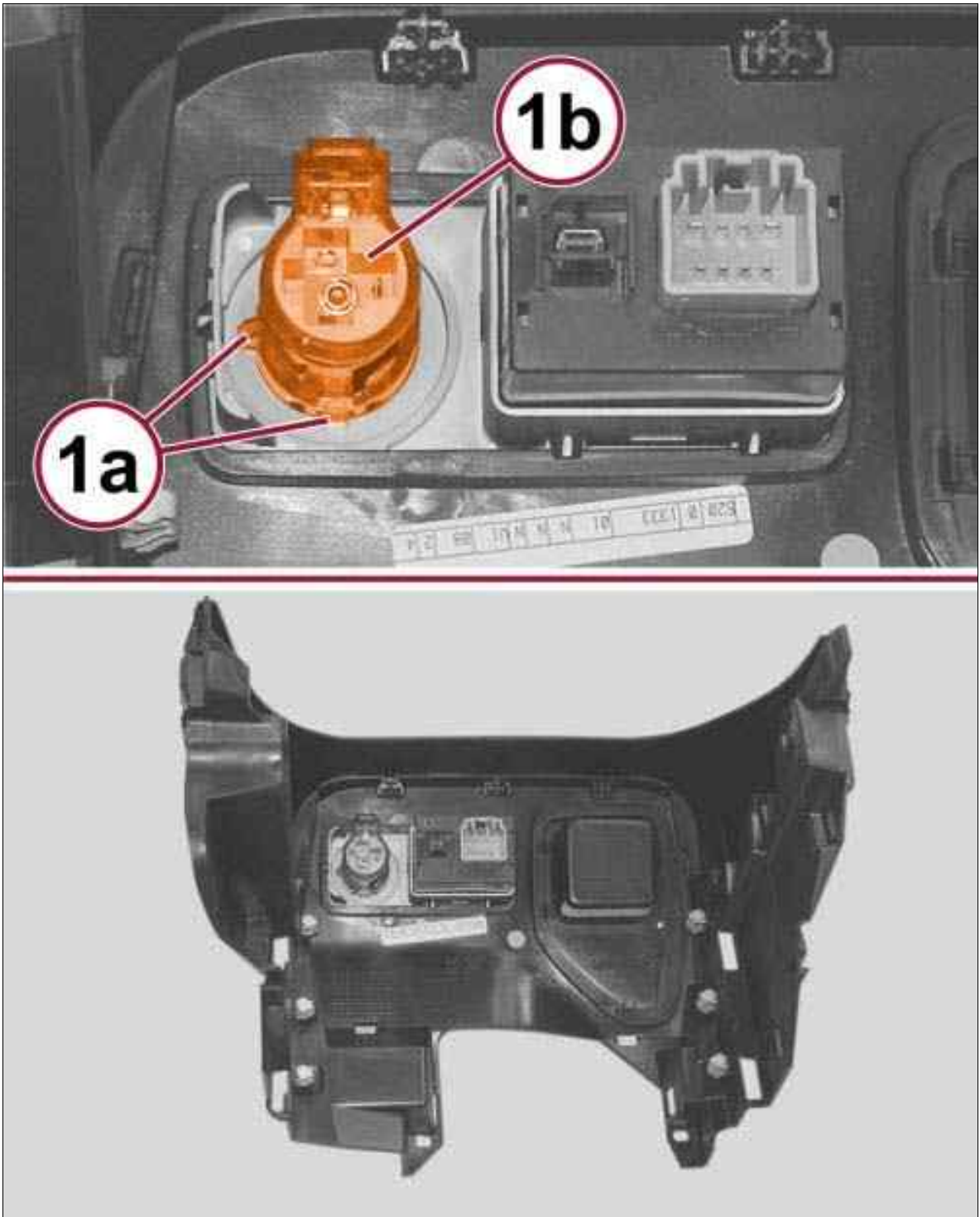
For complete circuit diagrams, **refer to appropriate SYSTEM WIRING DIAGRAMS article**. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds.

1. Check the fused B(+) fuse in the Power Distribution Center (PDC). If not OK, repair the shorted circuit or component as required and replace the inoperative fuse.
2. Turn the ignition switch to the Run position. Check for battery voltage at the fused B(+) fuse in the PDC. If not OK, repair the open or short as required.
3. Remove the cigar lighter knob and element from the cigar lighter outlet shell. Check for continuity between the inside circumference of the cigar lighter outlet shell and a good ground. There should be continuity.
4. Turn the ignition switch to the Run position. Check for battery voltage at the insulated contact located at the back of the cigar lighter outlet shell. If OK, replace the inoperative cigar lighter knob and element.
5. Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Check for continuity between the ground circuit cavity of the cigar lighter wire harness connector and a good ground. There should be continuity. If not OK, repair the open ground circuit to ground as required.
6. Connect the battery negative cable. Turn the ignition switch to the Accessory or Run positions. Check for battery voltage at the fused B(+) circuit cavity of the cigar lighter wire harness connector. If OK, replace the inoperative cigar lighter outlet. If not OK, repair the open fused B(+) circuit to the PDC fuse as required.

OUTLET, POWER > REMOVAL AND INSTALLATION > FRONT POWER OUTLET > FRONT POWER OUTLET - REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the floor console portion to gain access to the accessory outlet panel. Refer to CONSOLE, FLOOR, REMOVAL AND INSTALLATION .

Fig 1: Front Power Outlet & Clips



Courtesy of CHRYSLER GROUP, LLC

3. Untie the retaining clips (1a) and remove the front power outlet (1b).

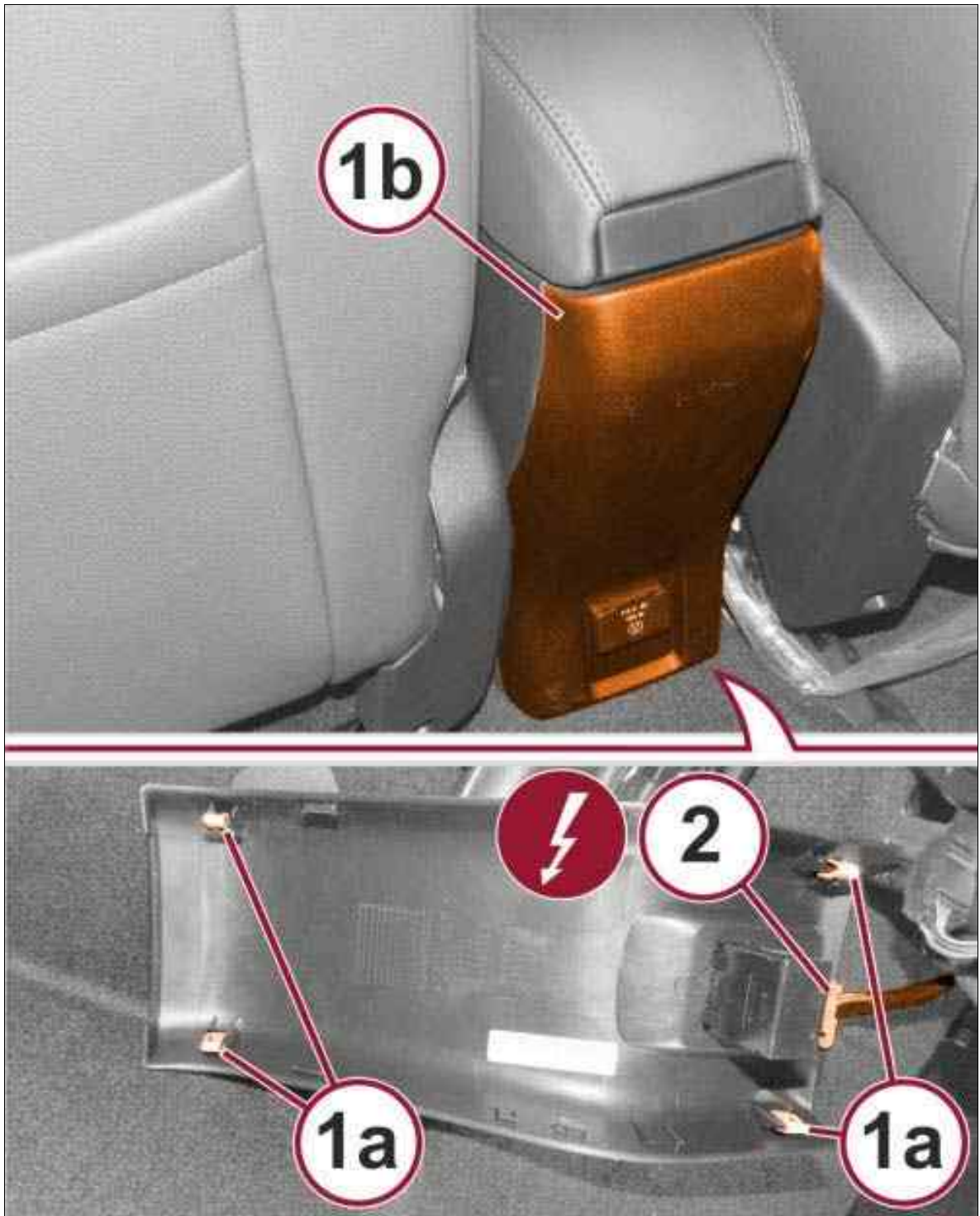
OUTLET, POWER > REMOVAL AND INSTALLATION > FRONT POWER OUTLET > FRONT POWER OUTLET - INSTALLATION

1. Position the front outlet and install the retaining clips.
2. Connect the electrical connector to the power outlet.
3. Install the floor console. Refer to CONSOLE, FLOOR, REMOVAL AND INSTALLATION .
4. Connect the negative battery cable.

OUTLET, POWER > REMOVAL AND INSTALLATION > MID POWER OUTLET > MID POWER OUTLET - REMOVAL

1. Disconnect and isolate the negative battery cable.

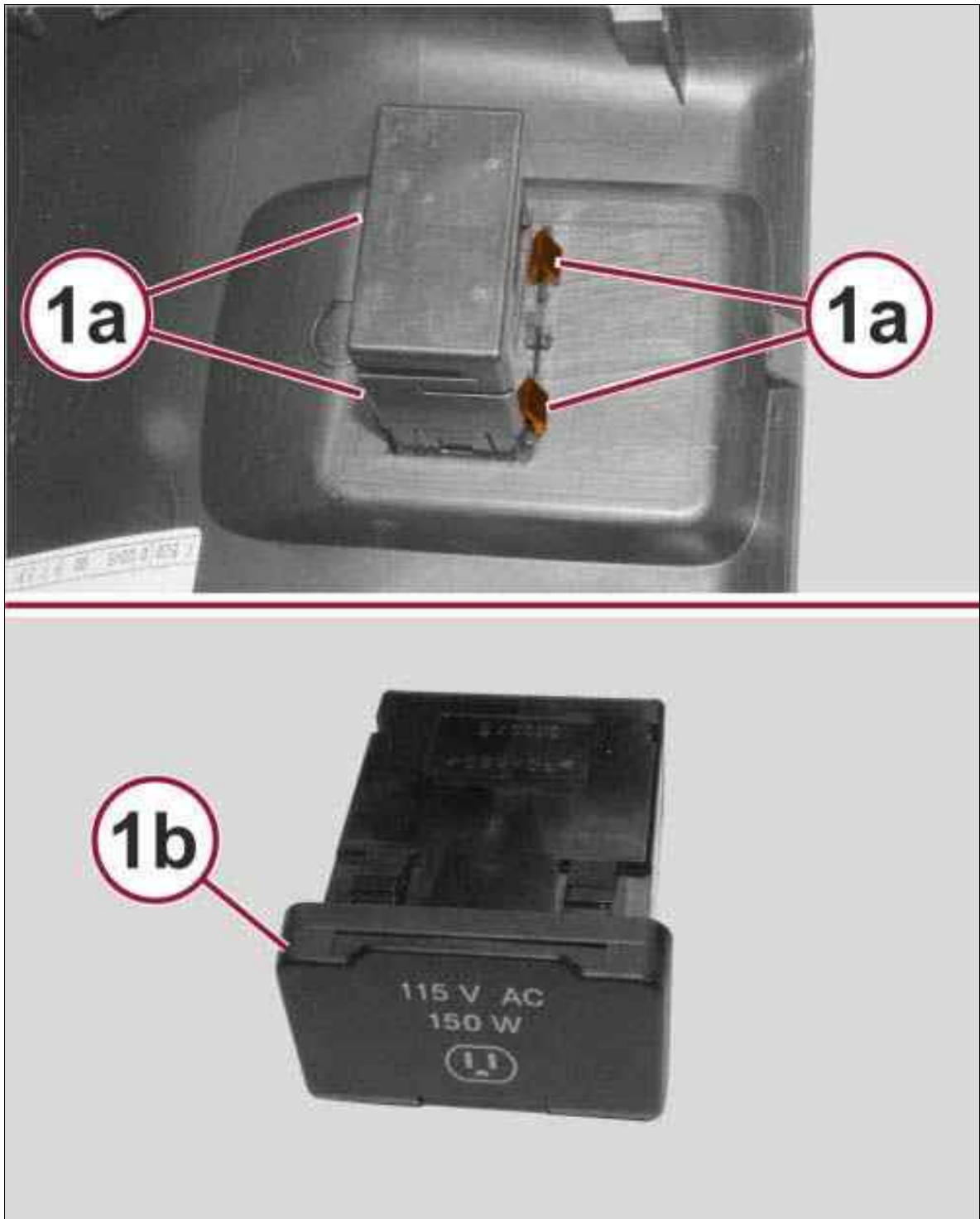
Fig 1: Floor Console Rear Cover, Retainers & Connector



Courtesy of CHRYSLER GROUP, LLC

2. With the proper tool, remove the floor console rear cover (1b) retainers (1a).

Fig 2: Power Outlet & Retainers



Courtesy of CHRYSLER GROUP, LLC

3. Release the retainers (1a) and remove the power outlet (1b).

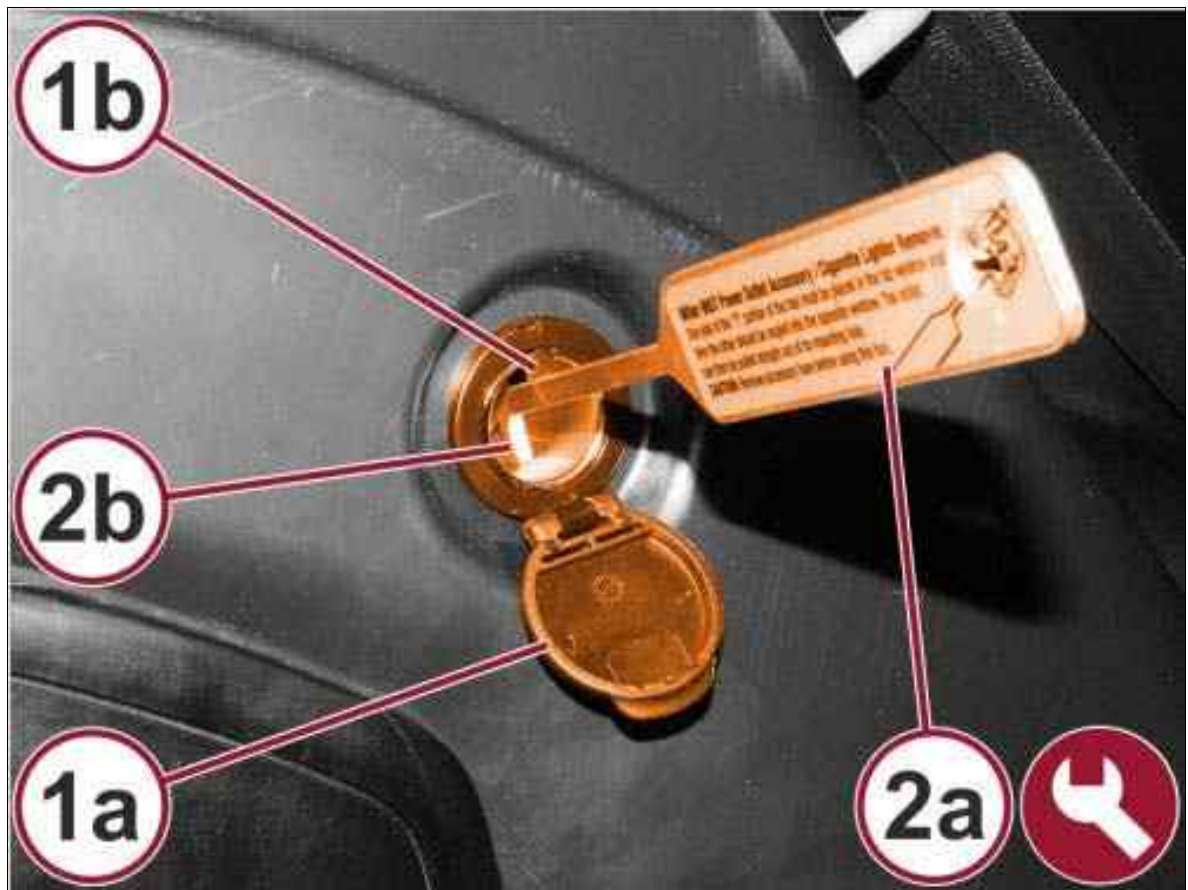
**OUTLET, POWER > REMOVAL AND INSTALLATION > MID POWER OUTLET > MID
POWER OUTLET - INSTALLATION**

1. Position the front outlet and install the retaining clips.
2. Connect the electrical connector to the power outlet.
3. Install the floor console rear cover.
4. Connect the negative battery cable.

OUTLET, POWER > REMOVAL AND INSTALLATION > REAR POWER OUTLET > REAR POWER OUTLET - REMOVAL

1. Disconnect and isolate the negative battery cable.

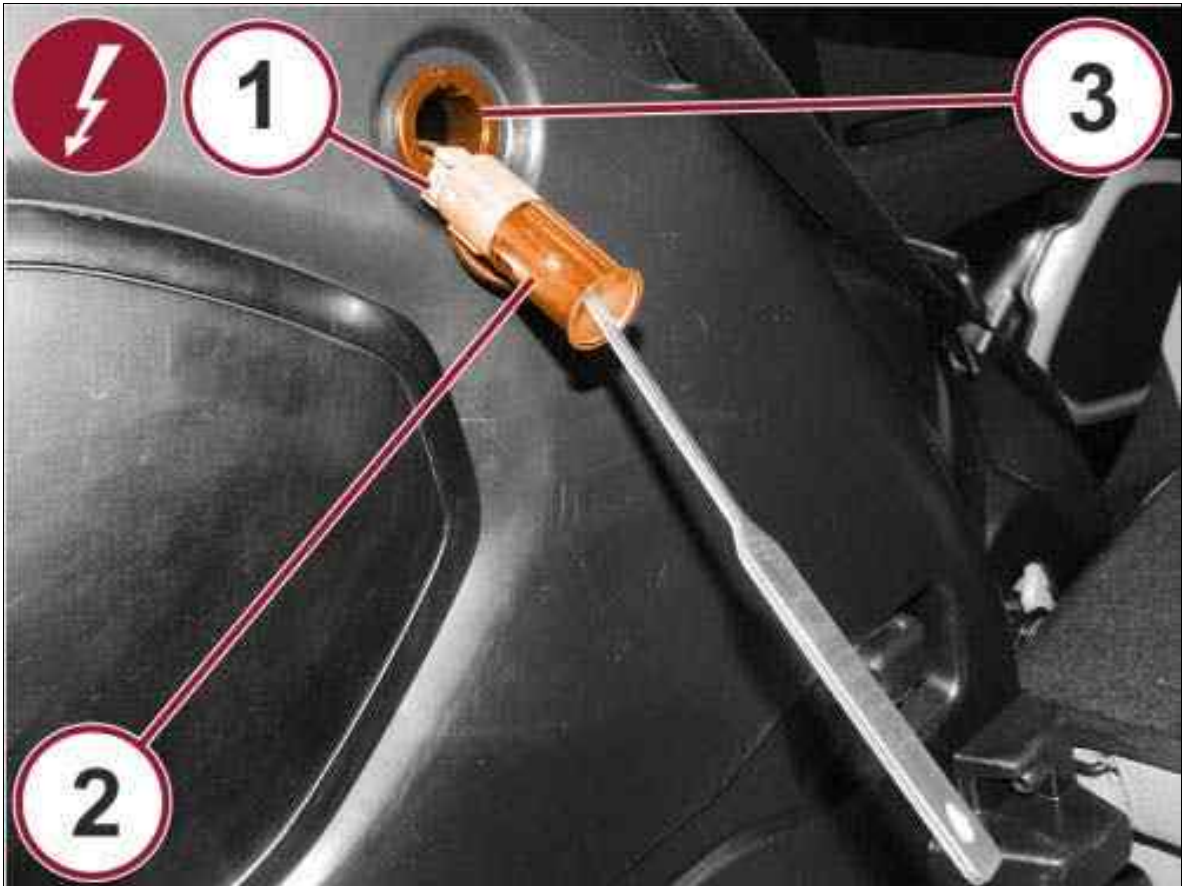
Fig 1: Rear Power Outlet, Cover & Tool



Courtesy of CHRYSLER GROUP, LLC

2. Working from the left side of the rear cargo compartment, open the cover (1a) of the outlet (1b).
3. Engage the appropriate tool (2a) in the socket, then carefully remove the socket (1b) itself.

Fig 2: Rear Power Outlet, Connector & Cover



Courtesy of CHRYSLER GROUP, LLC

4. Disconnect the power outlet electrical connection.
5. Remove the socket.
6. If necessary, remove the flange cover.

OUTLET, POWER > REMOVAL AND INSTALLATION > REAR POWER OUTLET > REAR POWER OUTLET - INSTALLATION

1. Check that the plug is not damaged.
2. If removed, replace the flange cover.
3. Connect the power outlet electrical connection.
4. Install the power outlet.
5. Close the cover of the socket.
6. Connect the negative battery terminal.

