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Fig 1: Switch Unit



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The car can be equipped with heated front seats and heated steering wheel. Both can be activated or deactivated through dedicated keys of the switch unit on the Centre console.

The driver and front passenger seats have two heating setting levels while the steering wheel has only one level.

On models equipped with Remote Start, the heated steering wheel and the heated seats will activate automatically during the remote start at temperatures below 40°F (4.4°C).

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When the occupants of the front seats request the activation of the heated seats (two heating levels) or the steering wheel through the central control panel, the command is sent via LIN line to the BCM. The BCM translates the command received and sends it via BH CAN to the seats/steering wheel heating control unit (CSWM). The CSWM will supply the heater pads placed on the front seat backrests and cushions and will receive the signal directly from the two temperature sensors (one per seat) in the cushions, to learn the temperature of the seats and implement the correct strategies for supplying the heater pads. The heater pads in the steering wheel cover are supplied directly by the CSWM, while the temperature signal is received by the SWS (steering wheel switch unit) and sent via LIN to the BCM which will put it on the CAN network.

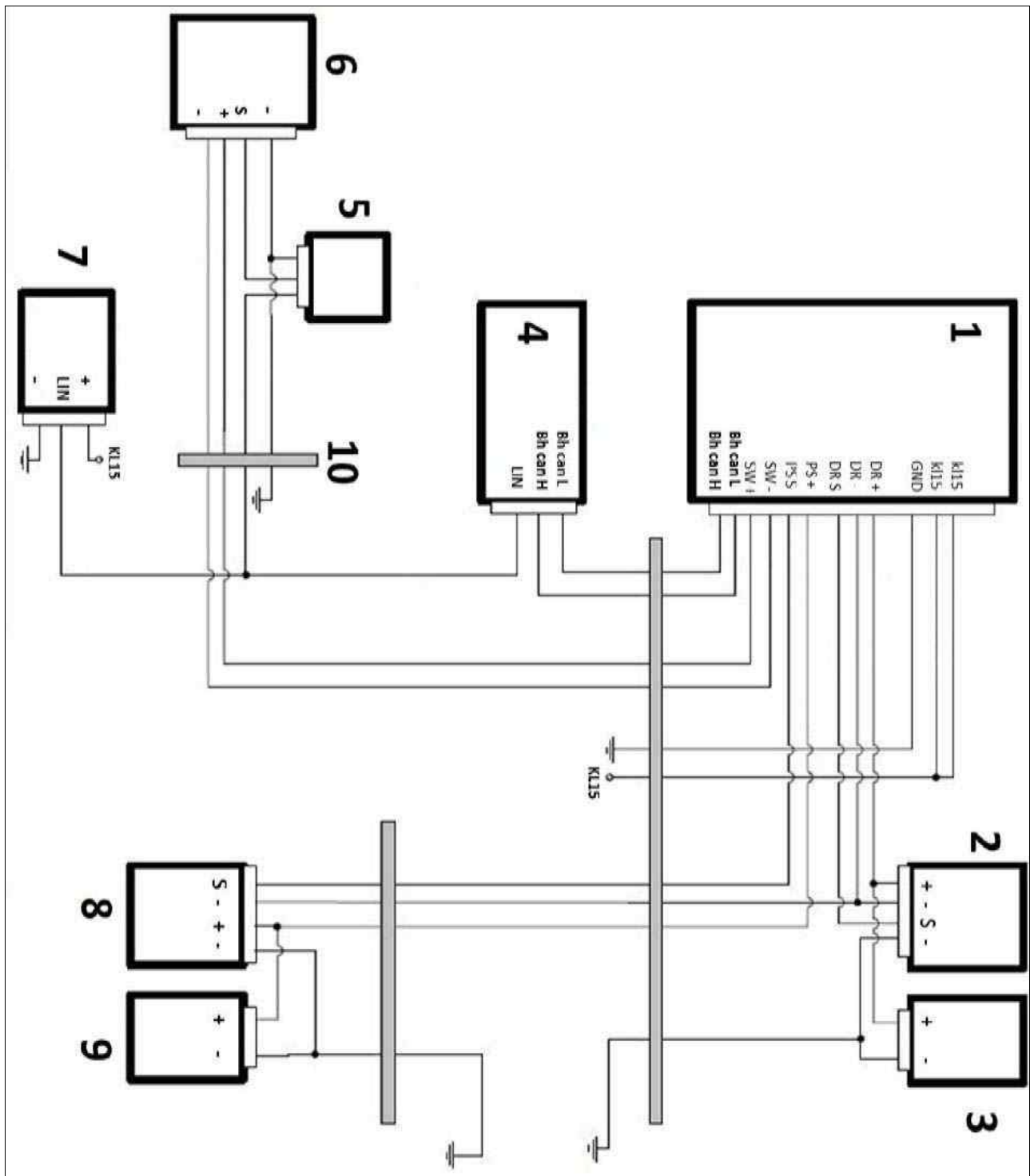
The CSWM monitors the operation of the system and will generate the appropriate DTCs in the event of failure.

When operating the heated seat switch, one of three switch positions can be selected: OFF, LOW, or HIGH. The CSWM can provide three levels of power to the heating elements for the HIGH setting. These power levels are changed by modulating the pulse width of the positive side of the circuit. The strategy used by the CSWM is to operate the heating element at the highest pulse-width until the target time or temperature for the pulse width is met. The CSWM then reduces the pulse width and repeats this process until the system times out. When the LOW setting is selected, the pulse width remains at 25% until the target temperature or time is reached (205 minutes for leather and 115 minutes for fabric). The following table provides an overview of the adjustment strategy used to control the amount of current provided to the seat heating elements:

Parameter name	Definition	Unit	Leather	Fabric
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Temp_OFF	Maximum temperature for heating program	°C	67	55
DH_S3	PWM for heating - high level 3	s	100%	100%
TempSH3	Maximum temperature for seat heating level 3	°C	50	34
T1S	First timing program for seat heating	min.	25	20
DH_S2	PWM for heating level 2	s	40%	70%
TempSH2	Maximum temperature for seat heating level 2	°C	55	38
T2S	Second timing program for seat heating	min.	85	35
DH_S1	PWM for heating level 1	s	40%	34%
TempSH1	Maximum temperature for seat heating level 1	°C	60	43
T3S	Third timing program for seat heating	min.	145	95
DL_S1	PWM for heating level Low	s	25%	25%
TempSL1	Maximum temperature for heating program Low	°C	65	48
T4S	Fourth timing program for seat heating	min.	205	115

Fig 1: Heated Systems Circuit Diagram



Courtesy of CHRYSLER GROUP, LLC

1. CSWM
2. Cushion heater
3. Backrest heater
4. BCM

5. SWS (steering wheel switch unit)
6. Steering wheel heater
7. CSS (central control panel)
8. Cushion heater
9. Backrest heater
10. Clock spring junction

Power supply of the seat heating control unit reaches from relay switch located in the luggage compartment fuse box, through a line protected by a fuse.

Relay switch receives an ignition-operated power supply (INT) from the line protected by a fuse.

The control unit then connects via CAN to the other network nodes.

The BCM receives a direct power supply from the battery through the line protected by a maxi fuse located in the engine compartment junction unit.

The BCM receives an ignition-operated power supply (INT). This signal is used, amongst other things, to "wake up the network".

The coil activation signal reaches the BCM via the LIN line.

Controls for the steering wheel coil are sent through coil spring, whose control thermostat is located in the steering wheel controls.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - HEATED SEAT SYSTEM



NOTE:

Vehicles equipped with the heated seat option utilize a low voltage cut-off feature. This feature turns off power to the heated seat system anytime vehicle voltage is below 11.7 volts or above 15.5 volts. Be certain to check the vehicle electrical system for proper voltage anytime the heated seat system appears inoperative.



NOTE:

If a Diagnostic Trouble Code (DTC) can not be verified, it is a good indication that an intermittent fault condition may be present. To help find an intermittent problem, sit in the seat in question and move around the heating elements within the seat while testing continuity. Wiggle the heated seat wire harness and electrical connectors while testing continuity.



NOTE:

*For complete circuit diagrams, **refer to appropriate SYSTEM WIRING DIAGRAMS article** . Wiring Information includes wiring diagrams, connector pin-out and location views, details of wire harness routing and retention, splice and ground locations and proper wire and connector repair procedures.*

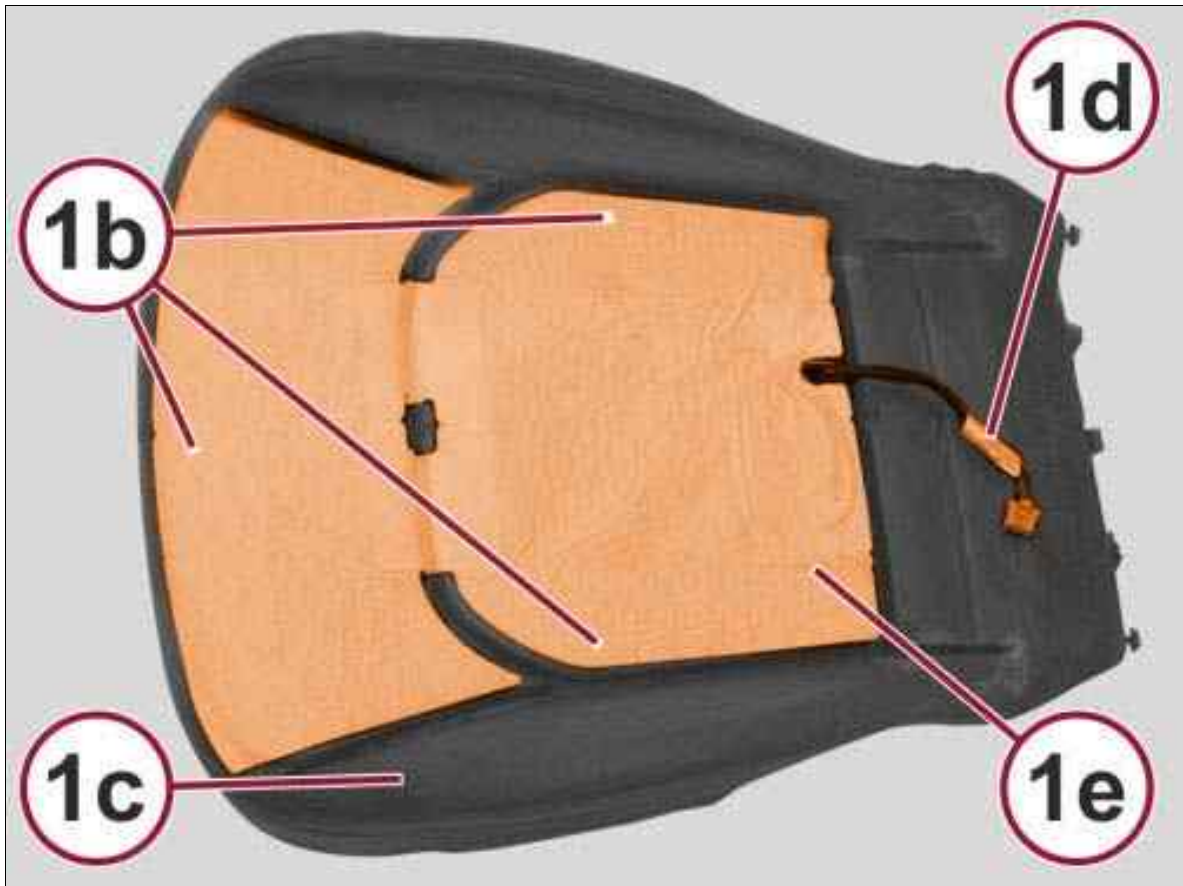
Before testing any individual components in the heated seat system, check the following:

- Check the vehicle's battery open-circuit voltage and charging system performance. If the vehicle's electrical system is defective or weak it may not be supplying sufficient energy to operate the heated seat system.
- Using a scan tool, check for any Diagnostic Trouble Codes (DTCs) related to the Body Control Module (BCM) and the heated seat switches. If any DTCs are found, repair as necessary. Refer to DIAGNOSIS AND TESTING .
- If there are no DTCs and a front heated seat does not operate properly, verify heated seat relay operation, and repair as necessary.
- If there are no DTCs and the front seat heating elements are receiving battery power and have a good ground, test the seat heating elements for proper operation, and repair as necessary.
- If there are no DTCs and the front heated seat system functions properly, but the Light Emitting Diode (LED) indicator in a heated seat switch does not illuminate, replace the seat switch assembly located in the seat frame housing.

PAD, HEATER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > HEATED SEAT PAD - REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the seat cushion and cover. Refer to SEAT CUSHION, REMOVAL AND INSTALLATION .

Fig 1: Heating Pad, Adhesive Surfaces & Wiring



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3. Remove the heating pad (1a) by detaching the adhesive surfaces (1b) and (1c) and disengaging the wiring (1d).
4. If the adhesive starts peeling off the adhesive surfaces (1b) of the heating pad, replace the heating pad.

 NOTE:

Be careful not to damage the passenger occupant sensor in the padding of the passenger seat cushion.

PAD, HEATER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > HEATED SEAT PAD - INSTALLATION

1. Check that the heating pad is not damaged.
2. If the heating pad is being reused, apply adhesive spray for plastics to the adhesive surfaces.
3. If using a new heating pad, remove the protective film of adhesive surfaces.

4. Put the heating pad in place, centering on padding slots and feed the wiring harness connector through the connector hole on the padding.
5. Install the heating pad to the adhesive surfaces.
6. Wait the necessary time for the adhesive glue to dry before installing the cover.
7. If reusing the heating pad, refer to the time indicated by the supplier of spray glue used.
8. For new heating pad installations, refer to the time specified by the supplier of the parts.
9. Install the seat cover and cushion. Refer to SEAT CUSHION, REMOVAL AND INSTALLATION .
10. Connect the negative battery cable.