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2014 JEEP Grand Cherokee SRT-8 OEM Service and Repair Workshop Manual

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The HVAC module uses an in-car temperature sensor to activate the correct operating strategy for the conditioning system.

Sensor specifications:

Function	Unit	Min.	Rated	Max.
Operating temperature	°C (°F)	-40 (-40)	23 (73.4)	+85 (+185)
Operating power supply	V_{DC}	8	12	16
Operating current	mA			100

Powertrain Control Module (PCM)

Component Index

The A/C compressor clutch is controlled by the PCM. The PCM can enable or disable the compressor clutch based upon inputs from the HVAC module, internal data to the PCM or the A/C pressure transducer.

The PCM is mounted to a bracket on the rear side of the radiator upper support, just forward of the coolant reservoir.

Inputs

- A/C pressure transducer signal
- Compressor request

Outputs

- A/C pressure transducer 5 volt supply
- A/C pressure transducer ground
- A/C clutch control

Refer To List:

List 1

- 08 - Electrical / 8E - Electronic Control Modules / CONTROLS, Rear Cabin Comfort (RCCC) / Removal and Installation
- 08 - Electrical / 8E - Electronic Control Modules / MODULE, Integrated Center Stack (ICSM) / Removal and Installation

List 2

- 28 - DTC-Based Diagnostics / MODULE, Powertrain Control (PCM), 2.0L / Diagnosis and Testing

1 - Fastener
2 - Ambient Temperature Sensor
3 - Wire Harness Connector

2. Disengage the fastener securing the ambient temperature sensor to the vehicle.
3. Disconnect the wire harness connector and remove ambient temperature sensor from vehicle.

INSTALLATION

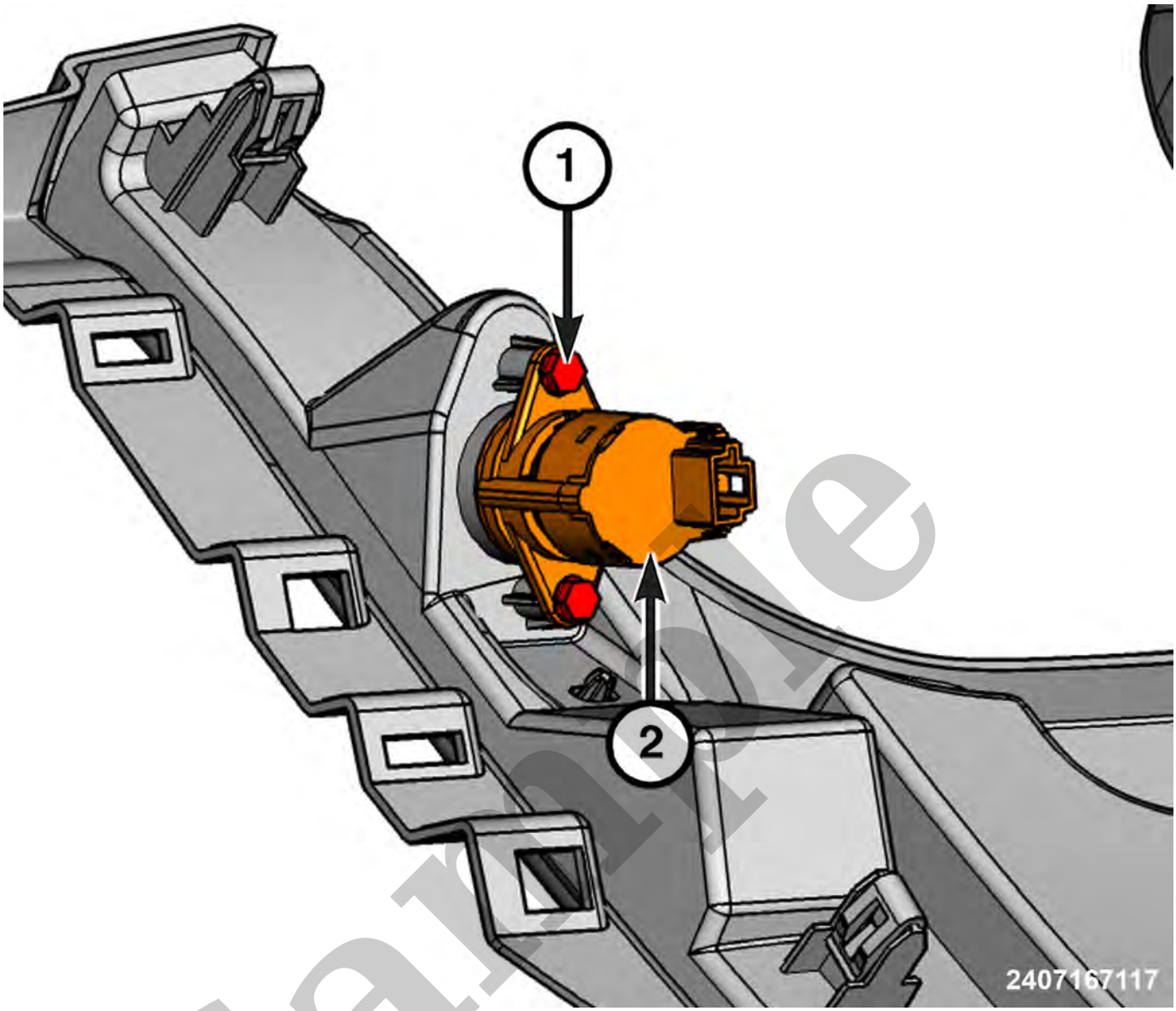
Follow the removal procedure in reverse for general reassembly of the components on the vehicle.

YOUR CURRENT VEHICLE

Humidity Rain Light Sensor Module

HUMIDITY RAIN LIGHT SENSOR MODULE

The humidity sensor is incorporated in the Humidity Rain Light Sensor Module (HRLSM) for this vehicle. For removal and installation procedures for the HRLSM, (Refer to 08 - Electrical/8R - Wipers/Washers/MODULE, Humidity Rain Light Sensor (HRLSM)/Removal and Installation).



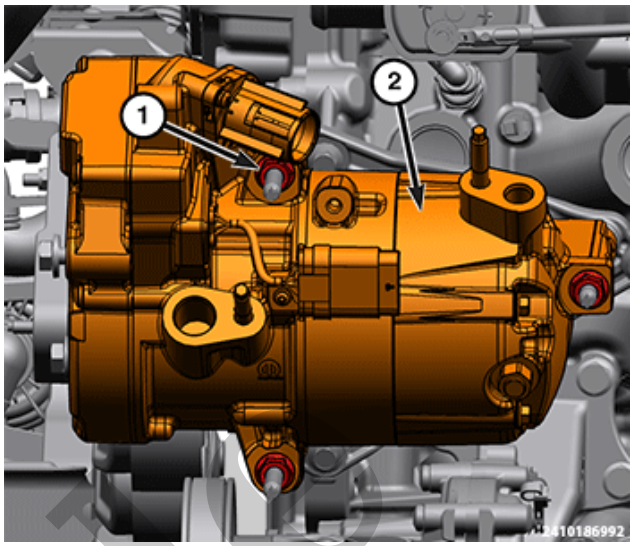
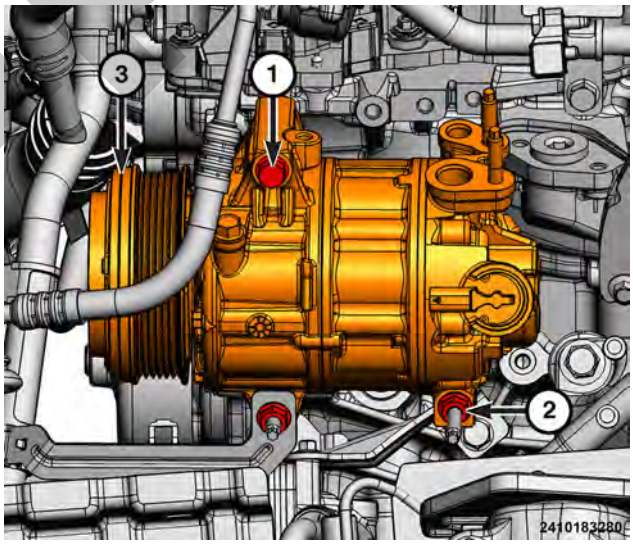
1 - Fasteners
2 - In-Car Temperature Sensor

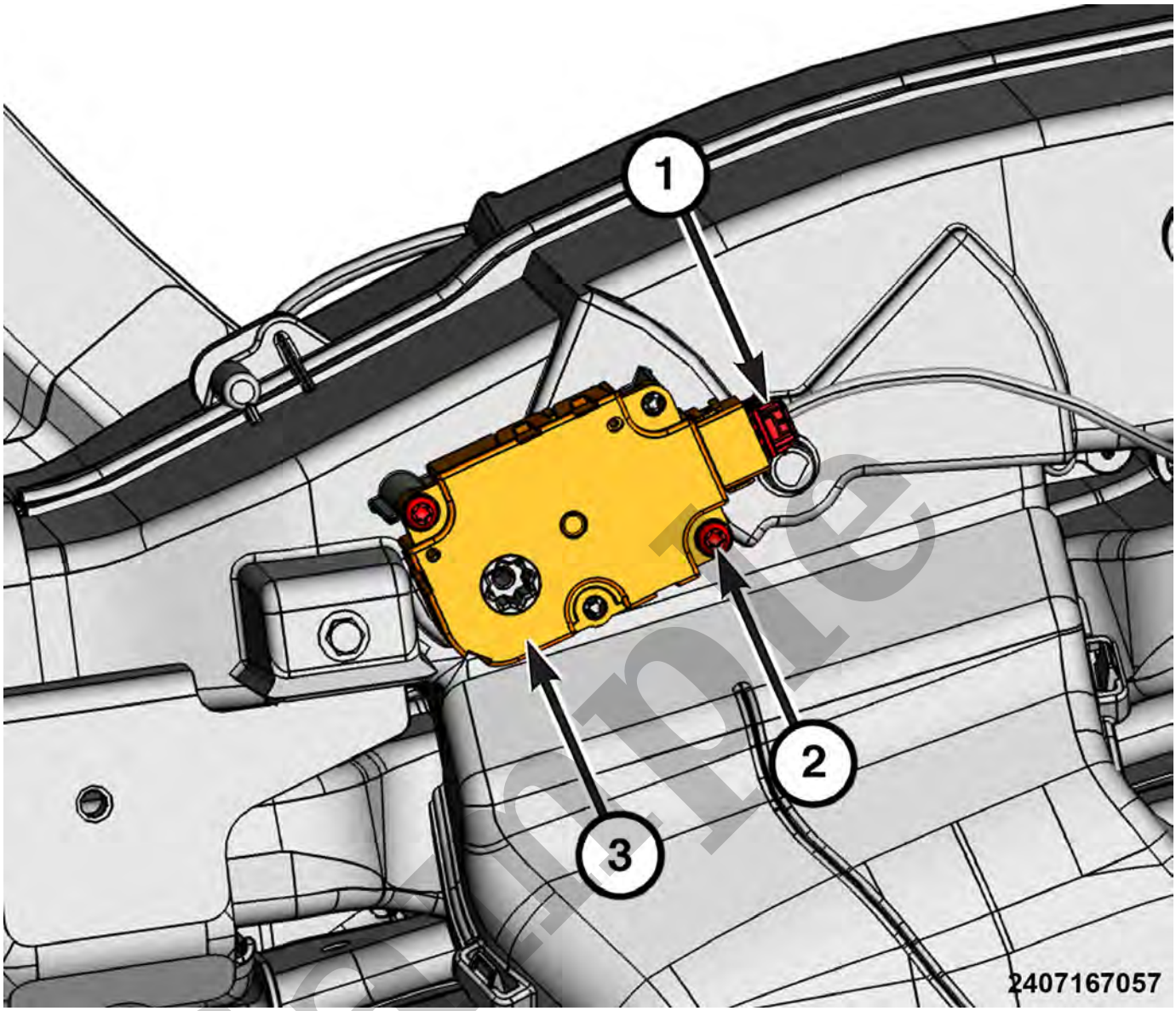
2. Remove the fasteners that secure the in-car temperature sensor to the steering column opening cover.

INSTALLATION

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Tighten the fasteners securely.

DESCRIPTION	SPECIFICATION	COMMENT
	3. **Tighten middle nut to 28 N·m (21 ft. Lbs.)** 4. **Tighten lower nut to 28 N·m (21 ft. Lbs.)**	
A/C Compressor to Engine Bolt and Nuts - 3.6L Engine	**Torque Procedure** 1. **Install the nuts and hand tighten** 2. **Install bolt and hand tighten.** 3. **Tighten rearward nut to 28 N·m (21 ft. Lbs.)** 4. **Tighten upper bolt to 28 N·m (21 ft. Lbs.)** 5. **Tighten forward nut to 28 N·m (21 ft. Lbs.)**	Tightening Sequence 
A/C Compressor to Engine Bolt and Nuts - 5.7L Engine	**Torque Procedure** 1. **Install the nuts and hand tighten** 2. **Install bolt and hand tighten.** 3. **Tighten upper nut to 28 N·m (21 ft.**	Tightening Sequence



1 - Wire Harness Connector
2 - Fasteners
3 - Second Row B-Pillar Mode Door Actuator

3. Disconnect the wire harness connector from the second row B-pillar mode door actuator.
4. Remove the fasteners securing the second row B-pillar mode door actuator to the floor console duct.

INSTALLATION

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

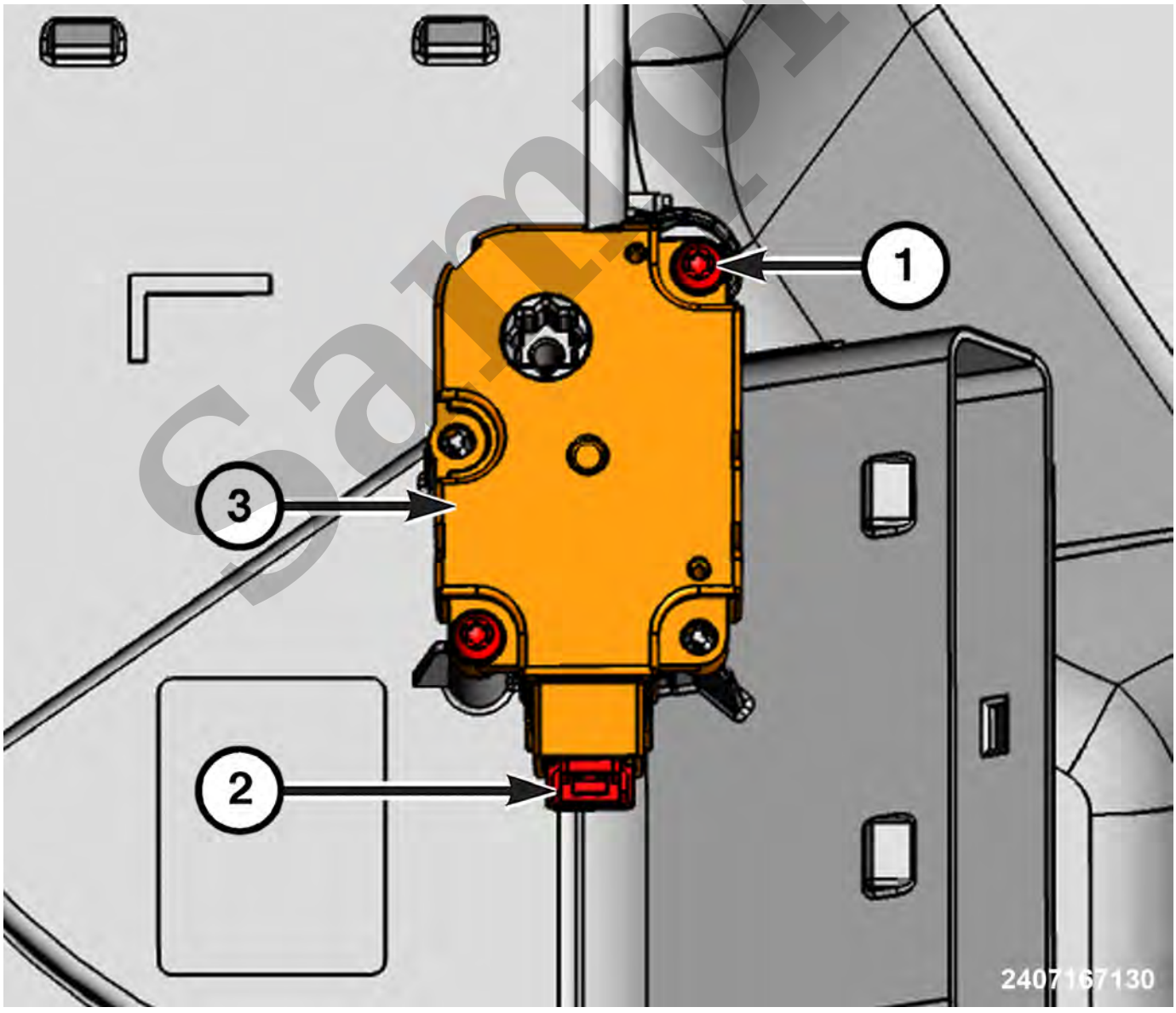
- If necessary, rotate the actuator slightly to align the splines on the actuator output shaft with those in the mode air door linkage.

Third Row Left Mode Door Actuator

THIRD ROW LEFT MODE DOOR ACTUATOR

REMOVAL

1. Remove the left third row seat (Refer to Body/Seats, Third Row/SEAT/Removal and Installation)(Refer To List 1).

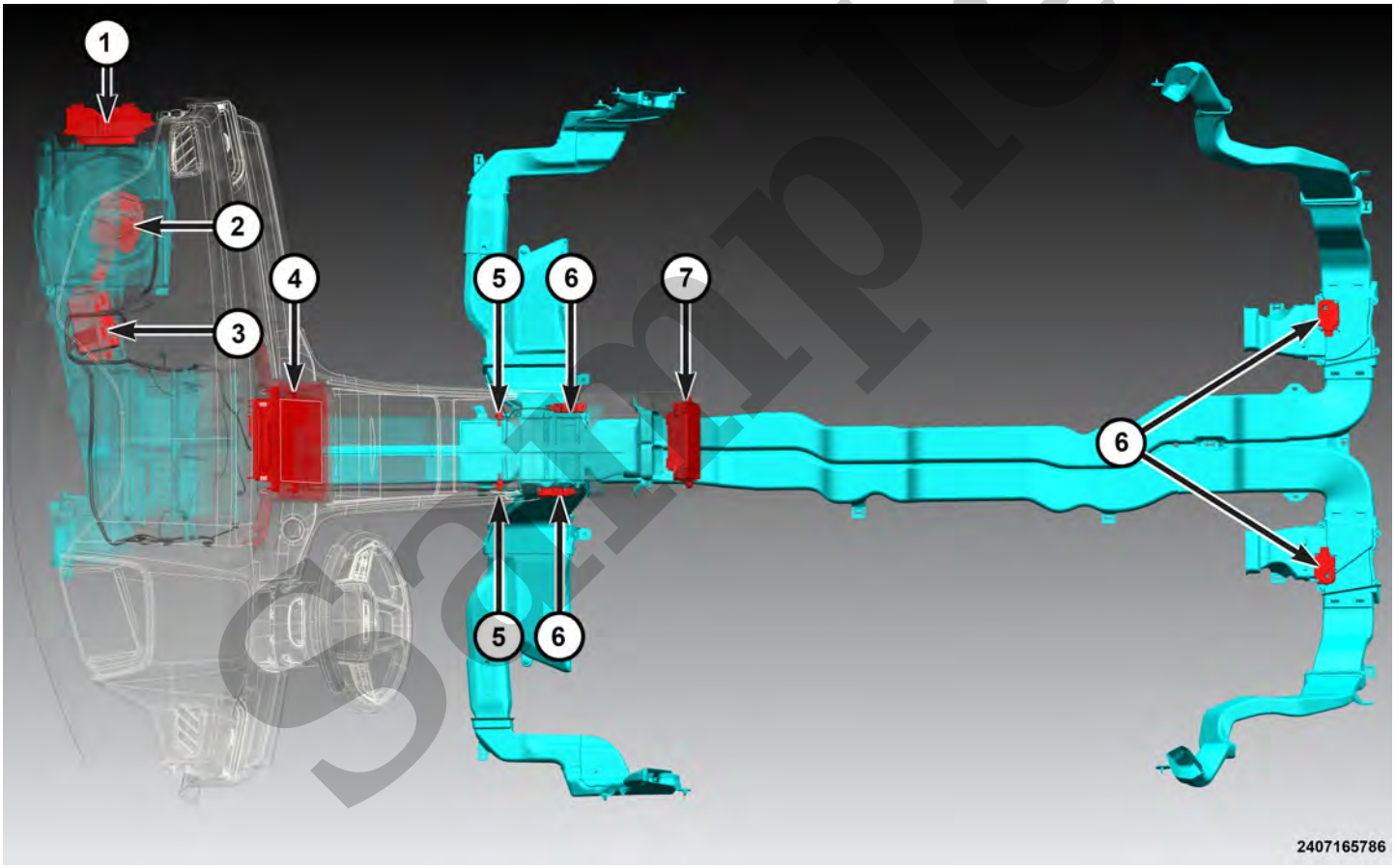


YOUR CURRENT VEHICLE

Rear HVAC Controls

REAR HVAC CONTROLS

DESCRIPTION



The rear Heating, Ventilation and Air Conditioning (HVAC) system controls consist of the following components:

Component Index

1.	Body Control Module (BCM)
2.	Blower Motor Power Module (Located on the bottom of and integral to the blower motor)

each of the four zones and each has stall detection capability. Refer to the Quad-Zone Actuator Working Parameters table for additional information on each of the actuators.

The door actuators are direct current motors controlled at 12 volts, but usually operate between 9 and 16 volts. The HVAC housing contains two front blend door actuators, four rear blend door actuators (right and left hot, right and left cold), one floor mode door actuator, one defrost mode door actuator, one vent panel/demister mode door actuator, and one recirculation door actuator. All actuators operate in the same fashion.

Actuator Specifications

Measurement	**Value**
Operating Voltage	9 to 16 V dc
Operating Temperature	-40°C to (-40°F) 85°C (185°F)
Steps per OPG Revolution	6400
Degrees per Step	0.05625°
Min. Pull in Torque (9.0 ≤ x < 9.7 V dc) Autospeed	≥ 20 N·cm (28.32 Oz. In.)
Max. Pull out Torque (-40 °C / -40°F)	≤ 110 N·cm (155.77 Oz. In.)
Potentiometer Resistance	4.7 kilohms

The actuators work in conjunction to control both the temperature of the air being distributed and the volume of the air flowing throughout the vehicle. The temperature is controlled directly using the temperature blend doors, however, the volume of air flow is achieved using the mode doors to close off the direction of the air flow, thus restricting the amount of air allowed to pass that particular door. This allows air flow from a single blower motor to be used for the entire vehicle yet gives individual control of the air volume to each front seat occupant and a rear seat occupant.

The potentiometer operates in a linear fashion. The potentiometer receives a 12 volt power supply at terminal 4 and receives a ground at terminal 1. The LIN input to each actuator is at terminal 2 and exits to the next actuator at terminal 3 on all actuators except the last actuator in the system.

Quad-Zone Actuator Working Parameters

LIN COMMUNICATION ORDER	ACTUATOR DOOR	0% POSITION	100% POSITION	INCREASE STEP COUNT DIRECTION	PARK POSITION	DEFAULT MODE WHEN ENABLED