

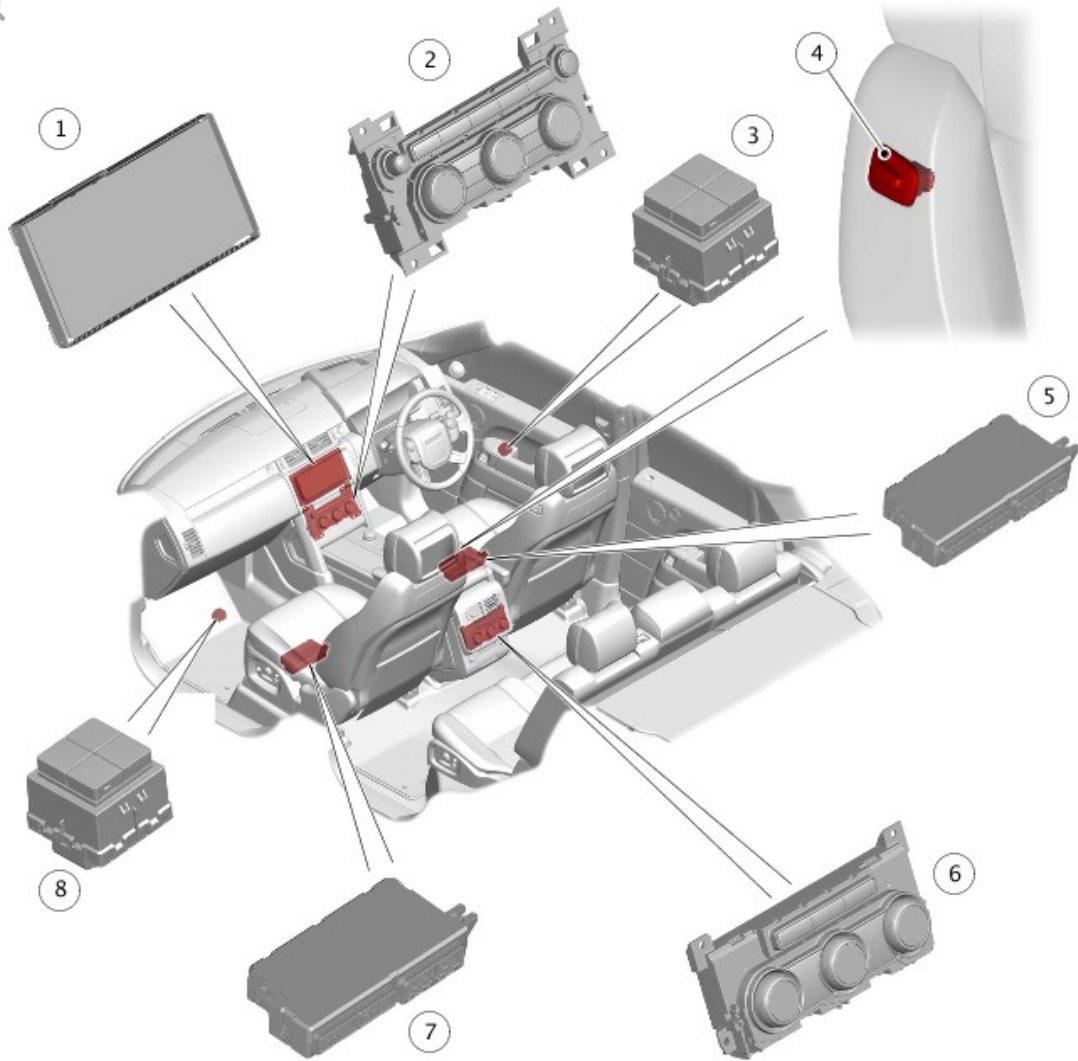
2016.0 RANGE ROVER (LG), 501-10

SEATING - STANDARD WHEEL BASE

DESCRIPTION AND OPERATION

COMPONENT LOCATION

COMPONENT LOCATION - 1 OF 15

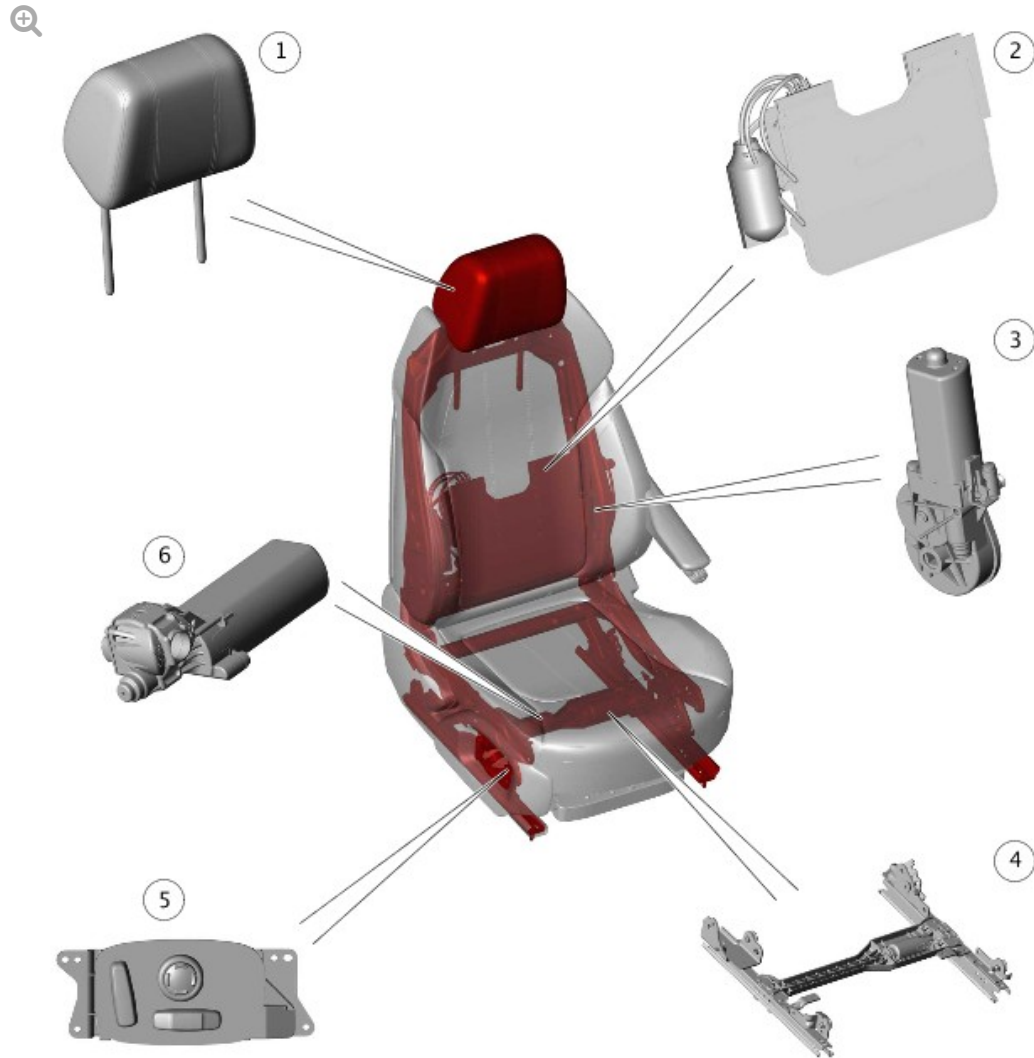


E190942

ITEM	DESCRIPTION
1	Touch Screen (TS)
2	Integrated Control Panel (ICP)
3	Seat memory switchpack - Driver
4	Seat away switch
5	Driver Seat Module (DSM)
6	Rear Integrated Control Panel (RICP)
7	Passenger Seat Module (PSM)
8	Seat memory switchpack - Passenger

NOTE:

Driver seat shown, passenger seat is similar.



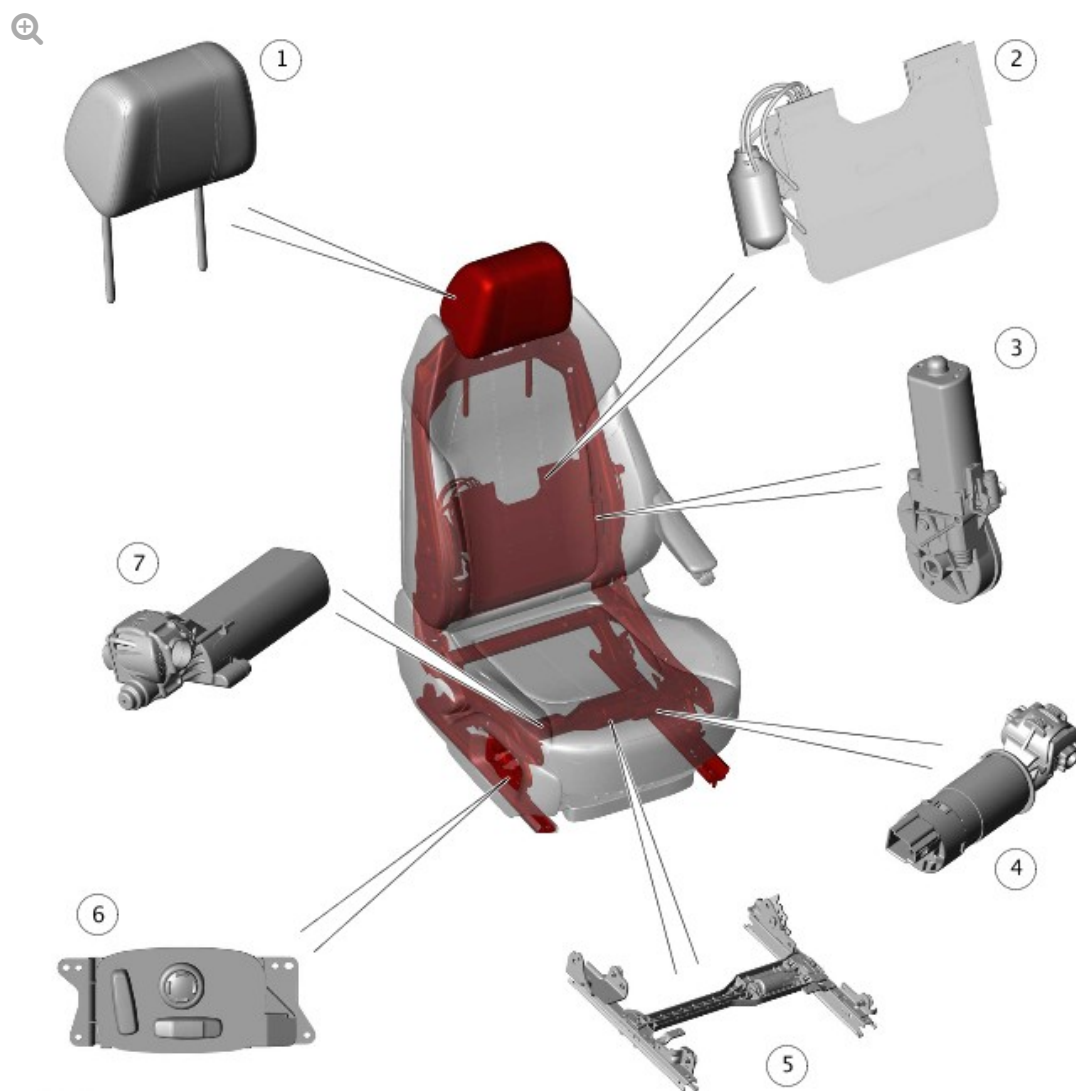
E190489

ITEM	DESCRIPTION
1	Head restraint
2	Seat lumbar assembly
3	Seat backrest recline motor
4	Seat forward/rearward motor
5	Seat switchpack
6	Seat height motor

COMPONENT LOCATION - 3 OF 15 - 10-WAY SEAT

NOTE:

Driver seat shown, passenger seat is similar.



E190488

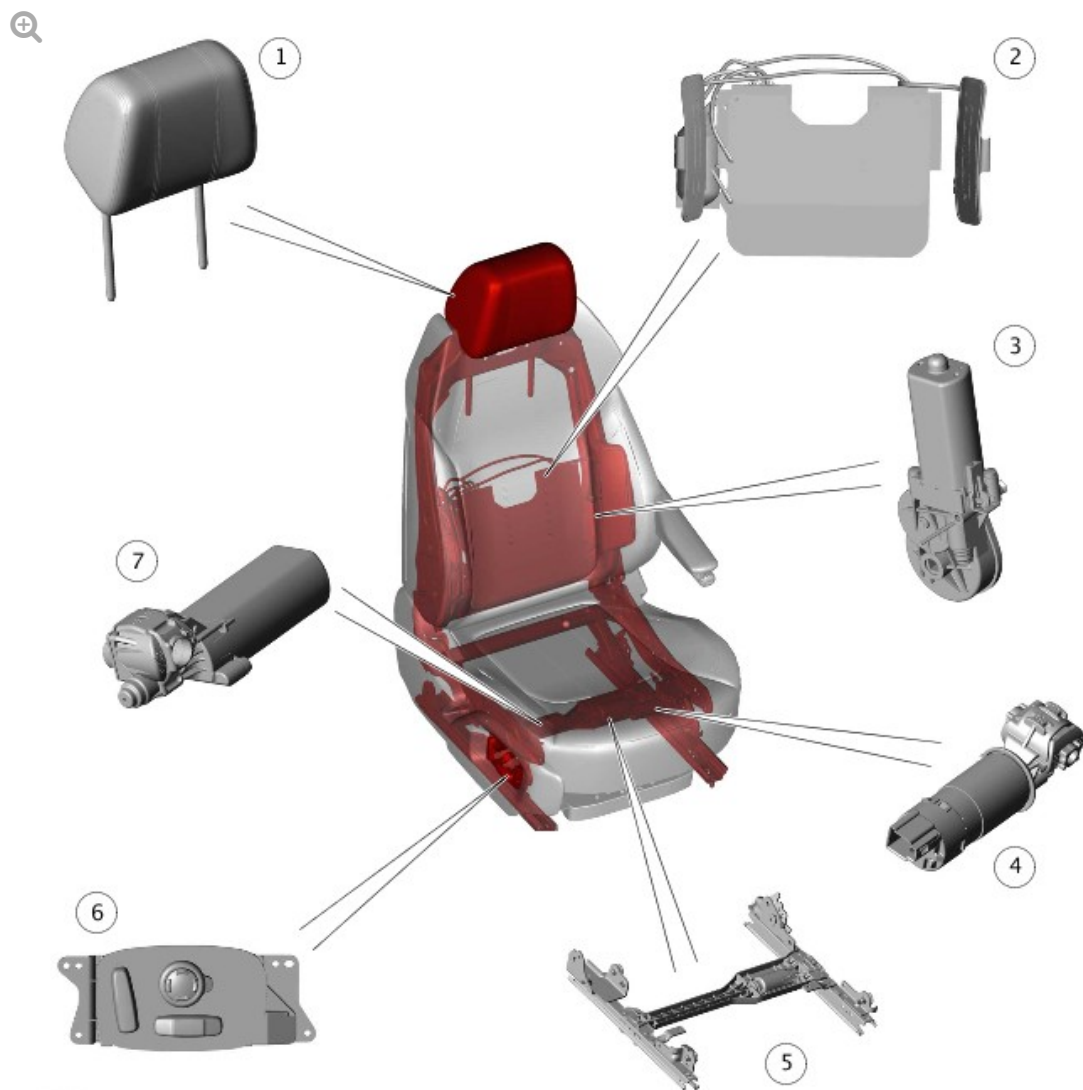
ITEM	DESCRIPTION
1	Head restraint
2	Seat lumbar assembly
3	Seat backrest recline motor
4	Seat cushion tilt motor

5	Seat forward/rearward motor
6	Seat switchpack
7	Seat height motor

COMPONENT LOCATION - 4 OF 15 - 14-WAY SEAT

NOTE:

Driver seat shown, passenger seat is similar.



E190397

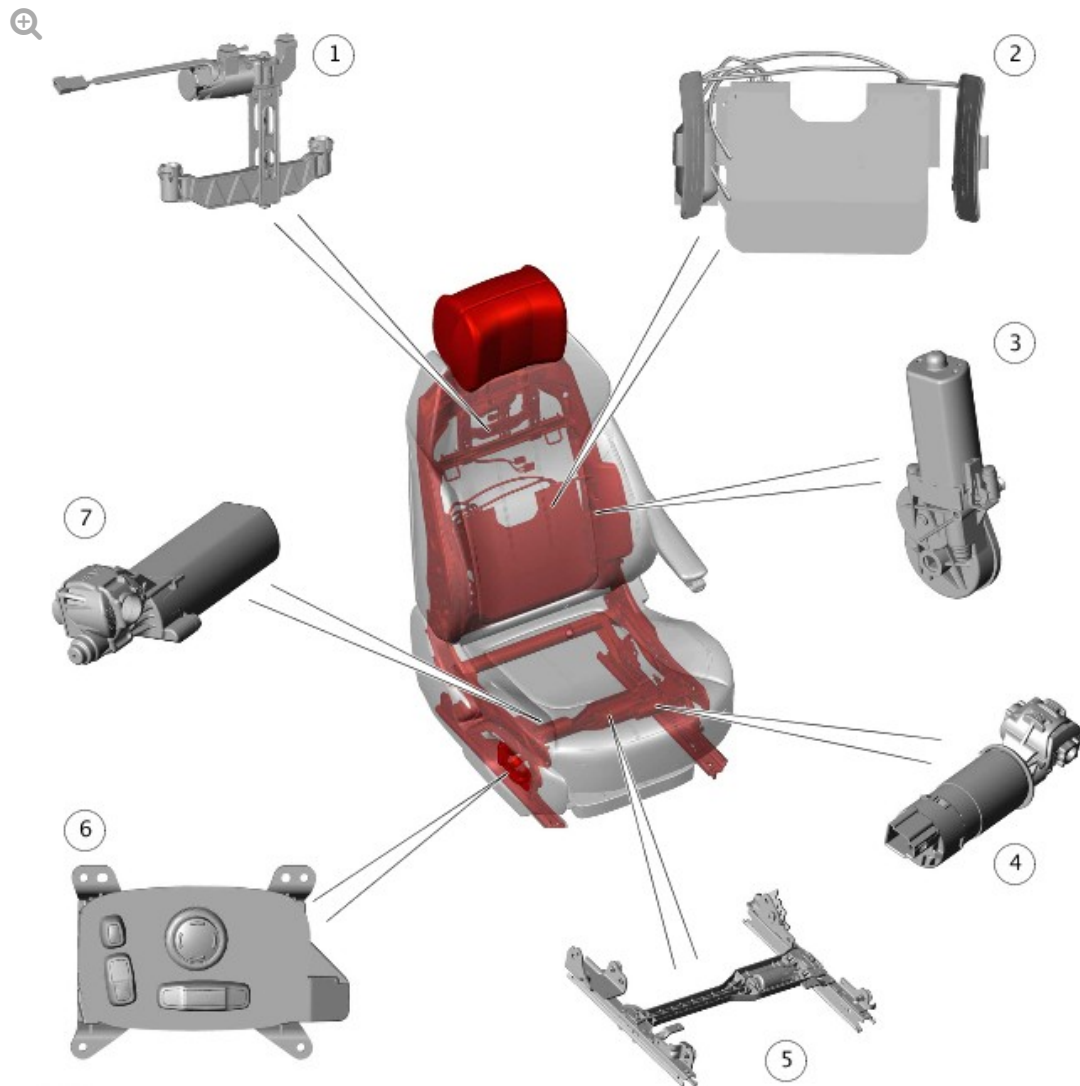
ITEM	DESCRIPTION
1	Head restraint

2	Seat lumbar assembly
3	Seat backrest recline motor
4	Seat cushion tilt motor
5	Seat forward/rearward motor
6	Seat switchpack
7	Seat height motor

COMPONENT LOCATION - 5 OF 15 - 16-WAY SEAT

NOTE:

Driver seat shown, passenger seat is similar.



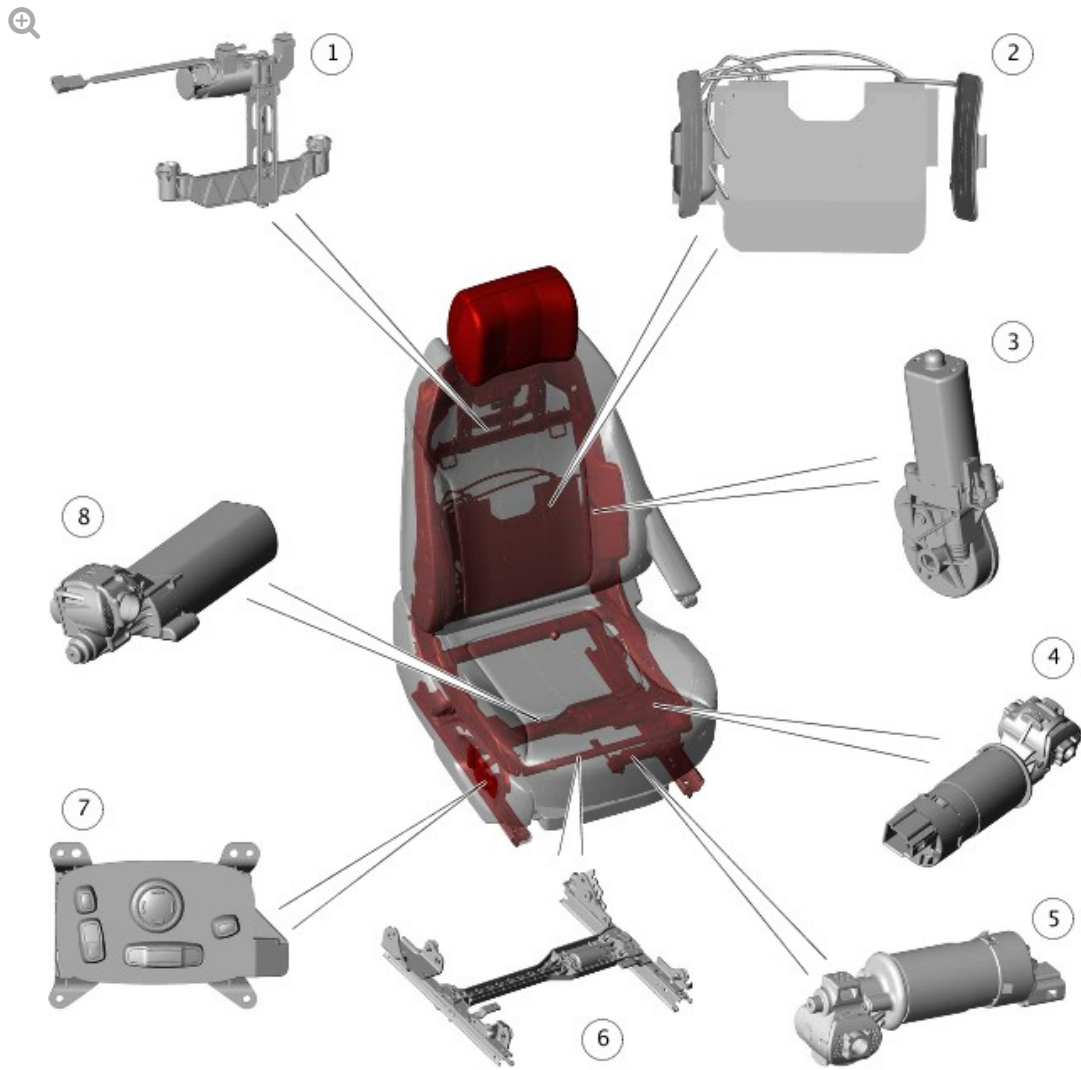
E190398

ITEM	DESCRIPTION
1	Head restraint motor
2	Seat lumbar assembly
3	Seat backrest recline motor
4	Seat cushion tilt motor
5	Seat forward/rearward motor
6	Seat switchpack
7	Seat height motor

COMPONENT LOCATION - 6 OF 15 - 18-WAY SEAT

NOTE:

Driver seat shown, passenger seat is similar.

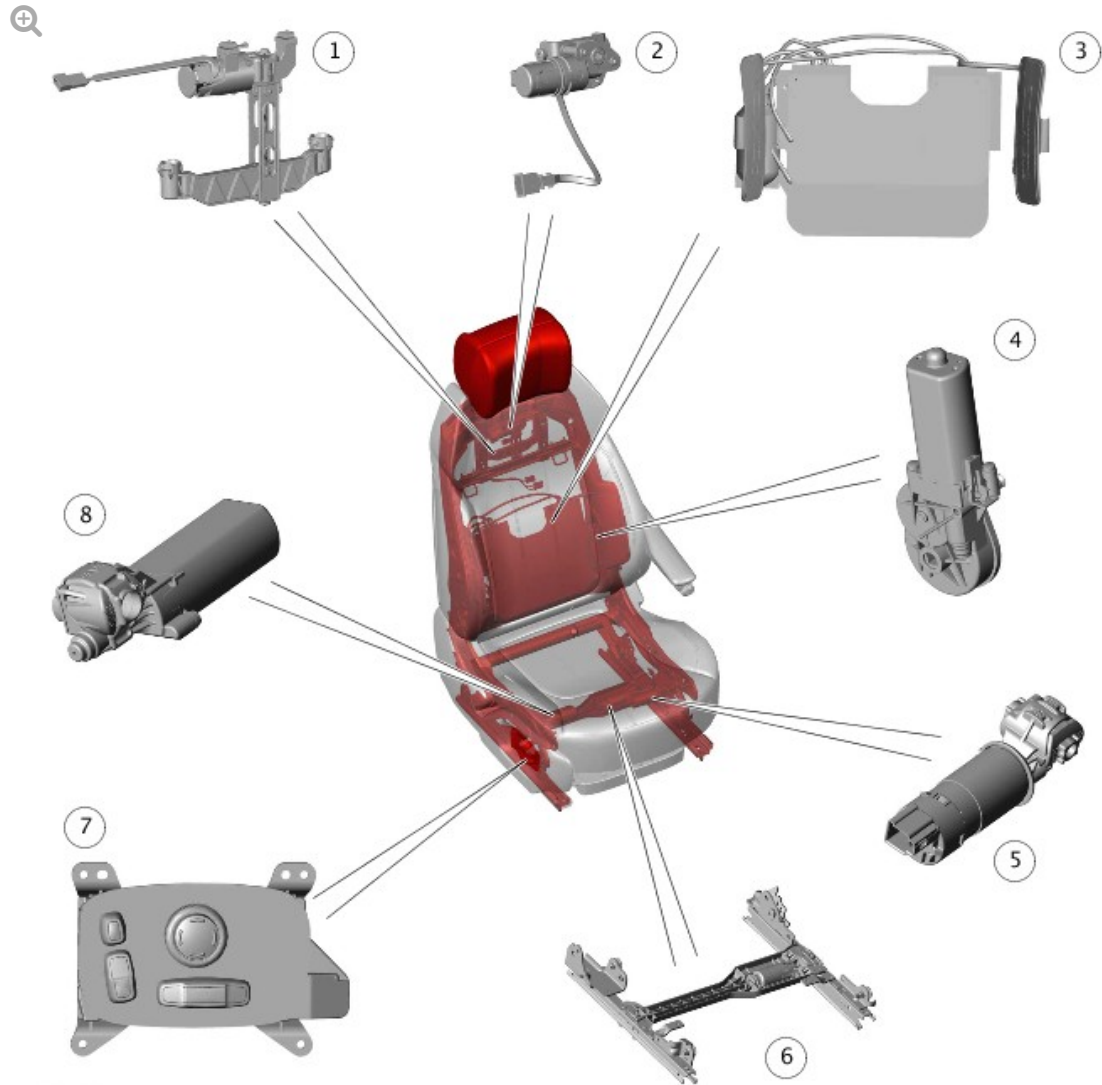


E190399

ITEM	DESCRIPTION
1	Head restraint motor
2	Seat lumbar assembly
3	Seat backrest recline motor
4	Seat cushion tilt motor
5	Seat cushion extension motor
6	Seat forward/rearward motor
7	Seat switchpack
8	Seat height motor

NOTE:

Driver seat shown, passenger seat is similar.



E190400

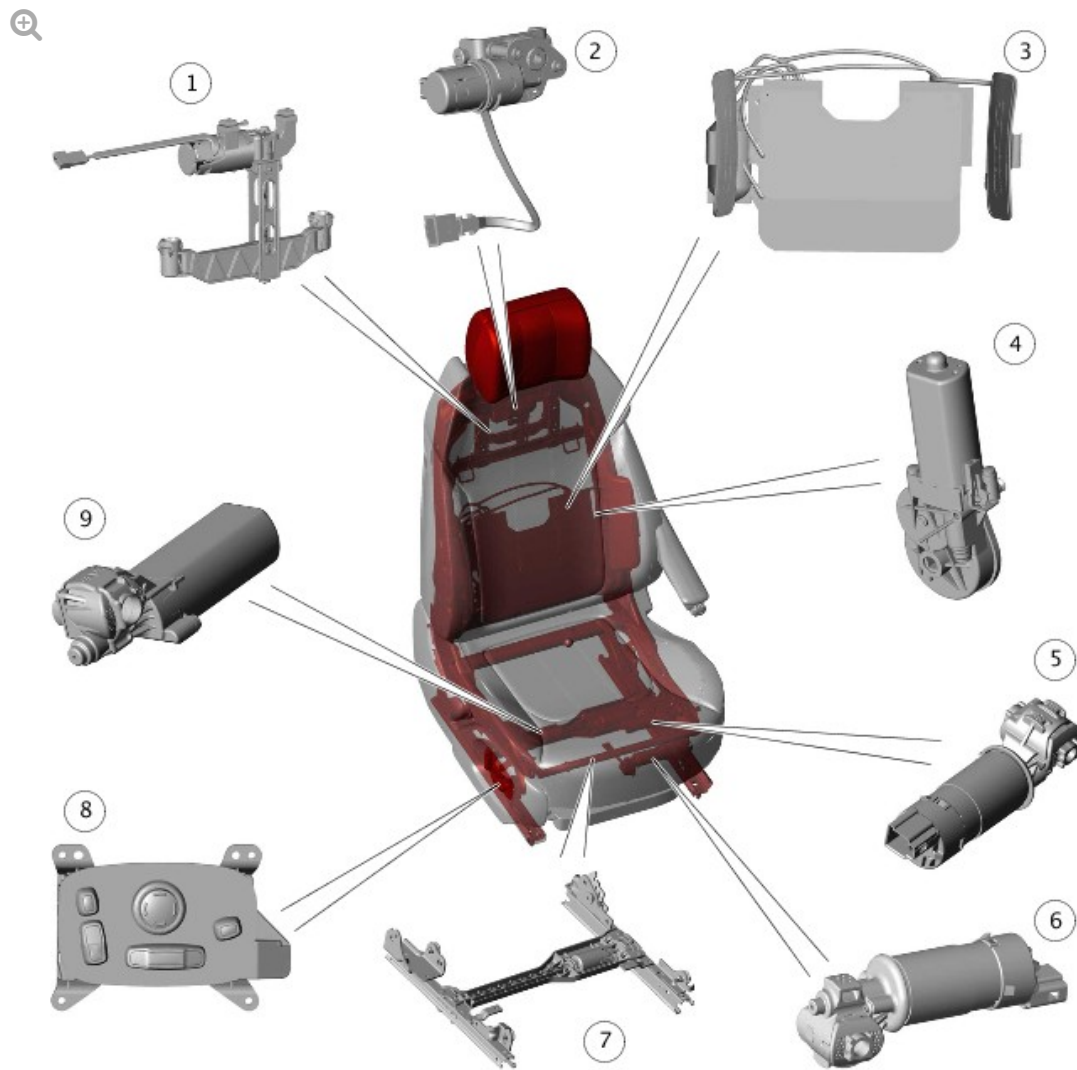
ITEM	DESCRIPTION
1	Head restraint motor
2	Upper backrest adjustment motor
3	Seat lumbar assembly
4	Seat backrest recline motor
5	Seat cushion tilt motor
6	Seat forward/rearward motor

7	Seat switchpack
8	Seat height motor

COMPONENT LOCATION - 8 OF 15 - 20-WAY SEAT

NOTE:

Driver seat shown, passenger seat is similar.



E190401

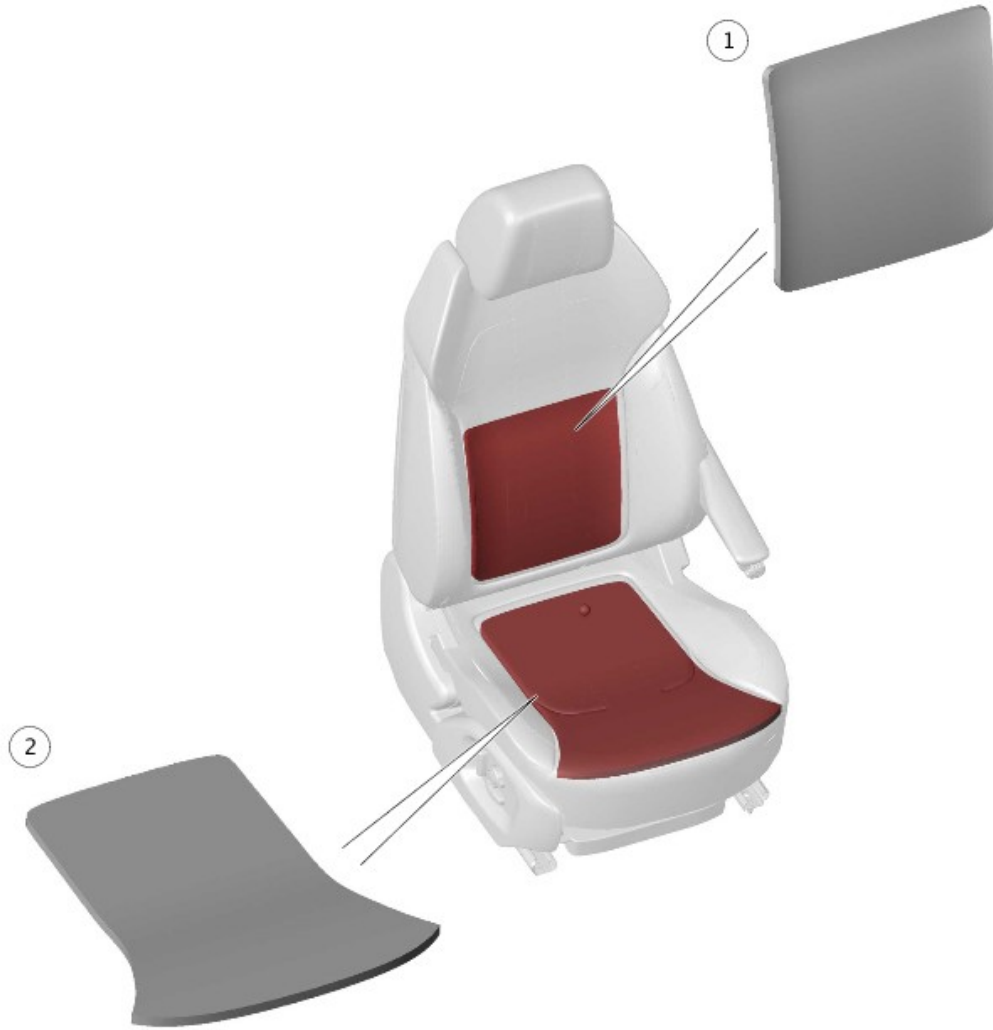
ITEM	DESCRIPTION
1	Head restraint motor
2	Upper backrest adjustment motor

3	Seat lumbar assembly
4	Seat backrest recline motor
5	Seat cushion tilt motor
6	Seat cushion extension motor
7	Seat forward/rearward motor
8	Seat switchpack
9	Seat height motor

COMPONENT LOCATION - 9 OF 15 - HEATED SEAT

NOTE:

Driver seat shown, passenger seat is similar.



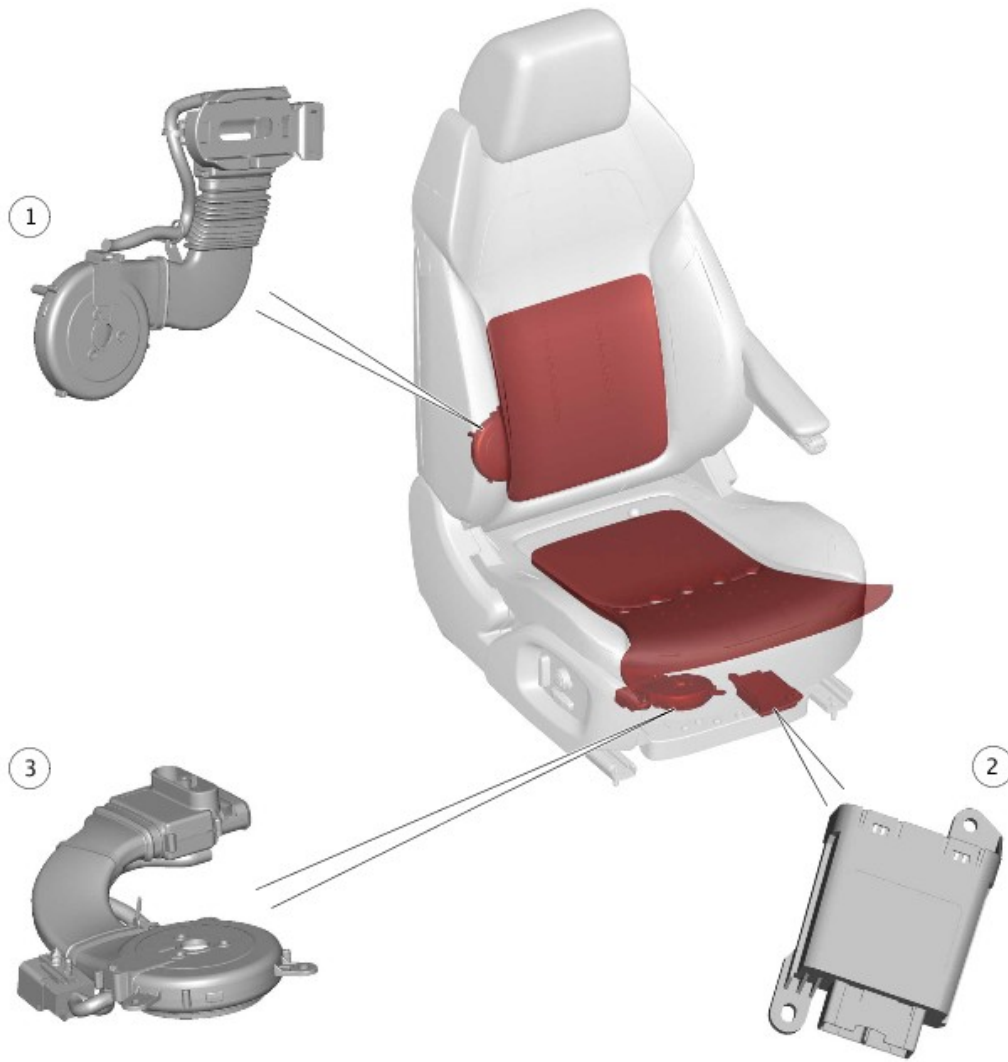
E190404

ITEM	DESCRIPTION
1	Heated seat backrest element
2	Heated seat cushion element

COMPONENT LOCATION - 10 OF 15 - CLIMATE SEAT

NOTE:

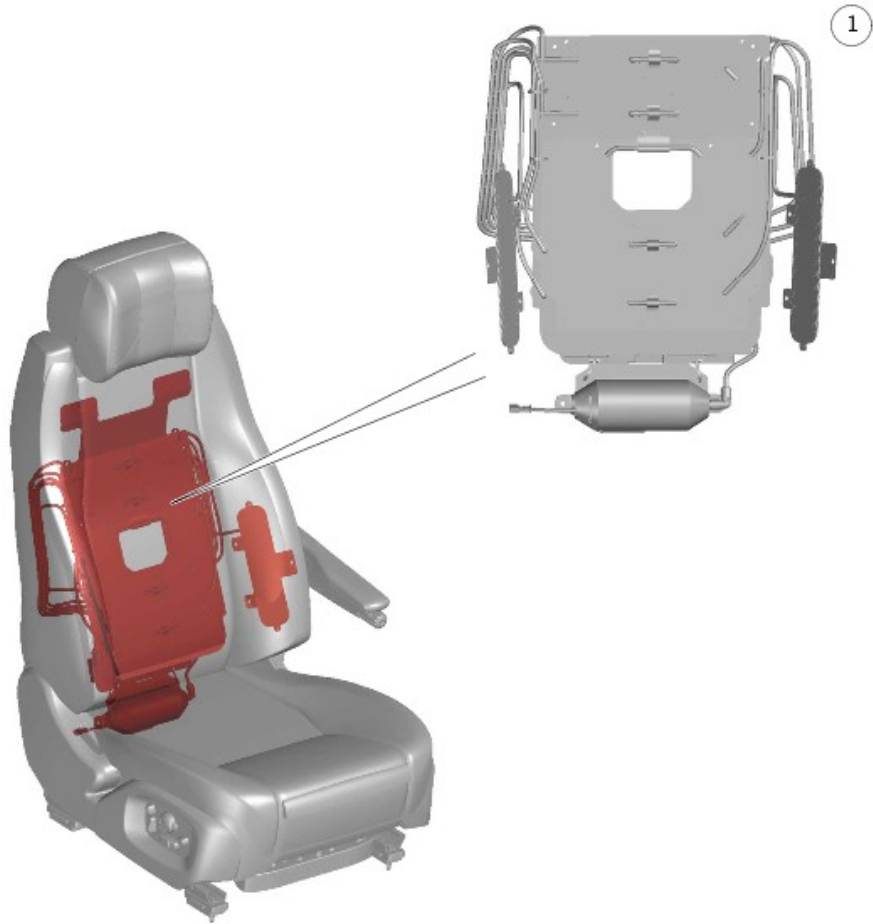
Driver seat shown, passenger seat is similar.



E190405

ITEM	DESCRIPTION
1	Seat backrest climate assembly
2	Seat Climate Control Module (SCCM)
3	Seat cushion climate assembly

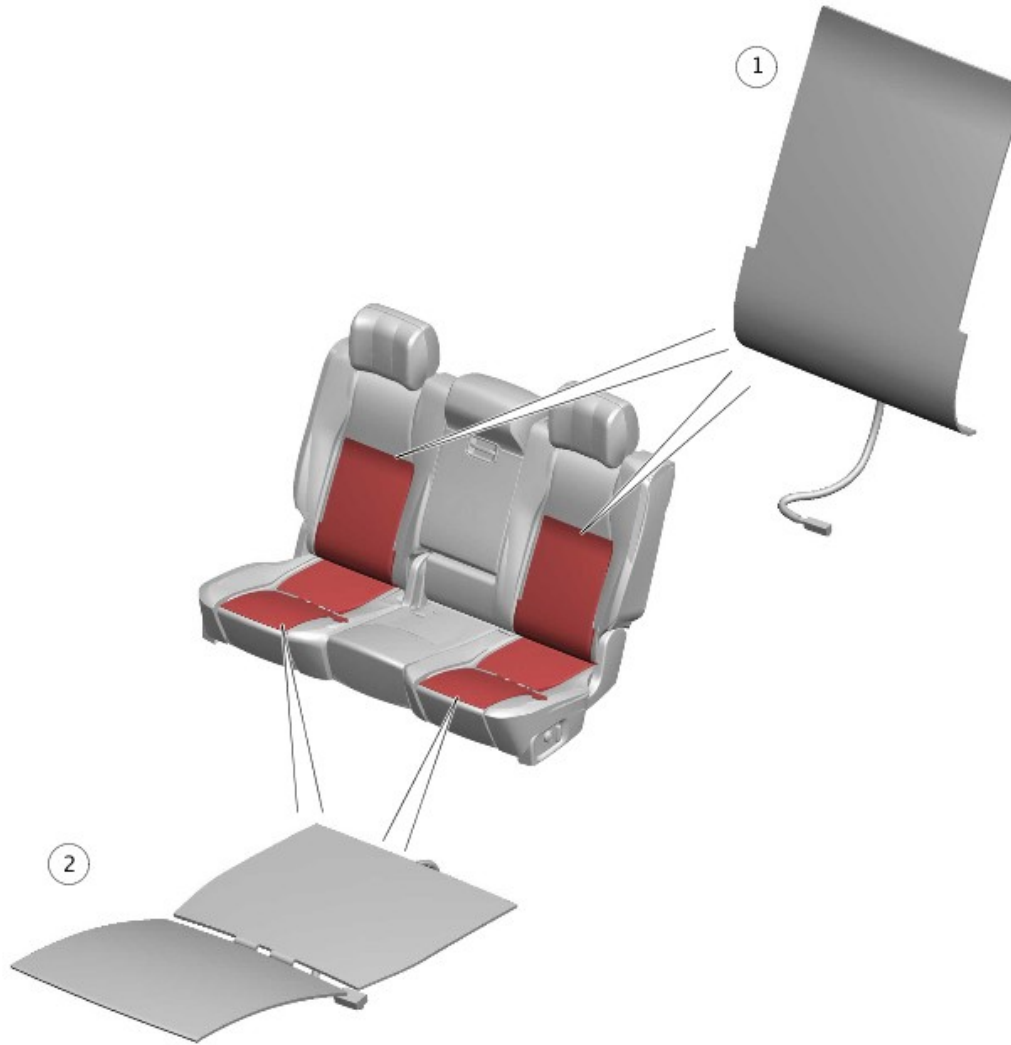
COMPONENT LOCATION - 11 OF 15 - LUMBAR MASSAGE ASSEMBLY



E190947

ITEM	DESCRIPTION
1	Lumbar massage assembly

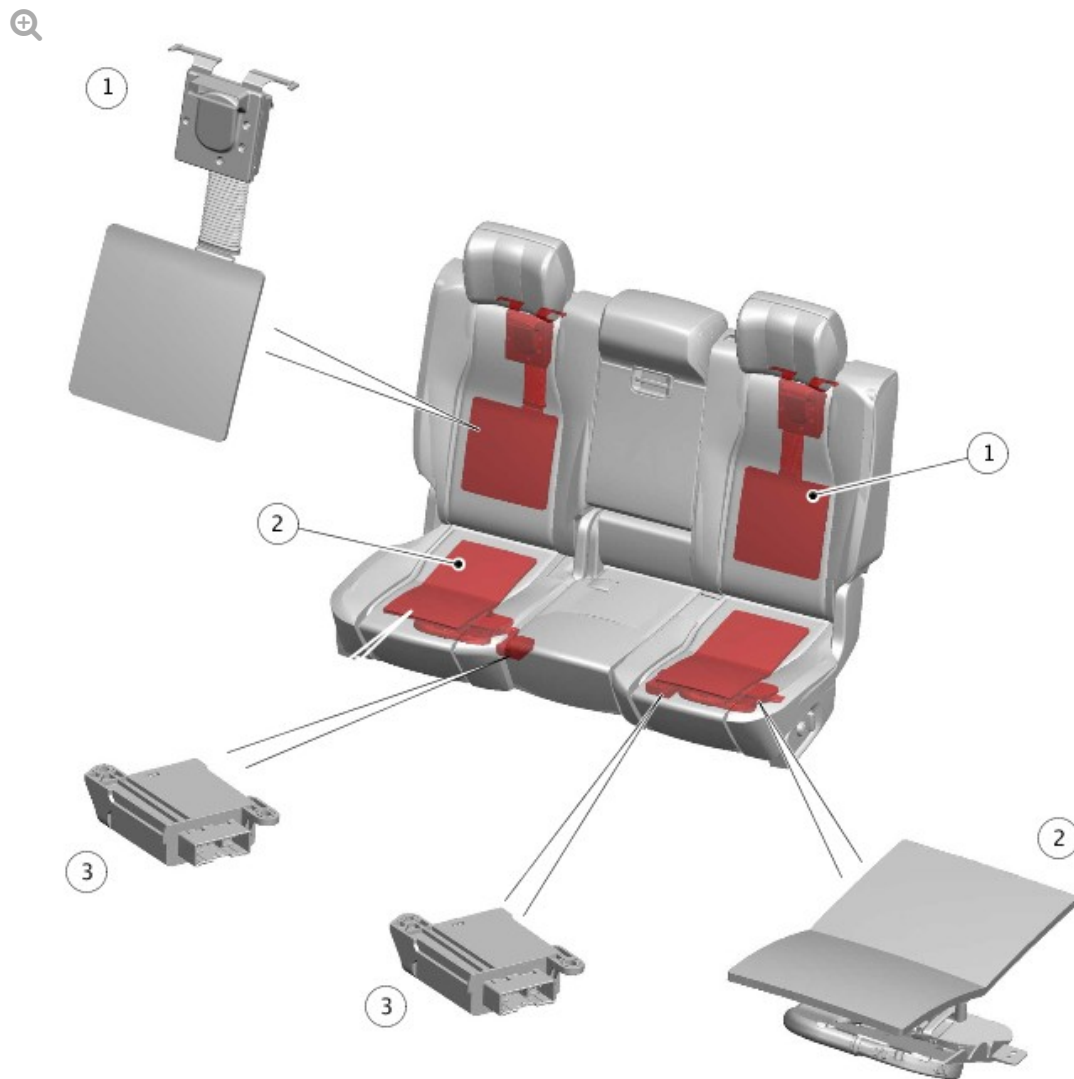
COMPONENT LOCATION - 12 OF 15 - HEATED SEAT - REAR



E190943

ITEM	DESCRIPTION
1	Heated seat backrest element (2 off)
2	Heated seat cushion element (2 off)

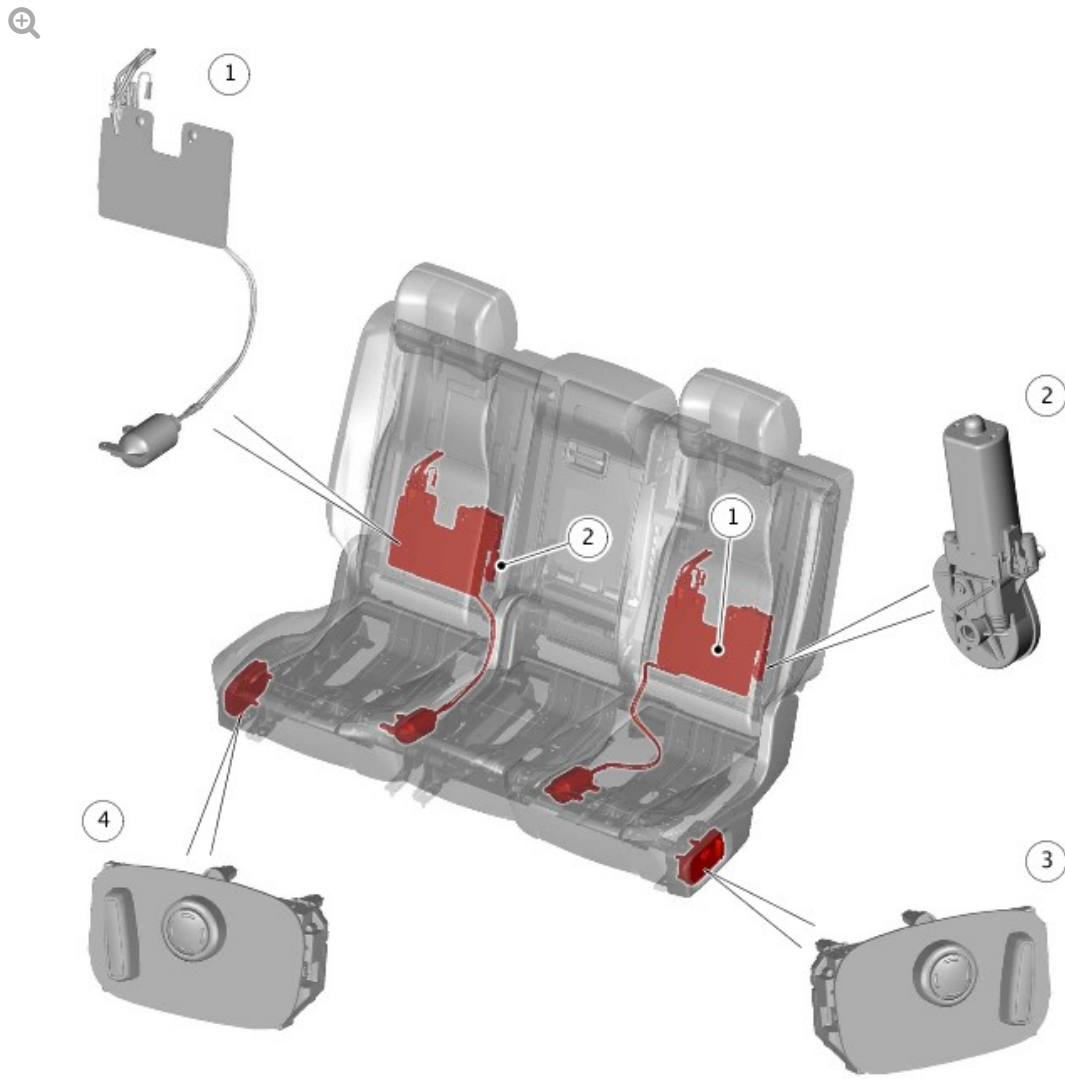
COMPONENT LOCATION - 13 OF 15 - REAR CLIMATE SEAT



E190944

ITEM	DESCRIPTION
1	Seat backrest climate assembly (2 off)
2	Seat cushion climate assembly (2 off)
3	Rear Seat Climate Control Module (RSCCM) (2 off)

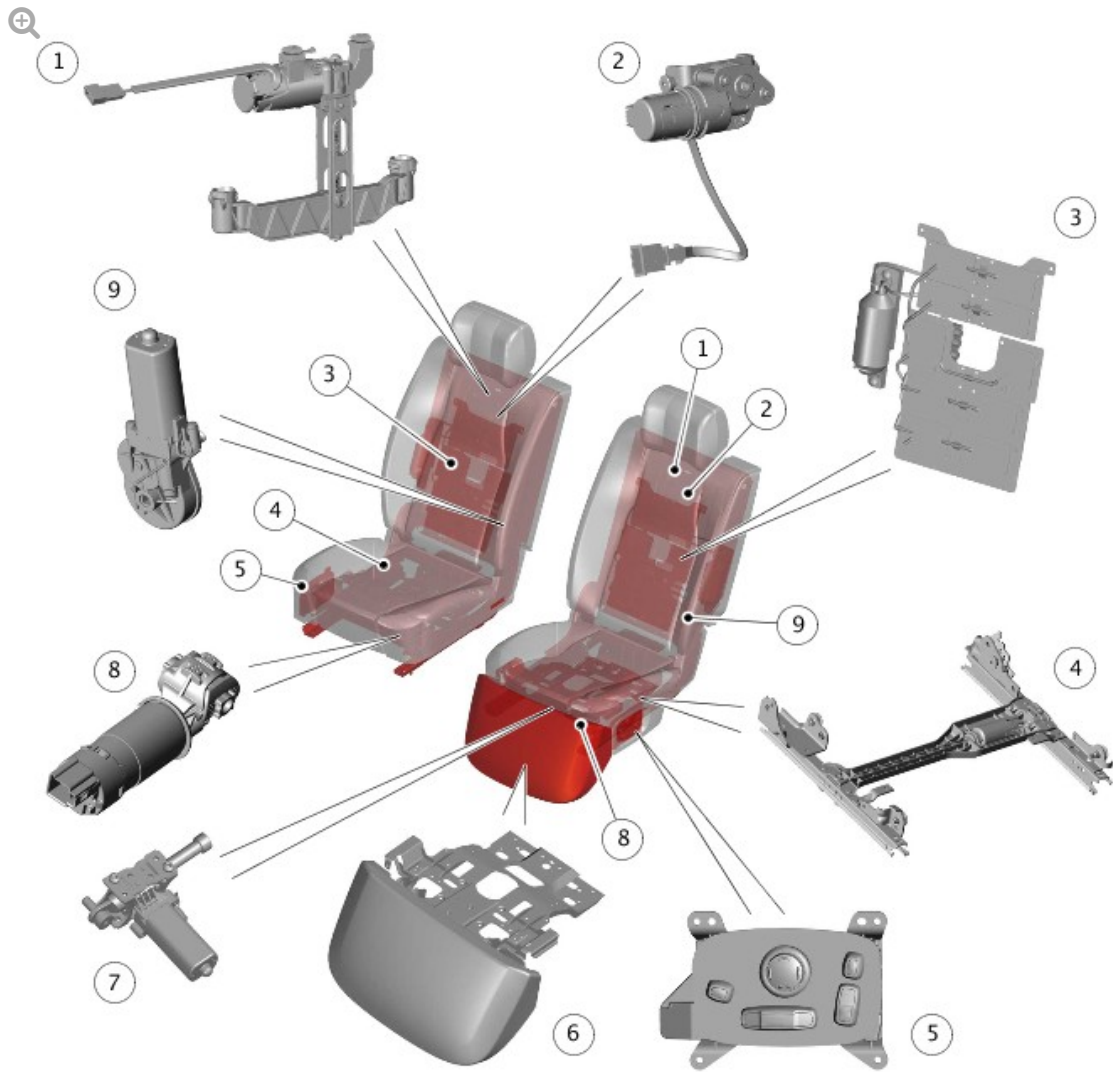
COMPONENT LOCATION - 14 OF 15 - REAR 60/40 SEAT ADJUSTMENT



E190945

ITEM	DESCRIPTION
1	Seat lumbar assembly (2 off)
2	Seat backrest recline motor (2 off)
3	Seat switchpack - Rear left
4	Seat switchpack - Rear right

COMPONENT LOCATION - 15 OF 15 - REAR BUSINESS SEAT ADJUSTMENT



E190946

ITEM	DESCRIPTION
1	Head restraint motor (2 off)
2	Upper backrest adjustment motor (2 off)
3	Lumbar massage assembly (2 off)
4	Seat forward/rearward motor (2 off)
5	Seat switchpack (2 off)
6	Calf rest
7	Calf rest actuator
8	Seat cushion tilt motor (2 off)
9	Seat backrest recline motor (2 off)

OVERVIEW

LEATHER SEAT COVERS

Leather is a natural product, therefore it bears natural characteristics, such as grain variations, growth and bush marks. These non-weakening marks show the true nature of the hide and are the hallmarks of leather. In order to maintain the beauty of the vehicles natural leather upholstery it requires regular cleaning, which if neglected, may cause deterioration. Where dust and dirt are allowed to accumulate and become ingrained in the surface of the leather, the upholstery may become permanently damaged.

Light colored upholstery can be particularly susceptible to soiling and staining. Care should be taken to make sure that where there is evidence of any soiling or staining on the upholstery. This should be cleaned immediately using the Land Rover approved products. Failure to do this could lead to the stain becoming permanent, this applies to all leather upholstery and is not color specific.

Leather trimmed seats will naturally exhibit areas of creasing and wrinkling over a period of time and is a normal characteristic as the leather ages.

Particular care should be taken where there is evidence of soiling or staining on the leather, this should be cleaned immediately. Failure to do this could lead to the stain becoming permanent.

Particular care should be taken to prevent damage from studs, zips and buckles.

NOTES:

- Please refer to leather care label attached to seats for more information.
- Creasing and wrinkling does not represent a manufacturing defect.
- Damage from studs, zips and buckles do not represent manufacturing defects.
- Use only Land Rover approved products in accordance with the instructions for use.

FRONT SEATS

Various options are available for the front seats with regard to temperature control and electrical adjustment. Seats are heated or heated and cooled (climate), with the following adjustment options:

- 8-way adjustment on the driver and passenger seats.
- 12-way adjustment on the driver and passenger seats.
- 18-way adjustment on the driver and passenger seats.
- 20-way adjustment on the driver and passenger seats.

8-way adjustments consist of seat slide, seat height, backrest recline and 2-way lumbar adjustment. 12-way adjustment adds cushion tilt and 4-way lumbar. 18-way adjustment adds cushion extension, front power head restraints and adjustable 2-way backrest seat bolsters. 20-way adjustment adds seat massage. The controls for seat adjustment are installed in the outboard side shield of the related seat cushion.

The driver seat on all variants has a 3-channel memory for easy recall of stored position settings for the seat, steering column and door mirrors. Passenger seats with 18-way / 20-way adjustment also have a 3-channel memory. The controls for memory operation are in the related front door trim panel. Lumbar and backrest seat bolster settings are not included in the

memory function.

Operation of the temperature settings for heated and climate seats is controlled from the Integrated Control Panel (ICP).

A storage pocket is installed on the rear of each front seat backrest.

REAR SEATS

The following options are available for the two outer rear seats:

- Heated seats
- Climate seats
- Recline function
- Front passenger seat away function
- Massage seats - business seats only
- Calf rest - business and autobiography seats only
- Manual or powerfold.

Operation of the temperature settings for heated and climate seats is controlled from the Rear Integrated Control Panel (RICP) and/or the Integrated Control Panel (ICP).

ISOFIX fastening points are attached to the seat frame to provide secure fastening for compatible child seats in the rear seats.

Depending on the vehicle specification, two variants of the rear seats are available:

- a 60/40 split rear seat which allows for three occupants
- a business class rear seat for two occupants with an extended rear floor console between the seats. The rear business class seats have a memory function, with a memory switchpack located in each door trim panel.

Some models have a seat away switch located on the inside of the passenger seat backrest. The switch allows the driver or rear seat passenger

to move the passenger seat forward to allow additional legroom for the rear occupant. On vehicles with business rear seats, an additional seat away switch is located in the rear floor console.

The rear business seats have a 3-channel memory for easy recall of stored position settings for the seat. The controls for memory operation are in the related rear door trim panel. Lumbar and backrest seat bolster settings are not included in the memory function.

The business and autobiography rear passenger seats have a calf rest fitted. On the standard wheelbase vehicles this is only fitted on one side of the rear passenger seats. For example, if the vehicle is Right Hand Drive (RHD) the calf rest will be located on the left side of the rear passenger seat. On the long wheelbase vehicle the rear calf rest is fitted to both outer rear passenger seats.

DESCRIPTION

FRONT SEATS

The vehicle is equipped with standard or sport seats and may also incorporate seat climate or seat heating (option or market dependent).

Front seats are available power adjustable with up to 20-way adjustability.

SEAT MODULES



E189100

The seat modules are equipped only where seat memory is specified. On memory electric seats the seat switchpack is operated on Local Interconnect Network (LIN) bus with the seat modules.

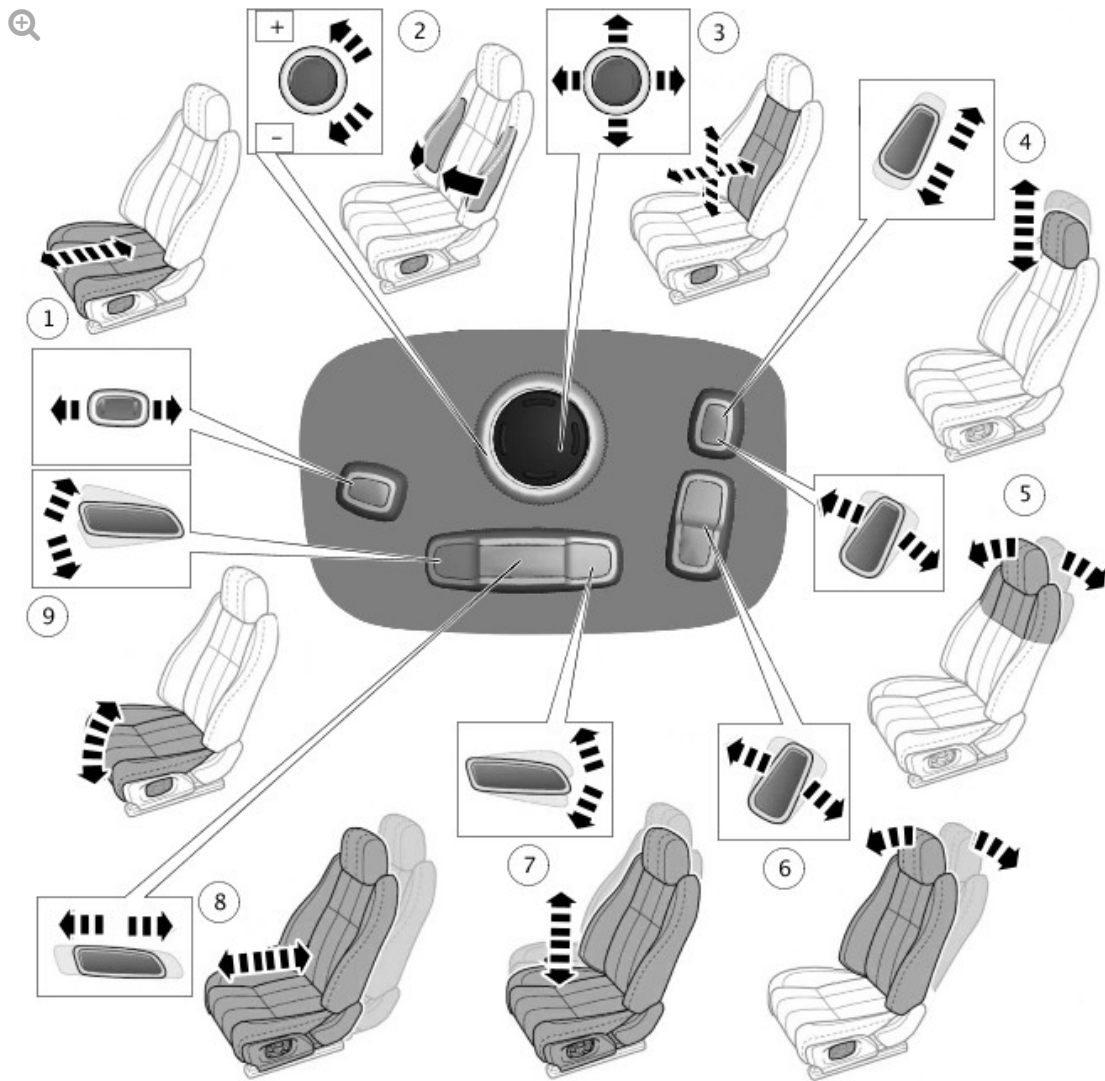
The seat module is located on the underside of the seat cushion frame on both the driver and the passenger seat. The module is located towards the front of the seat cushion, behind a plastic trim.

The driver and passenger seat modules are connected by hardwired connections to the seat adjustment motors. The seat switchpacks are connected to the seat module with a LIN bus. The seat module contains a non-volatile erasable programmable read only memory. The seat module monitors the seat positions and stores information provided by Hall effect sensors within the seat adjustment motors. All seat memory values and current seat adjustment motor positions are stored in the erasable programmable read only memory.

FRONT ADJUSTMENT SWITCHES

NOTE:

High specification seat shown, not all features are available on other vehicle specifications.



E190948

ITEM	DESCRIPTION
1	Seat cushion extension switch
2	Seat bolster inflate/deflate switch
3	Seat lumbar assembly switch
4	Head restraint height switch
5	Upper backrest adjustment switch
6	Seat backrest recline switch
7	Seat height switch
8	Seat forward and rearward switch
9	Seat cushion tilt switch

Electric seat adjustment is controlled by a seat switchpack for each seat.

Electric motors are used to provide adjustment of seat slide, seat height, seat cushion tilt, backrest recline, if fitted, head restraint, upper backrest adjustment and cushion extension. An air pump and inflatable cushions are used to provide adjustment of the lumbar support and the backrest seat bolster supports (if fitted).

All of the seat adjustments are controlled from the seat switchpack on the outside of the seat cushion. On non memory passenger seats, the control switches are connected directly to the adjustment motors. On memory seats, the seat switchpacks are connected to the adjustment motors via Driver Seat Module (DSM) and/or Passenger Seat Module (PSM). Memory seats also have a seat memory switchpack in the related door trim panel.

PASSENGER SEAT AWAY SWITCH

NOTE:

Left Hand Drive (LHD) front passenger seat shown, Right Hand Drive (RHD) is similar.



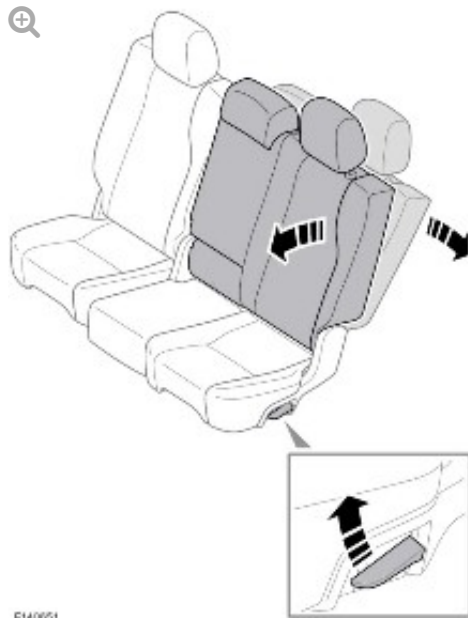
E1440676

ITEM	DESCRIPTION
1	Seat away switch - Front
2	Seat away switch - Rear (business seats only)

The passenger seat away switch is located on the inside of front passenger seat to allow the driver to move the passenger seat forward to allow access to the rear seats. On business rear seats a seat away switch is on the rear floor console.

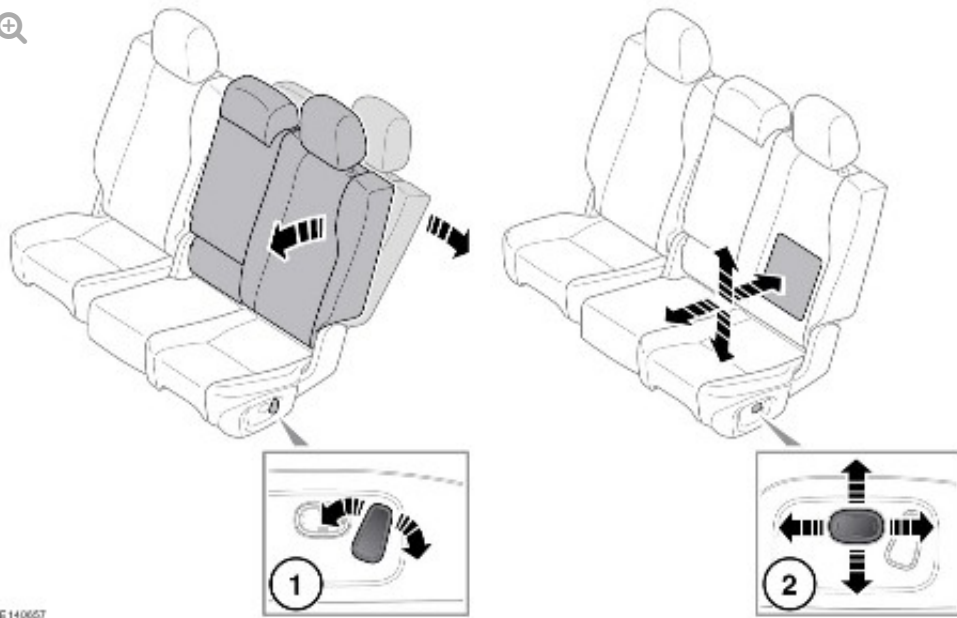
REAR SEAT ADJUSTMENT

Manual 60/40 Rear Seat Backrest



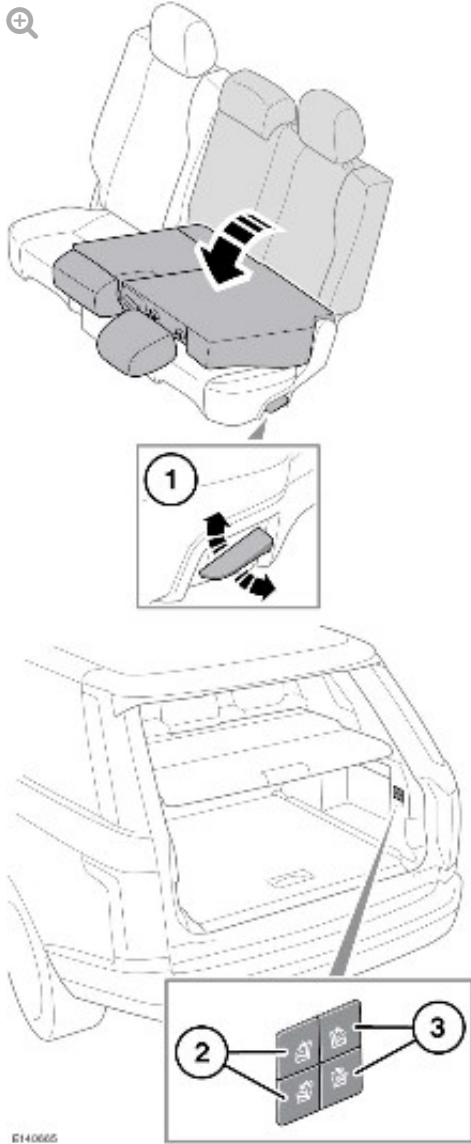
E140051

Electric/Manual 60/40 Rear Seat



ITEM	DESCRIPTION
1	Seat backrest recline adjustment switch
2	Seat lumbar assembly switch

60/40 Rear Seat Folding

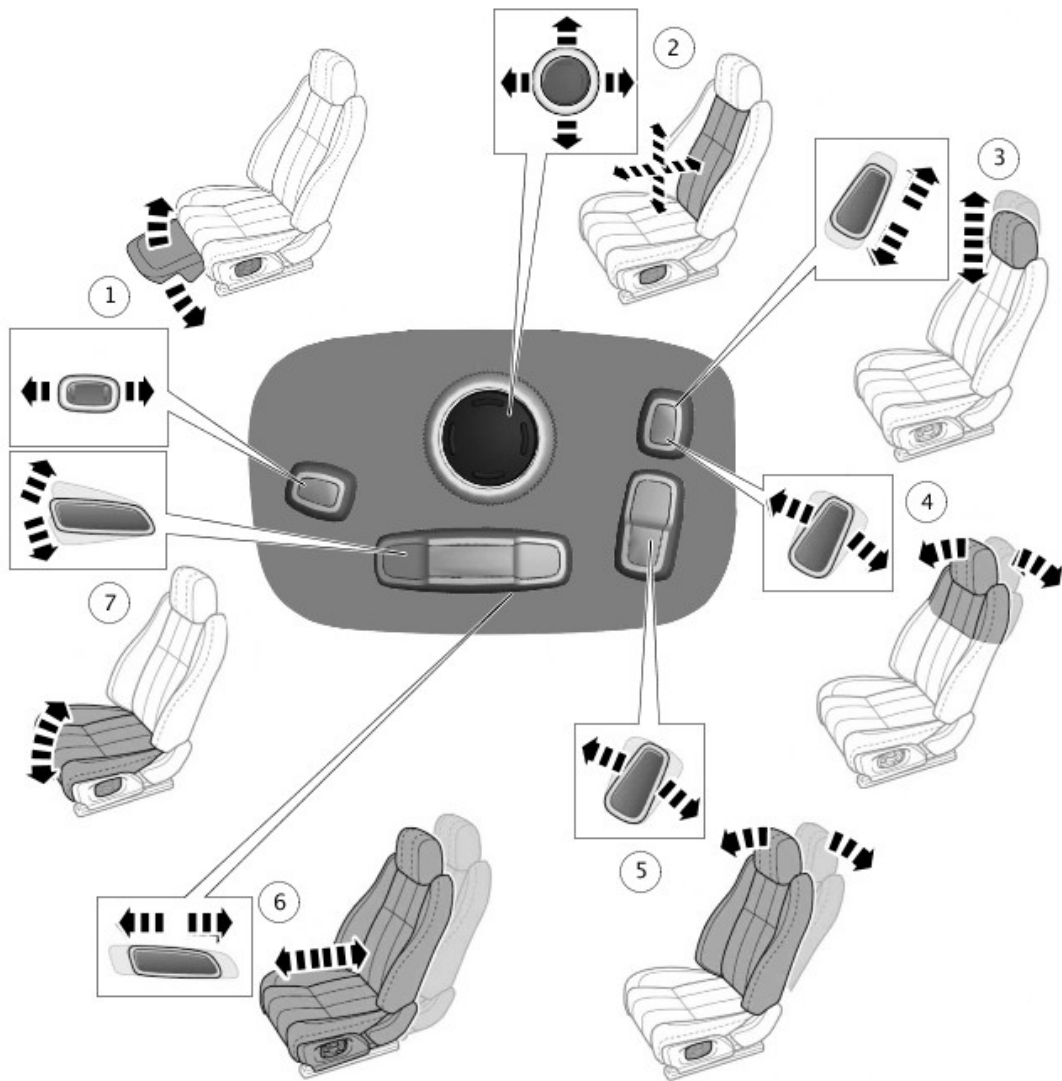


ITEM	DESCRIPTION
1	Manual seat folding
2	Left seat powerfold switches
3	Right seat powerfold switches

Business Seat

NOTE:

High specification seat shown, not all features are available on other vehicle specifications.



E190949

ITEM	DESCRIPTION
1	Calf rest switch (if fitted)
2	Lumbar support switch
3	Head restraint height switch
4	Upper backrest adjustment switch
5	Backrest recline switch
6	Forward and rearward position switch
7	Seat cushion tilt switch

If fitted, electric motors are used to provide adjustment of seat slide, backrest recline, cushion tilt, head restraint, calf rest adjustment and upper

backrest adjustment. An air pump and inflatable cushions are used to provide adjustment of the lumbar support (if fitted).

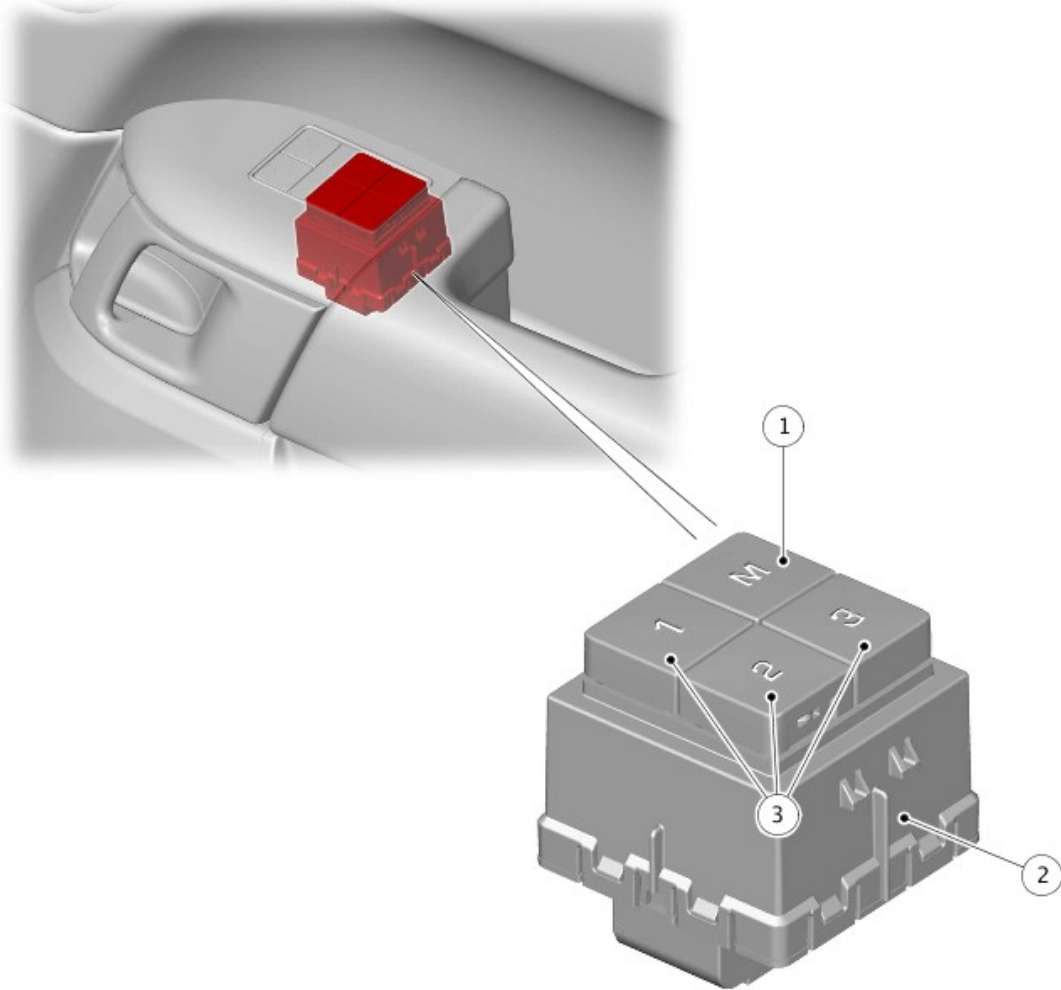
On 60/40 rear seats with electric recline motors, the motors can also be used to operate a powerfold function to fold the seats into a flat position to increase the luggage compartment area. A rear seat powerfold switchpack is located on the right side of the luggage compartment and allows the left and right seats to be folded independently.

INTELLIGENT SEAT CARGO MODE

Intelligent Seat Cargo Mode allows the rear seats to be folded using the seat powerfold switchpack located in the luggage compartment.

When using the Intelligent Seat Cargo function from the rear seat powerfold switchpack the front seats will automatically move to avoid clashing with rear seats. The same applies when unfolding the rear seats, the front seats will automatically move to avoid clash. Once rear seats have fully unfolded the front seats will move back to the original position.

SEAT MEMORY SWITCHPACK



E192353

ITEM	DESCRIPTION
1	Seat memory (M) switch
2	Seat Memory switchpack plastic housing
3	Seat memory switches 1, 2 or 3

The seat memory switchpack is located in the driver's and passenger's front door trim panel.

The selected memory position is passed from the seat memory switchpack to the related door module. The Driver Door Module (DDM) or Passenger Door Module (PDM) connects to the related seat module. The seat module then operates the seat motors to the correct positions associated with that

memory preset position.

On the driver seat, the memory function will also store the steering column position and door mirror positions associated with the selected memory switch 1 to 3.

To store a memory position, move the seat to the required positions (and steering column and door mirror for the driver seat). Press the 'M' switch on the seat memory switchpack. Then press the memory switch 1 to 3 to store the position against the selected memory switch number.

FRONT SEAT MOTORS

NOTE:

Motor fitment is dependent on vehicle specification.

Each adjustment motor contains a Hall effect sensor. The sensors provide position feedback signals which, on seats with a memory function, are used for memory store and recall operation.

The seat forward/rearward motor is an integral component of the cushion frame. The motor drives a gear on a worm drive lead screw, which is integral with the floor rail. The lead screw has a stop at each end to limit the forward and rearward seat movement.

The seat height motor is located below the seat. The motor drives a gear on a lead screw. The lead screw moves a lever mechanism, which raises or lowers the seat cushion.

The seat backrest recline motor is located in the seat backrest frame. The seat backrest recline motor rotates a shaft connected to the seat backrest frame, which changes the angle of the seat backrest.

The seat cushion tilt motor is located below the seat. The seat cushion tilt motor drives a gear on a lead screw to raise the front of the seat cushion.

The head restraint motor is located in the upper section of the backrest frame and is accessible by removal of the seat back. The motor moves a frame by a rack and pinion arrangement. The frame has two head restraint stems, which raise and lower the head restraint as the motor moves the frame.

The seat cushion extension motor is located below the seat. The motor drives a gear on a lead screw, which extends or retracts the front of the seat cushion

REAR SEAT MOTORS

NOTE:

Motor fitment is dependent on vehicle specification.

The seat cushion tilt motor is located below the seat. The seat cushion tilt motor drives a gear on a lead screw to raise the front of the seat cushion.

The seat slide motor is an integral component of the cushion frame. The motor drives a gear on a worm drive lead screw, which is integral with the floor rail. The lead screw has a stop at each end to limit the forward and rearward seat movement.

The seat backrest recline motor is located in the backrest frame. The seat recline motor rotates a shaft connected to the seat backrest frame, which changes the angle of the seat backrest. This motor also performs the powerfold function on rear seats with the electric fold feature.

The upper backrest motor is located in the backrest, above the head restraint motor.

The head restraint motor is located in the upper section of the backrest frame and is accessible by removal of the seat back. The motor moves a cradle by a rack and pinion arrangement. The cradle has two head restraint stems, which raise and lower the head restraint as the motor moves the

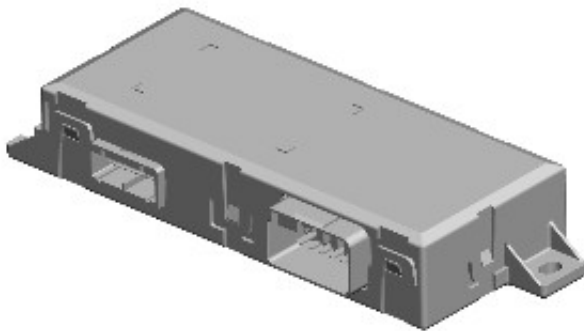
cradle.

CALF REST ACTUATOR

The calf rest actuator is located underneath the rear passenger seat base. The actuator moves the calf rest into the position which the occupant requires. It also contains a Hall effect sensor. This sensor provides position feedback signals to the Calf Rest Table Module (CRTM).

On the standard wheelbase vehicles the calf rest is only fitted on one side of the rear passenger seats. For example, if the vehicle is Right Hand Drive (RHD) the calf rest will be located on the left side of the rear passenger seat. On the long wheelbase vehicle a rear calf rest is fitted to both rear outer passenger seats.

CALF REST TABLE MODULE



E163043

The Calf Rest Table Module (CRTM) controls the operation of the calf rest. It provides and receives signals from the rear passenger seat adjustment switchpack and the calf rest actuator. This will then control the calf rest actuator in what position the occupants requires.

The CRTM is located under the rear right side passenger seat, under the carpet.

SEAT LUMBAR ADJUSTMENT

Seat lumbar adjustment is provided by a lumbar support and air pump installed in the seat backrest. The seat lumbar consists of an inflatable cushion with either a single air cell (2-way lumbar) or dual air cells (4-way

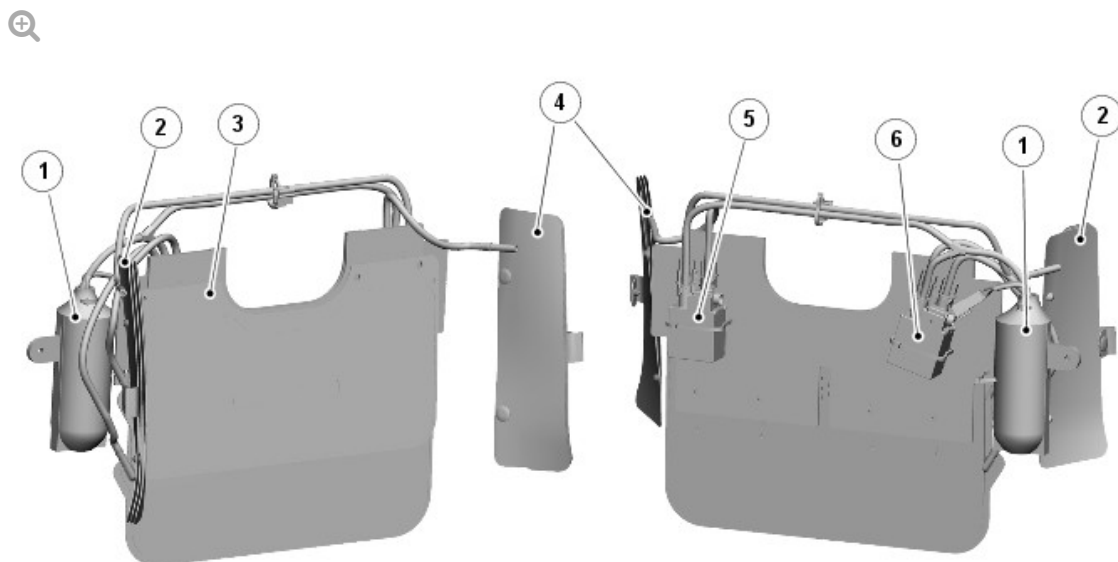
lumbar), depending on vehicle specification. A solenoid valve controls the air pump for the inflation or deflation of the lumbar cushion.

On vehicles with massage seats, the dual cell lumbar support is operated by the air pump of the massage system.

4-Way Lumbar Assembly

NOTE:

Front seat 4-way lumbar shown, rear seat similar but not fitted with seat bolster inflatable supports.



E149831

ITEM	DESCRIPTION
1	Air pump
2	Seat bolster inflatable support - Right
3	Lumbar support
4	Seat bolster inflatable support - Left

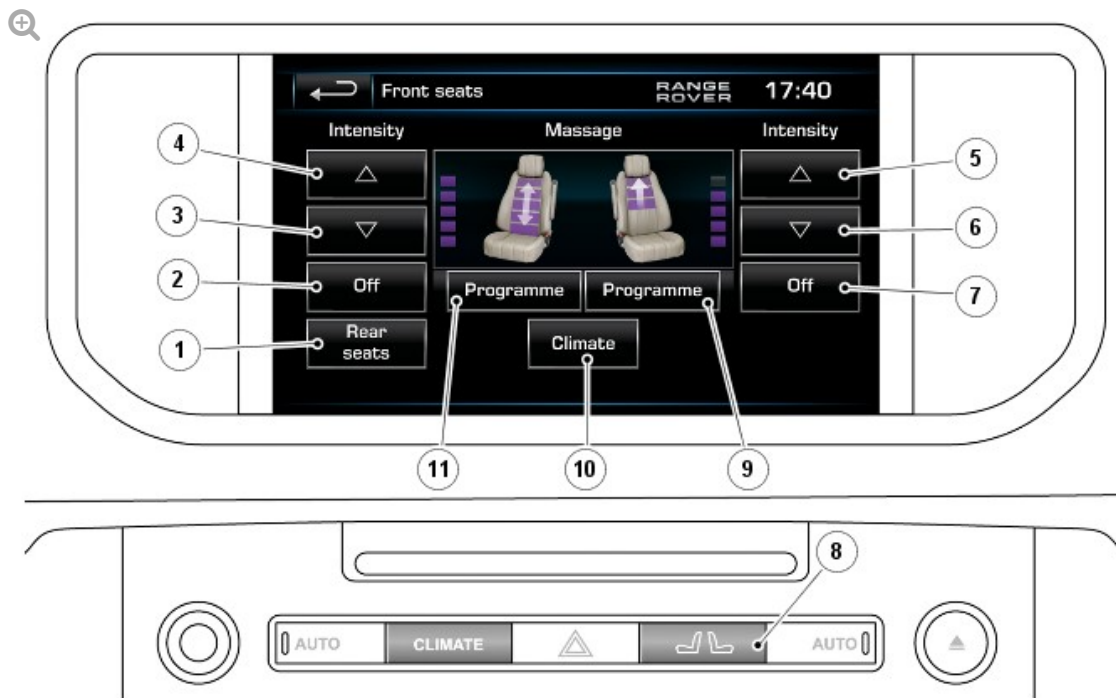
5	Seat bolster solenoid valves
6	Lumbar support solenoid valves

The 4-way lumbar support provides lumbar adjustment for the seat backrest and also for the side seat bolsters.

Bolster adjustment is provided by inflatable cushions on the inside faces of the backrest bolsters. The inflatable cushions are operated simultaneously by a separate solenoid valve block and the air pump of the lumbar support or the massage seat system. On vehicles with massage seats, the seat bolster solenoid valves are incorporated into the valve block containing the slave massage solenoid valves.

MASSAGE SEATS

Front Seat Massage Controls



E149832

ITEM	DESCRIPTION
1	Rear seat menu soft key
2	End program soft key - Left seat
3	Selected program adjustment decrease soft key - Left seat

4	Selected program adjustment increase soft key - Left seat
5	Selected program adjustment increase soft key - Right seat
6	Selected program adjustment decrease soft key - Right seat
7	End program soft key - Right seat
8	Front seat menu switch
9	Seat massage program select soft key - Right seat
10	Climate menu soft key
11	Seat massage program select soft key - Left seat

If fitted, the massage system in each seat consists of an air pump, air cell pads and massage master and slave solenoid valve blocks. The air pump is also used for adjustment of the lumbar and seat bolster supports for the 4-way lumbar. The slave solenoid block also incorporates the solenoid valves used to control the seat bolster supports.

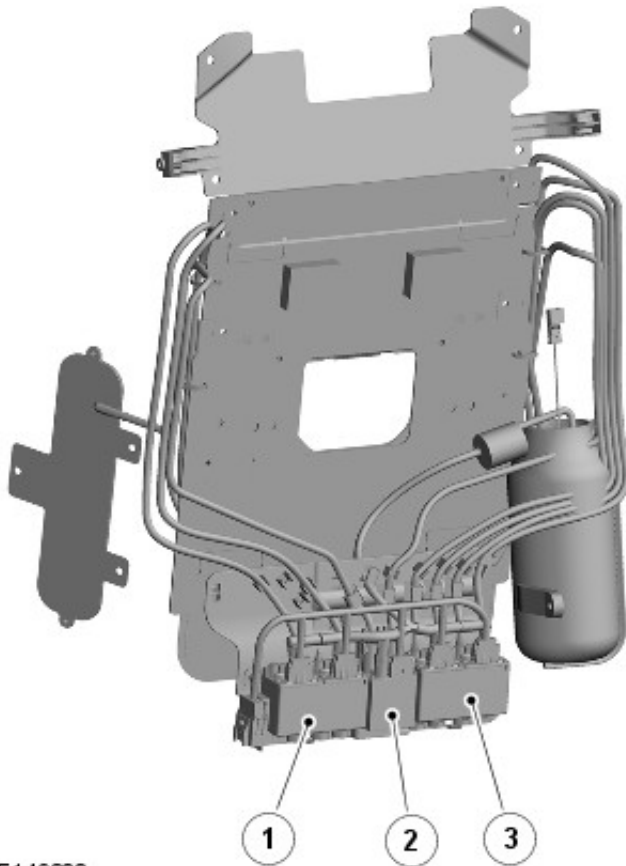
Operation of the massage system is controlled with START and STOP switches on the climate menu of the Touch Screen (TS) and is independent of the lumbar and seat bolster adjustments.

The air pump is located in the seat backrest or below the seat cushion depending on seat specification. The pump is housed inside a Noise, Vibration and Harshness (NVH) casing to cut down the pump operation sound level. Operation of the air pump is controlled by the master solenoid valve block.

The maximum pump pressure is controlled by a Pressure Relief Valve (PRV) in the lumbar solenoid valve block. The maximum pressure range is 310.5 to 379.5 mbar (4.5 to 5.5 psi.).

A thermal protection device in the air pump stops pump operation if the temperature increases to $72\pm 4^{\circ}\text{C}$ ($162\pm 7^{\circ}\text{F}$). The pump will not re-start until 10 minutes after the temperature decreases below the cut-off temperature.

Solenoid Valves

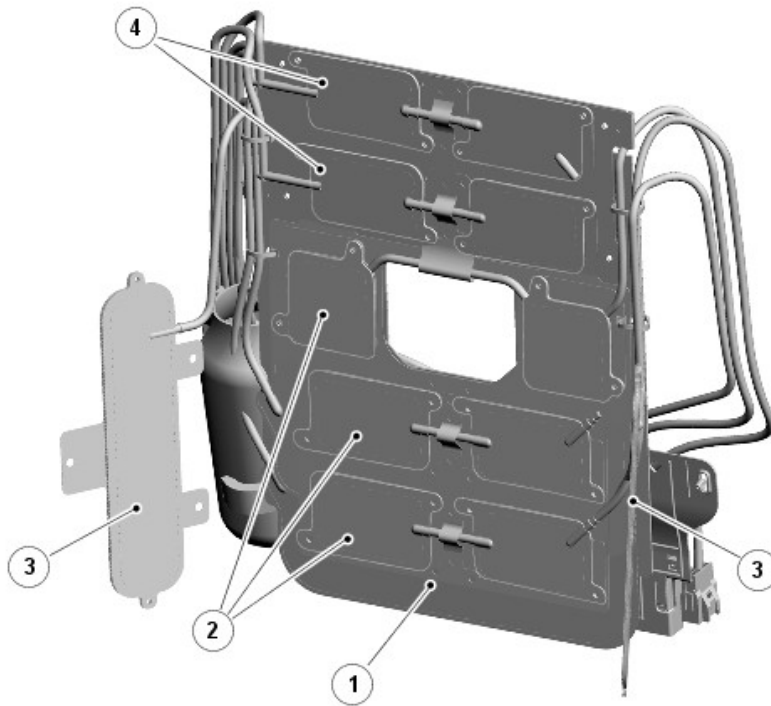


E149833

ITEM	DESCRIPTION
1	Massage master solenoid valves
2	Massage slave and seat bolster solenoid valves
3	Lumbar solenoid valves

The massage master and the massage slave solenoid valve blocks control the air supply to the massage air cells. During air cell deflation excess air is exhausted to atmosphere through the relevant solenoid valve block exhaust port.

Air Cell Pads



E149834

ITEM	DESCRIPTION
1	Lumbar massage assembly
2	Lower massage cells (3 off)
3	Backrest bolster cells (2 off)
4	Upper massage cells (2 off)

The massage air cells are located in two pads in the front of the seat backrest. The lower pad contains three separate pairs of cells, the upper pad contains two separate pairs of cells.

During operation the pressure of the air cells is approximately 207 to 379 mbar (3 to 5.5 psi.). This variation is due to the inflate time given to each air cell, the flow rate of the pump and the maximum pressure of the system.

FRONT AND REAR SEATS HEATING AND COOLING

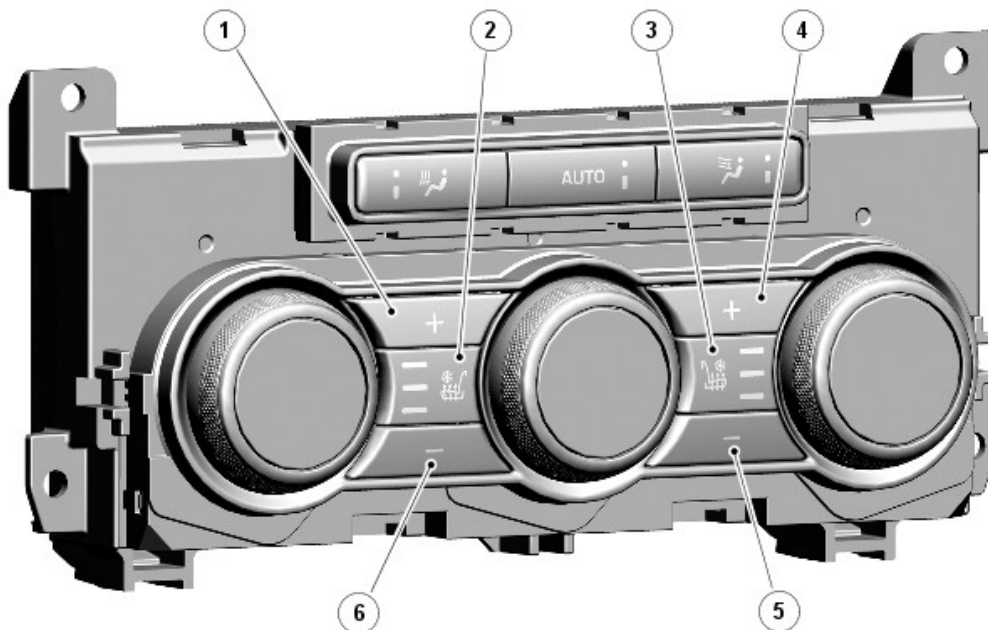
Front Seat Heating and Cooling Control - Integrated Control Panel



E180792

ITEM	DESCRIPTION
1	Rotary switch - Passenger seat heating and cooling control
2	Rotary switch - Driver seat heating and cooling control

Rear Seat Heating and Cooling Control - Rear Integrated Control Panel



E149836

ITEM	DESCRIPTION
1	Left seat heat/climate temperature increase switch

2	Left seat heat/climate temperature setting Light Emitting Diode (LED) display
3	Right seat heat/climate temperature setting Light Emitting Diode (LED) display
4	Right seat heat/climate temperature increase switch
5	Right seat heat/climate temperature decrease switch
6	Left seat heat/climate temperature decrease switch

Power to the heater and cooler elements of the front and rear seats are supplied from the Rear Junction Box (RJB). This is controlled by the Automatic Temperature Control Module (ATCM).

Seat heating and cooling for the rear seats is selected on the Rear Integrated Control Panel (RICP). The heating and cooling can also be selected for either the seat cushion and the seat backrest or just the seat backrest.

Climate seats are controlled by a Seat Climate Control Module (SCCM).

The rotary switch can be adjusted to the required level.

NOTE:

Liquid spillages on heated and cooled climate seats are not covered under warranty. Fluid ingress into the seat cushion or the seat backrest climate modules will cause serious damage to the system.

OPERATION

FRONT SEATS

NOTE:

To prevent excessive primary battery discharge, the heating or cooling of the front seats will only operate when the engine is running.

On memory front seats, the Driver Seat Module (DSM) or Passenger Seat Module (PSM) receives two permanent power supplies:

- The Central Junction Box (CJB)
- The Rear Junction Box (RJB).

The power supply from the CJB is used to operate the seat adjustment motors. The power supply from the RJB is used to operate the DSM or PSM.

A permanent power supply is connected from the RJB to the seat switchpack. The seat memory switch is connected to the seat switchpack and creates a ground when a seat memory switch is pressed.

The seat switchpack is connected to the DSM or PSM by a Local Interconnect Network (LIN) bus for the seat adjustment switches and the memory switch operation. Any selection for seat adjustment generates a message which is passed via the LIN bus to the DSM or PSM. The seat module processes the request and operates the applicable seat motor as required using the power supplies from the CJB.

Operating one of the seat adjustment switches will initiate the corresponding motor for that axis until the switch is released. Only two seat motors can be driven at the same time.

The DSM and PSM are connected to the Medium Speed (MS) Controller Area Network (CAN) comfort system bus. This allows the DSM to monitor the position of the door mirrors and the steering column, using signals from the Driver Door Module (DDM) and the Passenger Door Module (PDM) and

CJB respectively. These signals are used when storing and recalling seat memory settings. The MS CAN comfort system bus connection also allows both modules to relay seat memory information to enable confirmation chimes and in the Instrument Cluster (IC) message display center.

The front seats positions can be adjusted with the vehicle in power modes 4, 6 and 7.

The seats can move in power mode 0 without operating the seat adjustment switches, if they are in a clash position. This operates when the 60/40 rear seat is operating in intelligent seat cargo mode. If there is an occupant in a front seat they can cancel the movement by operating the seat adjustment switch on their seat.

If the seat encounters an obstruction it will stop moving and all further movement will be restricted.

The seat must be reset to continue movement.

- 1** Remove the obstruction.
- 2** Move the seat to the point where the movement ceased.
- 3** Press and hold the switch for at least two seconds to override the obstruction.

STALL DETECTION

A seat adjustment motor is deemed to have stalled if there is no change in the input from the feedback sensor of the motor for 200 ms. If a stall condition is detected then the drive to that motor is cancelled for the remainder of the memory recall operation or until the switch is re-selected (manual movement). The motor may be activated again, to move past the stall position, by pressing the appropriate switch for more than 2 seconds.

If sensor feedback is detected, then the motor will continue to be driven until the switch is released. If sensor feedback is not detected, then the motor is only driven for 0.5 second and then stops until the switch is released. When the switch is pressed again, then a further 0.5 second of

activation is permitted. This is known as inch mode, which allows seat adjustment to be maintained if sensor feedback is lost.

MEMORY SETTINGS FOR THE SEAT (AND STEERING COLUMN AND DOOR MIRROR FOR THE DRIVER SEAT) POSITIONS

Memory settings are stored in the Driver Seat Module (DSM) or Passenger Seat Module (PSM) by pressing the seat memory switch and then, within 5 seconds, one of the channel switches. When the memory switch is pressed the seat memory switchpack status indicator in the switch comes on. After the channel switch is pressed, the seat memory switchpack status indicator goes off and a chime sounds to confirm that the settings have been memorized. If the ignition is on, the message center will display a confirmation message. Any previously stored settings on the selected channel will be over-written.

Seat memory settings are recalled by pressing the applicable channel switch. This sets the seat (and steering column and door mirror for the driver seat) to the applicable channel memory position settings.

The memory recall function sets the driver's and passenger's seat to a stored position, and is activated when a seat memory switchpack memory position switch is pressed. For the driver seat it also stores the door mirror and steering column positions.

When memory recall is initiated, only two seat adjustment motors will operate at any one time to limit the overall current consumption. To further minimize the current load as the seat adjustment motors energize, the initiation of each of the two seat adjustment motors is phased with a 10 millisecond delay. The seat cushion slide and seat backrest will move first, followed by the seat cushion height.

The seats (and the steering column and the door mirror for the driver seat) can be adjusted and memory setting can be saved and recalled, with the vehicle in power modes 4, 6 and 7.

As soon as the seat memory switchpack memory position switch is pressed, a signal is transmitted to the Driver Door Module (DDM) or Passenger Door

Module (PDM) via a hardwired connection. The DDM or PDM transmits the message to the DSM and the PSM via the High Speed (HS) Controller Area Network (CAN) body systems bus.

The DSM or PSM then activate the memory recall and energize the seat motors. When a memory recall is activated, the DSM or PSM transmits a memory recall display message. The message is communicated to the Body Control Module/Gateway Module (BCM/GWM) assembly via HS CAN body systems bus. The BCM/GWM assembly transmits this message to the Instrument Cluster (IC) via the HS CAN comfort systems bus. The IC will display the memory recall messages in the message center.

DRIVER SEAT AUTO ENTRY AND EXIT MODE

Turn the steering column adjustment switch counterclockwise to the AUTO position to select the entry and exit mode. This moves the driver seat down for 2 seconds and the steering column to the uppermost tilt position to enable the easy entry/exit of the driver.

When the steering column adjustment switch is in the AUTO position, the switch completes a reference voltage circuit with the Central Junction Box (CJB) that bypasses the resistive ladder. When the CJB detects that the steering column adjustment switch is in the AUTO position, it enables the entry and exit mode to provide easier entry to and exit from the vehicle. When the driver door is opened, the seat moves down for 2 seconds to a lower position and the steering column moves to the uppermost tilt position. When the driver door is closed and the ignition is selected on, the seat and steering column moves to the previous position settings.

Turn the steering column adjustment switch clockwise to set the AUTO entry and exit mode off.

INITIALIZATION

When a replacement of the Driver Seat Module (DSM) or Passenger Seat Module (PSM) is fitted, it should be calibrated using Land Rover approved diagnostic equipment.

BATTERY MONITOR

If the primary battery voltage drops below 10.5V, then the driver and passenger seat modules ignore all requests for a memory recall. Until the primary battery voltage has reached 11.5V. This will conserve as much power in the primary battery as possible to enable engine cranking.

SEAT SWITCHPACK

The seat switchpack operates the motors in the seat. The relevant motor will operate while the switch is operated, it will stop when the switch is released.

On non-memory electric seats the seat switchpack is connected directly to the seat motors.

MASSAGE SEATS

Massage seat requests from the on/off soft keys on the Touch Screen (TS) are sent via the High Speed (HS) Controller Area Network (CAN) comfort system bus to the Driver Seat Module (DSM) or Passenger Seat Module (PSM). The DSM or PSM processes the requests and transmits them to the massage master solenoid on the Local Interconnect Network (LIN) bus connection.

When the on soft key is pressed, the massage master solenoid operates the relevant master and slave solenoid valves and activates the air pump. The massage function operates in 10 minute cycles. After a 10 minute cycle is complete the user must re-select the function if a further 10 minute cycle is required.

When the off soft key is pressed, the 10 minute cycle is completed, or the ignition is switched off. The solenoid valves are opened to deflate the massage cells and the air pump turned off.

During operation, the bottom cell pair inflate and then deflate. As the first cell pair are deflating the second cell pair start to inflate. This sequence is repeated for all five cell pairs, from cell pair one at the bottom to cell pair five at the top.

FRONT SEAT HEATING

The seat heater elements can only operate when the engine is running. Power for the heater elements is supplied from a comfort relay, which is controlled by a hardwired ignition on signal from the Rear Junction Box (RJB). Each heated seat cushion element contains a Seat Heater Control Module (SHCM). The SHCM is connected via Local Interconnect Network (LIN) bus to the Automatic Temperature Control Module (ATCM). The SHCM also controls the power supply to the heated seat backrest element.

Front seat heating selections made on the Integrated Control Panel (ICP) or on the Touch Screen (TS) in the climate menu. The seat icon on the TS will indicate if heating is selected.

FRONT SEAT CLIMATE

A front seat climate assembly is incorporated within each front seat cushion and the backrest of the seat. The Seat Climate Control Module (SCCM) (Driver and Passenger side) and electrical wiring are located beneath each of the front seats.

The climate modules contains Thermal Electric Device (TED), which heat up or cool down depending on the voltage provided by the SCCM. Each climate module also contains a blower, which blows air over the TED to distribute the heated or cooled air through liners in the related seat cushion or seat backrest. The blower is also controlled by the SCCM.

Selection of the climate function is by soft keys on the climate menu on the Touch Screen (TS). The seat icon on the TS will indicate if heating or cooling is selected, it will show red when heating and blue when cooling.

The climate function of the climate seats only operates when the engine is running. The SCCM is connected via Local Interconnect Network (LIN) bus to the Automatic Temperature Control Module (ATCM). The ATCM is connected to the TS on the High Speed (HS) Controller Area Network (CAN) comfort systems bus.

REAR SEATS

Rear Seat Adjustment

If fitted, the seat switchpack on the outside of the rear seat controls the electric motors to adjust these:

- Seat backrest recline
- Seat slide (business seat only)
- Seat cushion tilt (business seat only)
- Head restraint (business seat only)
- Calf rest adjustment (business seat only)
- Saet upper backrest adjustment (business seat only).

The rear seat switchpack sent signals to the Passenger Seat Module (PSM). The PSM then activates the relevant motor to adjust the seat position.

If fitted with lumbar support, the adjuster switch controls an air pump and inflatable cushions to adjust the lumbar support.

On 60/40 rear seats with electric recline motors. The motors can also be used to operate a powerfold function to fold the seats into a flat position to increase the luggage compartment area. A rear seat powerfold switchpack is located on the right side of the luggage compartment and allows the left and right seats to be folded independently.

The rear business seats also have a seat memory. This is controlled by the rear seat memory switchpack in the rear door. The rear seat memory switchpack is connected to the Rear Door Module (RDM) and via the High Speed (HS) Controller Area Network (CAN) body systems bus to the PSM. This operates the same as the front passengers seat memory.

Intelligent Seat/Cargo Mode

Intelligent seat cargo mode allows the rear seats to be folded using the seat powerfold switchpack located in the luggage compartment.

When using the intelligent seat/cargo mode function from the rear seat powerfold switchpack the front seats will automatically move to avoid

clashing with the rear seats. The same applies when unfolding the rear seats, the front seats will automatically move to avoid clash. Once the rear seats have fully unfolded the front seats will move back to their original positions.

Rear Heated Seat

Control of the rear seat heating is by switches in the rear of the floor console.

The control signal is on the Local Interconnect Network (LIN) bus. The heater elements receive a power supply from the Rear Junction Box (RJB).

Rear Climate Seat

The climate seat function for the rear seats can be selected by the Rear Integrated Control Panel (RICP).

The rear climate seats incorporate climate assemblies in the seat cushion and the seat backrest of the seat. The climate function of the climate seats only operates when the engine is running.

The climate assemblies contain Thermal Electric Device (TED), which heat up or cool down depending on the voltage provided by the related Seat Climate Control Module (SCCM). Each climate module also contains a blower. This blows air over the TED to distribute the heated or cooled air through liners in the related seat cushion or seat backrest. The blower is also controlled by the SCCM.

The SCCM is connected on the Local Interconnect Network (LIN) bus to the Automatic Temperature Control Module (ATCM). The ATCM is connected to the RICP on the HS CAN comfort systems bus.

Rear Passenger Calf Rest

The rear passenger calf rest seats are operational when the vehicle is in power mode 4. The rear passenger seat switchpack, will operate the calf

rest by sending a signal to the Passenger Seat Module (PSM) via a Local Interconnect Network (LIN) bus. The PSM then sends the signal to the Calf Rest Table Module (CRTM) via the High Speed (HS) Controller Area Network (CAN) body systems bus. The CRTM then supplies power to the calf rest actuator. This allows the occupant to adjust the position of calf rest.

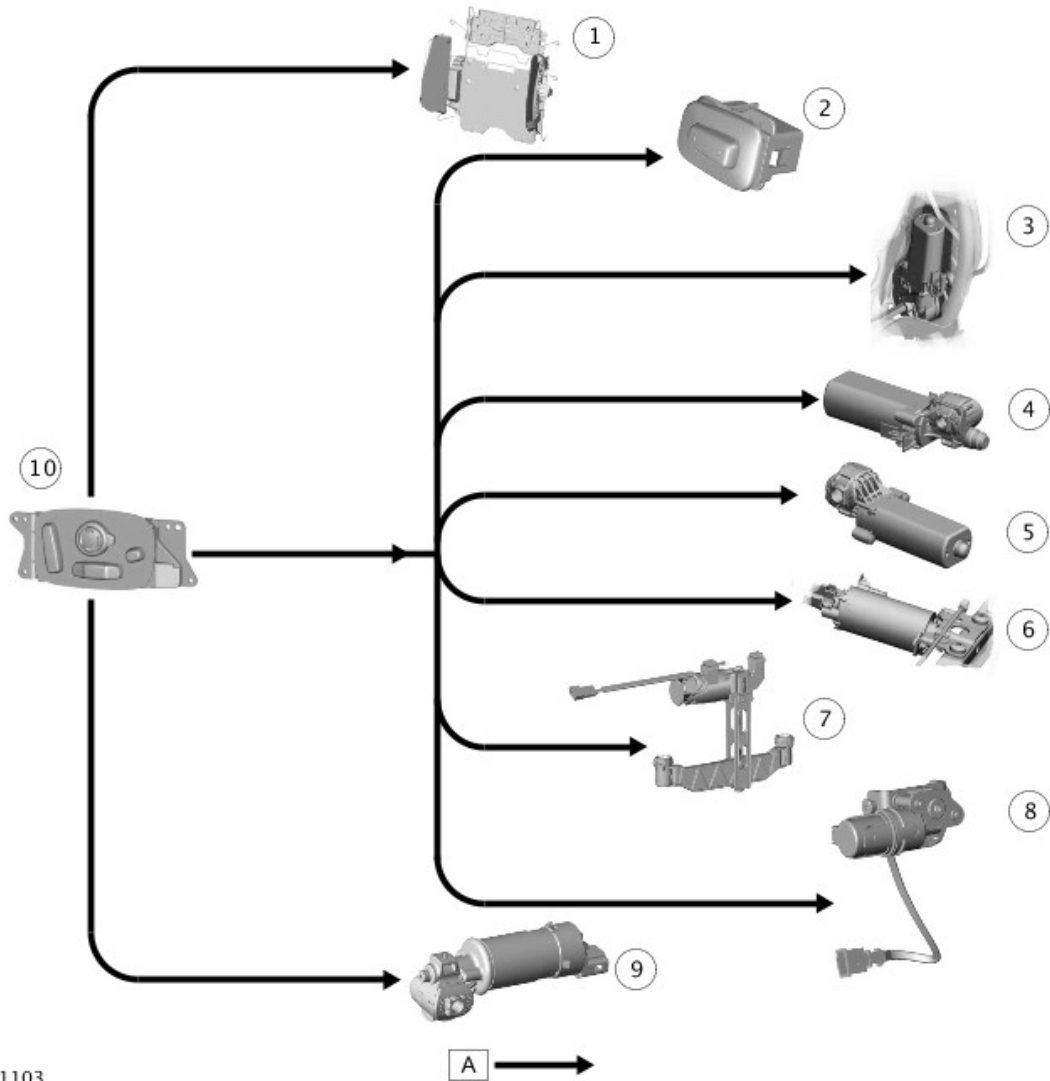
On the standard wheelbase vehicles the rear passenger calf rest is only fitted for the rear passenger seat behind the front passengers seat. On the long wheelbase vehicles both outer rear passenger seats have calf rests fitted.

CONTROL DIAGRAM

CONTROL DIAGRAM - 1 OF 10 - NON MEMORY SEAT

NOTE:

Driver seat shown, passenger seat is similar.

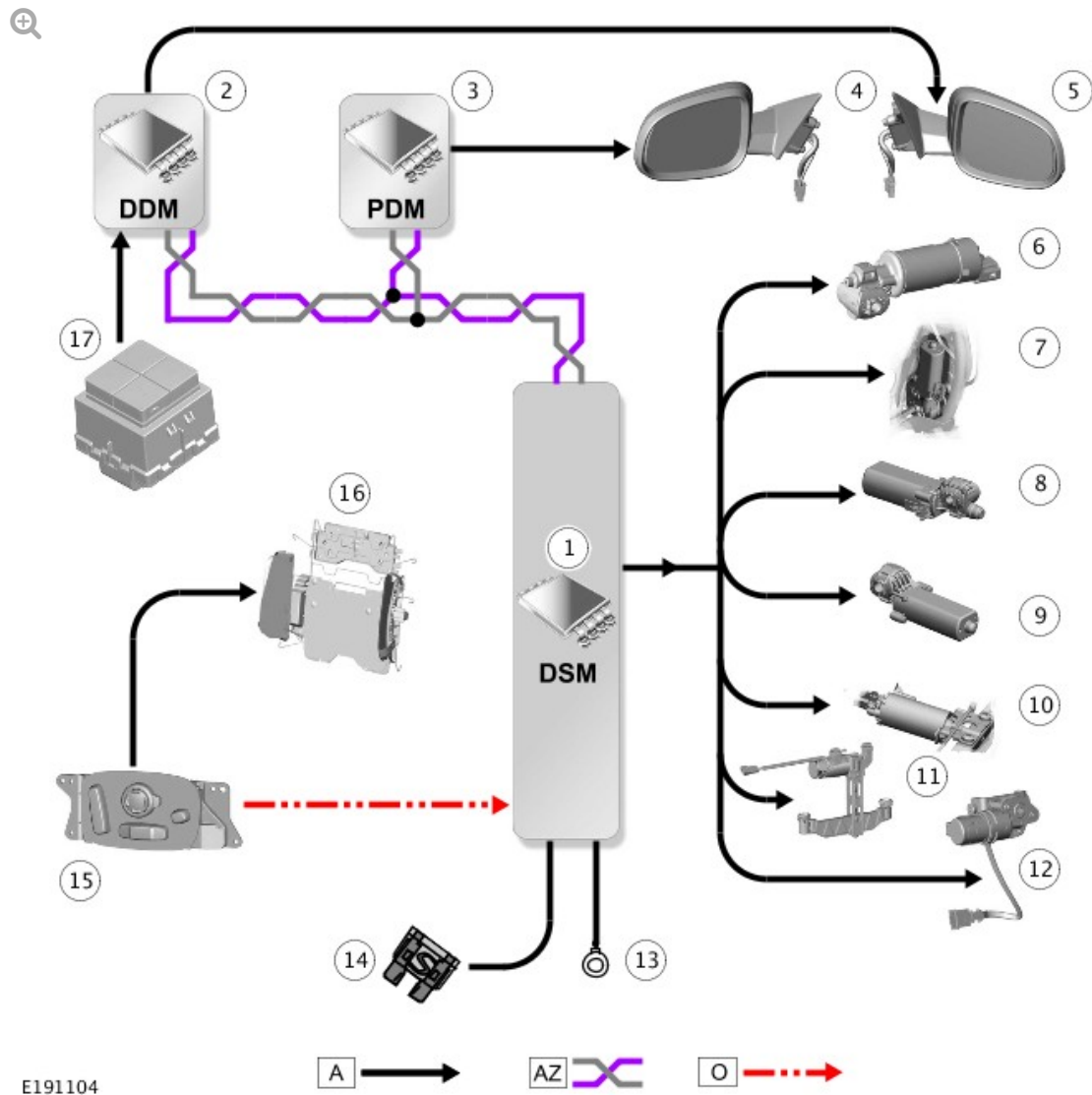


A = HARDWIRED.

ITEM	DESCRIPTION
1	Seat lumbar massage assembly
2	Seat away switch
3	Seat backrest recline motor
4	Seat cushion tilt motor
5	Seat height motor
6	Seat forward/rearward motor
7	Head restraint motor
8	Upper backrest adjustment motor

9	Seat cushion extension motor
10	Driver seat switchpack

CONTROL DIAGRAM - 2 OF 10 - MEMORY SEAT (DRIVER SIDE)

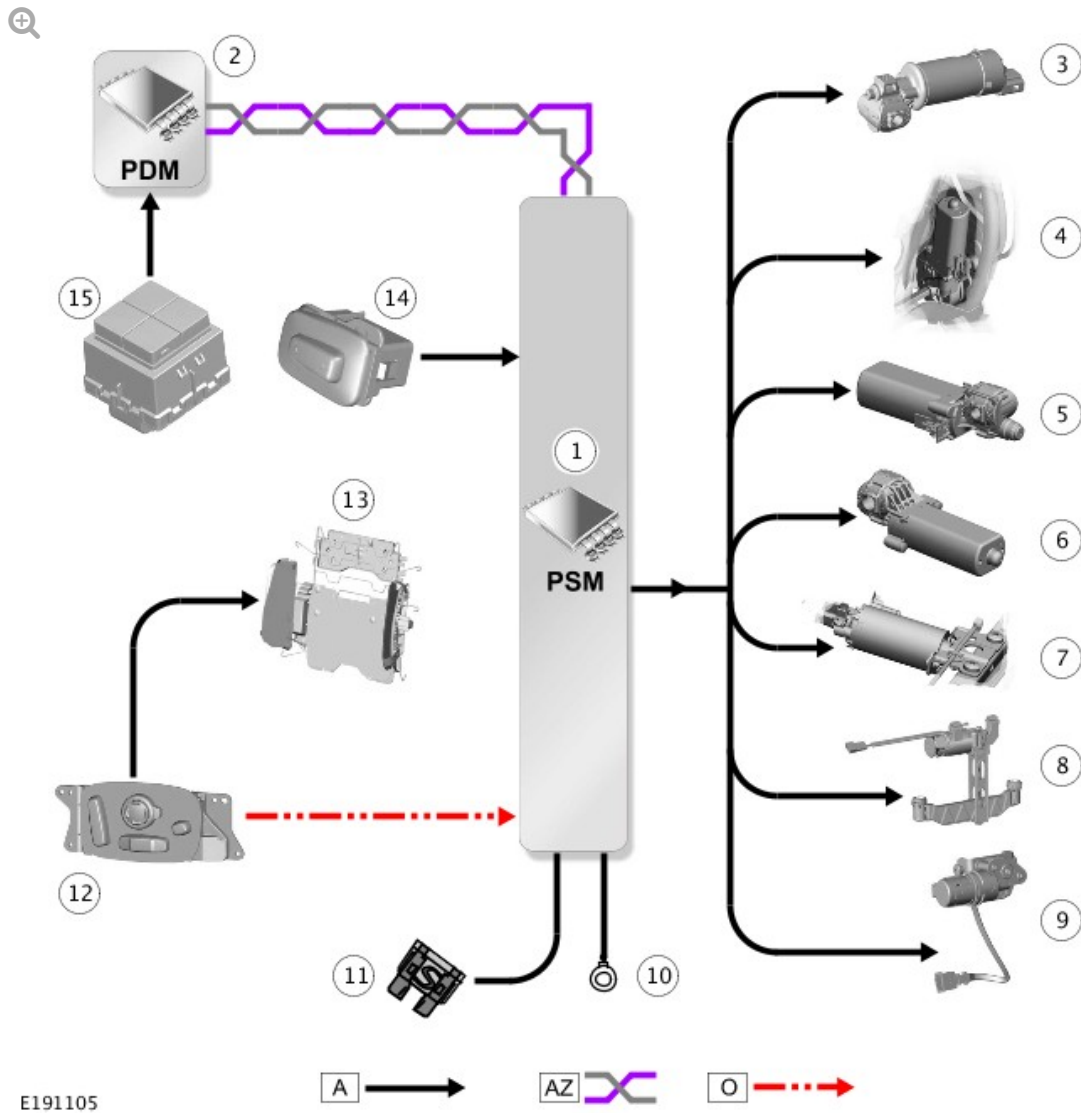


A = HARDWIRED: AZ = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) BODY SYSTEMS BUS: O = LOCAL INTERCONNECT NETWORK (LIN) BUS.

ITEM	DESCRIPTION
1	Driver Seat Module (DSM)
2	Driver Door Module (DDM)
3	Passenger Door Module (PDM)
4	Door mirror - Left

5	Door mirror - Right
6	Seat cushion extension motor
7	Seat backrest recline motor
8	Seat cushion tilt motor
9	Seat height motor
10	Seat forward/rearward motor
11	Head restraint motor
12	Upper backrest adjustment motor
13	Ground
14	Power supply
15	Seat switchpack - Driver
16	Seat lumbar assembly
17	Seat memory switchpack - Driver

CONTROL DIAGRAM - 3 OF 10 - MEMORY SEAT (PASSENGER SIDE)

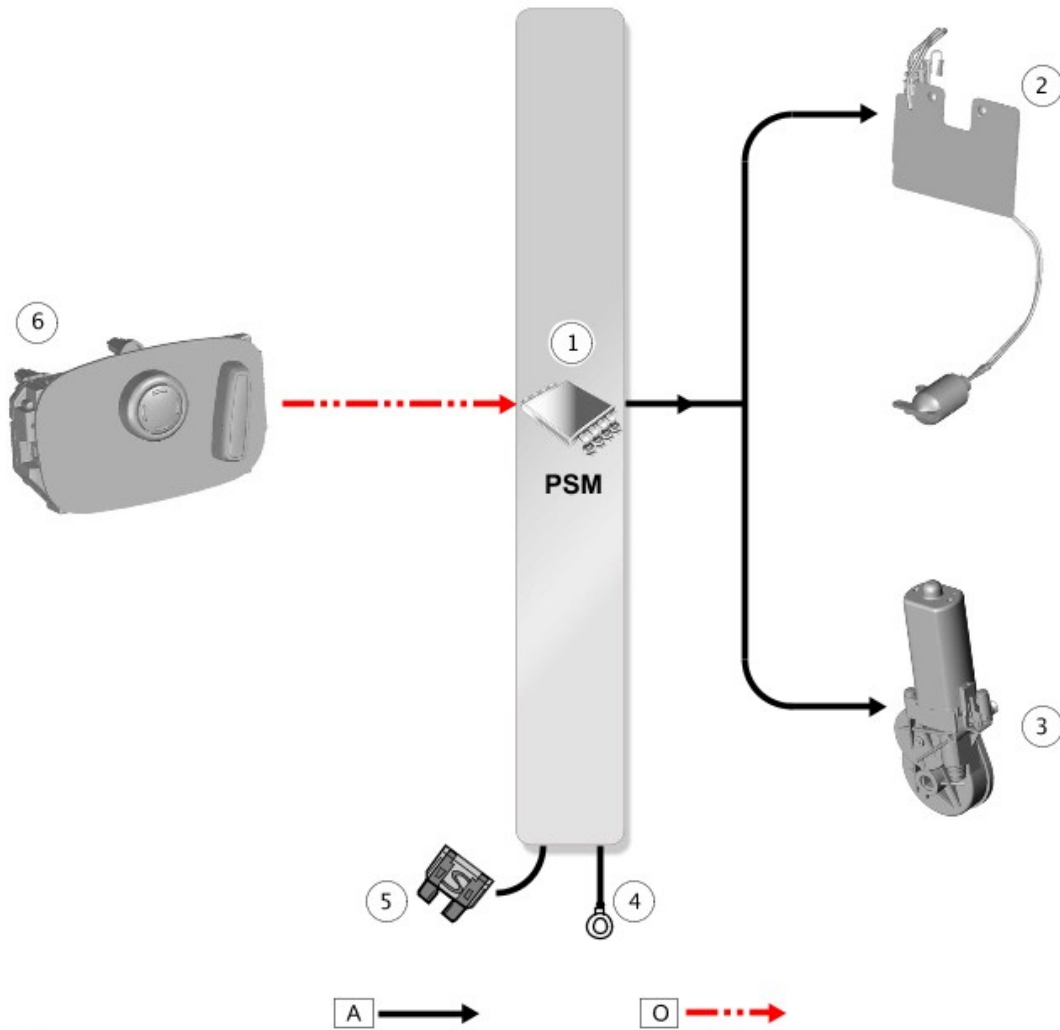


A = HARDWIRED: AZ = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) BODY SYSTEMS BUS: O = LOCAL INTERCONNECT NETWORK (LIN) BUS.

ITEM	DESCRIPTION
1	Passenger Seat Module (PSM)
2	Passenger Door Module (PDM)
3	Seat cushion extension motor
4	Seat backrest recline motor
5	Seat cushion tilt motor
6	Seat height motor
7	Seat forward/rearward motor

8	Head restraint motor
9	Upper backrest adjustment motor
10	Ground
11	Power supply
12	Seat switchpack - Front passenger
13	Seat lumbar assembly
14	Seat away switch
15	Seat memory switchpack - Front passenger

CONTROL DIAGRAM - 4 OF 10 - REAR 60/40 SEAT ADJUSTMENT

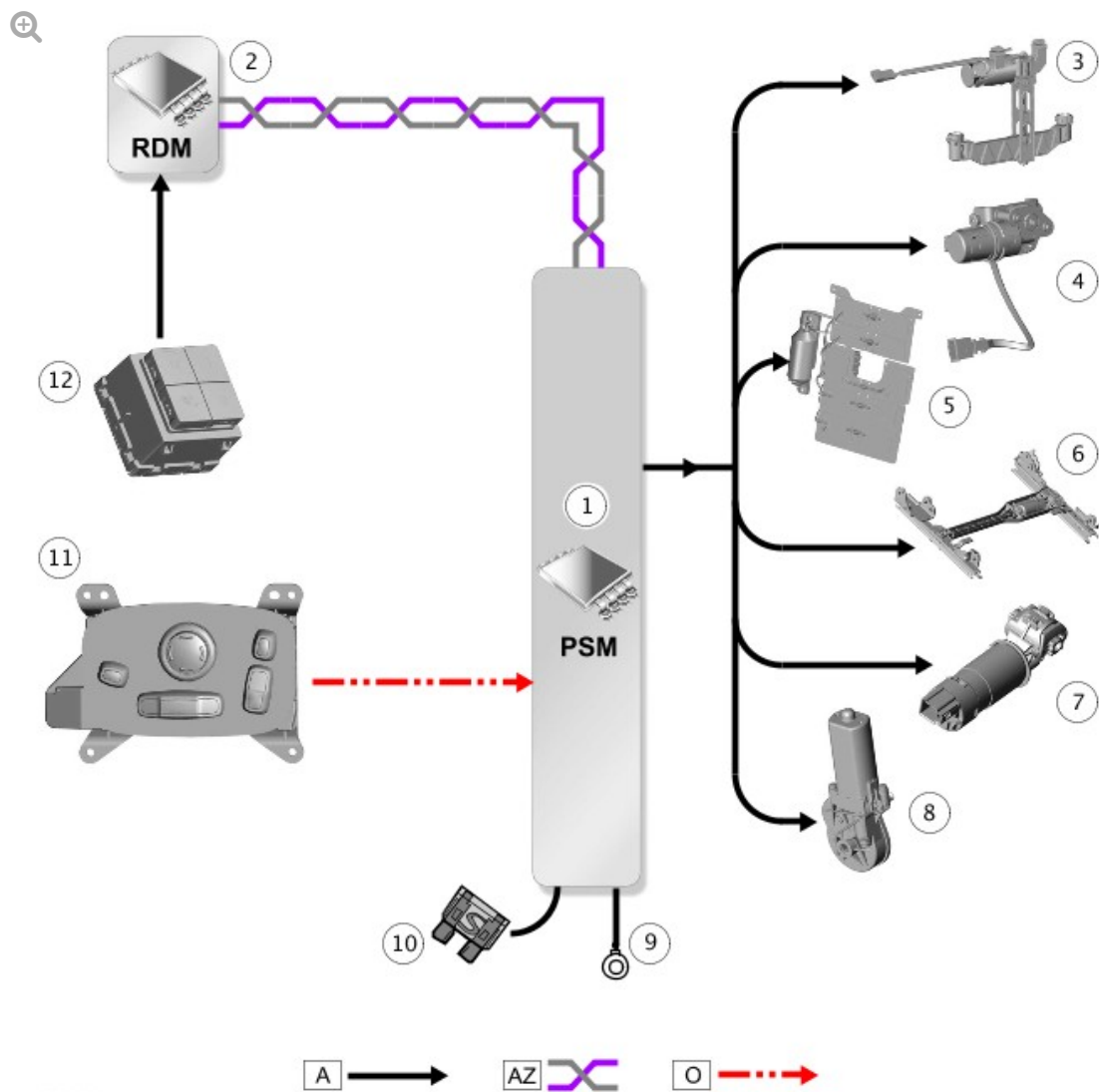


E191347

A = HARDWIRED: O = LOCAL INTERCONNECT NETWORK (LIN) BUS.

ITEM	DESCRIPTION
1	Passenger Seat Module (PSM)
2	Seat lumbar assembly
3	Seat backrest recline motor
4	Ground
5	Power supply
6	Seat switchpack - Rear

CONTROL DIAGRAM - 5 OF 10 - REAR BUSINESS SEAT ADJUSTMENT

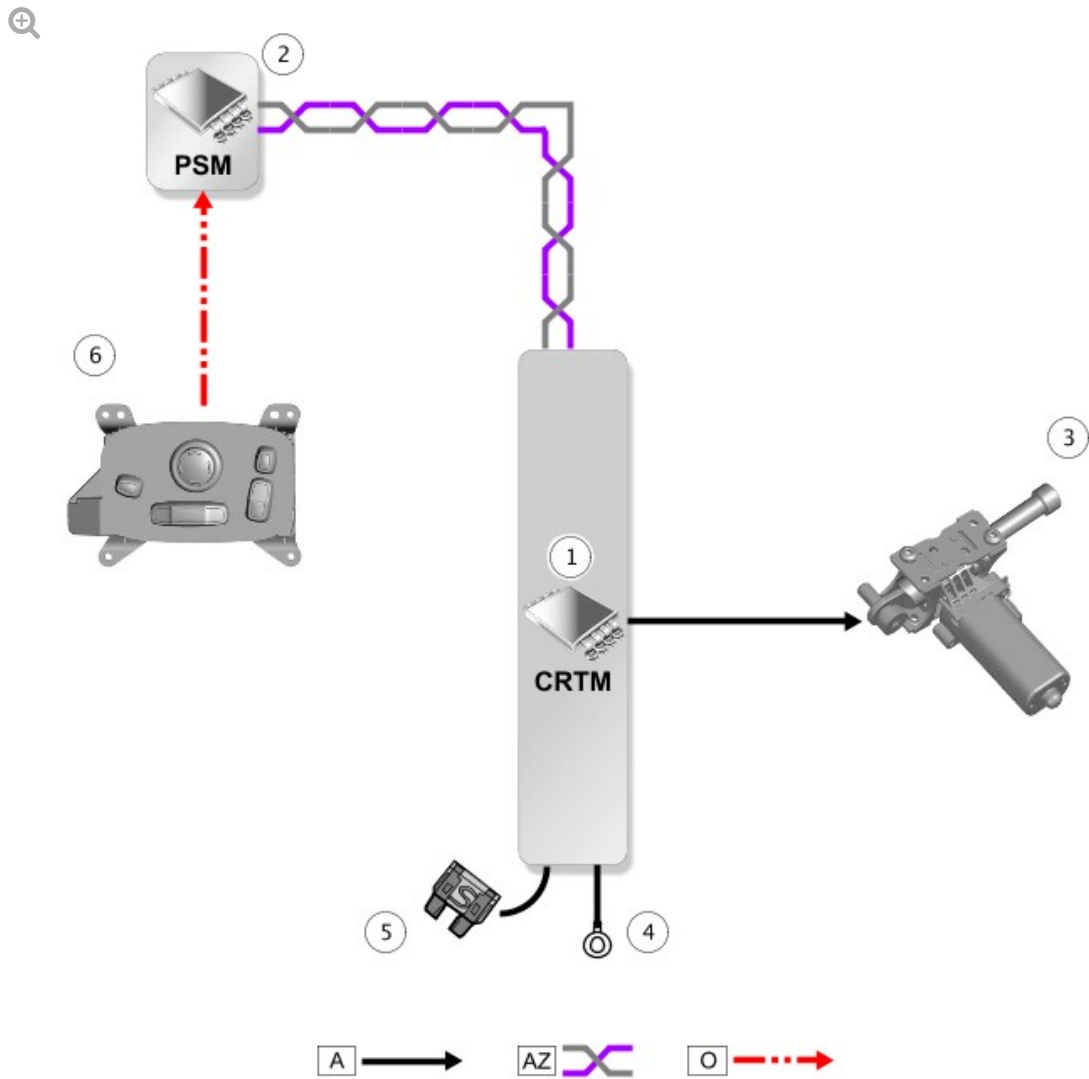


E192688

A = HARDWIRED: AZ = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) BODY SYSTEMS BUS: O = LOCAL INTERCONNECT NETWORK (LIN) BUS.

ITEM	DESCRIPTION
1	Passenger Seat Module (PSM)
2	Rear Door Module (RDM)
3	Head restraint motor
4	Upper backrest adjustment motor
5	Lumbar massage assembly
6	Seat forward/rearward motor
7	Seat backrest recline motor
8	Seat cushion tilt motor
9	Ground
10	Power supply
11	Seat switchpack - Rear
12	Seat memory switchpack - Rear

CONTROL DIAGRAM - 6 OF 10 - REAR PASSENGER SEAT CALF REST



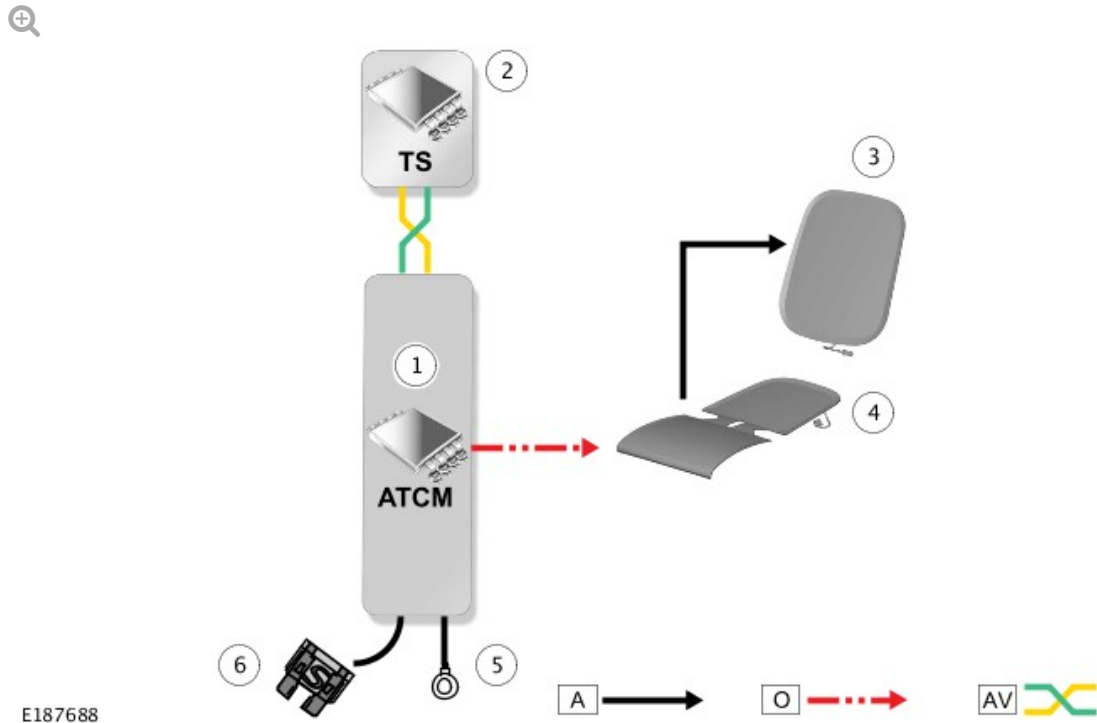
E191348

A = HARDWIRED: AZ = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) BODY SYSTEMS BUS: O = LOCAL INTERCONNECT NETWORK (LIN) BUS.

ITEM	DESCRIPTION
1	Calf Rest Table Module (CRTM)
2	Passenger Seat Module (PSM)
3	Calf rest actuator
4	Ground
5	Power supply
6	Seat switchpack - Rear

NOTE:

Driver seat shown, passenger seat is similar.

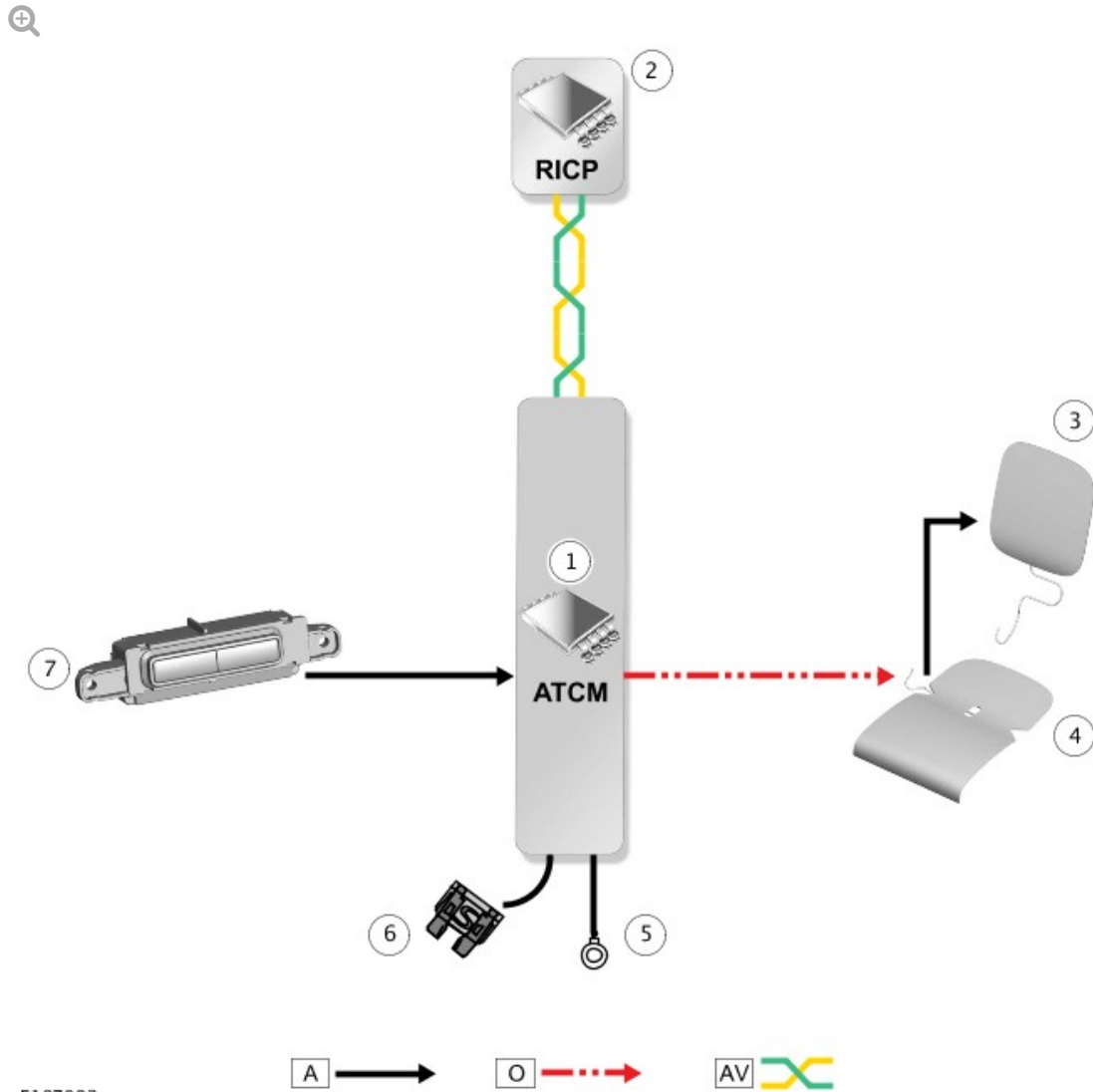


A = HARDWIRED: O = LOCAL INTERCONNECT NETWORK (LIN) BUS: AV = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) COMFORT SYSTEMS BUS.

ITEM	DESCRIPTION
1	Automatic Temperature Control Module (ATCM)
2	Touch Screen (TS)
3	Heated seat backrest element
4	Heated seat cushion element
5	Ground
6	Power supply

NOTE:

Rear right seat shown, rear left seat is similar.

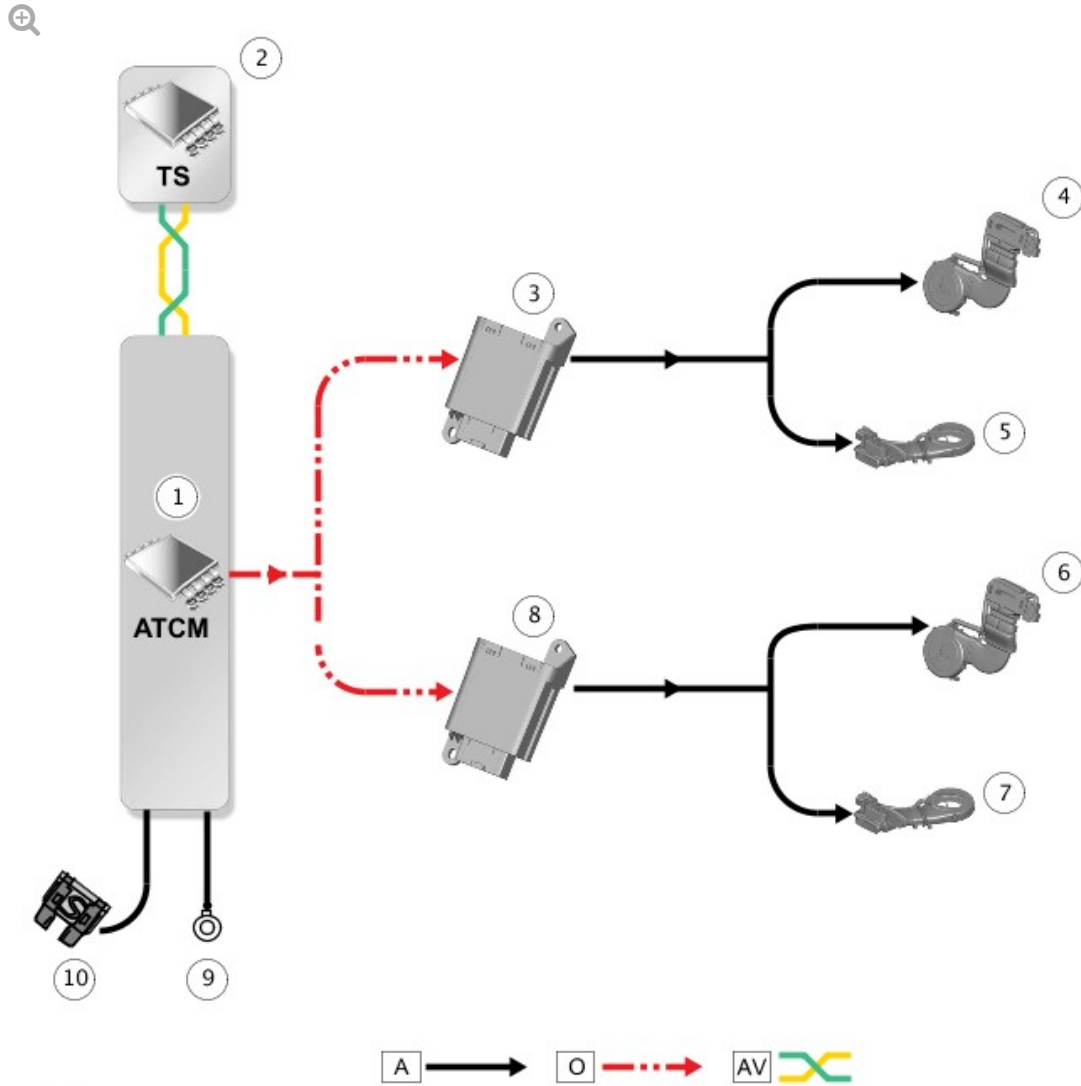


A = HARDWIRED: O = LOCAL INTERCONNECT NETWORK (LIN) BUS: AV = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) COMFORT SYSTEMS BUS.

ITEM	DESCRIPTION
1	Automatic Temperature Control Module (ATCM)
2	Rear Integrated Control Panel (RICP) (if fitted)
3	Heated seat backrest element

4	Heated seat cushion element
5	Ground
6	Power supply
7	Heated seat switch - Rear seat (if fitted)

CONTROL DIAGRAM - 9 OF 10 - FRONT CLIMATE SEAT



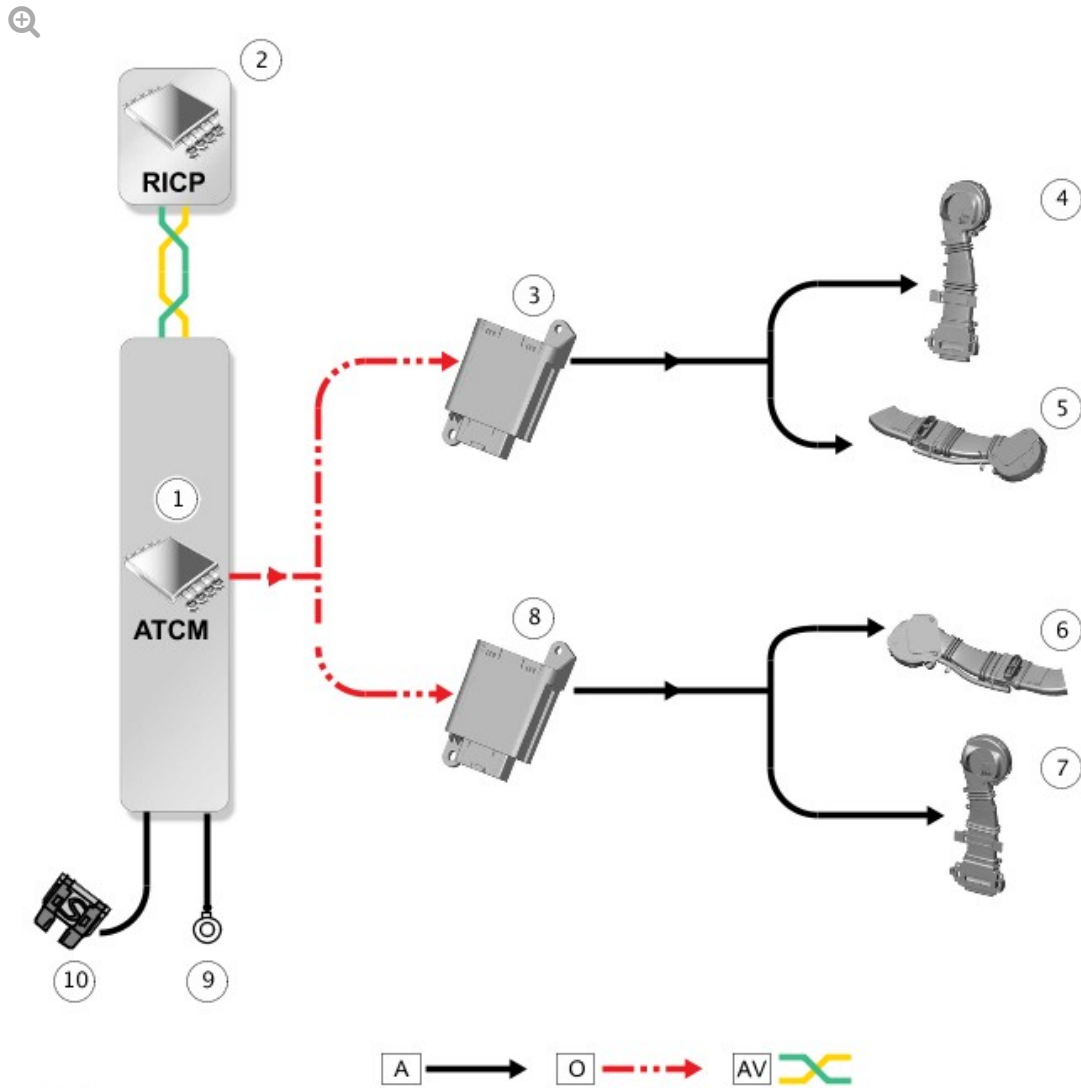
E187091

A = HARDWIRED: O = LOCAL INTERCONNECT NETWORK (LIN) BUS: AV = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) COMFORT SYSTEMS BUS.

ITEM	DESCRIPTION
1	Automatic Temperature Control Module (ATCM)
2	Touch Screen (TS)

3	Driver Seat Climate Control Module (DSCCM)
4	Seat backrest climate assembly - Driver
5	Seat cushion climate assembly - Driver
6	Seat backrest climate assembly - Passenger
7	Seat cushion climate assembly - Passenger
8	Passenger Seat Climate Control Module (PSCCM)
9	Ground
10	Power supply

CONTROL DIAGRAM - 10 OF 10 - REAR CLIMATE SEAT



E188432

A = HARDWIRED: O = LOCAL INTERCONNECT NETWORK (LIN) BUS: AV

= HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) COMFORT SYSTEMS BUS.

ITEM	DESCRIPTION
1	Automatic Temperature Control Module (ATCM)
2	Rear Integrated Control Panel (RICP)
3	Rear Seat Climate Control Module (RSCCM) - Left
4	Seat backrest climate assembly - Rear left
5	Seat cushion climate assembly - Rear left
6	Seat cushion climate assembly - Rear right
7	Seat backrest climate assembly - Rear right
8	RSCCM - Right
9	Ground
10	Power supply