

# Technical Service Bulletin

SUBJECT: <b>NEW MODEL FEATURES &amp; SERVICE INFORMATION – 2018 OUTLANDER PHEV</b>			No: <b>TSB-17-00-014</b>
			DATE: <b>December 2017</b>
			MODEL: <b>2018 Outlander PHEV</b>
CIRCULATE TO:	<input type="checkbox"/> GENERAL MANAGER	<input checked="" type="checkbox"/> PARTS MANAGER	<input checked="" type="checkbox"/> TECHNICIAN
<input checked="" type="checkbox"/> SERVICE ADVISOR	<input checked="" type="checkbox"/> SERVICE MANAGER	<input checked="" type="checkbox"/> WARRANTY PROCESSOR	<input checked="" type="checkbox"/> SALES MANAGER

## PURPOSE



This bulletin contains important new model service information and features for the **2018 Outlander PHEV** (U.S. models only). Review the details that follow to familiarize yourself regarding new features and options. Refer to the 2018 Outlander PHEV Service Manual on MEDIC, MDL, or CD (p/n MSCD-027B-2018), and the Owner's Manual for details on these and other features.

## AFFECTED VEHICLES

2018 Outlander PHEV

## U.S. MODEL LINEUP

MODEL	ENGINE	MOTOR	TRANSAXLE
SEL (S-AWC)	4B11 2.0L DOHC MIVEC (Range Extender)	Two electric motors, 60 kW (maximum output): Front: S61 Rear: Y61	Two transaxles: Front: F1EKA Rear: F1E1A
GT (S-AWC)			

## SERVICE INFORMATION

See TSB-17-00-013 for 2018 Outlander PHEV Technical Specifications.

See TSB-17-00-012 for details on PDI procedures for the 2018 Outlander PHEV.

## NEW FEATURE HIGHLIGHTS

The 2018 Outlander PHEV has many of the standard features of the 2018 gasoline Outlander. This bulletin highlights updated features and differences between the gasoline Outlander and Outlander PHEV. Some of these features are unique to the Outlander PHEV.

<u>ENGINE/MOTOR</u>	<u>COMMENTS</u>
2L DOHC MIVEC range extender gasoline engine	Standard on all 2018 Outlander PHEV
60 kW twin electric motors	Standard on all 2018 Outlander PHEV
Lithium-ion main drive battery (12 kW)	Standard on all 2018 Outlander PHEV

<b><u>TRANSMISSION/DRIVE SYSTEM</u></b>	<b><u>COMMENTS</u></b>
Front & rear, single speed transaxles	Standard on all 2018 Outlander PHEV
Twin motor Super All-Wheel Control (S-AWC)	Standard on all 2018 Outlander PHEV

<b><u>EV DRIVE FEATURES</u></b>	<b><u>COMMENTS</u></b>
12 kWh Main drive Lithium-ion (Li-ion) battery	Standard on all 2018 Outlander PHEV
Main drive battery warming system	Standard on all 2018 Outlander PHEV
120V charging cable with CCID, 8A/12A	Standard on all 2018 Outlander PHEV
120V/240V charging system	Standard on all 2018 Outlander PHEV
DC Fast Charge capability	Standard on all 2018 Outlander PHEV
Level 3 Quick Charge port	Standard on all 2018 Outlander PHEV
Charger lid locking system	Standard on all 2018 Outlander PHEV
Regenerative Brake System (RBS) with steering wheel paddle shifters	Standard on all 2018 Outlander PHEV
High voltage cut-off system	Standard on all 2018 Outlander PHEV
Acoustic Vehicle Alert System (AVAS)	Standard on all 2018 Outlander PHEV

<b><u>CONVENIENCE</u></b>	<b><u>COMMENTS</u></b>
PHEV specific steering wheel	Standard on all 2018 Outlander PHEV
Twin motor S-AWC drive mode selector	Standard on all 2018 Outlander PHEV
Electric shift lever	Standard on all 2018 Outlander PHEV
EV Drive Mode switches (EV, Charge, Save)	Standard on all 2018 Outlander PHEV
Electric heater	Standard on all 2018 Outlander PHEV
Smartphone EV Remote Control	Standard on all 2018 Outlander PHEV
Electric fuel door release	Standard on all 2018 Outlander PHEV
1500W AC Power Supply Inverter with 2 outlets	Standard on GT

<b><u>EXTERIOR</u></b>	<b><u>COMMENTS</u></b>
PHEV Badging	Standard on all 2018 Outlander PHEV
Dark chrome grille accents	Standard on all 2018 Outlander PHEV
Side sill garnish with chrome accent	Standard on all 2018 Outlander PHEV
New Ruby Black Metallic	Exclusive for 2018 Outlander PHEV
18-inch two-tone alloy wheels	Standard on all 2018 Outlander PHEV
Emergency tire repair kit (no spare tire)	Standard on all 2018 Outlander PHEV
Halogen fog lamps with gloss black bezel	Standard on SEL
LED fog lamps with gloss black bezel	Standard on GT

<b><u>INTERIOR</u></b>	<b><u>COMMENTS</u></b>
Power driver and passenger front seats	Standard on all 2018 Outlander PHEV
Premium leather seats	Standard on all 2018 Outlander PHEV
High contrast instrument meter with color LCD display	Standard on all 2018 Outlander PHEV
Energy Meter Display (MID and SDA)	Standard on all 2018 Outlander PHEV
Deluxe floor console (larger w/cup holder lid)	Standard on all 2018 Outlander PHEV
Front / rear door trim w/bottle holder	Standard on all 2018 Outlander PHEV
Auto-dimming rear view mirror with Compass and Homelink®	Standard on all 2018 Outlander PHEV

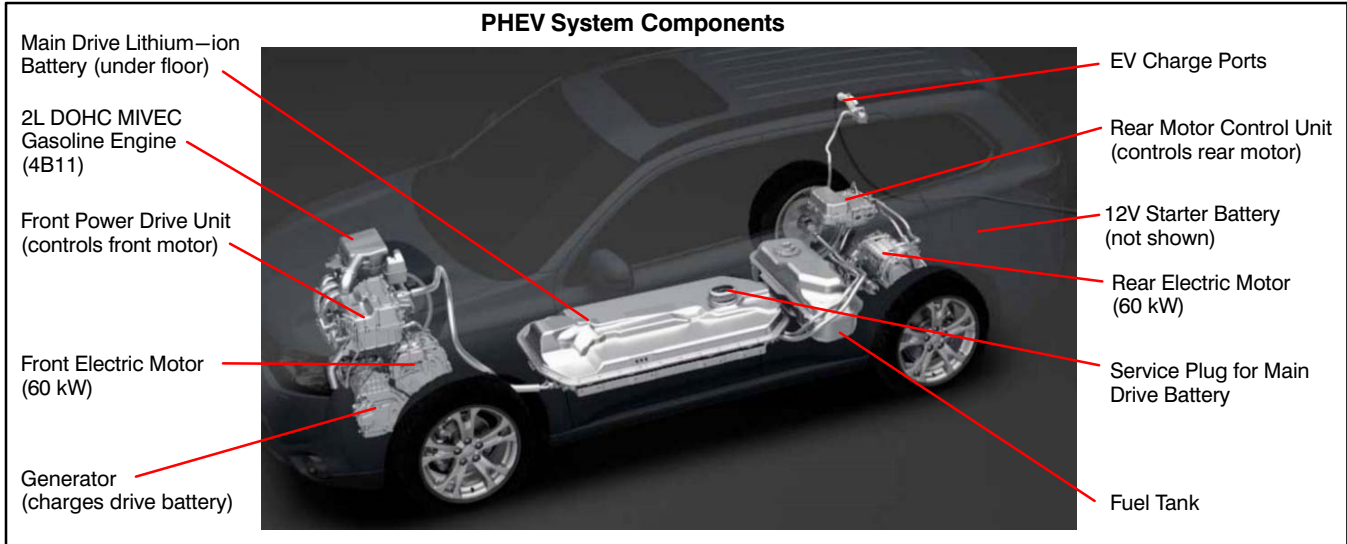
The systems in the following table are essentially the same as those for 2018 gasoline Outlander models, and are available for 2018 Outlander PHEV models as noted below.

<b><u>TECHNOLOGY</u></b>	<b><u>COMMENTS</u></b>
Electric parking brake switch w/Auto Hold	Standard on all 2018 Outlander PHEV
Power remote tailgate	Standard on all 2018 Outlander PHEV
Blind Spot Warning (BSW) with Lane Change Assist (LCA) and Rear Cross Traffic Alert (RCTA)	Standard on all 2018 Outlander PHEV
Power glass sunroof	Standard on GT
Rockford-Fosgate premium audio with 9 speakers	Standard on GT
7-inch touchscreen Smartphone Link Display Audio with HD radio, Bluetooth® phone/audio	Standard on SEL
Forward Collision Mitigation (FCM), Auto High Beam (AHB), Lane Departure Warning (LDW)	Standard on GT
Adaptive Cruise Control (ACC)	Standard on GT
Multi-view camera	Standard on GT
Rear-view camera	Standard on SEL
Heated steering wheel	Standard on GT

## ENGINE/MOTOR

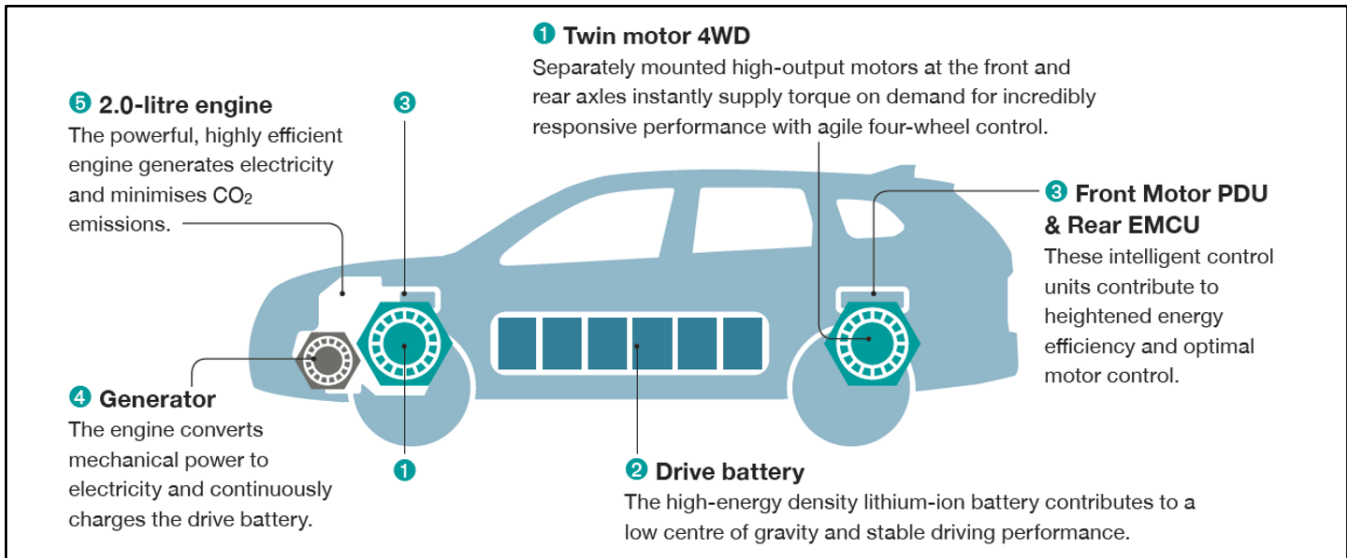
### PHEV System Components

Refer to the following diagram for the basic system components of the Outlander PHEV (all models).



### EV Drive System Features

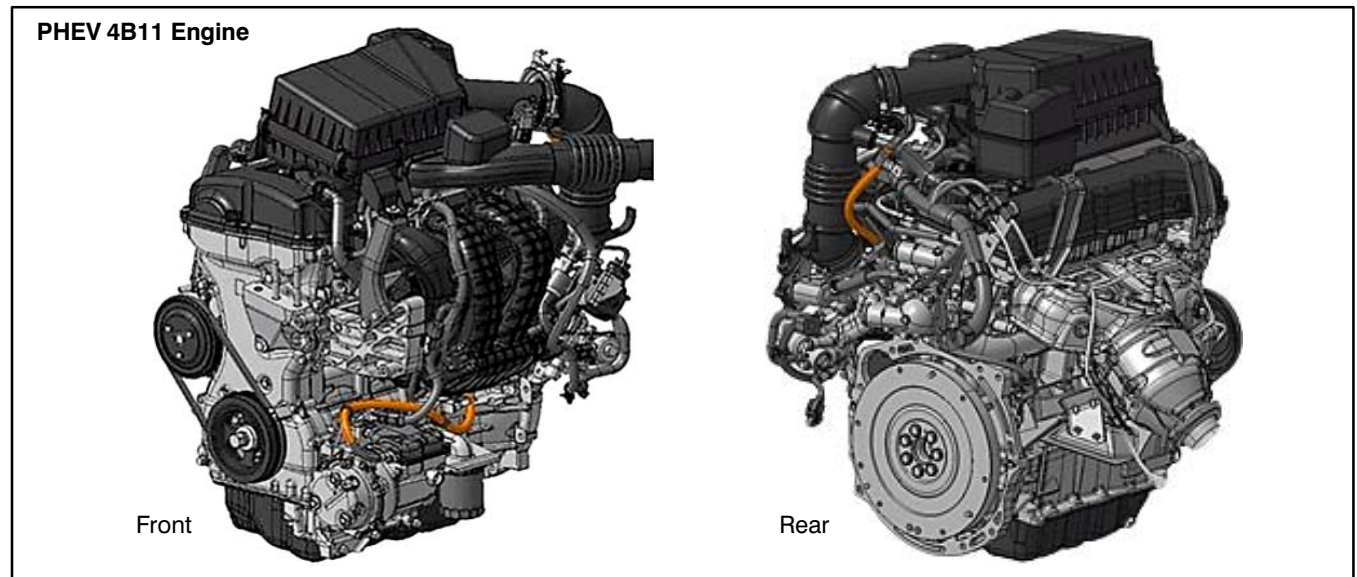
The Outlander PHEV has a main drive 12 kWh Lithium-ion battery and two 60 kW (maximum output) electric motors to drive both axles with S-AWC capability.



## ENGINE/MOTOR (continued)

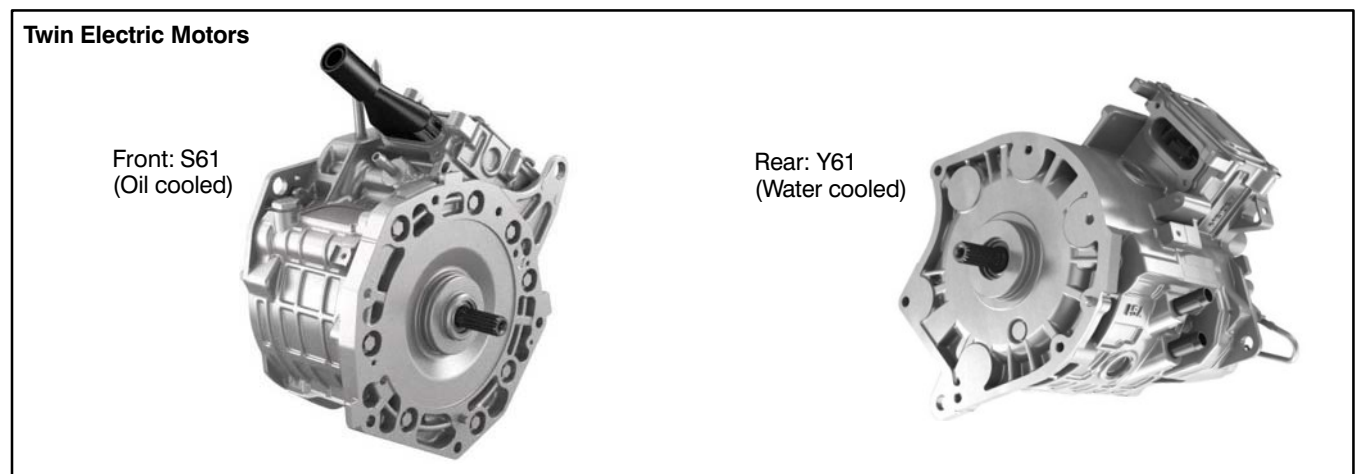
### 2L Gasoline Engine (4B11)

The Outlander PHEV is equipped with a 2L MIVEC range extender gasoline engine. The engine drives the generator and can assist the front motor in propelling the vehicle.



### 60 kW Twin Electric Motors (Front and Rear)

The front and rear drive motors have a low speed torque which provides quick acceleration and propels the vehicle. On deceleration or when driving downhill, the vehicle's kinetic energy is converted into electricity to charge the main drive battery (regeneration).



## TRANSMISSION/DRIVE SYSTEM

### Front and Rear Transaxles

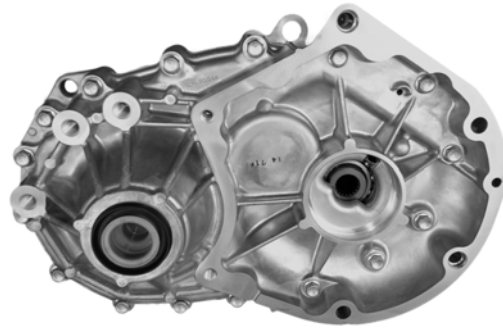
Since the electric motors can deliver torque over a wide RPM range, there is no need for a conventional transaxle. Two single speed, fixed reduction gear transaxles are driven by the electric motors at low to mid speeds, and by the gasoline engine at higher speeds.

#### Front and Rear Transaxles

Front: F1EKA



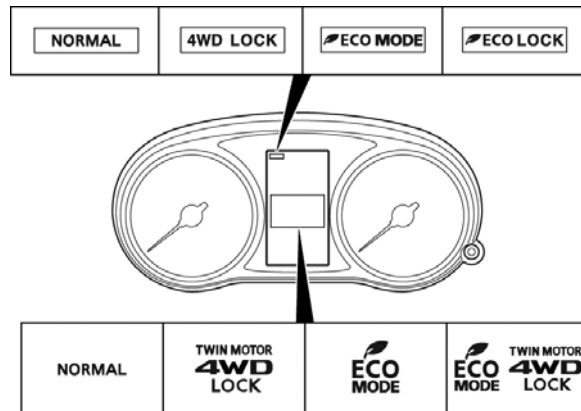
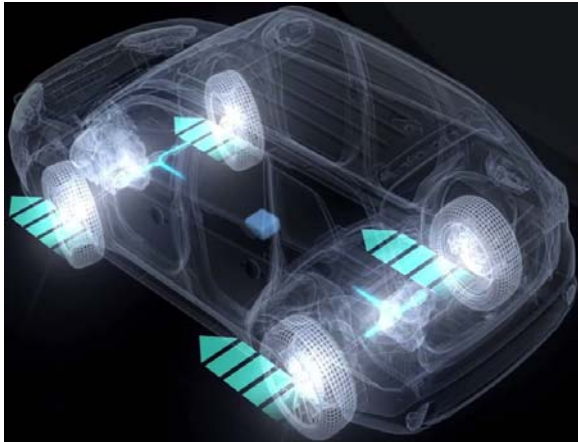
Rear: F1E1A



### Twin Motor Super All–Wheel Control (S–AWC)

The Outlander PHEV now has a twin motor Super All Wheel Control system with independent electric motors in the front and rear and independent brake control for 4 wheels.

#### Twin S–AWC

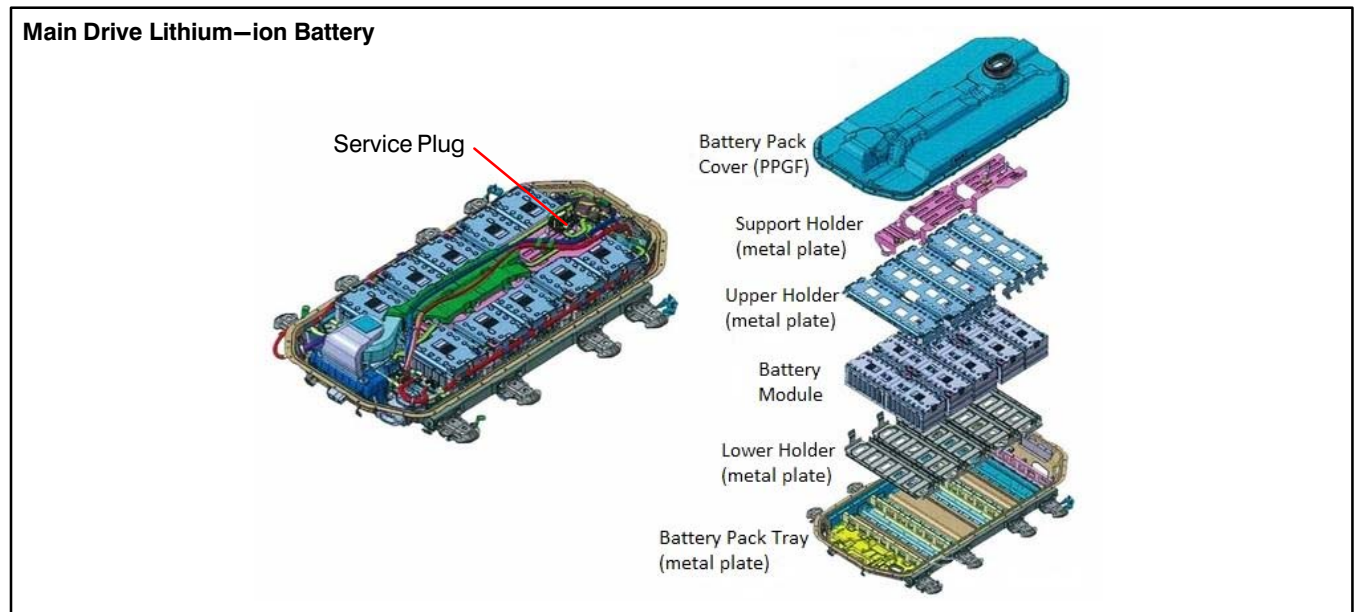




## EV DRIVE FEATURES

### Main Drive Lithium-ion Battery

The Outlander PHEV has a 12 kWh Lithium-ion main drive battery, mounted under the floor. Constructed with 10 modules containing 8 Lithium-ion cells in each module, for a total of 80 cells. The battery is cooled with R-1234yf refrigerant with its own evaporator and blower. A service plug is accessible to the rear of the center console inside the vehicle.



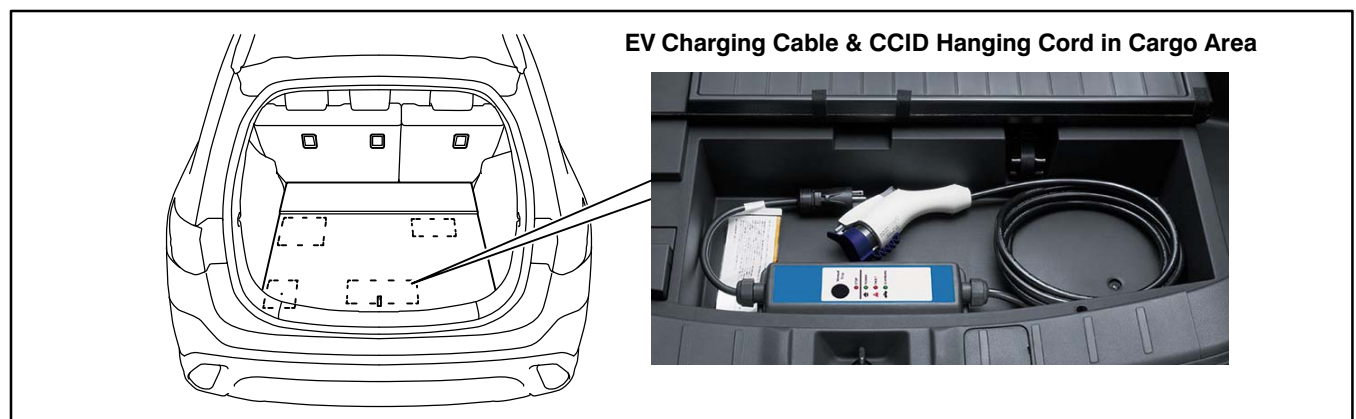
### Main Drive Lithium-ion Battery Warming System

A battery warming system heats the air in the drive battery using electricity from the charge cable or from the drive battery. While driving, the Drive Battery's temperature is kept above 14° F (-10° C).

When a charge cable is connected, the battery warming system operates to raise or maintain the drive battery temperature above -22° F (-30° C).

### Charging Cable with CCID

The integrated Mitsubishi EV charging cable and Charging Circuit Interruption Device (CCID) with hanging cord are stored under the rear hatch floor panel in the cargo area.



## EV DRIVE FEATURES (continued)


### Locking Charger Lid and Charging Ports



#### Charging Port Door

The charging port door on the right rear of the vehicle is unlocked using the Unlock switch on the FAST key remote. When open, a light illuminates the charge ports.

When charging, the MID shows charging information such as battery level and estimated charge time.

Also, a charge indicator lamp displays in the power meter. 

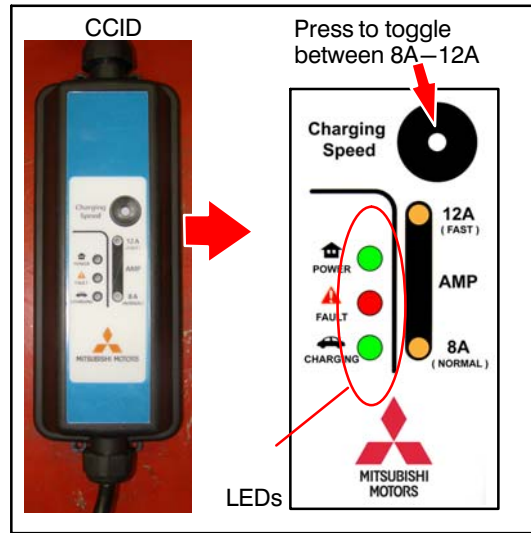
Two charge ports are available, accommodating 3 levels of charging, including DC Fast Charge.

#### Level 1 & 2 Charge Port

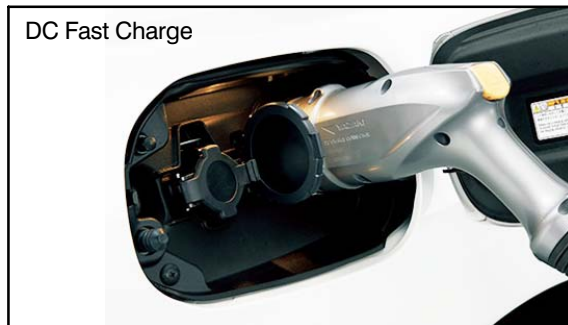


**Level 2 Charging:**  
240V Charging Station  
(Eaton shown as example)

#### Level 1 Charging (DC-DC): 120VAC EV Charge Cable and CCID



#### Level 3 Charging: DC Fast Charge (CHAdeMO charger shown as example)





## EV DRIVE FEATURES (continued)

### Regenerative Braking System (RBS) with Steering Wheel Paddle Shifters

The Outlander PHEV uses regenerative braking during deceleration to convert kinetic energy to electricity. The level of regenerative strength can be controlled using the paddle selectors on the steering wheel, or the selector lever. For more details on regenerative braking, refer to the Owner's Manual and PHEV training materials.

- **Regeneration Control – Shift Selector (Joystick)**

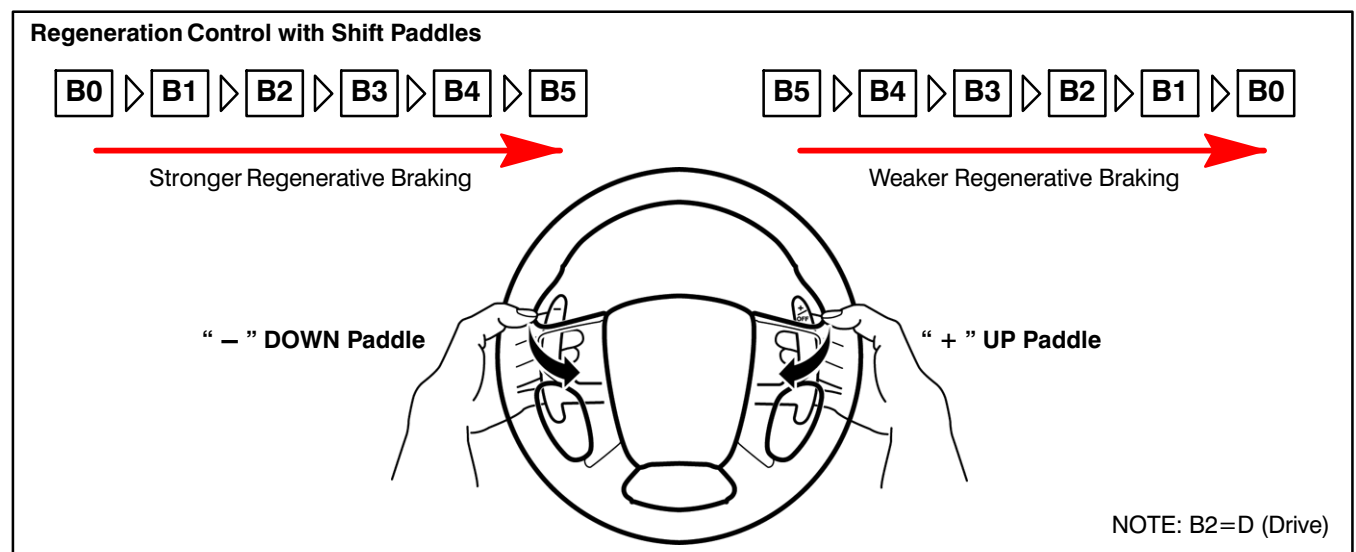
Two levels of regenerative braking are available using the shift selector. Pulling the selector lever towards you activates the lower level “B3” regenerative braking. Pulling it again activates the stronger “B5” level. The level will be displayed in the Multi-Information Display (MID).



- **Regeneration Control – Shift Paddles on Steering Wheel**

All 5 levels of regenerative braking are available using the “-” (down) and “+” (up) shift paddles on the steering wheel.

**NOTE:** B2 is the same as D (drive), meaning



## EV DRIVE FEATURES (continued)

### High Voltage Shut-off System

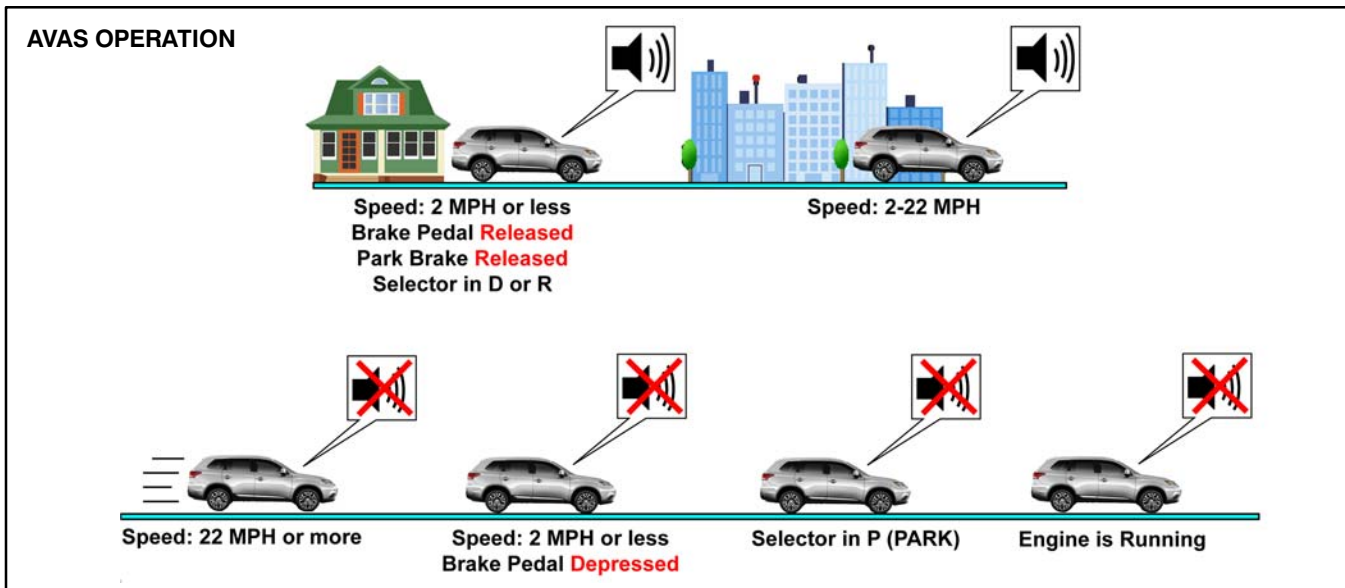
The emergency shut-off system will be activated and the high-voltage system will automatically turn off under the following conditions:

- Certain front, side or rear collisions.
- Certain Plug-in Hybrid EV System malfunctions.

When the emergency shut-off system is activated, the Ready indicator is turned off.

### Acoustic Vehicle Alert System (AVAS)

Because the electric motors are very quiet in the Outlander PHEV at low speeds or when in "READY" mode, an audible pedestrian alert system has been added. The alert is heard in forward and reverse gears between certain speeds. See the diagram below for operation details.

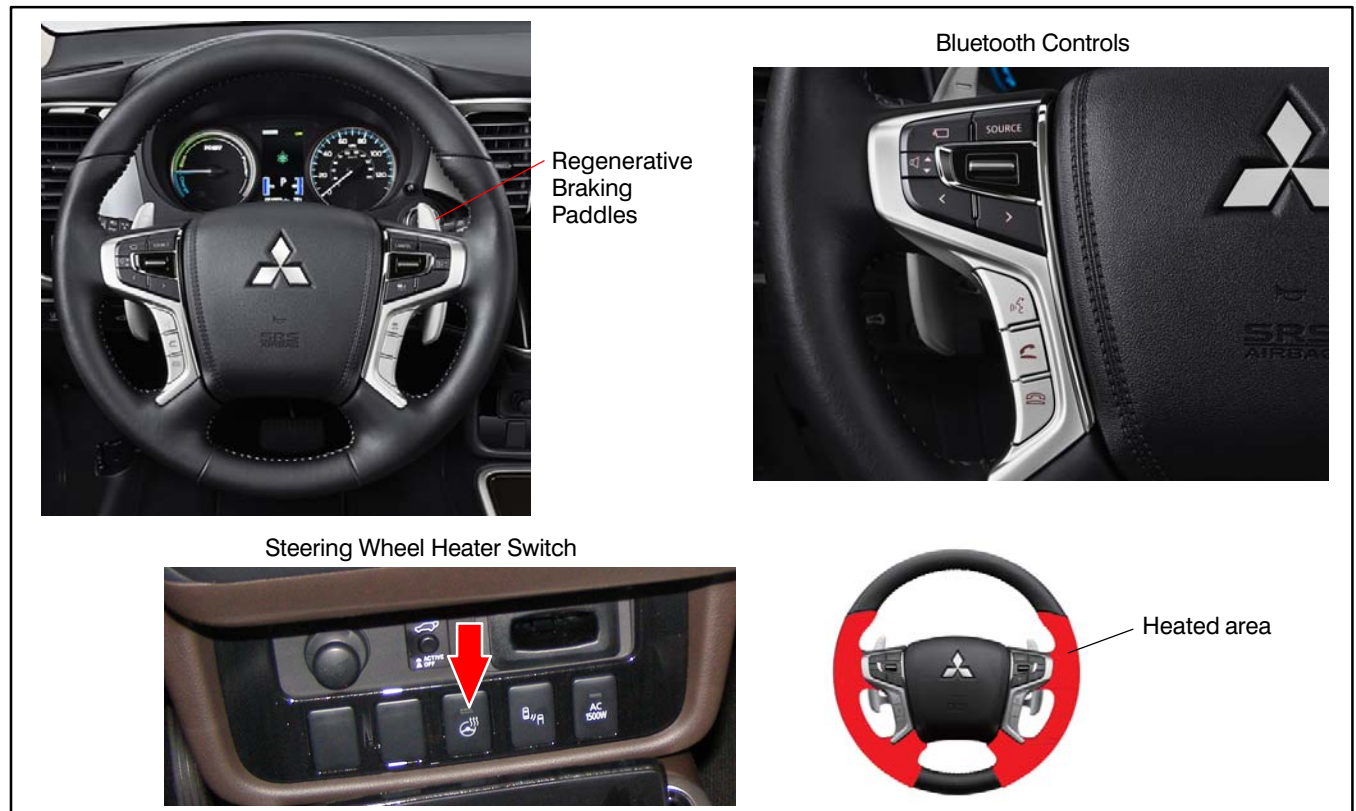


## CONVENIENCE FEATURES

The systems described in this section apply to all 2018 Outlander PHEV models, unless noted otherwise.

### PHEV Specific Steering Wheel

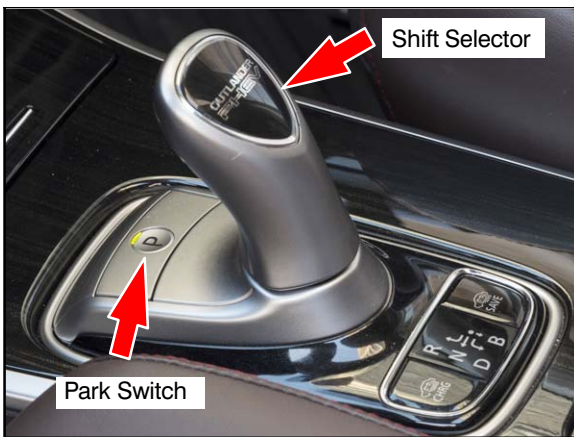
All Outlander PHEV models are equipped with a steering wheel uniquely designed for PHEV models. The leather steering wheel also is equipped with bluetooth controls, paddle shifters for regenerative braking control, and a heater which automatically stops after 30 minutes.



### Twin Motor S-AWC Drive Mode Selector

The twin motor Super All Wheel Control system switch is located in the newly designed center console.

## CONVENIENCE FEATURES (continued)



### Electric Shift Selector (“Joystick”)

All Outlander PHEV models are equipped with a unique “joystick” electric shift selector, and electric Park switch.

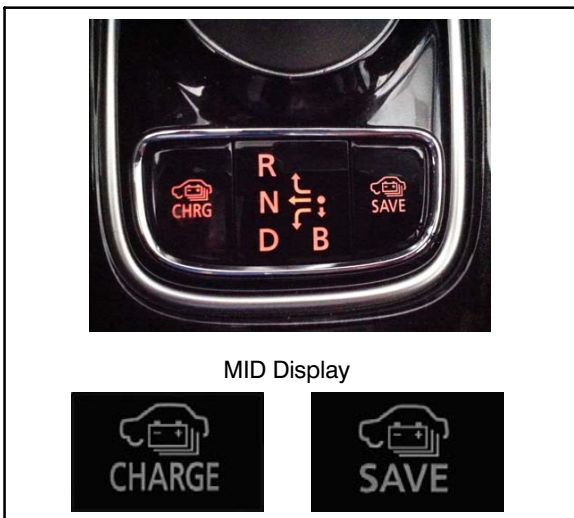
## EV Drive Mode Switches: Battery Charge and Save Modes



### EV Mode Switch

To enable EV mode (vehicle drives with electric motors only), press the “EV” priority button on the center console (below the 4WD switch).

The Multi–Information Display shows “EV” when activated, and goes off when pressed again.



### CHRG switch:

To charge the drive battery, press the Battery Charge switch (just below shift selector) with POWER switch ON. The engine will start, powering the generator, and charge the battery. MID will display the “CHARGE” symbol.

**NOTE:** A state of charge/SOC of 80% is recommended. The engine will stop when state of charge reaches 90%.

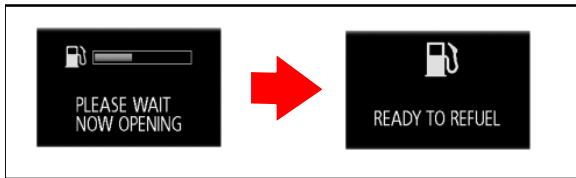
### SAVE switch:

To save power in the drive battery, press the Battery Save switch with POWER switch ON. The engine turns the generator to preserve battery SOC.

MID will display the “SAVE” symbol.



## CONVENIENCE FEATURES (continued)



### Electric Fuel Door Release (standard on all models)

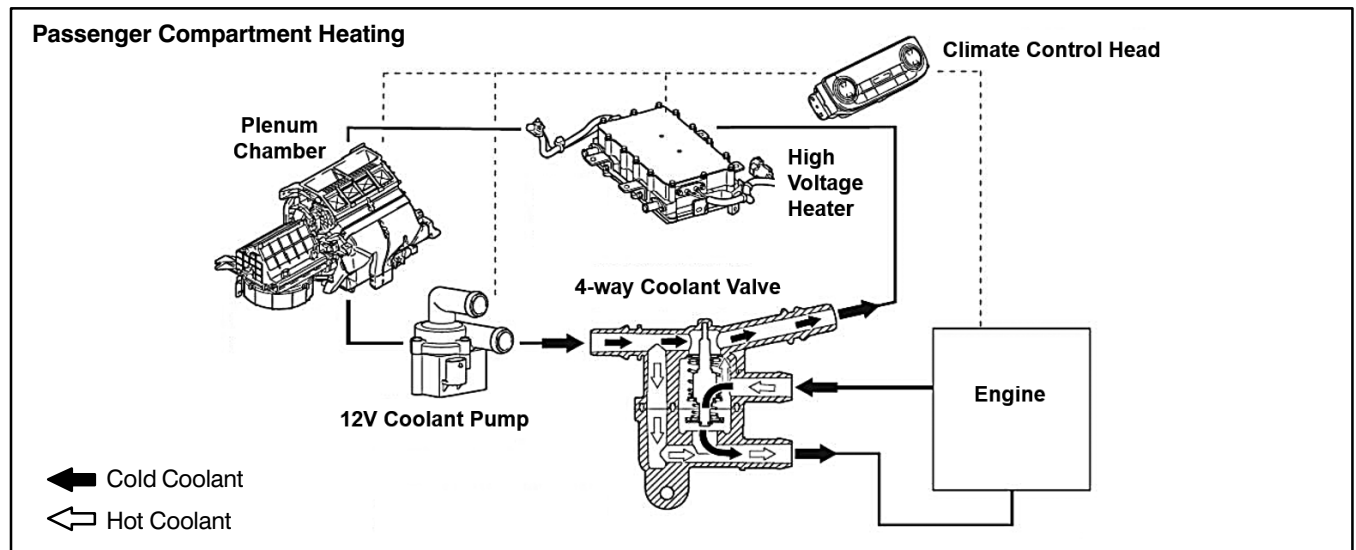
The Outlander PHEV has a closed fuel tank system to reduce engine operation frequency and improve fuel economy. The internal pressure of the closed fuel tank is higher than a conventional tank. This means the internal tank pressure must be relieved before refueling by pressing the electric fuel door release button (on the lower dash left of the steering wheel).

- Once the button is pressed the Multi-Information Display (MID) shows the door release progress.
- “Ready to Refuel” will display when the door is released.

**NOTE:** If internal tank pressure is high, it may take up to 10 seconds before the door is released.

### Electric Heater

The passenger compartment of the Outlander PHEV is heated by an electric heater. When selected on the Climate Control head, coolant is heated by the engine or high voltage heater and delivered to the plenum chamber by an electric 12V coolant pump. The 4-way coolant valve directs flow from either the engine or PTC heater depending upon coolant temperature.





## CONVENIENCE FEATURES (continued)

### Smartphone EV Remote Control

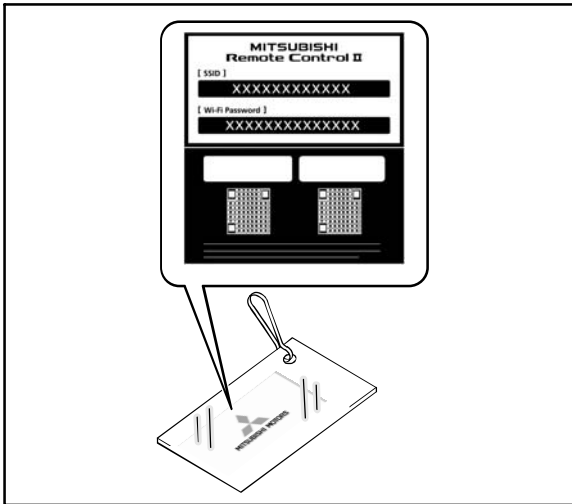
The Mitsubishi Remote Control App lets the driver connect to the vehicle with an i-OS or Android device and control certain PHEV functions such as preheating/cooling vehicle interior, setting start/stop charge times, displaying vehicle settings/status.

The following operating systems are supported:

- i-Phone: iOS 7.0 or later
- Android: OS 4.4 or later

For vehicles sold in the U.S., use software version PHEV II, available from the Apple App Store and Google Play. For more details, go to the following website:

[http://www.mitsubishi-motors.com/en/products/outlander\\_phev2/app/remote/](http://www.mitsubishi-motors.com/en/products/outlander_phev2/app/remote/)



### Remote Control registration card

The remote control registration card with WiFi information is attached to the F.A.S.T. Key for every vehicle.

This card contains necessary ID and password information for the customer to register the smartphone Remote Control app.

Refer to the illustration below for examples of the many systems that can be accessed with the Remote Control App.

## CONVENIENCE FEATURES (continued)

### Mitsubishi Remote Control Functions

**state.A/C status**

- Waiting for Pre-activated Climate Control (Cool)
- Operating Pre-activated Climate Control (Cool)
- Waiting for Pre-activated Climate Control (Heat)
- Operating Pre-activated Climate Control (Heat)
- Waiting for Pre-activated Climate Control (Defrost)
- Operating Pre-activated Climate Control (Defrost)

**Charging Method**

- Charging
- Under Quick Charging
- Under Normal Charging
- Under Trickle Charging
- Charge timer is set
- Connected (Quick Charging)
- Connected (Normal Charging)
- Connected (Trickle Charging)
- Connected (Waiting to Charge)

**Charging status and the driving battery state of charge**

**Remaining time before charging is completed**

**Timer Charge ON/OFF**

- Timer ON/OFF : Timer Charge ON
- Timer ON/OFF : Timer Charge OFF

You can turn on/off the charging timer.

**Manual A/C ON/OFF**

- Climate ON/OFF : Manual A/C ON
- Climate ON/OFF : Manual A/C OFF

You can operate the Manual Remote Climate Control

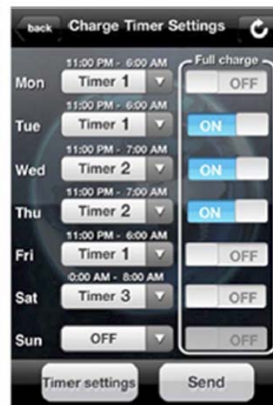
**Timer A/C ON/OFF**

- Set : Timer A/C ON
- Set : Timer A/C OFF

You can turn on/off the remote climate control timer.



Home



Charging Timer Settings



Climate Timer Settings



Vehicle Status



Operations



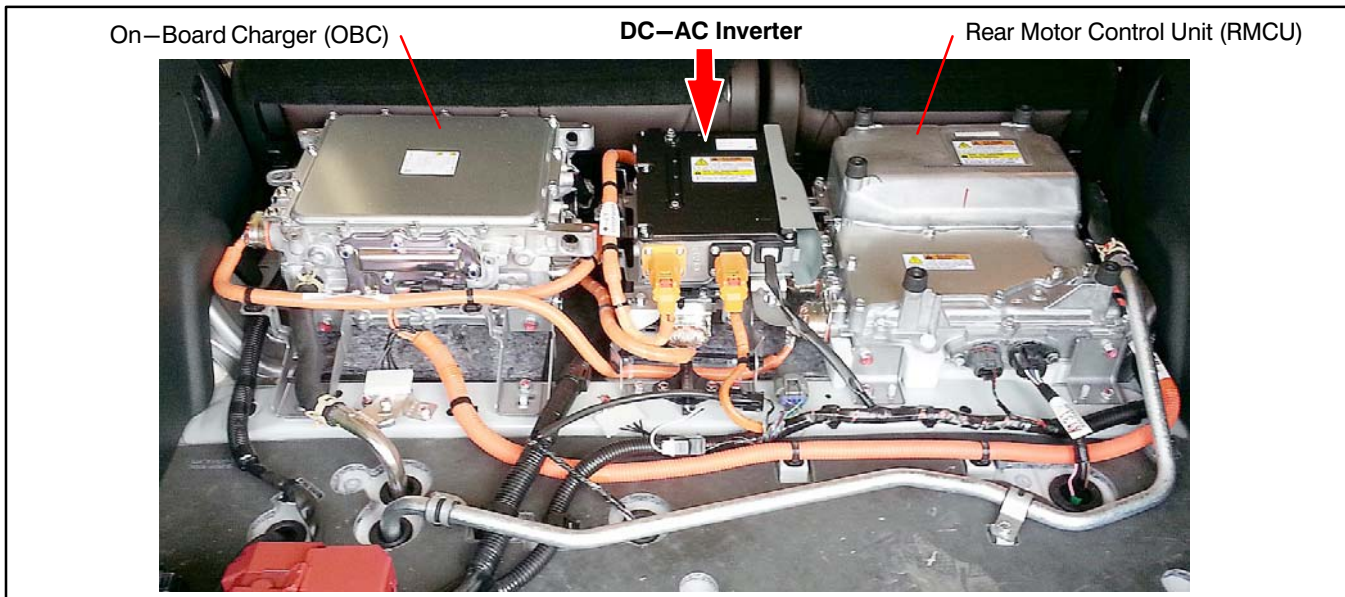
Settings

## CONVENIENCE FEATURES (continued)

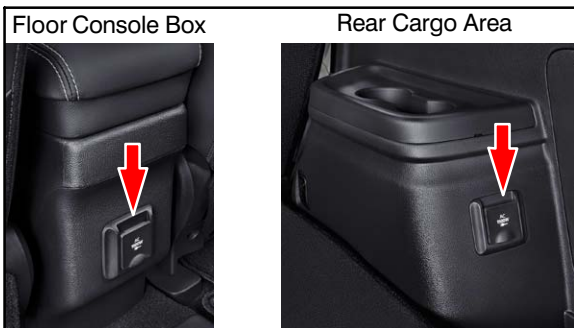
### Accessory sockets (console box & cargo area)

As an option, GT models are equipped with two 120V accessory outlets, one behind the center floor console box, one in the rear cargo area. Stored power from the main drive battery is available from these 3-pronged outlets, and operates up to 4 hours.

The DC-AC inverter is mounted between the On-Board Charger (OBC) and the Rear Motor Control Unit (RMCU) in the cargo area to convert 300VDC from the Main Drive battery to 120VAC for the outlets.



To enable power to the 120V AC outlets on the Outlander PHEV, press the “AC 1500W” switch in the center console.



The outlets can be used to plug in an electrical appliance (e.g., coffee maker, blender, TV, Fridge, etc.)

## EXTERIOR



### PHEV Badging on sides and rear

Special PHEV badging are mounted on both sides and on the rear of all 2018 Outlander PHEV models.



### New Color

A new paint color, ruby black metallic, is exclusively available for all 2018 Outlander PHEV models.



### 18-inch Two-Tone Alloy Wheels

All 2018 Outlander PHEV models come standard with boldly designed 18-inch two-tone alloy wheels.



## EXTERIOR (continued)



### Dark Chrome Radiator Grille

An attractive dark chrome radiator grille is standard on all 2018 Outlander PHEV models.



### LED/Halogen Fog Lamps with Gloss Black Bezel

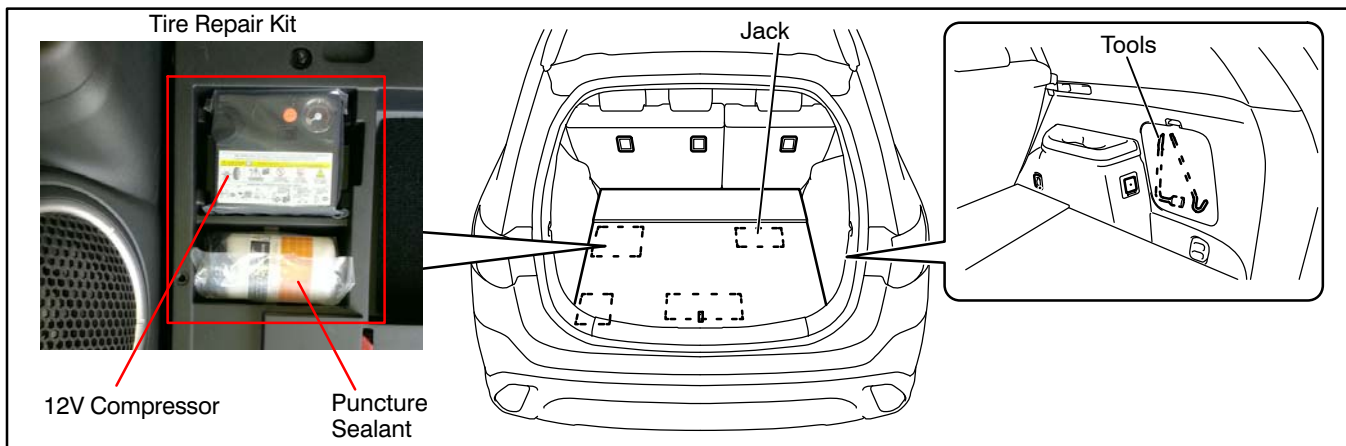
- LED fog lamps surrounded by gloss black bezel are standard equipment on GT models.
- SEL models come standard with halogen fog lamps with the gloss black bezel (not pictured).

## Tire Repair Kit, Jack & Tools

The Outlander PHEV does not come with a spare tire. Instead, a tire repair kit is provided to temporarily repair a minor puncture caused by a nail, screw, or similar object.

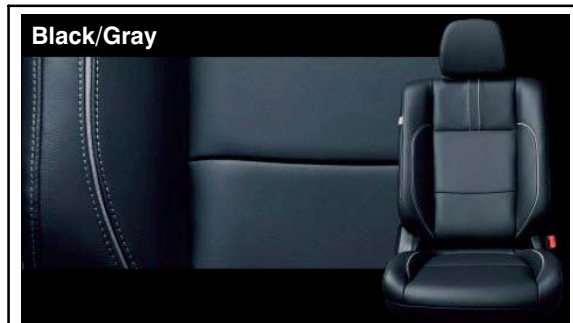
The tire repair kit is stored beneath the floor board of the cargo area (see illustration below), and contains a 12 V air compressor, puncture sealant, and speed restriction sticker.

The jack is stored beneath the floor board of the cargo area. The tools are behind the access panel in the right hand quarter trim (see illustration below).





## INTERIOR



### Seats

- All models come standard with premium leather seats:
  - Black with gray stitching or
  - Brown with red stitching
- Also standard on all models are 8-way adjustable power driver and passenger front seats.



### Rear View Mirror with Compass

Also standard on all PHEV models is a rear view mirror equipped with a compass and Homelink®.



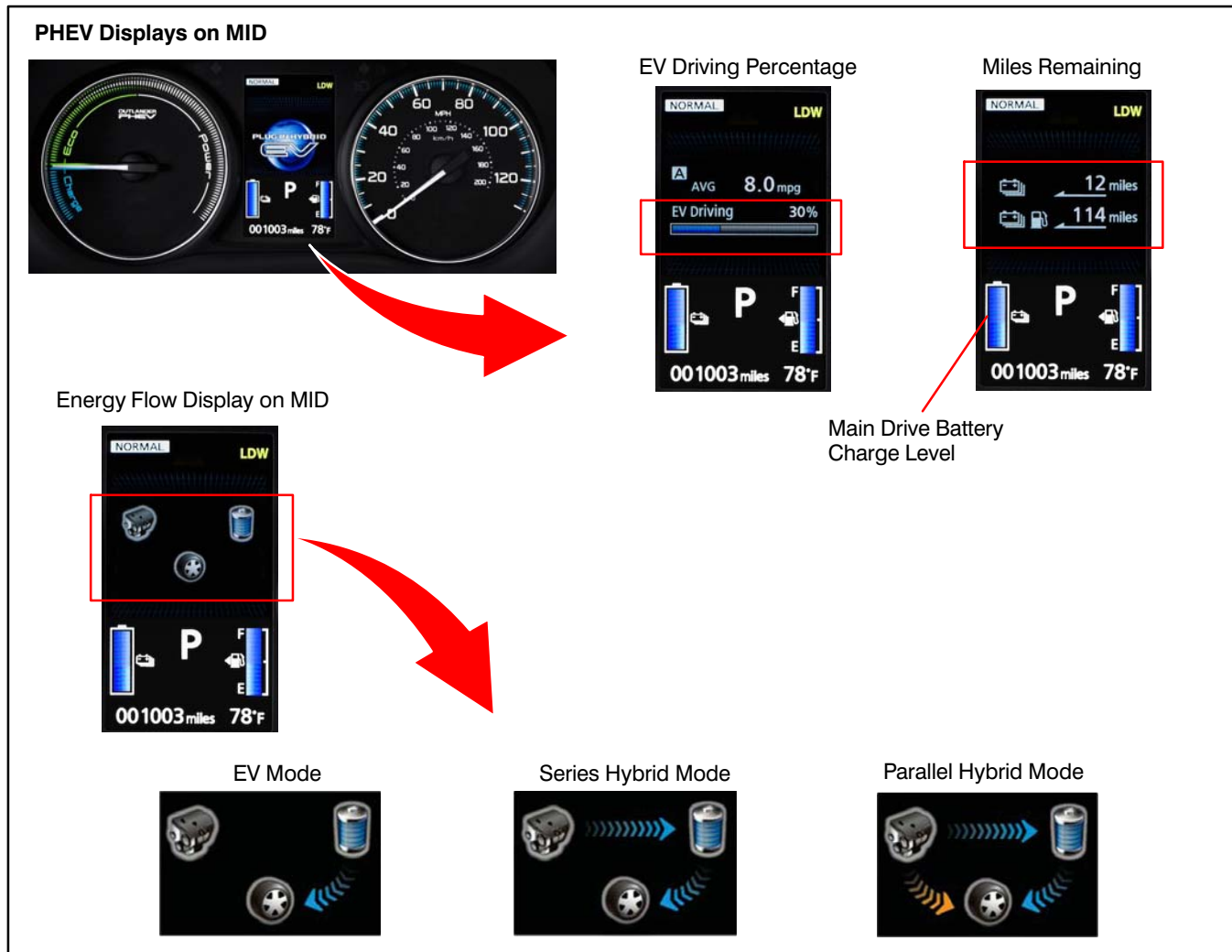
### Deluxe Floor Console

All models come with a deluxe floor console with larger cup holders and closing lid, which matches the premium interior print panels.

## INTERIOR (continued)

### Energy Flow Display on MID and SDA

Details of EV driving such as main drive battery charge level, miles remaining for EV and gasoline driving, and Energy Flow are displayed on the multi-information display in the combination meter, and on the Smartphone Link Display Audio screen.



## INTERIOR (continued)

### PHEV Displays on SDA

The main screenshot shows the SDA home screen with the following icons highlighted in a red box: Vehicle Info, Timed Air Conditioning, Timed Charging, and Charging Cost. A red arrow points from this box to a collage of detailed views for each of these functions:

- Vehicle Info:** Shows EV Power (120 kW), Instant MPG (60 mpg), Charge (60 kWh), and Current (6 kWh). It also displays EV Cruising Range (5 mile) and Total Cruising Range (114 mile).
- EV Drive Ratio:** Shows a ratio of 86% and Average MPG of 223.3 mpg. It also displays Avg Consum. of 3.2 mile/kWh.
- Timed Air Conditioning:** Shows Start Time and Operating Time (10, 20, or 30 minutes) with AM/PM selection.
- Timed Charging:** Shows Start Time and End Time with AM/PM selection.
- Charging Cost:** Shows a graph of charging cost over time and a table of monthly costs. The table shows:
 

Month	Cost
2	12
2	12
3	12
3	12
1	12
4	12

### Energy Flow Displays on SDA

The Energy Flow displays show the following information for each mode:

- EV Mode:** EV Cruising Range 5 mile, Total Cruising Range 114 mile.
- Series Hybrid Mode:** EV Cruising Range 5 mile, Total Cruising Range 115 mile.
- Parallel Hybrid Mode:** EV Miles to Empty ---- mile, Total Miles to Empty 176 mile.

**FACTORY AND PORT OPTION PACKAGES**

- ENTERTAINMENT PACKAGE** – 2018 Outlander PHEV – All Trim Levels
- Rear seat DVD player
  - Remote control
  - Infrared wireless headphones (2)

- EXTERIOR PACKAGE** – 2018 Outlander PHEV – All Trim Levels\*
- Front, side, and rear air dams

\* Developed for PHEV models only

- TOWING PACKAGE** – 2018 Outlander PHEV – All Trim Levels
- Tow hitch
  - Trailer tow wire harness

- CHROME PACKAGE** – 2018 Outlander PHEV – All Trim Levels
- Chrome door handle covers
  - Side view mirror covers

- PROTECTION PACKAGE** – 2018 Outlander PHEV – All Trim Levels
- Rear bumper step protector
  - Scuff plates
  - Liftgate protector

- CARGO MAT PACKAGE** – 2018 Outlander PHEV – All Trim Levels
- Cargo mat
  - Cargo net

- ALL WEATHER PACKAGE** – 2018 Outlander PHEV – All Trim Levels
- Cargo tray
  - All-weather floor mats (4)

- QUICK VALUE PACKAGE 1** – 2018 Outlander PHEV – All Trim Levels
- Black lug nuts and wheel locks
  - Front and rear mudguards
  - Cargo mat
  - Cargo net

- QUICK VALUE PACKAGE 2** – 2018 Outlander PHEV – All Trim Levels
- Hood protector
  - Roof rack crossbars
  - Cargo tray
  - All weather floor mats (4)

## ACCESSORY OPTIONS (U.S. Models)

The following port and/or dealer installed accessories are available for 2018 Outlander PHEV.

- LED fog lights (SEL only)
- Front and rear park assist sensors
- Rear park assist sensors
- Hood protector
- Sunroof wind deflector (GT only)
- Roof rack crossbars
- Tonneau cover
- Front and rear mudguards
- Rear large spoiler
- Body side moldings
- Carpeted floor mats and portfolio
- Black lug nuts and wheel locks
- "PHEV" body graphics\*
- "OUTLANDER" hood emblem\*

\* Developed for PHEV models only

### PHEV Body Graphics & Hood Emblem





<b>WARRANTY</b>
<b>U.S. and Puerto Rico</b>
● Basic – 5 years or 60,000 miles
● Powertrain – 10 years or 100,000 miles (original retail purchaser only). 5 years or 60,000 miles to subsequent owners.
● PHEV Components – 10 years or 100,000 miles
● Main Drive Battery – 10 years or 100,000 miles
● Outer Panel Rust Perforation – 7 years or 100,000 miles
● Adjustments – 1 year or 12,000 miles
● Roadside Assistance – 5 years / unlimited miles
● Emissions – Refer to the Warranty and Maintenance Manual for coverage details.