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## 01 QMR OF THE MONTH

We are pleased to announce this month's Winner of QMR of the Month:

**Corey Repoza** from  
**Herb Gordon Subaru in Silver Spring, MD**

Corey submitted an excellent QMR outlining his diagnosis and repair of the A/C system on a new 2019MY Forester. The customer stated the A/C system was not working and that it blew warm air regardless of the setting. After confirming the condition as reported, Corey connected his manifold gauges to check high and low-side system pressures which were both equal at just 90 psi. A thorough inspection for refrigerant leaks revealed nothing. Realizing he was working with a variable-displacement type compressor, Corey connected the SSM4 and checked the current data. His findings revealed the compressor was not coming on along with both high and low-side pressures were zero instead of the 90 psi his gauges read. Next, he checked for DTCs and started looking into the stored B14A3 which related to an open pressure sensor circuit. The diagnostics asked if a B14A4 (shorted sensor circuit) was present which it was not. Corey then started looking into the wiring diagram for commonalities between different components and realized the air intake door and high pressure sensor shared the same power and ground. Since the harness connector (B627) for the high pressure sensor was easier to access than the mix door actuator's, he disconnected it and realized current data for the low-side pressure began to change. After numerous additional electrical checks which he provided detailed results of in his report, Corey determined the high pressure sensor was failed internally. He proceeded to evacuate the system and replace the sensor. After recharging, normal current data was observed along with normal system operation.

In appreciation for going the extra mile and sharing his experience with us, Corey will be receiving the following from his Field Service Engineer:

**A \$500.00 Snap-On gift card.**

**CONTINUED ON THE NEXT PAGE**

## SUBARU TECHLINE HOLIDAYS & HOURS OF OPERATION

### Holiday Break: (Closed)

Monday, December 24, 2018  
 Tuesday, December 25, 2018

### New Years Day: (Closed)

Tuesday, January 1, 2019

Mon. - Thurs.	8:30AM - 7:30PM EST
Friday	10:30AM - 5:00PM EST
Saturday	9:00AM - 3:00PM EST

SUBARU OF AMERICA



### CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.

The Subaru TechTIPS newsletter is intended for use by professional Technicians ONLY. Articles are written to inform those Technicians of conditions that may occur in some vehicles, or to provide information that could assist in the proper servicing of the vehicle. Properly trained Technicians have the equipment, tools, safety instructions, and know-how to do the job correctly and safely. If a condition is described, DO NOT assume that your vehicle has or will have that condition. Impreza, Legacy, Justy, Loyale, Outback, Forester, Subaru SVX, WRX, WRX STI, Baja, Tribeca, BRZ, XV Crosstrek and "Quality Driven" are Registered Trademarks. Ascent is a trademark.

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ISO 14001 is the international standard for excellence in Environmental Management Systems. Please recycle or dispose of automotive products in a manner that is friendly to our environment and in accordance with all local, state and federal laws and regulations.



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The other Regional winners selected from QMRs submitted during October 2018 were:

- **Evan Puckett** from **Jim Keras Subaru** in Memphis, TN
- **Kevin Lopez** from **Timmons Subaru** in Long Beach, CA
- **Bill Duaine** from **Flemington Subaru** in Flemington, NJ

Any Subaru Technician can participate in the QMR of the Month program. See the February 2013 and January 2016 issues of TechTIPS for full details. You just might see your name and photo in a future issue of Tech TIPS!

One of the first things to do after attempting to reproduce a customer's concern is to check for relevant Technical Service Bulletins or TechTIPS. If the condition being diagnosed is a known concern, there is a good chance STIS has information on it. TSBs and TechTIPS may also have diagnostic information not available in the Service Manual, saving the Technician valuable time and ensuring the vehicle is fixed right the first time.

Scenario 1: A customer presents their 2018 Outback with a concern of being locked out of the vehicle after running into a convenience store: their remote keyless entry doesn't operate. Without full details such as the hazard lamps being left on, the Technician may have difficulty duplicating the concern and return a no problem found. A review of TSBs for the vehicle will return 07-124-17R "Reprogramming File Availability for Remote Keyless Entry (RKE) and Access Key Functionality Enhancement"

Scenario 2: A customer presents their 2014 WRX with the Check Engine Lamp illuminated. The Technician finds DTC P0300 stored. Today, the engine is not misfiring so the Technician may consider clearing the DTC and releasing the vehicle with no problem found. Once again, a review of TSBs will return 07-96-15 Design Change to Engine Wiring Harness.

If a TSB or TIP is not found for a customer's concern, follow the applicable Service Manual diagnostics.

## 05 ABNORMAL NOISE DIAGNOSIS

The Techline continues to receive calls from Technicians needing assistance with noise concerns. One thing to keep in mind when calling is to have very specific details on the noise and its location. If possible, it is recommended a video of the noise be submitted for the Techline to better assist you. If unable to duplicate the noise, arrange for a test drive with the customer. One of the things you will need to diagnose a noise which is hard to find is a set of chassis ears. This will be one of the first recommendations by the Techline in order to get the noise localized. Once localized, Techline may have a better idea of a possible cause and be able to give better advice on how to approach the noise. One of the main issues the Techline sees is lack of detail. Here are some questions Advisors can ask customers or, you should have the answer to when calling:

When does the noise occur? (hot, cold, rough surface only, etc.)

Where is the noise coming from? (L/F, R/R, center of vehicle, etc.)

- Steering/suspension related
- Engine/trans/driveline related
- Brake application related
- Body noise related



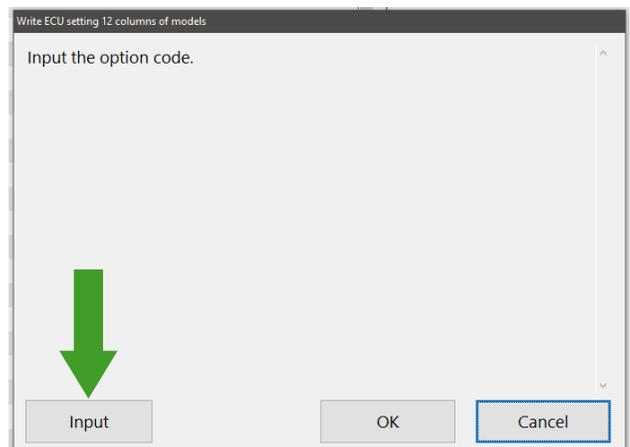
Is the noise normal? (Not sure? Compare it to a like vehicle.)

Check for any related TSBs or TIPS on the issue.

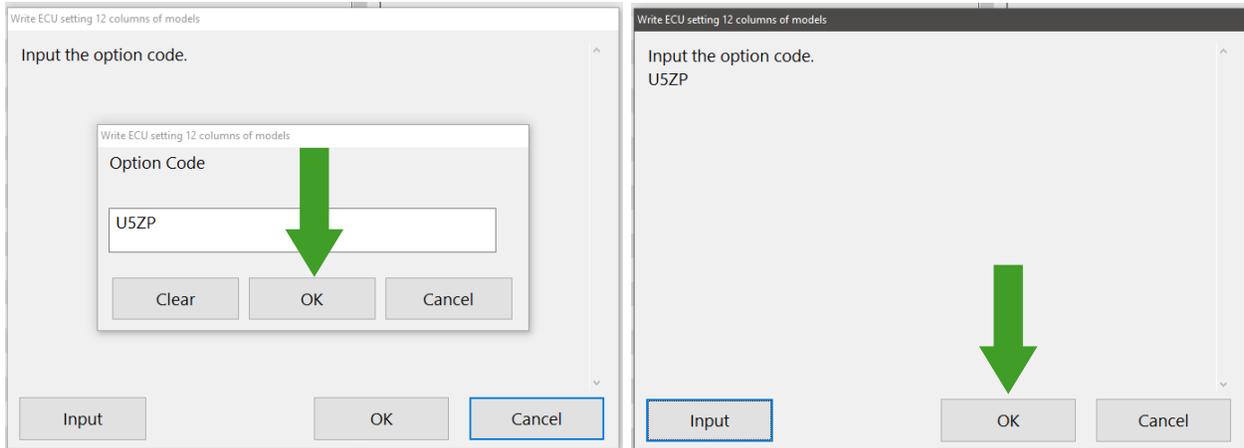
**REMINDER: An Electronic Listening Device is required as per Subaru Minimum Required Equipment List found on SubaruNet.**

## 07 PERFORMING VARIANT WORK WHEN REPLACING COMBINATION METERS

Most current model vehicles require Variant Work to be performed when replacing the combination meter. Typically, the Technician will perform Operation Procedure A which saves the configuration from the original meter before replacement then uploads it to the new meter. If Operation Procedure A fails or communication to the meter cannot be established, the Technician must perform Operation Procedure B. Due to changes in SSM software, additional steps are needed to successfully input the Applied Model and Option codes. To enter this information, the Technician must click the "Input" button, enter the code, click OK, and click OK again.



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The 2019 Forester Automatic Start-Stop System will only function when certain parameters are met. Knowledge of the conditions required to enable this system to function are essential when attempting to duplicate a customer's concern of Automatic Start-Stop System is inoperative. The conditions required to enable system operations include parameters set in several separate systems. Please refer to the Owner's Manual pages 339-344 for details.

When the Automatic Start-Stop System is engaged, the system icon in the instrument cluster illuminates in green. When the Automatic Start-Stop System is turned off, the icon illuminates in amber. When a malfunction is detected, the amber icon blinks. When Automatic Start-Stop System enable conditions are not met, the white icon with crossed line illuminates.



# TECH TIPS GREATEST TIPS

*This series features TechTIPS articles frequently referred to by Techline. This month's feature from August 2014 shows the operation of the seat heater system equipped in 2015+MY Legacy and Outback vehicles.*

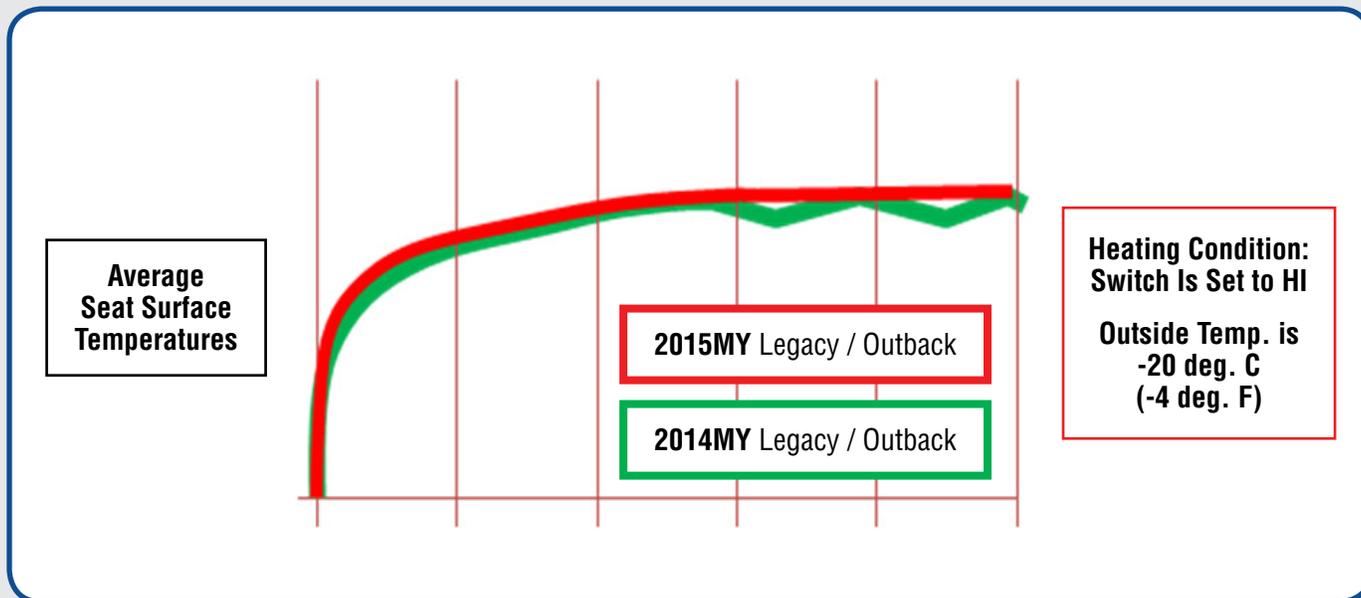
**NOTE:** Please refer to 2014 Forester Seat Heater Operation and Switch Functions article from November 2013 for more information.

**NOTE:** Ascent seat heaters elements are not serviced separately from the seat cushion.

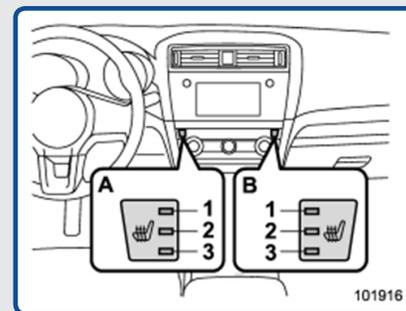
## 12 2015MY LEGACY / OUTBACK SEAT HEATER OPERATION OVERVIEW

The front seat heater system used in the 2015MY Legacy / Outback is a new design compared to prior systems. It utilizes a thermistor sensor which allows the front seats to remain at warmer temperatures more consistently than the prior system. The new system is very different due to the change in sensors. The seat heater system on 2014MY and prior Legacy / Outback is a thermostat sensor-based system which makes the front seats heat up periodically and then cool down until the sensor indicates a need to turn the element on again. When this sensor-based system is operating, the temperature increases until the sensor determines the heating element has reached approximately 50 degrees C (roughly 122 degrees F). At that point, the element is switched off until the sensor reads approximately 40 degrees C (104 degrees F). At that temperature reading, the element is turned back on again to re-heat the seat resulting in an approximate 18-degree range. This cycle continues as long as the seat heater switch is on in either the low or high position.

In comparison, the thermistor sensor used in the new system also cycles on and off but, the operating range (temperature difference) is much smaller with a slightly lower upper limit temperature. The new system turns on the element until the thermistor sensor determines approximately 38 degrees C (roughly 100 degrees F) then cycles the element off until the temperature (at the thermistor) reaches approximately 37 degrees C (roughly 98 degrees F) before the element cycles on again, yielding only an approximate 2-degree range. As you can see, the upper and lower temperature range on the new system is significantly reduced. However, this is an apples and oranges comparison as the actual seat temperature felt is very similar. As you can see on the chart below, the average surface temperature of the front seat for each system ends up being very close. The RED line on the graph shows the temperature on front seat surface of the new 2015MY Legacy / Outback while the GREEN line represents the previous model year. You can see the fluctuations of the previous system have been virtually eliminated and the temperature stability enhancement the new system provides.



There are three levels of front seat heating available for 2015MY Legacy and Outback, HIGH (1), MID (2) and LOW (3). The difference among these modes is an upper limit temperature change of about 2 to 4 degrees C. Similar to the older system the speed at which the seat actually heats up varies with the level settings. The high setting will heat the seat the quickest, mid will increase the temperature more gradually and low will increase it at the slowest rate.



In contrast, the rear seat heater system used on 2015MY Legacy / Outback is a similar design as the previous model year but, the cycle and surface temperatures for those seats are lower than the front seats on previous model by a few degrees C.

Another operational difference between the old and new seat heater systems is how each functions in higher ambient temperatures conditions. Naturally, ambient temperatures which are at or above the upper limit of either system's sensor function may keep the seat heater from operating. Simply stated, if the ambient temperature inside the car is higher than the upper cycle limit for that sensor, the system will not allow the element to heat. This is not a malfunction; the seat heater system is operating as designed.

Should you receive a customer concern stating their seat heaters do not work, start your diagnosis by first confirming the conditions under which the system was reported to be inoperative. If the ambient temperatures were close to or higher than the seat heater sensor's upper limit (remember, inside vehicle temperatures will be higher than outside ambient temperature in most cases), the concern may be a normal operating characteristic of the system. If this is not the case, diagnose the system using the applicable Service Manual. On the 2015 Legacy and Outback, temperatures of the thermistor sensor can be viewed using the SSMIII as shown in the screen shot below.

## 12 2015MY LEGACY / OUTBACK SEAT HEATER OPERATION OVERVIEW (CONTINUED)

This data may be used to check if the sensor is functioning correctly or not. **NOTE:** Temperatures shown on SSMIII are not the actual temperatures felt on the seat surface. Actual seat surface temperatures will be higher than those shown for the thermistor sensor on the SSMIII data.

Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> In-vehicle Sensor Temperature	89.47	°F	89.64	89.04	89.44
<input checked="" type="checkbox"/> A/C Pressure Sensor	0.98	MPa	1.02	0.95	0.98
<input checked="" type="checkbox"/> Seat Heater operation steps(Driver's)	3		3	3	3
<input checked="" type="checkbox"/> Seat Heater operation steps(Passenger's)	3		3	3	3
<input checked="" type="checkbox"/> Seat Heater Temp.(Driver's)	102.24	°F	103.24	98.56	101.03
<input checked="" type="checkbox"/> Seat Heater Temp.(Passenger's)	103.05	°F	103.05	98.56	101.26

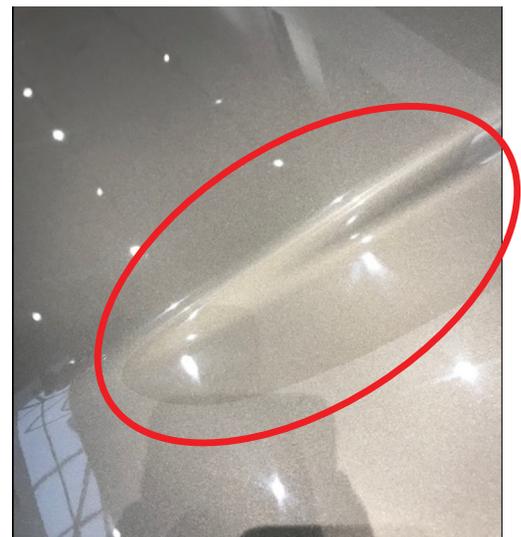
## 13 PAINT CONDITION ON HOOD – MOISTURE STAIN

Retailers have reported several 2019MY Foresters with a paint condition found on the hood which appears to be a stain. This condition is actually a result of moisture intrusion into the paint. This condition may occur if water becomes trapped under the wrap guard on the hood for an extended period of time. If you encounter this condition, at first, place the vehicle outside where the hood will be exposed to direct sunlight for at least 2-3 hours to allow the moisture to be drawn from the hood. If this is not possible or the condition remains after direct sunlight exposure, CAREFULLY use a blow dryer or heat gun to GENTLY apply heat to the affected area to help draw the moisture out. Using this method, the stain should be gone after a few minutes. A blow dryer is recommended to avoid overheating or burning the paint.

Please be careful to not apply too much heat too quickly. To help minimize this risk, do not hold heat source too close to the surface or hold the heat source stationary (keep the heat source moving constantly).

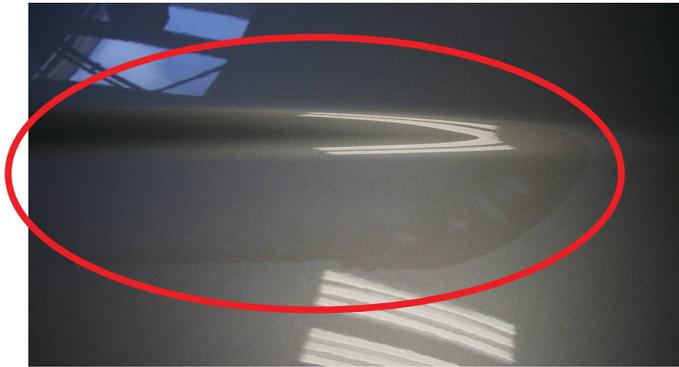
To the right and below are some pictures of cases which have appeared in the field. Stain conditions are outlined in red.

**IMPORTANT:** Never attempt to remove this condition by buffing, sanding, or application of chemicals as this will only serve to damage the paint.



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## 13 PAINT CONDITION ON HOOD – MOISTURE STAIN (CONTINUED)



Thank you all for your support and quality reporting for all 2019MY Forester QA items. Your QMRs provided us early exposure to this condition, which we sincerely appreciate.

## 15 2019 FORESTER REMOTE ENGINE START CHANGES AND PRECAUTIONS

We have received reports from our Retailers indicating there are differences between 2019MY Forester Accessory Key Start RES Kit installation versus the 2019MY Forester Push Button Start RES Kit. The reports describe inconsistencies which installation could create confusion and needless expenses attempting to fix an accessory RES Push Button system that is not broken.

The Techline did a test install of the 2019MY Forester “Push Button” Long Range RES Kit to confirm the installation instructions and see how the RES Push Button system works, which is not Telematics and Cell Phone controlled. This system is the SOA preferred option for our customers.

Here are the results found when attempting to initialize the RES Push Button system with the BIU and attempting to start the 2019MY Forester using the Remote FOB Transducers (2) supplied with the RES Kit:

When programming the Push Button Start RES System we discovered using the SDS July 2018 Quarterly Version Software 14.1.1 / Firmware 2.4.5 / SD Card 2.7.0 works like this;

- Using the Denso DSTi Box, selecting 2019MY Forester and attempting to initialize the RES Push Button Start (SMART) system was not successful. A “No Good Error Code” message was displayed; see the DSTi Box picture below. Unplug the DSTi box and start over to initialize the RES system. Start by entering 2018MY Forester then selecting Immobilizer and the RES Push Button initialization will be successful.

When operating the Push Button Start RES, to start the engine using the RES Kit FOB transducers, **the doors must be locked**. If all doors (including hood closed) are not locked, the vehicle horn will sound and parking lights will flash a total of (6) consecutive times and not allow the engine to start.

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To operate the vehicle once the engine is started using the RES FOB, (FOB blue light will flash, and a very slight sound will be emitted when the vehicle is started and engine running):

- Un-lock the doors using the vehicle Keyless Access Fob and enter the vehicle.
- Press and hold the brake pedal while simultaneously pushing the vehicle's Push to Start button on the dash to put the car into gear.
- **NOTE:** there is no green LED indicator on the Push to Start button to indicate the car is running after starting it with the RES system.



A customer may present a concern of: "When using the Remote Engine Start feature of the MySubaru mobile application, there used to be a setting for in-vehicle temperature". This setting has been removed since the 2019 Impreza Sport does not offer an automatic climate control system. The 2019 Impreza Sport with manual climate control is the only model affected by this change.

## 18 ERRORS IN SERVICE MANUALS, WHAT TO DO

Occasionally while performing diagnostics and repairs, a Technician may find a step that seems incorrect. For example, while following the trouble tree for B227C on 2018MY Legacy, the Tech is directed to test the harness at connector i281. However, connector i281 is not related to the circuit or system being tested. A quick review of the system wiring diagram at the top of the trouble tree shows the connectors related to the DTC. In this case the correct connector is B281. If you encounter a typographical error such as this or any other error, please submit a detailed QMR so it can be corrected. If unsure of the correct test to perform or want to confirm a suspicion of an error, please contact the Techline.

## 00 STIS NEW RELEASES

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
01-167-08R	Technical Service Bulletin	Recommended Materials (All Veh..	Dec 12, 2018
WTW-82	Subaru Product/ Campaign Bulletin	Combination Meter Reprogrammin...	11-Dec-18
09-54-12R	Technical Service Bulletin	High-Pitched Chirp, Squeak or ...	10-Dec-18
11-184-18	Technical Service Bulletin	DTC P119F and P219A; ECM Repro...	10-Dec-18
L1360BE	Service Manual	2019 Impreza / Crosstrek / Cro...	7-Dec-18
15-211-17R	Technical Service Bulletin	Reprogramming File Availabilit...	5-Dec-18
15-236-18	Technical Service Bulletin	Reprogramming File Availabilit...	4-Dec-18
	Service Diagnostics	2019MY Impreza / Crosstrek / C...	4-Dec-18
11-186-18	Technical Service Bulletin	DTC P0300: Reprogramming File ...	3-Dec-18
U1360BE	Service Manual	2019 Crosstrek Hybrid New Car ...	30-Nov-18
V1360BE	Service Manual	2019 Crosstrek Hybrid Emergenc...	30-Nov-18
MSA5B1908A	Owner Manual	2019MY Crosstrek Hybrid Quick ...	30-Nov-18

All revised publications are highlighted in yellow.

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ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
MSA5M1922A	Owner Manual	2019MY SUBARU STARLINK Safety ...	30-Nov-18
MSA5M1927A	Owner Manual	2019MY Crosstrek Hybrid EyeSig...	30-Nov-18
MSA5M1925A	Owner Manual	2019 Crosstrek Hybrid SUBARU S...	30-Nov-18
MSA5M1908A	Owner Manual	2019 Crosstrek Hybrid Owner's ...	30-Nov-18
12-254-18	Technical Service Bulletin	Loose "A" Pillar Trim	27-Nov-18
11-185-18	Technical Service Bulletin	DTC P0A7E: Reprogramming File ...	27-Nov-18
07-143-18R	Technical Service Bulletin	Power Rear Gate (PRG) Control ...	27-Nov-18
RES_TSG_14-16I_14-17...	Troubleshooting Guide	2014-16MY Impreza 2014-17MY Cr...	26-Nov-18
RES_TSG_19LO	Troubleshooting Guide	2019MY Legacy/Outback Remote E...	26-Nov-18
RES_TSG_14-18F	Troubleshooting Guide	2014-18MY Forester Remote Engi...	26-Nov-18
RES_TSG_15-18OL	Troubleshooting Guide	2015-18MY Leg/Out Remote Engin...	26-Nov-18
S074ZE	Other/Miscellaneous	Subaru Paint Manual	26-Nov-18

This is your chance to offer suggestions for use in future issues of TechTIPS! Make sure that if you e-mail us, you place in the **subject line** of your e-mail **“For TechTIPS Newsletter”**. Thank you!

MODEL: \_\_\_\_\_

YEAR: \_\_\_\_\_

VIN: \_\_\_\_\_

Description of situation encountered: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Your suggestion for repair procedure, product improvements, etc.: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please attach separate sheets, if necessary. You may also want to include Service Manual diagrams or references, or your own drawings to assist in describing your suggestion. All information submitted becomes the property of Subaru of America, Inc. Permission is granted to Subaru of America, Inc. to print your name and suggestions in TechTIPS and other Subaru of America, Inc. publications. Mail items to: PO Box 9103; Camden, NJ 08101-9877.

Your Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Dealer's Name: \_\_\_\_\_

City: \_\_\_\_\_

Date: \_\_\_\_\_

Dealer Code: \_\_\_\_\_