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SUBARU TECHLINE HOLIDAYS & HOURS OF OPERATION

Thanksgiving (Closed)

Thursday, November 23, 2017

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

SUBARU OF AMERICA



ANNIVERSARY
Est. 1968

01 QMR OF THE MONTH

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

**Frederic Mergen from
Subaru South Blvd in Charlotte, NC**

Frederic submitted a very detailed QMR on his diagnosis and repair of a 2016 Outback with just over 16,000 miles on it. The customer presented this vehicle with a complaint of a vibration or rattle during acceleration from the driver's side front of the vehicle. The condition only occurred within the first 20 miles of driving after the vehicle has been parked overnight. Frederic could duplicate the concern on a road test and noted the sound was coming from the base of the driver's side A-pillar. He started his diagnosis by isolating various panels, cables and other in-cabin components found in this area. Another road test showed these adjustments did not affect the sound. Frederic moved on to testing under the hood using chassis ears. Placing the ears at several points on the driver's side under the hood and road testing again, he found the sound was most pronounced from the cowl area. Removing and isolating components from the cowl and front strut also did not affect the sound. For his next step, Frederic placed the vehicle on a lift and found he could duplicate the sound there. Using a stethoscope, he traced the sound to a point where the transmission cooler line was in contact with the frame rail. Moving the line away from the frame rail stopped the sound. Loosening the line and placing a section of rubber hose between the line and the frame rail at the point of contact, eliminated the sound completely. Frederic's QMR included a series of clear photos showing the source of the sound and how he isolated it to eliminate the complaint. These combined with the specifics of his diagnosis and repair made the QMR easy to follow and understand. In appreciation for going the extra mile and sharing his experience with us, Frederic will receive the following from his Field Service Engineer (FSE):

A GoPro Hero 5 with 32GB SD Card plus credits to be used for additional award items of his choice.

Any Subaru Service Technician can participate in QMR of the Month. See the February 2013 and January 2016 Tech Tips for full details. You may see your name here in a future Tech Tips.

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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, L.L. Bean, Baja, Tribeca, BRZ, XV Crosstrek and "Quality Driven" are Registered Trademarks.

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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.



SUBARU

QUALITY DRIVEN® SERVICE



01 QMR OF THE MONTH AWARD PRESENTATION

As part of our “enhanced” QMR of the Month recognition program, we will be including a photo (whenever available) of the recipient’s award presentation in TIPS. The winner selected from QMR of the Month submissions received during July was Frank Pelletier, a Technician at Suburban Subaru in Vernon, CT. He is shown receiving his GoPro Hero 5 while joined by (l to r): Rick Manas, Service Manager, Ron Mann, Field Service Engineer, Subaru New England, Technician Frank Pelletier and Peter Krause, Retailer Principal.

Congratulations and **THANK YOU** to July’s QMR of the Month Award recipient!



TECH TIPS GREATEST TIPS

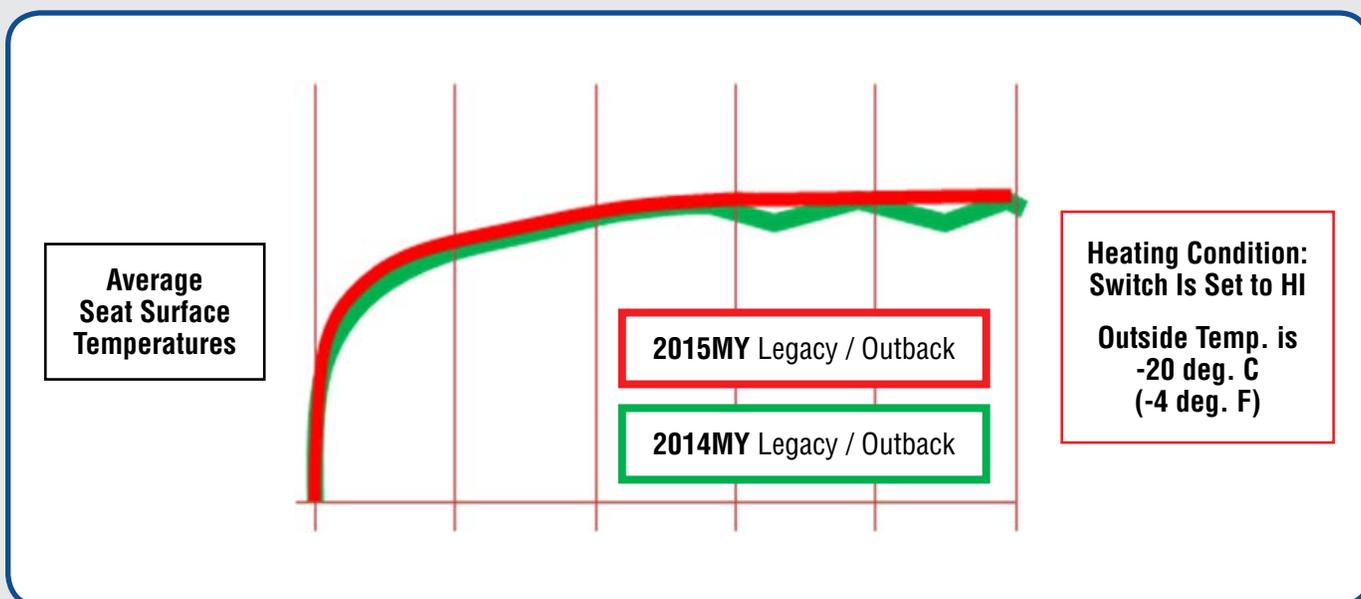
For this month’s version of Tech Tips Greatest TIPS we have selected Seat Heater Operation Overview. This TIP is still relevant today and with the winter approaching this information should come in handy.

12 2015MY LEGACY / OUTBACK SEAT HEATER OPERATION OVERVIEW

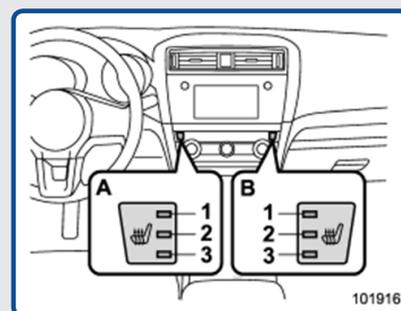
The front seat heater system used in the 2015MY Legacy / Outback is a new design compared to prior systems. It utilizes a thermistor sensor which allows the front seats to remain at warmer temperatures more consistently than the prior system. The new system is very different due to the change in sensors. 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 reads the heating element has reached approximately 50 degrees C (roughly 122 degrees F). At that point, the element is turned 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.

CONTINUED ON THE NEXT PAGE

In comparison, the thermistor sensor used in the new system also has periodic on and off cycles, but the operating range (temperature difference) is much smaller with an upper limit temperature which is slightly lower. The new system turns on the element until the thermistor sensor reads 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.

12 2015MY LEGACY / OUTBACK SEAT HEATER OPERATION OVERVIEW

Another operational difference between the old and new seat heater systems is how each functions in higher ambient temperature 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 due to characteristic system operation. If this is not the case, diagnose the system using the applicable Service Manual. On the new 2015 Legacy and Outback, you can view the temperature of the thermistor sensor using the SSMIII as shown in the screen shot below. 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 |

15 SEARCHING FOR ACCESSORY INSTALLATION GUIDES

When searching for accessory Installation Guides on STIS, all available guides may not appear if searching by VIN, Model Year, Carline and Trim. To search for the correct guide, it is easiest to go to Online Reference and enter the part number of the accessory in the Quick Search (example 1). The results will display the correct Installation Guides (example 2). This example is searching for a Remote Engine Starter for a turn key on a 2017-2018 Impreza.

There are accessories which are supplied the painted body color. Some of those accessories are Body Side Molding and Door Edge Guards. When searching for painted items, search for the part number and leave the last two digits off. For example, search for a Body Side Molding on a 2017-2018 Impreza in Carbide Gray: the part number is J101SFL500L8. A search with this part number would have 0 results. When searching, leave off the last two numbers and search for J101SFL500 (see examples 3 and 4 on page 6).

Example 1

Subaru Technical Information System

French Home User's Guide Logout

Information **Online Reference** Service Diagnostics

Search Criteria

Advanced Search - Enter at least one search criteria.

Publication Type

- Accessory Installation Guide
- Service Diagnostics
- On-Board Diag II Information
- Other/Miscellaneous
- Owner Manual
- Video Training Reference/Video
- Service Manual
- Service Manual Correction
- State Inspection/Maintenance Advisory Bulletin
- Subaru Product/Campaign Bulletin

VIN or Model Type (Enter VIN or Model Year/Carline/Trim):

VIN - Last 8 or Full 17

Model Year: Model / Carline: Choose Model Year Trim: Choose Model Year

Keywords/Tool #:

Quick Search - Enter a Document Code, Literature #, or Bulletin # to search for a specific document.

Document Code, Literature #, or Bulletin #:

Example 2

Subaru Technical Information System

French Home User's Guide Logout

Information Online Reference **Service Diagnostics**

Click on (+) sign to expand the search criteria section.

Search Criteria

Search Results

Click a column title to sort results in table.

Show entries Filter:

| Document Code | Publication Type | Title | Created Date | Actions |
|---------------|------------------------------|---|--------------|-------------------------------------|
| H001SFL100 | Accessory Installation Guide | 2017 Impreza Remote Engine Starter for Turn Start | Nov 17, 2016 | ↓ ★ |

Showing 1 to 1 of 1 entries Previous Next

Example 3

Subaru Technical Information System | French | Home | User's Guide | Logout

Information ▾ | Online Reference | Service Diagnostics ▾

Search Criteria [-]

Advanced Search - Enter at least one search criteria.

Publication Type

- Accessory Installation Guide
- Service Diagnostics
- On-Board Diag II Information
- Other/Miscellaneous
- Owner Manual
- Video Training Reference/Video
- Service Manual
- Service Manual Correction
- State Inspection/Maintenance Advisory Bulletin
- Subaru Product/Campaign Bulletin

VIN or Model Type (Enter VIN or Model Year/Carline/Trim):

VIN - Last 8 or Full 17 [**Lookup VIN**]

Model Year: [- Choose Model Year - ▾] **Model / Carline:** Choose Model Year **Trim:** Choose Model Year

Keywords/Tool #: [**Search**] [Clear]

Quick Search - Enter a Document Code, Literature #, or Bulletin # to search for a specific document.

Document Code, Literature #, or Bulletin #:

J101SFL500 [**Search**] [Clear]

Example 4

Subaru Technical Information System | French | Home | User's Guide | Logout

Information ▾ | Online Reference | Service Diagnostics ▾

Click on (+) sign to expand the search criteria section.

Search Criteria [+]

Search Results

Click a column title to sort results in table.

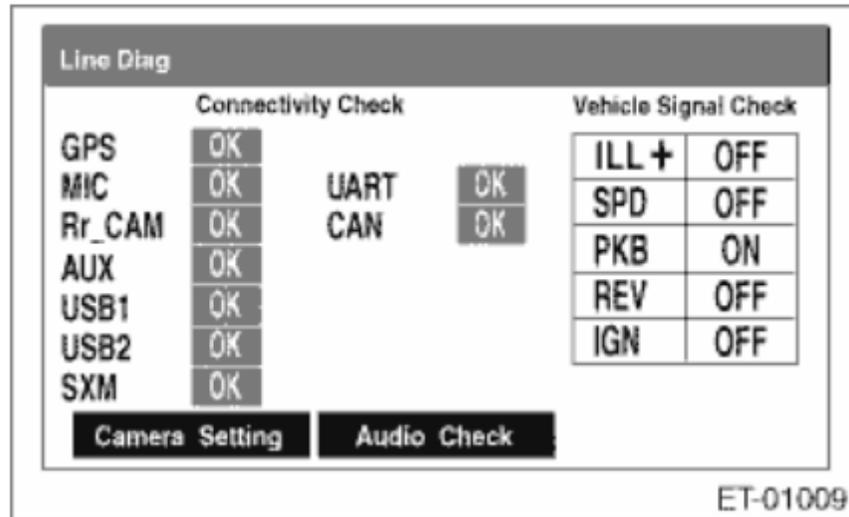
Show 10 ▾ entries Filter: []

| Document Code | Publication Type | Title | Created Date | Actions |
|---------------|------------------------------|--|--------------|---------|
| J101SFL500## | Accessory Installation Guide | BODY SIDE MOLDING KIT 2017 Impreza & 2018 Crosstrek (Englis... | Jan 16, 2017 | ⬇️ ⭐ |
| J101SFL500## | Accessory Installation Guide | BODY SIDE MOLDING KIT 2017 Impreza & 2018 Crosstrek (French... | Jan 16, 2017 | ⬇️ ⭐ |

Showing 1 to 2 of 2 entries Previous [1] Next

The Techline continues to receive calls from Technicians on Navigation/Audio unit concerns. Here are a few simple steps to complete in your diagnosis before contacting the Techline.

1. Verify the customer's concern. If Bluetooth related, check the phone compatibility before moving forward. This procedure can be found in 5/2017 Tech Tips. If the phone is compatible and there is a Bluetooth concern, use 7/2017 TechTIPS to aid in your diagnosis.
2. If you are having trouble duplicating the concern, get more information on when the concern occurs. Questions like: How often does it occur? Does it seem to be temperature related? What source is the radio on when the symptom occurs? These and similar questions should assist in recreating the issue. If the concern cannot be duplicated, at minimum, a detailed QMR should be submitted.
3. Once we verify the concern, perform a line check. The line check will verify continuity in certain systems. USBs must be plugged in if testing with a line check. The test can be found in the Service Manual under Entertainment. An example of a line check is provided below. If anything other than OK is displayed, there is trouble in that system and it should be checked.



4. Next, check connections at the radio and powers and grounds. Also inspect the terminals for looseness and deformities.
5. Swap the radio with a like radio and leave the DCM (Data Communication Module) unplugged.

15

NEW QUESTIONNAIRE RELEASING FOR HARMAN GEN 3 AUDIO/ NAVIGATION CONCERNS

SOA will soon be releasing a new questionnaire to collect information for concerns related to Harman Kardon Gen 3 Audio and Navigation systems found in 2017-18 Impreza, 2018 Crosstrek and 2018 Legacy and Outback models. It will soon be posted to Subarunet \ Service Operations & Technical \ Forms/Download section for use by retailers. SOA is asking that this new questionnaire be completed every time a customer presents with any concern(s) related to a Harman Kardon Gen 3 audio / navigation head unit. We have grouped the questions by categories to help collect critical information related to each specific concern. The best practice is to answer all the questions related to each concern the customer has brought to your attention with as much detail as possible. This will ensure all the customers concerns are fully documented and reduce the need for follow up questions.

The questionnaire is required to be supplied to Techline or attached to a QMR with every Harman audio/ navigation concern reported to SOA. This information will be used by SBR and Harman to investigate each reported condition and prioritize development of future firmware updates to improve the performance of these audio / navigation systems.

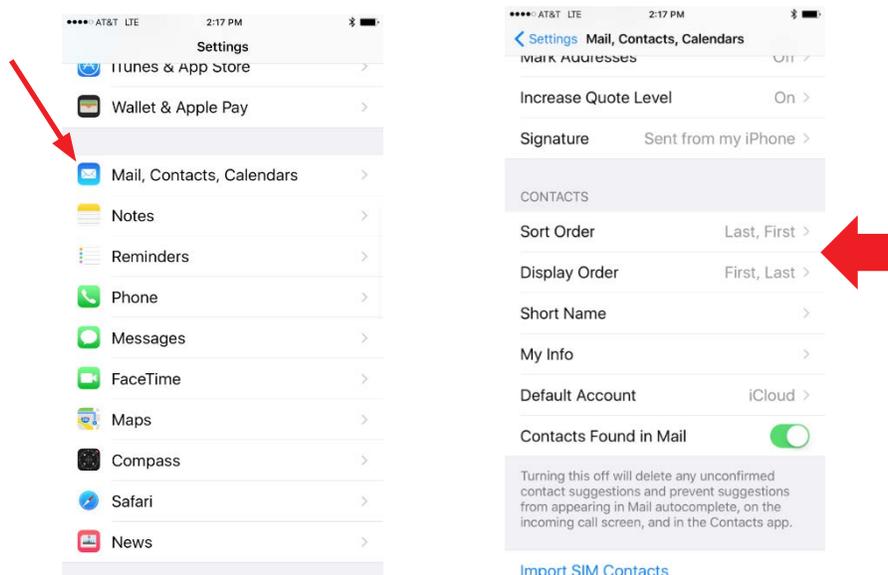
We recognize most questions are best answered by the customer, so we ask that Service Advisors have some copies of this form available to capture this detailed information during the initial interview with the customer.

It is also very helpful to have a video of the condition available to supplement the details in the questionnaire. Please try to make one if possible and share when requested. However, the video is not a substitute for the questionnaire, so please make sure your answers are detailed enough to be used without seeing the video.

15

PHONE CONTACT OPTIONS

If you receive a concern from the customer using dial by name where they have to say the last name before the first, check the settings menu of the iPhone. Scroll down to Mail, Contacts, Calendar and select. Next, scroll to Contacts and look at the setting selected; there is an option for display and sort order. Make sure the customer has this set to their liking as this setting will directly affect how the unit looks through the Contacts for the name.



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16 ALLOWABLE REPAIRS TO CVT ASSEMBLIES

All too often, the Techline is called asking what kind of repairs can I do? The procedure for all allowable repairs is outlined in the Policy and Procedures Manual on Subarunet under the Claims and Warranty Administration tab. The Policy and Procedure manual should be reviewed anytime a repair is in question.

The screenshot shows a web interface with a blue sidebar on the left containing the following menu items: CMS - Contact Mgmt System, Certified Pre-Owned, Claims & Warranty Administration, Claim Entry, Claim Entry User Guide, Claim Status Inquiry, Claim Upload, and Claims Policies & Procedures. The main content area is titled 'Subaru Claims Policies and Procedures Manual' and contains two links: 'Click here to open this manual in a new window.' and 'Click here to download the Claims Policies and Procedures Manual.' Below these links are instructions regarding Internet Explorer requirements and steps for downloading the manual. Red arrows in the image point to the 'Claims & Warranty Administration' menu item and the first link.

Example of the Policy and Procedure manual:

8.4.33.1.3 Original CVT Transmission

The following component repairs are required to be performed to the vehicle's original CVT Transmission when it is determined that such repairs will correct a failure:

- Torque Converter and seal, if it is not an internal failure that has contaminated the fluid
- Control Valve Body replacement as long as an internal failure has not contaminated the fluid
- Control Valve Body Harness
- Front Oil Pump Seal
- **Oil Pump Chain Cover Reseal**
- Output Clutch Control Valve Body (Hybrid vehicle)
- Drive Motor Assembly (Hybrid vehicle)
- Multi Plate Transfer Clutches (MPT)
- Mechanical Shifter and parking system components
- Valve Body and Pick Up Screen
- Secondary Oil Pressure Switch
- Inhibitor Switch
- Extension Housing Rear Seal
- Oil Inlet and Outlet Pipes
- Cooler Pipes
- Axles and seals
- All external sensors or switches
- Oil pressure test parts and drain plug
- Parking Pawl and spring

A new repair will be added to the Policy and Procedure Manual for CVT oil pump chain cover reseal. There is a TSB for TR690, TSB# 16-103-16R explaining repairs. The Service Manual covers the repair for TR580. We are no longer replacing CVT assemblies for leaking oil pump chain covers. Please use the applicable Service Manual for repairs.

| ITEM CODE | ITEM TYPE | TITLE | CREATED DATE |
|------------|--------------------------------------|-----------------------------------|--------------|
| 07-108-16R | Technical Service Bulletin | Diagnostic TIPS for ODS DTC B1... | 12-Oct-17 |
| 11-174-17R | Technical Service Bulletin | Reprogramming File Availabilit... | 11-Oct-17 |
| M001SAJ000 | Accessory Installation Guide | Car Cover Wagon (Outback) | 6-Oct-17 |
| WQP-51R | Subaru Product/ Campaign Bulletin | Regional Front Passenger Air B... | 5-Oct-17 |
| WQR-53R | Subaru Product/ Campaign Bulletin | Takata Front Passenger Air Bag... | 5-Oct-17 |
| TKB-16R | Subaru Product/ Campaign Bulletin | Takata Front Passenger Airbag ... | 5-Oct-17 |
| TKC-16R | Subaru Product/ Campaign Bulletin | Takata Front Passenger Airbag ... | 5-Oct-17 |
| TKA-16R | Subaru Product/ Campaign Bulletin | Takata Front Passenger Airbag ... | 5-Oct-17 |
| TKC-17R | Subaru Product/ Campaign Bulletin | Takata Front Passenger Airbag ... | 5-Oct-17 |
| TKB-17R | Subaru Product/ Campaign Bulletin | Takata Front Passenger Airbag ... | 5-Oct-17 |
| TKA-17R | Subaru Product/ Campaign Bulletin | Takata Front Passenger Airbag ... | 5-Oct-17 |
| 04-17-17R | Technical Service Bulletin | Rattling Sound from Steering R... | 5-Oct-17 |
| 07-108-16R | Technical Service Bulletin | Diagnostic TIPS for ODS DTC B1... | 4-Oct-17 |
| 07-92-15R | Technical Service Bulletin | Condensation (Fogging) in Rear... | 2-Oct-17 |
| J201SFL300 | Accessory Installation Guide | 2018 Crosstrek Exterior Auto D... | 29-Sep-17 |
| 01-167-08R | Technical Service Bulletin | Recommended Materials (All Veh... | 27-Sep-17 |
| 07-120-17R | Technical Service Bulletin | Ignition Coils and Engine Harn... | 22-Sep-17 |

All revised publications are highlighted in yellow.

CONTINUED ON THE NEXT PAGE

| ITEM CODE | ITEM TYPE | TITLE | CREATED DATE |
|------------|----------------------------|-----------------------------------|--------------|
| 06-55-16R | Technical Service Bulletin | Design Change to Stop Light Sw... | 22-Sep-17 |
| U1320BE | Service Manual | 2018 Crosstrek New Car Informa... | 20-Sep-17 |
| U8230BE | Service Manual | 2018 Forester New Car Informat... | 20-Sep-17 |
| U1330BE | Service Manual | 2018 Impreza New Car Informati... | 20-Sep-17 |
| L2540BE | Service Manual | 2018 Legacy/Outback Body Repai... | 20-Sep-17 |
| U2540BE | Service Manual | 2018 Legacy/Outback New Car In... | 20-Sep-17 |
| MSA5B1801A | Owner Manual | 2018 Impreza Quick Guide | 18-Sep-17 |
| MSA5M1812A | Owner Manual | 2018MY Impreza EyeSight Owner'... | 18-Sep-17 |
| 12-230-17 | Technical Service Bulletin | Trunk Garnish Installation Pre... | 15-Sep-17 |
| 07-119-17 | Technical Service Bulletin | Production Change to Rear Comb... | 15-Sep-17 |
| MSA5M1809A | Owner Manual | 2018 Impreza SUBARU STARLINK™ ... | 14-Sep-17 |
| | Service Diagnostics | 2018MY Impreza Service Manual ... | 14-Sep-17 |
| MSA5M1801A | Owner Manual | 2018MY Impreza Owner's Manual | 13-Sep-17 |

All revised publications are highlighted in yellow.

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 6000, Cherry Hill, NJ 08034-6000.

Your Name: _____

Signature: _____

Dealer's Name: _____

City: _____

Date: _____

Dealer Code: _____