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01 QMR of the Month

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

Christopher Vanaman from
Rafferty Subaru in Newtown Square, PA

Our March winner's QMR outlined the diagnosis and repair of a 2020MY Outback which presented with the power windows and automatic seats inoperative. After confirming the conditions as reported, the SSM was connected and a DTC U1822 was found stored in memory. A check of the power supply circuits was next where SBF 2 was found to be blown in the under hood Main fuse box (M/B). Replacing the fuse restored operation of all systems but, Christopher set out to determine the root cause of the blown SBF 2. He began by inspecting the current (amperage) draw on each of the circuits powered by SBF 2. After ruling out the power window system, he continued monitoring the draw while operating the numerous functions of the power driver's seat. While observing the meter and lowering the seat, the current draw was fluctuating to near 30 A then spiked to blow SBF2 again. Christopher removed the driver's seat assembly and began a thorough inspection of the lift motor wiring. His inspection revealed a short on the purple wire where the seat switch harness passes through an opening in the seat frame. The insulation had rubbed through in one spot. The exposed, bare wire was shorting directly to the frame but only when operating the lift motor up or down. Christopher proceeded to repair the affected wiring and add additional cable ties as needed to better secure the harness and prevent any recurrence. He then replaced SBF 2 a second time. After reinstalling the driver's seat assembly and clearing the memory, normal operation of all affected systems confirmed a sound repair.

Christopher's highly detailed report included all his testing results, connector and pin locations and a collection of exceptionally clear photos to further document the damaged wiring before and after repair.

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

\$500.00 Snap-On gift card

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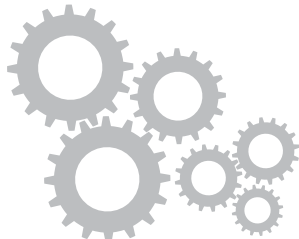
SUBARU TECHLINE HOLIDAYS & HOURS OF OPERATION

Memorial Day: (Closed)
Monday, May 25, 2020

Independence Day: (Closed)
Friday, July 3, 2020

Labor Day: (Closed)
Monday, September 7, 2020

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



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, Ascent, Crosstrek Hybrid 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.



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01 QMR of the Month (continued)

The other Regional winners selected from QMRs submitted during March 2020 were:

- **Scott Clark** from **Carr Subaru** in Beaverton, OR
- **Erik Rodriguez** from **Grand Subaru** in Bensenville, IL
- **Joshua Haskell** from **Charlie's Subaru** in Augusta, ME
- **David Rizzo** from **West Herr Subaru** in Orchard Park, NY

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

TECH TIPS GREATEST TIPS

This series features TechTIPS articles frequently referred to by Techline. This month's feature is from September 2017.

01 Lost Keys? Contact the Subaru Techline

If you receive a vehicle from the customer where all their originally registered keys have been lost, contact the Subaru Techline for the necessary steps to program new keys. Depending on the immobilizer type, you will be unable to just program one new key without an original key. Both immobilizer Type-B and Type-D require an original key to make any changes to the immobilizer system. Without an original key, a new one cannot be added. Unsure of which type immobilizer you have? Refer to the Quick Reference Chart found in the October 2016 TechTIPS newsletter. Once you have confirmed the vehicle is the Type-B or Type-D immobilizer system, the following:

- Verify the vehicle is onsite.
- Open a Repair Order with all necessary information.
 - VIN, RO number, RO date, Mileage if it can be obtained, etc.
- Verify key type (push-button, turn-key)
- Contact the Subaru Techline.

SOA will no longer clear immobilizer modules for salvage/rebuilt title vehicles. Please refer to the Service Manual/Registration Manual for Immobilizer for repair of these vehicles.

When calling the Subaru Techline, please ensure all necessary information is available at the time of the call. Once connected with the Techline, we will be able to provide the necessary procedure to program new keys to the vehicle.

Continued on the next page

01 Lost Keys? Contact the Subaru Techline (Continued)

See Latest Immobilizer chart below:

US Model		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Legacy / Outback	Key Start	A										B				G		
	Push Button									D							H	
Tribeca	Key Start		A															
Impreza	Key Start				A				B									
	Push Button											D						
Crosstrek	Key Start									B								
	Push Button											D						
Crosstrek Hybrid	Push Button									D				F				
WRX/Sti	Key Start				A						B							
	Push Button											D						
Forester	Key Start					A				B								
	Push Button											D						
BRZ	Key Start											X						
	Push Button											Y						
Ascent	Key Start																B	
	Push Button																D	

07 Parasitic Draw (Dark Current) Testing and Telematics DCM

Techline has recently received calls with questions about Parasitic Draw (dark current) conditions which seem to be resolved by removing the Data Communications Module (DCM) also known as the Telematics control module fuses.

There are a few key conditions to keep in mind when testing for Parasitic Draw on STARLINK Telematics-equipped vehicles:

1. The Audio Unit (A/U) will keep a DCM awake any time the A/U screen is on or sound is playing, even when the ignition is switched off.
2. A DCM connects to the STARLINK server at the time key is turned off. When there is a network connection issue, the DCM will continue to attempt to connect to the server, and/or if the MIL lamp is illuminated just before IGN-OFF and network connection is poor. The DCM won't sleep for **up to 15 minutes** after IGN-OFF.
3. The DCM will wake up if a customer uses any remote service function through Starlink APP.

Continued on the next page

Condition #1: It is obvious the DCM is not the root cause of parasitic draw as the A/U will visibly be on and/or audio will be playing. It requires at least 3 minutes following ignition off for the A/U to power down.

Condition #2: This is the most likely scenario for a misdiagnosis of DCM as the root cause of the draw. Checking signal strength for the DCM using SSM4 in your testing area is important and if signal strength is weak, testing should be completed after at least 15 minutes or more of wait time following ignition OFF.

Condition #3: It would be rare for a customer to be attempting remote services functions while the vehicle is at the retailer for service for parasitic draw testing.

A vehicles DCM can power up or stay awake for various reasons including but not limited to: software updates, Service Appointment Scheduler (SAS) usage and Ignition Off Data transmissions. When activated, the Stolen Vehicle Recovery function will keep the DCM awake for a couple of days (this is a very rare case.) Contact the SOA Techline to ensure Stolen Vehicle Recovery has not been activated if the DCM is not going to sleep after 15 minutes. The Telematics system LED can stay on for up to 5 minutes after Key Off and it is essential to wait at least 15 minutes after ignition off (key removed or all access keys at least 2+ meters away from the car) before proceeding to attempt diagnosis of Parasitic Draw and to determine if the DCM is the root cause of the draw.

When diagnosing parasitic draw, it is crucial to follow the latest STIS Service Manual information as additional wait time may be required.

Based on the information above, the best practice to rule out any possibility of an unexpected power draw from the DCM is to wait a full 15 minutes for the DCM to go to sleep. Use a watch or smartphone to keep track of time. After 15 minutes have elapsed, measure the dark current draw. If the draw exceeds specifications, perform the following steps to ensure the DCM power supply is eliminated:

1. Pull the M/B fuse (under the hood) feeding the DCM.
2. If the draw is still present, next pull the fuse feeding the ignition supply to the DCM from the front fuse box.
3. If the draw is still present, pull the fuse feeding the accessory power circuit to the DCM from the front fuse box.
4. If the DVOM is still indicating a parasitic load higher than 70mA, the DCM should not be considered the root source of the draw until further isolation methods have been performed to identify additional parasitic loads.

NOTE: While the DCM may only take 15 minutes to go to sleep, there may be other control modules in the vehicle which take longer, up to 55 minutes. See the related Service Manual for these details.

08 Combination Meter Settings: Kilometers to Miles

When presented with a customer concern of the odometer reading in Kilometers instead of Miles, it is always a good idea to consult the Owner's Manual. If the manual is not found in the vehicle, it can be accessed through STIS. Below is an example of the information found in the Owner's Manual to correct this concern.

Instruments and controls/Meters and gauges 3-11

If the ECO gauge moves towards the + side, this indicates better fuel efficiency.

NOTE

- The ECO gauge shows only an approximate indication of fuel efficiency.
- After resetting the trip meter, the average rate of fuel consumption is not shown until you have driven for 1 mile (or 1 km). Before that time, the ECO gauge does not operate.

■ Combination meter settings

Meter and vehicle settings can be set on the combination meter.

▼ Type A combination meter

Various adjustments can be made, such as switching units shown on the combination meter and adjusting the warning tone volume.

While the ignition switch is in the "OFF" position, each press of TRIP RESET switch results in items shown in the table below being switched.

Item	Combination meter display	Possible settings
A trip	A 8888.8	—
B trip	B 5555.5	—
Gauge needle sweep function	1 on	On/Off
Changing the unit*	2 MPH	mile/km
Warning volume*	3Lv.2	Lv. 1/Lv. 2/Lv. 3

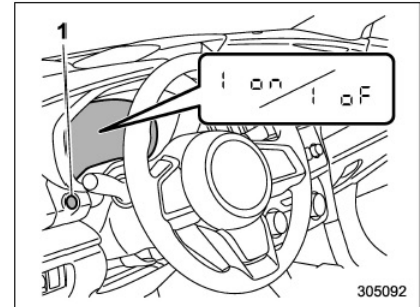
*: if available

NOTE

- If you switch the units on the combination meter, the units on the multi-function display (black and white) also switches accordingly.
- If either of the following conditions is met, the combination meter setting mode will be canceled.
 - The driver's door is opened.
 - The TRIP RESET switch is not operated for approximately 10 seconds or more.

▼ Switching method

1. Push the ignition switch in the "OFF" position.



- 1) TRIP RESET switch

2. Press the TRIP RESET switch repeatedly until the item you want to change is displayed.
3. Press and hold the TRIP RESET switch while the item to be changed is displayed, the setting of the item will be switched.

▼ Type B combination meter

Meter and vehicle settings can be set on the combination meter display (color LCD). Refer to "Menu screens" 3-38.

15 Incorrect Operation of Audio Unit After Rockford Fosgate Upgrade Installation

APPLICABILITY:

All Vehicles with Denso CP1 Multimedia Navigation (AVN) & Display Audio (DA) systems

SUBJECT:

2020 Outback/Legacy Rockford Fosgate Audio Upgrade Kit

There have been reports received concerning incorrect operation of the 2020 Outback/Legacy audio system after the installation of the Rockford Fosgate Audio Upgrade. Always refer to the Retailer Installation Instructions found in Subaru Tech Info System (STIS) and closely follow the instructions without skipping steps. Please see the items below to further assist in preventing concerns following the installation of the upgrade kit.

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- Remember to inspect the Audio Upgrade Kit parts to ensure no missing parts or part defects as well as confirm the correct part numbers.

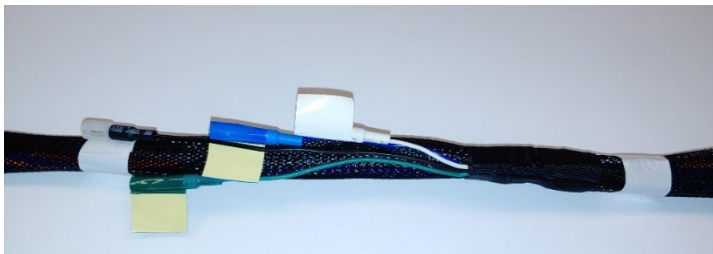
NOTE 1: The amplifier part number should be H630SAN002. It was designed specifically for 2020 Outback/Legacy.

NOTE 2: The Base model requires Tweeter Kit H630SAN100 to be added prior to installation of the Rockford Fosgate Audio Upgrade Kit. Tweeter Kit H630SAN100 is comprised of OEM parts and is not supplied by Rockford Fosgate. The Tweeter Kit is designed to improve sound with a full 6-speaker system (2 dash tweeters, 2 front door speakers, 2 rear door speakers).

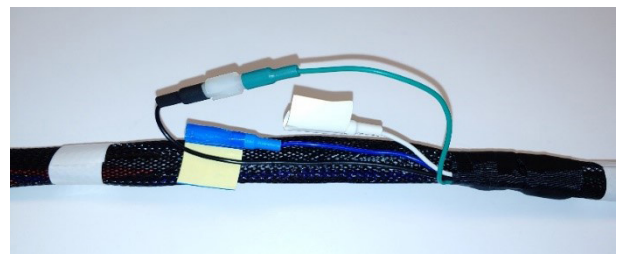
- Use extreme caution when performing removal, re-installation and all checks of the infotainment unit. The volume and tune knobs can be easily damaged, if excessive force is used to press the knobs in during checks or during handling.
- Remember to always disconnect the negative cable from the battery sensor prior to starting installation. Never disconnect it directly from the battery terminal.
- Verify the audio harness jumper wires have been properly set to select the correct audio profile for the target vehicle's trim level.

Configure sound characteristic (Tuning) programming to specific models
1. Using the chart on this page, connect the black wire to the correct colored wire based on the model being upgraded. NOTE: For Outback Premium and Onyx models, no wires will be connected.

TUNING PROFILE	Connect Mail (Black Wire) To:
Outback Premium / Onyx	No Connection
Outback Base	WHITE (short)
Legacy Base	BLUE (medium)
Legacy Premium / Sport	GREEN (long)



Harness jumper setting with tape flags for Outback Premium/Onyx



Harness jumper setting for Legacy Premium/Sport with tape flag removed and connection made

NOTE: Incorrect harness setting, selecting the wrong audio profile for the vehicle trim, will allow some audio system operation, but the sound quality would be below the specified performance.

- If the WHITE, BLUE, or GREEN jumper wires were used, the colored tape flag removed from the jumper should be placed on the amplifier as a visual indicator of the audio profile selected to match the target vehicle's trim level.



Example of the cap cover from the jumper harness visual configuration. In this example "green" was used for Legacy Premium Models.

- Remember to complete verification testing to confirm the system operates as intended.

Check Your Work

Select the "Balance/Fader" Icon

All Speaker Operation Check Continued

The Blue Icon will start in the center.

Press the location of the LF speaker icon.

Press the location of the RF speaker icon.

Check Your Work

Select the "Settings" Icon

Select the "Sound" Icon

Select the "Audio" Icon

Select the "Sound Customization" Icon

15 Incorrect Operation Of Audio Unit After Rockford Fosgate Upgrade Installation (Continued)

NOTE: Confirm the negative battery cable has been reconnected following upgrade kit installation instructions, being sure not to exceed the torque of 5.5 ft lb/ 66 in lb and CP1 system has completed reboot prior to starting any verification testing.

4. If verification testing results in an unexpected finding and installation has been confirmed as correct, please submit a QMR including specific details about the condition found and review of the installation including pictures of connectors, harnesses, CP1 system software version, amplifier part number, etc. If possible, provide a video of the concern as duplicated and any steps required to duplicate it.

15 A/C and Heat Conditions: Use of Recirculation / Recirc Button

Regardless if you are believer in Global Warming or not, in recent years we all are clearly experiencing some extreme variations in both temperature and humidity in ways not seen in the recent past. As a result, customers may experience higher temperatures and humidity conditions during any season than just those experienced in the past. Unusual temperature and humidity conditions may necessitate changes for how customers operate their HVAC system in order to achieve peak and desired performance.

One of the most overlooked but key performance points is the preferred use of the recirculation or “recirc” button to control the flow of outside air into the cabin. When applied in a manner inconsistent with ambient conditions, this can lead to a few customer complaints. Two common examples are listed below.



- Buildup of condensation or ice on the inside of windows can result from trapped moisture while having recirculate ON (recirculating cabin air) in winter. Switching recirculate to OFF will allow outside, lower humidity air into the cabin and allow natural drying to occur. Use of the front defrost / defogger is the most effective way to accomplish this drying action and will automatically change the recirculation setting to OFF (allowing fresh air in) for most vehicles. (Note: some older, manual HVAC systems may still require the recirc button be changed to OFF- Check the related vehicle's Owner's Manual).
- Reduced air conditioner performance may occur when recirc is set to OFF (allowing fresh air in). Having the recirc OFF (fresh air in) combined with high ambient temperature conditions (more than 100° F) reduced air flow through the condenser (such as during severe stop/go traffic conditions without adequate space between vehicles, vehicle parked with front close to a wall or other restricted air flow conditions), can increase refrigerant temperatures and system pressures and lead to a reduction of performance. In severe cases, the system may even temporarily shut down until internal refrigerant pressures return to within the normal operating range. This can even occur fully charged systems operating at capacity. In such conditions, it is best to have recirculate in the ON position (recirculating cabin air) to achieve the desired cooling effect.

The above examples represent only two possible scenarios and combinations of many conditions customers may experience. If the HVAC system appears to be operating correctly, it may prove helpful to inquire about the ambient temperature and humidity conditions during which the customer was experiencing the most recent concern. It may only take something as simple as a small change to the customer's recirculation settings to ensure their desired comfort level is achieved under similar conditions in the future.

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
15-261-20R	Technical Service Bulletin	Reprogramming File Availabilit...	21-May-20
Send-SSM4	Other/Miscellaneous	Sending a SSM4 Download	21-May-20
12-292-20	Technical Service Bulletin	Front Seat Belt Installation P...	19-May-20
12-291-20	Technical Service Bulletin	Staining on Finish of Rear Gat...	19-May-20
12-290-20	Technical Service Bulletin	Front Seat Backrest Cover Bols...	18-May-20
07-176-20	Technical Service Bulletin	DTCs B118B, B11E5, B11E6 in Dr...	18-May-20
06-75-20	Technical Service Bulletin	WUR-03R Brake Hose Ordering In...	15-May-20
07-155-19R	Technical Service Bulletin	Power Rear Gate (PRG) Control ...	15-May-20
WUT-05R	Subaru Product/Campaign Bulletin	Forester Rear Coil Springs	13-May-20
WUA-86R	Subaru Product/Campaign Bulletin	Harman Kardon Head Unit Reprog...	12-May-20
WUQ-02R	Subaru Product/Campaign Bulletin	Ignition Coil Short Circuit	11-May-20
07-162-19R	Technical Service Bulletin	Automatic Door Lock / Unlock F...	11-May-20
12-203-16R	Technical Service Bulletin	Squeaking Sound from Front Sea...	8-May-20
01-182-20	Technical Service Bulletin	Recall/Service Campaign Exempt...	7-May-20
WRD-20R	Subaru Product/Campaign Bulletin	Fuel Pump Impeller Failure	7-May-20
01-183-20	Technical Service Bulletin	Vehicle Repair Program for Cus...	6-May-20
TSG 900MHz PS	Troubleshooting Guide	Remote Engine Start Systems Tr...	6-May-20
TSG 900MHz KS	Troubleshooting Guide	Remote Engine Start Systems Tr...	6-May-20
TSG SFL PS	Troubleshooting Guide	Remote Engine Start Systems Tr...	6-May-20
WTY-84R	Subaru Product/Campaign Bulletin	2.0L Engine Valve Spring Fract...	6-May-20
11-200-20R	Technical Service Bulletin	Reprogramming File Availabilit...	6-May-20
14-25-20	Technical Service Bulletin	Valve Spring Replacement Tools...	5-May-20
12-288-20	Technical Service Bulletin	Power Front Seat Cushion Frame...	5-May-20
15-208-17R	Technical Service Bulletin	Availability of "Gracenote® Me...	4-May-20
E101EAJ501	Accessory Installation Guide	Rear Bumper Protector Mat	4-May-20
05-74-20	Technical Service Bulletin	Knocking -Type Sound from Engi...	30-Apr-20
01-181-20	Technical Service Bulletin	Vehicle Cleaning- COVID-19 Bes...	30-Apr-20
15-249-19R	Technical Service Bulletin	2020 Audio/Navigation & Power ...	30-Apr-20
15-195-16R	Technical Service Bulletin	Servicing and Claim Submission...	30-Apr-20
E541SEI000	Accessory Installation Guide	2021 Crosstrek Moonroof Air De...	28-Apr-20
WUJ-95R	Subaru Product/Campaign Bulletin	Exhaust Pipe Front (EPF) Bello...	24-Apr-20
15-263-20	Technical Service Bulletin	Harman Gen. 3.0 Audio and Navi...	23-Apr-20
L101SAN000	Accessory Installation Guide	2020 Outback Trailer Hitch (Fr...	21-Apr-20

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 9103; Camden, NJ 08101-9877.

Your Name: _____

Signature: _____

Dealer's Name: _____

City: _____

Date: _____

Dealer Code: _____