TECH TIPS

Subaru Service and Technical Support Line Newsletter

November 2021



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SUBARU TECHLINE HOLIDAYS
& HOURS OF OPERATION

Holiday Break: (Closed)
Friday, December 24, 2021
Saturday, December 25, 2021
Monday, December 27, 2021
Friday, December 31, 2021
Saturday, January 1, 2022

Mon. - Thurs.

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

01 QMR of the Month

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

Marco Yanes from Bill Kolb Jr. Subaru in Orangeburg, NY

September's QMR of the Month (the first winning report submitted via the new TechShare application) provided a highly detailed diagnosis of a 2016MY Crosstrek with a customer concern of no accelerator pedal response. The vehicle was towed in and the condition easily confirmed. Marco began his diagnosis with a DTC check and found P2109 in memory. After being referred to the diagnostics for DTC P2101 by the Service Manual, he began by doing the related wiring checks and verifying the Input / Output signal values at the ECM. Marco's report provided all his test results as he followed closely through each step which eventually led him to suspect a faulty throttle body. Marco proceeded to do comparison testing of the voltages at the throttle body connector of a known good car and identified discrepancies between the values of both vehicles. He then swapped the known good throttle body assembly to the problem car which restored normal operation confirming his suspicion. Marco ordered and installed a new throttle body assembly which repaired the customer vehicle. The DTC cleared normally and the CEL did not come on during his post-repair confirmation road testing. Marco's TechShare report included results of each diagnostic step and SSM data photos were also included to document his findings.

Jim Colamarino, Marco's Field Service Engineer (FSE) interviewed Marco related to his experience using the new TechShare app:

- 1. Q: What did you think of TechShare QMR app?
 - A: "I love it".
- 2. Q: Why do you love it?
 - A: "It's a game changer".
- 3. **Q:** In what way was it a game changer?
 - **A:** "Just the ability to be able to do it from my phone and not have to worry about emailing pictures to a PC to add them to the QMR made it so much more convenient".

Continued on the next page

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.

SUBARU OF AMERICA, INC. IS ISO 14001 COMPLIANT

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.



QMR of the Month (CONTINUED)

- 4. Q: How do you think TechShare will help improve the quality of the product?
 - A: "Being able to create a draft right away and being able to edit the QMR as I diagnose the vehicle are great features".
- 5. **Q:** Do you think the app will help you with your efficiency?
 - A: "Absolutely. I now can just copy and paste my QMR notes right into my RO. This will help free up computers in the shop for other Techs to complete their ROs".
- 6. Q: Did you have a chance to use the photo editing feature of TechShare?
 - A: "I was aware but haven't used it yet. This was my first QMR through TechShare and I wanted to become more familiar with it before editing pictures".
- 7. Q: Did you use the speech to text feature?
 - A: "I was aware of it but did not use it".
- 8. Q: Did you use the SDS Notebook SSM data upload feature?
 - A: "I didn't this time but will remember it for the future".

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

\$500.00 Snap-On gift card

The other Regional winners selected from QMRs submitted during September 2021 were:

- Anthony Gries from Baxter Subaru Omaha in Omaha, NE
- Brent Bledsoe from Courtesy Subaru of Chico in Chico, CA
- Clayton Huntington from Heritage Subaru Catonsville in Baltimore, MD
- Phuoc Do from MetroWest Subaru in Natick, MA

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!

QMR of the Month Award Presentations

As part of our "enhanced" QMR of the Month recognition program, we will include a photo (whenever available) of the recipient's award presentation in TIPS. The winner selected from QMR of the Month submissions received during September 2021 was Marco Yanes-Pena, a Technician from Bill Kolb Jr. Subaru in Orangeburg, NY.



Marco is shown above after being presented with his \$500.00 Snap-On Gift Card. To Marco's right is Subaru Distributors Corp. Field Service Engineer Jim Colamarino. To Marco's left are Bill Kolb Jr. Subaru's Shop Foreman (and August 2021's Winner) John Cote, Service Director Joe Minns and Service Manager, Jessica Rolon.

Congratulations and THANK YOU to our September 2021 QMR of the Month Award recipient!

TECH TIPS GREATEST TIPS

This series features TechTIPS articles frequently referred to by Techline. This month's feature is from April 2013.

07

ERRATIC DIGITAL FUEL GAUGE OPERATION, 2012MY AND LATER IMPREZA, BRZ AND 2014MY FORESTER

The Techline has been receiving inquiries about erratic digital fuel gauge operation on the models shown above after refueling. Examples of customer concerns include: the fuel gauge doesn't react after filling the tank, low fuel indicator remains on after fueling, or the gauge only reads ¾ full after filling. The information below provides some insight to how the fuel gauge operates, refueling suggestions and some answers you can use when customers have related questions at the Service counter.

Fuel Gauge Inaccuracy After A Partial Fill

It is recommended that the ignition be turned completely "OFF" when adding fuel to the tank. Inaccurate fuel level indication on the gauge can occur if the ignition is left in the "ON" position while adding fuel in small quantities.

Background of Mechanism

The fuel gauge logic incorporates a shunt to prevent gauge fluctuation while driving on curvy roads, which causes the fuel to slosh in the tank and effectively change the level at the sending units while driving in this manner.

If a small amount of fuel, approximately 4.25 US gallons (16 liters) or less is added to the tank while the ignition is in the "**ON**" position, the logic sees fuel slosh, rather than the actual increase in fuel level.

Note that the fuel level will most likely not self correct over time or with multiple key cycles.

In some cases, adding less than 2 gallons of fuel, even with the ignition in the "OFF" position, may result in no level increase on the gauge. An example of this may be a customer who adds only \$5 in fuel and then notes no change in the gauge reading.

How To Restore Correct Fuel Level indication

This is not an indication of any mechanical failure!

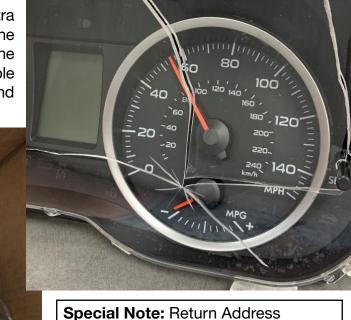
If this occurs, adding more fuel, more than 2 gallons, with ignition in the "**OFF**" position, will in most cases correct the condition. In some rare cases, it may be necessary to disconnect the battery negative cable for more than 10 seconds.

The real "**KEY**" is to turn the "**IGNITION OFF**" anytime you are fueling the vehicle (following the caution placards found on nearly every gas pump).

Sending Immobilizer Components, Broken on Arrival

Techline has received several broken immobilizer components in recent months for lost key reprogramming. This has been attributed to poor choices of packing material (or lack thereof), and inadequate box size. The most common parts found broken on arrival to SOA are the combination lens and meter mounting tabs.

When sending components for clearing, take extra consideration and care when packing. Using the proper insulating material and box size could be the difference between a broken meter or not. Inflatable bags are not recommended they are not reliable and can easily deflate.



Information is CRUCIAL. Please make sure this information is filled out on EVERY Lost Key Form. The return information should be addressed to an INDIVIDUAL, not a building.





Sending Immobilizer Components, Broken on Arrival (CONTINUED)

Techline and SOA provide the immobilizer clearing process as a courtesy service for our customers. Currently, there is no cost for clearing components. The only cost for the retailer is the shipping to SOA. Labor time and Technician pay will be determined by the retailer Service Department.

SOA is **NOT LIABLE** for **ANY** broken parts during shipping. It is the **RETAILER'S** responsibility to properly package the components for transport. Damaged components will need a claim opened with the shipping company involved, not SOA.

For the latest Immobilizer Information for Lost Keys, refer to 03/2021 Tech TIPS.



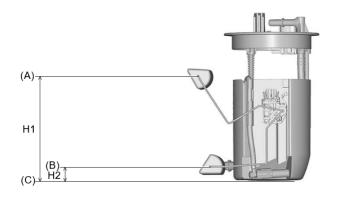
Fuel Gauge Discrepancy, not reading correctly

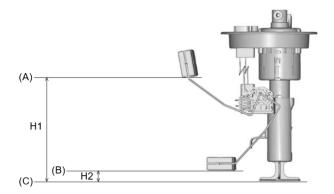
Diagnosis for fuel level discrepancies requires inspection of the combination meter, body harness, both level senders, and the fuel tank. The circuit of the fuel level senders is a loop from the combination meter through both senders, wired in series, that returns back to the combination meter. Subaru's system increases circuit resistance as the fuel level decreases.

A customer may have the concern of the fuel gauge never reading full after fill ups or that they run out of gas while there is still fuel showing on the gauge. The diagnosis is the same for either event. Using the SSM, the combination meter PID should be observed in work support for the circuit resistance. Once that value has been recorded, the total circuit resistance should be checked with a DVOM to confirm the meter is reading the resistance correctly. If the resistance does not match, the combination meter may be at fault.

If the combination meter is correctly reading the resistance of the harness, the senders should be checked for accuracy of the resistance. Each sending unit should have a sweep test performed. The Technician should confirm the minimum and maximum resistance are within the specification posted in STIS. The swept height of the sender arm should be measured to ensure the arm is not bent. The tank should be inspected for any obstacle that may limit the travel of the fuel sender arm in either direction. Damage to the tank or distortions may also impact the accuracy of the level sender.

If the resistance of each sender is within specification and the travel of the senders are not restricted, a harness check should be performed. If any excessive resistance or shorts are found in the harness, it should be replaced.





12 2022MY BRZ Front and Rear License Plate Installation

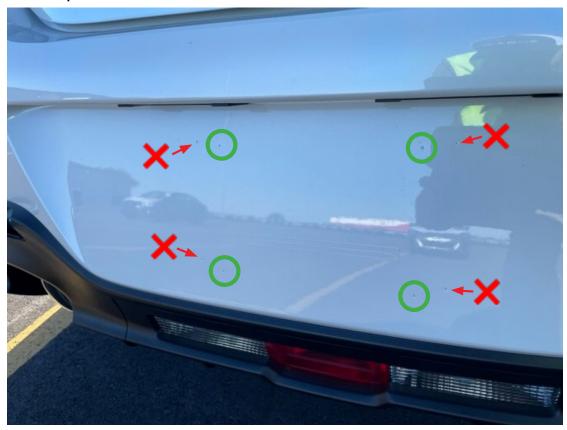
With the all-new 2022 BRZ launch underway, SOA has seen some concern from the field regarding installing front and/or rear license plates. Thank you for bringing this concern to our attention! Please read below for clarification on installing both front and rear license plates on the 22MY BRZ.

For front and rear license plates, Retailers should utilize self-tapping screws and the dimpled areas (green circles in below pictures) on the bumper facias. The collars pre-installed in the vehicle's front bumper face are for mounting plates in other markets (Example: EU and JDM). **NOTE:** The rear bumper has two sets of dimples, one outside set and one inside set. Retailers should use the <u>inside</u> set of dimples.

Front Bumper



Rear Bumper



Thank you again for bringing this concern to our attention!



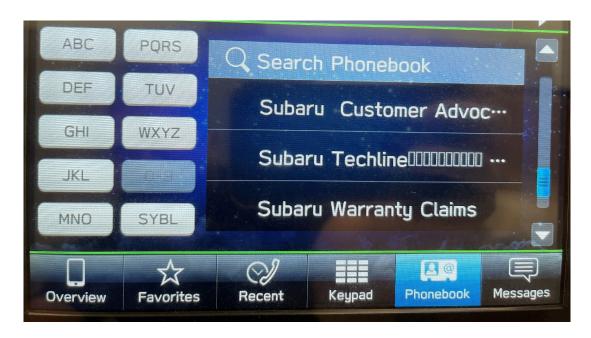
How many times have you heard when contacting Techline, "Have you inspected the vehicle for aftermarket accessories?". It is with good reason they continue to ask. QMR and FSE reports continue to show aftermarket accessories having adverse effects on certain systems, component function or vehicle features. This can include but is not limited to: Immobilizer DTCs, no start concerns, keyless entry being inoperative, TPMS DTCs, radio concerns and drivability concerns.

- ALWAYS check for aftermarket devices as there may be a relation to the concern the car is currently experiencing.
- NEVER automatically assume the condition is a direct result of the aftermarket device. There are a wide variety of devices used and many follow the necessary requirements to not create interference with the vehicle.
- AVOID going down the aftermarket device rabbit hole. ALWAYS follow good diagnostic practices FIRST to determine if the car may have a repairable condition. This will be the case more times than not.
- IF the diagnosis does not result in finding the cause of the condition, ASK if you can remove the aftermarket device to continue diagnosis. IF the device is readily removable or powered down such as by unplugging it from the power outlet or OBD port.
- IF the device is hard wired in, it may be necessary to request the customer remove it or have it removed to complete diagnosis. This may also be necessary if the condition is random in occurrence. It may also mean the device itself may have failed and may need repaired or replaced by the device supplier.

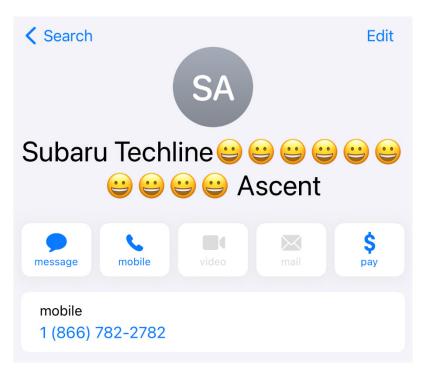


Harman Bluetooth voice commands and Contact Emojis

Techline has received reports about the "Call" voice command via Bluetooth being inoperative at times. Upon further inspection with the customer's phone, it was found only certain contacts trying to be called were affected. The condition was then traced back to those contacts containing emojis in their title name. The Harman platform does not know how to interpret emojis. As a result, the contact may present as a square tile or, ignore the existence of the contact all together when voice command is activated. This condition is only with a single press of the voice command button. A long push to activate Siri or Google will activate the phone's native voice command which can interpret the emoji correctly.



Here is an example image of the condition using an iPhone platform. Take note that the condition can happen with any emoji in any order. The head unit displays the emoji as square tiles. If the contact's name is edited or a change is made, a resync with the Bluetooth pairing and phonebook download must be completed. Certain setups may require the Bluetooth pairing to be deleted entirely and paired again followed by re-enabling a phonebook download. This condition does not affect Denso CP1 units.



B2255 and **B2256** misdiagnosis and Diagnostic changes

It has been brought to Techlines' attention when diagnosing B2255 and B2256, an important DTC diagnostic step is being overlooked leading to mis-diagnosis. The Telematics Field Quality Assurance team has found a high frequency of unnecessary Head Unit and USB jumper cable replacements being performed when the root cause repair is successful after proper Telematics DCM diagnosis completion. Even though these DTCs apply to different models, it is important to note, they both indicate a communication fault between the Infotainment Head Unit and the Telematics Data Communication Module.

STIS will be updated in the future to reflect this with the proper steps. For now, refer to the following guides for proper diagnosis.

-B2256 - DATA COMMUNICATION MODULE COMMUNICATION OPEN

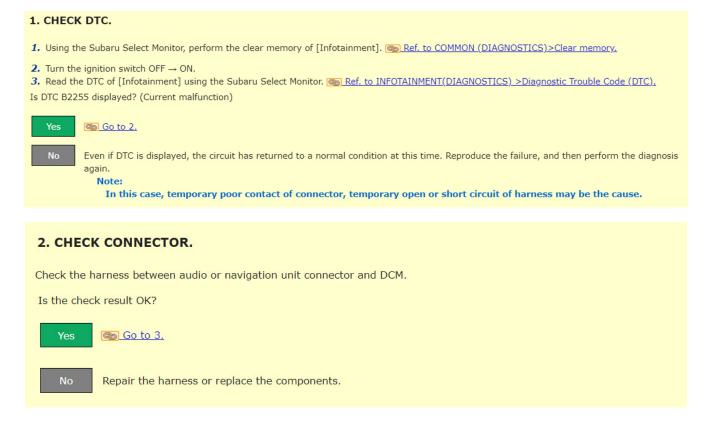
This trouble tree is complete in its testing methodology but fails to make one crucial point. In Step 3: CHECK DCM, the first hyperlink takes the Technician to the TELEMATICS SYSTEM (DIAGNOSTICS) > Basic Diagnostic Procedure trouble tree. This procedure has the Technician thoroughly check for DTCs and test the operation of the Telematics system. This operation is crucial that it is performed in its entirety. Technicians sometimes fail to resolve any Telematics DTCs before continuing to diagnose B2256 which leads to a possible inaccurate diagnosis, root cause indication and in some cases, an unnecessary component replacement.

Technicians <u>MUST</u> ensure the Telematics system is DTC free and operating as expected before continuing their diagnosis.

-FORESTER ONLY B2255 USB2(DCM) FAULTS

The Forester B2255 trouble tree is not as thorough as lacks the instruction to perform TELEMATICS SYSTEM (DIAGNOSTICS) > Basic Diagnostic Procedures.

To improve the Forester B2255 root cause determination success rate, we suggest Technicians follow the testing methodology as outlined here.



B2255 and **B2256** misdiagnosis and Diagnostic changes (CONTINUED)

3. CHECK DCM.

Perform the inspection according to the diagnosis for telematics system. Ref. to TELEMATICS SYSTEM (DIAGNOSTICS)>Basic Diagnostic Procedure.

Is the check result OK?

Yes

Replace the audio or navigation unit. Es Ref. to ENTERTAINMENT & MONITORING>Navigation Body.

No

Replace the DCM. @ Ref. to ENTERTAINMENT & MONITORING > Data Communication Module.

-B2255 - USB2(DCM) Faults on models other than Forester

This trouble tree is complete in its testing methodology but fails to make one crucial point. In Step 5 of the trouble tree: 5. CHECK DTC, the first hyperlink takes the Technician to the ENTERTAINMENT & MONITORING > Data Communication Module. This section talks about the removal and installation of the DCM but not any of the essential Telematics diagnostic procedures.

Technicians would be better served by going to **TELEMATICS SYSTEM (DIAGNOSTICS)** > **Basic Diagnostic Procedure trouble tree**. This procedure has the Technician thoroughly check for DTCs and confirm operation of the Telematics system. This operation **MUST** be performed in its entirety. Technicians sometimes fail to resolve any Telematics DTCs before continuing to diagnose B2255 diagnosis leading to a possible inaccurate B2255 root cause indication.

Technicians <u>MUST</u> ensure the Telematics system is DTC free and operating as expected before leaving the TELEMATICS SYSTEM (DIAGNOSTICS) > Basic Diagnostic Procedure trouble tree and continuing B2255 diagnosis.

00 STIS New Releases

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
15-255-19R	Technical Service Bulletin	Map Data Update Procedure for	8-Dec-21
E101SVA002	Accessory Installation Guide	2015-22MY WRX Side Sill Plates	8-Dec-21
05-72-19R	Technical Service Bulletin	Squeak / Creaking Sound from R	6-Dec-21
15-236-18R	Technical Service Bulletin	Reprogramming File Availabilit	6-Dec-21
J505SVA104	Accessory Installation Guide	PORT INSTALLATION: 2022MY Fore	6-Dec-21
J501SSJ340	Accessory Installation Guide	PORT INSTALLATION: 2022MT Fore	6-Dec-21
10-102-21	Technical Service Bulletin	Expansion Valve – Design Chang	6-Dec-21
SG980VA000	Accessory Installation Guide	2015-21MY WRX Battery Holder I	3-Dec-21
J2010VC000	Accessory Installation Guide	2022MY WRX Center Armrest Exte	3-Dec-21
J1310VC623	Accessory Installation Guide	2022MY WRX Center Console Lid	3-Dec-21
E5610VC550	Accessory Installation Guide	2022MY Rear Bumper Diffuser	3-Dec-21
E2610VC500	Accessory Installation Guide	2022MY WRX Strake Kit - Side	3-Dec-21
E2410VC500	Accessory Installation Guide	2022MY WRX Strake Kit - Front	3-Dec-21
E5610VC110	Accessory Installation Guide	2022MY WRX Rear Under Diffuser	3-Dec-21
E5610VC010	Accessory Installation Guide	2022MY WRX Rear Side Under Spo	3-Dec-21
E2610VC110	Accessory Installation Guide	2022MY WRX Side Under Spoiler	3-Dec-21
E2410VC210	Accessory Installation Guide	2022MY WRX Front Under Spoiler	3-Dec-21
J1010VC530	Accessory Installation Guide	2022MY WRX Front Aero Splash G	3-Dec-21
09-83-21	Technical Service Bulletin	3.6L Water Pump-Design Change	2-Dec-21
WRG-21R	Subaru Product/Campaign Bulletin	Fuel Pump Impeller Failure	1-Dec-21
J1310VC623	Accessory Installation Guide	2022MY WRX Ultrasuede Center C	30-Nov-21
J1310VC622	Accessory Installation Guide	2022MY WRX Ultrasuede Center C	30-Nov-21
J1310VC621	Accessory Installation Guide	2022MY WRX Ultrasuede Instrume	30-Nov-21
J101SVC000	Accessory Installation Guide	2022MY WRX Body Side Molding (30-Nov-21
J101SVC000	Accessory Installation Guide	2022MY WRX Body Side Molding (30-Nov-21
12-231-21	Technical Service Bulletin	Rear Bumper Installation Proce	19-Nov-21
14-28-21	Technical Service Bulletin	New Software Reprogramming Pro	19-Nov-21
J501SXC110	Accessory Installation Guide	PORT INSTALLATION: 2019MY Asce	18-Nov-21
J501SAN230	Accessory Installation Guide	PORT INSTALLATION: 2021-2022MY	18-Nov-21
J501SXC150	Accessory Installation Guide	PORT INSTALLTION: 2021MY Ascen	18-Nov-21
J501SXC130	Accessory Installation Guide	PORT INSTALLTION: 2021MY Ascen	18-Nov-21
J501SSJ311	Accessory Installation Guide	PORT INSTALLATION: 2021-2022MY	18-Nov-21
J501SAN222	Accessory Installation Guide	PORT INSTALLATION: 2021-2022MY	18-Nov-21
J501SFL402	Accessory Installation Guide	PORT INSTALLATION: 2019MY Impr	18-Nov-21
L101SSJ005	Accessory Installation Guide	PORT INSTALLATION: 2019-2022MY	17-Nov-21
E7710VC500	Accessory Installation Guide	2022MY WRX Exhaust Finisher	17-Nov-21
01-181-20R	Technical Service Bulletin	Vehicle Cleaning- COVID-19 Bes	16-Nov-21

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
07-178-21	Technical Service Bulletin	Battery Testing and Charging	16-Nov-21
H501SSJ000	Accessory Installation Guide	2022MY Forester Auto Dimming M	16-Nov-21
16-112-18R	Technical Service Bulletin	Ignition Key Sticking / Design	15-Nov-21
10-103-21	Technical Service Bulletin	Evaporator Core Drain / Water	15-Nov-21
WRB-21R	Subaru Product/Campaign Bulletin	Corrosion of the Air Condition	11-Nov-21
05-71-19R	Technical Service Bulletin	Front Coil Spring Inspection P	5-Nov-21
16-135-21R	Technical Service Bulletin	DTC P0871 – Transmission Fluid	5-Nov-21
15-208-17R	Technical Service Bulletin	Availability of "Gracenote® Me	5-Nov-21
15-282-21R	Technical Service Bulletin	STARLINK Remote Engine Start (4-Nov-21
12-230-21	Technical Service Bulletin	Outer Door Weatherstrip Fitmen	3-Nov-21
15-266-20R	Technical Service Bulletin	Telematics Function and Operat	2-Nov-21
15-281-21R	Technical Service Bulletin	Customer Takeover after STARLI	2-Nov-21
15-267-20R	Technical Service Bulletin	Telematics System Automatic Co	2-Nov-21
12-229-21	Technical Service Bulletin	Diagnostic Procedure for DTC P	2-Nov-21
15-242-19R	Technical Service Bulletin	Telematics System Diagnostic Q	2-Nov-21
05-63-18R	Technical Service Bulletin	Steering Rattle Sound / Steeri	2-Nov-21
15-219-18R	Technical Service Bulletin	Error Code 202 and / or 204 Ge	2-Nov-21
15-257-19R	Technical Service Bulletin	STARLINK Service Leads, DTC B2	2-Nov-21
05-82-21R	Technical Service Bulletin	Front Strut Dust Cover- Design	2-Nov-21
C1010VC000	Accessory Installation Guide	2022MY WRX (CVT models only) S	1-Nov-21

*** Now you can e-mail your TechTIPS input and suggestions to: tech@subaru.com ***
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:

SUBARU TECHLINE Hours of Operation

Monday – Thursday 8:30 am to 7:30 pm Friday 10:30 am to 5 pm and Saturday 9 am to 3 pm