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SUBARU TECHLINE HOLIDAYS & HOURS OF OPERATION

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:

Cory Calp from
AutoNation Subaru in Cockeysville, MD

The winning QMR of the Month selected from March's submissions involved the diagnosis and repair of a 2019MY Ascent with a Check Engine light that came on during the State Inspection road test. Cory began with a DTC check and found P0230: FUEL PUMP PRIMARY CIRCUIT stored in the ECM memory. After gaining access to the fuel pump controller, he noticed over time with the vehicle running, the unit became abnormally warm to the touch. He then proceeded with numerous wiring checks to verify proper voltages, solid grounds, voltage drops and resistance values. When testing the signal wire from the fuel pump controller, there was no output voltage at all to the ECM. Cory used the SSM4 oscilloscope function to check for the controller's square wave signal which was not occurring. He ordered a new controller and after installation, confirmed the square wave signal was within the specification supplied in the Service Manual I/O Signal Chart. Subsequent post-repair road tests confirmed the successful repair. Cory's report included details of each connector / pin test performed along with the results and a series of quality photos to support his findings.

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

\$500.00 Snap-On gift card

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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, 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 2021 were:

- **David Rizzo** from **West-Herr Subaru** in Orchard Park, NY
- **Matt Venetianer** from **Reynolds Subaru** in Lyme, CT
- **Chris Grad** from **Ganley Subaru of Wickliffe** in Wickliffe, OH
- **David Callender** from **Roy Robinson Subaru** in Tulalip, WA

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!

01 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 March 2021 was Cory Calp, a Technician from Subaru of Hunt Valley in Cockeysville, MD.



Cory is shown above (center) after being presented with his \$500.00 Snap-On Gift Card. Also pictured (left to right) are Subaru of America, Inc. (SOA) District Parts and Service Manager Jason Raguz, Subaru of Hunt Valley Service Manager Eric Nicholson and to Cory's left are SOA Field Service Engineer Jesse Bunting, and SOA Field Service Engineer Manager, Greg Pounds.

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

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TECH TIPS GREATEST TIPS

This series features TechTIPS articles frequently referred to by Techline. This month's feature is from July 2018.

01 Understanding DTCs and How to Proceed Properly with Repairs

The Techline has been receiving calls from Technicians who in some cases are following the wrong trouble tree when diagnosing DTCs. When a vehicle comes in with multiple codes stored, always look at the Freeze-Frame (FF) data and the Time Count PID first. This will be the best place to get a direction as to what the first DTC to set in the affected system was. **IMPORTANT:** Never clear any DTCs until all have been recorded and the corresponding FF data saved electronically.

In the example below, a customer came in with a traction (VDC) light, Check Engine light and A/T Temp light on. If the root cause issue is not current, they could come in with no warning lights on at all. The Technician connects the SSM and the following DTCs are stored:

- VDC code C1424 (ECM failure): DTC indicates there is a code in the ECM.
- ECM code P0700 (AT request MIL on): DTC indicates there is a code in the TCM.
- TCM code P0841 (Secondary Pressure Sensor Malfunction): This DTC is the root-cause issue and should be the code the Technician diagnoses first.

In this case, the other codes (C1424 and P0700) are secondary codes. The TCM informed the other control modules of its failure by setting the P0841. Whenever a control module has an issue and stores a DTC, there is a strong possibility of DTCs in other modules due to the interdependence of one system on another through operation of the high-speed CAN system.

You may also see CAN communication codes stored. These DTCs should be interpreted as secondary or by-product codes unless there are no other codes stored. Always check each system for DTCs as once the issue has subsided, the only place the DTC will be stored is in the affected system. An All-System scan will only provide current codes which in the example above, would be C1424.

05 AWD light flashing, STI & WRX

As the seasons change, WRX & STI owners often swap their wheels and tires for a summer/winter set. Techline has seen an increase in calls about a concern of the AWD light or DCCD light (model specific) flashing and being inoperative above certain speeds. This concern has been traced back to excessive road force in the wheel and tire assemblies interfering with the center differential control system. If you encounter a WRX or STI that the AWD light starts flashing when a certain speed is reached, with no DTCS or obvious signs of damage, be sure to inspect the wheels and tires. You may find that the customer has recently installed seasonal tires. At this point, a road force balance should be performed.

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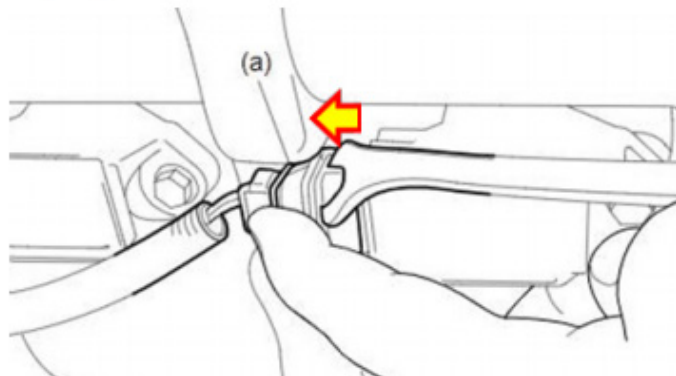
05 AWD light flashing, STI & WRX (CONTINUED)

Remember, the suggested road force for a passenger tire on a Subaru is 8.0kg (17.6lb) or less as per the NVH bulletin 05-50-10R. Exceeding these values could cause this condition. If the wheel and tire assemblies test near this specification, swapping/testing with a like vehicle is recommended.

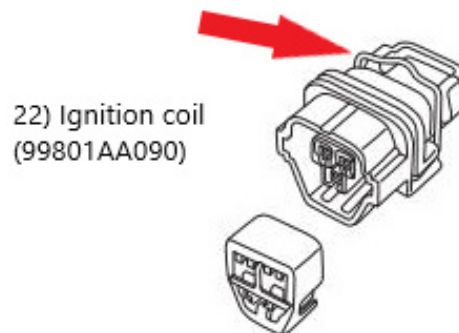
07 WRE-21 Ignition Coil Connector Removal and Wire Clip Loss- How to Repair

Techline has received reports of some retailers calling and looking for the metal retaining clip from the ignition coil connector on the engine harness. Technicians are prying the metal retaining clip off to remove the connector from the ignition coil. This is the incorrect and improper way to disconnect the connector. The metal retaining clip should not be removed in order to disconnect the connector from the ignition coil. The metal retaining clip should be pushed down, and the connector pulled off from the ignition coil. This information is in the Service Manual and was added as an update in the WRE-21 bulletin. It is provided here as reference.

TIP: When disconnecting the harness connectors from the ignition coils, squeeze the wire retaining clip (a) and push the connector off using a trim clip tool as shown in the illustration below. **DO NOT** remove the wire retaining clip from the harness connector.



The metal retaining clip itself is not available separately. If the clip is lost the connector will need to be ordered. The new connector comes with the metal retaining clip installed as shown here.



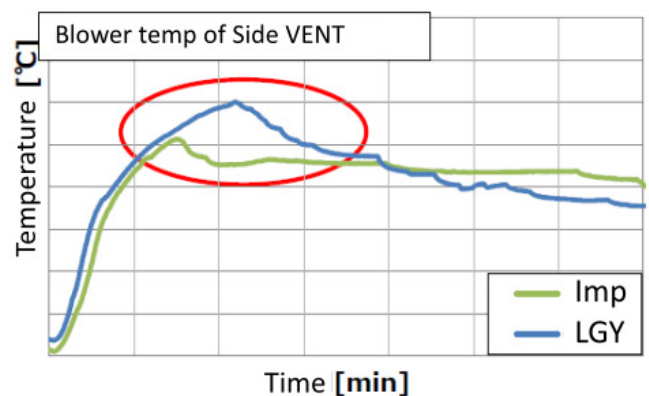
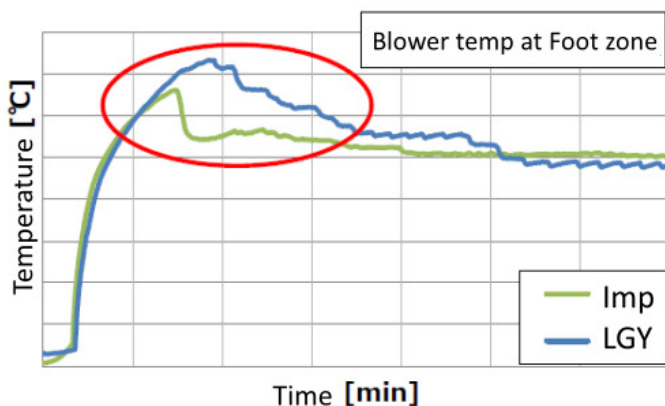
Supply of these connectors is extremely limited and must be special ordered. Retailers need to order these connectors **only as needed** using the existing VOR parts order process. They must then contact the PICs team, after placing the VOR order, to have the connector(s) released.

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A customer may present a concern of their climate control vent temperature seems too hot or cold in relation to the settings they are choosing. Technicians should be aware of several factors contribute to the setting being chosen; blower motor speed, the difference between ambient temperature and target temperature, and the effect of the sun all play a role to a person's perception of temperature inside the vehicle. Using the SSM4 a Technician has the ability to adjust/customize the target temperature in order to compensate and adjust the final vent temperature perceived by the customer. By adjusting the setting temperature target value, Technicians can raise or lower the final vent temperature to provide the customer with what they believe to be a more accurate final temperature.

The customization in the SSM4 for the target value can be adjusted from (+)3 to (-)3. This is not a direct relation to degrees, but levels. It is important to note, changing the target value will also change the blower motor ramp settings. The customer may notice the fan does not operate with the same characteristics as it did before the adjustment. This is a normal operating condition.

The A/C CM controls the blower temperature/speed in order to reach the target temp. This will also be affected depending on the gap between the target temp, actual temp and outside temp. The fan may initially blow higher and stronger to acquire the target temp selected. Depending on parameters, this may also create an overshoot scenario in which the customer may feel the system is too hot/cold. This is also a characteristic of how the system operates.



It is important to note the A/C CM judges the vehicle temperature unit by using the destination set in the Combination Meter (Canada or US) and will adopt the proper temperature unit: Celsius or Fahrenheit. When monitoring the A/C CM live data, the control panel setting values do not have a unit. This is simply showing the range in degrees available for both Celsius and Fahrenheit.

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Heater Control Panel Setting Value (Driver's)	Display the set temperature of the A/C control panel on driver's seat side.	15 – 90	—
Heater Control Panel Setting Value (Passenger's)	Display the set temperature of the A/C control panel on passenger's seat side.	15 – 90	With left/right independent air conditioning function
Blower outlet request temperature (Driver's)	Display the blow vents target temperature on driver's side.	-327.68 – 327.67°C	—
Blower outlet request temperature (Passenger's)	Display the inner set value of the A/C control panel. (With left/right independent air conditioning function)	-327.68 – 327.67°C	With left/right independent air conditioning function

The Technician should be aware that since we are dealing with perception, this may be a trial-and-error process the customer may have to assist with. Techline recommends a thorough customer interview and possible test drive to understand the customer's temperature perception.

Example: If the customer believes when their vehicle is set to 70°, it is noticeably colder to them, the target value can be adjusted to a higher (+) target temperature. This in turn, will raise the vent temperature for the effect of 70°, but in actuality, be above 70° depending on the setting shift. Conversely, if they feel 70° is hotter than it should, lower the setting temperature shift.

DIAGNOSTICS

TIRE PRESSURE MONITOR (DIAGNOSTICS)

AIR CONDITIONER (DIAGNOSTICS)

Basic Diagnostic Procedure

Check List for Interview

General Description

Electrical Component Location

Control Module I/O Signal

Inspection Mode

Diagnostic Procedure for Subaru Select Monitor Communication

Data Monitor

Freeze Frame Data

Active Test

Customize

OPERATION

▶ LIST

		MANU	Even when AUTO mode is actuated, inlet switching is not automatically operated. (Switching can only be manually operated)
Compressor auto mode	AUTO	AUTO	When AUTO mode is actuated, compressor is also automatically operated.
		MANU	Even when AUTO mode is actuated, compressor is not automatically operated. (Switching can only be manually operated)
Setting temperature shift	0	-3 -2 -1 0 +1 +2 +3	Adjust the A/C target value relative to the set temperature.
Mode/VentII	Yes	Yes	When AUTO mode is operated, VENT II mode (upper wind: large, lower wind: small) is present.

The steps to perform the customization can be found on [STIS > Diagnostics > Air Conditioning \(Diagnostics\) > Customize > Operation](#).

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12 Ascent Sunroof Frame Assembly

When diagnosing for air/water leaks, dislodged/deformed molding, performing adjustments, or when replacing the sunroof frame assembly, **DO NOT** remove the yellow tape from the double-sided tape installed on the sunroof frame assembly. It is required to remain in place by design.

NOTE: The yellow tape is not available separately/serviceable, if removed, the sunroof frame assembly will need to be replaced.



Continued on the next page

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
10-101-21	Technical Service Bulletin	Heater Control Assembly- Desig...	9-Jun-21
TIPS0820	TechTIPS NewsLetter	2020 August TechTIPS Newslette...	9-Jun-21
H6710AL010	Accessory Installation Guide	Cigarette Lighter Kit	8-Jun-21
15-236-18R	Technical Service Bulletin	Reprogramming File Availabilit...	8-Jun-21
WTN-74R	Subaru Product/Campaign Bulletin	Reprogramming File Availabilit...	8-Jun-21
15-211-17R	Technical Service Bulletin	Reprogramming File Availabilit...	8-Jun-21
WUA-86R	Subaru Product/Campaign Bulletin	Harman Kardon Head Unit Reprog...	8-Jun-21
WTZ-85R	Subaru Product/Campaign Bulletin	Harman Kardon Head Unit FMVSS ...	8-Jun-21
09-51-08R	Technical Service Bulletin	Catalytic Converter Revised Sh...	7-Jun-21
WRG-20	Subaru Product/Campaign Bulletin	Continental Tire Safety Recall	7-Jun-21
WRC-21R	Subaru Product/Campaign Bulletin	Continental Tire Safety Recall	7-Jun-21
12-320-21	Technical Service Bulletin	Front Outer Door Garnish -Desi...	7-Jun-21
07-195-21	Technical Service Bulletin	Power Rear Gate Control Module...	7-Jun-21
F411SFL050	Accessory Installation Guide	2017-2020MY Impreza Sedan Pet-...	4-Jun-21
F411SAN030	Accessory Installation Guide	2020-2022MY Legacy Pet Friendl...	4-Jun-21
15-254-19R	Technical Service Bulletin	Map Data Update Procedure for ...	3-Jun-21
09-74-21	Technical Service Bulletin	Cleaning Procedure for Carbon ...	3-Jun-21
15-208-17R	Technical Service Bulletin	Availability of "Gracenote® Me...	2-Jun-21
02-187-21	Technical Service Bulletin	Engine Oil Pressure Inspection...	1-Jun-21
11-203-21	Technical Service Bulletin	DTC P015A or P015B / Delayed O...	1-Jun-21
15-279-21R	Technical Service Bulletin	Gen1 Telematics DCM Replacemen...	27-May-21
E515SAN300	Accessory Installation Guide	2022MY Outback and Forester (W...	27-May-21
E515SAN100	Accessory Installation Guide	2022MY Outback (all trim level...	27-May-21
E515SAN040	Accessory Installation Guide	2022MY Outback (Wilderness Edi...	27-May-21
F551SCC000	Accessory Installation Guide	22MY BRZ Cargo Net	27-May-21
MSA5B2201A	Owner Manual	2022MY Impreza Getting Started...	26-May-21
MSA5M2209A	Owner Manual	2022MY Impreza Subaru STARLINK®...	26-May-21
MSA5M2212A	Owner Manual	2022MY Impreza Eyesight Owner'...	26-May-21
MSA5M2201A	Owner Manual	2022MY Impreza Owner's Manual	26-May-21
J101SSJ201	Accessory Installation Guide	2019-21MY Forester Body Side M...	21-May-21
J101SSJ201	Accessory Installation Guide	2019-21MY Forester Body Side M...	21-May-21
WRE-21	Subaru Product/Campaign Bulletin	Ignition Coil Replacement	19-May-21
11-198-20R	Technical Service Bulletin	DTCs P219C, D, E or F- ECM Rep...	19-May-21
SOA567R000	Accessory Installation Guide	2022MY Outback and Forester (a...	19-May-21
E2410CC000	Accessory Installation Guide	2022MY BRZ STI Front Under Spo...	19-May-21
E5610CC000	Accessory Installation Guide	2022MY BRZ STI Rear Side Under...	19-May-21
E2610CC000	Accessory Installation Guide	2022MY BRZ STI Side Under Spoi...	19-May-21

All revised publications are highlighted in yellow.

Continued on the next page

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
E7110CC00	Accessory Installation Guide	2022MY BRZ Fender Vent Accent ...	19-May-21
E5610CC150	Accessory Installation Guide	2022 MY BRZ Rear Under Diffuse...	19-May-21
02-186-21	Technical Service Bulletin	Scavenge Pump Installation- Se...	18-May-21
18-211-21	Service Manual Correction	Service Manual Corrections	18-May-21
WQR-53R	Subaru Product/Campaign Bulletin	Takata Front Passenger Air Bag...	14-May-21
07-176-20R	Technical Service Bulletin	DTCs B118B, B11E5, B11E6 in Dr...	13-May-21
18-210-21	Service Manual Correction	Service Manual Corrections	13-May-21
18-209-21	Service Manual Correction	Service Manual Corrections	12-May-21
J501SAN230	Accessory Installation Guide	PORT INSTALLATION: 2020-2022MY...	11-May-21
J501SAN222	Accessory Installation Guide	2021-2022MY Outback Wilderness...	11-May-21

All revised publications are highlighted in yellow.

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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: _____