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SUBARU TECHLINE HOLIDAYS & HOURS OF OPERATION

Labor Day: (Closed)
Monday, September 5, 2020

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

01 TechShare QMR of the Month

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

Jeremy Buturla from
Garavel Subaru in Norwalk, CT

Jeremy created a high quality QMR using TechShare reporting on DTC B28B1 (Stereo Camera Automatic Adjustment) stored in memory. Jeremy’s report included detailed diagnostic steps, high-quality photos, and videos.

Please refer to the following link to review the TechShare QMR in detail.
<https://subarutechshare.com/qmrs/TS-200180>

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

\$500.00 Snap-On gift card

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.



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01 QMR of the Month (CONTINUED)

The other Regional winners selected from TechShare QMRs submitted during May 2022 were:

- **Christopher Fox** from **Zeigler Subaru of Kenosha**
- **Leo Gilmore** from **Ruge's Subaru**
- **Roberto Perez** from **Ocean Subaru of Fullerton**
- **William Shepard** from **#1 Cochran Subaru of Butler County**

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

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 May 2022 was Technician Jeremy Burtula from Garavel Subaru in Norwalk , CT.



Jeremy is shown above (left/center) after being presented with his \$500.00 Snap-On Gift Card. Also pictured (left to right) Garavel Subaru’s General Manager Jeremy Garavel and Subaru New England (SNE) District Parts and Service Manager John DeMartini. To Jeremy’s left is SNE District Service Quality Manager Manny Martinez, Garavel’s Subaru’s Service Managers Daniel DeAlmeidia, and Tony Cornelio.

*Congratulations and **THANK YOU** to our May 2022 QMR of the Month Award recipient!*

Continued on the next page

Techline has been receiving calls about repeat diagnosis and repair for DTCs P2762 and P2757. Technicians have reported multiple valve body, wiring harness and torque converter replacements with no resolution. When faced with either DTC, it is very important to pay close attention and read the final steps of these trouble trees for proper diagnosis.

Most Subaru trouble trees take Technicians through several tests and lead them to identify the problem. This usually results in part replacement or wire repair, etc. These trouble trees are somewhat unique, as they ask to replace a part **AND** continue to the next step of the trouble tree.

This is because the Transmission Control Module (TCM) logic is unable to determine if the valve body or torque converter is at fault. It is unable to determine if there is a mechanical or hydraulic failure, causing the DTC to set. Therefore, the trouble tree advises to replace the likely faulted component and continue to the next step. This will also lead the Technician to perform a drive cycle in an attempt to reset the DTC.

However, a Technician may not be able to drive the vehicle far enough to get the DTC to set in a timely manner. If the vehicle returns with the same DTC, perform the trouble tree again from the beginning, if you get to Step 9 or 10, **DO NOT** replace the valve body again. Continue to the next step.

DTC P2762

9. CHECK INPUT SIGNAL FOR TCM.

- Lift up the vehicle.
- Start the engine.
- Warm up until the ATF temperature reaches to 40 – 70°C (104 – 158°F).
- Depress the brake pedal, and shift the select lever to "D" range.
- Shift the select lever to "P" range.
- Stabilize the engine speed at idle.
- Read the data of «Actual Secondary Pressure» using Subaru Select Monitor.

Is the «Actual Secondary Pressure» 0.5 – 1.5 MPa?

Yes Replace the control valve body. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(TR580\) > Control Valve Body](#). **Go to 10.**

No Perform the diagnosis according to DTC P0841. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(TR580\) > SENSOR PERFORMANCE](#).

10. DRIVING CHECK FOR LOCK-UP CONDITION.

- Perform the Clear Memory Mode. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(DIAGNOSTICS\) > Clear Memory Mode](#).
- Turn the ignition switch to OFF.
- Start the engine.
- Warm up until the ATF temperature exceeds 50°C.
- Drive the vehicle for one minute or more while keeping such constant speed that «Lock Up Duty Ratio» is 70%.
- Turn the ignition switch to OFF.
- Start the engine.
- Perform the procedure in step 5) again.
- Read the DTC using Subaru Select Monitor.

Does the AT OIL TEMP light blink and is DTC P2757 displayed?

Yes Replace the torque converter assembly. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(TR580\) > Assembly](#).

No Current condition is normal. It is possible that temporary poor contact occurs.

DTC P2757

10. CHECK INPUT SIGNAL FOR TCM.

- Lift up the vehicle.
- Start the engine.
- Warm up until the ATF temperature reaches to 40 – 70°C (104 – 158°F).
- Depress the brake pedal, and shift the select lever to "D" range.
- Shift the select lever to "P" range.
- Stabilize the engine speed at idle.
- Read the data of «Actual Secondary Pressure» using Subaru Select Monitor.

Is the «Actual Secondary Pressure» 0.5 – 1.5 MPa?

Yes Replace the control valve body. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(TR580\) > Control Valve Body](#). **Go to 11.**

No Perform the diagnosis according to DTC P0841. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(TR580\) > SENSOR PERFORMANCE](#).

11. DRIVING CHECK FOR LOCK-UP CONDITION.

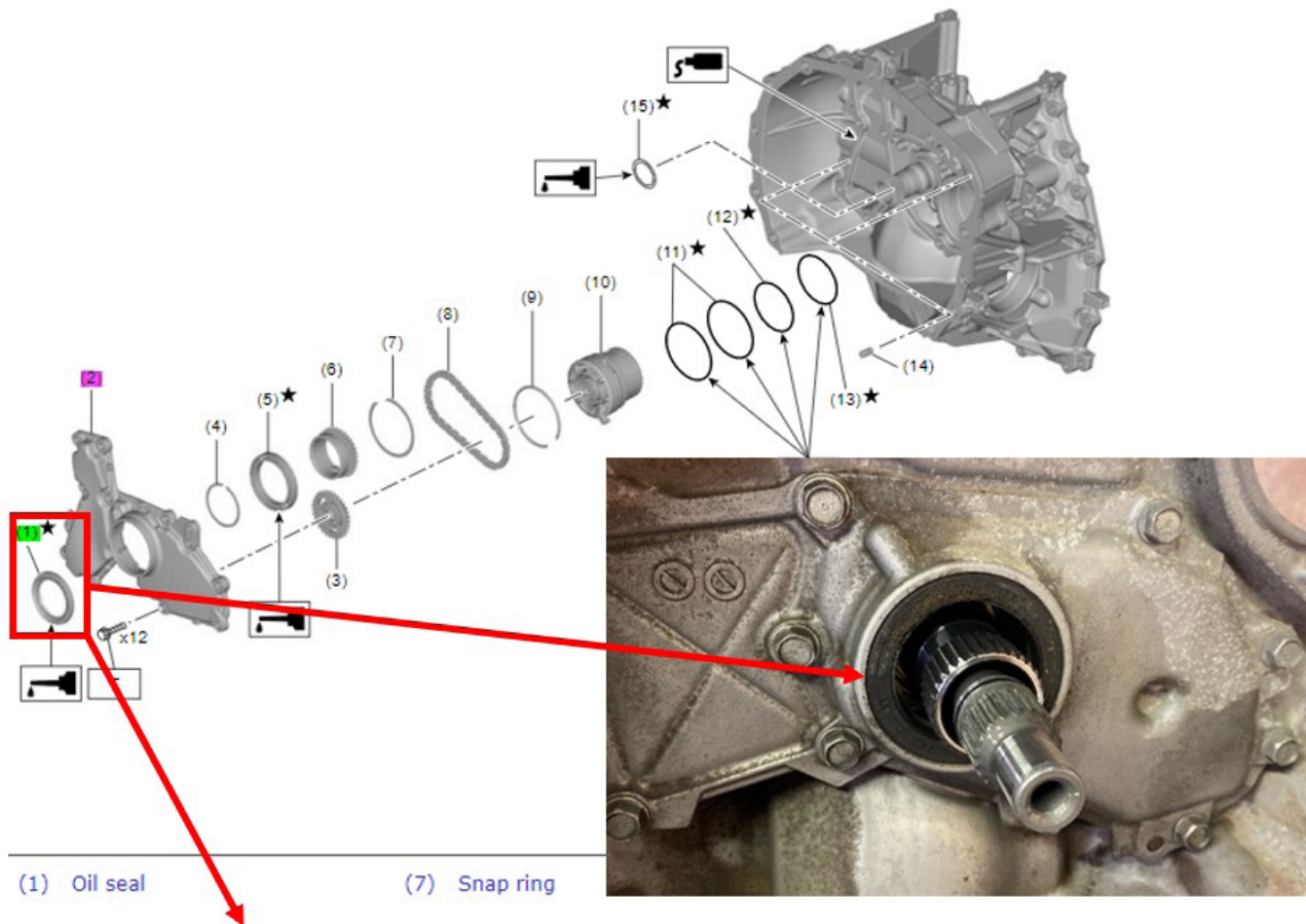
- Perform the Clear Memory Mode. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(DIAGNOSTICS\) > Clear Memory Mode](#).
- Turn the ignition switch to OFF.
- Start the engine.
- Warm up until the ATF temperature exceeds 50°C.
- Drive the vehicle for one minute or more while keeping such constant speed that «Lock Up Duty Ratio» is 70%.
- Turn the ignition switch to OFF.
- Start the engine.
- Perform the procedure in step 5) again.
- Read the DTC using Subaru Select Monitor.

Does the AT OIL TEMP light blink and is DTC P2757 displayed?

Yes Replace the torque converter assembly. [Ref. to CONTINUOUSLY VARIABLE TRANSMISSION \(TR580\) > Assembly](#).

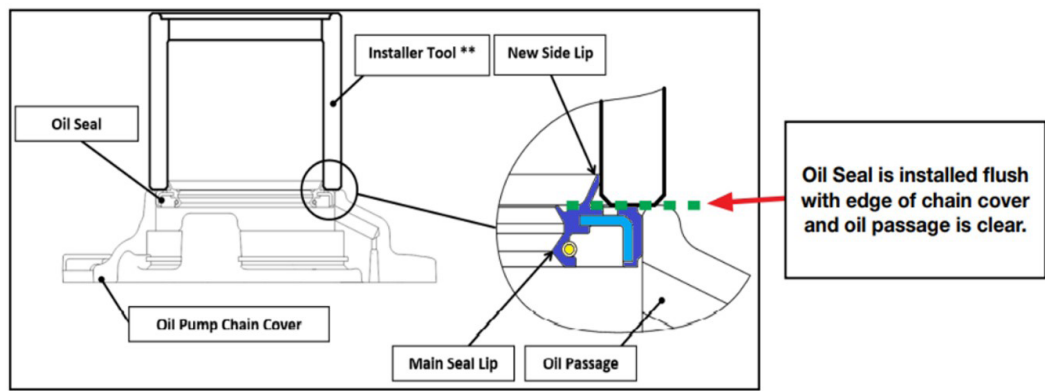
No Current condition is normal. It is possible that temporary poor contact occurs.

It is important to note if the Technicians diagnosis leads to replacing the torque converter, there are several one-time use seals that need to be replaced.



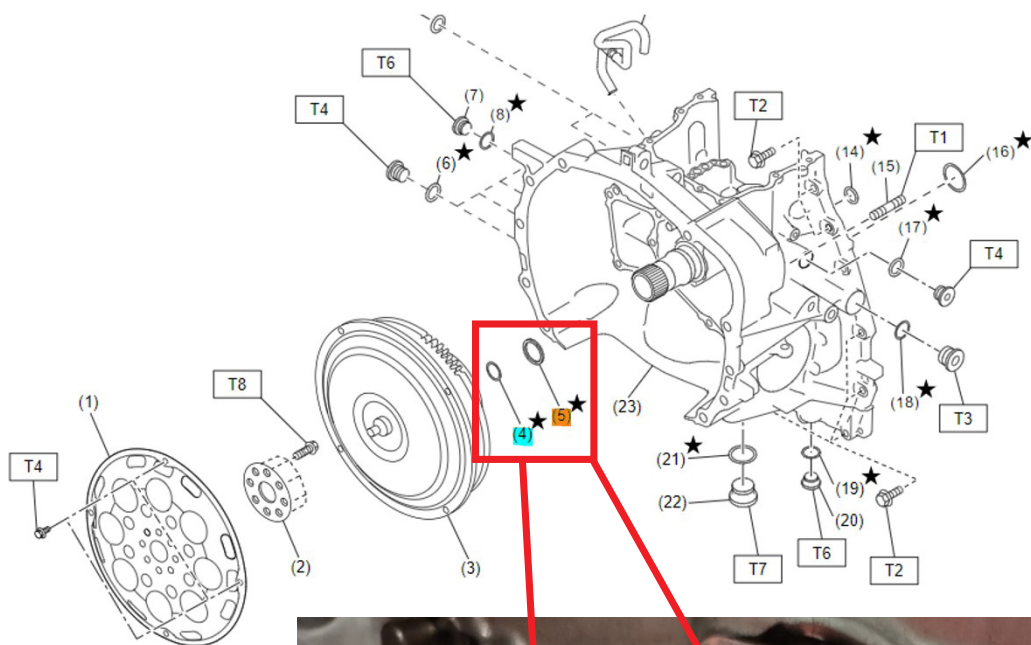
(1) Oil seal (7) Snap ring

• When installing this new seal, it is **STRONGLY** recommended to use the proper installer tool ****OPTIONAL Special Tool 927890000** as shown in the illustration below. Otherwise, If the seal were to be installed too deep into the bore of the chain cover (beyond flush with the chain cover edge as shown below), the oil passage may become restricted or blocked.



Make sure to replace the oil seal (#1), O-ring (#4) and sealing ring (#5) as well as all other one-time use parts during R&R of the CVT assembly. The chain cover (#2) will need to be removed to replace the sealing ring.

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12 Diagnosing Repeat P2762 and P2757 (CONTINUED)

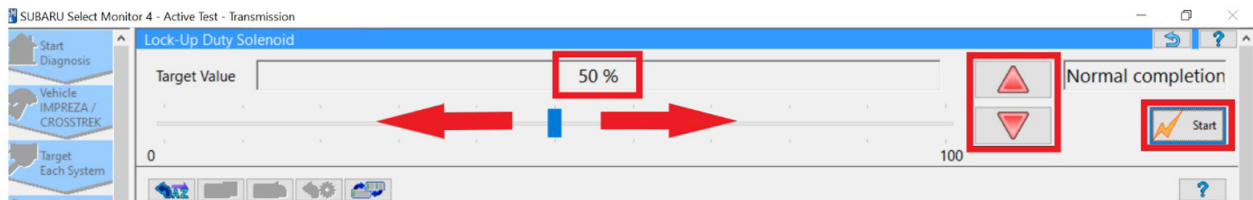
A final note: When performing the Lock-Up Duty Solenoid test in the trouble tree, the solenoid will need to be activated through the work support active test. The test does not cycle the solenoid on and off from 0 - 50%. Instead, the Technician will need to choose a duty percentage for the solenoid to activate to. Once selected and the active test started, a buzzing sound will emit from the solenoid activating. A stethoscope at the valve body cover may be needed to hear operation.

2. CHECK LOCK-UP DUTY SOLENOID (ACTIVE TEST).

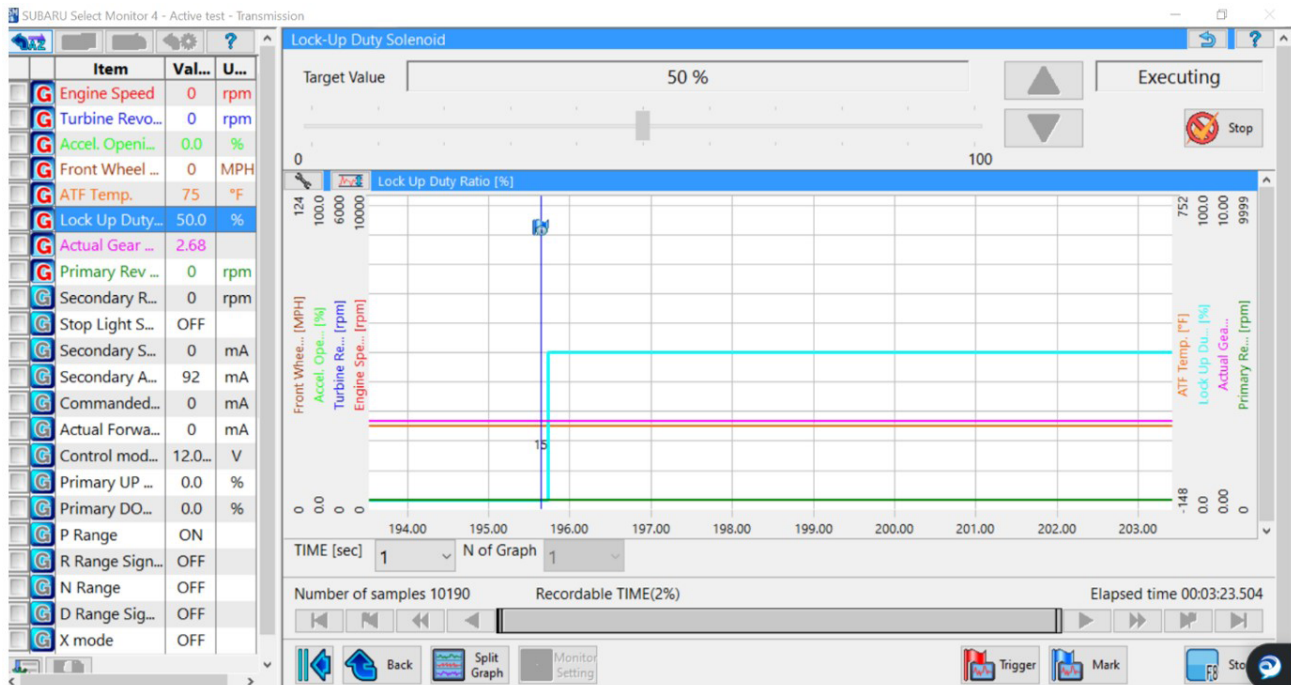
1. Turn the ignition switch to ON.
2. Using the Subaru Select Monitor, perform forced operation of the lock-up duty solenoid. [Ref. to TRANSMISSION \(DIAGNOSTICS\)>Active Test.](#)

Does the indication of 0 → 50% appear repeatedly during forced operation, and does operating sound emit during indicating 50%?

- Yes [Go to 6.](#)
- No [Go to 3.](#)



The default setting for the test will be 0%. A duty percentage will need to be selected. Then select start.



The above shows a graphed display of the solenoid activation.

Continued on the next page

Techline continues to receive calls from Technicians that are unable to perform basic tasks when using the Subaru Select Monitor. A heavy emphasis has been made about using Originally Equipped Denso USB cables when performing any task with the SSM, especially FlashWrite reprogramming. **At this time, there are no approved/tested aftermarket or 3rd party cables that can be used in place of a Denso cable.** It is unknown if aftermarket cables have the capabilities necessary to perform ALL SSM4 tasks.

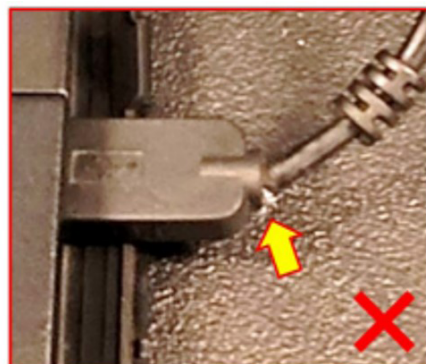


Nuspire Systems Integration DENSO USB CABLE 5135

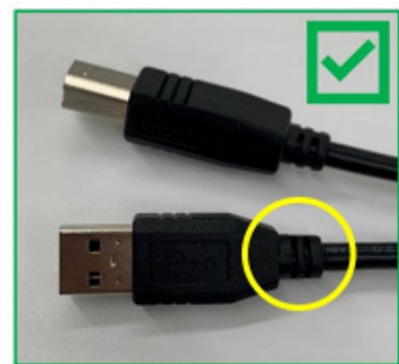
Reports from the field of no communication with control modules, software updates crashing, and error messages being displayed, has resulted in unrecoverable control modules leading to unnecessary part replacement. These conditions have been identified and are directly related to the use of aftermarket USB cables. SOA would like to remind everyone to always use Originally Equipped Denso USB Cables when using the SSM4 and DST-i box.



Corroded Connection



Exposed Wiring &
Incorrect Cable



Correct Cable

Shown here are examples from the field of cable conditions that could cause problems.

When performing FlashWrite Reprogramming, Subaru of America, Inc. (SOA) highly recommends connecting either the Subaru Midtronics DCA-8000 Dynamic Diagnostic Charging System or the Subaru Midtronics GR8-100 Diagnostic Battery Charger to the vehicle and utilizing the Power Supply Mode feature to supply a stable 13.5 volts. Once the Midtronics charger is connected to the vehicle, if the battery is fully charged, it takes less than three (3) minutes to boot-up the charger, select the Power Supply Mode, and have the battery voltage stabilized and ready for reprogramming.

[Continued on the next page](#)

The table below outlines the purpose of error codes seen during reprogramming and a procedure to complete in an effort to recover the programming process if it becomes interrupted.

Refer to the TechTIP from 2/20 [here](#) (page 8-10) about recovery procedures when an update fails.

No	Error Code	Content	Procedure
1	00000001	Parameter Error	Confirm the software version has been updated. If the software has been updated successfully, ignore this error code, and clear the fault memory. If not, make ONE attempt to reprogram.
2	00000009	Communication Error	Turn ignition switch off and wait 10 seconds. Turn on the ignition switch. Resume the reprogramming work without exiting the FlashWrite2 at password entry screen.
3	00000281	Star Download Error	
4	00000282	Data Transfer Error	
5	00000283	Transfer Complete Error	
6	00000284	Checksum Error	
7	00000270	Unit Confirmation Error	Confirm the reprogramming precautions & requirements are fully meet. If there is no problem, turn ignition switch off and wait for 10 seconds. Turn on the ignition switch. Exit FlashWrite 2 and start it from the beginning.

Refer to the 7/29/22 announcement [here](#) on Subarunet about TCM damage while performing WRK-21, which includes this message:

Retailers are cautioned, if a TCM is damaged because of faulty equipment or incorrect procedures followed as part of the WRK programming update, the resulting debit would include BOTH the costs related to the TCM as well as the CVT assembly since damaging the TCM would require an automatic replacement of the CVT since the slip mileages cannot be retrieved.

Replacements for damaged/missing USB cables can be ordered directly through www.SubaruDT.com.

Once on the site, navigate to: [Products-> Essential Tools-> Denso DST-I USB Cable 5135](#).

Contact Subaru Dealer Technologies to order genuine Denso parts. Pricing is available in the RISE hyperlink under [Service Operations & Technical](#) in Subarunet.com.

Service Tools & Equipment

You are here » Service Operations & Technical » Service Tools & Equipment

Service Tools & Equipment

Subaru Minimum Special Service Tool Requirements List
Items that comprise the Subaru Minimum Special Service Tool Requirements List are listed below. Unless otherwise noted, all items are required. These are minimum quantities and many retailers will require more to work effectively.

[Subaru Essential Tool List \(Open as PDF document\)](#) [Subaru Essential Tool List \(Open or Save Excel document\)](#)
Above list comprises Subaru specific tools that are required to be on-hand at all Subaru service facilities and represents all components of the New Retailer Kit (NRK). Available in PDF and Excel.

[Subaru Essential & Special Tools](#) - The approved source for all Subaru specific Special Service Tools including Subaru Essential Tools.

[Subaru Minimum Required Equipment List](#) - This list comprises the equipment that is required to be on-hand at all Subaru Service Facilities. If specific make, model or particular features of the equipment are required, it will be denoted in the list.

[Subaru Retailer Equipment](#) - The approved source for tools and equipment tailored to meet your shop's needs.

RISE Equipment - This list comprises items necessary to maintain and operate the required wireless network and Subaru Diagnostic System (SDS) equipment. Minimum standards apply to all retailers. Larger retailers may require additional equipment.

[RISE Program](#) - The approved source for the Subaru Retailer Infrastructure Support Environment (RISE).

Other Information

[Parts Account \(AR\) Billing FAQs](#) - Parts Statement (AR Statement) Billing for Subaru Special Tools and Equipment.

Continued on the next page

14 Special Tools – Denso USB Cable & ECM/TCM Reprogramming (CONTINUED)

In addition, a cable spacer and lock clip are available to help prevent damage/movement to the cables and ports. The larger [SDI DLC Link Cable 5002](#) can also be found here.

Nuspire Systems Integration

DENSO DST-i USB LOCKING MECHANISM CLIP 5254



Nuspire Systems Integration

DENSO DST-i USB CABLE SPACER 5253



05 Ascent Noise from Rear Over Bumps or When Turning

If a customer has a noise from the rear of the vehicle over bumps or when turning, do not forget to check the spare tire installation and pressure. Over time the tire may lose some pressure which could result in it not being firmly seated against the body. Spare tire pressure should be checked during regular service along with the other tires. Additionally, if the tire was recently used or replaced, it may not be firmly seated allowing movement under certain conditions. Below are links to two QMRs with videos showing the concern.

<https://subarutechshare.com/qmrs/TS-187733>

<https://subarutechshare.com/qmrs/TS-202793>

NOTE: Never use air or power tools to lower or raise the spare tire as this can cause damage to the internal mechanism and/or cable of the hoist. Only the spare tire lug wrench included with the vehicle should be used to raise or lower the spare tire (May 2019 TechTIPS).

Continued on the next page

It is important to note that for vehicles equipped with Version 4 Eyesight and a Gateway Control Module, registration may be required during stereo camera replacement. Refer to the applied model installation process on STIS for complete instructions. Below is an example of instructions that include the registration process. The registration menu can be found under Immobilizer registration on the SSM. This must be completed before performing the camera adjustment and inspection procedure.

3. Install the light assembly map. [Ref. to LIGHTING SYSTEM>Spot Map Light>INSTALLATION.](#)
4. Connect the ground terminal to battery sensor. [Ref. to REPAIR CONTENTS>NOTE > BATTERY.](#)
5. When the stereo camera has been replaced, perform the module registration. [Ref. to COMMON \(DIAGNOSTICS\)>Unit Registration>OPERATION.](#)
6. Perform the adjustment or inspection of the stereo camera. [Ref. to EyeSight>Camera Adjustment, Inspection.](#)

1. On [Start] screen, select [Immobilizer etc. registration].
2. On [Select Registration] screen, select [Unit Registration (Update & Verification)].
Then, when a message screen is displayed, follow the instructions on the screen.

Continued on the next page

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
WRB-22R	Subaru Product/Campaign Bulletin	PCV Vacuum Hose Clamp Lock Fai...	2-Sep-22
WRA-22R	Subaru Product/Campaign Bulletin	WRX EyeSight® Reprogramming	2-Sep-22
07-209-22R	Technical Service Bulletin	EyeSight® Reprogramming DTC B2...	2-Sep-22
J131SVC001	Accessory Installation Guide	PORT INSTALLATION: 2023MY Impr...	29-Aug-22
H501SAN000	Accessory Installation Guide	PORT INSTALLATION: 2023MY Lega...	29-Aug-22
07-210-22	Technical Service Bulletin	Hybrid Battery / High Ambient ...	29-Aug-22
J121SE1000	Accessory Installation Guide	2023MY Solterra - Exterior Gra...	29-Aug-22
57734AN04A	Accessory Installation Guide	2023MY Outback (Standard and P...	29-Aug-22
L101SAN000	Accessory Installation Guide	PORT INSTALLATION: 2023MY Outb...	29-Aug-22
J101SAN9XX	Accessory Installation Guide	PORT INSTALLATION: 2023MY Outb...	29-Aug-22
SOA801P061XX	Accessory Installation Guide	PORT INSTALLATION: 2023MY Outb...	29-Aug-22
15-300-22	Technical Service Bulletin	STARLINK® Telematics Remote En...	29-Aug-22
DCA-8000	Other/Miscellaneous	DCA-8000 Diagnostic Battery Ch...	29-Aug-22
J501SAN223	Accessory Installation Guide	PORT INSTALLATION: 2021-2022MY...	29-Aug-22
DSS-5000	Other/Miscellaneous	DSS-5000 User Guide	29-Aug-22
09-74-21R	Technical Service Bulletin	Cleaning Procedure for Carbon ...	26-Aug-22
07-209-22R	Technical Service Bulletin	EyeSight® Reprogramming DTC B2...	26-Aug-22
WRE-21R	Subaru Product/Campaign Bulletin	Ignition Coil Replacement	23-Aug-22
01-167-08R	Technical Service Bulletin	Recommended Materials (All Veh...	23-Aug-22
15-302-22	Technical Service Bulletin	2023 Audio/Navigation & Power ...	23-Aug-22
07-199-21R	Technical Service Bulletin	Measurement of Dark Current (S...	23-Aug-22
18-228-22	Service Manual Correction	Service Manual Corrections	23-Aug-22
18-227-22	Service Manual Correction	Service Manual Corrections	22-Aug-22
18-226-22	Service Manual Correction	Service Manual Corrections	22-Aug-22
07-207-22	Technical Service Bulletin	Subaru Battery Drain Product L...	18-Aug-22
15-236-18R	Technical Service Bulletin	Reprogramming File Availabilit...	12-Aug-22
TIPS_SE_July2022	TechTIPS NewsLetter	2012-Current Model Subaru Evap...	12-Aug-22
E551SXC100	Accessory Installation Guide	2023MY Ascent (all trims) - Bu...	12-Aug-22
E551SXC100	Accessory Installation Guide	2023MY Ascent (all trims) - Bu...	12-Aug-22
15-211-17R	Technical Service Bulletin	Reprogramming File Availabilit...	12-Aug-22
J1010AN400	Accessory Installation Guide	2020-2022+MY Outback - REAR ST...	12-Aug-22
910542040	Accessory Installation Guide	2023MY Solterra - Jack & Wrenc...	12-Aug-22
MSA5B2303A	Owner Manual	2023MY Legacy Getting Started ...	10-Aug-22
15-282-21R	Technical Service Bulletin	STARLINK Remote Engine Start (...)	9-Aug-22
WRK-22	Subaru Product/Campaign Bulletin	CVT Chain Guide Breakage	5-Aug-22
12-240-22	Technical Service Bulletin	Repair Procedure / DTC B1610 F...	5-Aug-22

All revised publications are highlighted in yellow.

Continued on the next page

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
WRK-21/22R	Subaru Product/Campaign Bulletin	CVT Chain Guide Breakage	5-Aug-22
C1010VC100	Accessory Installation Guide	2022MY WRX and 2018-2022 Cross...	5-Aug-22
SUTTIPSLOC	Other/Miscellaneous	TechTIPS Article Locator Index...	3-Aug-22
15-270-20R	Technical Service Bulletin	2020-2022 Outback & Legacy FOT...	2-Aug-22
03-88-22	Technical Service Bulletin	Propeller Shaft / Design Chang...	2-Aug-22
WRA-22R	Subaru Product/Campaign Bulletin	WRX EyeSight® Reprogramming	2-Aug-22
15-299-22	Technical Service Bulletin	Remote Engine Starter (RES) / ...	2-Aug-22
PS93642231	Accessory Installation Guide	PORT INSTALLATION: 2023MY Solt...	27-Jul-22
01-184-22R	Technical Service Bulletin	Pre-Delivery Inspection (PDI) ...	21-Jul-22
SOA854B00X	Accessory Installation Guide	Subaru by Sleepypod - Pet Trav...	20-Jul-22
SOA854S100	Accessory Installation Guide	Subaru by Sleepypod - Pet Carr...	20-Jul-22
SOA854H0X0	Accessory Installation Guide	Subaru by Sleepy Pod - Car Har...	20-Jul-22
WRB-22	Subaru Product/Campaign Bulletin	PCV Vacuum Hose Clamp Lock Fai...	18-Jul-22
	Service Diagnostics	2023 BRZ Service Manual V2	15-Jul-22

All revised publications are highlighted in yellow.

Continued on the next page

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: _____