

ATTENTION:

- GENERAL MANAGER
- PARTS MANAGER
- CLAIMS PERSONNEL
- SERVICE MANAGER

IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

© 2025 Subaru of America, Inc. All rights reserved.



QUALITY DRIVEN® SERVICE

SERVICE INFORMATION BULLETIN

APPLICABILITY: 2020-25MY Legacy & Outback
 2022-25MY WRX
 2019-25MY Ascent

NUMBER: 16-154-25
DATE: 09/02/25

SUBJECT: CVT Drivability Diagnosis Assistance
 Application User Guide

INTRODUCTION:

This Service Information Bulletin announces the release of a new diagnostic assistance application for TR690 CVT-equipped vehicles. The tool is designed to improve the identification of transmission-related drivability concerns, including chain slipping, judder, shudder, and hesitation. The use of this application will help reduce the risk of misdiagnosing CVT concerns, resulting in improving Fixed Right First Time (FRFT) scores and customer satisfaction.

When a customer reports a CVT-related drivability concern and the condition can be duplicated during test drive, follow the diagnostic procedure outlined in Technical Service Bulletin 16-151-24R (TR690 Chain Slip, Judder, Shudder, & Hesitation Concerns.) This process includes the use of the CVT diagnostic assistance application to ensure accurate concern identification and appropriate repair action.

SERVICE PROCEDURE / INFORMATION:

REMINDER: Customer satisfaction and retention starts with performing quality repairs.

The user guide for using this new application is provided below. When gathering data, ensure the vehicle is driven in compliance with local traffic laws. Avoid abnormal driving behaviors, such as sudden deceleration/acceleration or driving on rough roads, to prevent false reports of drivability concerns. The maximum length of a recording must be no more than 30 minutes. If the test drive exceeds this duration, stop and save the recorded data before starting a new recording.

This application can assist in diagnosing various concerns, including but not limited to lock-up judder, lock-up engagement shock, input clutch slip, chain slip, and forward clutch judder. However, it does not have the capability to diagnose transfer clutch, noise, DTC related, or engine performance concerns.

CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.

Subaru Service Bulletins are intended for use by professional technicians ONLY. They 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 this Service Bulletin applies to your vehicle, or that your vehicle will have that condition.

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.

Continued...

Key Information for Successful Testing:

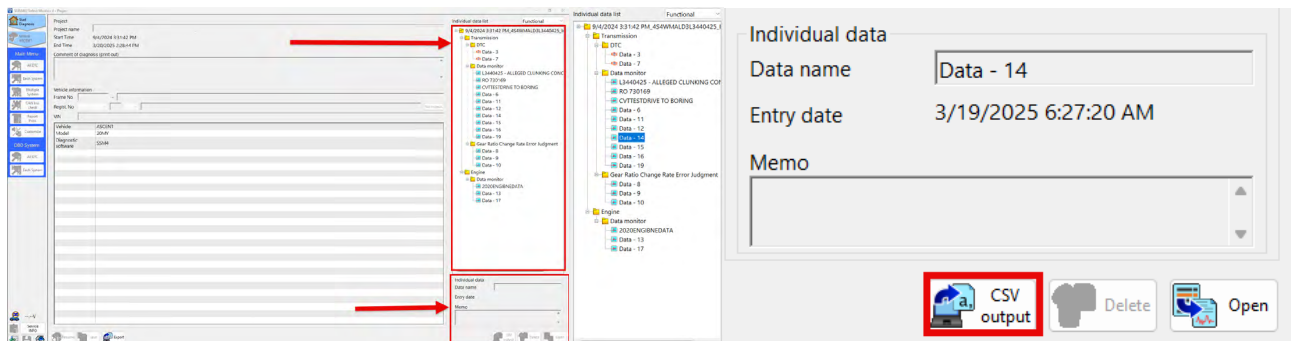
- The test drive should be performed with the ATF oil temperature above 50° F. Driving without warming up the CVT fluid will result in incorrect results.
- Using the Subaru Select Monitor (SSM), check and record **ALL TCM** data PIDs.
 - **Note: You must use the select monitor data monitor. Data collected using the “Gear Ratio Change Rate Error Judgement” will not work with the application.**
- The data file must be longer than 1 min but cannot exceed 30 mins. If more than 30 minutes is required to duplicate the concern, please begin a new data file recording.

WARNING: Do not use the application to verify repairs. The application is not a repair verification tool and use of the application should be strictly limited to the initial diagnostic process. Because of the application’s high sensitivity, using it after repairs have been completed may produce inaccurate or misleading results. If the concern cannot be reproduced after repairs, the repair is considered successful. If the customer concern persists after performing the repair recommended by the diagnostic assistance application, Techline must be contacted before moving forward with any additional parts replacement.

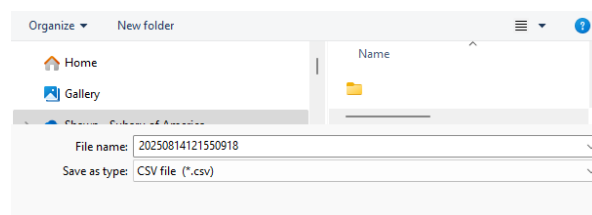
Step 1) Convert Project File to CSV After Recording SSM TCM Data

From the Project file:

- Select the data file you want to review from the right-hand side under Individual Data List.
- Ensure the data name matches the name listed in the Data Name field located in the upper right-hand corner of the screen.
- Press the CSV output button located below the individual data display in the lower right-hand corner of the screen.
- Do not change the file name, utilize the file name that was provided in the original recording.



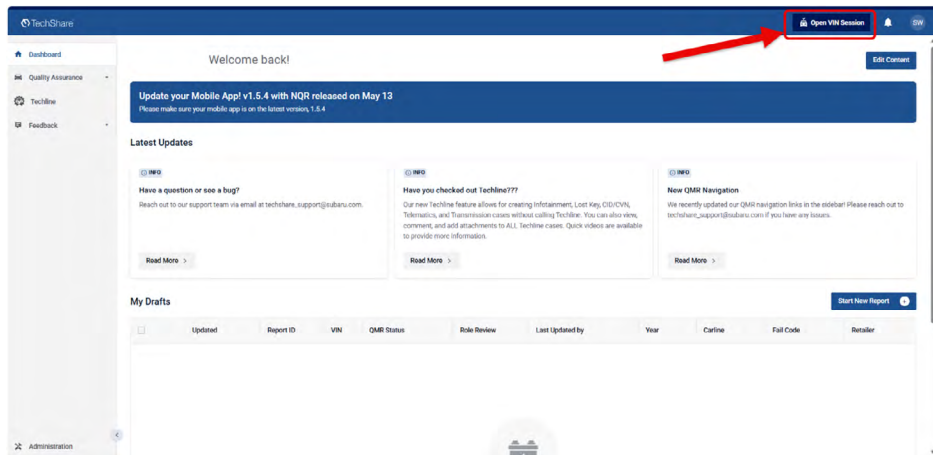
Please save this file somewhere in which the data can be accessed later. The file name will be a 19 digit number and “Save as type:” field will say CSV file (*.csv)



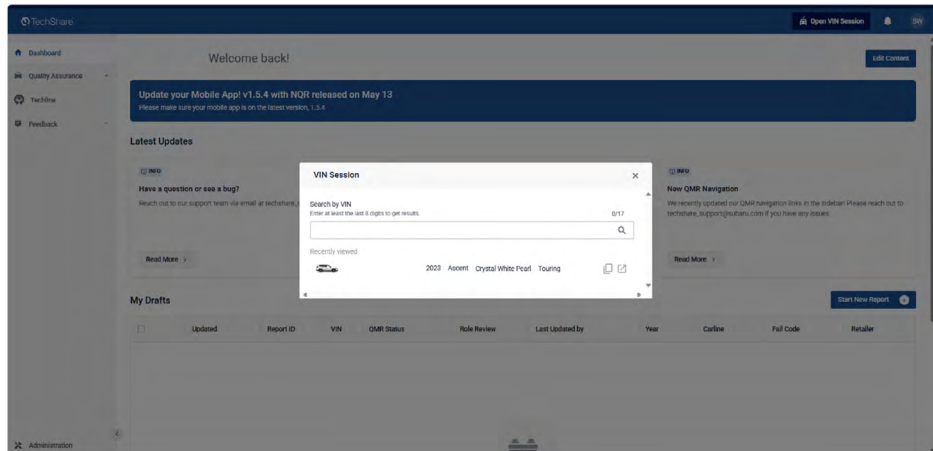
Continued...

Step 2) Input Data

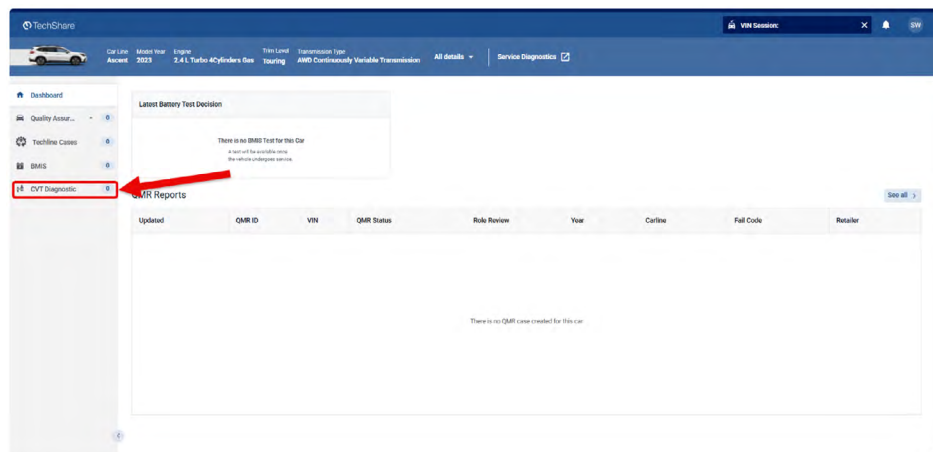
- Login to Techshare and select the “Open VIN Session” button found in the upper right-hand corner.



- Input the last 8 of the VIN associated with the vehicle being worked on.

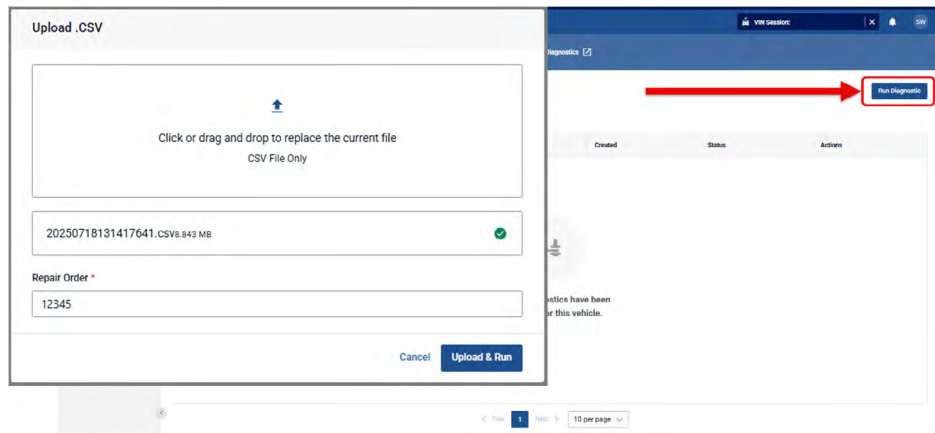


- Select the “CVT Diagnostic” button on the left-hand side.
(Note: If the CVT Diagnostic tab does not populate, the CVT diagnostic application is not applicable to the vehicle currently being worked on.)

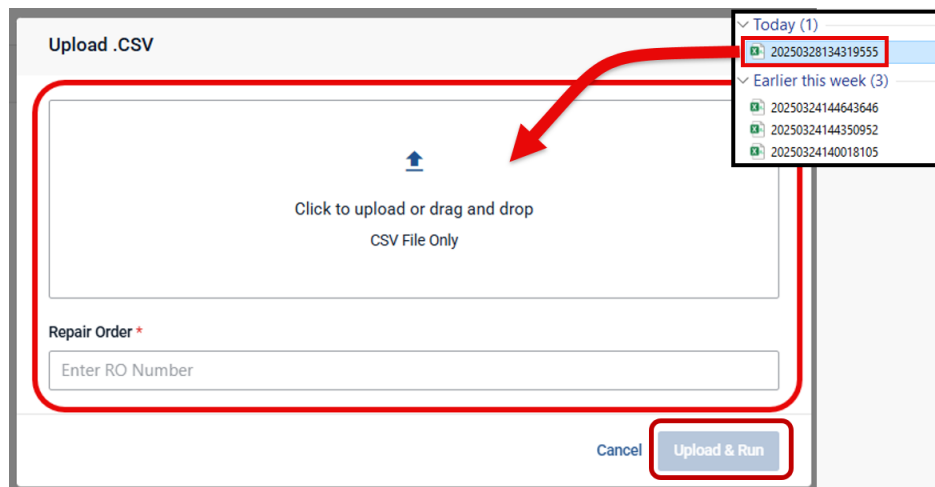


Continued...

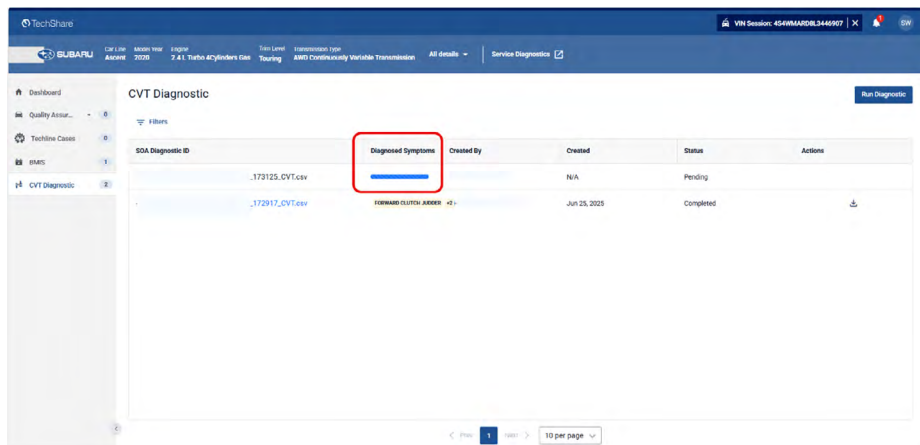
- Select the “Run Diagnostic” button.



- Once the application has loaded, click to upload or drag and drop the CSV file from the previous step, then enter the Repair Order Number and select the upload & run button.



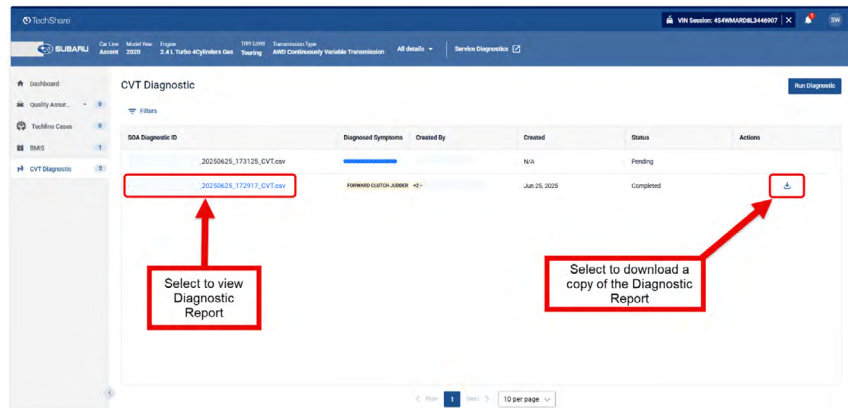
- Then select Submit. While the application is processing the data, the Diagnosed Symptoms field will display a blue loading bar. The review can take several minutes based on how big the file is. (The longer the recording, the more time it will take to review.)



Continued...

Step 3) Review Results

Once the application has finished, review the diagnostic results by selecting the file name, or download a PDF copy of the report by clicking the download button on the right-hand side under “Actions.”



After selecting the file name or downloading a copy of the report, you will be presented with the results and repair recommendations.

- The upper section will display the symptoms that occurred during the test drive.
- The middle section will display the current repair recommendation based on the reported symptoms.
- The final section will display a graph view for each of the indicated symptoms the tool identified. A vertical red band will indicate the area of focus where the symptom was identified. The graphs can be manipulated for data review and can be saved as a picture file for easy sharing.

← Diagnostic ID:2025_06_25_17_31_27_359610

CVT Diagnostic Report

NO	Diagnosed Symptoms	Details of symptoms
1	FORWARD CLUTCH Judder	A judder or engine RPM increase is felt during light acceleration from a stable speed. This is caused by a difference between Secondary Revolution Speed and Front Wheel Speed due to a FWD clutch speed variation.
2	LOCK-UP Judder	A juddering sensation during acceleration from low speeds to 50 mph, likely caused by wear in the torque converter lock-up clutch.
3	SHOCK AFTER LOCK-UP	A shock is felt after the torque converter lock-up clutch engages. (Lower speeds between 0-40 mph)

Repair Recommendation

- Confirm if procedures listed below were previously performed. If yes, contact Techline for additional diagnostic assistance.
- Verify and update to the latest TCM software. (if available)
- Change the CVT fluid
- Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs.

Graphs

Lock Up Judder at 143.62[s]

Shock After Lock Up at 281.17[s]

FWD Clutch Slip at 199.96[s]

Note: You can download a copy of the report directly from the CVT Diagnostic Report Screen by selecting the download button in the upper right hand corner above Details.

Continued...

Diagnostic Application Results:

Diagnostic Results		
Symptom	Symptom Description	Diagnostic Application Output
Lock-Up Judder	A juddering sensation during acceleration from low speeds to 50 mph, likely caused by wear in the torque converter lock-up clutch.	<ul style="list-style-type: none"> * Confirm if procedures listed below were previously performed. If yes, contact Techline for additional diagnostic assistance. * Verify and update to the latest TCM software. (If available) * Replace the torque converter. * Change the CVT Fluid. * Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs.
Shock after Lock-Up	A shock is felt after the torque converter lock-up clutch engages. (Lower speeds between 0-40 mph)	<ul style="list-style-type: none"> * Confirm if procedures listed below were previously performed. If yes, contact Techline for additional diagnostic assistance. * Verify and update to the latest TCM software. (If available) * Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs.
Forward Clutch Judder	A judder or engine RPM increase is felt during light acceleration from a stable speed. This is caused by a difference between Secondary Revolution Speed and Front Wheel Speed due to a FWD clutch speed variation.	<ul style="list-style-type: none"> * Confirm if procedures listed below were previously performed. If yes, contact Techline for additional diagnostic assistance. * Verify and update to the latest TCM software. (If available) * Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs.
Input Clutch Slip	Judder or engine RPM increase felt during light acceleration from a stable speed, possibly due to the input clutch.	<ul style="list-style-type: none"> * Confirm if procedures listed below were previously performed. If yes, contact Techline for additional diagnostic assistance. * Verify and update to the latest TCM software. (If available) * Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs.
Chain Slip	CVT chain slippage detected. Data indicates fluctuations in the actual gear ratio.	<ul style="list-style-type: none"> * Confirm if procedures listed below were previously performed. If yes, contact Techline for additional diagnostic assistance. * Verify and update to the latest TCM software. (If available) * Replace CVT. * Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs. * Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs.
Shudder during Deceleration	<p>A jerk or judder sensation felt from the powertrain during braking with the air conditioning on.</p> <p>*Only 2022-24 Legacy/Out-back and 2023-24 Ascent are applicable to the symptom.</p>	<ul style="list-style-type: none"> * Confirm if procedures listed below were previously performed. If yes, contact Techline for additional diagnostic assistance. * Verify and update to the latest TCM software. (If available) * Always reference STIS for any applicable Technical Service Bulletins and Service Manual procedures prior to performing repairs.

Continued...

WARRANTY / CLAIM INFORMATION:

This bulletin serves as a user guide for the application and does not provide diagnostic procedures. For all diagnostic steps and associated labor times, refer to the applicable diagnostic bulletin and the labor time guide.

Note: The Diagnostic ID generated by the CVT Application must be recorded and input in the “Specific Data” section of the warranty claim.

IMPORTANT REMINDERS:

- SOA strongly discourages the printing and/or local storage of service information as previously released information and electronic publications may be updated at any time.
- Always check for any open recalls or campaigns anytime a vehicle is in for servicing.
- Always refer to STIS for the latest service information before performing any repairs.

Continued...

Appendix A

If present with an error please review the list below:

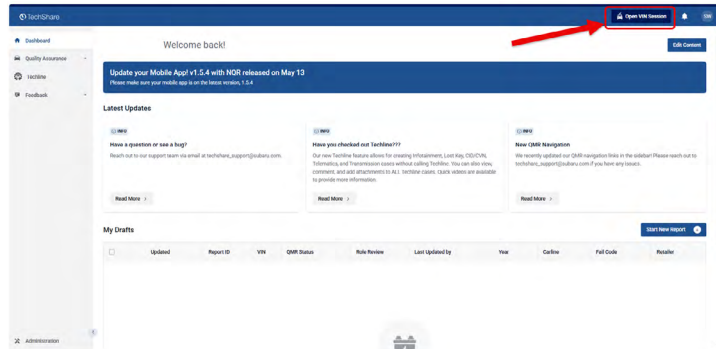
Error message	Detail
No Result	<p>No abnormalities detected. Refer to the Service Manual, TSBs, or other resources for diagnosis.</p> <p>NOTE: STIS contains Technical Service Bulletins such as 16-132-20R & 16-151-24R to assist with the diagnosis of transmission related concerns.</p> <p>If additional assistance is required contact Techline.</p>
Large Data	<p>The data file currently being analyzed needs to be reloaded due to its large file size. Please select the reload option to continue with analysis.</p> <p>Note: After 3 unsuccessful attempts, please try editing the file to a shorter length and resubmit for analysis.</p>
Lack Columns	<p>The file submitted does not have all the required PIDS for analysis. Please resubmit the file with all PIDS selected.</p>
Exception Error	<p>Network error – Check your internet connection.</p>
Network Error	<p>An unexpected error has occurred.</p>
Language Not Supported	<p>Language not supported</p>
Data Too Short	<p>Driving time is too short. Please upload at least 1 minute of driving data.</p>

Continued...

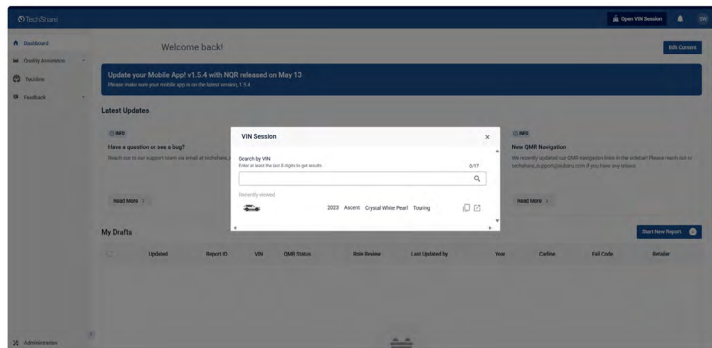
Appendix B

Accessing Previous Diagnostic Reports:

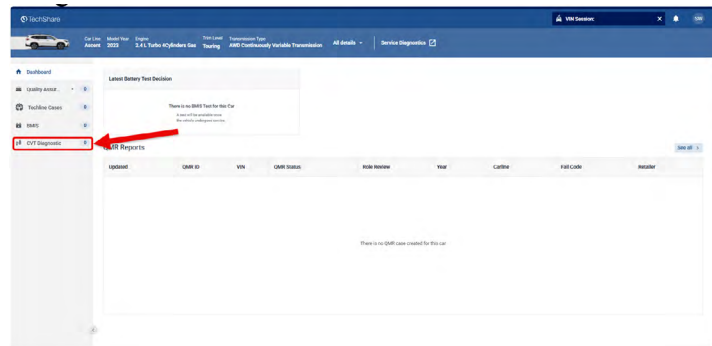
Step 1: To access CVT previously Diagnostic Reports select “Open VIN Session”



Step 2: Input the last 8 of the VIN associated with the vehicle you would like to access CVT Diagnostic Report for.



Step 3: Select the “CVT Diagnostic” button on the left-hand side.



Step 4: A list of previous CVT Diagnostic Reports will be displayed for review.

