

- ATTENTION:**
- GENERAL MANAGER
 - PARTS MANAGER
 - CLAIMS PERSONNEL
 - SERVICE MANAGER

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

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QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY: 2015-2017MY Legacy / Outback 2.5 CVT Models **NUMBER:** 16-104-17R
 2015-2016MY Crosstrek Hybrid (HEV) **DATE:** 02/23/17
SUBJECT: “Bump” Feeling from CVT at Idle in Drive **REVISED:** 03/30/17

INTRODUCTION:

This bulletin provides a diagnostic procedure along with Transmission Control Module (TCM) reprogramming files to address isolated customer concerns of a “bump” feeling from the CVT. The bump feeling has been reported to occur after the CVT is fully up to operating temperature, in Drive and with the engine at idle.

PRODUCTION CHANGE INFORMATION:

The new TCM logic was incorporated into production starting with the following VINs:

- 2017MY Legacy: H*046299
- 2017MY Outback: H*324232

PACK FILE APPLICABILITY:

Model	PAK File Name	New TCM Part Number	Old TCM Part Numbers	Decryption Keyword	New CID Number
2015MY Legacy	30919AD323.pak	30919AD323*	30919AD320, 321 & 322	C7427FA5	F4F20082
2015MY Outback	30919AD333.pak	30919AD333*	30919AD330, 331 & 332	4561EC13	F4F24082
2016MY Legacy	30919AF032.pak	30919AF032*	30919AF030 & 031	74977F60	E5F20081
2016MY Outback	30919AF042.pak	30919AF042*	30919af040 & 041	0082F1E2	E5F24081
2017MY Legacy	30919AF46B.pak	30919AF46B*	30919AF46A	05D465F6	D6F20080
2017MY Outback	30919AF47C.pak	30919AF47C*	30919AF47A & 47B	9D78B154	D6F24081
2015MY Crosstrek HEV	30919AE121.pak	30919AE121*	30919AE120	7A8EF1FD	C4FA4081
2016MY Crosstrek HEV	30919AE641.pak	30919AE641*	30919AE640	B17A7137	B5FA4080

***NOTE:** These New TCM part numbers are not currently available for order. In the meantime, if a replacement is needed, please use the current part number TCM for the VIN and update it with the corresponding pak file.

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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.

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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.

SERVICE PROCEDURE / INFORMATION:

Overview:

- After setting up the DST-i and SM4, perform the test procedure following the steps below to determine whether or not the bump condition exists.
- If the bump condition is confirmed, variator damage has likely occurred requiring CVT assembly replacement.
- Regardless of whether or not the bump condition is confirmed, after testing or repairs are complete, the TCM **MUST** be reprogrammed before releasing the vehicle to the customer.

Preparation of SM4:

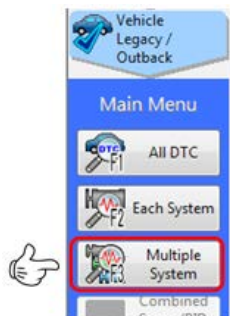
- Connect the DST-i and start the SM4 application on the SDS PC.
- From the Start menu, select “Diagnosis”.



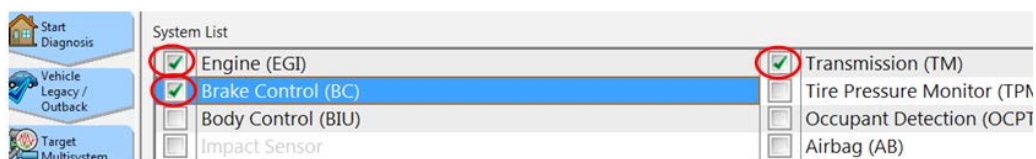
- Input (or confirm) the Vehicle information.

A screenshot of the 'Vehicle specifications' form in the SDS PC application. The form has two main sections: 'Vehicle specifications' and 'Vehicle information'. Under 'Vehicle specifications', there is a 'VIN' field with a 'Vehicle Settings' button to its right. Under 'Vehicle information', there are fields for 'Vehicle' (with a '(Select)' dropdown), 'Model', and 'Diagnostic software'.

- Select “Multiple System” from the Main Menu.

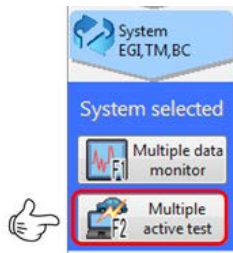


- From the System List, select “Engine”, “Transmission”, and “Brake Control”.

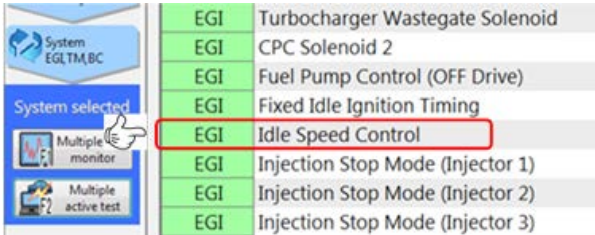


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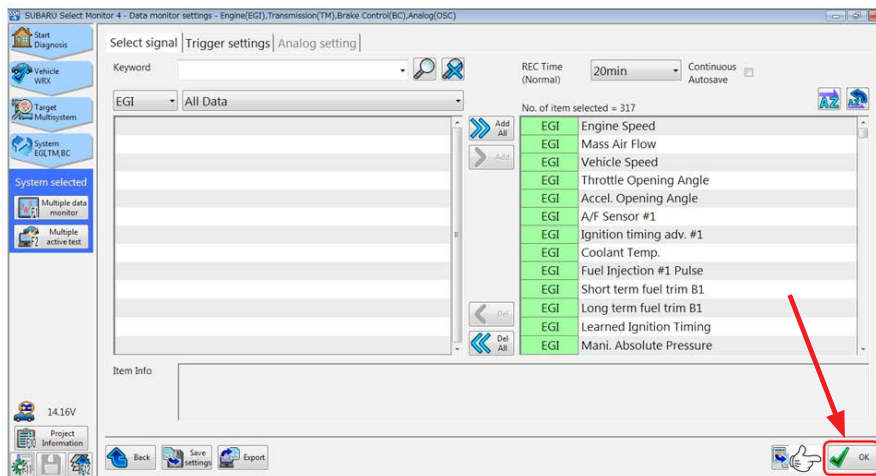
- Select “Multiple active test”.



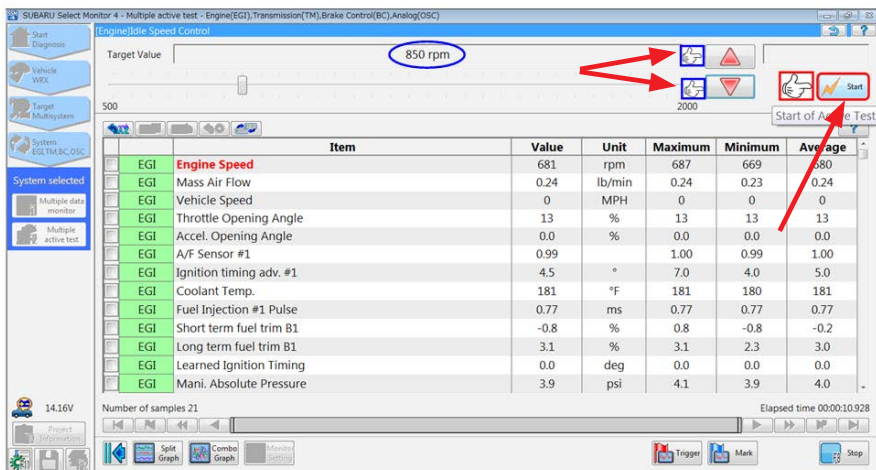
- Select “Idle speed control”.



- Select “OK”.

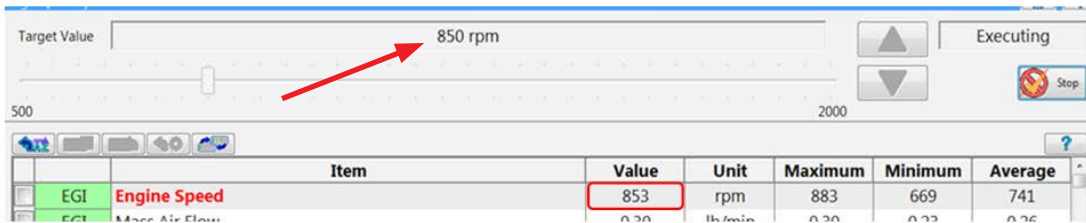


- Always confirm the CVTF temperature is 176 degrees f. (80 C) or above.
- Set the engine Idle speed to 850 rpm (950 rpm for Crosstrek HEV) using the up/down arrows then select “Start”.
- **Disconnect the Service Plug on Crosstrek HEV following the Service Manual procedure and ALL cautions.**

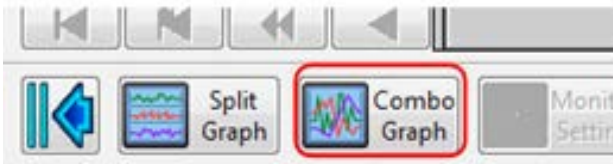


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- Confirm the idle speed is about 850 rpm (950 for HEV).

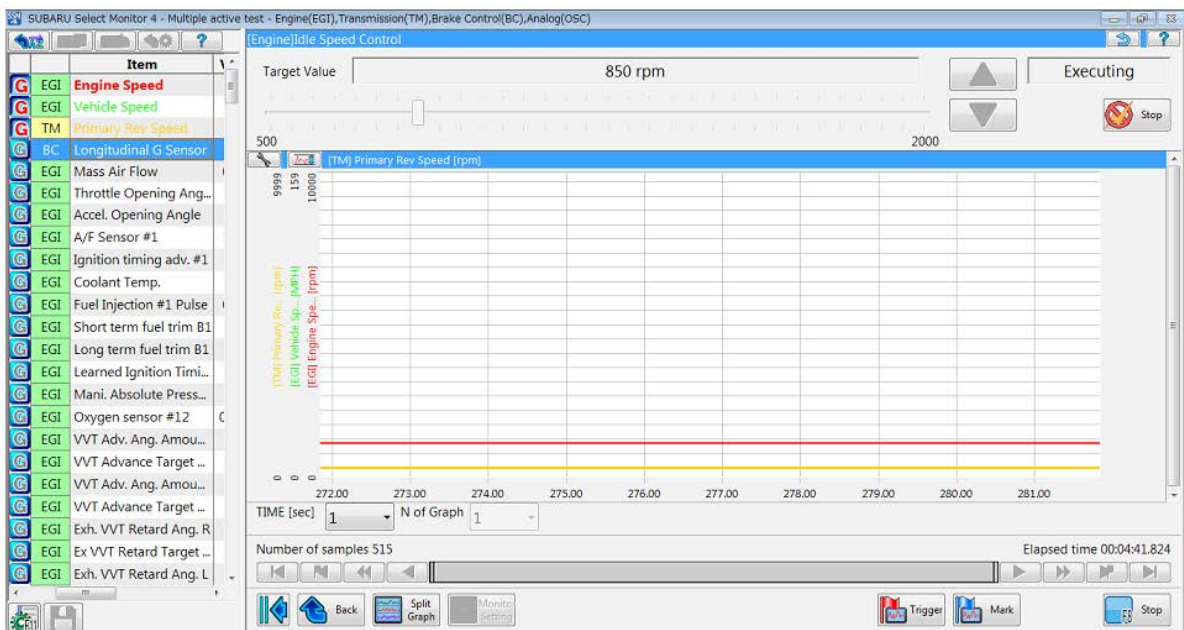


- Select “Combo Graph”



- Select the following list of items:

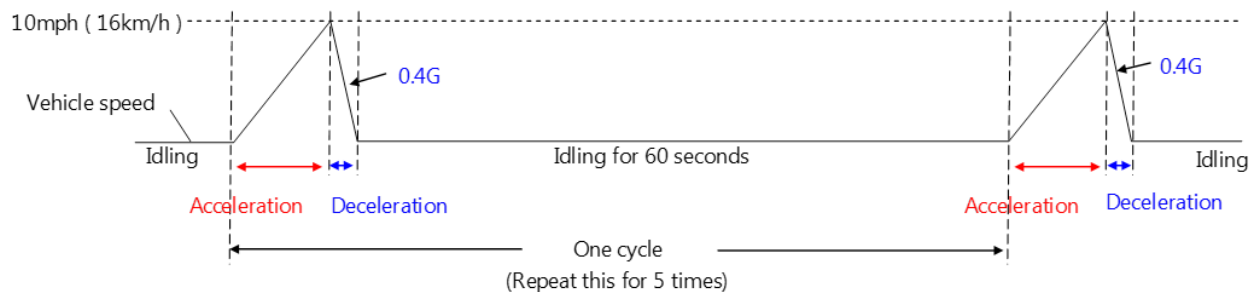
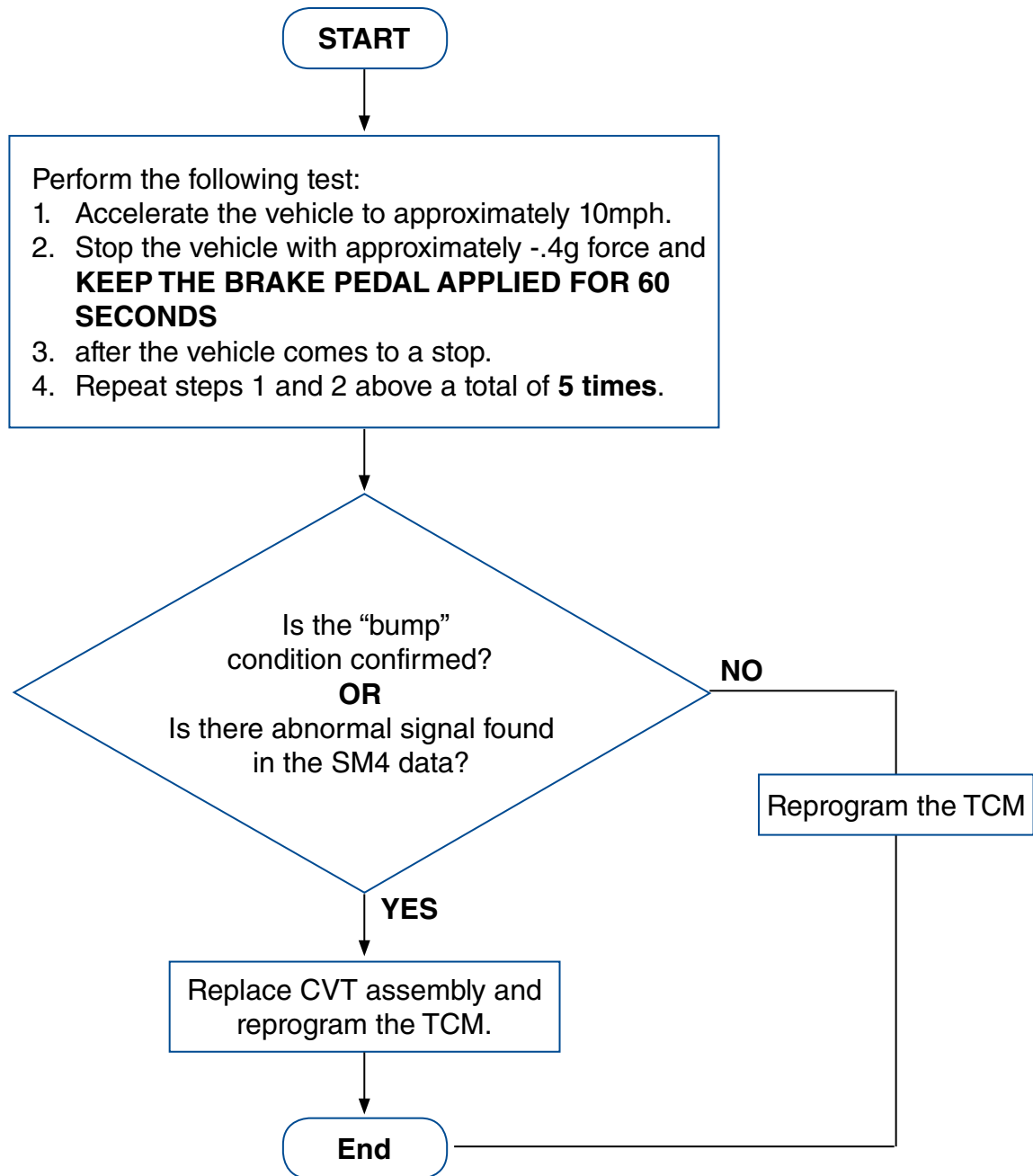
- Engine speed
- Vehicle Speed
- Turbine Revolution Speed
- Primary Rev Speed
- Longitudinal G sensor (BC)



- Perform the test following the flow chart and graph supplied below.

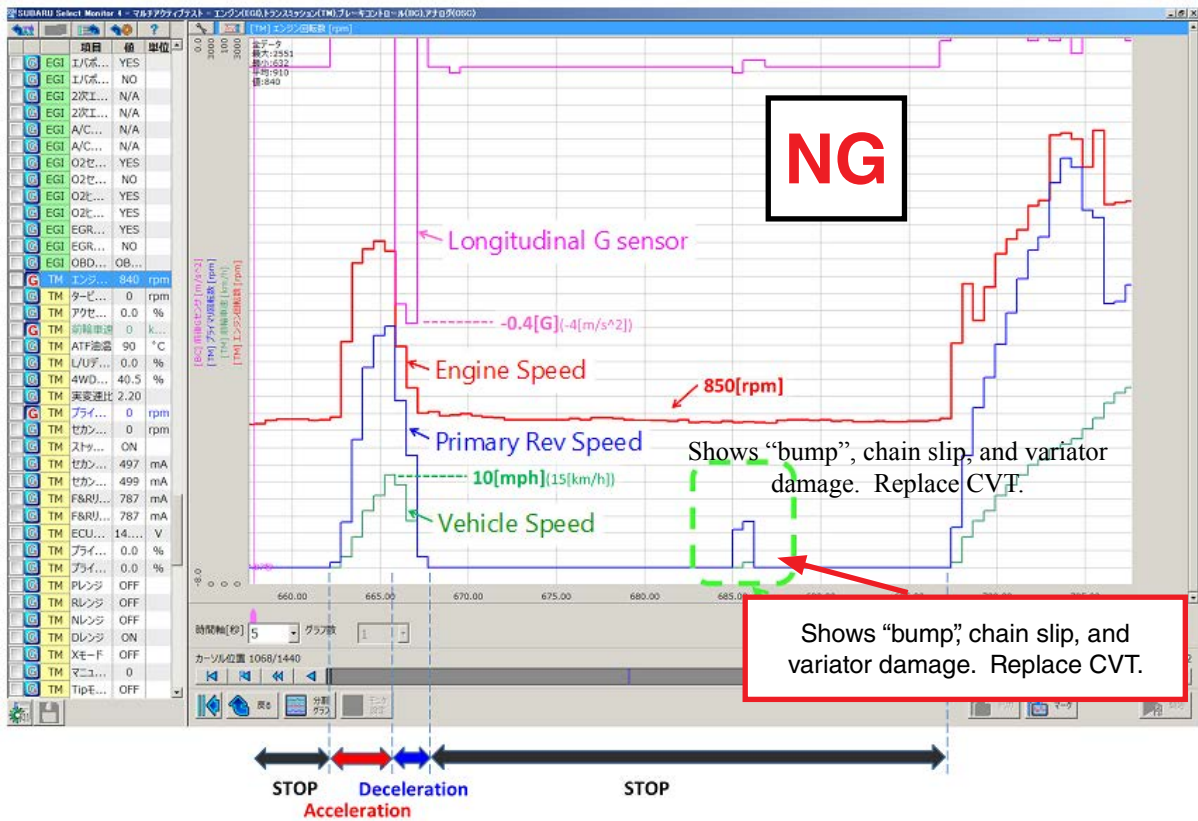
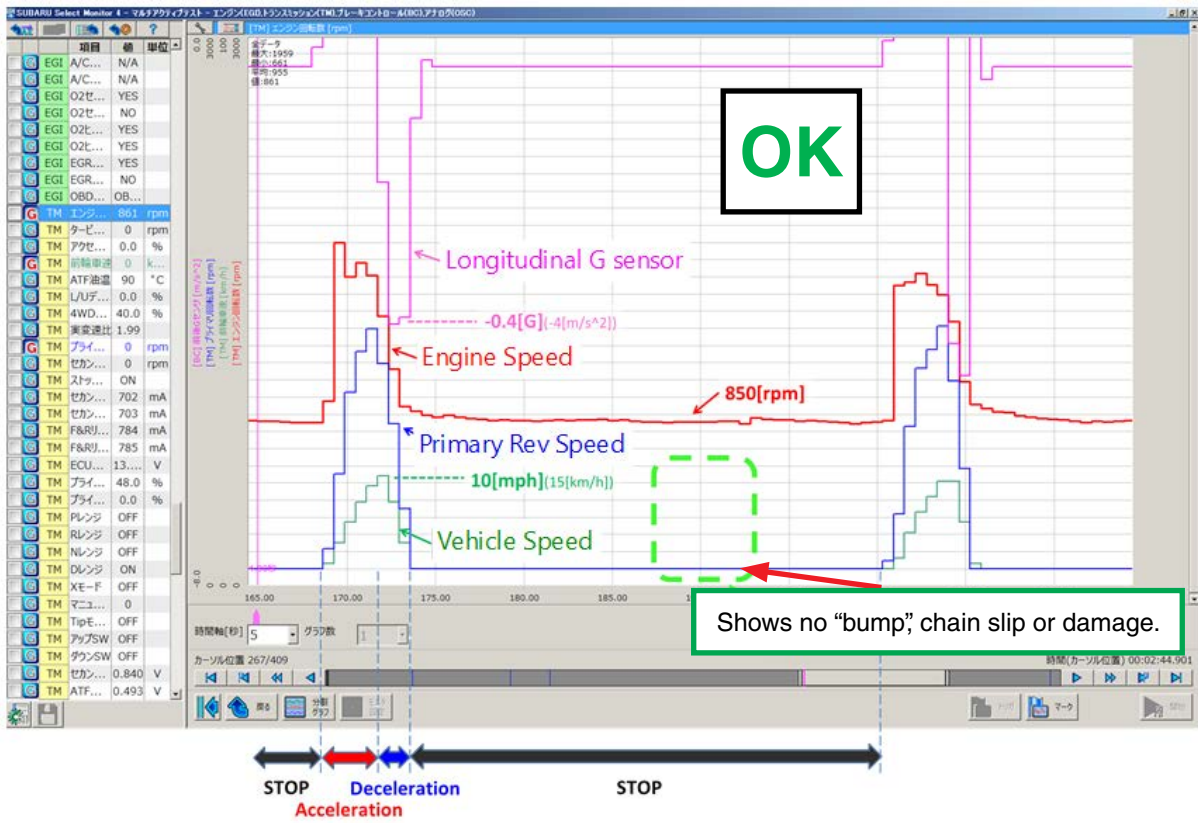
CAUTION: Perform this drive testing only in a closed area (such as parking lot) away from other vehicle traffic and **never** on a public roadway due to the need to brake and hold position for 60 seconds during each test cycle. In addition, the use of a co-driver to either drive the vehicle or monitor the SM4 data during this testing is **strongly encouraged**.

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- While performing the testing above, determine if the “bump” condition can be confirmed and / or if the data graph shows any chain slippage. Examples of “OK” and “NG” graphs are supplied below for reference to help make a proper determination.

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- If the bump condition is confirmed, there is most likely variator damage requiring CVT assembly replacement. Follow the service procedure in the applicable Service Manual when replacing the CVT assembly is required.

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VERY IMPORTANT REMINDERS:

The FFD and / or SM4 Project File **must be saved** to qualify for a replacement CVT when determined necessary. Claims may be charged back for those that do not have these files saved and available to support their testing results when requested.

The serial number found on the installed (replacement) unit must be entered in the Miscellaneous Detail field during claim entry for all replacement transmission assemblies. See Section 13.4.4 of the Policy and Procedure manual for more information.

Regardless of whether or not the bump condition is confirmed, after testing or repairs are complete, the TCM **MUST** be reprogrammed following the procedure provided below before releasing the vehicle to the customer.

- Reprogram the TCM using the SM4 following the normal FlashWrite procedure.

Step 1: SOA now highly recommends connecting the Midtronics GR8 Diagnostic Battery Charger to the vehicle and utilizing the Power Supply Mode feature anytime a vehicle control module is being reprogrammed. Once the GR8 is connected to the vehicle, as long as the battery is fully charged, it takes less than 3 minutes to boot-up the charger, select the Power Supply Mode, and have the battery voltage stabilized and ready for reprogramming.

VERY IMPORTANT: This information is applicable to the Midtronics GR8 Diagnostic Battery Charger **ONLY**. It does not apply to any other brand / type of “generic” battery charger whatsoever. **ONLY** the GR8 and its Power Supply Mode feature has been tested and approved by Subaru of America, Inc. (SOA).

- If the GR8 indicates the vehicle’s battery must be charged, charge the battery using the GR8 before proceeding to reprogram the vehicle while using the Power Supply Mode.
- Control module failures as a result of battery discharge during reprogramming are not a matter for warranty. Should any DTCs reset after the reprogramming update is performed, diagnose per the procedure outlined in the applicable Service Manual.

Step 2: Using the SSM4, clear the AT Learning Data using the following procedure:

- Start > Diagnosis > Vehicle Selection > Each System > Transmission > Work Support > Clear AT Learning Data.
- Click “YES” and when “Execute Clear AT Learning” is displayed, click “YES” again.
- Turn the ignition OFF, wait at LEAST 30 seconds then turn the ignition back ON. At this point, the AT Temp light will start blinking; 4 times in 2 seconds to signify the Clear AT Learning procedure has completed successfully. If the AT Temp light does not flash as described, repeat Step 2 again from the beginning.

Step 3: Using the SSM4, perform the AT Learning Control following the procedure outlined in the applicable Service Manual.

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IMPORTANT: The **NEW** Calibration Identification number (CID) for any newly-installed programming (as confirmed from the actual control module **AFTER** installation) **MUST** be noted on the repair order as this information is required for claim submission.

NOTE: The pack file listings provided in this bulletin are the latest available at the time of publishing. Updates are often released thereafter without revision to the original bulletin. For this reason, it is critical to always have the latest version of Select Monitor software installed on your system. You can confirm if a later version is available by entering the CID listed in this bulletin into FlashWrite. If a newer CID is shown as available in FlashWrite, reprogram using that file.

WARRANTY / CLAIM INFORMATION:

For vehicles within the Basic New Car Limited or Powertrain Limited Warranty period or covered by an active Subaru Added Security Powertrain, Classic or Gold plan, this repair may be submitted using the following claim information:

Labor Description	Labor Operation #	Labor Time / Model		Fail Code
		Legacy/Outback	Crosstrek HEV	
REPROGRAM TCM & AT LEARNING CONTROL FOR BUMP FEEL	B860-733	0.7	0.8	MKK-25
CVT (NEW UNIT) REPLACEMENT FOR VERIFIED BUMP FEEL	C303-003	4.2	3.9	
CVT (REMAN UNIT) REPLACEMENT FOR VERIFIED BUMP FEEL	C303-005	0.3		

NOTE: C303-003 is complete and includes cooler flush, logging the serial number for claim submission, logging radio presets, and use of the engine hold tool.

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.