

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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SUBARU

QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY: 2015-21MY WRX/STI 2.5L Turbo MT

NUMBER: 09-131-25

SUBJECT: Diagnosis Procedures for DTCs P2404 & P0420

DATE: 03/04/25

REVISED: 04/08/25

INTRODUCTION:

This bulletin announces the diagnostic procedures and availability of reprogramming files to rectify the following Diagnostic Trouble Codes (DTCs).

- P2404: EVAP System Leak Detection Pump Sense Circuit Range/Performance.
- P0420: Catalyst System Efficiency Below Threshold Bank 1. (not applicable for 15-18 models)

The ELCM may accumulate condensation causing the inaccurate detection of P2404. P0420 may become falsely detected due to unstable combustion caused by a downshift. The new reprogramming files contains enhanced software allowing for condensation conditions and downshift rotational speeds be more accurately detected by the Engine Control Module (ECM). If P2404 and/or P0420 are found to be detected by the ECM, perform the service procedures outlined in this bulletin.

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.

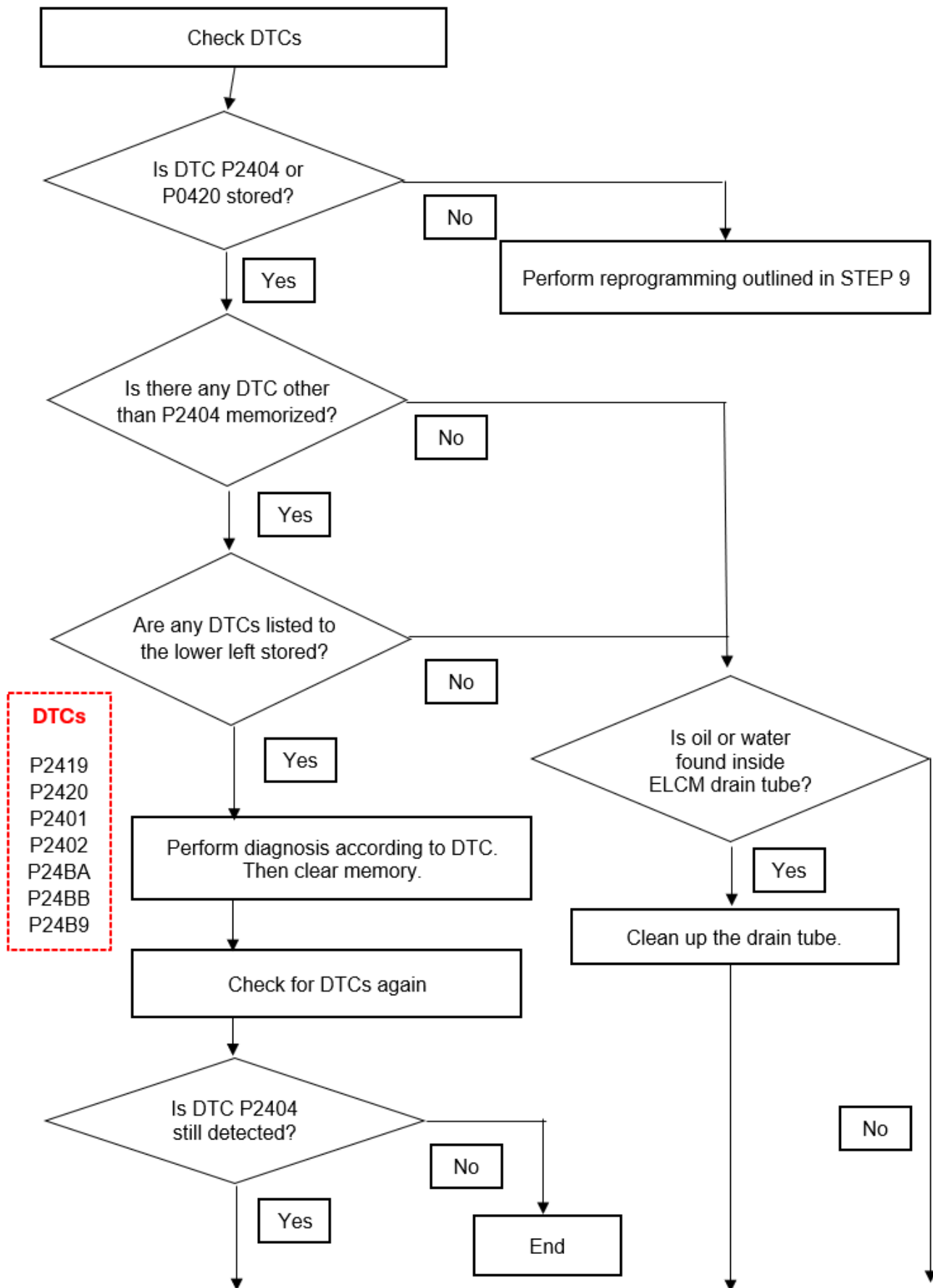
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PAK FILE APPLICABILITY:

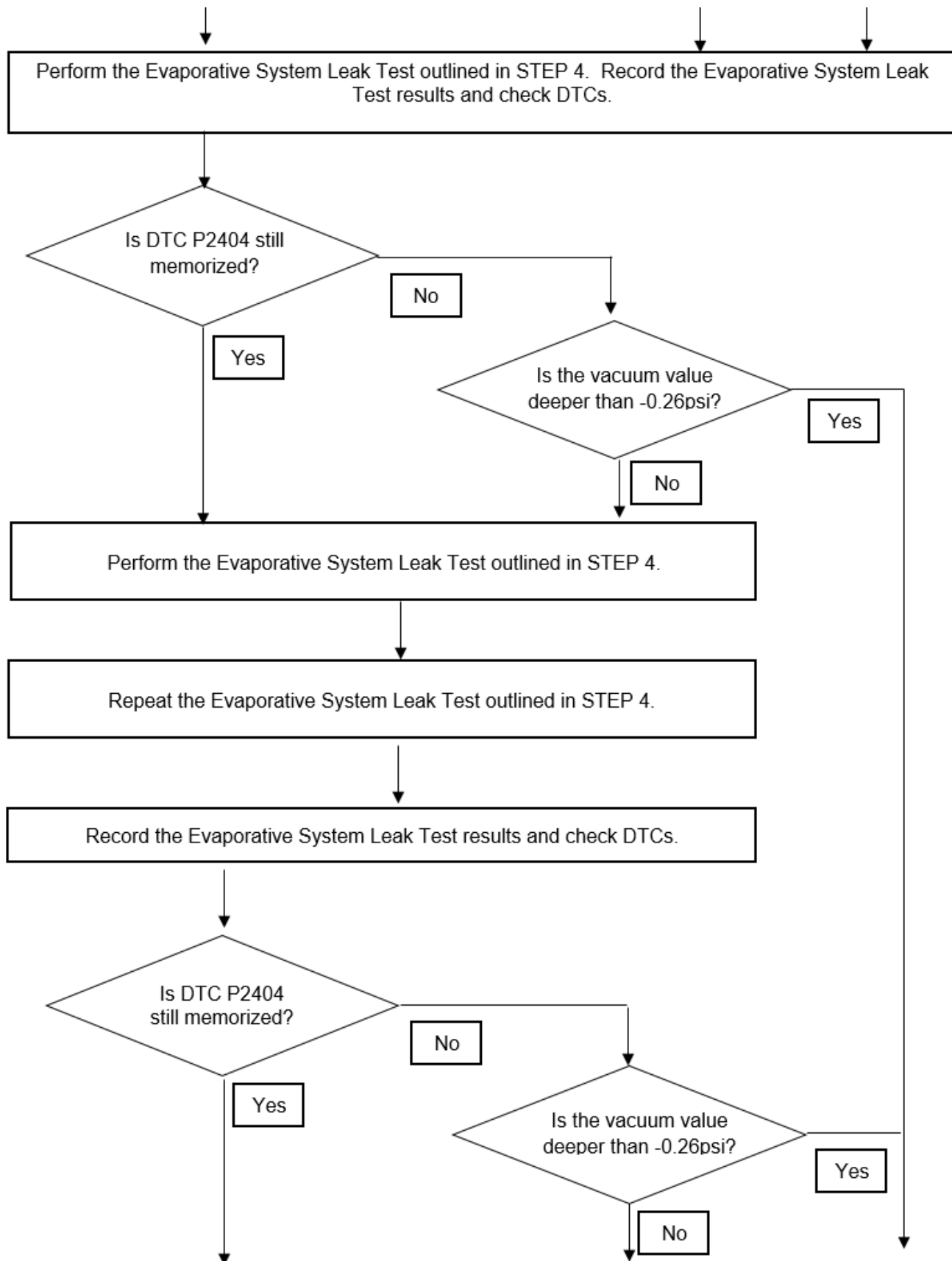
MY	File Description	Old Part #	Decryption Keyword	New CID
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16MY	22765AH604.pak	22765AH600 22765AH601 22765AH602 22765AH603	84BC55EE	AE5T400V
17MY	22765AK174.pak	22765AK170 22765AK171 22765AK172 22765AK173	8C286F89	AE5W300V
18MY	22765AK923.pak	22765AK920 22765AK921 22765AK922	611EAA24	AE5Z130V
18MY Type RA	22765AM272.pak	22765AM270 22765AM271	95573C7D	AE5Z130W
19MY	22765AM462.pak	22765AM460 22765AM461	315FDC7F	AE5Z340V
20MY	22765AN542.pak	22765AN540 22765AN541	EB31D0C7	AE5Z520V00G
21MY	22765AR201.pak	22765AR200	48D3781B	AE5Z900A00G

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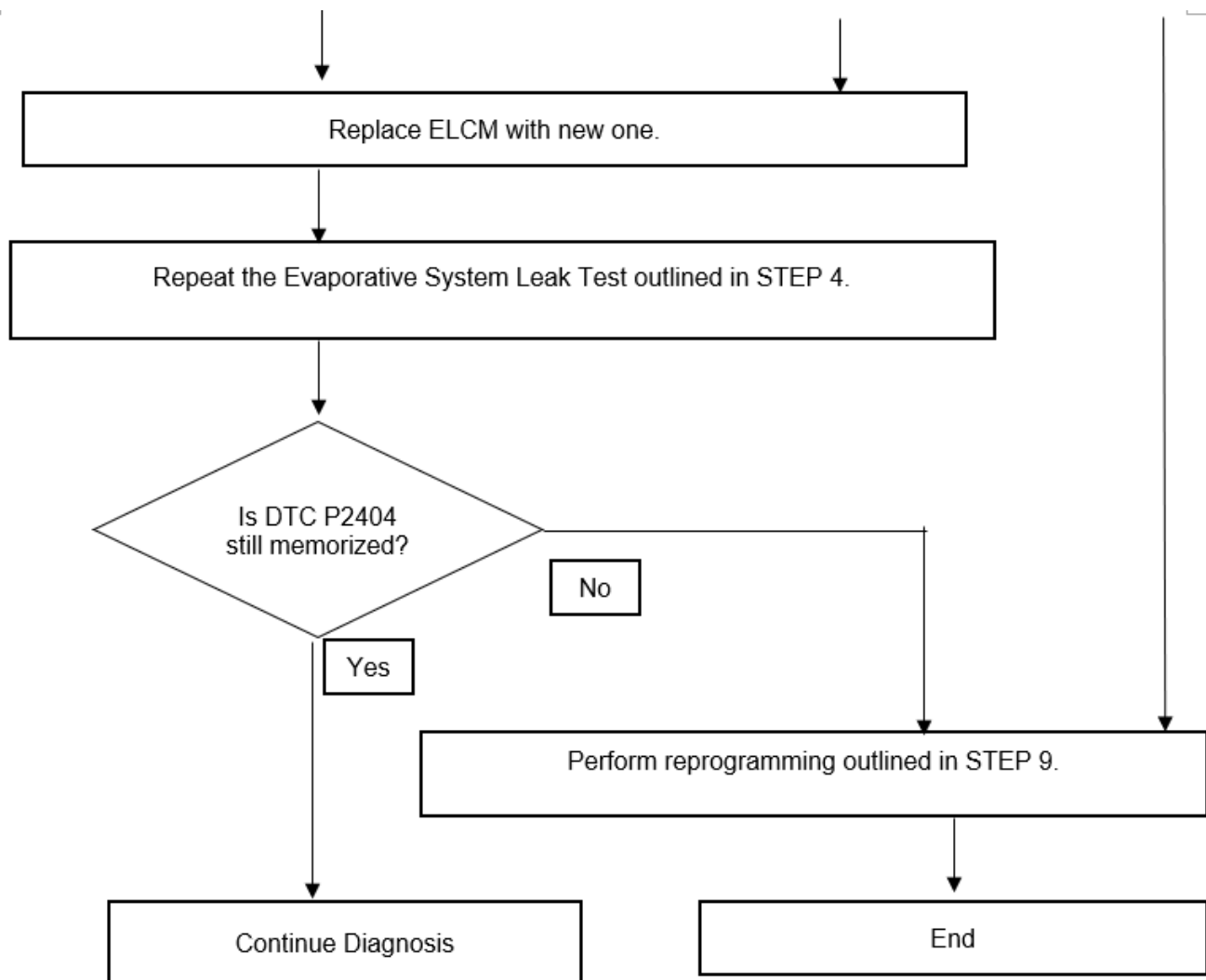
SERVICE PROCEDURE FLOWCHART:



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SERVICE PROCEDURE / INFORMATION:

STEP 1: Using Subaru Select Monitor (SSM), confirm diagnostic trouble codes P2404 and/or P0420 are detected by the ECM.

STEP 2: Are any of the diagnostic trouble codes listed below also stored withing the ECM?

- P2419 - EVAP System Switching Valve Control Circuit Low
- P2420 - EVAP System Switching Valve Control Circuit High
- P2401 - EVAP System Leak Detection Pump Control Circuit Low
- P2402 - EVAP System Leak Detection Pump Control Circuit High
- P24BA - EVAP System Leak Detection Pump Pressure Sensor Circuit Low
- P24BB - EVAP System Leak Detection Pump Pressure Sensor Circuit High
- P24B9 - EVAP System Leak Detection Pump Pressure Sensor Circuit Range/Performance

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NO – Proceed to STEP 3.

YES – Proceed to STEP 4.

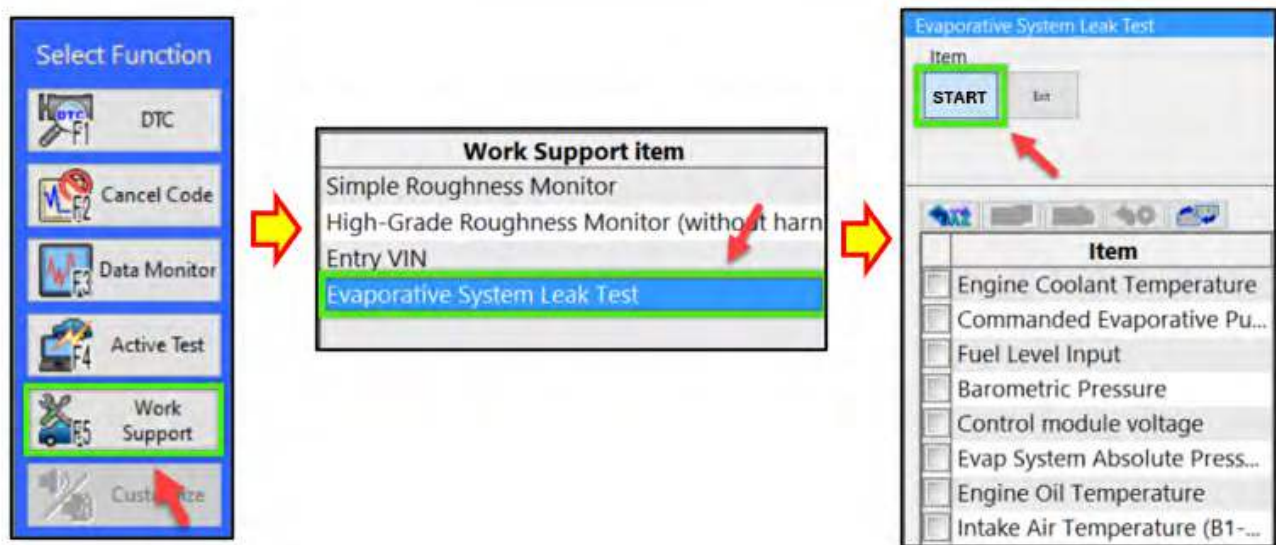
STEP 3: CAREFULLY disconnect the ELCM drain tube. Inspect for signs of water or oil.

Have signs of water or oil been detected withing the ELCM drain tube?

YES – Clean and dry the drain tube using a non-alcohol base cleaner. Proceed to STEP 4.

NO – Proceed to STEP 4.

STEP 4: Connect the vehicle to a recommended power supply. See APPENDIX A for addition information regarding power supply. Using SSM, perform the Evaporative System Leak Test. Collect and save all data.



Once the evaporative system leak test is complete, check the DTCs and examine the vacuum value results. Record the value shown in the row labeled MID: \$3C, TID: \$C4, and Scaling ID: \$FE. This value should be lower than -0.26 PSI.

MID	TID	Scaling ID	Value	Unit	Minimum	Maximum	Result
\$3C	\$C1	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$C2	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$C3	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$C4	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$C5	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$C6	\$35	0.00	psi	0.00	0.00	OK
\$3C	\$C7	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$C8	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$C9	\$FE	0.00	psi	0.00	0.00	OK
\$3C	\$CA	\$FE	0.00	psi	0.00	0.00	OK

Value Must Be Lower
Than -0.26 PSI

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Is DTC P2404 stored within the ECM?

NO – Proceed to STEP 5.

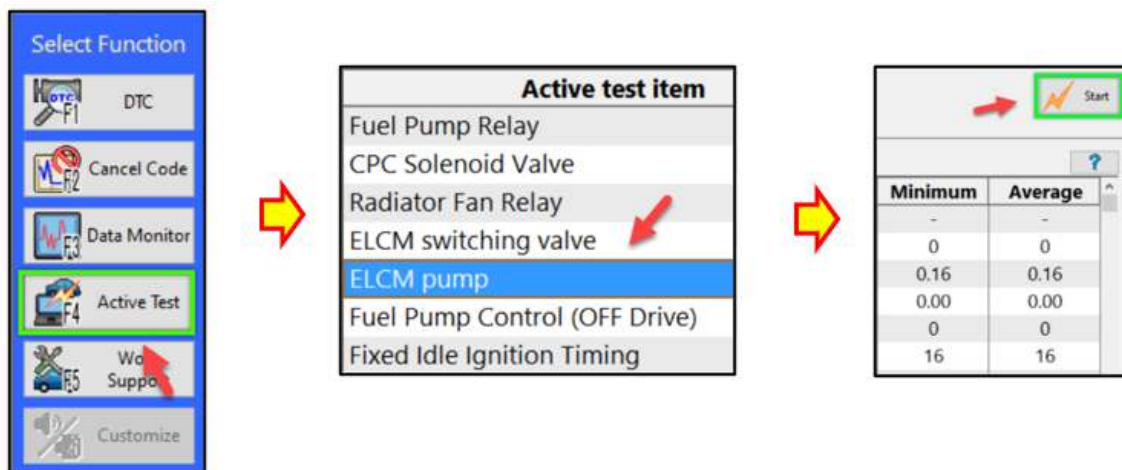
YES – Proceed to STEP 6.

STEP 5: Was the vacuum value result observed in STEP 4 found to be lower than -0.26 PSI?

YES – Proceed to STEP 9.

NO – Proceed to STEP 7.

STEP 6: Using SSM, perform the ELCM Pump Active Test for a period of 35 minutes or more. See APPENDIX A for addition information regarding power supply.



Once the ELCM Pump Active Test has been performed for a period of 35 minutes or more, repeat the Evaporative System Leak Test outlined in STEP 4. Check the DTCs and the vacuum value results.

Is DTC P2404 stored within the ECM?

NO – Proceed to STEP 7.

YES – Proceed to STEP 8.

STEP 7: Was the vacuum value result observed during the second Evaporative System Leak Test found to be lower than -0.26 PSI?

YES – Proceed to STEP 9.

NO – Proceed to STEP 8.

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STEP 8: Replace the Evaporate Leak Check Module and repeat the Evaporative System Leak Test outlined in STEP 4. Check the DTCs and the vacuum value results.

Is DTC P2404 stored within the ECM?

NO – Proceed to STEP 9.

YES – Continue diagnosis as per the applicable Service Manual.

STEP 9: Reprogram the ECM following the normal FlashWrite procedure. See APPENDIX A for addition information regarding power supply.

WARRANTY / CLAIM INFORMATION:

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

Labor Description	Labor Operation #	Labor Time	Fail Code
ECM REPROGRAMMING & DRAIN TUBE CLEAN / EVAP TESTING	A455-223	1.0H	UPG-48
LEAK CHECK MODULE R&R AND ECM REPROGRAMMING	A455-244	2.3H	

IMPORTANT: Always note the original Calibration Identification number (CID) the vehicle came in with on the repair order **before** reprogramming and, make sure to list the **NEW** CID for any newly-installed programming (as confirmed from the actual control module **AFTER** installation). The **NEW** CID **MUST** also be noted on the repair order as this information is required for entry in the Miscellaneous Detail field during claim submission.

NOTE: The PAK 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.

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.

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APPENDIX A

BATTERY CHARGING INFORMATION

Subaru of America, Inc. (SOA) highly recommends utilizing either the Subaru Midtronics DCA-8000 Dynamic Diagnostic Charging System or the Subaru Midtronics GR8-1100 Diagnostic Battery Charger to the vehicle in the Power Supply Mode feature anytime a vehicle control module is being reprogrammed. Once the Midtronics charger is connected to the vehicle, if the battery is fully charged, it will take 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.

NOTES:

- For instructions on using the Power Supply Mode, reference the applicable User Manual for the Midtronics DCA-8000 Dynamic Diagnostic Charging System and the Midtronics GR8-1100 Diagnostic Battery Charger on STIS.
- Confirm all electrical loads such as lights, audio, HVAC, seat heaters, and rear defroster are all switched OFF before setting up the charger for Power Supply Mode.
- Select the correct battery type (Enhanced Flooded, Flooded, Gel, AGM or AGM Spiral).
- Input the CCA which matches the vehicle's battery. **NOTE:** OE and replacement batteries have different CCA ratings. Always confirm the battery's CCA rating before proceeding.
- If using a DCA-8000 Dynamic Diagnostic Charging System, set the power supply voltage to 13.5 Volts.
- DO NOT connect the DST-i or DST-010 until the Power Supply mode function has completed its battery test mode and the Charging Voltage has dropped to and shows a steady 13.5 Volts on the display.
- Once Power Supply Mode reaches a steady 13.5 Volts, connect the DST-i or DST-010 to the OBD connector and proceed with initiating the normal FlashWrite reprogramming process.
- Amperage will fluctuate based upon the vehicle's demand for power. **NOTE:** If the voltage rises beyond 14 Volts while programming is in process, the procedure will abort. This can indicate a need to test or charge the vehicle battery before any further attempt at programming is made.
- ALWAYS set the power supply voltage to 13.5 Volts when using Power Supply Mode. NEVER turn the ignition switch on when charging at voltages 15 Volts or higher.

REMINDER: If the DCA-8000 or GR8-1100 indicates the vehicle's battery must be charged, charge the battery fully before proceeding to reprogram the vehicle while using the Power Supply Mode.

NOTE: Control module failures resulting from 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.

VERY IMPORTANT:

This information is applicable to the Subaru Midtronics DCA-8000 Dynamic Diagnostic Charging System and the Subaru Midtronics GR8-1100 Diagnostic Battery Charger **ONLY**. It does not apply to any other brand / type of "generic" battery charger whatsoever. **ONLY** the DCA-8000 and the GR8-1100 and their Power Supply Mode feature have been tested and approved by SOA.