ATTENTION:
GENERAL MANAGER ❑
PARTS MANAGER ❑
CLAIMS PERSONNEL ❑
SERVICE MANAGER ❑

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

SUBARU

QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY: 2019-23MY Forester
2020-22MY Legacy & Outback 2.5L
2017-22MY Impreza
2018-22MY Crosstrek

NUMBER: 09-122-24
DATE: 05/14/24

SUBJECT: DTCs P2404 Reprogramming Files

INTRODUCTION:

This bulletin the announces diagnostic procedures and availability of new Engine Control Module (ECM) reprogramming files to address DTC P2404 (Evap System Leak Detection Pump Sense Circuit Range/Performance) detection. In rare cases, the internal pump for the Evaporative Leak Check Module (ELCM) system can seize temporarily. The new files contain enhanced logic to prevent the ELCM pump from seizing. If P2404 is found in the fault memory, follow the procedures outlined below.

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:

FORESTER					
MY	**Model**	**File Description**	**Old ECM Part #**	**Decryption Keyword**	**New CID #**
19	Forester	22765AL827.pak	22765AL820 22765AL821 22765AL822 22765AL823 22765AL824 22765AL825 22765AL826	A44B186E	XE1FB00A
20	Forester	22765AN466.pak	22765AN460 22765AN461 22765AN462 22765AN463 22765AN464 22765AN465	585CB1E4	XE1M700a00G
21	Forester	22765AR675.pak	22765AR670 22765AR671 22765AR672 22765AR673 22765AR674	67CEEA2A	XE1P800a00G
22	Forester	22765AR604.pak	22765AR600 22765AR601 22765AR602 22765AR603	E1A8EC6C	XE1R600k00G
22	Forester	22765AR554.pak	22765AR550 22765AR551 22765AR552 22765AR553	B4E98F7C	XE1R600a00G
22	Forester	22765AR614.pak	22765AR610 22765AR611 22765AR612 22765AR613	73EC24BE	XE1R600z00G
23	Forester	22765AS923.pak	22765AS920 22765AS921 22765AS922	8BAB05EA	XE1X020k00G
23	Forester	22765AS933.pak	22765AS930 22765AS931 22765AS932	AD4C67EE	XE1X020z00G
23	Forester	22765AV272.pak	22765AV270 22765AV271	3B0220F6	XE1X020p00G
23	Forester	22765AV282.pak	22765AV280 22765AV281	69EF98B7	XE1X020s00G

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LEGACY & OUTBACK					
MY	**Model**	**File Description**	**Old ECM Part #**	**Decryption Keyword**	**New CID #**
20	Legacy	22765AN20H.pk2	22765AN20A 22765AN20B 22765AN20C 22765AN20D 22765AN20E 22765AN20F 22765AN20G	80F3F042	XE1J600m00G
20	Outback	22765AP54H.pk2	22765AP54A 22765AP54B 22765AP54C 22765AP54D 22765AP54E 22765AP54F 22765AP54G	D7DCFE8A	XE1J600n00G
21	Legacy	22765AR18F.pk2	22765AR18A 22765AR18B 22765AR18C 22765AR18D 22765AR18E	2183E3F3	XE1P800m00G
21	Outback	22765AR19F.pk2	22765AR19A 22765AR19B 22765AR19C 22765AR19D 22765AR19E	A55FC233	XE1P800n00G
22	Legacy	22765AS22F.pk2	22765AS22A 22765AS22B 22765AS22C 22765AS22D 22765AS22E	BE49F201	XE1Q400m00G
22	Outback	22765AS23F.pk2	22765AS23A 22765AS23B 22765AS23C 22765AS23D 22765AS23E	4DB14C7F	XE1Q400n00G

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2017-18 IMPREZA						
MY	**Model**	**Specification**	**File Description**	**Old ECM Part #**	**Decryption Keyword**	**New CID #**
17	Impreza	2.0L NA CVT AGS	22765AU29B.pak	22765AJ60A 22765AJ60B 22765AJ60C 22765AJ60D 22765AJ60E 22765AJ60F 22765AJ60G 22765AJ60H 22765AJ60J 22765AJ60K 22765AU29A	1B2FA6E0	XH3J2J0D
17-18	Impreza	2.0L NA 5MT AGS	22765AU28B.pak	22765AJ59A 22765AJ59B 22765AJ59C 22765AJ59D 22765AJ59E 22765AJ59F 22765AJ59G 22765AJ59H 22765AJ59J 22765AJ59K 22765AU28A	7343BAEE	XH3J2J0C
17-18	Impreza	2.0L NA 5MT	22765AU30B.pak	22765AK61A 22765AK61B 22765AK61C 22765AK61D 22765AK61E 22765AK61F 22765AK61G 22765AK61H 22765AK61J 22765AK61K 22765AU30A	C0580A71	XH3J2J0A
17-18	Impreza	2.0L NA CVT	22765AU31B.pak	22765AL71A 22765AL71B 22765AL71C 22765AL71D 22765AL71E 22765AL71F 22765AL71G 22765AL71H 22765AL71J 22765AL71K 22765AU31	58B3DA32	XH3J2J0B
18	Impreza	2.0L NA CVT AGS	22765AV39A.pak	22765AM28A 22765AM28B 22765AM28C 22765AM28D 22765AM28E 22765AM28F 22765AM28G 22765AM28H 22765AM28J	0D0DDA74	XH3JF00D

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2019-22 IMPREZA						
MY	**Model**	**Specification**	**File Description**	**Old ECM Part #**	**Decryption Keyword**	**New CID #**
19	Impreza	2.0L NA	22765AM64H.pak	22765AM64A 22765AM64B 22765AM64C 22765AM64D 22765AM64E 22765AM64F 22765AM64G	B2C85C03	XH3NB00C
19	Impreza	2.0L NA 5MT	22765AM65H.pak	22765AM65A 22765AM65B 22765AM65C 22765AM65D 22765AM65E 22765AM65F 22765AM65G	F713FC42	XH3NB00A
19	Impreza	2.0L NA CVT AGS	22765AM66H.pak	22765AM66A 22765AM66B 22765AM66C 22765AM66D 22765AM66E 22765AM66F 22765AM66G	F1E4A384	XH3NB00D
19	Impreza	2.0L NA CVT	22765AM67H.pak	22765AM67A 22765AM67B 22765AM67C 22765AM67D 22765AM67E 22765AM67F 22765AM67G	C03CF7E0	XH3NB00B
20	Impreza	2.0L NA 5MT AGS	22765AP11E.pak	22765AP11A 22765AP11B 22765AP11C 22765AP11D	F5C87F48	XE1M600C00G
20	Impreza	2.0L NA 5MT	22765AP12E.pak	22765AP12A 22765AP12B 22765AP12C 22765AP12D	E469A8DB	XE1M600A00G
20	Impreza	2.0L NA CVT AGS	22765AP13E.pak	22765AP13A 22765AP13B 22765AP13C 22765AP13D	55C01662	XE1M600D00G
20	Impreza	2.0L NA CVT	22765AP14E.pak	22765AP14A 22765AP14B 22765AP14C 22765AP14D	56C0CF73	XE1M600B00G
21	Impreza	2.0L NA 5MT AGS	22765AP84D.pak	22765AP84A 22765AP84B 22765AP84C	56DAE48B	XE1P700C00G
21	Impreza	2.0L NA 5MT	22765AP85D.pak	22765AP85A 22765AP85B 22765AP85C	D74E750C	XE1P700A00G

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2019-22 IMPREZA						
MY	**Model**	**Specification**	**File Description**	**Old ECM Part #**	**Decryption Keyword**	**New CID #**
21	Impreza	2.0L NA CVT AGS	22765AP86D.pak	22765AP86A 22765AP86B 22765AP86C	D3D70F22	XE1P700D00G
21	Impreza	2.0L NA CVT	22765AP87D.pak	22765AP87A 22765AP87B 22765AP87C	EC09E228	XE1P700B00G
22	Impreza	2.0L NA 5MT AGS	22765AS27C.pak	22765AS27A 22765AS27B	B93F17AA	XE1R500C00G
22	Impreza	2.0L NA 5MT	22765AS28C.pak	22765AS28A 22765AS28B	ED385E11	XE1R500A00G
22	Impreza	2.0L NA CVT AGS	22765AS29C.pak	22765AS29A 22765AS29B	7009AF79	XE1R500D00G
22	Impreza	2.0L NA CVT	22765AS30C.pak	22765AS30A 22765AS30B	B09D1F18	XE1R500B00G

2018-22 Crosstrek						
MY	**Model**	**Specification**	**File Description**	**Old ECM Part #**	**Decryption Keyword**	**New CID #**
18	Crosstrek	2.0L NA 6MT	22765AJ619.pak	22765AJ610 22765AJ611 22765AJ612 22765AJ613 22765AJ614 22765AJ615 22765AJ616 22765AJ617 22765AJ618	1857E138	XH3J2J0E
18	Crosstrek	2.0L NA CVT	22765AJ629.pak	22765AJ620 22765AJ621 22765AJ622 22765AJ623 22765AJ624 22765AJ625 22765AJ626 22765AJ627 22765AJ628	8DCDF939	XH3J2J0F

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2018-22 Crosstrek						
MY	**Model**	**Specification**	**File Description**	**Old ECM Part #**	**Decryption Keyword**	**New CID #**
19	Crosstrek	2.0L NA CVT	22765AM827.pak	22765AM820 22765AM821 22765AM822 22765AM823 22765AM824 22765AM825 22765AM826	5403239C	337E D1EA
19	Crosstrek	2.0 NA 6MT	22765AM817.pak	22765AM810 22765AM811 22765AM812 22765AM812 22765AM813 22765AM814 22765AM814 22765AM815 22765AM816	AD37330D	XH3NB00E
20	Crosstrek	2.0L NA 6MT	22765AN934.pak	22765AN930 22765AN931 22765AN932 22765AN933	B816B9FF	XE1M600E00G
20	Crosstrek	2.0L NA CVT	22765AN953.pak	22765AN950 22765AN951 22765AN952	ABB8C540	XE1M600F00G
21	Crosstrek	2.5L NA CVT	22765AP814.pak	22765AP810 22765AP811 22765AP812 22765AP813	32282FD2	XE1P700G00G
21	Crosstrek	2.0L NA 6MT	22765AP923.pak	22765AP920 22765AP921 22765AP922	67DDE383	XE1P700E00G
21	Crosstrek	2.0L NA CVT	22765AP933.pak	22765AP930 22765AP931 22765AP932	2CC36181	XE1P700F00G
22	Crosstrek	2.0L NA 6MT	22765AS312.pak	22765AS310 22765AS311	B9C9F065	XE1R500E00G
22	Crosstrek	2.0L NA CVT	22765AS322.pak	22765AS320 22765AS321	090EB7B3	XE1R500F00G
22	Crosstrek	2.5L NA CVT	22765AS344.pak	22765AS340 22765AS341 22765AS342 22765AS343	989D58B6	XE1R500G00G

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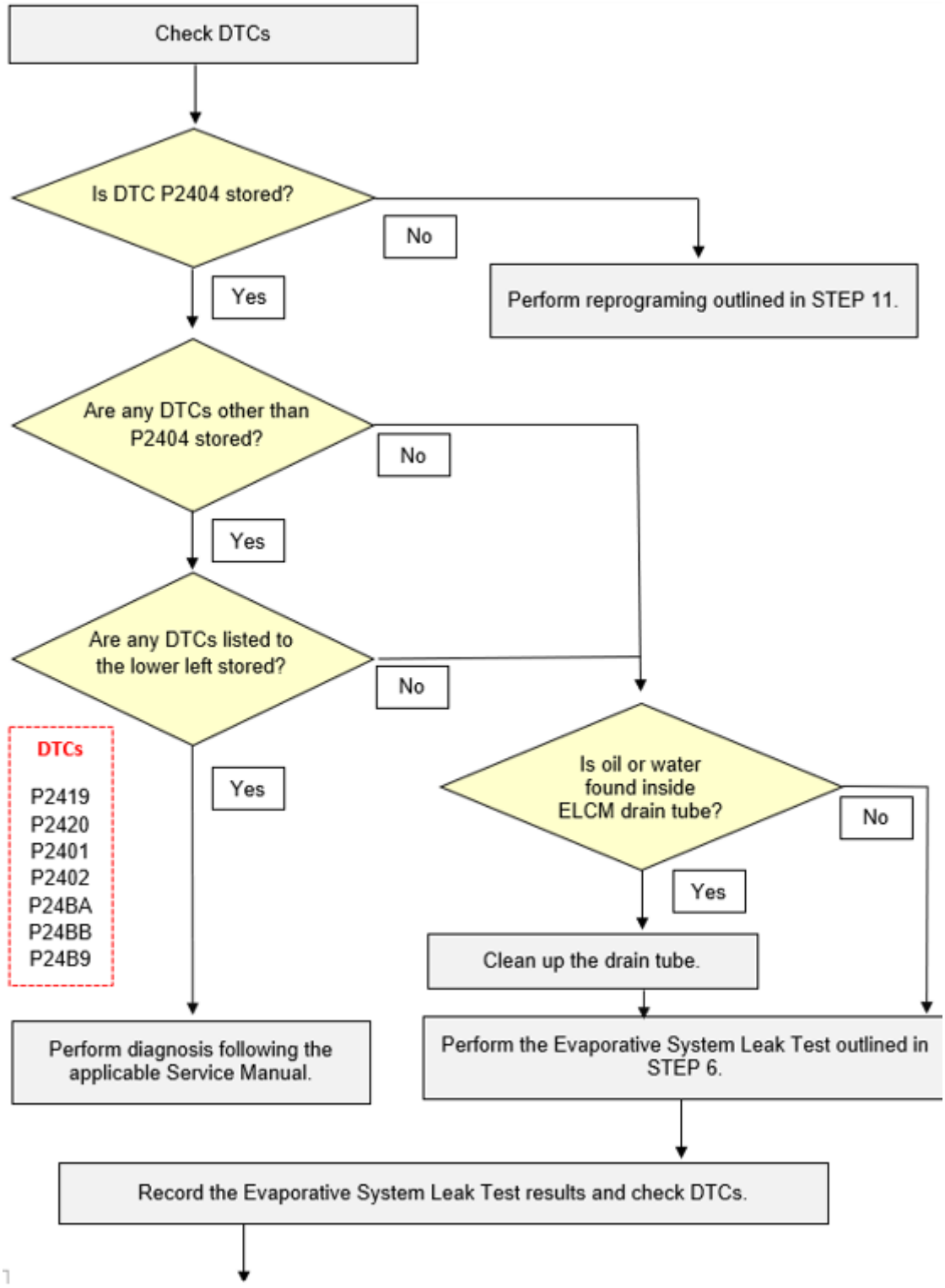
SERVICE PROCEDURE FLOWCHART:



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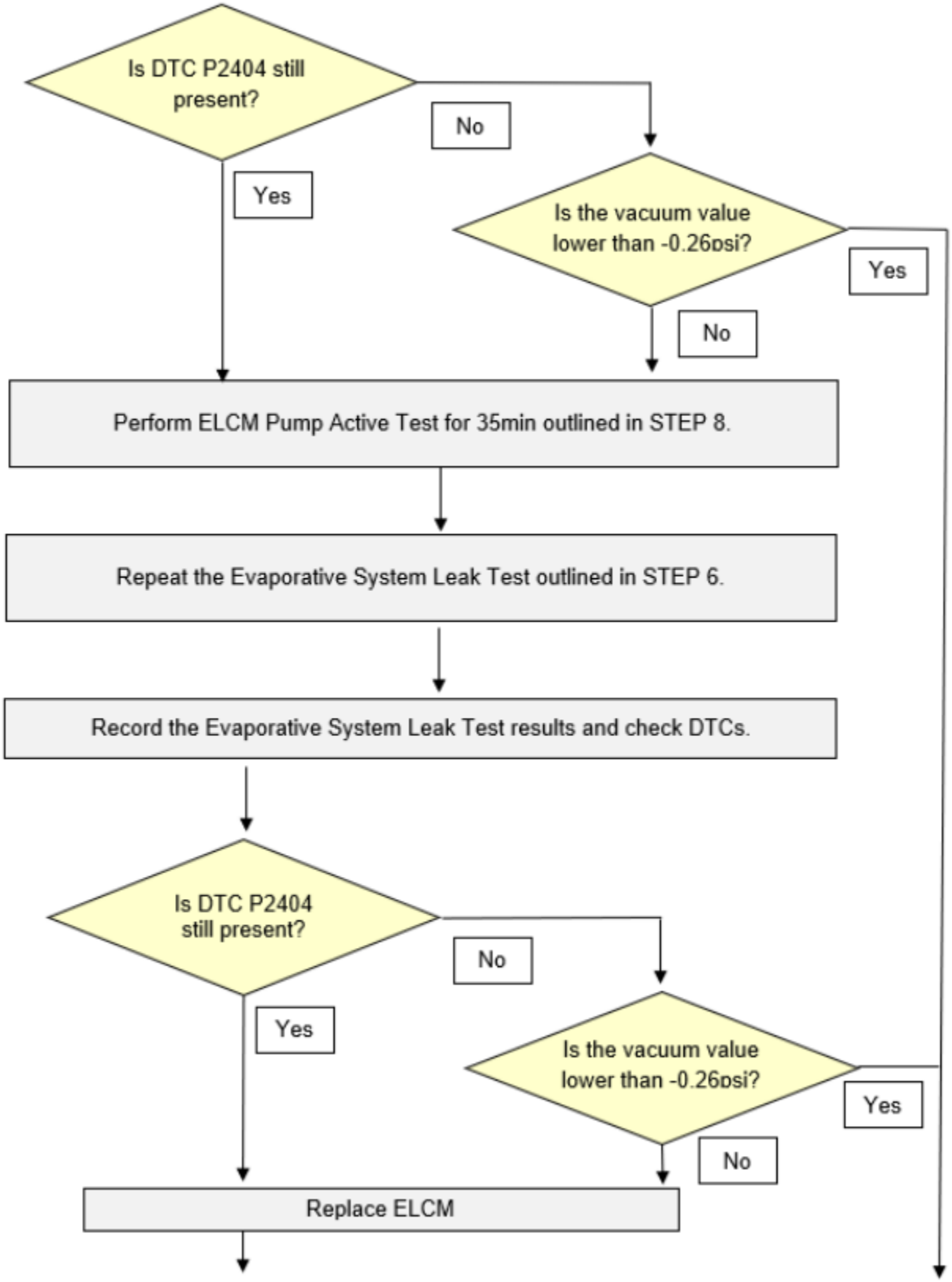
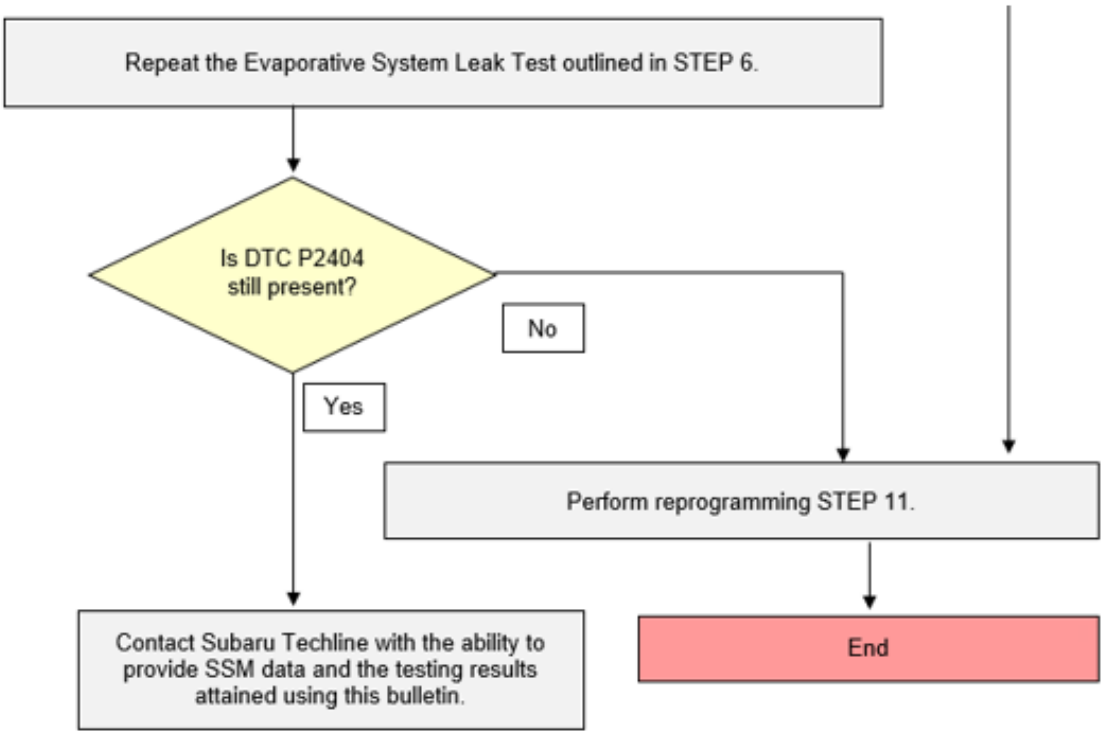

Is DTC P2404 still present?
No
Yes
Is the vacuum value lower than -0.26psi?
Yes
No
Perform ELCM Pump Active Test for 35min outlined in STEP 8.
Repeat the Evaporative System Leak Test outlined in STEP 6.
Record the Evaporative System Leak Test results and check DTCs.
Is DTC P2404 still present?
No
Yes
Is the vacuum value lower than -0.26psi?
Yes
No
Replace ELCM

Continued...



SERVICE PROCEDURE / INFORMATION:

STEP 1: Using Subaru Select Monitor (SSM), check for diagnostic trouble codes. Confirm P2404 is stored and proceed to the next step.

NOTE: Always save SSM data and record the results of the following tests.

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

NO – Proceed to STEP 3.

YES – Perform diagnosis of the DTC(s) following the procedures outlined in the applicable Service Manual.

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STEP 3: Refer to the applicable Service Manual and review: General Description > Repair Contents > Action required before & after Battery Disconnect. Additionally, record any stored seat position(s) before proceeding. Relearn any seat position memory after work is complete. If the power rear gate (PRG) height has been customized, that position must also be noted and relearned. **CAREFULLY** disconnect the ground terminal from the battery sensor.

STEP 4: CAREFULLY Raise the vehicle and locate the ELCM located behind the fuel tank.

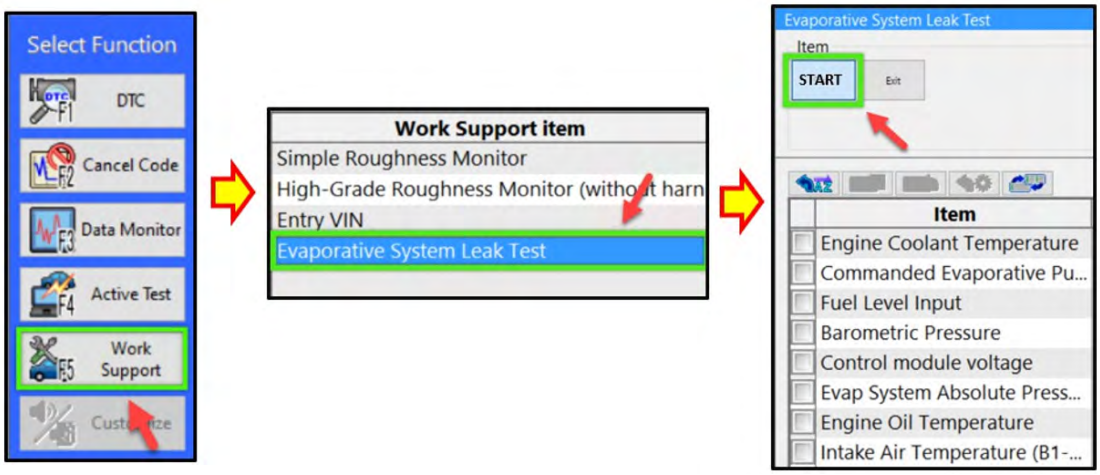
STEP 5: CAREFULLY disconnect the ELCM drain tube. Inspect for signs of water or oil.

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 such as Simple Green®. Proceed to STEP 6.

NO – Proceed to STEP 6.

STEP 6: Connect the vehicle to a recommended power supply. See **APPENDIX A** for additional 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	0.00	OK
$3C	$C7	$FE			0.00	0.00	OK
$3C	$C8	$FE			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

Continued...

Is DTC P2404 stored within the ECM?

NO – Proceed to STEP 7.

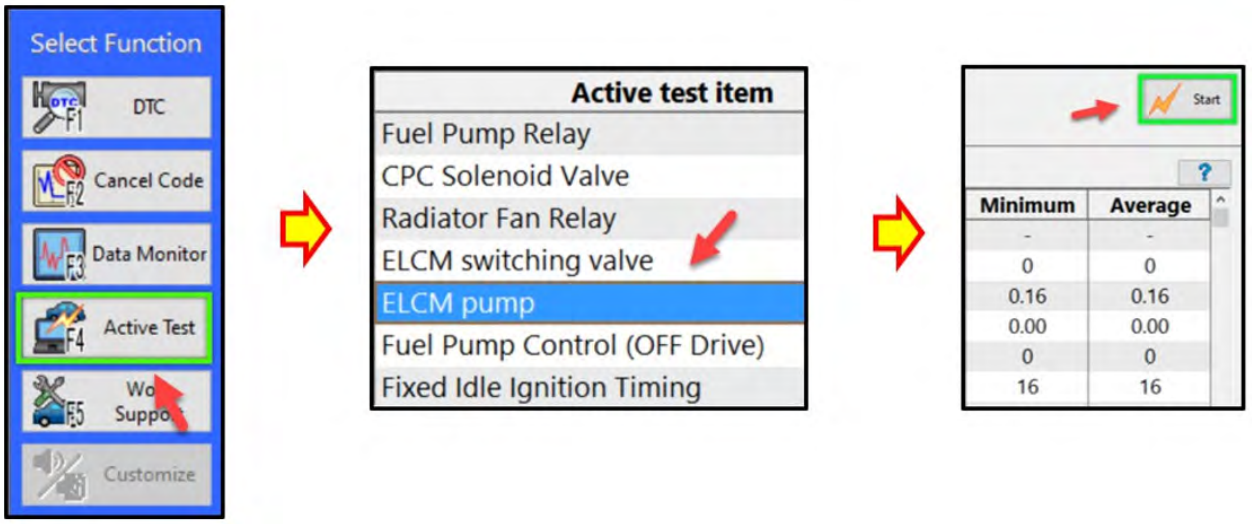
YES – Proceed to STEP 8.

STEP 7: Was the vacuum value result observed in STEP 6 found to be lower than -0.26 PSI?

YES – Proceed to STEP 11.

NO – Repeat the Evaporative System Leak Test (outlined in Step 6) then proceed to STEP 8.

STEP 8: Using SSM, perform the ELCM Pump Active Test for a period of 35 minutes or more. See **APPENDIX A** for additional 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 6. Check the DTCs and the vacuum value results.

Is DTC P2404 stored within the ECM?

NO – Proceed to STEP 9.

YES – Proceed to STEP 10.

STEP 9: 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 11.

NO – Proceed to STEP 10.

Continued...

STEP 10: Replace the Evaporate Leak Check Module and repeat the Evaporative System Leak Test outlined in STEP 6. Check the DTCs and the vacuum value results.

Is DTC P2404 stored within the ECM?

NO – Proceed to STEP 11.

YES – Contact Subaru Techline with ability to provide SSM data and the testing results attained using this bulletin.

STEP 11: 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	1.9H	

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 claim specific data 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

Subaru of America, Inc. (SOA) highly recommends connecting either the Subaru Midtronics DCA8000 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.