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QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

| **APPLICABILITY:** | 2017-22MY Impreza | **NUMBER:** | 09-90-22 |
| | 2018-22MY Crosstrek | **DATE:** | 05/20/22 |

SUBJECT: P0890 TCM Power Relay Sense Circuit
P05A0 Active Grille Air Shutter "A" Stuck on
Low DTC P015A & P015B / Delayed O2 Sensor Response

INTRODUCTION:

This bulletin announces availability of new reprograming files for the Engine Control Module (ECM). These files have been developed to address concerns of the starter motor not operating and/or illumination of the engine warning lamp. This concern may occur under any of the four driving scenarios outlined below. It is **IMPORTANT** to fully review the details below to accurately confirm the concern and perform the reprogramming procedure when necessary.

DESCRIPTIONS OF CONCERN:

Scenario A:

While attempting a restart after a short drive cycle in low ambient temperatures (less than 0 Degrees Celsius / 32 Degrees Fahrenheit), the starter motor may not operate. DTC P0890 (TCM Power Relay Sense Circuit Low) will likely be stored in the ECM under this condition. Condensed moisture in the ignition relay can cause the contact points to freeze under these conditions. The new logic enhances the relay self-shutdown program, eliminating the possibility of frozen relay contacts.

Scenario B:

DTC P05A0 (Active Grille Air Shutter "A" Stuck On) may be stored in the ECM when the vehicle is driven in low ambient temperatures (less than 0 Degrees Celsius / 32 Degrees Fahrenheit) and/or harsh weather including snow and freezing rain. This is caused by an inaccurate freezing estimation of the Active Grille Shutter (AGS) by the ECM. The new logic optimizes the freezing estimation program within the ECM.

Scenario C:

P015A (A/F /02 Sensor Delayed Response - Rich to Lean Bank 1 Sensor 1) & P015B (A/F /02 Sensor Delayed Response - Rich to Lean Bank 1 Sensor 1) may set when stabbing acceleration (ON then quickly OFF the accelerator) and similar braking are performed repeatedly such as in stop and go driving while the engine is warming up.

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Scenario D:

A hesitation and/or lack or power may be felt while operating the vehicle with an engine speed of 1500-3500rpm.

NOTE: Reprogram the ECM ONLY after confirming any of the scenarios as described above are present.

SERVICE PROCEDURE / INFORMATION:

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

- Reprogram the ECM following the normal FlashWrite procedure.
- See the information below for pak file applicability.

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 and utilizing 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 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.

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 (Flooded, EFB, 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 SDI 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 SDI 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 14V 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.

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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.

PAK FILE APPLICABILITY:

MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2017	Impreza	2.0L NA, 5MT AGS	22765AJ59A	22765AU28A.pak	BD9CAD75	XH3J2G0C
			22765AJ59B			
			22765AJ59C			
			22765AJ59D			
			22765AJ59E			
			22765AJ59F			
			22765AJ59G			
			22765AJ59H			
			22765AJ59J			
			22765AJ59K			
		2.0L NA, CVT AGS	22765AJ60A	22765AU29A.pak	FE01CFEB	XH3J2G0D
			22765AJ60B			
			22765AJ60C			
			22765AJ60D			
			22765AJ60E			
			22765AJ60F			
			22765AJ60G			
			22765AJ60H			
			22765AJ60I			
			22765AJ60J			
			22765AJ60K			

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MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2018	Legacy & Outback	2.5L NA, CVT	EB4P000C	22765AK85D.pak	ED0B7C17	EB4T700C
			EB4P001C			
			EB4S100C			
			EB4S101C			
			EB4S10ZC			
			EB4T400C			
		3.6L NA, CVT	DB4P000D	22765AK89D.pak	A26C95FA	DB4T700D
			DB4P001D			
			DB4T400D			
			DB4T600D			

MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2019	Legacy & Outback	2.5L NA, CVT	EB4V000C	22765AN06C.pak	03B99837	EB4V900C
			EB4V00ZC			
			EB4V600C			
		3.6L NA, CVT	DB4V000D	22765AN11D.pak	03BC002D	DB4V900D
			DB4V600D			
			DB4V800D			

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MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2020	Legacy	2.5 NA, CVT	XE1J030m00G	22765AN20D.pk2	E82093DA	XE1J400m00G
			XE1J03Zm00G			
			XE1J100m00G			
			XE1J300m00G			
			XE1J301m00G			
		2.4L Turbo, CVT	LG7D100B00G	22765AM975.pk2	518C182E	LG7D700B00G
			LG7D200B00G			
			LG7D201B00G			
			LG7D310B00G			
			LG7D320B00G			
			LG7D420B00G			
			LG7D430B00G			
			LG7D500B00G			
			LG7D501B00G			
	Outback	2.5 NA, CVT	XE1J030n00G	22765AP54D.pk2	EC19EDD0	XE1J400n00G
			XE1J100n00G			
			XE1J300n00G			
			XE1J301n00G			
		2.4 Turbo, CVT	LG7D100B00G	22765AM975.pk2	518C182E	LG7D700B00G
			LG7D200B00G			
			LG7D201B00G			
			LG7D310B00G			
			LG7D320B00G			
			LG7D420B00G			
			LG7D430B00G			
			LG7D500B00G			
			LG7D501B00G			
	Impreza	2.0 NA, MT, AGS	XE1M110C00G	22765AP11D.pak	7D36F368	XE1M500C00G
			XE1M300C00G			
			XE1M30ZC00G			
			XE1M301C00G			
		2.0 NA, MT	XE1M110A00G	22765AP12D.pak	D7A1DB9B	XE1M500A00G
			XE1M300A00G			
			XE1M30ZA00G			
			XE1M301A00G			
		2.0 NA, CVT, AGS	XE1M110D00G	22765AP13D.pak	D2C975EC	XE1M500D00G
			XE1M300D00G			
			XE1M400D00G			
		2.0 NA, CVT	XE1M110B00G	22765AP14D.pak	7B3A4703	XE1M500B00G
			XE1M300B00G			
			XE1M400B00G			

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MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2020 cont.	Crosstrek	2.0 NA, 6MT	XE1M110E00G	22765AN933.pak	FDD0BD32	XE1M500E00G
			XE1M300E00G			
			XE1M30ZE00G			
			XE1M301E00G			
		2.0 NA, CVT	XE1M200F00G	22765AN952.pak	18F232B0	XE1M500F00G
			XE1M201F00G			
			XE1M300F00G			

MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2021	Legacy	2.5 NA, CVT	XE1P010m00G	22765AR18B.pk2	87F4A7B3	XE1P500m00G
		2.4L Turbo, CVT	LG7F000F00G	22765AR243.pk2	5315EEB2	LG7F400F00G
			LG7F100F00G			
			LG7F300F00G			
			LG7F301F00G			
	Outback	2.5 NA, CVT	XE1P010n00G	22765AR19B.pk2	23B1A792	XE1P500n00G
		2.4L Turbo, CVT	LG7F000F00G	22765AR243.pk2	5315EEB2	LG7F400F00G
			LG7F100F00G			
			LG7F300F00G			
			LG7F301F00G			
	Impreza	2.0 NA, MT, AGS	XE1P100C00G	22765AP84C.pak	82CE2831	XE1P500C00G
			XE1P10ZC00G			
			XE1P101C00G			
		2.0 NA, MT	XE1P100A00G	22765AP85C.pak	93FBB29A	XE1P500A00G
			XE1P10ZA00G			
			XE1P101A00G			
		2.0 NA, CVT, AGS	XE1P100D00G	22765AP86C.pak	A8F10D31	XE1P500D00G
			XE1P400D00G			
		2.0 NA, CVT	XE1P100B00G	22765AP87C.pak	BE951B1F	XE1P500B00G
			XE1P400B00G			

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MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2021 cont.	Crosstrek	2.0 NA, 6MT	XE1P100E00G	22765AP922.pak	7BE0917B	XE1P500E00G
			XE1P10ZE00G			
			XE1P101E00G			
		2.0 NA, CVT	XE1P100F00G	22765AP932.pak	CF1813CB	XE1P500F00G
			XE1P101F00G			
			XE1P10ZF00G			
		2.5 NA,CVT	XE1P010G00G	22765AP811.pak	F3081B11	XE1P500G00G

MY	Model	Specification	Old CID #	File Name	Decryption Keyword	New CID #
2022	Legacy	2.5 NA, CVT	XE1Q000m00G	22765AS22B.pk2	CA8D6EE9	XE1Q200m00G
		2.4 Turbo, CVT	LG7G100G00G	22765AR991.pk2	9E5F5650	LG7G300G00G
	Outback	2.5 NA, CVT	XE1Q000n00G	22765AS23B.pk2	E74F2B87	XE1Q200n00G
		2.4 Turbo, CVT	LG7G100G00G	22765AR991.pk2	9E5F5650	LG7G300G00G
	Outback Wilderness	2.4 Turbo, CVT	LG7G000H00G	22765AR251.pk2	D424CE99	LG7G300H00G
			LG7G100H00G			
	Ascent	2.4 Turbo, CVT	LT8J100F00G	22765AS001.pak	434B8CBA	LT8J300F00G
	Impreza	2.0 NA, 5MT, AGS	XE1R010C00G	22765AS27B.pak	A06D93F0	XE1R200C00G
			XE1R011C00G			
		2.0 NA, 5MT	XE1R010A00G	22765AS28B.pak	E7D2B96A	XE1R200A00G
			XE1R011A00G			
		2.0 NA, CVT, AGS	XE1R010D00G	22765AS29B.pak	2E99EA2B	XE1R200D00G
			XE1R100D00G			
		2.0 NA, CVT	XE1R010B00G	22765AS30B.pak	5E252BEA	XE1R200B00G
			XE1R100B00G			
	Crosstrek	2.0 NA, 6MT	XE1R010E00G	22765AS311.pak	2B358510	XE1R200E00G
			XE1R011E00G			
		2.0 NA, CVT	XE1R010F00G	22765AS321.pak	8F4C1AE5	XE1R200F00G
		2.5 NA, CVT	XE1R010G00G	22765AS341.pak	93449D15	XE1R200G00G

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WARRANTY / CLAIM INFORMATION:

For vehicles within the Basic New Car Limited Warranty period, this repair may be submitted using the following claim information:

Labor Description	Labor Operation #	Fail Code	Labor Time
MFI OBDII ECM Reprogramming	A455-288	UPG-48	0.4

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 Flash-Write.

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.