

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: 2023-24MY Ascent
2023-24MY Legacy & Outback

NUMBER: 07-225-24R

DATE: 03/13/24

SUBJECT: EyeSight Reprogramming Files / DTCs B28C7, B28A6, Halt Code E5

REVISED: 10/31/24

INTRODUCTION:

This bulletin announces the availability of new reprogramming files developed to address the following three symptoms:

SYMPTOM #1: After the EyeSight camera has been exposed to high humidity/temperature conditions without any operation, the cooling fans become inoperable and DTC B28C7 (Fan Motor RPM) is detected by the EyeSight Stereo Camera Assembly.

SYMPTOM #2: The EyeSight system enters into a temporary halt mode with an E5 halt code detected by the EyeSight Stereo Camera Assembly.

SYMPTOM #3: DTC B28A6 (Internal Stereo Camera Communication 1) is detected by the EyeSight Stereo Camera Assembly.

These new files contain optimized logic providing more precise detection of DTC B28C7, B28A6, and halt code E5. If any of the three symptoms listed above are reported by a customer. Follow the diagnosis and reprogramming procedures outlined in this bulletin.

PRODUCTION CHANGE INFORMATION:

This software has been incorporated into vehicle production as per the table below.

Model	Starting VIN
Legacy	R3021303
Outback	R3231280
Ascent	R3418360

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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PFC FILE APPLICABILITY:

MY	Model	File Description	Old Part #	New CID/ROMID
23-24	Legacy & Outback	87501AN11C_87501AN112_87501XC10C.pfc	87501XC10B	1A210800430E21080138
23-24	Ascent	87501AN11C_87501AN112_87501XC10C.pfc	87501AN11B	0521081E4C0E21080138

NOTE: There is no need to recalibrate the EyeSight camera after the reprogramming procedure.

SERVICE PROCEDURE / INFORMATION:

SYMPTOM #1

After the EyeSight camera has been exposed to high humidity/temperature conditions without any operation, the cooling fans become inoperable and DTC B28C7 is detected by the EyeSight Stereo Camera Assembly.

STEP 1: Is DTC B28C7 detected?

YES: Proceed to Step 2.

NO: Continue diagnosis as per the applicable Service Manual.

STEP 2: Check the Fault Freeze Frame Data (FFD).

Status	Code	Description/ Failure part	Time Stamp		Occurrence Date	FFD
Current	B28C7	Fan Motor Speed	xxx	xxx	2022/8/1	

DTC B28C7 is detected

Click

Failure Detail Code	00EB
Failure Detail Code	00EC

Is the Failure Detail Code (FDC) 00EC (FAN Speed is low) or 00EB (B28C7 detected during high temperature HALT)?

YES: Perform the reprogramming outlined in Step 3.

NO: Continue diagnosis as per the applicable Service Manual.

STEP 3: Review the prerequisites/battery charging information provided in the **APPENDIX A** section of this document. Connect the charger to the vehicle and set to Power Supply mode.

STEP 4: Using Subaru Select Monitor (SSM), confirm the battery voltage is 13.5 Volts and the Camera Temperature is less than 176°F (80°C). These prerequisites **MUST** be met prior to continuing.

Item	Value	Unit	Maximum	Minimum	Average
Battery Voltage	13.5	V	12.10	12.03	12.07
Camera Temperature (Current)	86.0	°F	86.0	86.0	86.0

Continued...

STEP 5: Using the Subaru Select Monitor 5-R (SSM5-R), confirm the following EyeSight Stereo Camera Assembly information:

- The reprogramming column reads “**Available.**”

NOTE: Additional information regarding SSM5-R can be found in **TSB 14-28-21R**.

Applicable System	CID / ROMID / SWID	Reprogramming availability Campaign	Reprogramming availability Other	Equipped	Communication
Airbag	9318260001	Not Available	Not Available	Equipped	Communicating
Central Gateway	4233313130	Not Available	Not Available	Equipped	Communicating
Telematics	3400220680	Not Available	Not Available	Equipped	Communicating
Engine	LHBKF00H00G	Not Available	Not Available	Equipped	Communicating
EyeSight	xxxxxxxxxxxxxxxxxxxx	Not Available	Available	Equipped	Communicating
Blind Spot Detection/Rear Cross Traffic Alert	LH: 0000720000 RH: 0000720000	Not Available	Not Available	Equipped	Communicating
Keyless Access with Push Button Start(Collation)	0001001004	Not Available	Not Available	Equipped	Communicating
Keyless Access with Push Button Start(Power Supply)	0002001104	Not Available	Not Available	Equipped	Communicating
Brake Control	A120241700	Not Available	Not Available	Equipped	Communicating

STEP 6: Are new reprogramming files available?

YES: Proceed to the next Step.

NO: Reprogramming is not required. Diagnosis must be performed as per the applicable Service manual.

STEP 7: Reprogram the EyeSight Stereo Camera Assembly following the normal SSM5-R procedure and confirm the CID/ROMID/SWID has changed to the following:

- **Legacy Outback ONLY:** The NEW CID/ROMID is **1A210800430E21080138**.
- **Ascent ONLY:** The NEW CID/ROMID is **0521081E4C0E21080138**.

Was the reprogramming procedure successful?

YES: The procedure is completed. There is no need to recalibrate the EyeSight camera after reprogramming.

NO: Review the Error Code information in **APPENDIX B**. Perform up to two more reprogramming attempts. If the reprogramming procedure continues to be unsuccessful, replace the EyeSight Camera Stereo Assembly.

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SYMPTOM #2

The EyeSight system enters into a temporary halt mode with an E5 halt code detected by the EyeSight Stereo Camera Assembly.

STEP 1: Does any of the Subaru Select Monitor data meet the criteria outlined below?

YES: Proceed to the next Step.

NO: Perform the HALT Code E5 diagnosis as per the applicable Service Manual. Refer to STIS: DIAGNOSTICS > EyeSight (DIAGNOSTICS) > EyeSight HALT Code > E5

SSM Data Monitor Item	Criteria (Range)	Criteria (Specific Value)
EyeSight Temporary 22 Count	More than 1 (one)	1, 2, 3 ...
EyeSight Temporary 23 Count	More than 1 (one)	1, 2, 3 ...
Camera Status Check 3	Within the range of 3C to 56	Any of the following values: 3C, 3D, 3E, 3F, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50, 51, 52, 53, 54, 55, 56
	Within the range of FFC4 to FFAA	Any of the following values: FFC4, FFC3, FFC2, FFC1, FFC0, FFBF, FFBE, FFBD, FFBC, FFBB, FFBA, FFB9, FFB8, FFB7, FFB6, FFB5, FFB4, FFB3, FFB2, FFB1, FFB0, FFAF, FFAE, FFAD, FFAC, FFAB, FFAA
Camera Status Check 4	Within the range of 3C to 56	Any of the following values: 3C, 3D, 3E, 3F, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50, 51, 52, 53, 54, 55, 56
	Within the range of FFC4 to FFAA	Any of the following values: FFC4, FFC3, FFC2, FFC1, FFC0, FFBF, FFBE, FFBD, FFBC, FFBB, FFBA, FFB9, FFB8, FFB7, FFB6, FFB5, FFB4, FFB3, FFB2, FFB1, FFB0, FFAF, FFAE, FFAD, FFAC, FFAB, FFAA

STEP 2: Review the prerequisites/battery charging information provided in the **APPENDIX A** section of this document. Connect the charger to the vehicle and set to Power Supply mode.

STEP 3: Using Subaru Select Monitor (SSM), confirm the battery voltage is 13.5 Volts and the Camera Temperature is less than 176°F (80°C). These prerequisites **MUST** be met prior to continuing.

Item	Value	Unit	Maximum	Minimum	Average
<input type="checkbox"/> Battery Voltage	13.5	V	12.10	12.03	12.07
<input type="checkbox"/> Camera Temperature (Current)	86.0	°F	86.0	86.0	86.0

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STEP 4: Using the Subaru Select Monitor 5-R (SSM5-R), confirm the following EyeSight Stereo Camera Assembly information:

- The reprogramming column reads “**Available.**”

NOTE: Additional information regarding SSM5-R can be found in **TSB 14-28-21R**.

Applicable System	CID / ROMID / SWID	Reprogramming availability Campaign	Reprogramming availability Other	Equipped	Communication
Airbag	9318260001	Not Available	Not Available	Equipped	Communicating
Central Gateway	4233313130	Not Available	Not Available	Equipped	Communicating
Telematics	3400220680	Not Available	Not Available	Equipped	Communicating
Engine	LHBKF00H00G	Not Available	Not Available	Equipped	Communicating
EyeSight	xxxxxxxxxxxxxxxxxxxx	Not Available	Available	Equipped	Communicating
Blind Spot Detection/Rear Cross Traffic Alert	LH: 0000720000 RH: 0000720000	Not Available	Not Available	Equipped	Communicating
Keyless Access with Push Button Start(Collation)	0001001004	Not Available	Not Available	Equipped	Communicating
Keyless Access with Push Button Start(Power Supply)	0002001104	Not Available	Not Available	Equipped	Communicating
Brake Control	A120241700	Not Available	Not Available	Equipped	Communicating

STEP 5: Are new reprogramming files available?

YES: Proceed to the next Step.

NO: Reprogramming is not required. Diagnosis must be performed as per the applicable Service manual.

STEP 6: Reprogram the EyeSight Stereo Camera Assembly following the normal SSM5-R procedure and confirm the CID/ROMID/SWID has changed to the following:

- **Legacy Outback ONLY:** The NEW CID/ROMID is **1A210800430E21080138**.
- **Ascent ONLY:** The NEW CID/ROMID is **0521081E4C0E21080138**.

Was the reprogramming procedure successful?

YES: The procedure is completed. There is no need to recalibrate the EyeSight camera after reprogramming.

NO: Review the Error Code information in **APPENDIX B**. Perform up to two more attempts. If the reprogramming procedure continues to be unsuccessful, replace the EyeSight Camera Stereo Assembly as per the applicable Service Manual using p.n. 87501AN11C (for Outback & Legacy) or p.n. 87501XC10C (for Ascent).

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SYMPTOM #3:


DTC B28A6 (Internal Stereo Camera Communication 1) is detected by the EyeSight Stereo Camber Assembly.

STEP 1: Is DTC B28A6 detected?


YES: Proceed to Step 2.

NO: Continue diagnosis as per the applicable Service Manual.

STEP 2: Check the Fault Freeze Frame Data (FFD).

Status	Code	Description/ Failure part	Time Stamp		Occurrence Date	FFD
Current	B28A6	EyeSight Communication	xxx	xxx	2022/8/1	

DTC B28A6 is detected

Click 

Failure Detail Code	C213
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Is the Failure Detail Code (FDC) C213 (Unauthorized address access within image recognition software)?

YES: Proceed to the next Step.

NO: Continue diagnosis as per the applicable Service Manual.

STEP 3: Review the prerequisites/battery charging information provided in the **APPENDIX A** section of this document. Connect the charger to the vehicle and set to Power Supply mode.

STEP 4: Using Subaru Select Monitor (SSM), confirm the battery voltage is 13.5 Volts and the Camera Temperature is less than 176°F (80°C). These prerequisites **MUST** be met prior to continuing.

	Item	Value	Unit	Maximum	Minimum	Average
<input type="checkbox"/>	Battery Voltage	13.5	V	12.10	12.03	12.07
<input type="checkbox"/>	Camera Temperature (Current)	86.0	°F	86.0	86.0	86.0

STEP 5: Using the Subaru Select Monitor 5-R (SSM5-R), confirm the following EyeSight Stereo Camera Assembly information:

The reprogramming column reads “**Available.**”

Continued...

NOTE: Additional information regarding SSM5-R can be found in **TSB 14-28-21R**.

The screenshot shows the SSM5 interface with the following table:

Applicable System	CID / ROMID / SWID	Reprogramming availability Campaign	Reprogramming availability Other	Equipped	Communication
Airbag	9318260001	Not Available	Not Available	Equipped	Communicating
Central Gateway	4233313130	Not Available	Not Available	Equipped	Communicating
Telematics	3400220680	Not Available	Not Available	Equipped	Communicating
Engine	LHBKF00H00G	Not Available	Not Available	Equipped	Communicating
EyeSight	XXXXXXXXXXXXXXXXXXXX	Not Available	Available	Equipped	Communicating
Blind Spot Detection/Rear Cross Traffic Alert	LH: 0000720000 RH: 0000720000	Not Available	Not Available	Equipped	Communicating
Keyless Access with Push Button Start(Collation)	0001001004	Not Available	Not Available	Equipped	Communicating
Keyless Access with Push Button Start(Power Supply)	0002001104	Not Available	Not Available	Equipped	Communicating
Brake Control	A120241700	Not Available	Not Available	Equipped	Communicating

STEP 6: Are new reprogramming files available?

YES: Proceed to the next Step.

NO: Reprogramming is not required. Diagnosis must be performed as per the applicable Service manual.

STEP 7: Reprogram the EyeSight Stereo Camera Assembly following the normal SSM5-R procedure and confirm the CID/ROMID/SWID has changed to the following:

- **Legacy Outback ONLY:** The NEW CID/ROMID is **1A210800430E21080138**.
- **Ascent ONLY:** The NEW CID/ROMID is **0521081E4C0E21080138**.

Was the reprogramming procedure successful?

YES: The procedure is completed. There is no need to recalibrate the EyeSight camera after reprogramming.

NO: Review the Error Code information in **APPENDIX B**. Perform up to two more attempts. If the reprogramming procedure continues to be unsuccessful, replace the EyeSight Camera Stereo Assembly as per the applicable Service Manual using p.n. 87501AN11C (for Outback & Legacy) or p.n. 87501XC10C (for Ascent).

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WARRANTY / CLAIM INFORMATION:

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

Labor Description	Labor Operation #	Labor Time	Fail Code
EYESIGHT SYSTEM REPROGRAMMING	B067-728	0.8H	ZQW-48
REPROGRAMMING SECOND ATTEMPT	C455-299	0.4H	
EYESIGHT STEREO CAMERA R&R AND CALIBRATION/ ADJUST	C067-713	1.4H	

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.

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.

PREREQUISITS:

1. Confirm there are no faults within the EyeSight® system. If there are any faults, they must be diagnosed, repaired, and cleared prior to reprogramming. Fully exit SSM prior to starting FlashWrite 2.
2. Apply the Electronic Parking Brake (EPB). Switch the ignition switch to the “ON” position (engine off). Using the gear selector lever, set the vehicle in the Neutral (N) range. Wait at least 5 minutes after complete.

CRITICAL:

- If the gear selector is in the Park (P) range, it is possible for the ignition switch to turn off automatically while reprogramming after approximately 60 minutes. This will cause the reprogramming procedure to fail.
- **DO NOT** operate SSM during reprogramming.
- **DO NOT** have the engine running during reprogramming.
- Confirm the PC being use for reprogramming is connected to a known good power source. Turn off any screen saver settings. Make sure the PC is not in power saving mode and is set to the normal power mode.
- Confirm all electrical loads are switched off such as climate control, seat heater, audio system, etc.
- Connect a Midtronics DCA-800 or GR8-100 battery charger to the vehicle, utilize the Power Supply Mode feature to supply a stable 13.5 volts.

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.

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- 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.
- 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.

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.

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.

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APPENDIX B

If an error code is displayed during reprogramming, follow the corrective action for each error code below.

Error code	Type of Error	Corrective Action
4510	The applicable unit is not in a state for reprogramming execution.	Check if the camera temperature is less than 60 ° C and the battery voltage is more than 12V and less than 13.5V. After IG OFF, put the system under conditions described above and execute the reprogramming again.
4511 4512	The data transfer cannot start.	<p>Turn OFF the ignition switch and wait for 10 seconds.</p> <p>Repeat the reprogramming procedure.</p> <p><u>DO NOT close the reprogramming software at this time.</u></p>
4513	An error occurred during the data transfer.	
4514	An error occurred when data transmission was completed.	
4515 4516	An error occurred during the check after data transfer.	
4525	A communication error has occurred between the PC and the vehicle.	

IMPORTANT: If the reprogramming procedure continues to be unsuccessful after a total of 3 attempts, replace the EyeSight Camera Stereo Assembly and perform the reprogramming procedure.