

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 PROGRAM BULLETIN

APPLICABILITY: 2005MY PZEV Spec. Subaru Legacy and Outback
SUBJECT: Engine Control Module (ECM) Reprogramming

NUMBER: WVH-18R
DATE: June 2009
REVISED: 02/17/17

This Campaign only applies to vehicles with motor vehicle registration in the States of California, Massachusetts, Maine, New York and Vermont. For affected vehicles registered in any other state, see Service Program WVI-19.

INTRODUCTION

Subaru of America, Inc. (SOA) has determined that vehicles affected by this Service Program require ECM reprogramming along with catalytic converter efficiency testing and possible replacement.

Under certain unique driving patterns, such as repeated acceleration and deceleration and/or continuous uphill driving at higher speeds (about 75 mph), the catalytic converters of affected vehicles may develop high internal temperatures that exceed design parameters. If left uncorrected, this condition may eventually degrade the efficiency of the catalytic converters. (The "CHECK ENGINE" light will illuminate to alert the driver if catalytic converter efficiency has degraded beyond an acceptable level and the vehicle may be releasing air pollutants which may exceed California standards.) To prevent this condition, a modification to the Engine Control Module software logic has been developed that will improve management of temperatures within the catalytic converters.

This condition is a software issue and has no impact on vehicle drivability.

AFFECTED VEHICLES

2005 MY Subaru Legacy and Outback with CAL PZEV Spec Emission System and motor vehicle registration in the States of California, Massachusetts, Maine, New York or Vermont only.

Affected vehicles are identified in the following VIN range chart. **NOTE:** Prior to performing repairs, confirm coverage for potentially affected vehicles by using the Vehicle Coverage Inquiry in the Dealer Communication System (DCS).

| MODEL | | FROM | TO |
|--------|-----------------|----------|----------|
| Legacy | 2005MY Sedan | 5*200006 | 5*230146 |
| | Wagon / Outback | 5*300006 | 5*393924 |

* Various characters may occupy this position of the VIN.

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|--|---|
| <p>CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.</p> <p>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.</p> | <p style="text-align: center;">SUBARU OF AMERICA, INC. IS "ISO 14001 COMPLIANT"</p> <p>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.</p> |
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OWNER NOTIFICATION

SOA will prepare and mail an Owner Notification Letter to owners of affected vehicles on or around June 15, 2009.

A copy of the Owner Notification Letter is included at the end of this bulletin.

DEALER PROGRAM RESPONSIBILITY

Dealers are to promptly service all vehicles subject to this service program at no charge to the vehicle owner regardless of mileage, age of the vehicle, or ownership.

For affected vehicles sold after the date on the dealer's computer list, dealers are to contact those owners and provide them with a copy of the owner notification letter. They should also arrange to make the required correction according to the instructions in the service procedure section of this bulletin.

Dealers are also to promptly perform the applicable service procedures defined in this bulletin to correct all affected vehicles in their inventory (new, used, demo). Additionally, whenever a vehicle subject to this service program is taken into dealer new or used inventory, or is in the dealership for service, necessary steps should be taken to ensure the service program correction has been made before selling or releasing the vehicle.

REPAIR PARTS

There is only a *small possibility* that catalytic converter replacement will be required. Part replacement is only necessary when indicated by the Catalytic Converter Efficiency Test Procedure results described in the Service Procedure section of this bulletin. In order to maintain an adequate part supply, SOA requests that Dealers only order parts necessary to supply anticipated demand -- about 15% of your affected VIN list.

| PART DESCRIPTION | PART NUMBER |
|-----------------------------------|-------------|
| Pipe Assy. RH AT | 44101AG17A |
| Pipe Assy. LH AT | 44101AG19A |
| Pipe Assy. RH MT | 44101AG18A |
| Pipe Assy. LH MT | 44101AG20A |
| WVH18 WVI19 GSKT Kit RH | 10105AB300 |
| WVH18 WVI19 GSKT Kit LH and/or RH | 10105AB310 |

SPECIAL TOOLS

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Vehicle ECM reprogramming will require the following:

Subaru Diagnostic System (SDS)

- SDS Toughbook
- Subaru Select Monitor III (SSMIII Application Software)
- Subaru Diagnostic Interface Box (SDI)
- USB Data Link Cable and Reprogramming Cable.

Note: If you require assistance with using the Subaru Diagnostic System (SDS), use the “Help” function icon, which will allow you access the tutorial information.

SERVICE PROCEDURE

This service procedure will involve completing the following three (3) steps:

- 1) Check ECM memory for diagnostic trouble codes. Clear any codes found after diagnosis is completed.
- 2) Perform Catalytic Converter Efficiency Testing. Replace applicable pipe assembly only if indicated during Efficiency Test Procedure.
- 3) Reprogram ECM with updated Pack file.

1) Check ECM memory for diagnostic trouble codes.

Using the appropriate Subaru Diagnostics System (SDS) components, check for stored diagnostic trouble codes as follows:

Select the Select Monitor Icon from the SDS Graphical User Interface (GUI).

The **Main Menu** will appear.

- 1) Select **Each System Check**.
- 2) Select **Engine Control System**.
- 3) Select **Diagnostic Code(s) Display**.
- 4) Select **Memorized Diagnostic Code(s)**.
- 5) Search results will appear; proceed as follows:

If no codes are found, proceed to the “Catalytic Converter Efficiency Test Procedure” section of this bulletin, beginning on page 4.

If trouble codes are found, refer to the following table for the correct repair procedure. Make any necessary repairs and clear all codes prior to reprogramming the ECM.

| DIAGNOSTIC TROUBLE CODE | REPAIR PROCEDURE |
|--|---|
| P0420 | Proceed to step “2”, Catalytic Converter Efficiency Test Procedure on page 4. |
| Any other code, or combination of codes, not listed above. | Refer to applicable service manual for additional diagnostic procedures. After completing repairs, clear codes and proceed to step “2”, Catalytic Converter Efficiency Test Procedure on page 4. |

2) Catalytic Converter Efficiency Test Procedure

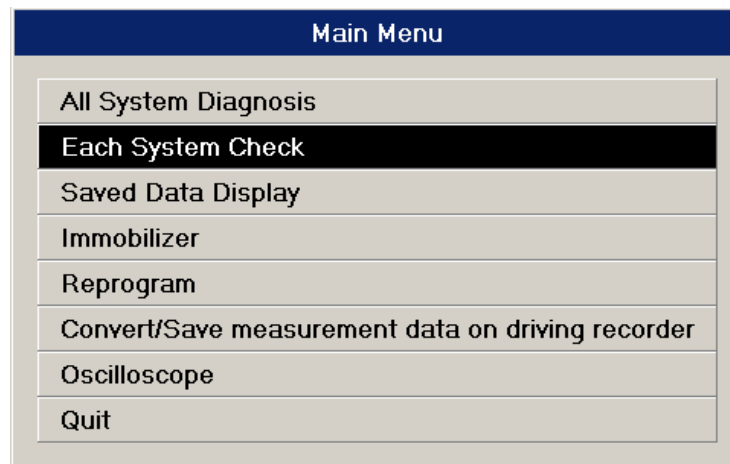
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Note: The following procedure only applies to vehicles affected by this Service Program and should not be used for any other models.

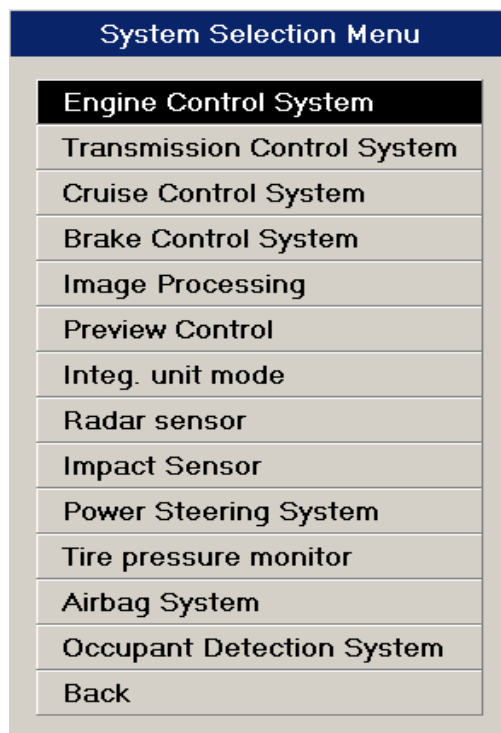
Check for right and/or left front catalyst deterioration using the SSMIII as follows:

- Drive the vehicle for more than 3 minutes at 45 mph or less to warm up the catalytic converters.
- Increase the vehicle speed to 50 through 60 mph and drive at least 5 minutes maintaining a steady throttle. (It is not necessary, but we recommend using the cruise control to maintain a steady throttle.)
- **Prior to turning the ignition off**, follow the procedure below to access the “catalyst deterioration index” readings.

1. From main menu of SSMIII, select the Each System Check

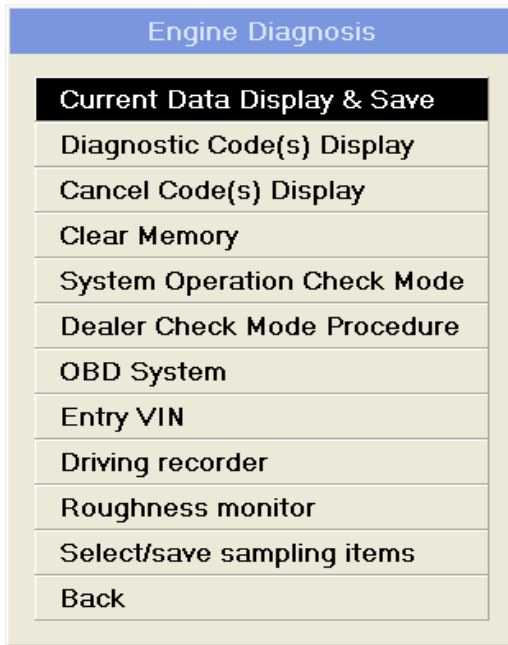


2. Select the Engine Control System



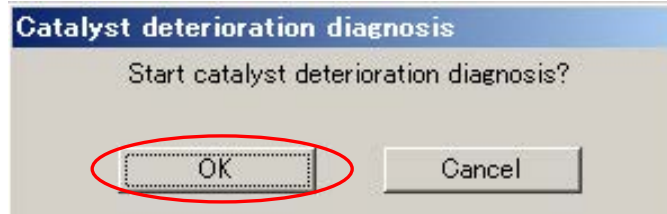
3. The following menu window will be displayed

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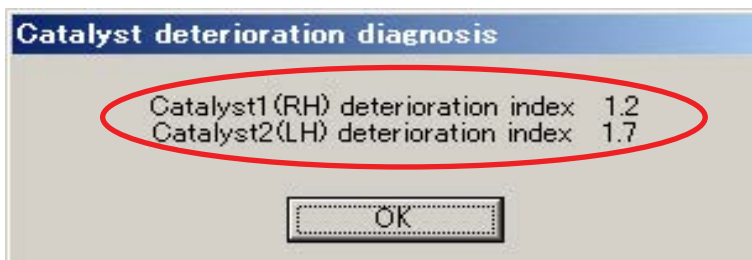
4. At this screen, press the “Alt” + “Ctrl” + “C” Keys at the same time on the SDS Toughbook.

5. The following window should be displayed.



6. Record the following information on the R.O.: Catalyst RH= ?? and LH= ??, indexes, approximate vehicle speed used during test drive, and date the data was recorded (RO date). This information may be required at the time of claim submission.

Note: If the catalyst readings (RH or LH) are zero, something during the 50mph driving cycle occurred to stop the catalyst test. This could be from not maintaining a speed over 50mph, not keeping the throttle steady, etc. Repeat the driving test cycle.



Record these numbers.
Then, Press OK.

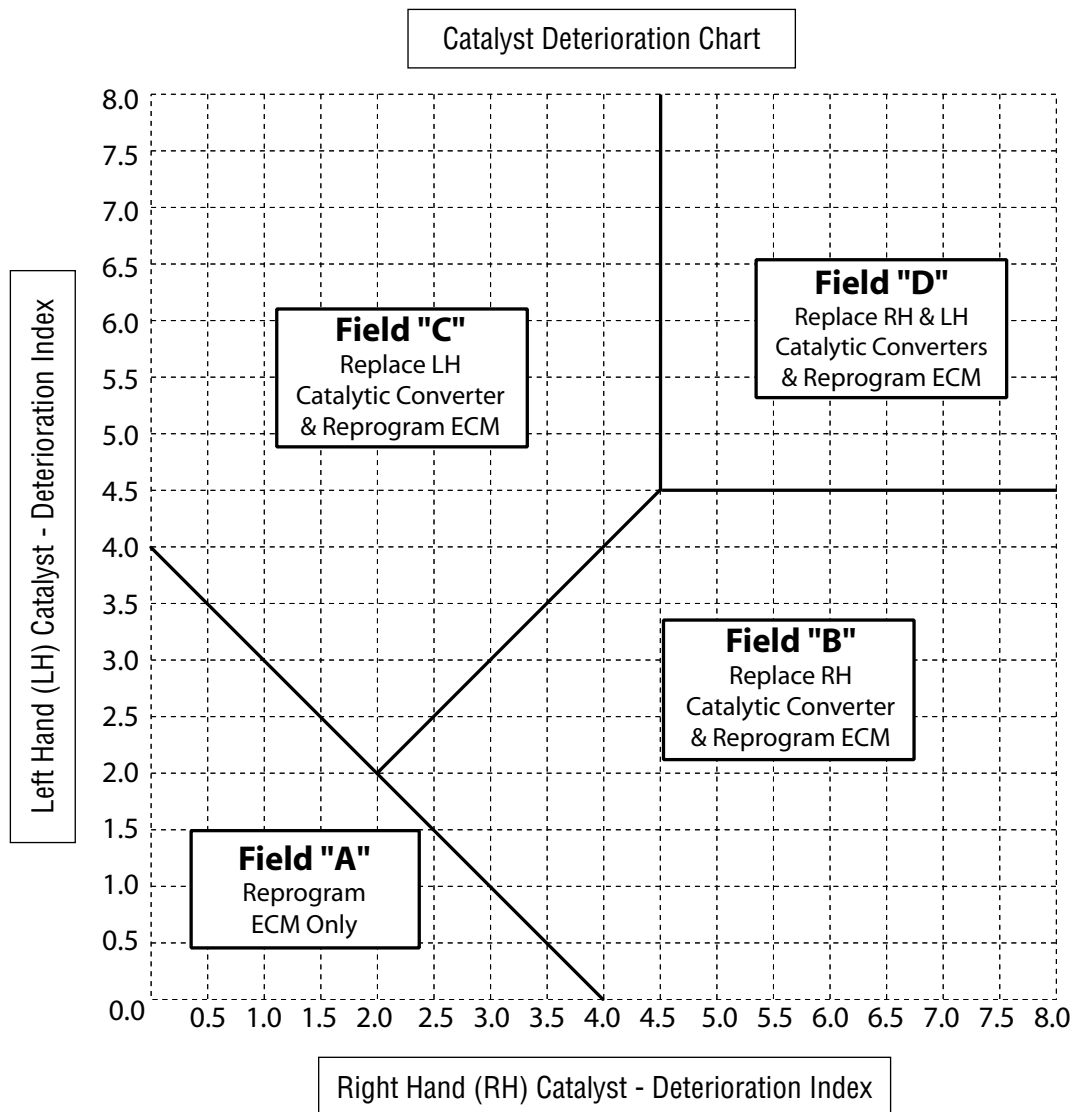
Once the deterioration index for catalyst 1 (RH) and catalyst 2 (LH) have been determined, proceed as follows:

Plot the intersection of the RH and LH deterioration indexes in the appropriate position of the following Catalyst Deterioration Chart. Determine the correct repair procedure identified in the corresponding field found on the chart and proceed accordingly. In all cases, the ECM should be reprogrammed with the updated Pack File.

Note: If the index coordinates intersect directly on the line between Field's proceed as follows:

- “A” and “B”, Reprogram ECM only.
- “A” and “C”, Reprogram ECM only.
- “B” and “C”, replace right catalytic converter only.
- “B” and “D”, replace right catalytic converter only.
- “C” and “D”, replace left catalytic converter only.

NOTE: Catalytic converter(s) should ONLY be replaced when indicated during the Catalytic Converter Efficiency Test Procedure. They should not be replaced for any other reason.



3) ECM Reprogramming Instructions

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Note: ECM reprogramming should be performed after finishing all the procedures below:

- 1) Diagnosis of trouble codes.
- 2) Testing of catalytic converter efficiency.
- 3) Replacement of applicable Pipe Assy and clearing trouble codes, only if necessary.

Confirm your SSMIII contains the April 2009 software update.

Upgrade Version Numbers

- Software: 1.18.36.11 or higher
- Interface Box: 1.6.4 or higher
- Interface Box CF Card: 1.2.45 or higher

Use the following Pack file to reprogram the ECM:

| VEHICLE | TRANSMISSION | NEW ECM / PACK FILE PART NUMBER |
|---|--------------|---------------------------------|
| 2005MY Legacy & Outback 2.5L NA CA Spec. PZEV | MT | 22611AH92G.pak |
| 2005MY Outback 2.5L NA CA Spec. PZEV | AT | 22611AH94F.pak |
| 2005MY Legacy 2.5L NA CA Spec. PZEV | AT | 22611AJ49F.pak |

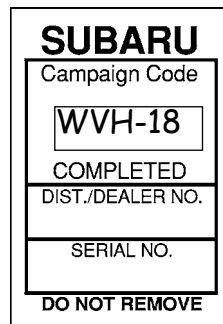
STATE EMISSION TESTING ADVISORY

After ECM reprogramming, the OBD system’s readiness code monitors will set to “incomplete”. Normally, the vehicle needs to be driven under a variety of conditions before the readiness code monitors will indicate “complete”. (See State I/M Program Advisory Bulletin number 11-72-04, dated 8/4/04 for details.)

SERVICE PROGRAM IDENTIFICATION LABEL

Type or print the necessary information on a Service Program identification label. The completed label should be attached to the vehicle’s upper radiator support.

A quantity of labels has been sent to each dealer along with their affected VIN list. Additional labels are available through the Customer Dealer Services Department (CDS) at 1-866- 782-2782.



CALIFORNIA “VEHICLE EMISSION RECALL - PROOF OF CORRECTION”

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CERTIFICATE

The California Air Resources Board and the Department of Motor Vehicles Registration/ Recall Program requires that all emission related Recall/Campaign or Service Program repairs be completed before a vehicle registration is renewed. Please provide owners of vehicles registered in the state of California a completed "Vehicle Emission Recall - Proof of Correction" certificate. Vehicle owners should be advised to retain this certificate because the California Department of Motor Vehicles may require they provide proof this service program repair has been completed.

| Vehicle Emission Recall - Proof of Correction | | | | |
|---|-----------------------------------|------------------------------|-----------|-------------------------------|
| License Number | Make | Year Model | Body Type | Vehicle Identification Number |
| Manufacturer <u>Subaru of America, Inc.</u> | | Recall Number _____ | | |
| The above described vehicle has been repaired, modified and/or equipped with new emission control devices to meet applicable California Emission Control Laws | | | | |
| Dealer's Name | | Address, City, State and Zip | | |
| Date | Dealership's Authorized Signature | | | |
| | x | | | |
| Return this certificate to DMV <u>only</u> when required-otherwise retain for your records. | | | | |

CLAIM REIMBURSEMENT AND ENTRY PROCEDURES

Credit to perform this Service Program will be based on the submission of properly completed repair order information. Dealers may enter the applicable claim information through their Dealer Communications System.

If catalytic converter replacement was necessary, enter the Catalyst 1 (RH) and 2 (LH) deterioration index readings in the comments field at the time of claim submission.

| CLAIM TYPE | CAMPAIGN CODE | LABOR / TIME | LABOR DESCRIPTION |
|------------|---------------|-----------------|---|
| RC | WVH-18 | B 145-680 / 1.0 | Catalytic converter efficiency testing and ECM reprogramming. |
| | | C 145-682 / 0.6 | Replace left front catalytic converter, add. |
| | | C 145-681 / 0.6 | Replace right front catalytic converter, add. |
| | | C 145-684 / 0.8 | Replace both left and right front catalytic converters, add. |

OWNER NOTIFICATION LETTER

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Service Program WVH-18
Engine Control Module Reprogramming
Vehicles Registered in the States of
CA, MA, ME, NY or VT.

June 2009

Dear Subaru Owner:

We would like to thank you for selecting a 2005 Subaru Legacy or Outback with a 2.5 Liter engine equipped with a California Partial Zero Emission Vehicle (PZEV) emission system. At Subaru, we take pride in our products and are committed to your continued satisfaction.

During a quality review, we discovered that under certain unique driving patterns, such as repeated acceleration and deceleration and/or continuous uphill driving at higher speeds (about 75 mph), your vehicle's catalytic converters may develop high internal temperatures that exceed design parameters. If left uncorrected, this condition may eventually degrade the efficiency of the catalytic converters. (The "Check Engine" light will illuminate to alert you if the catalytic converter efficiency has degraded beyond an acceptable level and if your vehicle may be releasing air pollutants which may exceed California standards.) To prevent this condition, Subaru has developed a modification to the Engine Control Module software logic that will improve management of temperatures within the catalytic converters. This software change will not adversely affect the performance of your vehicle.

WHAT WE ARE ASKING YOU TO DO PROMPTLY

We suggest that you schedule an appointment with your Subaru Dealer as soon as possible to have your vehicle's catalytic converter efficiency tested and the Engine Control Module software reprogrammed. The approximate time to perform this inspection and update is one hour. Additionally, if the efficiency level of your vehicle's catalytic converters is found to be below a predetermined level, one or both catalytic converters may require replacement. This will add approximately 45 minutes to the estimated repair time. It may be necessary for you to leave your car for a longer period on the day of your scheduled appointment to allow your dealer flexibility in scheduling other appointments. Your Subaru dealer will perform this repair at no cost to you.

Please present this letter to your Subaru Dealer on the day of your service appointment.

CALIFORNIA REGISTERED OWNERS

The California Air Resources Board requires that emission related campaigns be completed prior to California's vehicle registration renewal process; without this repair, you will not be able to register your vehicle during your next annual registration. Upon completion of the services required by this campaign, your California dealer will complete and provide you a "Proof of Correction Certificate." If required, present the certificate to the California Department of Motor Vehicles (the "DMV") when renewing your California registration as proof of campaign

Continued...

completion. If the DMV does not request the certificate, we recommend that you keep it for your records.

In addition, the State of California requires that every vehicle must pass an emission test (SMOG Check) every two years and before it is sold. Without the free service we are providing, your vehicle may be more likely to fail this test and require that you make costly repairs.

CHANGED YOUR ADDRESS OR SOLD YOUR SUBARU?

If you have changed your address, or if you have sold your Subaru, please complete the enclosed prepaid postcard and mail it to us.

IF YOU NEED FURTHER ASSISTANCE

To locate your nearest Subaru Dealer, you can access our web site at www.Subaru.com and go to the dealer locator function. Or, you may call us at 1-800SUBARU3 (1-800-782-2783) during normal business hours. Please call or write (using the address at the top of this letter) us immediately if the dealer fails or is unable to complete this procedure free of charge.

Your continued satisfaction with Subaru is important to us. This update is intended to assure your vehicle's optimal performance. We appreciate your understanding in this matter and regret any inconvenience this may cause you.

Sincerely,
Subaru of America, Inc.

Notice to Lessors

The lessor of a vehicle who receives this letter is requested to provide a copy of it to the vehicle lessee(s) within 10 business days from receipt. The lessor should also keep a record of the lessee(s) to whom this letter is sent, the date sent, and the applicable vehicle identification number (VIN). (For the purposes of this section, a lessor means a person or entity that in the last twelve months prior to the date of this notification has been the owner, as referenced on the vehicle's title, of any five or more leased vehicles. A leased vehicle is a vehicle leased to another person for a term of at least four months.)

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