

ATTENTION:
GENERAL MANAGER
PARTS MANAGER
CLAIMS PERSONNEL
SERVICE MANAGER

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



QUALITY DRIVEN® SERVICE

SERVICE PROGRAM BULLETIN

APPLICABILITY: 2007-2008MY CA PZEV Spec.
Subaru Forester
SUBJECT: Engine Control Module (ECM)
Reprogramming & Fuel Tank One-Way
Fuel Valve Removal

NUMBER: WVN-24R
DATE: October 2009
REVISED: 02/06/17

INTRODUCTION

Subaru of America, Inc. (SOA) has determined that vehicles affected by this Service Program have two conditions that may adversely affect the performance of the catalytic converter. To correct these conditions, described below, affected vehicles require (1) ECM reprogramming and (2) permanent removal of the fuel tank one-way fuel valve.

Condition One (1). Under certain severe driving patterns, such as high speed highway/up-hill driving and/or accelerating with high engine revolutions, the efficiency of an affected vehicle's catalytic converter may begin to degrade beyond design parameters. To prevent this condition, Subaru has developed a modification to the Engine Control Module software logic that will improve management of the catalytic converter. This software change will not adversely affect the vehicle's performance.

Condition Two (2). The one-way fuel valve is located at the base of a small sub-chamber contained in the fuel tank and may not perform as intended. When the tank's fuel level drops below 1½ gallons, the sub-chamber is intended to provide a fuel reserve for the fuel pump during vehicle cornering. However, the one-way valve may inadvertently act in such a way as to prevent fuel from refilling the sub-chamber, failing to provide a reserve. If this were to happen, the fuel pump could momentarily draw air causing the engine to experience a sporadic misfire condition resulting in possible damage to the vehicle's catalytic converter.

If either or both conditions were to cause the catalytic converter efficiency to degrade beyond an acceptable level, the "Check Engine" light on the vehicle's instrument panel will illuminate to alert the driver that the vehicle may be releasing air pollutants that exceed Federal or California emission standards.

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**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"**

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.

AFFECTED VEHICLES

- 2007-2008 MY Subaru Forester with CAL PZEV Spec Emission System

Affected vehicles are identified in the VIN range chart below. **NOTE: Prior to performing repairs, confirm coverage for potentially affected vehicles by using the Vehicle Coverage Inquiry function at Subarunet.com.**

MODEL		FROM	TO
Forester	2007	7*700002	7*748358
	2008	8*700009	8*726415

* Various Characters may occupy this position

OWNER NOTIFICATION

SOA will prepare and mail an Owner Notification Letter to owners of affected vehicles on or around January 4, 2010.

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.

PARTS INFORMATION

SOA will automatically pre-order and ship each dealer a supply of repair parts equivalent to 20% of their affected vehicle count. Dealers will need to order any additional supply through normal parts ordering procedures.

DESCRIPTION	PART NUMBER
Gasket – Fuel Pump Housing	42025SA000

Also, for those vehicles requiring catalytic converter replacement in association with this

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Service Program, Subaru has prepared the following gasket/hardware kit. Please note that the kit also includes the fuel pump housing gasket.

DESCRIPTION	PART NUMBER
WVN24 Gasket Kit*	10105AB350

*The WVN24 Gasket Kit contains the following components:

NO.	PART DESCRIPTION	PART NUMBER	Q'TY
1	GASKET F	44022AA020	2
2	GASKET-EXHAUST	44616AA030	1
3	FLANGE NUT	-902370009	6
4	NUT-8x7.5	-802008270	2
5	BOLT	44059AA010	2
6	FLANGE NUT	-902370010	3
7	GASKET	44011AE030	1
8	BOLT & WASH M10	-901250076	1
9	SPRING	44044AA010	2
10	GASKET	42025SA000	1

SPECIAL TOOLS

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 to access the tutorial information.

Fuel Tank One-way fuel valve removal will require the following:

Fuel Line Quick Connector Tool: Part number 42099AE000

SERVICE PROCEDURE

This service procedure will involve completing the following two (2) steps:

- 1) Check ECM memory for diagnostic trouble codes.
- 2) Reprogram ECM with updated Pack file.

1) Check ECM memory for diagnostic trouble codes.

Using the appropriate Subaru Diagnostics System (SDS) components, connect to the vehicle’s Diagnostic Link Connector (DLC) located in the vehicle’s lower left dash panel.

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

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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 “ECM Reprogramming Instructions” section of this bulletin, beginning on the following page.

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	Replace Catalytic Converter(s).
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 reprogram the ECM.

2) ECM Reprogramming Instructions

Note: Vehicles equipped with automatic transmission must be placed in “Park” (P) during the reprogramming process.

Confirm that your SSMIII contains the October 2009 or newer software update. Use the following Pack file to reprogram the ECM:

MODEL YEAR	VEHICLE	TRANSMISSION	NEW ECM / PAK FILE PART NUMBER
2007MY	Forester 2.5L NA CA Spec. PZEV	A/T	22611AM324.pak
	Forester 2.5L NA CA Spec. PZEV	M/T	22611AM314.pak
2008MY	Forester 2.5L NA CA Spec. PZEV	A/T	22611AN084.pak
	Forester 2.5L NA CA Spec. PZEV	M/T	22611AN073.pak

FUEL PUMP HOUSING & ONE-WAY FUEL VALVE REMOVAL

Note: Removal of the fuel tank one-way fuel valve is only necessary on certain 2007 and 2008 model year vehicles. Confirm this procedure is necessary before proceeding.

WARNING:

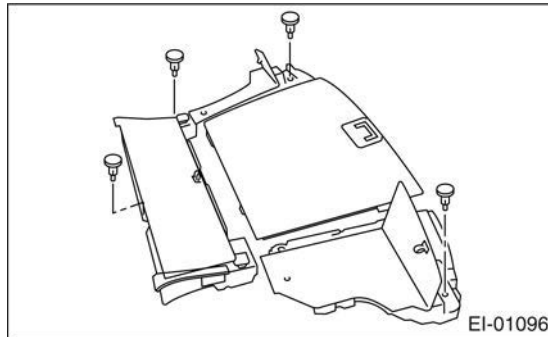
- Place “Caution” signs near the work area indicating “No Fire” or “No Smoking”.
- Be careful not to spill fuel on the floor.
- Make sure there is no more than half a tank of fuel in fuel tank.

CAUTION: Use extreme care while performing the following steps. Gasoline contained in the fuel tank is extremely flammable. Repairs should only be performed in a well ventilated area.

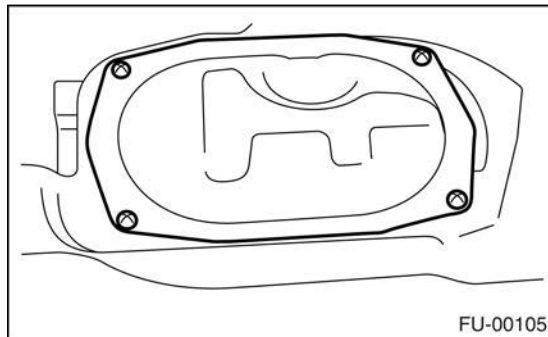
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- **Do not use electrical devices, such as drop lights, or other items that could cause a spark.**
- **Do not allow smoking or other activities in the work area that could result in ignition of fuel vapors.**
- **Be sure the vehicle's battery is disconnected, as indicated in the following instructions.**

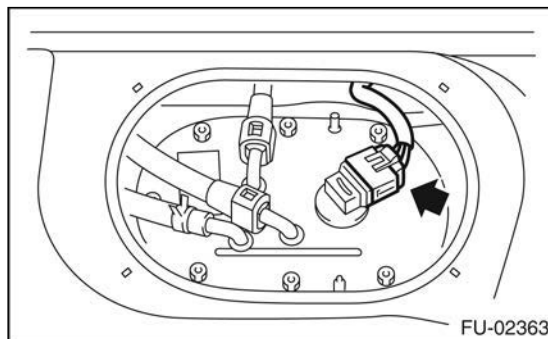
- 1) Remove the luggage area floor mat (varies by model).
 - Remove the backside mat from the rear seat backrest.
 - Remove the clips and then detach the rear floor mats and boxes.



- 2) Remove fuel pump access cover.



- 3) Release fuel pressure:
 - Disconnect the electrical connector from fuel pump.

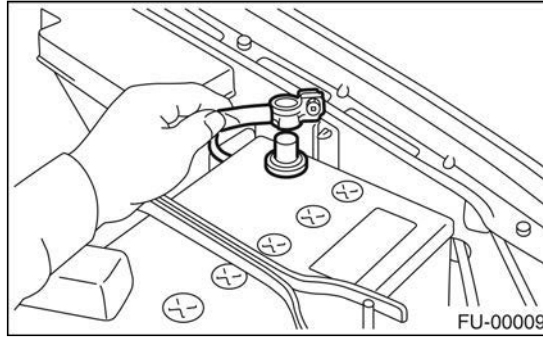


- Start the engine and run it until it stalls.
- After the engine stalls, crank it for five more seconds.
- Turn ignition switch to OFF.

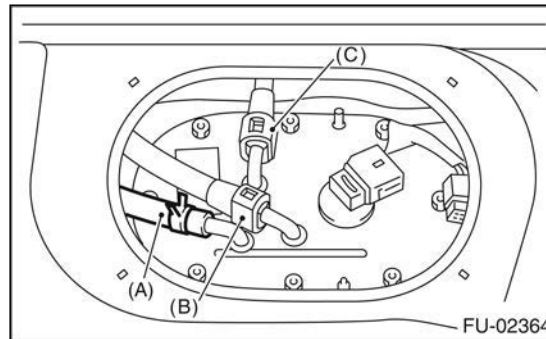
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NOTE: Record radio pre-set stations.

- 4) Disconnect battery ground cable.

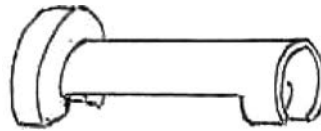


- 5) Please use caution and observe the following instructions when separating the fuel pump line connections. **Note:** The fuel line retainer clamps used on lines “A”, “B” and “C” will be reused so take care not to cause damage during disassembly. (Configurations and clamp type vary by model.)



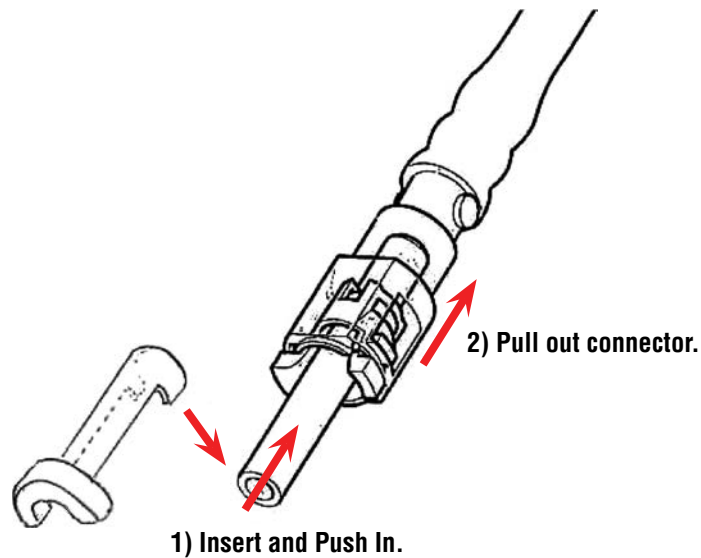
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Separation of the Quick Connector on the Fuel Pump

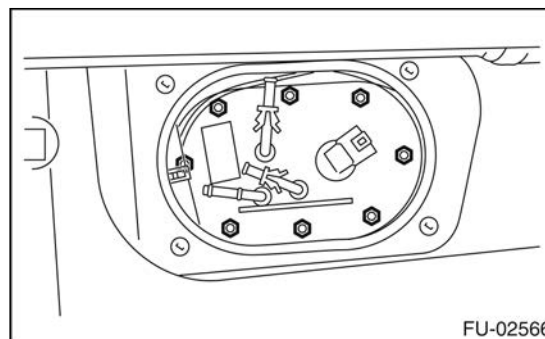


Special Tool: 42099AE000

The special tool 42099AE000, which is set up to separate fuel hoses with quick connectors in the engine compartment, can also be used for return and delivery sub hoses. The quick connector can be unlocked by inserting the special tool around the pipe and pushing it forward as shown. Pull out and separate the connector.



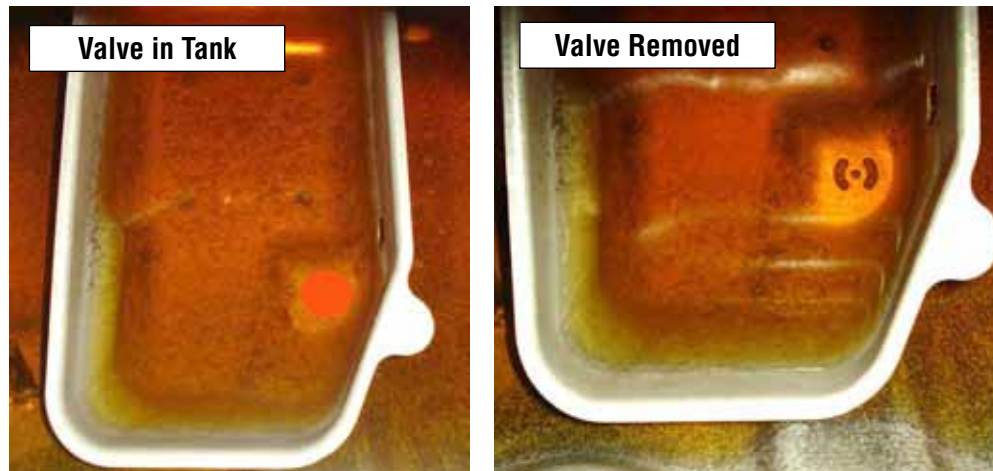
- 6) Remove the nuts which secure the fuel pump assembly onto the fuel tank.



- 7) Carefully remove the fuel pump assembly from fuel tank. To ease removal, lift up on the float while removing. Do not attempt to force the pump assembly from the tank.

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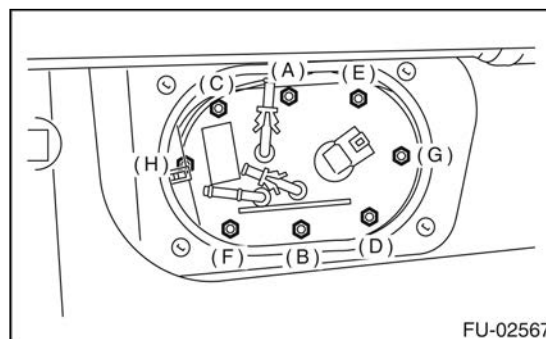
- 8) Wearing suitable fuel resistant gloves, reach into the fuel tank and remove the one-way fuel valve by pulling while twisting the valve. The valve should easily detach from the inner tank fuel reservoir. Discard the valve as it is no longer needed.



Reinstall the Fuel Pump Housing

IMPORTANT:

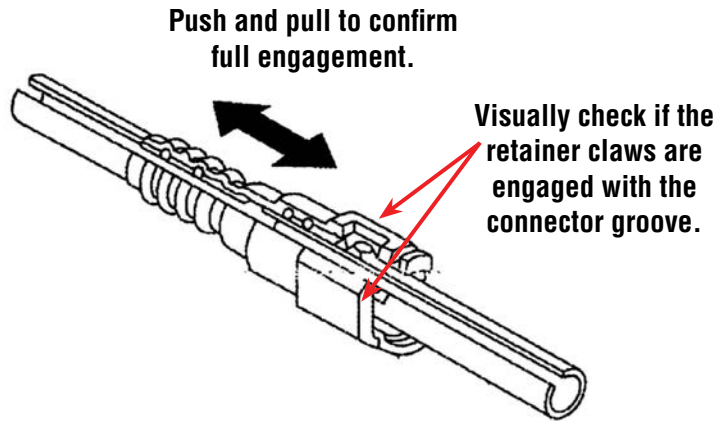
- **Always use a new gasket.**
 - **Ensure the sealing portion is free from fuel or foreign particles before installation.**
- 1) Carefully reinstall the fuel pump housing into the fuel tank using caution while inserting the fuel level float through the fuel tank opening. It will be necessary to hold the float up to avoid interference with the inner tank fuel reservoir.
 - 2) Tighten nuts in alphabetical sequence as shown to the specified torque.
Tightening torque: 4.4 N•m (0.45 kgf-m, 3.3 ft-lb)



- 3) Reattach the fuel lines. **NOTE:** If the fuel line retainer clamps are damaged or broken, replace with new ones.
 - When the connector is reconnected, be careful not to force, bend, or twist the pipe.
When the retainer was separated using the special tool or the retainer was replaced with a new part:
Hold the connector body with your fingers, align the axis of the pipe and the connector and then push in the pipe until the retainer clicks.

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- Push and pull the connector lightly several times to ensure the pipe is fully engaged with the connector. Also, visually check if the retainer claws are engaged with the connector groove at both of the two points.



- 4) Reattach the fuel pump electrical connector.
- 5) Reconnect the battery.
- 6) Start vehicle and confirm there are no fuel leaks.
 - Raise fuel pressure in the high pressure fuel lines and check for leakage at each of the connectors, tubes and pipes.
- 7) Reinstall the fuel pump access cover and remaining components to their original condition.
- 8) Reprogram radio pre-set stations.

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 1-800- 782-2782.

SUBARU
Campaign Code
WVN-24
COMPLETED
DIST./DEALER NO.
SERIAL NO.
DO NOT REMOVE

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CALIFORNIA “VEHICLE EMISSION RECALL - PROOF OF CORRECTION” 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 submit claims through Vehicle Claim Entry on Subarunet.

Note: certain vehicles affected by the WVN-24 Service Program may also be affected by the WVU-31 ECM Reprogramming Service Program. Since the WVU-31 PAK file includes the updates contained in the WVN-24 PAK file, only reprogram the ECM using the WVU-31 PAK file. **NOTE: If WVN-24 was previously performed or performed in conjunction with WVU-31, labor time will be reduced by 0.4 hours on the WVN-24 claim, to adjust for overlapping reprogramming labor.**

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When WVN-24 is Not Performed in Conjunction with WVU-31:

ECM Reprogramming and Fuel Tank One-way Fuel Valve Removal:

CLAIM TYPE	CAMPAIGN CODE	LABOR	LABOR OPERATION
RC	WVN-24	145-591 1.0 hrs.	ECM reprogramming and Fuel Tank One-way Fuel Valve Removal.

ECM Reprogramming, Fuel Tank One-Way Fuel Valve Removal and Catalytic Converter Replacement:

Note: If catalytic converter replacement was necessary due to DTC P0420, submit claims for replacement using claim type RC.

CLAIM TYPE	CAMPAIGN CODE	LABOR	LABOR DESCRIPTION
RC	WVN-24	B145-592 1.0 hrs.	ECM Reprogramming with DTC P0420 and Remove Fuel Tank One-Way Fuel Valve.
		C145-593 0.5 hrs.	Replace Catalytic Converter(s)

When WVN-24 is Performed in Conjunction with WVU-31:

ECM Reprogramming and Fuel Tank One-way Fuel Valve Removal:

CLAIM TYPE	CAMPAIGN CODE	LABOR	LABOR OPERATION
RC	WVN-24	145-591 0.6 hrs.	ECM reprogramming and Fuel Tank One-way Fuel Valve Removal.

ECM Reprogramming, Fuel Tank One-Way Fuel Valve Removal and Catalytic Converter Replacement:

Note: If catalytic converter replacement was necessary due to DTC P0420, submit claims for replacement using claim type RC.

CLAIM TYPE	CAMPAIGN CODE	LABOR	LABOR DESCRIPTION
RC	WVN-24	B145-592 0.6 hrs.	ECM Reprogramming with DTC P0420 and Remove Fuel Tank One-Way Fuel Valve.
		C145-593 0.5 hrs.	Replace Catalytic Converter(s)

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OWNER NOTIFICATION LETTER

Service Program WVN-24

Engine Control Module Reprogramming And Fuel Tank One-way Fuel Valve

January 2010

Dear Subaru Owner:

We would like to thank you for selecting a 2007~2008 Subaru Forester 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 two conditions that may adversely affect the performance of your vehicle's emissions system, specifically the catalytic converter:

Condition One. Under certain severe driving patterns, such as high speed highway/uphill driving and/or accelerating with high engine revolutions, the efficiency of your vehicle's catalytic converter may begin to degrade beyond design parameters. To prevent this condition, Subaru has developed a modification to the Engine Control Module software logic that will improve management of the catalytic converter. This software change will not adversely affect the performance of your vehicle.

Condition Two. The one-way fuel valve located in your vehicle's fuel tank may not perform as intended and could cause a condition that may damage the catalytic converter. To prevent this condition, the one-way fuel valve must be permanently removed from the fuel tank. Removal of the valve will not adversely affect the performance of your vehicle because it has been determined this valve is unnecessary.

If either or both conditions were to cause the catalytic converter efficiency to degrade beyond an acceptable level, the "Check Engine" light on your vehicle's instrument panel will illuminate to alert you that your vehicle may be releasing air pollutants that exceed Federal or California emission standards.

ADDITIONAL INFORMATION CONCERNING CONDITION TWO

The one-way fuel valve is located at the base of a small sub-chamber contained in the fuel tank. When the tank's fuel level drops below 1½ gallons, the sub-chamber is intended to provide a fuel reserve for the fuel pump during vehicle cornering. However, the one-way valve may inadvertently act in such a way as to prevent fuel from refilling the sub-chamber, failing to provide the intended reserve. If this were to happen, the fuel pump could momentarily draw air, causing the engine to experience a sporadic misfire condition resulting in possible damage to your vehicle's catalytic converter.

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 Engine Control Module software reprogrammed and the Fuel Tank One-way Fuel Valve removed. The approximate time to perform this update is 1 hour. However, 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.

Important: Since it will be necessary for your dealer to remove the fuel pump from your

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vehicle's fuel tank to access the one-way fuel valve, it is very important that the fuel tank be less than half full at the time of service.

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 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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