Warranty Field Campaign

Campaign Number: c2015	**Revision**: B	**Released Date**: 07-Jun-2019
X15 CM2350 X114B/X116B Aftertreatment Outlet NOx Sensor Campaign for Volvo		**Expiration Date (U.S. and Canada)**: 01-Jun-2020
		Expiration Date (International): 01-Jun-2020

Attention

- Mark.[redacted]@cummins.com; Michael.[redacted]@cummins.com

This is to revise and replace C2015-A, dated 19-Jun-18. This revision is to:

1. **Update the description, and**
2. **Extend the expiration date to: 01-Jun-2020.**

If additional information is required, please contact your Cummins Warranty Operations Group Leader.

Description

This Campaign is being issued to address contamination and liquid impingement that can cause NOx sensor fault codes 3545 and 1887 in certain X15 CM2350 X114B/X116B powered chassis. This Campaign authorizes certified repair locations to clean the NOx cup using the attached procedures and to correct the issue of liquid impingement by applying high temperature sealant over the affected area where liquid wicks into the NOx cup.

Note : This field action provides retroactive coverage for repairs made in anticipation of and prior to the release of this publication.

Note : There are two repair paths detailed in this field action. Select **only** the required repair path to meet the reimbursement parameters provided below. In BOTH cases, the NOx Cup Cleaning procedure **MUST** be performed. Please refer to Attachment B for detailed instructions.

Action

In order to qualify for repair under this field action, an engine:

1. will be covered Regardless of coverage status, and
2. **must** show as OPEN on QuickServe® Online for this field action.

Note : The ESN list is attached for reference.

IMPORTANT INFORMATION BEFORE STARTING YOUR REPAIR PATH:

a. If the engine WAS **NOT** repaired under the expired field action ATC1968 (missing the High Temp Sealant on the water shield), proceed with the full repair path defined below.
b. If the engine WAS repaired under ATC 1968, the instructions (Steps 1-4) below do **not** apply. In this case, please refer to the Attachment B, Aftertreatment Outlet NOx Sensor Cup Clean Procedure to complete the field action.

Note : Please refer to Attachment C for a list of ESNs completed under ATC1968.

After verifying that the engine meets the above requirements, perform the following actions:

1. Please refer to the Aftertreatment Outlet NOx Sensor High Temperature Sealant Installation Instructions 5414639 for detailed instructions.
2. Remove the Outlet NOx Sensor. Take care to remove carefully. The sensor will need to be reinstalled after the repair. Please refer to Aftertreatment Outlet NOx Sensor replacement Procedure 019-451 in Section 19, in the appropriate service manual.
3. Remove the Exhaust Gas Temperature Sensor. Take care to remove carefully. The sensor will need to be reinstalled after the repair. Please refer to Aftertreatment Exhaust Gas Temperature Sensor replacement Procedure 019-449 in Section 19, in the appropriate Service Manual.
4. Remove the Particulate Sensor. Take care to remove carefully. The sensor will need to be reinstalled after the repair. Please refer to Aftertreatment Particulate Sensor Procedure 019-478 for the removal of the PM sensor in the appropriate service manual.

Material Disposition

Materials removed as a result of this field action **must** be scrapped.

Reimbursements

Parts

Note : Parts are OPTIONAL. Based on the repair path selected, claim **only** the appropriate part(s). Sensor should **only** be replaced when confirmed as malfunctioning and damaged when removing or re-installing.

The following parts are covered under this field action:

Part Number	Quantity	Description
432687200	1	SEN,NIT (OPTIONAL)
432687200RX	1	SEN,OXI (OPTIONAL)
536210800	1	SLT (OPTIONAL)

Note : SRTs to gain access that are required to complete the repair, that are sufficiently explained in the claim narrative, may also be claimed on this action.

Note : All SRTs are OPTIONAL. Select **ONLY** the appropriate SRTs and appropriate quantities for the repair performed. For units that already have the High Temp Sealant applied thru prior field action directives, claim **ONLY** 1 hr of 99-901 time. If the full repair path is required, claim 3 hrs for HT Sealant application, cure time and NOx Cup Cleaning.

Labor Using Applicable Access Code and Time

SRT Code	Description	Time (hrs)
00-90X	Administrative time	
14-00T	Aftertreatment Diesel Particulate Filter (DPF) - Regeneration Test (EPA 2017)	
17-902	CAMPAIGN CHECK - INSPECT TO DETERMINE REPAIR PATH	

SRT Code	Description	Time (hrs)
19-0D4	AFTERTREATMENT PARTICULATE SENSOR - REMOVE AND INSTALL - X15 CM2350 X114B (OPTIONAL)	
19-0D5	AFTERTREATMENT OUTLET NOX SENSOR - REMOVE AND INSTALL - X15 CM2350 X114B (OPTIONAL)	
19-0D8	AFTERTREATMENT EXHAUST GAS TEMPERATURE SENSOR - REMOVE AND INSTALL - X15 CM2350 X114B (OPTIONAL)	
19-0G6	AFTERTREATMENT PARTICULATE SENSOR - REMOVE AND INSTALL - X15 CM2350 X116B (OPTIONAL)	
19-0G7	AFTERTREATMENT OUTLET NOX SENSOR - REMOVE AND INSTALL - X15 CM2350 X116B (OPTIONAL)	
19-0G8	AFTERTREATMENT EXHAUST GAS TEMPERATURE SENSOR - REMOVE AND INSTALL - X15 CM2350 X116B (OPTIONAL)	

SRT Code	Description	Time (hrs)
99-901	HIGH TEMPERATURE SEALANT INSTALLATION AND CURE TIME AND NOX CUP CLEANING (QTY OPTIONAL)	

Travel

Travel is **not** covered under this field action. Towing is **not** covered under this field action.

Other Claimables

Consumables are **not** covered under this field action.

Claim Instructions

For Cummins Dealers, claims for this Field Campaign **must** be filed via **RAPID**SERVE™ Web (rsw.cummins.com). For information regarding **RAPID**SERVE™ Web, please reference the "Warranty" tab in QuickServe® Online. If there are additional questions, please contact your local Cummins Distributor.

Claim Codes	
Description	**Code**
Account Code:	65
Pay Code:	Distributor = X
Pay Code:	Dealer = D
Pay Code:	International = I
Failure Code:	WYNEBX

Attachments

Click here to see c2015_esn-list.xls

(/service/english/attachments/c2015_esn-list.xls) Click here to see c2015_nox_cup_cleaning_instruction_attach-b.pdf

(/service/english/attachments/c2015_nox_cup_cleaning_instruction_attach-b.pdf) Click here to see c2015_atc1968_completed_esn_listing_attach-c.xls

(/service/english/attachments/c2015_atc1968_completed_esn_listing_attach-c.xls)

Engine Family	Fuel System
ISX, QSX15 ISX15	
Design Application	**Market Application**
Automotive	Automotive

Last Modified: 07-Jun-2019

Service Instruction

Aftertreatment Outlet NOx Sensor Cup Clean Procedure.

Product

- X15 CM2350 X114B
- X15 CM2350 X116B

The purpose of this document is to guide the user through the steps involved in cleaning around the NOx shield and cup in the SCR (Selective Catalyst Reduction).

Parts Required

The material required to clean the NOx cup are provided in Table 1. This is the only item approved for this procedure.

Table (1.) Required Parts	
Part Description	Part Number
Distilled Water	

Personal Protection Equipment (PPE)

- Completing a Job Safety Assessment (JSA) prior to performing work helps identify job safety hazards and prevent incidents.
- To reduce the possibility of personal injury, personal protective equipment (PPE) must be utilized. Reference General Safety Instructions Procedure 204-006 in Section I of the corresponding Service Manual.

Installation Tools

No special service tools are required to clean the NOx cup. The table below is the list of standard service tools required along with any additional items recommended.

Table (1), Required Items	
Service Tools	Additional
Clean Towels	Distilled water
Safety Glasses	

WARNING

Wait for the Aftertreatment system to cool down before working on the hot exhaust or exhaust components. Failure to do so could result in personal injury.

Preparation Steps:

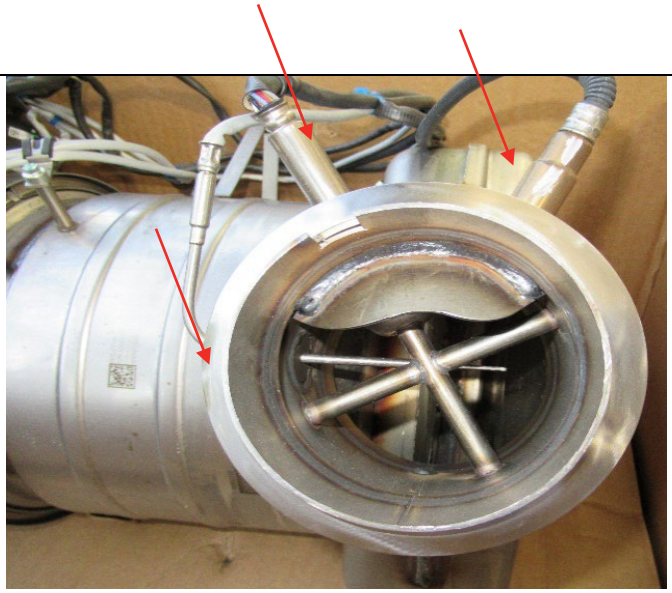
1. Remove exhaust stack to expose the SCR outlet according to the OEM service procedures.

2. Remove all SCR outlet sensors shown in **Figure 1** and place them in **a safe place** prior to cleaning the NOx cup.

3. Refer to **Aftertreatment Outlet NOx sensor replacement procedure in section Procedure 019-451** in section 19, in the corresponding service manual.

4. Refer to **Aftertreatment Exhaust Gas Temperature Sensor procedure 019-449** in section, in the corresponding service manual.

5. Refer to **Aftertreatment Particulate Sensor Procedure 019-478** for the removal of the PM sensor in the corresponding service manual.



SCR Overview
Figure 1

Clean NOx Sensor Cup

6. Use preferred delivery method, dispense distilled water into the NOx sensor cup. (Figure 2)

ATTENTION: If a funnel is used, it **MUST** be clean and clear of any contaminates. Failure to recognize this can result in the introduction of new contaminates that can and will cause the NOx sensor to fail.

7. Wait 30 seconds to allow contaminates to dissolve.

8. Using shop air, insert an air blow gun into sensor boss to blow out residual distilled water until dry. (Figure 3. Recommended shop air pressure: 90 to 150 psi.)

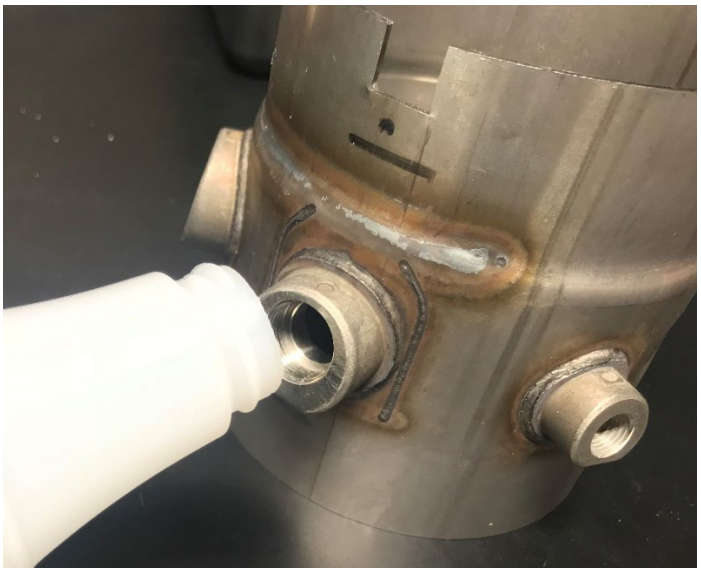
Caution: When using shop air, ensure PPE is used to protect your eyes and skin in case any debris comes loose during this process.

9. Use a clean cloth to remove any debris found outside the NOx sensor cup and SCR outlet pipe.

10. Repeat steps 6 – 9 three (3) times to ensure all contaminates are removed.

Caution: Do not use any chemical solvents or cleaners to clean internal metal surface. Possible damage to Aftertreatment SCR catalyst may occur.

11. Continue with Aftertreatment Outlet NOx Sensor High Temperature Sealant Installation Instructions **5414639.**



Distilled Water Delivery

Figure 2



Shop Air

Figure 3

Finishing Steps, if not preforming Step 11

12. Install the original Aftertreatment outlet NOx sensor, EGTS sensor and also the PM sensor.

13. For the **NOx sensor**, see Aftertreatment Outlet NOx Sensor **Procedure 019-451** in Section 19, in the corresponding service manual

14. For the **EGTS sensor,** see Aftertreatment Exhaust Gas Temperature Sensor **Procedure 019-449** in the corresponding service manual

15. For the **PM sensor**, see Aftertreatment Particulate Sensor **Procedure 019-478** in the corresponding Service Manual.

16. Run a stationary regeneration after installing the OEM exhaust stack. See Aftertreatment Diesel Particulate Filter (DPF) Regeneration Test, **Procedure 014-016 in Section 14**, in the corresponding Service Manual.