

# NON COMPLIANCE RECALL

**Mack Trucks Inc.**  
Greensboro, NC USA



| Date    | Number  | Release | Page  |
|---------|---------|---------|-------|
| 11.2019 | EC0022C | 01      | 1(16) |

## **Analysis & SCR Hardware Replacement, 11L - 1 box AN, CX, GR, GU.**

### **NON COMPLIANCE RECALL INFORMATION**

(November 2019)

Mack Trucks has determined that certain model year 2017-2018 MP7 model engines may be equipped with an improperly functioning SCR (Selective Catalytic Reduction) system due to Low NOx Conversion Efficiency DTC (Diagnostic Trouble Code), which may cause a loss of catalyst performance that violates Federal and California standards and regulations. The root cause is that water is chemically bonding and deactivating the catalyst during extended low temperature operation followed by high temperature operation.

This issue is to be addressed by updating ECM software, inspecting DEF system, running Premium Tech Tool function "Exhaust Aftertreatment System Analysis", replacing the SCR system with one containing an improved hybrid catalyst, and returning the SCR as instructed.

Follow the procedure outlined in this document.

### **VEHICLES AFFECTED**

Certain Mack North America vehicles manufactured between January 10th, 2017 and August 22nd, 2018.

### **VEHICLE QUANTITY**

There are 318 vehicles affected by this recall (307 U.S., 11 Canada).

## Material Needed

### REQUIRED PARTS:

#### Parts Ordering Process

An email is required to order parts list. Email [campaign@macktrucks.com](mailto:campaign@macktrucks.com) and include the following in the body of the email:

- VIN of vehicle being repaired
- Dealer ID number
- Part Numbers
- Campaign Number
- PO number

A response will be provided within 2 hrs. (Monday-Friday 8am to 5pm EST.)

| Parts List |                                        |                                                                                                                                         |          |
|------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------|
| Item       | Part Number                            | Part Description                                                                                                                        | Quantity |
| 1          | 23159385<br>Superseding to<br>23160669 | Muffler (Fully Contented, Hybrid SCR with T4)<br>Superseding to<br>Muffler (Decontented, Hybrid SCR with T4)<br><b>(See Note Below)</b> | 1        |
| 2          | 997711                                 | Plug for T4 Sensor                                                                                                                      | 1        |
| 3          | 21021850                               | Clamp                                                                                                                                   | 2        |
| 4          | 21095726                               | Gasket                                                                                                                                  | 2        |
| 5          | 21376801                               | Sealing Plate                                                                                                                           | 1        |
| 6          | 22677399                               | Gasket                                                                                                                                  | 1        |
| 7          | 23108406                               | Clamp and Gasket Kit<br><b>NOTE:</b> only required for Decontented SCR.                                                                 | 1        |
| 8          | 85152363                               | Decal (Campaign Completion Decal)<br><b>NOTE:</b> N/A if previously installed on truck                                                  | 1        |
| 9          | N/A                                    | Vehicle Emissions Recall – Proof of Correction<br>Certificate US-CAN (EN)<br><b>NOTE:</b> See last page of recall for this form         | 1        |

| NOTE                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| During fourth quarter of 2019, the fully contented 1-box (Complete, with DPF preinstalled) will supersede to a Decontented 1-box (without, DPF, DPF Cover, and DPF Pressure Sensor installed). Please verify you have the correct parts for the repair you are completing. |

## REQUIRED TOOLS

- Premium Tech Tool (PTT) version 2.7.75 or higher
- Vocom (one of the following 16 Pin cables) 88890304, 88890253, or 88894001
- Vocom Communication Interface 88890300, or 88894000
- Vocom USB Cable 88890313
- Refractometer 88890105
- Litmus paper 88890110

| NOTE                                                 |
|------------------------------------------------------|
| Using other interfaces may affect programming speed. |

| NOTE                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ensure PTT version 2.7.75 or higher is used for complete PTT functionality. Earlier versions of PTT will not have functions for the following steps to complete this recall. Check Premium Tech Tool version by clicking on Help tab and then click on "About Tech Tool". |

## Repair – All Mack AN, CX, GR, and GU Chassis configurations.

| Repair Index |                                             |             |
|--------------|---------------------------------------------|-------------|
| Section      | Description                                 | Page Number |
| 1            | Update Software                             | 4           |
| 2            | Inspection, DEF                             | 5           |
| 3            | Exhaust Aftertreatment System Analysis Test | 5           |
| 4            | SCR Replacement                             | 9           |
| 5            | Inspection, SCR Crystallization             | 10          |
| 6            | SCR Return Policy                           | 10          |
| 7            | Label & Certificate                         | 12          |
| 8            | Reimbursement                               | 14          |

## UPDATE SOFTWARE

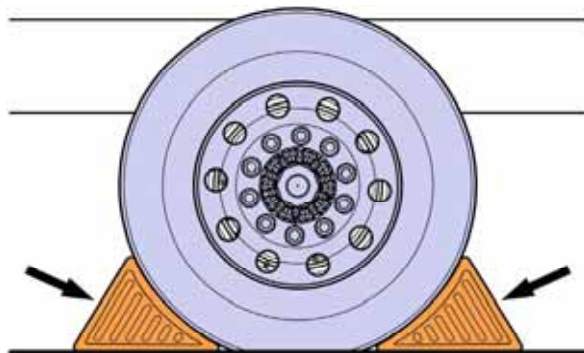
You must read and understand the precautions and guidelines in Service Information, group 30, "General Safety Practices, Electrical" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

**NOTE:** Information is subject to change without notice. Illustrations are used for reference only and can differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.



Do not attempt to repair or service this vehicle without having sufficient training, the correct service literature and the proper tools. Failure to follow this could make the vehicle unsafe and lead to serious personal injury or death.

1. Park the vehicle on a flat and level surface.
2. Apply the parking brake.
3. Place the transmission in neutral or park.
4. Install the wheel chocks.



5. Using Premium Tech Tool (PTT), connect to the vehicle
6. Update EMS Software to Part Number **23766686**.
7. **Note:** Follow the on screen prompts until the programming is complete.
8. Disconnect the vehicle from Premium Tech Tool (PTT)

## INSPECTION, DEF

| NOTE                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Record values for steps 9 through 11 and steps 22 through 24 on the "Inspection Check List" found page 15. This sheet will need to be saved and uploaded to UCHP with the claim information. |

9. Inspect DEF Quality using a Refractometer (P/N 88890105). Record Value.
10. Inspect DEF Quality using a Litmus Paper (P/N 88890110). Circle "Pass" or "Fail".
11. Inspect DEF Tank for contamination of any dirt, debris, coolant, water fuel, oil etc. Circle answer "Yes" or "No".

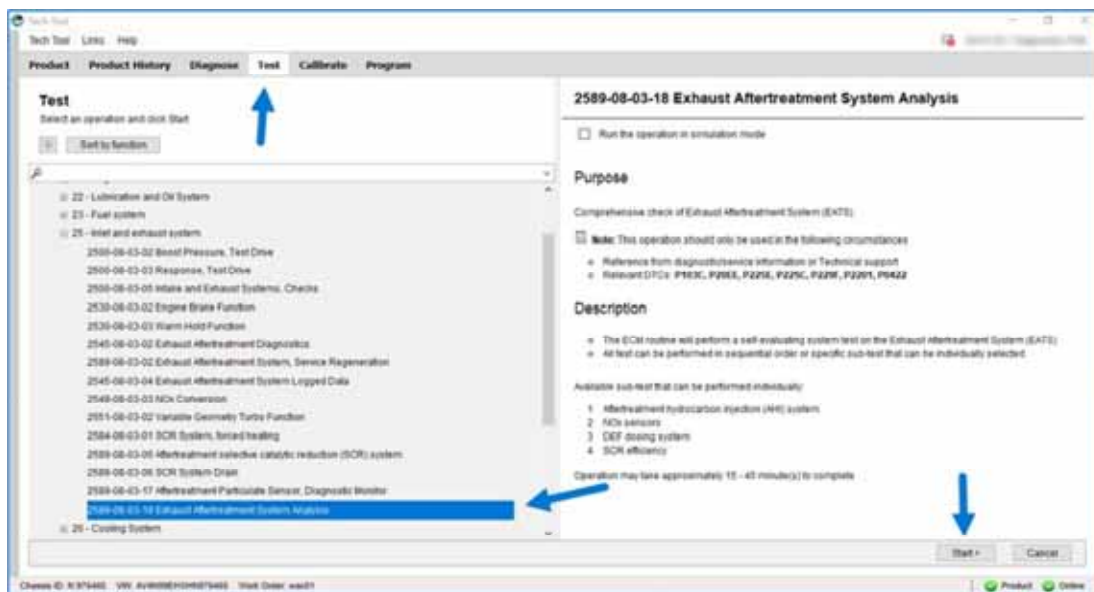
| NOTE                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| If contaminants are found, continue with recall procedures. Once recall is completed consult with customers for repair of the contaminated DEF system. |

## Exhaust Aftertreatment System Analysis

| NOTE                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regardless of results from Exhaust Aftertreatment System Analysis, if the test aborts before completing, or if the test fails to progress to next step for 15 minutes continue to step 21 of this recall. |

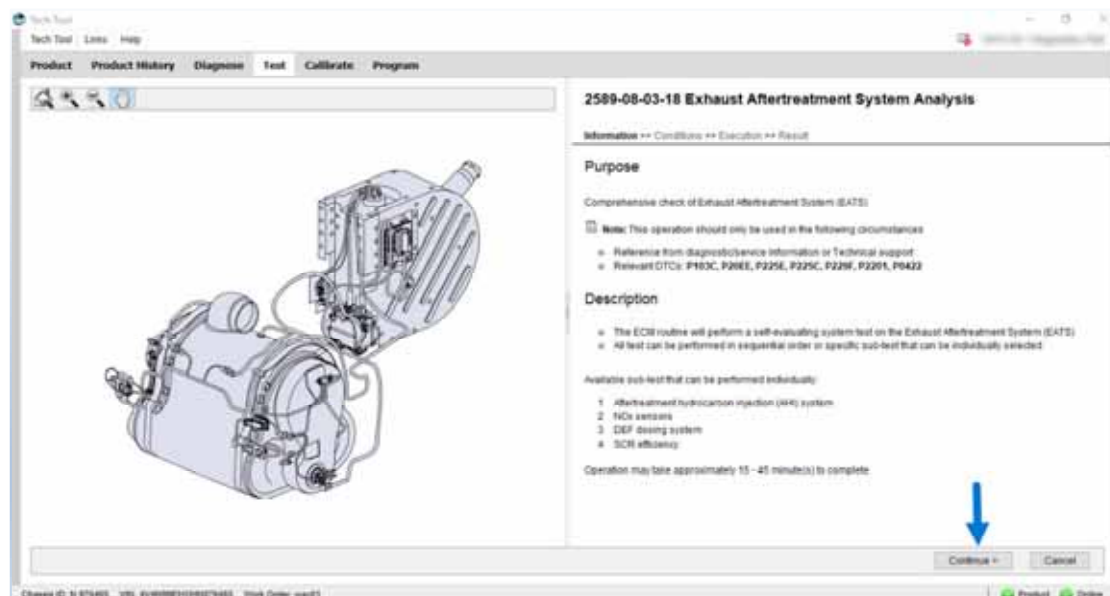
| NOTE                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Before continuing ensure PTT version 2.7.75 or higher is used for complete PTT functionality and the EMS Software is updated to 23766686. In addition, PTT may require to be restarted and a new work session opened for the "Exhaust Aftertreatment System Analysis" to function. |

12. Start the PC and open Premium Tech Tool (PTT).
13. Connect the interface to PC and vehicle. Ignition switch needs to be in the "on" position.
14. Perform identification and connection dialog.



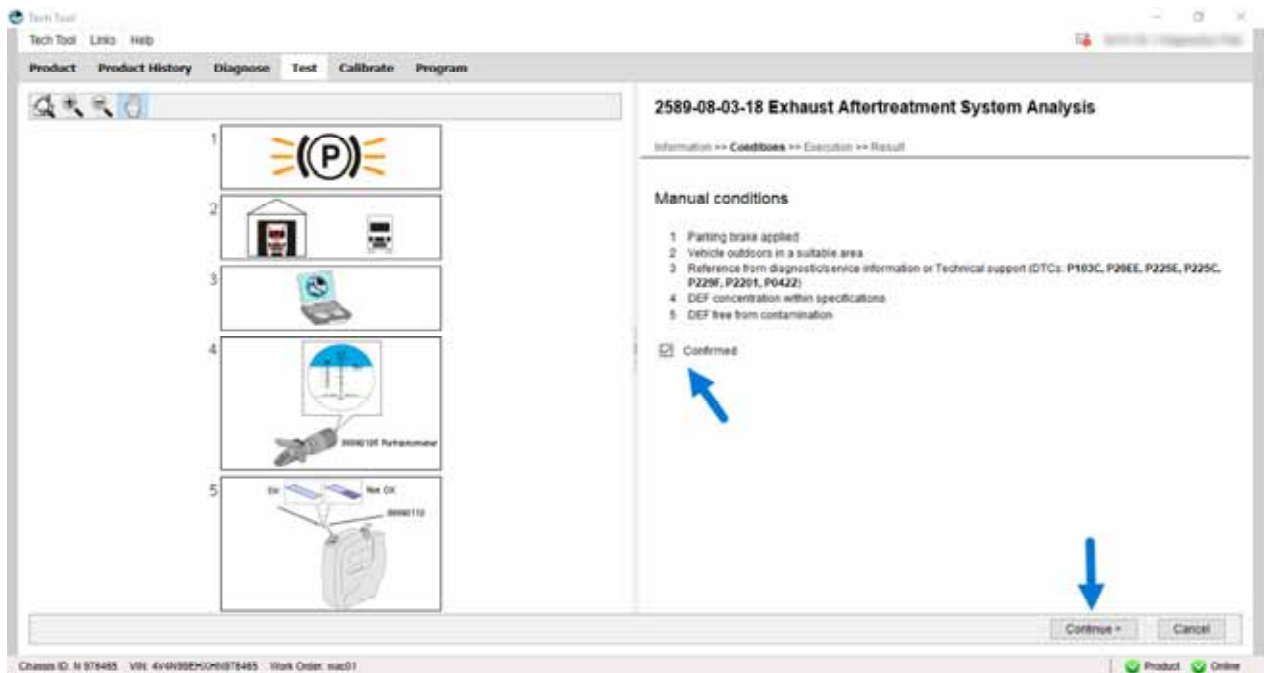
15.

From the “Test” tab, select “2589-08-03-18 Exhaust Aftertreatment System Analysis” and then select “Start”.

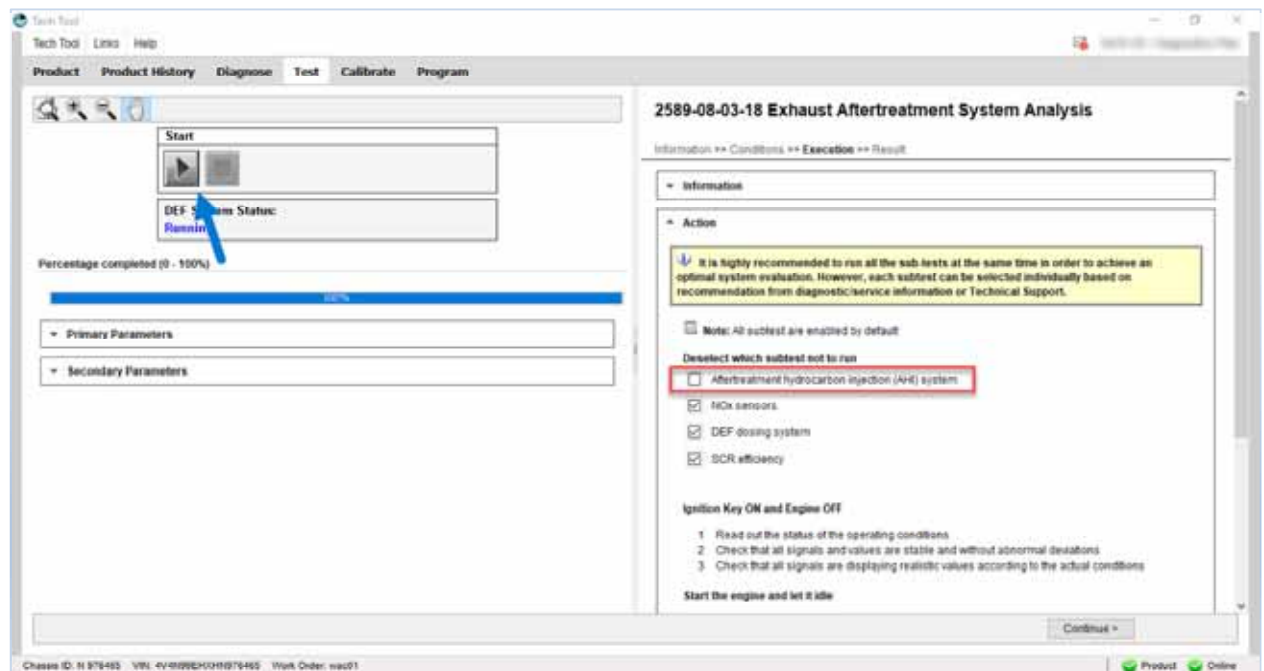


16.

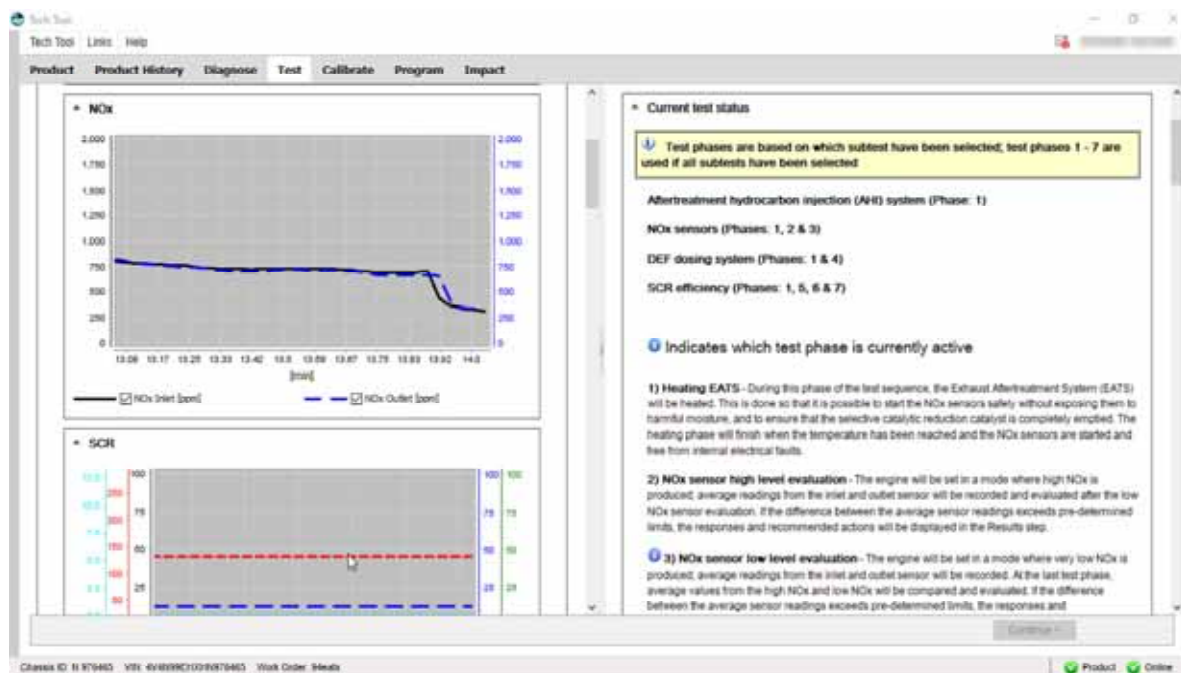
Select “Continue”.



Verify the manual conditions are met, check the “Confirmed” box, and then select “Continue”.



Uncheck “Aftertreatment Hydrocarbon Injection (AHI) System Box, and select “Start” on the upper left side of the screen.



Wait for test to go through all phases of the operation. Note the blue indicator on the right will move through each phase.



19. Once the test is complete, results will populate. **Regardless of results** select continue. Return to the main screen in PTT and select "Finish Work".

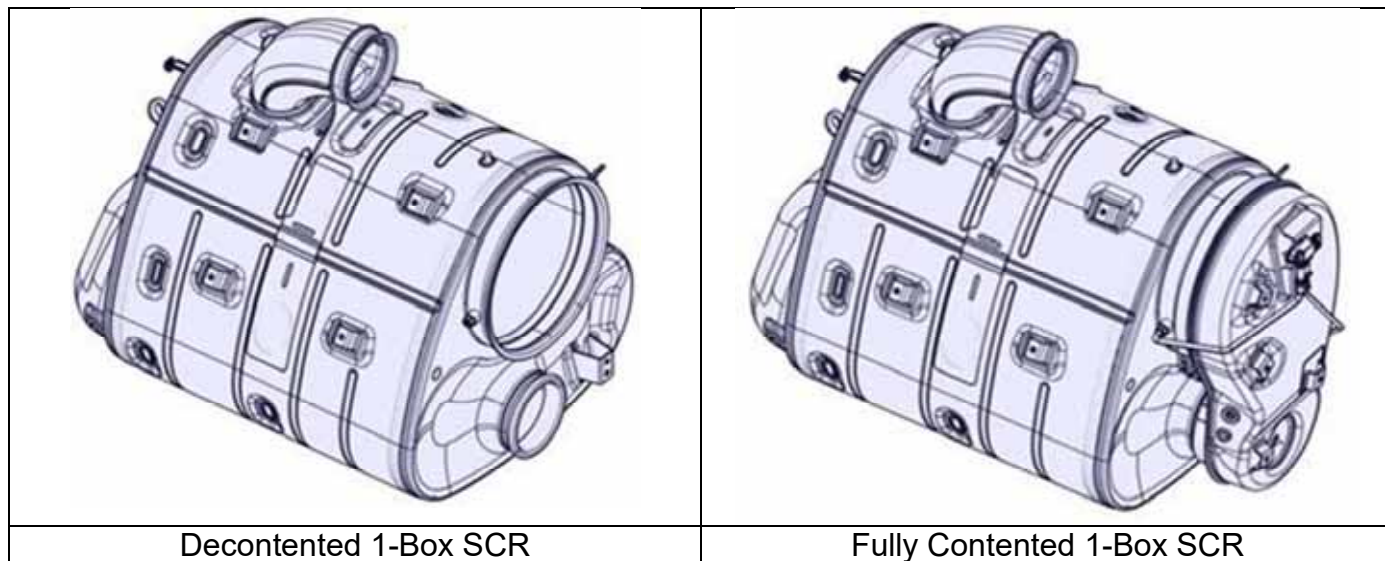
20. You may now disconnect the interface from PC and vehicle. Turn ignition off.

For More Information on the PTT Function Visit: <http://www.premiumtechtool.com>

## SCR Replacement

21. Follow standard repair instructions from impact for specific VIN.

**NOTE:** steps for installing DPF can be skipped for repairs that received a fully contented 1-Box.



| Impact Instructions |                                                              |                  |
|---------------------|--------------------------------------------------------------|------------------|
| Function Group      | Title                                                        | Repair Operation |
| 258                 | Muffler, Replacement (Combined DOC, DPF, SCR)<br>Decontented | 2586-03-02-10    |

## Inspection, SCR Crystallization

| NOTE                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Record values for steps 9 through 11 and steps 22 through 24 on the “DEF Inspection Check List” found page 15. This sheet will need to be saved and uploaded to UCHP with the claim information. |

- 22. Inspect DEF Dosing Valve for excessive crystallized DEF – Circle found condition
- 23. Inspect SCR Diffuser Pipe for excessive crystallized DEF – Circle found condition
- 24. Inspect SCR Inlet for excessive crystallized DEF – Circle found condition

## SCR Return Process

\*\*\*The UCHP Claim (part return) will be arriving in your “MI Tab” within no later than 7 days after crediting. Please follow the below shipping instructions on the UCHP shipping documents\*\*\*

- 25. Ensure all plugs and caps supplied with the new SCR are reused and installed on returned part. Securely band SCR to Pallet.

| NOTE                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------|
| All SCR openings must be sealed to eliminate contamination. If plugs and caps are damaged use water proof tape to cover the openings. |

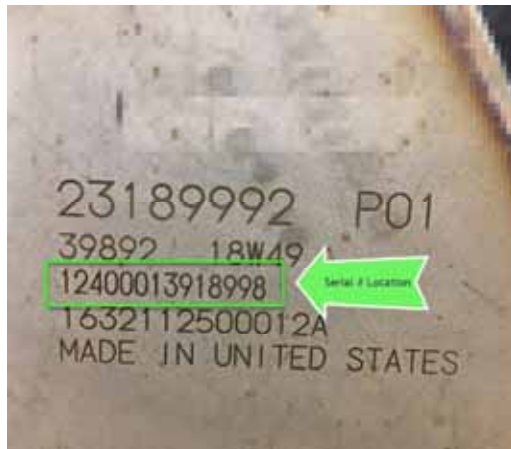
### Fully Contented Example



### Decontented Example



26. Record failed SCR Part Number, Serial number to enter into UCHP Claim



27. Enter Failed SCR Serial Number in UCHP Claim for the Failed/Casual Part & New Part.

| Claim job information                                                    |             |                 | Labour | Material | Other costs | Remarks | History |
|--------------------------------------------------------------------------|-------------|-----------------|--------|----------|-------------|---------|---------|
| <b>Causal part</b>                                                       |             |                 |        |          |             |         |         |
| Prefix                                                                   | Part number | Description     |        |          |             |         |         |
| VO                                                                       | 12345678    | MUFFLER         |        |          |             |         |         |
| <input checked="" type="radio"/> Replaced <input type="radio"/> Repaired |             |                 |        |          |             |         |         |
| <b>Included material</b>                                                 |             |                 |        |          |             |         |         |
| New Prefix                                                               | Part number | Description     |        |          |             |         |         |
| <input type="radio"/> VO                                                 | 87654321    |                 |        |          |             |         |         |
| <b>Add row</b>                                                           |             | <b>Copy row</b> |        |          |             |         |         |

Old SCR

|             |               |
|-------------|---------------|
| Func. group | Serial number |
| 2586        | 111111111111  |

New SCR

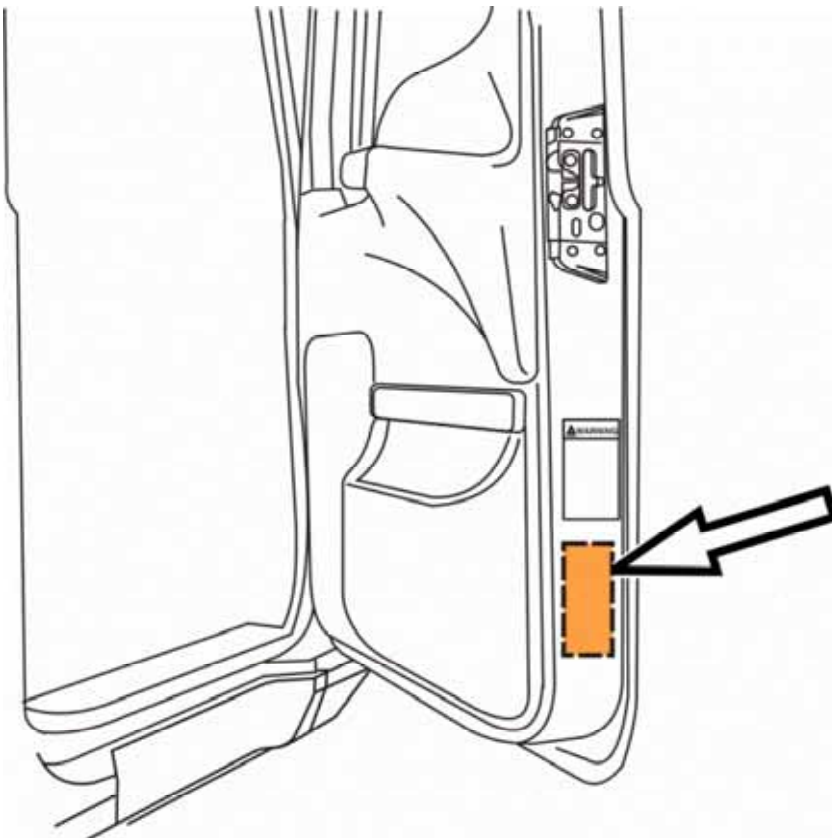
|               |
|---------------|
| Serial number |
| 999999999999  |

28. Attach TMAC return label per normal process to return shipment.

## Label & Certificate

## NOTE

A campaign completion label (part number 85152363) needs to be installed on truck if not previously installed. To signify the campaign has been completed, use a permanent marker (Such as a Sharpe ®) to write the recall number, completion date (MM/DD/YYYY) and dealer code on the label. The label is to be applied to the inside of the passenger door as shown in the illustrations below

[illegible]

### Label Placement- Conventional Chassis Configuration

**NOTE**

A Vehicle Emissions Recall – Proof of Correction Certificate is provided on last page of this recall. See the example below. Fill in the appropriate information for your records and provide a copy to the customer.

| Vehicle Emissions Recall - Proof of Correction                                                                        |      |                      |            |                               |
|-----------------------------------------------------------------------------------------------------------------------|------|----------------------|------------|-------------------------------|
| License Number                                                                                                        | Make | Year Model           | Year Model | Vehicle Identification Number |
|                                                                                                                       |      |                      |            |                               |
| Manufacturer:                                                                                                         |      | Recall Number:       |            |                               |
| The above described vehicle has been repaired, modified to address the Emissions Related Recall that is listed above. |      |                      |            |                               |
| Dealer's                                                                                                              |      | Address, City, State |            |                               |
|                                                                                                                       |      |                      |            |                               |
| Dealer's Authorized Signature                                                                                         |      |                      |            |                               |
| X                                                                                                                     |      |                      |            |                               |
| Return this certificate to DMV only when required - otherwise retain for your records.                                |      |                      |            |                               |

**REIMBURSEMENT**

| NOTE                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All repairs are to claim the Primary Labor Code of 2586-03-02-10, Muffler, Replacement (Combined DOC, DPF, SCR) Decontented. <b><u>Regardless</u></b> of the 1-box received for the repair being a Fully Contented or Decontented unit. |

|                                                                                                                                              |                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| This repair is covered by an authorized Non Compliance Recall Campaign. Reimbursement is obtained through the normal claim handling process. |                                           |
|                                                                                                                                              | UCHP Reimbursement                        |
| Claim Type (used only when uploading from the Dealer Business System)                                                                        | 40                                        |
| Recall Status                                                                                                                                |                                           |
| Vehicle repaired per instructions                                                                                                            | 1-Modified per instructions               |
| Labor Codes                                                                                                                                  |                                           |
| Primary Labor Code:<br>Muffler, Replacement (Combined DOC, DPF, SCR). Decontented                                                            | <b>2586-03-02-10</b><br>1.7<br>1.8<br>1.9 |
| Exhaust Aftertreatment System Analysis                                                                                                       | <b>2589-08-03-18</b><br>1.0               |
| Program Engine Electronic Control Unit                                                                                                       | <b>2840-22-03-01</b><br>0.5               |
| Causal Part                                                                                                                                  | 21970120                                  |
| Authorization Number                                                                                                                         | M0075                                     |

**Note:** Dealers are to perform Non Compliance Recall on all subject vehicles at no charge to the vehicle owner regardless of mileage, age of vehicle or ownership (original purchaser or subsequent purchasers). Whenever vehicles are subject to a Non Compliance Recall are brought to your dealership for service, or taken into your dealership vehicle inventory, it is strongly recommended that every effort be made to perform the recall correction before the vehicle is sold or released to the owner.

| <u>Step</u> | <u>Inspection Check List</u>                                                                                                 | <u>Data Input</u>                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| 1           | Inspect DEF Quality using Refractometer (P/N - 88890105) and Record Value                                                    | VALUE _____                        |
| 2           | Inspect DEF Quality using litmus paper (P/N - 88890110) and Circle Pass or Fail                                              | PASS / FAIL                        |
| 3           | Inspect DEF Tank for contamination of any dirt, debris, coolant, water, fuel, oil, etc. - Contamination found, circle answer | YES / NO                           |
| 4           | With SCR Removed - Inspect DEF dosing valve for excessive crystallized DEF - Circle found Condition                          | NONE / MINIMAL / MODERATE / SEVERE |
| 5           | With SCR Removed - Inspect SCR Diffuser Pipe for excessive crystallized DEF - Circle found condition                         | NONE / MINIMAL / MODERATE / SEVERE |
| 6           | With SCR Removed - Inspect SCR Inlet for excessive crystallized DEF - Circle found condition                                 | NONE / MINIMAL / MODERATE / SEVERE |

## Vehicle Emissions Recall - Proof of Correction

[illegible]

Manufacturer: \_\_\_\_\_

Recall Number: \_\_\_\_\_

The above described vehicle has been repaired, modified to address the Emissions Related Recall that is listed above.

Dealer's Address, City, State

Dealer's Authorized Signature

**X**

Return this certificate to DMV only when required - otherwise retain for your records.