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Revision: J Range of applicable VINs updated 09/23/2022

P20EE (diagnostic troubleshooting code) SOLUTION - NOX CONVERSION EFFICIENCY
 Prevost vehicles

B13R (9700 us/can)

MODEL YEAR(S) AND VEHICLES INVOLVED

GHG17 or OBD18 compliant vehicles

NOTICE TO SERVICE CENTERS	
<i>Verify vehicle eligibility by checking warranty bulletin status with SAP or via ONLINE WARRANTY SYSTEM available on Service / Warranty tab of Prevost website.</i>	
H3-41, H3-45 coaches Model Year: 2017 - 2019	2PCH33492 <u>HC713670</u> and From 2PCH33494 <u>HC713735</u> up to 2PCH33490 <u>KC710466</u> incl.
H3-45 VIP motorhomes Model Year: 2017 - 2019	2PCVS3495 <u>HC713507</u> and From 2PCVS3493 <u>HC713747</u> up to 2PCVS3496 <u>KC720585</u> incl.
X3-45 coaches Model Year: 2017 - 2019	From 4RKG33491 <u>H9737417</u> up to 4RKG33499 <u>K9737575</u> incl.
X3-45 coaches Model Year: 2017 - 2019	2PCG3349X <u>HC736092</u> 2PCG33495 <u>HC736114</u> 2PCG33490 <u>HC736117</u> and From 2PCG33490 <u>HC736182</u> up to 2PCG33494 <u>KC736404</u> incl.
X3-45 VIP commercial use Model Year: 2017 - 2019	2PCCS3493 <u>HC736145</u> and From 2PCCS3495 <u>HC736180</u> up to 2PCCS3499 <u>KC736433</u> incl.
X3-45 VIP motorhomes Model Year: 2017 - 2019	except 2PCCS3498 <u>KC736407</u>
VOLVO 9700 Model Year: 2017 - 2019	From 3CET2V927 <u>H5184392</u> up to 3CET2V926 <u>K5194709</u> incl.

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DESCRIPTION

For the vehicles **on which a notification** for SP18-35 **exists**, perform the following checklist and operations. It has been determined that these vehicles had the code (DTC) P20EE activated.

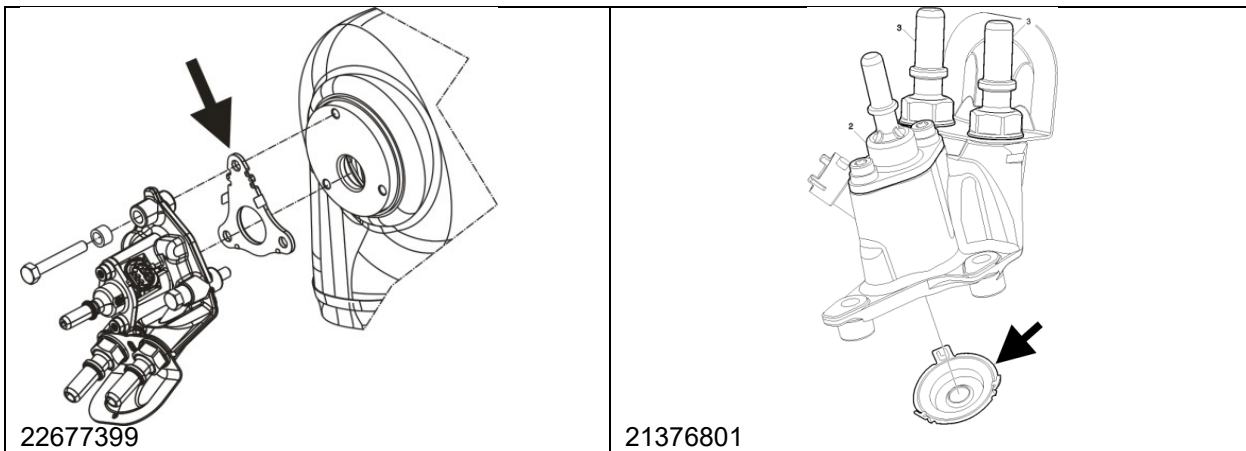
DO NOT perform this special bulletin on a specific vehicle unless a notification exists, otherwise, no reimbursement will be awarded.

You can request a vehicle to be notified, to do so, send a request to the Technical Publications functional mailbox: technicalpublications_prev@volvo.com and include a screen capture of diagnostic troubleshooting code P20EE.

MATERIAL

Part required

Part No.	Description	Qty
22677399	GASKET, DEF INJECTION NOZZLE	1
21376801	SEALING PLATE	1



NOTE

Material can be obtained through regular channels.

Other parts that may be required. **Note that these parts are not covered by this bulletin.**

Part No.	Description	Qty
22303390	NOx SENSOR, PRE	1
22303391	NOx SENSOR, POST	1




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DANGER

Park vehicle safely, apply parking brake, stop the engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

IMPORTANT NOTES

-  DO NOT perform WB18-04 or WB18-84 EMS & ACM SOFTWARE UPDATE before the following checklist, otherwise useful diagnostic codes and monitor data could be erased.
Wb18-04 for Prevost coaches, Wb18-84 for Volvo 9700
-  Any troubleshooting labor of active DTCs (Diagnostic Troubleshooting Codes) other than P20EE is considered as a separate operation of the RO (repair order) and cannot be charged to this special bulletin.
-  Perform the steps in the same order as they appear. If this recommendation is not followed, required diagnostic information might not be recoverable after the software update.

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Vehicle identification		
H3	<input type="checkbox"/>	V.I.N (short) : _ _ - _ _ _ _ _
X3	<input type="checkbox"/>	
9700	<input type="checkbox"/>	

OPERATIONS TO BE PERFORMED IN ADVANCE BY THE SERVICE ADVISOR

Ask the customer whether he/she noticed an abnormal consumption of oil or coolant.

Search all relevant information concerning the aftertreatment system or severe turbo failure in the history of repairs of the vehicle and record. Attach to the repair order.

Also check if SP18-35 has already been performed on that particular coach. If this is the case, do not perform SP18-35 once again, contact the Technical Publications for instructions. You can send a message to the Technical Publications functional mailbox: *technicalpublications_prev@volvo.com*


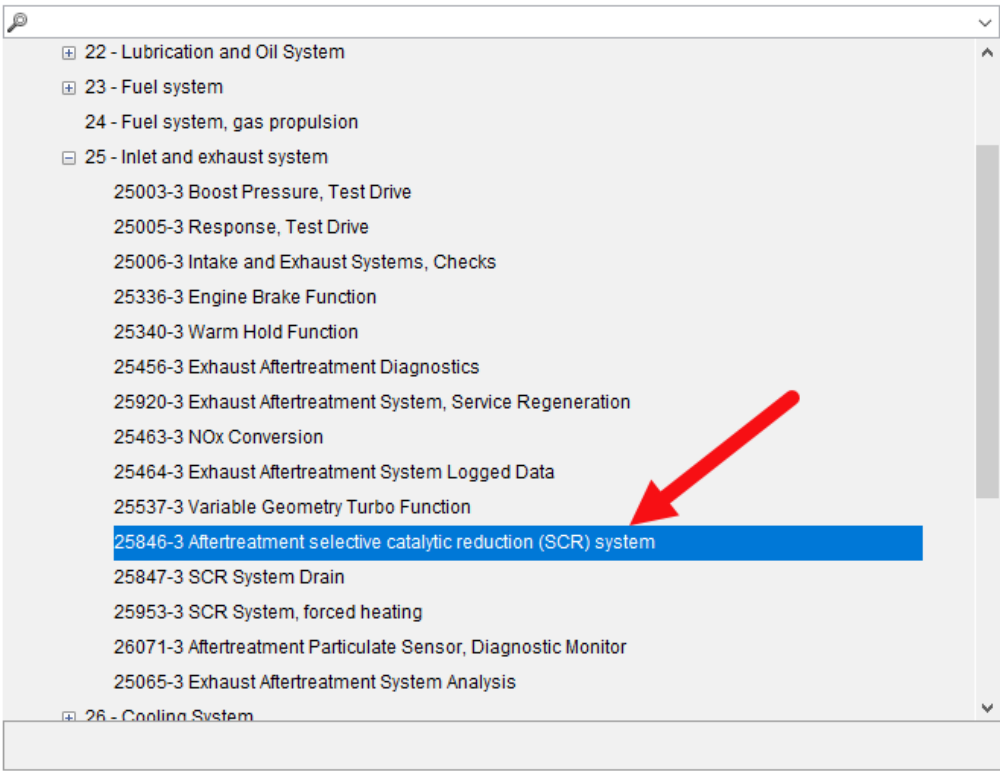
NOTE/RESULTS:

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#	checklist	INITIALS & DATE
1	<p>Before performing any engine ECM software update, connect PTT and check the diagnostic codes related to EMS and ACM.</p> <p>Confirm that code P20EE is present (whether active or inactive). Take a screen capture of the DTCs and save for submittal.</p> <p> Is the code P20EE present? YES <input type="checkbox"/> NO <input type="checkbox"/></p>	
COMMENTS/RESULTS:		
2	<p>Before performing any engine ECM software update, take a screen capture of the five most recent SCR efficiency evaluations and save for submittal.</p> <ul style="list-style-type: none">• Test screen 2589-08-03-05 on PTT with software version prior to 2.8• Operation 25846-3 option D on PTT with newest software version (see next image) <div data-bbox="269 905 1295 1864"><p>Test Select an operation and click Start</p><p><input type="button" value="+"/> <input type="button" value="Sort by function"/></p><p></p><p>Chassis ID: B13R 190080 VIN: 3CET2V92XJ5190080 Work Order: test</p></div> <p>OPERATION 25846-3 OPTION D ON PTT WITH NEWEST SOFTWARE VERSION</p>	

Example of SCR efficiency evaluations

DTC P20EE	
Test Values - NOx/SCR Monitor Data	
80 %	Minimum fault limit
79 %	Evaluation (Most recent)
77 %	Evaluation 2
76 %	Evaluation 3
80 %	Evaluation 4
81 %	Evaluation (Oldest)

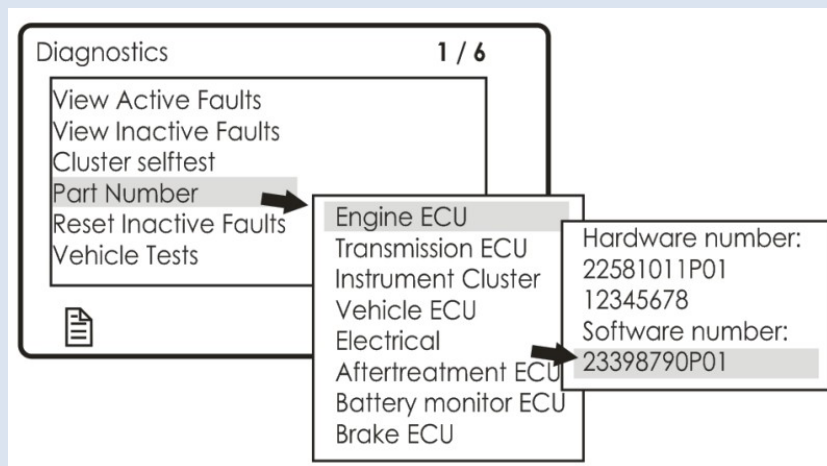
COMMENTS/RESULTS:

3 Check if there are leaks at the Charge Air Cooler (soapy water test). Check if there are leaks of EGR, exhaust gas (between turbo and SCR converter). Note any presence of soot. Any repair is considered as a separate operation of the RO (repair order) and cannot be charged to this special bulletin.
Note: Try to clear exhaust clamps while keeping in mind the state of the insulating blankets to avoid damages because the heat can make them fragile over time.

➡ Leaks were found? YES NO

COMMENTS/RESULTS:

4 Check and record the engine ECU (a.k.a. Engine Control Module ECM) software number.
To do so, check in the dashboard DID. Select DIAGNOSTICS > PART NUMBER > ENGINE ECU



➡ Engine ECU software number: _____

COMMENTS/RESULTS:

5 Engine ECU (a.k.a. Engine Control Module ECM) software update.

If the engine ECU software is not up to date, perform an update to the latest version (software version should be 23766686 or higher).

COMMENTS/RESULTS:

6 Remove DEF doser, perform the dosing test (operation 25846-3 option B) and record the results below.

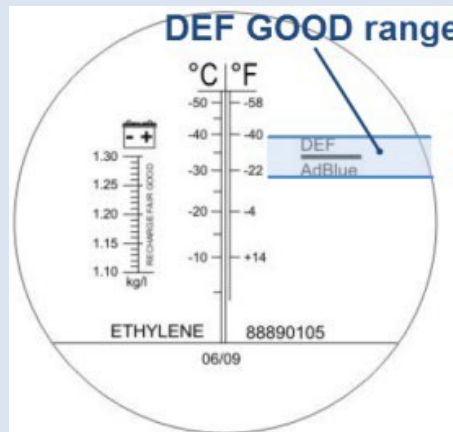
Expected values: small dosing: 49 - 60 ml

large dosing: 196 - 240 ml

Dosing amount: small _____ ml large _____ ml

COMMENTS/RESULTS:

7 Test the concentration of DEF and record the result below. Tool: refractometer # 88890105.



Apply a drop of DEF on the viewer of the refractometer. If the level is above the word "DEF" or below the word "AdBlue" the DEF is contaminated. If no level is shown, it may indicate chemical residue, such as pure water or diesel fuel.

➡ Is the DEF of proper concentration? YES NO

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COMMENTS/RESULTS:

8 Check inside the pipe downstream of the DEF injector for any accumulation of solid (*crystallized*) DEF, attach pictures of crystal accumulations if applicable. Reinstall the DEF injector with two new seals.

NOTE: A small amount of crystal accumulation is normal.



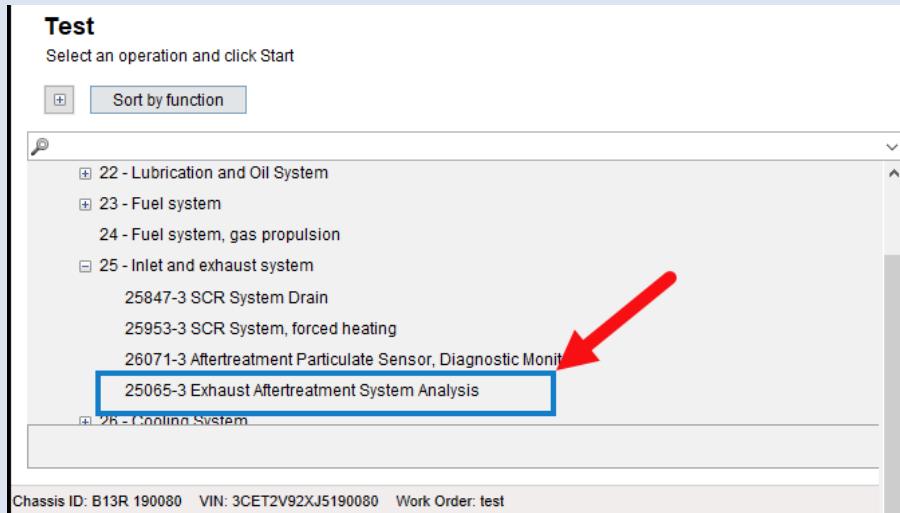
Is there significant/excessive DEF crystal buildup?

YES

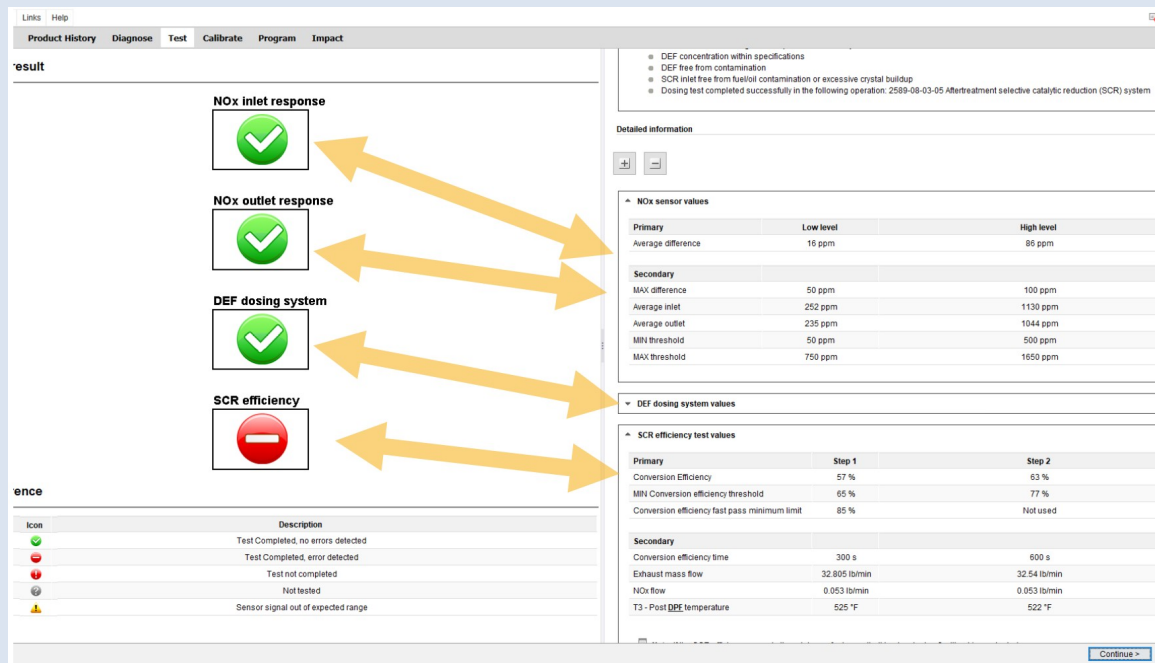
NO

COMMENTS/RESULTS:

9 Perform the **Exhaust aftertreatment system analysis** (operation 25065-3)



Take a screen capture of the Test result (image below) and save for submittal.



COMMENTS/RESULTS:

10

Authorization for the replacement of the SCR converter

An analysis of this checklist with the comments/results must be done in order to allow the replacement of the SCR converter.

Scan and send this checklist with all the relevant documents, screen captures, etc. to the Technical Publications functional mailbox: *technicalpublications_prev@volvo.com*

Please indicate in the "subject line": SP18-35 and the short V.I.N. as in the example below...

The screenshot shows an email composition interface. On the left is a 'Send' button. To its right are buttons for 'To ...', 'Cc..', and 'Ccj...'. The 'To' field contains 'Function Prevost Technical Publications'. The 'Subject' field contains 'sp18-35 F-1234'. The 'sp18-35' and 'F-1234' are each enclosed in a red rectangular box. Two red arrows point from the top towards these boxes. Below the subject field is a large empty text area with three dots at the bottom left.

COMMENTS/RESULTS:

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PARTS / WASTE DISPOSAL

Discard waste according to applicable environmental regulations (Municipal/State [Prov.]/ Federal)

WARRANTY

This diagnostic is covered by Prevost's normal warranty. We will reimburse you the parts and labor upon receipt of a warranty claim according to the following:

PARTS COVERED BY THIS BULLETIN

22677399	DEF injection nozzle gasket	Qty: 1
21376801	sealing plate	Qty: 1

Any other parts such as parts installed to correct exhaust leaks or for the replacement of sensors cannot be charged to this bulletin. These are covered by the normal warranty when applicable and must be charged on a different operation.

LABOR COVERED BY THIS BULLETIN

The time allowed to complete this bulletin in its entirety is 2.25 hours

This allowed time covers the execution of the procedure described in this document only. Any corrective work such as replacing the DEF injector, correcting exhaust leaks or any diagnostic work of active DTCs codes other than P20EE is considered a separate operation on the repair order and cannot be charged to this special bulletin.

Please submit claim via our Online Warranty System, available at www.prevostcar.com (under Service \ Warranty section). Use Claim Type: "Bulletin/Recall" and select "Warranty Bulletin SP18-35".

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OTHER

VBC Bulletin	N/A
Fail Code	04.04-1
Defect Code	9
Syst. Cond	B
Causal Part	21970125

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