

## Conditions for fault code P2002:

- PM Filter Efficiency Monitor

### Probable cause:

- Update required for diagnostic function monitoring the DPF efficiency.

### Possible (observable) Symptoms:

- Mal Indicator Lamp (MIL)  
After 2 driving cycles



### Notes:

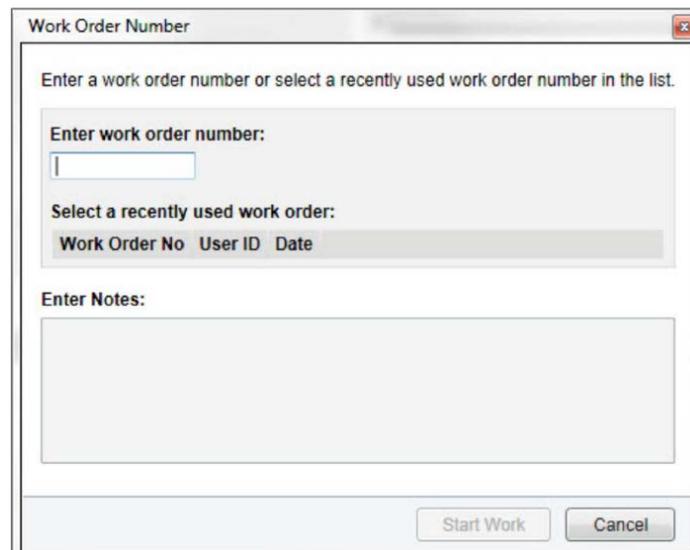
- Check eWarranty for open Service Programs. If SP 284-042 is loaded to the VIN, proceed and file per those instructions.
- If the SP 284-042 is not loaded, notate in Volvo Remote Diagnostics Team's Asist case and proceed with the repair per the following instructions.

### Required Tools:

1. Premium Tech Tool version 2.02.55 or higher
2. Diagnostic Connector 88890304
3. Communication Interface 88890300 with firmware 1.12.0.2 or higher

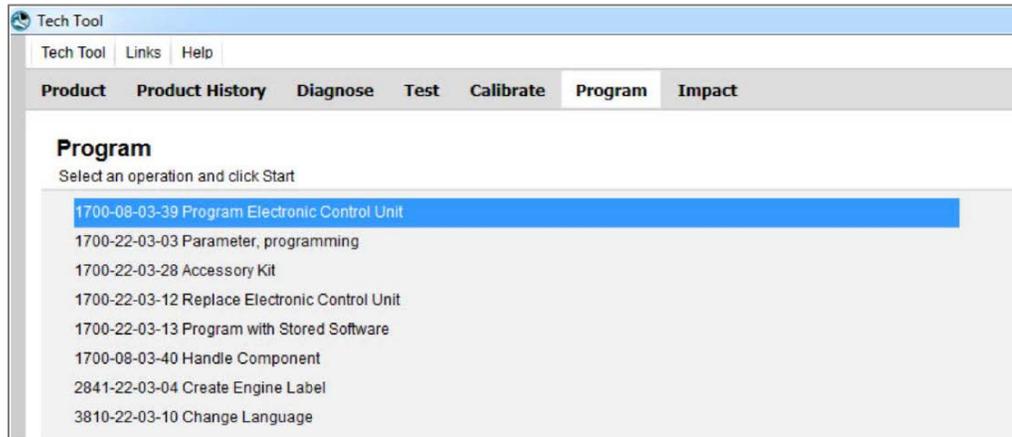
### Repair Instructions:

1. Connect Premium Tech Tool (PTT) to the vehicle diagnostics connector using the 16 pin OBD cable 88890304 and Communication Interface 88890300. Connect the PC to a functional LAN or modem connection and a 120 Volt AC source.
2. Turn the ignition switch "ON".
3. Log in to PTT and Identify Vehicle is displayed.
4. Once the vehicle has been identified, enter the Work Order Number information. Then click *Start Work*.

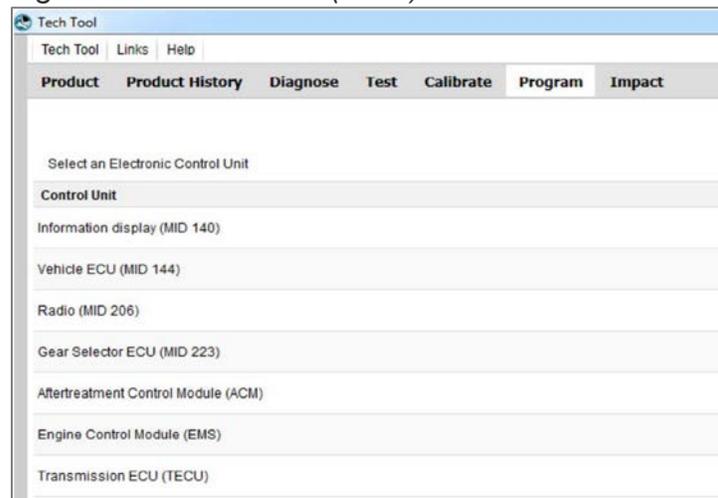
A screenshot of a software dialog box titled "Work Order Number". The dialog box has a title bar with a close button (X). The main content area contains the following elements:

- A text prompt: "Enter a work order number or select a recently used work order number in the list."
- A section labeled "Enter work order number:" with a text input field below it.
- A section labeled "Select a recently used work order:" with a table below it. The table has three columns: "Work Order No", "User ID", and "Date".
- A section labeled "Enter Notes:" with a large text area below it.
- At the bottom right, there are two buttons: "Start Work" and "Cancel".

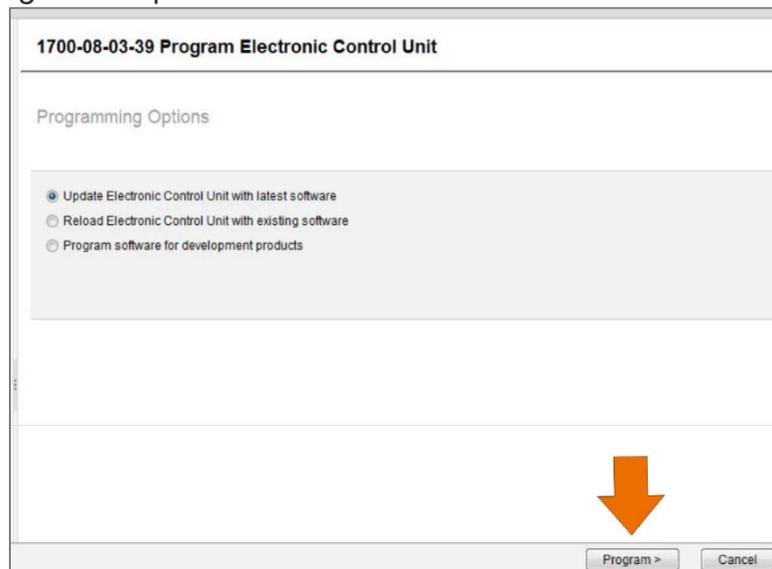
5. From the Main Menu select *Program* and then *Program Electronic Control Unit 1700-08-03-39*. Then click *Start*.



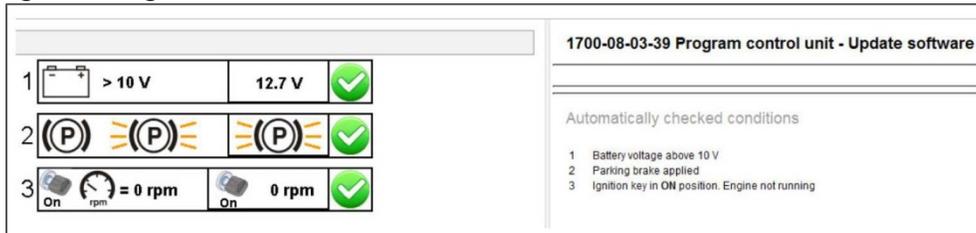
6. Select the *Engine Control Module (EMS)* from the list.



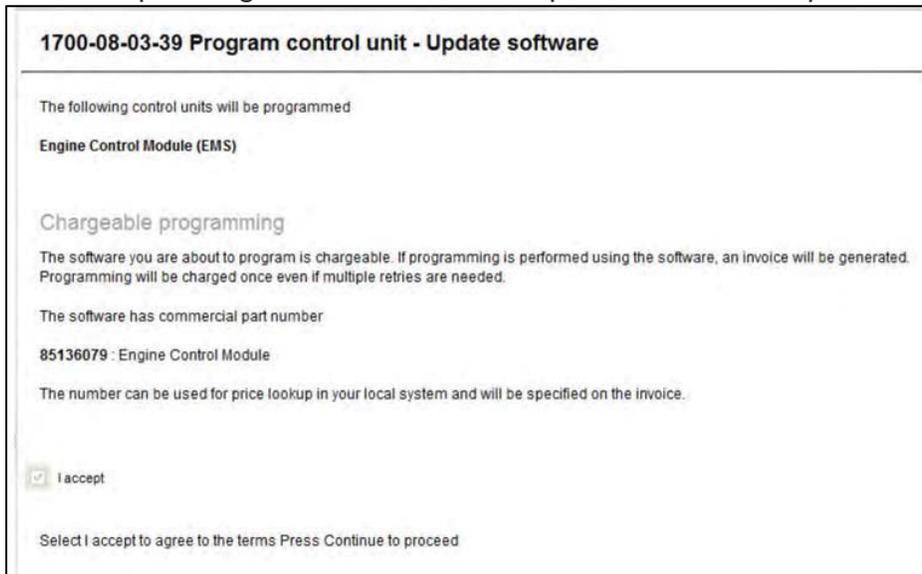
7. Select *Program* to update the electronic control unit with the latest software.



- Certain conditions must be met to continue with programming: battery voltage above 10v, parking brake applied, and ignition key in ON position with engine not running. When all conditions have been met, click *Continue* to proceed with programming.



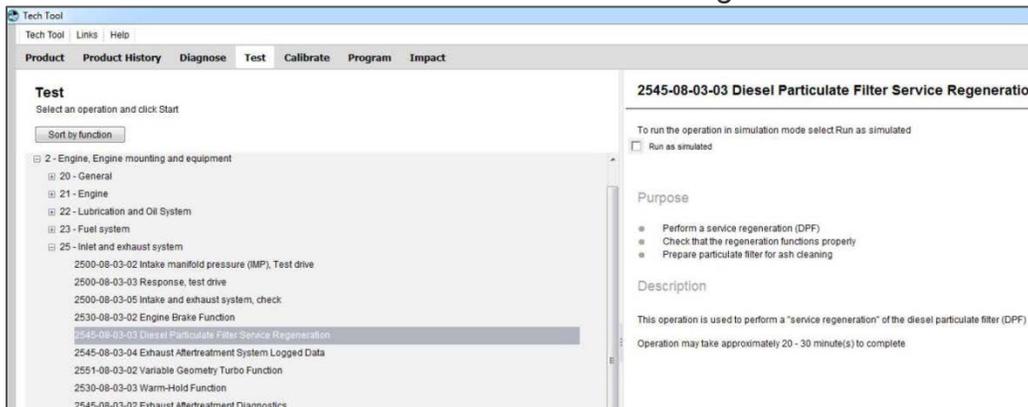
- Select "I accept" to agree to the terms and press Continue to proceed.



- When EMS programming is complete, click *Exit* to return to Main Menu and repeat steps 5-8 to program the Aftertreatment Control Module (ACM).

**Note:** Engine hours will be lost once modules have been programmed.

- When ACM programming is complete, select *Test* from the Main Menu. Select *2545-08-03- 03 Diesel Particulate Filter Service Regeneration* and click on *Start*.



12. Review the advisories, check the box and click on *Continue*.

**2545-08-03-03 Diesel Particulate Filter Service Regeneration**

Information >> Conditions >> Execution >> Result

**WARNING**

Ensure that the vehicle is in a suitable place outdoors. The exhaust outlet must not be directed towards anything that could be damaged by high temperature. If the exhaust is directed towards the ground it is recommended to soak the ground below with water to prevent damage to the surface, or if possible position the vehicle on gravel surface. Ensure that the exhaust is not near flammable material.

A fire-extinguisher should be accessible in case of fire.

**CAUTION**

Vehicles equipped with an exhaust aftertreatment system generate high exhaust gas temperatures during regeneration of the diesel particulate filter. If regeneration might occur while working with the vehicle, ensure that the exhaust outlet is not directed toward anything that could be damaged by high gas temperatures. Also, do not connect an exhaust vent hose to the vehicle since most exhaust vent hoses are not designed to handle high temperatures. Failure to follow this warning may result in high temperature exhaust gases overheating nearby structures or components resulting in a fire.

I have read and understand the above advisory

13. When all conditions are met, check the confirmed box and click on *Continue*.

1	> 10 V	13.6 V	<input checked="" type="checkbox"/>
2	(P)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	> 400 rpm	700 rpm	<input checked="" type="checkbox"/>
4	> 120 °F	174.2 °F	<input checked="" type="checkbox"/>
5	< 0 %	0 %	<input checked="" type="checkbox"/>
6	= N		
7			

**2545-08-03-03 Diesel Particulate Filter Service Regeneration**

Information >> Conditions >> Execution

Automatically checked conditions

- 1 Battery voltage above 10 V
- 2 Parking brake applied
- 3 Ignition key in ON position. Engine running
- 4 Engine Coolant Temperature (ECT) above 120 °F
- 5 Accelerator pedal position below 0 %

Manual conditions

- 6 Transmission in neutral position
- 7 Vehicle outdoors in a suitable area

Confirmed

14. When regeneration is complete, allow engine to idle until high exhaust system temperature (HEST) light goes off. HEST light shown below.

4

15. When the HEST light goes off, select *Test* from the Main Menu. Select *2585-11-03-03 SCR, Diesel Exhaust Fluid, Crystal Sublimation* and click on *Start*.

**Note:** Start the Crystal Sublimation process within 2 minutes of engine coming back to idle.

The screenshot shows the 'Test' menu with a tree view on the left and a details panel on the right. The tree view includes categories like 'Exhaust Aftertreatment', 'Body Builder', 'Brakes', 'Cab', 'Driver Interface', 'Engine', 'GlobalProduct', and 'Lighting system'. Under 'Exhaust Aftertreatment', the item '2585-11-03-03 SCR, Diesel Exhaust Fluid, Crystal Sublimation' is highlighted. The details panel on the right shows the title '2585-11-03-03 SCR, Diesel Exhaust Fluid, Crystal Sublimation' and options to 'Run as simulated' (unchecked) and 'Replay recorded values' (unchecked). It also includes a 'Purpose' section: 'Perform DEF crystal sublimation' and a 'Description' section: 'Under certain circumstances, the SCR catalyst may become loaded with DEF crystals. These deposits develop when the DEF is injected in cold duty cycles in which the SCR catalyst does not reach the proper temperature needed for chemical reaction. If the crystallization level becomes greater than that which can be removed by normal engine operation, manual regeneration may be needed. Operation may take approximately 45 minute(s) to complete. This operation should only be used when referred by service information, Guided Diagnostics or Technical Support.'

16. Review the advisories, check the box and click on *Continue*.

The screenshot shows a warning and caution advisory screen. At the top, it says '2585-11-03-03 SCR, Diesel Exhaust Fluid, Crystal Sublimation' and 'Information >> Conditions >> Execution'. A yellow banner with a warning icon and the word 'WARNING' is displayed. Below it, the text reads: 'Ensure that the vehicle is in a suitable place outdoors. The exhaust outlet must not be directed towards anything that could be damaged by high temperature. If the exhaust is directed towards the ground it is recommended to soak the ground below with water to prevent damage to the surface, or if possible position the vehicle on gravel surface. Ensure that the exhaust is not near flammable material. A fire-extinguisher should be accessible in case of fire.' Below this is a yellow banner with a caution icon and the word 'CAUTION'. The text reads: 'Vehicles equipped with an exhaust aftertreatment system generate high exhaust gas temperatures during regeneration of the diesel particulate filter. If regeneration might occur while working with the vehicle, ensure that the exhaust outlet is not directed toward anything that could be damaged by high gas temperatures. Also, do not connect an exhaust vent hose to the vehicle since most exhaust vent hoses are not designed to handle high temperatures. Failure to follow this warning may result in high temperature exhaust gases overheating nearby structures or components resulting in a fire.' At the bottom, there is a checkbox labeled 'I have read and understand the above advisory' which is checked.

17. When all conditions are met, check the confirmed box and click on *Continue*.

The screenshot shows a conditions screen with a list of 8 conditions. Each condition has a status indicator (a green checkmark in a box) and a 'Confirmed' checkbox. The conditions are: 1. Battery voltage > 10 V (13.8 V); 2. Parking brake applied (P icon); 3. Ignition key in ON position, Engine running (> 400 rpm, 700 rpm); 4. Engine Coolant Temperature (ECT) above 120 °F (177.8 °F); 5. Accelerator pedal position below 0 % (0 %); 6. Transmission in neutral position (H icon = N); 7. Reference from diagnostic/service information or Technical support (laptop icon); 8. Vehicle outdoors in a suitable area (house icon). The 'Confirmed' checkbox at the bottom is checked.

18. When sublimation is complete, allow engine to idle until HEST light goes off.



19. Clear any diagnostic trouble codes (DTC) and Finish Work.

**Reimbursement:**

<b>This repair is covered by an authorized Service Program. Reimbursement is obtained via the normal claim handling process.</b>	
<b>Claim Type (used only when uploading from the Dealer Bus. Sys.)</b>	B
<b>Recall Status</b>	
Vehicle inspected, repair not required	1- Inspected OK
Vehicle repaired per instruction	2- Modified per instruction
<b>Labor Code</b>	
Primary Labor Code	28438-0-02 – 2.3 hrs
Time to take charge and determine campaign status	17003-0-0 – 0.3 hrs
<b>Causal Part</b>	3092091
<b>Authorization Number</b>	SP284-042
<b>Expiration Date</b>	31-OCT-2014

**Note:** Take Charge Time is not included in the Labor Code for this operation. Take charge may be eligible but can only be used once per repair visit. If vehicle is having other warranty repairs performed, take charge should be charged to the warranty repair, otherwise take charge can be charged to this service program.