



Mack Chassis - Diagnostic Trouble Code (DTC) P226D Intermittently Lighting The Malfunction Indicator Lamp (MIL) - US14+OBD15 And US14+OBD16 Emissions (Non-Common Rail Fuel System), Commonly Model Years 2015 and 2016



> Internal Content

Verify the chassis emissions level

- Details can be found in the Product Details box on the Product tab in PTT as seen below:



Review the Detailed Status Information for the relevant code on the DTC Readout.

DTC List (2 Items)		
Control Unit	DTC	Status
Brake ECU (MID 136)	SID 69: Axel load sensor, FMI 2: Data erratic, intermittent, or incorrect	Active
Engine Control Module (EMS)	P229F64: NOx Sensor Gas Outlet Removed, Signal Plausibility Failure	Active

NOx Sensor Gas Outlet Removed	
Detailed status information	
Title	Value
Confirmed DTC	True
Pending DTC	False
Test failed	True
Test failed since last clear	True
Test failed this operation cycle	True
Test not completed since last clear	False
Test not completed this operation cycle	False
Warning indicator requested	False

Software improvements have been released for both emissions levels to address this DTC. Field Service Bulletins with instructions have been published for each emissions level. Both can be found under the Service tab in Impact, Function Group

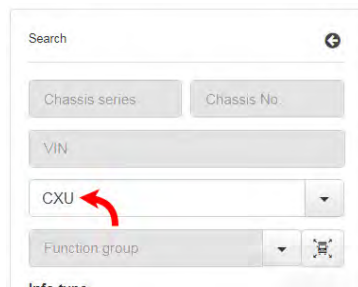


284. The articles can also be searched for by title. Refer to the chart below for the correct bulletin information:

Emissions Level (Model Year)	Field Service Bulletin
US14+OBD15 (2016)	FSB 284-064 Engine Control Module (ECM) and Aftertreatment Control Module (ACM), Reprogramming
US14+OBD16 (2017)	FSB 284-065 Engine Control Module (ECM) and Aftertreatment Control Module (ACM), Reprogramming

If the Bulletin does not appear when searched with either VIN or Chassis information entered, search by model:

1. Clear any chassis information from the Search box.
2. Select or enter the applicable model.



Search

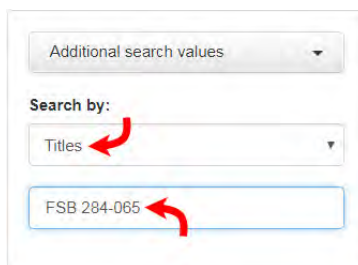
Chassis series Chassis No.

VIN

CXU

Function group

3. Make sure Title is selected in the Search By field. Enter the correct Bulletin title in the text entry field.



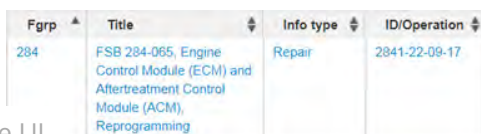
Additional search values

Search by:

Titles

FSB 284-065

4. Press the Search button. The operation will appear in the results window.



Grp	Title	Info type	ID/Operation
284	FSB 284-065, Engine Control Module (ECM) and Aftertreatment Control Module (ACM), Reprogramming	Repair	2841-22-09-17

5. Select the correct vehicle configuration from the list that appears as

shown below:

FSB 284-065, Engine Control Module (ECM) and Aftertreatment Control Module (ACM), Reprogramming

Description	ID	Date
☐ CXU, ENG-VE11, EOBD-U16, Assembly Date 2016-01-01 - 2016-12-31		06/08/2019
☐ CXU, ENG-VE13, EOBD-U16, Assembly Date 2016-01-01 - 2016-12-31		
☒ CXU, ENG-VE16, EOBD-U16, Assembly Date 2016-01-01 - 2016-12-31		

If software is current and the code is present, the code confirmed status should be verified to be TRUE as shown above before continuing diagnosis.

- Codes and symptoms that may be related to P226D should be diagnosed prior to P226D itself.

 Tags

k18901293

mack

Related links and attachments

No links or attachments available

 Live UI

 Feedback

[Give feedback](#)

to help improve the content of this article

(June 2018)

Information

Software updates with enhancements are available for the engine control module (ECM) and aftertreatment control module (ACM) for VOLVO D11, D13 and D16 engines on OBD2015 vehicles built from January 1, 2015 to December 31, 2015.

Follow the reprogramming procedure in the following order as outlined in this document:

- ECM reprogramming
- ACM reprogramming

The software updates address the following Diagnostic Trouble Codes (DTCs):

- P026C - Fuel Injector, Low Mass Flow
- P0507 - Idle Engine Speed Rationality: Idle Speed High
- P2002 - PM Filter Efficiency Monitor
- P0422 - Catalyst 2 Efficiency Below Threshold (Bank 1)
- P226D - Diesel Particulate Filter (DPF) Missing Substrate
- P249C - Time to Enter DEF (Diesel Exhaust Fluid) Dosing
- P208E - Aftertreatment Reagent Dosing Valve Clogged
- P2459 - Too Frequent Regeneration
- P24A4 - DPF Restriction - Soot Accumulation Too High (Bank 1)
- P10FE - DPF Restriction - Soot Accumulation Moderately High (Bank 1)
- P226C - Boost Pressure Slow Response
- P249F - Excessive Time to Enter Closed Loop DPF Regeneration Control
- P24A0 - Closed Loop DPF Regeneration Control at Limit - Temperature Too Low
- P208A - Aftertreatment DEF Pump: Open Circuit
- P20CF - (AHI) Fuel Injector "A" Stuck Open
- P226C00 - Turbocharger Boost Control "A" Slow Response
- P205B - Aftertreatment DEF tank Temperature Sensor: Rationality Low
- P20128 - Engine Cooling System: Stuck Open or Leaking Thermostat Monitor

Check the current main software for ECM and ACM to determine the action required as shown in the table below.

Action Required		
ECM	Main Software	Action Required
D11/ D13	Equal or Less Than 22687459	Update to Latest Software
D16	Equal or Less Than 22644015	Update to Latest Software
ACM	Main Software	Action Required
D11/ D13	Equal or Less Than	Update to Latest

Copyright to this documentation belongs to the Volvo Group. No reproduction, copying, change, amendment or other similar disposal is entitled without prior written consent by the Volvo Group.

The information contained herein is current at the time of its original distribution, but is subject to change. The reader is advised that printed copies are uncontrolled.

/ D16	22741796	Software
-------	----------	----------

Required Tools

Premium Tech Tool (PTT) version 2.06.35 or higher

VOCOM Diagnostic Connector 88890304

Communication Interface 88890300

Note: Using other interfaces may affect programming speed.

Note: Check Premium Tech Tool version by clicking on Help tab and then click on "About Tech Tool".

Software Update Procedure

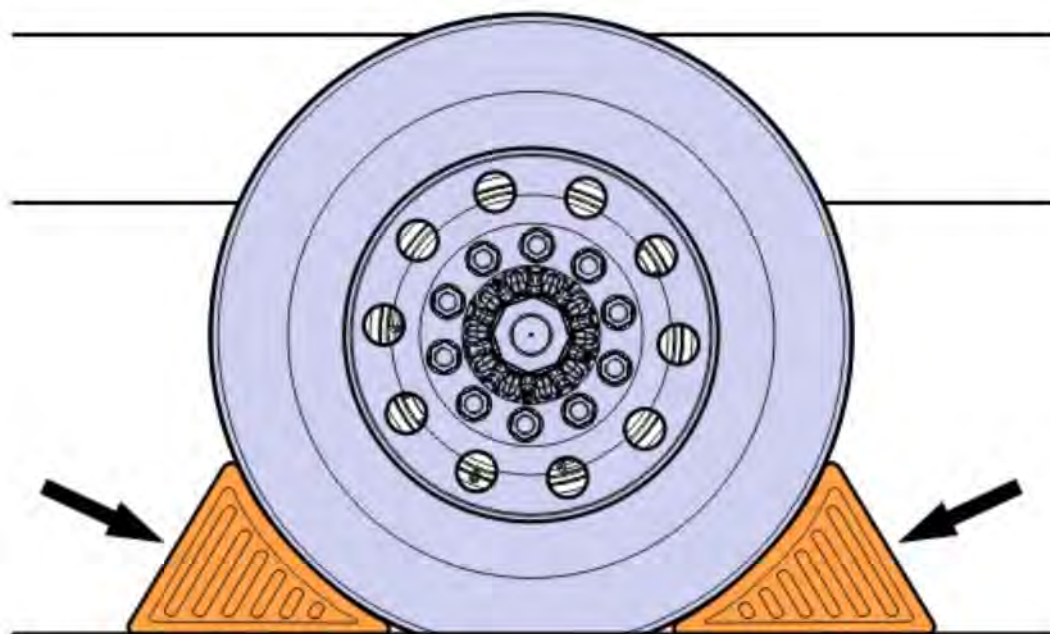
You must read and understand the precautions and guidelines in Service Information, group 20, "General Safety Practices, Engines" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.



Danger

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 level surface.
2. Apply the parking brake.
3. Place the transmission in neutral or park.
4. Install the wheel chocks.



5. 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.
6. Turn the ignition switch "ON".
7. Log in to PTT and Identify Vehicle is displayed.
8. Once the vehicle has been identified, enter the Work Order Number information, then click Start Work.

Work Order Number

Enter a work order number or select a recently used work order number in the list.

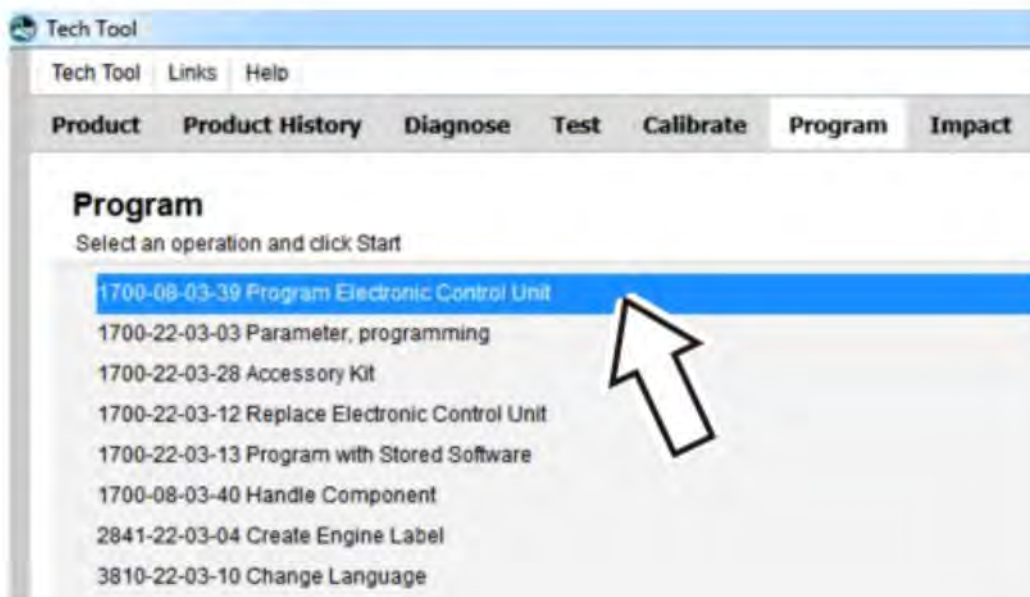
Enter work order number:

Select a recently used work order:

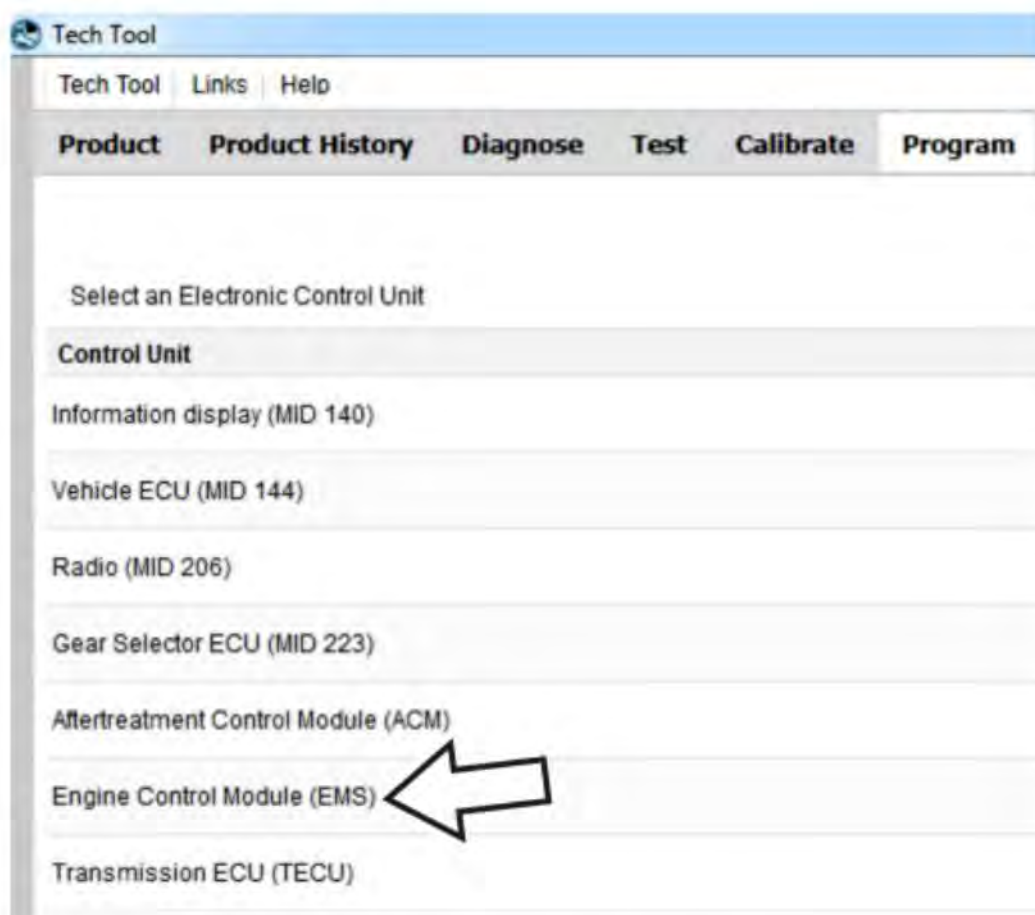
Work Order No	User ID	Date

Enter Notes:

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



10. Select Engine Control Module (EMS).



11. Select Program to update the ECM with the latest software.

Programming options

- ☒ Update control unit with latest software
☐ Reload control unit with existing software

12. 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.

1	 > 10 V	12.7 V	
2	 		
3	  = 0 rpm	 0 rpm	

1700-08-03-39 Program control unit - Update software

Automatically checked conditions

- 1 Battery voltage above 10 V
- 2 Parking brake applied
- 3 Ignition key in **ON** position. Engine not running

13. Select "I accept" to agree to the terms and press continue to proceed.

Note: In the United States and Canada, the programing is NOT chargeable. An invoice will not be generated.

1700-08-03-39 Program control unit - Update software

The following control units will be programmed

Engine Control Module (EMS)

Chargeable programming

The software you are about to program is chargeable. If programming is performed using the software, an invoice will be generated.

Programming will be charged once even if multiple retries are needed.

The software has commercial part number

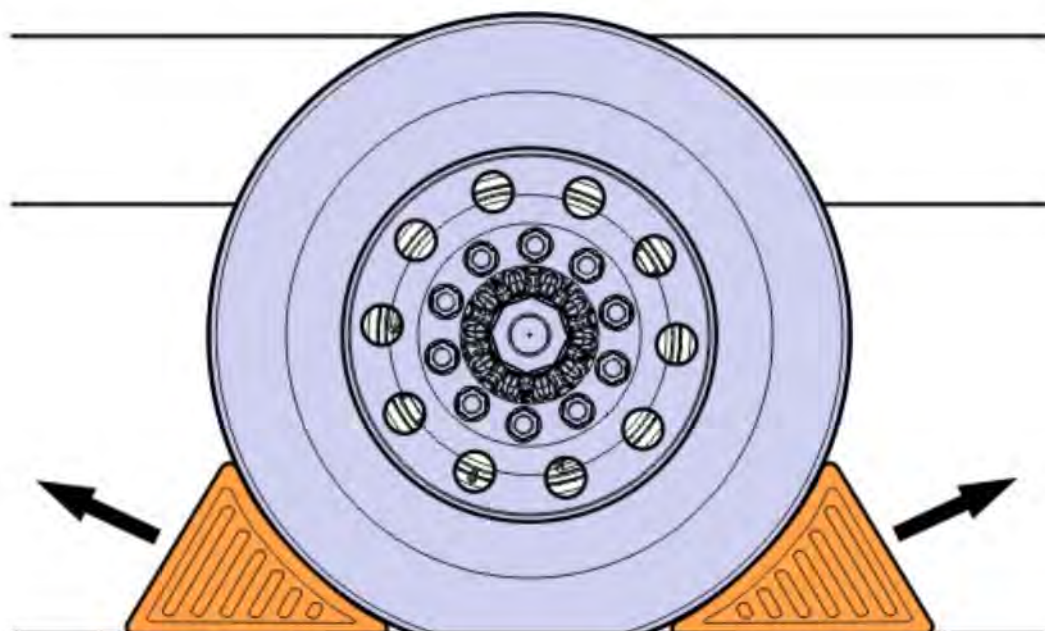
85136079 : Engine Control Module

The number can be used for price lookup in your local system and will be specified on the invoice.



Select I accept to agree to the terms Press Continue to proceed

14. When programming is complete, click Exit to return to Main Menu to program the ACM.
15. When all programing is complete, clear any diagnostic trouble codes (DTC) and Finish Work.
16. Remove the wheel chocks.



Reimbursement

This repair may be eligible for reimbursement if a product failure

UCHP
Reimbursement

Copyright to this documentation belongs to the Volvo Group. No reproduction, copying, change, amendment or other similar disposal is entitled without prior written consent by the Volvo Group

The information contained herein is current at the time of its original distribution, but is subject to change. The reader is advised that printed copies are uncontrolled.

was experienced within time and mileage limits of the applicable Warranty coverage. Reimbursement is obtained via the normal claim handling process.	
Claim Type (used only when uploading from the Dealer Bus. Sys.)	W
Labor Code	
Primary Labor Code (Engine Control Module (ECM) and Aftertreatment Control Module (ACM), Reprogramming)	2841-22-09-16 0.4 hrs.
Causal Part	3092091

VOLVO Trucks North America reserves the right to make any changes in design or to make additions to or upon its products without incurring any obligations to install the same on vehicles previously built.

(June 2018)

Information

Software updates with enhancements are available for the engine control module (ECM) and aftertreatment control module (ACM) for VOLVO D11, D13 and D16 engines on OBD2016 vehicles built from January 1, 2016 to December 31, 2016.

Follow the reprogramming procedure in the following order as outlined in this document:

- ECM reprogramming
- ACM reprogramming

The software updates address the following Diagnostic Trouble Codes (DTCs):

- P026C - Fuel Injector, Low Mass Flow
- P0422 – Catalyst 2 Efficiency Below Threshold (Bank 1)
- P0507 – Idle Engine Speed Rationality: Idle Speed High
- P10FE – DPF Restriction – Soot Accumulation Moderately High (Bank 1)
- P208E – Aftertreatment Reagent Dosing Valve Clogged
- P226C – Boost Pressure Slow Response
- P226D – Particulate Filter Deteriorated/Missing Substrate Bank 1
- P24A0 – Closed Loop DPF Regeneration Control at Limit – Temperature Too Low
- P24A4 – DPF Restriction – Soot Accumulation Too High (Bank 1)
- P2459 – Diesel Particulate Filter Regeneration Frequency (Bank 1)
- P249C – Excessive Time To Enter Closed Loop Reductant Injection Control
- P249F – Excessive Time to Enter Closed Loop DPF Regeneration Control

Check the current main software for ECM and ACM to determine the action required as shown in the table below.

Action Required		
ECM	Main Software	Action Required
D11/ D13	Equal or Less Than 22825014	Update to Latest Software
D16	Equal or Less Than 22898389	Update to Latest Software
ACM	Main Software	Action Required
D11/ D13 / D16	Equal or Less Than 22738289	Update to Latest Software

Required Tools

Premium Tech Tool (PTT) version 2.06.35 or higher

VOCOM Diagnostic Connector 88890304

Communication Interface 88890300

Copyright to this documentation belongs to the Volvo Group. No reproduction, copying, change, amendment or other similar disposal is entitled without prior written consent by the Volvo Group.

The information contained herein is current at the time of its original distribution, but is subject to change. The reader is advised that printed copies are uncontrolled.

Note: Using other interfaces may affect programming speed.

Note: Check Premium Tech Tool version by clicking on Help tab and then click on "About Tech Tool".

Software Update Procedure

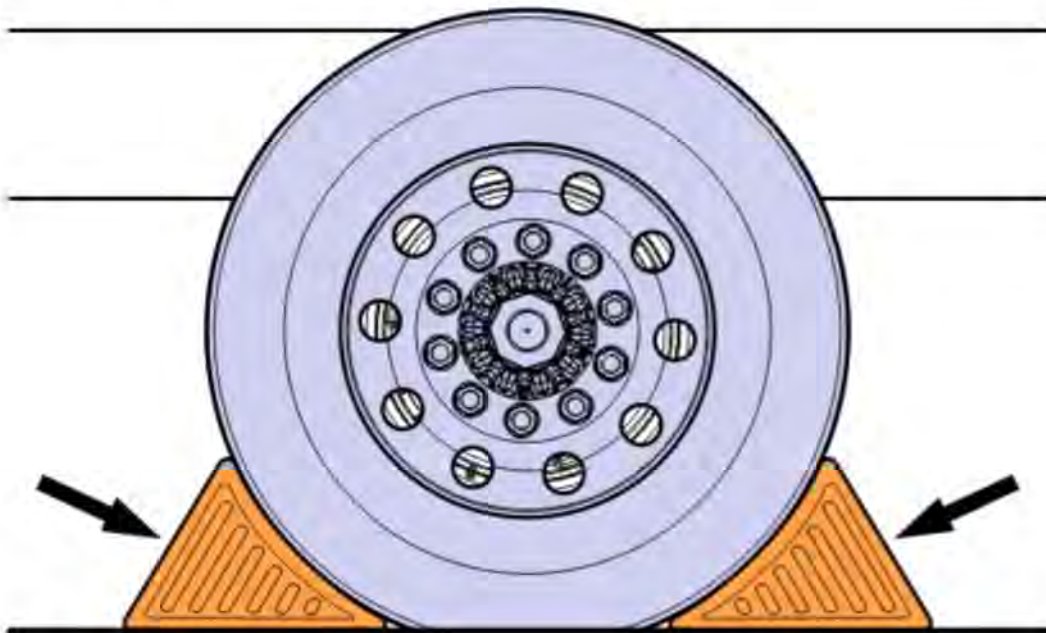
You must read and understand the precautions and guidelines in Service Information, group 20, "General Safety Practices, Engines" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.



Danger

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 level surface.
2. Apply the parking brake.
3. Place the transmission in neutral or park.
4. Install the wheel chocks.

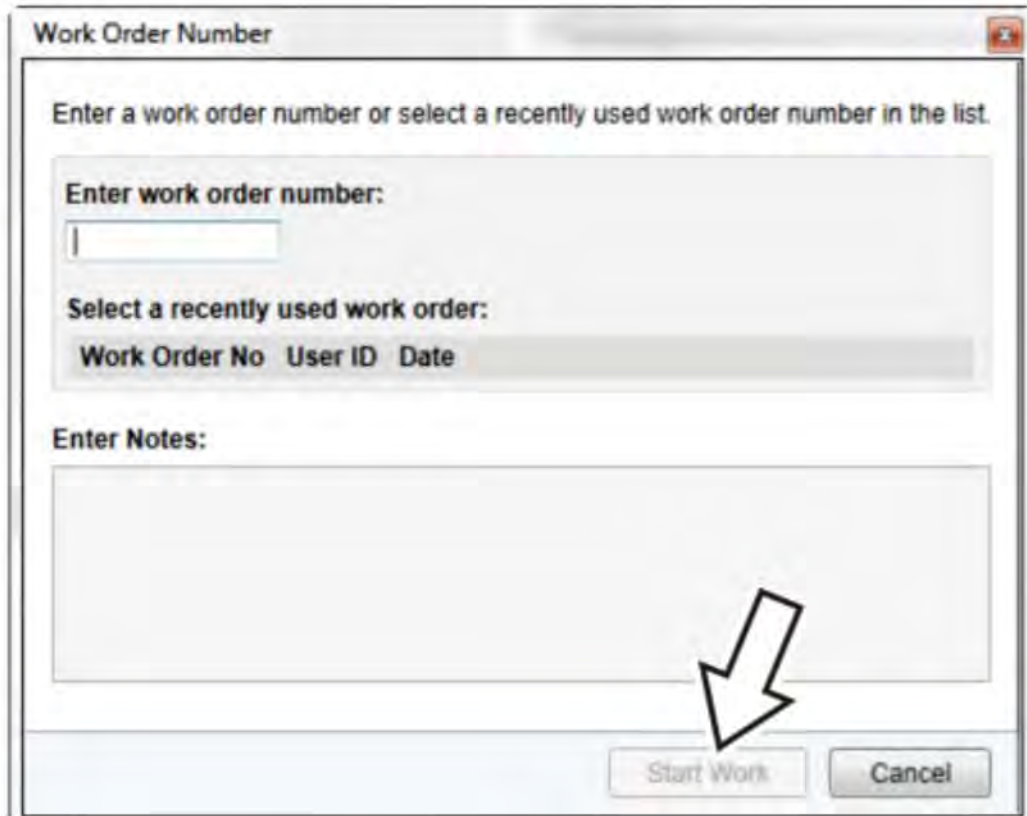


5. Connect Premium Tech Tool (PTT) to the vehicle diagnostics connector using the 16 pin OBD cable 88890304 and Communication Interface 88890300. Connect the PC to a functional LAN or modem connection and a 120 Volt AC source.
6. Turn the ignition switch "ON".
7. Log in to PTT and Identify Vehicle is displayed.

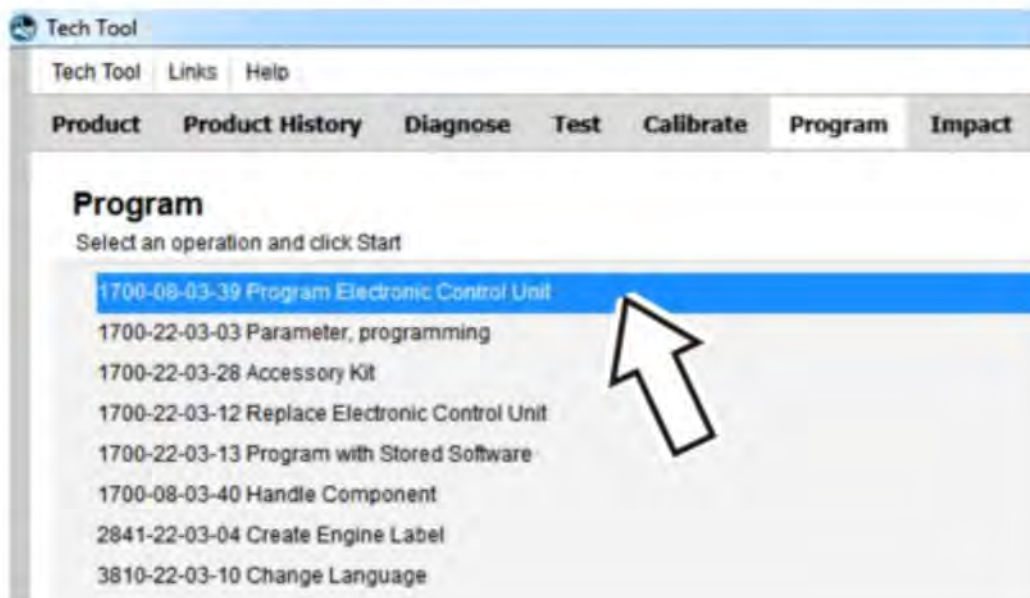
Copyright to this documentation belongs to the Volvo Group. No reproduction, copying, change, amendment or other similar disposal is entitled without prior written consent by the Volvo Group.

The information contained herein is current at the time of its original distribution, but is subject to change. The reader is advised that printed copies are uncontrolled.

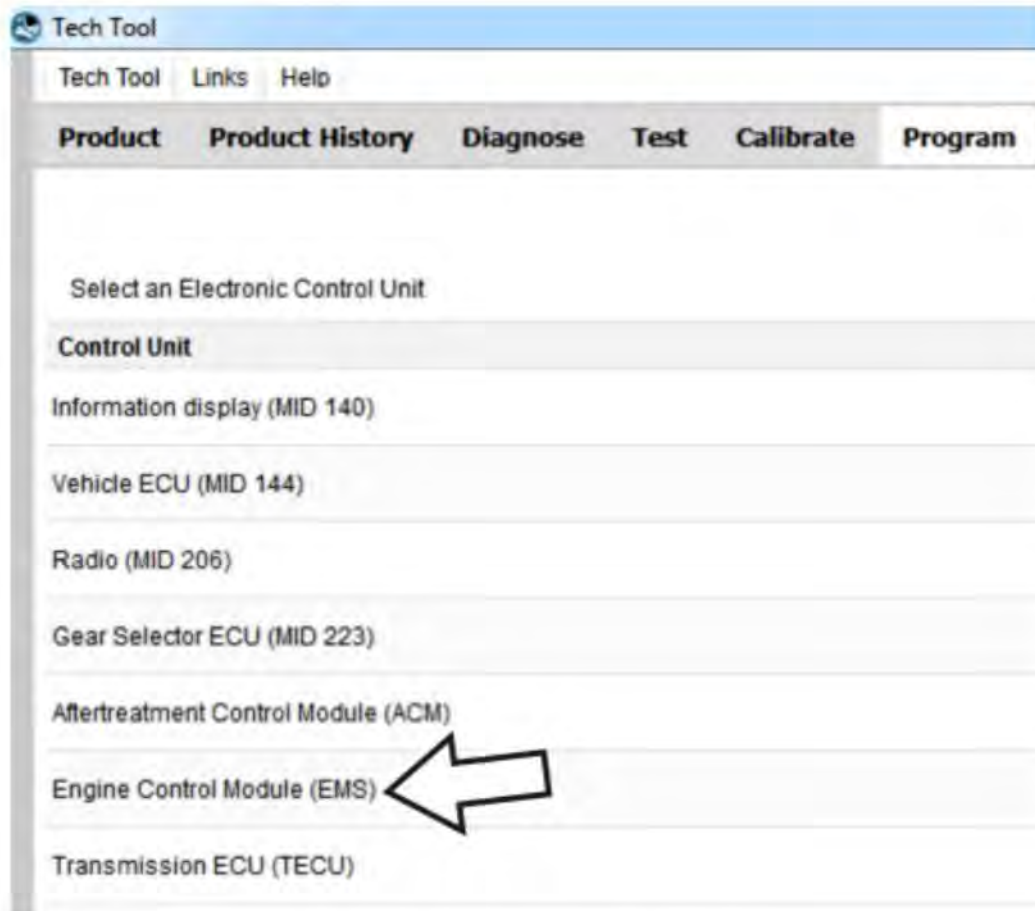
8. Once the vehicle has been identified, enter the Work Order Number information, then click Start Work.



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

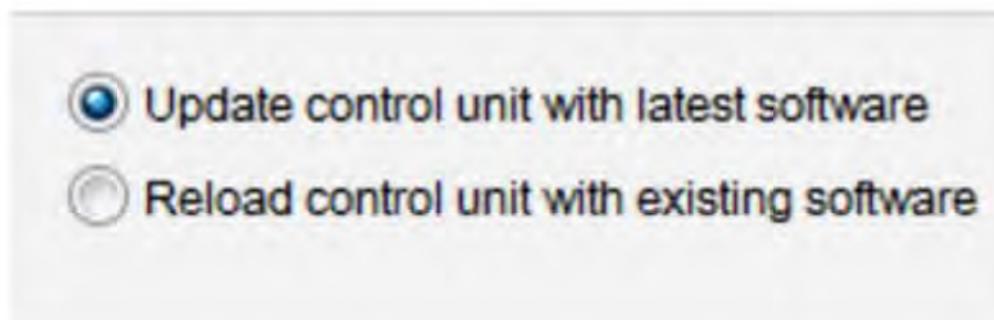


10. Select Engine Control Module (EMS).



11. Select Program to update the ECM with the latest software.

Programming options



12. 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.

1	 > 10 V	12.7 V	
2	 		
3	 = 0 rpm	 0 rpm	

1700-08-03-39 Program control unit - Update software

Automatically checked conditions

- 1 Battery voltage above 10 V
- 2 Parking brake applied
- 3 Ignition key in **ON** position. Engine not running

13. Select "I accept" to agree to the terms and press continue to proceed.

Note: In the United States and Canada, the programming is NOT chargeable. An invoice will not be generated.

1700-08-03-39 Program control unit - Update software

The following control units will be programmed

Engine Control Module (EMS)

Chargeable programming

The software you are about to program is chargeable. If programming is performed using the software, an invoice will be generated.

Programming will be charged once even if multiple retries are needed.

The software has commercial part number

85136079 : Engine Control Module

The number can be used for price lookup in your local system and will be specified on the invoice.

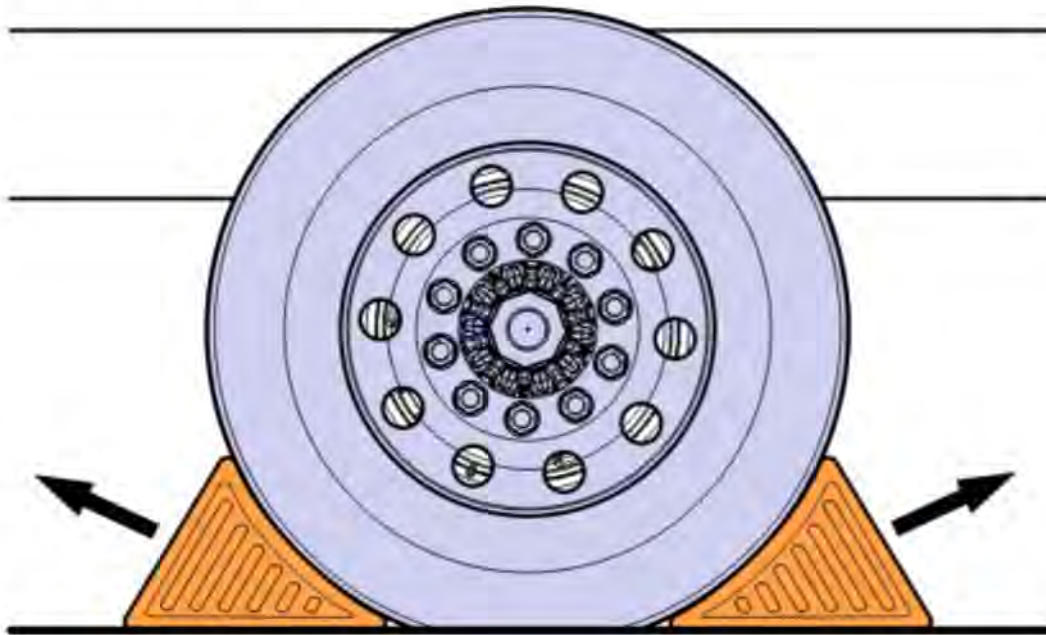


I accept



Select I accept to agree to the terms Press Continue to proceed

14. When programming is complete, click Exit to return to Main Menu to program the ACM.
15. When all programing is complete, clear any diagnostic trouble codes (DTC) and Finish Work.
16. Remove the wheel chocks.



Reimbursement

This repair may be eligible for reimbursement if a product failure was experienced within time and mileage limits of the applicable Warranty coverage. Reimbursement is obtained via the normal claim handling process.	UCHP Reimbursement
Claim Type (used only when uploading from the Dealer Bus. Sys.)	W
Labor Code	
Primary Labor Code (Engine Control Module (ECM) and Aftertreatment Control Module (ACM), Reprogramming)	2841-22-09-17 0.4 hrs.
Causal Part	3092091

VOLVO Trucks North America reserves the right to make any changes in design or to make additions to or upon its products without incurring any obligations to install the same on vehicles previously built.