




**MAINTENANCE
INFORMATION**

MI16-34

DATE :	SEPTEMBER 2016	SECTION :	12 - Brakes
SUBJECT :	IMPLEMENTATION OF VOLVO ENGINE BRAKE AUTO MODE – US10 & ODB13 VEHICLES		

IMPORTANT NOTICE
This modification is recommended by PrevoSt to increase your vehicle's performance. Note that no reimbursement will be awarded for carrying out this modification.

APPLICATION

Model	VIN
<div style="text-align: center;">  <p>US10 AND OBD13 vehicles equipped with the ALLISON TRANSMISSION and VOLVO ENGINE BRAKE (VEB)</p> </div>	

DESCRIPTION

This Maintenance Information describes the steps to be followed on your computer to add the Volvo Engine Brake AUTO mode on the vehicle.

The AUTO mode may be added on US10 and OBD13 vehicles that were built before the introduction of the Volvo Engine Brake AUTO mode on the assembly line.

The vehicle must be equipped with the ALLISON TRANSMISSION and VOLVO ENGINE BRAKE (VEB).

Computer tools required:

US10& OBD13: PTT (Premium TechTool)

OBD13: VPG (Vehicle Program Generator). Contact your PrevoSt Service Manager or your PrevoSt Service Center.

To familiarize yourself with the use and behavior of the Volvo Engine Brake AUTO mode, please consult Maintenance Information MI16-06 available on PrevoSt Technical Publications site at this address:

<http://techpub.prevoStcar.com/en/>

PROCEDURE FOR OBD13 VEHICLES

OBD13 VEHICLES

PART 1 - RUN ACCESSORY KIT



DANGER

Park vehicle safely, apply parking brake, stop engine and set the ignition key to ON

1. In Premium TechTool, select PROGRAM tab. In PROGRAM tab, select operation 1700-22-03-06 Accessory Kit then click START (FIGURE 1).

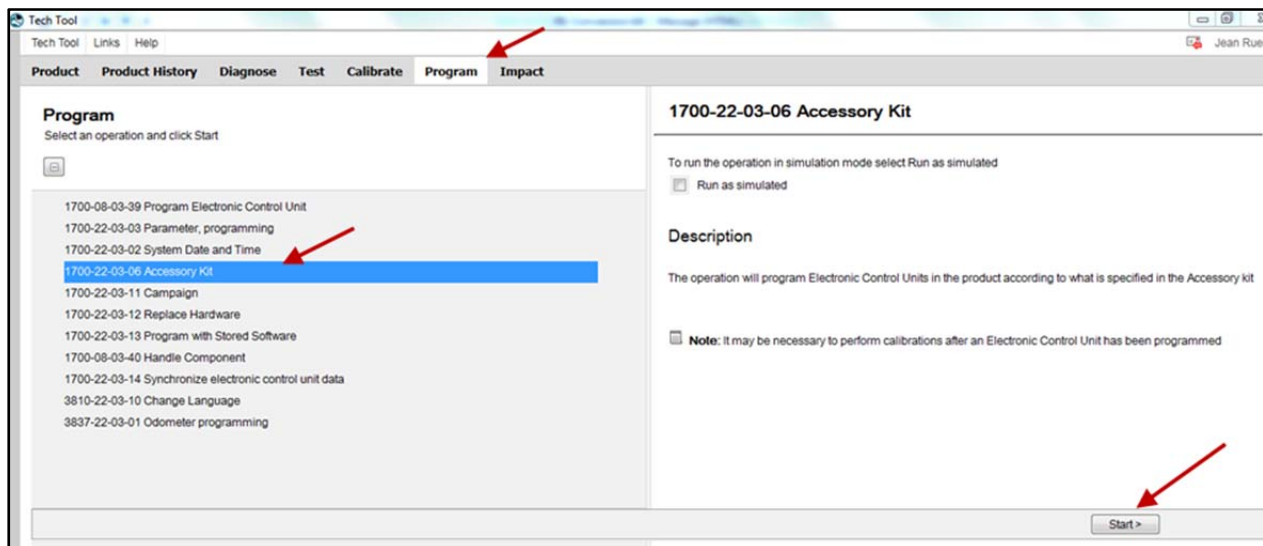


FIGURE 1

PROCEDURE FOR OBD13 VEHICLES

2. Enter the accessory kit number 85150635 (FIGURE 2).
3. Click on PROGRAM button below and then follow the instructions. The programming process will start (FIGURE 2, FIGURE 3).

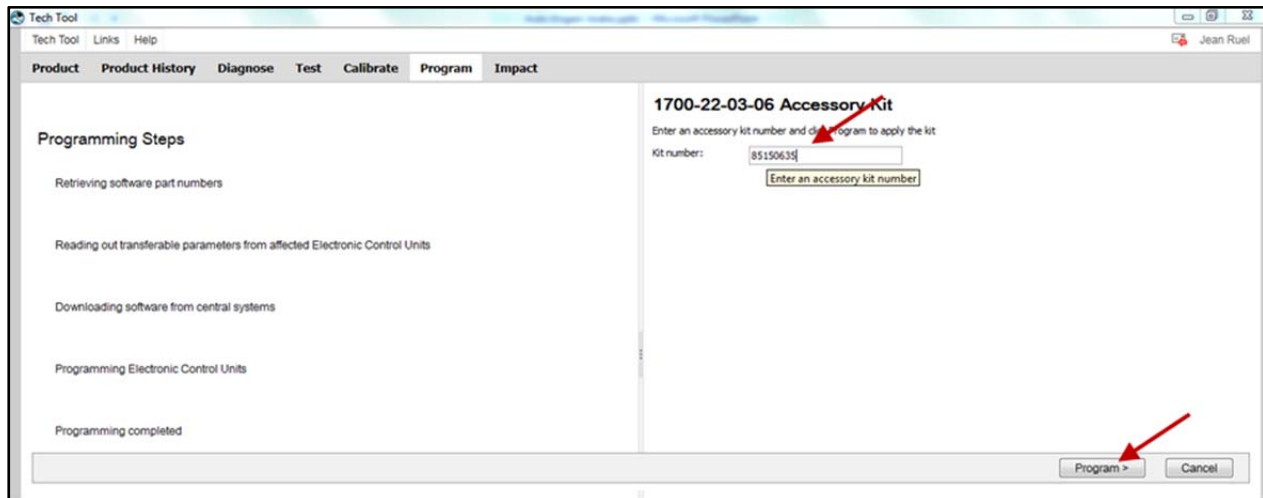


FIGURE 2

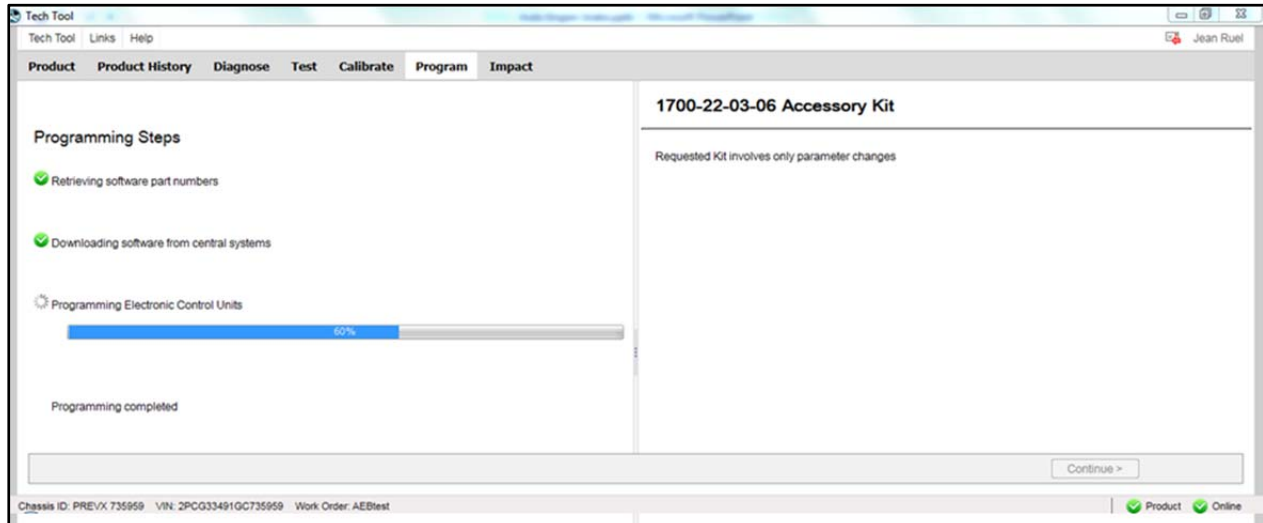


FIGURE 3

PROCEDURE FOR OBD13 VEHICLES

PART 2 – PROGRAM VECU (MID144)

1. In Premium TechTool, select PROGRAM tab. In PROGRAM tab, select operation 1700-08-03-39 Program Electronic Control Unit then click START (FIGURE 4).

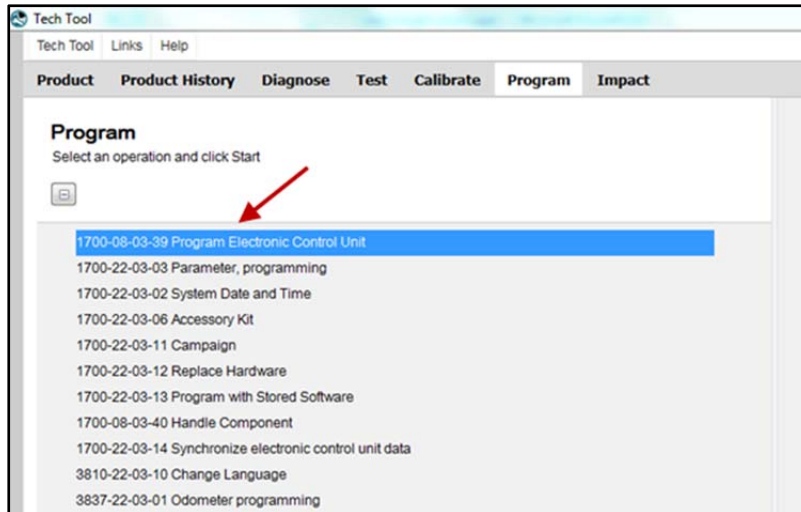


FIGURE 4

2. Select the proper electronic control unit which is VEHICLE ACU MID144 (FIGURE 5).
3. Select UPDATE ELECTRONIC CONTROL UNIT WITH LATEST SOFTWARE (FIGURE 5).
4. Click on PROGRAM button and then follow the instructions (FIGURE 5).

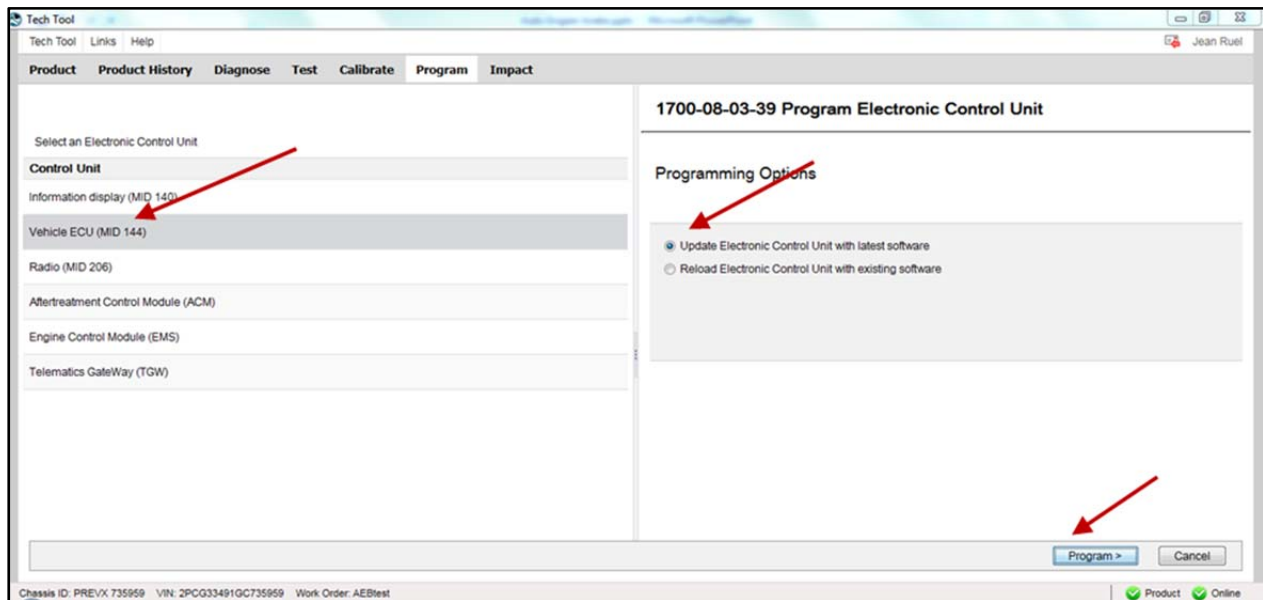


FIGURE 5

PROCEDURE FOR OBD13 VEHICLES

5. If the software present in the VECU is not up to date, the following message will appear. In this case, select YES (FIGURE 6).
6. Click CONTINUE and follow the instructions (FIGURE 6).

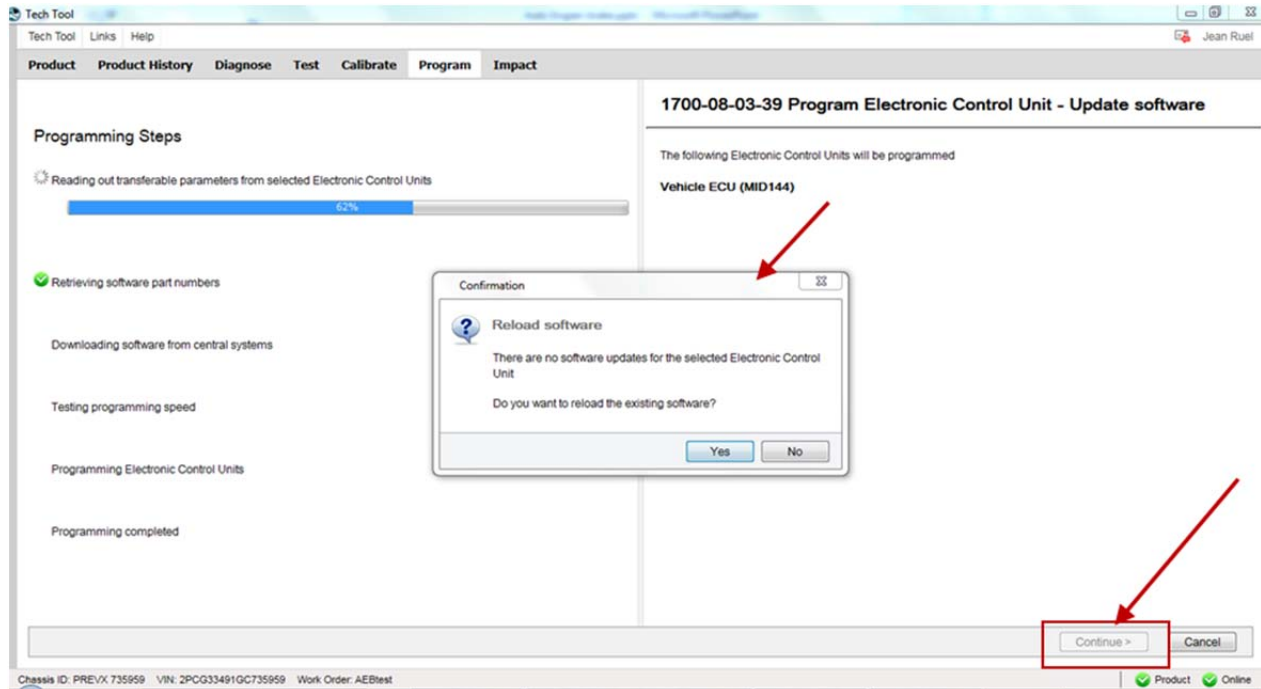


FIGURE 6

PROCEDURE FOR OBD13 VEHICLES

PART 3 – PROGRAMMING DJ PARAMETER

1. In Premium TechTool, select PROGRAM tab. In PROGRAM tab, select operation 1700-22-03-03 Parameter, programming then click START (FIGURE 7).

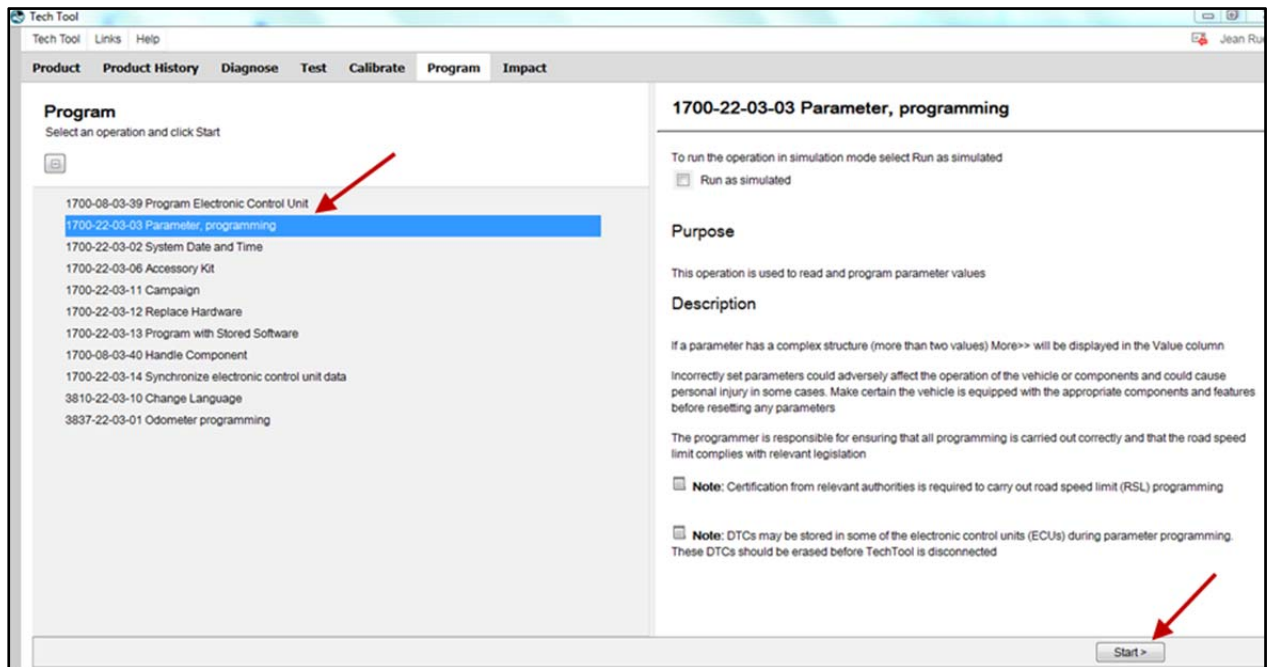


FIGURE 7

PROCEDURE FOR OBD13 VEHICLES

2. Under CONTROL UNIT, select Vehicle ECU (MID 144) in the drop-down list (FIGURE 8).
3. Change the value of DJ parameter. Write in the field: **1.3** if unit is **mph** or **2** if unit is **km/h** then click ENTER on your keyboard (FIGURE 8).
4. Click CONTINUE (FIGURE 8).

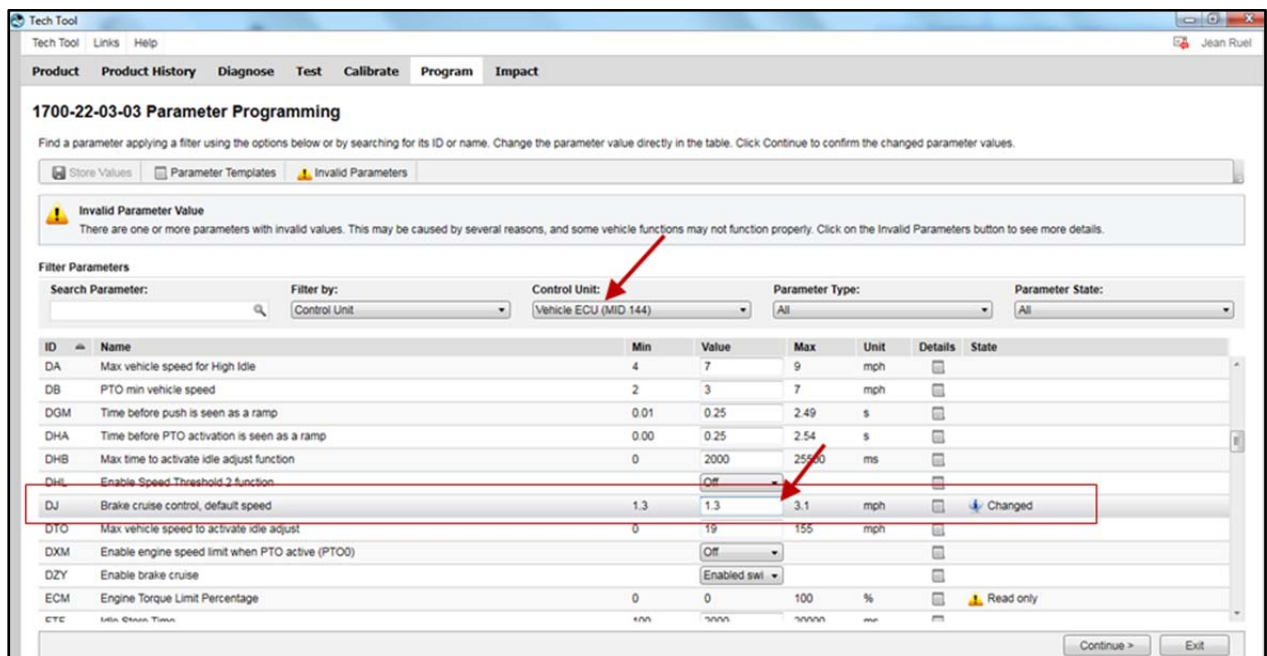


FIGURE 8

5. Click PROGRAM (FIGURE 9).

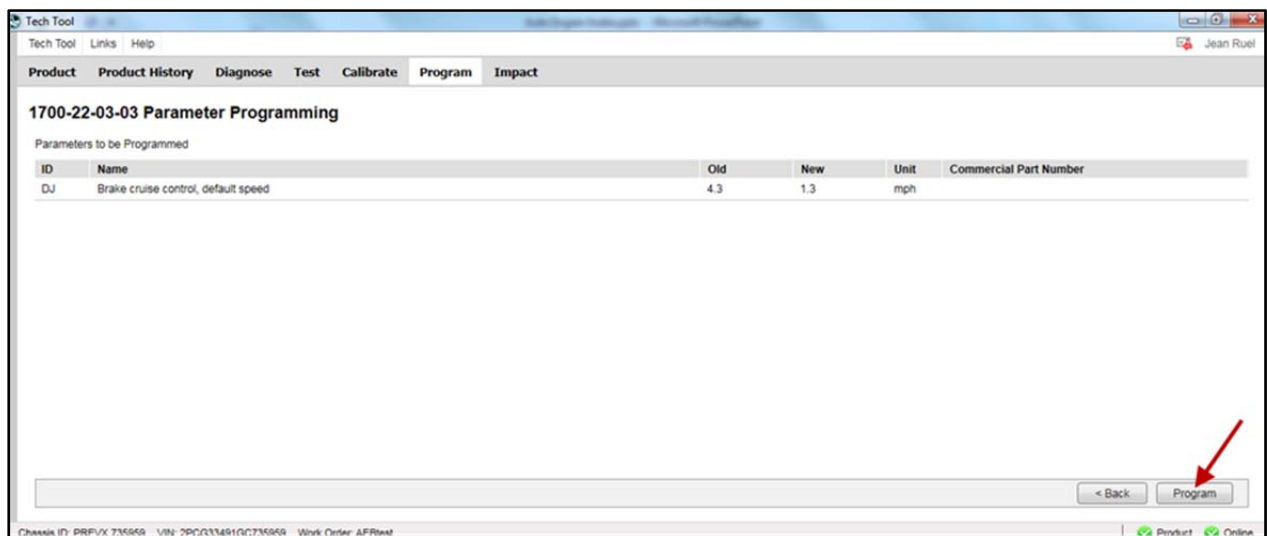


FIGURE 9

6. Follow the instructions on your screen.

PROCEDURE FOR OBD13 VEHICLES

PART 4 – MULTIPLEX PROGRAMMING

You need to make an appointment in a Prevest Service Center or contact your Prevest Service representative to have this part completed as it requires VPG (Vehicle Program Generator) software.

1. Connect VPG interface cable to the DB9 connector.
2. Change RTDPDL parameter value. Initial value is **NO**, change this value for **YES** using the drop-down list, then click on SELECT (FIGURE 10).

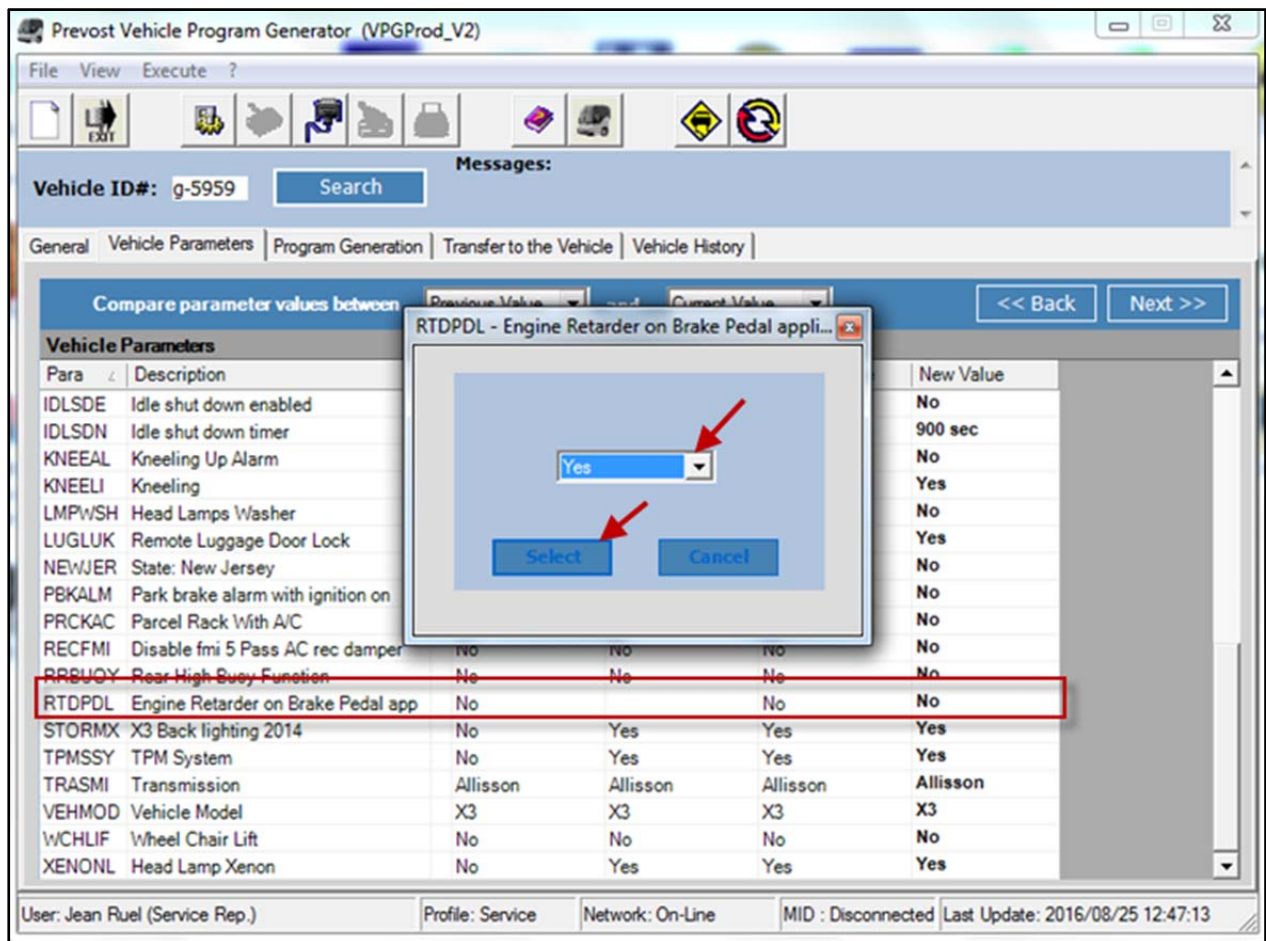


FIGURE 10

3. Select the PROGRAM GENERATION tab and follow instructions according to the usual procedure.
4. Select the TRANSFER TO THE VEHICLE tab and follow instructions according to the usual procedure.

PROCEDURE FOR OBD13 VEHICLES

PART 5 – VALIDATION STEP


1. In order to validate that the previous steps have successfully added the Volvo Engine Brake (VEB) AUTO mode, perform the following step.
2. Set the ignition switch to the ON position and check if the pictogram  appears in the DID status line (FIGURE 11). If this is the case, the Automatic control mode is successfully implemented on the vehicle.



FIGURE 11

PART 6 – OPTIONAL STEP, ADDITION OF AN ENGINE BRAKE CANCEL SWITCH

Order the following parts:

Part No	Description	Qty
564146	VOLVO ENGINE BRAKE BUTTON	1
562698	NGR SWITCH	1

NOTE

Material can be obtained through regular channels.

PROCEDURE FOR OBD13 VEHICLES



Engine Brake Cancel Switch (optional)

The vehicle's engine brake is by default set to automatic (AUTO **(A)** mode). On vehicles equipped with this switch, it is possible to disable the engine brake (OFF mode).

From OFF or AUTO mode, the driver can switch directly to Engine Brake LOW **(L)** or Engine Brake HIGH **(H)** mode by using the buttons on the steering wheel.

The switch will have to be clicked again to return from OFF mode to AUTO **(A)** mode (cycling the ignition will have the same effect).

1. Remove the dashboard cover.
2. Locate a free switch location on the L.H. dashboard panel (FIGURE 12).



FIGURE 12

3. Remove the dummy plate (FIGURE 12) on the free switch location.
4. Insert the switch body.
5. Mount the button on the switch body.
6. From behind the dashboard, located connector **SW16** among the dashboard harness. Connect SW16 to the switch body.

PROCEDURE FOR US10 VEHICLES

US10 VEHICLES

PART 1 - RUN ACCESSORY KIT



DANGER

Park vehicle safely, apply parking brake, stop engine and set the ignition key to ON.

1. In Premium TechTool, select PRODUCT tab. Enter work order number (FIGURE 13).

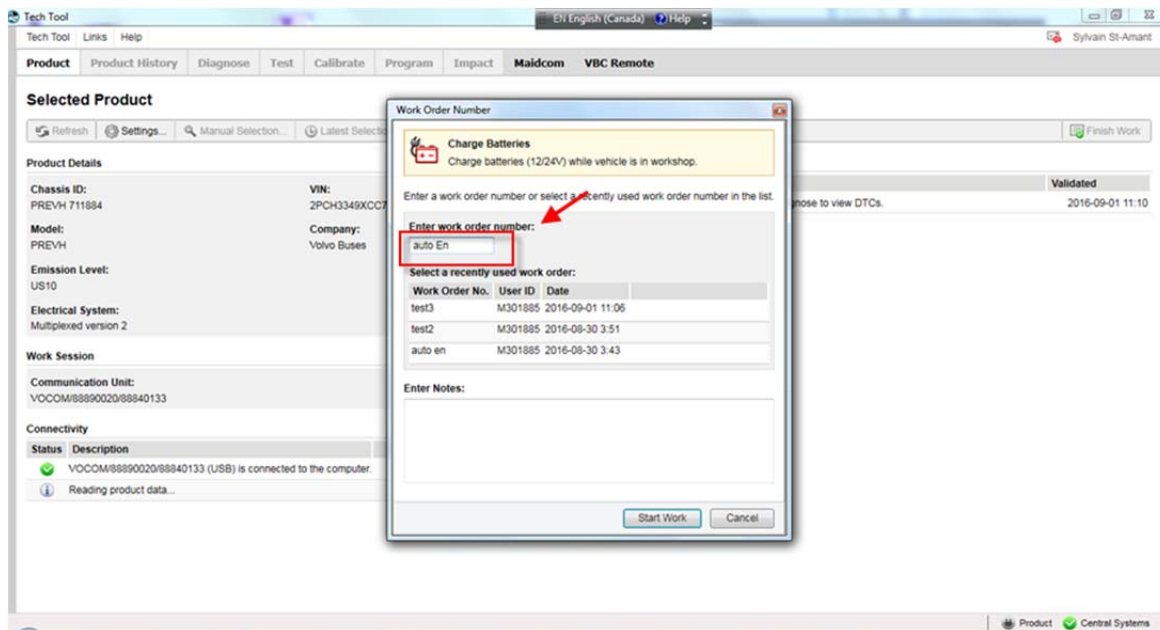


FIGURE 13

PROCEDURE FOR US10 VEHICLES

- Premium TechTool should confirm with two green dots that you are properly connected to the vehicle and the central system (FIGURE 14)

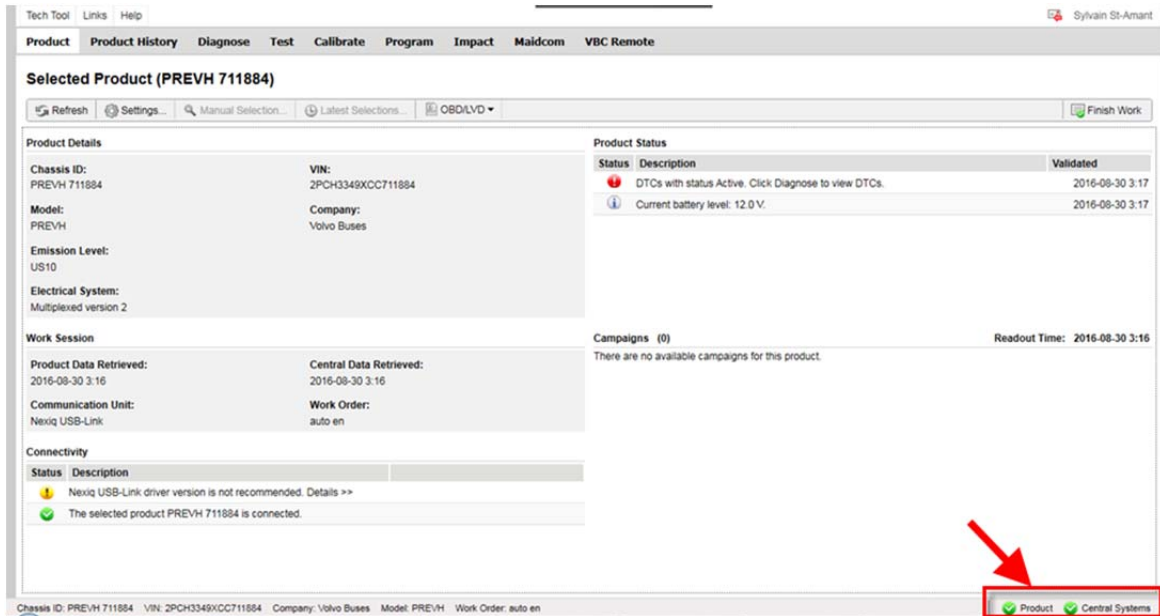


FIGURE 14

- In Premium TechTool, select PROGRAM tab. In PROGRAM tab, select operation 1700-22-03-06 Accessory Kit then click START (FIGURE 15).

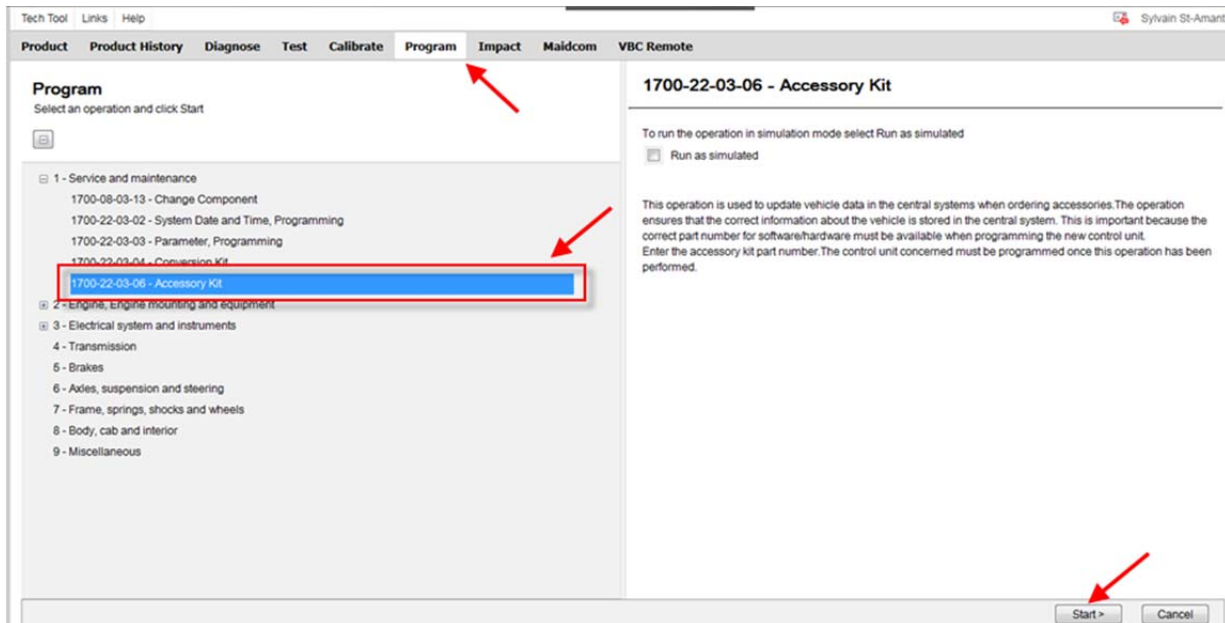


FIGURE 15

PROCEDURE FOR US10 VEHICLES

4. Click ► (play) (FIGURE 16).

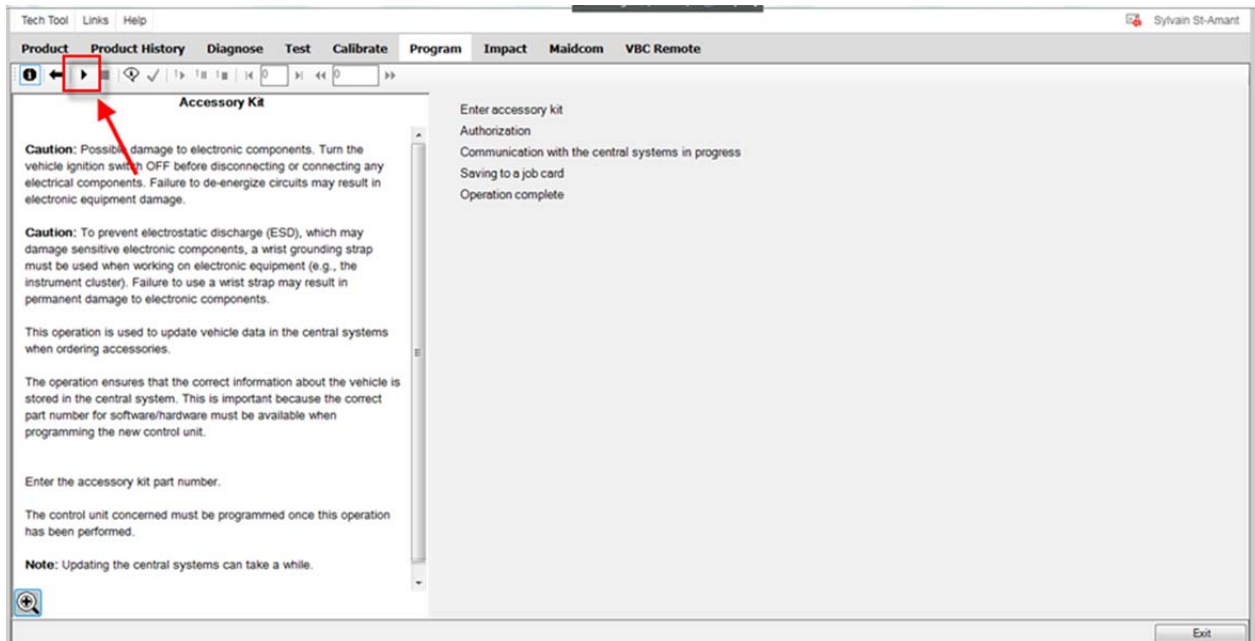


FIGURE 16

5. Enter the accessory kit number 85150635 (FIGURE 17) and then click OK.

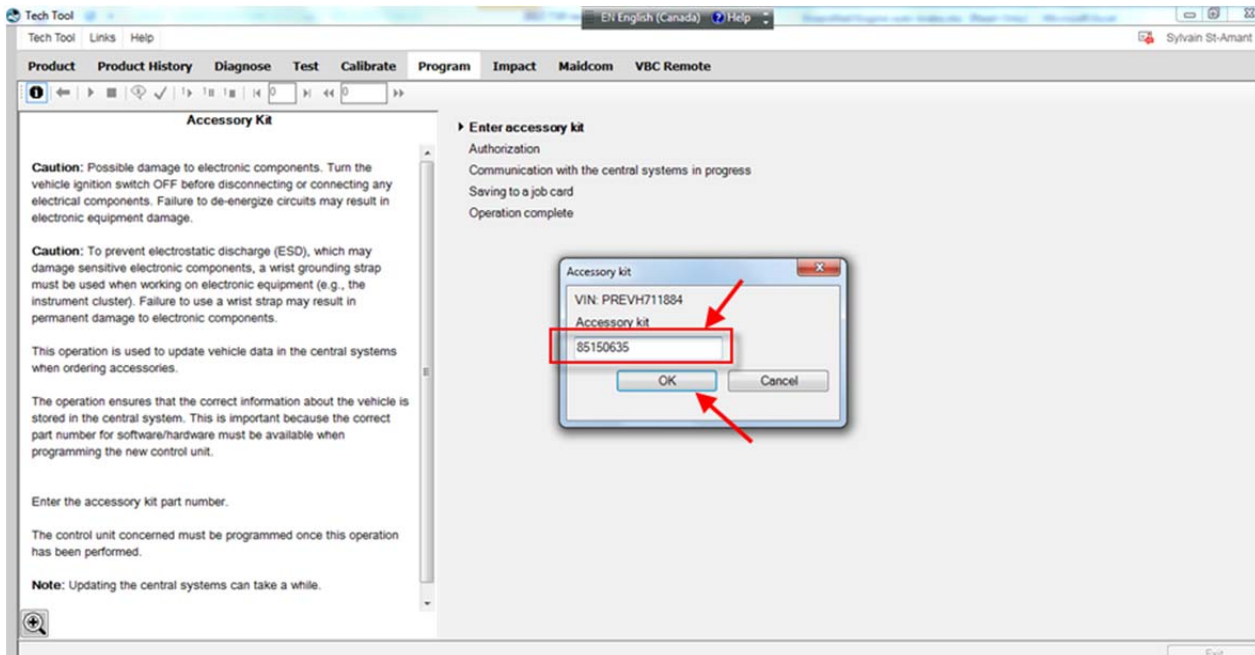


FIGURE 17

PROCEDURE FOR US10 VEHICLES

6. If this pop up appears, click CLOSE (FIGURE 18).

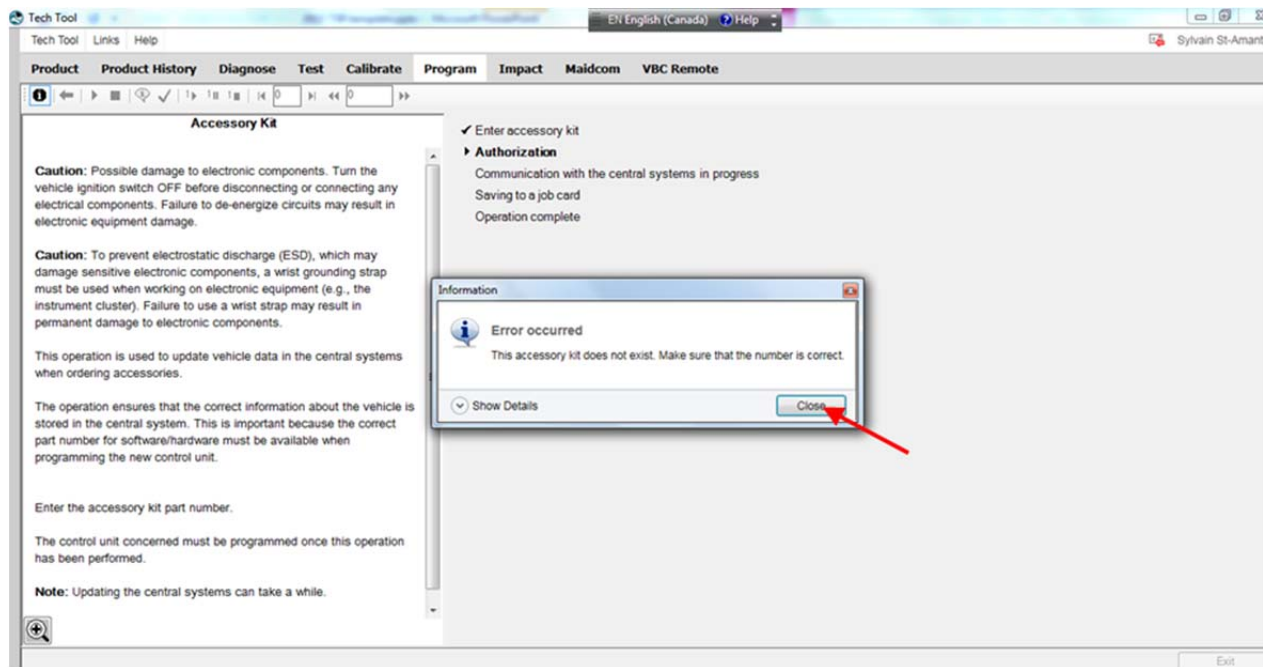


FIGURE 18

PROCEDURE FOR US10 VEHICLES

PART 2 – PROGRAM VECU (MID144)

1. In Premium TechTool, select PROGRAM tab. In PROGRAM tab, select operation 3649-22-03-01 – MID 144 ECU, Programming then click START (FIGURE 19).

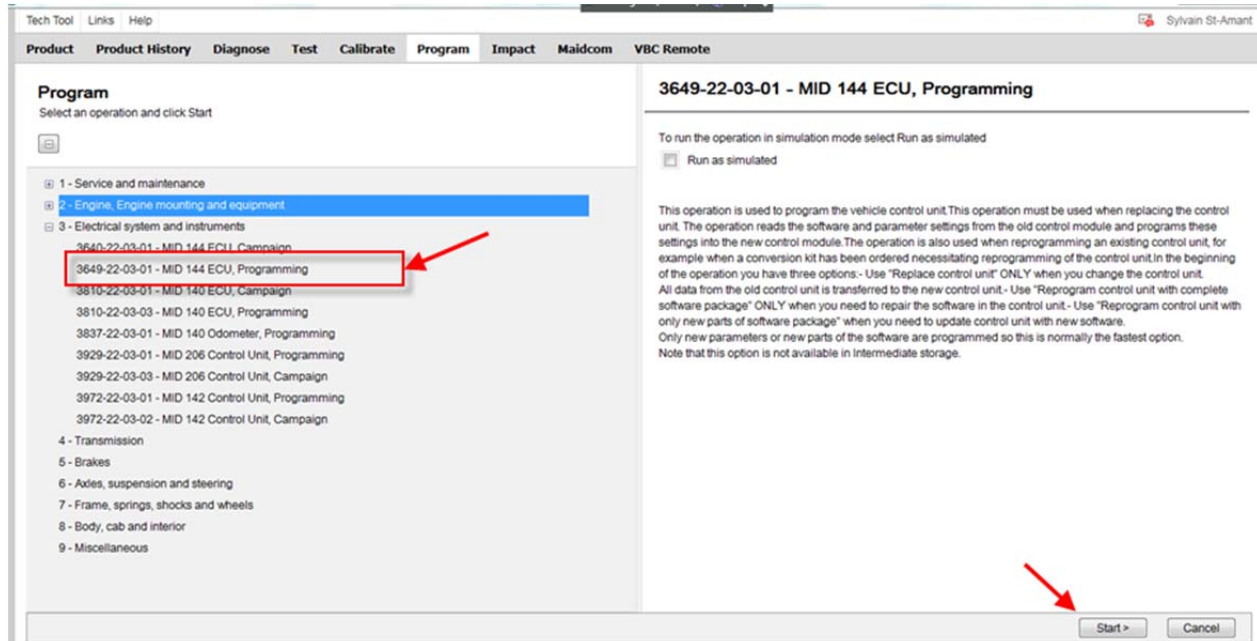


FIGURE 19

2. Click ► (play) (FIGURE 20).

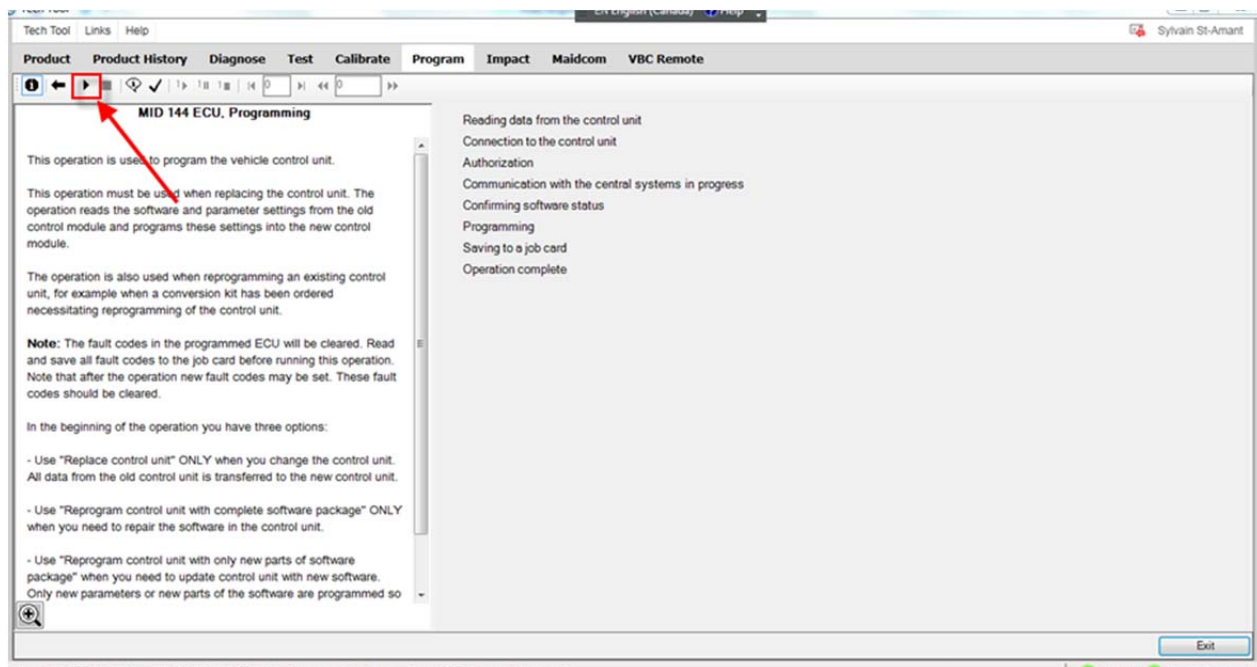


FIGURE 20

PROCEDURE FOR US10 VEHICLES

3. Click OK (FIGURE 21).

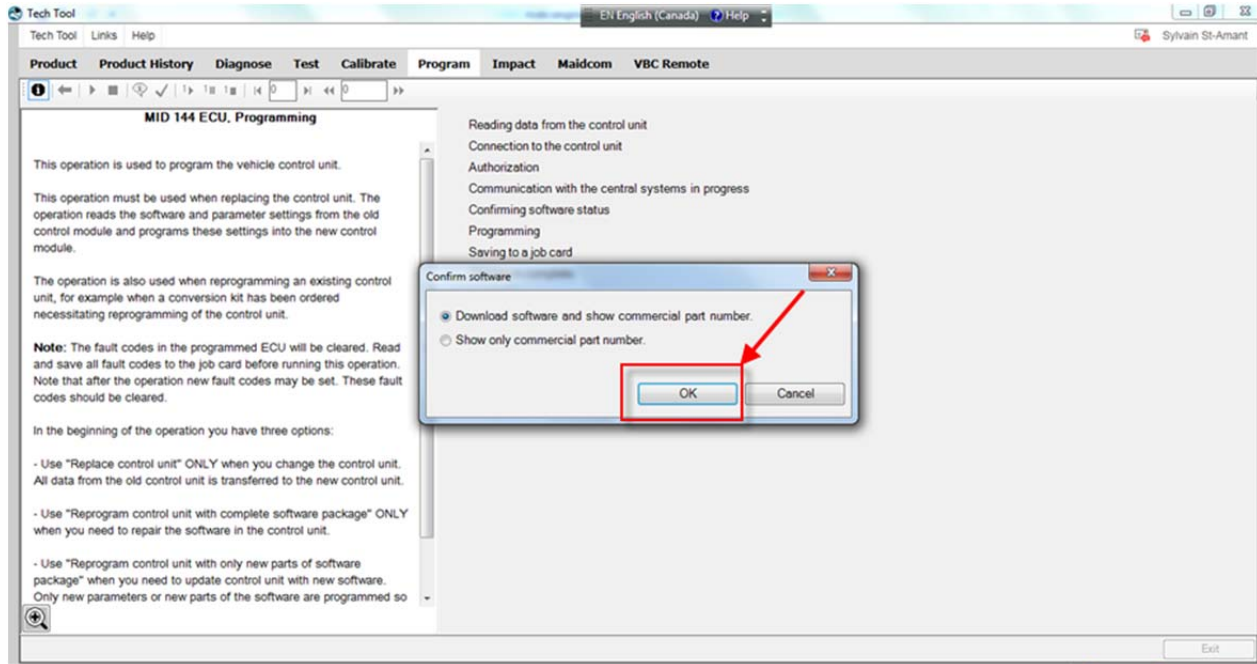


FIGURE 21

4. Select **REPROGRAM CONTROL UNIT WITH ONLY NEW PARTS OF SOFTWARE PACKAGE** and then click OK (FIGURE 22).

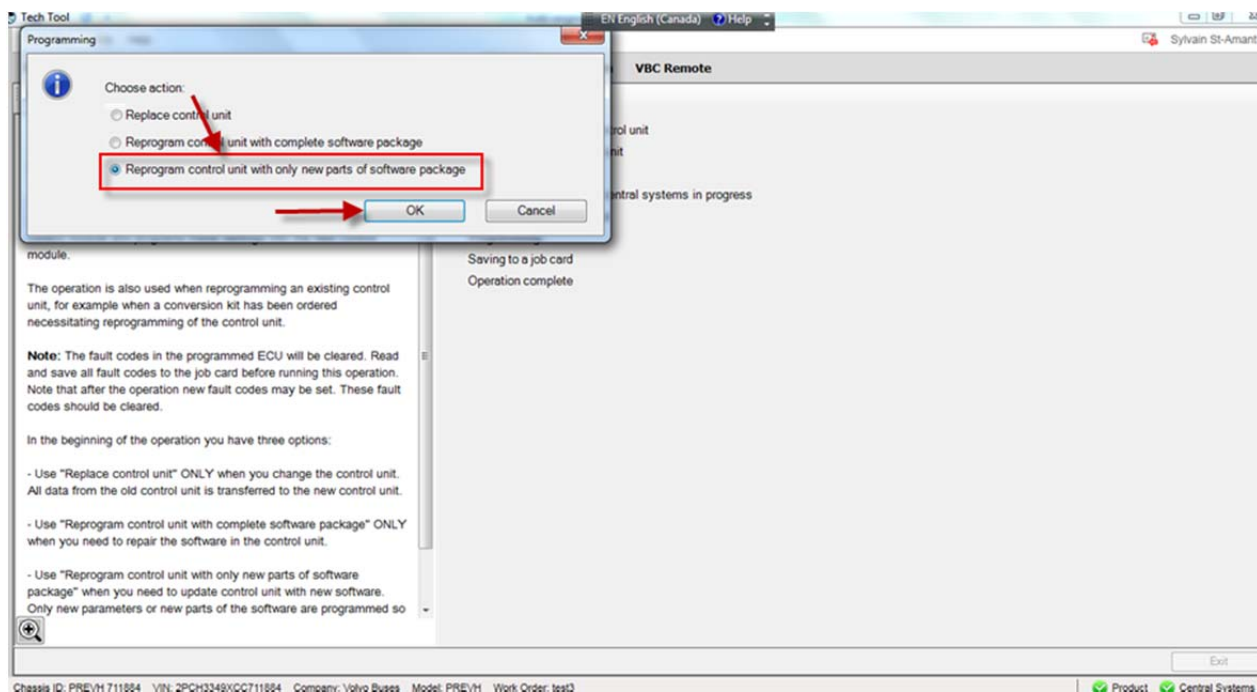


FIGURE 22

PROCEDURE FOR US10 VEHICLES

5. Validate the conditions shown on the pop up window (FIGURE 23).

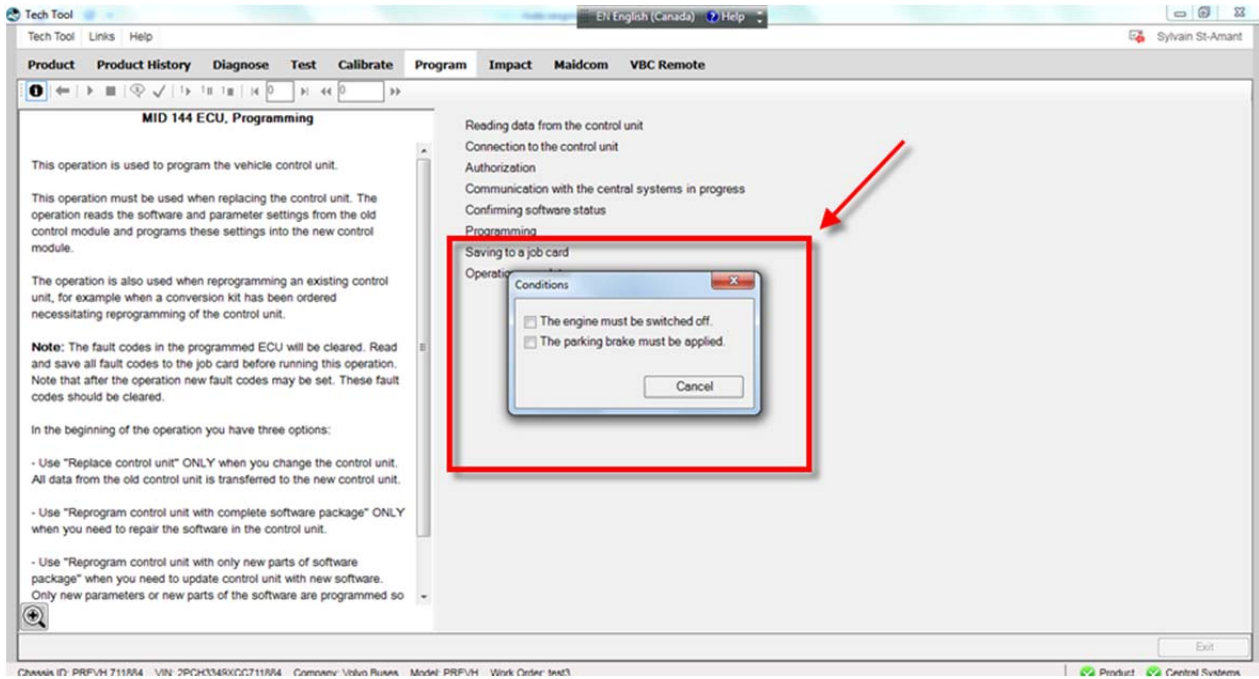


FIGURE 23

6. Click CONTINUE (FIGURE 24).

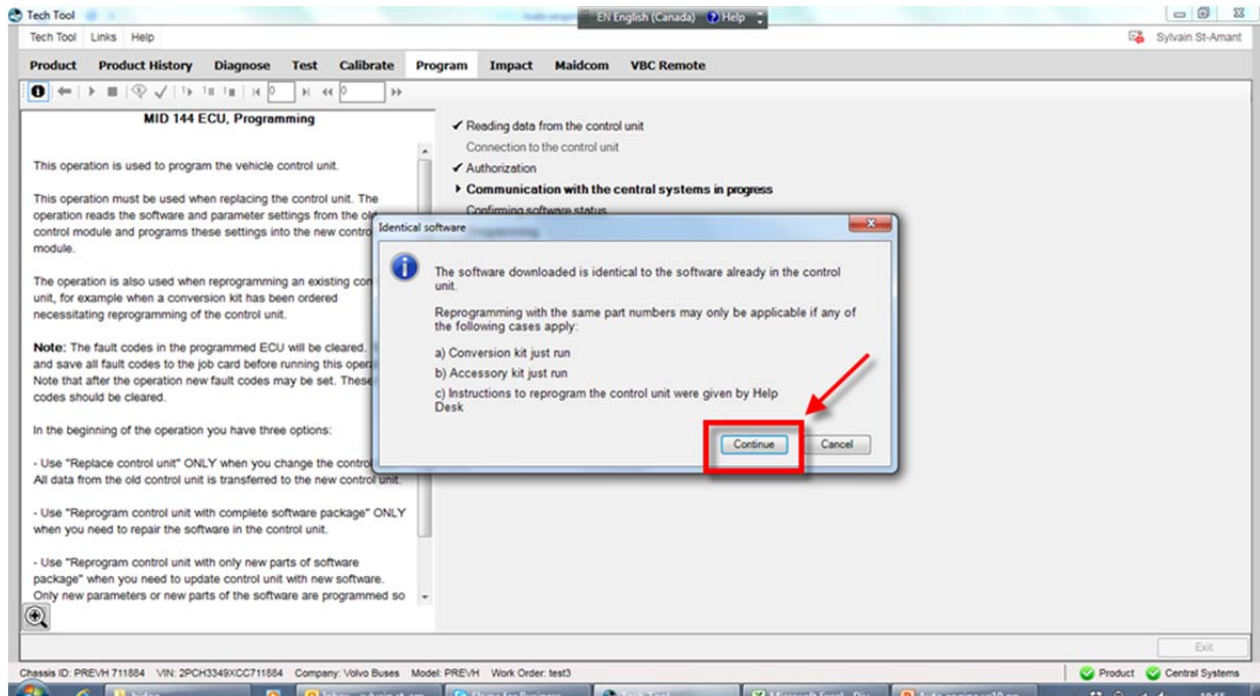


FIGURE 24

PROCEDURE FOR US10 VEHICLES

7. Click OK (FIGURE 25).

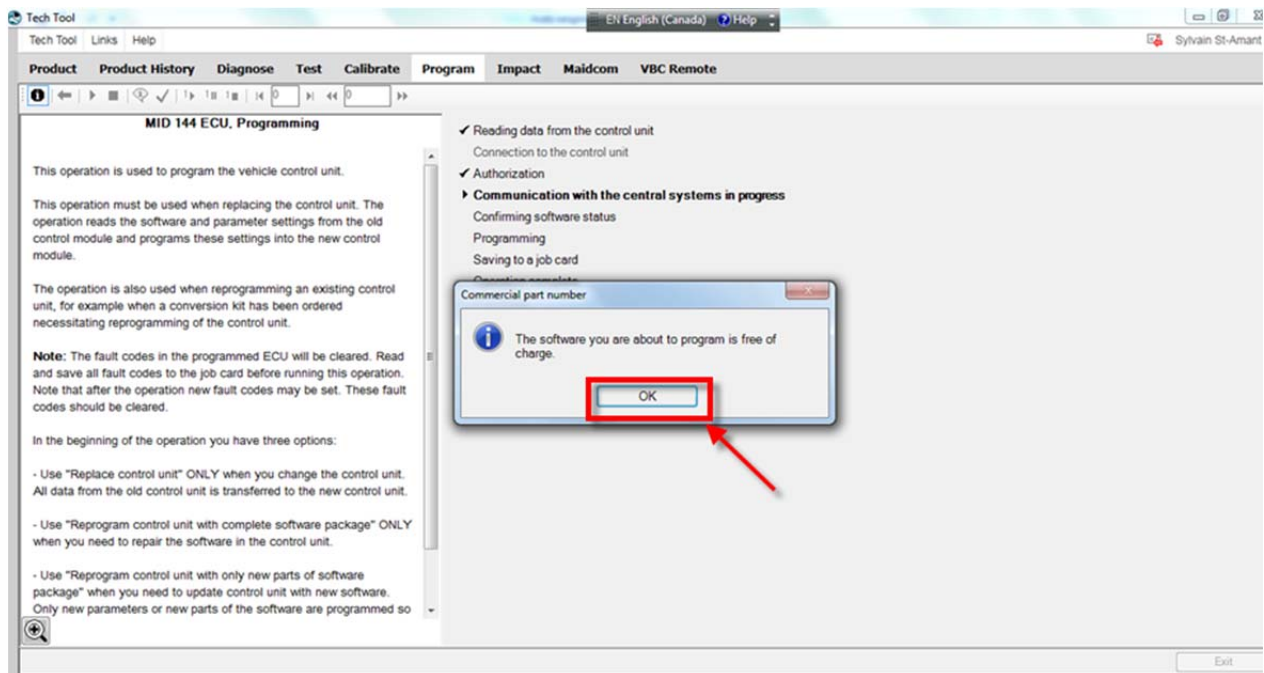


FIGURE 25

8. Programming is in progress (FIGURE 26 & FIGURE 27).

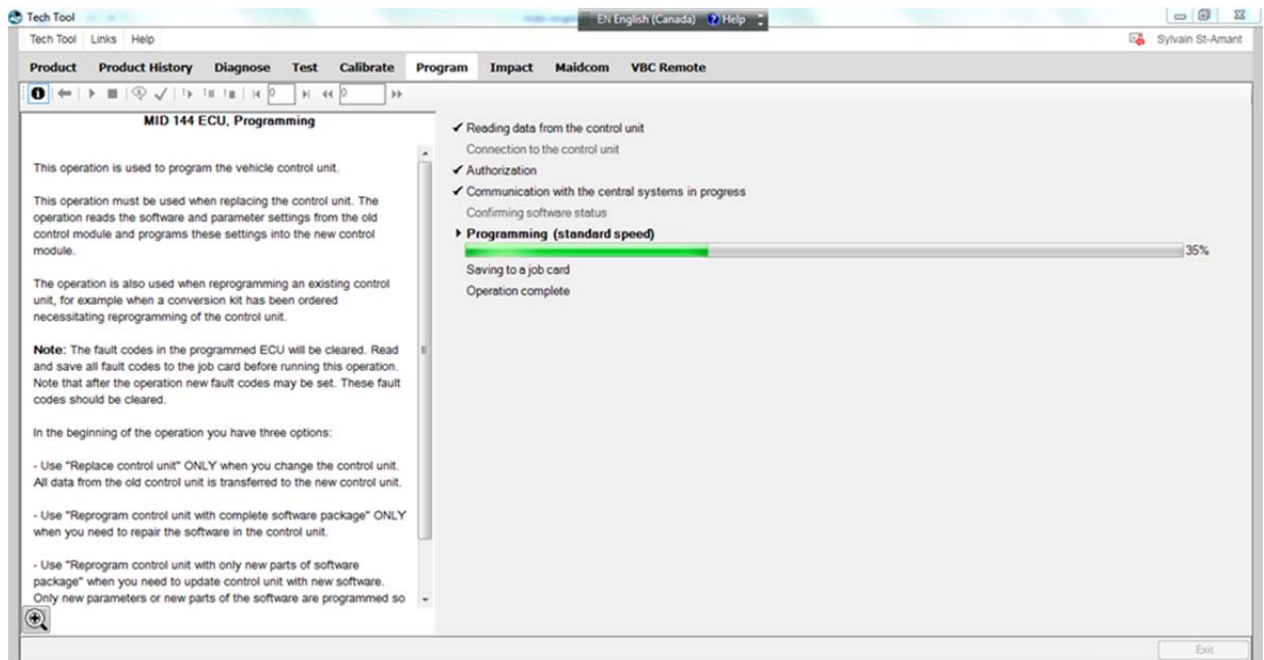


FIGURE 26

PROCEDURE FOR US10 VEHICLES

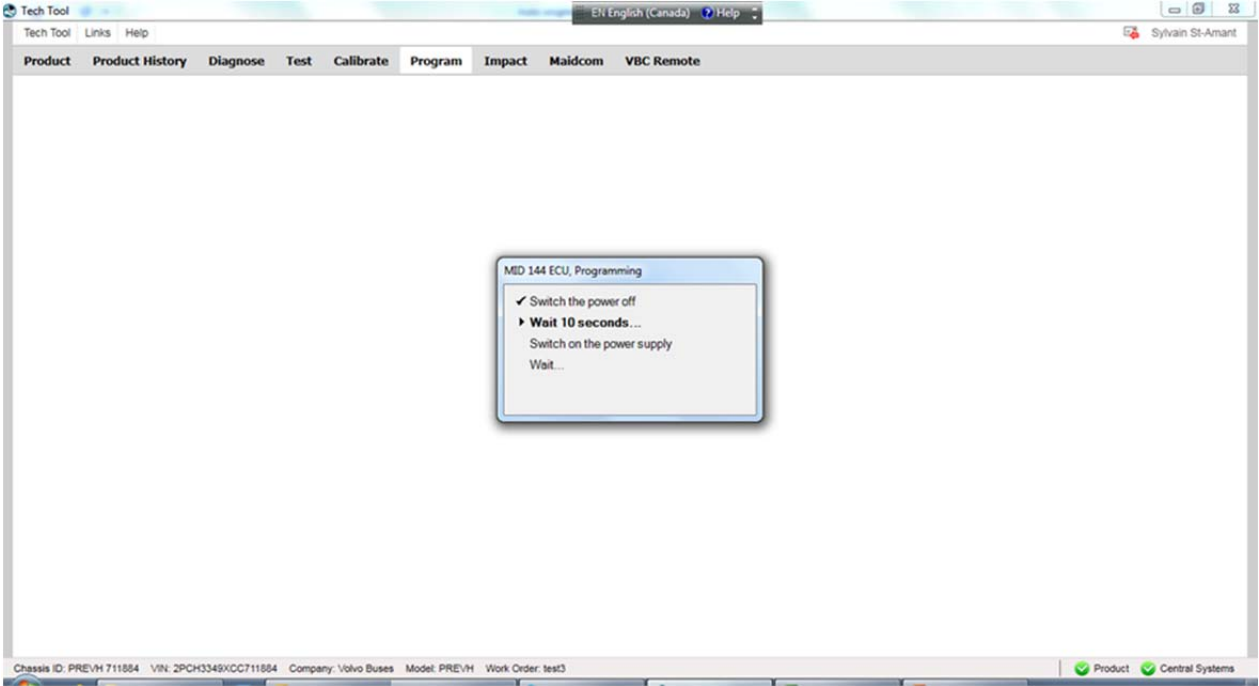


FIGURE 27

9. Click [stop] (stop) and then click EXIT (FIGURE 28).

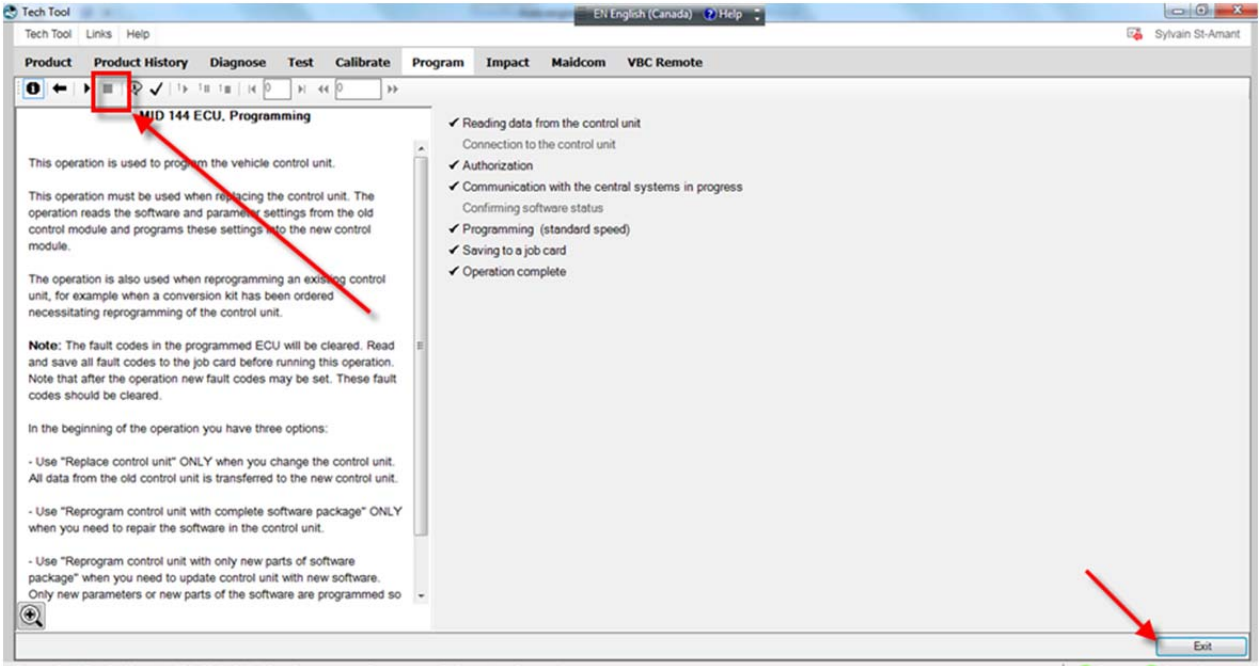


FIGURE 28

PROCEDURE FOR US10 VEHICLES

PART 3 – PROGRAMMING DJ PARAMETER

1. In Premium TechTool, select PROGRAM tab. In PROGRAM tab, select operation 1700-22-03-03 Parameter, programming then click START (FIGURE 29).

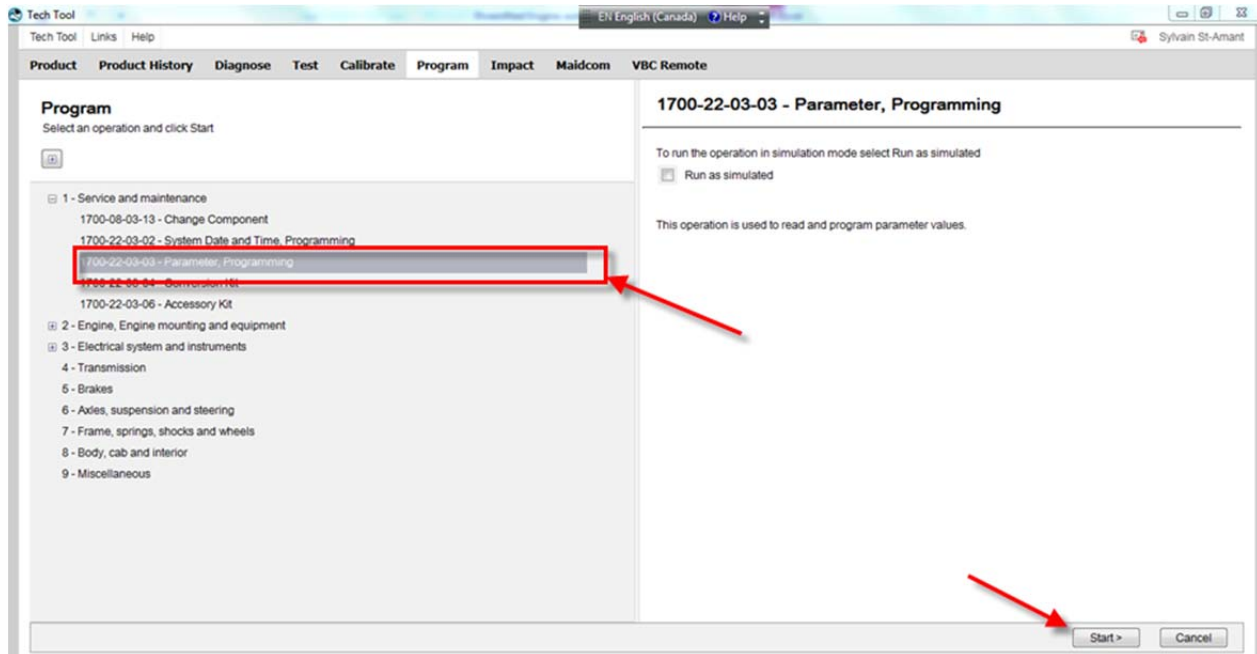


FIGURE 29

2. Click YES on this pop up window (FIGURE 30).



FIGURE 30

PROCEDURE FOR US10 VEHICLES

3. Click ► (play) (FIGURE 31).

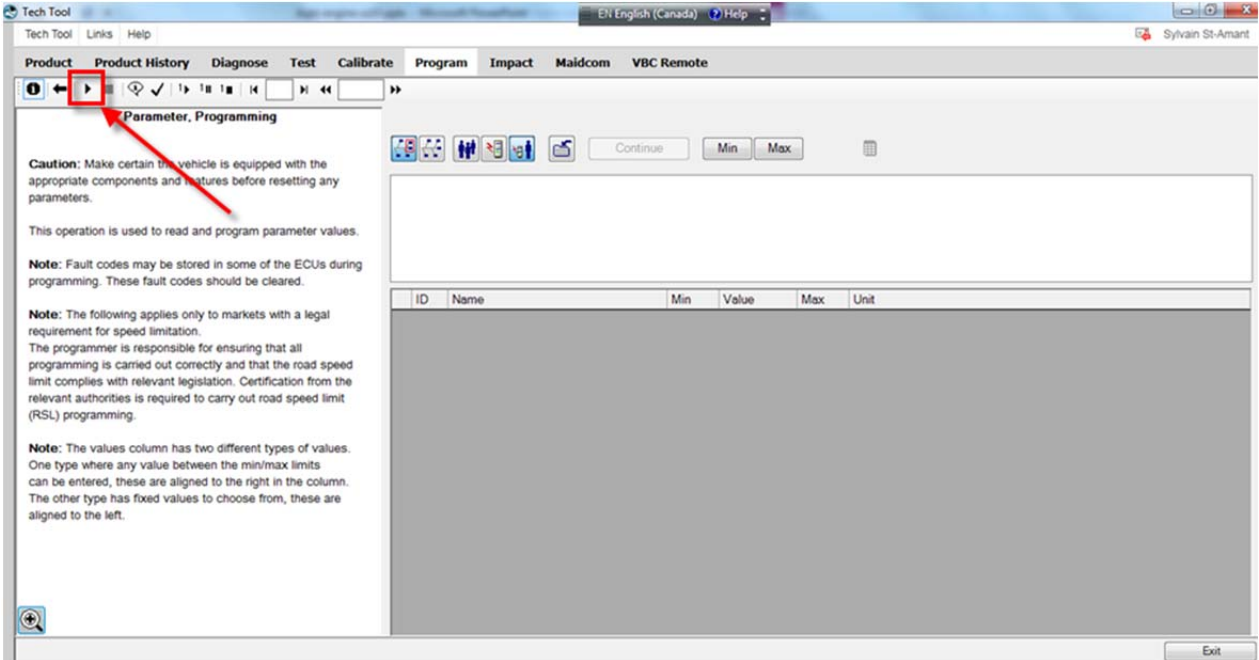


FIGURE 31

4. Select the icon shown at step (1) on FIGURE 32. Select the proper MID number which is **144 Vehicle ECU** (see step 2). Proper MID number is. locate DJ parameter in the list below (step 3).

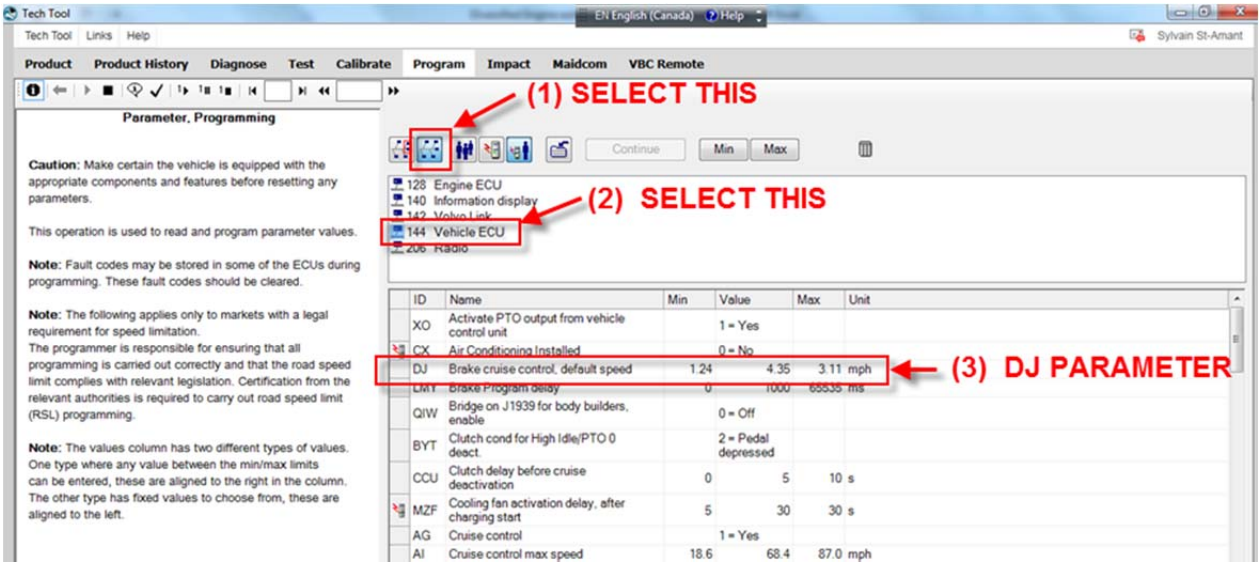


FIGURE 32

PROCEDURE FOR US10 VEHICLES

5. Change DJ parameter **Value** to 2.00 (FIGURE 33) then press ENTER on your keyboard.

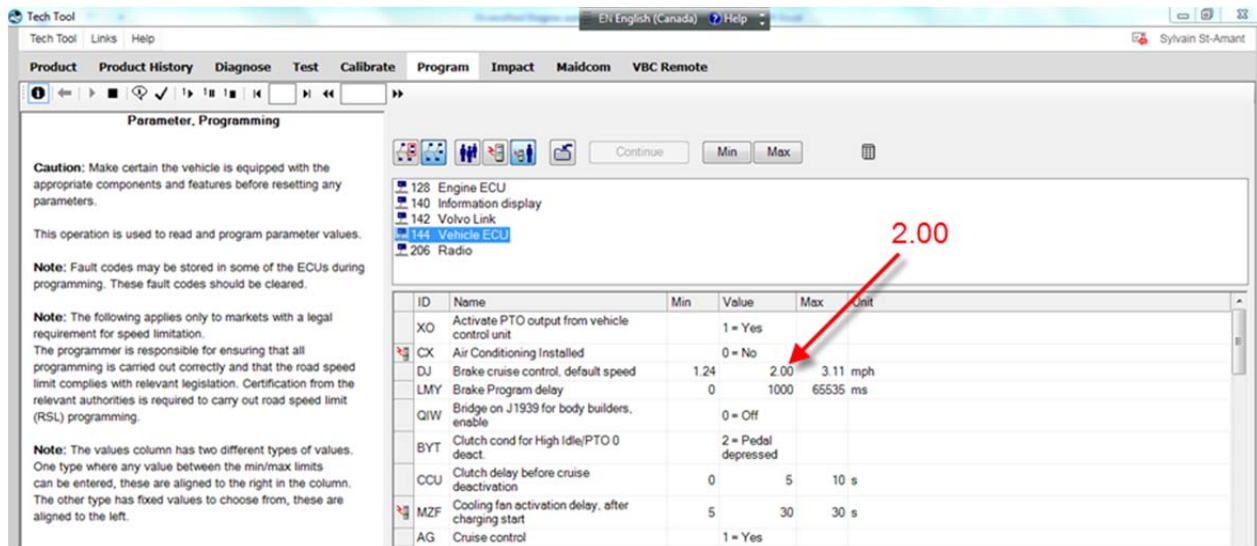


FIGURE 33

6. Click on CONTINUE (FIGURE 34).

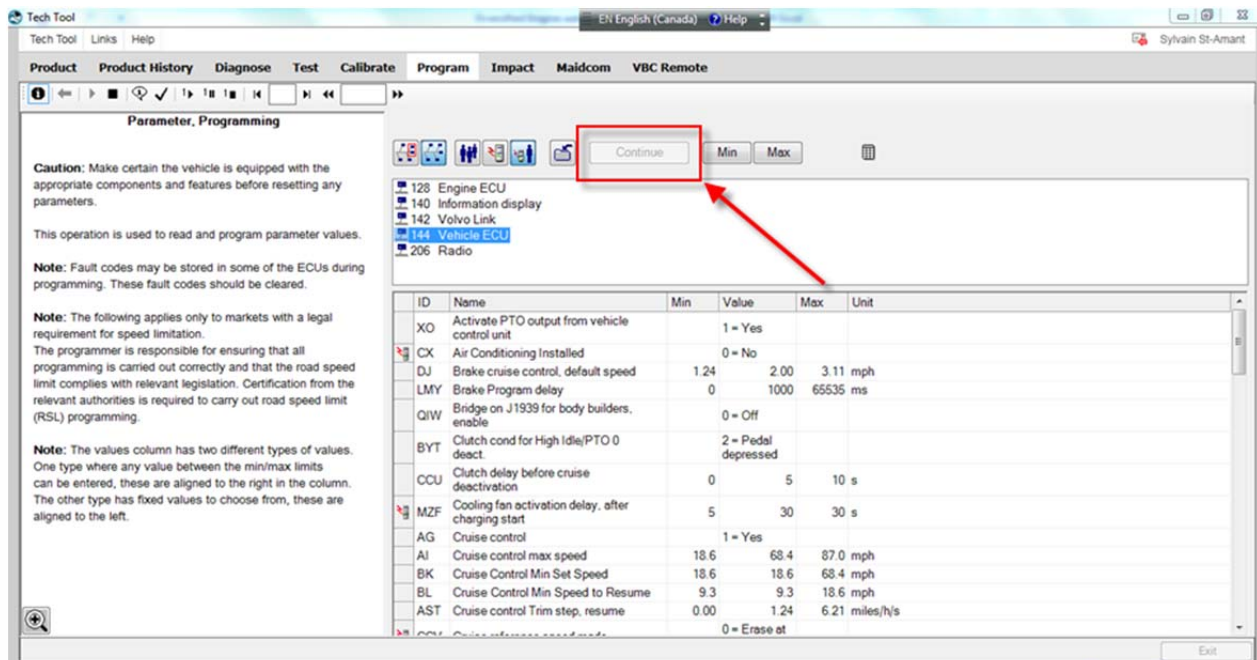


FIGURE 34

PROCEDURE FOR US10 VEHICLES

7. Click on PROGRAM button (FIGURE 35).

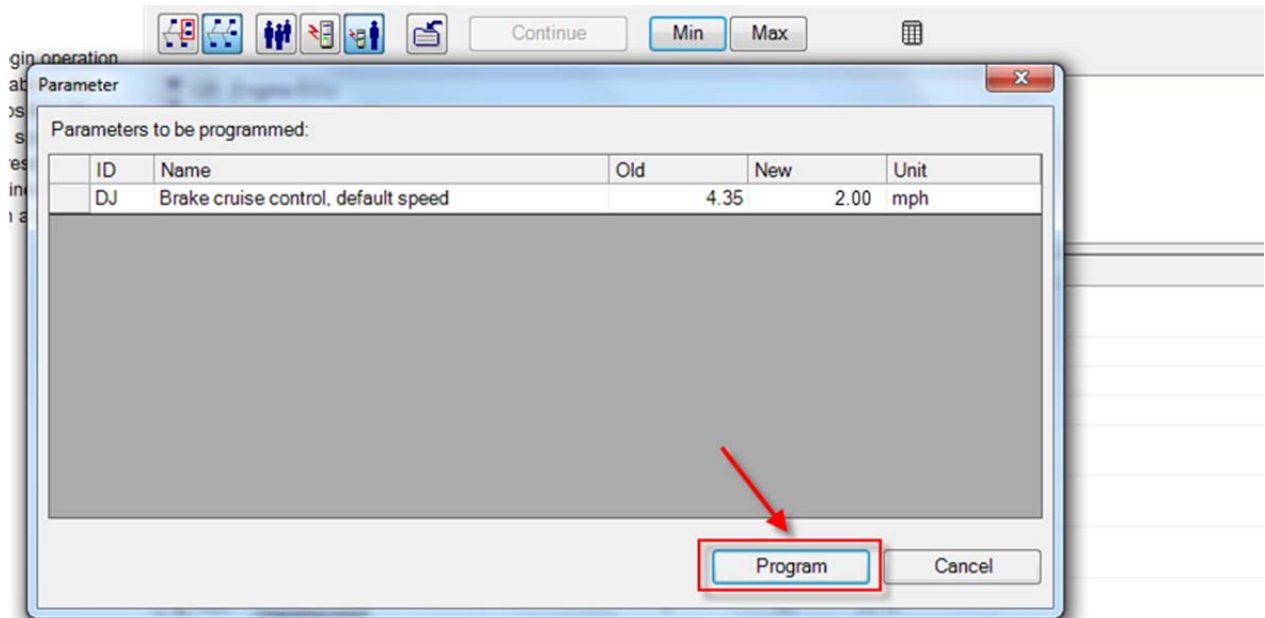



FIGURE 35

8. Click  (stop) (arrow 1) and then EXIT (arrow 2) (FIGURE 36).

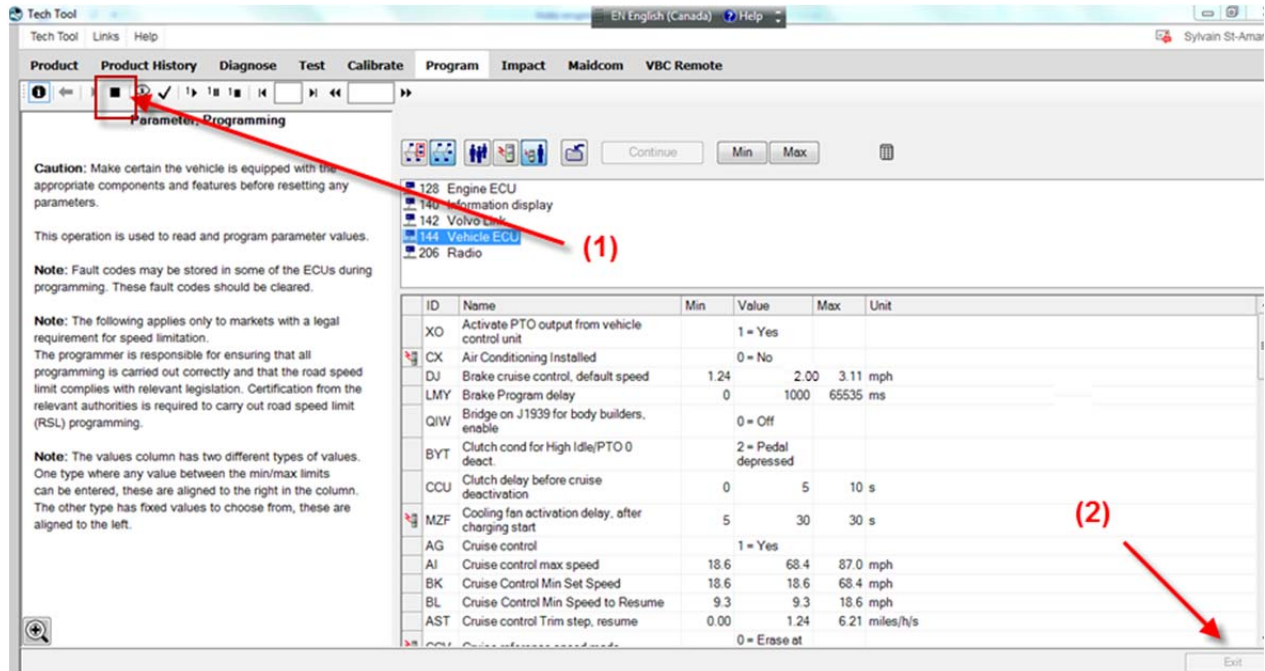


FIGURE 36

PROCEDURE FOR US10 VEHICLES

9. Execute the following command shown on your laptop screen (FIGURE 37).

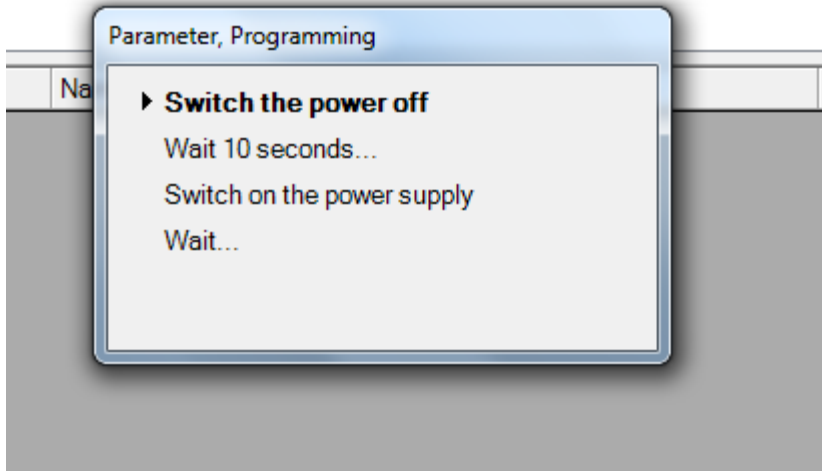


FIGURE 37

10. On the PRODUCT tab, click FINISH WORK button (FIGURE 38).

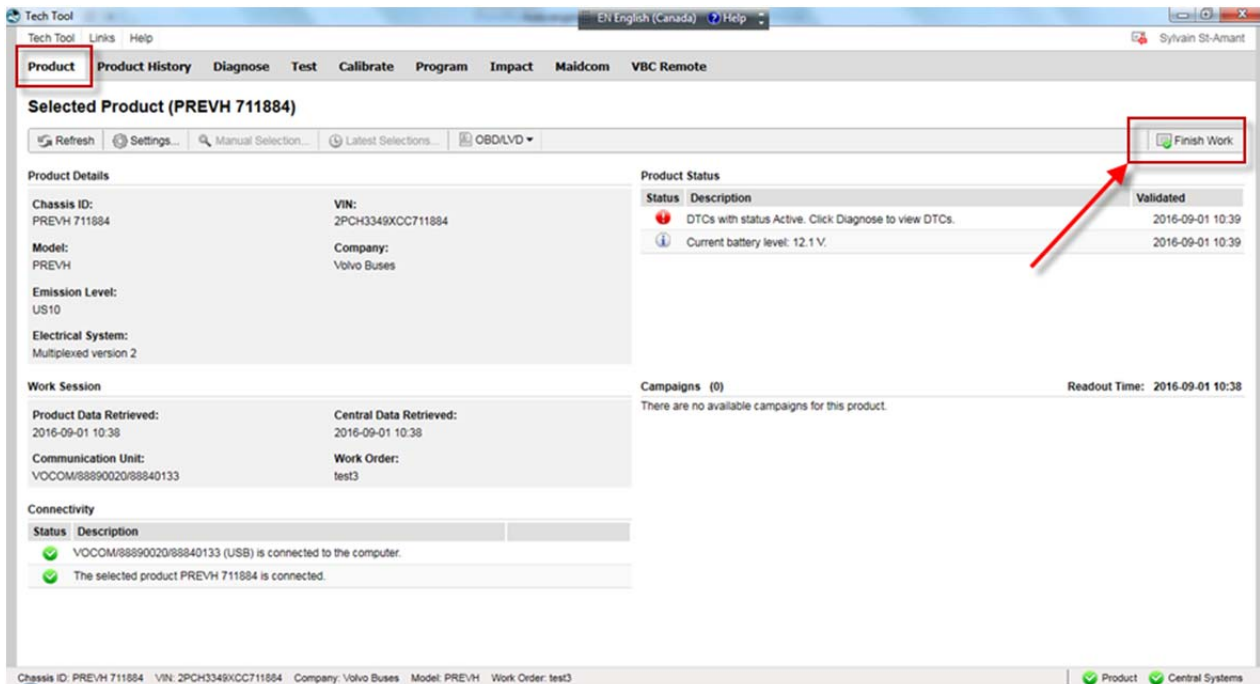


FIGURE 38

PROCEDURE FOR US10 VEHICLES

11. Log Premium Tech Tool off (FIGURE 39).

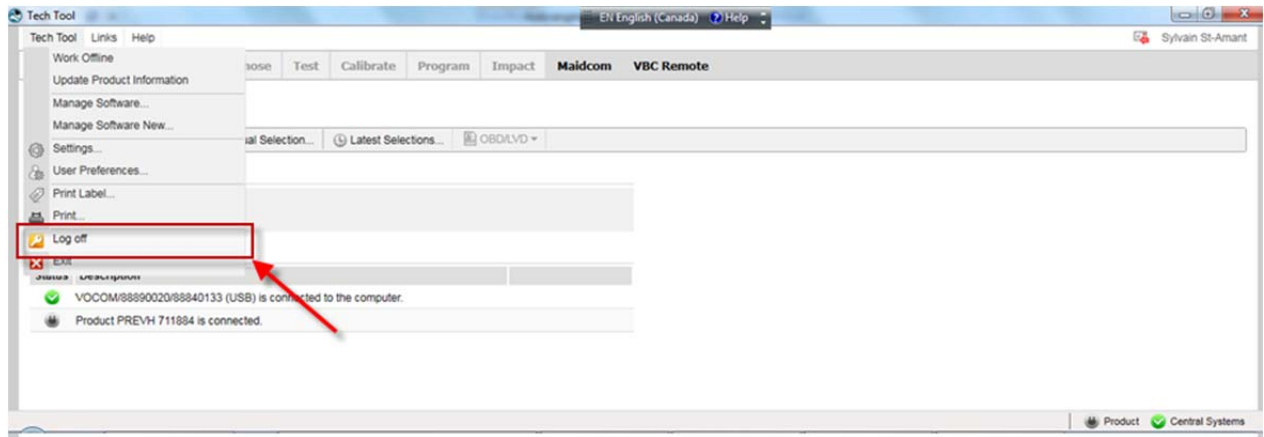


FIGURE 39

PART 4 – ADDITION OF A JUMPER CABLE

1. Install a jumper cable between the engine brake dashboard switch ground wire and circuit 163B. (FIGURE 40). Doing this will keep the engine brake switch activated.

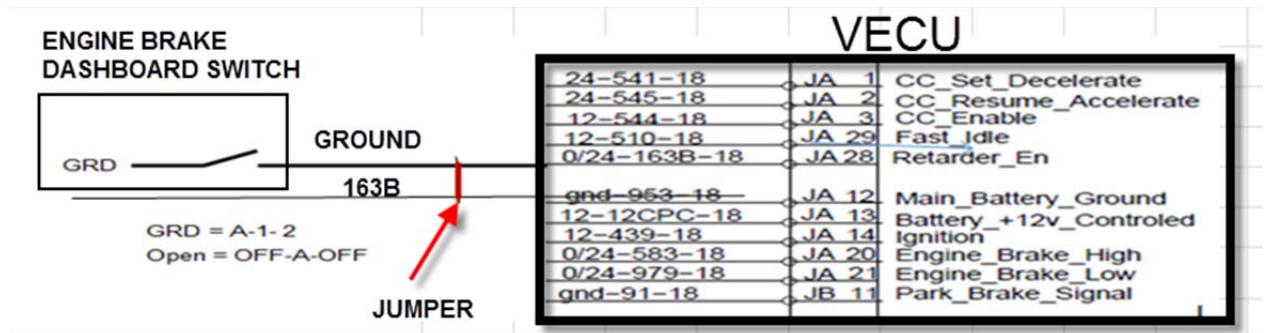


FIGURE 40

PROCEDURE FOR US10 VEHICLES

PART 5 – VALIDATION STEP


1. In order to validate that the previous steps have successfully added the Volvo Engine Brake (VEB) AUTO mode, perform the following step.
2. Set the ignition switch to the ON position and check if the pictogram  appears in the DID status line (FIGURE 42). If this is the case, the Automatic control mode was successfully implemented on the vehicle.



FIGURE 41 : PRIOR UNDERTAKING THIS PROCEDURE, (OFF) PICTOGRAM DISPLAYED ON THE DID STATUS LINE

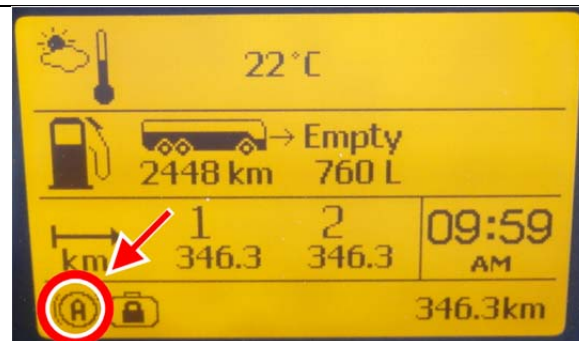



FIGURE 42 : PROCEDURE COMPLETED SUCCESSFULLY, THE PICTOGRAM  APPEARS IN THE DID STATUS LINE

PARTS / WASTE DISPOSAL

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



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