

Date	Expiration	Revision	Page
07.2017	N/A	1	1(25)

## IMPLEMENTATION OF VOLVO ENGINE BRAKE AUTO MODE – US10 & OBD13 VEHICLES ACCESSORY KIT: 85150635

Prevost vehicles

### DESCRIPTION

This bulletin 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).

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/>

### *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.*

### MODEL YEAR(S) AND VEHICLES INVOLVED

Model	VIN
	
US10 AND OBD13 vehicles equipped with the ALLISON TRANSMISSION <b>and</b> VOLVO ENGINE BRAKE (VEB)	

### EQUIPMENT REQUIRED

Use the following Computer tools:

Part No.	Description	Qty
N/A	PTT (Premium TechTool)	1
N/A	For OBD 13 Vehicles; VPG (Vehicle Program Generator). **Contact your Prevost Service Manager or your Prevost Service Center	1

Other parts that may be required:

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

### 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).

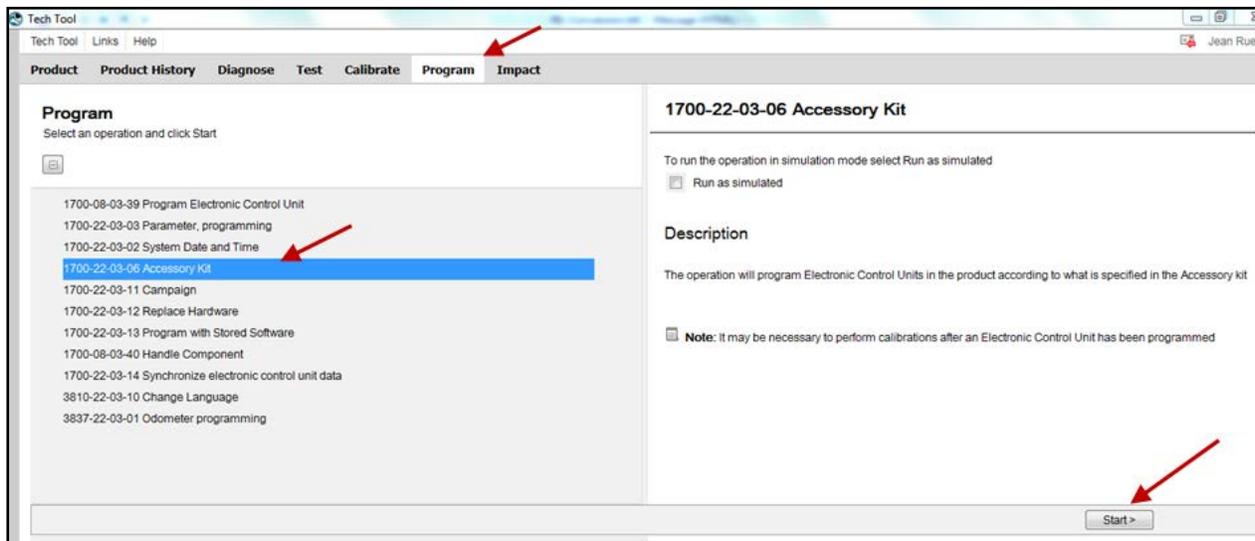


FIGURE 1

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).

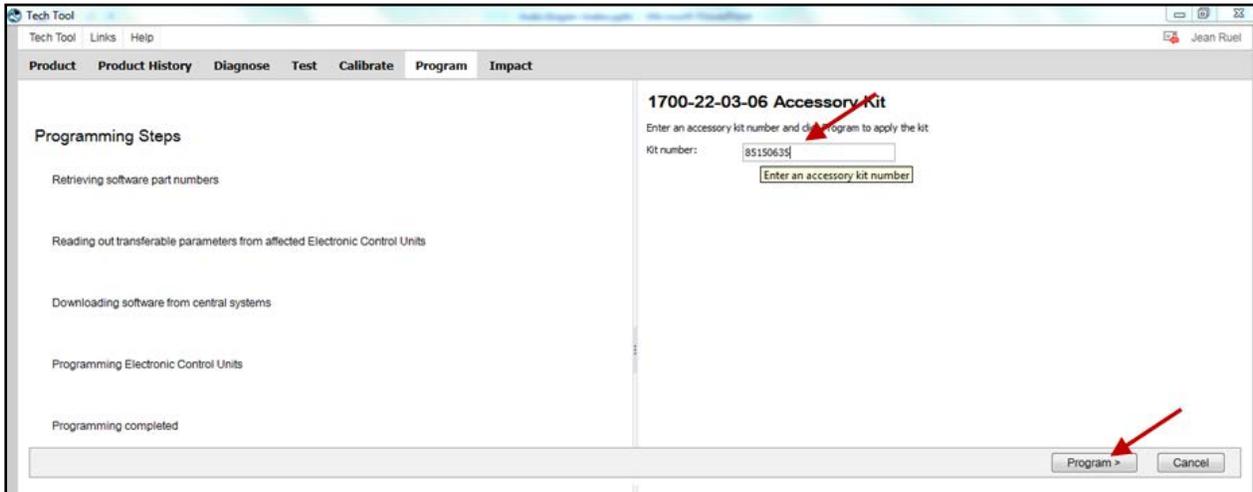


FIGURE 2

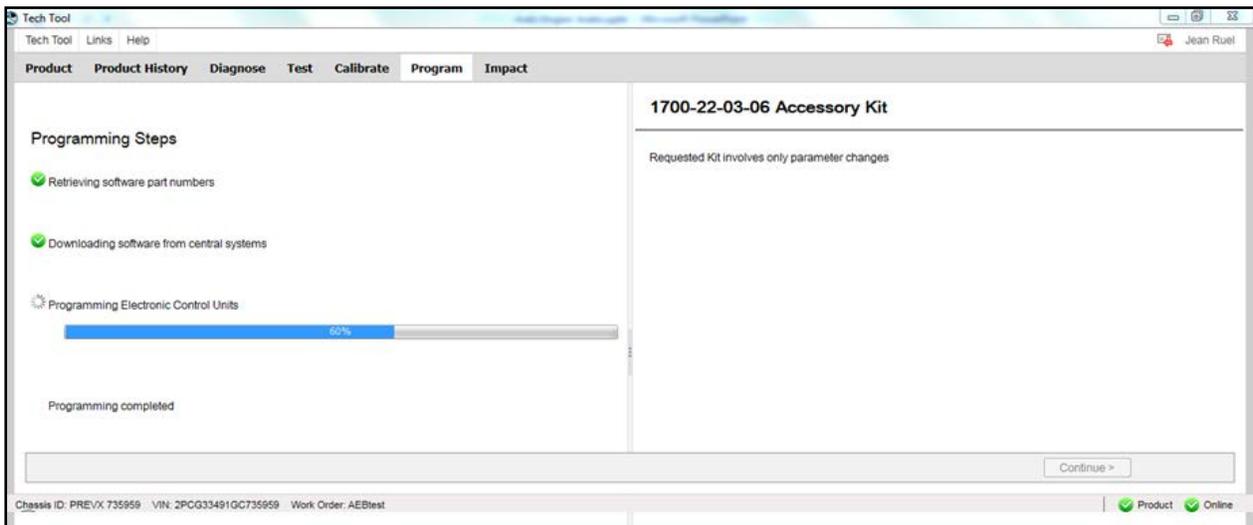


FIGURE 3

## 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).

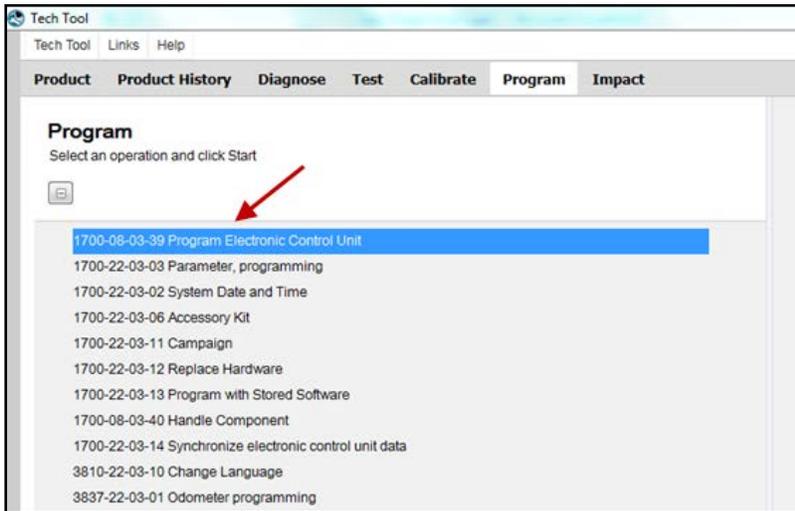


FIGURE 4

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).

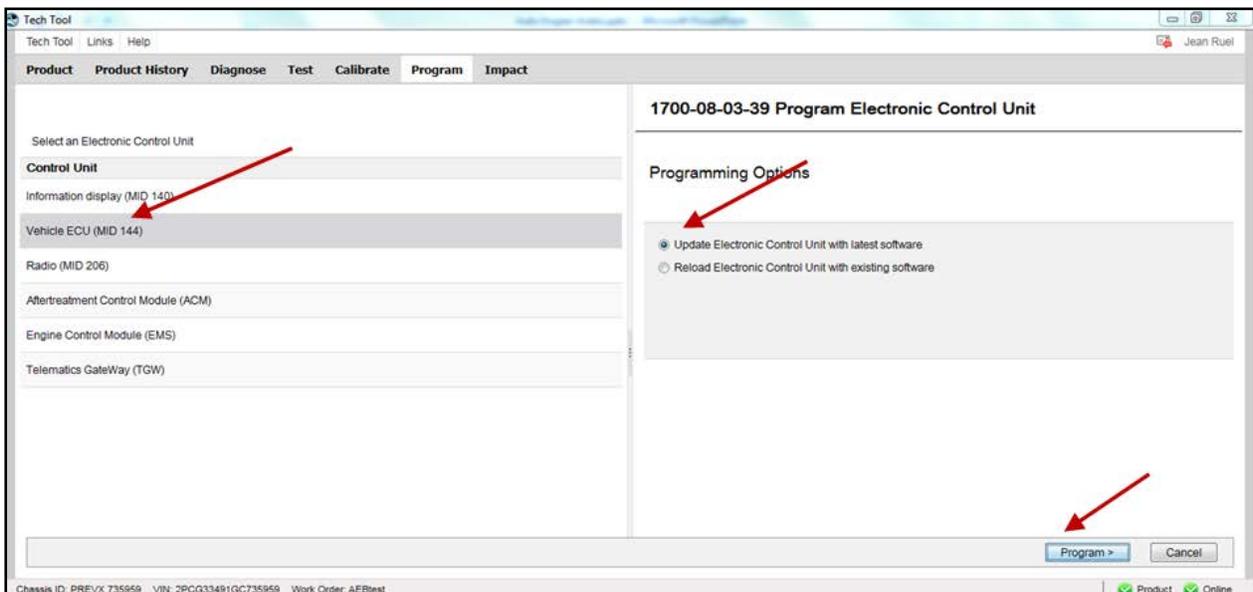


FIGURE 5

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).

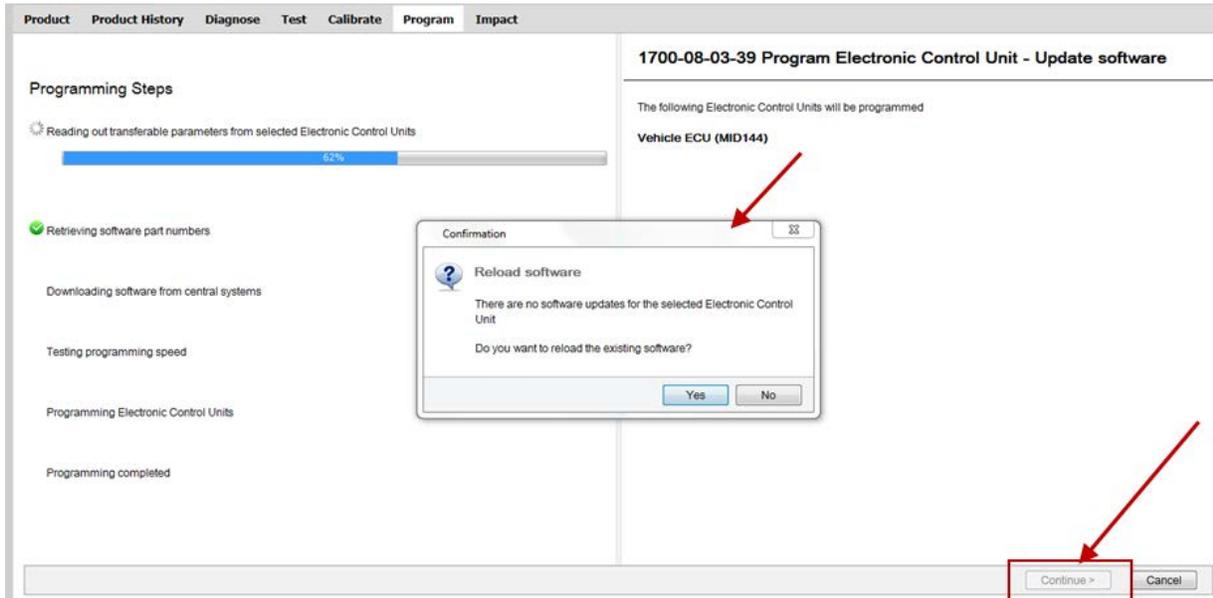


FIGURE 6

## 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).

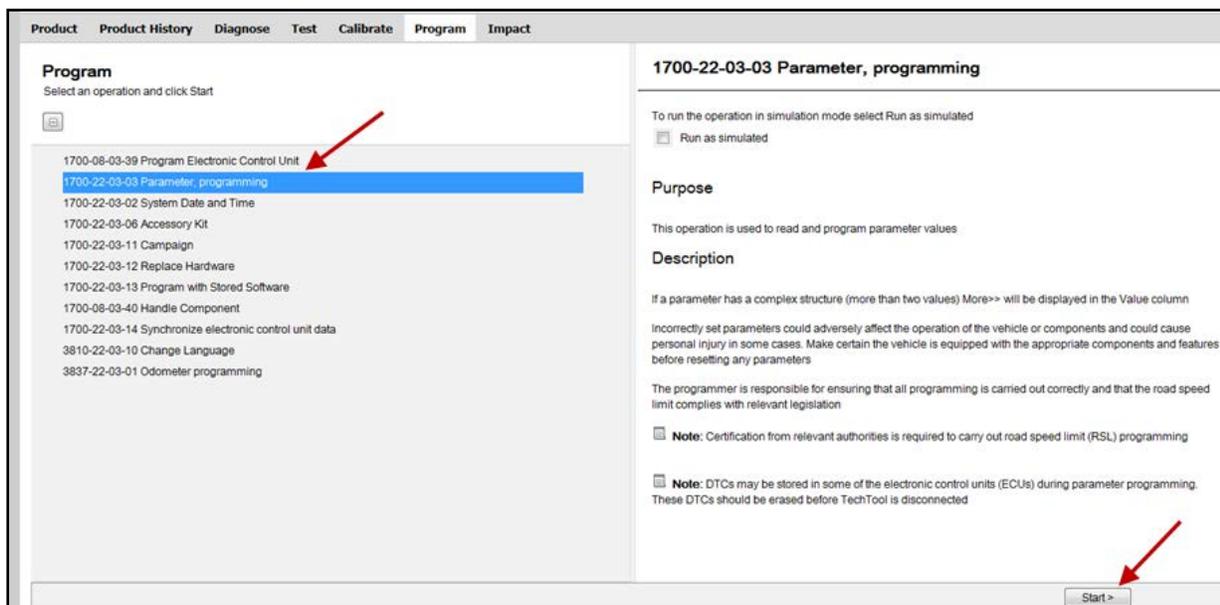


FIGURE 7

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).

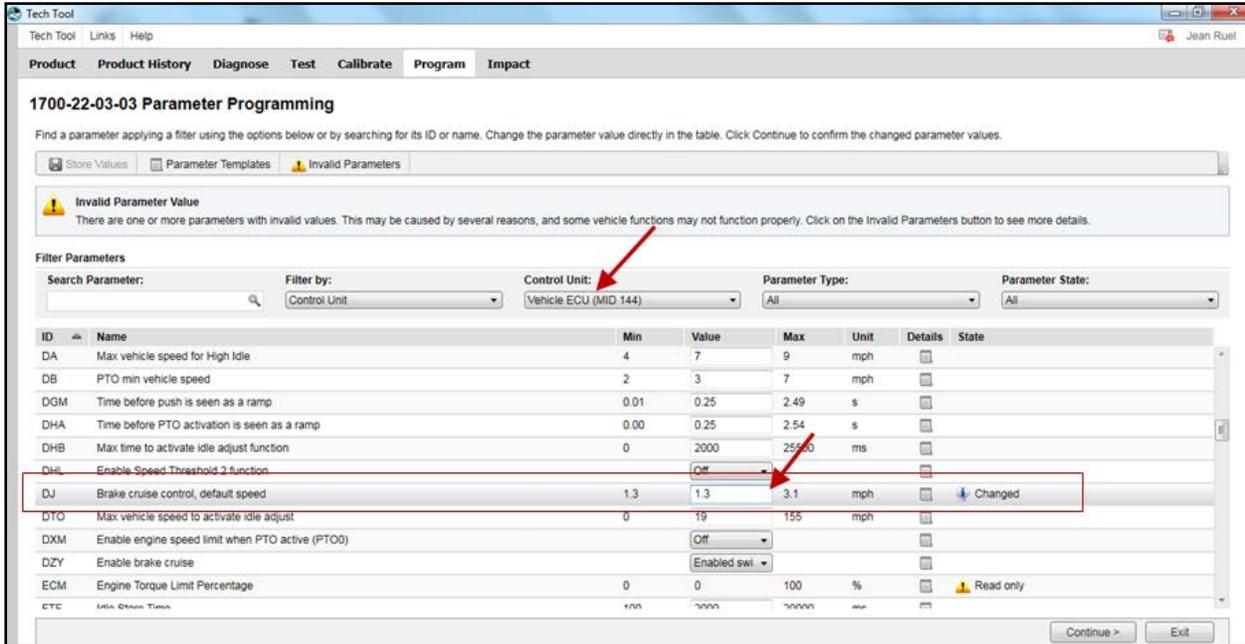


FIGURE 8

5. Click PROGRAM (FIGURE 9).

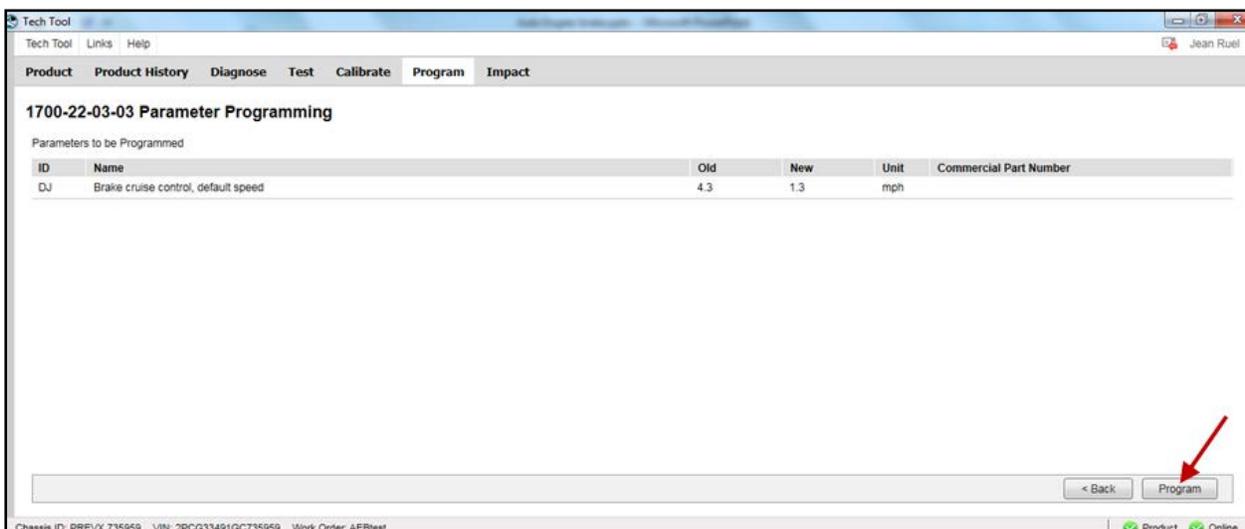


FIGURE 9

6. Follow the instructions on your screen.

## 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).

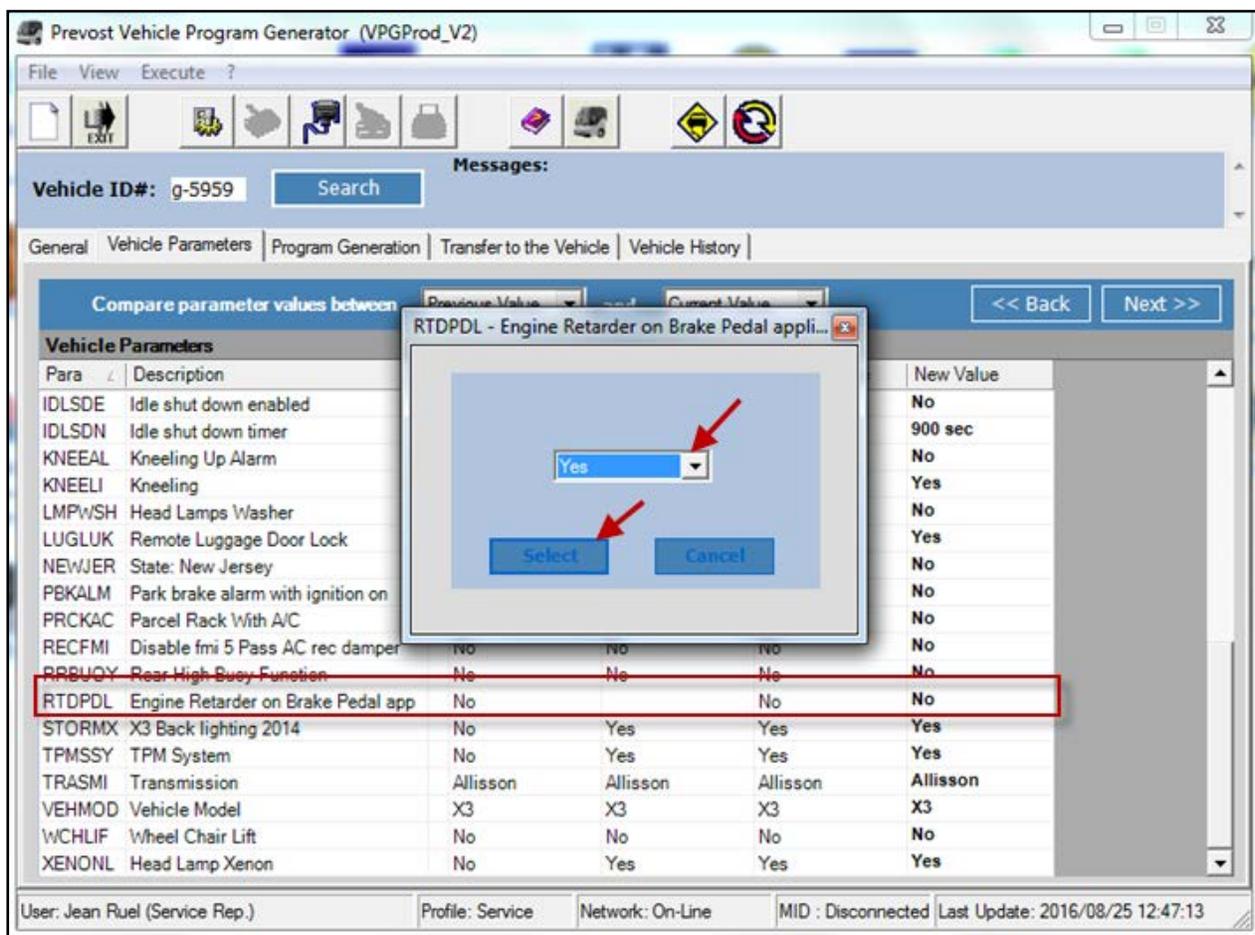


FIGURE 10

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.

## 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

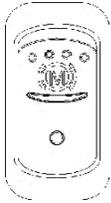
## PART 6 – OPTIONAL STEP, ADDITION OF AN ENGINE BRAKE CANCEL SWITCH

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.*



## 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

### 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).

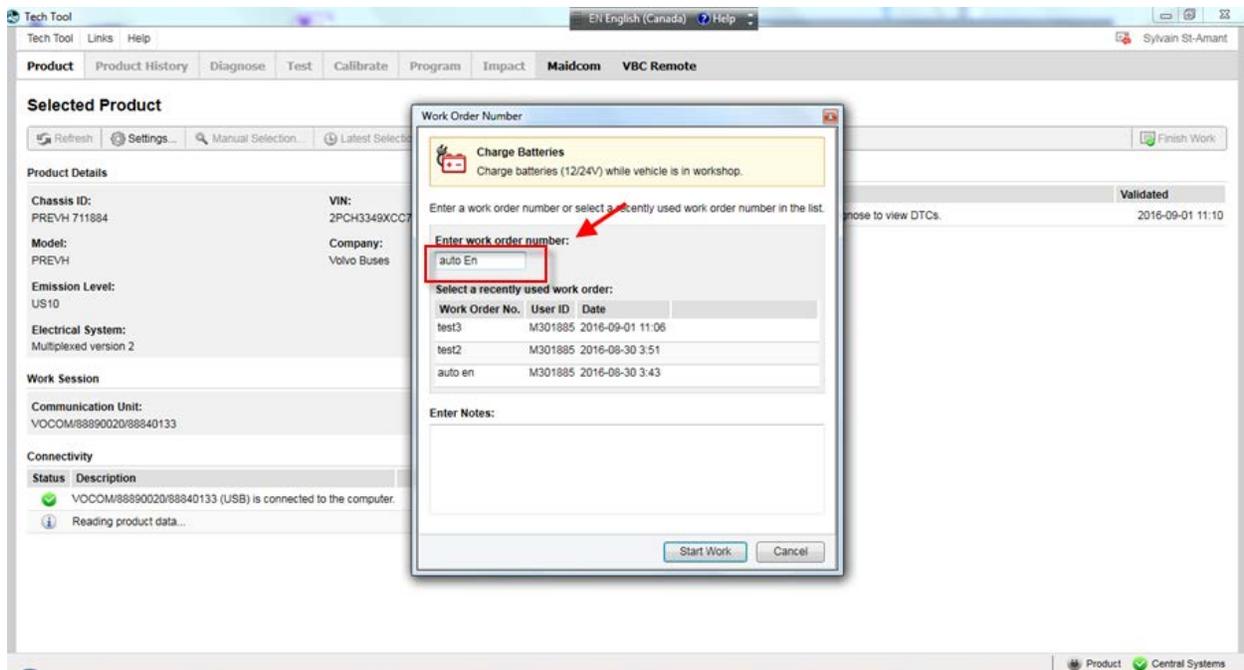


FIGURE 13

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

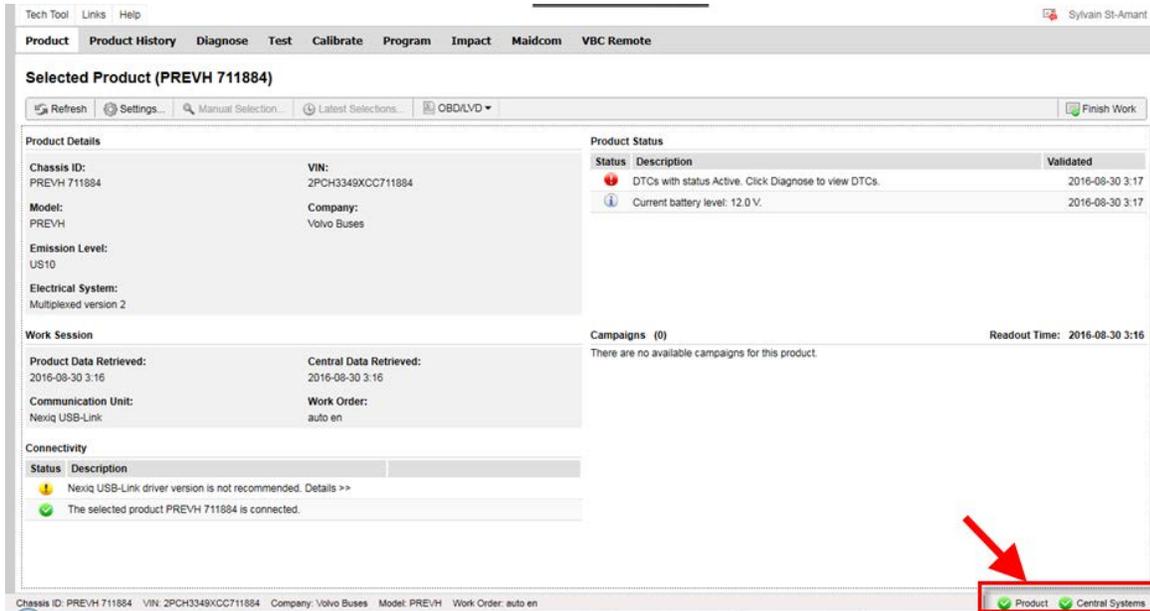


FIGURE 14

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

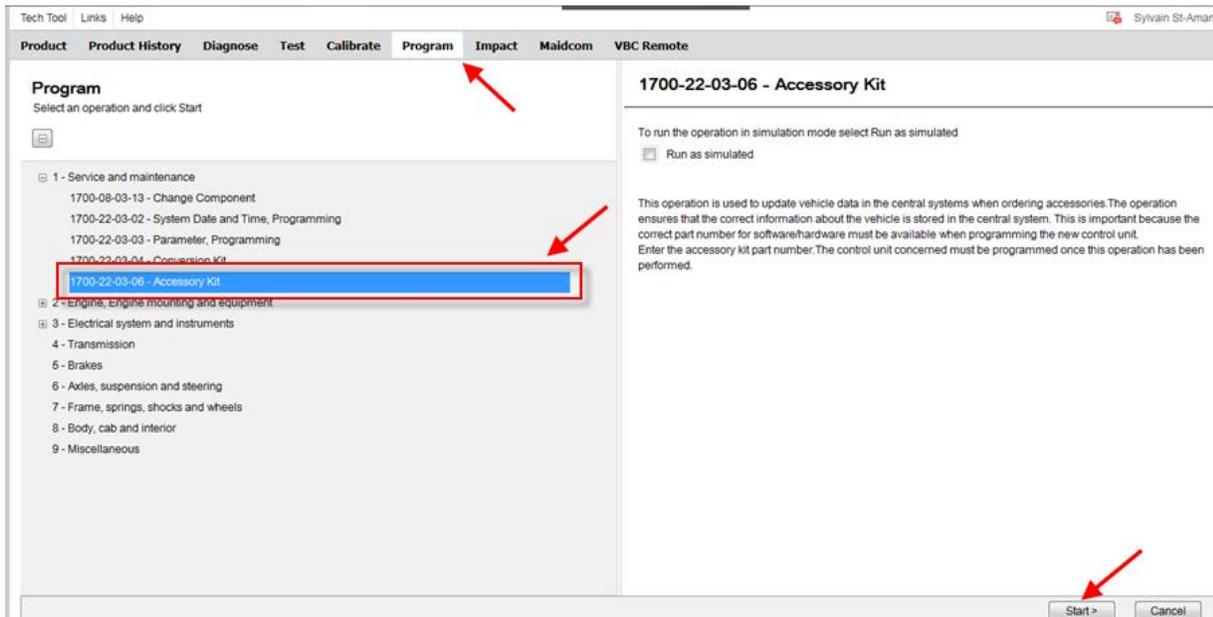


FIGURE 15

4. Click ► (play) (FIGURE 16).

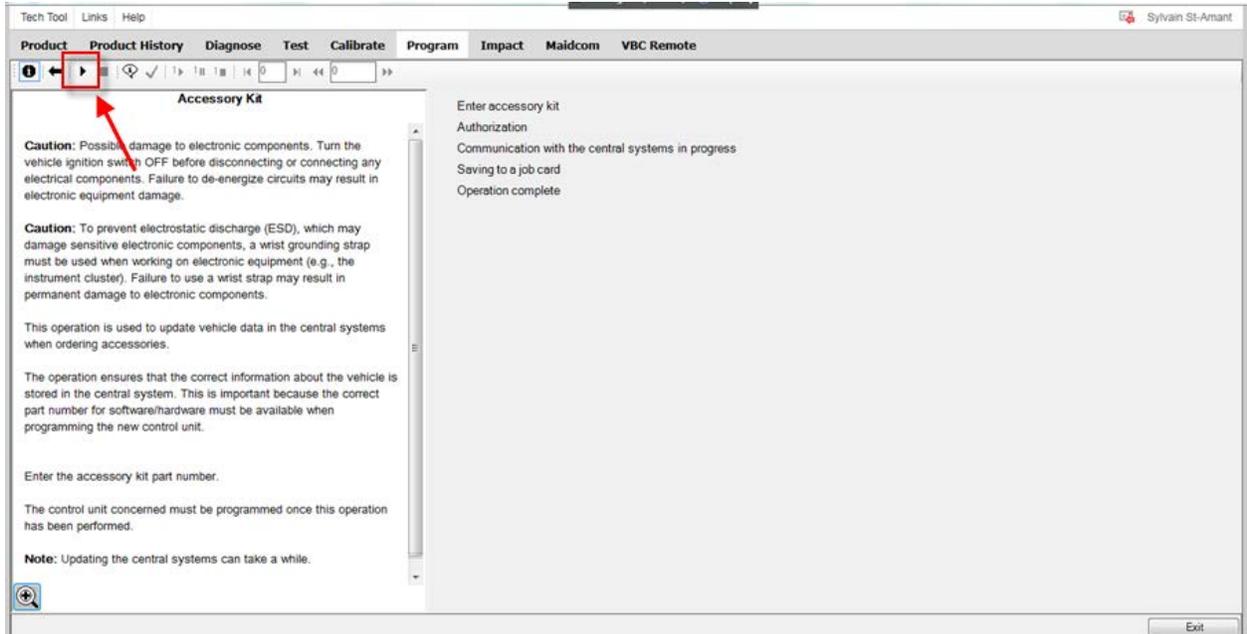


FIGURE 16

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

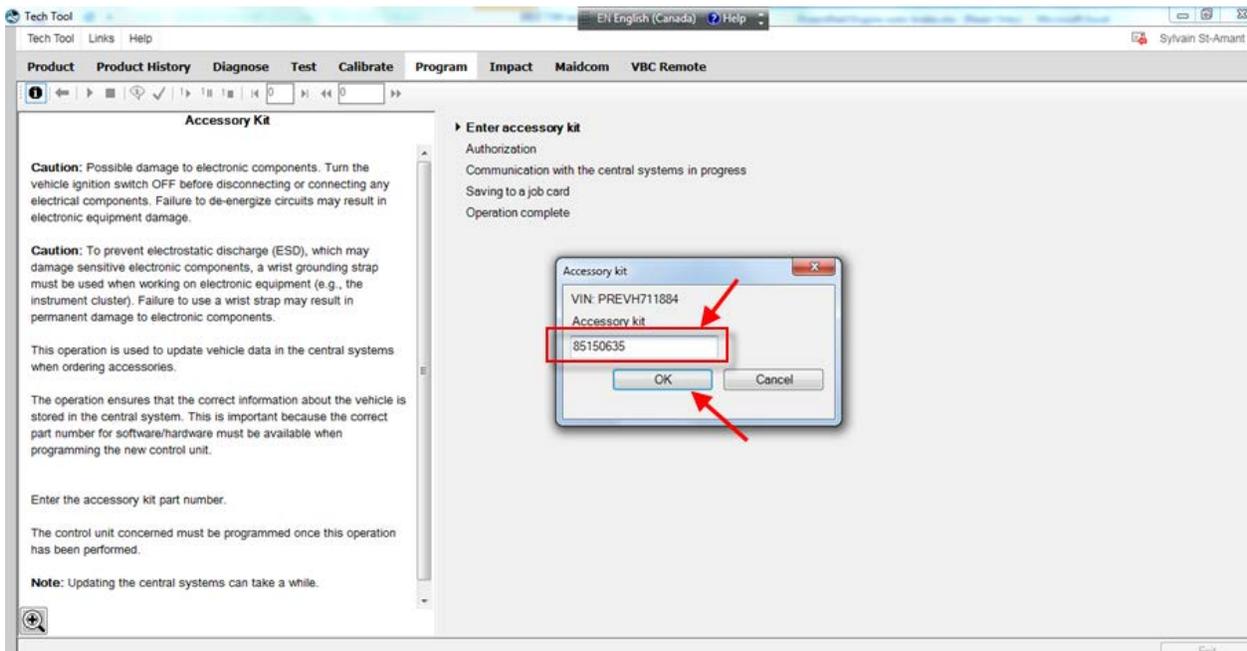


FIGURE 17

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

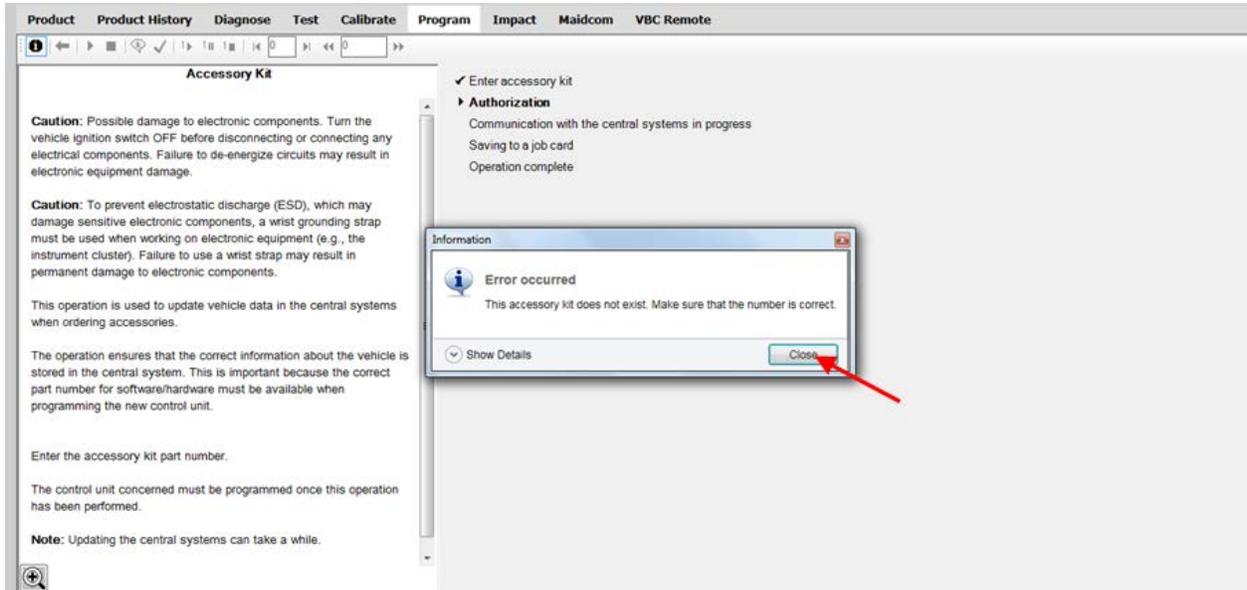


FIGURE 18

## 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).

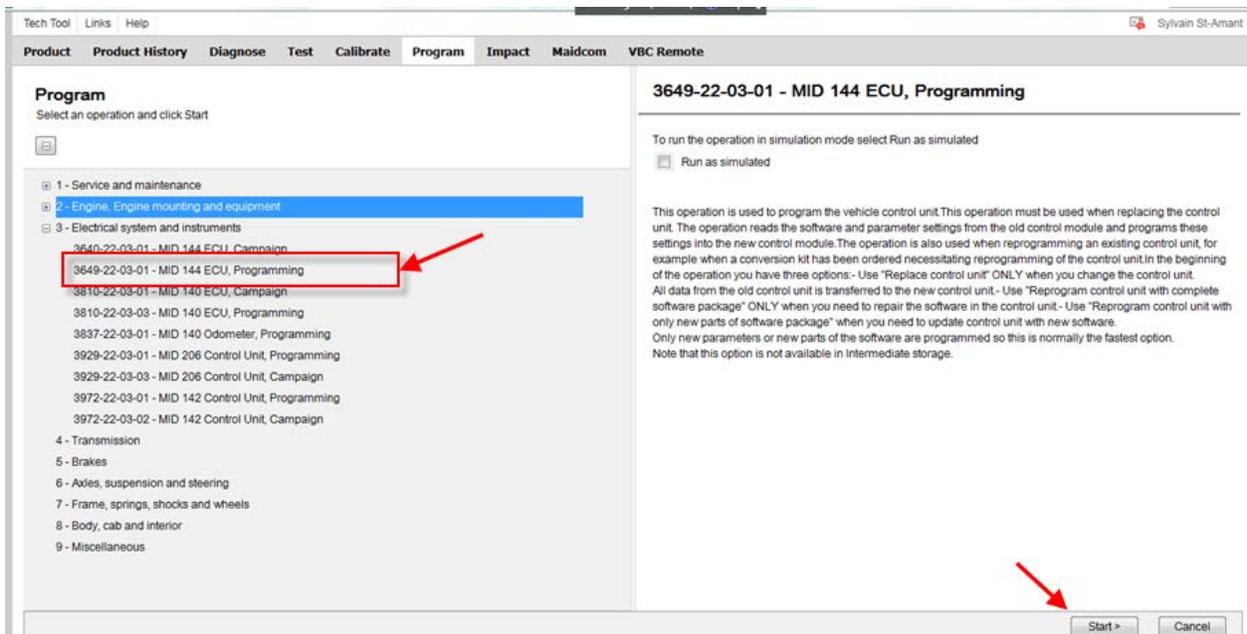


FIGURE 19

2. Click ► (play) (FIGURE 20).

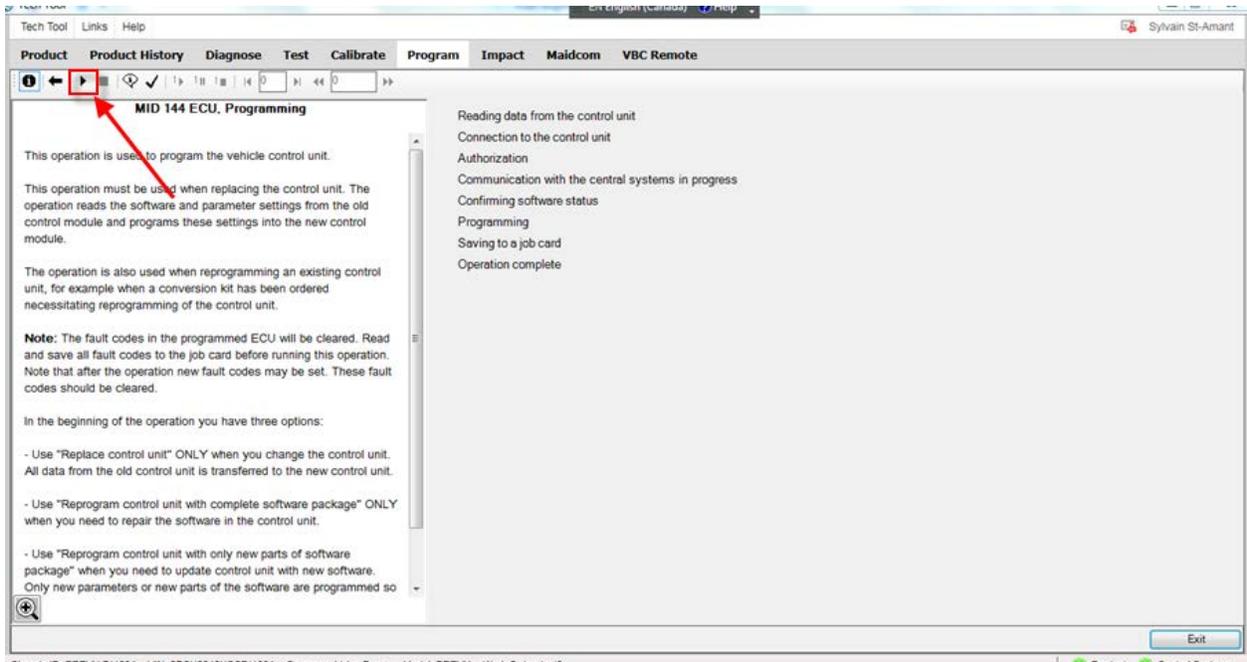


FIGURE 20

3. Click OK (FIGURE 21).

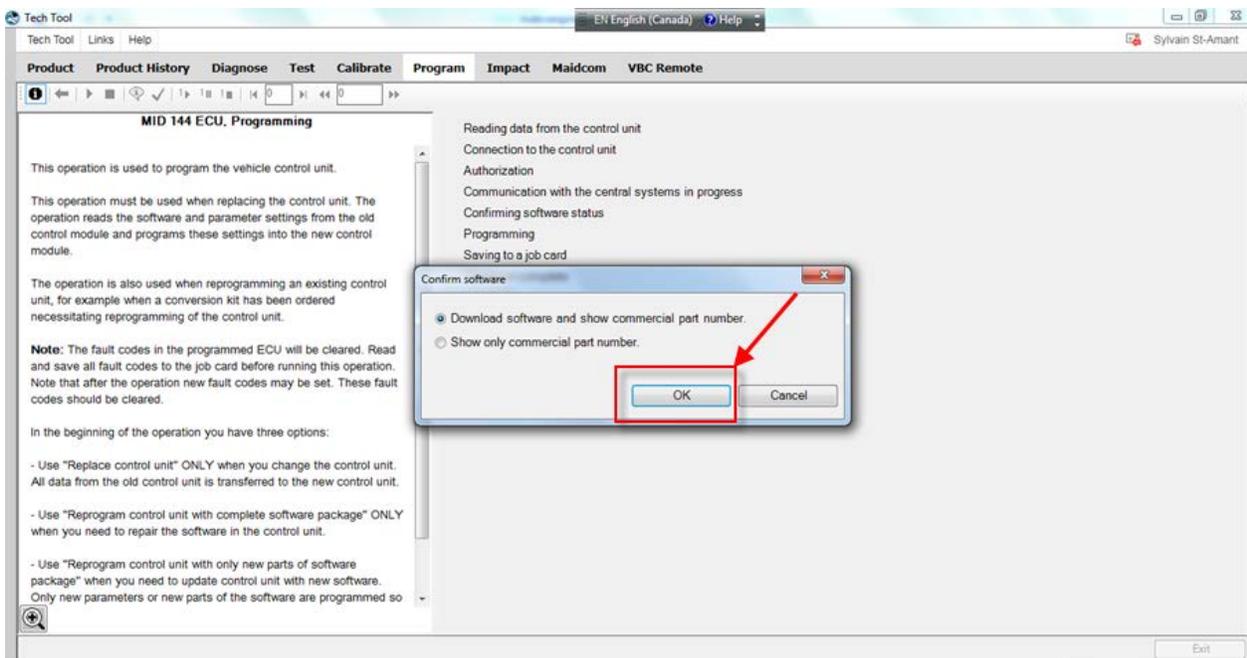


FIGURE 21

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

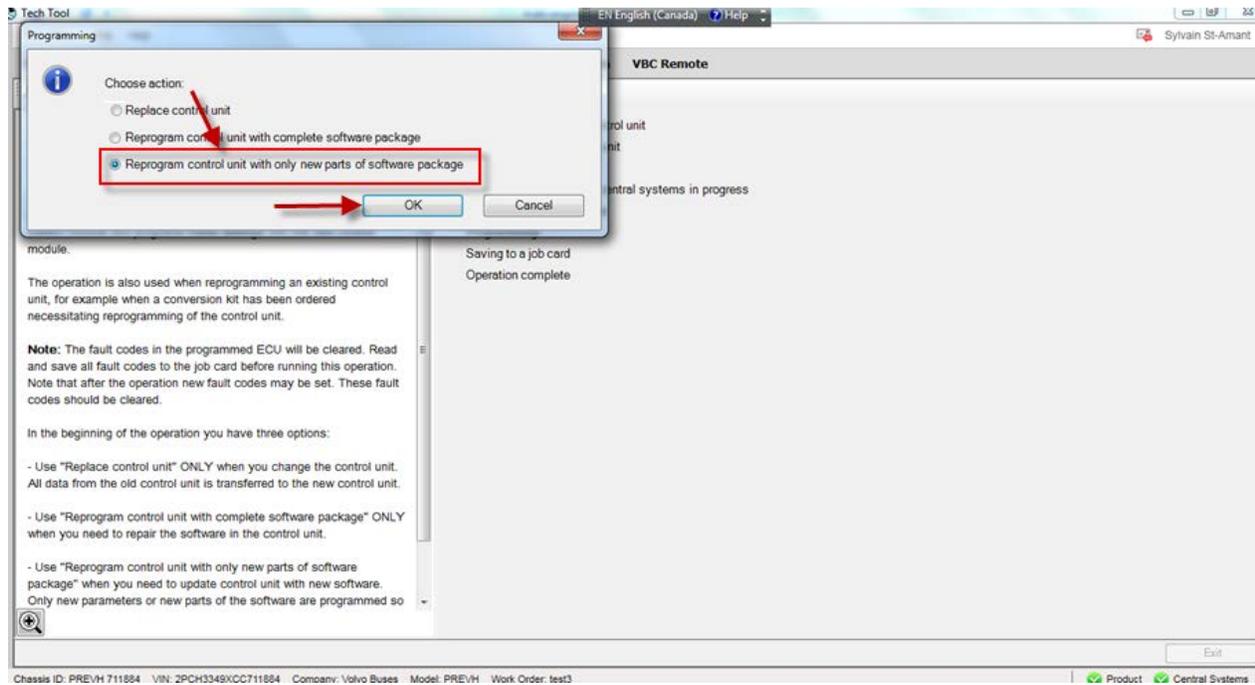


FIGURE 22

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

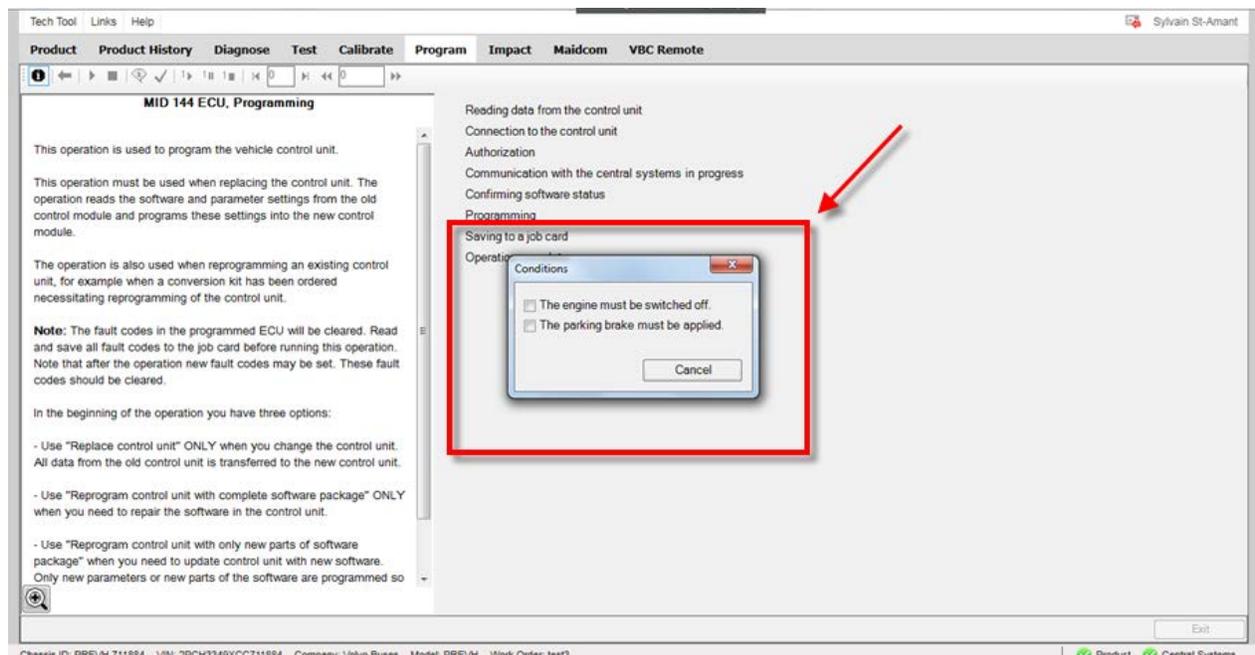


FIGURE 23

6. Click CONTINUE (FIGURE 24).

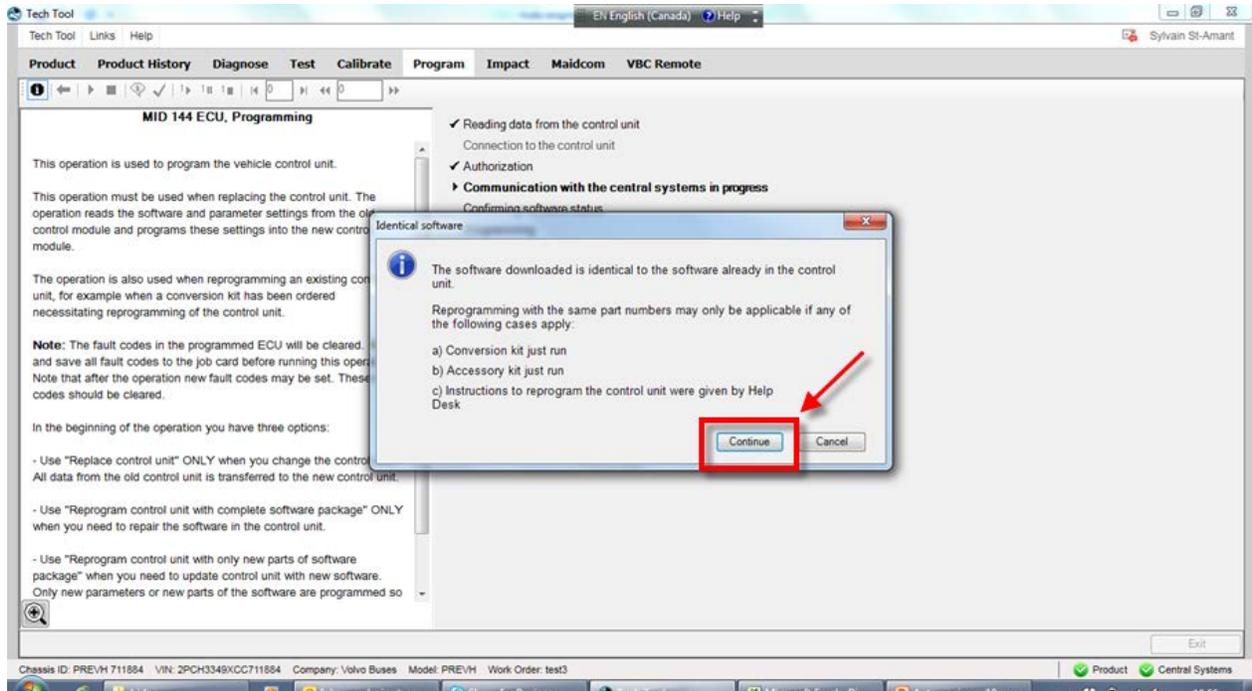


FIGURE 24

7. Click OK (FIGURE 25).

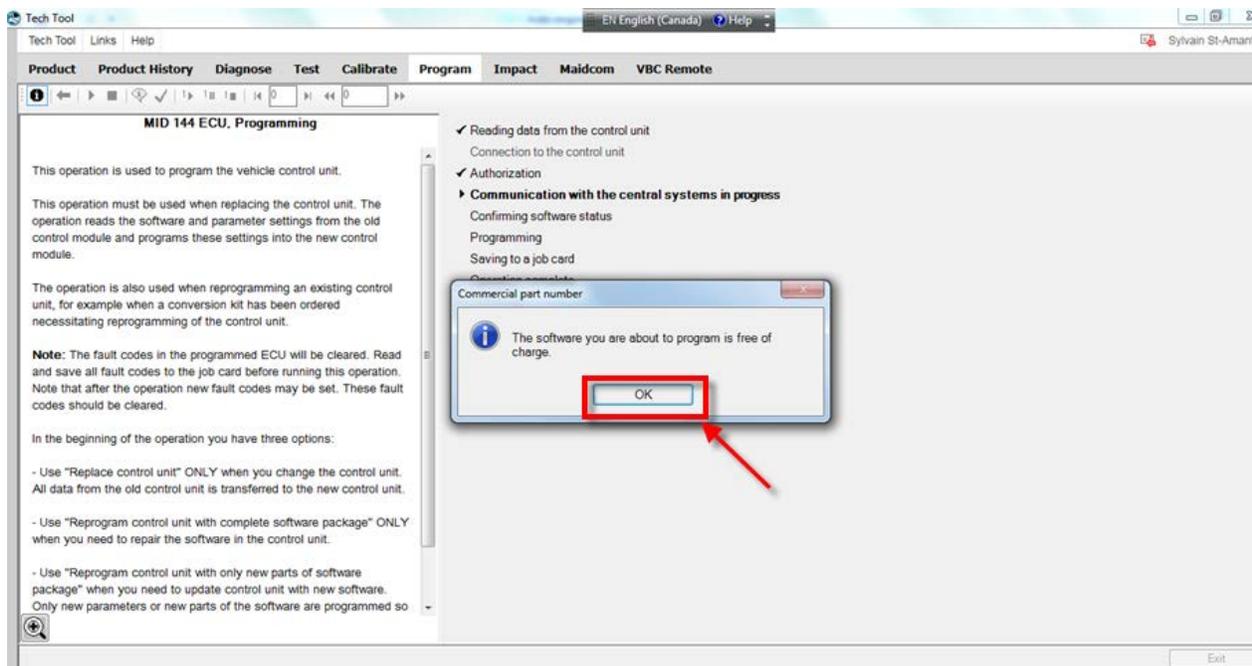


FIGURE 25

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

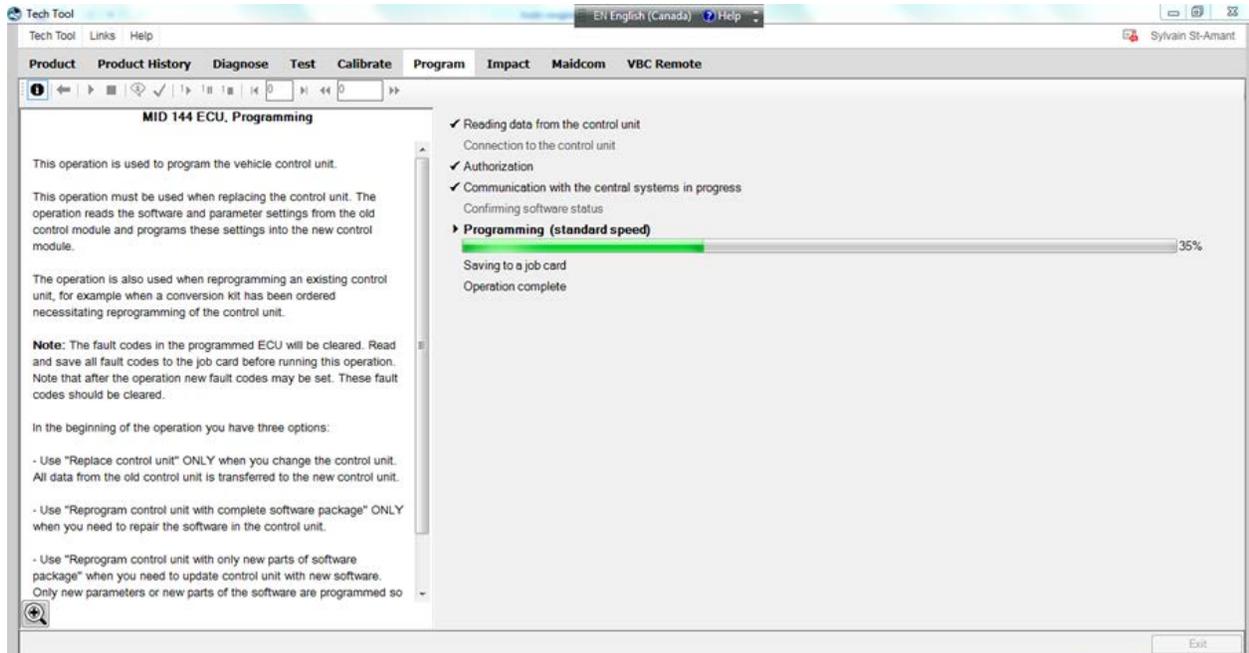


FIGURE 26

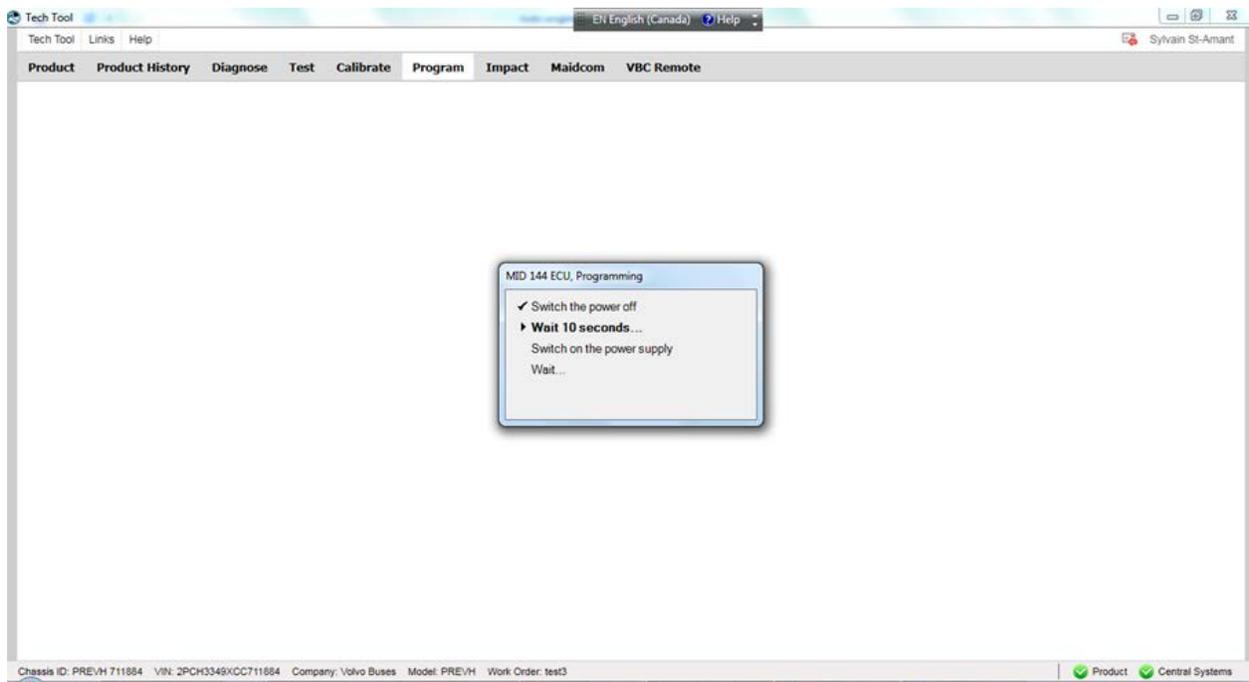


FIGURE 27

- Click  (stop) and then click EXIT (FIGURE 28).

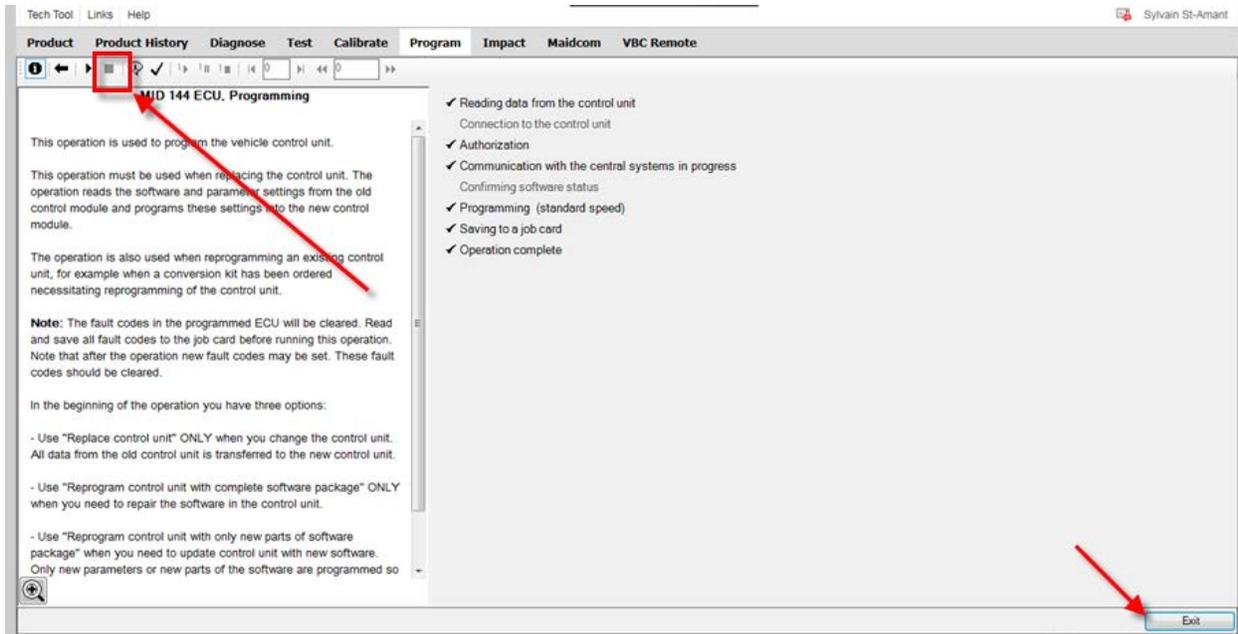


FIGURE 28

## PART 3 – PROGRAMMING DJ PARAMETER

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

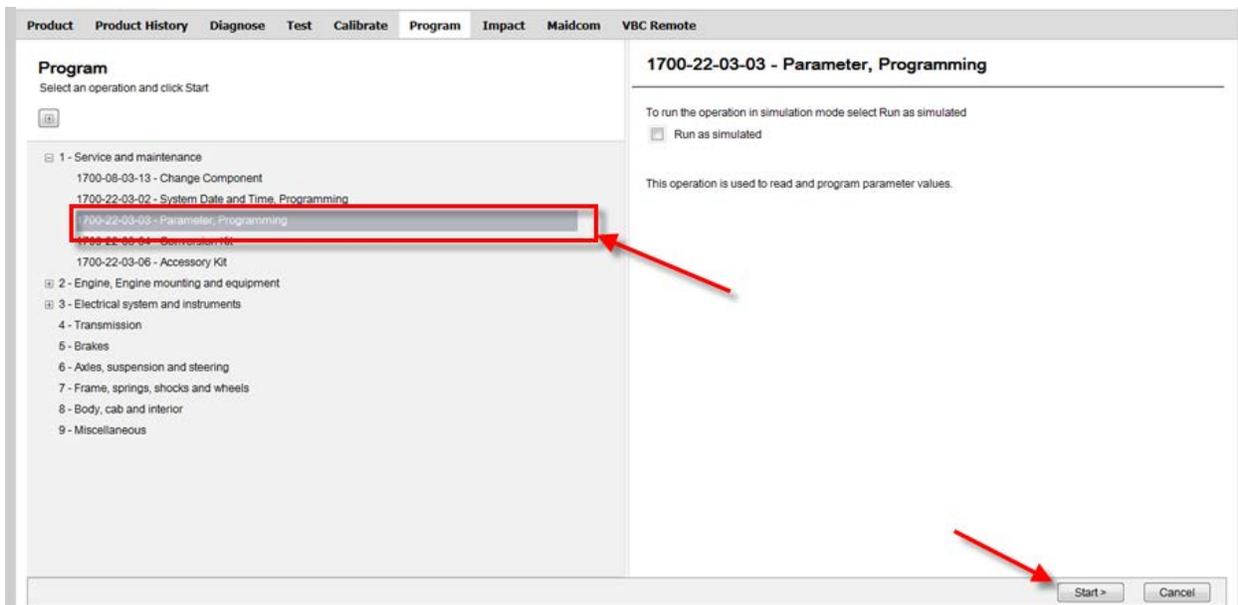


FIGURE 29

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

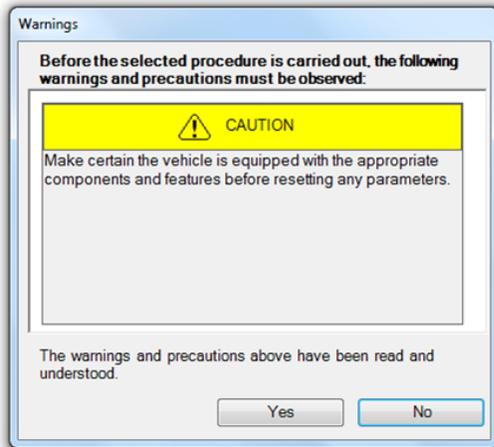


FIGURE 30

3. Click ► (play) (FIGURE 31).

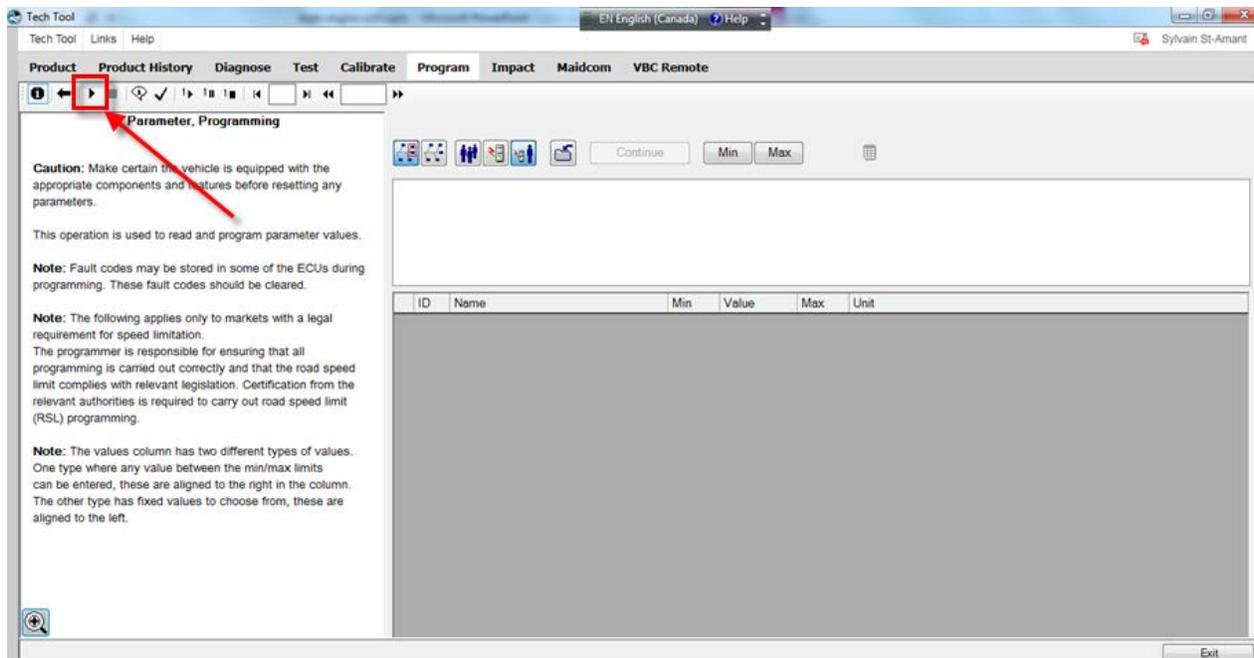
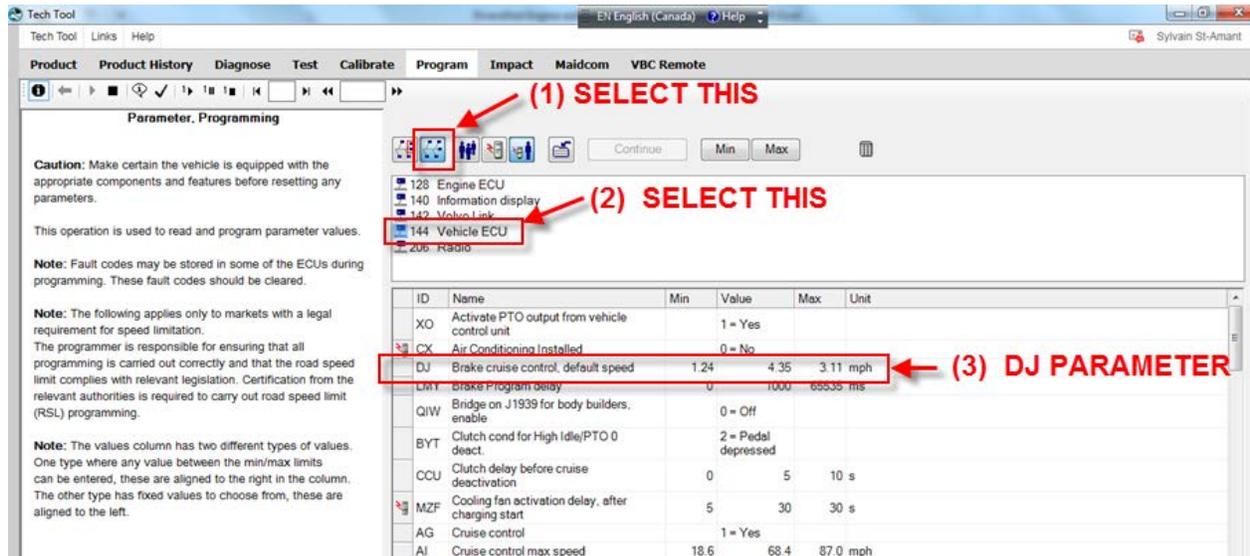
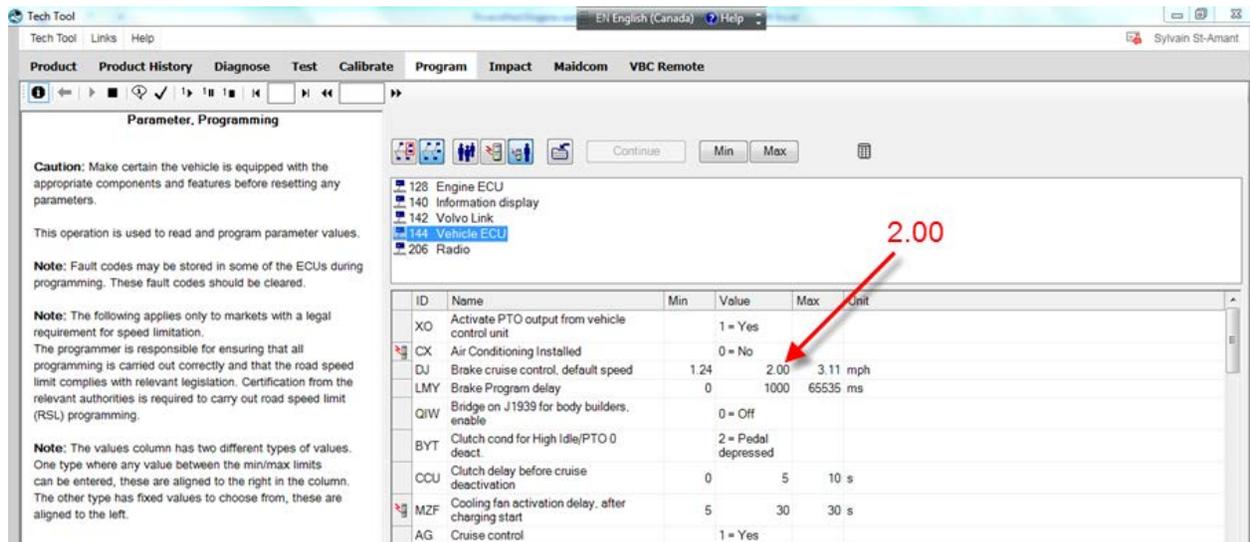


FIGURE 31

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**

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

**FIGURE 33**

6. Click on CONTINUE (FIGURE 34).

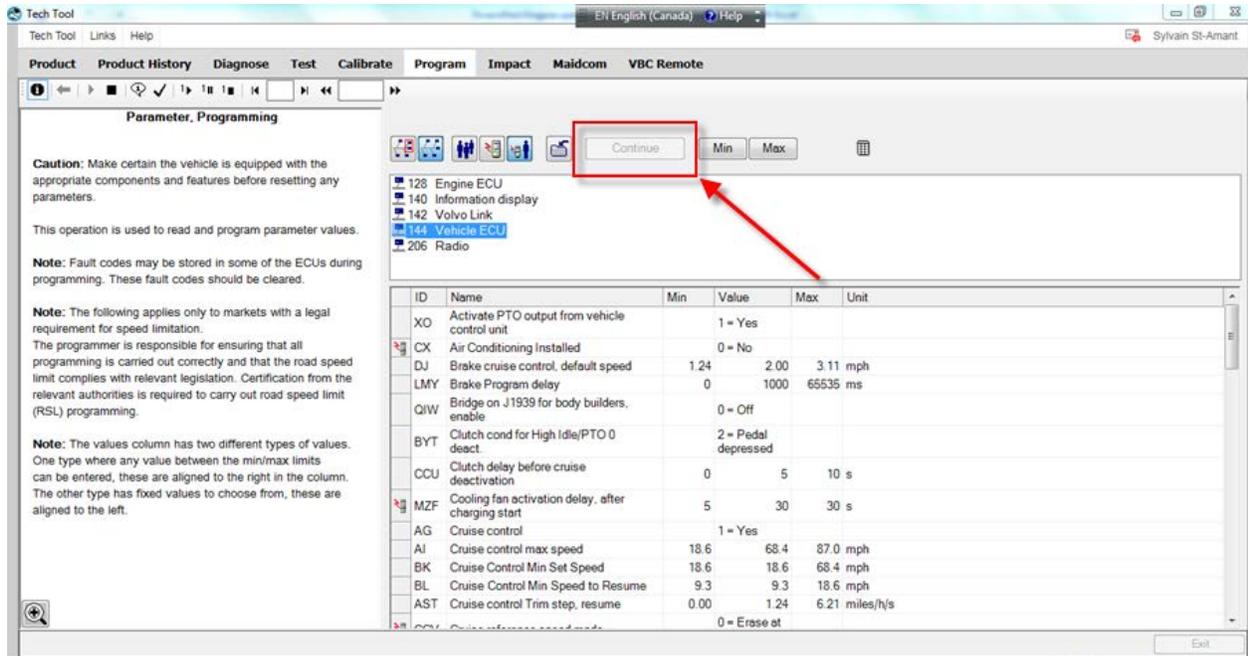


FIGURE 34

7. Click on PROGRAM button (FIGURE 35).

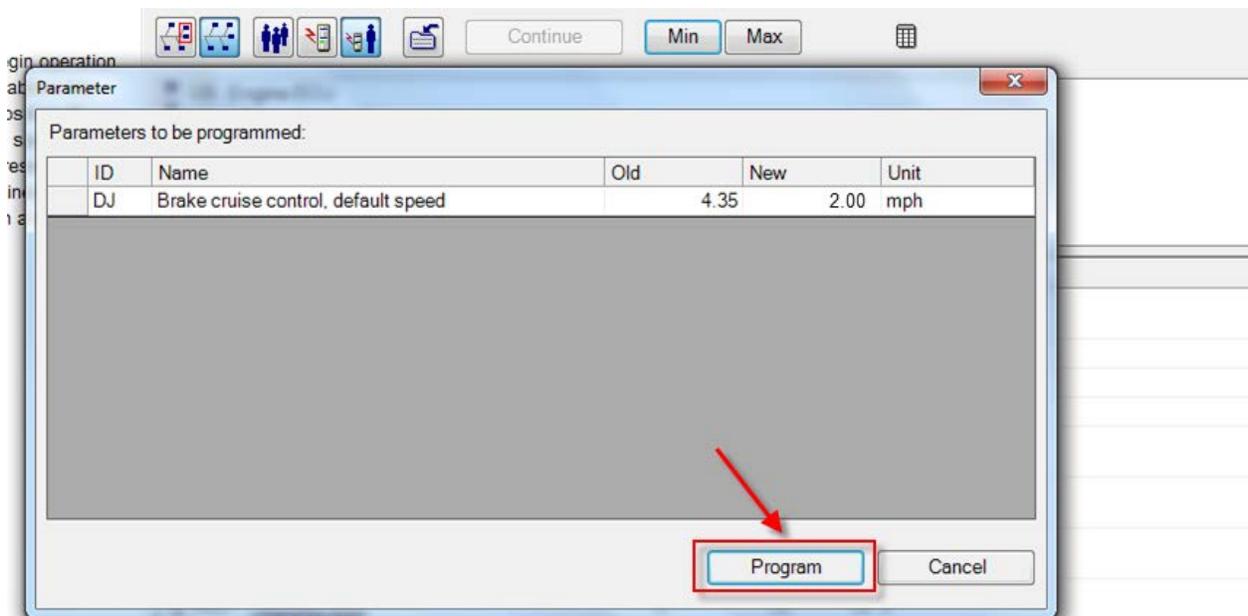


FIGURE 35

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

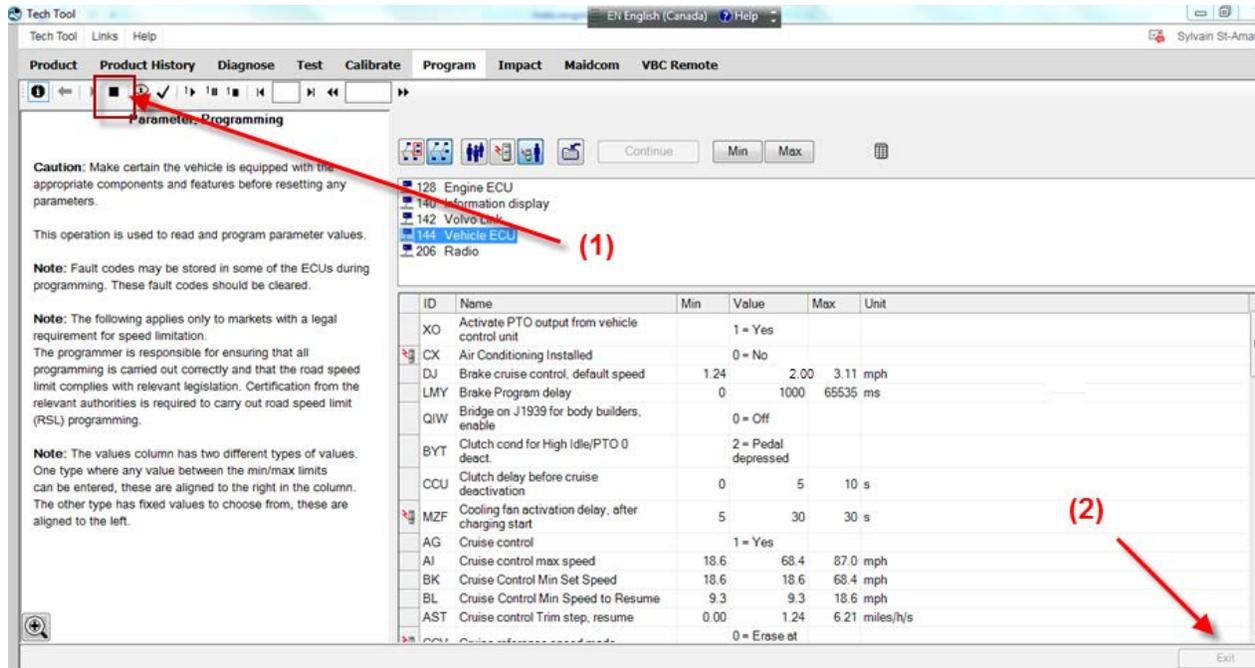


FIGURE 36

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

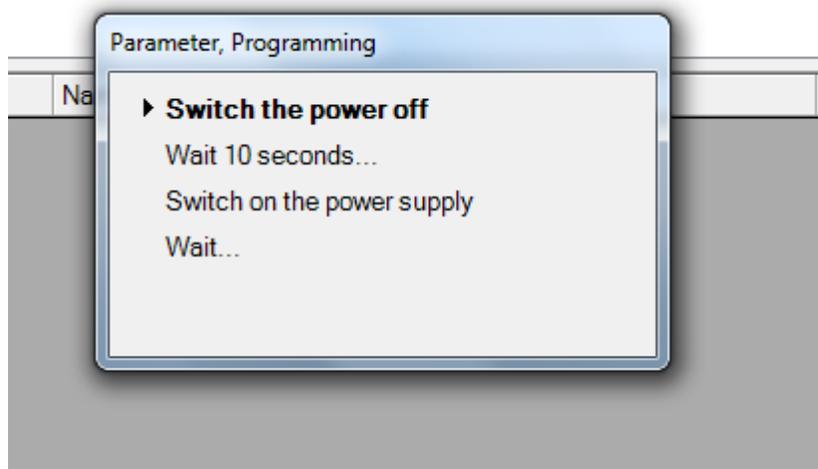


FIGURE 37

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

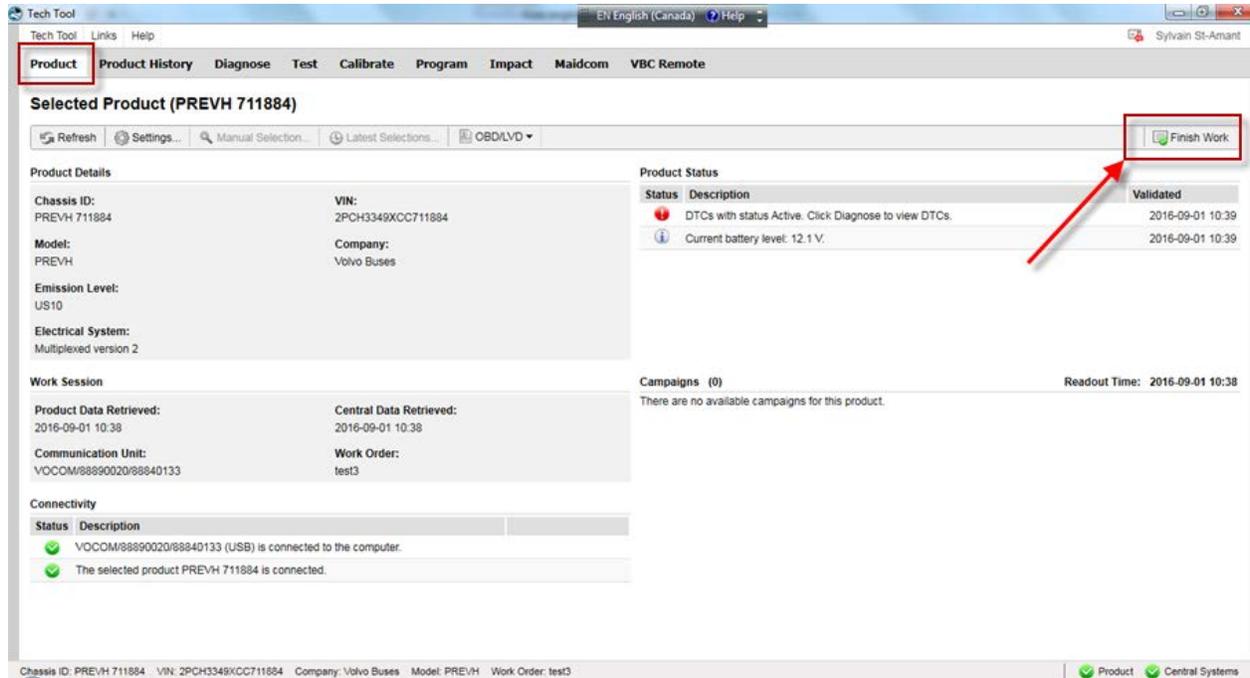


FIGURE 38

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

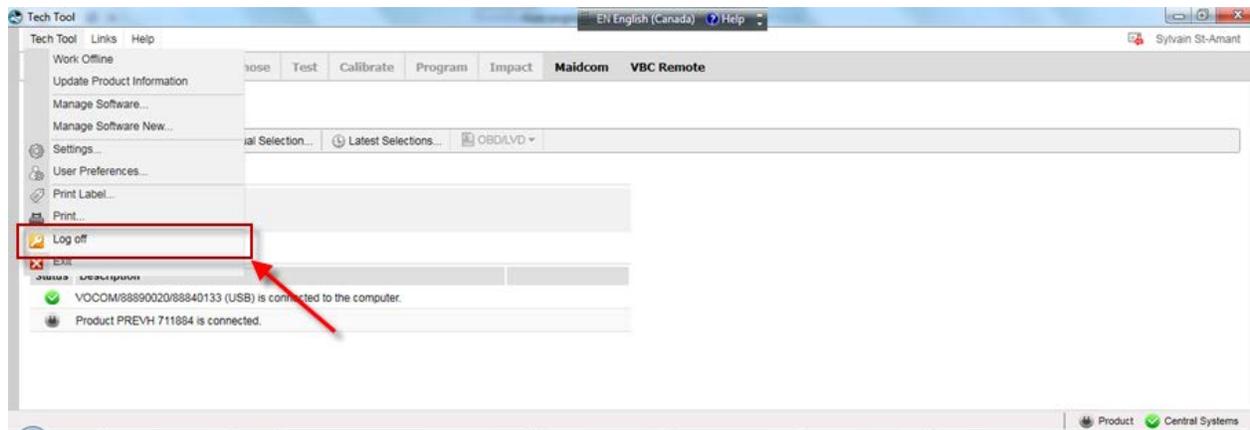


FIGURE 39

## 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.

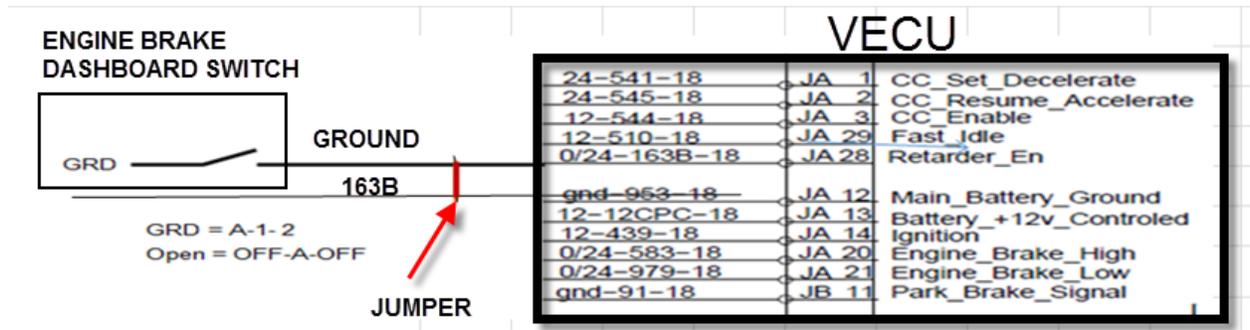


FIGURE 40

## 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 **(A)** 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 **(A)** APPEARS IN THE DID STATUS LINE

## PARTS / WASTE DISPOSAL

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

## ESTIMATED TIME

The time required to perform this special bulletin is approximately xxx hour.

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