



SERVICE BULLETIN

Classification: EL19-071	Reference: NTB20-001	Date: January 7, 2020
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2016-2017 LEAF; 40 KWH HIGH VOLTAGE SERVICE BATTERY PACK

APPLIED VEHICLES: 2016-2017 LEAF® (ZE0)
APPLIED VIN: Only VINs starting with 1N4BZ0...

SERVICE INFORMATION

If the High Voltage (HV) Battery Pack needs to be replaced for any reason:

- The 40 kWh HV Battery Pack listed in the Parts Information table, on page 26, is a direct replacement for the 30 kWh HV Battery Pack and does not require any additional parts.
- The 30KWh HV battery pack is discontinued as of the publication of this bulletin.
- For vehicles requiring HV Battery Pack replacement that are not covered by this bulletin, VINS starting with 1N4AZ0, refer to NTB14-059.

NOTE:

- Refer to the applicable Electronic Service Manual (ESM) section **EVB – EV Battery System** for the procedure to replace the HV Battery Pack.
- Refer to **Service Information Overview** on page 2 for additional services required when replacing the HV Battery Pack.

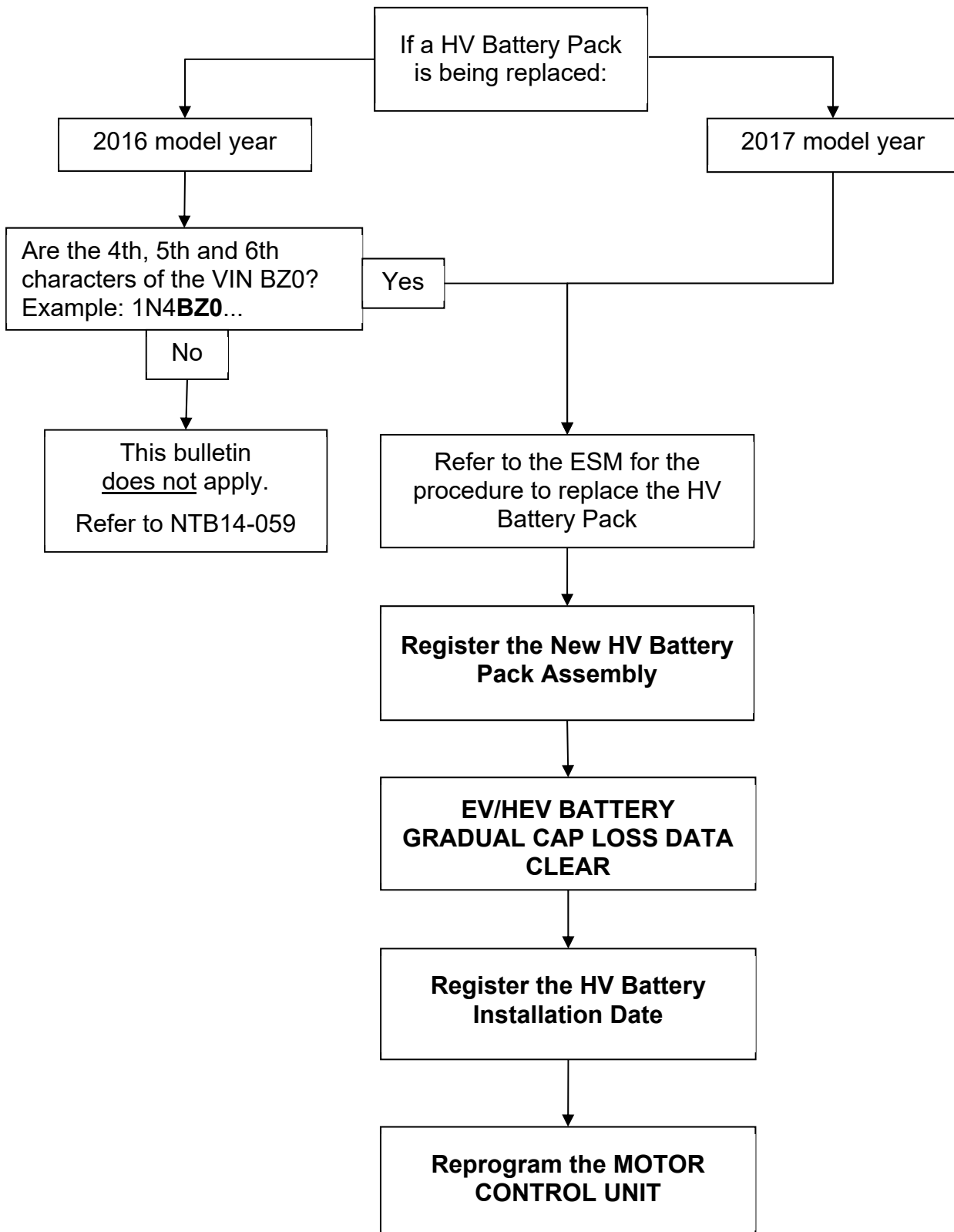
NOTICE

DO NOT “READ & WRITE” any Li-ion Battery Controller (LBC) data to the new HV Battery Pack assembly.

- Writing the old HV Battery Pack LBC data to the new HV Battery Pack assembly will cause the vehicle to read only 8 bars of capacity and will require the LBC to be replaced.

Nissan Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. **NOTE:** If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Nissan dealer to determine if this applies to your vehicle.

Service Information Overview



SERVICE PROCEDURE

Refer to the ESM for HV Battery Pack replacement, and then perform the following procedures in order:

- a. **Register the New HV Battery Pack Assembly** (below)
- b. **EV/HEV BATTERY GRADUAL CAP LOSS DATA CLEAR** (page 9)
- c. **Register the HV Battery Installation Date** (page 10)
- d. **Reprogram the Motor Control Unit** (page 12)

Register the New HV Battery Pack Assembly

IMPORTANT: Before starting, make sure:

- ASIST on the CONSULT PC has been synchronized (updated) to the current date.
- All CONSULT-III plus (C-III plus) software updates (if any) have been installed.

HINT: An unregistered HV Battery Pack will set P3102 (Invalid Battery).

NOTICE

DO NOT “READ & WRITE” any Li-ion Battery Controller (LBC) data to the new HV Battery Pack assembly.

- Writing the old HV Battery Pack LBC data to the new HV Battery Pack assembly will cause the vehicle to read only 8 bars of capacity and will require the LBC to be replaced.
1. Install the HV Battery Pack registration card into the CONSULT PC.
 2. Attach the CONSULT PC to the vehicle.
 - Connect the plus VI to the vehicle.
 - Connect the AC adapter to the CONSULT PC.
 3. Turn ON the CONSULT PC and then open C-III plus.
 4. Depress the vehicle’s power (“ignition”) switch twice without depressing the brake pedal.
 - The meter and gauges will illuminate.
 - Do Not set the vehicle in “READY to drive” mode.
 - Make sure all accessories are turned OFF.

- After the plus VI is recognized, select **Diagnosis (All Systems)**.
 - Make sure all applications other than C-III plus are closed.

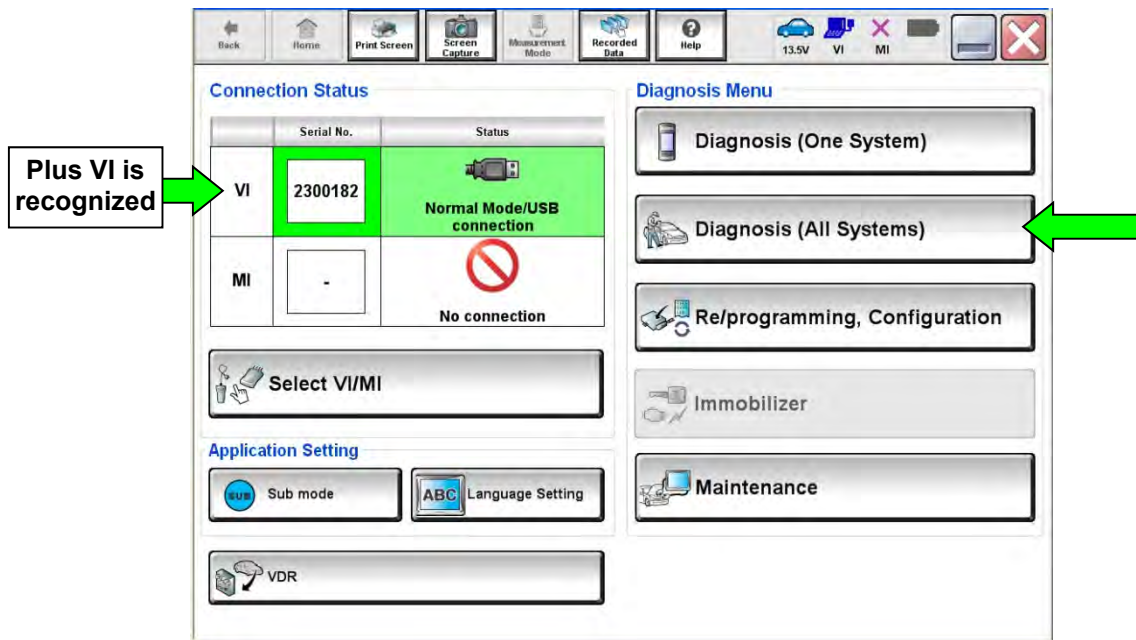


Figure 1

- Select **LEAF** and the appropriate model year or **Automatic Selection(VIN)**.
 - If **Automatic Selection (VIN)** is selected, wait for the **Reading VIN** screen to complete (picture not shown).
- Select **Select**.

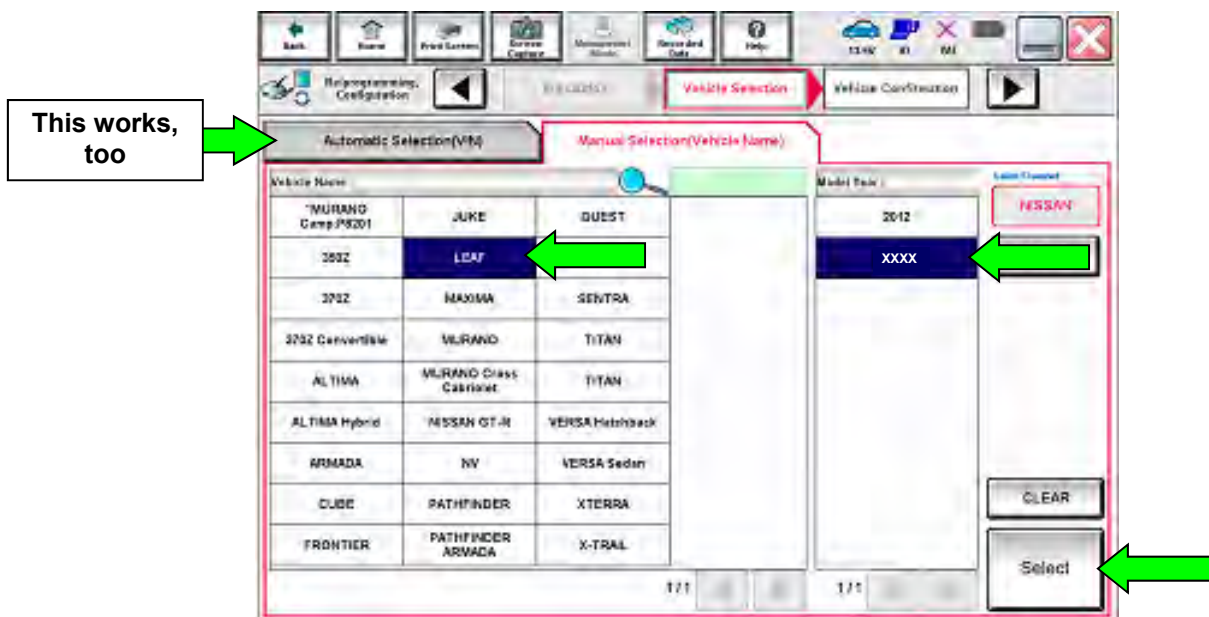


Figure 2

8. Verify the VIN in **VIN or Chassis #** matches that of the vehicle.

- If the correct VIN is displayed, select **Confirm**.

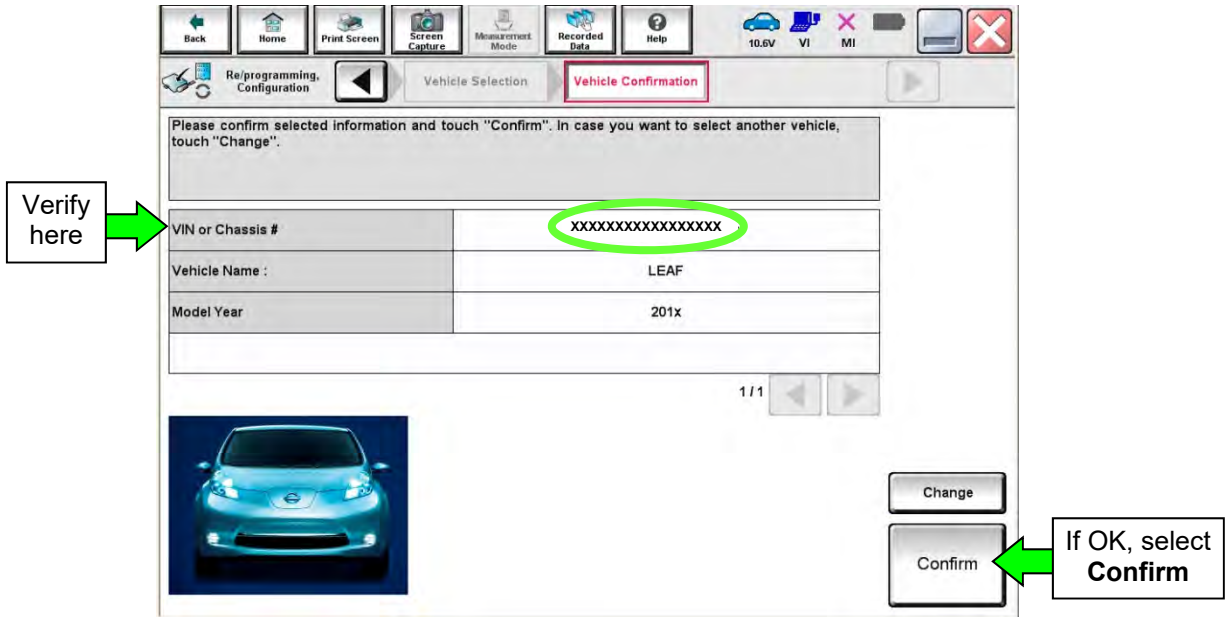


Figure 3

9. Select **Confirm**.

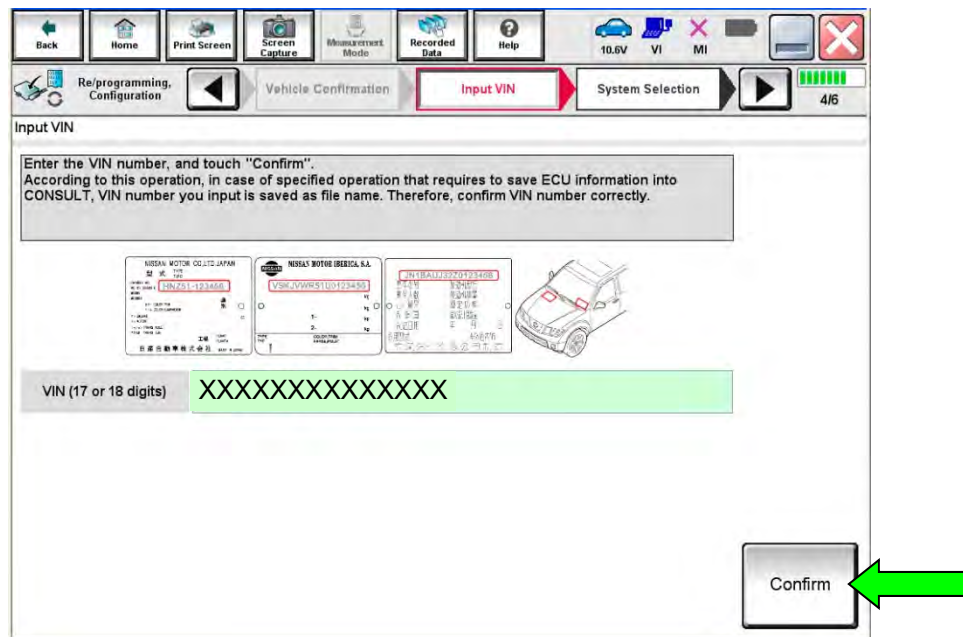


Figure 4

10. Select **EV/HEV**.

- Wait for system call to complete.

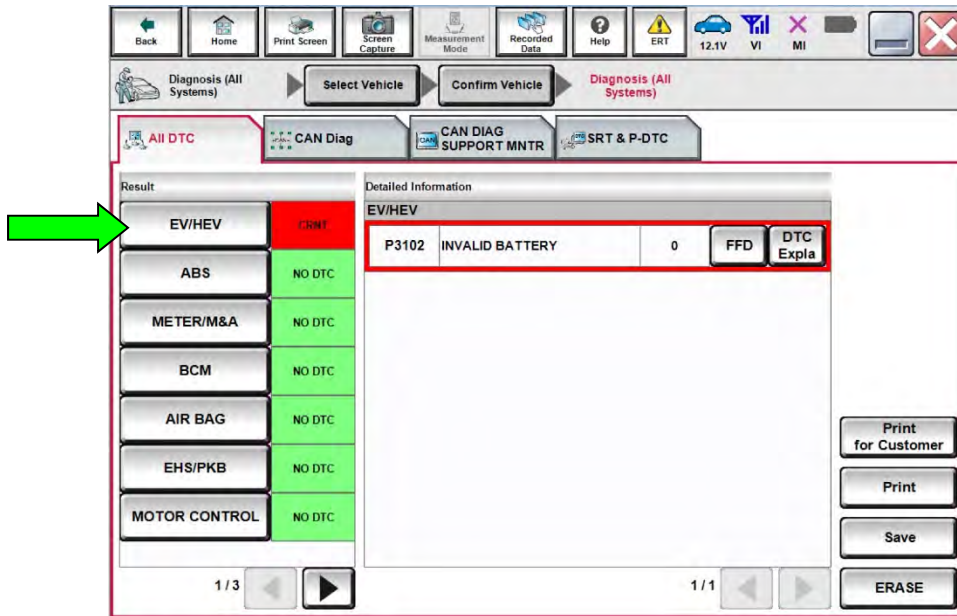


Figure 5

11. Select the “right arrow” (Figure 6).

HINT: This arrow will only be available if the HV Battery registration card is installed in the CONSULT PC.

- The card must be installed before opening C-III plus.
- If the card is installed, but the arrow in Figure 6 is not available, reboot the CONSULT PC and restart the procedure from step 3.

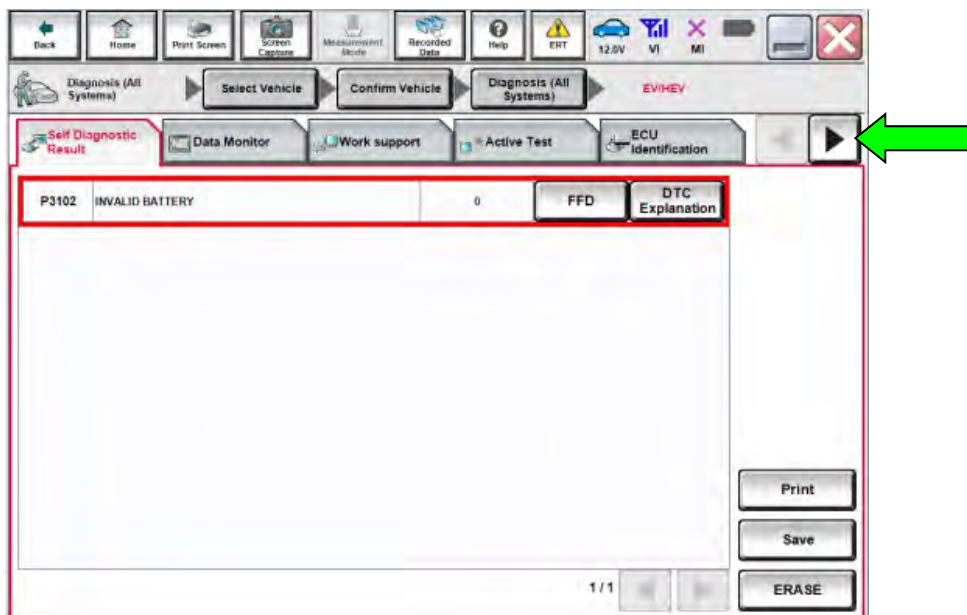


Figure 6

12. Select LOAD BATT ID.

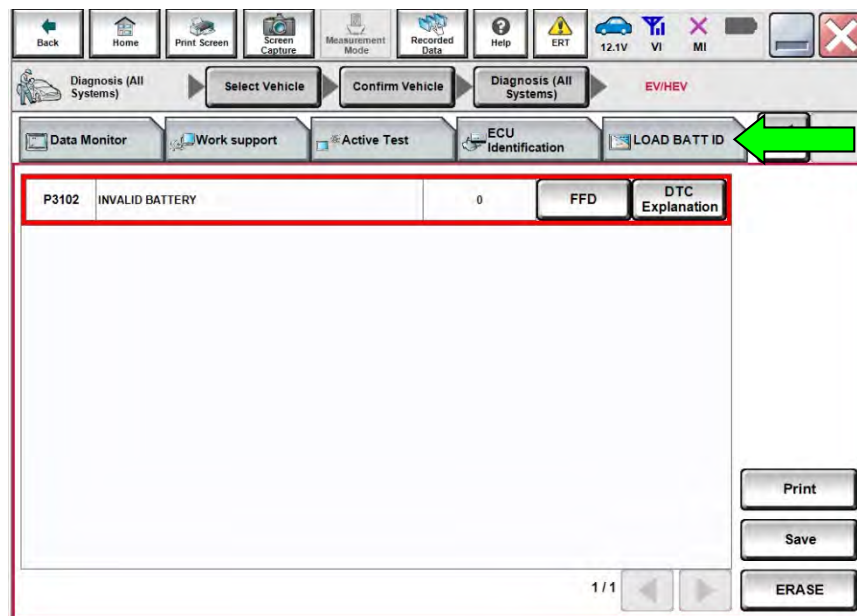


Figure 7

13. Select Next.

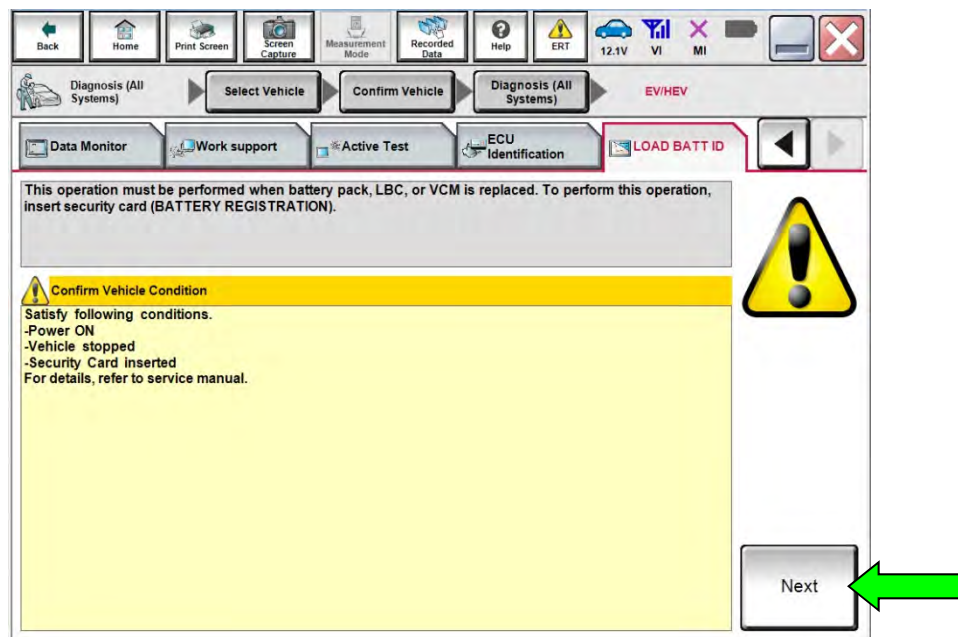


Figure 8

14. Select **Start**.

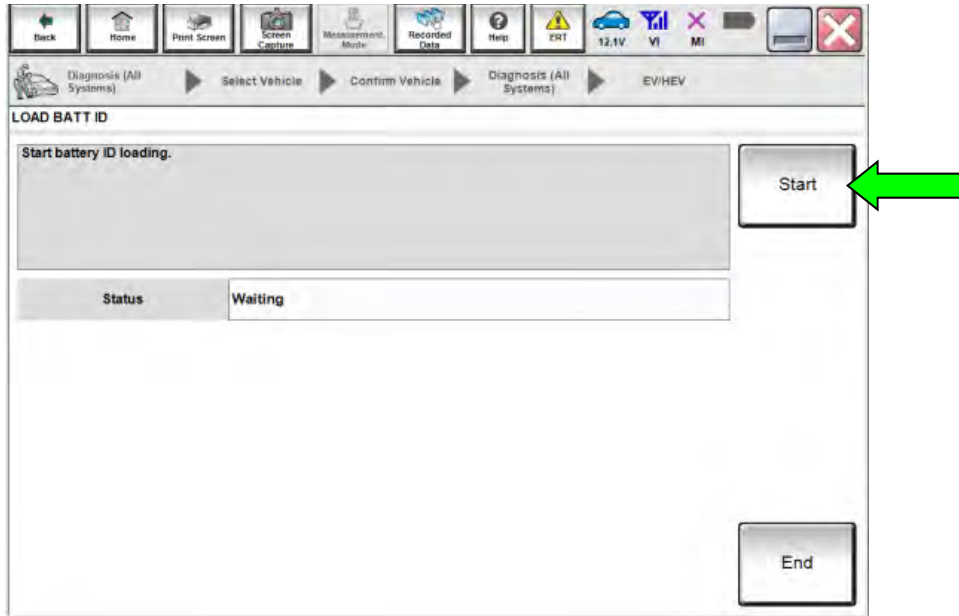


Figure 9

15. When the status displays “Complete”, select **End**.

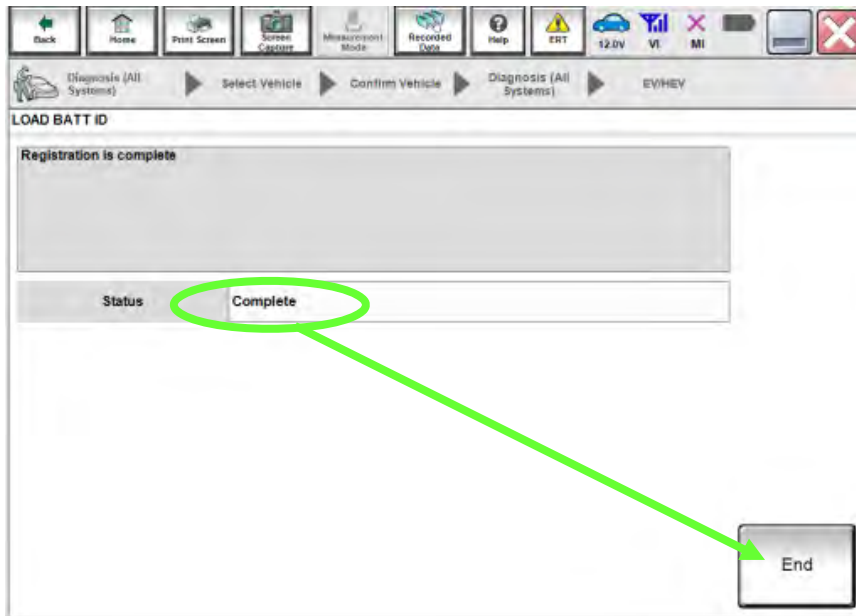


Figure 10

16. Return to the EV/HEV Self-Diagnosis screen and then erase DTC P3102.

Proceed to “**EV/HEV BATTERY GRADUAL CAP LOSS DATA CLEAR**” on the next page.

EV/HEV BATTERY GRADUAL CAP LOSS DATA CLEAR

17. Select EV/HEV **Work support**.

18. Select **BATTERY GRADUAL CAP LOSS DATA CLEAR**.

19. Select **Start**.

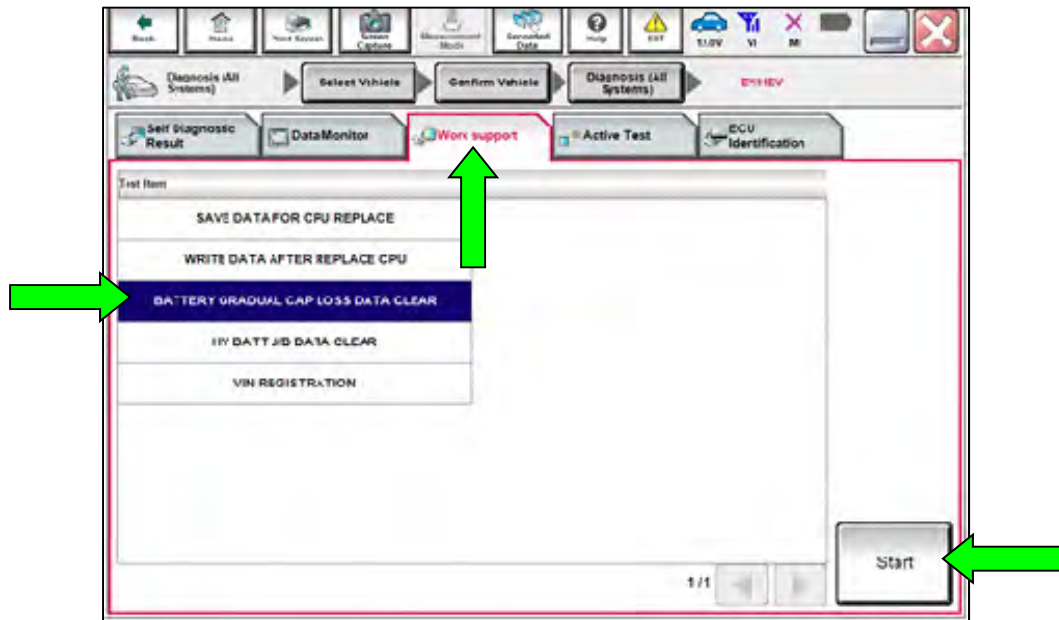


Figure 11

20. Select **Start** again.

21. When the Current status displays “Completed”, select **End** and then **Home**.

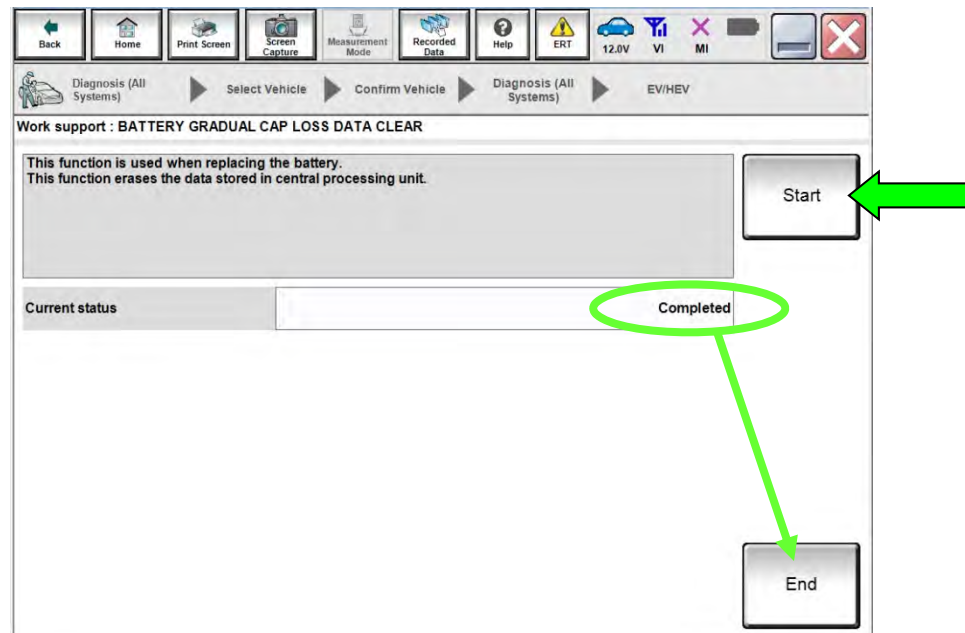


Figure 12

Proceed to “Register the HV Battery Installation Date” on the next page.

Register the HV Battery Installation Date

22. Select Maintenance.

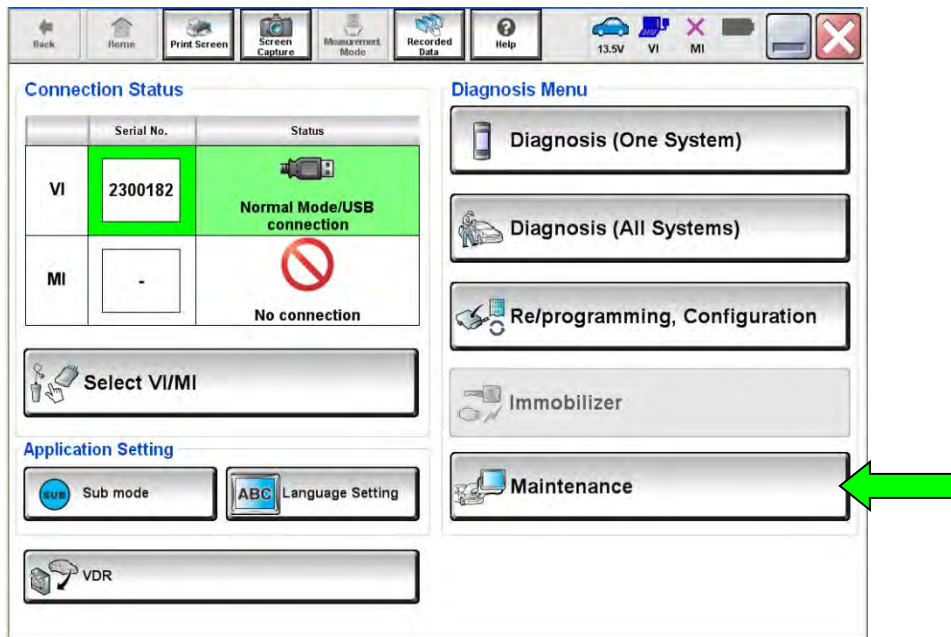


Figure 13

23. Select EV Battery usage report.

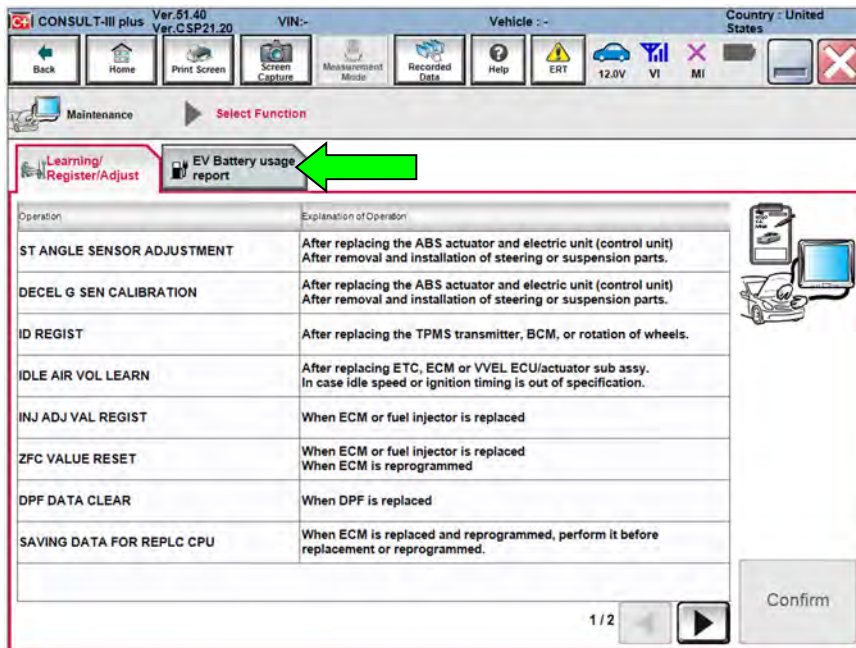


Figure 14

24. Select **Next**.

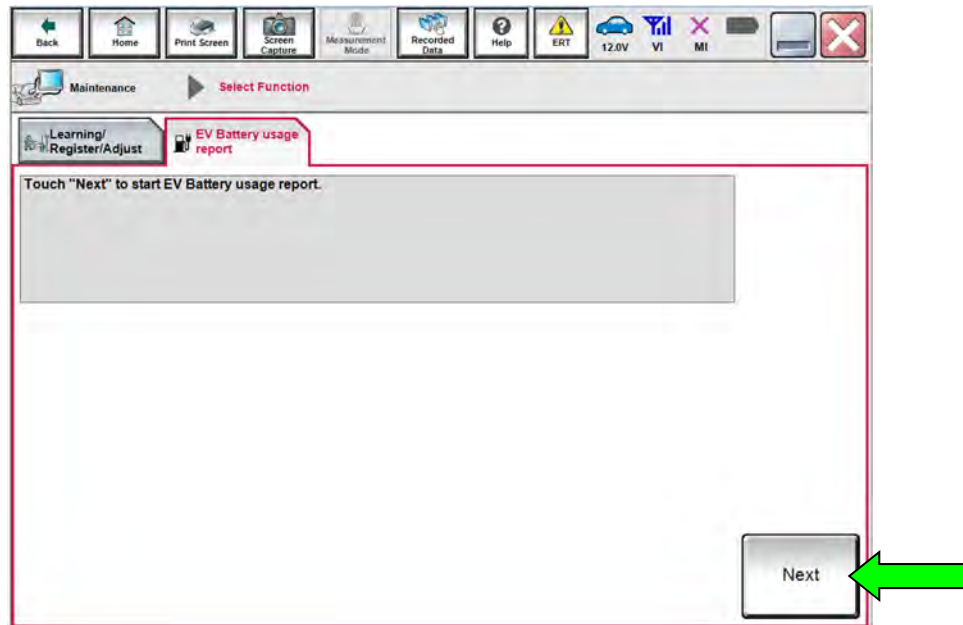


Figure 15

25. Input the correct "Battery registration date" (see Figure 16).

26. Select **Register**.

HINT: If a print-out of the battery health maintenance report is needed:

- The prior calendar year must first be entered before the report is printed.
- After the report is printed, the current calendar year must be re-entered.

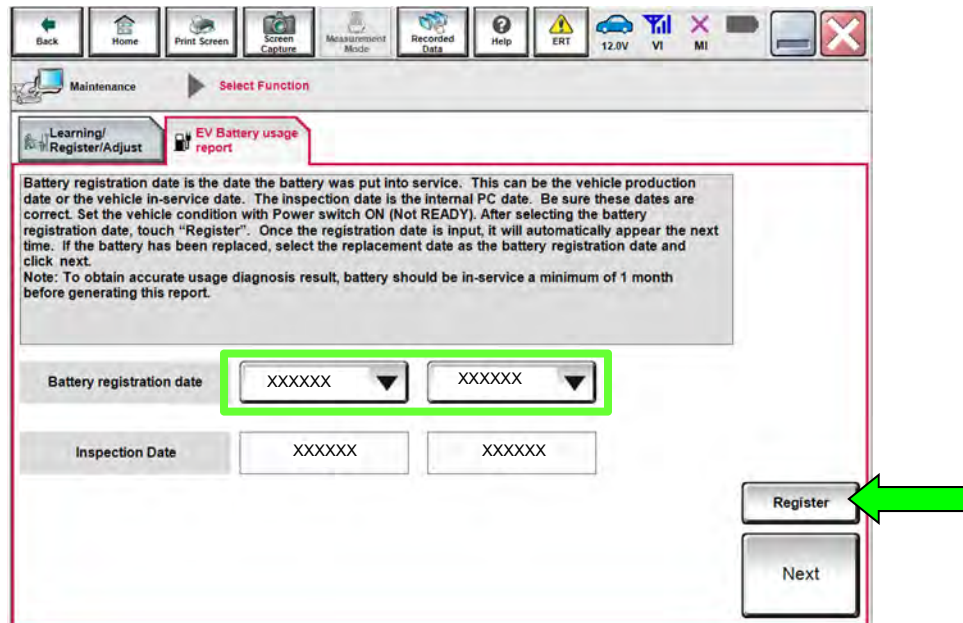


Figure 16

27. When “Registration is completed successfully” is displayed, select **OK**.

28. Select **Next**.

29. Select **Home**.

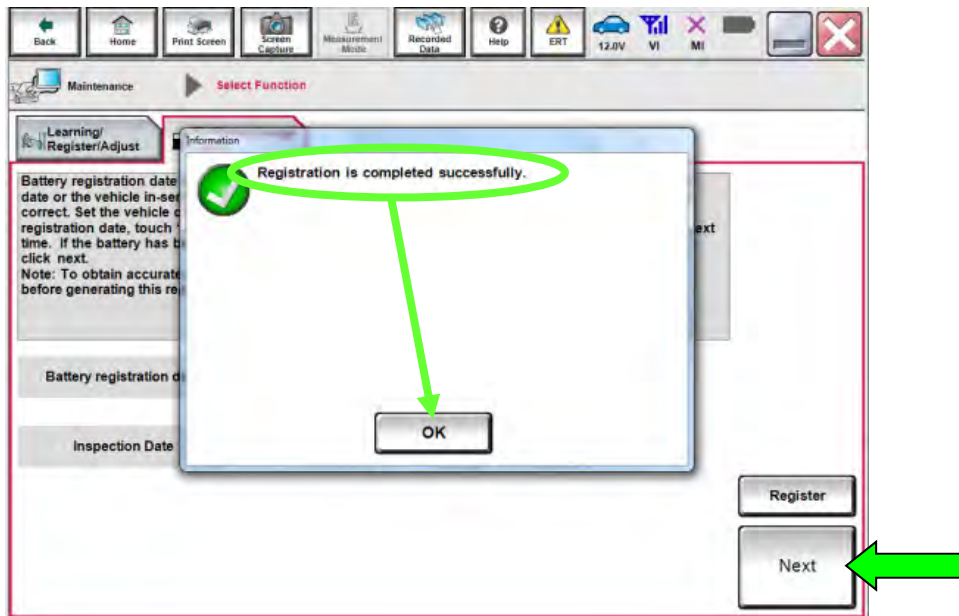


Figure 17

Reprogram the MOTOR CONTROL UNIT (MCU)

- Most instructions for reprogramming with C-III plus are displayed on the CONSULT PC screen.
- Check to see if the timer for either charging or climate control is ON. If ON, turn them OFF and make sure to turn them back ON after reprogramming.

NOTICE

- Connect a battery maintainer or smart charger to the vehicle battery, set to “power supply” mode.
If the vehicle battery voltage drops below 12.0V or rises above 13.5V during reprogramming, the MCU may be damaged.
- Be sure to turn OFF all vehicle electrical loads.
If a vehicle electrical load remains ON, the MCU may be damaged.
- Be sure to connect the AC Adapter.
If the CONSULT PC battery voltage drops during reprogramming, the process will be interrupted and the MCU may be damaged.
- Turn OFF all external Bluetooth® devices (e.g., cell phones, printers, etc.) within range of the CONSULT PC and the VI. If Bluetooth® signal waves are within range of the CONSULT PC during reprogramming, reprogramming may be interrupted and the MCU may be damaged.

30. Open the hood, and then connect a battery maintainer or smart charger to the 12V battery.

- Set to Power Supply Mode.
 - Battery voltage must stay between 12 volts and 13.5 volts.
 - Do not charge the High Voltage (HV) Lithium Ion battery during reprogramming.

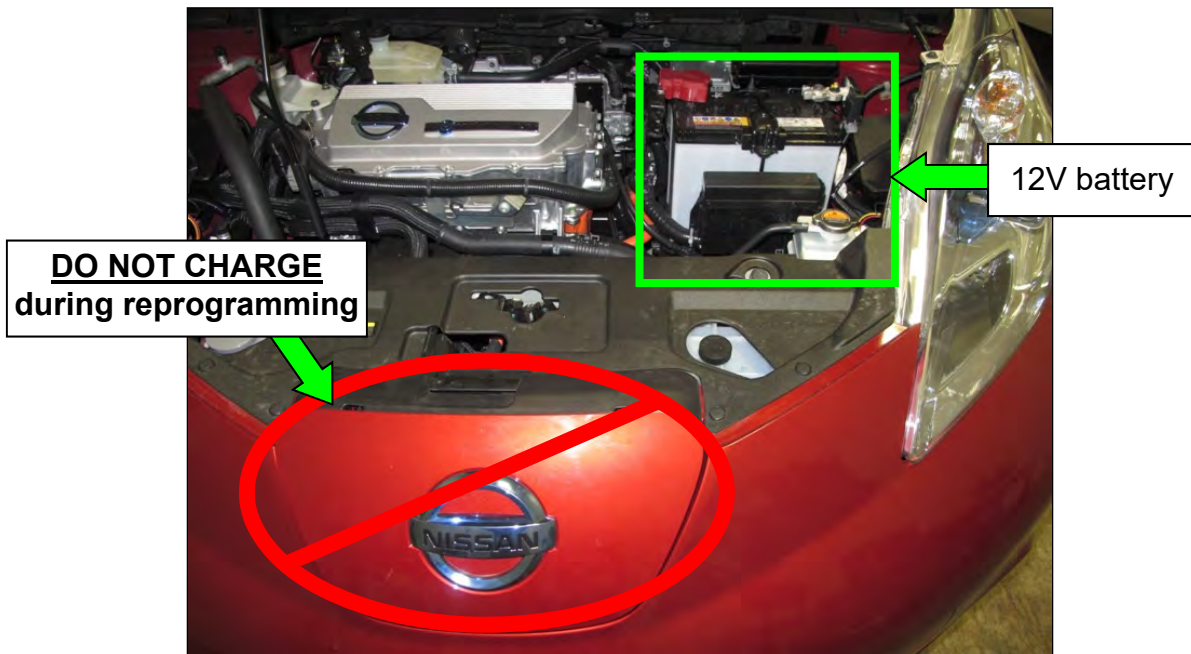


Figure 13

31. Select **Re/programming, Configuration**.

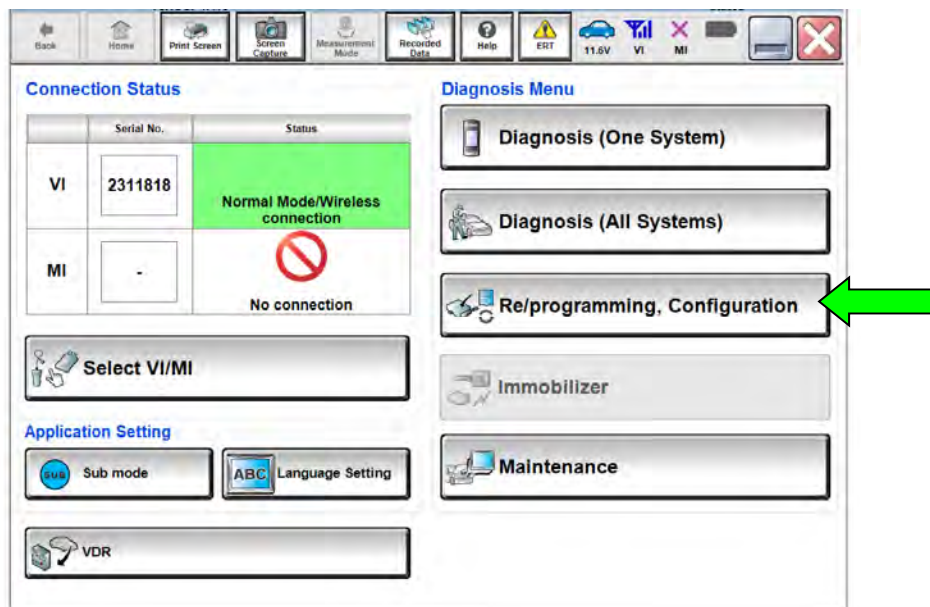


Figure 18

32. Read the Instructions and then click on the “Confirmed instructions” check box.

33. Select **Next**.

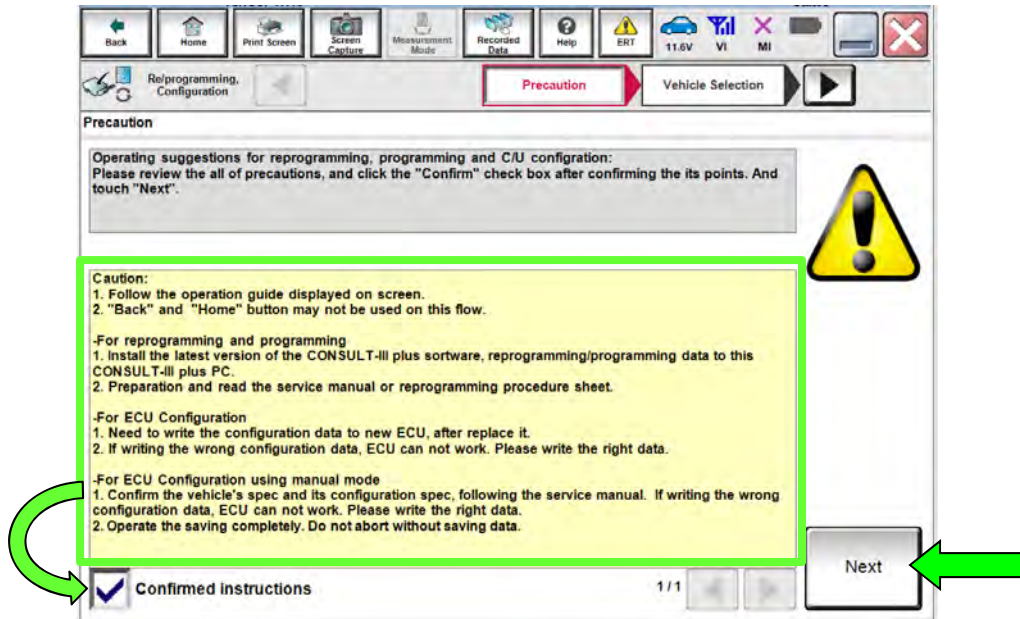


Figure 19

34. Confirm that the VIN is correct and then select **Confirm**.

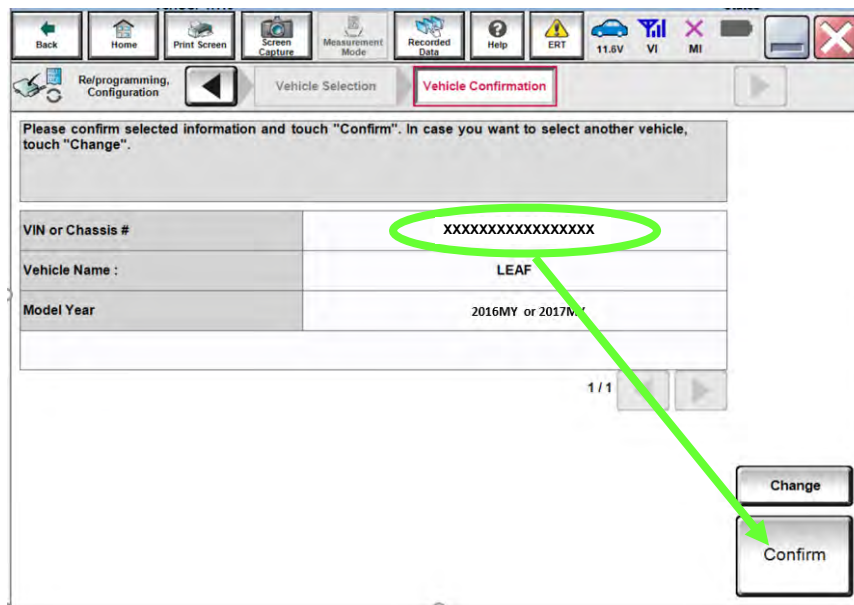


Figure 20

35. Select **MOTOR CONTROL**.

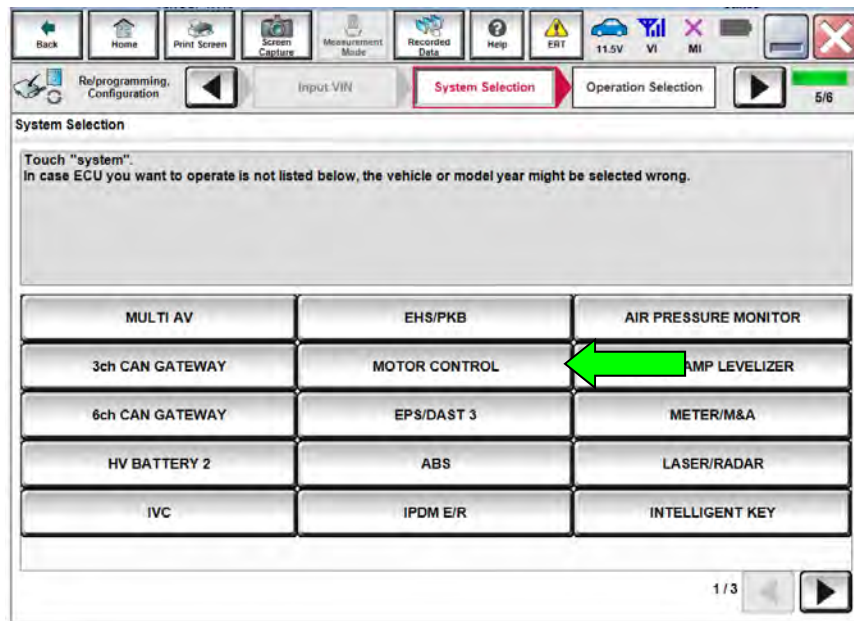


Figure 21

36. Select **Reprogramming**.

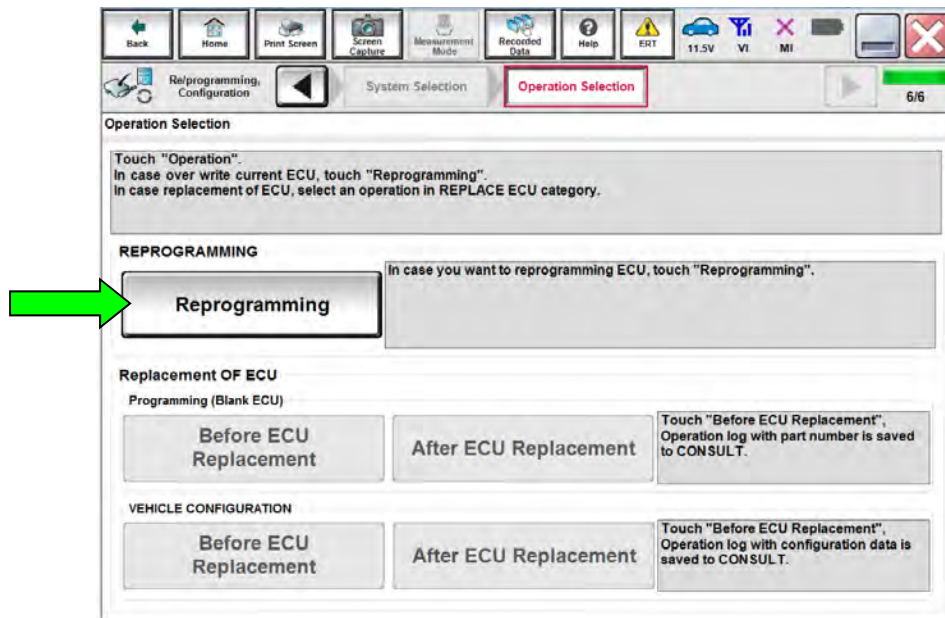


Figure 22

37. When you get to the screen shown in Figure 23, find the **MOTOR CONTROL Part Number** and write it on the repair order.

HINT: This is the current MOTOR CONTROL Part Number (P/N).

- If the current MOTOR CONTROL Part Number is 291A0-3NF0E, proceed to step 52.
- If the current MOTOR CONTROL Part Number is not 291A0-3NF0E, continue to step 38.

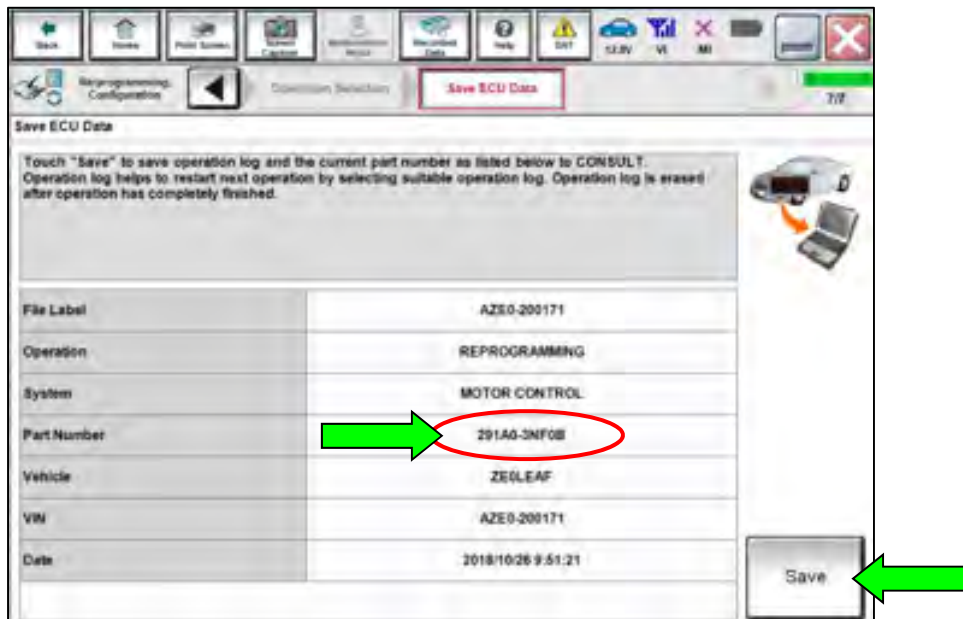


Figure 23

38. Select **Save**.

39. Select **Next**.

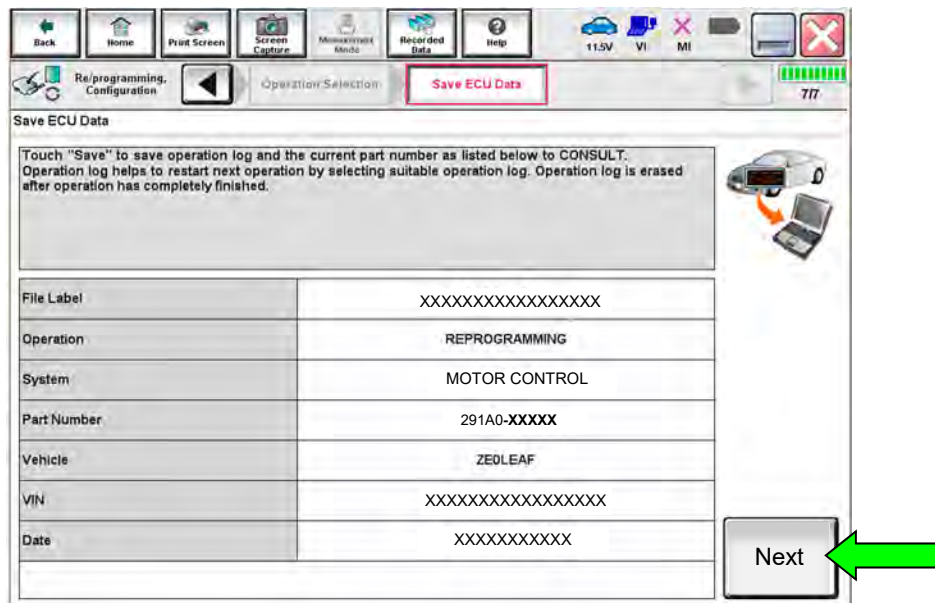


Figure 24

40. Use the arrows (if needed) to view and read all precautions, and then click on the “Confirmed instructions” check box.

41. Select **Next**.

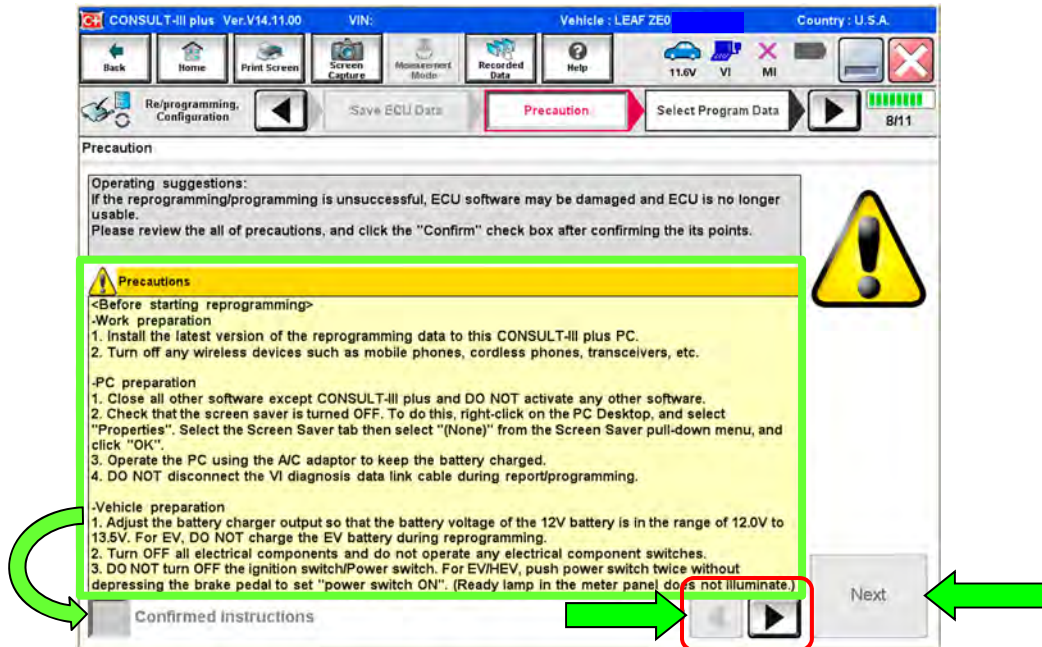


Figure 25

HINT:

- In some cases, more than one new P/N for reprogramming is available.
 - If more than one P/N is available, the screen in Figure 26 will display. Select and use the reprogramming option that **does not** have the message “Caution! Use ONLY with NTBXX-XXX”.
 - If you get this screen and it is blank (no reprogramming listed), it means there is no reprogramming available for this vehicle.

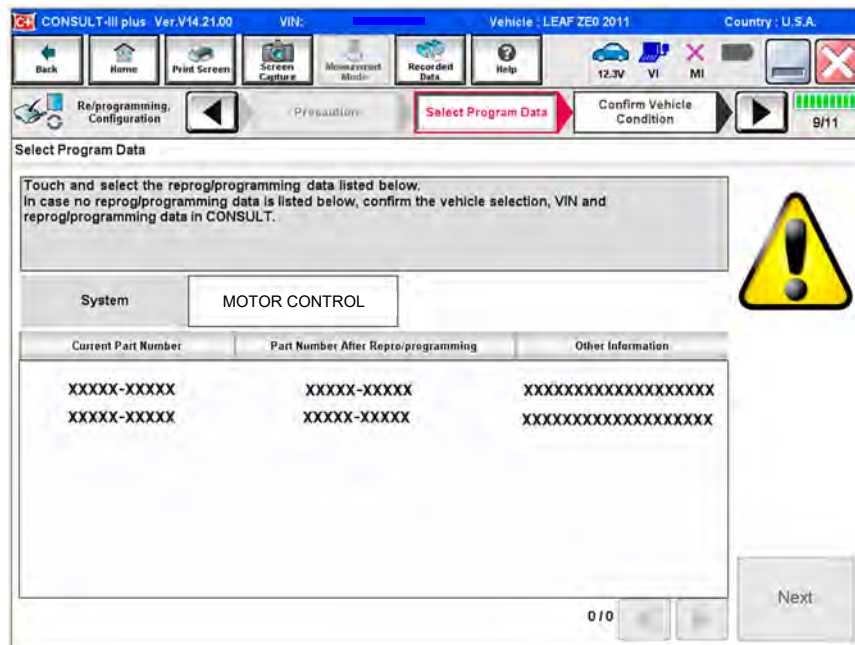


Figure 26

42. Read the **Current Part Number** and **Part Number After Reprogramming**. They should be different.

43. Select **Next**.

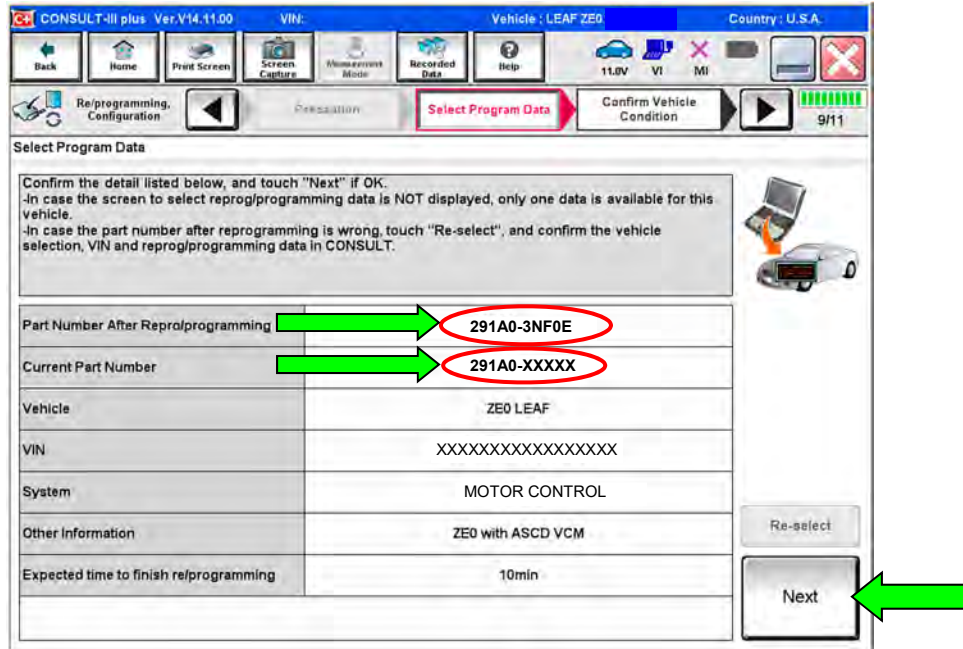


Figure 27

44. Confirm the battery voltage is correct, and then select **Next**.

- Battery voltage must stay within specified range to make the indicator turn **green**.

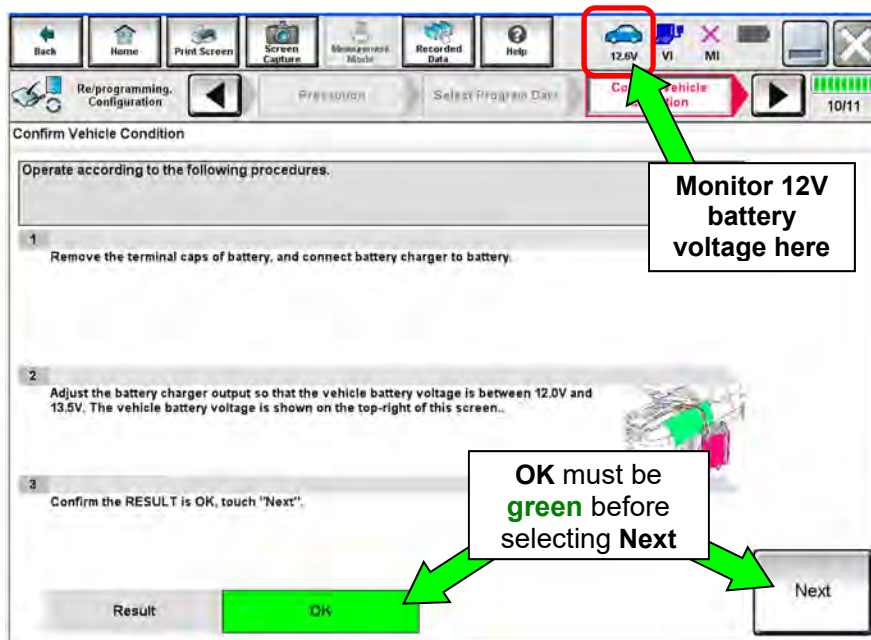


Figure 28

45. When the battery voltage is OK (in the green), select **Start**.

- The reprogramming process begins when **Start** has been selected.
- For the reprogramming to continue, the vehicle's 12V battery voltage must stay between 12 volts and 13.5 volts. Make sure the voltage level is sufficient.

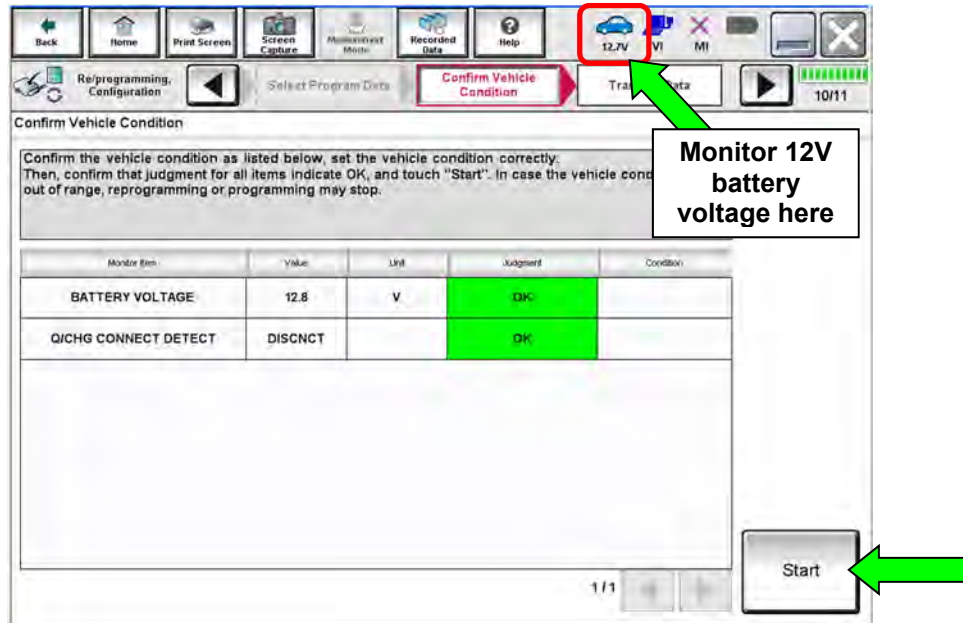


Figure 29

46. Wait for both bar graphs to complete.

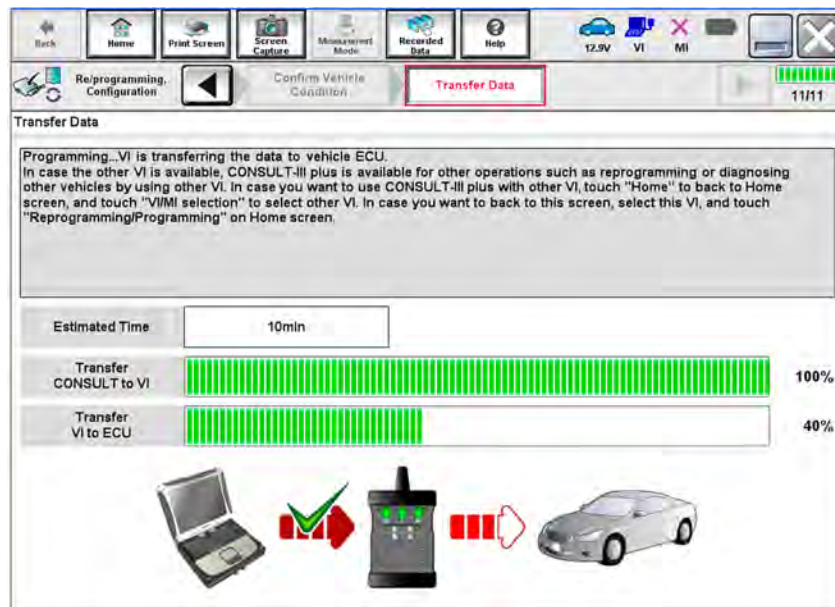


Figure 30

47. When the screen in Figure 31 displays, reprogramming is complete.
- Select **Next**, and then wait for System Call to complete.
 - Proceed to step 48 on page 22.

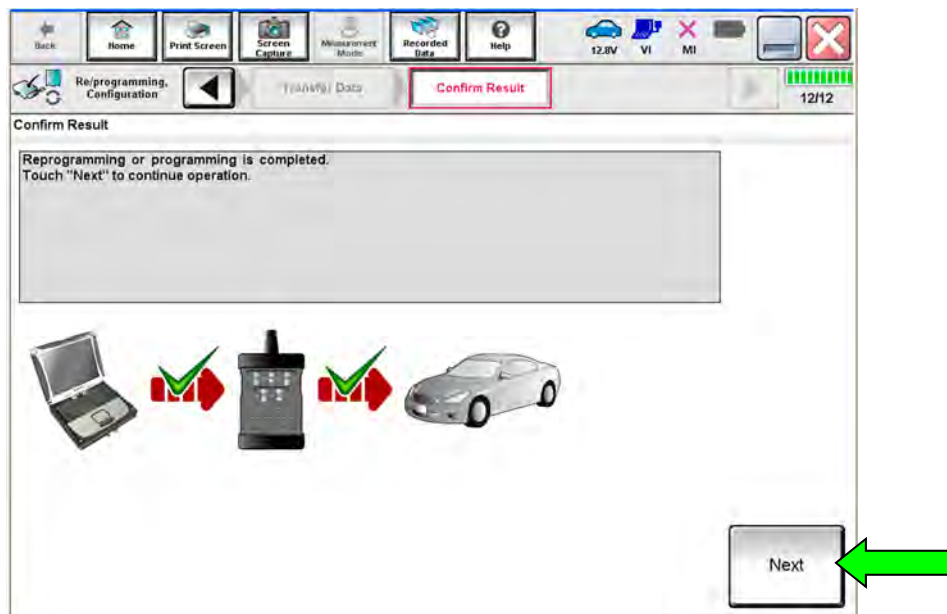


Figure 31

HINT: If the reprogram will not complete, refer to the next page for “recovery” information.

MOTOR CONTROL unit recovery

HINT: If reprogramming does not complete and the **!?** displays as shown in Figure 32:

- Check battery voltage (12.0 - 13.5V).
- Ignition is ON, Ready Mode is OFF.
- External Bluetooth® devices are OFF.
- All electrical loads are OFF.
- **Select Retry and follow the on screen instructions.**
- Retry may not go through on the first attempt and can be selected more than once.

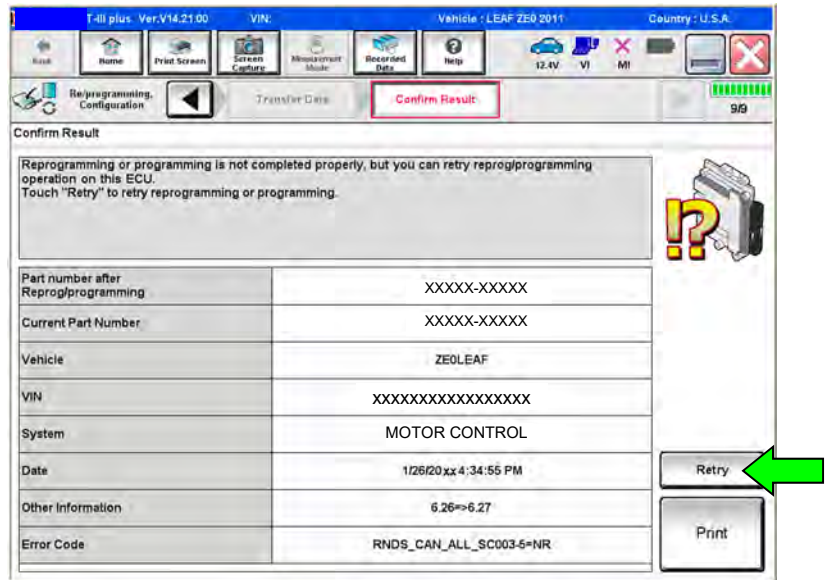


Figure 32

OR: If reprogramming does not complete and the **X** displays as shown in Figure 33:

Do not disconnect plus VI or shut down Consult III plus if reprogramming does not complete.

- Check battery voltage (12.0 - 13.5V).
- CONSULT A/C adapter is plugged in.
- Ignition is ON, Ready Mode is OFF.
- Transmission in Park.
- All C-III plus / plus VI cables are securely connected.
- All C-III plus updates are installed.
- **Select Home, and then restart the reprogram procedure from the beginning.**

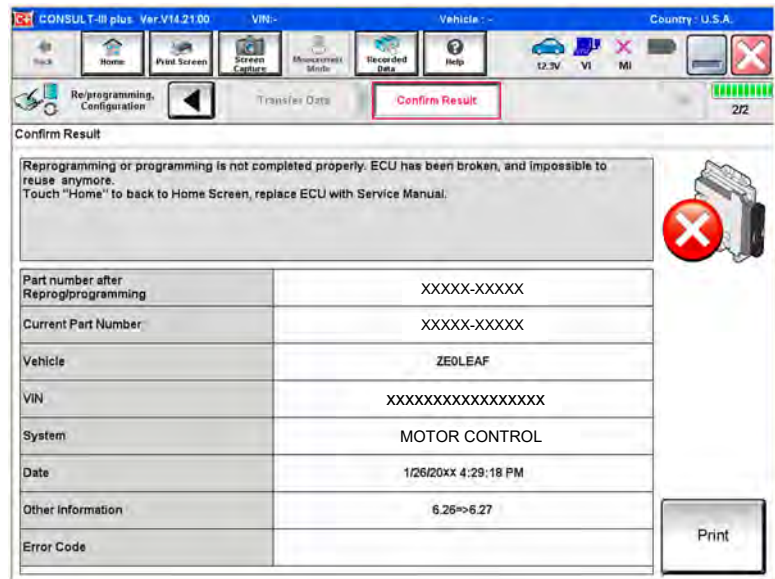


Figure 33

48. Erase all DTCs as follows:

- a. Turn the “ignition” off by depressing the power switch once.
 - The screen in Figure 34 will read **OFF** after pressing the power switch once.

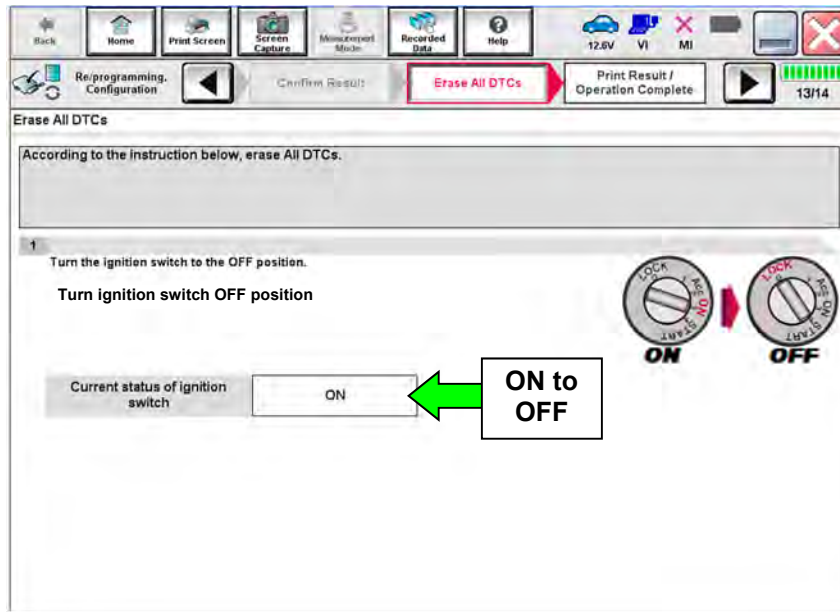


Figure 34

- b. Wait 1 minute with the ignition OFF.
- c. Turn the “ignition” ON by depressing the power switch twice (not Ready mode).
 - Do not step on the brake pedal when depressing the power switch.
 - The screen in Figure 35 will read **ON** after pressing the power switch twice.

HINT: Do not be confused by any screen messages. At this point, simply turn the “ignition” ON.

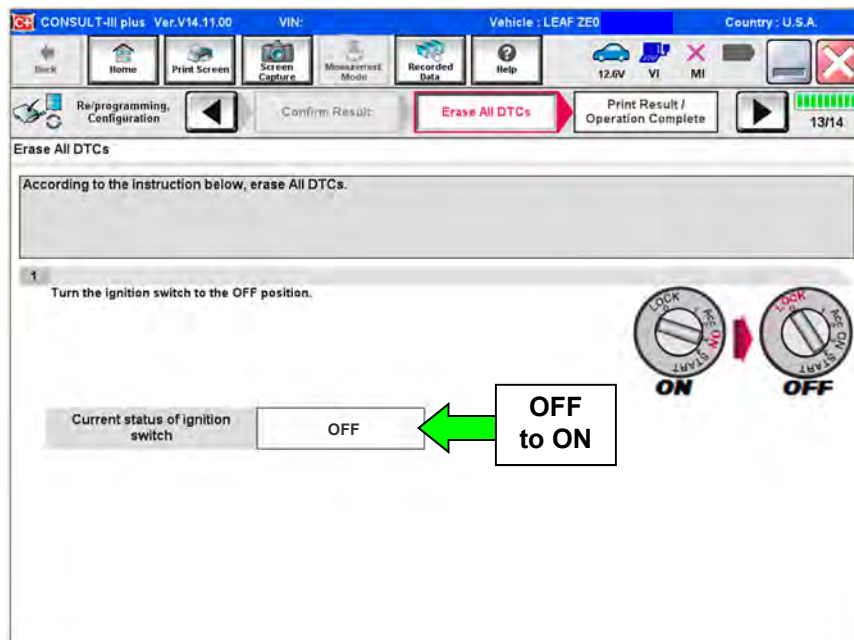


Figure 35

d. Wait for the **ERASE** function to complete.

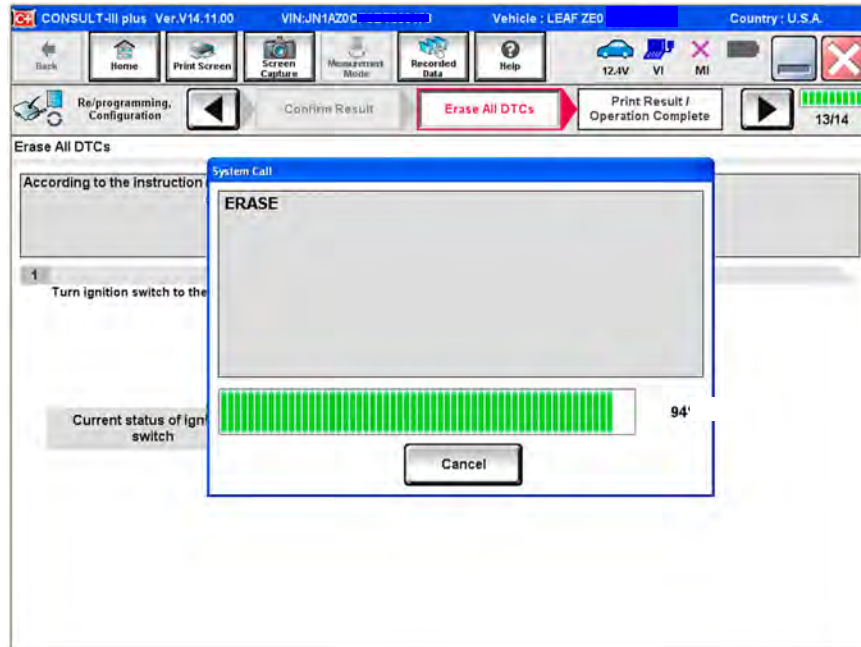


Figure 36

49. Verify that the **Part number after Reprog/programming** has changed to 291A0-3NF0E.

50. Print a copy of this screen (Figure 37) and attach it to the repair order.

51. Select **Confirm**.

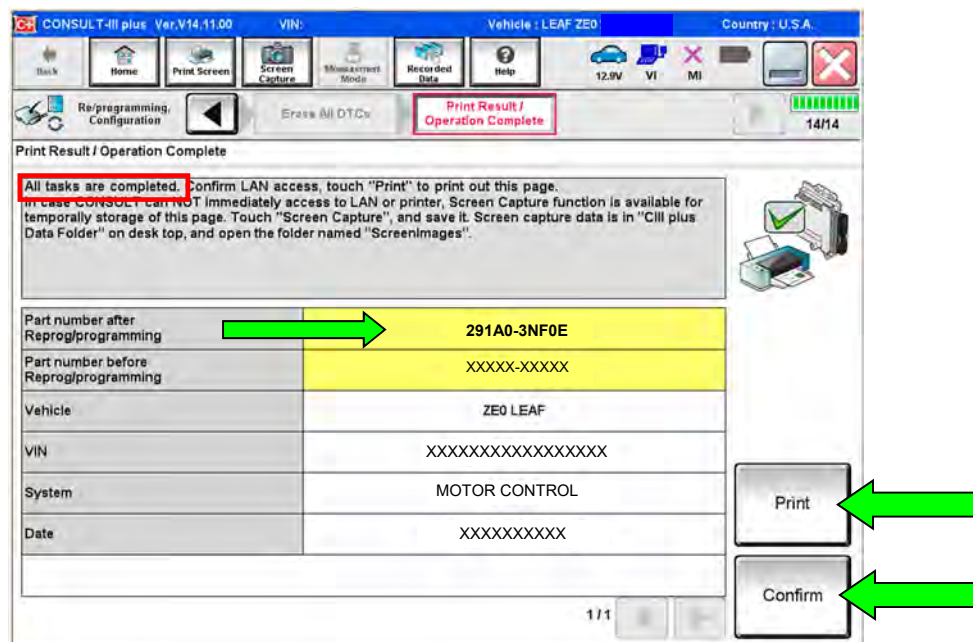


Figure 37

52. Select Home.

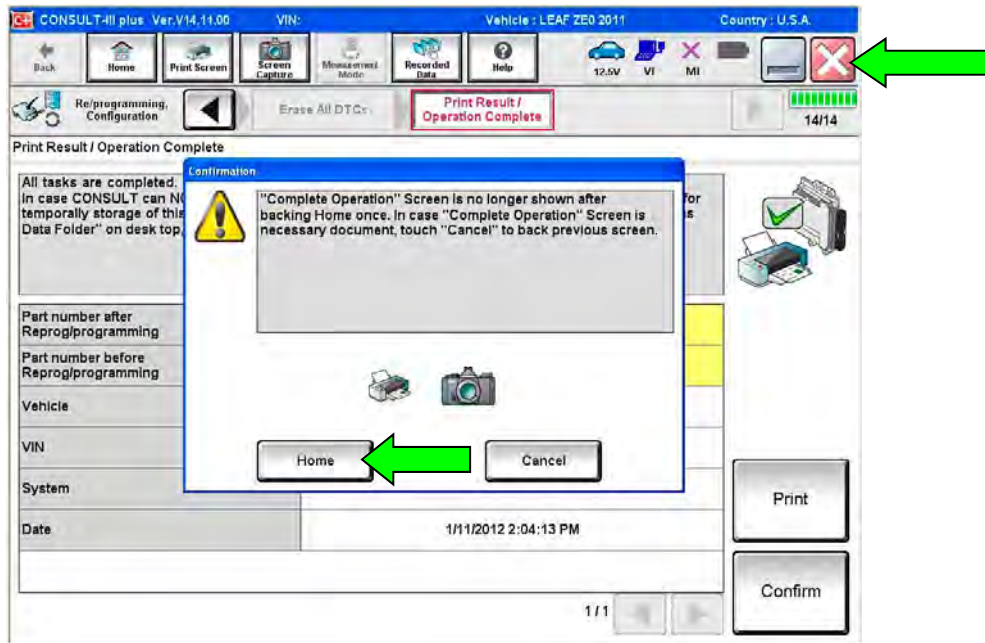


Figure 38

53. Close C-III plus by selecting "X" (see Figure 38).

Reset Customer Settings

54. Reset the clock in the combination meter.

55. Reset the radio settings.

56. **If equipped**, check/reset the clock in the navigation system.

57. **If equipped**, reset the customer preferred settings for the Automatic Air Conditioning System.

- If needed, refer to System Settings in the HAC section of the ESM.

58. **If equipped**, turn the Charge and A/C timers back ON if they were turned OFF.

59. Inform the customer:

- **If equipped**, some memory settings in the navigation system may need to be reset.

60. Reinitialize and check the Anti-Pinch Function for all Auto-UP power windows:

Reinitialize

- a. Turn the ignition ON.
- b. Operate the power window switch to fully open the window (glass all the way down).
- c. Hold the window switch UP until the glass stops at the fully closed position, and then continue holding the switch UP for 2 seconds or more.
- d. Check that AUTO-UP function operates normally.

Check Anti-Pinch Function

- a. Fully open the door window (glass all the way down).
- b. Hold a piece of wood near the fully closed position.
- c. Close the door window glass using the AUTO-UP switch. Allow the window glass to hit the wood.
- d. Check the following conditions:
 - Check that the glass lowers for approximately 150 mm (5.9 in), without pinching the wood, and stops.
 - Check that the glass does not rise when operating the power window main switch, while the window is lowering after hitting the wood.

PARTS INFORMATION

MODEL	DESCRIPTION	PART#	QUANTITY
2016-2017 LEAF (All) 4th, 5th and 6th characters of VIN are digits BZ0. Example: 1N4 BZ0 ...	HIGH VOLTAGE BATTERY PACK (40 kWh)	295B0-4NP6B	1

CLAIMS INFORMATION

Submit a Primary Part (PP) type line claim using the following claims coding:

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
40 kWh BATTERY PACK ASSY RP & REPROGRAMMING	(1)	JX62AA	HC	32	2.7

(1) Reference the parts information table and use the High Voltage Battery Part Number as the Primary Failed Part (PFP).

AMENDMENT HISTORY

PUBLISHED DATE	REFERENCE	DESCRIPTION
January 7, 2020	NTB20-001	Original bulletin published

