Technical Bulletin

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SERVICE BULLETIN

Classification:	Reference:	Date:
EL13-024	NTB13-069	July 12, 2013

2013 LEAF®; INCOMPLETE OR NO CHARGING WITH DTCs STORED

APPLIED VEHICLE: 2013 LEAF® (ZE0)

IF YOU CONFIRM:

The customer states the HV battery charger of an applied vehicle will not charge or will not complete charging

AND

The EV warning light is on and all of the following DTCs are found stored:

- P316C, P3170, P3171, and B29C1

   NOTE: CONSULT III plus must display B29C1 with malfunction type "EVSE no signal" or "EVSE invalid signal".

ACTION:

1. Confirm this bulletin applies.

   - Compare the vehicle's current PDM part number to those listed in **Table A** (see page 8).
   - When CONSULT III plus displays DTC B29C1 and its malfunction type is anything other than "EVSE (no signal or invalid signal)", this bulletin does not apply. Refer to the Electronic Service Manual (ESM) for further diagnosis.

2. If this bulletin applies, reprogram the PDM.

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

OPERATION	PFP	OP CODE	SYM	DIA	FRT
PDM REPROGRAMMING	(1)	JX24AA	ZE	32	0.5

(1) Refer to the electronic parts catalog (FAST) and use the Power Delivery Module assembly part number (292C0-XXXXX) as the Primary Failed Part (PFP).

IMPORTANT: The purpose of **ACTION** (above) is to give you a quick idea of the work you will be performing. You MUST closely follow the entire **SERVICE PROCEDURE** as it contains information that is essential to successfully completing this repair.

REPAIR OVERVIEW

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┌─────────────────────────────────────────────────────────────────┐
│  The customer states the HV battery charger does not charge or   │
│  does not completely charge, and the EV warning light is on and  │
│  DTCs P316C, P3170, P3171, and B29C1 (no signal or invalid signal)│
│               are found stored.                                   │
└─────────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────────┐
│  Have ASIST on the CONSULT PC freshly synchronized (updated)     │
└─────────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────────┐
│  Reprogram the CHARGER / PD MODULE (On-Board Charger)            │
└─────────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────────┐
│  Erase DTCs from all systems and turn timers back on for         │
│               charging and climate control                       │
└─────────────────────────────────────────────────────────────────┘
                              │
                              ▼
                        ┌──────────┐
                        │   END    │
                        └──────────┘
```
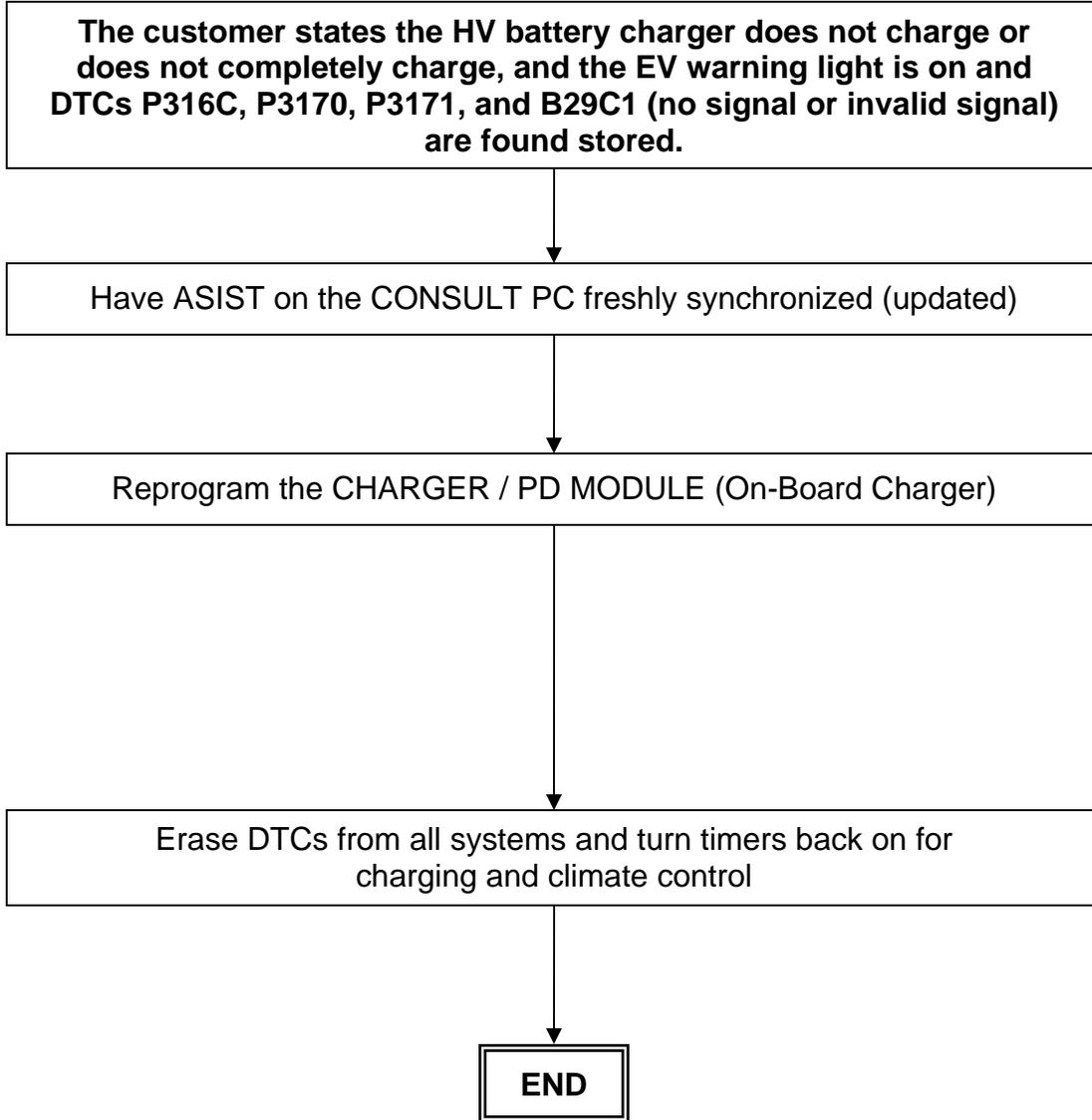
SERVICE PROCEDURE

Reprogram the CHARGER / PD MODULE (On-Board Charger)

IMPORTANT: Follow all cautions, warnings, and notes in the Electronic Service Manual (ESM) when working on or near a High Voltage (HV) System or Supplemental Restraint System (SRS), such as an airbag.

1. **Before continuing, it is IMPORTANT to make sure:**
   - **ASIST on the CONSULT PC has been freshly synchronized (updated).**
   - **All CONSULT related software updates (if any) have been installed.**
     NOTE: The CONSULT PC automatically gets all reprogramming software during ASIST synchronization.

CAUTION:

- Turn off all cell phones and external Bluetooth® devices within range of C-III plus.

- Do not touch C-III plus during reprogramming.

- Do not disconnect the AC adaptor during reprogramming.

- Do not disconnect the plus VI's diagnostic cables during reprogramming.

- Do not touch the power ("ignition") switch during reprogramming.

- Do not touch any electrical switch during reprogramming.

- If these steps are not followed, the PDM may be damaged.

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2. Have the **GR8 Multitasking Battery Diagnostic Station** (battery tester/charger) available and ready to use.
   - For proper setup, go to Page 38, **GR8 Multitasking Battery Diagnostic Station**.
   - Do not connect the battery tester/charger at this time. The battery tester/charger will be set up later in this bulletin.

     CAUTION: Do not charge the High Voltage (HV) Lithium Ion battery during reprogramming or vehicle component damage may occur.

     NOTE: Battery voltage must stay between 12 volts and 15.5 volts or reprogramming may not start or be temporarily stopped. Returning battery voltage within the 12-15.5 volt range will resume the reprogramming procedure.

     NOTE: Check to see if the timer for either charging or climate control is on. If on, turn it off and make sure to turn it back on after reprogramming.

3. Once all ASIST and CONSULT related updates have been performed, attach the CONSULT PC to vehicle.
   - Connect the plus VI to the vehicle, and then to the Consult PC with the USB cable.
   - Connect the AC adapter to the CONSULT PC.

4. Turn on the CONSULT PC, and then open C-III plus.

5. Depress the vehicle's power ("ignition") switch twice <u>without</u> depressing the brake pedal.

- The meter and gauges will illuminate.

  CAUTION: Do <u>Not</u> set the vehicle in "READY to drive" mode or vehicle component damage may occur.

  NOTE: Make sure <u>all</u> accessories are turned off.

6. After the plus VI is recognized, select **Diagnosis (All Systems)**, and then **Confirm**.

- After system call has completed, erase all DTCs.

7. Select the **Home** button, select **YES** to return to the screen shown in Figure 1, and then select **Re/programming, Configuration**.

   NOTE: Make sure all applications other than C-III plus are closed.
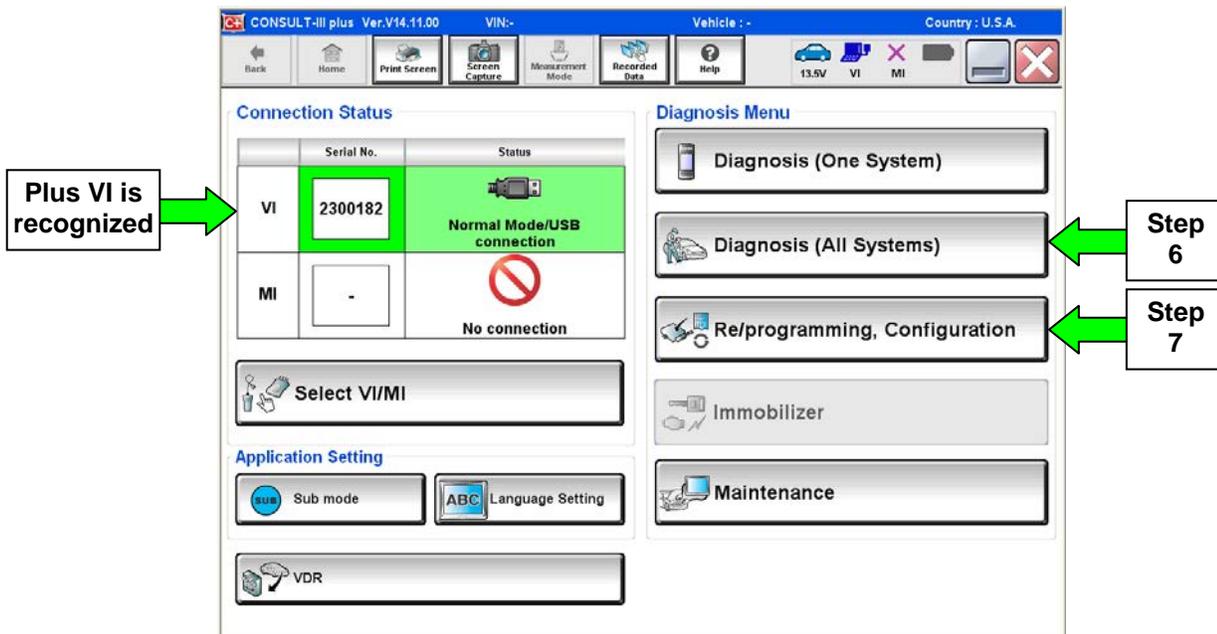
Figure 1

8. Check mark the box for **Confirmed Instructions**, and then select **Next**.
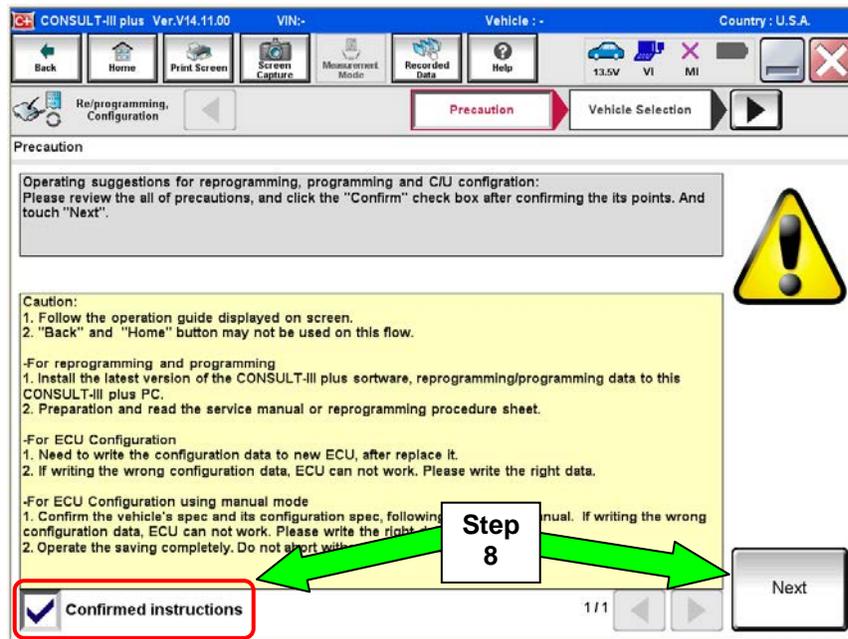
Figure 2

9. Select **LEAF** and **2013,** or **Automatic Selection (VIN)**.

- If **Automatic Selection (VIN)** is selected, wait for the **Reading VIN** screen to complete (picture not shown).

10. Select **Select**.
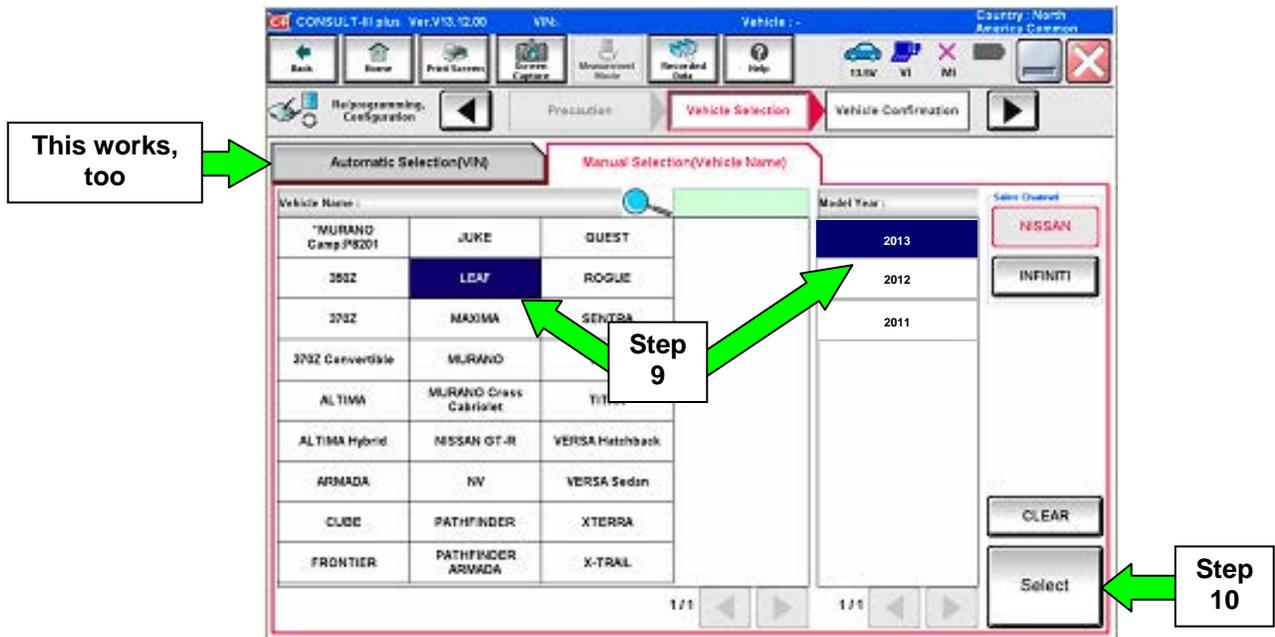
Figure 3

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

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

Verify here →

If OK, select **Confirm** →
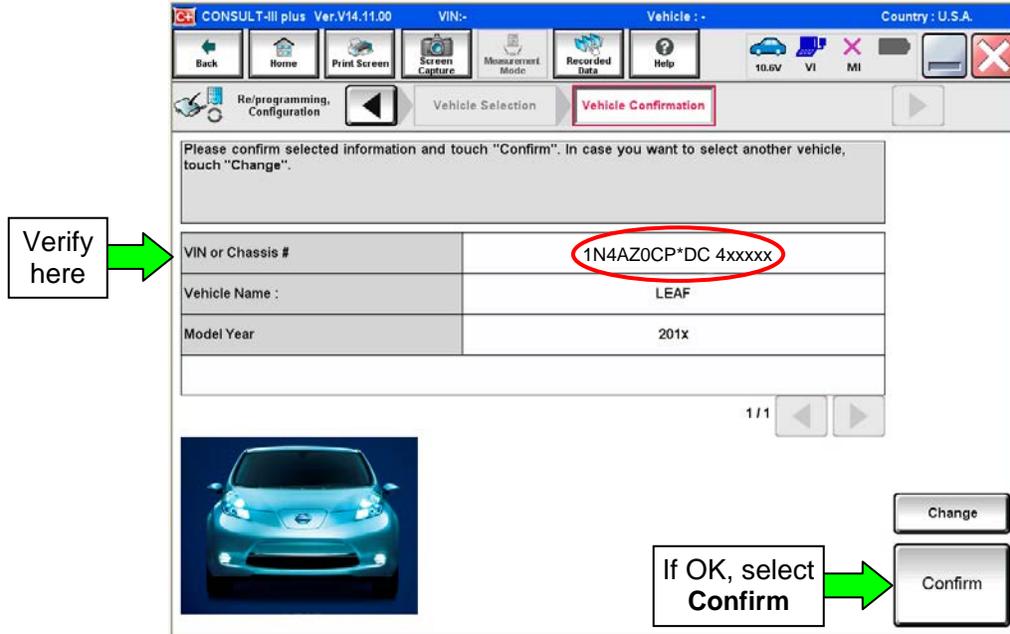
Figure 4

12. Select **Confirm** again.

Step 12 →
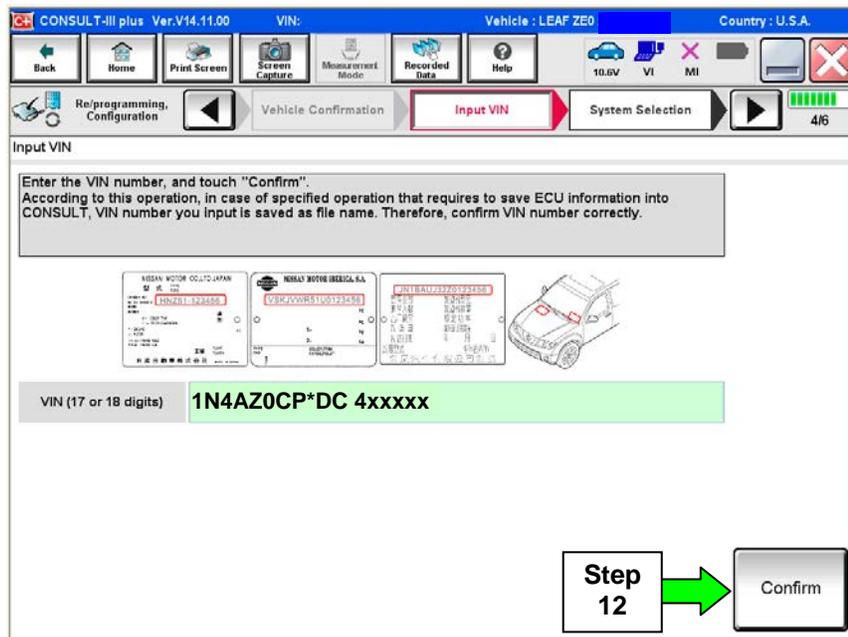
Figure 5

CHARGER / PD MODULE (On-Board Charger) Update

13. Select **CHARGER / PD MODULE.**

- Wait for system call to complete.
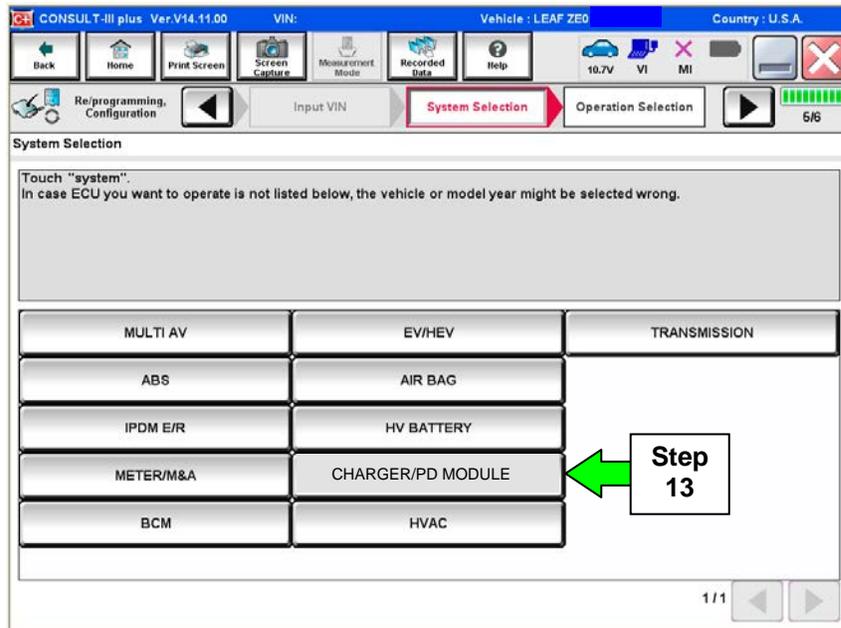
Figure 6

14. Select **Reprogramming**.
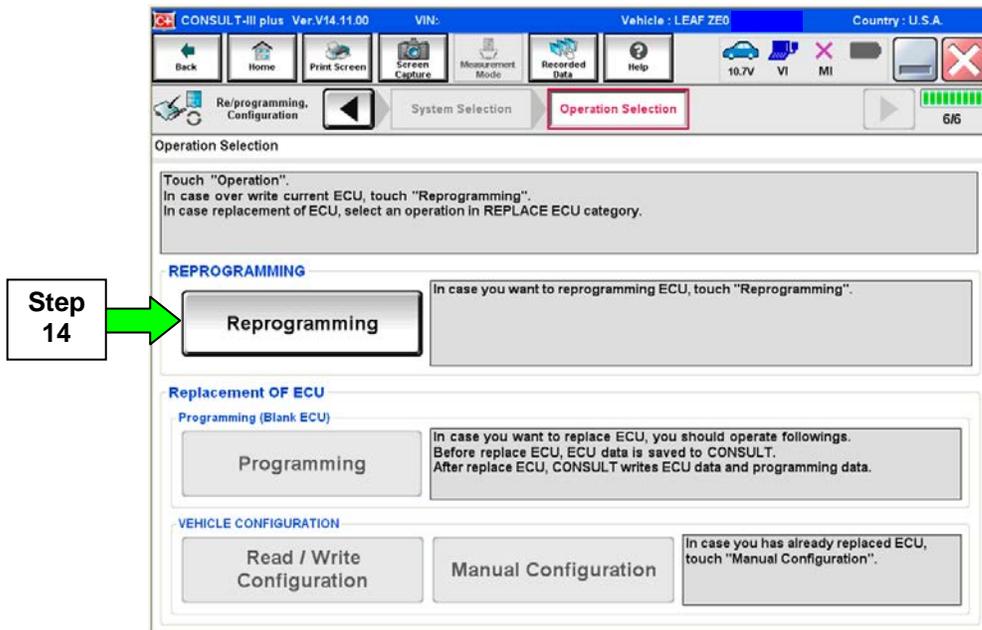
Figure 7

15. Write down the **Part Number** on the vehicle's repair order (see Figure 8) and confirm if it matches one of the part numbers in Table "A" below.

Table A

MODEL YEAR	CURRENT CHARGER/PD MODULE PART NUMBER: 292C0-
2013 LEAF® (ZE0)	3NF0A, 3NF1A, 3NF2A, 3NF3A, 3NF4A, 3NF5A, 3NF6A, 3NF7A, 3NF8A, 3NF9A, 3NF2B, 3NF3B, 3NF0C, 3NF1C, 3NF2C, 3NF3C

- If the CHARGER / PD MODULE part number is one of the part numbers listed in the table above, continue with reprogramming.

  ➢ Select **Save**, and then go to Step 16.

- If the CHARGER / PD MODULE part number **is not** in the table above, this bulletin may not apply or it has already been done.
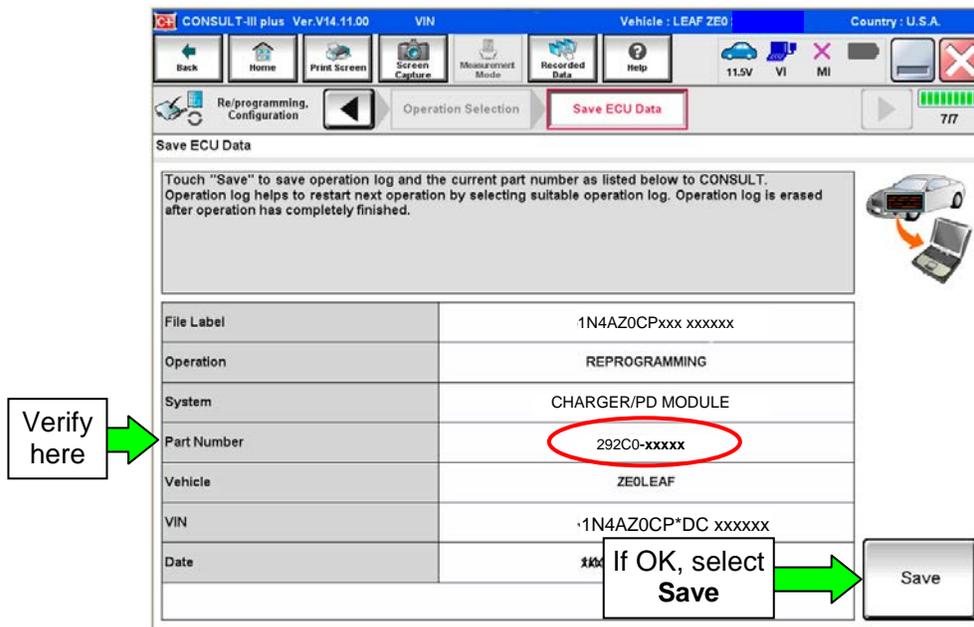
Figure 8

16. Read the precautions on page 1, and then select page 2 (page 2 not shown) with arrow. After reading page 2, check mark **Confirmed instructions**, and then select **Next**.
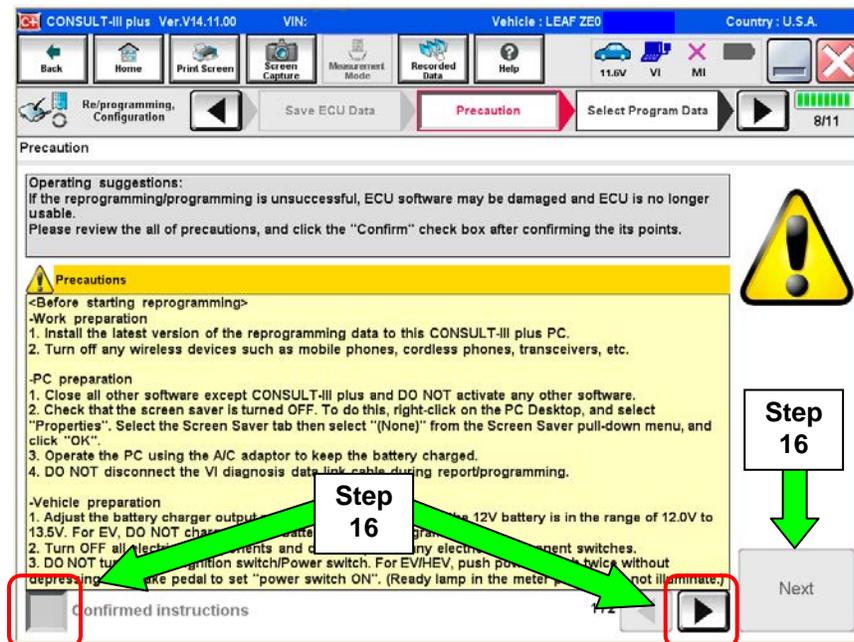
Figure 9

NOTE: In some cases, more than one new P/N for reprogramming is available.

➢ In this case, the screen in Figure 10 will display.

➢ Select and use the reprogramming option that **<u>does not</u>** have the message "Caution! Use ONLY with NTBXX-XXX".

• If you get this screen and it is <u>blank</u> (no reprogramming listed), it may mean that there is no reprogramming available for this vehicle, this <u>bulletin does not apply</u>, or it has already been done.
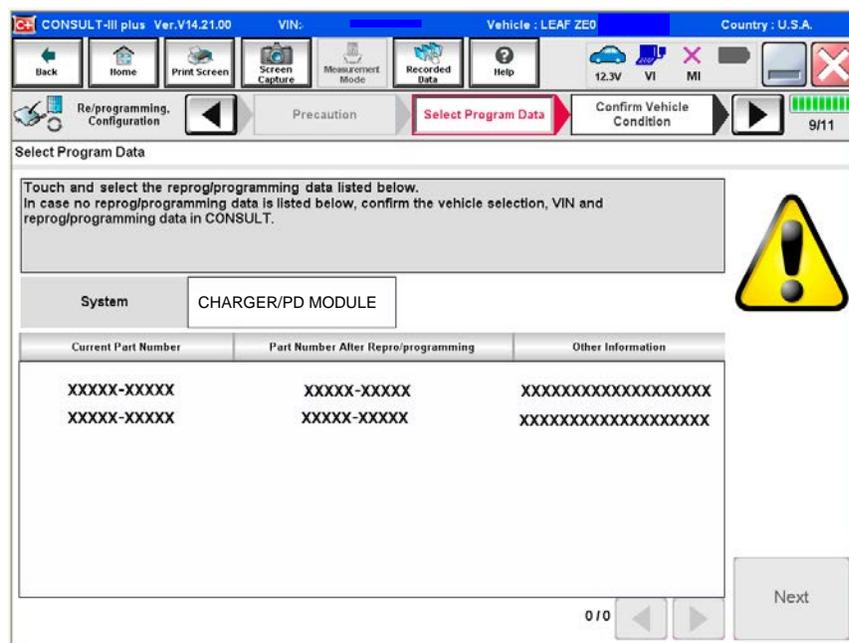
Figure 10

17. The **Current Part Number** will <u>not match</u> the **Part Number After Repro/programming**. This is normal.

- Select **Next**.
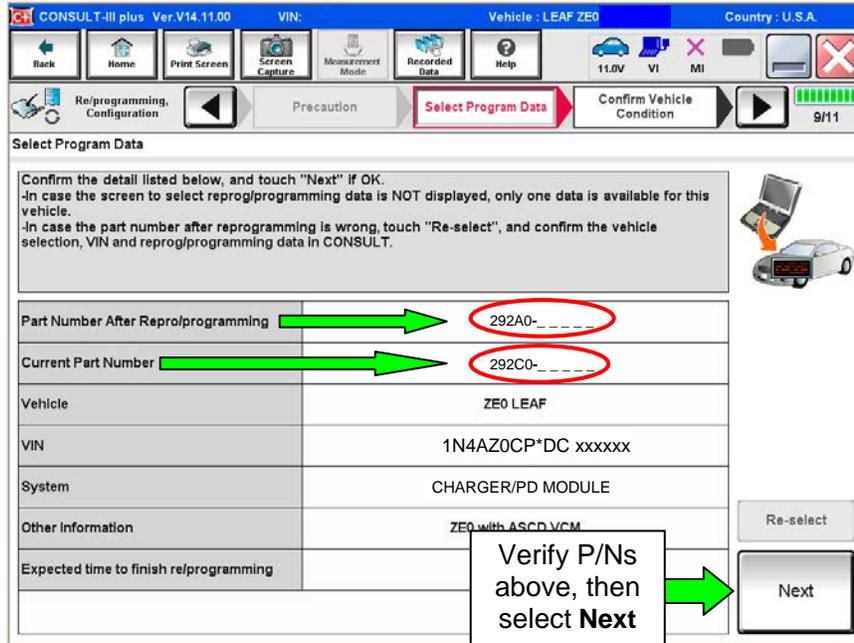
Figure 11

18. If the screen in Figure 12 appears, select **Delete**, **Confirm**, and then **Other Operation**.

- This will erase the **Saved Data List** and restart the reprogram from step 13.

- If no **Saved Data List** is stored, Figure 14 (on the next page) will be displayed. Proceed to step 19.
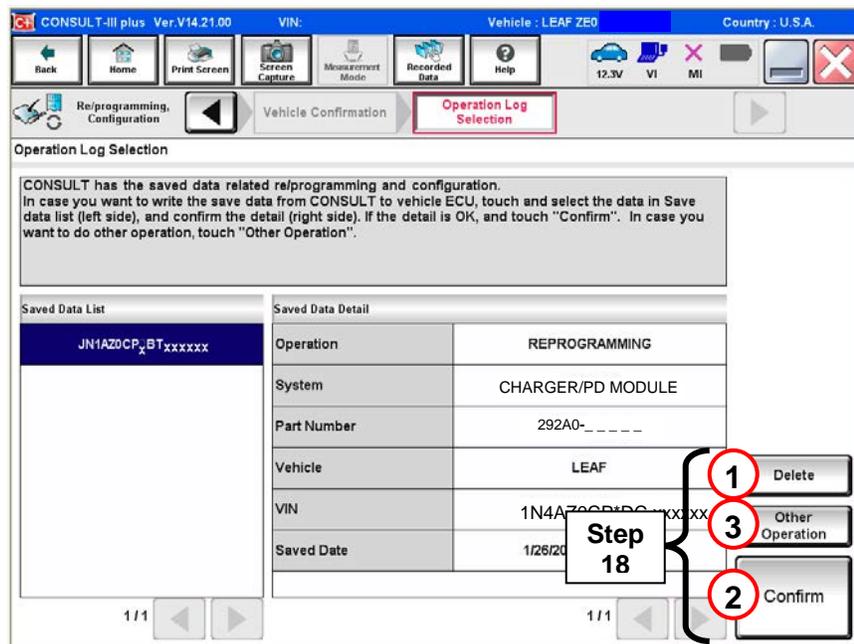
Figure 12

19. Open the hood, and then set up the GR8 Multitasking Battery Diagnostic Station (battery tester/charger) for the 12V battery.

- For battery tester/charger setup, refer to page 27, **GR8 Multitasking Battery Diagnostic Station Setup**.

CAUTION: Do not charge the High Voltage (HV) Lithium Ion battery during reprogramming or vehicle component damage may occur.

NOTE: Battery voltage must stay between 12 volts and 15.5 volts or reprogramming may be temporarily stopped. Returning battery voltage within the 12-15.5 volt range will resume the reprogramming procedure.
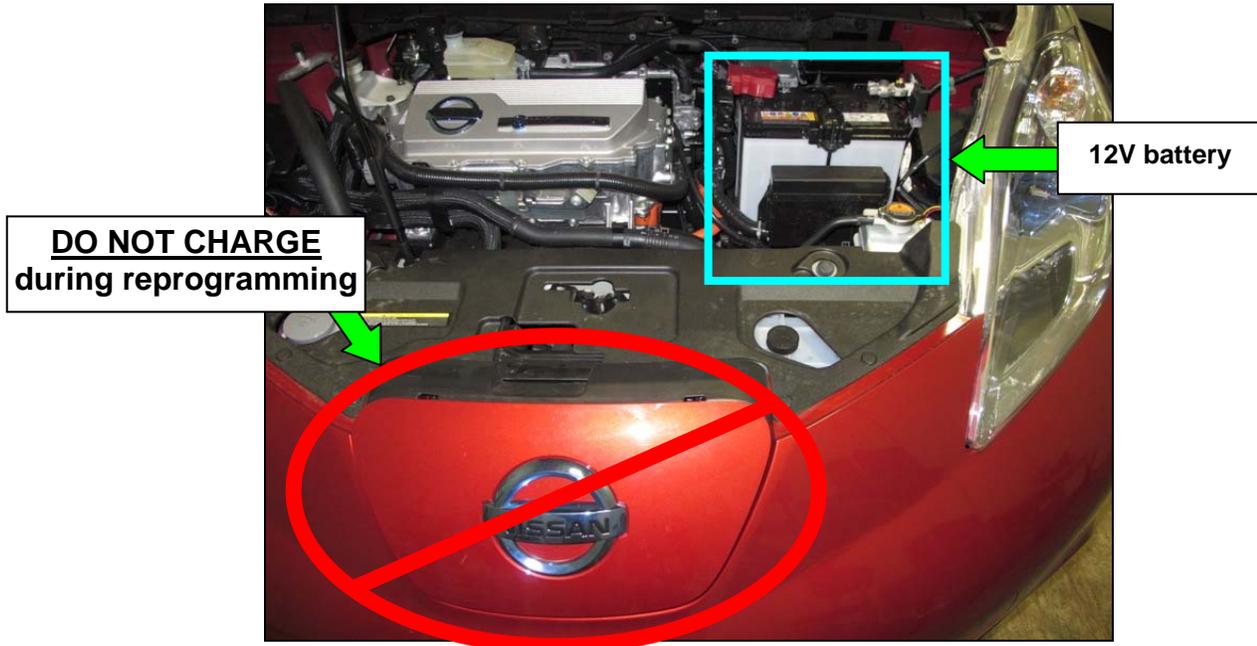
Figure 13

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

NOTE: Battery voltage must stay within specified range to make the indicator turn **green**.
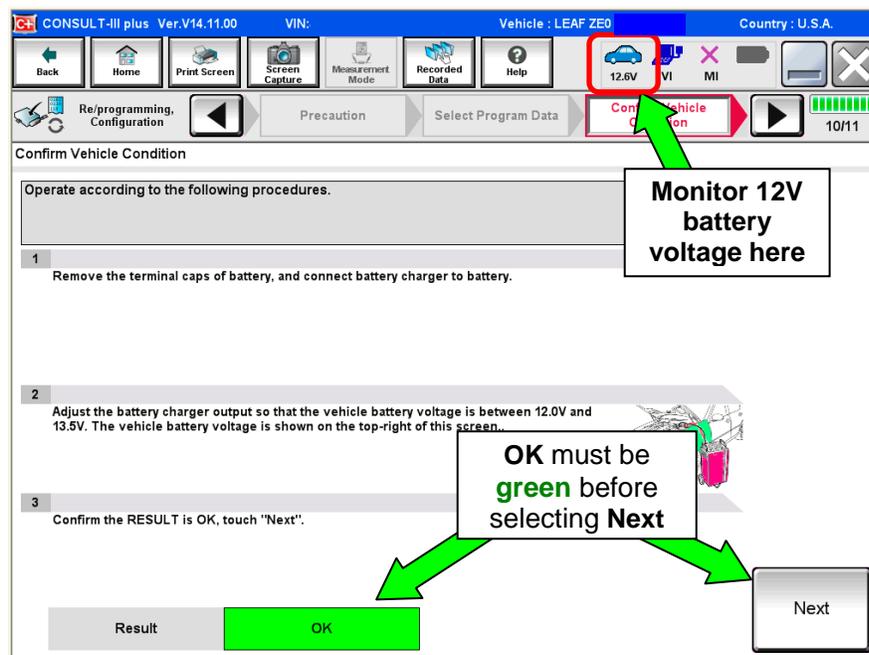
Figure 14

21. With battery voltage in the green, select **Start**.

- The reprogramming process begins when **Start** has been selected.

  NOTE: For reprogramming to continue, vehicle 12V battery voltage must stay within 12 volts and 15.5 volts. Make sure the voltage level is sufficient.
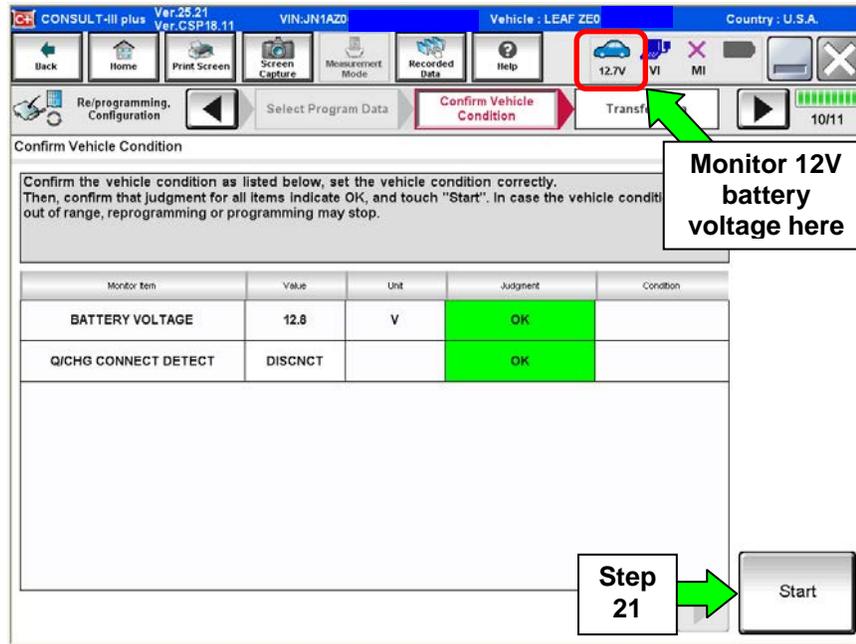
Figure 15

22. Wait for both bar graphs to complete.
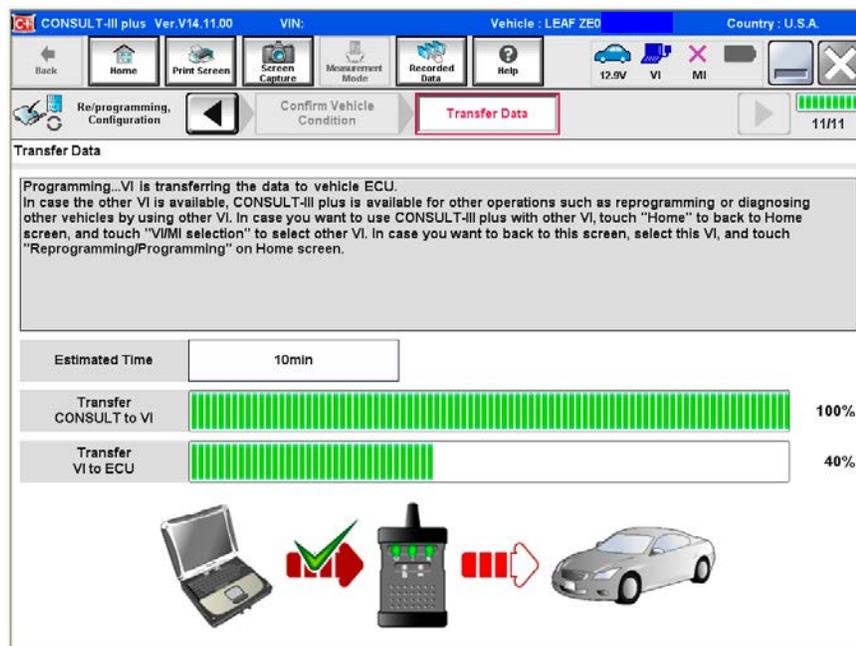
Figure 16

23. When the screen in Figure 17 appears, reprogramming is complete.

    a. Select **Next**, and then wait for System Call to complete.

    b. Proceed to step 24 on page 15 to erase DTCs.
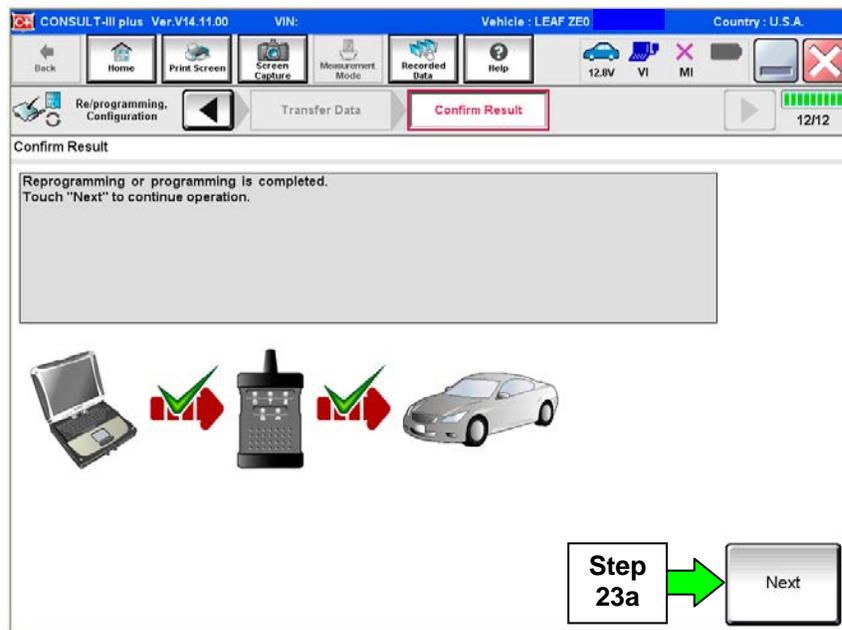
Figure 17

NOTE: If the reprogram will not complete, see the next page (page 14) to **RETRY** the reprogram update.

CHARGER / PD MODULE (On-Board Charger) recovery

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

- Check battery voltage (12.0 - 15.5V).
- 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.
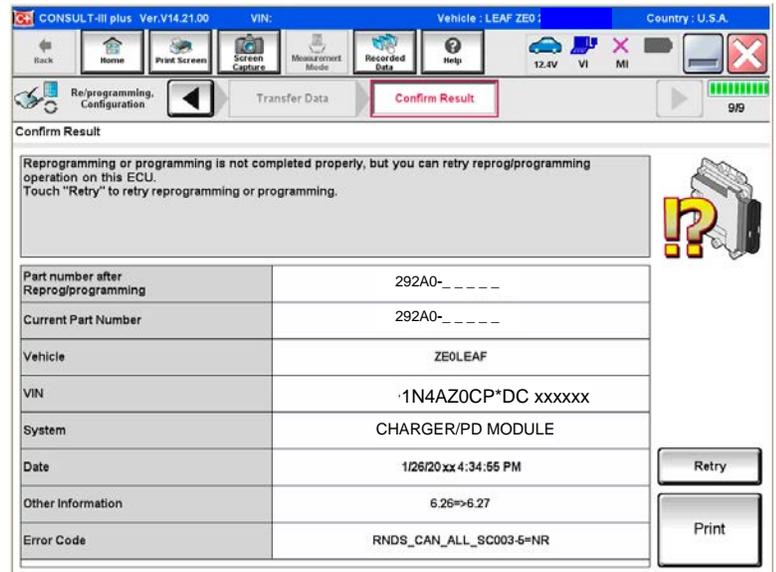
Figure A

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

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

- Check battery voltage (12.0 - 15.5V).
- 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.**
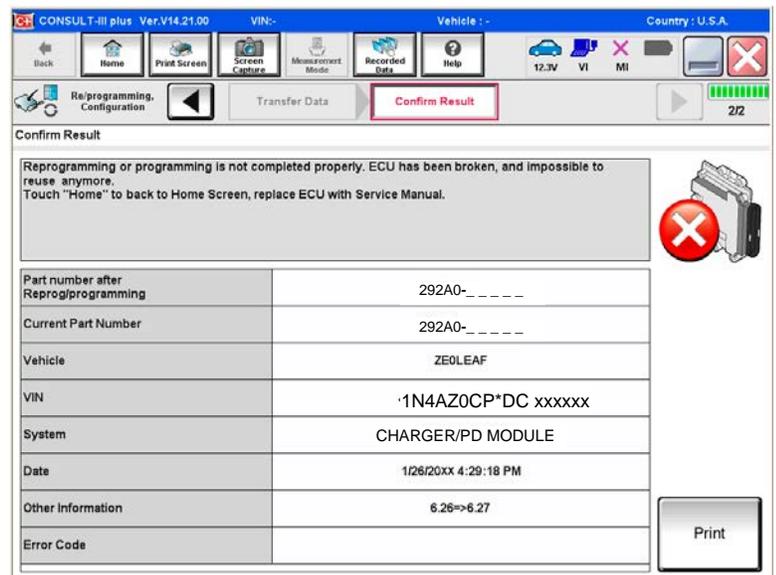
Figure B

24. Erase all DTCs:

    a. Turn the "ignition" off by depressing the power switch once.

        • The screen in Figure 18 will read **OFF** after pressing the power switch <u>once</u>.
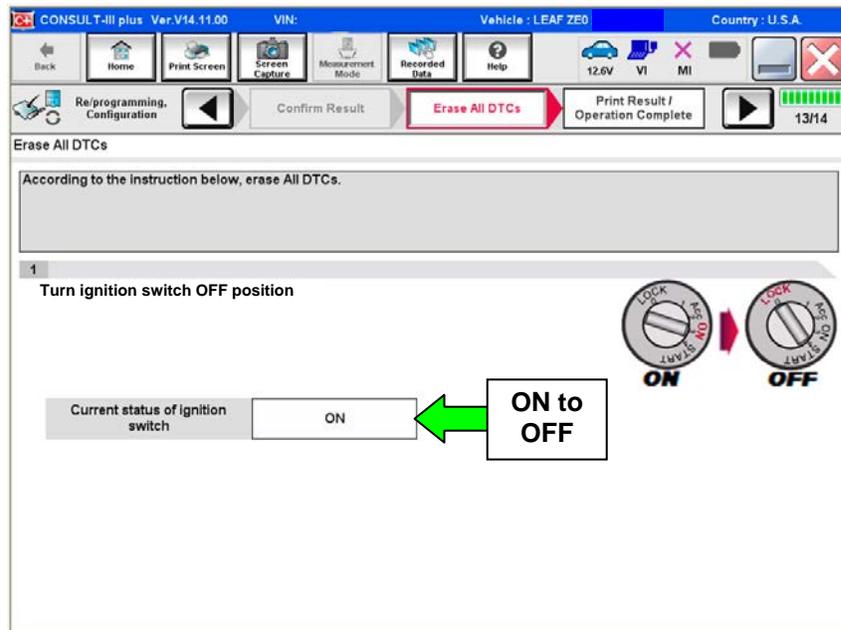
Figure 18

    b. <u>Wait 1 minute with the ignition **OFF**</u>.

    c. Turn the "ignition" on by depressing the power switch twice.

        • Do not step on the brake pedal when depressing the power switch.

        • The screen in Figure 19 will read **ON** after pressing the power switch <u>twice</u>.

        NOTE: Do not be confused by any screen messages. At this point, simply turn the "ignition" on.
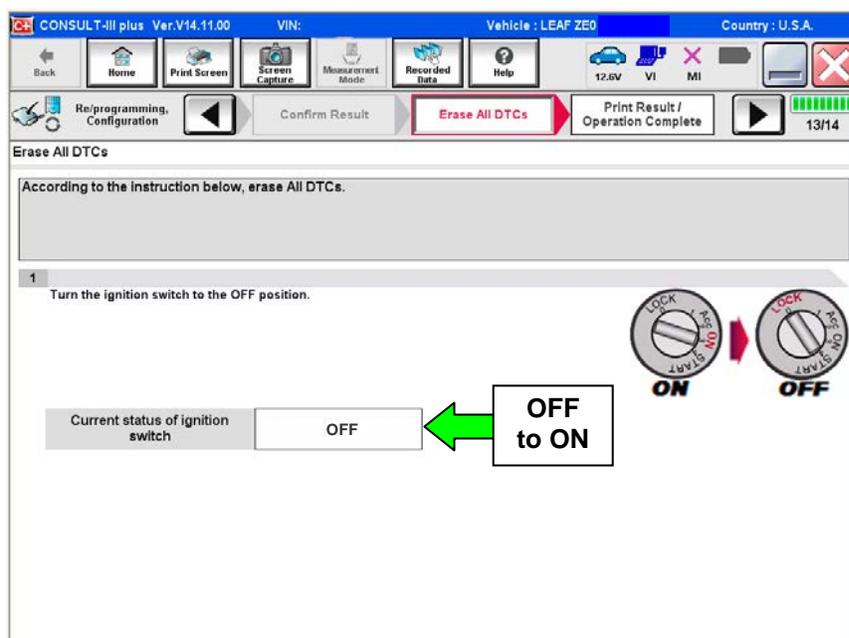
Figure 19

d. Wait for the bar graph in the **ERASE** window to complete 100%.
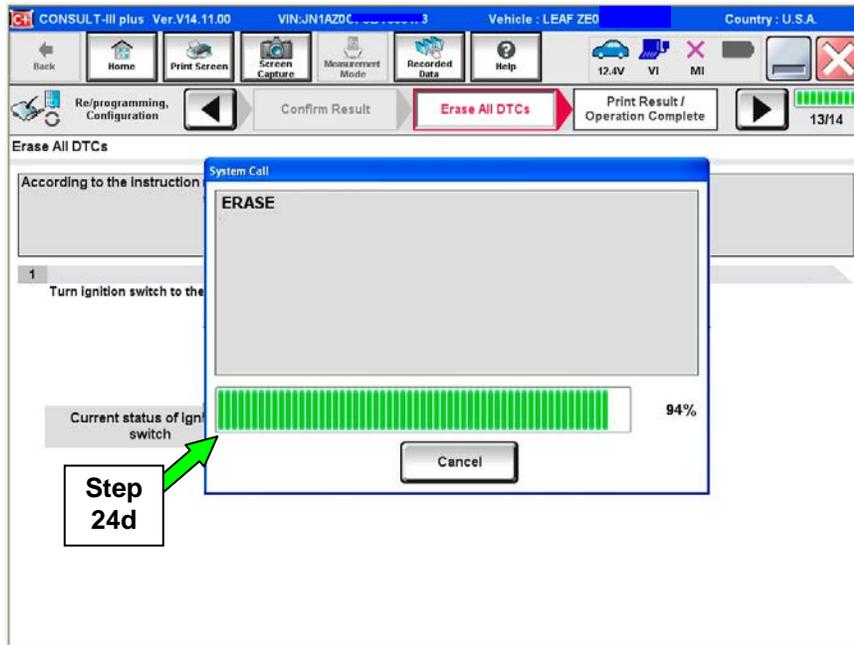
Figure 20

25. Verify the part number has changed.

a. Print a copy by selecting **Print**.

NOTE: Before and after part numbers on your print-out may be switched compared to your CONSULT PC screen. This is ok.

b. Attach the copy to the repair order.

c. Once a copy has been printed, select **Confirm**.
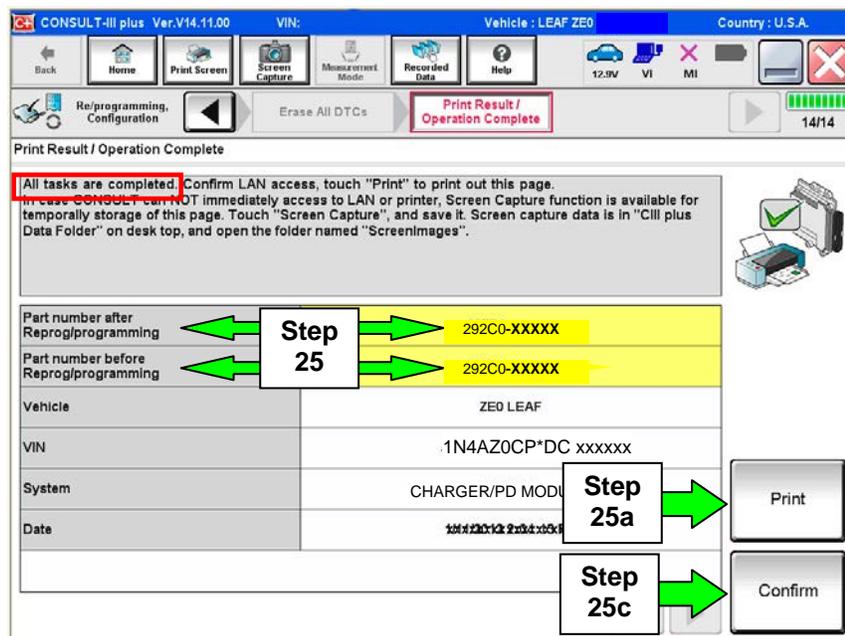
Figure 21

26. After Confirmation has completed, select **Home**.
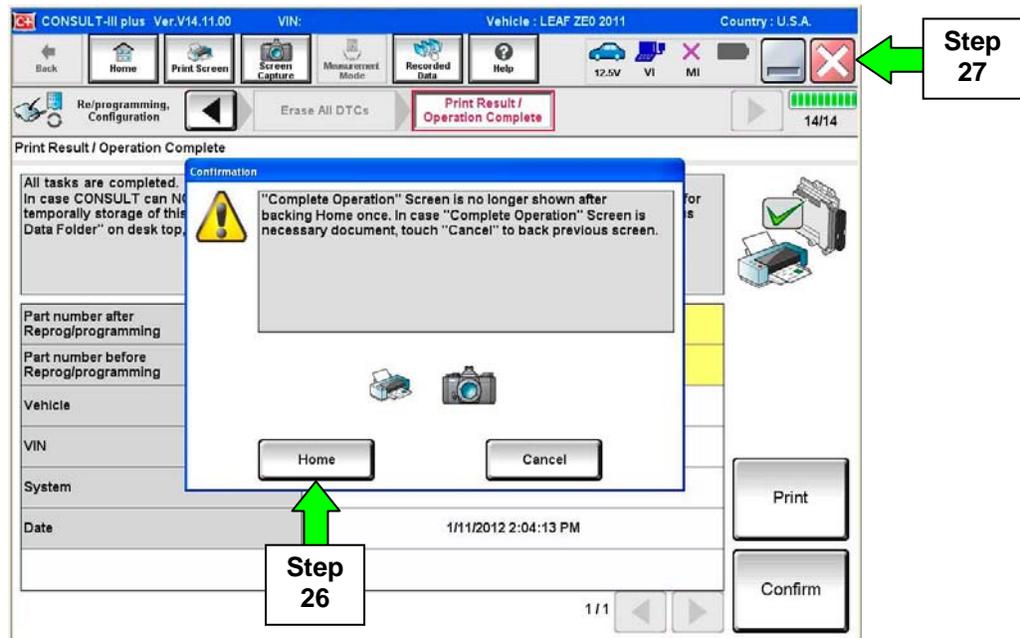
Figure 22

27. Close C-III plus by selecting "X" in Figure 22.

- Do not turn off the CONSULT PC.

28. Place the vehicle in "READY to drive" mode:
    - Apply the parking brake.
    - Depress the brake pedal.
    - Depress the power switch once.
    - The meter and gauges will illuminate.

29. Open C-III plus.

30. Once the plus VI is recognized, select **Diagnosis (All Systems)**.

Plus VI recognized

Step 30
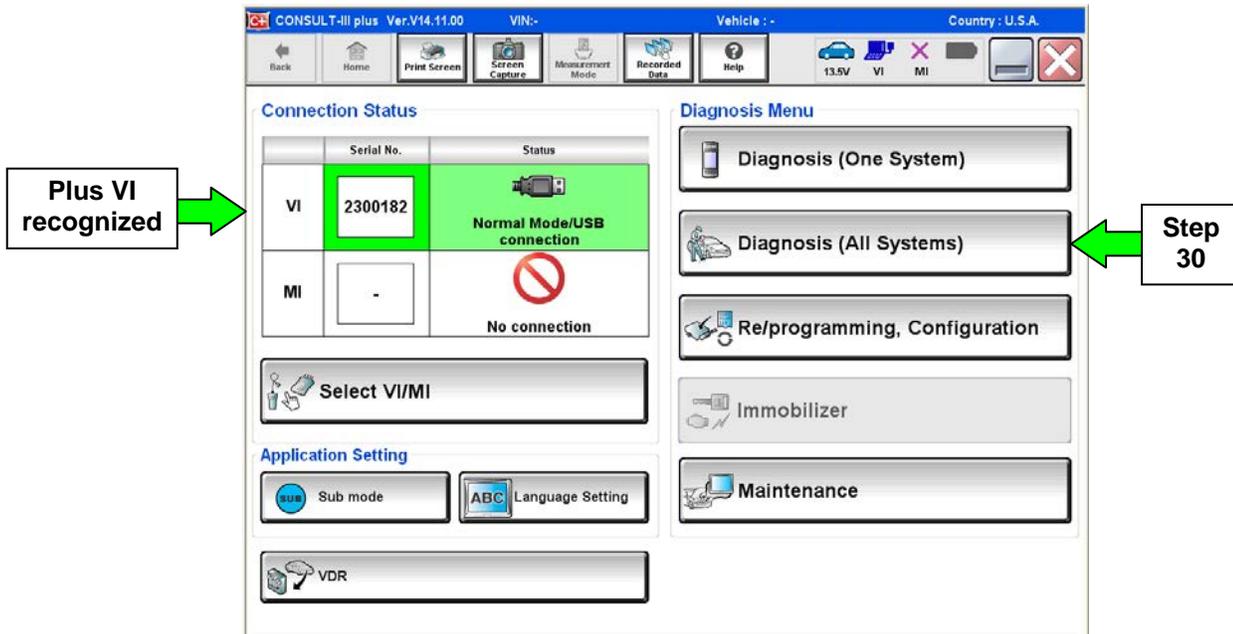
Figure 23

31. Select **LEAF** and **2013,** or **Automatic Selection (VIN)**.

- If **Automatic Selection (VIN)** is selected, wait for the **Reading VIN** screen to complete.

32. Select **Select** or **Detect Vehicle**, whichever displays.

This works, too

Step 31

Step 32: May display **Detect Vehicle**
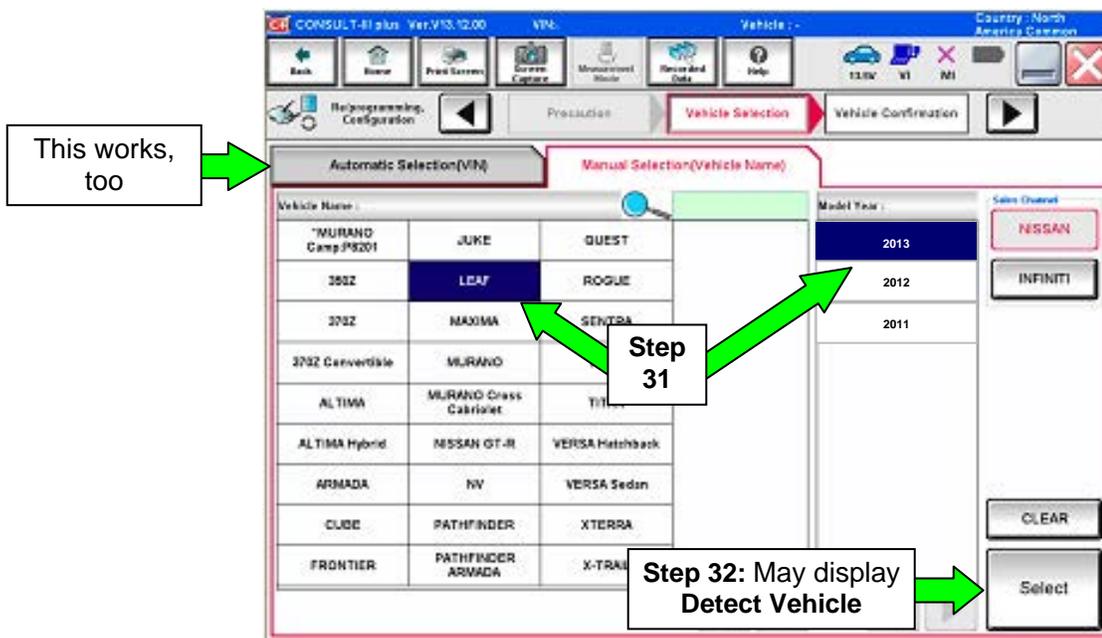
Figure 24

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

- If the correct VIN exists, select **Confirm**.

Verify here →

VIN or Chassis # — 1N4AZ0CPxxx xxxxxx

If OK, select **Confirm** →
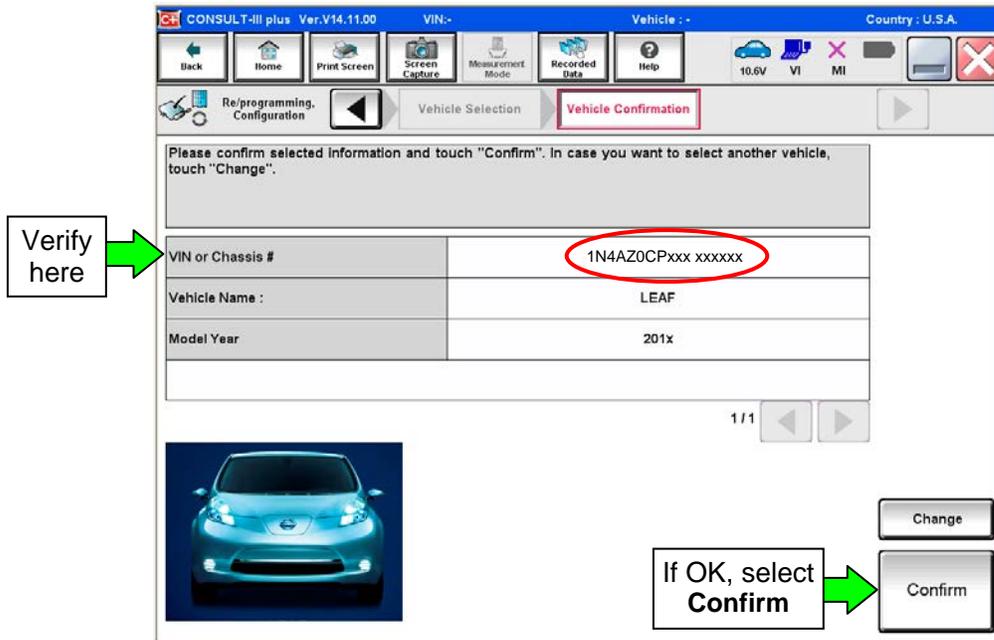
Figure 25

34. Wait for System Call to complete.

System Call

System call performing...
Please wait...

94%

Cancel
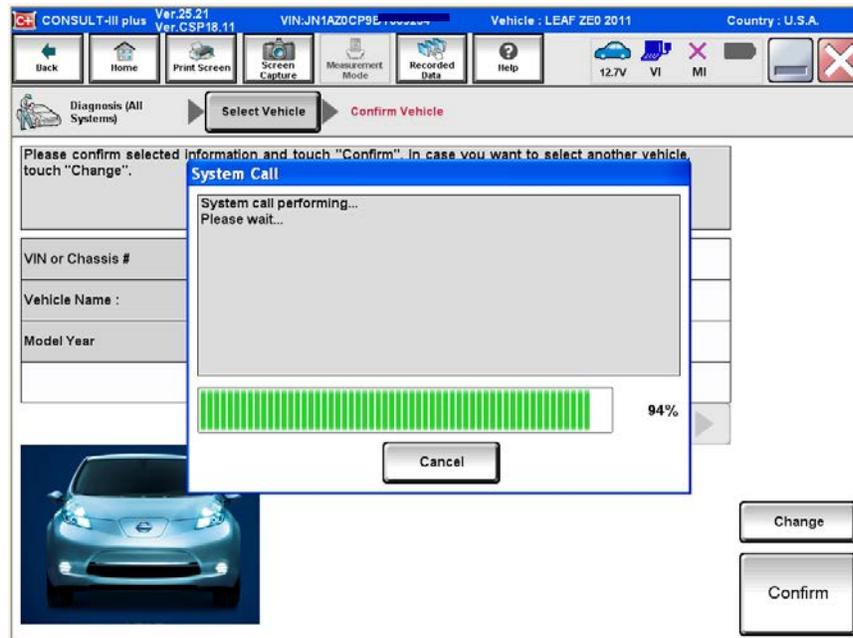
Figure 26

35. If DTCs are present, select **ERASE**.

- If no DTCs are present, skip to Step 38.
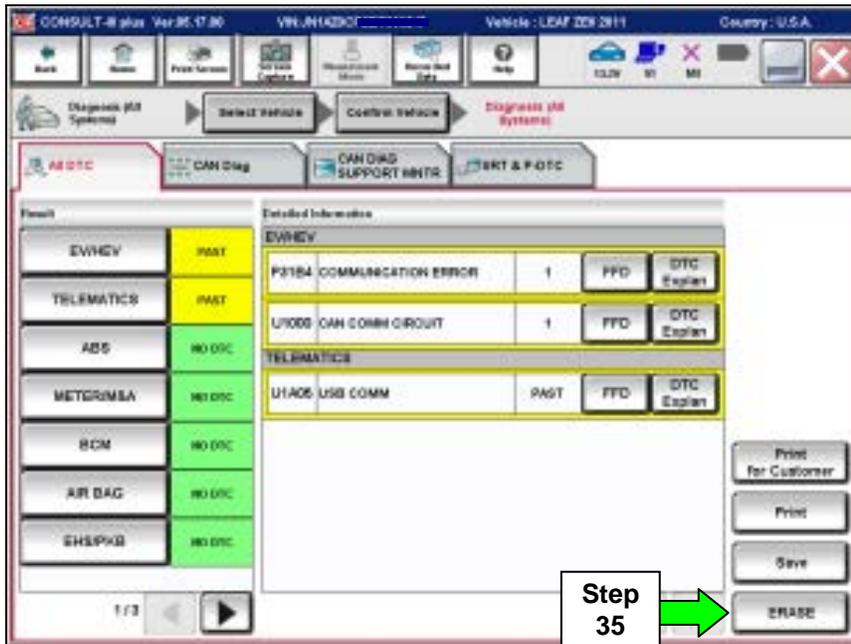
Figure 27

36. Select **ERASE**.
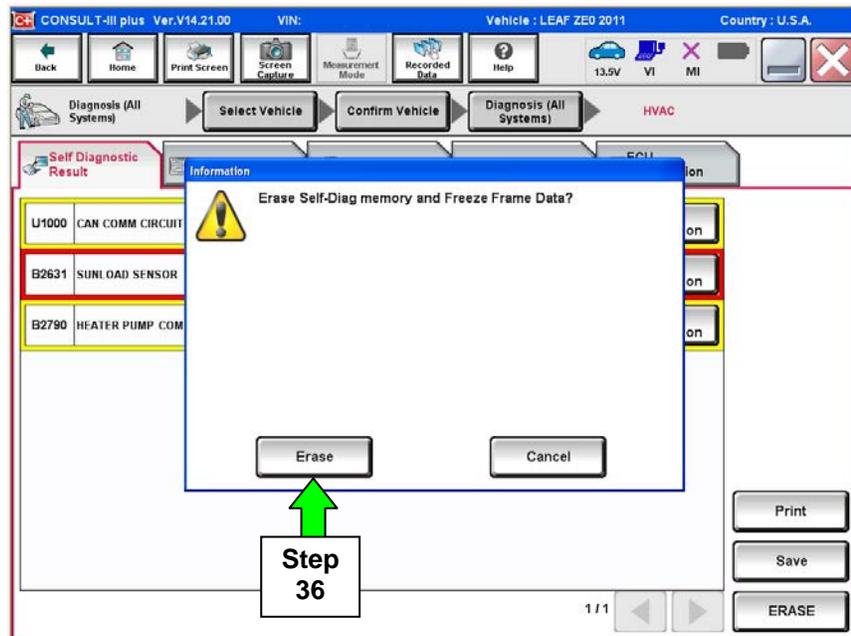
Figure 28

37. Select **Close**.
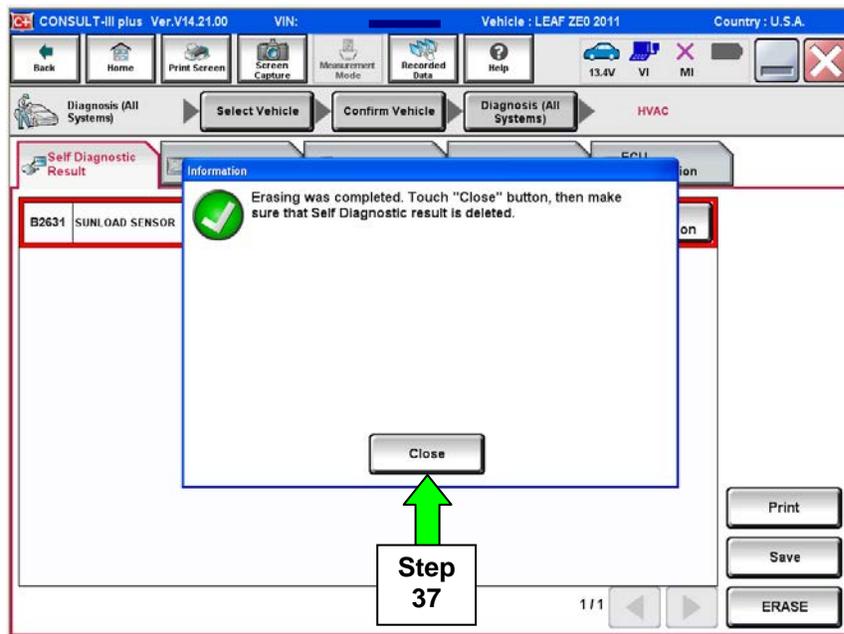
Figure 29

38. Using the arrow keys, select Page **3/3**, and then select **HVAC**.
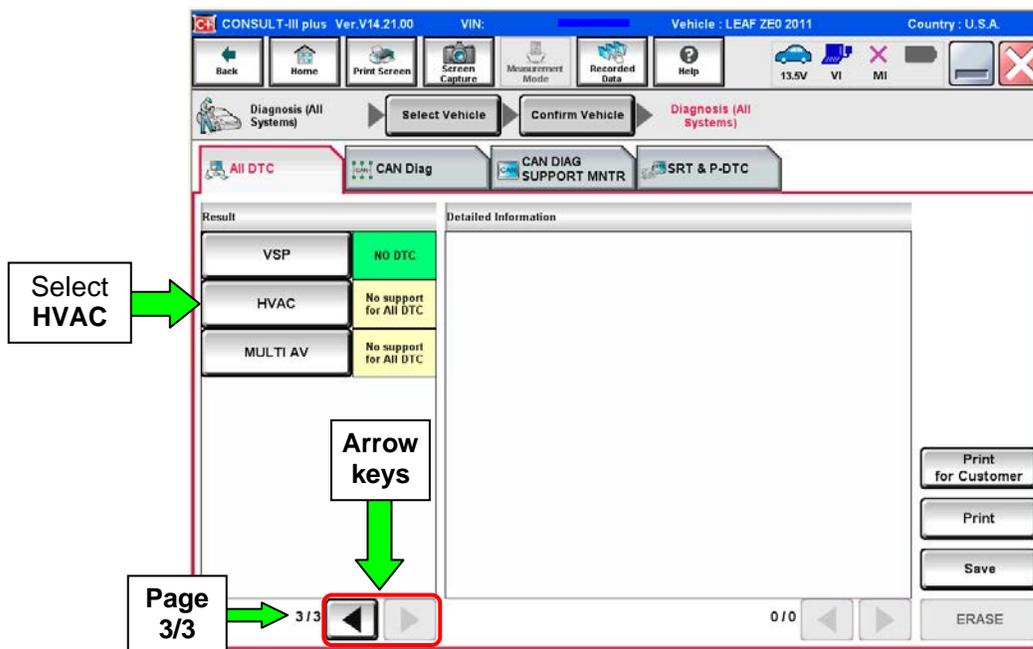
Figure 30

39. Select **ERASE**.
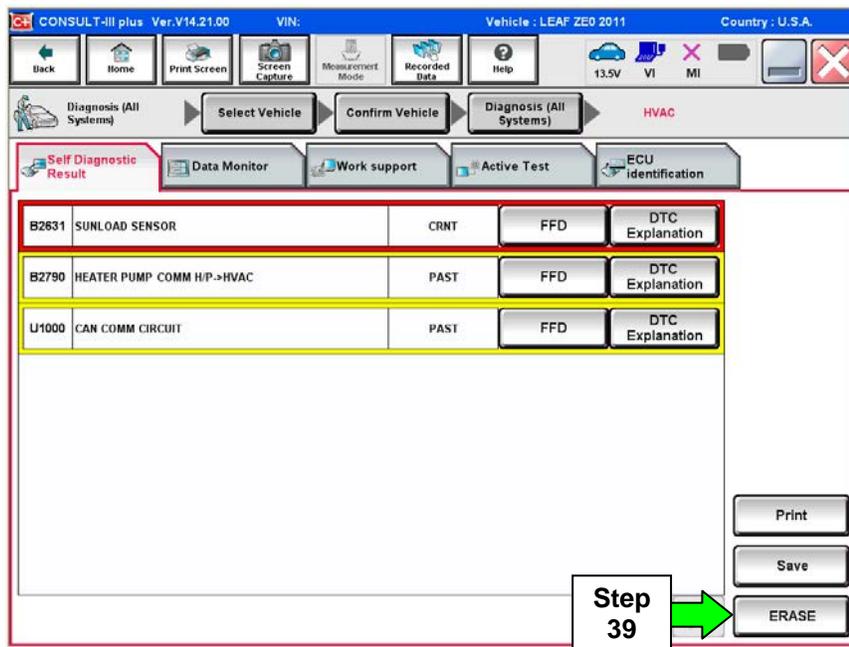
Figure 31

40. Select **ERASE**.
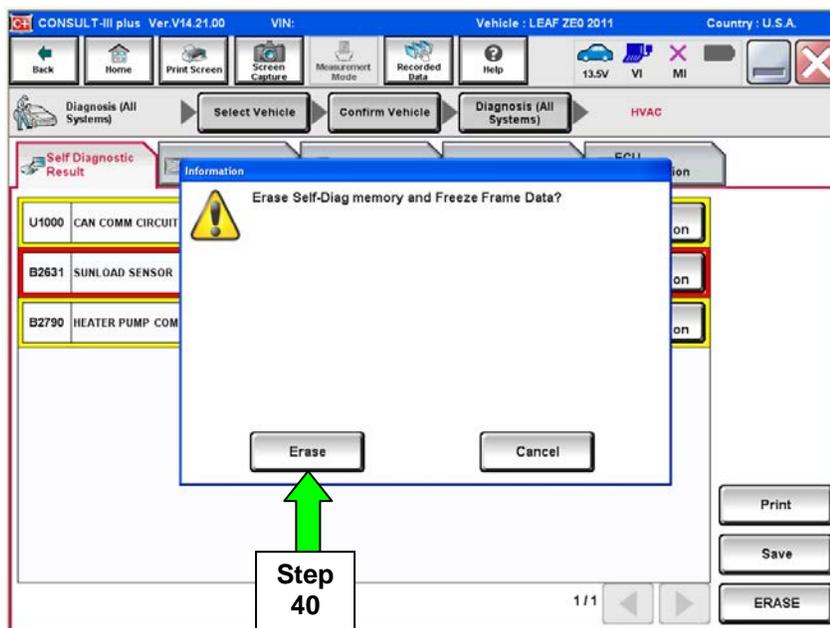
Figure 32

41. Select **Close**.
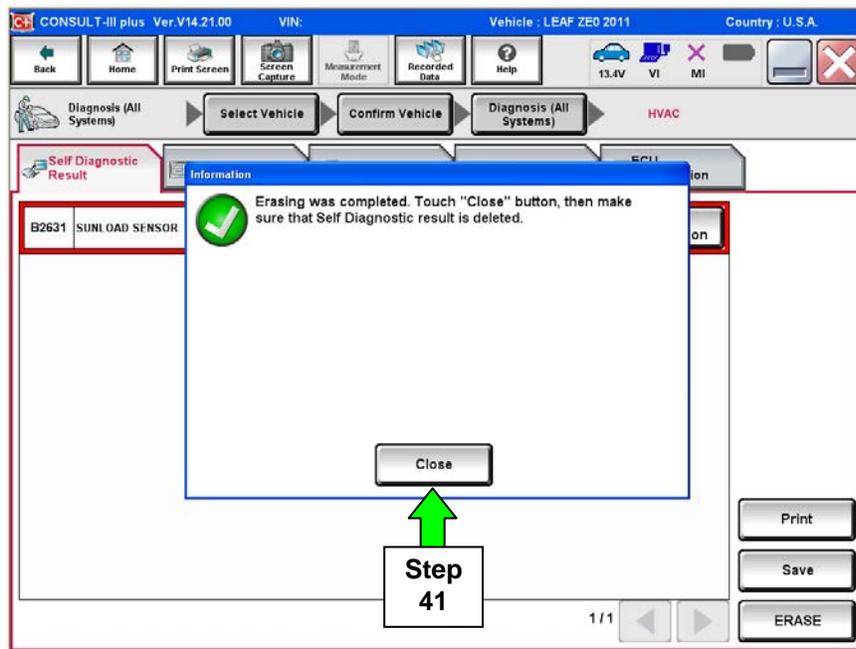
Figure 33

NOTE: If DTC B2631 (SUNLOAD SENSOR) sets again, this is okay.
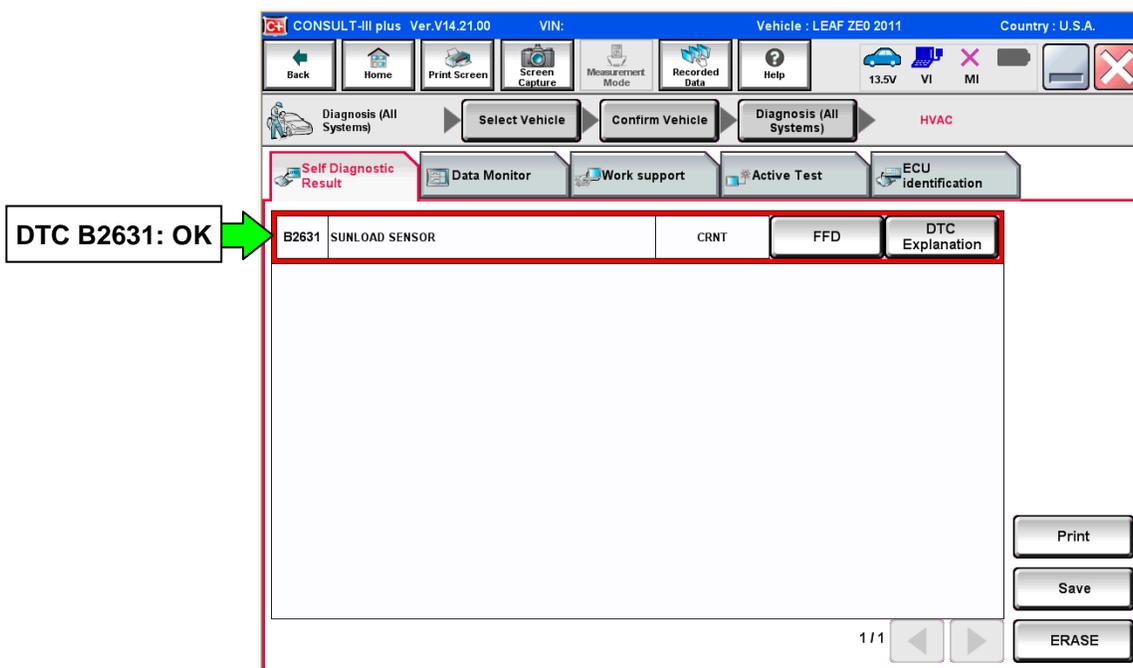
Figure 34

42. Select **Back**.
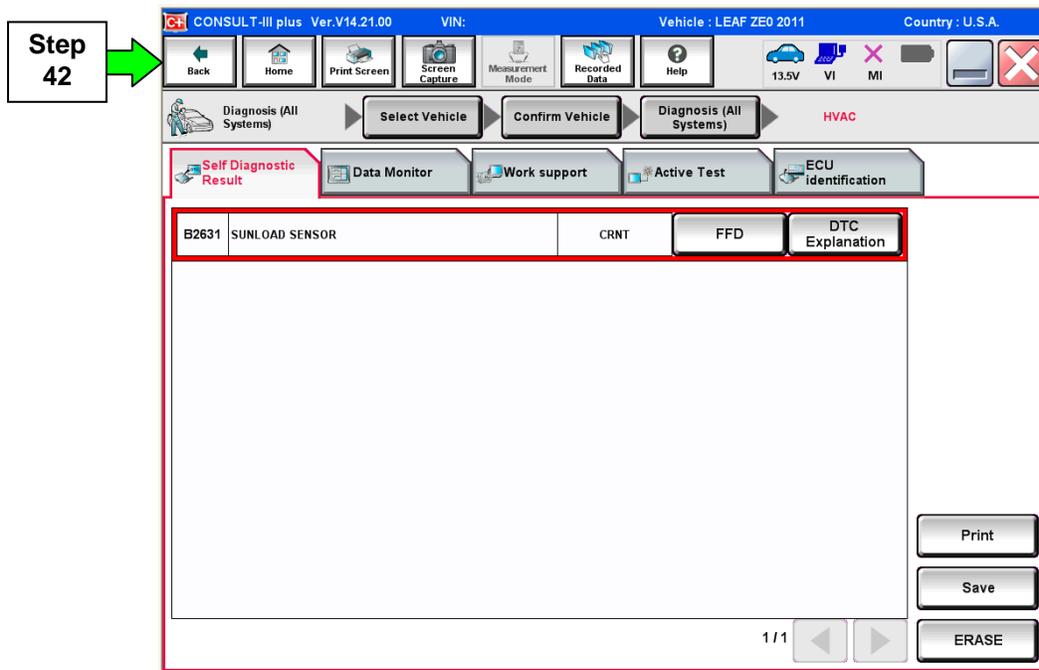
Figure 35

43. Using the arrow keys, go to Page **3/3**, and then select **MULTI AV**.
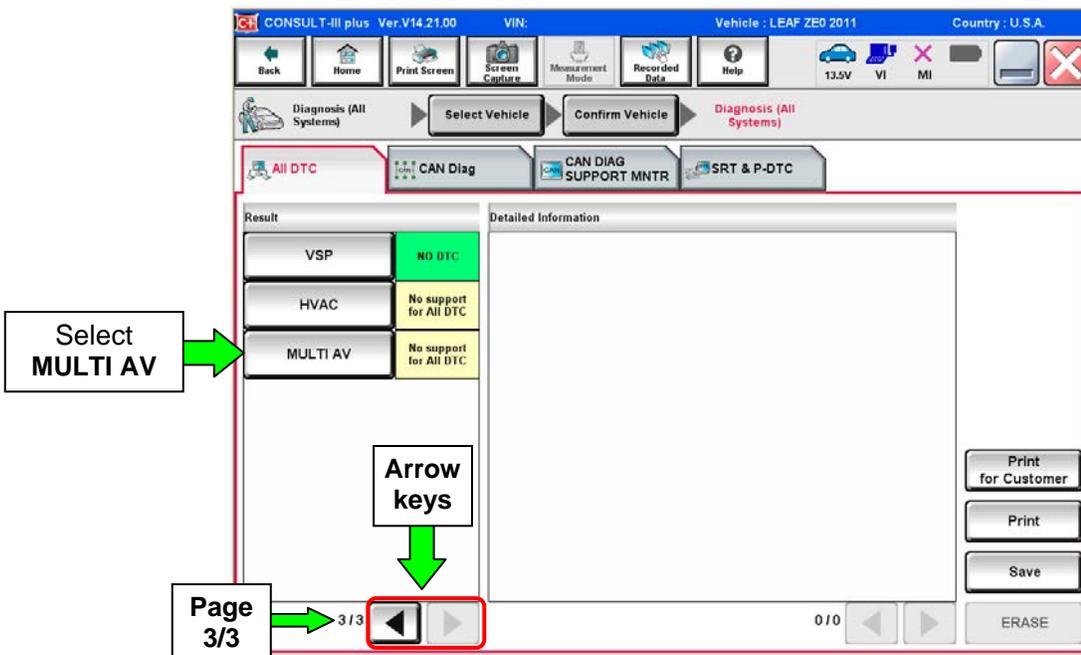
Figure 36

44. Select **ERASE**.
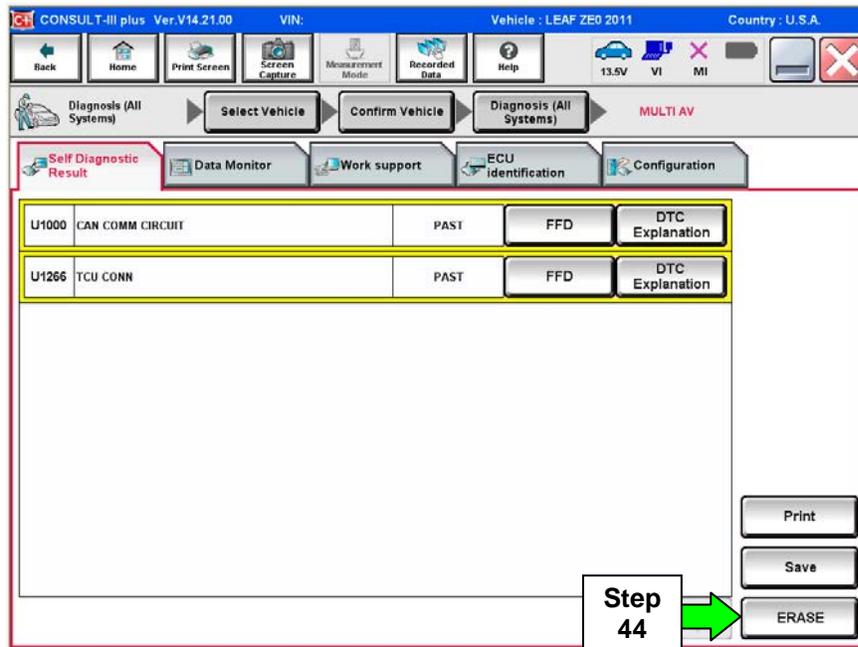
Figure 37

45. Select **Erase**.
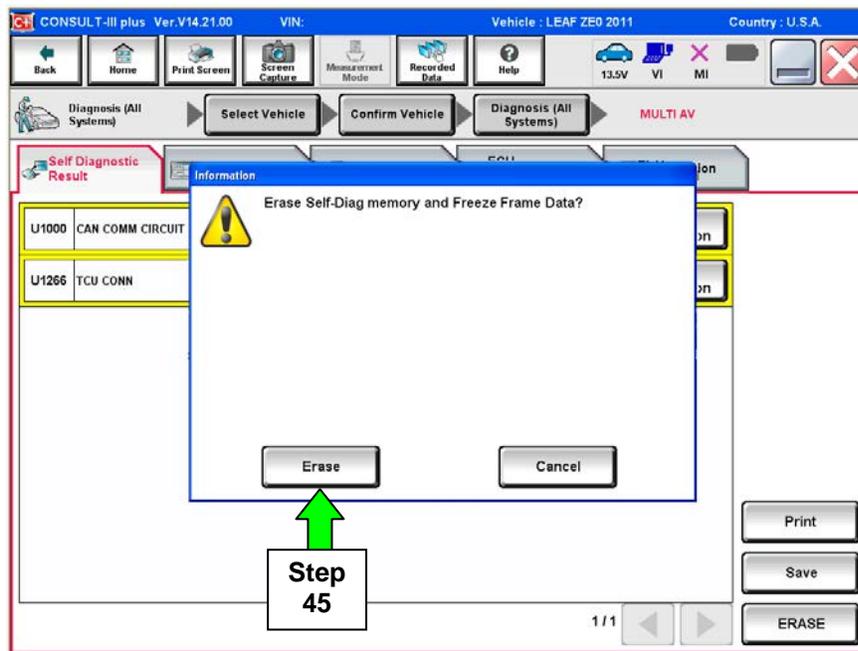
Figure 38

46. Select **Close**.
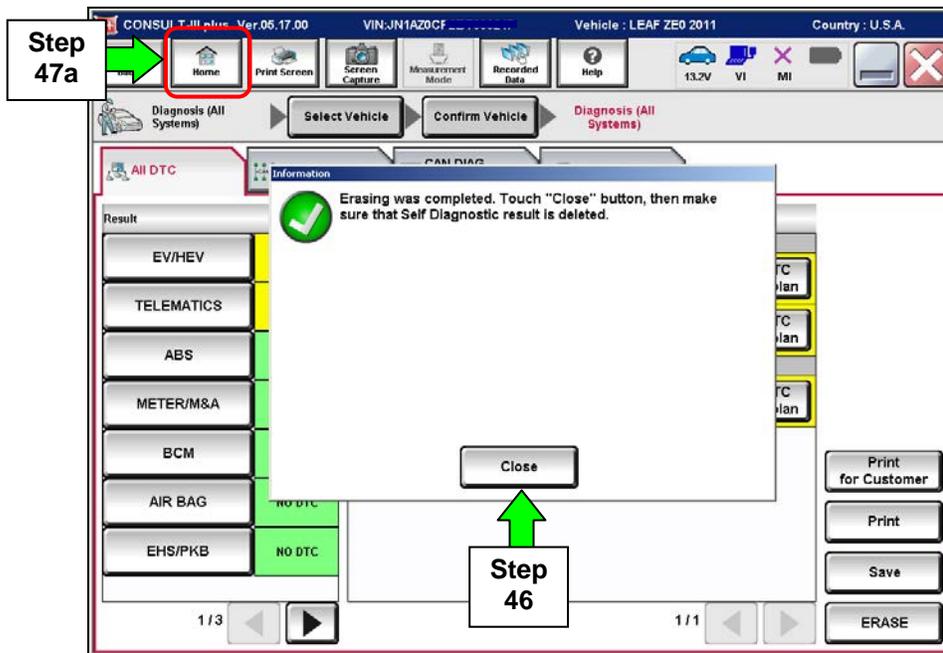
Figure 39

47. Once all DTCs have been erased:

    a. Select **Home**, and then on the next screen select **Yes** (picture not shown).

    b. Close C-III plus, turn off the CONSULT PC, and then disconnect the CONSULT PC and plus VI from the vehicle.

    c. Turn "ignition" off (depress power switch <u>once</u>).

48. Verify the repair is complete:

    a. Place the vehicle in the "READY to drive" mode (press power switch while stepping on the brake pedal).

    b. Verify no error messages are displayed in the meter and gauges or center multi-function control panel.

    c. If the timer for either charging or climate control were "on" prior to reprogramming, turn them back on.

NOTE: Battery voltage <u>must stay</u> between 12 volts and 15.5 volts or reprogramming may be temporarily stopped. Returning battery voltage within the 12-15.5 volt range will resume the reprogramming procedure.

GR8 Multitasking Battery Diagnostic Station Setup

1. Connect the battery tester/charger to the 12V battery, <u>positive cable first</u>.

2. Plug in the battery tester/charger (AC voltage supply), and then turn on the battery tester/charger.

3. Select the preferred language, and then depress NEXT.

4. Select the USER, and then depress NEXT.

5. Confirm the USER, and then depress NEXT.

6. Select System Test, and then depress the "down" arrow.

7. Select the Manual icon, and then depress NEXT.

8. Select REGULAR FLOODED, and then depress NEXT.

9. Select LIMIT VOLTAGE, and then depress NEXT.

10. Set MIN VOLTAGE to 12.40 volts, and then depress NEXT.

    - Use the arrows to raise and lower the voltage setting.

11. Set the charging time for 40 minutes, and then depress NEXT.

12. Wait for the system to go through Test mode and Advanced Test mode.

13. Perform **CHARGER / PD MODULE** reprogramming now.

14. Once **CHARGER / PD MODULE** reprogramming has completed:
    - Depress STOP
    - Depress the power switch to OFF
    - Unplug the battery tester/charger from the AC voltage supply

    NOTE: For further details on battery tester/charger connection and set-up, refer to the battery tester/charger's instruction manual.