Technical Bulletin

SERVICE BULLETIN

Classification:	Reference:	Date:
AT17-004b	NTB17-041b	December 18, 2018

ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE OR TRANSAXLE ASSEMBLY

> **This bulletin has been amended. See AMENDMENT HISTORY on the last page.**
> **Please discard previous versions of this bulletin.**

APPLIED VEHICLES: 2013-2019 Sentra (B17)
2014-2019 Versa Note (E12)
2013-2019 Versa Sedan (N17)
APPLIED TRANSMISSION: CVT
APPLIED ENGINE: **HR16DE and MRA8DE (non-turbo engines)**

SERVICE INFORMATION

After CVT assembly or control valve replacement, additional service must be completed with CONSULT-III plus (C-III plus).

- If all additional services are not performed, the vehicle can experience drivability concerns which may result in a CVT issue.

Additional Service when Replacing Control Valve or Transaxle Assembly

➢ The following procedures, starting on the next page, <u>must be</u> performed in this order.

➢ Check off each procedure as they are performed in the order listed below.

CHECK OFF	PROCEDURE	PAGE
	TCM REPROGRAMMING	2
	CONTROL VALVE REPLACEMENT (CONSULT-III plus Work Support)	22
	ERASE LEARNING VALUE	27
	CONFORM CVTF DETERIORTN	29
	AUXILIARY GEARBOX CLUTCH POINT LEARNING	32
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SERVICE PROCEDURE

IMPORTANT: Repairs performed for this bulletin require CONSULT-III plus <u>Diagnostic result reporting function-Setting</u> be turned ON and <u>Diagnosis (All Systems)</u> be performed. If not done, it may result in a repair being non-warrantable.

TCM REPROGRAMMING

IMPORTANT: Before starting, make sure:
- ASIST on the CONSULT PC has been synchronized (updated) to the current date.
- All C-III plus software updates (if any) have been installed.
- The CONSULT PC is connected to the internet (Wi-Fi, or cable).

1. Connect the plus Vehicle Interface (plus VI) to the vehicle.

   > **CAUTION:** Make sure the plus VI is securely connected. If the plus VI connection is loose during reprogramming, the process will be interrupted and the TCM may be damaged.

2. Connect the AC Adapter to the CONSULT PC.

   > **CAUTION:** Be sure to connect the AC Adapter. If the CONSULT PC battery voltage drops during reprogramming, the process will be interrupted and the TCM may be damaged.

3. Connect the GR8, set to "Power Supply" mode, to the vehicle battery.

   > **CAUTION:** Be sure the GR8 is connected securely to the battery. Make sure the battery voltage stays between <u>12.0V and 15.5V</u> during reprogramming. If the battery voltage goes out of this range during reprogramming, the TCM may be damaged.

4. Turn OFF all external Bluetooth® devices (e.g., cell phones, printers, etc.) within range of the CONSULT PC and the VI.

   > **CAUTION:** Make sure to turn OFF all external Bluetooth® devices. If Bluetooth® signal waves are within range of the CONSULT PC and the plus VI during reprogramming, reprogramming may be interrupted and the TCM may be damaged.

5. Turn the ignition ON with the engine OFF.

   - **The engine must not start or run during the reprogramming procedure.**

6. Turn OFF all vehicle electrical loads such as exterior lights, interior lights, HVAC, blower, rear defogger, audio, NAVI, seat heater, steering wheel heater, etc.

   > **IMPORTANT:** Make sure to turn OFF all vehicle electrical loads. Make sure the battery voltage stays between <u>12.0V and 15.5V</u> during reprogramming. If the battery voltage goes out of this range during reprogramming, the TCM may be damaged.

7. Turn ON the CONSULT PC.

8. Select CONSULT-III plus (open C-III plus).

9. Wait for the plus VI to be recognized.

- Serial number will display when the plus VI is recognized.

plus VI is recognized →
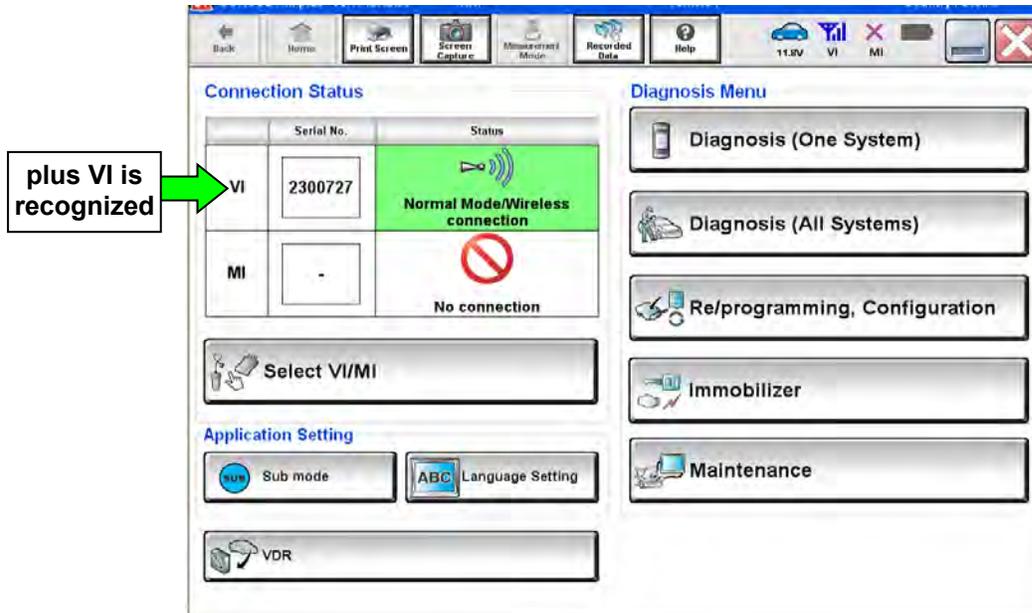
Figure 1

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

← **Step 10**
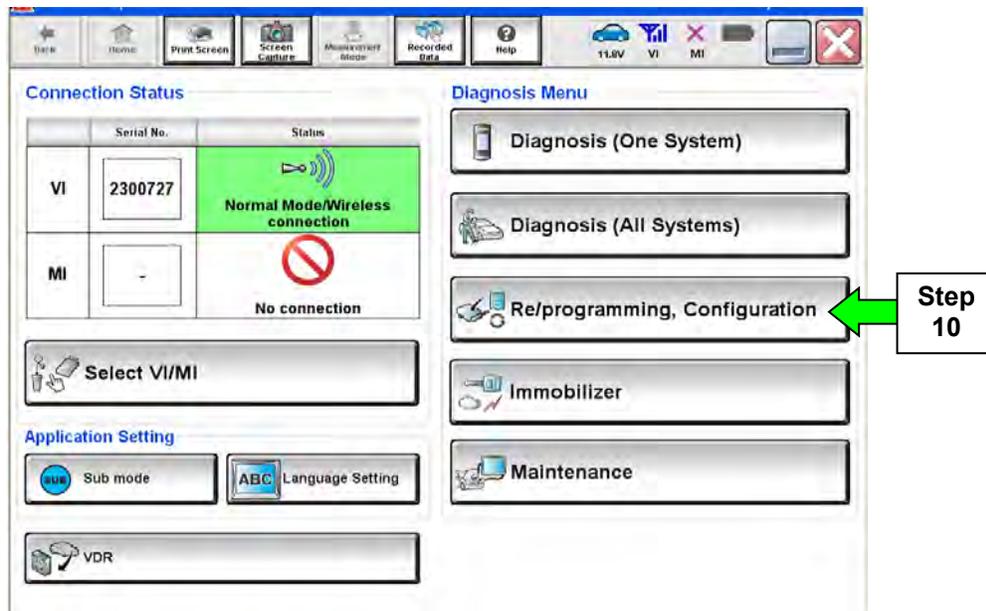
Figure 2

11. Use arrows (if needed) to view and read all precautions.

12. Check the box confirming the precautions have been read.

13. Select **Next**.
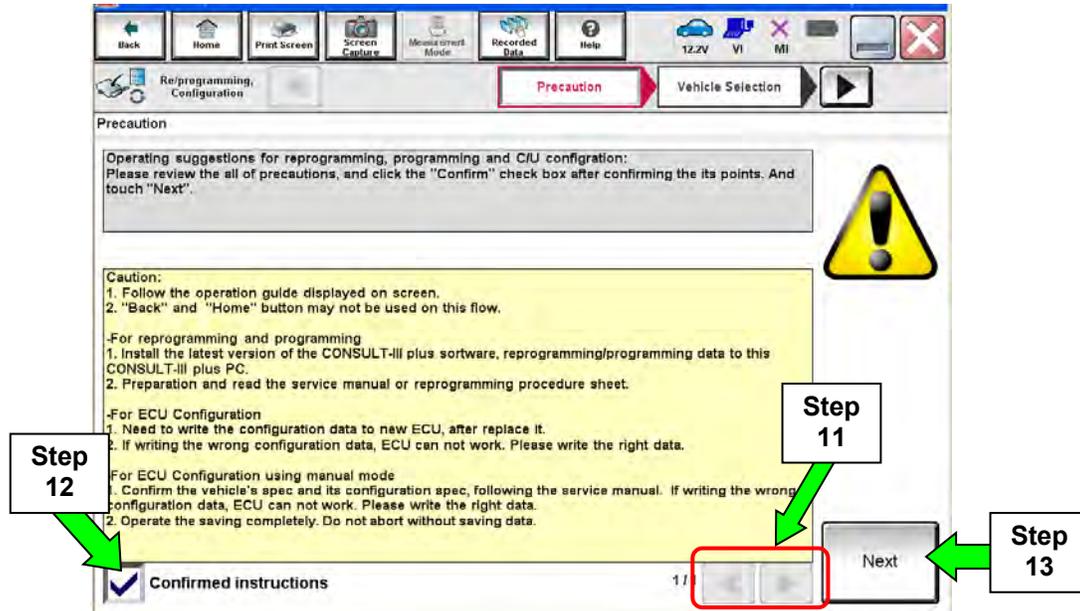
Figure 3

14. If the screen in Figure 4 displays, select **Automatic Selection(VIN)**.

- If the screen in Figure 4 <u>does not</u> display, skip to step 15.
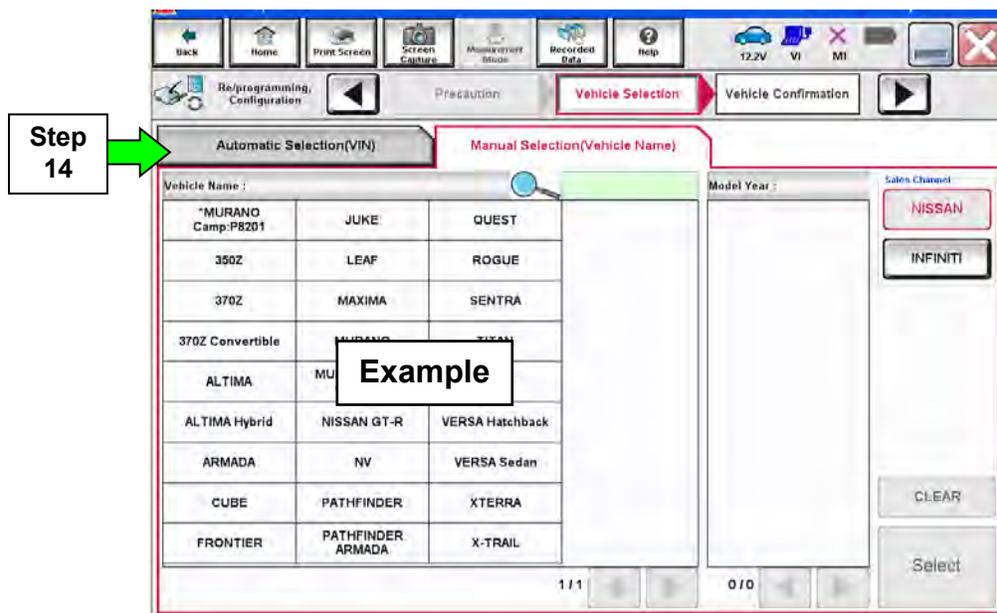
Figure 4

15. Make sure **VIN or Chassis #** matches the vehicle's VIN.

16. If the correct VIN is displayed, select **Confirm**.
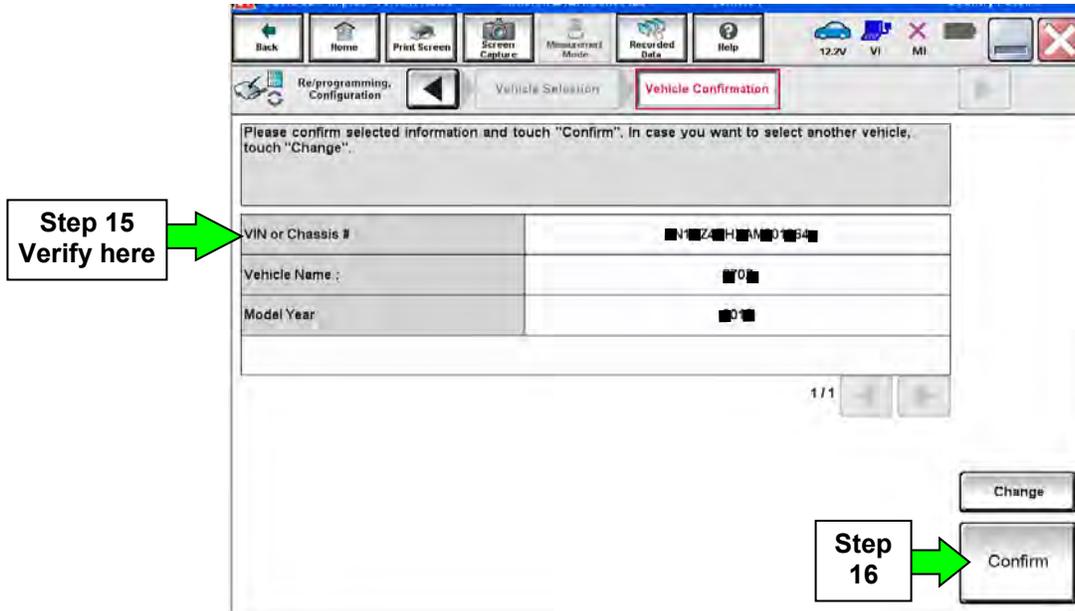
Figure 5

17. Select **Confirm**.
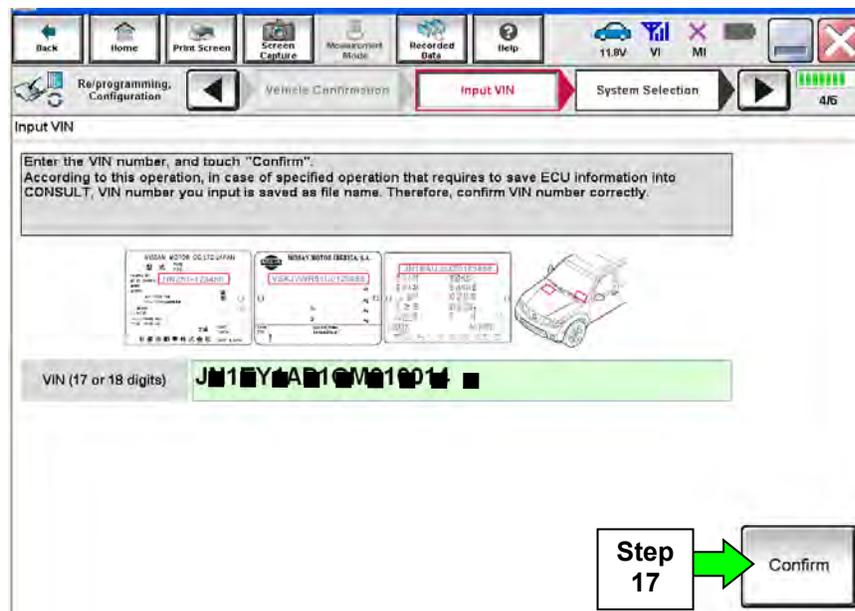
Figure 6

18. Select **TRANSMISSION**.
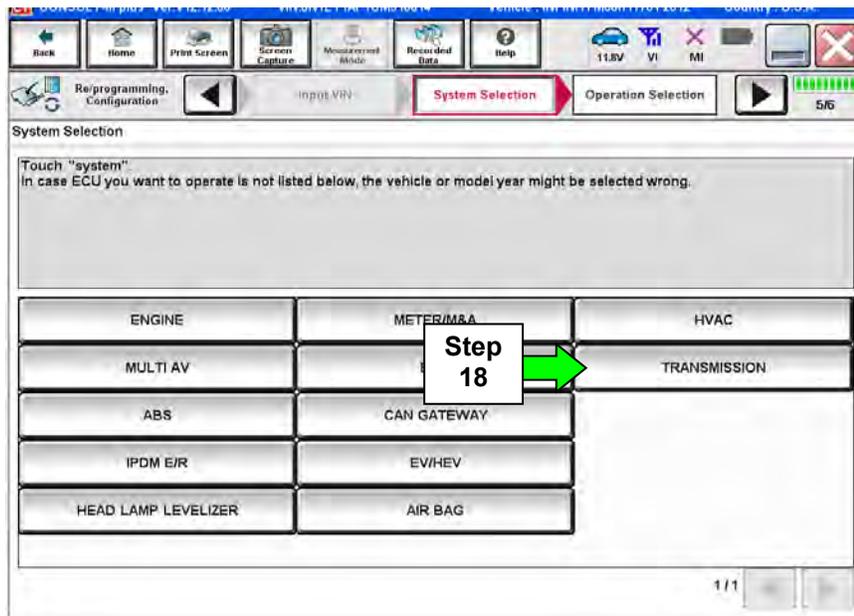
Figure 7

19. Select **Reprogramming**.
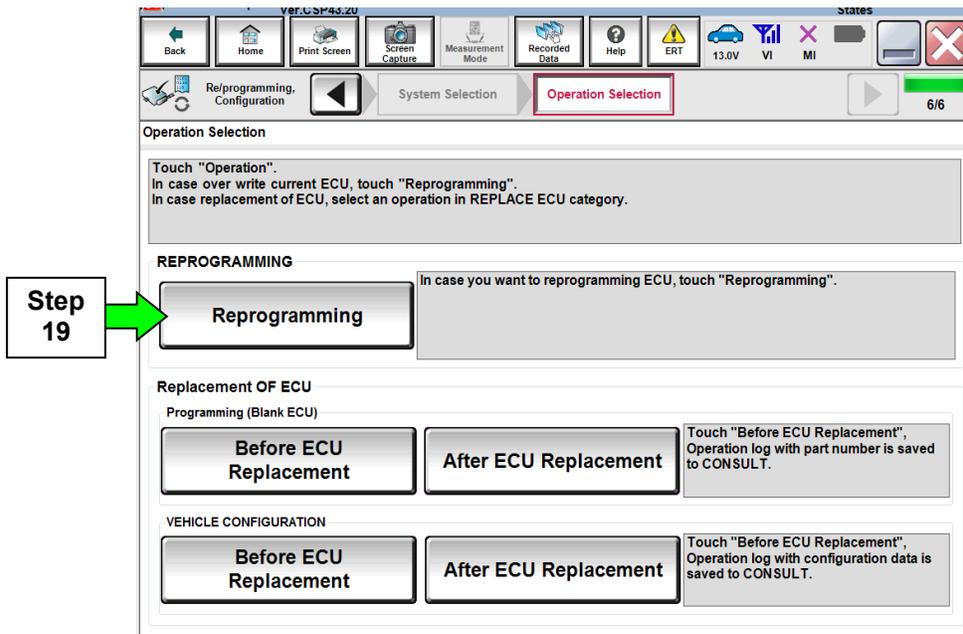
Figure 8

20. Follow the on-screen instructions; maintain the following conditions:

    a. Ignition ON, with the engine OFF.
    b. Press the Brake.
    c. Press accelerator between ¼ and ½.
    d. Put shift selector in **R**.

21. Select **Start**.
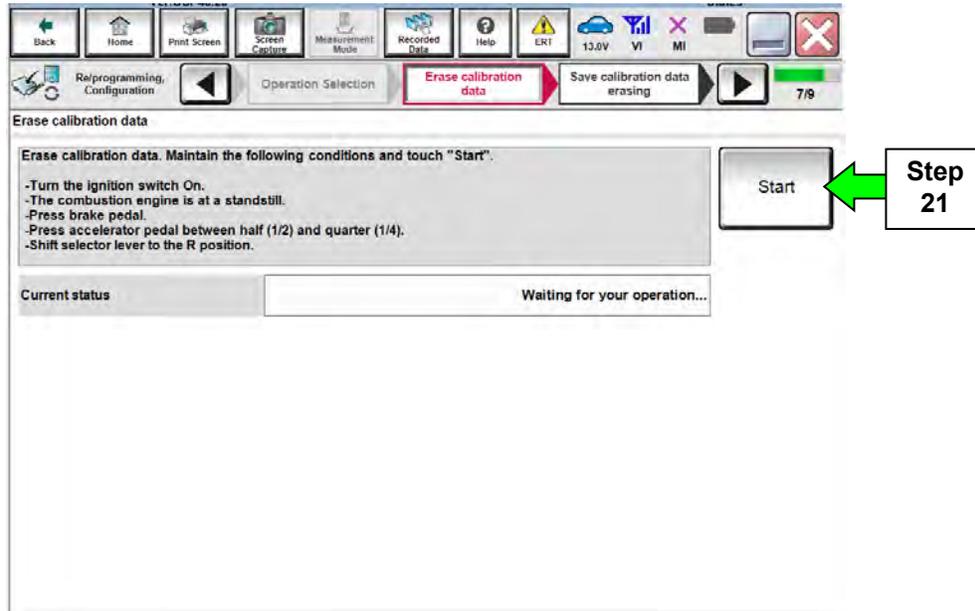
Figure 9

22. When <u>COMPLETED</u> is displayed, select **Next**.
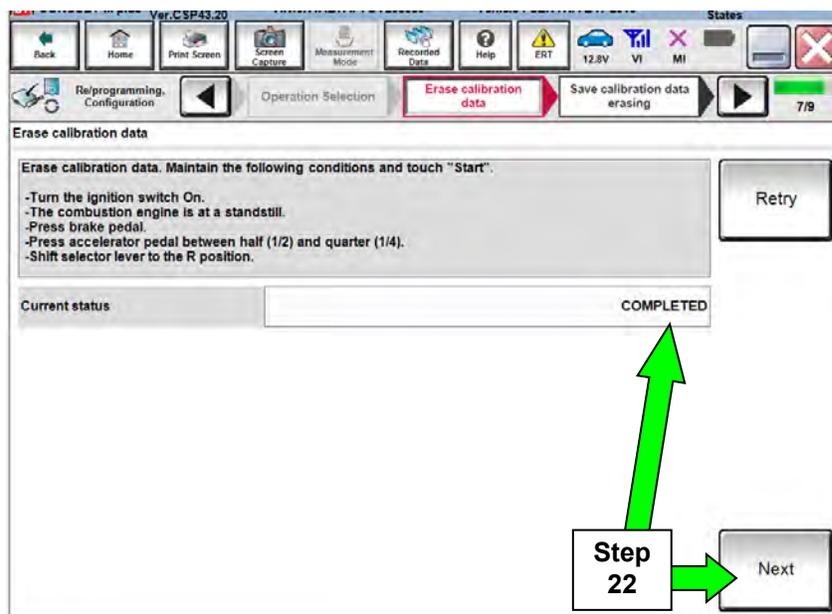
Figure 10

23. Operate the ignition per the on screen instructions.
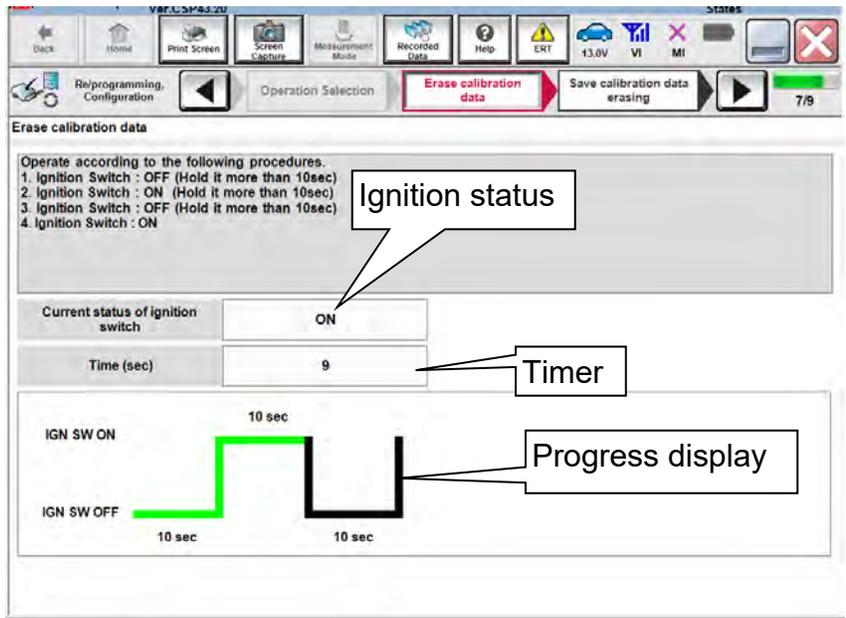
Figure 11

24. When <u>OK</u> is displayed, select **Next**.
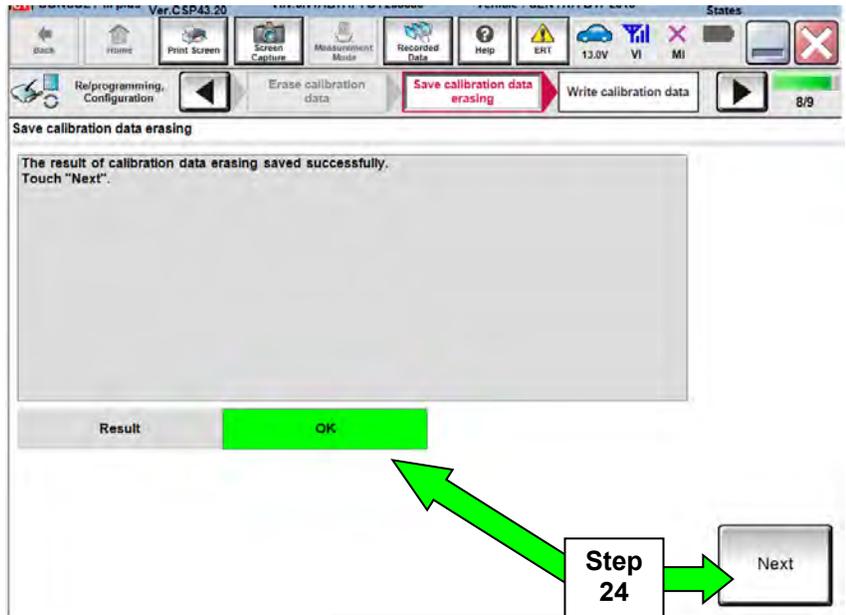
Figure 12

25. Move the shift selector to **P**, then select **Next**.
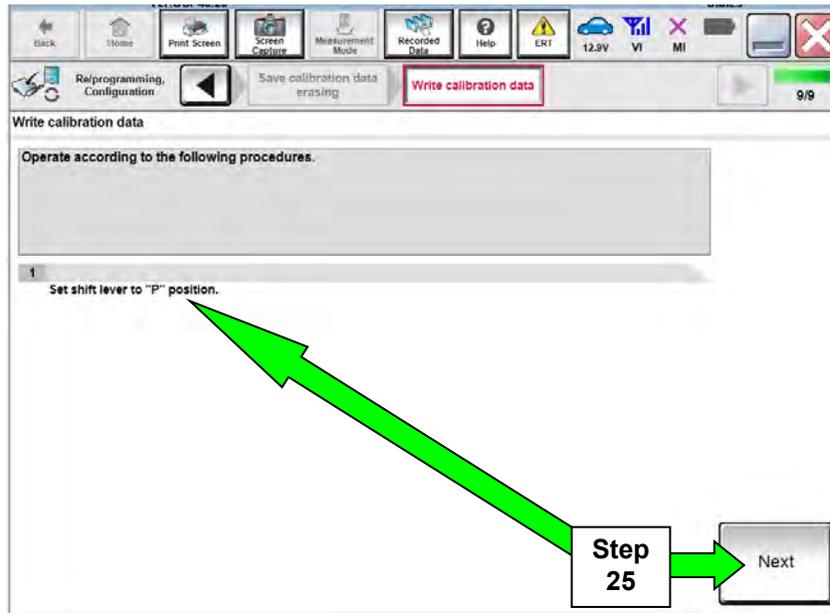
Figure 13

26. Operate the shift selector per the on-screen instructions.

    a. Move the shift selector: **P** > **R** > **N** > **D** > **P**.
    b. Confirm the center display meter indicates the correct selector position.

27. Select **Next**.

Figure 14

NTB17-041b
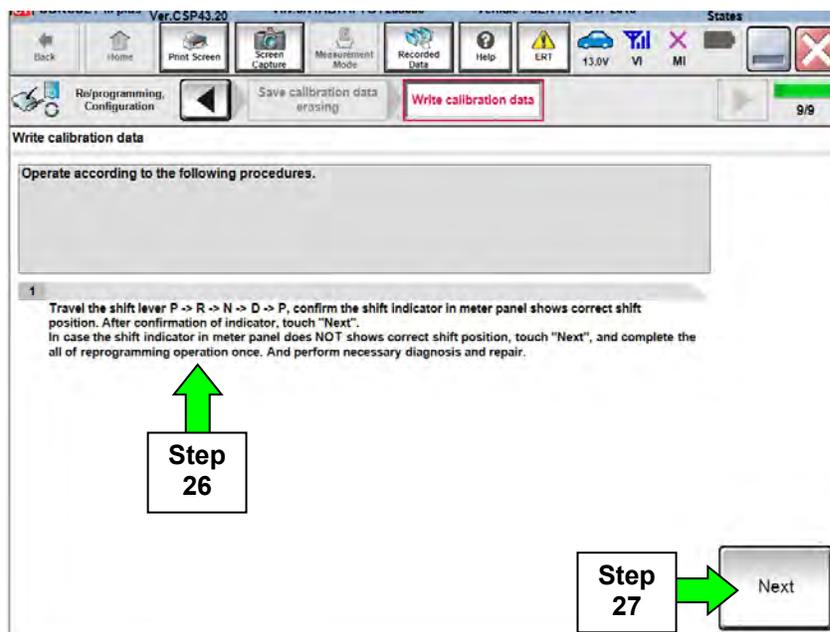
28. Select **Save**.
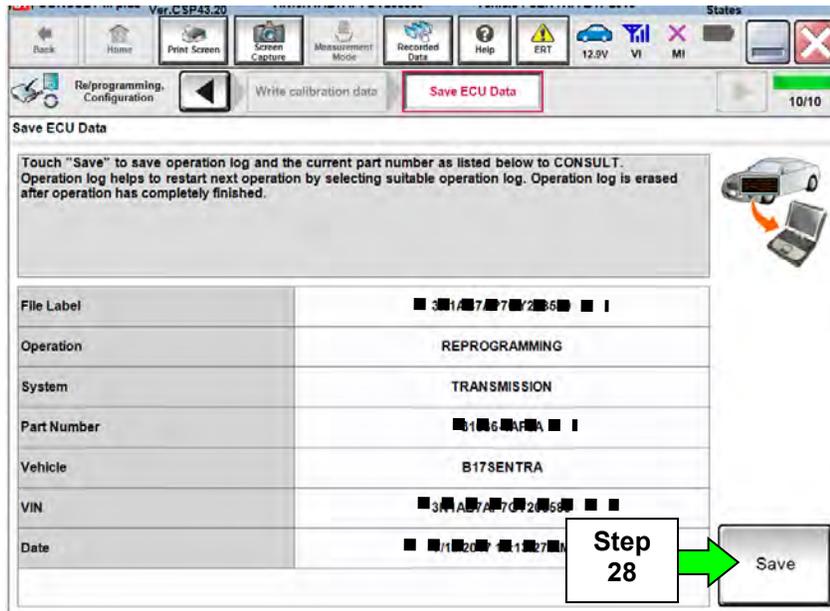
Figure 15

29. Use arrows (if needed) to view and read all precautions.

30. Check the box confirming the precautions have been read.

31. Select **Next**.
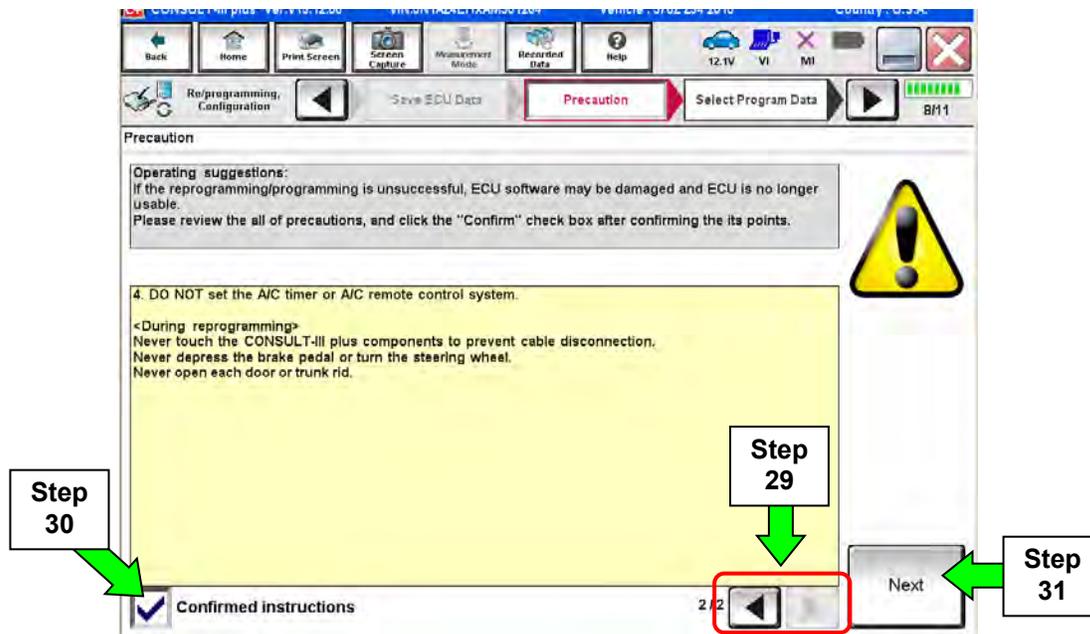
Figure 16

IMPORTANT: For step 32 to be accurate:

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

32. Confirm reprogramming is required for this vehicle:

- Read / compare the **Current Part Number** and **Part Number After Reprogramming** (see Figure 17).

- They should be **different**.

33. Comparison results:

- If they are **different**, continue with the reprogramming procedure.

- If they **are the same**, reprogramming is **not needed**. Skip to CONTROL VALVE REPLACEMENT on page 22.

34. Select **Next**.
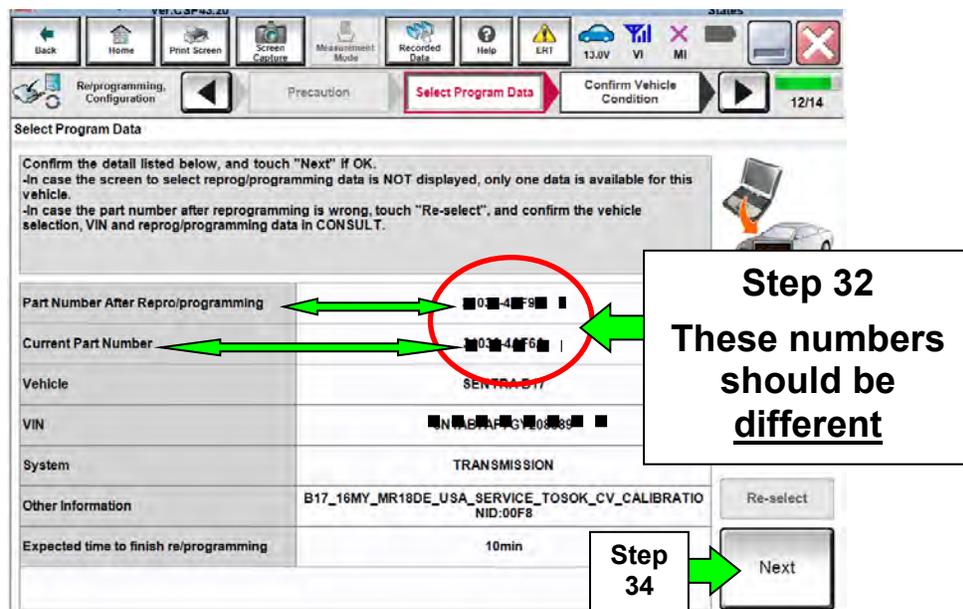
Figure 17

35. Make sure **OK** is highlighted **green** (battery voltage must be between **12.0 and 15.5 Volts**).

36. Select **Next**.

IMPORTANT: Battery voltage must stay between **12.0 and 15.5 Volts** during reprogramming or TCM reprogramming may be interrupted and TCM may be damaged.
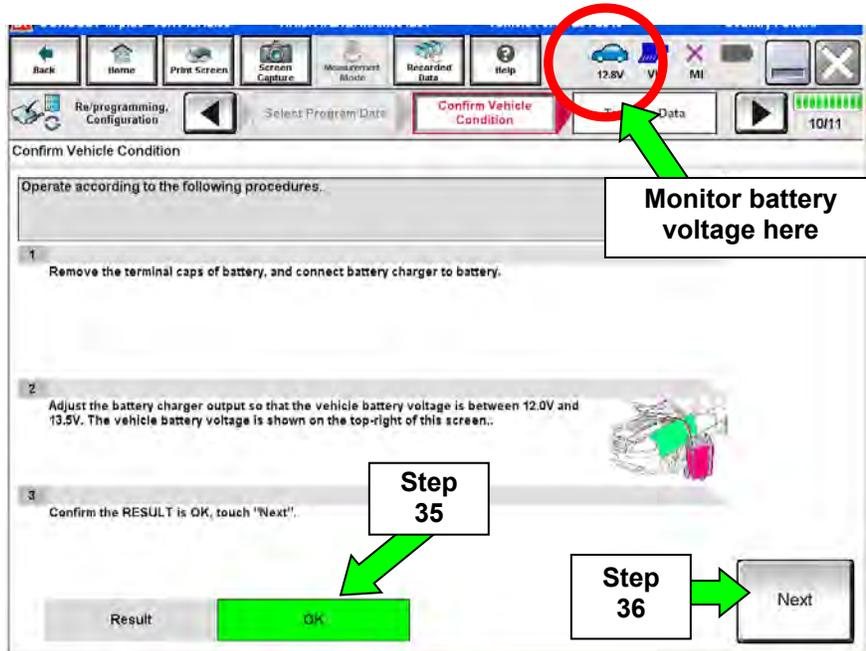
Figure 18

37. Select **Start**.

Figure 19

NTB17-041b
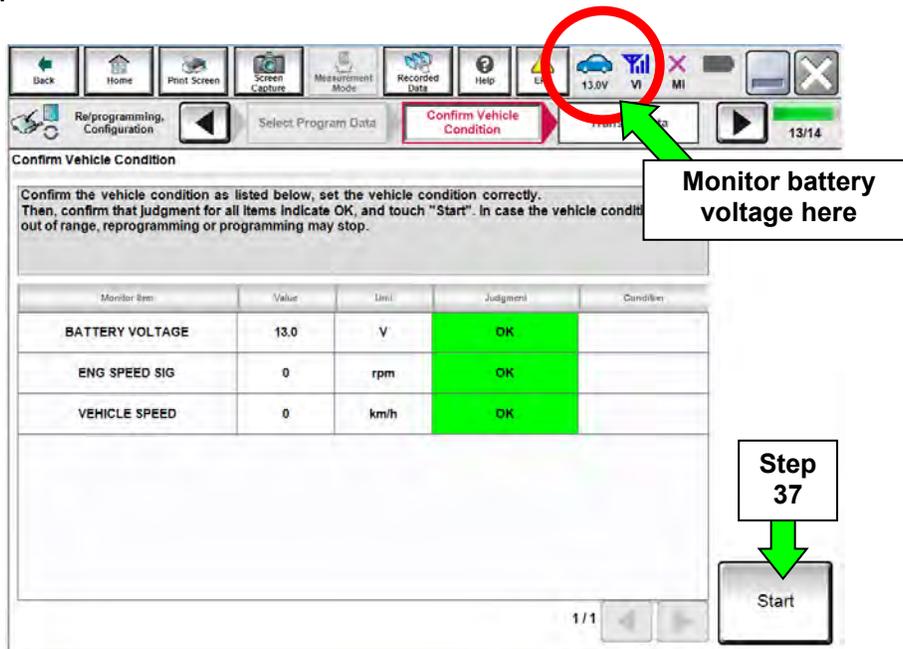
- If a screen displays asking for "Please select your user group"; select USA/CANADA Dealers.

- Before reprogramming will start, you will be required to enter your User Name and Password.

  ➢ The CONSULT PC must be connected to the Internet (Wi-Fi or cable).

  ➢ If you do not know your User Name and Password, contact your Service Manager.
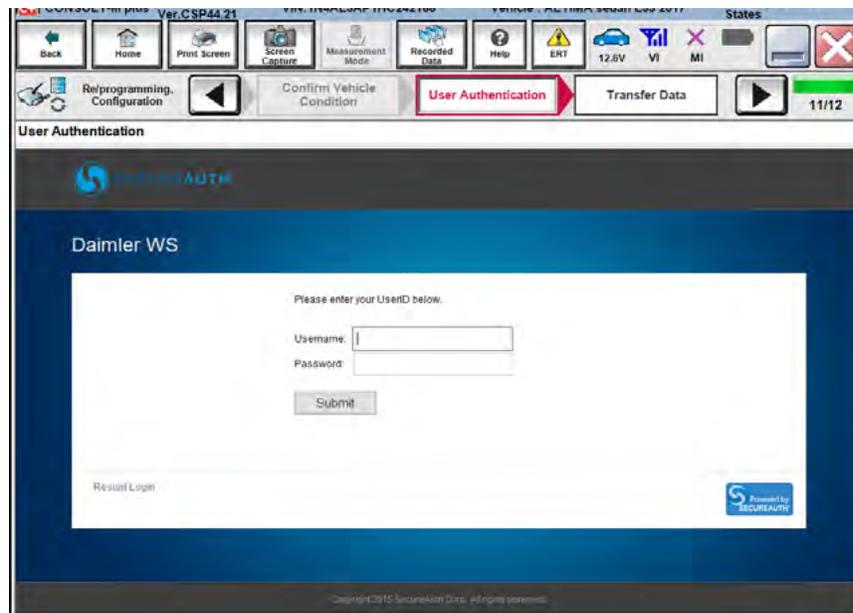
Figure 20

38. Wait for both progress bars to complete.

Figure 21

NTB17-041b
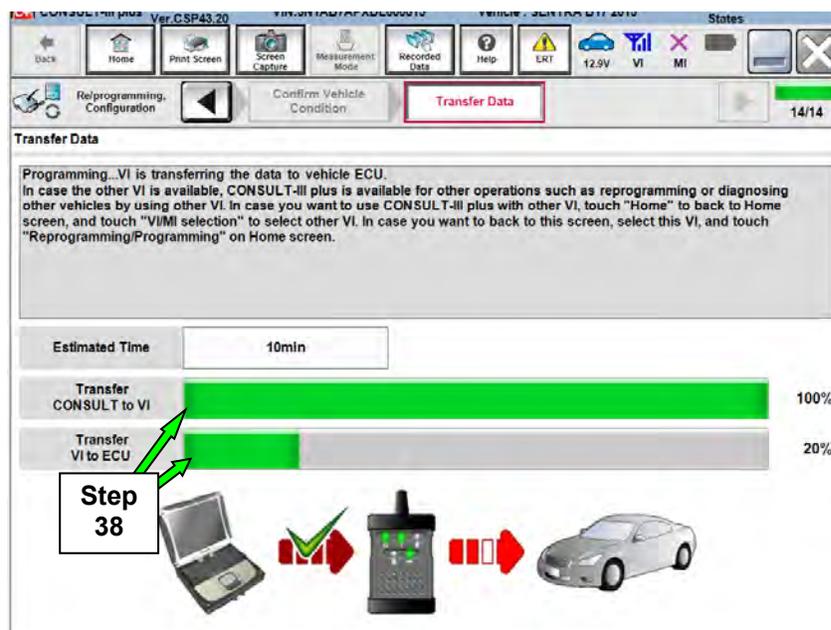
39. When the screen in Figure 22 displays, the reprogramming is complete.

   NOTE: If the screen in Figure 22 does <u>not</u> display (which indicates reprogramming did <u>not</u> complete), refer to the information on the next page.

40. Disconnect the battery charger (GR8) from the vehicle.

41. Select **Next**.
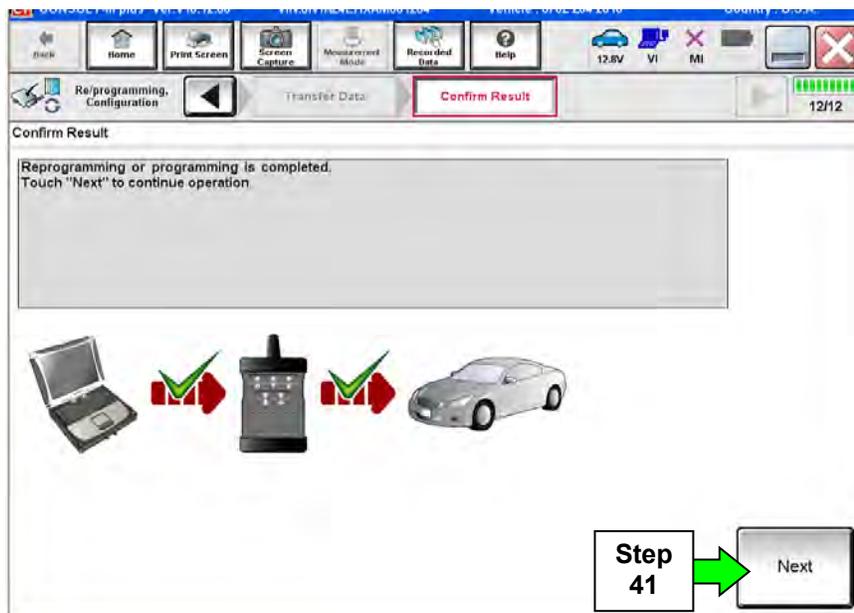
Figure 22

NOTE: Additional steps/operations are required before C-III plus will provide the final reprogramming confirmation report. Continue with the reprogramming procedure on page 16.

If reprogramming does not complete and the "!?" symbol displays as shown in Figure 23:

- Check battery voltage (12.0 – 15.5V).

- Ignition ON, engine OFF.

- External Bluetooth® devices are OFF.

- All electrical loads are OFF.

- **Select Retry and follow the on screen instructions.**

    NOTE: Retry may not go through on first attempt and can be selected more than once.
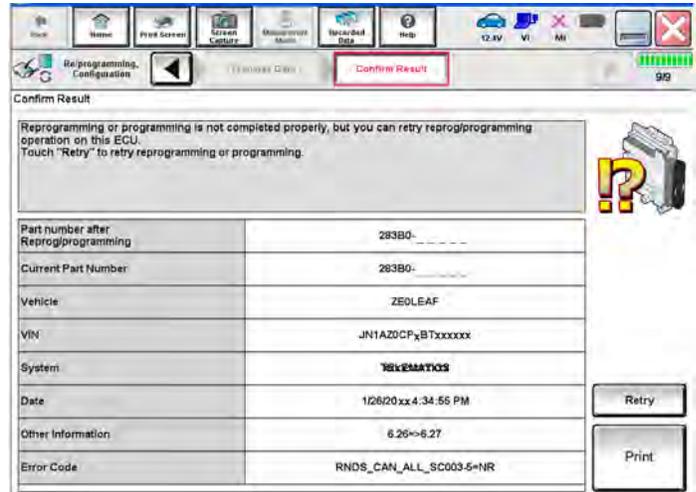
Figure 23

If reprogramming does <u>not</u> complete and the "X" symbol displays as shown in Figure 24:

- **Do not disconnect the plus VI or shut down C-III plus if reprogramming does not complete.**

- Check battery voltage (12.0 – 15.5V).

- CONSULT A/C adapter is plugged in.

- Ignition ON, engine 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.**
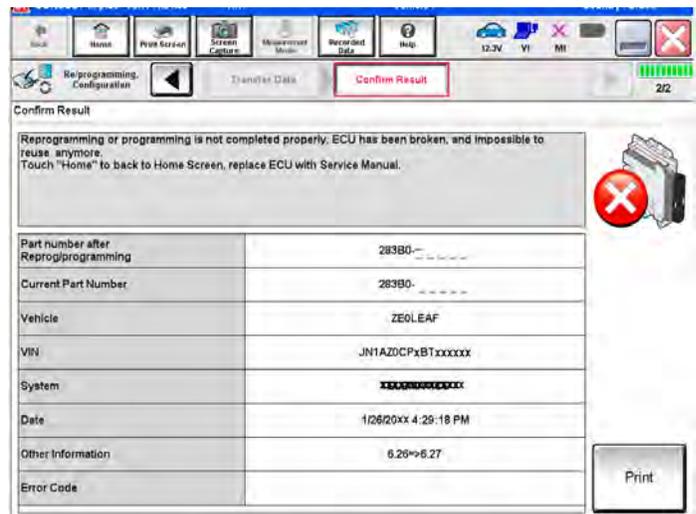
Figure 24

42. Confirm the Transmission Fluid temperature judgment is **OK**, then select **Next**.

- If the judgment is NG, drive the vehicle to warm the transmission until the judgment changes to OK.
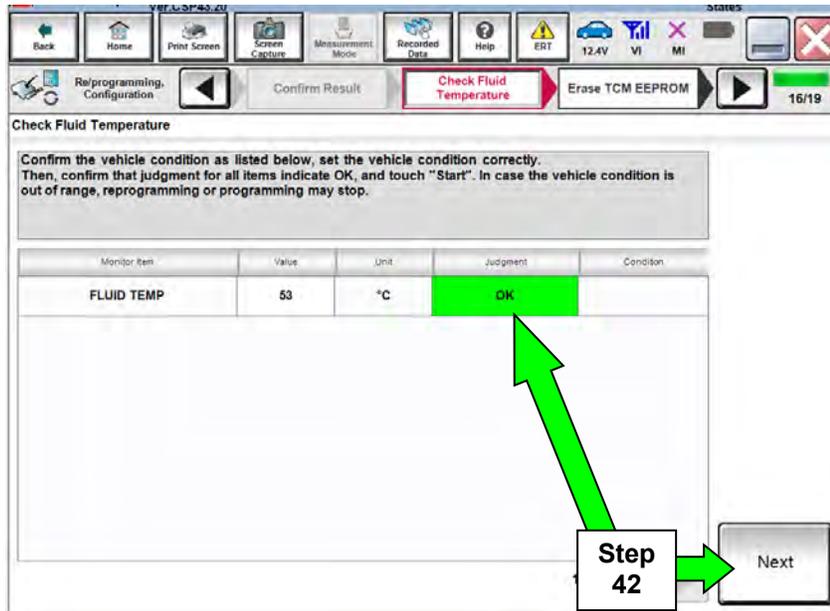
Figure 25

43. Follow the on-screen instructions; maintain the following conditions:

   a. Parking brake set.

   b. Ignition ON, with the engine OFF.

   c. Press the Brake.

   d. Press accelerator between ¼ and ½.

   e. Put shift selector in **R**.

44. Select Erase **DTC**.
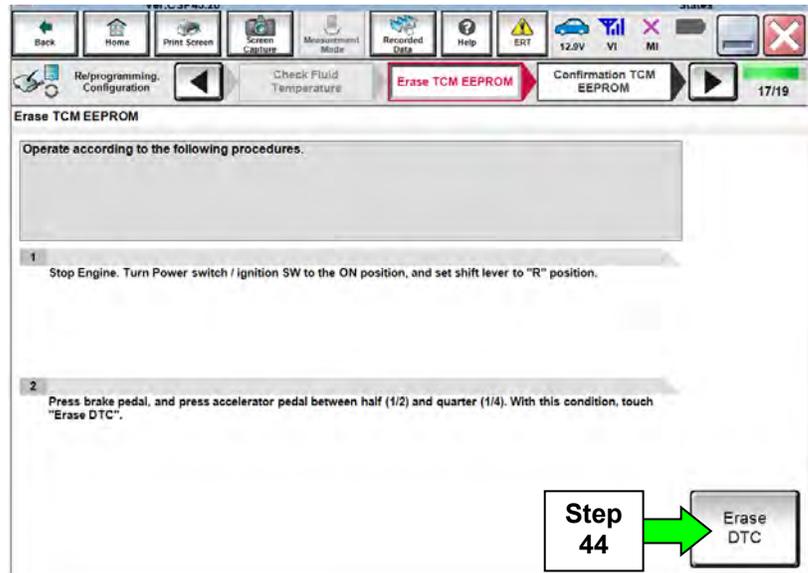
Figure 26

45. Follow the on-screen instructions; maintain the following conditions:

   a. Parking brake set.

   b. Ignition ON, with the engine OFF.

   c. Fully depress the accelerator.

   d. Put shift selector in **R**.

46. Select **Start**.

Figure 27

NTB17-041b
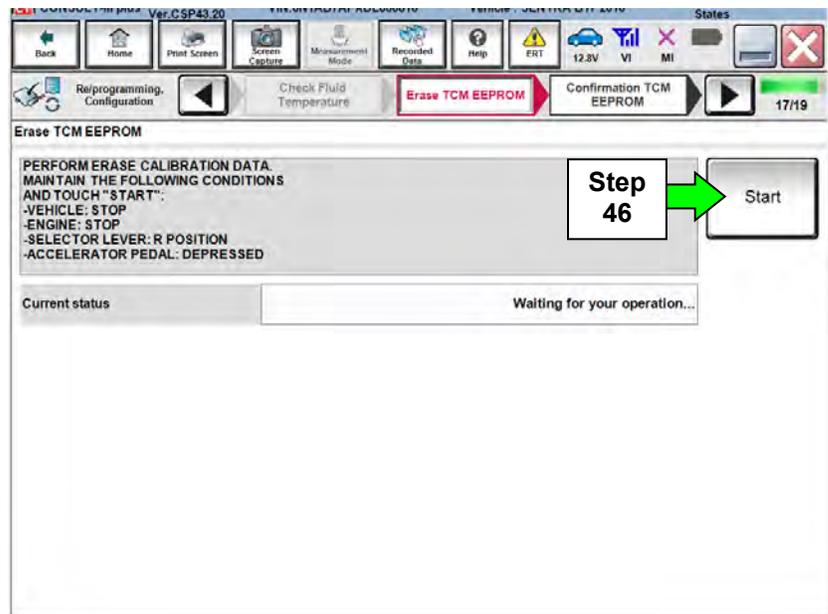
47. When <u>COMPLETED</u> is displayed, select **Next**.
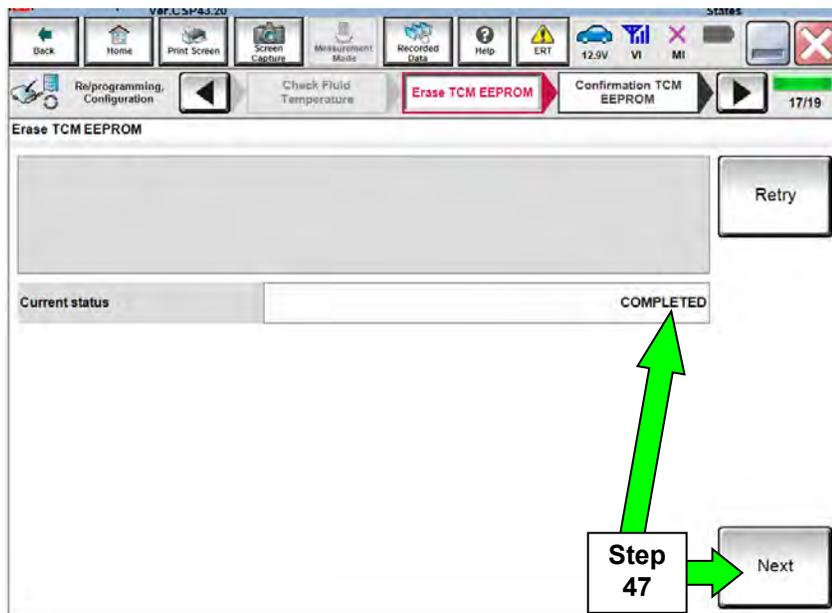
Figure 28

48. Operate the ignition per the on-screen instructions.
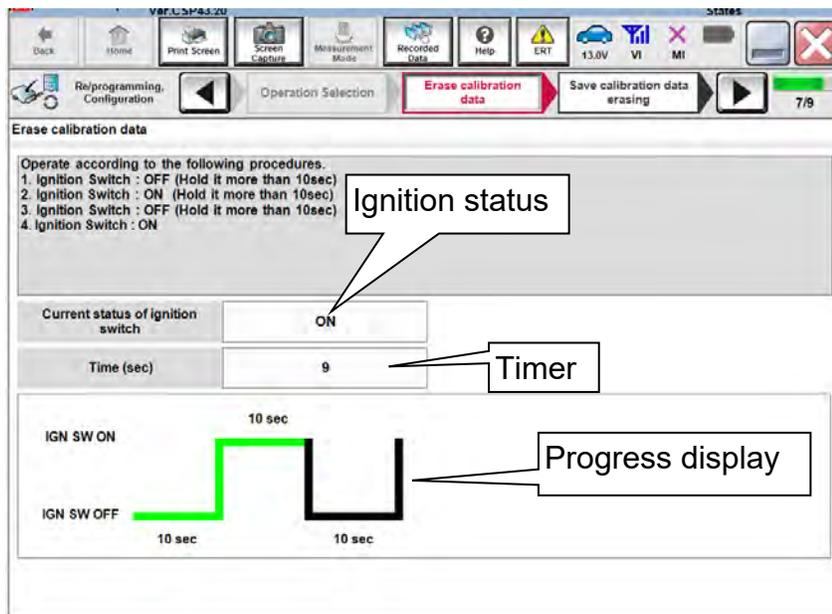
Figure 29

49. When <u>OK</u> is displayed, select **Next**.
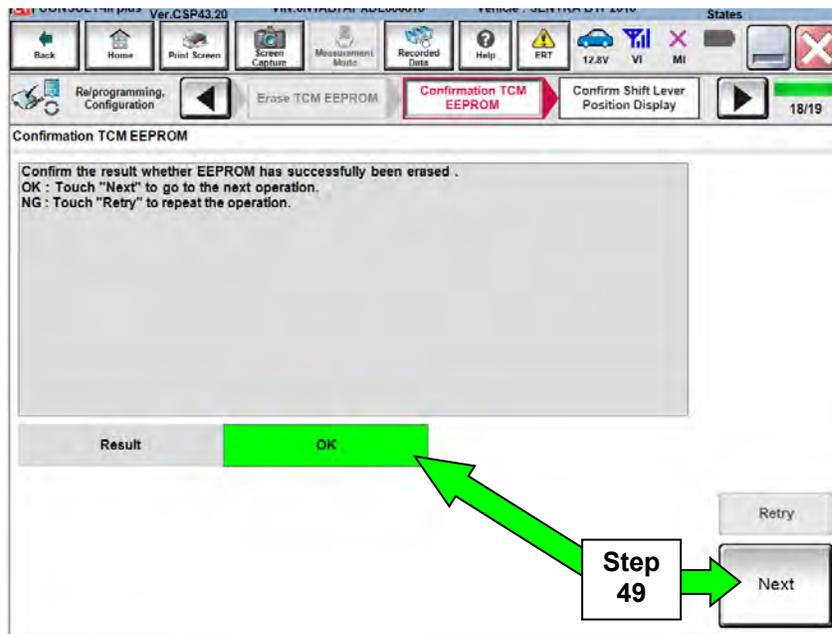
Figure 30

50. Operate the shift selector per the on-screen instructions.

    a. Move the shift selector to **P**, then move **P** > **R** > **N** > **D** > **P**.

    b. Confirm the center display meter indicates the correct selector position.

51. Select **Next**.

Figure 31

NTB17-041b
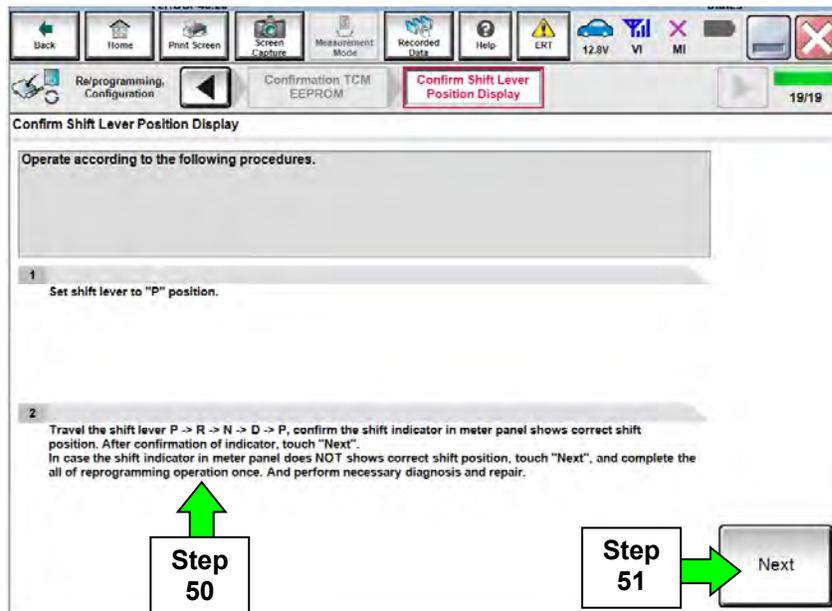
52. Erase all DTCs as follows:

    a. Turn the ignition OFF.

    b. Turn the ignition ON.

    c. Wait for DTC erase to complete.

53. Select **Next**.

Figure 32

54. Verify the before and after part numbers are different.

55. Print a copy of this screen (Figure 33) and attach it to the repair order.

56. Select **Confirm**.

Figure 33

NOTE: If you cannot print the above screen:

a. Select Screen Capture.
b. Name the file.
c. Save the file in My Documents.

- A copy of the screen is now saved in the CONSULT PC. It can be retrieved and printed at a later time.
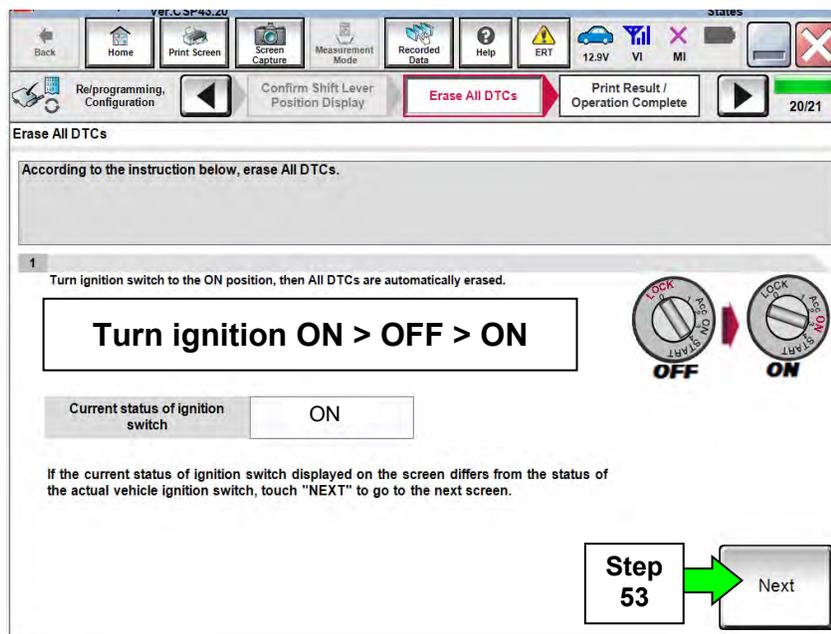
CONTROL VALVE REPLACEMENT (CONSULT-III plus Work Support)

57. Navigate C-III plus to the screen shown in Figure 34.

- **Diagnosis (All Systems) > TRANSMISSION > Work support**

58. Select **CONTROL VALVE REPLACEMENT**.

59. Select **Start**.
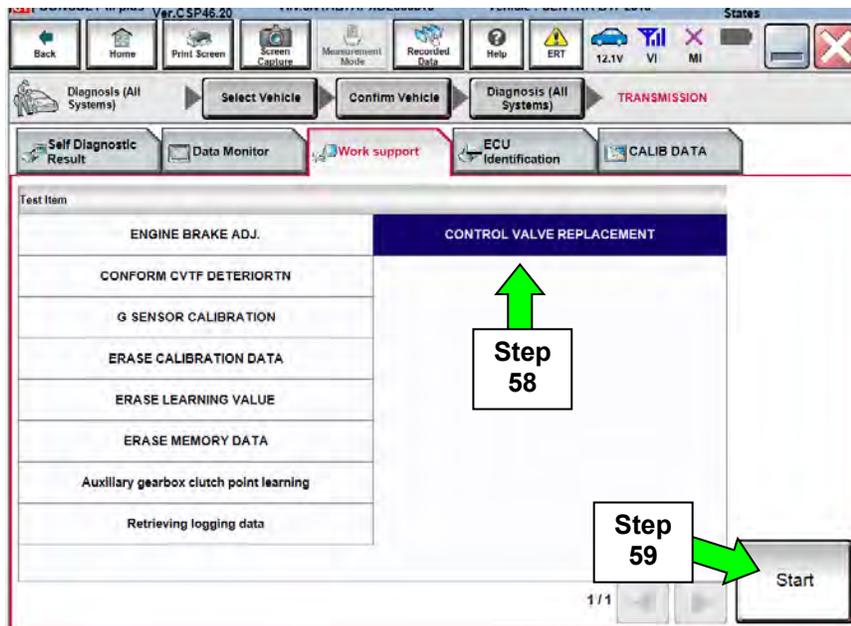
Figure 34

60. Follow the on-screen instructions; maintain the following conditions:

    a. Ignition ON, with the engine OFF.
    b. Press the Brake.
    c. Press accelerator between ¼ and ½.
    d. Put shift selector in **R**.

61. Select **Start**.
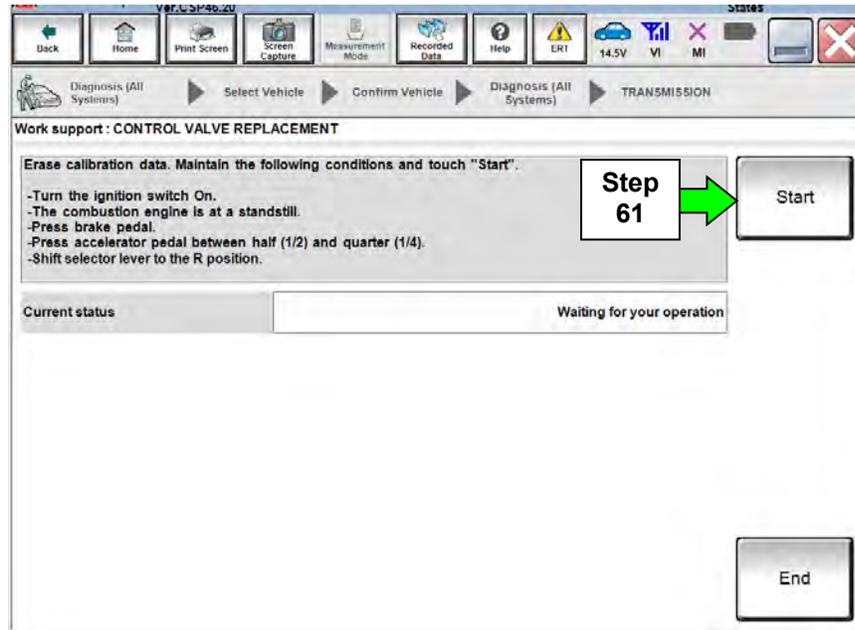
Figure 35

62. Release the accelerator and brake (shift selector remains in **R**).

63. Turn the ignition **OFF**, then wait 10 seconds.
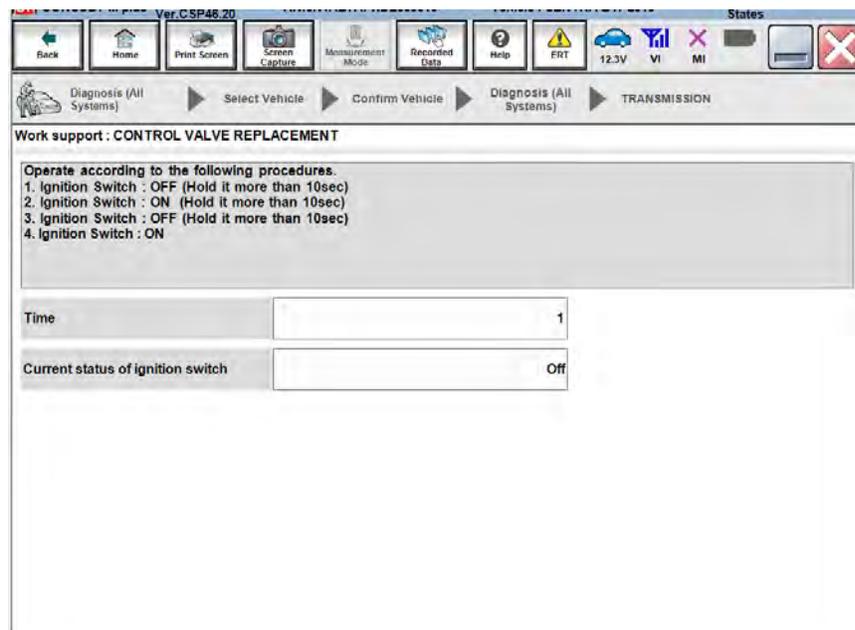
Figure 36

64. Turn the ignition **ON**, then wait 10 seconds.
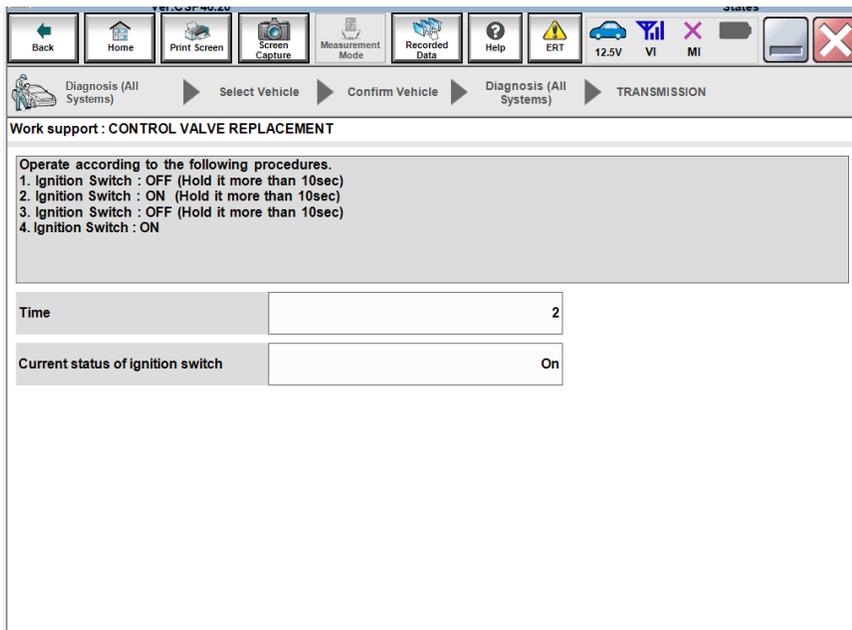
Figure 37

65. Turn the ignition **OFF**, then wait 10 seconds.

Figure 38

NTB17-041b
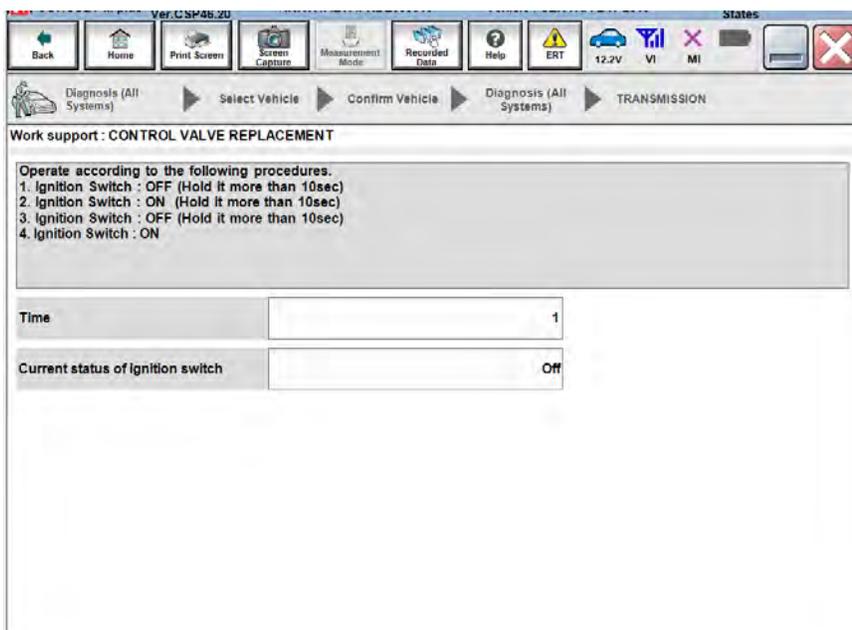
66. Turn the ignition **ON**.

67. Move shift selector to **P**.
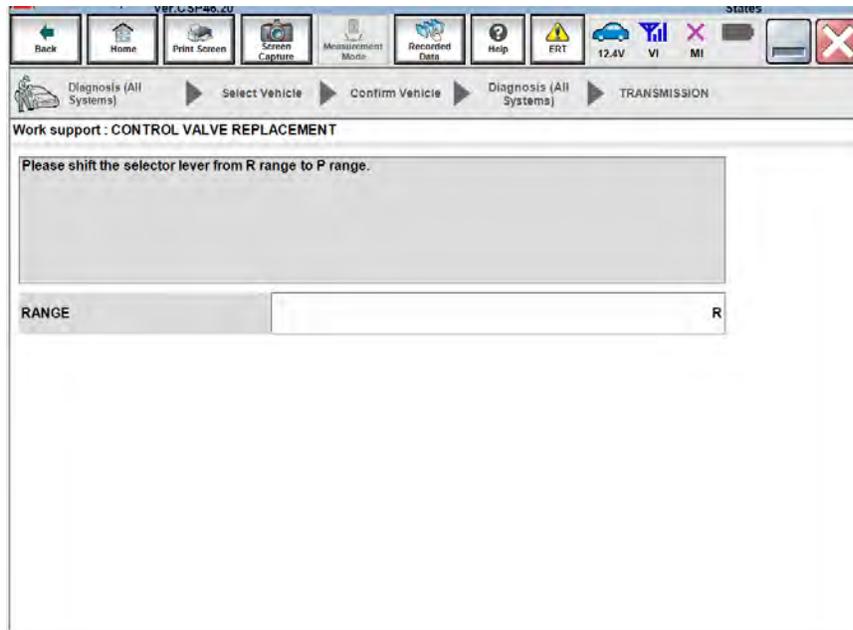
Figure 39

68. When <u>COMPLETED</u> is displayed, select **End**.
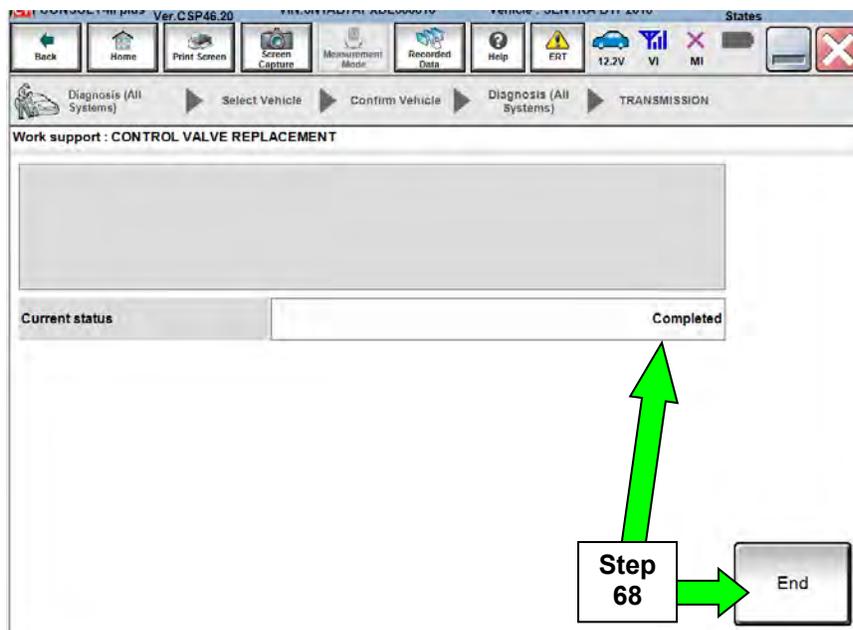
Figure 40

69. If the pop-up notification shown in Figure 41 displays, <u>TCM Programming is not correct for the installed Control Valve</u>.

Select **OK**, then perform **TCM Reprogramming**, starting on page 2, <u>ONLY</u> if the notification shown below is displayed.
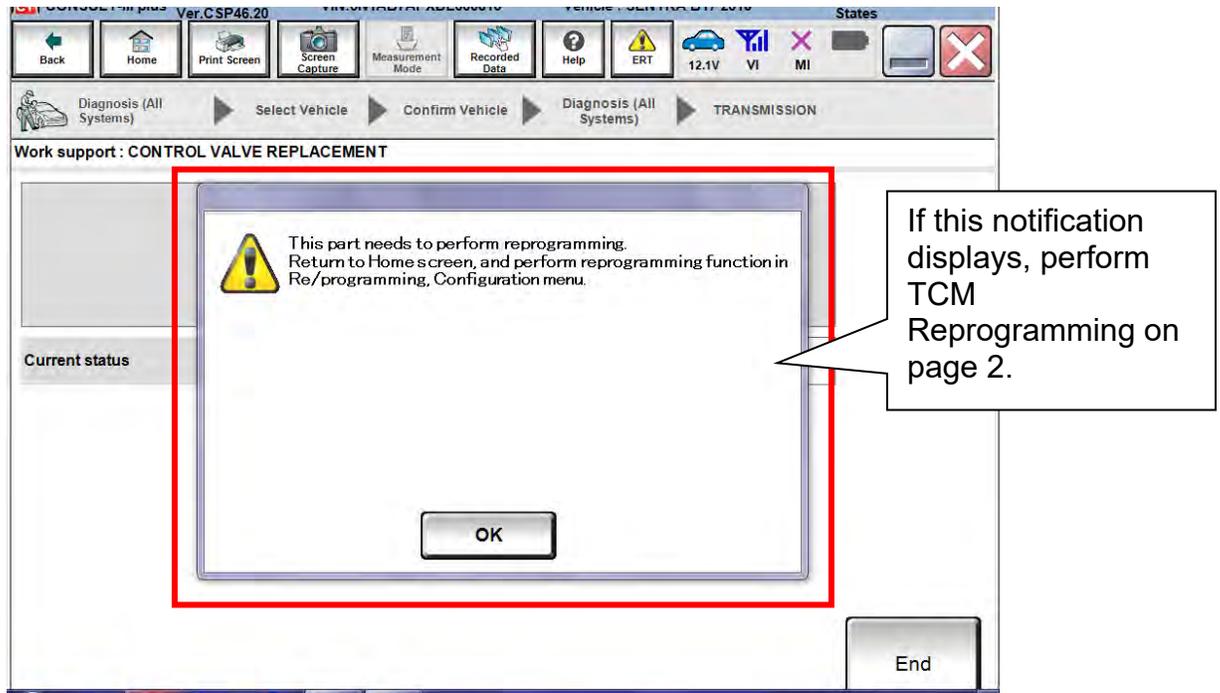
Figure 41

ERASE LEARNING VALUE

70. Navigate C-III plus to the screen shown in Figure 42.

- **Diagnosis (All Systems) > TRANSMISSION > Work support**

71. Select **ERASE LEARNING VALUE**.

72. Select **Start**.

Figure 42

NTB17-041b
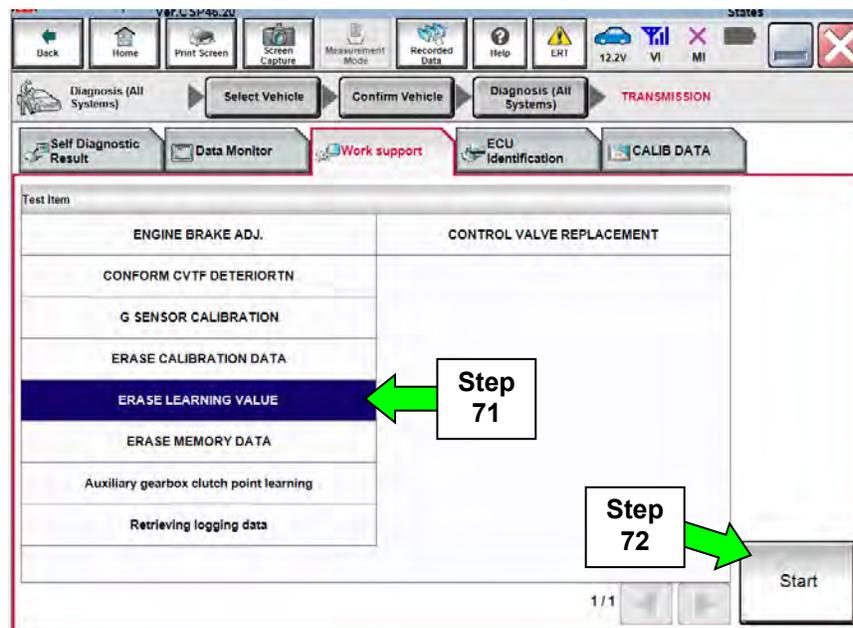
73. Follow the on-screen instructions; maintain the following conditions:

    a. Parking brake set.
    b. Ignition ON, with the engine OFF.
    c. Fully depress the accelerator.
    d. Put shift selector in **R**.

74. Select **Start**.
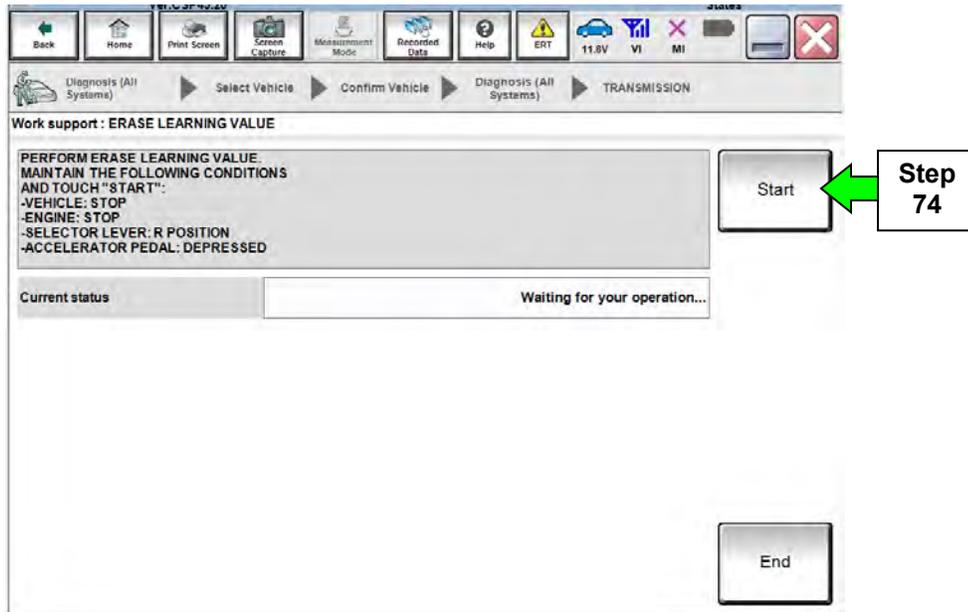
Figure 43

75. When <u>COMPLETED</u> is displayed, select **End**.

Figure 44

NTB17-041b
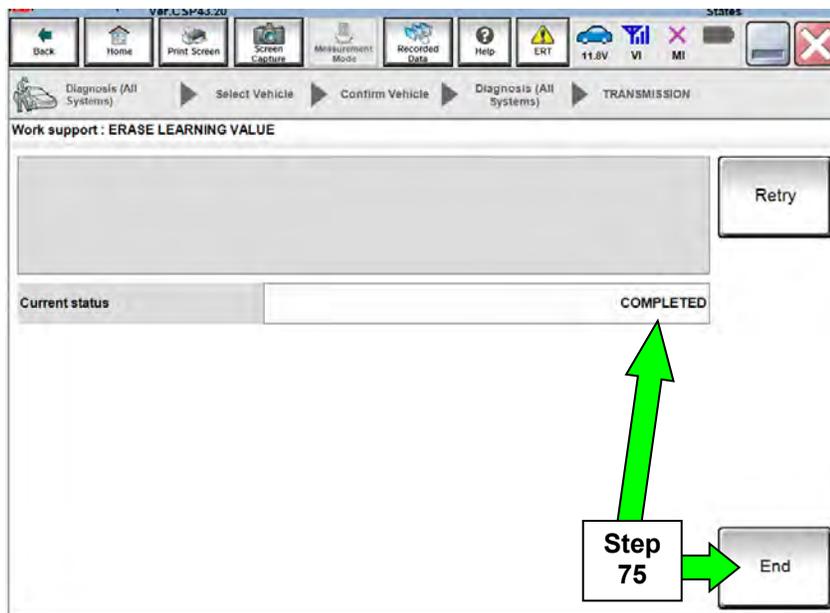
CONFORM CVTF DETERIORTN

76. Navigate C-III plus to the screen shown in Figure 45.

   - **Diagnosis (All Systems) > TRANSMISSION > Work support**

77. Select **CONFORM CVTF DETERIORTN**.

78. Select **Start**.
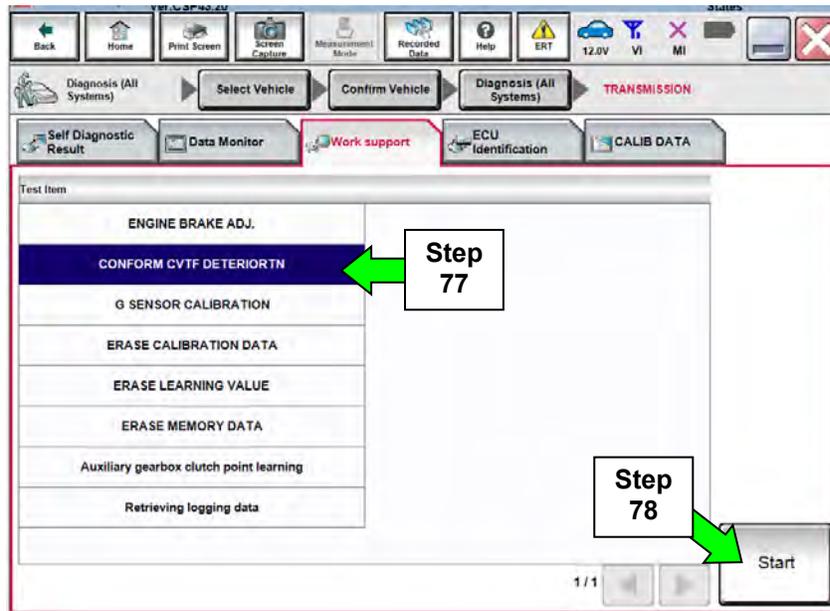
Figure 45

79. Select **Start**.
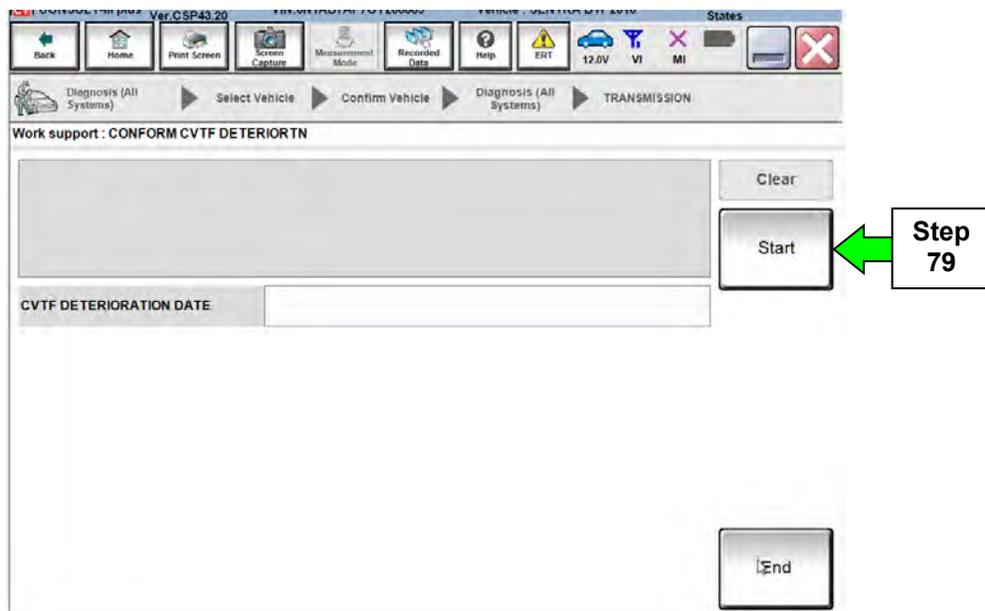
Figure 46

80. Select **Clear**.
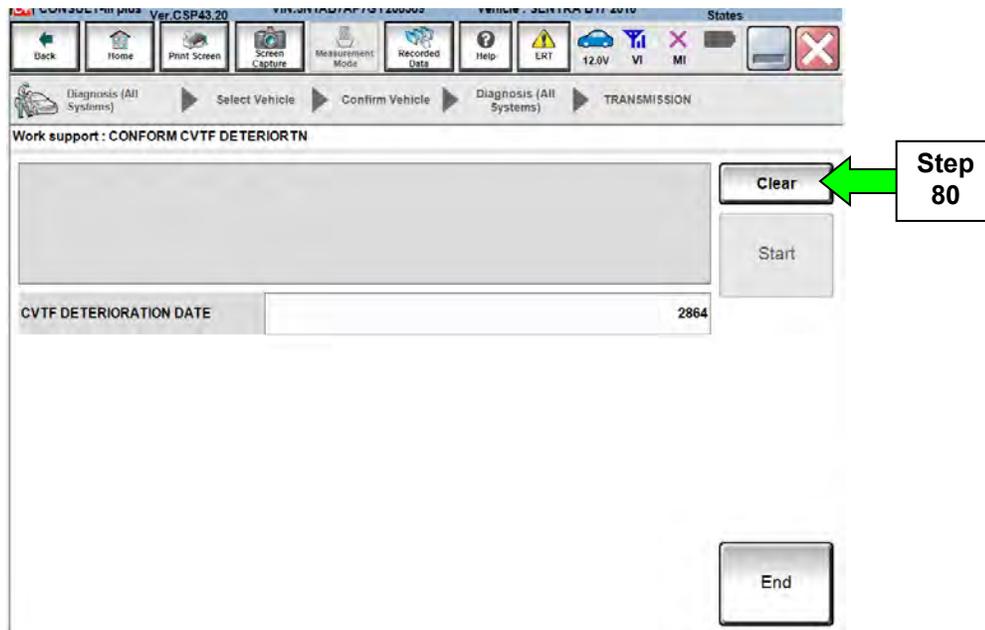
Figure 47

81. Select **Yes**.
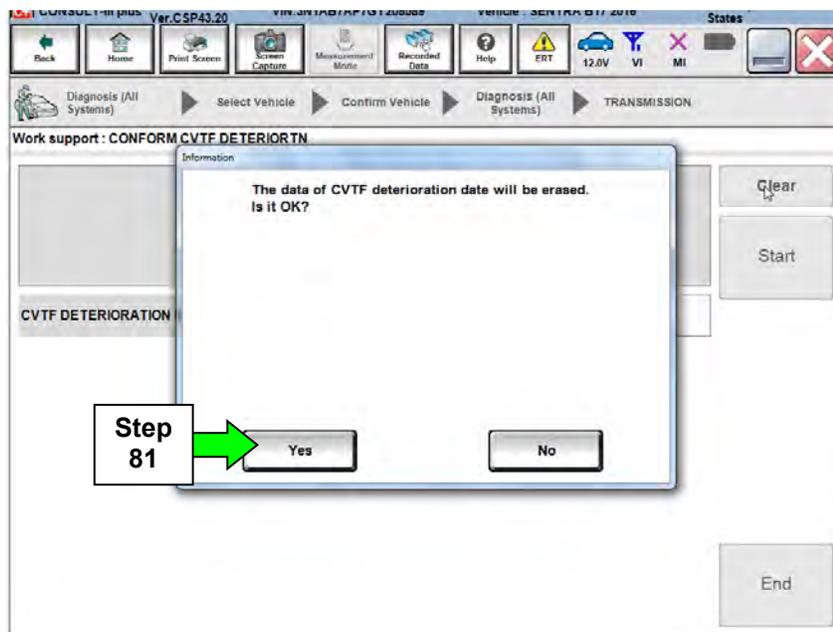
Figure 48

82. When **CVFT DETERIORATION DATE** changes to "0", select **End**.

Figure 49

NTB17-041b
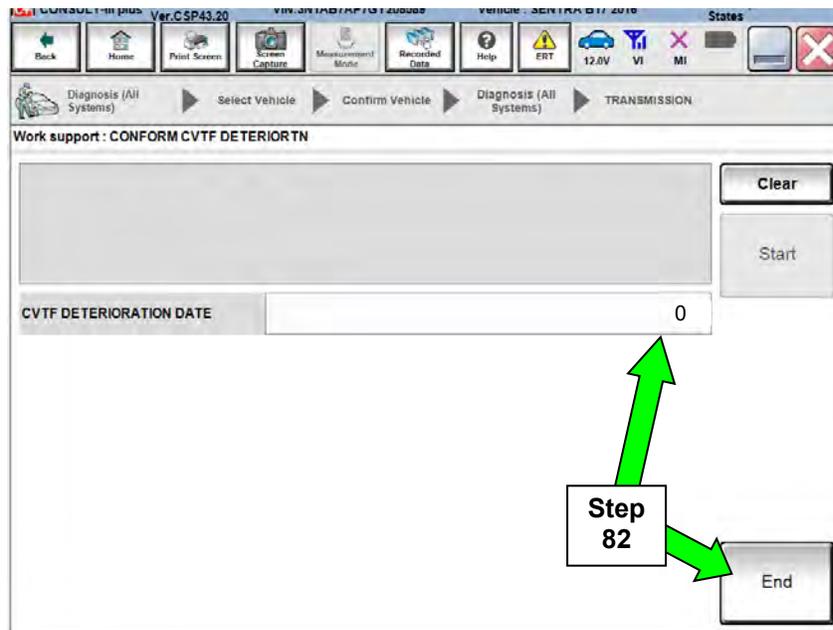
AUXILIARY GEARBOX CLUTCH POINT LEARNING

NOTE: Auxiliary gearbox clutch point learning will need to be completed twice.

83. Start the engine.

84. Set the parking brake, turn OFF the A/C, and then bring the engine to normal operating temperature range with CVT fluid temperature over 122°F (50°C).

85. Select **Auxiliary gearbox clutch point learning**, and then **Start**.

    Or

    - If this feature is not available in the vehicle that is being repaired, skip to **Manual Auxiliary gearbox clutch point learning on** page 35.
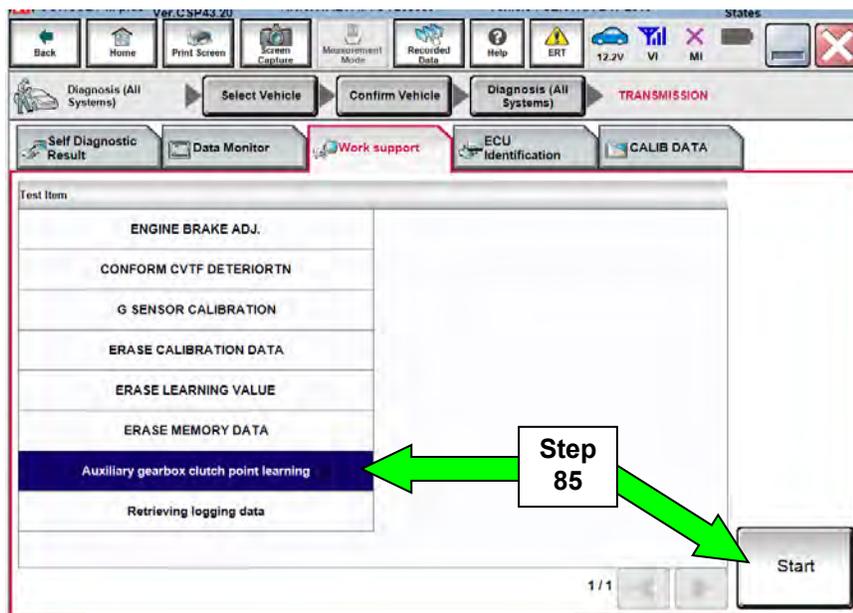
Figure 50

86. Follow the on screen instructions to meet all parameters displayed in Figure 51, and then select **Start**.
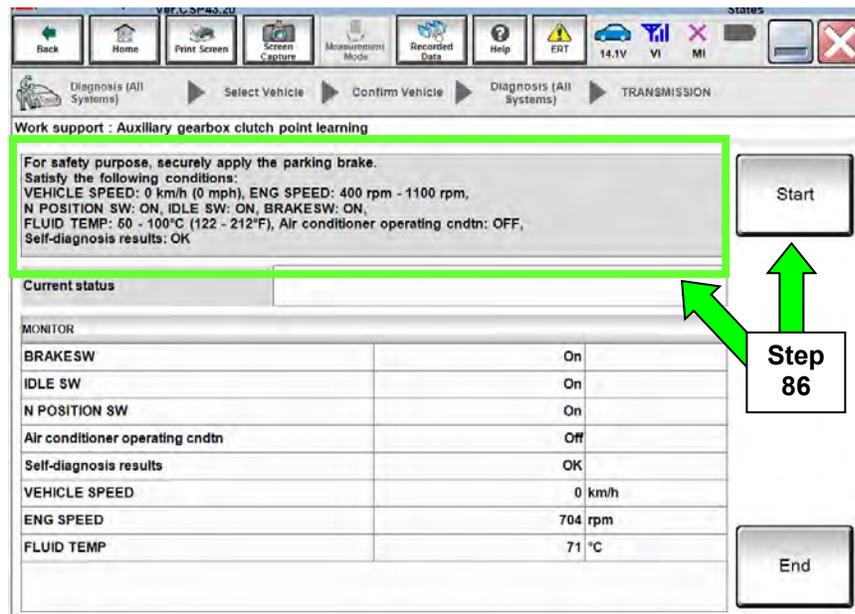
Figure 51

87. With the brake pedal still applied, move the shift selector to **D**.

- Figure 53 on the next page will display after moving the shift selector to **D**.

  NOTE: The Current status will show EXECUTING, but until the shift selector is moved to **D**, Auxiliary gearbox clutch point learning will not complete.
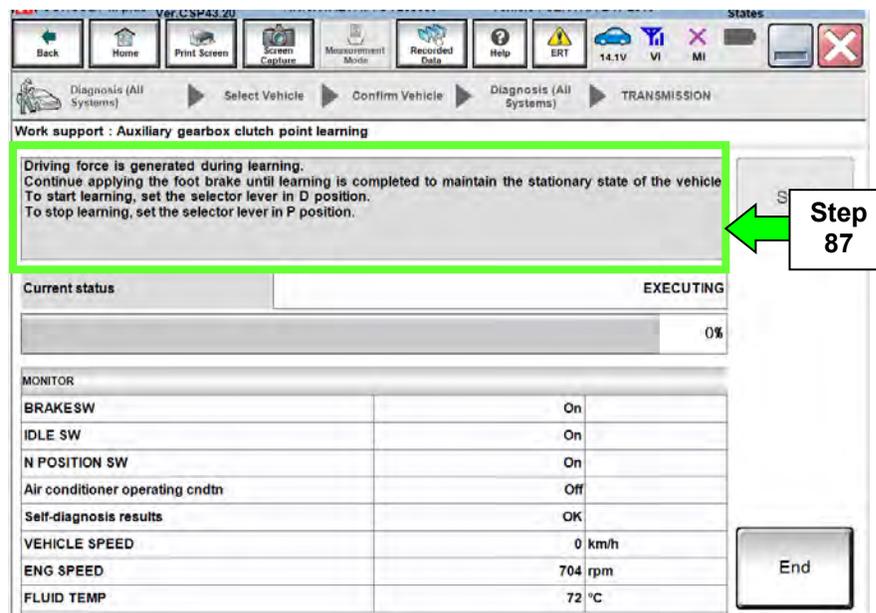
Figure 52

88. Continue to depress the brake pedal until the Current status shows "Completed" as shown in Figure 54.

NOTE: This may take several minutes to complete.
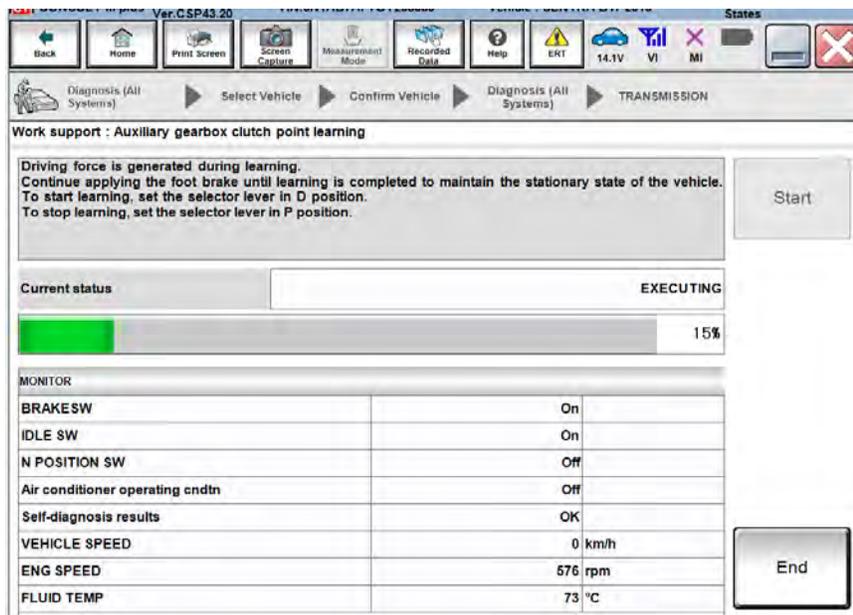
Figure 53

89. Select End.

90. Move shift selector to **P**, turn ignition OFF, and release the brake pedal.
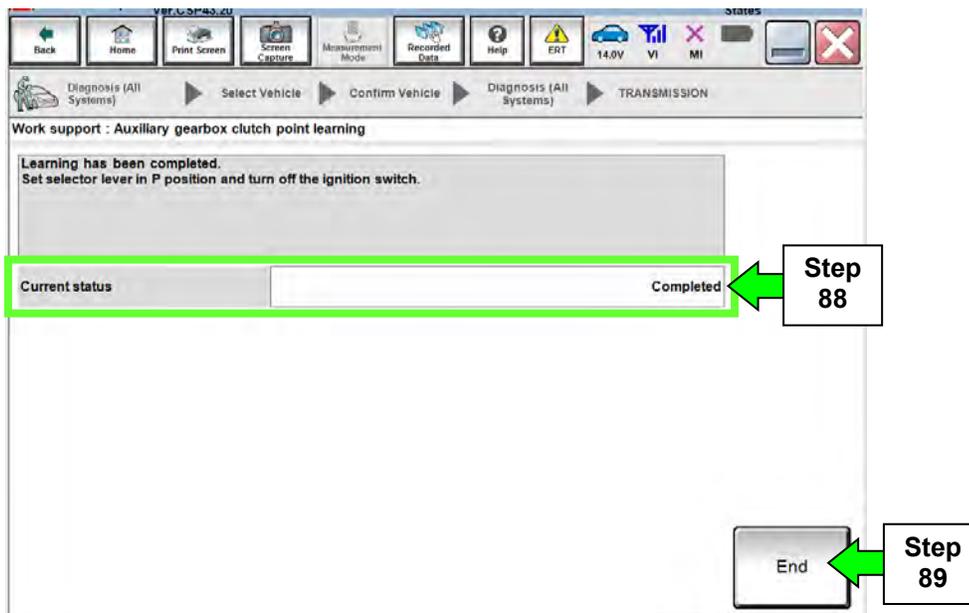
Figure 54

91. Perform step 83 to step 90 one additional time (Total: Two times).

92. Turn OFF C-III plus.

93. Disconnect C-III plus from the vehicle.

94. Verify the CVT operates normally and no abnormal noises are heard during a test drive.

95. Erase DTCs (this is in addition to erasing the DTCs during TCM reprogramming).

Procedure complete.

MANUAL AUXILIARY GEARBOX CLUTCH POINT LEARNING

CAUTION: If clutch touch point learning is not performed, you may feel shift shock when the auxiliary transmission shifts.

NOTE: This manual procedure is only needed if the auto procedure is not available in C-III plus.

a. Start the engine and warm up the CVT fluid to 50°C (122°F).

   NOTE: Confirm the CVT fluid temperature by "FLUID TEMP" in "Data Monitor".

b. Turn the air conditioner OFF.

c. Move the shift selector to **P**, turn the ignition OFF, and then wait 5 seconds.

d. Start the engine and allow it to idle for 5 seconds.

e. Turn the ignition OFF and then wait 30 seconds.

f. Perform Step "e" to Step "f" two more times (Total: Three times).

g. Start the engine.

h. Allow engine to idle for 30 seconds.

i. Move the shift selector to **D**.

j. Accelerate the vehicle from 0 km/h (0 MPH) to 65 km/h (40 MPH) at low throttle (0.5/8 – 1/8).

k. Decelerate the vehicle to 30 km/h (18 MPH) or less without using brakes.

l. Stop the vehicle and move the shift selector to **P**.

m. Turn the ignition OFF and wait 5 seconds or more.

n. Restart the engine.

o. Perform Step "j" to Step "o" four times (Total: Five times).

p. Move the shift selector to **D**.

q. Accelerate the vehicle from 0 km/h (0 MPH) to 45 km/h (28 MPH) at low throttle (0.5/8 – 1/8).

r. Stop the vehicle and move the shift selector to **P**.

s. Turn the ignition OFF for 5 seconds or more and then restart the engine.

t. Perform Steps "q" to Step "t" four times (Total: Five times).

u. Drive the vehicle and check that no shock occurs while shifting gears.

NTB17-041b

AMENDMENT HISTORY

PUBLISHED DATE	REFERENCE	DESCRIPTION
April 13, 2017	NTB17-041	Original bulletin published.
January 5, 2018	NTB17-041a	Changes made throughout.
December 18, 2018	NTB17-041b	APPLIED VEHICLES and SERVICE INFORMATION sections revised. CONTROL VALVE REPLACEMENT and ERASE LEARNING VALUE procedures added. ERASE MEMORY DATA procedure removed. Statement added to page 2.