Technical Bulletin



SERVICE BULLETIN

 Classification:
 Reference:
 Date:

 AT16-004c
 NTB16-068c
 June 29, 2017

2016-2017 TITAN XD; TRANSMISSION SHIFT QUALITY ISSUES

This bulletin has been amended. Changes have been made throughout.

Discard previous versions of this bulletin.

APPLIED VEHICLES: 2016-2017 Titan XD (A61) **APPLIED ENGINE:** Cummins 5.0L V8 Diesel

APPLIED TRANSMISSION: 6AT: RE6R01A

IF YOU CONFIRM

Any of the following issues:

- When cold (transmission fluid below 140°F [60°C]), there is an engine RPM rise (200 to 500 RPM flare) during the 1-2 shift, 2-3 shift, and/or the 3-4 shift.
- While slowing to a stop, a 2-1 down shift bump is felt just before stopping.
- Harsh up-shifts.
- Shift shock when lifting your foot from the accelerator.
- Gear hunting while driving in city traffic.

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.

ACTION

- 1. Compare the vehicle's current <u>TCM</u> part number to the part number listed in **Table A** on page 7.
 - If the current <u>TCM</u> part number matches a part number listed in **Table A**, follow the instructions in **Table A**.
- 2. Save computer data with CONSULT-III plus (C-III plus).
- 3. Compare the vehicle's current **ECM** part number to the part number listed in **Table B** on page 30.
 - If the current **ECM** part number matches a part number listed in **Table B**, reprogram the **ECM**.
 - Write saved data.

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 <u>entire</u> **SERVICE PROCEDURE** as it contains information that is essential to successfully completing this repair.

SERVICE PROCEDURE

Reprogram the TCM

NOTE:

- Most instructions for reprogramming with CONSULT-III plus (C-III plus) are displayed on the CONSULT PC screen.
- If you are not familiar with the reprogramming procedure, *click here*. This will link you to the "CONSULT- III plus (C-III plus) Reprogramming" general procedure.
- For the Titan XD Diesel, the GR8 set to ECM power supply mode can be attached to either 12 volt battery.

CAUTION:

- Connect the GR8 to one of the 12V batteries and set to ECM power supply mode.
 If the vehicle battery voltage goes below 12.0V or above 15.5V during
 reprogramming, the TCM may be damaged.
- Be sure to turn OFF all vehicle electrical loads.
 If a vehicle electrical load remains ON, the TCM 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 TCM may be damaged.
- Turn OFF all external Bluetooth[®] devices (e.g., cell phones, printers, etc.) within
 range of the CONSULT PC and the plus VI. If Bluetooth[®] signal waves are within
 range of the CONSULT PC during reprogramming, reprogramming may be
 interrupted and the TCM may be damaged.
- 1. Connect the plus VI to the vehicle and open/start CONSULT-III plus.
- 2 Confirm the ignition is ON, with engine OFF.
- 3. Confirm the plus VI is recognized.
 - The **Serial No.** will display when the plus VI is recognized.
- 4. Select Re/programming, Configuration.

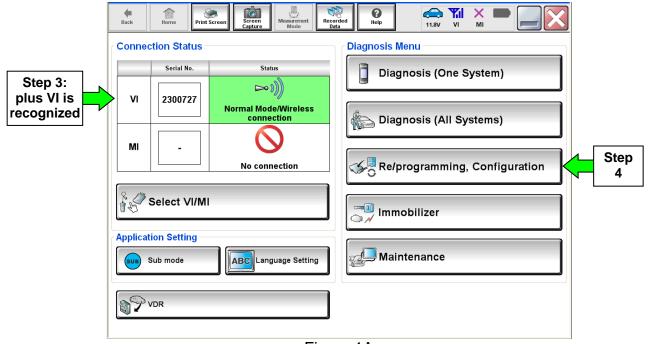


Figure 1A

- 5. Use arrows (if needed) to view and read all precautions.
- 6. Check the box confirming the precautions have been read.
- 7. Select Next.

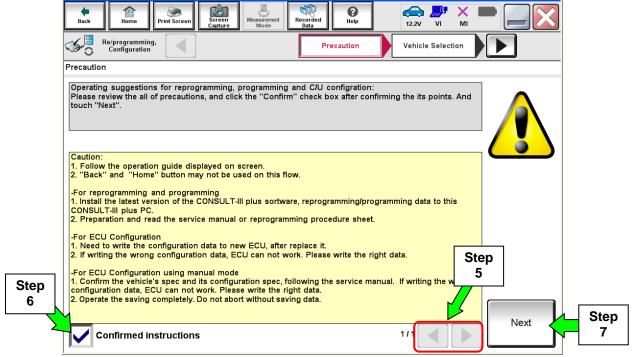


Figure 2A

- 8. Select Nissan, Vehicle Name, and then the correct Model Year.
 - If the screen in Figure 3A does not display, skip to step 9.

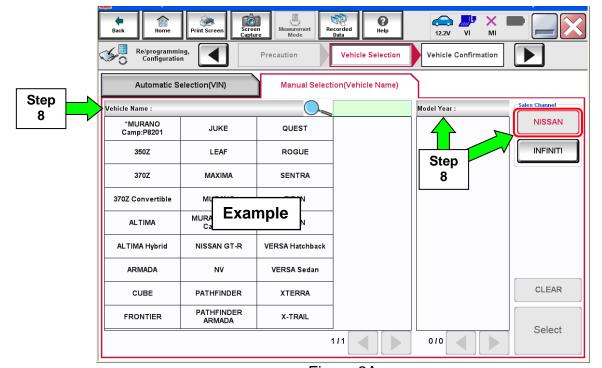


Figure 3A

9. Make sure VIN or Chassis # matches the vehicle VIN.

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

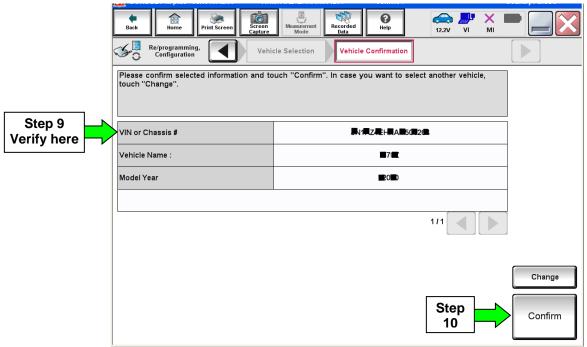


Figure 4A

11. Select Confirm.

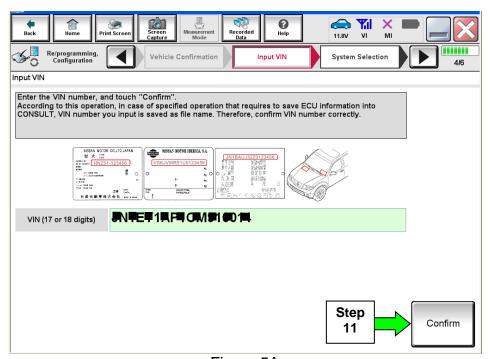


Figure 5A

12. Select **TRANSMISSION** on page 2.

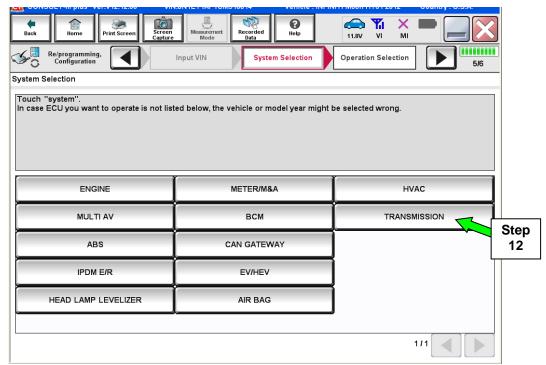


Figure 6A

13. Select Reprogramming.

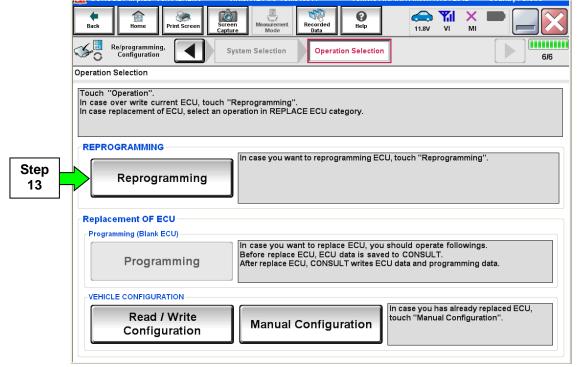


Figure 7A

- 14. When you get to the screen shown in Figure 8A, confirm TCM reprogramming applies as follows.
 - a. Find the <u>TCM</u> **Part Number** and write it on the repair order.

NOTE: This is the <u>current TCM</u> Part Number (P/N).

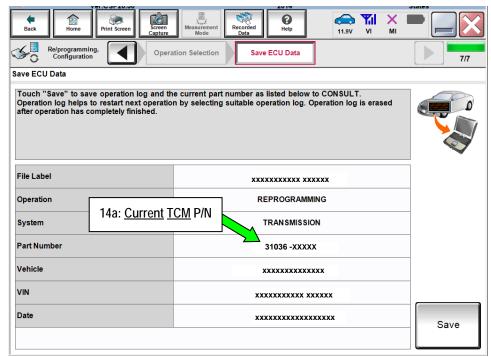


Figure 8A

- b. Compare the P/N you wrote down to the numbers in the **Current <u>TCM</u> Part Number** column in **Table A** below.
 - If there is a match, follow the instructions in Table A.
 - If there is <u>not a match</u>, <u>TCM</u> reprogramming does not apply. Determine if **ECM** reprogramming applies (go to page 28).

Table A

Current TCM Part Number: 31036 -	Instructions		
EZ02B, EZ02D, EZ03B, EZ03D	 Complete <u>TCM</u> Reprogramming. Perform Transmission Calibration. Determine if ECM reprogramming applies (go to page 28). 		
EZ04B, EZ04D	 Complete <u>TCM</u> Reprogramming. Determine if ECM reprogramming applies (go to page 28). 		

15. Select Save.

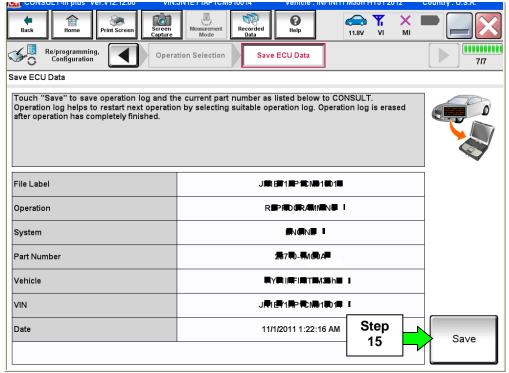


Figure 9A

- 16. Use arrows (if needed) to view and read all precautions.
- 17. Check the box confirming the precautions have been read.
- 18. Select Next.

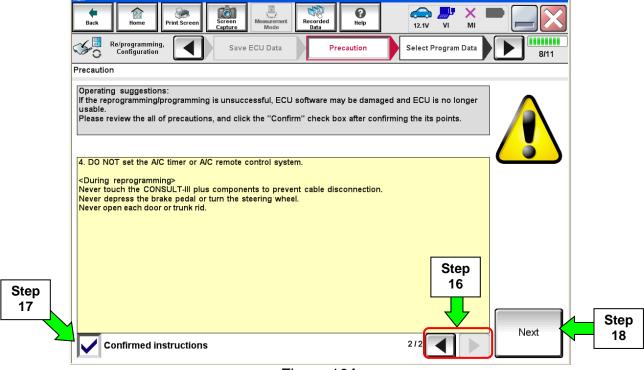


Figure 10A

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

20. Select Next.

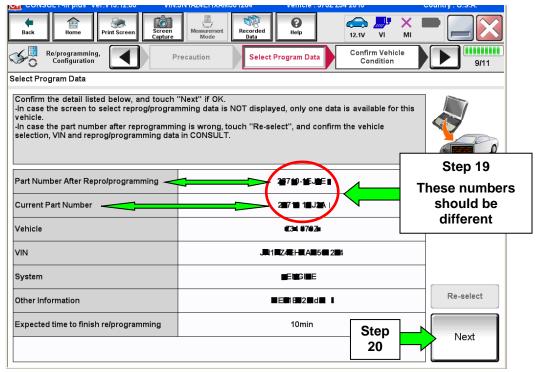


Figure 11A

NOTE:

- In some cases, more than one new P/N for reprogramming is available.
 - If more than one new P/N is available, the screen in Figure 12A displays.
 - 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 means there is no reprogramming available for this vehicle. Close C-III plus and refer back to ASIST for further diagnosis.

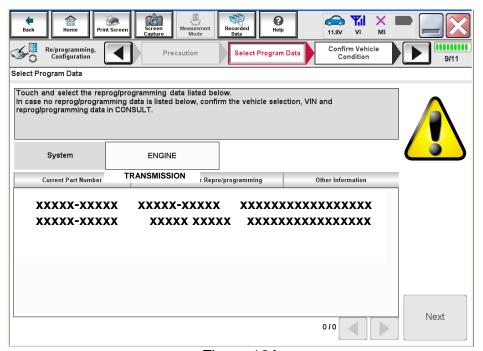


Figure 12A

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

22. Select Next.

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

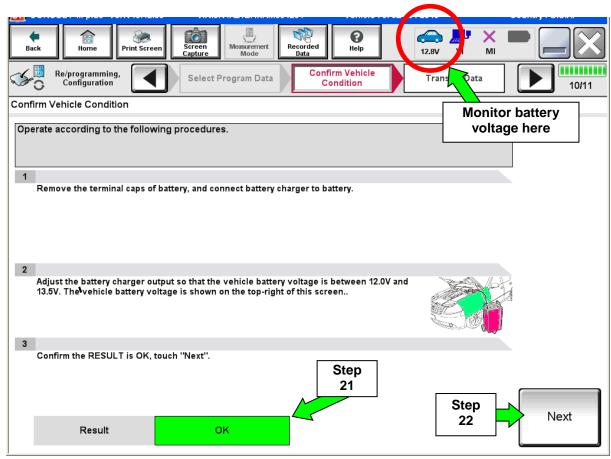


Figure 13A

23. Change the ignition to **ACC mode**.

Make sure the IGN status judgement changes to OK. See Figure 15A.

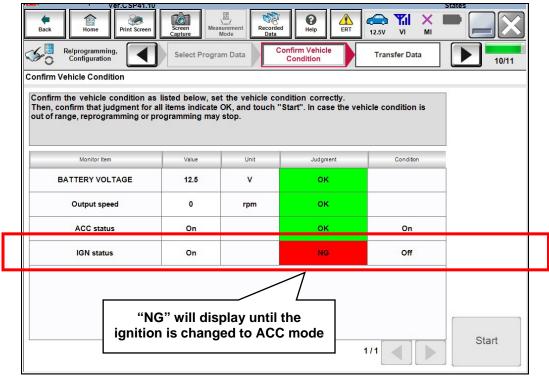


Figure 14A

NOTE: In the next step, the reprogramming process will begin when **Start** is selected.

24. Select Start.

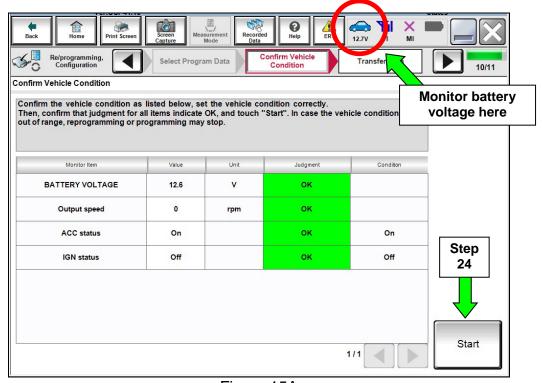


Figure 15A

25. Wait for both progress bars to complete.

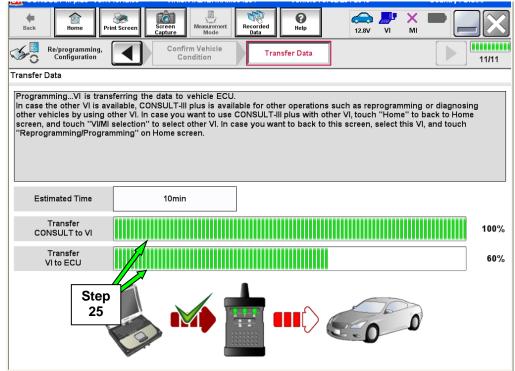
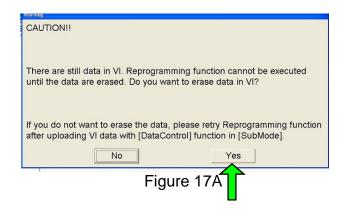


Figure 16A

NOTE: If the message shown in Figure 17A appears, there is data stored in the plus VI. Select "**Yes**" to proceed with reprogramming.



26. When the screen in Figure 18A displays, reprogramming is complete.

NOTE: If the screen in Figure 18A does not display (indicating that reprogramming did not complete), refer to **TCM Recovery** on the next page.

- 27. Disconnect the GR8 (battery charger) from the vehicle.
- 28. Select Next.

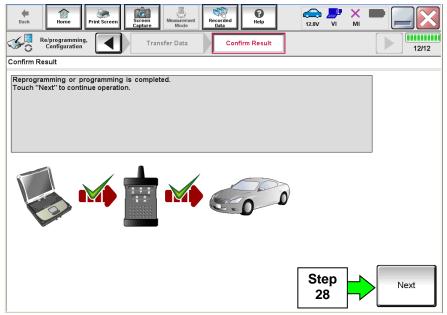


Figure 18A

29. Follow the on-screen instructions and change the ignition to **ON mode**.

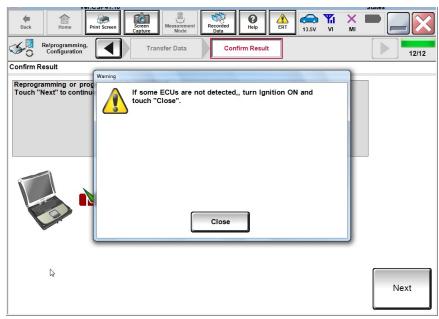


Figure 19A

NOTE:

- In the next step (page 16), you will perform DTC erase.
- This operation is required before C-III plus will provide the final reprogramming confirmation report.

TCM Recovery

<u>Do not disconnect the plus VI or shut down C-III plus if reprogramming does not complete.</u>

If reprogramming does <u>not</u> complete and the "!?" icon displays as shown in Figure 20A:

- Check battery voltage (12.0 15.5 V).
- Ignition is ON, engine OFF.
- External Bluetooth® devices are OFF.
- All electrical loads are OFF.
- Select <u>retry</u> and follow the on screen instructions.
- "Retry" may not go through on first attempt and can be selected more than once.

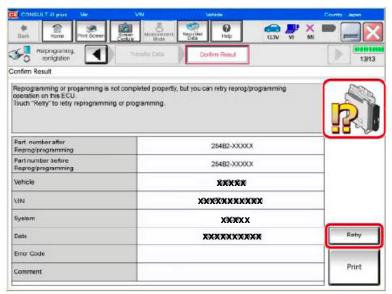


Figure 20A

If reprogramming does <u>not</u> complete and the "X" icon displays as shown in Figure 21A:

- Check battery voltage (12.0 - 15.5 V).
- CONSULT A/C adapter is plugged in.
- Ignition is ON, engine OFF.
- Transmission is in Park.
- All C-III plus / VI cables are securely connected.
- All C-III plus updates are installed.
- Select <u>Home</u>, and restart the reprogram procedure from the beginning.

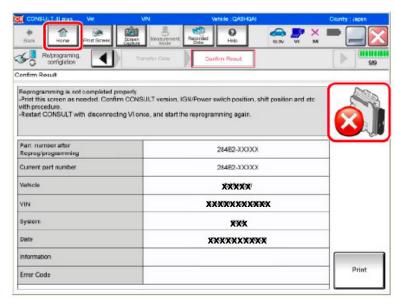


Figure 21A

- 30. Follow the on-screen instructions to Erase DTCs.
- 31. When the entire reprogramming process is complete, the screen in Figure 22A will display.
- 32. Verify the before and after part numbers are different.
- 33. Print a copy of this screen (Figure 22A) and attach it to the repair order for warranty documentation.
- 34. Select Confirm.

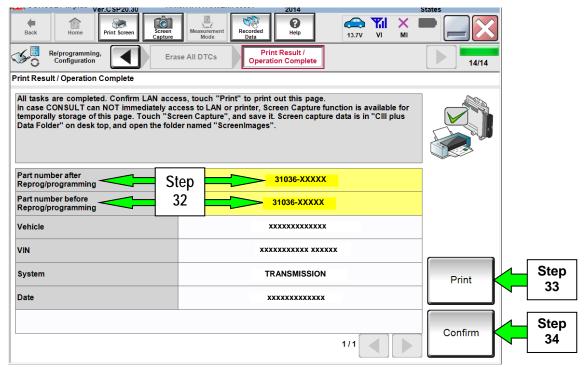


Figure 22A

Continue to the next page.

Transmission Calibration

8. Start CONSULT-III plus (C-III plus).

NC	TE: Before continuing, refer to page 7 to confirm <u>Transmission Calibration</u> is required.
1.	 Make sure the transmission is warm. It may be helpful to take the vehicle for a drive (approximately 10 minutes) to warm the transmission.
2.	 Confirm the transmission fluid level is correct. Follow the procedure for Checking the AT Fluid Level in the Electronic Service Manual (ESM), section TM-Transaxle & Transmission.
3.	Set the parking brake.
4.	Chock the wheels.
5.	Connect the CONSULT PC to the vehicle with the plus VI.
6.	Start the engine.
7.	Turn the A/C system OFF.

9. When the plus VI is recognized, select Diagnosis (One System).

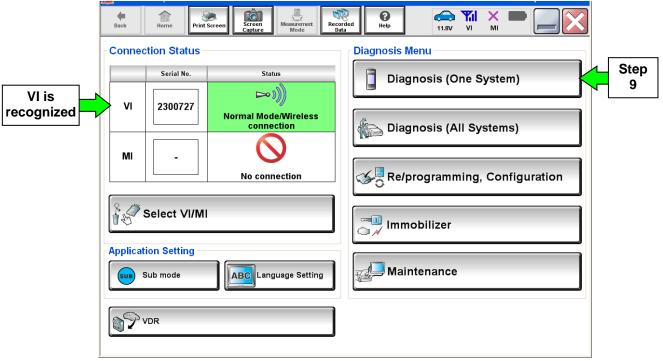


Figure 1B

- 10. Navigate C-III plus to **Transmission** > **Work support** (see Figure 2B).
- 11. Select Transmission adjustment.
- 12. Select Start.

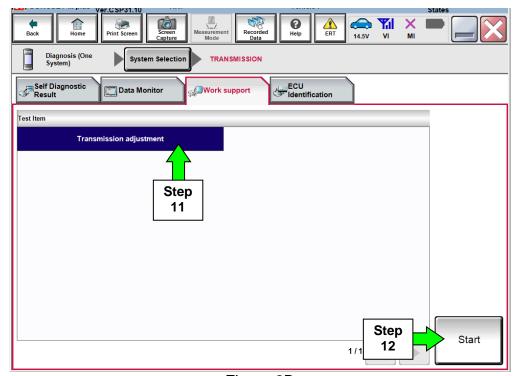
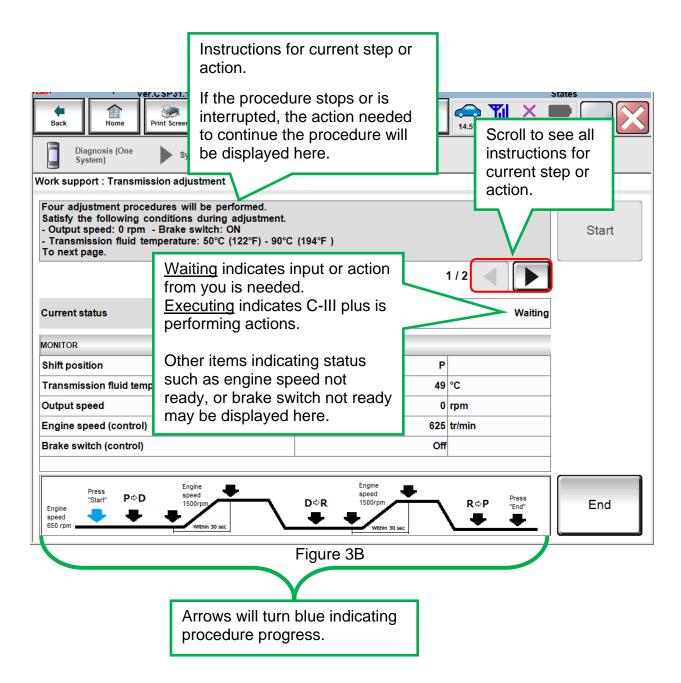


Figure 2B

NOTE:

- While performing the Transmission Adjustment procedure, a screen like the one in Figure 3B will display.
- Review the call outs in Figure 3B explaining the information on this screen.
- This information will be helpful as you perform the Transmission Adjustment procedure.
- While C-III plus is performing automatic adjustments, you will hear and feel the transmission changing gear position.



NOTE: There are 4 adjustment procedures within the Transmission Adjustment.

First Adjustment Procedure

- 13. Confirm the following conditions (refer to the C-III plus screen):
 - Shift position: D
 - Transmission fluid temperature: 75°C (167°F) 90°C (194°F)
 - Output speed: 0 RPM
 - Engine speed (control): 600 tr/min (RPM) or more
 - Brake switch (control): ON
- 14. When the above conditions are met, select **Start**.
 - Current status will change from Waiting to EXECUTING.

NOTE: If current status indicates EXECUTING, wait (about 3 minutes) for the first adjustment procedure to complete.

- 15. Wait for the first adjustment procedure to complete (about 3 minutes).
 - When complete, current status will change to Waiting.

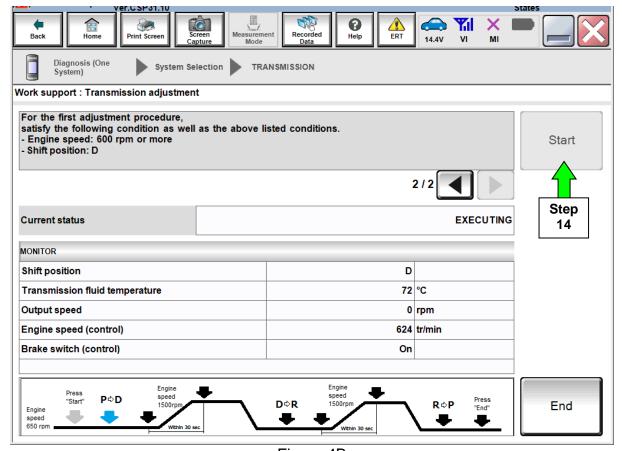


Figure 4B

Second Adjustment Procedure

16. Confirm the following conditions (refer to the C-III plus screen):

• Shift position: D

Transmission fluid temperature: 75°C (167°F) – 90°C (194°F)

Output speed: 0 RPM

Engine speed (control): 1,250 – 1,750 tr/min (RPM)

Brake switch (control): ON

17. When the above conditions are met:

- Current status will change from Waiting to EXECUTING.
- **Keep the RPM about 1,500** so that when the RPM drops, caused by transmission shifts, it will not interrupt the procedure.
- If the procedure is interrupted, follow the on screen instructions (which includes turning the ignition OFF and back ON), and then start from the beginning (step 13).

NOTE: Keeping the rpm in the correct range is a bit challenging, and may take a few tries (practice) to get it right.

18. Wait for the second adjustment procedure to complete.

When complete, current status will change to Waiting.

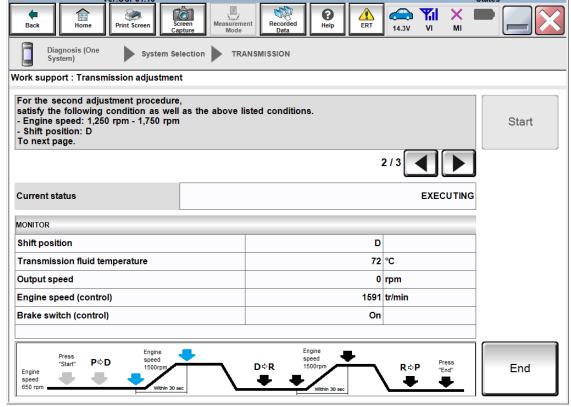


Figure 5B

Third Adjustment Procedure

19. Confirm the following conditions (refer to the C-III plus screen):

• Shift position: R

Transmission fluid temperature: 75°C (167°F) – 90°C (194°F)

Output speed: 0 RPM

Engine speed (control): 600 tr/min (RPM) or more

Brake switch (control): ON

20. When the above conditions are met:

Current status will change from Waiting to EXECUTING.

21. Wait for the third adjustment procedure to complete.

When complete, current status will change to Waiting.

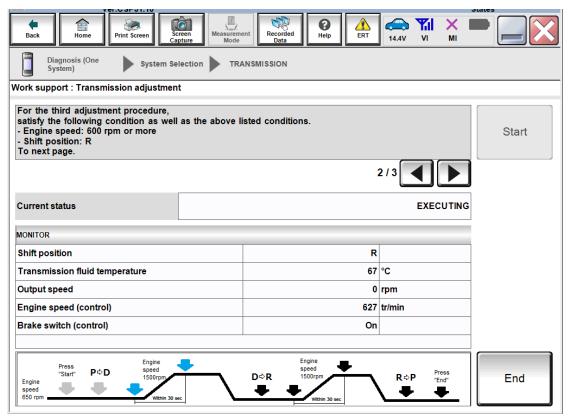


Figure 6B

Fourth Adjustment Procedure

22. Confirm the following conditions (refer to the C-III plus screen):

• Shift position: R

• Transmission fluid temperature: 75°C (167°F) – 90°C (194°F)

Output speed: 0 RPM

Engine speed (control): 1,250 – 1,750 tr/min (RPM)

• Brake switch (control): ON

23. When the above conditions are met:

- Current status will change from Waiting to EXECUTING.
- **Keep the RPM about 1,500** so that when the RPM drops, caused by transmission shifts, it will not interrupt the procedure.
- If the procedure is interrupted, follow the on screen instructions and start from the beginning (step 13).

24. Wait for the fourth adjustment procedure to complete.

• When complete the screen in Figure 8B (next page) will display.

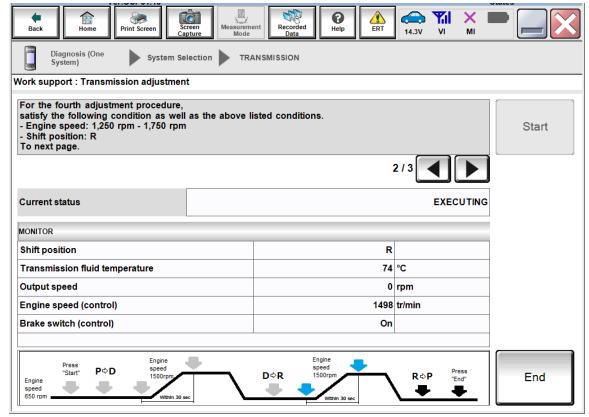


Figure 7B

- 25. When the Transmission Adjustment has completed (see Figure 8B), shift the transmission to Park.
- 26. Turn the ignition OFF.
- 27. Select End.

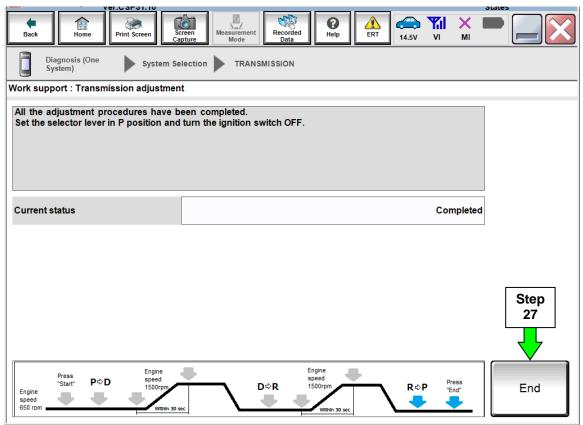


Figure 8B

Save ECM Computer Data

- 1. The CONSULT PC should still be connected to the vehicle, with C-III plus running.
- 2. If not, open / start C-III plus.
- 3. Turn the ignition ON, with engine OFF (engine not running).
- 4. Wait for the plus VI to be recognized.
 - The Serial No. will display when the plus VI is recognized.
- 5. Select Diagnosis (One System).

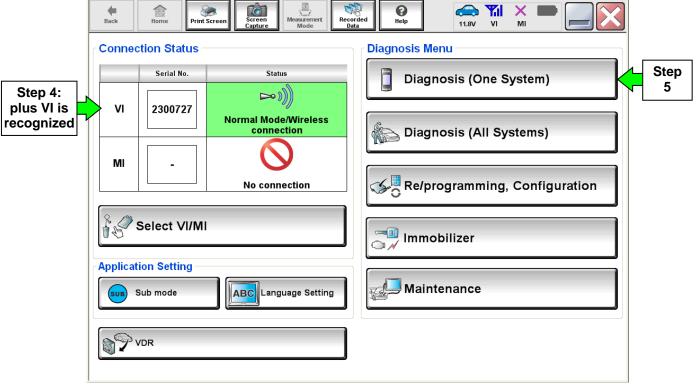


Figure 1C

- 6. Navigate C-III plus to ENGINE > Work Support (see Figure 2C).
- 7. Select SAVE COMPUTER DATA.
- 8. Select Start.

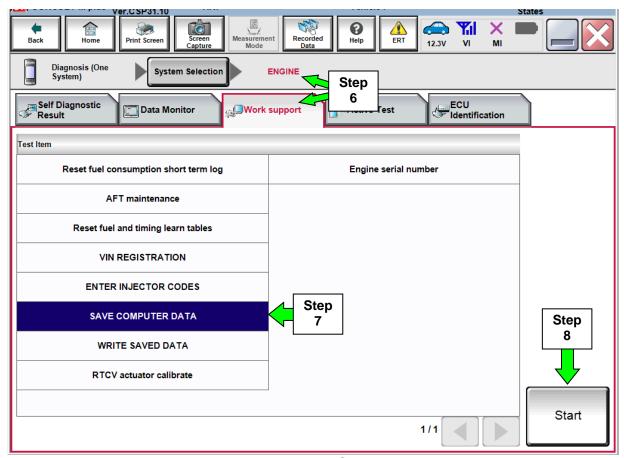


Figure 2C

NOTE:

After selecting Start, a screen message may appear that says:

Latest diagnostic tool update must be used before saving the data, otherwise there is a risk that the data entry will not work.

If the above message appears, select Continue.

9. Make sure the ignition is ON and the engine is OFF (engine not running).

10. Select Confirm.

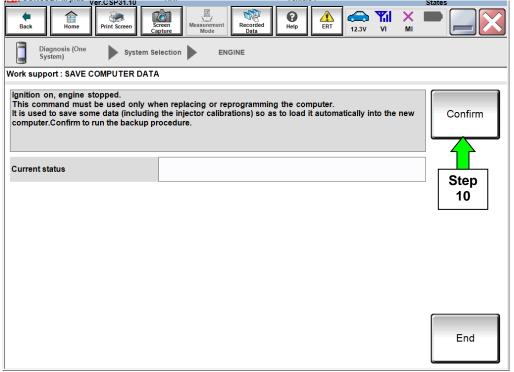


Figure 3C

11. Select End.

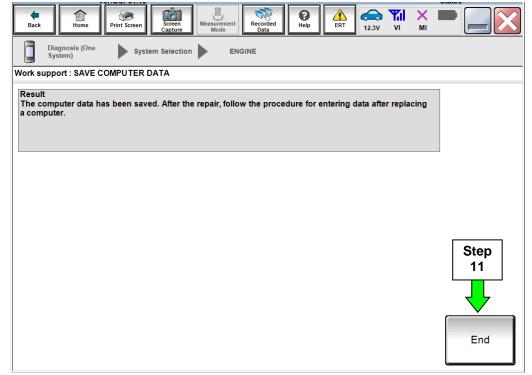


Figure 4C

Reprogram ECM

NOTE:

- Make sure to save ECM computer data before necessary ECM reprogramming is determined and performed. Refer to page 25, **Save ECM Computer Data**.
- Most instructions for reprogramming with CONSULT-III plus (C-III plus) are displayed on the CONSULT PC screen.
- If you are not familiar with the reprogramming procedure, *click here*. This will link you to the "CONSULT- III plus (C-III plus) Reprogramming" general procedure.
- The GR8 should still be connected to the vehicle, set to ECM power supply mode. If not, it can be attached to either 12 volt battery.

CAUTION:

- Connect the GR8 to one of the 12V batteries and set to ECM power supply mode. If the vehicle battery voltage goes below <u>12.0V or above 15.5V</u> during reprogramming, the ECM may be damaged.
- Be sure to turn OFF all vehicle electrical loads.
 If a vehicle electrical load remains ON, the ECM 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 ECM may be damaged.
- Turn OFF all external Bluetooth® devices (e.g., cell phones, printers, etc.) within range of the CONSULT PC and the plus VI. If Bluetooth® signal waves are within range of the CONSULT PC during reprogramming, reprogramming may be interrupted and the ECM may be damaged.

- 1. Return to the C-III plus Home screen (see Figure 1D).
- 2 Confirm the ignition is ON, with engine OFF.
- 3. Confirm the plus VI is recognized.
 - The **Serial No.** will display when the plus VI is recognized.
- 4. Select Re/programming, Configuration.

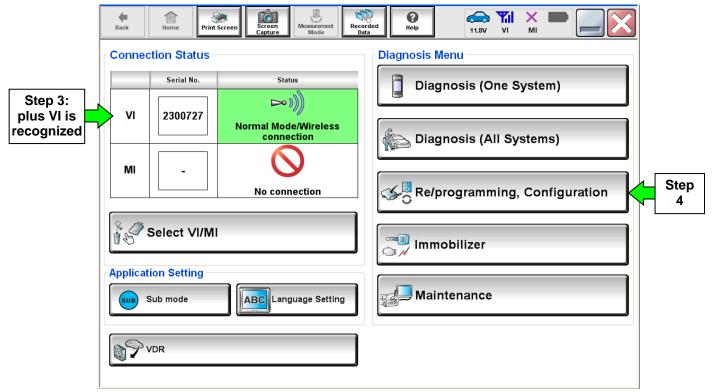


Figure 1D

5. Follow the on-screen instructions and navigate C-III plus to the screen shown in Figure 2D on the next page.

- 6. When you get to the screen shown in Figure 2D, confirm ECM reprogramming applies as follows.
 - a. Find the ECM **Part Number** and write it on the repair order.

NOTE: This is the current ECM P/N.

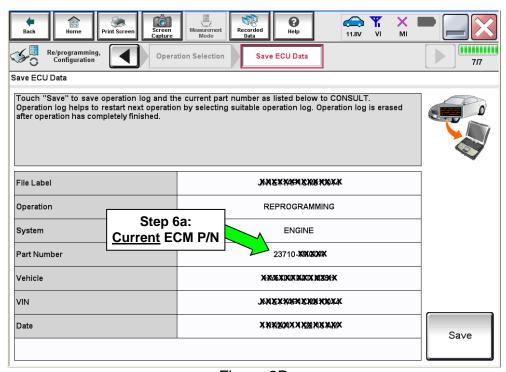


Figure 2D

- b. Compare the P/N you wrote down to the numbers in the **Current ECM Part Number** column in **Table B** below.
 - If there is a <u>match</u>, continue with the reprogramming procedure.
 - If there is <u>not a match</u>, STOP HERE. ECM reprogramming does not apply. No further work is necessary.
 - If there is <u>not a match</u> for both TCM <u>and</u> ECM, this bulletin does not apply. Refer to ASIST and the ESM for further diagnosis.

Table B

1 41010 2			
Model	Current ECM Part Number: 23710-		
2016 Titan XD Cummins Diesel	EZ41E, EZ42A, EZ42B, EZ42C, EZ42D, EZ42E		
2017 Titan XD Cummins Diesel	EZ44D, EZ44E, EZ45A		

7. Follow the on-screen instructions to navigate C-III plus and reprogram the ECM.

NOTE:

- In some cases, more than one new P/N for reprogramming is available.
 - If more than one new P/N is available, the screen in Figure 3D displays.
 - 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 means there is no reprogramming available for this vehicle. Close C-III plus and refer back to ASIST for further diagnosis.

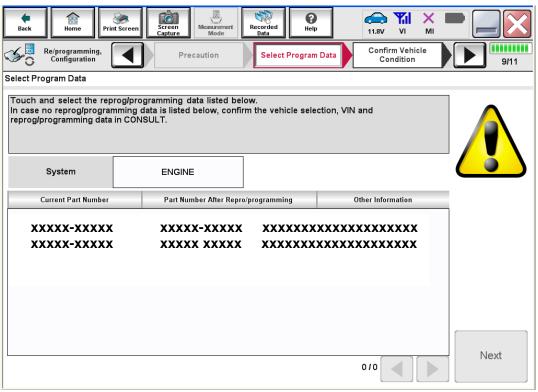


Figure 3D

8. When the screen in Figure 4D displays, reprogramming is complete.

NOTE: If the screen in Figure 4D does not display (indicating that reprogramming did not complete), refer to ECM recovery on the next page.

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

10. Select Next.

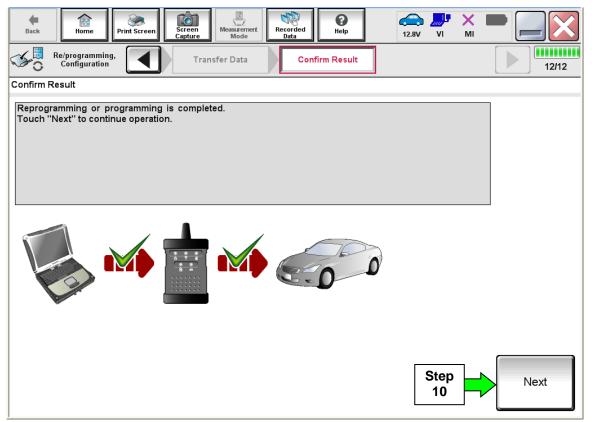


Figure 4D

NOTE:

- In the next step, (page 34), you will perform DTC erase.
- This operation is required before C-III plus will provide the final reprogramming confirmation report.

ECM Recovery

<u>Do not disconnect the plus VI or shut down C-III plus if reprogramming does not complete.</u>

If reprogramming does <u>not</u> complete and the "!?" icon displays as shown in Figure 5D:

- Check battery voltage (12.0 - 15.5 V).
- Ignition is ON, engine OFF.
- External Bluetooth® devices are OFF.
- All electrical loads are OFF.
- Select <u>retry</u> and follow the on screen instructions.
- "Retry" may not go through on the first attempt and can be selected more than once.

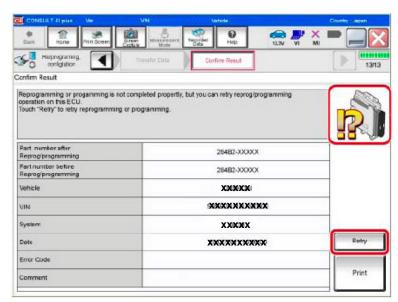


Figure 5D

If reprogramming does \underline{not} complete and the "X" icon displays as shown in Figure 6D:

- Check battery voltage (12.0 - 15.5 V).
- CONSULT A/C adapter is plugged in.
- Ignition is ON, engine OFF.
- Transmission is in Park.
- All C-III plus / plus VI cables are securely connected.
- All C-III plus updates are installed.
- Select <u>Home</u>, and restart the reprogram procedure from the beginning.

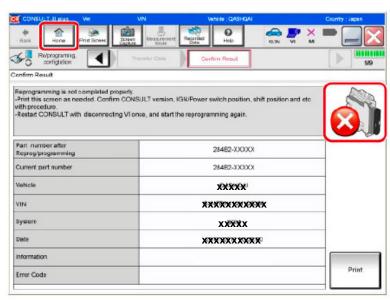


Figure 6D

- 11. Follow the on-screen instructions to **Erase DTCs**.
- 12. When the entire reprogramming process is complete, the screen in Figure 7D will display.
- 13. Verify the before and after part numbers are different.
- 14. Print a copy of this screen (Figure 7D) and attach it to the repair order for warranty documentation.
- 15. Select Confirm.

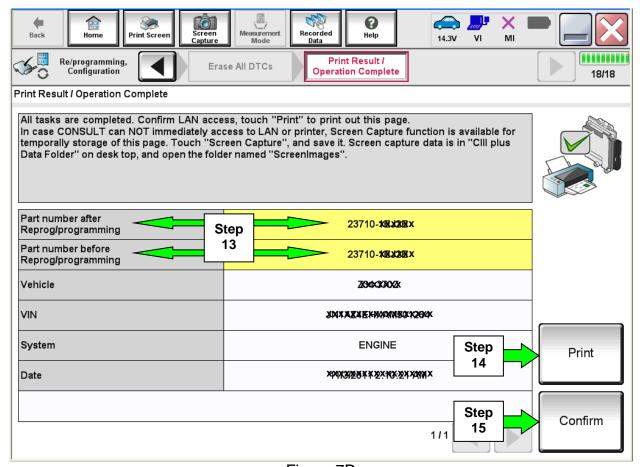


Figure 7D

Continue to the next page.

Write Saved Data

- 1. Return to the C-III plus Home screen (see Figure 1E).
- 2 Confirm the ignition is ON, with engine OFF.
- 3. Confirm the plus VI is recognized.
 - The **Serial No.** will display when the plus VI is recognized.
- 4. Select Diagnosis (One System).

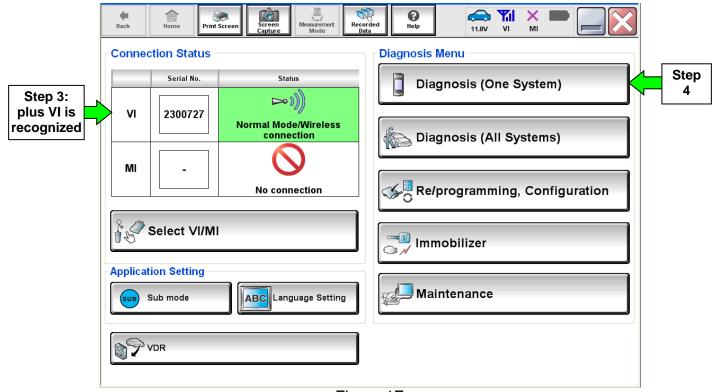


Figure 1E

- 5. Navigate C-III plus to ENGINE > Work support (see Figure 2E).
- 6. Select WRITE SAVED DATA.
- 7. Select Start.

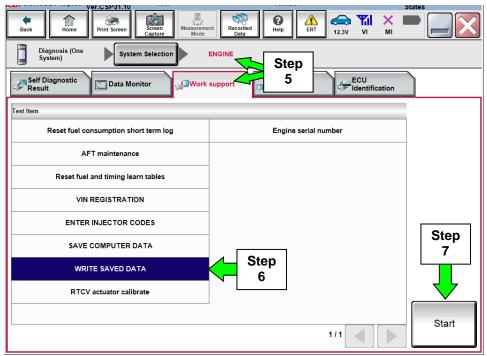


Figure 2E

- 8. Make sure the ignition is ON and the engine is OFF (engine not running).
- 9. Select Confirm.

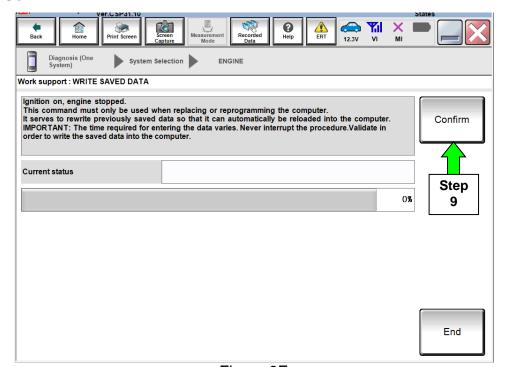


Figure 3E

10. Wait for the procedure to complete.

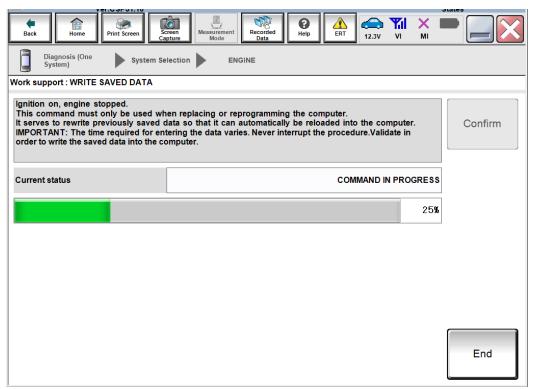


Figure 4E

11. Select End.

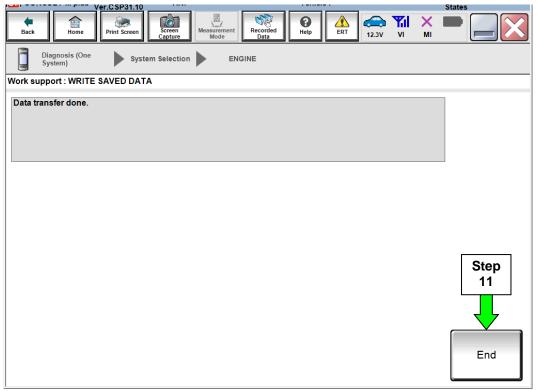


Figure 5E

- 12. Close C-III plus.
- 13. Turn the ignition OFF.
- 14. Disconnect the plus VI from the vehicle.
- 15. Test drive the vehicle and make sure it operates correctly and the MIL is OFF.
 - If the MIL comes ON, go back to ASIST for further diagnostic information.
 - Diagnosis and repairs beyond TCM and ECM reprogramming are not covered by this bulletin.

The information on page 40 is provided as Service Information for the customer and is not part of the Service Procedure in this bulletin.

* * Print the last page (40) and provide it to the customer. * *

CLAIMS INFORMATION

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

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Reprogram Transmission Control Module	(1)	JX46AA	ZE	32	0.6

⁽¹⁾ Refer to the electronic parts catalog (FAST) and use the TCM assembly part number (31036 - XXXXX) as the Primary Failed Part (PFP).

OR

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Reprogram Transmission Control Module and Perform Adjustment	(1)	JX47AA	ZE	32	1.1

⁽¹⁾ Refer to the electronic parts catalog (FAST) and use the TCM assembly part number (31036 - XXXXX) as the Primary Failed Part (PFP).

And/Or (the claims coding below may be combined with one of the above <u>on the same repair line</u>, or applied by itself):

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Reprogram Engine Control Module	(1)	DE97AA	ZE	32	(2) (3)

⁽¹⁾ Refer to the electronic parts catalog (FAST) and use the ECM assembly part number as the primary failed part if TCM was not reprogrammed.

⁽²⁾ Reference the current Nissan Flat Rate Manual and use the indicated flat rate time.

⁽³⁾ FRT allows adequate time to access DTC codes. No other diagnostic procedures subsequently required. Do NOT claim any diagnostic OP Codes with this claim.

IMPORTANT INFORMATION FOR THE CUSTOMER

- Completing the transmission adjustment procedure has erased <u>ALL</u> of the TCM "adaptive learning values" that have accumulated over time. The transmission will shift differently than it did before this procedure was performed (especially for vehicles that have been driven over 1,000 miles).
- The Aisin 6-speed A/T has the ability to enter into a learning mode once the vehicle meets the following criteria:
 - Make sure there are no warnings in the Meter pertaining to reduced power mode such as low fuel or low DEF.
 - Confirm the vehicle is not in Tow Mode. If in Tow Mode, the vehicle will be prevented from entering into the learn mode.
- Learning takes place with upshifts at steady accelerator positions from 1st gear through 5th gear continuously and repeatedly once the above criteria have been met. Improvements occur during repeated upshifts.