



**Classification:**

**Reference:**

**Date:**

ST13-005

ITB13-046

December 23, 2013

## 2014 Q50 LOW POWER ASSIST FROM ADAPTIVE STEERING SYSTEM

**APPLIED VEHICLES:** 2014 Q50 (V37) equipped with Direct Adaptive Steering (DAST)  
2014 Q50 Hybrid (HV37)

### IF YOU CONFIRM:

The power steering has "low power assist",

and

One or more of the following DTCs are stored in DAST1, DAST2 or EPS/DAST3 as current or past:

C13AB-00	C13BE-00	C13C0-00	C13D5-00	C13EB-00	C13F0-00
C13AC-00	C13BF-00	C13C1-00		C13E6-00	
		C13C2-00		C13E9-00	
		C13C3-00			
		C13C4-00			

**NOTE:** For all other DAST system DTCs or low power assist issues, call TECH LINE for additional assistance.

### ACTION:

1. Refer to step 14 in the **SERVICE PROCEDURE** to confirm that this bulletin applies to the vehicle you are working on.
2. If this bulletin applies, perform the complete reprogram and calibration / confirmation procedures.

**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.

Infiniti 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 Infiniti dealer to determine if this applies to your vehicle.

## SERVICE PROCEDURE

There are two parts to this Service Procedure:

**PART 1:** Reprogramming Procedure. This includes three separate control unit reprograms; DAST 1, DAST 2, and EPS/DAST 3.

**PART 2:** Calibration and Confirmation Procedure. This includes the following: DAST CALIBRATION (MODE1), ADJUST STEERING ANGLE SENSOR NEUTRAL POSITION, Self-Diagnosis Check, Confirmation of EPS/DAST 3 ANGLE 1, and Check Steering Off-center / Pull.

### PART 1: Reprogramming Procedure

**NOTE:** PART 1 must be performed 3 separate times to reprogram the control units for DAST 1, DAST 2, and EPS/DAST 3.

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:**

- Connect the GR8 to the vehicle 12 volt battery and set to ECM power supply mode. If the vehicle battery voltage drops below 12.0V or rises above 13.5V during reprogramming, the DAST may be damaged.
- Be sure to turn OFF all vehicle electrical loads. If a vehicle electrical load remains ON, the DAST 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 DAST 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 DAST may be damaged.

2. Once all ASIST and CONSULT related updates have been performed, attach the CONSULT PC to the vehicle.

- Connect the plus VI to the CONSULT PC with the USB cable.
- Connect the AC adapter to the CONSULT PC.

3. Turn ON the CONSULT PC, and then open CONSULT III plus (C-III plus).

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

4. Press the ignition switch twice without depressing the brake pedal.
  - The meter and gauges will illuminate.

**CAUTION:** Do Not start the engine, the DAST may be damaged. (For Hybrid vehicles, make sure the Ready light is OFF.)

**NOTE:** Make sure ALL accessories are turned off.

5. Erase all stored DTCs as follows:
  - a. Wait for the plus VI to be recognized.
  - b. Select **Diagnosis (All Systems)** and **Confirm**.
  - c. Wait for system call to complete.
  - d. Erase all DTCs.

6. Go to **Re/programming, Configuration**.
  - a. Select the **Home** button, and then select **YES** to return to the screen shown in Figure 1.
  - b. select **Re/programming, Configuration**.

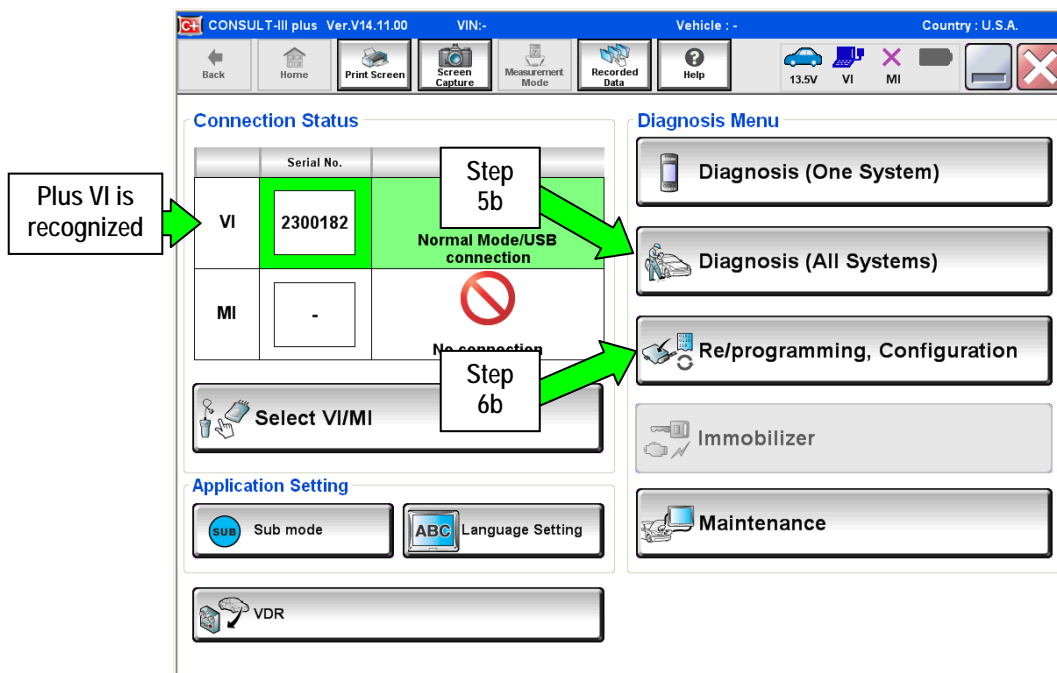


Figure 1

7. Check the box for **Confirmed Instructions**, and then select **Next**.

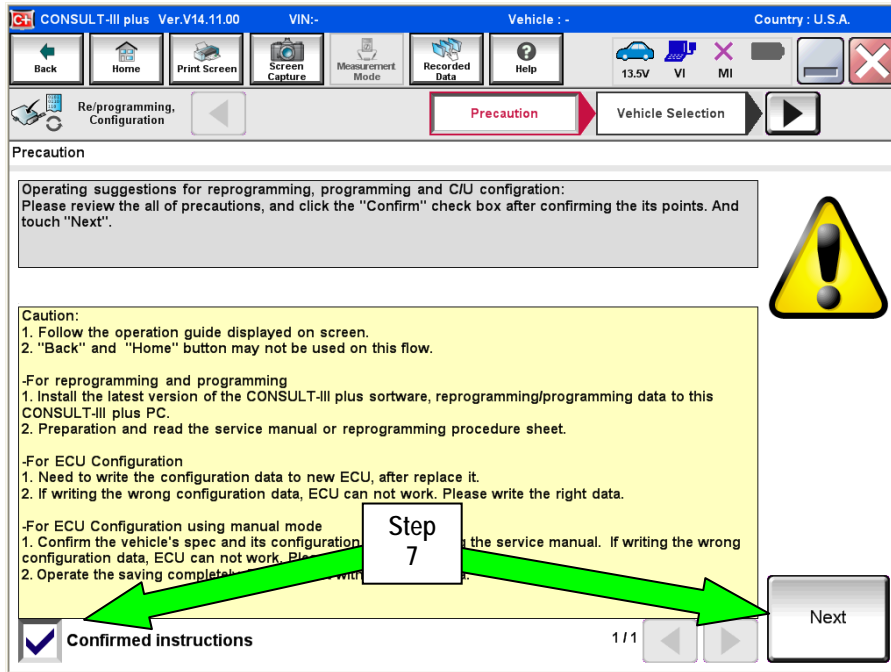


Figure 2

8. Select **Q50** and **2014**, or **Automatic Selection(VIN)**.

- Under **Manual Selection(Vehicle Name)** select Infiniti, Q50, 2014 and then click **Select**.
- For Hybrid vehicles, select Infinity Q50 Hybrid and 2014.
- If **Automatic Selection (VIN)** is selected, wait for the **Reading VIN** screen (not shown) to complete.

9. Select **Select**.

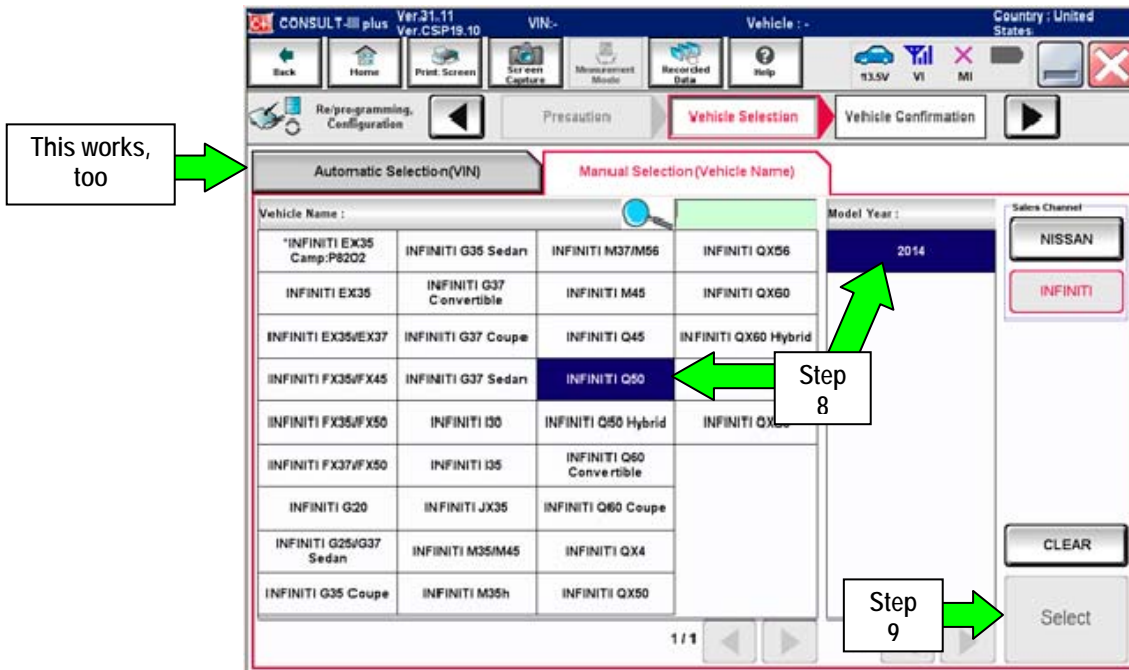


Figure 3

10. Verify the VIN or Chassis # matches that of the vehicle.

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

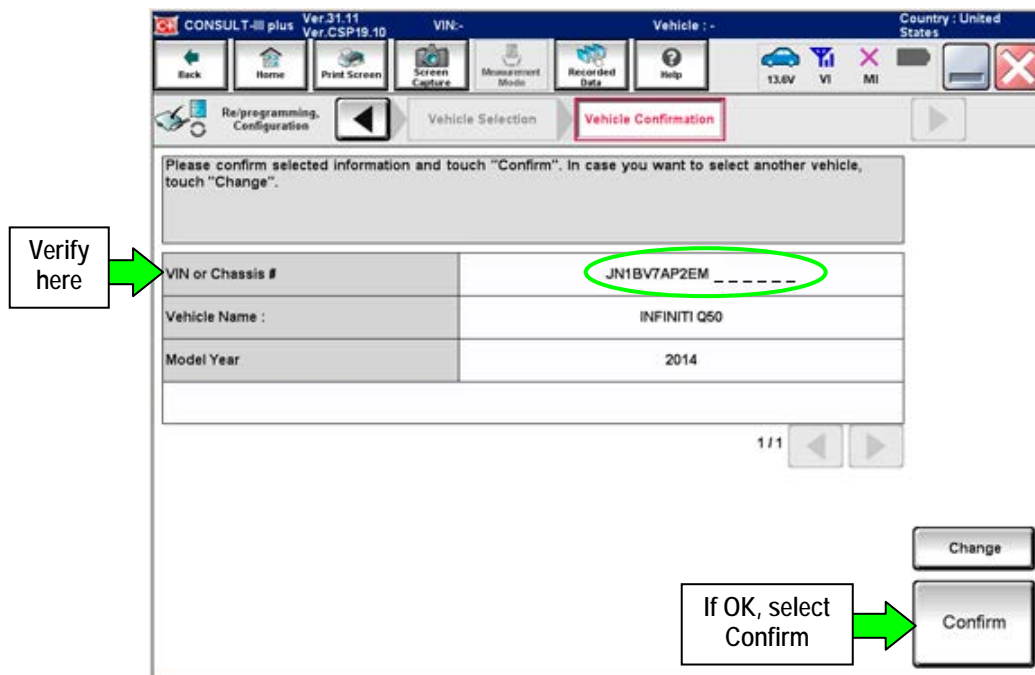


Figure 4

**NOTE:** Write the last 6 digits of the VIN on the repair order. You will need it later in the procedure.

11. Select **Confirm** again.

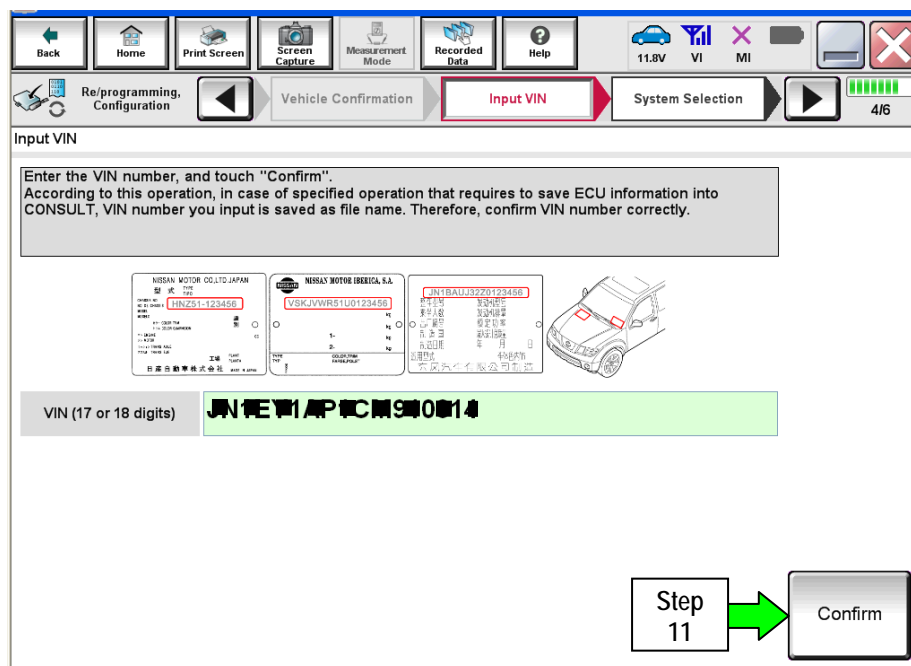


Figure 5

12. Use the page arrows to scroll and select the correct control unit to be reprogrammed.

Make sure to reprogram the control units in this order:

DAST 1, then DAST 2, and then EPS/DAST 3

NOTE: DAST 1 and DAST 2 are shown in Figure 6; EPS/DAST 3 is not shown.

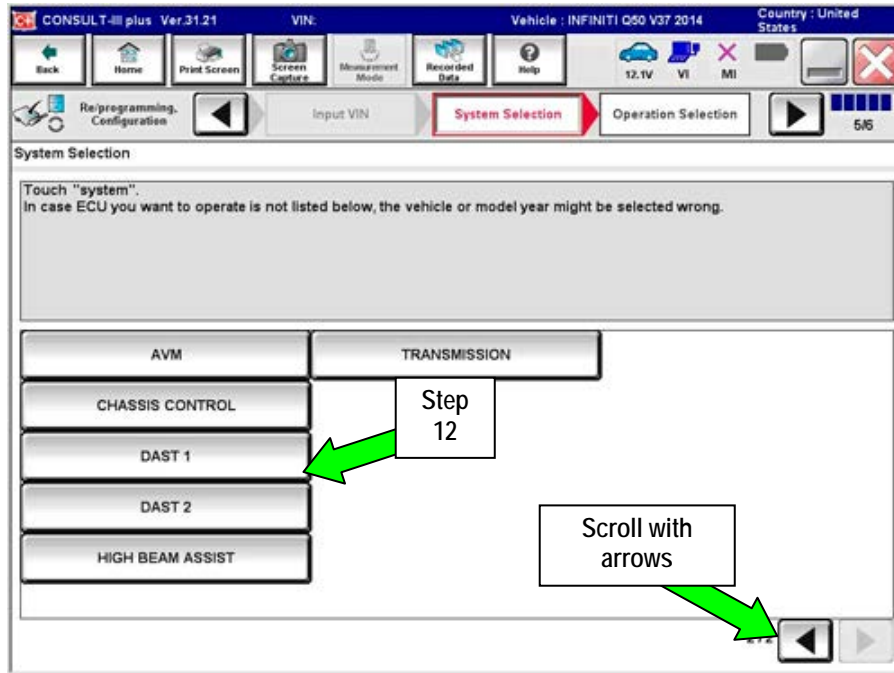


Figure 6

13. Wait for System Call to complete, and then select **Reprogramming**.

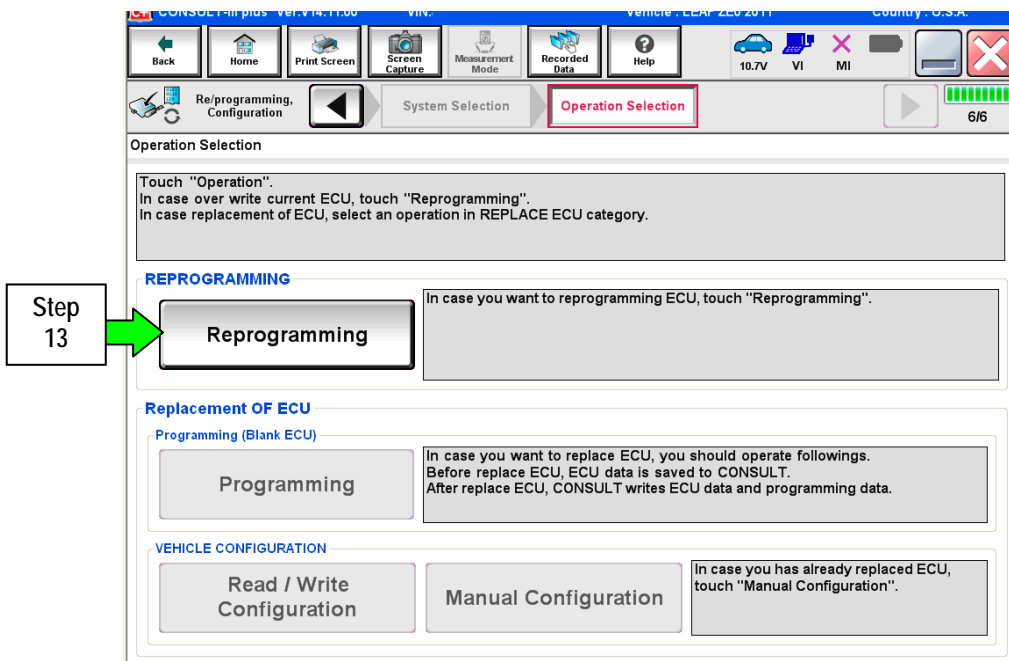


Figure 7

14. When you get to the screen shown in Figure 8, confirm reprogramming applies as follows:

A. Find the DAST **Part Number** and write it on the repair order.

**NOTE:** This is the current DAST Part Number. DAST 1 is shown; DAST 2 and DAST 3 are similar.

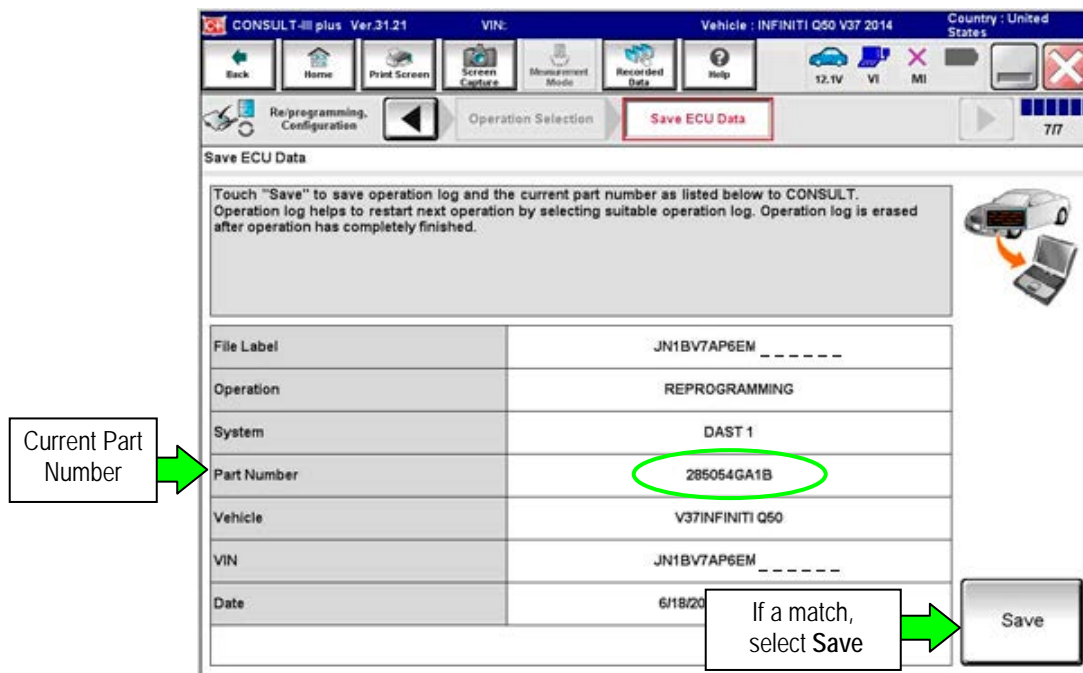


Figure 8

B. Compare the P/N you wrote down to the numbers in the **Current Part Number** column of Table A below:

- If there is a match, that reprogramming applies. Continue with the reprogramming procedure.
- If there is not a match, that reprogramming does not apply.

**NOTE:** If there is no match for DAST 1, there will be no match for DAST 2 or DAST 3. You can stop. This bulletin does not apply.

Table A

MODEL	CONTROL UNIT	CURRENT PART NUMBER:
2014 Q50 (V37/HV37)	DAST 1	28505 – 4GA1B, 4GA1C
	DAST 2	28505 – 4BA6B, 4GA6C
	EPS/DAST 3	285H0 – 4GA5B, 4GA5C

C. If there is a part number match as specified above, Select **Save**, and then continue with the reprogramming procedure on the next page.

15. Read the precautions on the C-III plus screen (use page arrow as needed). After reading, select **Confirmed instructions**, and then select **Next**.

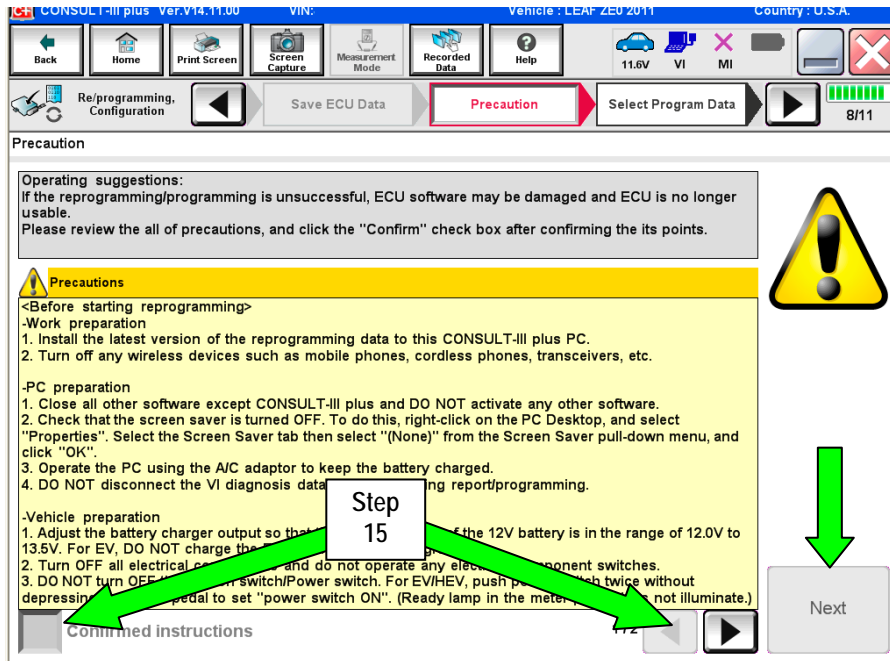


Figure 9

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 **does not** have the message "Caution! Use ONLY with ITBXX-XXX".
- If you get this screen and it is blank (no reprogramming listed), it means there is no reprogramming available for that control unit.

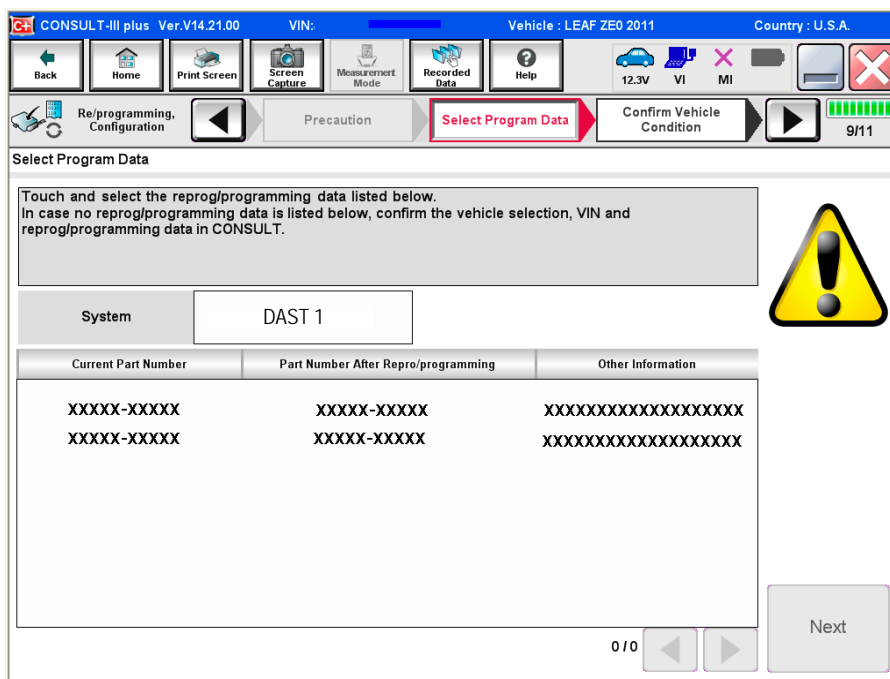


Figure 10



16. Verify the **Current Part Number** matches the Part Number written down in step 14, and then select **Next**.

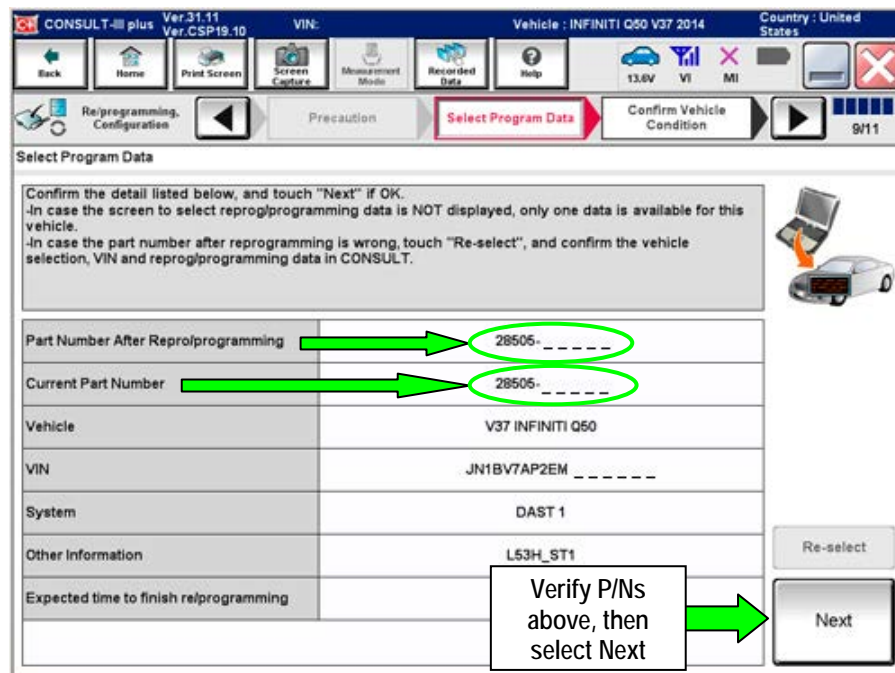


Figure 11

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

- This will erase the **Saved Data List** and restart the reprogram from step 12. You must go back to step 12.
- If no **Saved Data List** is stored, Figure 13 on the next page will be displayed.

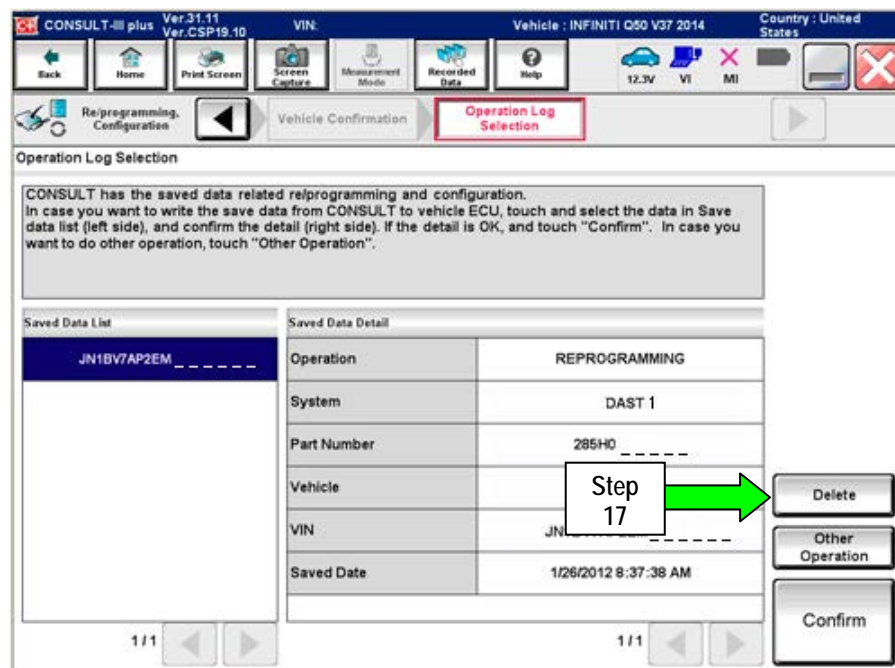


Figure 12

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

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

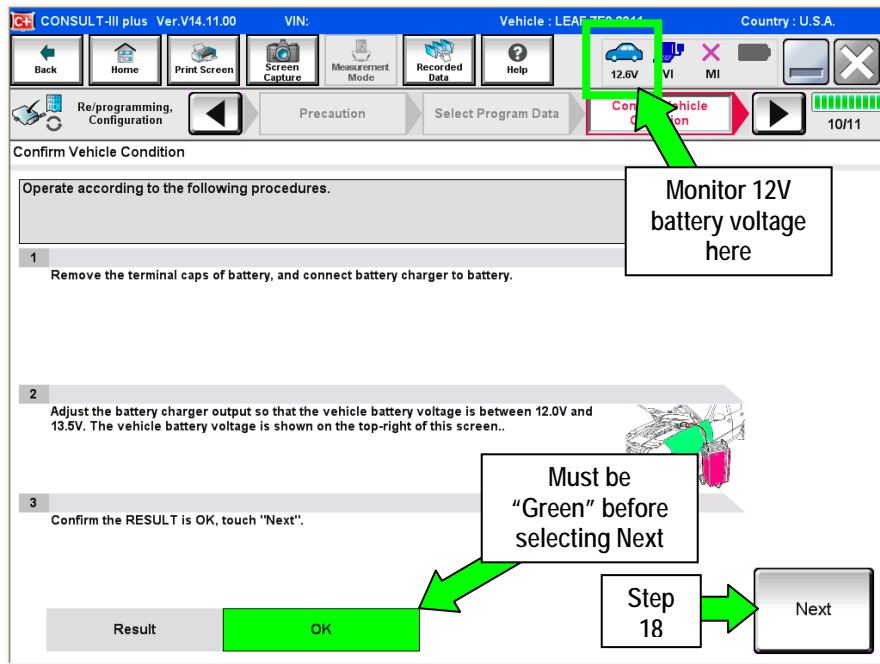


Figure 13

19. With battery voltage OK (green), select **Start**.

- The reprogramming process begins when **Start** is selected.

**NOTE:** For reprogramming to continue, vehicle 12V battery voltage must stay within 12 volts and 13.5 volts.

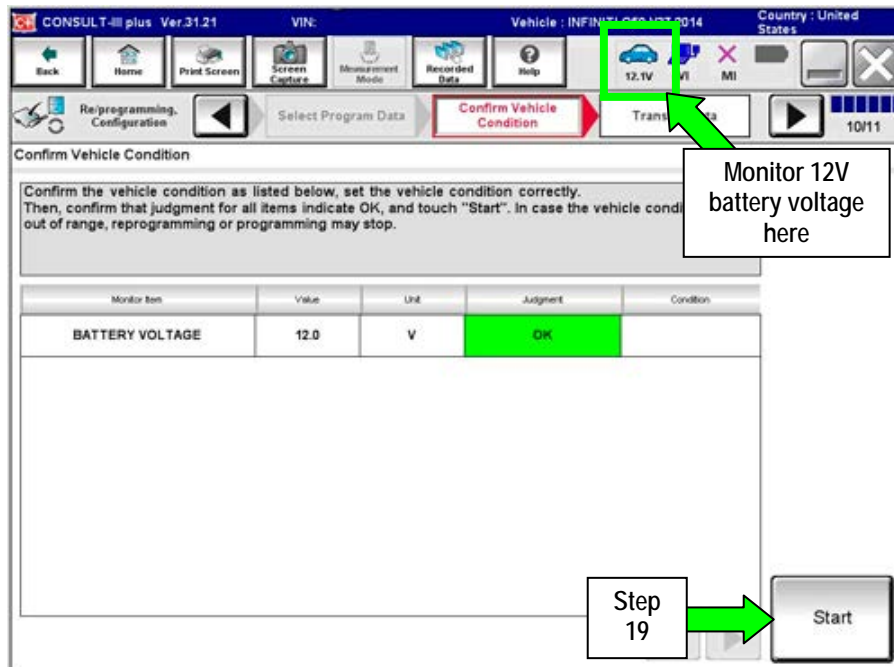


Figure 14

**IMPORTANT:** Until the reprogramming has completed:

- Do not disconnect the USB cable, although the following message appears:  
"Disconnecting CONSULT and VI is Available"
- Do not touch the Home button until instructed to.
- When the plus VI is transferring the reprogram to the DAST control unit, do not disconnect the plus VI from the vehicle even if the PC freezes.
- To disconnect the plus VI, first check the LED on the plus VI body to confirm that the communication from the plus VI to the vehicle has completed and the LED for the vehicle icon is OFF.
- If you accidentally disconnect the plus VI during program writing to the vehicle, the DAST control unit that is being reprogrammed will need to be replaced.

20. Wait for both bar graphs to complete.

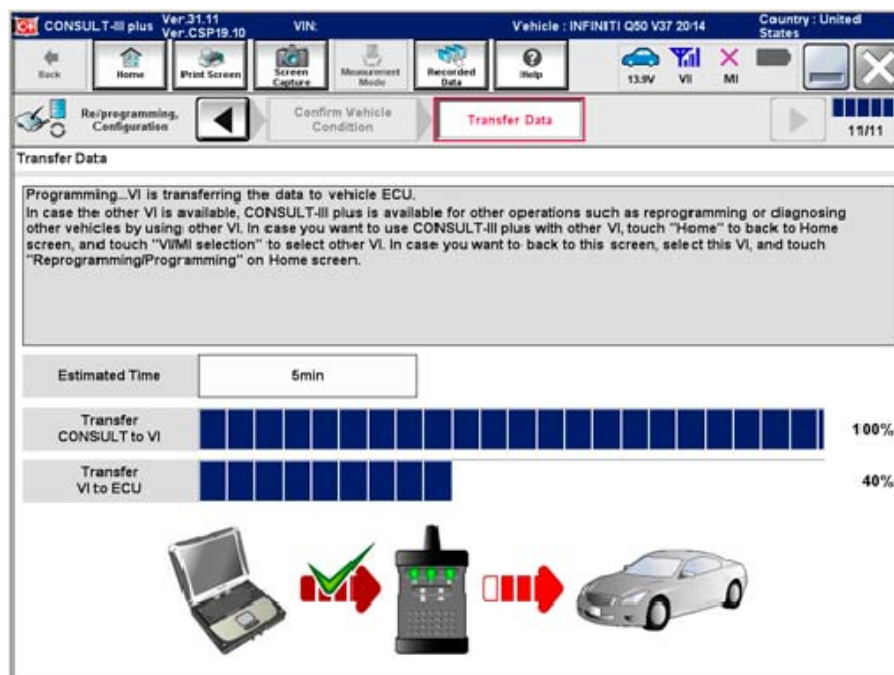


Figure 15

Possible errors that may rarely occur:

- If the progress bar freezes at 90% of a complete transfer to the plus VI and error code "12-1-1NR" is displayed (see Figure 16 on the next page), **turn the ignition OFF, then ON**, and then refer to Control Unit Recovery on the next page.
- If the progress bar freezes at 90% more than 3 times "on the same DAST control unit" but without Error Code "12-1-1NR", replace only the DAST control unit that is currently being reprogrammed, and then reprogram to the most current software.

**NOTE:** If a DAST control unit replacement is required:

- Refer to the appropriate section of the ESM for the procedure to replace and configure a DAST control unit.
- **Make sure to perform Read/Write Configuration** and save the Control unit's configuration before replacement, and then write the configuration to the new control unit.

## Control Unit Recovery:

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

If reprogramming does not complete and the “!?” icon displays as shown in Figure 16:

- Check battery voltage (12.0–13.5 V).
- Ignition is ON, engine OFF (not READY).
- 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.

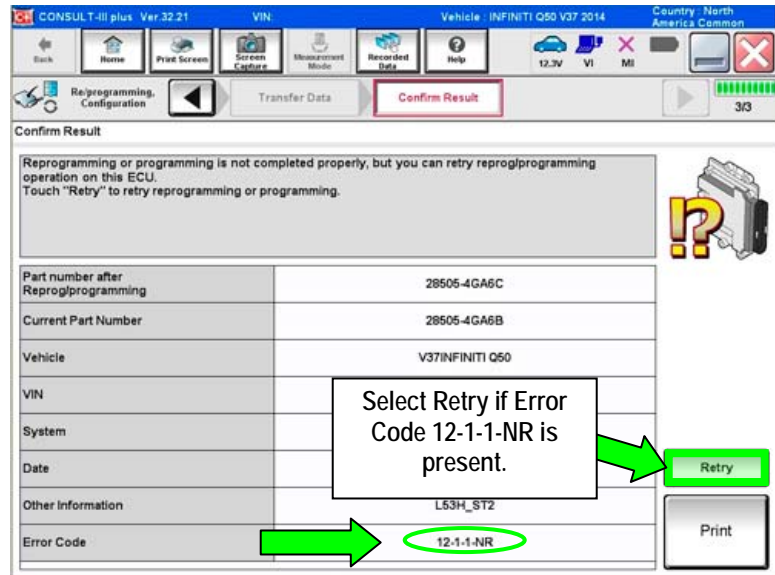


Figure 16

If reprogramming does not complete and the “X” icon displays as shown in Figure 17:

- Check battery voltage (12.0 – 13.5 V).
- CONSULT A/C adapter is plugged in.
- Ignition is ON, engine OFF (not READY).
- Transmission is 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.

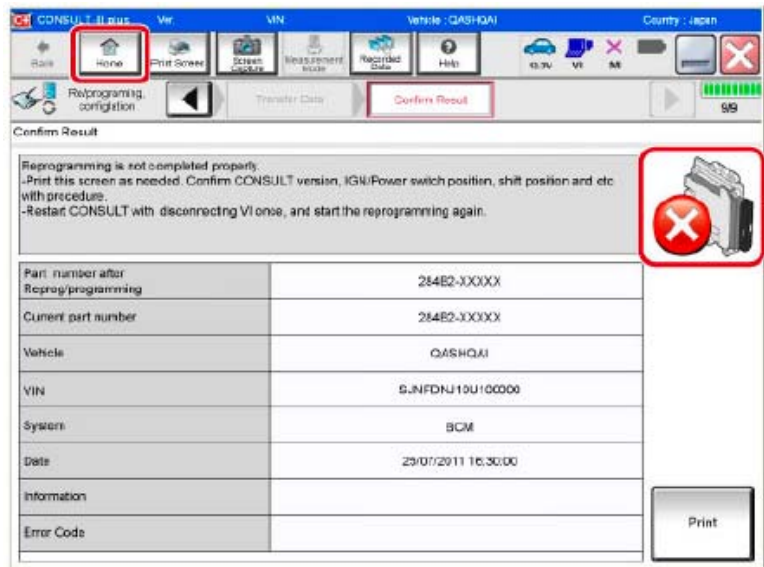


Figure 17

21. When the screen in Figure 18 appears, reprogramming is complete.

22. Select **Next**.

23. Wait for System Call to complete.

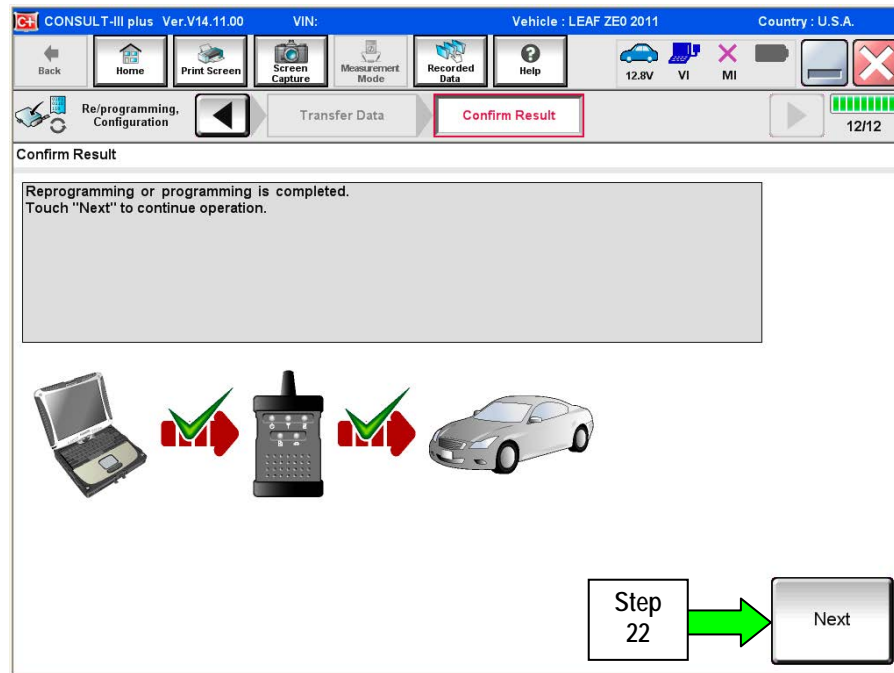


Figure 18

24. Erase all DTCs:

a. Turn "Ignition" OFF.

- The screen in Figure 19 will read OFF after pressing the power switch once.

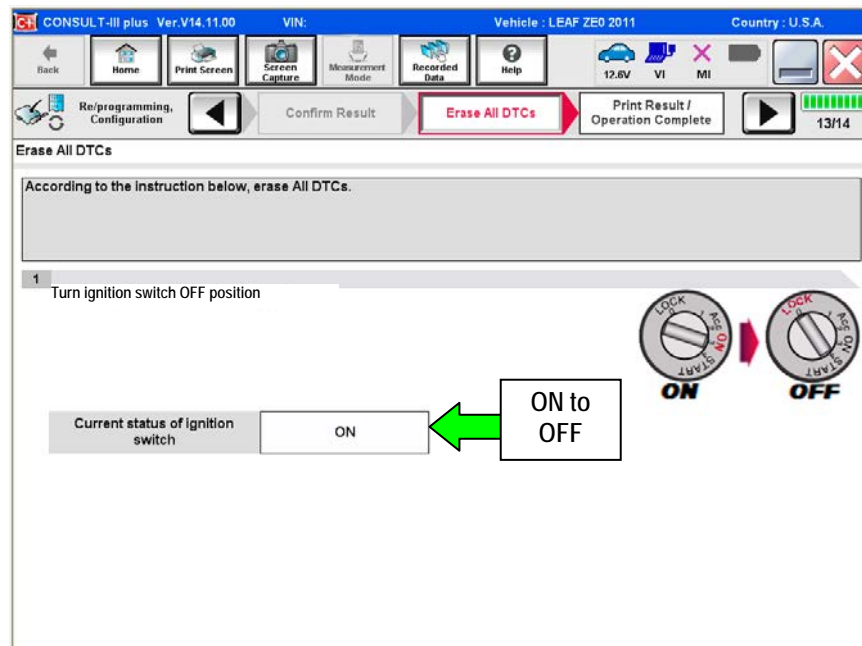


Figure 19

- b. Turn the ignition ON with engine OFF (press switch twice, no foot on brake).
    - The screen in Figure 19 will read **ON** after pressing the power switch twice.
- NOTE:** Do not be confused by any screen messages. At this point, simply turn the ignition ON.

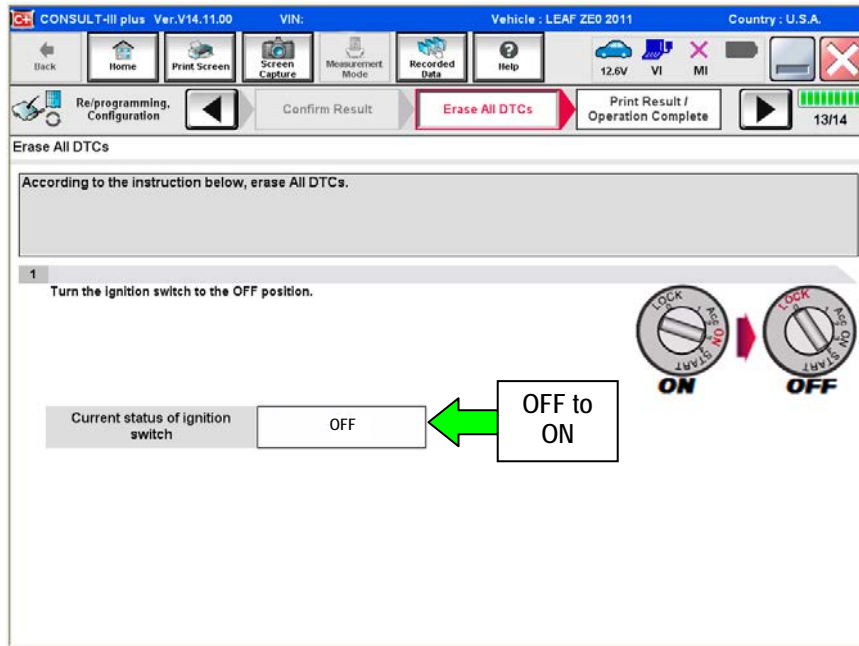


Figure 20

- c. Wait for the bar graph in the **ERASE** window to complete 100%.
- d. Select **Next**.

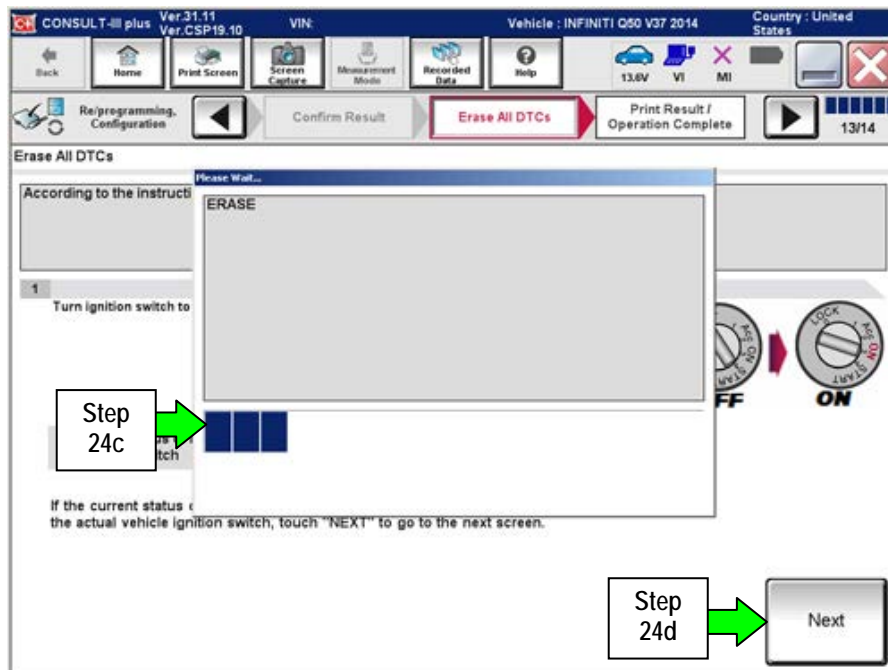


Figure 21

25. Verify the part number has changed (before and after reprogramming part numbers should be different).
  - a. Print a copy of the screen in Figure 22 by selecting **Print**.
  - b. Attach the copy to the repair order.
  - c. Once a copy has been printed, select **Confirm**.

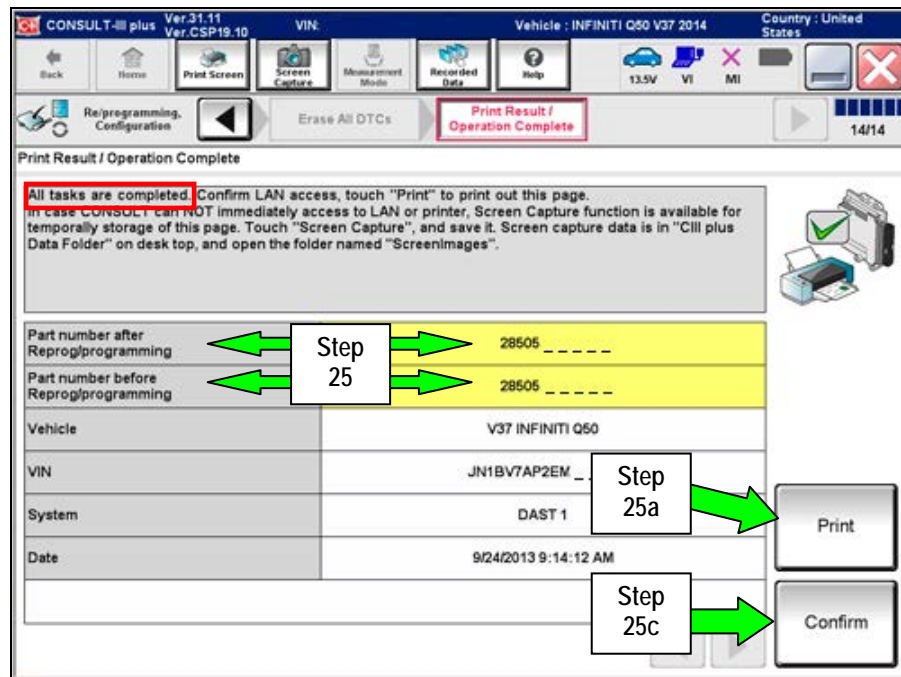


Figure 22

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

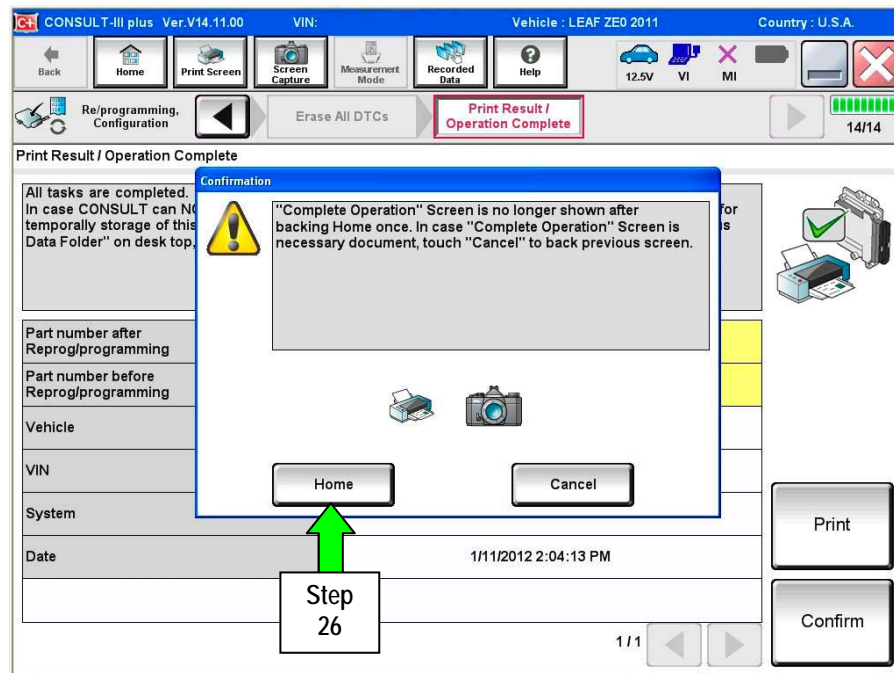


Figure 23

27. Repeat the entire reprogramming procedure for DAST 2.

28. Repeat the entire reprogramming procedure for EPS/DAST 3.

**After all three reprograms are complete, go to step 29.**

29. Check for DTCs in DAST 1, DAST 2, and EPS/DAST 3.

- a. Open C-III plus, and then select **Diagnosis (All Systems)** and **Confirm**.
- b. Wait for system call to complete.
- c. Check for stored DTCs.
  - If no DTCs are stored, go to **PART 2** on the next page.
  - If C13C0 or C13C2 are stored in DAST 1 or DAST 2, go to **DAST DTCs** on page 25.
  - If DTC C13F2 is stored in DAST 1, DAST 2, or DAST 3 as current:
    - Then, at least one of the DAST control units did not complete the reprogramming correctly.
    - Perform reprogramming again for the DAST control unit that Does Not have this code.
  - If only DTCs other than the ones listed above are stored, erase DTCs and go to **PART 2** on the next page.

**NOTE:** If a DAST control unit replacement is required:

- Refer to the appropriate section of the ESM for the procedure to replace and configure a DAST control unit.
- **Make sure to perform Read/Write Configuration** and save the Control unit's configuration before replacement, and then write the configuration to the new control unit.



## PART 2: Calibration and Confirmation Procedures

**NOTE:** PART 2 includes the following:

- DAST CALIBRATION (MODE1)
- ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION
- Self-Diagnosis Check
- Confirmation of EPS/DAST 3 ANGLE 1
- Check Steering Off-center / Pull

### DAST CALIBRATION (MODE1)

**CAUTION:**

- Never move the vehicle during **DAST CALIBRATION (MODE1)** because the steering gear is held in a neutral position until the ignition switch is turned OFF.
- Never rotate the steering wheel more than 120 degrees just after **DAST CALIBRATION (MODE1)** has been completed because the spiral cable will be damaged.

**WARNING:** Be careful of moving parts. The steering wheel and front wheels will move automatically by themselves after starting DAST CALIBRATION (MODE1).

**Before starting Calibration Mode1:**

- Place the vehicle on an alignment rack and then remove the pins from the turn tables so they are allowed to move freely, or place the vehicle on a lift so that the tires do not touch the ground.
- Place the steering wheel tilt to the highest level.
- Connect a battery charger to the vehicle battery set to a low charge rate.

**NOTE:** This calibration procedure will be performed twice completely through.

**IMPORTANT:** Do Not turn the ignition OFF at the end of the second time through.

1. Make sure the plus VI is still connected to the vehicle and to the CONSULT PC with the USB cable.
2. Make sure the AC adapter is still connected to the CONSULT PC.

3. Push the ignition button twice (without brake depressed) to turn the ignition ON.
  - **IMPORTANT:** Do Not start the engine (for Hybrid models the READY light must be OFF).
4. Turn ON the CONSULT PC, and then open C-III plus (if not already open).
5. On the C-III plus screen, select **Diagnosis (All Systems)**. After system call has completed, select **EPS/DAST 3 >> Work support >> DAST CALIBRATION (MODE1)**. See Figure 24.

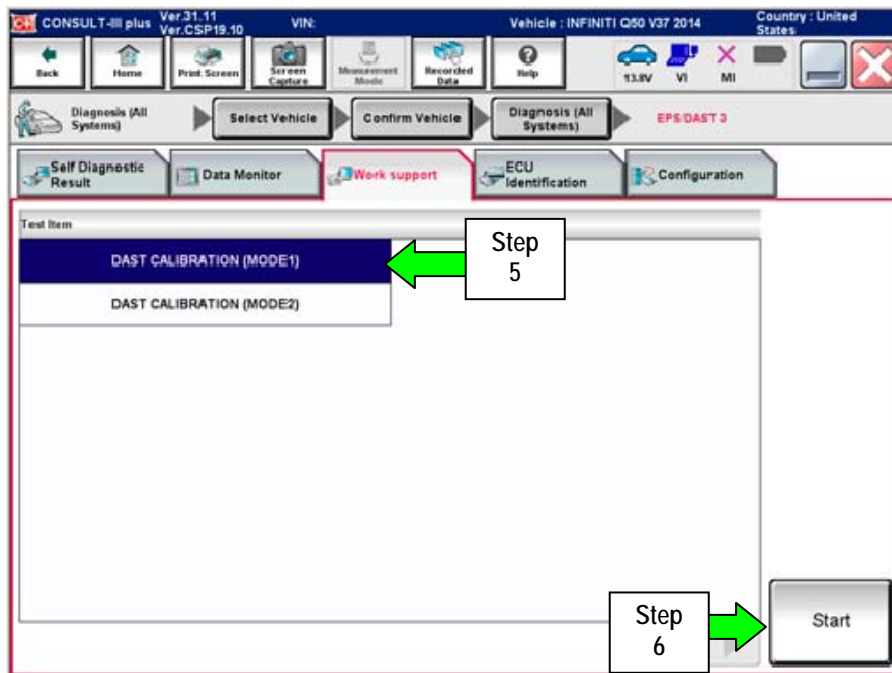


Figure 24

6. Select **START**, and then **START** a second time to begin **DAST CALIBRATION (MODE1)**.
  - Do not rotate the road wheels during the DAST calibration.

**WARNING:** Be careful of moving parts. The steering wheel and front wheels will move automatically by themselves after starting DAST CALIBRATION (MODE1).

**NOTE:** If DAST CALIBRATION (MODE1) will not start, refer to DAST DTCs on page 25.

- When Auto steering has completed, center the steering wheel to the neutral (straight ahead) position, and then select **Start** again (see Figure 25).

**CAUTION:** When DAST CALIBRATION (MODE1) has completed, the steering wheel is disconnected from the steering gear and the force feedback of the steering is reduced. **Never turn the steering wheel beyond 120 degrees otherwise the spiral cable will be damaged.**

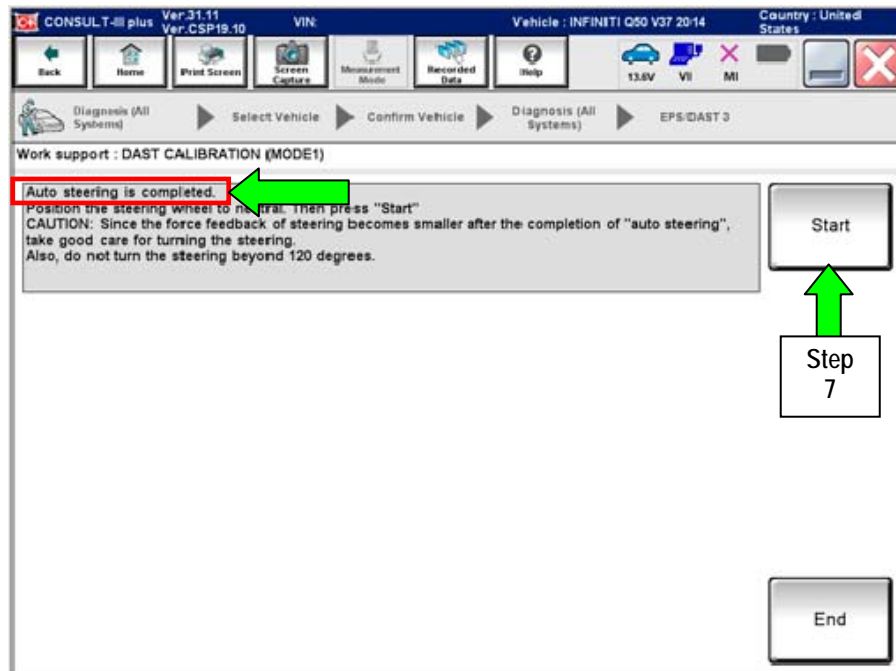


Figure 25

8. Select End.

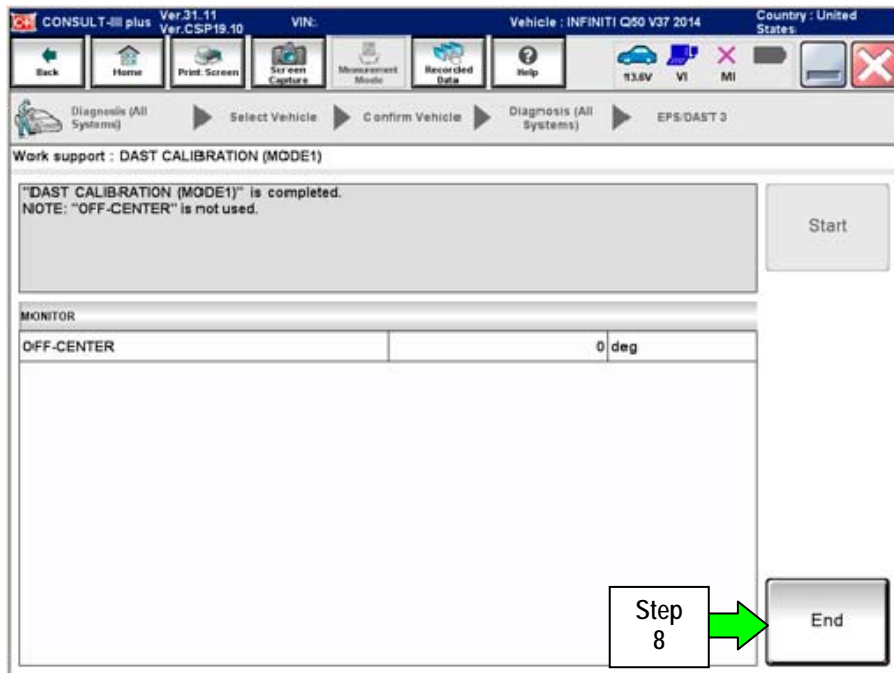


Figure 26

9. Turn the ignition switch OFF.

10. With the C-III plus still connected, repeat steps 1-8 a second time, but **Do Not** turn the ignition OFF after step 8, and then proceed to step 11.

11. Select the **BACK** button twice, and then select **Yes** to "Delete results".

- After system call completes, proceed to **ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION** on the next page.

**IMPORTANT:** Do Not turn the ignition OFF.

- If the ignition is turned OFF between the DAST CALIBRATION (MODE1) and ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION, the procedure for DAST CALIBRATION (MODE1) must be started over from step 1.

## ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

1. With C-III plus in **Diagnosis (All Systems)**, select **ABS >> Work support >> ST ANGLE SENSOR ADJUSTMENT**, and then select **START**.
2. When the message "Waiting for your operation..." is displayed, select **Start**.

**IMPORTANT:** Do Not touch the steering wheel while adjusting steering angle sensor.

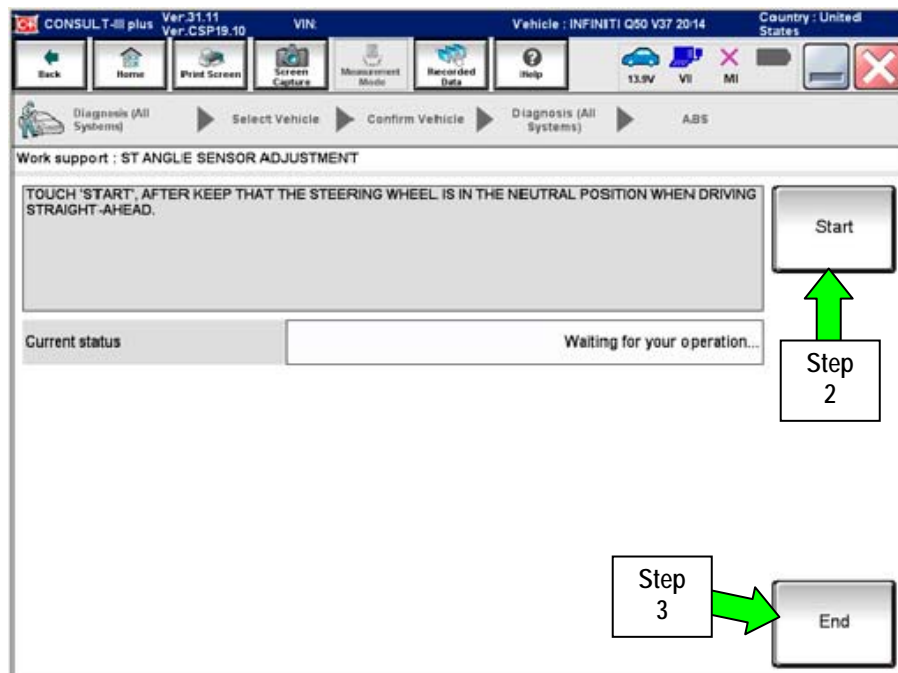


Figure 27

3. When the message **COMPLETE** is shown (after approx. 5 seconds), select **End**.
4. Turn the ignition switch OFF and wait at least 10 seconds, then go to "Self-Diagnosis Check" on the next page.

## SELF-DIAGNOSIS Check

1. Start the engine or place in READY mode (turn ignition ON with brake pressed).
  
2. Check for DTCs in DAST 1, DAST 2, and EPS/DAST 3 as follows:
  - A. On C-III plus, return to the Home screen.
  - B. Select **Diagnosis (All Systems)**, and then select **Confirm**.
  - C. Wait for system call to complete.
  - D. Check for stored DTCs
    - If no DTCs are stored, go to CONFIRMATION of EPS/DAST 3 ANGLE 1 on the next page.
    - If DTCs C13E9-00, C13EB-00, and/or C13F0-00 are stored:
      - a. Erase all DTCs
      - b. Change the steering wheel tilt to a slightly lower position.
      - c. Perform DAST CALIBRATION (MODE1) again.
      - d. Perform SELF-DIAGNOSIS Check again.
      - e. Repeat a – d above until no DTCs are stored.
      - f. Go to CONFIRMATION of EPS/DAST 3 ANGLE 1 on the next page.

**IMPORTANT:** Do Not drive the vehicle.

## CONFIRMATION of EPS/DAST 3 ANGLE 1

**NOTE:** At this point the ignition should still be ON with the engine running or the READY light ON.

1. With C-III plus in **Diagnosis (All Systems)**, select **EPS/DAST 3 >> DATA MONITOR >> ANGLE 1**, and then check the value of **ANGLE 1** (see Figure 28).
  - ANGLE 1 should be within the standard value shown below.
  - If ANGLE 1 is **not** within the standard value:
    - a. Change the steering wheel tilt to a slightly lower position.
    - b. Perform DAST CALIBRATION (MODE1) again.
    - c. Perform CONFIRMATION of EPS/DAST 3 ANGLE 1 again.
    - d. Repeat a – c above until ANGLE 1 is within the standard value.

Monitor item	Standard value
ANGLE 1	between -4.4 and 4.4

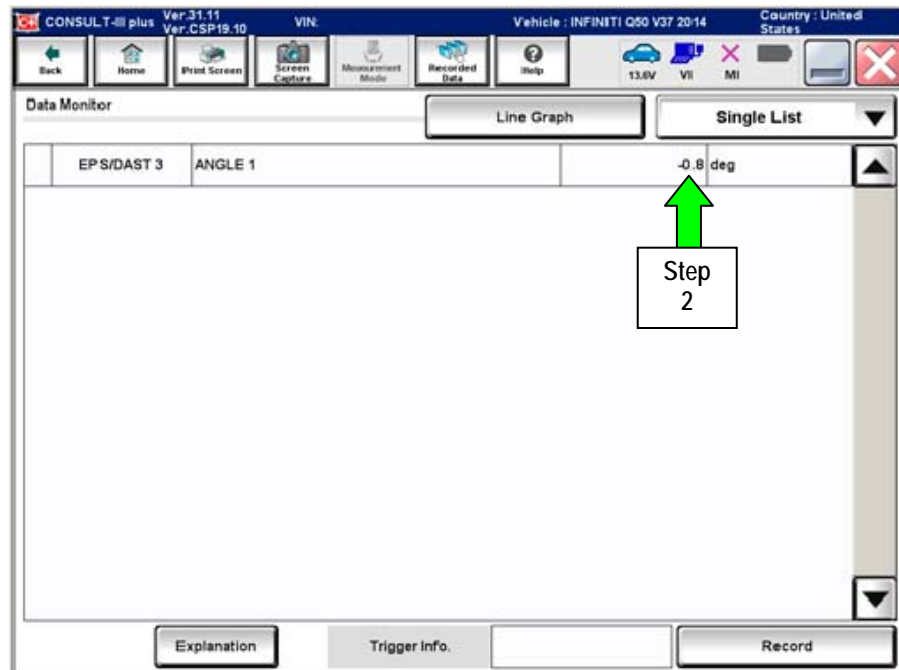


Figure 28

## Check Steering Off-center and Pull

Test drive the vehicle and check for any pull or off-center condition.

- If there is **not** any pull or off center condition, the Service Procedure in the bulletin is complete.
- If there is any pull or off-center condition, drive the vehicle as follows.

1. Safely drive the vehicle as follows:

- In a straight line (hold the steering wheel so the vehicle stays in a straight line)
  - On a smooth, straight, flat road
  - Speed of 40 mph or more (recommend staying at below 50 mph)
  - For at least 5 seconds
- The DAST will automatically correct the off-center condition. During the above drive the steering wheel will gently and very slowly move to a center position while driving straight.

### NOTE:

- Make sure to operate the vehicle safely.
- Using a smooth, straight, flat road with very light or no traffic is recommended.
- Bumps, pot holes, or other steering input may affect the calibration, which will require a repeat of step 1.
- Traffic conditions that require steering input may affect the calibration, which will require a repeat of step 1.

2. Recheck: If the steering wheel is still off-center while driving straight, repeat step 1.

3. When there is no pull or off center condition, the Service Procedure in this bulletin is complete.



## DAST DTCs

**NOTE:** Perform the following steps only if:

- DTCs are stored for DAST 1 and/or DAST 2.
- DAST CALIBRATION (MODE1) will not start.

### 1. Check DTCs for **DAST 1**.

- If C13C0 and C13C2 are detected as current on **DAST 1**, replace the control unit for **DAST 2**.
- If DTCs can not be read (DAST 1 is not listed), go to step 2 and check DTCs for **DAST 2**.

### 2. Check DTCs for **DAST 2**.

- If C13C0 and C13C2 are detected as current on **DAST 2**, replace the control unit for **DAST 1**.
- If DTCs can not be read (DAST 2 is not listed), turn the ignition switch OFF and then back ON. Then go back to Check DTCs for DAST 1 (step 1) again.
  - If step 1 and step 2 are repeated more than 5 times and there is still no DTCs stored/listed, replace the control unit for **DAST 3**.

**NOTE:** If a DAST control unit replacement is required:

- Refer to the appropriate section of the ESM for the procedure to replace and configure a DAST control unit.
- **Make sure to perform Read/Write Configuration** and save the Control unit's configuration before replacement, and then write the configuration to the new control unit.

## PARTS INFORMATION

DESCRIPTION	PART #	QUANTITY
DAST 1 Control Unit	28505 - 4GA1D	Replace Control Unit <b>Only</b> if indicated in the Service Procedure – this is not expected.
DAST 2 Control Unit	28505 - 4GA6D	
EPS/DAST 3 Control Unit	285H0 - 4GA5D	

## CLAIMS INFORMATION

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

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Reprogram all DAST Control Modules	(1)	QX27AA	ZE	32	2.1

(1) Reference the repair order and use the DAST 1 control unit part number written down in step 14 of the service procedure as the PFP.

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If required

## CLAIMS INFORMATION

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

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
RPL Power Steering Main Control Unit	(1)	RS53AA	ZE	32	(2)

(1) Use the DAST 1 Control Unit part listed in the parts information as the PFP.

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

AND/OR

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

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
RPL Power Steering Sub Control Unit	(1)	RS54AA	ZE	32	(2)

(1) Use the DAST 2 Control Unit part listed in the parts information as the PFP.

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

AND/OR

## CLAIMS INFORMATION

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

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
RPL PS Column Control Assy	(1)	RS13AA	ZE	32	(2)

(1) Use the EPS/DAST 3 Control Unit part listed in the parts information as the PFP.

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