General Service Bulletin (GSB):	Module Programming
GSB Overview:	This General Service Bulletin will cover the proper tool usage along with what programming procedure to use and tips on how to perform these procedure
NOTE: This information is not intended to replace or supersede any warranty, parts and service policy, Work Shop Manual (WSM) procedures or technical training or wiring diagram information.	

This General Service Bulletin covers the following topics:

1. Where to go in the IDS Tool to Access Module Programming

2. The Different Module Programming Types
- **Programmable Module Installation**
- **Module Reprogramming**
- **Programmable Parameters**
- **As-Built**

3. Module Reprogramming/Programming Tips

4. Detecting Unauthorized/Non-Factory PCM Calibrations

"Module Programming"

Module Programming Menu

- **Module Programming Menu (figure 1) is available in the Toolbox tab after starting a session with a vehicle.**
    NOTE: The module programming tab is disabled when a manual vehicle session is started

- **When selecting the Module Programming Menu (figure 2) you will see 4 tabs**
    NOTE: Some tabs may not be present on all vehicles.
    - **Programmable Module Installation (PMI)**
    - **Module Reprogramming**
    - **Programmable Parameters**
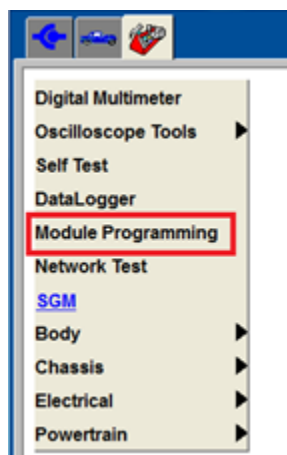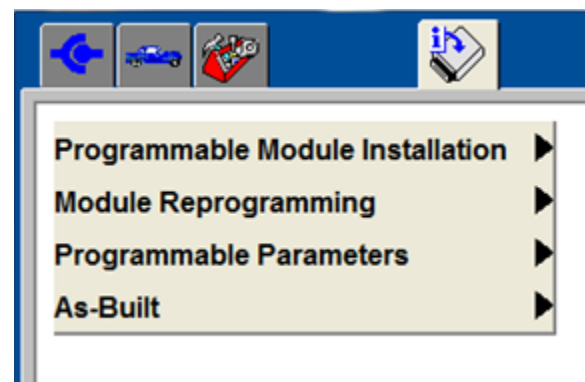   - **As-Built**

Figure 1

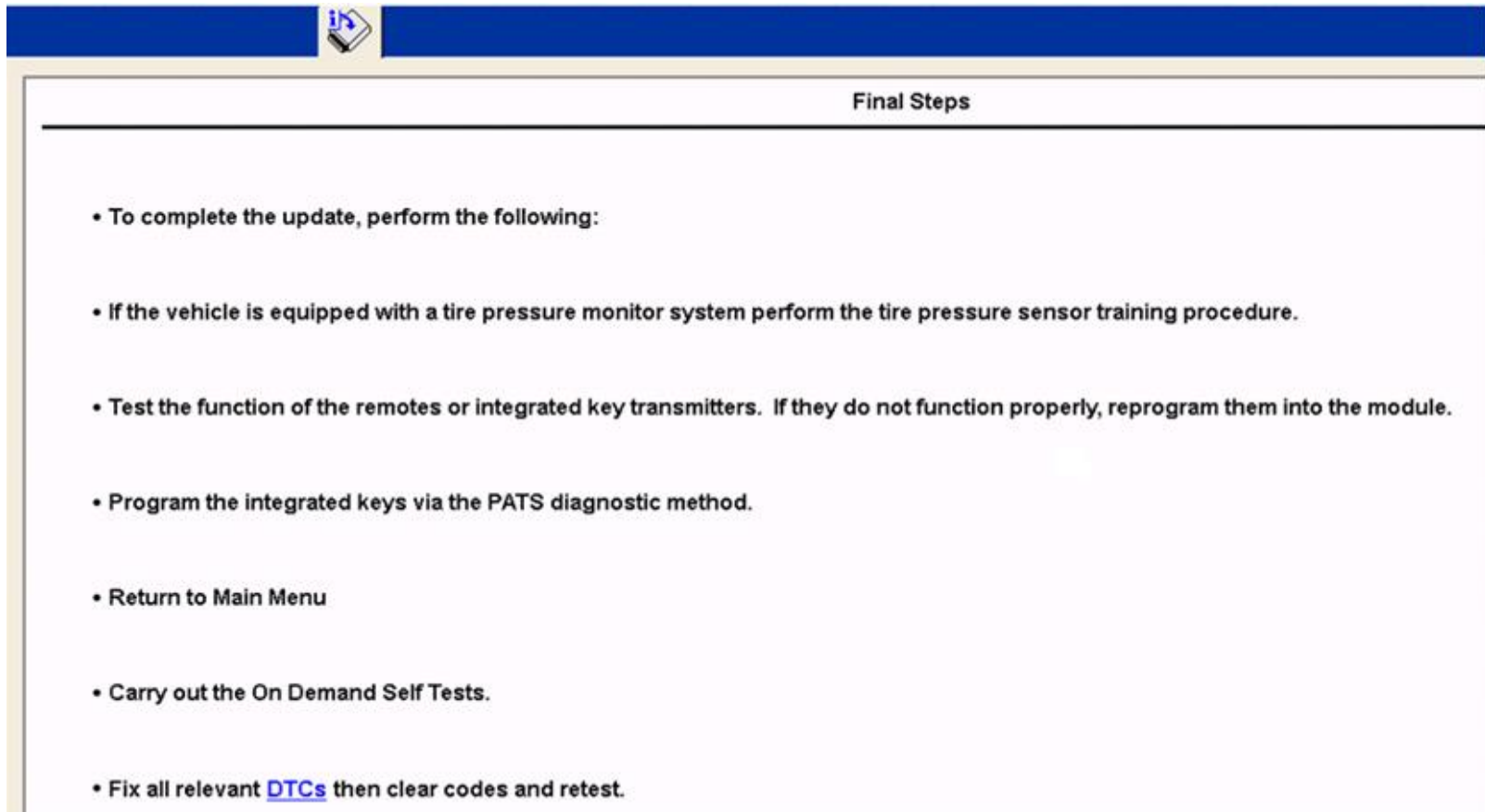Figure 2

"Module Programming"

Programmable Module Installation (PMI)

- **PMI is used when replacing a module. When running this function, IDS can program As-Built data and flash calibration/software files when available.**
    NOTE: This may not always update the module to the latest level if it is already at a valid level (see Module Reprogramming).

- **When running PMI, start the session with the original module. This will inhale the original data and exhale it into the new module. This will carryover customer stored preferences.**
    IE: Daytime Running Lights, Belt Minder, etc.

- **Running PMI when the original module does not communicate will pull the original data from PTS and program the module as needed.**

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Programmable Module Installation (PMI) (continued)

After the calibration and configuration have been loaded and checked, the Final Steps screen will appear giving additional steps required to complete the installation process.

Final Steps

- To complete the update, perform the following:

- If the vehicle is equipped with a tire pressure monitor system perform the tire pressure sensor training procedure.

- Test the function of the remotes or integrated key transmitters. If they do not function properly, reprogram them into the module.

- Program the integrated keys via the PATS diagnostic method.

- Return to Main Menu

- Carry out the On Demand Self Tests.

- Fix all relevant DTCs then clear codes and retest.

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Module Reprogramming

- **Module Reprogramming will update the software/calibration of a module when directed by a FSA, TSB, SSM or Workshop Manual procedure. This may also configure As-Built data when needed.**

- **Module Reprogramming will read the current software levels within the module and compare this information with the IDS database. If there is an update, it will be displayed on the IDS screen.**

- **Calibration is how a module determines what to do with the inputs it receives such as Mass Air Flow (MAF) sensor tolerances, Accelerator Pedal Position (APP) readings, etc.**

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As-Built or "Configuration Data"

- **As-Built is the data that tells the module how it is originally configured from the plant.**
  - **"Yes" it has DRL or "No" it does not**
  - **It should not be mistaken for calibration data**
  - **As-Built data may not be available or required for all modules**

- **Running As-Built on a module returns it back to the way it left the plant. For instance, the customer turned the seatbelt minder off, if you run As-Built on the RCM it will configure the feature back on.**

- **As-Built can be entered automatically or manually (manual entry is not recommended). The data is located in PTS by selecting the As-Built tab in the drop down menu.**

- **As-Built can also be used to obtain valid part numbers within the As-Built file. When the IDS tool cannot read a part number from an original module it may direct you to As-Built to obtain it.**

Were you directed here from another procedure such as Programmable Module Installation or Module Reprogramming to obtain part numbers?

No	Yes

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As-Built "Data Corrupt"
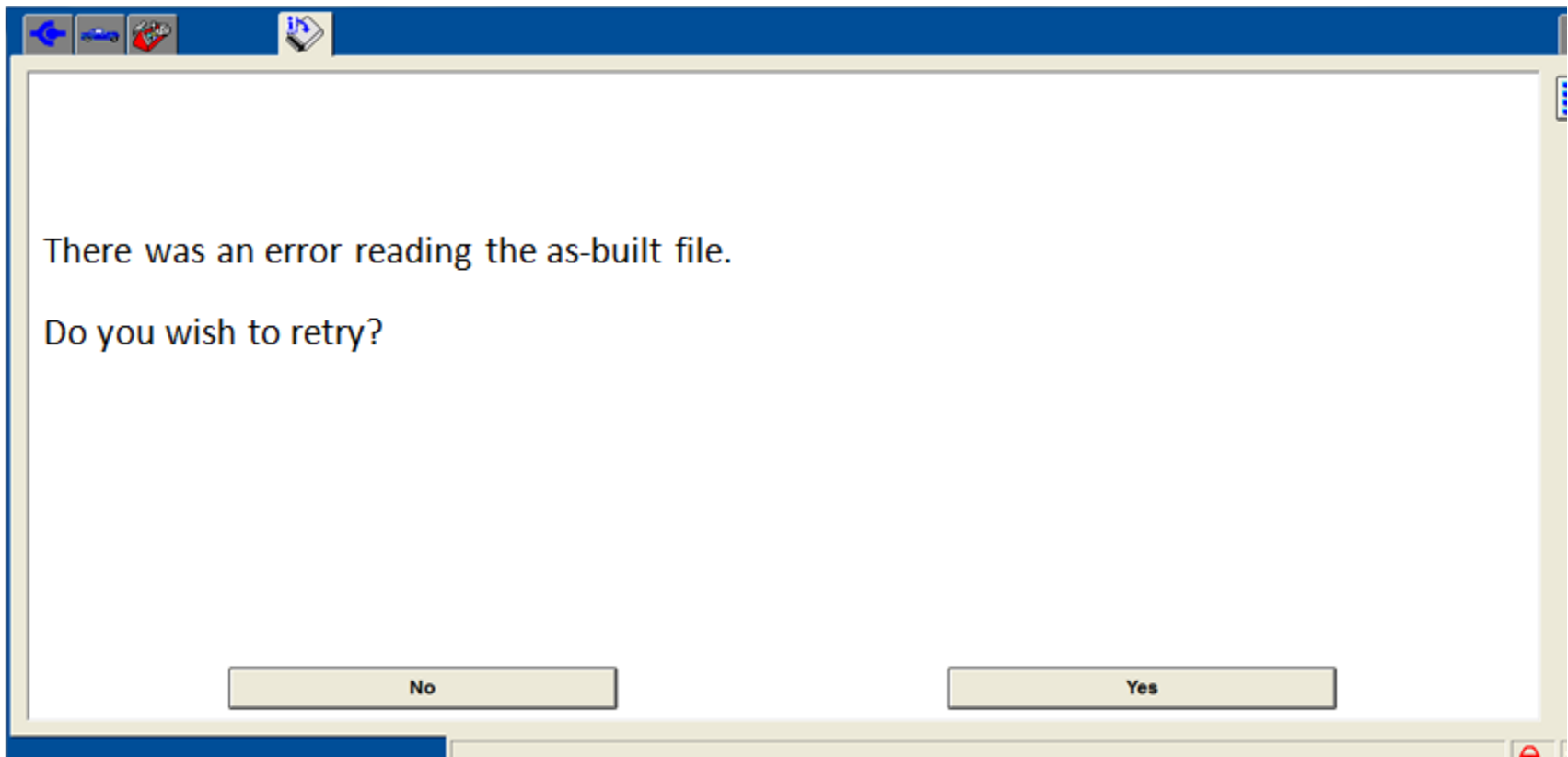
- **This message is displayed when the IDS has either not found the data or, the data does not match the vehicle. <u>NOTE:</u> Do not replace the module for this, complete the following steps to correct.**
- **If this message is displayed, the IDS sends an As-Built data request to the system (see pg. 9)**
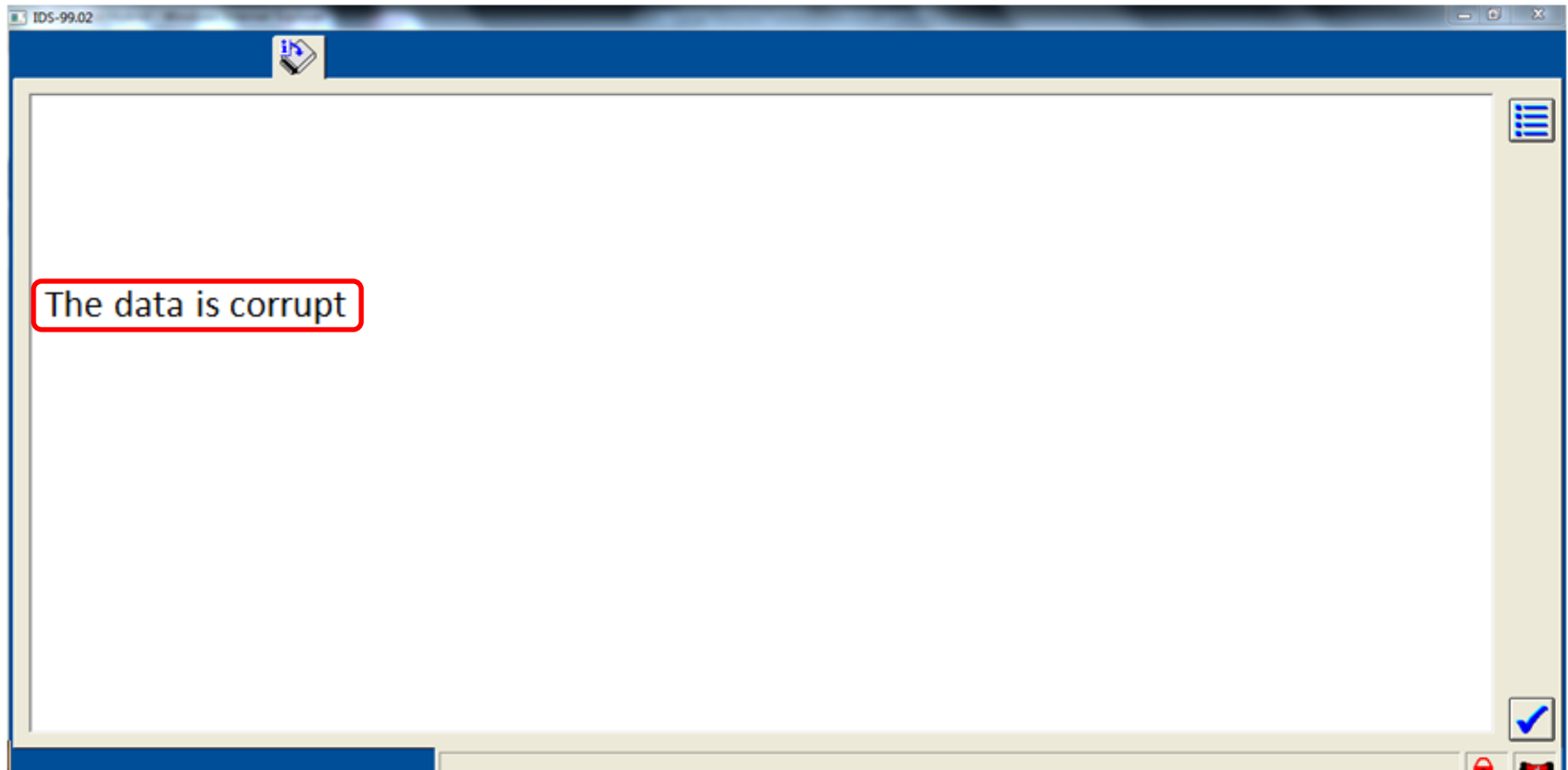
"Module Programming"

As-Built or "Data Corrupt"

- **Select "No" at this screen**
- **This will allow you to refer to the "As-Built Assistance Request " screen to see if it was answered (see pg. 9)**

There was an error reading the as-built file.

Do you wish to retry?

| No | | Yes |

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As-Built or "Data Corrupt"

- **Search for your Vehicle's VIN to see if the request has been answered**
- **If answered, go to the As-Built tab and select "Click here if data is now available"**

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As-Built or "Data Corrupt"

- **Scroll down to the module that was missing the data and click on "Inst" for the next steps to take**

Data is unavailable for the following modules
These modules may be optional on this vehicle.
If the data is required, please select the Instructions link next to the desired module.
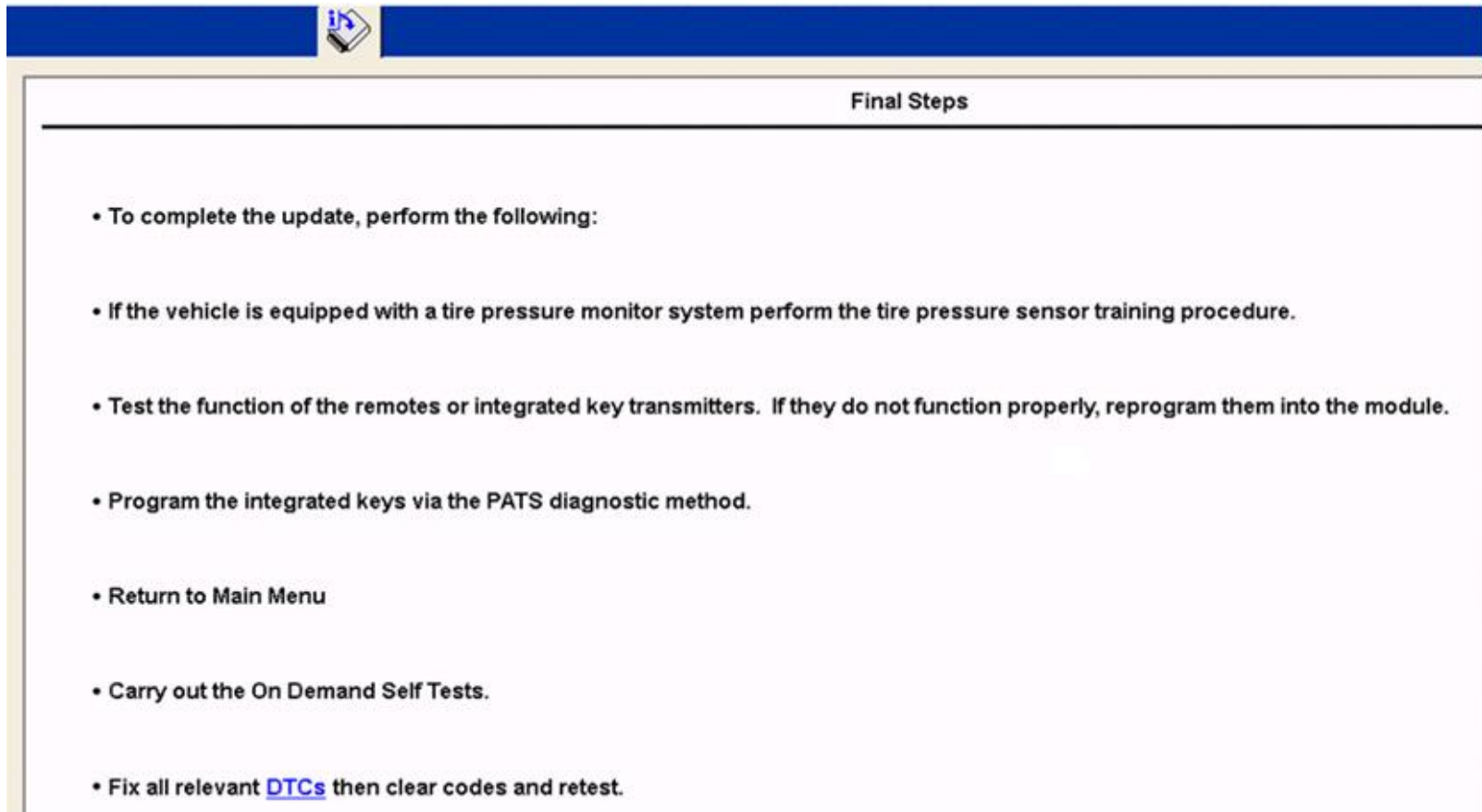
			TSB	SSM	Instructions
760	ABS	Anti-Lock Bake System Module			Inst
764	CCM	Cruise Control Module			Inst
746	DCDC	DC to DC Converter Control Module			Inst
744	DSM	Drivers Seat Module			Inst
783	DSP	Digital Signal Processor			Inst
7A5	FCDIM	Front Control Display Interface Module			Inst
741	PDM	Passenger Door Module			Inst
751	RTM	Radio Tansceiver Module			Inst
776	DCSM	Driver Climate Control Seat Module			Inst
791	TRM	Trailer Module			Inst

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Programmable Module Installation (PMI) (continued)

After the calibration and configuration have been loaded and checked, the Final Steps screen will appear giving additional steps required to complete the installation process.

Final Steps

- To complete the update, perform the following:

- If the vehicle is equipped with a tire pressure monitor system perform the tire pressure sensor training procedure.

- Test the function of the remotes or integrated key transmitters. If they do not function properly, reprogram them into the module.

- Program the integrated keys via the PATS diagnostic method.

- Return to Main Menu

- Carry out the On Demand Self Tests.

- Fix all relevant DTCs then clear codes and retest.

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Module Programming and Reprogramming Service Tips

Use the following tips to help ensure programming completes without errors:
- **Ensure that the session is created (Key ON Engine OFF (KOEO))**
- **Connect vehicle to a battery charger set on the optimal charge setting**
- **Connect the IDS tool (computer) to a power source**
- **Inspect the VCM and cables for any damage and ensure cables remain connected throughout programming**
- **A hardwired internet connection is strongly recommended**
- **Turn off all accessories (radio, heated/cooled seats, headlamps, HVAC, close all doors, etc.)**
- **For Plug-In EVs, disconnect any external EVSEs/HV Charge Cords from the charge port.**
- **Follow all on-screen instructions carefully, especially any key cycle movements the IDS directs you to perform. Allow the startup/power down routines to complete**
- **Disable Microsoft Windows sleep mode, screensaver, hibernation modes**
- **On many vehicles, a validation will be performed of the configuration of other modules on the network by the module being reprogrammed. An overall loss of communication with a module may prevent a module reprogramming action from completing. The cause of the communication concern must be corrected before reprogramming will complete.**

NOTE: Disconnect any aftermarket items (remote start, alarm, power inverter, insurance devices, etc.)

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Recovering a PCM/SJB When Programming has Resulted in a Blank Module
IMPORTANT: Never Delete the Original Session

1. Obtain the original IDS used when the programming error occurred during Module Reprogramming or Programmable Module Installation (PMI).
2. Disconnect the VCM from the IDS and then the DLC.
3. Reconnect VCM to the IDS and then the DLC. The VCM icon should appear in the corner of the IDS screen. If the VCM icon does not appear, troubleshoot the IDS-to-VCM connection.
4. Attempt to start a new IDS session for the vehicle, if the IDS can read the VIN it will default into the failed programming session. If it cannot read the VIN, locate the original vehicle session used when programming failed. In most cases this would be the last session used. If you cannot locate the original vehicle session, use the session created on the date the programming failed. Using an IDS with the latest release available, sessions with failed programming will be highlighted in RED.
   NOTE: If the original session is not in the previous list, click the Recycling Bin icon in the lower right of the Previous Sessions screen. This will load any deleted session, double click on the session to restore.
5. Once the session is loaded, the failed process should resume automatically.
6. If programming does not resume automatically, proceed to the Module Programming menu and select the previously attempted process (PMI or Module Reprogramming).
7. Follow all on-screen instructions to complete the programming process. Near the end of programming, IDS will prompt you to select certain parameters. It is important to make a selection for ALL parameters listed, even if the correct selection is highlighted you need to click that selection before clicking the Tick mark to complete the configuration.
8. The last screen on IDS may list additional steps required to complete the programming process. Ensure all applicable steps are performed in the order listed on the screen.

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<u>Detecting Unauthorized/Non-Factory PCM Calibrations</u>

Unauthorized/non-factory PCM calibrations may not be detectable using standard tools or diagnostic equipment. Customer acknowledgement is the only conclusive method to verify an unauthorized PCM calibration has been utilized. Two methods often <u>misused</u> to verify the presence of an unauthorized PCM calibration are:

<u>The PCM Filename of the software file in the PCM.</u>

> Due to the design of unauthorized calibration equipment (Aftermarket Tuners) and the inherent possibility that this equipment will utilize a factory PCM Filename, the PCM Filename cannot be used to verify the presence of an unauthorized calibration. For example, the aftermarket calibration may have the same filename as a valid Ford Motor Company Calibration.

<u>The Ignition Counter (IGN_CTR) located in Mode 9</u>

> This data displays the number of ignition key cycles since the most recent PCM calibration update. The PCM calibration may be updated at a dealership or a 3rd party facility with an IDS or other scan tool causing the Ignition Counter to reset. The accuracy of this value cannot be determined as this value resets with any calibration update.

To ensure an accurate repair and prevent repeat failures, follow any applicable publications in OASIS. If no applicable service publications are available refer to the following:

- Determine extent of damage and complete the repair per the Warranty and Policy Manual and published Workshop Manual procedures.
- After the repair is completed, install the factory calibration in the PCM (use the procedure shown on pg. 10).
- After the PCM calibration is restored, refer the customer to the Warranty and Policy Manual regarding the vehicle warranty and risks of unauthorized calibrations.

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Detecting Unauthorized/Non-Factory PCM Calibrations (continued)

Returning PCM calibration to the factory setting

- **Start a normal IDS session. If a previous session is present, select None of the Above.**
- **Select "No" when verifying the information on the "Vehicle Specification" screen.**
- **Enter the Tear Tag into the IDS to identify the vehicle.**
    - **NOTE: The Tear Tag is located under the As-Built screen from the OASIS tab on PTS.**
- **There will be a second "Vehicle Specification" screen. Verify information and select "Yes"**
- **When the session is started, "Module Programming" should automatically begin. If it does not, select Programmable Module Installation (PMI) from the IDS menu and select PCM.**

This procedure will only install the latest factory calibration and *will not* verify if an unauthorized calibration was installed. Following the repair, attach the PCM Filename, Ignition Counter and any DTCs to the repair order for documentation.