SS 3124 - FTL Legacy M2 Bulkhead Module (BHM) Replacement and DiagnosticLink Issues

PLEASE NOTE: Attached is a document "Bulkhead Programming Instructions" that should be used when programming the new BHM. For additional information on migrating the bulkhead module please see the M2 workshop manual section “flashing the bulkhead module procedure"

Applicable Vehicles

Legacy M2 Business Class, 108SD, 114SD using a Bulkhead Module (BHM) and Chassis Module (CHM) for power distribution and control.

Production vehicles may have used any of approximately 10 different part numbers.

Currently-available replacement BHM parts include:

1. 06-75157-001 ("pre-2016 OBD"), version 7.30 software
2. A66-03086-001 (automatic baud rate detection for J1939), version 7.43 software
3. A66-03086-002 (fixed 250kbps J1939 baud rate), version 7.45 software
4. A66-03086-003 (fixed 500kbps J1939 baud rate), version 7.44 software

Symptoms

After replacing the BHM in a truck *without* first confirming the correct part with Excelerator, DiagnosticLink may not be able to program the replacement BHM. Although DiagnosticLink may report success, the VIN in the replacement part is (usually) the "blank" VIN of ABCDEFGHIJKLMNOP1.

If an incorrect part is used, and then the correct part is installed, DiagnosticLink may program an incorrect software version to the module. See the attached screen shot, which shows the DiagnosticLink Professional view of a BHM with part number 06-75157-001 (originally loaded with 7.30 application software) that was reflashed to 7.45 application software and has a blank VIN.

Flashing to a different software version than supported by the module may render a BHM inoperative. The example noted above resulted in a module that would only communicate on a 500kbps J1939 network, where the truck had a Natural Gas engine that only supported a 250kbps J1939 network.

NOTE: There are other known situations where a replacement BHM cannot be programmed. If the replacement part was confirmed *before* any programming attempt, this Service Solution likely will not apply.

Issue

When replacing the BHM, Excelerator *must* be consulted to determine the correct replacement part for the serial number that is being serviced.

This is *especially* important if a truck is being rebuilt with a sales cab. Sales cabs *may not* have the correct BHM for the original vehicle. *Use the serial number of the original vehicle when confirming the correct BHM part number*.

If an incorrect BHM (per the pats catalog) is used, there are several issues that arise when using DiagnosticLink Professional to configure the BHM:

1. DiagnosticLink Professional will not flash the per-serial configuration to the module, as noted above.
2. As a result of the failure to flash the per-serial configuration, the VIN in the BHM will remain at "ABCDEFGHIJKLMNOP1".
3. DiagnosticLink will attempt to migrate the vehicle data to an (incorrect) software version.
4. Without further intervention by the DTNA CAC, further attempts to install a BHM will also fail.
5. Even if the correct BHM part is subsequently installed, DiagnosticLink professional will reprogram the application software, rendering the BHM unusable except on newer M2 chassis.

At least two instances where a dealer has rendered multiple BHM parts unusable have been reported.

Sometime after calendar year 2017, three different BHM "upgrade" paths were defined. Prior to that time, any BHM with newer software *could* be installed on an older truck without issue. That is no longer true - the following defined "breakpoints" for BHM software and parameter compatibility are enforced in the FLT mainframe. However, these breakpoints *are not* correctly enforced with DiagnosticLink.

1. **BHM 7.30 software** is compatible with *all* M2 chassis built before 2016 OBD changeover (2 January 2016) for the U.S. and Canada, and *may* have also been used on vehicles for export markets. See below for more information. Part number 06-75157-001 replaces all M2 BHM parts for older M2 chassis.
    - All older M2 chassis *can* be updated to the 7.30 software without issue. Parameter interchange and compatibility has been confirmed.
    - There is *no upgrade path* to newer software versions (7.4x) - parameter interchange and compatibility is *not defined*.
2. **BHM 7.43 software** is compatible with approximately the first 2 years of 2016 OBD production (2 January 2016 changeover). New module part number is A66-03086-001.
    - Version 7.43 software *can be flashed* to a BHM that has 7.41 software without any loss of functionality.
    - Although *theoretically* possible, upgrades to either the 7.44 or 7.45 software are *blocked* because the boot loader
3. **BHM 7.45 software** was changed over on 18 January 2021 and is compatible *only with* M2 chassis built for export markets or with an engine exempt from HD-OBD regulations. Part number A66-03086-002.
    - *Trucks with a 7.41 or 7.43 Bulkhead Module and a 250kbps J1939 datalink* ***CANNOT*** *be updated to this software version. The application is not compatible with the boot loader used on earlier modules and upgrades are blocked.*
    - *This software is not compatible with trucks that used BHM 7.30 or earlier software.*
    - *This software is not compatible with trucks that used BHM 7.44 software, the BHM will prevent communication on the J1939 network.*
4. **BHM 7.44 software** was changed over on 18 January 2021 and is compatible *only with* M2 chassis built after that date. This version is a fixed 500kbps baud rate J1939 module, intended to address some of the issues caused by the automatic baud rate detecting modules (versions 7.41 and 7.43). Part number A66-03086-003.
    - *Trucks with 7.41 or 7.43 software and a 500kbps J1939 datalink* ***CANNOT*** *be updated to this software version.*
        - *DiagnosticLink may offer software version 7.44 as a software upgrade. Efforts are underway to prevent this from occurring.*

    - *The 7.44 application software is not compatible with the boot loader used on the 7.41 and 7.43 version BHM modules.*
- *This software is not compatible with trucks that used BHM 7.30 or earlier software.*
- *This software is not compatible with trucks that used BHM 7.45 software, the BHM will prevent communication on the J1939 network.*

NOTE: the 2 January 2016 changeover date represents the date when the *automatic baud rate detecting* BHM (version 7.41) changed over in production for trucks that complied with the 2016 HD-OBD regulation changes for the U.S. and Canada. *Some trucks built in 2016 may have used the version 7.30 fixed baud rate module*, therefore, this *is not* an "absolute" date. Vehicles built for Mexico and export markets did not adopt a 500kbps J1939 datalink at the same time, and BHM version 7.30 remained in production until July 2017. Excelerator will list the correct BHM replacement for each truck serial number.

Solution

Before using DiagnosticLink, ensure that the correct BHM part number, as called out in Excelerator, is installed on the truck. Excelerator has correct part number information for the BHM (module 32A).

If a module has been replaced, and it is determined that the module was flashed with incorrect software, DiagnosticLink has initiated a data migration. A ticket must be logged with the Customer Assistance Center in SalesForce, specifically requesting BHM migration rollback.

Labels :

108SD 114SD Electrical M2

Add tags

Attachments

BHM_Programming_Instructions.docx

7 Kudos

Comment

E1939-33 **BHM_J1939 - Bulkhead Module**

Device Configuration

Software Mode	Running in Application

Device Information

Make	FRGHT
Model	BHM_L
Serial Number	504055
Hardware Revision	A0
Software Indentification	U.r.2.A0.07.45
VIN	ABCDEFGHIJKLMNOP1

ID Block

Diagnostic Version	745

Vehicles Affected: Legacy M2 Business class, 108SD and 114SD

Described Condition:

If replacing a Bulkhead Module, refer to Excelerator for the latest hardware displayed in module 32A. If the BHM was replaced in a truck *without* first confirming the correct part with Excelerator, DiagnosticLink may not be able to program the replacement BHM.

Figure 1

This is *especially* important if a truck is being rebuilt with a sales cab. Sales cabs *may not* have the correct BHM for the original vehicle. *Use the serial number of the original vehicle when confirming the correct BHM part number*.

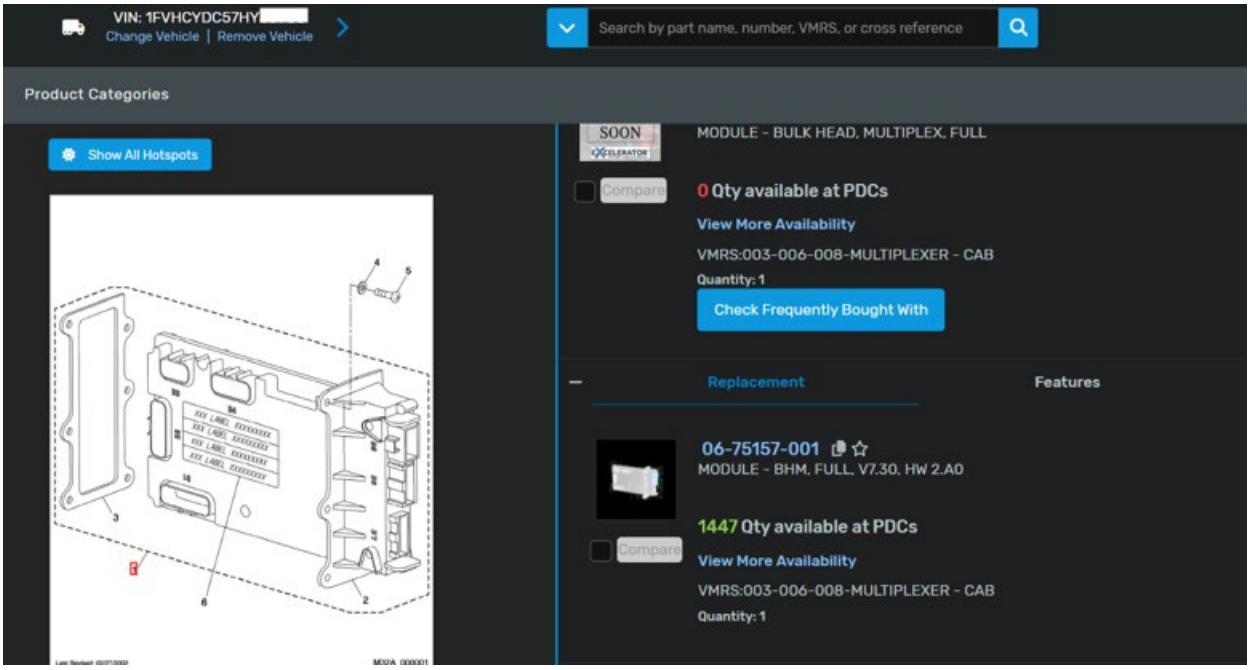


Figure 2

Confirm vehicle specific part number in module 32A in Excelerator.

Below is the Bulkhead Module Programming Instructions that should be used when programming the new BHM

New BHM Migration programming Steps:

Once you are connected to the vehicle and in the add request screen it should auto populate the ECU. If it defaults to all A's for the VIN or alphabetical sequence 1 then type in the full VIN for the migration. Verify the hardware part number matches the installed BHM. (if you are replacing the BHM then validate that the hardware part number matches with the correct one in Excelerator).

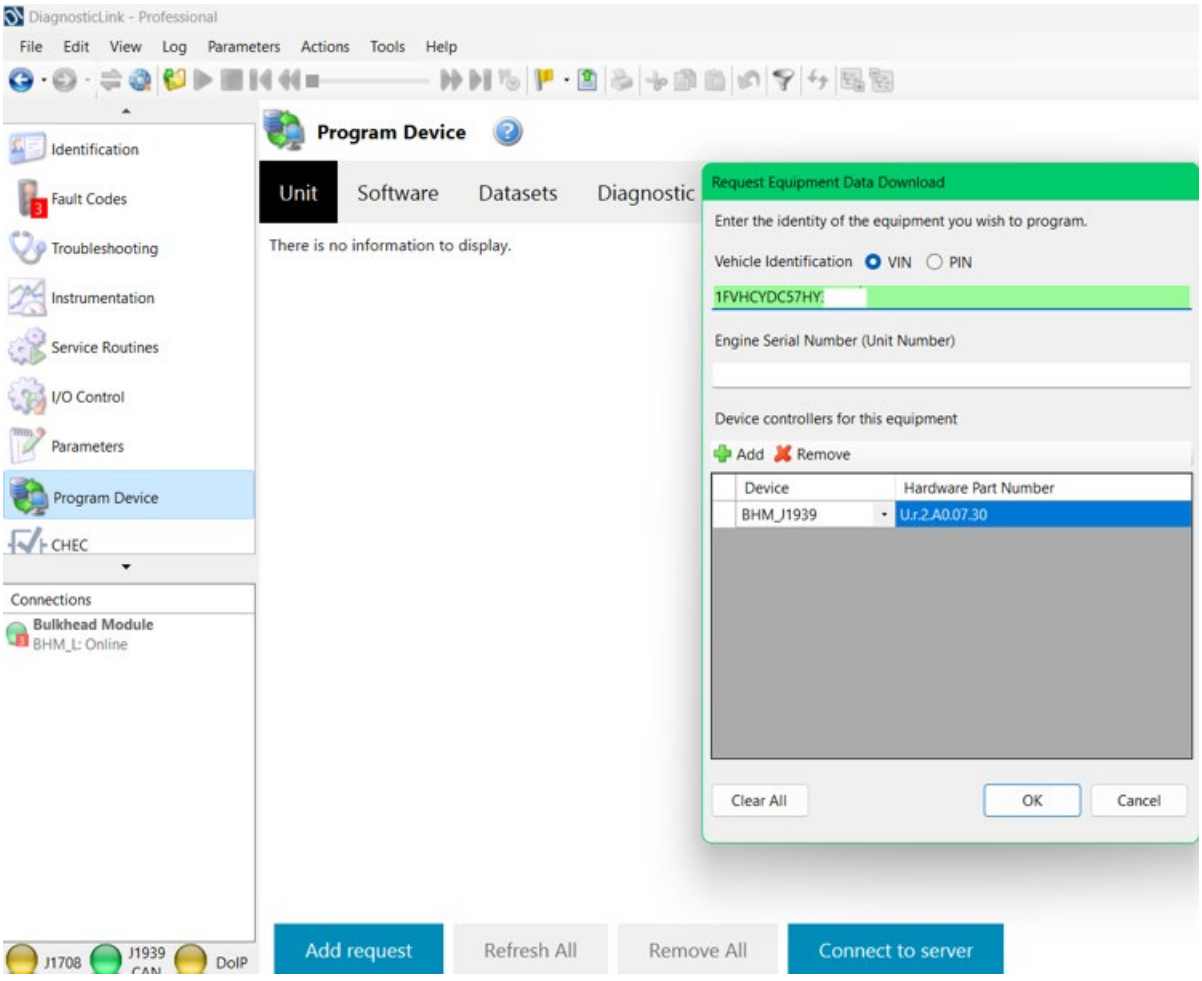


Figure 3

Once you click on connect to server and the “download completes” click on the VIN number and hit next.

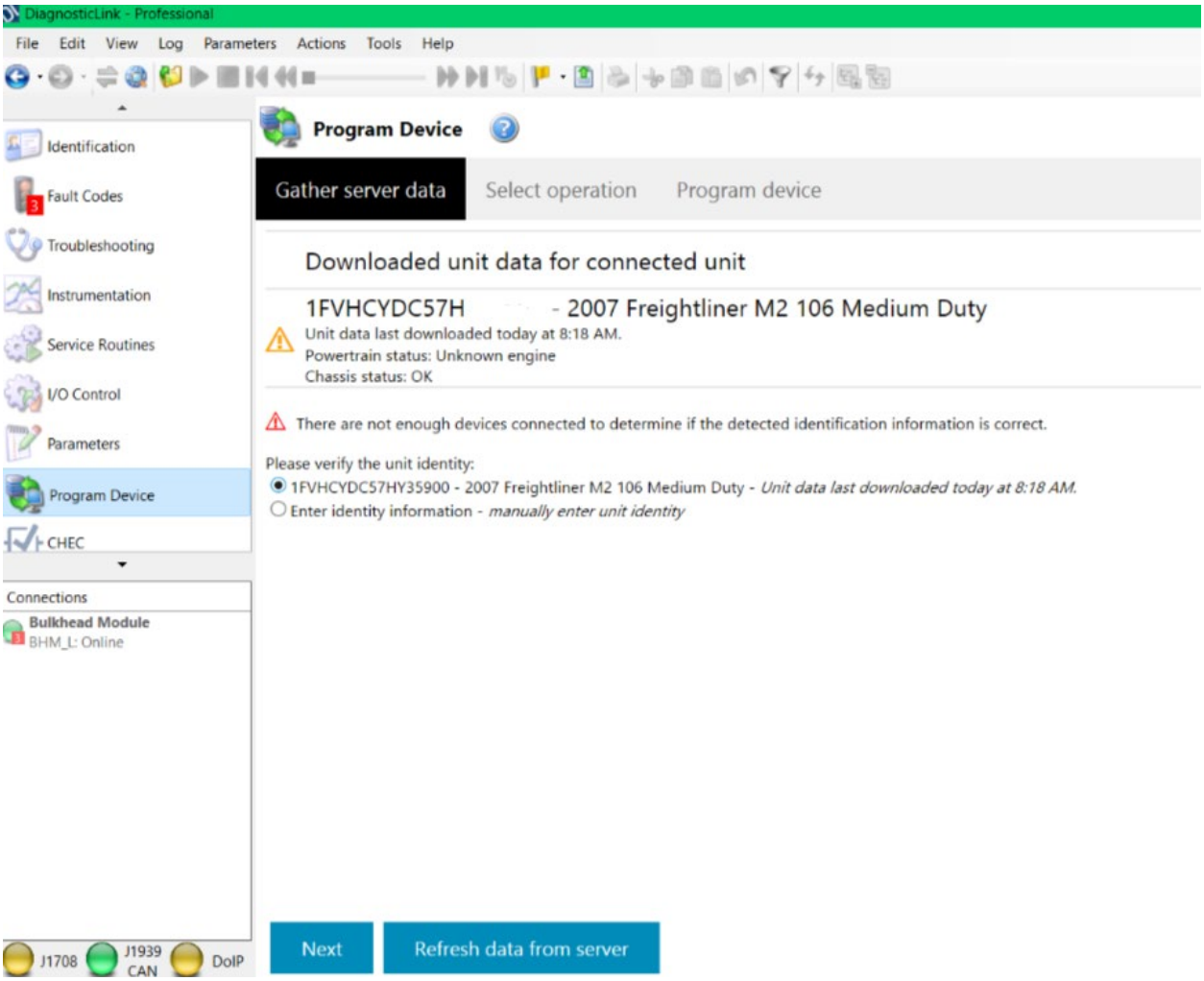
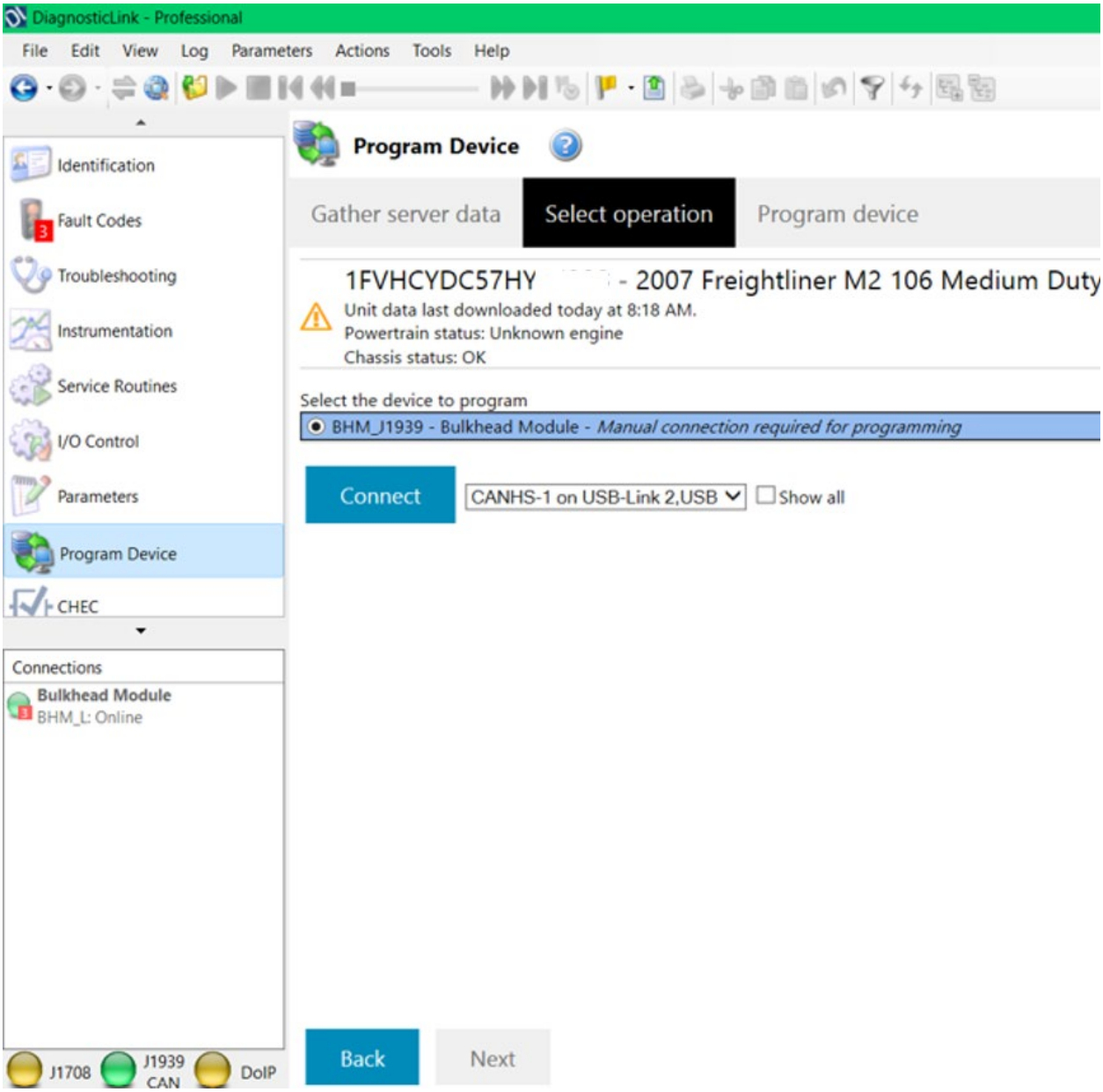


Figure 4

Figure 5



Click connect.

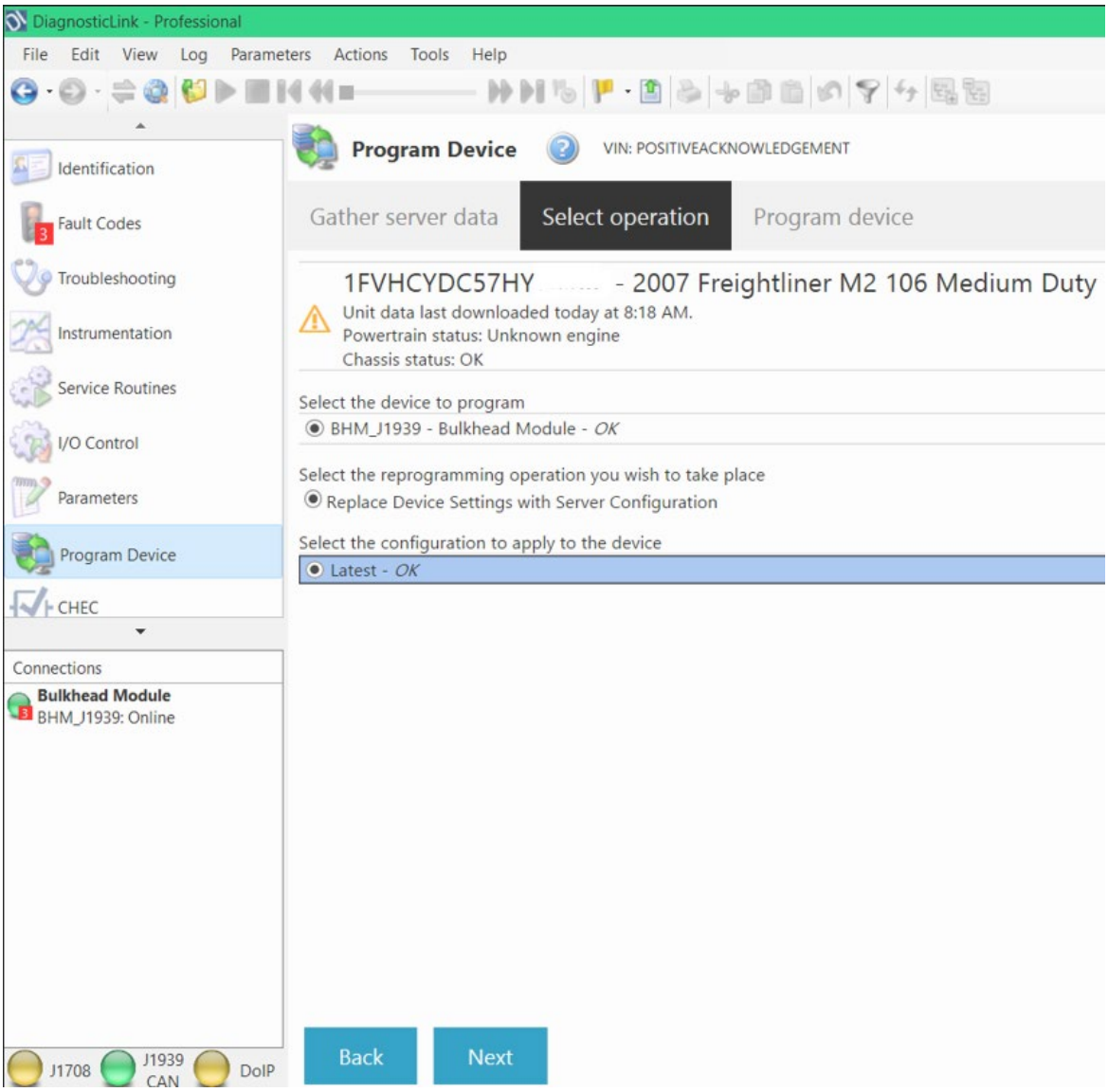
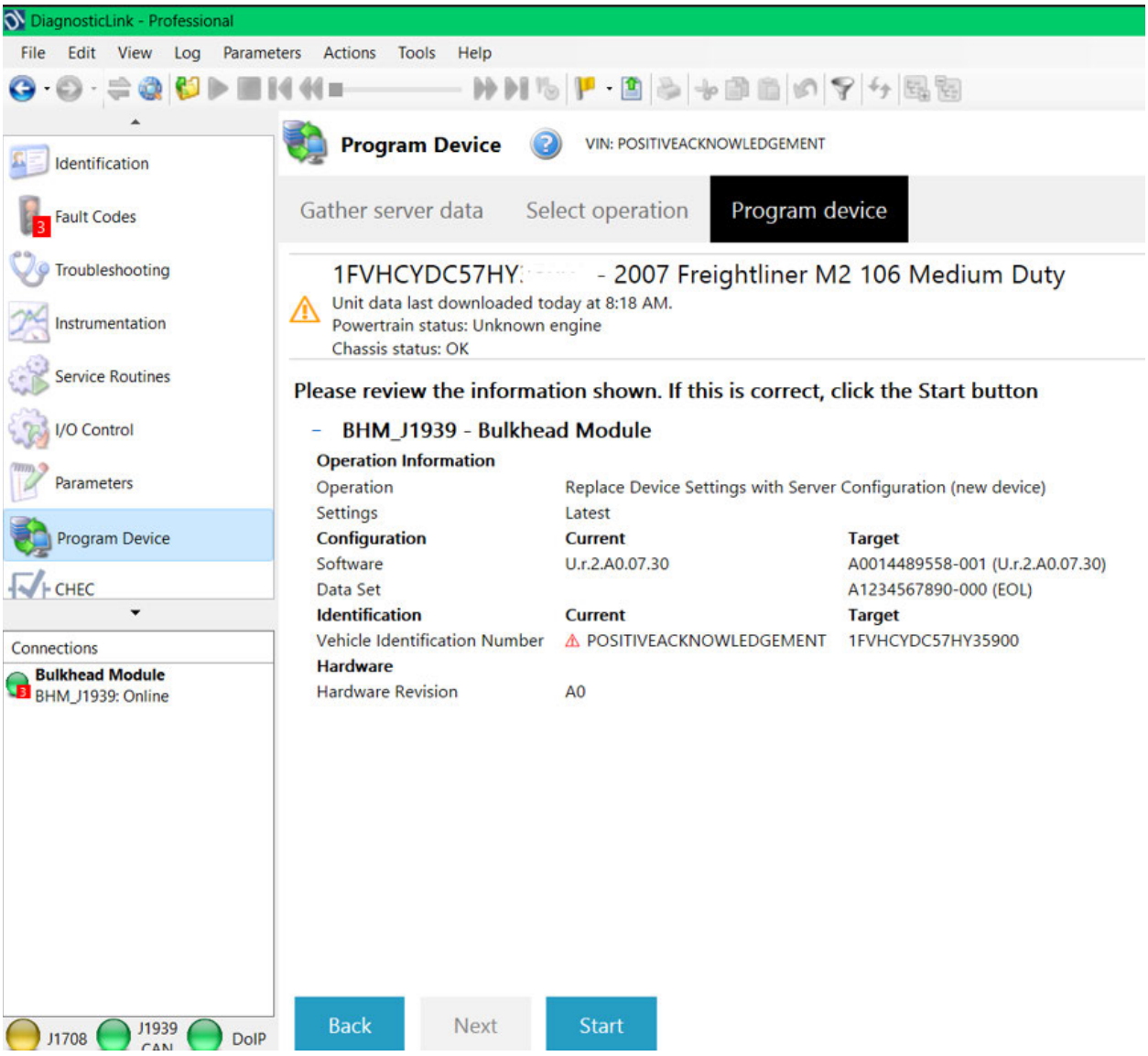


Figure 6

If programming BHM to the same version, use the latest file. If replacing BHM and version listed in Excelerator is different than what was on the vehicle select newest.

Figure 7



Confirm your target is your desired version and VIN, press start.

After completing the process in the identification tab confirm the VIN, Software identification and the diagnostic version is correct.

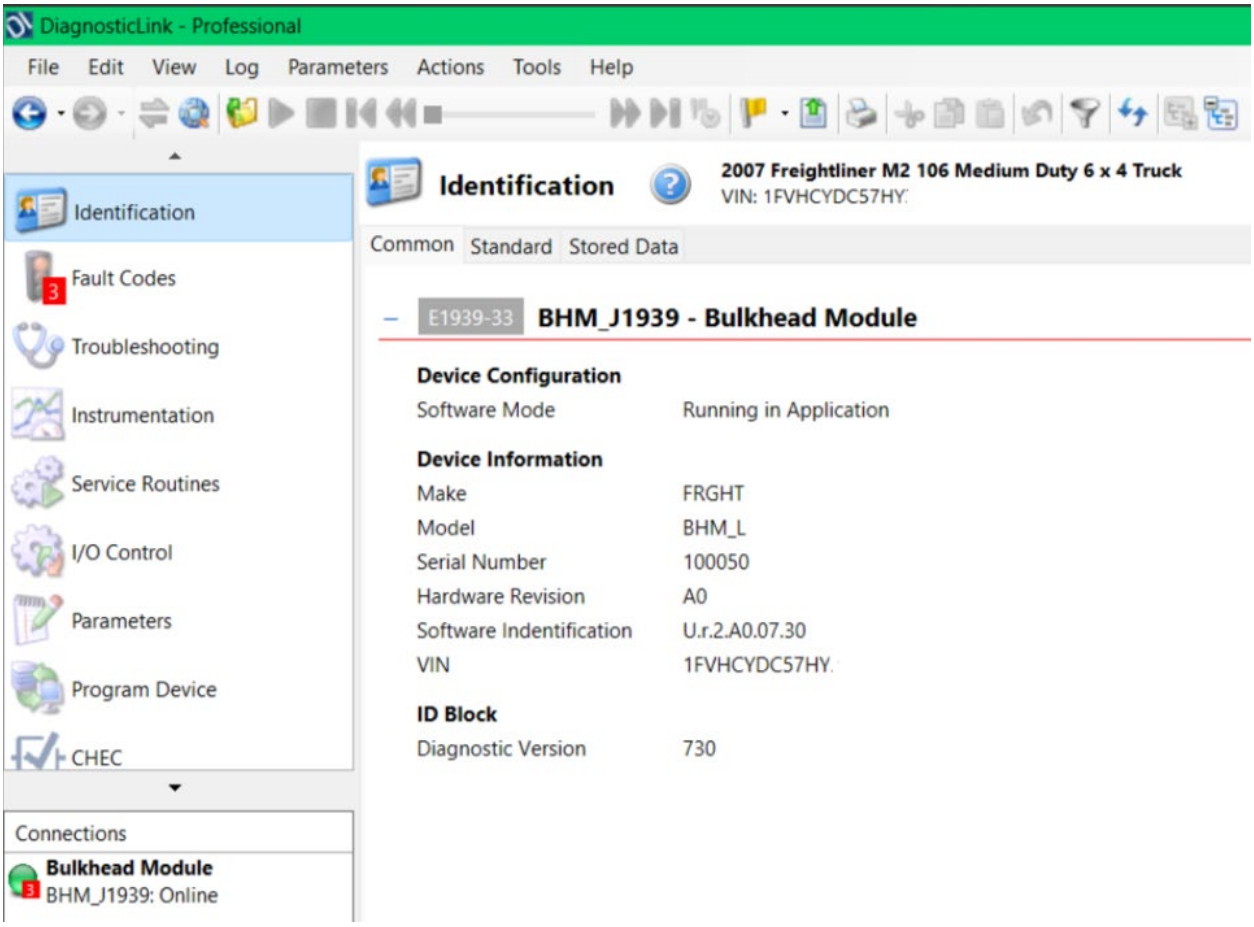


Figure 8