



No.: 20TS-04
May 18, 2020

TO: Service Locations

FROM: Service Systems Development

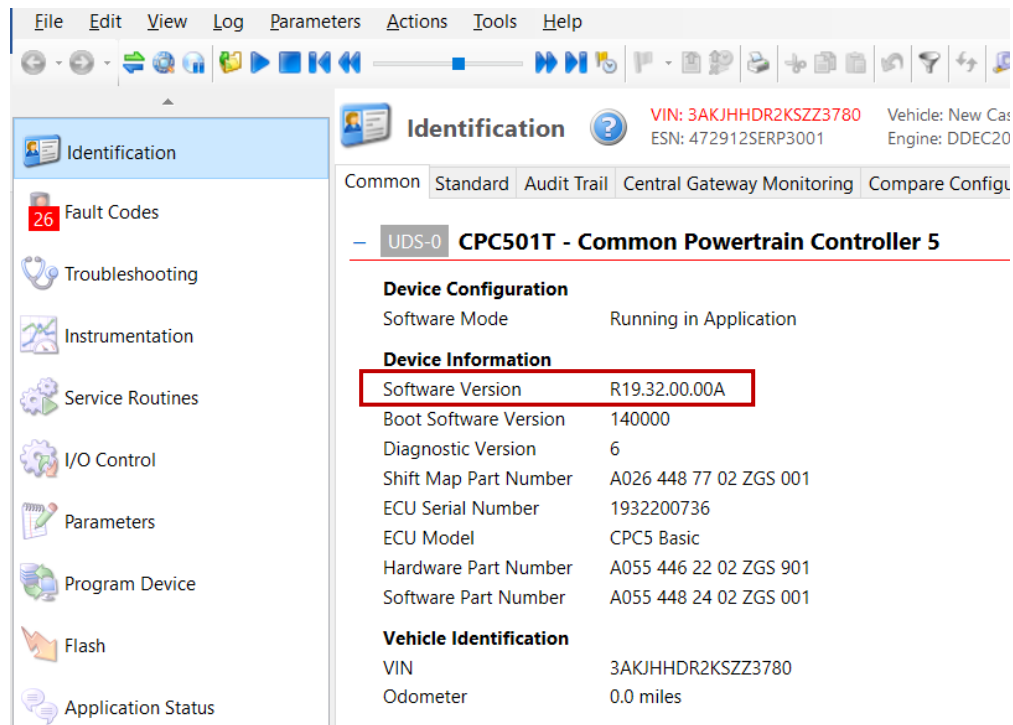
SUBJECT: **Detroit™ CPC501T GHG21 Only; Bootloader Update**

ISSUE

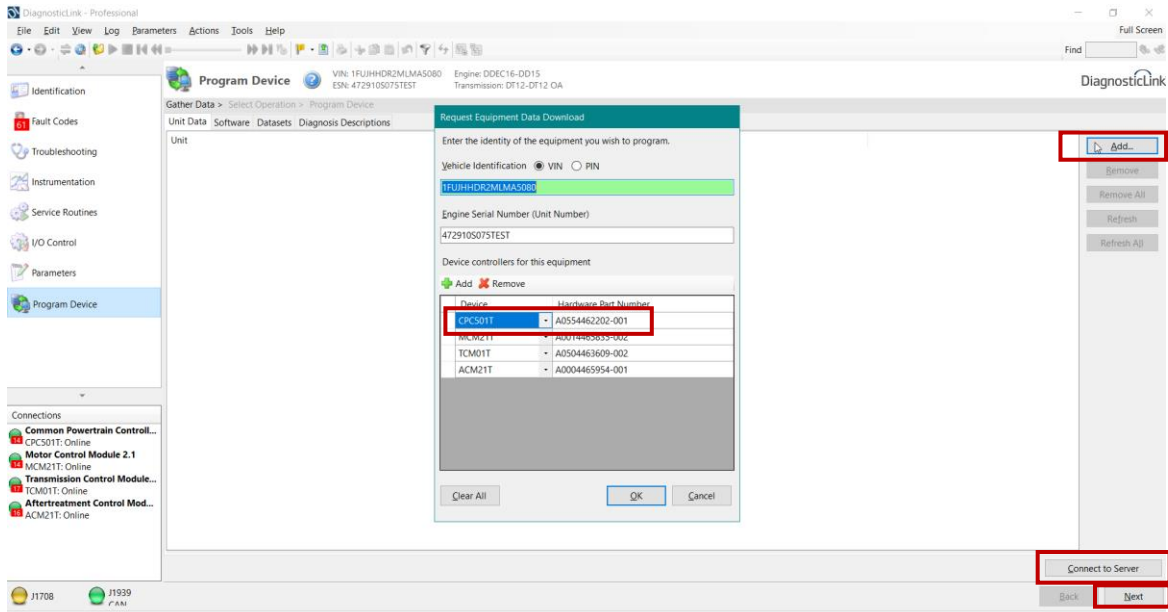
On Detroit™ powertrain equipped Cascadia's, built in 2020, it may be necessary to complete an additional step in the programming process when updating the CPC501T software.

REQUIRED ACTION

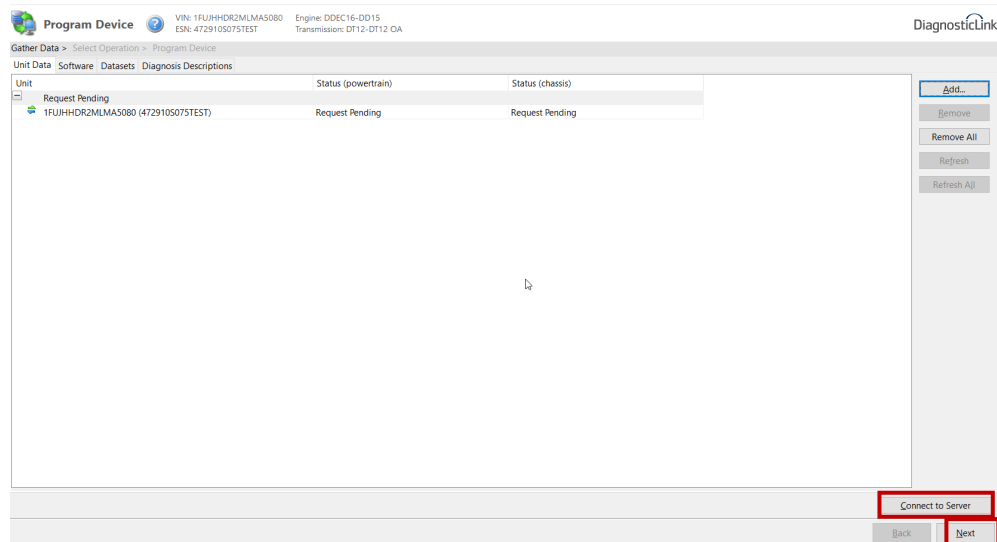
1. Connect DiagnosticLink® version 8.11 with Service Pack 4 or higher. On the Identification Tab, check the CPC501T software level. If the software level is R19.32.00.00A, no special programming steps are necessary. If the CPC5 software level is **NOT** R19.32.00.00A, continue to step 2.



2. Choose Program Device “select Add/ Next”. (note the last digits of the CPC5 Hardware Part Number are 001. Also make note of VIN/ESN which is manually entered in a later step)



3. Choose “Connect to Server” to download unit data, then select “Next”



4. Select “CPC5”, then “Update Device Software”. Select the V14.00.00 option which is the new bootloader software
5. Hover over the V14 choice until a message displays stating that additional programming is needed. Once displayed, select “Next” button.

Program Device VIN: 1FUJHHR2MLMA5080 ESN: 472910S0750CPC Engine: DDEC16-DD15 Transmission: DT12-DT12 OA DiagnosticLink

Gather Data > Select Operation > Program Device

Select the device to program

Name	Description
CPC501T	Common Powertrain Controller 5
MCM21T	Motor Control Module 2.1
TCM01T	Transmission Control Module MY2013
ACM21T	Aftertreatment Control Module 2.1

Select the reprogramming operation you wish to take place

☐ Replace Device Settings with Server Configuration
☒ **Update Device Software**
☐ Change Dataset

Select the software version to apply to the device

Version	Part Number	Description
R19.11.00.00A	0554481802_001	R19.11.00.00A
V14.00.00	0554480302_001	CPCS R19.32 bootloader.MY2020

Additional reprogramming is required to use this software.

Back Next

6. After selecting the “next” button, the below incompatible software message will appear. This is normal behavior. Select the “OK” button.

Compatibility Information

The selected software is not compatible with other connected devices, please update them as necessary after reprogramming is complete.

VIN: 1FUJHHR2MLMA5080 ESN: 472910S0750CPC

Target Device

Device	Hardware	Software
CPC501T	A0554462202-001	V14.00.00

Compatible Set #1

Device	Hardware Options	Hardware Change	Software Options
MCM21T	A0014465835-001, A0014465835-002, A0024460935-002		6.8.0.1
ACM21T	A0004464654-002, A0004464654-003, A0004464654-004, A0004465954-000, A0004465954-001, A0004465954-002, A0004465954-003, A0004465954-004, A0004465954-005, A0004469454-003, A0004469454-004, A0004469754-001, A0004469754-002, A0004469754-003		7.60.2.0

Compatible Set #2

Device	Hardware Options	Hardware Change	Software Options
MCM21T	A0014465835-001, A0014465835-002, A0024460935-002		6.8.0.1
ACM21T	A0004464654-002, A0004464654-003, A0004464654-004, A0004465954-000, A0004465954-001, A0004465954-002, A0004465954-003, A0004465954-004, A0004465954-005, A0004469454-003, A0004469454-004, A0004469754-001, A0004469754-002, A0004469754-003		7.60.2.0

Print... Copy OK

7. Verify the CPC501T software that is being programmed is V14.00.00. Then select the “Start” button.

 **Program Device**  VIN: 1FUJHHR2MLMA5080 Engine: DDEC16-DD15
ESN: 472910S0750CPC Transmission: DT12-DT12 OA

Gather Data > Select Operation > Program Device

The following data will be programmed

Name	Target Data
Operation	Update Device Software
Device	CPC501T
Unit	1FUJHHR2MLMA5080 (472910S0750CPC)
Software	V14.00.00
Data Set	A0554449999-999 (0140_cpc5_ghg17_140_Test)
Settings	Existing Settings
Vehicle Identification Number	1FUJHHR2MLMA5080

If this is correct, click the Start button

Step Result

Start

8. Programming will fail at the Flash Firmware step “Data Implausible – reconnect in boot mode”. **THIS IS NORMAL** and means the boot software has been loaded

 **Program Device**   There are data items on this computer that are required to be uploaded to the server. Click here to attempt to connect to the server now. 

Gather Data > Select Operation > Program Device

The following data will be programmed

Name	Target Data
Operation	Update Device Software
Device	CPC501T
Unit	1FUJHHR2MLMA5080 (472910S0750CPC)
Software	V14.00.00
Data Set	A0554449999-999 (0140_cpc5_ghg17_140_Test)
Settings	Existing Settings
Vehicle Identification Number	1FUJHHR2MLMA5080

 The programming operation failed - to retry, click the Start button

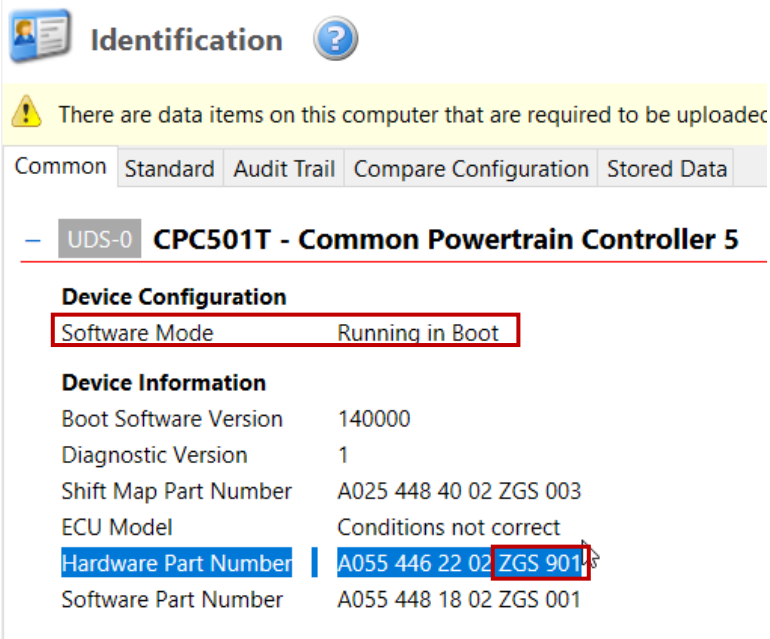
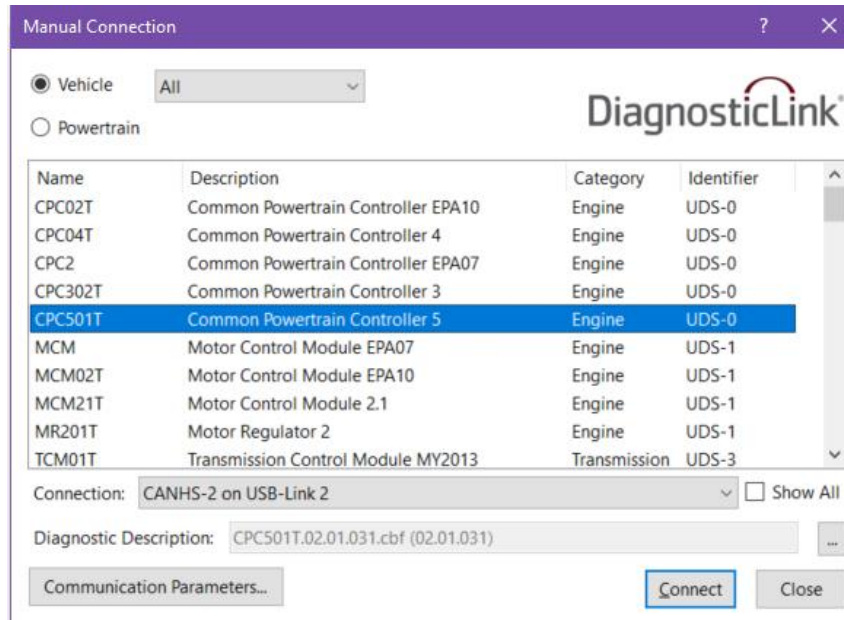
Step Result

Connect to device	Complete
Read existing settings	Complete
Flash Firmware	Data implausible - reconnected in boot mode
Flash Data Set	
Unlock	
Reset device to default settings	
Unlock	
Load existing settings	
Load preset settings from server	
Write settings	
Write Vehicle Identification Number	
Commit settings to permanent memory	

Back Finish

9. Navigate back to the “Identification” screen and you will see CPC501T is “Running in Boot”. This is the expected result. Also note that the Hardware Part Number changed from ZGS 001 to ZGS 901.

Note: If CPC501T does not connect automatically, it may be necessary to connect manually under “File”, “Connect” “... CPC501T”.



10. Return to the “Program Device” tab and select the “Back” button to return to the main programming screen

The screenshot shows the 'Program Device' tab in the DiagnosticLink software. At the top, there is a yellow warning banner: 'There are data items on this computer that are required to be uploaded to the server. Click here to attempt to connect to the server now.' Below this, the 'Gather Data > Select Operation > Program Device' path is shown. A table lists the data items to be programmed:

Name	Target Data
Operation	Update Device Software
Device	CPC501T
Unit	1FUJHHDR2MLMA5080 (472910S0750CPC)
Software	V14.00.00
Data Set	A0554449999-999 (0140_cpc5_ghg17_140_Test)
Settings	Existing Settings
Vehicle Identification Number	1FUJHHDR2MLMA5080

Below the table, a message states: 'The programming operation failed - to retry, click the Start button'. A 'Start' button is visible. A list of steps is shown with their results:

Step	Result
Connect to device	Complete
Read existing settings	Complete
Flash Firmware	Data implausible - reconnected in boot mode
Flash Dataset	
Unlock	
Reset device to default settings	
Unlock	
Load existing settings	
Load preset settings from server	
Write settings	
Write Vehicle Identification Number	
Commit settings to permanent memory	

At the bottom right, there are 'Back' and 'Finish' buttons. The 'Back' button is highlighted with a red box.

11. Select the VIN, then select the “Remove All” button and then the “Yes” button.

The screenshot shows the 'Program Device' tab in the DiagnosticLink software. At the top, there is a yellow warning banner: 'There are data items on this computer that are required to be uploaded to the server. Click here to attempt to connect to the server now.' Below this, the 'Gather Data > Select Operation > Program Device' path is shown. A table lists the data items to be programmed:

Unit	Status (powertrain)	Status (chassis)
Warning		
1FUJHHDR2MLMA5080 (472910S0750CPC)	OK	VD00061E - ECU 06-95372-000 is not compati...

At the bottom right, there are buttons: 'Add...', 'Remove', 'Remove All', 'Refresh', and 'Refresh All'. The 'Remove All' button is highlighted with a red box. A dialog box is open in the center of the screen with the following text:

DiagnosticLink - Professional

! This will permanently remove the data for ALL units. Are sure you want to continue?

Yes No

The 'Yes' button is highlighted with a red box.

12. Select the “Add” button and then manually re-enter the VIN and ESN. Then select the “OK” button and “Next” button.

The screenshot shows the 'Program Device' window in DiagnosticLink. A yellow banner at the top states: 'There are data items on this computer that are required to be'. The 'Unit Data' tab is selected. A modal dialog box titled 'Request Equipment Data Download' is open. It prompts the user to 'Enter the identity of the equipment you wish to program.' with radio buttons for 'VIN' (selected) and 'PIN'. The VIN field contains '1FUJHHDR2MLMA5080'. The 'Engine Serial Number (Unit Number)' field contains '472910S0750CPC'. Below, there is a section for 'Device controllers for this equipment' with an 'Add' button and a table. The table has two columns: 'Device' and 'Hardware Part Number'. One entry is visible: 'CPC501T' with part number 'A0554462202-901'. At the bottom of the dialog are 'Clear All', 'OK', and 'Cancel' buttons. In the background window, the 'Add...' button on the right and the 'Next' button at the bottom right are highlighted with red boxes.

13. Choose “Connect to Server” and download unit data.

The screenshot shows the 'Program Device' window in DiagnosticLink. The top bar displays the VIN: 1FUJHHDR2MLMA5080, ESN: 472910S075TEST, Engine: DDEC16-DD15, and Transmission: DT12-DT12 OA. The 'Unit Data' tab is selected. A table lists the unit data with columns for 'Unit', 'Status (powertrain)', and 'Status (chassis)'. The first row shows 'Request Pending' for the unit, and the second row shows 'Request Pending' for the unit 1FUJHHDR2MLMA5080 (472910S075TEST). On the right side, there are buttons for 'Add...', 'Remove', 'Remove All', 'Refresh', and 'Refresh All'. At the bottom right, the 'Connect to Server' button is highlighted with a red box. The 'Next' button is also visible at the bottom right.

14. Highlight CPC501T then select “Update Device Software” version R19.32.00.00A and choose “Next”.

Program Device ? DiagnosticLink

Gather Data > Select Operation > Program Device

Select the device to program

Name	Description
CPC501T	Common Powertrain Controller S

Select the reprogramming operation you wish to take place

☐ Replace Device Settings with Server Configuration

☒ Update Device Software

☐ Change Dataset

Select the software version to apply to the device

Version	Part Number	Description
R19.32.00.00A	0554482402_001	CPC5 R19.32 FOTA capable

Back Next

15. Verify CPC501T software is R19.32.00.00A and select “Start” to begin programming

Program Device ? DiagnosticLink

Gather Data > Select Operation > Program Device

The following data will be programmed

Name	Target Data
Operation	Update Device Software
Device	CPC501T
Unit	1FUJHHR2MLMA5080 (472910S0750CPC)
Software	R19.32.00.00A
Data Set	A0264487702-001 (0140_cpc5_ghg17_140_test)
Settings	Existing Settings (from previous attempt)
Vehicle Identification Number	1FUJHHR2MLMA5080

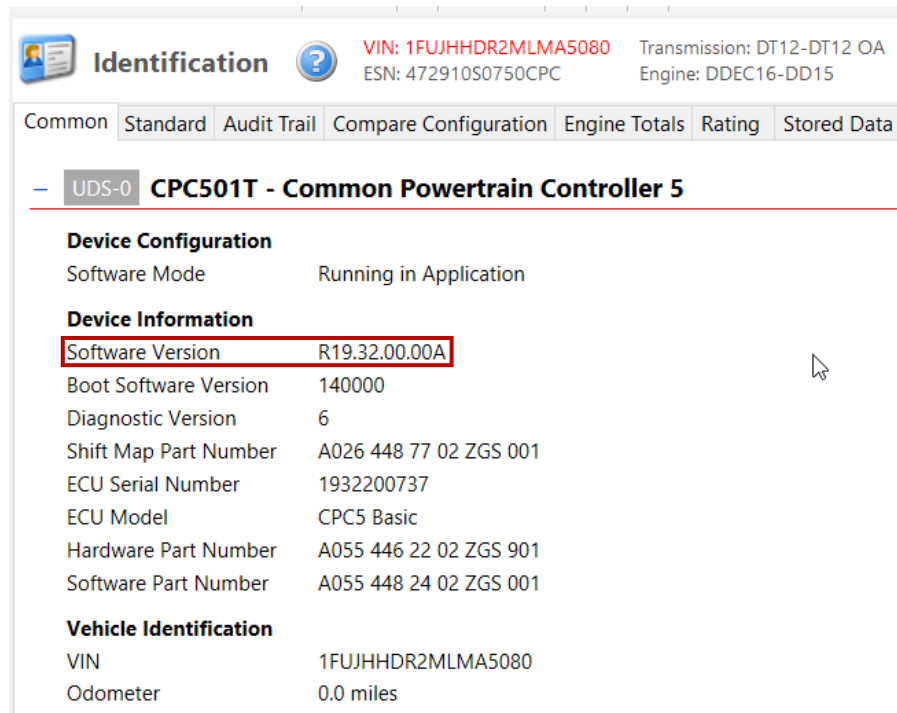
If this is correct, click the Start button

Start

Step	Result
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Back Next

16. After programming, return to the "Identification" tab and verify CPC501T R19.32.00.00A software is successfully installed.



The screenshot displays the 'Identification' tab of a diagnostic interface. At the top, it shows the VIN: 1FUJHHR2MLMA5080, ESN: 472910S0750CPC, Transmission: DT12-DT12 OA, and Engine: DDEC16-DD15. Below this, a navigation bar includes 'Common', 'Standard', 'Audit Trail', 'Compare Configuration', 'Engine Totals', 'Rating', and 'Stored Data'. The 'Common' tab is selected, showing 'UDS-0 CPC501T - Common Powertrain Controller 5'. Under 'Device Configuration', 'Software Mode' is 'Running in Application'. Under 'Device Information', 'Software Version' is 'R19.32.00.00A', which is highlighted with a red box. Other device information includes 'Boot Software Version' (140000), 'Diagnostic Version' (6), 'Shift Map Part Number' (A026 448 77 02 ZGS 001), 'ECU Serial Number' (1932200737), 'ECU Model' (CPC5 Basic), 'Hardware Part Number' (A055 446 22 02 ZGS 901), and 'Software Part Number' (A055 448 24 02 ZGS 001). Under 'Vehicle Identification', 'VIN' is 1FUJHHR2MLMA5080 and 'Odometer' is 0.0 miles.

Device Configuration	
Software Mode	Running in Application

Device Information	
Software Version	R19.32.00.00A
Boot Software Version	140000
Diagnostic Version	6
Shift Map Part Number	A026 448 77 02 ZGS 001
ECU Serial Number	1932200737
ECU Model	CPC5 Basic
Hardware Part Number	A055 446 22 02 ZGS 901
Software Part Number	A055 448 24 02 ZGS 001

Vehicle Identification	
VIN	1FUJHHR2MLMA5080
Odometer	0.0 miles

CONTACT INFORMATION

Please contact the Detroit Diesel Customer Support Center at 800-445-1980 or email csc@daimler.com if you have any questions.