Technical Service Bulletin

Technical Service Bulletin: TSB220228	**Released Date**: 05-May-2023
HDZAA Injection Pump (UCV) Contamination Issue	

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Warranty Statement

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

Contents

Product Affected

- HDZAA Spec F

Issue

Symptom:

- Customer complaint of no start.

Root Cause:

- Contaminants in the fuel system clogging the injector, causing no fuel to enter the cylinder, and preventing the generator from starting.

Verification/Confirmation

1. Make sure there is proper fuel flow from the low-pressure fuel pump to UCV.

2. Using UCV signal checking tool (included in tool rental kit from Cummins field service engineer (CFSE)) make sure the proper PWM signal to UCV is present.



Figure 1, Flashing LEDs During Cranking

3. During Cranking the LEDs should be flashing, if the LEDs aren't flashing you don't have a PWM signal from ECM and need to troubleshoot.

4. If there is sufficient fuel supply, correct PWM signal at the UCV terminals, and the unit cranks but does not start, proceed to the resolution section below.

Resolution

Call 1800-Cummins (1-800-286-6467) to escalate issue to CFSE and coordinate repair. An HDS-II tool is required to perform the repair and will need to be sent to the repair site to complete a dataset update on unit and is subject to tool availability. See Service Parts availability to order replacement UCV (injection pump) PN A072F011

Please see service instructions for repair, manual number A066T114

Service Instructions

Note: After replacing the UCV, the ECM will need to be updated and matched to the new UCV using the Hatz HDS2 tool.

Make sure new dataset is available on the Hatz server prior to beginning repair by connecting the unit to a laptop with the HDS2 software installed.

Note: The HDS2 software updates upon computer restart, so restart the computer to see most recent dataset for the specific serial number. (The update can take a while if it hasn't been restarted recently)

Removal

1. Drain the oil.
2. Remove all enclosure panels
3. Pull off the brace on muffler side

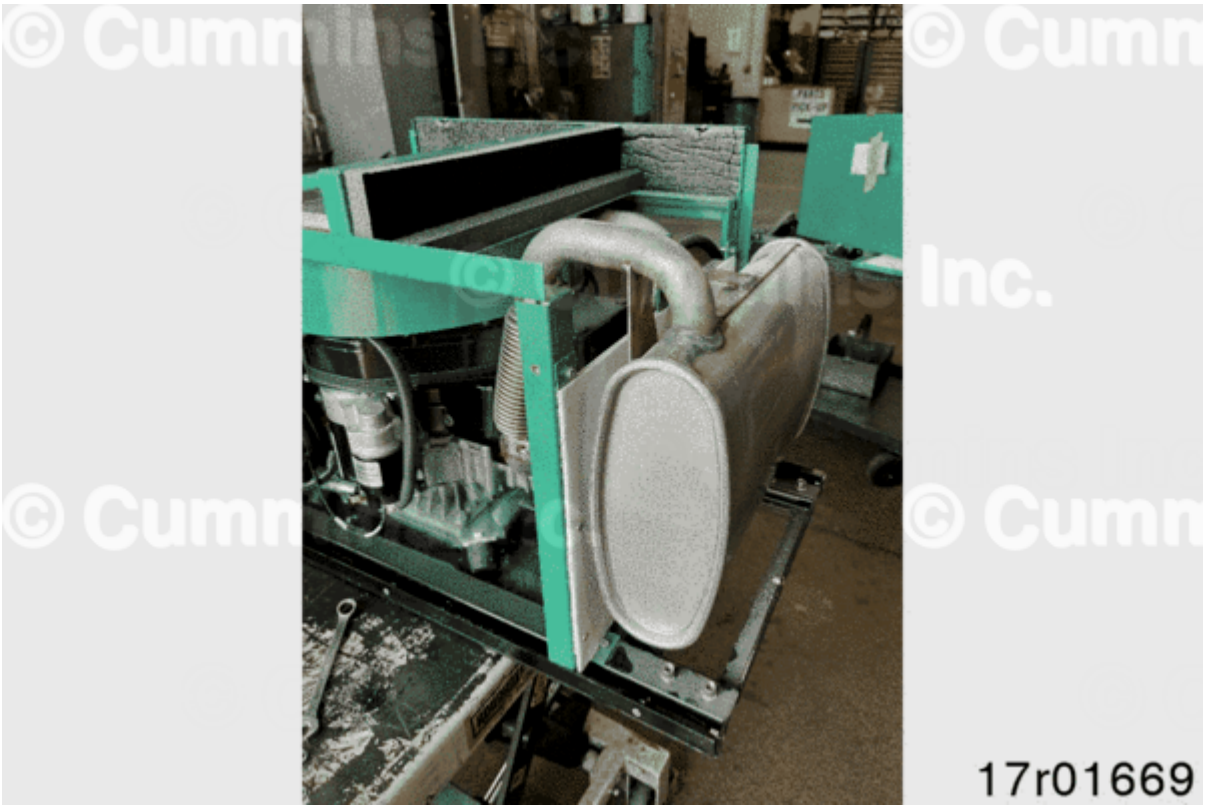


Figure 2, Muffler location

4. Remove muffler
5. Remove insulating panel

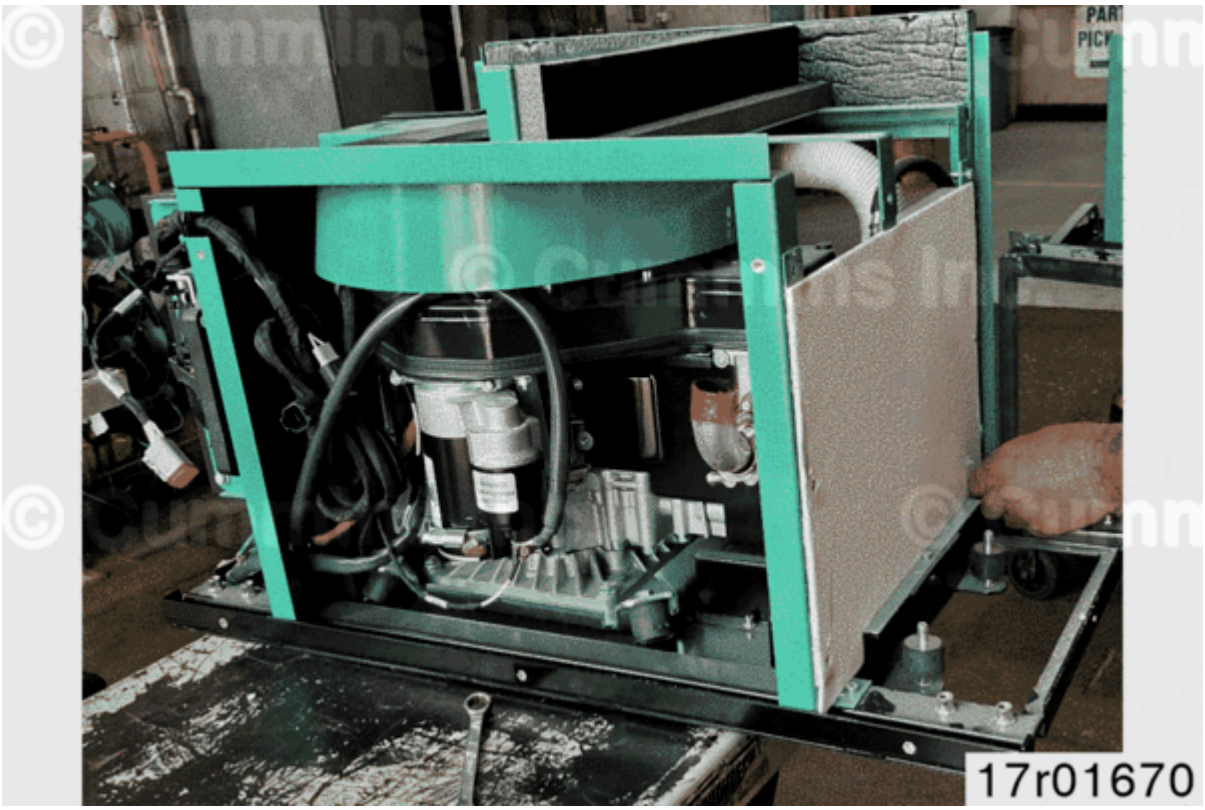


Figure 3, Removing the insulation panel

6. Remove air box (do not damage or lose gasket stack)

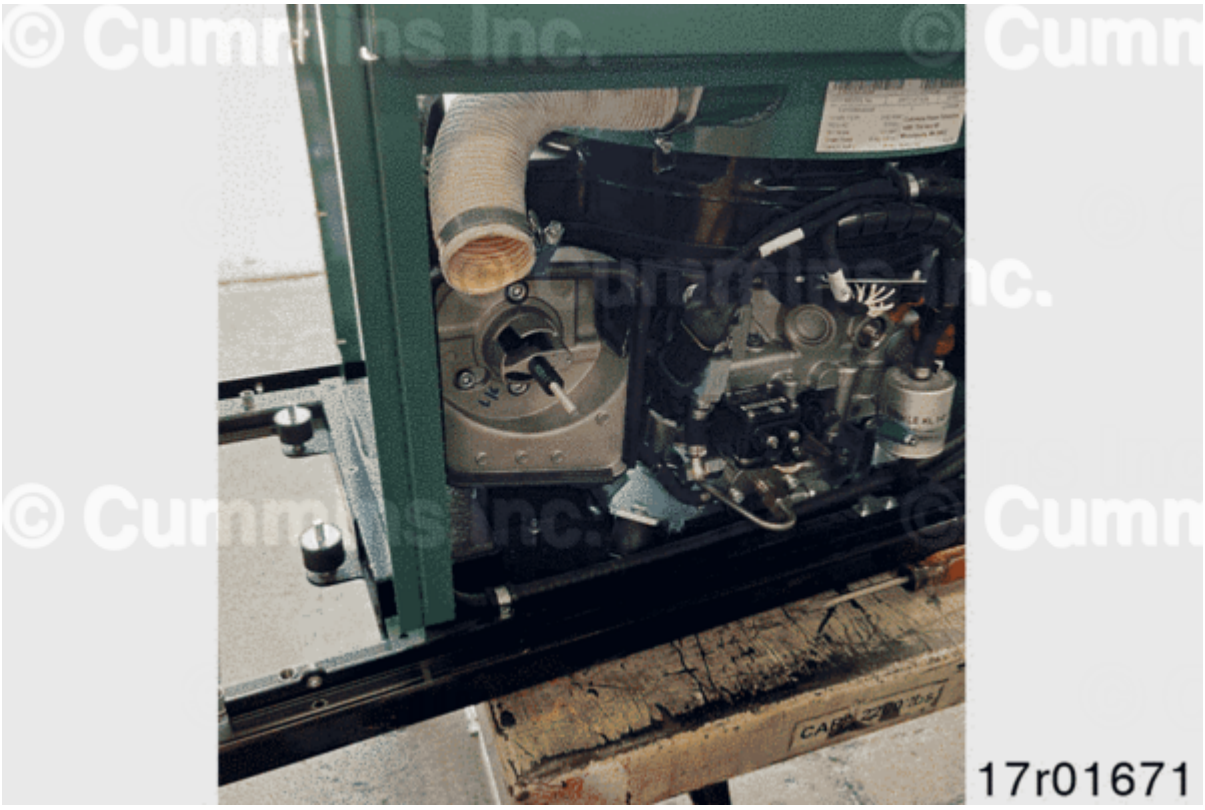


Figure 4, Removal of Air box



Figure 5, Gaskets

7. Remove valve cover - discard old gasket

Note: Put rag below to catch oil seepage.

Note: Order a new valve cover gasket.

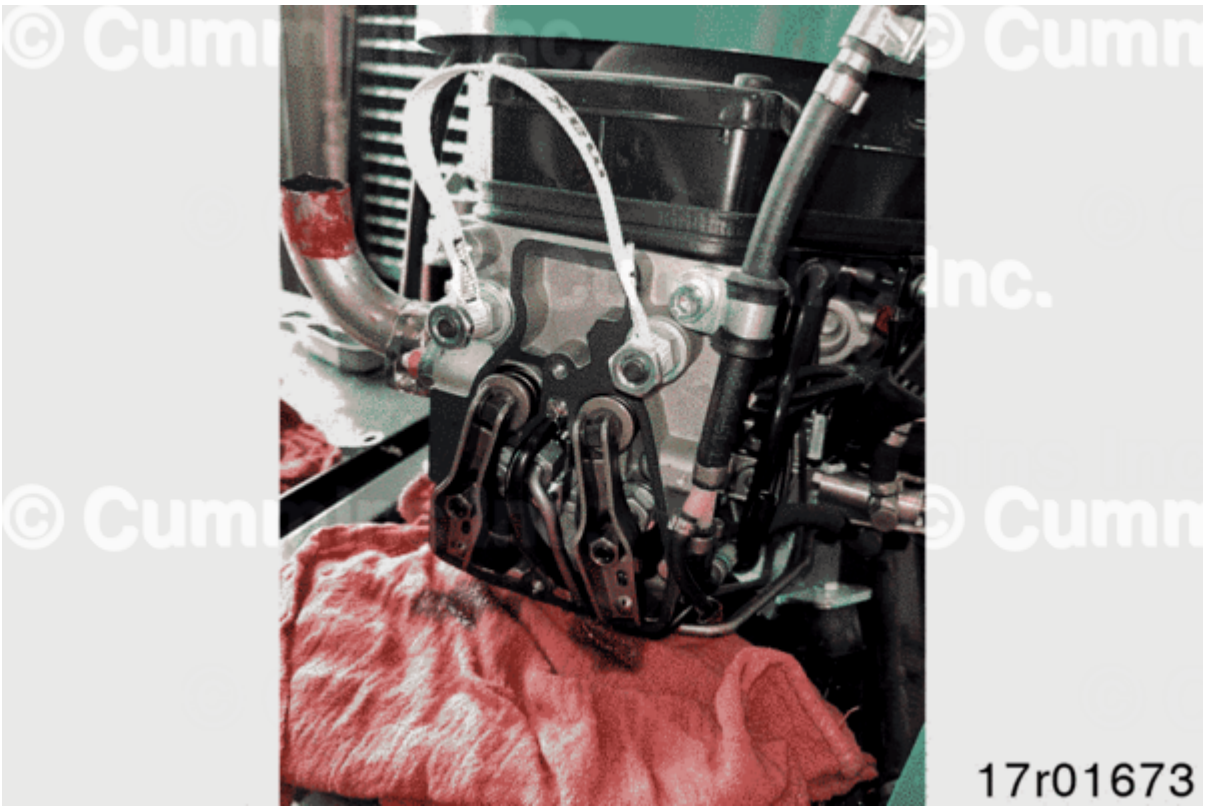


Figure 6, Rocker cover

8. Remove return line from top of the injector
9. Remove zip ties from hardline
10. Remove hard line and return line from UCV
11. Remove Banjo supply line and signal wires from the UCV
12. Remove UCV pump

Note: Put rag below to catch oil seepage.

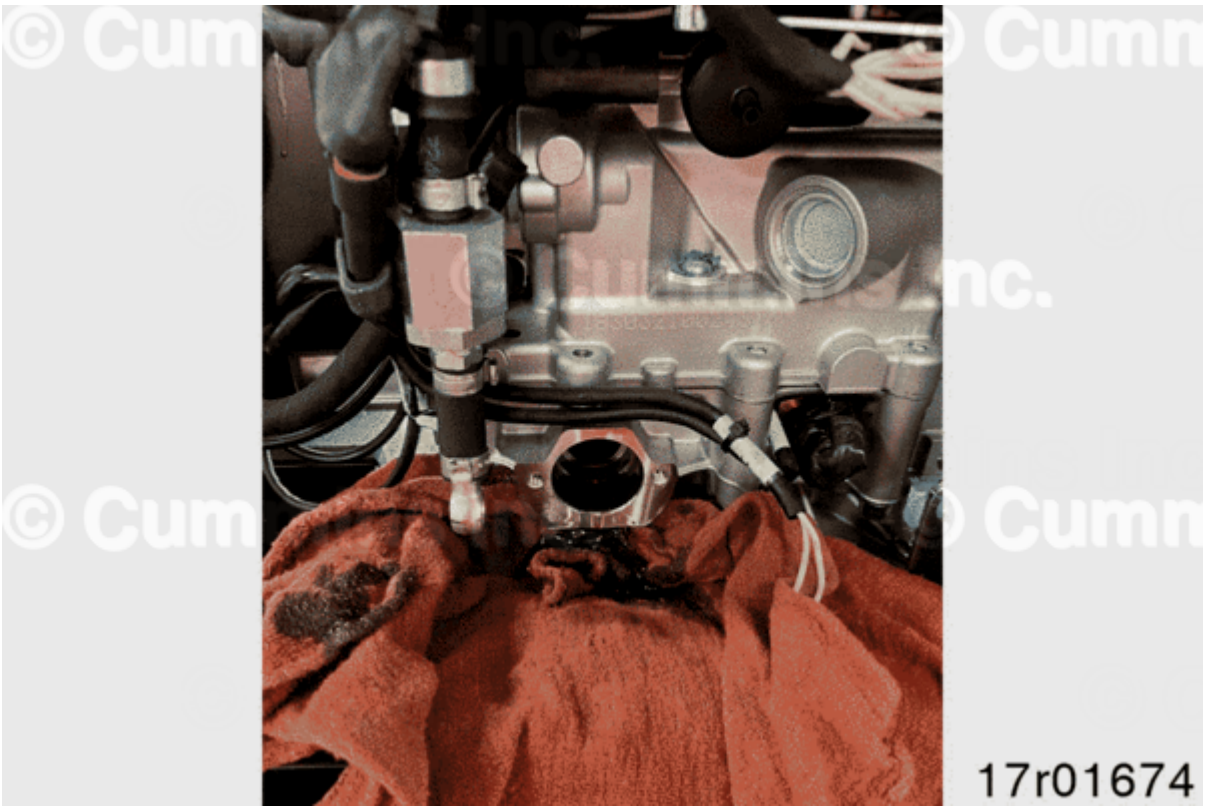


Figure 7, Removal of container clip

13. Remove the retaining clip securing the injector and remove the injector and hardline assembly

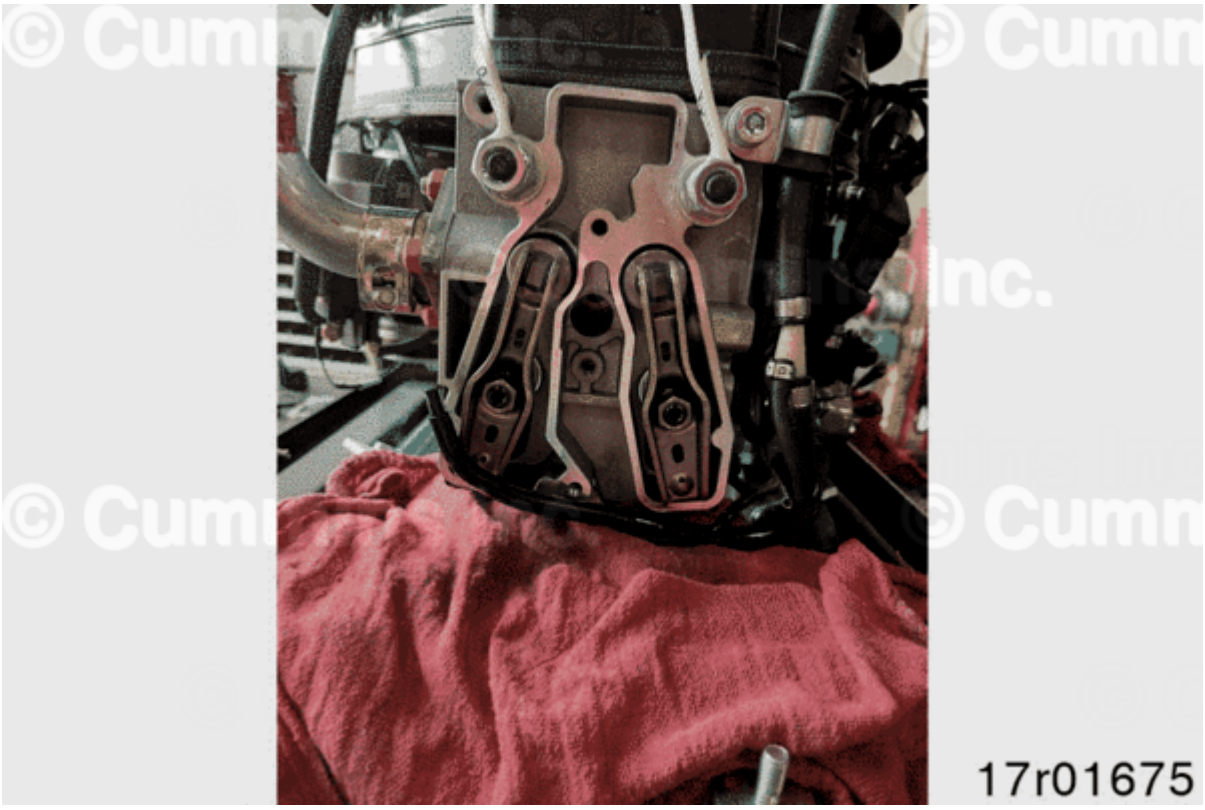


Figure 8, Injector removed

Note: Make sure the copper sealing washer is removed before installing the new one with the UCV kit.

Install

1. Install new UCV pump by evenly thread in mounting bolts.

2. Crimp return line on UCV before installing Injector hardline.

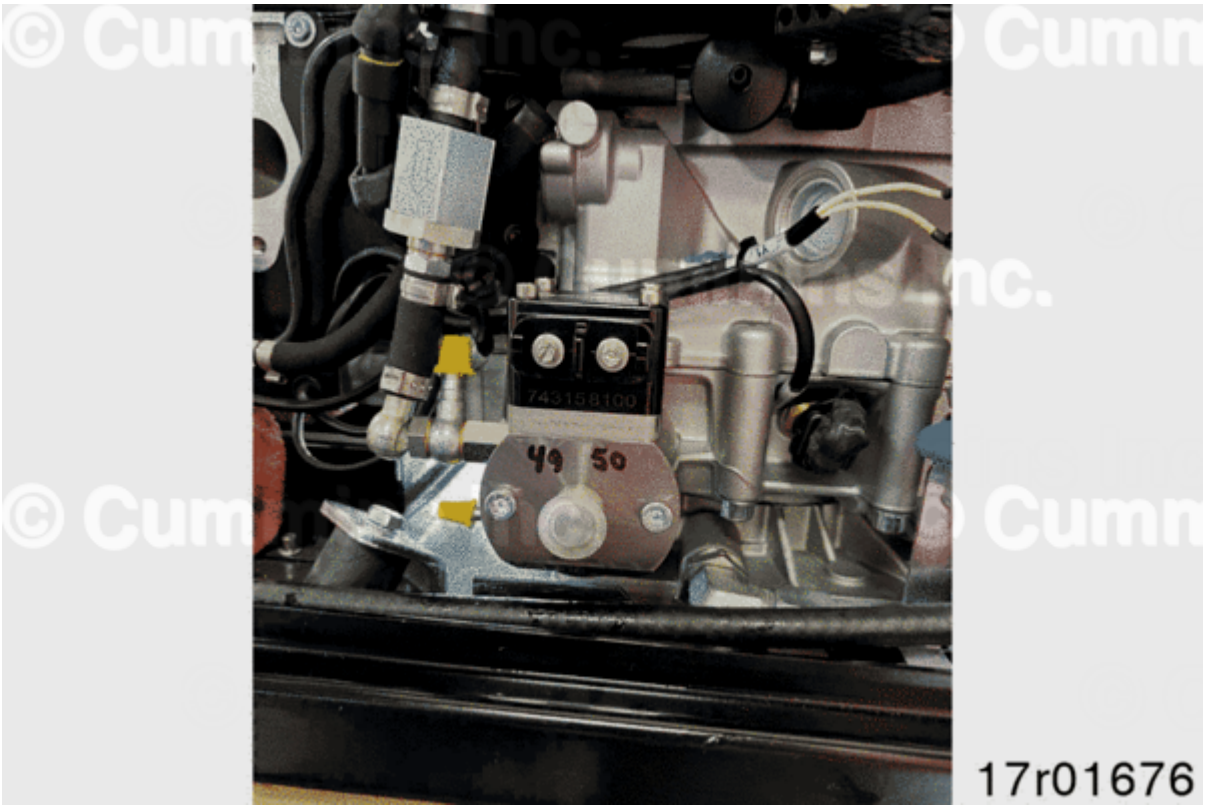


Figure 9, New UCV installed

3. Install new injector and hardline assembly

Note: leave new injector installed on hardline during assembly to keep injector clean.

4. Reinstalled return line and clamp on injector

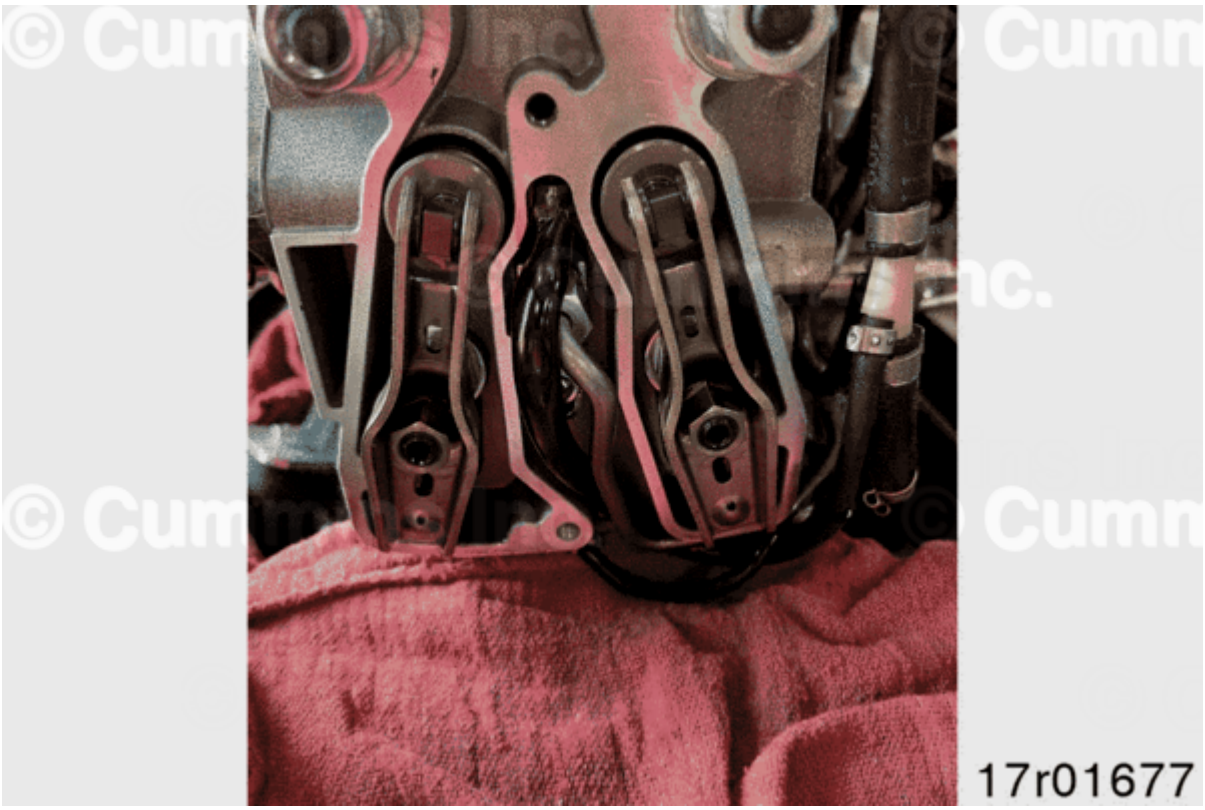


Figure 10, Installed hardlines

5. Install hardline on UCV

6. Connect UCV signal terminals

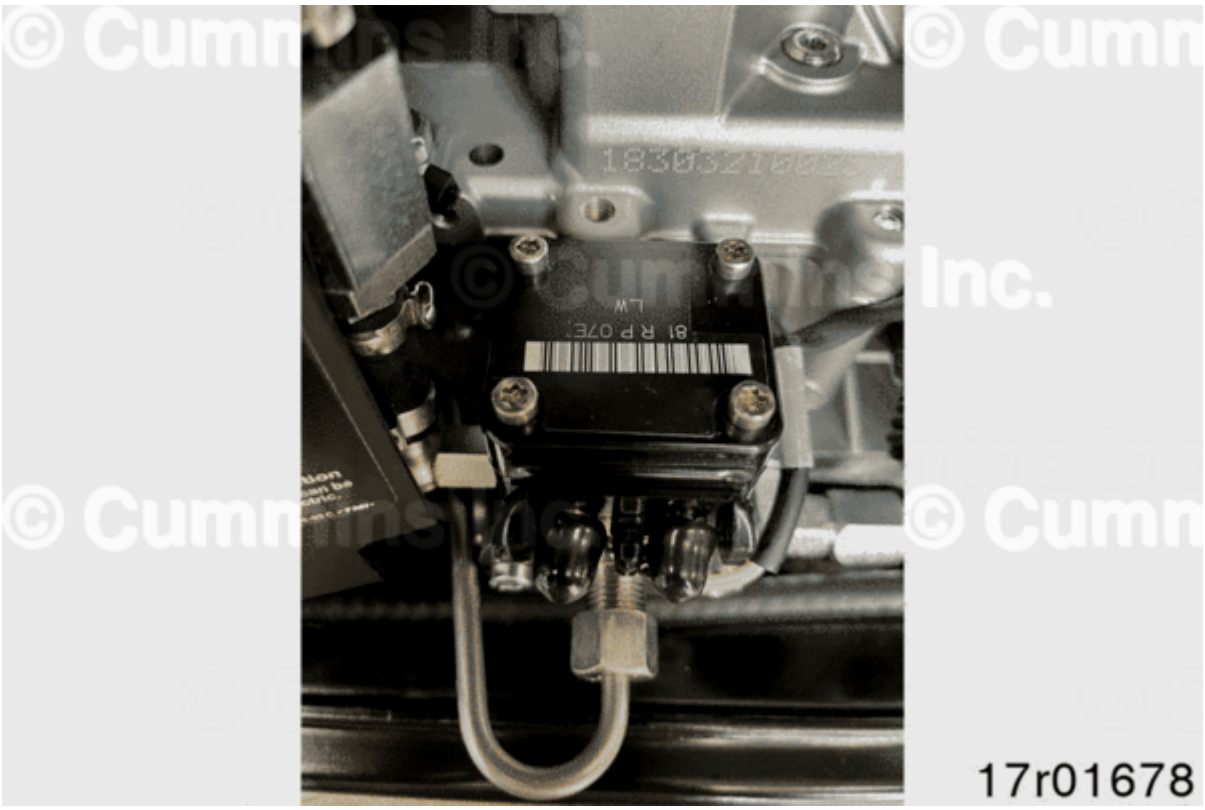


Figure 11, UCV signal terminals

7. Zip tie return line to hard line under cylinder head

8. Install zip tie around UCV signal wires

9. Install a new valve cover gasket (A045W750)

10. Reinstall the valve cover

11. Install the air box and all associated gaskets.

Note: Make sure the breather hose is reinstalled

12. Install air filter

13. Install air box cover with fan hose

14. Reinstall insulating panel

15. Reinstall muffler

16. Refill the oil.

Dataset Update

Restart computer to update Hatz tool once dataset for serial number has been updated by Hatz

To complete a dataset update on the HDZAA, a HDS^2 tool (Figure 12, #1), pigtail harness (Figure 12, #3) and laptop software is required (Connect at #2). Your local CFSE has access to this Hatz engine tool and software. These tools can be ordered directly from Hatz (Kit Part Number 65545310).



Figure 12, Pigtail harness

1. Use pigtail wiring harness (#3 from Figure 12) to connect the generator set to the HDS^2 tool (#1 from Figure 12).

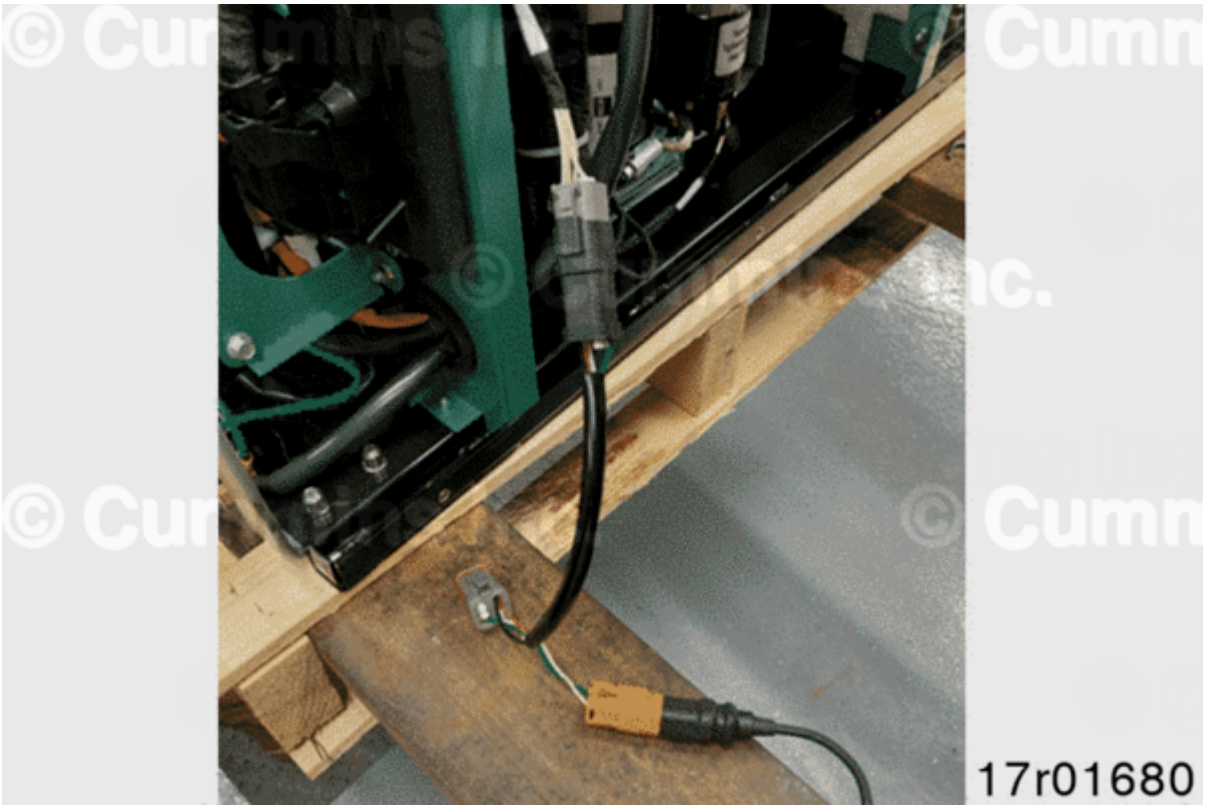


Figure 13, Pig Tail Connection

2. Verify you have the UCV files on your laptop. They are in C:\MDT\Hatz\XML\IMA_All

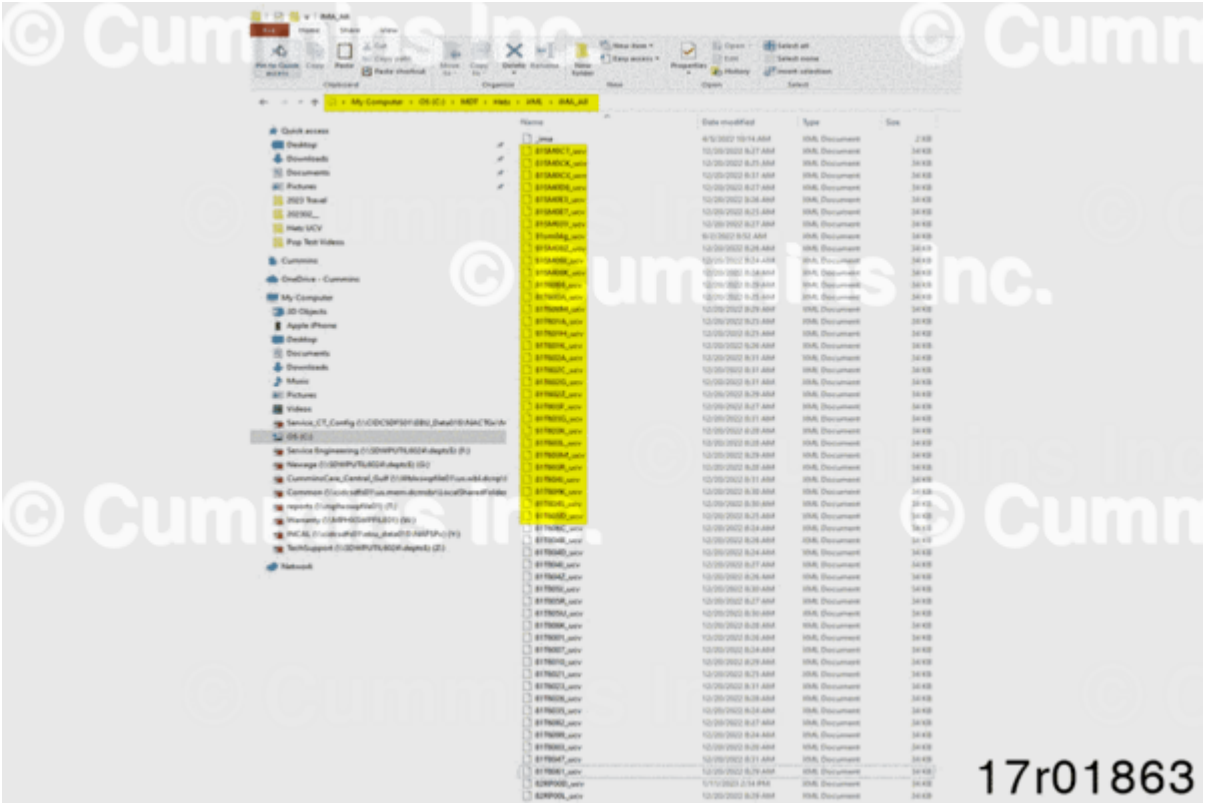


Figure 14, UCV Files

3. Connect the USB end of the HDS^2 cable to a laptop (#2 from Figure 13) with the HDS software installed (available on Cummins Software Shelf).

4. Generator display will need to be powered on after cable is connected to laptop but before software is opened.

5. Once the software has loaded, a screen with the engine identification will show.

6. Locate the "Service" screen

7. Click on “UCV-Kit”

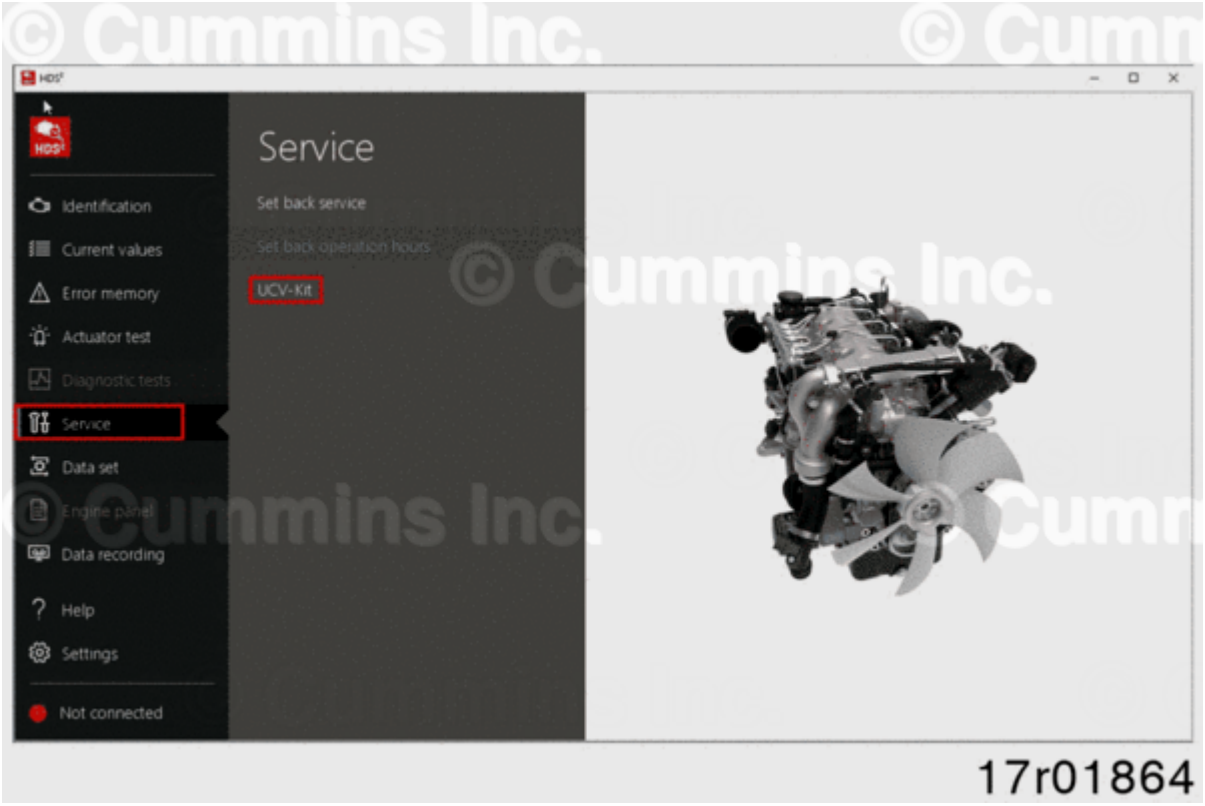


Figure 14, UCV-Kit

8. Make sure HMI is powered on and click “Start”

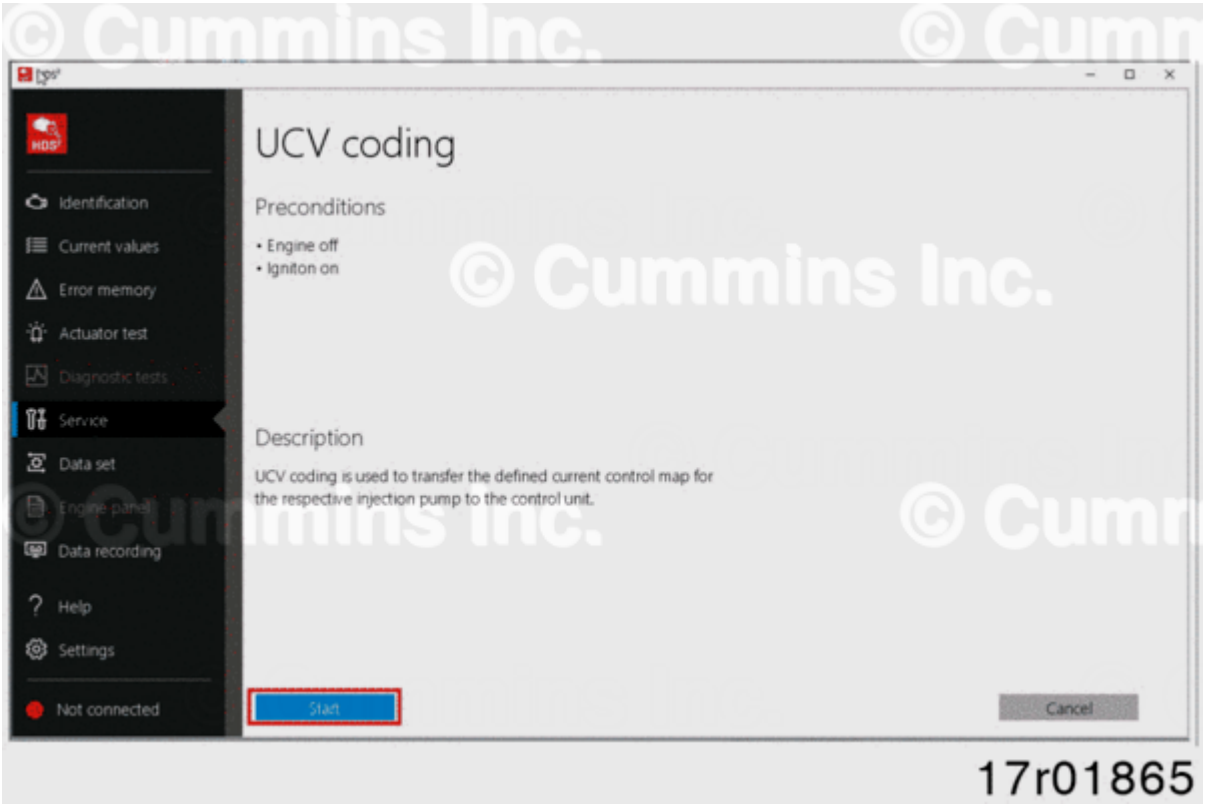


Figure 16, Start Button

9. Click “Yes” to change the values

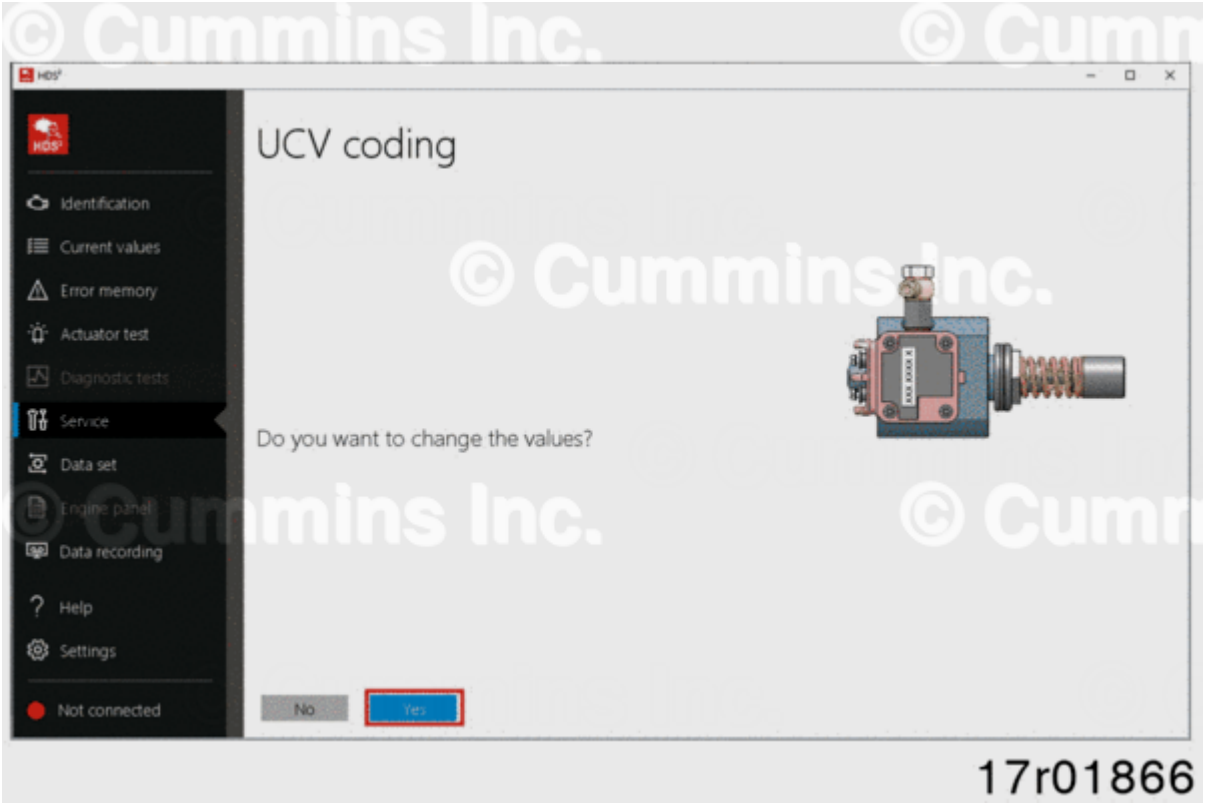


Figure 17, Yes Button

10. Enter the UCV Trim Code found on top of UCV.

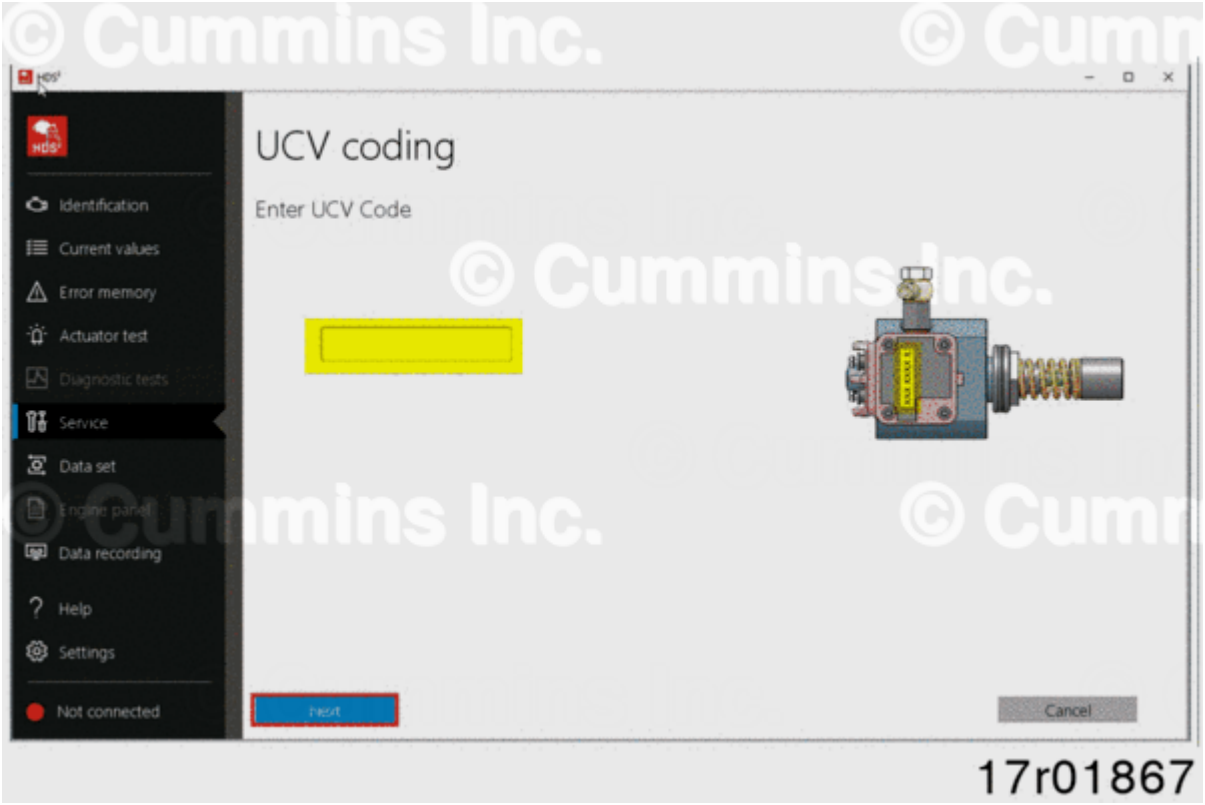


Figure 18, Enter Trim Code

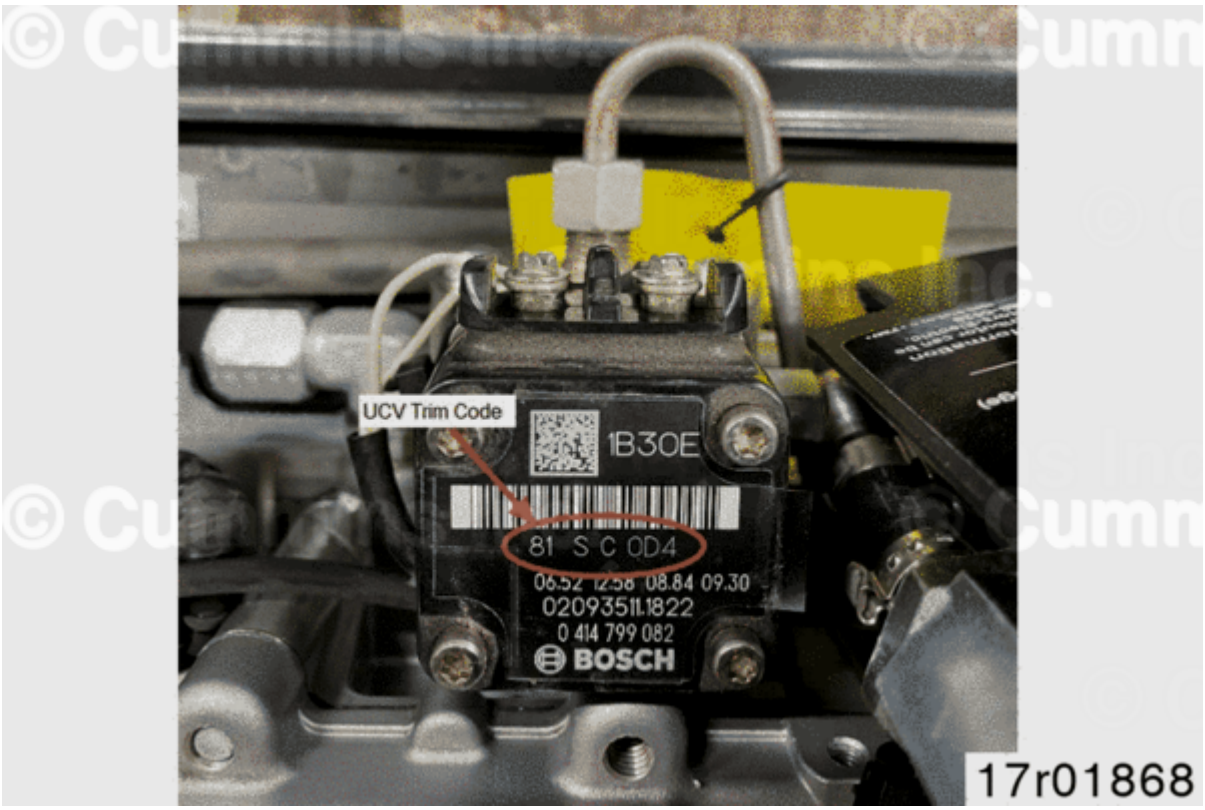


Figure 19, Trim Code Location

11. Click “Next” once code it entered. If HMI goes to sleep cycle the Red Button to wake it up.
12. The ECM update is now complete.
13. Bench test the unit to make sure functionality

Service Parts Availability

Service parts are available. See Table 1 for part numbers.

Table 1, Service Parts	
Part Description	**Part Number**
UCV (injection pump)	PN A072F011
Gasket, Valve Cover	PN A045W750

Document History

Date	Details
2022-11-10	Module Created

Date	Details
2023-1-11	Non-Product Problem Solving (PPS)
2023-3-24	Non-Product Problem Solving (PPS)
2023-5-4	Non-Product Problem Solving (PPS)

Last Modified: 05-May-2023