



CATEGORY: Instrumentation
PART NUMBER: G-802-55 and G-802-56
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SUPERSEDES: n/a
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ROUTE: Distributor/End User

PRODUCT APPLICABLE TO:	TEST METHOD:
<input checked="" type="checkbox"/> F-1/F-2 Combination	D 2699, D 2700
<input checked="" type="checkbox"/> F5 Cetane	D 613
<input type="checkbox"/> Supercharge	D 909
<input type="checkbox"/> Accessories	
<input type="checkbox"/> Tools	
<input type="checkbox"/> Technical Publications	

SUBJECT: **New DCU / cRIO Controller Supersession**

This Service Bulletin is to announce to customers that CFR Engines Inc. will be releasing a new DCU (cRIO) data acquisition computer for the XCP platform. The current design (model 9073) is still being used but is now obsolete, so over time, we will slowly transfer customers to the 9056 cRIO model. If you are currently using the 9073 cRIO and your controller is functioning properly, there is no need to upgrade to the 9056 cRIO. However, if your controller needs to be replaced, you will need to upgrade to the 9056 cRIO.

cRIO 9072 platforms are no longer being offered, are obsolete and will also no longer be supported by CFR with future software upgrades. If customers with cRIO model 9072 are satisfied with the current performance, there is no need to upgrade. However, any future XCP software upgrades the customer would like to obtain will require upgrading to the 9056 platform.

The following kits have been created to help manage the transfer of the 9072 and 9073 controllers as they undergo obsolescence. Replacing the cRIO on an XCP panel is considered a critical repair to the panel that involves working with electrical wiring. Customers are strongly encouraged to work with an CFR Authorized Distributor for this replacement.

G-802-55 Octane Upgrade Kit

G-802-56 Cetane Upgrade Kit

Below are instructions for upgrading and installing the cRIO 9056 data acquisition computer for the XCP platform. Please read through the instructions carefully before performing any aspect of the upgrade.

NI 9056 cRIO Upgrade

Parts List in each kit:

- National Instruments cRIO Controller 9056
- Din rail mount kit
- Ferrite
- Zip Ties (customer supplied)

Tools needed for installation:

- Wire snips
- Wire strippers
- Small flat-blade terminal screw screwdriver
- Medium Philips Screwdriver

Removal of Old cRIO (9072/ 9073)

1. Perform lockout tagout on both single and 3-phase power

⚠ Warning: After applying Lock Out Tag Out (LOTO), test to be sure the unit cannot be started or operated. This work should be performed by an individual qualified in electrical work.

2. Remove rear cover of XCP panel (disconnect ground wire if necessary)
3. Locate the 4-pin connector on the far-left side of the cRIO controller, loosen the two screws, and pull the connector away from the cRIO assembly
 - Remove the two wires from the connector and reinstall the connector back into the cRIO
4. Locate the new connector from the 9056 cRIO and install the wire labeled "NICV1" into slot "V" of the new connector and the "COM" wire into slot "C" (**See Figure 1**)
 - Trim/strip the wire ends as needed.



Figure 1

5. Disconnect the Ethernet cable from the 9073 / 9072 cRIO
6. Make a note of each card's slot position (ex. 9201= slot 1, 9217 = slot 2...)
 - The positions of the cards are important, as the unit will not function properly if they are placed in the wrong slot.

Disconnect each card assembly from its position by depressing the two spring-loaded metal tabs on the top and bottom ends of each card (the connectors can be left connected to each respective card)

- Carefully let the cards rest on the bottom of the XCP panel

7. Disconnect the crankcase vacuum sensor to allow more space to work, and to prevent damage to the wiring harness (**See Figure 2**).

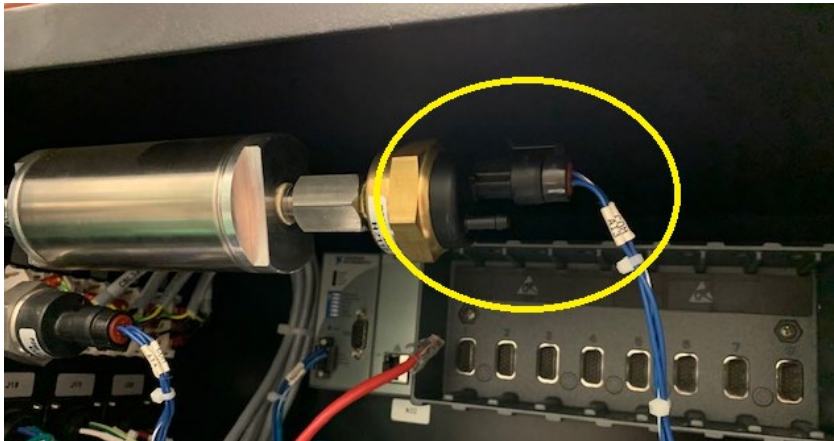


Figure 2

8. Disconnect the cRIO assembly from the rail by pressing down firmly on the top of the unit with both hands (spring loaded), and then simultaneously pulling the bottom of the unit outward toward you.
 - For this task, it helps to position the thumbs on the bottom of the cRIO and the rest of the fingers on top of the cRIO

NOTE: Older units may require removal of the screws at slot 1 and slot 8 (without spring clips).

9. Disconnect the ground wire attached to the cRIO assembly and set aside.

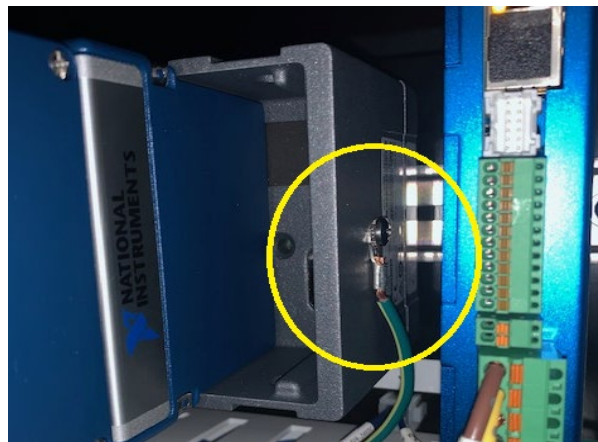


Figure 3

Installation of New 9056 cRIO

10. Install the new mounting bracket onto the new cRIO using the included hardware
 - Be sure that the spring clips are on the top side of the new cRIO (**See Figure 4**)
 - Secure and fasten with the 3 screws included in the kit

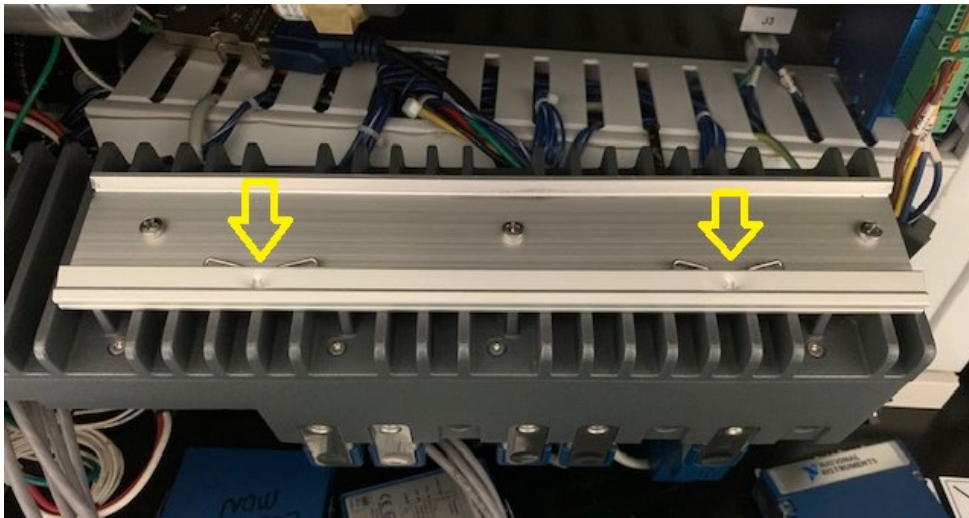


Figure 4

11. Install the ground wire that was taken off earlier from the old cRIO and mount it onto the right side of the new cRIO.
12. Install the new cRIO by placing the top side of the mounting bracket onto the rail first, then apply downward pressure to load the spring clips and push the bottom of the cRIO inward toward the panel.
 - Verify that the cRIO is secure and will not lift out of position.
13. Reinstall the cards back into their respective locations. **See Figure 5**

NOTE: It is important that the cards are inserted straight to avoid bending the pins that connect the card to the cRIO chassis.

14. Verify that each card is fully seated by ensuring that both top and bottom spring-loaded clips retract outwards after pushing the cards into place.

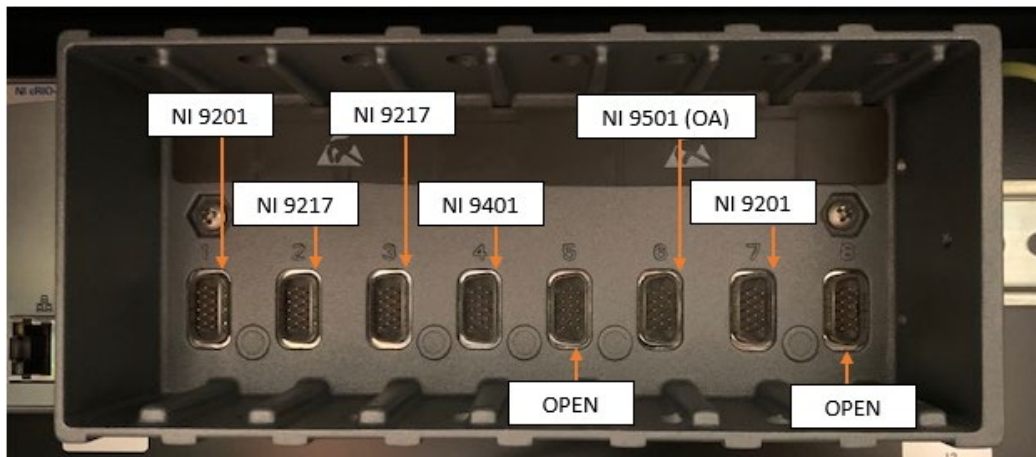


Figure 5

15. Connect the red Ethernet crossover cable to the 9056 cRIO.
16. Connect the 2-pin power connector (V/C) and make sure the two screws are tight.
17. Reconnect the crankcase pressure sensor (if it was removed earlier)
18. Attach the ferrite core roughly 2" below the input power connector by placing the two wires into the center of the ferrite core and closing the ferrite assembly. (**See Figure 6**)
 - To keep the ferrite from sliding out of position, install a zip tie directly beneath the ferrite onto the two wires, and snip the excess zip tie end

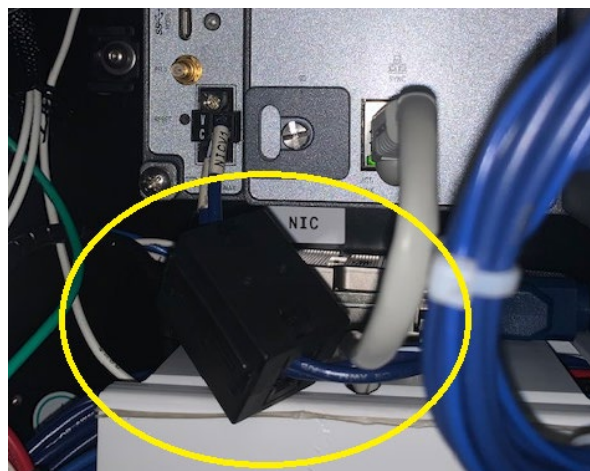


Figure 6

19. Inspect all aspects of the installation to be sure all connections are tight and that all cards and grounds are firmly in place.

- Tug on each wire installed to be sure that it will not come loose during operation

NOTE: Loose wire connections are a common cause of preventable electrical issues- therefore, validate all connections.

20. Turn on the single-phase power and verify that the green "Power" light on the top-left side of the cRIO is lit

21. Switch ON the computer/HMI and open the CFR Octane Software (wait 7 minutes after turning on single-phase power)

- A new license key will be required to allow communication between the new cRIO and software (**See Figure 7**)
 - Select the "Update License Key" dialog box and record the Key Code as seen in the picture below
 - Send CFR Service the Key Code and you will be provided a Host and Target license
 - Input the new licenses from CFR, then select "Host License" and Target License" buttons
 - Close the software
 - Press the green "Reset DCU" switch on the panel and wait five minutes
 - Open the software and verify proper functionality

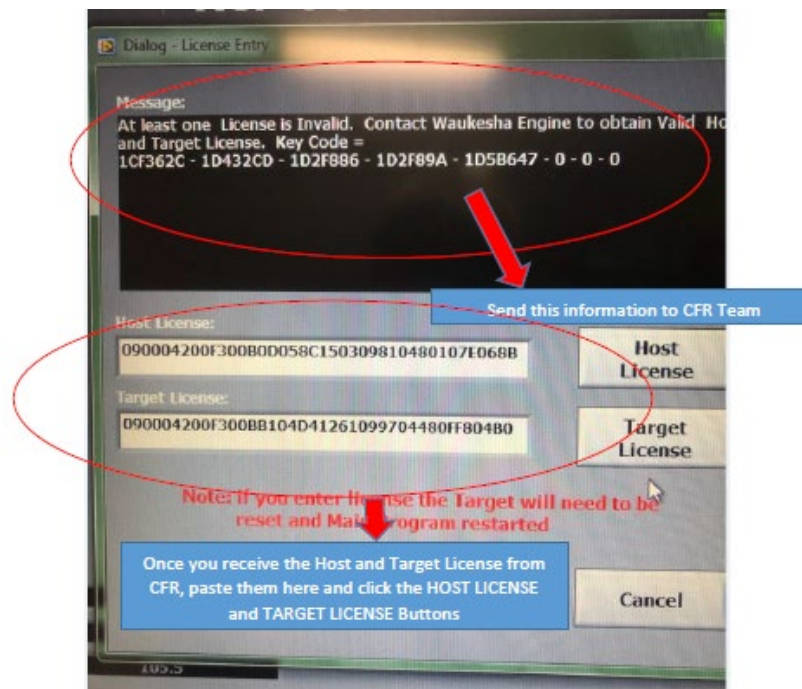


Figure 7



22. Reinstall XCP back-panel cover and re-secure grounding strap

If you have any additional questions, please contact your local Distributor for information.

**Best Regards,
Dan Bemis
CFR Global Service Manager
CFR Engines Inc.**