CNC12 Software Installation and "Upgrade" Guidance:

Table Of Contents

Document conventions

- When referring to the CNC12 installation directory it will be referred to as: **cnc***
  - The asterisk (*) stands in for the last letter, which differs depending on which type of machine you have.
  - For instance if we have a CNC12 Mill installation our directory will be named: **cncm**

1 Overview

1.1 First Time CNC12 Installation:

Step by step new installation instructions start on .

First time 'fresh' CNC12 installation is simple and just takes a few minutes to install. The process is covered in detail in the various Centroid CNC main-board installation manuals (Acorn/AcornSix/Hickory/Oak/Allin1DC) and in several videos online. If you are installing CNC12 for the first time follow the instructions in those manuals and videos. The new fresh installation process also starts on of this document.

1.2 Updating CNC12 for Acorn, AcornSix, and Hickory (with wizard):

Step by step Acorn/AcornSix "Updating" instructions start on .

Step by step Hickory (with wizard) "Updating" instructions start on .

For Acorn, AcornSix, and Hickory (with wizard) there is no such thing as an automatic "update" or installing CNC12 "on top of" an existing installation. To "update" a system, you always perform a fresh installation of CNC12. The CNC12 software for Acorn, AcornSix, and Hickory (with wizard) does NOT install "on top of" an existing installation. The installer will make a backup copy of the existing CNC12 installation and then install a new "fresh" copy of CNC12 in which you must re-configure values in the wizard. Files such as tool libraries or WCS tables will need to be copied over by hand.

The reason for this is: the wizard creates a PLC program for you based on the selections you make in the wizard. The wizard then automatically generates a PLC program that will inherently have any and all new features that are available pre-programmed ready to run that came with the new version. The wizard also sets the corresponding CNC12 parameters, and creates any macros (if necessary). It takes about 15 minutes to get a typical new installation of CNC12 for Acorn, AcornSix, or Hickory (with wizard) running on an existing system using this "updating" method.

If you'd like to learning more, there are video discussions and demonstrations of "updating" CNC12 for Acorn/AcornSix on the Centroid Tech Support YouTube Channel and on the Centroid Tech Support Forum: www.centroidcncforum.com

1.3 Updating CNC12 for Oak, Allin1DC, MPU11, and Hickory (without wizard):

Step by step Hickory (without wizard) "Updating" instructions start on .

Step by step Oak, Allin1DC, and MPU11 "Updating" instructions start on .

For Oak, Allin1DC, MPU11, and Hickory (without wizard) "updating" CNC12 is a straight forward process as you can install "on top of" the current installation. When using a stock Centroid provided PLC program it's as easy as installing an updated version of that previous stock PLC. However, if a custom PLC program was previously being used there are choices that must be made:

1. Keep the old PLC and miss out on new features that were added to the new stock PLCs.

2. Keep the old PLC and add in new features from newer stock PLCs.

3. Install a new stock PLC and customize it with needed features from the old PLC.

Something to note with "updating" by installing "on top of" the current installation is that configuration and settings are directly transferred to the new version. This means that any settings, regardless of whether they're new, moved, or changed will be set to exactly what they were previously. It's the responsibility of the person "updating" CNC12 to familiarize themselves with changes made between the old and new versions of CNC12 and adjust accordingly. Version release notes can be found here: https://www.centroidcnc.com/centroid_diy/centroid_cnc_software_downloads.html

Note: If you are "updating" with an Oak, Allin1DC, or MPU11 from CNC software older than v4.16 you can purchase a Pro or Ultimate License for CNC12 v5.xx at a one time discounted rate of $299 to move to the new software.
Purchase here: https://shopcentroidcnc.com/shop/cnc-software/upgrade-from-v4-16-to-v5-xx-for-oak-allin1dc-mpu11/

1.4 Need some help with installation or "updating"?

Sign up for Free CNC Tech Support here: https://centroidcncforum.com/

Centroid's Tech Support YouTube Channel: https://www.youtube.com/@CentroidSupport

1 on 1 Factory direct tech support available here: https://shopcentroidcnc.com/centroid-factory-direct-11-technical-support/

For help installing or updating your CNC12 installation, purchase at least an hour of 1 on 1 tech support above. Then schedule an appointment with tech support where they can remotely connect to your computer to help you out.

To request 1 on 1 tech support have a few things ready:

- The order number associated with the tech support purchase
- Your control serial number or system ID
    - Here is how to find it: https://centroidcnc.com/serial.html
- Internet access on the CNCPC
- TeamViewer installed with ID and Password ready to be given to support
    - TeamViewer comes pre-installed on pre-configured CNCPCs sold by Centroid
    - Free download here: https://www.teamviewer.com/

2 CNC12 installation instructions:

1.) Make sure the CNCPC meets the specification requirements found on this page:
https://www.centroidcnc.com/centroid_diy/acorn_quick_start_guide.html

2.) Configure Windows 10/11 for CNC use, video found on this page:
https://www.centroidcnc.com/centroid_diy/acorn_quick_start_guide.html

Note: A new Centroid CNC PC Tuner app is available and is a free download here:
https://www.centroidcnc.com/centroid_diy/centroid_cnc_software_downloads.html
Video is here: https://youtu.be/bOZVMMdzOj8?si=cNr-VZnmpHUp5Yj9

 And be sure to verify that Windows is up to date with the latest .NET Framework updates.

3.) Download and unzip the CNC12 installer zip file:
https://www.centroidcnc.com/centroid_diy/centroid_cnc_software_downloads.html

EXTRACT the zip file.

4.) **With the CNC control board up and running connected with a heartbeat in BENCH TEST configuration (see example video showing this)**

Double Click centroid_cnc12_v5.xxx_installer.exe

You may run into this Windows notification. Click "More Info" then click "Run Anyway" to continue.
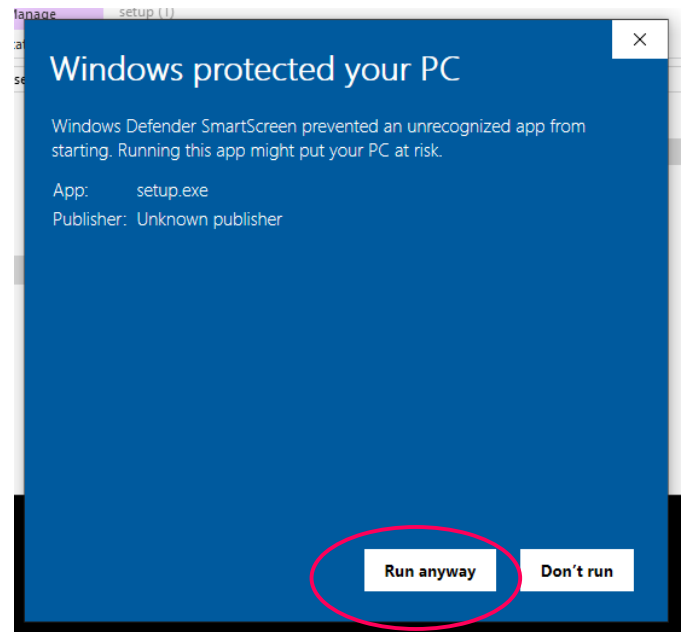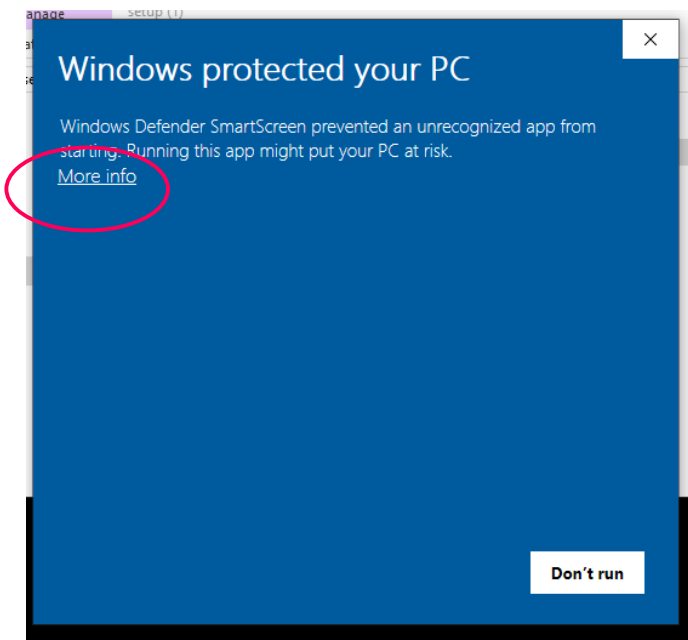
5.) Now follow the instructions on the screen to install CNC12. Select which Centroid controller you're using.

Note that Hickory has 2 different options here:

Hickory (No Wizard Setup) allows you to "install on top of" the current installation and requires hand configuration of parameters, PLC changes, etc.

Hickory w/ Wizard Setup allows you to use the wizard for configuration and PLC changes. However, you cannot "install on top of" the current installation.

More information on these Hickory choices can be found in the Hickory installation manual.
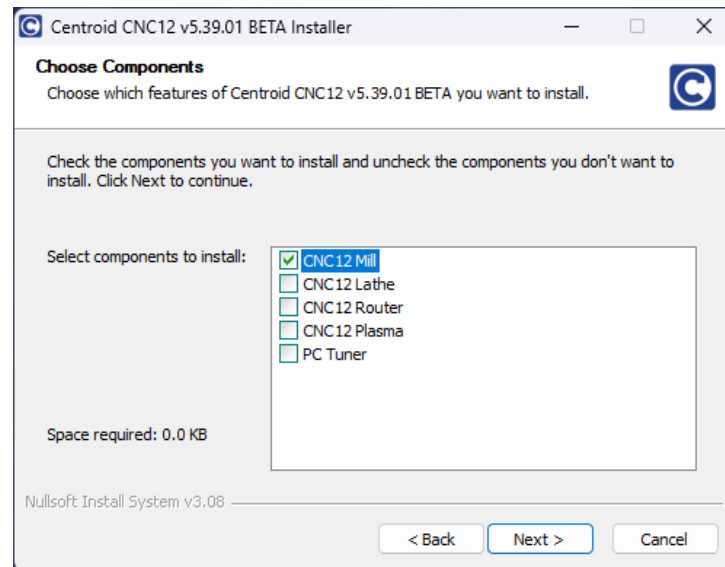
Select "Next" to continue.
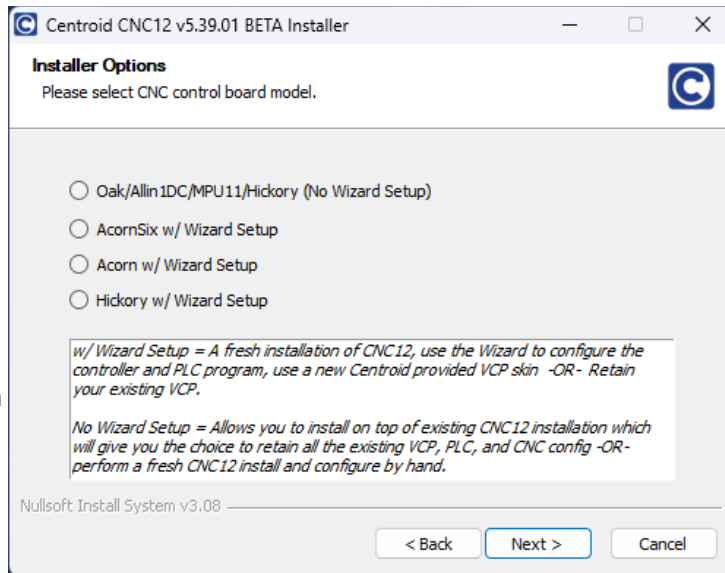
6.) Select what type of CNC12 you'd like to install.

Note that starting with CNC12 v5.4 there can now be multiple types of CNC12 installed at any given time.

If you'd like to have Router and Plasma installed for instance, you can do that by selecting both.

Select "Next" to continue.

7.) Select your preferred type of machine units and Virtual Control Panel (VCP).

If you change your mind on the machine units this setting can always be changed later.

It's always recommended to install the stock VCP and copy over modifications you previously made. However, if you'd rather just keep the old VCP you're able to do so. Either way, there will be a backup copy of either the old VCP or the new VCP created. And if you don't plan on using the VCP you can forgo it all together.

Select "Install" to continue
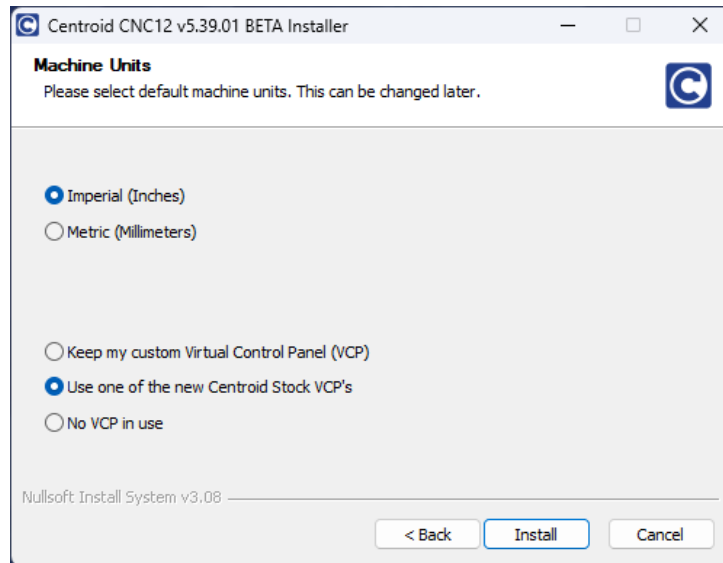
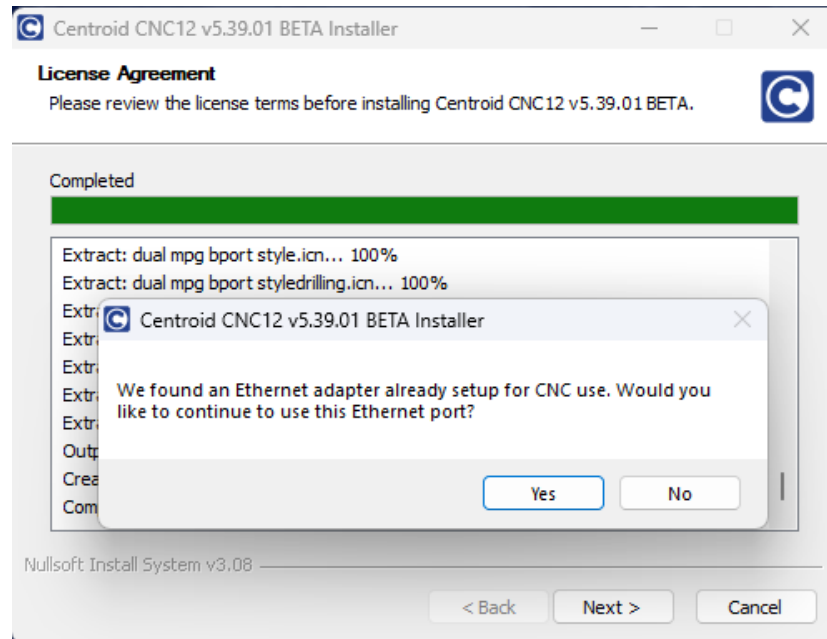8.) All necessary files for CNC12 will now be installed.

If a previous version of CNC12 is installed a backup of that directory will be made automatically.
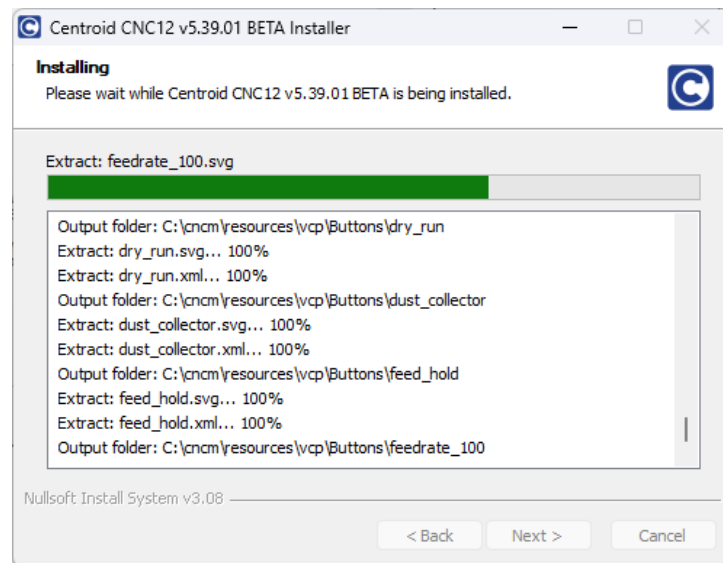
9.)Select which Ethernet port to use for CNC use.

If you already have an Ethernet port setup for Centroid CNC use the installer will recognize it and ask you if you'd like to continue to use it.

Select "Yes" and your installation is just about done.

Centroid CNC12 v5.39.01 BETA Installer

License Agreement
Please review the license terms before installing Centroid CNC12 v5.39.01 BETA.

Completed

Extract: dual mpg bport style.icn... 100%
Extract: dual mpg bport styledrilling.icn... 100%

Centroid CNC12 v5.39.01 BETA Installer

We found an Ethernet adapter already setup for CNC use. Would you like to continue to use this Ethernet port?

Yes   No

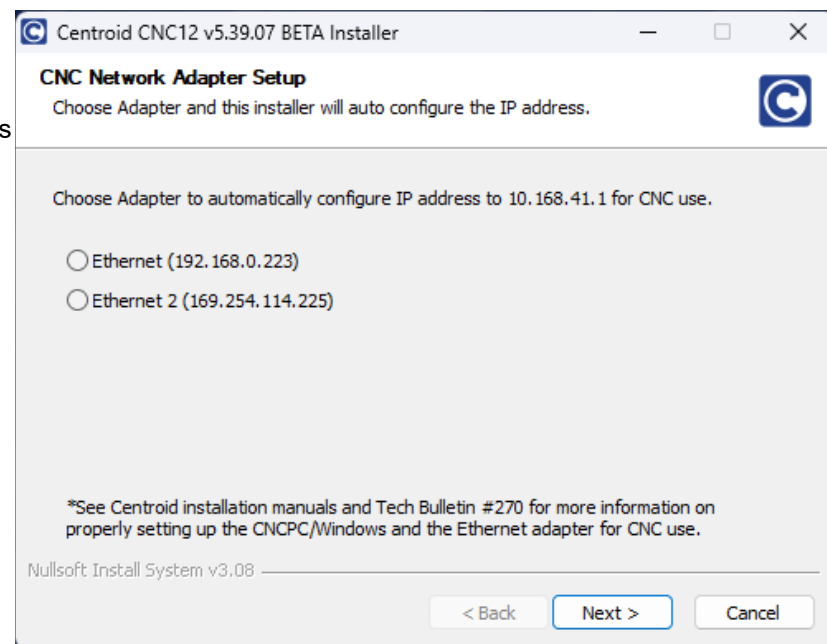Nullsoft Install System v3.08

< Back   Next >   Cancel

If you don't already have an Ethernet port setup for Centroid CNC use the installer will ask you to choose which one you'd like to configure for CNC use.

If you're using an Ethernet connection for internet on the CNCPC you will see multiple options listed.
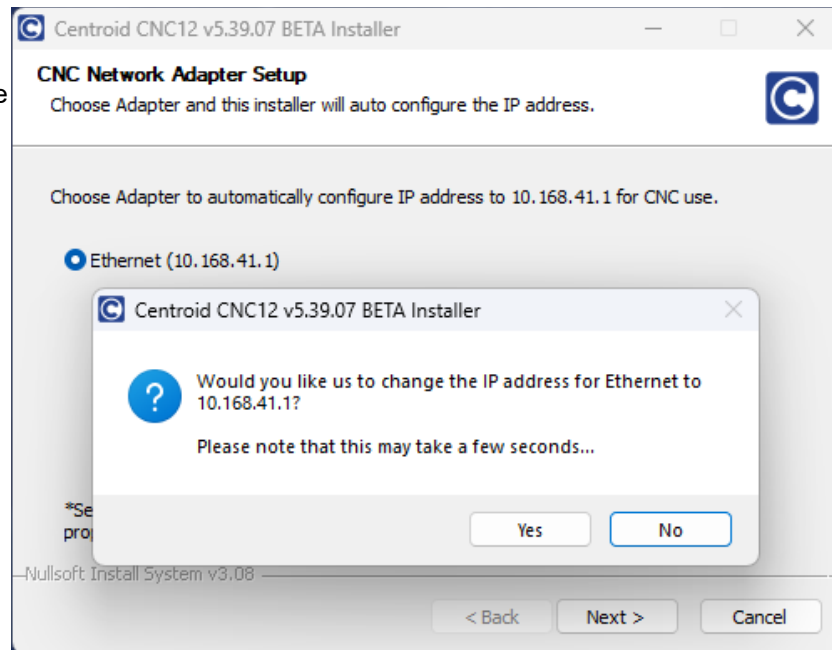
If you don't know which one is connected to the Centroid CNC controller it's recommended to cancel the install here, unplug the Ethernet providing internet, and run the installer again.

With the internet Ethernet cable unplugged, you will see only one option listed here, which is the Ethernet connected to the Centroid CNC control.

Centroid CNC12 v5.39.07 BETA Installer

CNC Network Adapter Setup
Choose Adapter and this installer will auto configure the IP address.

Choose Adapter to automatically configure IP address to 10.168.41.1 for CNC use.

○ Ethernet (192.168.0.223)
○ Ethernet 2 (169.254.114.225)

*See Centroid installation manuals and Tech Bulletin #270 for more information on properly setting up the CNCPC/Windows and the Ethernet adapter for CNC use.

Nullsoft Install System v3.08
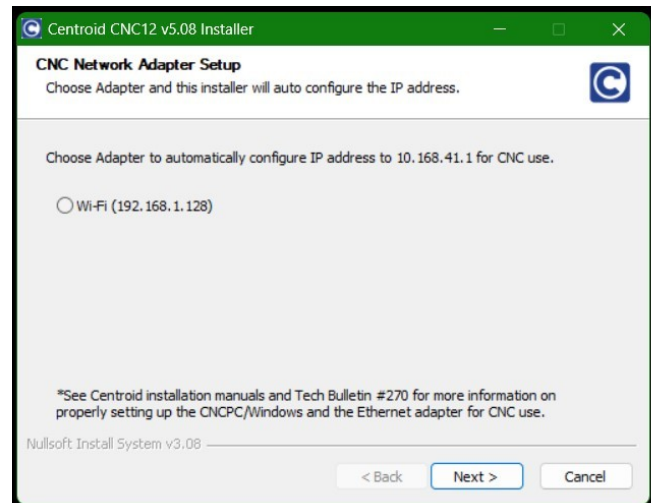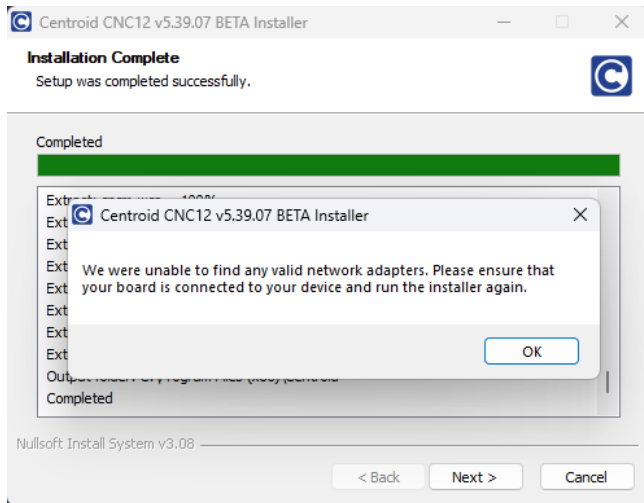
< Back   Next >   Cancel

Once you've identified the correct Ethernet connection select it and select "Next".

Select "Yes" to change the IP address of the Ethernet port and the installation process is just about done.

CNC Network Adapter Setup
Choose Adapter and this installer will auto configure the IP address.

Choose Adapter to automatically configure IP address to 10.168.41.1 for CNC use.

○ Ethernet (10.168.41.1)

Centroid CNC12 v5.39.07 BETA Installer

? Would you like us to change the IP address for Ethernet to 10.168.41.1?

Please note that this may take a few seconds...

Yes   No

< Back   Next >   Cancel

Warning!   If you see either of these screens STOP.

Installation Complete
Setup was completed successfully.

Completed

We were unable to find any valid network adapters. Please ensure that your board is connected to your device and run the installer again.

OK

< Back   Next >   Cancel

CNC Network Adapter Setup
Choose Adapter and this installer will auto configure the IP address.

Choose Adapter to automatically configure IP address to 10.168.41.1 for CNC use.

○ Wi-Fi (192.168.1.128)

*See Centroid installation manuals and Tech Bulletin #270 for more information on properly setting up the CNCPC/Windows and the Ethernet adapter for CNC use.

< Back   Next >   Cancel

These screens will appear when there is no hardware Ethernet adapter detected by the installer. This means the installer does not "see" the CNC control board Ethernet connection on the CNCPC.

Close the installer and be sure before starting the installation process that the Centroid CNC control is powered up and connected to an Ethernet port on the CNCPC. You should see an amber and green light on the Ethernet port of the Centroid CNC control if it's connected properly.

10.) CNC12 has now successfully been installed.

If you're installing CNC12 for use with Acorn, AcornSix, or Hickory (with wizard) the installation process is now complete and you can move on to step 13.

If you're installing CNC12 for Hickory (without wizard), Oak, Allin1DC, or MPU11 continue with steps 11 and 12.

Select "Finish" to continue.
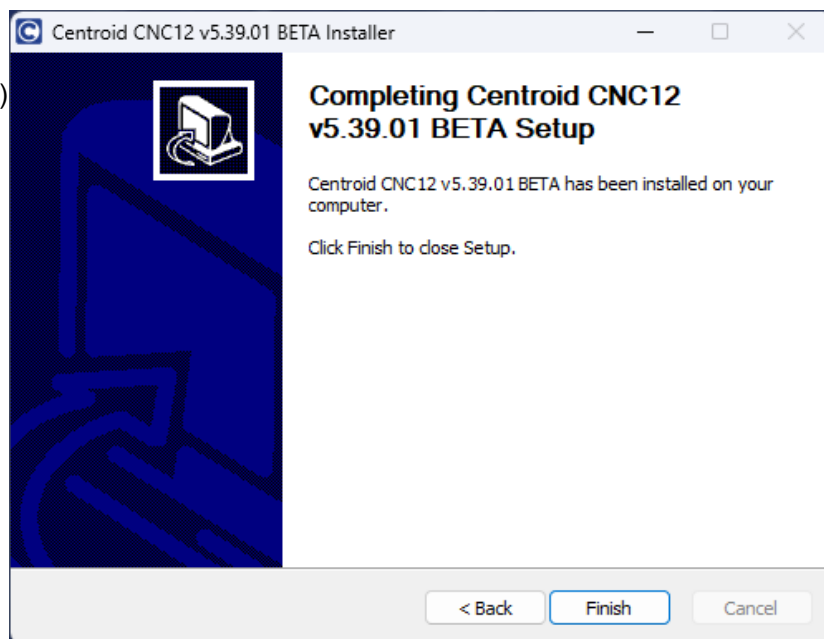
11.) When installing CNC12 for a motion controller without a wizard such as an Oak, Allin1DC, MPU11, or Hickory (without wizard) you'll need to install a PLC program.

If this is a new installation of CNC12 you must install a PLC program otherwise CNC12 will not operate correctly.

Select "Yes" to continue.
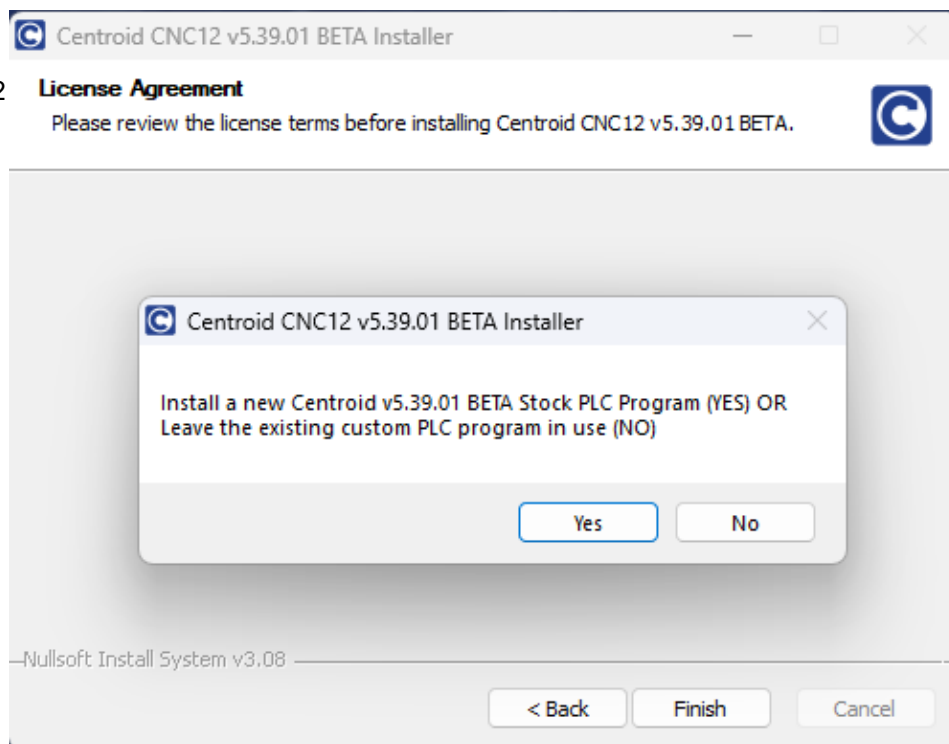
12.) Now select which PLC program you'd like to install.

Use the navigation tree on the left to expand either _Mill or _Lathe.

Now expand the section that pertains to which motion control board you have. eg. Allin1DC, Oak, etc.

Select which PLC program will work for you; _Centroid_Standard generally being a safe choice.

Once you've made your selection, select "Install" at the bottom.

Your installation of CNC12 is now complete.
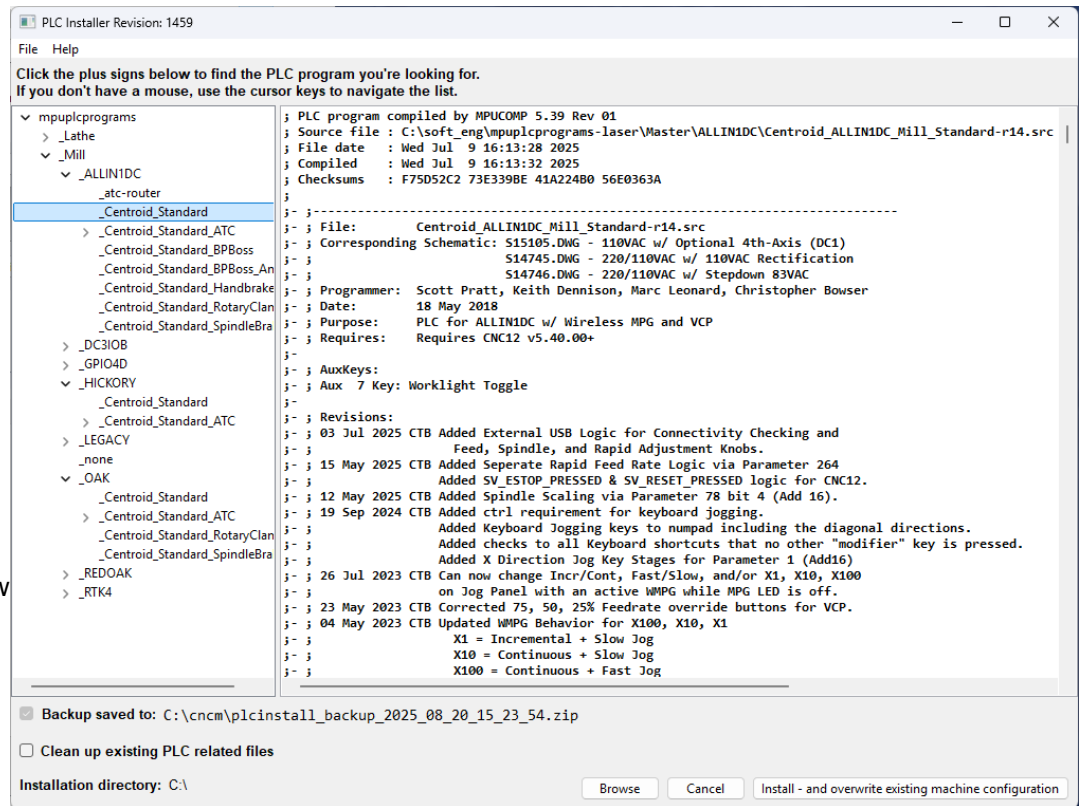
13.) After the installer is finished, and with the CNC control board up and running with a heartbeat connected in BENCH TEST configuration (see video showing this) double click on the CNC12 Desktop Icon to start CNC12.

CNC12 will update the firmware on the CNC control board. Follow the instructions on the screen.

14.) With CNC12 running, now Run the communications Stress Test G-code program.

a.) Press **Cycle Start** to set a home position.
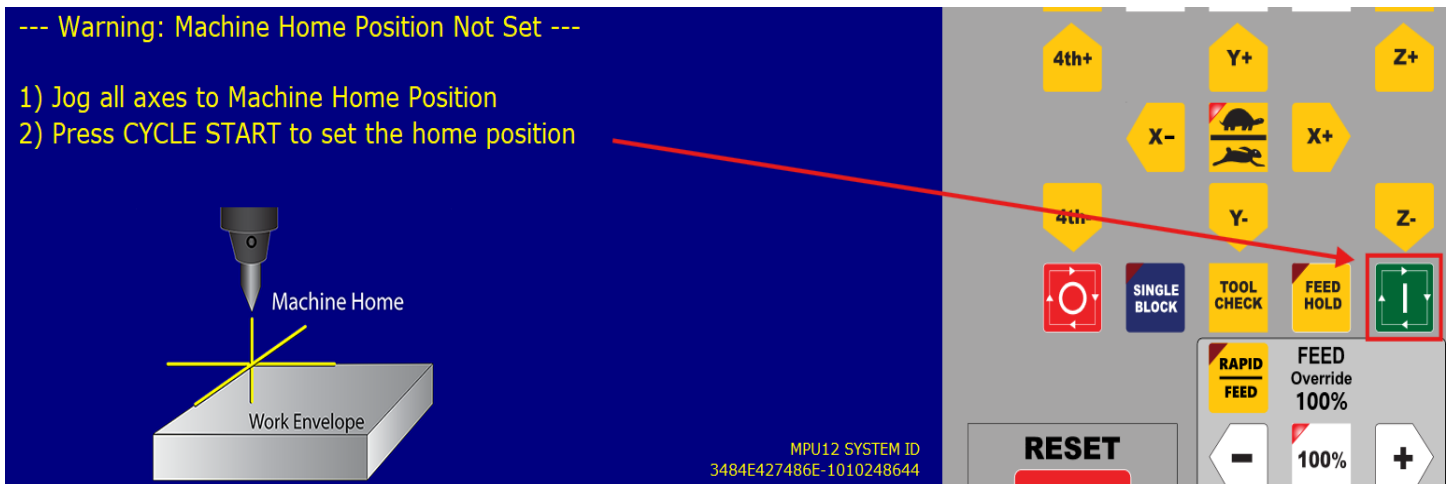
b.) Load and run `com_stress_test.cnc`. This can be achieved by either pressing the "Utils" button near the bottom of the VCP or by pressing **F2 – Load** and navigate to the file `com_stress_test.cnc` found in the `cnc*\ncfiles` folder.
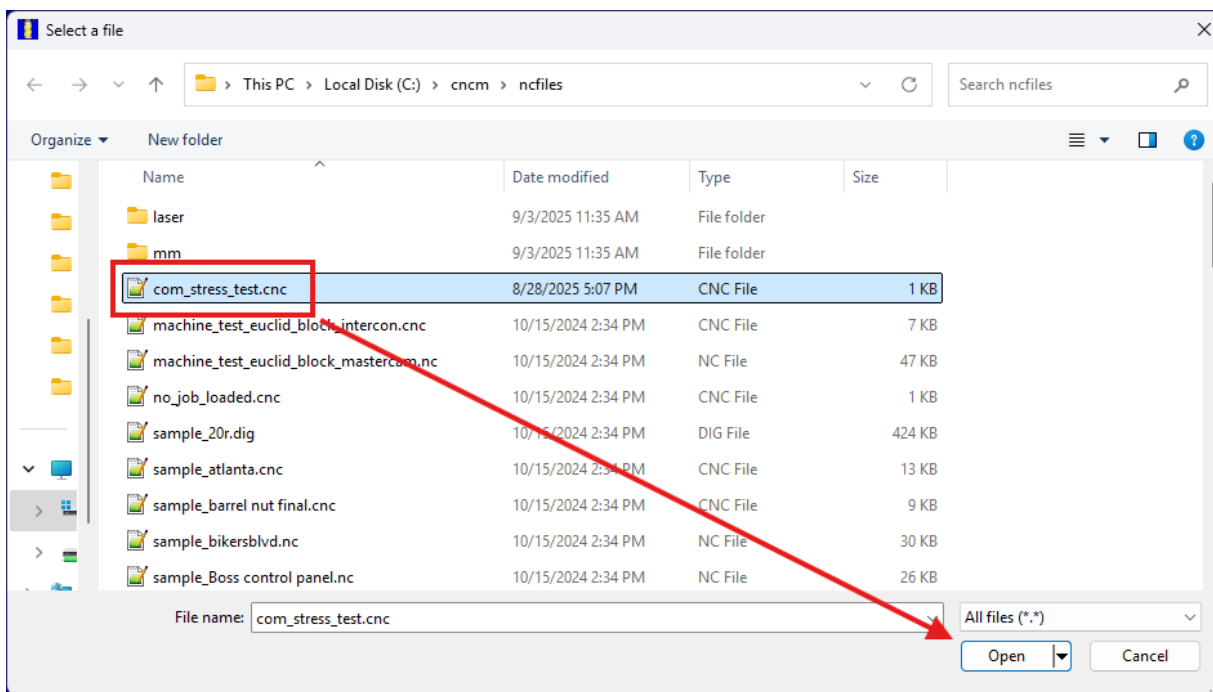
c.) Press **Cycle Start** to run the Communications Stress Test
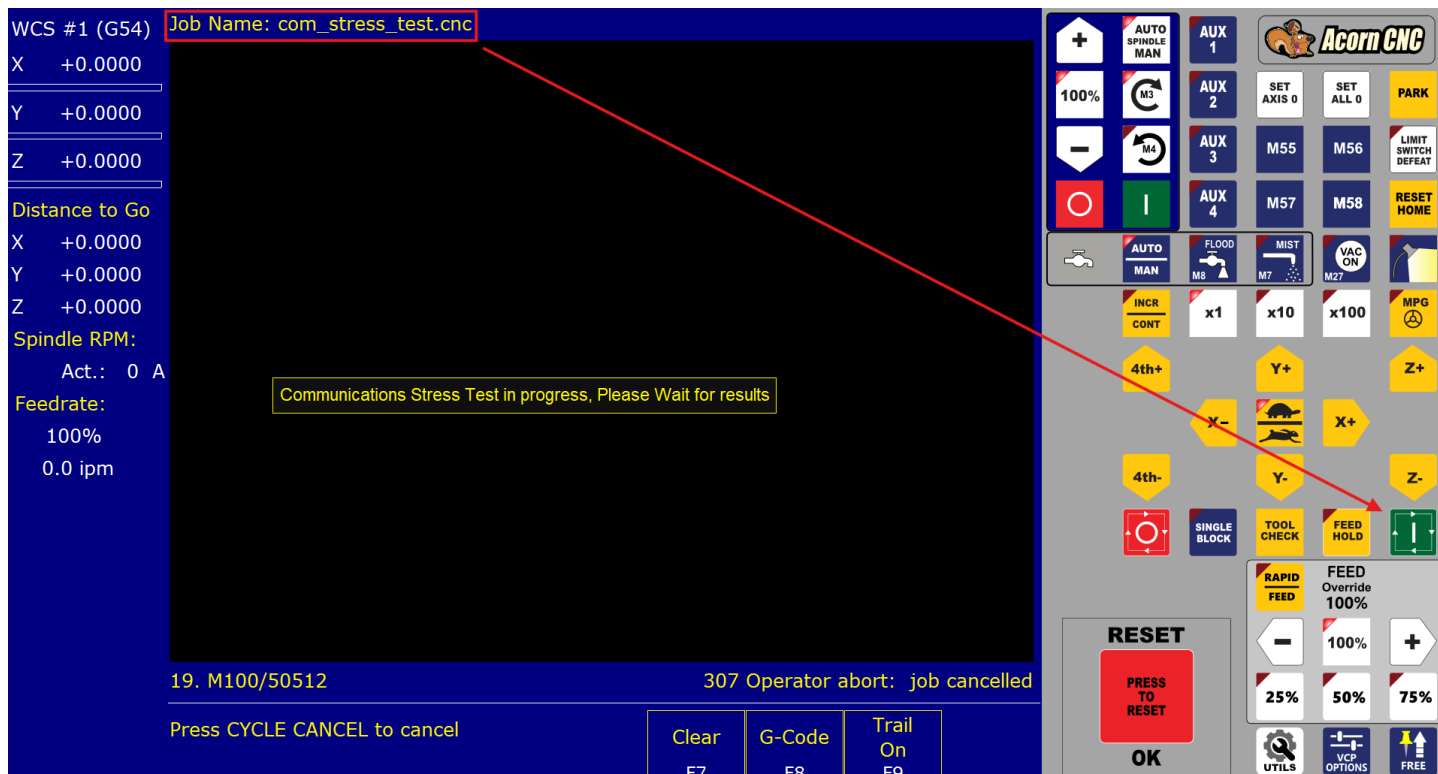
d.) Wait for results. If Passed continue to next step. If Fail. STOP and resolve the Communication issue now.

Follow details in TB's 309 https://www.centroidcnc.com/dealersupport/tech_bulletins/uploads/309.pdf
and TB 270 https://www.centroidcnc.com/dealersupport/tech_bulletins/uploads/270.pdf

Communications Stress Test
PASSED
max. errors acceptable = 5
Results:
Packets Resent: 0
Generic Communication Errors: 0
Packets Out of Order: 0
NAcks Packets Sent: 0
NAcks Packets Recieved: 0

15.) Install the License file. **F7 – Utility Menu** > **F8 – CNC12 License** > **F8 – Import License** and follow instructions.

16.) Configure the Acorn, AcornSix, and Hickory (with wizard) setup wizard as per the respective Installation manual. For Oak, Allin1DC, MPU11, and Hickory (without wizard) follow their respective installation manuals/videos to configure CNC12 to a specific CNC machine tool.

17.) If desired customize the new VCP and Macros to match your specific application.
See the VCP 2.0 users manual
https://www.centroidcnc.com/centroid_diy/downloads/centroid_vcp_users_manual.pdf
and the Intro to Centroid Macro programming manual
https://www.centroidcnc.com/centroid_diy/downloads/acorn_documentation/centroid_cnc_macro_programming.pdf

Notes:

- CNC12 with VCP v5.xx is optimized for 16:9 aspect ratio screens. For best results use a monitor that is 1920x1080 resolution and verify windows is set to this resolution.

- When using CNC12 without a VCP it's best to use a 4:3 aspect ratio screen.

- Release notes for CNC12 are located on the CNC12 downloads web page:
https://www.centroidcnc.com/centroid_diy/centroid_cnc_software_downloads.html

**3 Updating from previous versions of CNC12 for Acorn and AcornSix users:**

1.) Start by creating a new folder named something like "Wizard Update." It's convenient to place this folder on the desktop or on a flash drive.

2.) Start the existing installation of CNC12 and make a fresh report by going to **F7 – Utility Menu** > **F7 – Create Report**. Now select where you'd like to create the report, which should be the folder we just made: "Wizard Update". Navigate to that folder and press "Select Folder." The Report will now be made and saved in our "Wizard Update" folder.

3.) Now we'll take screenshots of every wizard screen for later use. Start by opening the wizard by going to **F7 – Utility Menu** > **F10 – Acorn Wizard**.
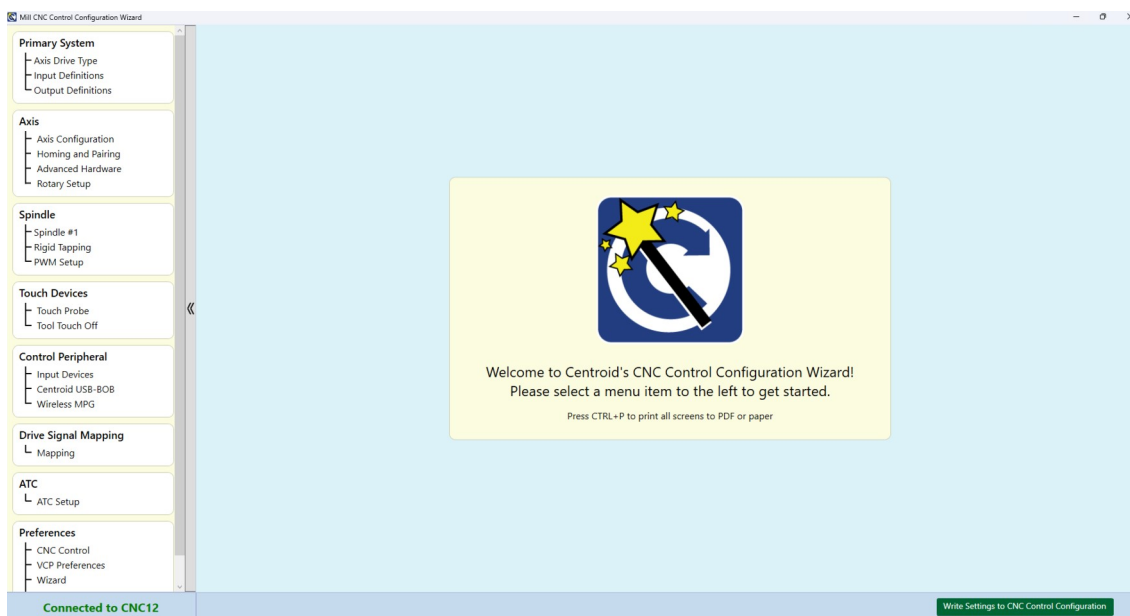
4.) If using any version of CNC12 v5.0 or newer you can press **CTRL+P** when the wizard is open to create a PDF document with a screenshot of every wizard page. When printing be sure to select a "Print to PDF" option. If using a version of CNC12 prior to v5.0 skip to step 6.
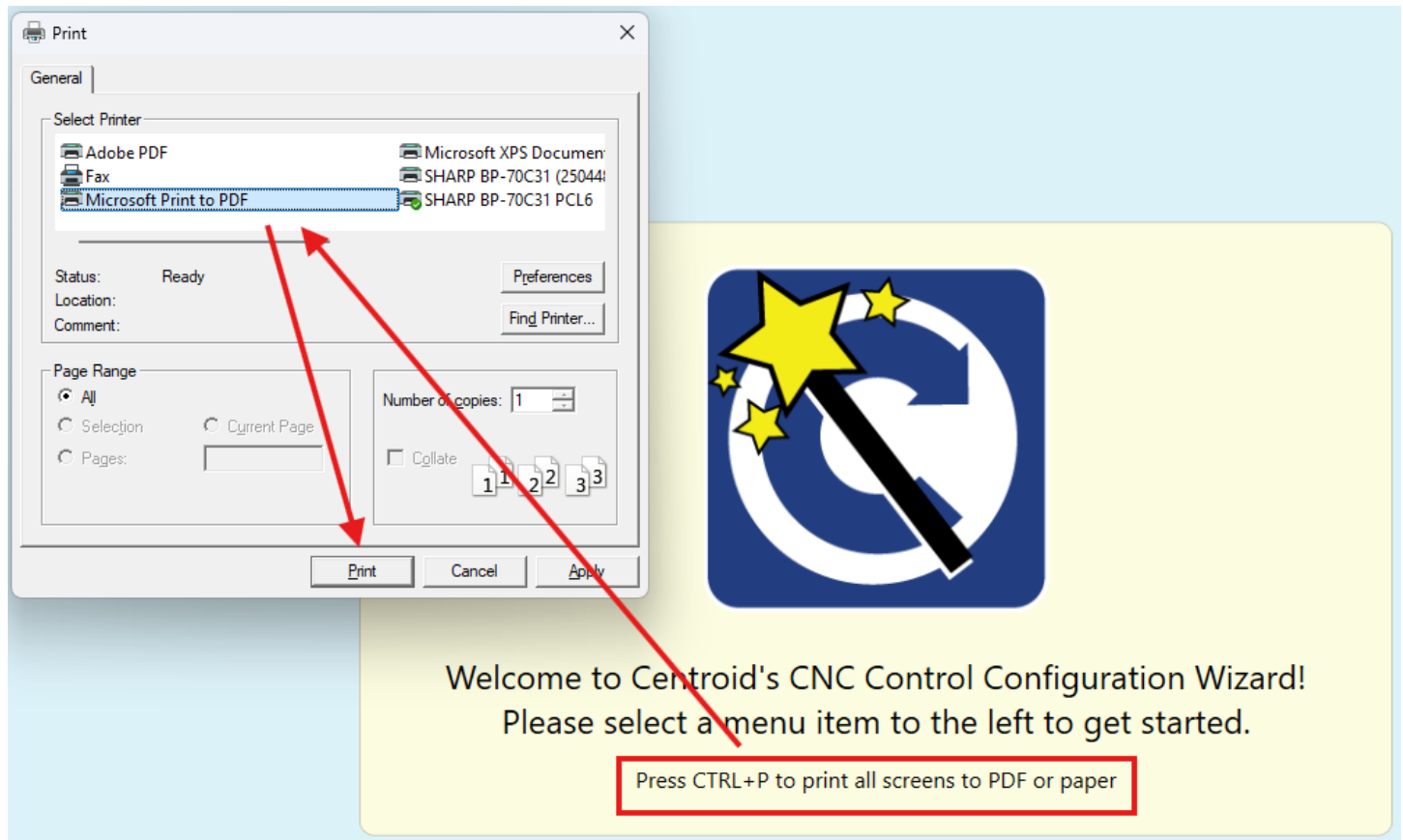
5.) Now name the PDF something like "wizard screenshots" and save it to our "Wizard Update" folder. Skip to step 10.
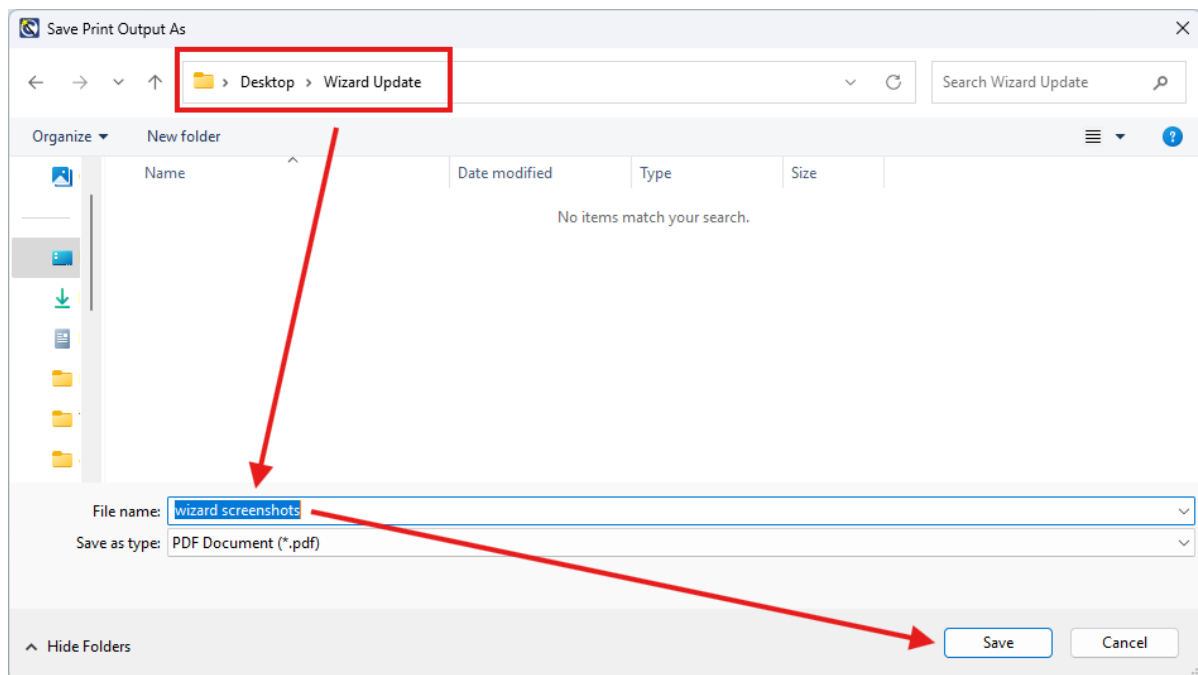
6.) When making screenshots of the wizard pages with CNC12 versions prior to v5.0 there are many options. One of the simplest options, which is available on any Windows PC is using the application Paint. Open the first page of the wizard, the Axis Drive Type screen, and press the **PrtSc** button on the keyboard. **PrtSc** is generally located above the arrow keys.

7.) Now open the Paint application and press **CTRL+V** to paste the screenshot into Paint and save it as a PNG file to our "Wizard Update" folder. To save the image go to the top left in Paint and click "File," "Save as," and then "PNG picture."
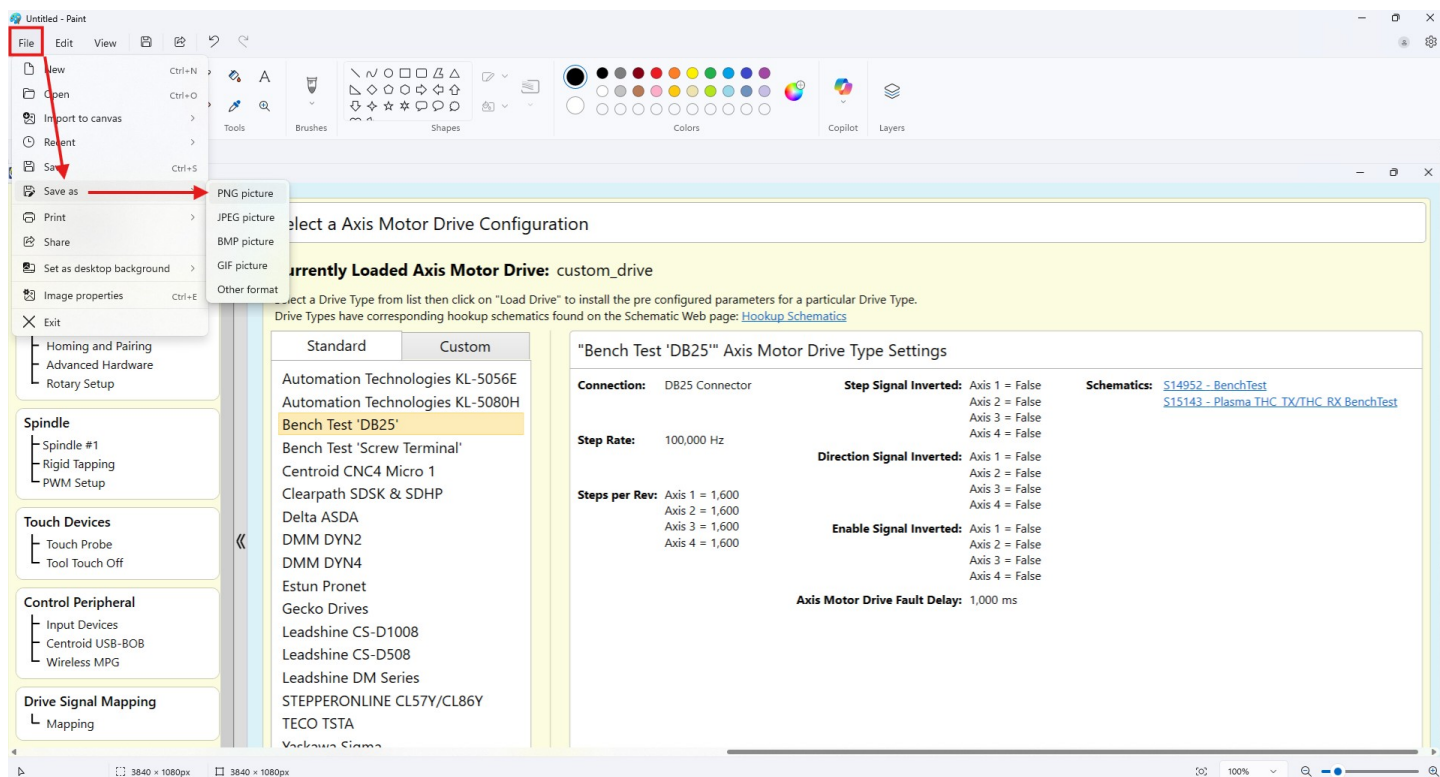
8.) Save the image to our "Wizard Update" folder and name it something easily identifiable for which page it is.
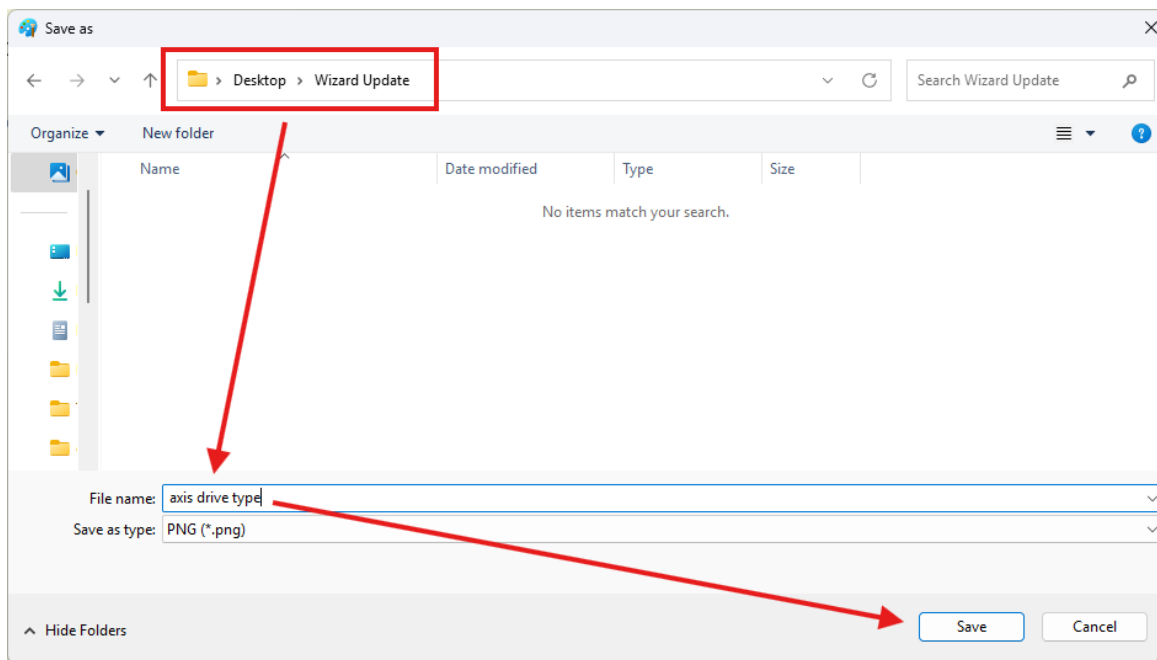
9.) Now repeat steps 6-8 until you've made an image for every page in the wizard.

10.) Follow the CNC12 installation instructions above starting on Page 4.

11.) With your newly installed CNC12 running, open the wizard from **F7 – Utility Menu** > **F10 – Acorn Wizard**.

12.) Now we will begin the process of re-entering every value we had in our previous installation of the CNC12 wizard. You'll need to open the PDF we made earlier, or each image for each wizard page as we go, which we had saved in our "Wizard Update" folder. It's recommended to either have a second monitor for this, or to transfer the PDF or images to another PC or smartphone. Find below an example of a screen setup you could use if you only have one screen. In this image the CNC12 wizard is taking up about 2/3 of the screen and the PDF is open on the other 1/3.

13.) When finished re-entering the values of every screen of the wizard **BE SURE** to press the **"Write Settings to CNC Control Configuration"** button in the bottom right. **DO NOT** exit out of the wizard without pressing that button otherwise **Nothing will be saved.** Follow the instructions given, power cycling the Acorn or AcornSix if requested.

14.) To finish up, with CNC12 closed, copy over anything from the previous installation you may want. This could include: custom macros, VCP modifications, home programs (`cnc*.hom`), tool and offset libraries (`cnc*.tl`, `cnc*.ol`, or `cnct.ttl`), WCS positions (`cnc*.wcs`), the license file (`license.dat`), and job files found in `cnc*\ncfiles`.

Note: If for any reason you'd like to switch back to the old installation of CNC12 you can easily do that by simply renaming the installation folder. Below you can see, on the left, the newly installed CNC12 folder and the backup of the previous installation that was made automatically when installing the new version. By renaming `cnc*` to something else and renaming the backup to `cnc*` we have successfully switched back to the previous installation. Now start CNC12 and it will update the firmware on the Acorn or AcornSix and be back to how it was before the update. Check out this video for a demonstration: https://www.youtube.com/watch?v=j3Kr8CI-nx4

==For Plasma it is always required to re-calibrate the Torch when a new version of CNC12 software is installed.==
This simple process is covered in the Centroid Plasma users manual:
https://www.centroidcnc.com/centroid_diy/downloads/acorn_documentation/centroid_acorn_plasma_users_manual.pdf

Repeated here.

6.) Verify Torch Touch Off and Breakaway functionality

7.) Verify basic torch function with the Torch Test Fire button on the VCP.

8.) Load a Profile using the Centroid Profile manager to select a Profile to match the material to test cut with.

9.) Run the Arc Voltage Calibration macro. See critical details to get this right in the corresponding section of this manual.

10.) Load and cut the Centroid test plate plasma G code program to verify operation.

If you had any custom plasma profiles, simply copy them from the old install to the new one and restart CNC12.

3.1 Notes for Acorn and AcornSix ATC's, custom PLC programs, and VCP's

1.) Watch this **VIDEO DISCUSSION AND GUIDANCE for updating CNC12 version on Acorn and AcornSix CNC system.**

https://youtu.be/j3Kr8CI-nx4?si=sRUxjoHiy3g6hloN

2.) When using old and/or custom PLC programs and VCP's. We recommend editing the new PLC program or VCP to "copy over" any of the custom logic to the new PLC program. This way you will have your custom functions along with the new features and capabilities of the new PLC program or VCP.

Watch this video discussion on this subject for the VCP.   https://youtu.be/MKzCIzk8WEs?si=blA9P3YSiL88PpWQ

Special Cases

3.) When using a customized PLC program it is best to edit the wizard generated v5.xx PLC program with those customization's previously made and recompile. This way the system will have the new features added to v5.xx and the customizations made previously to the PLC.

4.) If you really must use an old custom PLC program (a plc program that has been hand edited and compiled not created by the wizard) there are two choices.

      a.) Hand edit the new v5.xx wizard auto generated PLC program with your customizations and recompile. Edit the stock VCP skin to match your application if necessary. This is the best solution as you will gain any new functionality that is included with v5.xx and have your old customizations at the same time.

      b.) Alternatively you could use 'Restore Report' with CNC12 and then choose "update wizard with Custom PLC program in use" in the wizard update pop up window. This forces v5.xx to use the old PLC program. Only choose this if you don't care about any new features of v5.xx.   This will retain the old customized PLC program and install a "Legacy VCP Skin" This Legacy Skin is user editable replaceable so it is up to you to copy over your VCP files and install them manually. Not advised, not ideal but possible.

The wizard update pop up menu will show up when using an older report UNLESS you have a "Custom PLC in use" selected. The wizard update pop up menu is SOLELY triggered by the wizard looking at the PLC program comparing it to the currently loaded PLC program. If they don't match you get the update pop up menu, if they do match, no pop up menu. If the report.zip has "custom PLC in USE" selected then no pop up menu.

As always if using a custom PLC and/or VCP let the wizard know by selecting Yes to either or both of the following:

Notes:

- A New Acorn ATC menu has been added that replaces the old method of hand copying ATC PLC programs.

You can still use your existing working ATC programs OR it is often best to configure the new wizard to work with the ATC.

4 Updating from previous versions of CNC12 for Hickory users:

As Hickory can be installed in two different ways, with or without a wizard, there are two main ways of "updating" CNC12 for use with Hickory. Installing or updating CNC12 for Hickory without the wizard is only recommended for power users, OEM's, Centroid installers, etc. It's highly recommended to install CNC12 for Hickory with the wizard if this is a DIY installation and/or the machine does not require high levels of customization. Even if there is some customization needed outside of what the wizard can do, the wizard will get you 98% of the way there.

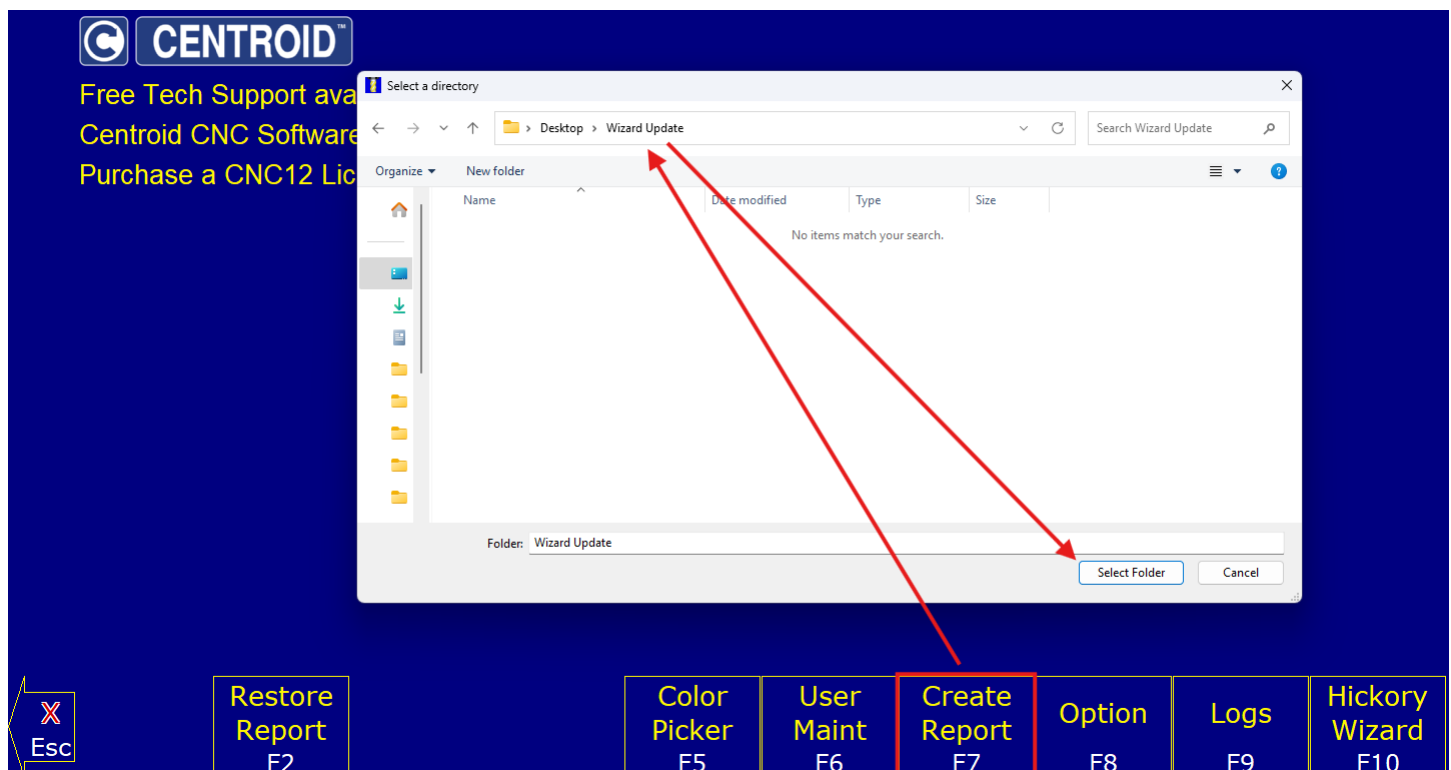### 4.1 Updating CNC12 for Hickory with the wizard:

Benefits of using the wizard:

- Wizard sets any and all NEW parameters/files for you based on your choices
- Wizard creates the PLC program for you with all the latest features
- No PLC programming required
- Wizard creates macros based on your choices

"Update" process with wizard:

1.) Start by creating a new folder named something like "Wizard Update." It's convenient to place this folder on the desktop or on a flash drive.

2.) Start the existing installation of CNC12 and make a fresh report by going to **F7 – Utility Menu** > **F7 – Create Report**. Now select where you'd like to create the report, which should be the folder we just made: "Wizard Update". Navigate to that folder and press "Select Folder." The Report will now be made and saved in our "Wizard Update" folder.

3.) Now we'll take screenshots of every wizard screen for later use. Start by opening the wizard by going to **F7 – Utility Menu** > **F10 – Hickory Wizard**.
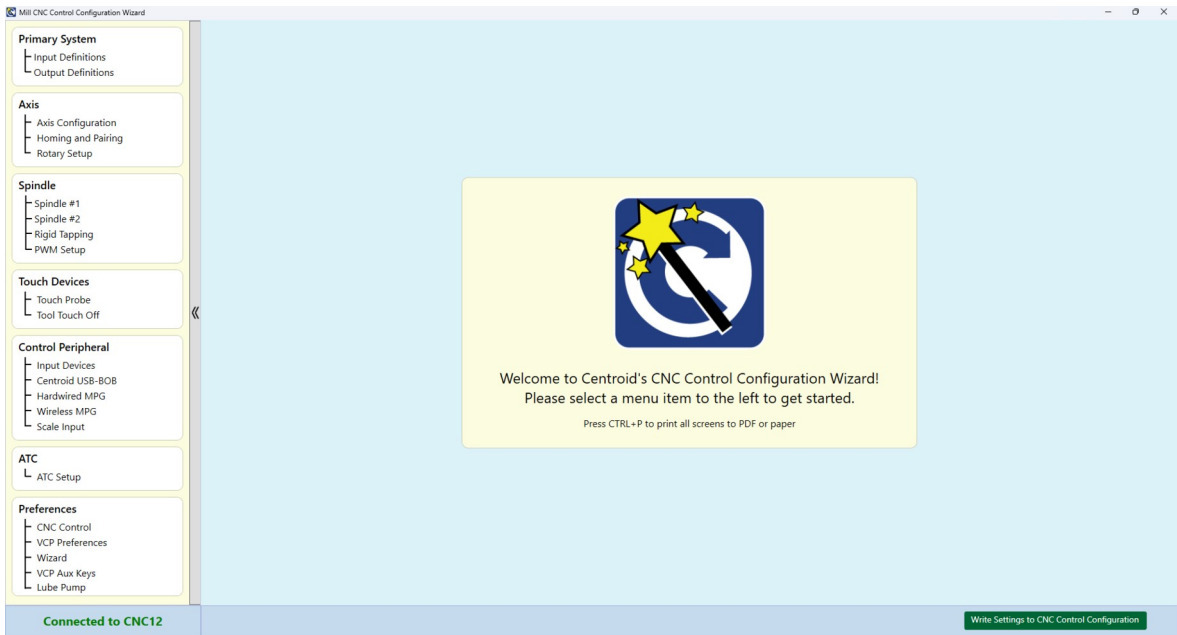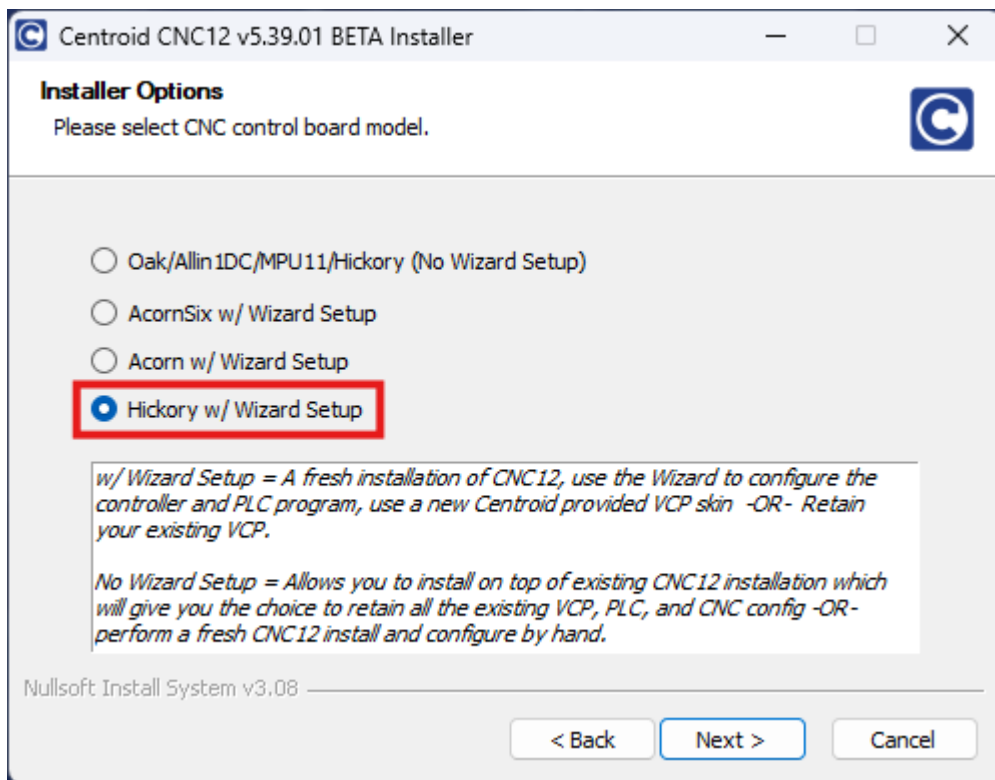

4.) With the wizard open, press **CTRL+P** to create a PDF document with a screenshot of every wizard page. When printing be sure to select a "Print to PDF" option.
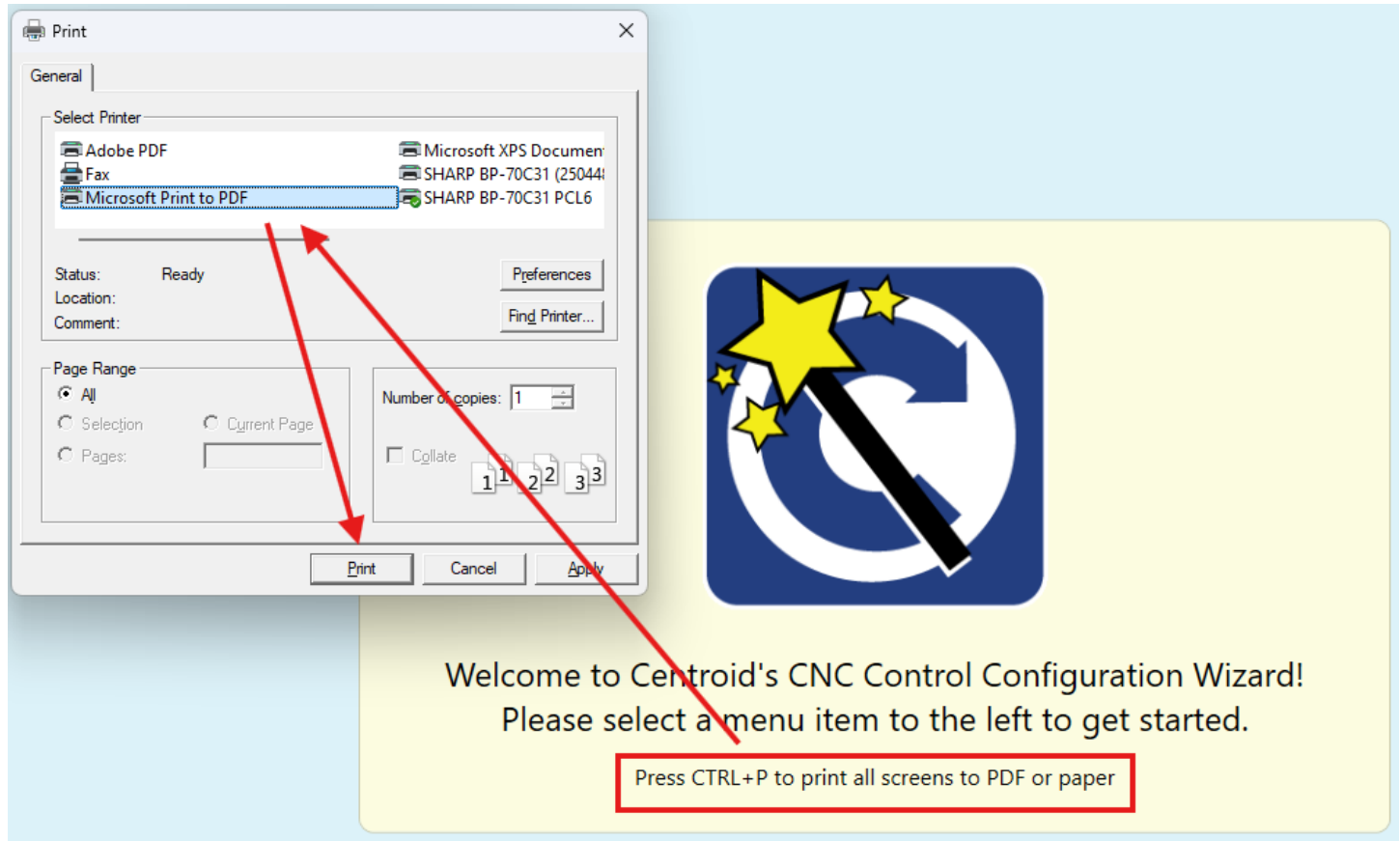
5.) Now name the PDF something like "wizard screenshots" and save it to our "Wizard Update" folder.
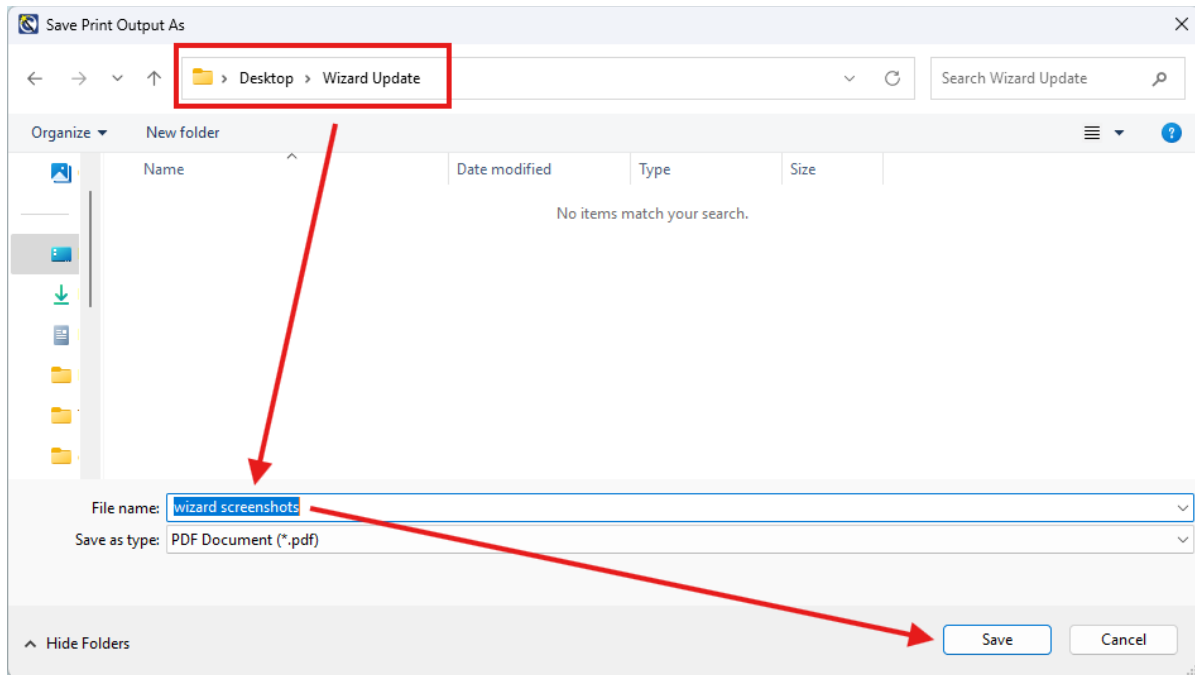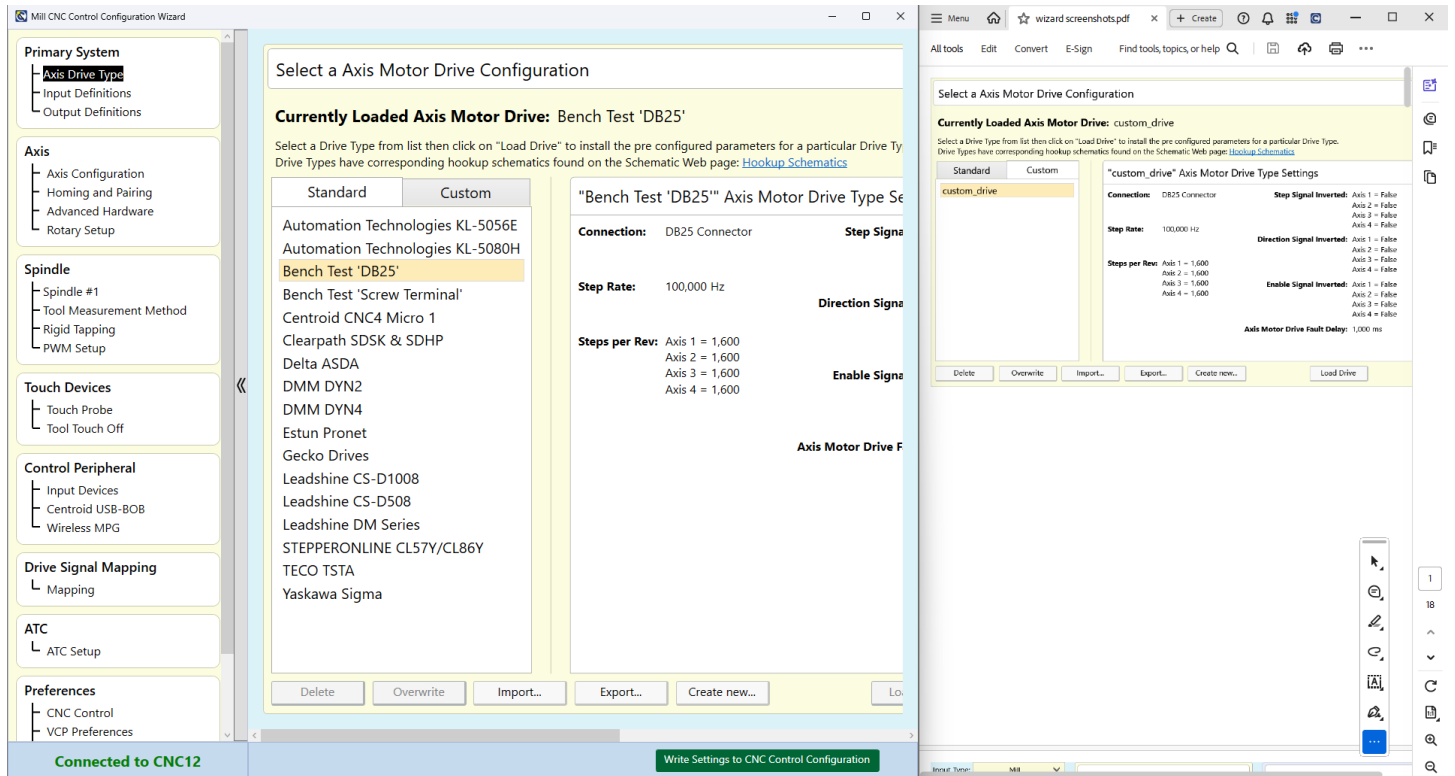

6.) Follow the CNC12 installation instructions above starting on Page 4. Being sure you select "Hickory w/ Wizard Setup."

7.) With your newly installed CNC12 running, open the wizard from **F7 – Utility Menu** > **F10 – Hickory Wizard**.

8.) Now we will begin the process of re-entering every value we had in our previous installation of the CNC12 wizard. You'll need to open the PDF we made earlier, which we had saved in our "Wizard Update" folder. It's recommended to either have a second monitor for this, or to transfer the PDF to another PC or smartphone. Find below an example of a screen setup you could use if you only have one screen. In this image the CNC12 wizard is taking up about 2/3 of the screen and the PDF is open on the other 1/3.

9.) When finished re-entering the values of every screen of the wizard **BE SURE** to press the **"Write Settings to CNC Control Configuration"** button in the bottom right. **DO NOT** exit out of the wizard without pressing that button otherwise **Nothing will be saved**. Follow the instructions given, power cycling the Acorn or AcornSix if requested.
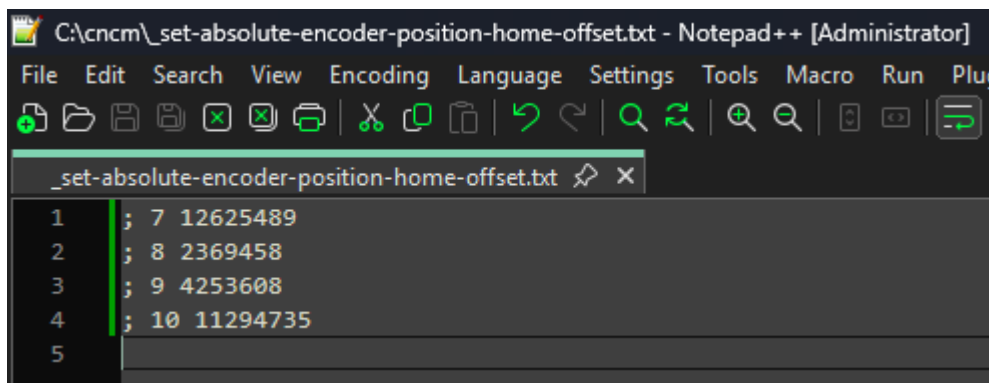

10.) To finish up, with CNC12 closed, copy over anything from the previous installation you may want. This could include: custom macros, VCP modifications, home programs (`cnc*.hom`), tool and offset libraries (`cnc*.tl`, `cnc*.ol`, or `cnct.ttl`), WCS positions (`cnc*.wcs`), the license file (`license.dat`), and job files found in `cnc*\ncfiles`.

11.) The previous absolute encoder home offset can also be transferred over to the new installation. To do this, follow these steps:

1. Close CNC12 and power down the Hickory and drives.

2. Navigate to your old cnc* directory and find a file named: `_set-absolute-encoder-position-home-offset.txt`

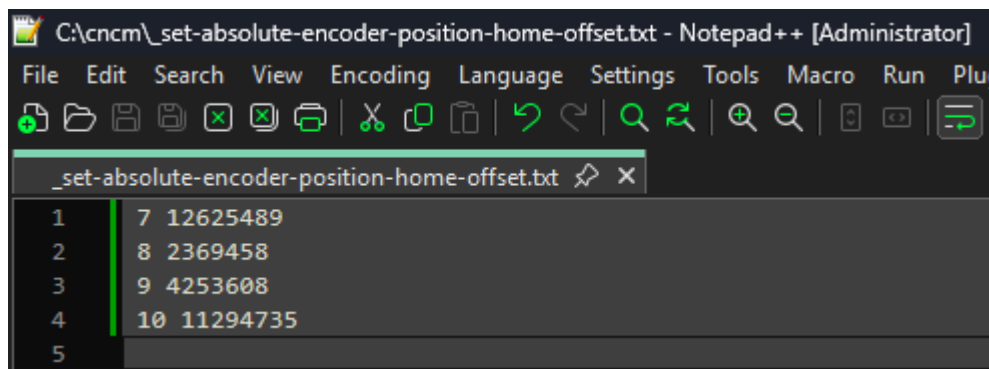3. Copy and Paste this file into your new cnc* directory. Replacing the current file if prompted.

4. Open the file in a text editor such as Notepad++. You will see something like the image below:

5. Remove the semicolons (;) from in front of each line and save the file.

6. Power on the drives, then the Hickory, and restart CNC12.

Now when homing the machine the home will be set in the same place as the previous installation.

Note: If for any reason you'd like to switch back to the old installation of CNC12 you can easily do that by simply renaming the installation folder. Below you can see, on the left, the newly installed CNC12 folder and the backup of the previous installation that was made automatically when installing the new version. By renaming `cnc*` to something else and renaming the backup to `cnc*` we have successfully switched back to the previous installation. Now start CNC12 and it will update the firmware on the Hickory and be back to how it was before the update. Check out this video for a demonstration: https://www.youtube.com/watch?v=j3Kr8CI-nx4

4.2 Updating CNC12 for Hickory without the wizard:

Benefits of not using the wizard:

- Ability to retain the previously installed custom PLC
- Easy to "update" by installing "on top of" the previous installation

Disadvantages of not using the wizard:

- Users must review and set all new or updated CNC12 parameters and files by hand
- Not automatically getting new features from the new PLC programs
- Limited to use of Mill and Lathe CNC12 software

"Update" process without the wizard:

1.) Start the existing installation of CNC12 and make a fresh report by going to **F7 – Utility Menu** > **F7 – Create Report**. Now select where you'd like to create the report, which should be in a safe place like on a flash drive. This is good practice for backup purposes.

2.) Follow the CNC12 installation instructions above starting on Page 4. Being sure you select "Oak/Allin1DC/MPU11/Hickory (No Wizard Setup)." And when prompted at the end if you'd like to install a PLC program, select "No" to keep the previous custom PLC.
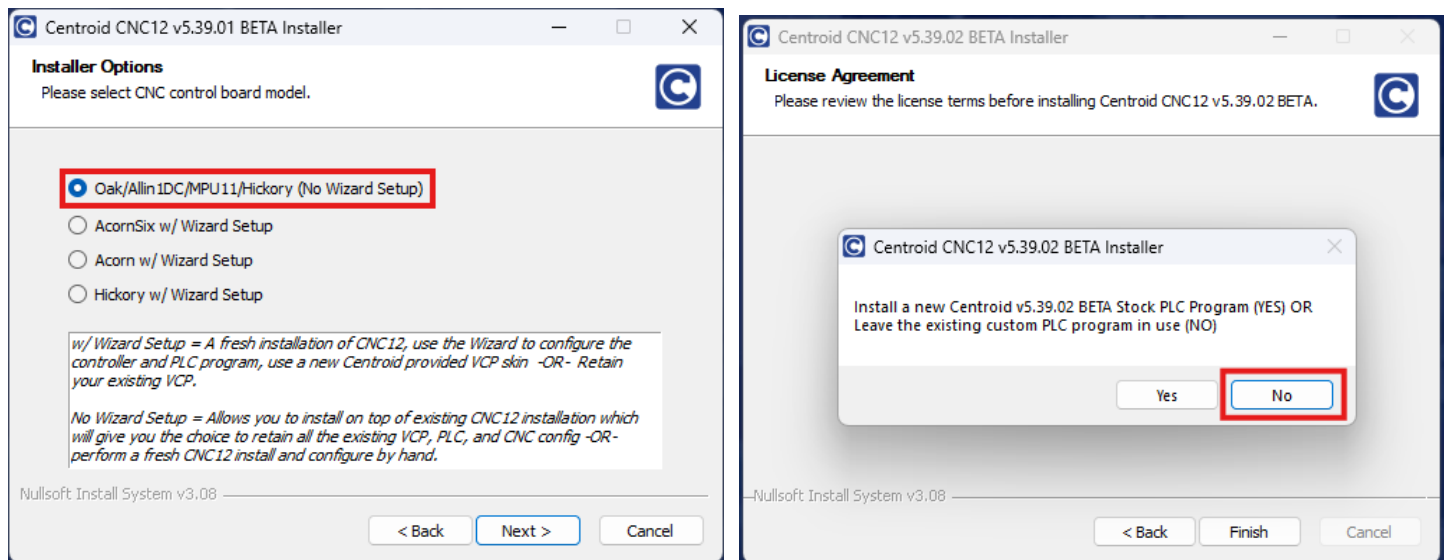
3.) Your installation of CNC12 for Hickory has now been successfully updated and we've kept the previous configuration and PLC program. Now be sure to review all of the new features that have been added in the versions between the old version and the new to set configuration accordingly. The PLC program should now also be manually updated with any new features requiring PLC support that you want.

Note: If for any reason you'd like to switch back to the old installation of CNC12 you can easily do that by simply renaming the installation folder. Below you can see, on the left, the newly installed CNC12 folder and the backup of the previous installation that was made automatically when installing the new version. By renaming `cnc*` to something else and renaming the backup to `cnc*` we have successfully switched back to the previous installation. Now start CNC12 and it will update the firmware on the Hickory and be back to how it was before the update. Check out this video for a demonstration: https://www.youtube.com/watch?v=j3Kr8CI-nx4
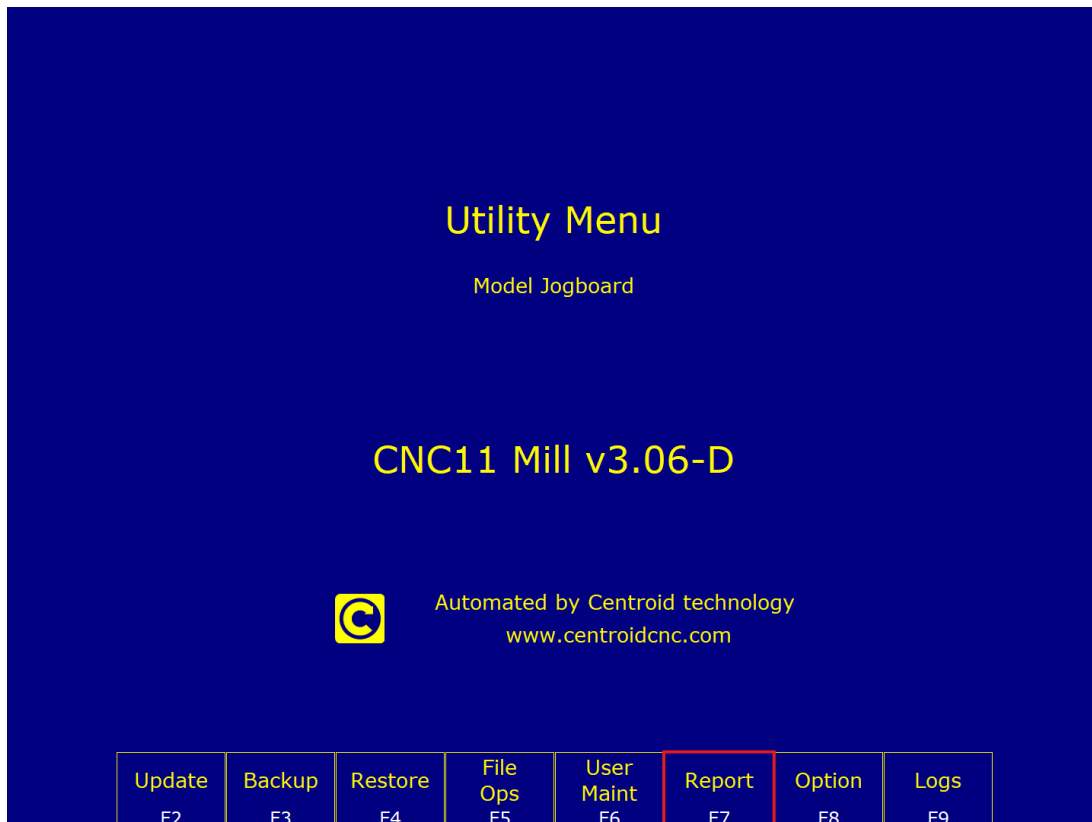
5 Updating from previous versions of CNC11 or CNC12 for Oak, Allin1DC and MPU11 users:

Before starting the update process it's imperative that the control is running on <mark>CNC11 v3.06 or higher</mark>. If this is not the case, you must first update to CNC11 v3.06. To update to CNC11 v3.06 continue to the following section. Otherwise, if running CNC11 v3.06 or newer skip the following section.

5.1 Updating to CNC11 v3.06 from a previous version for Oak, Allin1DC, and MPU11 users:

<mark>*WARNING* This MUST be done if currently running CNC11 3.04 or older!</mark>

1.) Start the existing installation of CNC11 and make a fresh report by going to **F7 – Utility** > **F7 – Report**. Now select where you'd like to create the report, which should be in a safe place like on a flash drive. This is good practice for backup purposes.

Utility Menu

Model Jogboard

CNC11 Mill v3.06-D

Automated by Centroid technology
www.centroidcnc.com

Update	Backup	Restore	File Ops	User Maint	Report	Option	Logs
F2	F3	F4	F5	F6	F7	F8	F9

2.) Make a backup of your current cnc* directory. The easiest way to do this is to click on the cnc* folder in the C: drive, press **CTRL+C**, press **CTRL+V**, and there should now be a `cnc* - copy` folder. You can rename this to `cnc* - backup` or something similar if you'd like, or just leave it as `cnc* - copy`.

📁 cncm

📁 cncm - backup
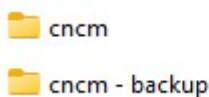
3.) Now download the CNC11 v3.06 install zip folder from the Centroid website, available on the downloads page at the bottom: https://www.centroidcnc.com/centroid_diy/centroid_cnc_software_downloads.html

Updating an existing CNC11 installation to v3.16

1.) If the control is not running CNC11 v3.06 or higher, the CNC11 software MUST be updated to v3.06 before updating it to any higher CNC11 software version.
2.) Generate a report from your system following TB193.
3.) Double-click the setup.exe file and follow the command prompts.
4.) When it gets to the section about installing a PLC program, select NO.
5.) Start CNC11 and restore the report file made in step #2

If current CNC11 version is BELOW v3.06, update to and run v3.06 FIRST, then update to v3.16

All controls that are running a version *prior to* v3.06 must be upgraded to v3.06 first, They then can be updated directly to v3.14 from v3.06. NOTE: You must successfully run CNC11 v3.06 at least once in order to upgrade the MPU11 firmware *before* installing v3.16
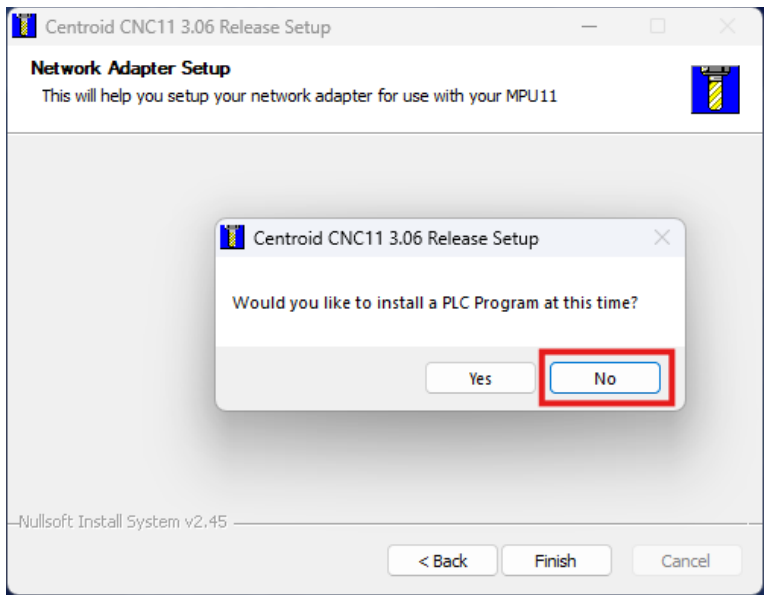
Link to v3.06 install zip file

3.) Extract the contents of this zip folder to wherever is convenient for you. Directly in the Downloads folder is fine.
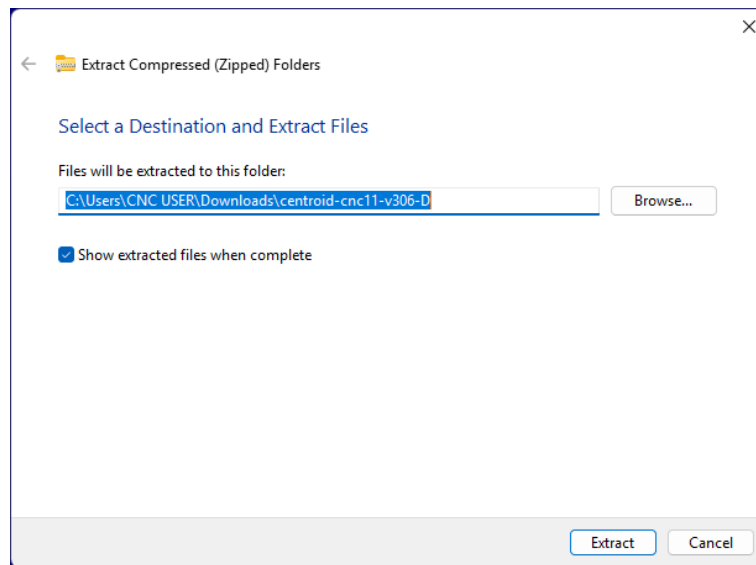
4.) Open the extracted folder and run `Setup.exe`.
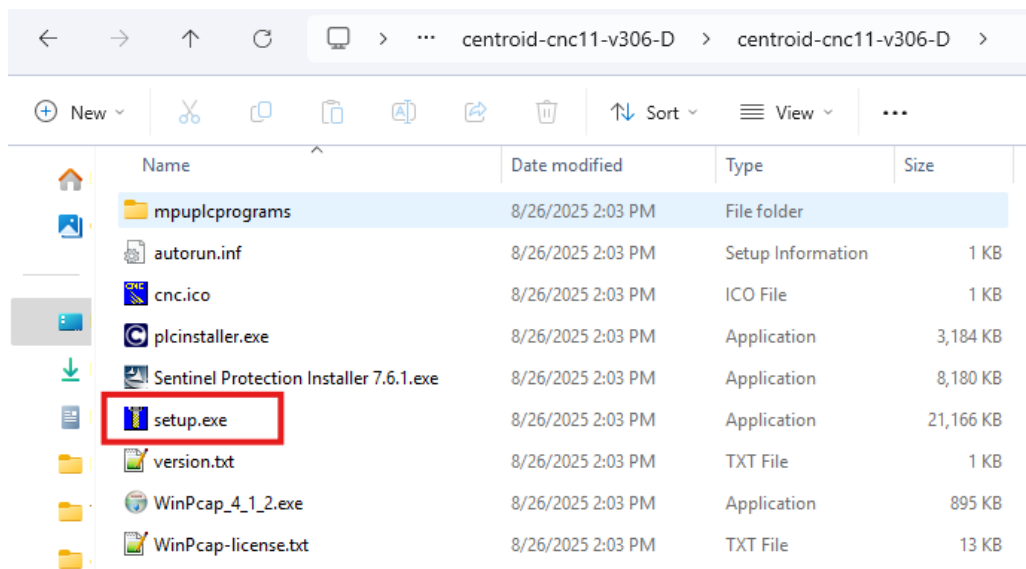
5.) Go through the installer, selecting Mill or Lathe, etc. and when you get to the end, select "No" as to not install a new PLC program.

6.) With CNC11 v3.06 now installed, you MUST run and open the CNC11 software at least once, to update the firmware on the Centroid motion controller. When starting CNC11 v3.06 you will see the text in the below image before the CNC11 software starts.

7.) Once the CNC11 software opens, navigate to the **F7 – Utility** menu to confirm you're running v3.06. If you see something like the image below, you're now free to update to the latest version. See the following section for instructions on how to do that.

5.2 Updating from previous versions of CNC11 or CNC12 for Oak, Allin1DC, and MPU11 users:

<mark>*WARNING* If running CNC11 v3.04 or earlier follow the previous section first!</mark>

1.) Start the existing installation of CNC11 or CNC12 and make a fresh report by going to **F7 – Utility** > **F7 – Report**. Now select where you'd like to create the report, which should be in a safe place like on a flash drive. This is good practice for backup purposes.

2.) Follow the CNC12 installation instructions above starting on <u>Page 4</u>. Being sure you select "Oak/Allin1DC/MPU11/Hickory (No Wizard Setup)." And when prompted at the end if you'd like to install a PLC program, select "Yes."
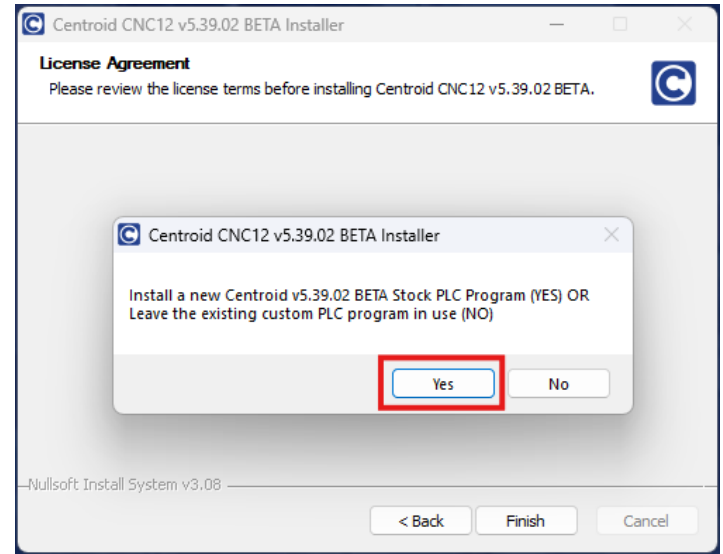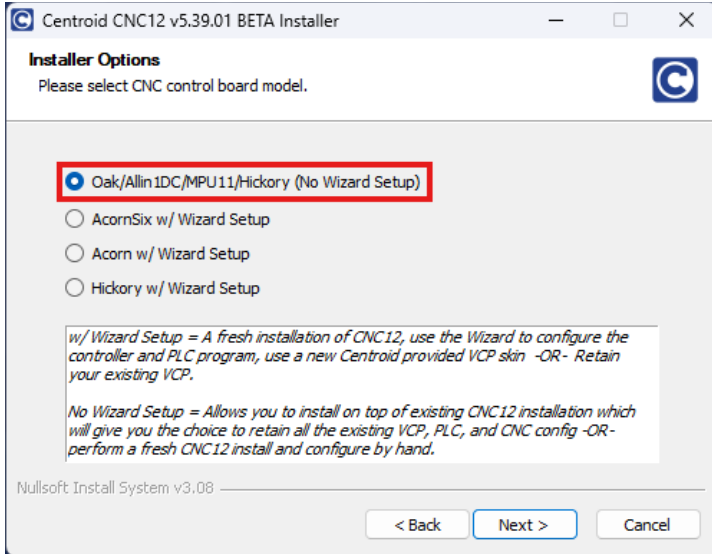
3.) Now select the PLC that is relevant to your machine and Centroid motion control board.
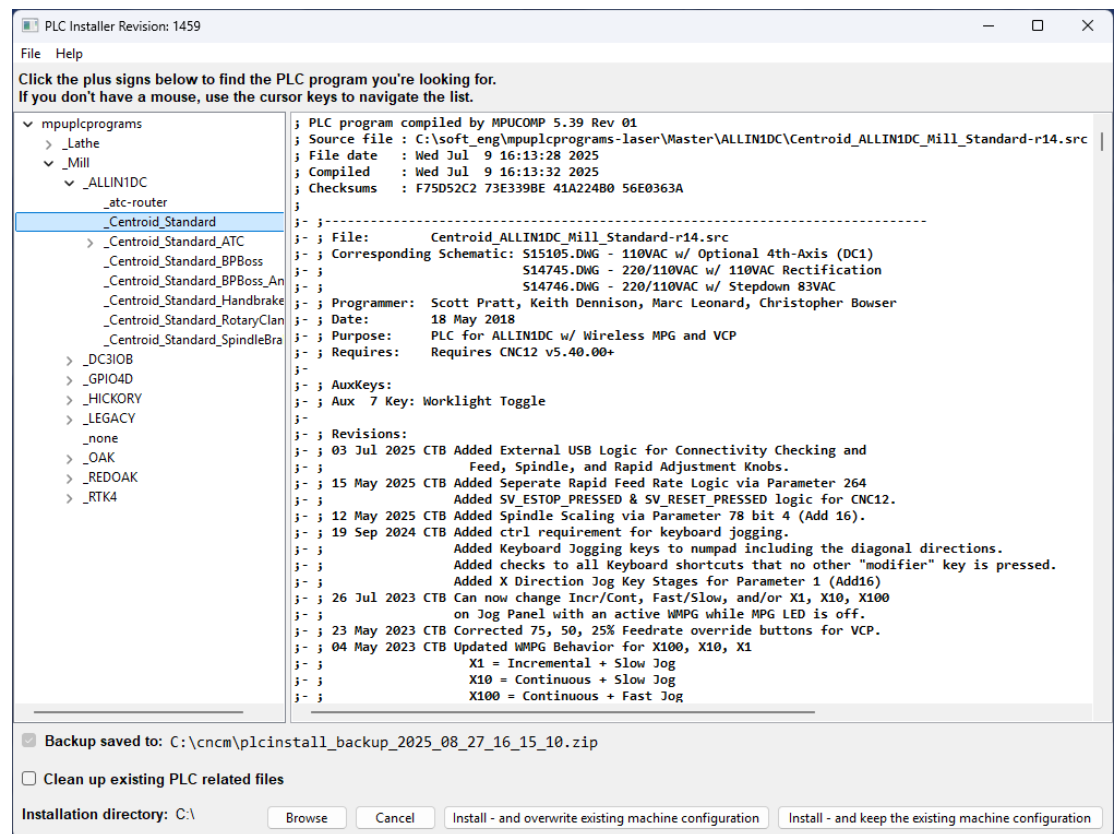
The navigation tree on the left can be expanded by clicking the arrows.

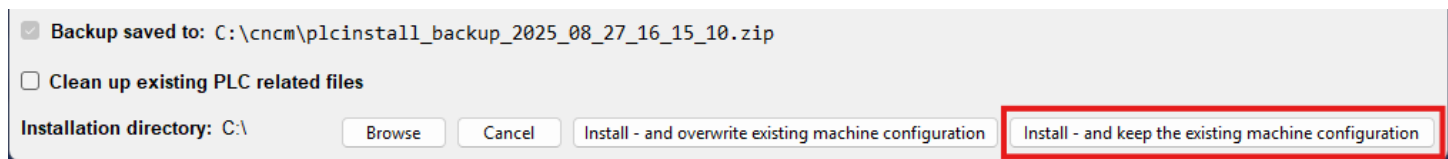Start by expanding the section for the type of machine you have: _Mill or _Lathe.

Next, expand the section for the type of Centroid motion controller you have: _ALLIN1DC, _OAK, etc.

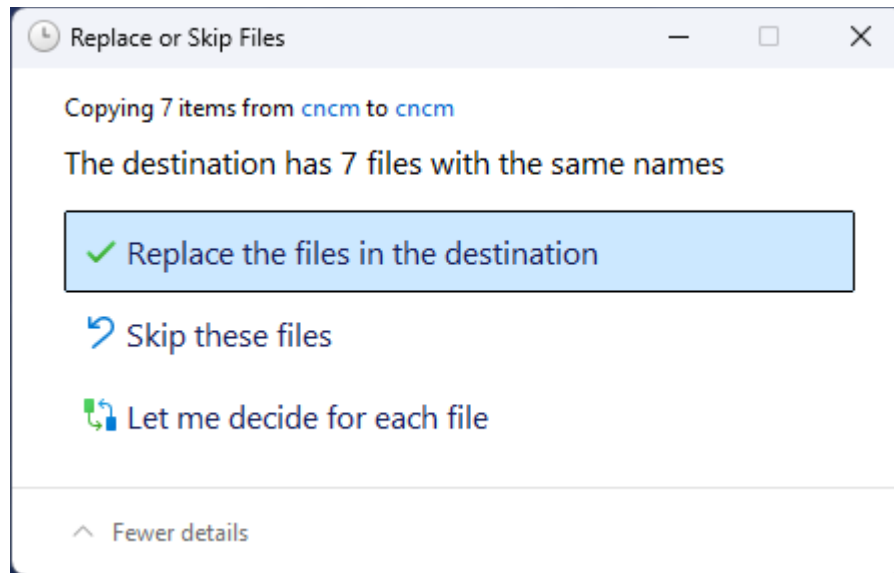Now select the type of PLC program you need.

_Centroid_Standard generally being a safe choice if you're not sure.

4.) Once you've made your selection for which PLC you want, select "Install – and keep the existing machine configuration."

Backup saved to: `C:\cncm\plcinstall_backup_2025_08_27_16_15_10.zip`

☐ Clean up existing PLC related files

Installation directory: `C:\` [Browse] [Cancel] [Install - and overwrite existing machine configuration] [**Install - and keep the existing machine configuration**]

5.) You will now be prompted by Windows letting you know the destination folder already contains these files. Select "Replace the files in the destination" to finish installation.

Replace or Skip Files — ☐ ✕

Copying 7 items from cncm to cncm

The destination has 7 files with the same names

✓ Replace the files in the destination

↻ Skip these files

⤵ Let me decide for each file

⌃ Fewer details

6.) The "update" of CNC12 is complete. You can now open CNC12 using the shortcut placed on the Desktop.

CNC12 Mill

7.) Now be sure to review all of the new features that have been added in the versions between the old version and the new to set configuration accordingly. The newly installed PLC program should now be updated with any custom features you may need from the old PLC program.

Note: If for any reason you'd like to switch back to the old installation of CNC11 or CNC12 you can easily do that by simply renaming the installation folder. Below you can see, on the left, the newly installed CNC12 folder and the backup of the previous installation that was made automatically when installing the new version. By renaming `cnc*` to something else and renaming the backup to `cnc*` we have successfully switched back to the previous installation. Now start CNC11 or CNC12 and it will update the firmware on the Centroid motion controller and be back to how it was before the update. Check out this video for a demonstration: https://www.youtube.com/watch?v=j3Kr8CI-nx4

📁 cncm ➡️ 📁 cncm_new_install

📁 cncm_backup_20250821121941 ➡️ 📁 cncm