

Centroid CNC12 Software Installation and “Upgrade” Guidance:

First Time CNC12 Installation: Step by step new installation instructions start on Page 3.

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 mainboard installation manuals (Acorn/AcornSix/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 starts on Page 3 of this document, the v5.08 install process starting on page 3 covers anything new not found in existing installation manuals.

UPGRADING CNC12: Step by step Acorn/AcornSix “Updating” instructions start on Page 10

When upgrading from an old version of CNC12 to a new version of CNC12. In this document there are different installation instructions for Acorn and AcornSix than for Oak , Hickory and Allin1DC systems.

1.) For Acorn and AcornSix there is no such thing as “updating” a system. To ‘update’ a system, you always perform a fresh installation of CNC12 for Acorn/AcornSix. The CNC12 software for Acorn and AcornSix 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 configure.

With Acorn/AcornSix when ‘updating’ a system from an old version of CNC12, one always performs a “fresh install” of CNC12 and then hand enters the setup and configuration values into the Wizard setup screens and if desired, hand copies over files such as tool libraries and WCS tables, there is no such thing as an automatic update or installing CNC12 on top of an existing installation with Acorn and AcornSix. The reason for this is: the Wizard creates a PLC program for you based on the selections you make in the Wizard and 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 and sets the corresponding CNC12 parameters, and creates any macros (if necessary). It takes about 5-10 minutes to get a typical new installation of Acorn/AcornSix CNC12 running on an existing system using this ‘manual’ updating method.

If you are interested in learning more there are video discussions and demonstration of updating Acorn/AcornSix CNC12 on [Centroid’s Tech Support YouTube Channel](#) and on the Centroid Tech Support Forum.

Free Tech support and CNC12 updating guidance is available on the Centroid Acorn CNC Technical Support Forum www.centroidcncforum.com

Centroid’s Tech Support YouTube Channel. <https://www.youtube.com/@CentroidSupport>

For Hickory/Oak/Allin1DC/MPU11 system updating (installing on top of existing cnc12 installation) is possible but, admittedly can be a bit convoluted to the uninitiated since updating ease depends on the version you are updating from and whether you care about adding some new features that would require a PLC program edit/compile to add to your existing PLC program (effectively updating the PLC program with the new features you want).

For Hickory/Oak/Allin1DC/MPU11 there is no Wizard that would automatically create a new PLC program that would support any new CNC12 features (unlike Acorn/AcornSix and soon to be Hickory) so, you have to make a choice to stick with your existing PLC program or edit it to update it with any new features that you are interested in. For instance, one of the 'new' features that require PLC logic to function is the [Wireless MPG](#). This means you can't use an old custom PLC program with the WMPG (older than the first version that the feature was introduced) in the case of the wireless MPG that version is CNC12 v4.20, said another way, If you are using a version of CNC12 older than v4.20 and have a custom PLC program and you wish to use the new WMPG, the custom PLC program would have to be updated as well for the WMPG to work.

The 'stock' PLC programs included with the latest CNC12 installer contain any and all new logic to support the new features of that version of CNC12. So, if you are running an older stock PLC program it is pretty easy to install the new version of CNC12 and choose from one of the new stock PLC programs and everything will work the way it was AND you will have any and all new features supported by the new PLC as well. These types of updates are quick and painless.

Things get more complicated when you have a custom PLC program. When running a custom PLC program and wanting to update the CNC12 software you have two choices, use the existing PLC program as is and miss out on any new features that require PLC logic to work OR edit the old PLC program and add in any new logic required to support the new features you are interested in. Sometimes performing this edit to update to the PLC program is a simply cut and paste and recompile, other times it is hours of work to reconfigure the PLC program to make it compatible with new features, it completely depends on how customized the existing PLC program is or not and the features being added to the old PLC program.

When installing on top of an existing CNC12 installation, similar adjustments, edits and settings will have to be made to the CNC12 parameters and possibly the configuration screens and or other system files. This is because you've updated the CNC12 version but are using the old CNC12 parameter setting data so, any new features that have new parameters (or existing ones have had new capabilities added to them) will be required for the user to set those parameters for the desired outcome.

While it is entirely possible for a user to perform a CNC12 software update on an Hickory/Oak/Allin1DC/MPU11 system especially if there is no custom PLC involved. We do recommend purchasing at least an hour of Tech Support then we will assess your particular system and consult and provide guidance and tech support for you on the various paths to upgrading the CNC12 software to the latest version.

Note: If you are upgrading with an Oak, MPU11 or Allin1DC 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/>

Purchase one on one Centroid factory support here. <https://shopcentroidcnc.com/centroid-factory-direct-11-technical-support/>

Email a fresh report.zip file to support@centroidcnc.com

install internet connection on the CNC PC along with downloading the free version of Team Viewer (if possible) and arrange a time with our tech support staff.

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.

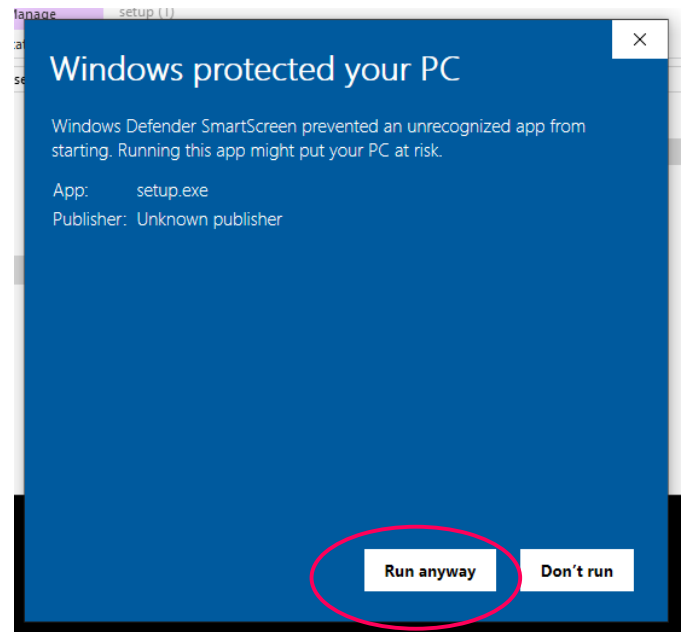
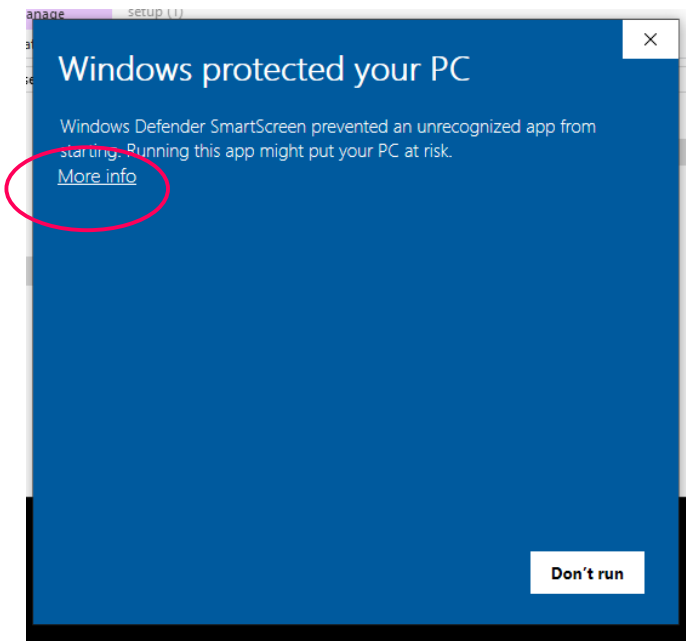
https://www.centroidcnc.com/centroid_diy/centroid_cnc_software_downloads.html

EXTRACT the zip file.

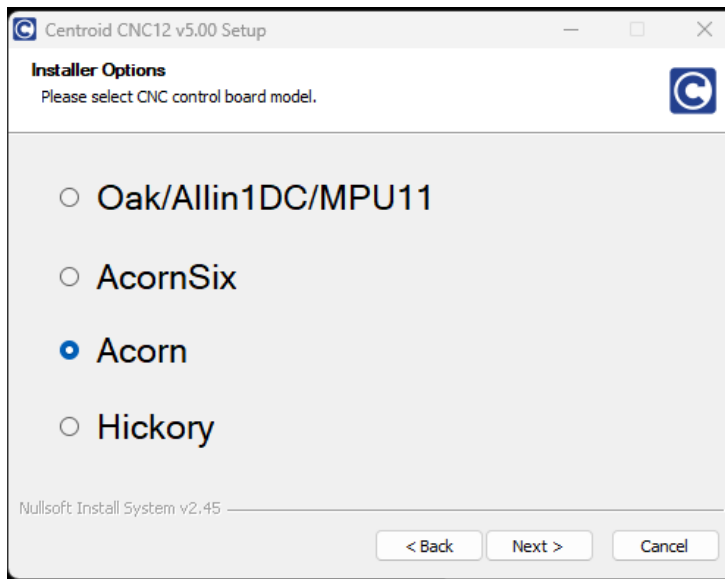
4.) **With the CNC control board up and running connected with a heartbeat in BENCH TEST configuration (see example video showing this)**

Double Click centroid_cnc12_v5.xxx_installer.exe

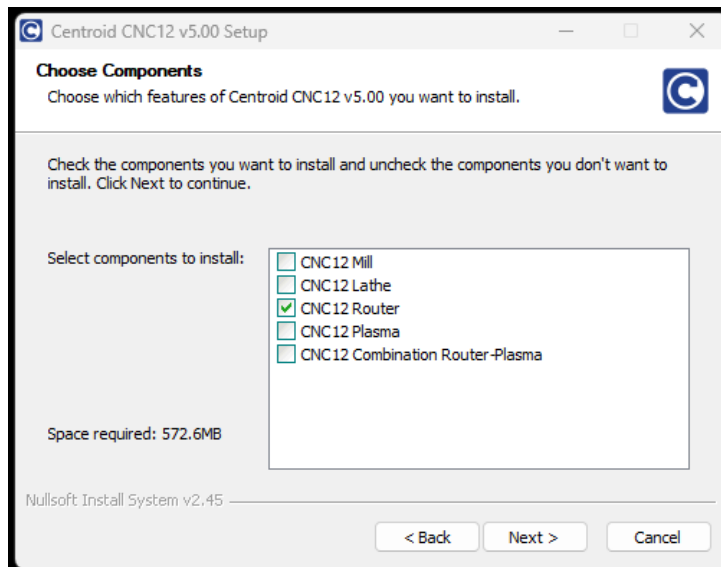
You may run into this Windows notification. Click "More Info" then click "Run Anyway" to continue.



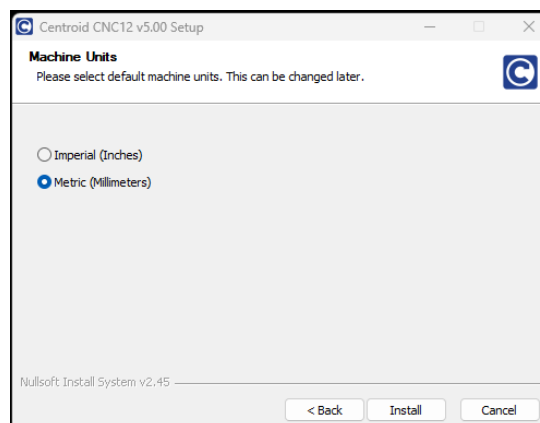
And then follow the instructions on the screen to install CNC12. Choose CNC controller board.



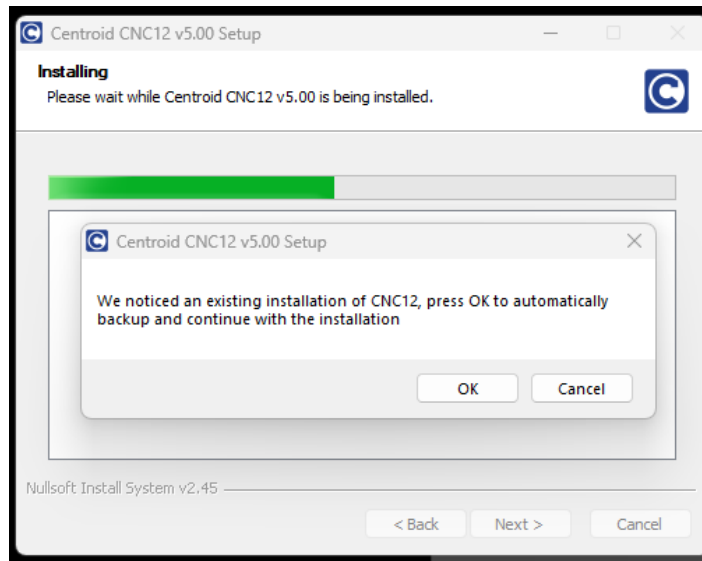
For Acorn choose Mill, Lathe, Router, Plasma or Combination Router Plasma install



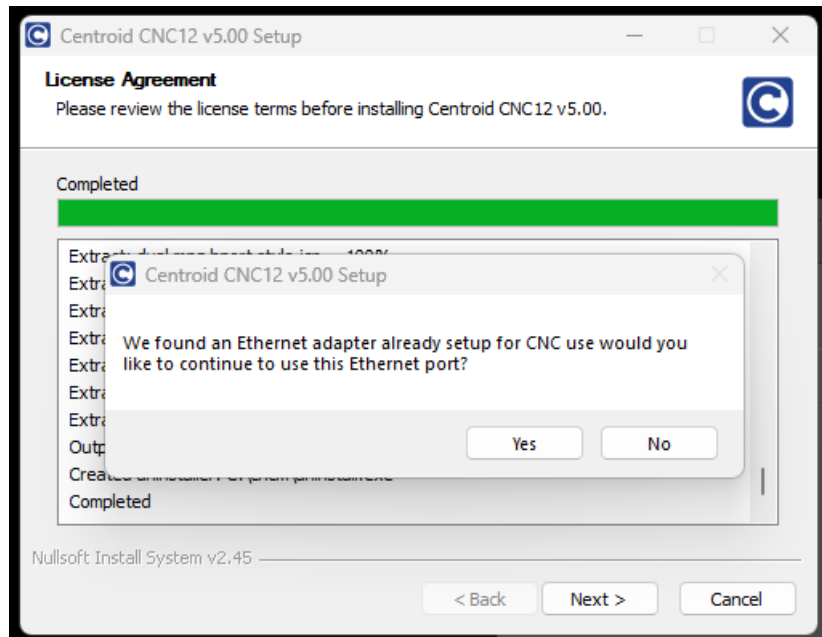
Choose inch or metric.



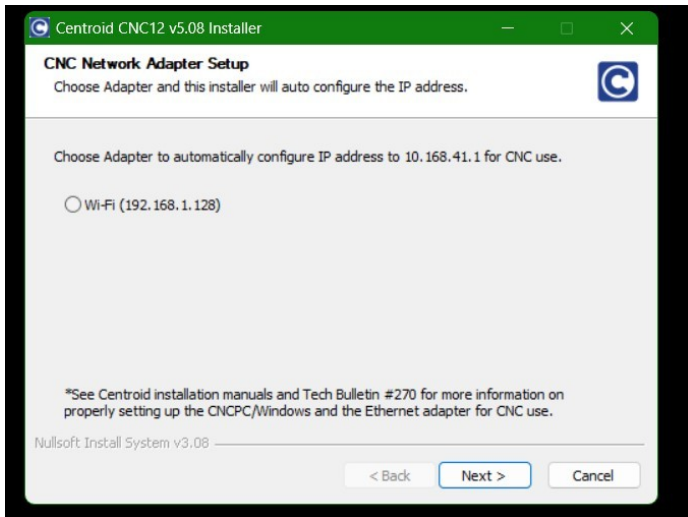
If you previously had an installation of CNC12 the installer will ask you if you'd like to back up that older installation.



If you previously had 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.



Warning! If you see this screen STOP.

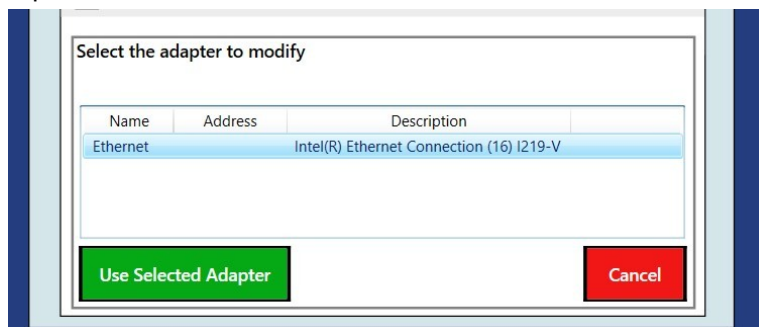


This screen will appear when there is no hardware ethernet adapter detected by the installer.

This means the installer does not 'see' the CNC control board ethernet connection on the CNCPC.

Remedies:

1.) If this is a new first time installation. Close the installer by pressing Cancel. Connect the CNC Control board to the CNC PC and run the Centroid PC Tuner which will automatically configure the Ethernet Adapter being used to connect to the CNC Control board. Example screen shot below from the Centroid PC Tuner ethernet adapter selection menu.



and then re run the CNC12 installer.

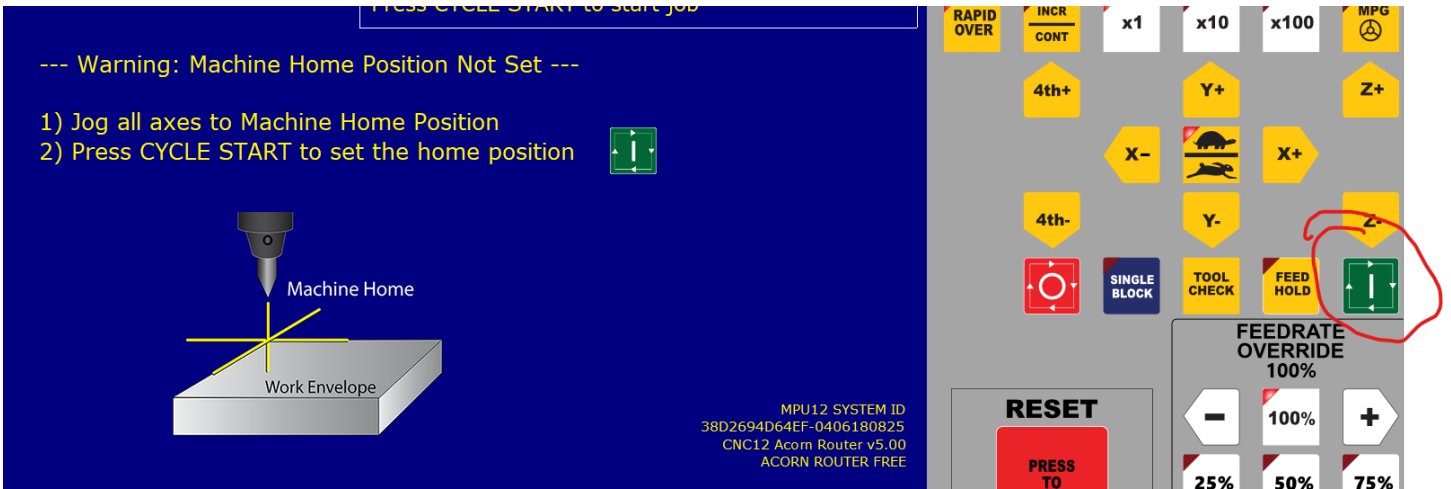
2.) If this is a CNC12 installation on an existing working CNC control system, connect the CNC Control board to the CNC PC, and press "Next" (do not select the Wifi adapter radio button) and the installer will do nothing in regards to the Ethernet adapter that is already setup and working.

4.) 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.

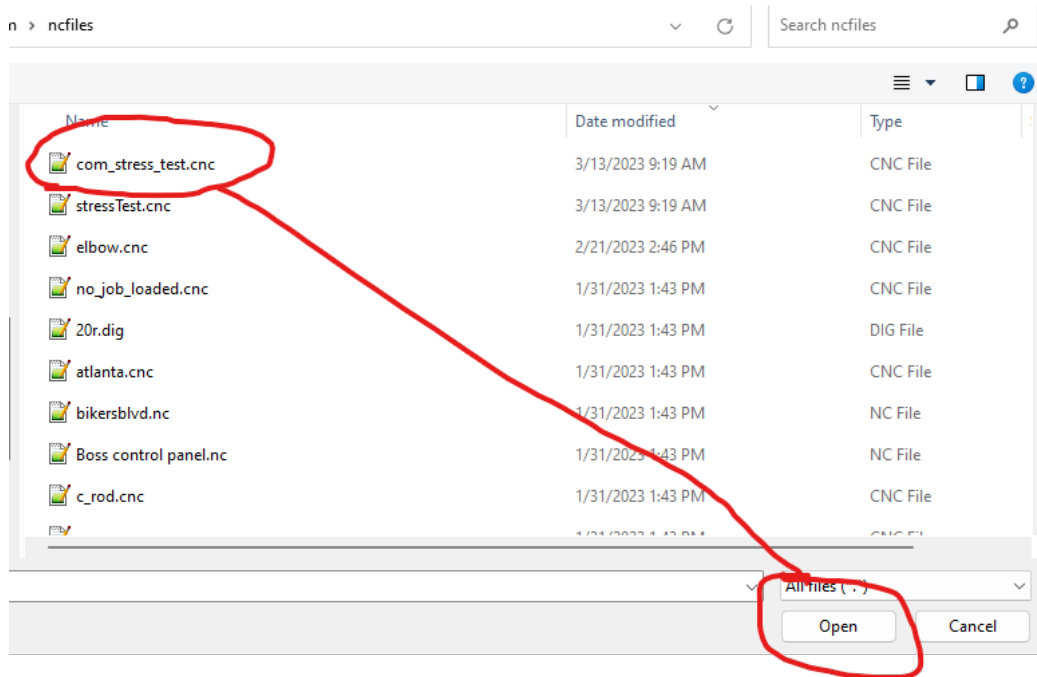
CNC12 will update the firmware on the CNC control board. Follow the instructions on the screen.

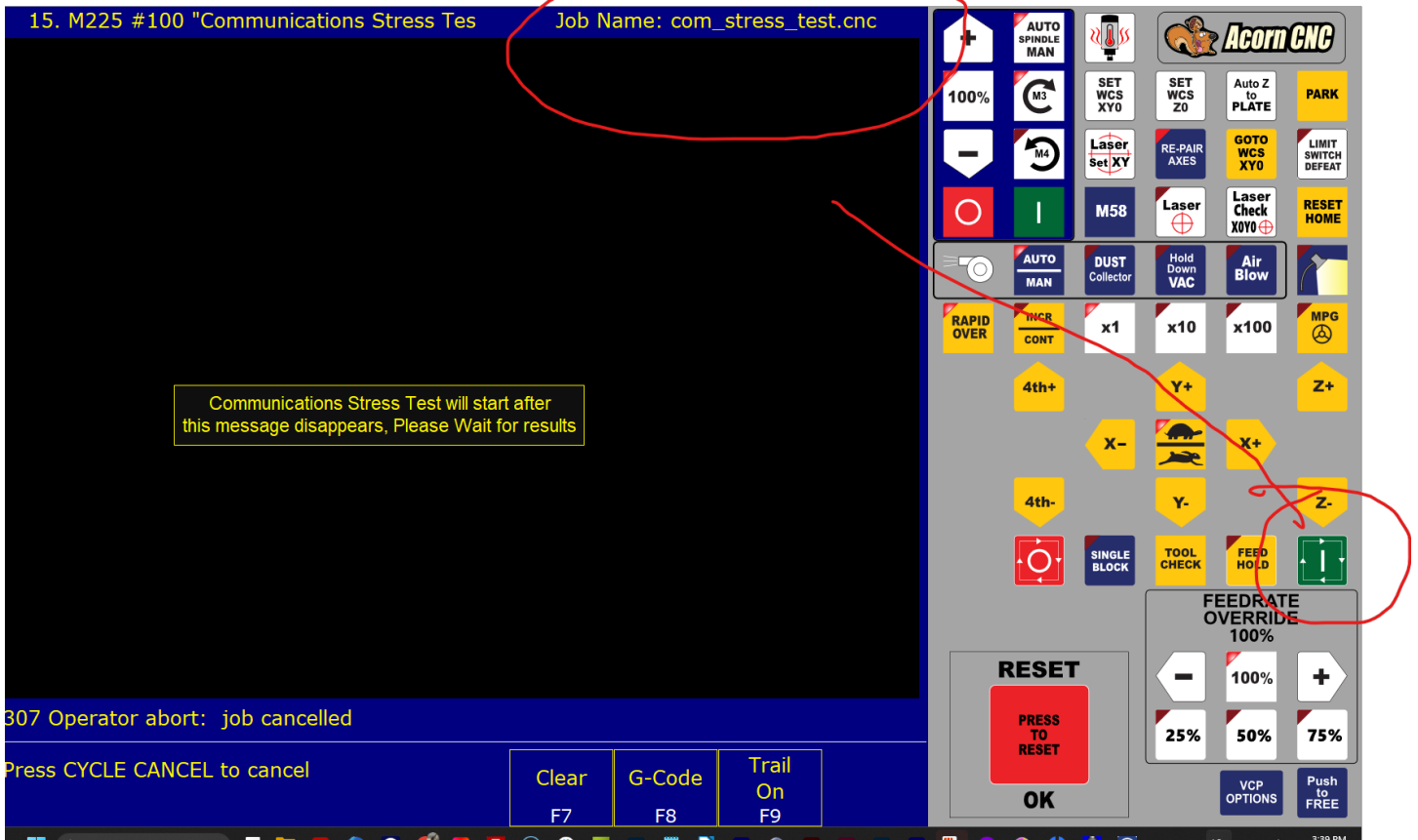
5.) With CNC12 running, now Run the communications Stress Test G-code program.

a.) Press cycle start button to set a home position.



b.) Press F2 Load and navigate the file 'com_stress_test.cnc'





c.) Press Cycle Start to run the Communications Stress Test

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 Received: 0

6.) Install the License file from the F7 Utility menu, Press F8 "Import License" or F8 "Options" and follow instructions.

7.) Configure the Acorn/AcornSix setup Wizard as per the Acorn Installation manual. For Oak and Allin1dc follow their respective installation manuals/videos to configure CNC12 to a specific CNC machine tool.

8.) 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 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.

- Release notes for CNC12 are located on the CNC12 downloads web page

- **Sign up for Free CNC Tech Support here.**

<https://centroidcncforum.com/>

Updating From Previous versions of CNC12 for Acorn and AcornSix users:

- 1.) Start the existing installation of CNC12, Open the Wizard and make screen shots of each Wizard menu of the existing installation so you have a visual record of the current Wizard settings. If using any version of v5.0 open the Wizard and press <CTRL P> at the same time to automatically create a PDF screen capture of every menu in the Wizard. Save the PDF on the desktop. Make a fresh report.zip file by going to the Utility menu and pressing "Create Report" and then store copies of the report and screen shots in a safe place even on another computer as an extra precaution would be a good idea as well). Alternatively Windows "Snipping Tool" can be used to make individual screen shots of each of the Wizard menus. To find this windows program type in "snip" in the Windows search bar.
- 2.) Update the CNCPC Windows installation. Update Windows with the latest .NET Framework updates.
- 3.) Run the Centroid CNC PC Tuner
- 4.) Follow the CNC12 installation instructions above starting on Page 3.
- 5.) Open the Wizard and re-enter the information and settings from the screen shots made in step 1 and press "Write settings to CNC control" and follow the instructions on the screen.

Note: If you have any custom macros or VCP buttons copy them over from the old install to the new install and restart CNC12. same with tool libraries, custom home programs and wcs positions. cncm.ol, cncm.tl, (mill offset and tool library), cnc.ttl (lathe tool library), cncm.wcs/cnc.t.wcs (WCS positions), license.dat is the Pro or Ultimate license file which can also be copied over from the old directory to the new one as well. Close CNC12 to do this.

And have no fear! It is easy to revert to any version of CNC12 in seconds. To do this, make a copy of the any working version of the cncm/cnc.t directory and store in a safe place. To revert back to any older version all you have to do is simply rename the new cncm directory (such as cncm_v4.82) and then copy back the old cncm direction and restart CNC12. Watch this video showing you how.

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 Centroid Plasma users manual starting on page 36

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.

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=sRUxjoHiy3g6hIoN>

2.) When using old and/or custom PLC programs and VCP's. I 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/MKzC1zk8WEs?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.

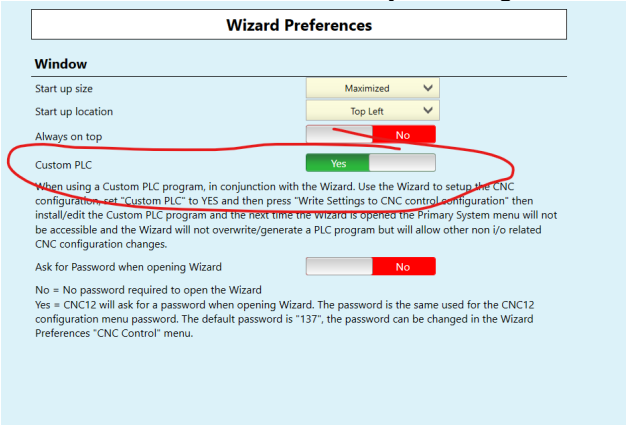
a.) Hand edit the new v5.xx Wizard auto generated PLC program with your customizations and recompile. Edit the stock VCP skin to match your application if necessary. This is best solution as you will gain any new functionality that is included with v5.xx and have your old customizations at the same time.

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



Wizard Preferences

Window

Start up size: Maximized

Start up location: Top Left

Always on top: No

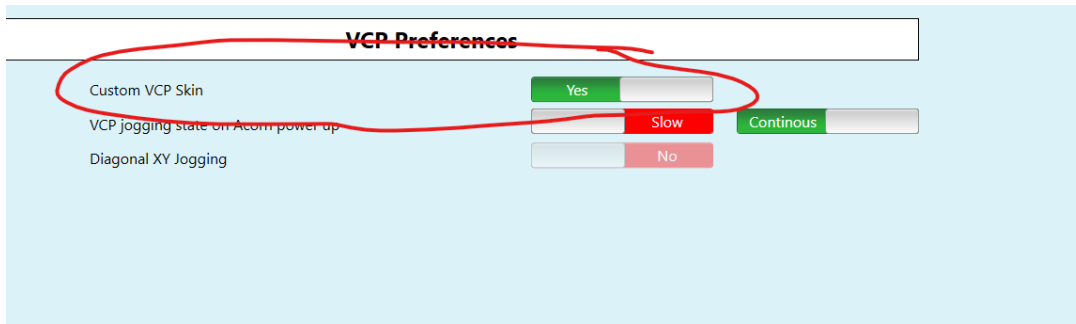
Custom PLC: Yes

When using a Custom PLC program, in conjunction with the Wizard. Use the Wizard to setup the CNC configuration, set "Custom PLC" to YES and then press "Write Settings to CNC control configuration" then install/edit the Custom PLC program and the next time the wizard is opened the Primary System menu will not be accessible and the Wizard will not overwrite/generate a PLC program but will allow other non i/o related CNC configuration changes.

Ask for Password when opening Wizard: No

No = No password required to open the Wizard
Yes = CNC12 will ask for a password when opening Wizard. The password is the same used for the CNC12 configuration menu password. The default password is "137", the password can be changed in the Wizard Preferences "CNC Control" menu.

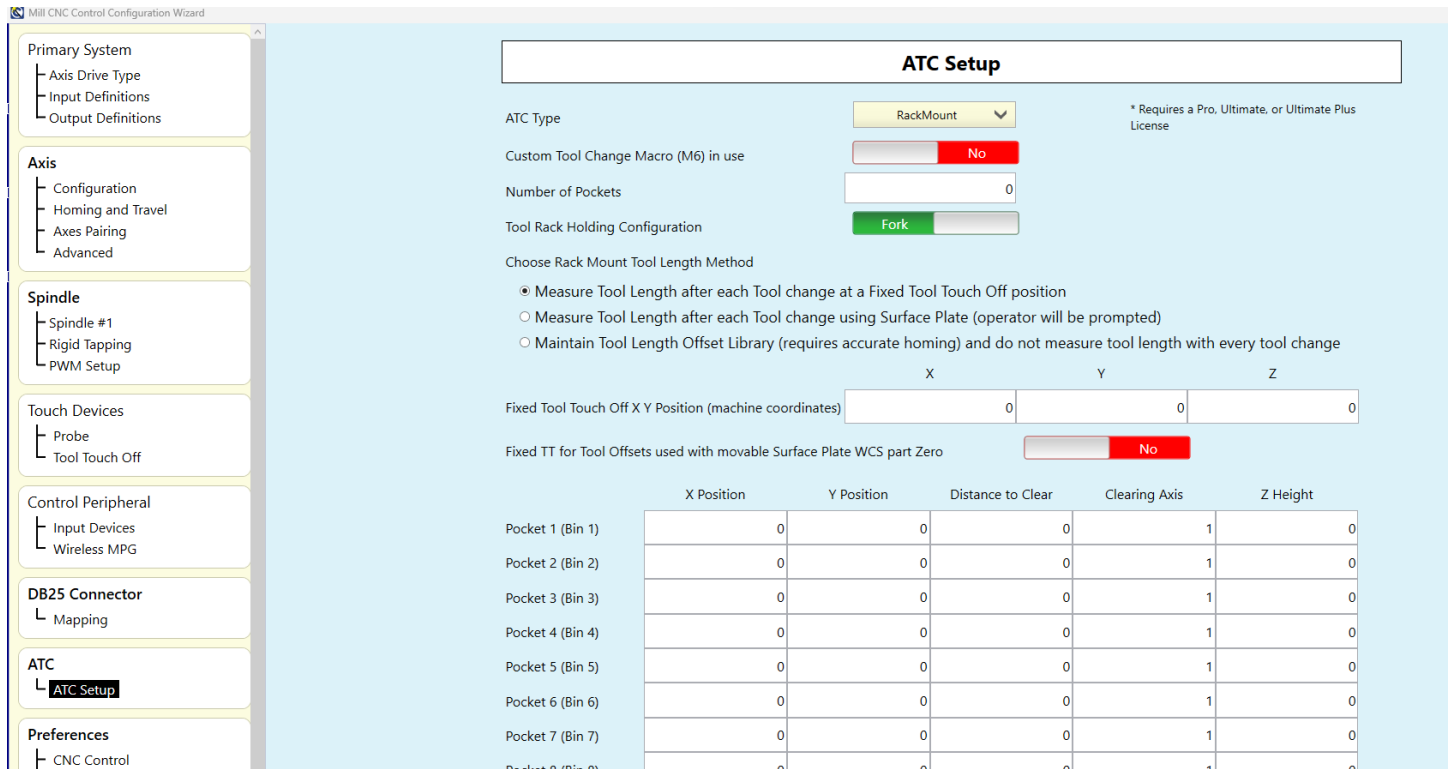
and Yes to



Notes:

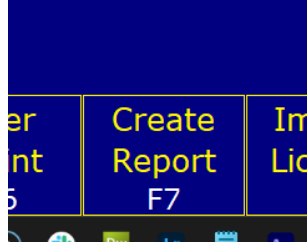
- A New Acorn ATC menu has been added that replaces the old method of hand copying ATC PLC programs.

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



Upgrade from older version Installation Instructions for Oak, Allin1DC and MPU11 systems.

1). Open the existing running instance of CNC12 and Generate a report **before** updating to the new software version.

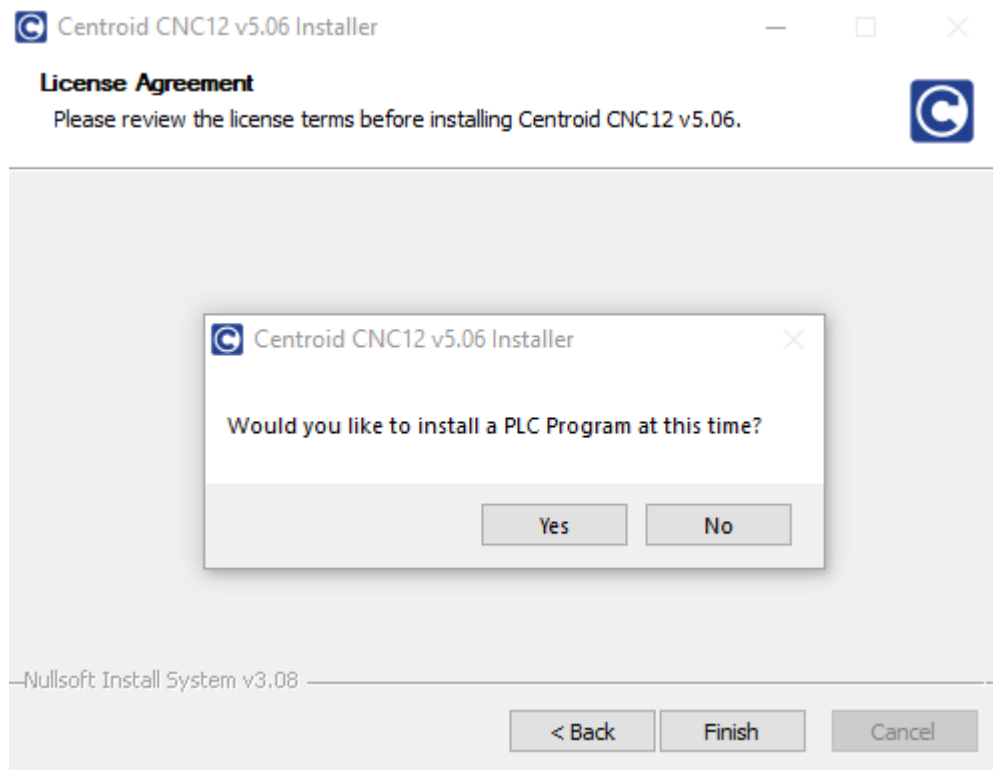


To do this, From the Main Menu it is F7 Utility, then F7 Create Report. If you accidentally skipped this step, often the most recent report that was automatically made can be found in the “reportbackup” folder in the “cncm” or “cncr” directory.

2) Follow the normal install CNC12 installation procedure which starts on page 2 of this document.

Then select “Oak,Allin1DC and MPU11” for the control option.

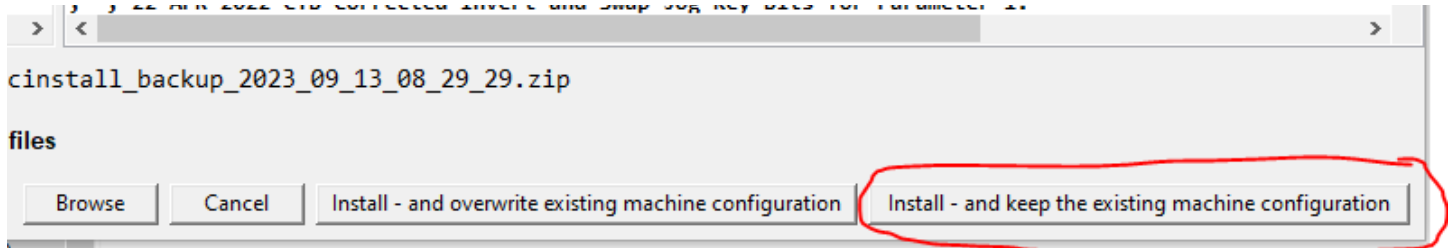
3) The Installer will now prompt for the installation of a PLC Program.



4a.) Oak/Allin1DC/MPU11 CNC11 3.06 through and including CNC12 4.14

When updating from any version of CNC11 3.06 through and including CNC12 4.14 and you wish to have the latest PLC program that supports any and all the new features of CNC12 such as the Virtual Control Panel and support for the Wireless MPG then:

- 1.) Select “Yes” to install a PLC program and select the appropriate PLC Program.
- 2.) Then to keep the existing CNC controller configuration settings and parameters from the old version select “Install – and keep the existing machine configuration”.



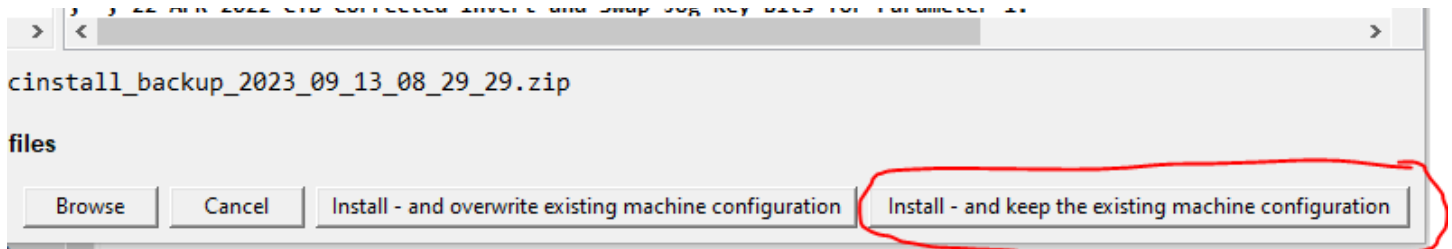
- 3.) For any new features that use a parameter value any CNC12 parameters that are related to any new feature will have to be configured to the users requirement. Refer to the CNC12 operator manual for the complete list of CNC12 parameters and their function.

Note: If an older Custom PLC was retained and used with the new version of CNC12 the system will still work as it did, the old PLC program just doesn't have the logic/support for any new CNC12 features that require PLC logic. If you wish to add support for any of these new features into an old Custom PLC program (such as new VCP PLC logic and/or WMPG-6 logic), sometimes doing this is a “copy/ paste” and other times it is much more involved and time consuming, it depends on the level of customization and the age of the PLC program and the feature being added. The PLC Program is fully user editable and there are free PLC programming videos, manuals and free tech support forum support or your can hire a CNC tech to do the work for you. Contact support@centroidcnc.com for a quote on Centroid updating it, please attach a copy of your report.zip.

Oak/Allin1DC/MPU11 CNC12 4.16 through CNC12 4.22

4b.) When updating from **CNC12 4.16 through CNC12 4.22** and you wish to have the latest PLC program that comes with the new version of CNC12 AND the use of the updated VCP functions then:?

- 1.) Select **“No”** to not install a PLC program.
- 2.) Now, start the latest version of CNC12 and the restore the report you created earlier (F7 Utilities, F2 Restore Report).
- 3.) Exit out of CNC12.
- 4.) Start the CNC12 software installer again and follow the normal install procedure selecting “Oak,Allin1DC and MPU11” for the control option.
- 5.) This time select “Yes” to install a PLC Program. Select the appropriate PLC Program.
- 6.) Then finally to keep the existing CNC controller configuration settings and parameters the same as the old version select “Install – and keep the existing machine configuration”.



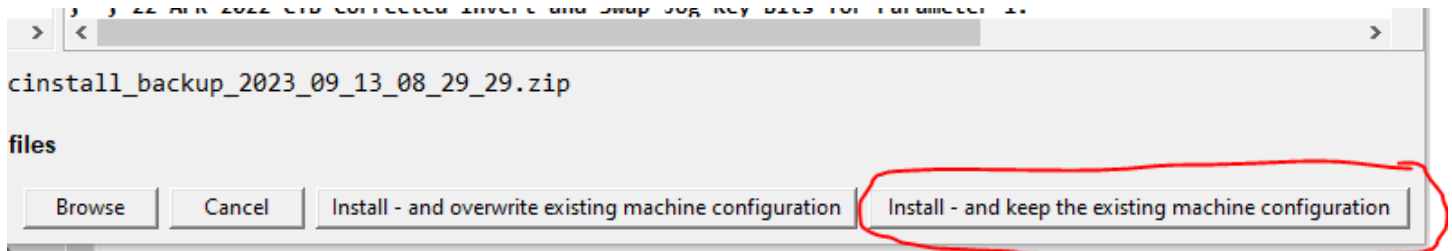
7.) For any new features that use a parameter value any CNC12 parameters that are related to any new feature will have to be configured to the users requirement. Refer to the CNC12 operator manual for the complete list of CNC12 parameters and their function.

Note: If an older Custom PLC was retained and used with the new version of CNC12 the system will still work as it did, the old PLC program just doesn't have the logic/support for any of the new CNC12 features that require PLC logic. If you wish to add support for new features into an old Custom PLC program (such as new VCP PLC logic), sometimes doing this is a “copy/ paste” and other times it is much more involved and time consuming, it depends on the level of customization and the age of the PLC program and the feature being added. The PLC Program is fully user editable and there are free PLC programming videos, manuals, tools and free tech support forum support or you can hire a CNC tech to do the work for you. Contact support@centroidcnc.com for a quote on Centroid updating it, please attach a copy of your report.zip.

4c.) Oak/Allin1DC/MPU11 CNC12 5.00 or newer

When updating from any version of **CNC12 5.00 or newer** and you wish to have the latest PLC program that supports all the latest CNC12 features.

- 1.) Select “Yes” to install a PLC program and select the appropriate PLC Program for your system.
- 2.) Then to keep the existing CNC controller configuration settings and parameters from the old version select “Install – and keep the existing machine configuration”.



- 3.) For any new features that use a parameter value any CNC12 parameters that are related to any new feature will have to be configured to the users requirement. Refer to the CNC12 operator manual for the complete list of CNC12 parameters and their function.

Note: If an older Custom PLC was retained and used with the new version of CNC12 the system will still work as it did, the old PLC program just doesn't have the logic/support for any of these new CNC12 features that require PLC logic. If you wish to add support for new features in an old Custom PLC program (such as new VCP PLC logic) , sometimes doing this is a “copy/ paste” and other times it is much more involved and time consuming, it depends on the level of customization and the age of the PLC program and the feature being added. The PLC Program is fully user editable and there are free PLC programming videos, manuals, tools and free tech support forum support or you can hire a CNC tech to do the work for you. Contact support@centroidcnc.com for a quote on Centroid updating it, please attach a copy of your report.zip.