

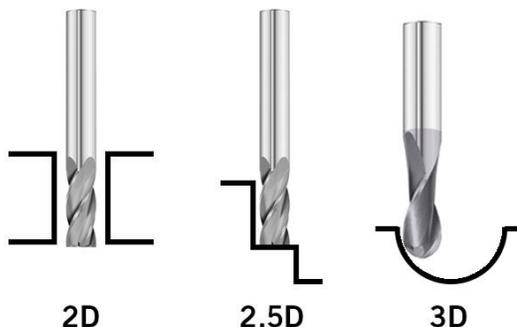
Hi CNC Enthusiast,

I wanted to thank you again for signing up to our Free CNC For Beginners Course. Welcome to Day 4!

In this email I want to talk to you about the types of projects that you might want to create with a CNC system and the different strategies that are used to accomplish them. As you are reading through this email, I ask that you begin to daydream about the different projects that you can create with a CNC. Think about your hobbies, your home, gifts, school projects, family fun, items you can sell, starting a business and much more. This is a technology that many never knew existed and for those of you who did know, maybe you thought that the operation was too complicated or simply out of your reach. What I can tell you is this ... If you can Think It, you can Make It! It's not just our company tag line, but it is reality. Myself and my entire team at STEPCRAFT are dedicated to making this possible.

Ways To Cut On A CNC

There are three different cutting strategies used to create just about anything on a CNC, they are: 2D, 2.5D and 3D.



2D Projects

2D projects like puzzles, silhouette signs, block letters, drone frames, simple brackets and other items where all the features on the part are cut straight through from the top to the bottom. Think of 2D projects like something you would cut out using a scroll saw or band saw. Additionally, do to the versatility and multifunctional aspect of the STEPCRAFT CNC Systems, you can also add other attachments and do projects like wood burning, scrapbooking, vinyl and graphics cutting, stamping, pen drawing, laser engraving and much, much more. It is the perfect solution for the entire family!

2.5D Projects

2.5D projects are one of the main ways that a CNC stands out from traditional workshop tools like a table saw, band saw or scroll saw. With 2.5D you can not only cut all the way through the material but you can also assign assorted depths to cut within the material called pockets. The nice thing about 2.5D strategies is that all projects are drawn in 2D, which is the simplest form of CAD or vector design. The depths to which you cut into the material is assigned in the CAM by setting Z-cut depths. For instance, if you want to make a drink coaster with a round pocket in the center for the cup to sit, you can select that circle and tell the software to cut a certain depth rather than all the way through.

3D Projects

One of the most impressive types of operations you can do with a CNC is 3D carving. A 3D carving starts with a 3D model, which would have to be designed in special 3D CAD or design software. You can also find millions of models online for free on sites such as www.thingiverse.com. You have to make sure that the CAM software that you choose is capable of processing 3D models and turning them into G-code. An example of this would be Vectric VCarve Desktop or Pro and Autodesk Fusion 360.

Things I Want To Ensure You Understand

The process of creating a project on a CNC machine requires three separate steps:

Project Design (CAD): Both 2D and 2.5D projects can be done in programs like Adobe Illustrator, Inkscape, Vectric programs like Cut 2D and VCarve, and many, many more vector-based programs. For 3D projects, solid models can be created with software such as SketchUp, AutoCAD, Fusion 360, Solidworks, or any professional software.

Tool Path Creation (CAM): While there are many CAM programs on the market and most, if not all, will work with our STEPCRAFT CNC machines, we fully support Vectric programs and Fusion 360. Vectric programs are powerful and simple to learn and because of this, we bundle all of our system packages with their software. Additionally, all STEPCRAFT machines come with a free one-year subscription of Fusion 360, for those of you who are interested in this powerful CAD/CAM package. For personal, small organizations and students, Fusion 360 remains free to use after the first year.

Machine Operation (UCCNC): Every STEPCRAFT machine comes with a copy of UCCNC. This is the program that you use to carve your G-code files, designed in your CAM program. This program also allows you to setup and operate the machine. NOTE: UCCNC software is only used to run the machine, you will, at the very least need one of the CAM/CAM programs to be able to design and generate the files needed to create a project.



2D designed wooden clock

3-Axis CNC Limitations? There Are None!

Any 3-Axis CNC can perform 2D, 2.5D and 3D operations and generate any type of 3D projects. Nothing special is required.



2.5D carving with 3D elements made from a single piece of maple.

The ability of your machine to create and perform simple to complex project designs is NOT dependent on the machine ... It's your imagination that matters the most! Our software makes doing complicated things much easier - allowing you to turn your ideas into reality quickly. You want to be sure to buy a CAD/CAM program that is capable of creating the types of projects that you wish to create with your CNC. Don't think only about your needs for today, but the future as well. For example, if you only wish to do 2.5D operations like puzzles, etc. and you never see yourself creating any 3D carvings, then Vectric Cut2D is a good software program for only \$149. However, if you think you might want to do V-carved signs or full 3D relief carvings in the future, then you will want to consider Vectric VCarve Desktop, which is \$349. Another nice feature of the Vectric software is that have an upgrade program, which allows you to upgrade from one version to another by only paying the difference in the software cost. This gives you peace of mind, knowing that if you ever had an application that required a different application that you can upgrade.

Don't Be Fooled

Don't be fooled by CNC Machines that include free web-based software. Some machines on the market are targeted to home hobbyists and as such they have developed web-based software to simplify the learning curve. They often include access to this online software with the machine in order to not add an additional cost to their machines. While this is great initially, like training wheels on a bicycle, you will quickly realize that there are limitations to what you can do as your skills progress, plus in many cases you have to be online to use the software. Vectric and Fusion 360 are professional software programs, backed by reputable companies and their software can provide an unlimited amount of projects that you can create, both now and into the future, without a connection to the internet. Vectric programs are equally as easy to learn as the "free" programs, but you will find that there are no limitations as your skills progress. Free is not always better!

You Can Do It!

This email might have felt a little technical to some, while I hope it was not. I tried to explain these machining strategies in as simple terms as I could along with the different steps and software required to make your ideas a reality. Putting all that aside, if you have an idea, we can help you create it! It's as simple as that. My team is dedicated to your success!

If you feel that you have more questions on the topics covered in this email, please email me at info@stepcraft.us or give us a call at 203-556-1856 and we will be sure you understand and are comfortable with the entire process.

In Tomorrow's Email...

I hope that you are enjoying this email course and are finding this information helpful. Tomorrow's email will help direct you to the best CNC solution to meet your creative needs. Please let me know your thoughts and suggestions by emailing me at info@stepcraft.us.

Sincerely,

A handwritten signature in black ink, appearing to be 'ERICK ROYER', with a long horizontal line extending to the right.

Erick Royer

Director

www.Stepcraft.us