

Cricuts 101

Slide 3: Tonight I'll be going over the Cricut machines and what they can do. We'll discuss picking a machine, how the various models differ, the tools and equipment they use, the materials they work with, the software and file types they use, and the basic work flow process of completing a project in the Cricut Design Space Software.

Slide 4: So what exactly is a Cricut? Cricut produces a line of computer controlled cutting and tooling machines. It uses a proprietary tool to cut, engrave, score, perforate, emboss, apply foil or draw onto the material.

The material is placed on a self-adhesive mat that is fed into the machine. The computer tells the machine what design to make, what tool it needs, what the material is, and goes to work completing your project!

Slide 5: Cricut has 3 machines on the market right now: the Joy, the Explore 3, and the Maker 3. You can still find the older models of these around sometimes, but there's barely a difference in price so I wouldn't recommend getting one if you're buying new. The higher end machines are capable of working with a larger variety of materials, and can handle thicker and stronger materials than the lower end models. This chart shows the basic differences between the main 3 models. The maker can work with over 300 materials, where the explore can work with over 100.

Slide 6: So what can they do? Before we go into more details, let's look at some examples of exactly you can do in the miniature maker world with all this. Here are some examples of ways they can help make your life easier as a maker! This is an assortment of furniture and shelving made with a Cricut. These are all from various Etsy shops that sell SVG files. These are all made out of an assortment of materials. Various thicknesses of cardstock, chipboard, kraftboard and thin wood.

Slide 7: These are some examples of smaller accessories and little items you can make. Again these are also all from various Etsy shops.

Slide 8: They're also great for cutting large shapes like room boxes and basic structures. These can all be made with a Cricut. The dollhouse on the left here is made from the cut file shown above it, to give you an idea of what a really complex cut file looks like.

Slide 9: Here are a couple more examples. Some Wall finishings, stencils, and this intricate spiral staircase are a few of my favourites.

The glowing witch effect was created by engraving a piece of acrylic and placing an LED light along the bottom so the engraved portion lights up.

Slide 10: If you have a hard time cutting by hand, struggle with repetitive motions or hand strength, or find yourself measuring and remeasuring and hate fussing with rulers, this will make your life so much easier. It can cut back on material waste in the long run as it eliminates the human error in measuring and mis-cuts.

Slide 11: Although I'm going to focus on how valuable of a tool this is for the mini maker, I'd also like to mention a few of the other things it can do! You can make handmade cards, papercrafts, stickers, vinyl decals,

personalize clothing and other textiles, make mugs, decorate travel cups, make party decorations, and so much more. Here's a few photos of some of the things you can make. These projects incorporate a wide variety of materials.

Slide 12: Are they the same as a laser cutter? In short, no. Although they perform similarly to a laser cutter, they're not the same. They are much less expensive, but also much more limiting. A laser cutter can cut far thicker materials, the maker is limited to 2.4 mm thick and just won't be strong enough to cut through some materials even if they're thinner than that. The Cricut uses a physical blade or tool instead of a laser, so it's much slower. It also requires different tools to be installed to perform different actions, where a laser cutter does not.

Slide 13: There is one main competitor on the market for Cricut, and that's Silhouette. Their line of machines are very similar and they're definitely worth looking into if you're thinking about investing in a cutting machine. One major benefit to the Cricut line of machines is the software they use. The Cricut software is streamlined, simplified and easy to learn. If you don't want to spend time learning complex software, the Cricut is probably better for you. The silhouette software is much more elaborate, making it more complicated to learn, but more capable in the long run. If you're eager to learn a more elaborate program and feel generally confident with technology, the silhouette might be better for you.

Slide 14: I'd like to go back to the various tools available for the machines. I mentioned it briefly earlier in looking at what each machine can do. Whatever machine you get, it comes with the basic main cutting tool. There are quite a few specialty tools available for these machines. If you want to perform an action other than a basic cut, or cut a special material, you'll need the corresponding tool. The machine knows which tool is loaded and will prompt you to install the correct tool for the job. The machines have all two slots for tools, the primary slot on the right called clamp A, and the secondary slot on the left called clamp B. The secondary slot is almost exclusively used for drawing tools like markers.

Slide 15: Here's a brief overview of the various tools. Some are exclusive to the higher end machine, and some can be used by both. The joy uses it's own unique tools.

Slide 16: Getting your new machine set up is pretty easy! The machine needs to sit in a spot where it has about 12 inches of clearance in front of and behind it, as the mat moves in and out during the cutting process. It comes with a booklet that explains everything you need to know, follow it step by step. Your machine will come with a test project to get yourself oriented within the program, and get to know your machine a little. I'm going to go over the software and project file types now, are there any last questions about the machine before we move on?

Slide 17: You may have noticed so far we've only discussed the Cricut Design Space software. This is the only program that can communicate with your machine. Because of the complex nature of the machine, it can only take commands from it's own software.

In that respect you're limited to using this software for completing your projects, but you aren't limited to designing those projects within Design Space. You can create your projects in other programs, export them, and import them into the Design Space. I would highly recommend this method most of the time, as the actual 'design' features of design space are pretty lacking.

Slide 18: One thing I would highly recommend getting in the habit of doing early on is using a different program to actually create your designs. There are a variety of programs people like to use. It really depends on what you're already used to using, if you want a free program vs a paid one, and how much complexity you want. You just need a program that can work with images in the SVG format. Adobe Illustrator and CorelDraw are a couple popular paid options. Inkscape, Gimp and Vectortator are great free options. I use Inkscape personally and really love it.

Slide 19: So what's an SVG? SVG stands for Scaleable Vector Graphic. It's an image format, like a jpeg or png. Except those are made up of pixels. An SVG is not made up of individual pixels. The picture you see is essentially an image generated by an equation that tells the computer what the image should look like. So if I display it an inch wide, or a mile wide, it'll never become distorted or blurry. This makes it infinity saleable, hence the name.

This makes them very different from your standard image file types. Although the images may look the same, they aren't interchangeable. Design Space only understands SVG files. You can upload other file types and it will convert it to an SVG for you. You can use their upload editing tools, but this is a pretty imperfect process.

There are various websites that claim to convert files to SVG format for you. These will all give you similar results to the Design Space upload process, and it's really hit or miss. PNG files with transparent areas will upload well, but never as well as an SVG. Luckily, you can find loads of SVG files that are ready to go, and only have to be uploaded to design space.

Slide 20: What if you don't have an SVG, and you want to design a project in Design Space yourself? This takes some practice, but once you get the hang of it you can easily create your own designs in DS. I'll walk you through a simple example now.

Slide 21: At this point you might be thinking, that's great, but what if I want to cut a totally random material I have on hand? You don't have to stick to using the materials made by Cricut, although they generally work the best with factory settings. Any materials designed for these types of machines should work. You can find materials at craft stores, hardware stores, dollar stores, plastics manufacturers, or leftover from other projects. Provided they fit within the confines of what a tool can cut, and what the machine can do, you can use them. There's a fair bit to be said about custom materials, so I'm going to include more comprehensive notes on this for anyone that's interested in the follow up email.

Slide 22: A couple notes on where to buy a machine. You can find these at Michael's. They also sell them at Costco, sometimes in store, but generally only online. Recently a few other local chains have started selling them as well, like Staples and Indigo. If you decide to buy one, I'd recommend signing up for a Cricut Access membership and buying one from the Cricut website. It ships from the US but it's still almost always the best price. One thing I would strongly advise you avoid is buying a machine second hand from someone you don't know. There's a scam where people sell their broken machines that have been remotely disabled by Cricut after a warranty claim.

Basically if your machine breaks under warranty, they ship you a new one. The broken one becomes their property, and generally they'd have you ship it back to them. But to cut costs they've been remotely disabling the machine and asking you to dispose of it instead.

There's another issue with using someone's old machine. During the set up process, your machine is registered to your Cricut account. Once a machine's serial number's been registered to an account, it can only ever be

used by that account. You can de-register it to give it to someone else. But if this isn't done right there's nothing you can do. No amount of contacting Cricut will convince them to link it to your account.

So unless you're getting it from a trusted friend who will help make sure it's all set up and working when you get it home, I'd recommend avoiding buying a used machine.

Slide 23: Just a quick note on what the access membership gets you. It's pretty good value.

Slide 24: I wanted to wrap this up by running you through the general process of completing a project! So I'll go back to Design Space now, and show you how that looks. I can also show you here what the material settings look like for the Maker, since it's not practical to list all 300 of them here.

Here's some extra detailed answers to common questions, answers to questions asked during the session, and extra information on some specifics. This wouldn't fit into the seminar, so I thought I'd include it here in case anyone wanted more information.

- The usable cutting area depends on the machine and the mat used. The full size machines use either a 12 x 12 inch square mat, or a 12 x 24 inch long mat. The joy uses a smaller mat, 4.5 x 6 inches, and a long mat, 4.5 x 12 inches. These all include a half inch unusable margin.
- You don't have to own a Cricut to download the software. If you're interested in trying out the software you can download it from the Cricut website.
- Cricut also makes a line of heat presses, cutting mats, tools, accessories, and a line of propriety materials like adhesive vinyl, HTV, blanks, and much more. The Cricut brand materials are specifically designed to be compatible with the machine's factory settings, but you're not limited to using materials made by them. Any materials intended for use with a cutting machine will work.
- The Maker is a fairly large jump in price, but it's quite a bit more capable. If you don't think you're going to make use of the heavy duty capabilities of the maker, the Explore could be exactly what you need.
- The difference in price of the Maker over the Explore could easily pay for itself if you're making a lot of room boxes and structures, since the raw materials are so much more affordable than kits. But if you think most of your use will be paper and card stock, you'd likely be very happy with the abilities of the Explore.
- The little Joy machine is really in it's own category, having a significantly smaller working area, the least amount of tools, and no ability to do print then cut. I have one of these and it's actually a surprisingly versatile little machine, especially if you're making miniatures. Depending on the scale you work in you may find the small mat is enough space for you. It's a very compact little machine, it's fast, it's quiet, it cuts quite well, it's much easier to fit into a smaller workspace. If you aren't sure how you feel about learning the software or working with SVG's and you aren't ready to invest in a maker, this is definitely worth considering. Especially since they so often go on sale for close to \$100.
- Most of the time the machine can sense what tool is loaded, and will tell you if you have the wrong one for the project. There are certain ones it can't differentiate between though, like the difference between the fine point and deep point blades, or the single vs the double scoring wheels.

- Generally the tools are compatible between the maker and the explore as they use the same housing. Some tools are exclusive to the Maker, since they need the more heavy duty machine. But if you had an explore and a maker, you could share tools between them, just not the maker exclusive ones.
- The markers and pens are compatible between the Maker and the Explore, but the Joy has it's own because of the smaller housing. None of the machines can use a generic marker, they need the ones specifically designed for the Cricut. There are several aftermarket adapters available that allow you to use your own markers.
- Some tools have a blade that needs to be replaced as it wears, some do not. The fine-point blade, deep-cut blade, knife blade, and the bonded fabric blade need their blades replaced over time. The rest do not.
- Why can't you easily convert an image into an SVG file? There are websites that claim to do it, and they only work well sometimes. I'd compare it to using google translate. If you're translating a single word, the translation will probably be pretty good. But the more complicated you get, the more you need an actual person to do the translation to get really accurate results.
- There are a huge number of free SVG files available online, and a huge number available for sale as well. Etsy is a great place to start looking if you want to try out some more complicated cut files.
- You can find free cut files within the Cricut Design Space. If you're an access member, there are hundreds and hundreds of free projects available. Unfortunately it's pretty rare to find miniature and model making themed projects here.
- Whether you design your project in design space, in Inkscape, or purchase your SVG from another maker, just make sure you remember to account for the material thickness in your design, and always do a test cut.
- If you purchased a file, make sure you read through any accompanying notes to see what material thickness they intended it be used with.
- And if you're cutting a material you haven't used before, make sure run a test cut to get the settings calibrated right. If it's a project I've never made before I always do a test cut on plain printer paper or scrap card stock to make sure everything looks right before using my premium materials.
- There are a few things you're going to need to stick with the Cricut brand for, as the machine will only work with the proprietary equipment. But there are some great off brand alternatives on the market when it comes to accessories and materials. Here are a few of my favourites, and where they're available.
- If you use a Cricut brand material in a project, the factory settings will perfectly match and you should be able to cut the material with consistent perfect results without needing to adjust anything. But you don't have to stick with the Cricut brand. Any materials that are intended for use with a cutting machine will work.

Notes on acquiring or making project files:

There are plenty of SVG project files available online designed by fellow makers for the Cricut machines, both for free and for sale. These are generally going to be the simplest and most successful projects, with the least amount of technical skill required and very little set up. It can take hours of work to get even a simple project

file designed in Inkscape, and even more still running test cuts and making sure everything fits perfectly together. A good project file that you can just dive right into making with is well worth the investment.

Before you buy a file, read the description and reviews carefully. You'll want to be sure they include an SVG file, not just a PNG with the purchase. Check if they mention making the file with the intention that it be used with the Cricut. If the listing photos only show digital renders and no finished item, I'd be very careful buying it.

Check reviews for others that have made the item with the same machine as you to see if they ran into any issues. Check what the seller includes for instructions, and if the reviews comment on how comprehensive those instructions are.

And of course as always, make sure you have up to date anti-virus software and only download files from reputable sources. If you're getting something for free and it seems too good to be true, proceed with caution. As they say, if something is free, you're the product. Does the one offering the free file get exposure or advertising? Do they get your email address, or require you to sign up for a newsletter? Those are pretty standard practices and it's clear how the seller benefits from not charging you for the file.

Notes On Custom materials:

Always start by creating a custom material in Design Space rather than modifying one that's already there if you can. You can only get to this setting from the 'Set Base Material' step in making a project. Select browse all materials, and then select material settings on the bottom left. From here you can see all the settings that come pre-loaded for the various materials the machine can cut. This will give you an idea of what you might need to cut your new material. You can edit an existing material, but I'd recommend adding a new one so you don't adjust the settings for one you might need later.

- Select add new material and give it a name. Now you can set the cut parameters.
- You set the pressure you want the machine to use, from between 70 and 339 with the fine-point blade.
- You can set how many times you want it to go over the cut line, between 1 and 9 passes.
- And you can tell it to use either the fine point blade, the deep point blade, or the rotary blade.
- Save your material, click done at the bottom, and select your new custom material from the list.

The biggest limitation with creating a custom material is that you can't make one with the knife blade. I'm assuming that's because this tool has the potential to cause serious issues and damage to your machine if misused. Be extremely careful if you're going to try cutting materials with one of these settings that isn't intended to be cut.

I'd wait to dive into this until you have a good general understanding of how the machine works, how the different tools function, and the characteristics of the various materials you've worked with. Cutting completely random found materials can damage your machine if you're not careful.

If you think your material will need to be cut with the knife blade, you can still do it, but you'll have to use a material already programmed in. Scroll through the list to find a material that most closely resembles the one you have. You won't be able to edit these settings, the best you can do is keep track of which ones have worked well in your notes. You can use the more or less option in the pressure setting to fine tune it a bit, this will add or remove 10 pressure to the factory settings.

General Advice For Custom Materials:

Whatever method you go with, always start by measuring your material carefully with digital calipers. Using a material too thick will seriously damage the machine. Make sure the material's thickness is consistent across the entire piece. Materials that vary in thickness, density, or grain will not cut well. Materials composed of bonded layers or laminates should also be avoided. Anything prone to splintering should be avoided.

It's always a good idea to monitor your machine as it's cutting, but you'll want to keep an extra close eye on it if you're experimenting with strange materials. A piece could break off and get pulled into the machine and very quickly cause serious damage. If the tool breaks or the material becomes dislodged from the mat, a couple minutes of continuing to cut could completely destroy the machine.

If something goes wrong:

The pause button on the machine pauses the project and allows you to check the progress of the cut. You can't eject the mat mid cut, but you can clean up bits of material that have come loose and check the cut status. In an emergency you can press the power button to shut it off mid cut. When you turn the machine back on it will automatically eject the mat out slowly.