



Choosing the Best Plasma Software

Version 8.26

Software is probably by far the most overlooked aspect when purchasing a plasma table. Confusing the issue is that nearly every company claims their software is the 'easiest to use' and 'takes only minutes to learn'. This article attempts to highlight what you should consider when looking for a software program.

Features to Look For:

- 1 - Software Pricing
- 2 - Software License Restrictions
- 3 - CAD Capabilities
- 4 - Trace Feature
- 5 - Nesting parts
- 6 - Generate a cut path
- 7 - Allow manipulation of cut sequence
- 8 - Generate and modify lead-in / lead-out lines
- 9 - Tiling

1 - Software Pricing

In general, there are four types of software pricing - Free, Perpetual, Subscription, or Locked. While free programs always sound great, these types of programs typically rely on the cooperation of contributing members to upgrade or improve the software. This usually means the software is not as capable or fully developed as that produced by a for-profit company. The second option is to sell the software with a perpetual license, meaning that you pay only once, and use the software forever. This to us, makes the most sense. In this way, you buy a fully upgraded version of the software and get to use it forever. The third option, subscription based, means you must pay a monthly, or annual fee. While less expensive initially, in the long run, this can be extremely costly, and not surprisingly, a lot of companies have moved to this pricing model. The fourth option, locked, is to sell a stripped down basic version of the software, for a very low introductory price. While the software has all of the required options to properly cut plasma parts already built into the program, they're locked out, and won't work until you purchase an unlock code. The problem is, the upgrades are typically very expensive - one popular plasma company includes the basic version of the software with their tables, but then charges a separate \$1,000 fee for each of the six different features required to properly design and cut parts.

2 - Software License Restrictions

License restrictions refer to the number of computers you can install the software on. Most of us are familiar with software that legally allows you to install the software on several computers. However, the world of plasma is quite different. One of the more

popular plasma programs allows only one installation per license, and this is tied directly to the ip address of the computer. Install it on another computer, and it simply won't run. Keep in mind that most plasma tables require a computer to drive the table, which means that you'll be forced to design your parts in your work environment, not in the comfort of your home or office. It also means that when your computer fails (and they all eventually do) you'll have to re-register the software to another computer address, potentially costing you more money. Additionally, some software installations require the computer to have a parallel port. This 25 pin port is rarely found on modern computers, and almost never seen on laptops. Being aware of the hardware limitations ahead of time is always a good idea.

3 - CAD Capabilities

There are a host of different Computer Aided Design or CAD programs to choose from. No matter which you select, it must be capable of designing a vector graphic image, and not a raster or bitmapped image. Bitmapped images are basically a collection of dots, which viewed far enough away, form a whole picture. Vector graphics programs draw images using arcs and lines, which no matter how close or far away, will never pixelate or degrade.

4 - Trace Feature

The trace feature allows you to convert a raster based image to a vector based image. Most of the images you find online, or most anything you scan or take a picture of, will be a raster based image, which your plasma table cannot use. So it's very important your software program can convert images to a vector graphic.

5 - Nesting Parts

Nesting is the process of efficiently arranging duplicate or multiple parts on a single sheet of material. Better nesting programs allow the parts to be rotated, overlapped, or even placed inside one another.

6 - Generate a Cut Path

Once a shape or design is chosen, a cut path must be added, which programs the machine on how to precisely cut the part. If you're modifying a part from the parts library, the controller adds the cut paths automatically. But if you've found an image online or designed your own part in a CAD software program, you'll need to learn CAM, or some sort of Computer Aided Machining software, to add the cut paths.

7 - Allow Manipulation of Cut Order or Sequence

It's important to be able to manually designate which lines are cut first, or the 'cut sequence'. Most software programs are sophisticated enough to choose a proper cut sequence, ie inside lines are cut first, before outside lines. But there are times when it's best to manually select the order in which parts are cut - for example, when cutting from thin metals, it's best to move around the sheet of parts and vary the cuts, so as not to overheat and warp the metal too much by only cutting in one area at a time. When cutting thicker plates, this would not be a concern, and the shortest path between cuts would be a better solution - something the software could automatically do just fine.

8 - Generate and Modify Lead-in / Lead-out Lines

When the torch first pierces through the material, the resultant hole is wider than the normal cut path, or 'kerf'. Therefore, in order to cut the highest quality parts, it's necessary to first pierce the material away from the edge of the part, and then slowly 'lead-in' to the material, typically via an arc leading into the normal cut path. Likewise when the torch is turned off, a lead-out line is used to guide the torch away from the part before the torch is turned off.

9 - Tiling

Tiling is the process of cutting projects larger than your plasma table. This is accomplished by using either of two different methods. The first is to slide the material through the plasma machine, and incrementally cutting it, section by section. The second is to break the project down into separate smaller pieces called 'tiles', and cut them separately, rejoining them together later to reform the entire piece.

Another complicating factor is that when outputting the commands, or g-code, the software program must write the code in such a way that the plasma table controller will be able to understand it. This is done via a custom piece of software called a post processor. While not overly complicated, it is required, and without it, the software code will most likely not be compatible with the table.

In summary, software is typically the least understood, yet most important aspect when choosing a plasma table. Many consumers have been duped into buying low cost tables bundled with 'empty' software packages that can't cut anything, only to find out too late that they need to spend thousands more on optional software 'upgrades'. ***Remember this - you cannot run the table without the software.*** Make sure to understand if you're getting the upgraded, top level software, and if not, ***what are the exact costs of upgrading.*** It's extremely important to ask these questions, and get answers, before you buy.

