

Nesting Software

PURCHASE GUIDE



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POWER MADE SIMPLE™

MTC Software has 25 years of experience developing and supplying CAM nesting software to companies of all sizes involved in CNC plasma, oxyfuel, laser, waterjet, and punch applications. During that period, we have been asked a lot of questions by customer prospects during their purchase decision process. If you are currently involved in that process yourself, we thought sharing some of the key issues might be helpful; as they were to the thousands of MTC Software customers who decided on our products and quickly achieved the return on investment they were seeking.

First, let's consider the key objectives purchasers have for nesting software, once implemented;

Optimize material use

Optimize part quality

Reduce programming time and complexity

Create CNC files to operate one or more cutting machines

Optimize manufacturing system productivity

Provide detailed operator and management information

The above list is not fully-inclusive but these items are important to all companies we are in contact with; large through small.

Considering the key factors, let us now take a closer look at the important issues you should consider when purchasing nesting software.

■ ■ Optimize Material Use

It's pretty common for those evaluating nesting software to compare programs using **nest utilization** for a group of parts, as the benchmark. Certainly benchmarks are important, but we believe making a purchase decision on this alone is a mistake since there are other important factors involved that must be considered (see the other main topics covered in the following section). Those items should be thought through and prioritized accordingly, if a material yield benchmark is something you decide to do.

When performing a material utilization benchmark, to ensure an apples-to-apples comparison we suggest all prospective vendors are supplied clear direction. Direction should include specific values to be used in the benchmark, including; part to part separation, part to plate edge separation, pierce to part separation, lead in/out styles, lengths and configurations, cut sequence preferences, and any rotation restrictions in place for specific parts (if dealing with grain issues). Even though different software programs will develop and calculate utilization values differently, make sure all potential nesting software vendors are using the same parameters when creating the benchmark nest and this should help you to obtain objective data for fair comparison. We feel that the absolute best solution is for you to perform the benchmark yourself using a working trial of

each vendor's software at your company. Any vendor worth considering will be more than happy to walk you through this process. Once again, regardless of how you perform the benchmark, we suggest you evaluate the results of this comparison with the other key objectives you are seeking to achieve at your company.

■ ■ Optimize Part Quality

Many standard and process-specific (laser, plasma, etc.) nesting software features require customizable parameters to be periodically modified during use to achieve optimum part quality, such as reducing hole taper, providing for sharp corners, and adding leads of the optimum length, style, angle, etc. Nesting software programs that offer an open architecture allowing easy modification of **custom parameters** using standard business tools, such as Microsoft® Excel, are preferable. Programs offering their own internal editing tools, or worse still, requiring all modifications to be performed in the post processor by the vendor, are less flexible and can get in the way of achieving your quality goals.

■ ■ Reduce Programming Time and Complexity

When programming jobs using nesting software, the best scenario for users is to be able to get from "CAD to code" in the shortest time possible. We recommend selecting a program with an intuitive interface that requires the fewest steps to complete the job. Avoiding nesting software applications made up of numerous separate programs is advised, since these require the user to manually shift between programs to complete a job, which is not as efficient.

Another important consideration factor is the ease of use of certain job-related editing tools and their implication on total programming time, depending on the steps you must go through to use them. For example, if a nest has been created and a different lead in/out location or style is desired for one or more parts on the nest then it is ideal to be able to directly edit the nest from the nesting screen rather than having to close that window and return to another area of the program for lead editing and then re-nesting. Therefore, we recommend selection of a nesting program that offers flexible and logical editing functionality.

■ ■ Create CNC Files to Operate One or More Cutting Machines

The more complex the features on your machine(s), the more important it is that you ensure the nesting software you select allows you to get the most from those features. Review your requirements for programming of specific machine features with the software vendor and make sure the software includes all the necessary capabilities to manage, equally well, the cutting processes that you plan to use.

Sometimes, when it comes to features; less is more. You may be presented with some software that contains a huge list of features, but in reality many may never be used because they are not relevant to your needs or are just not practical. A good example of this is Automatic Chain Cutting. This may sound like a great idea, but in

reality, although it may be possible to have the software chain all the parts on a pre-optimized nest, the likelihood of that cutting in a useful manner is virtually impossible. So, make sure the features you are being shown are **relevant and useable** in a real-world environment with the cutting equipment you have or plan to purchase. If you are not convinced, request a full working trial so you can test it on your machine(s).

■ Optimize Manufacturing System Productivity

Originally, nesting software programs were operated independent of the company's other business systems since compatible platforms for data exchange were not developed at that time. Nesting software is now much more advanced, where today it can play a central role in the internal business system. Whether it be importing of 3D CAD files from programs such as SolidWorks®, ProEngineer®, or Inventor®, or integration with external Manufacturing Resource Planning (MRP) applications such as SAP, a nesting software system that is **flexible and capable** of offering this is important if you seek a high level of productivity leveraging process automation.

■ Provide Detailed Operator and Management Information

Operating a successful business involving CNC cutting means having the right information available; when you need it, so you can make informed decisions based on empirical data. Therefore, a nesting software program with a good selection of standard reports containing job data is useful. We recommend you look for reports that include text and graphics. Costing by nest and by part, cut cycle times, cut sequence and other related information are also good to have. **Customizable reports** are better still and the ability to create bar code labels, etc., for each job is a useful feature appreciated by many. Additionally, being able to readily view job and nest utilization on-the-fly without generating reports is a tool that allows programmers to make comparisons and optimize costs and is a valuable feature to look for.

From our perspective, that covers all of the major items for consideration in your nesting software purchase. Note that we purposely kept discussion of these points at a high level, although we understand that you probably have some more in-depth technical questions you'd like answered or concerns you'd like addressed. For example, maybe you want to be sure that your next nesting program can read-in CNC files created in your old software or perhaps you are planning an IT upgrade next year and need to confirm the software you purchase today will operate with the PC's you'll add in the months to come. Whatever the situation, the staff of MTC Software is more than happy to assist you with these questions and will provide you with fair, objective answers based upon our many years of experience.

At this point, we'd like to address a few additional items related to the nesting software purchase process that we feel are worth mentioning and should help you.

CAD Software

Some nesting programs include a built-in CAD component; some do not, so you may be wondering about the implications of this issue. Generally, as a rule of thumb, just because a nesting program contains built-in CAD capability does not mean that all your drawing needs will be satisfied. These systems are typically very simplistic and capable of only the most basic drawing functions, even when compared with the most inexpensive off-the-shelf CAD software.

In addition to drawings created in-house, many nesting software users receive CAD files from their customers. Since the drawing formats supplied can vary drastically, CAD file import flexibility and reliability are critical to the successful use of any nesting program.

As a result, we find that most nesting software users feel they are better served purchasing a stand-alone professional CAD package to satisfy their needs. Therefore, the emphasis should not be placed on the inclusion of CAD functionality but instead on a nesting program's ability to import the widest range of CAD file formats and how well the independent CAD and CAM programs work together. For instance, does the nesting program import data that may be stored on a separate CAD file layer, such as the material type, required quantity, etc.

Pricing

Our observation is that just because a nesting software program has the highest price tag and is bundled with a lot of features, as standard, does not mean it's the best product, or indeed the right product for any particular company. We feel that using the items discussed earlier as a measure of suitability to your needs will offer greater satisfaction in the long run.

Also, during your purchase process, be sure to look out for potential hidden costs in the pricing or future costs that are unreasonable. These might include excessive costs for additional user licenses, or costs for a post processor to allow the nesting software to operate a specific machine you plan to purchase in the future.

License Configurations

Depending on how your company plans to deploy the software for use, you should evaluate the licensing options offered to ensure they meet your needs. Typically license formats include static PC, where a license may be operated on one PC, and floating networked, where any number of network licenses may be purchased and allowed to operate simultaneously on numerous work stations.

Software Training

After you have made your software purchase it is important that your programmers get the training they need to allow you to start returning on your investment. Although on-site training at your

facility or at the nesting software company's facility is an acceptable solution, there are some downsides to this approach. First, it can be quite costly because someone has to travel. Second, it pulls the programmers away from their work for an extended period of time. Third, it is only human, that much of what is taught during an intensive course is not absorbed or remembered.

We have found that an excellent solution to providing efficient training that provides the best results while avoiding the aforementioned downsides, is web-based online training. This convenient method allows internet training to be provided to a group of any number in "bite-size" chunks that can be retained. All that is required at the customer site is a web-connected PC and a phone! Programmers may then return to their work and practice what they have learned before their next online training session and come prepared with questions. We recommend that you select a vendor that offers this training format.

Software Upgrade Path, Support, and Updates

If your company is in growth mode, your current requirements may only call for a basic nesting solution but will likely become more demanding in the future. We suggest you confirm that the software vendor has a scalable nesting software solution, offering different levels of nesting software that provide your company with an upgrade path. Also, clarify the frequency of updates to each of the nesting software programs you think your company might use over time and the ongoing investment in maintenance updates, so you can be sure that your nesting system is reasonably future-proof and provides a long-term business solution.

Vendor Knowledge

We recommend your purchase decision considers not only the software program itself but also the prospective vendor. You should select a vendor that has knowledgeable staff who possess real-world industry experience and understand the cutting applications you have. These staff should be able to provide you the support you need, when you need it.

Also, check to make sure the vendor is a technology leader and has working relationships with industry cutting machine producers where information-exchange is taking place to allow both sides of the equation to stay at the leading edge and provide you with the best solutions.

We hope that you will find this **Nesting Software Purchase Guide** useful. Feel free to let us know if you have any personal insights you would like to share about your nesting software purchase process and we will consider those when making future updates to this guide.

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About MTC Software

MTC Software, Inc. is headquartered in Lockport, New York (USA). Established in 1984 to serve the software needs of the CNC sheet and plate processing industry, **MTC Software** was founded on the principles of innovative technology, thoughtful design to ensure ease of use, and outstanding customer support. Decades of industry experience, combined with our dedicated in-house R & D staff, allows us to stay at the leading edge of sheet and plate manufacturing technology. Today, with thousands of customers worldwide, MTC Software has grown to become a global company recognized as the industry leader in software for cutting applications, including oxyfuel, plasma, laser, waterjet, router, knife, and punch.

Customers in North, Central and South America are served from our head office, regional offices located throughout the USA, and a broad distributor network. International subsidiary offices located in the UK, Germany, Australia, and Singapore, together with distributors in Europe, Africa, Middle-East, Asia, and Pacific Rim allow us to easily support customers, worldwide.

By supporting all brands of CNC sheet and plate cutting equipment utilized in today's manufacturing, fabricating and value-added material distribution businesses, MTC Software provides a single solution to all of your profile cutting needs. MTC Software is constantly expanding its core technologies to provide you with the tools necessary to take full advantage of increasingly complex equipment, improve your product quality, maximize your productivity and profit, and manage your business operation.

MTC Software represents the application of advanced technology that is easy to learn and use... **Power Made Simple™**. By selecting MTC Software, you will feel comfortable that you have partnered with a company that measures its success by ensuring yours.



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