Top Ten Things To Consider When Buying Nesting Software

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From the corporate offices in Old Tappan, New Jersey here are the Top Ten Reasons You Should Want To Buy An Automatic Nesting System:

10. The machine operators won't swear at you anymore.
9. You won't swear at the machine operators anymore.
8. You'll have more time to socialize with your coworkers.
7. Maybe your carpal tunnel syndrome will go away.
6. You never did like the scrap man anyway.
5. You might get a vacation.
4. You won't have to meet with pesky nesting salespeople anymore.
3. Your company stock options will increase in value.
2. You will finally get home on time for dinner.
1. Your boss will think you are smart.

Often times when top ten lists come to mind, most people think of the popular late-night television talk show which provides a humorous approach not unlike above. There is really nothing humorous about nesting software, other than when a search is performed on the web, nesting dolls or bird homes are usually at the top of the list. And we all know that nesting is not for the birds.

Setting these unlikely matches aside, the following is the definitive

Top Ten Things To Consider When Buying Nesting Software:

10. Does The Software Support Multiple Platforms?

It is important to know if the software supports your current operating system. If not, then the nesting software company will try to sell you a PC which incorporates an operating system that is supported by their own nesting system. It is also important to take into consideration if your company is migrating to a different operating system in the future. If this is the case, then find out if the operating system you are migrating to is supported as well.

Your company may be running multiple platforms or operating systems. Make sure to ask if the nesting software company can guarantee compatibility between the platforms in question. This will help cull the substandard companies from the superior ones.

While you're at it, check the processing speed and RAM of the computer your considering installing the nesting software on and find out if it will operate adequately. The nesting software should be functional within a wide range of speed and RAM. Ask if the software supports multiple processors as well. Purchasing a new computer with a multi-processor may not be wise if the software really does not utilize both processors in its operation.

Superior nesting software is written to take advantage of the latest processing speed and RAM available. Because of this, it makes sense to consider updating your computers if they are more than two or three years old. Improved processing speed will make all the difference in the world when it comes to nesting times.

9. Is The Software Easy To Use?

User friendly is the buzzword. Good software will be written in a common graphical user interface or GUI. This reduces the learning curve because every Windows GUI application should perform the basic functions in a standard manner. Think of it in a different way. If your experienced user leaves after many years, will the new person be able to come in and take over in very little time?

Windows applications will support new features available today such as long file names. Be wary of wolves in sheep's clothing. If you review the properties of a typical executable in the nesting software it should be described as a Windows executable that runs in the 32-bit Word machine or more. Old DOS programs and executables will not support new Windows features. In general, old source code dated from the 70's and 80's is not likely to support the newest innovations either.

Don't be afraid to ask if the nesting software is at least a 32-bit Windows/Unix application. This means it is going to be more efficient and run faster than an application that is 16-bit, which basically supports old computer architecture.

UNIX applications should target the Motif graphical user interface, which provides a consistent look and feel across all UNIX platforms.

8. Are There Different Product Levels?

A superior nesting Software Company can provide various product levels to suit the small to large fabricator. Determine whether you need rectangular nesting, true shape nesting and/or nesting on any shape material. Also take into account if your needs will change and if so, will a more complex solution be needed in the near future.

If the software company sells a fully integrated solution, it should contain the following: A universal translator that can translate most any CAD/NC format in a batch mode, an order scheduling manager, a part assembly manager, an automatic NC tool path generator, a raw inventory manager, a remnant tracking utility and unattended true shape nesting which supports unlimited parts, material sizes or machine tools.

A link to your MRP/ERP (Manufacturer's Resource Planning/Enterprise Resource Planning) system should be included as well as an ODBC interface. This stands for Open Database Connectivity. It will provide for a true relational database using Structured Query Language (SQL) as a standard for accessing data. This means you would be able to use your own database management system such as Oracle or Access and write your own customized reports.

Is a cost analysis tool available that can support your sales area as well as the manufacturing side of your facility? These tools can be used to cost out quotes, run simulations to determine best material usage and machine throughput, process time studies and conduct best inventory practices studies.

Find out if a manual-editing feature is available. This is always great when parts need to be modified on the fly or you want to tweak the nest. These features allow editing within the nesting program and save you the time of exporting the information back out to your CAD program.

It's a good bet that the superior nesting company, which provides a fully integrated solution, has a product level to meet your needs if you are a small fabricator. Most often they have an established migration path for planned growth of expanding companies. Purchasing from a software company like this will allow you to buy state-of-art, innovative software versus buying from a company that has not dealt successfully with the more challenging, complex solutions.

7. Are There Various Flexible Configurations?

Determine how you need the software configured. Do you need an integrated solution serving multiple users and facilities or a stand-alone seat? Could there be a situation that you may have simultaneous users. The superior nesting software companies will be able to handle these situations.

In addition, it is also advantageous to look at a nesting software system that includes a professional version and a shop floor version when considering multiple seats. The professional version provides full editing capabilities including access to default databases. The shop floor version is streamlined with little or no editing of nests or orders. The shop floor version would be applicable when the machine operator is going to have a dual role as the nesting operator whereas the professional version is undertaken by a production manager or engineer.

It may be that you have multiple applications (i.e. laser, plasma & oxy-fuel) contained within multiple facilities. Only the best nesting software companies can provide a server-based system supporting simultaneous users across multiple facilities and multiple applications (see attached examples). Even if your needs are not this advanced, go with a company who is this technologically advanced. You will benefit from their knowledge.

6. How Automatic Is The Software?

You will hear most nesting software companies say their product is automatic. Ask some specific questions. Can the CAD/NC translator automatically fix bad part data? Can you translate parts one at a time or translate hundreds or thousands at a time (batch mode). Does each part have to be attributed before it can be nested and post processed? Does a dual part library need to be maintained? Additionally, find out if the nesting can be done both dynamically (as you need it) and batch mode. It can be a benefit if you could initiate a hundred nest runs at the end of your work day, have them nest overnight and then come back the next day with all of them complete and ready for you to send to the machine tool.

Ask if the reports available can be automatically generated as well as such things as labels and scheduling of jobs.

Will the machine code be automatically generated and will it have been optimized for your specific application? Does the tool path match the needs of the application? Where are the automatic lead/ins lead/outs placed? Is code compression available to make the file smaller so it can run on an older controller? Also, is part or shape tracking available so the machine picks up where it left off as in the case with a shift change of personnel. Are power settings automatically supported?

Ultimately, many times the machine tool can perform the optimized functions desired, but the task is not automatically supported in the nesting software.

5. How Is The Nesting Software Able To Improve Machine Throughput?

Specifically, what processes are available to make the machine tool run faster or reduce the cutting time? If your machine tool supports multiple torches, then this should be available in the nesting software that will drive the machine. The software should support stacking of plates. This is good when high volumes of different parts are to be cut. A single nest can be generated which is then cut many times on the same size plate, with the plates being laid side by side. This cuts down on setup time and increases your throughput. If your machine is configured properly, the software should be able to support multiple torches across a single plate or across several plates.

The software should support compression of part and shape geometry into better features such as splines and arcs instead of tiny line segments. This will generate code that can be cut faster on the machine tool.

Is a parametric solution available that allows automatic translation, nesting and post processing of parts from input variables. This can eliminate the CAD design step if your parts share some basic parameters.

Check out the additional optimizers available to improve machine throughput. Consider what your most troublesome areas are when cutting parts and ask about any solutions to your problems. Inquire about such options as common line or shared edge. This removes the duplicate tool path that is shared between two parts. Ask if the software has the ability to common line partial segments at any angle automatically.

Additionally, inquire about head down logic or collision avoidance, if applicable. The key here is (if your machine tool can support it) to ask if the software can minimize the need to lift the cutting head between parts and their internal features, including etching. The fact that the head down logic can run across the parts and their internal features will save up to 40% in linear tool path.

Find out if this is done automatically during nesting or is this more of a manual process of attributing each part.

Reduced pierce or minimum pierce is another option. This will utilize the existing kerf of a previously cut shape as the lead-in to the next shape. Be sure to ask if the software company had dealt with the problem of nicks that sometimes occur with this option. Other variations on this theme would be such options as bridge cutting and chain cutting.

Skeleton cutting will cut up the sheet in user-defined pieces so this does not have to be done manually. This will also help increase the value of the scrap.

Part tabbing or micro-welds may be available to prevent part tipping. It will be important to understand if these options are run automatically or are they manually applied to each part.

Other options may be available. Ask about all that could pertain to your application.

4. Is A Live Demo Of The Software Available?

Live demos are the best. If the nesting company provides a CD-ROM, is it a slide presentation or a real demo. If indeed it is a real demo, put it through its paces. Nesting software usually requires some degree of training and when you're let loose with a demo disk, it is easy to get into trouble. Demo disks also have been prone to crash. At this point you don't know if it was the demo disk or a bug in the real software that crashed. When this happens you are left with an indifferent opinion of the software at best. Some companies offer on-line demonstrations in which you are provided a "live" demo through a modem connection or service provider on the web. These types of demos allow the nesting software company to conduct a live demo, guiding the potential user through the process, allowing him control at any time. You get a good feel for how the software operates in a live mode. Ordinarily, follow up live demos can be provided to help answer additional questions that come to mind after the initial session.

3. Does The Nesting Software Company Create, Distribute & Support The Product?

Dealing with a distributor can be frustrating when your calls go unanswered or the follow up is poor. Distributors make their money by selling and rarely are paid retainers to maintain an existing customer base. In addition, the issue, when answered may require modification or changes in the code. By the time the corporate office technical support staff gets a hold of your issue from the distributor, it could be interpreted very differently and may require follow up back to you through the distributor for further clarification. This inefficiency wastes everyone's time and effort and may risk significant and valuable down time in production.

Purchase the nesting software from a company that creates, distributes and supports the software. Usually they back up their claims with a warranty that guarantees their product for a specified amount of time. Maintenance contracts are offered annually which provide for technical support and upgrades of your licensed product. The nesting software company has a vested interest in keeping you a happy customer and will most often go out of their way to keep you fully satisfied.

How good is the technical support? This is a critical area. Make sure you will be provided unlimited technical support. Don't rely on phone support only; this could have you passing diskettes or e-mail back and forth when production is down. Modem support or support through an

IP address via an Internet connection is vital. During an emergency, even the best technical support personnel may not be able to solve your crisis unless they see it themselves. This is where on-line support comes in handy. Through the use of various software utilities, the nesting software company can connect to your computer and provide a work around, if not a permanent fix to your problem, whether it be an issue with the operation of the software, a nesting concern or a concern with the machine code.

Call the nesting software company's references and ask about the support, among other things. You'll get a good idea of the quality of the service through these references.

Ask the nesting software company if they are involved in any other type of business activity and if so, to what degree. If nesting software is not their prime business, don't expect to be their most important concern.

2. What Improvement In Efficiency Can Be Expected?

Maybe what is more accurate, how do you measure efficiency and can the nesting software company help improve it? Material savings is what often comes to mind when considering efficiency. A small increase in efficiency can yield big material savings over the course of a year. Increased efficiencies will be dictated by part shapes, order quantities, material options and most importantly, how efficient you are now. Is there a lot of room for improvement? If so, make sure your nesting software can provide you the results you desire.

Most nesting software companies do not run more than a handful of algorithms (mathematical equations) during their nesting program to achieve a "best nest" scenario. The top companies run multiple algorithms in the 30 to 60 range, incorporating cost to select the "best nest". These solutions will be the most lucrative

It is important to note that if you are manually nesting now and the nesting software company can't beat your solution, the timesaving involved between the manual and automatic means should be evaluated. This can sometimes be the difference between hours and minutes.

1. What Will Be Your Return On Investment or ROI?

For most fabricators it comes down to price and what they believe they can afford. If you want to save your company money, become more efficient and generate an increase in profits, look at your return on the investment, not just the initial cost of the system.

Think about the long term versus the short term. Will the nesting software company continually improve your investment or are they working on the next sale leaving you in the dust. Quite often that is the only way low-end companies can stay in business. Spending a little more time now may save you from having to buy a new system that better meets yours needs later.

With nesting software, like anything else, you get what you pay for. Do your homework and calculate your savings and how long it will take to pay for the nesting software. Then figure out what type of savings you will generate and how this will impact your bottom line. It is disappointing to hear about a fabricator who purchased a machine tool for hundreds of thousands of dollars, but then decided to go cheap with the software to drive the machine.

Get this list in front of you the next time you are talking to a nesting software company about

purchasing their product, whether at a trade show or on the phone. Better business decisions can be made with the right information.
