

3. “Thermwood Nested Based Systems place fewer technical demands on the cabinetmaker”

Only with Thermwood do you get everything from one company. Software, CNC control, machine, tooling and production supplies.... one source.

This is important because someone has to make all this work together. If you purchase from different sources, this is your responsibility. Few cabinetmakers have the technical depth needed to integrate these diverse technologies. And the technologies are constantly changing.

When you buy from Thermwood, we, and not you, make certain it all works together seamlessly. We have a large technical staff that is constantly checking, evaluating and reevaluating how available technologies can help you be more competitive, more profitable.

We also have a way of providing this technical support to you, whenever you need it, almost instantly. We call it “Virtual Service”.

Press a key on your CNC control and in a minute or so a Thermwood technician shows up on the control screen. You can see and talk to each other, but more importantly, the technician can see inside your control. He can detect problems, incorrect settings, programming errors, improper configurations ... all in a matter of minutes. He can answer questions, provide guidance and even send you video instructions if mechanical adjustments are needed.

If more detailed information is needed, he has access to experts in all aspects of the technologies from vacuum hold down to tool selection, from software operation to programming techniques. It's like having a team of experts right in your plant, but without the high cost.

This is the wonder of modern technology and, again, it is available only from Thermwood because Thermwood is

the only CNC Router company that controls all the technology needed to make this all work.

And, let's admit it, this technology is constantly changing. It's not like purchasing a simple manual machine and then using it for the next twenty years. Modern, competitive technology today is obsolete next year. Commercial CNC controls, used by other router manufacturers, become officially obsolete every few years. Within a year or two of declaring it obsolete, you cannot even buy parts from the original control manufacturer but must rely on third-party support. After all, most control companies get up to half their income replacing their own obsolete controls.

To remain competitive long term, you must constantly upgrade your system. With others, this means scrapping the system every few years and buying a new one...totally impractical. Constantly upgrading is a natural part of working with Thermwood.

Join Thermwood's Advanced Support Program for less than 3% of the system cost per year. You are automatically enrolled for the first year as part of the machine purchase. You get continuous access to Virtual Service, an ongoing warranty on the control system components and an annual update of the CNC system software.

That's right. Each year your system is updated to include the newest technology, wherever it goes. At times you may need to purchase certain hardware upgrades, but these are normally reasonable expenses and overall the program is substantially less costly than living with an obsolete system for years and then replacing the whole thing.

Thermwood is the only CNC Router company with this type of program because Thermwood is the only one that controls all of the technologies. We can make sure your system does not become obsolete.

Thermwood is the best source for Nested Based Systems because you get more value from Thermwood, Rolling Nest technology save you money others can't and we support you with ongoing technology and help.

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Nested Based Manufacturing



“Nested based systems cost less, are more profitable, and...”

“Thermwood is the best source for nested based systems.”

“Why is Nested Based Manufacturing better ?”

There are three basic ways to build cabinets. Traditional manual methods using saws and manual machines, a panel saw and Point to Point machining center or Nested Based Manufacturing using a CNC Router.

Manual methods depend on the skill of the cabinetmaker. Many shops successfully build cabinets this way but few argue that by using modern tools, more quality cabinets can be built at lower cost than even the most skilled cabinetmaker. With two clear choices for a more modern approach, which is best?

Panel Saw/Point to Point is the older technology. It required two machines, a panel saw and a point to point machining center. Sheets of material are cut into rectangular blanks using the panel saw and then the blanks are loaded, one at a time, into a point to point machining center where they are machined into their final shape.

The newer approach, Nested Based Manufacturing, uses a single CNC Router with a table large enough to accommodate the entire sheet. Parts are machined and cut from the sheet material in a single operation. There are many advantages to this approach. It is simpler, faster, requires less machinery and fewer people.

Both approaches use machines with multiple tools and drills

but there are fewer tool changes with Nested Based. Point to point machining centers must machine parts one at a time so every tool required for a part must be accessed for each part. This takes time. In Nested Based, once a tool is accessed, it is used to machine every part on the sheet that uses that tool. Fewer tool changes mean faster per part processing time. It's faster.

With point to point machines, you must load and unload every part, one at a time. You might even be required to change vacuum pod locations for different parts. This takes time and you can make costly mistakes. At best, the operator is tied directly to the machine operation with no free time.

With Nested Based, Universal Vacuum holds the sheet without set up and allows for different sized parts without changes. Just load a sheet, press Start and you have five or six minutes of free time to do other things like sort, edge band assemble or whatever. Parts are being made automatically with no operator intervention.

With a saw/point to point, parts are cut into rectangular blanks before they are machined to final shape. This is fine if all you make is rectangular parts. If you make angled cabinets, corner cabinets or any other product with parts that are not a rectangle, you may waste material. Potentially large areas may be discarded when the final part shape is cut.

With Nested Based, it is possible to interlock odd shaped parts, using the material that would otherwise be scrapped. The interlocked parts can be easily cut with a router but there is no way to cut them out with a saw. Yield is better, sometimes much better.

Nested Based requires less machinery, fewer people, is faster, can improve yield and allows the machine operator time to do other things. In short, "it's better".

“Why Thermwood is the best source for nested based systems?”

Three reasons

1. You get more value for your money
2. Rolling Nest makes it more profitable than other Nested Based systems
3. It makes less technical demand on the cabinetmaker.

Let's look at each of these.

1. More value for your money

The CNC Router comes from Thermwood, the leader in CNC Routers. We have been designing and building CNC Routers longer than anyone else. Much of today's CNC Router technology was first developed by Thermwood. This experience has made us good at what we do and we can give you more machine, more technology at a lower price than anyone else.

We are the only CNC Router Company in the world to build our own CNC Control and also generate the cabinet design software, all integrated seamlessly. With others the control comes from one vendor, the software from another, neither is the CNC Router company. In addition to the obvious problem of trying to connect technical products that you don't understand intimately, there is another major problem with this approach, the software.

Cabinet design software that can run a CNC Router can cost \$10,000, \$20,000 OR MORE, but that's not the worst part. The worst part is that you are not really buying the software. You don't own it even after you pay for it. You are buying a license to use the software and with few exceptions you can't sell the license or transfer it to someone else without permission. Sometimes you pay for that permission, sometimes you can't get it. We use a different approach, eCabinet Systems.

eCabinet Systems is a cooperative with thousands of members. The world class cabinet design software is free. Software development is paid for through voluntary purchases of hardware, tools and components through the program not through high selling prices, annual fees and transfer fees.

With Thermwood 100% of your investment is purchasing tangible assets. Real assets that don't evaporate. Great equipment at aggressive prices.

Rolling Nest Yield Savings Analysis						
(Savings not available from other Nested Based Systems)						
		Average Number of Sheets Per Job: 20				
		Number of Jobs per Week				
Cost/Sheet	Yield Gain	1	2	3	4	5
Annual Yield Savings Only Available from Rolling Nest						
\$10	5%	\$520	\$1,040	\$1,560	\$2,080	\$2,600
	10%	\$1,040	\$2,080	\$3,120	\$4,160	\$5,200
	15%	\$1,560	\$3,120	\$4,680	\$6,240	\$7,800
	20%	\$2,080	\$4,160	\$6,240	\$8,320	\$10,400
\$20	5%	\$1,040	\$2,080	\$3,120	\$4,160	\$5,200
	10%	\$2,080	\$4,160	\$6,240	\$8,320	\$10,400
	15%	\$3,120	\$6,240	\$9,360	\$12,480	\$15,600
	20%	\$4,160	\$8,320	\$12,480	\$16,640	\$20,800
\$30	5%	\$1,560	\$3,120	\$4,680	\$6,240	\$7,800
	10%	\$3,120	\$6,240	\$9,360	\$12,480	\$15,600
	15%	\$4,680	\$9,360	\$14,040	\$18,720	\$23,400
	20%	\$6,240	\$12,480	\$18,720	\$24,960	\$31,200
\$40	5%	\$2,080	\$4,160	\$6,240	\$8,320	\$10,400
	10%	\$4,160	\$8,320	\$12,480	\$16,640	\$20,800
	15%	\$6,240	\$12,480	\$18,720	\$24,960	\$31,200
	20%	\$8,320	\$16,640	\$24,960	\$33,280	\$41,600
\$50	5%	\$2,600	\$5,200	\$7,800	\$10,400	\$13,000
	10%	\$5,200	\$10,400	\$15,600	\$20,800	\$26,000
	15%	\$7,800	\$15,600	\$23,400	\$31,200	\$39,000
	20%	\$10,400	\$20,800	\$31,200	\$41,600	\$52,000
\$60	5%	\$3,120	\$6,240	\$9,360	\$12,480	\$15,600
	10%	\$6,240	\$12,480	\$18,720	\$24,960	\$31,200
	15%	\$9,360	\$18,720	\$28,080	\$37,440	\$46,800
	20%	\$12,480	\$24,960	\$37,440	\$49,920	\$62,400
\$70	5%	\$3,640	\$7,280	\$10,920	\$14,560	\$18,200
	10%	\$7,280	\$14,560	\$21,840	\$29,120	\$36,400
	15%	\$10,920	\$21,840	\$32,760	\$43,680	\$54,600
	20%	\$14,560	\$29,120	\$43,680	\$58,240	\$72,800

2. “Rolling Nest makes Thermwood’s Nested Based more profitable than others”



We have already talked about interlocking odd shaped parts but there is something else that can be even more important. In each job you will have one, two, three or more partial sheets of material left over. Your nest didn't completely use every sheet. It's normal.

This material represents real money if you could only find some way to use it. Commercial software packages provide a technique for inputting the shape of these pieces so they can be used. By the time you gather and input this data and then communicate to the operator which pieces to use and then try and find the exact sheet when you are ready to run, it is easy to waste more time than the material is worth. Most just discard it.

The key to using this material is to create the nest at the machine control rather than in the office. We call this Rolling Nest.

When a job is run, a bar code is printed for each the extra pieces or drops. When another job is run that uses this material, scan the bar code and the drop is used. Simple, easy, fast and profitable.

Yield improvements depend on the type of product and the particular job. Actual money savings can be significant. Depending on material cost, the number of jobs and the yield improvement, it is possible to pay some or even all the machine payments.

Rolling Nest technology is only possible when one company understands and controls all the technology, both software and control. This simple idea requires a deep integration between the two, but it offers savings, perhaps significant savings, not available from others.

Nested Base requires fewer people and the Savings, even after paying for the machine, can be substantial.

Operation of Panel Saw/Point to Point

- Deliver material to panel saw
Cut parts
- Move material to Edge Bander
Edge Band
- Move parts to Point to Point
Machine parts one at a time
Possibly change machine setup
between parts
- Move parts to Assembly
- Assemble

Requires 4 to 5 people

Operation of Nested Based System

- Deliver material to CNC Router
Machine Sheets (Edge banding
may be done by the person operating
the CNC Router)
- Move parts to Assembly
- Assemble

Requires 2 to 3 people

Cost Savings after paying for the machine						
# hours per year 2,000		Monthly Lease Payment for Thermwood System \$2,200				
Cost of employee		Number of employees saved				
\$/hr	25% added employment cost	1	2	3	4	5
		Savings AFTER Paying for the Machine				
\$8	\$10.00	-\$6,400	\$13,600	\$33,600	\$53,600	\$73,600
\$10	\$12.50	-\$1,400	\$23,600	\$48,600	\$73,600	\$98,600
\$12	\$15.00	\$3,600	\$33,600	\$63,600	\$93,600	\$123,600
\$13	\$16.25	\$6,100	\$38,600	\$71,100	\$103,600	\$136,100
\$14	\$17.50	\$8,600	\$43,600	\$78,600	\$113,600	\$148,600
\$15	\$18.75	\$11,100	\$48,600	\$86,100	\$123,600	\$161,100
\$16	\$20.00	\$13,600	\$53,600	\$93,600	\$133,600	\$173,600
\$17	\$21.25	\$16,100	\$58,600	\$101,100	\$143,600	\$186,100
\$18	\$22.50	\$18,600	\$63,600	\$108,600	\$153,600	\$198,600
\$19	\$23.75	\$21,100	\$68,600	\$116,100	\$163,600	\$211,100
\$20	\$25.00	\$23,600	\$73,600	\$123,600	\$173,600	\$223,600

Based on an approximate \$100,000 Thermwood Nested Based System