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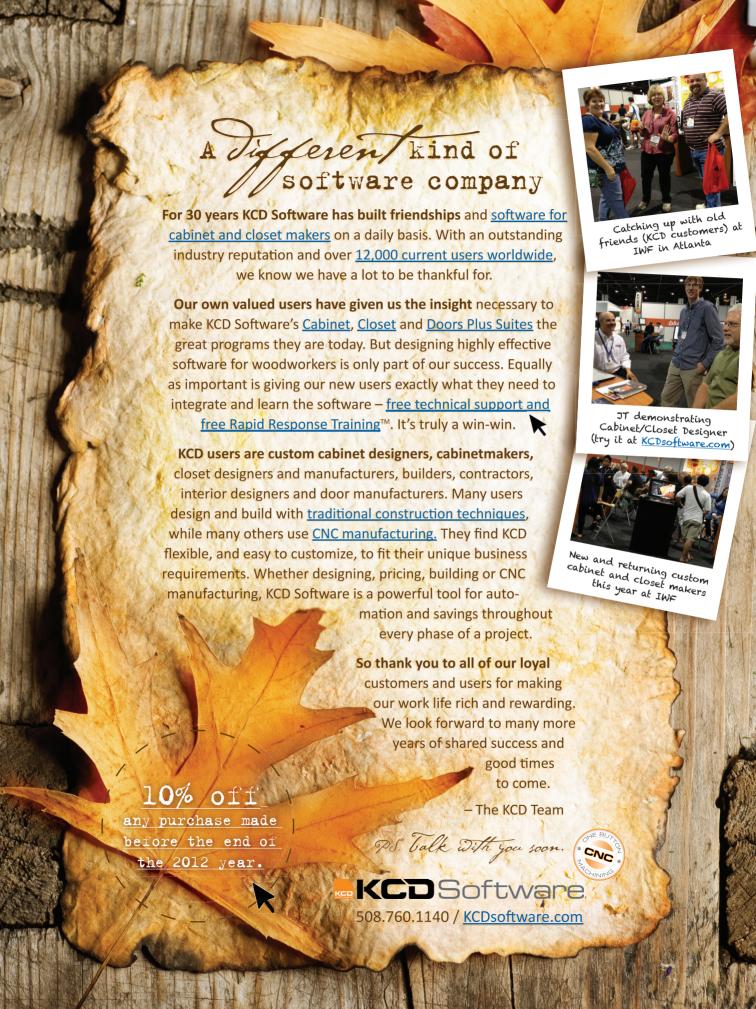
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12" JOINTER/PLANER COMBINATION MACHINE

8" X 76" JOINTERS

- Motor: 5 HP, 220V, single-phase, 3450 RPM
- Jointer table size: 14" x 591/2"
- Max. depth of cut: 1/8"
- Max. width of cut: 12"
- Bevel jointing: 0° 45°
- Planer feed rate: 22 FPM
- Planer table size: 12½" x 23½"
- Cutterhead speed: 5034 RPM
- · Approx. shipping weight: 704 lbs.

POLAR BEAR SERIES - SPIRAL CUTTERHEAD

G0634XP \$219500 SALE \$215000

MADE IN TAIWAN



NEW END MOUNTING **FENCE** INCLUDES FREE SAFETY PUSH BLOCKS

\$150 T

12" X 60" SHORT BED JOINTER WITH SPIRAL CUTTERHEAD

MADE IN

ISO 9001

Motor: 3 HP, 220V, single-phase, TEFC

• Precision ground cast iron table size: 13" x 60 Max. depth of cut: 3/8"

Bevel jointing: 45° - 90° - 135°

• Cutterhead speed: 4950 RPM

• 4 row spiral cutterhead w/ 60 FACTORY indexable solid carbide inserts

 Approx. shipping weight: 834 lbs. PARALLELOGRAM

G0706 TABLE ADJUSTMENT ONLY \$249500

G070 179

INCLUDES

FREE SAFETY

PUSH BLOCKS

PEDESTAL MOUNTED

MAGNETIC

SAFETY SWITCH

- Motor: 3 HP, 220V, single-phase, TEFC, 3450 RPM
- Precision around cast iron table size: 8" x 765/16" Infeed table size: 8" x 76"
- Cutterhead knives (G0490): 4 HSS, 8" x ¾" x 1/8"
- Cutterhead speed: 5350 RPM
- Cutterhead dia.: 3³/₁₆"
- Max. depth of cut: 1/8"
- Max. rabbeting depth: ½"
- · Approx. shipping weight: 564 lbs

G0490 \$94500 SALE \$**850**⁵⁰

WITH SPIRAL CUTTERHEAD

G0490X \$125000 SALE \$112500

INCLUDES FREE SAFETY





\$150 T

12" X 831/6" PARALLELOGRAM JOINTERS

- Motor: 3 HP, 220V, single-phase Precision around cast iron table
- size: 123/4" x 831/2" Cutterhead speed: 4950 RPM
- Max. depth of cut: 1/8"
- Max. rabbeting capacity: 3/4"
- Approx. shipping weight:

1059 lbs.

HANDLES FOLD IN FOR ADDED SAFETY

INCLUDES

FREE SAFETY

PUSH BLOCKS

G0609 ONLY \$199500

WITH SPIRAL CUTTERHEAD

G0609X ONLY \$249500

THE ULTIMATE 16" EXTREME SERIES® JOINTERS MADE IN

20" PLANERS

SERIES

- · Motor: 5 HP, 220V, single-phase or 3-phase, TEFC
- Precision ground cast iron table size: 16¼" x 99¼" • Center mounted fence: 65/8" x 431/4"
- Max. depth of cut: 5/16"
- Bevel iointing: 0° 45°
- Cutterhead speed: 5000 RPM
- · Cutterhead dia.: 4"
- · Approx. shipping weight: 1719 lbs

· Motor: 5 HP, 220V, single-phase

Precision ground cast iron table size:

20" x 25¾" (20" x 55½" w/ extension)

G0454Z \$249500 SALE \$224550

SINGLE-PHASE, SPIRAL CUTTERHEAD G9953ZX ONLY \$649500 3-PHASE, SPIRAL CUTTERHEAD

Max. cutting height: 8"

Max. cutting depth: 1/8"

Cutterhead dia.: 31/81

G0454 \$157500

SALE \$1417⁵⁰ WITH SPIRAL CUTTERHEAD

Feed rate: 16 & 20 FPM

Cutterhead speed: 5000 RPM

· Approx. shipping weight: 920 lbs.

G9953ZXF ONLY \$649500



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BUILT-IN

ISO 9001

FACTORY!

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- Precision ground cast iron tables & extension wings
- Table size: 15" x 20"
- Max. cutting height: 8"
- Feed rate: 16 & 30 FPM
- Cutterhead speed: 5000 RPM Magnetic safety switch
- Approx. shipping weight: 675 lbs



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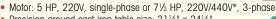
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G0453Z \$165000 SALE \$148500

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MADE IN TAIWAN

FEED ROLLERS!



- Precision ground cast iron table size: 31 1/8" x 24 1/8"
- Feed motor: 2 HP
- Max. cutting height: 8"
- Max. cutting depth: 1/8"
- Feed rate: 17 26 FPM
- · Cutterhead knives: 4 HSS
- Cutterhead speed: 5200 RPM
- Approx. shipping weight: 1126 lbs.

5 HP. SINGLE-PHASE

G5851Z \$499500 SALE \$475000



G7213Z \$499500 SALE \$475000







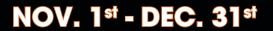
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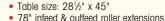
Motor: 15 HP, 220V/440V*, 3-phase, TEFC

MADE IN TAIWAN

 Motor: 10 HP, 220V/ 440V*. 3-phase, TEFC

G0502 18" CUT-OFF SAW

ONLY 4295⁰⁰



 Max. cutting capacity: 2" x 21", 4" x 19", 6" x 15" & 8" x 8" · Approx. shipping weight: 1668 lbs.

• Table size: 26" x 27" • 78" infeed & outfeed roller extensions

 Blade size: 20", 22" & 24" dia. Arbor: 1"

Width w/extension rollers: 184½"

• Blade size: 18"

Arbor size: 1"

Max. cutting capacity: 2" x 12", 3" x 11" & 4" x 10"

Max. cutting speed: 81 SPM

· Approx. shipping weight: 1029 lbs.



"JUMPS" UP TO CUT OFF WOOD

INDEPENDENT MOTOR SWITCHES



MADE IN TAIWAN

12" SLIDING TABLE SAW

WITH SEPARATE SCORING BLADE MOTOR

Main motor: 7½ HP, 220V/440V*, 3-phase, TEFC
 Scoring motor: 1 HP, 220V/440V*, 3-phase, TEFC

Main blade arbor: 1" • Main blade arbor speed: 4000 RPM
Main blade tilt: 0-45° • Depth of cut: 35/16" @ 90°, 23/8" @ 45°

Scoring blade size: 4³/₄"

 Scoring blade arbor: 20mm Scoring blade arbor speed: 8000 RPM

Scoring blade tilt: 0-45°

Sliding table size: 126" x 13¾"

• Approx. shipping weight: 1468 lbs. G0699 \$5995 SALE \$549500



98" CROSS CUT

MADE IN GERMANY 12" SLIDING TABLE SAW

• Main motor: 61/2 HP, 220V, 3-phase

Scoring blade motor: 1 HP, 220V, single phase

• Main blade arbor: 30mm • Main blade speed: 4000 RPM

Main blade tilt: 0-45°
 Depth of cut: 41/4" @ 90°, 3" @ 45°

Scoring blade size: 4¾" (120mm)

 Scoring blade arbor: 20mm

Scoring blade tilt: 0-45

 Sliding table size: 121/4" x 126"

Max. rip capacity: 52"

· Length of cross cut: 124"

Approx. shipping wt.: 1552 lbs

MADE IN TAIWAN 14" SLIDING TABLE SAW

Main motor: 10 HP, 220V/440V*, 3-phase
 Scoring motor: 1 HP

Precision ground cast iron main table size: 39½" x 24"

• Durable aluminum sliding table size: 98" x 133/4"

& 41/2" DEPTH OF CUT! • Main blade tilt: 0 - 45° • Main blade arbor: 1" Main blade speed: 4200 RPM
 Depth of cut: 4½"
 90°, 3½"
 45°

• Scoring blade size: 43/4" (120mm)

 Scoring blade tilt: 0 - 45° Scoring blade arbor: 7/8" (22mm)

 Approx. shipping weight: 1680 lbs.



G0451 5995 SALE 5679500

14" SLIDING TABLE SAW

G0674 \$799500 SALE \$759500

Main motor: 10 HP, 220V/440V*, 3-phase

Scoring motor: 1 HP, 220V/440V*, 3-phase
Main blade arbor: 1" • Main blade till: 0-45°

 Main blade speed: 4000. 5000, & 6000 RPM

Depth of cut: 41/8" @ 90° 21/8" @ 45°

Scoring blade size: 43/41

Scoring blade tilt: 0-45°

Sliding table size: 13¾" x 126"

Max. rip capacity: 48½"

Length of cross cut: 123"

Approx. shipping wt.: 1928 lbs.

MADE IN TAIWAN



\$769500 H7833 OPTIONAL FULLY ENCLOSED BLADE COVER

14" INDUSTRIAL-DUTY SLIDING TABLE SAW

 Main motor: 10 HP, 220V/440V*, 3-phase Scoring motor: 1 HP, 220V/440V*, 3-phase Main blade tilt: 0-45°

 Main blade speed: 3000, 4000, 5000, & 6000 RPM Depth of cut: 4"

@ 90°, 2¾" at 45° Scoring blade size: 4¾¹ Scoring blade tilt: 0-45°

 Scoring blade speed: 8000 RPM OVER 10' OF SLIDE TRAVEL & Sliding table size: 15" x 120"

 Max. rip capacity: 52½" · Approx. shipping weight: 2873 lbs.

FOR ACCURATE POSITIONING & EXACTING SPEEDS!

OVER 52" OF CUTTI WIDTH G0501 \$1150000

355 SALE \$10.500°

MADE IN TAIWAN STRAIGHT LINE RIP SAW

PROVIDES SMOOTH FEEDING Main motor: 15 HP, 220V/440V*, 3-phase
Feed motor: 2 HP, 220V/440V*, 3-phase

Table size: 53" x 37"

SALE \$799500 =

 Max. cutting thickness: 3-7/8" Min. cutting length: 8" (with

included hold-down roller kit) Variable feed speed: 30-112 FPM

Max. saw blade dia.: 10"-12"

Max. dist. blade to column: 18"

 Approx. shipping weight: 2243 lbs. G0524 \$25000



H5749

OPTIONAL

EXPRES





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CCI Vol. 26 No. 11

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Video: CNC machining parts at CedarWorks

A CNC operator combines CNC machining and hand routing to save time in processing parts at CedarWorks' plant in Rockland, Me. www.CabinetMakerFDM.com/87397.html



Video: Reviewing RoboReel

Will Sampson tries out a sophisticated power cord reel system. www.CabinetMakerFDM.com/87400.html



SawdustSoup: Charging for plans

Read a discussion about issues related to charging design fees. www.SawdustSoup.com/forum/topics/charging-for-plans



Webinars: Free online wood technology seminars

See archived free online seminars on technology, CMA certification, software, finishing, industry forecasts and more. www.CabinetMakerFDM.com/webinars.aspx



Video: Cameron flooring nester See the Cameron flooring nester organize flooring pieces at Heister House Millwork. www.CabinetMakerFDM.com/87356.html





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Corporate headquarters CCI Media LLC

P.O. Box 470, Fort Atkinson, WI 53538 414 807 3540

Publisher/President Tim Fixmer tim.fixmer@ccimedia.net 414 807 3540

Editorial Team

Magazine Editor William Sampson will.sampson@ccimedia.net 203 270 0025

Online Editor Karl D. Forth karl.forth@ccimedia.net 815 966 5416

Copy Desk Team

Managing Content Editor Tara Leitner

Community Manager/ SEO Editor Kathleen McLaughlin

Contributing Editor, Daily Brief Rachael Turski

Contributing Writers Jim Lewis, Art Raymond, Gero Sassenberg, Gene Wengert

Art/Production Team

Senior Art Director Elizabeth Crosby

Production Director Bill Spranger bspranger@wattnet.net 815 966 5428

Advertising Production Coordinator Connie Miller

Sales Team

Market Manager Rob Roszell New England, Mid-Atlantic, Southeast, E. Canada rob.roszell@ccimedia.net 919 967 0460

Regional Manager Lee Kulbarsh West, Southwest, Midwest

lee.kulbarsh@ccimedia.net 760 720 0333

Sales Associate Ginny Stadel, Classified gstadel@wattnet.net 815 966 5591

Europe Sales Anthony Rochman anthonyrochman@btinternet.com +44 208 880 8485

Taiwan, Hong Kong, China Sales Robert Yu sales@wwstaiwan.com 886 4 2325 1784

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Going green is good business

The numbers of woodworking businesses that actively attempt to be environmentally responsive and to promote that for business is still small, but it is growing. Most of the folks who hesitate to jump on the green bandwagon typically raise concerns about the cost of going green and fears that customers won't be willing to pay the price. But most of that is short-sighted thinking.

Let's put green thinking into different terms. What about running your business more efficiently with less waste? That's something every business owner agrees with. Well, that's green. One of the most important principles of lean manufacturing is the elimination of muda, the Japanese term for waste. By practicing green principles of creating less waste, recycling or repurposing the waste that you do create, and choosing materials, supplies and practices that lead to less waste, you can be environmentally response and add to your business efficiency.

Another area that many shops balk at is paying more for environmentally friendly materials such as no-added-formaldehyde sheet goods and low-VOC finishes. But what is the real cost here, and what is the potential value as perceived by customers? Do the math. Calculate how much more it really would cost to add eco-friendly materials to a specific proiect. Take a high-end custom kitchen project, for example. The information I have is that we are talking about an increased real costs of only hundreds of dollars in a project that will be sold for tens of thousands of dollars. Isn't the marketing value to close a sale worth that?

Which brings us to a repeated complaint I hear: "My customers don't ask for green." There are two kinds of customers these days, the ones who want eco-friendly products and are willing to pay for them, and the customers who think going green is nice, but don't want to pay. (Oh, I suppose there are a few customers who for



some reason oppose green on some kind of principle, but I've yet to meet one.) So, aren't you ahead of the game by including environmental value as part of the rest of the value you sell to your customer? Isn't this yet another way to differentiate your products from the competition? Doesn't that mean more sales? Successful entrepreneurs don't wait until customers ask for something to supply a new product; they think of a product that fills a need and then sell it to customers. Nobody asked for an iPod before Apple invented it.

Take a hard look at your business, every part of it, and see where you can cut waste, be more efficient, and adopt ecofriendly practices. Then don't be shy about telling your customers what you are doing. You'll be surprised how much green you can make and save by going green. <



What's new and what's next

Technology marches on whether times are good or bad, a point made by many. Whether the economy is strong or not there are new developments that any company, large or small, needs to be aware of.

According to IWF, verified buyer attendance for the exhibition was 13,002. Overall attendance, including about 8,000 exhibitor and other personnel, reportedly topped

Registered attendees came from 60 countries, and China sent a special delegation. In 2010, verified buyer attendance was 11,425. That's a pretty good increase.

There was not a discouraging word to be heard from exhibitors I talked to. This group is usually more than willing to share complaints if they feel that traffic isn't what they want it to be.

We also were able to organize a lunch of some of our readers and they provided interesting views on the challenges facing wood products manufacturers today.

The show itself is a good indication of the direction of the

wood products industry. A stronger industry leads to a stronger show,

Speaking of new technology, the Challengers Awards are a great place to start.

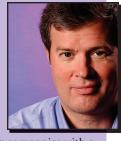
which in turn helps the industry.

We saw all of the winners firsthand, and wanted to see all of the finalists but ran out of time.

We've included a listing of the winning companies with a brief description of each in this issue.

"Industry professionals wanted to see what's new and what's next for the industry," said Michael Burdis, IWF 2012 chairman and president of James L. Taylor Mfg. Co. "The future of the industry was showcased at IWF with over 850

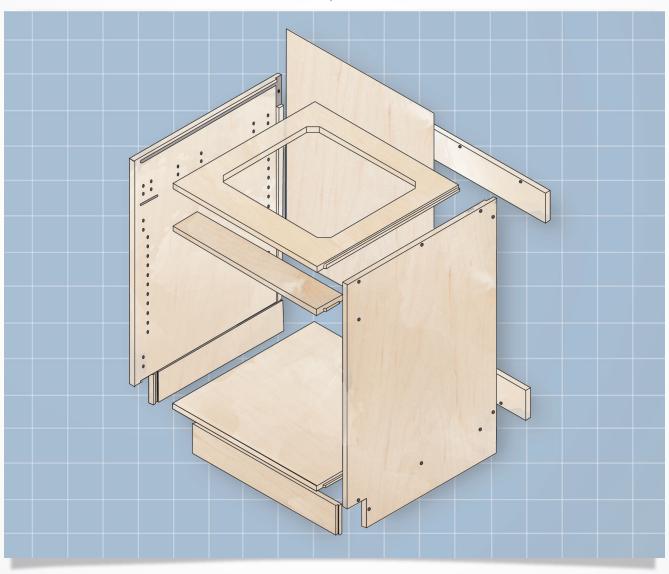
This year is winding up, but there are plenty of opportunities to see new technology in 2013. The main attraction will be AWFS in Las Vegas July 24-27. Don't be left behind.



by Karl D. Forth

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QUICK CUTS

AWFS to rename, rebrand Sequoia New **Product Awards**

The Association of Woodworking & Furnishings Suppliers has announced it is renaming and rebranding the Sequoia New Product Awards to the AWFS Visionary Awards.

According to Angelo Gangone, Executive Vice President, AWFS: "We decided to change the name to better reflect what the award truly represents, and that is the new products and solutions that our exhibitors will offer their customers in order to improve their top and bottom lines and make them more responsive to their customer's needs."

AWFS will change how the awards will be judged, selecting finalists prior to the show by a volunteer panel. Contact Angelo Gangone at Angelo@awfs.org or 323.838.9440 for more information.

Arauco, Flakeboard finalize June Flakeboard purchase agreement

Arauco and Flakeboard Co. Ltd. have announced that they have finalized the sale agreement for all outstanding Flakeboard shares to Arauco. The agreement was originally announced in June.

Following this purchase Arauco will combine its particleboard and MDF plant in Moncure, N.C., with Flakeboard's seven North American operating facilities, making Arauco the largest producer of MDF, particleboard, hardboard, and thermally fused melamine panels in the Americas.

The eight North American locations will operate under the Flakeboard name and its existing senior management. Kelly Shotbolt will be retained as head of Flakeboard North America.

Arauco CEO Matias Domeyko said, "Building on Arauco's stability and stature as a global leader in sustainable forest products, we expect great things to result from the blending of the talents, technology, and market leadership of these two companies.

"Our combined strengths will enable us to continue our commitment to delivering our customers the responsibly produced, high-quality, innovative products they need in order to thrive in this ever-changing marketplace."

Arauco is headquartered in Santiago, Chile, and North American headquarters is at 5901B Peachtree Dunwoody Rd. NE, Suite 500, Atlanta, GA 30328. Phone: 770.350.1610, www.arauco-usa.com.









Finding the reason for glue line failure

Avoiding cupping; using a desuperheater.

We have just had two panels of cedar with glue line failure. Normally, we have excellent results. We are using a two-part cross-linking PVA emulsion adhesive with a catalyst. We are checking the glue edges for squareness and flatness; we are positive that we have a good, even glue spread; we are keeping the open time to less than ten minutes; we are making sure we have a four-hour clamp time; and we do not machine for 24 hours. Our press has manual pressure. What should we be looking for?

It is hard to diagnose a problem like •yours in which you have already done an excellent job of assuring good joints. So, we need to look for something unusual which is hard to do without being there. Here are three possibilities.

First, one reason is that the edges were old and had aged a bit (contaminated perhaps with cedar oils or dust or oxygen, etc.), making them less receptive for gluing. As you are probably aware, the joint strength should be 1-1/2 times stronger than wood, so normally a slight bit of aging will not cause a problem; perhaps your edges were a bit older than normal.

Second, one rare reason would be that the pressure drops slightly after initial pressure application. Because the initial momentary application of higher pressure squeezed out the glue, then when the pressure drops and the joint opens a tiny bit, there is a starved, weak joint. It might be worth checking to see if a pressure drop is possible, but only rarely.

A final possibility is that the temperature of the wood or adhesive was quite

Want more? To search a full list of **Wood Doctor's Rx question** and answers, go to

www.CabinetMakerFDM.com

cool or exceptionally hot. Temperature does affect glue bonding, so uniform temperatures from day to day are important. Many operations will keep glue in a room with a constant temperature, year round.

In all the years that I have been a consultant, I have had only two cases where the adhesive itself was the issue, so there is no need to change adhesive brands or types as almost all the time you have no problems. I also assume that the catalyst was properly mixed. Let me know what you find.

Is it possible to kiln dry freshly sawn, very wide (16 - 18 inch), 1-inch thick white pine lumber with minimal cupping? By minimal I mean, I want to be able to plane the wide boards down to 3/4 or 5/8 after it's dried to 6 percent.

Cupping is a natural tendency of • the wood. The side of a piece of lumber closest to the bark will shrink a bit more than the other side, causing cup. This difference cannot be well controlled by changes in drying procedures, although slow drying and rewetting partially dried lumber will increase the amount of cup. The closer the piece is to the center of the tree (closer than about 8 inches is where the cup begins), the more cupping we will see. A piece really close to the center is nearly 100 percent likely to cup. Unfortunately, wide pieces almost always come from near the center



of the tree. White pine is a low shrinking species, so cup will not be really large. So, with fast drying (which gets dry fibers on the outside which are twice as strong as wet fibers) will give you the best chance, but your chances of perfectly flat lumber are not really high.

If you rip the piece down the middle and then dry the two pieces and glue them back together, the two matching pieces, minus the small amount of saw kerf can be flat and look as through they are one piece.

We use steam in several processes, including the kilns. The new boiler supervisor mentioned that we needed a desuperheater as the steam was too hot after the steam goes through a pressure reducer. What is a desuperheater and why is the steam too hot?

First, your new boiler person is indeed alert to a fact that many people overlook. When steam, let's say 50 psi, is first made in the boiler, it has a temperature of about 300F. Now, when the steam goes through a pressure reducer valve, the pressure does indeed drop, let's say to 10 psi. If you had a boiler operating at 10 psi, the steam would be at 240F. However, when you drop the pressure of 50 psi, 400F steam to 10 psi, all the heat is still there. This extra heat, called superheat, means that you have 10 psi steam at 400F. This is dry steam, rather than saturated. So, what is sometimes done is that this hot steam is bubbled up through water. The heat will actually boil the water and make steam until 240F is reached. Now you have 10 psi steam at 240F; now the steam is wet

steam. Wet steam heats more uniformly, faster, and more efficiently. The vessel (often only 10 inches in diameter and 3 feet long) with fresh water continually being added to make sure that it does not run dry is called a desuperheater.

I just bought some lumber from a small mill and they were not certain but thought it was honey locust, but it might be elm. Any ideas how to separate the two?

Honey locust and black locust • (unrelated species actually) both will fluoresce a bright yellow color when exposed to blacklight. Elm, hackberry, oak and most other common woods will not show any response. We will see fluorescence in rare species like pawpaw, redbud, Kentucky coffeetree, sweetbay and sumac. You can get safe backlight bulbs at hardware stores.

Wet steam heats more uniformly, faster, and more efficiently.

I am curious...how many wood cells are in a cubic inch of wood?

The typical cell is about 1/1000 of an inch in diameter and 1/10 of an inch long. The cells are hollow tubes. The cell wall is actually 1-1/2 times heavier than water, but it is the hollow, air-filled spaces that make wood float. There are a few species of wood, such as ipe or Brazilian cherry, that are so dense (thick walls and very little hollow space) that do

Gene Wengert, "The Wood Doctor," has been training people in efficient use of wood for 35 years. He is extension specialist emeritus at the University of Wisconsin-Madison.

not float. There are also bacteria that can get in the base of a living tree and these bacteria eliminate the air and fill the hollow space with water so that the bottom log from that tree will not float. In fact, it is these bacterially infected logs that are on the bottom of lakes, ponds and rivers and are sometimes logged today

after 100 years under water. The bacteria make wood smell, make wood quite weak and can discolor the wood too. so such sunken logs may have quality issues for some products. (I digress--at my age, you either preach or reminisce.) The answer is: about 4 million, give or take, depending on species. <



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Getting work in progress under control



Applying 5S techniques to WIP can yield dramatic results.

My trip to Atlanta in August took me through Franklin, Ky., so I visited with the vice president of a company that started its lean journey three years ago. This company is a Japanese-owned auto parts supplier that had been in the United States for about seven years before the VP contacted me to conduct an assessment and launch the subsequent lean transformation project. During the initial 84 months of their start-up here, the company had made a profit only one month. Within two months of launching the lean initiative the company turned a profit and has been profitable ever since. Their transformation was extraordinary, but they had extraordinary leadership and an extraordinary staff who enthusiastically embraced lean.

Ron, the vice president, proudly reported that they continue to make significant strides in throughput, workin-process reduction, and connecting internal customers and suppliers to create flow. At the start of their journey, the staff was working an average of 60 hours a week. On-time delivery was achieved only through an excessive amount of work-in-process, a large finished goods inventory, and a lot of overtime. The factory operated 24/6 so growth opportunities were limited. Ron told me the plant now produces the same volume on two 40-hour shifts, and work-in-process is less than half.

Getting WIP under control

I preempted this article with that update because I want to focus on work-in-



The best way to see if there is a problem with work in progress is by simply to observe and absorb how all of the processes are interacting on the shop floor or gemba, as the Japanese call it.

process (WIP). Getting WIP under control reduces chaos in the plant, and frees up financial resources so they can be used for growth opportunities. Another plus through WIP reduction is better space utilization for current operations. Freeing space of unnecessary work-in-process allows internal customers and suppliers to become closely connected thus creating smooth, continuous flow, Smooth, continuous flow reduces lead-time, enhances quality, reduces operating cost, and improves cash flow, which are all objectives that managers and business owners in every industry are striving to achieve.

The accompanying pictures illustrate a common issue that the staff deals with when processes are congested with excess WIP. Note how the assembly person has to maneuver the tall cabinet around partially completed units until he can find a temporary location for it to wait for the next process. All of this takes time and consumes resources (people, space, time, personal energy) that could better be utilized completing units that can immediately be delivered to the consumer.

Moving product around stacks of other product waiting in queue increases the risk of damage or loss. Believe it or not, excess WIP can swallow up unsuspecting product and send it into a black hole never to be found until after it has already been produced again. I suspect that some of the items on your company's proverbial hot list are victims of the black hole theory.

Observing and learning

How can you tell when a process is accumulating too much WIP? The best method is by simply going to gemba to observe and absorb how all of the processes are interacting. Gemba is a Japanese word meaning, "where the work gets done." Go to the production floor, find a spot where you can observe internal customer/supplier relationships, and watch and absorb. Note the frequency of incoming work versus outgoing. Also note how incoming work is arranged. Is work accumulating faster than it is being flushed through a process?

Is new work being placed in front of existing work causing the internal cus-

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Every time a product is moved without any value-adding process taking place, that is waste.

tomer to have to move unnecessary to get the work that should be processed next? If work is processed using the last-in-first-out method, older work will continue to age and ultimately wind up on the hot list, which creates more chaos and confusion as people search to find the required parts.

When you are in gemba, pay attention to the material movements that take place between internal customers and suppliers. Every time a product is moved without any value-adding process taking place, that is waste. The more material movement, the more waste. Ridding processes of waste is the fundamental reason why most companies embark on the lean journey so it stands to reason that if you reduce WIP you will reduce waste, increase product velocity, and increase profit.

Apply 5S to WIP

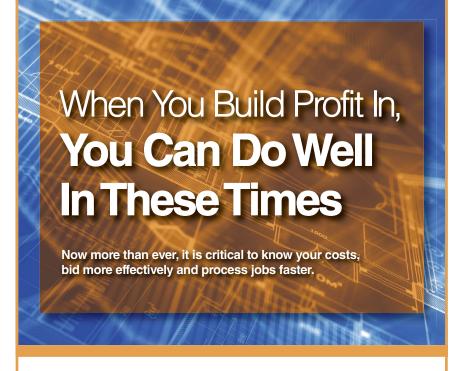
How can you decrease WIP and create flow? The best way to get started is to apply Extreme 5S thinking to WIP by:

- Sort the existing WIP. Separate the product by priority of completion date or promised date to the customer. Remove product that is no longer required due to canceled or changed orders.
- Set-in-Order the remaining WIP. Organize the product by completion date or promised date to the customer so first-in-first-out (FIFO) processing will be possible for all future product. Designate

locations for incoming and outgoing product and define the maximum number of loads that should be in queue at processes that cannot be connected to create continuous flow. When the maximum number of loads has been reached. the internal supplier should cease operations because any further work

- will exceed space allocations and add to the chaos. The internal supplier can be utilized in other areas that add value.
- > Shine the remaining WIP. Check the WIP for damage and to ensure only product of acceptable quality criteria will proceed through the balance of the process steps.







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> Standardize how future WIP will be processed. Establish procedures for material handlers (if used), organize the work area to accommodate FIFO processing, and, as stated above, limit the number of locations



Note how the assembly person has to maneuver the tall cabinet around partially completed units until he can find a temporary location for the tall cabinet to wait in line for the next process.



Excess WIP can swallow up unsuspecting product and send it into a black hole never to be found until after it has already been produced again.

for staging work from the internal supplier.

> Sustain the new process. Continually review customer demand, adjust takt time as necessary, determine customer/supplier capacities, and rebalance work requirements between process steps to create smooth, continuous flow. Getting control of WIP is not an insurmountable task, but it does require a well-defined plan that starts with a visit to gemba so you will best understand the current situation. If you are unsure of how to develop an executable plan, check CabinetMaker+FDM archives for articles on the Tactical Planning Tool or contact me directly. Next time we will look at applying Extreme 5S thinking to developing a marketing strategy. <

Jim Lewis has worked in the furniture industry for more than 30 years with a special emphasis on facilitating the transformation to the Lean Business Philosophy. He is an independent lean business consultant, author, and writer. Jim's most recent book, "Story of a Lean Journey," chronicles the journey of one company through the lean transformation process. The book is available through the Society of Manufacturing Engineers (SME. org), and amazon.com



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The land of speculation

One of the earliest financial scandals in the United States took place more than 200 years ago. The scandal developed around a pyramid scheme built on real estate speculation and questionable paper money, and led to the first bank collapse in the U.S. in 1809.

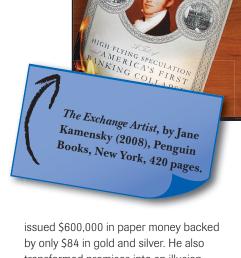
The Exchange Artist: A Tale of High-Flying Speculation and America's First Banking Collapse, by Jane Kamensky, describes what happened This is the story of Andrew Dexter, Jr., a speculator and financier in the early days of the United States. And while this was America's first banking collapse, one of the lessons of the book is that we haven't seen the last.

Much of the story involves Dexter's attempt to build a large commercial building in central Boston, and how he paid for it with paper money. Dexter financed the Exchange Coffee House, at the time the tallest building in Boston, with worthless paper money from regional out-of-town banks that he himself controlled.

The building was built, but the expected tenants and related business never materialized to the point where the project could have made money. In fact, even if everything had gone as expected it would have been difficult to pay all the bills. (The Exchange Coffee House later burned down in 1818.)

One of biggest problems was paper money. Banks issued paper "promises to pay" that often had little or no value. Artisans and workers received these paper notes for jobs performed and often weren't really paid.

Bank notes were money, but they were not legal tender and no one had to accept them. One of Dexter's banks



issued \$600,000 in paper money backed by only \$84 in gold and silver. He also transformed promises into an illusion of success. These "promises to pay" were issued on small out-of-town banks in places that were at that time fairly remote, like Albany and Detroit.

After the scandal broke and no one would take the paper money, Dexter had to leave Boston. He traveled all the way to what is now Alabama, and had a role in founding the city of Montgomery. He was involved in real estate speculation here also, on what at the time was the edge of civilization.

One of the lessons of the book was that these kind of financial scandals often don't begin with intent to commit fraud. But Dexter built a financial house of cards that could only be sustained by fraud. In the end even fraud couldn't create enough fraudulent bank notes to pay all of the bills.

Another lesson is that there have been all kinds of collapses, reversals and scandals in the past 200 years. We have not seen the last financial scandal. In fact, it's probably underway now. That's something every person in business should keep in mind.



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Flooring nester boosts shipment consistency

Machine packages consistent sizes of flooring for installers and end users.

Product quality is an important part of Heister House Millworks, and a new type of machine allows them to deliver consistent quantities of a product in which that consistency is difficult to achieve.

"Our overall level of product quality is excellent," says general manager Jeff Hunt. "We don't have a lot of callbacks and complaints. That has been our reputation. Coupled with that is a willingness to say yes to the customer."

The new technology is the Cameron Flooring Nester from James L. Taylor Mfg. Co. Random flooring strips are fed into one end and nested bundles are produced at the other end. It can produce bundles of different lengths and widths, and the Cameron software can track incoming and outgoing information.

Heister House Millworks' 60 employees produce custom and high-end millwork, lineal mouldings and flooring, with the latter accounting for 10 to 15 percent of the business. The company has an office, paint shop and warehouse in the central Pennsylvania town of Mt. Pleasant Mills, with a moulding and flooring operations a few miles away.

HHM makes flooring in red oak, white oak, maple, cherry, hickory, walnut, some ash, with some eastern white pine and some knotty pine, all in widths from 2-1/4 to 11-1/4 inches.

After wood pieces go through the moulders and tongue-and-grooves are cut on the sides, they cross the street and enter the flooring operation. First, moulded wood goes into through a Dimter cutoff saw, then into a Doucet end matcher.



Heister House Millworks is known for high-end millwork.

At a glance

Who: Heister House Millworks Inc.

Where: Mt. Pleasant Mills, Pa.

What: Architectural millwork. lineal mouldings, flooring

Employees: 60

Plant size: 120,000 square feet (three buildings)

Wesbsite:

www.hhmillworks.com



y Karl D. Forth

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James L. Taylor Mfg. Co. won a Challengers Award at the recent IWF show for its Cameron Flooring Nester.



Cut flooring pieces are fed to a turntable, where they are graded. There is one common grade and a rustic grade with more knots and defects.



Random flooring strips are fed into one end and nested bundles are produced at the other end.

Heister House Millworks produces custom and high-end millwork, lineal mouldings and flooring.

See the Cameron Floor Nester in action at Heister House Millworks. Watch our video on your smart phone or www.CabinetMakerFDM. com/87356.html. If your phone has a Web browser and camera, download the free app at http://qrcode.kaywa. *com*/ and scan over this barcode.



"It trims each end and tongue-andgrooves the end of the flooring pieces, so it puts the same milling on the ends that are on the sides," explains company vice president Lorne Nipple.

The cut pieces are fed to a turntable, where they are graded. "We have one common grade and a rustic grade with more knots and defects," Hunt says. "We'll sort the grades out into another table or into the nesting machine."

After pieces are graded they go into the Cameron nesting machine. The function of the machine is to make a consistent nested bundle. It measures each piece and calculates the square footage needed to create the desired bundle size.

"The operator tries to vary the lengths he is putting into the machine, so he has more options to put together," Nipple says. "He doesn't have to put a whole lot of thought into it.

"If the nesting machine can't put a combination together, it will actually (sort

♣ FLOORING NESTER

and remove) pieces, so the operator will (have to) give it more pieces to make a combination. If it has too many pieces it will dump some out and get new pieces and new lengths in."

The flooring nester holds 12 pieces at a time on a sorting area, and it will only hold a piece so long. If a piece doesn't fit, it will be kicked out.

Nipple says that Heister House is currently producing a bundle with five layers, three pieces wide, but they can vary in width. "We put in 84 inches for a 2-1/4 bundle," he says. "We give it a plus or minus 6 inches, so it doesn't have to hit 84 inches (exactly). One bundle may be slightly under 20 square feet, or slightly over."

The completed bundles are shipped directly to the flooring installer or to wholesalers unfinished. The company is not doing any prefinishing on this product.

"This is the first prototype," Nipple says. "Cameron Automation was looking



Heister House is currently producing a bundle with five layers, three pieces wide, but they can vary in width.

for a flooring manufacturer to put this machine in their shop. It's been here about a year, and we're well pleased with it." The machine here can handle bundles up to 9 feet wide.

Hunt says that previously, Heister House was offering these bundles but putting them together manually, which was not as consistent or accurate and required a lot of calculation.

As for customers, Nipple says, "We're

giving them a more consistent bundle."

Hunt says many of the benefits have been internal, especially in cost and time savings.

Millwork and moulding

In the same building as the flooring nester, Heister House has a Northwood CNC router, Weinig moulder, and several saws. These are for the millwork business, which includes interior doors,





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Heister House makes flooring in red oak, white oak, maple, cherry, hickory, walnut, ash, with some eastern white pine and some knotty pine.

exterior doors and stair treads.

Lineal mouldings are a big part of the company's business, and a lot of radius mouldings are made here. At that moulding operation, Heister House has a Newman-Whitney surfacer, Mereen-Johnson gang-rip saw, Cameron Opti-Rip saw, and four Weinig moulders: Powermat 1000, two Hydromat 230s, and one Unimat. Also, a new Powermat 2400 is being added this fall.

"We're taking raw lumber and we're ripping it to width, we're surfacing it, making blanks for the moulders and then running it through the moulders for profiles," Hunt says.

"The thing we're doing differently than a lot of folks is we're into prefinished products in a big way. We do a lot of painting and clear coating, mainly of mouldings and doors. For our customer base that seems to be a big deal and not

Cameron Flooring **Nester wins IWF Challengers Award**

James L. Taylor Mfg. Co. won a Challengers Award at the recent IWF show for its Cameron Flooring Nester. The machine takes technology from the company's Opti-Sizer (1986) and the Opti-Match (2005). Random flooring strips are fed into one end and nested bundles are made at the other end. Cameron software tracks incoming and outgoing data.

a lot of people are doing that."

"We seem to have created a niche in custom doors, doing more than we did a few years ago," Hunt says. "A lot of that is two-fold. Number one is the capability of doing custom things, and the second







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is lead time. A lot of the companies that make door slabs are on the west coast, so if (a customer) can't find the style they want in inventory locally, you're waiting six to eight weeks for something to be made on the west coast and shipped to the

east coast. We can typically turn around a custom door here in three to four weeks."

Hunt says the company is known for interior applications. "We're trying to expand our exterior presence," he says. "Wood siding, exterior railing products, columns, decorative trusses and beams would be examples of that."



The company is known for interior applications. In many high-end projects every piece of moulding may be a custom profile.

Modular and custom

Hunt says a third of business is supplying the modular housing marketplace. Many of these companies are local.

"That represents more of the commodity market, but we also have the ability to do things that go into multimillion dollar houses. In those types of projects every piece or moulding in the house may be a custom profile.

Most business has been within a 50 mile radius. "We're intentionally trying to expand into the larger cities. There is more high-end housing in these areas.

Nipple says the company has been in flooring six to eight years, and is now looking at stair manufacturing and fingerjointing for paint-grade mouldings.

"We were very conservative as a company all along," Hunt says. "We never overspent or borrowed too much, and paid as we went. That seems to be the secret to longevity.

"Because of that we've been able to adapt to changing needs, and have been open to other product categories." <



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nautical dream room. Visit veneertech.com to view the category winners, honorable mentions and all entries in the 2012 competition. Congratulations to the winners, and thanks to all who entered. Remember, the Challenge is not about the amount or source of the veneer—only the quality of skill and application, and recognition of the entire supply chain. Get ready for the 2013 competition to be awarded at AWFS-Las Vegas!

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QUICK CUTS

Steelcase introduces new mobile line

Steelcase CEO Jim Hackett said recently that they will show their new line of products for the mobile workplace, according to MLive.com. "We've been working with the Marriott hotel chain to prototype collaborative work environments in hotel conference centers," Hackett said.

"We think there is potential here to expand the definition of our purpose, to help create great experiences wherever work happens."

The company surpassed their expectations in sales last year, with profits up two-fold for the eighth consecutive quarter. The company has done well in the Americas and growing in Europe, the Middle East, and Africa.

Steelcase opened a new showroom in Guangzhou, China. It's the third WorkLife Center in the company's China network, joining Shanghai and Beijing. The larger effort is to establish itself in cities that have a many global organizations and local companies. By November, they plan to open a manufacturing facility in India.

WCMA tours and expo in Minneapolis

A total of 142 WCMA members, technology partners, and plant tour hosts participated in the Wood Component Manufacturers Association's 2012 Fall Conference & Plant Tour Event in Minneapolis. This year's event offered contact tables with Technology Partners during the Wood Technology Expo and tours of seven innovative manufacturing operations in the Minneapolis area.

Northland Forest Products is a manufacturer and wholesale distributor of premium quality S4S hardwoods and mouldings. The corporate campus sits on 16 acres in Shakopee, Minn. Northland also operates a lumber reload distribution center, Twin City Reload, in Roseville, Minn. Recent investments in technology include two Weinig Powermat 1000 HSK new-generation moulders, and Weinig MillVision Pro 2.0 Software that networks the entire moulding process.

Andersen Corp. is a manufacturer of windows and doors and includes Andersen brand windows and doors, American Craftsman Window & Door Co., Silver Line Building Products LLC, and Renewal by Andersen. Headquartered in Bayport, Minn., Andersen Corp. holds FSC chain-of-custody certification from the Forest Stewardship Council, was one of the first window manufacturers accepted into the Environmental Protection Agency's Energy Star Program.

Navy Island was founded in 1983 and produces architectural panels, doors, frames and mouldings, cabinetry, and store fixtures. They occupy a 60,000 square foot manufacturing facility with a 1,500 square foot showroom displaying

Blum's Apprenticeship 2000 program recognized by Department of Labor

The Apprenticeship 2000 program, which trains skilled workers, was recently recognized by the U.S. Department of Labor as a recipient of the Trailblazers and Innovators Award within the National Registered Apprenticeship system.

The Apprenticeship 2000 program has more than 24,000 registered apprenticeship programs nationwide. The program originally began in 1995 with Blum and Daetwyler, and has since grown to include six additional partner companies: Ameritech Die & Mold, Chiron, Pfaff Molds. Timken. Sarstedt

and Siemens.

"The average age of key technicians in America is above 50 years. Our average age is below 30 years, and therefore, we can utilize all the newest machinery and equipment that is needed to compete with the low labor markets in our manufacturing facility in North Carolina. We are very grateful for receiving such a prestigious award and we look forward to its many vears of future success for our Apprenticeship program," said Apprenticeship manager, Andreas Thurner.

hundreds of unique veneers from around the world. Navy Island's unique manufacturing facility is highly automated using robotics where appropriate.

Progressive Systems manufactures custom production machinery. They offer machine sales, full-service consultation, engineering, and replacement parts. Equipment available includes double and single end tenoners, cut-to-size machines, multiple rip machines, door and window sawing equipment, moulder feeders, and custom built machines and systems.

Timesavers Inc. has been providing widebelt abrasive finishing machines for 65 years. They also produce wood surfacing machines for finish sanders, abrasive planers, combination knife planer/sanders, feed through orbitals, rough lumber abrasive planers, veneer polishers, seal sanders, and moulding sanders.

Dura Supreme delivers outstanding design choices in hand-crafted cabinetry. Dura Supreme now employs over 550 people at their 220,000 square foot manufacturing facility. Company president Keith Stotts continues to lead the company based on the guiding principles of quality and innovation.

Plato Woodwork markets both framed and frameless custom residential cabinetry through a nationwide network comprised primarily of kitchen and bath dealers. Plato Woodwork prides itself on its custom ability, whether it's creating door styles, sourcing exotic woods or doing custom match finishes.

The 2013 WCMA Fall Conference & Plant Tour will be in Canton, Ohio, Sept. 15-17, 2013. See woodcomponents.org.





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10 ways to go green profitably

Making your business more environmentally responsive can help you make more money, too.

Going green has become more than a catchphrase in the woodworking industry as more firms discover that being more environmentally sensitive can also be a good business decision. But there are potential costs and pitfalls on the road to green, and there are even disagreements over what constitutes "green" at all. Here are 10 real world tips to improving your eco-friendly quotient in ways that also boost your bottom line.

Use green materials. The most common method to go green is to use environmentally friendly materials, and there are green choices for almost every product these days, with big improvements particularly in the area of sheet goods. Uniboard introduced its NU Green MR50 medium density fiberboard, a no-added-formaldehyde panel, at the 2012 International Woodworking Fair in Atlanta. Columbia Forest Products' PureBond panels have also been a big player in this segment.

But some companies balk at using green-labeled materials because of price. The key is often customer education. Bob Margulis, owner of Ravenworks LLC in Seattle, says he spends most of his time doing client education on his initial visit. He considers the indoors our ecosystem, where we spend the vast majority of our time.

"Homes are filled with chemicals that are killing us," he says. "Asthma is the single largest cause of most school days lost due to health reasons. Children are constantly getting bombarded with chemicals. With customers, I raise their consciousness about what green means in the context of interiors."

You can also educate customers about alternatives they likely don't even know exist. Steve Prescott of Fiddlehead Designs in Brunswick, Me., uses Richlite countertops which are made from phenolic resin-bonded paper manufactured from sustainable forest resources. But the result is an elegant and durable countertop that Prescott says can compete with granite.

Reduce waste. Being more environmentally responsible means reducing waste, and cutting waste makes economic sense, too. Carl Spencer of Spencer Cabinetry in Monroe, Wash., is an enthusiastic proponent of the Toyota Production System. "The underlying premise is waste reduction. That's a huge part of it," says Spencer. "It's called make more money. We never set out to be green. We just discovered we were." His business has been recognized as a leader in sustainability.

The company reduced waste by 50 percent using 100 percent recycling of all lumber scrap, wood waste, pallets, paint waste, plastic, aluminum, steel and even office paper. They also eliminated shipping damage and related rework. Workers start at 7:30 a.m. because Spencer discovered that was the time for lowest traffic. He also encourages car pooling and public transportation, boosting employee ridesharing by 60 percent.

Recycle.

Most people recognize recycling as eco-friendly, but it goes beyond recycling bottles and cans, especially when it comes to woodworking. Woodhaven Furniture, an upholstered furniture manufacturer in Cairo, Ga., has made recycling a cornerstone in its business plan. "If you combine all the materials that we recycled last year, it was about 12 million pounds -- everything from wood, foam, cardboard, to plastic and fabric," Tommy Harper, general man-



Bob Margulis, owner of Ravenworks LLC in Seattle, emphasizes environmentally friendly practices as he makes cabinets and custom furniture.

ager, says. "Our company decided to go towards green manufacturing but also green operations. We got heavily into recycling, and have changed buildings to T5 lighting with skylights." The company has even purchased recycled remanufactured CNC routers from Accu-Router for its upholstery frame manufacturing.

Eco-friendly finishing. Using low-VOC finishes such as water-based finishes is growing dramatically as finish suppliers become increasingly sophisticated in green formulations. Also new standards and certification such as Greenguard have entered the arena.

Steffy Wood Products, a manufacturer of children's furniture in Angola, Ind., added an automated finishing line both to improve finishing efficiency and to be more environmentally responsible, says John Steffy, president of the company. Using only UV cured water-based finishes, the company successfully achieved Greenguard certification. "That means the furniture has been tested and certified that it won't emit anything



hazardous in a classroom environment." explains Steffy. "And the certification process is not just a once-and-done thing. You have to submit products and materials on a quarterly basis."

Steffy prominently displays the Greenguard logo on his product catalogs and on his Web site. While he says it is an essential marketing tool in the children's furniture market, more importantly, he says, it's just the right thing to do. "It's important to be environmentally responsible," he says.

Other new products such as AkzoNobel's Chemcraft Airguard, a Greenguard-certified solvent borne topcoat, and Sherwin-Williams' Sher-Wood F3 Hi-Bild PreCat Lacquer, a catalyzed lacquer that provides formaldehyde-free finishing, are new green finishes.

> Participate in green programs.

With increasing numbers of projects requiring environmental certification, such as LEED, it makes good sense to get involved in those programs because it means more work. Bill VaVerka of Verk's Custom Cabinets got involved in a project building what some claim is one the most sustainably built houses in the country. Dubbed the Costa Mesa Green Home, it is the first private

residence in Orange County, Calif., to be certified Platinum by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) for Homes Program. The home was awarded 104 points, four more than needed to achieve Platinum status.

VaVerka got involved in the project

through a friend of the homeowner. But despite seven years as a custom cabinetmaker, he really wasn't familiar with requirements for green building. He talked with his building products distributor, Weber Plywood and Lumber Co. There he connected with Steve Weisenberg, a LEED accredited professional who manages We-



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ber's Environmentally Friendly and Green Materials Division. "Steve is one of the more knowledgeable people out there," says VaVerka. "People don't understand there are certain levels of green. I tried to stay as green as you can get."

Steve Prescott knows that all of his attention to environmental considerations will be wasted if his business is not successful and customers don't buy what he sells. Consequently, he works hard to explain the value of

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construction, and

he's convinced it's a strong selling point that sets his work apart from competitors.

"So much of what I do is education," he says. "I have to explain why my cabinets are so much better than the factory stuff." He frequently makes comparisons to other consumer purchases like cars or high-end consumer electronics that may cost as much or more than cabinetry but not have nearly the lifespan. "My cabinets will last a whole lot longer than that plasma TV," he says.

He has even teamed up with a nearby retailer that specializes in environmentally sound products. Prescott gives workshops on eco-friendly remodeling at F.W. Horch Sustainable Goods & Supplies in Brunswick, Me. That helps promote his cabinets in an arena where people are already interested in green.

Partner with other green companies.

Many woodworking operations, especially smaller custom shops, find it helps to partner with other green companies. Bob Margulis says, "Half of my company's business is through 'deep green' general contractors, architects and designers, not those companies that are searching how to get points for the least amount of money to get a certain level of certification, whether it's LEED or Washington State's master builder association Build Green program."

Wood casegoods manufacturer



Steve Prescott's effort to be an environmentally sound cabinetmaker involves using only wood from sustainably managed forests, preferably from local New England sawyers, as in the case of this oak door panel.

Eagle Industries LLC unveiled a new collection of eco-friendly outdoor composite furniture called "Bear River." The line includes tables, bars, stools, chairs, benches, plant stands, planter boxes and accessory items, available in a variety of earth-tone colors.

Eagle Industries partnered with Natures Composites to supply sustainable, wheat, straw-based composite material for a new furniture collection. Eagle Industries' officials say partnerships with domestic companies such as Natures Composites, as well as industry organizations like the Sustainable Furnishings Council, U.S. Department of Agriculture and U.S. Green Building Council, further the company's goal of promoting "American Manufacturing" while reducing long lasting effects on the environment.

Source locally. It's not always easy or cheap to keep environmental issues in mind while sourcing supplies, but Steve Prescott thinks it is crucial to the way he works. He uses only lumber from certified sustainably grown forests and whenever possible he sources from local New England sawyers, often from Rex Lumber in Acton, Mass. He avoids environmentally threatened exotic species. And by sourcing locally, he not only reduces the carbon footprint of his products, he saves real dollars in the transportation and shipping costs.

Avoid "greenwashing." One of the dangers of efforts to be perceived as more environmentally responsive is "greenwashing." That's when businesses try to make points with eco-minded customers by stretching the boundaries of what is green and what

isn't. For example, a moulding manufac-

turer once advertised its plastic mouldings as green only because they could be finished with water-based top coats.

"As capitalists pan for gold in the green rush, there is often a paradox between what is being sold as helping our environment and the actual consequences that occur," says Mark S.







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Goldman, president of Pennville Custom Cabinetry. He notes cabinetmaking historically has been "one of the greenest manufacturing jobs on the planet" because it uses a renewable resource, products are built to last, materials are

often locally sourced, and products are often shipped in blankets rather than wasteful packing. He suggests an emphasis on these environmentally sound practices are more important than chasing after certifications and green point systems. "If you care about our planet at all, you should not sell



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promises that have nothing to do with helping our environment," he says.

Be green top to bottom. True commitment to environmental sustainability means more than just adding a green product here and a water-based finish there. "A company that builds sustainable housing may quickly pronounce themselves as a Green Organization," says Gero Sassenberg, a longtime efficiency consultant to the woodworking industry.

"While that may be so, a closer look at what a green organization is will quickly reveal that there is a great chasm between a green product and a green organization. A green organization while producing green products must also be green in every aspect of its activities with regard to design, engineering, manufacture, administration and supply to market. Above all it must have a low environmentally damaging footprint."

Steve Prescott of Fiddlehead Designs in Brunswick, Me., says being green can't be just a gimmick. "The health of our environment is critically important to me," he says. "I undertake a number of precautions to ensure the business of Fiddlehead Designs is as environmentally responsible as possible." <

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WoodLinks education coordinator takes high school teaching position

WoodLinks USA (www.woodlinksusa.org) national education coordinator, Mark Smith, has recently taken a new teaching position at Morris Community High School in northern Illinois.

Smith serves as the industrial technology instructor for students at the high school. Currently, Smith's students are working on building an acoutic guitar, for which Gerry Kowalski of Taylor Guitars donated all the materials.

Mark Smith's industrial technology students work on building an acoustic guitar with materials donated by Taylor Guitars.

Elkay Mfg. Co. receives Vendor of the Year award

Elkay Mfg. Co., a building products company, recently received the Bath & Kitchen Buying Group's Vendor of the Year award.

The award, according to executive director, Eddie Schukar, is the highest honor given to preferred vendors by the Bath & Kitchen Buying Group. The Bath & Kitchen Buying Group uses nine different criteria in the selection process. A selection committee then narrows the list to three finalists and a majority vote determines the single winner.

Ligna, Interzum to draw wood, furniture industry to **Germany in 2013**

Wood and furniture industry members around the world are gearing up for two upcoming German trade shows in May 2013.

Interzum, organized by Koelnmesse, will take place from May 13-16, following Deutsche Messe's Ligna for the first time, May 6-10.

The two shows together will cover a broad range of topics, ranging from wood as a renewable material to woodworking and processing technology to components for the furniture and interior finishing sectors. For more information, please visit www. interzum.com or www.ligna.de.





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CedarWorks builds a marketing and production model to stay ahead of offshore competition and even provide business for other wood products manufacturers.

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Lots of successful woodworking companies talk about having a great team, referring to employees and management staff. But at CedarWorks in Rockport, Me., membership in their winning team extends well beyond the boundaries of their offices and production plant. The team includes a select group of mostly regional suppliers and partners who all have found shared success in meeting each other's individual supply and production needs in a mass customization environment.

CedarWorks uses mass customization, lean manufacturing and sophisticated direct marketing techniques to produce wooden playsets and youth furniture. Their products successfully hold their own against offshore competition by selling upscale quality and custom options that cheap mass production just can't achieve, says owner Barrett Brown

Manufacturer or marketer?

When Brown's father bought Cedar-Works in 1988, he was coming out of the textile industry. And although it was clear that CedarWorks was a manufacturer, Brown says his father viewed it

more as a marketing company."We love being a manufacturer," says Brown. "But we like not being beholden to manufacturing."

CedarWorks sells direct to customers, providing personalized design services online and by telephone to construct just what the customer wants from a huge battery of custom options. "We were never a custom shop," says Brown, explaining how mass customization techniques deliver individualized packages for each customer while still allowing manufacturing efficiency in production.

Customizing the way CedarWorks does, requires a lot of handholding and individual attention by the five members of the sales staff when they deal with customers. Typically, the sales staff touches a customer seven times before a sale. But that helps the company capture more affluent customers in what typically is a once-in-a-lifetime purchase. That also puts the company's products in a different league than low-end imported playsets that have taken over much of the market. Asian manufacturers have captured 80 percent of the outdoor playset market,



Recently the company has expanded its playset offerings to include indoor playsets and related furniture.



CedarWorks owner Barrett Brown. right, talks with visitors to the company's headquarters in Rockport, Me. Behind him is one of the company's new Rhapsody series indoor playsets.

regional partnerships

Brown says, noting that there was not one Asian manufacturer building playsets as recently as 2000.

Design and sales

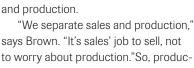
Almost all of CedarWorks sales are online now. Brown says the company does Google pay-for-click ads and other efforts to build traffic for the company's website, which is its primary marketing tool. "We have to be there when people are looking," he says.

When customers call in to discuss their needs, a member of the sales staff uses design software to quickly work up a 2D design that can then be shown to the customer as a 3D model. There is no pricing online, so customers have to request a quotation, and the discussion might go back and forth many times before the deal is done.

Information integration

As soon as a sale is made, the Cedar-Works information technology system is designed to automatically communicate with production. It outputs a parts list for the factory. But despite all the give and take between sales and the customer, there is no give and take between sales

Carina Richards shows the design interface she uses to work directly with customers to custom design a playset or furniture product to meet their needs.



to worry about production."So, production staff access parts orders daily and adjust production to meet the demand in what amounts to a pull order system. Shipments go out on Fridays, and it is typically two to three weeks from the time the customer orders to the time the playset is shipped.

To keep such a tight schedule with such a broad range of customized products takes some special skills and techniques, says Don Protheroe, manufacturing manager. "We needed to get good at short runs of a lot of little things," he says. "Information technol-



At a glance

Who: CedarWorks

What: Indoor and outdoor wooden playsets

Where: Rockport and Rockland, Me.

Employees: 15-20 in office; 20 in production

Plant size: 60,000 square feet

www.cedarworks.com



Barcode readers like this are essential to tracking parts, supplies, and orders in the CedarWorks production plant and warehouse in Rockland, Me., just a few miles from the Rockport offices.



A machine operator checks the Biesse Rover CNC machine as it starts another part. To save setup time, the operator uses a hand router and sander to machine bottom edges of parts while the CNC behind his bench machines top edges of parts.

CedarWorks uses both flat table as well as podand-rail CNC machining centers, both Biesse machines, to efficiently handle different kinds of machining chores.





Graceful curves set some of CedarWorks' designs apart, especially from cheaper offshore competitors. CedarWorks partners with another New England woodworking company to obtain these bent laminations for play slides.

ogy and information flow is the key to the whole thing. "Daily information on orders is coordinated with the inventory system. All parts are tracked by barcodes from manufacturing to shipping to keep the 1,000 to 2,000 boxes shipped each week all straight. Color codes on labels differentiate different shippers, and boxes are coordinated to make life easier for customers

Ensuring customer satisfaction

CedarWorks is proud of its 98-percent customer satisfaction

rating, which is certainly important in generating essential referrals that account for about a third of business. But customer satisfaction is no accident. "We have a quality incentive program," explains Protheroe. "For every set that

goes out the door, money is set aside for a reward for no customer complaints."

He says the company also works hard to eliminate what he describes as "controllable errors." For example, they noticed regular problems with customers complaining that they were missing certain washers. When they investigated the situation more closely, CedarWorks staff realized customers were getting confused about three different sizes of washers and using the wrong washers in the wrong places, thus not having the correct washer when it came to a certain point in the assembly. To solve the problem, the products were redesigned to use the same washers to eliminate potential for confusion.

"You have to get into the mind of the customer," says Protheroe. "You have to solve it from the customer standpoint."

Regional consortium

Protheroe notes that the company has adopted lean manufacturing



All parts are sorted into bins and tracked with barcodes to ensure accuracy of orders and to facilitate lean manufacturing flow.

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methods and CNC machining where applicable. There are two Biesse CNC routers, one a flat table unit and the other pod-and-rail. And CNC technology has facilitated custom features such as decorative cutouts and a whole new indoor playset and furniture line. But the real secret to the huge output at CedarWorks is the successful integration of regional suppliers for many of the parts the company uses. CedarWorks relies so much on regional outside suppliers that Protheroe characterizes the factory as "more fulfillment than production."

CedarWorks has been able to take advantage of collaboration between Sustainable Forest Futures and the wood products industry in Maine, New Hampshire, Vermont, and northern New York. The Consortium conducts workshops and connects decision-makers at companies that might not normally work together.

For example, CedarWorks uses graceful curves in its play slides, which helps distinguish it from cheaper competitors with straight slides. But those curved slides need bent laminations. Rather than tooling up to make them at CedarWorks, the company connected

with Mystic Woodworks in Warren, Me. Mystic specializes in making cutting boards that are glued up laminations, so they know a bit about such constructions and could supplement their cutting board business by supplying CedarWorks. It was a mutually beneficial relationship.

"The Consortium is creating strong networks involving multiple states, various industry sectors and leading experts in the field to address and overcome challenges facing wood product manufacturing operations," says Collin Miller, director of wood products initiatives for Sustainable Forest Futures.



Summary of IWF Challengers Award winners

A look at the seven winners and what makes them special.

The winners of the IWF Challengers Award were announced during IWF. Here is a summary of the features of each of the winning products:

Cim-Tech Solid-CIM 3D can be used for programming or nesting 3D solid parts and assemblies from AutoCAD. Autodesk Inventor and other solid modeling products. Automatic Feature Recognition (AFR) works directly on 3D solids and 3D solid assemblies to lay parts flat and identify machine operations. With one click, nested programs for any CNC machine are created with a cutlist with all the parts, materials, and quantities. Solid-CIM can turn solid models and assemblies into machine ready NC Code for any CNC machine.

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Prisma6000 FCOtech allows for enhanced machine performance and productivity, along with reduced power consumption and moving mechanical components. It combines increased machine performance with reduced power consumption. It captures the lost kinetic energy of the large moving components (saw carriage and pusher) during their deceleration cycles, and turn that waste into energy. Giben has replaced the traditional drive systems with linear drive motors. The energy recuperation is accomplished using electric motors. When electricity is sent to the electric motors on the machine. the shaft turns and the motion takes



Giben America Inc. Prisma6000 ECOtech.

place. However, the opposite process is also possible. During deceleration, the circuit is reversed and the spinning component generates electricity back through the motor. The resulting energy can then be returned to storage and reused to power the machine.

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Hafele America's Frontino

allows sliding doors to operate on a single track rather than on separate tracks. Frontino allows doors to sit flush when closed and provides space savings within cabinets. The Frontino is the newest addition to Hafele's portfolio of sliding hardware. Unlike hinged doors, sliding doors maximize available space as doors don't open outwards, which takes up valuable space. The Frontino is a good fit for designs based on the principles of Aging in Place and Universal Design because sliding doors allow easier access to cabinet interiors for those who may have physical constraints. Since the hardware allows for cabinet doors to slide away, rather than open out, its also also means doors can stay open while meals are being prepared, increasing the functionality of the kitchen.

www.hafele.com/us



Hafele America's Frontino.

) James L. Taylor Mfg / JLT **Clamps / Cameron Automation** Cameron Flooring Nester. The

machine takes technology from the company's Opti-Sizer and the Opti-Match. Random flooring strips are fed into one end and nested bundles are made at the other end. Cameron software tracks incoming and outgoing data. At Heister House Millworks, wood pieces go through the moulders and tongue-and-grooves are cut on the sides, then enter the flooring operation. First, moulded wood goes into through a Dimter cutoff saw, then into a Doucet end matcher. The cut pieces are fed to a turntable, where they are graded. After pieces are graded they go into

the Cameron nesting machine. The function of the machine is to make a consistent nested bundle. It measures each piece and calculates the square footage needed to create the desired bundle size.

www.jamesltaylor.com

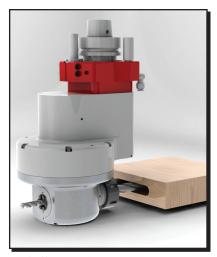
Martin Woodworking **Machines Corp. Martin T75** Sliding Table Saw. The Martin T75 PreX is the first machine where a cutting height of 204mm is combined with a tilting range of 2 x 46 degrees. The operator is free to execute each angular cut at the cross-cut fence as well as the rip fence exactly the way it is best for the task at hand or the work piece to be machined.

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time-consuming deep lock cases and mortise work on CNC routers. The Atemag Extra Plus Aggregate is different than other aggregate tools because, instead of applying a standard back-and-forth cut. the tool oscillates, increasing the material removal rate. This helps to reduce CNC time, and helps control equipment and labor costs. The tool is best suited for deep pockets, mortise and tenon projects, and anytime a connector is needed for a doors, stairs, or furniture, for example, It can be used with all CNC routers.

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Composite Panel Association expands ECC Certification Program

The Composite Panel Association has expanded its new voluntary certification program under the Eco-Certified Composite Sustainability Standard. The ECC Certification Program, launched by CPA earlier in 2012 for North American panel producers, now also provides a tool for manufacturers of finished products (including components and laminated panels) to communicate the environmental advantages of composite panel products.

With the underlying ECC Sustainability Standard serving as the basis for the ECC Certification Program, the ECC Certification Program is also based on ongoing third-party audits of client manufacturing plants and facilities.

Further information including the complete ECC Standard and application form may be downloaded at www.ECCproduct.org, along with a current list of ECC-certified panel manufacturing plants. Facilities interested in participating in the ECC Certification Program should submit a completed application form and license agreement to CPA. Those with questions should contact Chris Surak, director of certification services, by email to csurak@cpamail.org.

Upholstery fabrics manufacturer adding 55 new jobs

Global Textile Alliance. North Carolina fabrics manufacturer for bedding and upholstery is adding 55 new jobs to their Reidsville location, according to The Business Journal.

As part of the project, they are investing \$7.4 million over three years in an expansion, according to Gov. Bev Perdue's office.

The company received a \$150,000 grant from the One North Carolina Fund, which provides financial assistance to attract business projects that will stimulate economic activity and create new jobs.

The company sells to U.S. furniture brands. Their Reidsville plant is home

to the company's corporate headquarters, distribution, design, sales and marketing, finance and quality control divisions.

"Global Textile Alliance Inc. is extremely pleased to have the continued support of North Carolina," Steven Graven, of Global Textile Alliance, said.

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www.grizzly.com



SandMan Products sanding booth

SandMan Products offers the Sand Pro SBP108 sanding booth. The SBP108 is ideal for furniture that is too large to place on downdraft tables. The hinged vinyl sides and top panels allow for construction of work piece perimeters up to 9 feet wide. Exhaust air exits from the top of the machine.

> 800.265.2008 www.sandmanproducts.com



Stiles Machinery Belfab BEL 75

Stiles Machinery Inc. offers the Belfab BEL 75. The dust collector was designed as a stand-alone unit with capabilities to provide solutions for single machine operations as well as multiple machinery work cells, according to Stiles. The BEL 75 has 7.5 HP with 4.000 CFM.

> 616.698.7500 www.stilesmachinery.com

Grizzly Industrial Inc. model T23375 dust collection accessories kit

Grizzly Industrial Inc. offers model T23375 dust collection accessories kit. Included in the kit are: a 4-inch-by-3-foot clear pipe, quick-connect coupler and hose

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www.nordfab.com.

800-532-0830

₱ DUST PRODUCTS

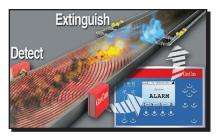


Oliver Machinery Dust Collection

Oliver Machinery cyclone dust collectors have one micron filter, magnetic switch, drum casters and quick drum release. Powerful enough to be used as a central system for the small shop or use the included splitter to connect directly to individual machines. The actuator automatically sweeps the inside of the canister after the system is shut

off. Quick release lever lifts the lid from the drum allowing it to be quickly rolled out and dumped. Handy site glass lets you see when the drum is getting full. Automatically turn the dust collector on or off from anywhere in the shop.

> 206.575.2722 www.olivermachinery.net



GreCon Inc. spark detection and extinguishing systems

GreCon Inc. offers Spark Detection and Extinguishing Systems. These systems can reduce risk of fires and dust explosions in production equipment, dust collectors and pneumatic conveying

systems, according to the company. GreCon says its Spark Detection System sensors detect a spark's infrared radiation and automatically activate programmable countermeasures that can include extinguishing, filter deluge, diverting hazardous airflow, or triggering automatic machinery shutdown. Extinguishment immediately releases a fine mist of water downstream, extinguishing sparks and embers.

> 503.641.7731 www.grecon-us.com

Woodworker's Supply Inc. **Woodtek cyclone dust collector**

Woodworker's Supply Inc. offers the Woodtek cyclone dust collector. This 1 1/2 HP unit automatically controls dust cake on the canister filter with a motordriven agitator that turns on when the main unit is turned off. Features of the dust collector include hose ports and a suction hose to hold the bag, a fill-level viewing window on the collection barrel,



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casters on the collection barrel, leveractivated collection barrel disconnect casters with brakes on the main unit. and an optional remote.

> 800.645.9292 woodworker.com



American Fabric Filter Co. custom cartridge overbags

American Fabric Filter Co. offers customdesigned cartridge overbags that help prevent dust from bridging across the filter pleats. The custom overbags are manufactured from nylon monofilament. These reusable overbags have custom sizing, free design assistance and quotes. 800.367.3591

www.americanfabricfilter.com



Airflow Systems Inc. PCH Series portable dust collection systems

The PCH Series of portable dust collection systems from Airflow Systems Inc. provides source-point collection of airborne contaminants and prevents contaminants from migrating throughout the facility. The PCH Series features an E-Z Arm High Flow Extractor arm design, as well as a dynamically balanced, all-aluminum motor and is offered in standard construction of 14/16-gauge welded steel or stainless steel. The PCH Series includes a PCH-1 model, available with a 0.5, 1.0, or 1.5 HP motor capable of air flow rates up to 800 CFM; and the PCH-2 model, available with a 1.0, 1.5, or 3.0 HP motor capable of air flow rates up to 1.200 CFM.

> 214.503.8008 www.airflowsystems.com

Nederman USA Inc. **SmartFlow**

Nederman USA Inc. offers SmartFlow "on-demand" dust collection technology. By retrofitting existing dust collection systems with SmartFlow, the company says utility costs could be reduced up to 80 percent, and system capacity and workstation flow can be improved. SmartFlow can also reduce system size by up to 40 percent, according to the company. SmartFlow technology offers remote monitoring of system operation.

800.533.5286

www.nedermanfilters.com



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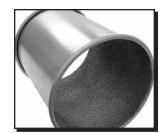
₱ DUST PRODUCTS



Weima America Inc. ECO shredder & TH briquette press combo

Weima America Inc. offers the ECO single-shaft shredder & TH series briquette press combo. The ECO shredder begins by shredding wood waste, cardboard or office paper. The shredded material then goes into the dust collection system, along with the rest of the dust from production equipment. This empties into the hopper of a TH series briquette press.

> 803.802.7170 www.weimaamerica.com



Nordfab Inc. Quick-Fit with Tuff Shield

Nordfab Inc. offers Quick-

Fit with Tuff Shield. This abrasion-resistant ducting comes with a flame-sprayed RC60 abrasion coating on the inside. Quick-Fit TS is available on all QF parts but is primarily designed for use on elbows, branches, reducers, and "extender" pieces that clamp on downstream of elbows to provide even more protection, Nordfab says.

800.532.0830

www.nordfab.com

Oneida Air Systems SmartPro dust collector

Oneida Air Systems offers the SmartPro dust collector. The dust collector is



equipped with Smart Air Control Technology, a dust bin level sensor with flashing strobe light, and HEPA filter media with a Flame Guard Arrestor. The dust collector has a 35-gallon metal drum under the cyclone.

> 315.476.5151 www.oneida-air.com

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Woodstock International Shop Fox Model W1826 wall dust collector

Woodstock International Inc.'s Shop Fox Model W1826 wall dust collector has a 1 HP. 120V/240V. single-phase motor. With 537 CFM, the unit is an ideal point-of-use dust collector with a steel base plate for mounting to walls. The unit features a 4-inch intake port and a collection bag with 2.5 micron filtration

800.840.8420 www.woodstockinternational.com



Silver Machine Inc. Silver series industrial dust collector

The Silver series of heavy-duty industrial dust collectors by Silver Machine can exhaust dust to an outdoor container and feature collection power of either 10 or 15 hp, out feed air blower motors of 2, 3 or 5 hp, out feeder motors of 1 or 2 hp, air delivery of 5,000 or 7.100 CFM, and air speeds of 40 to 45 m/s.

905.881.2293 www.silvermachineinc.com



General International 10-800CF M1 dust collector

General International offers the 10-800CF M1 dust collector. This portable, two-stage cyclone dust collector has a 1.5 hp motor and 13-inch blower. It is mounted on rolling swivel casters with a maximum height of 70 inches. The machine comes with a 30 gallon chip collection drum and a remote control to control the machine from anywhere in the shop, according to the company.

> 888.949.1161 www.general.ca



02 Filtration Höcker Polytechnik Vacumobil dust collector

O2 Filtration offers the Höcker Polytechnik Vacumobil - a compact, mobile dust collection unit that is ideally suited for the dust collection of one or more machines with an air volume of up to 5,000 cubic feet per minute. Vacumobil units are protected against explosions and feature an integrated automatic fireextinguishing system offered only by Höcker Polytechnik.

336.778.1236 www.o2filtration.com

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DUST PRODUCTS



Camfil Farr Air Pollution Control Gold Series safety monitoring filters

Camfil Farr Air Pollution Control offers a line of integrated safety monitoring filters for its Gold Series cartridge dust collectors. In addition to the current HEPA filters available for critical applications, ASHRAEgrade filters are also offered. Integrated on top of the collector, these after-filter modules prevent collected dust from re-entering the workspace if there should be a leak in the dust collector's primary filtering system. The company says the system is also qualified as a flame arrestor

as outlined in NFPA Performance-based provisions and NFPA 654 and 101 Life. Safety Objectives related to dust collector deflagration and explosion.

> 870.933.8048 www.farrapc.com

FilterPro filter cleaning services

FilterPro offers filter cleaning services for cabinet shops and wood product manufacturers. The company says it can clean a dirty filter bag so that it can be reused. FilterPro is able to clean filters for both small shops with small delta-style units as well as for large corporations with hundreds of filters in a single dust collector. All of the company's cleaned filters are tested and evaluated to assure that the filters are renewed to original manufacturer specifications, according to FilterPro. The company also manufactures new aftermarket filters that can be customized to customer specifications.

> 800.336.5441 www.fpfilters.com



Felder-Group USA RL160 dust extraction

Felder-Group USA offers certified clean-air extractors in various price and performance categories. The RL160 filters the air so that the dust remaining in the air is under 0.1 mg/m3. This mobile clean-air dust extractor features an inlet size of 6-1/4 inches, a maximum airflow of 1883 CFM. and a manual filter cleaning system. It also allows for a bag volume of 106 gallons.

302.322.7732

www.feldergroupusa.com







Ruwac FRV1400 vacuum

Ruwac's FRV1400 features 300 cubic feet per minute of suction capability in an explosion proof vacuum. Stacked in a compact frame on a heavy-duty, counter-balanced base, operators may use up to a 3-inch diameter hose without tipping the machine over. Ruwac's FRV1400 vacuums are ETL certified to UL and CSA standards for explosive dust situations and OSHA compliant. Premature clogging of the filters is prevented by a unique filter system.

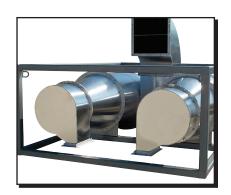
800.736.6288



Donaldson Torit low-profile bin vent collectors

The CPV-1 Donaldson Torit bin vent collector features a low-profile design that allows positioning closer to the point of dust generation where a traditional bag bin vent would not fit. The CPV-1 is designed with an integral blower that can be mounted top, back, left or right. A new vertical mounting option is also available for hard-to-fit applications offering ducting and energy savings.

> 800.365.1331 www.donaldsontorit.com



Airlanco horizontal dust cyclones

The HE Horizontal Dust Collection Cyclones from Airlanco are designed to provide high-efficiency separation of dust and particulates from plant and process air. They can handle high temperatures, moisture content and airflow. Cyclones come in durable carbon or sanitary stainless steel, with round or square inlets. Vertical HE Dust Collection Cyclones and other models are also available

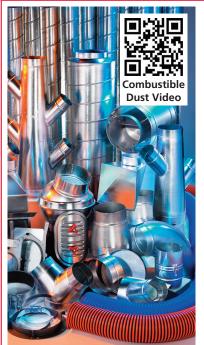
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Thermwood Corp. MTR30 DT CNC router

The MTR30 DT CNC router from Thermwood Corp. is designed for machining jobs that require multiple tools and dual tables for nonstop machine production. The machine is configured with two stationary 61-by-121-inch high flow vacuum tables with dual programmable part locators. It is equipped with a 12 HP spindle with an automatic tool changing system as well as a drill bank with both horizontal and vertical drills, available up

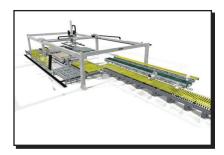
to 25 spindles. The QCore control has a dxf convertor for accepting dxf files for automatic nesting.

> 812.937.4476 www.thermwood.com

Biesse America Active 400 sliding table saw

Biesse America Active 400 sliding table saw is for users looking for quality of cuts and accuracy on solid wood, plywood, MDF board, particleboard and various kinds of laminated panels. This compact machine is equipped with features like precision ground guide ways for smooth and accurate cuts and an industrial saw carriage with separate motors for the main saw and scoring saw. The Biesse Active 400 is easy to use and provides and array of cutting solutions, from straight cuts, to complex miter and cross cuts.

www.biesseamerica.com



SCM Group North America Gabbiani CUBO panel saw

The Gabbiani Cutting Unit Batch One CUBO from SCM Group North America is a panel saw with two routing units. The CUBO can be incorporated in a Mahros loading-unloading system controlled by Easy Plan and production wastes/quantity of the off-cuts can be reduced by using Rolling Software with the panel saw, the company says. The panel saw is available with cutting lengths of 3,200 mm, 4,500 mm and 5,600 mm, in widths of 2,200 mm and 2.440 mm.

770.813.8818

www.scmgroupna.com





Allmoxy Web-based sales and management software

Allmoxy offers a Web-based sales and management software suite for the woodworking industry. It allows companies to sell complex, customized products online, and then automatically allocates supplies, creates cut lists, machinery/software exports, customer notifications, collections reminders and more.

> 800.804.8821 www.allmoxy.com

Laguna Tools IQ CNC router

Laguna Tools' IQ CNC router is a smaller version of the company's SmartShop technology. Two machines are available: the IQ HHC and the IQ Pro with



a touchscreen interface. Each has a 36-by-24-4-inch working envelope and 2hp liquid-cooled spindles.

> 800.234.1976 www.lagunatools.com

EcoDomo Phoenix Leather Collection

EcoDomo offers the Phoenix Leather Collection of re-purposed belt panels and rugs as an accent to doors, walls, furniture and more. Phoenix Leather Collection panels are offered in black, brown or multicolor. In addition to custom panels up to 4-by-8-foot, the panels are also offered in five standard



sizes from 6-by-48 inches to 48-by-48 inches, while area rugs come in rectangular or circular sizes up to 5-by-8 feet.

> 301.424.7717 www.EcoDomo.com

Freud America Inc. **Quadra-Cut shank router bits**

Freud America Inc.'s Quadra-Cut shank router bits are offered in 1/2- and 1/4inch profiles. The bits are designed for routing the edges of both hard and soft wood. In addition to employing four cutting edges, two of the carbide cutters have an upshear angle to remove stock and a pair of downshear cutters.

800.472.7307 www.freudtools.com



₱ PRODUCTS

Valley Oak Cabinet Doors **Artisan line painted finishes**

The Artisan line painted finishes from Valley Oak Cabinet Doors includes seven different colors, along with two glaze options for each color. The painted finishes can be applied to Maple framing and MDF panels on all raised panel designs to combat problems commonly found with panel expansion or contraction. In addition, the painted finishes can be used on the company's Kitchen-Aire wood hoods and fronts.

> 402.573.9244 www.ValleyOakCabinetDoors.com

CounterBalance Lift-A-Syst

Lift-A-Syst from CounterBalance is designed to provide assisted lifting force and mid-span balancing for lightto medium-weight countertop doors. Lift-A-Syst features aluminum and



stainless steel parts, and can be used on granite, marble, wood and solid surface counters. Available in a variety of sizes. Lift-A-Syst balances door weight and controls movement of countertop door from 0 to 95 degrees.

> 215.957.9260 www.cbal.com

CounterBalance Counter-a-Syst

CounterBalance's Counter-a-Syst is designed to neutralize the weight of a coun-



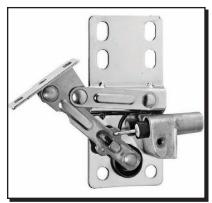
tertop on medium- to heavy-weight countertop doors. Custom designs are offered in a variety of sizes, including: CAS 325, CAS 326. CAS 327. CAS 328. Counter-a-Svst. can be installed in most granite, wood and synthetic countertop doors.

> 215.957.9260 www.cbal.com

Rev-A-Shelf LLC **LD-0220 Series tip-out hinge**

Rev-A-Shelf LLC offers the LD-0220 Series soft-close tip-out hinge, ideal





for larger-sized false-front applications where ETH hinges are commonly used. The hinges' 50-degree opening allows for complete accessibility to items stored within. It requires a 2 5/8-inch depth.

> 800.626.1126 www.rev-a-shelf.com

Amana Tool miniature bearing routing bits

Amana Tool miniature bearing routing bits have a 3/16-inch diameter



ball bearing guide. The bits come in a variety of profiles including round over, chamfer, flush, bevel trim and rabbet, making them ideal for delicate projects such as sign-making, building musical instruments, routing letter edges, flush trimming tight corners and high-production projects.

> 631.752.1300 www.amanatool.com

Bosch Power Tools and Accessories CM12 miter saw

Bosch Power Tools and Accessories' CM12 12-inch, single-bevel compound miter saw has a one-handed carry han-



dle to make it portable. The saw features nine adjustable miter detents, miter and bevel scales with uniform markings, as well as a 15 Amp/4,300 RPM motor with a brake and 37-inch expanding work piece support. In addition to offering top crown/base and cross-cut capacity, a Squarelock quick-release fence aligns 90 degrees to a table or workstation

> 224.232.2738 www.boschtools.com

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Vollmer of America Corp. QWD 760H wire erosion machine

Vollmer of America Corp.'s QWD 760H is a wire erosion machine designed specifically for manufacturing of diamond-tipped metal cutting tools. Designed to manufacture smaller diameter tools with intricate geometries, the QWD 760H features 5-axis machining and a 5-axis CNC loader. The machine's EXProg software interfaces with industrial PCs and the programmable generator can be set for four erosion stages for coarse roughing, roughing, finishing and fine finishing.

www.vollmer-us.com

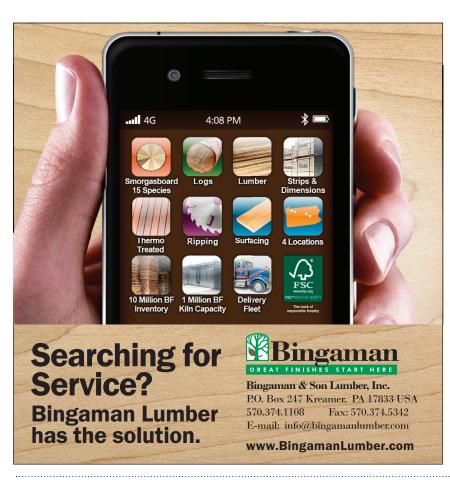


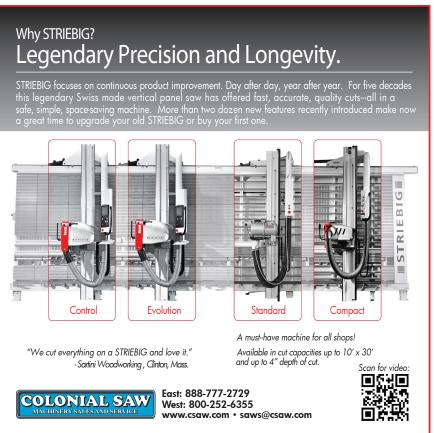
Peter Meier Inc. Total Light

Total Light from PMI is an accent lighting program for casework that consists of made-to-order wood-framed units with acrylic inserts and press-in LED light bars. Dual light strips illuminate upward and downward with a 3,500K color value at 3 watts per foot output. They are available for either face frame or frameless cabinetry.

336.996.7774

www.petermeier.com

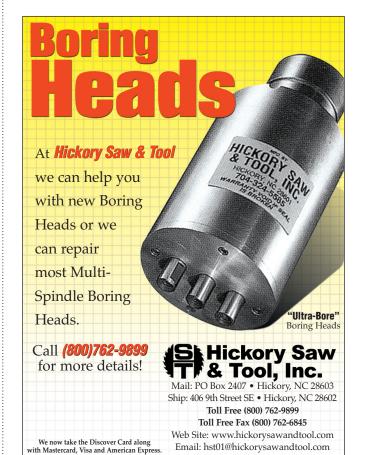




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WM28 is a handy little Wire Manager. Can be used individually or in groups to form a path. Simply press down on either side and insert wiring, then let go. The wires are held securely in place. Can be easily mounted with double-sided tape or screwed into the surface. A first place winner of the prestigious Annual Mockett Design Competition, the WM28 was designed by William Lawrence of Anna, TX.







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PRODUCTS



Franklin International Advantage EPI mixer

Franklin International's Advantage EPI mixer is a system for mixing and dispensing its two-component Advantage EPI adhesives. The mixing system features preset and fully adjustable mixing ratios and pneumatic controls, and the operator can control the system using either an electronic controller, a manual thumb button, a foot pedal or an automated

machine interface. The mixer can handle continuous output of up to 35 pounds per minute (4 GPM).

> 614.443.0241 www.franklinadhesives.com



Giben America Inc. Giben Prisma6000 saw

The Prisma6000 saw from Giben America Inc. features ECOtech technology. The technology allows for enhanced machine performance and productivity, along with reduced power consumption and moving mechanical components.

> 770.448.9140 www.giben.it



North American Laminate Flooring Association-certified sustainable laminate flooring

The North American Laminate Flooring Association conducts third-party tests on laminate flooring, and products that earn the NALFA certification seal are deemed sustainable. NALFA-certified laminate flooring is made from recycled natural resources, is free of air-damaging chemicals, complies with formaldehyde emissions regulations for laminate flooring core board set forth by the California Air Resources Board, and may contribute to points to the LEED standards.

202.785.9500

nalfa.com





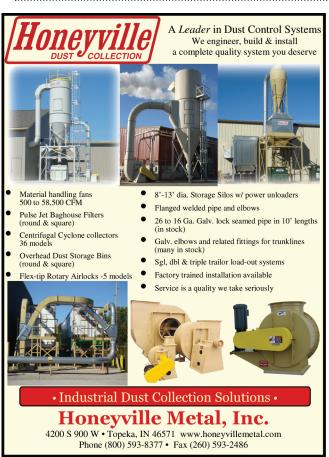




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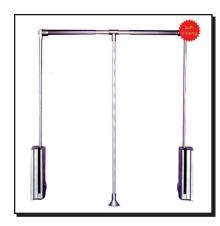
Web Site: www.hickorysawandtool.com

Email: hst01@hickorysawandtool.com





PRODUCTS



Atlantic Hardware Corp. pull-down closet system

Atlantic Hardware Corp. offers a pull-down closet system. The system features full width adjustment, side mounted to cabinet walls, with an antishock, soft-closing mechanism and aluminum finish

973.458.1200

www.atlantichardwarecorp.com



Hera Lighting Big6/2-LED

Hera Lighting's Big6/2-LED was designed for applications where high light levels are necessary. The light has a 360-degree swivel, is dimmable and has an attached 79-inch connecting cable with plug-in connector. The Big6/2-LED is available in stainless steel or white finishes with LEDS in cool white or warm white.

> 770.409.8558 www.heraliahtina.com

American Lumber Co. in-house **lumber inventory storage system**

American Lumber Co. offers a fully integrated system that stores in-house lumber inventory for customers so they



don't have to, offering delivery of any volume of lumber when and where it is needed. The system is intended to reduce cost, increase yield and guarantee delivery.

> 814.438.7888 www.alumber.com

Vauth-Sagel Slide corner

Vauth-Sagel's Slide corner enables comfortable access to cabinet contents. available in base cabinet through tall cabinet versions. Available for 15-, 18and 21-inch door openings, the wooden shelf comes in a maple-look finish, while the rail comes in RAL 9006.

www.vauth-sagel.de





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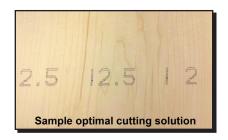
Rockler Woodworking and Hardware Undermount Utility Tray

Rockler Woodworking and Hardware's Undermount Utility Tray is a workbench accessory that attaches to the underside of work surfaces to hold benchtop tools. The bottom panel of the 16-gauge galvanized steel tray is perforated to allow sawdust and other debris to fall through.

> 763.478.8201 www.rockler.com

Baillie Lumber Co. YieldMAX

Baillie Lumber Co.'s YieldMAX product line features Wood-Eye Scanning Technology to provide consistent lumber across multiple species and thicknesses. YieldMAX helps manufacturers create custom blends to meet specific produc-



tion requirements, improve overall yield, develop consistent products and reduce inventory of unusable parts by providing the required lumber quantity to produce a guaranteed yield.

> 716.649.2850 www.baillie.com

Plataine TPO WoodOptimizer v8.0

Plataine Inc. offers WoodOptimizer v8.0 as part of its Total Production Optimization solution suite. Features include a user interface with enhanced nesting and cut-path optimization capabilities, use of filler parts, automatic tabbing and tab-removal options, parallel processing of work-orders, full support of cloud computing for algorithmic learning and more. The WoodOptimizer package is offered on a subscription basis, or Software-as-a-Service.

www.plataine.com



Top Knobs Passport Collection **Tower Bridge Series**

The Passport Collection's Tower Bridge Series of knobs and pulls from Top Knobs was inspired by the London bridge's Victorian Gothic architecture style. The Tower Bridge Series is available in five finishes including Brushed Satin Nickel, Polished Chrome. Polished Nickel, Pewter Antique and Umbrio. The series comes in four sizes and two styles.

800.499.9095

www.topknobs.com

Sherwin-Williams Sher-Wood F3 Hi-Bild PreCat Lacquer

Sherwin-Williams offers Sher-Wood F3 Hi-Bild PreCat Lacquer, a catalyzed lacquer that provides formaldehyde-free finishing. The lacquer can be used as a drop-in replacement. It is a self-sealing product, compatible with the full range of Sher-Wood stains and glazes.

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oem.sherwin-williams.com

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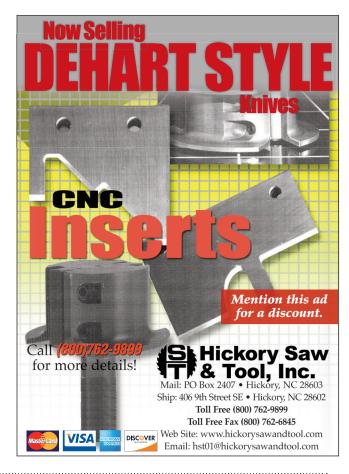
Equipment available includes: Mereen-Johnson Rip Saw System, Barr Mullin Turbo Wonder Saw Systems (2), Weinig Moulders (2), Accu-Router CNC, Yates American Double Surfacer, Western Pneumatics Finger Jointer, SCMI double-end tenoner, Forklifts (2) and other miscellaneous planers, sanders, saws



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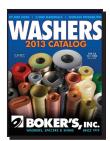












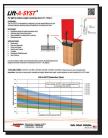
2013 washers catalog

Boker's 2013 washers catalog illustrates 27.000 non-standard flat washer sizes that can be manufactured to exact customer

specifications. Washers are featured in a wide range of outside diameters, from 0.08 inches to 5.14 inches, a variety of inside diameters and thicknesses, and a choice of more than 2.000 materials.

800.927.4377

www.bokers.com



Lift-A-SYST brochure

The Lift-A-SYST brochure from Counter-Balance provides an overview of the system for light- to mediumweight countertop

doors. The brochure includes color diagrams and product features and specifications.

> 215.957.9260 www.cbal.com



General line catalog

Dynabrade's general line catalog showcases the company's line of industrial power tools ac-

cessories and abrasives. The 316page color catalog includes more than 800 tools, as well as QR codes that go to Dynabrade's website and tool videos.

> 716.631.0100 www.dynabrade.com

Rockler 2012 **IWF** products catalog

Rockler Woodworking and Hardware has a catalog that features new products from the latest IWF exhibition. Products include a silicone glue application system, aluminum ladder step kit, rolling library ladder hardware, cribbage template system, doweling jig, shutter building system, straight-edge dado jig and undermount utility tray.

> 763.478.8201 www.rockler.com



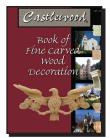


Veneer in **Interior Work** brochure

The Veneer in Interior brochure from Initiative Furnier + Natur. IFN. contains 64 pages with information on

real wood veneers in interior work. The free brochure provides information in the focus areas of: definitions. properties, veneering and examples of veneer use.

> 49.0.22.24.93.77.0 www.furnier.de



Book of Fine Carved Wood Decoration volume VI

Castlewood by AMS' Book of Fine Carved Wood Decoration

volume VI is a 38-page catalog with more than 300 new items including domestically produced corbels, crown mouldings, cabinet trim, crown blocks, fluted fillers, onlays, rosettes, wine lattice and more. It is available in print and is downloadable as a pdf document from the company's website.

> 800.346.4042 www.castlewood.com

Solutions for Woodworking brochure

General Tools & Instruments offers its Solutions for Woodworking brochure, which provides an overview of the company's woodworking tools and accessories. The company provides wood joining jigs and accessories, moisture meters, drill accessories, specialty drill bits, circle cutters, screwdrivers, gages and layout tools, and specialty cutting tools.

> 800.697.8665 www.generaltools.com

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- 1200 Lumens*

\$18.26 per ft.

Go to 2012 Web Pages 460 - 461

*BASED UPON 6 FT. LENGTH

Bar of Light:

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- Aluminum body Available in RGB
- format that can be programmed to strobe or morph 1080 Lumens*
- ^{\$}18.90 per ft. (White)
- ^{\$} **20.70** per ft. (RGB)

Go to 2012

Thin Light:

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- Polycarbonate bodyComes with double-
- sided adhesive tape on bottom
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Fixtures can be **Directly Connected** or Linked via Cables



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rob.roszell@ccimedia.net



Regional Manager Lee Kulbarsh West, Southwest, Midwest 3400 Woodland Way Carlsbad, CA 92008 760 720 0333, fax: 760 720 1333

lee.kulbarsh@ccimedia.net

Europe Sales Anthony Rochman 4 Gunton Rd.; London, E5 9JS +44 208 880 8485, fax: +44 208 880 0859 mobile: +44 793 915 1592 anthonyrochman@btinternet.com

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RoboReel power cord reel

High-tech cord reel offers controlled power retraction and overload protection.

No matter how well your shop is wired, it always seems like there are times you need an extension cord. Or. if it's not in the shop, it's on the job site. But those cords are always a pain and a time suck to roll out and roll up neatly, and available mechanical cord reels are a less than perfect solution. Now comes the RoboReel, a spherical cord reel that looks and works like no other cord reel you've seen.

In the round

Right away you'll notice the most obvious thing about the RoboReel, its shape and color. About the size of a basketball and bright orange, the spherical cord reel is enclosed in a multipurpose frame with rubber grips for carrying and gripping the floor. The frame is also designed so you can hang it in an optional wall hanger.

More than just a cute gimmick, the spherical reel housing is designed to rotate 360 degrees, and its fully enclosed construction helps to keep dust and dirt off the cord. The cord itself is 50 feet long with heavy-duty 12-gauge wire, a triplex outlet and a rubber stop collar.

Operation and electronics

To use the RoboReel, first plug in its power cord, which has a 15-amp circuit breaker on the plug. Then pull out the cord from the reel as long as you need it. There's no spring tension to fight; just pull it to the exact length you need. Finally, push and hold the center button on the outlet end and see the LEDs illuminate to tell you the cord is operational and ready to be used.

When it comes time to roll the cord up, just press the center button to turn the power off, then press again, and



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the cord quickly rolls itself back into the sphere. But rather than the dangerously fast whipping action you might experience with spring operated reels, this power reel can be programmed to slow down at a prescribed distance just before it reaches the end of the line. If you are closer to the reel than the end of the cord, you can also roll it up by pushing a button on the top of the sphere.

Inside the sphere there are also smart electronics that offer thermostatic detection if the cord is being overloaded or getting too hot, and the system will

shut down the power even if the normal circuit breaker has not been tripped. Likewise, if you accidentally cut the power cord with a saw or some other tool, the system shuts down immediately.

Of course, all of this doesn't come cheap. The portable RoboReel we tested lists for \$279. A ceiling-mounted unit with a clever self-leveling ball joint goes for \$299. RoboReel is covered by a 4-year, 4,000-wind guarantee. And the company is also developing similar units for air lines and water hoses. To learn more, go to www.roboreel.com. <

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