

Mighty Mite H

While the vast majority of portable sawmills are band mills, there are a few circle saw options out there—most notably swingblade. The Mighty Mite company is unique in that it manufactures both band and circle mills.

The Mighty Mite circle mill runs on a track, much like a band mill or swingblade mill. But the similarity ends there. The mill features a 26-foot-long truss frame. The vertical main head saw and one or two smaller horizontal edger blades travel the length of the frame to cut the log. The sawyer controls the height of the blade and its horizontal position to get the desired board size. Each pass down the log yields one or two boards, depending on the number of edger blades used.

Background

I met John Davis, president of Mighty Mite, at the factory in Canby, Oregon. From there, we drove about 20 miles north to Portland, where a local sawyer runs one of these machines. On the drive out, John gave me a brief rundown on the mill and its history. In production since 1966, Mighty Mite was one of the first portable mills available, and is particularly well-known in the Pacific Northwest. “A lot of people around here refer to single logs being



hauled down the road as Mighty Mite logs,” he explained. He continued, “We have mills in all 50 states, but international sales are about 75% of our business. Part of that is because we have a proven track record with large logs. Our mills can cut large hardwoods and do it for 10 years successfully and reliably. We’ve proven that in those markets.”

“I’m a circle saw guy,” admits John. “The band mills do a lot of wonderful things that the circle saws can’t do, but production and



The Mighty Mite in action. The vertical main blade and horizontal edger blade produce an edged board after each pass. The drag-back brings the board back past the sawyer. According to Joolz Moorcroft, the mill works most efficiently with one or two helpers.

Left: Cutting the wide slabs is a two-step process. Joolz Moorcroft cuts a flat on the top of the log with the horizontal edger on the Mighty Mite mill. Then he uses the flat surface to guide his Alaska mill's 8-foot bar through the log to make slabs up to 6 feet wide.

cost per board foot really favor the circle blade mill." He explained that his circle mills are serious production machines—up to 1,200 board feet per hour—designed to be run by two or three people, depending on the type of lumber produced, board-handling equipment, and whether the boards are stickered as they are produced. "With the double edger blades, once you open up a log, you're cutting a board or two every pass. So when you're talking about a feed rate of 100 feet per minute, you're looking at a lot of production," he concluded.

John is proud of his mills' safety record. "The operator is the weak point in the safety," he noted. "Whenever anyone buys a mill, we encourage them to come here for training. We'll have their mill set up and spend as much time as it takes to train them to run it safely."

As we talked, he drove right into downtown Portland. The sawmill business we were to visit was called, appropriately, Urban Timberworks. Wedged tightly into a corner of a city block were a number of huge logs of impossible shape, an office, and the object of our visit, a Mighty Mite H model sawmill. There we were warmly welcomed by Joolz Moorcroft, aka the Wood Dood. With a beard, plaid shirt, suspenders, and a chain saw wrench dangling from a loop in his heavy jeans, Joolz looked like he had just walked out of a lumber camp.

Urban Timberworks

In addition to being FSC-certified, Urban Timberworks deals mainly with logs from trees cut in urban areas. These logs present too many challenges for most sawmills—too big around, too short, forks and branches, and, of course, too many

foreign objects. Joolz estimates that 80% of the urban logs have some sort of foreign object in them. "We put them through a metal detector, and I'm pretty good at spotting metal in the logs," Joolz said. "If you hit something while running carbide teeth, you can pretty much count on replacing that tooth. I did hit a glass insulator in a log that the metal detector didn't pick up. The shanks, the teeth, everything came out of that blade. The sound was horrific. We had stuff flying everywhere. Here's my gentle reminder," he laughed, indicating a piece of wood with a carbide tooth deeply embedded in it. "That's just something you face when you cut urban logs, and that's why the big mills won't cut them." He continued, "The strangest thing I hit was a concrete statue of Buddha in the crotch of a big maple log!"

Joolz works closely with arborists, tree companies, and area land developers. "All of this was going for firewood or to the landfill," he said, gesturing toward his stockpile of logs. "That's why I got into the business in the first place. My dad was a boatbuilder, so I grew up around carpentry. When I looked at the logs from a carpenter's view, it seemed crazy to just bury or burn them. We looked into urban logging, and concluded that the only way it could make money was to complete the process from harvesting, primary processing, secondary processing, to manufacturing and installation. That's where you make your money—manufacturing and installation. It's expensive to harvest one or two logs at a time."


Urban Timberworks and Mighty Mite

Joolz looked at several different mills before deciding on the Mighty Mite circle mill. Because of previous experience with band mills and their portability, he considered them first. After talking to another contractor who spoke very highly of the Mighty Mite, Joolz looked into it. "They have a long

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Mighty Mite H

Mill typeCircle, moving head
PortabilityTransportable, some disassembly recommended
Weight4,500 lbs.
Track length26 ft.
Vertical cutting blade30 in. diameter, 12 in. cutting depth
Horizontal cutting blade23 in. diameter, 9 in. cutting depth, flush mount
Maximum cutting length18 ft. 6 in.
Maximum log diameter6 ft.
Maximum board dimensions12 in. by 9 in.
Power61 hp Perkins diesel
Track typeSquare steel truss
Log turnerOptional
Horizontal networksMechanical Hand crank
Vertical networksHydraulic
Carriage feedHydraulic, variable 0 to 120 ft. per minute

Board drag-backStandard
Log clampingHydraulic
Options10 ft. traction sections, up to 46 ft. total length, hydraulic log turner, double edger blades, live deck, extensions to handle larger diameter logs—virtually unlimited, hydraulic networks

MANUFACTURER

Mighty Mite Industries Inc.
 461 NE 3rd Ave., Canby, OR 97013
 Phone: 503/266-3387
 Fax: 503/266-3395
 e-mail: mytmite@pacifier.com
 www.mightymitesawmills.com



The controls and operation of the Mighty Mite mill look complicated, but Joolz Moorcroft has found the machine to be simple to operate, and can handle logs that would be impossible with a band mill. He is very careful to pay attention to safety when running the mill.

track record of being very good at what they do. The fact that they are built only 20 miles away was another plus. We did a lot of research on mills, and we decided that that's the one we wanted."

The Urban Timberworks mill uses a 66-hp John Deere diesel engine with a 30-inch main blade, capable of making a 12-inch-deep vertical cut. Joolz has two options for the edger blades. The single 23-inch-diameter edger blade allows a horizontal cutting depth up to 9 inches for a maximum beam size of 12 inches by 9 inches. He also has a pair of smaller edger blades that can cut up to 4 inches into the log. These can be adjusted to cut a pair of boards—for example two 4-inch by 6-inch boards, or a 4-inch by 4-inch and a 4-inch by 8-inch with each pass of the saw. By turning the log, he can use the flush mount edger blade to flatten each side to make cants or beams up to 5 feet on a side. All blades use inserted teeth. Joolz finds that the high-speed steel teeth work fine in softwood, but prefers carbide teeth for the hardwoods. And although the blades can be sharpened on the mill, he removes dull teeth and sends them out to a sharpening shop. He keeps extra sets of sharp teeth on hand at all times.

After each pass, a hand crank moves the carriage sideways for the

next cut into the log. After the layer of boards has been taken off the top of the log, the track is lowered with the touch of a hydraulic lever, and the mill is ready to cut the next layer. For most cutting, there is no need to turn the log, so there is little time lost between cuts. Edging is done by the mill when it cuts the boards, so that step is eliminated. The mill also has a drag-back system that brings the boards back to the sawyer, if desired. According to Joolz, "it keeps your offbearer real busy. With three of us using the double edger blades, we've gotten some real production." He continued, "It depends on the size of the logs and how you're loading the green chain. You've got to be on top of it with the stickering."

Joolz pointed to a 6-foot-diameter log, about 8 feet long. "This is a cedar of Lebanon log. It produces beautiful wood. We specialize in big slabs, because we can handle big logs." Joolz uses an Alaska mill and a Stihl 088 chain saw with an 8-foot-long bar and a ripping chain to cut slabs up to 6 feet wide. "The circle mill and the Alaska mill complement one another beautifully," he exclaimed. "It is like they were made for one other. I can flatten the log and get some boards off the top of the big log with the flush mount edger on the



Wide slabs for craftsmen is a large part of Urban Timberwork's niche market. These bookmatched walnut slabs were salvaged from a log that otherwise would have been destined for the local landfill.

circle mill. Then the Alaska mill has a nice flat surface to ride on for making slabbing cuts. It's beautiful. I love it."

Clamping these logs can be tricky. Joolz explained, "You have to come up with ingenious ways to hold an odd-shaped log, because if it moves even a little while cutting, it can warp the blade." This might involve notching the log with a chain saw or nailing cleats to it, in order to give the clamps something to grip. "It's just being creative. You've just got to figure out what works."

The two-ton machine isn't exactly portable, but it is trans-

portable. According to John Davis, a typical customer can prepare the mill for transport in about an hour and set up the mill in an hour and a half. To save labor, Joolz uses a boom truck to break down the mill and load it onto the truck and a trailer for transport—even so, he will only move the mill if he has more than 20,000 board feet to cut at a given location.

While production sawing can easily keep three people working consistently, Joolz generally works with a single helper. “He’s a third-generation logger from Oregon, and really knows his way around a chain saw. We don’t even have to talk with each other when we’re working. We just use hand signals. Our mantra for working here is common sense. Don’t do stupid stuff. Stay out of each other’s way and be aware of what’s going on around you.”

Joolz is very particular in maintaining the mill and takes the time to make sure that everything is

adjusted and lubricated correctly. He has found the mill to be rugged and reliable. “It is a wonderful piece of machinery. The beautiful thing about it is its simplicity.” His one concern is the 5/16-inch kerf taken by the main circle saw blade. To solve this, he has just added a



Urban Timberworks owner Joolz Moorcroft poses with some of the salvaged logs that are destined to become works of art as tables, countertops, and sculptures at the hands of area woodworkers.

band resaw to cut cants into thinner boards.

The Log Whisperer

He sums up his business this way: “It’s about what the log wants to become.” He continued, “These big trees all have a story to tell. They tell the story of the heritage of our city, so when we process these logs, it’s about the finished product continuing to tell the story of the tree and the history of our city. I keep track of where every log comes from, how old the tree was, where it once stood, and the reason it came down. I can tell you that story in every wood product we produce.” He smiled. “I think I’ll have Log Whisperer printed on my next batch of business cards.” ■

Dave Boyt has a BS degree in Forest Management and an MS in Wood Technology. He manages a tree farm (2006 Missouri Tree Farm of the Year), and operates a band saw sawmill.

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