

The Logosol M7 Chain Saw Mill

The chain saw is an essential tool for every logger or sawyer. While many people are quick to dismiss the idea of milling with a chain saw as too slow, too inaccurate, and taking too much kerf, many sawyers find unexpected uses for specialized cutting. For some, chain saw mills are a low-cost alternative to a band mill where high volume is not an issue. For others, they are a valuable addition to a band or circle sawmill, providing a way to cut odd sizes or shapes of logs that would normally be trimmed off or left in the woods.

By DAVID BOYT

The Logosol M7 is something of a hybrid mill. Although it is powered by a chain saw, it consists of a rigid framework with a bed for the log to rest on and a track for the chain saw. It has the advantages of extreme portability (one person can easily move it, and it fits easily on the back of a pickup truck—or even on the roof of a car) and low cost. Another benefit of the frame is that the sawyer cuts the log at a comfortable height. The track allows the sawyer to set the precise location of the cut in the log. The saw is cranked through the log by a rope that pulls against the end of the log. This balances the forces, and helps keep the log from moving. To adjust the location of the cut, the knees can be raised and lowered inde-



pendently in 1/8 inch increments. While the frame accommodates logs up to 8 feet 3 inches long, multiple units can be combined to cut logs of virtually any length. To emphasize this, Logosol lined up eight mills to cut a 114-foot-long 2 x 4, which was entered in the *Guinness World Records*.

The Logosol mill is manufactured in Sweden, where it was developed for small woodlot owners to provide them with the ability to utilize small logs. The mill is popular there, and it is not uncommon for several families to share a mill, taking it out to the woods on the roof of a Volvo for a day of sawing. Here in the United States, the mill is finding its way into the new market of urban forestry (see the Oct/Nov 2004 issue of this magazine). Trees

Above: The M7 sawmill does an excellent job on odd sizes and shapes for specialty cutting. Note the board clamped to the knees to support the log. With a little creativity, the mill will cut just about anything.

that are cut for development or disease, or are blown down, are typically chipped or go to the landfill. Many tree services are willing to deliver logs to a mill at no charge, just to avoid the landfill charge. These logs present special challenges. Grown as shade trees, urban logs are generally rejected from conventional mills because they are too short, and because of the high probability that they contain metal or other foreign objects. A small mill that can be set up quickly in a parking lot or a driveway is ideal for “recycling”

Logosol M7 Chain Saw Mill

Typechain saw mill

Stationary or portableportable

Cutting capacityup to 56 in.,
depending on the bar

Length and width of mill.....9 ft. long
by 4 ft. wide

Note: Mills can be attached to each other for unlimited length

Size and construction

of framerail track 2 in. by 5-1/2 in.
by 9 ft. long

Track.....aluminum

Replacable tracks?yes

Carriage

support system.....aluminum

Power Plantas reviewed
Husqvarna 372 chain saw

Recommended.....85cc or larger
chain saw

Optional...6.6 kw 3 phase 220v electric
.....11 kw 1 phase 220v electric
.....6.6 kw 1 phase 220v electric

Base price\$2,395

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these logs into lumber.

While it is slower than a band or circle mill, the difference is much less than one might think. The key here is in the chain and bar. The mill works best with a ripping blade. Typically, this is a chisel skip-tooth chain with a shallow 10-degree cutting angle. For bars shorter than 26 inches, a Pico chain and bar are an option. These take a narrower kerf than a standard chain, but will not stand up to the stresses encountered on longer bars. And while a logger can get by with a worn bar, the length and width of a cut made by the chain saw mill makes bar maintenance critical (more on that later). When everything is set up correctly, and the chain is sharp, expect a smooth, straight cut.

Giving It a Try

The Logosol showed what it could do at the 2005 Great Portable Sawmill Shoot-Out in Youngstown, Ohio. Ignoring the diesel band saws on either side of him, Rob Bjorklund and Martin Hall consistently cut one board after another. The duo sliced their way through 422 board feet in just over an hour and a half, and achieved a recovery yield of 82%.

Having seen the M7 mill in action at the Shoot-Out, I was eager to give it a try for myself. A lot of walnut grows in my part of the country, and most of it remains in the brush piles after a harvest. Some of it is large diameter, but too short for sawmills to use. Large crotches are also left behind. Properly cut, these can become gun stock blanks that bring anywhere from \$40 to \$800, depending on the figure of the grain.

I have had limited success cutting the crotches on my band mill. For one thing, there is just no good way to clamp down a 20-inch piece. The other problem lies in lining up the wood to get the precise cut that gives the figured grain prized by gunsmiths. After experiencing the

frustration of cutting into the logs, logs rolling while being cut, and miscuts, I decided to give the M7 a try. I was not disappointed.

First of all, the mill arrives in pieces. The manual is clear and well illustrated. While there was no problem in assembling the M7, it did take about six hours. I strongly recommend that it be built in a garage where parts can be laid out. The nuts and bolts are all metric, so you will need metric wrenches, and

Allen wrenches. Be patient, and follow the instructions. Assembly is not complicated, but there are a lot of parts. Once assembled, the mill has a sturdy frame capable of holding a 1,100-pound log.

The independent knees made it possible to angle the log at the precise angle for the cut. The ratchets allow adjustment in either 1/4-inch or 1/8-inch increments. Short pieces require some special clamping, or even attachment to a support board



Slicing a walnut crotch for a gunstock, the sawyer stands behind the saw with one hand on the throttle and the other hand cranking the saw through the wood.



Logosol factory representative Rob Bjorklund demonstrates the inversion cutting technique for cutting the big logs. The entire sawmill frame is bolted upside down on the log.

with deck screws, but this is not difficult. Once the log was in place, I was ready for the first cut. With a freshly sharpened ripping chain on the bar, the saw cut smoothly through the log. The crank feed was nearly effortless, requiring only a light touch on the crank and the throttle. With the guide rail supporting the saw, cutting took almost no physical exertion. About three-fourths of the way through the log I drove in a wedge to hold the top of the log off the bar, and then finished the cut.

The results were amazing. The cut was smoother than a band saw mill, revealing the beautiful grain inside. I cranked each of the knees up 1-1/2 inches, and again put the saw to the wood. The next cut was nearly as easy as the first, though the saw was working noticeably harder since it was cutting through a wider part of the log. Although smooth, there was some variation in thickness. I called Logosol for advice, and spoke with Rob Bjorklund (the sawyer at the Shoot-Out) about the problem.

Rob explained that a chain saw mill pushes the machine to the maximum. "The type of milling we're doing is more demanding on the bar and chain than what professional loggers are doing," he explained. They can get by running a sharp chain until it gets dull. When milling, you need to run a razor-sharp blade until it gets sharp. When it is merely sharp, you need to file it back to a razor edge." The other culprit, as it turned out, was the bar. Uneven wear on the bar causes it to either climb or dive. Again, this is more evident when sawing a board than when felling a tree. Rob described the process for truing the bar. Once I did this, it cut much straighter and, if possible, smoother.

While I was using the M7, a sawyer friend stopped by to watch. While he found the mill interesting,



Guner and John of Seaborne Designs show a counter-top made from a slab milled with their M7 sawmill.

he left commenting that he thought he'd stick with his band mill. I'll keep my band mill, as well, but I'm also going to keep the M7. It will only take a few dozen gun stock blanks to pay for it, and I have no doubt that there are other niche markets for which it will prove useful.

Seaborne Design Rustic Furniture

To see another application of the M7 mill, I traveled to Goleta, California, home of Seaborne Design. There I was greeted by Guner Tautrin and John Birchim. Located in the California hills within sight of the Pacific Ocean, Seaborne Design specializes in unique rustic furniture that retains much of the character of the trees from which it comes. The workshop houses only the basic tools of the trade—a table saw, planer, jointer, router—and the sawmill. Seaborne started out building conventional cabinets. "We came into the business as cabinetmakers. We would go down to the local Home Depot and buy 3/4-inch birch plywood and do custom cabinetry. We got tired of using plywood," recalls Guner. Then they got hold of a walnut log, which they cut and used for face frames. They were soon hooked on the idea of using locally available logs and milling them for custom furniture, and purchased an M7 mill.

According to Guner, "Santa Barbara has a lot of potential for wood, in trees that are being cut down due to development or to disease. We're finding that we can take those and mill them ourselves, and take it to the next level, and actually make a product out of it." To get the logs, they contacted several area tree services. Rather than pay to leave them at the landfill, they are happy to set them aside to be used by Seaborne. Customers are generally pleased to know that their trees will be used for furniture instead of thrown

out as trash. "We call our vision urban tree restoration," says Guner. "We've gotten some amazing logs. We document where the tree was, and the process of turning it into furniture. This gets people more in tune with where the tree came from and how precious the wood is." The sawmill allows Guner and John to make use of the natural attributes of the log in their furniture. "We thrive on character. We don't promote perfectly grown trees. The gnarly logs are the ones that surprise you the most."

The day I was there, they were preparing to cut a 38-inch-in-diameter, 8-foot ponderosa pine log. "We've been pushing the envelope on diameter," says Guner. "We've worked with logs that required a 42-inch bar on these mills. It's pretty impressive. We only use the 42-inch bar when we have to on the center cut. We quartersaw the logs, then switch to the shorter bar, then slab them. Cutting logs this size calls for an unlikely looking setup called 'inversion cutting.' Instead of loading the log onto the mill, the log is notched and the mill is turned upside down on the log and bolted down to it! The saw rides on the track in the normal fashion. This means that the log can be cut where it lies, instead of lifting it onto the mill."

Once the mill was in place and

the depth of cut was set, Guner fired up the saw and proceeded to crank it through the log. About three-fourths of the way through the cut, he stopped and drove a couple of plastic wedges into the cut to hold the top of the log off of the bar and back side of the chain. He then finished the cut. The saw cut smoothly through the log in about six minutes. Impressive time for a chain saw. He made two more cuts before unbolting the sawmill from the log. With the mill in the normal operating position, he finished cutting the remaining boards from the slabs.

The end result was four slabs roughly 36 inches wide, plus narrower boards from the slabs. It would be nearly impossible to produce comparable boards with a band or circle mill. Guner has nothing but praise for the mill. It has given them the ability to produce furniture that would otherwise be difficult to build, and has opened up new de-



The author cuts a walnut crotch for a gunstock blank (or possibly a guitar neck).

sign possibilities. And even though they only work locally, word has spread around the Santa Barbara area, and demand for their furniture is increasing. Customers not only like the design of the furniture itself, but also the idea that it was made from salvaged logs that were

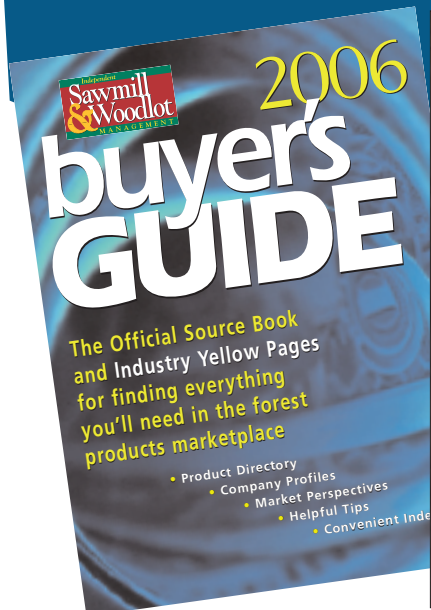
saved from chipping or the landfill.

Although the business is enjoying success, Guner and John keep their work in perspective. "We have a unique lifestyle that doesn't require a lot of overhead, which means having more time to do the things we enjoy," says Guner. "Surfing is our

passion, and we drop whatever we're doing when we have good waves. We're having a good time or we wouldn't be doing any of it." ■

Based in Neosho, Missouri, David Boyt is a frequent contributing writer to Sawmill & Woodlot magazine.

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