

PHOTOS BY JOE DENIG



**For backwoods sawyers, this 3-blade circular saw is a real champ!**

# Timber Champ

Reviewed by Joe Denig

I was trying hard to peer through the fog to spot the turnoff for Glen Reed's farm. I had promised to meet Glen for breakfast and then take the opportunity to look at his Timber Champ Sawmill. Out of the fog the turnoff suddenly appeared and I turned up the dirt road to his homestead.

Glen's farm is located in the Blue Ridge mountains of Virginia. Originally from Michigan and recently retired from UPS, Glen splits his time between his farm in Virginia and his Michigan home, where his wife still lives. When she retires in a few years the couple plans to build a

retirement home on the farm and move there permanently. Glen loves to spend his time outdoors, working and tinkering. He will tell you that he is not in the portable sawmill business to make a million dollars, but it gives him an excuse to be outside and meet a variety of people. His portable mill also gives him the opportunity to saw wood that he is saving to use in his future home.

During breakfast Glen described how he drove from Michigan to Oregon to purchase the mill directly from the manufacturer in December of 1996. What spurred his Timber Champ purchase was that the mill was extremely functional, or as he

describes it, "the bare bottom basics." Everything came with mill that he needed to get started.

The Timber Champ is basically a box beam made from formed sheet metal. A saw head equipped with three circular saws travels along the beam to produce boards. The beam is supported by end stands that can be raised or lowered, which lets the sawyer cut extremely large logs and in rough terrain.

When I arrived, Glen had his mill configured in the trailer mode so he could show me how to set up the mill for sawing. For the demonstration he had chosen two large maple logs that a customer had given him to saw. The logs

had been sitting around for about a year, and the ends had dried, making them more difficult to saw. Before we got started, Glen warned me that he had not sawn in the last several months and that he and his mill might be a bit rusty. I told him I understood and that it would probably be a better test of man and machine.

To prepare the Timber Champ for sawing, the end stands are first placed in position and visually aligned. Two supports or props are attached to the far end stands (opposite of the operator) to help stabilize the rig. The beam supporting the traveling saw head is then attached to the end stands. Lastly, the wheels and the axle are removed. The simplicity and the thought that went into the design of the mill are really

**Glen Reed (above right) guides his Timber Champ through a big old Maple log. At right, the two horizontal edger blades on the saw head can be seen.**



obvious during this trailer-to-saw operation.

The box beam also serves as a storage bin for the tools. It takes very little manual effort to assemble the mill because everything that has to be moved is either light enough to move or acts like a counterweight, lessening the amount of effort needed to position the part. Only two wrenches are needed to assemble the mill: a 1/2-inch, and a 9/16. The cross member of each end stand is horizontally leveled using a carpenter's level.

The log stands, with the attached log dogs, are positioned to accept a log, and you are ready to saw. The whole setup looks like it is wobbly, or as Glen describes it, "as loose as a goose." But it is this flexibility of the frame that gives the mill its accuracy, which I'll describe in more detail later.

Getting the large maple log in position took some skill and effort on the part of Glen and his front-end loader.

The sawing head is powered by a 24 horsepower Onan gas engine, and comes equipped with three blades. The main blade is 23 inches in diameter with approximately a 1/4-inch kerf. It saws in

the vertical axis to produce the thickness dimension, while two 11 1/2-inch edger blades saw in the horizontal axis to produce a board's width. The bottom edger blade is fixed, and the top edger blade can be adjusted from 1 3/4 inches to 8 1/4 inches above the bottom edger blade. The maximum size board the mill can produce is 4 1/4 inches in thickness by 8 1/4 inches in width.

To begin the sawing sequence, the beam and saw head are vertically and horizontally aligned to the pith of the log. To split taper saw in the vertical plane, the beam is set parallel to the pith in the vertical view. To split taper saw in the horizontal plane, the beam and saw head are aligned parallel to the pith in the side view. In other words, the taper on the outside of the log is split in the horizontal axis. What this should tell you is that with the Timber Champ you don't need perfectly level ground to operate on, you only need to align on the log and keep the same alignment while sawing.

The beam carrying the saw head is raised by each end stand with a worm gear and cable arrange-

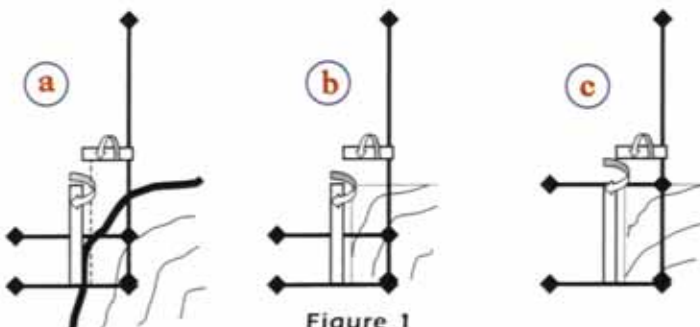


Figure 1

The top edger blade can be used to (a) edge a board, (b) split the board, or (c) size a board.

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ment. The operator uses a ruler on each end stand to set the cut of the bottom edger saw. The first cuts on the log are horizontal cuts with the bottom edger saw. This establishes the opening face and the sides of boards to be cut. Then the saw head is lowered and the vertical saw is indexed over the board thickness. The operator can use the two edger saws in several different ways, as shown in Figure 1. When cutting on the outside of the log, the bottom edger saw sets the side of a board while the top edger saw is placed where the wane breaks, edging the board in one pass. Because of its limit on board width, the Timber Champ is not ideal for sawing around large logs, but it is well-suited for sawing

framing lumber.

The Timber Champ has two features that help with sawing accuracy. The first feature is what I call the saw dampener, which is used when sawing on the outside edge of the log. This is a system that keeps pressure on the outside rim of the saw when it is not supported by wood, in order to dampen the vibration of the saw. The second feature is designed around the built-in looseness of the frame of the mill. Guides ride along the previous cut, steadying the travel of the saw head to help set sawing accuracy. The rotation of the saw sucks the saw head into the log, which makes sure the lumber is manufactured to the thickness set by the

*(Continued on page 38)*

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(Continued from page 6)

depth of the guide. So to adjust the thickness of the piece, the guide depth is set and the beam carrying the saw head is moved to the right with a chain drive. The action of the edger blades keeps the head all the way to the right during the entire cut.

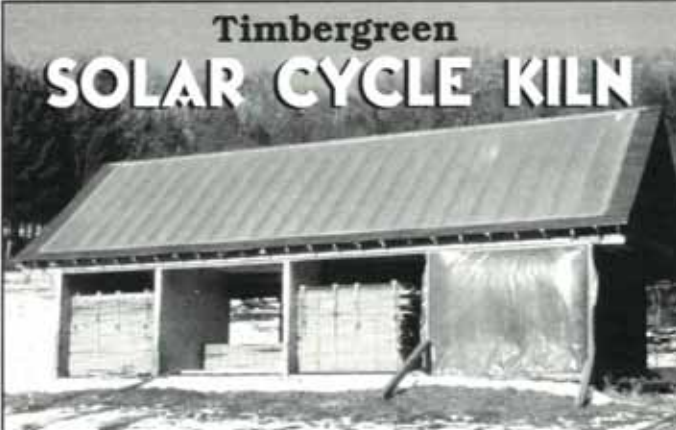
The carriage head is moved up and down the length of the beam by use of a rack-and-pinion drive. The engine supplies power to the drive through a simple disk transmission that allows for variable speed and reversing direction. Because the maple logs Glen was sawing were dried out, they were extremely hard to saw. And, since the mill had not been used for a while, there were some

difficulties in feeding it. Mechanically, this could be blamed on the main drive belt slipping some during the run we had earlier in morning and to some mis-adjustment of the depth of cut guides. Or, it could have been due to over oiling a nearby chain. Glen readjusted the guide and kept the mill speed on slow and it solved the problem. We clocked the cycle time of producing an eight-foot maple board, which averaged right around 39 seconds. Glen reported that on 16-foot white oak logs he has timed himself at 46 to 48 seconds a cut.

Operating the Timber Champ mill is simple and it can be controlled comfortably by standing in one location. There is an

## TIMBER CHAMP SPEC SHEET

<b>NAME &amp; MODEL NUMBER</b> Timber Champ	Wheels are Made of: Hardened Steel
<b>MANUFACTURER &amp; ADDRESS</b> Mobile Manufacturing Company 798 NW Dunbar Ave. PO Box 250 Troutdale, OR 97060 503-666-5593 503-661-7548 (fax) www.mobilemfg.com	Size of bearings on carriage wheels: 1 5/8 inches
<b>MILL OVERVIEW</b> Band or Circle Mill: 3-blade circular	<b>SAWING HEAD</b> Saw Blades: 23-inch vertical, 2 11 1/2-inch horizontal edger blades Teeth: 18 total, inserted
Stationary or Portable: Portable	<b>GUIDES AND STRAIN SYSTEM</b> Type of Guides: Roller guides to set accuracy Strain: Saw blade manual system
Cutting Capacity: (diameter and length): any diameter, up to 20 feet long, or 40 feet maximum with extension	<b>SETWORKS</b> Method of Setwork Drive: Hand crank, chain drive
Weight: 1,300 pounds	<b>POWER PLANT</b> Standard: 24 HP Onan, gas
Length & Width: 24 feet x 8 feet	<b>LOG TURNER</b> None needed
<b>FRAME &amp; CARRIAGE</b> Tracks are made of: 16 gauge sheet metal	<b>LOG LOADER</b> None needed
Are the Tracks Replaceable? Yes	



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adjustable (for various  
length logs) automatic stop  
that reverses the travel of  
the saw head. An automatic  
off-bearer is included with  
the mill, and it worked  
well. Adjustable collars for  
the end stands are included  
that limit how far the saw  
head can be lowered so that  
you do not saw into them.

The saws that come with  
the mill have a total of 18  
inserted teeth: six teeth on  
the 23-inch main saw blade  
and six teeth on both of the  
11 1/2 inch edger blades.  
Glen said it takes him six to  
seven minutes to change all  
of the teeth, and three to  
four minutes to sharpen the  
teeth if they are not dam-  
aged. He sharpens the  
teeth on a bench grinder.  
Glen uses teeth that have a  
Stellite surface and he says

they are serving him well.  
To keep his teeth sharp and  
to lengthen their life, Glen  
always makes sure there are  
no rocks embedded in the  
bark of the log.

Glen said he likes the  
ingenuity of the mill design.  
After two years he has had  
not had to do any major  
maintenance on his mill.

Overall, Glen seems very  
happy with his mill. My  
impression is that the  
Timber Champ is a simple,  
easy to operate mill that  
would serve a person well  
who wants to saw basic  
lumber sizes and needs to

work in the woods or other  
less-than-ideal sawing sites.  
It is not going to produce  
lumber with the thinnest  
kerf possible, nor does it  
have the capability of pro-  
ducing a wide range of  
product sizes. But if you  
want a mill to produce  
cabin framing in the back-  
woods, the Timber Champ  
is a very viable choice.

Or as Glen puts it "how  
simple can you get?" ■

*Joe Denig is a Wood Products  
Extension Specialist at North  
Carolina State University's College  
of Forest Resources.*

#### MANUFACTURER'S COMMENTS:

The Timber Champ sawmill can be set up for a permanent  
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