TIMBER FRAMING

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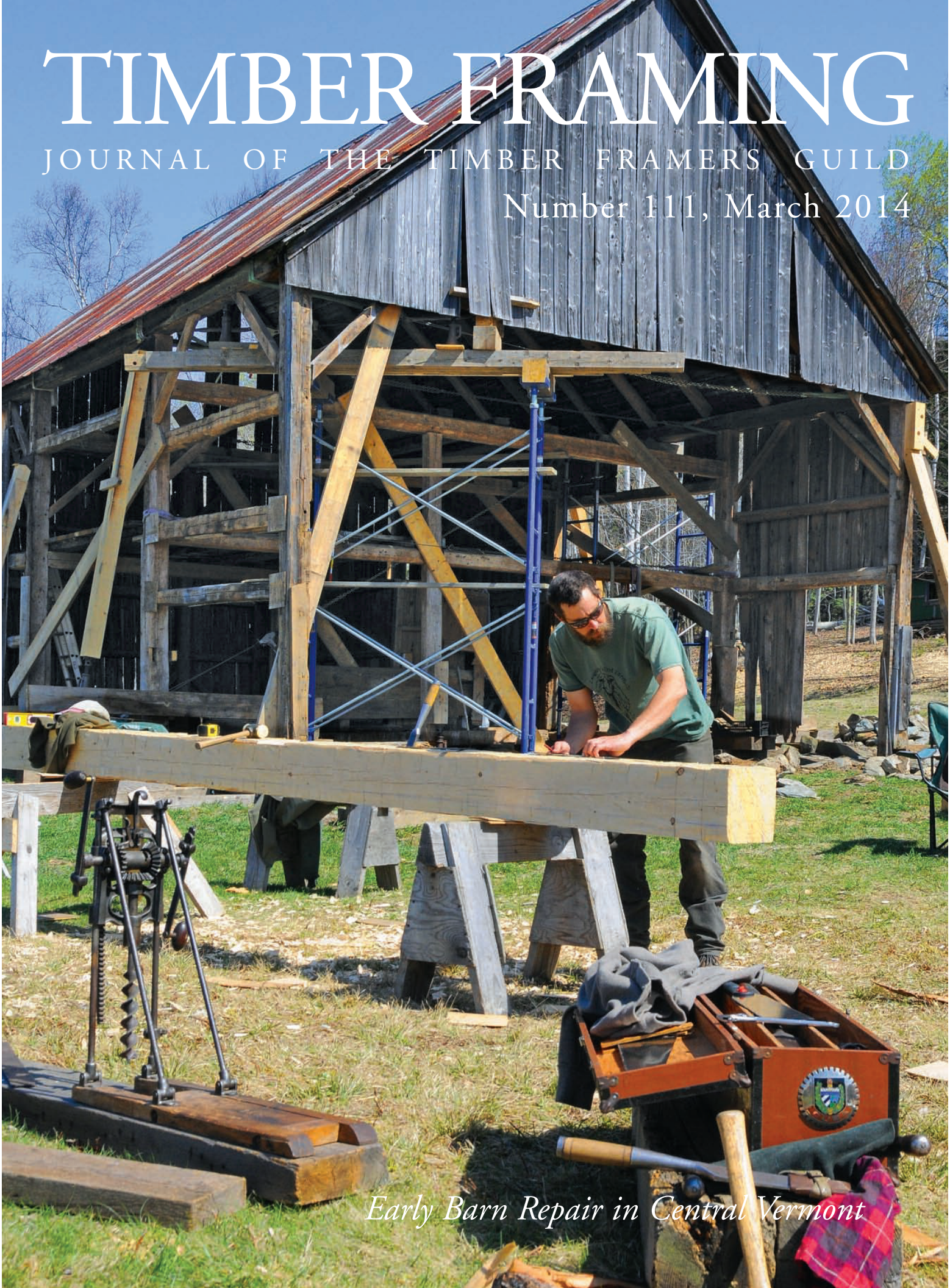
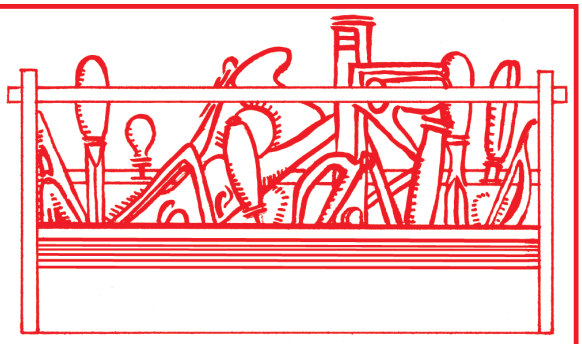


Early Barn Repair in Central Vermont

TOOLS



TRACK SAW FOR TIMBERS

BEFORE cutting my first timber frame, I was convinced that the *biggest* circular saw was the essential power tool. So I purchased the popular Makita 16¼-in. saw (5402NA). After lugging this 32-lb. saw around and struggling to get straight cuts with it, I soon realized what you really need is the *smallest* saw that will get the job done.

Since then, I added two saws to my arsenal—a 10¼-in. Makita (5104) and a 6¼-in. Mafell track saw (KSS-400)—and divested myself of the biggest Makita. I thought I had all bases covered until I recently saw a new 9¼-in. Mafell track saw, the KSS-80 Ec/370.

The name of this saw is a mouthful. Mafell uses *KSS* to designate a saw and track combination. The *80* refers to the depth of cut in millimeters (about 3¼ in.) when on the track. *Ec* means the saw has a motor with electronic speed control and *370* is the length of cut on the track (again in millimeters, equal to about 14½ in.). The saw feels quite light (16 lbs.) for its size and very well balanced, even when assembled with its guide track. The controls are comfortable and well positioned and the machine evinces quality engineering (Figs. 1, 4 and 5).

Setting the blade depth When you first see the blade depth mechanism on a Mafell saw, you may wonder why all circular saws aren't designed this way. My 6¼in. Mafell has a top-mounted lever that raises and lowers the blade on two vertical shafts, along with a separate lever to lock the depth. The KSS-80 uses similar shafts, but combines the depth and locking levers into one, and it's even easier to adjust than its smaller sibling. Simply squeeze a button on the side of the lever to lift or lower, then release to lock (Figs. 1 and 5).

Mafell supplies two adjacent depth scales (both metric) on the saw, one showing blade depth when the saw is mounted on the guide track and the other when the saw is off-track. It's easy enough to print and tape an imperial conversion chart on the top of the saw for those of us who can't divide by 25.4 in our heads.

When the saw is mounted in the guide track, the maximum cutting depth is 3¼ in. Removing the saw from the track increases the depth to 3½ in. (Fig. 3).

The guide track The saw ships with a 32-in. track that can guide a cut up to 14½ in. long. Mounting the saw to the track couldn't be easier—just align the two channels in the saw base to the track, push a short distance on the track and the saw locks into place.

Cutting with the guide is a pleasure. The red plastic edge (Fig. 2) can be placed on the cut line and the saw moves smoothly along the track. The red-edge alignment works with bevel cuts too, even up to the saw's maximum tilt of 60 degrees. An integrated elastic cord aids the return of the saw along the track after the cut (cord end-fittings seen in Figs. 1 and 2).

The track guide is equipped with a sturdy and accurate miter gauge. The cut-side of the track has a fixed stud that should be positioned against vertical face of the timber before cutting. The opposite side of the track has an adjustable stud that slides along a rail and locks in place with the turn of a thumb screw. The scale goes from 0 to 60 degrees in one direction and 0 to 50 in the other, with detents at 0, 22.5 and 45 (Figs. 1 and 2).

Making cuts The Mafell KSS-80 cuts so easily through white pine timbers that you don't hear any motor strain at all (this is initially disconcerting). I also tested the saw by cutting through 3x12 slabs of cherry and birch, which the KSS-80 handled easily. The 19-amp Cuprex motor has an adjustable speed setting. I cranked it up to max and left it there.

The saw comes with an alternate-top-bevel 12-tooth blade, which looks odd (Fig. 3) but cuts almost effortlessly in soft pine, at the cost of some tear-out. Cutting 8x8 timbers to length is quite simple when using the track guide set at 0. If you've got a square timber, marking is not even necessary. For out-of-square timbers, holding the track on a drawn line is easy, provided the fixed track stud is held against the timber. The track remains aligned even without setting the miter gauge, using a minimal amount of pressure.

Cutting joinery This mid-sized saw works well for cutting timbers to length and roughing out tenons (although another ½ in. of cutting depth would be optimal for working with actual 8x8s). But what the KSS-80 really excels at is cutting braces.

The angle settings on the guide track can make reasonably fast work of the nose and tenon-end miters, though cuts from both sides are necessary with typical 4-in. brace stock. (I still prefer to do these cuts in single passes on a 12-in. miter saw.) But after that, no saw finishes off a brace faster or easier than this new Mafell.

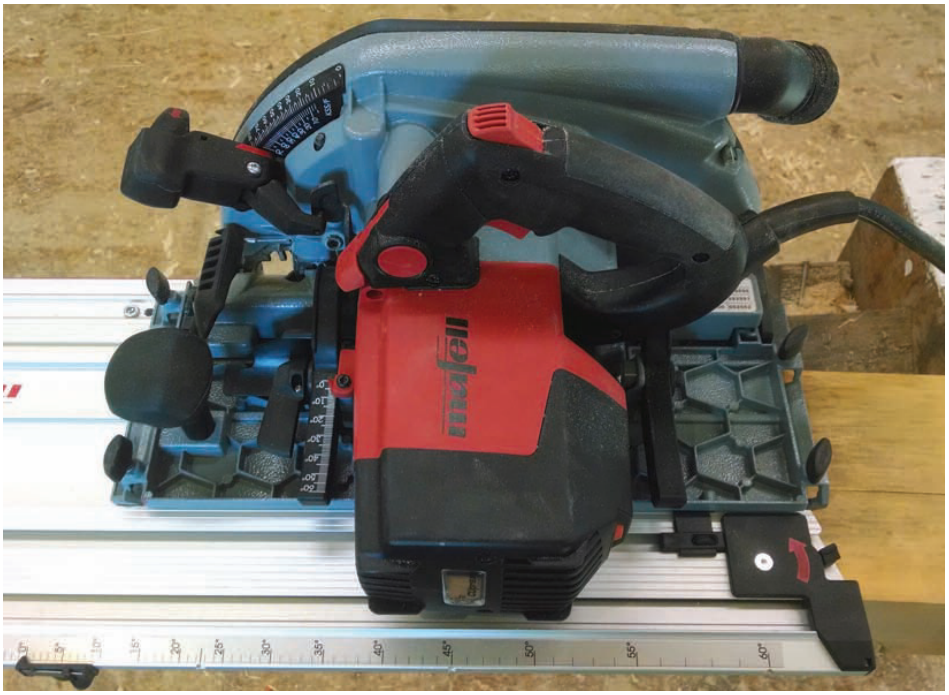
Cutting the brace shoulder is a matter of setting the shoulder depth and cutting another miter along the track. After the brace is secured (I use a bench vise) the saw can be removed from the track and the depth reset to tenon depth (or as nearly as possible) to make the ripcut along the tenon cheek while bearing on the end of the brace. Making this ripcut generates much waste, and I appreciated how easy it was to sight the inside edge of the blade because of the red pointers on the saw base, open sight lines and good dust extraction. (When using another saw to make the same cut, I would have to hesitate and blow the line off several times to see it, but not once with the Mafell.)

Dust extraction A dust extraction port is mounted to the upper part of the blade housing and includes a fitting with a Velcro strap to hold a vacuum hose in place (Figs. 1 and 3). Even without a vac, the saw ejects most dust through the port, which can be rotated to direct the stream away from you. By attaching a vacuum, extraction is almost 100 percent.

Other features The saw has a clever, safe way of lifting the blade guard before the cut, necessary when entering plunge and bevel cuts. A lever near the left-hand grip can be easily pulled by your thumb, without removing your hand from the grip (Figs. 1 and 2).

Bevel cuts can be set with a single lever, next to a legible scale (Fig. 4). The saw has an integrated riving knife that moves up and down with the blade, allowing the blade to be plunged into a timber from above without removing the knife (Fig. 3).

A 13-ft. power cord is supplied with a three-prong US plug. The standard package includes a full-length, double-rodded rip fence with metric measurements, which mounts to the cast and ribbed saw base and is secured by four thumbscrews. Mafell offers guide tracks of several different lengths, from 2.6 ft. to 10.2 ft., and fittings to attach two sections of track together. My evaluation package included two optional blades that Mafell produces for this saw—a 24-tooth and a 56-tooth, both ground alternate top bevel.



1 Saw releases from track via single lever, lower right. Auto-return fitting just forward. Depth-setting lever at upper left frees by squeezing button, locks at new position upon release. Blade guard retractor just beneath. Fence-rod housings with twin thumbscrews at ends of cast base.

Photos Ben Weiss

2 Two studs, one fixed, one adjustable (arrows), in underside of track bear on workpiece edge to establish cutting angle.

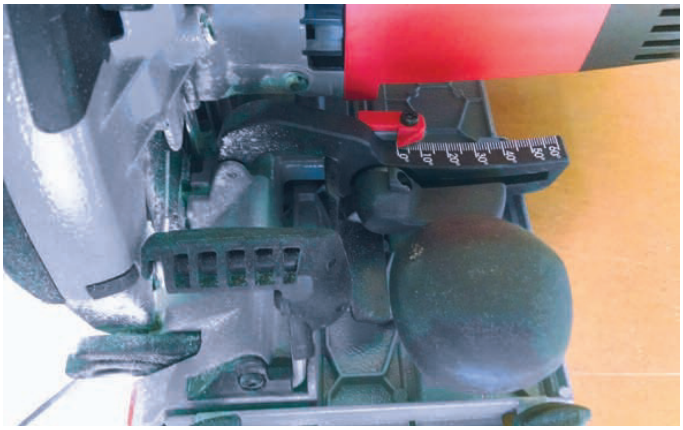
To remove a blade, you rotate a safety mechanism and pull a lever in the left-hand handle to lock the spindle, then loosen the bolt with the included Allen wrench that mounts at the rear of the blade housing (Figs. 1 and 3). I found the 24-tooth blade the best for Eastern white pine. It cut almost as freely as the 12-tooth and left a cleaner cut. The 56-tooth blade produced cuts only slightly cleaner again, and may not be worth the extra money for framing work.

Summary The Mafell KSS-80 is very well made, light for its size, balanced and powerful. The guide track is handy and easy to attach and detach. The saw's dust collection is effective and its mechanism for depth-setting unrivaled. For an American framer, a drawback is that the depth of cut is ½ in. shy of 4 in., however, and for most users the saw should ship with the 24-tooth blade instead of the 12-tooth. And at $1,572, this new saw is not cheap (nothing from Mafell is)—but if I were to start from scratch and buy only one timber-framing circular saw, the KSS-80 would be the one.

—Ben Weiss

Ben Weiss (zoomtext@gmail.com) is an owner-builder in Dorset, Vermont. He reviewed mortising machines in TF 91.

3 In-track depth of cut is 3¼ in. Riving knife descends with blade to keep kerf open behind blade. Dust chute rotates and accepts hose.



4 Bevel lock and scale behind knob, guard-retracting lever to left.

5 Squeeze-operated depth-setting lever and scales off and on track.