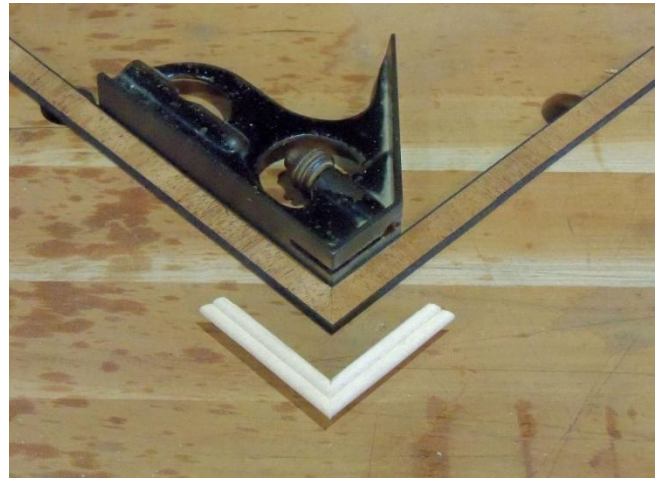


Small Parts Miter Sled Plans



Compliments of: **MICROJIG** 
WORK SMARTER.



Working with small decorative moldings usually requires that they be mitered, and often those mitered parts will be pretty small. Cutting accurate miters in small parts can be both challenging and dangerous, so we here at Micro Jig have designed this table saw sled so that you can cut with confidence that your parts will fit and your fingers will remain safe.

The sled is easy to build in a few hours, compact enough to store easily, and uses common materials. You will be surprised at the results you get when you start using it.

The secret to the sled are the center cleats. As long as they are set exactly 90 degrees to each other, and you cut in the proper sequence, your joints will always fit. Any variation on one side is mirrored on the other so the fit is always square.

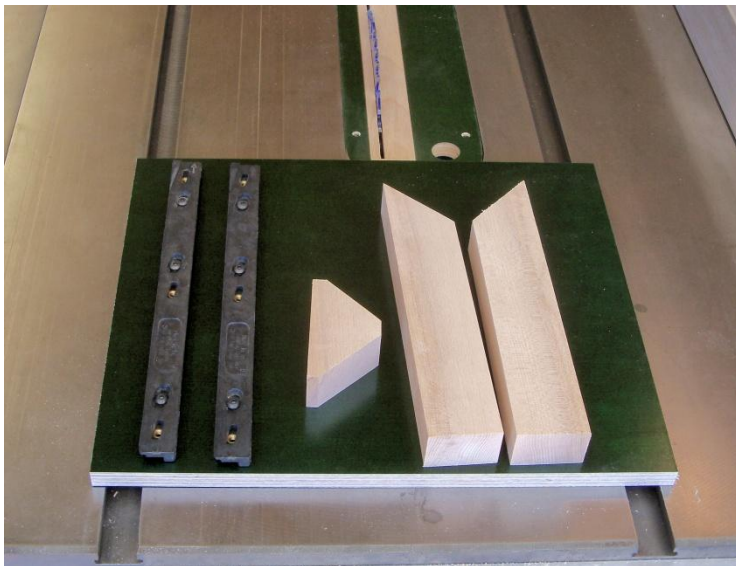
For safety, the sled features a polycarbonate chip shield, blocks to keep the blade covered except at the cutting point, and a simple finger guard system to keep your digits out of harm's way.

So let's get building!

The Base

The base of the sled is sized to your saw. It spans both miter slots. This one is 12" wide by 10" deep to fit my Unisaw, but you may need to adjust to fit your saw.

Note that the miter slots are not evenly spaced from the blade, so the blade will not be centered in the sled. The cleats **MUST** be centered on the blade, so a kerf is needed before we can proceed. Set the rip fence to hold the sled evenly spaced over the miter slots and cut a kerf about 1/3 of the way into the base plate.

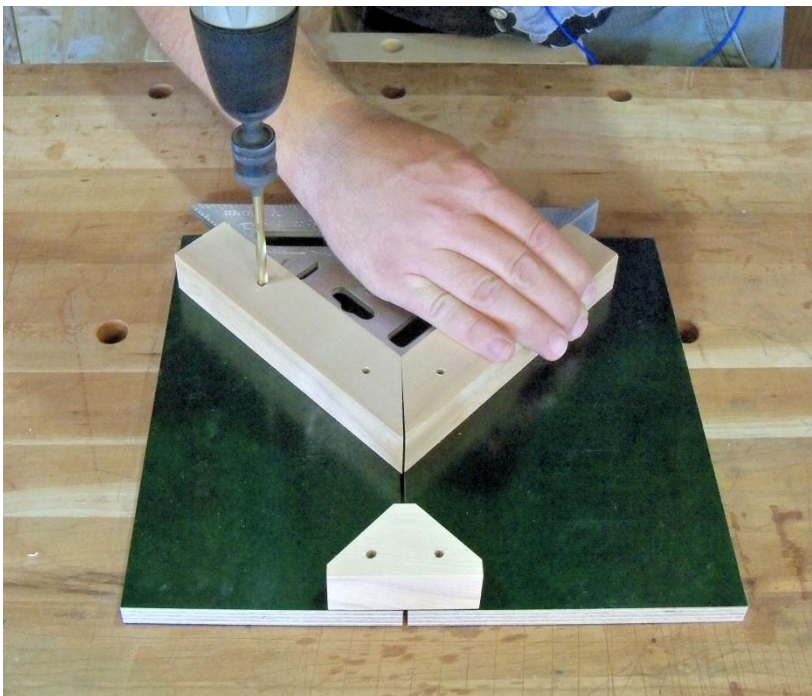


Cleats and a lead block are needed next. Mill up some scrap hardwood and rough cut, drilled and counter bored as shown in the parts list.

The stock does not need to be too tall, this sled is for small moldings and inlays. 1" thick is sufficient.

The lead block is set along the front edge of the base spanning the kerf. This block keeps the base plate from warping and covers the blade in use. Use a drill bit to mark the holes in the base.

The first cleat is set in place with a square and aligned with the kerf about 1 1/2" back from the lead block.

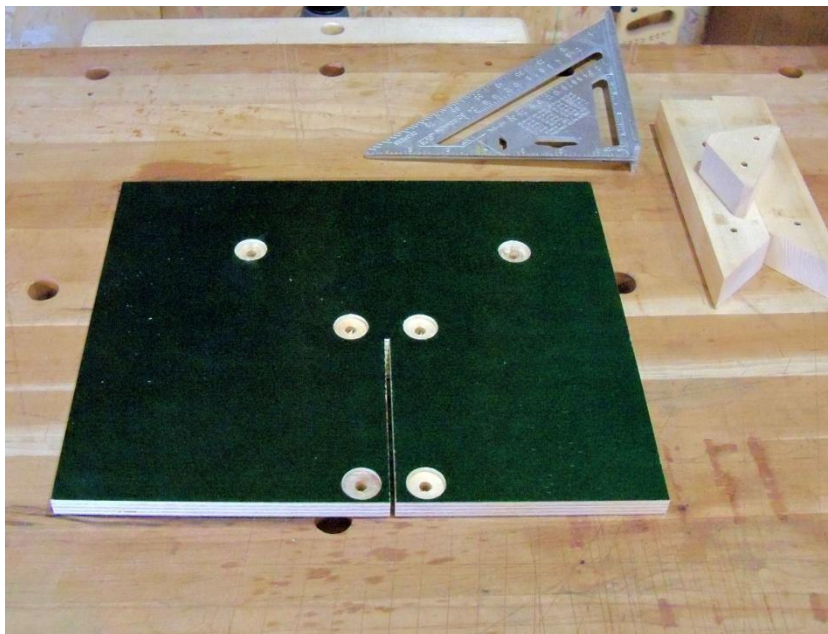


The second cleat is positioned and marked the same way so that the cleats are aligned with each other. The drill is just to mark the hole locations, they will be drilled through on the drill press.

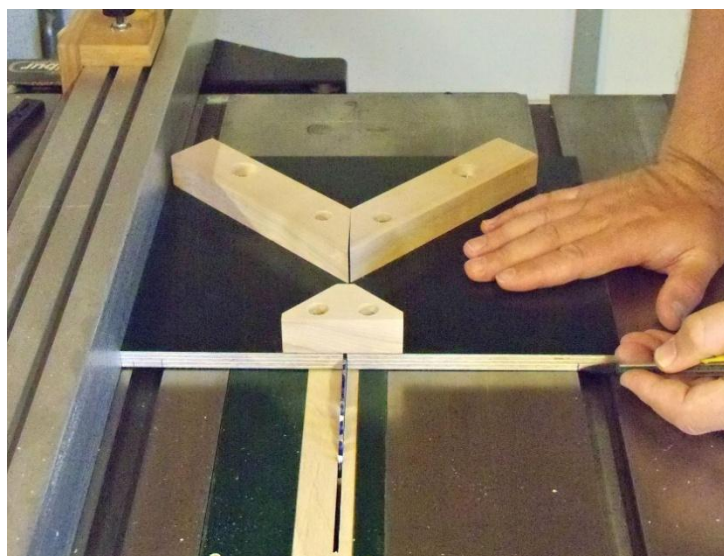
The oversized holes in the back of the cleats will allow for final adjustment once the cleats are properly mounted with screws.

The holes we just marked out are counter bored and drilled through the base with bits sized for your T-nuts. If you are using threaded inserts, no counterbore is needed.

Pan head 8-32 x 1" machine screws are used to secure the lead block and cleats to the base plate.



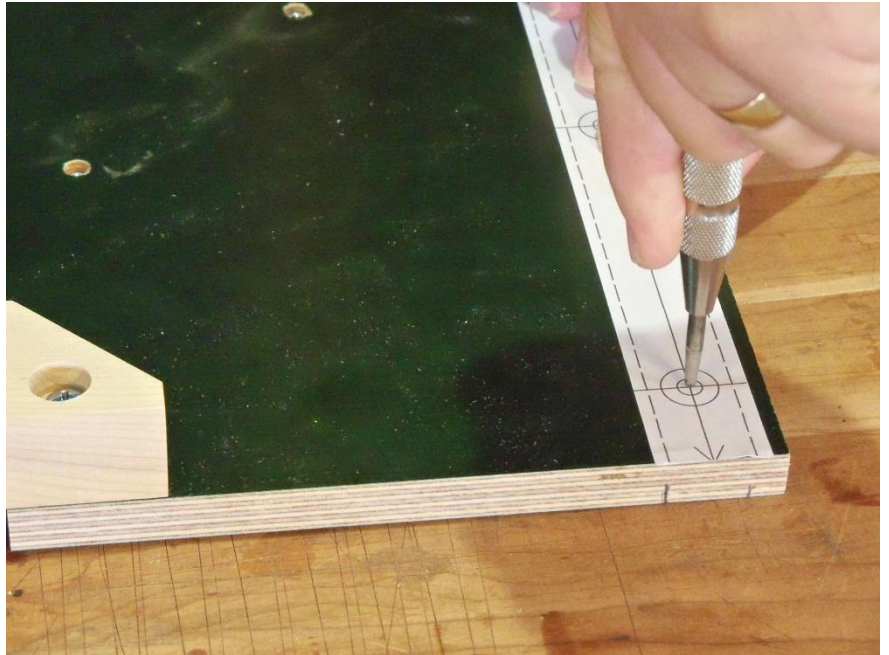
A square is used to align the cleats so that they form a perfect 90 degree angle. Loosen the rear bolts and the oversized holes in the cleats will allow for adjustment. Set the screws tight when you have them aligned. You want the 90 degree cleats to be as close to 45 degrees to the kerf as possible, but the 90 degree angle is the most critical.



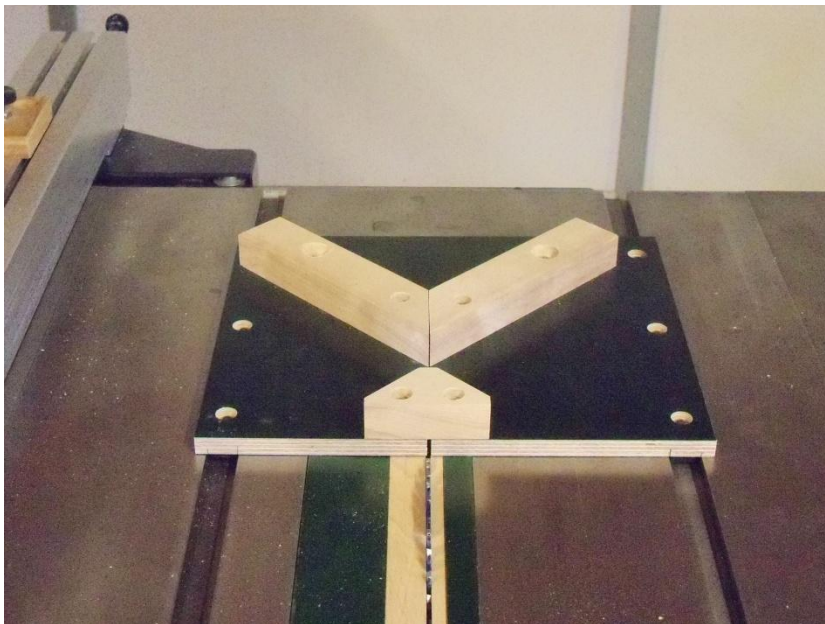
With the table saw unplugged, set the rip fence as before so that the blade is aligned with the kerf in the base. Carefully mark the edges of both miter slots in the base.

Print out the Zero Play template in the back of this plan, cut them out and align them to the miter slot marks you just made. (the holes should be 4" on center)

Use an awl or punch to mark the mounting holes as shown on the template. I had to remove one of the cleats to fit the template since they are off center. Drill and counter bore the holes for the Zero Play Guide bars.



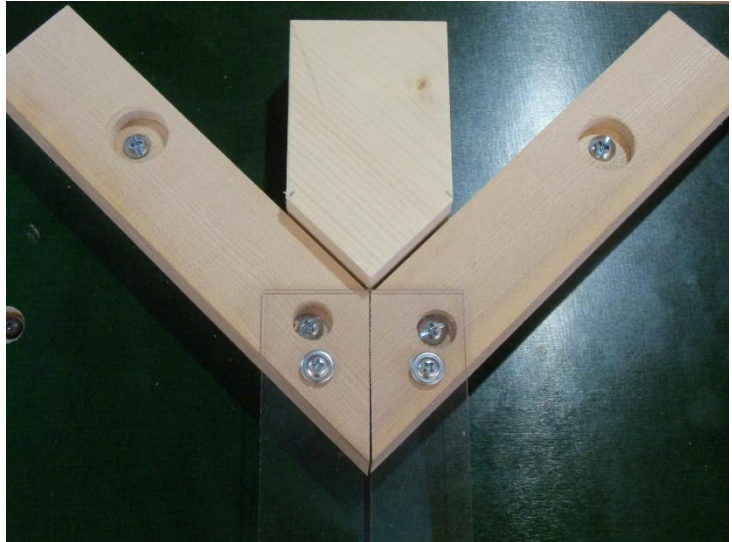
Follow the instructions that come with your Zero Play Guide Bars to set them snug in your miter slots. As before, set the rip fence so that the blade slides into the kerf in the base, and attach the Zero Play Guide Bars to the sled base using the screws provided. The rip fence will insure that the sled is square to the blade until the Guide Bars are secure.



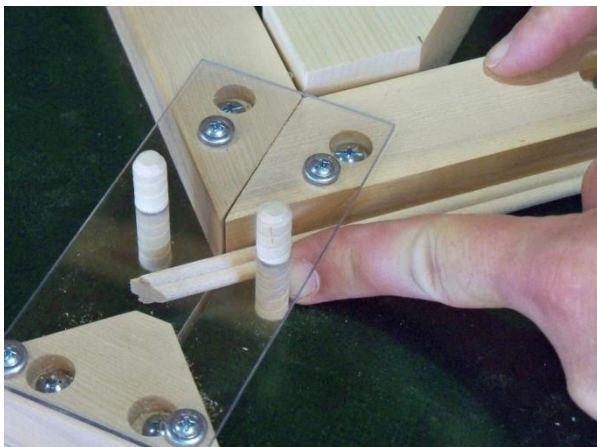
Your sled is now operational, but we need to add a few safety features before we can use it.

For safety, the blade is covered across the entire sled except inside a fairly narrow cutting zone at the front of the 90 degree cleats. Covering the cutting zone with a small piece of polycarbonate keeps fingers out and chips or small off cuts in.

Polycarbonate plastic also goes by the trade name "Lexan" and small squares can be bought at home centers. It is virtually unbreakable so is well suited for guards like this. Simply cut a rectangle out to span the gap between the lead block and the cleats. Short washer head screws attach it directly to the hardwood parts.



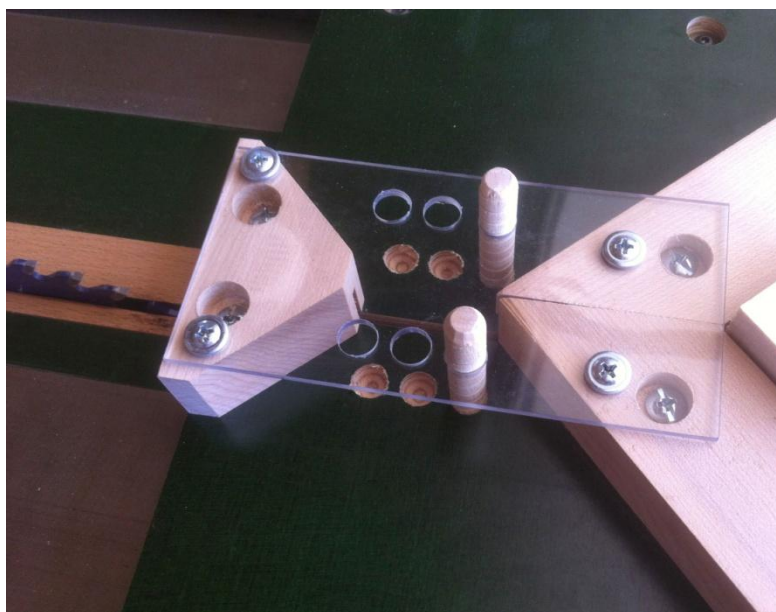
Notice too that a scrap block has been added behind the cleats. This block keeps the blade covered if it happens to pass beyond the cleats to keep fingers safe.



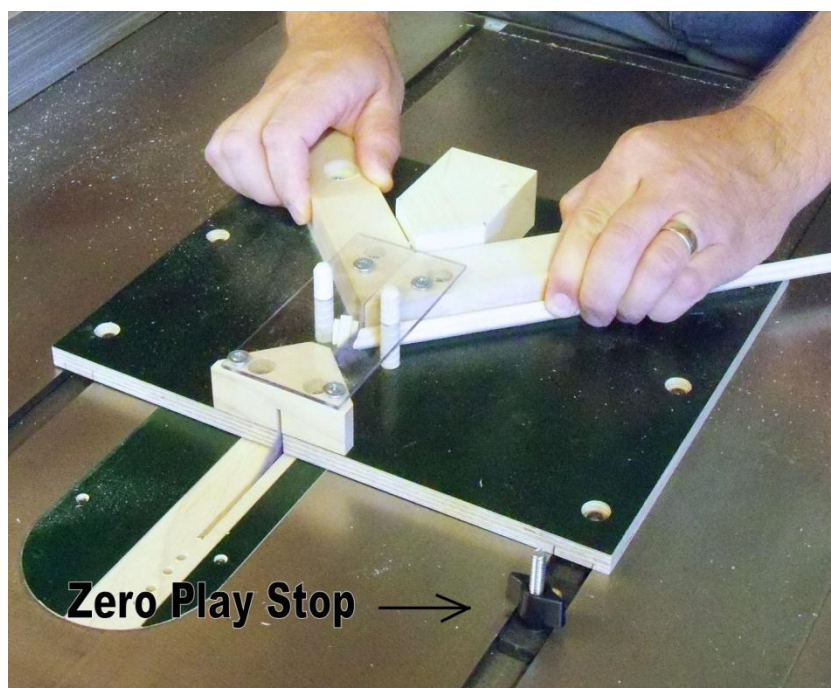
In many cases, the moldings will need to be supported quite close to the cut. To prevent fingers getting too close to the blade, holes were drilled through the chip shield and a little way into the base plate to hold removable dowel pins. The pins can be set to allow the molding through but not fingers too.

Drilling multiple holes for the safety dowels allows for wider parts to be cut while still providing a safety gate for your fingers.

The sled is NOT designed to pass completely over the blade. It is meant to be pushed forward only as far as needed to cut through the moldings.



The block behind the cleats will keep the blade covered if the sled is pushed further than needed, but to keep from accidentally over cutting, I prefer to set up the Zero Play Stops that come with the Zero Play Bars.

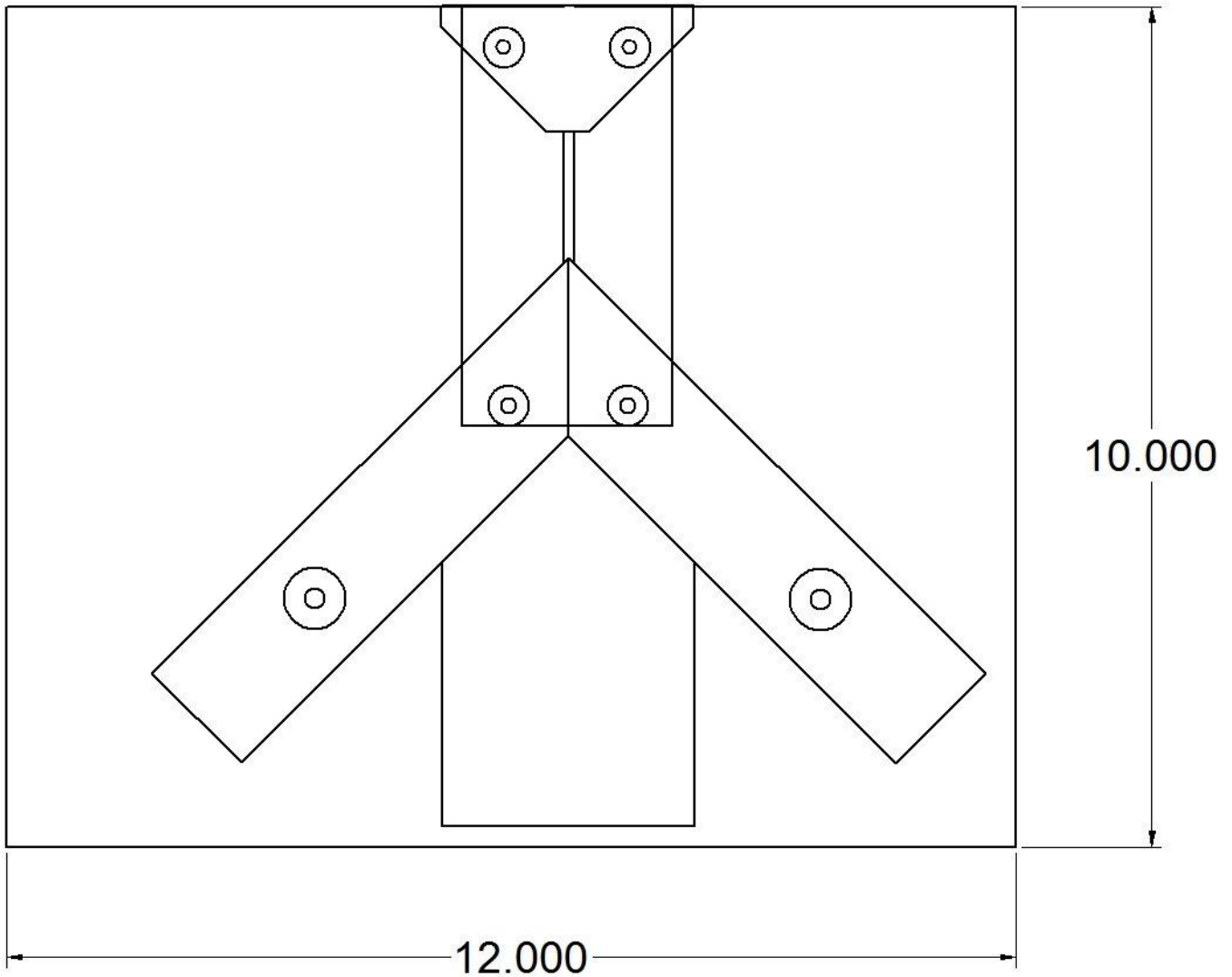


The Zero Play Stop fits in the miter slot and can be easily locked into position to prevent the sled from moving further than wanted.

Setting up these or some other type of stop provide a simple reminder if you are cutting lots of parts.

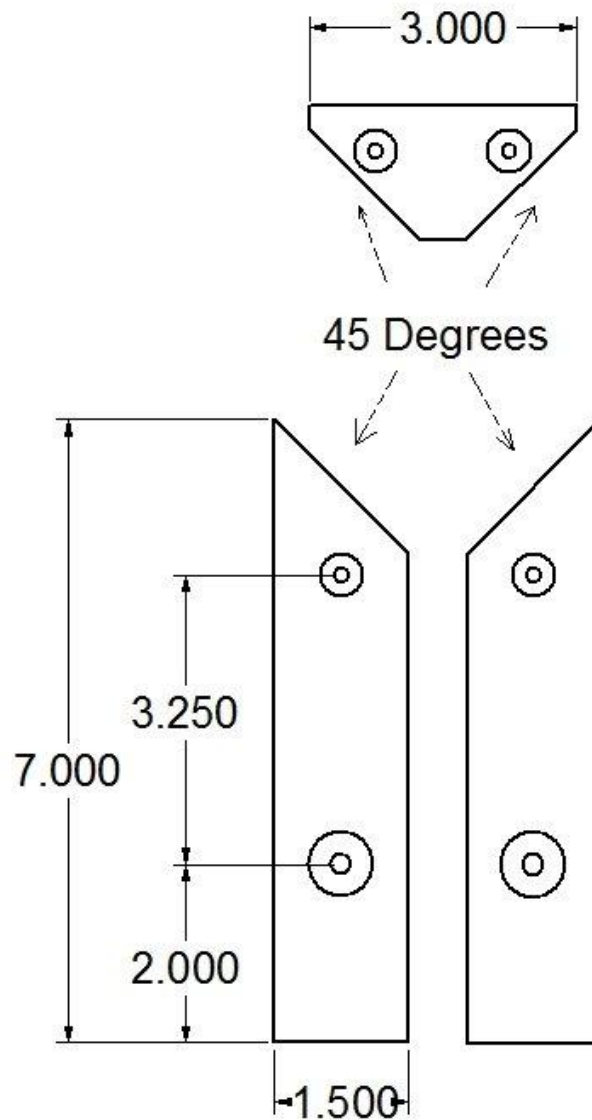
Your Sled is now fully ready to help you cut safely and accurately.

Basic Layout



This plan view and the parts details below are provided as references. The sled shown is set up for my left tilt Unisaw, but you may need to make adjustments for your saw set up.

Lead Block and Cleats



Plans prepared by: Consultingwoodworker.com
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