Crisscross 14 Installation on a Moravian Workbench

The installation instruction given below are based on a Moravian workbench built by the plans given the video and the article. The instructions are for using a Benchcrafted Classic vise and Crisscross 14. The Benchcrafted has their instructions for the vise and crisscross are available at their website. I would recommend reading them as well before beginning.

If you are using a wooden Lake Erie Toolworks vise screw in conjunction with the crisscross it will work if you move the center of the screw and crisscross father away from the leg than given here. If building a new bench and you are using a wooden vise screw, I would recommend moving the two long stretchers down 2” or so to allow more space above the crisscross for the larger wooden screw.

If you are retrofitting an existing bench, I would recommend making a new back vise support so it will be as strong as possible.

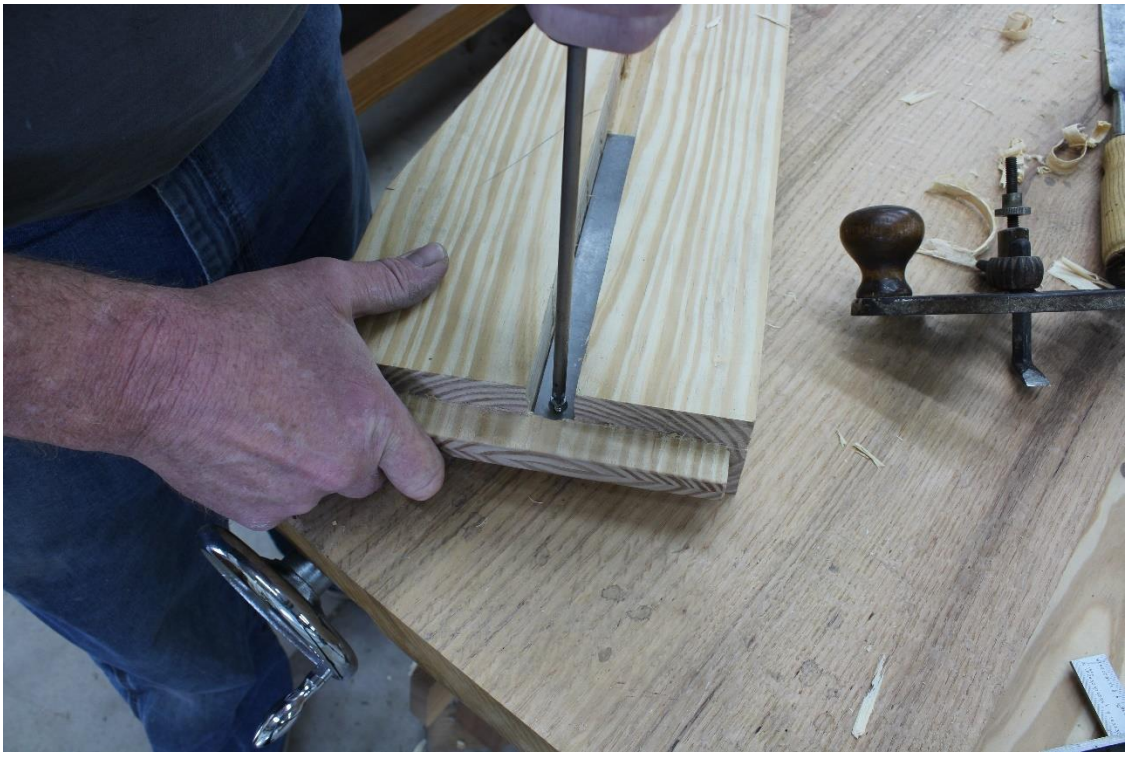
With the back vise support mortised, tenoned and fitted to the bench remove it from the bench, measure up 14 ¼” from the bottom edge on the face side and square a line across, this will be the length of the crisscross mortise.

Measure up from this line 1 ¼” (The Benchcrafted instructions recommend 1 ¾”, going with 1 ¼” gets the vise screw down just a tad more and gives you a bit deeper throat opening) and square another line across. This line will be the horizontal center for the screw location. The crisscross requires a 7/8” wide mortise, the location of this mortise will vary slightly bench to bench. The one here is being mounted on the left end of the bench so the vise needs to be as far to the left as possible. Use the steel nut for the vise screw, center it on the upper line with the flange just inside the angle edge of the vise support, and mark the approximate vertical center. Now set a mortise gauge to 7/8” between the teeth then center on the screw location. Scribe the mortise from the second line to the bottom edge of the vise support. Double check the nut for clearance from the vise support edge.

The mortise needs to be 1 9/16” deep. I bored out the majority of the waste with a drill press.

The walls can be quickly squared up with a little chisel work.

Clean the bottom of the mortise up with a router plane. The lower part of the mortise has an iron bearing plate that installs with a single screw.



The pivot pin holes are 3/8” in diameter and located ¾” from the top edge of the mortise and 13/16” in from the face. BC recommends boring these on a drill press but the angled side of the vise support prevents it in this case. I use a long 3/8” bit and a scrap of wood clamped and aligned to the pivot layout line. This gives you a reference edge to guide you drill bit. Bore halfway from either side meeting in the mortise.

Reinstall the vise support in the bench and measure the distance from the top of the crisscross mortise to the top of the bench. Add about ½” to this measurement and that will be where the top of the vise chop mortise will need to be located from the top edge of the chop. The added ½” will give you a little extra chop length above the benchtop. This can be marked and cut to final length after the vise is mounted.

The chop needs to be at least 2 ¼” thick (the one pictured is 2 ½”). The rest of the chop dimensions are the same as given in the bench plans. Leave the vise square, cut it to shape after the mortise and screw have been installed.

The mortise, vise screw, and pivot pin location for the chop is laid the same as the vise support.

I cut the reliefs in the sides of the mortises for the center pivot pin with a gouge, BC recommends boring a 1 ¼” hole at the center of the mortise. I forgot this step!

The vise screw hole can also be bored at this point, it is 1 ¼” in diameter.

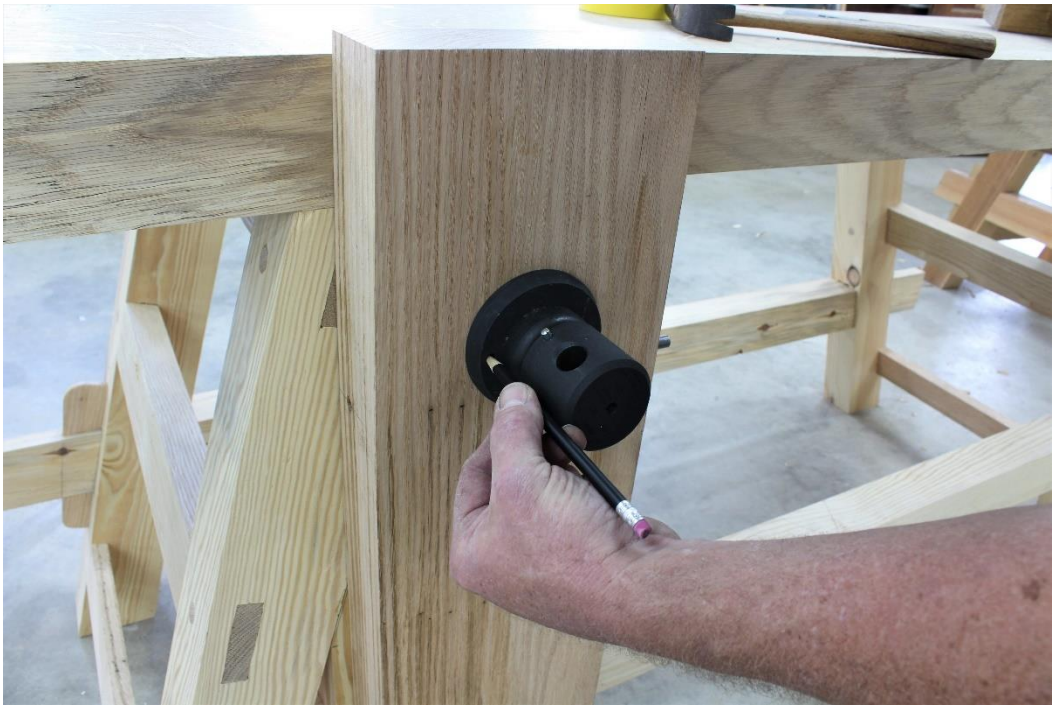
The pivot pins and crisscross can now be installed.

With the chop on and flat against the bench, insert the bit used to bore the vise screw hole into the screw hole and tap with a mallet. This will give you a perfectly aligned layout on the vise support.

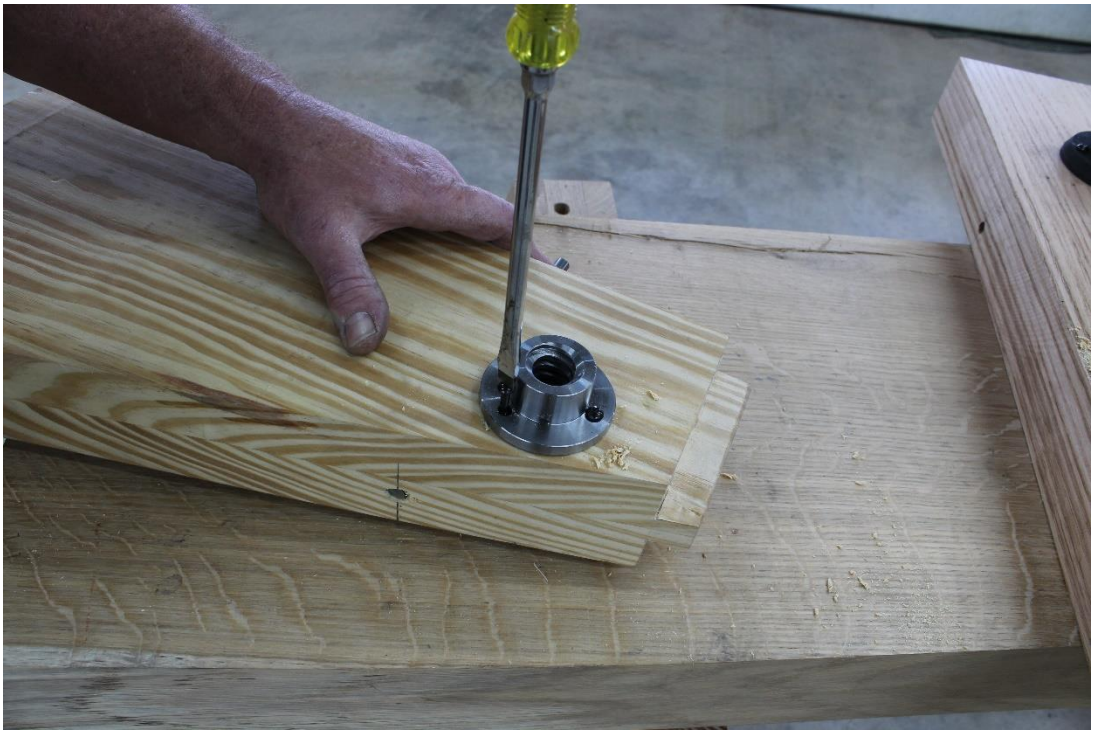
Remove the vise chop from the vise support and remove the support from the bench. There is an acetal bushing that is installed on the face of the vise support to help guide the screw. This hole is bored first to about ½" deep and the 1 ¼" vise screw hole is bored the remainder of the way thru the vise support.

There are several ways to help center the vise screw in the holes in the chop and support. I wrapped several layers of masking tape on the screw in a couple of places and it worked well.

With the tape in place insert the screw into the vise and snug the nut on the back by hand.



Mark the screw locations at the hub flange and the nut. Remove the vise screw and bore pilot holes for the screws.



Reinstall the vise support and using the long 3/8” bit bore thru the pivot pin hole into the leg an inch of so. This will allow the pin to extend into the leg and help distribute some of the pressure

from the vise support to the leg. The other end of the pin can be left straight, I heated this one and bent it 90 degrees. This pin will need to be pulled out slightly to remove the vise support from the bench. The angled end is much easier to grab.

The vise chop can now be cut to whatever shape you desire and reinstalled. The acetal bushing can also be installed.

Last check that the vise operates freely, and the arms of the crisscross are clearing the mortise side. Pare away any offending material.

Below are a few pics of the completed installation. Good Luck!