



I continue on with this routine until I get close to my finished depth, checking after each pass. Once the mortise is at its finished depth I'll square up the ends. Place your body in front of the work so you can use the chisel straight down, square into the opening. If you have trouble chopping square then place a square on your bench top, behind the work for reference. Another mortising trick you can try is marking the finished mortise depth on the back side of your chisel with a felt marker before you begin; that way you can make sure you're not chopping down too deep.



This process is repeated fifteen more times and when complete I'll begin to saw out the tenons. Refer back to my last post to see my set up for that.



When everything is looking good I go back and re-visit the foot components and shape them. This being a workbench I could have easily left them square- not like anyone will be looking at them ~ but I've always liked the look of rounded feet on workbenches. I find it gives the bench a traditional look and there will be much less chance of me tripping on them while I stumble around the shop. My own workbench has square feet but I think that taking the extra 30 minutes or so to round them over adds a nice touch.

Shaping the Feet



To begin shaping the feet I draw out the arch and scribe the lines to determine the recess in the top of the foot. On my bench hook I'll make the first cross cut to establish the small fillet down and then I'll put the stock upright and rip down to remove the shoulder.



Next, I make an angled cut to remove most of the waste and with some rasps and files I fair out the curve.



As you may know, my work shop is in my basement and the floor down there is far from flat! With that in mind I decide to remove the middle, underside of the feet to create four contact points where they meet the floor instead of the bench sitting on the entire length of the foot stock. This will make for a more stable bench.

To remove the material I make a series of cross cuts down to my desired depth which in this case is 1/4 inch.



Then I grab my biggest, meanest Japanese chisel and start chopping the waste out between the saw ke. I take my time doing this part so I don't blow out any of the wood grain. Working from the inside of the foot, I chop down a little over half way and then flip the board over and now working from the outside, *sho* side of each foot to complete the cut.



A quick going over with a sharp card scraper and it's done. When I have the first foot shaped I'll use it as a pattern and trace the rest of the feet off of it. This will insure they're all the same without having to measure every time. A bit of sanding and they're good to go!





With the feet shaped and the joinery cut I'll do another dry fit and we'll call it a day. I begin by laying c the left front and back legs and insert the cross stretcher and foot. I'll mirror this assembly on my bench with the right hand side as well.



Leaving the frames flat on the bench top I'll insert the cross stretchers.





Finally, I'll peg the right hand frame onto the end of the stretchers and stand the whole unit upright. I'm happy with the results and my joints are looking pretty descent. In this final shot you can see how the work surface will slide down into the front slip joints and sit on the rear stub tenons. When I glue up the frame I'll drill and peg all of these joints for a bench that'll probably be around a lot longer than I will...My mortisirs are done for today but I'll add another cross stretcher at the top, rear of the frame that will serve dual purposes. It'll have a dado running along its length to peg the drawer holders into as well as another pick-up point for the surface to sit on. This final cross stretcher will be made of oak because I want it to be at least 2" wide and as you know, the Ipe came pre-dimensioned at 1 1/2".

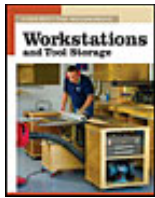


In the next post I'll cut the giant hole in the work surface top for the granite insert (*the horror, the horror!*) as well as make the final stretcher and some last minute details before I glue up the frame assembly and build the under carriage that will hold the granite in place...stay tuned

Workstations and Tool Storage

From the editors of Fine Woodworking

Store, Protect, and Get More from Your Valuable Tools

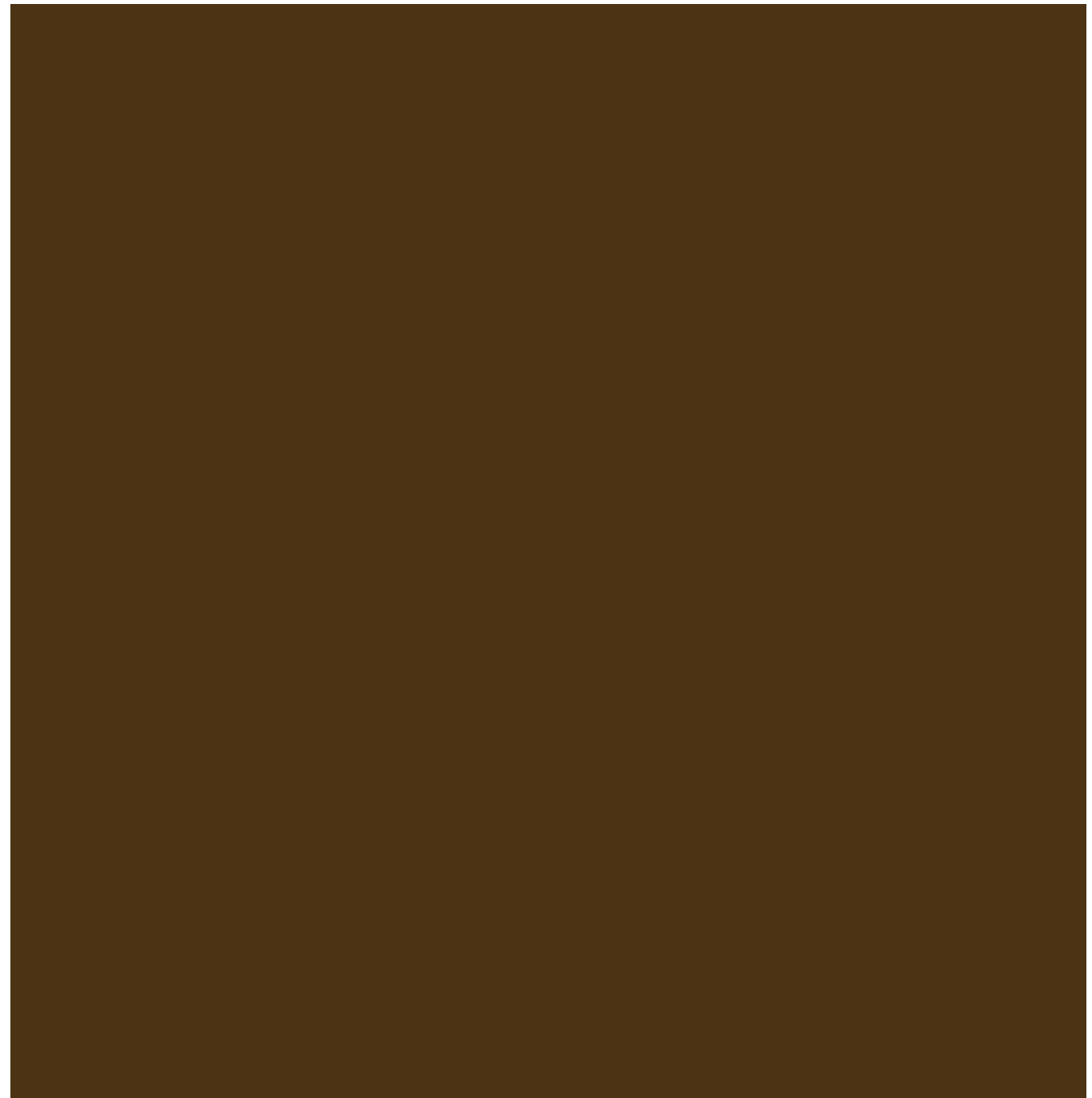


\$17.95

[more info...](#)

add to cart

posted in: [blogs](#)

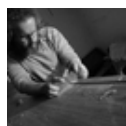




Fine Woodworking Online Membership
member page ▶

A Dedicated Sharpening Bench -part 6- Cutting the Top and building the Under Carriage

December 9th, 2009 in [blogs](#) [ShareThis](#)



Tom Fidgen, member

With the frame assembly dry fit and the bench surface placed into the leg joinery, I carefully place the granite insert on top to establish its permanent location. My initial thoughts were to install it off to one side but after laying it on the work surface and imagining how it would function in daily use, I decided to center it. This decision was based on the under carriage bracing system and the drawer hanger locations. I also decided that it would be more comfortable centered while in use and may keep the bench a little more balanced. Now that I know where I want to place it I carefully lay out and scribe around the perimeter.



Once I have the lay out complete it's time to start thinking about just how I'm going to make this cut-o
My first thought is to use my frame saw and after drilling a pilot hole through the oak, dis-assemble the
and thread the blade through the opening as you would on a scroll saw. I proceeded to do this and ma
the first long rip cut down the front of the piece but hit a wall when faced with the cross cuts. The fran
saw only has a 6" throat so it wouldn't work for the cross cutting.

More from this series

- [Part One: An Introduction](#)
- [Part Two: A Flat, Square Benchtop](#)
- [Part Three: Hand-Cut Joinery](#)
- [Part Four: Start the Frame](#)
- [Part Five: A Stable Base](#)
- [Part Seven: Glue Up](#)
- [Download the Free Plan](#)

1" oak is a challenge at the best of times and the light blade of the frame saw was really pushing it. I de
to use my Japanese ryoba saw, this is the one without a back and has both a rip and cross cut tooth
configuration. I use a brace and bit and bore a series of holes along the cut line to fit the ryoba and g
things underway. In the next shot you can see the first rip cut at the rear and the holes drilled to allow
blade of the ryoba to pass through.



In a power tool shop this procedure wouldn't be a big deal, maybe a jig saw would suffice or even a tal
saw with the piece placed over the blade and then carefully raising it up through the work. In my sho
however, a little trial and error and I'll have the cut out complete. The ryoba works its way through the c
Some people have a hard time with pull saws binding and teeth breaking but if you don't force the cut a
let the saw do the sawing, even on this hard white oak it's a relatively easy task.



It's not pretty but it worked! I'll clean up the inside edges next.



Again with a nice wide chisel I carefully work my way around the area taking small bites. I begin from the underside and chop down a little more than half way. I flip the piece over and finish the job from the top where it's seen. I have a corner chisel and this is a perfect application for it. These are a kind of special item that you could indeed live without but they do come in handy from time to time.





I dry fit the granite and note any tight spots along the edges. I mark them and remove the slab to slowly and carefully pare away the 'fat' to achieve a perfect fit.



Now that I have the surface cut-out complete I turn my attention back down to the frame and dimension the final rear stretcher. This 2" oak is placed at the rear top and the back of the work surface will sit or when complete. So again with the mortise chisel I chop out the cavity.





The tenons in the oak are off set to allow for the dado I'll plough out next. This groove will hold the under carriage cross pieces, both the granite insert supports as well as some drawer hangers.



My plough plane is the perfect tool for the job.





With the frame joinery finally complete, I'll start to lay out the components for the granite supports. They are made from some hardwood offcuts I had, in this case some birch and walnut and I dimension them that when installed the granite will sit slightly proud of the surface. When I say *slightly proud*, I mean more than the thickness of a standard sheet of writing paper. The back of the supports will sit in the dado we just cut into the top, rear stretcher and the front will be screwed and joined into two recesses on the underside of the front apron.

I begin as usual by laying these out.



I approach this like I would with chopping a half blind dovetail, clearly scribing the edges and the depth of the cavity. The main difference between this and a dovetail is the dovetail is usually chopped into the edge grain of a board while this is running along the grain. Care must be taken to insure I don't chop too deep and split the piece. I begin by making some saw cuts to establish the outer edges and then with a chisel begin removing the waste.





In a power tool shop this procedure could be easily accomplished with a router and a jig so with that in mind I'll get mine to complete the cut-out.



Gotcha! Did you really think my router would have a 'plug' attached? Taking shallow passes, I work my way down with the router plane until I reach my desired depth.





Then with a chisel I clean up the corners and dry fit the supports. I'm looking for a nice tight fit- how tight? With the apron clamped in my face vise I'm able to press the supports down into the openings and with any support they're able to sit proud without sagging or falling out.



I'll re-assemble the bench top pieces and dry fit the granite supports.





When I'm happy with the fit and the depth of the components are well established, I'll take my awl and mark for some screw holes. I need to make all of these pieces removable for times when I want to resurface the bench top. This is also why the front cross member on the tool tray is also removable. My vintage hand drill with a modern counter sink bit enables me to drill and countersink in one pass.



From here I begin laying out and measuring for the drawer hangers. They will also sit in the rear apron and are cut for a snug fit. The two inner hangers will need to be shaped to fit around the profile of granite. I approach this as I did when removing the waste on the underside of the feet. I make a series of saw cuts to establish the depth and then chisel out the waste.



In the next shot you can see the shaped drawer hanger in the fore ground and the side example in the r
These will also recieve a dado for the drawers to hang in.



To add some added insurance that all of these pieces do what I'm hoping they'll do (and that's holding
heavy granite slab and two drawers tightly to the bottom of my workbench) I'll add some pocket hole
screws that will secure it up into the bench top. A pocket hole jig is a useful tool in the hand tool woods!
but is usually associated with power tools.





Here, with a special bit chucked into my brace I can easily drill the holes and am ready for a final dry f
You may notice at this point I only had two of the four drawer hangers installed; truth be told I wanted
see if this system would work and when it did I went back and made the two for the left hand drawer



I was planning on showing the frame glue up in this post but looking at its length I think I'll save it for 1
next one-
cheers!

posted in: [blogs](#)

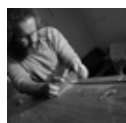




Fine Woodworking Online Membership
member page ▶

A Dedicated Sharpening Bench - part 7 - The Glue-up

December 12th, 2009 in [blogs](#)  [ShareThis](#)



Tom Fidgen, member

The Glue-up

In the last post I finished off the cut out for the granite plate insert and I'm ready to start the glue-up. One last detail I took care of before beginning to glue the frame was to plane some rabbets into the lower crutch stretchers. I didn't get any shots of the process but they're shallow rabbets about 1/2" wide and only 1/8" deep. Their purpose is to create a small lip to register a shelf against later on. These could be eliminated and simple batons screwed to the shelf bottom would act as guides but they only took a few extra minutes to make and will benefit the design and make the shelf installation that much easier.

More from this series

- [Part One: An Introduction](#)
- [Part Two: A Flat, Square Benchtop](#)
- [Part Three: Hand-Cut Joinery](#)
- [Part Four: Start the Frame](#)
- [Part Five: A Stable Base](#)
- [Part Six: Granite Insert Prep](#)
- [Part Seven: Glue Up](#)
- [Download the Free Plan](#)

With the rabbets complete I can finally start to glue. First thing I do is assemble everything I'll need for the process, glue, clamps, paper towels etc... it's easier to do this now before getting started, instead of scrambling around looking for something I need while the glue is starting to set!



I begin with each side frame and will glue these up before adding the cross stretchers. I lay them out on bench and start spreading the glue- lots of it! This is a workbench so I'm not too worried about any squeak out. There are certain liberties you can take when building a piece destined for the workshop and not someones living room. When I have everything clamped I'll check for square and measure my diagonals. soon as the glue sets I'll drill down through the joints to drive in some hardwood dowels. With a generous amount of glue I drive the dowels home. I leave the side frames to sit overnight and in the morning I'll take off the dowels.



I use my Japanese flush cut saw and follow with a low angle block plane.





This completes the side frames and I repeat this process with the two frames standing on my bench top the cross stretchers in place. I place a clamp across each stretcher and let things 'cook' awhile. Once the glue sets I'll follow the same procedure by drilling and pegging all of the joinery.



With the frame glued I clean off my bench top and turn my attention to the surface pieces. The main work surface area has bread board ends set into the side aprons but to add some extra support I'll use some blind dowels where it attaches to the front apron. I use a self-centering jig and drill a few holes down the front edge of the surface piece.





Once drilled I can insert some dowel centers and dry fit the pieces one last time. When the surface pieces mate these dowel centers will leave tiny dimples in the oak showing me exactly where I'll need to drill



No measuring and no guess work, the dowel centers and centering jig are great work shop aids that make things run a little smoother in the wood shop. Again, these are some jigs that you may not have considered using in a hand tool only workshop.

I take the dry assembly apart and drill out the dowel locations. Again it's time to start spreading some glue so I'll go through the ritual of organizing everything I'll need for a stress free assembly. I should also mention that the bread board ends have three tenons in each- the middle tenon gets glued but the two

outside ones are left dry. Once assembled all three will be pegged with hardwood dowels as well. The two side aprons are first followed by the front and rear. Then the whole surface is clamped up tight draw the dovetails together. Another night to set and in the morning I'll see how I did. If you look closely the following picture you'll notice the placement of the clamps on each outside edge; they're placed just inside the end of the dovetails so that when clamped tight, the extra meat on the dovetails won't keep the assembly from coming together tightly.



Sunday sunrise I come down to the shop to find the bench top is looking pretty good. The clamps are removed and I'm happy with the results. I scrape off the squeeze out and with a block plane I'll trim the dovetails flush with the apron surfaces. I don't have a whole lot of material to remove so it goes pretty quickly.



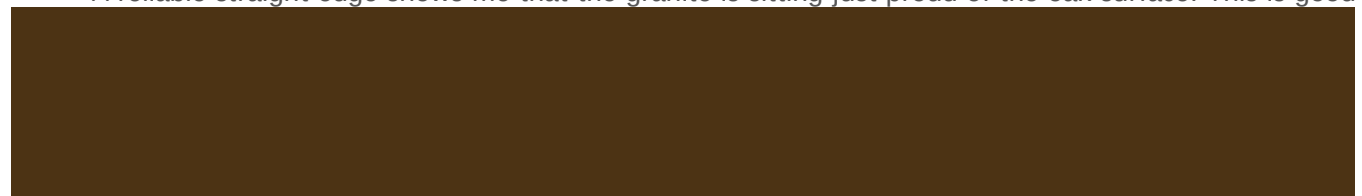
From here I'll take the top assembly and place it good side down on my workbench. I'll spread some glue for the frame and attach it now. The front slip joints will also get a couple of dowels for added strength through the leg and into the oak top and another an inch down through the middle of the joint. Now I can assemble the under carriage. The granite plate is inserted into the cut out and I'll add the cross stretchers. These are the ones I put the pocket holes in to keep the granite living where it's supposed to be and not falling out onto my workshop floor.



Two of the four drawer hangers are added as well (at this point I still haven't decided on my final draw configuration) and I'll turn it back over onto the floor to check how the granite plate is sitting.



A reliable straight edge shows me that the granite is sitting just proud of the oak surface. This is good





I'll use up a little off cut of 1/4" walnut plywood from the scrape pile and rip it to size for the tool tray bottom. This is cross cut into two pieces for times when I want the extra depth in the tool tray- I can ea remove one side or the other.



I give everything a coat of boiled linseed oil and paste wax and call it done for today. In this last shot y can see the shallow rabbet in the lower stretchers.





In the next post I'll build the drawers and add the details....stay tuned.

posted in: [blogs](#)

