Metadata: https://www.youtube.com/watch?v=SjecdEB7qaU
This is the operator's side of my workbench that I made a couple years back. It's all made out of southern yellow pine. It works really well. I haven't had any problems out of this workbench. And this is the main vise that I use. It's a completely DIY approach to a leg vise. The screw assembly is completely DIY. It's actually a scaffold leveling leg. And there's a split washer right here. And this whole piece, this hub is turned on a lathe. And then the handle is turned on a lathe. All of this works really, really well. Really, really effortless. And I like it a lot. Now, I don't have a parallel guide that goes through a mortise cut onto or cut into the leg of the workbench. Instead, for means of parallel adjustment, I have a simple wedge on the floor that I kick back and forth. It's never been an issue. It's just crazy easy and guaranteed to never fail. So I'm going to duplicate this setup on my new workbench. But instead of a completely DIY screw assembly, I picked up an inexpensive screw off of Amazon simply because I know a lot of people don't have access to a lathe or a way to turn this whole hub assembly. So an inexpensive option is to just buy a simple screw. This is the screw that I picked up. It's nothing fancy, just some regular threads here and a captured washer to mount to the outside of the leg vise chop. And essentially just a basic large T-nut that has four mounting holes and matching threads. So this will get mounted to the inside of the leg. This is the workbench that I'm going to be putting the vise on. It is a Hickory workbench based upon the exact same design as my last workbench. But I used Hickory because I've got quite a bit of it. And the best wood to use is the wood you have available. So that's the reason why I went with Hickory. Now, I don't know if you can see it, but on all four of the legs, there's already a screw hole drilled for a leg vise screw. And that's not because I'm going to put four leg vises on here. I'm not. It's because it's much easier to drill that hole before assembly, when each one of the legs can be taken over to the drill press individually, rather than having to lay this workbench on its side and try and drill a perpendicular hole. And the reason I did that is because I'm a right-handed person. I'm going to have the leg vise in the typical right-handed location, which is this leg right here, closest to me. But down the road, this workbench may go to somebody else and they may be left-handed. So at that point, it's just easier and more flexible to have the option of letting that next person put it wherever they want. So that's the reason why I did that. Now for the actual leg vise chop, I'm going to be using a solid chunk of Hickory that I need to cut out of a slab that I've had for quite a while. This is the smallest Hickory slab that I have, and it's just a little bit too big, unfortunately. And I say unfortunately, because I wanted to incorporate some of this live edge into the final design, but this is just simply too wide for my power tools. So instead, I'm going to cut it off and dimension it as normal like I would for any other project. And the only way to incorporate this would be to cut out some of the center section and glue it back together. I'm not going to go through all that hassle. And I'm definitely not going to go through the hassle of dimensioning this or flattening everything out by hand with some hand planes, because I can already tell that this Hickory, the grain is going in all kinds of crazy directions, and I don't have enough aspirin for that. So instead, I've made a mark right here to cut this down with my circular saw, and that will allow me to bring a much more manageable sized piece to the rest of my power tools to dimension this properly. So as you can tell, obviously, the board is wider than my jointer, and I can still use the jointer to get a flat reference face, just not through its entire width. Now, in order to do that, I did have to remove the guard on here, and I'm not a big fan of removing guards. But in this case, it will allow me to proceed with milling this nice and flat. So if you do remove guards on your stuff, be careful and do so at your own risk. I can run this through my jointer to get a flat reference face, and then use a sled in my planer to reference off of that face to get the opposite face of the board nice and flat. And then at that point, I can remove the sled, flip the board back over and finish milling the original face. So everything should be flat and parallel. When I made my last leg vise, I left the sides parallel to one another until the very last step and then cut the tapers. The reason being is while the sides were still parallel, that gave me a 90 degree reference

face to cut the chop to its final length. In this case, I went ahead and cut the tapers first because what that did is it allowed me to leave as much waste material as possible on the sides of that slab because that's still good usable lumber. It leaves me with just a little bit of a problem though in that I need to determine what angle this is to cut the bottom at 90 degrees to the center line. And then of course, cut the top at 90 degrees to that center line, but just a little bit long so I can trim it up with a hand plane, flushing it with the top of the workbench later. So to determine what angle I need, I used a little protractor here to make some reference lines from each side until I found two that were parallel of one another at the same angle. And what I've determined is that it is a one and a half degree angle to get it perpendicular to the center line. So now I can use my miter saw to cut this to a little bit more than its final length. So I spun the workbench around so you can get a better look at this and it's not in a shadow. I wanted to get the screw mounted before I made any refinements to the chop just to make sure that there wasn't any interference and nothing was binding. Everything's working as it should and technically I could use it just like it is, but there's a couple things that I want to change on it before I call it done. I want to cut a 45 degree angle up here at the top for a little bit more handsaw clearance. I need to cut the wedge down at the bottom. I want to put a just a dowel in the back side to prevent this from swinging like so. And then a interference or a spacer block to go on top of the screw inside the workbench. I'm going to get all that done and explain what all that does. So I don't know if you can tell on camera but I reduced the size of the chop by about an inch on either side. It was just looking a little bit too big for this workbench. The proportions weren't there and also I had this ugly knot that was just... it needed to be stabilized. So I had a little bit more waste by removing it which is not what I wanted. I wanted to save as much of this wood as possible but it is what it is. I also cut a little retaining block for this dowel which will eventually be mounted on the inside of this chop and the hole that I drilled. I'm not going to install it just yet. Instead I'm going to switch gears to the wedge because I need to get that done before I can put the screw back in. Now this wedge is... I sized this to the exact same size as my last wedge for my other workbench and I put two nails on the top over here on the large side because I'm right-handed so I'm typically in the center of the workbench working to my left and that means I can kick it forward easily but to make it a little bit easier to pull it back that's what these nails are for. And I chopped them off or clipped them off about three-eighths of an inch above the surface so my shoe can grab that and pull it backwards. So now that I have this established I can cut the matching angle for this on the bottom side of the chop. This is the bottom of the chop and this is the direction that the wedge will go in to increase the distance away from the workbench. And if I have this angle cut too far in this direction I'll decrease the effectiveness of this wedge. I'll decrease its capacity really. So to get it as far the other direction as I'm comfortable with I've elevated the bottom side of this inside face the same distance as right here on the wedge.thereabouts. And then I can go to this corner, strike a line, which I've already done, and that'll be my cut line to match the taper of the wedge. Basically what that means is with the inside face up against the workbench and the inside face right here up against the workbench, the wedge will start to engage right about there when there's nothing in the vise and it's closed all the way. Maybe just a little bit more to rack the top in just a little bit. But there's very little of this wedge engaged into the leg or this chop right here. So that means that I'll have as much as possible out of this piece to go through until I lose capacity of this wedge. Hopefully that made sense. This is the inside face of the chop and I struck a line equal to the thickness of the wedge. And that's a little bit overkill. I don't need to go that deep with my cut because I did offset the whole chop by 3 quarters of an inch off the floor when I mounted it with this screw. But what this does is it guarantees that anything that I have sticking out on the top to help me pull this back will never interfere with this cut. I did not glue the dowel in place because it was incredibly tight and I don't see it ever falling out. Now I did tighten down the vise so that this is in its final, I guess, home position. And I want to lock this in place to restrict the movement of this dowel

laterally and therefore it will restrict the movement of the chop laterally. So hopefully this piece, the shape of this piece starts to make sense. It just slides over and this slot allows me adjustment for one screw in here to hold this down as needed. Now this does allow for adjustment but it really should be a set it and forget it type situation. Using the wedge it just utilizes an extra limb that you're not really using anyway while you're interacting with the vise. Rather than having to bend down, stop turning, and change the parallel guide, you can do it all very easily. So once you have contact up here you can advance the wedge, tighten it down, it's not going anywhere, loosen it up, pull the wedge back, and you can quickly go to thinner material. And what I'll normally do is wait till it touches up here and push the wedge forward with my foot, tighten it down, and we're back in business without this racking at all. So once you get used to it, it's a very, very, very simple process to switch between materials and it just uses the extra limb that you're not using otherwise. Also I have a capacity of about three and a half, four inches with this wedge. I can increase that by just putting a spacer block in between the bottom wedge or be in between the wedge and the bottom of the leg and that happens very seldom. So works for me. Super simple and pretty much guaranteed to never fail. Now the reason I decided on using this screw for this leg vise was because I had a lot of people ask me if I could show a method that did not require a lathe. Therefore it would be silly to show turning a handle on a lathe and using it for a handle. So in that regard I just put a dowel in here and pinned it in the middle. I prefer to pin these rather than letting them slide back and forth because it almost always guarantees that you're going to have a handle somewhere near the top which is easier to grab rather than bending down and picking up the handle that has fallen through. And I have it sized so that it is lower than the workbench. It's not going to hit anything. That being said I'm not going to leave it like this because this doesn't do this chop justice. So once I'm done here I'm going to turn a handle and make it match this chop. But for the sake of this video a dowel will do the job just fine. I went ahead and completed everything off of camera just to get it done so I could use it. I did turn a hickory handle. I didn't put any larger ends on either side because those are typically typically there to prevent this from dropping all the way down. I like mine pinned in the middle so that's not an issue. I also applied a coat of mineral oil to everything just to bring out the grain which is kind of crazy looking. And the only adjustment that I made is I moved the dowel from the left hand side to the right hand side because I noticed if I kicked the wedge a little a little too aggressively then the dowel would bend just slightly. It probably wouldn't have made any difference long-term but I went ahead and moved it to the right side so that the leg interferes with it bending and well prevents it from bending just a little bit more. The only downside to putting it on the inside of the workbench which is why I initially put it on the outside is it prevents any type of cabinet or any structure that I build down below from going all the way up to the leg. I don't know what I'll do down below but that is the reason why I started left and went right on it. And I oh the last thing I did is I put a piece of leather on the inside of the chop just on the chop not on the workbench. All you need is one piece of leather to really add grip and I prefer that to be on the chop side of the vise rather than on the workbench because this allows the workbench to remain flat for material however long of material you add to the vise. So vise is done I'm gonna put it in my I guess standard location where nobody will ever see it and then I'm gonna drill some dog holes. To lay out the dog hole placement on the operator side of the workbench I made marks every four inches in between the legs and then every three inches on the outside of the legs. I went ahead and duplicated all of these holes onto this other side and I also added a center one over here and a center hole over here centered in the workbench in this direction. And the reason I added them to this other side is I'm gonna be working at this bench from all sides and it just gives me more options with my holdfasts. These are 3 quarter inch holes and the benefit of using circular holes rather than square holes for square dogs is that you can use your holdfasts in them. So this gives me a lot of clamping options. These are holding just fine in this thick of a top. On my last workbench I had to counterbore the bottom side of all of the

holdfast holes so that the the thickness of the top that was engaging with the holdfast was about two and a half inches. I had to do that in order for these holdfasts to work. In this workbench top they seem to be holding just fine so I don't have to counterbore but if they for whatever reason quit holding then I can counterbore the bottom side of the holes. Also the reason I put the center one on either end is to clamp in between dogs. Now I don't have it with me. I ordered it just hasn't arrived yet. One of those, I forget the name of it, it's a it's made by Veritas. It's a dog that goes into these dog holes and has a horizontal screw so you can put it in any one of these dogs and clamp against another dog with a board in between and I forget the name of that it's escaping me I'll put it on the screen. Anyway you can do that with this singular row that's just fine but if I have two dogs in line with one another and let's just say a much wider panel then I can put them in between those two dogs and clamp right in the middle of them with these center holes and that gives you three contact points much more sturdy and yeah so that's the reason behind these two holes. Also I had a knot right here that I wanted to cover up. So I think that does it. I'm ready to use this workbench. I'm toying around with the idea of adding an auxiliary tool well to the other side over there just to experiment and see if I like it. I don't know but that's it for right now. I'm done working on this and I'm ready to get to work on some actual projects on it. So thanks for watching you guys take care and I'll catch you on the next video. Just to add a little bit more I did go ahead and paint the hardware black and I did so for cosmetic reasons just because it looks a lot better black and it would be hypocritical of me to do that for cosmetic reasons and not change out the screws for cosmetic reasons. So for all those who are complaining that the screws were keeping you guys up at night giving you nightmares and those of you who would never ever ever see those screws again don't worry because I changed them out for dowels and you'll never ever ever see the dowels again now. So there's that.