



# Lake Erie Toolworks

## Twin Screw Vise Kit Installation Instructions

Copyright, Lake Erie Toolworks, Inc. – Version 4/18/2011

[www.LakeErieToolworks.com](http://www.LakeErieToolworks.com)

### Very Important – Please Read!

Read all instructions prior to vise screw kit installation to ensure full knowledge of the installation process. Also, please follow all proper safety rules and guidelines as appropriate when using your woodworking tools to install the vise screw kits in order to prevent any bodily injury.

Vise Kit Contents:	
Quantity	Description
2	Vise Screw
2	Vise Nut
2	Vise Handle with End Caps & O-Rings (optional depending on kit)
2	Brass Garter Kit with Screws or Nuts/Bolts (optional depending on kit)
2	Hard Maple Internal Garter (optional)

Recommended Installation Tools:	
Quantity	Description
1	2-1/2", 2-9/16", 2-5/8", or 2-3/4" diameter drill bit / hole saw (You will determine proper size after reading directions)
1	3/8" diameter drill bit or router bit (For install of internal garter)
1	Pilot drill bit for #14 screw
1	Power Drill / (Router – optional)
1	Combination Square
1	Measuring Tape

**Disclaimer: Woodworking is inherently dangerous and Lake Erie Toolworks cannot be held responsible for any injury to person or property arising from installation, use or misuse of our products.**

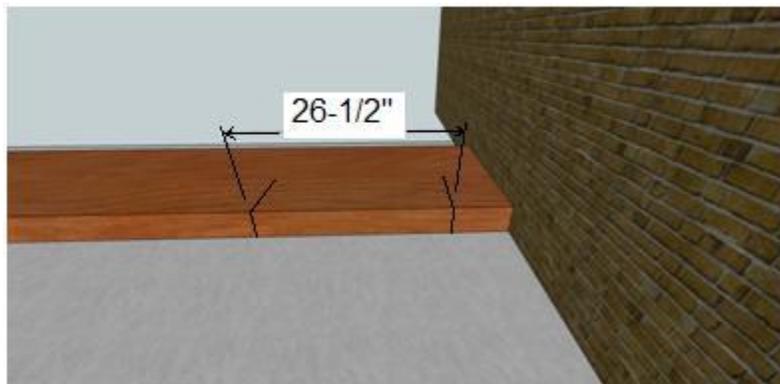


### Twin Screw Vise Kit – Installation Instructions:

- The vise chop must be at least 2-3/4" thick (6.985cm) for an internal garter vise install and at least 2-1/2" thick (6.35cm) for a brass external garter vise install.
- The width of the vise chop will need to be at least 4-1/4" wider (10.795cm) than your benchtop's thickness for an internal garter vise install and at least 4-3/4" wider (12.065cm) than your benchtop's thickness for a brass external garter vise install.

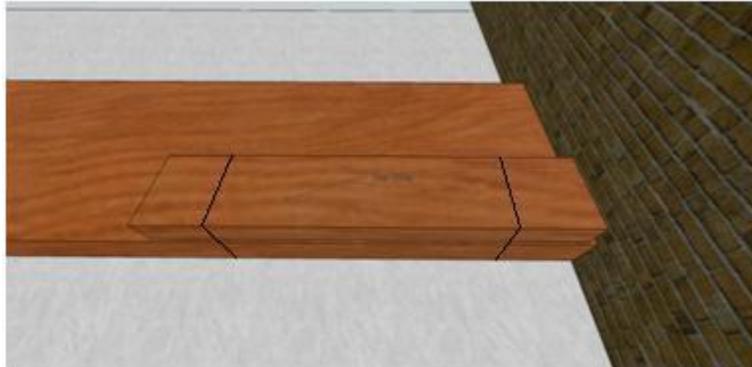
(Example: 4" thick bench-top with an internal garter must have a chop that is at least 8-1/4" wide.)  
(Example: 4" thick bench-top with an external garter must have a chop that is at least 8-3/4" wide.)

- The overall length of your vise chop is variable based on your clamping needs but we recommend a length of approximately 40" (101.6cm) to suit most work holding purposes.
- Flip your benchtop over so the bottom is facing up. (See Figure 1)
- First you will have to determine the location on your bench for your vise. It is best to locate this prior to building your bench, as you can plan your dog holes around where your vise screws and nut are located. 24" (60.96cm) between each vise screw, or 26-1/2" (67.31cm) on centers, is usually a good choice as you will be able to hold most work pieces with this setup. (See Figure 1)



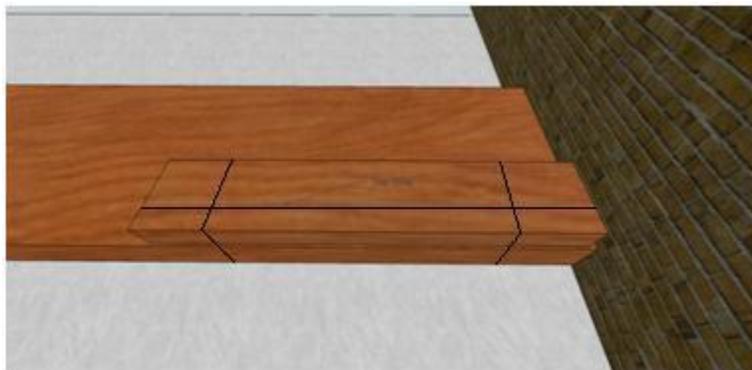
(Figure 1)

- Mark the location for the center of the screw along the front face of the workbench and along the bottom with a square. Then take your vise jaw / chop and transfer the marks on your bench to the front of the chop, taking care to center the vise chop. (See Figure 2)



(Figure 2)

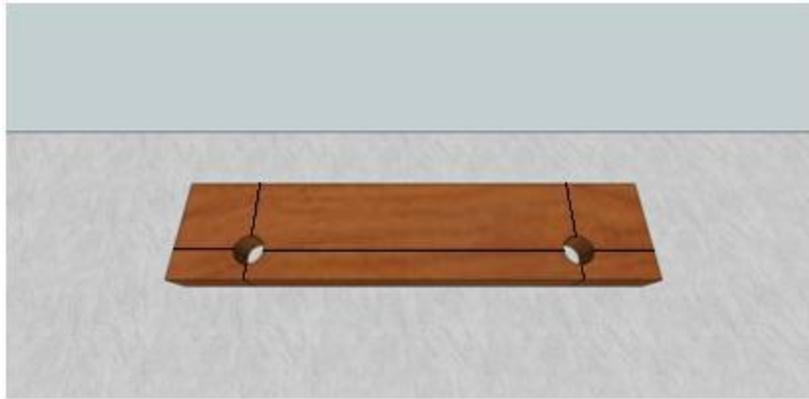
- Take a combination square or a marking gauge, etc., and add 2-1/8" (5.3975cm) to the thickness measurement of your bench top and draw a line along the length of your vise chop from the top of it (Example: 4" thick bench would be 6-1/8"). (See Figure 3)



(Figure 3)

### **For internal garter vise installations:**

- Now that you have the vise screw hole locations marked on your vise chop, you are ready to drill the vise screw clearance holes. (See Figure 4)
- Drill two - 2-1/2" holes (6.35cm) through your vise chop. If you want to be able to angle your vise to clamp tapered work, you will have to either drill a larger hole (2-9/16", 2-5/8", etc.) or use some other method of widening the hole from side to side (spindle sander, rasp, etc.) to accommodate the "twist" or "racking" angles for the vise chop. (See Figure 4)



(Figure 4)

- Now is the time to layout and cut the mortises for the internal garters. Transfer the distance from the hub of the vise screw to the beginning of the internal garter groove onto the bottom of your vise chop, below the screw holes. (See Figure 5)
- Layout and cut the mortise for your garter so that there is a snug fit that centers the cutout in the previously drilled holes. This is an important mortise so take extra care when laying out and cutting it. Test the fit with the vise screw installed and adjust accordingly. The groove is just over  $\frac{3}{8}$ " (0.9525cm) so you may have to plane the tip of your garter to get a good fit that still allows the screw to spin freely. (See Figure 5)



(Figure 5)

- You can use friction to hold the garters in place, or some other positive fixing method, such as a pin/dowel, etc. but be sure that whatever method you use that you are still able to remove your internal garters should you need or want to clamp angled objects and would like to “twist” or “rack” your vise chop.
- Next, you can install both vise screws and the internal garters onto your vise chop to form your twin vise screw clamp sub-assembly.

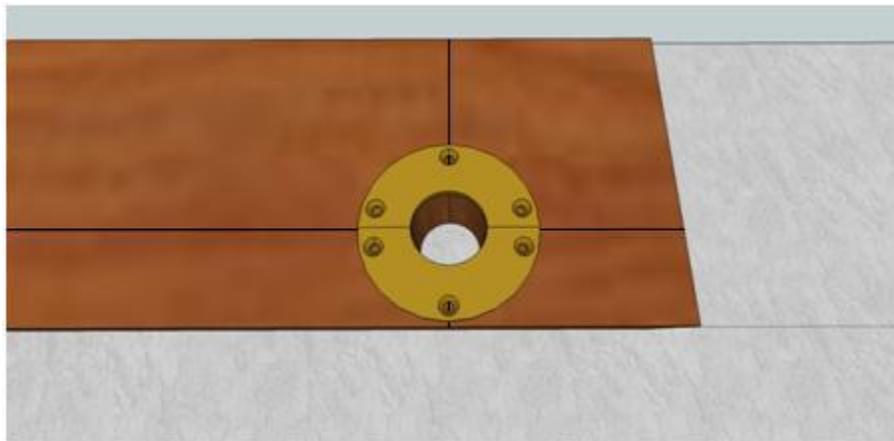
## For external garter vise installations:

- Use the layout lines that you have drawn on your vise chop and drill two holes ranging in size from 2-9/16" through 2-3/4" (6.50875cm – 6.985cm) (the size is not critical, since this is only for clearance) if you are using brass external garters. (See Figure 6)



(Figure 6)

- Lay your brass garters on the face of the chop and align them with the seam running horizontally. Use the cross marks that are already on the vise chop to align the center holes and the seam. (See Figure 7)
- Clamp the garters in place and then transfer the middle hole of each garter piece onto the vise chop with transfer punches, drill bits, or carefully tracing the hole w/ a mechanical pencil. (If you are confident in your transferring and drilling skills you could transfer and drill all of the holes at once, however we recommend that you do the two middle holes first, so that if they are slightly off, then you can accommodate for this by somewhat offsetting the other holes). (See Figure 7)

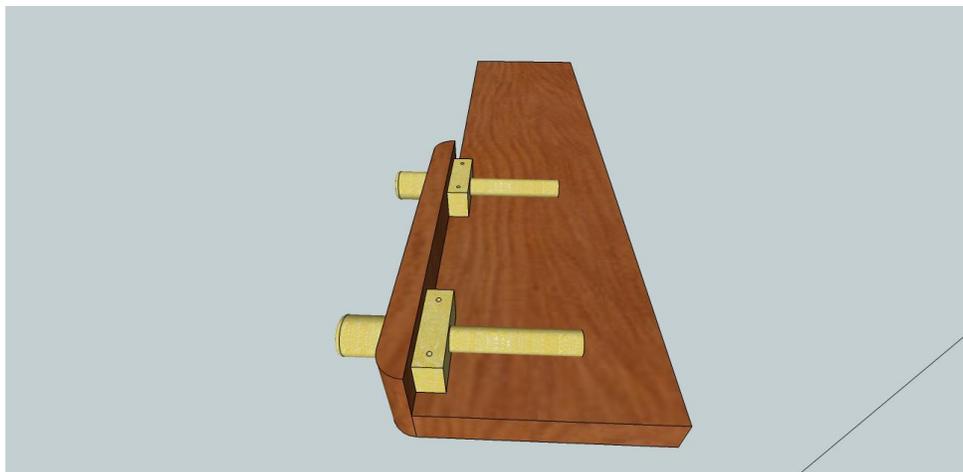


(Figure 7)

- Unclamp the garters and then drill the two #14 screw pilot holes into the vise chop. Put the garter on the chop and install it with two screws (we suggest using plenty of paraffin wax on the screw thread to ease installation). If there is too much resistance, back out the screws carefully and re-drill with a slightly larger drill bit and retry (again using plenty of wax). You do not want to break screws here, so don't use an impact driver. We recommend hand driving them if you can, but a cordless drill w/ a lighter clutch setting should be fine.
- Check the fit of the garters and transfer the other holes. If they don't line up, then loosen the center screws and put the garters in the proper position and mark accordingly.
- Disassemble again and drill the pilot holes for the remaining garter screws.
- Reassemble the garters and drive in the screws. With care, you should have a well fitting, properly centered garter assembly.
- Take the garters off and reassemble with the vise screws inserted into the chop to form your twin vise screw clamp sub-assembly.

**Nut Installation - Same for internal or external garter twin screw vises:**

- Determine your method for attaching the nuts to the underside of your bench (lag bolts are common). Drill the holes in each nut for your chosen attachment method (taking into account any existing dog holes that may interfere with installation). (See Figure 8)
- Thread each nut onto a vise screw all the way, being careful to put the "Lake Erie Toolworks" punch mark facing the same direction, either facing the chop or away. Ensure that the mark on both nuts points to the left or to the right. Lay the vise chop and screw/ nut assembly on the bench where it is to be installed. The nuts should be up against the vise chop and the chop should be up against the benchtop's front. (See Figure 8)



(Figure 8)

- Clamp the vise assembly onto the bench top and transfer the holes for one of the nuts onto the bottom of the bench top. (See Figure 8)
- Remove the vise assembly and carefully drill the holes for your lag screws or bolts.
- Now put the assembly back in place and fix the nut to your bench with lag screws/ bolts.
- Slightly loosen the vise screws, not enough so that the nut and chop don't touch, but just enough so that you can shift one against the other.
- Shift the loose nut as far as it will go to the right (moderate hand pressure is fine) and put a pencil mark on the benchtop from both sides of the nut, then push the loose nut all the way to the left, putting a pencil mark on the benchtop from both sides of the nut. Now center the nut between the two outermost pencil marks and tighten the vise screws.
- Use clamps to hold the vise chop and nut in place if need be, then carefully transfer the lag screw holes to the benchtop.
- Remove the vise chop and screws from the benchtop and carefully drill the holes.
- Reassemble the vise, with the lag screws or bolts, install your vise handles, and you should have a properly functioning twin-screw vise with no binding. (See Figure 9)



(Figure 9)

### **Additional Installation Suggestions / Nut Install Variation:**

- It is a good idea to place a spacer between the vise screw and the underside of the benchtop, to keep it from dipping down too much if the vise is extended a great deal.

- Also, a variation on the previously described nut installation method would be to cut shallow cavities in the bottom of the bench top to accommodate the nuts, locating the screw to about 1/8" from the bottom of the bench top, eliminating the need for a spacer as the bottom of the bench top itself will keep the vise from dipping. This allows the vise screws to be closer to the top of the bench which makes for better clamping of small pieces as it puts the line between the screws closer to the object being clamped. (See Figure 10)
- Note: You will have to adjust measurements from previous steps to accommodate this nut install variation; otherwise your vise chop will extend about 3/4" above your benchtop.



(Figure 10)

We truly hope that you enjoy your twin vise screw kit from Lake Erie Toolworks and if you have any questions or comments regarding the installation method detailed in this document, or other installation ideas to share, please feel free to contact us via the comment section of our website at [www.LakeErieToolworks.com](http://www.LakeErieToolworks.com) or via direct email at [info@LakeErieToolworks.com](mailto:info@LakeErieToolworks.com).

We also wish you the absolute best in your woodworking projects and don't forget to drop us a line or send us some pictures on how your vise screw & work bench efforts turned out. We'd be happy to add them to our website for the benefit of other woodworkers who are building their workbenches.

Best regards and happy woodworking,  
Nick Dombrowski  
Lake Erie Toolworks