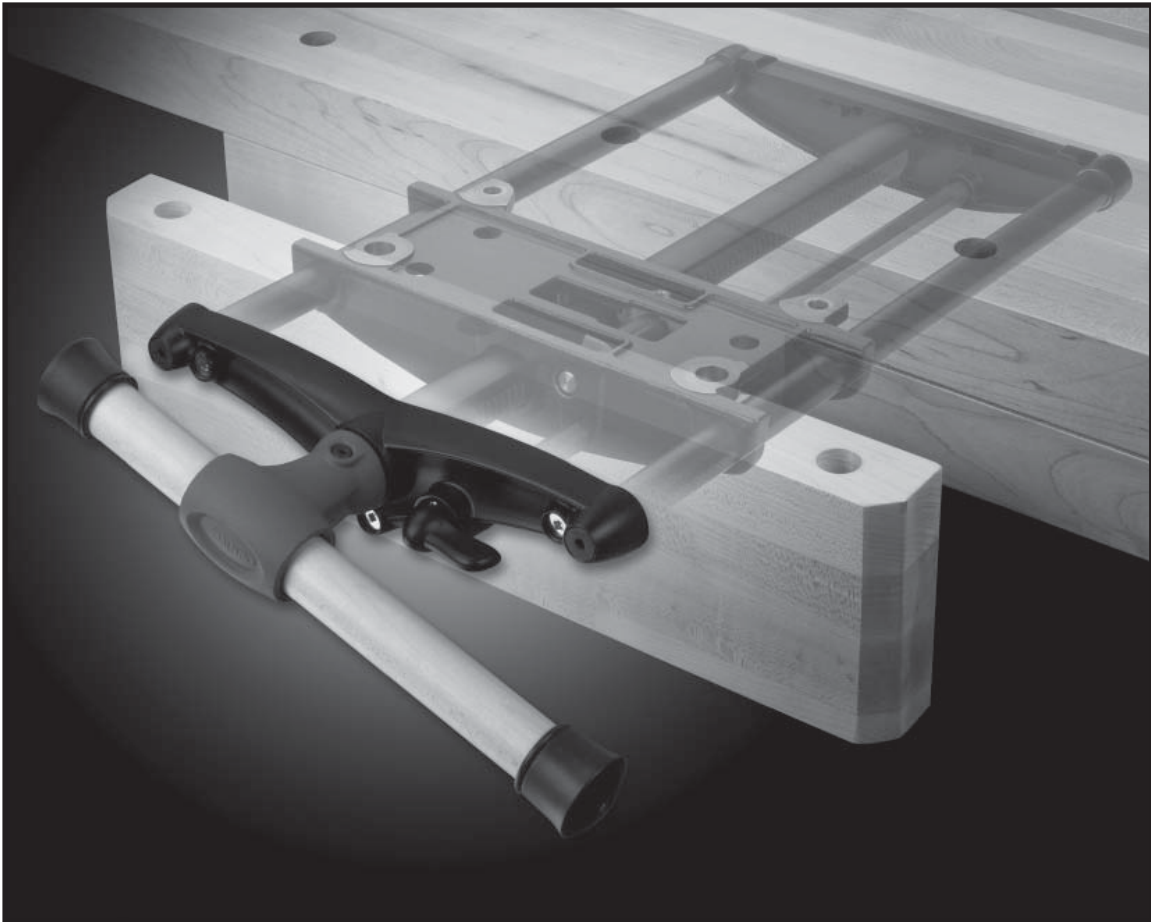


veritas®

Quick-Release Front Vise



05G34.01

U.S. Des. Pat. No. D673,830

Introduction

A front vise is the most generally useful vise on a typical workbench. It can be used for clamping parts on edge within the jaws, for clamping large parts in combination with a deadman, and for clamping parts on top of the workbench when used in combination with bench dogs. When installed on a workbench with a 2" thick apron and a 1³/₄" thick user-made front jaw, the vise has a clamping capacity of 9". Tight tolerances within the base casting result in little sag, even at maximum opening.

This vise features a quick-release mechanism for fast adjustment of the opening. The positive action of the mechanism means that the vise can be used for spreading workpieces apart, as well as for clamping them together.

Requirements

⚠ Warning: Please read the instructions *before* you begin installing the quick-release front vise onto your workbench. While the vise has been designed with ease of installation as a primary requirement, the instructions offer critical information to facilitate the task.

These instructions assume the workbench has a 2" thick apron. Please refer to *Appendix 1* for installation on a workbench with no apron.

These instructions show an installation on the left end of the workbench, which would be typical for a right-handed woodworker.

Assuming a 1³/₄" thick front jaw will be used, the quick-release front vise requires a clear area at least 16" deep by 12" wide on the underside of the workbench top (see **Figure 2**). The user-made jaw should be designed to match the type of work the vise is expected to do.

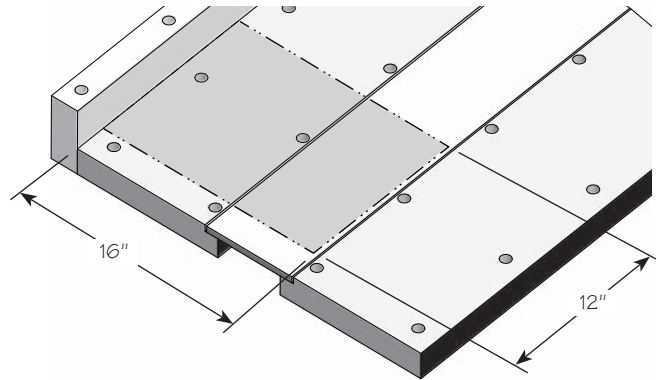
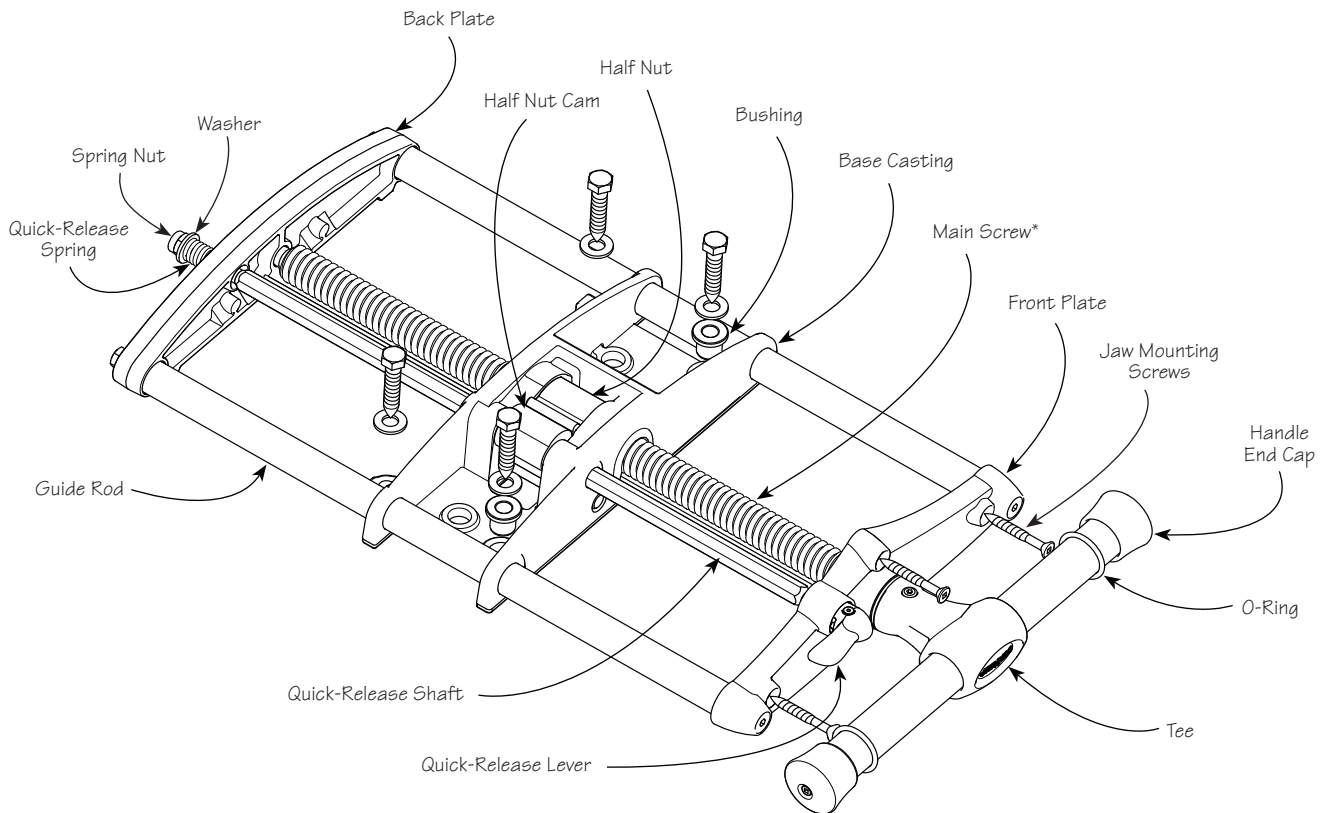


Figure 2: Space requirements for the quick-release front vise.



*Main screw cover (not shown) located under main screw.

Figure 1: The Veritas® Quick-Release Front Vise mechanism, shown upside down.

Before making the jaws and installing the vise, you will need to consider the following:

- Which end of the workbench: generally, a right-handed woodworker will install the front vise on the left-hand end of the workbench (as shown in the diagrams in these instructions). This keeps the mechanism out of the way when planing long boards clamped against the front of the workbench (i.e., when jointing an edge). A left-handed user would usually want the front vise on the right-hand end of the workbench.
- Size of the front jaws: the mechanism of the vise has been designed around a nominal jaw width of 18½". Wider is possible if required; however, a jaw wider than 24" will begin to put higher-than-anticipated side loads on the vise.
- Dog holes: the front jaw should be thick enough to allow for dog holes so that the vise can be used to clamp parts to the top of the workbench. Ideally, these holes should align to the dog-hole matrix in the workbench top. The holes also need to be located so that they do not interfere with holes for the various rods and screws the mechanism will require (see **Figure 4**).

- Jaw thickness: this vise was designed around a 1¾" thick front jaw and a 2" thick apron. A 1¾" thick front jaw in a suitable hardwood will give sufficient strength and can easily accommodate ¾" diameter dog holes.
- Relative mechanism position: generally, it is desirable to offset the mechanism in the jaw to give a larger clear space on one side of the mechanism for through clamping.

Depending on the overall workbench design, there may be other critical elements to consider. Judicious planning will go a long way towards making the installation go smoothly.

Preparing the Blank for your Front Jaw

The design of your front jaw is heavily dependent on the overall design of your workbench. **Figure 3** shows a typical 18" wide front jaw design with three dog holes. The height of the jaw needs to be at least 3" greater than the thickness of your workbench top. (**Do not** drill the holes for the main screw, guide rods or quick-release shaft at this time.)

Tip: Leave a bit of material on the top of the jaw, then plane it flush with the workbench top **after** installation; 1/32" should be enough (e.g., if your workbench is 2" thick, you would add 2 1/32" to all the vertical dimensions shown in **Figure 3**).

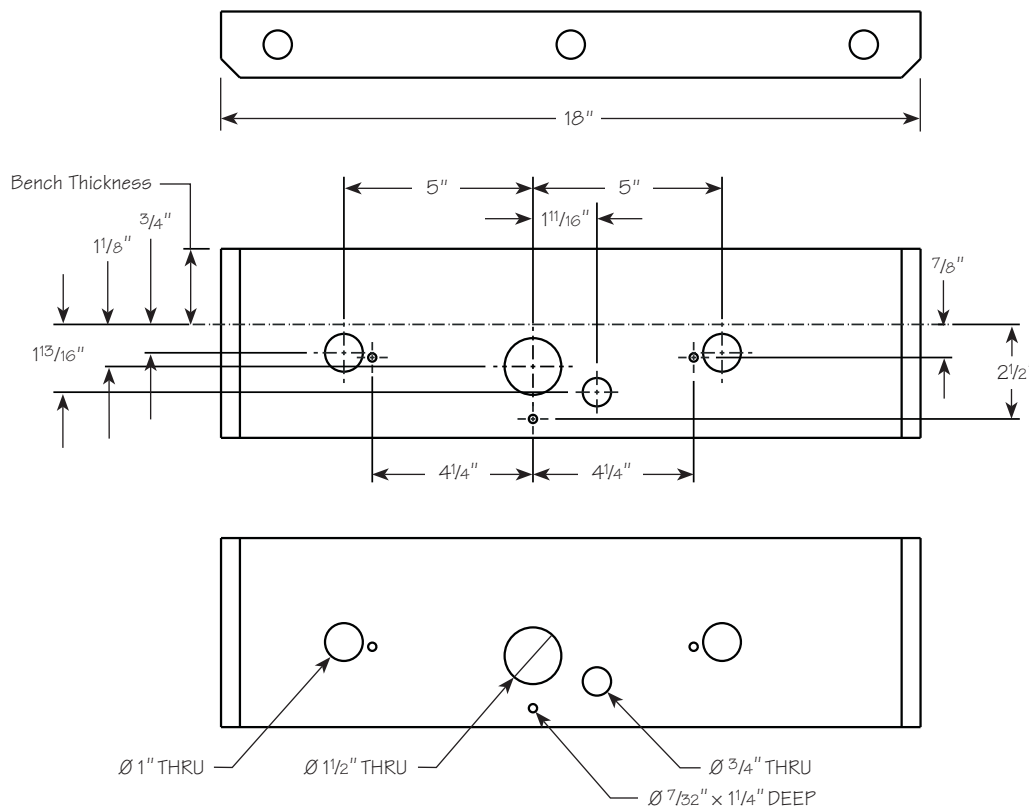


Figure 3: Typical front jaw design.

Positioning the Vise Mechanism

Clamp the jaw blank to your workbench in the position you want the jaw to be. Place the vise mechanism on the top of the workbench, aligning the main screw where you want it to eventually be in relation to the jaw.

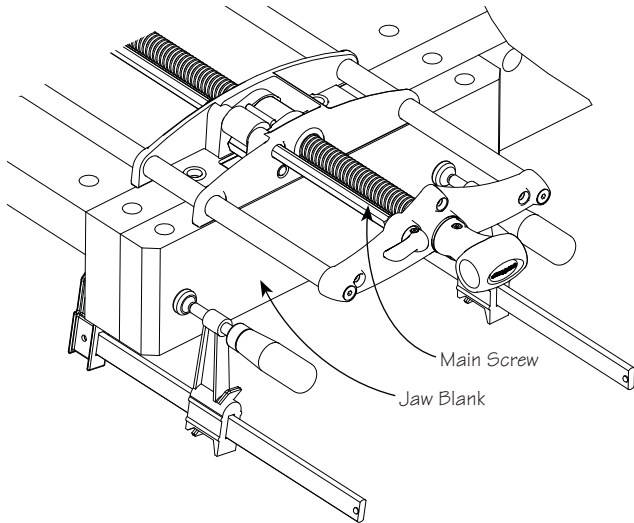


Figure 4: Positioning the jaw blank and vise mechanism.

Place a square on each side of the main screw and transfer the main screw location to the front of the jaw using a pencil or marking knife. The main screw center is between these two lines.

Preparing the Jaw

Unclamp the jaw and lay out the exact position of the main screw hole, as shown in **Figure 3**. Keep in mind that the jaw is slightly taller than its final size.

Lay out the rest of the jaw holes using the *Jaw Hole Template* (included), or as per the dimensions in **Figure 3**.

The horizontal hole locations are given from the location of the main screw.

The through-hole sizes are minimum diameter; larger holes will not adversely affect the action of the vise.

The 1¼" deep holes are for the #14 × 2" jaw mounting screws. The 7/32" diameter hole shown is for a hardwood jaw; use a 3/16" diameter hole if you are installing a softwood jaw.

Tip: It may be easier to drill the holes for the mounting screws later in the installation process.

Note: A drill press is recommended for boring these holes to ensure they are bored square to the jaw face.

Tip: When drilling the holes for the main screw, guide rods, etc., **do not** rotate or turn the workpiece on the drill-press table. (See **Figure 5**.) Instead, slide the workpiece over. If your drill press is slightly out of alignment (off 90° from table to spindle), you will double the error by turning your workpiece end for end rather than sliding it along the drill-press table.

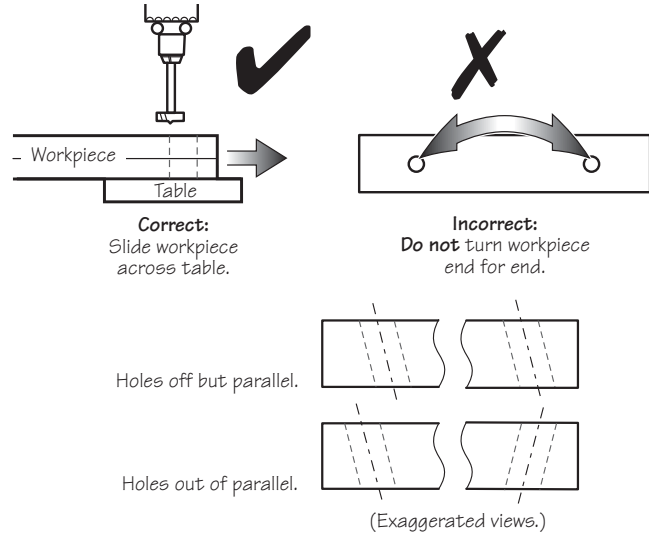


Figure 5: Drilling the holes in the jaw.

Drilling the Apron

Clamp the drilled front jaw to the workbench in the position you want the jaw to be (see **Figure 6**). Keep in mind that the top of the jaw is proud of the workbench top.

Use the holes in the jaw as drill guides for drilling out the matching holes in the apron. Take care that the apron holes are drilled square to the apron face.

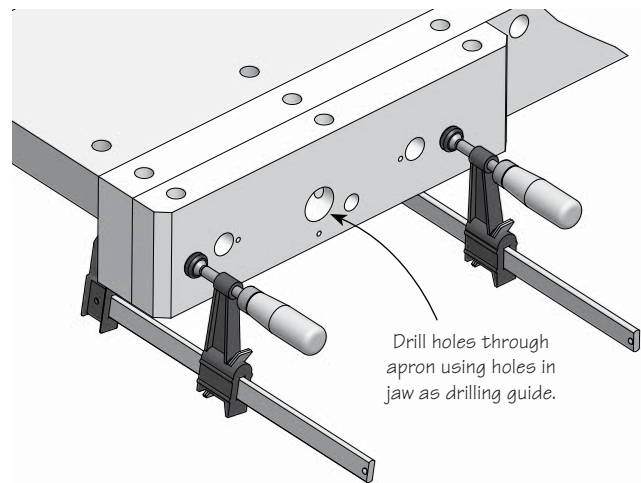


Figure 6: Drilling the apron.

Leave the jaw clamped in place for the rest of the assembly process.

Installing the Vise Mechanism

Installing the vise requires some disassembly of the mechanism. This is not as difficult as it might seem; however, some care is required to maintain the position of the mechanical components.

Before removing anything, place a piece of duct tape across the cam and half nut (see **Figure 7**) to maintain their relative position while the mechanism is apart.

Note: If the cam should come loose during assembly, see **Appendix 2** for instructions on re-installing it in the correct orientation.

Remove the tee shoulder screw, the tee and the tee washer.

Remove the spring nut, washer and quick-release spring on the back of the mechanism. Unfasten the screw holding the quick-release lever in place. **Do not** remove the quick-release shaft.

Remove the two guide rod screws and carefully pull the front plate off. The fit between guide rods and front plate is tight; you may need to progressively tap each side until these come apart. Avoid skewing the front plate in relation to the guide rods.

From this point on, the installation of the vise mechanism will be much easier if the workbench is flipped upside down. Alternatively, if your workbench top is easily removable, just detach it from the base and flip it over. The vise mechanism weighs more than 20 lb and it is much easier to locate it and screw it in place when gravity is on your side.

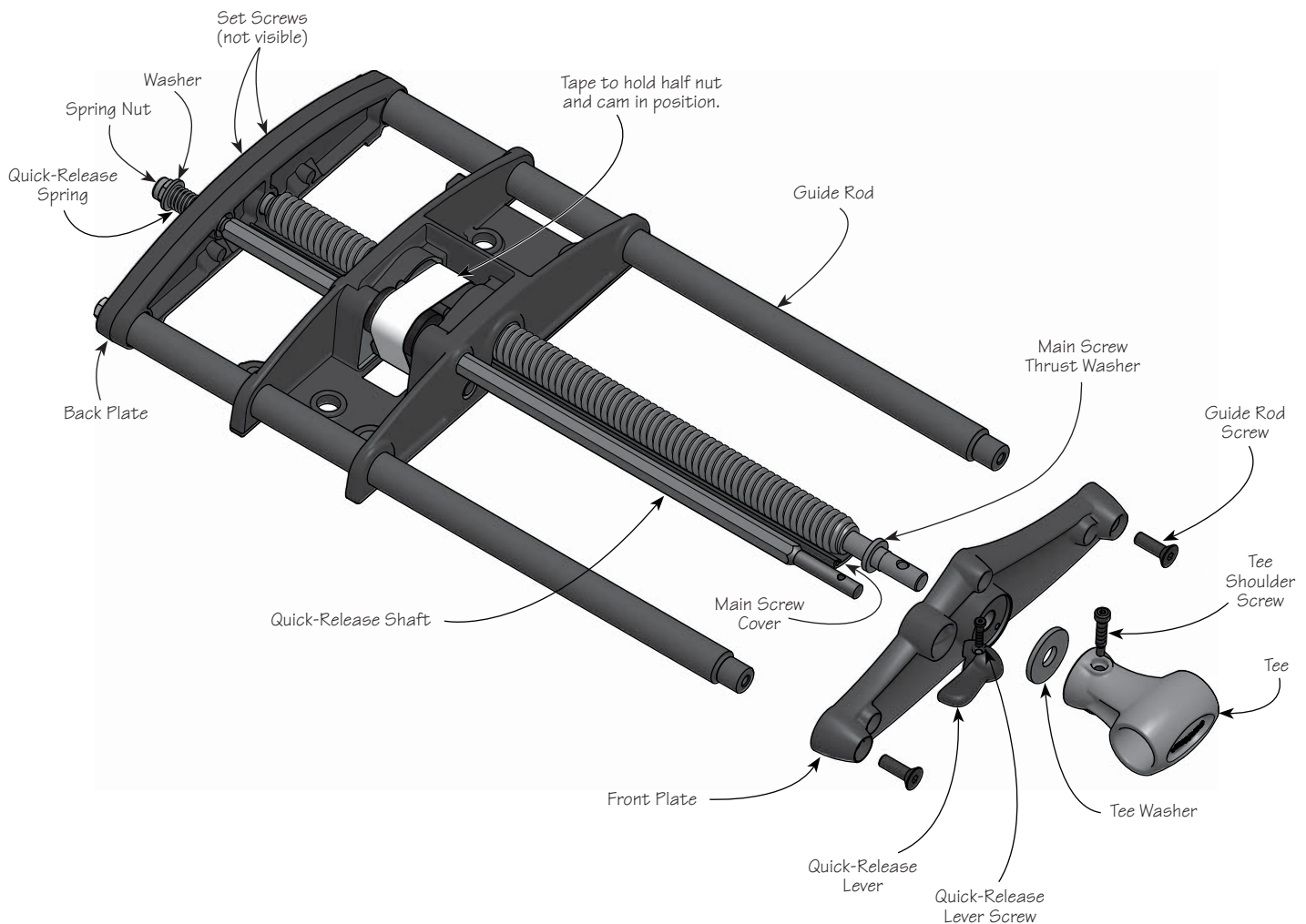


Figure 7: Removing the front plate prior to installation.

Four mounting holes are required to attach the vise mechanism to the underside of the workbench top. **Figure 8** shows the dimensional locations for the mounting holes relative to the center line of the main screw, or you can use the *Mounting Hole Template* (included).

Note: *Do not* use the base casting to transfer the hole locations; these holes are too large to provide an accurate transfer.

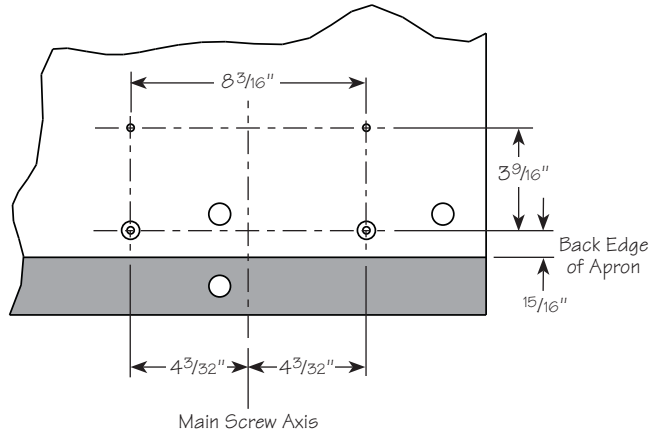


Figure 8: Mounting hole locations.

The two front holes require $\frac{5}{8}$ " diameter by $\frac{1}{4}$ " deep counterbores. The four mounting screws require $\frac{5}{16}$ " diameter by $1\frac{1}{2}$ " deep pilot holes, if the workbench is hardwood ($\frac{9}{32}$ " diameter by $1\frac{1}{2}$ " deep pilot holes in softwood).

Place the vise mechanism on the underside of the workbench with the assorted rods and screws through the appropriate holes in the apron and front jaw. Center the rods in their holes as accurately as possible.

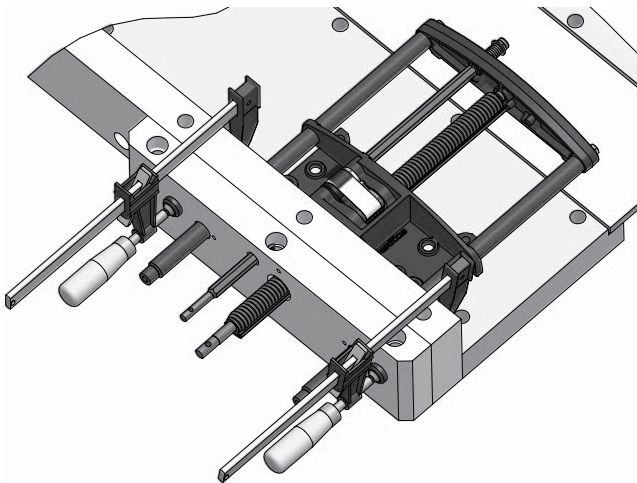


Figure 9: Positioning the vise mechanism on the underside of the workbench top.

Install the two bushings in the front mounting holes. These are an extremely tight fit in the base casting and may need to be driven home with a hammer. Use a piece of wood between the bushing and the hammer to avoid damaging the vise mechanism. Install all four washers and $\frac{3}{8}$ " lag screws; tighten all the lag screws.

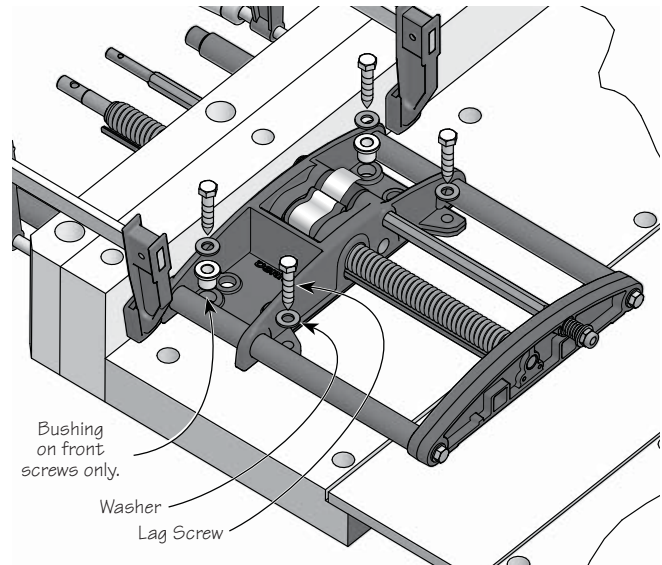


Figure 10: Installing the bushings, washers and lag screws.

Reinstall the front plate and all the parts shown in **Figure 7**. **Do not** use a thread-locking compound when reassembling the vise as this will make it near-impossible to remove the screws should the need arise. Remove the tape across the half nut and cam.

Reinstall the quick-release spring, washer and spring nut, ensuring that the nylon insert in the spring nut is fully engaged on the quick-release shaft threads. **Do not** overtighten the spring nut; otherwise, it will be difficult to turn the quick-release lever.

There are two set screws located in the back plate. These have been adjusted at the factory to retain the main screw cover (see **Figure 7**). Should the set screws need to be adjusted, take care not to overtighten them so as not to impair the operation of the vise.

If you did not drill the mounting holes in the front jaw when you bored all the other holes, drill them now using the front plate as a guide. Center-punch the holes through the casting and drill the appropriate pilot hole for #14 screws, as shown in **Figure 11**.

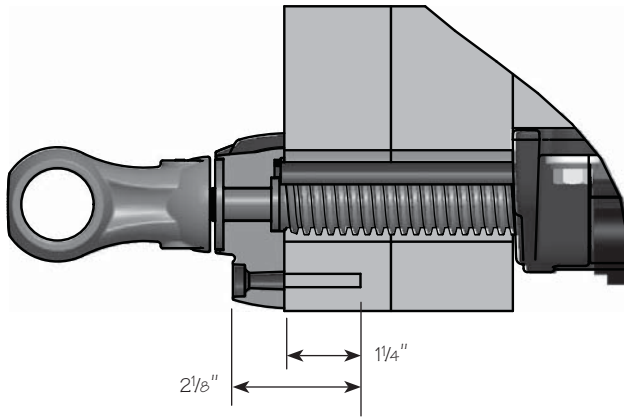


Figure 11: Mounting screw hole depth.

Install the #14 flat-head screws to secure the front plate to the front jaw.

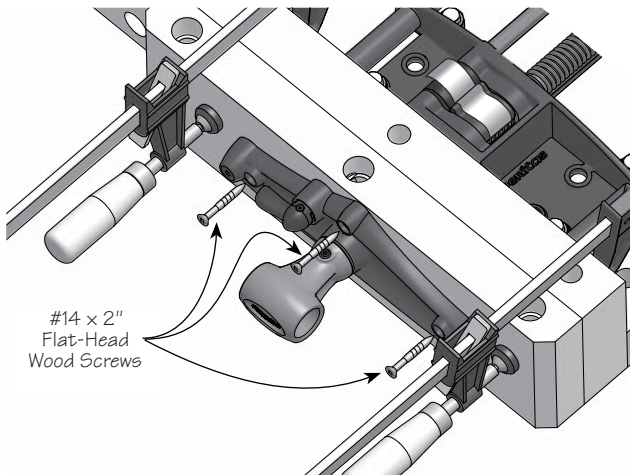


Figure 12: Attaching front plate to front jaw.

Remove the clamps holding the jaw to the apron. Flip the workbench upright (or reinstall the workbench top on its base). Insert the handle into the tee, slide an O-ring onto each end of the handle, then attach the end caps with the #8 screws, as shown in **Figure 13**. (The O-rings will protect the end caps from banging into the tee as the handle is rotated.)

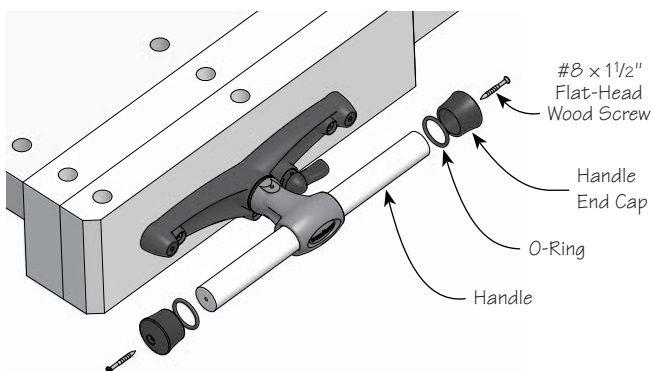


Figure 13: Installing the handle.

Plane the top of the jaw so that it is flush with the top of the workbench. Apply the desired finish to the jaw.

Use

A novel feature of this vise is the quick-release half nut. To actuate, flip the quick-release lever from horizontal to vertical, as shown in **Figure 14**. (You may need to rotate the handle to release the threads.)

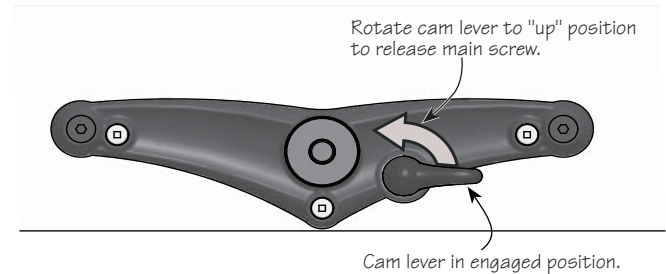


Figure 14: Releasing the half nut.

Caution: Do not release the half nut when the vise is loaded. Disengaging a loaded vise will result in sudden release of clamping pressure, which can lead to damage of the vise and workpiece, as well as injury to the user.

To re-engage the half nut, simply flip the lever back to horizontal. If the threads in the half nut are not aligned with those on the main screw, the lever may not return immediately to horizontal. If this is the case, you can align the threads by rotating the main screw; this will, in turn, force the quick-release spring to nudge the half nut into place, and snap the quick-release lever to horizontal.

Care and Maintenance

The vise comes fully lubricated; however, it will need periodic cleaning and lubrication. White grease on the main screw will ensure smooth operation, and a light oiling of the half nut will keep this component moving freely. The guide rods do not require lubrication; they have a surface treatment that is self-lubricating and prevents rust.

Note: Do not use silicone-based lubricants on the main screw. The main screw has a special hardening treatment and surface coating that is not compatible with silicone-based lubricants.

Appendix 1: Installing the Front Vise onto a Workbench without an Apron

Option A:

If your workbench does not have an apron, and if your workbench top is reasonably thick, you can mount the front vise to the underside of the workbench top and clamp workpieces against the edge of the workbench. Assuming a $1\frac{3}{4}$ " thick jaw, this set-up will require a space of 18" x 12" under the workbench top.

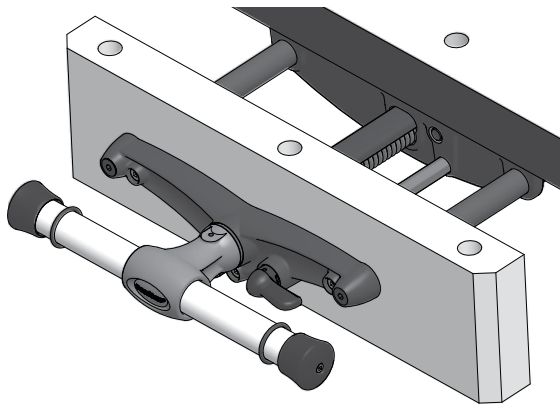


Figure 15: Mounting the front vise onto a workbench without an apron.

Option B:

Alternatively, a rear jaw can be added to the underside of the workbench top to increase the clamping surface area. Adding a rear jaw to the underside of the workbench allows long workpieces to be clamped right up to the edge of the workbench.

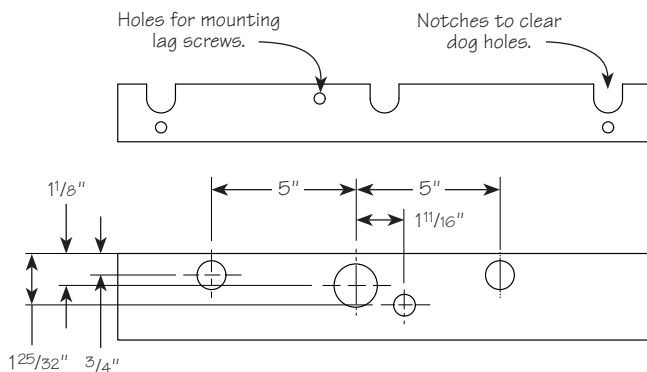


Figure 16: Typical rear jaw dimensions.

In practice, it will probably be easier to bore the holes for the vise mechanism into the rear jaw *after* the rear jaw has been installed. Attach the rear jaw to the workbench with lag screws, or other attachment method. Clamp the drilled front jaw in place, as shown in **Figure 6**, and follow the rest of the instructions for installing the vise mechanism as though the workbench had an apron.

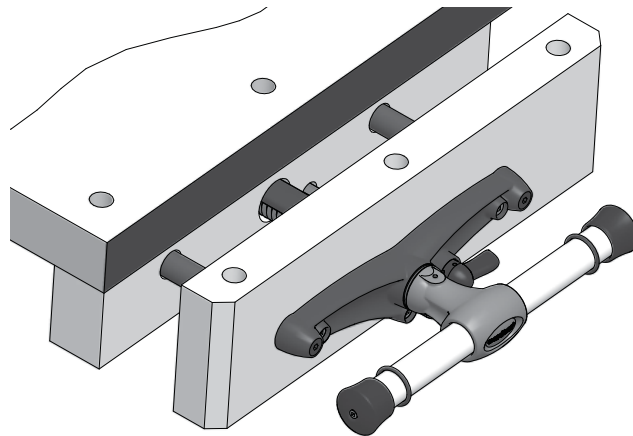


Figure 17: Assembly with rear jaw.

Appendix 2: Cam Orientation

If, for some reason, the vise mechanism is disassembled beyond the point described in these instructions, it is imperative that the cam be re-assembled in the correct position relative to the quick-release shaft. **Figure 18** shows the engaged position for the cam, as well as the critical orientation of the cross hole in the lever end of the quick-release shaft.

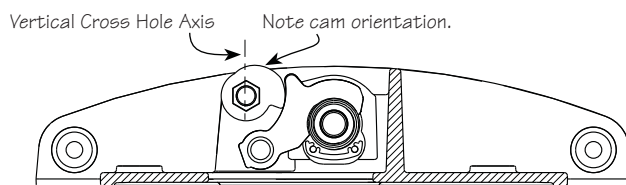


Figure 18: Installing the quick-release cam, assembly shown upside down.

Secure the assembly with a piece of tape across the cam and half nut while the reassembly is completed.

Accessories

05G34.03 Leather Jaw Liners, pr.

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