The Rockler Dovetail Jig comes equipped with a ⅜"-centered template, a ¾" guide bushing, and a ⅝" diameter 14° ⅜" shank carbide dovetail bit, to allow you to create ⅜"-wide half-blind flush or rabbeted dovetail joints on ⅜" centers (see Figure 1).
The jig will accommodate drawer stock from 1/2" to 1 1/4" thick, and boards up to 11" wide. It allows you to cut both sides of a half-blind joint in a single pass. If your stock is less than 5 1/2" wide, you can set up stock at both ends of the jig, and mill two complete joints at one time.

The main body of these instructions will be devoted to using the jig to create half-blind flush dovetail joints. Appendices are included to describe how to create other types of joints. It is strongly recommended that you familiarize yourself with the operation of the jig by starting with half-blind flush dovetail joints before advancing to other types of joints.
There are a few basic points to keep in mind as you use the jig:

No jig will be able to make a good joint in stock that does not start out square and flat. Similarly, the stock must be loaded into the jig carefully. Before milling, make sure boards are square to the side stops and perpendicular to each other. Check to make sure that the template is parallel to both the front of the jig body and to the top of the jig body. Check for flexing - use scrap stock as spacers to support the unused end of the template, and under the unused ends of the clamps. Check the boards themselves: if the clamps are exerting too much pressure, they can cause the boards to flex. Keep the router flush on the top of the template. NEVER lift the router off the jig while the bit is still spinning. Do not start the router while the bit is in contact with the stock. Keep the same point on the router sub-base pointed toward the fence, rather than allowing the router to rotate as you move down the template. Check to be sure that the bit has not shifted in the collet during use. When measuring the position of the template or the fence, be sure to measure at both ends of the jig, not just at one point.

Variations of $\frac{1}{64}$" in measurements of bit height, template placement, and fence placement have tangible impact on the quality of the joint. For these reasons, do not expect to simply make all settings exactly per these instructions, and then load your prized quarter-sawn exotic burl stock into the jig for your first attempt to make a perfect joint. Use the suggested settings as a starting point, and expect that you will need to fine-tune them through trial, making only small ($\frac{1}{64}$") changes between tests. Always verify your setup with scrap stock, and only install the actual drawer sides after you've produced a satisfactory joint using the scrap test pieces.

Once you have finished setting up and adjusting the jig for your stock, the actual work of milling precise joints becomes almost trivial, allowing you to quickly turn out repeatable, high quality joints.
Assembling the Jig

The jig is shipped fully assembled, with the exception of the two clamp handles. The template is installed, but the template mounting screws are not tightened to help protect the template from shipping damage. To complete assembly, refer to Figure 3, and hand-thread each handle (part #1) into the center hole in each of the two clamp axles (part #3). Also tighten the four template screws (part #14).

PARTS LIST - 11" Dovetail Jig

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<th>Part</th>
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<td>16</td>
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(not shown)
**Mounting the Jig**

The jig must be mounted to a sturdy work surface. It should be attached with screws or bolts, either directly to the work surface, or to a mounting base that can be secured independently to a work surface. Two \( \frac{3}{4}'' \) mounting holes are provided on the bottom flange at the rear of the jig body. There are \( \frac{1}{2}'' \) tool-access holes directly above these in the top of the jig body. The jig should rest on the rear body flange and the two front edge feet, with the front edge flange overhanging and snug against the edge of the worksurface or mounting base (see Figure 4). The mounting base can be a simple flat panel that can be clamped directly to a bench, or can be constructed with a perpendicular bottom flange suitable for clamping in a vise (see Figure 5).

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**Guide Bushing Compatibility**

The guide bushing and lock nut provided with the jig are intended for use with routers equipped with the common \( 1\frac{3}{8}'' \) to \( 1\frac{1}{2}'' \) diameter sub-base opening, and therefore they will fit many, but not all, brands and models of routers. If your router does not accommodate this style of guide bushing, you will need to obtain separately a guide bushing compatible with your router. To work properly with the jig, the bushing must have a \( \frac{7}{16}'' \) outer diameter, an inner diameter sufficient to clear a \( \frac{1}{4}'' \) shank bit, and must project between \( \frac{1}{8}'' \) to \( \frac{3}{16}'' \) below the router sub-base.
Jig Overview

The jig has a variety of knobs, stops, clamps, screws, and other hardware that can at first be intimidating, so it is worthwhile to take a few minutes to get to know the different components, how they function, and how they are adjusted. Functionally, the jig components fall into four categories: the clamps, the side stops, the template, and the fence.

Clamps. The clamps secure the workpieces for milling. There are two clamps on the jig: one on the top, for holding stock horizontally; and one on the front, for holding stock vertically (see Figure 6).

The function of the clamps is simply to hold the workpieces in place. Both operate in the same fashion: two large round knobs are adjusted based on the thickness of the stock, and then once these are set the clamp handles can be used to quickly and easily open and close the clamps.
**Side stops.** The side stops control tail layout. The jig comes with two ½"-offset side stops installed, to complement the ½"-centered template. The function of the side stops is to ensure the proper offset between the tail and socket cuts, to facilitate repetitive milling, and to allow for adjustment of how the dovetail pattern will lay out on the workpiece. The main goal in adjusting the stops is to achieve correct spacing of the tails along the length of the joint (see Figure 7).

![Figure 7](image)

**Template Adjustment Bars.** The template position controls the depth of the tails on the drawer sides. Two screws at either end secure the template, in a fixed position, to the template adjustment bars. Two ratcheting lock knobs, near the back of the jig body, lock the template bars in place to fix the position of the template (see Figure 8).

![Figure 8](image)
The bars allow the template to be moved in or out relative to the front of the jig body. This positioning of the template defines the minimum outward travel of the router bit, which controls the length of the tail on the drawer sides (see Figure 9).

Fence. The fence position controls the depth of the sockets in the drawer ends. The fence is secured in place by two large round knobs, one at each end (see Figure 10). The fence can be moved in or out relative to the jig body, and it is used to control how far the bit moves into the drawer end pieces to form the sockets (see Figure 9). The fence controls this depth by limiting how far the base of the router can move inward as the guide bushing follows the template slots. The goal of the fence setting is to match the depth of the sockets to the length of the tails.

Bit. The bit height controls how tightly the joint fits. While technically not a part of the jig, the bit is part of the dovetailing system, and it is important to recognize that adjustments to the height of the bit impact both the tail length and the socket depth. The bit radius at the bottom of the cut remains constant at $\frac{1}{2}$", but as the bit height varies, so does the radius of the bit at the top of the cut. For a bit height setting of $\frac{3}{16}$", the difference between the two radius values can be approximated as $\frac{1}{16}$".
Setup

**Scrap.** Be sure to have at hand a selection of scrap pieces that are the same thickness as your final drawer sides and ends, and at least one piece that is also the same width as your drawer ends. The length of these pieces should be at least 4" long for drawer sides and 7" long for drawer ends to allow the scrap to fully engage with the clamps.

**Router.** Install the guide bushing and lock nut supplied with the jig in the sub-base of your router, as shown in Figure 11 (or if using a proprietary bushing, install it per the manufacturer’s instructions).

![Figure 11](image1)

To mount the provided guide bushing: unplug the router, remove any bit from the collet, and raise the collet well above the level of the sub-base. Insert the guide bushing in the center hole of the router sub-base from the bottom, and secure it in place with the provided lock nut.

With the router still unplugged, install the bit in the collet, and adjust the bit height per the router manufacturer’s instructions so that it projects 9/16" below the sub-base of the router (see Figure 12).

![Figure 12](image2)
If your router’s guide bushing mount or sub-base mount allows adjustment to center the bit in the guide, do so. With the router still unplugged, carefully spin the bit by hand, rotating the collet, to verify that neither the bit nor the collet will make contact with the guide bushing.

**Shop Tip:** Not all guide bushing mounts allow for centering, and not all router bases are perfectly circular. To improve the accuracy and repeatability of guided routing, make sure that the same point on the router base is pointed toward the template and fence - do not rotate the router as you move along the template (see Figure 13). Try moving your feet along as you move the router, rather than keeping your feet in place and pivoting. Also, you may want to use the corner of a file to make a small reference notch in the top edge of the bottom of your router base, at the point that is most comfortable to keep pointed toward the template and fence. Fill the notch with a small dab of bright paint to improve visibility.

Figure 13

Router orientation constant during milling
Clamps. To set the clamp knobs, first be sure the clamp handles are in the “closed” position (pointing down for the front clamp, and pointing toward the back for the top clamp). Loosen the clamp knobs at each end of the clamp bar, if needed, and place scrap pieces of stock the same thickness as the workpieces between the clamp bar and the jig body, near each end of the clamp bar. Tighten both clamp knobs until they secure the stock firmly, but not so tight as to flex the stock. Make sure that the clamp bar is evenly adjusted, so that the bar is parallel to the top surface of the jig body - not lopsided or higher or lower at one end.

Verify that the work is easily removable when you throw the handles to the ‘open’ position. If necessary, adjust both clamp knobs slightly, the same amount for each, and repeat as needed.

Side Stops. The side stops are each secured with three Phillips-head screws - one on the front leg of the stop and two on the top leg. To adjust the stops, all three screws must be loosened slightly to allow the stops to slide to the right or left - be sure not to completely remove the screws - the backing plates are held in place only by their connection to the screws, and while they can easily be reattached, the plates may disappear once released.

To prepare for setting the stops, first loosen the stop screws slightly, and slide the stops all the way in their slots toward the ends of the jig body. Install narrow scrap pieces under each end of the top clamp, but leave a 1" to 2" gap between the side stops and the scrap. Hold the pieces back from the edge of the jig body ¼" to ½".

With the template in place, slide a scrap piece of stock the same width as the workpiece into the front clamp, against one of the stops, and make it snug and square to the bottom of the template (see Figure 14).

Figure 14
Move the scrap piece away from the stop just enough to achieve an equal distance between the ends of the piece and the adjacent template fingers (see Figure 15).

Once the piece is positioned for a good tail layout, slide the stop over against the edge of the piece; confirm that the piece is still square to the template and still parallel to the edge of the stop, and then tighten the screws on the stop. Repeat the procedure for the other stop.

Leave the horizontal scrap pieces in place to aid in setting the template position.

**Template Adjustment Bars.** The template offset setting determines the depth of the tails for a given bit height.

Open the front clamp, load narrow pieces of scrap the same thickness as the drawer ends into the left and right vertical positions, and close the clamp part-way, just enough to hold the scrap from falling out of the jig as you adjust the pieces. Make sure the scrap pieces are snug against the side stops and the bottom of the template, and close the clamp completely.

Open the top clamp and slide the horizontal pieces of scrap previously loaded outward against the side stops, and forward against the vertical pieces of scrap. Close the clamp to hold the horizontal pieces in place. Verify that all four pieces of scrap are square to the stops, the jig body and the template. Make sure that neither the scrap pieces nor the template is flexed out of alignment (see Figure 15).

![Figure 15](image-url)
Loosen the two ratcheting lock knobs on the template adjusting bars. Slide the template forward or backward until the horizontal distance between the front face of the jig body and the front edge of the template (the template offset) is \( \frac{1}{16} \)" less than the thickness of the drawer sides, but no larger than \( \frac{7}{16} \)" (see Figure 16 and Table 1). Be sure to measure the offset at both ends of the template for accurate alignment, and write down the template offset value so that you can use it later when setting the fence. Leave the scrap pieces loaded in the jig to aid in setting the fence setback.

**Figure 16**

**Fence.** The final setting to determine is the fence setback - the horizontal distance from the front edge of the template to the front face of the fence. This setback must be selected so that the depth of the socket cuts will match the length of the tails. The setback depends on the template offset, determined above, as well as the radius of the router sub-base, the radius of the bit, and a bit-offset value that is derived from the bit height and the angle of the bit:

\[
\text{Fence Setback} = (2 \times \text{Template Offset}) + \text{Sub-base Radius} - \text{Bit Radius} + \text{Bit Offset}
\]

The sub-base radius is the distance from the center of the collet to the outside edge of the sub-base. It is best to determine the point on the sub-base that you expect to point toward the fence during milling and to measure to that particular point (see Figure 17).
The bit radius is \(\frac{3}{4}\)" and the bit offset can be approximated by \(\frac{1}{16}\)" for a \(\frac{9}{16}\)" bit height setting. Table 1 shows example of Template Offset and Fence Setback values for some typical side stock thicknesses.

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<th>Side Stock Thickness</th>
<th>Template Offset</th>
<th>Fence Setback</th>
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*All measurements in inches: assumes \(\frac{3}{8}\)" diameter 14° dovetail bit

Table 1: Common Jig Settings
Loosen the two knobs at the ends of the fence. Slide the fence forward or backward until the horizontal distance from the front face of the fence to the front edge of the template (the fence setback) matches the calculated value. Be sure to measure the setback at both ends of the fence for accurate alignment (see Figure 18).

![Figure 18](image_url)

**Tuning.** Now that all the preliminary settings have been made, re-check that the horizontal and vertical scrap pieces previously loaded into the jig are all still properly located and aligned - square to the stops, the jig body and the template. Verify that there is no flexing of stock, the template or the fence, and that the fence and template are horizontal and parallel to the top face of the jig body. Re-measure the template offset and the fence setback, and ensure that they match the calculated values.

Check the bit height in the router. Then, with the router off, set the router gently onto the template, keeping the bit back away from the tips of the template fingers. Visually check that the cutting edge of the bit will not engage the template or any other part of the jig.

Milling should proceed from left to right across the workpiece. Find the first template finger gap that shows the left end of the vertical board, and position the bit outside and slightly to the left of that gap.

Start the router, and then begin cutting by easing the router forward into the gap, with the guide bushing following the left side of the gap. When the bit reaches the back of the cut (when the router sub-base touches against the fence), keep gentle inward pressure on the router to maintain contact with the fence as you move the router to the right until the guide bushing reaches the right side of the template gap. Then slowly move the router back outward, keeping slight pressure to the right so that the bushing follows the template. As the bit approaches the near end of the template finger, ease the bit out and around the end of the finger while maintaining contact between the bushing and the template. Move down the left side of the next gap, and repeat the process for each finger gap until the joint is fully milled. After the last cut is complete, DO NOT LIFT THE ROUTER OFF OF THE TEMPLATE. Move the router away from the fence, so that the bit is not in contact with anything, and turn off the router. Lift the router gently away from the jig, so that the edges of the bit don’t inadvertently nick the edges of the template.
Shop Tips: When transitioning across the back of the finger gap, from left to right, maintain back pressure while moving to the right. A common error is to jump somewhat diagonally from the back-left part of the gap to the right-hand side of the gap, leaving a small amount of material in the back-right part of the socket.

Keep the router base flat on the template as you work. Tilting the router will ruin the joint, and most often happens while moving around the tips of the template fingers.

When milling very thick material in the vertical positions of the jig, remove the material in two passes - make a first pass from left to right that removes most of the material that extends forward past the template finger tips.

Once the first test joint has been milled, remove the two scrap pieces and check the joint for fit. Common joint problems and the related adjustments are shown in Figure 19. Remember to only make very small adjustments in the $\frac{1}{64}$" range, and only make one adjustment at a time before milling another test joint on scrap.

Figure 19

Continue milling test joints until you achieve satisfactory results. In general, once you have attained a good setup on one end of the jig, the results should be the same when milling at the other end - but only if template and fence positions have been measured precisely at both ends, the fence and template are confirmed horizontal and parallel to the top face of the jig body, and there is no flexing of the stock or template. You should always verify your setup by making test joints at both ends of the jig.
Drawer Part Preparation

Once you have tested, tuned and verified your setup, take some time to lay out and label the drawer pieces before starting the final milling process (see Figure 20). Label or mark the inside faces of each piece so the notes will be visible when loading the jig. Indicate at the center of each piece which piece it is - “L”, “R”, “F” or “B”. If there are multiple drawers, add a drawer number to the letter - “L1”, “B2”. Finally, add an ‘up’ arrow, just to remove any doubt. Near the ends of each piece label or mark a joint code “1”, “2”, “3” or “4”.

Loading the Jig

*Only install the actual drawer sides after you’ve produced a satisfactory joint using scrap boards.*

Select the drawer end piece (front or back) and drawer side piece (left or right) for the first joint, making sure to match the joint code markings. Typically, the two left-hand joints (joining the left drawer side to the drawer front and drawer back) are milled on the left end of the jig, and the two right-hand joints are milled on the right end of the jig.

Open the front clamp by pulling up the clamp handle. Slide the drawer side board into one side of the front of the jig (vertically) from the bottom, under the clamp, and almost up to the bottom of the template, making sure that the inside face of the board is facing out. Slide a scrap piece of the same thickness under the clamp at the opposite end of the jig to maintain clamping balance. Secure the work board and scrap piece by closing the clamp with the clamp handle. The top edge of the work board should protrude above the jig body a small amount (less than the thickness of the drawer end board), but perfect alignment is not necessary at this time (see Figure 21).
Open the top clamp by pulling forward on the clamp handle. Slide the drawer end board into the jig (horizontally) from the rear, under the clamp, fence, and template, at the same end of the jig as the vertical work board. The inside face of the board should be facing up, and the joint label on the front end of this horizontal board should match the joint label on the top end of the vertical board. Butt the horizontal board tightly against the vertical board and check that it is firmly against the side stop (see Figure 22). Slide a scrap piece of the same thickness under the clamp, fence, and template at the opposite end of the jig, and secure the work board and scrap piece by closing the clamp with the clamp handle.

![Figure 22](image)

Return to the vertical board. Open the front clamp slightly, and slide the board up so that the top edge is flush with the top face of the horizontal board (see Figure 23). Check that the board is firmly against the side stop, and secure the board and scrap piece in place by closing the clamp again with the clamp handle.

![Figure 23](image)
Milling the Final Joints

Mill the first joint in the same way that you milled your test joints: move from left to right down the jig, keeping the router flat on the template, with the same point toward the fence. Be sure not to ‘shortcut’ across the back-right curve of each socket; and don’t lift the router until the bit has stopped and is well away from the template. Verify the fit of the joint, and then repeat the loading and milling process for the other joints of the drawer box.

Shop Tip: If you experience tear-out when milling the outer edge of the vertical board tails, try ‘backcutting’ the edge of the vertical board before actually milling the joint. With the jig loaded and ready for milling, make a light pass of the router, from right to left, across the tips of the template. Do not go in and out of the finger gaps; the goal is to just barely score the surface of the board to a depth of only \( \frac{1}{64} “ \) or \( \frac{1}{32} “ \).

Appendix A

Rabbeted Half-Blind Dovetail Joints. This type of joint allows you to add a lip to the sides, top and bottom of the drawer front (see Figure A-1). It is typically used when the drawer face will be integral to the drawer box, rather than attached separately to the box; it can be used for either inset or overlay drawers.

Figure A-1

Drawer piece sizing. The drawer front board must be larger in width and height than the drawer back by the desired width of the lips. It may also need to be thicker than the drawer sides and back, and must be at least \( \frac{1}{2} “ \) thicker than the thickness of the lip. Finally, the rabbets around the edges of the drawer front must be cut in advance of dovetail milling.

Consider the example of a frameless cabinet, with a 14” wide drawer opening, for an inset drawer which will be mounted using typical drawer slides requiring \( \frac{1}{2} “ \) of space on each side of the drawer:

The width of the drawer front should be equal to the width of the opening minus a gap for clearance on each side; for a 14” opening and \( \frac{1}{16} “ \) clearance gaps, the drawer front would be cut to 13\( \frac{3}{8} “ \) wide. The drawer box width, however, should be equal to the width of the opening minus the \( \frac{1}{2} “ \) side spaces for the slides, or 13”. The rabbet required on each end of the drawer front to match the drawer front to the box would then be \( \frac{7}{16} “ \) wide (see Figure A-2).
The height of the drawer sides and back should be selected based on fit and function, but must accommodate any top-clearance requirement of the slides, and should result in a pleasing dovetail layout. Once a height has been selected for the sides and back, the height for the drawer front can be the same or larger, and the height of the rabbets should be selected accordingly. For this example, we will choose to match the top and bottom rabbets to the side rabbets, making them $\frac{7}{16}$" high.

The depth of the rabbets must be at least $\frac{1}{2}$"; the thickness of the drawer front must allow for this depth and still have a sufficient thickness for the lip. Generally, the lip should be at least $\frac{3}{8}$" thick. For this example, selecting $\frac{7}{8}$" stock for the drawer front will result in a $\frac{3}{8}$" lip.

Once the dimensions of the drawer sides, back and front have been established, cut the stock to size, and create the rabbets on the drawer front piece prior to milling the joints.

**Differences in Jig Setup and Milling.** The two back joints of the drawer are standard flush half-blind joints and can be milled in the normal manner. The two front joints, however, require some special handling:

The side rabbets impact the milling of the sockets. If the drawer front was loaded into the jig in the normal fashion, it would butt up against the vertical board, and the start of the socket cuts would be shifted back away from the front of the template by the width of the side rabbets. The best way to counter this is to shift the board forward by the width of the rabbet, which requires that the drawer fronts be milled separately from the drawer sides because the drawer front cannot be shifted forward without removing the drawer side.

*In certain situations, where the rabbet width is small and the drawer side thickness is also small, the fence can be shifted back so that both pieces of the joint can still be milled simultaneously. However, it is generally much simpler to just mill the parts separately rather than disturb a good verified setup.*

Similarly, top and bottom rabbets on the drawer front can impact the standard offsets provided by the side stops. These rabbets cause the start of the joint to be shifted away from the side stop by the height of the rabbet (see Figure A-3). If you choose to not rabbet the top or bottom of your drawer front, you can skip to the section on *Milling.*
To maintain the proper offset between the two workpieces, the drawer side must be shifted away from the side stop by the same amount that the drawer front milling is shifted, which is the height of the top or bottom rabbet. To achieve the proper offset, you can set the side stops differently for milling the drawer sides and front, or you can use a spacer to shift the drawer side over by the height of the rabbets; it can be difficult to juggle the sides and the spacer while trying to set the side stop and load and unload stock in the vertical orientation.

Consider that the $\frac{1}{2}$"-centered template is designed for a $\frac{1}{2}$" offset between the pieces of a flush half-blind joint, but that the relationship between the tails and sockets would still be properly maintained if the offset were changed to $1\frac{1}{2}$" or $2\frac{1}{2}$", etc. - the offset can be $\frac{1}{2}$" or $\frac{3}{4}$" plus some integral number of $1$" increments.

For the rabbeted half-blind joint, then, where the drawer front joint is shifted by the width of the rabbet, you can maintain the proper offset between the pieces either by spacing the drawer side over by the width of the rabbet, or by spacing the drawer front over by ‘X’ inches minus the width of the rabbet.

For our example, cut a scrap spacer the same thickness as the drawer front to a width equal to $2"$ minus the height of the rabbet, or $2" - \frac{7}{16}" = 1\frac{9}{16}"$. Use this spacer between the drawer front and the top side stop when milling. The $2"$ increment starting value is chosen because $1$" would either be too small for a larger rabbet, or would at least tend to make the spacer very thin.

**Milling.** Only install the actual drawer sides after you’ve produced a satisfactory joint using scrap boards. It is best to mill all of the back joints of the drawer as standard flush half-blind joints first, and then proceed to milling the front joints. None of the jig settings should need to change.

After the back joints are milled, the next step is to mill the side-piece parts of the front joints. These pieces are loaded and milled using the exact same setup and method used for the back joints, except the drawer front is not loaded and milled at the same time. Instead, scrap pieces the same thickness as the drawer front are substituted for the drawer front to keep the template level and to help prevent tear-out at the inner edge of the tail cuts.
Finally the drawer front is loaded, using the spacer to offset it from the side stop (if necessary). Instead of butting it up against a scrap piece loaded vertically, the drawer front is slid forward until the inner face of the rabbet is flush with the front edge of the jig body (see Figure A-4). Each end of the drawer front is milled in this manner, completing the milling of the front joints.

**Figure A-4**

**Appendix B**

**Box (Finger) Joints.** This type of joint is made up of simple interlocked rectangular fingers; it provides a unique look, but also provides a large amount of gluing surface for strength (see Figure B-1). Larger box joints can be drilled and dowelled vertically to lock the fingers with little or no glue. To create box joints using the Rockler dovetail jig, you will need to use a \( \frac{1}{2}'' \) straight bit with a \( \frac{1}{2}'' \) top-mounted guide bearing, or a non-bearing-guided \( \frac{1}{2}'' \) straight bit and a separate \( \frac{1}{2}'' \) OD guide bushing (these items must be obtained separately). The cutting height of the bit must be at least as high as the thickness of the stock, and the stock thickness is limited to 1” thick or less.

**Figure B-1**

**Drawer piece sizing and marking.** Because the pieces of the joint interlock, with the fingers extending fully through the opposing piece, the drawer piece lengths are simply the same as the outer dimensions of the box. The sides of each drawer should be center-marked as described for half-blind dovetails, but instead of marking joint numbers near the ends of each board, mark each side of a joint either ‘NO’ (no offset) or ‘O’ (offset). Both ends of two drawer pieces can be offset, with both ends of the other two pieces designated for no offset, or one end of each piece can be offset with the other end designated for no offset.
**Differences in Jig Setup and Milling.** Each piece of each joint is milled separately; all pieces are milled in the front (vertical) position of the jig, and all pieces can be milled at the same end of the jig.

The bit height must be set based on the exact thickness of the stock; however, because of the diameter of the bit, it will generally not be possible to adjust the bit upward enough to keep the bearing alongside the template or the top of the non-bearing-guided bit from contacting the guide bushing while limiting the cut in the workpiece to the right depth. For safety and practicality, shims must be used under both ends of the template, fence and clamp to raise the template enough that the bit can then be adjusted downward to the proper depth in the stock. For example, if the stock is \( \frac{3}{4} \)" thick, the proper depth-of-cut is also \( \frac{3}{4} \)". If you are using a non-bearing-guided straight bit with a 1" cutting height, a \( \frac{3}{4} \)" thick shim will place the highest setting of the bit at about a \( \frac{1}{4} \)" to \( \frac{3}{16} \)" depth-of-cut in the stock (see Figure B-2). The bit can then be adjusted downward to the required \( \frac{1}{2} \)" depth-of-cut.

If the stock is \( \frac{3}{4} \)" thick, and the bit has a 1\( \frac{1}{2} \)" cutting height, a shim 1" thick will result in a minimum stock depth-of-cut of about \( \frac{1}{2} \)"; again allowing adjustment down to the required \( \frac{1}{2} \)".

The template position is not critical; but it must be positioned so that neither the inner curved portion of the finger gap nor the outer curved tip of the finger are positioned over stock loaded into the front clamp (see Figure B-3). The fence must simply be set back out of the way far enough that the router base will not contact it until after the bit has passed fully through stock mounted in the front clamp. Aside from the bit height setting, the only other critical setting relates indirectly to the side stops. The actual settings for the stops should be selected just to create a pleasing finger layout, but the two sides of a joint must be loaded into the jig with an exact \( \frac{1}{2} \)" offset to each other for the joint to be successful.
This offset can best be accomplished by using a \( \frac{1}{2} \)" wide spacer between the workpiece and the side stop to offset the stock for one side of the joint. Unfortunately, it can be awkward to try to hold the workpiece, spacer and a scrap piece all in position vertically in the front portion of the jig while closing the clamp. To make this easier, add a ‘hanger’ to the spacer. Create the spacer by cutting a scrap piece the same thickness as the stock, and perhaps 3-4" long, to \( \frac{1}{2} \)" width. Drill a hole in the back of the spacer, near one end, sized to accommodate a common nail (8d to 12d work well). Slip the spacer into the front clamp, alongside the sidestop, and insert the nail from behind to “hang” the spacer in place (see Figure B-4).

**Milling.** Only install the actual drawer sides after you’ve produced a satisfactory joint using scrap boards. Mill all of the ‘no offset’ sides of the joints first, with the work boards snug to the side stop. Install the template shim boards first; open the top clamp by pulling forward on the clamp handle. Slide the template shims into the jig (horizontally), from the rear, under the clamp, fence and template at both ends of the jig. Make sure that the shims are more than 1" away from the side stop, to leave room for the spacer-hanger; and that the shims overhang the front edge of the jig body by an amount at least the same as the thickness of the stock. Secure the two shims by closing the clamp with the clamp handle.

Open the front clamp by pulling up the clamp handle. Slide a work board into one side of the front of the jig (vertically), from the bottom, under the clamp and up against the bottom of the template shim board. Make sure that the top end of the piece is marked ‘NO.’ Slide a scrap piece of the same thickness under the clamp at the opposite end of the jig to maintain clamping balance. Secure the work board and scrap piece by closing the clamp with the clamp handle.

Mill the vertical work piece in the same manner as you would mill half-blind dovetail joints. Be sure that the bit passes fully through the workpiece as you work through each template finger gap.

Once all the ‘no offset’ board ends have been milled, load and mill the ‘offset’ board ends in the same way, but be sure to install the spacer-with-hanger between the workpiece and sidestop to offset the milling.