

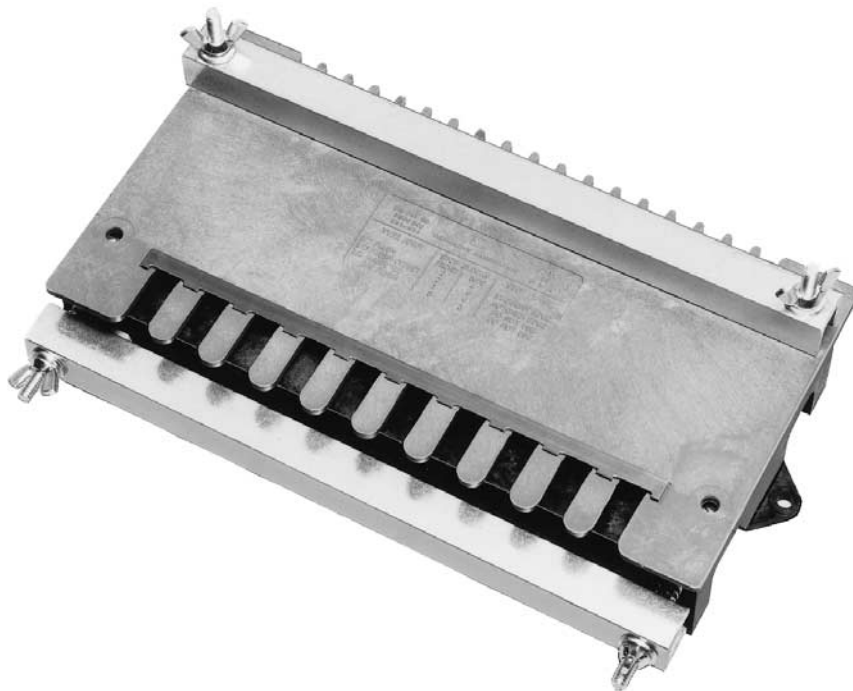


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Owner's Manual Model No. 23460

**CAUTION: READ ALL
INSTRUCTIONS
CAREFULLY**

**Save This Manual
For Future Reference**



VERMONT AMERICAN

Dovetail Fixture Kit

- Assembly
- Operating

Published in 2/1996
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Mfg. No. 45325

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General Safety Instructions For All Power Tools

WARNING: FAILURE TO HEED ALL SAFETY AND OPERATING INSTRUCTIONS AND WARNINGS REGARDING USE OF THIS PRODUCT CAN RESULT IN SERIOUS BODILY INJURY.

KNOW YOUR POWER TOOL

Read the owner's manual carefully. Learn its applications and limitations, as well as the specific potential hazards of this particular tool.

DO NOT FORCE THE TOOL

Tools will perform better and safer if operated at the rates for which they are designed.

USE THE CORRECT TOOLS

Do not force tools or attachments to do jobs they are not designed for.

USE RECOMMENDED ACCESSORIES

Consult the owner's manual for recommended accessories and follow instructions. The improper use of accessories may be hazardous and inhibit the performance of the tool.

MAINTAIN TOOLS WITH CARE

Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

KNOW THE PROPER ELECTRICAL OPERATION OF YOUR TOOL

If a tool is equipped with an approved 3-conductor cord and a 3-prong grounding plug, be sure to plug it into the proper grounding receptacle. The green conductor in the cord is the grounding wire. Never connect the green wire to a live terminal.

AVOID ACCIDENTAL STARTS

Make sure switch is in "OFF" position before plugging in.

DISCONNECT TOOLS

Unplug tools from receptacle before servicing, changing accessories such as blades, bits, cutters, and when not in use.

PROTECT AND USE SUITABLE CORDS

Never carry tool by cord or yank it to disconnect from receptacle. Protect cord from heat, oil and sharp edges. For outdoor operation, only use extension cords marked suitable for outdoor use.

OPERATE ONLY IN SAFE WORK AREAS

Do not use power tools in damp or wet locations and do not expose power tools to rain.

PLAN YOUR WORK SPACE

Keep work area well lighted and provide plenty of surrounding work space. Cluttered areas and benches invite accidents. Floors should not be slippery from wax or sawdust.

KEEP AWAY FROM HAZARDOUS MATERIALS

Normal sparking of the motor could ignite fumes, flammable liquids or combustibles.

CHILD-PROOF YOUR WORK AREA

Store tools not in use in dry, secure places, out of the reach of small hands. Visitors should stay a safe distance away from work. Install padlocks, master switches and remove starter keys to prevent accidents.

PROTECT YOURSELF AGAINST PERSONAL INJURY

Do not operate any tool while under the influence of drugs, alcohol or any medication.

WEAR APPROPRIATE CLOTHING

Do not wear loose clothing, gloves, neckties or jewelry such as rings or wristwatches that may become caught in moving parts. Non-slip footwear is recommended. Roll long sleeves to above the elbow. Wear protective hair coverings over long hair.

USE EYE AND HEAD PROTECTION

Wear eye protection that complies with ANSI Standard Z87.1 at all times. Use a face mask if the cutting operation is dusty. Wear earplugs or muffs during extended periods of operation.

KNOW RULES FOR SAFE OPERATION

Consult owner's manual for operation instructions and warnings.

KEEP GUARDS IN PLACE

Be sure guards are in working order, and in proper adjustment and alignment.

CHECK FOR DAMAGED PARTS

Before further use of the tool, damaged guards or other parts should be checked carefully to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, breakage of parts or mounting and any other conditions that may affect operation. A damaged guard or part should be properly repaired or replaced.

REMOVE ADJUSTING KEYS AND WRENCHES

Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.

SECURE WORK

Use clamps or a vise to hold work when practical.

DO NOT OVERREACH

Keep proper footing and balance at all times.

CHECK DIRECTION OF FEED

Feed work into a blade or cutter against the direction of rotation only.

KEEP HANDS AWAY FROM CUTTING AREA

NEVER STAND ON TOOL

Tipping the tool over or accidental contact with the blade may result in serious injury.

NEVER LEAVE TOOL RUNNING OR UNATTENDED

Turn power switch to "OFF." Do not leave tool until it comes to a complete stop.

UNPACKING AND CHECKING CONTENTS

In order to facilitate handling and minimize any damage that may occur during shipment, your new Dovetail Fixture is packaged unassembled. Start by separating all parts from the packaging materials and check each part against the parts list on page No. 11 to be sure that all parts are there.

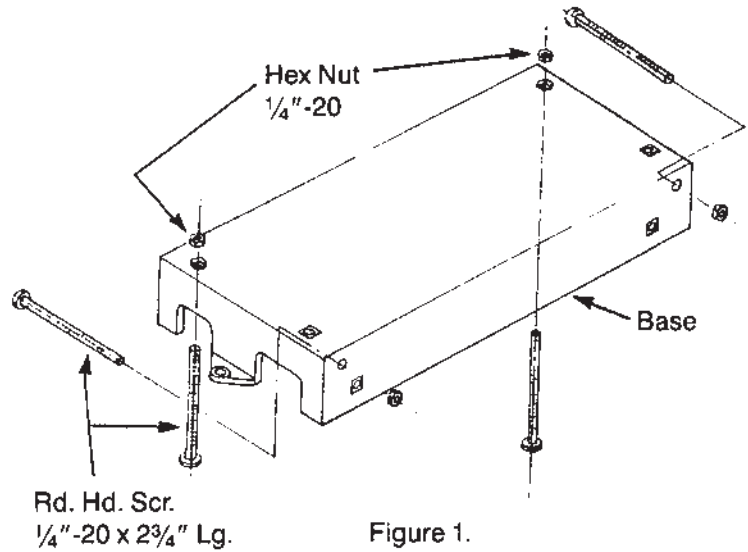
GETTING TO KNOW ABOUT TEMPLATES

This fixture is furnished with two templates.

Each template has molded on its top surface an identifying number, the types of joints that can be cut with this template, the stop block settings required for these joints and an arrow showing the direction the template must point for a particular joint.

NOTE: THE TOP SURFACE WITH MOLDED-ON INFORMATION MUST ALWAYS FACE UPWARD WHEN THE TEMPLATE IS ATTACHED TO THE FIXTURE.

Dovetail Template 1 is used for 1/2" rabbeted joints and 1/4" flush joints; Dovetail Template 2 is used for 1/2" flush joints and 1/2" flush-offset joints.



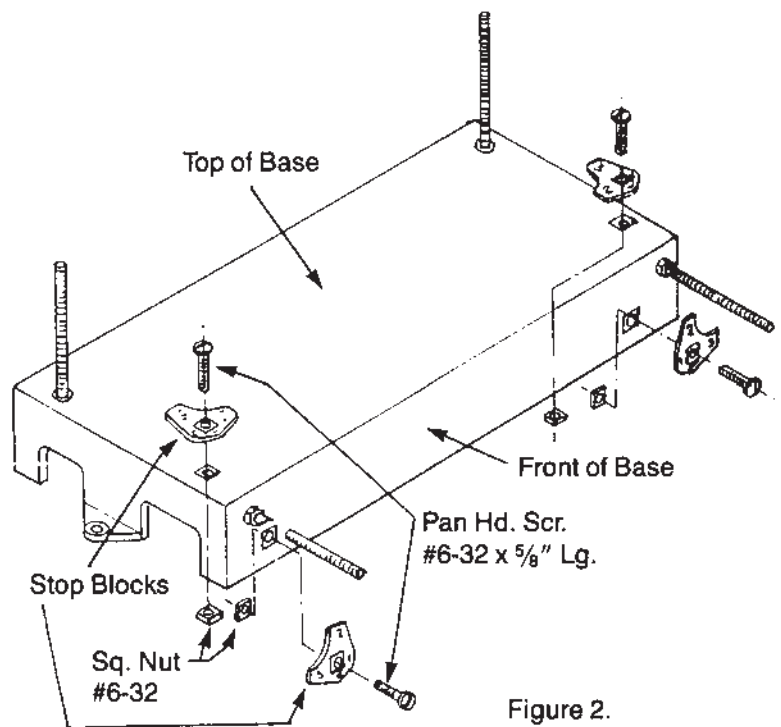
ASSEMBLY

WARNING: You must read and understand all instructions of your Dovetail Fixture, as well as your router owner's manual before attempting to assemble and to operate this product.

1. Install 4 round head screws onto the base as shown in Figure No. 1. Securely tighten all screws and nuts (make sure hex heads are seated fully into the two hex recesses molded in the top of the base).
2. Assemble four stop blocks to the base (square shaped protrusions on the stop blocks should be seated in the square recesses in the top and front of the base) (see Figure No. 2).

NOTE: The orientation of stop blocks is immaterial at this time.

3. Attach a clamping bar to the front of the base as shown in Figure No. 3.



GENERAL

Four different style dovetail joints can be made easily with your Dovetail Fixture and the router. These are described below:

1. The 1/2" Flush joint is used when the drawer front is of same height as the drawer sides and of same length as the drawer width (see Figure No. 4).

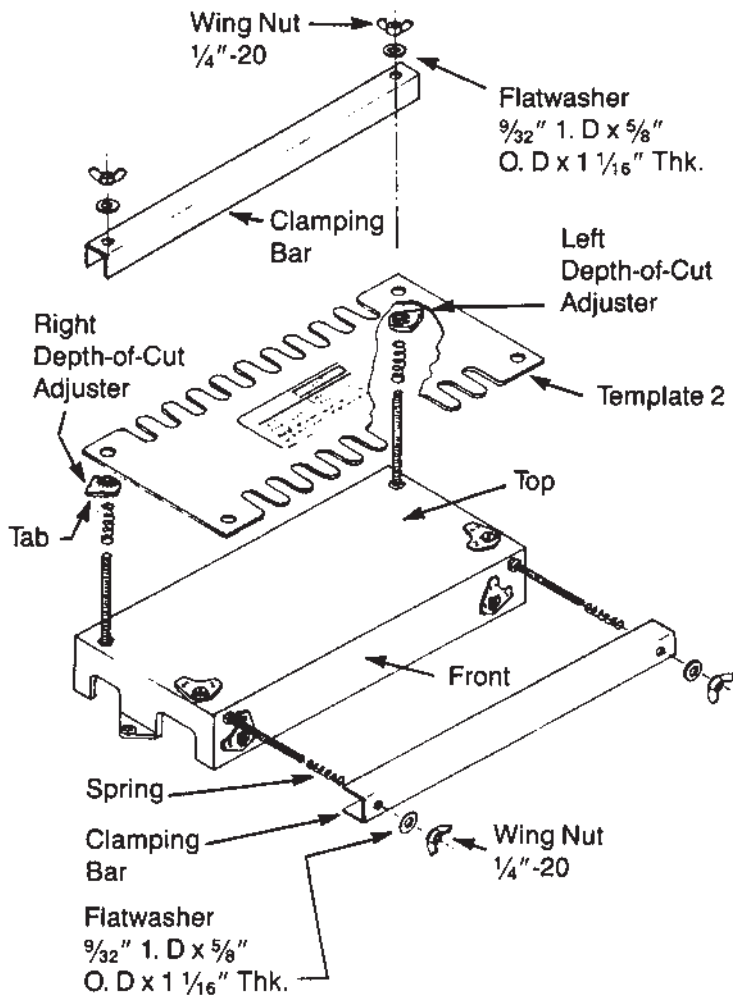


Figure 3

4. Attach the second clamping bar, dovetail template for the type of joint desired, and the depth-of-cut adjusters to the top of the base (make sure that round protrusions on depth-of-cut adjusters are pointing upward and seated in the holes in template, and the surface of the template with molded-on joint cutting information is facing upward)(see Figure No. 3).

NOTE: For proper identification, the depth-of-cut adjusters have an "R" for the right or an "L" for left molded on the back of the tab. Orient both tabs so they are pointing away from the ends of the base.

NOTE: THE DEPTH-OF-CUT ADJUSTERS ARE USED WHEN CUTTING ALL THREE 1/2" JOINTS AND ARE NOT USED FOR THE 1/4" JOINT.

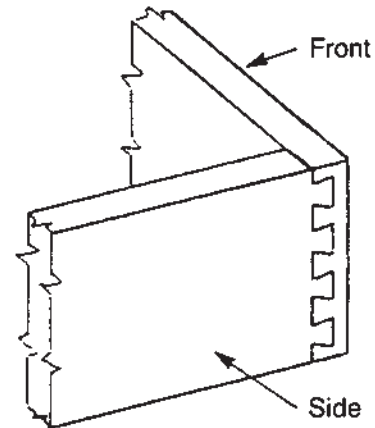


Figure 4.

2. The 1/2" Flush-Offset joint is used when the drawer front is of the same height as the drawer sides and is 1/8" longer than the drawer width (the drawer sides are recessed 1/16" into the drawer front (see Figure No. 5).

NOTE: It is necessary that a 1/16" deep by 3/8" wide rabbet be cut on the opposite ends of the drawer front.

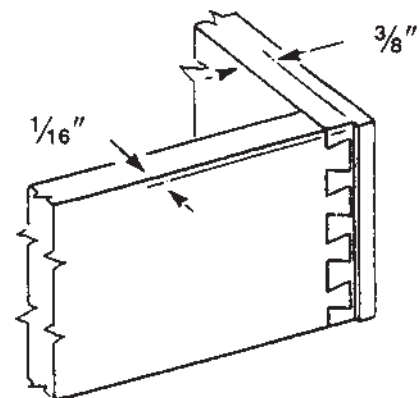


Figure 5.

3. The 1/2" Rabbeted joint is used when the drawer front is to overlap the opening for drawer on all four sides (the top, the bottom, and two sides). The drawer front in this case is 3/4" higher than the drawer sides and also 3/4" longer than the drawer width (see Figure No. 6).

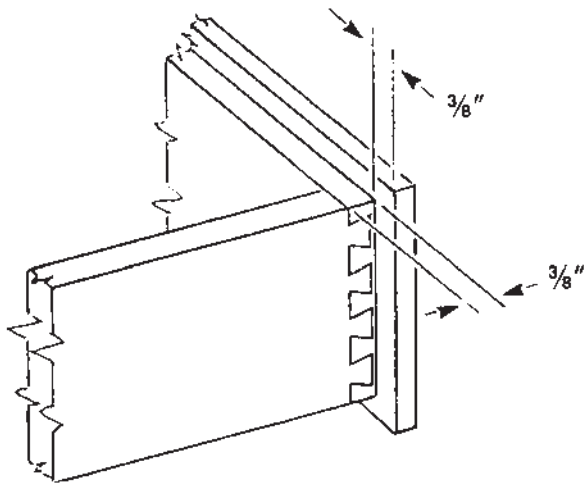


Figure 6.

NOTE: It is necessary that a 3/8" deep by 3/8" wide rabbet be cut around the periphery of the drawer front.

4. The 1/4" Flush joint is the same as the 1/2" Flush joint except that the dovetails are much smaller. This joint is usually used for very small drawers, such as jewelry cases, silverware chests, gun boxes etc. (see Figure No. 7).

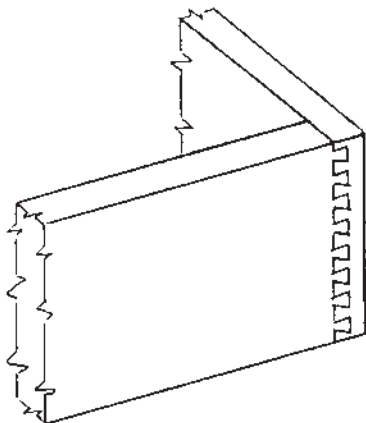


Figure 7.

PREPARING DRAWER FRONT AND SIDES

The drawer front should be cut to the finished size (both height and length).

The drawer sides should be cut to the finished height. They may be left longer and cut to the finished length later.

Be sure that all the ends are cut square.

NOTE: It is recommended that trial dovetail cuts be made on short lengths of wood to be sure you are obtaining the desired joint.

ROUTER SETUP

WARNING: Always unplug router from electrical source before installing or removing router bits.

FOR ALL 1/2" JOINTS

1. Assemble the 7/16" guide bushing to your router (may use 7/16" guide bushing that came with your router or the 7/16" guide bushing in Vermont American No. 23458 guide bushing kit).

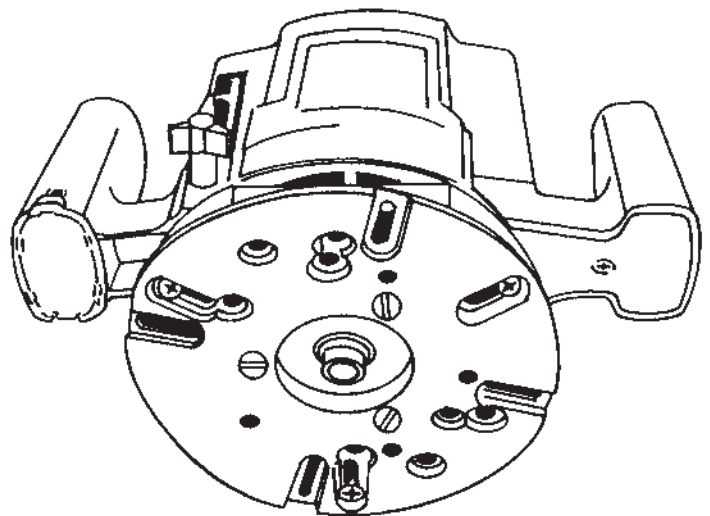


Figure 8.

2. Insert a 1/2" Dovetail Router Bit by Vermont American – No. 22134 or No. 22500 – into the router and securely tighten the collet.
3. Adjust the height of the router bit so that the end of the bit is approximately 1/2" below the baseplate (see Figure No. 9).

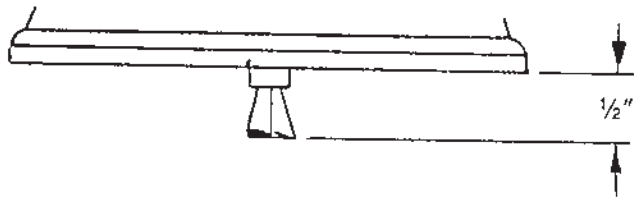


Figure 9.

FOR 1/4" JOINTS

1. Assemble the 5/16" guide bushing to your router (may use 5/16" guide bushing that came with your router or the 5/16" guide bushing in Vermont American No. 23458 guide bushing kit).
2. Insert a 1/4" Dovetail Router Bit (by Vermont American No. 22130) into the router and securely tighten the collet nut.

NOTE: When cutting 1/4" dovetails, it is necessary that you use a Vermont American No. 22130 Dovetail Router Bit which looks like the one shown in Figure No. 11. You will note a small necked portion which provides chip clearance.



Figure 11.

4. Make a trial cut.
 - A. If the joint is TOO LOOSE, INCREASE the amount by which the bit extends below the baseplate by 1/64" or 1/32" and make another trial cut.
 - B. If the joint is TOO TIGHT, DECREASE the amount by which the bit extends below the baseplate by 1/64 or 1/32" and make another trial cut.
5. Once the desired router bit height setting is obtained, it is suggested that you make a simple gauge from a block of wood which will enable you to obtain the correct setting quickly in the future (see Figure No. 10).

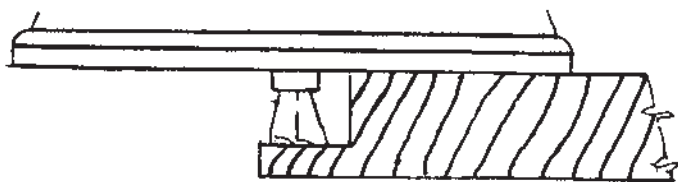


Figure 10.

Because of the small space in 1/4" joints, it is very important to keep wood chips cleaned out of the space between the bit and the hole in the guide bushing. This will prevent excess heat and chips from prematurely wearing out the guide bushing.

The use of the type of bit shown provides more space for chips than other types of 1/4" dovetail router bits.

3. Adjust the height of the router bit so that the end of the bit is 11/32" below the baseplate (see Figure No. 12).
4. Continue as in Steps 4 and 5 in the section "FOR ALL 1/2" JOINTS."

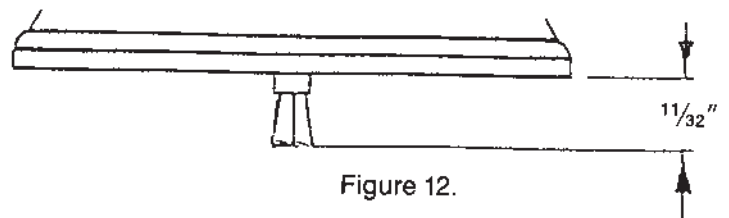


Figure 12.

CUTTING DOVETAIL JOINTS

TO CUT A 1/2" FLUSH JOINT (FIGURE NO. 4) USE
TEMPLATE 2

1. Position the front and side stop blocks as shown in
Figure No. 13. Securely tighten screws after the stop
blocks are in desired position.

NOTE: The screws for the front stop blocks are
accessible through the holes in the template
directly above the screws. DO NOT FORCE A
LARGE SCREWDRIVER THROUGH THESE
HOLES AS IT MAY ENLARGE THE HOLES.
THIS WOULD CAUSE IMPROPER FUNCTION
WHEN CUTTING DOVETAIL JOINTS.

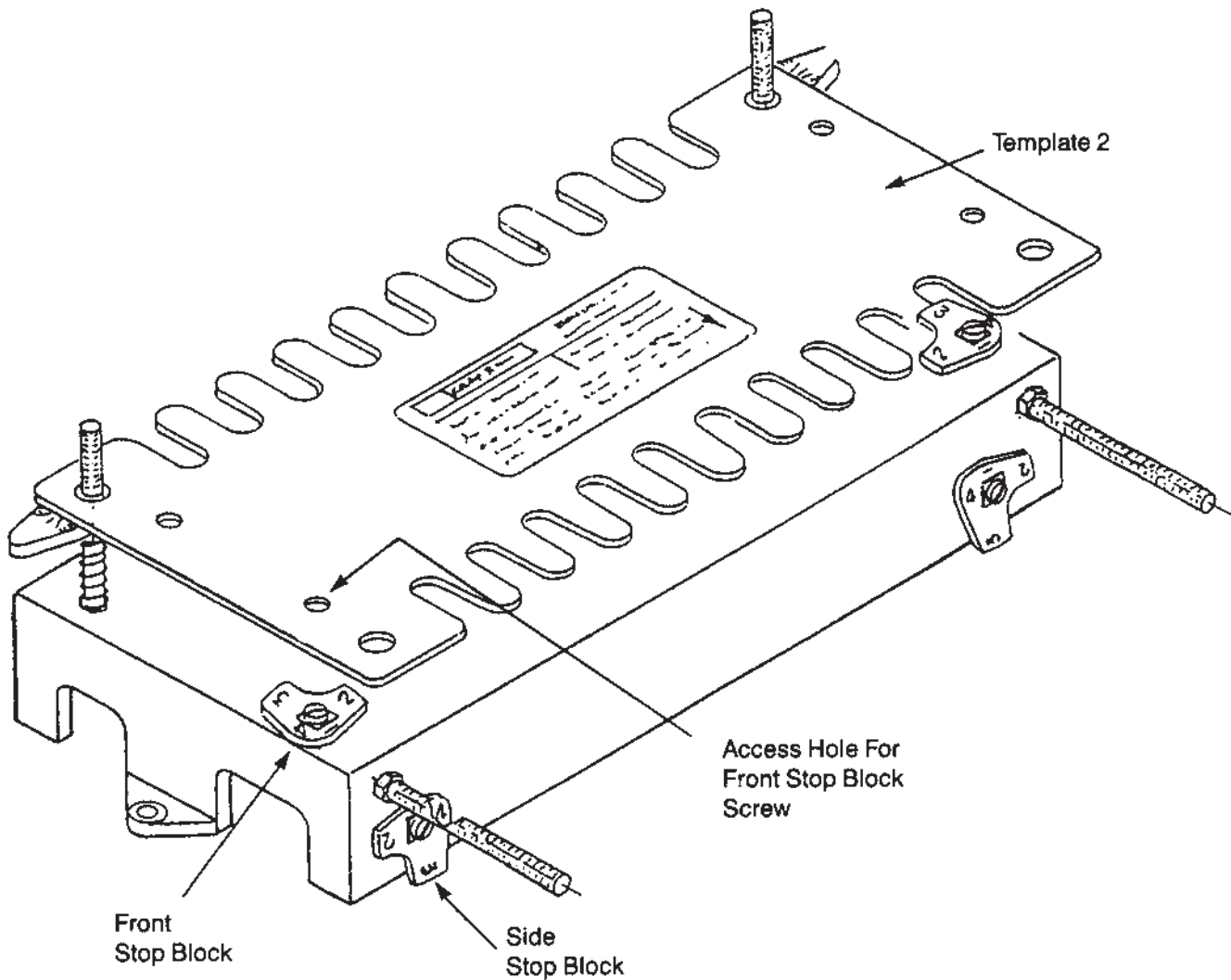


Figure 13.

2. Loosen all wing nuts until they are just at the ends of the threads on the screws.
3. Position the tabs on both depth-of-cut adjusters so that they are in line with the front clamping bar (see Figure No. 14).

This is done by rotating the tabs either in a clockwise or counterclockwise direction. A slight ratcheting effect will be felt as the depth-of-cut adjusters pass through various positions.

DO NOT ATTEMPT TO MAKE THIS, OR ANY OTHER CHANGE TO THE DEPTH-OF-CUT ADJUSTERS WITH A WORKPIECE CLAMPED IN THE FIXTURE OR WITHOUT LOOSENING THE WING NUT AS DESCRIBED ABOVE. FAILURE TO DO THIS CAN RESULT IN DAMAGE TO THE DEPTH-OF-CUT ADJUSTMENT FEATURE.

4. Place the drawer front and drawer side in the dovetail fixture as shown in Figure No. 14. The drawer front and side must be against the stop blocks and the end of the drawer side must be flush with the inside surface of the drawer front (see Figure No. 14). Tighten all wing nuts securely to clamp drawer front and side to the fixture.
5. Place the router on the template and make the cut with the guide bushing following the template. Always hold the router down flat on the template while making the cut. When the cut is finished, **TURN THE ROUTER OFF**, and pull the router off the template.

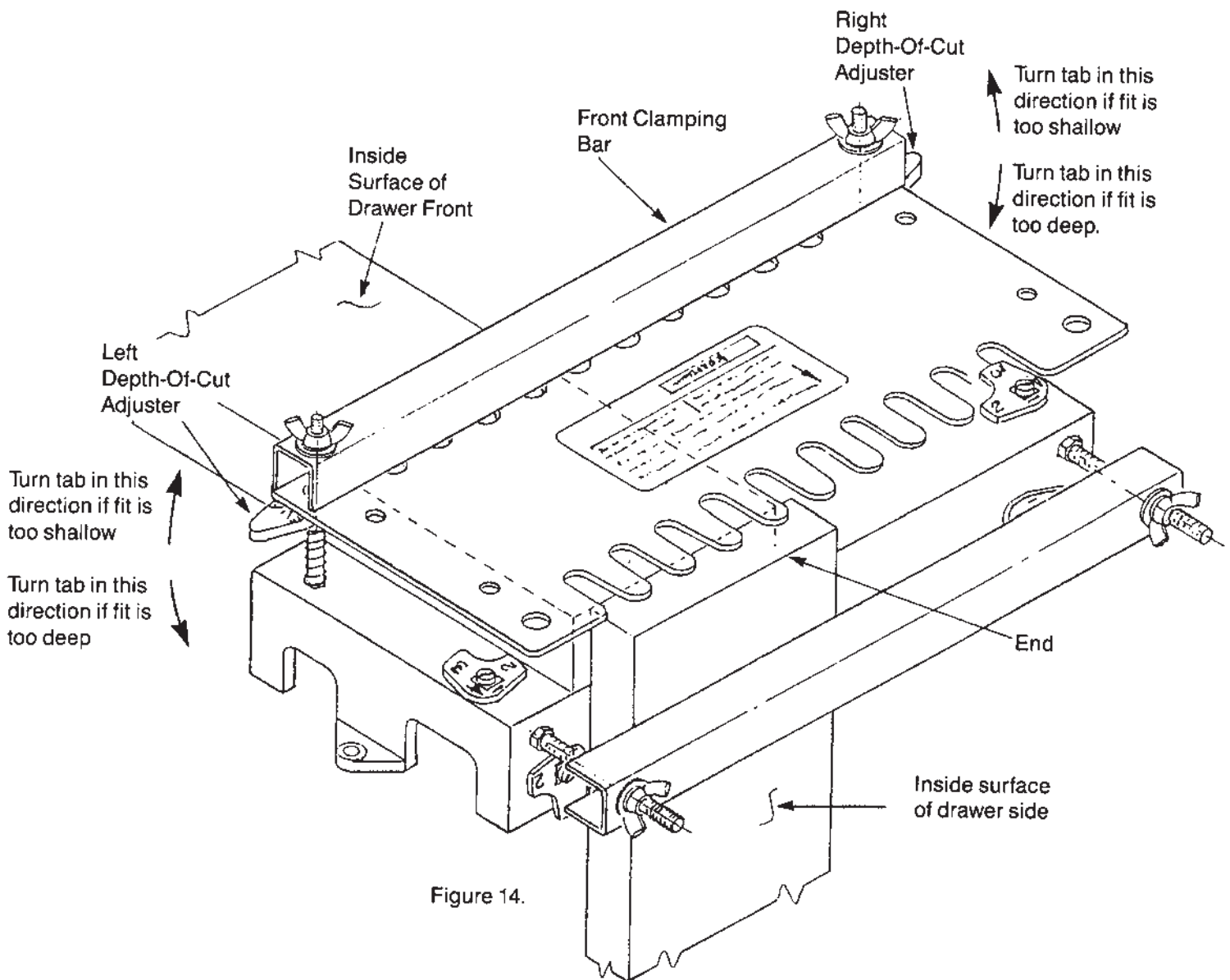


Figure 14.

CAUTION: NEVER LIFT THE ROUTER UPWARDS WHEN THE ROUTER IS ON AND WHEN THE GUIDE BUSHING IS NEAR OR TOUCHING THE TEMPLATE BECAUSE THIS WILL CAUSE THE BIT TO CUT INTO AND DAMAGE THE TEMPLATE.

Before unclamping the workpieces, look at the cut to be sure that it looks uniform. Sometimes the router does not go all the way back until guide bushing touches the back of the template. If this is visibly noticeable, retrace the cut in the area that did not look uniform.

The finished front and side should look like the one shown in Figure No. 15.

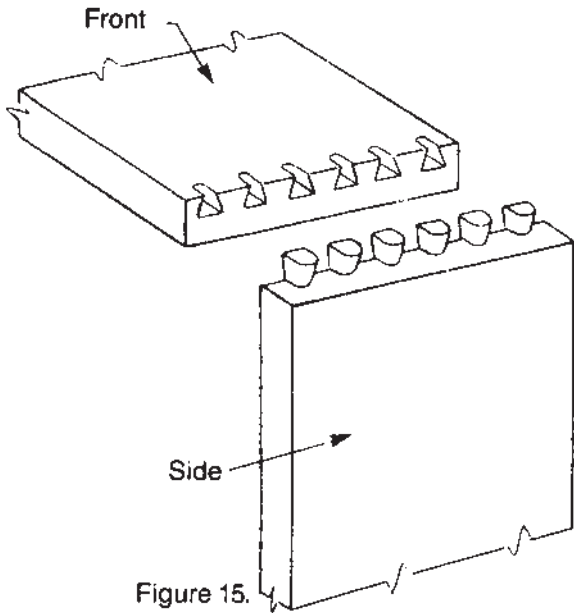


Figure 15.

6. Remove the front and side from the dovetail fixture and check the fit of the joint.

A. If the fit is TOO SHALLOW (Figure No. 16), loosen the wing nuts holding the front clamping bar as described in Step 2 and turn both adjuster tabs an equal amount in a CLOCKWISE direction (see Figure No. 14).

One ratchet “click” will make the depth of the cut in drawer front approximately 1/64” deeper.

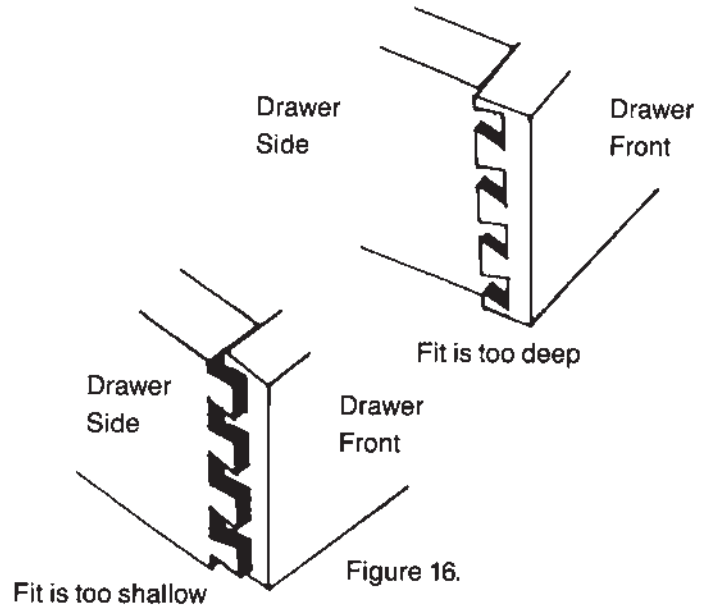


Figure 16.

B. If the fit is TOO DEEP (Figure No. 16), loosen the wing nuts holding the front clamping bar as described in Step 2, and turn both adjuster tabs an equal amount in a COUNTERCLOCKWISE direction.

One ratchet “click” will make the depth of the cut in drawer front approximately 1/64” shallower.

7. If any condition 6A or 6B exists, reposition the front and side in the fixture. Tighten all wing nuts and make the cut (a number of trial cuts may be necessary to obtain correct depth-of-cut). If not, continue with Step 8.
8. Reverse the ends of the drawer front. Take the other drawer side and clamp it and the reversed front on the right side of the fixture against the other two stop blocks.

NOTE: If the first end was cut on the left side of the fixture, then the reversed end of the drawer front and other side must be cut on the right side of the fixture.

After this second cut has been made, the drawer front joints are complete.

9. if the back of the drawer is also to have dovetail joints, the sides must be cut to the proper length before cutting the dovetails.

NOTE: Joints for the LEFT FRONT CORNER and the RIGHT REAR CORNER of a drawer or a box are cut on the LEFT SIDE of the fixture. Joints for the RIGHT FRONT CORNER and the LEFT REAR CORNER of a drawer or a box are cut on the RIGHT SIDE of the Dovetail Fixture.

TO CUT A 1/2" FLUSH-OFFSET JOINT (FIGURE #5) USE TEMPLATE 2

Position the front and side stop blocks as shown in Figure No. 17. Refer to Step 1 in section "TO CUT A 1/2" FLUSH JOINT." Make sure template is positioned correctly. Cut a 1/16" by 3/8" wide rabbet on opposite ends of drawer front before cutting the dovetail. Continue as in Steps 2 through 9 in the section "TO CUT A 1/2" FLUSH JOINT."

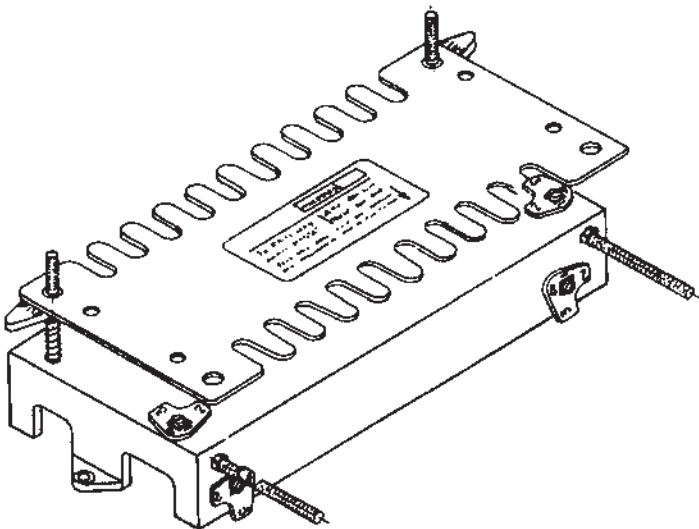


Figure 17.

TO CUT A 1/2" RABBETED JOINT (FIGURE #6) USE TEMPLATE 1

Position the front and side stop blocks as shown in Figure No. 18. Refer to Step 1 in section "TO CUT A 1/2" FLUSH JOINT." Make sure template is positioned correctly. Cut a 3/8" wide by 3/8" deep rabbet around the drawer front before cutting the dovetail. Continue as in Steps 2 through 9 in the section "TO CUT A 1/2" FLUSH JOINT."

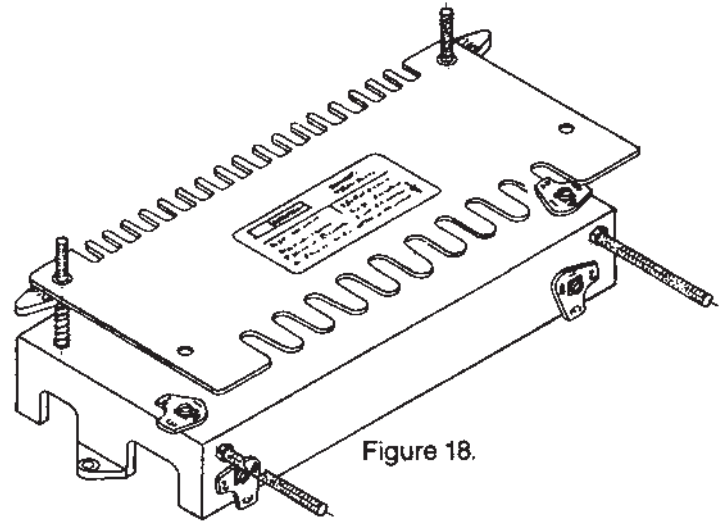


Figure 18.

TO CUT A 1/4" FLUSH JOINT (FIGURE #7) USE TEMPLATE 1

Position the front and side stop blocks as shown in Figure No. 19. Refer to Step 1 in section "TO CUT A 1/2" FLUSH JOINT." Make sure template is positioned correctly. Continue as in Steps 2 through 9 in the section "TO CUT A 1/2" FLUSH JOINT."

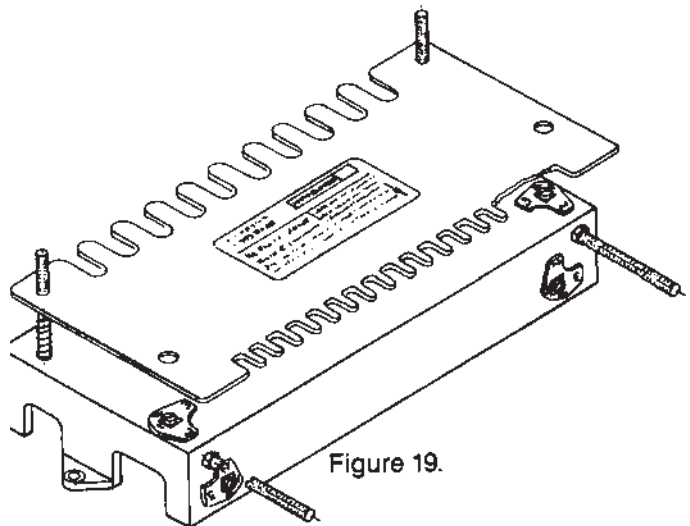
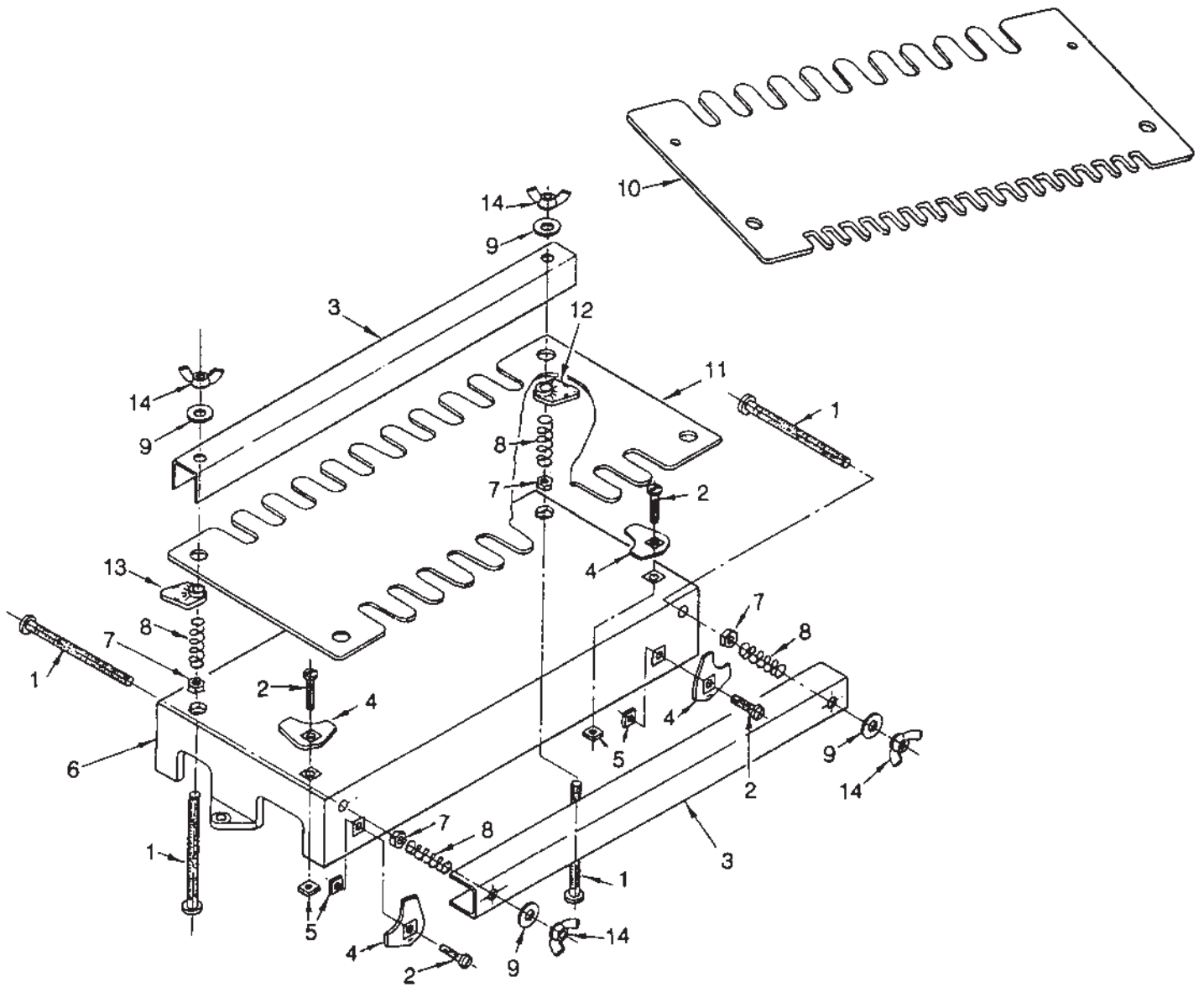


Figure 19.

NOTE: DEPTH-OF-CUT ADJUSTERS ARE NOT USED WHEN CUTTING 1/4" DOVETAILS. THEY SHOULD BE KEPT IN A SAFE PLACE SO THEY ARE NOT LOST.



PARTS LIST FOR VERMONT AMERICAN DOVETAIL FIXTURE KIT MODEL NO. 23460

| Key No. | Part No. | Description | Quantity |
|---------|------------|--|----------|
| 1 | 29A-244-24 | 1/4-20 x 2 3/4" Large Round Head Machine Screw | 4 |
| 2 | 29A-264-4 | #6-32 x 5/8" Large Pan Head Machine Screw | 4 |
| 3 | 31L-354 | Clamping Bar | 2 |
| 4 | 29L-94 | Stop (Locating) Block | 4 |
| 5 | 29A-315-5 | #6-32 Square Nut | 4 |
| 6 | 29L-96 | Base | 1 |
| 7 | 29A-242-4 | 1/4-20 Hex Machine Screw Nut | 4 |
| 8 | 29A-490 | Spring | 4 |
| 9 | 29A-306-10 | 9/32 I.D. x 5/8 O.D. x 1/16" Thick Washer | 4 |
| 10 | 29L-95-1 | Dovetail Template 1 | 1 |
| 11 | 29GD-386 | Dovetail Template 2 | 1 |
| 12 | 29GD-388-1 | Fine Adjustment (Right Side) | 1 |
| 13 | 29GD-388-2 | Fine Adjustment (Left Side) | 1 |
| 14 | 29A-252-13 | 1/4-20 Wing Nut | 4 |

WHEN REQUESTING INFORMATION ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The KEY NUMBER
2. The PART DESCRIPTION
3. The MODEL NUMBER – **No. 23460**
4. The NAME of ITEM – **DOVETAIL FIXTURE KIT**