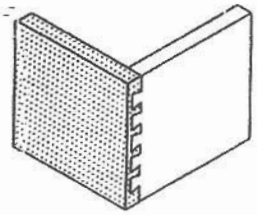
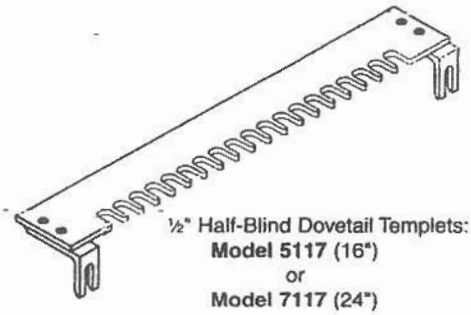
½" HALF-BLIND DOVETAILS

Half-blind dovetails are mainly used for attaching drawer fronts to sides.



½" Half-Blind Dovetails

ACCESSORIES REQUIRED:



½" Half-Blind Dovetail Templets:
Model 5117 (16")
or
Model 7117 (24")

½" Dovetail Bit:
43640 High Speed Steel
or
43705 Carbide Tipped

42046 ⅝" Templet Guide
42237 Lock Nut

Fig. 3

PREPARING OMNIJIG®

1. Adjust top clamp to secure thickness of material to be used for the drawer front.
2. Adjust front clamp to secure thickness of material to be used for drawer sides.
3. Loosen all stop bars and slide out of the way. Note these will be relocated and tightened later.

PREPARING ROUTER

1. **CAUTION:** DISCONNECT ROUTER FROM POWER SOURCE.
2. Insert templet guide, (A) Fig. 4, in hole (B), in router sub-base (C).
3. Install templet guide locknut (D) on templet guide and firmly tighten to lock templet guide in sub-base.
4. Insert dovetail bit, (A) Fig. 5, through templet guide into router collet.
5. Adjust router so dovetail bit projection (B) from bottom of router sub-base (C), is 19/32".

The router is now ready to cut ½" dovetail joints.

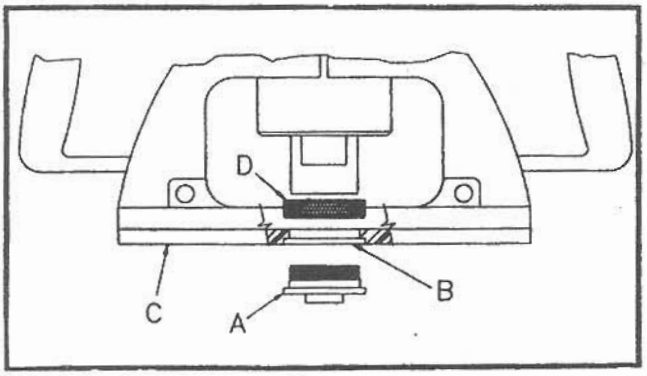


Fig. 4

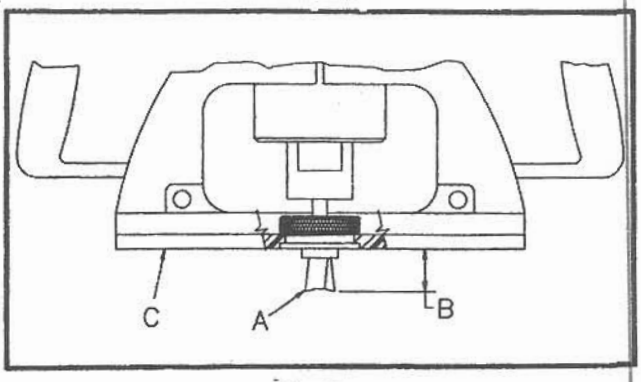


Fig. 5

IDENTIFYING DRAWER PARTS

It is recommended that scrap lumber be used when making your first dovetail cut so all adjustments and fits can be checked to ensure a satisfactory joint. Once the OMNIJIG® and router have been set up to rout a satisfactory dovetail joint, any number of joints can be made.

1. Arrange the drawer front and side pieces as shown in Fig. 6.

   NOTE: Ends of front and side pieces must be cut square with the length of the pieces to produce good dovetail joints.

2. Mark the "outside", "inside" and "ends" of each piece as shown.

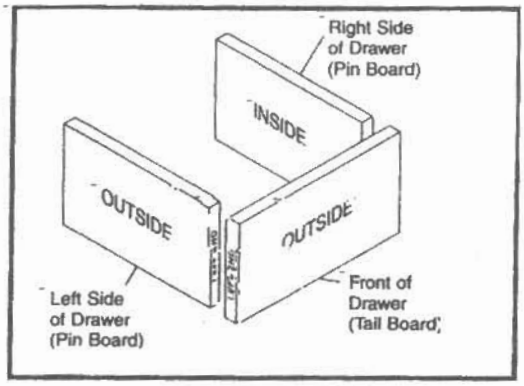


Fig. 6

CLAMPING DRAWER PARTS

1. Temporarily clamp the left side of drawer (pin board) "inside out" under front clamp extending approximately ¼" above top surface of jig.

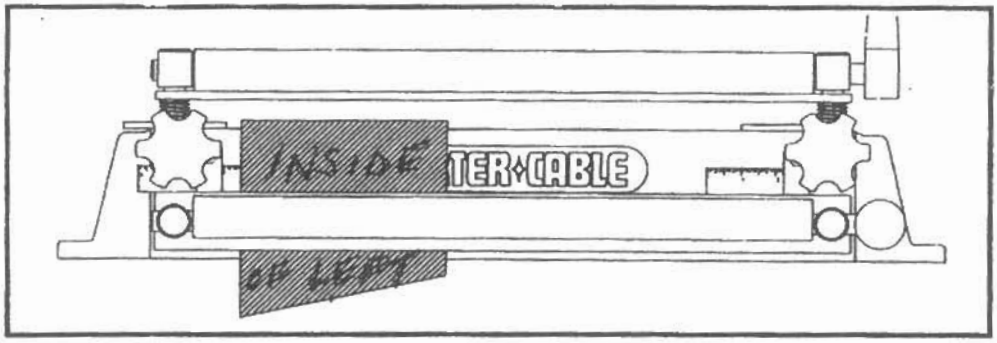


Fig. 7

2. Place drawer front (tail board) "inside up" under top clamp and butt against left side of drawer.

3. Place ½" Half-Blind Dovetail templet on top of drawer front and position so that there is about 19/32" (see Fig. 8), from the back edge of the templet slots to the edge of the drawer front at both ends of the templet and tighten knobs to secure templet in place.

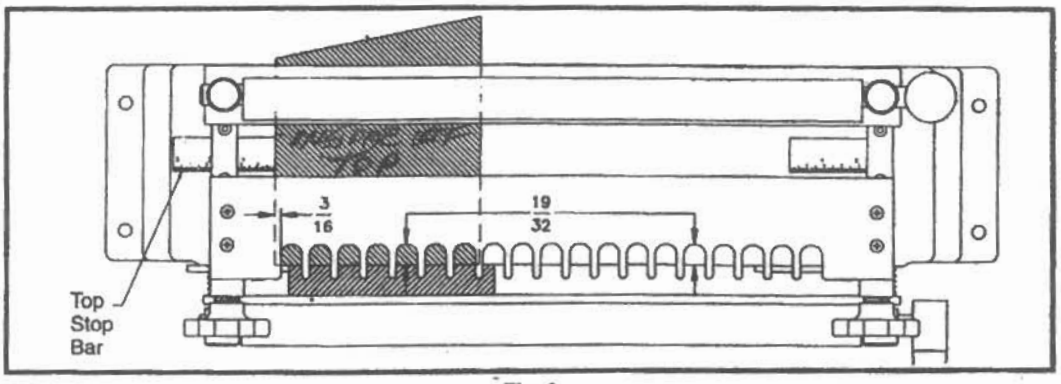


Fig. 8

4. Position drawer front so that the left edge is 3/16" (see Fig. 8), past the left edge of the first templet slot and clamp board in place.

5. Slide top stop bar (see Fig. 8), to the right to contact drawer front and lock in place.

6. Loosen front clamp and raise left side of drawer so that it touches bottom of templet 7/16" (see Fig. 9), from left edge of top board and clamp in place.

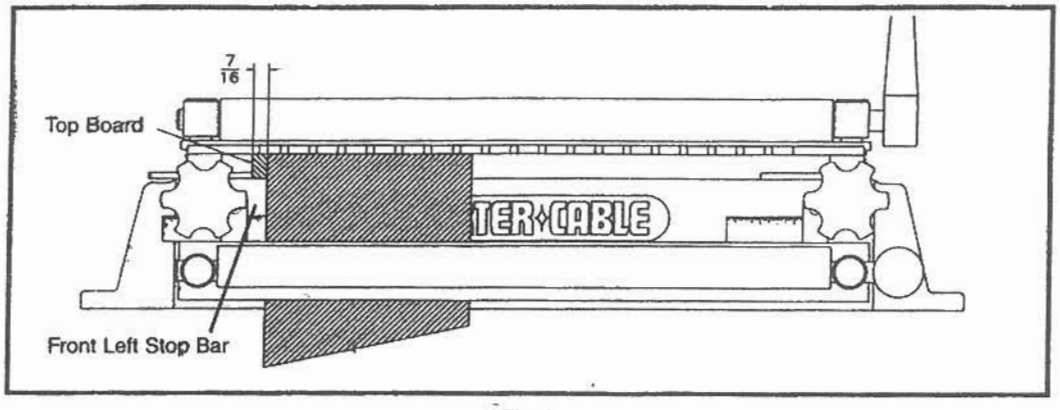


Fig. 9

7. Slide front left stop bar to the right to contact side of drawer and lock in place.

ROUTING DOVETAILS

1. Be sure router motor is "off" and plug into power source.

2. Set router squarely on finger templet to the right of drawer pieces.

3. Make sure bit is clear of work and will not strike machine base.

4. Start the motor and make the first cut along the entire outside edge of the finger templet from right to left, in the direction of the arrow (A) Fig. 10. This will prevent chipping of the edge of the drawer piece when the router is moved in and out of the templet.

5. Now, carefully move the router from left to right around the templet outline, in and out of the slots as shown by arrow (B) Fig. 10.

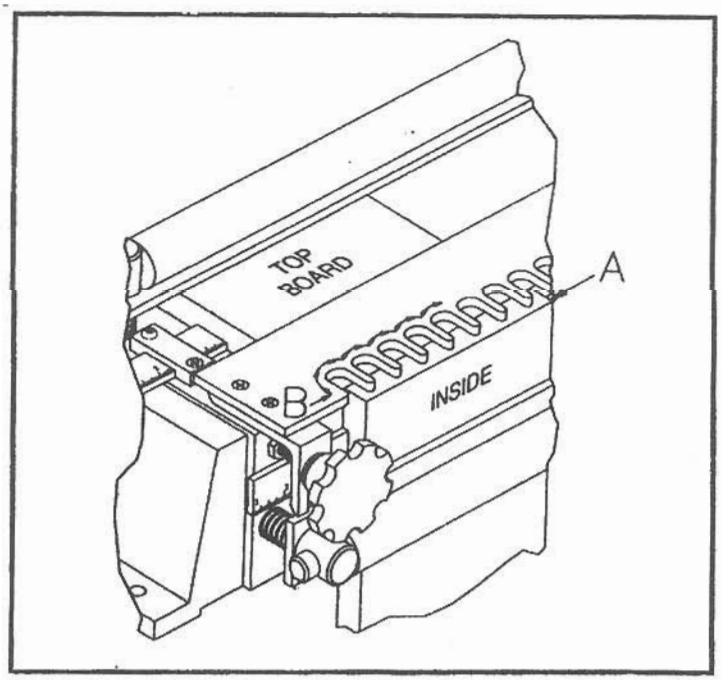


Fig. 10

6. Next, examine the drawer pieces to make sure they have been cleanly routed. See Fig. 1

7. Remove drawer pieces and fit together, matching dovetail (A) with slot (B), Fig. 11.

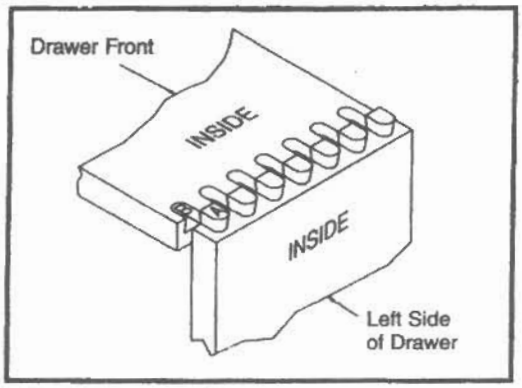


Fig. 11

CAUTION: DISCONNECT ROUTER FROM POWER SOURCE BEFORE MAKING ADJUSTMENTS TO ROUTER.

If **joint is loose**, slightly **increase depth** of cut. If **joint is tight**, slightly **decrease depth** of cut. The bit is raised or lowered by adjusting the router motor in the router base with the motor "off".

8. After obtaining a snug dovetail, assemble parts and check the relation of the end of the drawer front to the side of the left side of the drawer. If the drawer **front overhangs** side of drawer, **decrease** 19/32" dimension in step 3 under CLAMPING DRAWER PARTS. If **side of drawer overhangs** front, **increase** 19/32" dimension.

9. Fig. 12 shows both the left and right corner of a drawer fitted together after they were both routed from the left end of the templet. Note the location of partial pins on drawer sides.

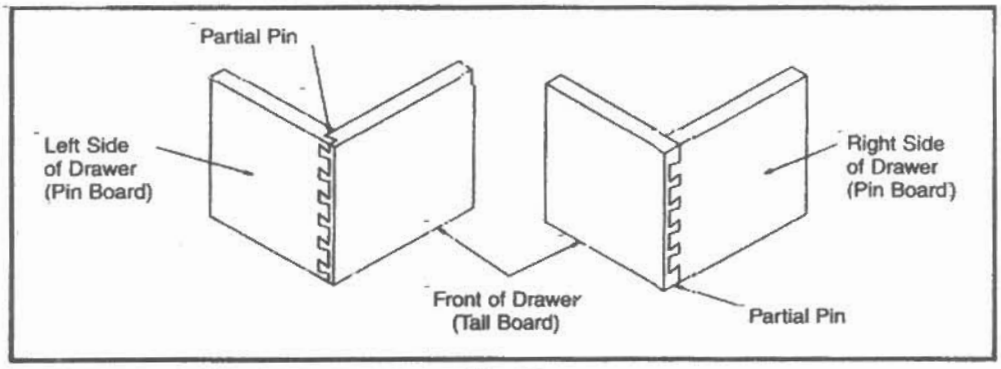


Fig. 12

10. If for appearance reasons the partial pins are desired to be in the same location of both sides of the drawer as shown in Fig. 13, then rout the right end of the drawer front and right side of the drawer on the right end of the templet. Adjust the right stop bars the same as those on the left (mirror image).

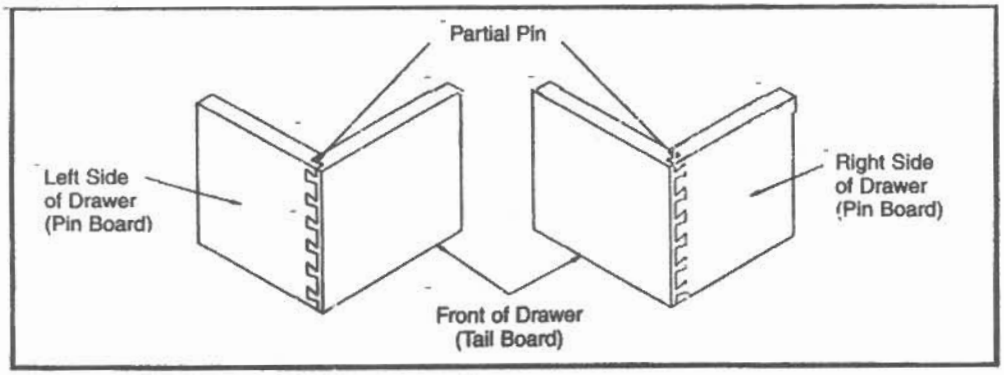


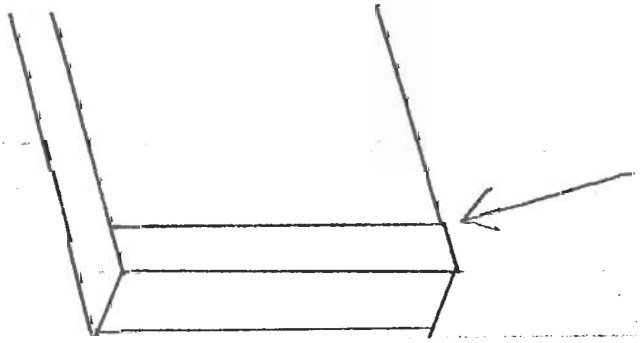
Fig. 13

Prepare a set-up board

This board is set up to cut the following dovetails:

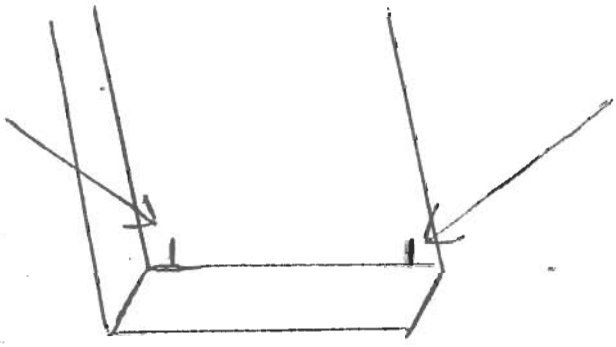
½" half-blind dovetails

1. Select 2 boards; one is marked for setting up stops, the other is NOT marked and is placed in front clamp for alignment.
   - both boards same size, same thickness.
   - 7-8" long, about 6-7" wide, ½ to ¾ thick
   - all side must square, straight.
2. Make a Mark for Templet alignment:
   - Set depth gauge to 19/32
   - Mark and draw a thin line across the width of board, 19/32 from end, both ends.

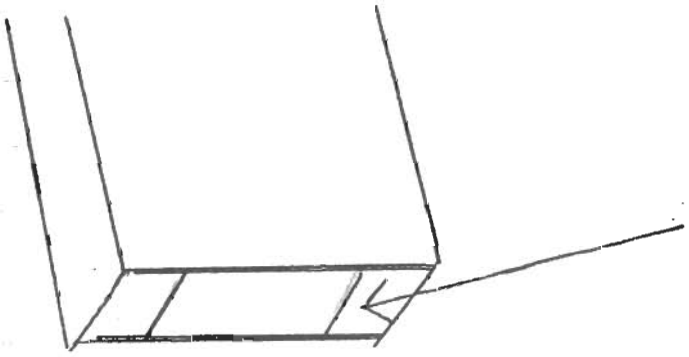


Continued...

3. Make a Mark on board, lengthwise, 3/16 from front edge of board, do same on back edge. This mark is for aligning Top board with right/Left Side of finger Templet. Set depth gauge to 3/16.



4. Make a Mark on board, across edge of board. 7/16 from front of board, 7/16 from the back.
   - place board in vise
   - set depth gauge to 7/16
   - This Mark used for aligning the front board with Top board.



Adjust the clamps

1. adjust the Front clamp by placing the pen board under the clamp. Make the necessary adjustment so that clamp holds the board firmly.

2. adjust the Top clamp:
   a.) For half-blind dovetails, place the tail board under the Top clamp. Make the Necessary adjustment so that clamp holds the board firmly.
   b.) For thru dovetails, place a scrap board under the Top clamp, with a 1/4" thick board underneath.
   NOTE: The thickness of both these boards together must be 1/4" thicker than the boards that you will be cutting. This is important in order to protect the omijig.

continued...

Set jig Stops

Using the set-up board, Make the following settings:

1. set the finger templet position
   - Place set-up board in Top clamp
   - Make sure templet is flat on board, square with left side of jig.
   - one washer in front of templet, 2 behind.
   - align bottom of fingers withe the 19/32 line on board. If further adjustment is Necessary, use a 9/16 wrench and adjust the Nut at behind the Templet.
   - After alignment, Tighten down the Templet and lock into place.

2. Adjust + set Top STOPS
   - line up the 3/16 Mark with the left edge of left-Most finger of Templet
   - Clamp set-up board Tight at this position
   - slide the left Top STOP against the board
   - Lock this STOP into place.
   - Move set-up board to right side of jig and align same way.

CONTINUED...

3. Adjust & Set front stops

- First, Make sure that the set-up board is placed under Top clamp, left side.
- Place the unMarked board under the front clamp. Slide all the way to left, Top edge protruding about 1/4" above the Top of the jig. Clamp front board.
- Move the Top set-up board, flush and square against the edge of the front board, AND flush and square against the Top left STOP.
- Clamp the Top set-up board Tight.
- Now, Move the front board into position. align the left edge of front board with the 7/16 Mark on edge of the Top set-up board.
- Lock this left front stop in place
- Move both boards to right side of jig and align same way.

4. Set-up the router

- depth of cut is 21/32" — 19/32"
- 1/2" Dovetail bit
- Make sure router bit will clear the Top of jig.

5. Wax the base of router and Top of templet

- IMPORTANT: Before plugging in router to Power, BE SURE that router switch is OFF.

continued...

Drawer Layout

1.) The Pins are cut under the front clamp. This is the ~~Front & Back~~ sides of the drawer.

2.) The Tails are cut under the Top clamp. This is the ~~sides~~ Front & back of the drawer.

3.) Mark the inside & bottom of each of the 4 boards

NOTE: If you can make the width of your drawer boards in increments of 7/8" the dovetails come out more even. However, this is NOT Necessary.

Cutting the Dovetails

always place each board with the inside of drawer face up and bottom of drawer against the stop.

Half-blind dovetails.

continued...

Need to make More adjustments ?
(after first cut)

(1.) **IF joint Too Loose:** Make a deeper cut by adjusting router bit.

(2.) **IF joint Too Tight:** The cut is too deep. Make a more shallow cut by adjusting router bit.

(3.) **IF Tails Too deep:** Move the templet forward, toward you.

(4.) **IF Tails Too shallow:** Move the Templet back, away from you.

(5.) **IF gap at one end or the other:**
Then, your boards NOT square, straight;
OR, boards NOT squarely, firmly against the STOP.

ADJUSTABLE THROUGH DOVETAILS

The through dovetail duplicates the hand cut version found on some antique furniture and boxes.

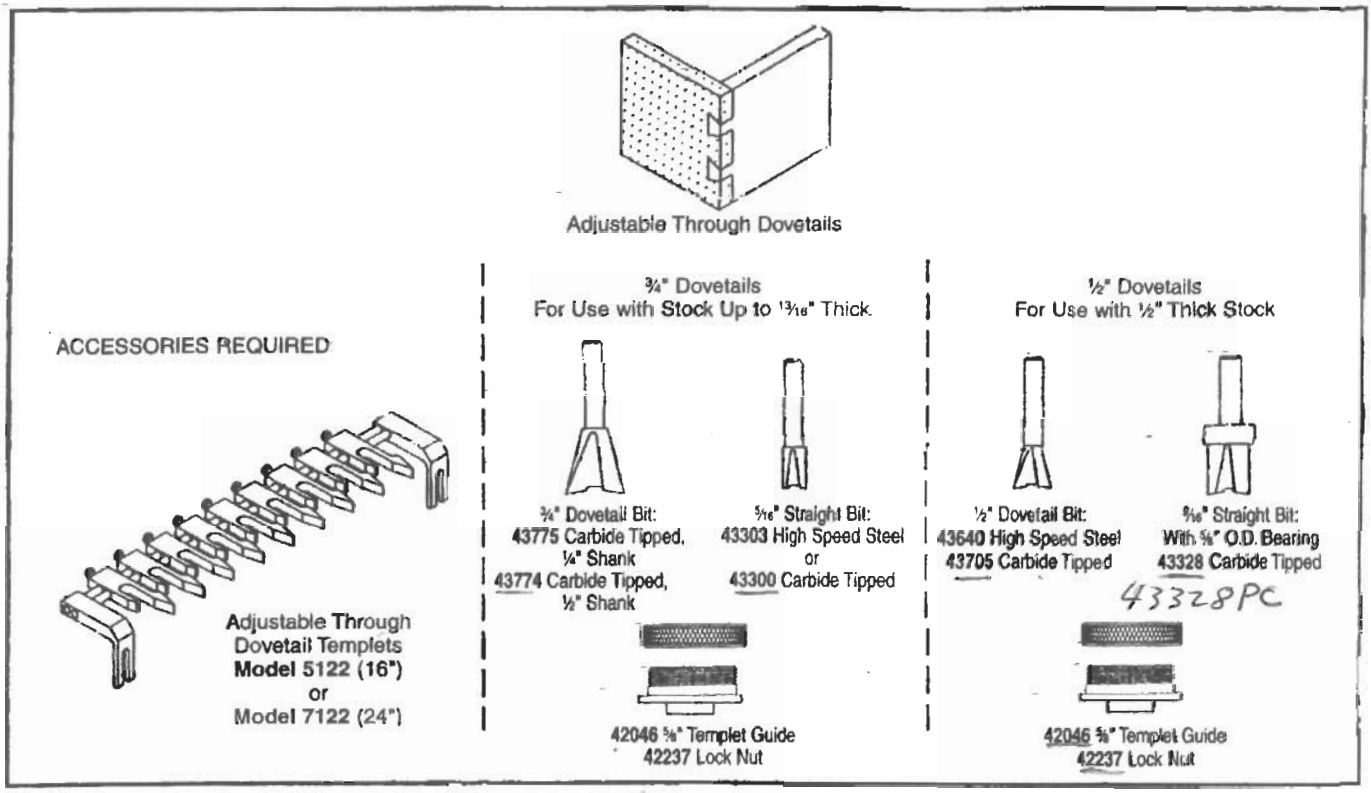


Fig. 22

PREPARING OMNIJIG® FOR TAIL BOARD

1. Adjust top clamp bar to secure material that is at least ¼" thicker than boards to be dovetailed. This is required so that cutters do not contact jig base as all boards to be dovetailed are located behind the front clamp.

2. Position thick and thin spacers on templet bracket rods as shown in Fig. 23, and adjust bracket and rod nuts 1/16" to ⅛" out from front face of jig.

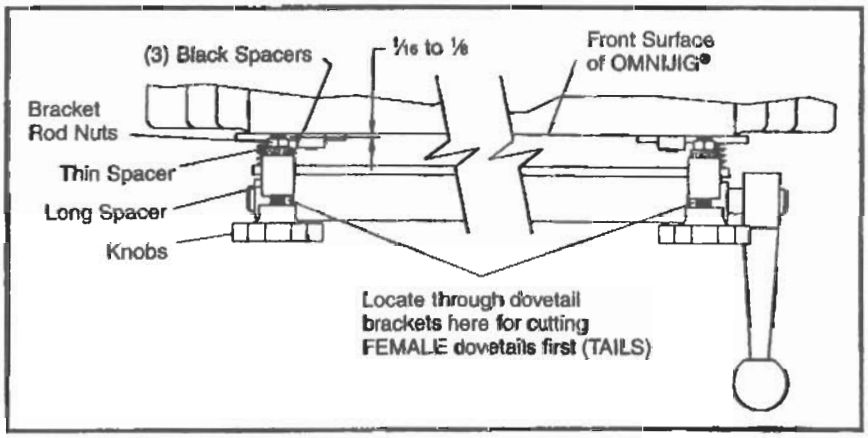


Fig. 23

3. Loosen front left stop bar and locate as shown in Fig. 24, for cutting female dovetails first (tails).

4. Adjust front clamp bar to secure material for tail board that is to be dovetailed.

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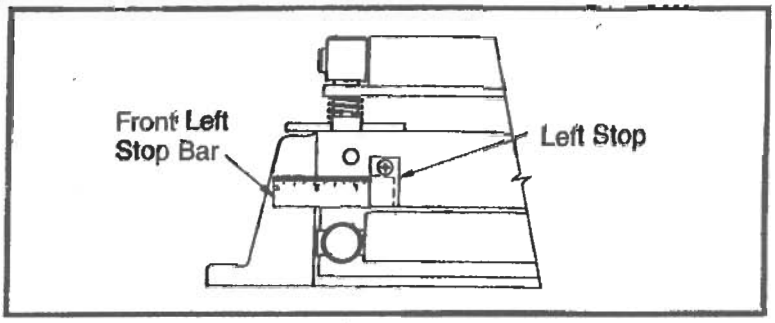


Fig. 24

CUTTING TAIL BOARD (Female Dovetail)

1. Place a scrap piece of wood that is at least ¼" thicker and at least as wide as the boards to be dovetailed on top of the jig under the top clamp.

2. Place Through Dovetail Templet on top of scrap piece of wood (step 1) locating brackets in space shown in Fig. 23, and tighten knobs.

NOTE: Templet should seat on scrap piece of wood. If scrap is not very wide, slide it to the left and right underneath the templet to make sure the templet is the same height along its entire length.

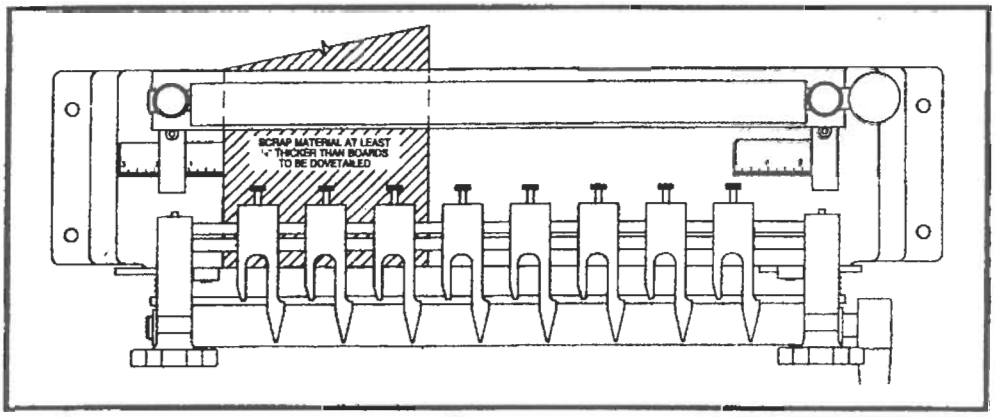


Fig. 25

3. Place tail board (with outside facing jig) under front clamp, against left stop, and up against underside of templet. Clamp in place.

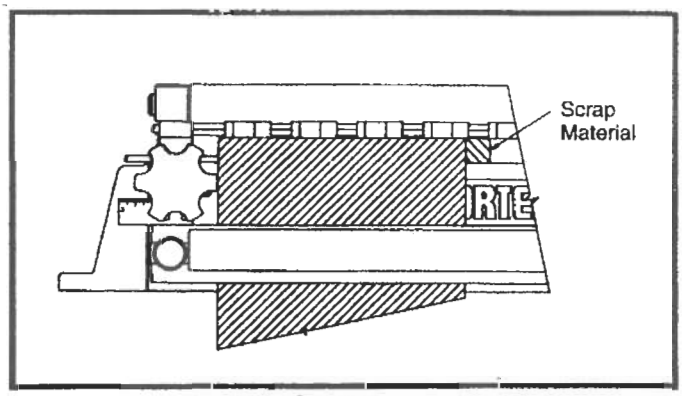


Fig. 26

4. Loosen locking screws on templet forks and slide into desired location. Tighten locking screws securely. If "T" shaped plastic caps on locking screws protrude above templet, they may be pried off and repositioned to eliminate interference with router base.

NOTE: For your first dovetailing sample we suggest you use ¾" thick material, 7½" wide, 12" long. Although the template forks may be located at any spacing, 3/16" and 2" are used for this example. Locate first templet fork 3/16" from edge of board and locate other forks 2" center to center.

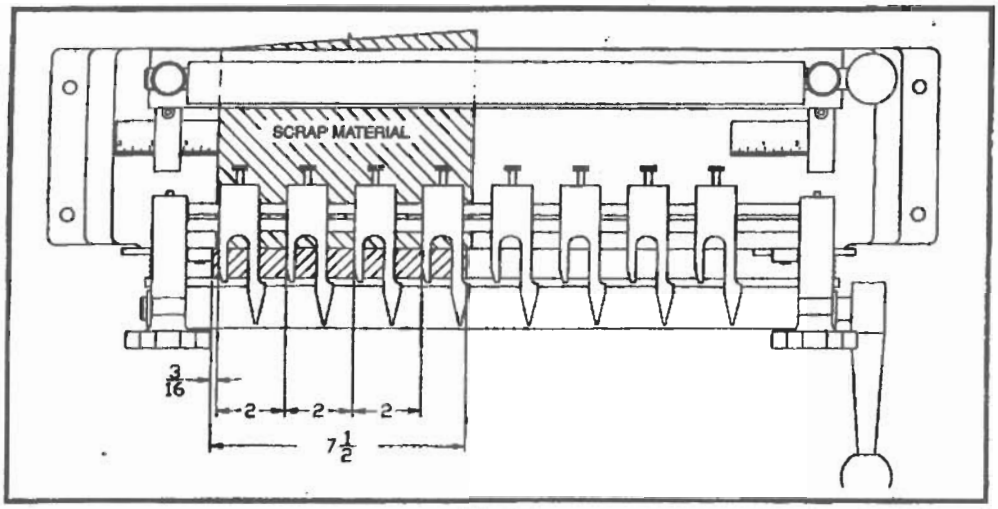


Fig. 27

CAUTION: If forks are located 3" or more apart, be very careful when routing as there may not be enough support for the router base, depending on the size of the router base.

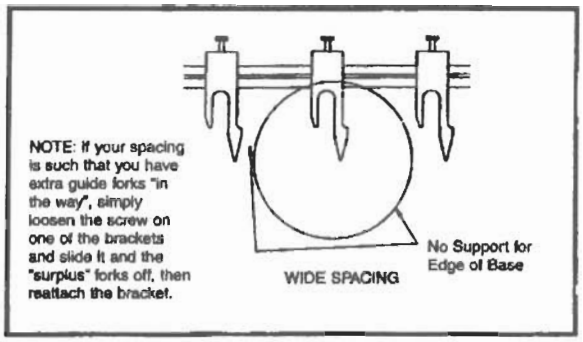


Fig. 28

5. Assemble templet guide to router base and insert either the ½" or ¾" dovetail bit through guide and into router chuck, tighten securely.
6. Adjust depth of cut such that the dovetail cutter extends ½" plus the thickness of the pin board from the router base.

   NOTE: 1/32" may be added to depth of cut for sanding flush later.

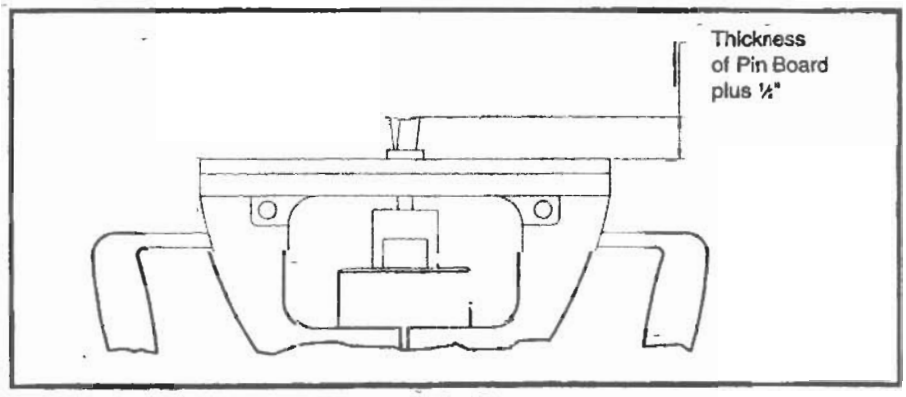


Fig. 29

7. Slide scrap piece of wood (step 1 above) against tail board, to prevent tear-out when routing and clamp in place
8. Carefully rout tails by using the guide slots in each fork.

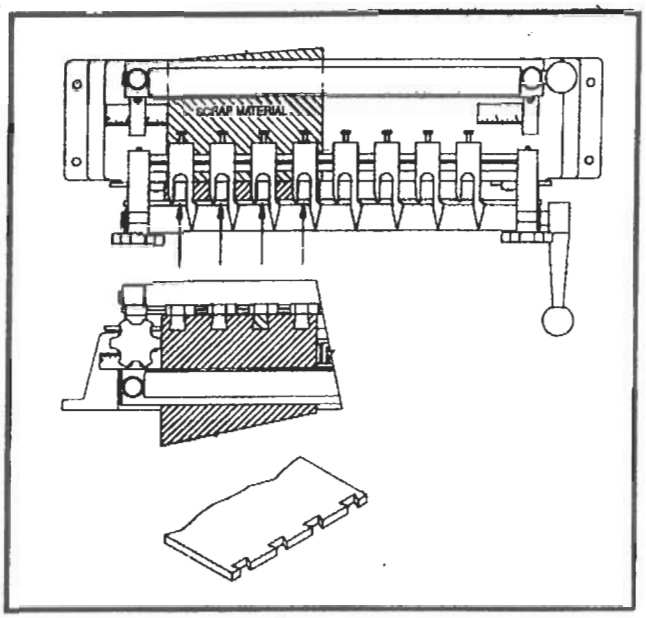


Fig. 30

9. Remove the board from jig.
10. When making a box, rotate tail board as shown and rout tails on other end repeating preceding directions. Two tail boards required per box.

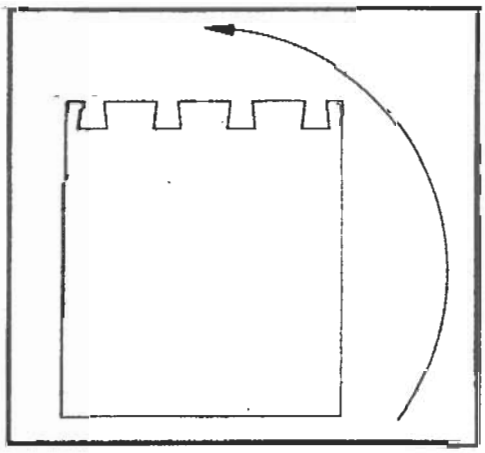


Fig. 31

PREPARING OMNIJIG® FOR PIN BOARD

1. Reposition dovetail templet by locating brackets between the thin spacer and first black spacer.
2. Loosen left stop and slide stop bar to right so it extends ½" and lock in place.

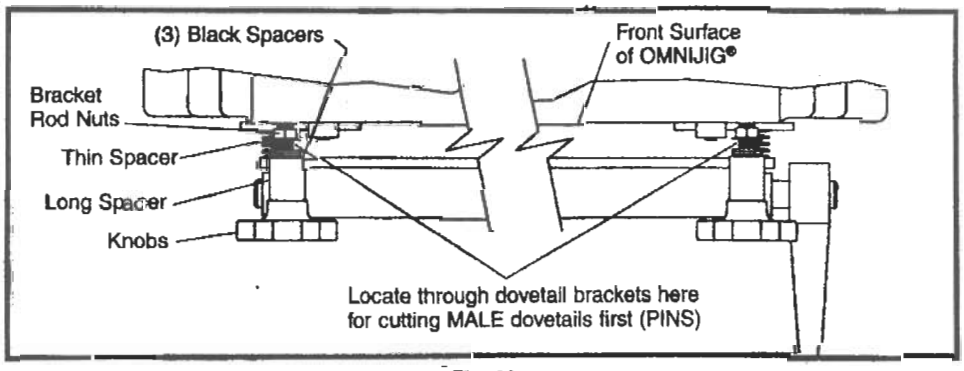


Fig. 32

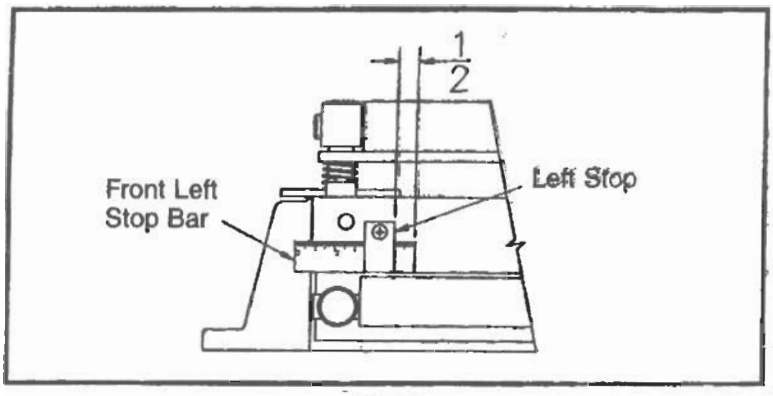


Fig. 33

3. Adjust front clamp bar to secure material for pin board if pin board is different thickness than tail board.

CUTTING PIN BOARD (Male Dovetail)

1. Place Through Dovetail Templet on top of same piece of scrap material used for tail board, making sure it is the same height along its entire length and tighten knobs.
2. Place pin board (with outside facing clamp bar) under front clamp bar, against left stop bar and up against underside of templet. Clamp in place.

   NOTE: Do not change location of templet forks from that used for tail board.

3. Remove ¾" dovetail bit from router and insert 5/16" dia. straight bit, or (if making ½" through dovetails) remove ½" dovetail bit and template guide from router; install 5/16" dia. straight bit with ball bearing guide.
4. Adjust depth of cut so that it equals ½" plus the thickness of the tail board.
5. Slide scrap piece of wood (step 1 above) against pin board to prevent tear-out when routing and clamp in place. (Place uncut end of scrap piece against pin board).
6. Carefully rout pins by using space between forks.

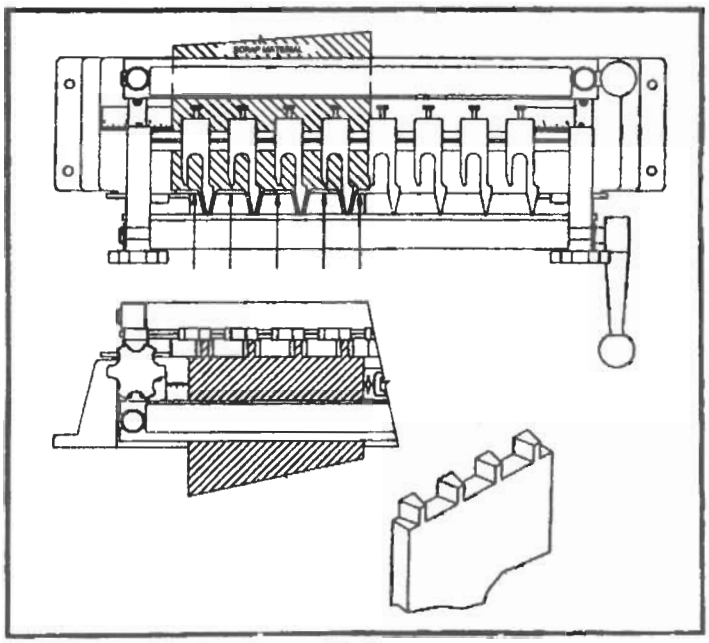


Fig. 34

7. Remove pin board from jig.
8. When making a box, rotate pin board as shown and rout pins on other end by repeating preceding directions

   Two pin boards required per box.

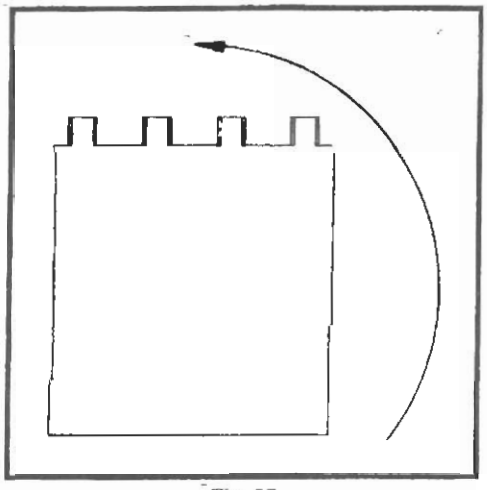


Fig. 35

INSPECTING FIT OF PIN AND TAIL BOARDS

1. If fit is too tight, turn bracket rod nuts clockwise (towards templet) to make pins smaller.
2. If fit is loose, turn bracket rod nuts counterclockwise (towards clamp) to make pins larger.
3. Cut new pin boards until desired fit is obtained.

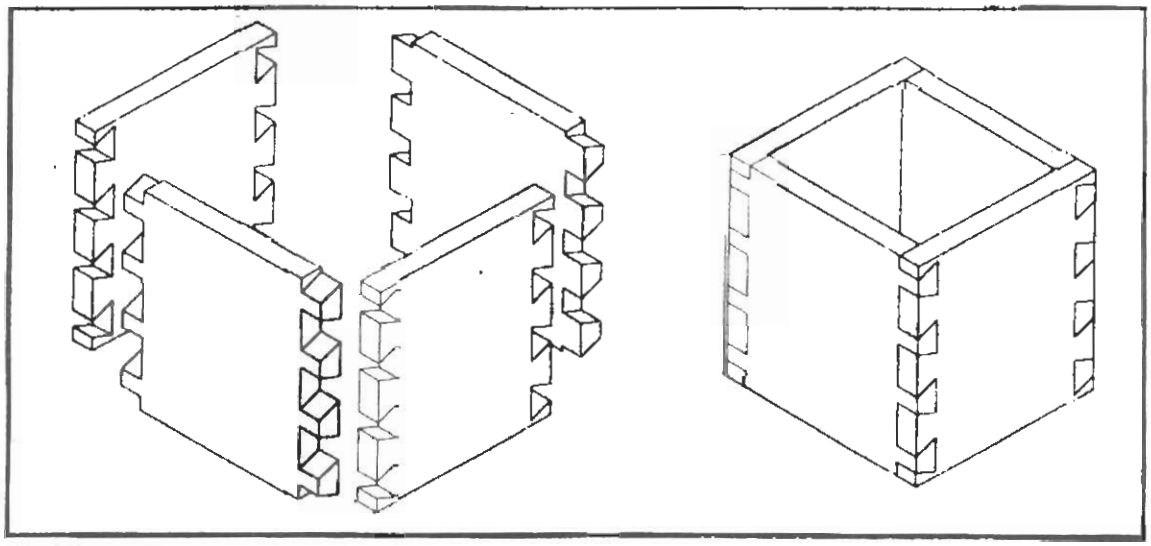


Fig. 36

For Through dovetails ONLY

NOTES:

The Pin boards is always the FRONT And back of a drawer.

The Tail boards is always the Sides of drawer.

Adjustable Thru Dovetails
3/4" or 1/2" dovetails

Suggested Stock Size:

- For 3/4" dovetails, up to 13/16" Thick
- For 1/2" dovetails, 3/8" to 1/2" Thick

NOTE:
- Both Pens & Tails are cut on same side of the jig, separately.
- The Tail board is cut with dovetail bit.
- The Pen board is cut with straight bit.

Accessories Required:

- Dovetail Templet Model 5122 (16")
- For 3/4" dovetail, Need 3/4" dovetail bit, and 5/16" straight bit.
- For 1/2" dovetail, Need 1/2" dovetail bit, and 9/16" straight bit.
- 5/8" Templet Guide & Lock Nut
  42046 42237

Adjust The Clamps

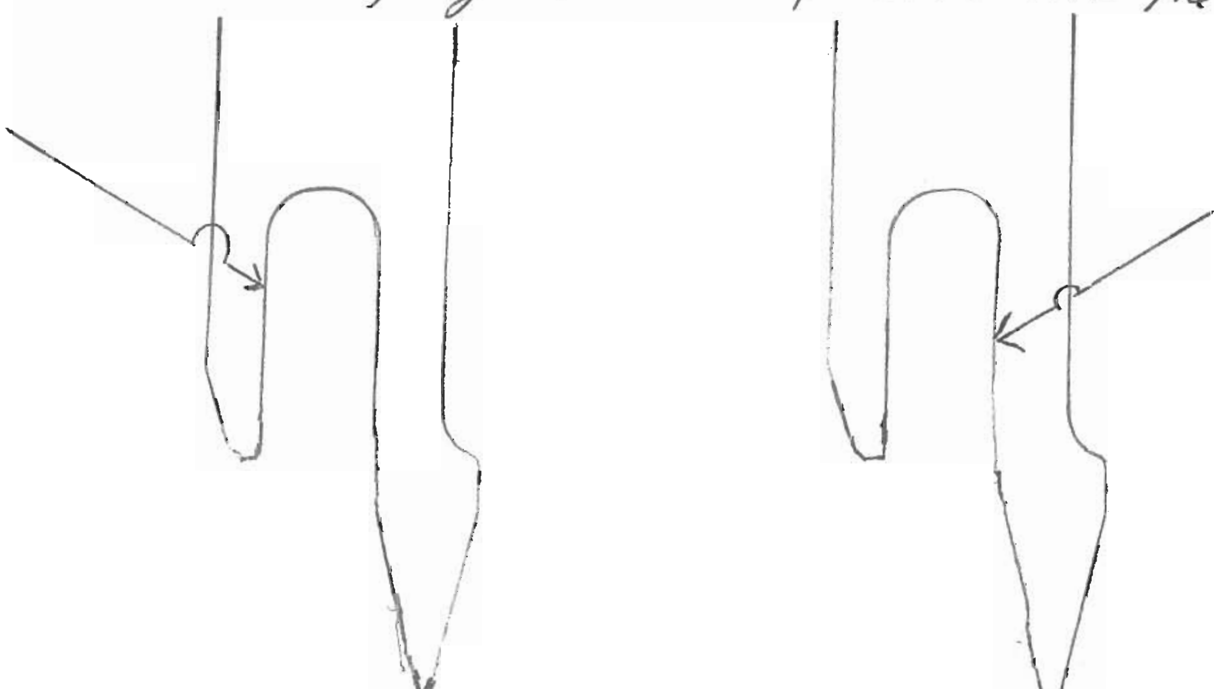
1. adjust The Front clamp by placing The pen board under the clamp. Make The Necessary adjustment so That clamp holds the board firmly.

2. adjust The Top clamp:
   a.) For half-blind dovetails, place The Tail board under The Top clamp. Make The Necessary adjustment so That clamp holds The board firmly.
   b.) For Thru dovetails, place a scrap board under The Top clamp, with a 1/4" Thick board underneath.
   NOTE: The thickness of both These boards together must be 1/4" Thicker Than The boards That you will be cutting. This is important in order To protect The omijig.

CONTINUED ...

—TAILS—

1. SET up The DoveTail TempleT:
   - Big Washer, 3 Smaller Washers, one Thin Washer; all Washers <u>behind</u> TempleT.
   - INSTall The TempleT.
2. Mark Tail board edge with a scribe that is $7/16$" from each side of board.
3. Place Tail board under front clamp
   - flush against bottom of TempleT
   - square against left side of jig; remove this left stop.
4. Line up TempleT fingers so that the two outside fingers line up with the $7/16$" Mark.



5. SET up the ROUTER:

- INSTALL 3/4" dovetail bit, for 3/4 Dovetails
  1/2" dovetail bit, for 1/2 Dovetails
- SET bit depth to thickness of the pin board + 1/2".
- INSTALL 5/8" Templet Guide.

6. Make sure scrap board is clamped in place on top of jig.
   - This scrap board is at least the thickness of boards being cut + 1/4".

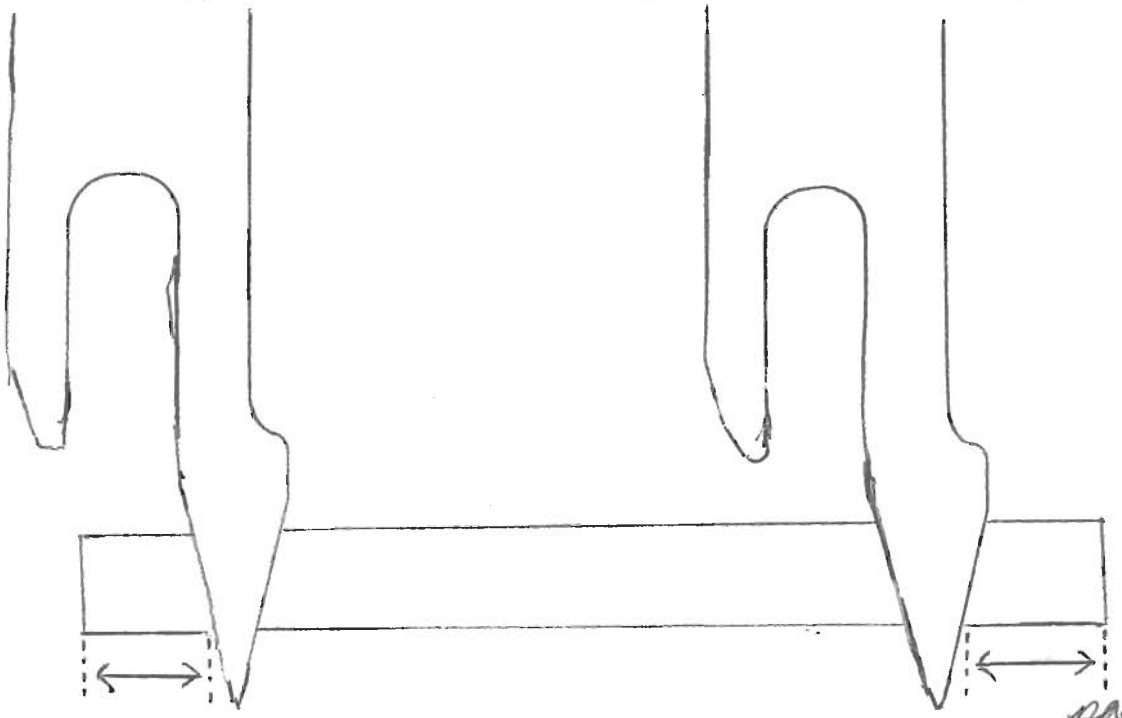
7. CAUTION: MAKE SURE that the Router switch is OFF before you plug in to Power.

8. CUT the Tails.

9. Remove Tail board.

— PINS —

1. SET up the Dovetail Templet
   - PUT the thin washer behind Templet; all other Washers IN FRONT of Templet.
   - adjust the rod NUTS on each side of Templet To about 1/8" from FRONT face of jig.
2. DO NOT Reposition the Templet fingers.
3. Place the pin board under front clamp.
4. Position the Pin board so that both edges of board are same distance, Left & right, from the Two outside fingers. See below.
5. Re-install the Left STOP & Lock in place.



6. SET up the Router:

- INSTALL 5/16" STRAIGHT BIT, FOR 3/4 DOVETAILS.
- INSTALL 9/16" STRAIGHT BIT, FOR 1/2 DOVETAILS.
- SET BIT DEPTH TO THICKNESS OF TAIL-BOARD + 1/2".
- INSTALL 5/8" TEMPLET GUIDE.

7. Make sure scrap board is clamped in place on top of jig.

- Check to see that router bit will clear the top of the jig.

8. CAUTION: Make sure that Router switch is OFF before plug in to Power.

9. CUT THE PINS.

- Remove all wood between finger points

10. IF Adjustments are Necessary:

- IF JOINT TOO TIGHT, Move Templet Toward back of jig; Turn rod nut clockwise.
- IF JOINT TOO LOOSE, Move Templet Toward front of jig; TURN rod NUT COUNTER-clockwise.