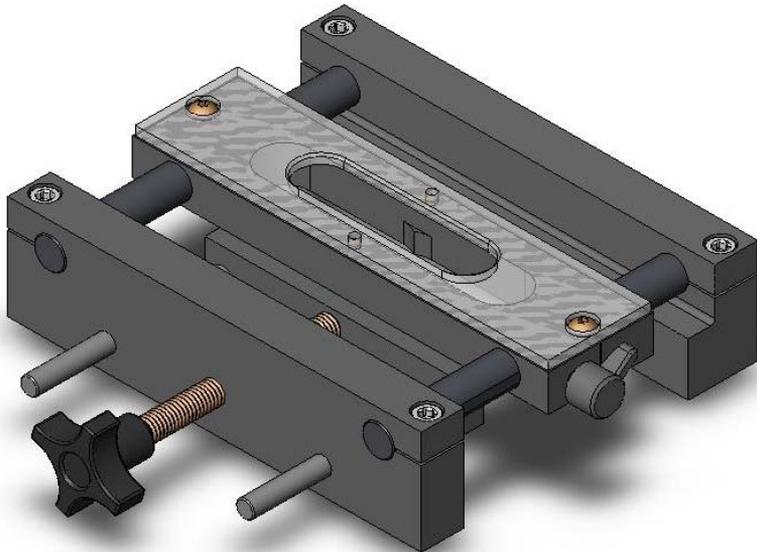


# Mortise Pal™

PRECISION MORTISING JIG



## User's Manual

Revision-D

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**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE OR FORM WITHOUT THE WRITTEN APPROVAL OF R.G. Jig Co.**

# Mortise Pal™ Mortising Jig User's Manual

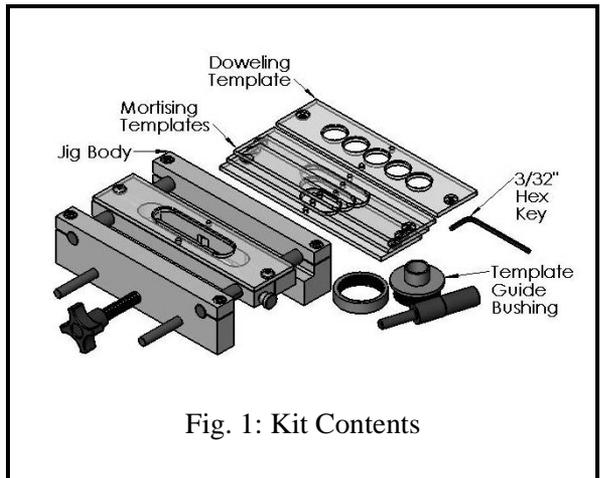
Mortise Pal™ allows you to make precision slot mortises with your plunge router. Please take the time to thoroughly read this manual and familiarize yourself with how the jig is used as well as the jig's safety precautions.

## Kit Contents:

As shown in Fig. 1, the jig is supplied with:

- (1) Jig Body
- (4) Mortising Templates
- (1) Doweling Template
- (1) 5/8" Template Guide Bushing\* with Nut and Centering Pin
- (1) 3/32" Hex Key

\*Note: The supplied template guide bushing fits Porter Cable style base plates. Check your users manual. Others will require a universal base plate adapter (not included).



# Mortise Pal™ Mortising Jig User's Manual

## Required Items:

To use the jig you will be required to supply:

- A light duty plunge router with a 6" base plate. These routers are generally 2-1/4 horsepower or less and weigh less than 12 pounds. The jig is not designed for and should not be used with heavy duty plunge routers. Various factors such as their overall size, weight, and center of gravity make heavy duty plunge routers unsuitable for use with this jig.
- A router bit. Spiral up-cut bits are recommended as they remove waste from the mortise while routing.

## Safety:

To operate this or any tool safely and efficiently, it is essential to become as familiar as possible with its characteristics. Take as much time as necessary to become familiar with the jig. Also, read and follow all of the safety procedures noted in this manual. If you do not understand any of the operations or safety guidelines discussed in this manual, please get answers to all your questions before attempting to use the jig by emailing [support@mortisepal.com](mailto:support@mortisepal.com) or calling 619-459-7951.

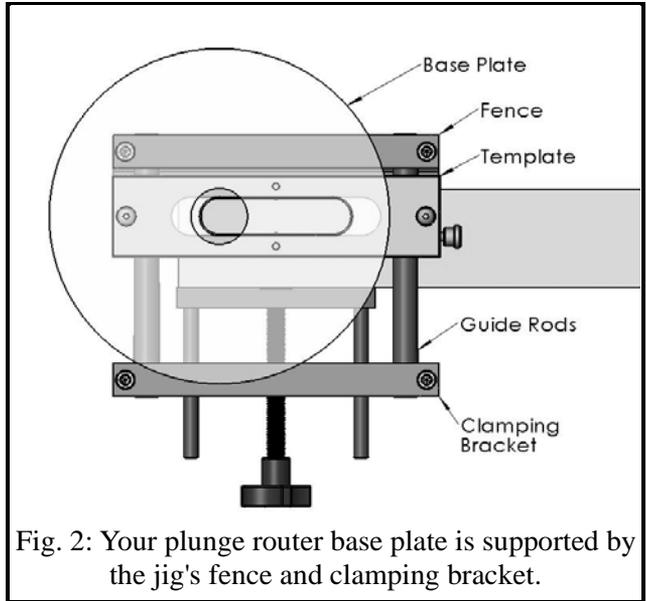
Read, understand, and follow all of the safety instructions that were included with your plunge router.

This jig should only be use with a plunge router. Never use the jig with a fixed base router.

The jig is designed to be used with plunge routers that have base plates that

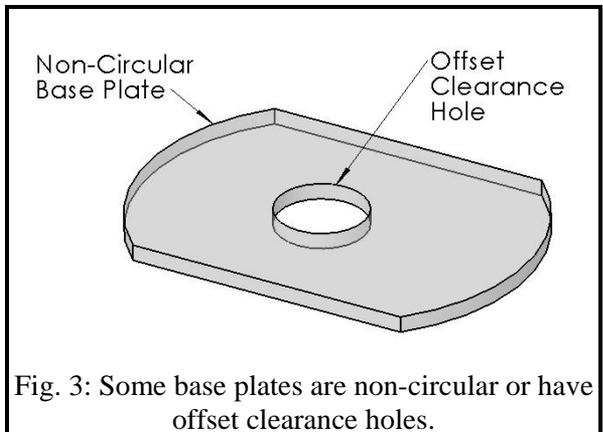
# Mortise Pal™ Mortising Jig User's Manual

are at least 6" in diameter. Referring to Fig. 2, your plunge router's **base plate** must be supported by the jig's **fence** and the jigs **clamping bracket** at all times during use. Before using the jig, check to see that your plunge routers base plate is supported by the **fence** and **clamping**



**bracket** with the **template** positioned anywhere along the **guide rods**. If your base plate is not supported by the jigs **fence** and the jigs **clamping bracket** do not use the jig as this can create problems with your joinery, damage the jig or create an unsafe situation.

Referring to Fig. 3, some base plates are not completely circular or have an offset **clearance hole** or both. Care must be taken when using these plunge routers to ensure that the **widest**



# Mortise Pal™ Mortising Jig User's Manual

**portion of the plate** is at least 6" and maintains contact with the jigs **fence** and **clamping bracket** at all times as shown in Fig. 4.

Proper stock holding is essential for the safe use of the jig. Your stock must be held securely with clamps, in a woodworkers vise, or by other suitable means. Stock that is not properly secured could move while routing, creating an unsafe situation or damaging the jig.

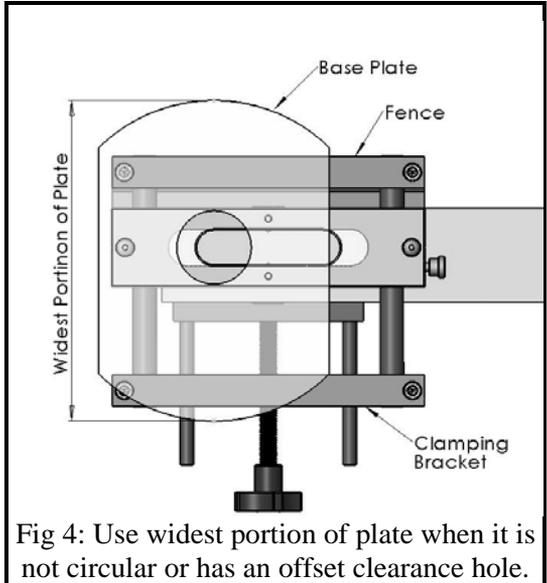


Fig 4: Use widest portion of plate when it is not circular or has an offset clearance hole.

# Mortise Pal™ Mortising Jig User's Manual

When using a woodworker's vise avoid clamping the jig to your stock as shown in Figures 5 and 6. The jig is shown clamped to the stock with too much distance between the jig and the vise jaws. Forces generated from routing could leverage the stock

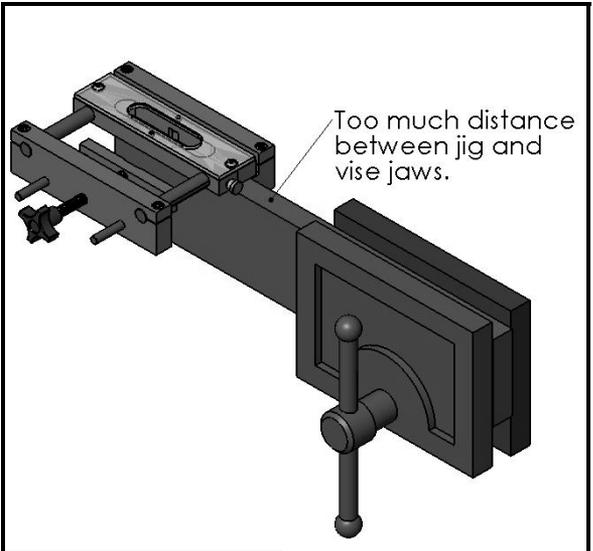


Fig 5: Unsafe Vise Setup.

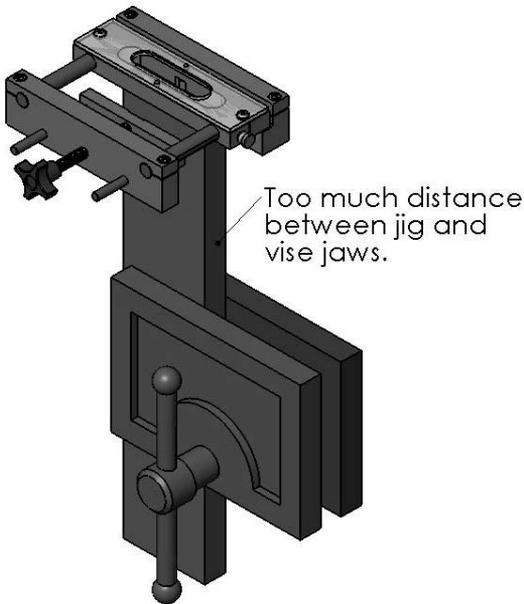
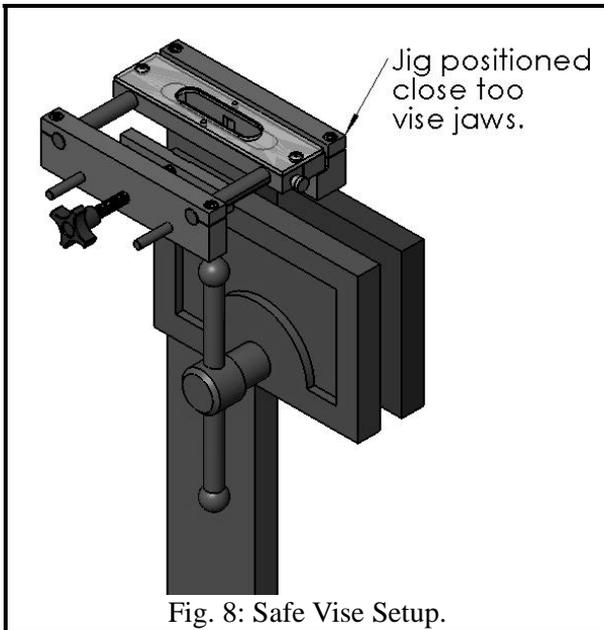
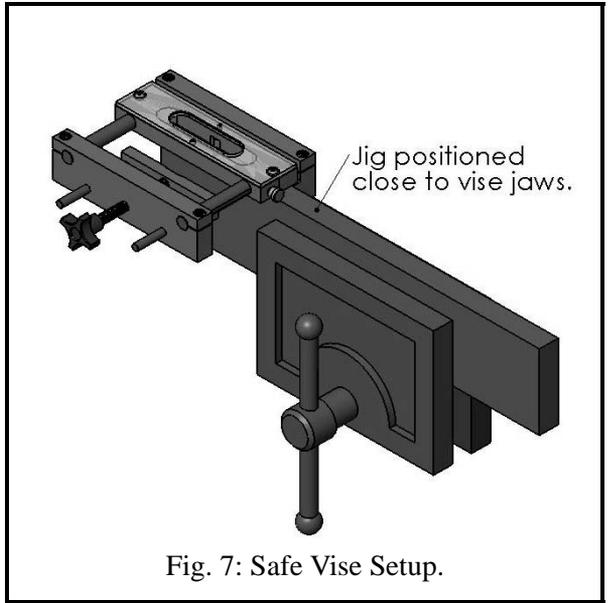


Fig. 6: Unsafe Vise Setup.

and cause it to move.

# Mortise Pal™ Mortising Jig User's Manual

Figures 7 and 8 illustrate a safer setup when clamping stock in a woodworkers vise. The stock has been repositioned so that the jig is closer to the vise jaws. Forces generated from routing are less likely to leverage the stock.



# Mortise Pal™ Mortising Jig User's Manual

## Specifications:

Referring to Fig. 9:

- The minimum **stock width** is 1". Your stock needs to be at least 1" wide to be securely clamped in the jig.
- The minimum **stock thickness** is 3/4". Note, mortises may be made in thinner stock by using shims.
- The maximum **stock thickness** is 3".
- The maximum **mortise width** is 1/2" as determined by the largest bit to fit through the 5/8" outside diameter template guide bushing.
- The **mortise length** is determined by the template used and the diameter of the router bit used. Referring to Fig. 10, the **template length** is measured from center to center along the slot. The mortising templates supplied with the jig come in four lengths, 1/2", 1", 1-1/2" and 2".
- To determine the overall mortise length add the template length to the bit diameter. For example,

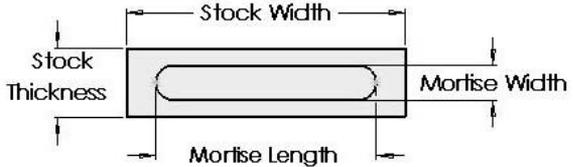


Fig. 9: Stock and mortise specifications.

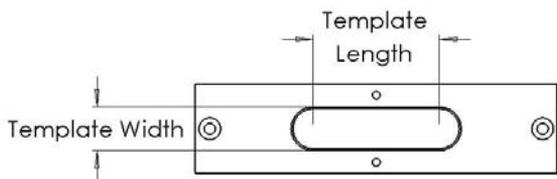


Fig. 10: Template Specifications.

# Mortise Pal™ Mortising Jig User's Manual

the 1" template used with a 3/8" bit produces a 1-3/8" mortise. The same template used with a 1/4" bit produces a 1-1/4" mortise. Table 1 can be used to determine the overall mortise length for common sized router

bits. Note, by overlapping mortises it is possible to create

mortises of

virtually any length. Referring again to Fig. 8, the **template width** is 41/64", or 1/64" larger than the 5/8" template guide bushing. This small space between the bushing and the template allows you to rout the mortise by moving your router around the template thereby producing a mortise with an excellent surface finish on the walls. Just remember that your finished mortise will be 1/64" larger than the bit diameter.

Template Length (in)	Mortise Length (in)			
1/2	3/4	13/16"	7/8	1
1	1 1/4	1 5/16"	1 3/8	1 1/2
1 1/2	1 3/4	1 13/16"	1 7/8	2
2	2 1/4	2 5/16"	2 3/8	2 1/2
Bit Diameter (in)	1/4	5/16"	3/8	1/2

Table 1: Mortise length equals template length plus bit diameter.

## Using the Jig:

Using the jig generally requires the following five steps:

1. Install the template guide bushing.
2. Select and install a template.
3. Make layout lines on your stock.
4. Set up the jig.
5. Rout the mortise.

# Mortise Pal™ Mortising Jig User's Manual

**Step 1.** The **template guide bushing** includes a **centering pin** that allows you to install it perfectly concentric with your plunge routers collet. Referring to Fig. 11, insert the appropriate end of the **centering pin** into your plunge routers 1/4" or 1/2" collet. Tighten the collet. Then install the **template guide bushing** by placing it into the counter bore of your plunge

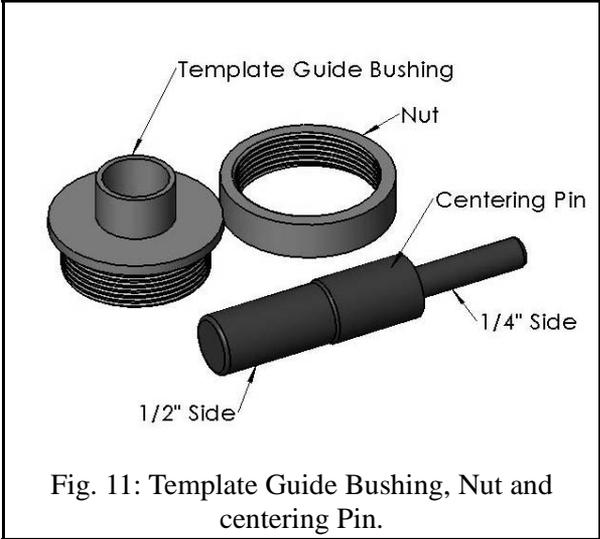


Fig. 11: Template Guide Bushing, Nut and centering Pin.

router's base plate. Thread the **nut** onto the **template guide bushing**, but do not completely tighten the **nut**. Plunge the **centering pin** through the **bushing** so that the center portion of the pin mates with the inside diameter of the **bushing**. Lock your plunge router at this depth and tighten the **nut**. Then retract the **centering pin** and remove it. The **template guide bushing** is now installed perfectly concentric with your plunge routers collet.

## Mortise Pal™ Mortising Jig User's Manual

**Step 2.** Referring to Fig. 12, select a **template** and then install it by first removing the **brass screws**. Use the 3/32" hex key that was included with the jig. Place the template onto the **template block** so that the **holes** in the **template** mate with the

corresponding dowel pins on the **template block**. Press down firmly to ensure that the holes in the **template** mate with the dowel pins. Carefully replace the brass screws. To remove the **template**, remove the **brass screws**, insert your index finger into the slot

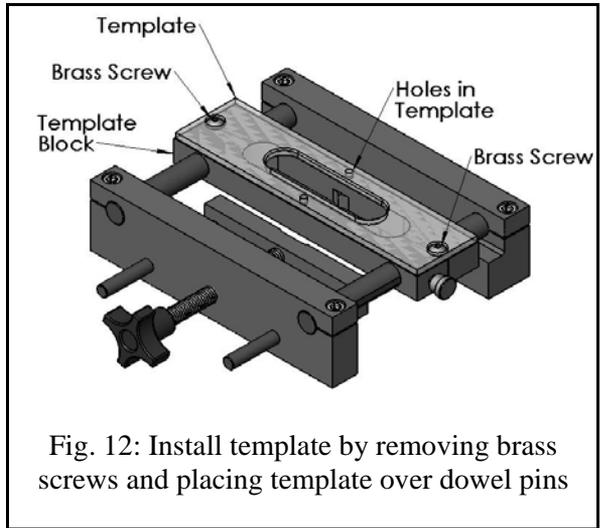


Fig. 12: Install template by removing brass screws and placing template over dowel pins

on the **template** and pull it off of the **template block**.

**Step 3.** Make layout lines on your stock that mark the center of the mortise. Fig 13 shows the completed layout lines on a leg blank before the mortise has been routed.

# Mortise Pal™ Mortising Jig User's Manual

**Step 4.** Setting up the jig will require centering the template over the layout lines. Referring to Fig. 14, hold the jig's **fence** against your stock. Align the **centerline mark** on the side of the jig with the first **layout line** as shown. When the **centerline mark** and the **layout line** coincide, turn the **thumb screw** to lock the template in place.

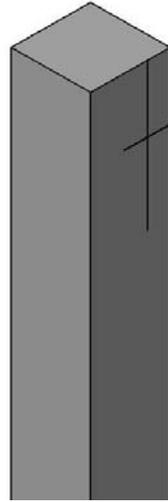


Fig. 13: Make layout lines marking the center of the mortise.

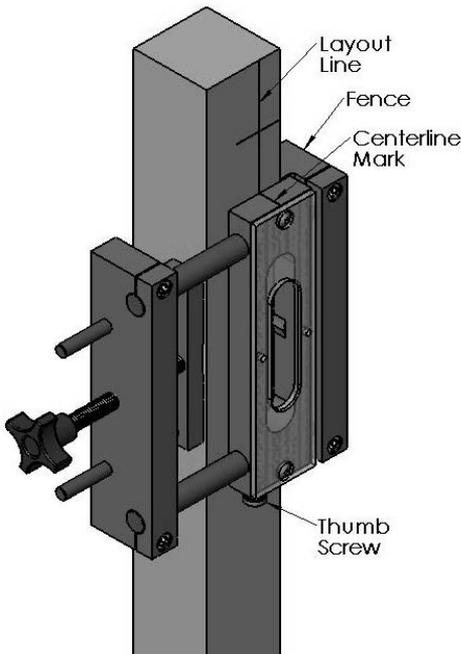
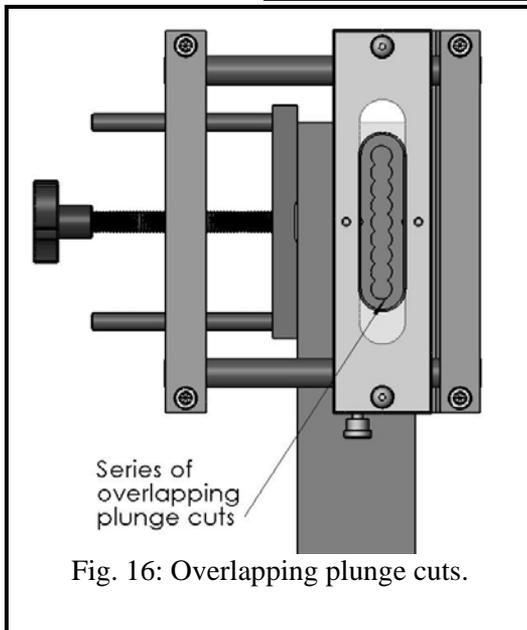
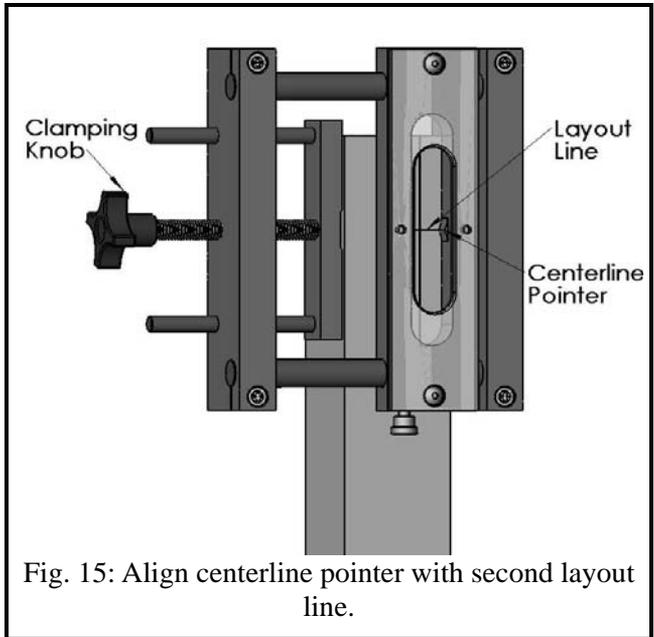


Fig. 14: Align centerline mark with first layout line.

# Mortise Pal™ Mortising Jig User's Manual

Referring to Fig. 15 align the **centerline pointer** with the second **layout line**. Then turn the **clamping knob** so that the jig is secured to the stock with the template centered over the layout lines.



**Step 5.** Proceed to rout the mortise. Referring to Fig. 16, one technique for routing the mortise is to make a series of overlapping plunges to full depth along the length of the template. Then make a finishing cut by moving your plunge router around the template. This technique is fast and produces a mortise with an excellent surface

# Mortise Pal™ Mortising Jig User's Manual

finish on the walls.

Note, waste chips will accumulate while routing the mortise. You may need to periodically stop routing and remove this waste. A shop vacuum works well.

## **Maintenance:**

The jig requires very little maintenance. To remove dust and debris from the jig use compressed air, a soft bristle brush or a dry rag. Periodically place a drop of lubricant or tool oil on the four stainless steel guide rods.

## **Warranty:**

R.G. Jig Co. stands behind its products with a one-year limited warranty. If you have any questions regarding the warranty you can contact Customer Service by email at [support@mortisepal.com](mailto:support@mortisepal.com) or by calling 619-459-7951.

## **Coverage:**

R.G. Jig Co. warrants that this product is free of defects in factory workmanship and materials during normal use. If this product fails during normal use because of such a defect, R.G. Jig Co. will, at its option, repair or replace, free of charge, any part or parts shown to be so defective.

## **Excluded from Coverage:**

Failure resulting from alteration, modification, misuse, abuse or neglect or after repairs have been attempted or made by others.