NEXT WAVE® CNC

SHARK®

RS1000 PRO
Apps Guide

CONTENTS

Apps Menu 3
- Establish Bit Parameters 4
- Run Fence/Bit Calibration 5
- Biscuit Slots 9
- Box Joints 13
- Dado Cut 17
- Dado Repeating 20
- Half Blind Dovetail Joints 24
- Sliding Dovetail Joints 29
- Through Dovetail Joints 34
- Dovetail Test Fit 40
- Fluting 43
- Key Holes 47
- Pocket Holes 51
- Step & Plunge 55
- Step & Repeat 59
- Tongue & Groove Joints 63
- Locking Miter Joints 68

Your RS1000 Pro comes preprogrammed with a number of apps that make it easier to complete a variety of useful functions. For example, there are apps for calibration, making decorative cuts like fluting, and cutting a wide variety of joints. After entering some basic parameters into each app, the system does all the math and moves the fence and router lift as needed to complete the task.

Apps Menu

Apps Menu Screen: Press the Apps button on the Main Control screen to open the Apps screen. The Apps menu contains options for controlling specific **RS1000 Pro** functions. Press a menu item to open the setup screen for that option. To return to the Main Control Screen, press X in the upper right corner.

Establish Bit Parameters

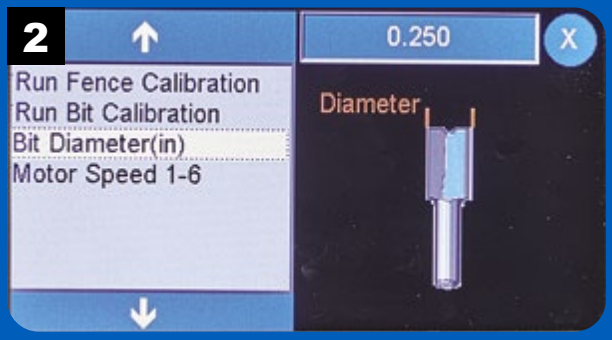
Press the Apps button on the main screen to display the menu of apps. The **RS1000 Pro** uses parameters for the router bit you enter into the **LCD Pendant** (Figure 1). Set the diameter of the router bit so the **RS1000 Pro** can calculate the movements of the fence and router lift for each application. Figures 2 and 3 show you how to do this.

To establish the zero points for the fence and router lift, you must also calibrate these using the touch plate (see next page). The **RS1000 Pro** also allows you to set the motor speeds for moving the fence and router lift (Figures 4 and 5).

1

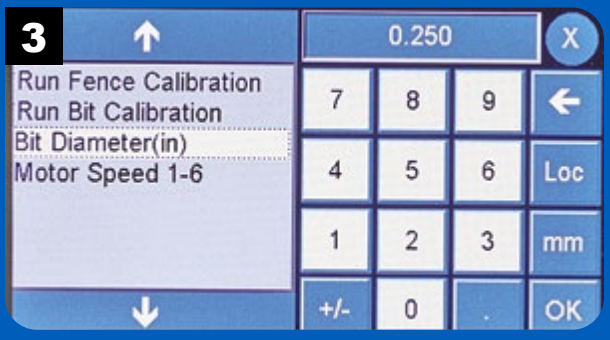
Set Bit Diameter

2



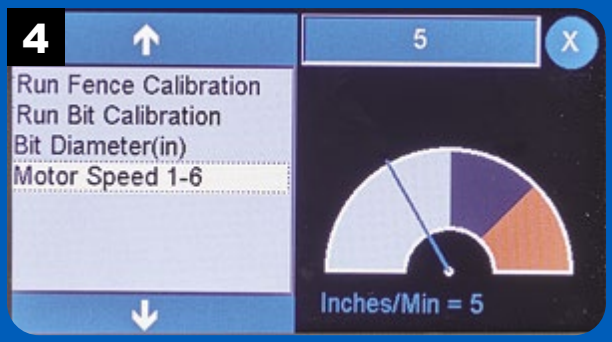
Selecting Bit Diameter from the menu displays the current value in the upper right. Press this button to change the diameter.

3



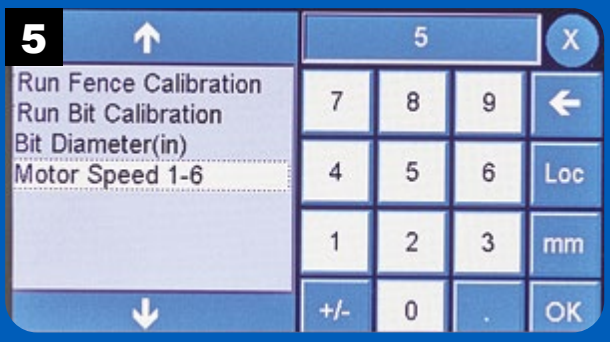
On the numeric keypad, enter the diameter of the router bit installed in the router and press OK.

4



Change the speed range of the motors that control the fence and router lift by selecting Motor Speed from the menu.

5



On the numeric keypad, enter a value for the motor speed (1=slow, 6=fast) then press OK.

Run Fence to Bit Calibration

As mentioned on the previous page, the **RS1000 Pro** needs to know the zero location for the fence (Figure 1). For this, use the touch plate accessory. Figures 2 through 7 step you through the sequence of calibrating the fence. Start by selecting Run Fence Calibration from the menu.

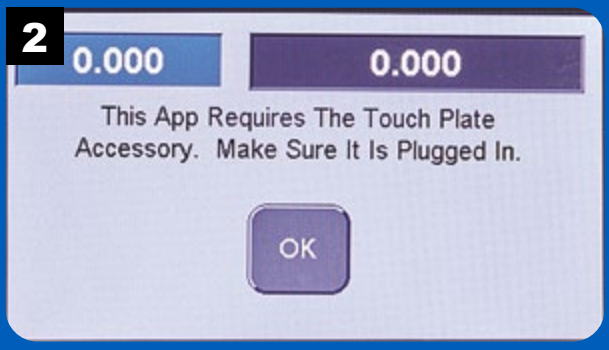
NOTE: The correct bit diameter must be entered before continuing to calibrate the fence and router lift.

Once the fence is calibrated, you may need to move the fence back to access the router bit for calibrating it (page 7).

1

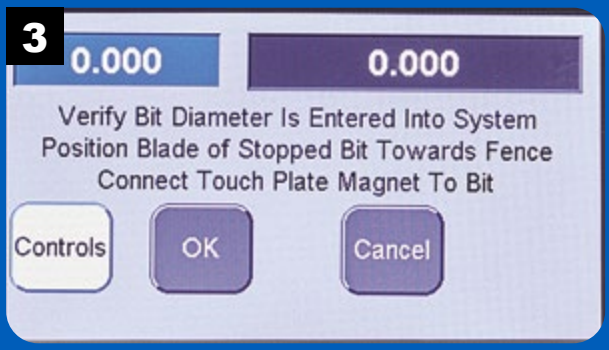
Setting Up Fence "ZERO" Position

2



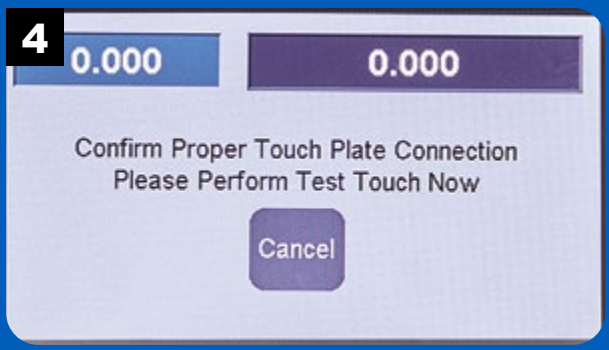
The left value field at the top of the screen displays the current fence location. This needs to be reset every time you install a different router bit. Connect the touch plate and press OK.

3



Rotate the bit's cutting edge toward the fence. Attach the touch plate magnet to the bit then press OK. Press Controls if you need to adjust the position of the fence or router lift.

4



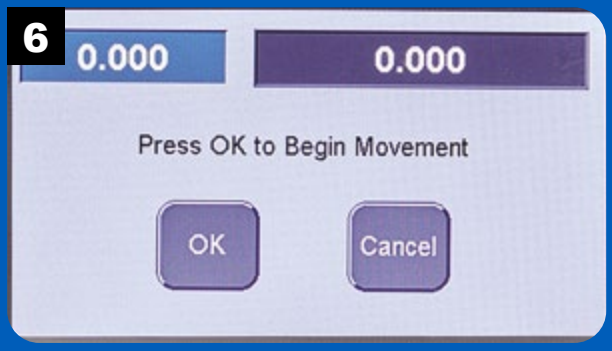
This screen asks you to confirm a proper touch plate connection by moving the touch plate to contact the router bit.

5

This screen confirms that the touch plate is installed correctly. Position the touch plate between the fence and router bit.

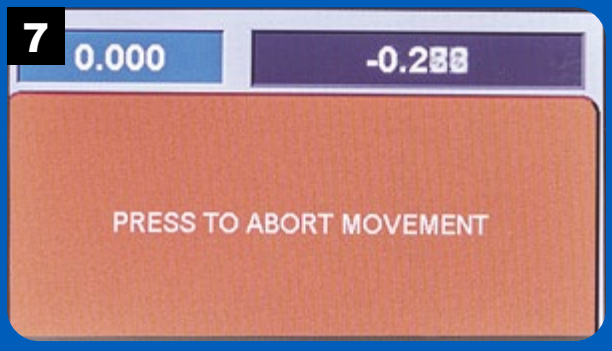
Setting Up Fence "ZERO" Position *continued*

6



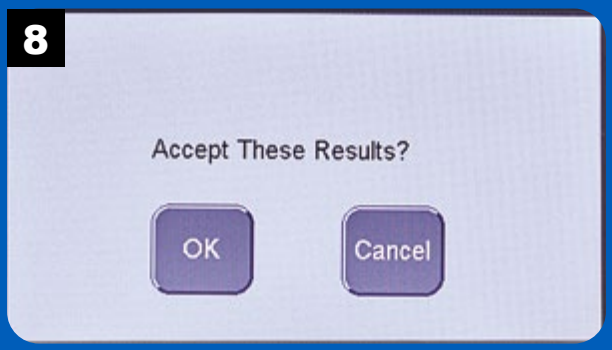
Pressing OK begins movement of the fence and touch plate toward the router bit.

7



While the fence is moving, you can press the red button to stop movement if necessary. When the touch plate contacts the bit, the fence position should read 0.000.

8



If this value looks acceptable to you, press OK to store the fence position in the Pendant.

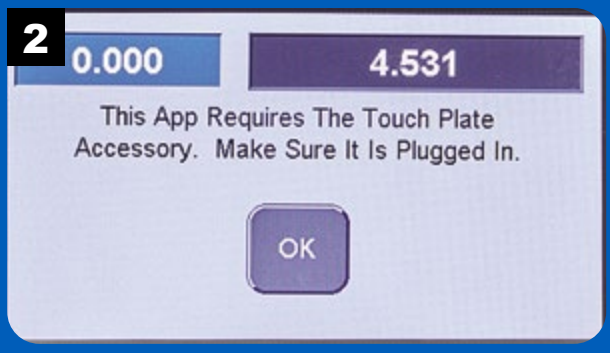
Run Bit Calibration

Similar to fence calibration, the router bit calibration establishes the zero point for the router lift (Figure 1). This operation also requires the touch plate. Figures 1 through 8 outline the process of calibrating the router bit.

1

Setting Up Bit "ZERO" Position

2



The value field in the upper right displays the current value for the position of the router lift. Install the touch plate and press OK to continue.

3

Make sure the router bit is below the surface of the table and press OK. The Controls button allows you to make adjustments in the fence and lift position before continuing.

4

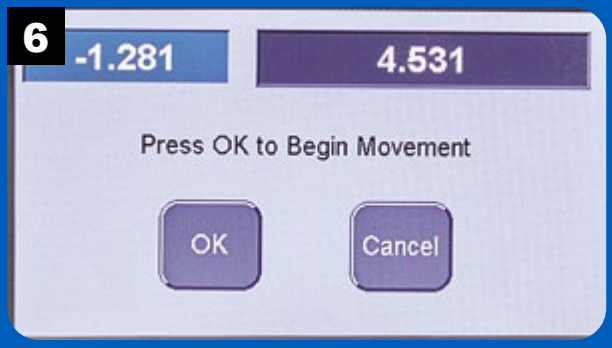
Tap the touch plate to the router bit to confirm that the plate is installed and connected correctly.

5

The red screen confirms a proper touch plate connection.

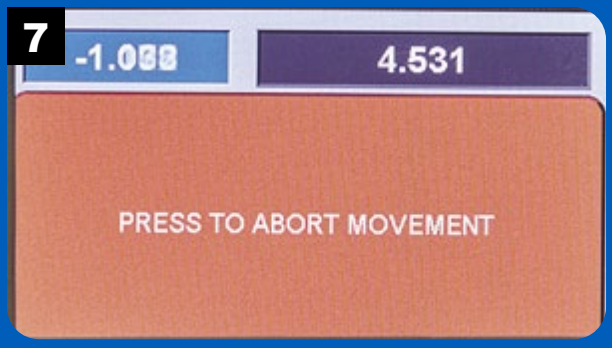
Setting Up Bit Calibration *continued*

6



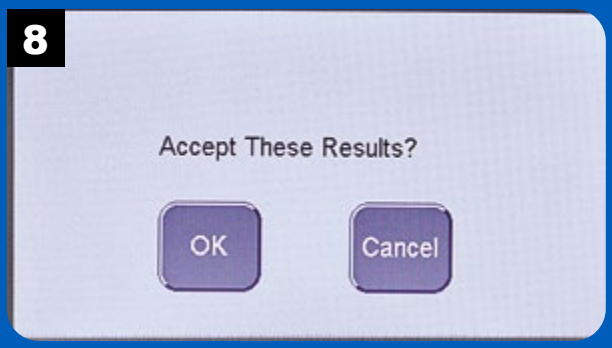
Ensure that the touch plate is flat on the table over the router bit and press OK.

7



The router lift moves until it contacts the touch plate and displays the position in the upper right value field.

8



Press OK to confirm the results of the lift calibration.

Biscuit Slot

The **RS1000 Pro** includes apps for a variety of joinery options. One is for routing slots for biscuits used to join two workpieces (Figure 1). Select Run Biscuit Slot in the menu and then Press To Run to start configuring and running the biscuit slot app.

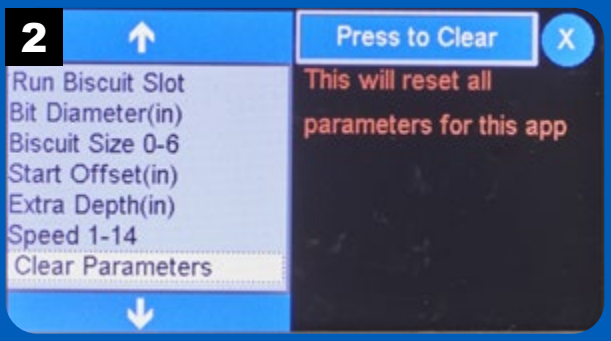
The location of the biscuit slot is set by using the offset parameter. The value entered represents the distance from the edge of the workpiece to the beginning of the slot. The fence will automatically move to the correct location for this distance. The workpiece should be positioned face down when cutting the slots.

1

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

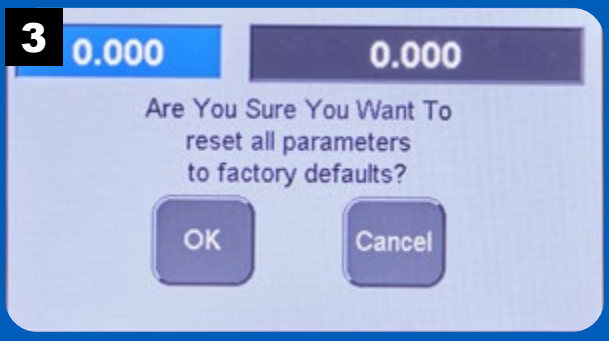
Biscuit Slot Setup

2



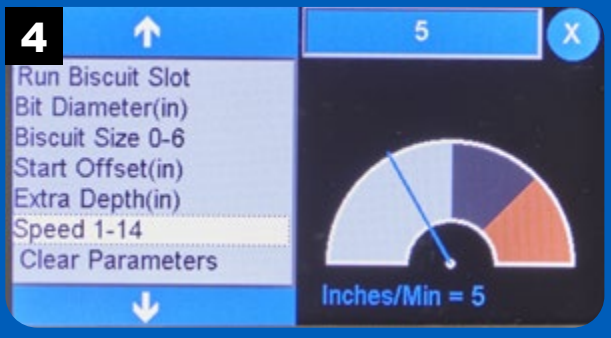
If you make a mistake when entering parameters or wish to reset the values to factory defaults, select Clear Parameters then Press to Clear.

3



When prompted, press OK to reset the parameter values or Cancel to abort the operation.

4



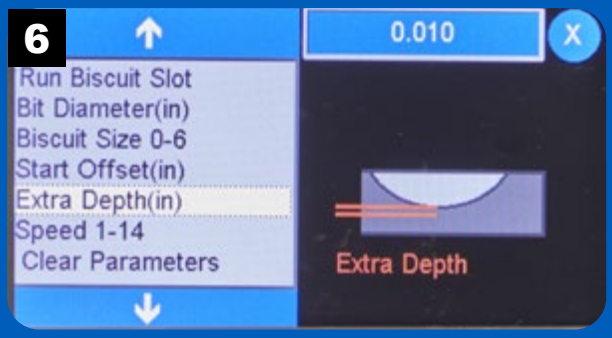
Use the Speed function to set the speed of the fence and lift while cutting the biscuit slot. Press the value field to change it.

5

Enter a value from 1-14 (slow to fast) for the speed then press OK.

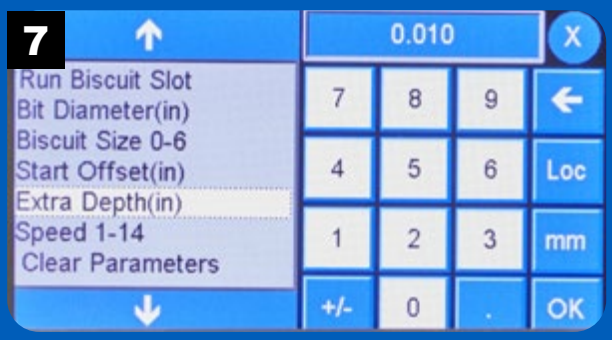
Biscuit Slot Setup *continued*

6



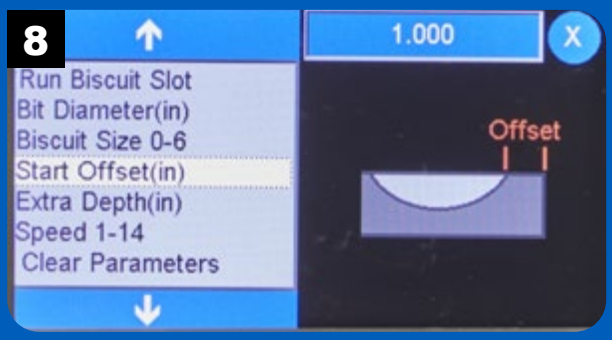
The Extra Depth option allows you to add space around the biscuit for glue relief and ease of assembly. Press the value button in the upper right to assign this distance.

7



Enter the extra depth distance using the keypad then press OK.

8

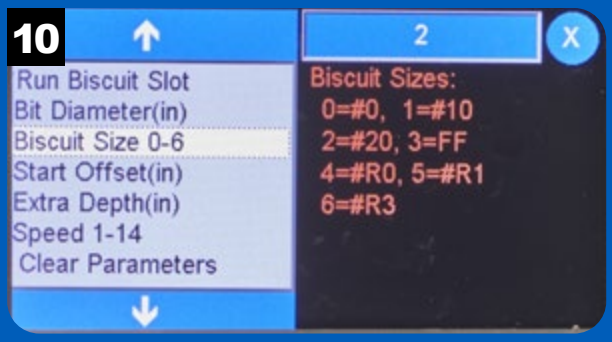


The Start Offset option sets the distance of the end of the biscuit slot from the edge of the workpiece. Press the value button to change this distance.

9

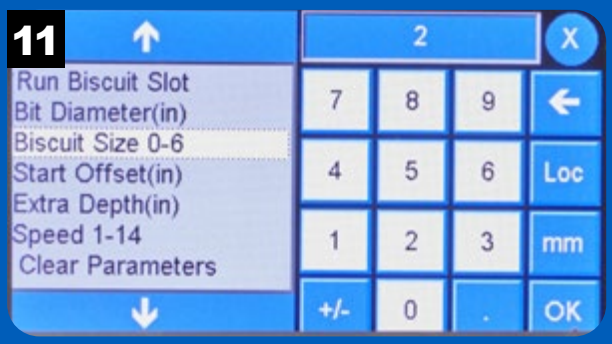
Enter the offset distance and press OK.

10



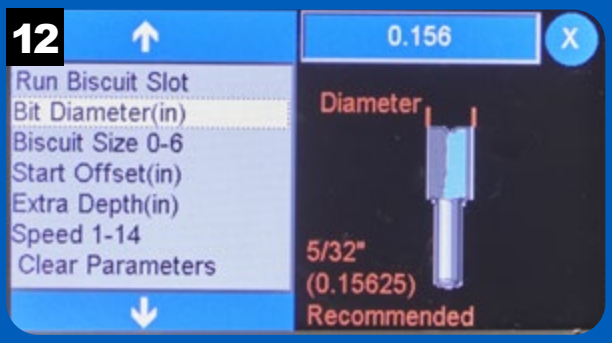
Next, set the size of the biscuit slot by selecting a conventional biscuit size using the Biscuit Size function. Press the value button in the upper right to change the biscuit size.

11

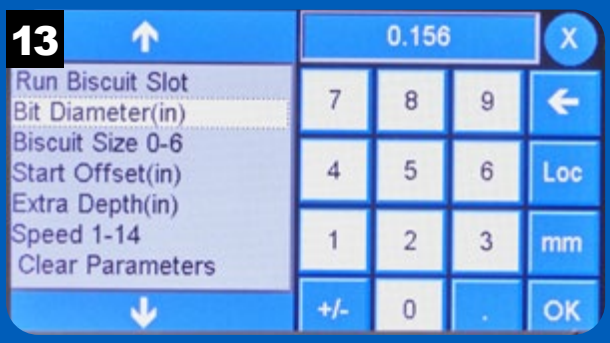


Select the desired biscuit size from the keypad and press OK.

Biscuit Slot Setup *continued*

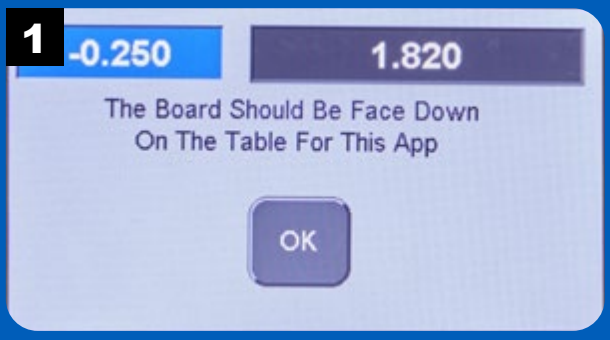


Start by entering the bit diameter using the Bit Diameter function. A 5/32" bit is recommended. Press the value button in the upper right to enter the bit diameter.

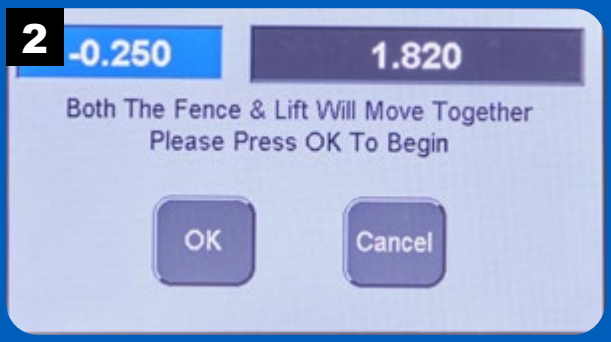


Using the keypad, enter the diameter of the bit and press OK.

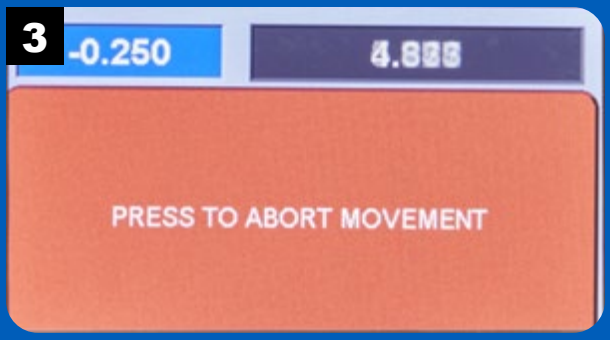
Run Biscuit Slot



With the correct parameters entered, Press Run Biscuit Slot to start the app. Press OK to continue.



A message appears notifying you that the fence and lift will move when you press OK. Make sure the workpiece is tight against the fence before proceeding.

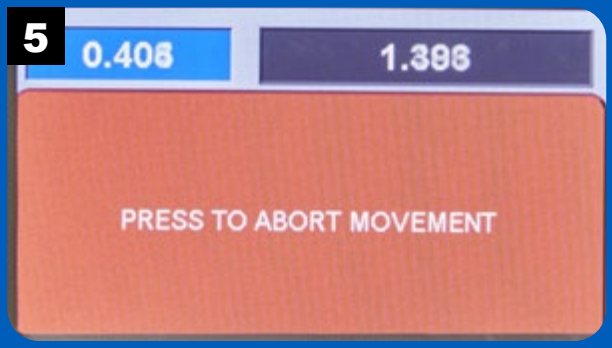


The fence and router lift both move automatically to create the slot with the preset dimensions. Press the red area to abort movement if necessary.

Press OK to use the same parameters to repeat the slot-cutting operation on another workpiece or the opposite end of the workpiece.

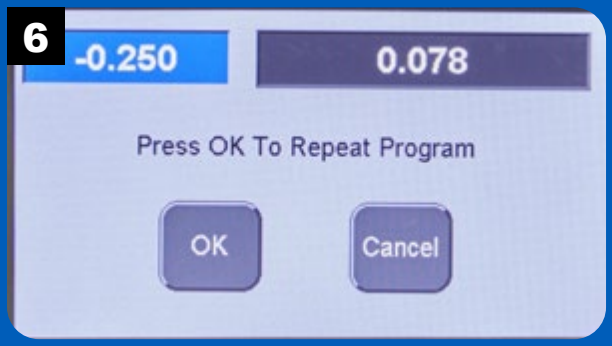
Run Biscuit Slot *continued*

5



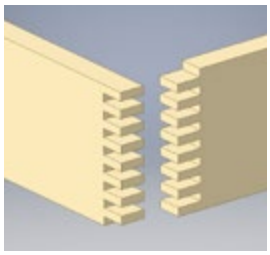
Just like before, you can press the red button to abort lift and fence movement.

6



Press OK to continue routing biscuit slots or Cancel to end the app.

Box Joints



Box joints create a super-strong, attractive assembly. The repetitive, accurately sized and spaced pins and slots are a necessity for a perfect fit and ideal for the **RS1000 Pro** to cut. Select Apps from the main menu, then Box Joints.

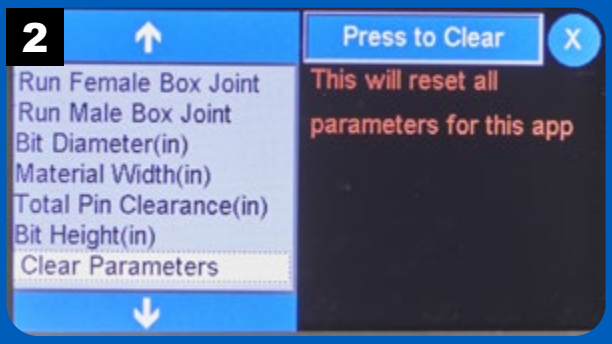
NOTE: Though not required, the accessory miter gauge fence makes routing box joints a breeze. Simply clamp the workpiece to the miter gauge fence and the **RS1000 Pro** takes care of moving the workpiece the required distances when cutting pins and slots. To use a standard miter gauge, you'll need to manually ensure the workpiece is tight to the **RS1000 Pro** fence before each cut.

1

NOTE: Visit **www.NextWaveCNC.com/appguide** or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

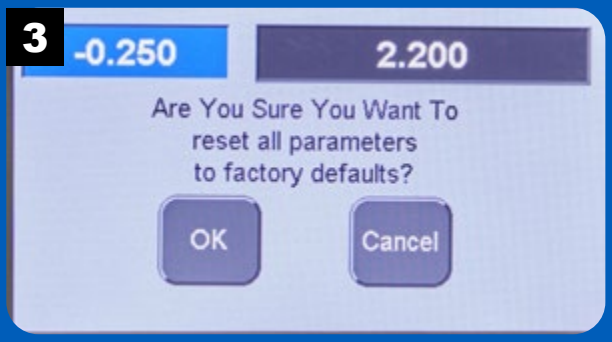
Box Joints Setup

2



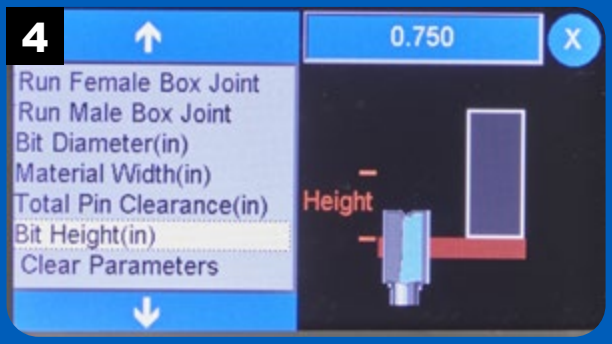
The Clear Parameters function resets all of the parameters to their factory default values.

3



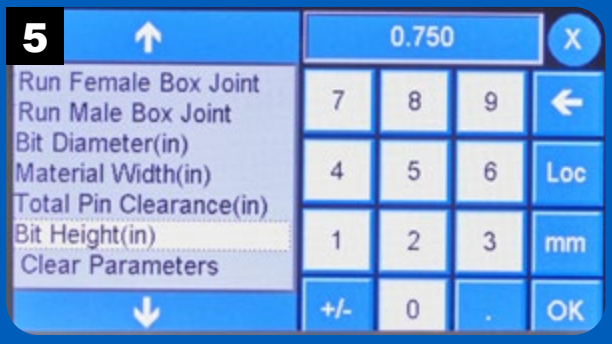
Press OK to reset parameter values, Cancel to abort this operation.

4



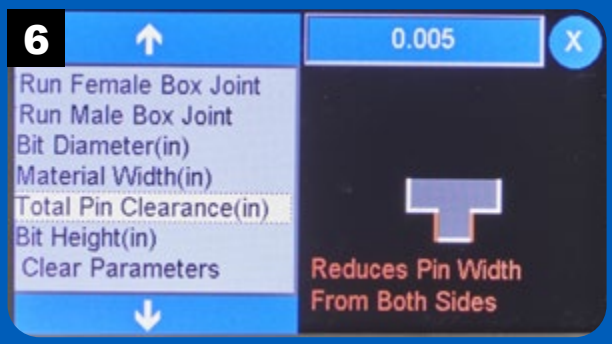
The Bit Height determines the length of the pins and sockets from the end of the workpiece. This minimum value should match the thickness of the workpieces.

5

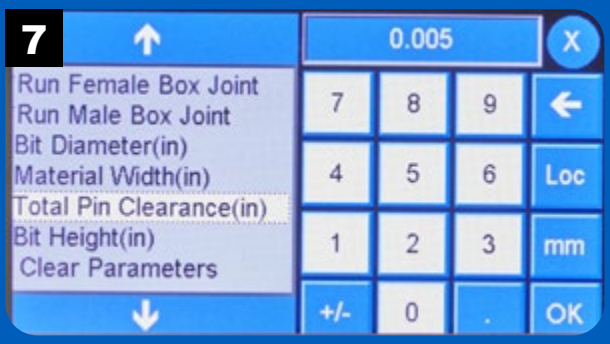


Enter the desired bit height and press OK.

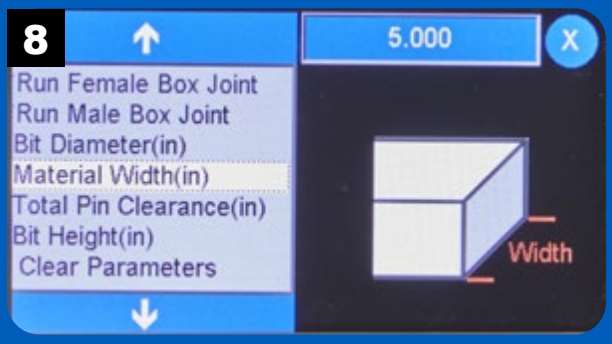
Box Joints Setup *continued*



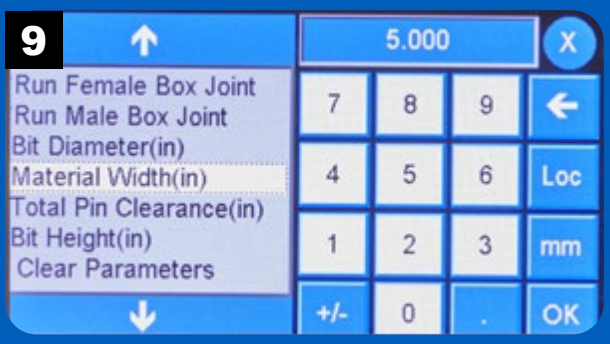
The Total Pin Clearance value reduces the pin width by subtracting the clearance value from each side of the pin.



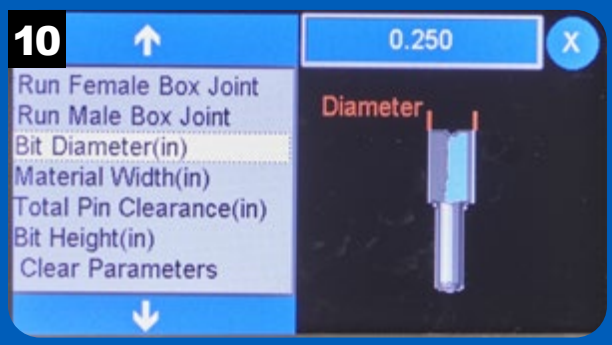
Enter the clearance value and press OK.



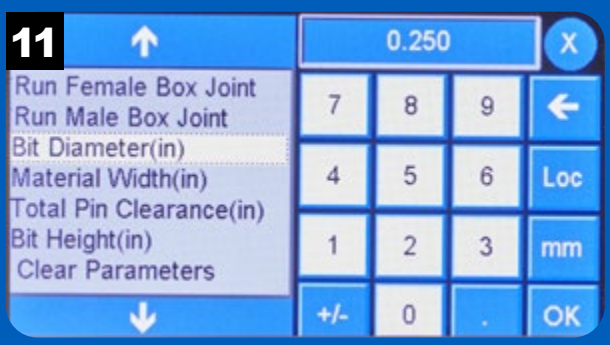
Enter the overall width of the material you're using to create the box joints by pressing the value field.



Enter the width of the workpiece and press OK.

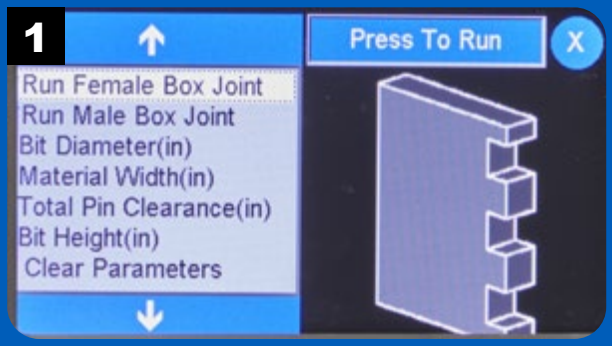


Set the bit diameter by pressing the value field in the upper right. **NOTE:** It's best to measure the actual diameter of the bit with calipers rather than rely on the stated diameter.

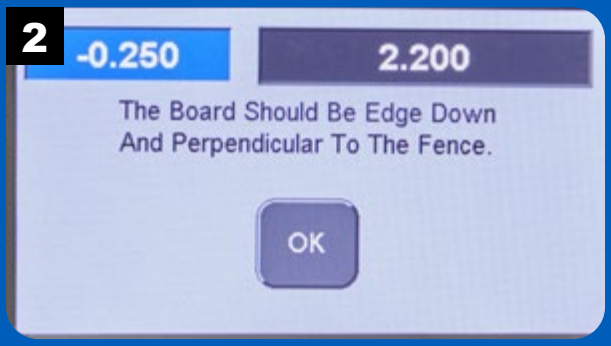


Enter the measured bit diameter using the numeric keypad then press OK.

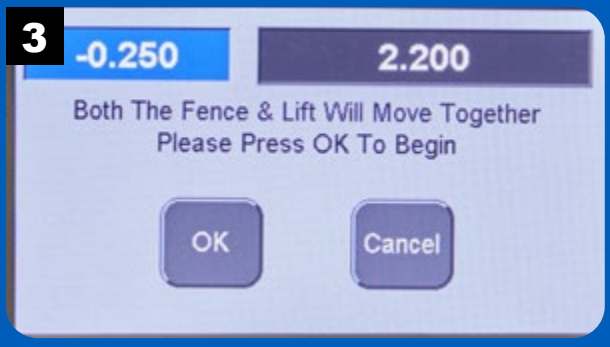
Run Female Box Joints



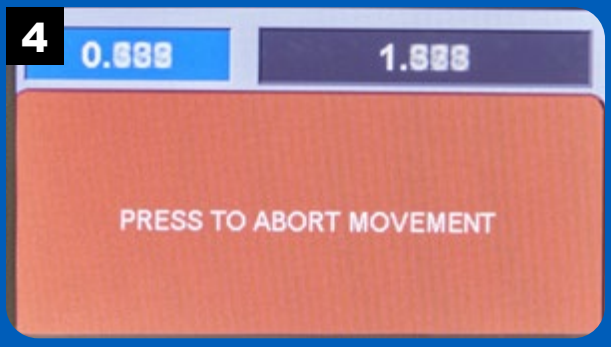
The function Run Female Box Joint cuts the spaces, or sockets, between the pins. Select Press To Run to continue.



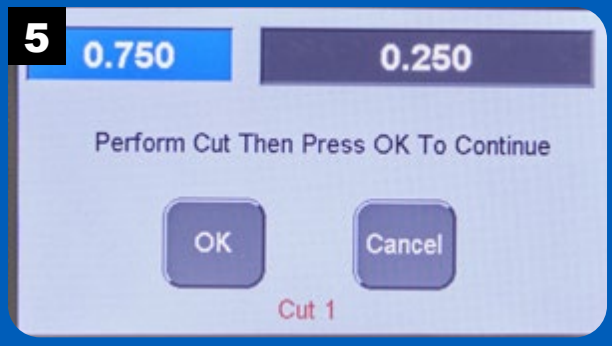
Clamp the workpiece to the miter gauge with the end against the router tabletop and the back edge against the router table fence. Press OK to continue.



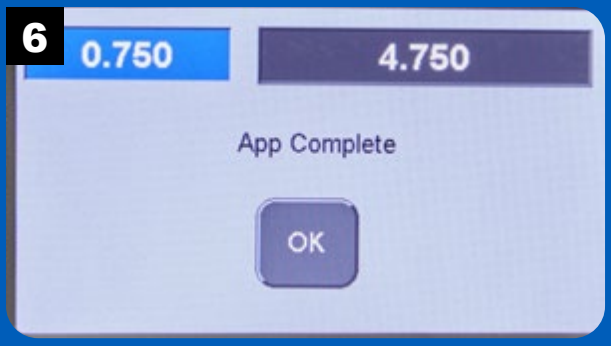
Pressing OK will move the fence and the lift to the starting position for cutting the female box joints. Ensure there are no obstructions on the router table and press OK.



As the router lift and fence move, you can press the red button to abort the movement if necessary. Otherwise, the fence and lift continue to move to the starting position.

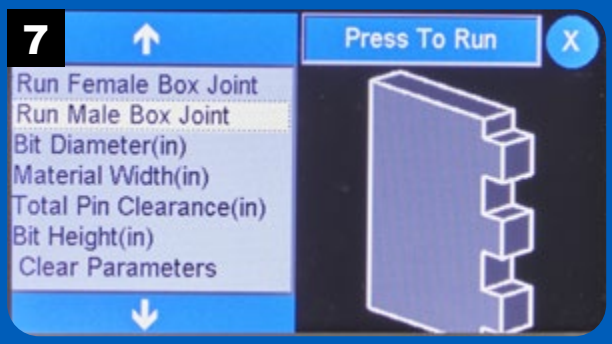


Using the miter gauge with workpiece attached, make the first cut across the router bit. Repeat until the female joint is complete.

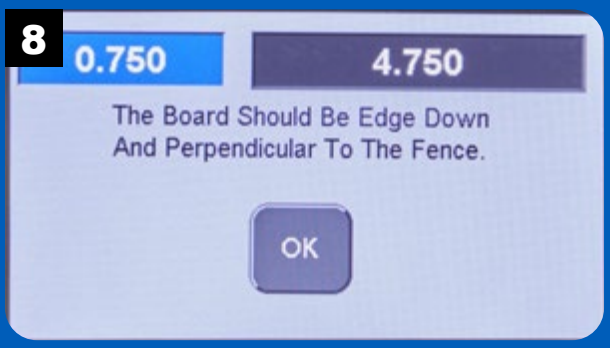


When all of the cuts are completed, the app stops. Reorient the workpiece to cut the other end and press OK to continue.

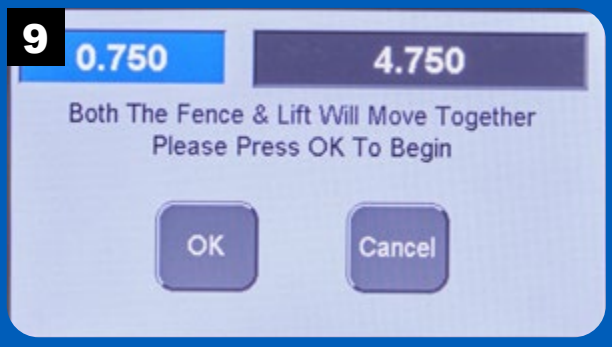
Run Male Box Joints



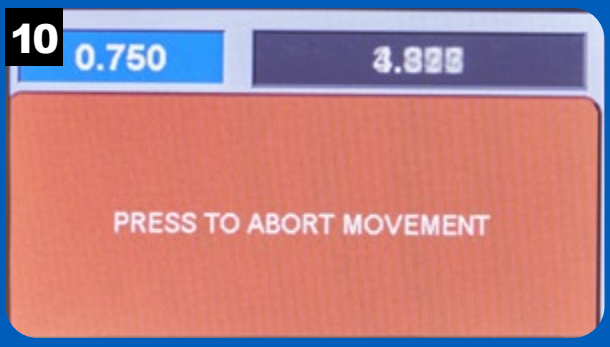
Cutting the male portion (pins) of the box joints follows the same process as cutting the female portion. Press Run Male Box Joint then Press To Run to continue.



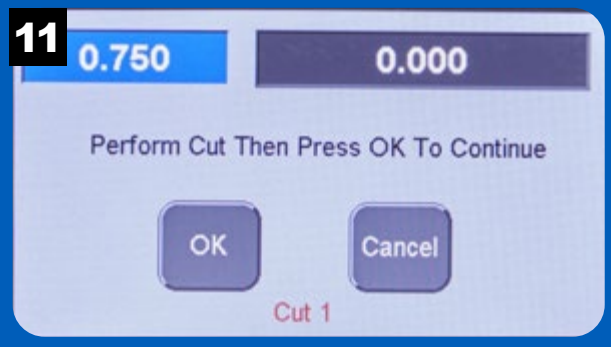
Clamp the workpiece to the miter gauge with the end against the router tabletop and the back edge against the router table fence. Press OK to continue.



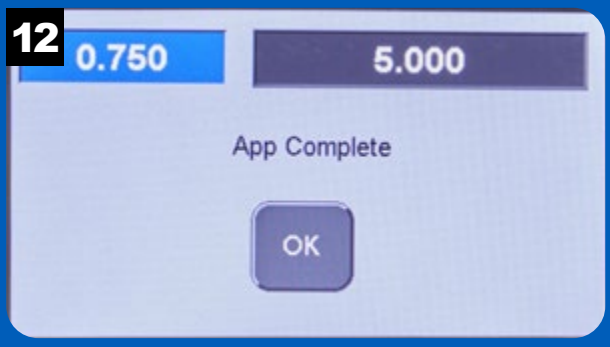
Pressing OK will move the fence and the lift to the starting position for cutting the female box joints. Ensure there are no obstructions on the router table and press OK.



As the router lift and fence move, you can press the red button to abort the movement if necessary. Otherwise, the fence and lift continue to move to the starting position.

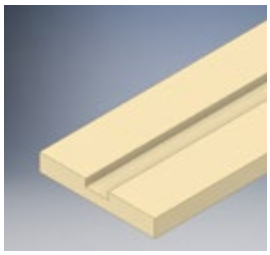


Using the miter gauge with workpiece attached, make the first cut across the router bit. Repeat until the male joint is complete.



When all of the cuts are completed, the app stops. Reorient the workpiece to cut the other end and press OK to continue. Test the fit of the joint and tweak the parameters for a good fit.

Dado Cut

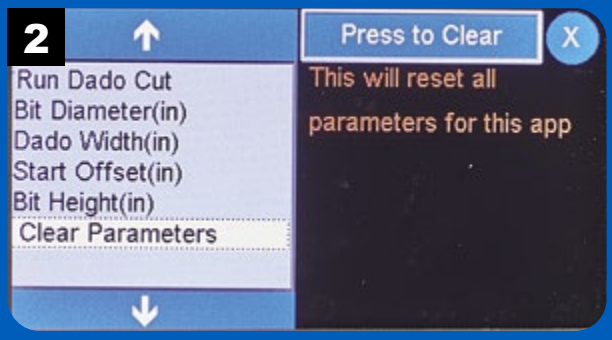


Dadoes and grooves are common joints in making cabinets, boxes, and a wide variety of projects. This app allows you to cut a dado or groove one at a time using different parameters for each.

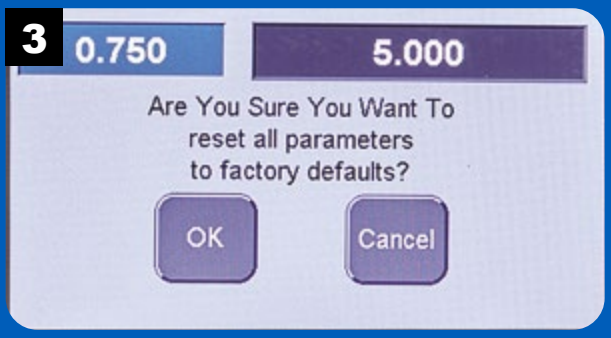
To cut multiple dadoes or grooves that are evenly spaced, see Dado, Repeating on page 20.

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

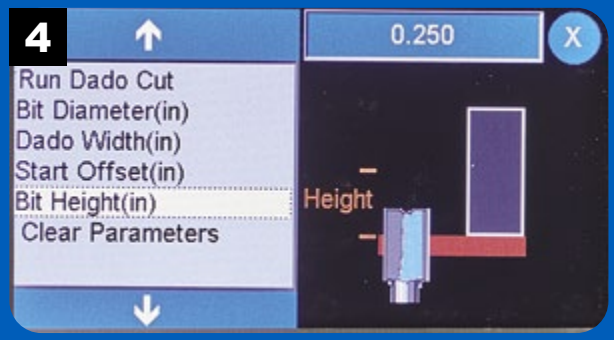
Dado Cut Setup



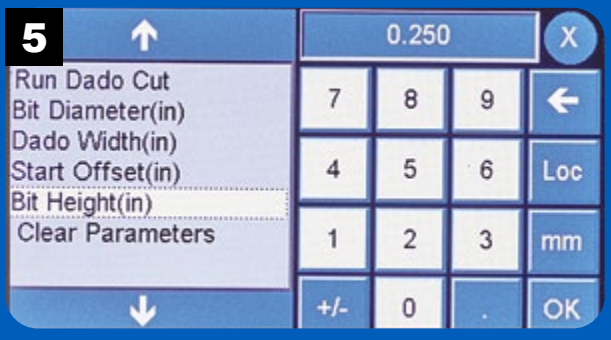
The Clear Parameters function resets all of the parameters to their factory default values.



Press OK to reset parameter values, Cancel to abort this operation.

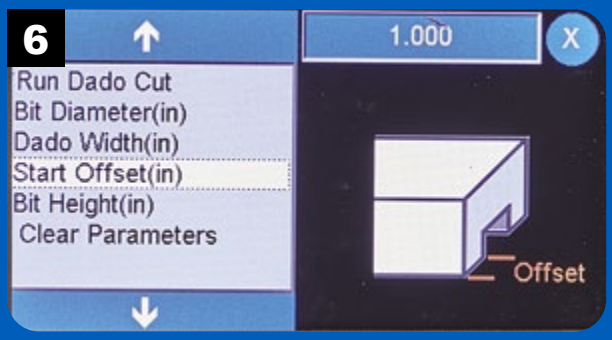


Use Bit Height to set the depth of the dado.

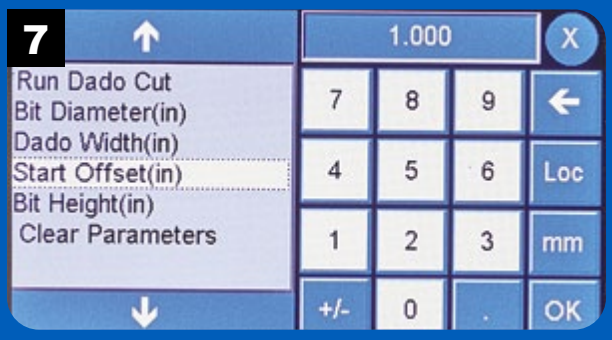


Enter the desired value for the depth of the dado and press OK.

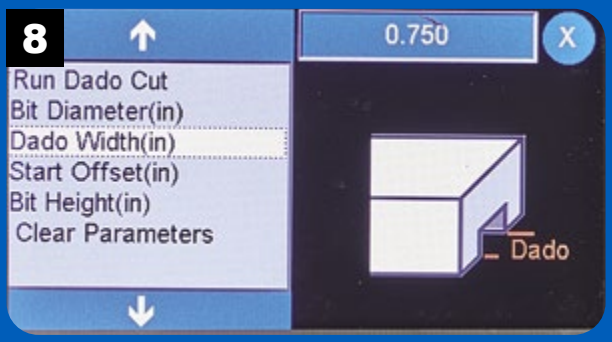
Dado Cut Setup *continued*



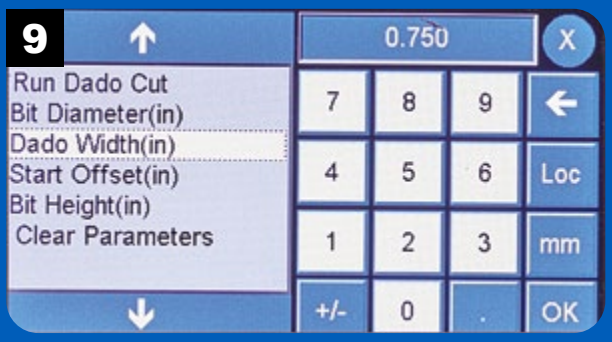
Use the Start Offset function to set the distance of the edge of the dado from the edge of the workpiece.



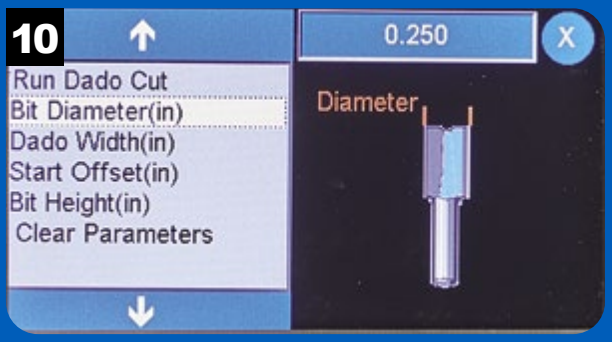
Enter the value for the Start Offset and press OK.



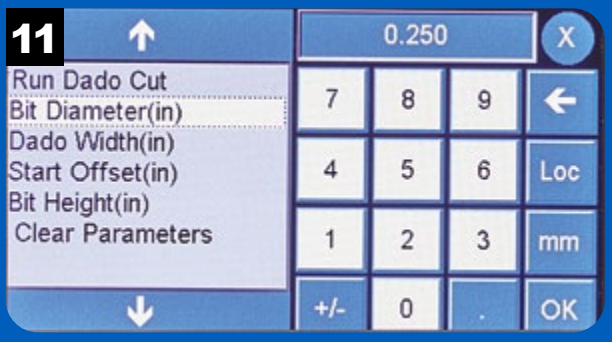
Select Dado Width to set the overall width of the dado.



Enter the width value for the dado and press OK.



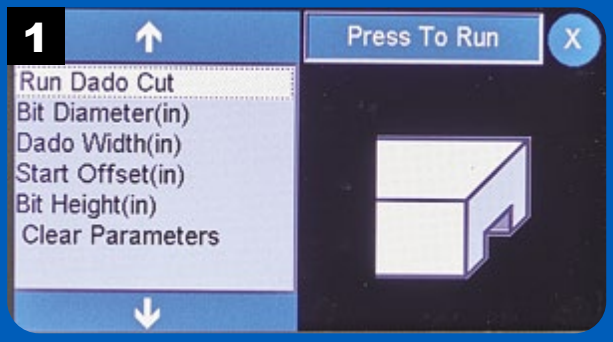
Set the bit diameter by pressing the value field in the upper right. **NOTE:** It's best to measure the actual diameter of the bit with calipers rather than rely on the stated diameter.



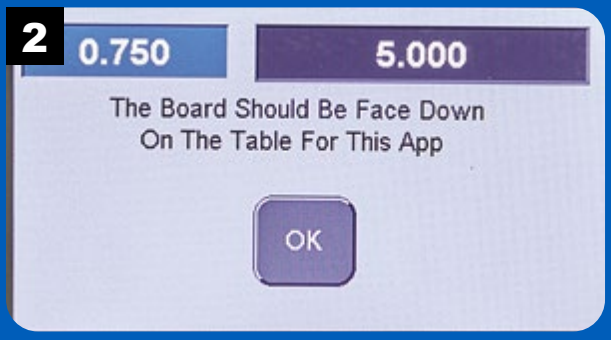
Enter the measured diameter of the router bit and press OK.

TIP: For the best results, rout the joints in multiple passes starting with a shallow pass and increasing the bit height with each pass, finishing with the bit at final height.

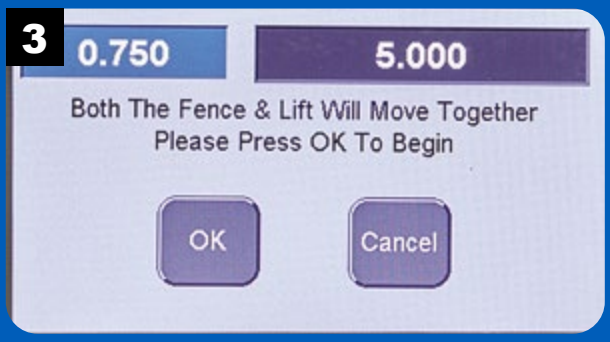
Run Dado Cuts



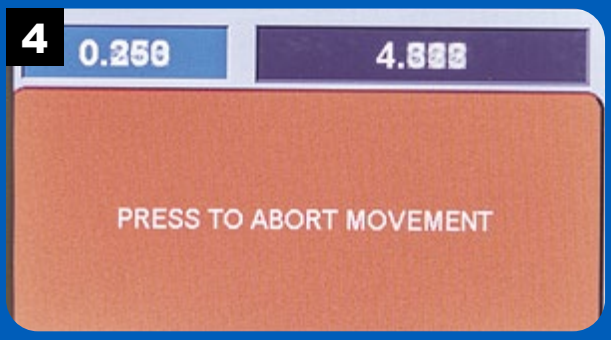
After setting all of the parameters for the dado, select Run Dado Cuts then Press to Run.



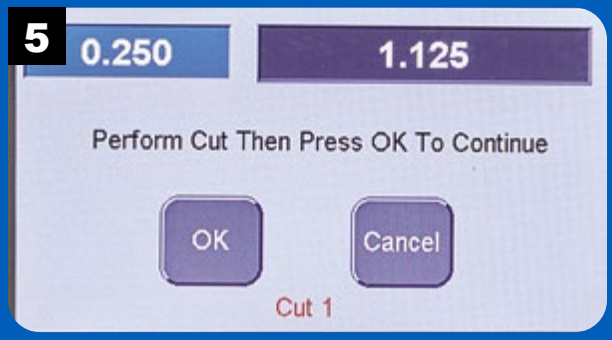
Place the workpiece face down (where the dado is to be cut). Press OK to continue.



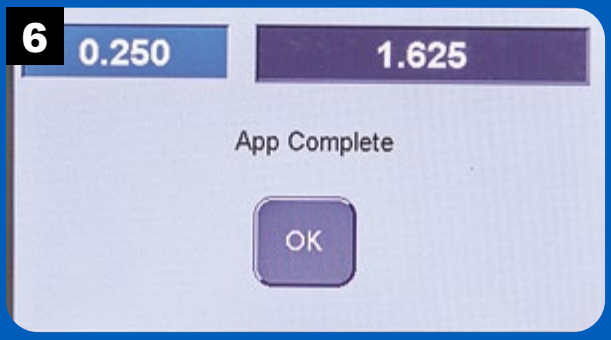
Pressing OK will move the router fence and lift to the starting position for routing the dado. The fence will move multiple times until the entire width of the dado is complete.



As the router lift and fence move, you can press the red button to abort the movement if necessary. Otherwise, the fence and lift continue to move to the starting position.

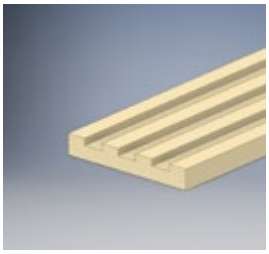


Make the first pass over the router bit then press OK. The fence will move to the next position. Repeat until the full width of the dado is complete.



After all of the cuts are made, the App Complete message appears. Press OK to exit.

Dado, Repeating



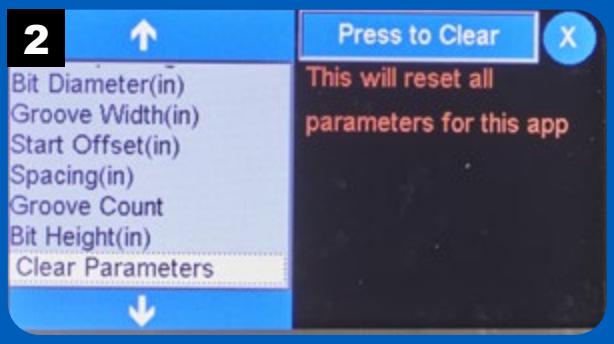
Creating multiple dadoes and grooves that are evenly spaced and of consistent depth is an ideal job for the **RS1000 Pro**. Like the Dado app on page 17, you'll set the bit height, dado width, and starting offset. With the Dado, Repeating app, you also supply the values for spacing and number of dadoes.

1

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

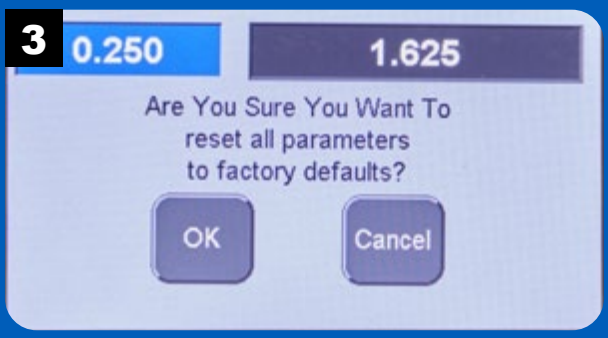
Dado Repeating Setup

2



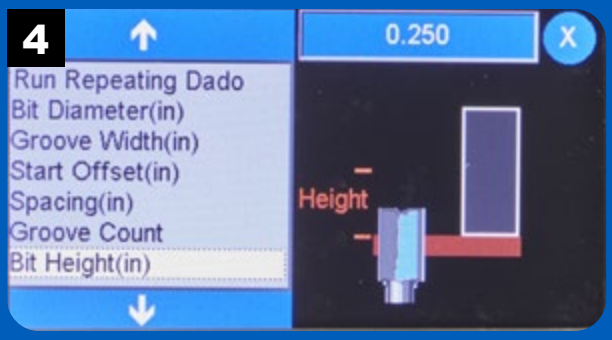
The Clear Parameters function resets all of the parameters to their factory default values.

3



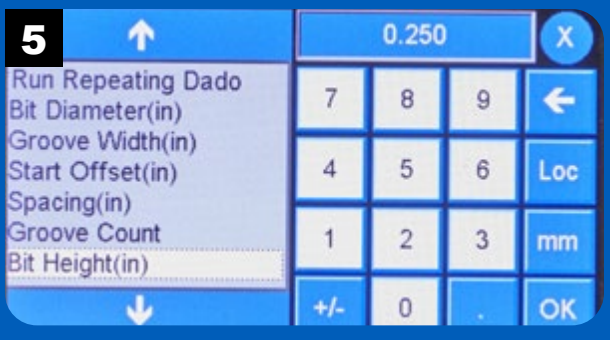
Press OK to reset parameter values, Cancel to abort this operation.

4



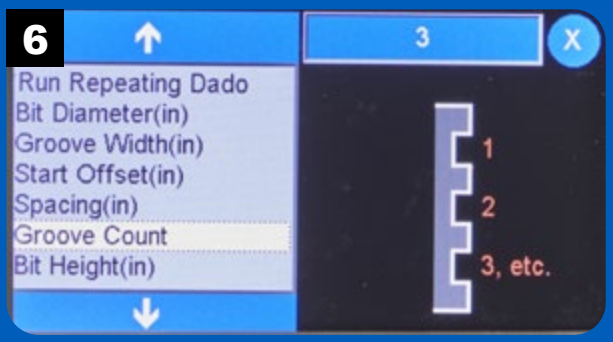
Select Bit Height to set the depth of the dadoes or grooves.

5

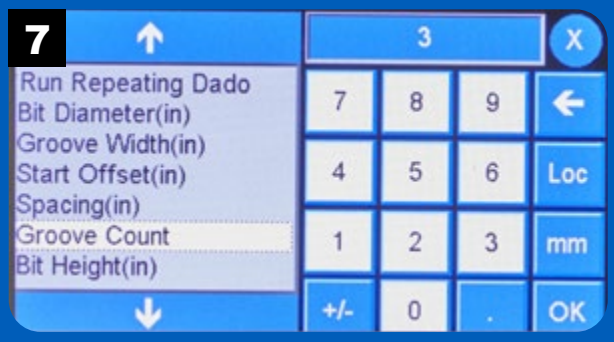


Enter the desired dado depth and press OK.

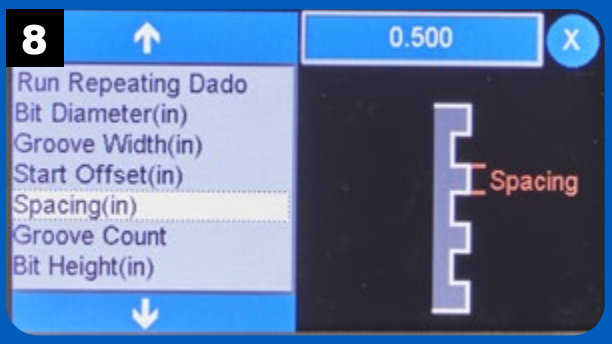
Dado Repeating Setup *continued*



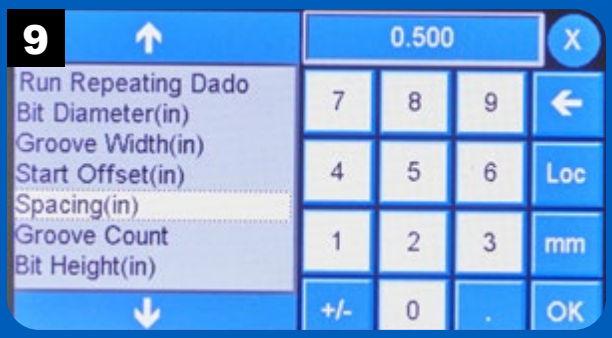
Select Groove Count to set the number of dadoes or grooves to cut in the workpiece.



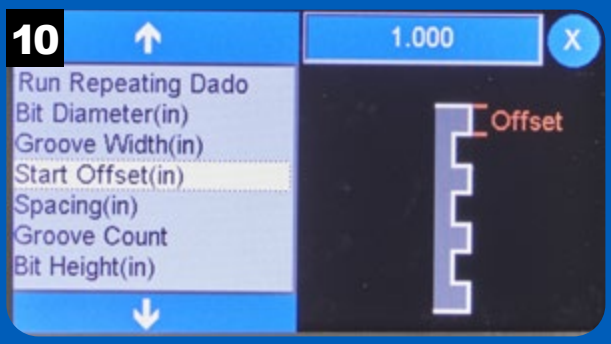
Enter the number of dadoes or grooves and press OK.



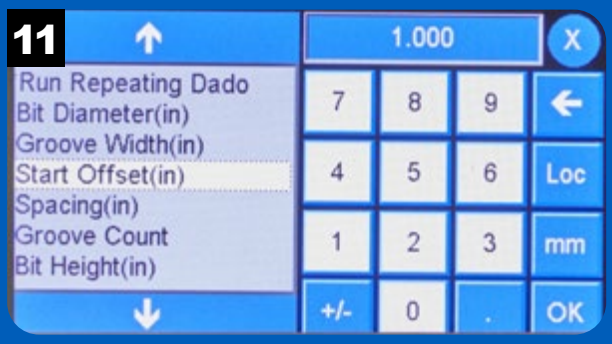
The Spacing function determines the edge-to-edge distance between the dados or grooves.



Enter the desired spacing between dadoes and press OK.

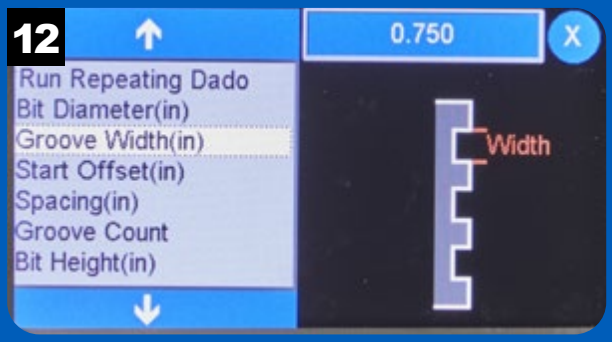


Use the Start Offset function to set the distance of the edge of the first dado from the edge of the workpiece.

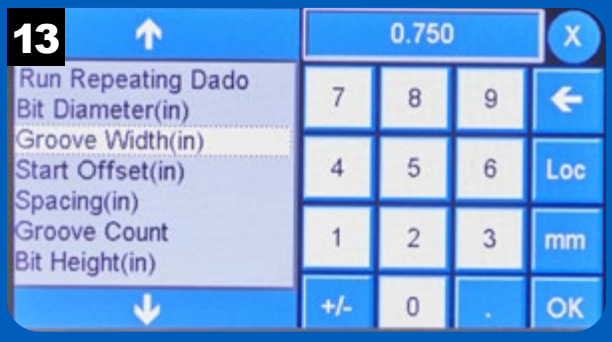


Enter the offset value and press OK.

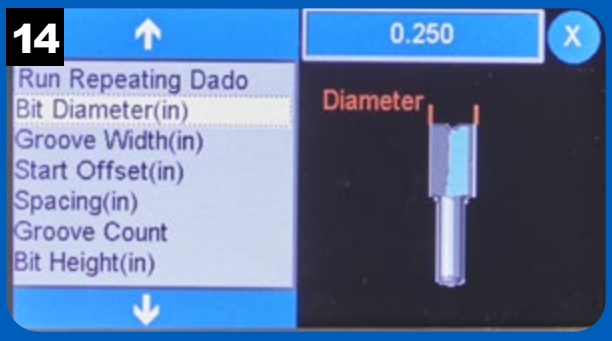
Dado Repeating Setup *continued*



Select Groove Widths to set the overall width of the dadoes or grooves.



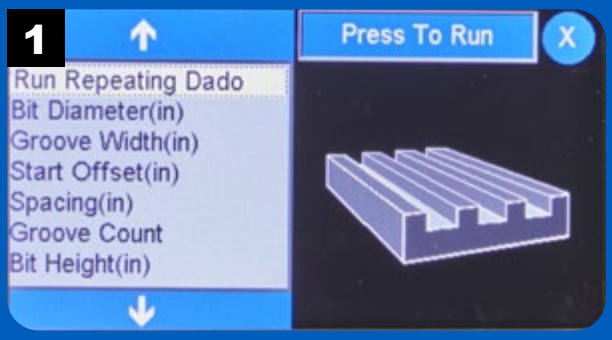
Enter the width value for the dado and press OK.



Set the bit diameter by pressing the value field in the upper right. **NOTE:** It's best to measure the actual diameter of the bit with calipers rather than rely on the stated diameter.

Enter the measured diameter of the router bit and press OK.

Run Dado Repeating

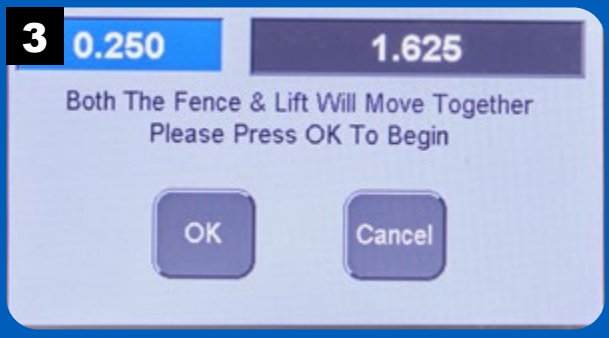


After setting all of the parameters for the dado, select Run Repeating Dado then Press To Run.

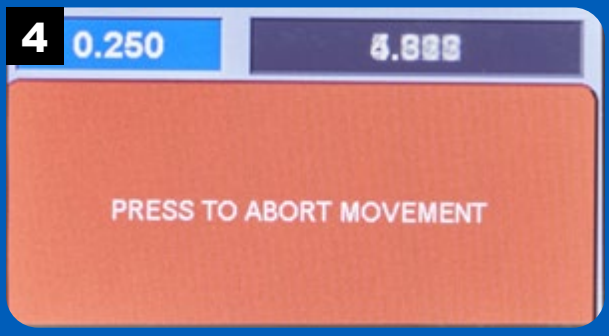
Place the workpiece face down (where the dadoes are to be cut). Press OK to continue.

TIP: For the best results, rout the joints in multiple passes starting with a shallow pass and increasing the bit height with each pass, finishing with the bit at final height.

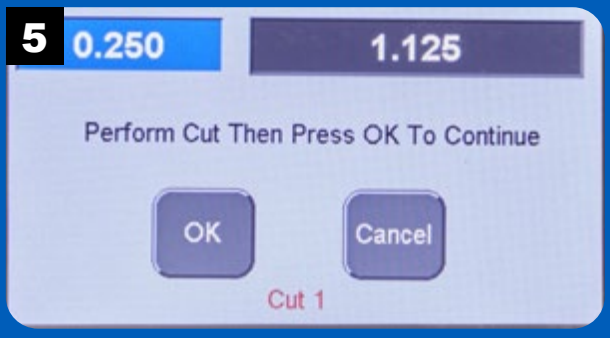
Run Dado Repeating *continued*



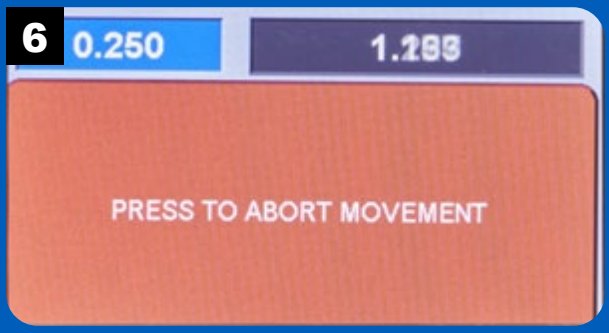
Pressing OK will move the router fence and lift to the starting position for routing the dado. The fence will move multiple times until the entire width of the dado is complete.



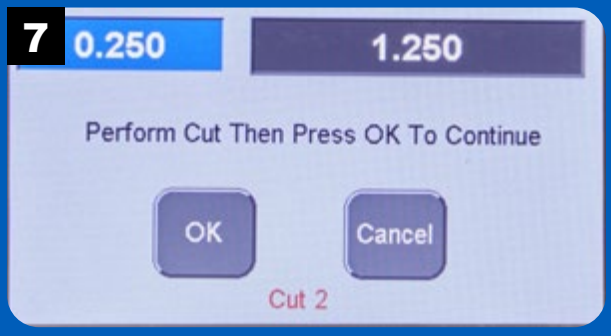
As the router lift and fence move, you can press the red button to abort the movement if necessary. Otherwise, the fence and lift continue to move to the starting position.



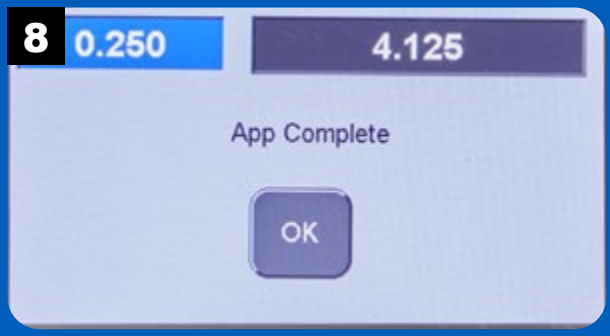
Make the first pass over the router bit then press OK. The fence will move to the next position. Repeat until the full width of the dado is complete.



The fence will move to reposition the workpiece for the next cut.

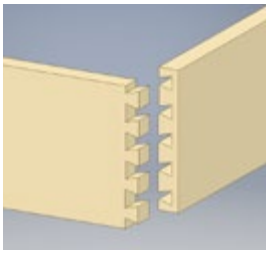


Repeat the cuts, pressing OK after each pass.



When all of the dadoes or grooves have been cut to their desired width and spacing, the app stops automatically. Press OK to exit.

Half-blind Dovetail Joints



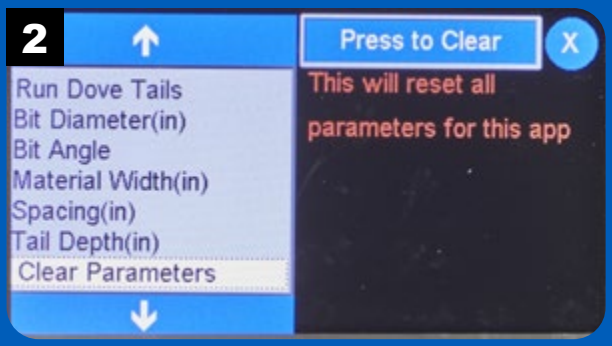
Half-blind dovetail joints are often used in drawer construction. Dovetail sockets are cut on the inside face of the drawer front and back. The dovetail pins routed on the drawer sides fit into these sockets, creating a strong joint. With the drawer closed, the joint is hidden.

Of course, there are many applications for half-blind dovetail joints limited only by your imagination. The **RS1000 Pro** makes routing these joints easy and accurate.

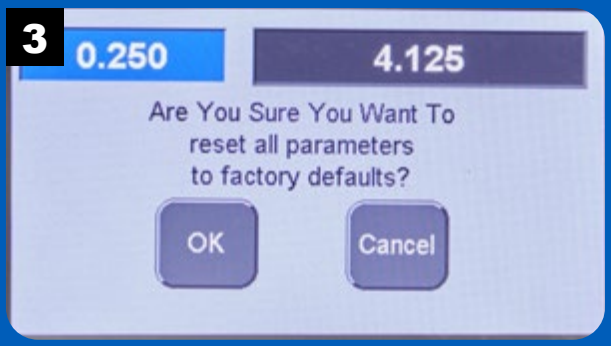
NOTE: This joint requires a stop block on the fence to limit the depth of the dovetail socket.

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

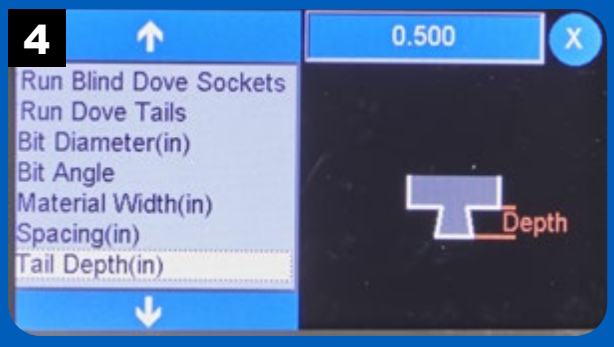
Dovetail Setup



The Clear Parameters function resets all of the parameters to their factory default values.



Press OK to reset parameter values, Cancel to abort this operation.



The Tail Depth is one parameter that controls the fit of the final half-blind dovetail joint. Note the recommended values and tips on the screen.

Enter the tail depth and press OK. To accept the default value displayed, press OK without entering a value.

Dovetail Setup *continued*

The Spacing parameter sets the center-to-center distance between the dovetails. Note the recommended spacing parameters and tips on the screen.

Set the spacing between tails by entering the value and pressing OK.

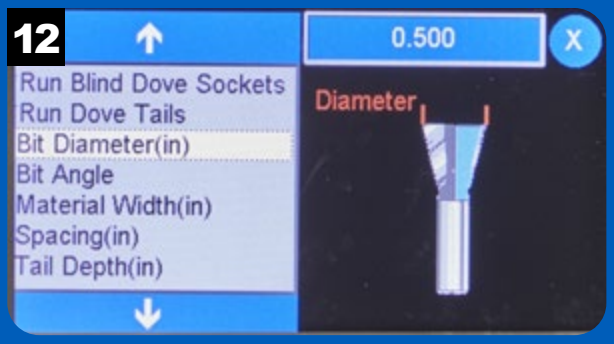
Enter the overall width of the material you're using to create the half-blind dovetail joints by pressing the value field.

Enter the width of the workpieces and press OK.

The Bit Angle is the angle of the dovetail router bit. This value can usually be found on the product packaging for the bit.

Enter the angle of the dovetail and press OK.

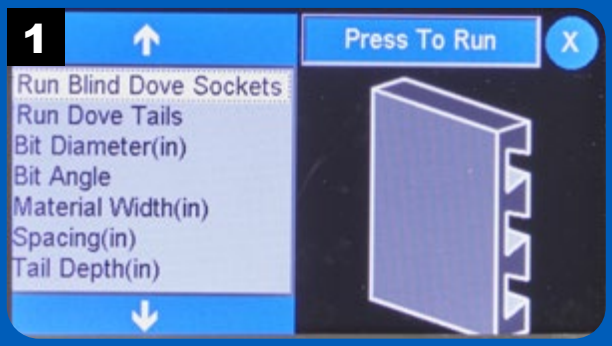
Dovetail Setup *continued*



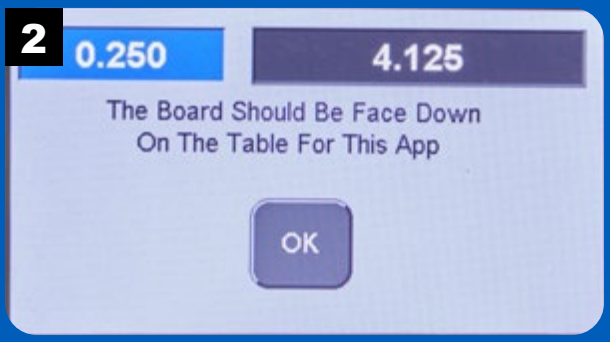
Set the bit diameter by pressing the value field in the upper right. **NOTE:** It's best to measure the actual diameter of the bit with calipers rather than rely on the stated diameter.

Enter the measured diameter of the router bit and press OK.

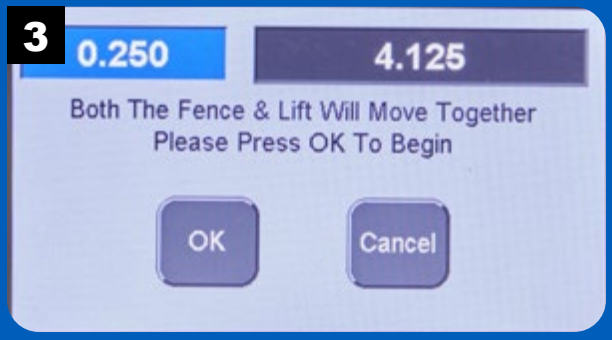
Run Dovetail Sockets



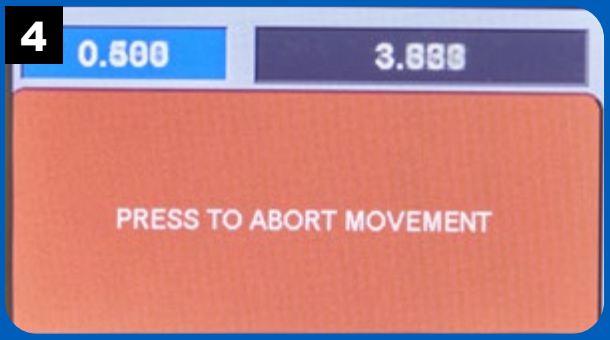
Select Run Blind Dove Sockets to begin cutting the sockets in the ends of the workpieces.



Place the workpiece facedown and press OK. NOTE: This operation requires a stop block on the fence. Refer to this video for details: {ADD LINK HERE}

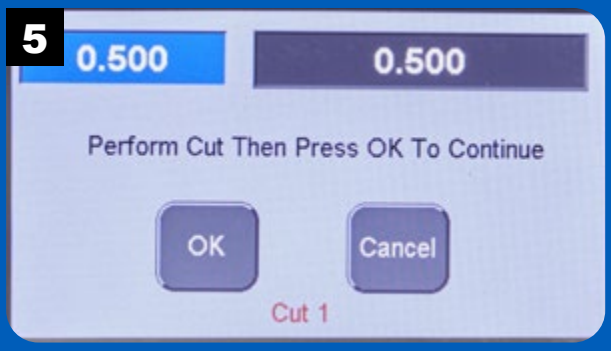


Pressing OK will move the router fence and lift to the starting position for routing the sockets. The fence will move multiple times until all of the sockets are routed.

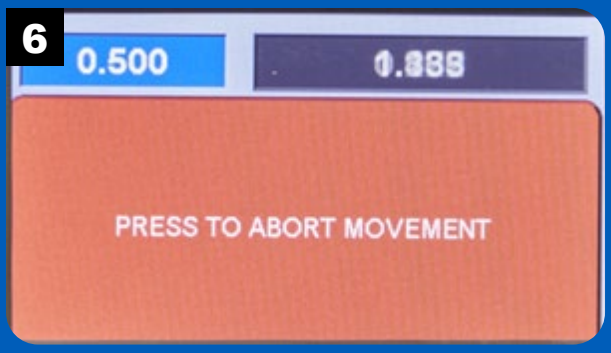


As the router lift and fence move, you can press the red button to abort the movement if necessary. Otherwise, the fence and lift continue to move to the starting position.

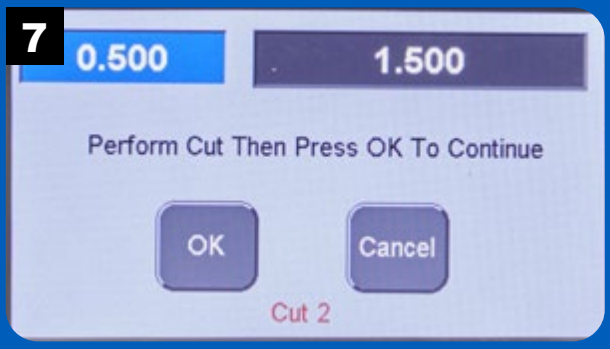
Run Dovetail Sockets *continued*



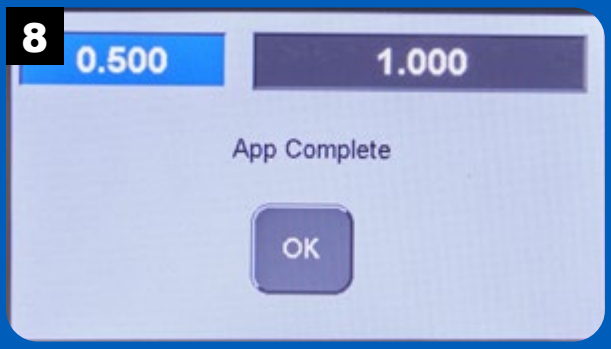
With the workpiece against the fence, make the first cut until the workpiece contacts the stop block.



The fence will move to reposition the workpiece for the next cut.

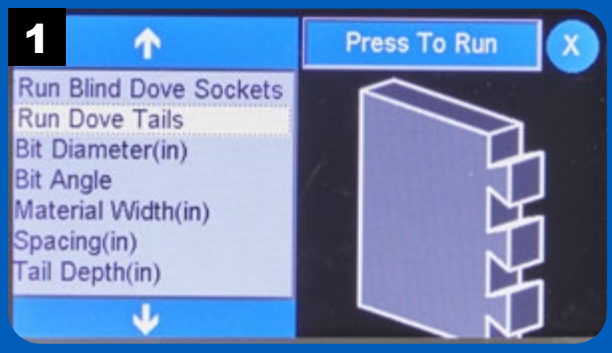


Repeat until all the sockets are cut on the end of the workpiece. After the last socket is routed, the app will stop.

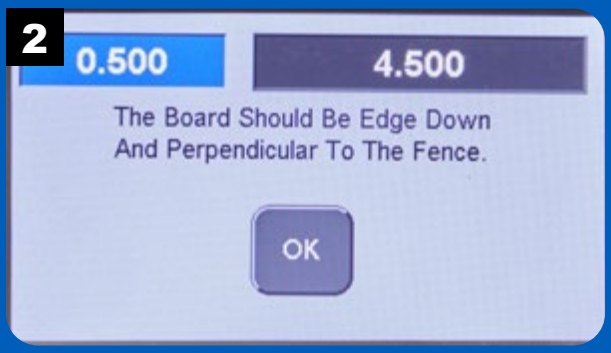


Press OK to continue to the app used for cutting the tails in the mating workpieces for the half-blind dovetail joints.

Run Dovetails



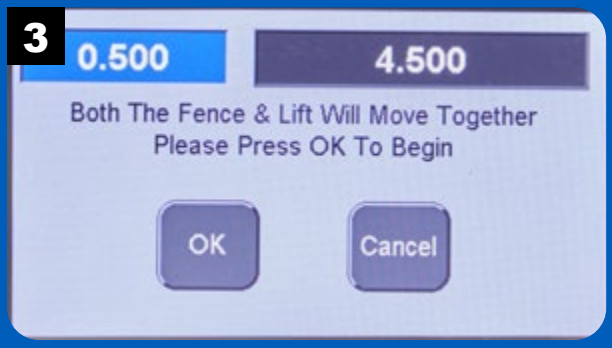
Select Run Dove Tails to rout the pins, or tails, that fit into the sockets you routed earlier.



Clamp the workpiece to the miter fence with the end against the table and the edge against the fence. Press OK to continue.

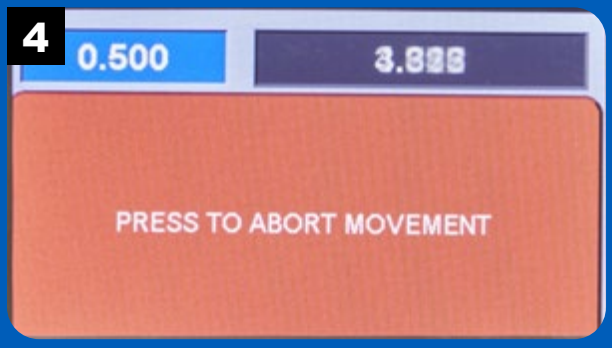
Run Dovetails *continued*

3



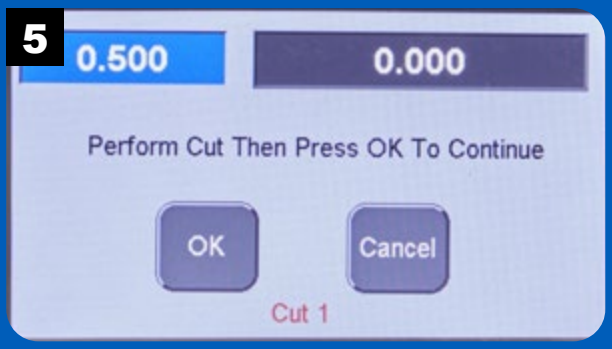
Pressing OK moves the router fence and lift to the starting position for routing the tails. The fence moves multiple times until all of the tails are routed.

4



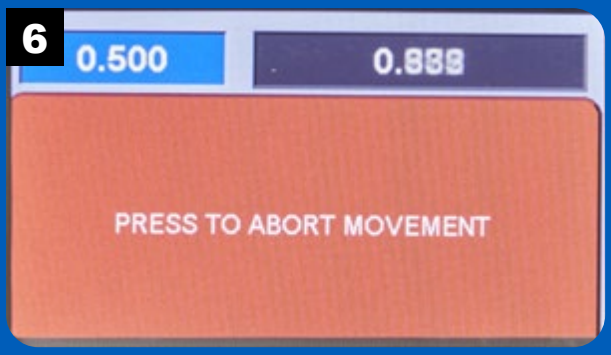
As the router lift and fence move, you can press the red button to abort the movement if necessary. Otherwise, the fence and lift continue to move to the starting position.

5



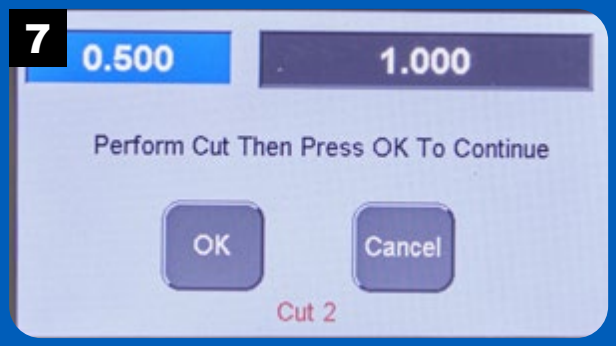
With the workpiece clamped to the miter gauge, make the first cut to define one edge of the first dovetail.

6



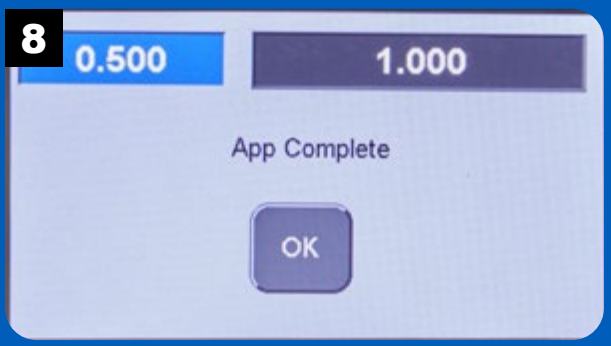
The fence will move to reposition the workpiece for the next cut.

7



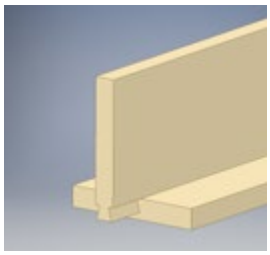
Repeat yntil all the tails are cut on the end of the workpiece. After the last tail is routed, the app will stop.

8



When all of the tails have been cut, the app stops automatically. Press OK to exit.

Sliding Dovetail Joints



A sliding dovetail joint provides a rock-solid method of joining pieces at right angles. This joint is often used to join shelves to cabinet sides.

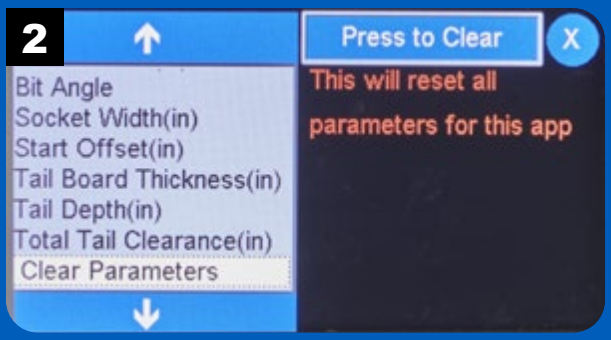
The sliding dovetail joint consists of a dovetail-shaped groove cut in one piece. On the mating piece, a dovetail-shaped tongue is routed on the edge of the workpiece. The tongue slides into the groove, locking the pieces together.

1

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

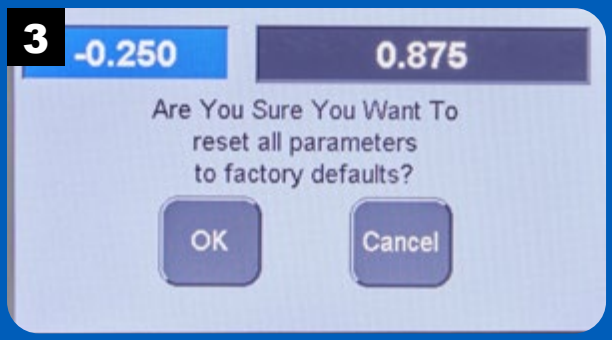
Sliding Dovetail Sockets Setup

2



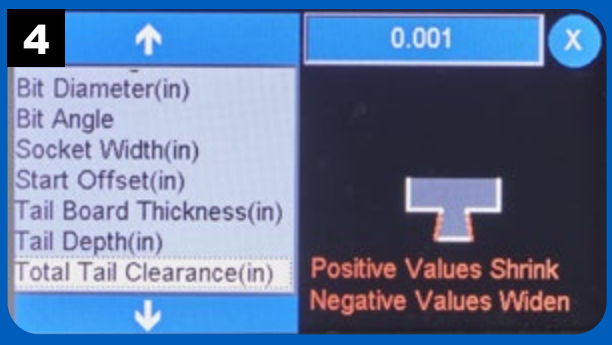
The Clear Parameters function resets all of the parameters to their factory default values.

3



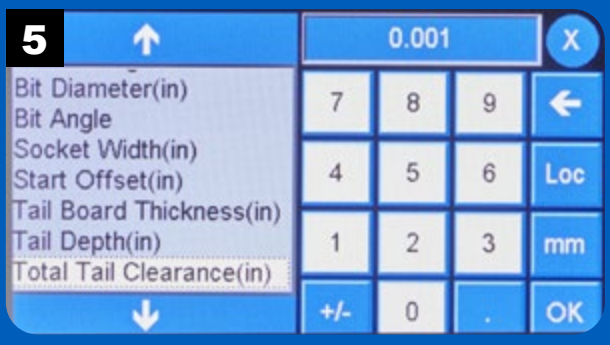
Press OK to reset parameter values, Cancel to abort this operation.

4



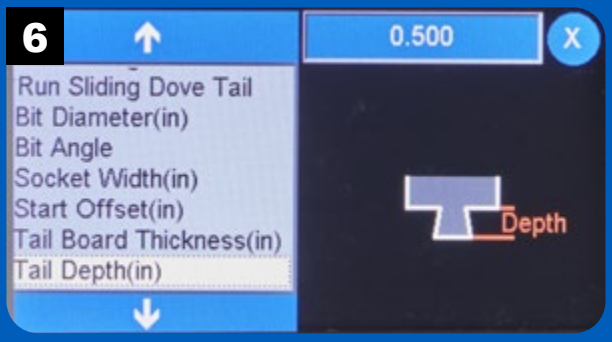
Press the down arrow to access other parameters for sliding dovetail joints. The Total Tail Clearance sets the amount of material to be removed from the width of the dovetail.

5

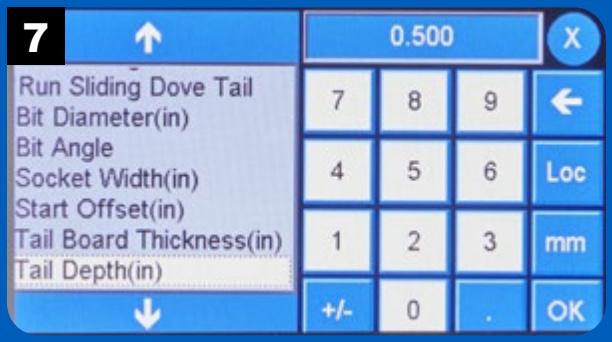


Enter the value for the Total Tail Clearance and press OK. NOTE: The value entered will be applied to *each side* of the dovetail.

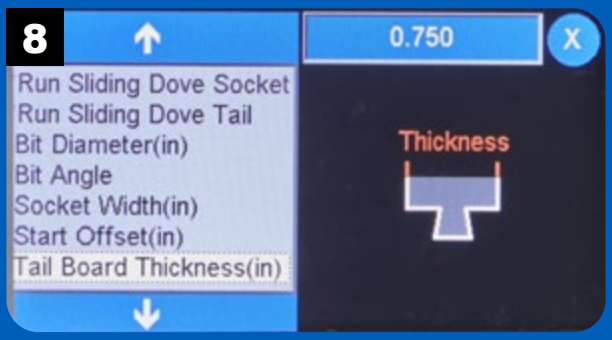
Sliding Dovetail Setup *continued*



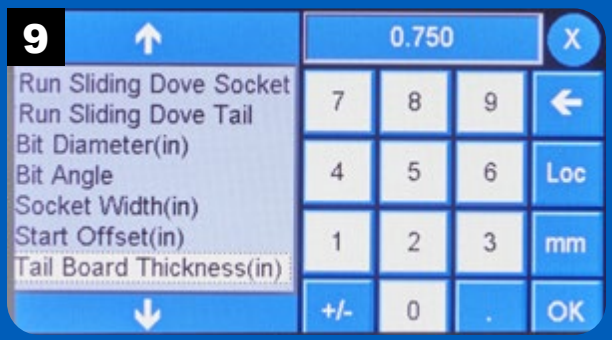
The Tail Depth option sets the length (depth) of the dovetail.



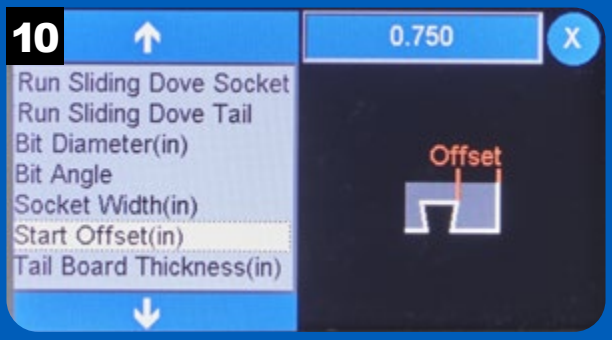
Enter the desired value for the depth of the dovetail and press OK.



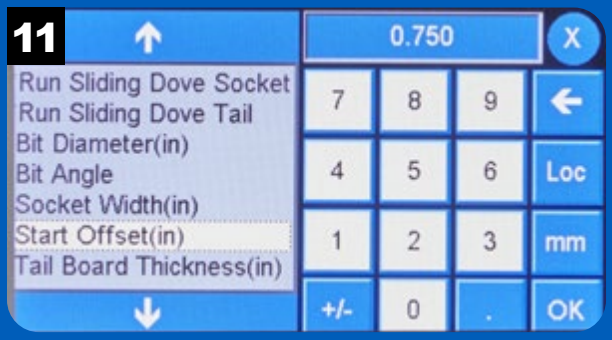
Select the Tail Board Thickness option to set the thickness of the workpiece to be routed to create the dovetail.



Enter the thickness of the workpiece and press OK.

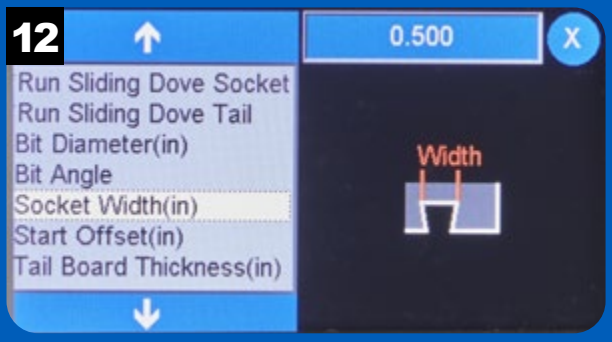


Choose the Start Offset function to set the distance of the socket edge from the edge of the workpiece.

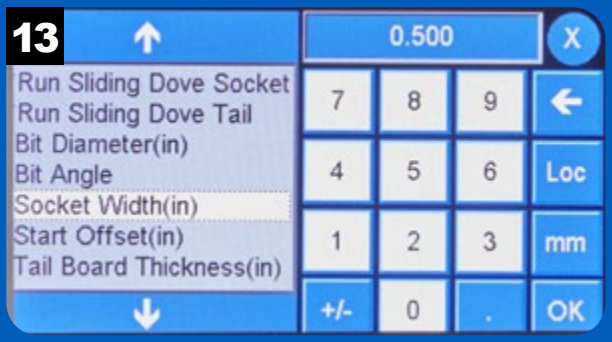


Enter the offset value and press OK.

Sliding Dovetail Setup *continued*



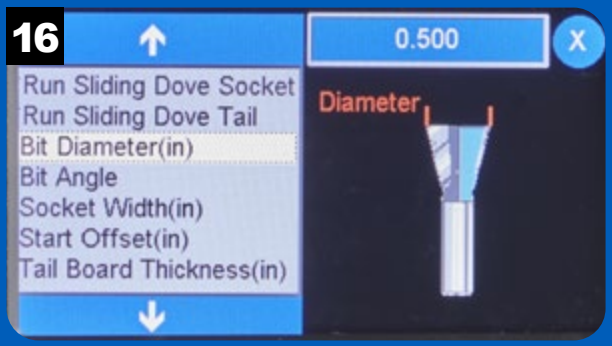
Select Socket Width to set the width of the dovetail socket. If this value is greater than the bit diameter, the *RS1000 Pro* will adjust the fence position to rout the socket in multiple passes.



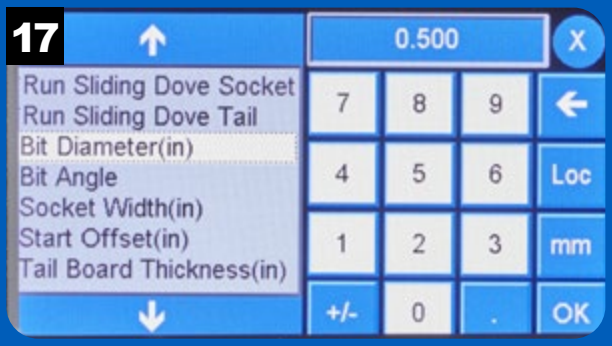
Enter the desired width for the dovetail socket and press OK.

The Bit Angle is the angle of the dovetail router bit. This value can usually be found on the product packaging for the bit.

Enter the angle of the dovetail and press OK.

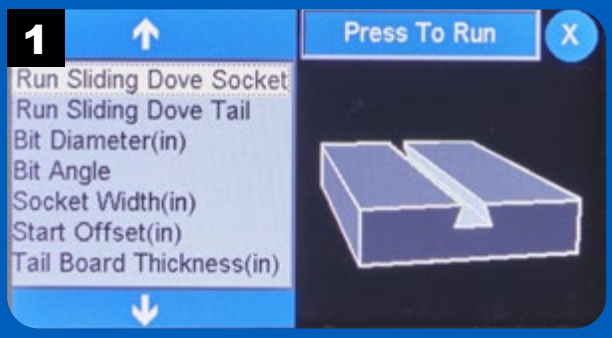


Set the bit diameter by pressing the value field in the upper right. **NOTE:** It's best to measure the actual diameter of the bit with calipers rather than rely on the stated diameter.

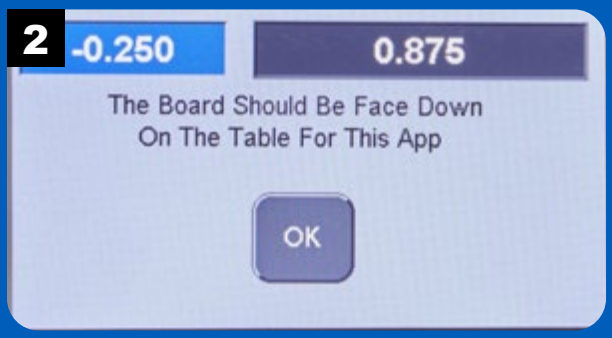


Enter the measured diameter of the router bit and press OK.

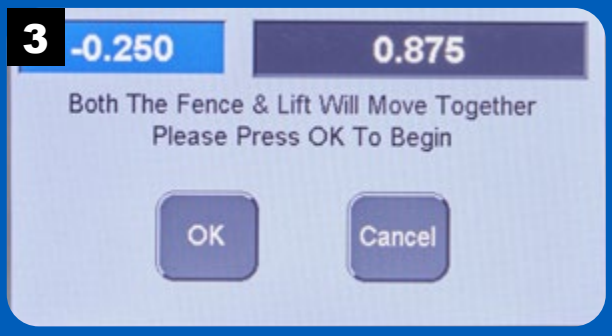
Run Sliding Dovetail Sockets



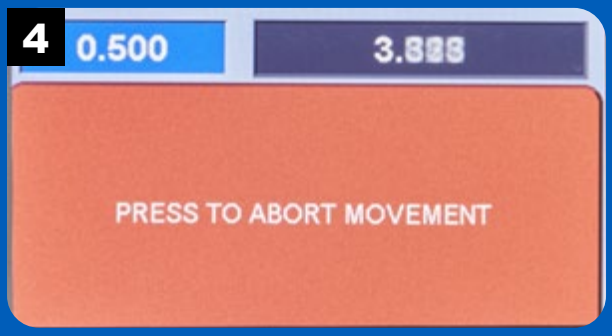
After the parameters are set, select Run Sliding Dove Socket.



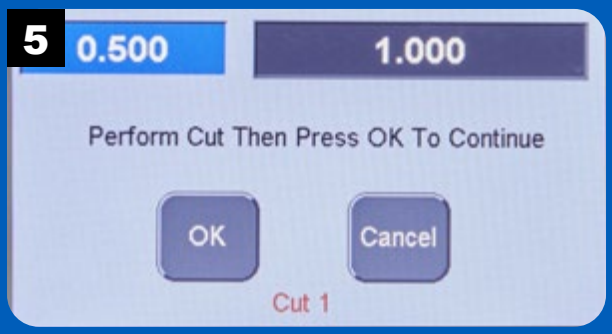
Place the workpiece face down on the router table.



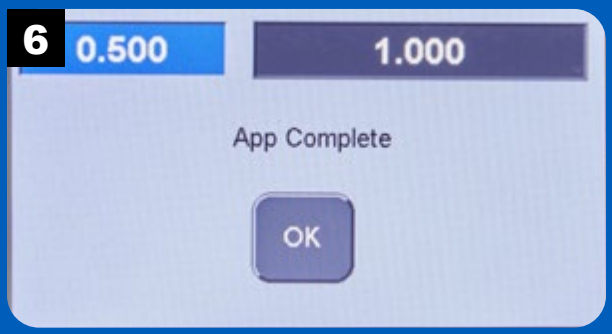
Press OK to move the fence and lift to the starting position for cutting the dovetail socket.



While the fence and lift are moving, you have the option to abort the movement, if necessary.

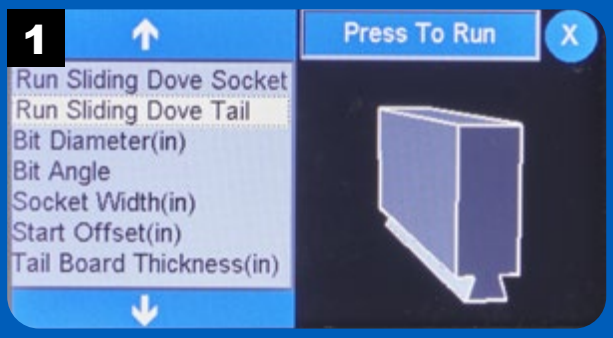


Make a pass over the router bit to create the dovetail socket and press OK.

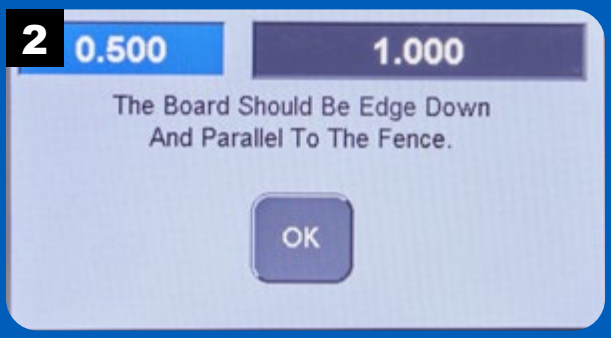


Press OK to continue to the next step of routing the dovetail tongue on the mating workpiece.

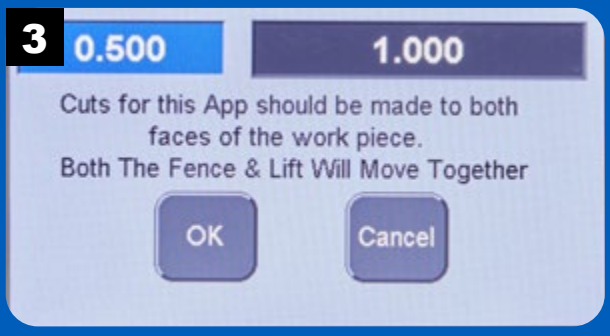
Run Sliding Dovetail



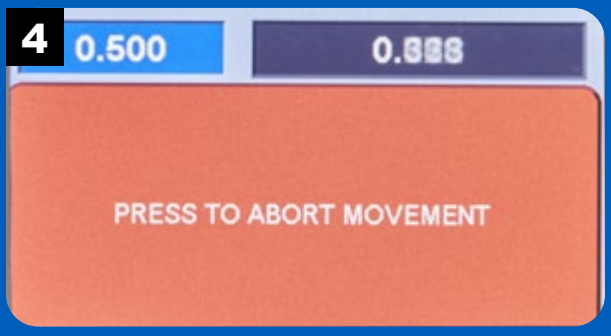
Select Run Sliding Dove Tail to begin routing the dovetail.



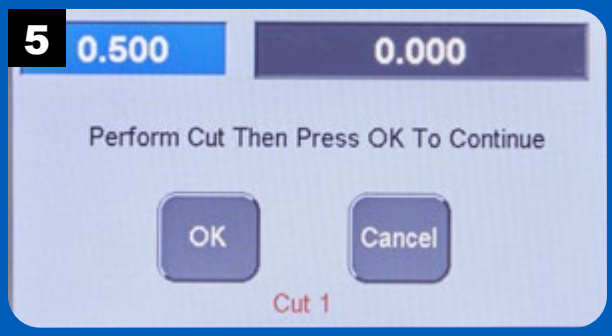
Place the workpiece vertically with one edge against the router table and one face against the fence and press OK.



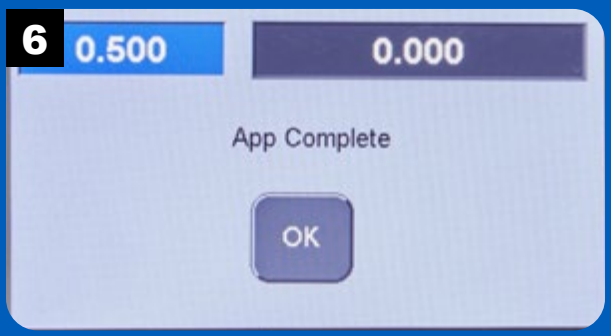
To create the dovetail, each side of the workpiece must be routed. Press OK to move the fence and lift to the starting position.



While the fence and lift are moving, you have the option to abort the operation.

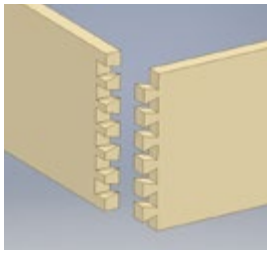


With the workpiece tight against the fence and table, make a pass to form one side of the tongue. Rotate the workpiece and make another pass to complete the dovetail. Press OK.



With the dovetail complete, press OK.

Through Dovetail Joints



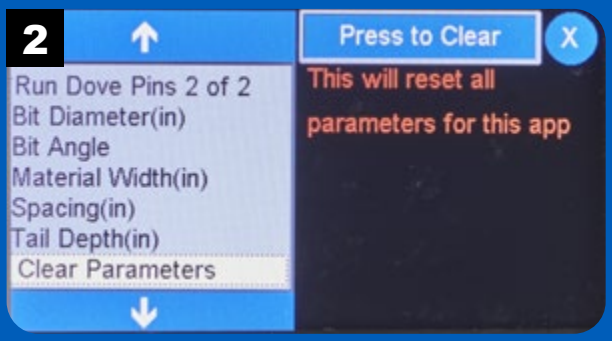
Gap-free through-dovetail joints are the hallmark of quality woodworking. The joints are not only attractive, they create a strong mechanical bond.

Creating through-dovetails on the **RS1000 Pro** requires three routing operations: One to create the dovetails, and two operations to create the mating pins.

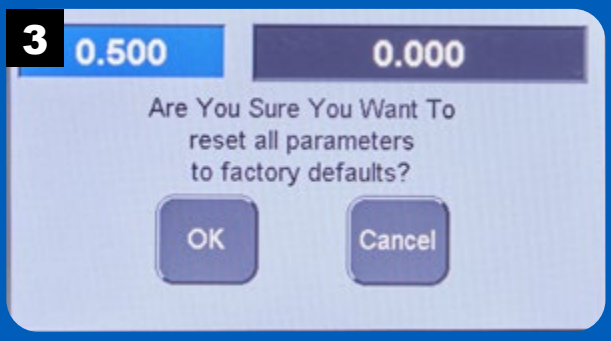
NOTE: A miter gauge is required for routing through dovetails. We recommend the **RS1000 Pro** miter gauge accessory for professional results.

NOTE: Visit **www.NextWaveCNC.com/appguide** or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

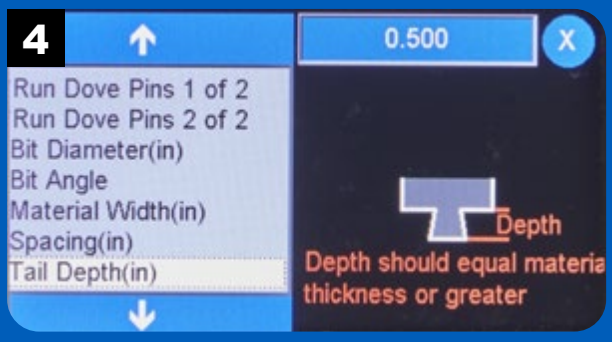
Through Dovetail Setup



The Clear Parameters function resets all of the parameters to their factory default values.



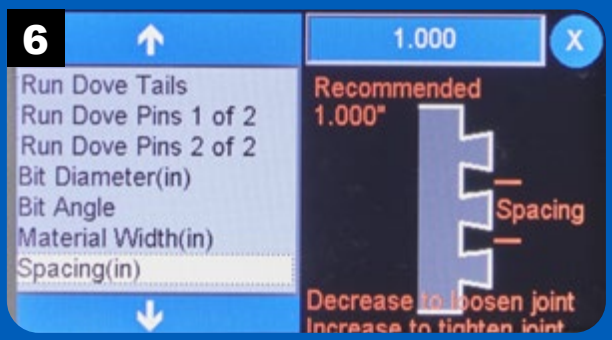
Press OK to reset parameters to their default values. Press Cancel to leave the parameters set as is.



The Tail Depth option sets the depth (or length) of the dovetails. **NOTE:** The depth cannot be greater than the thickness of the mating pin board.

Enter the desired depth of the dovetail and press OK.

Through Dovetail Setup *continued*



The Spacing option sets the distance between the dovetails. Note the tips and recommendations on the screen.

Enter the value for the desired spacing and press OK.

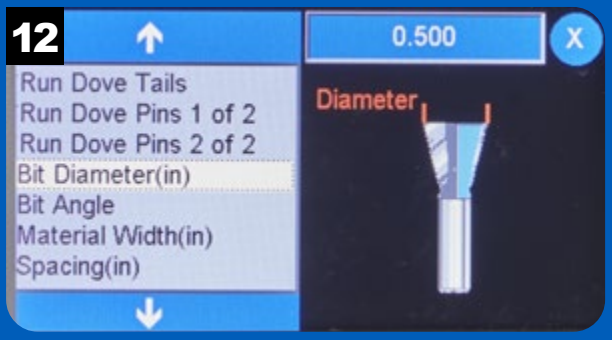
Set the parameter for the width of the workpieces by selecting Material Width.

Enter the workpiece width and press OK.

Select Bit Angle to set the parameter for the angle of the router bit. You can usually find this information on the product packaging.

Enter the bit angle and press OK.

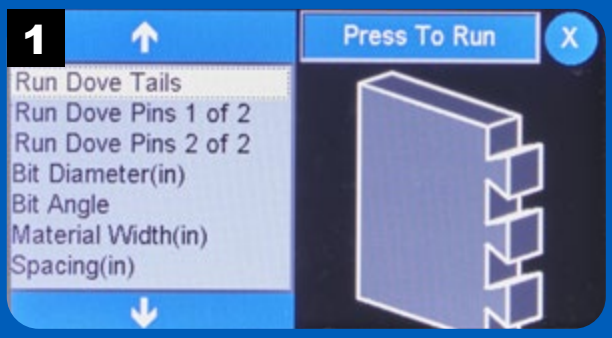
Through Dovetail Setup



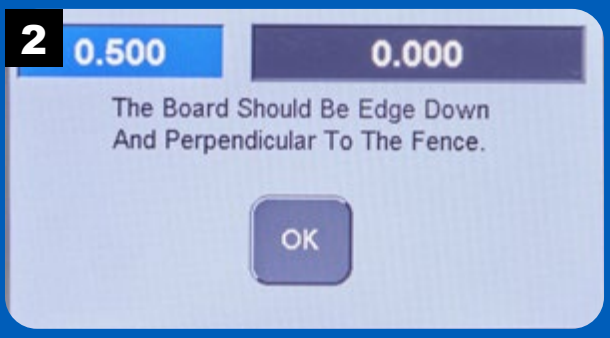
Set the bit diameter by pressing the value field in the upper right. **NOTE:** It's best to measure the actual diameter of the bit with calipers rather than rely on the stated diameter.

Enter the measured bit diameter and press OK.

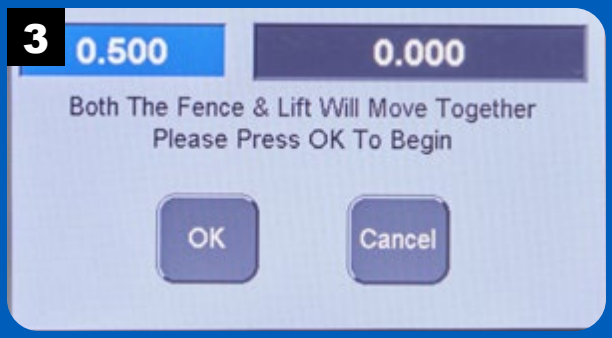
Run Through Dovetail Tails



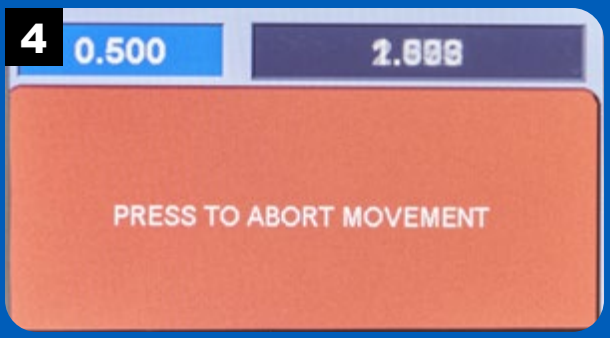
Run Dove Tails runs the app to create the dovetails on the tail boards.



Clamp the workpiece to the miter gauge with one face against the miter gauge, one edge against the fence, and the end tight to the router table. Press OK to continue.

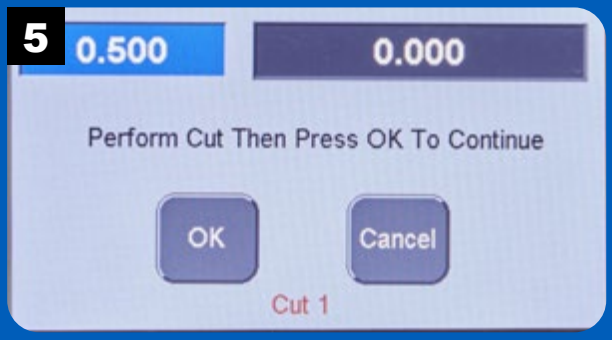


After pressing OK, the lift and fence will move to the starting position for routing the dovetails.

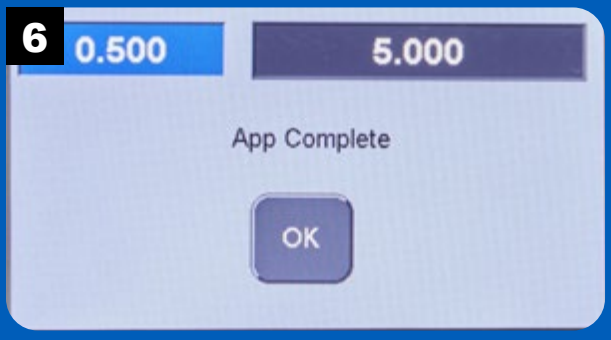


While the fence and lift are moving, you have the option to abort the operation, if necessary.

Run Through Dovetail Tails *continued*

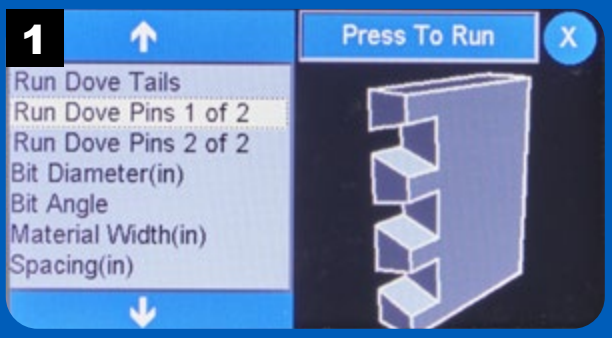


Make the first pass and press OK. Repeat the process until all of the dovetails are routed.

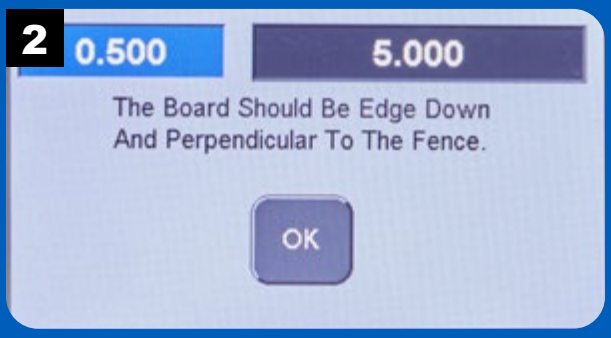


After the last pass, the app is finished. Press OK to move onto cutting the pins.

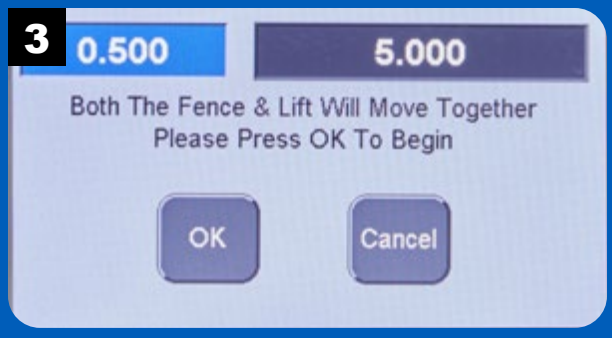
Run Through Dovetail Pins (1 of 2)



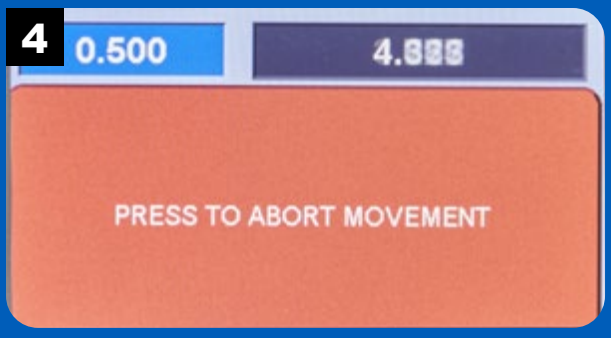
Leave the dovetail bit installed and select Run Dove Pins to make the first pass that removes the bulk of the waste between the pins.



As with the tail board, clamp the workpiece to the miter gauge with one edge against the fence and the end against the router table. Press OK to continue.



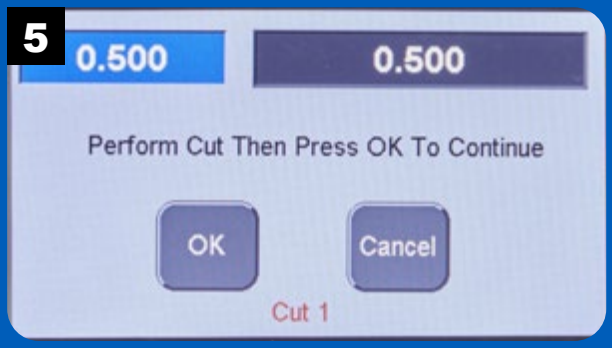
The fence and lift move to the starting position after pressing OK.



If necessary, you can abort the movement of the lift and fence.

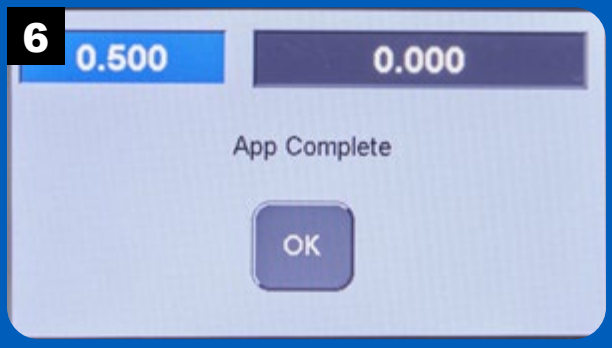
Run Through Dovetail Pins (1 of 2) *continued*

5



Make the first pass over the bit and press OK. Repeat this process until the app finishes.

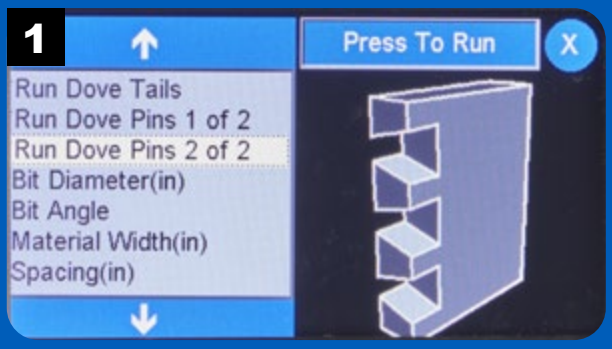
6



After the final pass, the app is complete. Press OK to continue.

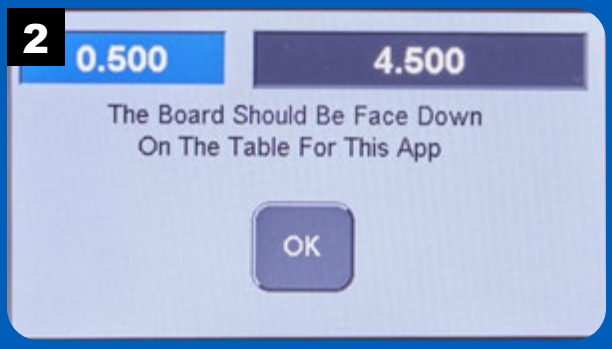
Run Through Dovetail Pins (2 of 2)

1



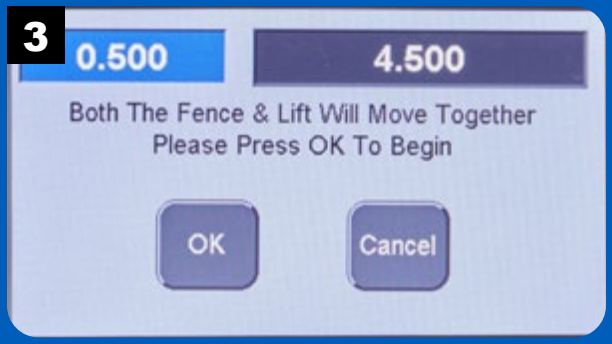
Still leaving the dovetail bit in place, press Run Dove Pins 2 of 2. This operation creates the angled sides of the pins to mate with the dovetails.

2



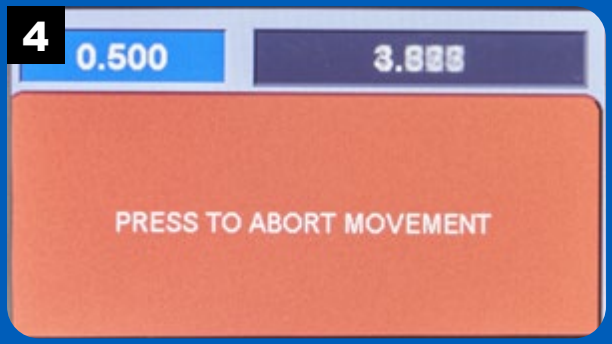
Remove the miter gauge and place the workpiece face down on the router table. Press OK.

3



Press OK to move the lift and fence to the starting position to finish routing the pins.

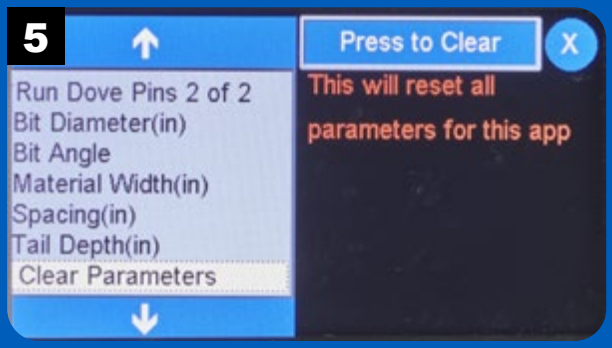
4



If necessary, you can abort the movement of the fence and lift.

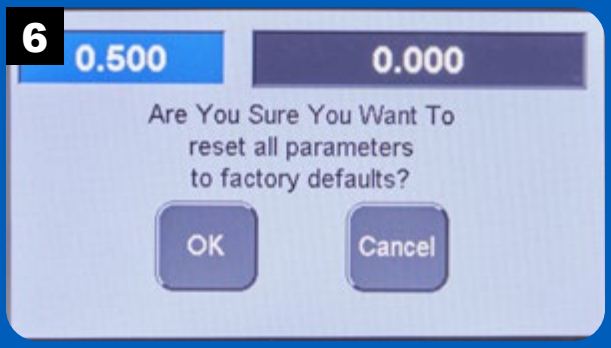
Run Through Dovetail Pins (2 of 2) *continued*

5



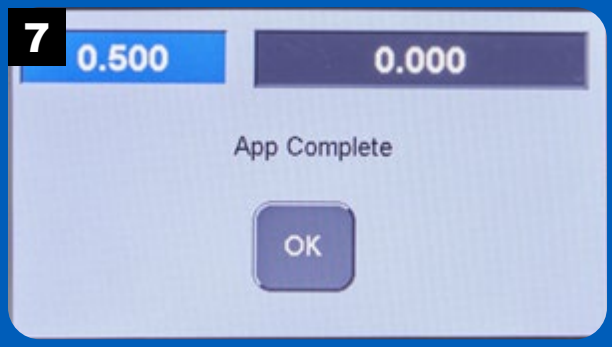
NOTE: When running this app, stop the cut when the bit reaches the baseline (or bottom) of the pins.
Visit www.NextWaveCNC.com/appsguide for more informa-

6



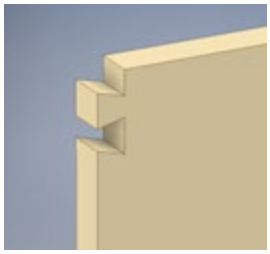
Make the first cut and press OK. Repeat the process until the app ends.

7



Press OK to exit the app. **NOTE:** The inside faces of the pins will have a faceted surface that is not visible when the joint is assembled.

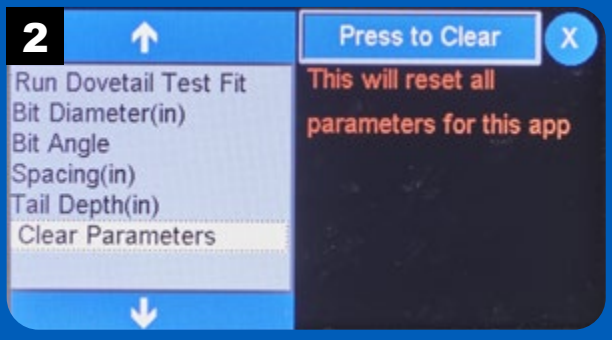
Dovetail Test Fit



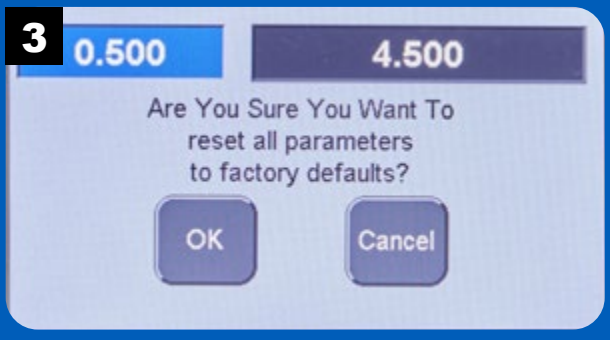
To ensure gap-free joints when routing dovetails, it's helpful to make test cuts before routing the final workpieces. The Dovetail Test Fit app creates a test dovetail you can use to adjust any parameters as needed for a tight fit. We recommend using a cutoff or scrap piece the same thickness as the final workpieces.

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

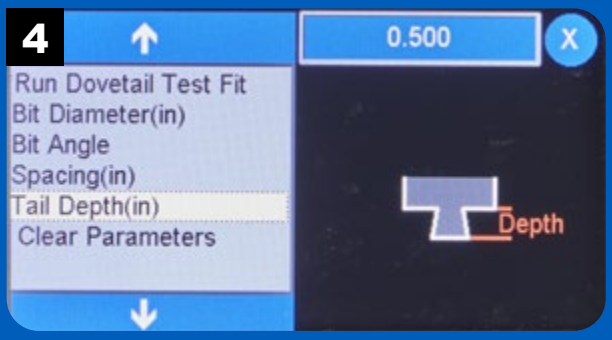
Dovetail Test Fit Setup



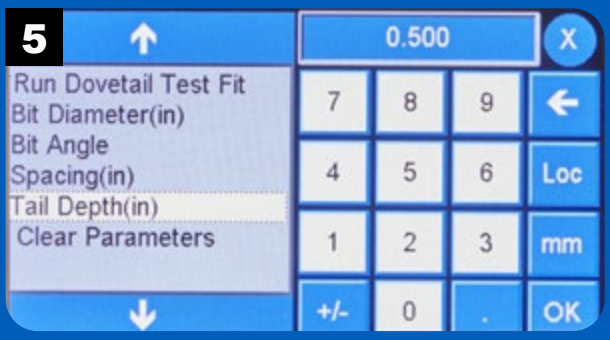
The Clear Parameters function resets all of the parameters to their factory default values.



Press OK to reset parameters to their default values. Press Cancel to leave the parameters set as is.

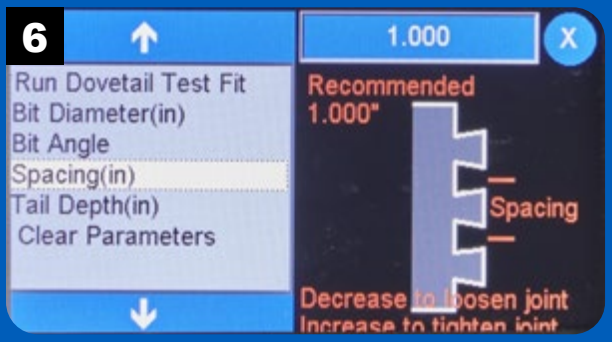


The Tail Depth option sets the depth (or length) of the dovetails. **NOTE:** The depth cannot be greater than the thickness of the mating pin board.

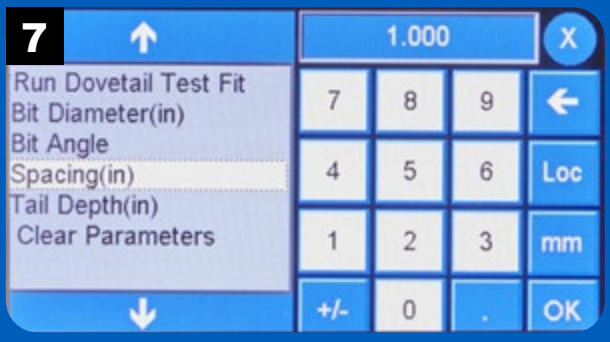


Enter the desired depth of the dovetail and press OK.

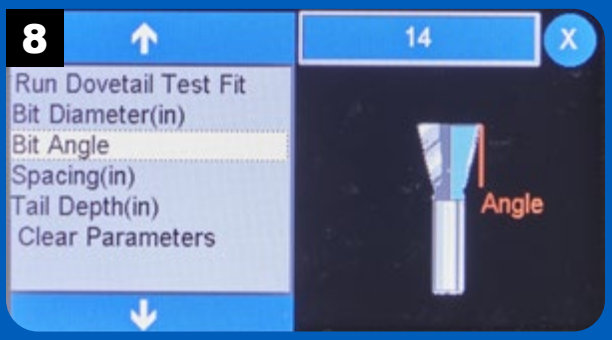
Dovetail Test Fit Setup *continued*



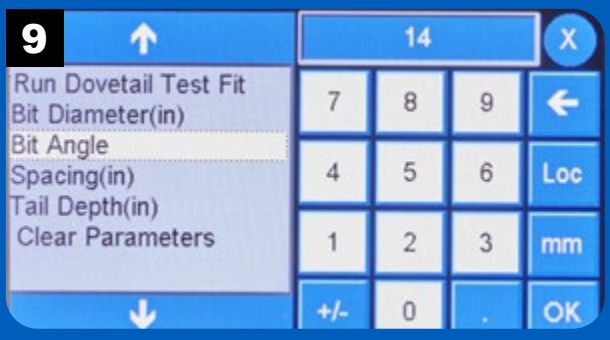
The Spacing option sets the distance between the dovetails. Note the tips and recommendations on the screen.



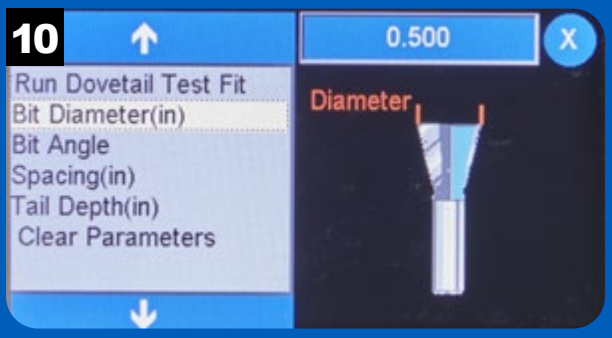
Enter the value for the desired spacing and press OK.



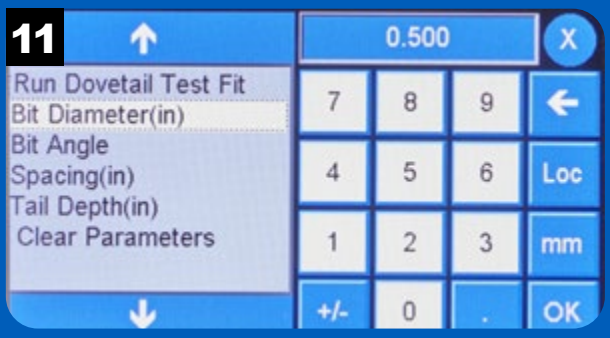
Select Bit Angle to set the parameter for the angle of the router bit. You can usually find this information on the product packaging.



Enter the bit angle and press OK.

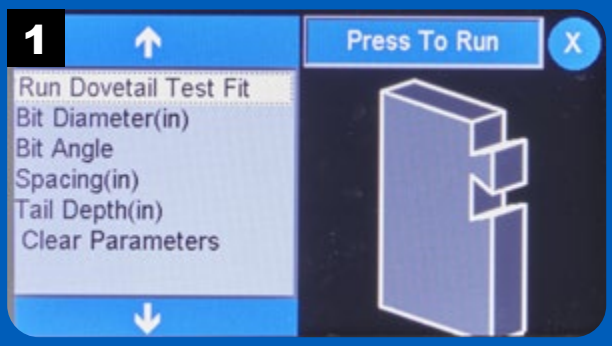


Set the bit diameter by pressing the value field in the upper right. **NOTE:** It's best to measure the actual diameter of the bit with calipers rather than rely on the stated diameter.

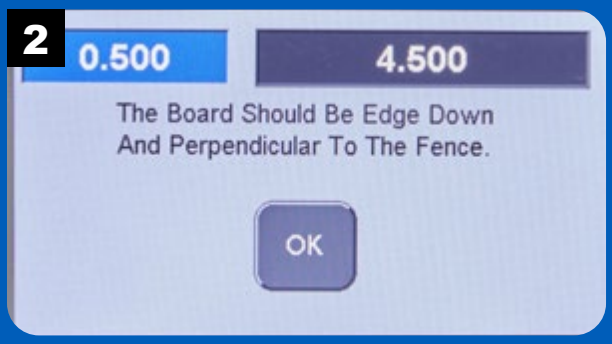


Enter the measured bit diameter and press OK.

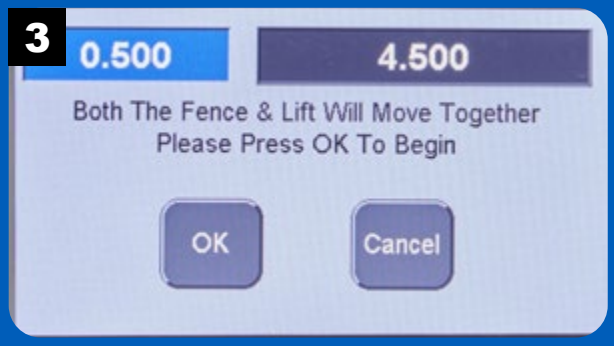
Run Dovetails Test Fit



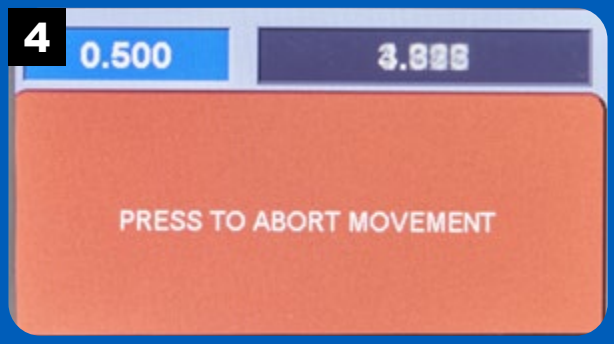
After setting the parameters, press Run Dovetail Test Fit to start the app. Select Press To Run to start.



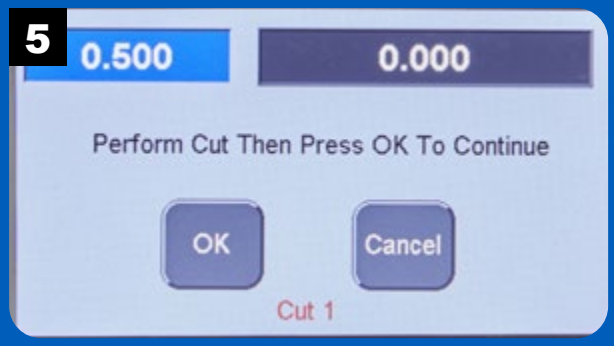
Clamp the workpiece to the miter gauge with one edge against the fence and the end tight to the router table. Press OK.



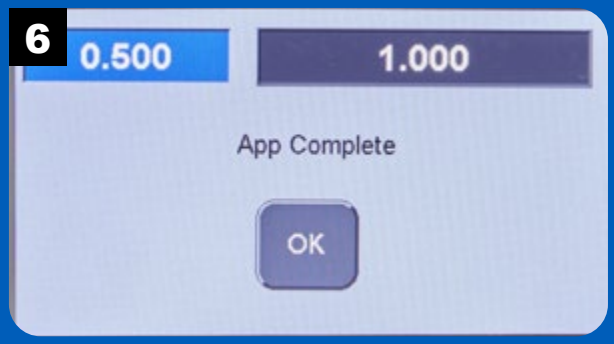
Press OK to move the lift and fence to the starting position to cut a dovetail.



During the movement of the lift and fence, you have the option to abort, if necessary.



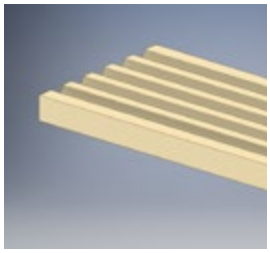
Make the first cut and press OK. Repeat until the app is complete.



Press OK to exit the app.

Fluting

Flutes are one option for creating decorative, parallel grooves in a workpiece. Using a core box router bit, you can easily create flutes with the **RS1000 Pro**.

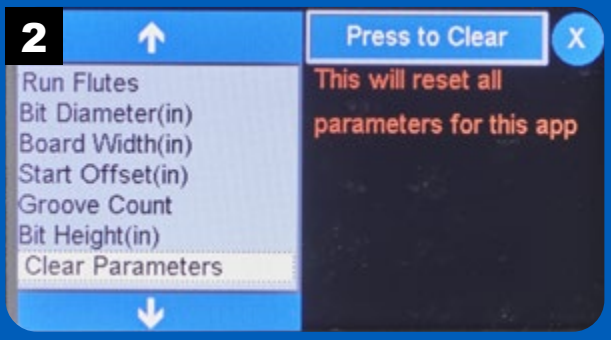


1

NOTE: Visit **www.NextWaveCNC.com/appguide** or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

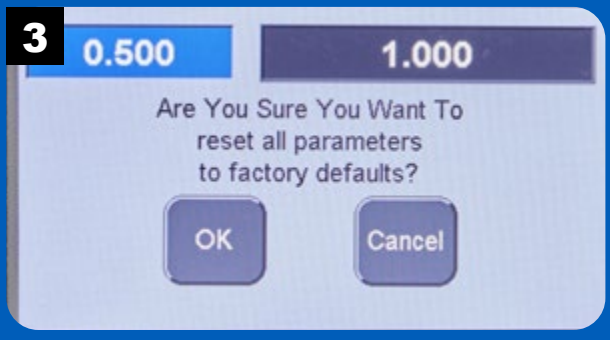
Flutes Setup

2



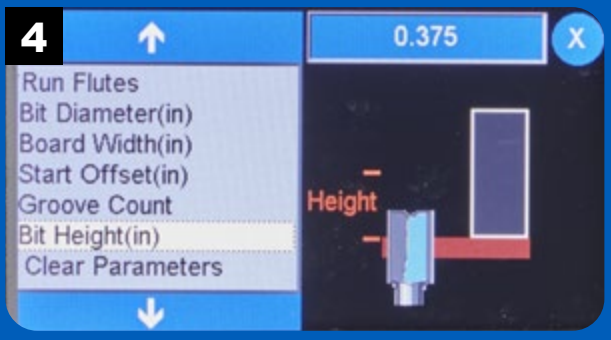
The Clear Parameters function resets all of the parameters to their factory default values.

3



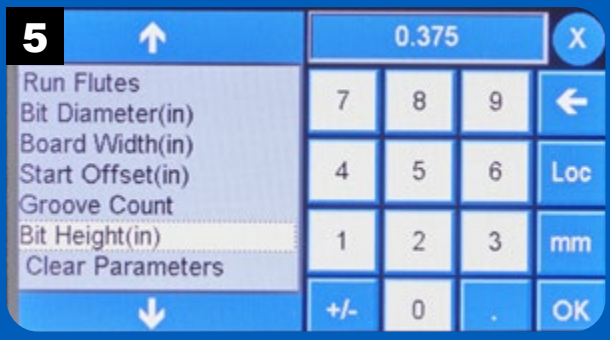
Press OK to reset parameters to their default values. Press Cancel to leave the parameters set as is.

4



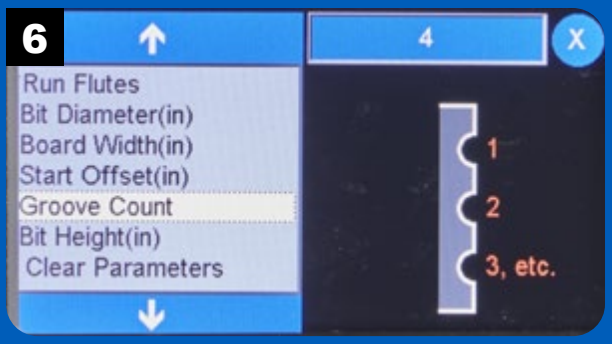
The height of the router bit determines the depth of the grooves. Set this value using the Bit Height option.

5

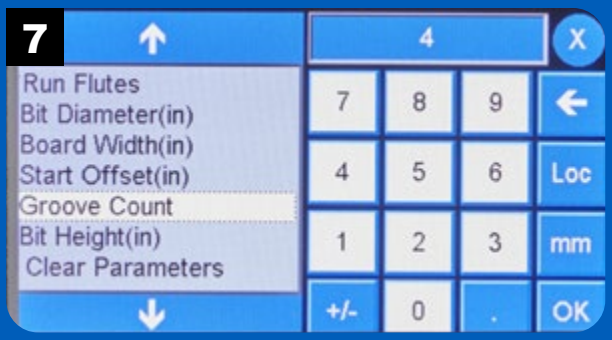


Enter the bit height and press OK.

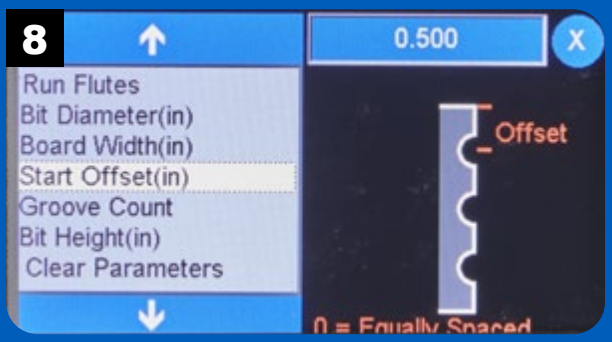
Flutes Setup *continued*



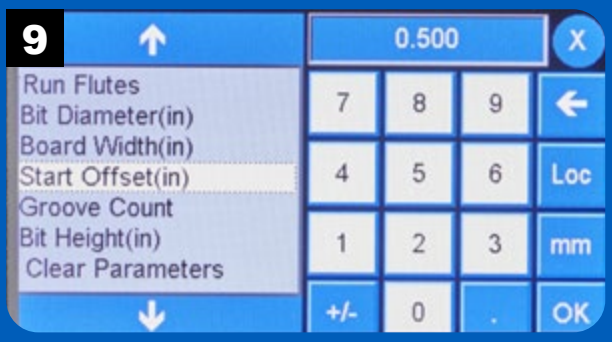
Specify the number of grooves to rout using the Groove Count option.



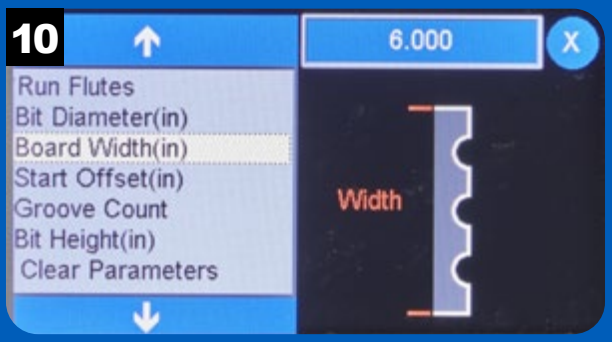
Enter the desired number of grooves and press OK.



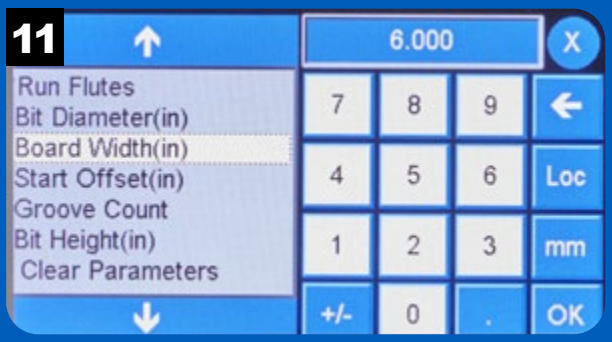
The Start Offset option sets the distance of the centerline of the first flute from the edge of the workpiece. NOTE: Entering a zero value spaces the flutes evenly across the widht.



Enter the desired distance for the offset and press OK.

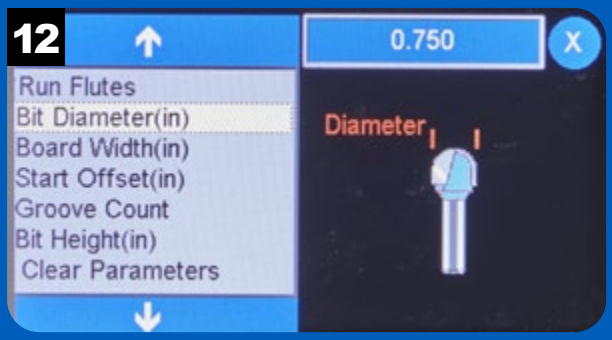


Press Board Width to enter the overall width of the workpiece by pressing the value button on the upper right.

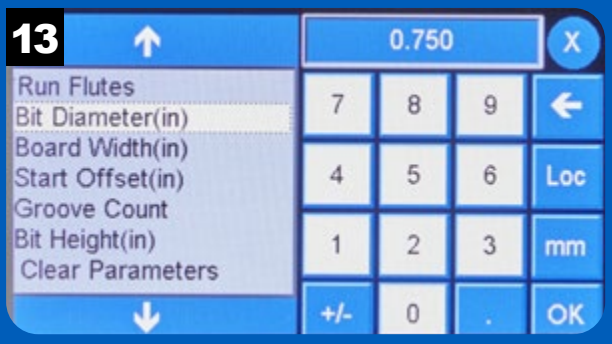


Enter the width of the workpiece and press OK.

Flutes Setup *continued*

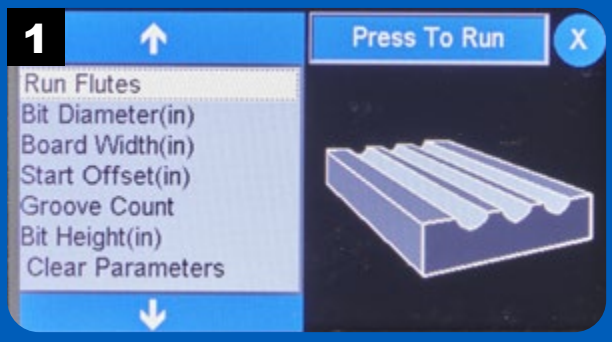


Set the bit diameter by pressing the value field in the upper right.

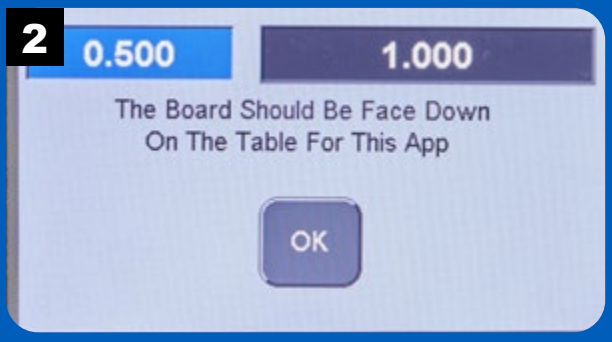


Enter the bit diameter and press OK.

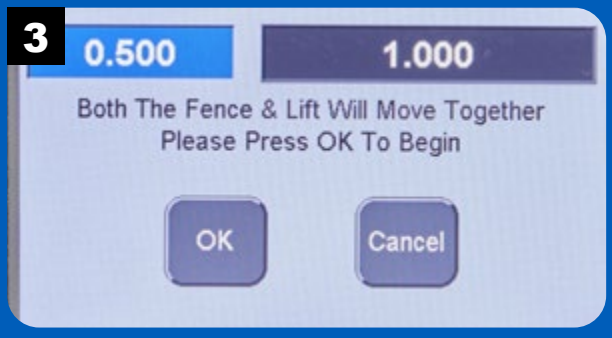
Run Flutes



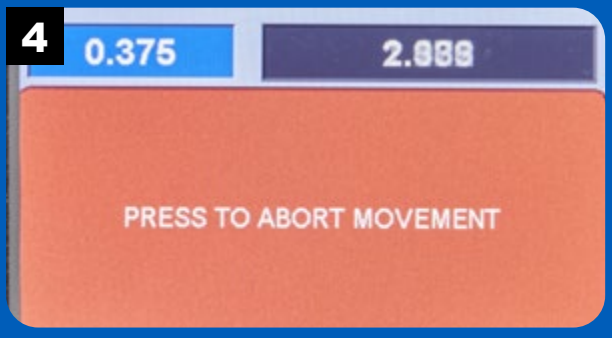
With the parameters set, press Run Flutes then Press To Run to start the app.



Place the workpiece face down on the router table and press OK.



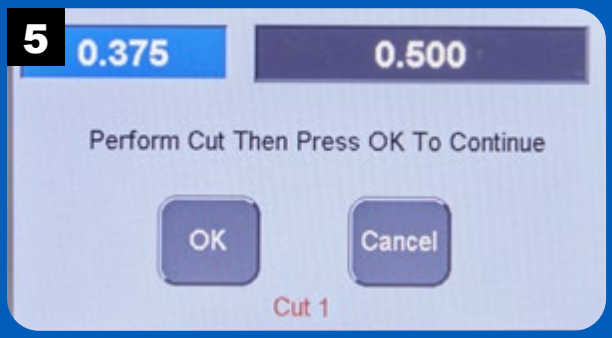
Press OK to move the lift and fence to the starting position for cutting the flutes.



During the movement of the lift and fence, you have the option to abort, if necessary.

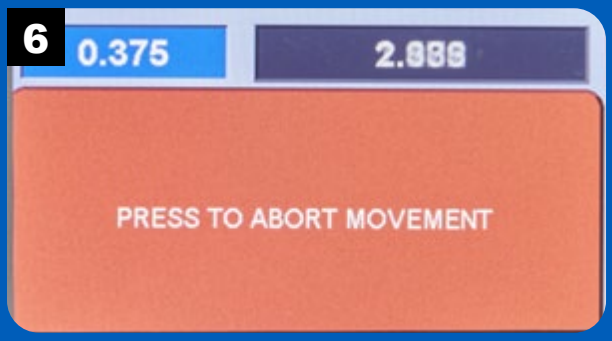
Run Flutes *continued*

5



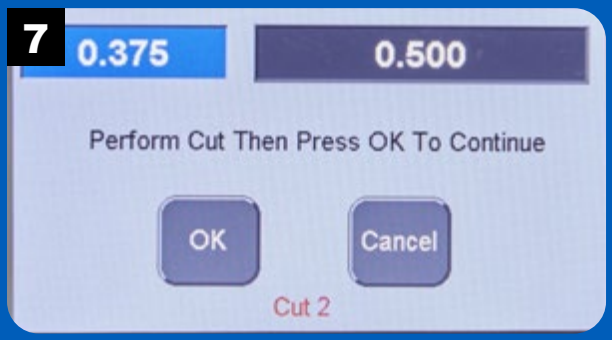
With the edge of the workpiece against the fence, make the cut to create the first flute. Press OK to move the fence to cut the second flute.

6



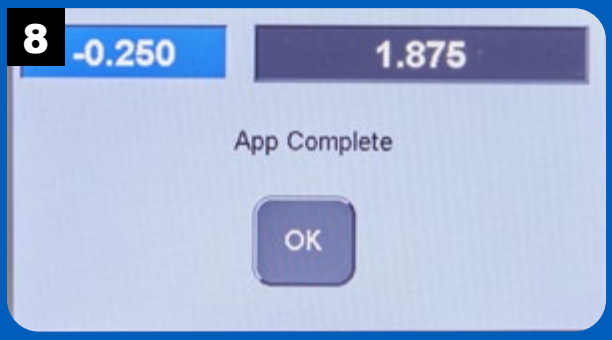
During the operation, you have the option to abort, if necessary.

7



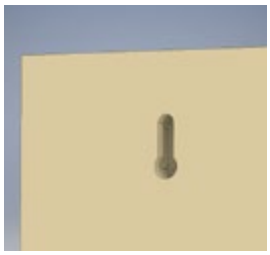
Repeat the operation for the remaining flutes, pressing OK after each cut.

8



After all the flutes are cut, the app stops. Press OK to exit the app.

Key Hole



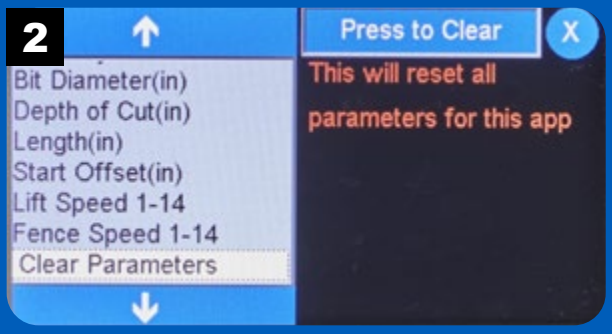
Key hole slots are most commonly used to create a hanging point on the back of frames. The key hole fits over a screw in the wall and locks into place.

The key hole router bit features two cutting diameters. The larger diameter at the end of the bit creates a clearance hole for a screw or nail head. The thinner shaft of the bit cuts the slot for the shank of the screw or nail.

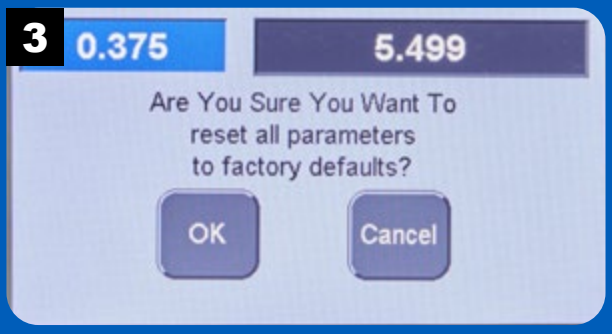
Select Run Key Hole from the list of apps to get started.

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

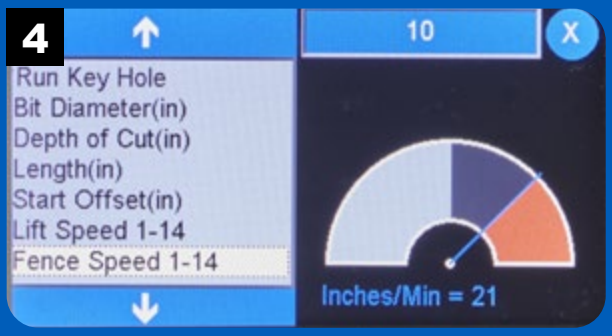
Key Hole Setup



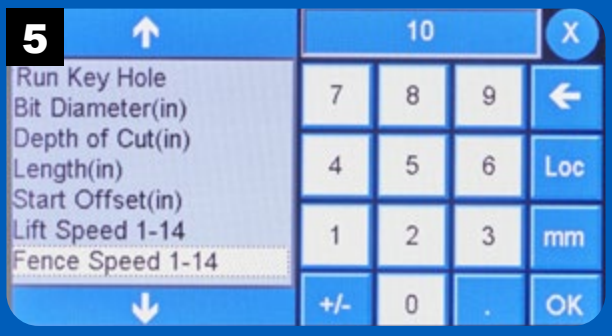
The Clear Parameters function resets all of the parameters to their factory default values.



Press OK to reset parameters to their default values. Press Cancel to leave the parameters set as is.

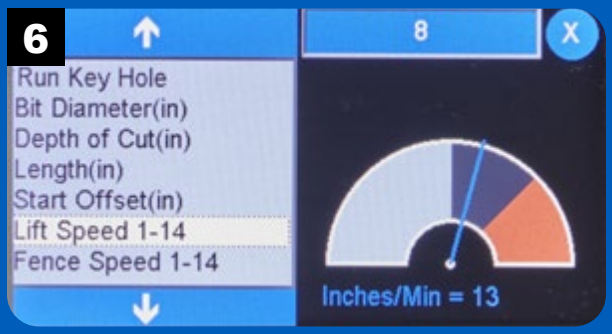


The fence speed can be set to a value from 1 to 14. Press Fence Speed to change the value.

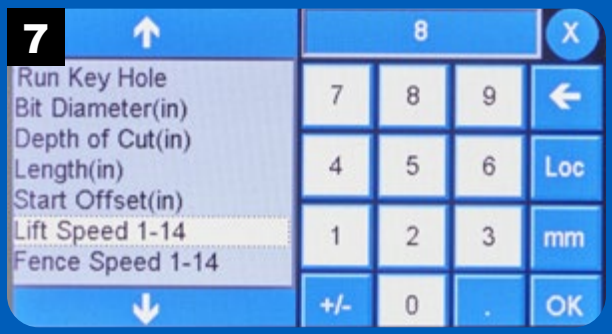


Enter the desired fence speed and press OK.

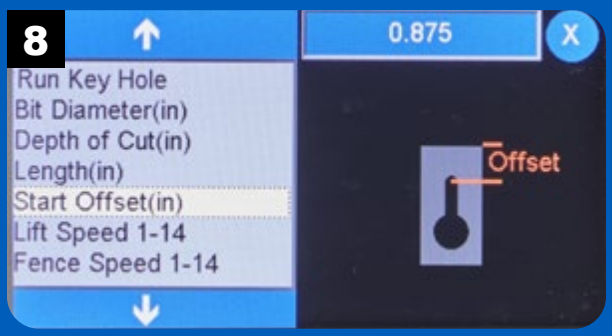
Key Hole Setup *continued*



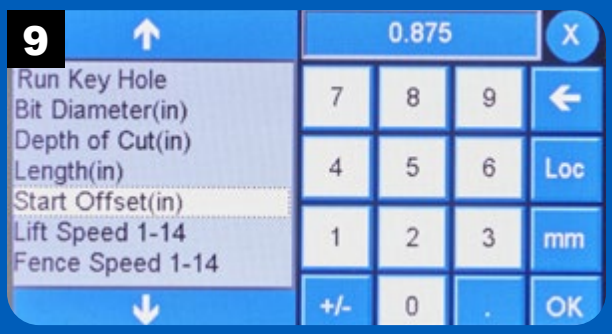
Change the speed of the router lift by entering a value between 1 and 14. The inches per minute is displayed for reference. For dense hardwoods, use a lower speed.



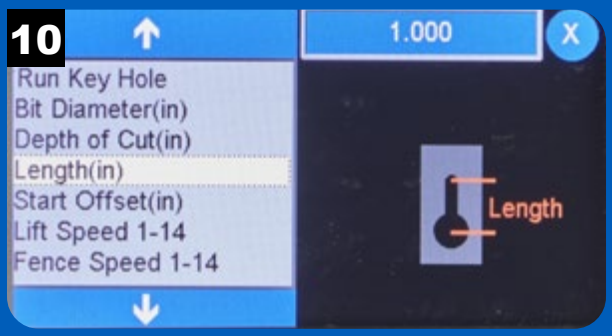
Enter the value for the lift speed and press OK.



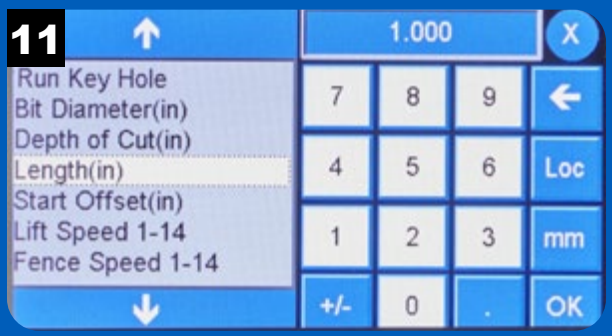
Use the Start Offset option to set the distance of the end of the slot from the edge of the workpiece.



Enter the offset value and press OK.

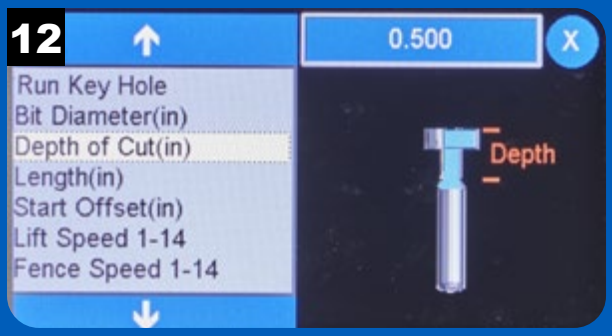


Use the Length parameter to set the overall length of the key hole slot. NOTE: The dimension entered is the center-to-center distance between the clearance hole and slot end.

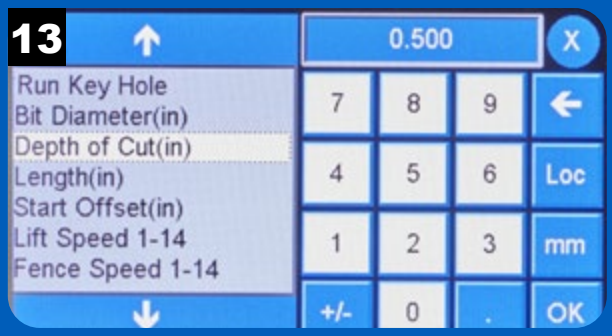


Enter the length of the slot and press OK.

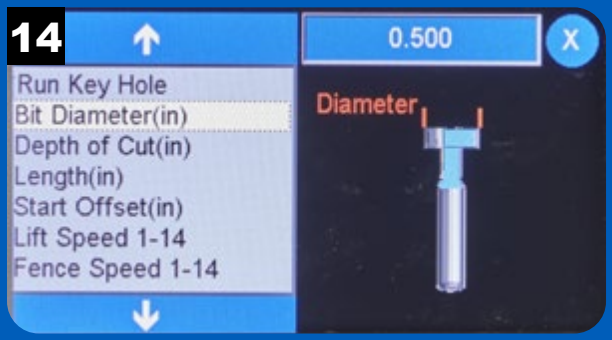
Key Hole Setup *continued*



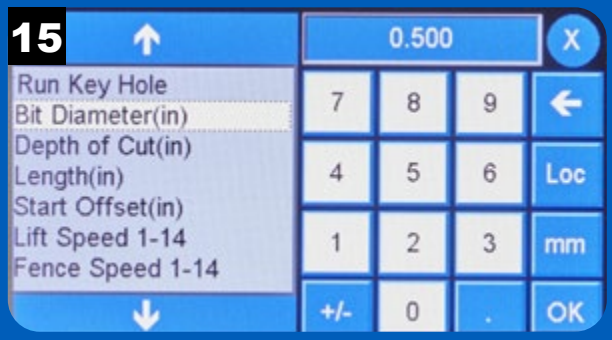
The Depth of Cut option sets the overall depth of the key hole slot in the workpiece.



Enter the desired depth of the key hole and press OK.

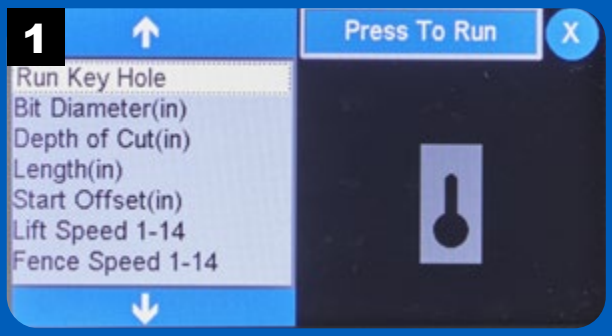


Select Bit Diameter to enter the diameter of the key hole router bit at its largest diameter.

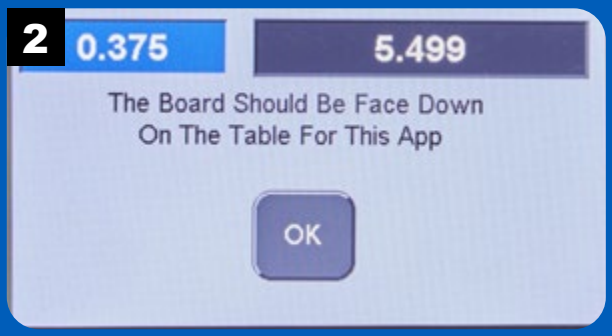


Enter the diameter and press OK.

Run Key Hole



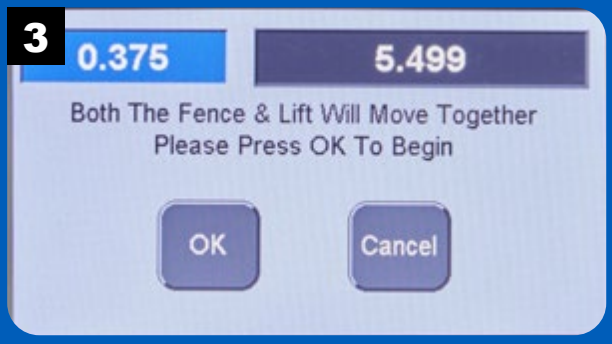
Choose the Run Key Hole option the Press To Run to start the app.



Place the workpiece with the back face on the table and one edge against the fence. Press OK. **NOTE:** Clamp a stop block to the fence to aid in positioning the workpiece for routing.

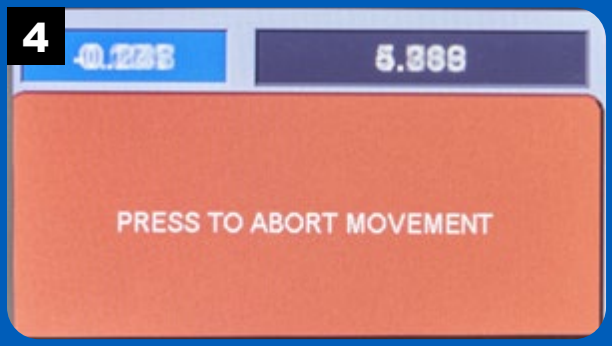
Run Key Hole *continued*

3



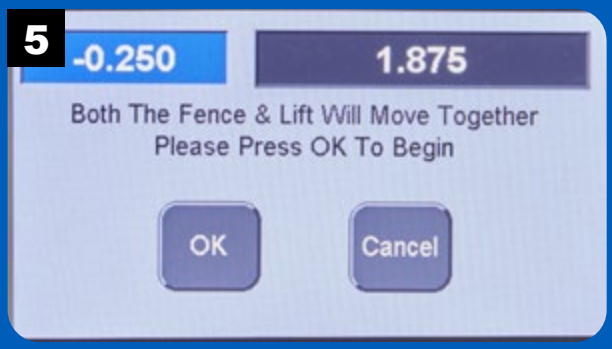
The fence and lift move into the starting position after pressing OK.

4



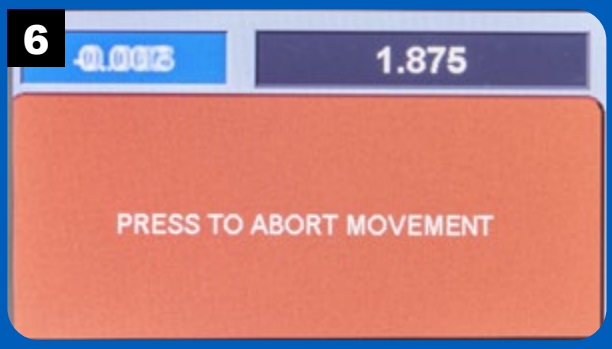
While the fence and lift are moving, you can abort the operation, if needed.

5



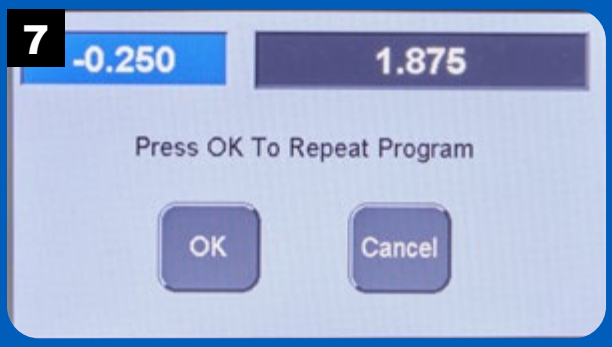
With the workpiece in position, press OK to start routing. The lift will raise and the fence will move forward then back. Keep the edge of the workpiece against the fence.

6



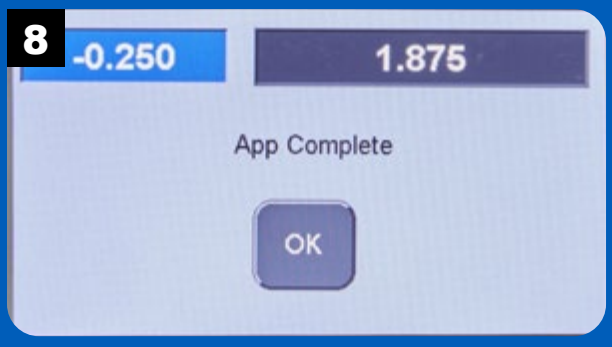
During the operation, you can abort the movement, if needed.

7



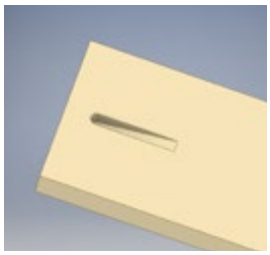
To cut another key hole, press OK. Otherwise, press Cancel.

8



Press OK to exit the app.

Pocket Hole

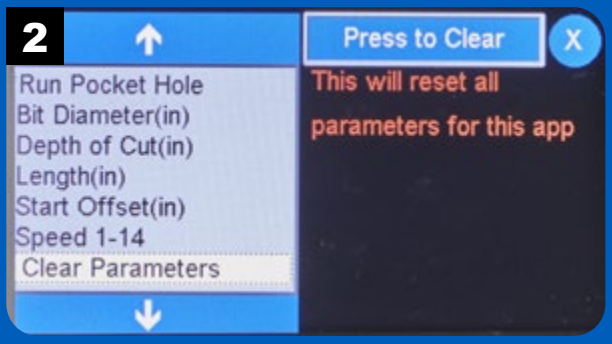


Pocket hole joinery provides a quick and easy way to join workpieces without a lot of fuss. The router forms a pocket, which is essentially, a ramped hole. Inside this hole a pocket screw joins the two workpieces.

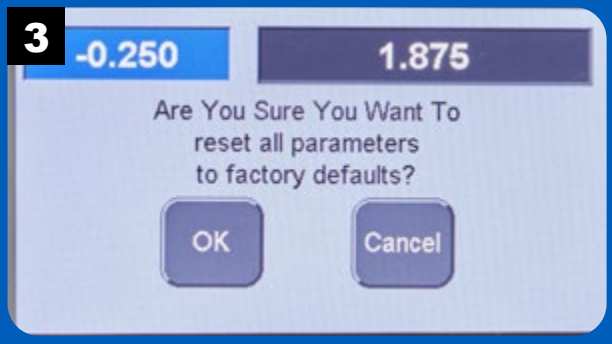
For best results, a plunge router bit is recommended. Also, use a stop block on the router table fence to accurately locate the pocket hole.

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

Pocket Hole Setup

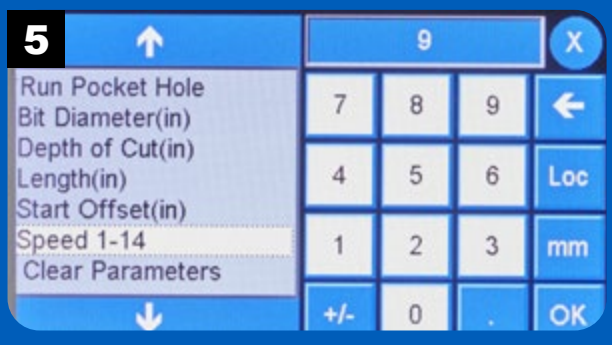


Use Clear Parameters to reset all of the parameter values to factory defaults.



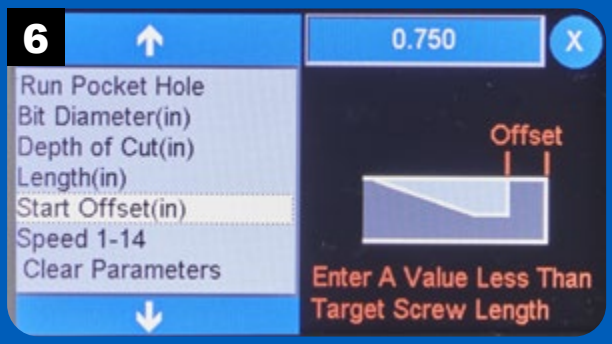
Press OK to reset the values of the parameters.

Use the Speed option to change the speed of the router lift and fence. Use lower speeds on dense hardwoods.

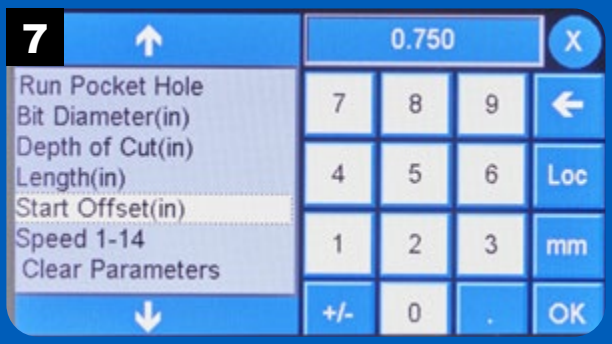


Enter the desired speed (from 1 to 14) and press OK.

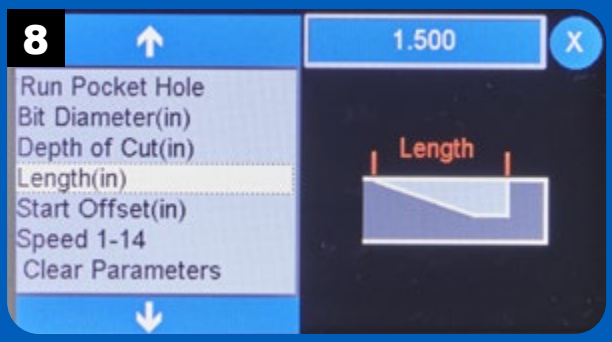
Pocket Hole Setup *continued*



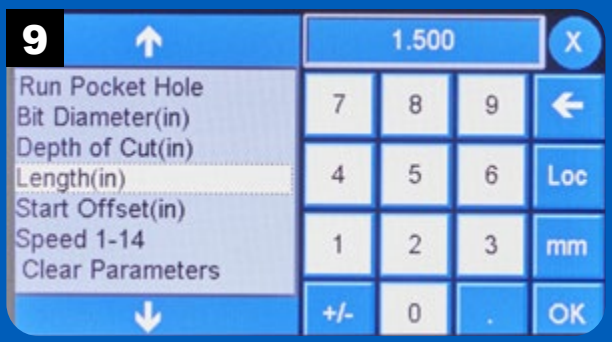
The Start Offset function sets the distance of the end of the pocket hole from the edge of the workpiece. This is determined by the screw length to be used.



Enter the offset value and press OK.

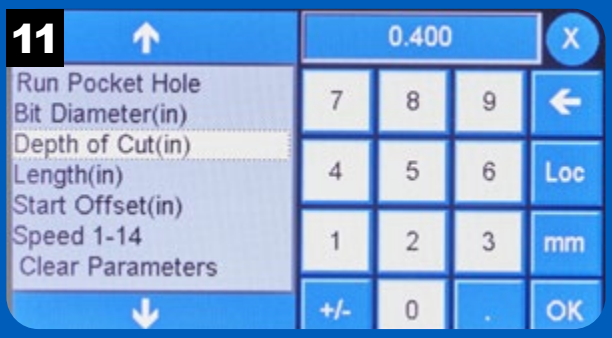


Select Length to establish the overall length of the pocket hole.



Enter the length and press OK.

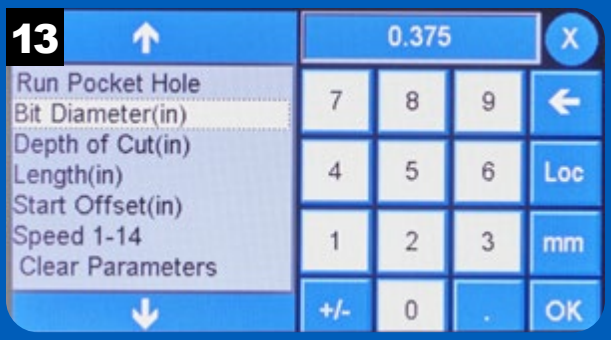
The Depth of Cut option sets the depth of the pocket hole at its deepest point. The value must be less than the thickness of the workpiece and may require some test cuts to refine it.



Enter the pocket hole depth and press OK.

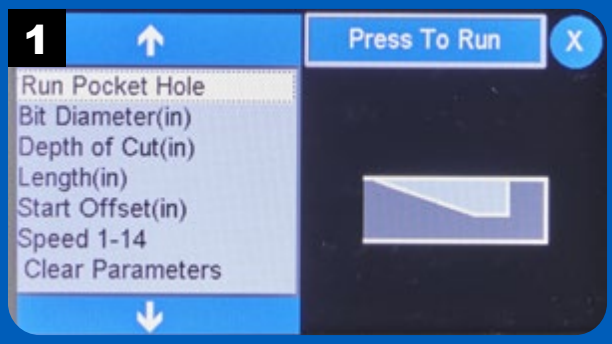
Pocket Hole Setup *continued*

The diameter of the router bit determines the width of the pocket hole. Select Bit Diameter to change this value.

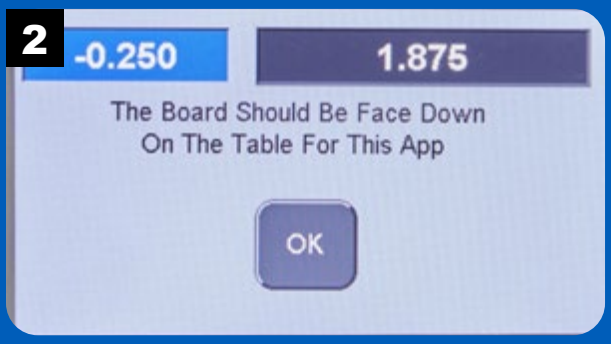


Enter the bit diameter and press OK.

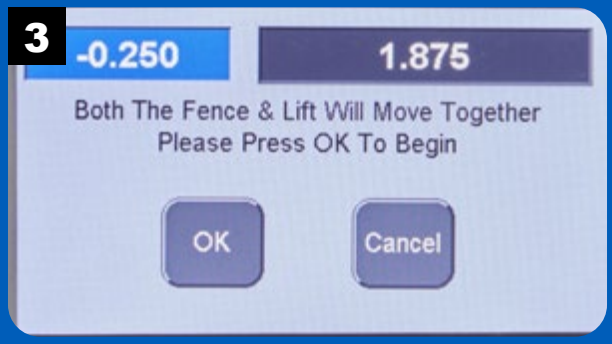
Run Pocket Hole



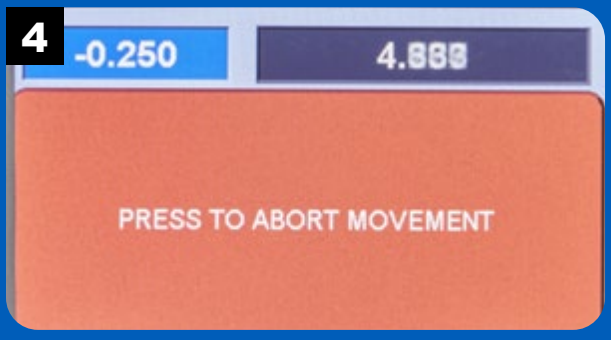
Press Run Pocket Hole to start the app.



Place the workpiece face-down on the router table. **NOTE:** A stop block mounted on the fence helps locate the pocket hole on the workpiece and supports the workpiece.



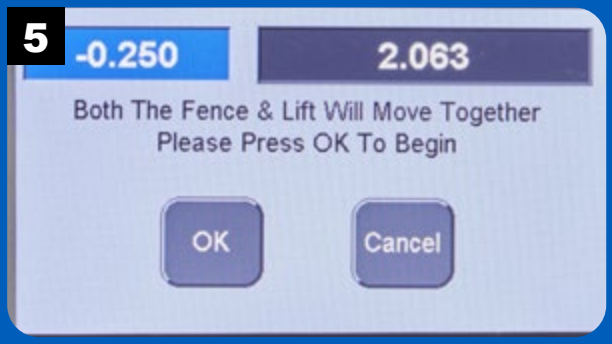
After pressing OK, the fence and lift will move to the starting position to cut the pocket hole.



If necessary, you can abort the movement of the fence and lift.

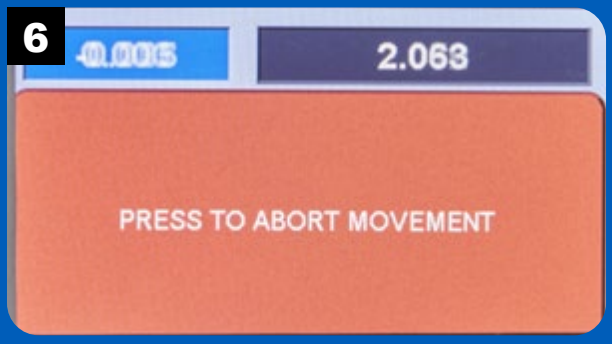
Run Pocket Hole *continued*

5



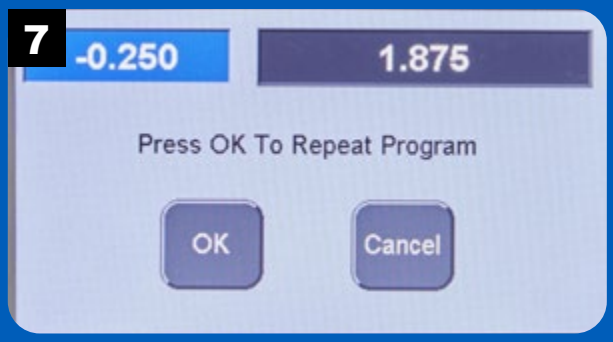
With the workpiece tight against the fence and stop block, press OK to cut the pocket hole.

6



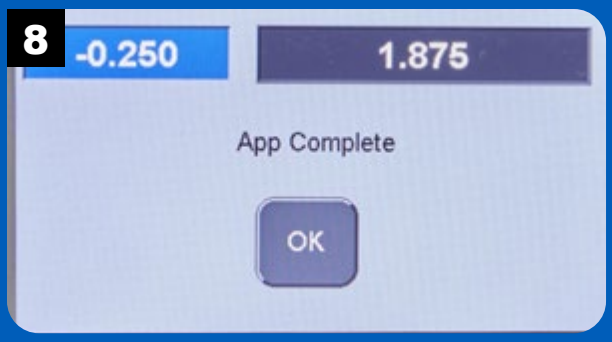
You can abort the operation at any time, if necessary.

7



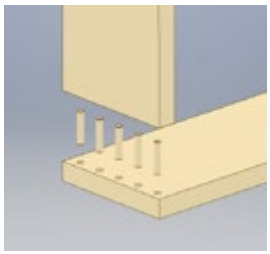
To create additional pocket holes, press OK. Press cancel to exit the routine.

8



Press OK to exit the app.

Step and Plunge (Doweling)



Dowel joinery has a long history of being strong and easy to assemble. The issue has always been accurately aligning the dowel holes in mating workpieces. The **RS1000 Pro** takes the guesswork out of drilling dowel holes.

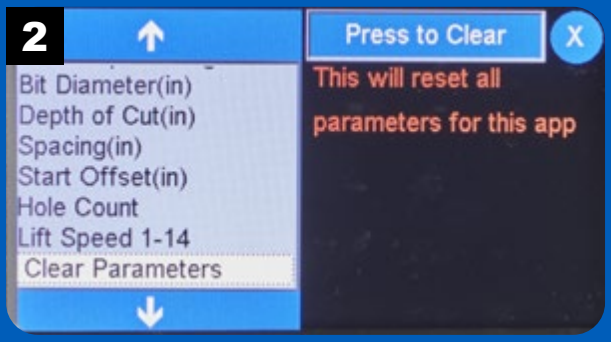
NOTE: We recommend using a tall stop block attached to the fence to assist in a locating the workpiece for accurate hole placement.

1

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

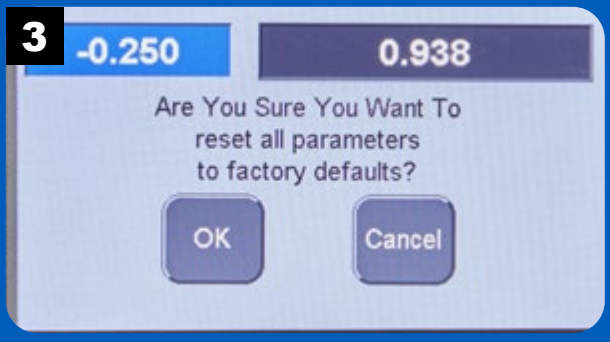
Step and Plunge Setup

2



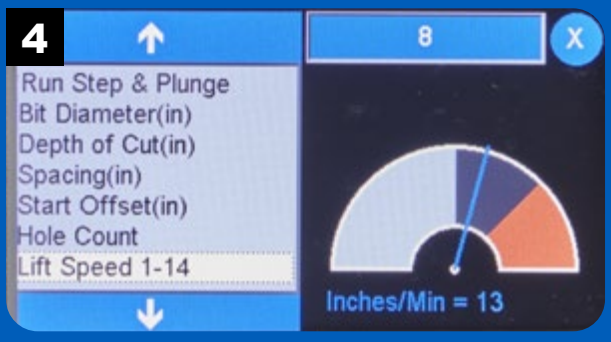
To reset all the parameters to factory defaults, select Clear Parameters.

3



Pressing OK changes all the parameters to their factory default values.

4

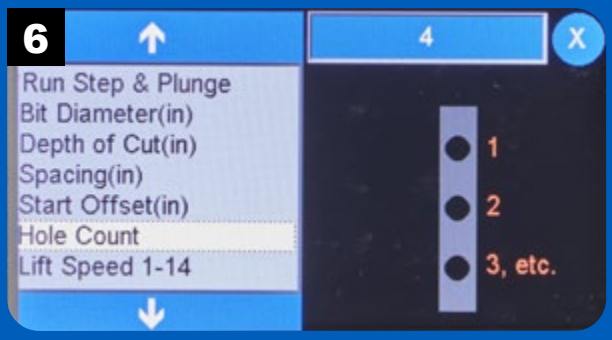


Change the speed of the router lift using the Lift Speed option. Enter a value between 1 and 14. The inches per minute adjusts accordingly. Use a lower number for dense hardwoods.

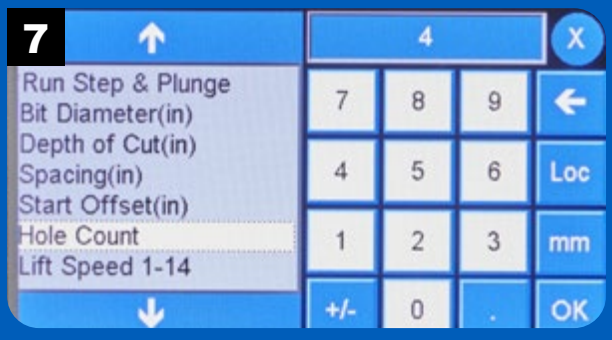
5

Enter the speed of the lift and press OK.

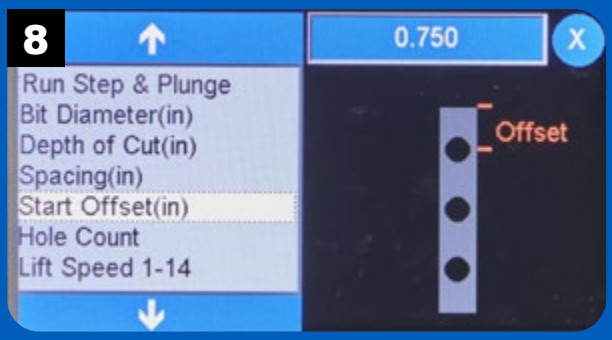
Step and Plunge Setup *continued*



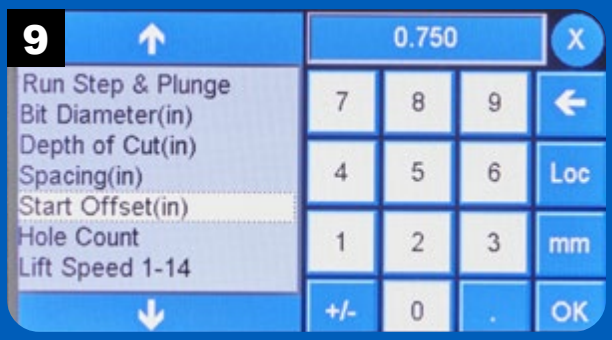
Set the number of dowel holes using the Hole Count function.



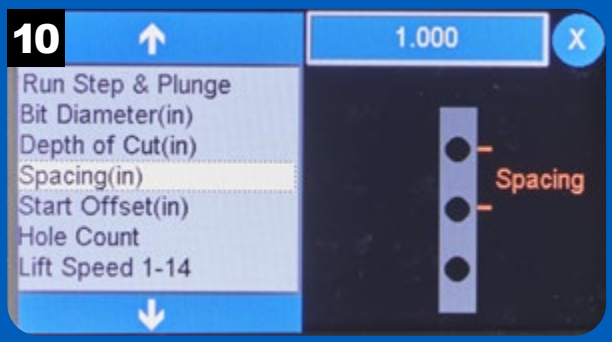
Enter the desired number of dowel holes to be routed and press OK.



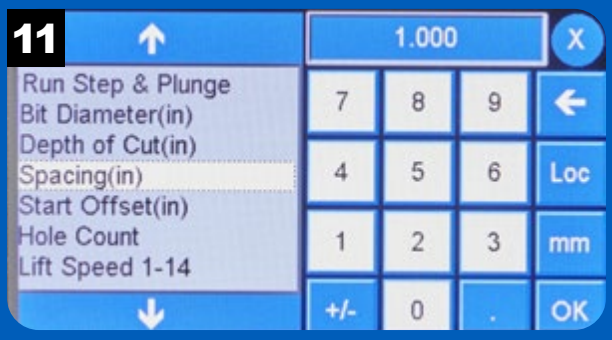
To establish a predetermined distance from the edge of the workpiece for the first hole, use the Start Offset function.



Enter the offset distance and press OK.

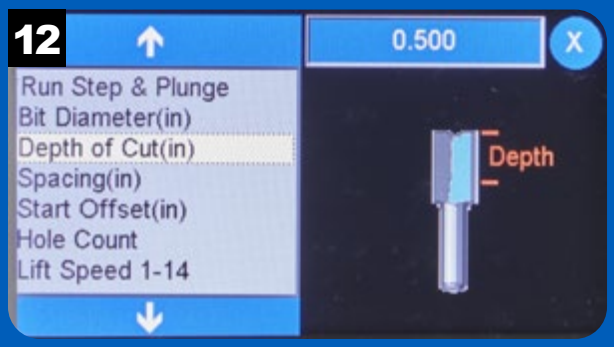


Create evenly spaced dowel holes by using the Spacing function to set the center-to-center distance between dowel holes.

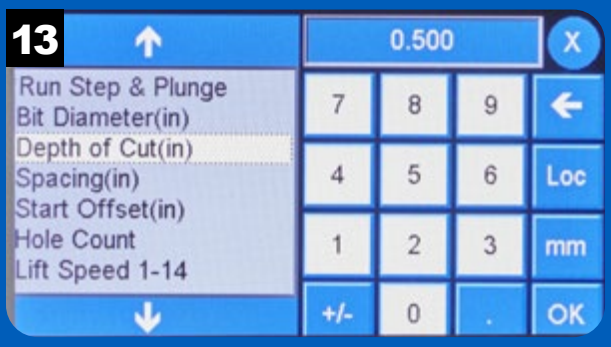


Enter the spacing dimension and press OK.

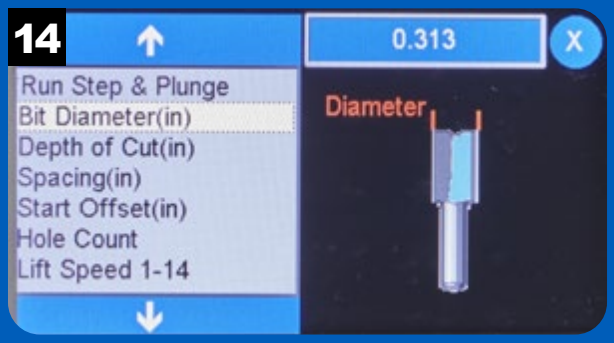
Step and Plunge Setup *continued*



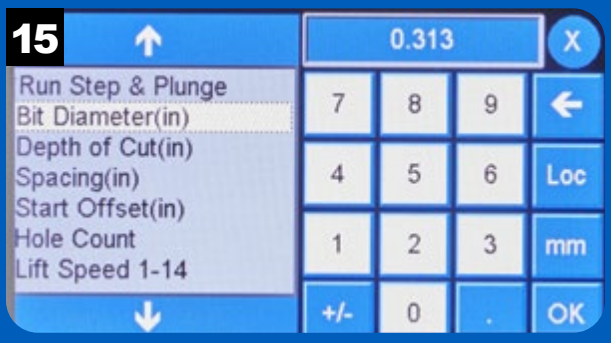
The Depth of Cut option allows you to set the depth of the dowel holes.



Enter the dowel hole depth and press OK.

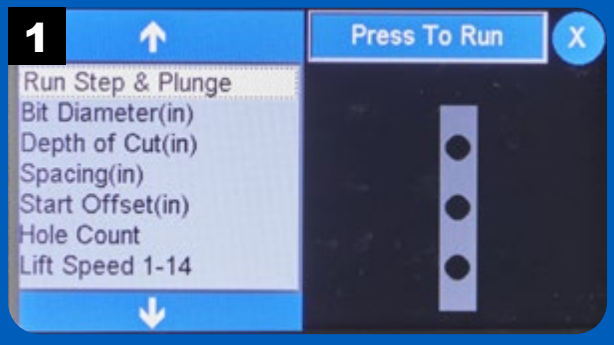


Use the Bit Diameter function to set the diameter of the router bit. The dowel hole diameter will match the bit diameter.

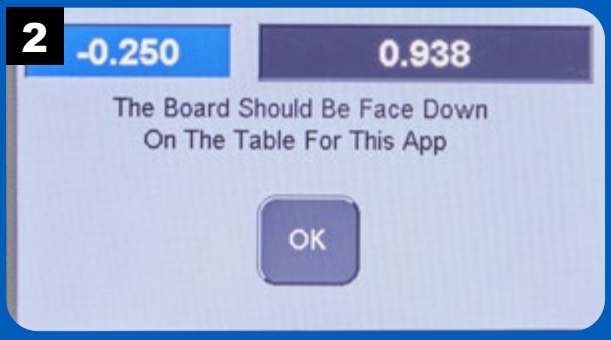


Enter the bit diameter and press OK.

Run Step and Plunge

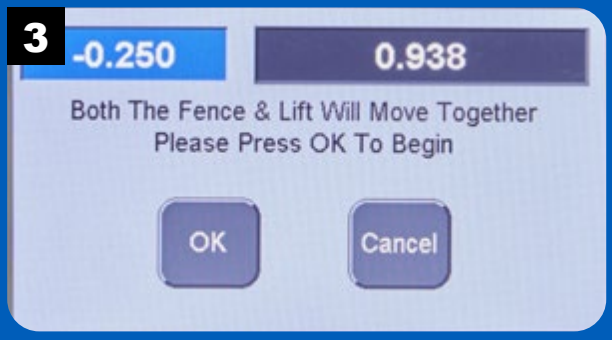


To start routing dowel holes, select Run Step & Plunge.

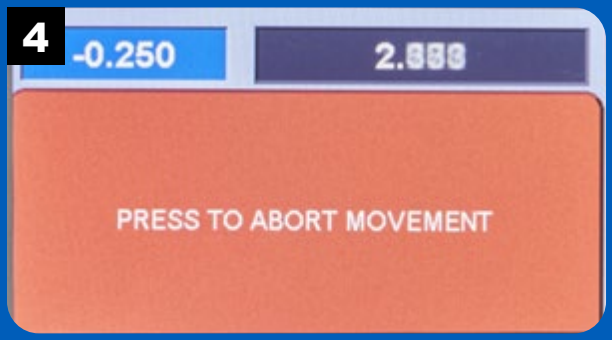


Place the workpiece on the router table with the edge or face to be drilled face down.

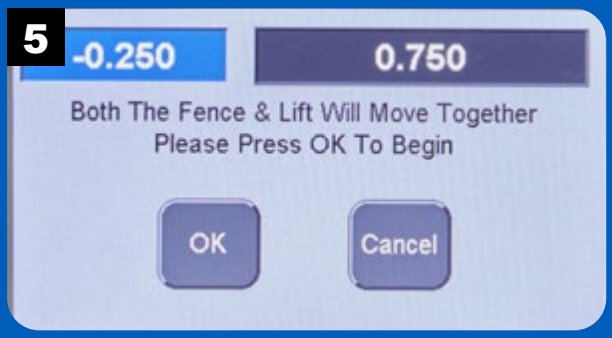
Run Step and Plunge *continued*



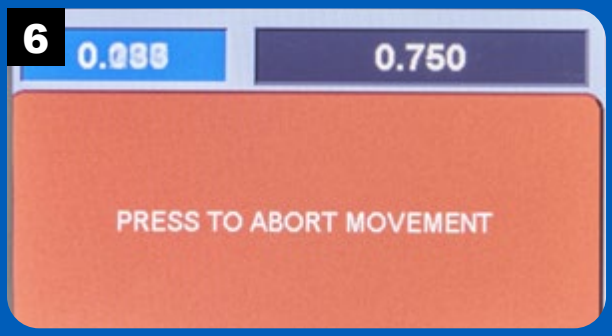
Press OK to reposition the fence and lift at the starting position for routing the dowel holes.



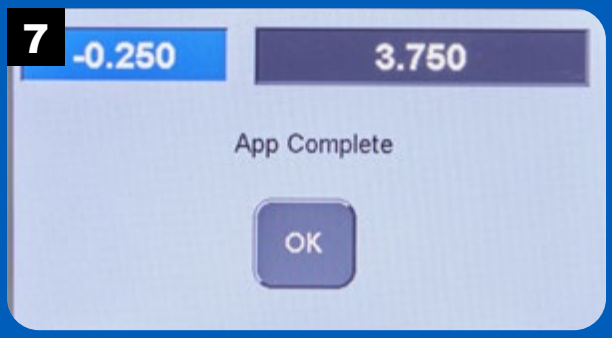
During fence and lift movement, you have the option to abort the operation.



With the workpiece in place, press OK to start routing the dowel holes.

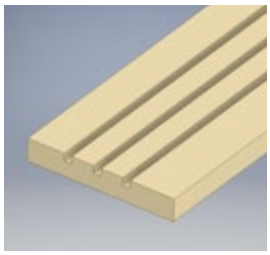


At any time during the operation, you can press abort.



After all of the dowel holes are routed, press OK to exit the app.

Step and Repeat



The **RS1000 Pro** is perfect for repetetive tasks. The Step & Repeat app allows you to make a series of cuts with a predetermined distance between them. One application would be using a plunge roundover bit to create beads. The Step & Repeat function can be used with any plunge bit.

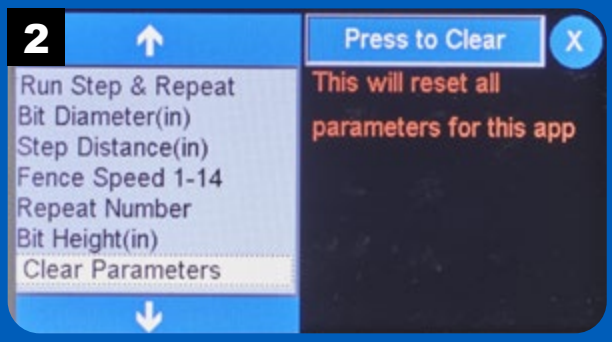
The Step & Repeat function is also ideal for routing parallel grooves using a straight bit. For repetetive routing tasks, the **RS1000 Pro** removes the hassle of routing accurately spaced cuts.

1

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

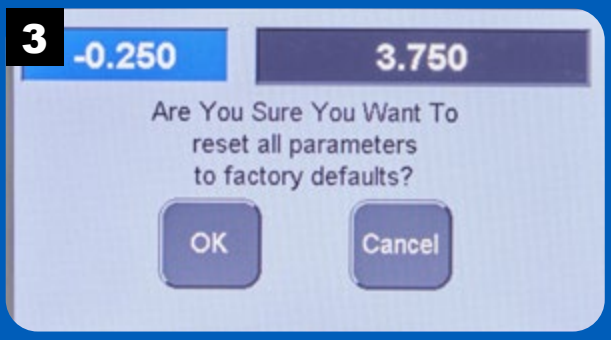
Step and Repeat Setup

2



To reset the parameter values to their factory defaults, press Clear Parameters.

3

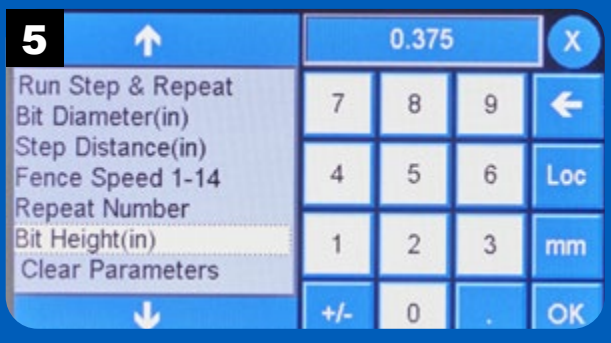


Press OK to reset all the parameters.

4

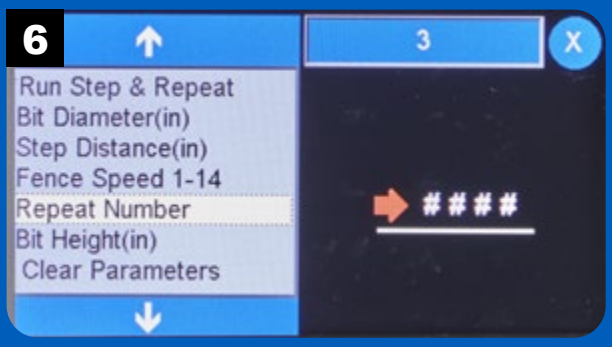
Set the height of the router bit using the Bit Height function.

5

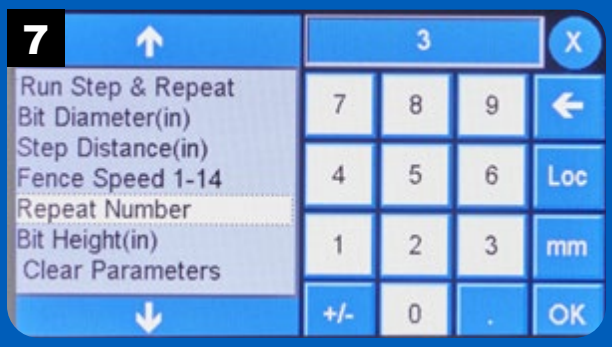


Enter the desired bit height and press OK.

Step and Repeat Setup *continued*

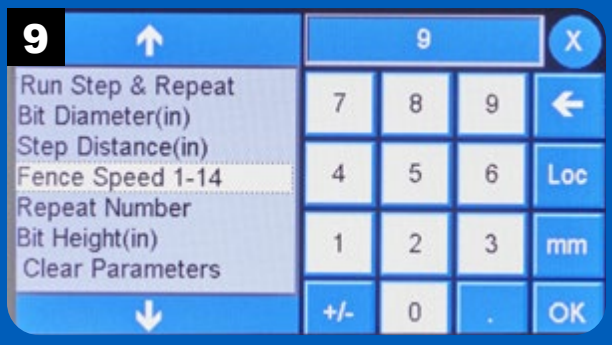


Specify how many steps the **RS1000 Pro** moves using the Repeat Number parameter.

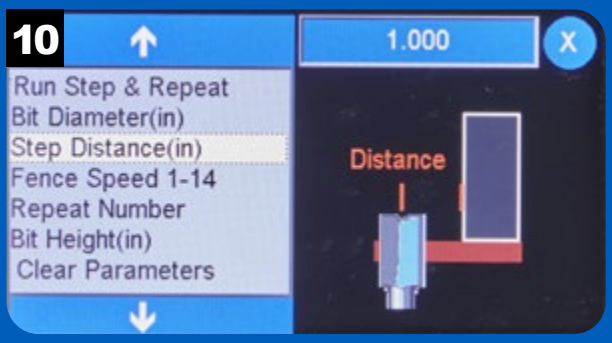


Enter the number of cuts, or steps, to make while the app is running. Press OK.

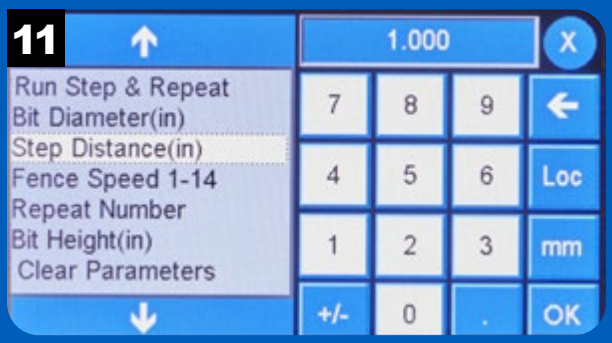
During the Step & Repeat app, the fence moves between each pass to set the distance for the next cut. The Fence Speed parameter allows you to control the speed.



Enter a value from 1 (slow) to 14 (fast) for the fence speed and press OK.

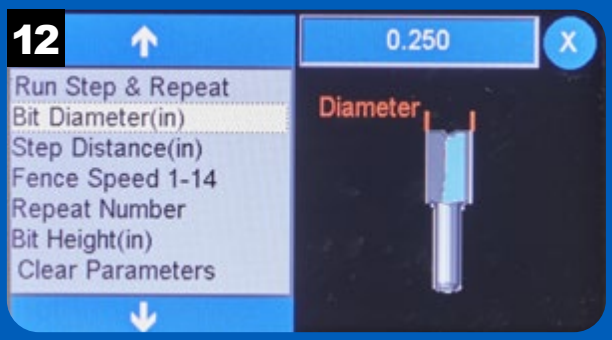


The Step Distance sets the distance of the fence from the centerline of the router bit.

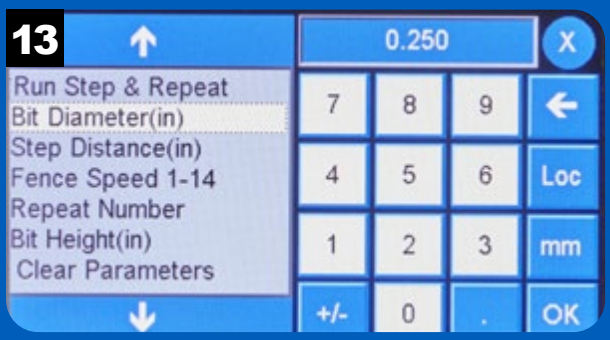


Enter the desired distance for the step distance and press OK.

Step and Repeat Setup *continued*



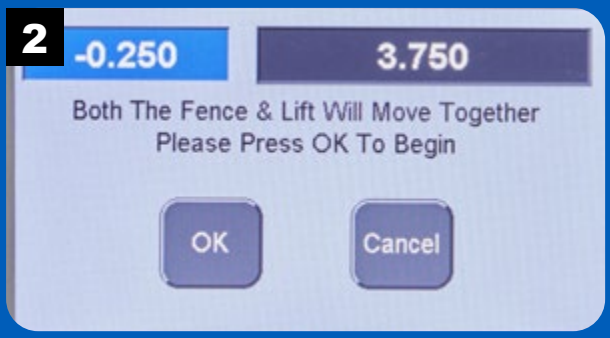
Set the diameter of the installed router bit using the Bit Diameter parameter.



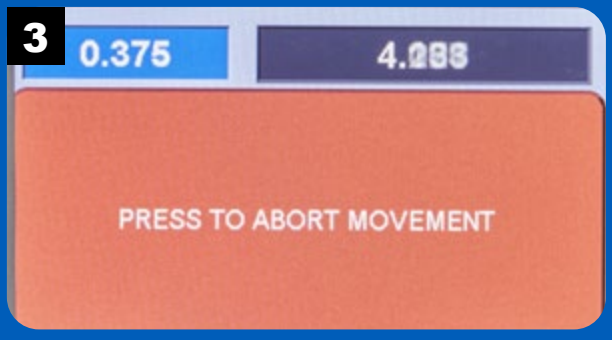
Enter the bit diameter and press OK.

Run Step and Repeat

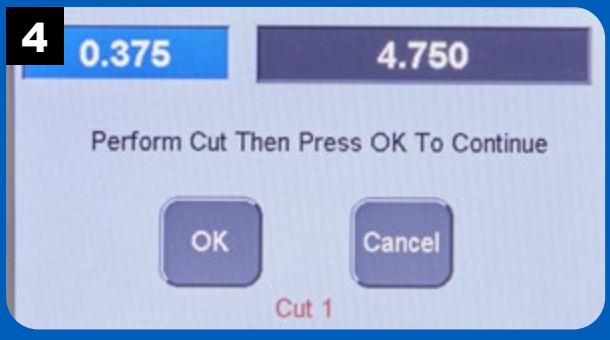
Press Run Step & Repeat to begin the routing sequence.



Press OK to move the fence and lift into their starting positions.



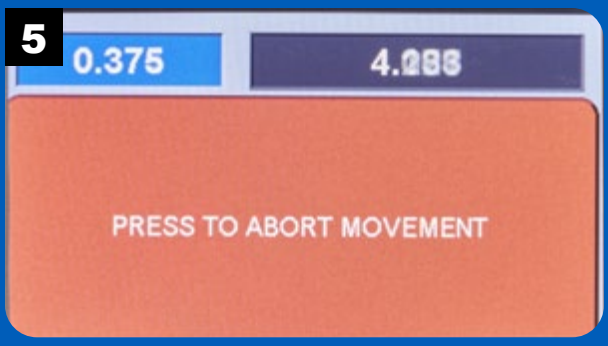
At any time during fence or lift movement, you can abort the operation.



With the workpiece tight against the fence, make the first pass. Press OK. The fence will move to the next step position.

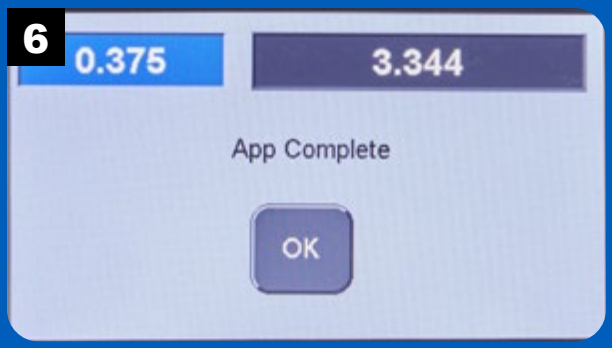
Run Step and Repeat *continued*

5



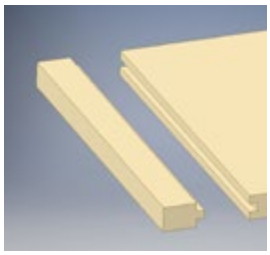
You can abort the fence movement, if required. Continue to press OK (step 4, previous page) until all of the cuts are made.

6



After the last cut, press OK to exit the app.

Tongue and Groove



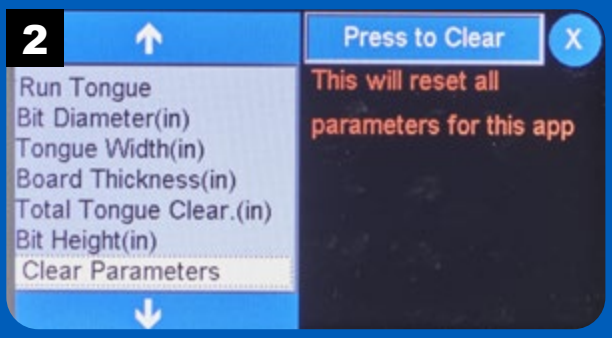
Tongue and groove joints are commonly used in ceiling or flooring applications using wood planks. A groove on the edge of a plank engages the groove on the adjacent piece, locking them together and flush with one another.

Tongue and groove joints have many other applications for cabinet construction and other woodworking projects.

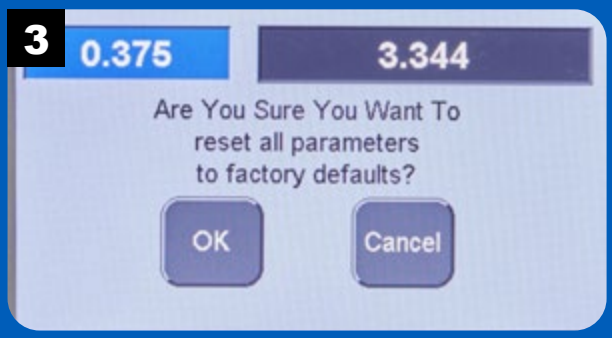
When routing tongues, the **RS1000 Pro** removes material from opposite edges of the workpiece to form a tongue.

NOTE: Visit **www.NextWaveCNC.com/appguide** or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

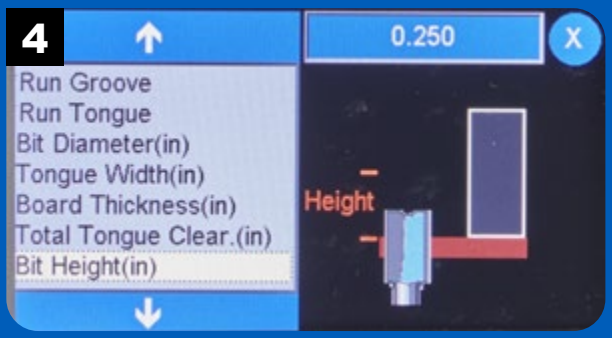
Tongue and Groove Setup



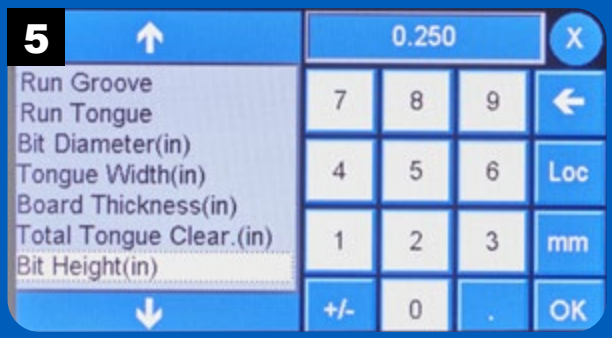
The Clear Parameters option resets the values of the parameters to factory defaults.



Press OK to reset the parameter values.

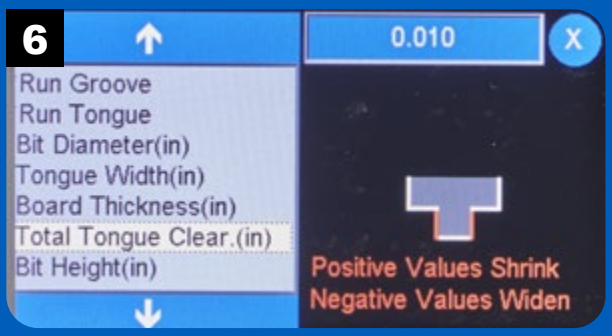


The height of the router bit determines the length of the tongue. Select Bit Height to set this distance.

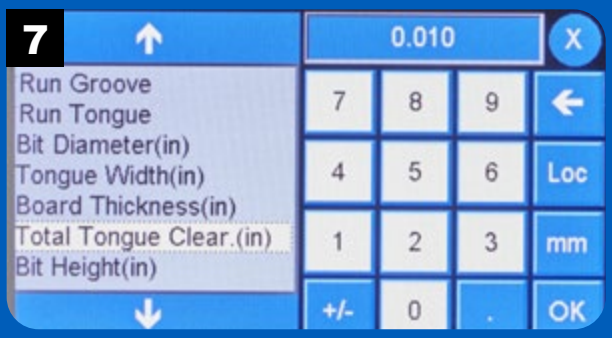


Enter the bit height and press OK.

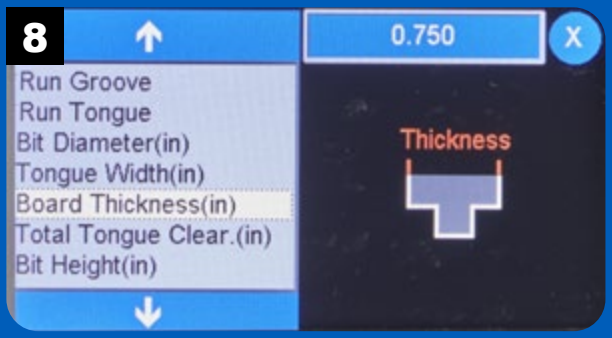
Tongue and Groove Setup *continued*



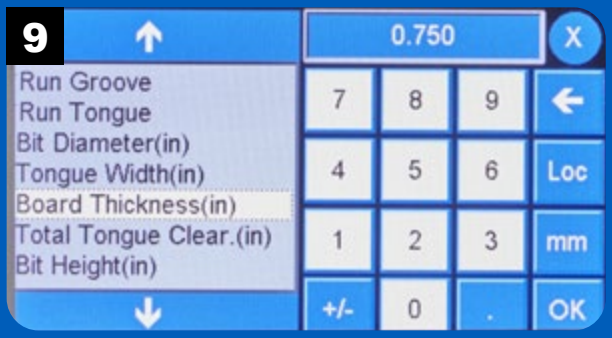
To create a joint with a snug fit without being too tight, fine-tune the tongue width by choosing the Total Tongue Clearance parameter.



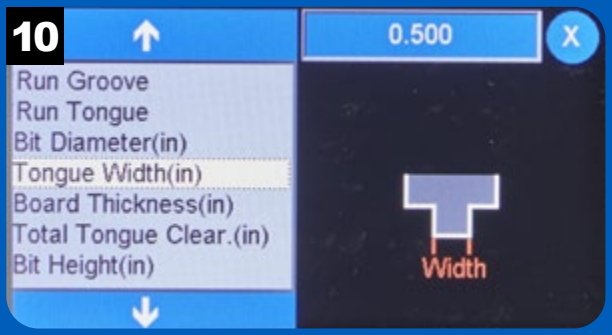
Enter the clearance value and press OK.



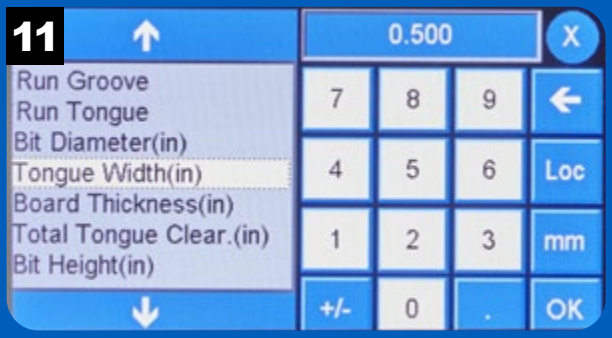
Use Board Thickness to set the thickness of the workpiece.



Enter the board thickness and press OK.

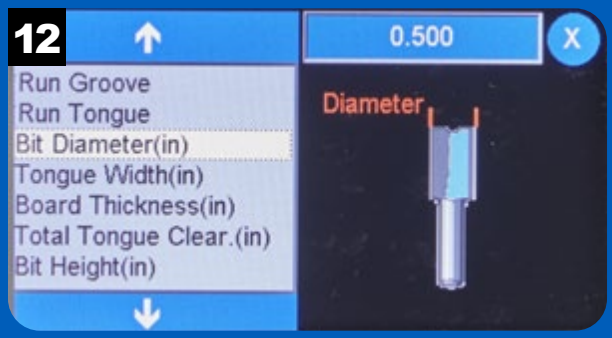


Setting the tongue width determines how much material to remove from each edge to form a tongue.

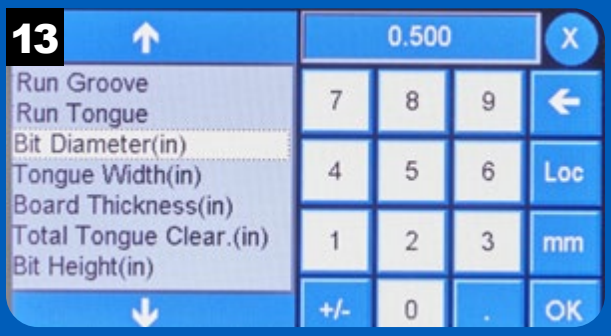


Enter the desired tongue width and press OK.

Tongue and Groove Setup *continued*

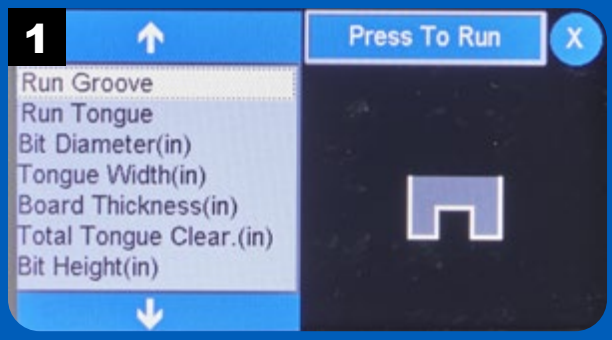


Use a straight bit for routing tongues. Use the Bit Diameter function to set the bit's diameter.

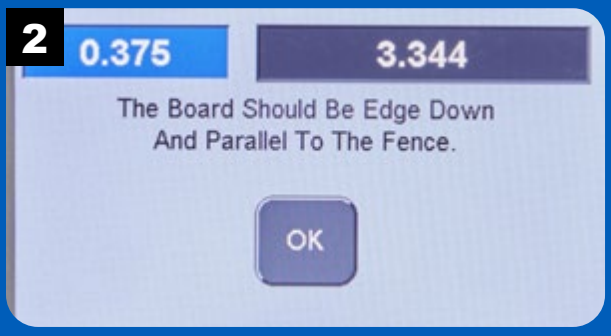


Enter the bit diameter and press OK.

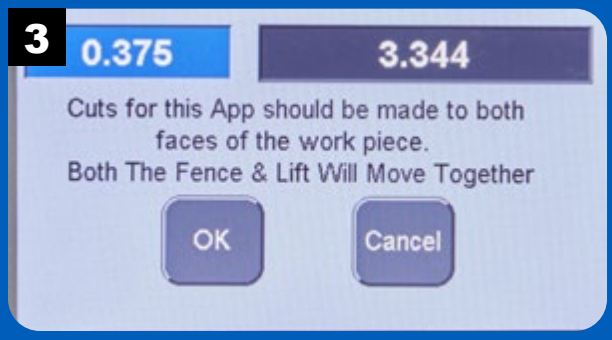
Run Groove



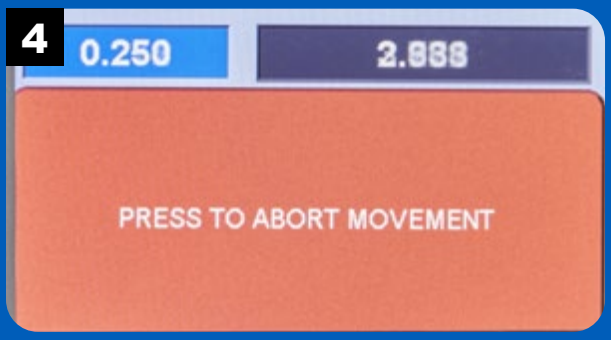
The Run Groove app routs the groove centered on the edge of the workpiece. Use a bit diameter the same width as the groove or smaller. Multiple passes create the desired width.



Press OK to to start the app.

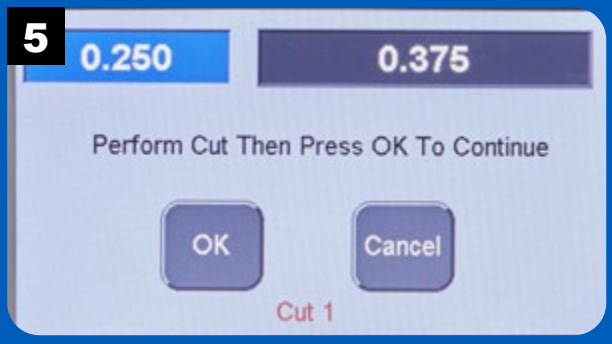


To move the lift and fence to their starting positions, press OK.

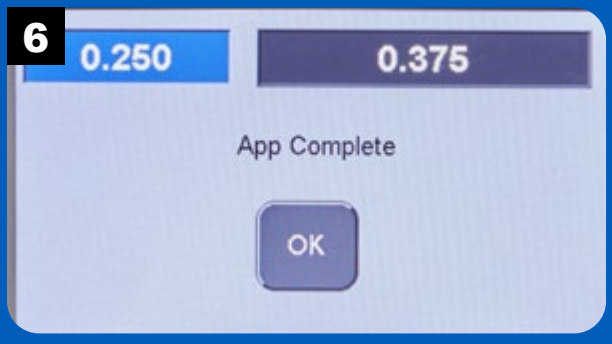


You have the option to abort the operation, if needed.

Run Groove *continued*

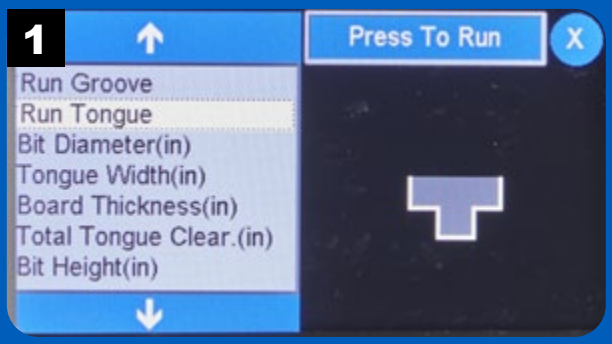


With the edge of the workpiece resting on the router table and the face against the fence, make the first pass. Press OK then rotate the workpiece 180° to make the second cut.

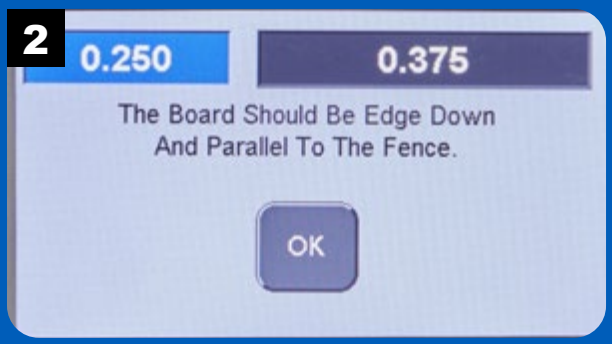


After the second cut, the app is complete. Press OK to exit.

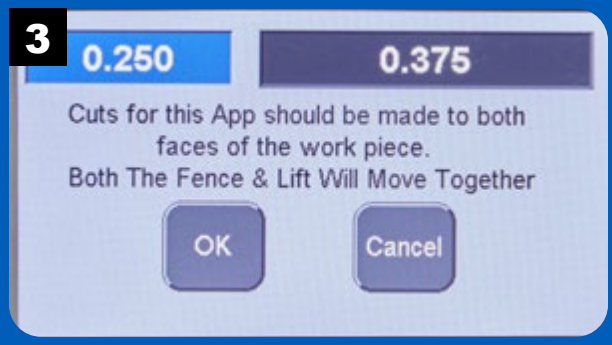
Run Tongue



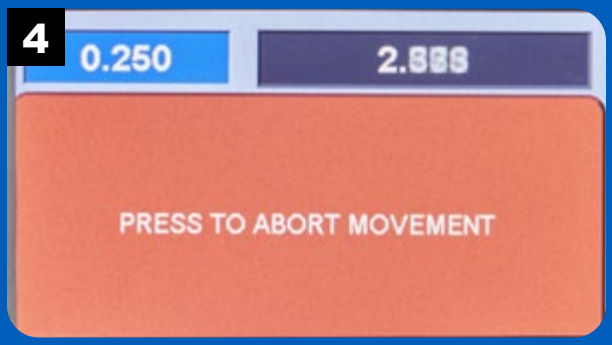
To create the mating tongue for the groove, select the Run Tongue app.



Press OK to continue the app.



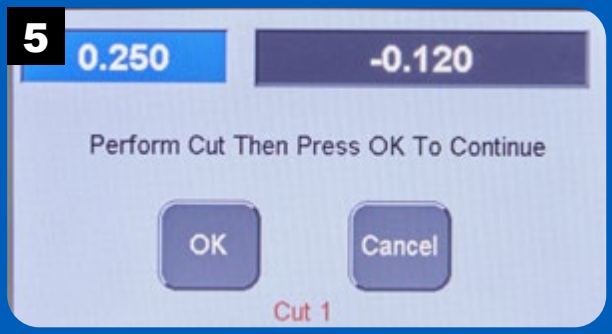
To create a tongue centered on the edge of the workpiece, you'll make a pass on opposite sides of the workpiece. Press OK to move the fence and lift to their start positions.



During fence or lift movement, you have the option to abort the operation.

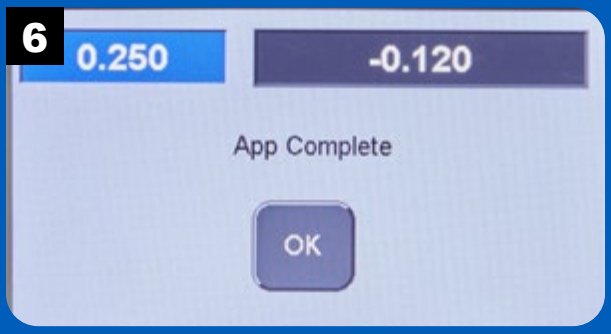
Run Tongue *continued*

5



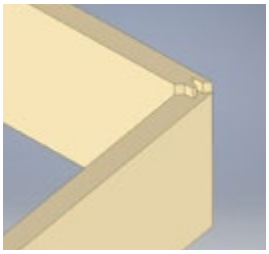
Position the workpiece tight to the router table and the face against the fence. Make the first pass to create one side of the tongue then press OK. Rotate the workpiece and repeat.

6



Press OK to exit the app.

Locking Miter Joint



Commonly used for box construction, a lock miter joint is designed to provide plenty of glue surface for added strength.
The design of a lock miter router bit creates a profile on one side of the joint and a mirror-image profile that meshes with the first to create an interlocking joint.

NOTE: It is necessary to calibrate the router bit using the touch plate. Reference the zero point shown in Step 8 (p.69) and Step 1 (p.70), not the top of the bit.

1

NOTE: Visit www.NextWaveCNC.com/appguide or scan the QR code above with your tablet or phone camera to take you to a video demonstration of this app.

Locking Miter Setup

2

Since the lock miter bit is a large bit, we recommend making multiple light passes to create a smooth joint. Use the Number of Passes option to set this value.

3

Enter the desired number of passes and press OK. For each pass, the **RS1000 Pro** moves the fence closer to the bit.

4

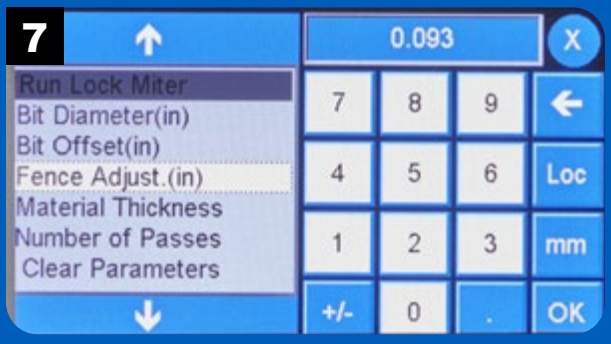
The geometry of a lock miter joint depends a lot on the material thickness. Use the Material Thickness parameter to set this value.

5

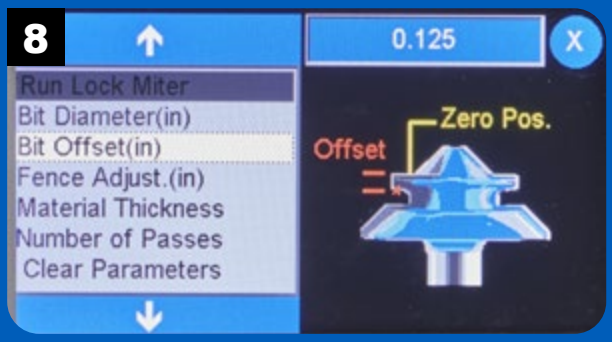
Enter the thickness of the workpieces and press OK.

Locking Miter Setup *continued*

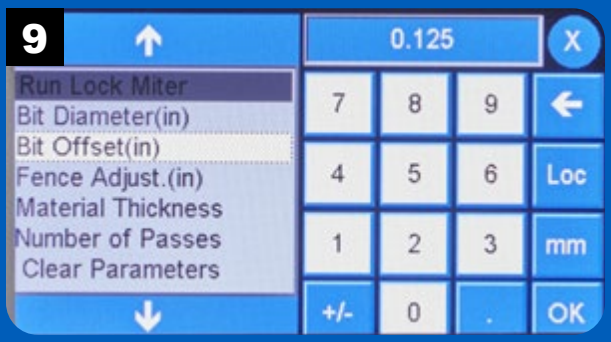
The Fence Adjust value allows you to fine-tune the fit of the lock miter joint. It's helpful to test the fit on scrap pieces the same thickness as the final workpieces.



Enter the Fence Adjust value and press OK.

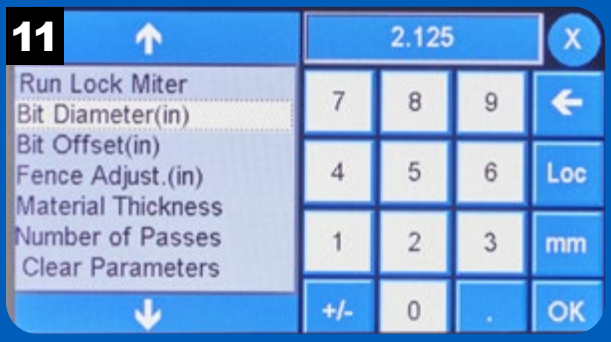


Using the illustration on the screen, measure the Bit Offset.



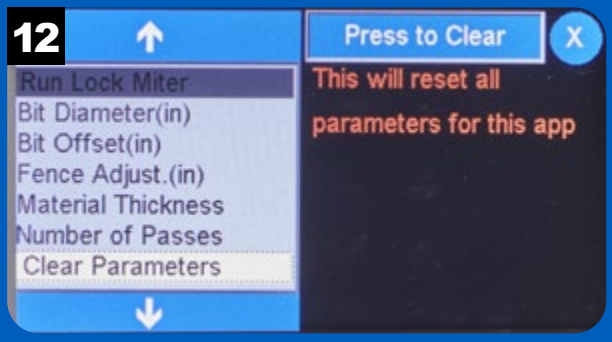
Enter the value for the offset and press OK.

Use the Bit Diameter option to enter the largest diameter of the lock miter router bit. Use a set of calipers to obtain an accurate measurement.

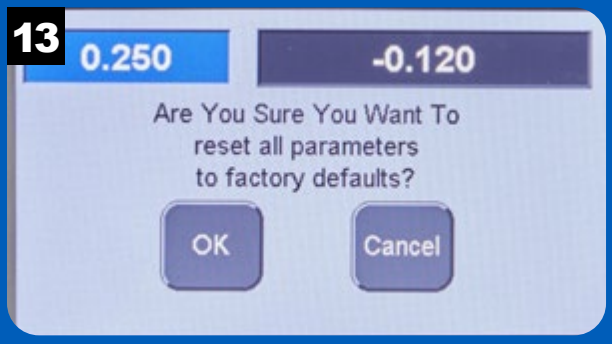


Enter the router bit diameter and press OK.

Locking Miter Setup *continued*

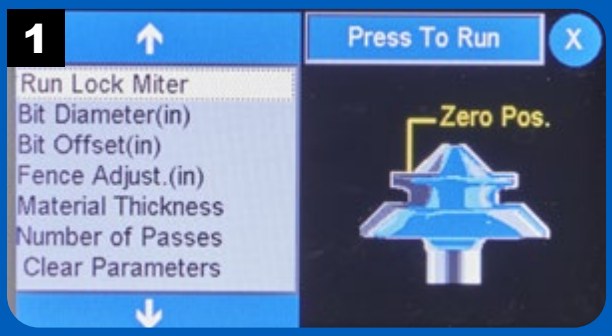


Select Clear Parameters to reset the values of all the parameters to their factory default values.

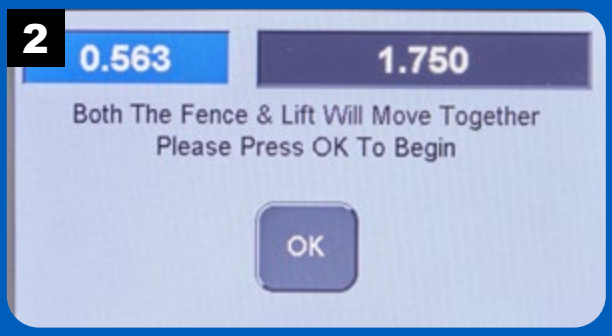


Press OK to reset parameter values.

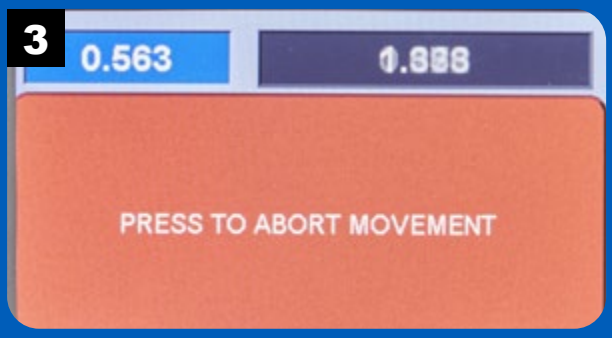
Run Locking Miter



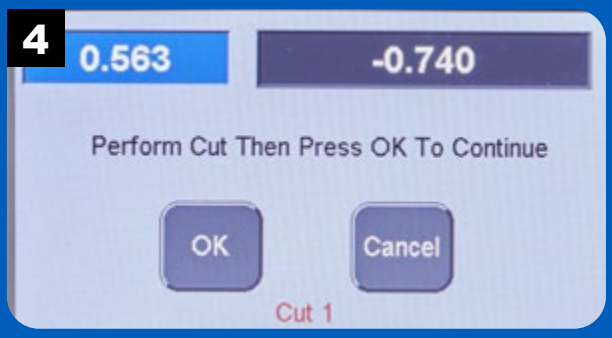
Select Run Lock Miter to start the app. Note the zero position on the lock miter router bit. This is the point of calibration using the touch plate.



Press OK to move the fence and lift into their starting positions.



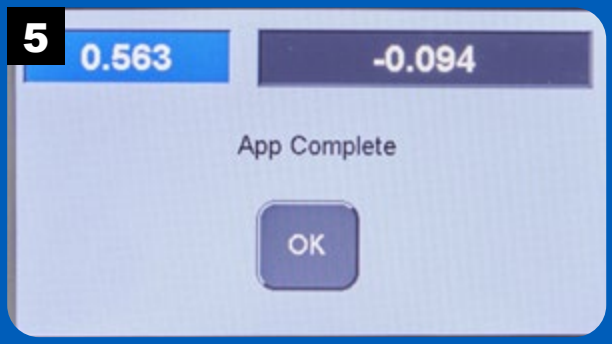
If you need to stop the movement of the fence and lift, you can abort the operation.



One side of each joint is cut with the workpiece flat on the router table. The mating piece is oriented vertically against the fence. Rout all the pieces at the same setting and press OK.

Run Locking Miter *continued*

5



After you have made all of the passes for each workpiece, the app stops. Press OK to exit.

NEXT WAVE® CNC

SHARK®
World Class. Made in USA.

RS1000 Pro
Apps Manual
Version: 12/19/2022

800023