

Kreg Pocket Hole System (K3) lesson Plan

GWG equipment training

Course number: PHJ101, v1.0
December 28, 2006

Objective:

- 1) To acquaint the student with the proper methods of using the Greenville Woodworkers Guild Kreg Pocket Hole System, Mod K3
- 2) To teach the student the safety procedures necessary while using the system.
- 3) Have the student setup and make basic joints using the K3 System.

Materials:

- 1) Kreg K3 Master System.
- 2) One piece of $\frac{3}{4}$ plywood 1'-0" x 2'-0" for each student (+ one for carcass demo)
- 3) Two piece of $\frac{3}{4}$ " poplar, 3" wide x 2'-0" long for each student (+ one for carcass demo)
- 4) Portable drill motors (4) fitted with step drills and #2 square drive, extended length bits, 2 each

Training limitations:

- 1) Optimum class size: 6 or less
- 2) Class duration, one session, 1½ to 2 hours long
- 3) Class material charge, \$5.00 per student.

Lesson Plan

1.0 Introduction to pocket hole joinery

Pocket hole joinery is a quick, durable system for joining two pieces of wood in either a "corner" or a flat panel. Joints may be glued for permanence or may be dry to allow for seasonal movement. The K3 System allows the woodworker to assemble complex glue-ups "one part at a time" thus eliminating the race against glue open times. In addition, since the screws act as clamps, the need for clamps is eliminated. Finally, unlike a clamped glue-up the assembly may be worked on immediately after the screws are in place thus eliminating the need for setting the work aside to "dry".

The drilled hole - The basic method is to drive a screw into and through the joint diagonally, burying the head below the surface so that it may be covered. The angle chosen for the screw is 15 degrees off the surface of the wood. A drilled pilot hole is made in one of the two pieces to be joined. The hole is "stepped" with the surface hole being $\frac{3}{8}$ " diameter to allow the screw head to be set below the surface of the wood, and the stepped hole is $\frac{1}{8}$ " to guide the screw threads through the wood so that it exits at the mid point on the edge of the wood.

Special screws for fastening - Screws are special, self tapping screws with a large head having a flat under-side so that the pressure of the tightened screw is distributed over a larger area. The "self-tapping" feature is necessary to prevent splitting the wood being joined. Screws are made with a #2 square drive to ensure that they are firmly seated. Screws come in several lengths (from 1" to 2½" long) with the 1¼" length being most often used by woodworkers because it is suitable for joining $\frac{3}{4}$ " thick lumber. Finally, screws are available in coarse and fine threads. Fine threads are used for hardwood joinery and coarse threads are used for soft woods, composites, plywood, MDF and melamine. Most woodworkers need to have both coarse and fine thread screws available. Some other special purpose screws are available.

Square assemblies – The Kreg system relies on the mating surfaces to produce square corners or flat panels. This is because the pocket screws will pull the joint together more evenly, and with great

force. It will be difficult, or impossible to “spring the corner to square up the carcass”. Hence, the blades and fences used to prepare the work for assembly need to be maintained and properly squared up. Check all adjustments before cutting joints for this equipment.

Features of the Kreg Jig – The drilling jig performs a number of functions and is the heart of the system

- 1) When clamped to the surface of the “drilled part”, it establishes the 15 degree entry angle.
- 2) A clamp collar on the shank of the drill contacts the Drill Guide Block bushing when the hole is at the proper depth for the pieces being joined.
- 3) The position of the jig, relative to the edge of the wood fixes the location of the screw exiting the piece in its center
- 4) Several drill jig holes enable you to drill two holes in the same part without re-setting the jig. This feature is especially helpful when making hardwood face frames.
- 5) The K3 Master system has a jig base that positions the jig vertically, positions the jig relative to the edge automatically, collects dust, clamps the wood in position, and makes the best darn cup of coffee available in Greenville County.
- 6) The Drill Guide Block may be used in the clamp block for a fixed setup, or may be removed from the clamp block and attached to the wood using a special Kreg Face Clamp for portable, on-the-job use.
- 7) Pocket hole screw heads may be covered using specially made plugs, $\frac{3}{8}$ ” diameter and trimmed to a 15 degree cutoff angle. These are available in several common species or can be shop made in exotic woods to match the project.

The Kreg K3 Pocket Hole System is an excellent tool for use in making Face Frames, table leg and rail assemblies, mitered corner joints, cabinet and furniture carcasses, angled joints and curved panels, attaching edging to panels and edge joining boards

2.0 Lets make a panel!

A common use of the system is to join pieces of wood to make a panel. You wouldn’t want to be drilling holes in this panel, or raising the panel without a careful plan as to where the pocket screws are to be located. We will use the K3 Portable base and drill guide block for this simple exercise

- 1) Prepare the edges of the stock on a jointer, or using a Glue Line Rip blade on the table saw.
- 2) Establish the material thickness to be attached to the drilled piece. ($\frac{3}{4}$ ” in this case)
- 3) Setup the Drill Guide Block to the proper “depth setting” in the Portable Base for the material selected.
- 4) Setup the stop-collar on the step drill $3\frac{9}{16}$ above the step shoulder. Demonstrate the depth gage on the Portable Base:
 - a. Install the Drill Guide Block in the Portable Base
 - b. Align the proper material thickness mark on the side of the Drill Guide Block with the top of the Portable Base
 - c. Insert the Step Drill bit into a bushing and line up the step with the proper mark on the face of the Portable Base.
 - d. Maintain the drill bit position while installing the split collar onto the drill bit shank in contact with the guide bushing.
- 5) Demonstrate how to “hook” the Portable Base on the end of the workpiece and clamping it in place

Note: the pocket holes are made of the back face of the panel so they won’t show.

- 6) Mount step drill in portable drill motor
- 7) Insert step drill into the Drill Guide bushing about $1\frac{1}{2}$ ”, but not in contact with wood

Note: starting the drill while the stepped tip is against the wood will break the tip off.
- 8) Start the drill motor and allow it to come up to speed.

- 9) Advance the drill until you make contact with the wood, make a small dimple, back the drill bit off about ½", then re-engage the drill and complete the hole until the stop collar engages the Drill Guide bushing
- 10) Repeat making pocket holes about every 6-8 inches
- 11) After dry-fitting the face frame, apply glue to the carcass edges.
- 12) Clamp the edges together using the Premium Face Clamp, the larger pivoting pad is positioned against the bottom face of the work.
- 13) Drive a 1¼" long fine thread screw into the hole.
- 14) Remove the clamps.
- 15) Discuss the match up of the surfaces in the panel.

3.0 Making a cabinet carcass

Another very popular use of the Kreg Pocket Hole System is making carcasses for furniture and cabinets. In making the pocket holes, consider what can be seen by the user. Place the holes on the hidden sides between the cabinet boxes, or on other hard to see surfaces. We will be using ¾" plywood to build the joint. While we could use the Portable jig for this type of work, we will use the K3 Benchtop Base and Drill Guide Block for this exercise.

- 1) Prepare the edges of the stock by ripping them straight on the table saw.
- 2) Establish the material thickness to be attached to the drilled piece. (¾" in this case)
- 3) Setup the Drill Guide Block to the proper "depth setting" in the Benchtop Base for the material selected.
- 4) Setup the stop-collar on the step drill 3⁹/₁₆ above the step shoulder.
 - a. Demonstrate the depth gage on the Benchtop Base
- 5) Demonstrate how to setup the clamping pad for the panel to be drilled
 - a. Place scrap into the jig
 - b. Move clamp handle to clamped position (horizontal)
 - c. Unscrew the clamp pad until it presses the scrap snug against the Drill Guide Block.
 - d. Release the clamp handle
 - e. Screw the clamp pad in (toward the Drill Guide Block) two full turns and lock the jam nut
- 6) Place the sheet to be drilled into the Benchtop jig and clamp for the first hole
 - a. Note: the pocket holes are made on the back face of the panel so they won't show.
- 7) Mount step drill in portable drill motor.
- 8) Insert step drill into the Drill Guide bushing about 1½", but not in contact with wood
 - a. Note: starting the drill while the stepped tip is against the wood will break the stepped tip off.
- 9) Start the drill motor and allow it to come up to speed.
- 10) Advance the drill until you make contact with the wood, make a small dimple, back the drill bit off about ½", then re-engage the drill and complete the hole until the stop collar engages the Drill Guide bushing
- 11) Repeat making pocket 3 or 4 holes
- 12) Make pocket holes to mount the face frames to the carcass at this time
- 13) After dry-fitting the face frame, apply glue to the carcass edges.
- 14) Hold the edges together and drive a 1¼" long course thread screw (plywood) into the hole.
- 15) Remove any clamps.

4.0 Making a Face Frame

Next to carcasses, face frames are one of the most popular ways to use the Kreg K3 Pocket Hole System. The pockets are drilled into the back face of the face frames and are completely hidden when the face frame is assembled to the carcass. The Benchtop Base system should always be used on face frames.

- 1) Prepare the stock as normally done. Be certain that all end cuts are square in both directions.
- 2) Establish the material thickness to be attached to the drilled piece. ($\frac{3}{4}$ " in this case)
- 3) Setup the Drill Guide Block to the proper "depth setting" in the Benchtop Base for the material selected.
- 4) Setup the stop-collar on the step drill $3\frac{9}{16}$ above the step shoulder.
 - a. Demonstrate the depth gage on the Benchtop Base
- 5) Demonstrate how to setup the clamping pad for the panel to be drilled
 - a. Place scrap into the jig
 - b. Move clamp handle to clamped position (horizontal)
 - c. Unscrew the clamp pad until it presses the scrap snug against the Drill Guide Block.
 - d. Release the clamp handle
 - e. Screw the clamp pad in (toward the Drill Guide Block) two full turns and lock the jam nut
- 6) Place the piece to be drilled into the Benchtop jig and clamp for the first hole
 Note: the pocket holes are made on the back face of the panel so they won't show.
 Pocket holes in Face Frames always exit the end of the frame piece. Face frame members will be clamped vertically in the jig. Never drill crossways on the side of a frame member.
- 7) Mount step drill in portable drill motor.
- 8) Insert step drill into the Drill Guide bushing about $1\frac{1}{2}$ ", but not in contact with wood
 Note: starting the drill while the stepped tip is against the wood will break the stepped tip off.
- 9) Start the drill motor and allow it to come up to speed.
- 10) Advance the drill until you make contact with the wood, make a small dimple, back the drill bit off about $\frac{1}{2}$ ", then re-engage the drill and complete the hole until the stop collar engages the Drill Guide bushing
- 11) Repeat making the second hole in the appropriate bushing
- 12) After dry-fitting the face frame, apply glue to the carcass edges.
- 13) Hold the edges together and clamp the joint with the Premium Face Clamp on the joint line.
- 14) Drive a $1\frac{1}{4}$ " long fine thread screw (hardwood) into the hole.
- 15) Remove any clamps.
- 16) Notice the flush joints and square corners of the face frame.

5.0 Attaching face frame to cabinet carcass

With the face frame assembled, it is easily attached to the carcass using the pocket holes on the outside surfaces of the carcass made during its assembly.

- 1) After dry-fitting the face frame, apply glue to the carcass edges.
- 2) Position the face frame on the cabinet opening .
- 3) Align the corners, using the face frame to square up the carcass if necessary.
- 4) Attach the face frame with fine thread, $1\frac{1}{4}$ " pocket screws

6.0 Practice joints

- 1) Each student sets up and makes a three sided ("U" shaped) plywood box 12" deep with sides 8" long using pocket hole technology. The box is to be drilled for a face frame as well.
- 2) Each student makes and attaches a face frame, $1\frac{1}{2}$ " wide, to the box.

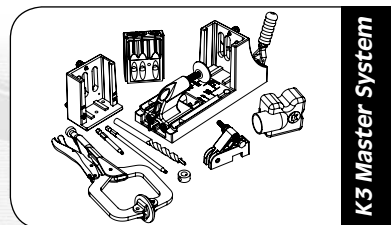
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Kreg Jig®

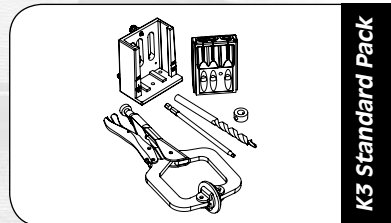
K3 Pocket Hole System

INSTRUCTIONAL MANUAL



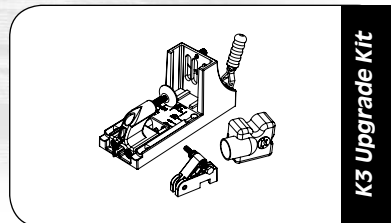
K3 Master System

Item# K3MS



K3 Standard Pack

Item# K3SP



K3 Upgrade Kit

Item# K3UP

Products covered by one or more of the following patents:
4,955,766
5,676,500
6,481,937
6,726,411
Other patents pending.

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Warnings and Cautions

2

Thank you for your purchase! Kreg Tool Company is proud to manufacture top quality tools and accessories that are surpassed only by our commitment to customer service. If after reviewing this manual you still have a question or concern that you would like addressed please visit our website at www.kregtool.com, call 800-447-8638 or email customerservice@kregtool.com. This manual covers the basics of pocket hole joinery including the Kreg Jig® K3 Pocket Hole System. In addition, a joinery guide located towards the back of the manual details the basics for producing a variety of wood joints utilizing pocket hole joinery.

We offer various educational materials to help you get the most out of your Pocket Hole tools. In addition to educational videos, we also offer a plan CD which contains 15 Pocket Hole project plans in a PDF format that can be printed from your home computer. Video titles include...

- ***The Pocket Hole Solution to Cabinetmaking***
- ***The Pocket Hole Solution to Tables***
- ***The Pocket Hole Solution to Building Your Own Router Table***
- ***The Pocket Hole Solution to Home Improvements***

Warnings and Cautions

CAUTION! : Handle drill bit carefully - Like any cutting tool, flutes of drill bit are extremely sharp.

Never hold a pocket hole jig by hand while drilling holes. Always secure jig and workpiece to an immovable object before drilling.

Always check drilling depth in scrap material before producing final pocket holes and driving screws.

Make sure material is securely clamped into jig before drilling.




Always allow drill bit to reach full speed before plunging into the workpiece.

3

Package Contents



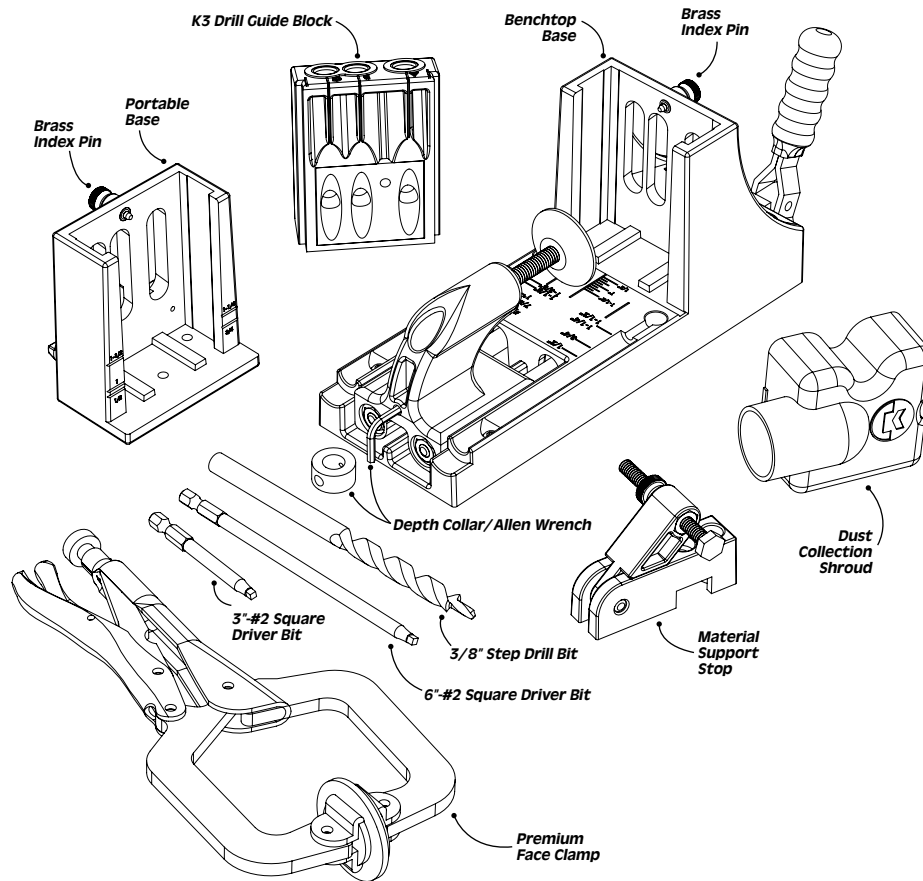
- Indicates what is included in package.

	K3 Upgrade Kit	K3 Standard Pack	K3 Master System
			
3/8" Step Drill Bit (KJD)			
3"-#2 Square Driver Bit (D3)			
6"-#2 Square Driver Bit (D6)			
Allen Wrench - 1/8" (AW18)			
Depth Collar (KJSC)			
Premium Face Clamp (PFC)			
Material Support Stop (KJSS)			
Dust Collection Shroud (NK3005)			
Portable Base (NK3036)			
K3 Drill Guide Block (NK3003)			
Benchtop Base (NK3035)			
SPS-C1 Screws			
SML-F125 Screws			
SML-C125 Screws			
SML-C150 Screws			
SML-C2 Screws			
SML-C250 Screws			
Standard Pack Case (NK3031)			
Master System Case (NK3023)			



Parts Identification

4



Part Number	Description
KJD	3/8" Step Drill Bit
D3	3"-#2 Square Driver Bit
D6	6"-#2 Square Driver Bit
AW18	Allen Wrench - 1/8"
KJSC.....	Depth Collar
PFC	Premium Face Clamp
KJSS.....	Material Support Stop
NK3005	Dust Collection Shroud
NK3009	Brass Index Pin
NK3036	Portable Base
NK3003	Drill Guide Block
NK3035	Benchtop Base
NK3031.....	Standard Pack Case
NK3023	Master System Case



Standard Pack Case



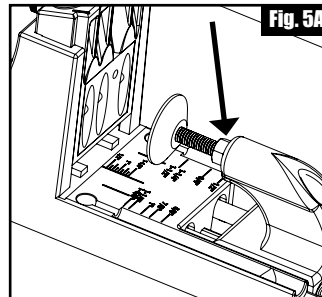
Master System Case

5 Benchtop Base Assembly

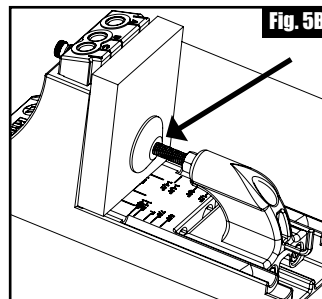


Attach the Clamping Pad (Fig. 5A&B)

1. Attach the Clamping Pad to the Clamp Follower by simply threading the shaft of the Clamping Pad into the threaded insert of the Clamp Follower.
2. The position of the Clamping Pad will be adjusted for the thickness of the material to be drilled. Proper position of the Clamping Pad will be outlined in the "Getting to Know Your K3 System" section.
3. You may notice that the Clamping Pad will angle slightly upward once the Clamping Pad is installed into the Clamp Follower. This is the correct configuration of the Clamping Pad. The Clamping Pad is angled slightly upward to assist the clamping mechanism to insure the work piece is seated tight against the Drill Guide Block and flush with the Benchtop Base surface.



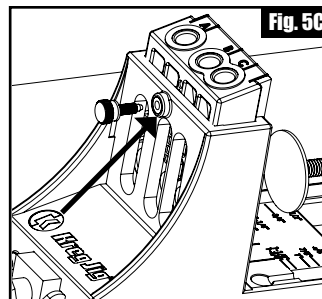
Hex nut on threaded shaft.



Clamping Pad clamped against board.

Attach the Index Pin (Fig. 5C)

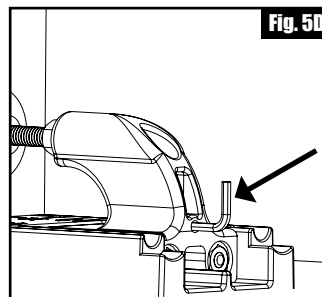
1. Thread the Brass Index Pin into the threaded insert contained in the upright of the Benchtop Base.
2. Back off the Brass Index Pin so that the rounded point of the Brass Index Pin is flush with the inside of the upright surface.
3. The Brass Index Pin will be seated fully when the Drill Guide Block has been inserted in the opening of the upright and used to hold the Drill Guide Block in position prior to clamping.



Inserting the Brass Index Pin.

Store the Allen Wrench (Fig. 5D)

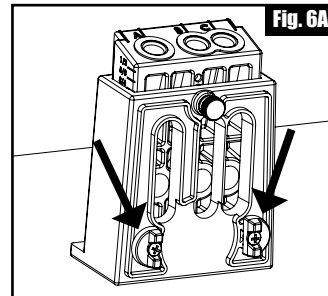
1. The 1/8" Allen Wrench is used to lock the Depth Collar in position on the Kreg Jig® Drill Bit for different depths of pocket holes.
2. The Allen Wrench may be stored either in the designated location in the case or it can be held conveniently in the rear of the Clamp Follower.
3. When using the Clamp Follower location be sure to rotate the right-angled extension of the Allen Wrench to a clock position between 9 o'clock and 3 o'clock. This will prevent the Allen Wrench from being accidentally lost when the Clamp Follower slides across the center rib in the bottom of the Benchtop Base.



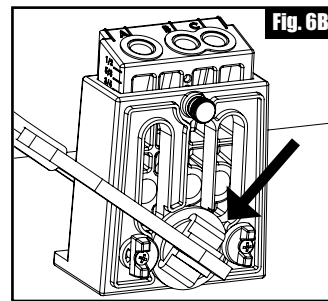
Storage for the Allen Wrench.

Attach the Locking Tabs (Fig. 6A&B)

1. Align the center-hole of each of the Locking Tabs to the corresponding mounting hole on the rear vertical surface of the Portable Base.
2. Insert a #6 x 3/8" screw through center-hole of each of the Locking Tabs and tighten while still allowing the Locking Tabs to move freely.
3. The smaller pad of the Premium Face Clamp will be held in position on the Portable Base by rotating the Locking Tabs so that they cover the outside surface of the Premium Face Clamp pad. Proper position of the Premium Face Clamp will be outlined in the "Getting to Know Your K3 System" section.
4. You may notice that there are raised ribs on the rear outside surface of the K3 Portable Base surrounding the openings used for wood chip ejection. These raised ribs are provided so that any clamp may be used to secure the K3 Portable Base and Drill Guide Block to the material to be drilled.



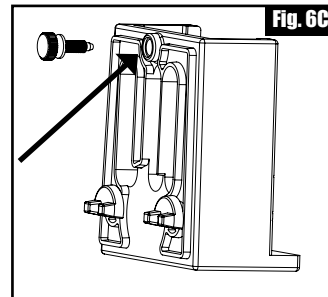
Locking Tabs on Portable Base.



Locking Tabs holding the Premium Face Clamp in position.

Attach the Index Pin (Fig. 6C)

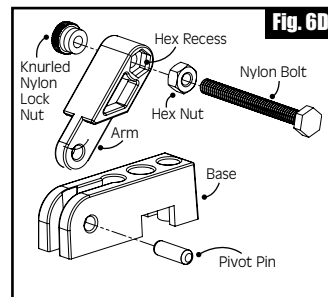
1. Thread the Brass Index Pin into the threaded insert contained in the upright of the Portable Base.
2. Back off the Brass Index Pin so that the rounded point of the Brass Index Pin is flush with the inside of the upright surface.
3. The Brass Index Pin will be seated fully when the Drill Guide has been inserted in the opening of the upright and used to hold the Drill Guide Block in position prior to clamping.



How to insert the Brass Index Pin.

Assemble the Kreg Jig® Support/Stop (Fig. 6D)

1. Slide the center tongue of the Support/Stop Arm between the outside extensions of the Support/Stop Base and align the pivot hole through all three surfaces.
2. Insert the Pivot Pin through one outside surface of the Support/Stop Base and either tap into place with a mallet or a hammer and a block of wood to prevent marring the end of the Pivot Pin. Continue to advance the Pivot Pin until it is fully seated in the Support/Stop Base and Support/Stop Arm. Push the 1/4"-20 Hex Nut into the side of the Support/Stop Arm hex recess.
3. Thread the Nylon Stop Bolt from either side through the Support/Stop Arm into the Hex Nut. Which side will depend on which side of the Kreg Jig® that the Support/Stop will be used.
4. Thread the Knurled Nylon Lock Nut onto the Nylon Stop Bolt on the side of the Support/Stop Arm opposite the Hex Nut. It may be necessary to thread the Knurled Nylon Lock Nut onto the Nylon Stop Bolt prior to threading the Nylon Stop Bolt into the Hex Nut in some applications.



Support/Stop assembly diagram

7 Quick-Start Guide...



To Building Your First Pocket Hole Joint

Ready to jump in and start building? Here is a quick-start guide to creating your first pocket hole joint.

Before you start... a few Pocket Hole Joinery Facts

- You only need to drill a pocket hole into ONE of the workpieces to be joined. No pre-drilling of the second workpiece is required with the use of self-tapping screws.
- The step drill bit forms both a pocket hole for the screw head and a guide hole for the screw shank in one motion.
- Gluing the joint is optional.
- Simply clamp the two workpieces to be joined to hold flush alignment and drive the screw.



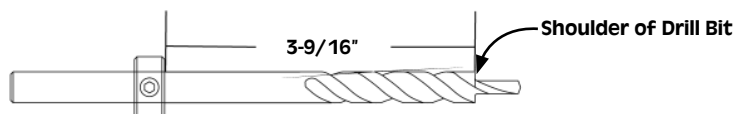
STEP 1 - Set the drilling depth.

(this example assumes using 3/4" thick material)

(CAUTION! Drill bit flutes are extremely sharp! Handle with care.)

The first step in creating a pocket hole joint is to set the drilling depth of your drill bit. Drilling depth is adjusted by changing the location of the depth collar on the shank of the drill bit. For joining 3/4" thick material, place the depth collar onto the shank of the drill bit. Use a tape measure to position the depth collar 3-9/16" from the **SHOULDER** of the drill bit. Tighten the depth collar in this position with the Allen Wrench provided.

Fig. 7A



TIP

Setting the depth collar closer to the **SHOULDER** of the drill bit will result in less screw travel into the second workpiece, moving the depth collar further from the **SHOULDER** of the drill bit will result in more screw travel.

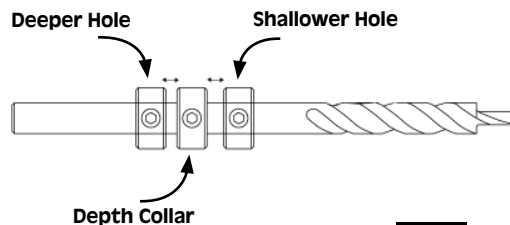
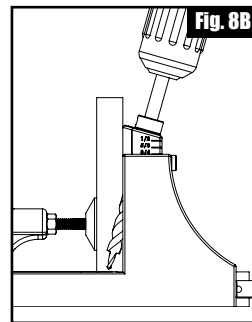
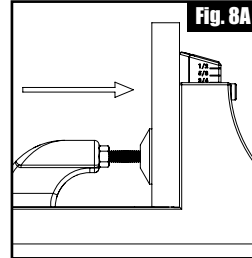


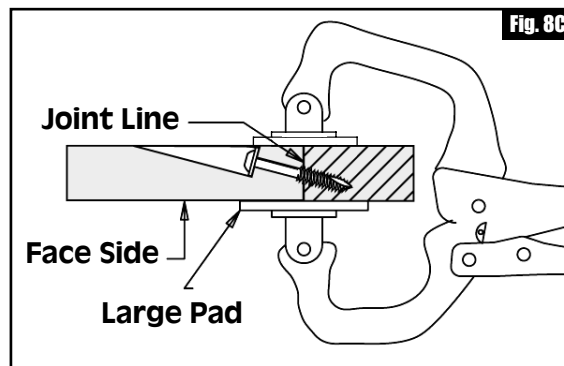
Fig. 7B

2.**STEP 2 - Prepare wood and drill the pocket holes.**

Prepare your wood by squaring the pieces to be joined on all edges. Place the drill bit into your drill and tighten securely. Place one workpiece to be joined onto the base of the Kreg Jig® K3 as shown in Fig. 8A. Adjust the clamping pressure of the clamp by turning the clamping pad to firmly hold the workpiece into the jig. Next, place the first 1-1/2" of the drill bit into any one of the three drill guides making sure that the tip does not come in contact with the workpiece. Bring the drill bit up to full speed and slowly plunge the drill bit into the drill guide until the depth collar reaches the top of the guide as shown in Fig. 8B. Remove drill bit and drill the second hole in an adjacent drill guide. Once drilling is complete, unclamp and remove workpiece from jig, gently tapping the workpiece to remove any remaining wood chips from the holes you have just created.

**3.****STEP 3 - Drive screws to secure the joint.**

At this time, choose the correct screw length for your application. If you are joining 3/4" material to 3/4" material, a 1-1/4" length screw is suggested. Add glue to the joint line if desired. If you are joining the two pieces in a flat plane, such as a frame, position the large pad of the Kreg Premium Face Clamp over the joint line and clamp with firm pressure to hold them perfectly flush as shown in figure 8C.



Place the self-tapping screws down into the pocket hole and drive with a cordless drill until tight. Your joint should be tight, flush and extremely strong. If you encounter any problems, consult our FAQ section that begins on page 32.

9 Getting to Know Your K3 System



Choosing the Correct 2-Hole Spacing

Spacing pocket holes across the width of a workpiece is important in maximizing the strength of a joint. When framing most woodworking projects, it is recommended to place two pocket holes across the width of a rail to keep the workpiece from twisting once it has been assembled. The patented three-drill guide fixed spacing of the Kreg Jig® Drill Guide Block makes it extremely easy to place two pocket holes in a workpiece without having to unclamp and move the workpiece to drill the second hole. A real timesaver when working with a variety of wood widths. We recommend using the drill guide spacings indicated below for each rail width. For very wide pieces such as panels, we recommend placing a pocket hole every 6-8 inches across the length of the panel. Use any of the three drill guides to form the pocket on panels.

Fig. 9A

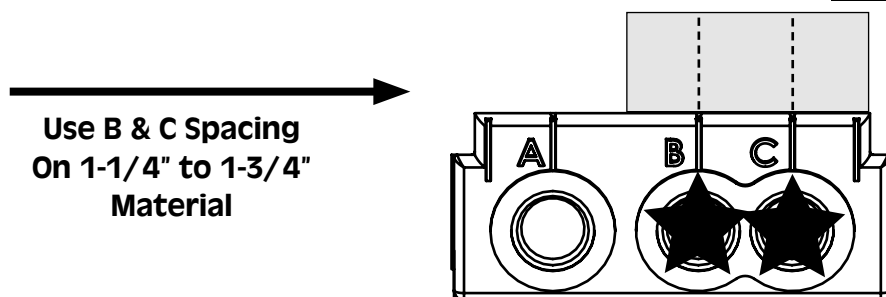


Fig. 9B

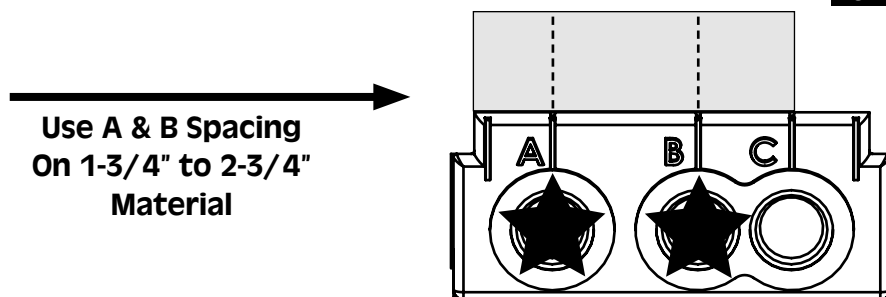
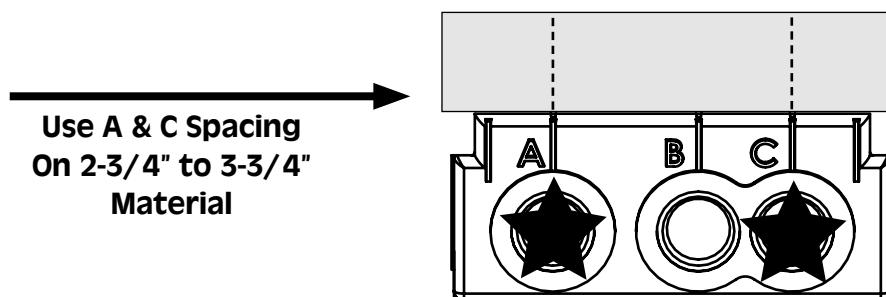


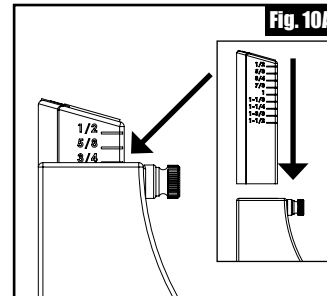
Fig. 9C





Adjusting the Drill Guide Block (Fig. 10A)

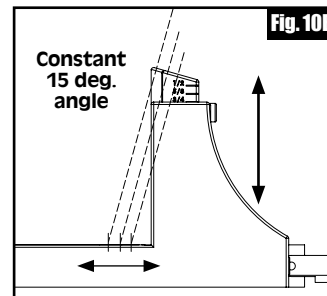
Lines molded into the side of the Drill Guide Block are labeled with fractional designations that represent the thickness of the material that is being drilled. For example if you are drilling a pocket hole in $3/4$ " material the line beside the marking of $3/4$ is aligned to the top of either the Benchtop Base opening or the Portable Base opening.



Drill Guide Block markings.

Moving the Exit Point of the Screw (Fig. 10B)

As the Drill Guide Block of the K3 Kreg Jig® is raised vertically, the exit point of the screw projects out further from the base of the jig. The key here is that the 15 degree drilling angle remains constant. The result is that as you move the upright to your desired material thickness setting, the screw will automatically be aligned to exit on the centerpoint of the workpiece.

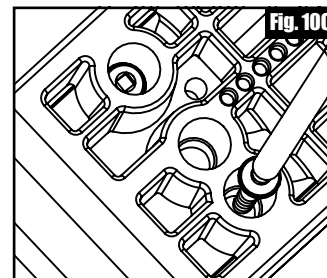


As the Drill Guide Block is raised, the exit point of the screw projects further from the base of the jig.

Using the Drill Guide Block Separately (Fig. 10C)

There are times when it is not convenient to use one of the bases specially designed for the Kreg Jig® K3; or it is awkward to clamp the Drill Guide Block in position. For these occasions the Drill Guide Block has been specially designed to accept two SML head style screws to hold the Drill Guide Block in position while drilling the pocket hole.

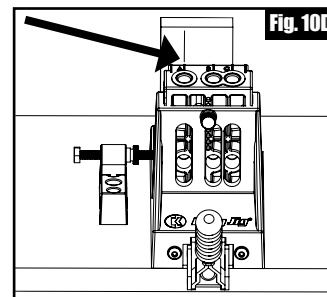
(CAUTION! You must use the center drill guide hole ("B") when performing this operation.)



Drive screws into chip extraction holes to hold jig in position.

Centerlines on the Drill Guide Block (Fig. 10D)

Markings on the top surface of the Drill Guide Block designate the centerlines of the three drill guides. These markings also align with corresponding markings on the surface of the Benchtop Base. To place a pocket hole in a specific location, mark a board with a pencil in the desired location, then align the pencil mark with the corresponding centerline marking on the Drill Guide Block or Benchtop Base.



Pencil mark aligned with centerline of Drill Guide Block.

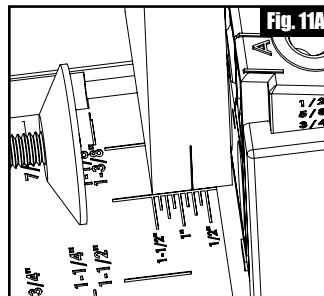
11 Getting to Know Your K3 System



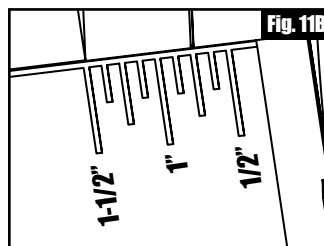
Markings on the Benchtop Base (Fig. 11A&B)

A series of markings have been added to the Benchtop Base that mark the exit point of the screw for a given Drill Guide Block setting. These markings will allow you to “estimate” the exit point of the screw without needing to know what the actual thickness of your material may be. These markings are similar to the lines on a ruler. The longest lines are labeled as 1/2”, 1”, and 1-1/2” and the lines that fall between these labeled locations represent the 1/4” increments and 1/8” increments (shortest lines).

For example if you want the screw to exit at a position closer to the inside of your workpiece, simply mark the desired exit location on the edge of your board and choose the line on the base of the jig that most closely corresponds, then adjust the Drill Guide Block to the same fractional setting height. Once the Drill Guide Block is secured at that height the resulting pocket hole will guide a screw to exit at the predetermined location regardless of the thickness of material.



3/4" thick board with the centerline marked.

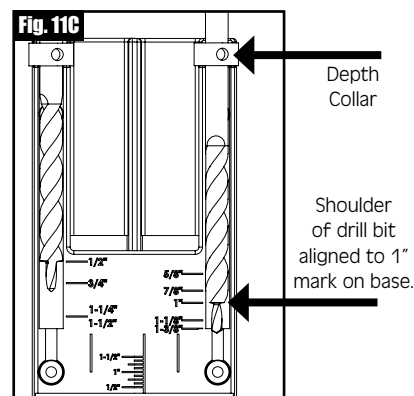


Centerpoint aligned with 3/4" mark on base of jig showing the exit point of the screw in this setting.

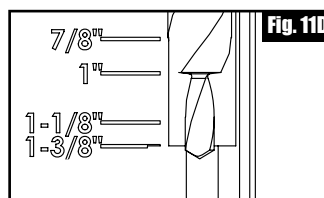
Setting the Depth Collar - Benchtop Base (Fig. 11C)

Standard Depth Collar settings are molded into the face of the Benchtop Base. These drill depths allow for maximum screw penetration in the mating workpiece when using the recommended screw for the size material being joined. To use these markings align the **stepped shoulder** of the drill bit with the desired mark on the base. As the Depth Collar is moved away from the stepped shoulder of the Drill Bit the resulting pocket hole will be deeper. Be careful not to set the Depth Collar so that the drill bit will penetrate the jig itself.

When departing from the designated drill bit depth settings for the given material thickness the pilot point of the drill bit should be kept a height of approximately 1/8" (the thickness of a nickel) above the surface.



Set shoulder of drill bit to desired setting and tighten depth collar.



Close-up showing **shoulder** of drill bit aligned to 1" marking on base of jig.



About the Front Side Clamp (Fig. 12A&B)

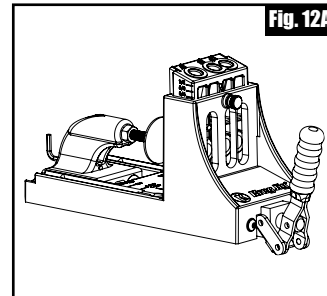
The clamping mechanism of the Kreg Jig® K3 Benchtop Base has been designed in a way that requires no adjustment for varying thicknesses of material. However you will need to adjust for the common thickness of the material to be drilled. This is accomplished by adjusting the location of the Clamping Pad relative to the Clamp Follower. With the clamping mechanism fully engaged (handle in full horizontal position) rotate the Clamping Pad until it pushes the material to be drilled against the Drill Guide Block. Relax the clamping mechanism by lifting the handle and the rotate the Clamping Pad 2-full-turns toward the material. This will allow the clamping mechanism to exert the proper amount of pressure against the workpiece when the clamping mechanism is fully engaged.

The internal springs of the Clamp Follower will tighten or relax as the material thickness of your workpieces vary. To apply additional pressure the Clamping Pad is rotated toward the workpiece, however you must be careful not to compress the springs an excessive amount and cause the springs to take a "set" in a compressed state.

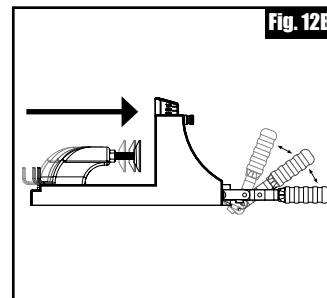
Be certain to tighten the Lock Nut on the Clamping Pad to prevent the Clamping Pad from accidentally loosening as material is clamped and unclamped during normal operation of the jig.

About Dust Collection (Fig. 12C)

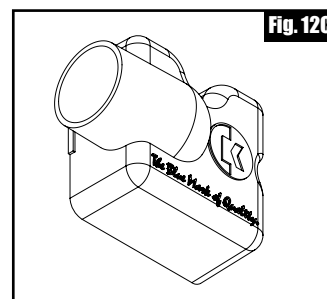
One of the most unique features of the K3 Pocket Hole System is the addition of a Dust Collection Shroud. The Drill Guide Block has been designed so that wood chips created during the drilling operation are allowed to escape the drill guides, thereby minimizing the friction of the wood chips against the rotating drill bit. Openings in the rear of the Benchtop Base align with the chip extraction holes of the Drill Guide Block to provide a clear path for the wood chips to escape the drill guide.



Front side clamp shown in "unclamped" position



Examples of the clamping action



Dust Collection Shroud with standard 1-1/4" diameter connection.

About Dust Collection Cont. (Fig. 13A&B)

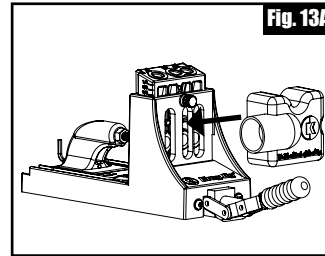
When the pressure opposite the openings is reduced to less than standard air pressure the wood chips will flow more freely from the drill guides. This reduction in pressure is achieved when a shop vacuum or dust collector is connected to the rear of the Benchtop Base. The Dust Collection Shroud forms a complete seal around the openings in the rear of the Benchtop Base and channels the chips from the drill guides to a hose connected to a vacuum source.

The tabs on opposite sides of the Dust Collection Shroud simply “snap” into place in the recessed areas on the rear of the Benchtop Base. To remove the Dust Collection Shroud simply “squeeze” the sides of the Shroud and pull away from the Benchtop Base. The exit port of the Dust Collection Shroud is sized to accept a common 1-1/4” shop • vac® style hose end. Adapters are available from your local woodworking retailer to connect other common shop vacuum sizes such as 2-1/2” and dust collection systems.

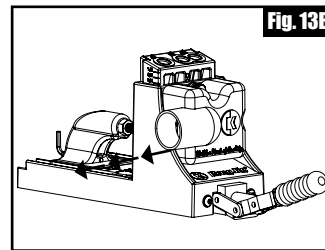
Mounting the Benchtop Base for Maximum Effectiveness (Fig. 13C&D)

Mounting the Kreg Jig® K3 Benchtop Base to a piece of plywood is a good way to prepare it for use in the shop and allow it to be easily removed from your work area to hang on a wall or shelf. We recommend cutting a 3/4” thick piece of plywood to 12” x 24”. This will allow you to attach the Support/Stop at a location that will properly support large panels and also properly operate the clamping mechanism. The Benchtop Base may also be mounted directly to a workbench but remember to locate the jig near the front of the work surface to allow for proper operation of the clamping mechanism.

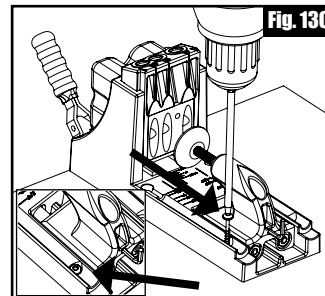
shop • vac® is a registered trademark of the Shop-Vac® Corporation Williamsport, PA.



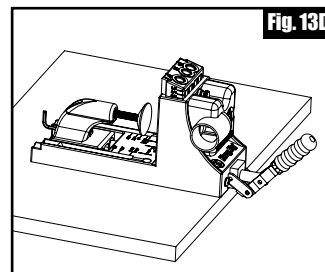
Dust Collection Shroud easily snaps onto the back of the Benchtop Base.



Standard 1-1/4” connection and direction of dust flow.



Attach Benchtop Base to 3/4” plywood with 1-1/4” screws.



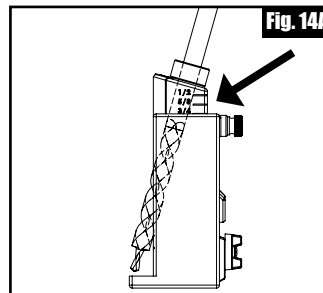
Benchtop Base attached to 3/4” x 12” x 24” wide piece of plywood.

Markings on the K3 Portable Base (Fig. 14A&B)

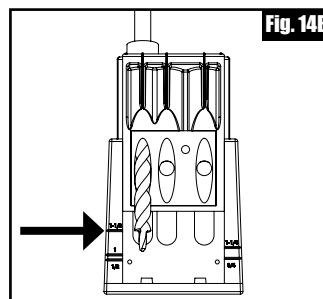
Horizontal lines on the face of each side of the upright of the Portable Base are used to set the Depth Collar position on the Drill Bit. These drill depths allow for maximum screw penetration in the mating workpiece when using the recommended screw for the size material being joined. To use these markings the **stepped shoulder** of the Drill Bit is aligned with the mark by sighting across the surface of Drill Guide Block. Be careful not to set the Depth Collar so that the Drill Bit will penetrate the jig itself. When departing from the designated drill bit depth settings for the given material thickness the pilot point of the Drill Bit should be kept a height of approximately 1/8" above the projected surface of the Portable Base.

About the Premium Face Clamp (Fig. 14C&D)

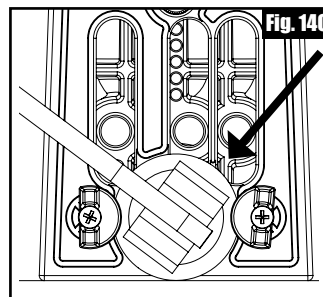
The preferred clamping mechanism for the Portable Base is the Premium Face Clamp. The Premium Face Clamp is attached to the Portable Base by rotating the Locking Tabs to locate the smaller pad of the Premium face Clamp. The smaller pad is placed within the recess on the back of the Portable Base and the Locking Tabs are rotated to capture the smaller clamp pad but still allow freedom of movement of the Premium Face Clamp. After drilling the pocket holes in the work pieces, the Locking Tabs may be rotated to remove the Premium Face Clamp so it may be used for assembly. A network of ribs sit above the rear surface of the Portable Base so that virtually any type of C-clamp may be used to hold the Portable Base to the workpiece being drilled. The K3 Portable Base provides a convenient way to drill pocket holes in large panels or cumbersome work pieces by simply locating the step of the Portable base against the edge of the workpiece and clamping in position.



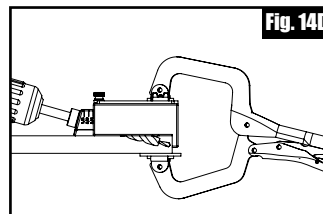
Set the drill guide block to the proper position prior to checking drill bit depth collar setting.



Sight across Portable Base and Drill Guide Block to set drilling depth.



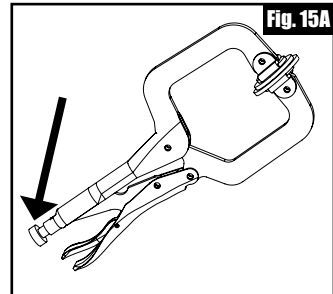
Locking tabs capture small pad of clamp on backside of Portable Base.



Premium Face Clamp in use on edge of large panel.

Adjusting the Premium Face Clamp (Fig. 15A)

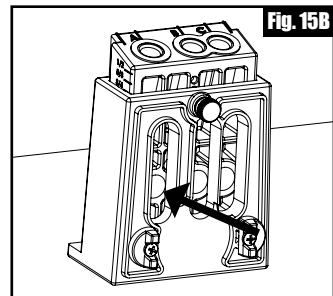
Turn the adjustment screw of the Premium Face Clamp in the counter-clockwise direction for thicker materials and clockwise direction for thinner materials. Clamping pressure is also adjusted using the same adjustment screw; after sizing the clamp opening for the thickness of material, a half-turn of the adjustment screw in the clockwise direction will provide sufficient clamping pressure to hold the jig in place during drilling. To increase clamping pressure turn the adjustment screw clockwise; likewise to decrease clamping pressure turn the adjustment screw counter-clockwise.



Adjustment screw on the Premium Face Clamp.

Portable Base Wood Chip Extraction (Fig. 15B)

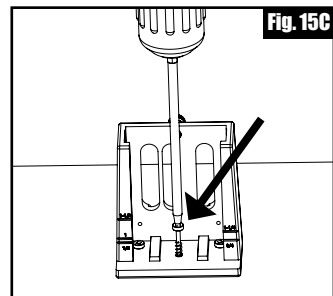
There are openings in the rear surface of the Portable Base that align with the chip extraction holes in the Drill Guide Block to allow a free path for wood chips to exit the Drill Guide Block. By allowing chips to escape less friction will occur with the rotating drill bit thereby easing the drilling stroke and extending drill bit life.



Arrow shows openings for the chip extraction holes.

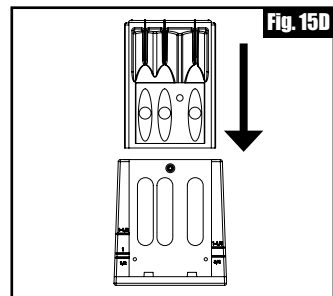
Temporary Mounting Portable Base (Fig. 15C)

The bottom of the Portable Base contains three holes that allow it to be temporarily attached to a workbench for drilling pocket holes in a vertical orientation, similar to the Benchtop Base.



Screwing the Portable Base down for vertical use.

The function of the Portable Base in this setting is virtually the same. The Drill Guide Block is set for the thickness of material to be drilled and the Depth Collar is set to the same corresponding thickness. Although the Premium Face Clamp is recommended for this operation, another type of C-clamp may be used.



Motion of Drill Block Guide sliding down into the Portable Base.

Material Support/Stop (Fig. 16A-D)

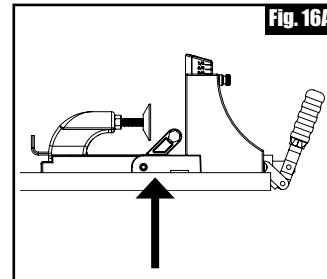
The Material Support/Stop is a dual function feature that both “Supports” large panels to keep them perpendicular to the base of the jig, and “Stops” workpieces in a desired position to easily repeat a 2-hole spacing across a rail.

If you intend to use the Support/Stop mainly as a support, we recommend that you locate it 8-10” from the base of the jig to provide proper support across the full width of a panel. Add multiple Support/Stops to your work surface to gain more placement versatility (Item# KJSS). Screw holes are provided to screw mount the Material Support/Stop to the work surface.

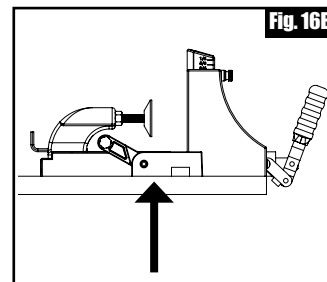
The Material Support/Stop is also designed to function as a position stop. The end of the Nylon Stop Bolt is positioned to rest against the workpiece to “center” the workpiece across the predetermined 2-hole spacing. By locking the Nylon Stop Bolt in position several pieces of the same width may be located and drilled quickly to minimize the time involved in measuring the pocket hole location for each workpiece. When the stop position is no longer being used the Material Support/Stop Arm may be pivoted out of the way to drill panels or large face frame components. We recommend that you locate the Material Support/Stop approximately 1/8” to 3/4” from the base of the jig for optimum performance as a Stop.

You may notice that a notch in the bottom of the Support/Stop Base is sized to span the profile of Kreg Mini Trak. A special “T”-nut and #10-32 Machine Screw are included with the Material Support/Stop hardware pack for mounting to the Kreg Mini Trak. By adding a length of Kreg Mini Trak to either side of the K3 Benchtop Base an adjustable Support/Stop system may be created to allow the drilling of several pocket holes across the width of large panels at repeatable locations.

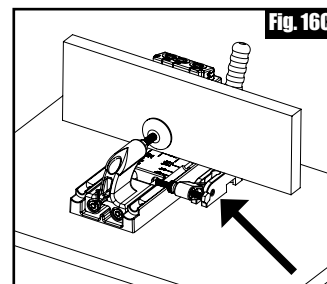
The Material Support/Stop may also be used with the K3 Portable Base as a Stop. Mount the Material Support/Stop adjacent to the Portable Base in a similar fashion as with the Benchtop Base.



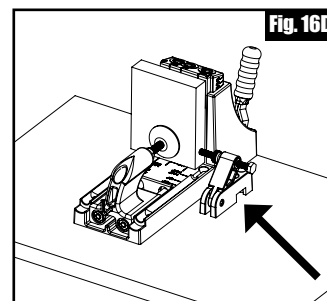
Material Support/Stop shown in “Stop” position.



1” tall Material Support/Stop shown in “Support” position.



Material Support/Stop helping to balance a panel.



Material Support/Stop positioning workpiece for proper placement.

17 Selecting the Correct Screw

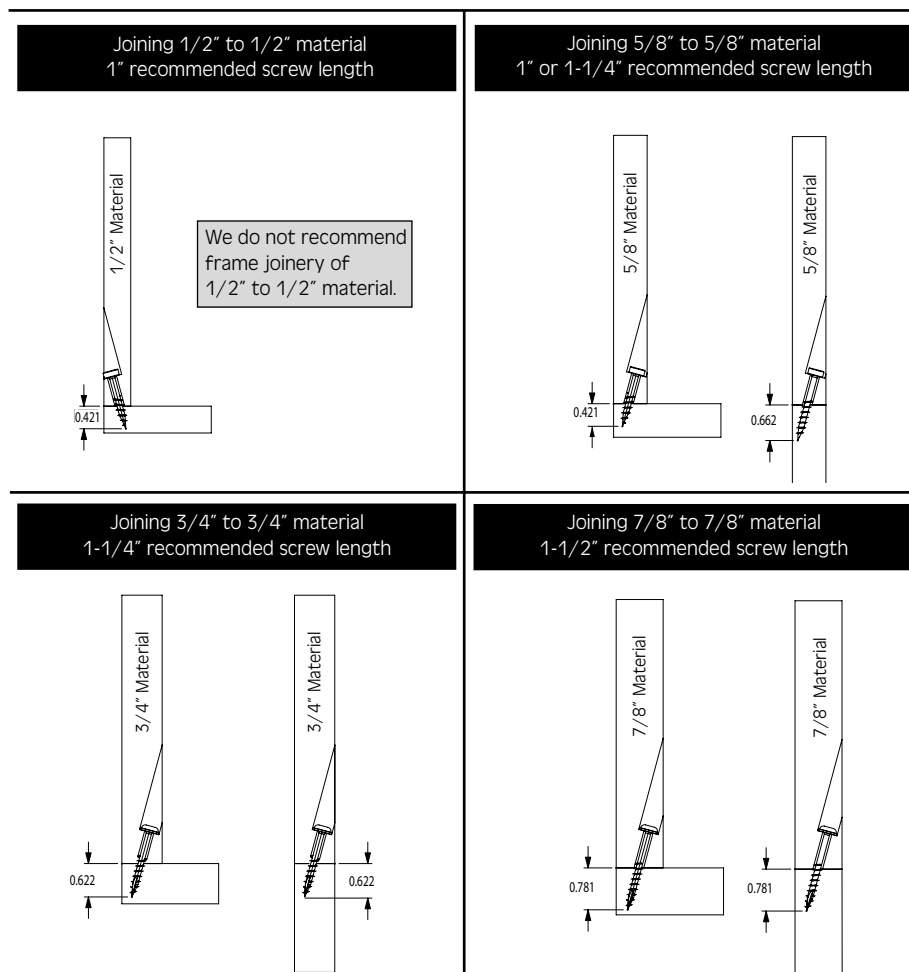


Selecting the Correct Screw for Your Application

Selecting the correct screw for your application is a function of three variables.

1. **Jig setting** - Set jig to the same setting as your wood thickness (ie. 3/4" setting for 3/4" thick wood).
2. **Drill bit depth collar setting** - Set your drill bit to the standard setting using the base of the jig or the chart at the bottom of page 18.
3. **Screw length** - Use the chart below to select the correct screw length.

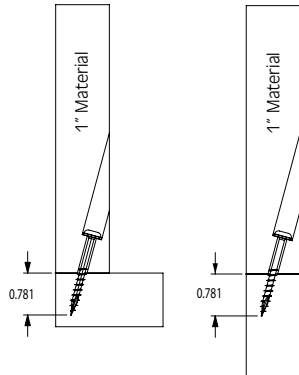
The chart below helps to select the correct screw type when joining like thicknesses of wood (ie. 3/4" to 3/4" material) in both a frame and right angle application. This chart assumes that you are using the setting of the jig that corresponds to the material thickness you are drilling, and that you are using the standard drill bit depth collar settings posted at the bottom right of page 18. These are simply standard guidelines for screw penetration... we always recommend that you test your desired joint in scrap material before drilling and assembling final pocket holes.



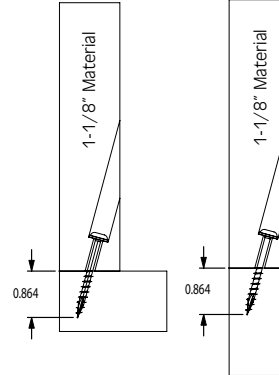


Selecting the Correct Screw 18

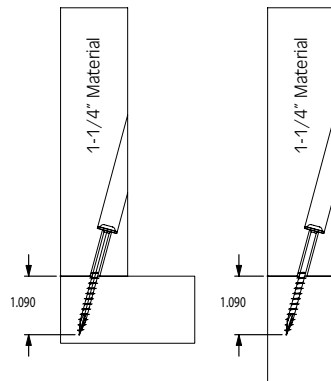
Joining 1" to 1" material
1-1/2" recommended screw length



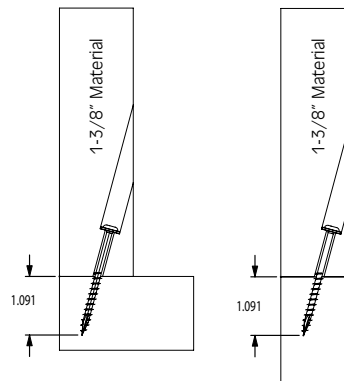
Joining 1-1/8" to 1-1/8" material
1-1/2" recommended screw length



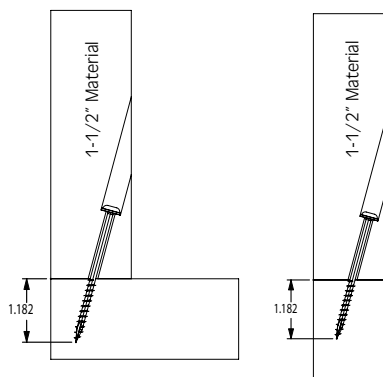
Joining 1-1/4" to 1-1/4" material
2" recommended screw length



Joining 1-3/8" to 1-3/8" material
2" recommended screw length



Joining 1-1/2" to 1-1/2" material
2-1/2" recommended screw length



Standard Depth Collar Settings

To get the amount of screw penetration shown in the charts, use the standard depth collar settings below as measured from the **shoulder** of the drill bit to the depth collar. These distances can also be referenced on the base of both the Benchtop and Portable Base.

Jig Setting	Depth collar distance from shoulder of drill bit
1/2"	3-1/4"
5/8"	3-7/16"
3/4"	3-9/16"
7/8"	3-11/16"
1"	3-7/8"
1-1/8"	4-3/16"
1-1/4"	4-1/8"
1-3/8"	4-5/16"
1-1/2"	4-1/8"

19 Selecting the Correct Screw



Kreg self-tapping screws are specially designed for pocket hole joinery. They feature a self-tapping auger point that eliminates pre-drilling and a large round head that seats flush in the bottom of the pocket hole. All of our screws utilize a #2 square drive recess. The deep recess of the square drive provides positive driver engagement to reduce cam-out. Like every Kreg product, our screws are manufactured from the highest quality materials. To manufacture a virtually unbreakable screw, industrial quality steel is first case-hardened and then coated with a dri-lube finish which reduces driving torque and gives them their bronze appearance. Many of our screw types are available in a weather resistant coating that is approximately 10 times more corrosion resistant than a standard zinc plated screw.

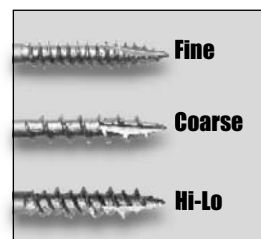


Choosing the right screw...

We offer three thread types, two head styles and five different lengths to handle nearly all pocket hole applications. The characteristics for choosing the screw for your project are detailed below.

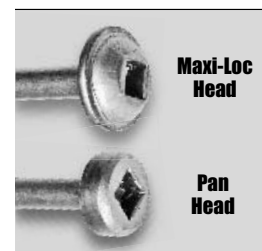
Thread Types

A fine-thread screw is used any time you're driving the screw into a hardwood (i.e., oak, maple, walnut, cherry, hickory, etc.) The coarse-thread screw has a larger thread diameter and provides greater holding power when driving a screw into soft material such as plywood, particle board, MDF, melamine, and pine. We also offer a Hi-Lo thread type which consists of two separate threads, one higher than the other that serves as a general purpose screw in medium hardwoods like poplar. The Hi-Lo screw is only offered in the 1-1/4" length.



Head Styles

The washer head (SML) screw is our most popular head style as it provides the largest amount of surface area to seat firmly in the bottom of the pocket. Available in both fine or coarse thread, this head style is highly recommended if the material the pocket is drilled into is soft such as plywood or pine. The large washer head assures that the screw is not overdriven in the bottom of the pocket.



The second available head style is the pan head (SPS). The pan head is slightly smaller in both head and shank diameter than the washer head screw and is a good alternative to the washer head screw if both mating workpieces are made of extremely hard woods. The pan head style is also of benefit in the 1" length as it allows one to join 1/2" and 5/8" stock and easily seat the screw head below flush.

Screw Length

There are five thread lengths most commonly used in pocket hole joinery; 1", 1-1/4", 1-1/2", 2", and 2-1/2". Choosing the correct screw length depends on the setting of your jig and the depth at which you drill the pocket hole. Both of these standard settings can be viewed on the previous pages.



What screw type (thread) should I use in hardwoods, softwoods?

It is recommended to use a fine thread screw in hardwoods such as oak, maple, walnut, cherry, hickory, etc. Use a coarse thread screw in softer materials such as pine, plywood, melamine, MDF and particle board.

What screw length should I be using?

Our general recommendations for joining like material thicknesses are posted on the previous pages. We always recommend that you test the amount of screw penetration into your second workpiece with a scrap piece of material that is the same thickness as the stock you will be actually joining. Drill a pocket hole, run a screw into the scrap piece in air, then hold the scrap piece up to the second workpiece to visually verify screw penetration depth. Adjust for deeper or shallower penetration by changing the setting of the jig, moving the depth collar or using a different screw length.

My wood is splitting when driving the self-tapping screws.

The first thing to check is the hardness of the material you're working with and the thread pitch of the screw. We always recommend using a fine thread screw in hardwoods such as oak, maple, hickory, cherry, walnut and a coarse thread screw in plywood, particle board, MDF, melamine, pine, etc. If you are already using a fine thread screw in hardwoods and are still having trouble, you may want to try our SPS-F125 or SPS-F150 screw. These screws have a slightly smaller shank size than the washer head screws (SML-F###). Lastly, whenever you encounter problems with materials splitting it is advised to slow down the speed of the driver.

Heads are breaking off when driving the screws.

Not all self-tapping pocket hole screws are created equal. Our screws are designed with a larger head than most common self-tapping screws making them much more likely to strip-out before the head of the screw breaks off. If you are having problems with the head breaking off in a box of KREG Pocket Hole Screws please let us know so we may make it right with you.

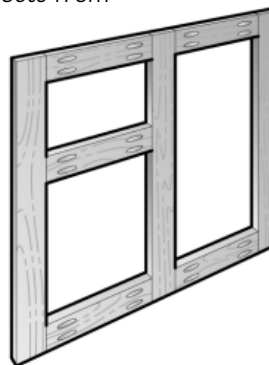
What screw should I use in 1/2" plywood?

This is normally a drawer box assembly question. We recommend using the SPS-C1 screw. This is a pan head coarse thread screw. The pan head is smaller than the washer head screw and more easily seats below the surface of the 1/2" material. The coarse thread provides maximum holding power in plywood.

21 Face Frames



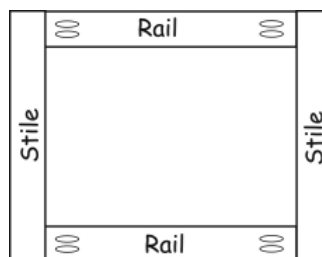
Frames are common to many types of woodworking projects from cabinets to entertainment centers, doors and more. The thread that ties all of these applications together is that the workpieces are assembled in a flat plane. Frames are commonly assembled from material as thin as 5/8" up to 2" thick. For cabinets, 3/4" thick material is the standard. The goal is to always use the setting of the Kreg Jig® that will allow you to place a pocket hole so that the screw will exit the mid-point of your material (ie. for 3/4" thick stock, you will want the screw to exit at 3/8" by using the 3/4" setting of the jig)



Face Frame Components

A. Rail – Horizontal members of a face frame. Pocket holes are always placed into the rail so that the screw will be driven into the stile across the grain.

B. Stile – Vertical members of a face frame. Stiles capture the rail, that is, they run all the way from top to bottom and the rails fit in between.



Standard Face Frame Dimensions

A typical face frame measures 31-1/2" tall by approximately 24" wide when assembled. You can just as easily build a face frame to custom dimensions such as 31-1/2" tall by 48" wide with pocket hole joinery. Rail and stile widths typically range from 1-1/2" to 2-1/2" wide.

Steps to Building a Face Frame

1. Plane wood to thickness, rip to width and cut square to length.

Planing your wood to the same thickness assures that you will produce flush frames without a great deal of sanding once assembled. Cutting your materials accurately will greatly affect overall squareness as a pocket hole joint will pull the workpieces into alignment with the cut edge. (An untrue cut will be pulled into untrue alignment!)

2. Layout and mark your workpieces.

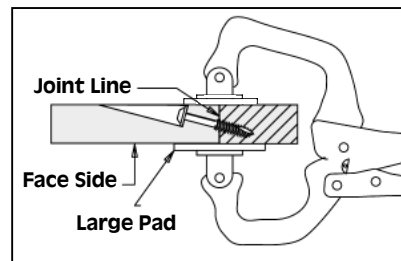
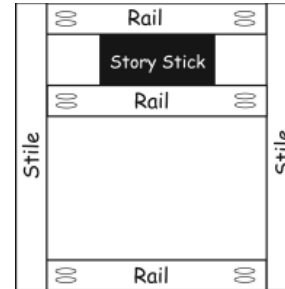
We recommend that you layout your cut workpieces on a workbench and mark each piece on the side that will receive the pocket holes. Measure corner to corner for square.

3. Drill pocket holes in both ends of rails.

Prepare the jig you will be using to center the screw in the material thickness being joined and set your depth collar accordingly (see jig instructions). You will want to place at least two pocket holes across the backside of the rail to make sure that it will not twist once assembled.

4. Position rails into alignment with reference marks on stile.

After the pocket holes have been drilled into the rails, place the workpieces into final alignment on a workbench or assembly grid. If your face frame will have a drawer bank, a good way to reference the size of the opening is to cut a story stick to size that will allow you to consistently and accurately place the intermediate rail.



5. Clamp over joint line and drive screws.

No pre-drilling is required of the stile as long as you are using a self-tapping wood screw. Add glue to the joint line at this time if desired. Place the KREG Face Clamp or Bench Klamp on the joint line to hold the rail and stile perfectly flush as the screws are driven.

Occasionally in very hard or dry material you may split the very top or bottom of a rail when driving a screw. To combat this try cheating the pocket hole on the rail so they are further from the edge of the stile. Another tip is to use a #6 shank size screw such as the SPS-F125 as opposed to the standard SML-F125 which is a #7. Another option is to use only one pocket hole per rail end if necessary.

23 Leg and Rail



The Leg and Rail joint is a standard with table and chair assembly. Design options include either a set-back or flush rail. Use corner braces or a gusset to stiffen the joint. Pocket holes can also be drilled upwards into the rail to attach the table top at a later time.



Leg and Rail Components

- A. Leg** – The main vertical support that extends all the way to the floor. Can be turned, square, rectangular or tapered.
- B. Rail** – Horizontal members that are screwed into the Leg.
- C. Gusset or corner brace** – Squaring / support blocks that reinforce the joint.

Standard Leg and Rail Dimensions

Tables and chairs come in various sizes but all incorporate a Leg and Rail connection. Legs can be purchased pre-turned, as furniture squares or laminated from thinner pieces of stock. Typical finished leg sizes range from 1-1/2" to 6" square. Rail widths will vary according to the size of the leg and overall length of the table or chair. 3/4" thick rails are very common in coffee tables, end tables and sofa tables while thicker rails may be found on dining tables.

Steps to Building a Leg and Rail Joint

1. Buy or prepare legs for assembly.

One of the most economical ways to construct legs for coffee and end tables is by simply laminating two pieces of 3/4" stock together. Plane your material to the same thickness, rip square, clamp and glue overnight. Once dried, trim and cut to final length.

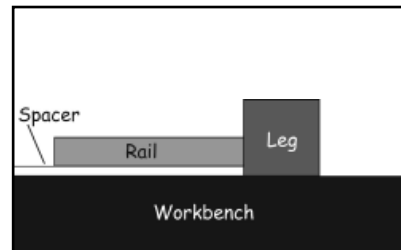
2. Drill pocket holes into end of rail.

Normally two or three pocket holes across a 3" rail is sufficient. If you are planning on attaching the table or chair top through the rail it is recommended to drill the pocket holes upward into the rail at this time before final assembly to the legs.

Set-back Rail -

A rail that is set-back from the edge of the leg to highlight a reveal is a very common way to dress up a table or chair and give the design depth and sophistication. This set-back is very easy to achieve with pocket hole joinery.

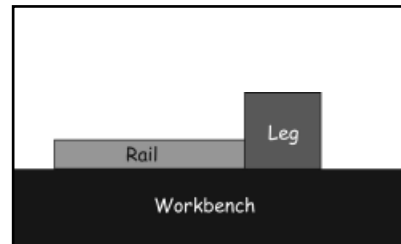
Cut a piece of material to the thickness of your desired set-back (1/4" plywood works well). Secure the leg to a workbench with a clamp. Butt the 1/4" plywood, or desired material, up against the leg at the location to be joined. Set the rail onto the plywood so it is raised off the workbench, clamp if desired and drive the screws.



Flush Rail -

This is the simplest form of a leg and rail connection where the rail is attached perfectly flush to the edge of the leg.

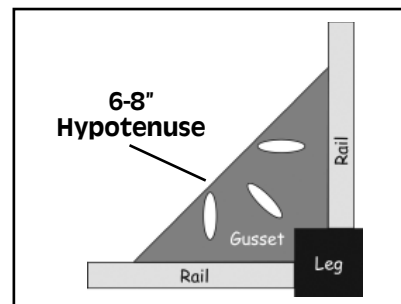
Secure the leg to a flat workbench with a clamp. Butt the rail up against the leg at the location to be joined making sure the top edge of the rail is flush with the top of the leg. Clamp the rail to the workbench if desired and drive the screws.



Gusset Supports -

A great way to add strength and square up a corner.

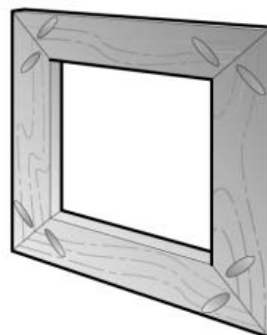
On a typical table with a 2" square leg and a 1/4" set-back rail you will want to first create a right triangle gusset with a 6-8" hypotenuse. Next cut a 1" by 1" square out of the corner. Take the finished gusset and place a pocket hole perpendicular to the short legs of the right triangle so that the screw will be driven directly into the rails (make sure to check the amount of screw penetration in a scrap workpiece before final assembly). You can also place a pocket hole into the corner of the gusset with the Mini Kreg Jig® to further tie it into the leg.



25 Mitered Joints



This section relates to mitered joints that are assembled in a flat plane such as a picture frame. This is probably one of the most challenging types of joints to produce with pocket hole joinery. Understanding how the orientation of the pocket hole and the width of the stock being joined varies will allow you to join frames more easily.

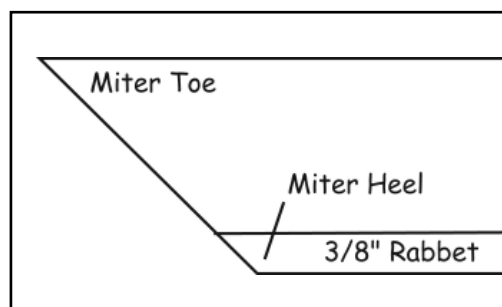


Miter Components

A. Miter toe – The outside point of a mitered workpiece.

B. Miter heel – The inside corner of a mitered workpiece.

C. Rabbet – This is typically a 3/8" wide by 1/2" deep L-shaped groove set into the edge of the frame that allows the backing material to be inserted.



Standard Miter Dimensions

A miter cut refers to anything other than a 90 degree cut. Two 45 degree miter cuts when assembled create a 90 degree joint, while two 30 degree angles will produce a 60 degree joint. To calculate the angles needed to make a hexagon, octagon, etc. simply take 360 degrees and divide it by the number of sides multiplied by two (ie. For an octagon take $360 / (8 * 2) = 22.5$ degrees

Triangle	60 degrees	Heptagon	25.7 degrees
Square	45 degrees	Octagon	22.5 degrees
Pentagon	36 degrees	Nonagon	20 degrees
Hexagon	30 degrees	Decagon	18 degrees

Frames are typically made from 3/4" thick stock. Material width of frame members can range from 1-1/2" wide to 5" wide and beyond. One thing to keep in mind with pocket hole joinery is that the wider the frame members, the easier they are to join. Many frames also incorporate a standard 3/8" wide by 1/2" deep rabbet into the inside edge of the frame that serves to allow the glass, picture and backing material to be secured.

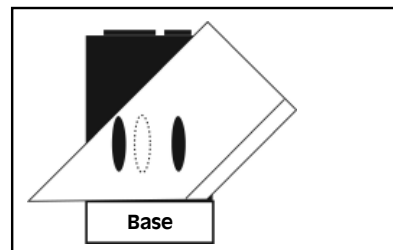
Steps to Building a Miter joint

1. Plane material to uniform thickness, rip to width and rout rabbet if desired.

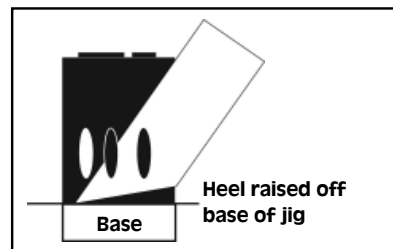
2. Cut desired miter on workpiece and position to drill pocket holes.

There are a few different ways to join mitered pieces with pocket hole joinery. This example below focuses on joining two 45 degree mitered pieces by placing two pocket holes across the workpiece perpendicular to the edge of the miter as shown in the image at right. The workpieces are 3" wide with a 3/8" rabbet along the inside edge.

a. Position one workpiece so that the edge of the miter rests entirely on the base of the jig and the drill guides will not interfere with the edge of the board or the rabbet as shown at right. On this 3" wide piece, use the A-C setting of the Kreg Jig® K3 or a 1-1/2" center to center pocket hole spacing.

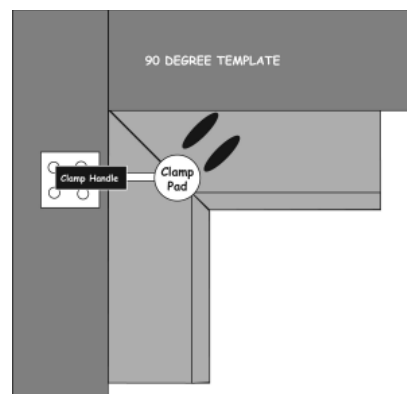


b. If your workpiece is less than 2" in width, you may need to raise the heel of the miter off of the base of the jig slightly in order to get the entire impression of the pocket hole on the backside of the workpiece. Adjust drilling depth and screw length accordingly in this situation.



3. Clamp and drive screws.

You can use many different styles of clamps to hold the workpieces flush while the screws are driven. If you will be assembling a number of miter joints you may want to produce an assembly fixture to help hold the toes of the miters in perfect alignment. The fixture consists of a piece of plywood that has two hardwood pieces attached to it to form a perfect 90 degree angle. You can add an overhead clamp to this fixture to produce consistent clamping results.

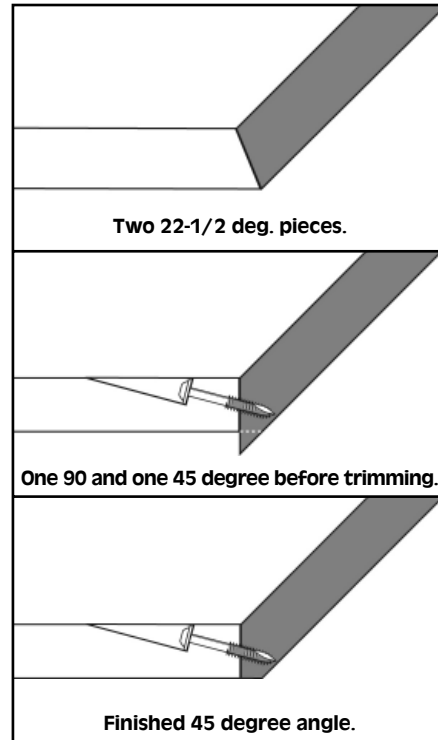


27 Angled Joints/Curves



Angles and curves are a great application for pocket hole joinery. With other methods of joinery an angled joint must be held in alignment for a substantial amount of time with bar clamps. Uneven pressure along the joint line can result in bowing, gaps or misalignment. The pocket hole joint solves this by putting constant pressure along the joint line in the form of screws that pull the two flat surfaces tightly together.

A typical 45 degree angle such as what you might find on an angled cabinet face frame front is traditionally made by joining two 22-1/2 degree pieces. With pocket hole joinery this joint is constructed by cutting the entire 45 degrees on one workpiece and leaving the other piece as a 90 degree. These two workpieces are then aligned flush on their inside edges which leaves an overhang on the front side which can be taken off with a jointer, sander or hand plane once assembled (if you don't have a jointer, you can tip your table saw blade to 45 degrees, cut it close and then finish with a belt sander).



The result of this assembly method is that once the overhang is taken off the joint line is in effect "shifted" around the corner and hidden from view. The resulting solid wood corner is more resistant to wear and abuse because the mitered edges are no longer exposed on the edge. This same concept can be adapted to any angled joint application. Do not use plywood for angled stile as the ply will show after trimming the overhang.

Angle Components

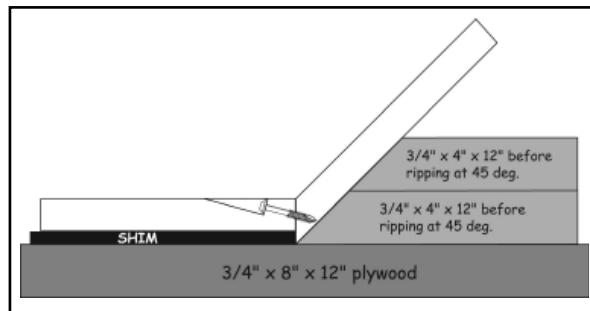
- A. Angled Stile** – The workpiece that contains the entire desired angle cut on one edge.
- B. 90 degree Stile** – The second workpiece to be joined cut at a 90 degree angle on both edges.
- C. Assembly Jig** – A homemade fixture you will want to build that will help hold the inside edges of the two stiles aligned while the screws are being driven.

Steps to Building an Angled Joint

1. Plane stiles to same thickness, rip to width and cut square to length. Place desired angle on inside edge of one stile.

2. Build an assembly jig from scrap stock.

We recommend that you first cut a plywood base 8" by 12". Next laminate two 3/4" x 4" x 12" hardwood pieces together with glue and then cut the block on an angle that will complement your desired assembly angle. Mount this angled piece to the plywood. Lastly, take your workpieces to be assembled, align them on their inside edges and measure the overhang that



occurs. Make a shim the same height as the overhang measurement and attach this to the plywood base so that the edge butts up with the angled piece.

3. Drill pocket holes into the edge of the 90 degree stile.

Prepare the pocket hole jig you will be using to center the screw in the material thickness being joined and set your depth collar accordingly (see jig instructions). We recommend that you place pocket holes every 6-8 inches along the length of the stile. Test the drill depth and screw penetration in scrap workpieces that are the same thickness as your actual stock before final assembly. If the screw tip protrudes too far into the second workpiece you can simply set the depth collar closer to the step of the drill bit to create a shallower hole.

4. Position stiles and drive screws.

Apply glue at this time if desired. Alternate from one end the the other as you slide the stiles across the assembly jig you have created. Press down onto the angled stile as you assemble to create a uniform overhang.

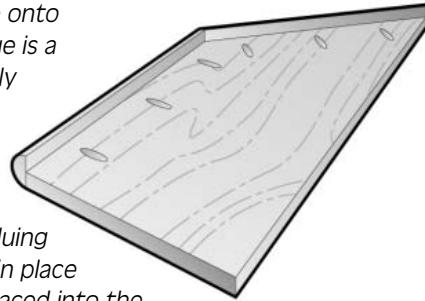
5. Remove overhang from the front edge.

Remove the overhang from the front edge of the workpieces with a jointer, sander or hand plane once assembled (if you don't have a jointer, you can tip our table saw blade to 45 degrees, cut it close and then finish with a belt sander).

29 Edgebanding



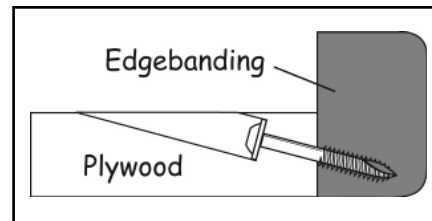
Edgebanding, or placing a solid wood edge piece onto plywood or melamine to hide the unfinished edge is a great application for pocket hole joinery. Typically used for countertops, tabletops and shelves. In the past this process would be completed by either brad nailing the solid wood onto the plywood which would require time consuming filling and sanding of the brad holes, or simply gluing the solid wood onto the plywood and holding it in place overnight with bar clamps. Using pocket holes placed into the underside of the plywood to secure the hardwood creates an extremely fast and strong joint resulting from the large amount of clamping pressure exerted by the self-tapping screws.



Edgebanding Components

A. Edgebanding — Typically a piece approximately 1" x 1-1/2" solid wood cut to correspond with the dimensions of the countertop/ shelf. Often has a routed profile to soften the edges and add visual appeal.

B. Plywood / Melamine -- (3/4" thick)



Steps to assemble Edgebanding

1. Rip edgebanding to size. Rout desired profile. Cut to length.

Rip the solid wood piece to size making sure that all edges are square and true. Rout profile onto the stock at this time. Cut to length and dri-fit to plywood or melamine before assembling.

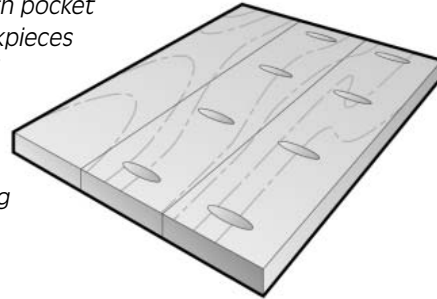
2. Drill pocket holes into plywood.

We recommend that you place pocket holes every 6-8 inches along the length of the plywood for adequate holding power.

3. Drive screws to assemble edgebanding.

Apply glue at this time before assembly. A great way to assemble edgebanding for a perfectly flush fit is to firmly clamp the solid wood piece down to a flat surface using the Kreg Bench Klamp. Then slide the ply material into position and drive a fine thread self-tapping screw. Make sure that you test the amount of screw travel in scrap pieces before final assembly.

Edgejoining, or assembling workpieces edge to edge such as for a solid wood tabletop is easily accomplished with pocket hole joinery. In traditional edgejoining, the workpieces are only glued together and then pipe clamped overnight to allow for the glue to set-up. With pocket hole joinery one simply glues and screws to assemble one layer at a time. This process can be immediately followed by sanding and trimming to size without delay.



Standard Dimensions

Materials to be edgejoined are typically solid wood. The general rule of thumb is to not edgejoin a board that is wider than 5" to avoid any cupping or bowing that could occur with changes in moisture levels. It is recommended to alternate the growth rings of the individual boards being joined to head off any potential problems.



(Alternating grain direction)

Steps to Edgejoin a Tabletop

1. Plane wood to same thickness. Rip to width and joint edges.

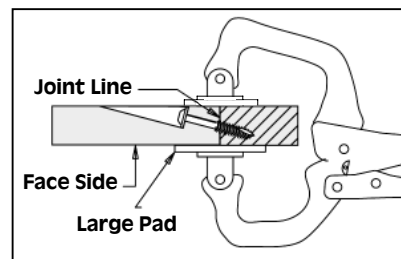
It is important to plane your wood to the same thickness to assure a flush top that requires minimal sanding. Once your boards are ripped to length, it is recommended to joint the edges of the board to create a tight joint line.

2. Drill pocket holes into edge of boards.

Layout your boards on a workbench. Alternate grain direction and choose the best face on each board. Layout pocket hole placement approximately every 6-8 inches across the length of the board with pencil lines (note you will not have to drill pocket holes into the first board in the sequence).

3. Clamp flush and drive screws.

On the first board, place a Face Clamp™ on the joint line directly over the pocket hole. Make sure that the large pad of the clamp is on the face side of the joint line to keep the workpieces perfectly flush. Assemble one screw at a time, moving the clamp directly over each pocket hole while assembling.



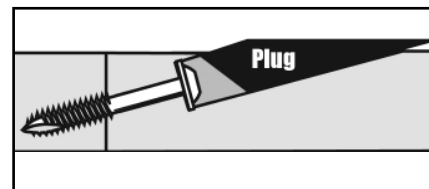
31 Plugging A Pocket Hole



Normally pocket holes are placed on the backside or underside of a project where they are hidden from view. From time to time however, you may find the need to place one in a visible location. In this event, KREG manufactures solid wood pocket hole plugs that can be glued in over the head of the screw and sanded flush to conceal the hole. These plugs are available in a variety of wood species.

Anatomy of a Pocket Hole Plug

Plugs are cut at an angle so that they sit perfectly flush on the top of the screw head when fully inserted. A small amount of plug will remain above flush and will need to be either trimmed off with a hand saw or sanded.



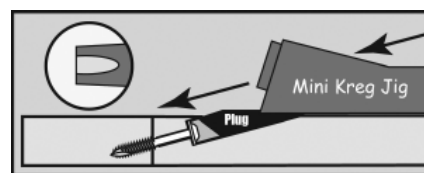
Steps to Plug a Pocket Hole

1. Drill hole to adequate depth and drive screw to secure joint.

One of the most frequently asked questions we receive is why does the plug not fully cover the pocket hole? Normally this is caused by not drilling the pocket hole deep enough to allow the plug to fully close the hole. Our normal suggestion is to set the depth collar on the drill bit approximately 1/8" further from the step of the drill bit to insure that the screw head will be deep enough into the pocket.

2. Glue and press into place.

Place a fair amount of glue into the bottom of the pocket and then also around the perimeter of the plug itself. Press into place and wipe away excess glue. The Mini Kreg Jig® contains a recess on its underside that can be used to firmly seat the plug into place.



Pressing a plug into place.

3. Trim or sand off excess plug.

Once the glue has setup, plugs can be trimmed or sanded off. Softwoods such as pine and basswood can often be made flush with an orbital sander while hardwoods such as oak and maple will most likely require trimming with a flush cut handsaw before final sanding. We have found that a laminate trimmer fitted with a bull-nose bit and a 45 degree base also works well if you will be trimming a number of plugs.

**Why do I need to use a 2,000+ rpm drill to make the pocket holes?****What brand do you recommend?**

A drill that is rated at 2,000 RPM or above is considered a woodworking drill. RPM's below that are normally seen in metal-working drills. The higher the RPM, the cleaner the hole and the longer the drill bit lasts. A 1,500 RPM drill will do the trick, but you will see slightly more wear on the bit over time. Most of the major tool manufacturers produce a drill above 2,000 RPM.

Do I need to drill all the way through the edge of the workpiece?

No. We recommend setting the depth collar so that the tip of your drill bit rests approximately 1/8" from the base of the jig for 3/4" material. Why you ask? By not drilling all the way through the edge you won't have to deal with the possibility of having a burr that you will need to remove before joining your pieces. The self-tapping tip of the pocket hole screw will easily drill through the last 1/8" of an inch and drill its own hole into the second workpiece, drawing the pieces tight without having to pre-drill.

Do I need to drill a pilot hole into the second workpiece?

No. The self-tapping tip of the pocket hole screw accomplishes this task for you. Even in very hard woods like hickory and maple no pre-drilling is required which saves an immense amount of assembly time.

Can I use pocket holes in melamine and MDF?

Yes. They are usually a little more finicky than simple hardwoods so here are a few suggestions that we find helpful...

1. Make sure you're using a sharp drill bit.
2. SLOW DOWN! Use a slower feed rate while both drilling the pocket hole and driving the screws.
3. Set the clutch setting on your driver to a light setting to avoid overdriving the screw.
4. Use a coarse thread, self-tapping screw with a washer head for maximum holding power.
5. Try to place pocket holes at least an inch from the end of your workpiece.
(The workpiece may split if the screw is driven too close to the edge)

The pocket hole plugs sit well over flush when placed in the bottom of the pocket hole. Is this normal? What is the best way to sand plugs flush?

Yes, this is normal. The depth that the plug seats into the bottom of the hole depends on the depth of the hole that is drilled. We must make the plugs with a certain tolerance of plug length to allow for varying hole depths. As a general rule, the deeper you drill the hole, the less plug you will need to sand off. There are a couple of different ways to trim plugs. If you will be trimming very few plugs, a flush cut hand saw followed by a light sanding works very well. If you will be trimming many plugs we recommend using a laminate trimmer outfitted with a bull nose bit. Trim off the majority of the plug, and then finish with a light sanding. See page 31 for more details.

33 General FAQ



What is the recommended pocket hole spacing across a panel?

We suggest that you place pocket holes every 6-8 inches across the length of a workpiece for adequate strength. Feel free to place them closer or further apart as the application warrants.

I am experiencing wood movement as I screw my joint together. How can I eliminate this?

First and foremost, the use of our Face Clamps will eliminate most wood movement while driving a screw. A good rule to use whenever attempting to assemble a pocket hole joint is that the screw will tend to pull the workpieces away from the side the pocket hole is placed on. Therefore, a simple solution is to always clamp a stop (clamp, scrap workpiece, workbench) on the opposite side of the pocket holes. By doing this, you will be able to consistently produce perfectly flush joints. Another trick that seems to work well if you're experiencing movement mainly caused by the lubricity of glue on the joint line is to first dry fit your workpieces and drive one or two screws, then disassemble, apply glue to the workpieces and re-assemble.

I am afraid to use pocket holes because I am worried about wood expanding and contracting with changes in the seasons. What do you recommend?

There are a couple of easy ways to compensate for this type of wood movement. Let's assume an example of attaching a rail or apron to a solid tabletop. First, set your depth collar on the drill bit so you barely drill through the edge of the rail or apron. This will create a larger pilot hole for the screw shank and will create the effect of a "floating top". Secondly, drive the screw into the top until tightened, then back off 1/4 of a turn. This will allow for plenty of expansion and contraction of the wood.

How can I get the longest life out of my drill bit?

We suggest following a few simple guidelines to get the longest life out of your drill bit.

1. Use a corded drill rated at 2,000 rpm or above (this is normally characterized as a woodworking drill, a metal-working drill is usually rated under 1,500 rpm).
2. Place the bit into the drill guide before starting the drill.
3. Make sure the drill is up to full rpm before plunging it into the workpiece. Sharpen the bit before it becomes so dull it breaks. In oak, this averages about every 2,500 pocket holes.

How many holes can I expect to drill before sharpening my drill bit?

You can expect to drill between 2,000 and 3,000 holes with your KJD drill bit when working with oak material. Drill bit life directly correlates to material composition.

Can the Kreg drill bit be sharpened?

Yes, we have a factory sharpening service for KREG bits only. KREG drill bits have "Kreg" stamped into the shank of the bit. We recommend sharpening the Kreg Jig® KJD bit every 2,500 holes and the DKDB (machine) bit every 8,000 holes. Package the bit securely and send it along with a check to the address on the following page.



What type of warranty do the pocket hole jigs carry?

We are confident that you will enjoy your KREG products. The Kreg Jig® K3 Pocket Hole System carries a lifetime warranty on the hardened steel drill guides when used with the KREG KJD drill bit. All of our tools also carry a 30-day complete satisfaction guarantee. If for any reason you are not completely satisfied within 30 days of purchase return the product along with your proof of purchase to the location you purchased the product from.

Are drill bits covered with a warranty?

No. Drill bits are not covered with any type of warranty. We are extremely confident that with due care our drill bits will exceed your expectations. If you are dissatisfied with the performance of your bit (ie. the bit broke on the 5th drilled pocket hole) please review the guidelines for extending drill bit life and contact us if you still have a concern and we will do our best to accommodate you.

Contact Information

Feel free to contact us with any questions, comments, concerns, or product suggestions. Send via email customerservice@kregtool.com or mail to...



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