INSTRUCTIONS

Rev. 1

for Building a

Kneeler

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A Few Remarks About Making the Kneeler

Robert Penoyer
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A WARNING – PLEASE READ

Woodworking can be dangerous! It's up to you to determine if you can safely use the tools and perform the tasks needed to complete this and any other woodworking project. If you are unsure, STOP! Get advice from someone knowledgeable or do some careful studying on your own. Be safe!

Always wear at least an appropriate N95 dust mask or respirator when sanding or when spraying finishes. For advice about dust masks and respirators, visit this link:

https://woodworkingtoolkit.com/best-dust-masks-respirators/

READ, UNDERSTAND, AND FOLLOW ALL OF THE INSTRUCTIONS AND WARNINGS THAT CAME WITH YOUR TOOLS. BE CAREFUL!

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Why Build This Project?

You or a loved one, particularly an elderly person, might want to practice certain religious rituals in the privacy of his or her own home, or maybe in an assisted living facility.

This Kneeler allows for kneeling as in church. The handles are 23″ tall to assist a person in returning to a standing position. The cushion is comfortable and similar to the cushions found in the kneelers of Catholic churches.

Figure 1. The Kneeler

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Key Features of the Kneeler

- The tops of the Handles are 23" above the floor
- The Handles have an attractive taper along each edge
- The wooden kneeling surface measures 21"x7 1/4" and is 6 1/2" above the floor
- The Cushion is 1 1/2" thick and comfortable for prolonged kneeling
- The Cushion is secured to the Top with Velcro straps laced through 4 holes in the Top
- The Cushion overhangs each edge of the Top by more than 1 1/4" to prevent knees or shins from accidently coming into direct contact with the edges of the wood
- The Feet are 13" wide for stability
- A 4 1/2"x2 1/2" Christian cross is mortised 1/8" deep into the outside face of each Handle
- Two sets of 1/4-20 hardware are used to secure the Handles to the Feet and Support Rails for maximum strength

Materials

- Wood: 1"x8" poplar boards (actual dimensions: 3/4"x7 1/4")
- MDF (Medium Density Fiberboard): 1/4" thick
- Glue: None on the Kneeler. Glue of your choice is used to make a Template.
- Screws: #8x1 1/4" and #10x2" flathead wood screws
- Nails: #18x1 1/2". (Nails are optional and useful only if a nail gun is available.)
- Special hardware and other material:
    - 1/4-20 threaded rod (2 required)
    - 1/4-20 sex bolts (4 required). (Yes, that's what they're called. They're sometimes called Chicago bolts. These are described on Page 21. They're available as Part Number 14339 from boltdepot.com.)
    - Padding suitable for kneeling (Described on Page 23)
    - Fabric to cover the padding (Described on Page 24)
    - Velcro straps

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Required Skill Level

You should have at least **intermediate** woodworking skills before attempting to build this project.

Some router work is needed, so **safe router skills are important**. You must know how to safely use a flush-cutting bit, a round-over bit, and a guide bushing. You should also know how to minimize tear-out when cutting with a flush-cutting bit.

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Details of the SketchUp File and Equivalent PDF File

File *Kneeler_17_SKETCHUP_VERSION_8.skp* is the SketchUp design for the Kneeler. This file is useful since all of the dimensions and other necessary details are incorporated here. But if you should find a dimension or other detail missing, it can be determined by examining this file. And you can orbit and move the model around for a better look at everything.

File *Kneeler_17_SKETCHUP_VERSION_8.pdf* contains all of the images and dimensions from the SketchUp file. Use this if you're not familiar with, or don't use, SketchUp.

If you would like to view the SketchUp file (.skp) without the expense of paying for SketchUp, you can obtain the free SketchUp Viewer here:

https://www.sketchup.com/products/sketchup-viewer

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Use the Included SketchUp or PDF File to Follow Along With These Descriptions

There are 10 pages in this design. The heading of each section below corresponds to the name of a particular SketchUp/PDF page. These files are referred to below as "the design drawing."

Assembly

This is a view of the entire assembly with the Cushion in place.

Assembly Bottom

Most of the important structural details are visible in this view.

Notice that there are two Support Rails. These are used for strength and to enclose two 1/4-20 threaded rods.

The threaded rods are not shown in this view. However, they pass through the holes at the right in this view, then between the Support rails, and then through two holes on the other side. Only one of the holes at the left is visible in this view.

IMPORTANT: IT IS UNSAFE TO BUILD THIS PROJECT WITHOUT THE 1/4-20 THREADED ROD AND ASSOCIATED HARDWARE. When someone uses the tops of the Handles for support while attempting to stand, outward forces naturally act against the handles. The long handles multiply the forces that act at the anchor points. The threaded rod and associated hardware are needed to withstand those high forces. **The Kneeler could collapse if you fail to use the threaded rods and associated hardware.**

Finally, notice that the bottom of the Handles and the cutout of the Feet are flush with each other.

Handle

Two Handles are needed. A lot of detail is visible in this drawing. First, the 7 1/4" overall width is the normal width of a 1"x8" poplar board, so no cuts are needed to establish the width of the Handle.

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The 2 1/2" diameter hole is a place where the user's fingers can wrap. It's also a place to hold when carrying the Kneeler. The 1/4" round-overs along the top edges of the Handle, near the hole, provides a comfortable rest for the user's hands. The inner edges of the holes also receive 1/4" round-overs.

The tapers on both edges give the Handle an attractive appearance.

The two 5/16" holes are for the 1/4-20 threaded rod and sex bolts that will secure the Handles, Feet, and Support Rails together. (To be clear, "sex bolts" is a real term. They're sometimes called Chicago bolts. These are discussed in more detail on Page 21.) *These holes should not be drilled until each Handle is secured to each Foot as described on Page 18.*

A 4 1/2"x2 1/2" Christian cross is mortised 1/8" deep into the outside face of each Handle.

Foot

Two Feet are needed. The 5/16" holes in each Foot correspond to the 5/16" holes in each Handle. *These holes should not be drilled until each Foot is secured to each Handle as described on Page 18.*

Top

The top is a simple rectangle. It incorporates 4 holes where the Velcro straps of the Cushion will be attached. The two long edges along the top face of the Top are given a 1/4" round-over.

Support Rail

Two Support Rails are needed. These are simple rectangles.

Routing Template

The Routing Template drawing shows the dimensions of the cutout area of the template that is used to cut the crosses into the Handles.

The dimensions given in the drawings assume the use of the *Whiteside 9500 Solid Brass Inlay Kit*:

https://www.whitesiderouterbits.com/products/9500?_pos=1&_sid=88084c6c1&_ss=r

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You can use other brands of router bits and guide bushings, but you should try to use a 1/8" diameter down-cutting bit together with a guide bushing having a 5/16" diameter collar. The descriptions later in these Instructions assume those dimensions.

The yellow cross at the left represents the dimensions of the opening of a template that will result in a cross-shaped mortise having dimensions of 4 1/2"x2 1/2".

The yellow and green crosses at the right show how the spacing inherent in a bit-and-guide-bushing setup reduces the dimensions of the yellow template down to the desired dimensions of the green mortise.

The green cross drawing is broken into squares (equal to 1/2" on a side) to clearly show the height-to-width proportions of the cross.

Template Implementation

The Routing Template for making the cross comprises 8 discrete pieces. Their edges are simply glued together to form the pattern. This technique ensures that the cross will have both straight sides and parallel sides. *Note that the corner of each piece that's immediately adjacent to an inside corner of the cross must be square.*

All of the pieces, both blue and beige, are made from 1/4" MDF.

Cushion

The Cushion comprises a particular kind of padding wrapped in leather or synthetic leather. Certainly, almost any sort of upholstery fabric will work, but it should be of a type that's comfortable against bare knees and legs.

Cushion Strapping

Notice the overhang of the Cushion beyond the edges of the Top. This was done so that the cushion isn't likely to get pushed back accidently and expose the knees or shins of a kneeling person to the wood underneath.

Velcro strapping secures the Cushion to the Top. This drawing is a bottom view of the Cushion resting on the Top. The areas highlighted in yellow show where the Velcro strapping should be sewn to the Cushion and where they wrap around the Top. One end of a Velcro strap passes through a hole in the Top while the other end passes around the outside edge of the Top.

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Building the Kneeler

Top

The top is 7 1/4" wide, the standard width of a piece of 1"x8" dimensional lumber. So, simply cut a piece of 1x8 to a length of 21".

Use a Forstner bit to drill each of the 4 holes. Be sure to use some scrap behind the Top while drilling to prevent tear-out.

Apply a 1/4" round-over along the two long edges on the top face. No round-over is needed on the bottom face.

Support Rails

Cut two piece 19 1/2" long by 4 3/8" wide.

Feet

Cut two pieces 13" long by 5 3/4" wide. **Be sure that the grain runs in the direction of the 13" dimension; otherwise, you risk splitting the Feet when weight is put on them.**

Do not drill the 5/16" holes until each Foot is secured to each Handle as describe on Page 19.

Cut the bevels as shown in the design drawing.

Use a 1" Forstner bit to drill a hole at each corner of the cutout at the bottom of each Foot. Use some scrap behind the workpiece while drilling to help avoid tear-out.

Mark a line perpendicular to the bottom of the Foot such that it just touches the outer edge of one hole and another line that just touches the outer edge of the of the other hole. Mark a straight line that just touches the tops of the 2 holes.

The cutout can now be completed in one of **two ways**:

Quick and Dirty: Use a jigsaw or bandsaw to cut along the lines, just inside the waste side. Sand the cuts smooth.

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Smooth and Professional: Use a jigsaw or bandsaw to cut along the lines while staying about 1/8" on the waste side of the lines. Now use a piece of scrap with a straight edge and secure it against one of the lines using double-sided tape or clamps. Follow the edge of the scrap with the bearing of a flush-cutting router bit to cut away the rest of the waste material next to the line. Make similar cuts along the other 2 lines. Be sure not to damage the inner surface of the holes with the router bit.

Apply a 1/4" round-over only to the edges shown. **Do not round over any edge not indicated in the design drawing.**

Construct the Template

Refer to the Template Implementation page of the design drawing. Cut 4 pieces of 1/4" MDF into squares approximately 5" on a side.

Use a reliable square to check the squareness of the corners of the pieces that you just cut. Find and mark one corner of each piece that you know to be square. If at least one corner of each piece isn't truly square, you will need to recut the pieces.

Cut a length of MDF 11/16" wide. Then cut it into 5 (yes, *five*) pieces, each roughly 3" long.

Now your goal is to assemble the pieces as shown in Figure 2. *Note the pencil mark at the corner of each large piece. Each mark tells me that corner is square.*

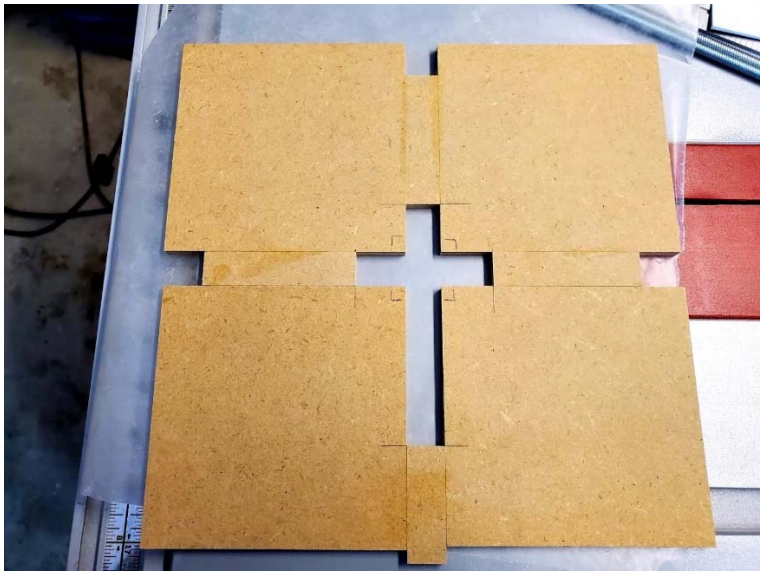

Figure 2. Cross Template

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You might have noticed the waxed paper in Figure 2. That was used to prevent any glue squeeze-out from adhering to the flat surface below the Template.

Construct the template in stages following this procedure while observing the dimensions in the design drawing:

1. Look at the arrangement of the top half of the template: from left to right, large piece, thin piece, and large piece. Lay the two large pieces on a flat surface against a straightedge along their <u>bottom</u> edges with the thin piece in between. Glue the pieces together while each large piece is pressed against the straightedge and the thin piece is spaced exactly 1" from the straightedge. Let the glue cure.
2. Now look at the arrangement of the bottom half of the template. Again, from left to right, its large piece, thin piece, and large piece. Lay the two large pieces on a flat surface against a straightedge along their <u>top</u> edges with the thin piece in between. Glue the pieces together while each large piece is pressed against the straightedge and the thin piece is spaced exactly 3" from the straightedge. Let the glue cure.
3. Once the glue in Steps 1 and 2 has cured, arrange the two assemblies on a flat surface so that the assembly from Step 1 is above the assembly from Step 2, with two thin pieces between the two assemblies. Also, place another thin piece vertically to align the two assemblies as shown in Figure 3.

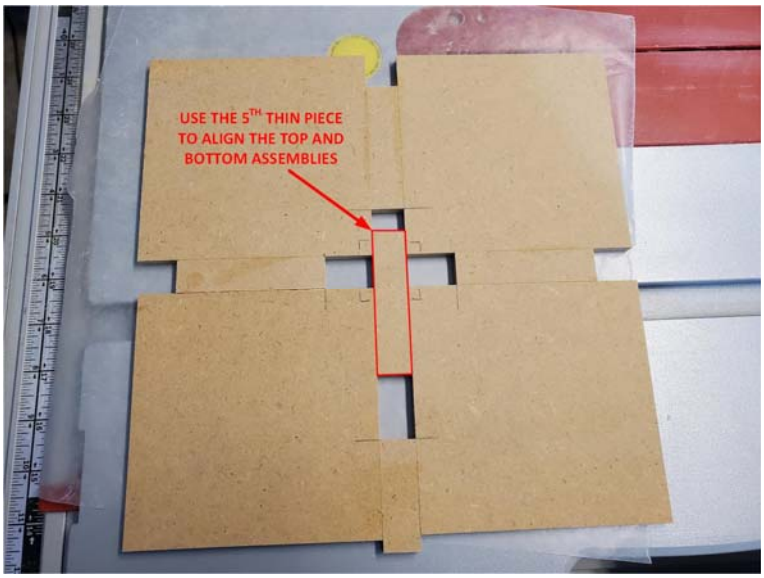

Figure 3. Align Top and Bottom Assemblies Using the 5th Thin Piece

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4. Ensure that the two thin pieces that are arranged horizontally between the two assemblies are spaced exactly 1" from the corners of the cross.
5. Glue the two assemblies together, but **do not apply glue to the thin piece highlighted in Figure 3.**

Remove the piece identified in Figure 3 after the glue has cured. Put the template aside.

Handle

Cut two pieces of 7 1/4" wide poplar to a length of 21 3/4".

Draw a centerline down the length of the Handle.

Mark the center point of the 2 1/2" hole on the centerline. Drill a 1/8" hole at the center. This hole will act as a pilot hole when using a hole saw.

There are **two ways** that you can cut the 2 1/2" hole:

Quick and Dirty: Simply use a 2 1/2" hole saw to drill the hole. Cut most of the way through, then cut from the other side to finish the hole. This will avoid tear-out. Sand the inner surface of the hole to clean it up.

Smooth and Professional:

1. Use a 2 1/**4**" hole saw to drill the hole in the Handle. Cut most of the way through, then cut from the other side to finish the hole. This will avoid tear-out.
2. Use a 2 1/**2**" hole saw to drill a hole in a piece of MDF.
3. Center the hole in the MDF over the hole in the Handle and secure it in place using double-sided tape or clamps.
4. Use a router with a flush-cutting bit and a bearing. Make sure the bearing lines up with the MDF. Use the router to cut away the remainder of the waste material, **being sure to cut the inside of the hole while moving the router in a <u>clockwise</u> direction.**

Place a mark on the centerline 10 1/4" from the bottom end of the Handle. Center the Routing Template on the centerline with the bottom of the Template at the mark. Secure the template to the Handle using double-sided tape.

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Use a 1/8" down-cutting bit and a 5/16" guide bushing like the Whiteside kit referenced on Page 8 to cut the cross into the Handle to a depth of 1/8". Check the cut for smoothness and completeness before removing the template. Be careful to not break the template while removing it.

Mark a line from a point along an edge 5 1/4" from the bottom end of the Handle to a point 1 1/8" in from the edge at the top of the Handle.

The tapers on the edges of the Handle can be cut in one of **two ways**:

Quick and Dirty: Cut along the line with a jigsaw or a bandsaw, staying just outside the line on the waste side. Or the line might be cut on a table saw by using a tapering jig if you have those tools. Thoroughly sand the edge to remove the toolmarks or use a hand plane to remove the toolmarks.

Smooth and Professional:

1. Cut along the line with a jigsaw or a bandsaw, staying about 1/8" away from the line on the waste side
2. Place the straight edge of a piece of scrap against the line and clamp it in place or use double-sided tape
3. Use a router with a flush-cutting bit guided by the straight edge of the scrap to cut away the remainder of the waste material. *Be sure the edge of the router bit cuts in a direction that's away from the bottom end of the Handle and toward the top end; this will reduce or eliminate tear-out.*

Round over the corners at the top of the Handle by first drawing a 1/2" radius arc. You can use any 1" diameter object in your shop to trace the arc. Even a United State 25-cent piece, a quarter, is close enough to 1" in diameter. Then sand the corners down to the lines. Make sure the corner is smooth to the touch.

Apply a 1/4" round-over to <u>every edge</u> of the Handle <u>except</u> the 3 edges shown in Figure 4. To be clear, the 3 edges identified in that figure are on the side of the Handle that faces the Foot. <u>The tapers above the 3 unrounded edges **do** get rounded.</u>

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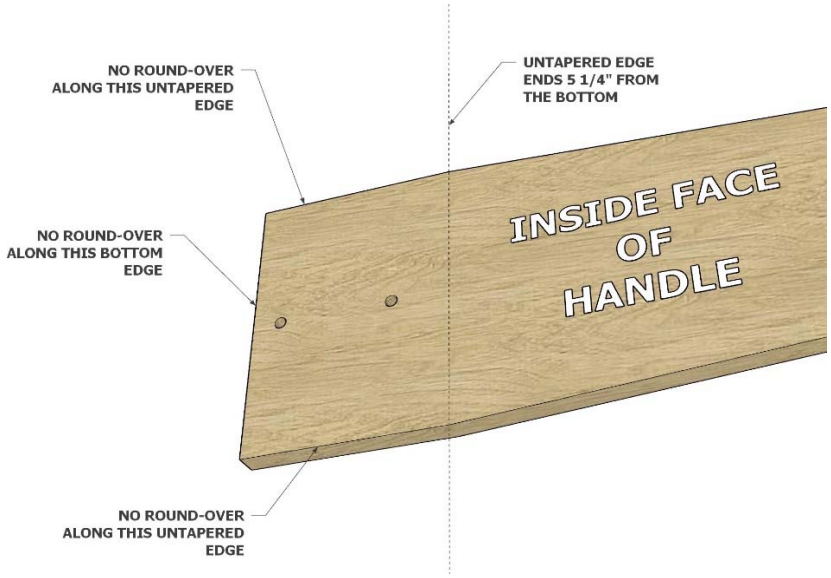

Figure 4. Edges of Handle That are NOT Rounded

Both edges of the 2 1/2" hole also receive a 1/4" round-over. **Be sure to move the router in a <u>clockwise</u> direction when making those round-overs.**

DO NOT drill the 5/16" holes in the Handle. Those will be drilled later as described on Page 19.

<u>Attach the Feet to the Support Rails</u>

Lay the Support Rails on a flat work surface next to each other with the Rails resting on their edges.

The Assembly Bottom page of the design drawing shows that the spacing between the Support Rails is 1". Gently clamp a 1" spacer between the Support Rails near each end. Use a square to ensure that the ends line up with each other and then tighten the clamps.

Place the Feet upside down on the work surface with one Foot butted against each end of the Support Rails. Carefully center each Foot on the Support Rails. The arrangement should look like Figure 5. Notice that the Support Rails are not wide enough to reach all the way to the cutout in the Foot.

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Figure 5. Foot Upside Down and Centered Against the Support Rails

If you have a nail gun: Shoot a single #18x1 1/2" nail through the Foot and into the end of each Support Rail. This will hold everything in place until screws can be driven in.

If you don't have a nail gun: Clamp the Support Rails and both Feet to the flat surface.

Drill and countersink two pilot holes through the Foot and into each Support Rail for #10x2" flathead screws. That is, drill a clearance hole for each screw (3/16") through the Foot and a pilot hole (1/8" or 7/64") for about 1 1/2" into the end of each Support Rail. DO NOT attempt to drive screws into the ends of the Support Rails without drilling pilot holes first; you risk splitting the Support Rails.

Drive the screws until their heads are below the surface of the Foot. Your result should look like Figure 6. The small holes in the figure are nail holes.

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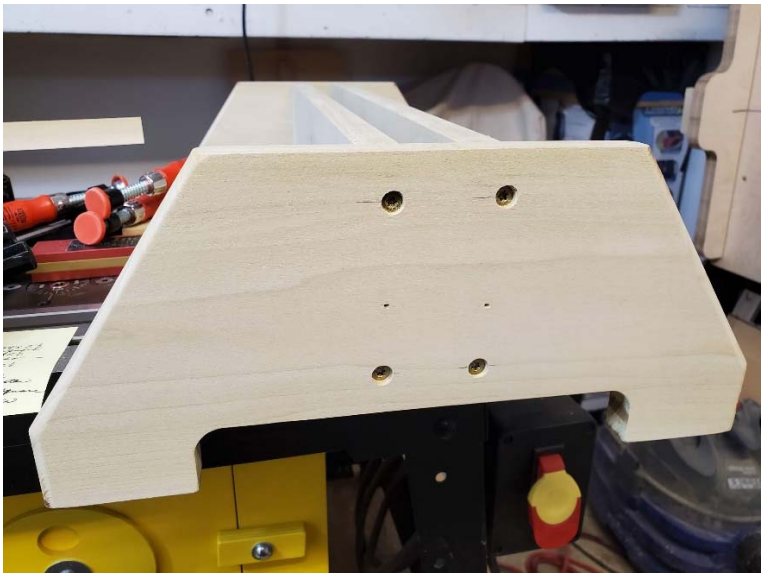

Figure 6. Screws Securing the Foot to the Support Rails

You should now have an assembly like the one in Figure 7. The tops of the Support Rails and the tops of the Feet should be flush with one another, and the assembly should rest on a flat surface without rocking.

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Figure 7. Support Rails Assembled with the Feet

Attach the Handles to the Feet

The cutout at the bottom of each Foot is 1 1/4" high. Rest the cutout of each Foot on something thicker than 1 1/4". A 2x4 is probably a bad choice for this since 2x4s tend to be uneven. Instead, find some flat material that's almost 7" wide (slightly less than the distance between centers in the Foot design drawing.) Stack the material as needed to ensure that the two Feet are a level with one another and that the bottoms of both Feet are held above the work surface.

Rest the bottom edge of one of the Handles on the same material that's supporting one of the Feet. This ensures that the upper edge of the cutout in the Foot is flush with the bottom edge of the Handle.

The inside face of the Handle (the area that is not rounded; see Figure 4) must be against the outside face of the Foot. The Handle must be centered on the Foot.

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If you have a nail gun: Shoot several #18x1 1/2" nails through each Foot and into each Handle. This will hold everything in place until screws can be driven in.

If you don't have a nail gun: Clamp each Foot to each Handle.

From the inner face of the Foot, drive #8x1 1/4" flathead screws through the Foot and into the Handle as shown in Figure 8. The small holes in the figure are nail holes.

Figure 8. #8 Flathead Wood Screws Securing the Foot to the Handle

Each screw should be located 2 1/4" below the top of the Foot and 1 5/8" away from the Support Rails.

Secure the other Handle to the other Foot the same way.

Drill the 5/16" Holes

With the Handles secured to the Feet, now is the time to drill the 5/16" holes through both the Handle and Foot. You can be sure that the holes in both pieces will be exactly collinear.

Mark a centerline on the one of the Handles. Then mark the center points of the holes 3/4" and 3 3/4" from the bottom edge of the Handle.

Use a drill press or a drill guide to ensure that the holes are drilled perpendicular to the surface of the Handle. Drill two 5/16" holes.

Repeat the process for the other Handle.

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Cut Two Lengths of 1/4-20 Threaded Rod

You will need two pieces of 1/4-20 threaded rod, each cut to a length of 21 1/4".

Figure 9 shows an arrangement of 1/4-20 nuts located on a piece of threaded rod. The nuts are jammed tightly together in pairs, leaving a narrow gap just wide enough for your saw's blade. The gap is located 21 1/4" from one end of the rod. Secure the rod in place by locking at least one of the nuts in a vice. Saw the rod into two pieces. Do this for the second rod as well.

Figure 9. Your Saw Blade Is Guided by the Two Pairs of Nuts

The nuts will tend to clean up the ragged cut edges when you turn them off the cut end. Some filing or grinding might still be needed.

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Secure the 1/4-20 Hardware to the Kneeler

You must obtain four 1/4-20x1 sex bolts like the ones shown in Figure 10. These are available as Part Number 14339 from boltdepot.com.

Figure 10. 1/4-20x1" Sex Bolts

Screw one of the bolts onto one end of a threaded rod so that only 3/8" of the rod is inside the bolt. Pass the rod and bolt through the top hole in one of the Handles, through the space between the Support Rails, and into the top hole of the other Handle. Hold the threaded rod so that it won't spin, and then screw the second bolt onto the rod.

NOTE: *The rod must not be allowed to spin during this procedure so that the rod won't thread far into one bolt while threading very little into the other bolt.*

Repeat the procedure for the bottom holes of the Handles.

Be absolutely sure to securely tighten all of the bolts.

Attach the Top to the Kneeler Assembly

Place the Kneeler assembly on a flat work surface. Place the Top, with its rounded edges facing up, on top of the Feet and Support Rails. Center the Top with the Handles.

If you have a nail gun: Shoot a single #18x1 1/2" nail through the Top and into each Foot. This will hold everything in place until screws can be driven in.

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If you don't have a nail gun: Clamp the Top to the Support Rails. This will hold everything in place until screws can be driven in.

Measure the distance from the outside face of one Support Rail to the outer edge of the Top. Transfer that measurement onto the top face of the Top, measuring the same distance *inward* from the edge.

Your measurement on the top surface indicates the distance from the edge of the Top to the edge of the Support Rail. So, it's offset 3/8" from the centerline of the Support Rail. Therefore, ***extend your measurement another 3/8" and make a mark****.*

Make this measurement and mark at each end of both Support Rails. Now, guided by the marks, draw lines along the Top representing the centerlines of the two Support Rails.

Using the centerlines as guides, drill and countersink three holes for #10 flathead screws through the Top and into each Support Rail. That is, drill a clearance hole for each of six #10 screws (3/16") through the Top and a pilot hole (1/8" or 7/64") for about 1 1/2" into the edge of each Support Rail. Space the holes equally along the length of the Top. Figure 11 shows the relative locations of the 6 screws as well as the 2 nails.

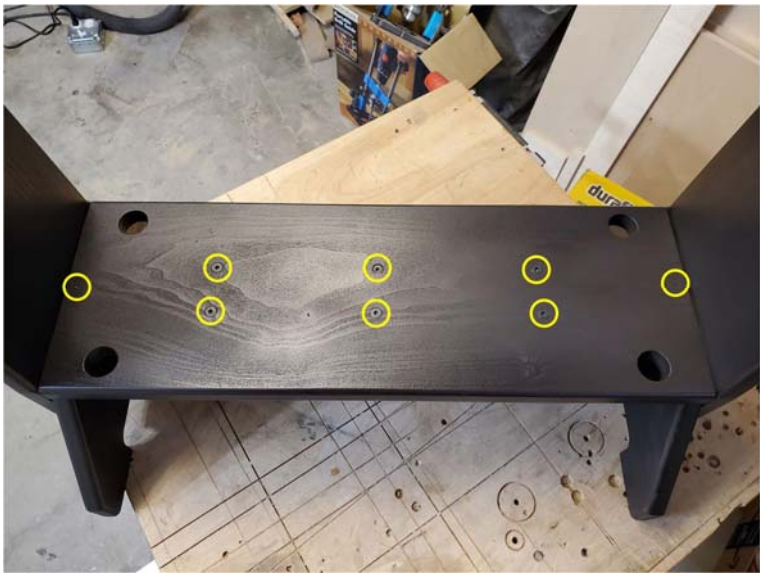

Figure 11. Locations of 6 Screws and One Nail at Each End

Drive a #10x2" screw into each of the holes being sure that the screw heads are set at or below the surface of the Top.

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Building the Cushion: Cut the Padding

The padding is made from a Husky kneeling pad that was purchased at Home Depot in April 2022:

https://www.homedepot.com/p/Husky-Kneeling-Pad-90346/315303737

This is a closed-cell 1.5" thick NBR foam pad that measures 22" long by 15" wide. *Use this material description to find a similar pad if you don't have a Home Depot near you or the link above no longer works.* Be sure that the pad you select is at least 21"x10".

Cut the pad to size using a sharp bread knife and a framing square to guide the cut. Everything needed is shown in Figure 12.

Figure 12. Padding and the Tools to Trim It to Size

Use the framing square to guide the knife as you trim the padding to dimensions of 20 7/8"x10". The trimmed length is 20 7/8" rather than 21" to allow some space for the fabric cover.

NOTE: My cushion was snug, but it *did* fit. It might be better for you to trim the padding to 20 3/4" to allow a little more room.

The resultant padding should look like Figure 13 after it's been trimmed.

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Figure 13. The Padding After Trimming

Building the Cushion: Wrap the Padding with Fabric

NOTE: Wrapping the padding with fabric is not a woodworking task, so it's well outside my area of expertise. Therefore, I am providing only a general description of how to prepare the fabric. You should consult the expert advice of a seamstress or someone who knows upholstery.

Obtain enough suitable fabric to cover the padding. The fabric should be leather, imitation leather (sometimes called pleather,) Naugahyde, or other sturdy fabric that's suitable for upholstery, that's durable, and that's comfortable to kneel on.

The fabric should have a dark or subdued color given the solemn nature of a kneeler used for religious purposes.

Here's where my knowledge gets weak so that there could be a better way to cover the padding:

1. Wrap the fabric, inside out, around the long edges of the padding
2. Bring the fabric together so that its firmly against the padding and pin the two ends together
3. Remove the padding and sew the two pinned ends together with sturdy thread that's suitable for upholstery
4. Trim the fabric near the seam while leaving enough material (about 1/2") to be sure not to cause any weakening of the seam
5. Turn the fabric "right side out" so that its "outside" surface is on the outside.

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Review the **NOTE** on Page 26 before continuing.

6. Insert the padding into the resulting tube
7. Fold the fabric around the ends of the padding as if wrapping a gift
8. Sew all of the edges into place

Look at Figure 14 and Figure 15 to see what the fabric should look like after it has been sewn in place. The Velcro strapping is also seen in these views.

Figure 14. How the Cushion Should Look After Sewing

Figure 15. The Fabric is Wrapped on the Padding Just Like Wrapping a Gift

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Attach Velcro Straps to the Cushion

The Cushion will be secured to the Top using Velcro straps. Look at the Cushion Strapping page of the design drawing. The yellow areas indicate where the Velcro strapping is sewn onto the fabric cover of the Cushion.

NOTE: It might be better to sew the strapping to the fabric **before** completely enclosing the padding in the fabric. *This would allow access to* ***both sides of the fabric****.*

Lay the Cushion on the Top. Center it so that its two edges overhang the edges of the Top by equal amounts. Use a pen or other marker to mark on the fabric at the outside edge of each hole by the yellow mark and on the outside edge of the Top on the opposite side of the yellow mark. Remove the Cushion from the Kneeler.

Sew Velcro straps into the fabric between each pair of marks. Try to select the place on the strap so that, when the ends of the straps are secured to each other, the excess strapping tends to stick under the Top and not extend outward past the edges of the Top or the Cushion.

Attaching the Cushion to the Top

Figure 16 shows a Velcro strap wrapped through a hole in the Top and around the edge. Notice that the excess strap length is directed under the Top, not the other way where it might be visible from above the Kneeler.

Figure 16. Velcro Strap Wrapped Through Hole in Top

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Applying the Finish

Like the fabric, the finish should have a dark or subdued color given the solemn nature of a kneeler used for religious purposes. I chose Rust-Oleum 257462 Painter's Touch 2X Ultra Cover, 12-ounce, Satin Dark Walnut. See Figure 17.

Figure 17. Paint

Be sure to remove the Cushion before attempting to paint the Kneeler.

Remove all dust and debris from the Kneeler. Use a tack cloth to wipe down all of the surfaces. Paint the entire Kneeler with one coat and let it dry. Once it's dry, sand lightly with a 320-grit or higher sandpaper. Dust off of the surfaces, and then go over them with a tack cloth before applying at least one more coat.

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