

Freestanding Homestead Pergola Assembly Instructions



Shown: 12 X 16 Freestanding Cedar Homestead Pergola.

General Notes:

The instructions in this booklet show most, but not all information concerning the assembly of the Homestead Freestanding Pergolas. The material selected, and options chosen, may affect some steps of the assembly process. A custom sized pergola may also affect the assembly. These instructions will show images of

a wooden Homestead (cedar or treated pine) with 8x8 square vinyl columns. Inserts will show other images such as rough cut cedar, wood posts, or round columns. Please call a project advisor should you need additional help or have questions.

The brackets shown with these instructions are one of many brackets that we carry. Although different sized pergolas and posts will possibly require a different bracket, the method to connect them remains the same. For example, some round columns have brackets that are round at the base, and there is more than one anchor bolt required. Also 8x8 columns have a larger bracket than a 6x6, but they are designed the same.

Site Preparation

Patios - Posts for the Homestead Pergola, no matter which material, will need to be anchored to a solid base. If attaching to a patio or a lawn, a concrete “footer” would be ideal to connect to. Attaching to a floating patio, brick, flagstone or patio blocks that have gravel, sand or earth base is not suggested. Over time they will sink, raise or come loose and the pergola would become unlevelled. If there is concrete under the top layer of the patio, it may be able to be attached to the patio. The connection bolts would have to go through the top layer and anchor to the concrete.

New construction of course is easiest - The location of the posts for the pergola will be discussed further on. The concrete footers can be made simply by digging a hole and filling with concrete. The top of the concrete should be flat, and all the footers are to be level with the others. The minimum diameter of the footers should be 12". Since the anchor bolts (see step 1 below) are expansion bolts, and will need a certain amount of concrete to keep it from cracking. Depth of the footers should be a minimum of 12", more if possible. **Note that local codes may determine a deeper depth, which is normally below the frost line.**

Concrete slab – To connect the structure to the slab, may require hardware that is not included in the package. For example, the expansion bolts are 4" long, so if the slab is less than 4" thick, the bolts included will not work. Shorter bolts can be purchased from a local hardware store. Since these bolts expand they will chip away at the bottom of the slab. The ideal thickness of the slab is 6" or more at the location of the posts. Also, keep in mind that since the bolts expand, they should be kept away from the edge of the slab. Never use an expansion bolt that is closer than 3" from the edge of the slab. Another option to attach is to use tap-cons (concrete screws) or an epoxy bolt. Each of these should be available locally. The epoxy is perhaps the best since they do not apply outward pressure on the slab as the expansion bolts do. If installing using epoxy bolts be sure to use their instructions.

Existing patio base - With a base that is not concrete, the best method is to remove the patio stones and pour the footers at the proper locations as described in the paragraph above. Generally it is best to then make the connection to the concrete. After the pergola is complete, re-install the patio blocks to come within an inch or less of the posts. The base trim on the columns will cover the gap.

Post Template – A post template is included, which are four or more pieces of wood with 45 degree cuts on the ends. Assembling and squaring the template gives the exact location of the posts. Use the template for the location of the posts and to know where to add the footers. The drawings and dimensions for the location will be sent should the footers need to be done in advance. Note, by making the footers 12" or more in diameter, there is a little “margin of error” since the anchor bolt does not

need to be perfectly in the center of the footers. If the bolt is at least 4" from the edge, it can be connected without cracking the footers.

Unattached Pergolas – If unable to attach the posts to a solid footer, there is a bracket included that is designed to sit on a level surface. The base of the bracket is 24" square, and will need to be weighted down. If preferred, use concrete or other decorative post bases to build partially up the posts. Make sure that there is sufficient weight to hold the pergola in place during storms. This method is generally only used if placing the pergola indoors, or on top of a roof or other applications where you cannot drill into the base.

Decks – If mounting the pergola on a wooden deck, the attachment is made using a self-tapping lag bolt, instead of an expansion bolt. Be sure that the lag bolt is going through the decking boards of the deck and into a joist. If there is not a joist at the location of the bolt to add a block, cross brace or other material so that it attaches to a solid piece, and not just to the decking boards. If not, the decking boards will bend under the weight of the pergola.

Our decks – If installing flooring with the pergola, there will be no metal brackets used to attach to the deck. Step 1a below shows instructions for assembling the deck and attaching the posts.

Canopies – If a retractable canopy is to be installed, there may (but not always) be additional pieces or slightly different methods of connecting some of the components of the pergola. Be sure to see notes or talk to your project advisor if a canopy has been ordered with your pergola.

Components

The Homestead Pergola consists of 4 components; posts, beams, main runners and top runners. Depending on the size of the pergola, the number of these components will vary. There is a parts list supplied with your shipment to ensure that you have received all the parts.

Here is a general overview of the base components. Some components are made up of a number of pieces.

Custom models will have additional notes in the copy of these instructions as needed.

Posts/Columns – There is a minimum of 4 posts for the Freestanding Homestead. If either of the dimensions of the pergola is over 16', there will be additional posts (unless it is a custom model with just 4 posts, and utilizing a glue lam beam to span beyond 16').

Vinyl Columns – Include a wooden post, the stainless steel post bracket, expansion (wedge) bolt, a vinyl sleeve, and 3 trim pieces. (top, bottom and a decorative ring) This is shown in the instructions to follow.

Treated Pine Posts - The post is a laminated post (from 5x5 up to 8x8 square in size, depending on what was ordered). Included is the post bracket, wedge bolt and a top and bottom trim for each post.

Cedar Posts - Since larger cedar posts tend to *check** more than other materials, the cedar posts are actually a laminated post that is wrapped in 1" cedar to give the appearance of a solid cedar post. Included is the post bracket, wedge bolt and top and bottom trim for each post.

** NOTE: ("Checks" in wood are surface cracks that develop when the outside of the lumber dries. This is normal. Cedar checking tends to be larger than other wood species. Checking does not affect the strength or structural integrity of the wood)*

Rough Cut Cedar Posts - This is also a 5 ½" post with rough cut cedar wrap. Included are the post bracket, wedge bolt and top and bottom trim for each post.

Round Vinyl Columns - These columns are tapered. There is a treated pine insert, and the column slips over the wooden post. Included are the post bracket, wedge bolt and a top and bottom trim for each post.

Custom Posts - There are a variety of other posts on the market. Fiberglass posts for example, will come with their own instructions from the manufacturer.

Beams - For treated pine and red cedar, the main wooden beams are a double laminated 2x8. Rough cut cedar beams are in one piece measuring a full 4x10. Installation of the rough cut cedar beams is the same as the other materials. The number of beam pieces is determined by the size of the pergola. Generally with a 4 post pergola, the beams are each one piece. If there is a middle post(s) the beams will usually be in 2 or more pieces with the beams "breaking" over the middle posts. "Breaking" meaning that the two piece beams will connect over the post which will support the middle with a 90 degree cut on the ends of the beam.

The Homestead pergola also has 2 return beams. These are the same size as the main beam, but do not have angled cuts. These beams run perpendicular to the main beam and sit on top of the posts to form a box.

Main Runners - Runners are 2x6 pieces with decorative ends. (Rough cut cedar runners are 3 x 8.) These have notches that go over each of the main beams. The number of runners depends on the size, and custom options selected. See parts list.

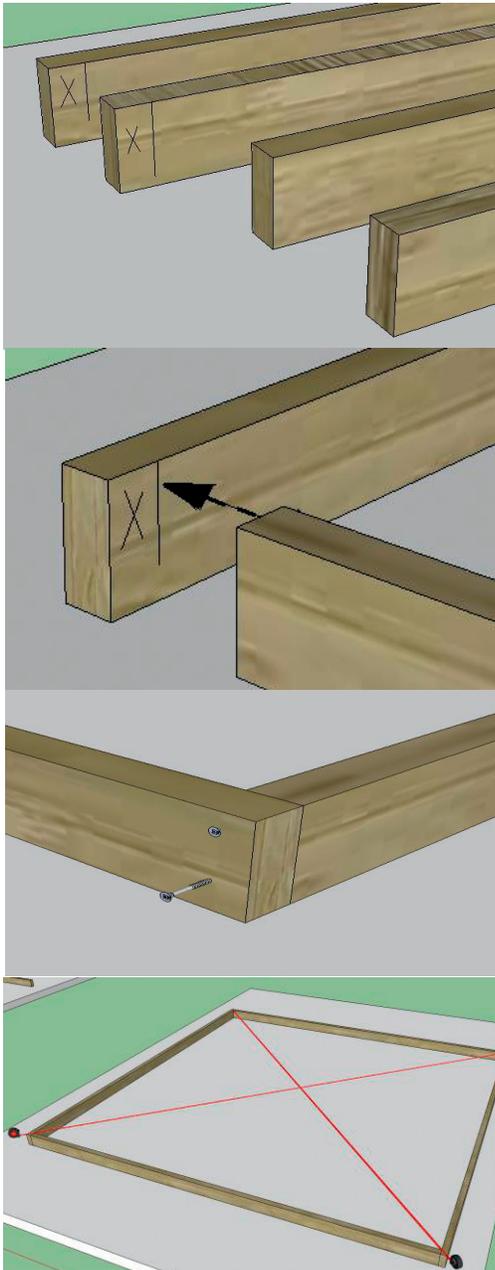
Top Runners - These are 2x4 pieces (3x6 with rough cut cedar) with notches that fit over each of the runners. (Note: The top runners are also used as a tool to ensure proper spacing when installing the main runners. – see tips)

Hardware – Generally there is no need to purchase any additional hardware other than what is included in the package, with one exception. The lag bolt for connecting to a wooden deck is not included, simply because how it is to be connected to an existing deck may require longer or shorter lags. Also, it is the responsibility of the owner to ensure a solid connection. The parts list will indicate the type and

number of hardware pieces that are included. If attaching to a concrete slab, another method of attaching may be needed as described in the Site Preparation section.

NOTE: Rough cut cedar will need larger hardware pieces. Different brackets use different screws, and if using stainless steel hardware there are some components that need to be changed in size because of strength issues. These instructions have the most common sizes and type of hardware, but what is included may vary. If there is no size on the hardware listed here, it is because there are too many variables to list, so check the parts list that comes with the pergola. Options selected will change some hardware as well. For example, a decorative steel top can be placed on the top of the top runners, or the top runners can be removed. The type of fasteners used for post-to-beam connection if the beam is a glue laminate beam, requires a different lag bolt. These possible combinations are limitless.

Section One - Posts



Setting up the template:

1. Your pergola kit includes a wooden template that is used to mark your post locations. Notice that two of the 2x4 boards have a marking near the ends. Build a box that will reveal the outside corners of the posts when properly placed.

2. Arrange the template pieces so that they are positioned in the exact location of where the pergola will be placed. The boards with the marking on the end will be across from each other. The marks will show where the other boards will be attached to create this box.

3. Connect the corners of the template pieces by driving two 2 ½" screws through the side of the template boards.

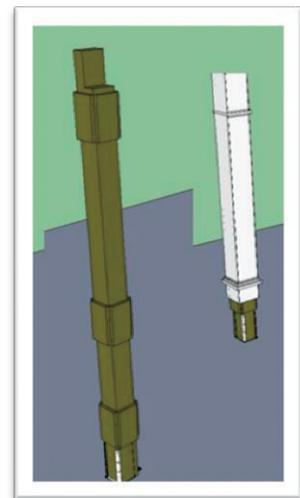


4. When the template is in position, square the template. Do this by measuring diagonally from one corner to its opposite corner, then measure diagonally between the other two corners. These two dimensions **MUST** be the same. Adjust the template until the diagonal measurements are identical.



5. Once the template is “square,” mark the post locations using the INSIDE corners of the framed box on a concrete slab with a pencil. After all the post locations are marked on the concrete slab, remove and set the wooden template aside.

Notice that the tops of the posts have a notch. These notches are where the main beams will sit. Be sure that the notched out part of the top of the beam is facing in, which is standard for all of our post types. The image at right shows the standard vinyl posts, both with and without the vinyl sleeves. The wood posts are “padded,” making it is easier to slide the sleeves over the wood, and to slide the top, bottom and middle trim pieces on before setting the posts. Put a screw in the wooden post to hold the vinyl up high enough to then drive a screw in the post through the hole in the upright of the bracket.



All wooden posts without a vinyl sleeve will not have padding. The base trim will already be pre-assembled. Slide the trim over the sleeve from the bottom before attaching the posts, then slide the trim down once the posts are attached. Round vinyl posts are done the same way as the square columns, but there is no middle trim. Do the same with all four posts.



Next, connect the support brackets to the main posts. Using wedge anchor bolts, to mount the support brackets to the concrete slab.



Screw two brackets with 2½" screws into place at the base of each post, catty-cornered. Using a ½" masonry bit and a hammer drill, drill a hole in the concrete slab approximately ½" longer than the length of the wedge anchors that were supplied with your kit.



Be sure that the nut and washer are on before inserting the bolt, otherwise you may drill the bolt too deep into the hole. Next, insert the wedge anchor bolts into the holes, leaving approximately ¼" of bolt exposed above the nut. It may be necessary to use a hammer to tap the wedge anchor bolts into the holes.



Once all the wedge anchor bolts are set, place a washer and nut on each bolt and tighten the nut. When tightening the nut, the wedge anchor will expand the bottom of the bolt in the concrete, securely anchoring the bolt into the concrete.

Step 2 – Setting beams.

The instructions moving forward are the same whether a floor was ordered, or not!

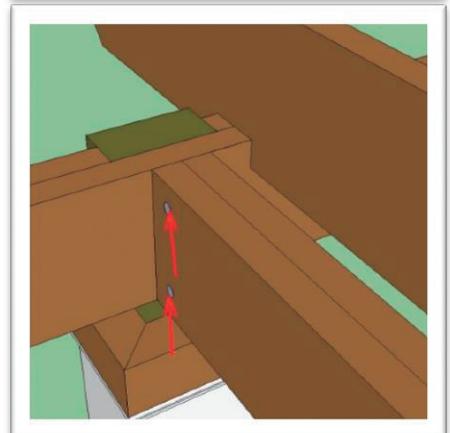
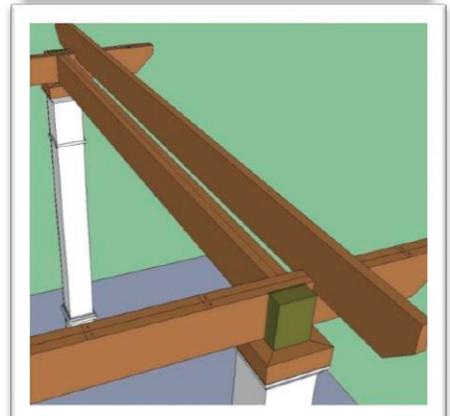
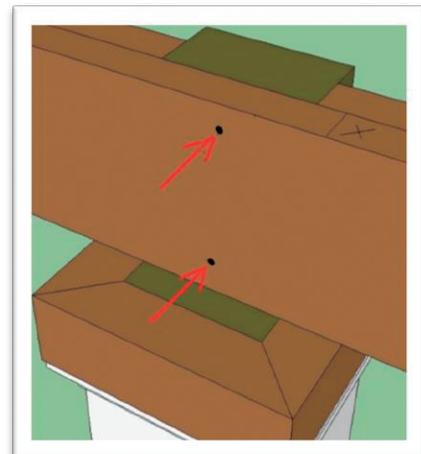
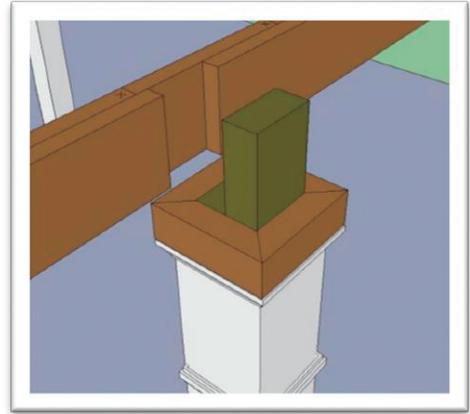
Because the beams can be quite heavy, it is a good idea to have at least 2 people to hold the beams on the posts while a third person attaches them.

Sit the beam on top of the post with the cut out portion of the beam aligning with the upright part on the post. (as shown at the right) Connect by using 3 ½" screws through the beam first and into the post. Attach using two screws - one near the top and the other near the bottom of the beam (leave about 1 – 1 ½" gap from top and bottom on the beam). Center the screw on the post.

Attach the beams with two screws to all of the posts.

Next, use the runner that has the notches cut out, and position it on top of the nearest beam, but not directly on top of the post. This will ensure that the distance between the beams is correct, and even. Do not attach the runners to the beams, as they are used for spacers for now.

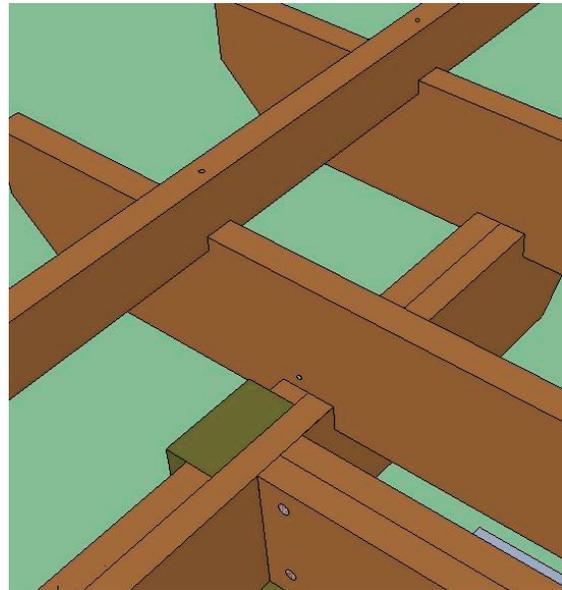
The return beams are either double 2x8s or rough cut 4x10s. They are the same as the main beams but do not have the decorative end cuts. The return beams will sit on top of the posts and align with the center of the posts. Be sure that the return beams are tight to the main beams, and attach with 3 ½" screws on an angle and into the beams. Connect with 4 screws at each connection, two from each side of the return beams.



Step 3 - Setting Runners

Position the rest of the runners with the notches over the markings on top of the beams.

TIP: When the runners are set on the beams but, before attaching them, use two (or more) top runners as spacers. The runners should sit on the markings. Using the top runners as spacers, before attaching them, will assure sure they can be attached later. It is normal if they are slightly (1/8" or less) off the mark.



Using 2 ½" screws, attach the runner to the beam with two screws, on each side driven at an angle into the beam. Note that if the beams are doubled 2x8s, the screws should be positioned so that they go into one of the boards and not in between them. Rough cut pergolas do not have a two piece beam, so the screw should center on the beam. Attach all the runners to the beams.

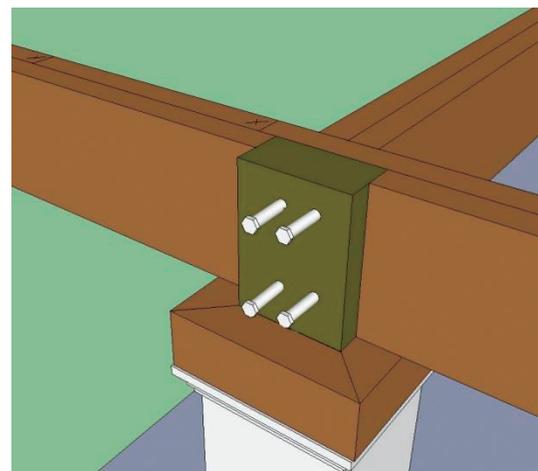
Step 4 - Setting Top Runners

Top runners are to sit on top of the main runners, in much the same way that the runners were attached to the beam. Set the notches so that they line up with the markings on top of the runners. They are attached with one 3 ½" screw down through the top of the top runners.

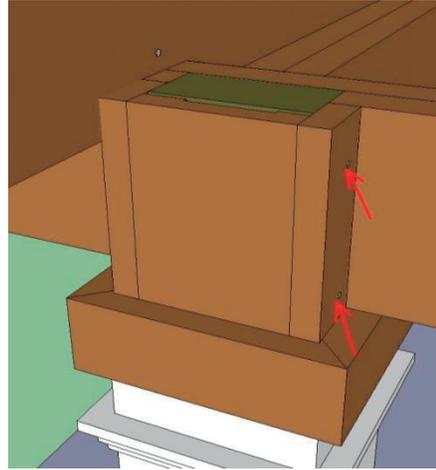
Step 5 – Finishing Touches

There will be four 6" lag screws that run through the posts, through the main beams and into the ends of the return beams. There are no pilot holes since these lag screws are self-tapping. These lag bolts are best put in by using an impact drill or other electric drills. (Cordless drills may not have enough power.) It is also possible to attach it with a socket wrench, which may be easier if pilot holes are drilled first. (the drill or screw gun is not powerful enough) Be sure that they are centered so that there are two in each of the two plies of the return beam. (Rough cut cedar does not have a double return beam, so simply use two lag bolts per connection.)

Make sure that the lags are fully set.



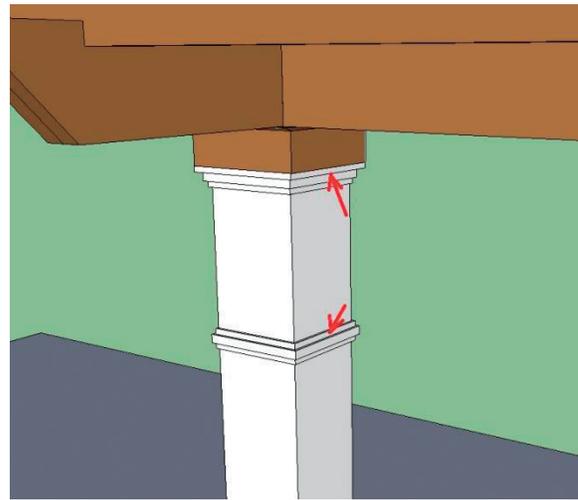
A U-shaped piece of trim is included that will cover the tops of the posts, and also hide the ends of the lag bolts. Sit this on top of the post, and attach with 4 (2 ½") screws, at an angle.



If installing vinyl posts, the final step is to attach the top and middle trim pieces. Using 2 painted head screws, attach the top trim to the wooden ring.

Measure down from the top middle trim ring 12" below the top trim. Make sure that the trim for each of the posts are the same measurement down from the top. Attach with 2 painted screws from the top down.

For the bottom trim, attach to the post with 2 screws, or simply let it sit on the ground.



The Homestead Pergola is now complete. A few notes concerning options are included below. Depending on the option, there may be a separate sheet explaining the option. If the option or the pergola itself is custom, these instructions may be hand written. Be sure to call your project advisor with any questions.

- **Canopies** – A retractable canopy, if ordered, will come with separate instructions. It is very important that the pergola is assembled correctly in order for the canopy to be assembled, since it was made to attach to this model.
- **Steel Panels** – If steel panels were ordered for the top of the Homestead Pergola, they generally will replace the top runners, although they can also be ordered to sit on top of the top runners. The spacing of the main runners is important to ensure that the panels fit correctly.
- **Privacy Panels** – Come with separate instructions.

