



Modern Fiberglass Pergola Assembly Manual



Required Tools:

Ladder, Hammer, Pliers, Electric Hammer Drill, 5/8" concrete drill bit, Portable Cordless Drill, #2 square drive bit, 13/16" wrench, 5/16" socket head bit, 3/8" socket head bit, 3/16" drill bit, 15/16" socket.

Foundation:

- If you are assembling on a concrete slab, it needs to be a minimum of 4" thick and 2,500psi strength.
- If you are assembling on concrete footings, the suggested estimated footing size is a minimum of 2' x 2' x 2' cubed or to reflect your local building code requirements taking frost line depth into consideration.
- If you are assembling on a wooden/composite deck, please see page 4 "Anchoring Posts to wood or composite deck".

IMPORTANT:

TO ENSURE STRUCTURAL STABILITY AND MAINTAIN YOUR WARRANTY, THE ENTIRE BOTTOM OF EACH COLUMN MUST BE TOUCHING AND FIRMLY SEATED ON A FLAT, SOLID CONCRETE SLAB OR FOOTING OR WOOD/COMPOSITE DECK. DO NOT PLACE, REST, OR SEAT THE COLUMN BOTTOMS ON PAVERS, STONE, TILE, STAMPED CONCRETE, OR UNEVEN CONCRETE. DO NOT FASTEN HARDWARE TO OR THRU PAVERS, STONE, TILE, STAMPED CONCRETE, OR UNEVEN CONCRETE. PAVERS OR STONE MAY BUTT-UP AGAINST THE SIDES OF THE COLUMNS.

Step 1: Wedge Anchor Placement and Insertion

(1.1) Refer to the drawings you approved to determine your post center dimensions. With a pencil, mark the locations where each post center will stand on your foundation.

Make sure the pencil marks for each column are level with each other. Also make sure the marks are “square” with each other (i.e. create a perfect rectangle or square). To achieve square positioning, stretch a string diagonally from one post center to the post center that is opposite and catty-corner. Do the same for the other two corners, such that the two strings criss-cross in the center of the square/rectangle. The two string lengths must be equal.

(1.2) Use a hammer drill and 5/8" masonry bit to drill a 5" deep hole in the concrete.



(1.3) Remove the dust from the hole to ensure a clear insertion of the stainless-steel wedge anchor.



(1.4) Use a hammer to tap in the 5/8" wedge anchor into the prepared hole. Your hammer should strike the nut fastened to the end of the bolt as shown in the picture on the right so that you do not inadvertently strip the thread of the bolt. Make sure you place the washer on the bolt before you place the nut, again as shown in the picture on the right.



(1.5) Use the 15/16" socket or wrench to tighten the nut on top of the wedge anchor. Note that each wedge anchor should be seated firmly in place after the nut is tightened. Confirm by gripping anchor top with hand and applying only moderate pressure from side to side and pulling upward.



(1.6) Install the coupler nut on top of the wedge anchor and tighten.



(OPTIONAL) Anchoring posts to a wood or composite deck

This section applies only if you intend to fasten the bottom of your columns to a wood or composite deck. If you are fastening the columns to a concrete slab or concrete footings, proceed to Step 2.

If you intend to anchor to a wood or composite deck, you should have requested and received steel deck plates. If you did not order/receive deck plates, stop the assembly and call us at (800) 403-9259.

image of steel deck plate =>



Your wood/composite deck must be sufficiently anchored to and fastened to adequate concrete footings and must meet local building code requirements.

You will need one steel deck plate for each column. A fiberglass column fits over each steel deck plate. The coupler nut in the center of the deck plate receives the 8ft tall threaded steel rod.

Fasten steel deck plate to your wood or composite deck: Each steel deck plate has four holes in it. Sink a ½" wide lag bolt through each of the four holes.

- The lag bolts must be long enough to sink through the surface/floorboards of the deck and firmly and deeply into the joists underneath the surface/floorboards.
- This requires the lag to be 4" long or longer.
- If there is no joist where you want to sink the lag, you must place "blocking" between two joists, so the lag has something firm and structural to bite into. An example of blocking is a short section of a 6x6 wood post that spans the distance between, and is bolted to, two joists.
- If you merely screw the lag into the surface/floorboards, and not into joists or blocking, you will have inadequately secured the column and you risk damage to the structure and personal injury.
- You may use through bolts or carriage bolts rather than lag bolts so long as they are secured tightly with flat and lock washers with lock nuts securing through bolts.

Column Placement & Anchoring Rod Connection:

- a) Once the deck plate is securely fastened as described in Step 1 above, position the first column so it is centered over the coupler nut. See next page for relevant images.
- b) Lower the 8ft threaded rod into the top of the column.
- c) Connect the threaded rod to the coupler nut on top of the deck plate. Turn the rod to thread it into the coupler nut. Use pliers/channel locks to turn the rod until tight but, do not clamp pliers onto top 1" of rod which could disfigure the thread pattern.
- d) Attach a second coupler nut and the 12" threaded rod to the top of the 8ft threaded rod.

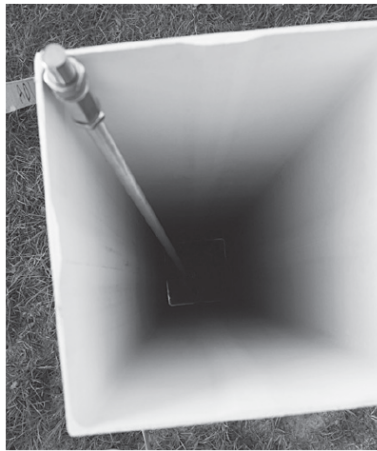
Step 2 (Column Placement & Threaded Rod Connection)

This section assumes the main threaded rod is 8ft long. However, the length of your main threaded rod may be longer or shorter depending upon the post height you ordered.

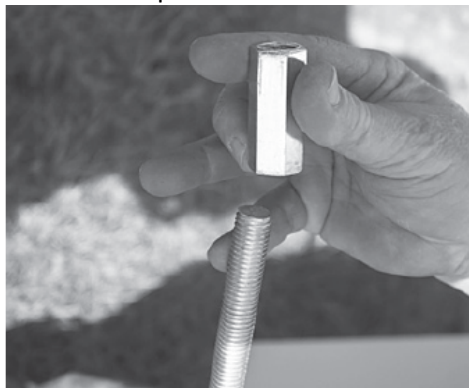
1. Position the first column centered over a previously installed wedge anchor and coupler nut.



2. Lower the 8ft threaded rod into the top of the column.

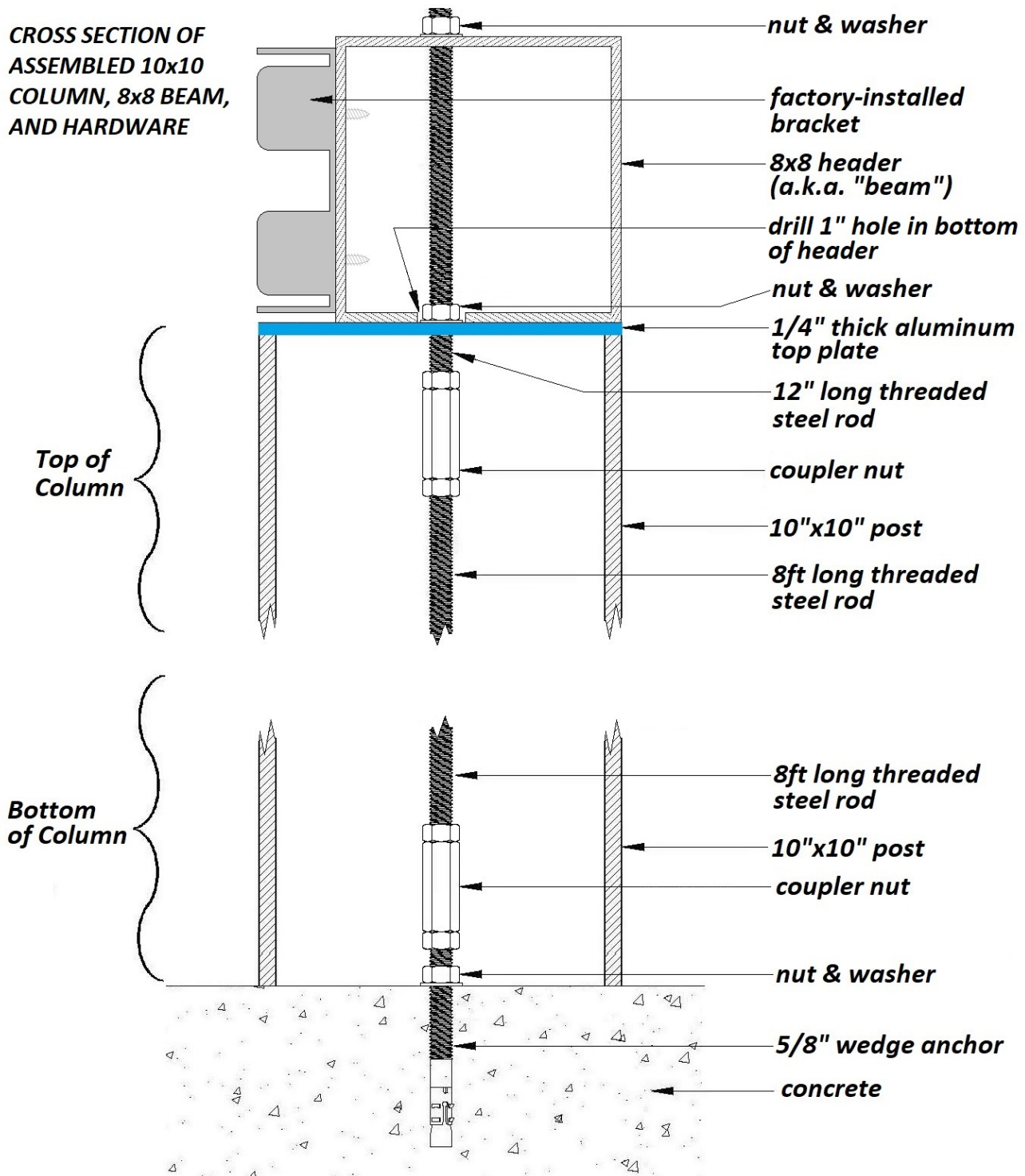


3. Connect the bottom of the threaded rod to the coupler nut on top of the wedge anchor. You may need to lift the bottom of the column up a foot or so to accomplish this.
 - a. Turn the rod to thread it into the coupler nut. Use pliers/channel locks to turn the rod until tight.
 - b. Do not clamp pliers onto top one inch of threaded rod which could disfigure the thread pattern.
4. Attach a second coupler nut to the top of the 8ft threaded rod.



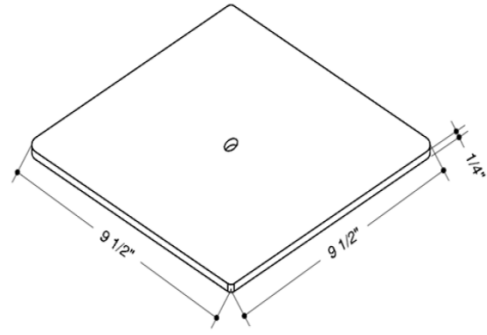
5. Attach the 12" threaded rod to top of second coupler nut.
6. Repeat steps 1-4 with the other columns. Using a mason line with level to ensure the tops of all columns are level with each other.

7. Proceed to Step 3 and Step 4 on the following pages. Following Step 3 and Step 4, your assembled column and header should appear as shown in the diagram below. Please refer to this diagram for reference as you proceed.



Step 3 (Top Plate Application)

(3.1) Identify the aluminum top plate. It is 9 1/2" square, 1/4" thick, and has a central hole.



(3.2) Place the plate on top of the column allowing the 12" threaded rod to protrude up through the central hole.



(3.3) Approximately 9" of the threaded rod should protrude above the top of the plate as shown in the photo below.



(Step 4) Beam Assembly:

Note: The 8x8 beams may be manufactured with "crowns". A crown is a slight bow in the beam. "Crowning" is intentional and in some cases necessary to create additional structural support for components. When you put the crowned beam into place, the crowned middle portion of the beam must be positioned higher above the ground than the two ends of the beam.

Note: Some of your beams have metal louver/rafter brackets installed to one or two faces. If the brackets are facing the unintended direction, simply flip the beams completely over so the brackets face in the opposite direction. If these parts are crowned and you need to flip so the brackets face the correct direction and a crown points downward, stop the installation and notify us as soon as possible by calling (800) 403-9259.

Note: the end of the 8x8 beam in the images below is shown open (unplugged) for clarity, but will be plugged and finished smooth when you receive it.

(4.1) Identify the 8-inch square beams with the 8x8 square and 2x8 rectangular metal brackets already attached on one outer side.

To the right is a photo of such a beam. This beam is painted in a custom color Benjamin Moore – Brown Sugar color (BM 2112-20). Your beam may be a custom color or standard white.

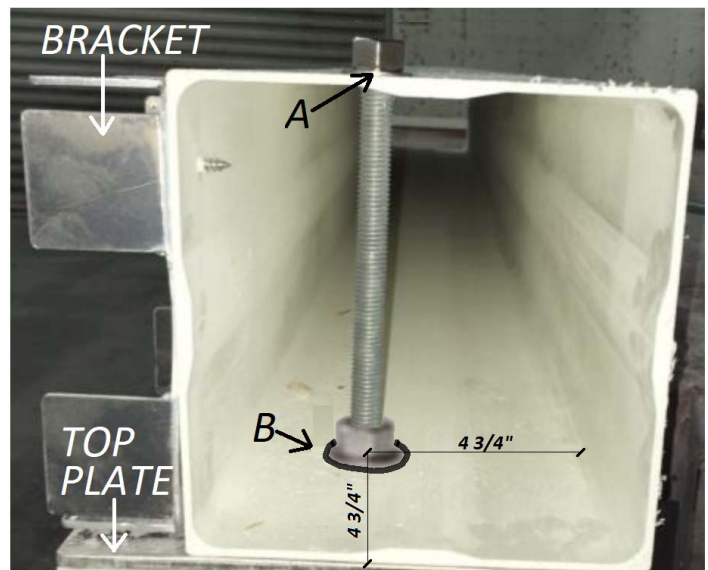


(4.2) Drill a 5/8" diameter hole on the top of the beam at point "A" noted in image to the right.

Drill a 1" diameter hole in the bottom of the beam at point "B" noted in image to the right.

The center of the drilled holes should be 4 3/4" from the outside face of the beam and 4 3/4" from the end of the beam, as shown.

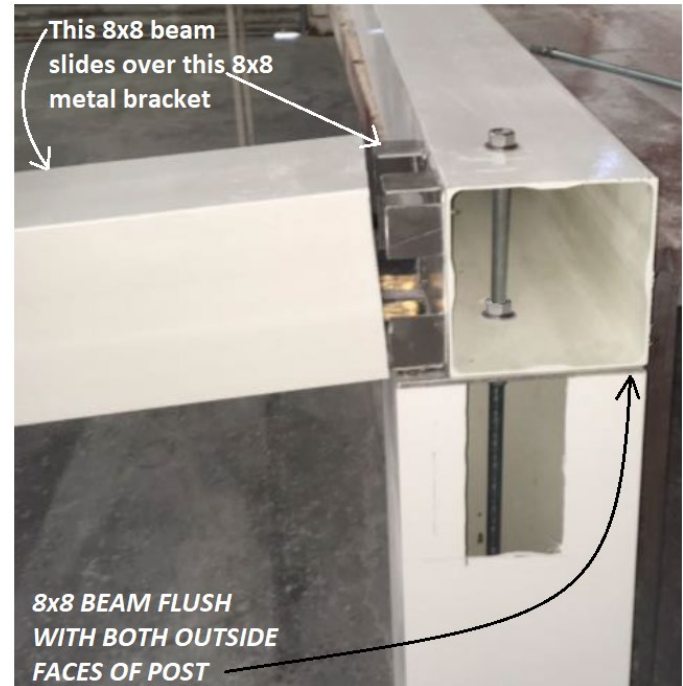
Note: 4 3/4" is half of 9 1/2" which is the actual width of the nominal 10x10 column.



(4.3) Place the beams over the tops of the columns, sliding the 12" threaded rod through both drilled holes.

(4.4) The outside edges of the beam should be lined up with the outside edges of the column shaft as shown to the right. Square and rectangle brackets are over the inside edge of top plate.

The holes you drill will allow the 5/8" threaded rod to pass through with $\frac{3}{4}$ " - 1 $\frac{1}{2}$ " of the rod rising above the top of the beam to receive a flat washer and nut. Excess threaded rod may be trimmed with a hacksaw at completion of assembly.



(4.5) The nut should be hand tightened at this point with final wrench tightening occurring after all four beams making up the frame have been installed.

(4.6) The other two 8x8 square beams without brackets will slide over the large square metal brackets as shown in the image above.

(4.7) Once both beams are secured and the four sides of the frame are connected, go back and tighten the top nut on top of each column. Place a flat washer under each nut to so that downward compression force is spread and displaced. Refrain from overtightening, stop just before top beam starts to concave.

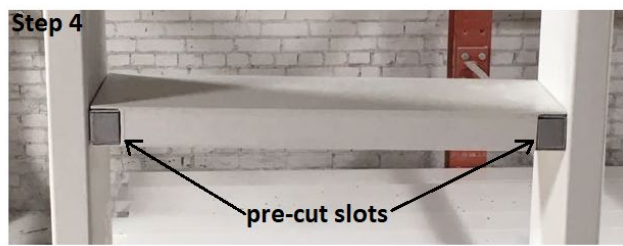
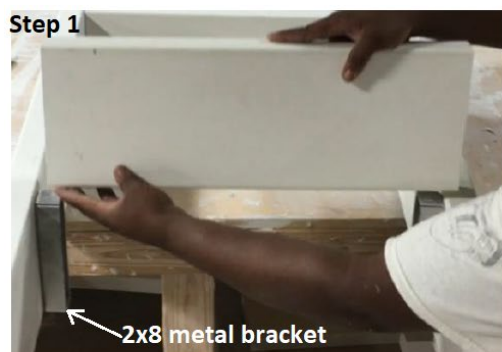
(Step 5) Rafter Assembly

The 2x8 rafters have pre-cut slots on their ends allowing them to slide onto the 2x8 metal brackets that have been pre-mounted to the inside faces of the 8x8 beams.

Slide the 2x8 rafters upwards onto the metal brackets so the pre-cut slots are not visible from underneath the pergola.

This will require two people, one to hold the rafter in place while the second person secures the rafters to the metal brackets with the provided $\frac{3}{4}$ " self-tapping stainless-steel screws.

Drive the screws through the outside of the rafter, into and through the internal pre-mounted metal bracket on at least two sides.



Brackets in the images above are shown unfinished for the purposes of clarity. In contrast, we will ship your brackets to you finished in the same color as your pergola with your choice of color or standard white ChromaGuard™ coating pre applied.

(Step 6) Final Checks and Touch Up

- Double check all top component and column anchoring hardware to insure it is tight.
- Each pergola order includes a quart of the same coating applied to the structure. Use this coating to touch up screw heads and any light scratches which may occur during assembly. It can also further conceal the rafter/bracket slot.
- Optional pop-rivets: Pop-rivets are included in your hardware package. You can use pop-rivets in place of the screws to secure the rafters to the brackets if you wish. You will need to predrill holes with a $\frac{3}{16}$ " bit for each pop-rivet. Predrilling is not necessary when using the self-tapping screws.
- For additional guidance and questions contact Pergola Kits USA at 800-403-9259.

Assembly is now complete. Thank you for your business. Enjoy your pergola!

www.pergolakitsusa.com (800) 403-9259