Assembly Instructions
Big Kahuna Solar Ready Pergola Kit - Attached



Thank you for purchasing a do-it-yourself pergola kit from Pergola Depot. We appreciate your business, and we are here to help you in any way possible. It will help to read these instructions entirely before beginning. Take your time, follow these instructions, and call us if you need help. You can do this!

If you are installing on a concrete foundation, we recommend you use galvanized steel post bases on each post secured with concrete anchors. For our pressure treated pine kits, we recommend you also install one Tapcon concrete screw in each post base to prevent twisting of the post while drying. The post bases, anchors and Tapcons are included with your kit if purchased with the option to be installed "on a concrete slab or footer", and can be purchased as accessories from us or from your local hardware store. There are instructions on how to install them in this document, and we have a video on the *Installation Information* page on our website under the *Resources>Tips* menu.

If you are installing your pergola on top of new footings, allow the concrete to dry before completing the rest of the pergola installation. This may require that you dig the holes and pour the footings one weekend and then assemble the kit the next. Additional instructions are provided below.

Check out the Resources>Tips tab on our website and don't hesitate to contact us if you have questions or need some extra help.

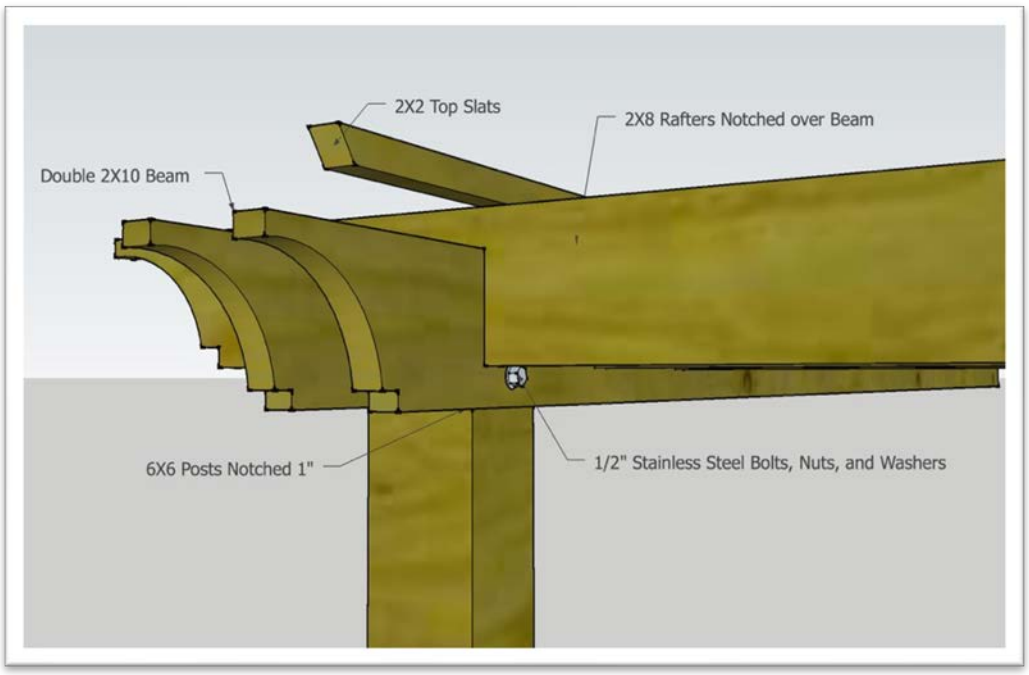
Call: 1-877-563-0002
Email: info@pergoladepot.com

Tools and Supplies Needed

- Helper (we recommend at least 2, especially for larger kits)
- Tape measure, hammer, level
- Ladder (tall enough to work the top of your pergola during assembly)
- Screw gun (a star drive bit is supplied with kit)
- 3/4" Wrench
- For new footings: post hole digger, dry concrete mix, gravel, trowel, shovel and mixing bin or wheel barrow
- For installing rebar into post (if posts going into new concrete foundations): drill, 5/8" drill bit
- For ledger: drill and 5/8" concrete drill bit (masonry walls), or 1/2" drill bit (wood frame walls)
- For all kits using post bases on concrete: 5/8" masonry drill bit and 15/16" wrench
- For Pressure Treated Pine kits using post bases on concrete: you will also need (1) a 5/32" masonry drill bit, and (2) a #2 Philips bit or #2 Philips screw driver

Kit Components



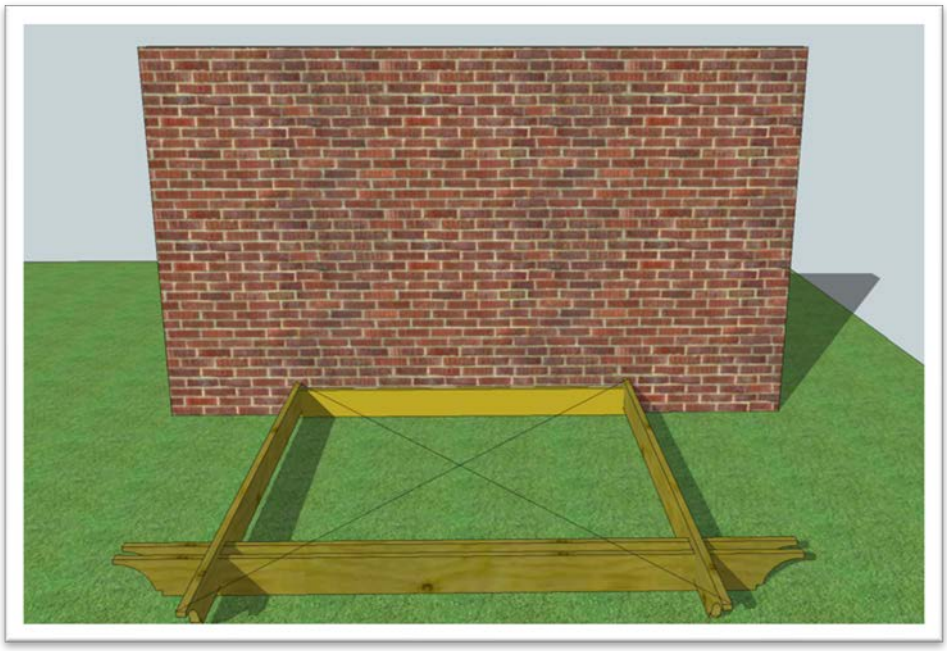


- 2x10 Beams (2 for standard size kits)
- 2x8 Notched Rafters (# depends upon kit size)
- 2x10 Ledger Board (1)
- 6x6 Notched Posts (2 for standard size kits)
- 2x6 Post Supports (2 per post - 8 for standard size kits)
- 2x8 Bearing Boards (2 for standard size kits)
- 2x6 Angle Braces (4 for standard size kits)
- 2x2 Top Slats (# depends upon kit size)
- Hardware Pack - 3" screws, 6" screws, 8" bolts nuts and washers, concrete anchors or lag screws for ledger board, rebar for post install (if installing in or on new concrete foundation), star drive bit (#s depend upon kit size)
- Optional: Post Base Trim; post base trim; post base mounting hardware and Tapcons (for pine kits); concrete footing form tubes

Reference the packing list that was provided with your shipment confirmation for a complete list of kit components, including the number of each type of lumber and hardware pack components.

Installation Steps

- **Step 1**- If not already done, remove the crating material from the outside of the kit.
- **Step 2** - Lay all parts next to where you will be installing the pergola.
- **Step 3** - Place the ledger board against the wall exactly where you would like it, but laying on the ground (with the x's facing up) and make a pencil mark on the wall at each end of the board.
- **Step 4** - Place the front beams in place on the ground about where you think they will end up. Slide one rafter on each of the outermost X marks (on the beams and ledger board), and butt the rafters against the wall. Make sure the end of the rafter that is against the wall is on top of the X mark on the ledger board. Using the 6" screws, temporarily screw each rafter through the pre-drilled holes into to the front beam and to the ledger board.
- **Step 5** - Step back and look to see how square the assembly looks. Take a tape measure and hook it on the outside corner of one of the rafters, and pull the tape to the opposite corner. Write down the measurement. Then hook it on the other corner and pull to the opposite corner like is shown in the next picture. Move the front beam from side to side until you have the same measurement both ways. When you have the same measurement, it is perfectly square. **Hint:** This is easier if you and your helper both have a tape measure and pull them across at the same time.



- **Step 6** - Now you can see where you should dig your holes for each post. (Or mount your post bases if you're on concrete.) Look at the top of the beam just inside the first rafter where it says post. If you are on concrete, make a mark on the concrete directly in the center of the lines where it says post. If you are on grass or dirt, stick the flags that are provided with the kit into the ground directly in the center of the lines where it says post.

- **Step 7** - Unscrew and remove the rafters from the beams and move everything out of the way. Now you should be left with flags or marks where the post holes or post bases will go.

- **Step 8** - Dig the post holes with the center of your hole at your mark, 2 to 4 feet deep (depending on the depth desired – see our website under *Resources>Tips>Post Information*) and 24" in diameter, or install your post bases directly over top of your marks. If you are pouring new footings on which to mount your posts, proceed to the next step and come back to this step when you are ready to mount the post bases.

  Post Base Installation:
  If installing using post bases on top of an existing concrete foundation or previously poured footings, place the bases on the concrete in the exact position where they will be installed. **Hint:** The measurements between the center of each post base should be the same as the center post to post measurement for your size pergola, which is 3'6" less than the overall size for each dimension. For example, a 10x12 pergola has a center post to post measurement of 6'6" x 8'6". Find the center of the hole on the bottom of the base, mark that point, and drill into the concrete with a 5/8" concrete drill bit at least 4" deep. Clear excess debris from the hole. Place the washer and nut on the concrete anchor, place the flared end into the hole in the concrete, and hammer it down until it is against the post base, but do not tighten. Repeat for each base. Before tightening the anchor to the post base, make sure that each base is square to the outside edge of your pergola footprint. Lay one of the beams or rafters (depending upon length needed) on the ground directly outside two of the post bases, then rotate the post bases until the outside edges of each base are touching and square with the board. Repeat this for the other bases. Once square, tighten each anchor with a 3/4" wrench until snug to the base.

  If installing a pressure treated pine kit using post bases, we recommend you install one Tapcon screw for each base through one of the holes in the post base that surround the first anchor. Using a 5/32" concrete bit, drill the Tapcon screw hole to at least 2" deep. Once the hole is drilled, clear excess debris from the hole, and slowly screw the Tapcon through the post base using a #2 Philips head screw bit or screw driver until snug to the base. Repeat for each base.

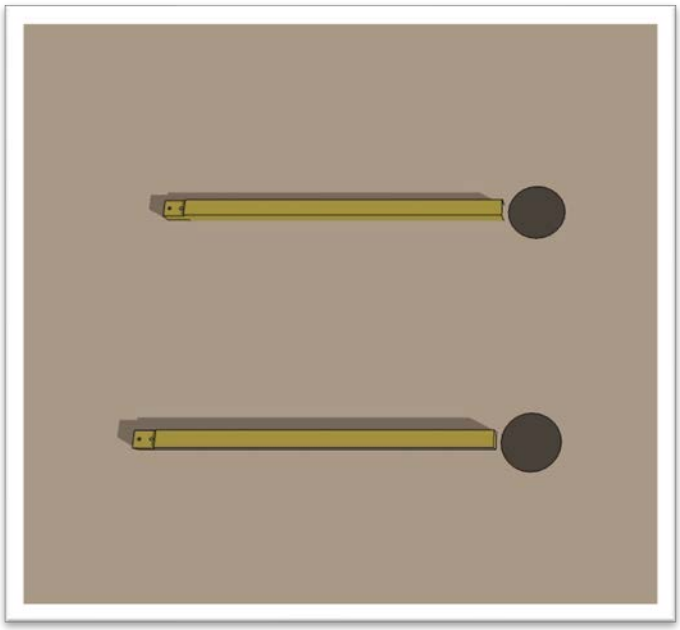
- **Step 9** - Pour in gravel to fill the first 4" of each post hole. Continue with the rest of this step if you are installing on top of new concrete footings and have not already poured your footings. Check out the information we have available on our website under *Resources>Tips>Post Information*, and consider using concrete footing form tubes, which you can purchase at your local hardware store. Mix the concrete according to the directions for the concrete you purchased and fill the hole to about 2/3 of the way to ground level. Use a shovel or piece of rebar to eliminate air bubbles. Insert 18" rebar supplied with your kit into the concrete so that it sits diagonally from the bottom of one side of the hole toward the top of the other side. Pour in more concrete to cover the rebar and until the concrete is level with the ground, or to the desired height to ensure that the top of each footing will be level with each other. If the ground surface is not level, you can use footing form tubes to create a level surface across the top of each footing using a line level. Work the top portion of concrete to eliminate bubbles and smooth the top with a trowel or shovel. Repeat for each footing. Allow to dry completely, which will depend upon the concrete used. Once dry, go back to the previous step for instructions on installing the post bases.

- **Step 10** - Install two 2x6 post supports to opposite sides at the base of each post as shown in the engineered drawing. Using the notch at the top of the posts, determine which sides of the posts you would like the post supports to be installed, and you may want to ensure the same side is used for all posts. Note that once your pergola is installed, the beams will attach to the posts on the notched side of the post, and the rafters will attach perpendicular to the beams. Align the square end of the post supports with the bottom of the post. While holding the supports firmly in place, attach the post supports to the posts using three sets of two 3" screws – one set located toward the bottom of the post (these will be buried in the concrete footer) and two more toward the top (these will be exposed above ground) – see the engineered drawing for a visual of the screw location. Repeat attachment for the opposite side and for the remaining posts.

  If installing using post bases on top of concrete footers, your post supports are shorter and will be completely above ground. You will need to ensure that the post supports are attached to the posts on the sides that will not be attached to the post bases (reference the engineered drawing for a visual). Align the square end of the post supports with the bottom of the post. While holding the supports firmly in place, attach the post supports to the posts using two to three sets of two 3" screws equally spaced – one set a few inches up from the bottom and another a few inches down from the top. Repeat for the opposite side and for the remaining posts.

- **Step 11** - Install a piece of 12" rebar, supplied with the kit, into the bottom of each post. Locate and mark a spot on the post supports that is approximately 10" up from the bottom of the post. Using a 5/8" drill bit, drill a hole straight through the post supports and post at the desired mark on each post. Note that the rebar will be inserted in a later step. Skip this step if installing in post based on top of concrete footers.

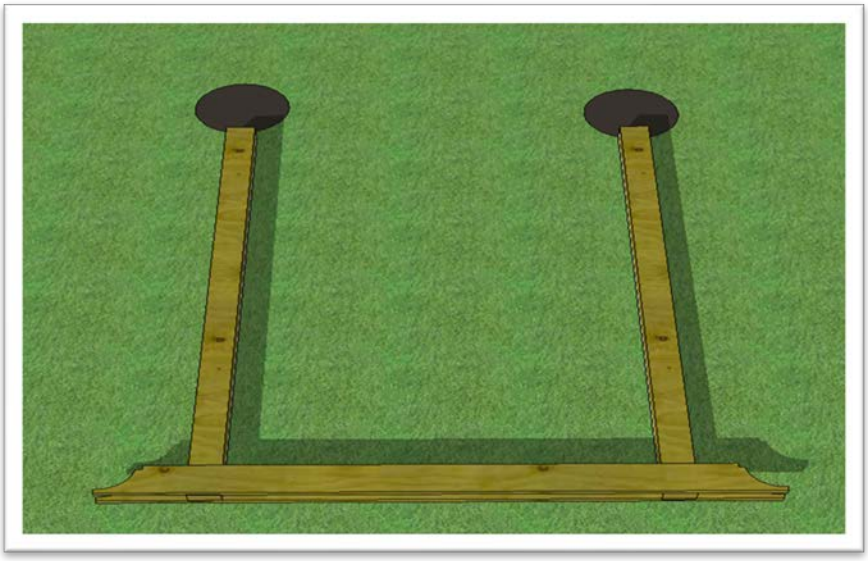
- **Step 12**- Lay the two posts on the ground with the bottoms at the edge of each hole, with the tops facing away from each other, like is shown in the next picture.



- **Step 13** - Insert the rebar through the hole at the bottom of each post. Use a hammer to move the rebar into place through the post until you have approximately equal lengths of rebar on either side of the post.

- **Step 14** - Lay one beam down on the ground near the top of the posts. Slide the posts up and onto the beam between the lines on the beam where it says post. Set the other beam on top sandwiching the post in between the two beams.

- **Step 15** - Place 1 washer on each 1/2" bolt. Lift the beam assembly enough to fit the bolts between the ground and the beam and insert the bolts into the holes from the bottom. **Hint:** You may want to use a block of wood to place on the ground under the bolt, so you can push the beam down to get the bolt to come up through the hole. Place a washer and nut on each of the bolts and make them snug but do not tighten them down yet. Now you should have this:



- **Step 16** - With one person on each side, tilt the assembly up and drop the posts into the postholes, or into the post bases if on concrete. Have your helper(s) hold the assembly plumb. (Note: for some of the larger size pergolas this step may require more help.) Refill the holes around the posts with dry concrete. **Do not water in the concrete yet**. Check for level across the top of the beam and on the sides of the posts. **Hint:** To make level, a common solution is to adjust the amount of concrete under the posts by lifting-up the low post and allowing dry concrete to fill in underneath, or if installing on top of a footer or existing slab you may need to use a shim under one or more of the posts.

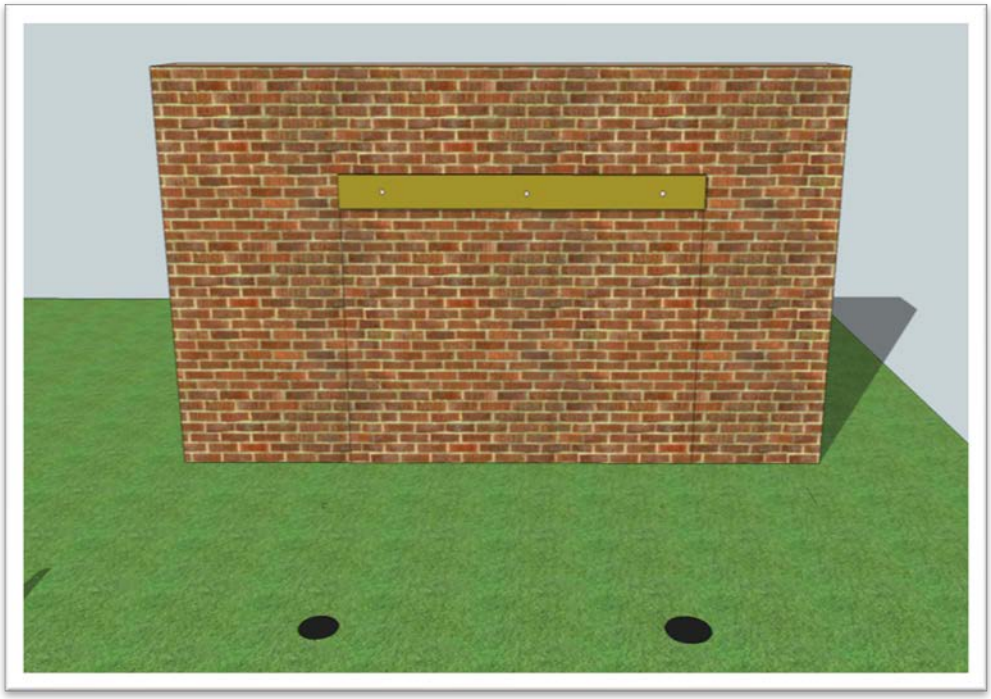
  Once level, to avoid the posts settling into the wet concrete once it is watered in, temporarily nail 2x4's at the base of each post, tight to the ground across the hole. The 2x4's can be removed after the concrete dries.

  If you are installing the pergola on concrete with post bases, you will need to have your helper continue to hold the assembly or prop the assembly up so that it does not fall. Once you have the bottom of the posts in the post bases, using the 1 1/2" galvanized nails supplied with your post bases, secure the posts to the bases with one nail on each side of the bases to hold them in place until the rafters are installed.

- **Step 17** - Level up from the marks you made on the wall earlier to the desired height of the pergola. The bottom of the ledger board should be the same height as, and level with the bottom of the front beam. Holding the ledger board in place exactly where it will be installed, ensuring that the board is level, mark the location with a pencil where you will drill holes in the ledger board. Then, using a 5/8" masonry drill bit, pre-drill holes in the masonry wall to a depth of at least 4 1/2". Clear excess debris from the holes. Having your helper hold the ledger board in place, insert the 5/8" anchor bolts supplied with the kit, hammer them into the wall and tighten with a 15/16" wrench. **Hint:**

drill the two outer holes first, secure the ledger board with two anchors, and then drill the rest of the holes.

If installing on a wood frame wall, you will have to locate the studs behind the framing or the top mounting plate above a window or door, and mark where the holes will be drilled. For wood frame walls, we do not pre-drill the ledger board so that you can match the holes in the ledger to the stud locations. Once you have identified and marked where the ledger will be attached, using a 1/2" drill bit, pre-drill holes to a depth of at least 4 1/2", insert the 1/2" lag screws provided with the kit through the ledger board and tighten with a 3/4" wrench. The ledger should now look like this:

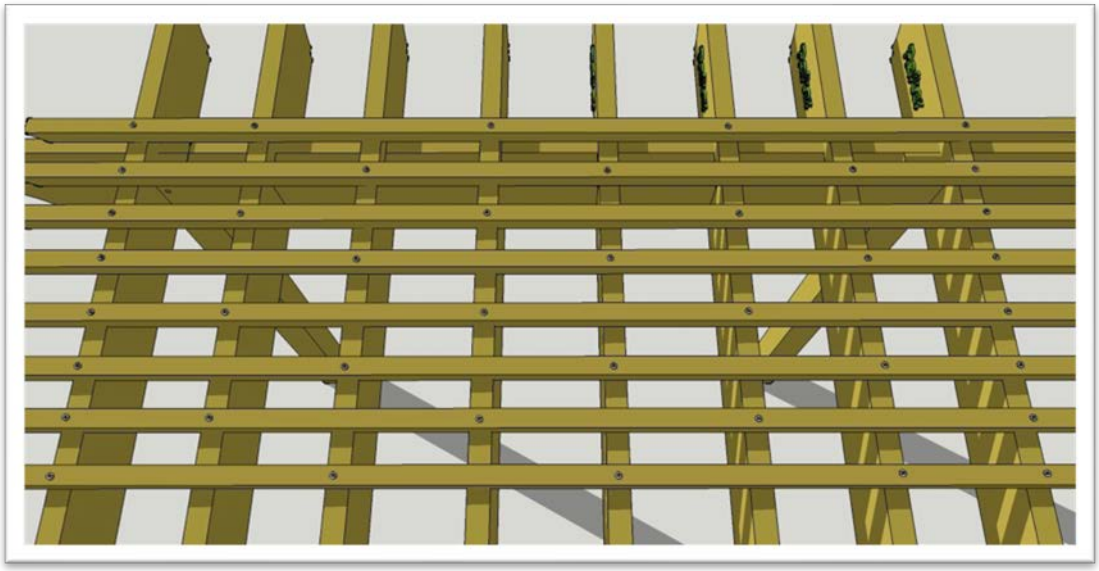


- **Step 18 -** Move your stepladder in between the beam and the wall. Take one of the rafters and slide it onto the outermost X marks on the beam and ledger board. Then screw the rafter in place using the 6" screws provided with your kit through the predrilled holes in the rafter onto the top of the beams and ledger. Now move to the opposite side and screw the other end rafter in place. Now your helper should be able to let go of the assembly.

- **Step 19** - Install the remaining rafters on the remaining X marks. Secure them to the beam and the ledger through the predrilled holes in the rafters with 6" screws. If on concrete, now is the time to finish securing the posts to the bases using the galvanized nails supplied with your kit.

- **Step 20** - Place the top slats into position across the top of the rafters on the lines labeled with an S, making sure you have the same overhang over the rafters on both sides for all top slats. Then screw the top slats down to the rafters using 3" screws. Start on one side and make your way across to the other side screwing every other rafter. Stagger your screw pattern as pictured below:

- **Note:** If installing the Bearing Boards as described in the next step, remove two top slats, one each where you would like the Bearing Boards to be installed.



Make sure every top slat is screwed down on both end rafters as pictured. Be careful with the screws, because stainless steel is a soft metal and they strip easily. Make sure your screw gun is straight and that the bit is inserted all the way into the screw, then push down hard while screwing them in. There are extra screws in every kit just in case you strip some, but if you need more you should be able to find them at any local hardware store. **Hint:** if you are having trouble with the screws stripping, it is helpful to get a bar of soap and rub the threads of the screw across it before screwing them in. This lubricates the screw, and they will go in a little easier.

- **Step 21** - Install the Bearing Boards. Lay the Bearing Boards on top of the rafters where you left space for them in the previous step, making sure to have equal spacing between the Bearing Board and the adjacent top slats. Screw down the Bearing Boards to the rafters with two 3/8" x 6" lag screws at each end and two for every third interior rafter. If you are not installing the Bearing Boards, you can install the two additional top slats that were provided with the kit.

- **Step 22** - Check the whole pergola assembly and tighten down any loose nuts and screws.

- **Step 23** - Install the Angle Braces. Two of the braces will go in between the beams and the other two will attach to the inside edge of the outside rafters – like shown in the picture below. To install the first two, slide the corner braces, with the long side towards the top, in between the two pieces of wood that make up the beam until flush with the top of the beam, then push the bottom side against the post. Make sure the angles are flush to the post and to the top of the beam. Screw in two 3" screws through the angle brace into the post through the predrilled holes, then screw the top through the face of one of the beams into the angle with four (4) 3" screws. (Note: there are no predrilled holes in the face of the beam and you can secure the angle to either the inside or outside beam.) Repeat for the other angle on the opposite end of the beams. For the other two angles, place the angle against the post with the long side up against the inside of the first rafter. Screw into the post through the predrilled holes at the bottom end that is against the post. Screw four (4) 3" screws through the top of the angle and into the rafter board. Repeat for the other angle.

  This is what they should look like when installed correctly:



- **Step 24 -** Water in the concrete around the posts according to the directions for the concrete you purchased. Thoroughly mix the concrete with a shovel or other tool. Add water and more dry concrete as may be needed to make the wet concrete level with or just below grade, then smooth the top surface with a trowel. Be sure not to move the unit around while the concrete is curing (about 24 hours depending upon concrete used and weather conditions). After the concrete dries, you can remove the temporary 2x4's from the bottom of the posts.

Note: If installing a pressure treated pine kit, do not paint or stain until the wood is dry.

You're Done!

Thanks again for your business. We appreciate our customers and their feedback on ways to improve our products. So, after you've completed putting your kit together, sit down, have a cold drink, and drop us a line by emailto tell us what you think about our products. Any feedback on how we can make our kits easier to install will be very helpful. Pictures are always welcome!

Built with pride in the U.S.A!

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