

Largo Freestanding Pergola Installation Guide



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Before you begin installation:

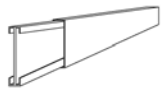
- View the installation video, great to view before installing! - www.usavinyl.com/vinylpergola.html
- Consult your local authorities for any permits required to construct the pergola.
- Check with local building code officials to review any required permits or building limitations.
- Read instructions thoroughly prior to assembly.
- If you have questions or concerns with this product **DO NOT** return to store. Assembly questions? Missing parts? Call 1-888-743-3673.
- Due to the size of the parts, at least two people are required to handle, fit and secure pergola components.
- Read manual first as mounting hardware varies with each application. Do not anchor to paver bricks. Foundation must be a solid surface.
- Do not stand, sit, or store items on top of pergola.
- Repair or replace broken parts immediately. Call 1-888-743-3673 for replacement parts.
- At regular intervals inspect your pergola to make sure that assembly integrity has been maintained.

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Tools required for installation:

1. Extension Cord
2. Post-Hole digger (for ground installation only)
3. Hammer Drill (for concrete installation only)
4. Reciprocating Saw
5. Cordless Drill
6. Power Drill
7. Drill Bits – 1", 5/16", 3/16"
8. Phillips Screwdriver Bit
9. Masonry Bit – 3/8" (for concrete installation only)
10. Masonry Bit – 5/32"
11. Carpenter's Square
12. Pencil
13. String Line
14. Level
15. Tape Measure (min of 25')
16. 2 Ladders (for at least the height of your pergola)
17. Rubber Mallet
18. Ratchet
19. Deep Socket – 1/2"
20. Standard Socket – 9/16" (for concrete installation only)

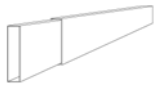
Part Photos



Headers
2" x 8" Hollow Vinyl Sleeve
w/ Extruded Alum. Insert



1.5" x 1.5" Purlin

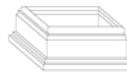


Projection Rafters
2" x 6" Hollow Vinyl Sleeve
w/ Extruded Alum. Insert



Purlin Cap

This list is general, custom orders may vary



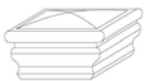
Post Dress Skirt



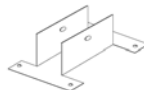
Decorative End
2"x 6"



Decorative End
2"x 8"



Post Cap



Double Beam Rafter Support Bracket



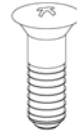
5/16" Flat Washer



1 1/2" Self Tapping Screw w/ Cap



**3/8" x 5" Wedge
Anchor (only
used if installing
on concrete)**



**#14 x 2" SS Screw (only
used with the concrete post
mount)**



**2" Self Tapping Screw w/
Cap**



Hole Plug



Glue



**Post Mount
Concrete**



**Vinyl
Sleeve
4"x4"x24"**

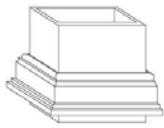


**Post
Spacer**



**5/16" X 4" SS Lag
Bolt (for connecting
the 2" x 8" headers to
the posts)**

Vinyl Column/Post Accessories:



**Interior Post
Adapter**



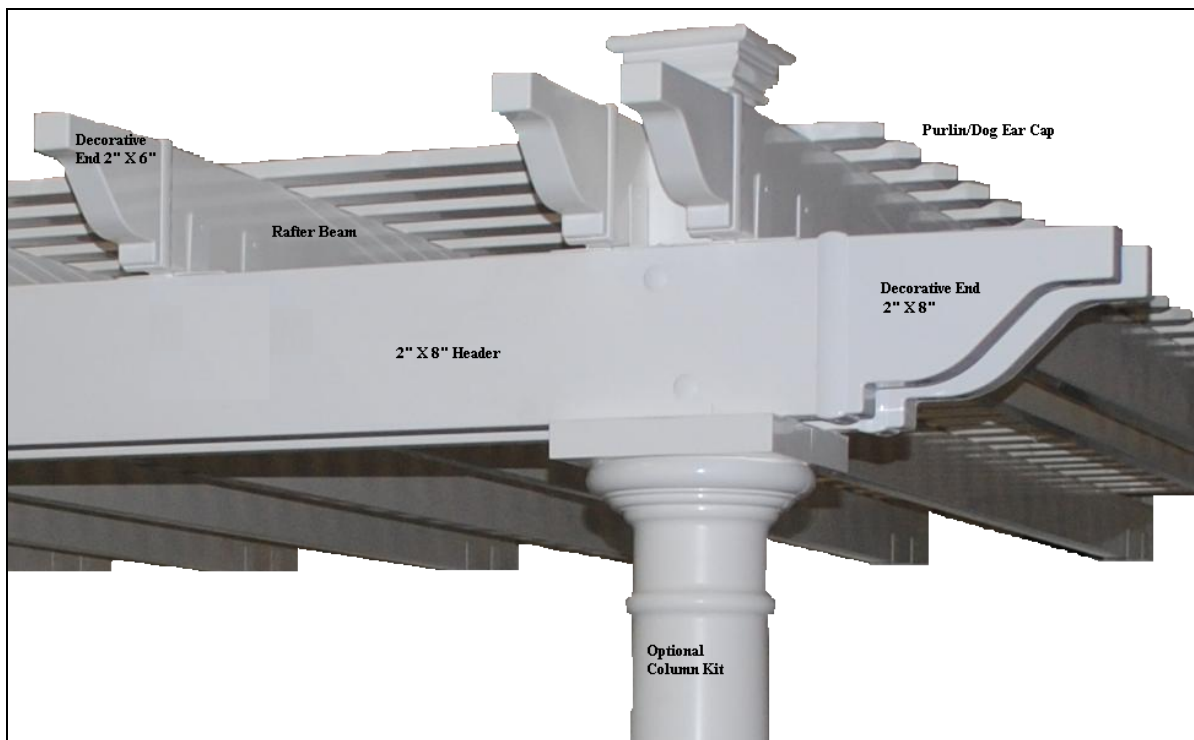
**5'x 4' Adapter
For 5' Post**



**7' Square
Gasket**



**Vinyl Post
5' X 5'**



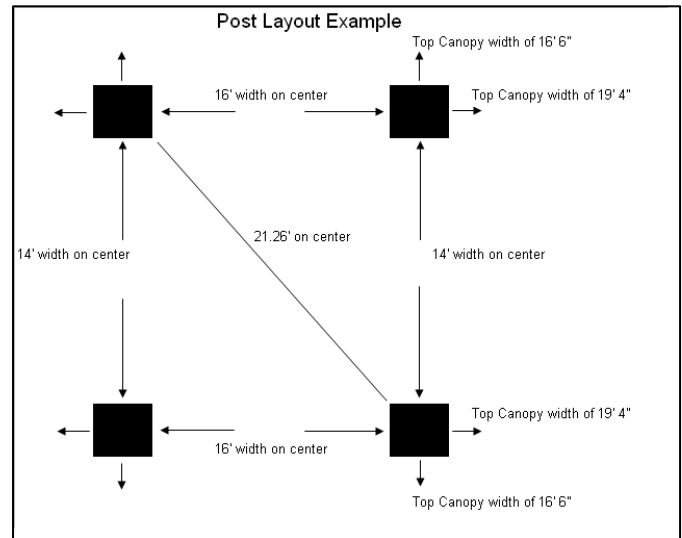
Section 1: The Posts

A. Preparation for Post Installation

NOTE: It is important that your pergola be built so that your structure is level and square. The post layout below is a suggestion for squaring your posts; other methods can be used to get the same result.

NOTE: The height of your post will be determined later during the installation process. The 4" x 4" wood post is typically up to 12" longer than necessary to allow for elevation changes of the ground or foundation. DO NOT cut the top of the wood post until after installing the headers. The heights of windows, roof overhangs, or other factors may change the recommended height. Make sure you calculate heights and distances before making any cuts.

NOTE: Our pergolas use on center measurements for width x projection. For example, if your pergola is 16' wide x 14' projection the post must be 16' on center for the width and 14' on center for the projection. For a custom size, you can install your posts closer together. The top canopy extends wider and longer than the post. The top canopy width extends over the post approximately 20" on both sides, and the top canopy projection extends over the post approximately 15" on both sides.

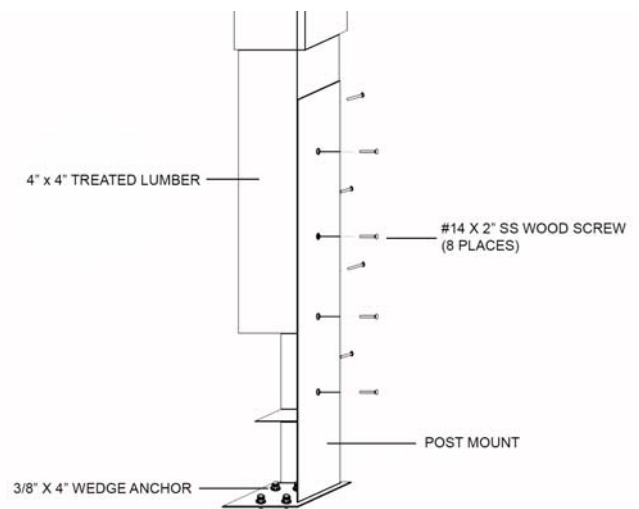


B. Deck Installation

- 1) If the posts are connecting to a deck or other structure, make sure the posts are attached securely to the structural framing and the structural framing is strong enough to hold the pergola. Consult a structural engineer to determine appropriate use and define fasteners.

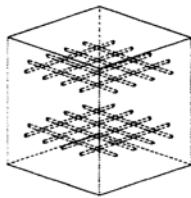
C. Concrete Installation

- 1) After you have placed, squared and traced each concrete mount you will need to attach the 4" pressure treated wood to each concrete mount.
- 2) Place the concrete mount on the bottom of the wood post. The concrete mount has 4 holes along each side. Pre-drill these holes with a 3/16" drill bit and install one #14 x 2" screw per hole. Repeat this step for each post.
- 3) Use a hammer drill at a 4 1/2" depth and drill the traced anchor holes with a 3/8" masonry bit. Remember not to rush this step; you do not want to compromise the integrity of your concrete surface.



- 4) Place the 3/8" x 5" wedge anchor into the each drilled hole and tap them into concrete using a hammer, making sure to leave 1" of the anchor above the concrete.
- 5) Place the concrete mount and pressure treated wood post over the installed anchor mounts. Install the washer and nut to each anchor.
- 6) Before the washer and nut are tightened, level the post and mount. If your post is not level you can use washers (not provided) as shims under the post mount until the post is level. Using a 9/16" standard socket, slowly tighten all of the nuts until they are level with the bottom of the post mount bracket. Do not over tighten the nuts. Repeat these steps for each concrete post mount.

**CHOOSE CONCRETE MASS FROM CHART BELOW
BASED ON WIND SPEED :**



Wind Speed	Mass cu ft	Depth	Length & Width
140MPH	7.2	2'	1'-10.75" SQUARE
		2'-6"	1'-8.25" SQUARE
		3'	1'-6.5" SQUARE
120MPH	5	2'	1'-7" SQUARE
		2'-6"	1'-5" SQUARE
		3'	1'-3.5" SQUARE
100MPH	3.6	2'	1'-4" SQUARE
		2'-6"	1'-2.5" SQUARE
		3'	1'-1.25" SQUARE
80MPH	2.5	2'	1'-1.5" SQUARE
		2'-6"	1'-0" SQUARE
		3'	11" SQUARE

CONCRETE SHALL BE A MINIMUM OF 3000PSI COMPRESSIVE STRENGTH WITH 2 MATS OF GRADE 60, #4 REINFORCING STEEL, 6" CENTER TO CENTER, E-W

GENERALLY SYSTEM MAY BE MOUNTED ON AN EXISTING CONCRETE SLAB, HAVE SLAB EVALUATED FOR STRUCTURAL INTEGRITY.

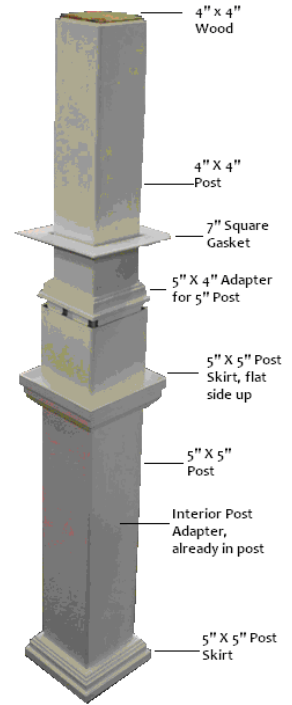
Section 2: Vinyl Sleeve Installation

NOTE: If you will be changing the height of your pergola from the 8' height, you will need to measure and cut your post sleeve at this time. The height is determined from the ground to the bottom of the first header.

NOTE: For proper installation, you MUST make sure your headers are level. See **C** for details.

A. 5" Post Sleeve

- 1) Slide the interior post adapter over the wood post. If the installation is on concrete, install the post interior adapter 6" off the ground using one 1" self tapping screw on either side of the adapter.
- 2) Slide the 5" post sleeve over the wood post. Take two post skirts and slide them over the 5" post sleeve, the first skirt (bottom trim) will be upright, and the second skirt (top trim) upside down. See diagram at the right.
- 3) Slide the 4" x 4" x 24" post and spacer together (spacer between the wood and vinyl post) over the remaining portion of the wood post.
- 4) Using a rubber mallet, hammer down the post and spacer until 18" is above the 5" sleeve.
- 5) Slide the 5" to 4" adapter over the 4" post and into the 5" sleeve.
- 6) Slide the 7" x 7" gasket over the 4" post and rest it on top of the 5" sleeve.
- 7) Secure the top and bottom post skirt to the vinyl post with a 1 1/2" self tapping screw and screw cap.
- 8) Repeat these steps for each post.



B. Leveling Post Heights For the Headers

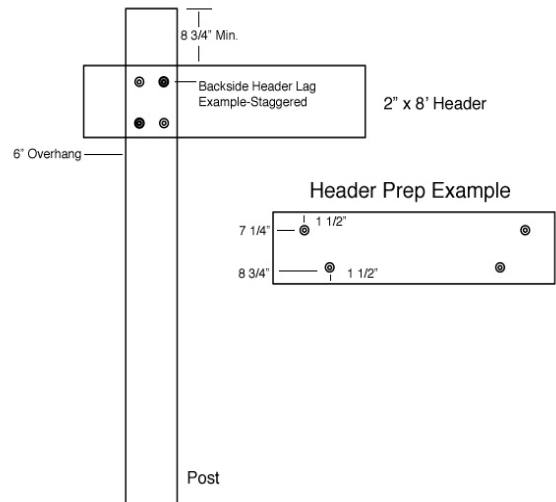
NOTE: There are multiple ways to level the pergola height. You must ensure that all of the posts (trim etc) are at the same height.

- 1) Determine the lowest elevation point for the pergola.
- 2) Run a string line with a level to determine if you columns/posts will be level with each other.
- 3) Cut the extra material off the length of the sleeve. Always measure twice and cut once.

Section 3: The Headers

A. Header Prep

- 1) To set the elevation of the headers, you will need the help of an additional person that can raise the 2" x 8" header to rest on the vinyl sleeves. To make the header lighter, you will want to remove the aluminum from the header you are using to set the elevation.
- 2) Determine the shortest post by measuring from the bottom of your vinyl sleeves to the top of the wooden 4" posts.
- 3) Starting with the shortest post, rest the header on 2 of the decorative vinyl sleeves. Mark the top of the header with a pencil on the 4" post. Next, measure and mark a minimum of 8 3/4" from the top of the header toward the top of the 4" post. You can

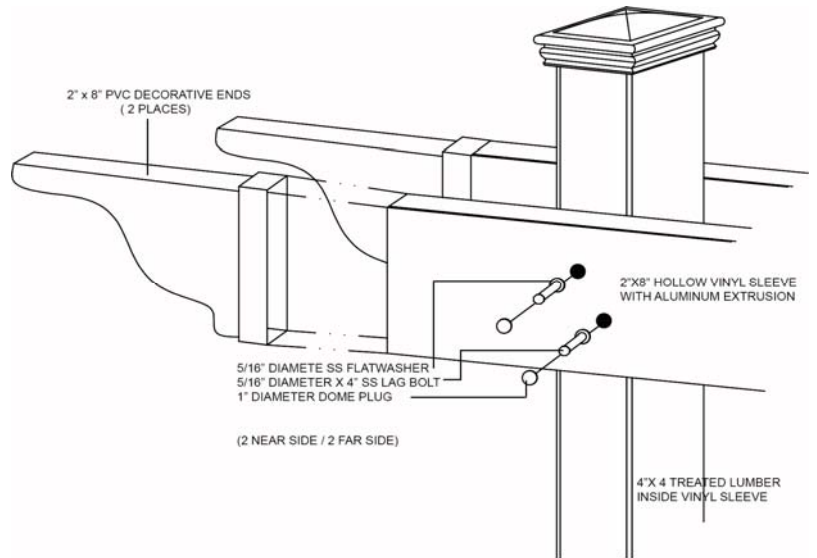


increase the 8^{3/4}" measurement if a taller canopy is desired.

- 4) Repeat this step for each post.
- 5) With a pencil, mark two holes on each end of the header. For hole #1, measure 1^{1/2}" from the top of the header and 7^{1/4}" from the end. For hole #2, measure 1^{1/2}" from the bottom of the header and 8^{3/4}" from the end (this will allow for a 6" overhang once the headers are installed).
- 6) Do this on both the left and right end of each header. This will allow your 5/16" x 4" lag bolts to be staggered so they do not hit each other during installation.
- 7) Slide the aluminum out of the way and use a 1" drill bit to pre-drill each mark through one side of the header. Slide the aluminum back in place and use the 1" hole as a guide to drill through aluminum and both sides of the header with a 5/16" drill bit.
- 8) Repeat these steps for all 2" x 8" headers.

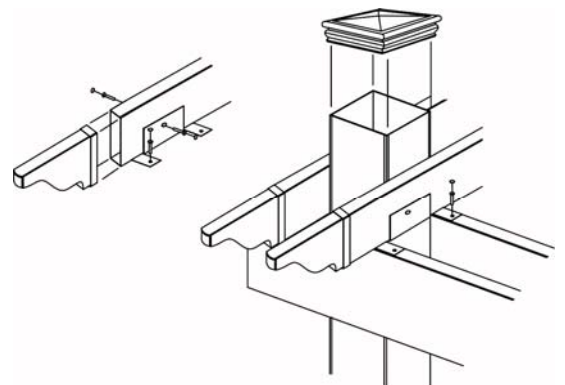
B. Header Installation

- 1) With the help of an additional person again, position the header on the previously marked area of the 4" post. Make sure there is at least a 6" overhang from the end of the header to the 4" post.
- 2) Use a 3/16" bit to drill through the previously drilled holes of the header into the 4" post. Install the lag bolts and washers through the vinyl and aluminum into the wood post. Tighten with 1/2" socket, DO NOT over tighten, this will cause the aluminum to bend.
- 3) Repeat these steps for all the header connections. Trim the tops of the post to be the same height (if necessary).



Section 4: Rafter Installation

- 1) To get equal rafter spacing, preset your rafters in your rafter support brackets before you make any cuts or secure any brackets. The rafters will extend at least 2" past the header on both sides.
- 2) Adjust the spacing of the rafters as necessary. The on center measurement (approximately 22"-24") may vary depending on the width of your pergola.
- 3) Place the rafters into the brackets. Use the #10 x 1" self tapping screw and screw caps to secure the rafter support bracket to the rafter and onto header.



Section 5: Purlin Installation

NOTE: The purlins will lay perpendicular to the rafters.

- 1) Place your purlins on top of your pergola and space them evenly.
- 2) The purlin overhang should be the same distance from either side of the last rafter. It would be helpful to have an additional person to assist with adjusting the purlin overhang.
- 3) Use the #10 x 2.5" self-tapping screws and screw caps to secure the purlins to the rafters. Do not over tighten the screws as this will cause dents in your purlin.

Section 7: Finish Work

- 1) Install the 1" hole plugs for the headers. Place and secure the 4" post caps, the header and rafter decorative ends and purlin caps with glue.
- 2) Secure the trim piece to the top trim piece.
- 3) ***For headers 16' and wider*** Once the 5/16" x 4" lag bolts and washers are installed for the headers sharing a post or column sleeve, you will need to install the 2" x 8" splice piece. The lips of the splice will rest on the outside seam on the bottom and top of the header and secure with 4 #10 x 1 1/2" self-tapping screws and screw caps in each corner.

Enjoy your new pergola!