



26' GROWING DOME VENT INSTALLATION STAGE 1

MATERIALS LIST

Included in the Growing Dome® kit for Stage 1 of the vent installation are the following:

- 2 – 6' nylon cord (restrainer cords for top vents)
- 2 – 3-1/2" nylon cords (restrainer cords for bottom vents)
- 4 – eye bolts, fender washers, and nuts
- 6 – screw eyes (2 per top vent / 1 per bottom vent)
- 1-3/4" bronze star drive screws (to attach hinges and crossbars)
- Crossbars – 2 @ 36" (for bottom vents with Bayliss openers) & 2 @ 36" (for top vents with Gigavents)
- Gigavent solar powered openers (for "A" top vents)
- Bayliss solar powered openers (for "E" bottom vents)
- Vent gaskets (cut to length)
- Hex head screws to attach vent gaskets

INSTALLING THE VENTS

It is necessary to attach the vents before attaching the glazing as the glazing will cover the vent hinges and proper alignment is critical to functionality. On the 26' Growing Dome® there are 2 "A" vents (top of dome) and 2 "E" vents (bottom). There are 4 possible locations for the 2 "E" vents.

Refer to the paper model or aerial view as to the vent location options. Start by installing the top "A" vents. See "A Vent Installation Stage 1" Video 6-V1. The two top "A" vents are mirror images of each other and are mounted so that the hinge side faces the strongest prevailing wind. (NOTE: It is important to install an "A" glazing panel in-between the two vents to prevent interference with the two vents opening.) Know that you can move the vents to best suit your location. Do NOT place a ladder against any of the struts to install the top "A" vent as this can cause the struts to twist the hubs out of alignment.

4th IMPORTANT ASPECT:

This is the most critical aspect. Improperly aligned hubs are the greatest cause of glazing triangles not fitting accurately. No matter how much they have been tightened, they can still "twist" from the weight of a ladder against a strut on the other side of the Growing Dome to the weight of a person using a strut for balance. As it is best to start at the top of the Growing Dome and work your way down, it is important to re-check hub alignment before and after the vents are installed, after the top pentagon triangles are installed and before each subsequent layer of triangles are installed. Hubs will NOT twist once a glazing triangle has been attached to its struts, so you can't adjust it afterwards.

All three sides of the vent sit on the outside edges of the struts. The vent does not recess into the opening. Place the vent in position with the hinges at the top over an "A" strut. Attempt to center the vent so that the metal reveals are even, consistent, and straight when viewed from underneath. Having an assistant inside the dome to tell you when the vent is centered in its opening is helpful. The hinges will hang over the edge of the strut slightly. See "Vent Components Stage 1" Diagram 6-D1. The holes in the hinges are very near the edge of the strut and the screws need to be inserted at a slight angle to ensure that they attach securely into the strut. Screw through all 4 holes in each hinge using 1-3/4" bronze star drive screws. Do not over-tighten these screws, as this will cause the vent to bind on its frame. The two "A" vents (where their rainsheds meet at the center top of the dome) may need the rainshed trimmed (1/4" gap needed) if you find that they interfere with each other when opening and closing. This is done easily with aircraft shears. The hinge edge is taped after the dome structure glazing is installed and after all the glazing seams are taped.

The two bottom “E” vents can go in any of the “E” locations on the bottom layer of triangles except in the north wall insulation area. Placements are chosen to achieve the best possible cross breeze and are installed in the same manner. These vents are easier to install if you have one person hold the vent in position while a second person drills the screws into the hinges.

THE RESTRAINING CORDS STAGE 1

As all 4 of the vents are installed, it is imperative to attach the restraining cord to each vent as they are installed. This prevents the vents from being blown open by wind gusts which could potentially damage the vents, harm your workers or even yourself.

They are also used later after the openers are installed to prevent the vents from opening too far during high winds. The restraining cord is nylon cord which is attached to both an eyebolt in the vent itself and to screw eye(s) in the vent frame opening. See “Vent Components Stage 1” Diagram 6-D1. The top vents use two screw eyes with a 6’ nylon cord and the bottom vents use only one screw eye with a 3-1/2’ nylon cord.

Start with the top “A” vents. Use a 1/4” bit to drill a perpendicular hole through the vent, centered left to right and approximately 8” up from the point of the glazing on the vent. Push or twist the end of the 1/4” eyebolt through the hole from the inside and put on the washer and nut on the outside of the vent. Use a wrench to tighten the nut on the outside of the vent rather than turning the eyebolt. This prevents the vent from being damaged on the inside. Using a drill bit a little smaller than 1/4”, pre-drill a hole into the side of an adjoining strut about 12” up from the bottom end of the strut, centered width-wise, so that the nylon cord does not interfere with the vent when it is in its closed position. Repeat for the other adjoining strut. Place a screw eye in each hole and tighten until firmly in place. Take the 6’ nylon cord and find the middle of the cord by folding it in half. Push the cord fold through the eyebolt, then pull the cord through the fold. Insert the other end of the nylon cord through one of the screw eyes and with the vent in the closed position at this time, pull the cord tightly through and finish with another temporary knot. Repeat for the screw eye on the other strut. Repeat for the second top vent.

This process is then repeated for the bottom “E” vents with 2 exceptions. First, the hole for the eyebolt on the vents can be approximately 8” to 10” up from the point of the glazing on the vent. Second, they use only one screw eye approximately 12” up from the bottom end of either adjoining strut and use a 3-1/2’ nylon cord each.

The knots at the screw eyes are temporary so they do not need to be really tight. They can be undone on calm, warm days and vents propped open to allow for airflow as long as they are re-tied if the wind comes up and at the end of the day. They will also need to be opened when installing poly triangles next to the vents.

See “Vent Installation Stage 2” Step 10 for instructions on completing vent installation. Completion will take place after all the polycarbonate glazing panels have been installed and all the glazing seams have been taped.