

kaleidoscope®

assembly guide



landscapeforms®

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section 1: recommended ground preparation and footings

Landscape Forms is not responsible for site preparation and footings. Contact Landscape Forms for structural information, including base plate dimensions, anchor hole size and spacing and locating notch. **Templates are shipped with every order. However, if you are using cast-in-place anchors, please call in advance of order shipment for templates.**

Note: Landscape Forms does not provide anchor bolts, leveling nuts, or washers.

SUGGESTED GROUND PREPARATION AND FOOTING.

Landscape Forms is not responsible for site preparation and footings. Landscape Forms does not provide anchors, leveling nuts or washers.

All of Landscape Forms suggested footing details are subject to local building restrictions. It is the responsibility of the installer to acquire all permits, inspections, building official compliance, and to determine local frost, wind, exposure, snow, and soil requirements.

There shall be no implied liability on the part of Landscape Forms for the suggested footings and other conditions suggested for the below grade anchorage of the Kaleidoscope system.

Contact Landscape Forms for the following Kaleidoscope OS foundation plans:

Caisson:

- 90 MPH exposure B; 40 PSF snow load
- 146 MPH exposure C

Slab:

- 90 MPH exposure B; 40 PSF snow load
- 146 MPH exposure C

Spread:

- 90 MPH exposure B; 40 PSF snow load
- 146 MPH exposure C

Exposure B: Defined as having terrain with buildings, forest or surface irregularities covering at least 20% of the ground level area extended one mile or more from the site.

Contact Landscape Forms for footing recommendations for Kaleidoscope I.



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setting the posts



Landscape Forms provides installation drawings for every order.

The base of every post is stamped with an identification number which corresponds with post numbers on the installation drawing.

There is a locating notch on each post that is shown on the installation drawing. This will guide you in setting posts in the proper direction.

It is critical to the alignment of all components that each post be installed in its proper location and direction.

Tools Needed

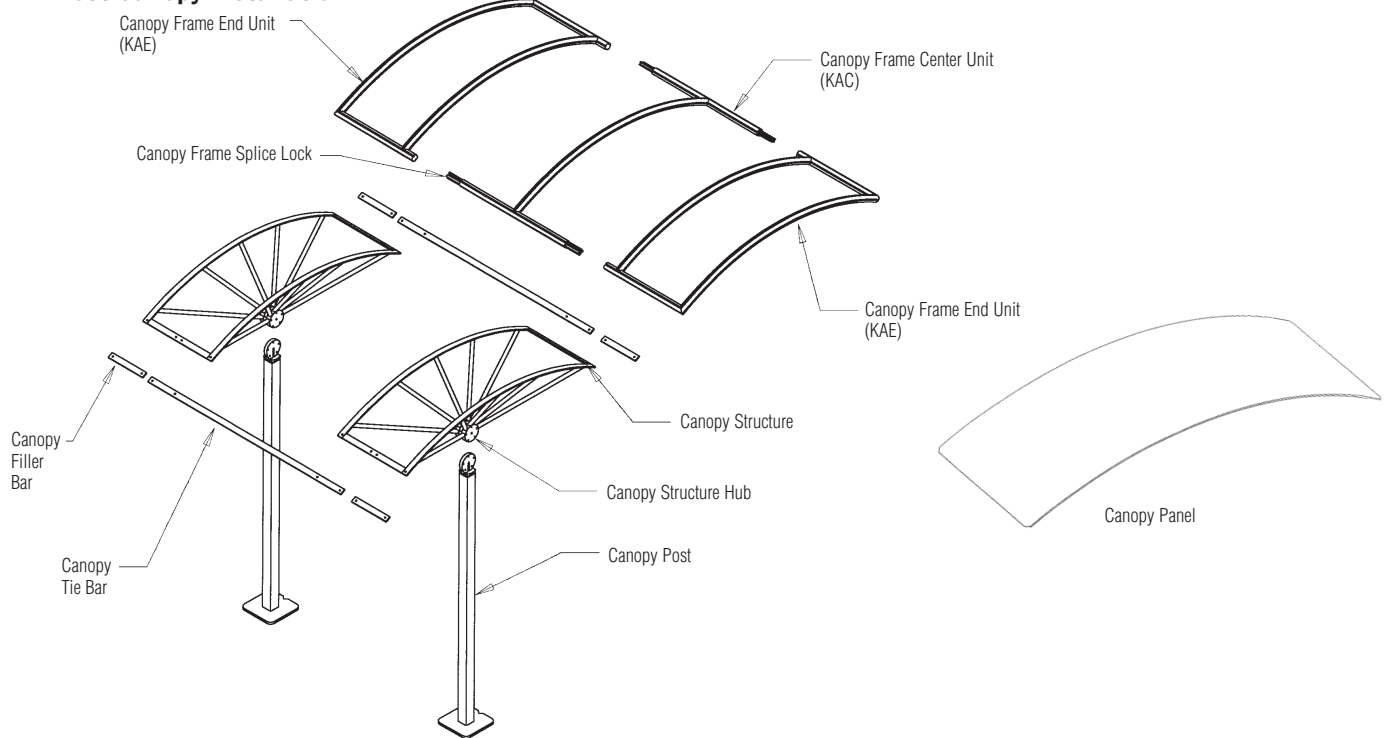
Boom crane, level, tape measure, nylon string, large adjustable wrench.
Anchor bolts, leveling nuts and washers to be provided by others.

Post Installation Instructions

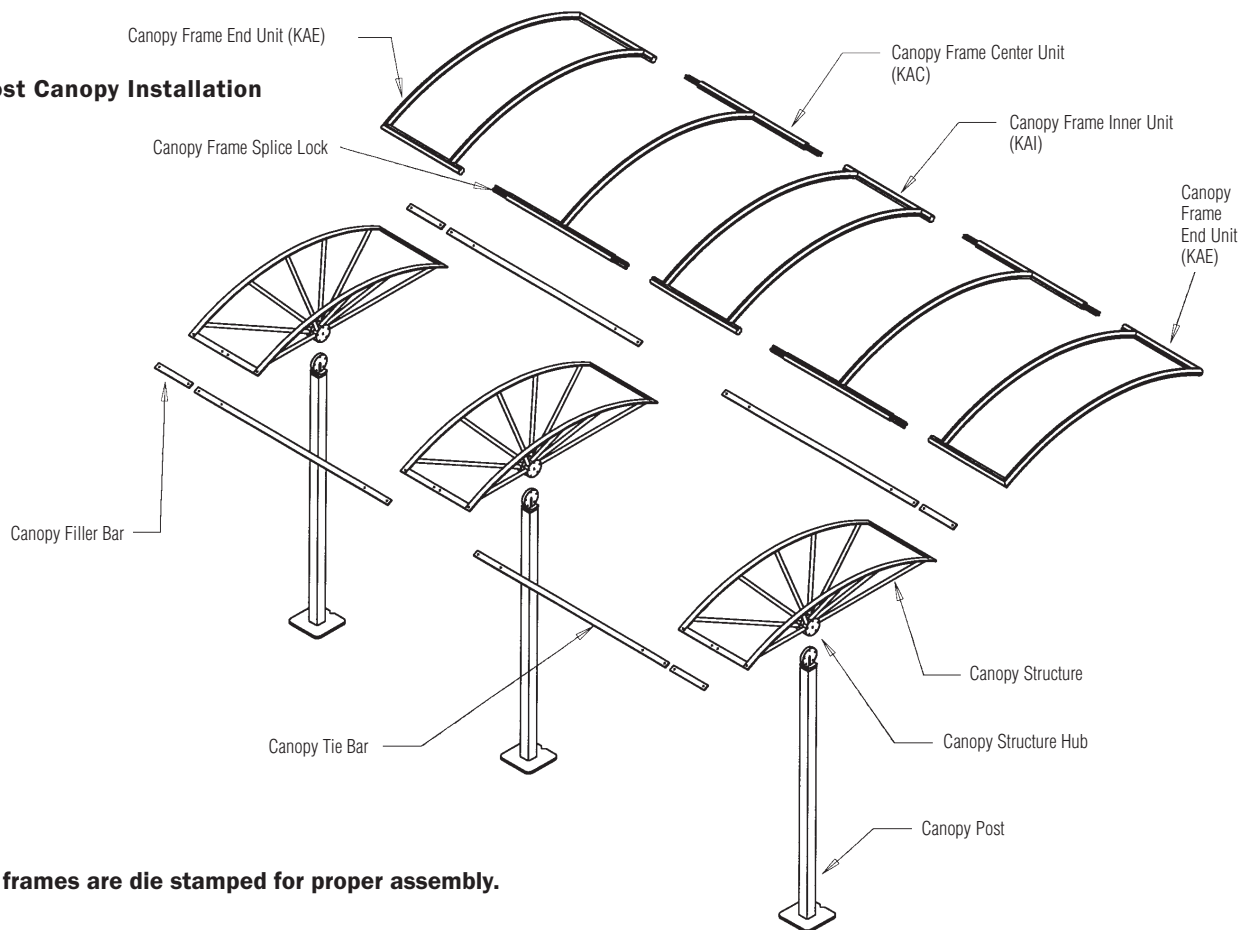
1. Verify the bolt layout and center to center distance of the anchoring bolts in and between footings before starting to install the posts. See Suggested Ground Preparation and Footing details to verify the required dimensions from top of footing to finished grade and minimum and maximum column base plate clearances.
2. Install the bottom leveling nuts and washers on to the anchor bolts.
3. Attach lifting strap to post hub as shown (if using boom crane).
4. Using boom crane, lift post onto anchoring bolts. **Note:** Orient locating notch in base plate as shown on installation drawing included with this package.
5. Install nuts and washers on top of base plate, plumb and level posts. Do not fully tighten nuts at this time; posts may need to be adjusted.
6. Install the remaining posts in the same manner.
7. Check post to post alignment as well as center to center dimensions.
8. Check to make sure posts are the same height across the top of the posts.

canopies

2 Post Canopy Installation



3 or More Post Canopy Installation

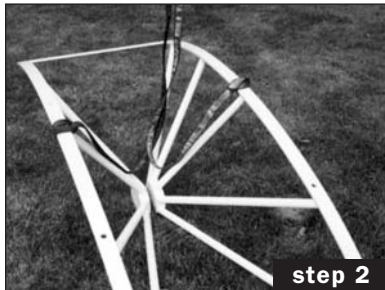


Note: Canopy frames are die stamped for proper assembly.

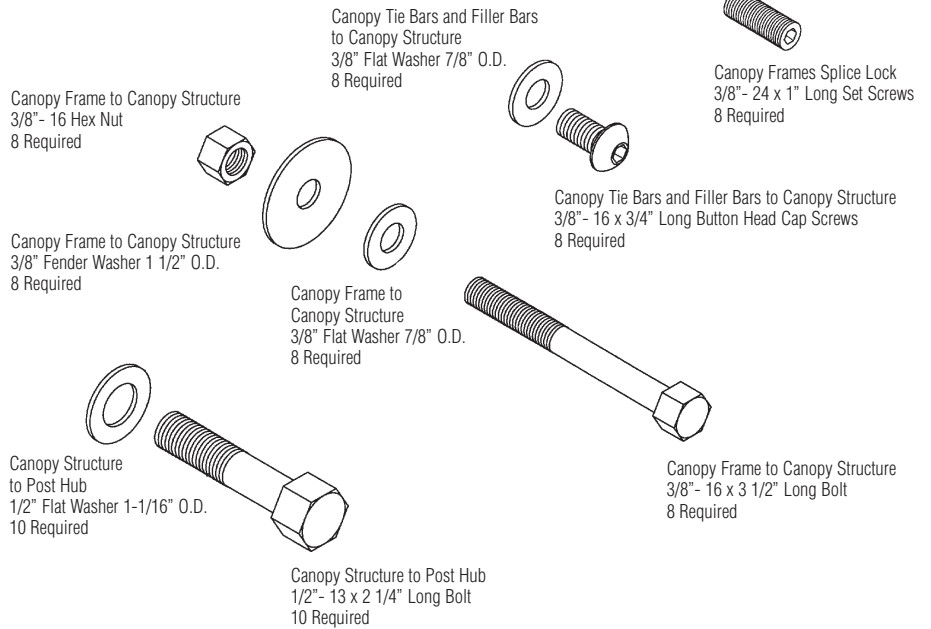
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Canopy Structure Hardware Package



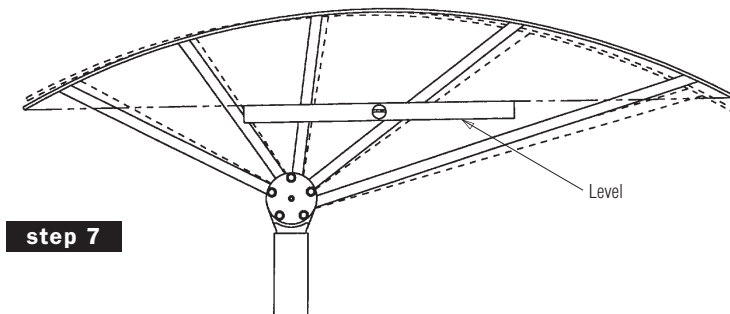
Tools Needed (SAE)

Boom crane, scaffold, level, tape measure, 9/16" and 3/4" socket and ratchet, allen wrench set, chalk line, line level.

Canopy Installation Instructions

Note: Canopy frames are die stamped for proper assembly.

1. Remove shipping spacer from between hubs of canopy structure.
2. Attach lifting strap to canopy structure for lifting as shown.
3. Using boom crane, lift the canopy structure on to post hub as shown.
4. Bolt the canopy structure to the post using the 1/2" -13 x 2-1/4" long bolts and flat washers supplied in the hardware package (10 required per post). Do not fully tighten at this time.
5. Install the remaining canopy structures in the same manner.
6. On installations of 3 or more posts, use a chalk line to align the canopy structure.
7. Level canopy structure and check alignment with each other as shown and tighten canopy structure to post bolts to 75ft • lbs.



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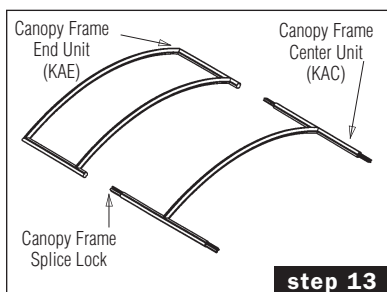
step 8a



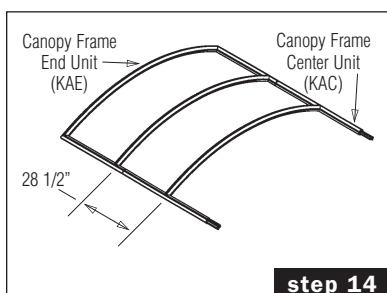
step 8b



step 11

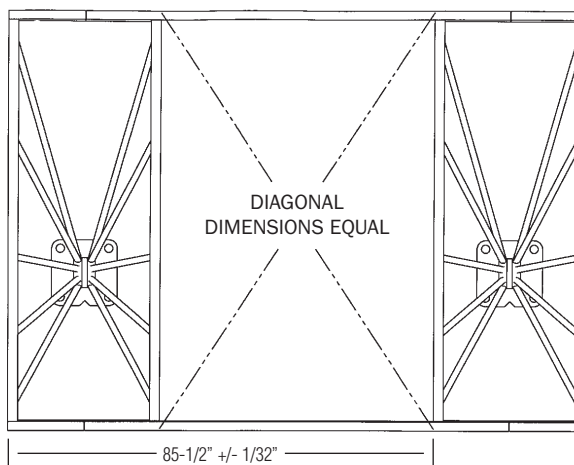


step 13



step 14

8. Bolt the canopy tie bars to the canopy structure using the 3/8" -16 x 3/4" long button head bolts and washer supplied in the hardware package (4 required per bar). Start by installing the 2 bolts in one end and tighten to 20 ft•lbs., then install the bolts on the other end of the tie bar. **NOTE:** It is very likely that you will have to adjust the canopy structure and or the post at this time, the tie bars should be flush with the front edge of the structure and tighten each to 20 ft•lbs.
9. Check the canopy for square by measuring corner to corner as shown. Check the centerline to centerline dimension, which should be 85-1/2".



10. Bolt on the filler bars to the canopy structure using the 3/8" -16 x 3/4" long button head bolts and washers supplied in the hardware package (2 required per bar). Filler bars should be flush with the front edge of canopy structure; tighten bolts to 20 ft•lbs.
11. Lift canopy frame end unit (KAE) into place and bolt onto the canopy structure using the 3/8" -16 x 3-1/2" long bolts, hex nuts, 7/8" O. D. flat washers, and 1-1/2" O. D. flat washers; do not fully tighten at this time. **NOTE:** the 1-1/2" O. D. flat washers are installed on the underside of the canopy.
12. Loosen the 8 set screws that hold the splice locks in place 3 turns to allow ease of installation.
13. Lift the canopy frame center unit (KAC) into place and slide the splice locks into the end frame extrusion. Bolt onto the canopy structure using the 3/8" -16 x 3-1/2" long bolts. Lock nuts, 7/8" O D. flat washers, and 1-1/2" O. D. flat washers, do not fully tighten at this time. **NOTE:** The 1-1/2" O. D. flat washers are installed on the underside of the canopy. Do not fully tighten at this time.
14. Install the 3/8" -24 x 1" long set screws into the other end of the splice locks. Make sure that the measurement between the bowed tubes centerline to centerline is 28-1/2". Tighten all set screws to 18 ft•lbs.
15. On a two-post installation install the other canopy frame end unit (KAE) in the same manner.
16. On a three or more post unit install the canopy frame inner unit (KAI) in the same manner as shown. The last canopy frame member will be an end frame unit.
17. Visually check alignment of all canopy frames on the canopy structure and then torque all the 3/8" -16 x 3-1/2" long bolts to 30 ft•lbs.

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canopies

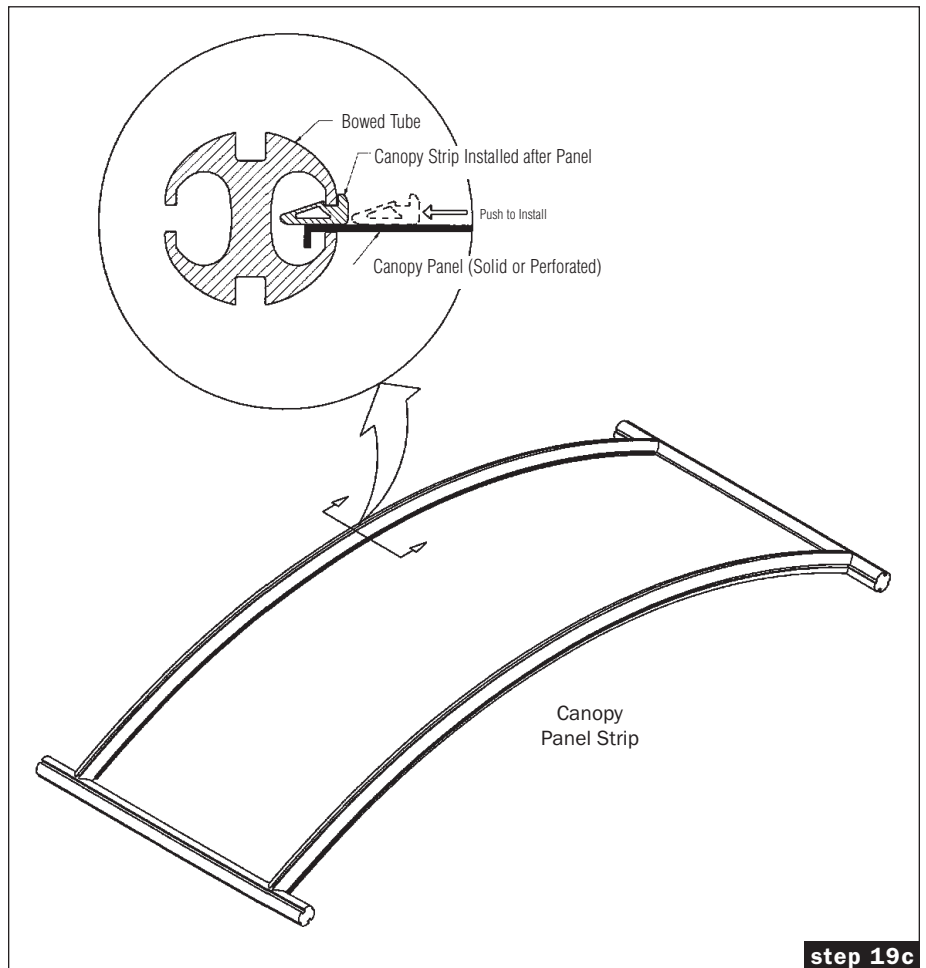
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18. To install the canopy panels **make sure that the flanged edge is down**. The panels are flexible. Beginning in the center of the canopy frame, slide the panel into the slot on the frame. Flex the other end of the panel into place and center in the frame. **NOTE:** The panel will be loose in the frame at this time.
19. Install vinyl panel strips on the topside of the panels. Make sure it is fully seated in the frame extrusion as shown in the illustration. **NOTE:** For easier installation, the vinyl strip may be lubricated with soapy water.
20. Install the remaining canopy panels in the same manner.
21. The post anchor nuts can be tightened to 350 ft•lbs.



Canopy Panel Strip Installation Detail



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lighting



Lighting Installation Instructions

Lighting purchased through Landscape Forms Inc. is low voltage (12 VAC). All components are UL listed. The lighting package consists of 1 light and transformer. Wiring and bulb are not provided.

Landscape Forms Inc. recommends a licensed electrical contractor install the lighting.

Landscape Forms Inc. is not responsible for verifying that the lighting and components meet local codes.

1. Remove the hex socket pipe plug in canopy structure hub and discard. The post hub has a wire slot for fishing wires into the posts. The 4" square posts are hollow to allow wiring to pass through and out the hole in the base plate.

NOTE: No additional holes may be drilled into the post for any reason.

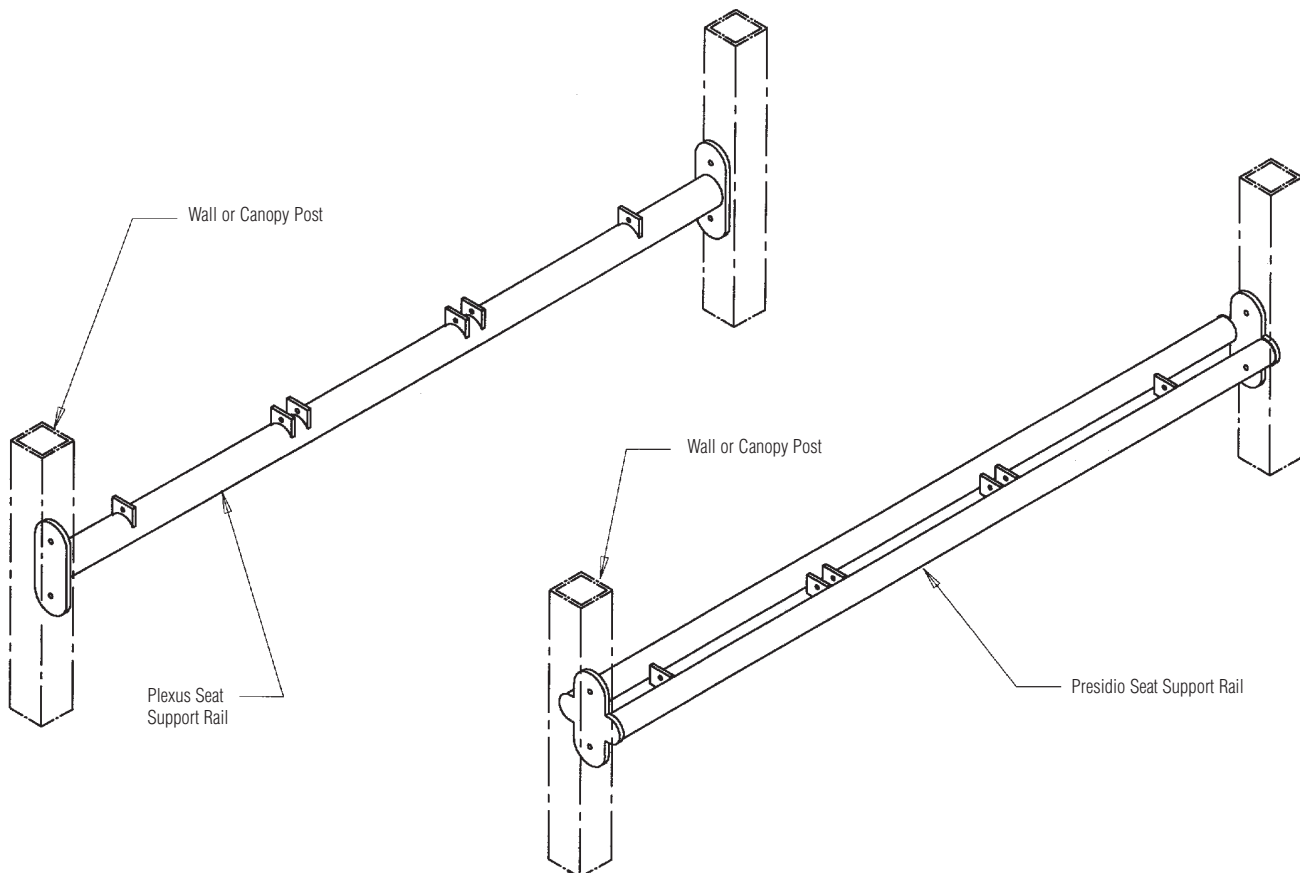
2. Thread the lights into the 1/2" pipe thread hole in the hub and adjust light direction as desired. All electrical connections are the responsibility of the customer.

Smart Shelter Lighting:

See Smart Shelter lighting system *Operation and Maintenance Manual* for more information.

seating

Seat Assembly Installation Instructions

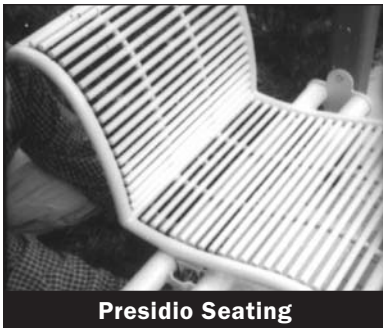


seating

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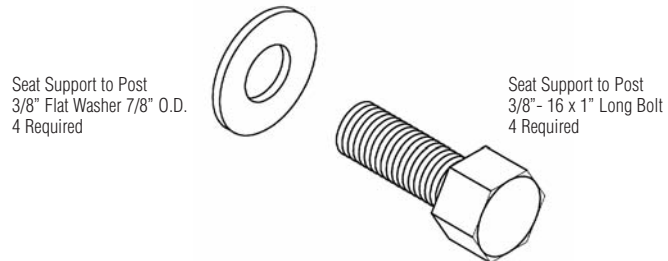


Presidio Supports



Presidio Seating

Seat Attachment Hardware



Tools Needed (SAE)

Ratchet, 9/16" socket.

Seat Assembly Instructions

1. Bolt seating support rail to posts using 3/8" -16 x 1" long bolts and flat washers; tighten to 30 ft • lbs.
2. Install the seats onto the seating rail.

Presidio Seat Assembly:

1. Because these units are quite heavy, we recommend using two people to install seat(s). Set seats in front of horizontal tube sections.
2. Hold first seat above tube and slip adapters on horizontal tube.
3. Insert bolts and install lock nuts for this seat. Tighten VERY SECURELY. These are grade 5 bolts that will not break. (We recommend tightening the bolts on each seat before installing the following seat, this makes it easier to fully tighten the bolt.)
4. Check to see if seat rocks at all. If seat rocks, keep tightening until it is totally stable.
5. Continue in same manner with other seats, tightening bolts securely as you add each seat.

Plexus Seat Assembly:

1. Set seats in front of horizontal tube sections.
2. Holding seat above tube, slip adapters on seat into channel of adapters on horizontal tube. If two people help, this is much easier.
3. If arms are used, DO NOT INSTALL BOLTS NOW. See arm assembly.
4. If arms are not used, insert bolts from the outside, toward the center of the seat and install lock nuts. Tighten VERY SECURELY. Seats will not rock if tightened correctly.

Arm Assembly for Seats with Back:

1. Arms are manufactured to fit to the right and left of seating. These are not interchangeable and will fit on unit only one way. As you sit in the seat, arms install at the right of each seat. Place arm with adapter adjusted to fit left of the end of seating run.
2. Holding arm above tube, slip arm adapter into channel on horizontal tube against seat adapter.
3. Insert bolt from the outside, toward the center of the seat and install lock nut. Tighten very securely.