

# ShadeTree® Canopy Systems Assembly Instructions

*ShadeTree® Deluxe or Basic Pergola supported by a vinyl structure attached to a house.*

## The Pergola



Dear Customer:

Thank you for purchasing our **ShadeTree® Canopy System**. We trust these assembly instructions will be satisfactory for your installation. If you have any questions, please feel free to call 1-800-894-3801.

And here's a special offer we'd like to make to you: Send us a photo of your new ShadeTree® installation and we will send you **\$50** if we use your photo in our advertising materials. Before and after pictures will receive an additional \$50. A deck or patio that is nicely furnished helps us communicate to prospective customers how nice a ShadeTree® patio can be.

We hope you enjoy your new ShadeTree® patio canopies.

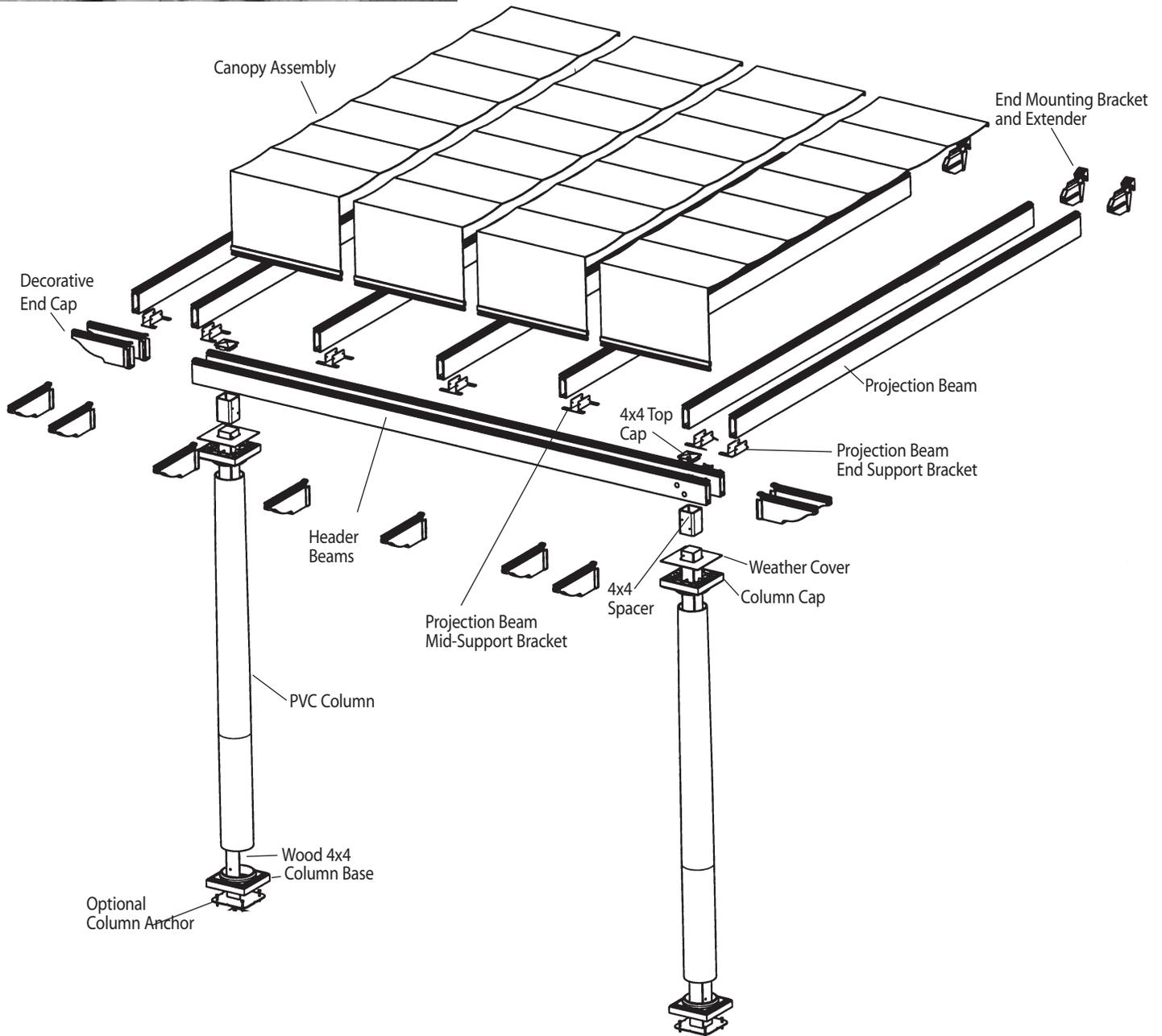
Sincerely,

Colin LeVeque, President  
ShadeTree Systems, LLC.

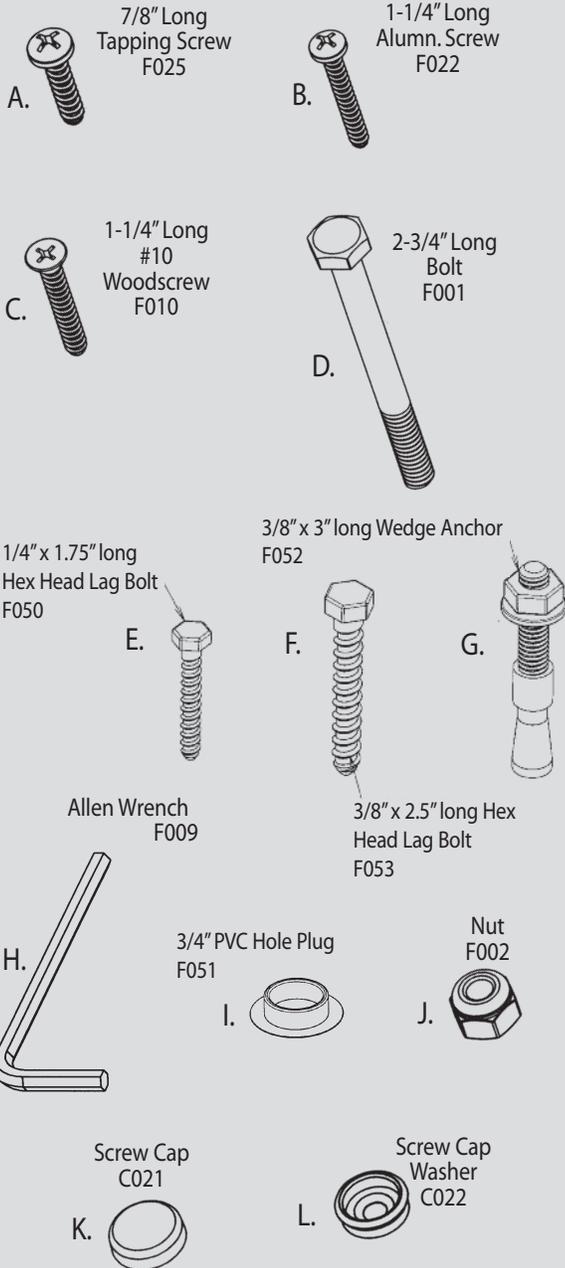
**ShadeTree®**  
Retractable Patio & Deck Canopies



Complete pergola-style vinyl overhead canopies and beams and vertical support system to be attached to house. These instructions are to be used for pergolas with round columns as shown in the illustrations, or square posts (not shown). If using square posts, skip step 5. The optional post anchor looks similar to the illustration shown on the next page, but has a smaller base of fit with the smaller post base.



**Fasteners & Hardware Provided:**



**Note:** All A & B screws should be assembled with screw cap washer (L.) As shown at right.



**Tools required:**

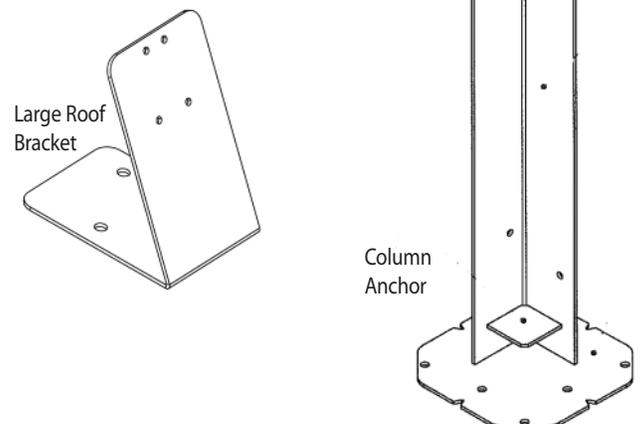
1. Phillips screwdriver
2. Hand drill
3. Power Drill
4. Phillips-Head Bit
5. Carpenter's Square
6. Pencil
7. Bubble-Type Level
8. Tape Measure
9. Tape
10. 8' Ladder
11. Circular Saw
12. hand saw
13. Post-Hole Digger (optional)
14. Ratchet
15. Deep Socket - 3 sizes
  - 1/4"
  - 7/16"
  - 3/8"
16. "Quick Grip" Clamps
17. Drill Bits 9/64", 1/4", 3/16", 3/4"
19. 3/8" masonry bit for concrete mounting

Note: If driving screws with a drill or power screwdriver, set the torque to a low setting to avoid stripping screw heads.

**CAD –YOUR PROVIDED CUSTOM BLUEPRINT :**

Each ShadeTree Pergola will ships with a custom-designed CAD drawing showing all of the dimensions necessary for installation. Please refer to this CAD for all steps in these instructions. If a CAD did not come with your ShadeTree system, please call customer service before proceeding with installation.

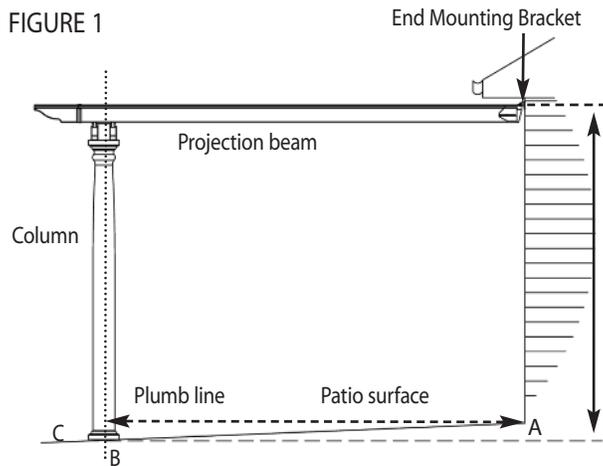
**Optional installation accessories:**



## Step 1 Determine the height of your ShadeTree® Pergola System

To determine the height at which to place the *End Mounting Brackets* (which hold the *Projection Beams*) on the house, it is important to know the maximum height of the mounting bracket relative to the maximum height of the columns.

See following illustration and dimensions to determine maximum height of End Mounting Bracket on the house.



Maximum height to top edge of End Mounting Bracket is 9' 2-3/4" from surface on which columns will be anchored. (See vertical arrow at far right side of diagram above.)

If there is no "fall" in your deck or patio surface (in most cases, there is some fall so rain will drain away from the house), you can place the *End Mounting Bracket* as high as 9' 2-3/4" from the patio surface at the house (A). However, if there is fall from your house (A) to the place where the columns are to be placed (C), it is necessary to adjust the height of the *End Mounting Brackets* to accommodate for this difference in surface levels.

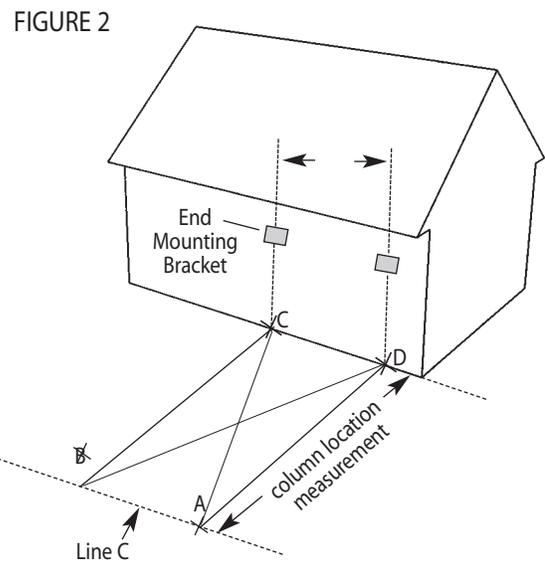
To determine the "fall" from your house to the surface on which the columns will be anchored (C), extend a string level from base of house (A) to the center line of *Column* (B) and measure the distance (fall) from level line at (B) to mounting surface (C). See the CAD drawing that came with the system to determine distance from house and center of *Column* (B).

Subtract the "fall" dimension from 9' 2-3/4" to determine the maximum height (based on maximum height of the columns) at which the top of the mounting bracket can be installed. Mark this position temporarily on the house.

## Step 2 Determine location of Columns

Measure out from the house to the desired location of your first vinyl *Column* (A). Measure out from the house a second time to the location of your second vinyl *Column* (B). Be sure that points A & B are on a line (C) that is parallel with the wall to which the *End Mounting Brackets* are to be attached.

To ensure that your system will be square, measure the distance from point B to point D. Then measure the distance from point A to point C. Move points A and B right or left to get B to D and A to C equal.



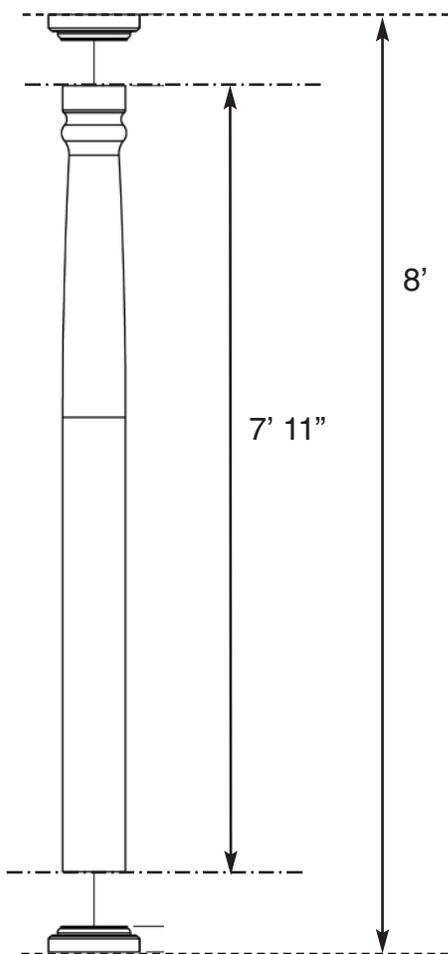
**Step 3 – Preparing the surface**

If you do not have a level surface (most patios have a slight slope to shed water), you may need to cut the columns that are to be placed on the high side of the mounting surface. You should first establish the difference in elevation (you can use a level and tape measure if necessary). Next measure up, from the bottom of the column, the difference in elevation, and place a mark on the column. **(You should only cut the column from the bottom).** It is important that your ShadeTree structure be built so the beams and headers are level. A deck or patio is an ideal surface. Another option is to set 4x4s into 3' deep hole and encase in concrete. Figure :5B

**Mounting higher than the maximum mounting point.**

If it is desirable to mount higher on the house than the 9' 2-3/4" shown in Fig.5A, you can do this by building post support "pillars" of brick, stone or other material. This can be an attractive way to achieve a higher positioning of the mounting brackets and thus a higher overall pergola system.

FIGURE 3



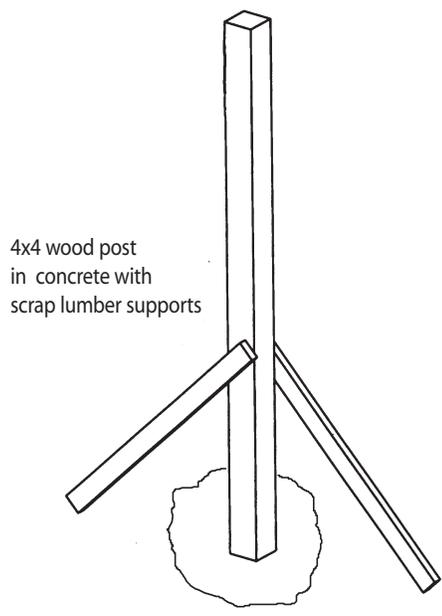
**Step 4 - Internal Post assembly**  
(set or surface-mounting)

**Step 4 - Option A: Wood posts set in concrete:**

**Dig holes and secure posts**

You will need 12' or longer 4x4 posts when setting posts into concrete. We recommend that you use pressure treated lumber for this application. Once you have determined the post locations, you can begin digging the holes. You should dig the holes to a depth of 3 feet. Mix concrete according to manufacturer's instructions and pour into holes. Check that wood posts are plumb and extend at least 9' 2-3/4" above ground level. Stabilize the posts temporarily by attaching scrap lumber into the posts as illustrated in Figure 5B.

FIGURE 4A

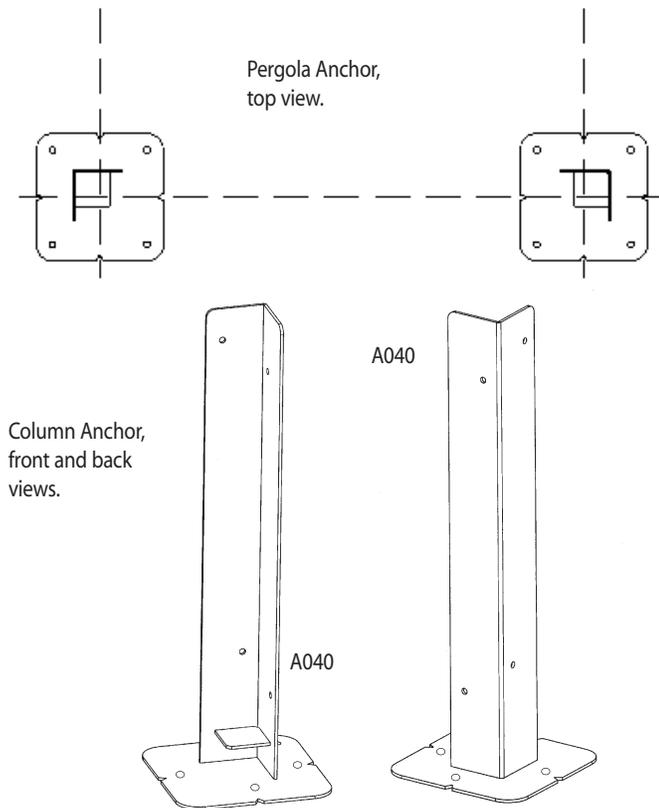


## Step 4 Option B – Surface-Mounting using Column Anchors

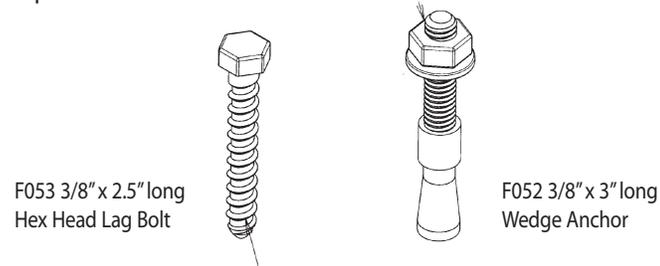
### 4B1 Pre-drill mounting holes

Before drilling holes into the surface, be sure that the *Column Anchor* alignment notches are aligned with the centerlines of the other anchors. Fig. 4B1.

FIGURE 4B1



**If attaching to a wood surface** Use the *Column Anchor* as a template and pre-drill for the 3/8" x 2 1/2" lag bolts that will secure the *Column Anchor* to your surface (using a 1/4" drill bit). Repeat for all column locations.



**If attaching the posts to concrete.** Use the *Column Anchor* as a template and pre-drill for the wedge anchors with a 3/8" masonry bit, and use the provided 3/8" x 3" long wedge anchors. After pre-drilling the holes, use a hammer to drive in the wedge anchors. Repeat for all column locations.

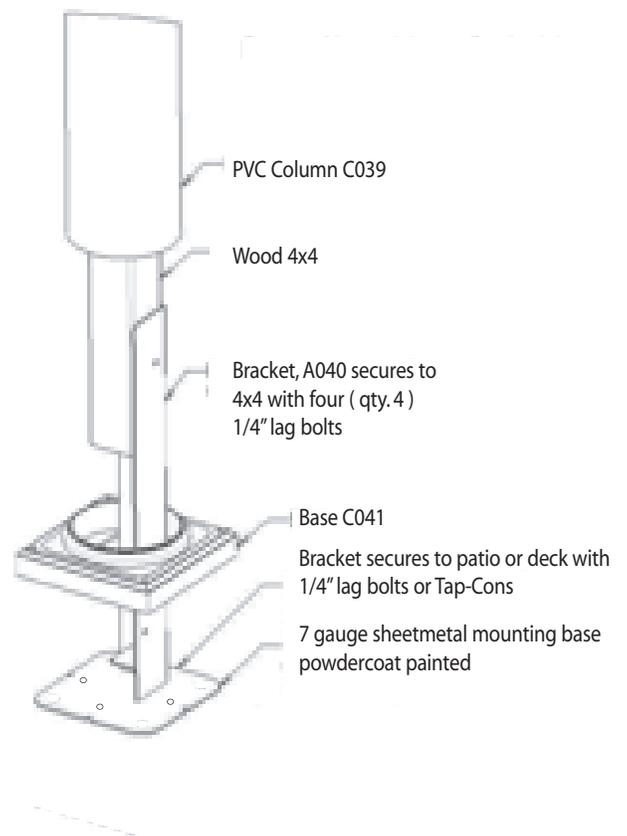
### 4B2 Attach bracket assembly to surface

Attach *Column Anchor* to the mounting surface using center line marks. Make sure *Column Anchors* are level, and then tighten.

### 4B3 Attach wood post to Column Anchor

With Anchor in vertical position on the ground, attach each wood 4x4x10' post onto the *Column Anchor*. Pre-drill for the 1/4" x 1 3/4" long lag bolts using a 3/16" drill bit. Install the 4 lag bolts through the steel support into the 4x4 wood posts.

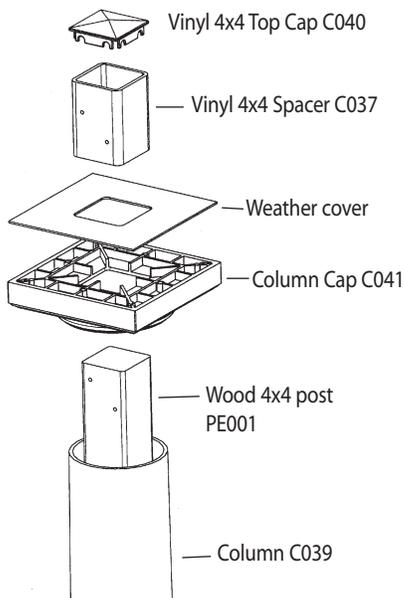
FIGURE 4B3 Base Mounting Detail



**Step 5 Assemble Column Cap**

After erecting the posts and Columns, place the Column Cap and Weather Cover (thin, flat, square piece of PVC with square hole) on top of the Column (Fig.5E).

FIGURE : 5G



**Step 6 Cut excess wood post**

Mark on the wood 4x4 post 4.75" from the top surface of the Column Cap and Weather Cover. This is the point at which you need to cut off the excess portion of the wood post. You can use a hand saw or saw zaw to cut the top of the wood post. After the top of the wood post is cut off, slide the vinyl 4x4 Spacer over the top of the wood post, and rest it on top of the Weather Cover. Then insert Column Cap.

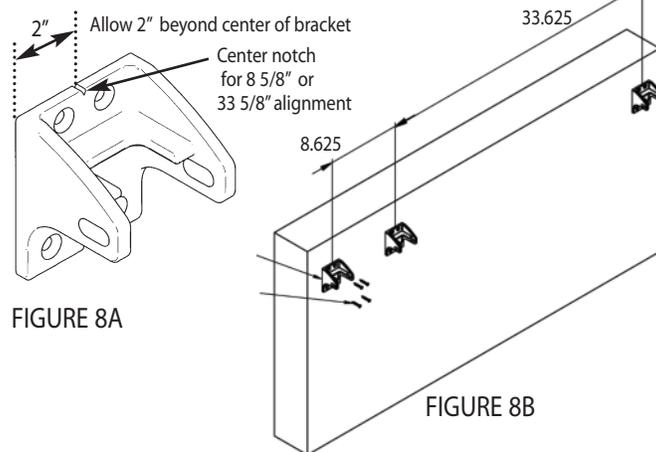
**Step 7 Seal the Column Cap**

Once you have fully assembled the Column Cap, put a bead-line of silicon sealant (not provided) around the joint between the Weather Cover and the Column Cap. Do the same for the joint around the Top Cap and the Vinyl Spacer. Then fill the gap between the Vinyl Spacer and the Weather Cover with a generous amount of sealant. Repeat steps 4 through 8 for remaining columns.

**Step 8 Attach End Mounting Brackets**

Mark the center location for each End Mounting Bracket on the house, as shown in figure 6A. One End Mounting Bracket is needed for every projection beam.

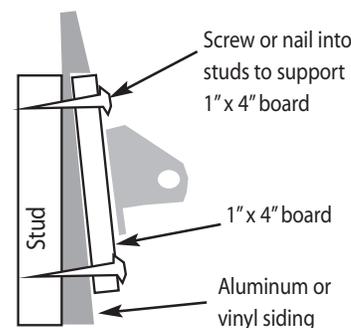
Mount the End Mounting Brackets on each center mark, using the center notch as a guide (FIG. 8A). The brackets should be mounted so that the the slanting edge of the bracket is to the top (as in illustration). Be sure to mount the brackets level with each other. Use a 9/64" drill bit to drill pilot holes. The Bracket can be used as its own template for marking pilot holes.



**WHEN MOUNTING TO HOUSE, BRACKETS MUST BE ATTACHED TO WELL-SECURED WOOD, BRICK OR STONE.**

- If mounting to a house with wood siding, or to wood trim, use the 1-1/4" #10 wood screws with the painted heads (screw c).
- If mounting to a masonry wall (brick or stone) concrete fastening screws must be used. Consult your hardware store for the best fastener for your situation.
- If attaching to stucco, aluminum, or vinyl siding, the screws must make contact with wood. On two story houses, this can usually be done in the area of the second floor joists. When no wood can be found to carry the canopy load, it is recommended to attach a 1" x 4" board to the home (see illustration below) ... horizontally at the height desired for the canopy. The board can then be secured by screws into each stud. On aluminum or vinyl siding, tighten the bottom screws only enough to hold board snugly. Over-tightening can compress the siding. The board can be painted or stained to match the siding.

FIGURE 8C



## Step 9 Position Headers

Place the pre-cut *Headers* according to Figure 4. Place the *Headers* on top of the *Column Caps* with the end of the *Headers* overhanging the outside edge of the *Column Caps* a minimum of 1-1/8". Clamp the *Headers* to the wood post. Use a 1/4" bit to start a pilot hole in one header that is 1" to the right of the center of the post and 1" below the bottom lip of the track/roller channel. Start another pilot hole that is 1" to the left of the center of the post and 3 1/2" below the bottom lip of the track/roller channel. Use a 3/4" bit to drill the large holes in the vinyl and aluminum insert to the proper size for the bolts - **do not drill large holes all the way through the header - only drill the outer layer of vinyl and aluminum.**

When positioning a column where headers are being joined, start a pilot hole 7/8" in from the edge of each header and 1" down from the bottom lip of the track/roller channel. Put another pilot hole 7/8" in from the edge and 3 1/2" down.

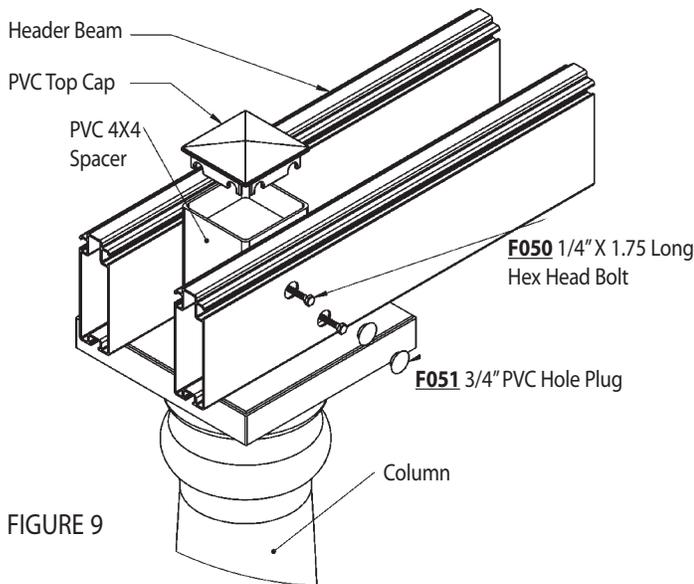


FIGURE 9

## Step 10 Assemble Headers

Using a 3/16 drill bit, drill holes approximately 2" through the *Vinyl Sleeve* and into wood post, using the smaller inside holes of the *Headers* as your guides (located on the "back-side" of the *Headers*). Next, insert and tighten the *Lag Bolts (F050)* at each end of the *Header* using your ratchet and 7/16 deep socket. Check to make sure the *Lags* are completely tightened, but be careful not to over tighten. Repeat steps 9 and 10 for remaining headers.

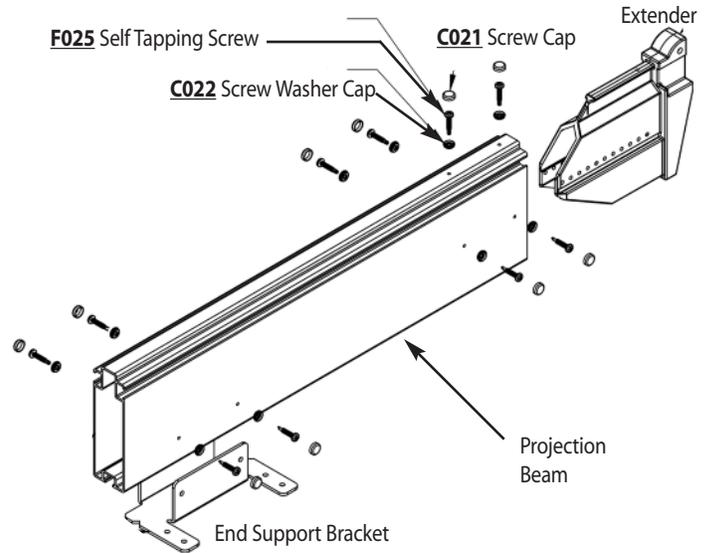
## Step 11 Cover Holes

Snap 3/4" *PVC Hole Plugs* into *Header Beams* to cover holes.

## Step 12 Assemble Projection Beams

Secure the *Projection Beam End* and *Mid-Brackets* to the *Projection Beams* in the pre-drilled holes. The *Projection Beam End Brackets* (one-sided brackets) are to support the left-most and right-most *Projection Beams (Outside Projection Beams)* and the feet of the *Bracket* should face inward toward the next *Projection Beam*. Secure with screw type *F025*, washer *C022*, and cap *C021*.

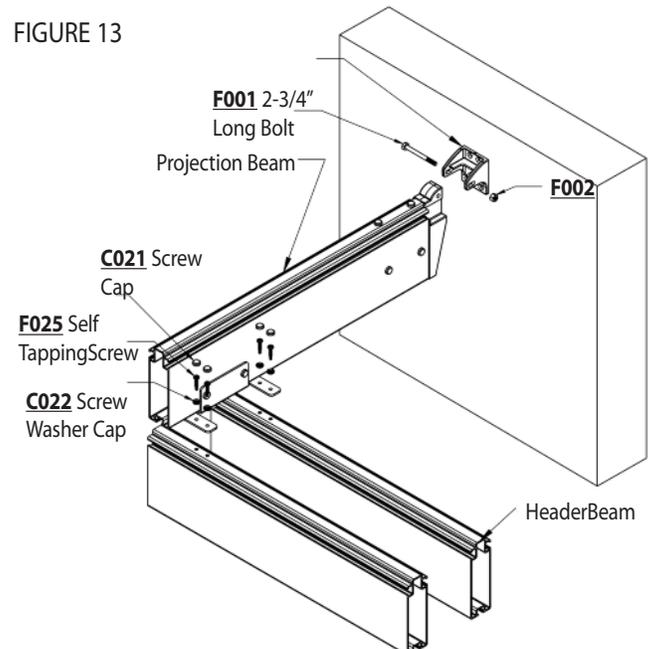
FIGURE 12



## Step 13 Attach Projection Beams

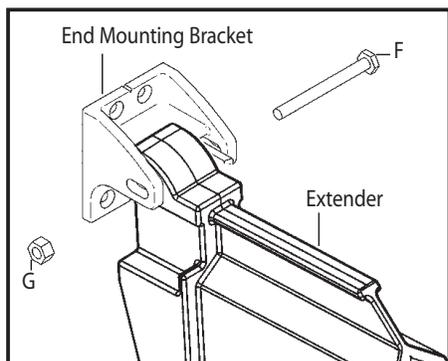
Attach *Projection Beams*, with brackets already assembled, to the *Headers* on the pre-drilled holes. The first *Projection Beam* to attach is either the left or right outermost beam. The provided CAD drawing will give you the center-to-center measurements for positioning the remaining *Projection Beams*.

FIGURE 13



**Step 14 Attach Extenders**

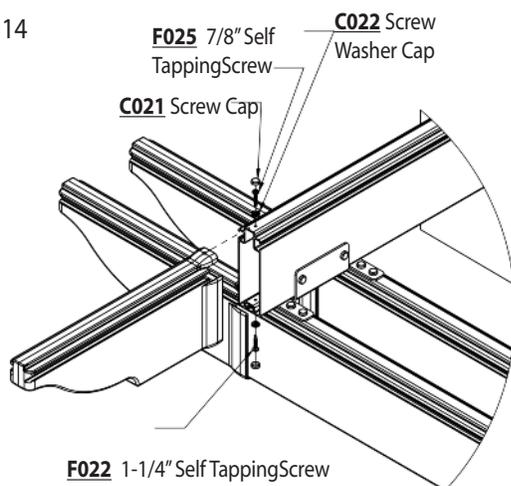
Attach an *Extender* to each of the *End Mounting Brackets* on the house using the 2-3/4" bolts (F), and nuts (G) provided. Be sure the top of the *Extender* is up (as shown.) Loosely hand-tighten the nuts.



**Step 14 Attach Decorative End Cap**

Attach *Decorative End Caps* on all *Projection beams* using one F025 screw with C021 washers and C022 caps. For top of decorative end cap use 1 F022 screw with a C021 washer and a C022 cap.

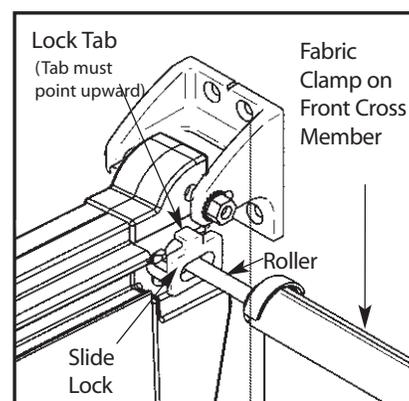
FIGURE 14



**Step 15 Installing the Canopies**

You can now insert the *Canopies*, starting at the end of the beams with the extenders. Insert the *Rollers* at the ends of each *Cross Member*; insert all *Cross Members*, ensuring that the back *Cross Member* is inserted last. The front *Cross Member* is the one that has a *Slide Lock* on each end. **When inserting, ensure that the Lock Tab is pointing up as shown here (Fig 9A).** Be sure that the *Canopy* is oriented so that the *Fabric Clamp (Top Cross Member)* is facing up as shown, while the aluminum *Cross Member* is oriented down. Continue inserting the remaining *Rollers* until the entire *Canopy* is up. Install remaining *Canopy* using the same procedure.

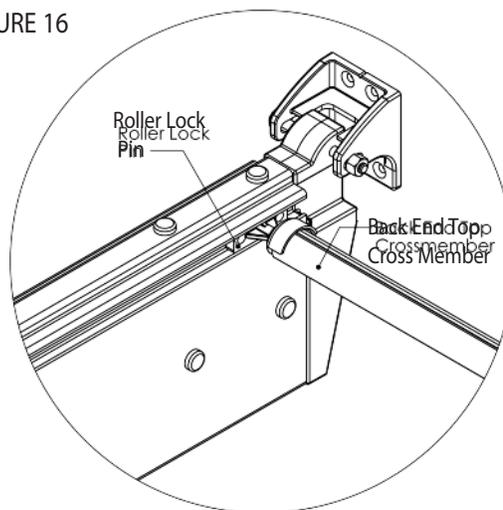
FIGURE 15



**Step 16 Locking the end of the Canopy**

A *Roller Lock Pin* is provided to hold the *Cross Member* nearest the house in a fixed position. It will arrive already inserted in the *Canopies* in the last *Cross Member*. Once in place, it can be secured with set screws. The *Locking Pin* will hold the last *Cross Member* firmly in place. Repeat on each track. (On masonry houses, it is recommended to leave a few inches between the *Canopy* and the house to prevent scuffing of the canvas during windy weather).

FIGURE 16



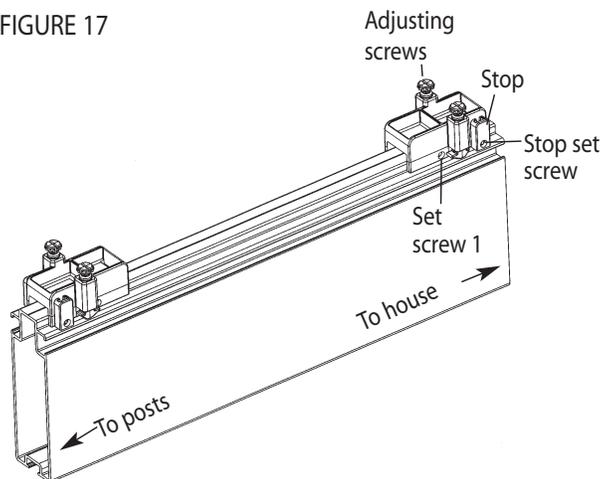
### Step 17 Installing the Top Lock Brackets

Pull each *Canopy* section out to the position where you want it to end. Place a *Top Lock Bracket* on the top of the track in the orientation shown in Fig. 17. Tighten set screw 1 on both sides of the *Top Lock Brackets* with the Allen wrench provided (I) . . . making sure that the *Top Lock Brackets* are completely pushed down on the track before tightening.

Test the snap-in *Top Lock Bracket* and tighten or loosen the *Adjusting Screws* as required for the desired tension. The recommended tension setting procedure is to turn the *Adjust Screw* clockwise until it stops, and then back the *Adjust Screw* out six full revolutions Repeat this step on each *Lock Mechanism*.

Pull each *Canopy* back to the fully retracted position. Place another *Top Lock Bracket* on each track at this point, in the orientation shown in Fig. 10A. Tighten the set screws.

FIGURE 17



**NOTE:** The *Locking System* is designed to release the *Canopies* in high winds to protect the canopies. The adjusting screws can be used to adjust the tension. Do not over-tighten, as this could increase the chance for canopy damage in high winds.

### Step 18 Adjusting the Handle height (optional)

Each *Canopy* has the *Handle* overhang approximately 18" from the tracks. This *Drop Handle* is for opening and closing the *Canopies*. However, if you must have less than an 18" overhang, follow the instructions below for shortening the *Handle* height.

1. Remove all screws in the *Handle* and open the *Handle* the entire width.
2. Cut the fabric to the desired length.
3. Carefully close the *Handle* and re-insert the screws provided - do not overtighten.
4. Reinstall the *Top Caps* in the end of the *Handle*.

**Step 19 Shortening Canopy Length** (optional)

Lay the canopy on a flat clean surface. The extra fabric length should be removed from the back end of the canopy. This is the end opposite the handle. Remove the *Roller Sleeve* assemblies at both ends of the back canopy *Cross Member*. To do this, first fully extend the *Roller*, then push down on the locking tab and pull *Roller Sleeve* outward (Fig. 19A).



Remove the *Fabric Clamp*. To do this, insert a flat head screw driver between the canopy fabric and the *Fabric Clamp*. Pry upward to release the *Fabric Clamp* (Fig. 19B).



From the back end of the canopy, measure the same distance that was taken off the track length. Make a mark at this distance on both outside edges of the fabric (Fig. 19C).



Place the *Bottom Cross Member* (aluminum) underneath the canopy, centering it on the two marks. Position the *Bottom Cross Member* so the punched square holes at the ends are facing downward. Holding the *Bottom Cross Member* in this position, reassemble the *Fabric Clamp* by snapping the *Fabric Clamp* in place at both ends and pressing down, working toward the center (Fig. 19D).

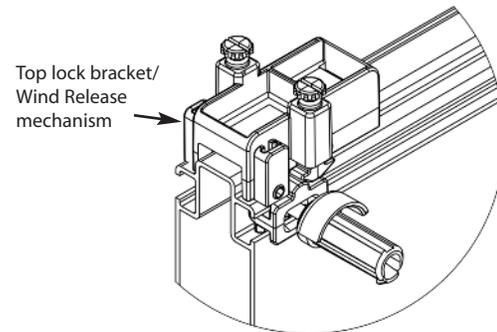


Insert the *Roller Sleeve* assemblies back into the *Bottom Cross Member*, ensuring that the locking tab engages the corresponding punched square hole in the *Bottom Cross Member* (Fig. 19E).

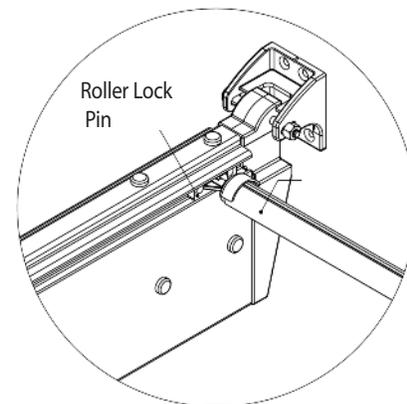
Measure the canopies to ensure the desired length is correct before trimming off excess canopy material. Remove the canopies and place on a flat, clean surface. To remove the excess canopy material, use the edge of the *Fabric Clamp* as a guide when cutting with a sharp utility knife (Fig. 19F).

**How to remove ShadeTree® Canopies for end-of season storage:**

1. Remove the **Top Lock Brackets** at the “retracted” end of each track (see step 17.)



2. Remove the **Roller Lock Pin** which holds the last *Cross Member* in a fixed position (see step 18.)



3. Then simply roll the **Cross Members** out of the “retracted” end of the track. The tracks can remain up year-round.
4. **If a canopy is dirty** and requires washing before storage, simply spread the canopy on a driveway or other flat surface. Use a medium-firm brush or broom to remove dirt particles while the fabric is still dry. If necessary, use a bucket of warm water and a mild soap, such as Ivory Snow to clean the fabric.

Be sure to rinse well by hosing with clear water. Allow to air-dry completely in the sun before rolling canopies up for storage. **(Do not store wet canopies!)**

### Care and cleaning of your ShadeTree® Canopies

1. **ShadeTree® tracks** should be cleaned regularly to keep debris and dirt from accumulating and interfering with the *Rollers*. Simply use a mild detergent with a small soft brush, such as a toothbrush, and gently wipe or brush along the inside of the tracks. To maintain a smoothly operating system, use the **ShadeTree® EasyRider Track Lubricant** in the *Roller Tracks*. **Note: Do NOT use oil or any wet lubricant, such as WD-40, on the tracks as it would attract more dirt.**
2. **Fabric** should be cleaned regularly before substances such as dirt, roof particles, etc., are allowed to accumulate on and become embedded in the fabric. The fabric can be cleaned without being removed from the *Cross Members*. Simply brush off any loose dirt, roof particles, etc.; hose down and clean with a mild natural soap in lukewarm water (no more than 100° F.) Rinse thoroughly to remove soap. **DO NOT USE DETERGENTS!** For ultimate performance, use **ShadeTree® Canopy Cleaner Mold & Mildew Stain Remover**.
3. For stubborn stains soak the fabric for approximately 20 minutes in a solution of no more than 1/4 cup (2 oz.) natural soap per gallon of water at approximately 100° F. Rinse thoroughly in cold water to remove all of the soap. Note: Excessive soaking in bleach can deteriorate sewing threads. This method of cleaning may remove part of the water repellency and the fabric should receive an application of an air-curing water-repellent treatment, such as **ShadeTree® Canopy Cleaner Mold & Mildew Stain Remover** and **ShadeTree® Water Repellent** or similar products, if water repellency is a factor.
4. When washing or cleaning, **DO NOT SUBJECT TO EXCESSIVE HEAT** as the fabric will shrink. **DO NOT STEAM PRESS OR DRY IN ELECTRIC OR GAS DRYERS**, but allow to air dry.
5. In cases where canopies are taken down & stored, they should be cleaned and allowed to air dry, before being stored in a dry, well ventilated area.

### Here's a chance to earn \$50!

We regularly use pictures in our advertising materials. If you send us reproducible pictures of your new ShadeTree® canopy installation, and we use them in any of our advertising, we will send you \$50. Interesting before-and-after pictures will receive an additional \$50. Of course, attractive landscaping and patio furniture will be a factor in selecting pictures to be used. Architects, builders and installers will receive credit mentions in the advertising.