



## GrowSpan™ Flip-Top Cold Frame



Photo may show a different but similar model.

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WARNING: Cancer and Reproductive Toxicity - P65Warnings.ca.gov

Revision date: 02.10.23

| STK#   | DIMENSIONS          |
|--------|---------------------|
| 105144 | 8' W x 5' H x 6' L  |
| 105145 | 8' W x 5' H x 8' L  |
| 105146 | 8' W x 5' H x 12' L |

# Important Information

## YOU MUST READ THIS DOCUMENT BEFORE YOU ASSEMBLE THE COMMERCIAL COLD FRAME.

Thank you for purchasing this GrowSpan™ Flip-Top Cold Frame. These instructions include helpful hints and important information needed to safely assemble and properly maintain the cold frame. Please read these instructions *before* you begin. If you have any questions during the assembly, contact Customer Service at 1-800-245-9881 for assistance.

### SAFETY PRECAUTIONS

- Wear eye protection.
- Wear head protection.
- *Parts may be sharp.* Wear gloves when handling the pipe and PolyCor material.
- Use a portable GFCI when working with power tools and cords.
- Do not climb on the cold frame during or after construction.
- Do not occupy the structure during high winds, tornadoes, or hurricanes.
- Provide adequate ventilation if the structure is enclosed.
- Do not store hazardous materials in the cold frame.

### ANCHORING INSTRUCTIONS

Prior to assembling this cold frame, please read the MUST READ document included with the shipment.

 **WARNING:** Strong winds can cause the cold frame to shift if it is not adequately secured to the site. Failing to properly anchor the cold frame may cause serious injury and damage.

The site on which the cold frame is constructed will determine the anchoring method that is required.

Consult a professional contractor to determine the best and safest way to anchor the frame.

Contact your sales representative at 1-800-245-9881 for anchoring suggestions.

### LOCATION

Choosing the proper location is an important step before you begin to assemble the cold frame. The following suggestions and precautions will help you determine whether your selected location is the best location.

- Identify whether underground cables or pipes are present *before* preparing the site or anchoring the cold frame.
- Location should be away from structures that could cause snow to drift on or around the cold frame.
- Do not position the cold frame in a place where large loads such as snow and ice, large branches, or other overhead obstacles could fall.

### SITE

After choosing a location, proper preparation of the site is essential. The following site characteristics will help ensure the integrity of the greenhouse.

- The site must be level to properly and safely erect and anchor the cold frame.
- Drainage: Water draining off the structure and from areas surrounding the site should drain away from the site to prevent damage to the site, the structure, and contents of the structure.

 **WARNING:** The individuals assembling this structure are responsible for furnishing all temporary bracing, shoring and support needed during the assembly process (if applicable). For safety reasons, those who are not familiar with recognized construction methods and techniques must seek the help of a qualified contractor.

### QUICK START GUIDE

For a quick overview of this shelter, its components, and connection details consult the Quick Start Guide at the back of these instructions.

## Important Information

### ASSEMBLY PROCEDURE

Following the instructions as presented will help ensure the proper assembly of your cold frame. Failing to follow these steps can result in an improperly assembled and anchored cold frame. The steps outlining the assembly process are as follows:

1. Verify that all parts are included in the shipment. Notify Customer Service for questions or concerns.
2. Read these instructions, the MUST READ document, and all additional documentation included with the shipment **before** you begin assembling the greenhouse.
3. Gather the tools and assistance needed to assemble the cold frame.
4. Re-evaluate the location and site based on the information and precautions presented in the documentation included with the shipment.
5. Assemble the frame components in the order they are presented in these instructions.
6. Read the Cold Frame Care and Maintenance information at the end of these instructions.
7. Complete and return all warranty information as instructed.

### REQUIRED TOOLS

The following list identifies the main tools needed to assemble the cold frame. *Additional tools and supports may be needed depending on the structure, location, and application. Recommended two (2) people for assembly.*

- Tape measures or measuring devices
- Variable speed drill (cordless with extra batteries works best) and drill bits (1/8" or smaller for pilot holes)
- Saw to cut recycled plastic lumber and metal
- Magnetic nut setter (3/8" x 2-9/16")
- Hammer and gloves
- Additional hand tools as needed.



### UNPACK AND IDENTIFY PARTS

The following steps will ensure that you have all the necessary parts **before** you begin to assemble the greenhouse.

1. Unpack the contents of the box or boxes and place them where you can easily inventory the shipment. Refer to the Bill of Materials/Spec Sheets.
2. Verify that all parts listed on the Bill of Materials/Spec Sheets are present. If you have questions or parts are missing, contact customer service at 1-800-245-9881.

### CARE AND MAINTENANCE

Proper care and maintenance of your Flip-Top Cold Frame will help to ensure reliable service. The following items identify areas that must be periodically checked to ensure that your cold frame is maintained properly:

- Check the anchoring system (if equipped) to verify that all components are tight and in good repair.
- Check all fasteners to verify that they remain tight.
- Verify that all connections and connectors are secure. Tighten these if necessary.
- Check the PolyCor™ cover to verify that it is in good repair.
- Do not climb or stand on the cold frame.
- Remove debris and objects that can accumulate on the cold frame. Use tools that will not damage the cover when removing debris.
- Remove snow to prevent excess accumulation. Use tools that will not damage the cover when removing snow.
- Check the contents of the shelter to verify that nothing is touching the PolyCor™ cover that could cause damage.
- If the cold frame is disassembled, inspect all parts and connections *before* reassembling.
- For replacement or missing parts, call 1-800-245-9881 for assistance.

**NOTE:** With the exception of Truss Arch buildings, GrowSpan™ shelters, cold frames, and greenhouses *do not* have any tested loading criteria.

# Important Information

## PICTORIAL GUIDE

The following graphics and photos will help you identify the different parts of the cold frame. Consult the Quick Start Guide for additional details and diagrams. (Some parts are not shown.)



FA4482B  
Tek Screw



102921B  
Neo-Bonded Washer



105233  
4-Way Fitting



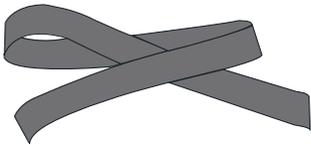
105234  
Slip Tee



104642 A-Angle  
Bracket



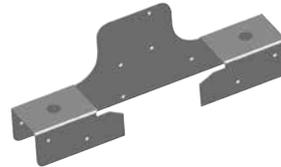
104645 Bracket



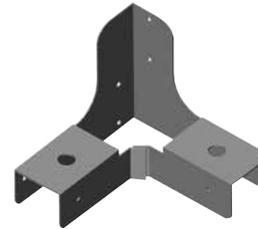
103620b  
Plain End Strap



104643  
Middle Connector



104639  
Pass Through Connector



104636  
Corner Bracket

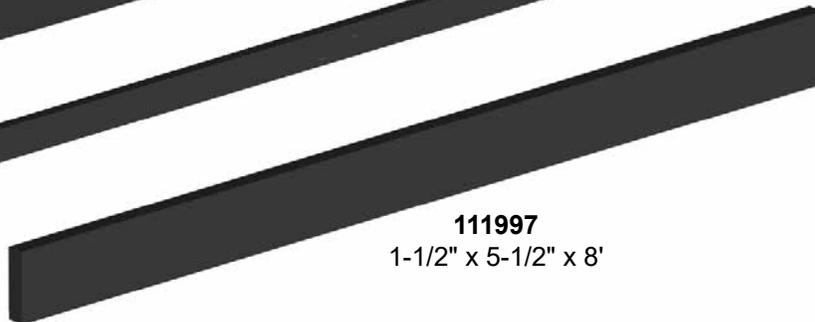
105237



105236



111994  
3/4" x 2-5/8" x 8'



111997  
1-1/2" x 5-1/2" x 8'

Plain



Swaged



Swaged and Plain Pipe

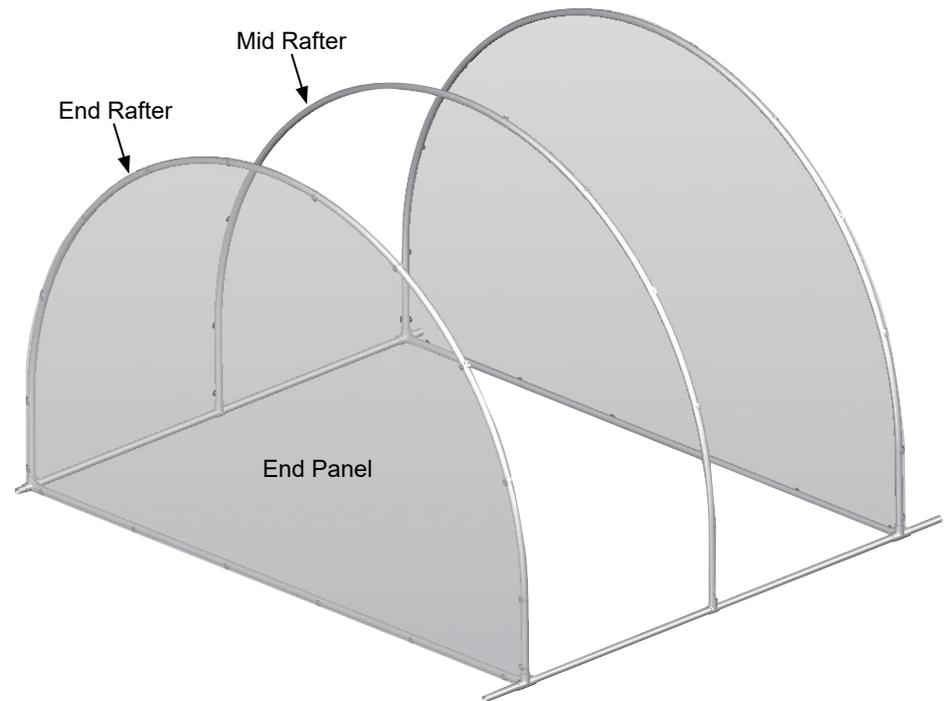
# Overview



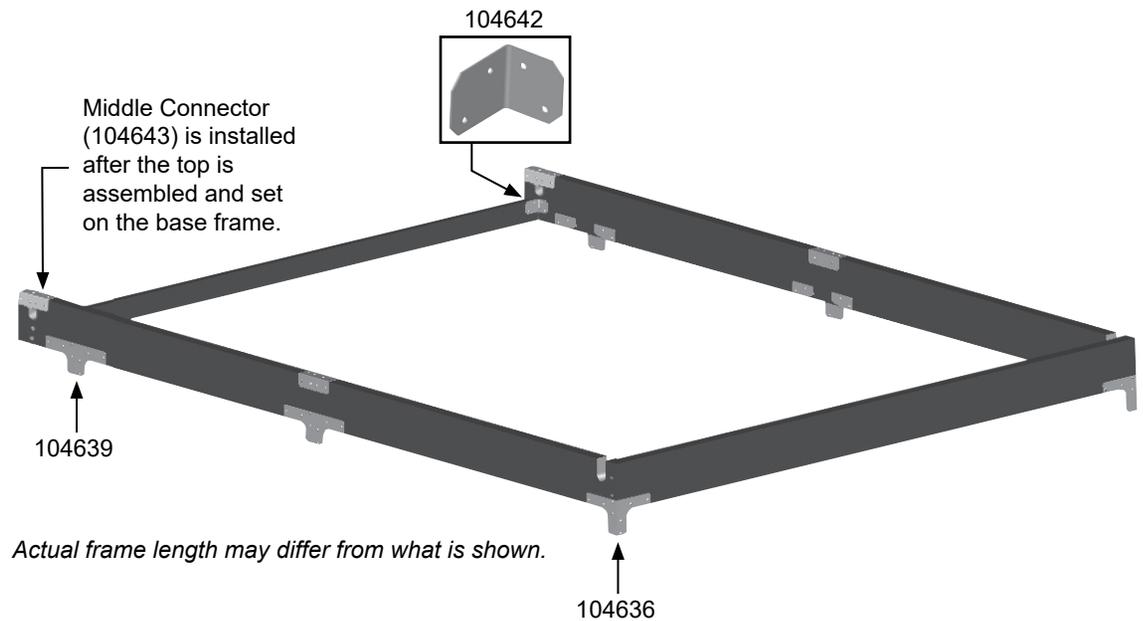
## OVERVIEW

This section describes assembling your flip-top cold frame. The illustration below helps identify the main parts of the cold frame.

1. Locate the required parts for each assembly procedure.
2. Assemble base frame.
3. Assemble the end rafters.
4. Cut and attach end panels to end rafters only.
5. Assemble and attach mid rafter or rafters for frame cover.
6. Cut and assemble the cover and attach to cover frame.
7. Attach cover frame to the base.
8. Install support pipe and straps.



*Main cover not shown.*



*Actual frame length may differ from what is shown.*

# Assembly Instructions

# 1

## ASSEMBLE THE BASE

After identifying the parts included with the shipment, assemble the frame using the steps below.

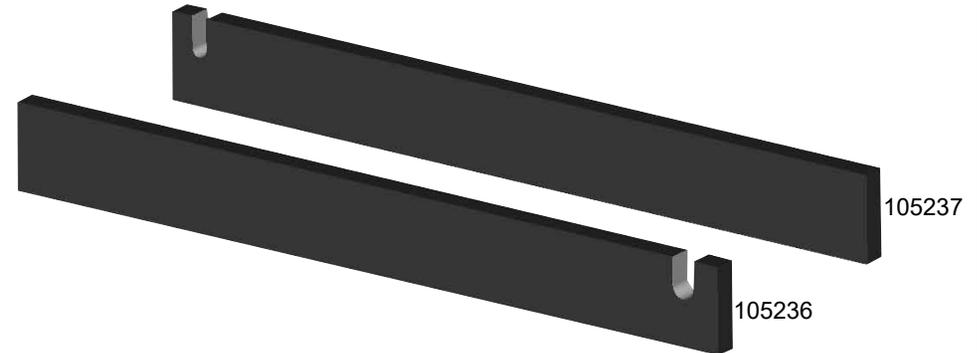
**ATTENTION:** Consult the Frame Diagrams *before* you begin to become familiar with the parts and part locations.

1. Take one (1) 105236 end base board and connect it to one (1) 105237 end base board using one (1) 104643 middle connector as shown. Use the FAF25P screws to install the bracket.

**NOTE:** When assembled correctly, the open end of the slots are up and the 104643 middle connection is on the top of the assembled end frame section as shown below.

2. Repeat to assemble the remaining end frame section. Use the FAF25P screws to install the brackets.
3. Locate the plastic lumber for the remainder of the base and place the boards and the end frame members (Steps 1 and 2) on a level surface for assembly.

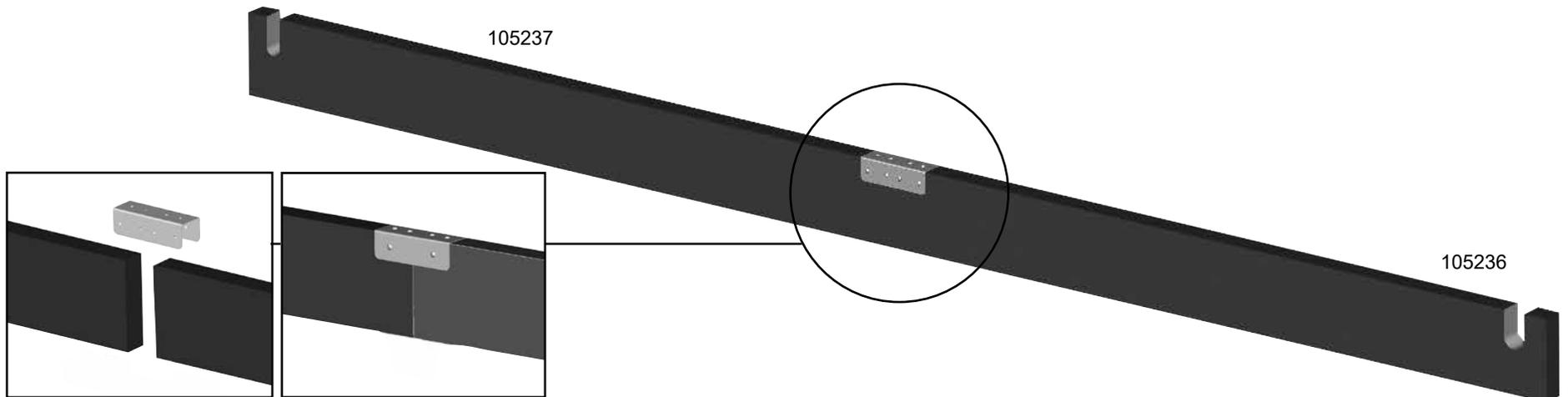
**CONSULT THE BASE FRAME DIAGRAM** (near the back of these instructions) FOR PART LOCATION AND FRAME LENGTH DIMENSIONS.



4. Using the Frame Diagram for *your* cold frame, cut the #111997 and the #111994 recycled plastic lumber (if needed) to the correct length as shown on the diagram.

**ATTENTION:** Locate the Base Frame Diagram at the back of these instructions for *your cold frame* and cut the boards (if needed) to the dimensions shown on that diagram. **NOT ALL BOARDS NEED CUT.**

For the 105146 cold frame, the front and back frame boards each consist of two sections joined and secured (as were the end frame boards in Steps 1). The front board sections are joined using a 104643 middle connector on the top. The back board sections are secured using a 3" x 3" bracket (104645).



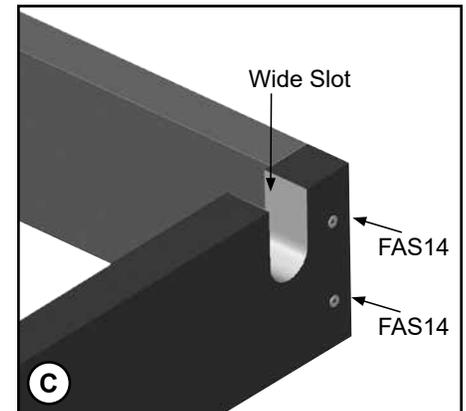
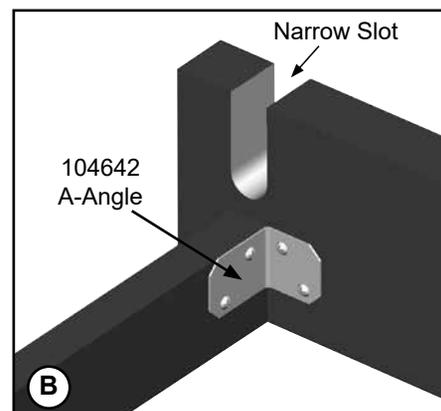
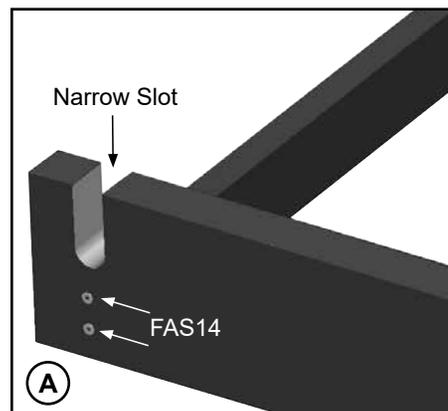
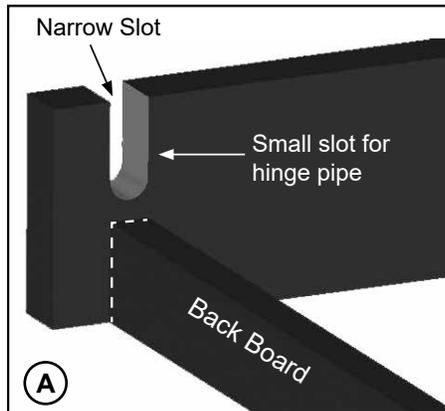
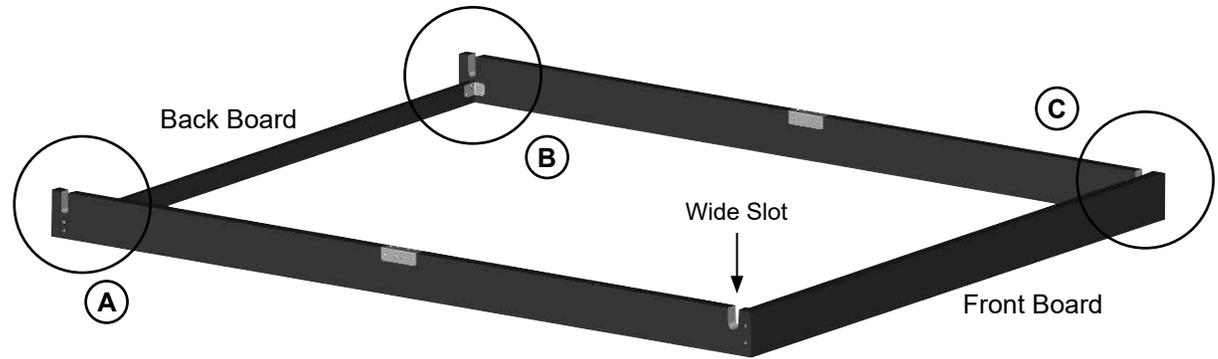
## 1

### ASSEMBLE THE BASE (continued)

5. Attach the long boards to the precut end boards using the deck screws (#FAS14).

**ATTENTION:** Note the position of the small board and the slot in the end board. *Center of the back board is aligned with the center of the slot.*

6. Attach the two 104642 A-angle brackets to the assembled frame to reinforce the back board. Use FAF25P screws for the brackets.



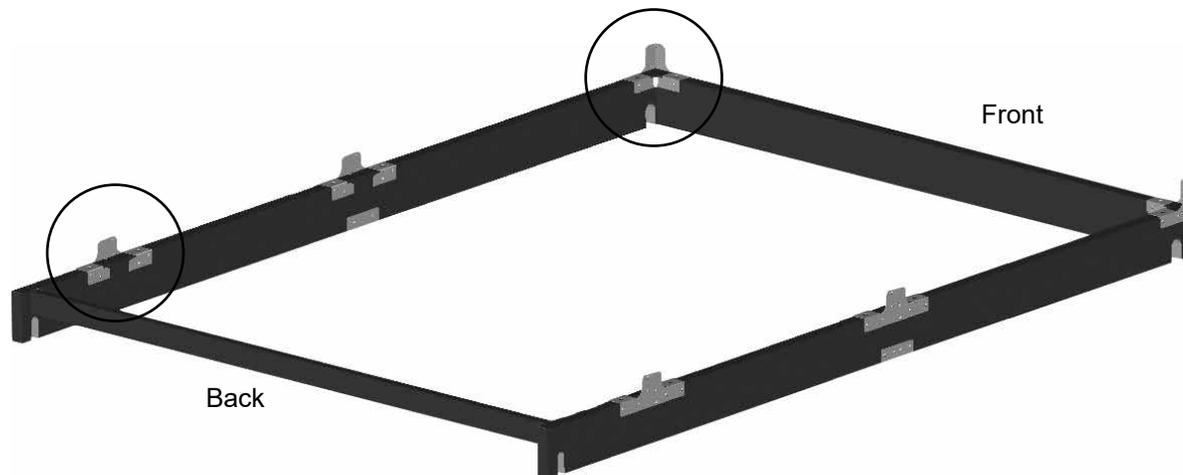
## 1

### ASSEMBLE THE BASE (continued)

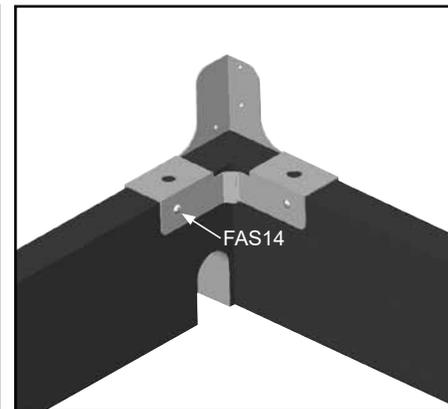
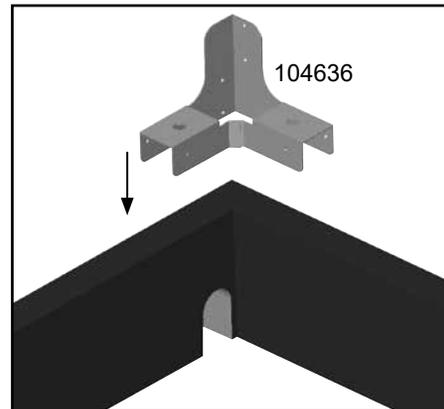
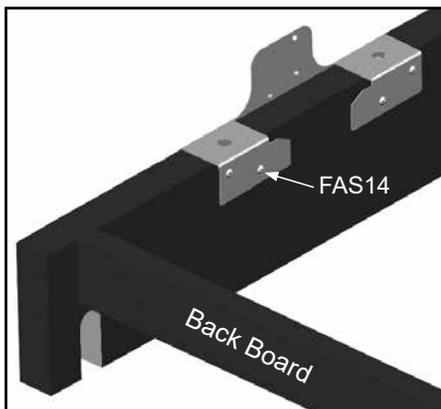
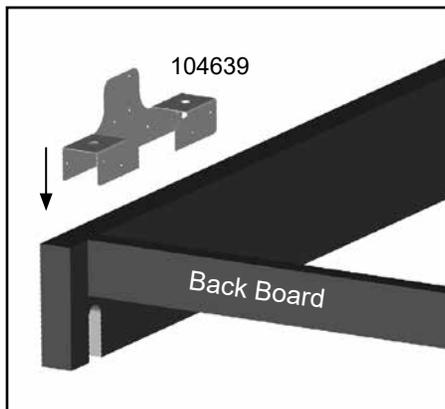
7. Locate all remaining base frame brackets and the screws (#FAF25P) and assemble the frame as shown on the Frame Diagram pages of these instructions.

**REMEMBER:** *Flip the frame as shown.* The frame is assembled upside down and then flipped over after it is completed. The extensions of the corner brackets are driven into the ground to keep the frame square during the remainder of the assembly.

Longer frames include additional brackets to secure the joints of the long boards. Consult the Frame Diagrams for the locations of these additional brackets if your frame includes two (2) boards for each long frame member.



**ATTENTION:** To avoid interfering with the back board and the brackets securing that board, install the back brackets a few inches to the inside of the back board.



# 2

## SQUARE THE BASE FRAME

1. After assembling the frame, flip the frame over and set the frame in place on the site.
2. With the frame positioned in the desired spot, measure diagonally from corner-to-corner and adjust the frame until both distances are equal.
3. Once the distances are equal, tap the corners down to set the frame in place.

**NOTE:** Verify that the frame remains square as you complete Step 3. *The site must be level for best results.*

It may be possible to simply step on the frame to push it into the ground depending on the site.



*Photo shows a different but similar frame.*

FRAME IS SQUARE WHEN  
DIAGONAL DIMENSIONS  
ARE EQUAL.

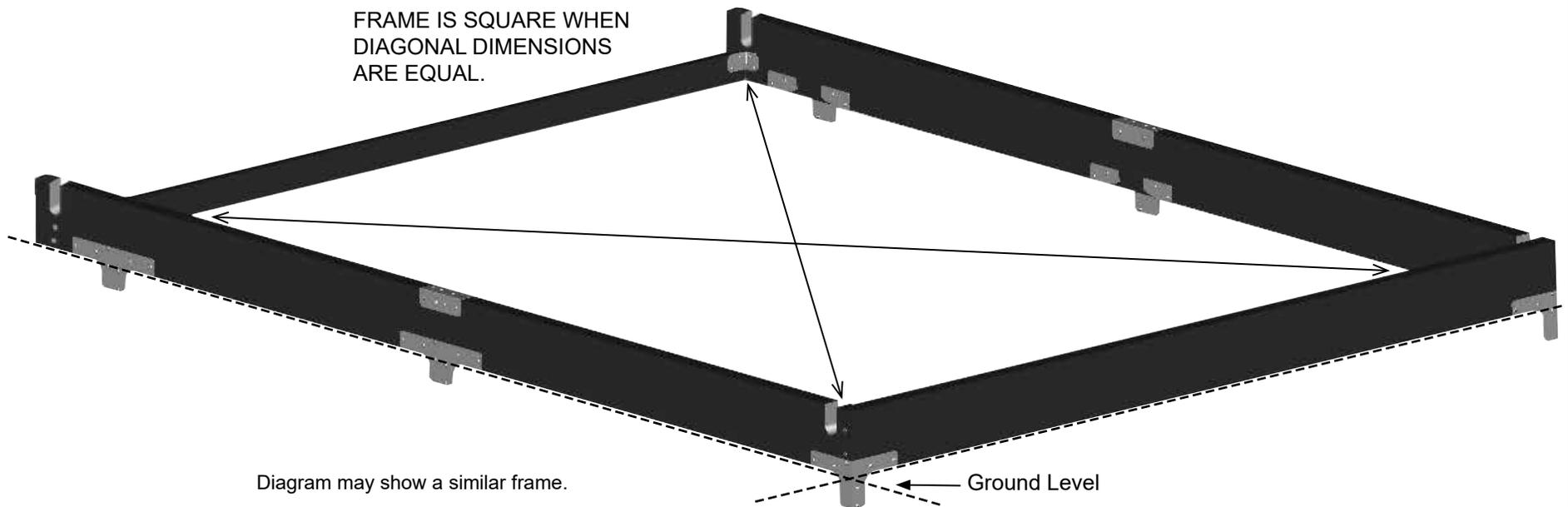


Diagram may show a similar frame.

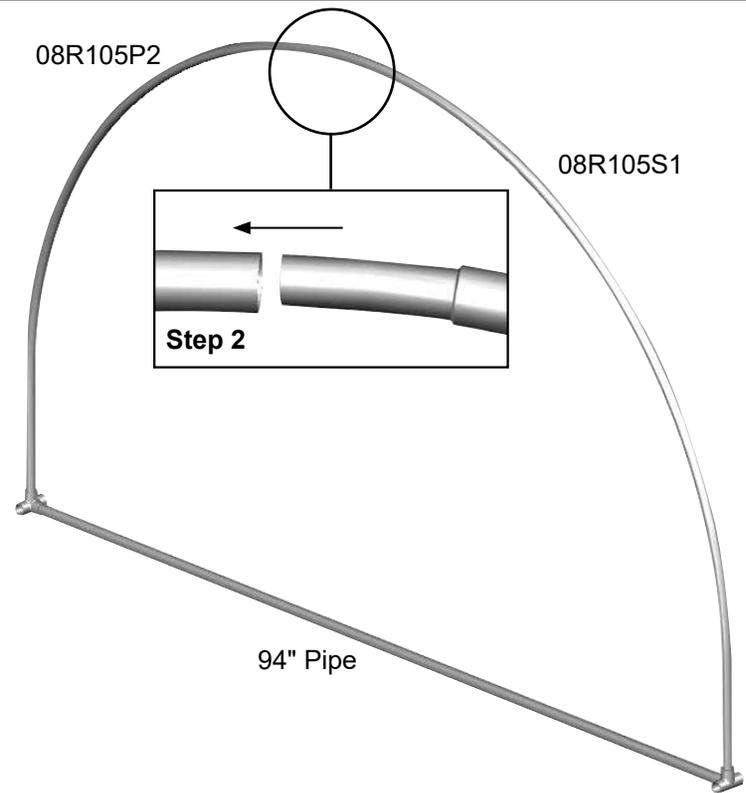
## 3

### ASSEMBLE THE END RAFTERS

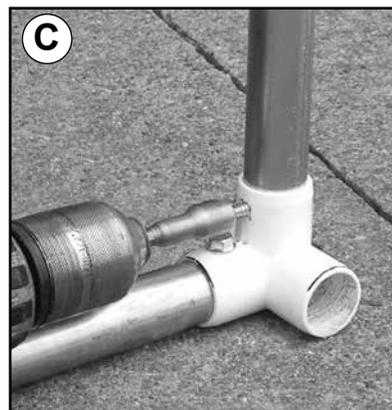
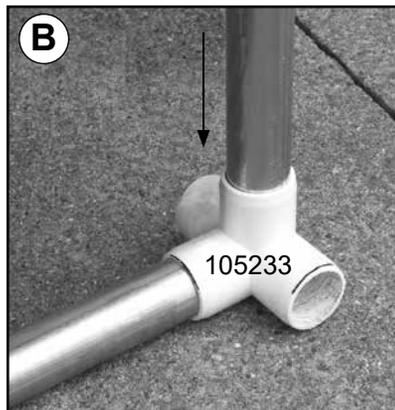
All end rafters consist of one (1) 94" straight pipe and two (2) curved sections of pipe: one pipe has plain ends and one pipe has a plain end and a swaged end that is inserted into the plain end of the first pipe.

Complete these steps to assemble the rafters.

1. Locate the two pipes for the first end rafter: #08R105P2 and #08R105S1.
2. Assemble the rafters by inserting the swaged (or tapered) end of one pipe into the plain end of the other as shown in the diagram to the right. *Do not install a Tek screw to secure the joint at this time.*
3. Locate two (2) 4-way PVC fittings (#105233) and select one straight plain pipe approximately 94" long (#105P094375).
4. Insert the fittings onto the ends of the pipe as shown until they are seated tightly in place. Verify that the base of the end rafter aligns with the base frame (A). Adjust as needed. *Do not Tek screw at this time.*
5. Select one of the assembled rafters and insert the ends of the rafter pipes into the 4-way fitting as shown until seated (B). Verify that fittings align with slotted baseboards.
6. With the pipes properly seated, secure the end rafter using FA4482 Tek screws (C & D).
7. Repeat the steps to assemble the remaining end rafter.



Install the screw so that its head will not interfere with the installation of the cover. Photo below shows the screw is installed on the underside of the rafter assembly.



## 4

### CUT AND INSTALL THE POLYCOR™ FOR THE END PANELS

Complete the following steps to cut the end panels for the end rafters.

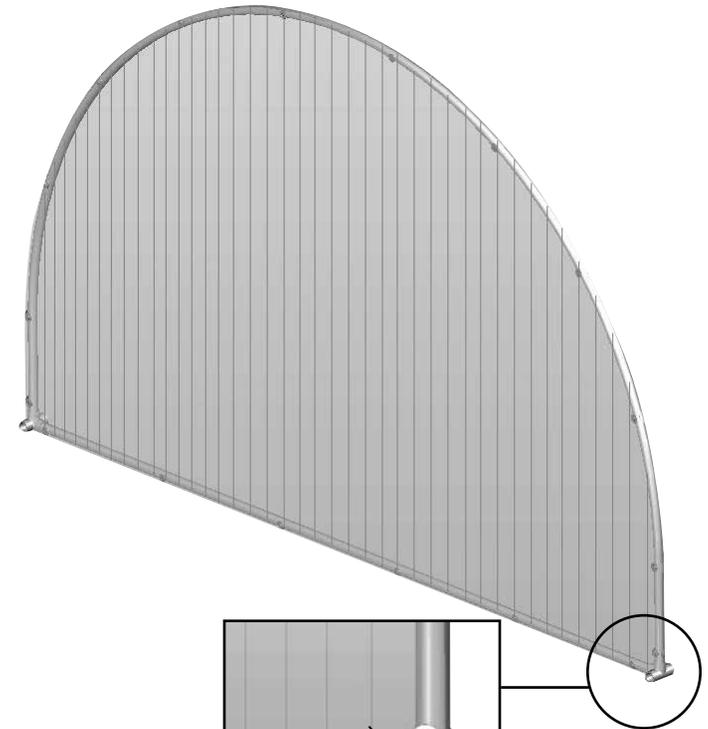
1. Unroll the PolyCor™ roll enough to place the rafter on a flat section of the roll. If needed, you can rest something on the roll to keep it from rolling back up as you mark the panel.

**NOTE:** Do not stand on the roll or use anything to weight it down that will damage the PolyCor™ material.

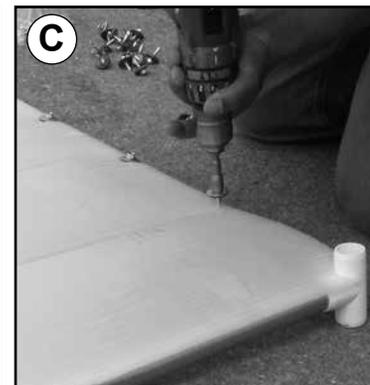
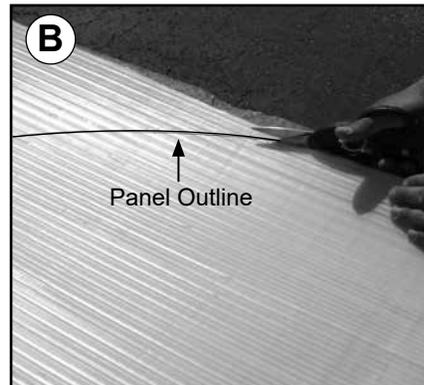
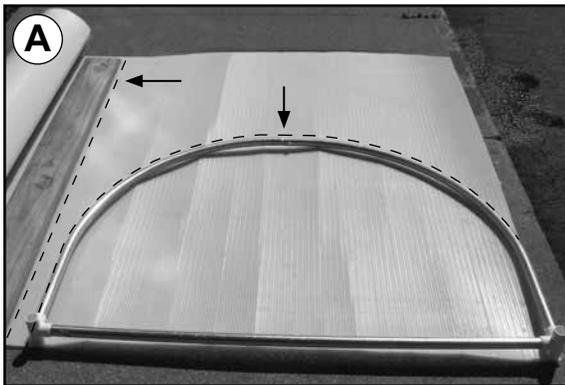
2. Position the rafter as shown below (A) and use a marker to trace around the rafter to mark the outline of the end wall and draw a vertical line to the edge of the panel material. (See arrows in Diagram A.)
3. After marking the material, cut the end panel from the material (B).
4. Attach the end wall PolyCor™ to the end rafter using Tek screws and the neobonded washers (C) evenly spaced around (8" to 10") the rafter.

**NOTE:** Trim the corners of the end panel to fit around the 4-Way connectors. It may be helpful to predrill the holes for the Tek screws if it is difficult to get the screw started. Use a drill and drill bit (1/8" or smaller) if you predrill the holes.

5. Repeat steps for the remaining end rafter (D).



Cut end panel corners to fit around the conduit.



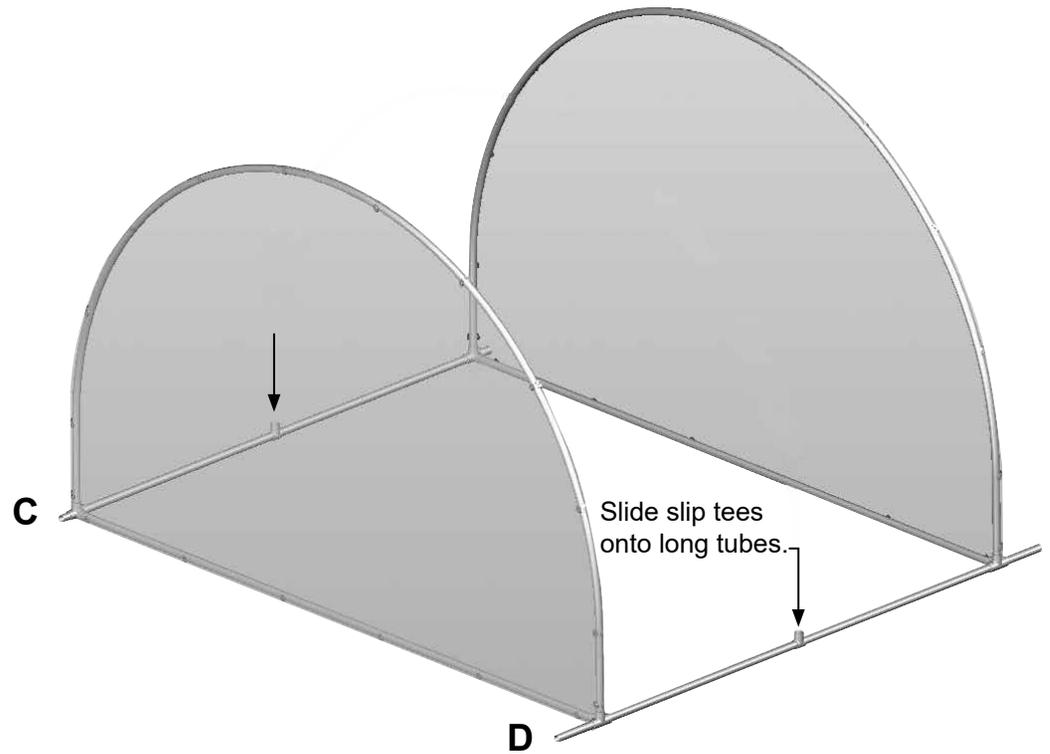
## 5

### ASSEMBLE FRAME

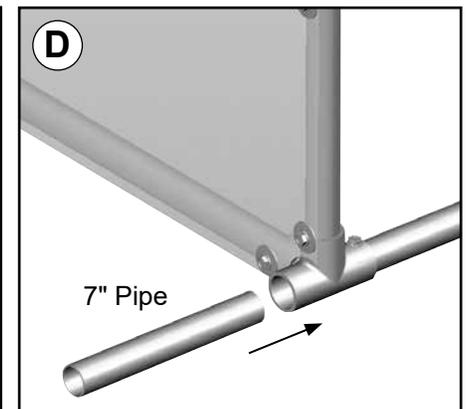
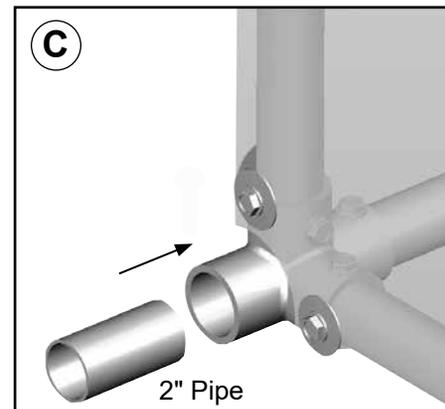
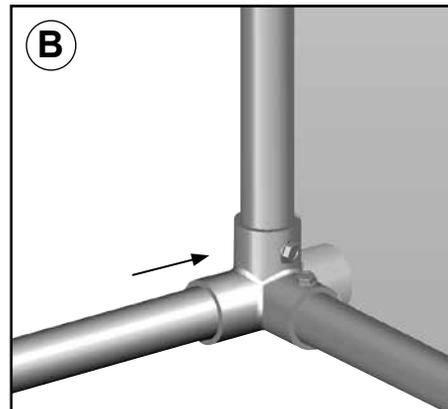
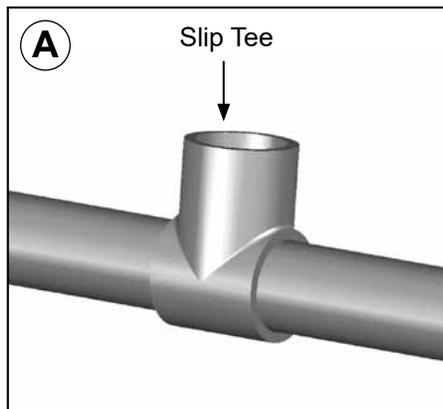
1. Locate the long, straight pipes used for the long frame tubes of the top. For the 105146 cold frame, these long tubes consist of two pipes (105P021875 and 105S123) connected and secured with a Tek screw.

**ATTENTION (SKU #105145 only):** Cut each 105P093875 pipe to 91-3/4" and continue.

2. Slide one slip tee onto each pipe as shown (A). For the 105146 cold frame, slide 2 slip tees onto each pipe assembly: one for each remaining rafter.
3. Insert the pipe ends into the 4-way fittings to assemble the top of the cold frame (B). Verify that the straight pipe is seated into each 4-way fitting.
4. Move to one (1) 4-way fitting at one end rafter and insert the short 2" section of pipe used as a hinge for the top (C).
5. Move to the remaining 4-way fitting on the same end rafter and insert one 7" section of pipe used for the handle and support pipe (D).
6. Repeat the above steps to install the remaining short sections of pipe into the 4-way fittings of the other end rafter.



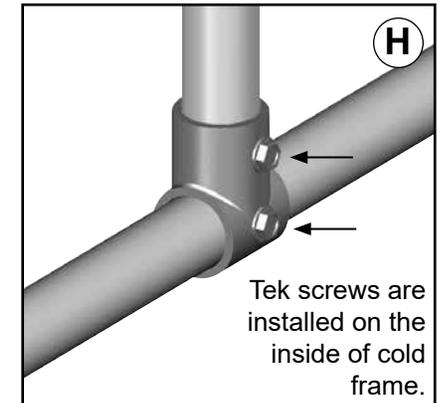
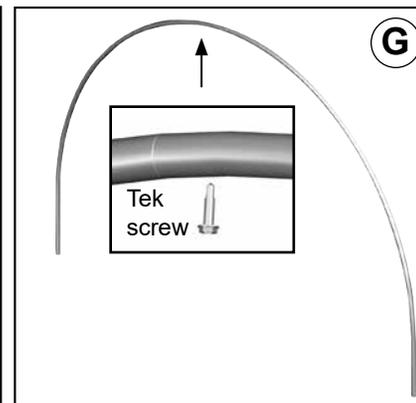
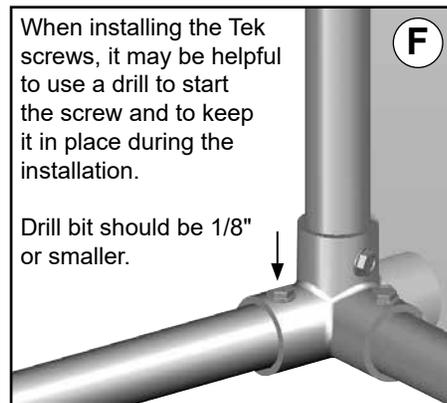
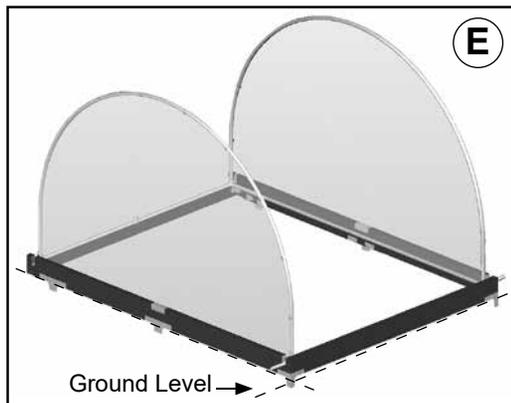
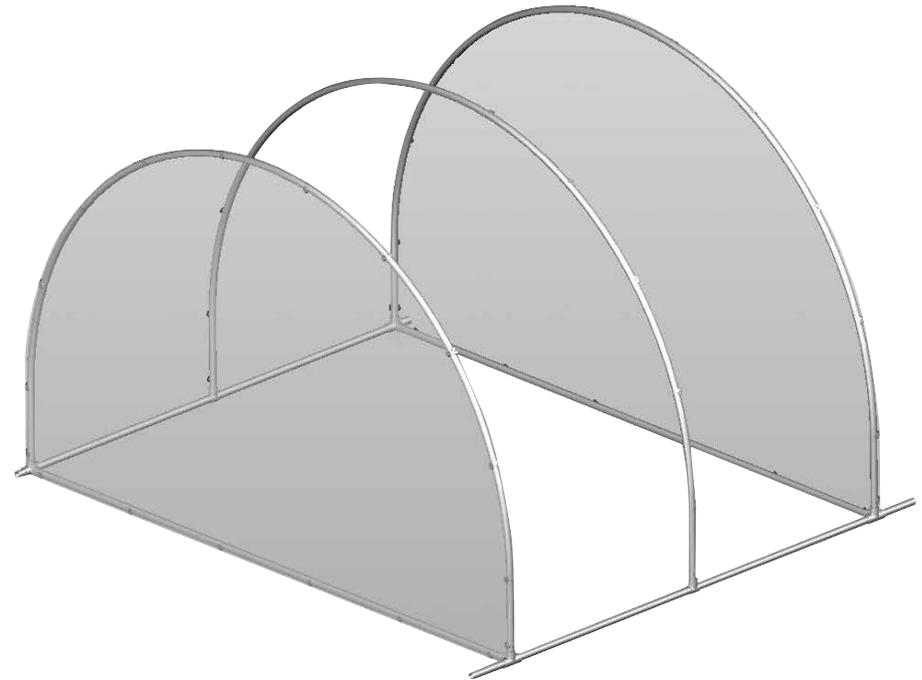
The 7" pipe lengths are installed at the front of the cold frame top and function as handles and mounts for the support pipes.



## 5

### ASSEMBLE FRAME (continued)

7. After all pipes are seated into the proper fittings and the slip tee fittings are in place and slide freely on the long pipes, carefully lift the cover frame and set it on the base frame (E).
  8. Adjust the frame as needed so that it fits the base. Use a light hammer to tap the frame fittings to adjust length if needed. *Do not damage the fittings.*
  9. After dry fitting the cover frame to the base frame, remove the cover frame from the base and install Tek screws to secure the pipes in the 4-way fittings as shown below (F).
- NOTE:** Do not over tighten the screws. Doing so may strip the threads in the hole cut by the self-tapping Tek screw.
10. Locate the pipes needed for the mid rafter or rafters: #08R105P2 and #08R105S1. With the pipes properly seated, secure the rafter using FA4482 Tek screws (G).
  11. Install the remaining rafter or rafters by inserting the rafter ends into the slip tee fittings on the long frame pipes.
  12. Evenly space the middle rafter (or rafters for the 105146) between the two ends and *secure the rafter to the fitting and the fitting to the frame pipe using Tek screws (H).*



## 6

### INSTALL MAIN COVER

**!** *Two (2) or more people are required to install the main cover.*

**Helpful Hints:** The edges of the main cover are trimmed with the white, vinyl H-channel. This trim is typically installed after the PolyCor™ is cut to the proper size and *before* the cover is attached to the cover frame. Consult the following for the location of the trim and how to attach it.

Dashed lines show the location of the H-channel. The 105146 cold frame has an H-channel splice *between* the end rafters where sections of the cover meet. *Consult the diagrams near the back of these instructions to assemble properly.*

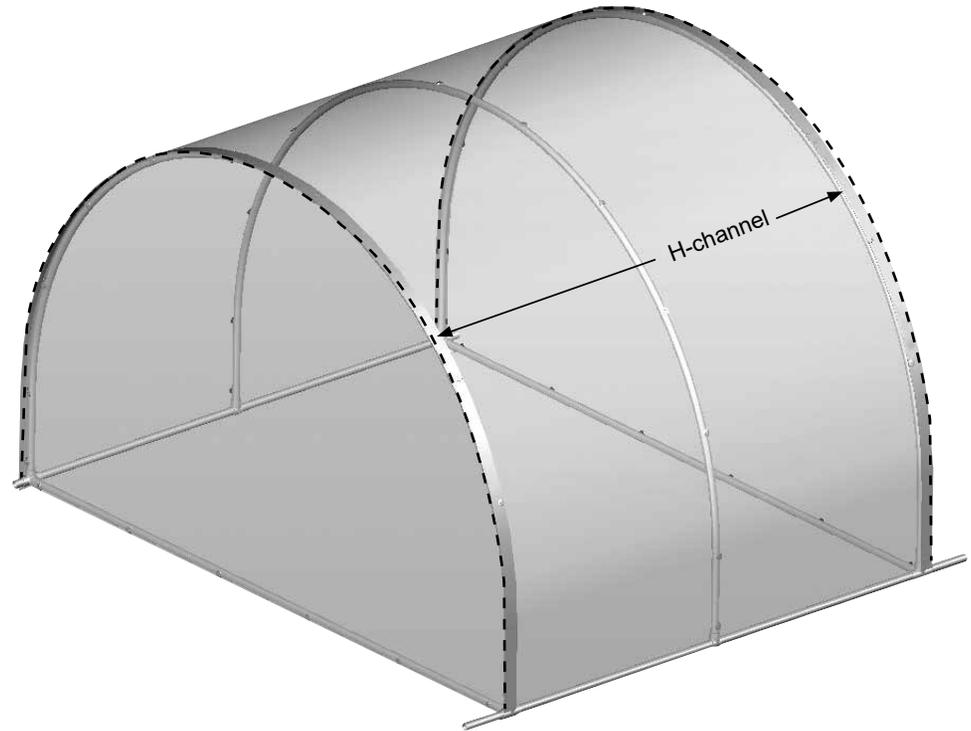
**NOTE:** Remember to measure and account for the width of the H-channel when cutting the PolyCor™ cover material to size. Consult the Cover Frame diagrams for cover length details.

During the installation, it may be helpful to predrill the holes for the Tek screws to get the screw started in the rafter. Use a drill and drill bit (1/8" or smaller) if you predrill the holes.

1. After cutting the PolyCor™ material to the desired length and width for the cover, install the H-channel trim on the ends of the cover.
2. With the H-channel trim on both ends of the cover, bend the H-channel over each end rafter and attach as shown. For best results, install Tek screws through the H-channel and PolyCor™.

**NOTE:** Verify that the length of the cover with the H-channel installed fits within the base frame. Remove H-channel and trim cover to size for a proper fit if needed.

*The 105146 cold frame has an H-channel splice between the end rafters where sections of the PolyCor™ cover meet. See the Cover Frame diagram.*



**NOTE:** Evenly space the screws and washers every 8" to 10" along the top of each end rafter.

It may be helpful to predrill the holes for the Tek screws if it is difficult to get the screw started. Use a drill and drill bit (1/8" or smaller) if you predrill the holes.



## 7

### SET THE ASSEMBLED FRAME ONTO THE BASE

After the end panels and main cover are installed, the assembled frame can be set on the base.

**NOTE:** The assembled frame and cover are lightweight and easily moved by wind. To prevent damage to the frame and to prevent personal injury, *DO NOT attempt to set the frame on the base during windy or stormy conditions.*

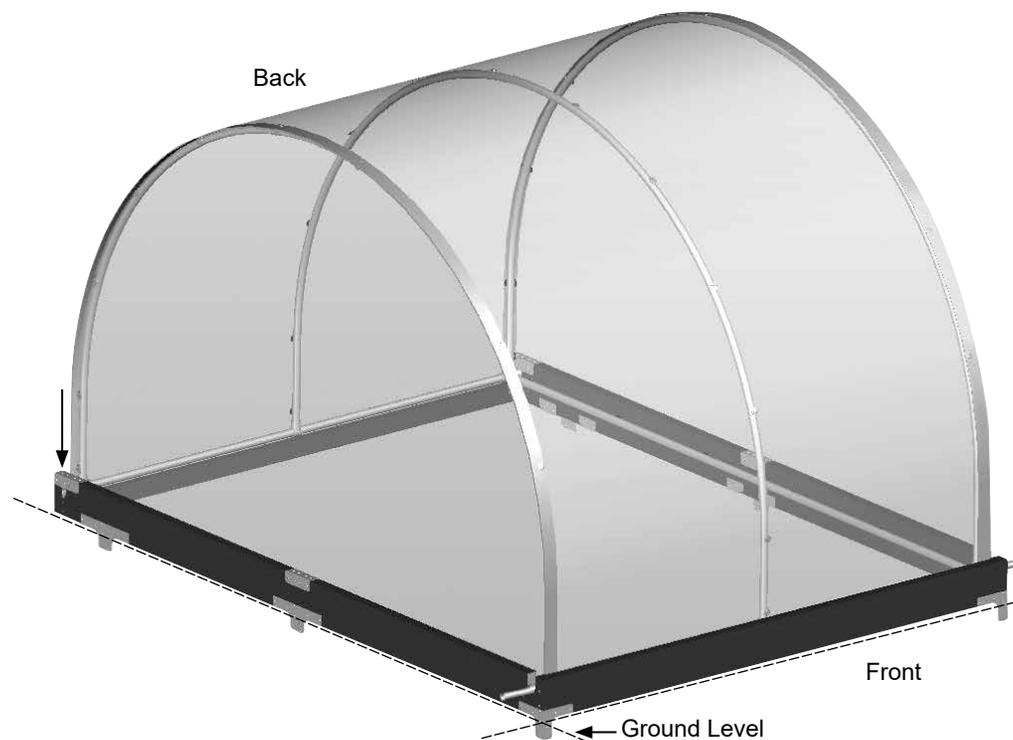
Anchoring the base to the site: Your sales representative has anchoring suggestions to help you anchor your cold frame in place. Call 1-800-245-9881 to talk to a representative about the best way to anchor your cold frame.

Continue with these steps:

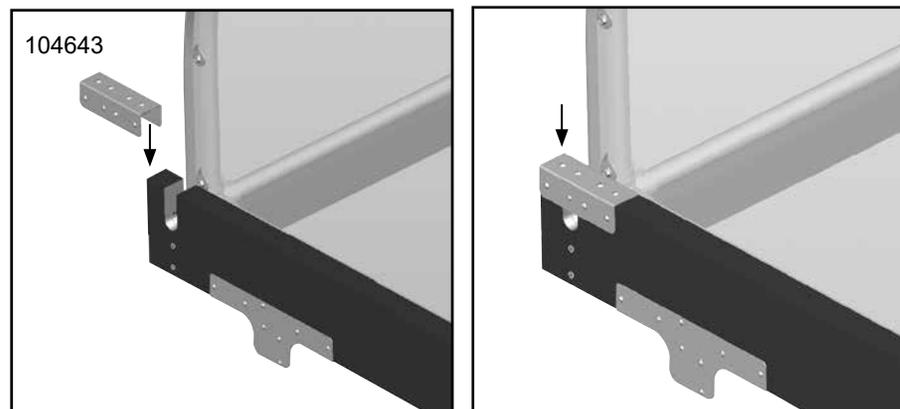
1. With adequate assistance, lift and set the assembled frame onto the recycled plastic lumber base. The short hinge pipes are set into the slots of the base end boards.
2. Locate one (1) 104643 mid connector and secure it as shown using screws (#FAF25P). See diagrams below.

**NOTE:** It is best to install a few screws to secure the bracket and then to check the operation of the cover *before* all screws are installed. Adjust as needed.

3. Repeat the step for the remaining mid connector.
4. Check the operation of the main cover and adjust brackets and reinstall screws if there is any interference with the cover operation.



*Frame may differ from actual frame.*



## 8

### ATTACH SUPPORT PIPES AND STRAP

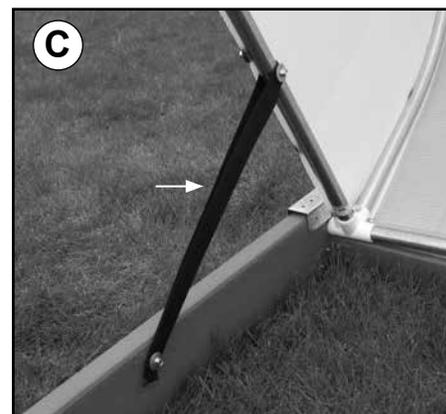
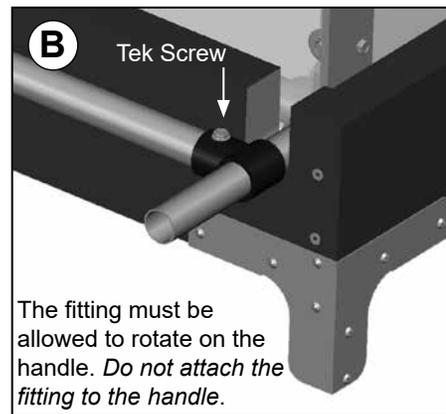
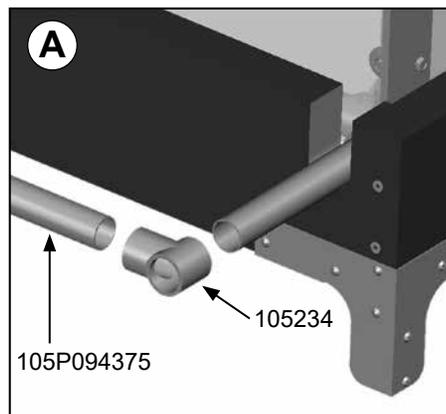
Complete these steps:

1. Locate the remaining 105234 slip tee fittings and the two (2) lengths of straight pipe (105P094375).
  2. Slide one fitting onto one straight pipe and slide that assembly onto the handle of the main cover (A).
  3. Secure the support pipe *to the slip tee fitting* using a Tek screw (B) to prevent the pipe from sliding out of the fitting.
- NOTE:** For proper operation, the fitting must be allowed to rotate on the handle. *Do not attach the fitting to the handle.*
4. Repeat the procedure to install the other support pipe.
  5. After installing both support pipes, open the top of the cold frame and use the pipes to keep the top open as shown in the photo to the right.
  6. Locate the black nylon straps. Loop one strap around the end rafter pipe and attach it to the inside of the pipe using a Tek screw and washer (C).
  7. Angle the doubled strap about 45 degrees, pull it snug and attach it to the base frame using a Tek screw and washer.

**NOTE:** Straps are attached on the inside of the frame at both ends of the cold frame.



8. Attach the remaining strap to the opposite end of the frame using Tek screws and washers (D).
9. Check the operation of the top and verify that all fittings are secured to the pipes as previously described.



# Quick Start Guide



## QUICK START GUIDE

8' Wide Flip-Top Cold Frame



**105145**

**DIMENSIONS\*:** 8' W x 5' H x 8' L



**105144**

**DIMENSIONS\*:** 8' W x 5' H x 6' L

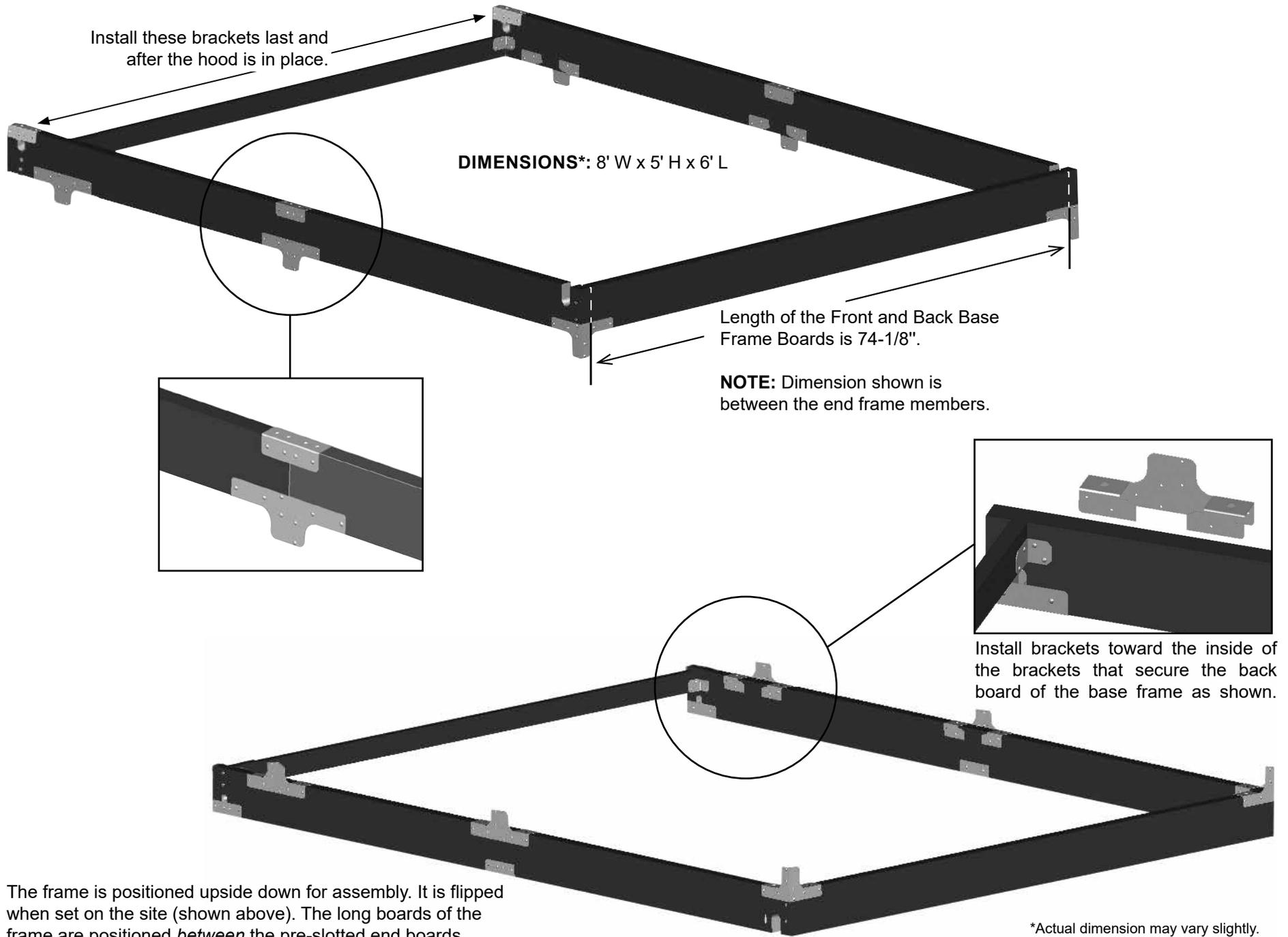


**105146**

**DIMENSIONS\*:** 8' W x 5' H x 12' L

\*Actual dimension may vary slightly.

# Base Frame - 105144



# Base Frame - 105145

Install these brackets last and after the hood is in place.

**DIMENSIONS\*:** 8' W x 5' H x 8' L

Length of the Front and Back Base Frame Boards is 96".

**NOTE:** Dimension shown is between the end frame members.

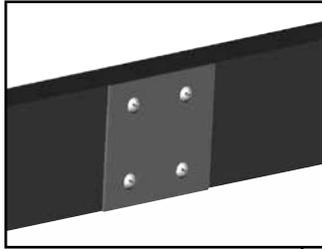
Install brackets toward the inside of the brackets that secure the back board of the base frame as shown.

The frame is positioned upside down for assembly. It is flipped when set on the site (shown above). The long boards of the frame are positioned *between* the pre-slotted end boards.

\*Actual dimension may vary slightly.

# Base Frame - 105146

3" x 3" Bracket (#104645)



Install this bracket last and after the hood is in place.

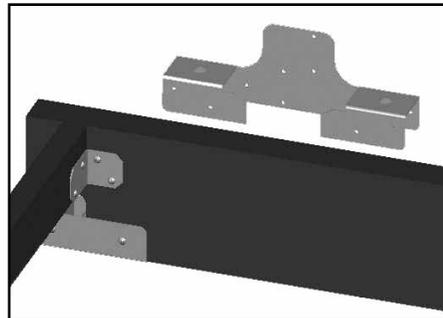
Install this bracket last and after the hood is in place.

**DIMENSIONS\*:** 8' W x 5' H x 12' L

Install brackets toward the inside of the brackets that secure the back board of the base frame as shown.

Length of the Front and Back Base Frame Boards is 146-1/8".

**NOTE:** Dimension shown is between the end frame members.

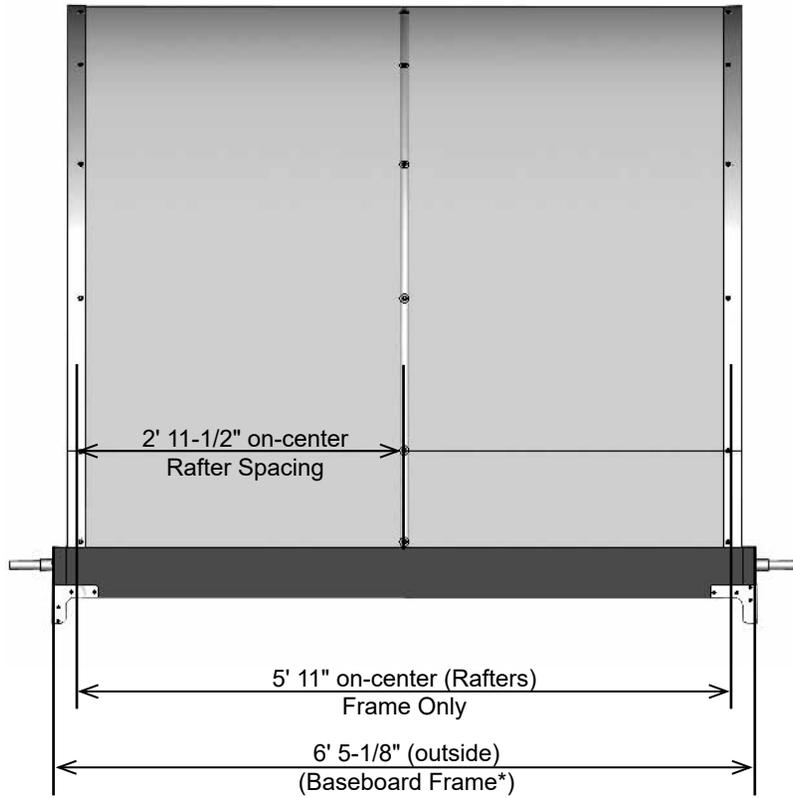


The frame is positioned upside down for assembly. It is flipped when set on the site (shown above). The long boards of the frame are positioned *between* the pre-slotted end boards.

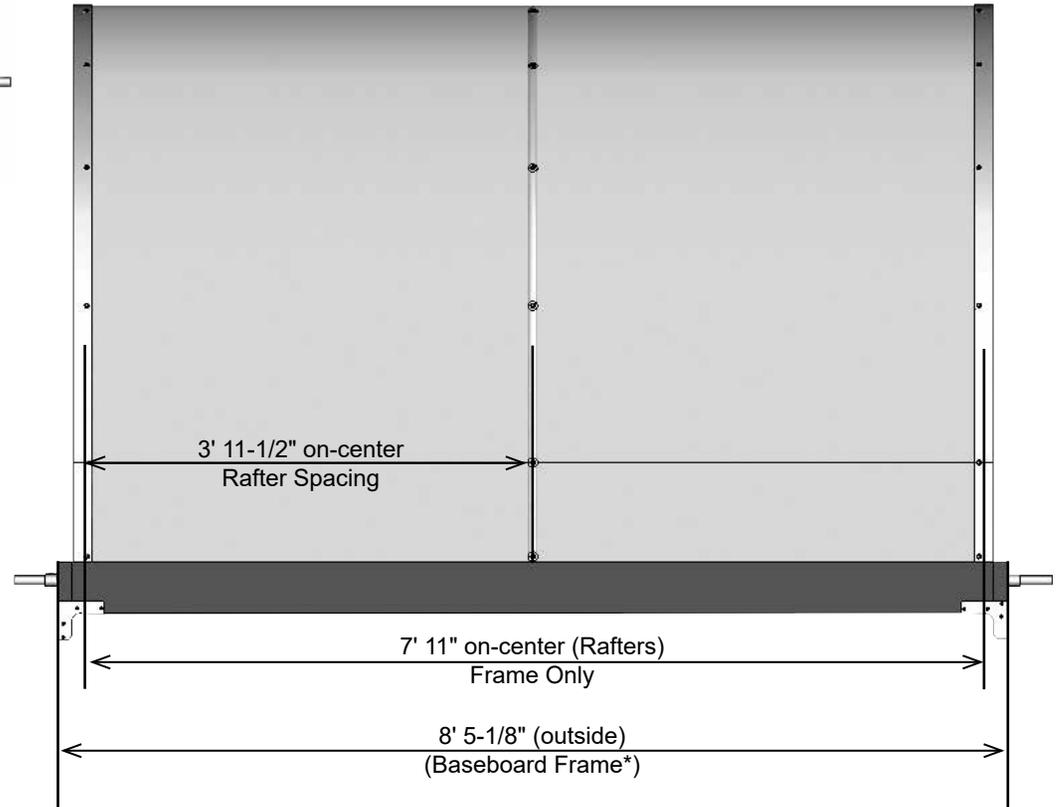
\*Actual dimension may vary slightly.

# Side Profile - 105144 & 105145

105144



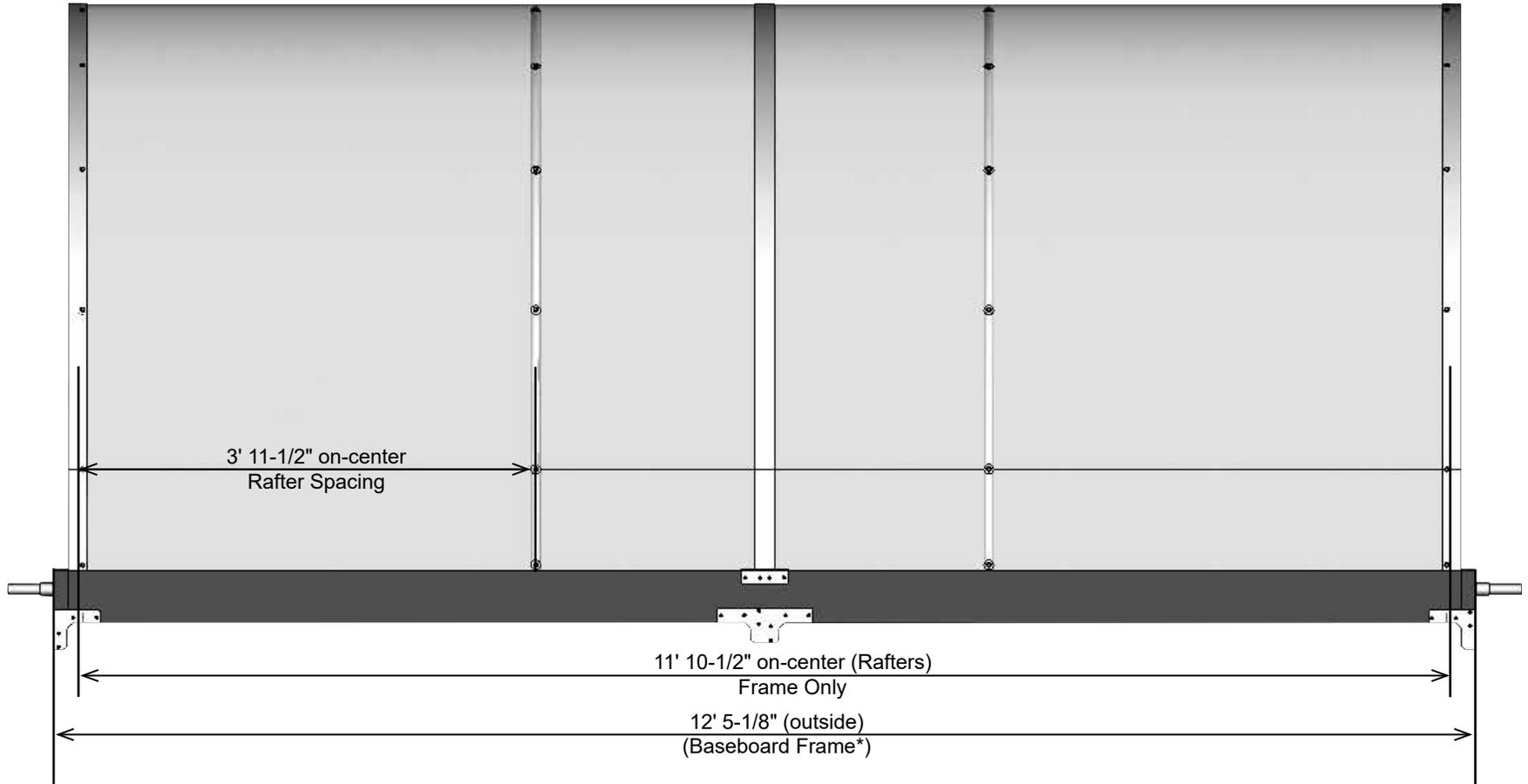
105145



\*Actual dimension may vary slightly.

# Side Profile - 105146

105146

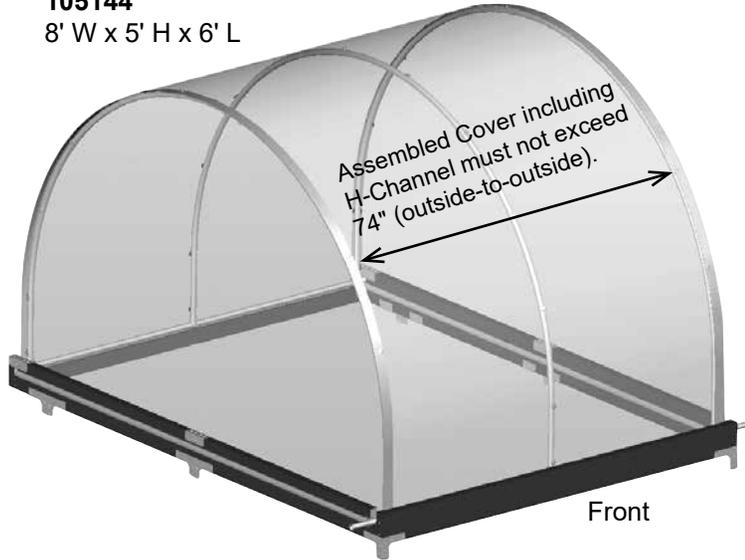


\*Actual dimension may vary slightly.

# Cover Frame

## 105144

8' W x 5' H x 6' L



**IMPORTANT:** The assembled cover *with the H-channel installed* must not exceed the inside dimensions of the base frame for your cold frame.

Verify all measurements *before* cutting the PolyCor™. Measure from the center of one end rafter to the center of the other end rafter and cut the PolyCor™ to that length. After cutting the PolyCor™, install the H-channel and check the overall length.

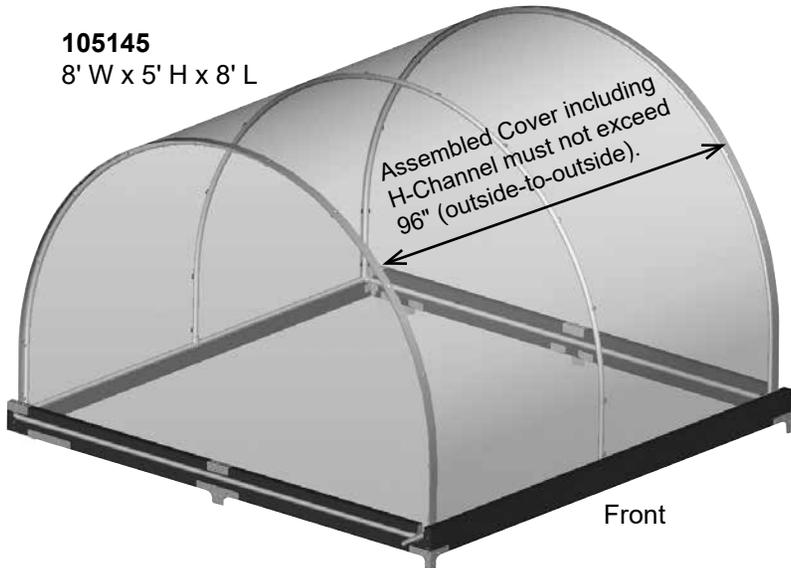
If the cover is too long, it will bind within the base frame. Check for a proper fit. If needed, remove the H-channel from one end, trim the cover, reinstall the channel and recheck the fit.

With the cover cut to size, attach it to the cover frame.

**105146 SPECIAL NOTES:** In addition to the end pieces of H-channel, the 105142 cold frame includes a center section of H-channel. The section of H-channel connects the two separate pieces of PolyCor™ during the installation. *With the two sections of PolyCor™ cut to size, connect them using the center piece of H-channel. Install the end pieces of H-channel and attach the assembled cover to the frame.*

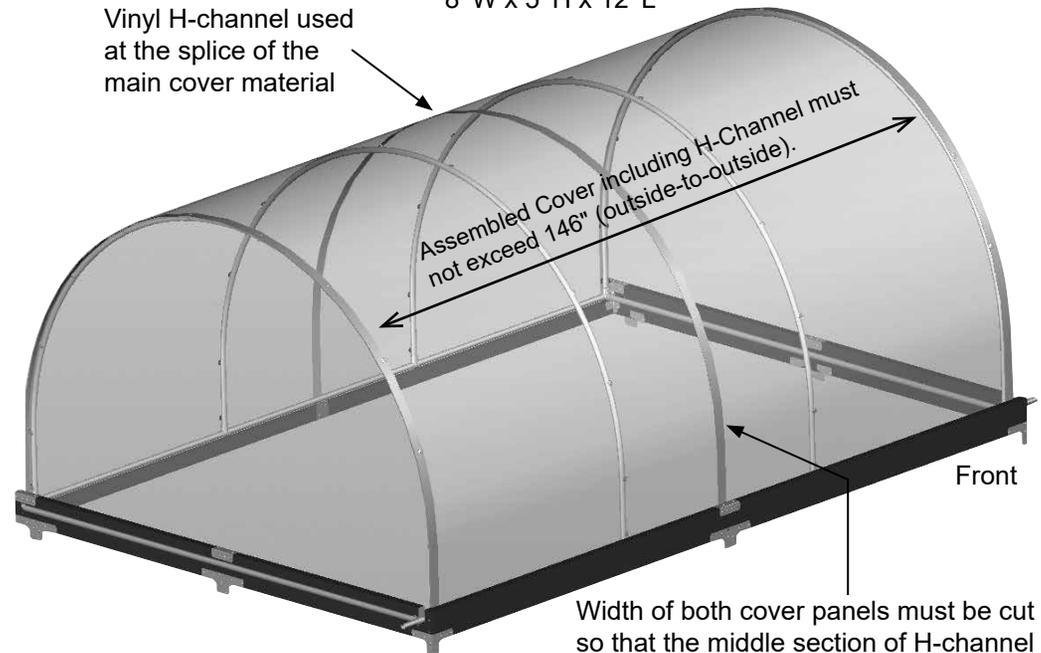
## 105145

8' W x 5' H x 8' L



## 105146

8' W x 5' H x 12' L



**ATTENTION:** The length, width, and height dimensions are approximate.

Width of both cover panels must be cut so that the middle section of H-channel is centered as shown (if desired).