



GrowSpan™ Economy Cold Frames



Photo may show a different but similar model. Frame is shown with optional cover.

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

STK#	DIMENSIONS
105163F	8' W x 7' H x 10' L
105164F	8' W x 7' H x 15' L
105165F	8' W x 7' H x 20' L
105166F	8' W x 7' H x 25' L
105167F	8' W x 7' H x 30' L



YOU MUST READ THIS DOCUMENT BEFORE YOU BEGIN TO ASSEMBLE THE SHELTER.

Thank you for purchasing this cold frame. When properly assembled and maintained, this product will provide years of reliable service. 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 for assistance.

SAFETY PRECAUTIONS

- Wear eye protection.
- Wear head protection.
- Wear gloves when handling metal parts.
- Use a portable GFCI (Ground Fault Circuit Interrupter) when working with power tools and cords.
- Do not climb on the 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 structure.
- Provide proper ingress and egress to prevent entrapment.

LOCATION

Choosing the proper location is an important step before you begin to assemble the structure.

The following suggestions and precautions will help you determine whether your selected location is the best location.

- Never erect the structure under power lines.
- Identify whether underground cables and pipes are present *before* preparing the site or anchoring the structure.
- Location should be away from structures that could cause snow to drift on or around the building.
- Do not position the structure where large loads such as snow and ice, large tree branches, or other overhead obstacles could fall.

SITE

After choosing a location, proper preparation of the site is essential. Follow the information below.

- *A level site is required.* The site must be level to properly and safely erect and anchor the structure.
- **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 designing and furnishing all temporary bracing, shoring and support needed during the assembly process. For safety reasons, those who are not familiar with recognized construction methods and techniques must seek the help of a qualified contractor.

ASSEMBLY PROCEDURE

Following the instructions as presented will help ensure the proper assembly of your structure. Failing to follow these steps may result in an improperly assembled and anchored structure and will void all warranty and protection the owner is entitled to.

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, and all additional documentation included with the shipment **before** you begin assembling the structure.
3. Gather the tools, bracing, ladders (or lifts), and assistance needed to assemble the structure.
4. Check the weather **before** you install the roof cover and any panels (if equipped). Do not install covers or panels on a windy or stormy day.
5. Re-evaluate the location and site based on the information and precautions presented in the documentation included with the shipment.
6. Prepare the site (if applicable).
7. Assemble the frame components in the order they are presented in these instructions.
8. Properly connect the assembled frame to the ground posts.
9. Install, tighten, and secure the end panel and main cover (if equipped). This applies to covers that stretch over the frame assembly. Your shelter may include roof panels or side panels or both.
10. Read the care and maintenance information at the end of these instructions.
11. Complete and return all warranty information as instructed.

LIST OF WORDS AND PHRASES

Before you begin, it is important to become familiar with the words and phrases used in this instruction manual.

These words and phrases are common to most GrowSpan™ shelters and identify the different parts of the shelter. (Some are used in this document. Others may not apply to this particular shelter.) These terms describe the shipped parts and can also be found on the materials list/spec sheets included with the shipment. To aid in the assembly, read through the following definitions before you begin to assemble your shelter.

- **Conduit:** An assembly of pipes used to secure the main cover and end panels (if equipped). Purlins and some strut assemblies also consist of connected pipes to form a conduit. Each pipe joint of a conduit assembly is secured with a self-tapping Tek screw.
- **Coupler or Fitting:** A part of the frame assembly where legs, purlins and rafter pipes are inserted and secured. In most instances, 3-way and 4-way couplers are used. In some larger applications, couplers are used to secure the joints of the different rafter sections during the assembly of the rafters. Some shelters do not use couplers.
- **Foot or Rafter Foot:** The part attached to and found at the base of the rafter or leg of the shelter. Depending on the shelter, the foot is an optional purchase. Some shelters do not offer an optional foot. Some use 1-way connectors; some use ground posts.
- **Must Read Document:** This document includes building and shelter anchoring instructions, steps for end wall reinforcement, safety precautions, and notices and warnings. The Must Read document is sent with all shelters and buildings. If you did not receive a Must Read document, contact Customer Service to request one.
- **On-Center:** Term used to describe a measurement taken from the vertical center of the rafter or frame member to the vertical center of another.
- **Purlin:** The pipe assembly that runs perpendicular to the rafters or framework that supports the main cover. Purlins are found on the sides and roof areas of the assembled frame, are evenly spaced, and typically run from the front to the back of the shelter.
- **Plain or Straight Pipe:** A term used to describe a pipe that has the same diameter or width throughout its entire length.
- **Strut:** A strut is usually a length of pipe with two flattened ends and is used for diagonal bracing of the shelter frame. A strut is typically secured to the frame work by special brackets and bolts.
- **Swaged End or Swaged Pipe:** The term “swaged” refers to the tapered end of the pipe or tube. Swaged ends of a pipe can be inserted into couplers and the straight ends of other pipes.
- **Tek Screw:** A self-tapping fastener used to secure pipe joints and to fasten brackets to rafters.

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REQUIRED TOOLS

The following list identifies the main tools needed to assemble the shelter. Additional tools and supports may be needed depending on the structure, location, and application.

- Tape measure or measuring device
- Fine point marker to mark the hole locations to be drilled in tubing
- Variable speed drill and impact driver (cordless with extra batteries works best)
- Wrenches or ratchet and socket set (recommended)
- Ropes long enough to reach over the frame (if optional cover was purchased)
- Hammers and gloves
- Metal file
- Duct tape (supplied by customer)
- Box cutter or utility knife
- Ladders, work platforms, and other machinery for lifting designed to work safely at the height of the frame

UNPACK AND IDENTIFY PARTS

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

1. Unpack the contents of the shipment and place where you can easily inventory the parts. Refer to the Bill of Materials/Spec Sheets.
2. Verify that all parts listed on the Bill of Materials/Spec Sheets are present. If anything is missing or you have questions, consult the Pictorial Parts Guide and all diagrams for clarification, or contact Customer Service.

NOTE: At this time, you do not need to open the plastic bags containing smaller parts such as fasteners or washers (if equipped).

SPECIAL NOTE: Baseboard Installation Procedure

These instructions describe installing a baseboard (recommended) at ground level along each side of the frame. The baseboard runs from the front to the back of the frame on the outside of the ground posts.

This baseboard is *not included* with the shipment and must be supplied by the customer. Treated or recycled plastic lumber can be used for a baseboard.

The baseboard, when installed properly, helps prevent the ground posts from sinking into the ground when anchored. Depending on the building, it also provides a surface to attach struts or other building components.

Consult these instructions, or contact Customer Service for additional information regarding baseboards.

Anchoring the Frame

Before installing a cover, the frame must be anchored to prevent personal injury and property damage.

Anchor kits are *not included* with the shipment and must be purchased or supplied by the customer.

Consult the MUST READ document for anchoring information and suggestions. Please call Customer Service at 1-800-245-9881 for additional anchoring information and to purchase anchors for your cold frame.

Film Cover and Optional End Frame Kits and Panels

If your building includes a film cover and you have also purchased optional end frame kits and panels, read all instructions *before you install the main cover film*. Many end frame kits require installation before a main cover is attached to the main building frame.

Installing the main cover film *before* you install the end frame and end panel may require the partial removal of the cover film to install the end frames and panels.

This does not apply to frames that do not have end frames or end panels.



The following diagrams and photos will help you identify the different parts and show you how they are used. (Not all parts are shown.)



FA4482B
Tek Screw



104545
Post Driver



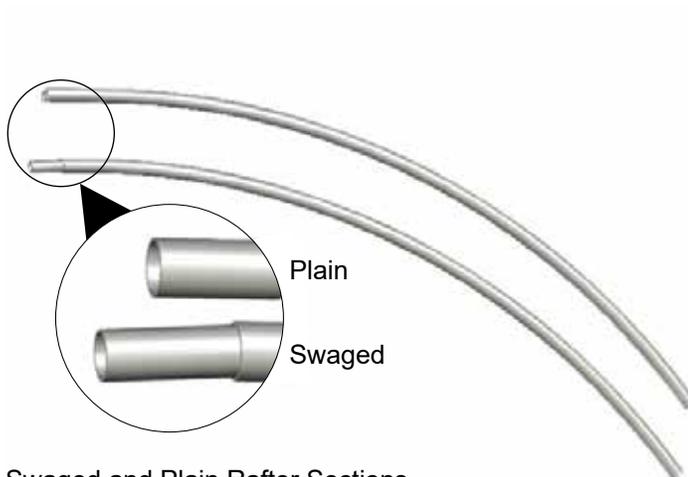
QH1070
Pipe Strap



105108
Cross Connector



104543
Ground Post



Swaged and Plain Rafter Sections
(not all pieces are shown)

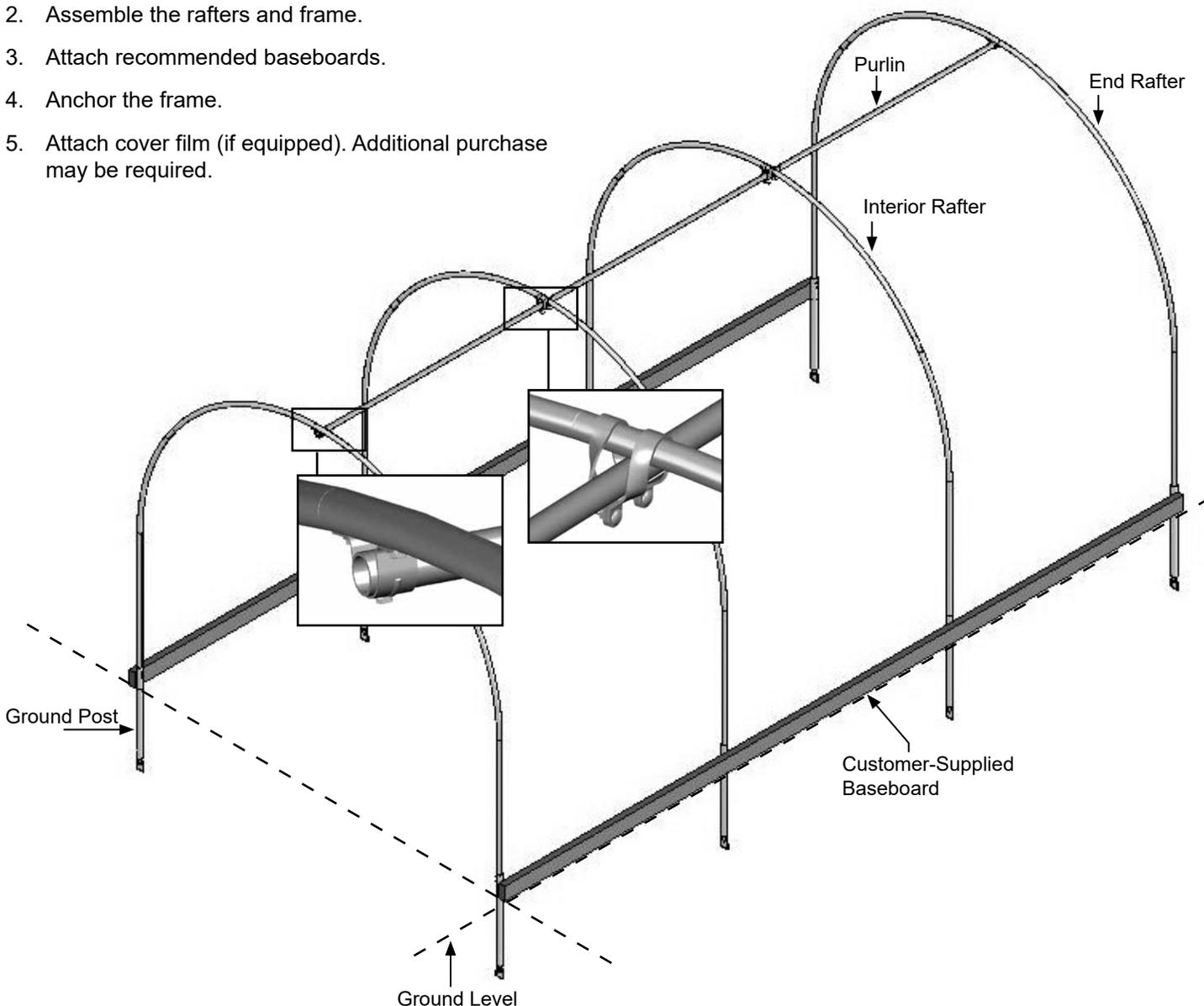


GrowSpan™ Economy Cold Frames

OVERVIEW

This section describes assembling your cold frame. For details of each assembly procedure, consult the individual sections of these instructions. See illustration below to identify main parts of the cold frame.

1. Locate the required parts for each assembly procedure.
2. Assemble the rafters and frame.
3. Attach recommended baseboards.
4. Anchor the frame.
5. Attach cover film (if equipped). Additional purchase may be required.



LAY OUT THE BUILDING SITE

After the site is prepared, lay out the building site.

Taking these steps **before** assembling the shelter saves time and ensures that the structure is positioned as desired.

Ground posts must be driven to the proper depth. Width of the shelter is measured from the center of one ground post to the center of the remaining ground post.

SQUARE THE SITE

Gather the parts:

- Ground posts (#104543)
- Tek screws (#FA4482B)

1. Identify a corner where a ground post will be positioned and drive the first ground post into the ground.

NOTE: Insert the ground post driver into the top of the ground post to protect the post and drive the post into the ground. *The top of the post must be six (6) inches above the finished grade when properly driven.*

2. After the first corner ground post is in place, string a line the width of the building (8' center-to-center) and drive the second ground post into the ground just enough to hold it in place.
3. Use a transit or line level to drive the second corner post to the same depth as the first ground post.
4. Sting a line at least as long as the building from the first stake at 90°.

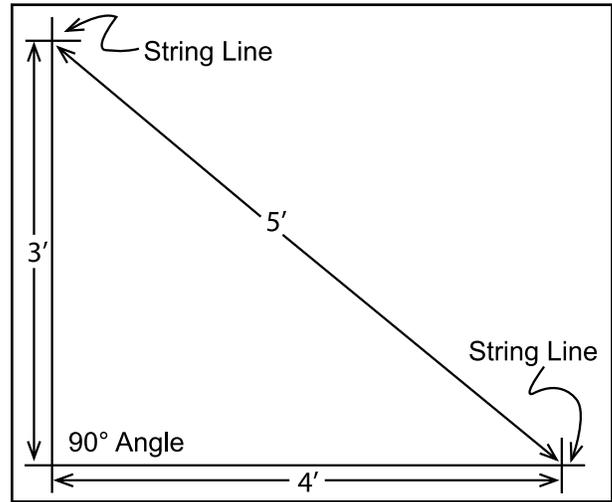
NOTE: A transit can be used to ensure an accurate 90° angle, or the 3-4-5 rule can be used. Refer to diagram. Using multiples of 3-4-5 such as 6-8-10 or 12-16-20 helps to maintain an accurate 90° angle.

5. After squaring the position of the building, measure the length and drive the next corner ground post.
6. Repeat the same step for the last corner post.

NOTE: The distance measured diagonally between corner posts must be equal for the building to be square.

7. Check all dimensions (and adjust if needed) before driving the remaining posts to the required height.

8. After all corner posts are accurately installed, tie a string line between the tops of the corner ground posts on the same side of the shelter. The string is used to identify the tops of all remaining ground posts. The string must remain tight and level.



9. Use a tape measure to mark the five (5) foot on-center locations of the remaining ground posts.
10. Drive the remaining ground posts into the ground at the required five (5) foot on-center width and the height identified by the string.

NOTE: Verify that each post is plumb and driven to the correct depth.

After the rafters have been assembled, the rafter ends are secured to the ground post.

11. Continue with the **Rafter Assembly** steps that follow.

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ASSEMBLING THE FRAME COMPONENTS

NOTE: Assistance is required to assemble the frame.

RAFTER ASSEMBLY

Gather the parts:

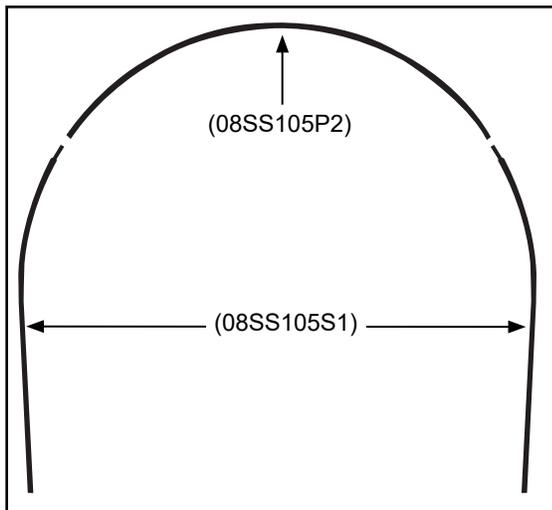
- Rafter pipe (#08SS105S1)
- Rafter pipe (#08SS105P2)
- Pipe strap (#QH1070)
- Tek screws (#FA4482B)
- Nut setter (3/8" x 2-9/16" magnetic)

Rafter Assembly Procedure

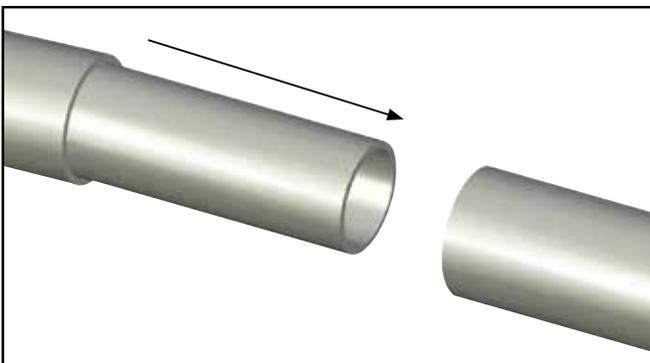
Each rafter assembly consists of three (3) rafter sections: one (1) curved rafter pipe (for the top) and two (2) bent side pipes that connect to the upper center pipe.

END RAFTER ASSEMBLY

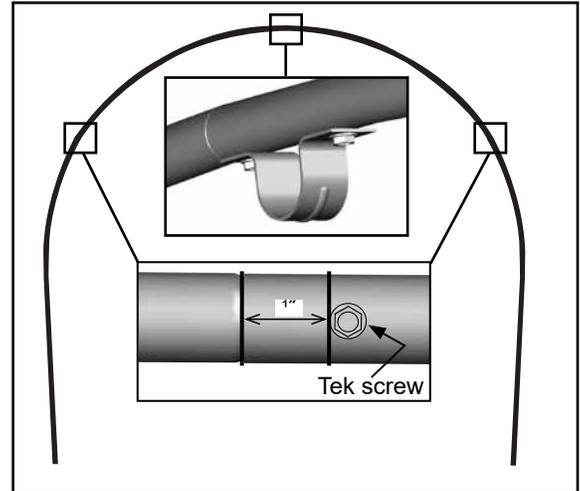
1. Select the three (3) pipes needed to assemble a rafter and arrange these on a flat surface as shown below for assembly.



2. Slide the swaged portion of each rafter pipe into the plain end of the pipe as shown.



3. With the main rafter pipes seated at each joint and the rafter positioned on a flat surface, secure each joint using a single self-tapping Tek screw. Position Tek screws approximately 1" from pipe joint.

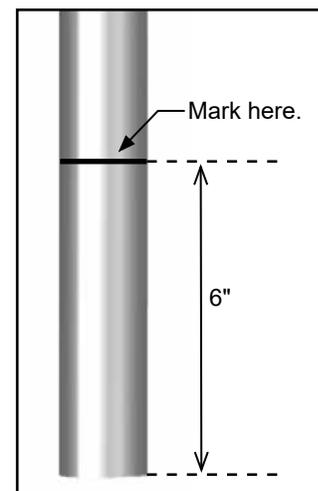


ATTENTION: Install the screws so they will not touch the cover once it is installed (if equipped). This is typically on the backside of the rafter, which will be the surface visible from the *inside* of the shelter once the frame is assembled.

4. Located one (1) QH1070 pipe strap and attach it to the underside of the rafter at the peak.

NOTE: Have assistants hold the rafter in the correct position to attach the pipe strap to the underside.

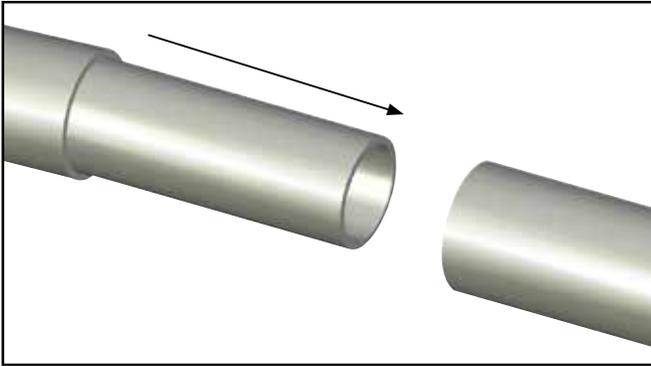
5. Repeat the same steps for the remaining end rafter.
6. At the end of each rafter leg, measure 6" and mark. This mark identifies how far to insert the rafter into each ground post.



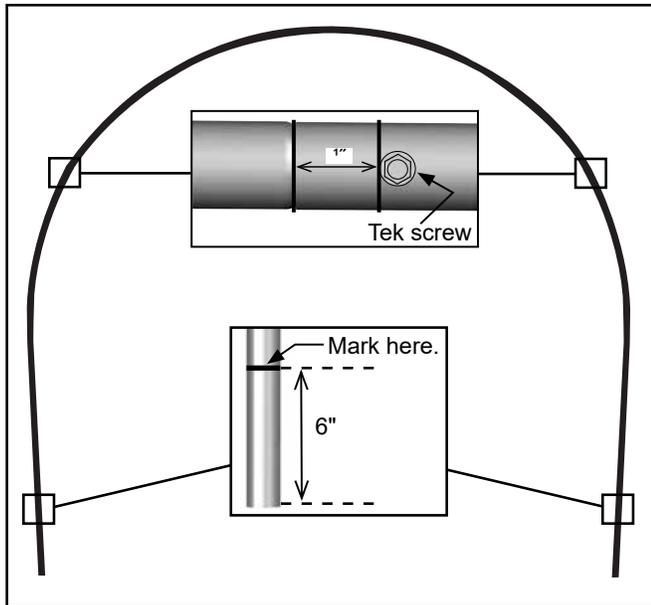
7. After the end rafters are assembled and marked, continue with the additional steps to complete the assembly of the interior rafters.

INTERIOR RAFTER ASSEMBLY

1. Select the three (3) pipes needed to assemble an interior rafter and arrange these on a flat surface for assembly.
2. Slide the swaged portion of each rafter pipe into the plain end of the pipe as shown.



3. With the main rafter pipes seated at each joint and the rafter positioned on a flat surface, secure the joints with a single self-tapping Tek screw. Position Tek screw approximately 1" from pipe joint.



ATTENTION: Install the screws so they will not touch the cover once it is installed (if equipped). This is typically on the backside of the rafter, which will be the surface visible from the *inside* of the shelter once the frame is assembled.

4. Repeat the same steps for the remaining rafters.
5. At the end of each rafter leg, measure 6" and mark. This mark identifies how far to insert the rafter into each ground post.
6. Once all the rafter assemblies are complete and the legs are marked, continue with the FRAME ASSEMBLY instructions that follow.

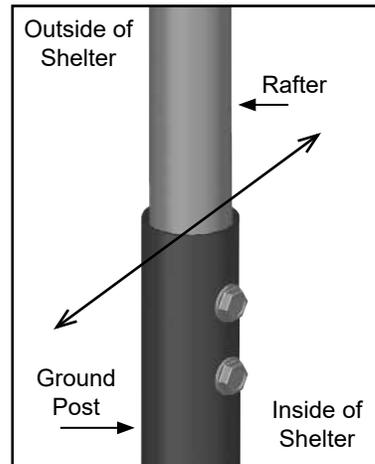
FRAME ASSEMBLY

Gather the parts:

- All rafter assemblies
- 1.05" purlin pipes
- Tek screws (#FA4482B)
- Lifts, ladders, and assistants as needed

Frame Assembly Procedure

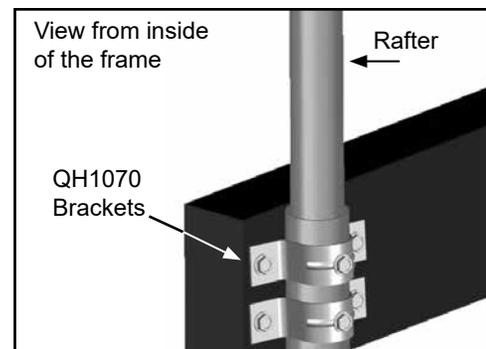
1. Using the proper lifts and with assistance, carefully stand the first end rafter assembly and place the leg pipes into the first set of ground posts.



IMPORTANT: Brace the first rafter in position as needed to keep it from moving. Bracing is removed *after* additional rafters are installed and secured to the other rafters.

2. Lower the rafter legs into the ground post to the 6" lines marked on the pipes earlier and secure the rafter to the ground post using Tek screws.

ATTENTION: For cold frames that include a film cover, attach a QH1070 bracket as shown below using the Tek screws. This bracket can be used to secure the customer-supplied baseboard to the ground posts.



NOTE: A baseboard is required to attach the poly latch system used to secure the cover to the frame. If no cover is used, continue with the next step. If you have an alternative way to secure a cover to the frame and you will not need the QH1070 brackets, do not install them. Continue with the next step.

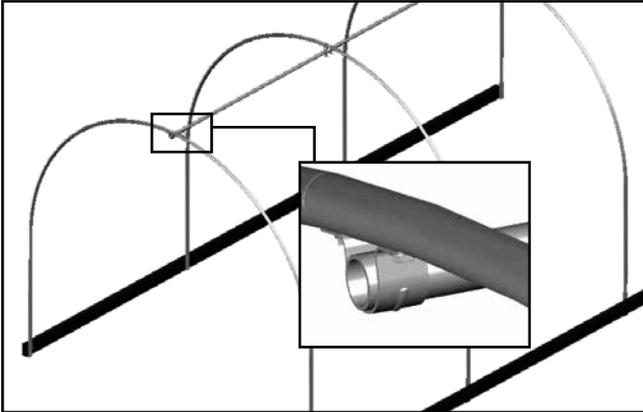
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FRAME ASSEMBLY (CONTINUED)

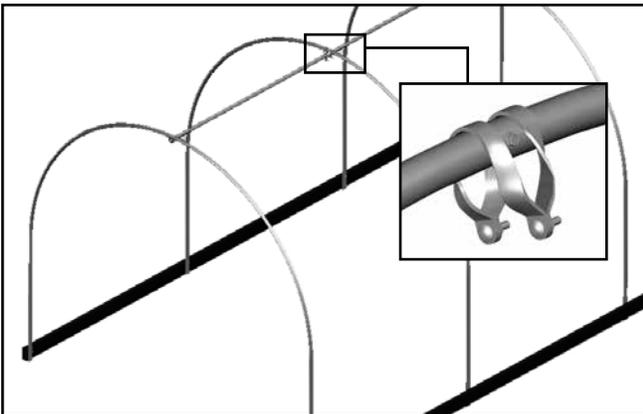
- Carefully position the *first interior rafter* in place and secure the leg pipes to the ground posts as previously described.

NOTE: Position the Tek screws on the inside of the ground post so they do not interfere with the installation of the cover (if equipped).

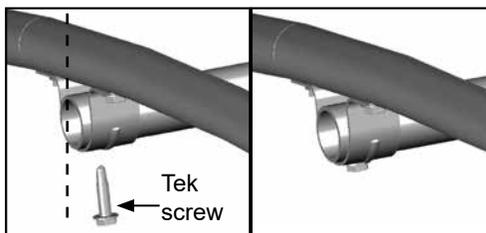
- Select another interior rafter and secure it in the next set of ground posts.
- After setting the third rafter in place, slide one section of the purlin pipe into the pipe strap at the end rafter.



- Select one of the cross-connectors and position it at the top of the mid (or second) rafter.



- Slide the purlin pipe and position the plain end of the purlin flush with (or slightly to the inside) of the end rafter and secure the purlin in the clamp with a Tek screw.

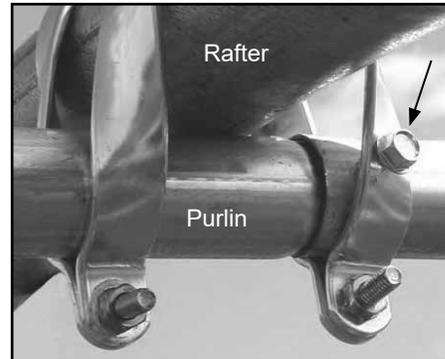


NOTE: To prevent damage to the cover, do not allow the purlin to extend beyond the end rafter.

- Move to the second rafter and verify that the rafter spacing is 5' on-center.

NOTE: Verify that the rafter is plumb front-to-back and side-to-side.

- Tighten the bolts in the cross connector and secure the cross connector to the purlin using a Tek screw.



NOTE: Photo shows a similar frame with the same connection.

- Choose another rafter assembly and set it in position.
- Secure the rafter legs to the ground posts as previously described.
- Repeat the above steps as needed to stand, place, and secure the remaining rafters to complete the frame assembly.

NOTE: If the last end rafter is plumb and the purlin extends beyond the end of the rafter, cut the last section of purlin pipe to the required length.

DO NOT allow the purlin to extend beyond the end rafter.

- After the center purlin is in place, verify that each splice in the purlin is secured with a Tek screw to prevent it from separating.

ATTENTION: To install a cover, read the following information and continue as needed with the next procedure. If your building includes a film cover and you have also purchased optional end frame kits and panels, read all instructions *before you install the main cover film*. Many end frame kits require installation before a main cover is attached to the main building frame.

Installing the main cover film before you install the end frame and end panel may require the partial removal of the cover film to first install the end frames and panels.

- If no cover is to be installed, the frame assembly is complete. Read the **Care and Maintenance** information that follows.

INSTALLING THE COVER FILM (Sku numbers ending in FF include the cover film. Additional purchase is required for all other skus.)

NOTE: Assistance is required to install the cover.

BASEBOARD INSTALLATION

If a cover is to be installed, the installation requires a baseboard to be attached to the frame and ground posts.

The baseboard is supplied by the customer and is attached to the outside of the ground posts. This baseboard runs along the outside of the frame assembly at ground level and must remain level throughout the length of the cold frame.

Gather the parts:

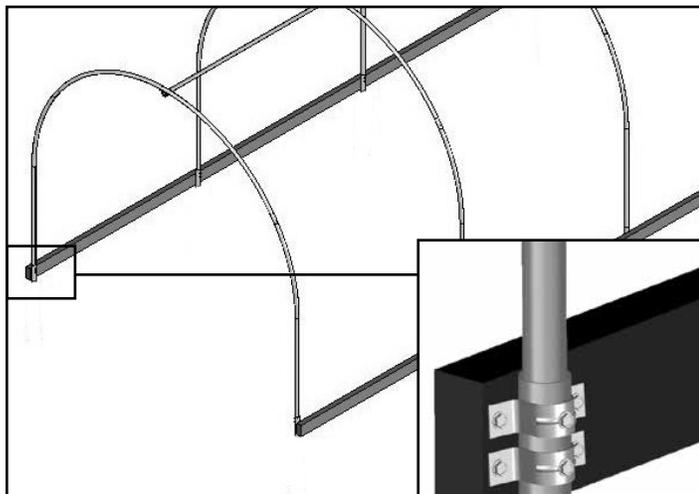
- Treated or recycled plastic lumber (supplied by customer).
- QH1070 brackets (already attached if used)
- Tek screws

If the QH1070 brackets were attached to the ground posts as described earlier in these instructions, the baseboard can be secured using lag screws or bolts, washers, and nuts supplied by the customer.

ATTENTION: The baseboard and all parts needed to attach the baseboard to the frame, except for the QH1070 brackets, are not included and must be purchased separately by the customer.

Contact Customer Service at 1-800-245-9881 to purchase baseboard and the parts needed to attach the baseboard.

NOTE: When installing the baseboard, allow it to extend beyond the end rafters so it can be attached to the QH1070 brackets if these are used.



Insert shows ground post as seen from the inside of the shelter.

FINISH ROUGH EDGES

Gather the parts:

- Duct tape (supplied by customer)
 - Metal file
1. Check for any sharp edges on the frame and file them smooth so they will not cut the cover.
 2. Apply two layers of heavy duct tape on all pipe connections and clamps that may contact the cover.

ANCHOR THE ASSEMBLED FRAME

At this point, anchor the cold frame. Consult the **MUST READ** document for anchoring information and suggestions. Please call customer service at 1-800-245-9881 for additional anchoring information.

CAUTION: The anchor assembly is an integral part of the cold frame construction. Improper anchoring may cause instability and failure of the structure to perform as designed. Failing to anchor the shelter properly will void the manufacturer's warranty and may cause serious injury and damage.

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COVER FILM INSTALLATION

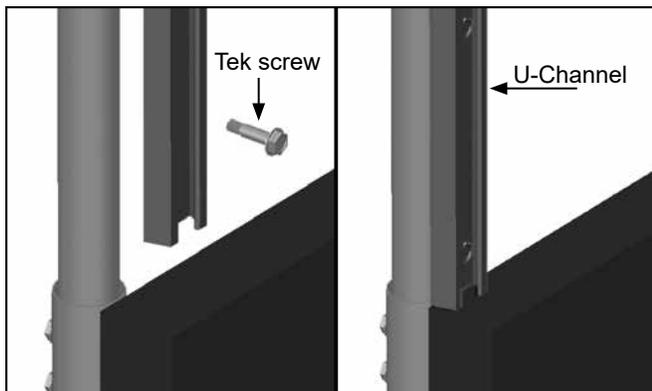
After the frame is assembled and the baseboards are attached to the frame, the cover is installed.

The steps to install the cover include:

1. Install poly latch U-channel on the tops of the end rafters and to the baseboard.
2. Pull cover over the shelter.
3. Attach the main cover to one peak, stretch to the other peak and secure with poly latch spring.
4. Center the cover along one side and attach.
5. Stretch to other side and attach.

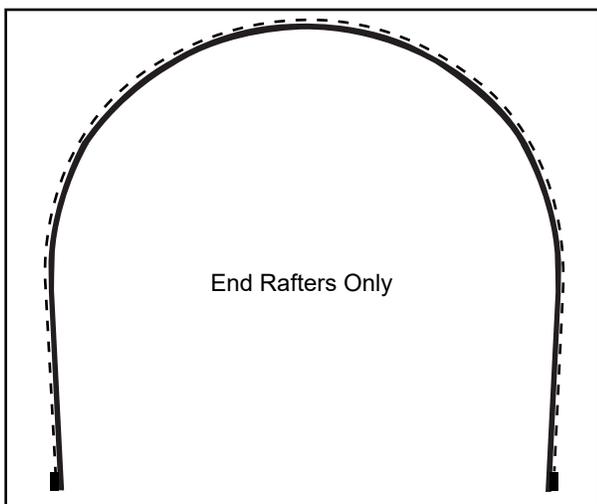
Install Poly Latch U-Channel for Main Cover

1. Using Tek screws, attach a section of the poly latch U-channel (#102179) to the top of the first end rafter. Begin at the *top of the baseboard* as shown below.



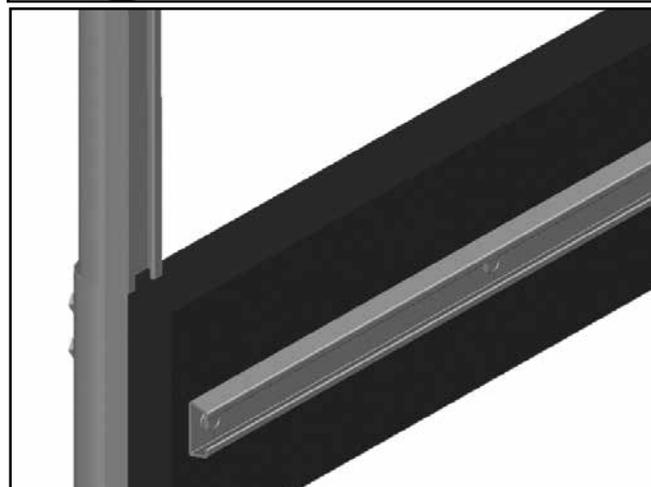
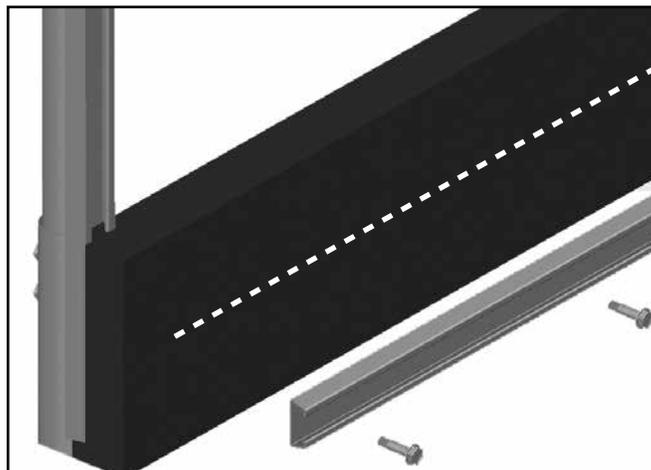
2. Continue to attach the U-channel sections working up and over the first end rafter.

ATTENTION: The U-channel is attached to the top of the rafter and will bend with the curve of the rafter as it is attached. See diagram that follows.



Dashed line represents the U-channel.

3. Repeat these steps for the remaining end rafter.
4. After attaching the poly latch U-channel to the tops of the end rafters, use Tek screws to attach the U-channel to the baseboard as shown. (See dashed line below.)



5. Continue to attach the U-channel until it has been installed on both baseboards.
6. Continue by installing the main cover.

COVER FILM INSTALLATION (CONTINUED)

Install the Cover Film

After all of the poly latch U-channel is attached to the shelter, the cover film is unpacked and pulled into place. Assistants positioned inside the frame along the length of the film edge can help when pulling the film into place. In some instances, ropes or straps are used to pull the cover film onto the frame depending on the length of the cover and the width of the frame.

⚠ WARNING: To prevent damage to the cover and to prevent serious personal injury, **DO NOT** attempt to install the main cover on windy or stormy days.

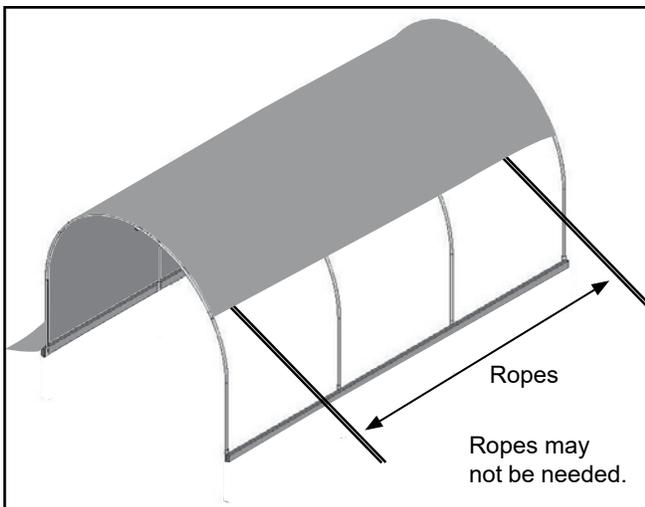
Continue with the steps that follow.

1. Unpack the cover film and position it at the base along one side of the frame.
2. With assistance, pull the cover film over the frame.

ATTENTION: Depending on the height and width of the frame, ropes can be tied to the film edge, thrown over the frame, and pulled to lift the cover film into place. See the diagram below.

The ropes must be long enough to reach over the top of the frame to the other side. Long buildings will require additional ropes to prevent tearing the cover film when it is pulled into place.

3. With the film in place on the frame, center the cover side-to-side and end-to-end.



Shelter shown above may be a different length than the actual model.

IMPORTANT: To prevent damage to the main cover during installation, additional personnel and lifts may be needed.

4. Once the main cover is in place and centered on the frame, begin at the peak of one end rafter and install the wire spring into the U-channel to secure the cover.

ATTENTION: Center the main cover front to back and side-to-side to ensure that enough cover material is present to lock into the U-channel.

If used, the rope can remain in place to temporarily secure the cover if needed. Remove the ropes as the cover is secured to the frame.



Photos show installing the spring into the U-channel on the outside of a frame. The process is the same for the U-channel attached to the top of the end rafters.

5. Continue adding the spring into the U-channel at the top of the first end rafter. Ensure that an even amount of the cover is exposed and maintained along the edge of the frame as it is attached.

NOTE: The cover material is cut longer/wider than is required to cover the frame. For easier anchoring, allow approximately 8" to extend past the edge of the end rafter as the cover is anchored in place.

6. Continue down both edges of the first end rafter until the entire length of the end of the main cover is secured in place.
7. Stretch the cover to the other end of the building and repeat the steps to secure the main cover in the U-channel.

NOTE: Pull the cover tight as the spring is inserted into the U-channel.

8. After the cover is stretched end-to-end and secured using the spring and U-channel, move to one side of the frame and repeat the steps to anchor the main cover to the first side.

Begin at one end of the U-channel and work toward the other.

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COVER INSTALLATION (CONTINUED)

NOTE: Maintain an even length along the side. The final stretching of the cover takes place when the last side is secured.

9. After securing the first side, move to the remaining side and secure it in place.



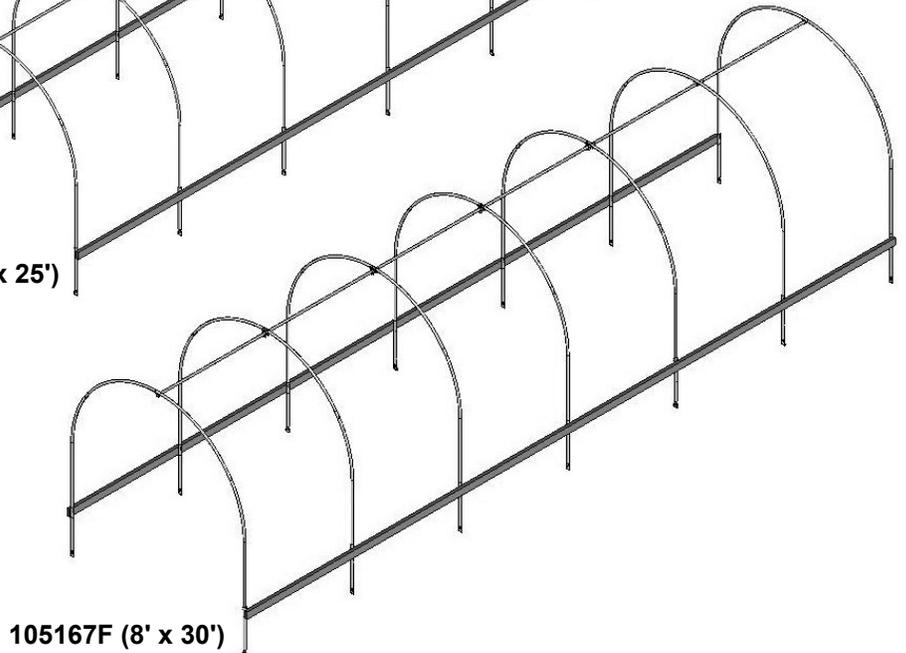
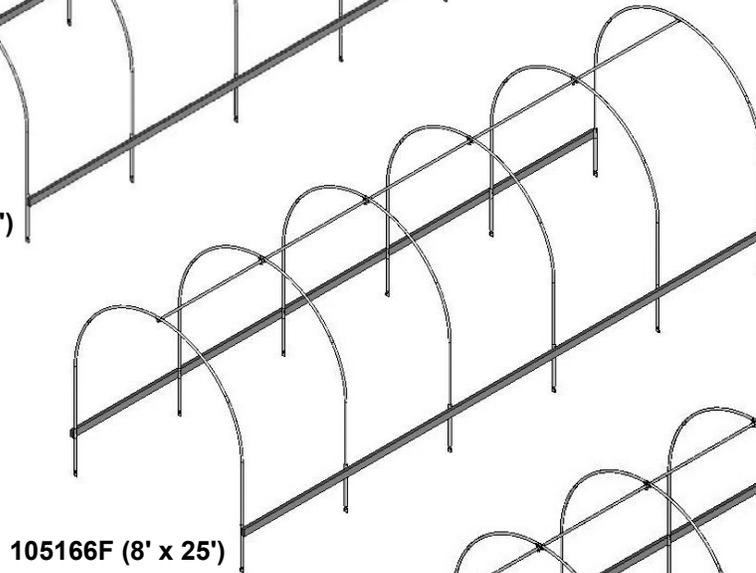
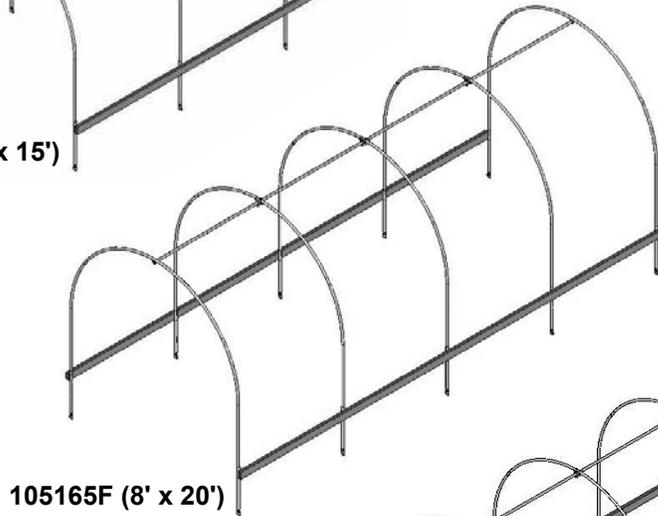
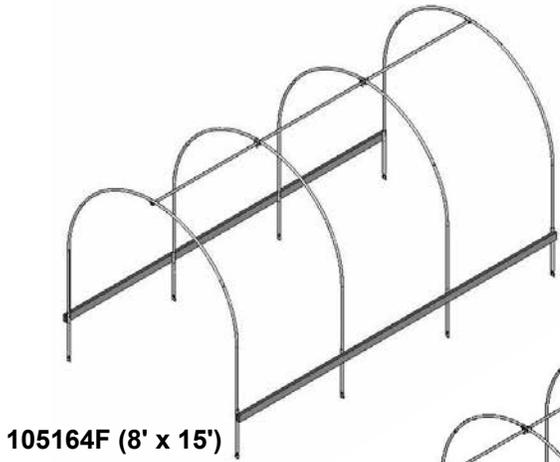
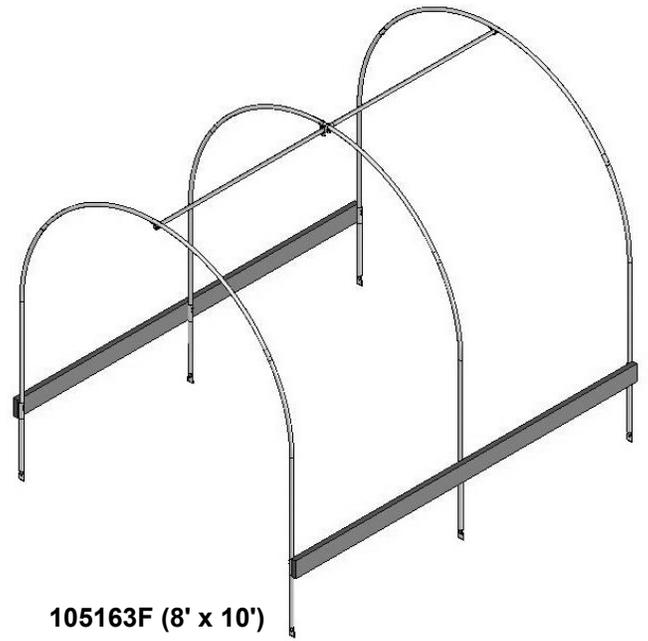
IMPORTANT: DO NOT REMOVE TOO MUCH OF THE EXCESS COVER MATERIAL AT EACH END. Some excess main cover material—the material that extends beyond the end rafters—should remain in place. If the main cover needs stretched in the future, remove the spring from the U-channel, grasp the excess material, pull the cover tight, and reinstall the spring.

10. Read the **Care and Maintenance** information that follows.

SHELTER CARE AND MAINTENANCE

Proper care and maintenance of the shelter is important. Check the following items periodically to properly maintain the shelter:

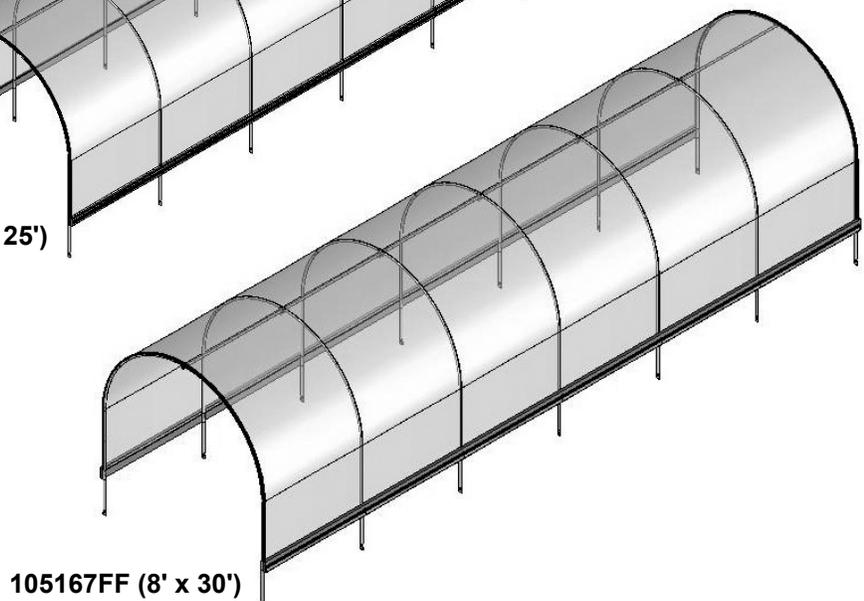
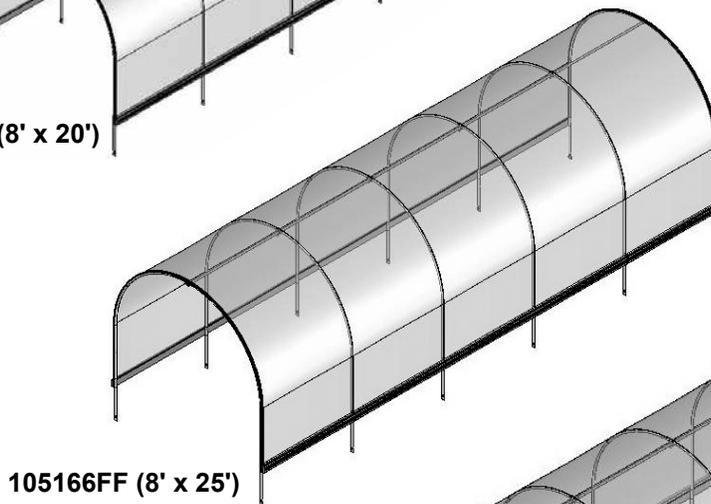
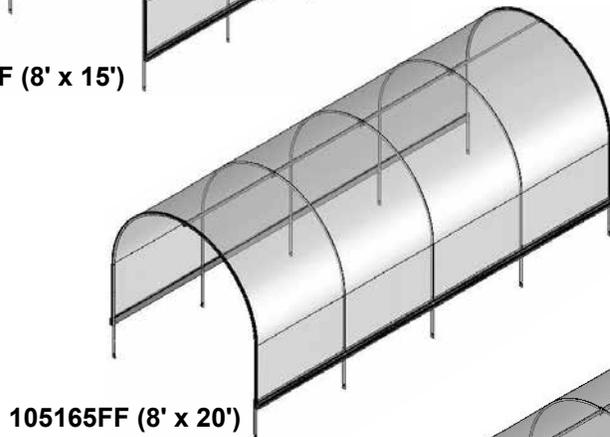
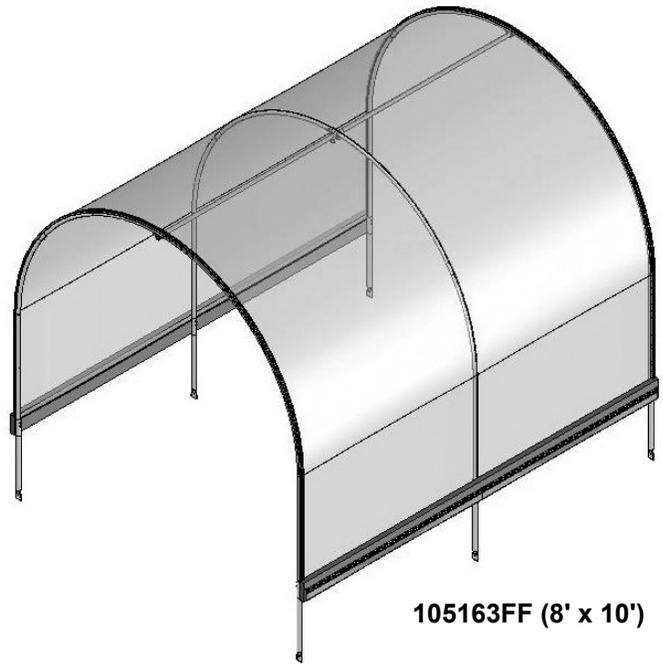
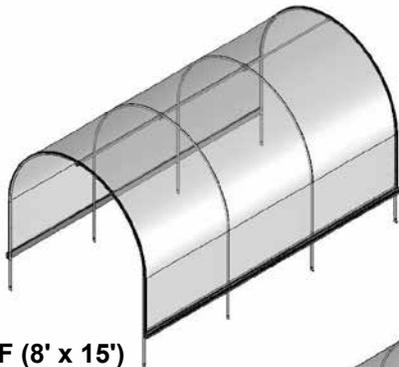
- Check the ground posts and anchoring system (if equipped) to see that all components are tight and in good repair.
- Check connections and all fasteners to verify that they remain tight.
- Verify that all connections and connectors are secure. Tighten these if necessary.
- Check the cover material (if equipped) to verify that it is in good repair.
- Do not climb or stand on the cold frame at anytime.
- 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 cover that could cause damage.
- If the cold frame is moved, inspect all parts and connections before reassembling.
- For replacement or missing parts, call 1-800-245-9881 for assistance.



GROWSPAN™ ECONOMY COLD FRAMES



8' Wide Cold Frames with covers (FF skus only)





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