MOUNTING INSTRUCTIONS

Royal Orangerie (HELIOS & EOS T)

Exaco Edits 01.06.24
Janssens Version 2024.01

Note: This is an all-inclusive manual. It shows optional accessories and customizations that may not apply to your greenhouse. Direct any questions to Exaco.

https://docs.janssens.be/manuals/helios_eos_t.pdf

Janssens since 1946

Assembly Videos can be found by scanning the code to the left with your smartphone.

Or find the link to our YouTube page at www.exaco.com. Go to the Victorian Greenhouse Playlist for all videos.

www.exaco.com
877-760-8500

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Customer Service or Assembly Questions?

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customerservice@exaco.com

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Please watch our animated assembly videos on our Exaco YouTube Channel.

Find the link at www.exaco.com

OR

Scan the code below:

Thank you for purchasing a Janssens' Royal Orangerie Greenhouse, imported and distributed in North America by Exaco in Austin, TX. Exaco will provide all the North American based customer support for your greenhouse. Please feel free to reach to Exaco customer service with any questions you may have during assembly!

Questions? Need Assembly Support?
Please call Exaco at 877-760-8500 or email customerservice@exaco.com.

THE FOLLOWING SECTION CONTAINS IMPORTANT RESOURCE INFORMATION – PLEASE READ BEFORE BEGINNING ASSEMBLY

Introduction

In this manual, you will find the assembly instructions for all basic/standard-model greenhouses. However, this manual also contains pages which apply to optional accessories that may not be included with your kit. **Greenhouse "kits" vary by retailer**. Some retailers may bundle additional accessories with their greenhouses - please check your order closely so you understand which accessories your greenhouse includes before building. It is also very helpful to plan out where each of these additional accessories will go to determine if you need to insert bolts/hardware during the build.

This greenhouse is designed for cultivation of plants/flowers. Therefore leakage, water drops and condensation inside the building are allowed. The building may only be entered by competent persons during cultivation or maintenance. Painted aluminum profiles/extrusions are powder-coated for a durable finish. The rubber strips have been treated with oil/silicone on the interior to facilitate the assembly. The building should be mounted on a solid concrete foundation deep enough to get a solid and frost-free ground. Anchoring of the foundation is vital and should be checked periodically. During winter, the roof will need to be cleared of snow or supported in a suitable way (see additional notes in "Maintenance" section). The greenhouse should be built in a location protected from strong winds. Protective gear (such as gloves) should be used during assembly in order to avoid injuries. One should at all times pay attention to the local building regulations.

This Royal Orangerie greenhouse has been engineered and manufactured in Belgium using the metric system. We strongly recommend having a metric or combination tape measure on hand during assembly. We have converted and added inches to the manual when feasible – however for the most accurate and precise measurements some do still remain in metric. Conversion of metric to inches results in unusual fractional increments or decimals that become difficult to measure on a standard US customary ruler/tape measure. Using the metric system keeps your measurements more precise. If you prefer to work only in inches, you may use a converter tool available in app stores for smart phones.

Preparing the Construction Site

A properly prepared construction site is an absolute requirement for the smooth assembly of your greenhouse!

- The ground must be stable, firm, level and free of all obstacles.
- A space of about 30 inches is required around the greenhouse for the placement of ladders and installing the glazing.

- When installing on a wall, this wall must be stable, level, and square.
- All materials for anchoring the greenhouse to a wall, on a wall, or to the foundation (such as plugs, wedge bolts, chemical anchors, etc.) are NOT provided in the kit because their use varies by region, construction site, and contractor.
- Leftover packaging, plastic, cardboard, as well as the wood of the glass pallet are not taken back.
- The greenhouse should be built in a place sheltered from wind or heavy storms.
- Always observe the locally applicable building regulations.

Basic Foundation Guidelines

- It is recommended that the greenhouse must be placed on a sufficient load-bearing (concrete) foundation that is deep enough to reach up to a solid frost-free ground.
- The dimensions of our aluminum structures always the outer dimensions of the structure.
- We recommend a concrete foundation strip foundation on the outer dimensions of the greenhouse, although a slab will work as well. It must be 100% level and flat so that the lower profile can be mounted on it without the need of much additional levelling.
- Get detailed advice on the foundation from your local professional – climate/regional requirements may vary.
- The anchoring as well as the routine checking of the condition must always be provided by the owner or operator.
- Additional information on foundation and anchoring can be found further on in the section on “Foundation and Anchoring”

Storage of the greenhouse until assembly

- The tall glass pallet must be stored in a dry place, protected from direct sunlight and any form of moisture. You may store the packaged items outdoors, but they must be securely covered and protected with a tarp from moisture and weather.
- Excessive water, moisture, humidity or condensation in the packaging can quickly lead to corrosion on profiles (from packaging) and/or glass in the form of white deposits, spots, etc.!
- The glass box is very heavy and fragile, handle it with care and always place it on a firm and level surface for safety.
- Look at the safety-instructions on the sticker on the glass box before opening the glass box.

Required/Recommend Tools

- Metric or Combination Measuring Tape (highly recommended)
- Socket wrench or spanner - 10mm (it is helpful to have multiple)
- Needle nose or other pliers (helpful when installing corner posts)
- Level
- Screwdrivers (Phillips and Flathead)
- Drill + bits
- Impact driver and 1/2” drill bit (useful to notch channel to insert missed bolts)
- Metal Saw to cut aluminum profiles when needed (i.e. low threshold kits)
- Caulk gun
- Scissors (to cut the rubber)
- Stable Ladder/s at least 6’ tall depending on the height of your greenhouse.
- Clear silicone caulk is included with the kit, you may find it desirable to use color-matched caulk (i.e. black) in some places.

Basic Assembly Order of Greenhouse

1. Preparing your site – must be level and accommodate anchoring of the structure (see section above and “Foundation and Anchoring” in section further on in this manual)
2. Unpacking, sorting, and checking components. Sorting of the profiles/extrusions according to size and shape will be helpful. The aluminum profiles (extrusions) are identified by their cross-section and length. It is helpful to have a metric or combination tape measure for this. Packages for specific accessories should be kept together – i.e. doors, windows, louvered windows, low thresholds.
3. Assembly of the complete aluminum framework, temporarily fixing it in place.
4. Checking the horizontal and vertical alignment of the structure again with a level.
5. Tightening and fastening all structural components.
6. Anchoring/securing of the greenhouse to the ground.
7. Glazing installation.

Safety Considerations

- Only assemble in dry and windless weather
- Keep children away from the construction site.

- **Glass safety**
  - During delivery you may need to assist the driver with the long narrow boxes, but do not assist with the tall glass pallet. Never try to “catch” a tall glass pallet if it is tipping, please just get out of the way.
  - Store the tall pallets of glass on firm level surfaces ONLY.
  - Keep your glass pallet dry! Moisture can cause the panes of glass to stick together and may be difficult to separate.
  - **Important! Please follow glazing removal instructions on the pallet for steps to safely remove glass panes from the pallet:**

To help guard against glass panels falling forward, Exaco recommends the following precautionary steps BEFORE unloading:

5. **Unscrew the upper wooden brace**
6. **Move it up and forward**
7. **Reattach it to the crate**
8. **Remove the lower wooden brace entirely**

Afterwards, carefully remove glass panels by pulling them down and out

(see picture →)

  - Tempered glass is surprisingly strong. The corners are the most vulnerable – please be aware of the corners when handling and installing glass.
  - Use a quality glass suction cup when handling glass, gloves are recommended.
- Watch your step! Be sure ladders are securely placed before climbing them.

Additional Remarks:

This manual is prepared for all standard constructions and is also applicable as a guide for other customized models where we recommend assembly by a skilled team. We reserve the right to make construction changes.

IMPORTANT!

- Always read the entire manual before starting
- When unpacking the profiles, do not use sharp or pointed objects to avoid damaging the paintwork.
- Always comply with local building regulations, which are the responsibility of the buyer/owner.
- Insurance: it is advisable to inform your insurance company about the installation of your greenhouse.
- During heavy snowfall, the greenhouse roof must be cleared OR sufficiently supported OR the greenhouse must be heated to maintain a temperature of 12°C. (Please see section on "Maintenance of Greenhouse" for additional information for heavy snow/wind areas)
- During a storm, all open parts should be closed (roof windows, doors, side windows, etc.).
- The black rubber strips are treated with oil on the inside, which facilitates quick and easy assembly.
- It is recommended to clean your greenhouse twice a year, check the gutters, check moving parts and oil if necessary, and clear the door's bottom rail of sand or gravel. See also "Maintenance of Greenhouse" section.

Helpful Suggestions

- Understand which greenhouse accessories you have and where they will be placed. There will be prompts throughout the manual to insert bolts during assembly for doors, window, shelves, shade cloth, misting system, etc.
- If you forget to add a bolt where one is needed, you may create an insertion point in the channel with a ½" drill bit and an impact driver. If possible, do it in a place that will be covered by the piece you will be attaching. We do also have hammerhead/T bolts available for purchase that may be added later.
- Look through the entire manual and watch the assembly video to help you prepare and understand the greenhouse assembly process.
- You may start with assembly of the doors and roof windows. This helps create familiarity with the materials and construction process and gives a head start when it comes to assembly time.
- **The stainless-steel hardware included with your greenhouse is preferred for damp greenhouse settings. This high-quality metal is malleable however, and the heads of the screws can be stripped or break if proper precautions are not taken. Set your driver (impact driver is preferred) to a low setting and hand tighten the screw at the end to avoid snapping the screw head.**

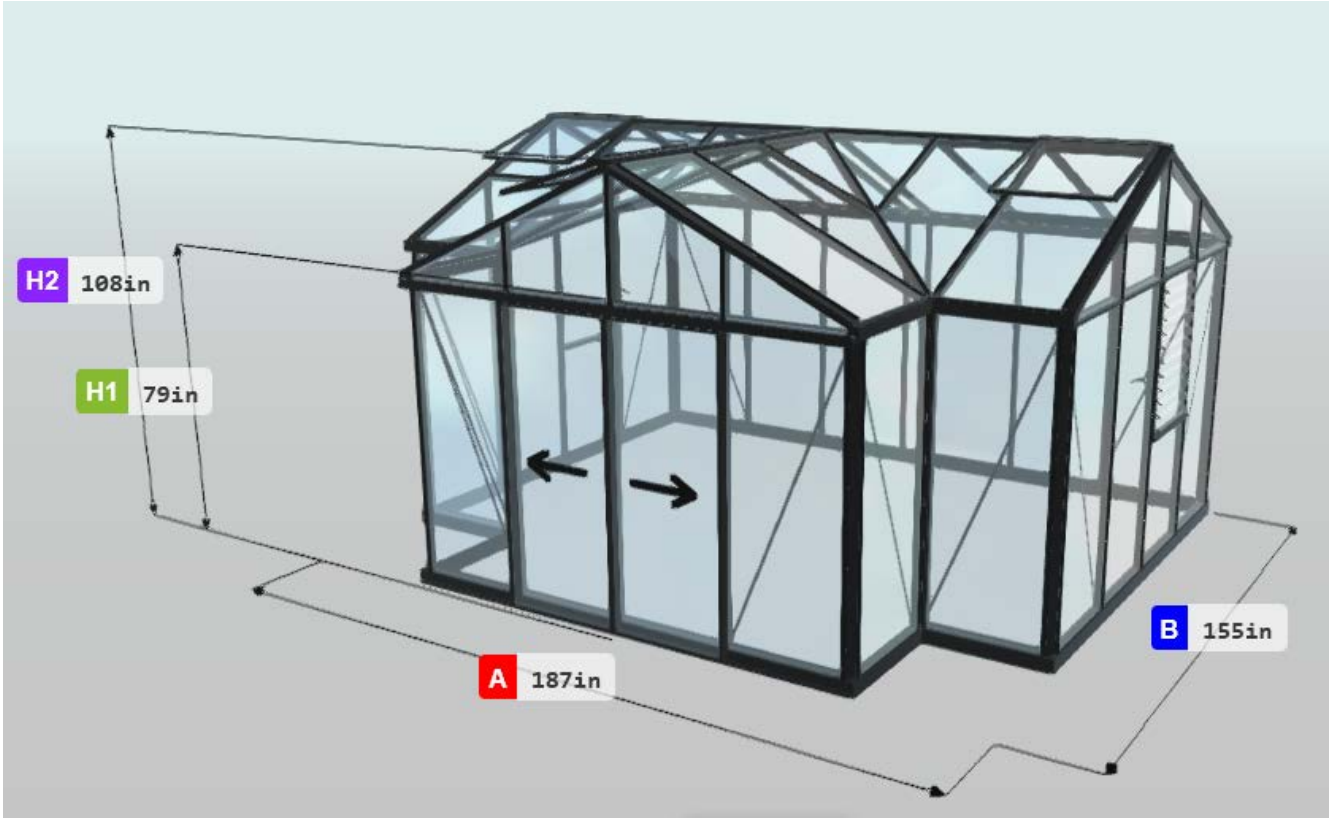
Please thoroughly read the email that was sent to you from Exaco customer service for additional addendums to the manual and other important information.

Refer to the Exaco YouTube Playlist for the Victorian Greenhouse for animated assembly videos as well as specific installation videos regarding your greenhouse. This playlist is also accessible via the QR code to the left.

Questions? Need Assembly Support?

Please call Exaco at 877-760-8500 or email customerservice@exaco.com.

The Standard Royal Victorian Orangerie Greenhouse (12’10” deep x 15’7” wide) includes the following: foundation frame/base, double sliding door, four roof vents (2 automatic openers, 2 manual spindle openers), two louvered windows (with auto openers and winter covers).



Doors

Royal Orangerie doors may be placed in any bay, but the double sliding doors make the most sense for this model in one of the gable ends. **Exceptions apply for corner placement, please call Exaco to discuss if you are considering an alternate placement.** Upgrades to additional single or double sliding doors and/or hinged doors are available.

Door Options:

- **Sliding Doors:** Single or double options are available. The sliding door/s of the greenhouse hang/slide along the outside of the greenhouse and feature brush weatherstripping. Keyed locks are included. Double doors will have no center support. For standard kits, the sliding door threshold will be the 4 ½” high base frame unless a low threshold kit (see below) is purchased. If you are building a stem wall, you will need to upgrade to hinged doors – see following section labeled “Drop Door Kits”.
- **Low Threshold Kits:** Standard greenhouse sliding doors will have the 4 ½” base frame as the door threshold. The upgrade to a low threshold kit requires cutting the base frame at the doorway to allow installation of a 1” high threshold to secure the sliding door guide and make walking in and out of the greenhouse easier. Available for single or double sliding doors.

- **Hinged Doors:** These are a very handsome upgrade, but are significantly more challenging. We recommend installation by a highly skilled handyman. The hinged doors can be time-consuming, require adjustments, and special tools (such as a grinder) may be needed. It is similar to a commercial door. The doors are inset into the frame of the greenhouse and are further weatherproofed with rubber gaskets. The doors feature their own door jamb including low threshold and high-quality adjustable hinges for easier hanging. Traditional handles with a keyed lock will keep your greenhouse secure. Double or single hinged doors are available. A hinged door should be used for greenhouses placed on stem walls. It is preferable to order a hinged door with the greenhouse as the hinged doors must be sent via freight truck and shipping costs can be prohibitive if shipped at a later date.

Drop Door Kits for Installation on a Knee/Stem Wall

- You may choose to place your "ground mount" greenhouse on a knee/stem wall. If you do this, you will need to purchase a "drop door" kit. This will give you framing pieces needed to frame a header above your existing door when it is brought down to ground level.
- The standard drop door kit allows you to place the greenhouse on a knee wall height of your choice – we give enough material for up to a 30" high knee wall. If you are building a taller wall, let us know at the time of order and we can include additional material.

NOTE: **The Drop Door kit is ONLY hardware and does not include the glazing for above the door.** The reason for this is the knee wall height is custom to your site, so the glass for above the door will be a custom size. It is best to wait until the greenhouse is fully built and then order the header glass so you can be sure of the exact size needed (slight variations can happen during builds). The glass needs to be tempered safety glass with a width of 28 ¾" and thickness of 3/16" or ¼" – the height will be determined by your build. Please reach out to a local glass shop to order – we do not have custom sizes. You cannot cut any of the tempered glass pieces to fit, they will shatter into many pieces.

- Hinged doors are strongly recommended when placing the greenhouse on a knee wall. Hinged doors are better suited for this application than sliding doors for the following reasons:
    - Hinged doors are more forgiving of any texture/lip/capstone/veneer that may be on your knee wall. They allow about 1" of clearance beyond the exterior of your greenhouse for the above items.
    - Hinged doors are designed to open 180 degrees. If you happen to build your wall beyond the exterior dimensions of the greenhouse, it may restrict the width of the opening somewhere between 90 to 180 degrees – however they will still open at least 90 degrees.
    - Sliding doors slide along the outside of the greenhouse. If you place a sliding door on a knee wall – the final exterior dimensions of your knee wall (including any capstone/lip/veneer) MUST match the exterior dimensions of your greenhouse footprint so the door can slide along the outside of your wall.
    - Most importantly, sliding doors need to have a rail mounted at the top in which the wheels roll. This holds the weight of the door. When placing a sliding door on a knee wall – there is not an ideal way to mount the top rail to the greenhouse, so we recommend using a metal strap to support this rail - attached to the horizontal structural piece above the door (gutter extrusion or gable horizontal profile). This will require customization on your side and possibly additional materials and may not be as desirable as the easily dropped hinged doors.

- Please reference the table of contents for the pages which address how a drop door kits and knee walls under “Foundation Measurement and Planning”: “Planning/Building a Stem Wall” and “Hinged Door/s on a Stem Wall with Drop Door Kit”

Windows

Each greenhouse will have a combination of roof vents and a louver side wall window. The roof vents allow hot air up at the ridge to escape, while the louver side wall window acts as an intake for cooler air. The roof vents are usually staggered and some placed on both sides of the ridge beam. Occasionally if there is prevailing wind from one direction, more windows may be placed on that side. We recommend the manual spindle opener be used for windows facing strong gusts of wind. The windows cannot be placed side by side. There are a variety of openers available for roof vent windows.

- **Roof Vent Openers**
  - Manual Stick openers - these will be packaged in every roof window kit. They are entry level openers that work on a peg/notch system. Not recommended for daily use but may be used to “lock down” the window if needed (auto openers must be disengaged or your piston will burst).
  - Manual Spindle openers - a high-quality stainless steel threaded rod to securely crank the window to desired open position with use of a removable long handle. These are heavy-duty and will hold up well to strong winds if needed.
  - Automatic Opener (Ventomax) - this opener utilizes a piston that is filled with oil that expands between 68 to 70 degrees. The oil pushes out the rod of the piston to open the window. When the piston is engaged, there is no manual control of the window. If there is rain when the temperature is above 68 in the greenhouse, it is likely that the roof vent will be open and rain will come in. During the cold months the pistons may be disengaged if heating the greenhouse.
- **Louver/Jalousie Side Wall Window**
  - Placed in a sidewall bay, often opposite the door for a cross breeze
  - Comes with a manual opener installed or included auto opener (Sesam Liberty) may be installed. The Sesam Liberty auto opener utilizes a piston that is filled with oil that expands between 68 to 70 degrees. The oil pushes out the rod of the piston to open the window. When the piston is engaged, there is no manual control of the window. If there is rain when the temperature is above 68 in the greenhouse, it is likely that the roof vent will be open and rain may come in. During the cold months the pistons may be disengaged if heating the greenhouse.
  - If you are installing an exhaust fan, the louvered window with auto opener may act as your intake vent.
- **Push Out/Top Hang Side Wall Window** - optional upgrade - It hangs from a hinge at the top and the bottom pushes out. An auto opener may be used.

Optional Accessories

There are a variety of optional accessories available, some of which are listed below. Some retailers may bundle a shadecloth/shelves with their greenhouse kits.

- Shadecloth - interior shade curtains hang from the gutters and ridge beam. Sliders installed in these channels allow the curtains to be pulled open/closed.
- Shelves

    - Seed tray/Seedbed - in Orangeries, the seed tray installs along one of the gable walls at your preferred height. The seed tray is 20” wide and has a 4” planting depth with a white polycarbonate bottom to allow for drainage. It is best to order at the same time as the greenhouse as it has to ship via freight truck due to the length.
    - Top Shelf - is 4” wide and it installs along one of the gable walls, either above the seed tray or on its own at your preferred height. It is best to order at the same time as the greenhouse as it has to ship via freight truck due to the length.
    - Slat shelves - extremely flexible in terms of height, usage, and all around placement. They are 59” long (across two sections of glass) and may be run end to end for a long stretch of shelving. They may also be centered across 3 panes of glass if desired. Slat design works well for holding pots/planters or it may be used for a work surface. These shelves may be shipped via FedEx or UPS.
        - 2 Slat Shelves - 9” wide x 59” long
        - 5 Slat Shelves - 21” wide x 59” long
- Fly Screens are a brand new addition from Janssens
    - Roof Window Fly Screen - easily installs into roof vent opening
    - Louver Window Fly Screen - clips onto outside of louvered window
    - Side Window Fly Screen – easily installs into the window opening
- Ventilation - An exhaust fan may be installed in the gable of the greenhouse to blow out the hottest air. Replace a glass pane with a lexan panel into which you can mount the fan (polycarbonate greenhouse panels may be cut to accommodate the fan). Many exhaust fans will use an external thermostat to control at what temperature it turns on and off. Place an exhaust fan opposite your louver window to create a cross breeze. For the most effective cross breeze, it is often recommended to close window vents to force airflow through your louver window.
- Heaters - see below “Heating the Greenhouse”

Placement of the Greenhouse

The placement of the greenhouse varies by intended usage, climate, location, and space available. There is a wealth of information to be found online on this subject, here are some considerations:

- Will your greenhouse be in full sun or get afternoon shade? Glass greenhouses do what they are intended to do - heat up quickly on sunny days. Great for the winter, but depending on your climate, it can be a challenge during summer months. Think about what you will be growing as well as the seasonal usage of your new greenhouse to determine appropriate sun exposure. It may help to watch the seasonal variations of sun angles in your yard to determine the placement.
- Depending on what you are growing and where you are located, you may wish to orient your greenhouse east/west or north/south - many garden bloggers have weighed in on this and research may help you consider the options. In many areas of the US, we do get plenty of hours of sunlight. Some users end up placing the greenhouse based on layout/space available, aesthetics and convenience.
- The site must be level. If it is not, you will need to prepare the area to provide a firm and level surface to construct your greenhouse. This may include building a retaining wall or placing your greenhouse on a stem wall - or just leveling out the site. Consider rainwater flow in your yard if you are in a hilly area.

Foundation and Anchoring

All greenhouses must be securely anchored. The Royal Orangerie will include 8 corner anchors attached to the interior of the foundation/base frame and extend an additional 12" below ground level. In very high wind areas or to meet the structural specifications for a permit - additional corner anchors may be purchased (PRO210) for use at all vertical members.

The manufacturer recommends an 8" wide concrete strip foundation that extends to the frostline. Please consult your local building codes for this information. It is recommended to leave a 4" diameter hole at the corner for the anchors to be embedded in concrete after the greenhouse frame is assembled and it is confirmed to be level and square.

Alternatively, the corner anchors may be trimmed off at ground level and cut in sections to be used as L brackets to secure the greenhouse frame to your anchoring surface with the appropriate hardware.

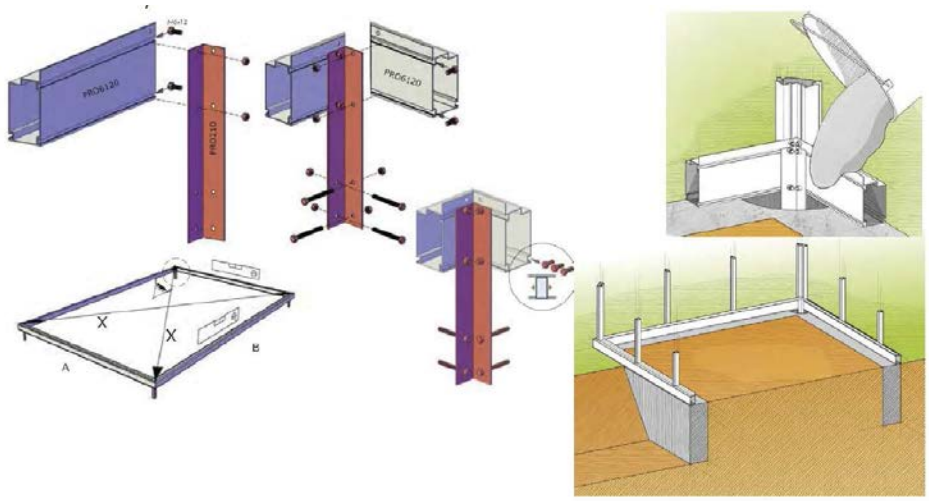
Some users have chosen a variety of alternative anchoring methods based on their climate, location, soil composition, and site considerations. These include full concrete slabs, concrete footers, pier and beam constructions, and even timbers. If you are considering the use of wood in your construction, be aware that your greenhouse will likely outlast your wood. If you use pressure treated wood, it is recommended to use a barrier material between the wood and the aluminum frame. When planning your anchoring method, keep in mind frost line/ground heaving, wind load, greenhouse location, ground composition, weather, climate, and local building code. If unsure, you should consult a local and experienced builder. Warranty coverage does not extend to damage resulting from improper anchoring of the greenhouse outside of manufacturer's recommendations (see above).

If a permit is needed in your area, we do have Texas-stamped structural certification letters and permit sets for most of our greenhouses. We may be able to obtain other state stamped documents, however if you need them specific to your state, we do not cover this expense. Please contact Exaco if structural documents are needed.

Anchoring Options (detail):

OPTION 1: Embedding the anchors into concrete – most secure, manufacturer recommended.

Leave a 4"-6" diameter hole for the anchors to be embedded in concrete after the greenhouse Is assembled and confirmed to be level and square. PVC pipe or Sonotube (at least 4" wide) may help to leave the anchor hole in the concrete. The PVC or Sonotube must be at least 4" wide in diameter.



OPTION 2: Cutting the anchors and use concrete screws/self-tapping screws

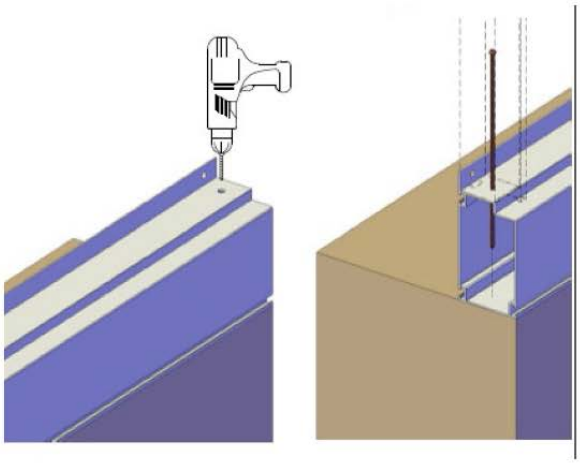
VIDEO: https://youtu.be/3W62iOgLVG4?t=59 (may be found at minute 0:59 in the Exaco animated assembly video.

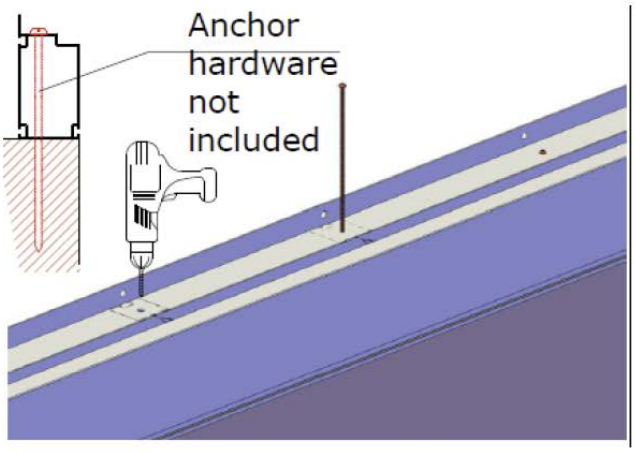
Steps:

- You will have (4) 15 3/4" long L brackets. VI 36 & 46 will have (6) long L Brackets-Cut off 4" of the L brackets to connect the foundation frame pieces together.
- Cut the remaining 11 3/4" into thirds and flip horizontally to mount the top half into the foundation frame and the bottom half into the concrete or other foundation.
- Use self-tapping screws or pre-drill and use normal screws to mount the top part into the foundation frame of the greenhouse.
- Use concrete anchor screws (link provided below) to attach the bottom part to your concrete. We HIGHLY recommend predrilling and using a hammer drill to drill the anchors in.
- TapCon Concrete Anchor Screws: https://www.homedepot.com/p/Tapcon-1-4-in-x-1-3-4-in-410-Stainless-Steel-Hex-Head-Concrete-Anchors-8-Pack-26120/202097033

OPTION 3: Long Anchor into foundation frame

Drill access holes as shown to the bottom right. Be sure to line these up with the holes in the vertical flange so they will be covered by a glazing bar (PRO1456). Use appropriate fasteners for your wall (not included). You may also leave holes at the corners to embed the long PRO210 anchors in concrete after the greenhouse is built. This is similar to what is shown for the ground mount version.





Flooring

The greenhouse does not include flooring material, allowing it to be customized to your needs and use. When planning your flooring, consider the intended use of the greenhouse, the plants that will be grown, drainage, heat sink benefits of the material, insulation, weed blocking, as well as aesthetics. If you use a natural flooring option - consider including a weed barrier. Here are a variety flooring options to consider:

- Soil - this is a great option if you have fertile soil and wish to plant directly into the ground. This can be used in combination with other options below.
- Pea gravel, crushed stone, etc. - provides natural drainage and some crushed rocks help with weed control
- Pavers and bricks - A very nice looking option with natural drainage capabilities. May also be used for paths in combination with in ground planting areas.

- Wood - Looks very nice, but requires more maintenance. Keep in mind that the wood may deteriorate before the greenhouse lifespan is over.
- Full concrete slab - This can double as your anchoring surface as well. Keep in mind that greenhouses can be wet environments so texture and drainage need to be considered.
- Tiling - this can be a beautiful option as well. If your greenhouse is a functioning greenhouse, consider water drainage. Tile may get very slippery when wet.

Water and Electricity

You may choose to bring water and electricity into your greenhouse. If possible, it is recommended to plan for this ahead of time so that you can plumb/wire underneath the base frame of the greenhouse. Generally users will bring electricity under the frame at the most convenient location and then attach conduit to the frame of the greenhouse to the desired location. Custom matched spray paint is available if needed.

The irrigation/misting system (included with Royal Victorians) may be directly plumbed or attached to a hose with a hose clamp (available at garden stores). The hookup end of the irrigation pipe will be at one of the gable ends, near the ridge. It is helpful to purchase a hose timer so watering can be automated.

Ventilation and Cooling of Greenhouse

Glass greenhouses are effective at heating up quickly on summer days. If you discover your greenhouse is becoming warmer than you desire, here are some options for cooling.

- Shadecloth - Janssens makes an interior shadecloth system
- Exhaust Fan - recommended to be installed in the gable of the greenhouse to blow out the hottest air. Replace a glass pane with a lexan panel into which you can mount the fan. Many exhaust fans will use an external thermostat to control at what temperature it turns on and off. Place the exhaust fan opposite your louver window to create a cross breeze. For the most effective cross breeze, it is often recommended to close window vents to force airflow through your louver window.
- Misting System - in dry environments, a misting system turning on at the hottest point of the day can cool a greenhouse up to 15 degrees.
- Tinting - Aftermarket tinting may be applied to the glass panes
- Whitewash - available from some greenhouse retailers, this can be washed off when the hot season is over.
- Exterior shade cloth - an exterior shade cloth, though not as beautiful, can be highly effective. An aluminet shade cloth is a metallic woven shade cloth that goes up and over the outside of the greenhouse. The metallic surface reflects the heat of the sun's rays before they get inside the greenhouse, while also providing shade.

Heating the greenhouse

Although the greenhouse heats up quickly during sunny days, you will likely find you will need to provide supplemental heat during cold winter nights and cold cloudy days.

- Heaters - electrical, propane and wood stoves have all been used. Be sure to properly vent according to manufacturer instructions. Find a BTU calculator online to determine how

powerful a heater you need. This is based on a variety of factors including greenhouse material, size, location/climate, low temperatures and desired goal temperature.

- Heat Sink - The more mass you have inside your greenhouse, the more heat can be absorbed during the warm day to release at night. This can help mitigate huge temperature swings during light frost, but can also reduce your heating costs. Easy ways to add mass that can retain heat are raised beds, a large dark water tank, or organic material. There is much information online about planning/designing more in depth heat sinks in your greenhouse - including flooring choices.
- Resources on insulated floors and geothermal heat can be found on many garden blogs.

Can I Use My Greenhouse as an Additional Living Space?

- These structures are designed to be a greenhouse first and foremost. As packaged, the greenhouse is not designed to be water/air tight. Greenhouse plants do benefit from a turn of air. You will need to do some extra sealing with silicone on the roof around the glass to achieve watertightness.
- We recommend any furniture be indoor/outdoor and that fine wood furniture/electronics be avoided or sufficiently protected.
- The glass is single pane, so there is a good chance for condensation on the inside that might drip. The roof windows do have auto openers, so it is likely the roof vents will be open during a rainstorm if the temperature in the greenhouse is above 68 degrees. You can switch to all manual openers if preferred.
- On sunny days, glass greenhouses can get warm very quickly. Depending on your climate, you will likely be fighting the heat in the summer (late spring/early fall).

It has been done, but you will need to make customized adjustments such as extra sealing, climate control, window tinting and heating. Indoor/outdoor furnishings are strongly recommended. Exaco will not be held responsible for any damages.

Maintenance of Greenhouse

The following will help keep your greenhouse in tip top shape:

- **WINTER/SNOW/ICE CONSIDERATIONS:**
    - The roof will need to be cleared of snow, this removes weight from the roof and also allows the sun to shine in and heat your greenhouse
    - Heating your greenhouse may also help some of the snow melt/slide off to assist in keeping the roof clear. If you are heating the greenhouse, you may wish to disengage your pistons so the roof vents do not open.
    - If you are expecting heavy snowfall that you will not be able to clear in a timely manner, we recommend bracing your ridge beam with a 2x4 in the center to help support the weight. Snow should still be cleared as soon as it is possible.
    - If you are in an area that routinely gets significant snow there are some options to strengthen and support your greenhouse:
        - Install self-tapping screws in addition to the bolts where the rafters meet the ridge beam and the gutters (noted in assembly manual).
        - Purchase extra spandrels/snow supports for your greenhouse for the ridge and gutters.

        - Add a stainless-steel cable with a turnbuckle connecting opposite sidewalls/spandrels to prevent the sidewalls from bowing out if there is excessive weight on the roof.
- Pistons and openers - Several times each year oil your piston rods, threading, and moving parts of your openers. You may use WD40 or even olive oil. If your pistons stop opening your windows, you likely need to oil them to loosen them up.
- Glass Maintenance
    - Cleaning Glass - use a gentle cleaner, such as Palmolive dish soap with a soft cloth. A squeegee with a long handle is helpful as well. Distilled white vinegar can be used to remove hard water spotting.
    - Replacement Glass - if you need to replace a piece of broken glass, please refer to the glass spec sheet in this manual. Replacement panes of 3/16" standard tempered safety glass should be ordered from a local glass shop. Exaco will not ship large pieces of glass, locally ordered replacement panes of standard tempered safety glass will match the original panes.
- Polycarbonate Cleaning - use a gentle cleaner, such as Palmolive dish soap with a soft cloth.

Questions? Need Assembly Support?
Please call Exaco at 877-760-8500 or email customerservice@exaco.com.

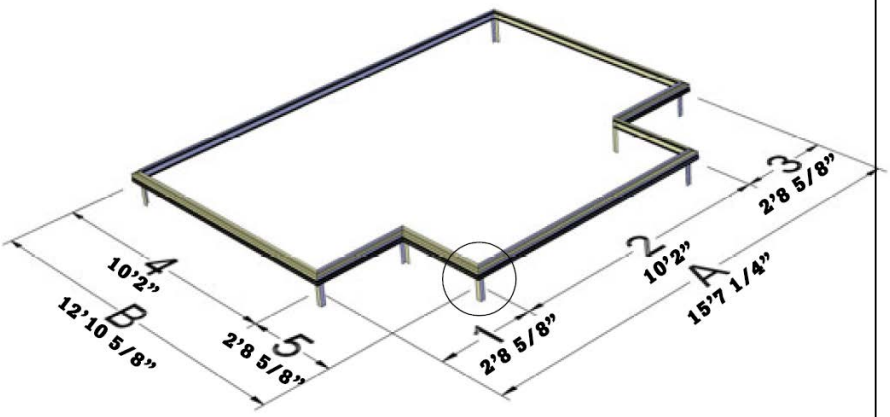
Standard Royal Orangerie

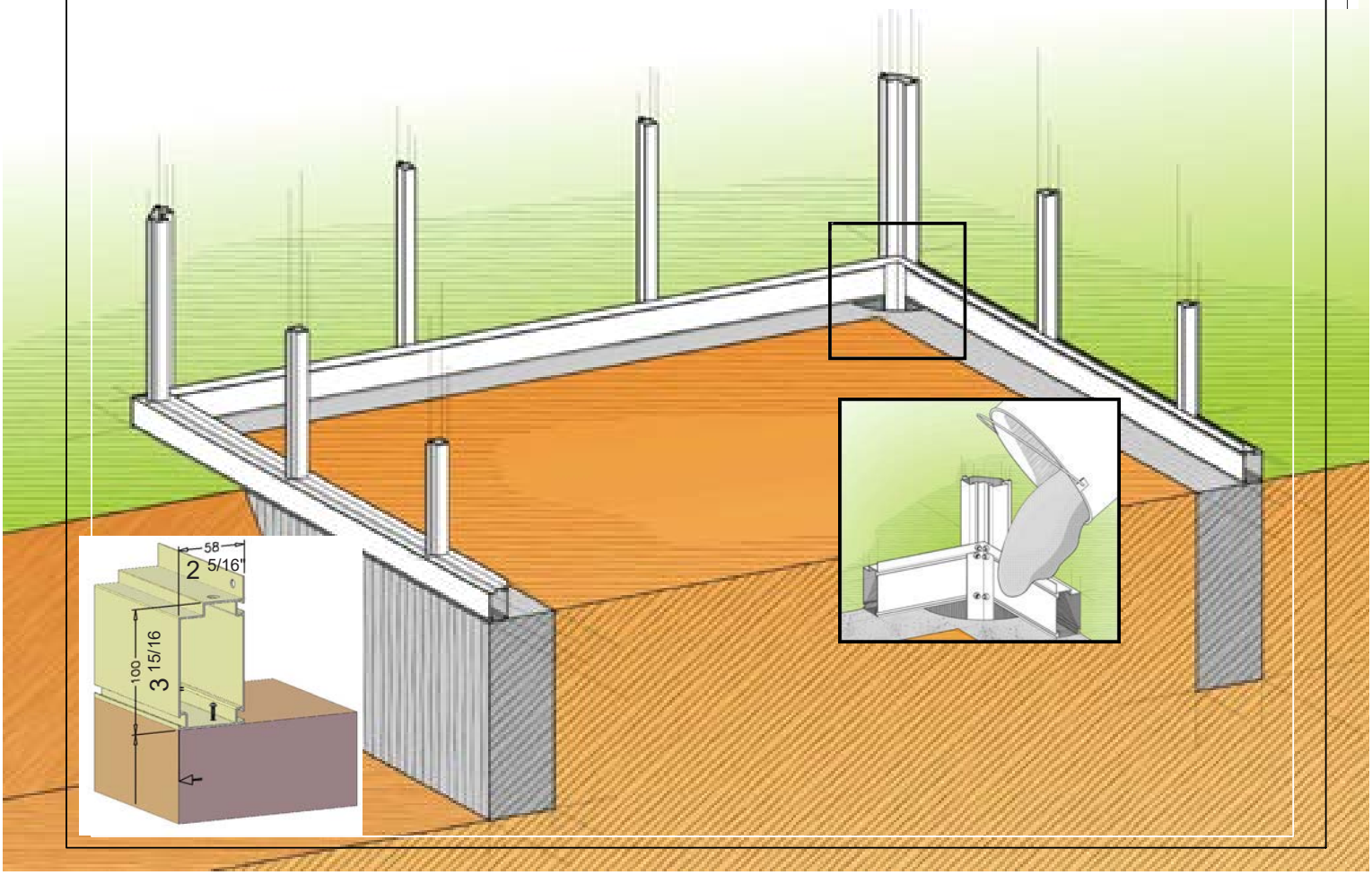
Please call Exaco for measurements if you have a custom greenhouse.

Notes:

- *Do not set anchors in concrete until the entire greenhouse frame is complete, level and square. You will need some play to attach the uprights.*
- *It is recommended to build your foundation down to the frost line in your area and/or consult a local contractor for recommendations.*
- *Greenhouse base frame is 2.25" wide*
- *Corner anchor posts are 1.5" x 1.5". They attach at the interior corners of the base frame, then extend 12" below ground. Bolts attach to the bottom of the anchor to be a "catch" in the concrete. We recommend leaving a 4 to 6" hole in your concrete for the anchor, centered on the inside corner. Do not embed the corner anchors into concrete until the greenhouse structure is built, leveled and square.*
- *Embedding the corner anchor into concrete is the most secure method, although you may choose to trim them off, cut in half, and use as L brackets to attach to the greenhouse and foundation with the appropriate stainless steel screws (i.e. Tap Con screws for concrete)*

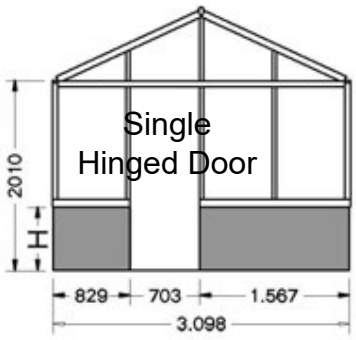
A= 1+2+3 15'7 1/4"	1 829mm / 2'8 5/8" 2 3098mm / 10'2" 3 829mm / 2'8 5/8"
B = 4+5 12'10 5/8"	4 3098mm / 10'2" 5 829mm / 2'8 5/8"

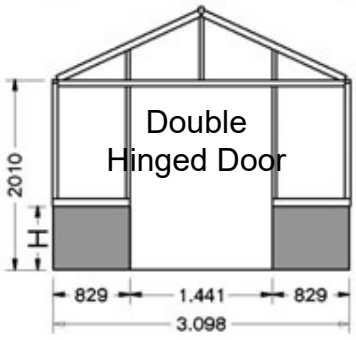


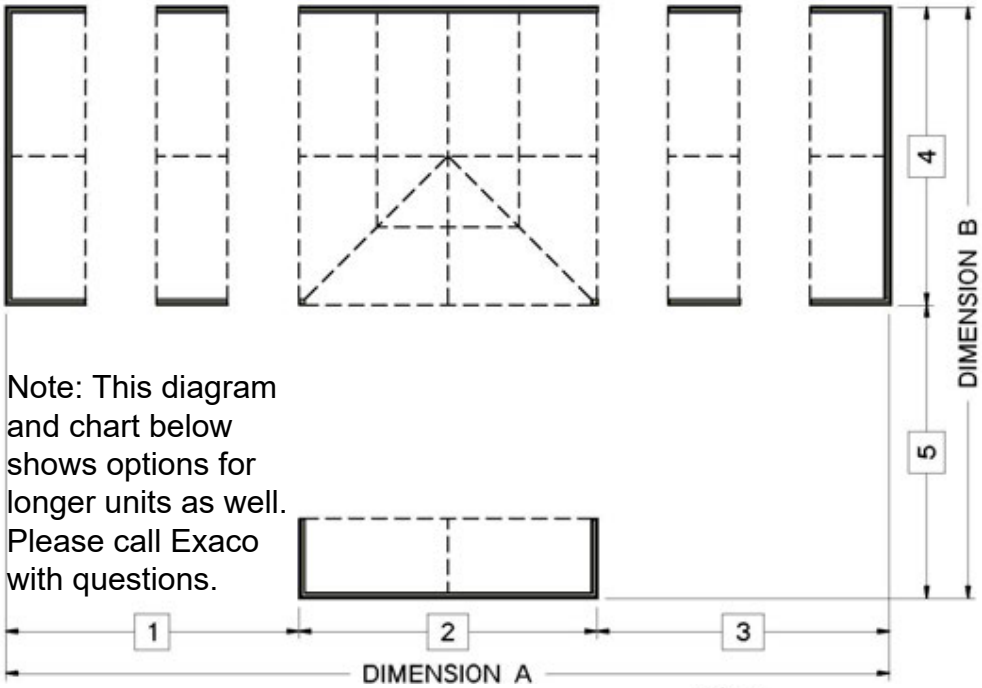


Option: Building on a knee wall

Note: You will need to upgrade to a hinged door and door drop kit. See also next page.

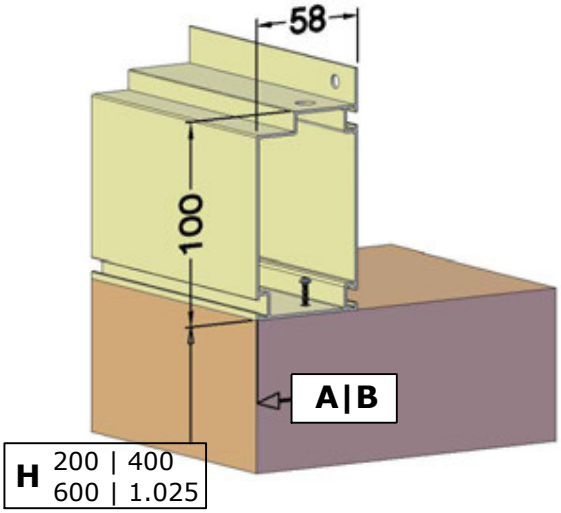




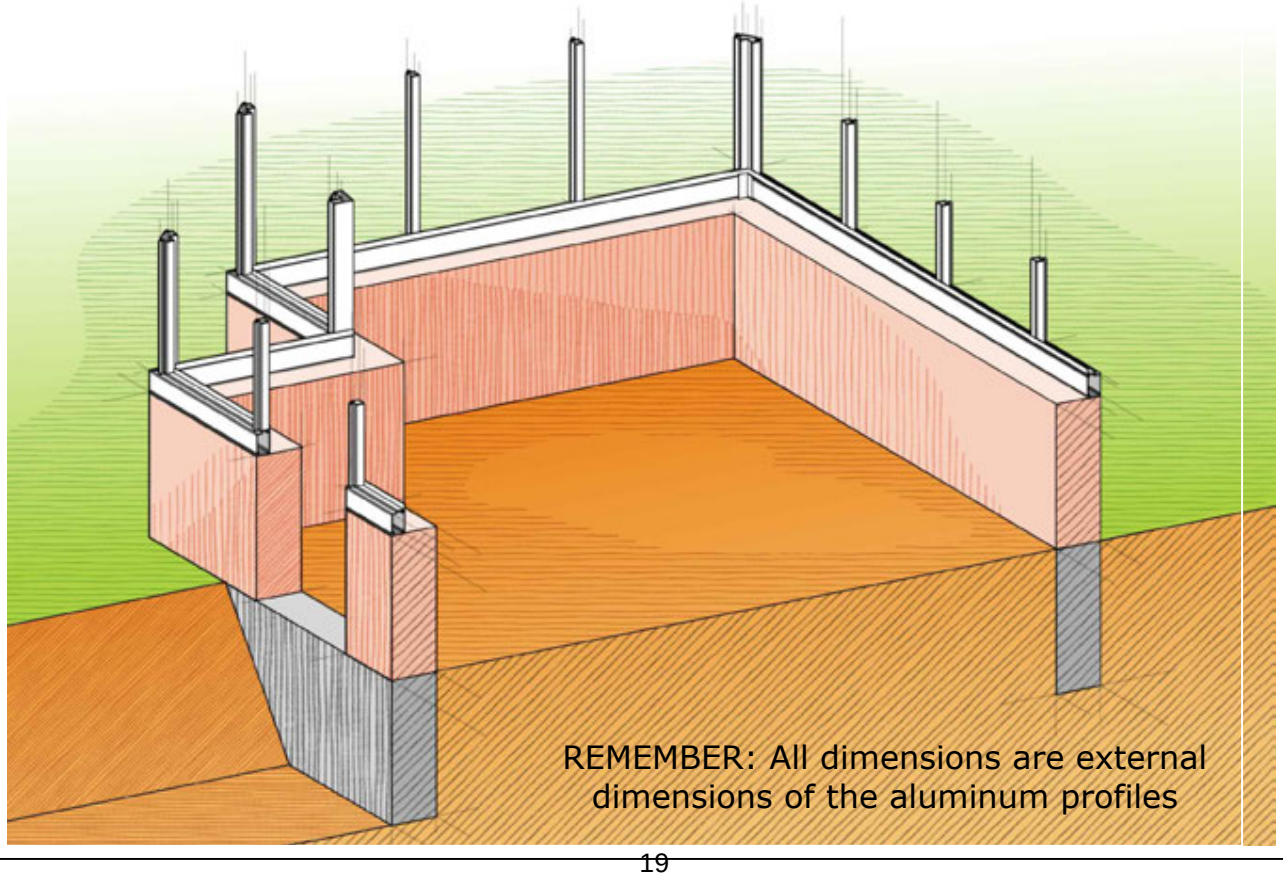


Note: This diagram and chart below shows options for longer units as well. Please call Exaco with questions.

HELIOS T MUR + EOS T MUR		
A = 1+2+3	1	829mm + ... x 738mm
	2	3.098mm
	3	829mm + ... x 738mm
B = 4+5	4	3.098mm
	5	829mm



H 200 | 400
600 | 1.025

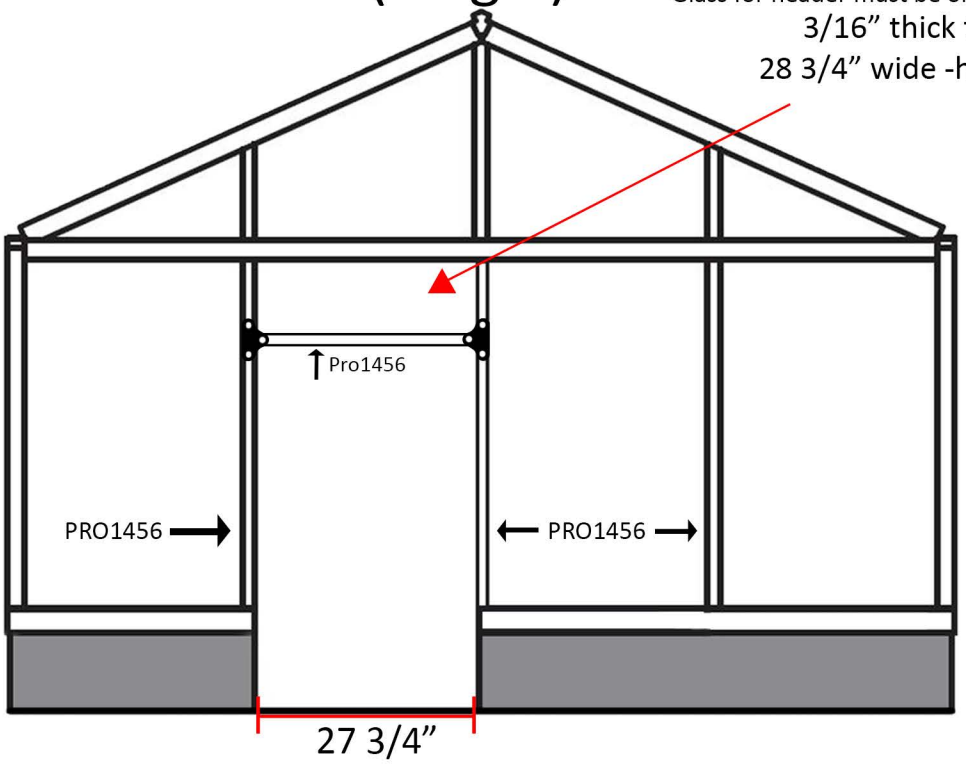


Hinged door extension installation - View from inside Greenhouse

Can be installed on long or short gable end of greenhouse
(see door considerations for VI36/VI46 at front of manual)

Glass for header must be ordered locally due to custom wall height
3/16" thick tempered safety glass
28 3/4" wide -height determined by wall

(Single)

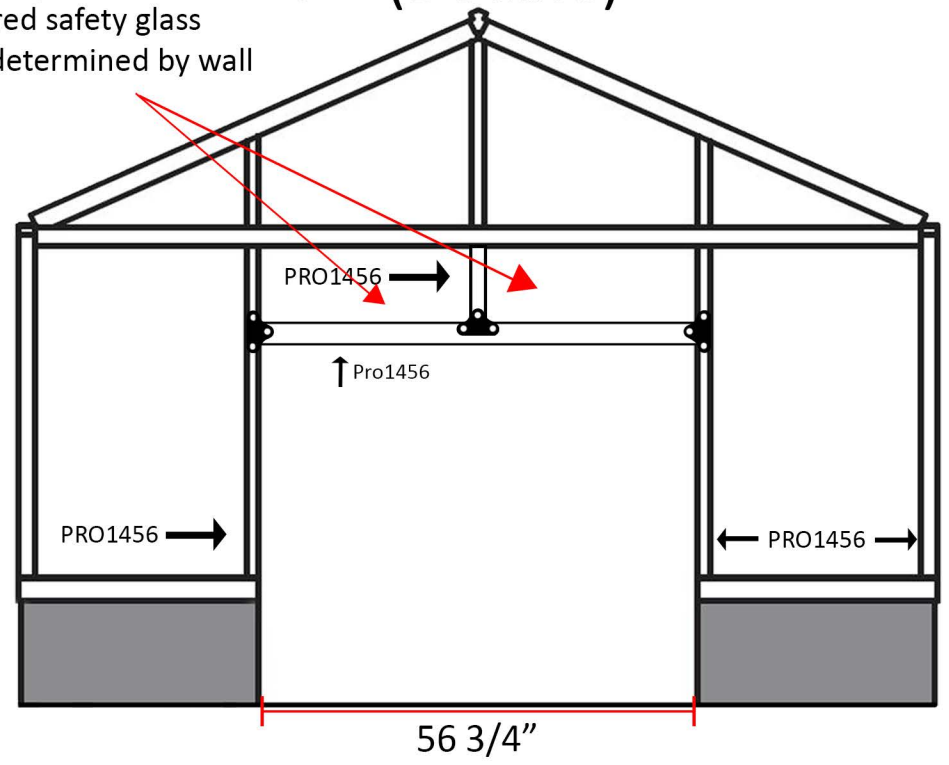


-Opening will be 27 3/4" or 703 mm wide

Kit will include:

(1) PRO1456
(2) 3-Hole Brackets
Nuts & Bolts

(Double)



-Opening will be 56 3/4" or 1441 mm wide

Kit will include:

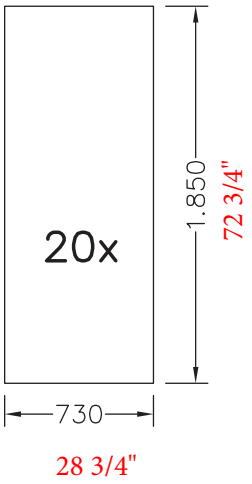
(1) PRO1456
(1) 30" Pro1456 (cut to match the height of stem wall)
(3) 3-Hole Brackets
Nuts & Bolts

Hinged door will include its own door jamb - place the horizontal PRO1456 on top of the door jamb.
move to manual for door assembly & installation

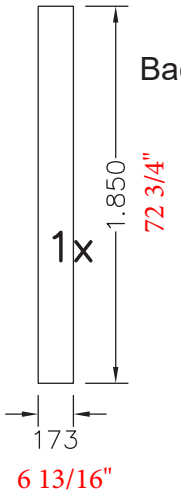
Royal Orangerie Glass Sizes (Helios)- 4mm thick (3/16")

Glass counts are for standard models - if you have changed any options on your greenhouse, counts may vary. If you have an Antique Orangerie with narrow glass, your glass sizes will be different. Please reach out to Exaco if you need these sizes.

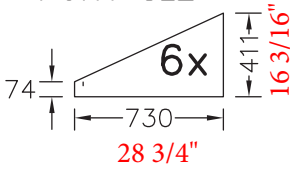
Side Wall/Sliding Door

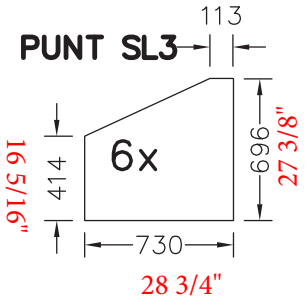


Back Middle Glass



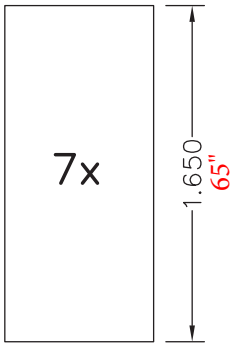
Small Gable Piece



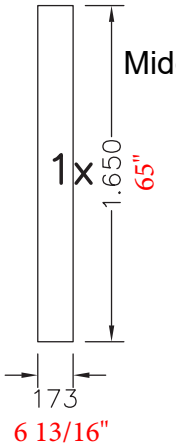


Large Gable Piece

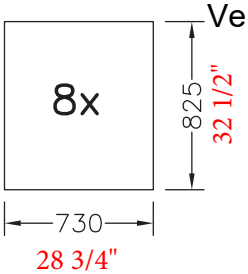
Roof Glass



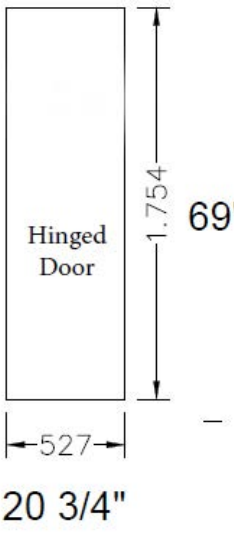
Middle Roof Glass

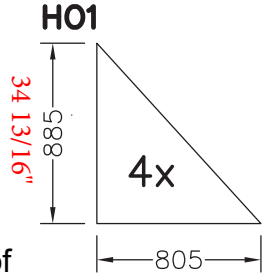


Roof Vent/ Below Vent/ Below Louvre

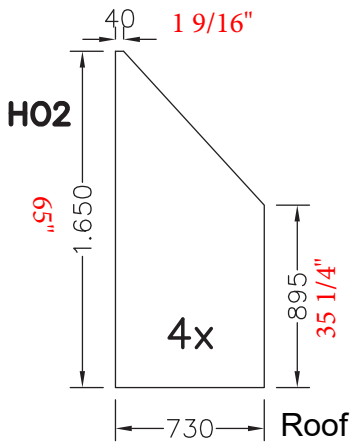


OPTIONAL: Hinged door glass panes are 527mm x 1754mm (20 3/4" x 69")



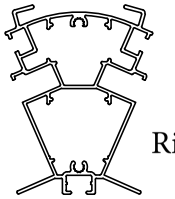


Small Roof Valley Piece



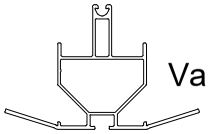
Roof Valley Piece

Key to Profile (Extrusion) Placement



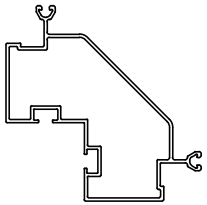
Ridge Beam

PRO6760



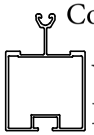
Valley Beam

PRO41942



PRO6578

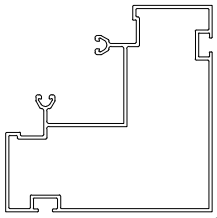
Corner Posts



Vertical Glazing Beam

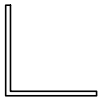
PRO1456

PRO20362 Wind Brace



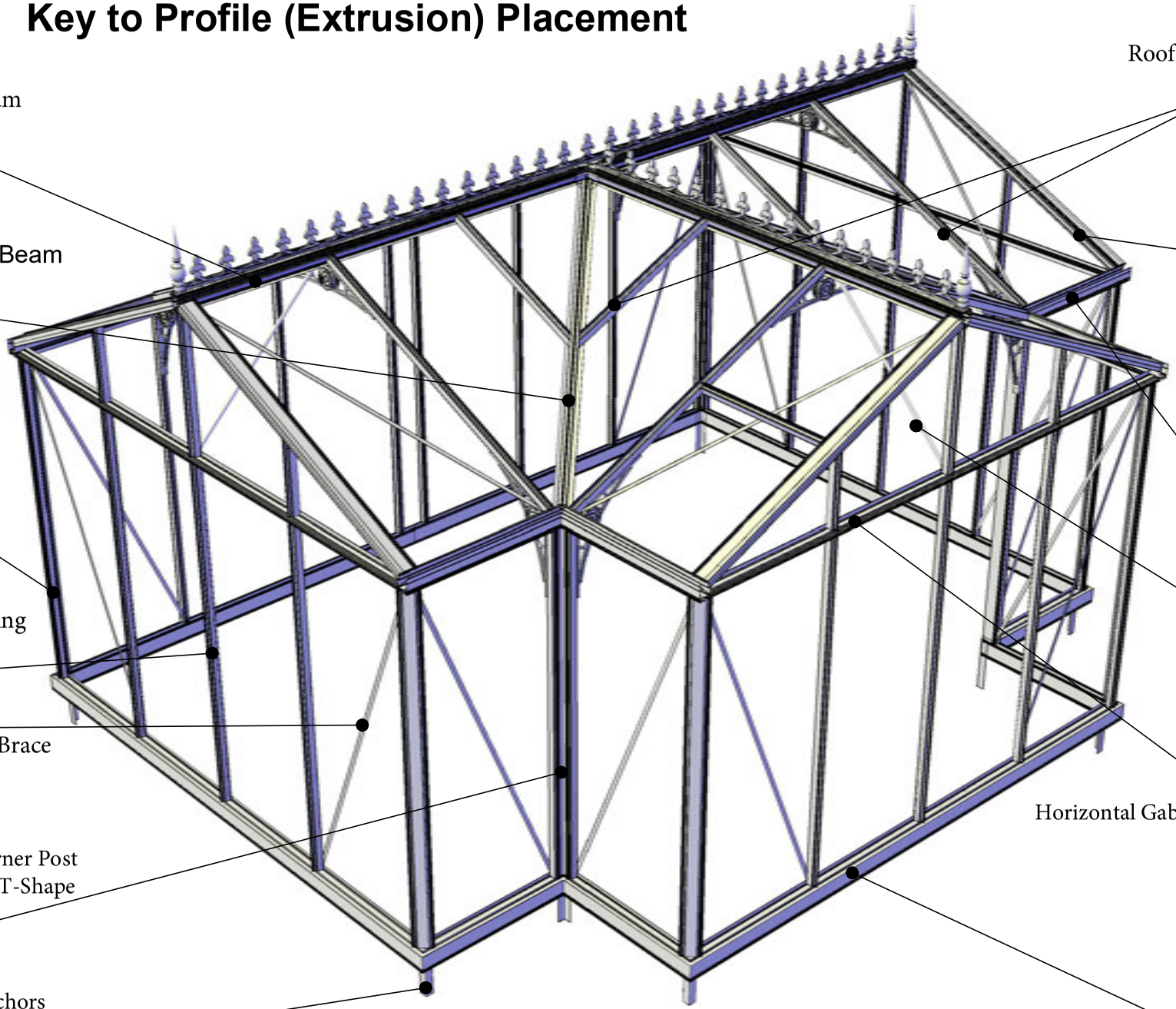
Corner Post for T-Shape

PRO40633

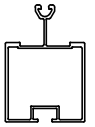


Corner Anchors
(Extend 12" below ground level)

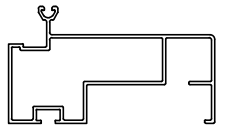
PRO210



Roof Glazing Bar

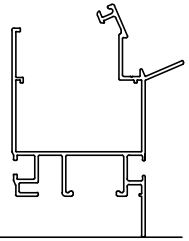


PRO1456



PRO6918

Roof Endbar

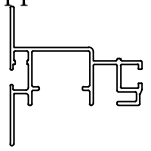


PRO20227

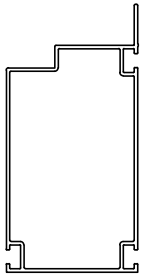
Gutter

Ø 19

Support Brace



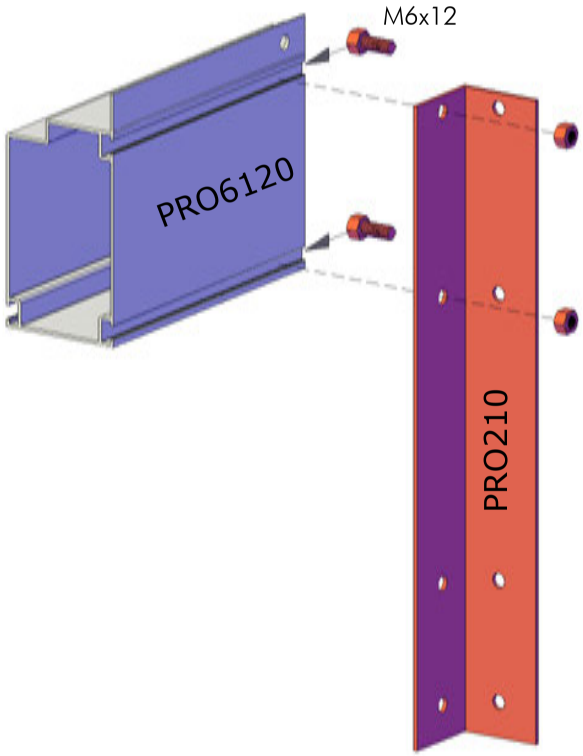
Horizontal Gable Bar PRO20229

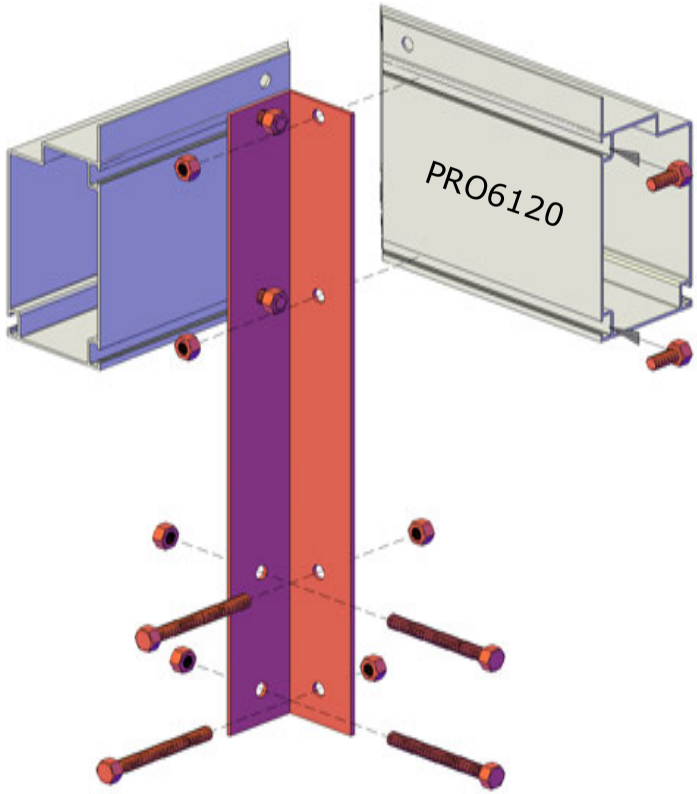


PRO6120

Foundation Frame

22

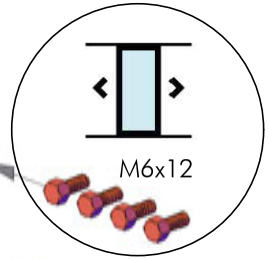


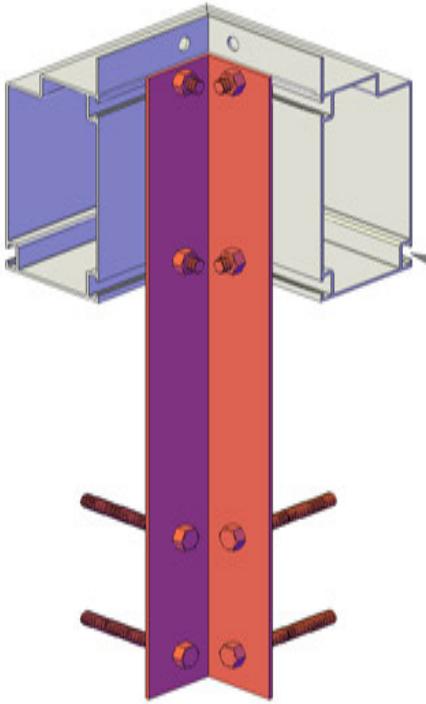


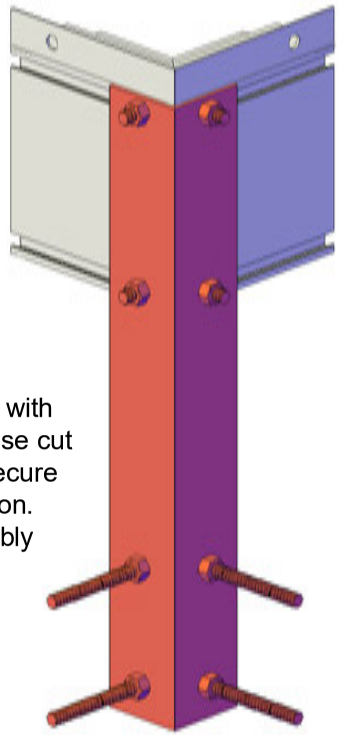
Note: When assembling the foundation in this step, only hand-tighten the nuts. The corners may need to be slightly loose to attach the corner uprights (PRO6578).

IMPORTANT!

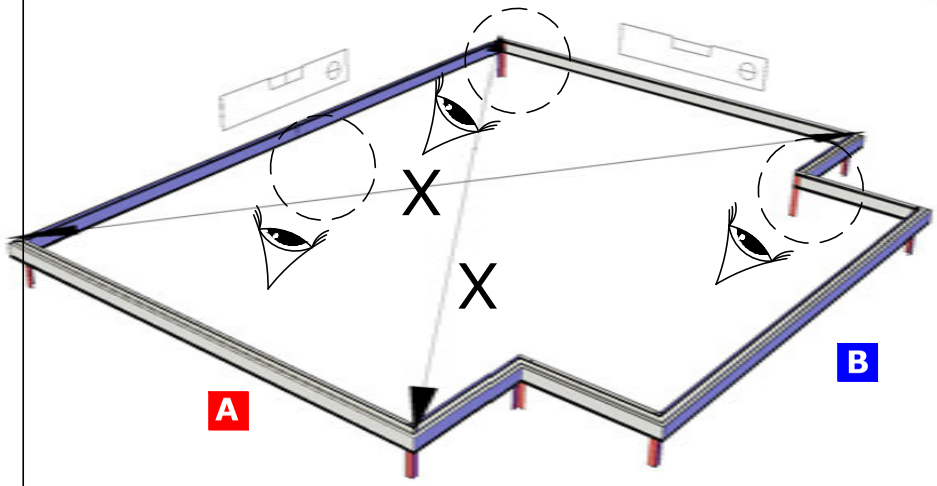
Before attaching, insert 3 M6x12 bolts as shown for the sliding door guide

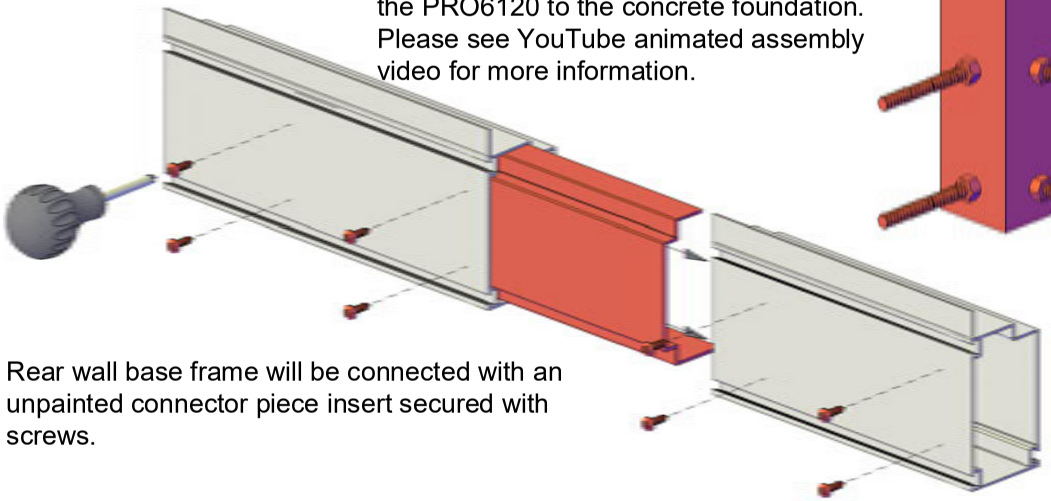




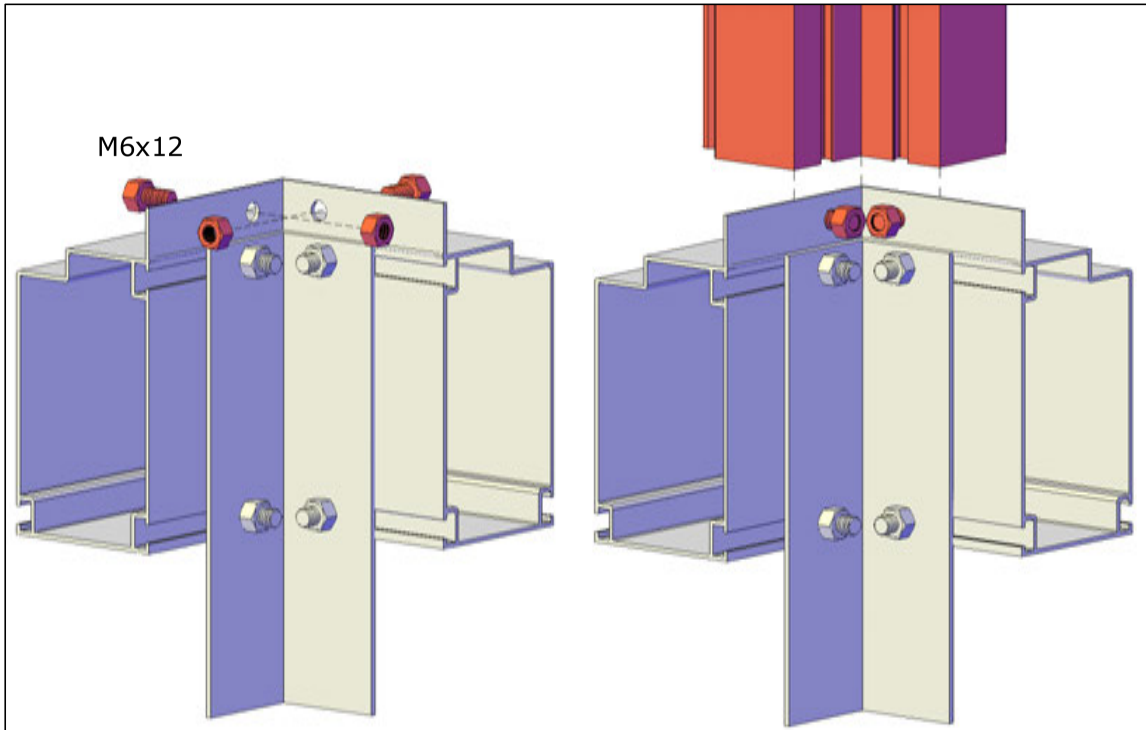


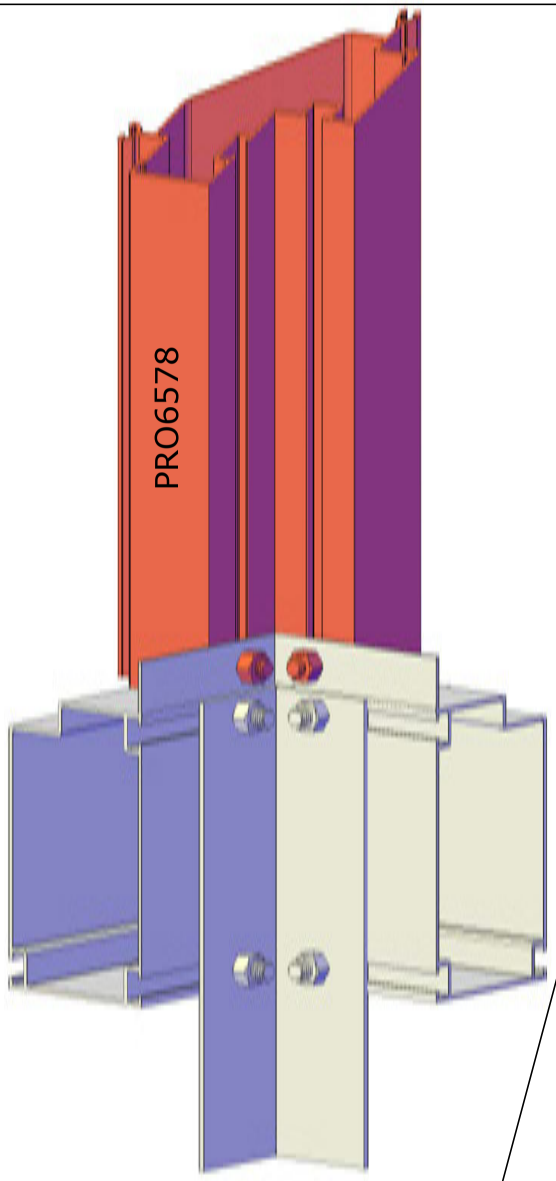
Suggestion: If installed on a concrete foundation you may cut PRO210 flush with the bottom of PRO6120. To anchor, use cut off PRO210 pieces as L-brackets to secure the PRO6120 to the concrete foundation. Please see YouTube animated assembly video for more information.

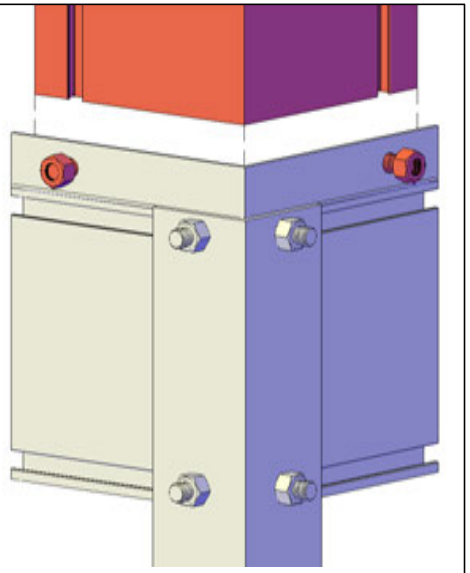


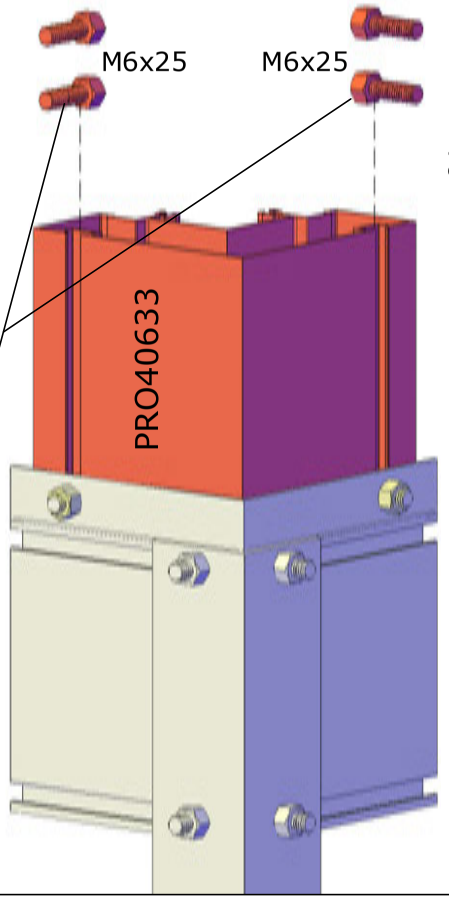


Rear wall base frame will be connected with an unpainted connector piece insert secured with screws.

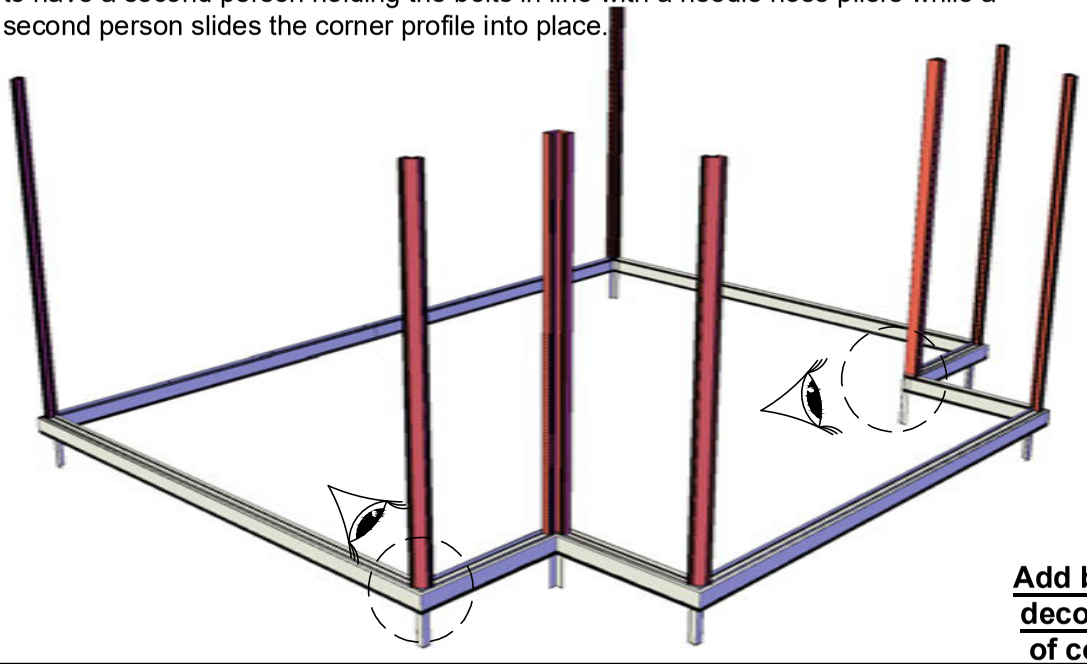


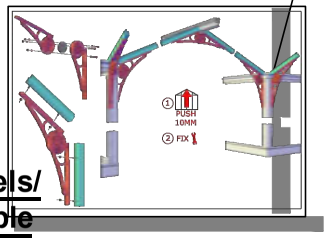




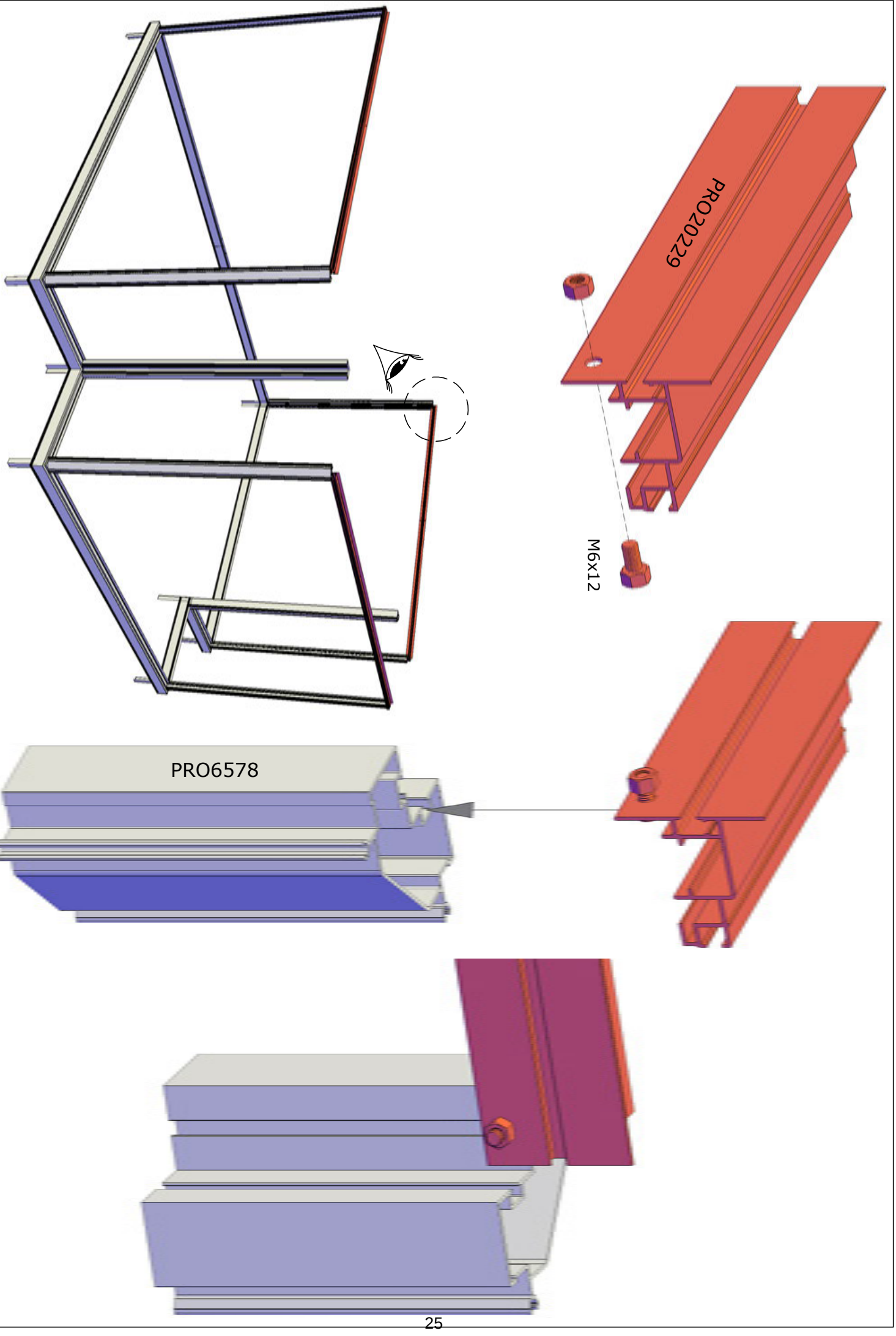


You may need to loosen the nuts holding your anchor corner brackets to allow some "play" in the corner to slide the corner post (PRO6578) onto the bolt heads. It is helpful to have a second person holding the bolts in line with a needle nose pliers while a second person slides the corner profile into place.



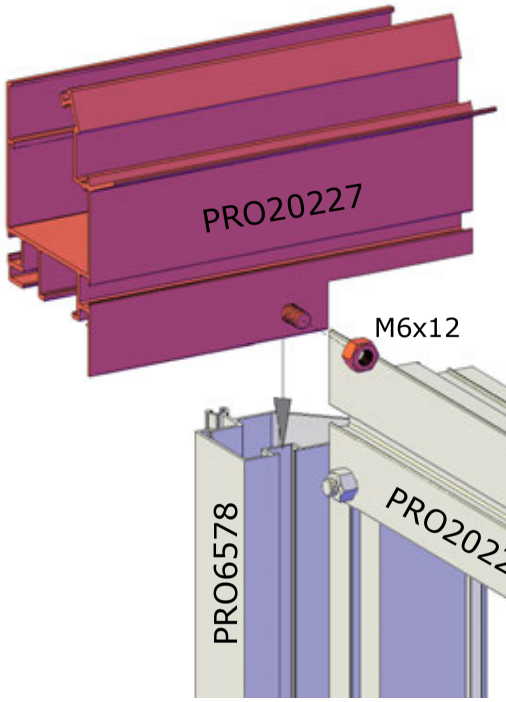


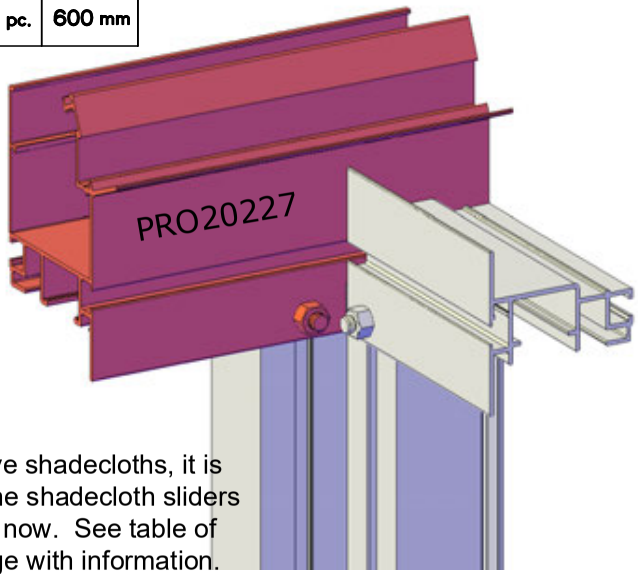
Add bolts for spandrels/ deco scrolls - see table of contents for page #


PRO20229
M6x12
PRO6578

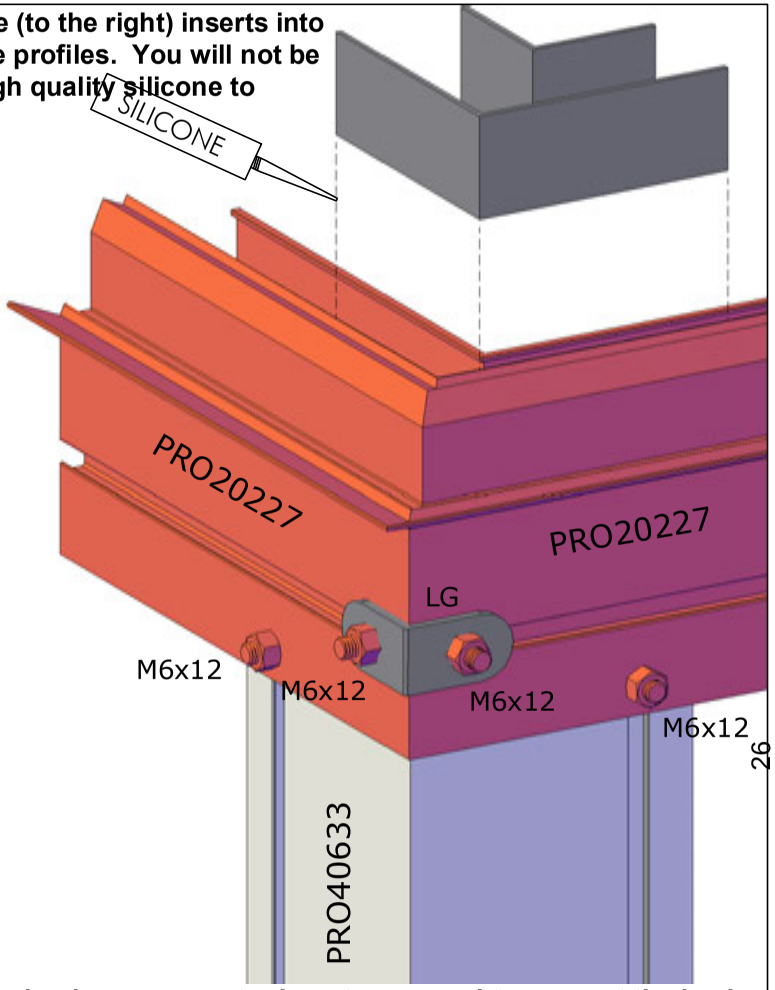
	Item	pc.	L
	20x55x20	1 pc.	600 mm
	15x20	1 pc.	600 mm

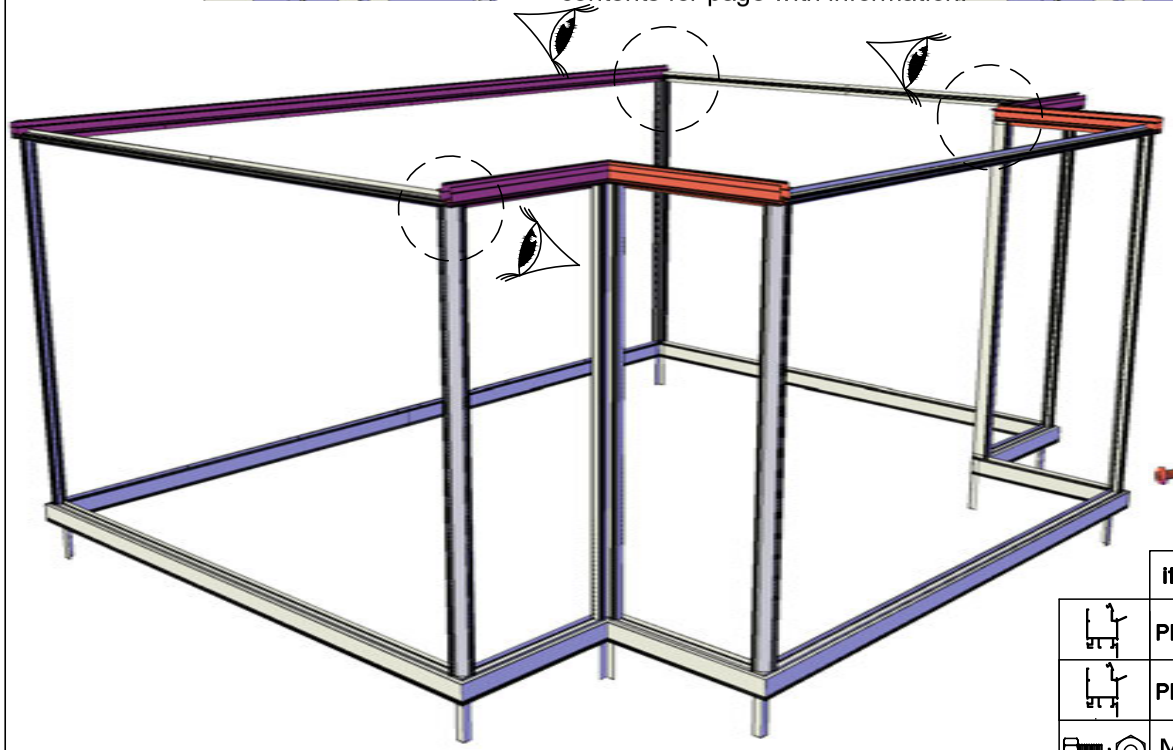
IMPORTANT! The gutter connector piece (to the right) inserts into the gutter extrusions from the end of the profiles. You will not be able to "drop" it in from the top. Use high quality silicone to secure against leakage.



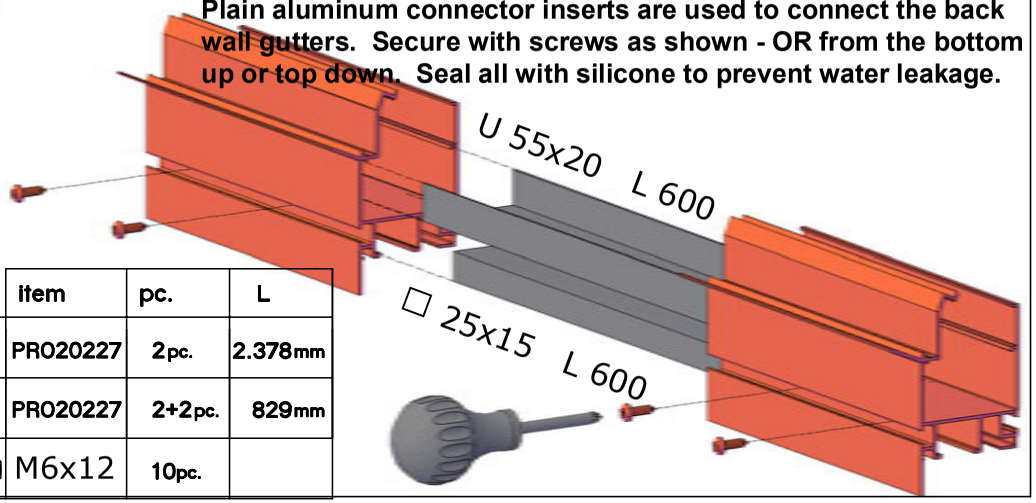


Note: If you have shadecloths, it is good to insert the shadecloth sliders into PRO20227 now. See table of contents for page with information.





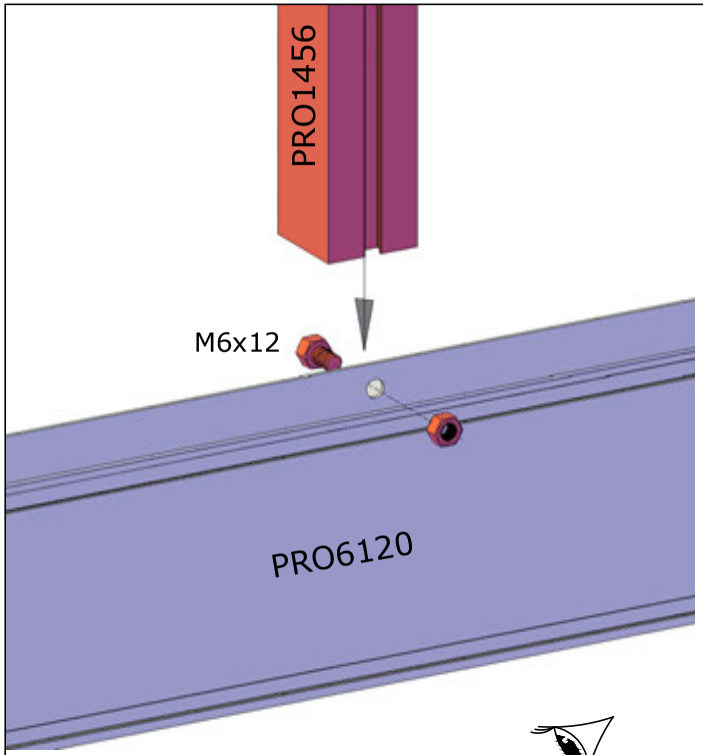
Plain aluminum connector inserts are used to connect the back wall gutters. Secure with screws as shown - OR from the bottom up or top down. Seal all with silicone to prevent water leakage.

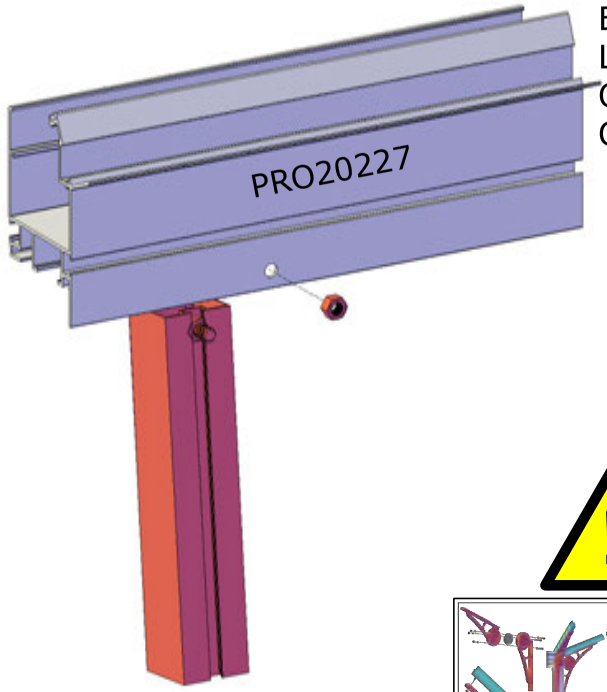


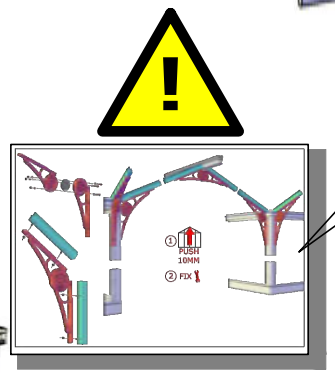
	Item	pc.	L
	PRO20227	2pc.	2.378mm
	PRO20227	2+2pc.	829mm
	M6x12	10pc.	

IMPORTANT:

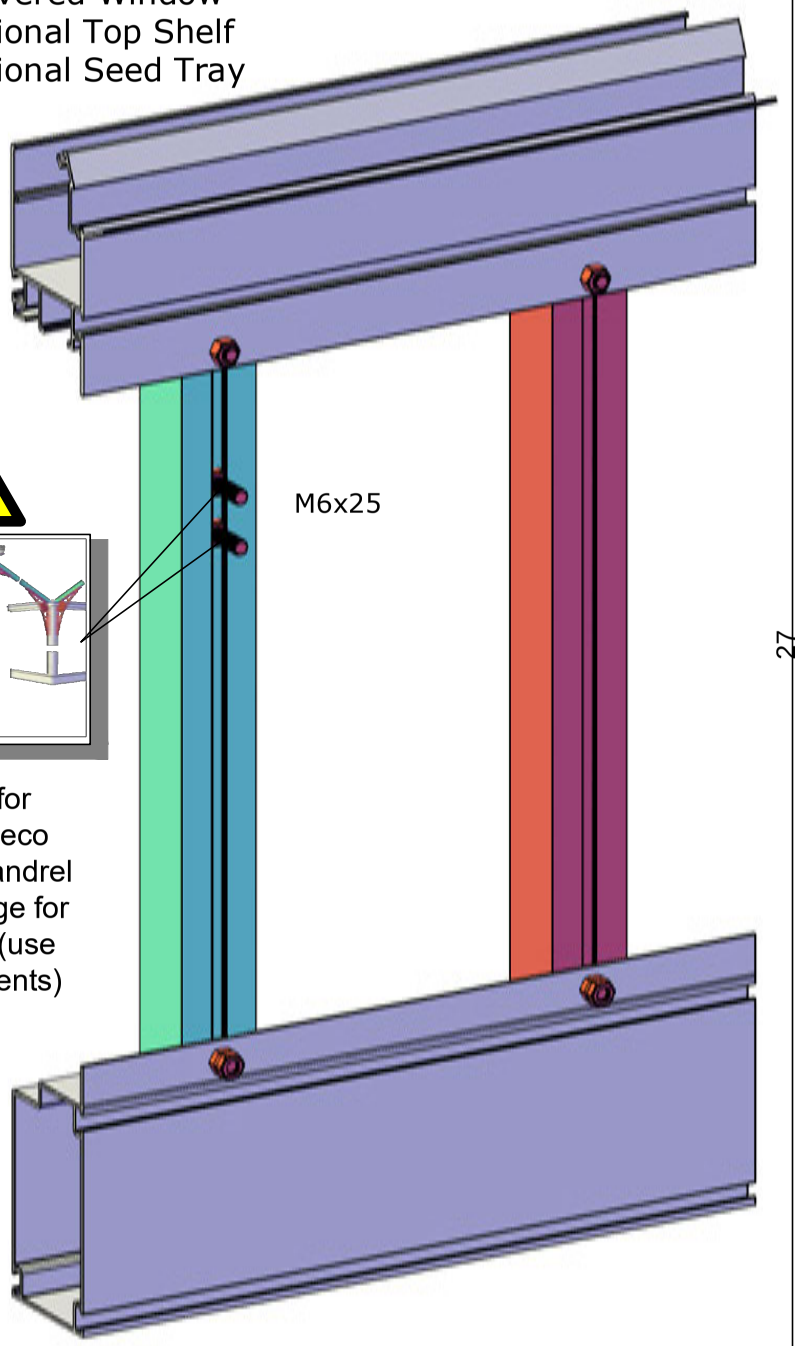
Before securing vertical profiles, insert bolts for:
Louvered Window
Optional Top Shelf
Optional Seed Tray

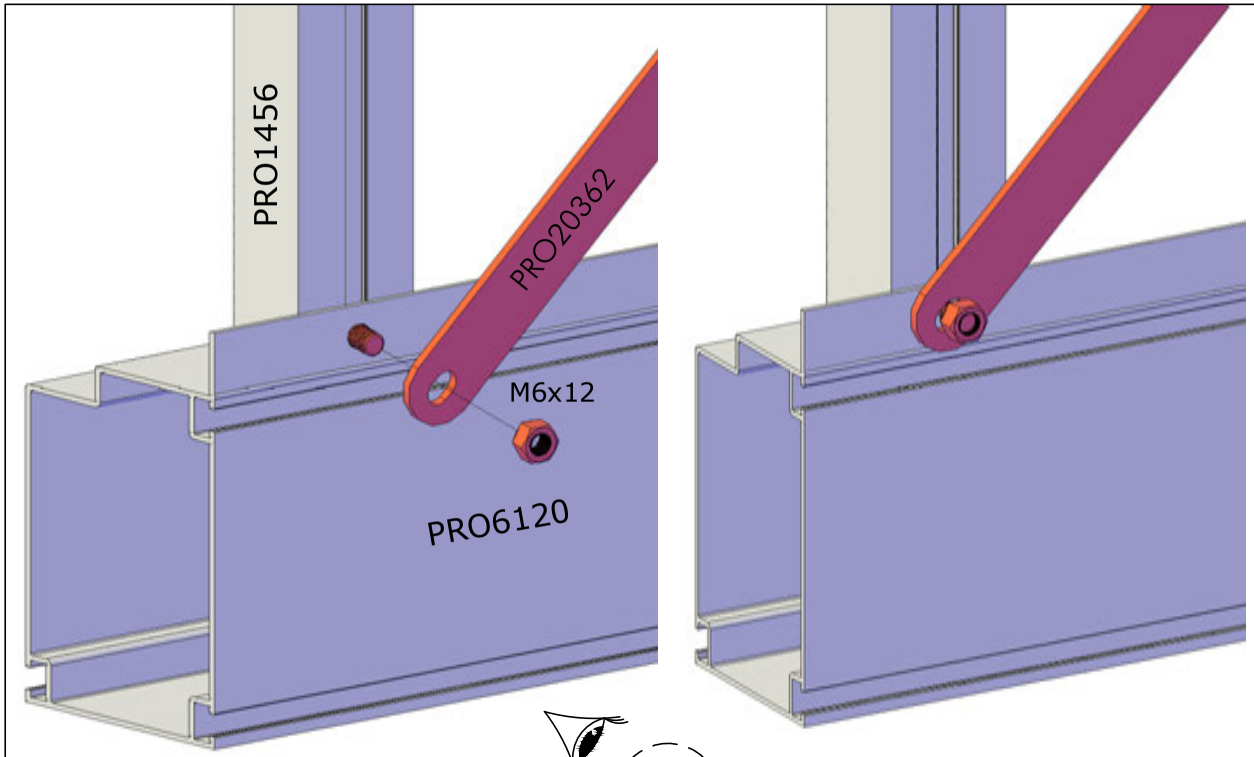




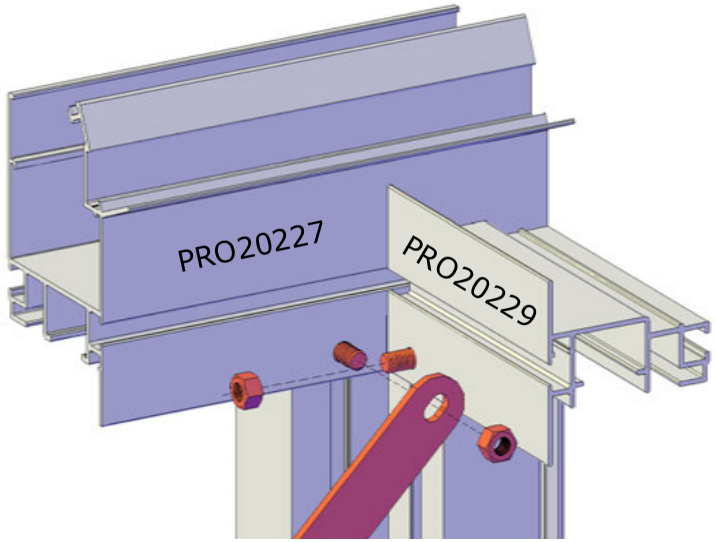


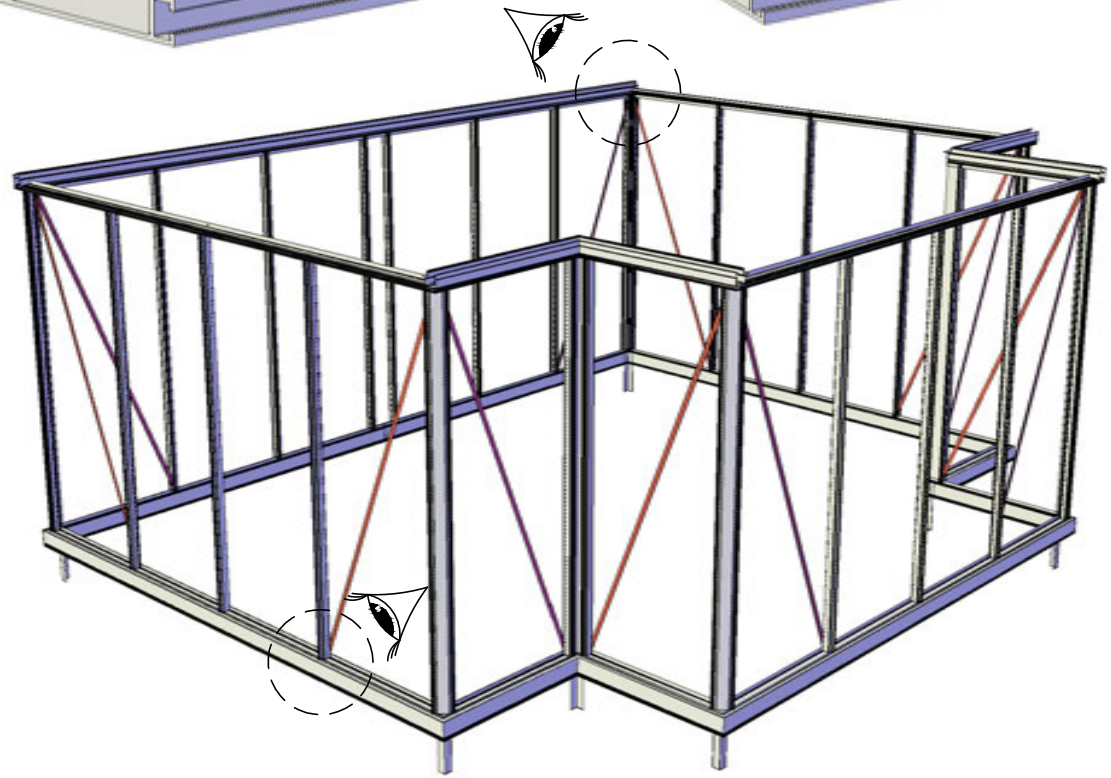
Add bolts for spandrels/deco scrolls (in spandrel pkg)- see page for clarification (use table of contents)

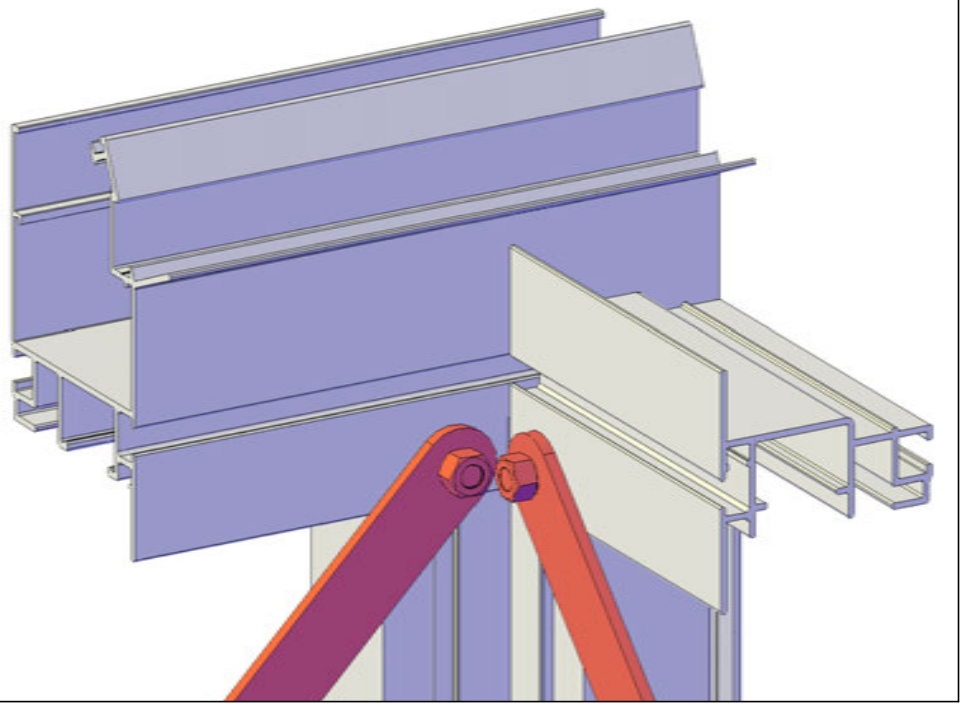


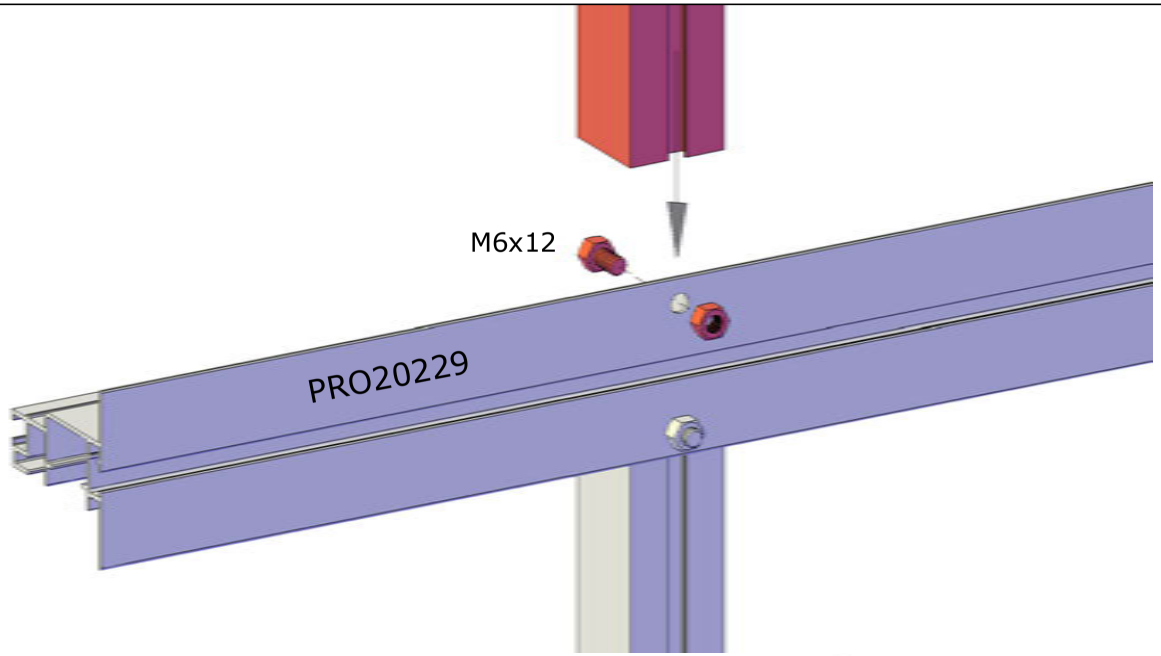


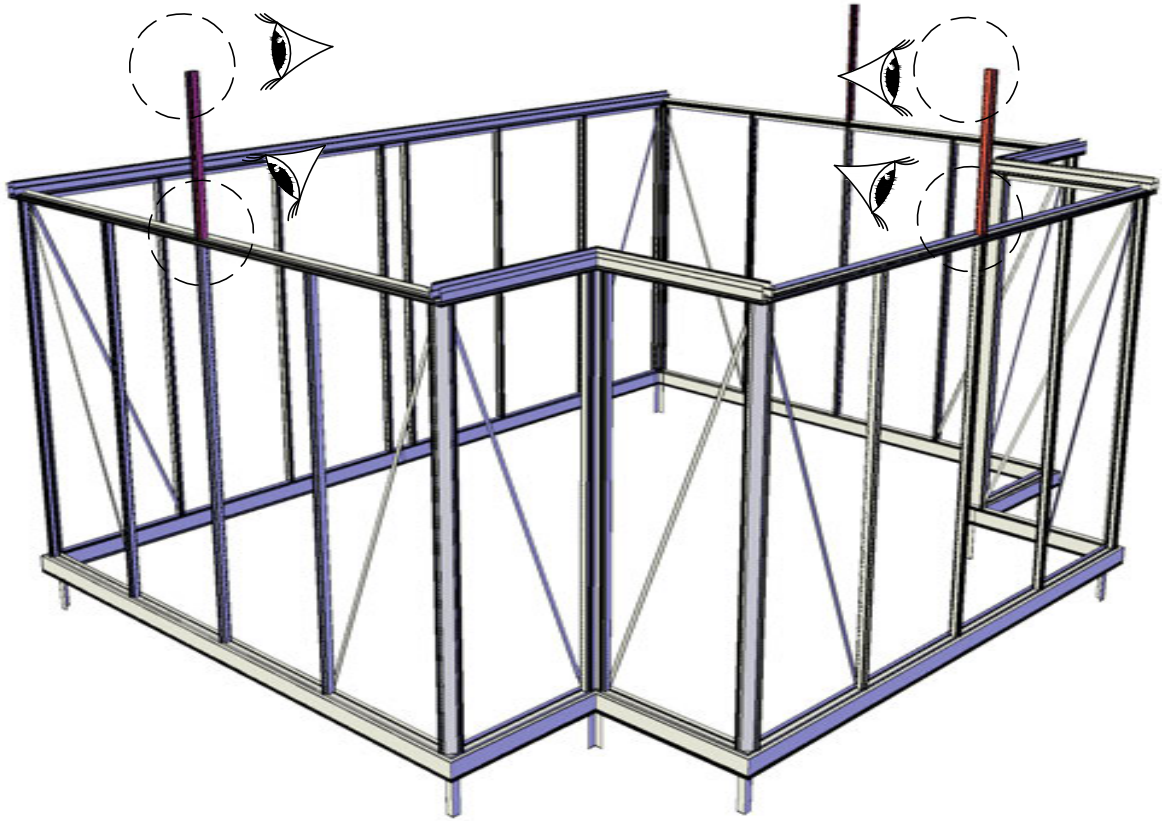
IMPORTANT! If your wind braces do not reach, your greenhouse is out of square. Measure distance between diagonal corners - they should be equal. Use a leve to determine where the issue lies and fix before proceeding. Side Wall Wind Braces are 77 3/4" long.

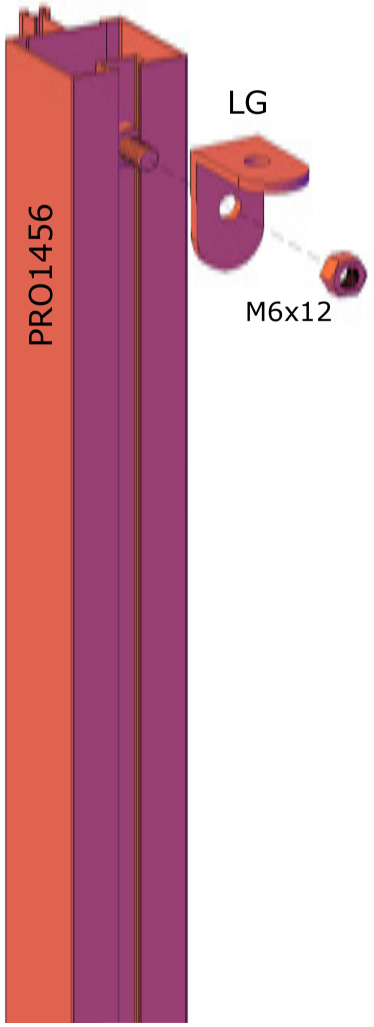




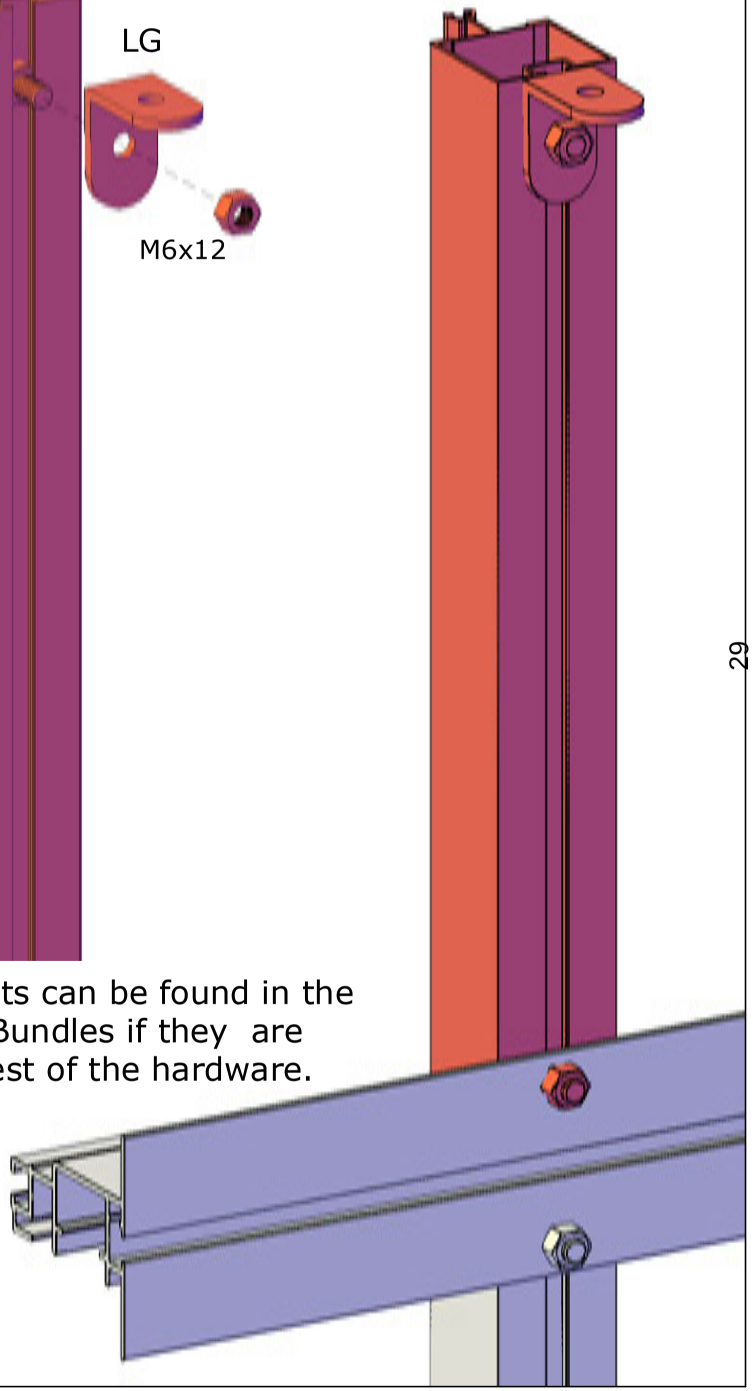


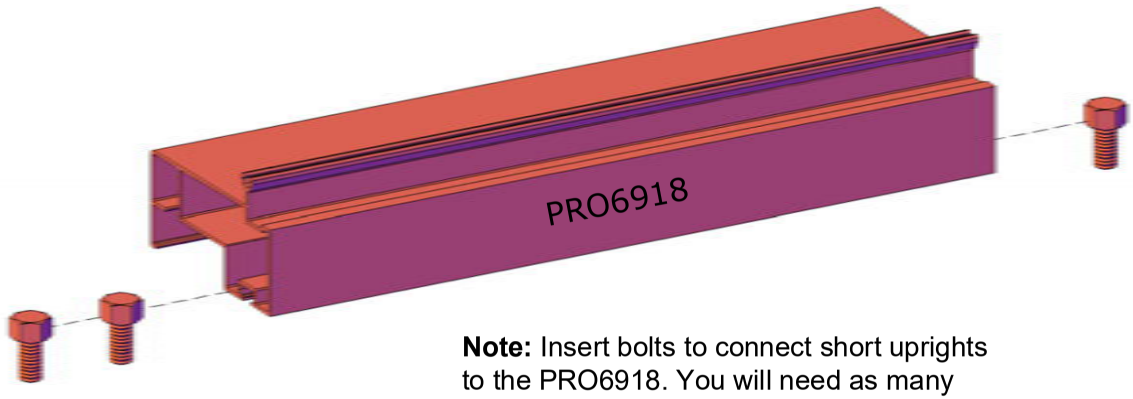






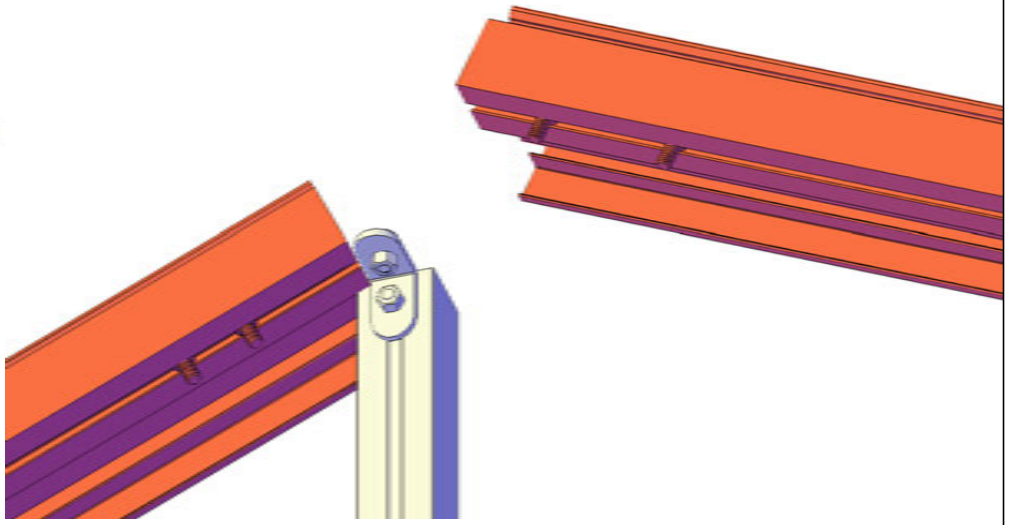
The LG Brackets can be found in the Roof Window Bundles if they are not with the rest of the hardware.

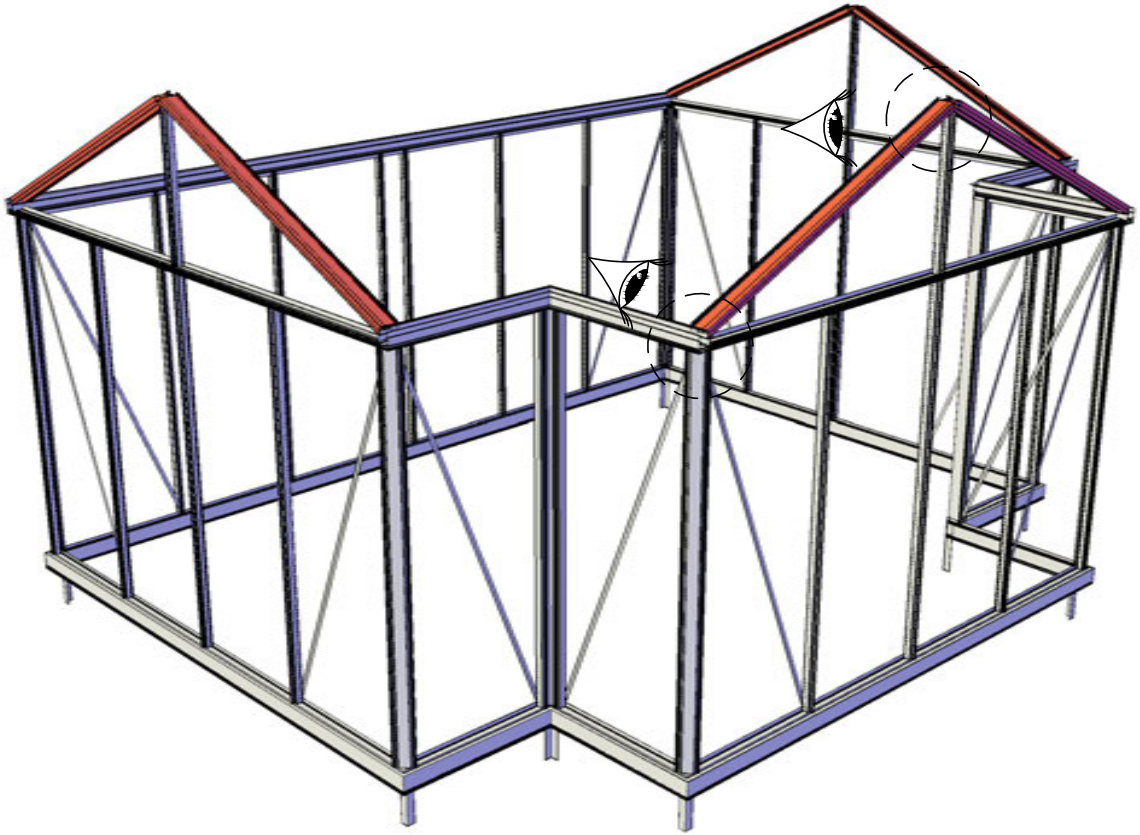


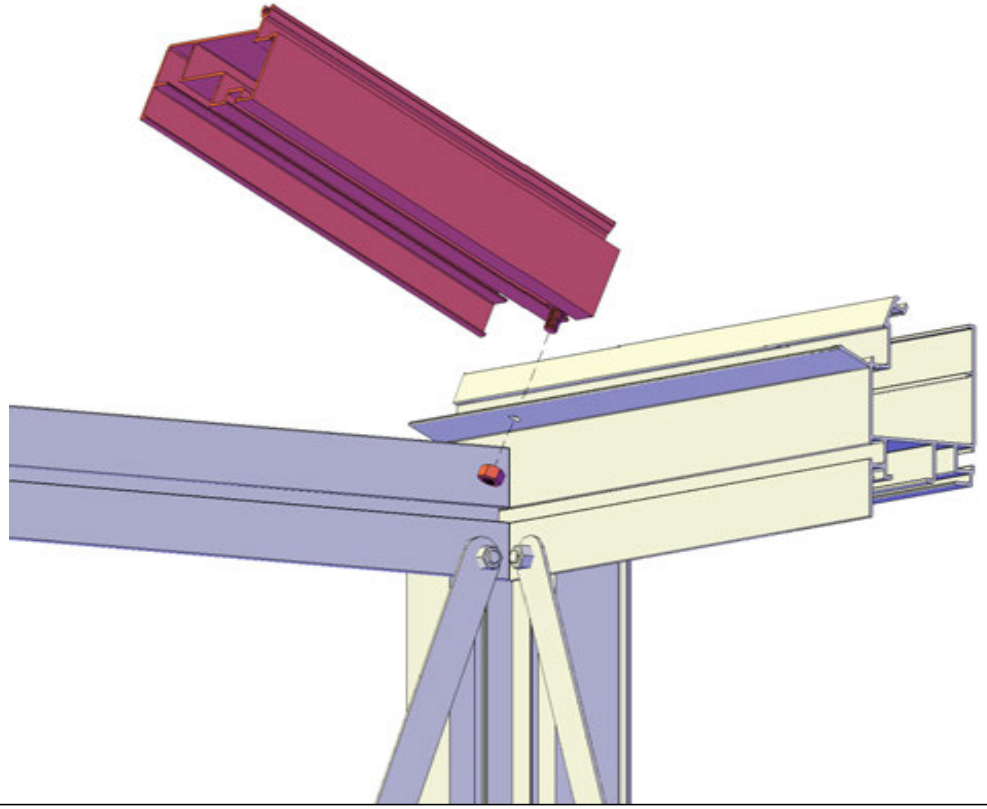


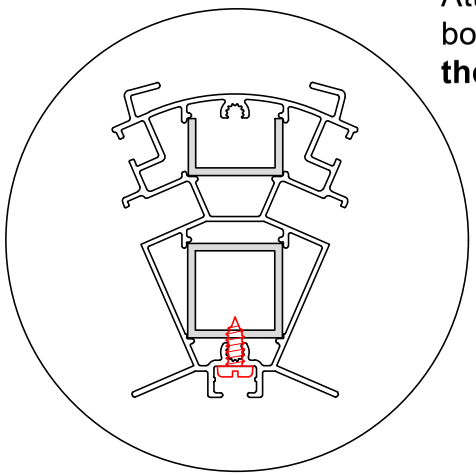
M6x12

Note: Insert bolts to connect short uprights to the PRO6918. You will need as many bolts as you have uprights.

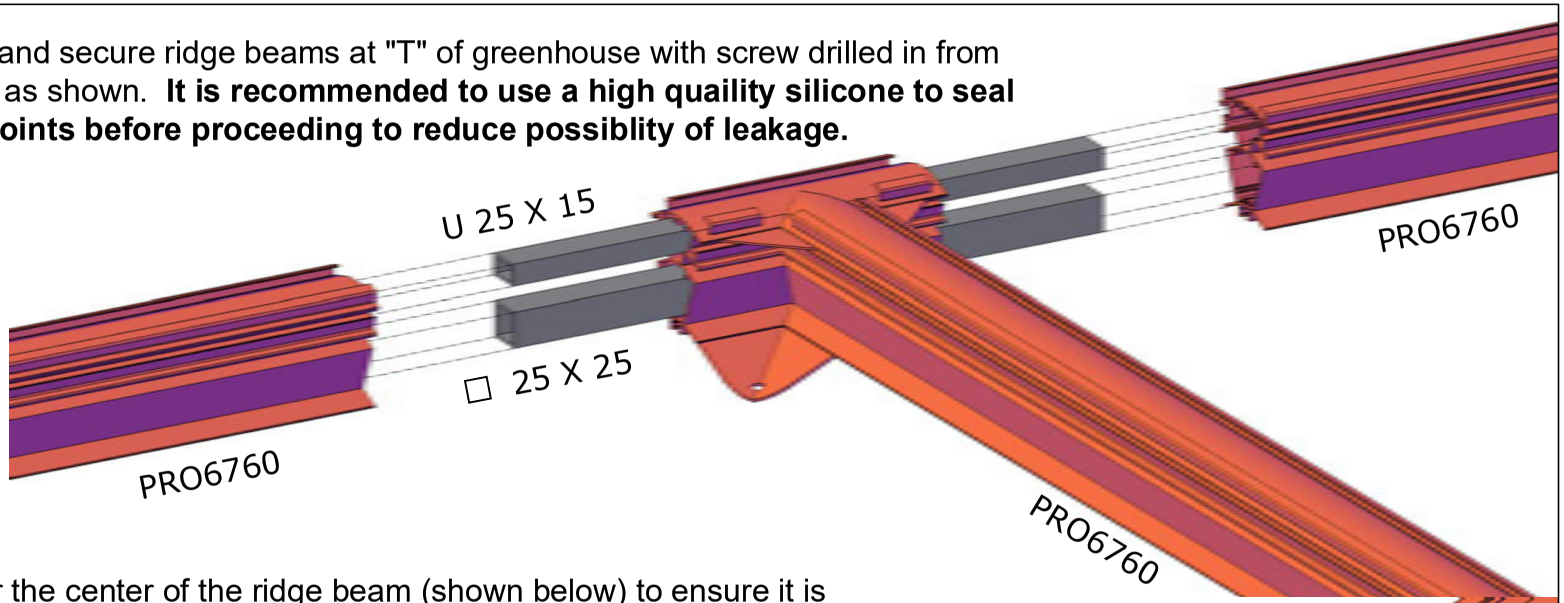




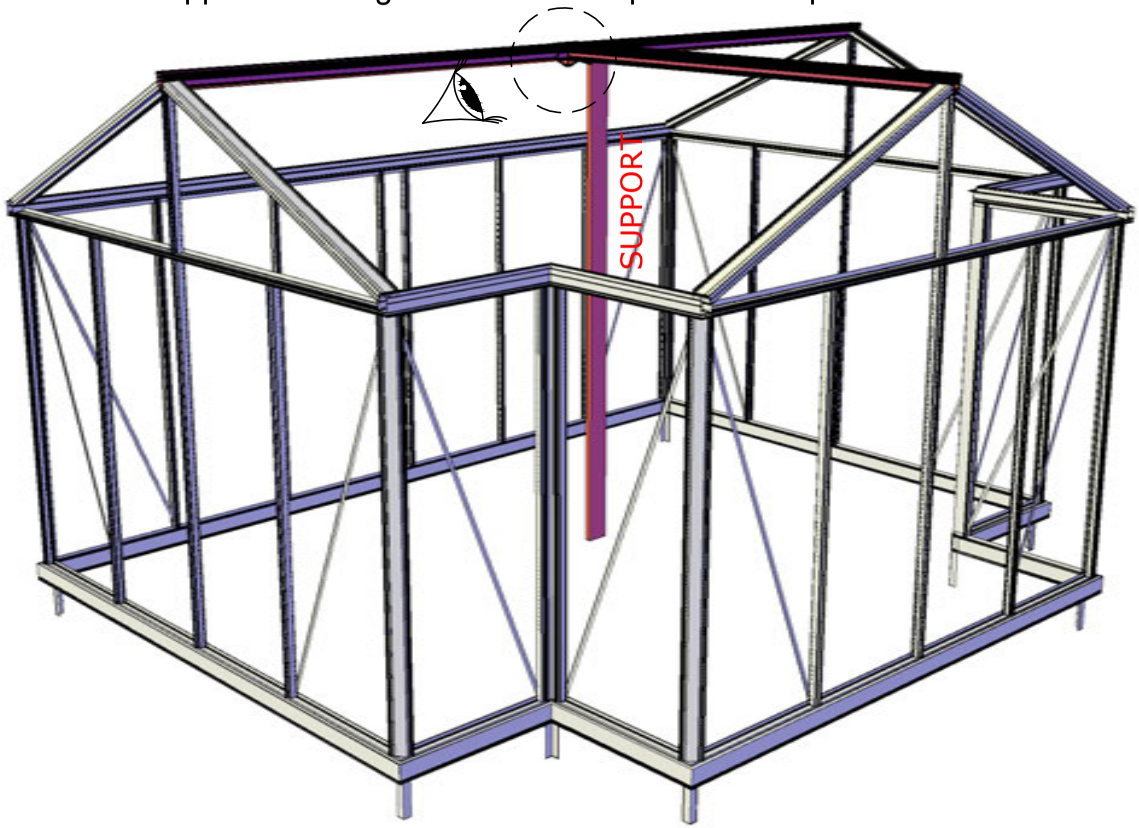


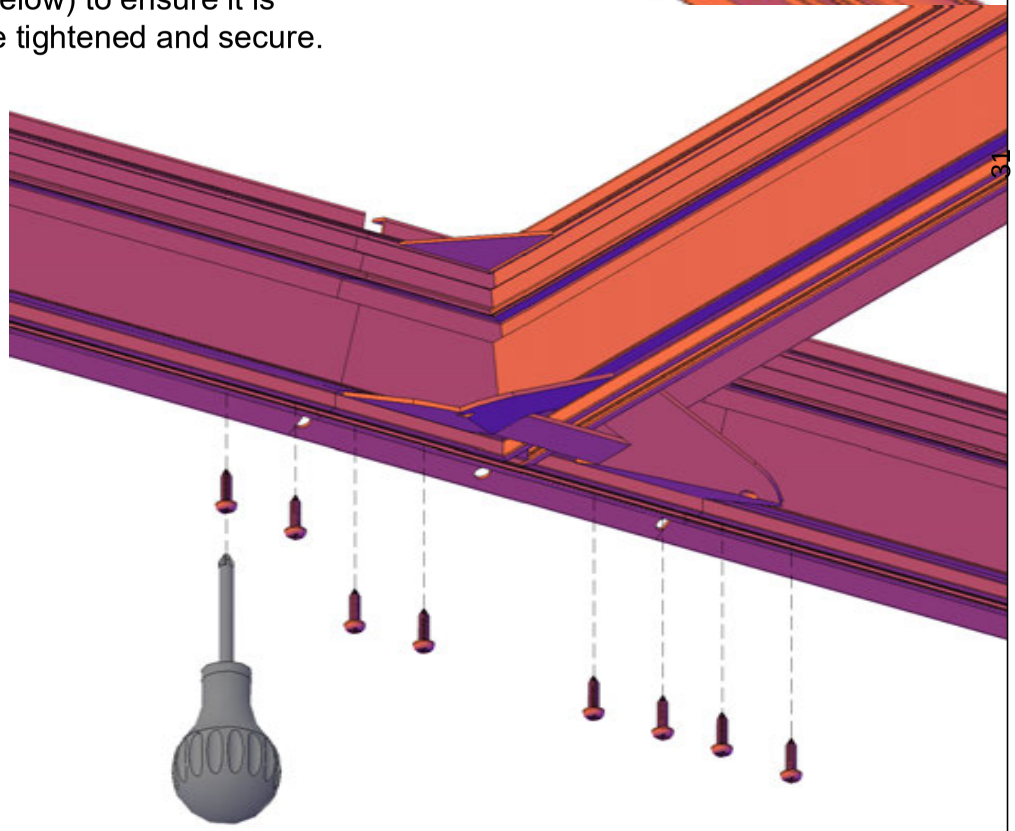


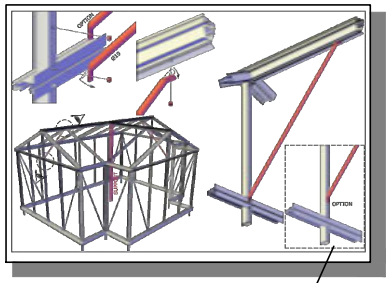
Attach and secure ridge beams at "T" of greenhouse with screw drilled in from bottom as shown. **It is recommended to use a high quaility silicone to seal these joints before proceeding to reduce possiblity of leakage.**

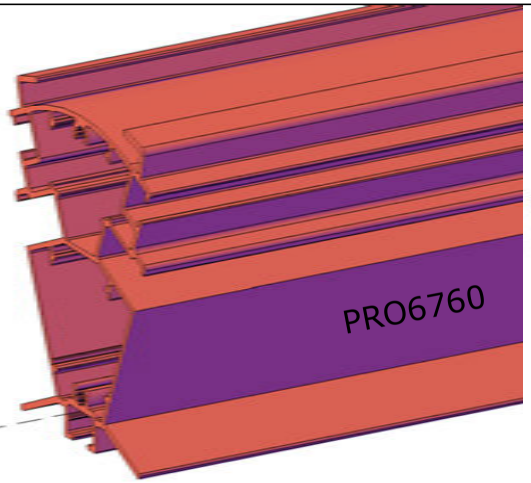


IMPORTANT: Place a 2x4 support under the center of the ridge beam (shown below) to ensure it is level and supported throughout the next steps until the spandrel/deco scrolls are tightened and secure.

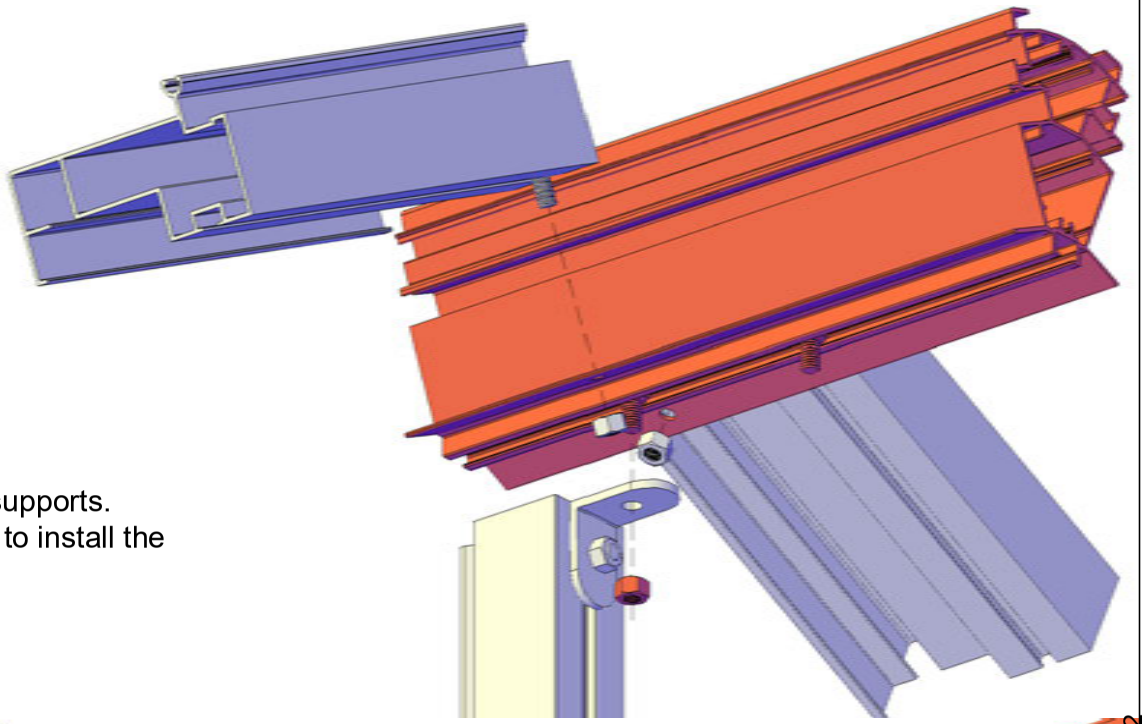




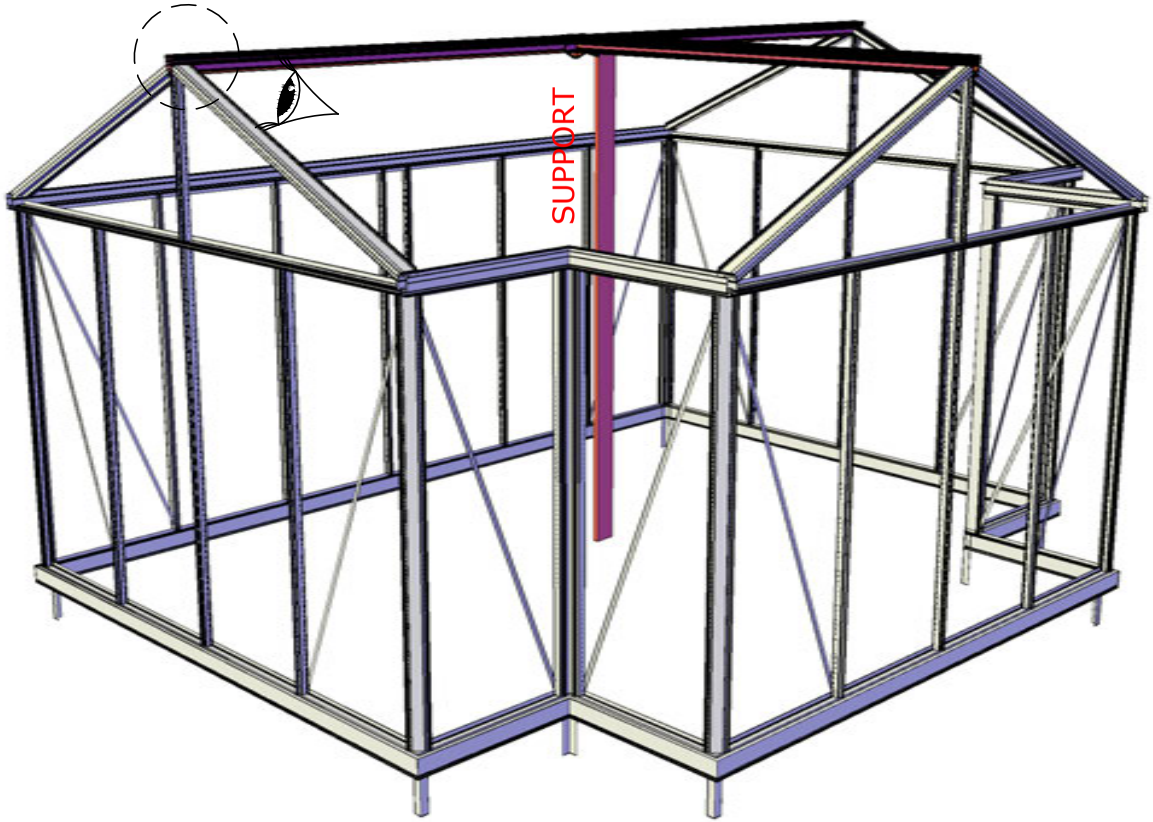


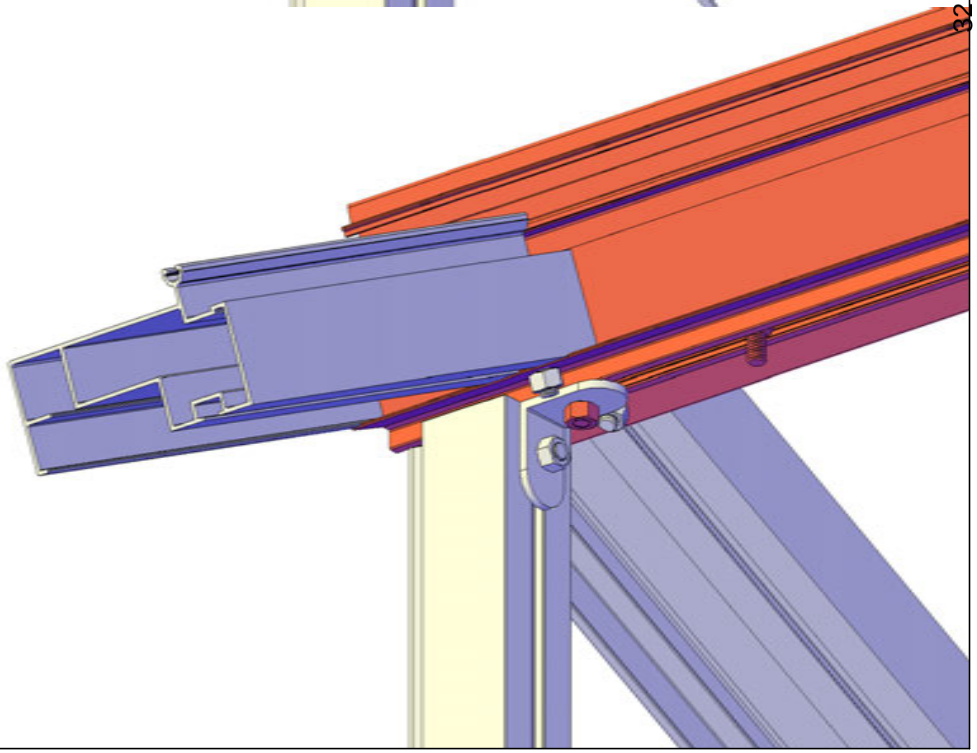


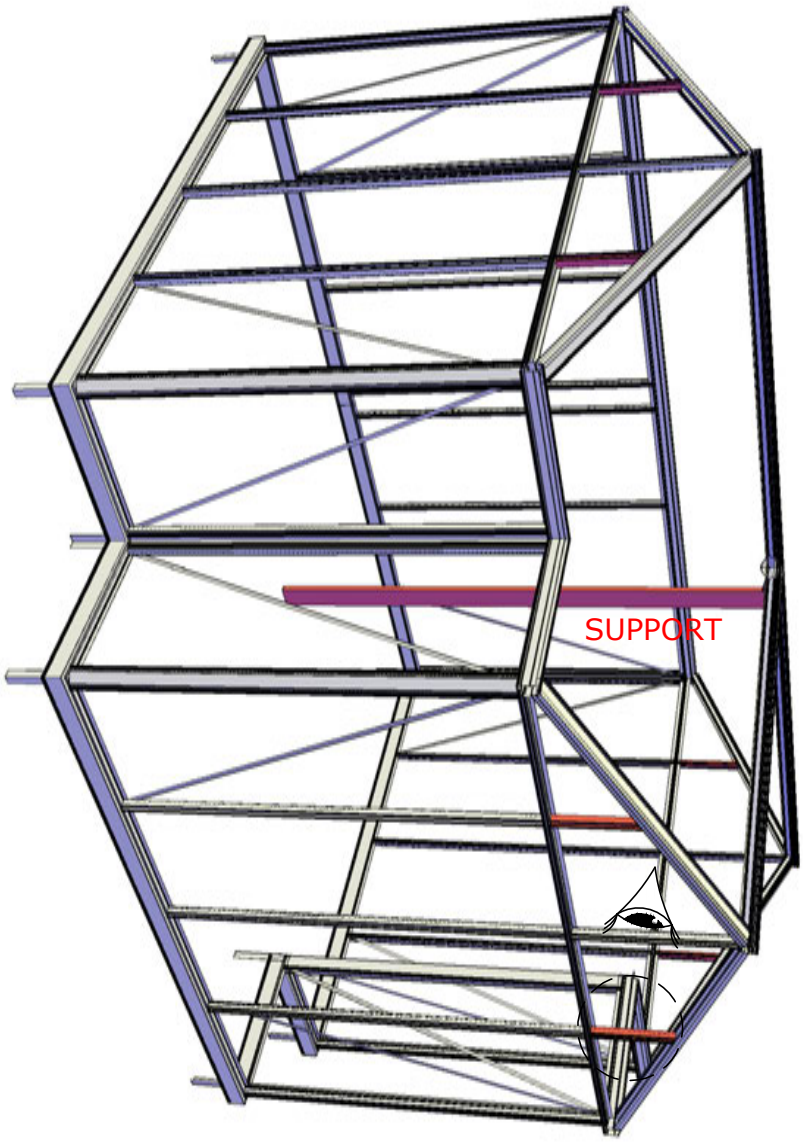
M6x12

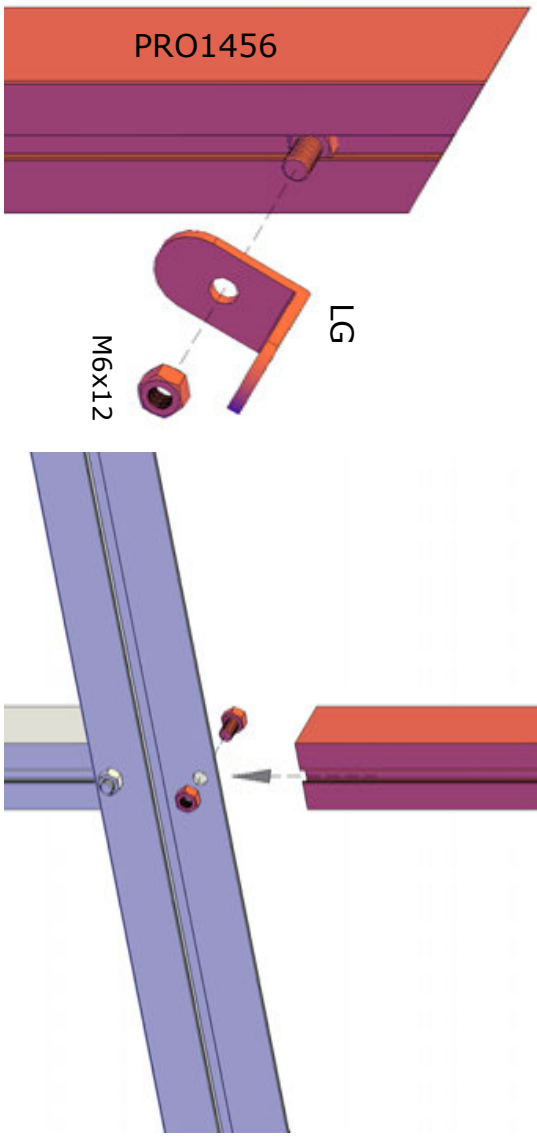


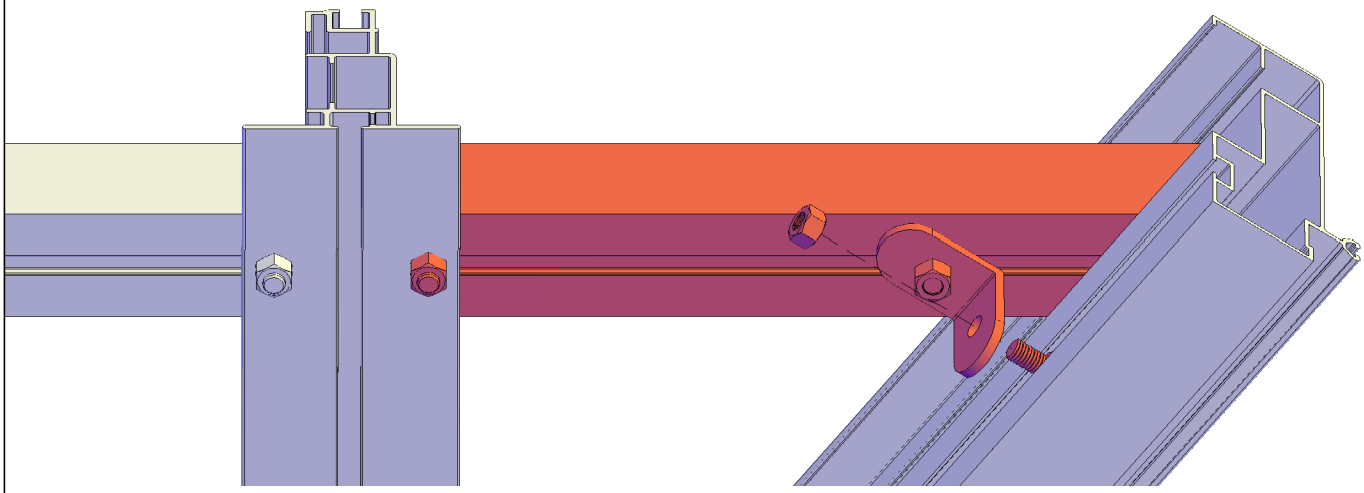
Add bolts to channel for diagonal roof supports.
You may use 16mm bolts to make it easier to install the wind braces on the roof

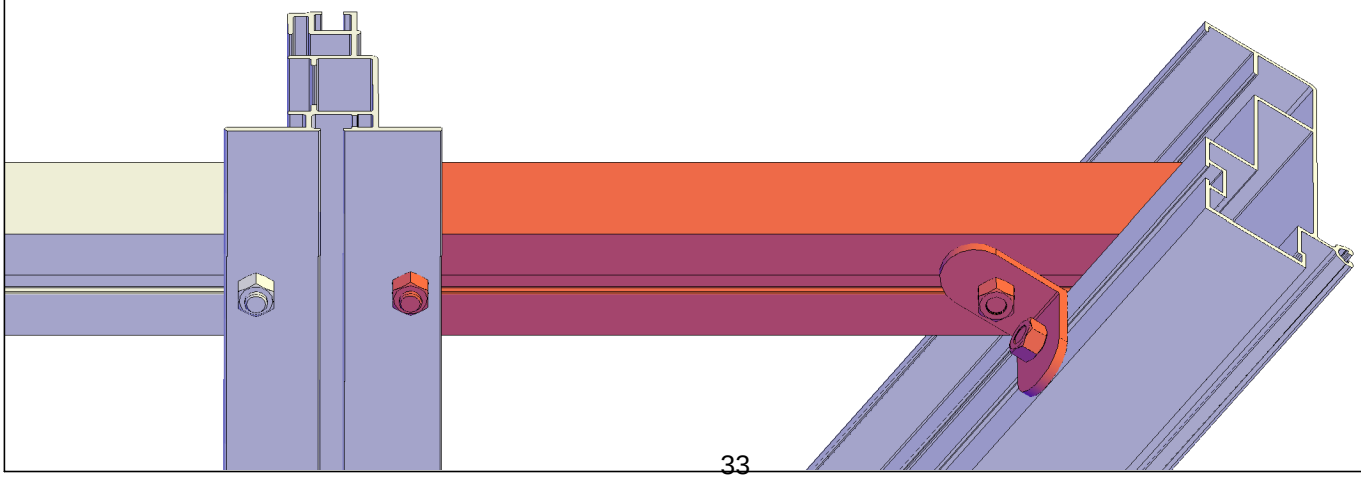


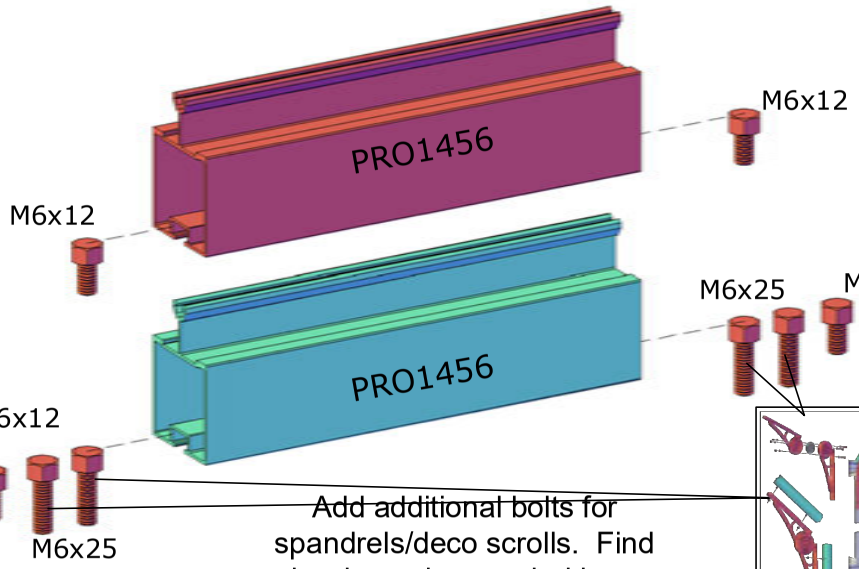



SUPPORT

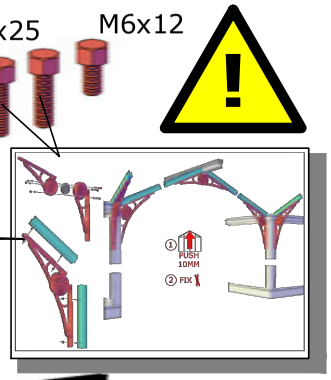

PRO1456
LG
M6x12



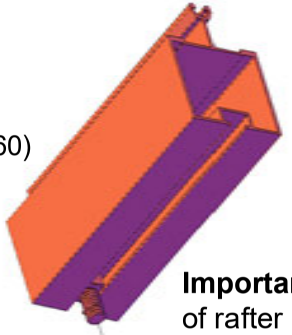




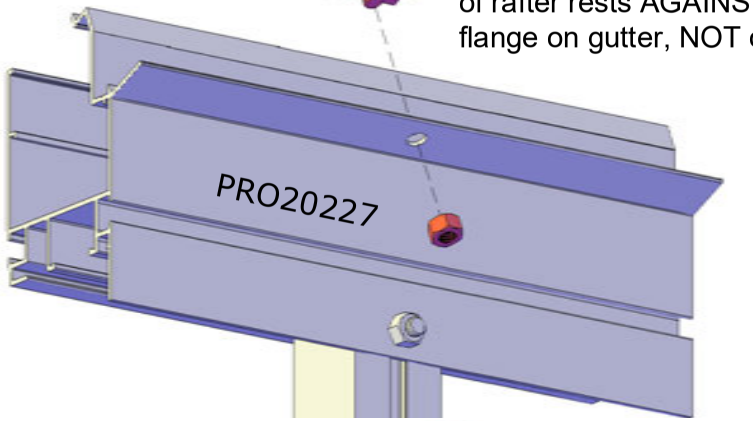
Insert bolts into rafter to attach them to gutter profile (PRO20227) and ridge beam (PRO6760)

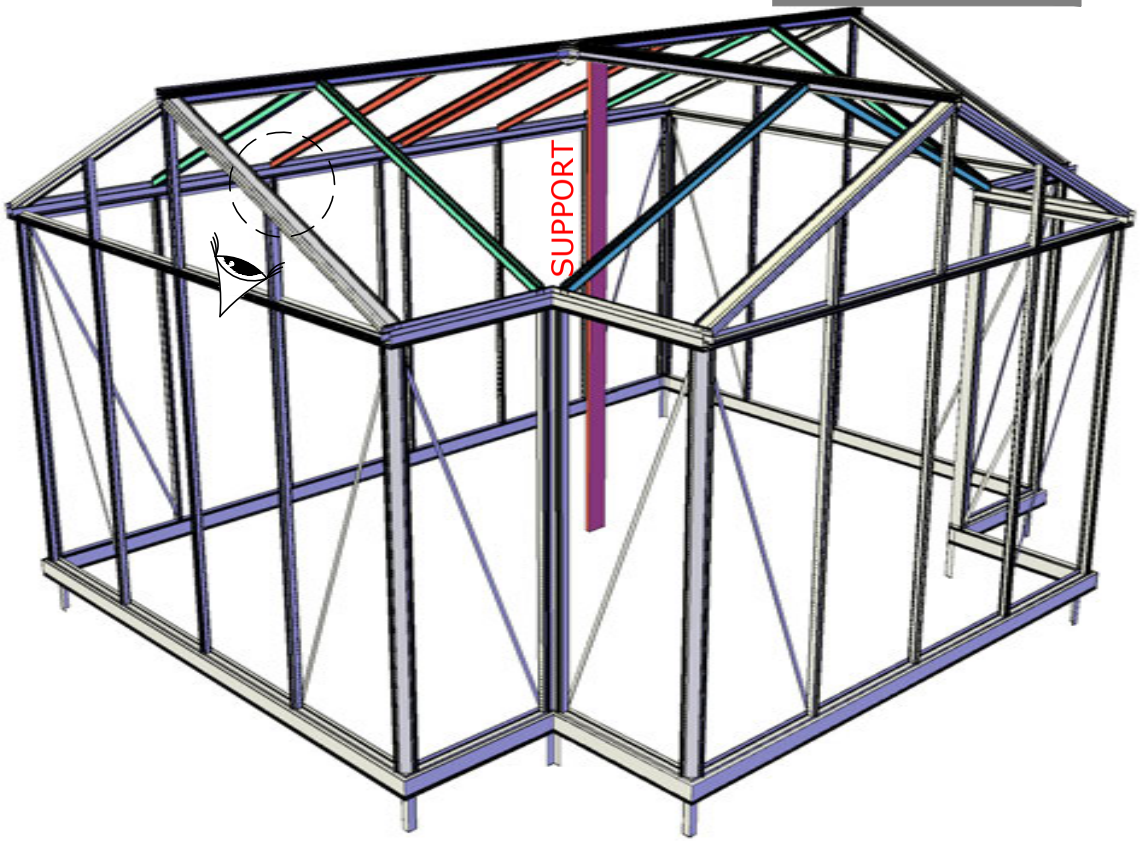


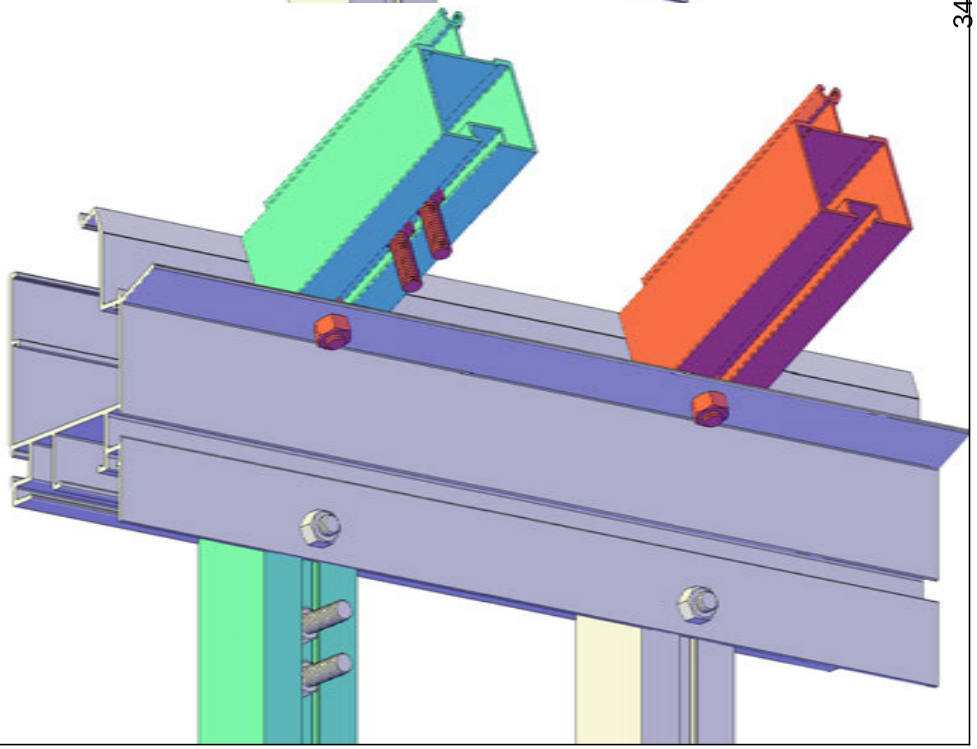
Add additional bolts for spandrels/deco scrolls. Find hardware in spandrel bag.

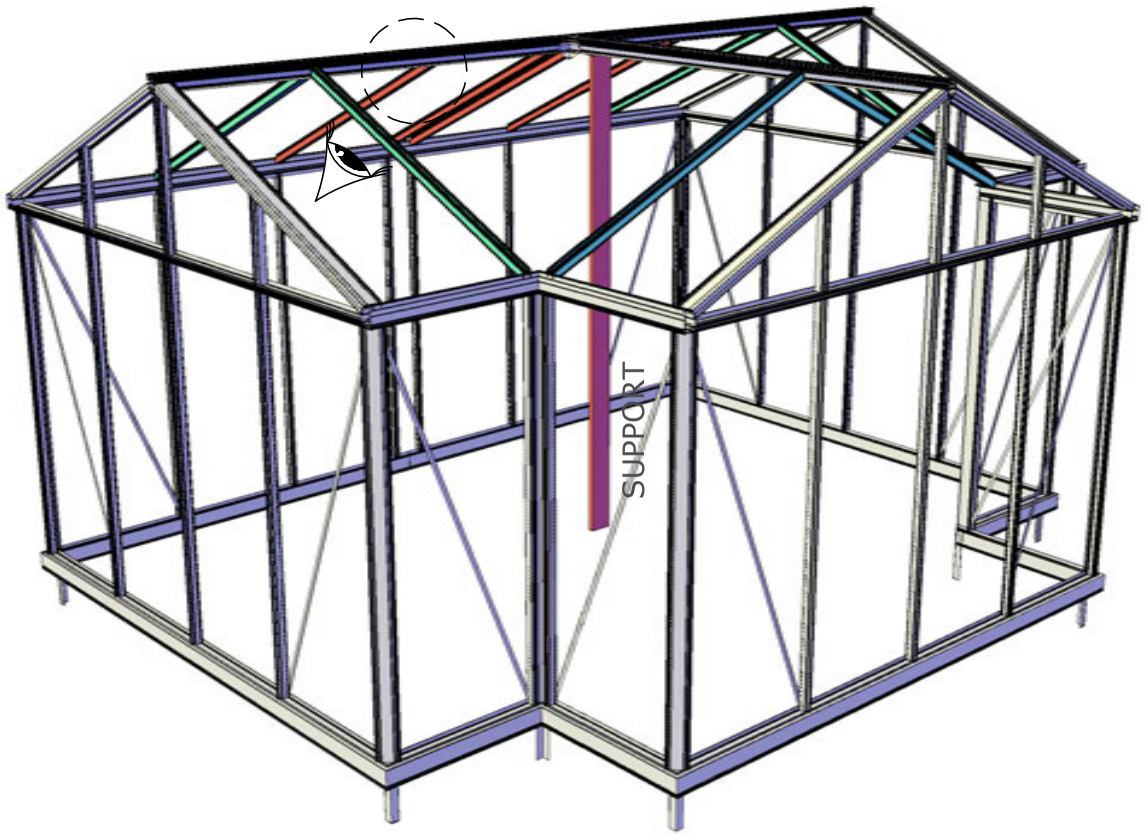


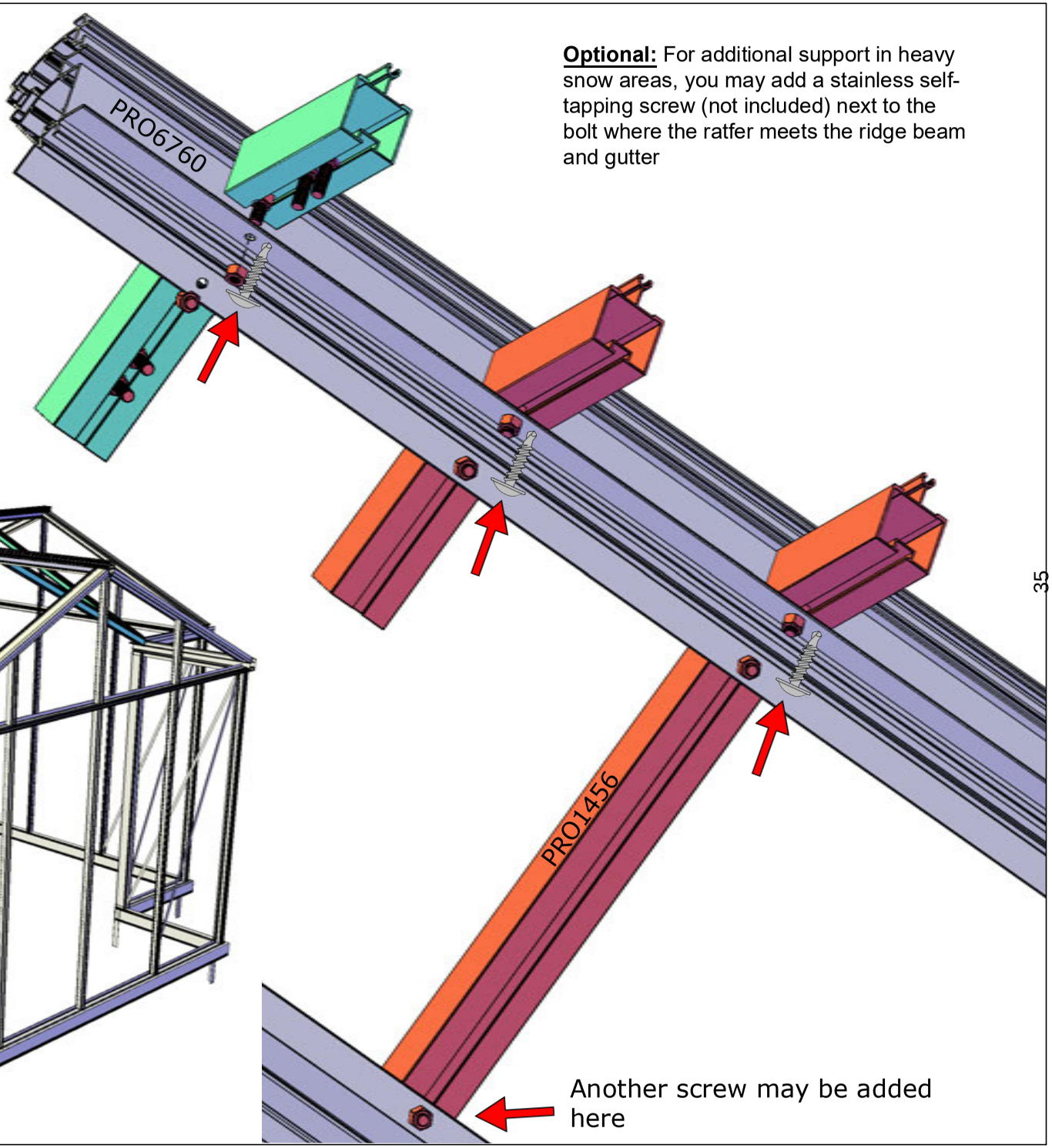
Important: Ensure bottom corner of rafter rests AGAINST the small flange on gutter, NOT on top of it.



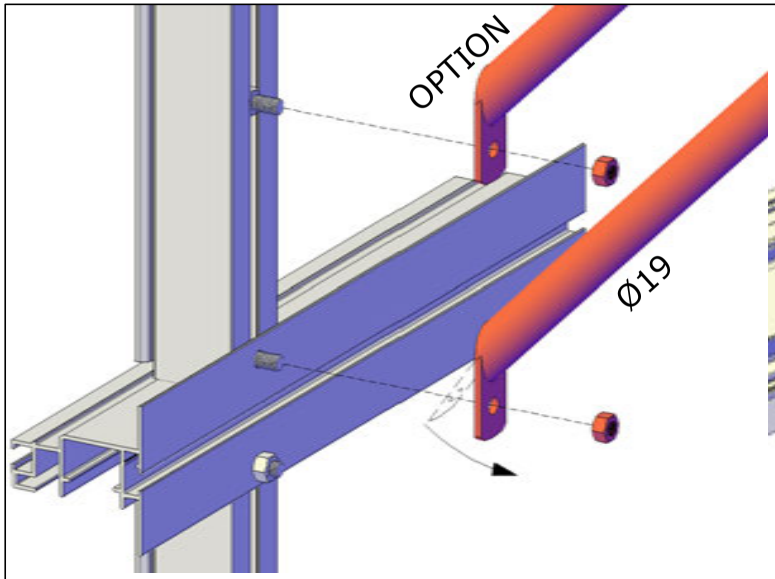


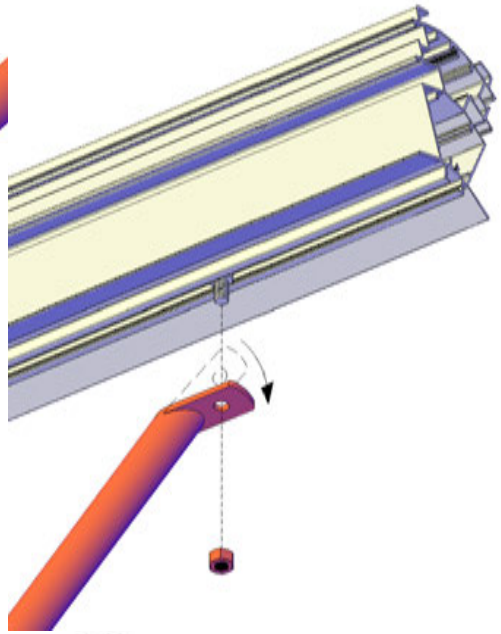


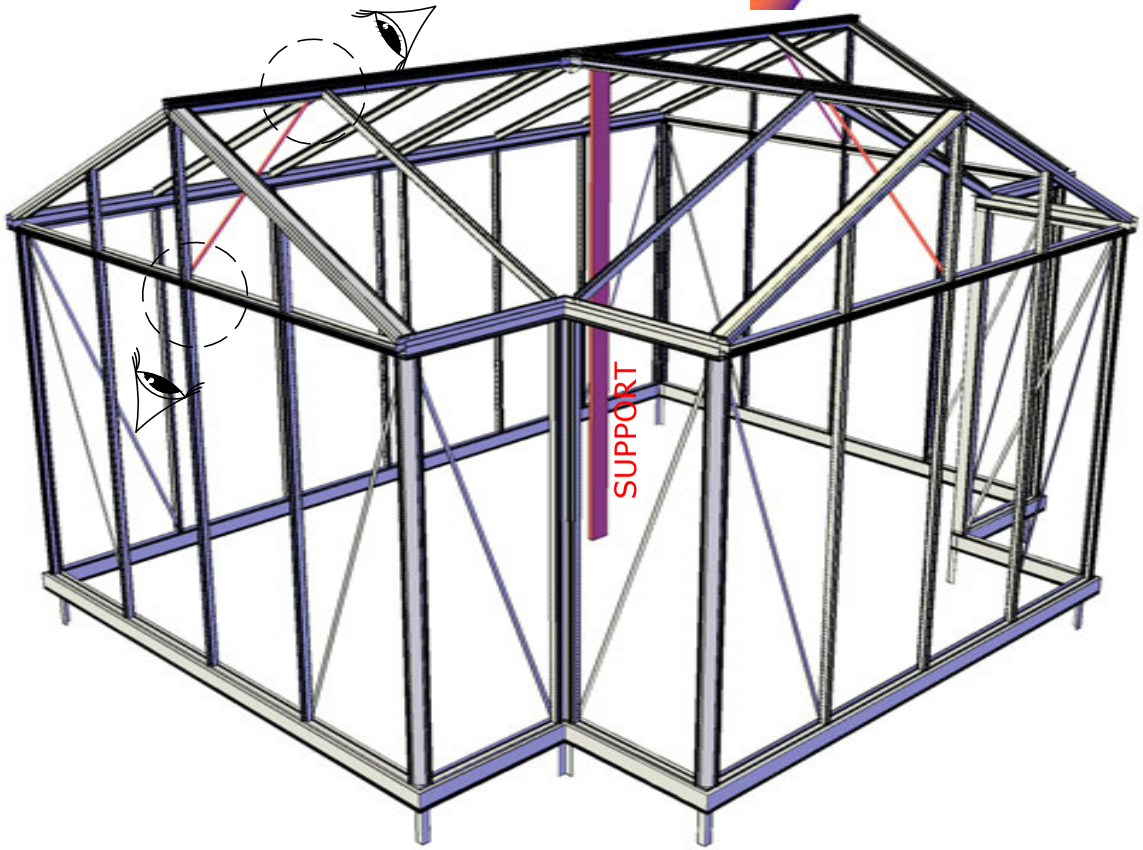


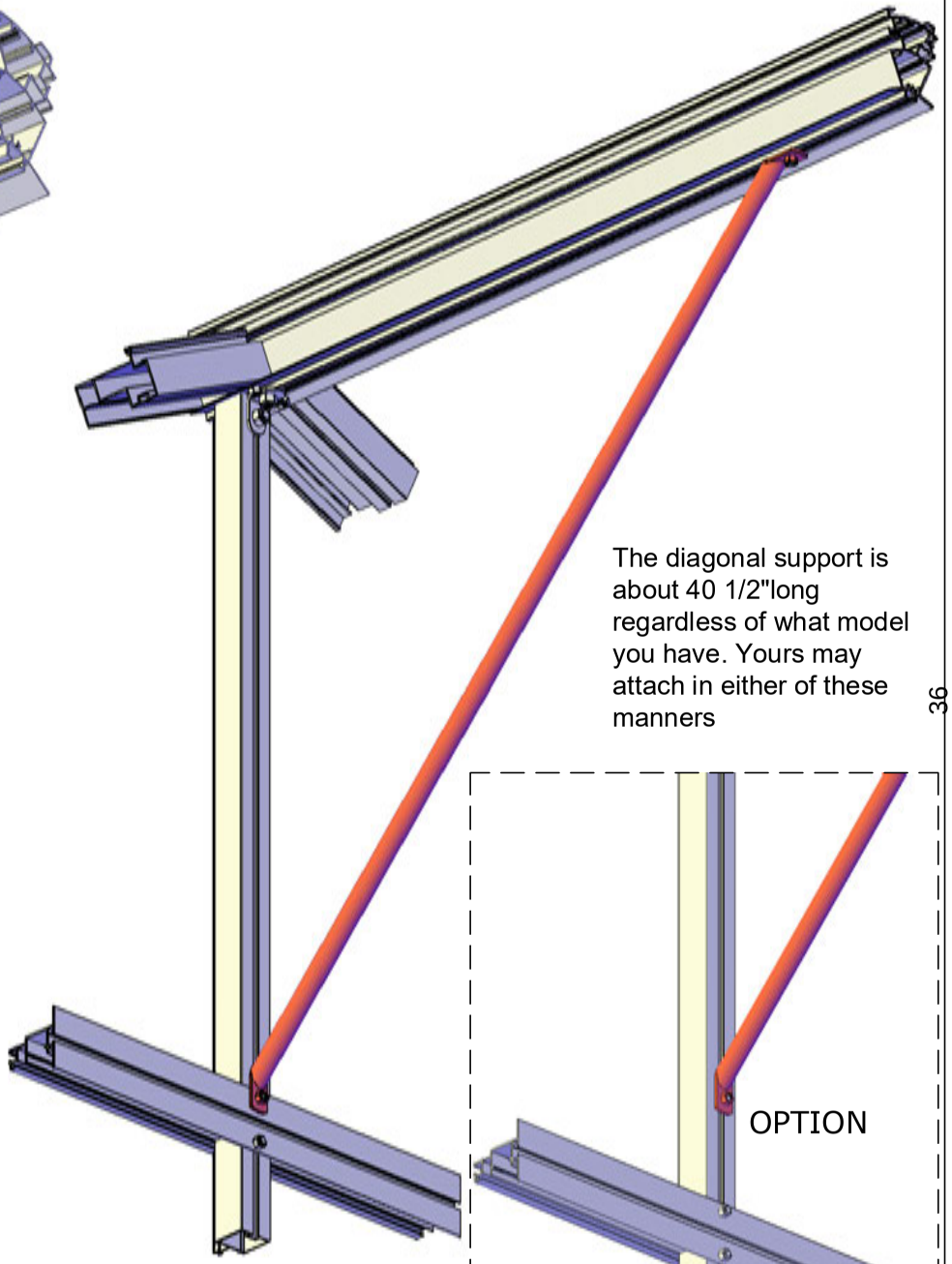


Optional: For additional support in heavy snow areas, you may add a stainless self-tapping screw (not included) next to the bolt where the ratfer meets the ridge beam and gutter

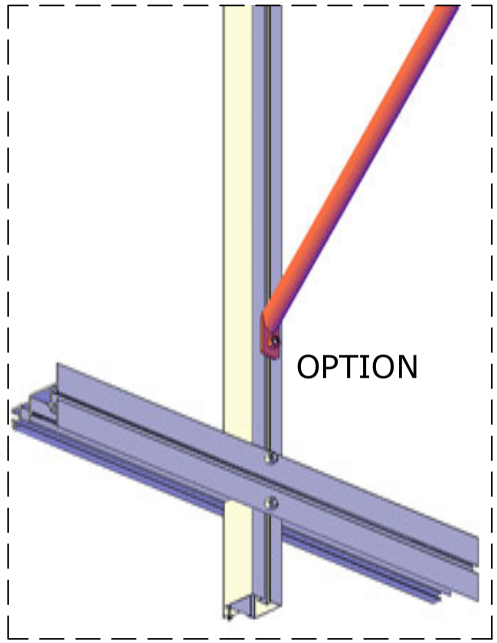


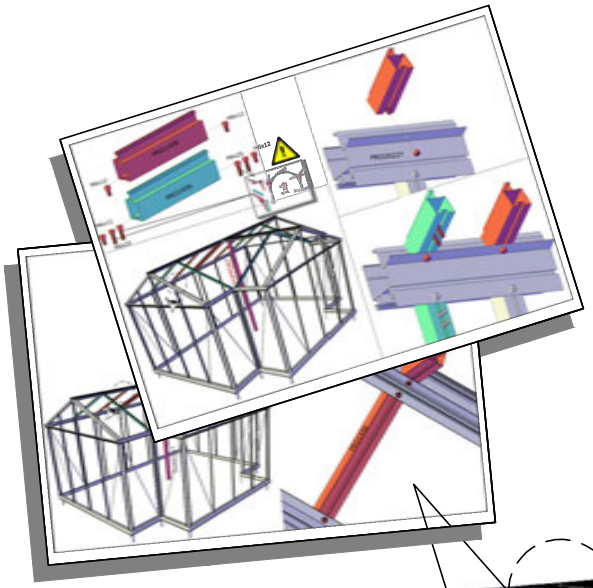


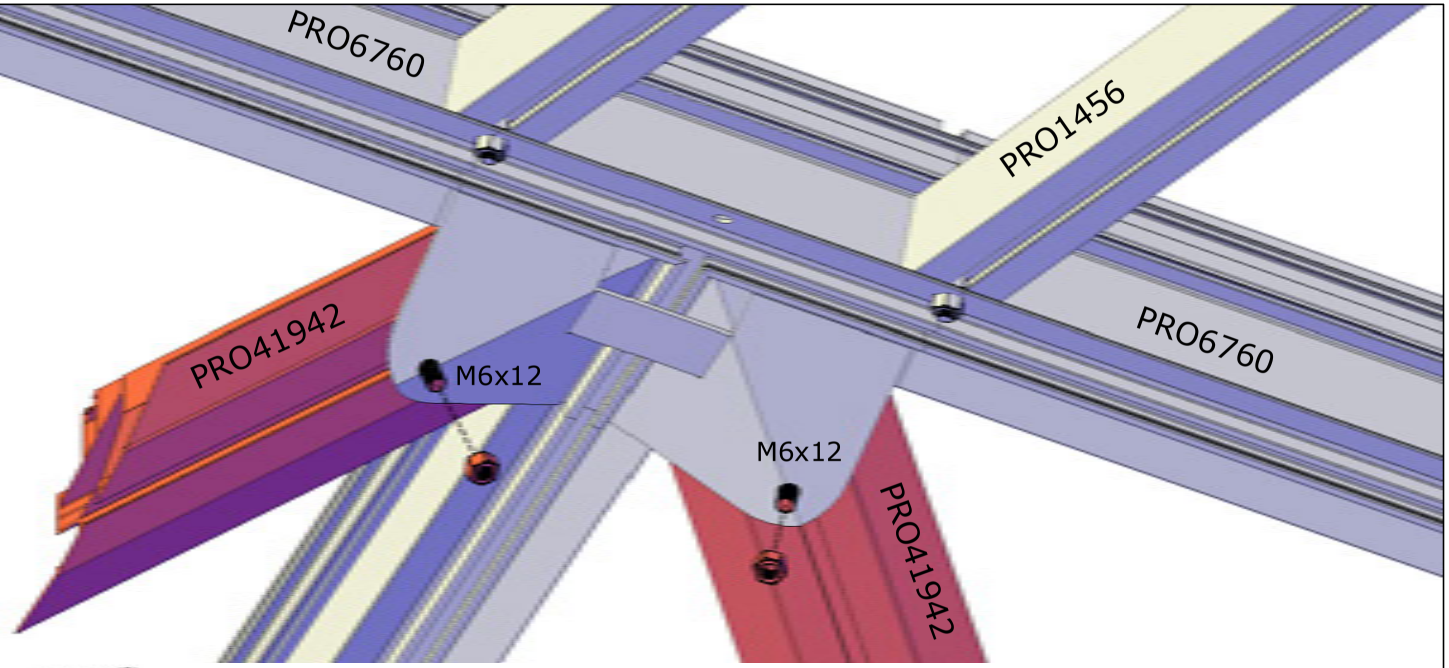


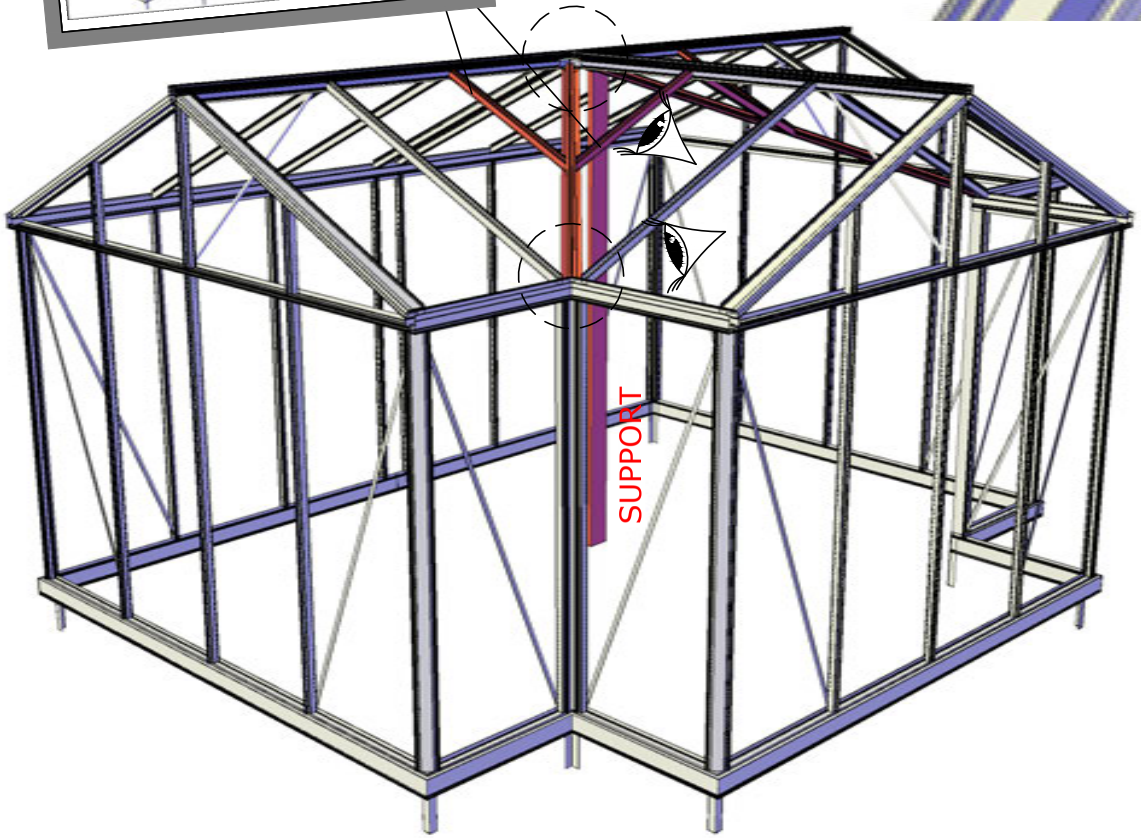


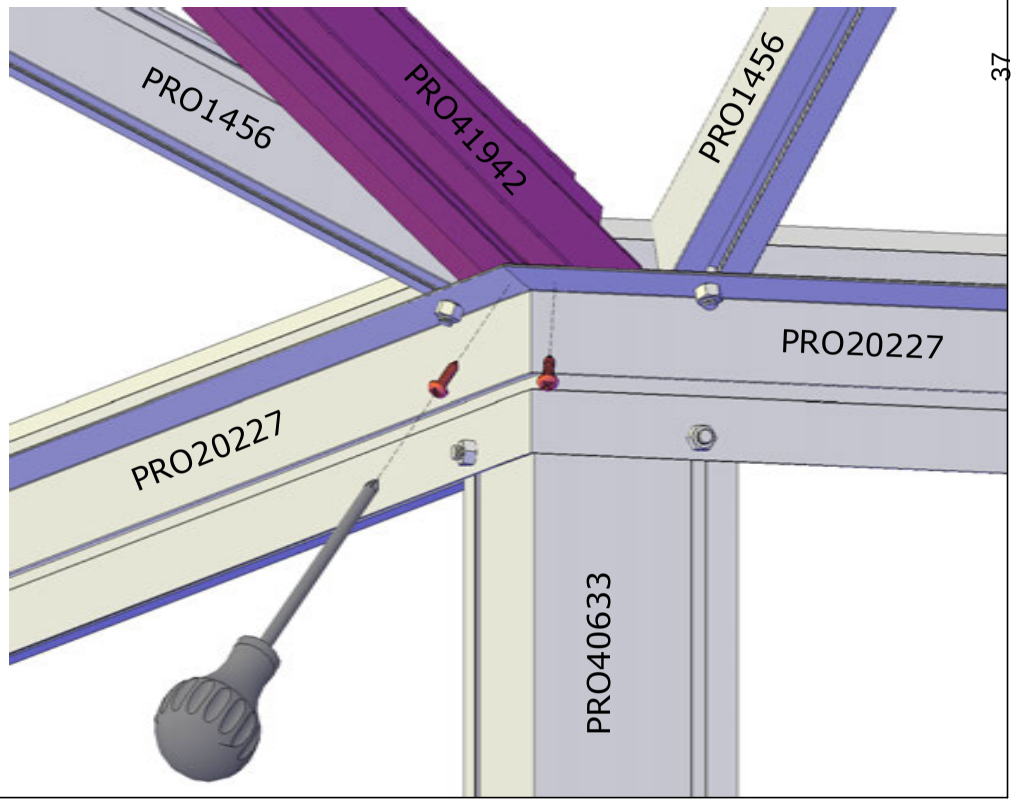
The diagonal support is about 40 1/2"long regardless of what model you have. Yours may attach in either of these manners

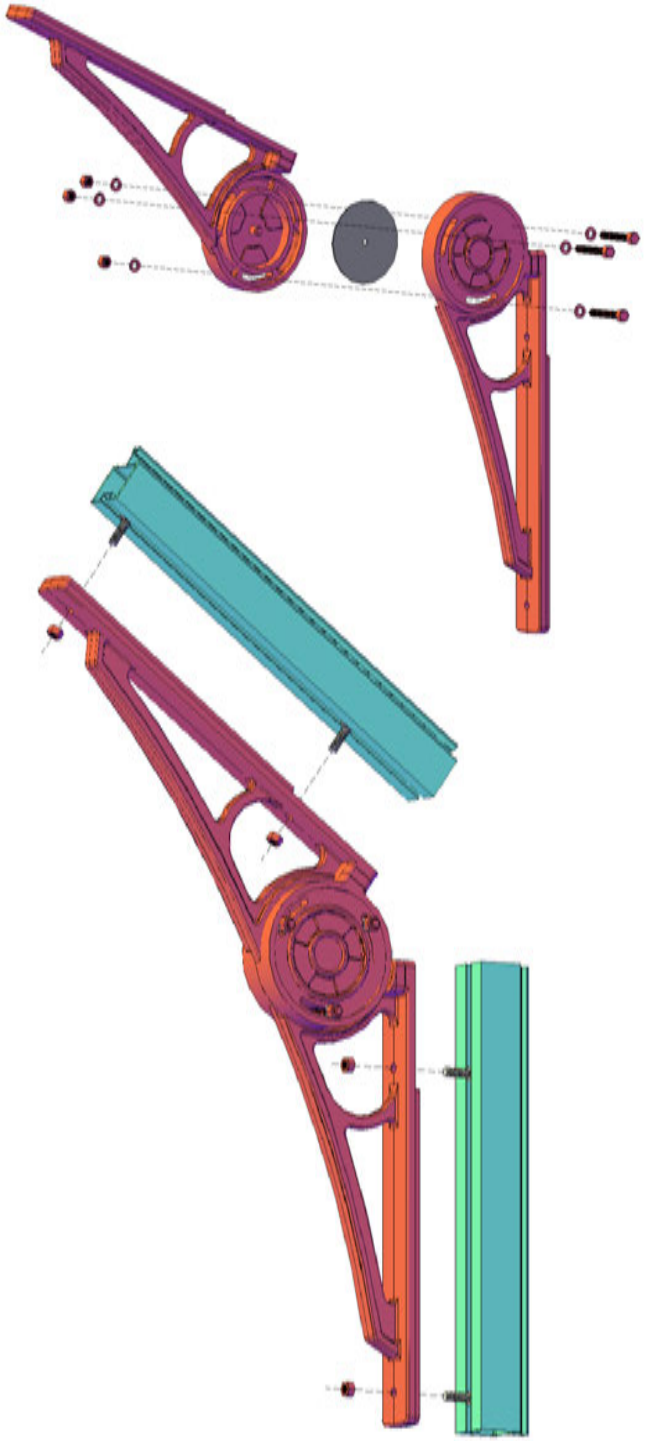


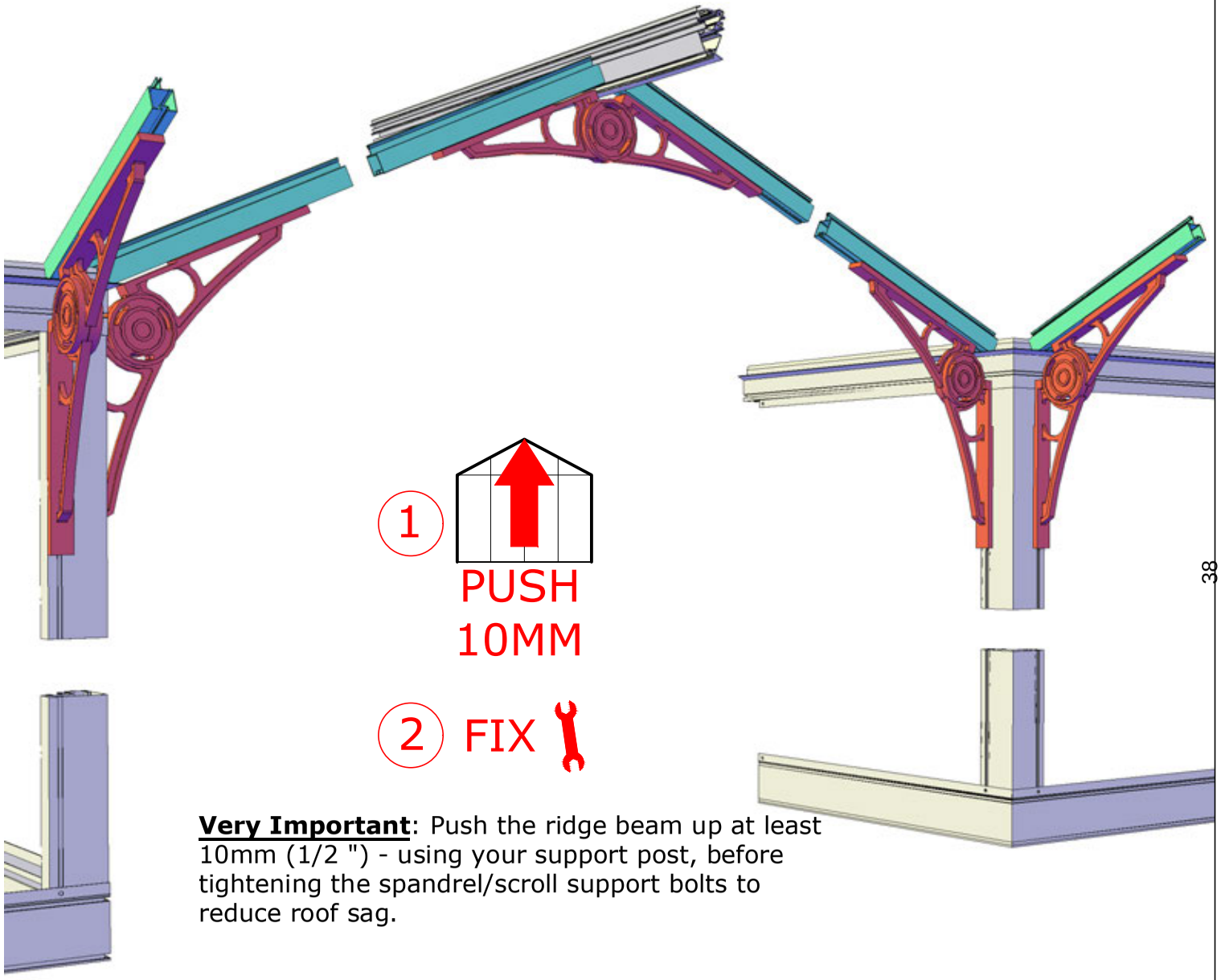



PRO6760
PRO1456
PRO6760
PRO41942
M6x12
M6x12
PRO41942


SUPPORT


PRO1456
PRO41942
PRO1456
PRO20227
PRO20227
PRO40633



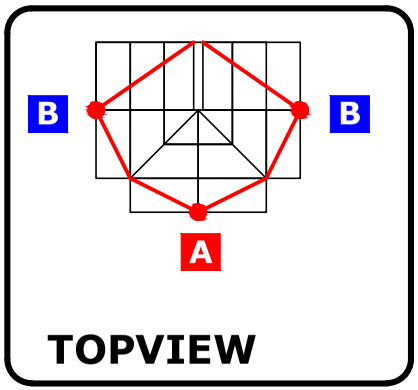


1 PUSH 10MM

2 FIX

Very Important: Push the ridge beam up at least 10mm (1/2 ") - using your support post, before tightening the spandrel/scroll support bolts to reduce roof sag.

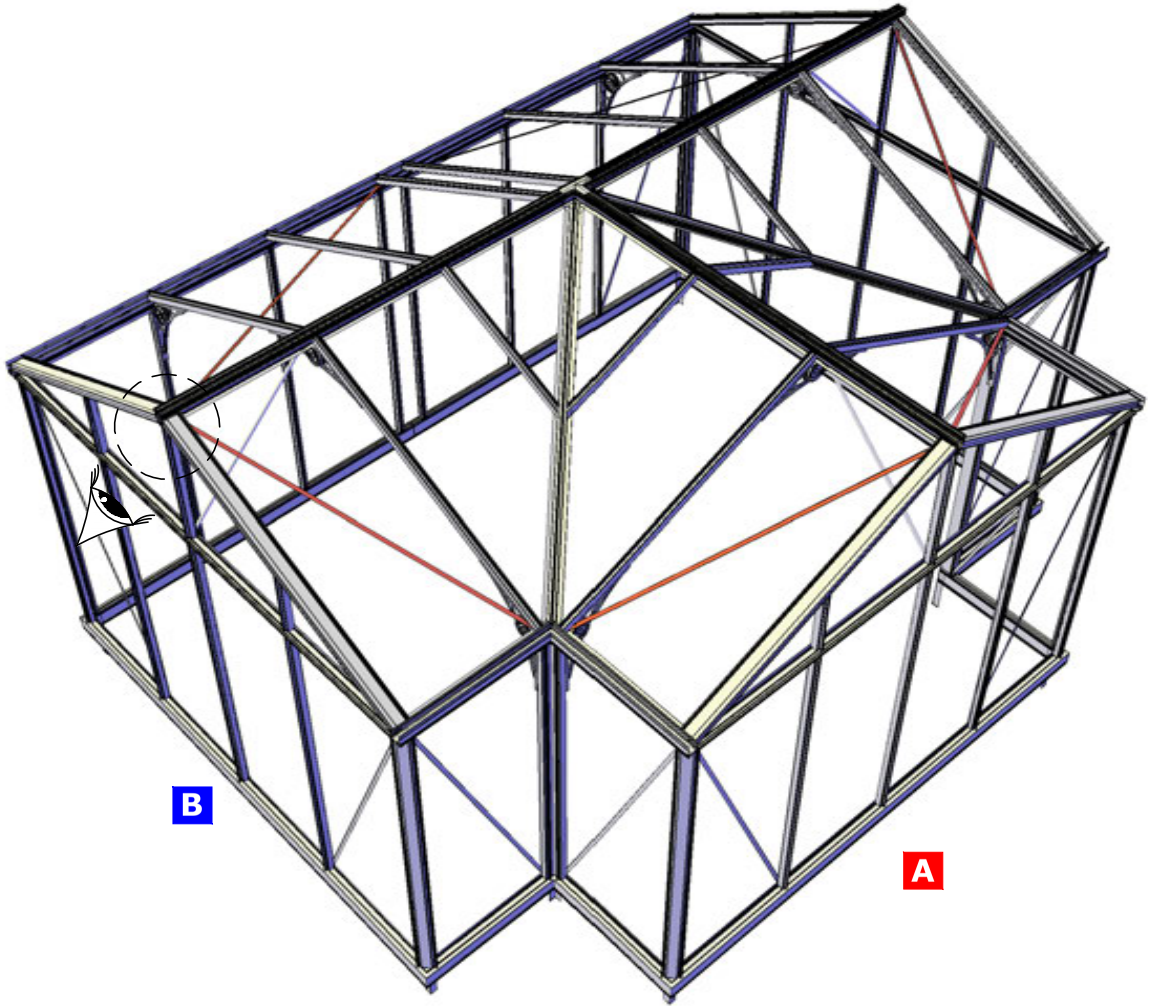
If you find your spandrels are slipping and your roof is sagging, you may drill a new hole in between the slotted holes for a more secure hold. Call Exaco with questions.

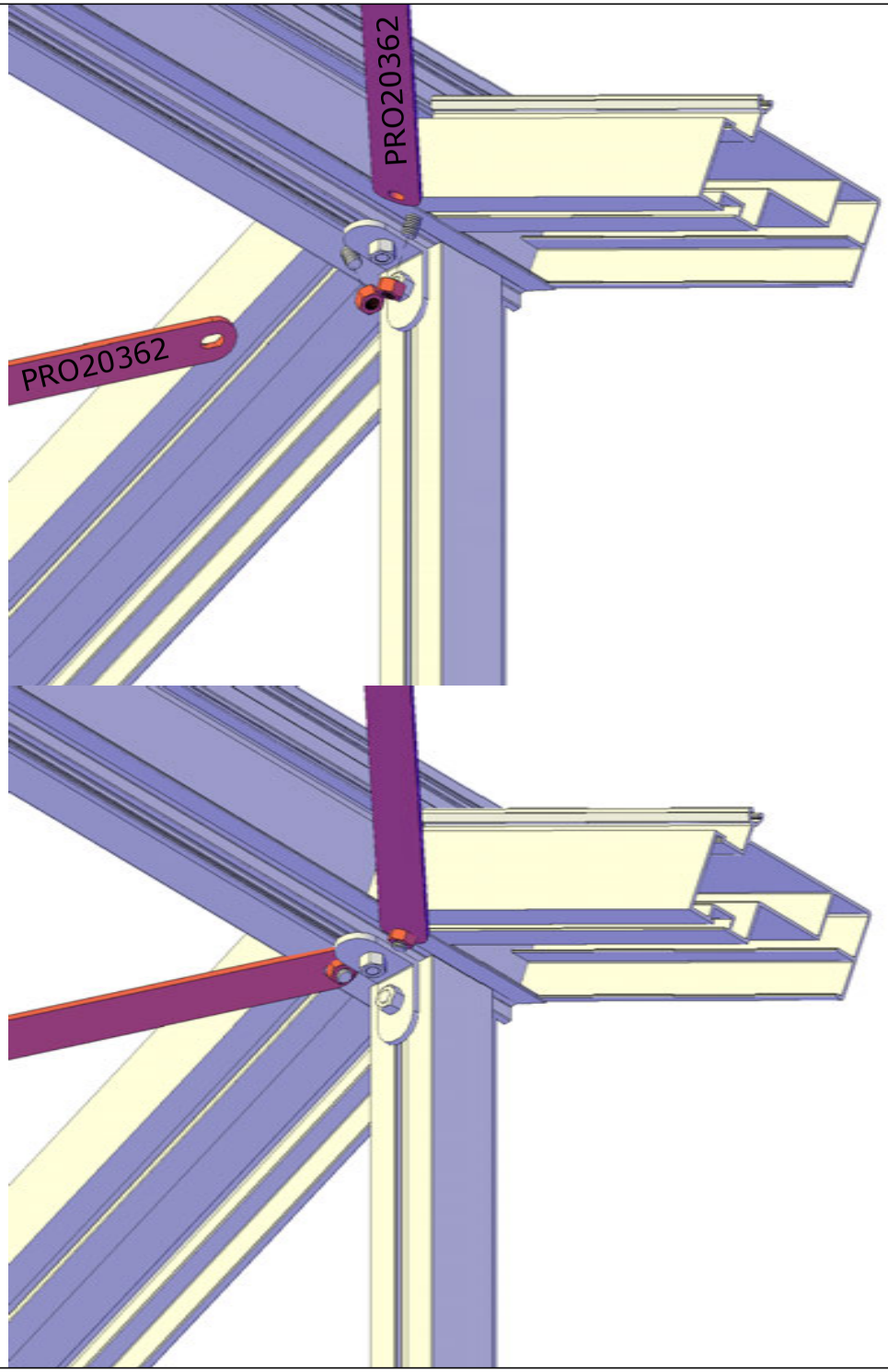


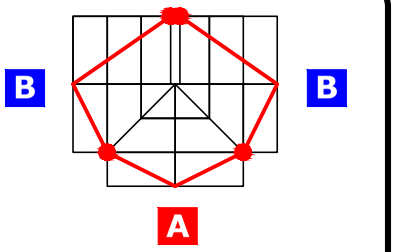
Important! If your wind braces don't fit where they should, your greenhouse is not square/level. Please go back to ensure your structure is square!

The (2) back wind braces are 108 9/16" Long

The front (4) are 70 11/16" Long.





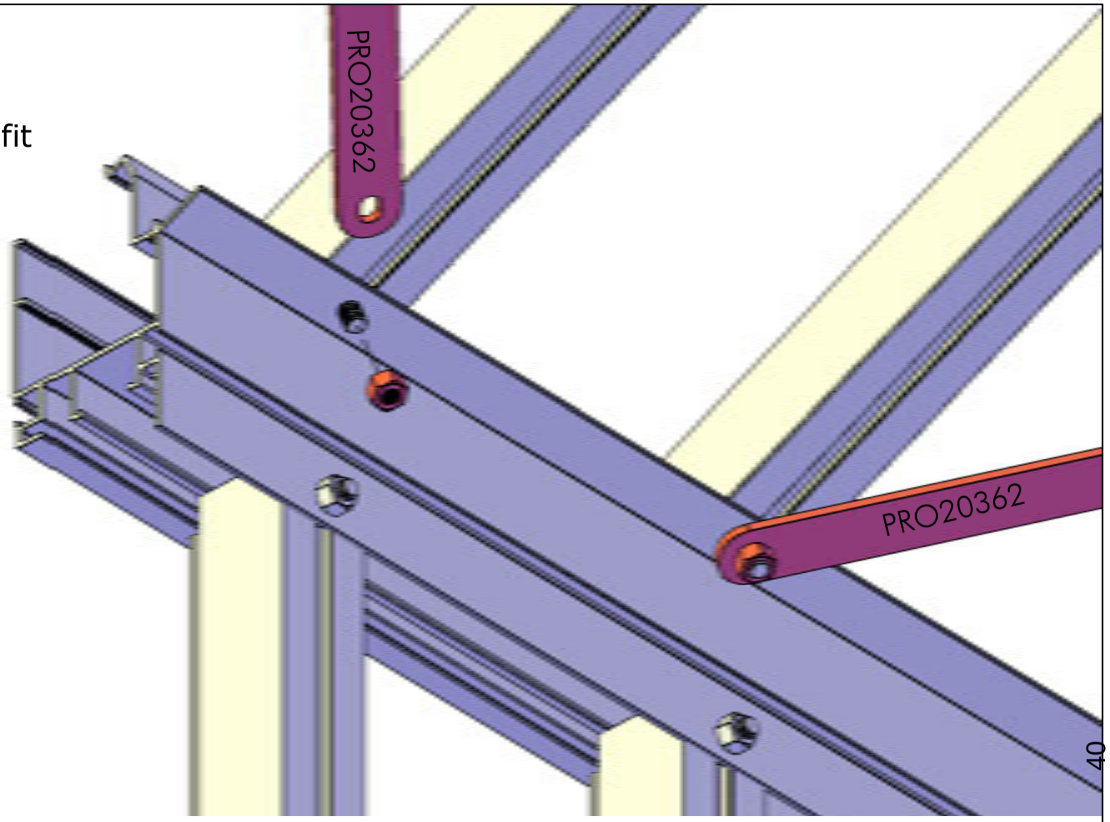


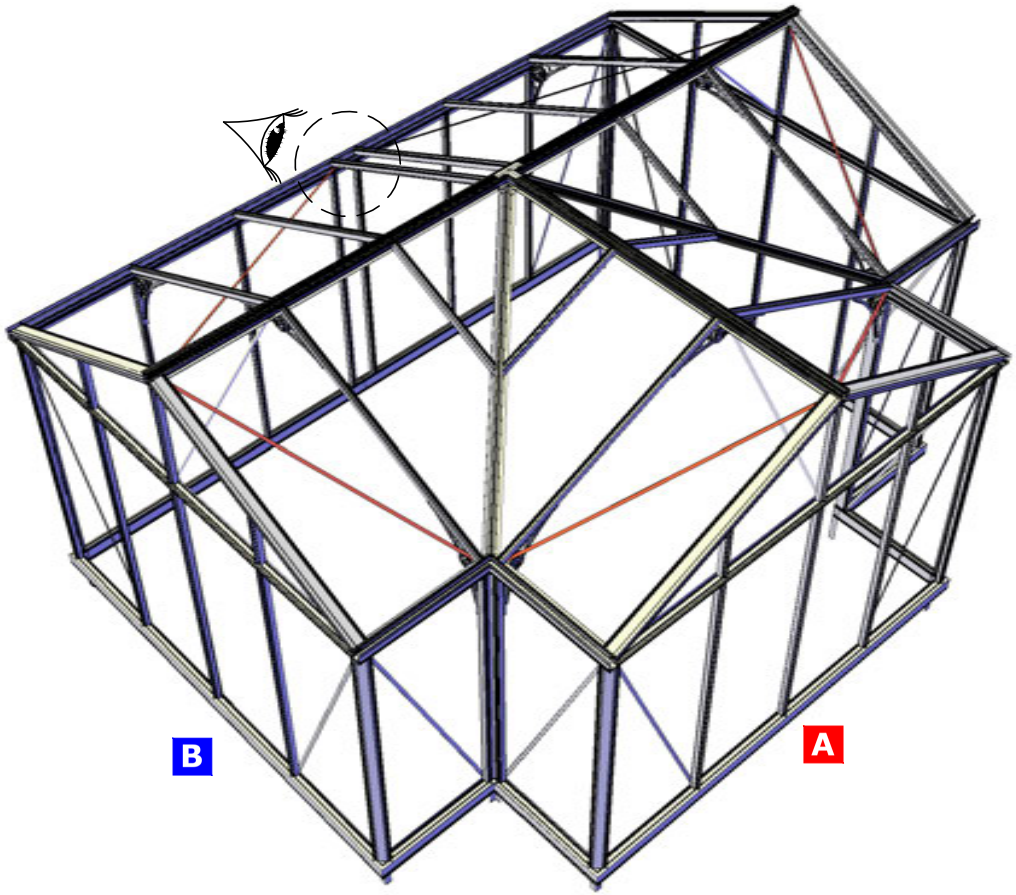
TOPVIEW

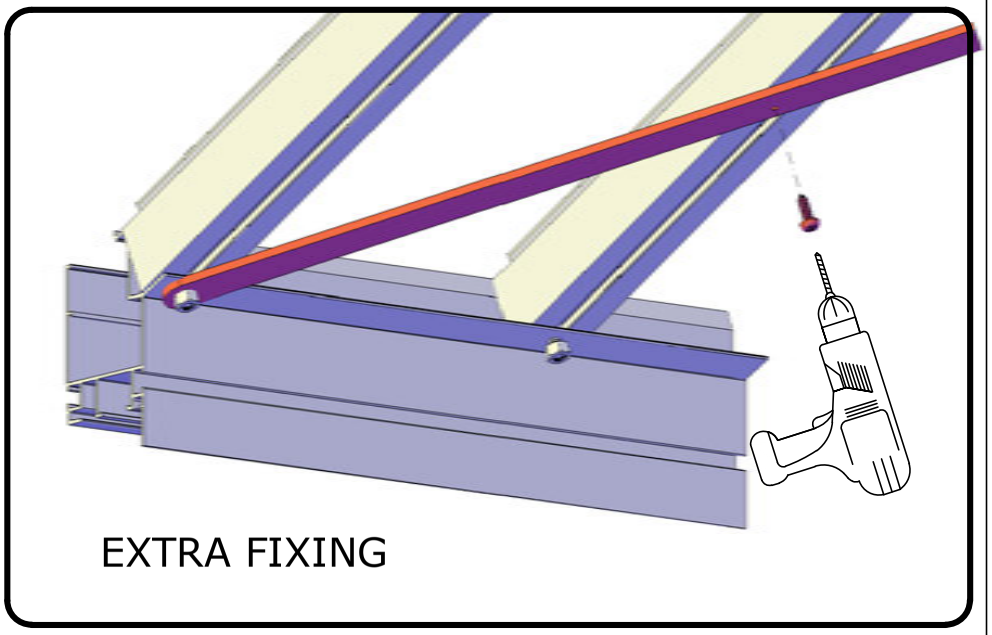
Important! If your wind braces don't fit where they should, your greenhouse is not square/level. Please go back to ensure your structure is square!

The (2) back wind braces are 108 9/16" Long

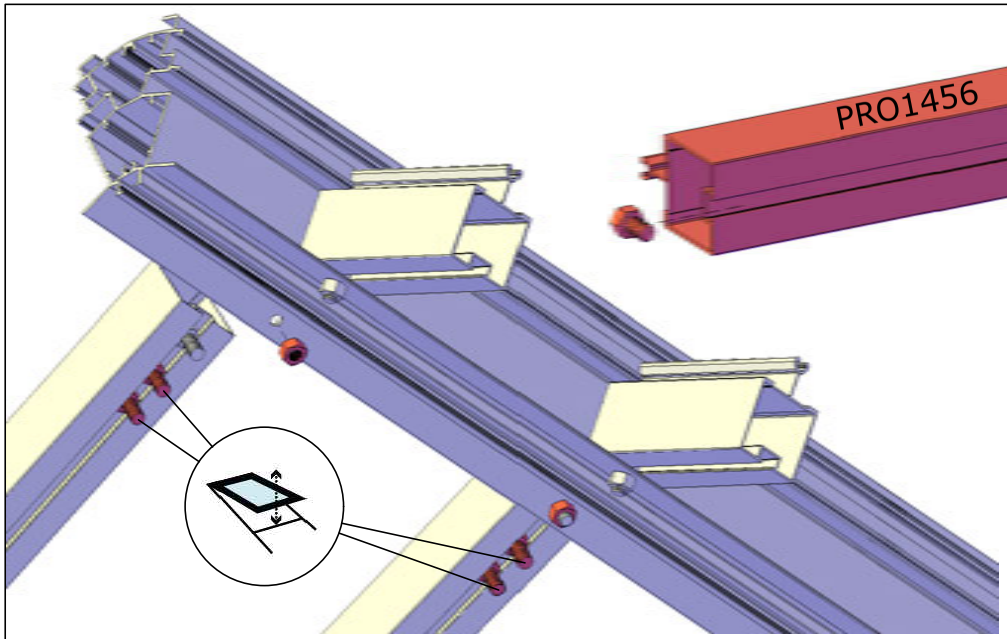
The front (4) are 70 11/16" Long.



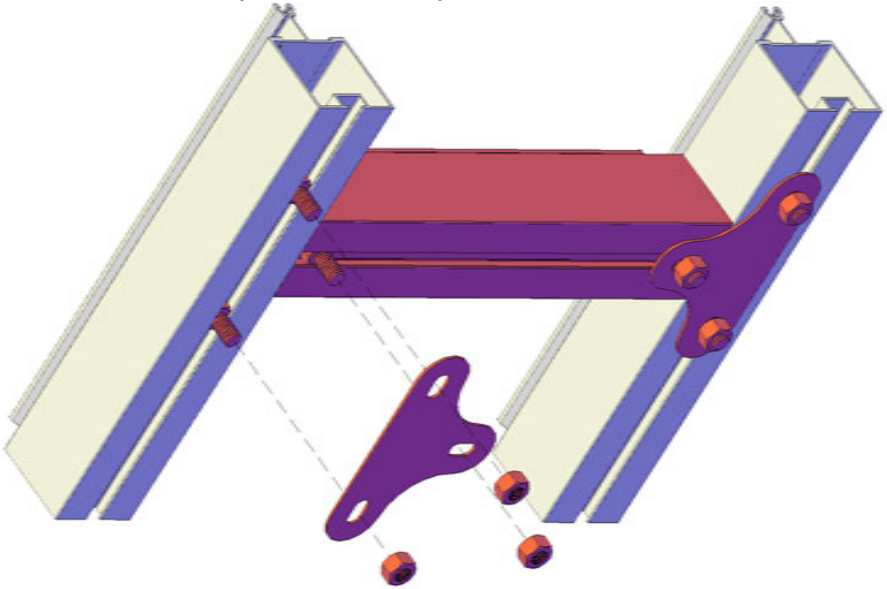


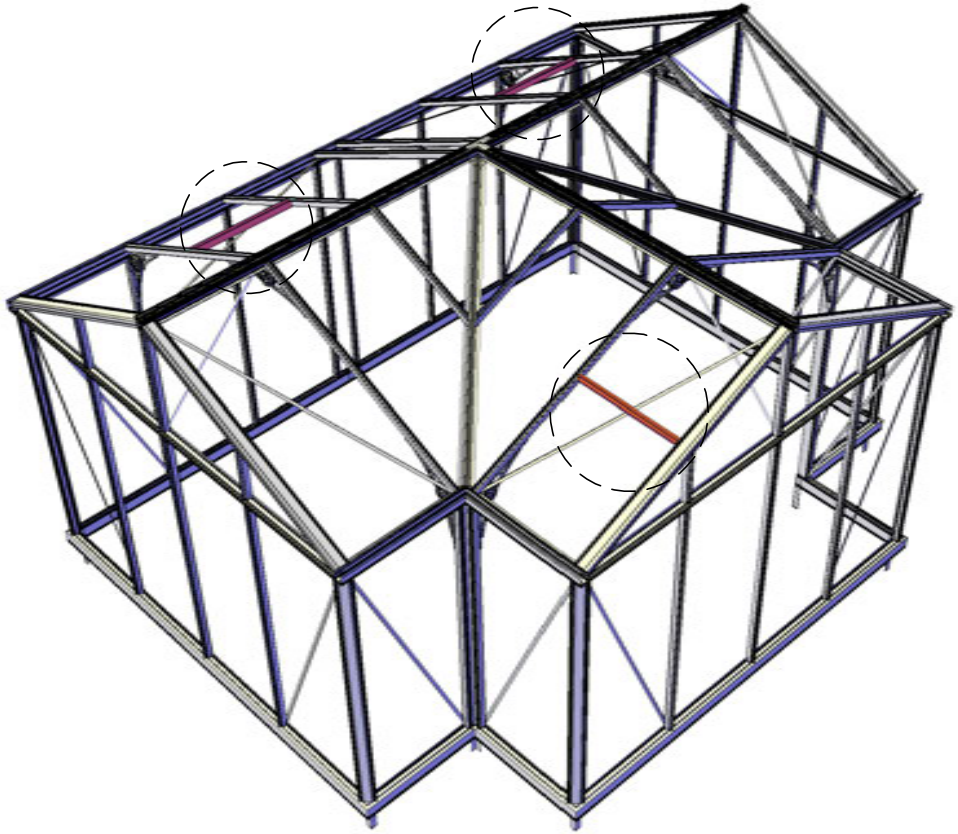


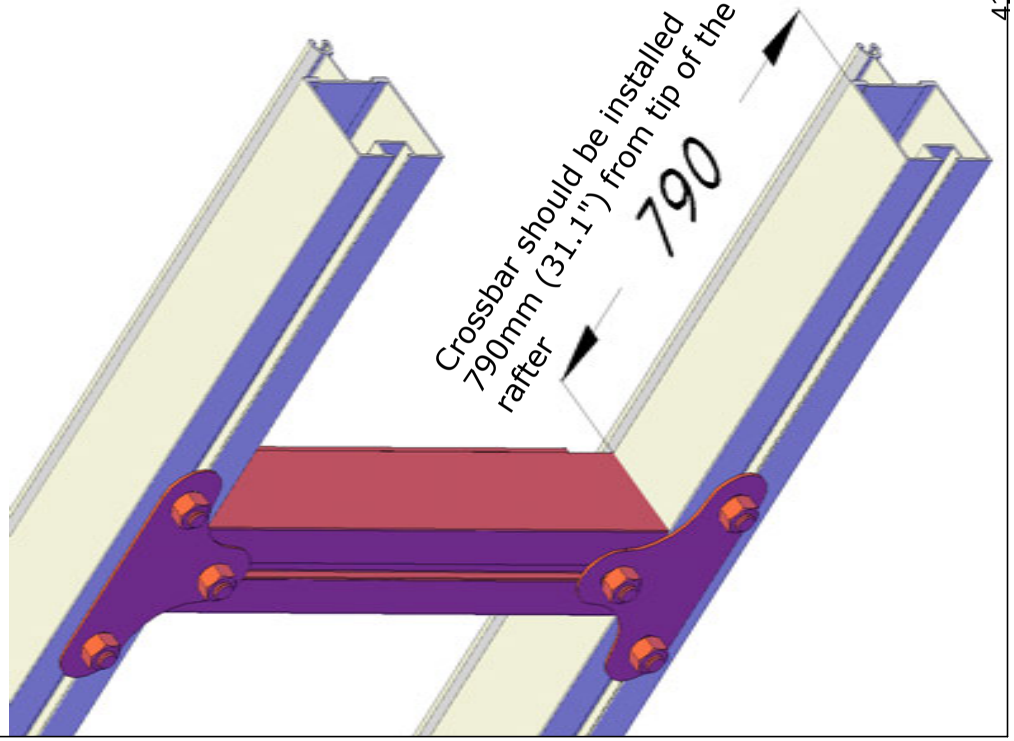
EXTRA FIXING



Crossbar for framing roof vent opening will be found in each Roof Window bag/package.
Roof vents may be installed in any bay. They may not be placed side by side.







You are now ready to install your glazing. If you have polycarbonate glazing, please refer to next page for specific prep regarding the polycarbonate panels - you will not use the crescent shaped gasket (E400330) with your polycarbonate panels.

Tips for installing your glazing (more detailed steps/diagrams follow - this is an overview):

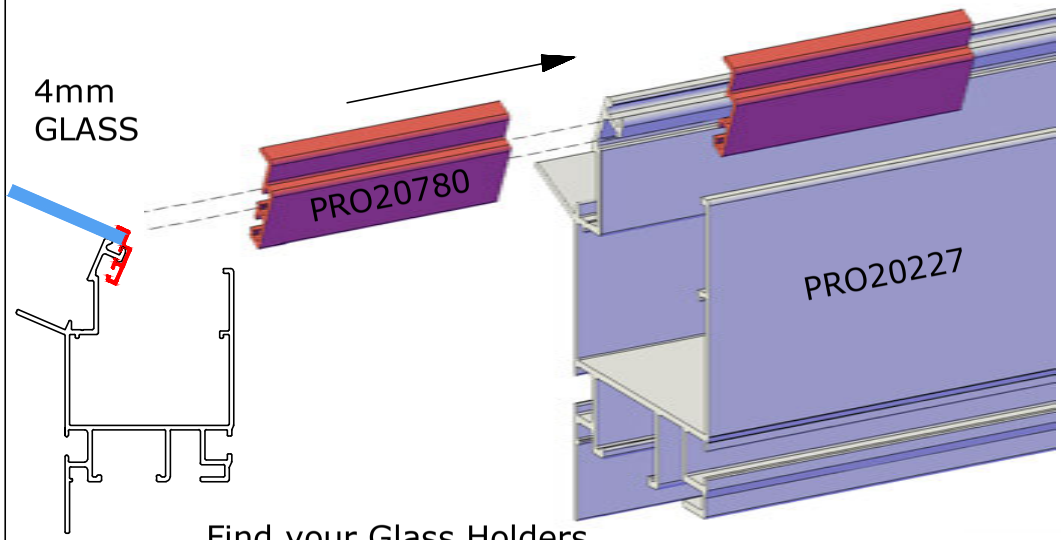
Use the provided glass suction cup - it helps a lot!

Wait until the end to install your roof vents - it will be easier to pop through the openings as needed to place the roof pieces and gaskets.

Start with your small, angled gable ends. For the smallest corner pieces, you may need to remove the vertical profile (PRO1456) next to it. Place the glazing, then replace profile. Secure the glass with the heavy duty gasket (PRO1748) on the verticals. Insert the crescent gasket (E400330) into the eaves (see figure on following pages) - it will be held in a flange that is further up than the one you can see.

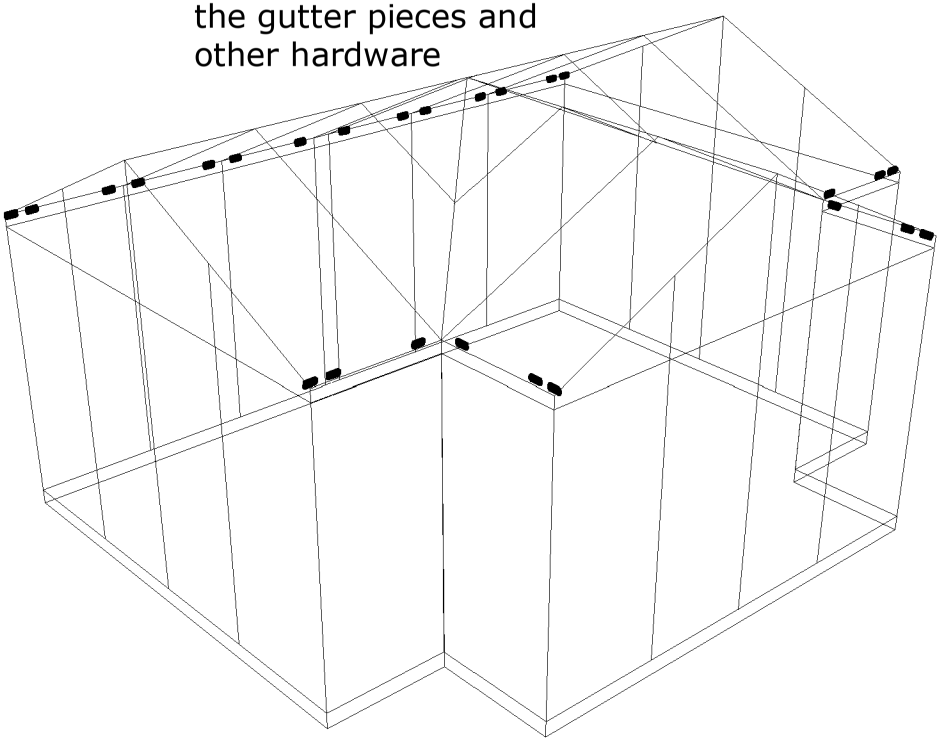
Do the roof next - always work one pane at a time! Slide top edge of glass into the ridge beam and set bottom into glassholder (PRO20780). Place one pane, then insert crescent gasket (E400330) into ridge and heavy duty gasket (PRO1748) into the channel on the rafter (PRO1456) on the far side of the glass. Place the next piece of glazing, then insert crescent gasket into ridge and the heavy duty gasket into the rafter on the far side. Repeat for the rest of the roof. You will also add the heavy duty gasket into the crossbar (PRO1456) that frames the roof vent openings.

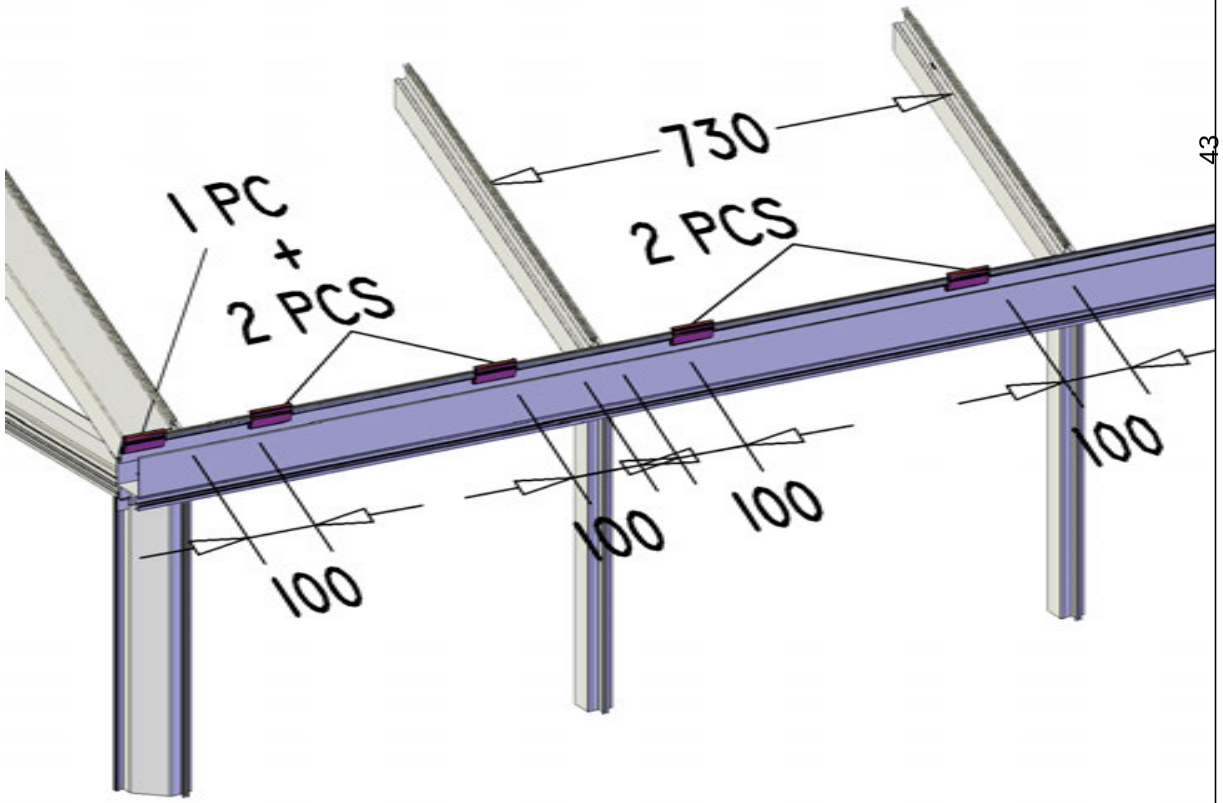
Finally place your sidewall panes, working one at a time. Place a panel, then secure one side with heavy duty gasket(PRO1748), place next panel, then secure where the two panel meet with gasket (PRO1748). **NOTE:** The crescent gasket (E400330) is **NOT** inserted at the top of the sidewall. There will be no gasket there.



IMPORTANT! When installing roof glazing start with the smallest triangle pieces and work outward! It may help to loosen the bolts on the small PRO1456 pieces next to the triangle glass when installing the smallest pieces.

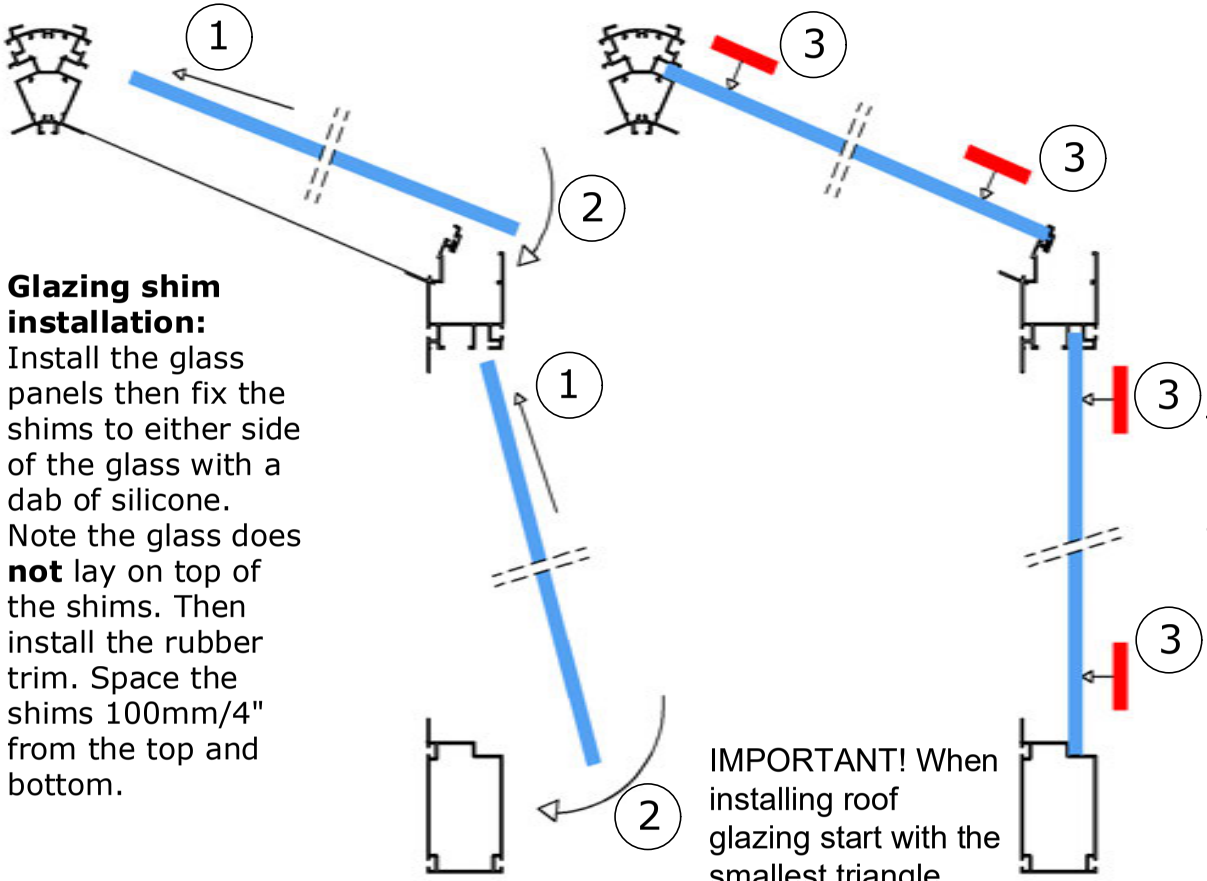
Find your Glass Holders in the Zak_H bag - with the gutter pieces and other hardware



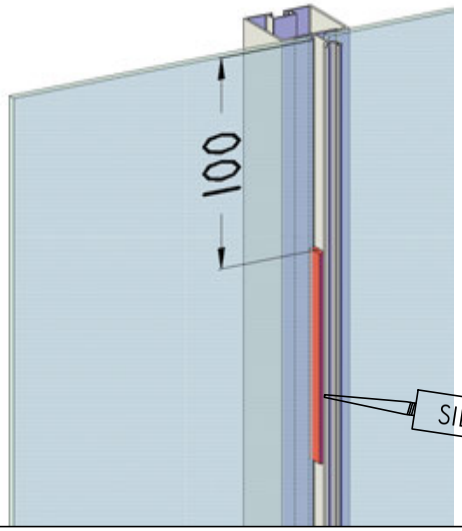


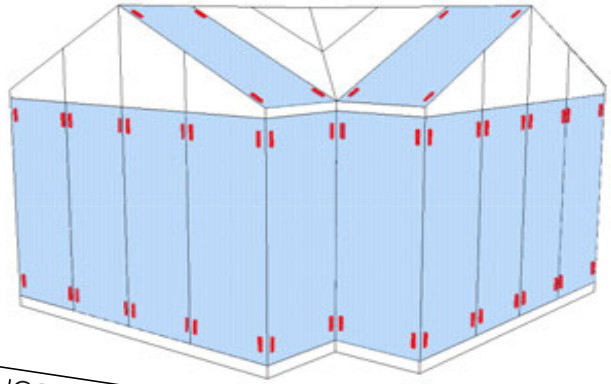
Glazing supports slide onto the gutter profile, space them 100mm or 4 inches from each roof profile.)

Glazing shim installation:
Install the glass panels then fix the shims to either side of the glass with a dab of silicone. Note the glass does **not** lay on top of the shims. Then install the rubber trim. Space the shims 100mm/4" from the top and bottom.

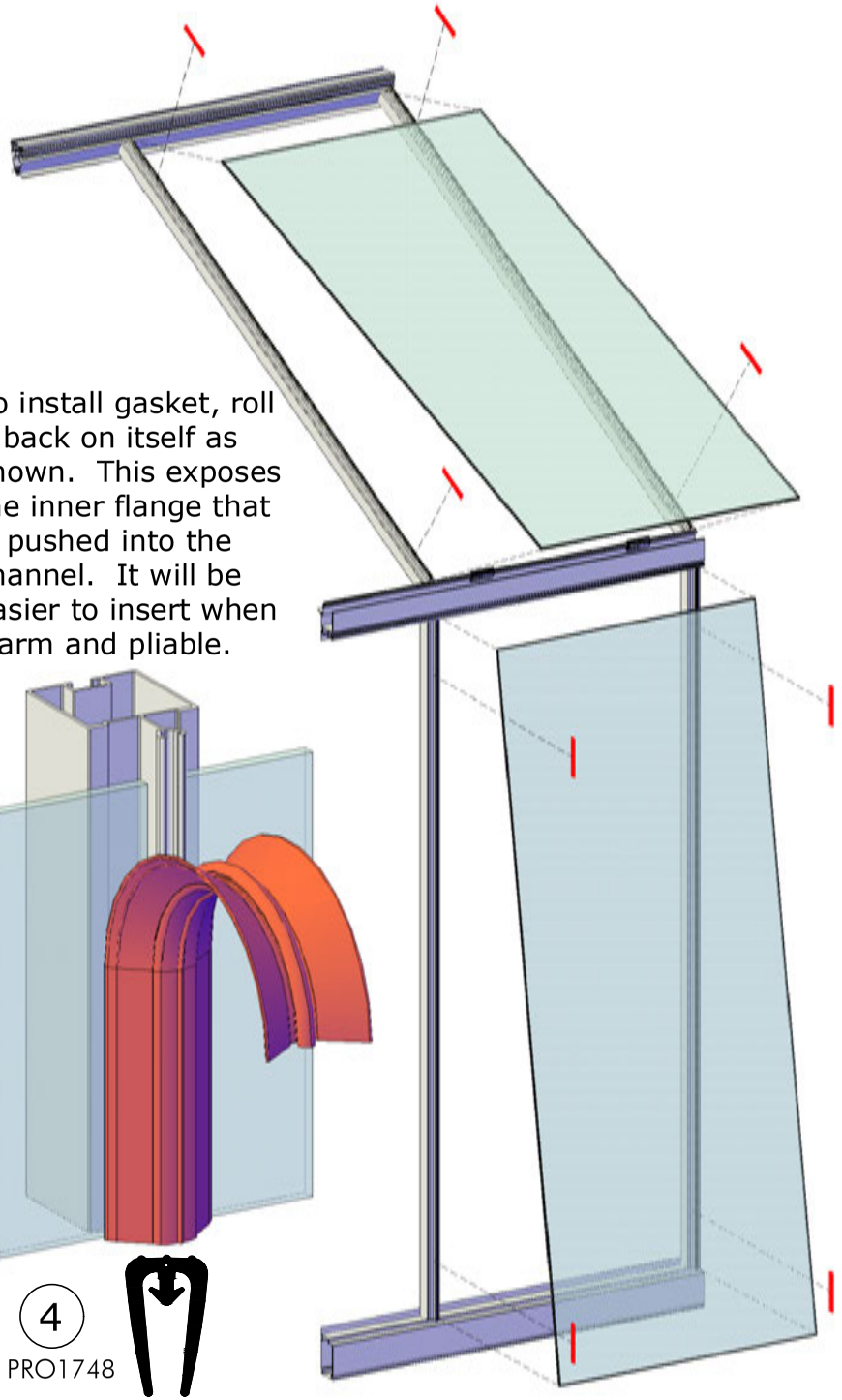


IMPORTANT! When installing roof glazing start with the smallest triangle pieces and work outward!

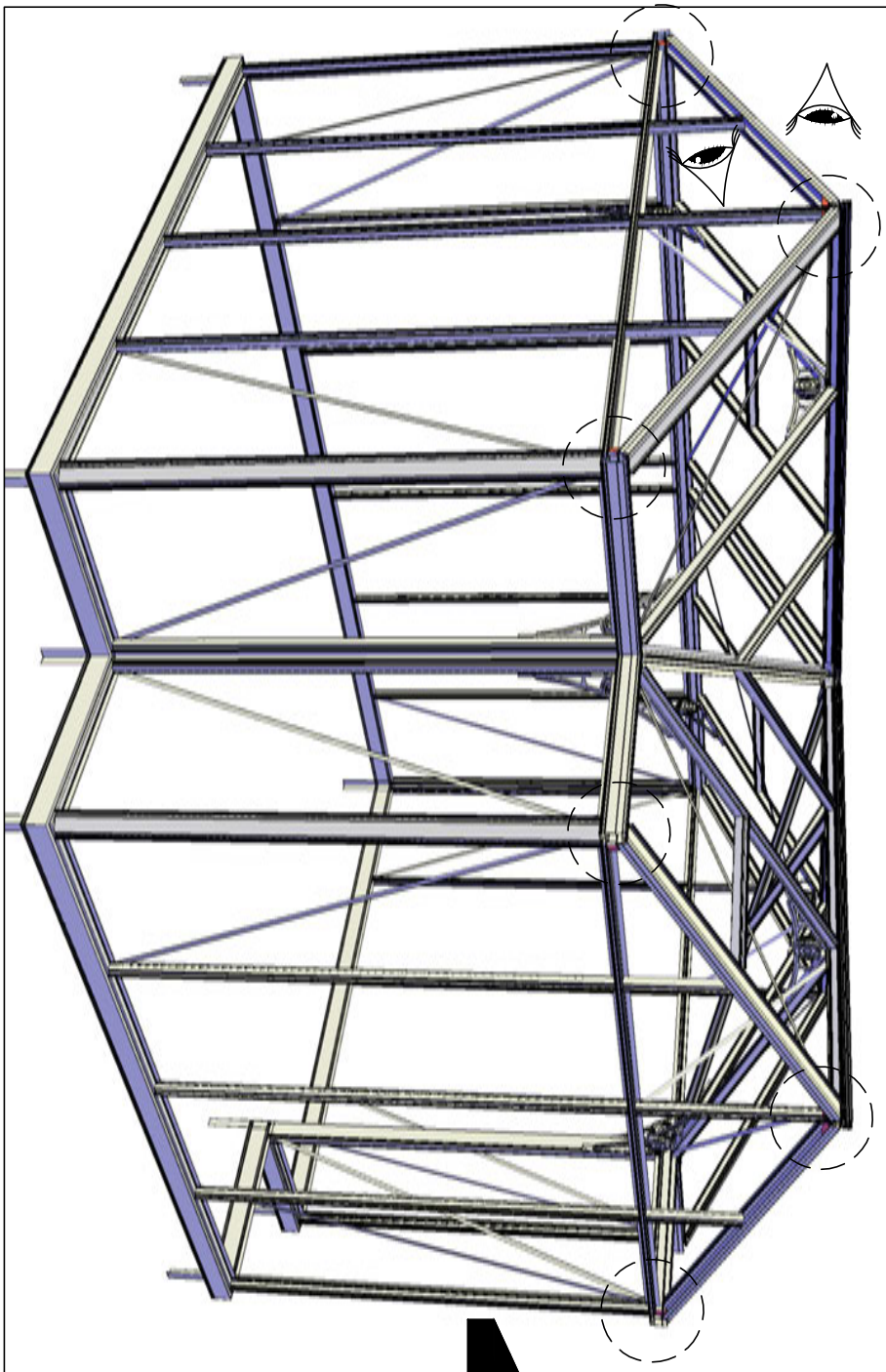


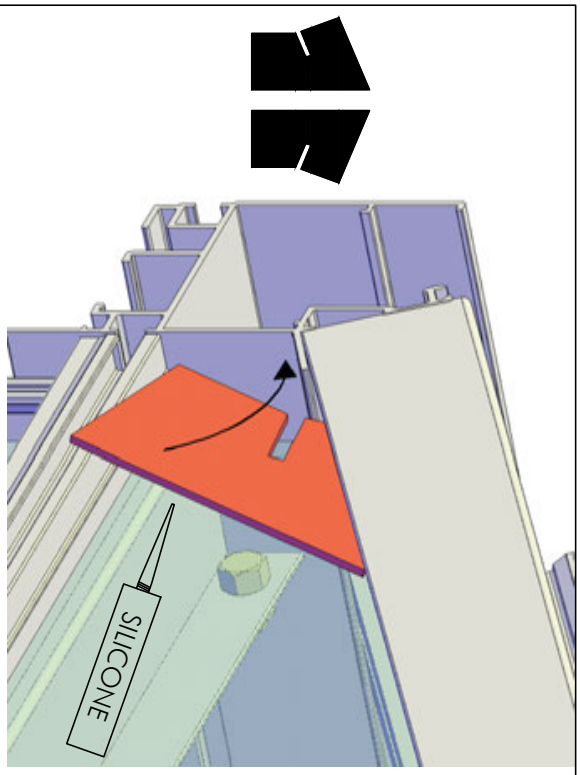


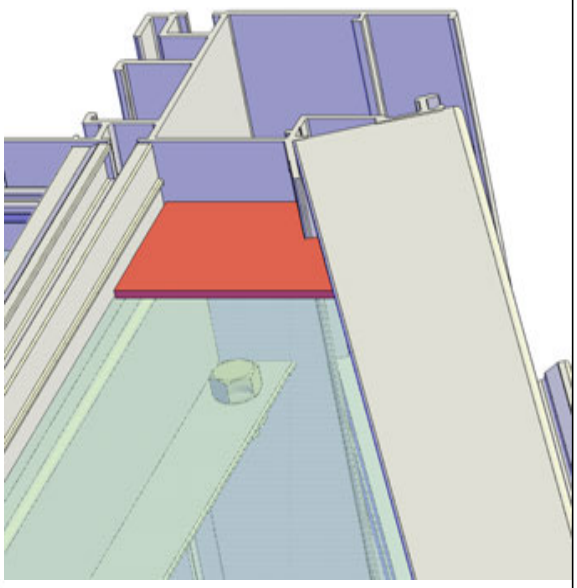
To install gasket, roll it back on itself as shown. This exposes the inner flange that is pushed into the channel. It will be easier to insert when warm and pliable.

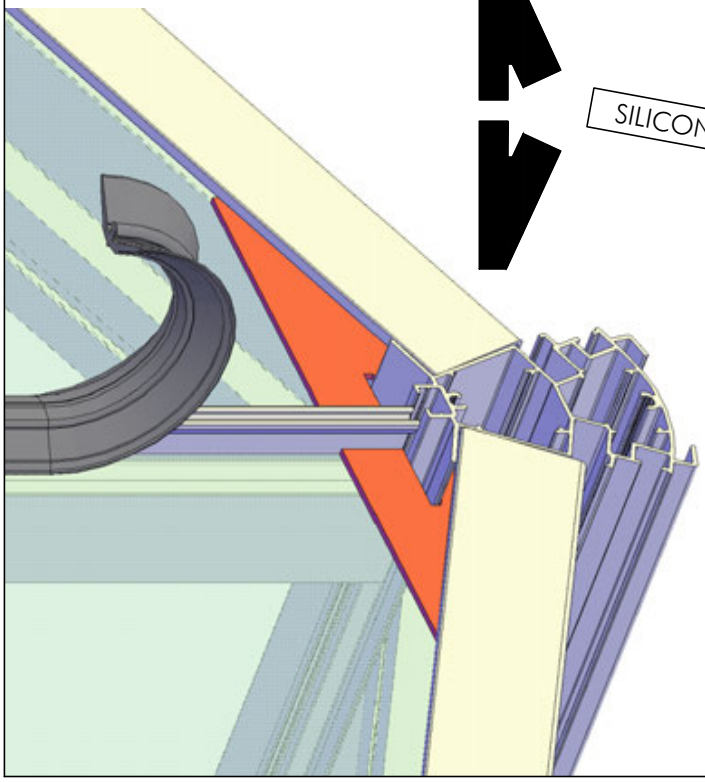


PRO1748

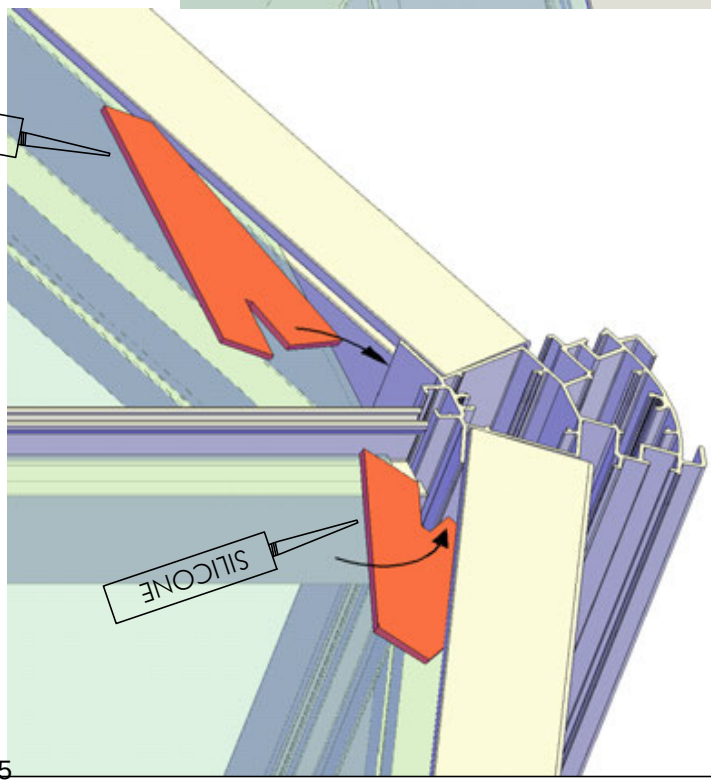






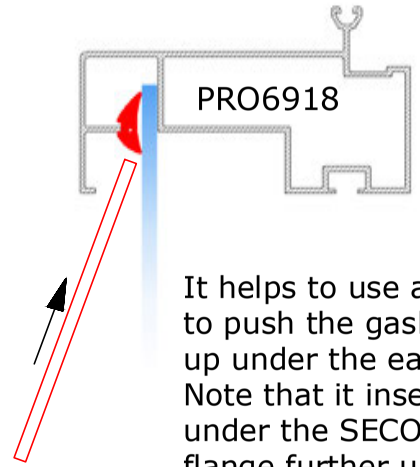


SILICONE

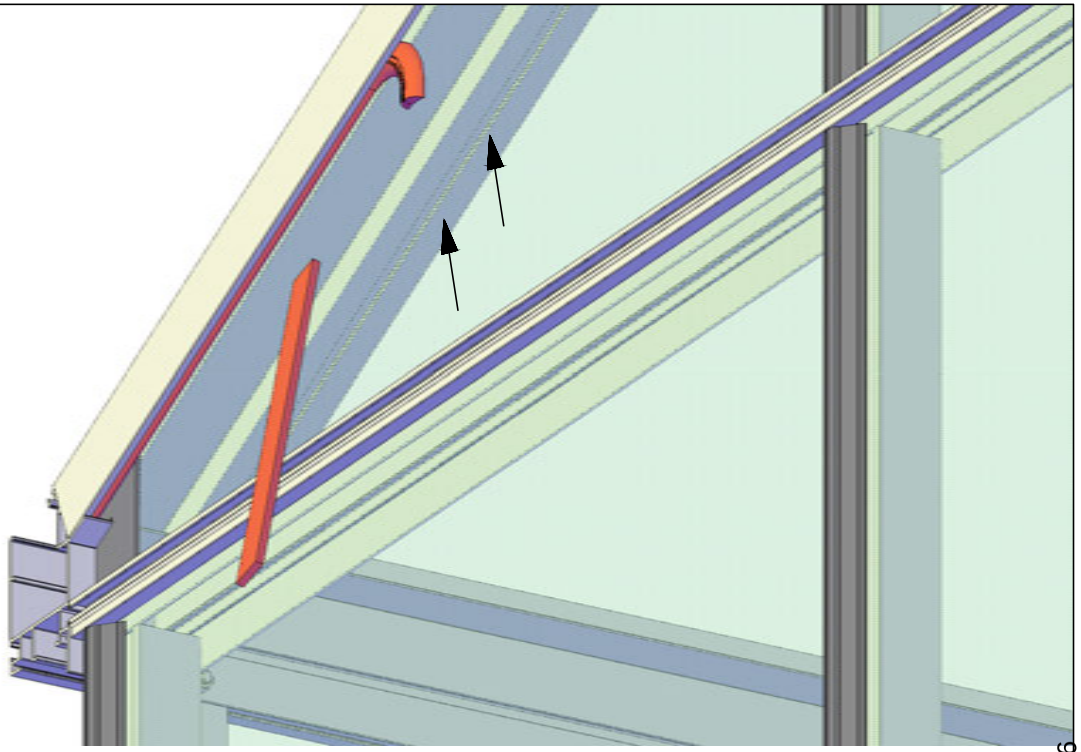


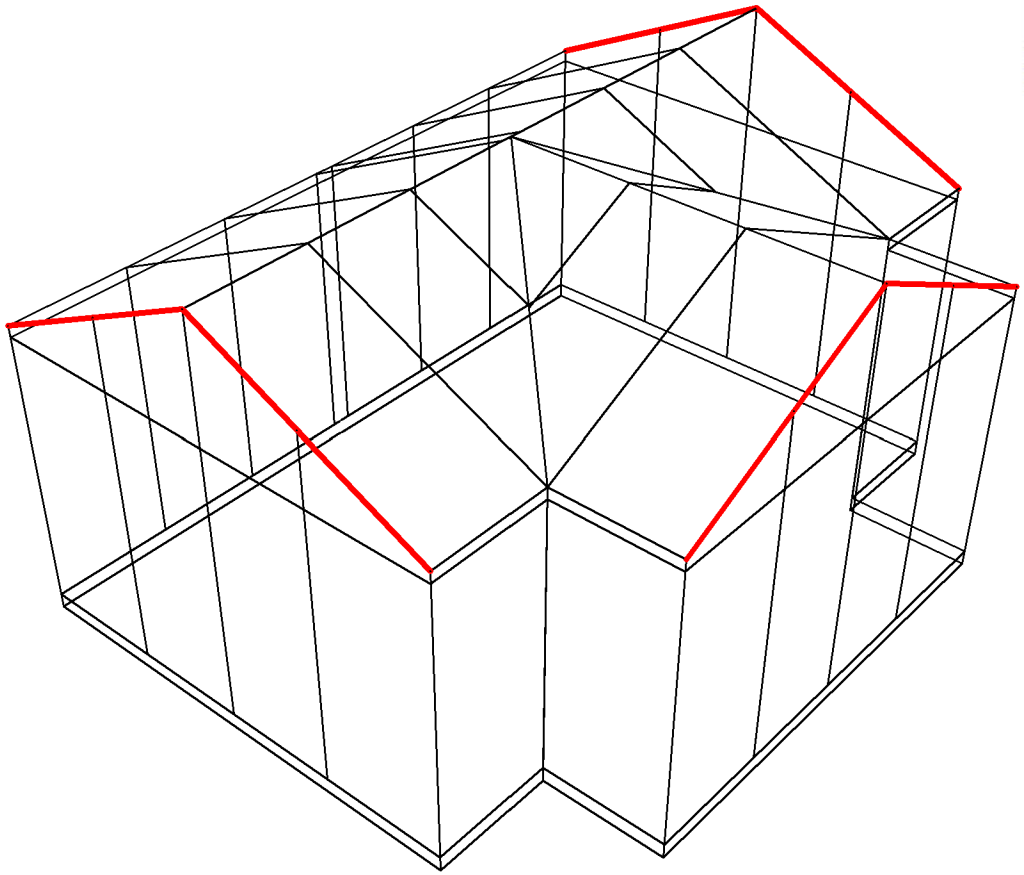
Crescent seal is only installed in the eaves and roof.
Not along side walls.

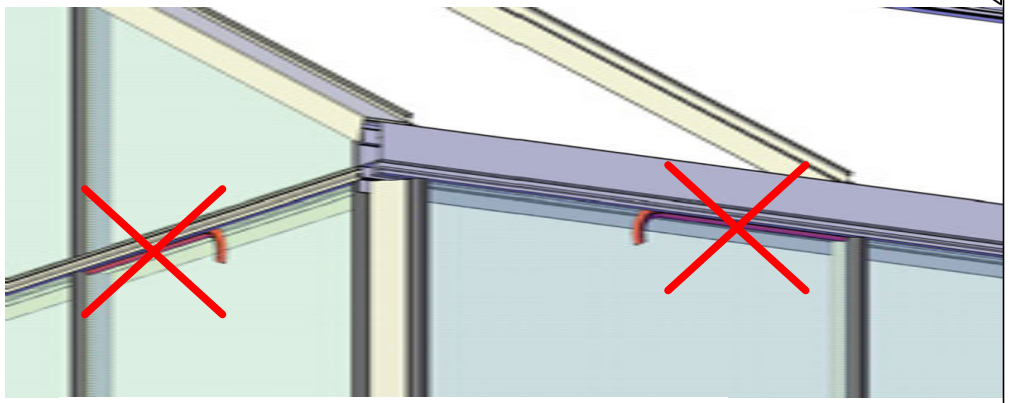
E400330

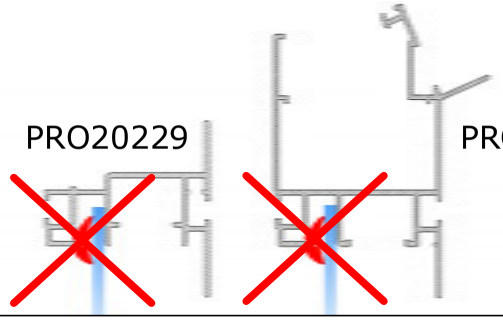


It helps to use a tool to push the gasket up under the eaves. Note that it inserts under the SECOND flange further up.

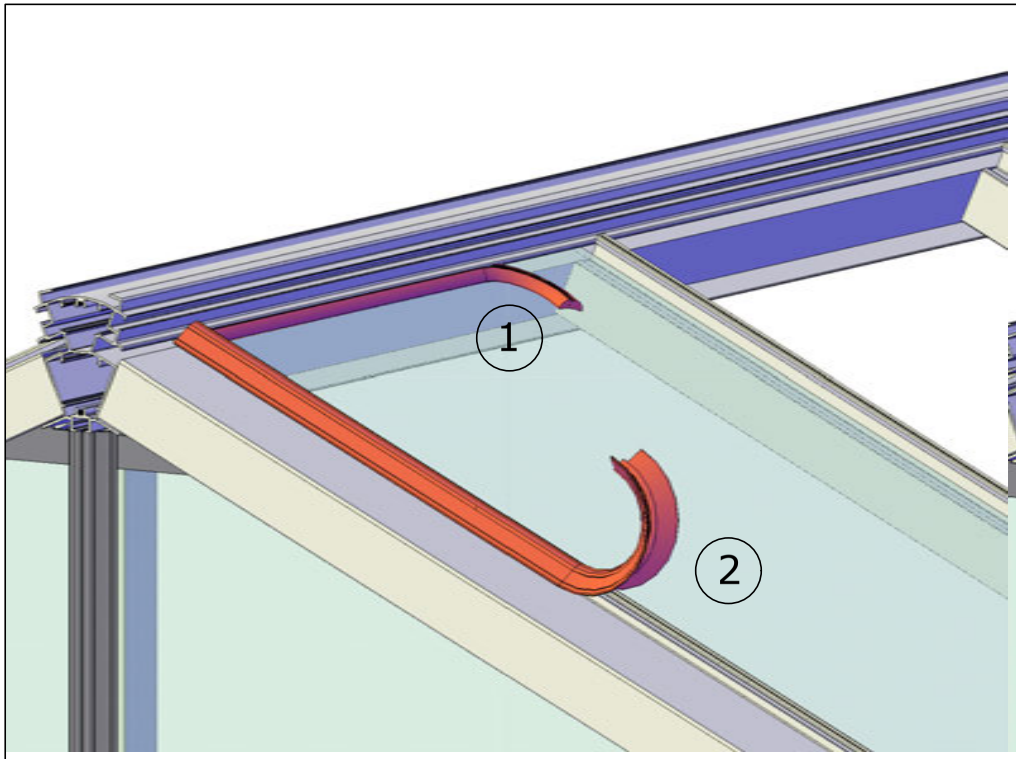


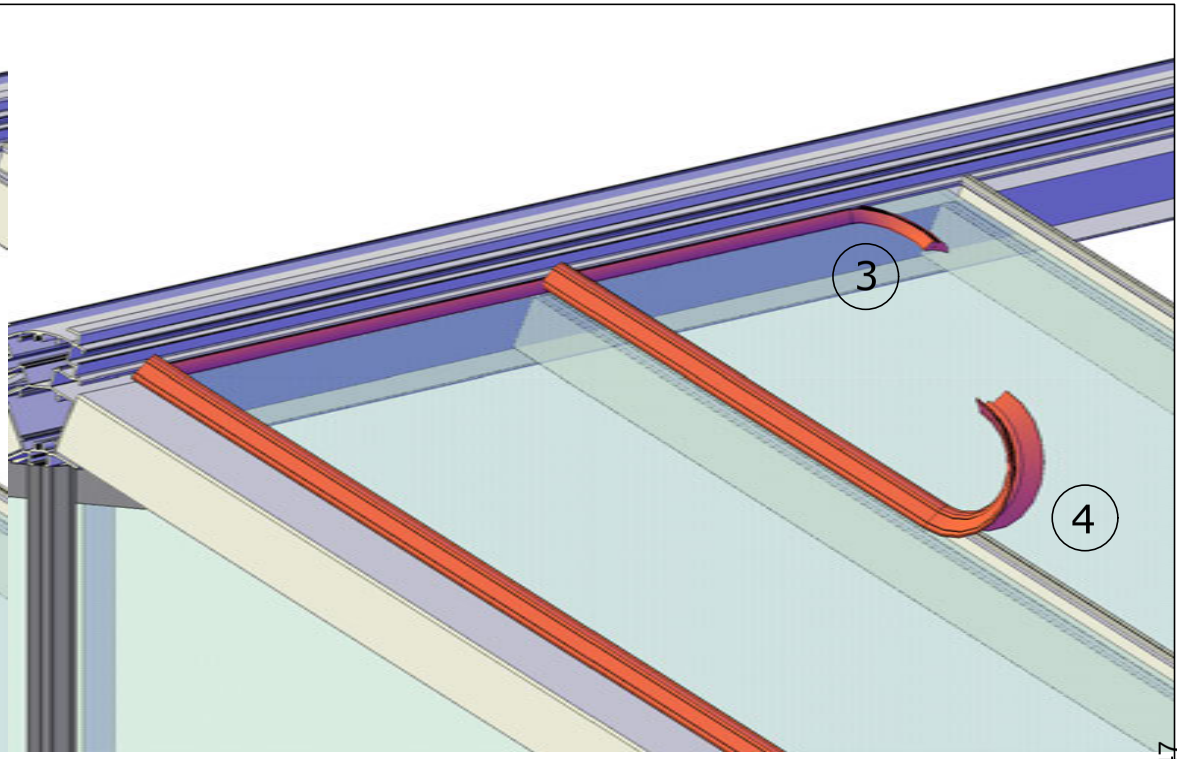




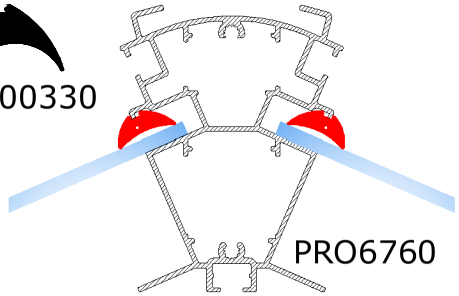


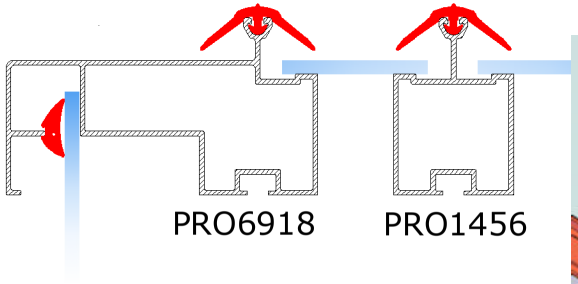
Crescent seal is only installed in the eaves and roof. Not along side walls.

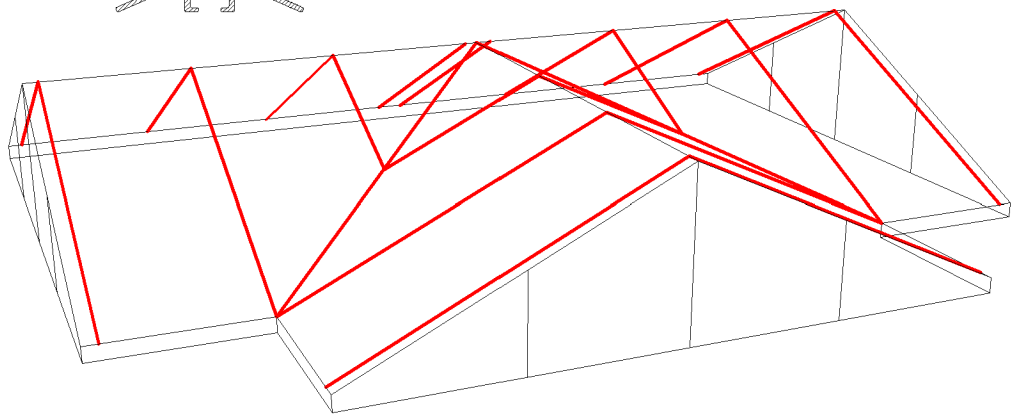


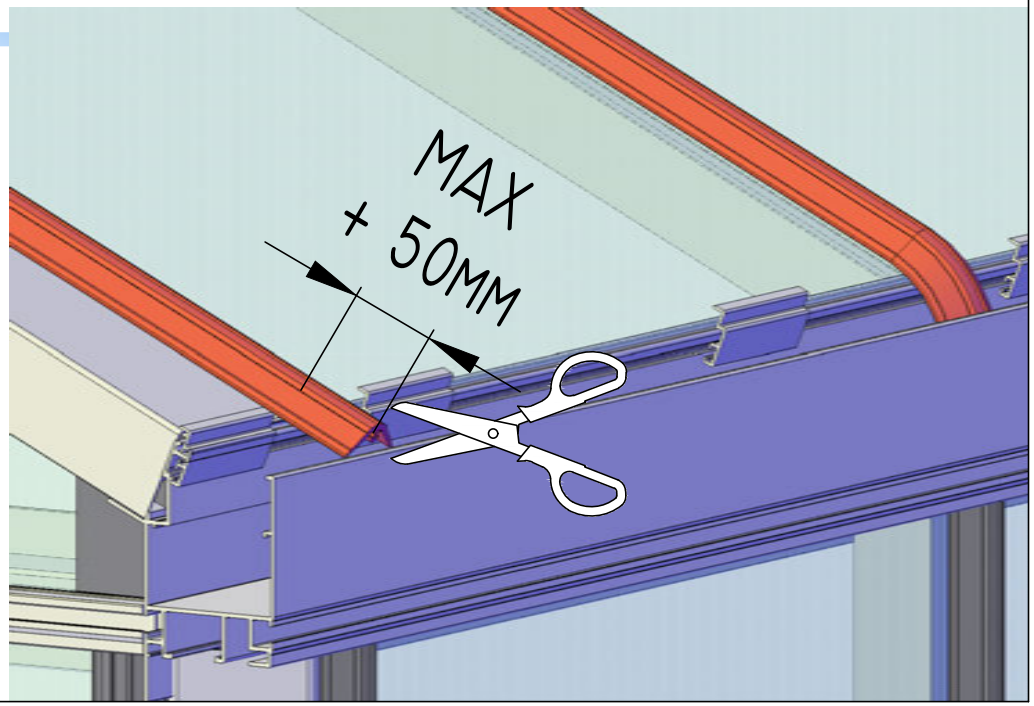


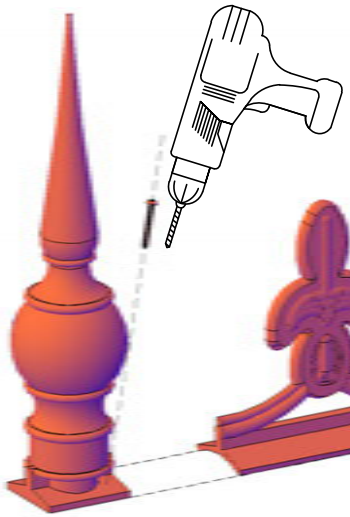
E400330



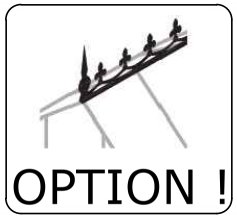


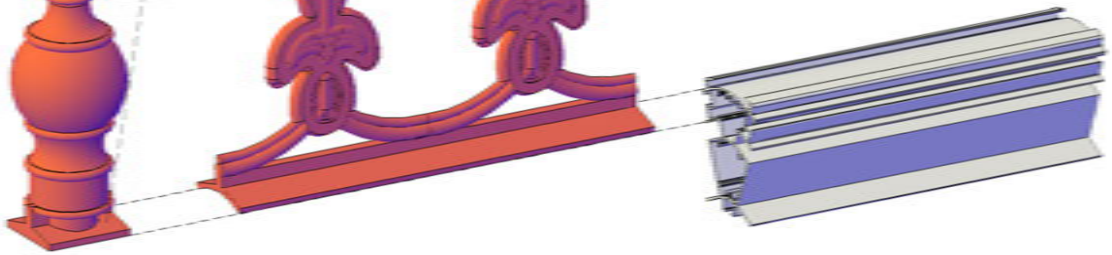


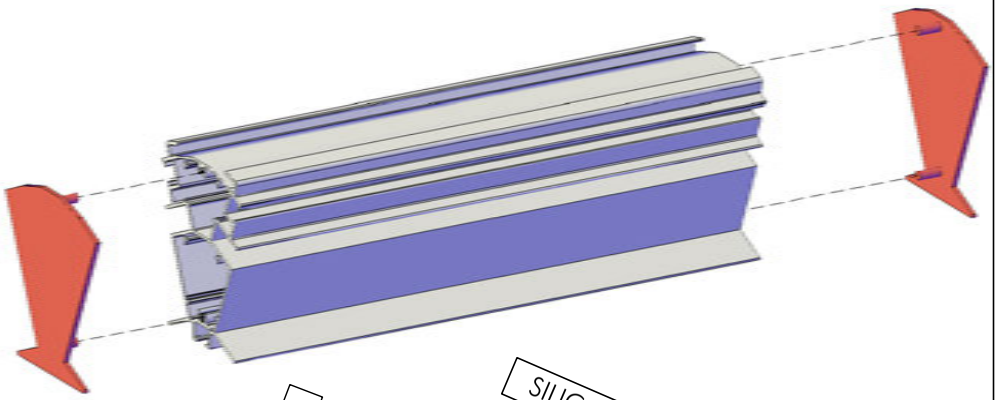


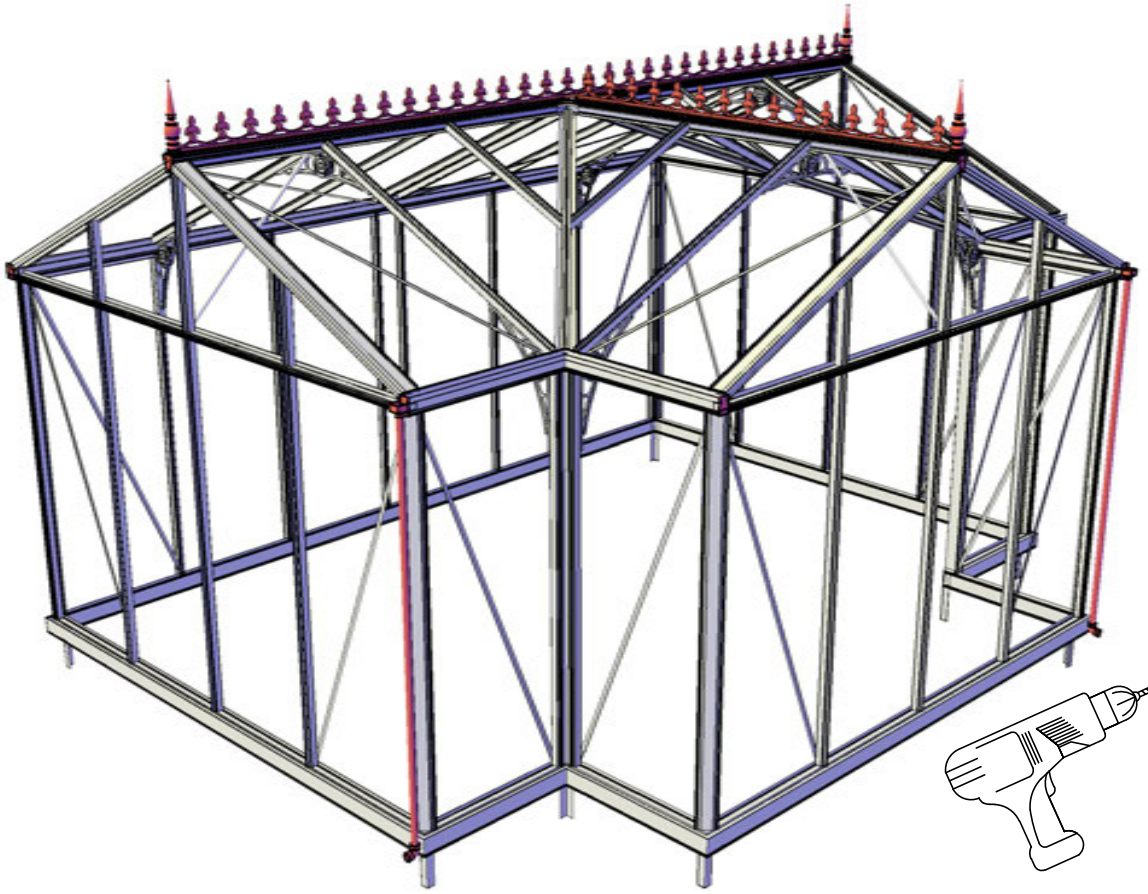


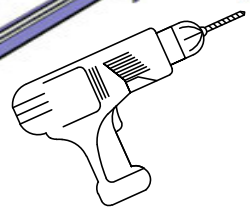
Secure the roof decorations at each end with a screw.

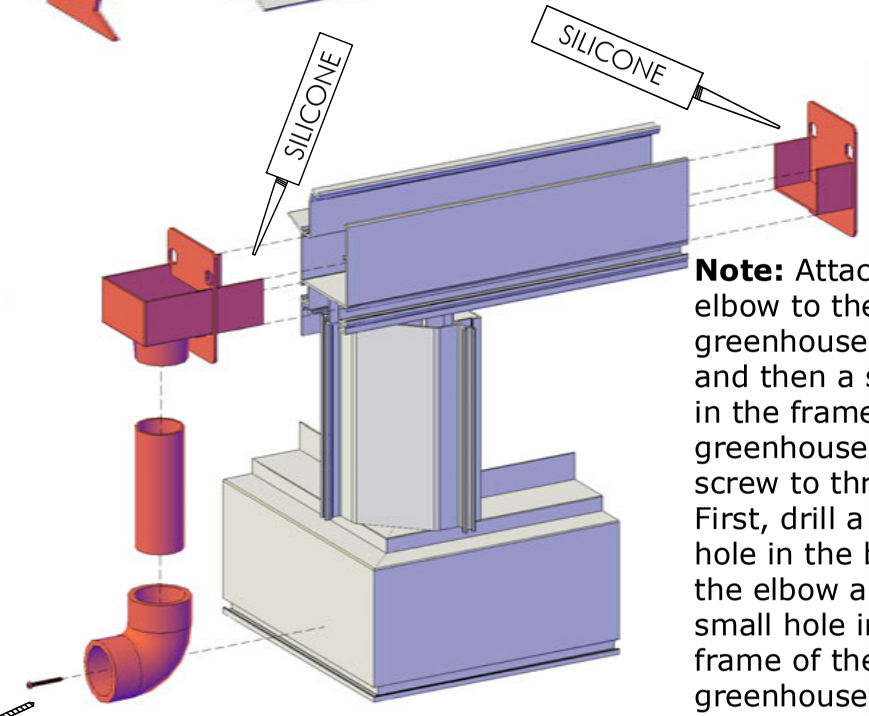












Note: Attach the elbow to the greenhouse the elbow and then a small hole in the frame of the greenhouse for the screw to thread base. First, drill a small hole in the back of the elbow and then a small hole in the frame of the greenhouse for the screw to thread into. Run the screw through the hole on the inside of the elbow and into the greenhouse base.

ACCESSORIES

This section contains many of the optional accessories. You will have some, but likely not all, items seen in this section.

IMPORTANT: Find Janssens Accessory installation video on our site here:
https://www.exaco.com/greenhouse-victorian.php
It will be immensely helpful!

You can scan the QR code below to view how the accessories are installed on YouTube.

OPTION: Greenhouse on a stem/knee wall SD_MUR

If your greenhouse is on a knee wall, you will need to cut the base frame (PRO6120) where the doorway will be located.

KSD_70

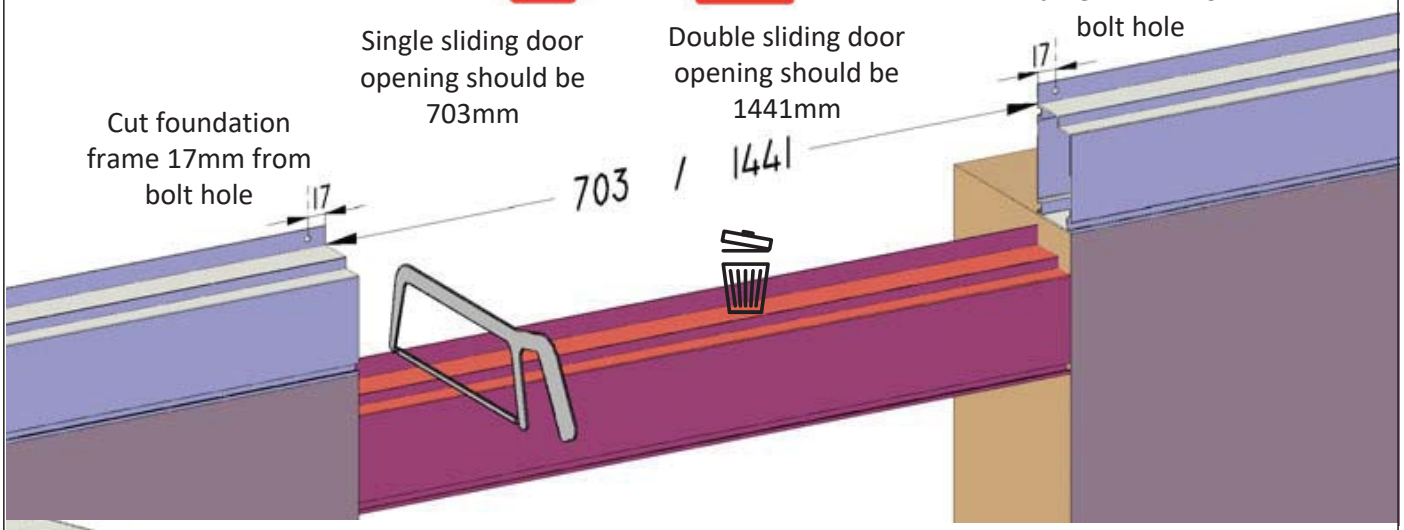
Single sliding door opening should be 703mm

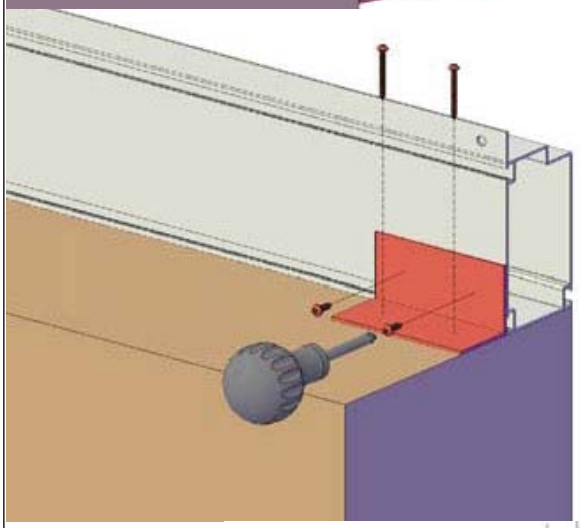
KSD_144

Double sliding door opening should be 1441mm

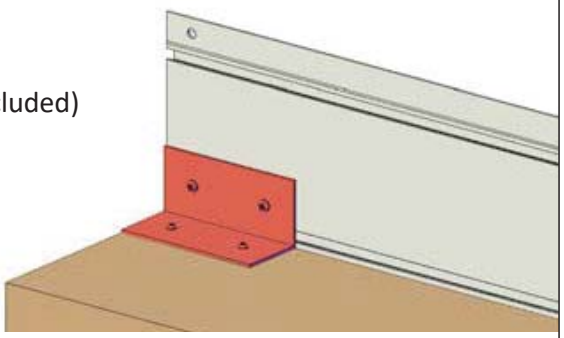
Cut foundation frame 17mm from bolt hole

Cut foundation frame 17mm from bolt hole

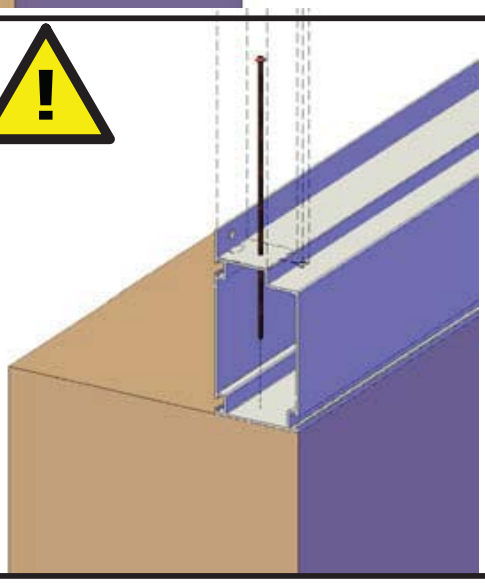




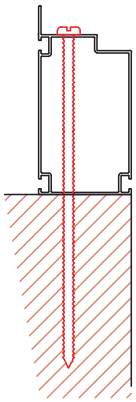
(hardware not included)



ALTERNATIVE



(hardware not included)



SD MUR_1

OPTIONAL UPGRADE:
Low Threshold for Sliding Door/s KSD

KSD_70

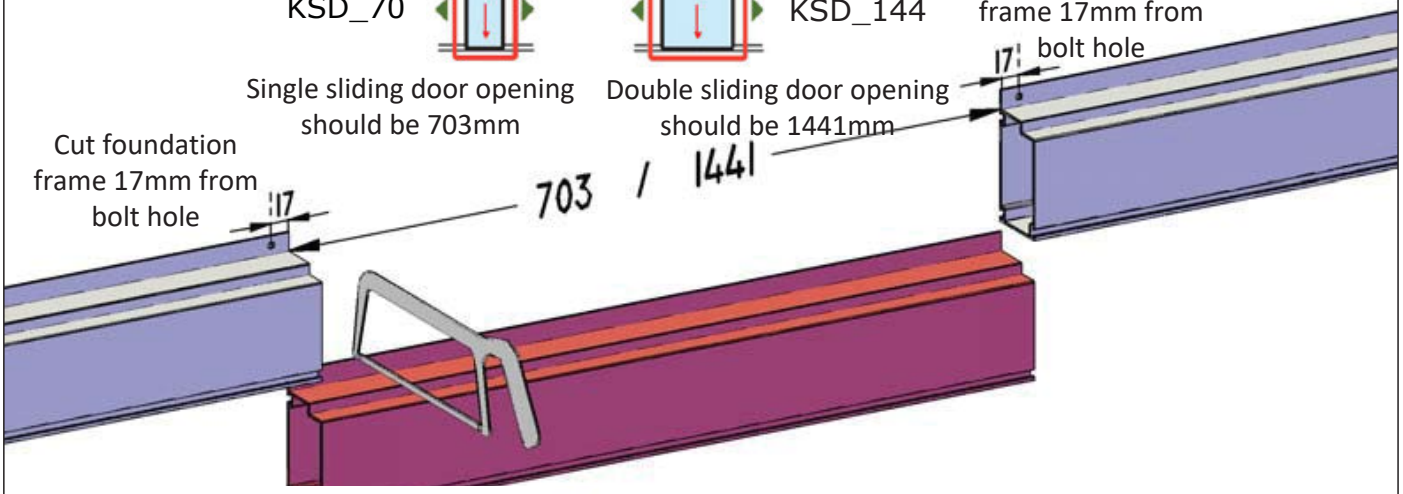
Single sliding door opening should be 703mm

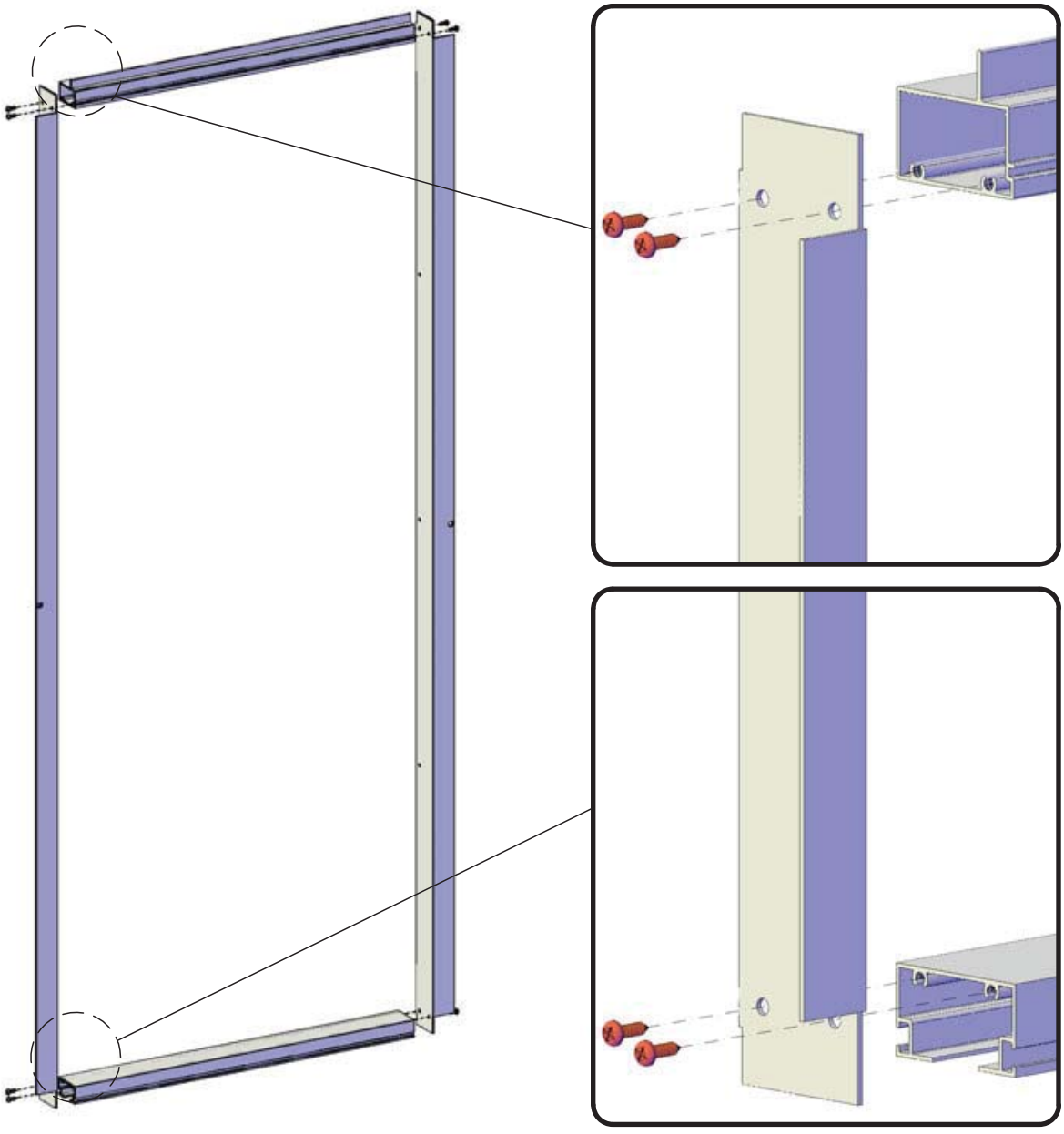
KSD_144

Double sliding door opening should be 1441mm

Cut foundation frame 17mm from bolt hole

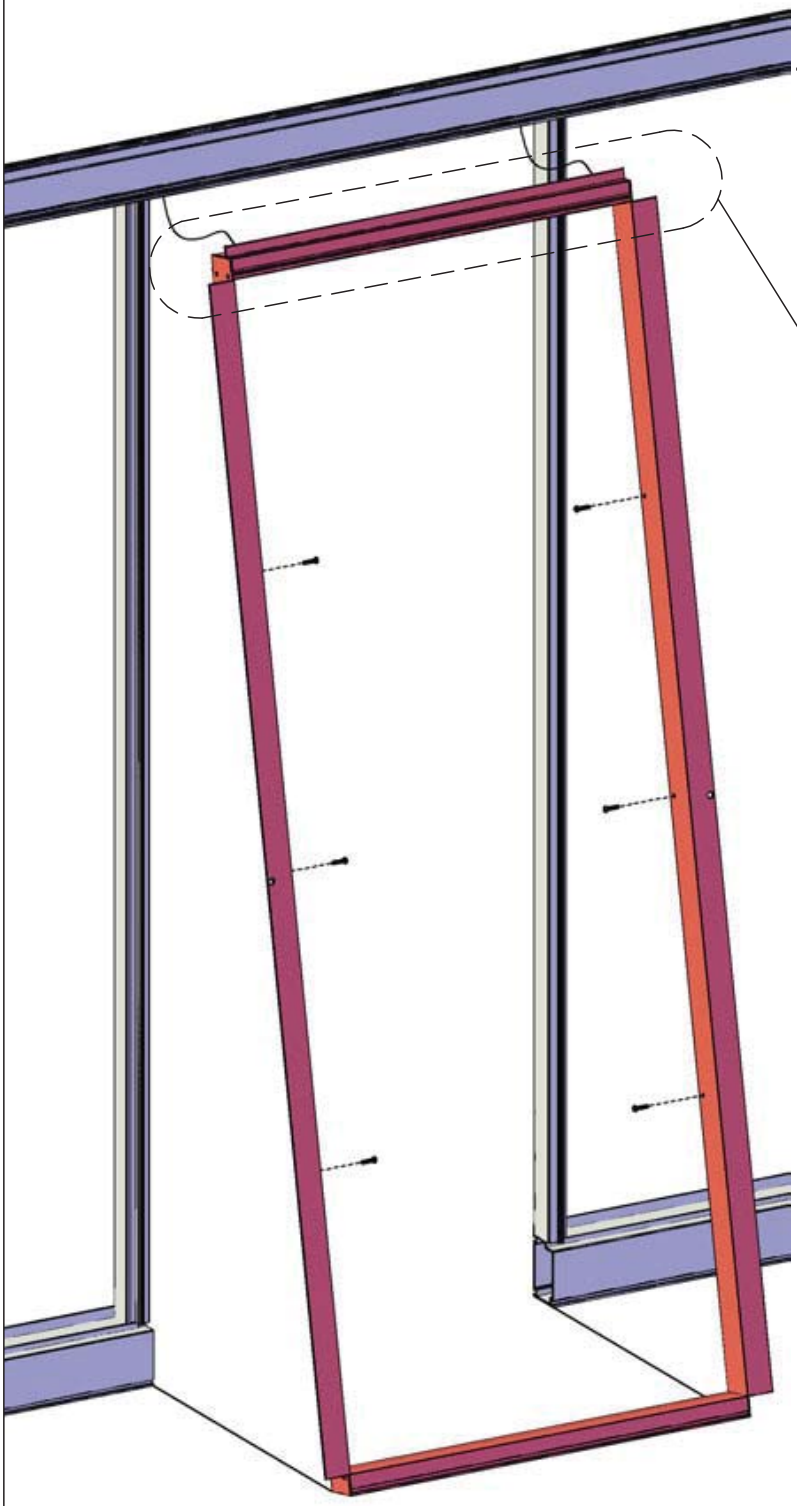
Cut foundation frame 17mm from bolt hole

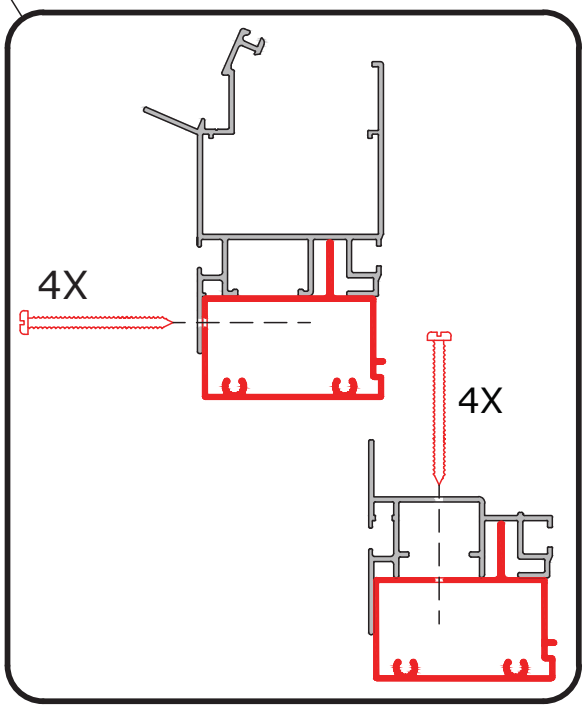


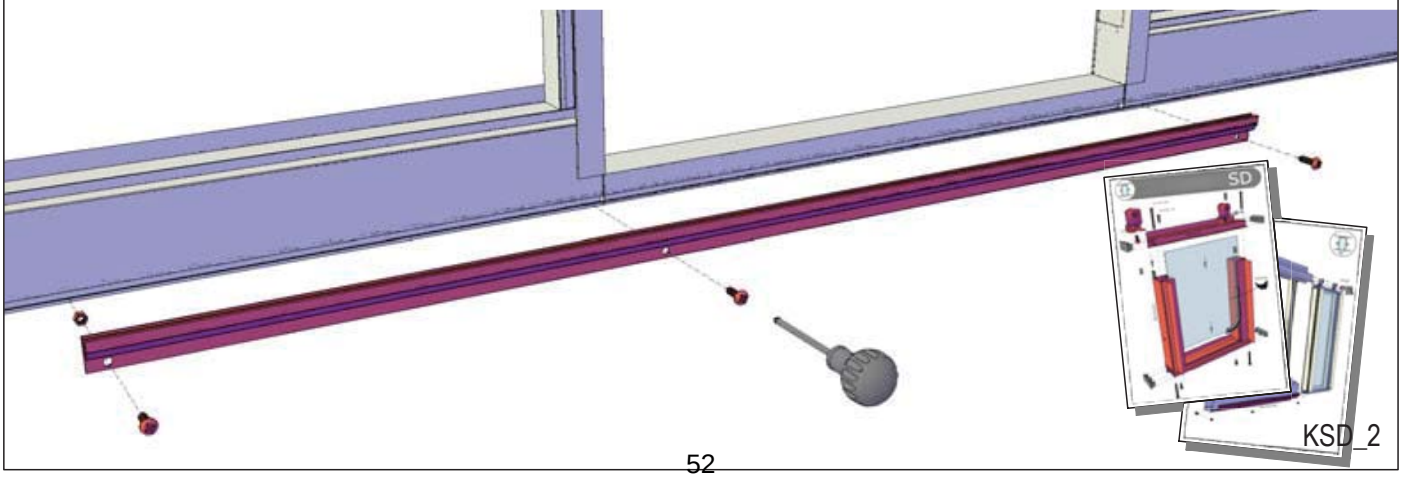


KSD_1

OPTIONAL UPGRADE: Low Threshold for Sliding Door/s







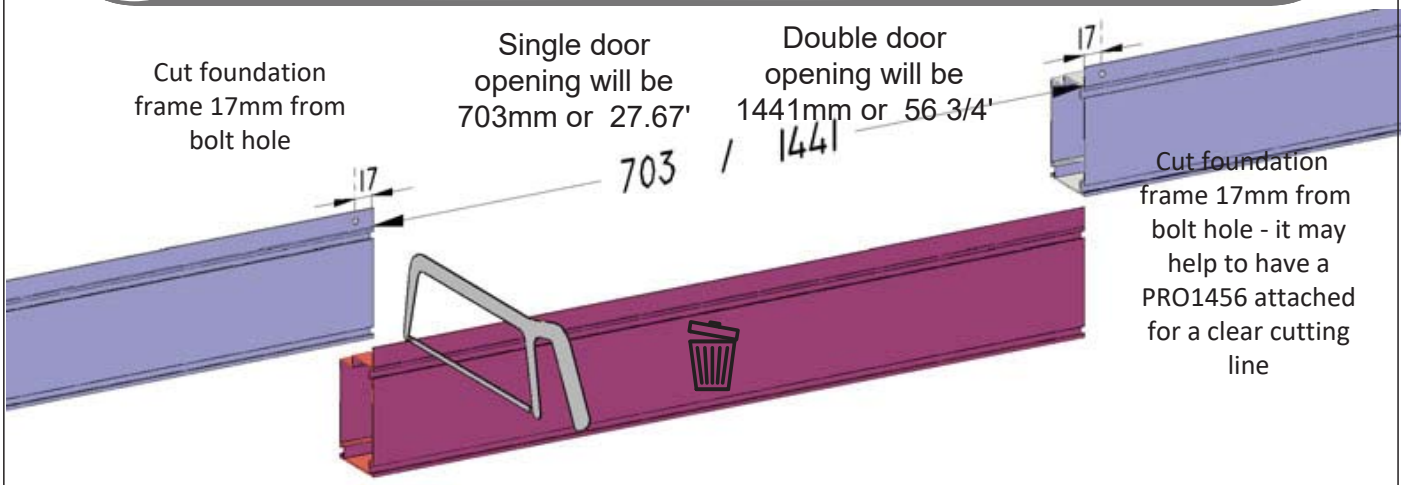
OPTIONAL UPGRADE:
late 2024 low threshold kit

SDL

Cut foundation frame 17mm from bolt hole

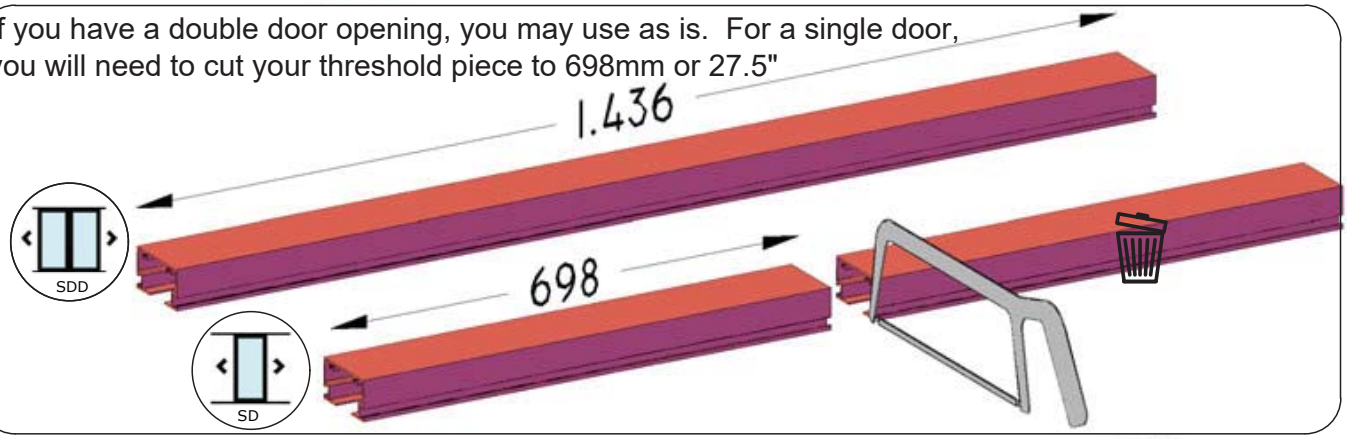
Single door opening will be 703mm or 27.67'

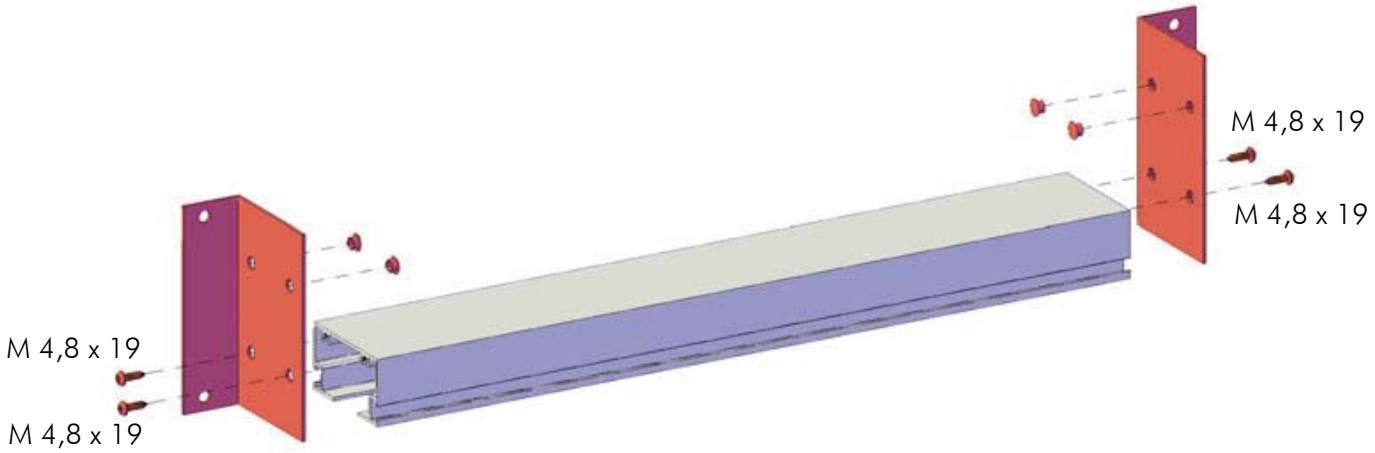
Double door opening will be 1441mm or 56 3/4'

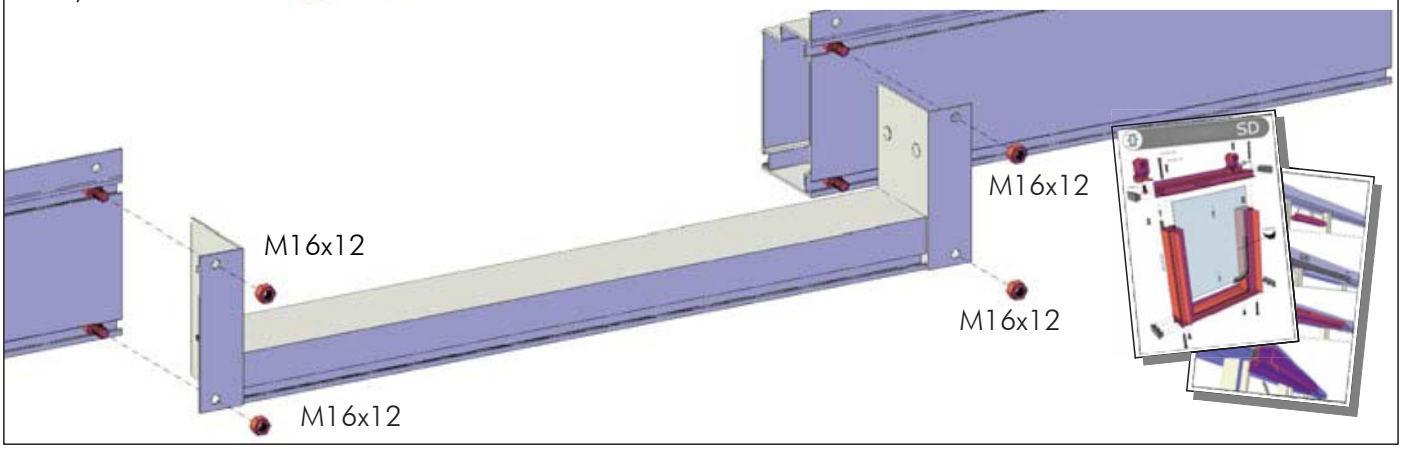


Cut foundation frame 17mm from bolt hole - it may help to have a PRO1456 attached for a clear cutting line

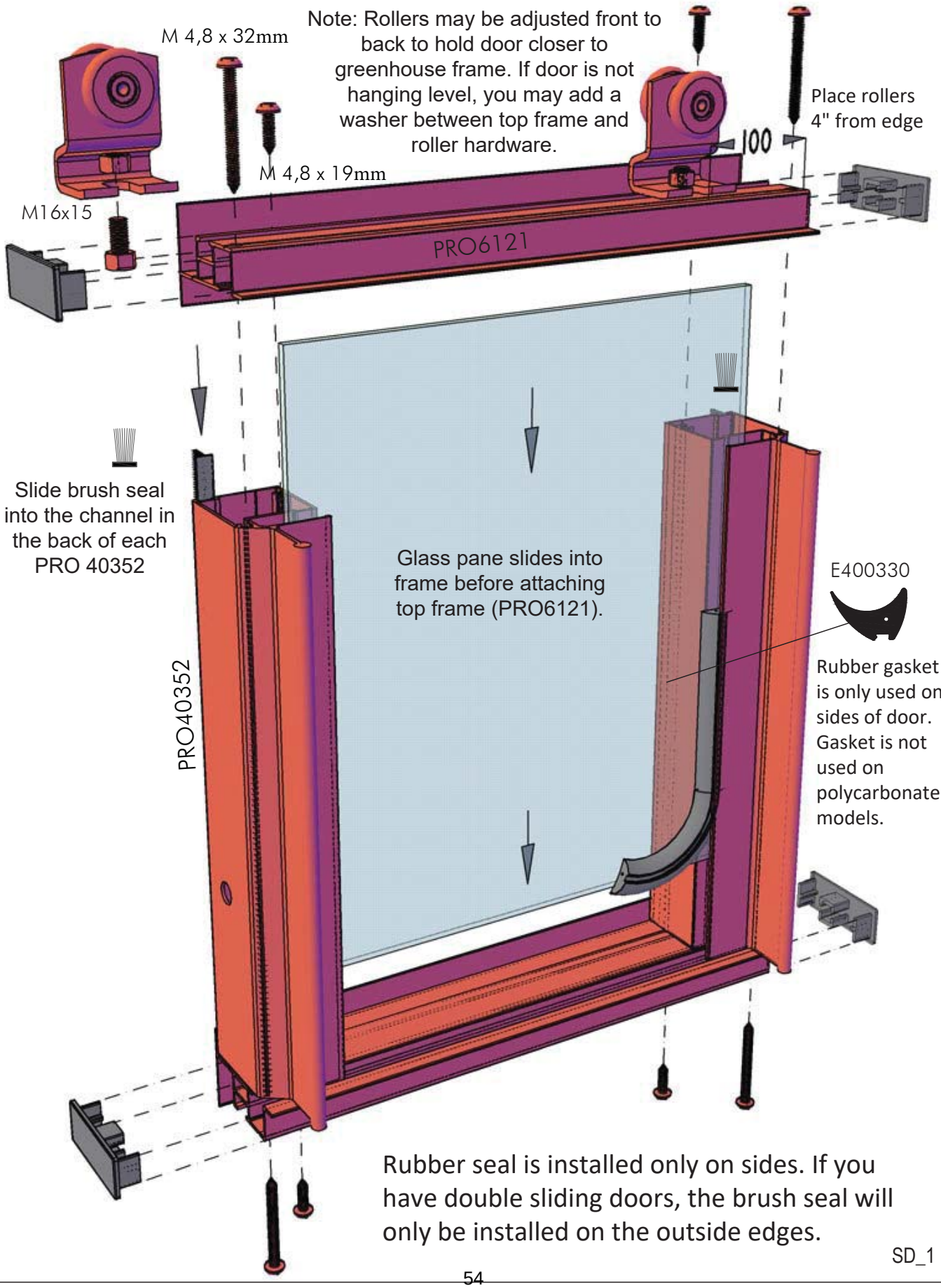
If you have a double door opening, you may use as is. For a single door, you will need to cut your threshold piece to 698mm or 27.5"







Sliding Door - Basic assembly of any sliding door. VI36 and VI46 have double doors, some VI34 models may include double doors. More doors may be added. SD

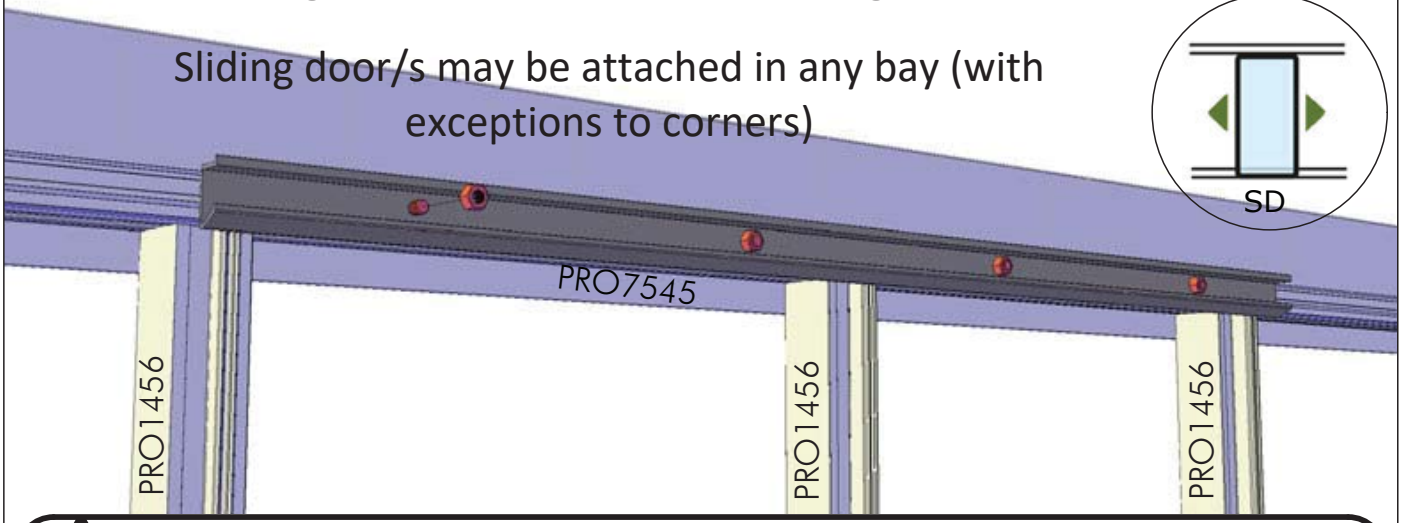


Rubber seal is installed only on sides. If you have double sliding doors, the brush seal will only be installed on the outside edges.

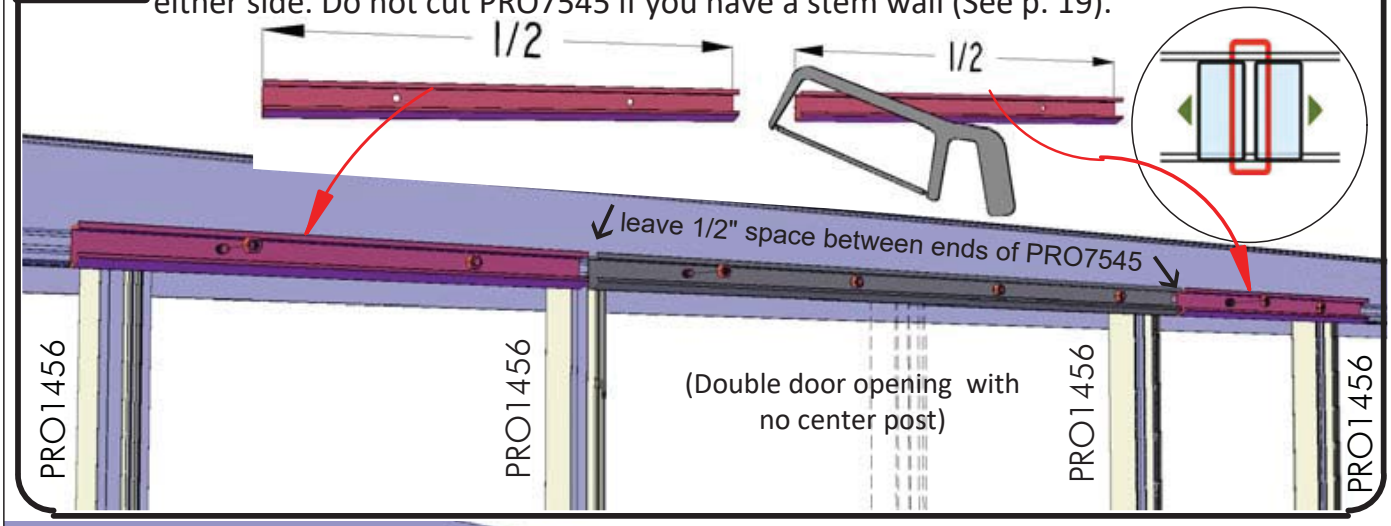
SD_1

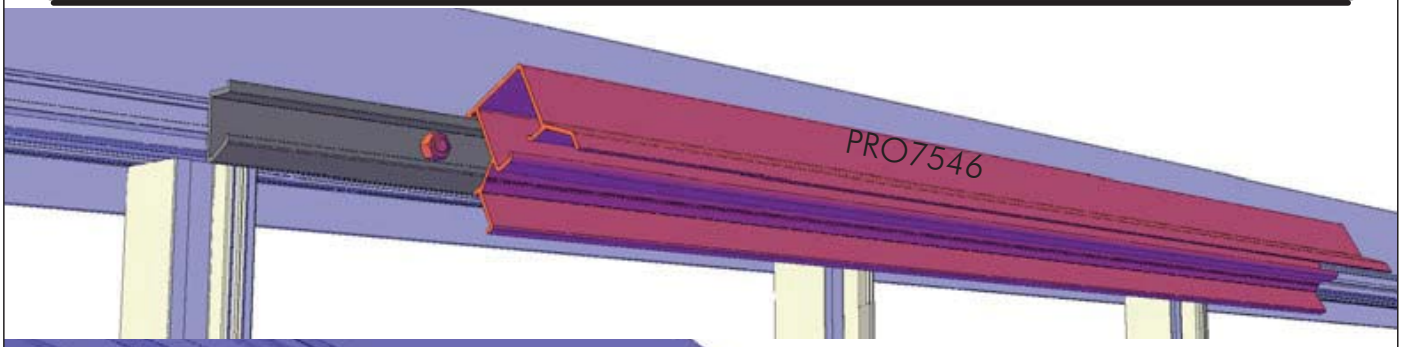
<u>Version 1:</u> Single and/or Double Door Hanger installation

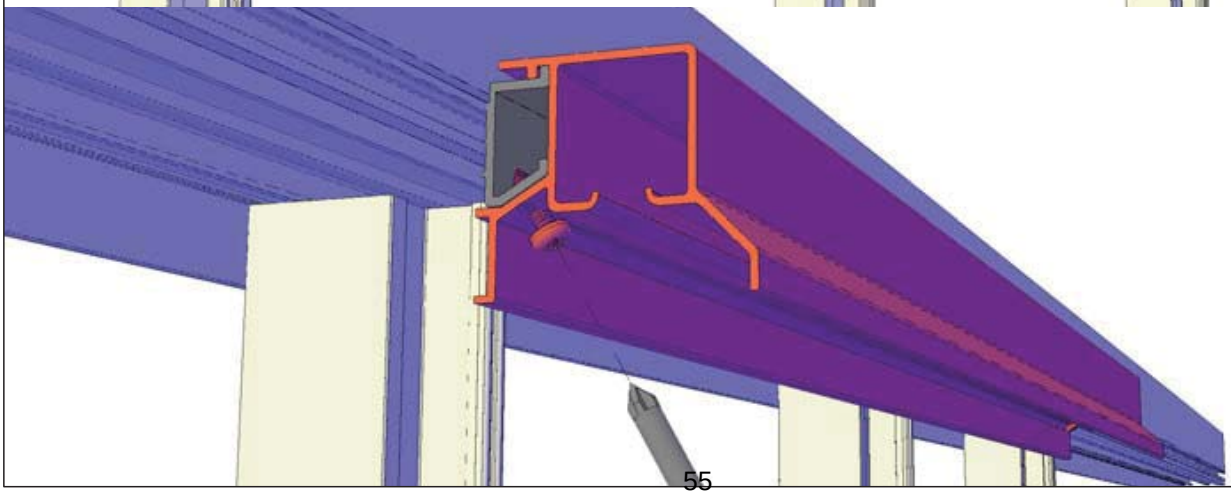
Sliding door/s may be attached in any bay (with exceptions to corners)



IMPORTANT for Double Sliding Door Opening!! Cut one PRO7545 in half. Place long PRO7545 in center (to support double opening) and the half PRO7545 on either side. Do not cut PRO7545 if you have a stem wall (See p. 19).

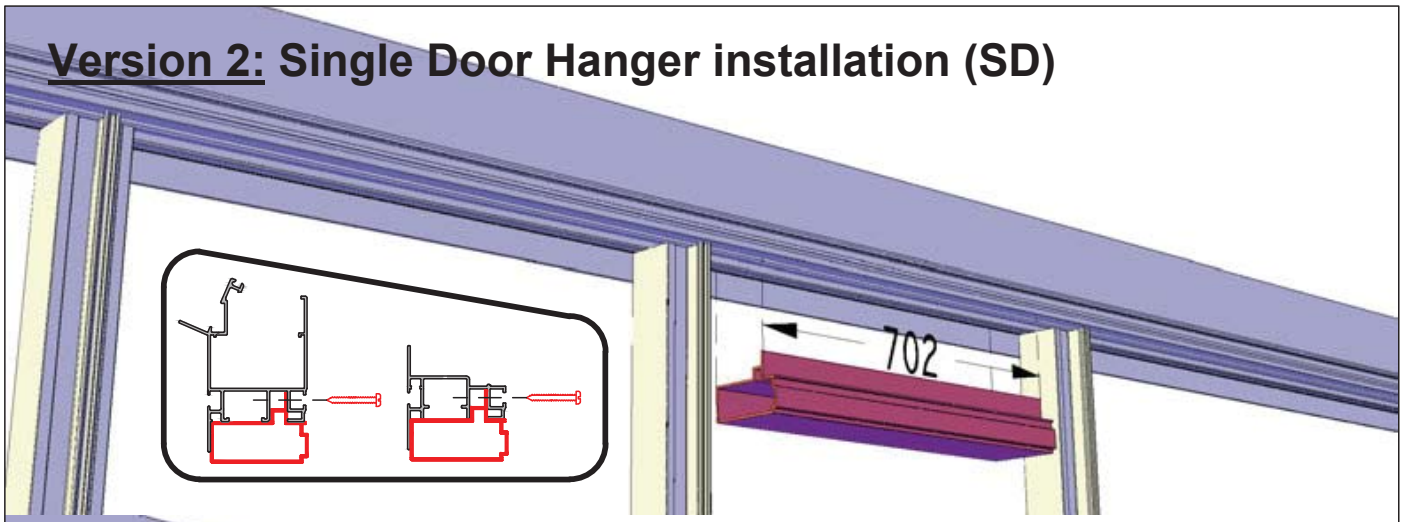


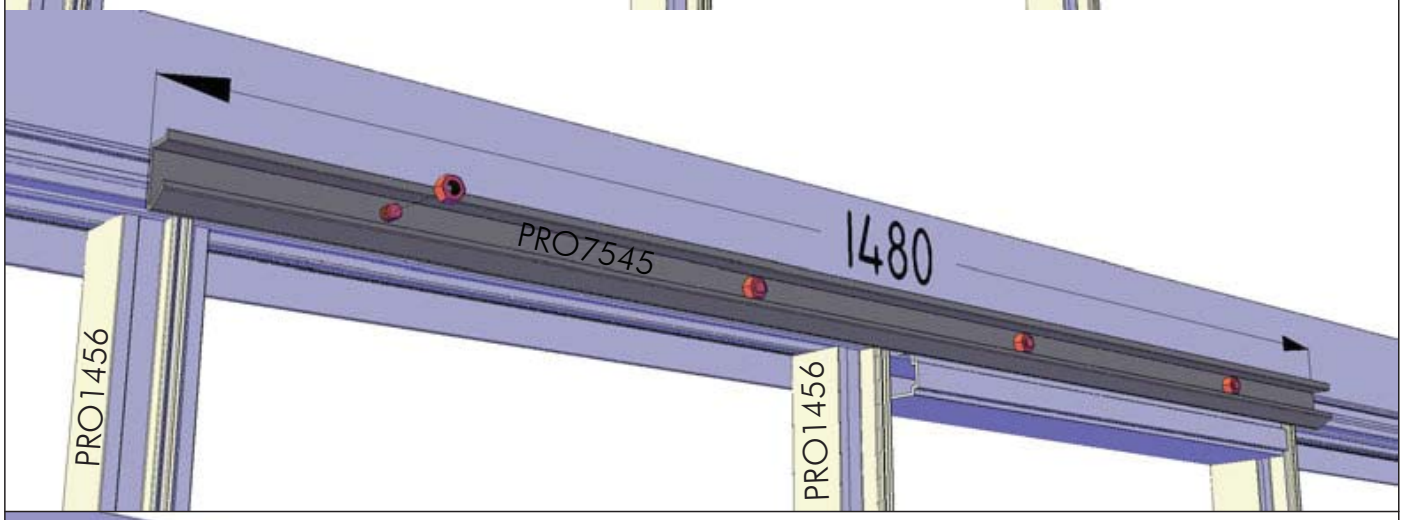


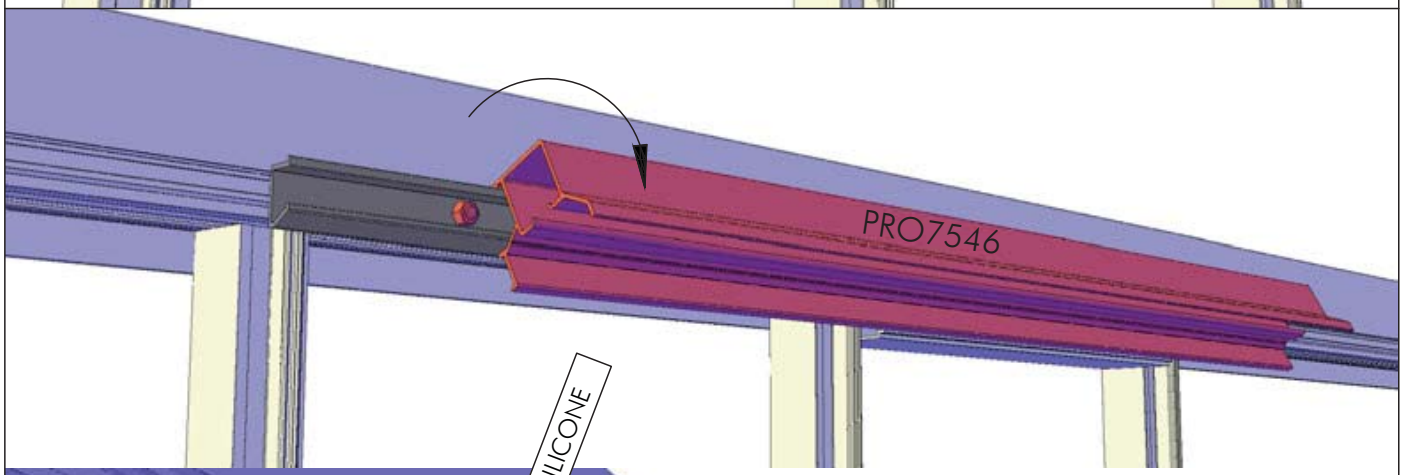


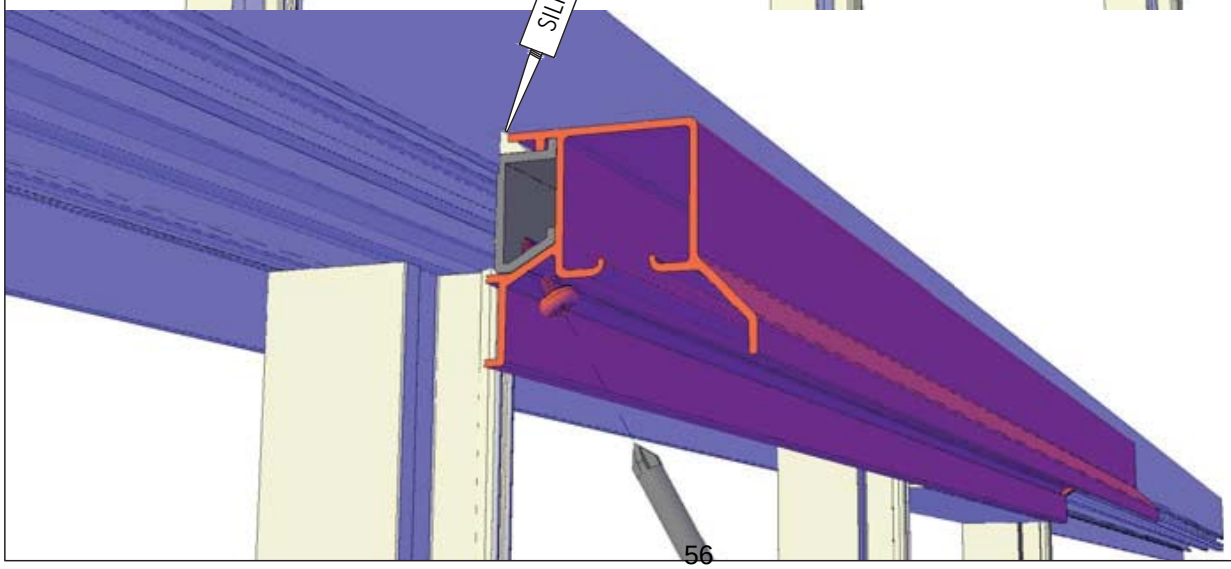
SD_2

Version 2: Single Door Hanger installation (SD)

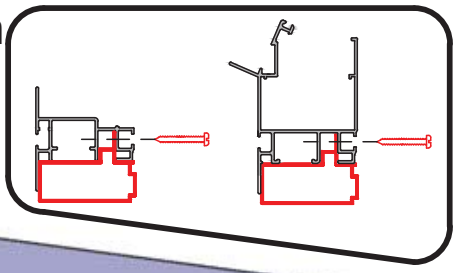


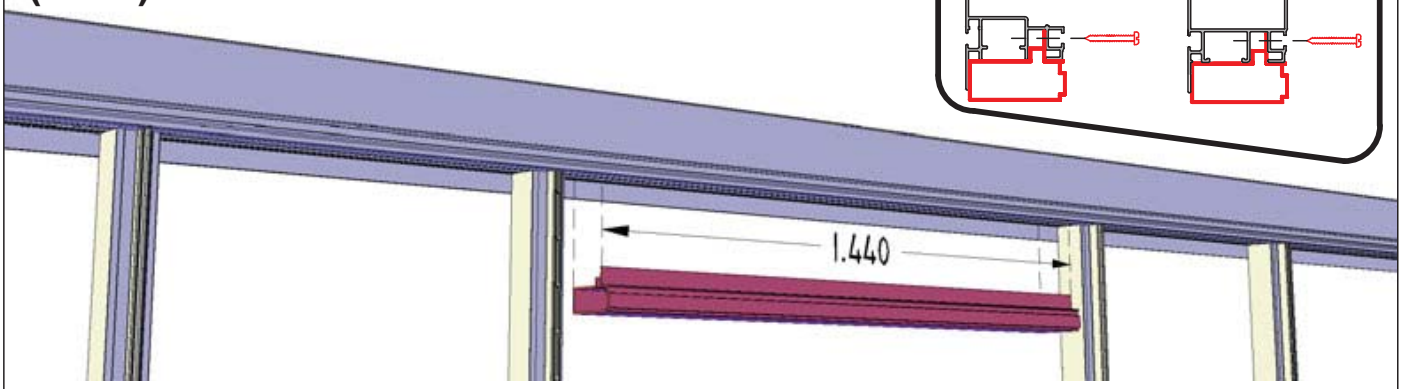


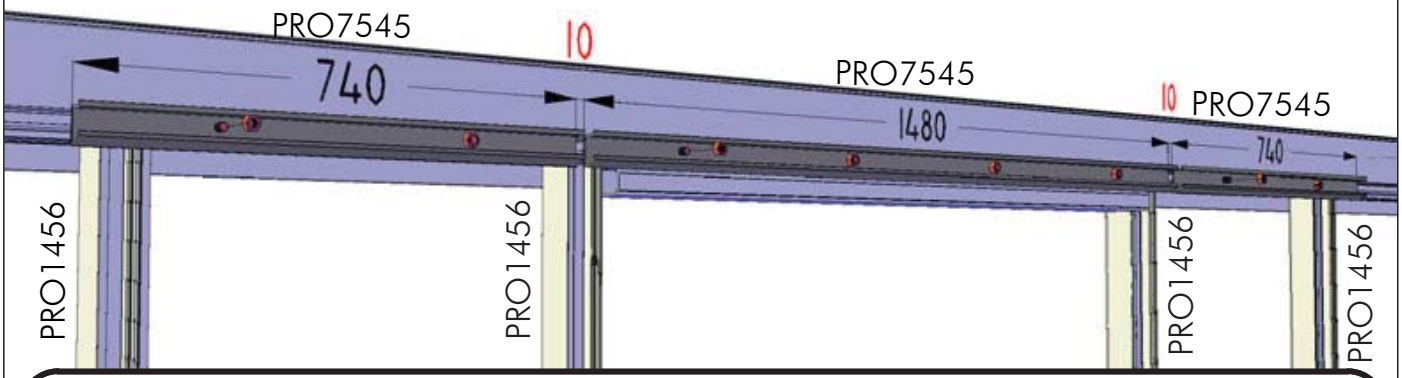


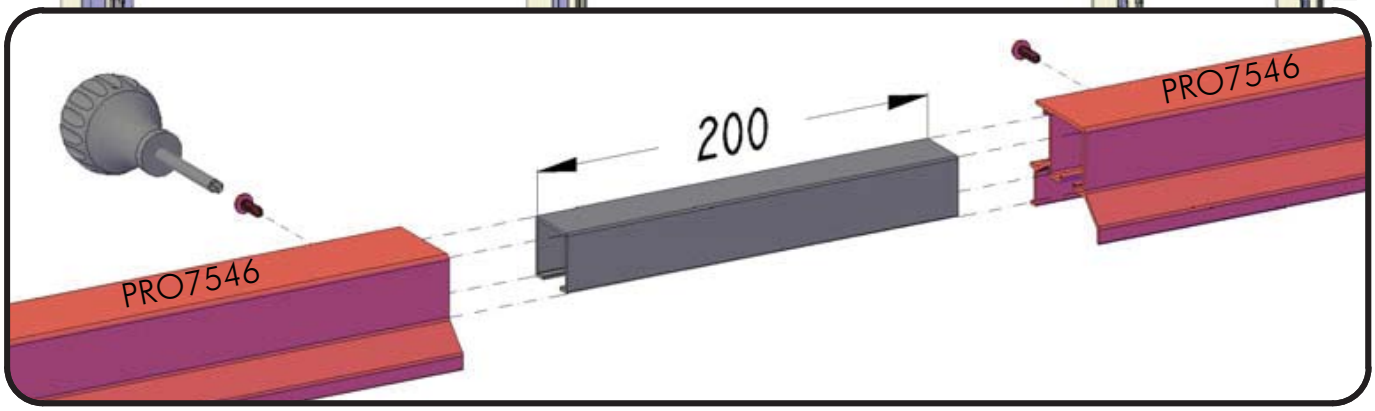


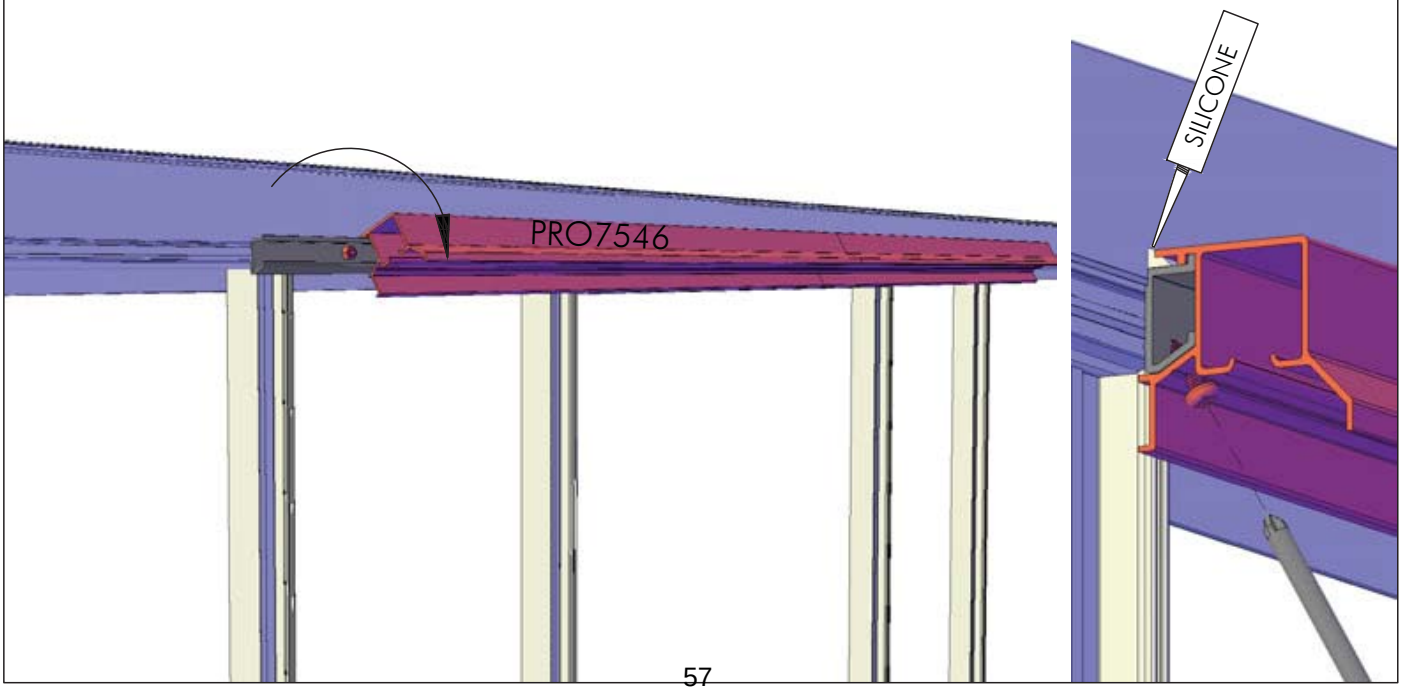
Version 2: Double Door Hanger installation (SDD)



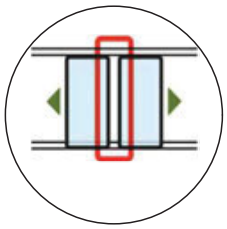






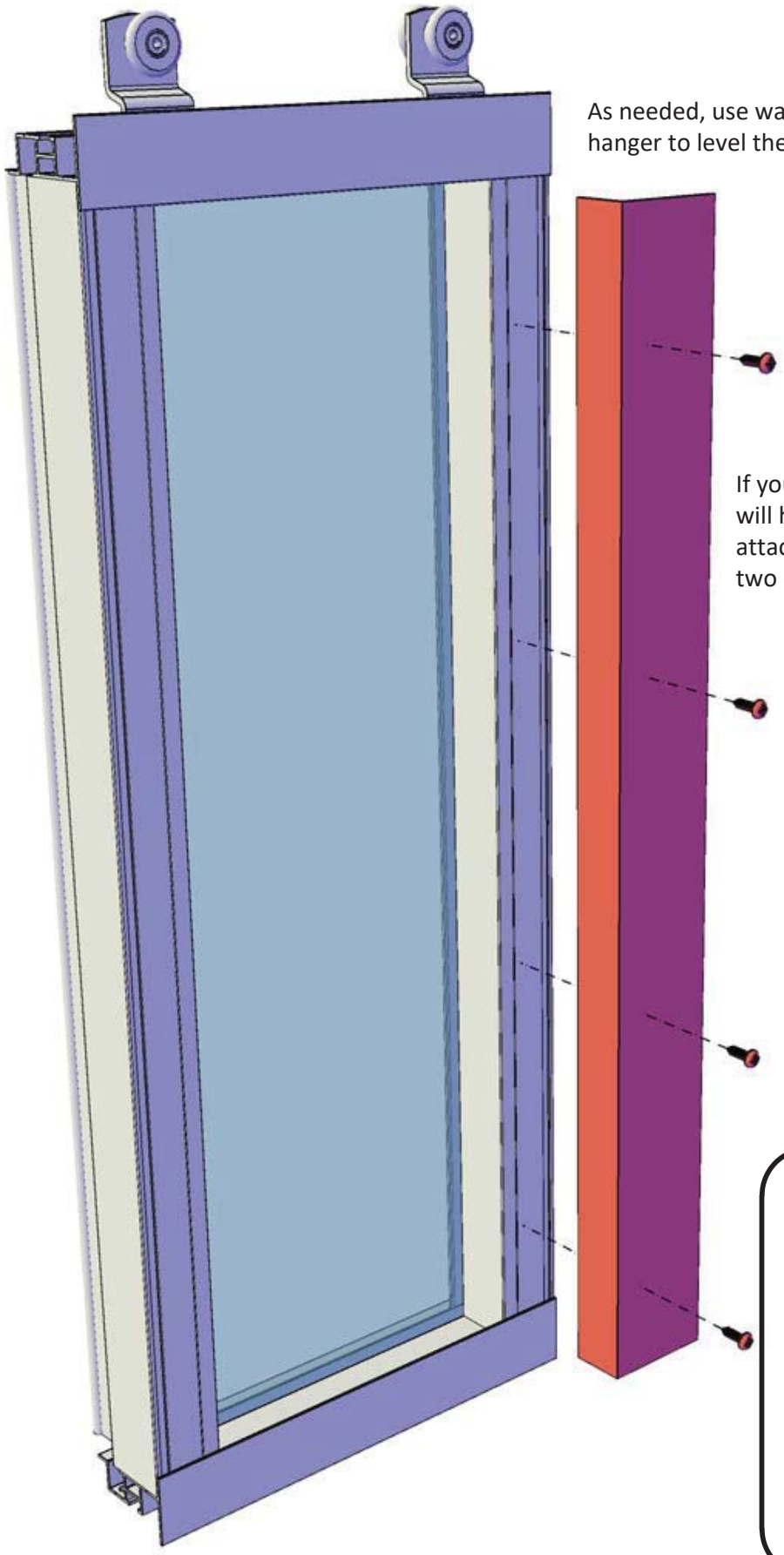


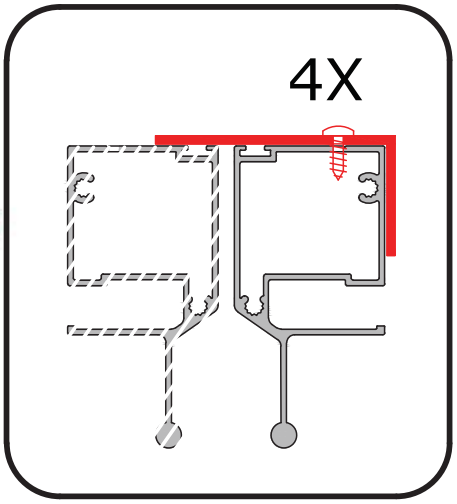
OPTION: Double Sliding Door (Applies to Version 1 and 2)



As needed, use washer underneath door hanger to level the door/s .

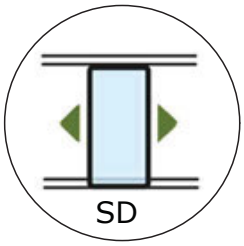
If you have a double sliding door, you will have a long L bracket that will attach to close any gap between the two doors.



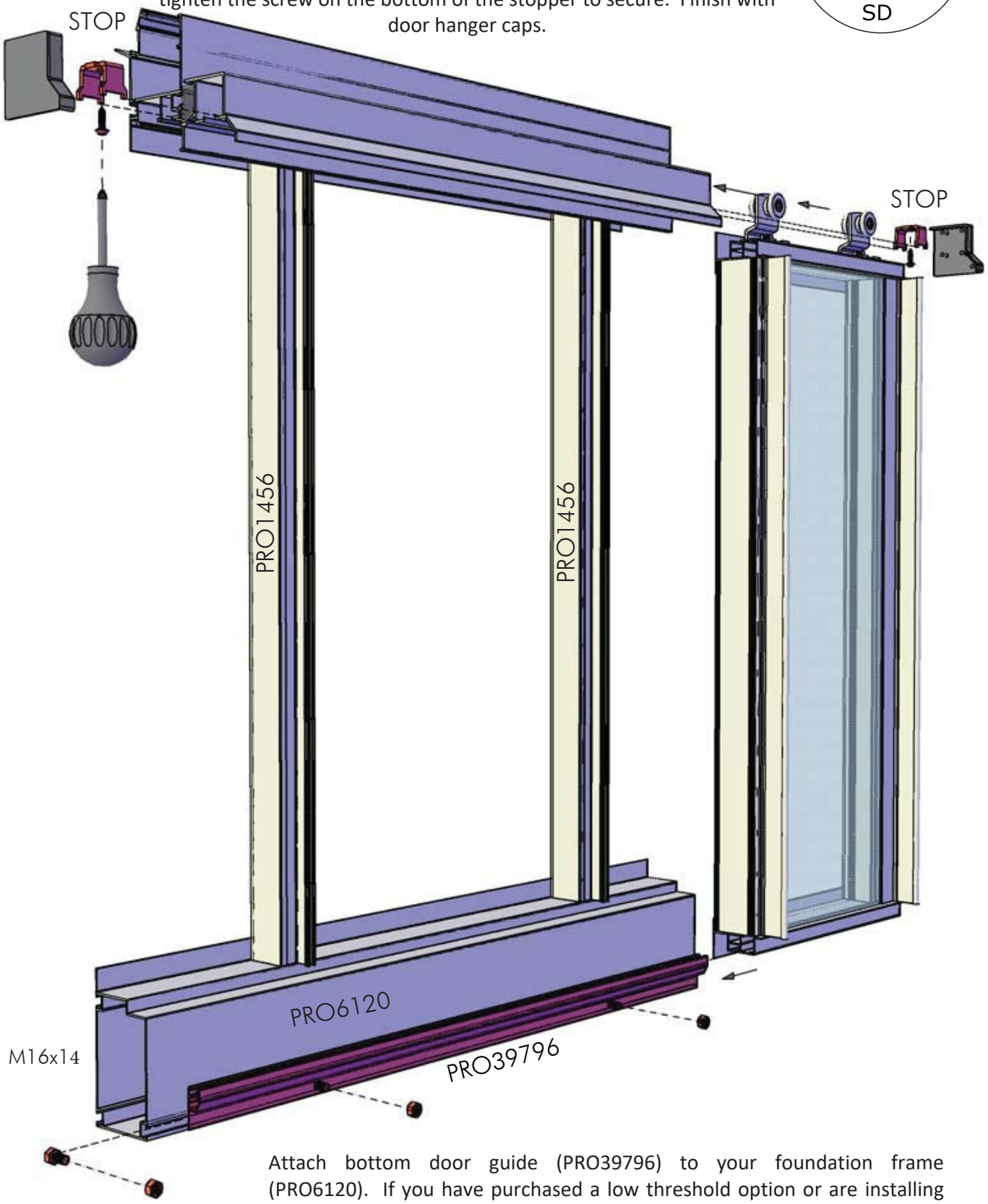


SD_3

Version 1: Door installation

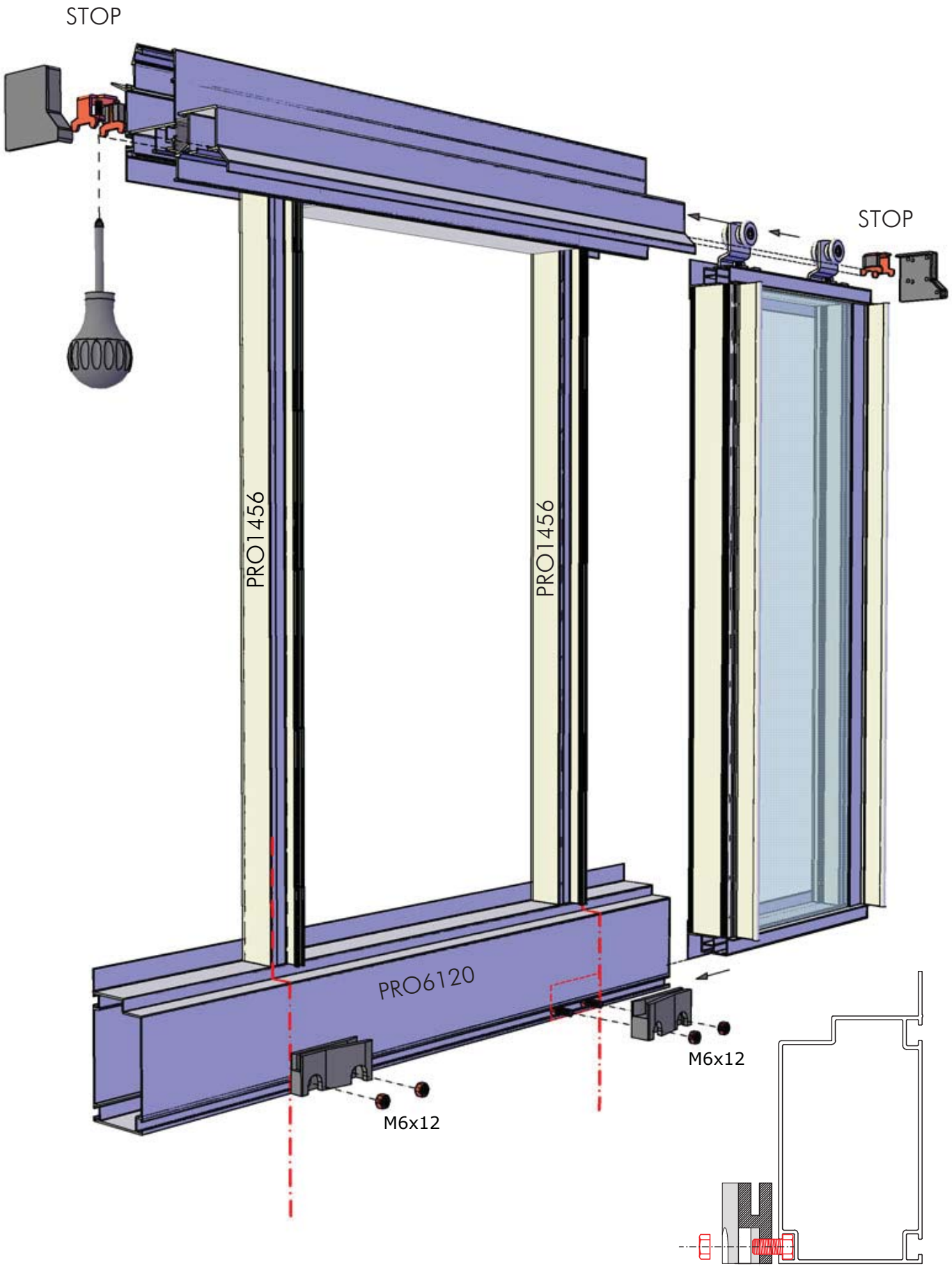


Slide door rollers into top door hanger (PRO7546 or PRO7876) and slide a stopper on either side. Determine how far the door should slide, then tighten the screw on the bottom of the stopper to secure. Finish with door hanger caps.

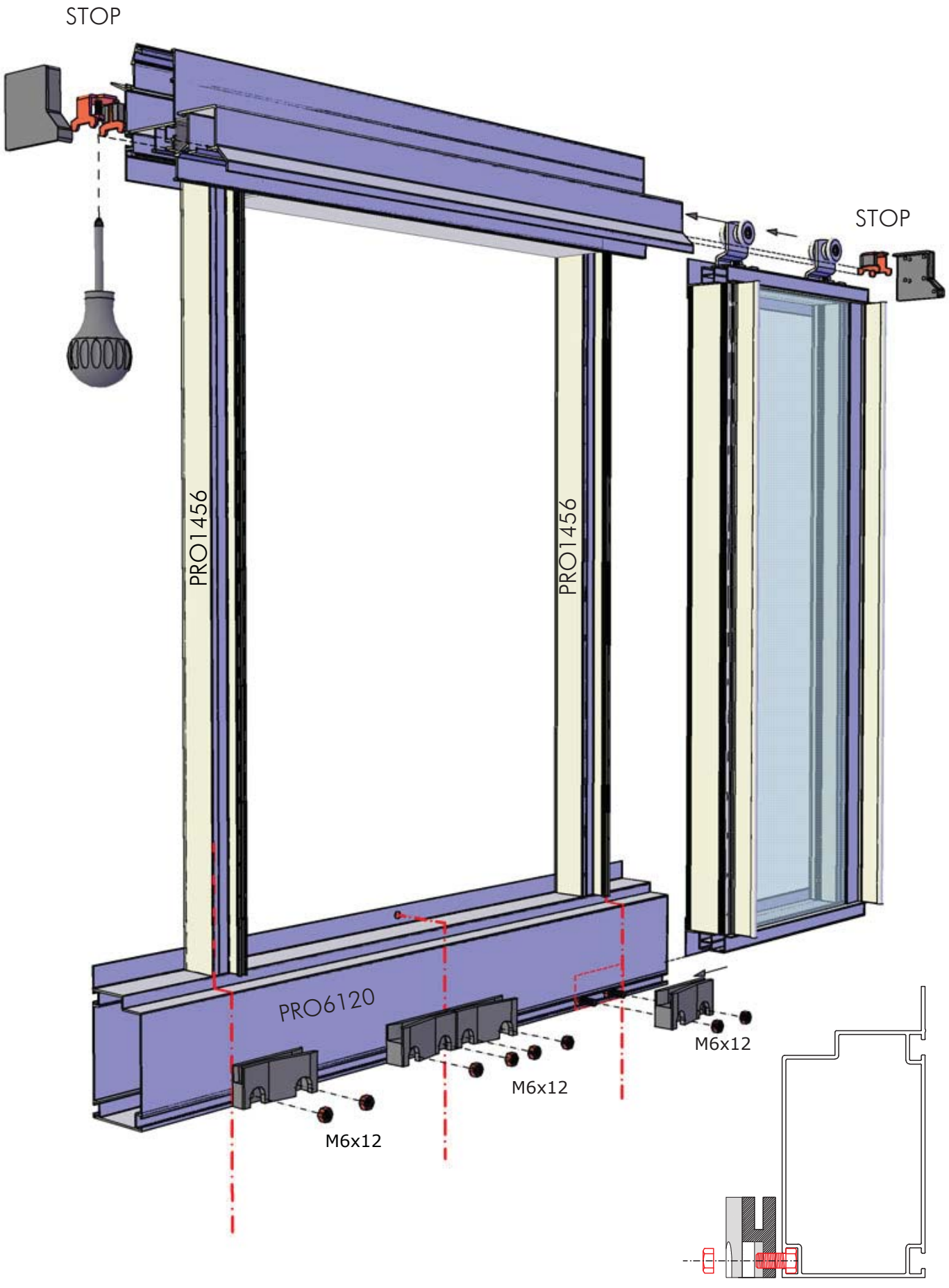


Attach bottom door guide (PRO39796) to your foundation frame (PRO6120). If you have purchased a low threshold option or are installing your greenhouse on a wall, please refer to the following pages marked SD_MUR for stem wall and KSD for low threshold kit before installing door, bottom door guide, and locks.

Version 2: Single Door installation



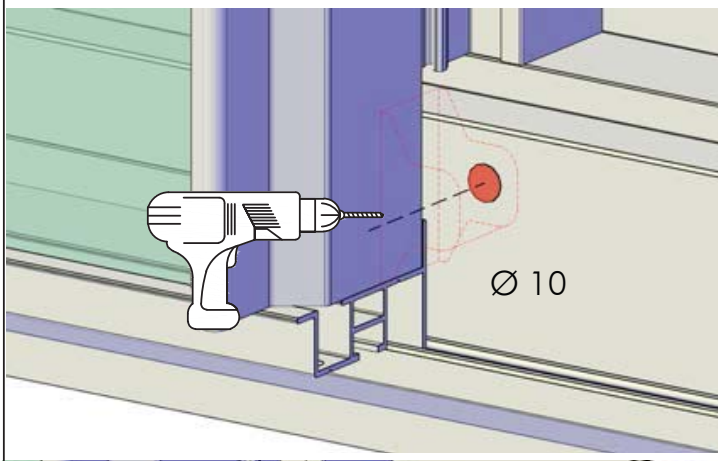
Version 2: Double Door installation (SDD)

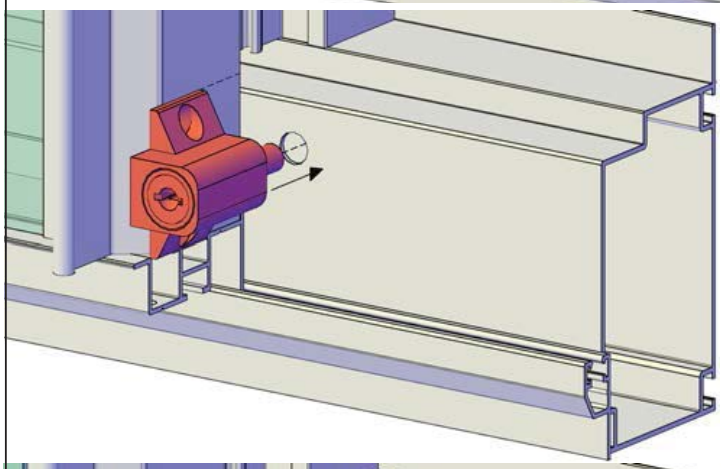


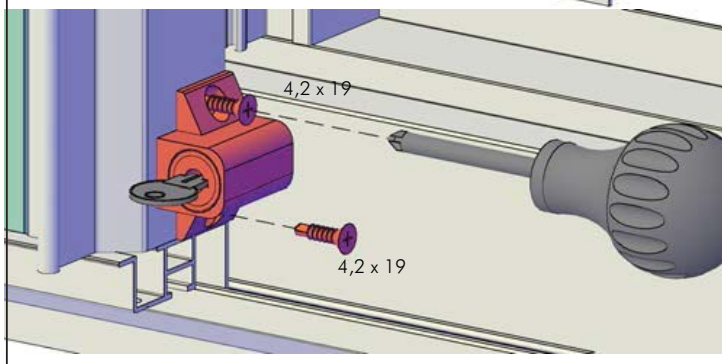
Version 1: Sliding Door Lock Installation w/o Low Threshold

Install lock at bottom of a:
- single sliding door
- first door of double sliding doors
- both of your double sliding doors

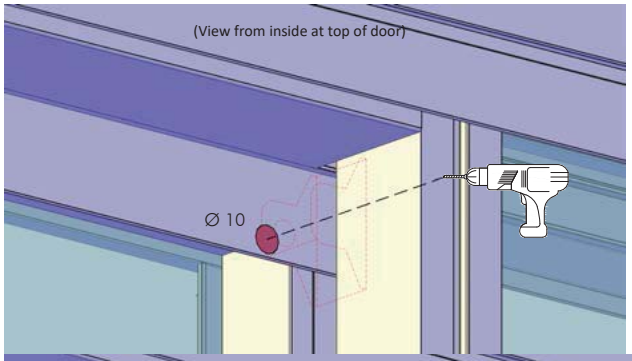
(View from outside at bottom of door)

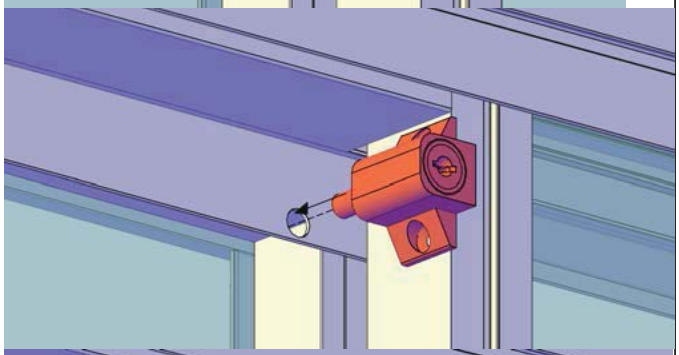


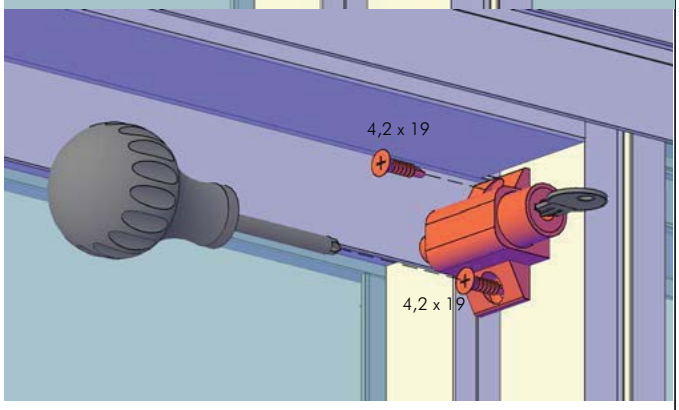




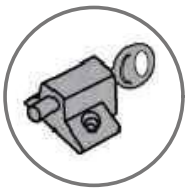
If you have a double sliding door, you may install one lock on the inside of your greenhouse as shown

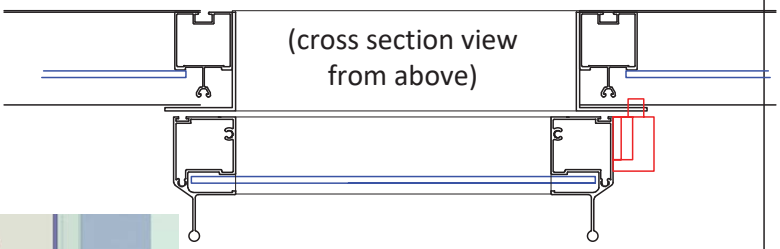


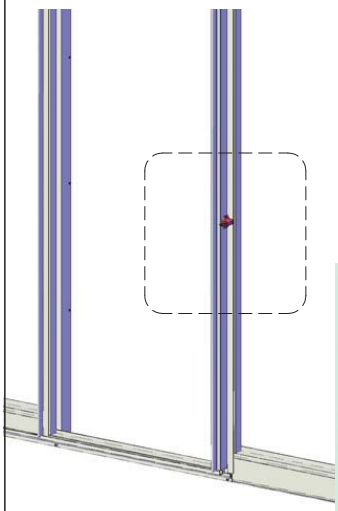


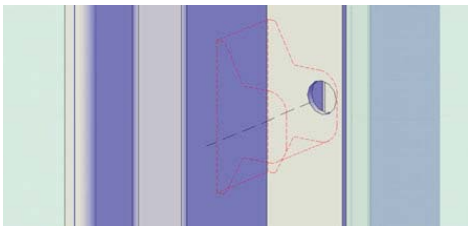


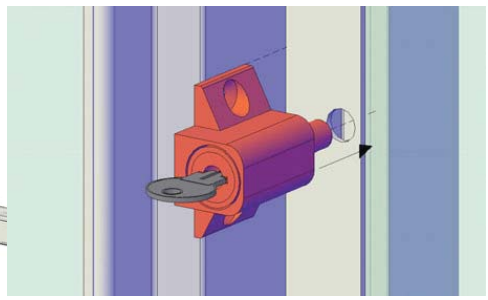
Optional Upgrade: Lock install with KSD - 4 Frame Low Threshold Kit (Single/First door)

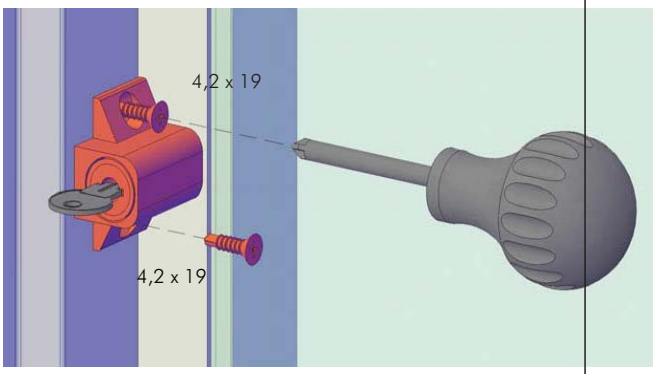




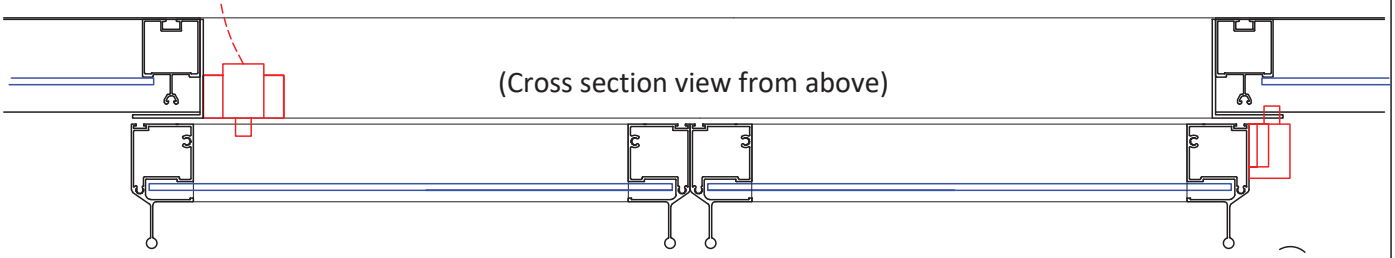


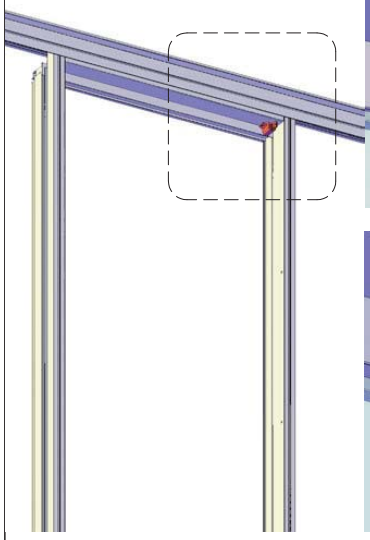


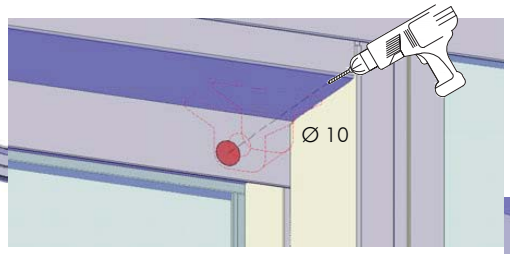


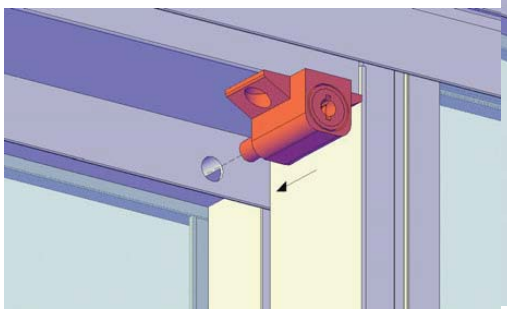


Lock installation on Double/Second Door Using Low Threshold Kit

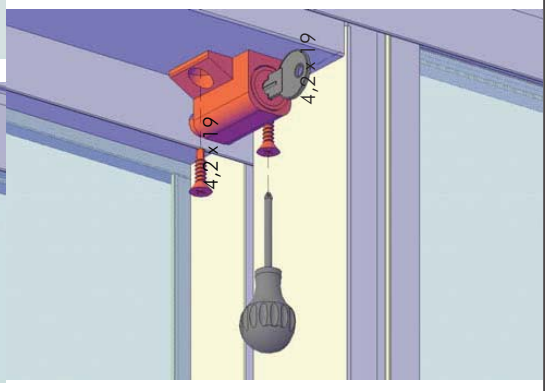




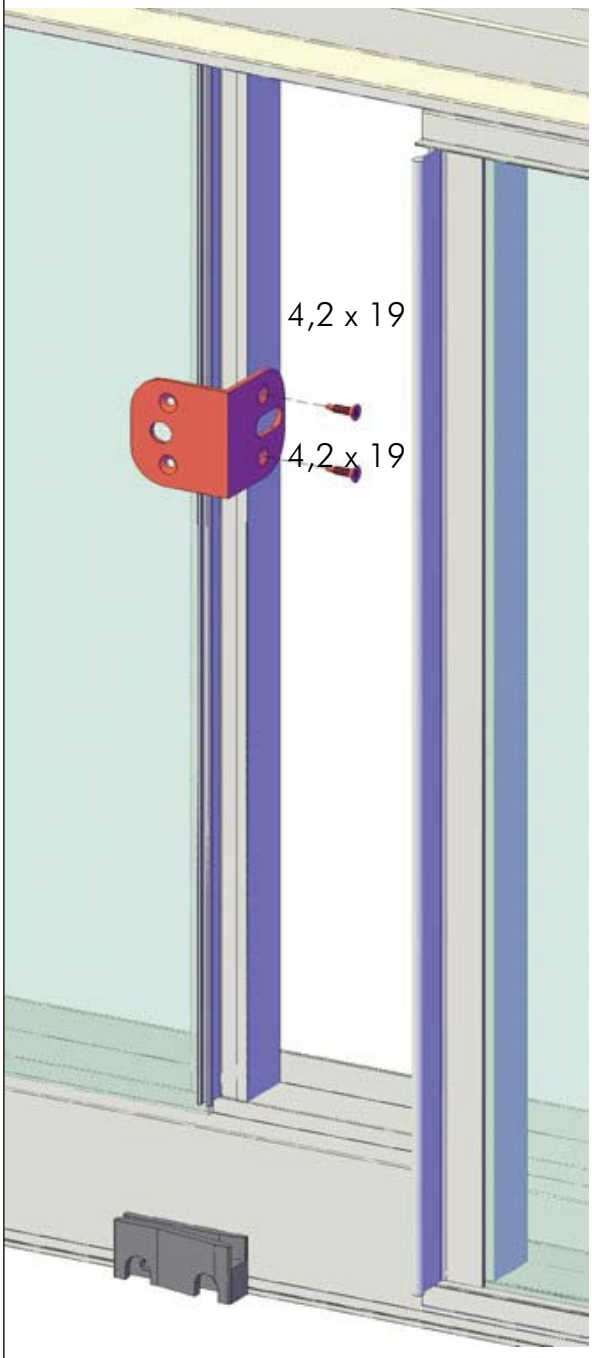


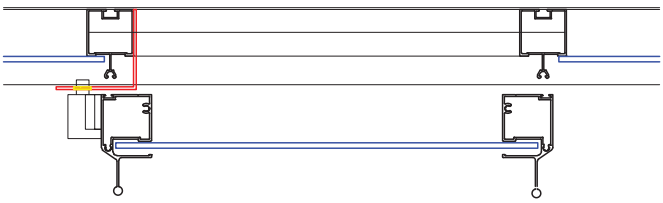


Note: Second lock is installed on the interior!

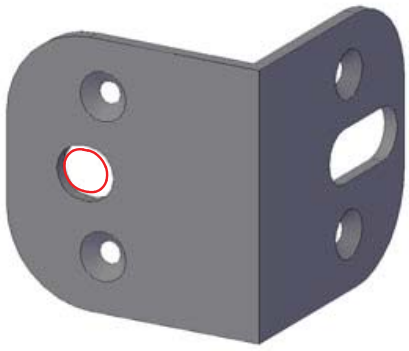


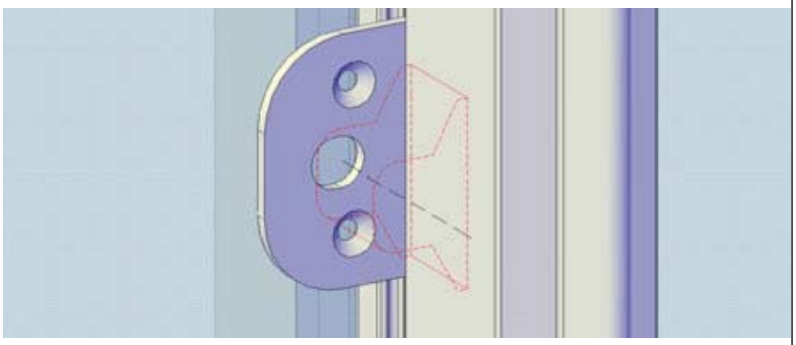
Version 2: Door Lock Installation - Single door

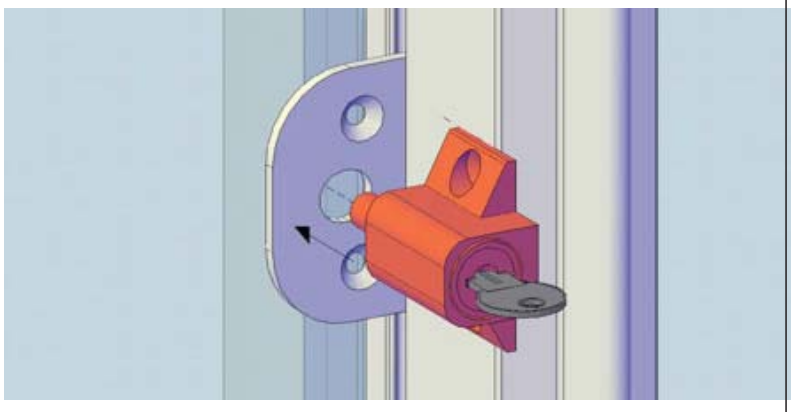


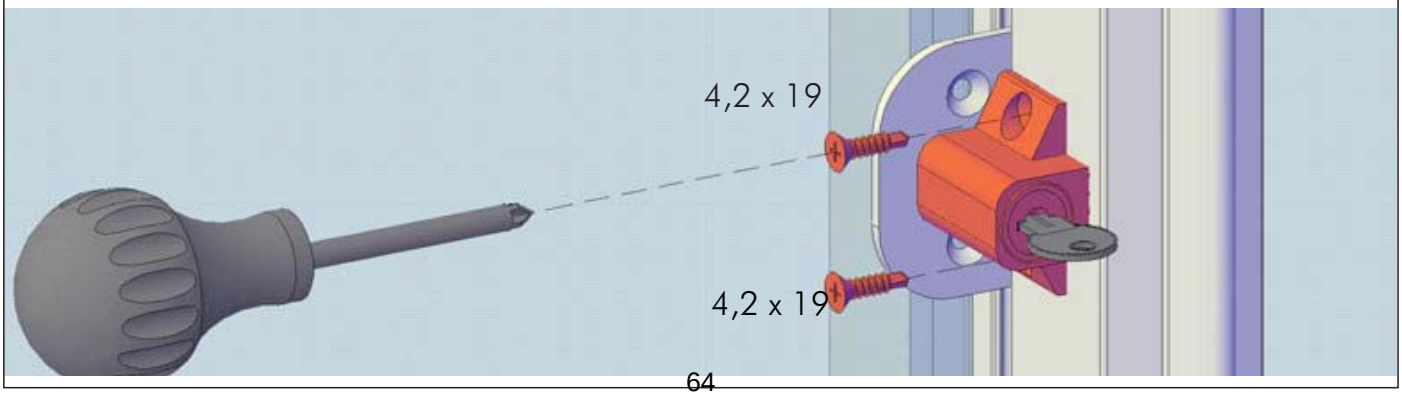


Important! Circular hole in plate faces out to act as the lock hole

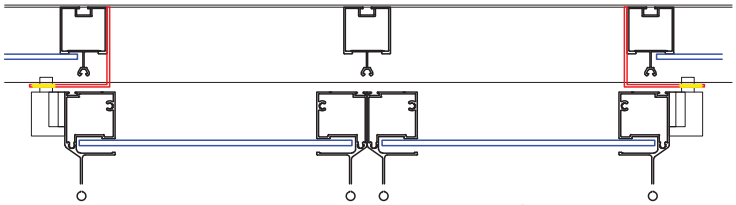




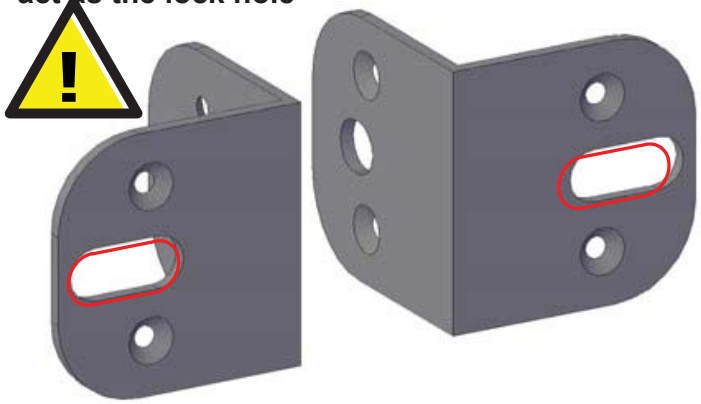


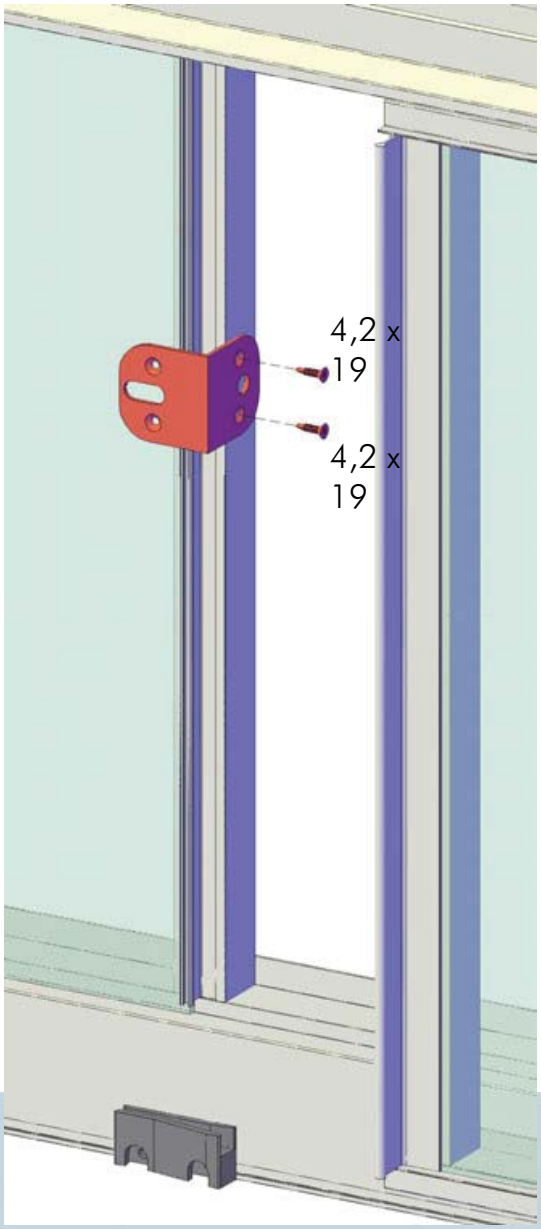


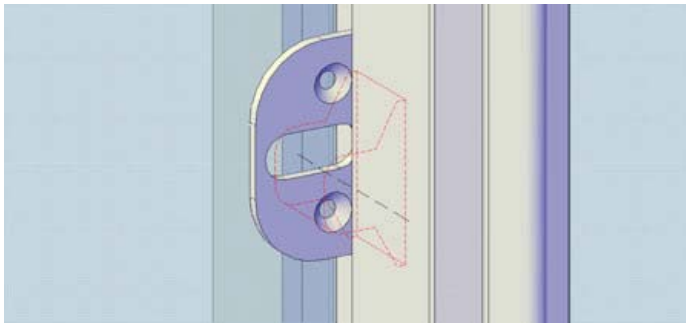
Version 2: Door Lock Installation - Double door

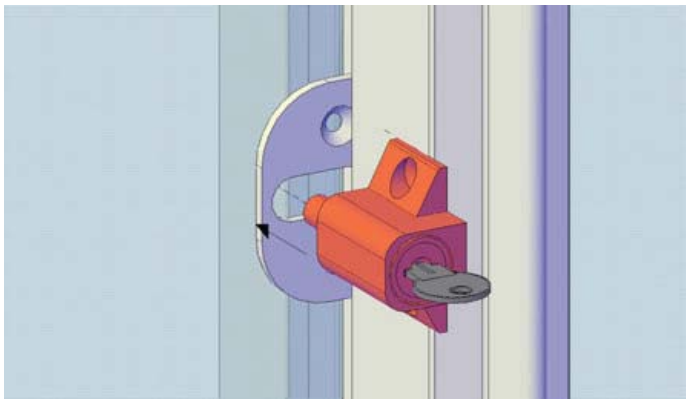


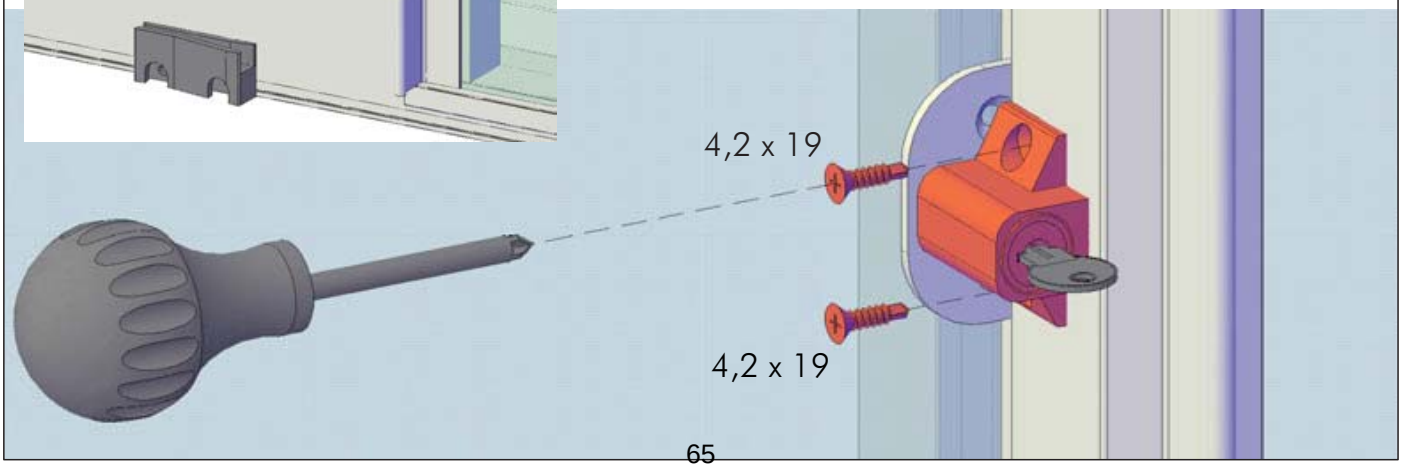
Important! Elongated hole in plate faces out to act as the lock hole

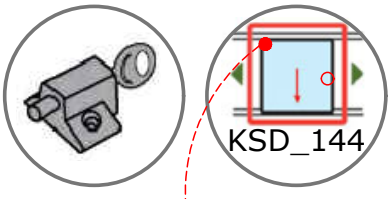




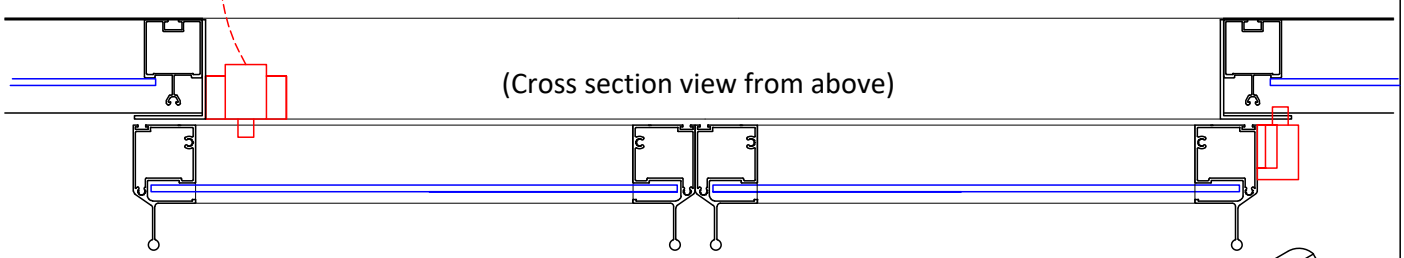


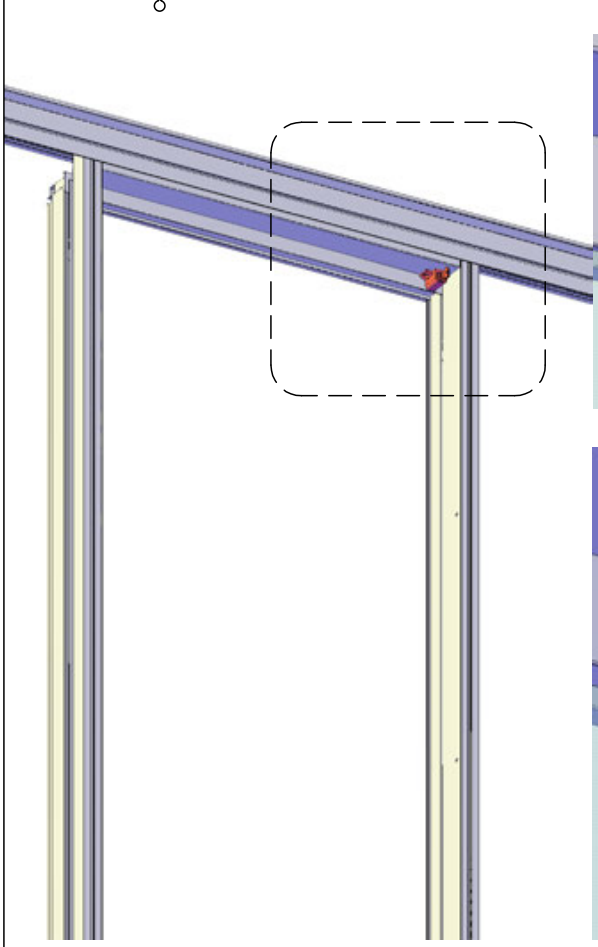


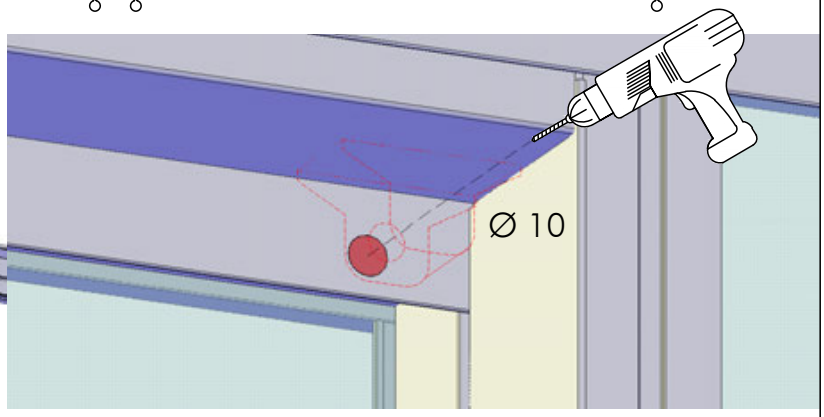


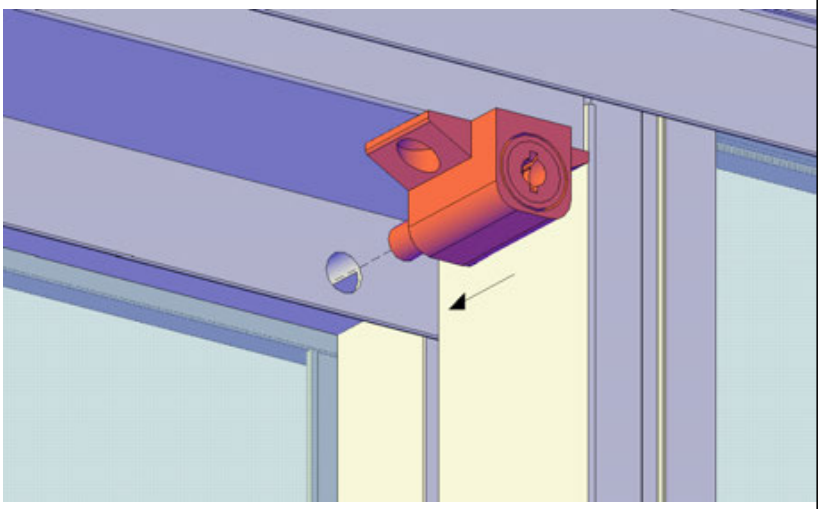


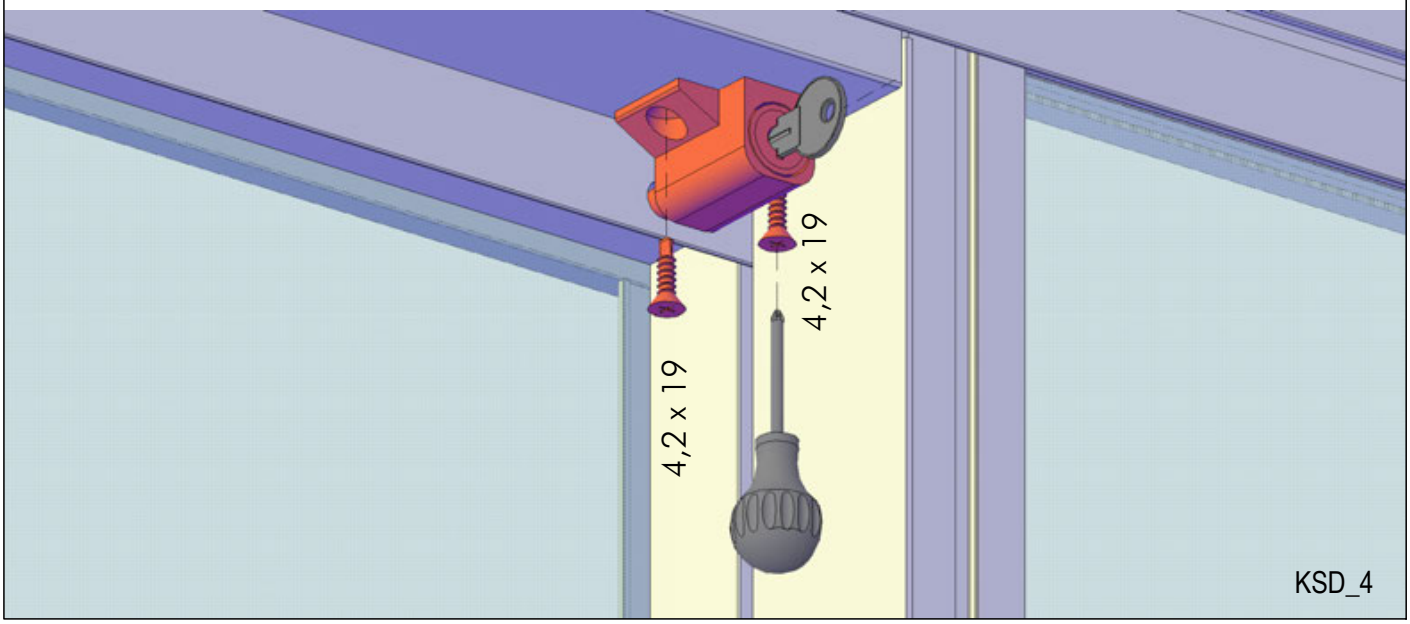
Optional Upgrade: Lock installation with Low Threshold Kit (Double Sliding Door - installed on the inside on one door)



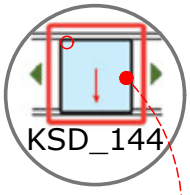


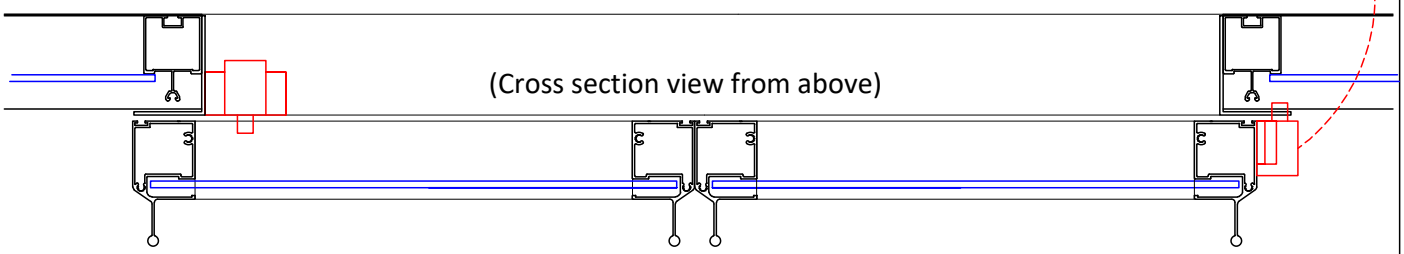


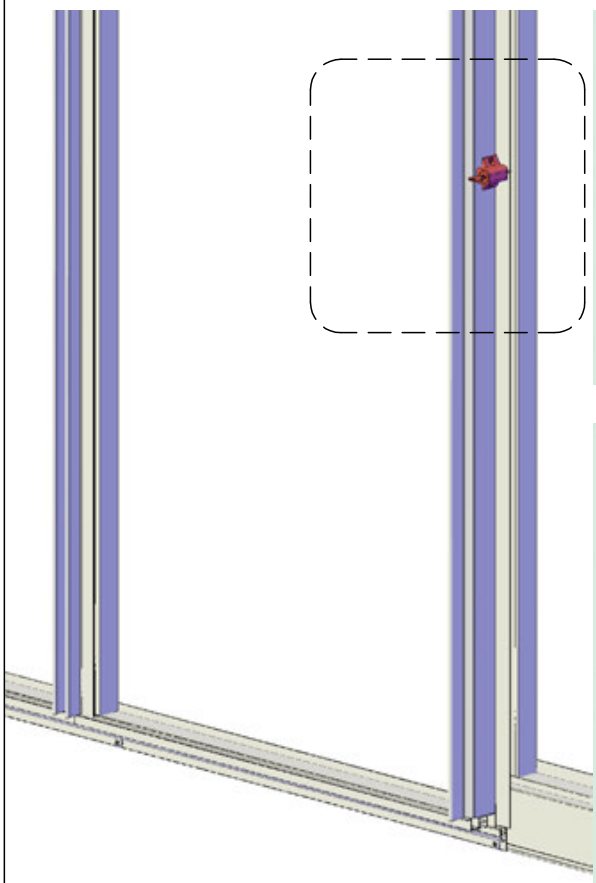


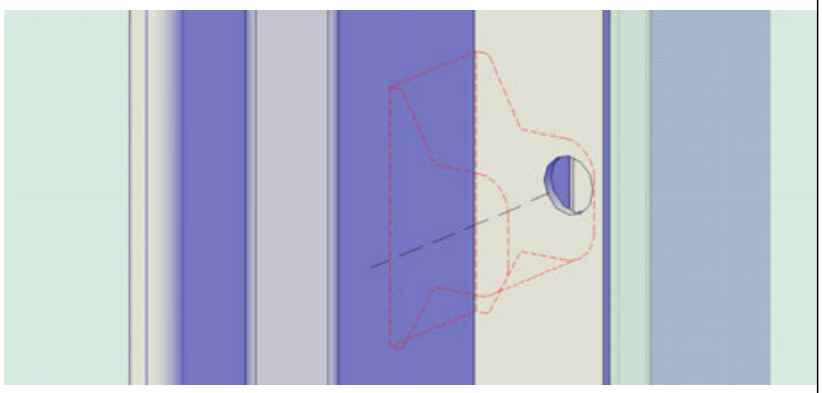


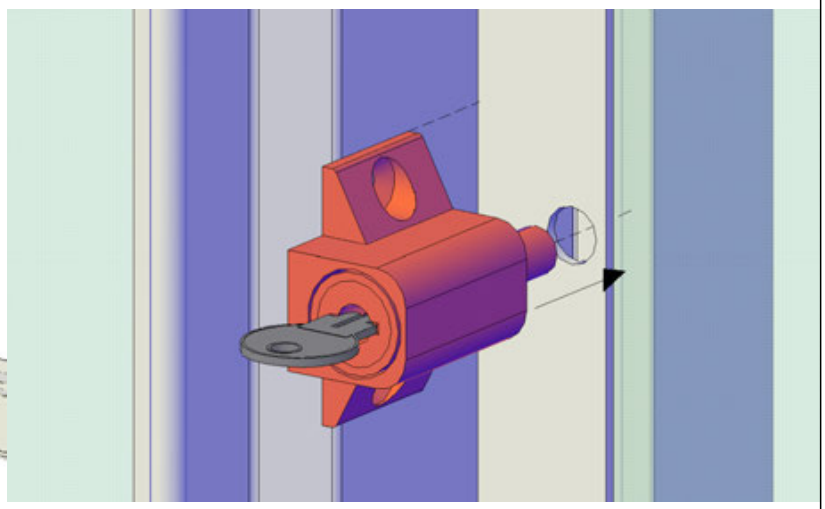
Optional Upgrade: Lock installation with Low Threshold Kit (Double Sliding Door - installed on the exterior for other door)

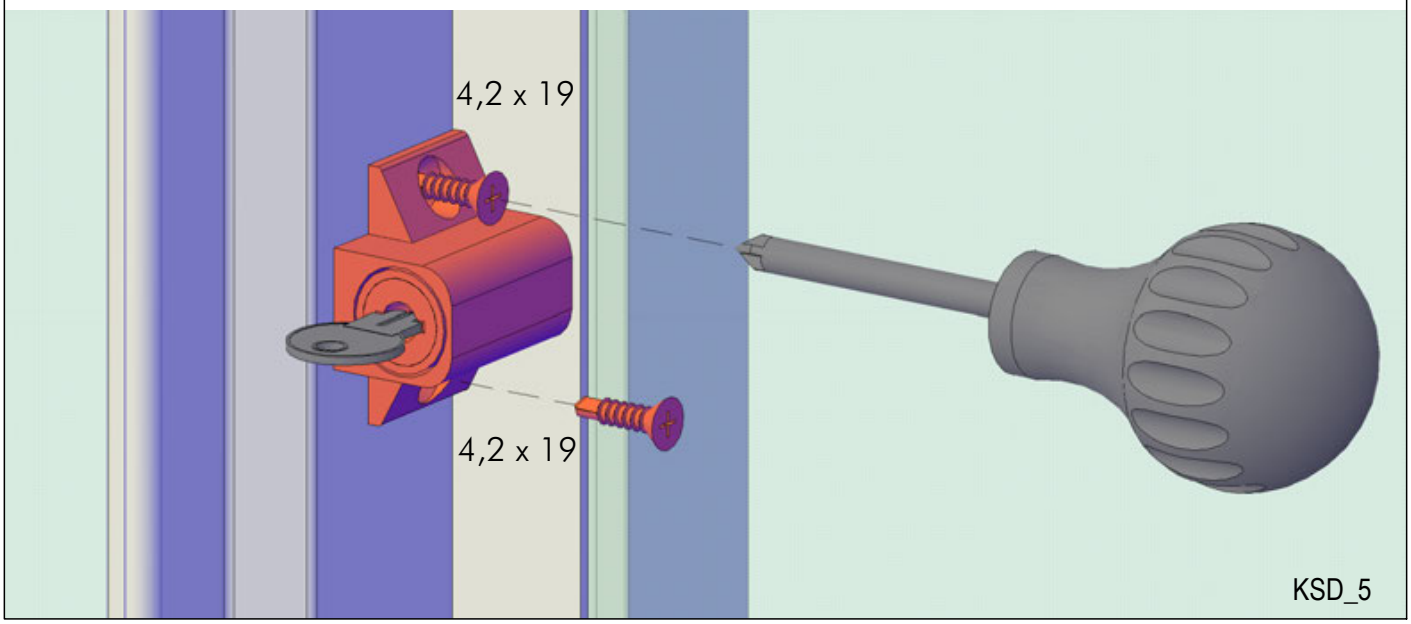








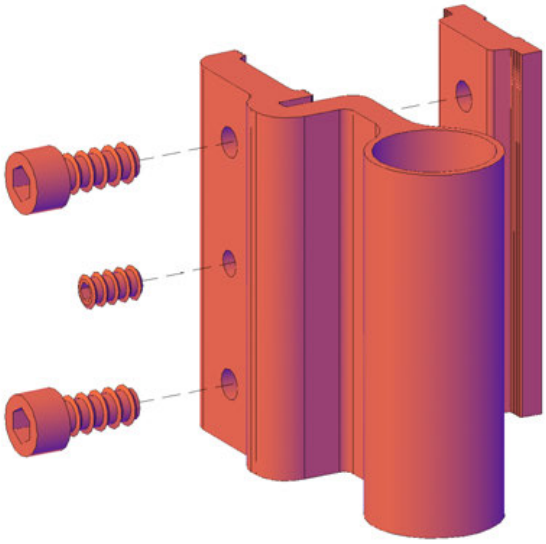


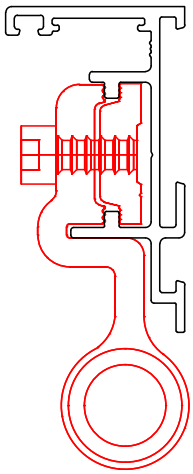


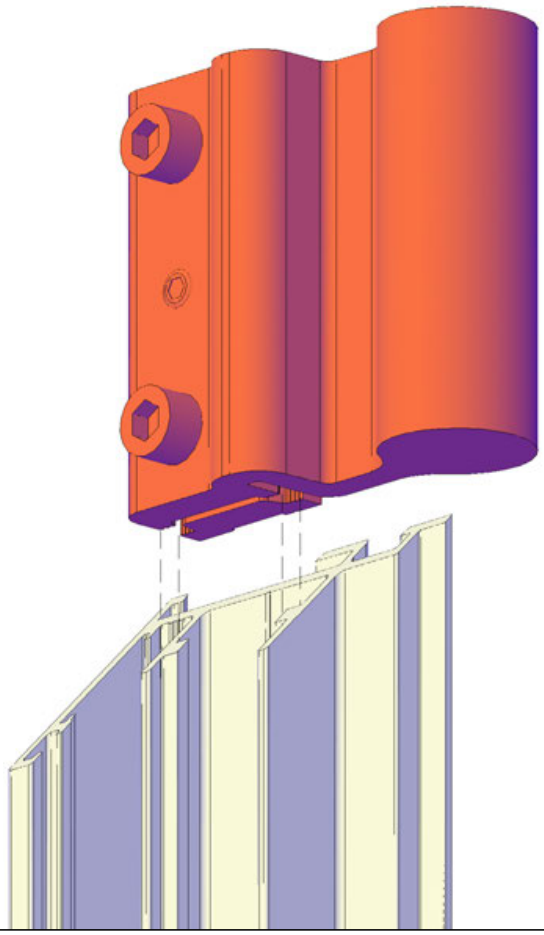
OPTIONAL UPGRADE: Hinged Door

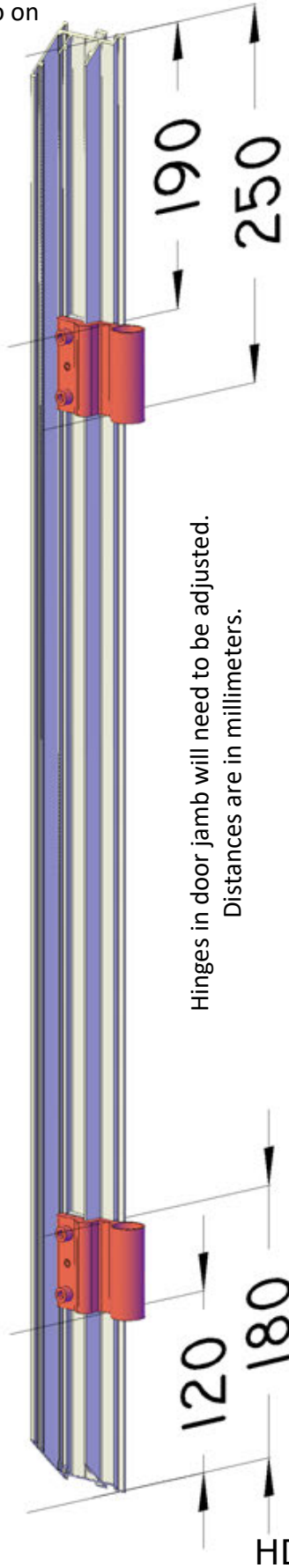
HD

IMPORTANT: Find Janssens Accessory installation video on our site here:
https://www.exaco.com/greenhouse-victorian.php



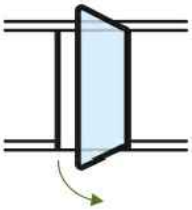


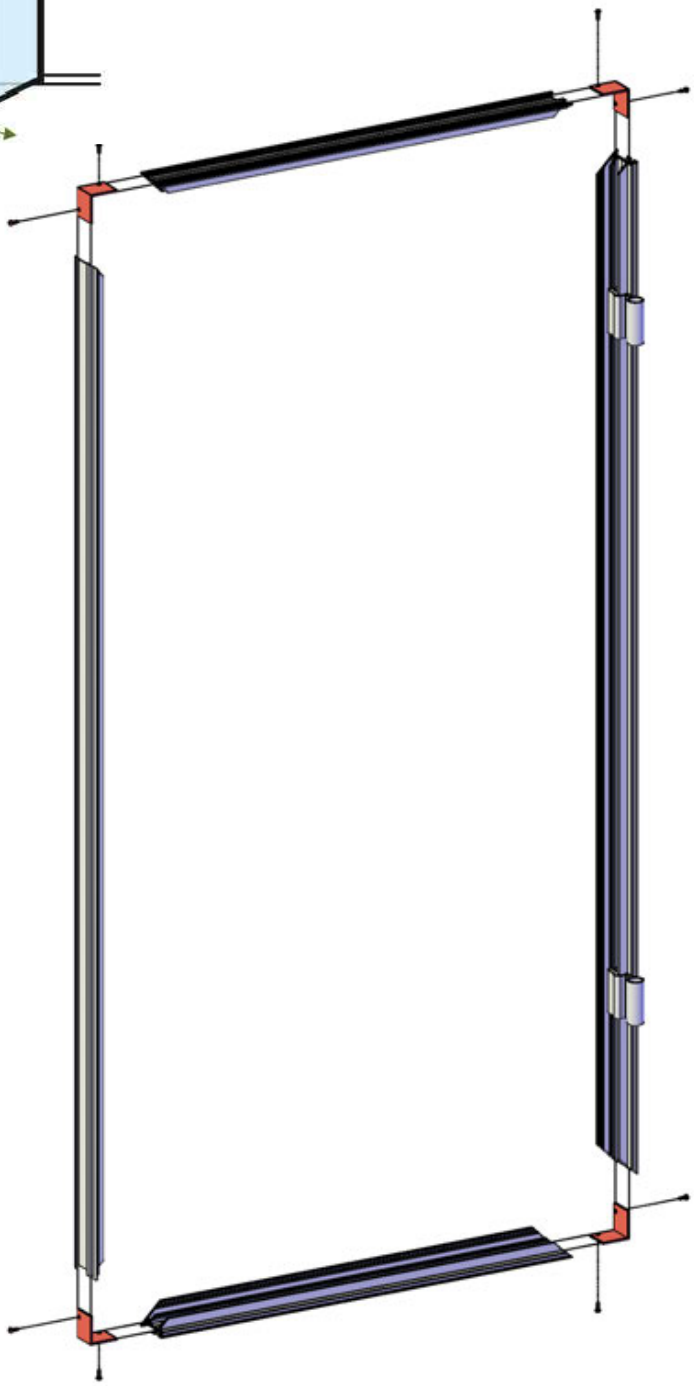


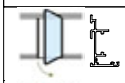
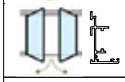
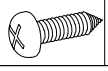


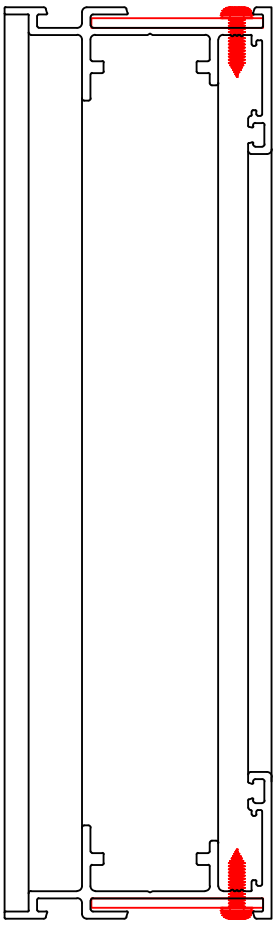
Hinges in door jamb will need to be adjusted.
Distances are in millimeters.

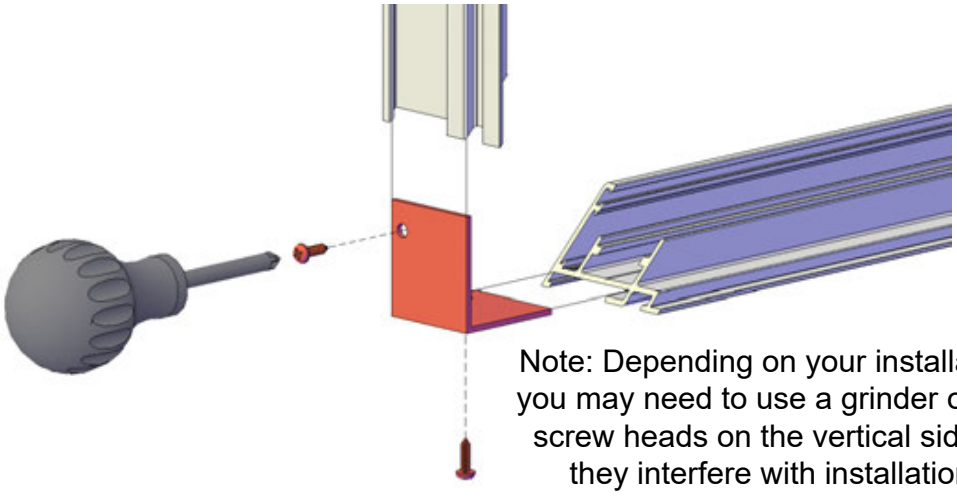
HD 1

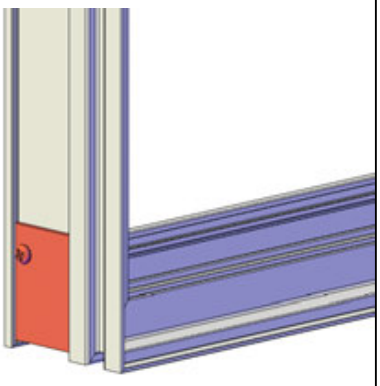




	ITEM	PC.	L
	L 40X40	4 PC	36 MM
	PRO6280	2 PC	703 MM
	PRO6280	2 PC	1.441 MM
	PRO6280	2 PC	1.930 MM
	4,2 X 13	8 PC	



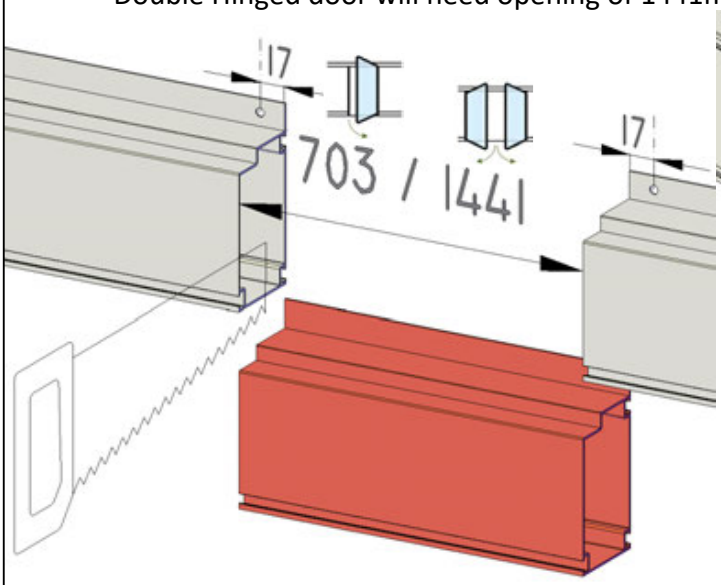


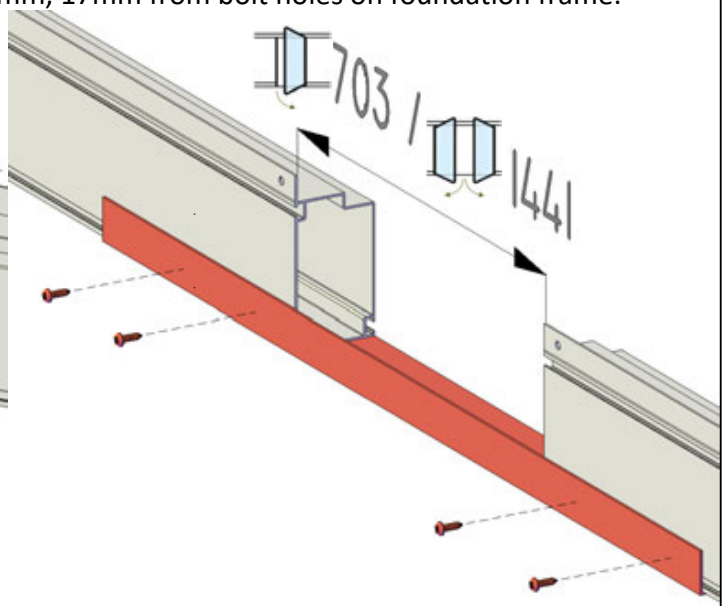


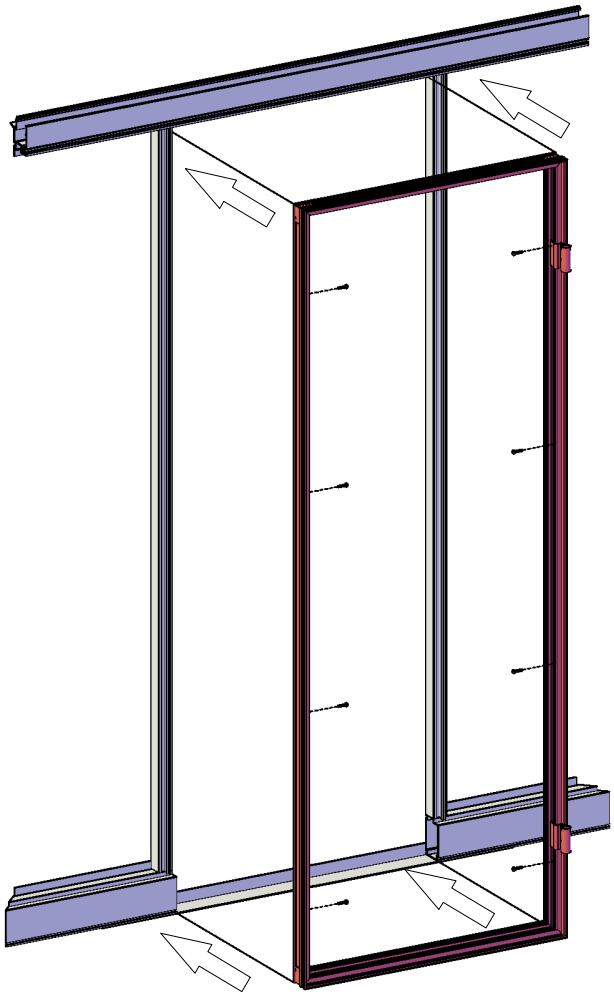
Note: Depending on your installation, you may need to use a grinder on the screw heads on the vertical sides if they interfere with installation.

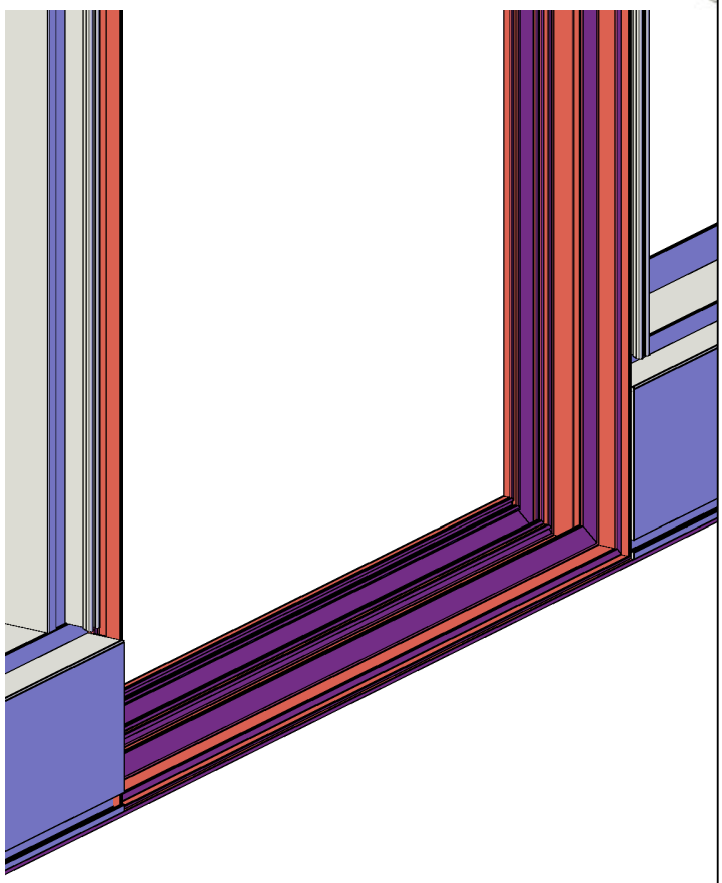
HD 2

Double Hinged door will need opening of 1441mm, 17mm from bolt holes on foundation frame.

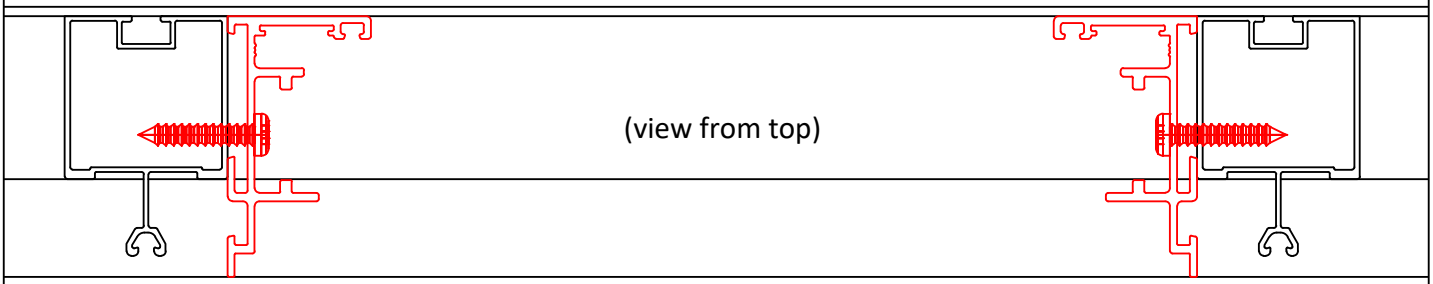






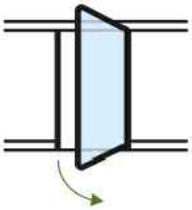


(Single door shown, double door jamb installation will be identical)

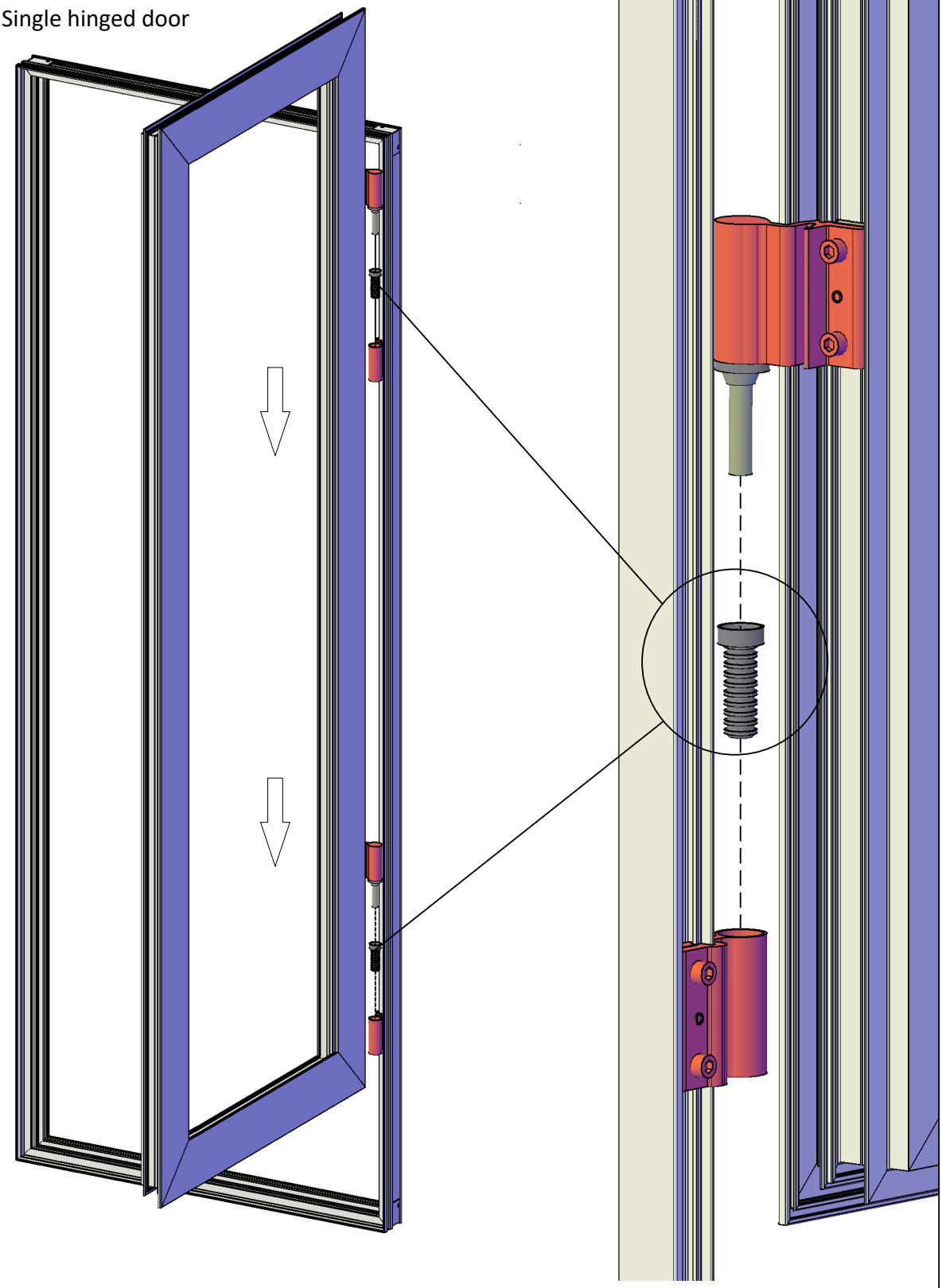


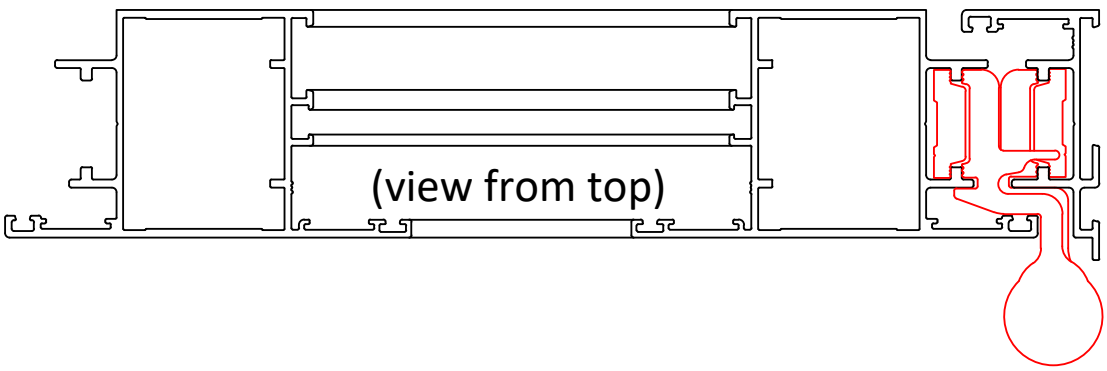
(view from top)

HD 3

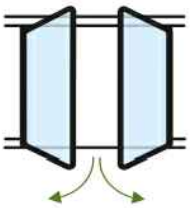


Single hinged door

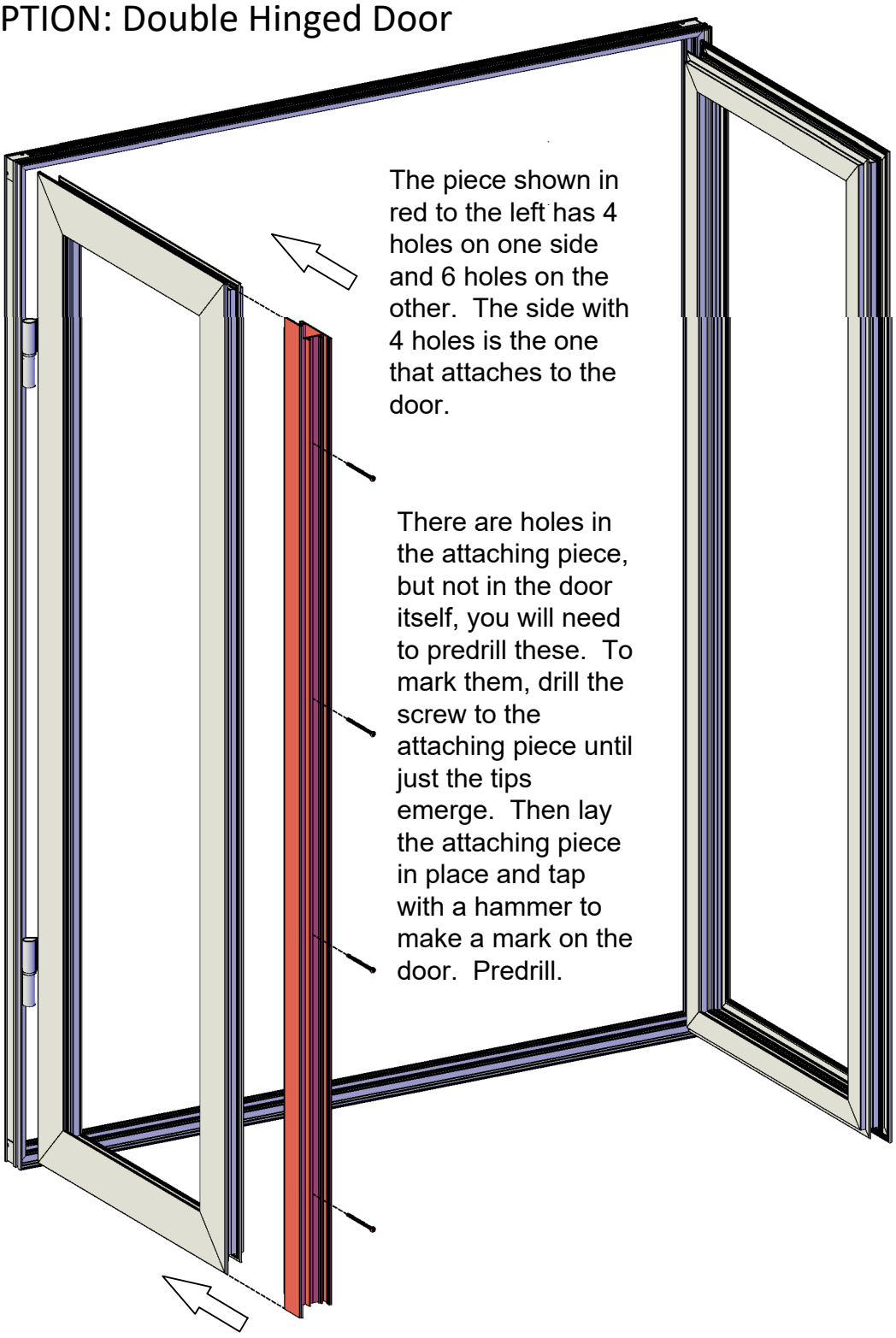




HD 4

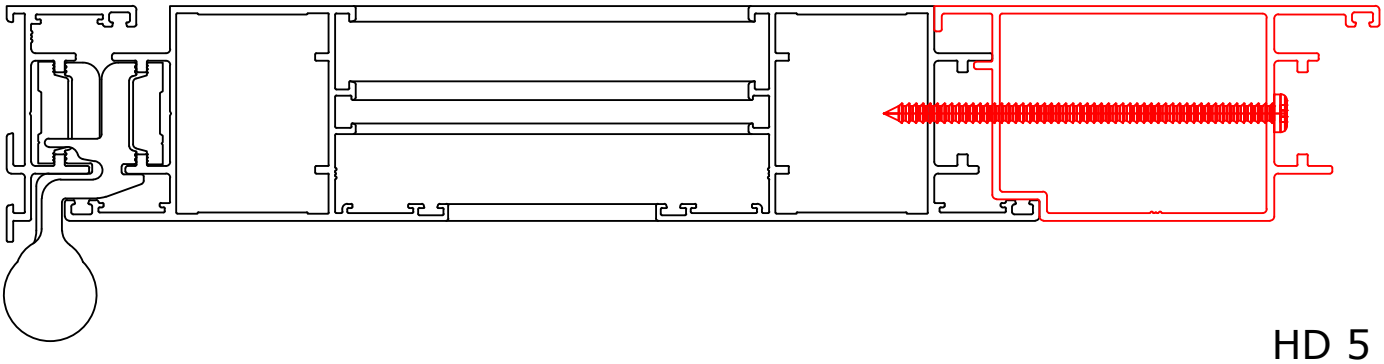


OPTION: Double Hinged Door

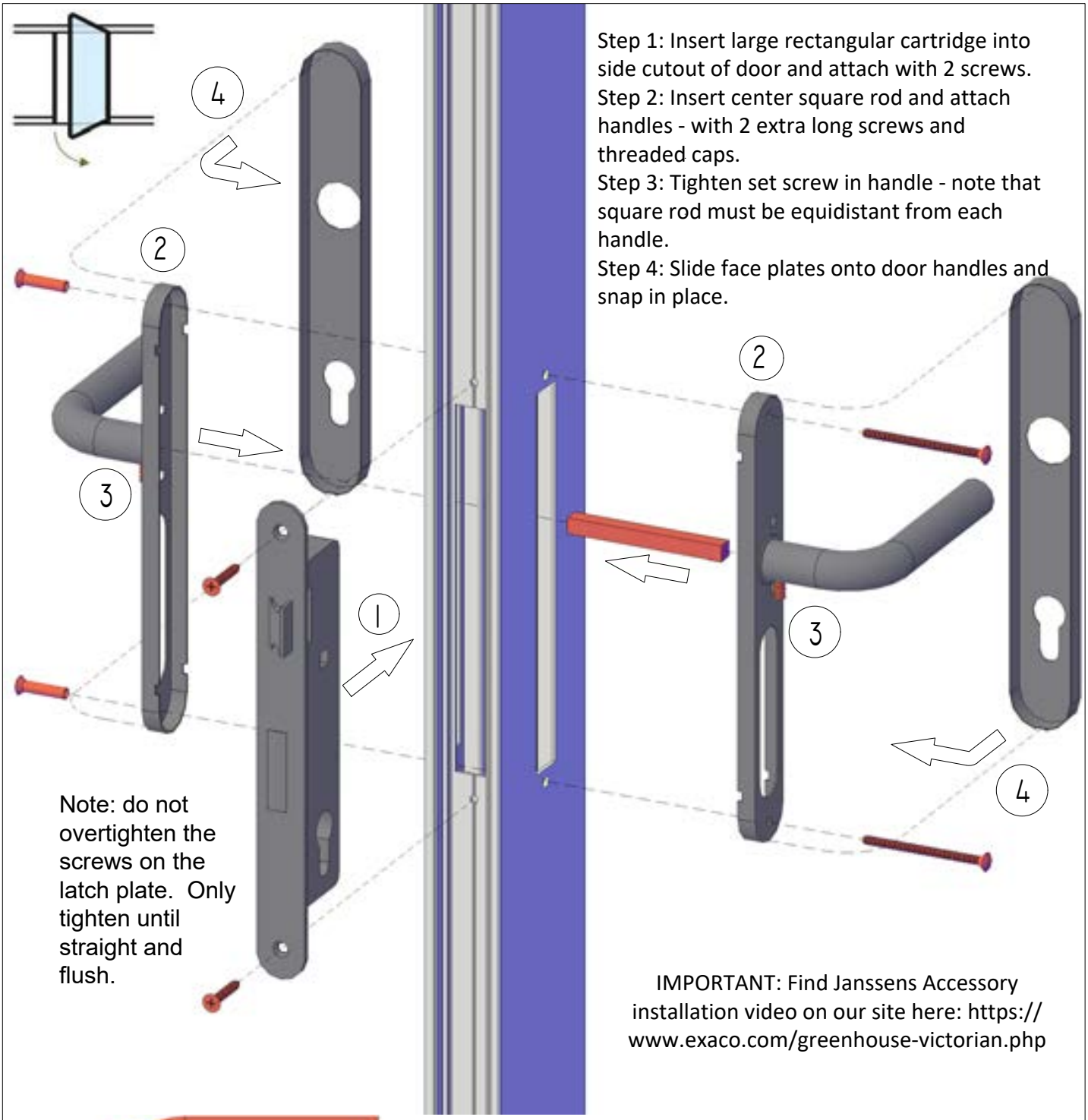


The piece shown in red to the left has 4 holes on one side and 6 holes on the other. The side with 4 holes is the one that attaches to the door.

There are holes in the attaching piece, but not in the door itself, you will need to predrill these. To mark them, drill the screw to the attaching piece until just the tips emerge. Then lay the attaching piece in place and tap with a hammer to make a mark on the door. Predrill.



HD 5

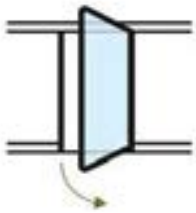


Step 1: Insert large rectangular cartridge into side cutout of door and attach with 2 screws.
Step 2: Insert center square rod and attach handles - with 2 extra long screws and threaded caps.
Step 3: Tighten set screw in handle - note that square rod must be equidistant from each handle.
Step 4: Slide face plates onto door handles and snap in place.

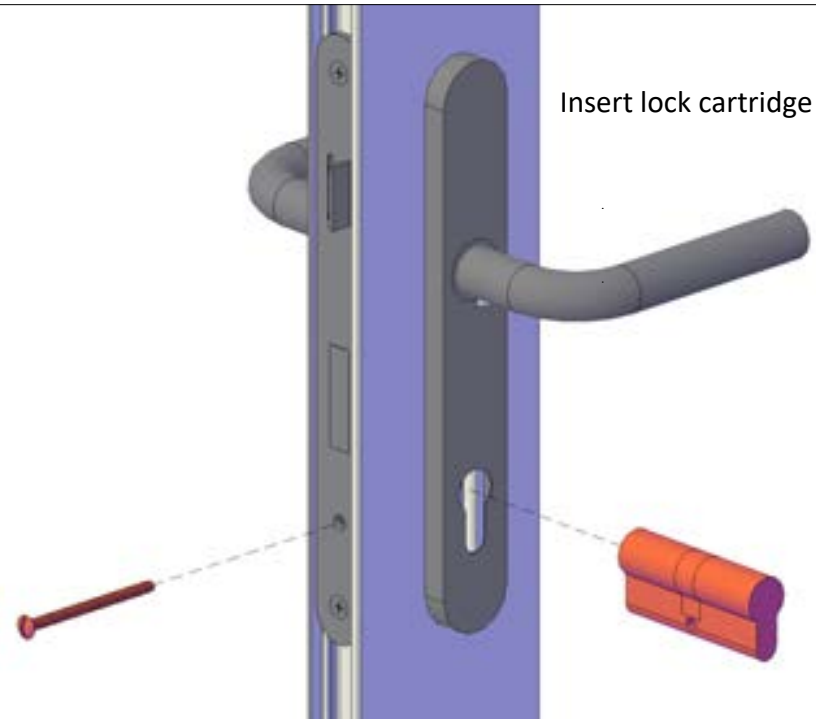
Note: do not overtighten the screws on the latch plate. Only tighten until straight and flush.

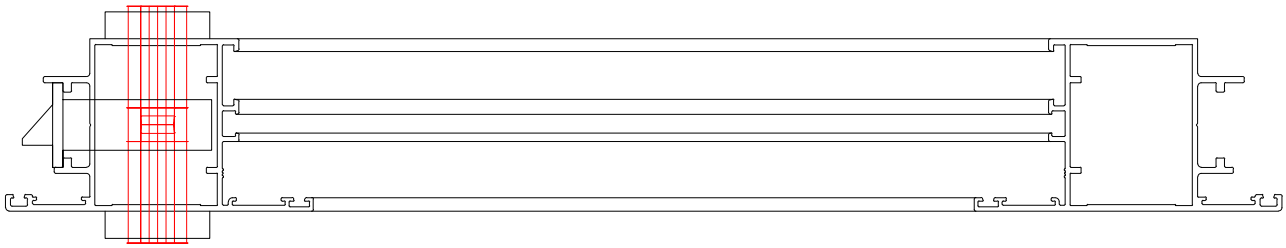
IMPORTANT: Find Janssens Accessory installation video on our site here: https://www.exaco.com/greenhouse-victorian.php

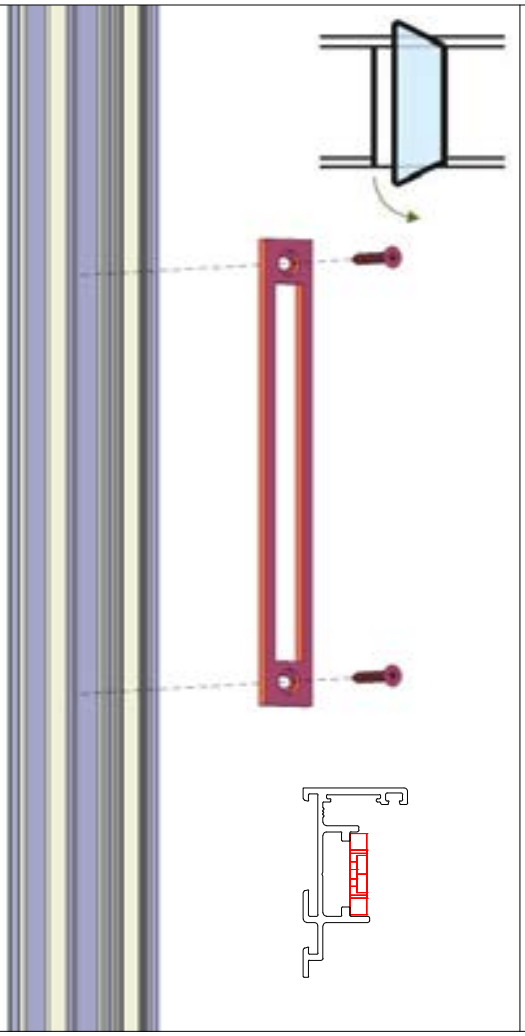
HD 6



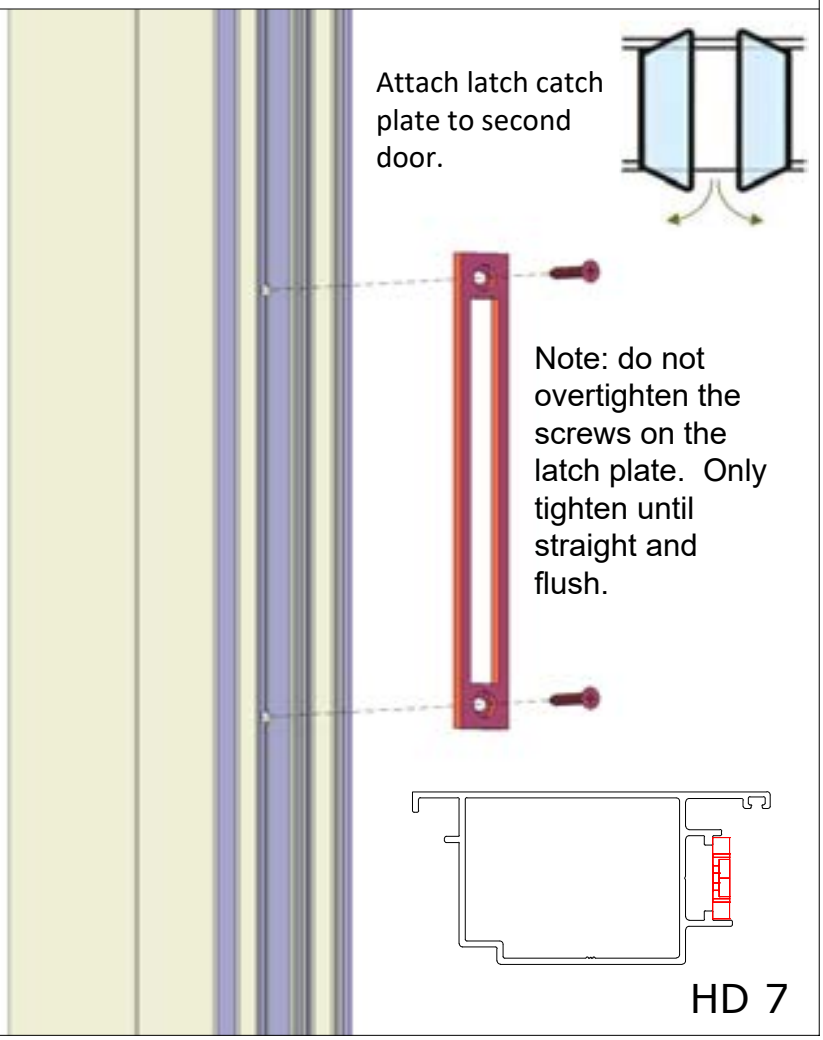
Insert lock cartridge and secure with screw.







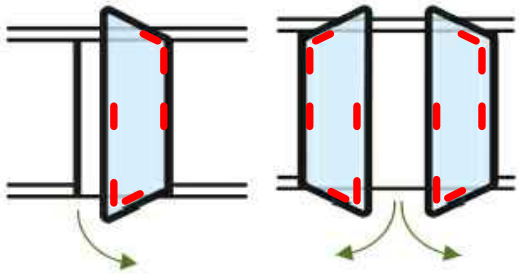
Attach latch catch plate to second door.

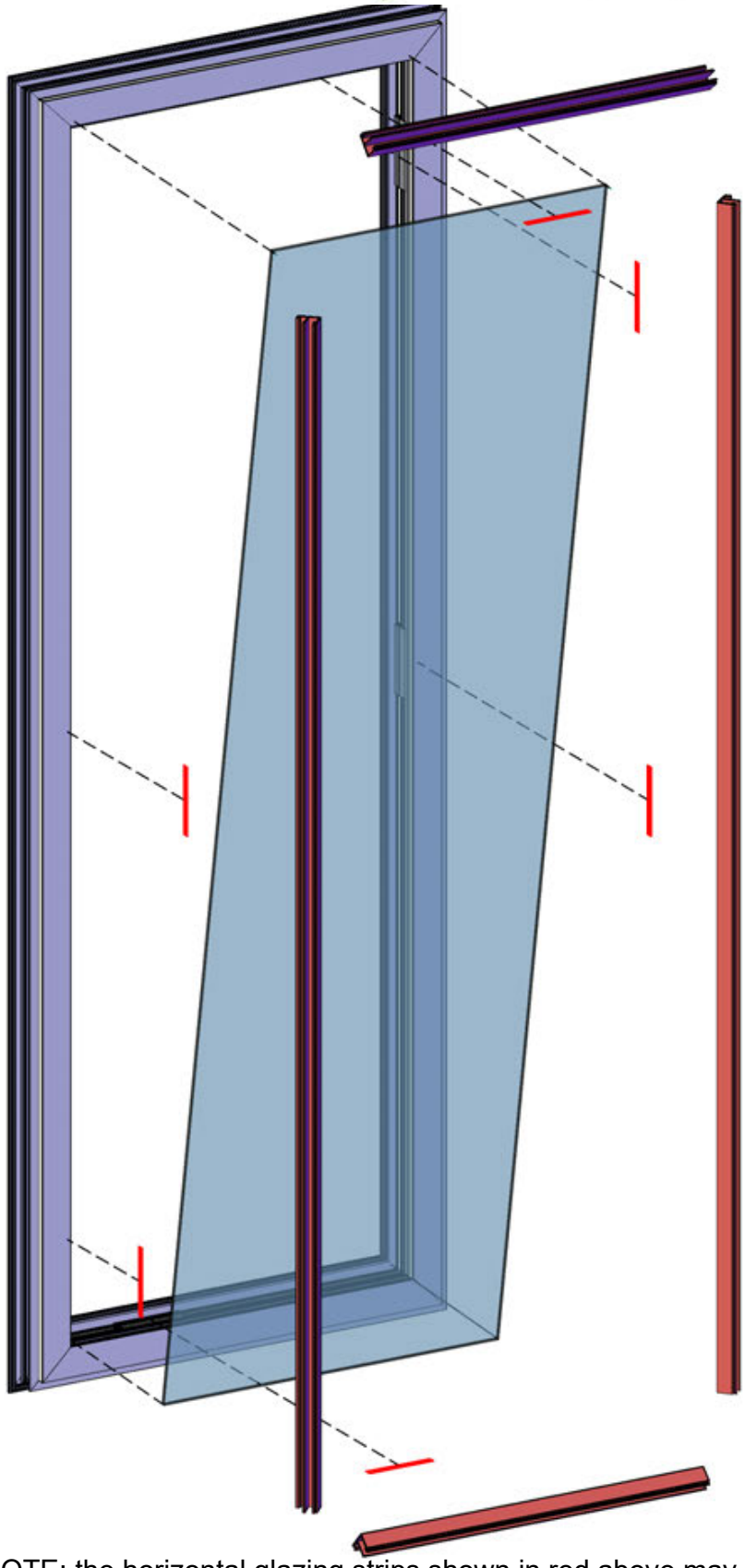


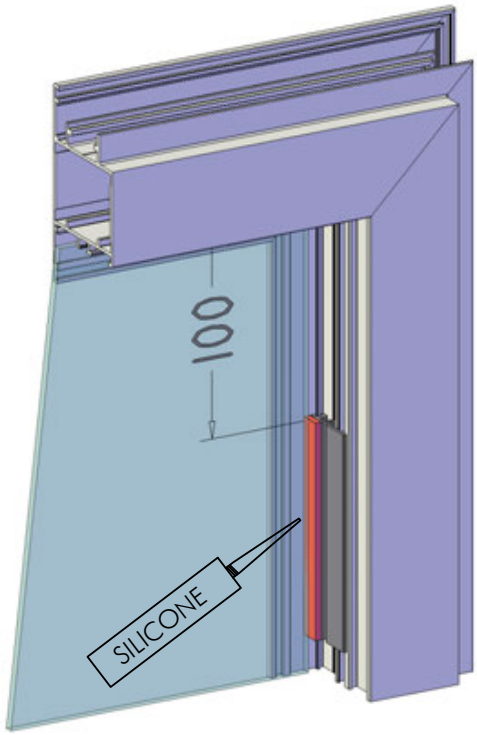
Note: do not overtighten the screws on the latch plate. Only tighten until straight and flush.

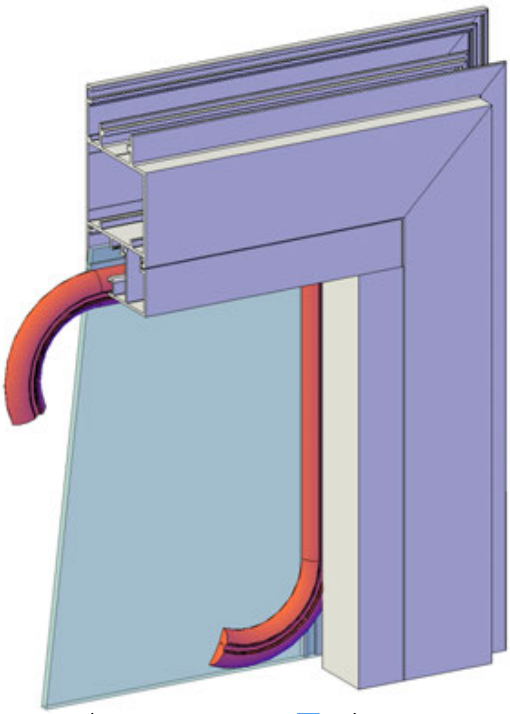
HD 7

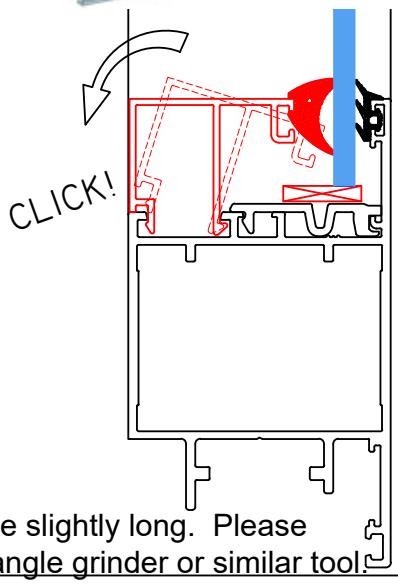
For the next step, we recommend placing the door flat until glass is installed.





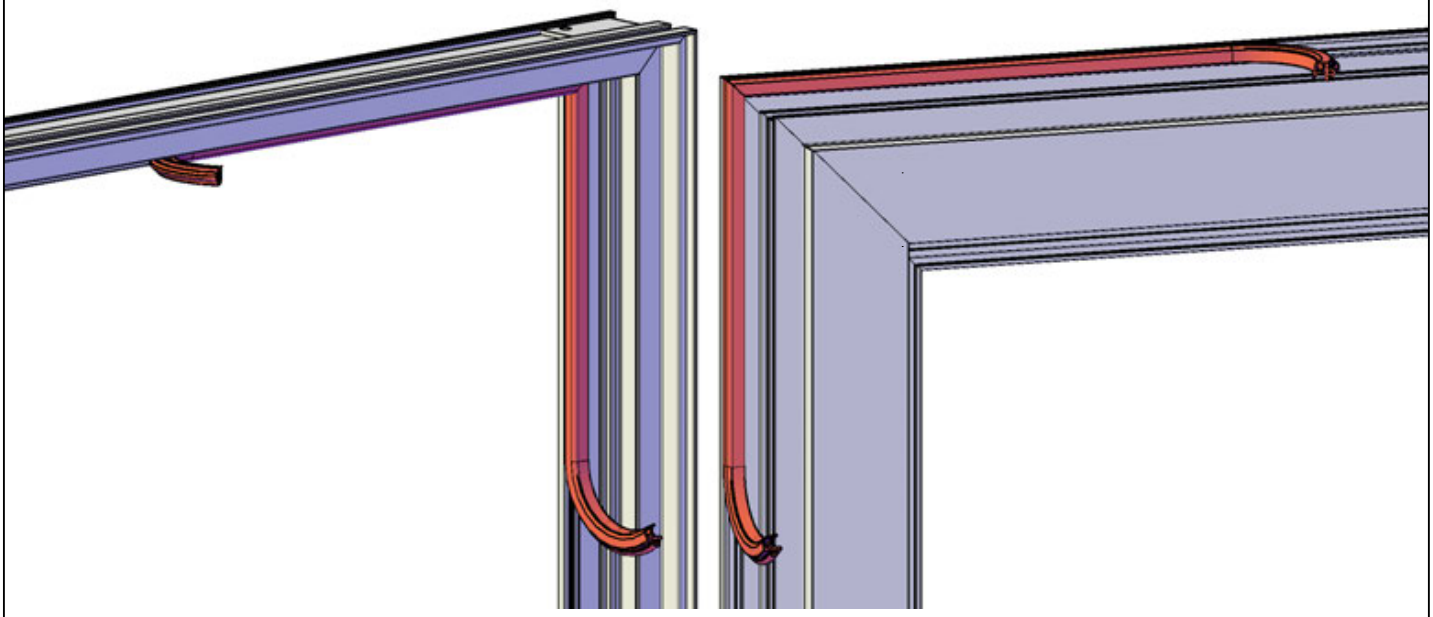


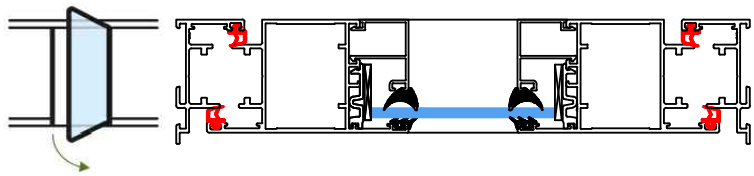


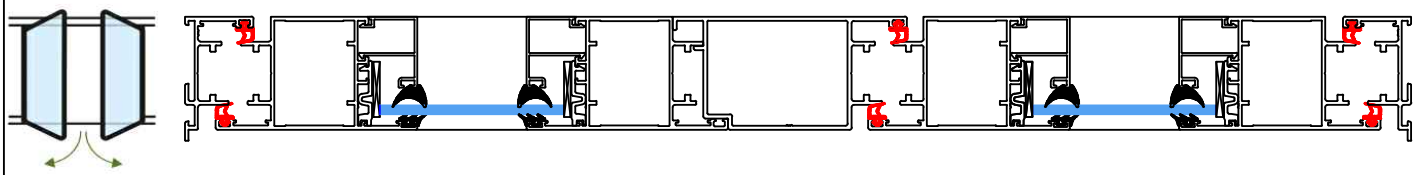


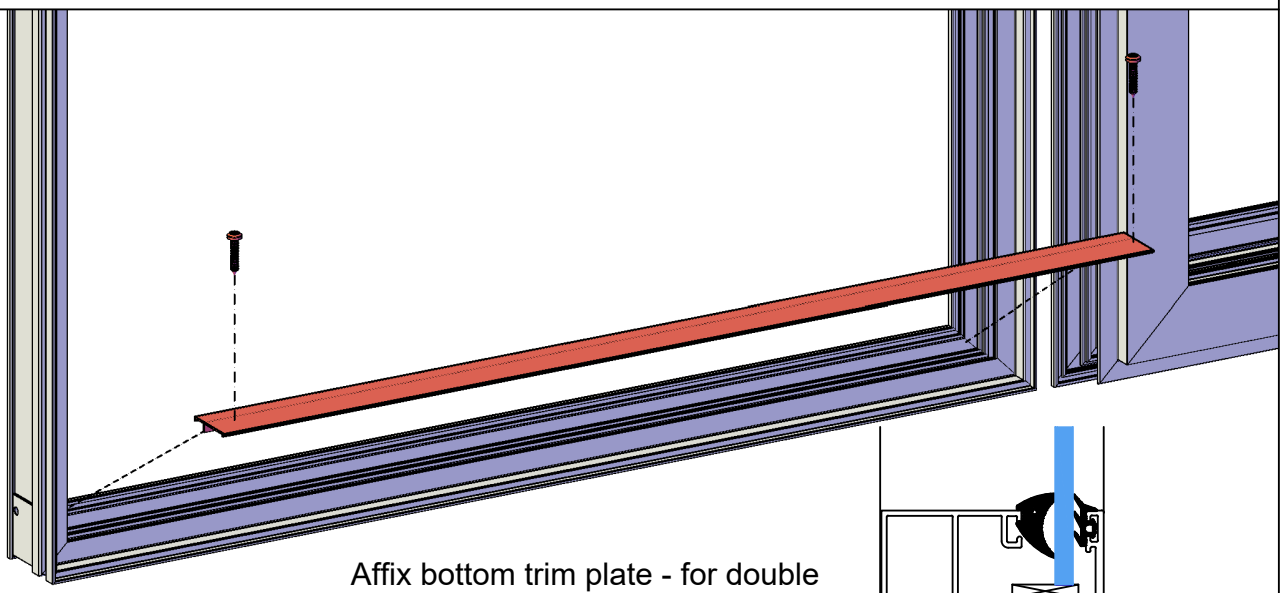
NOTE: the horizontal glazing strips shown in red above may be slightly long. Please measure and trim to fit your door usnig a hacksaw, hand file, angle grinder or similar tool!

HD 8

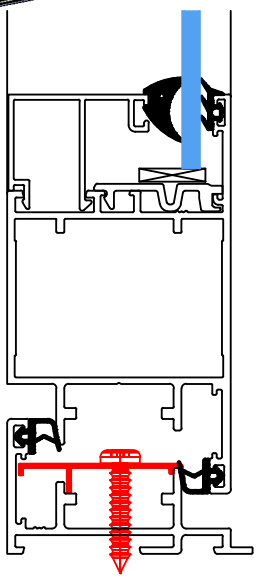






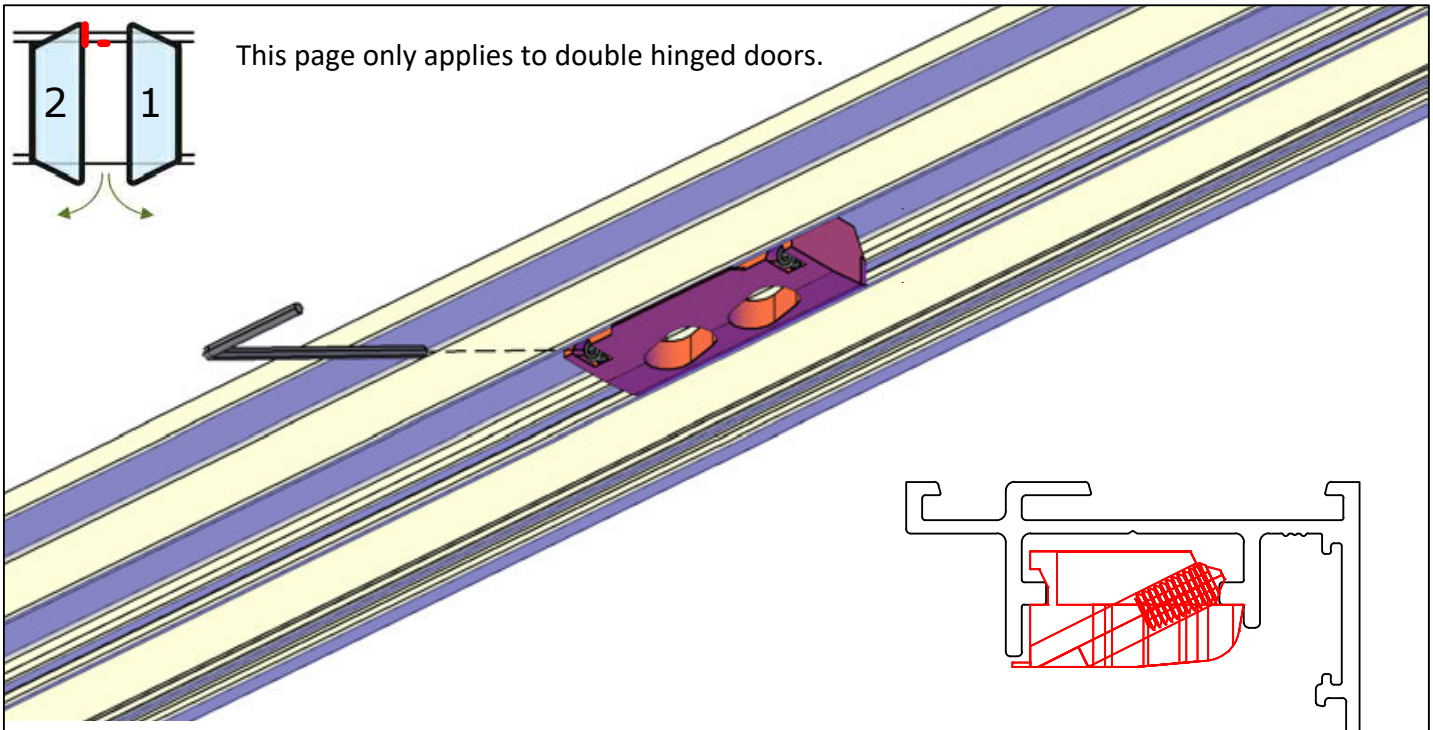


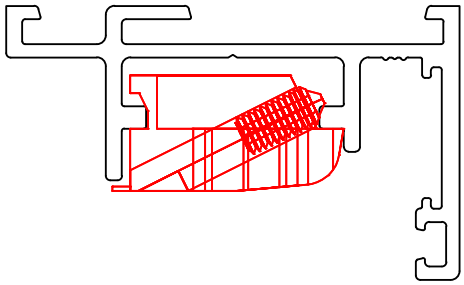
Affix bottom trim plate - for double doors see next page.

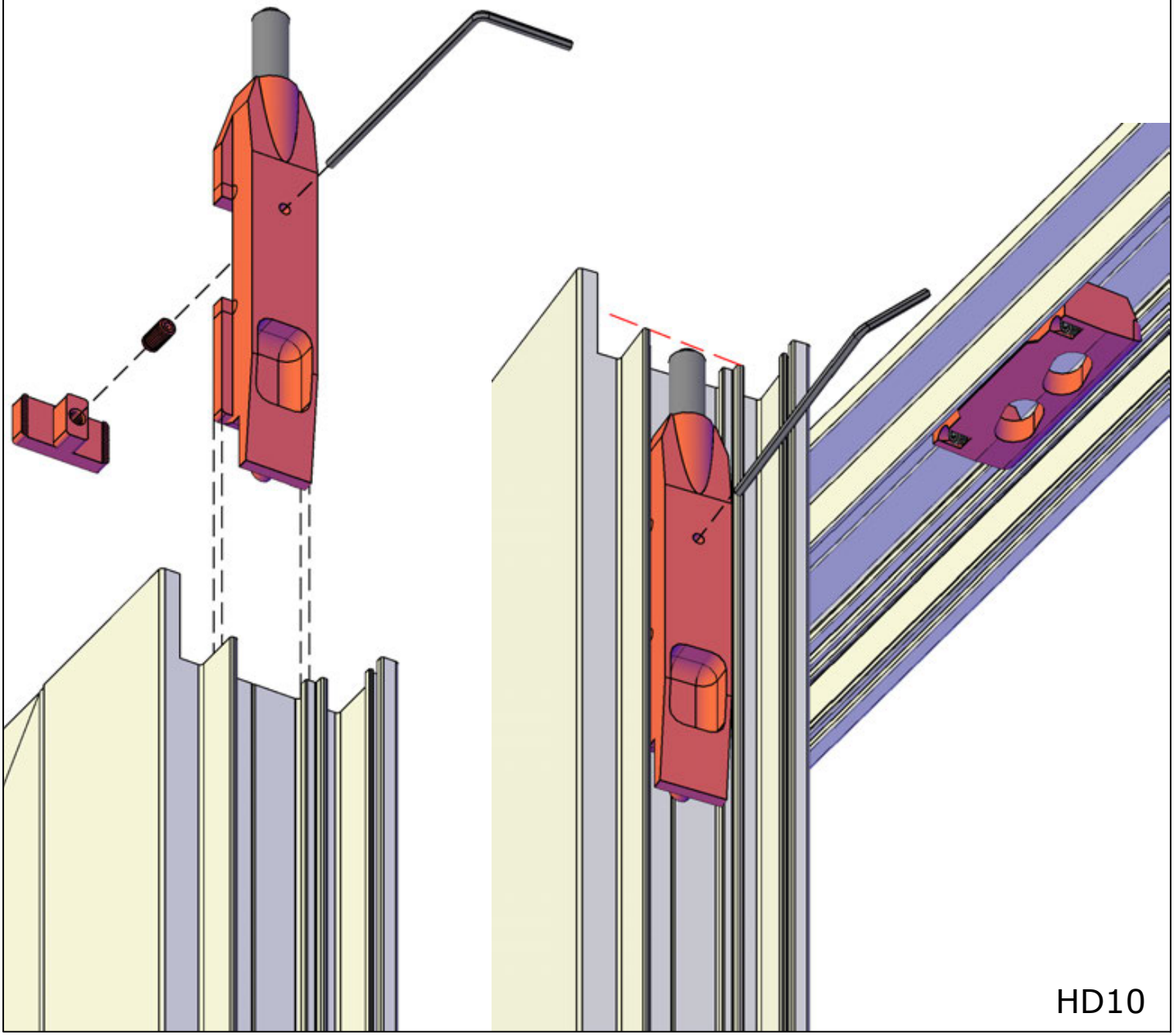


HD 9

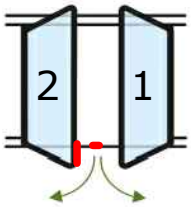
This page only applies to double hinged doors.

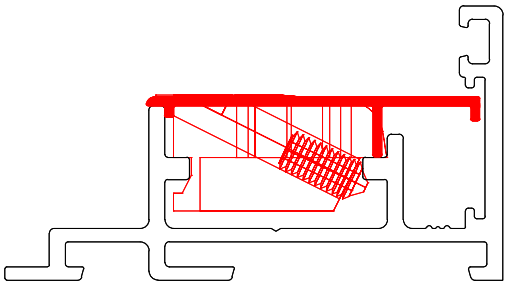






HD10

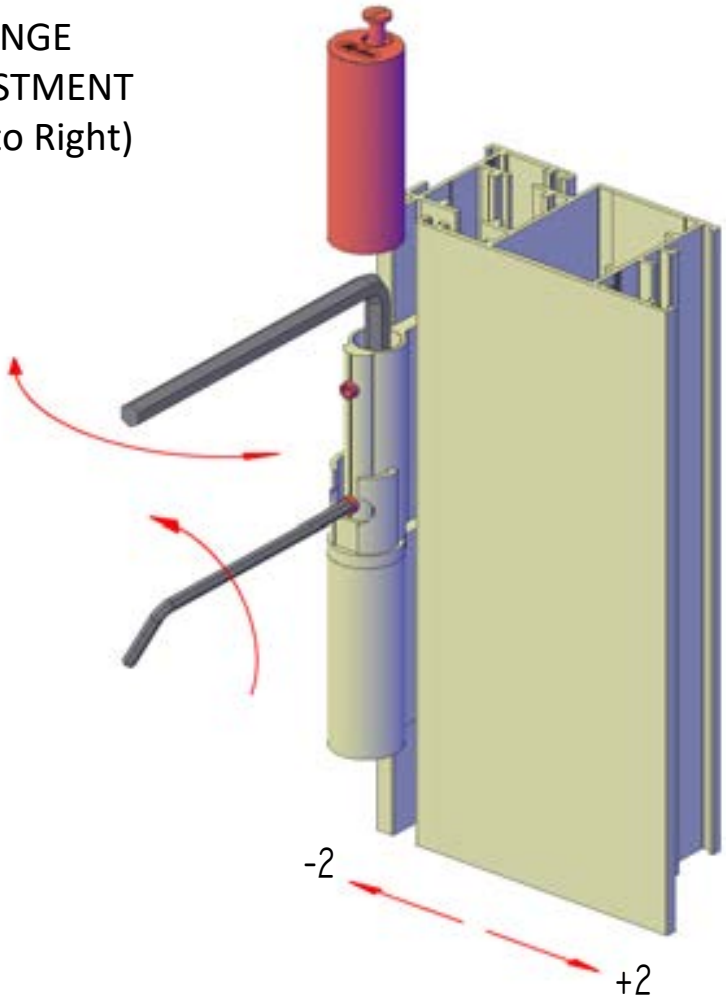


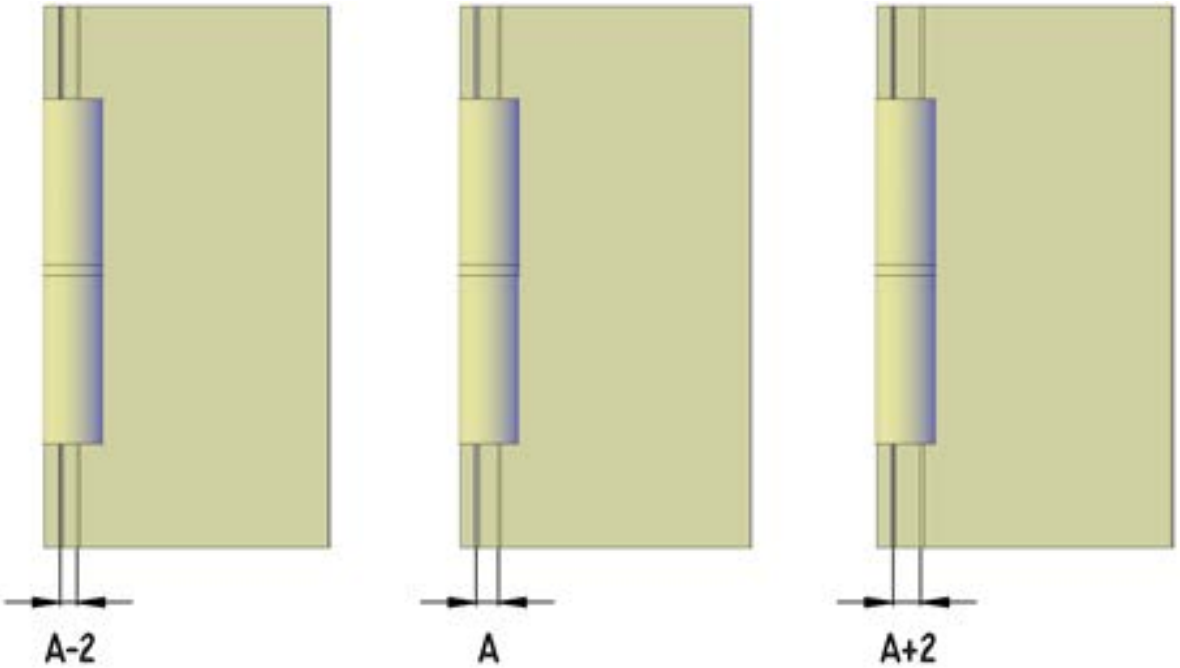


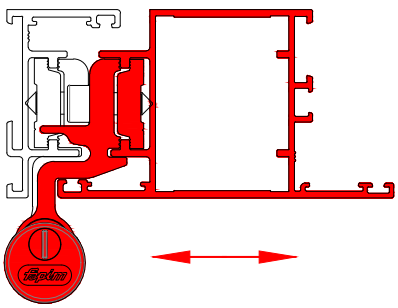
If using the bottom pin lock, you will need to trim the finishing plate in the middle as shown.

HD11

HINGE
ADJUSTMENT
(Left to Right)

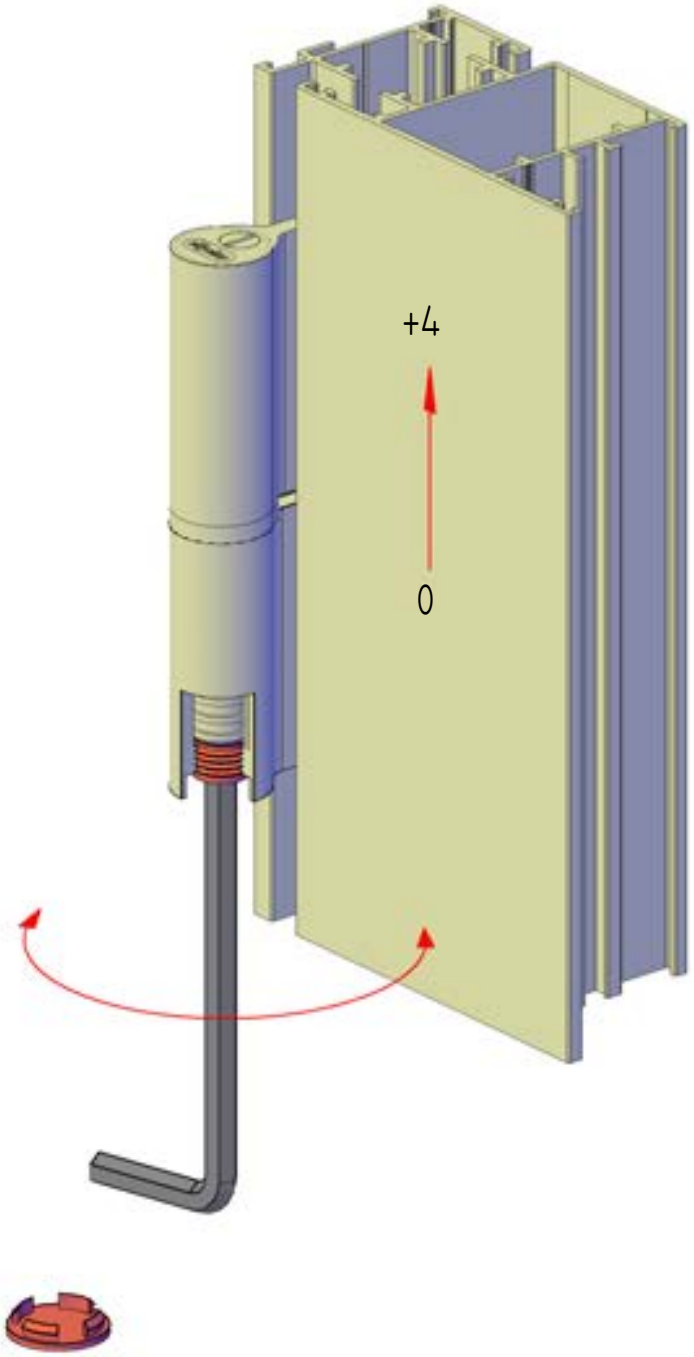




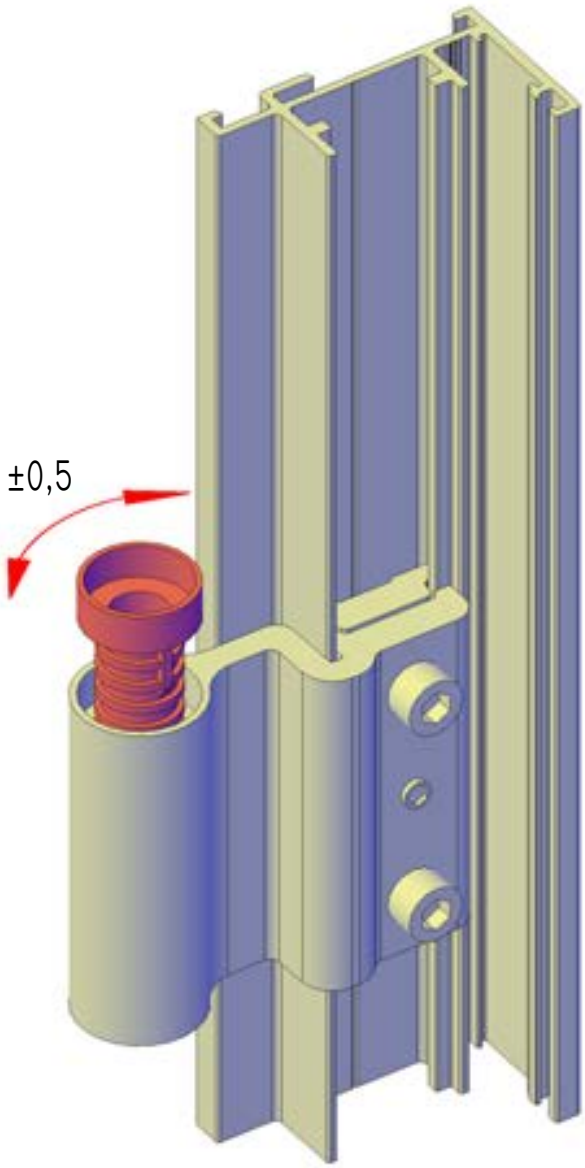


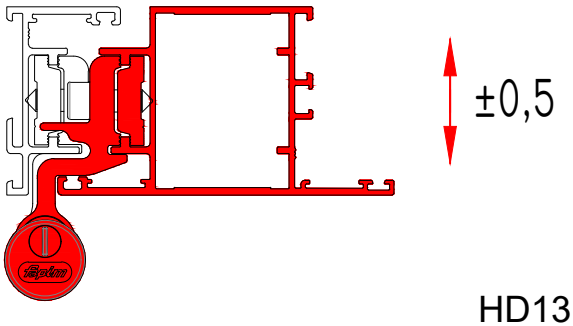
HD12

HINGE ADJUSTMENT (Up)



HINGE ADJUSTMENT (Front/Back)

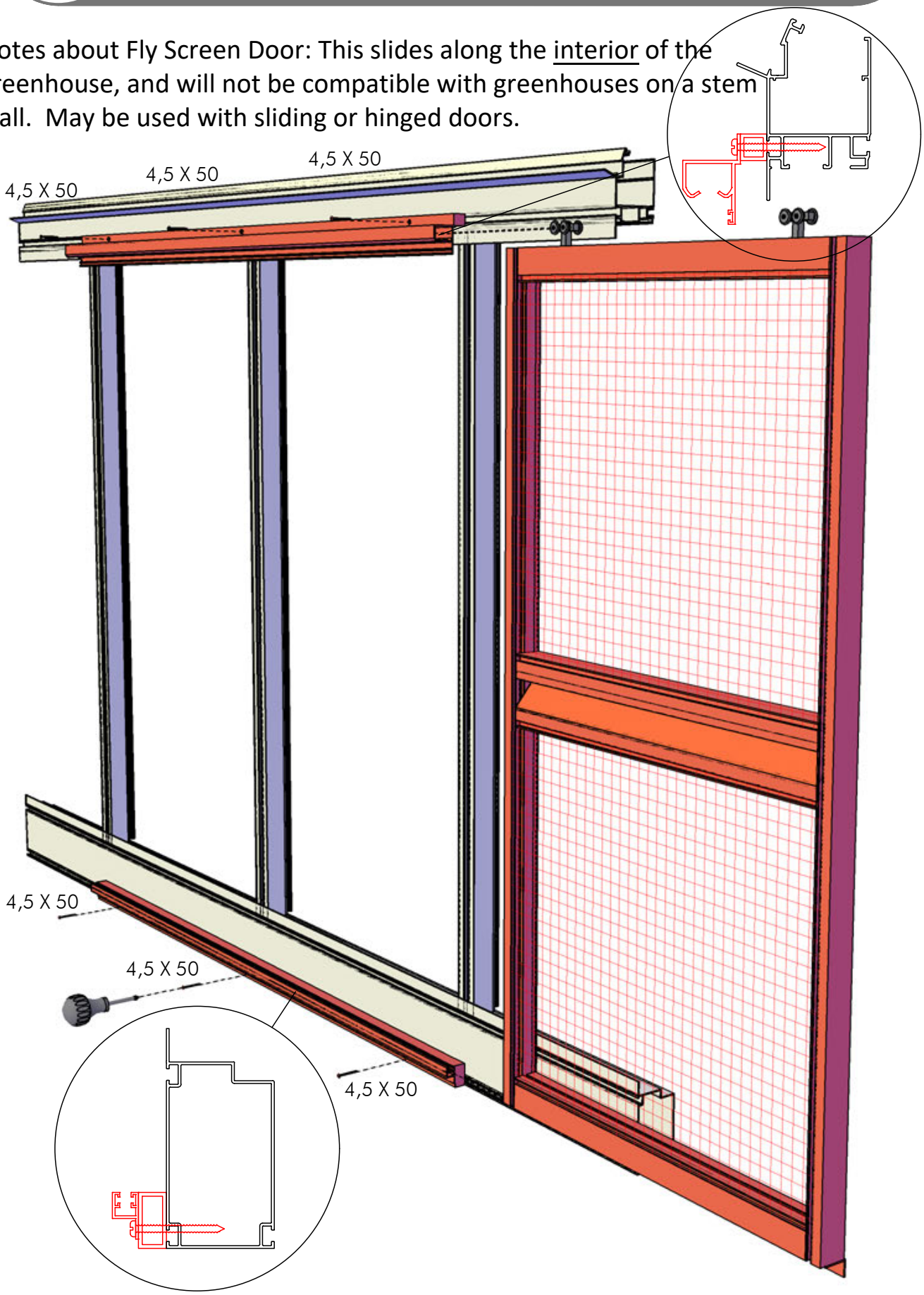




HD13

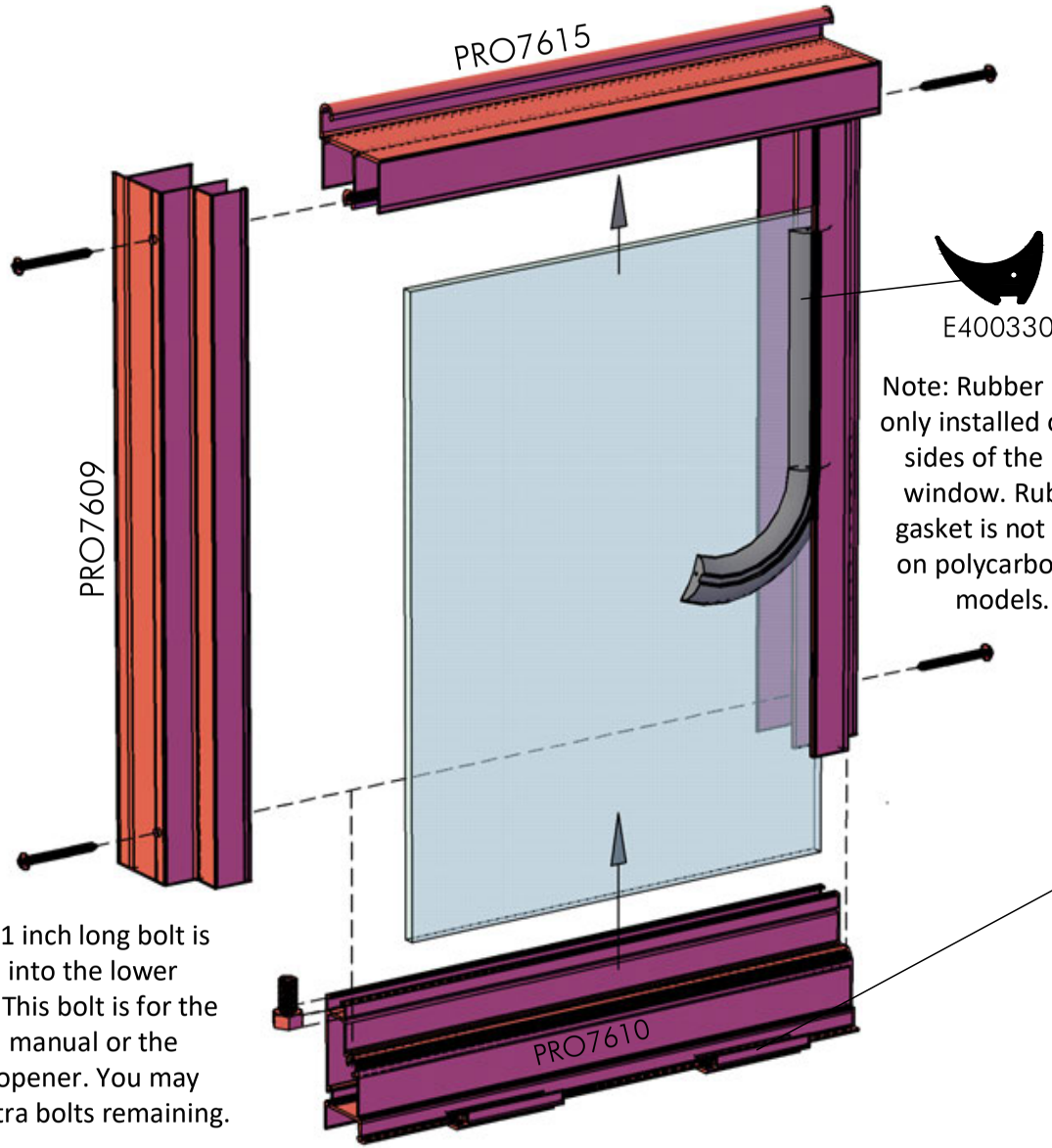
Optional Upgrade: Door Fly Screen FD

Notes about Fly Screen Door: This slides along the interior of the greenhouse, and will not be compatible with greenhouses on a stem wall. May be used with sliding or hinged doors.

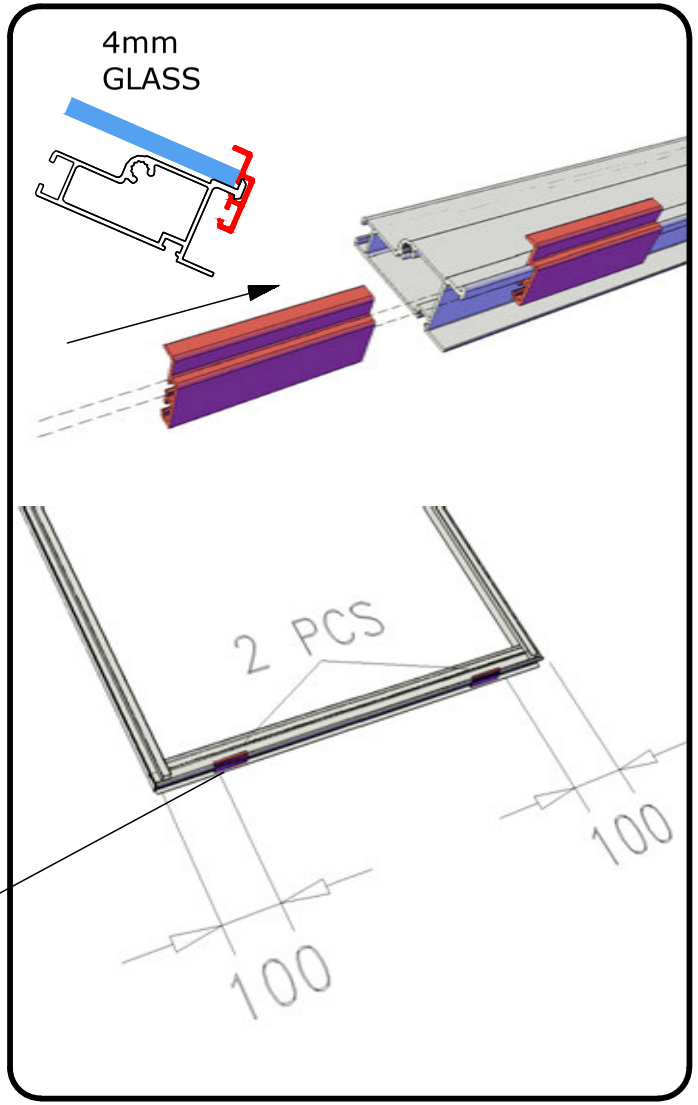


Roof Window /Vent - RW

all hardware will be included in roof vent package - including crossbar to frame opening



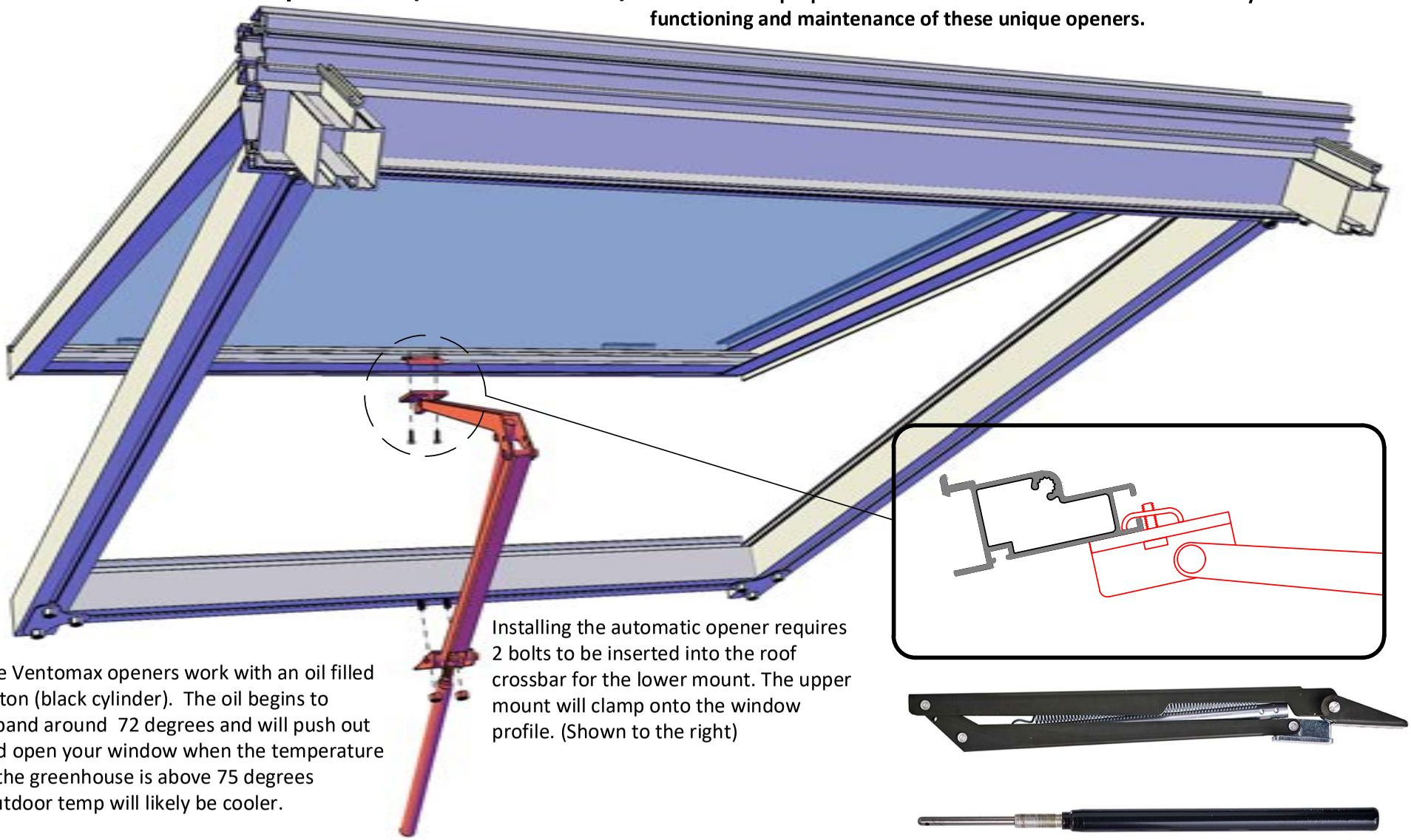
Note: Rubber seal is only installed on the sides of the roof window. Rubber gasket is not used on polycarbonate models.



Note: A 1 inch long bolt is inserted into the lower profile. This bolt is for the optional manual or the spindle opener. You may have extra bolts remaining.

OPTION: Auto Opener (Ventomax)

IMPORTANT! Read installation instructions included in your Ventomax auto opener box to ensure proper installation. There is also information to fully understand the functioning and maintenance of these unique openers.

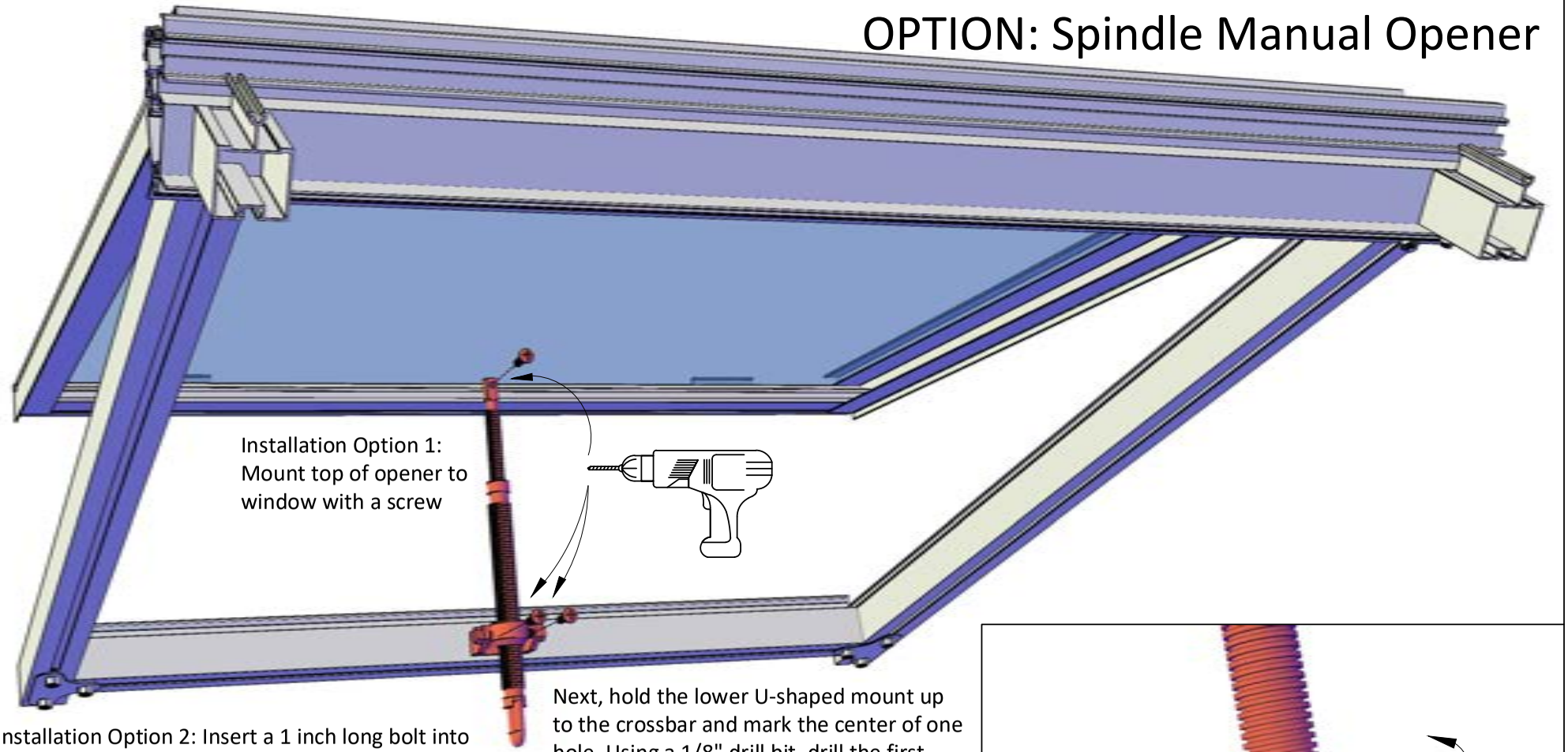


The Ventomax openers work with an oil filled piston (black cylinder). The oil begins to expand around 72 degrees and will push out and open your window when the temperature in the greenhouse is above 75 degrees (outdoor temp will likely be cooler.

Installing the automatic opener requires 2 bolts to be inserted into the roof crossbar for the lower mount. The upper mount will clamp onto the window profile. (Shown to the right)

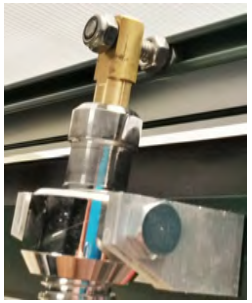
If you are struggling to install your piston and it is above 70 degrees, place the piston in cold water/ fridge for 10 minutes so the rod can retract.
Oil piston rod 2-3 times/year with a light oil such as WD40 or even olive oil.

OPTION: Spindle Manual Opener

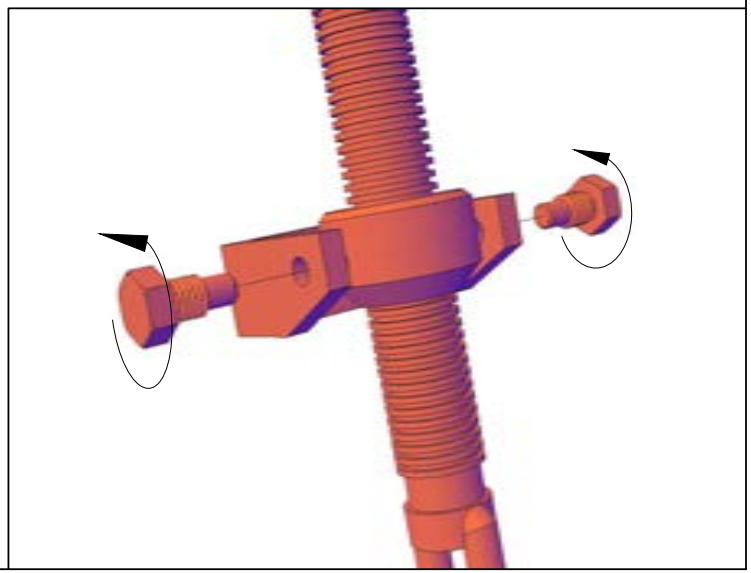


Installation Option 1:
Mount top of opener to window with a screw

Installation Option 2: Insert a 1 inch long bolt into lower roof window channel. Slide to the center and lock it in place with a nut as shown below.

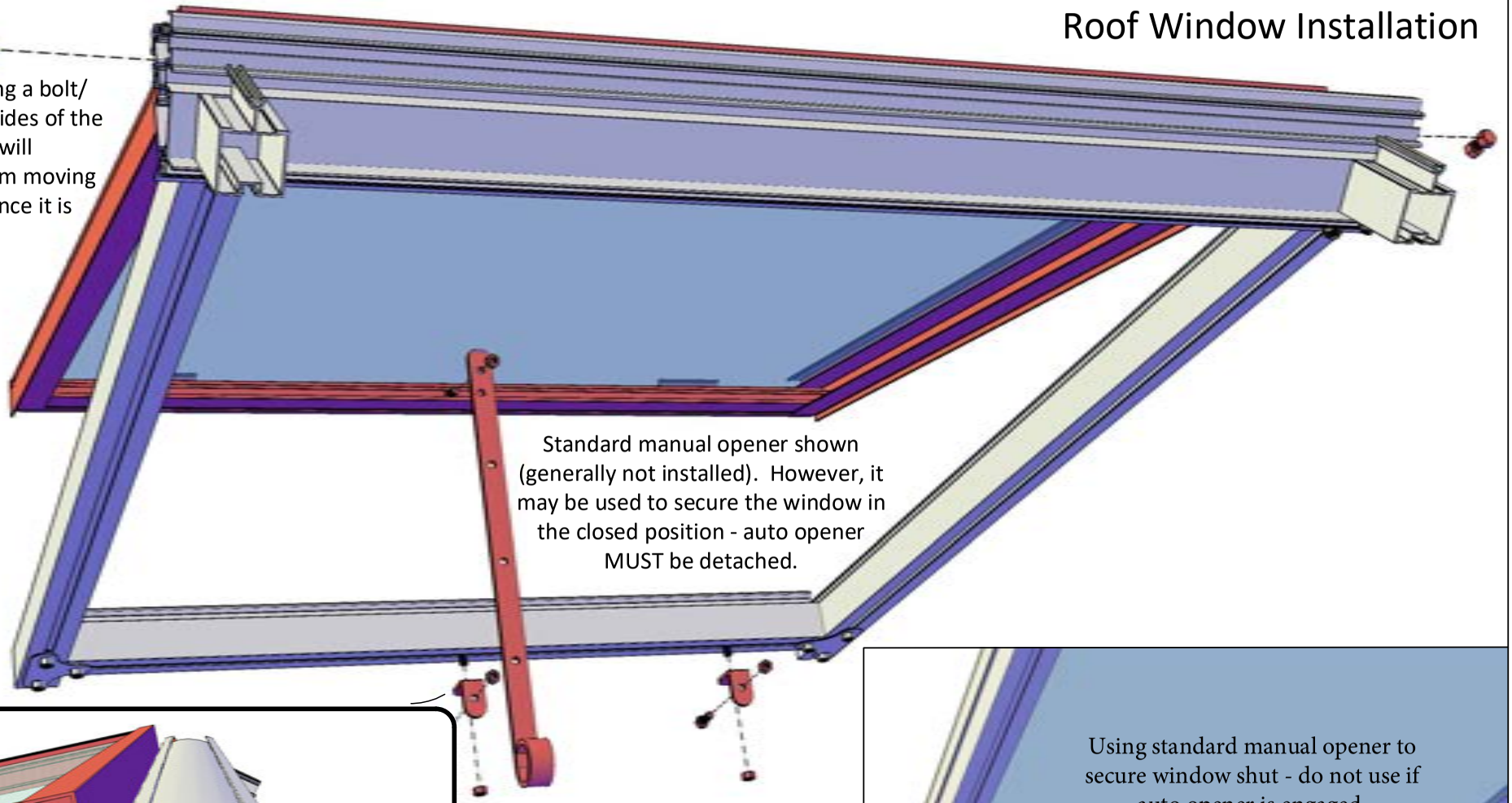


Next, hold the lower U-shaped mount up to the crossbar and mark the center of one hole. Using a 1/8" drill bit, drill the first hole, then screw the bracket on, check for level - then mark and drill the second hole. Slide the brass part of the opener over the bolt in the window channel. Use the supplied nylock nut to secure the opener on the top mounting bolt. Finally thread the large side bolts into the U-shaped mount and the opener is installed.

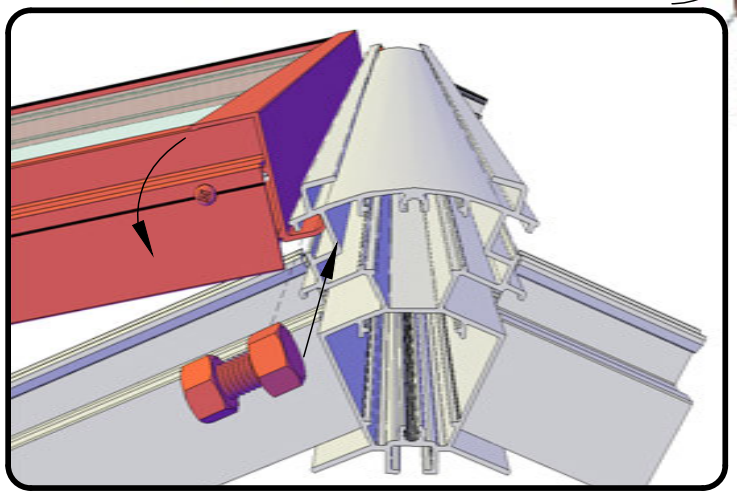


Roof Window Installation

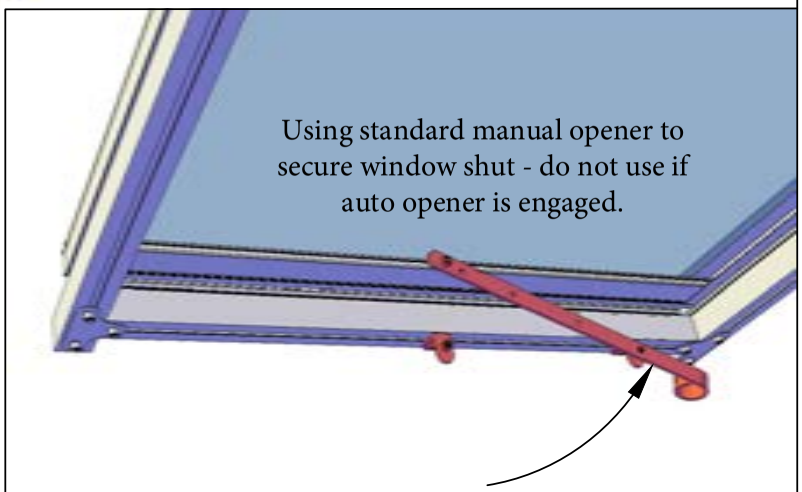
Note: Inserting a bolt/ nut on both sides of the roof window will prevent it from moving side to side once it is in place.



Standard manual opener shown (generally not installed). However, it may be used to secure the window in the closed position - auto opener MUST be detached.



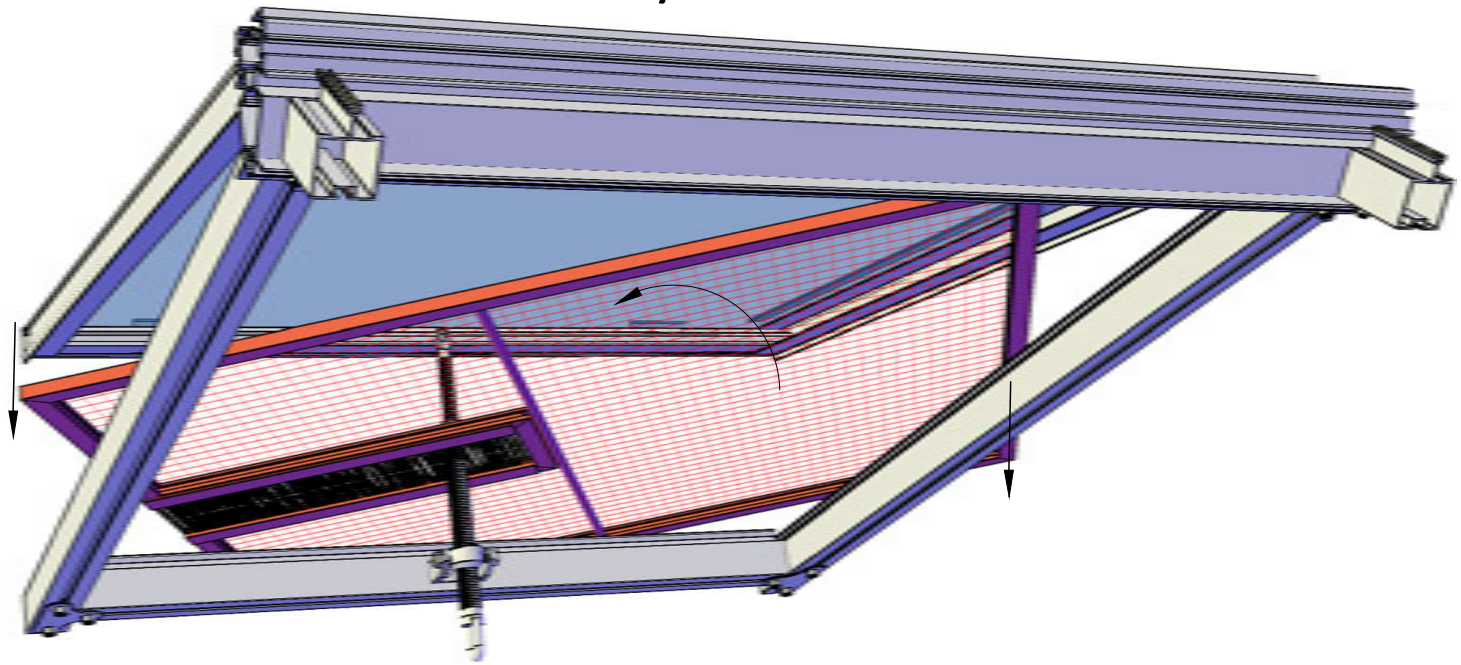
TO INSTALL: Slide window into the ridge beam from either end of the greenhouse. The "hook" on the top of the roof window profile will slide into the channel of the ridge beam (shown to the left).

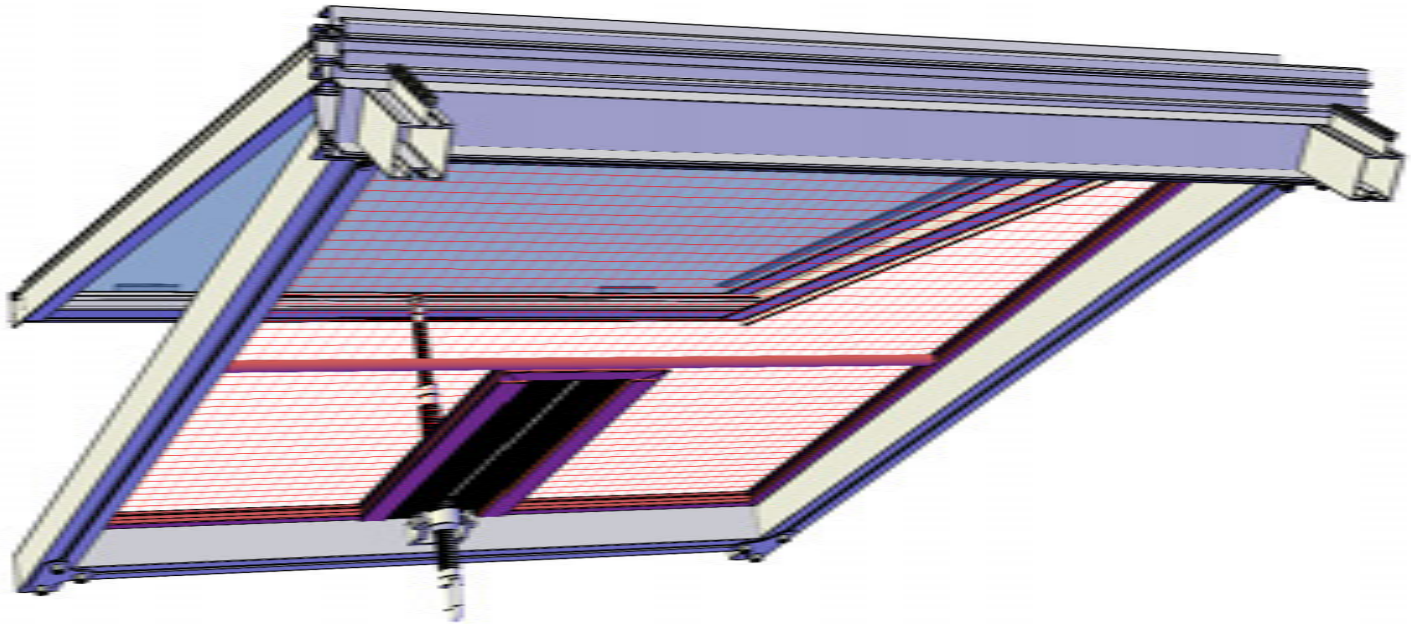


Using standard manual opener to secure window shut - do not use if auto opener is engaged.

FW

OPTIONAL UPGRADE: Fly screen for roof vent





Louvre Window - All Standard Royal models include one louvred window

LV

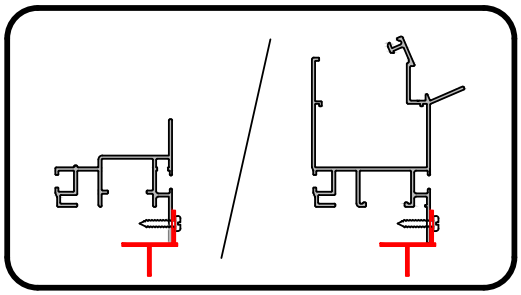
Note: All louvered window are black (even with green models)

Numbers below refer to steps in the following pages

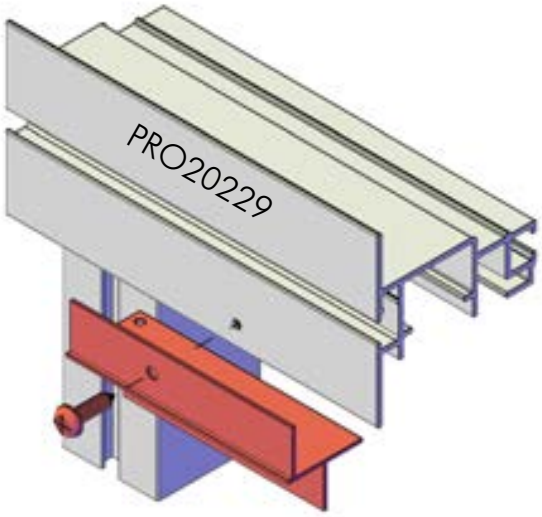
It is likely that your kit include an automatic opener (SESAM LIBERTY) for the louvre vent. Please refer to the Installation and Care manual packaged with the Sesam Liberty opener. You will need to remove the manual opener following the directions.

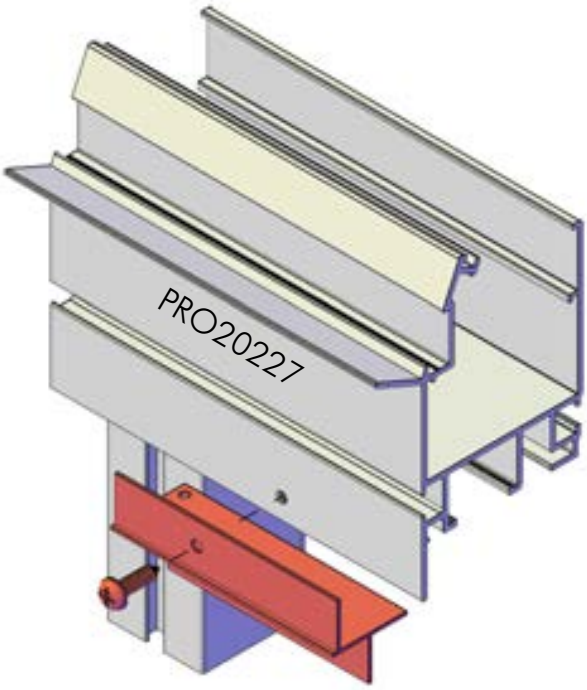
Piston maintenance: apply a light oil (WD40 or olive oil work) to the piston rod to keep it moving smoothly 2-3 times/year.

1

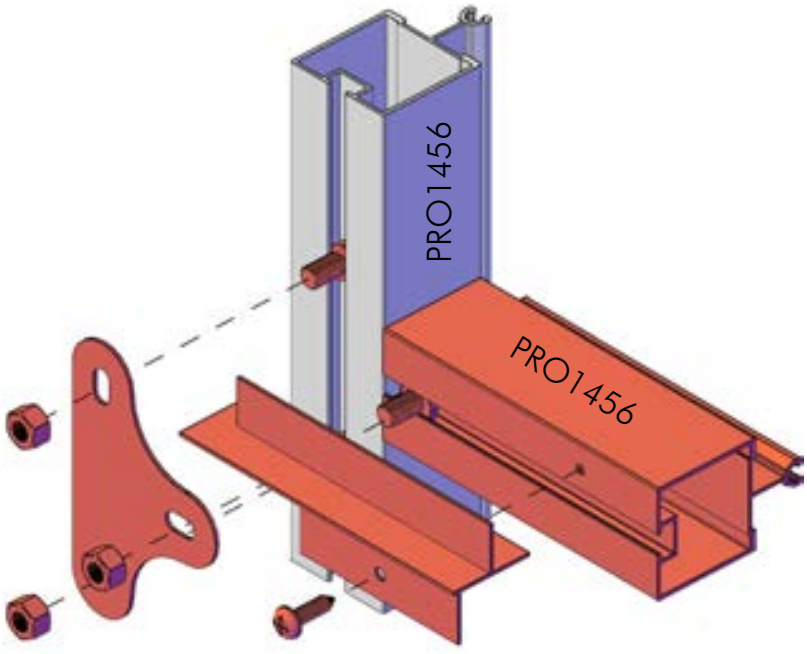


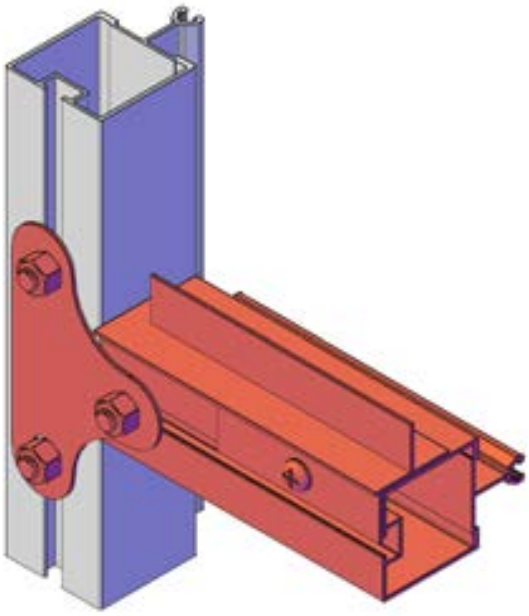
Louvred window may be installed on sidewall (under gutter profile (PRO20227)) or on gable end (under horizontal gable profile (PRO20229)). Both are shown to the left and below.



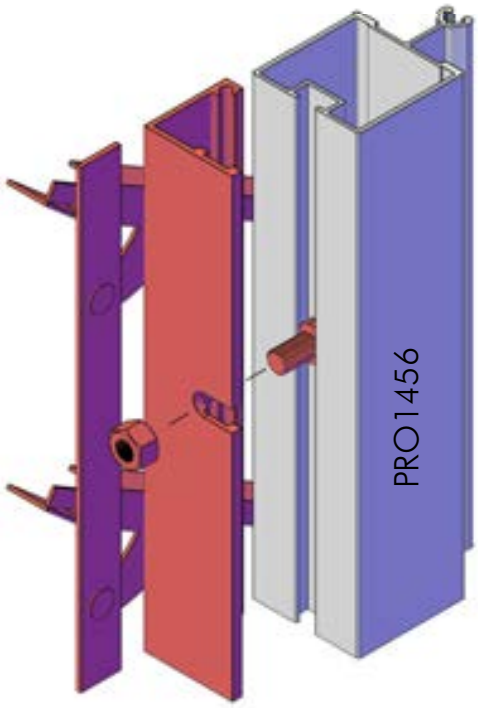


2





3

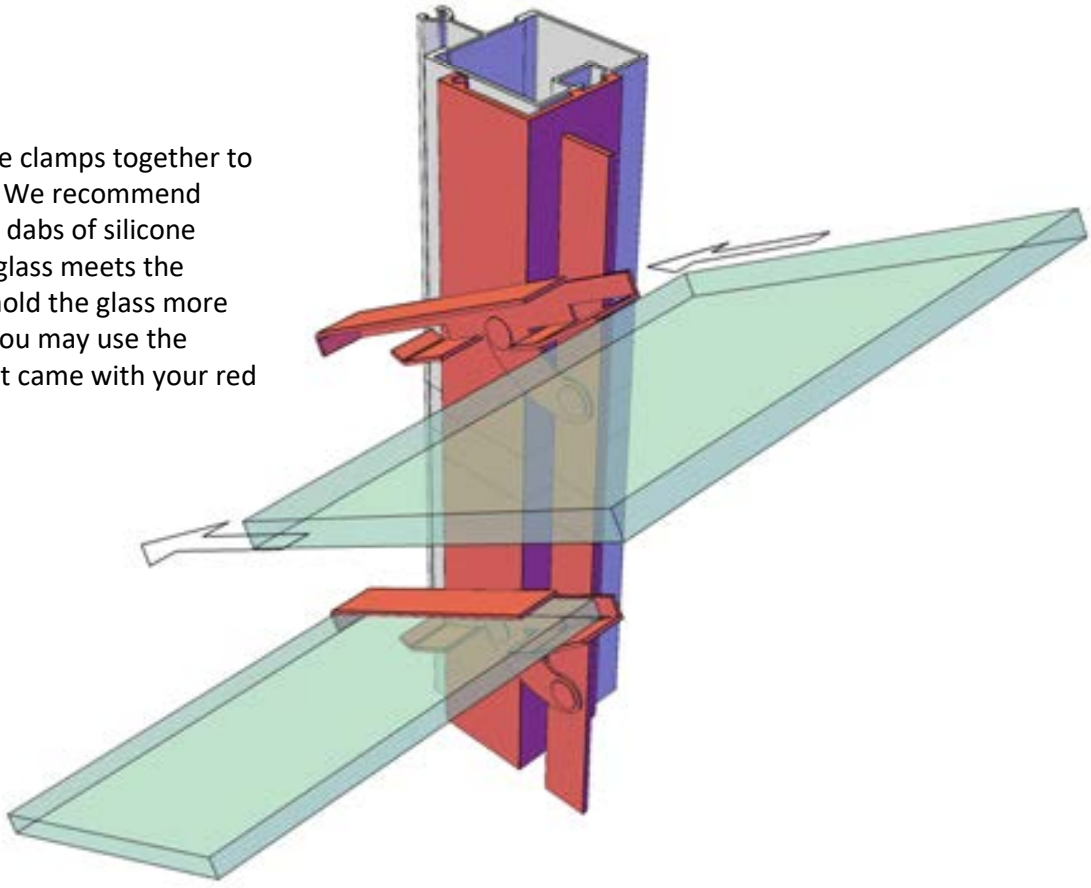


Insert a washer (not included) between black louvre frame and the greenhouse profile at all four bolt locations.

4X

4

Pinch louvre clamps together to hold glass. We recommend using a few dabs of silicone where the glass meets the clamps to hold the glass more securely. You may use the silicone that came with your red shims.



Louver Window Cover

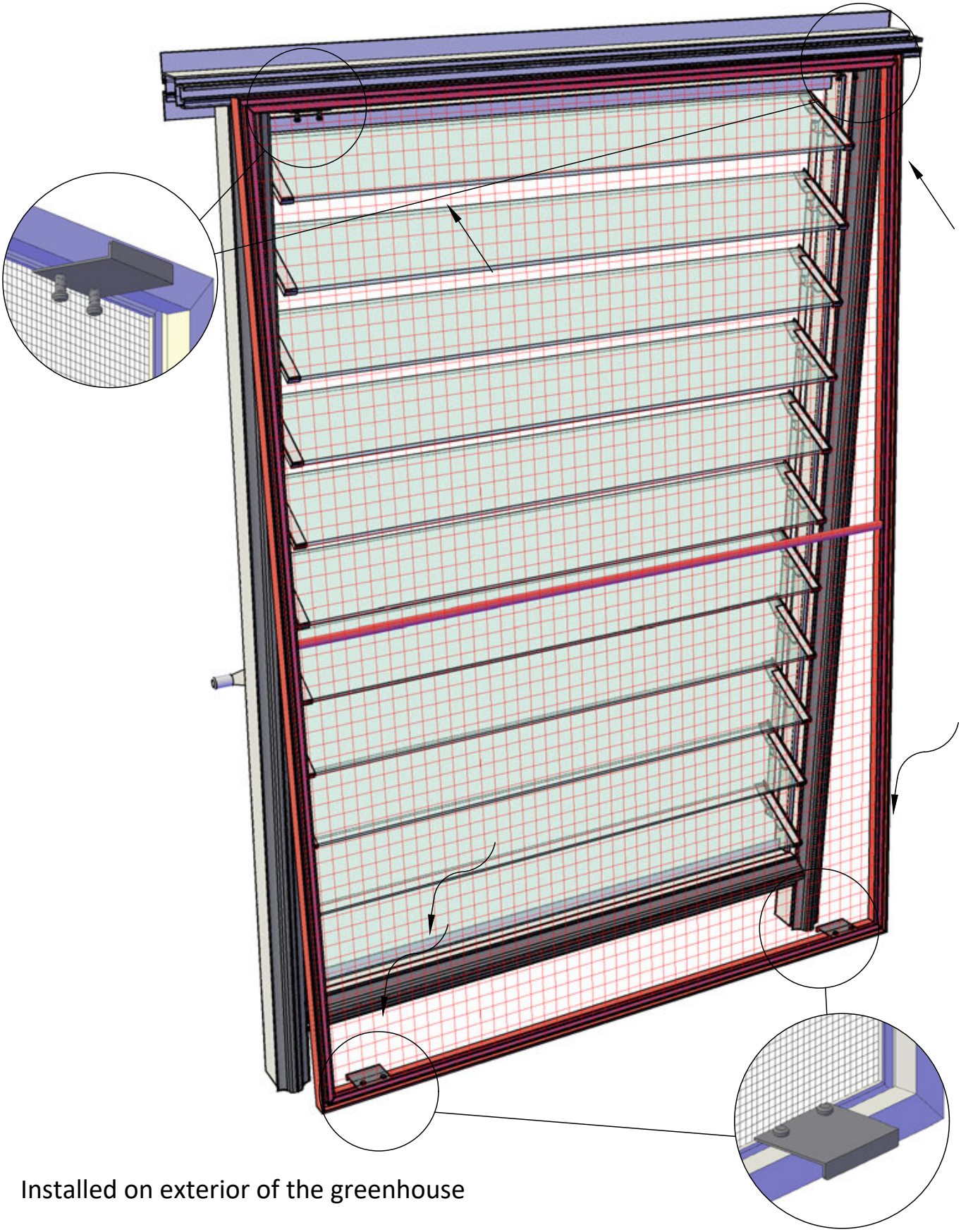
During cold weather, the louvered window may get drafty. Your kit includes as lexan cover to seal the louvers during this time.

To install the Lexan panel:

- Unscrew the piston from your auto opener
- Go outside the greenhouse and pull back the heavy duty rubber gaskets that hold in the panes of glass to the left, right, and bottom of the louvered window (see picture to the right)
- Place the lexan panel over the louvers as though it were a pane of glass and replace all the heavy duty gaskets (see photos below)

OPTIONAL UPGRADE: Louvered Window Fly Screen

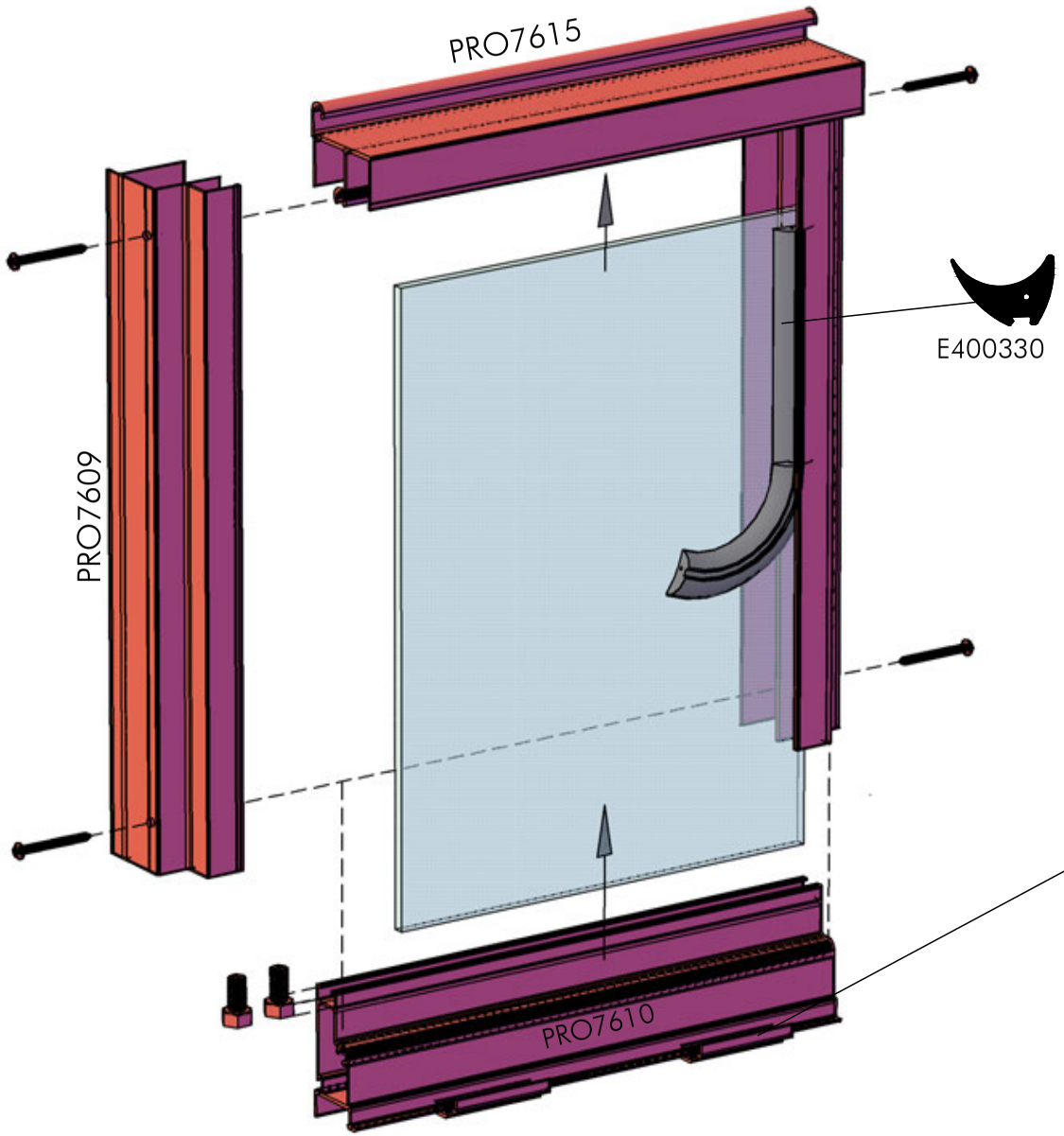
FLV

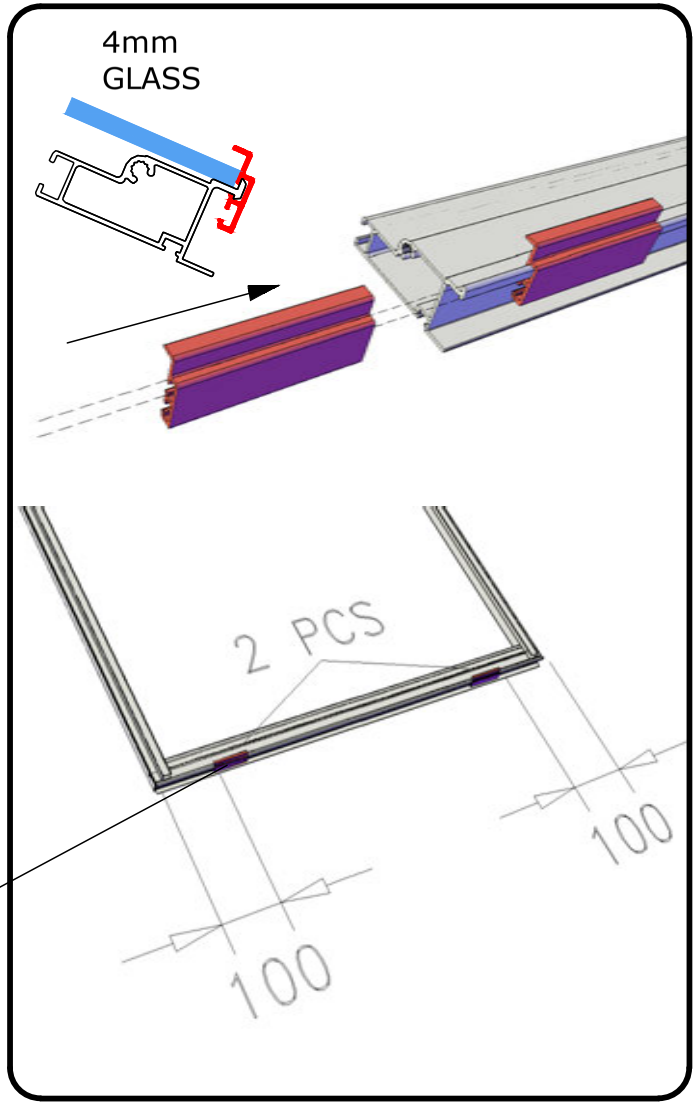


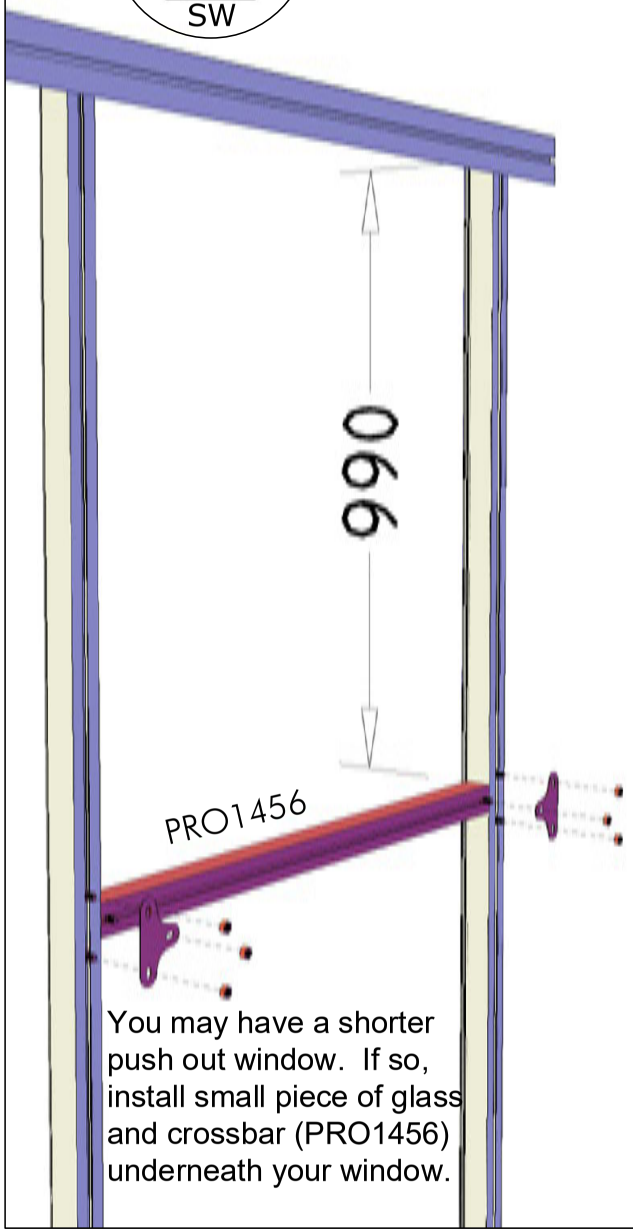
Installed on exterior of the greenhouse

OPTIONAL UPGRADE: Push out window - only Retro Victorians include this option

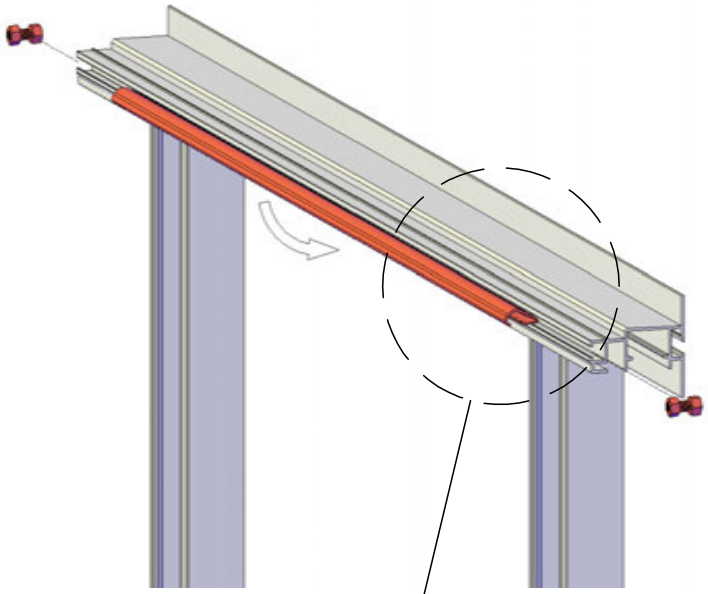
SW

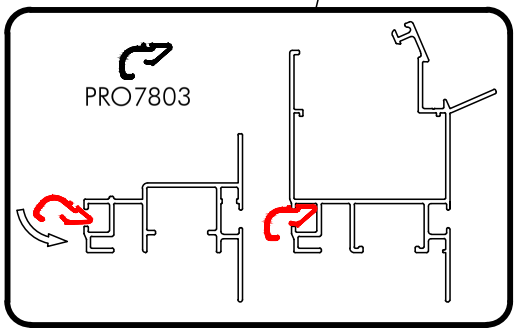


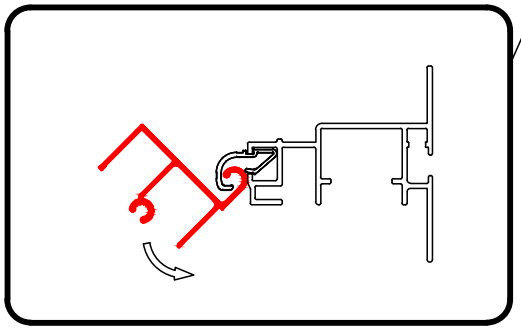


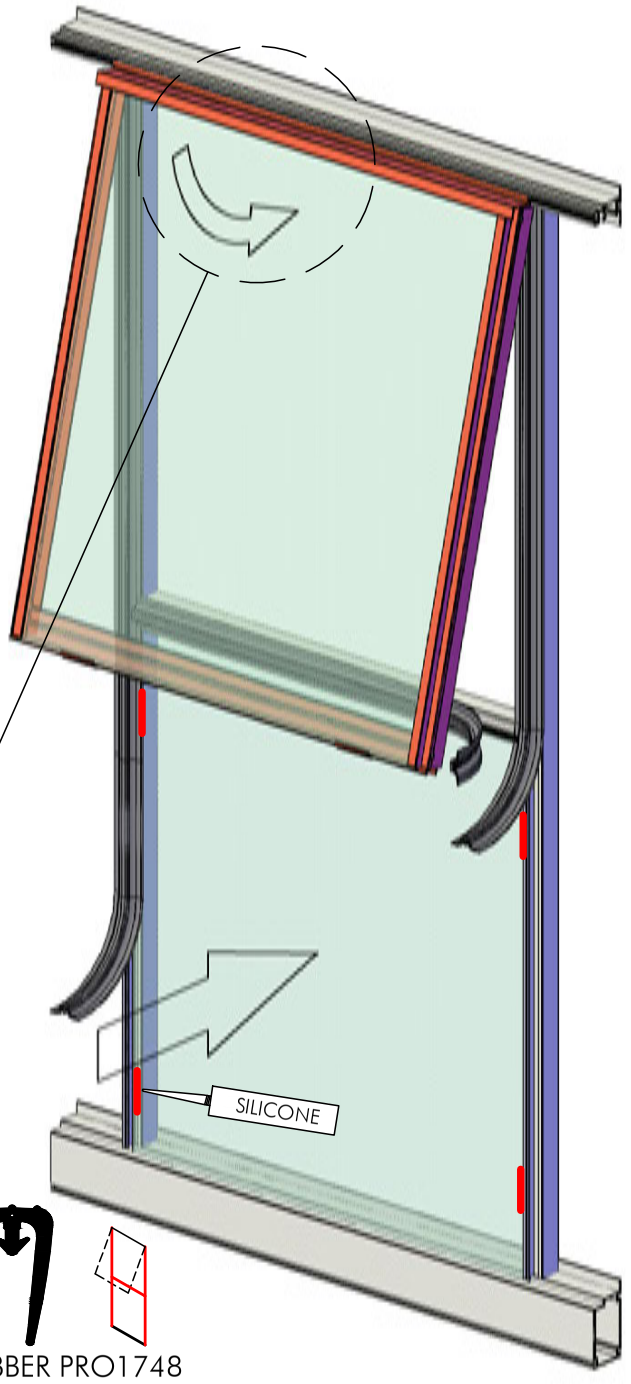


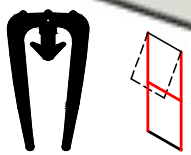
You may have a shorter push out window. If so, install small piece of glass and crossbar (PRO1456) underneath your window.

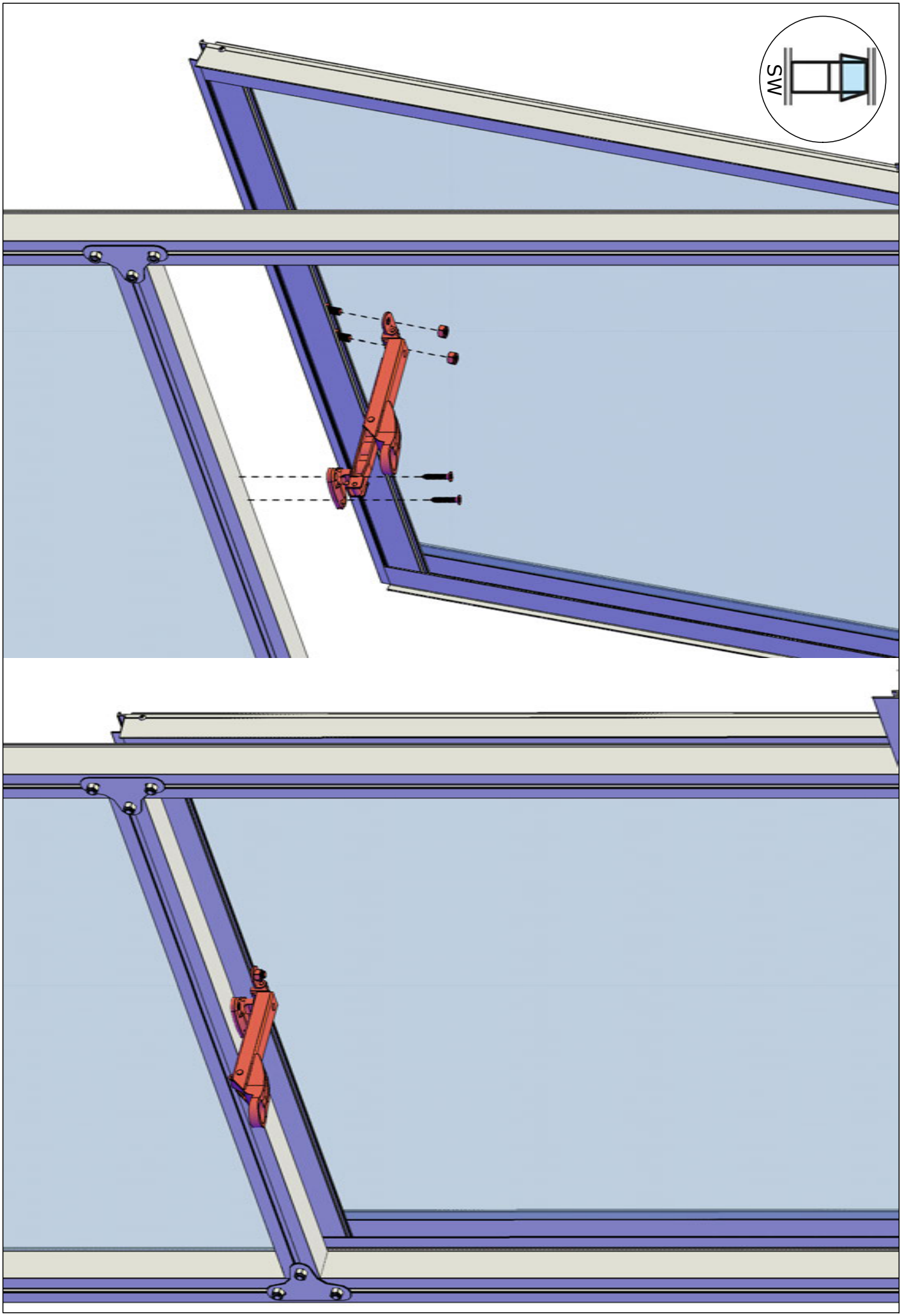




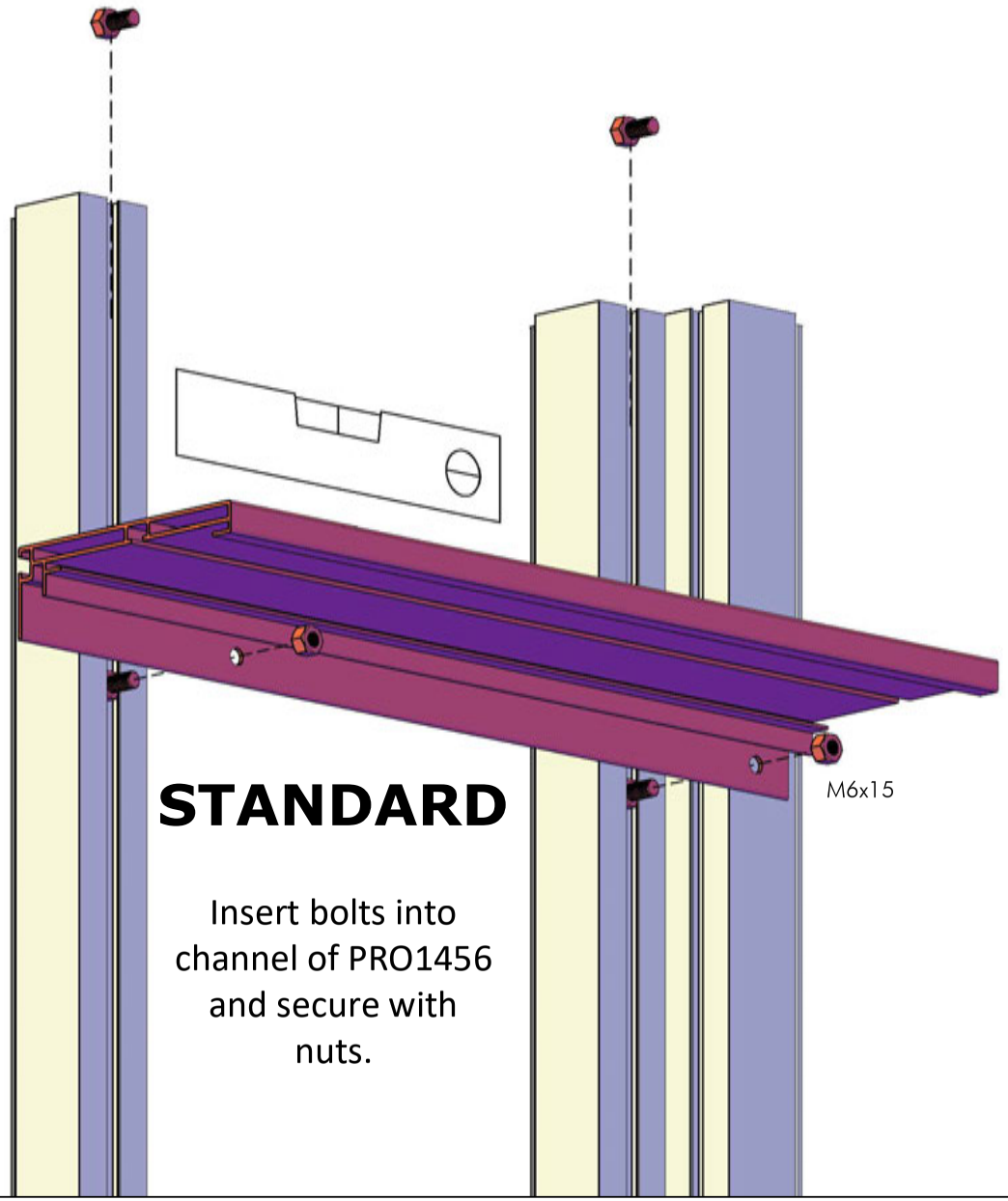






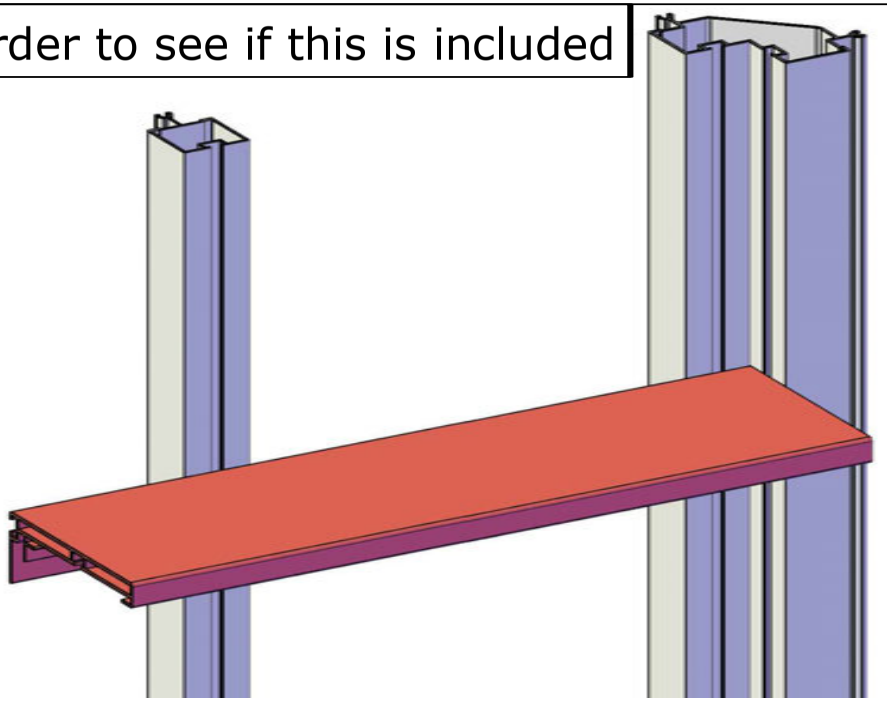

SW

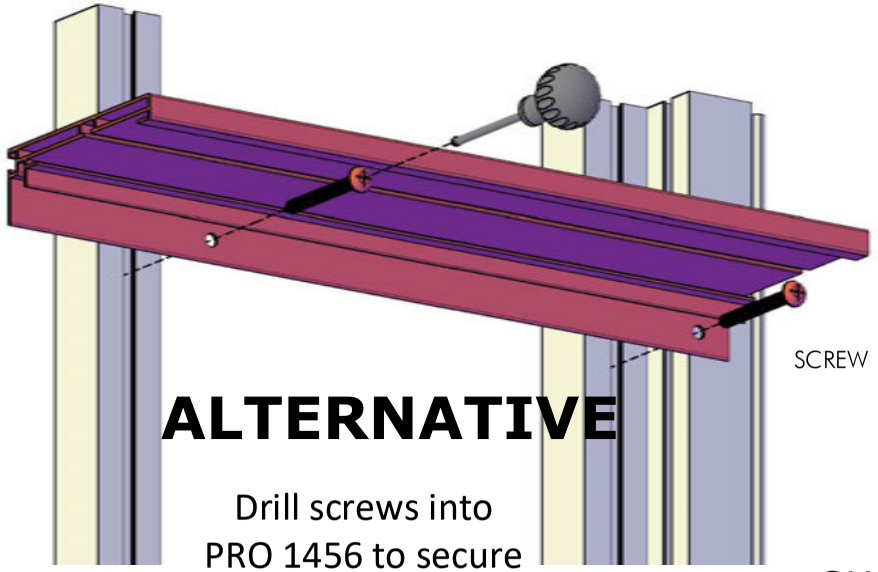
OPTION: Narrow Top Shelf - please check your order to see if this is included



STANDARD

Insert bolts into channel of PRO1456 and secure with nuts.



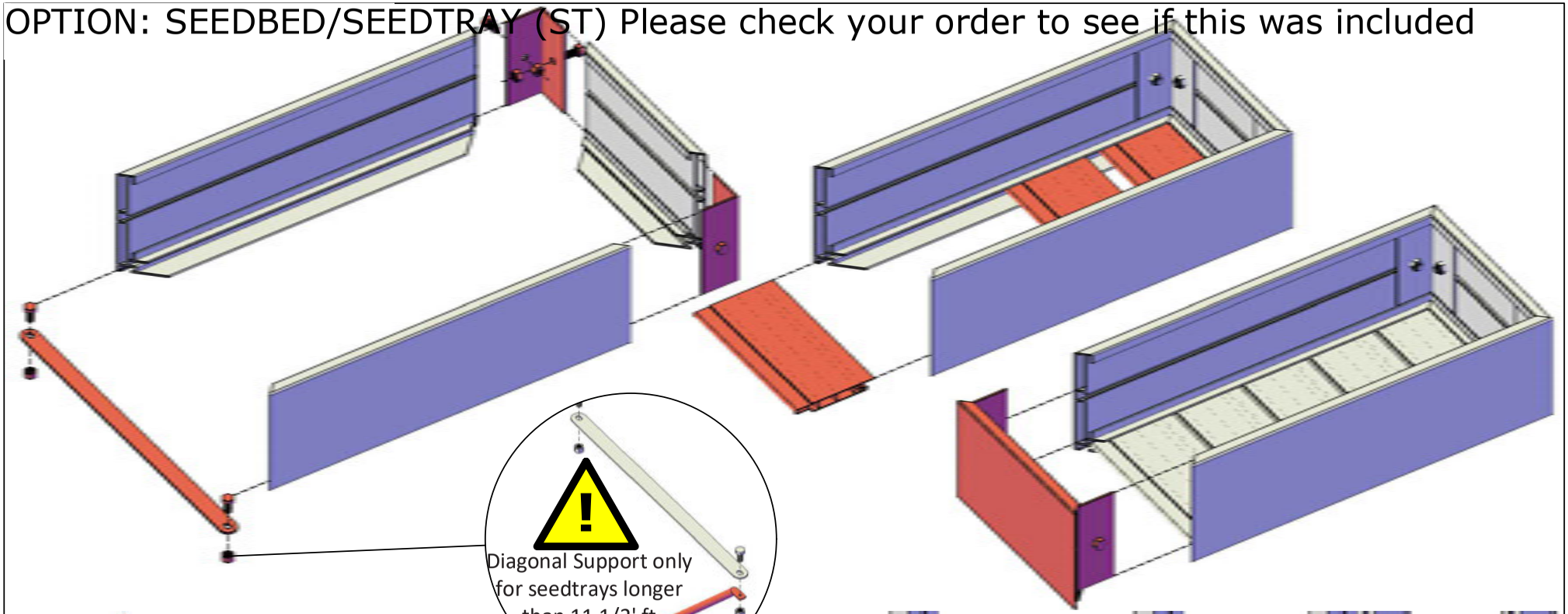


ALTERNATIVE

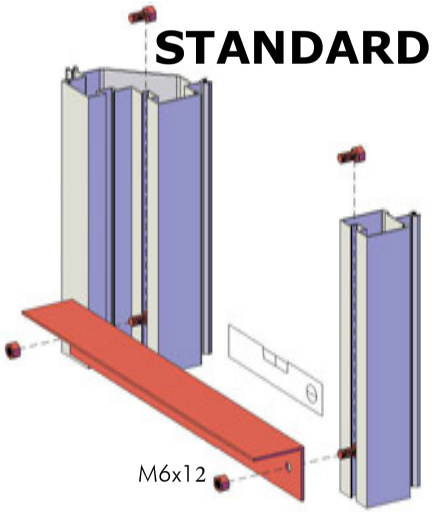
Drill screws into PRO 1456 to secure

SH

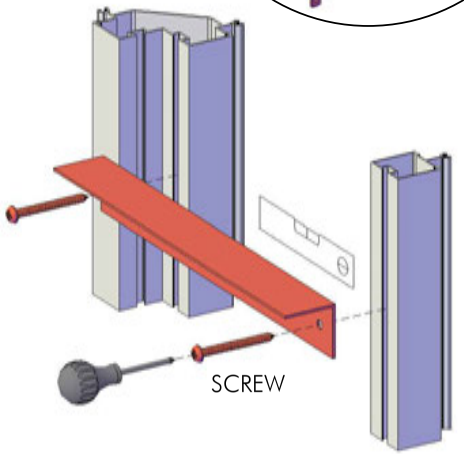
OPTION: SEEDBED/SEEDTRAY (ST) Please check your order to see if this was included



STANDARD

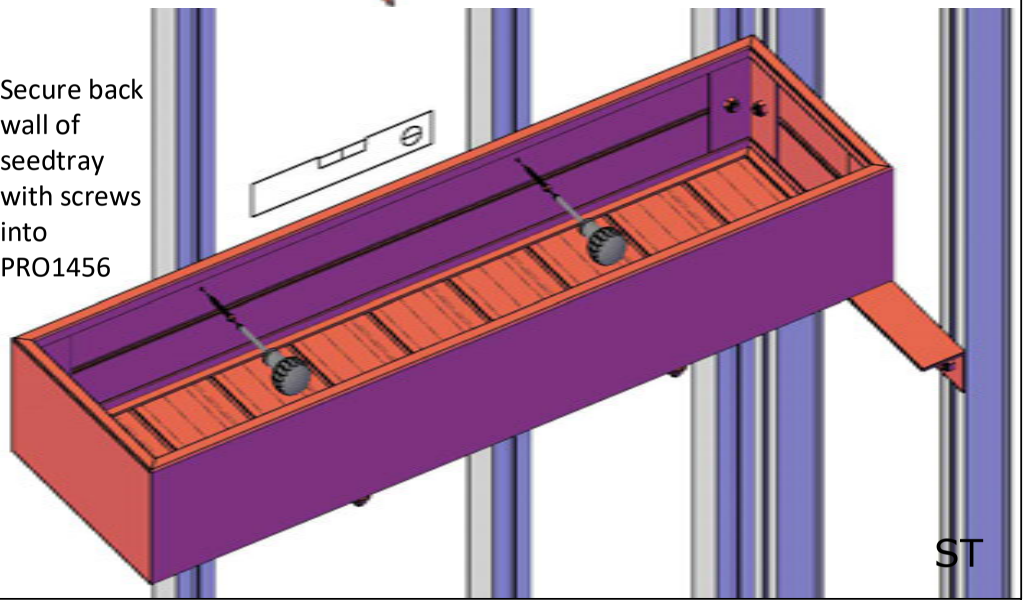


Attach L bracket to bolts inserted into corner post and PRO1456



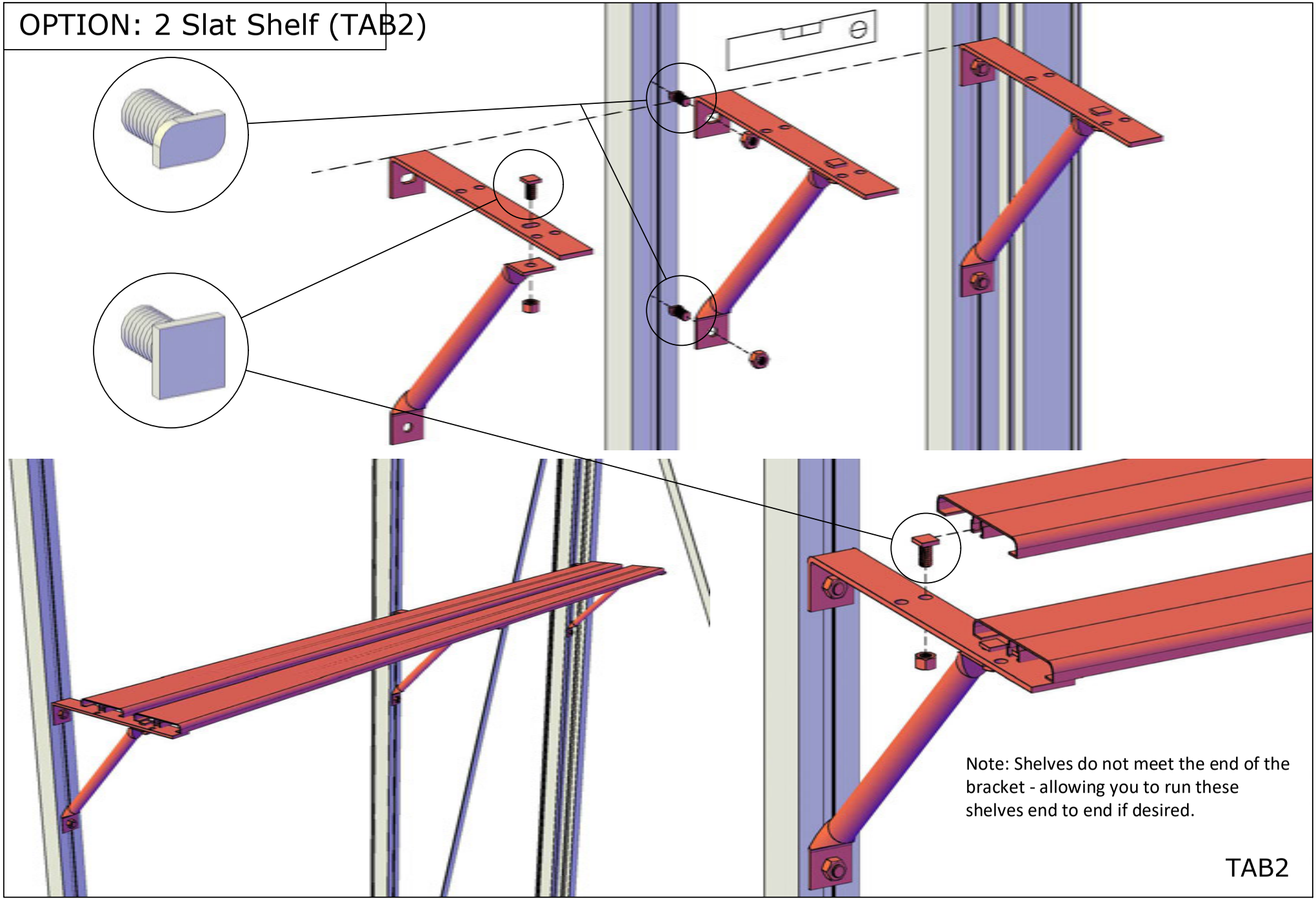
ALTERNATIVE

Secure back wall of seedtray with screws into PRO1456



ST

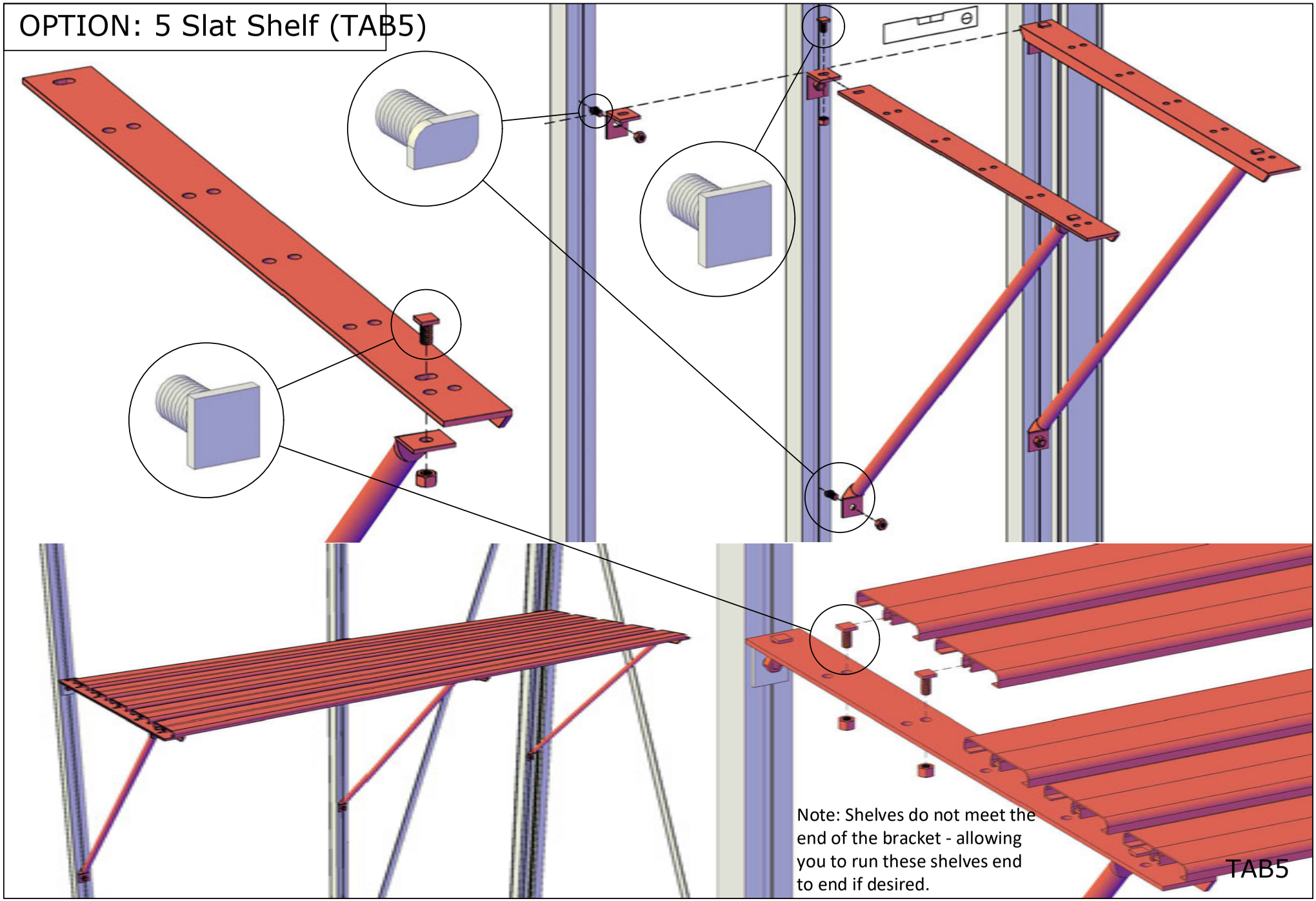
OPTION: 2 Slat Shelf (TAB2)



Note: Shelves do not meet the end of the bracket - allowing you to run these shelves end to end if desired.

TAB2

OPTION: 5 Slat Shelf (TAB5)



Note: Shelves do not meet the end of the bracket - allowing you to run these shelves end to end if desired.

TAB5

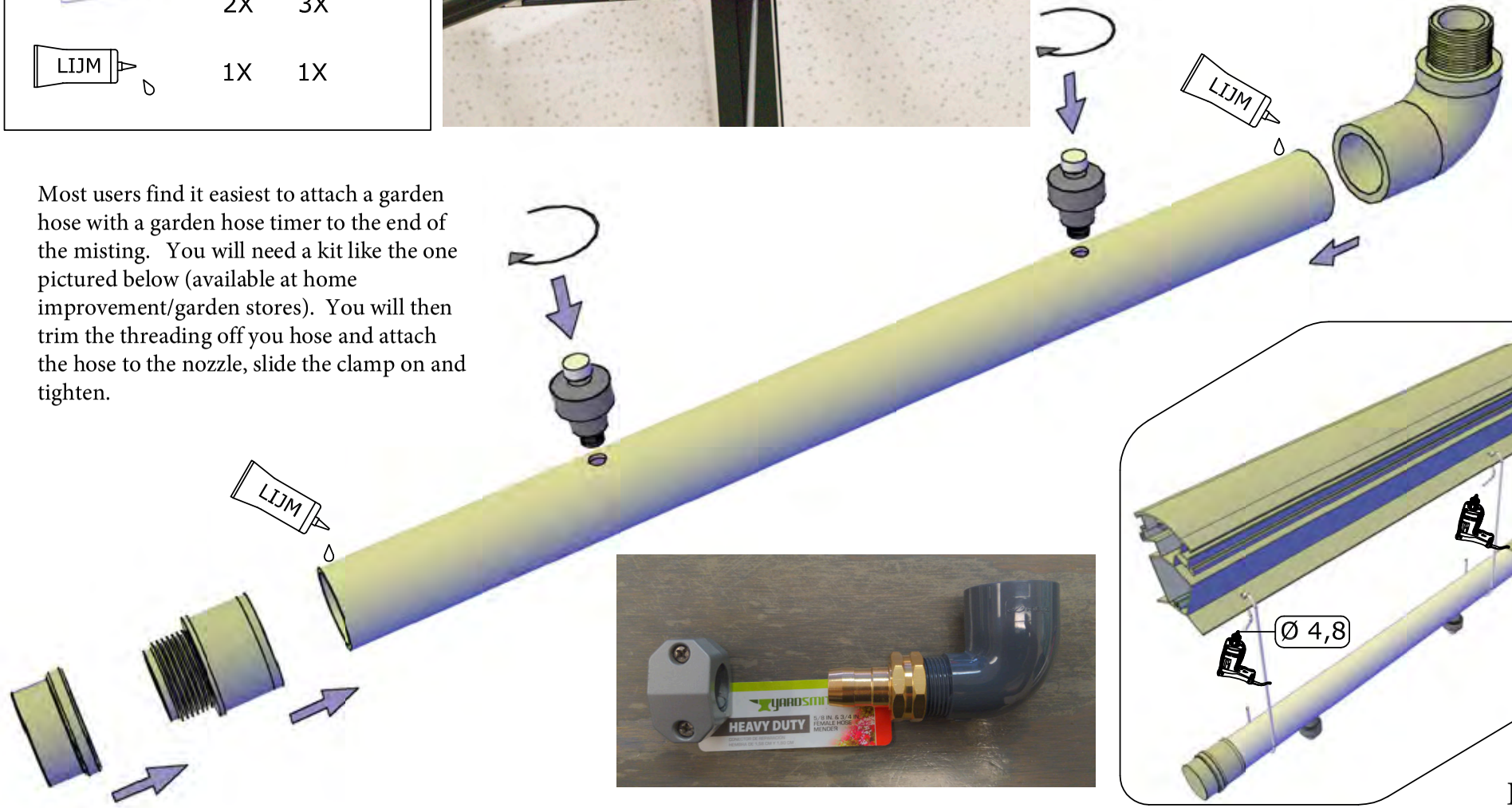
Misting System (If Equipped)

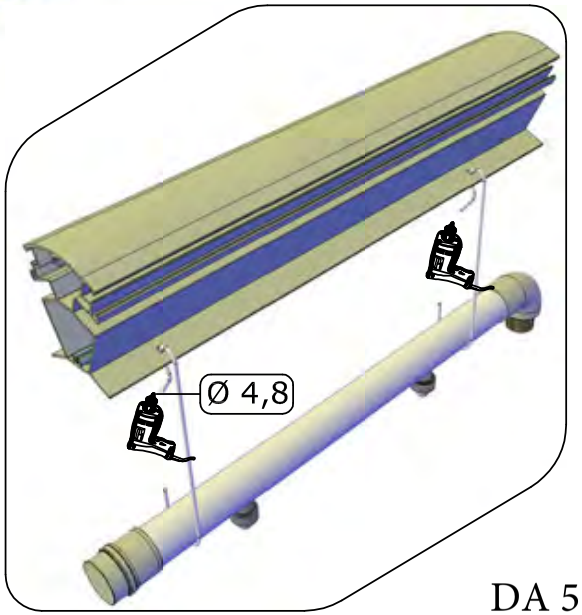
TYPE	Vi23 **310**	Vi34/36 **458**
	3X	4X
	1X	1X
	1X	1X
	2300	3300
	2X	3X
	1X	1X

Note: If curtains are going to be installed, the misting system should be hung with bolts as shown to the left. The hangers will need top be bent into position.

If there are no curtains it can be hung by drilling holes and hooking the hangers through them. (Shown below)

Most users find it easiest to attach a garden hose with a garden hose timer to the end of the misting. You will need a kit like the one pictured below (available at home improvement/garden stores). You will then trim the threading off you hose and attach the hose to the nozzle, slide the clamp on and tighten.





DA 5

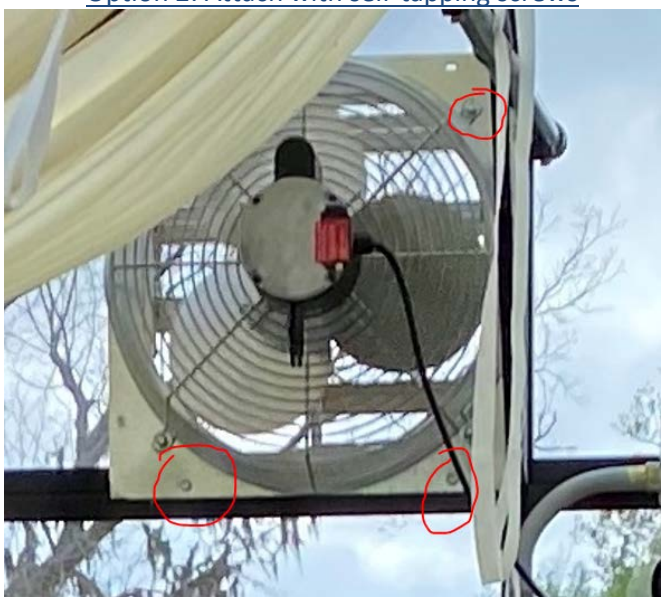
INSTALLING AN EXHAUST FAN IN A VICTORIAN GREENHOUSE

The exhaust fan in a Victorian Greenhouse should be installed up high in one of the gable ends of the greenhouse. If you happen to have polycarbonate walls on your Victorian, you may cut an opening in the polycarbonate to accommodate the fan. If you have glass glazing, we recommend replacing one of your upper angled gable panes with a piece of Lexan. We do offer a precut panel for purchase that is cut with this unusual shape (with a square cut out) that will replace one of the gable panes of glass.

OPTION 1: Attach fan with bolts inserted into channel of PRO1456

Once your panel with the cutout for the fan is in place, mount the fan on the interior of the greenhouse using bolts in the channels of the aluminum extrusions. These bolts will fit through the holes on the exhaust fan. You may need to cut the corner off due to the diagonal support beam being in the way.
Once the fan is mounted on two sides to the aluminum extrusions caulk around the area where the box of the shutters meets the glazing.

Option 2: Attach with self-tapping screws



Conversely, you can use self-tapping screws to hold the Exhaust Fan in place. Pre-drill holes in the exhaust fan metal to match up with the Pro1456 Gable piece. You may need to cut the corner off due to the diagonal support beam being in the way. Once the fan is mounted on two sides to the aluminum extrusions caulk around the area where the box of the shutters meets the glazing.

OPTIONAL ACCESSORY: ROYAL ORANGERIE SHADECLOTH

Inserting the curlicue hooks into the curtain: The curlicue hooks that insert into the curtain will go in every 6th loop in the white ribbon– look at the picture diagram to ensure you are inserting them in the correct direction so the curtain hangs well. Your curtains will have one looped ribbon running across the center (for the ridge) and 3 white looped ribbons on either side. You will use the center ribbon of the set of three and the ridge ribbon. **Please note: if you have forgotten to insert any items during assembly, you may "notch" the channel with a ½" drill bit in an inconspicuous place. We can send a touch up paint pen if you need one.**

Royal Orangerie (footprint of 12'10" D x 15'7" W)
Has a shade cloth set SUN310 – T SET, which consists of the following pieces: SUN310-T (Center sections T1 & T2) and (3) SUN310-73. There are 3 sets of "scroll" supports which the curtains fit around. The misting system is best hung in the long direction from bolts/ hooks next to each "scroll" support.

Insert the following in this order:

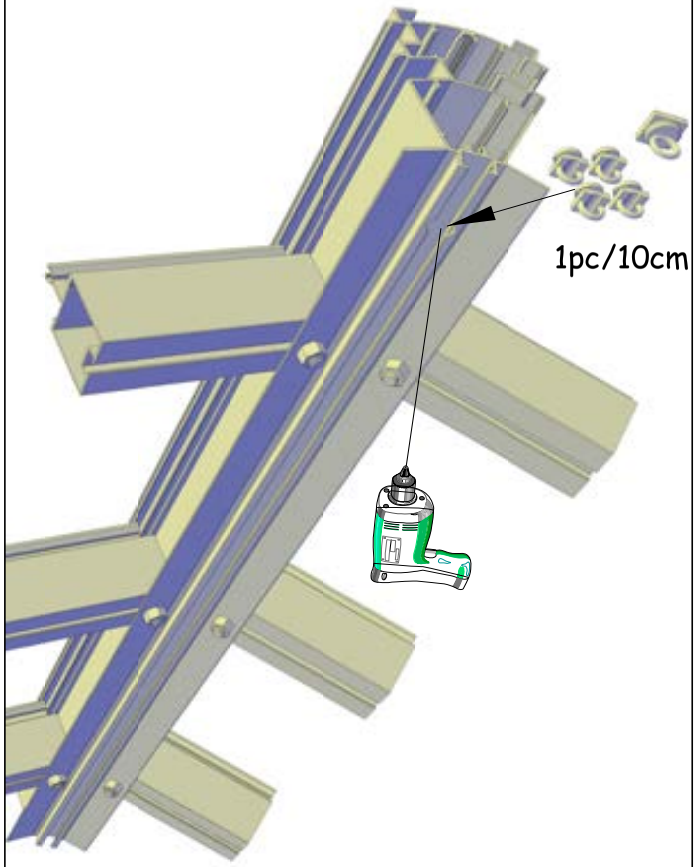
- In main ridge profile:
    - 1 bolt (for L bracket that connects at gable end)
    - 9 Sliding Eye Hooks
    - Space for scroll support
    - 1 bolt for hook for misting system
    - 1 Twist lock (optional)
    - 20 Sliding Eye Hooks
    - 1 bolt for hook for misting system
    - 20 Sliding Eye Hooks
    - 1 Twist lock (optional)
    - 1 bolt for hook for misting system
    - Space for "scroll" support
    - 9 Sliding Eye Hooks
    - 1 bolt (for L bracket that connects at gable end)
- In short ridge profile (inserting from front of the greenhouse):
    - 1 Twist lock (optional)
    - 18 Sliding Eye Hooks
    - Space for "scroll" support
    - 9 Sliding Eye Hooks
- In rear gutter profile:
    - 9 Sliding Eye Hooks
    - Space for "scroll" support
    - 1 Twist lock (optional)
    - 40 Sliding Eye Hooks
    - 1 Twist lock (optional)
    - Space for "scroll" support
    - 9 Sliding Eye Hooks
- In each small gutter section:
    - 9 Sliding Eye Hooks

Shadecloth Installation (see previous page for important info)

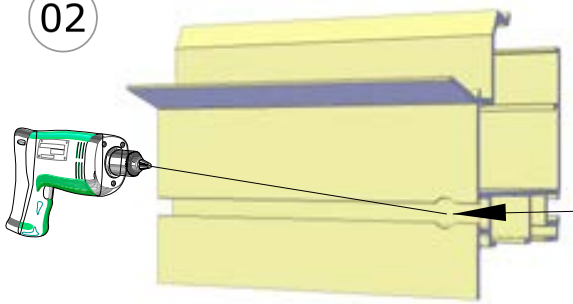
IMPORTANT! If you did not install the sliders during the build, you will need to drill an insertion hole into the channel. This is best done with a 1/2" drill bit and an impact driver. Make the insertion hole near the end of the channel. There are locking sliders that you can install near the hole to prevent the sliders from popping out of the hole.

TYPE	SUN236_73	SUN310_73	SUN236_300	SUN310_300
	24 pcs	24 pcs	93 pcs	93 pcs
	24 pcs	24 pcs	93 pcs	93 pcs

01

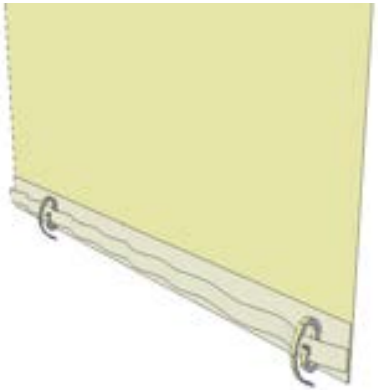


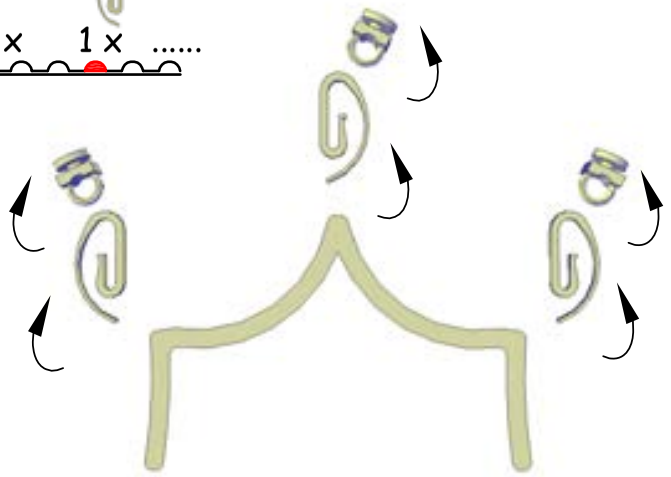
02



If greenhouse is already assembled, use a 1/2" drill bit in an impact driver to create an insertion hole. See notes to the left.

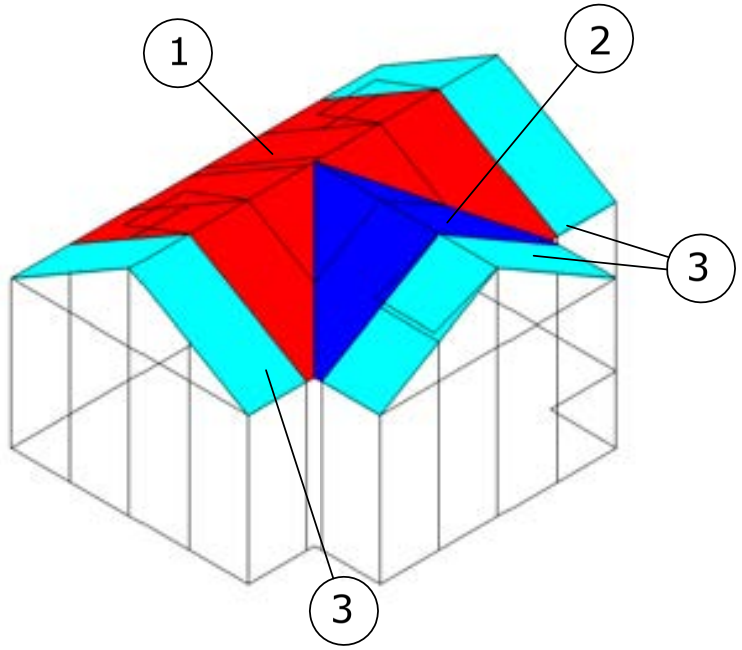
03



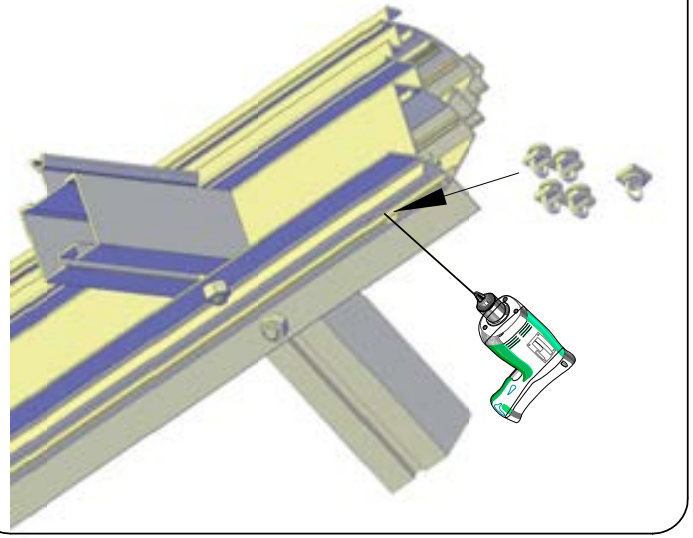


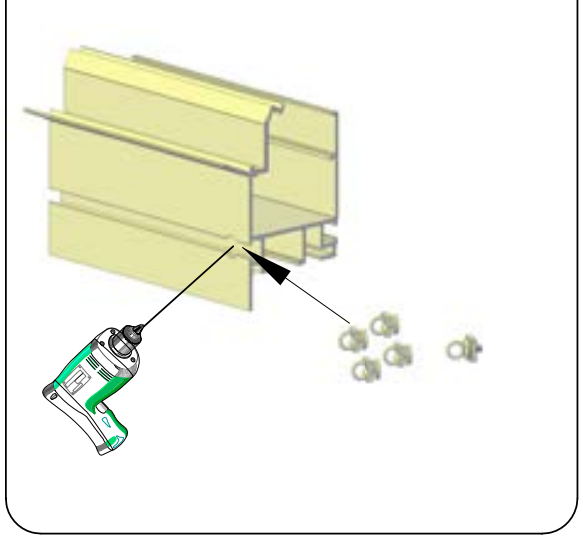
SD1

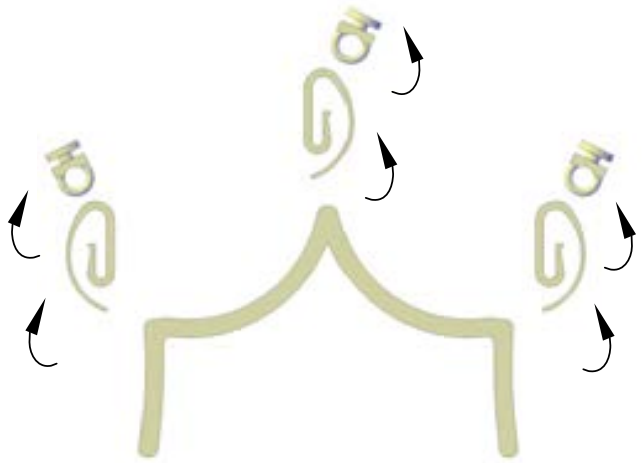
Shadecloth Installation
(please see previous pages for important info)



			SUN236	SUN310
1	T1		72 pcs	91 pcs
			72 pcs	91 pcs
2	T2		52 pcs	66 pcs
			52 pcs	66 pcs
3	73		24 pcs	24 pcs
			24 pcs	24 pcs
	300		93 pcs	93 pcs
			93 pcs	93 pcs







SD2

Customer Service or Assembly Questions?

Give us a call
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Please watch our animated assembly video on our Exaco Trading Co YouTube Channel.
Find the link at www.exaco.com

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