



IMPORTANT NOTES

MESSAGE TO THE INSTALLER

In order to experience all of the benefits of this Novatech Patio Doors Ontario product, it is important that all steps for assembly, installation and maintenance are followed properly. Please read this guide in all of its entirety for detailed instructions and important notes during the various steps in assembly, installation and maintenance.

For inquiries or questions about this Novatech Patio Doors Ontario product, call Toll-Free <u>1.800.561.1910</u> or visit our <u>website</u>. Thank you for choosing Novatech Patio Doors Ontario.

IMPORTANT

The rough opening should be ½" wider and ½" higher (± ½" each way) than the actual door frame size. (Refer to the catalogue for standard frame sizes.) The base of the opening must be solid, level, and of sufficient width and depth to support the entire door sill in a continuous and uniform manner. It is important that the opening be plumb, level, and square, as the door will not perform to its potential if installed into an improperly prepared opening.

WARNING!

While it may not seem like it, patio doors can be large and heavy. It is essential that the correct technique is used when lifting or moving a patio door, to prevent injury or product damage. Be proactive and use multiple people to lift or move patio doors to prevent injury and product damage.

WARNING!

Always follow the manufacturers' instructions when using hand or power tools. Make sure to wear the appropriate personal protective equipment (PPE) for the task at hand. It is always a good idea to wear safety glasses to prevent injury or product damage when using hand or power tools.

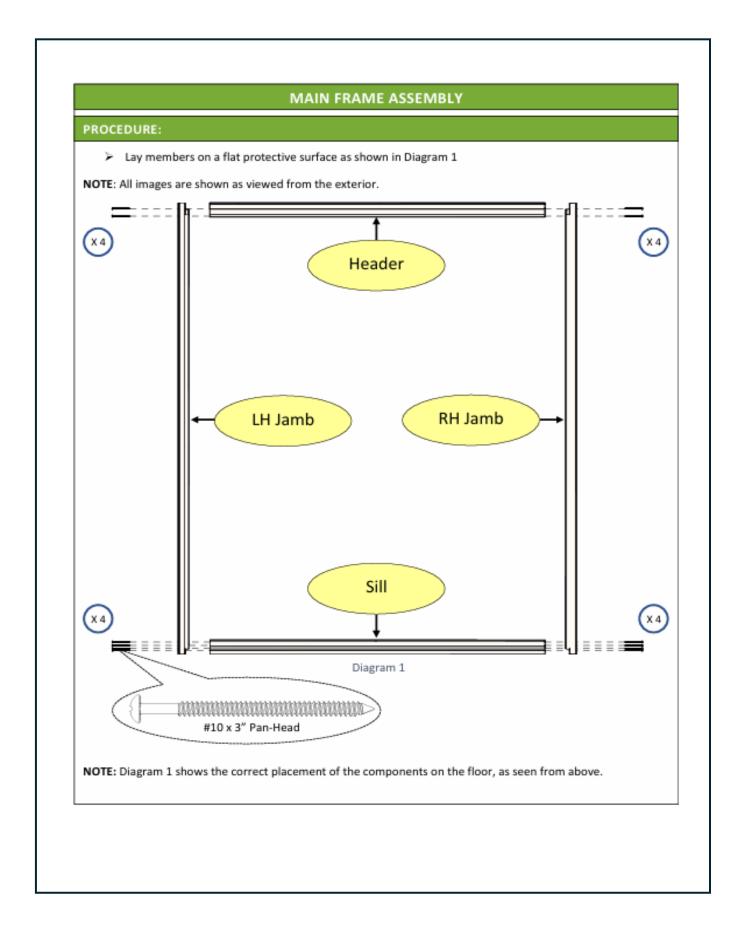
SAFETY AND WARNINGS

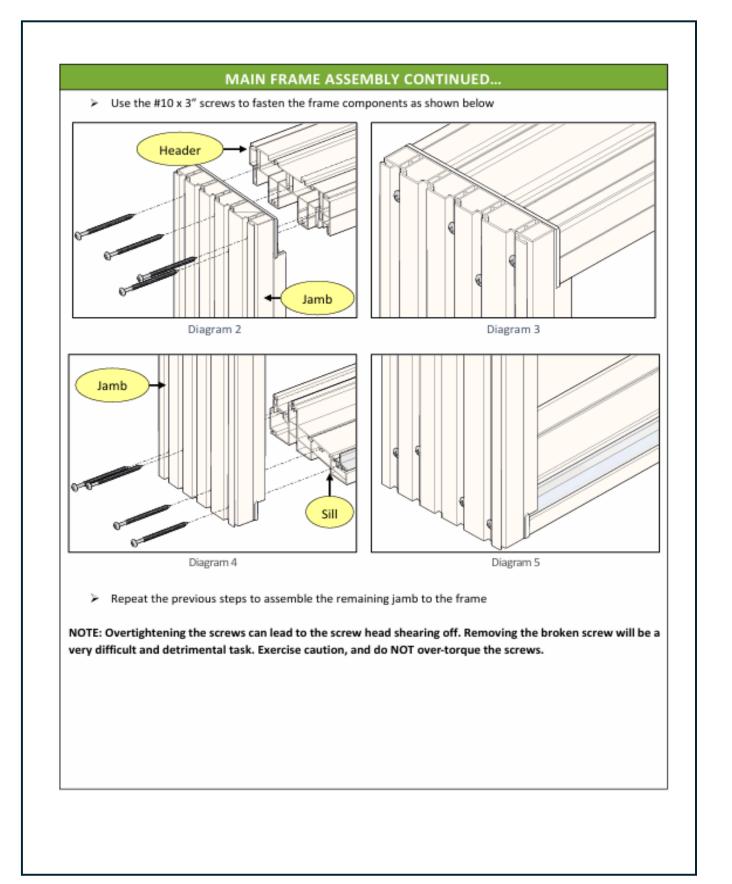
Make sure to inspect the patio door for signs of damage, and ensure it is the correct size and type. Contact the distributor if there are any problems **prior** to installing the door.

Always follow the manufacturer's instructions for proper use for all materials. Ensure that the materials used are compatible with one another (i.e. flashing, primers, sealants, etc.) and appropriate for the application.

TOOLS AND SUPPLIES **REQUIRED TOOLS/SUPPLIES:** NOTE: The tools and supplies listed below are all required for successful assembly and installation of the patio door. Isopropyl alcohol is a recommended cleaning solution. See the table below for recommended sealants. Bar clamp Power driver (#2 Robertson/Phillips 6" long drill bit) #2 Phillips screwdriver Caulking gun with clear sealant Cleaning solution Measuring tape Level RECOMMENDED SEALANTS: Recommendations Purpose Exterior perimeter caulking Dow Corning CWS, Tremco 600, GE Silicone II, or equivalent Sealing fixed panel to frame, Metal-to-metal sealing, Dow Corning 795, Tremco Spectrem 2, GE Supreme Silicone, or equivalent Covering screws WARNING! It is important to use the correct metal fasteners for each application. Novatech Patio Doors Ontario recommends using the fasteners that are provided in the hardware kit. In the event that alternative fasteners are to be used for the assembly and installation of the patio door, ensure the fasteners meet the necessary strength and corrosion resistance requirements. Novatech Patio Doors Ontario does NOT take any responsibility for injury or product damage caused by the use of alternative screws. WARNING!

Remove the protective film from the door immediately after installation. Exposure to direct sunlight will cause permanent adhesive bonding to the surface. Failure to remove the protective film may also result in permanent adhesive bonding to the surface.





FRAME INSTALLATION

NOTE: The drainage ports face the exterior.

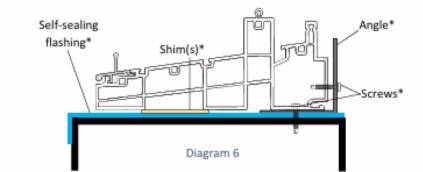
PROCEDURE:

NOTE: There are different ways to secure the sill to the substrate. Novatech Patio Doors Ontario recommends using method 1 or 2, as seen below. Method 3 and 4 are not preferred, but are acceptable if done correctly. Shimming is optional unless otherwise stated.

*Any materials/supplies with an asterisk in the diagrams below are not provided.

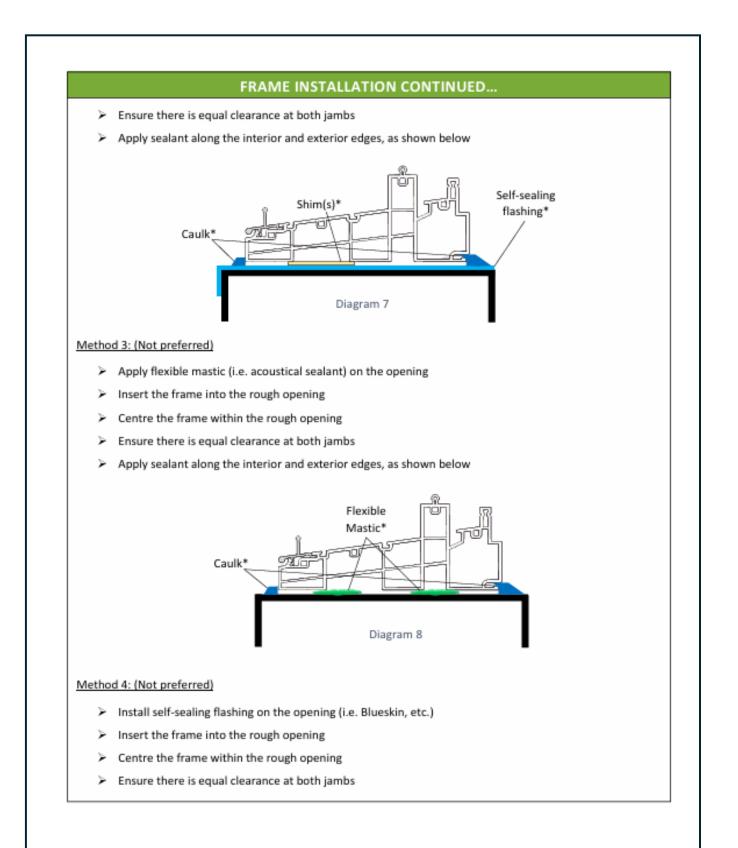
Method 1:

- Install self-sealing flashing on the opening (i.e. Blueskin, etc.)
- Secure the angle to the substrate by drilling through it
- Shim the sill
- Insert the frame into the rough opening
- Centre the frame within the rough opening
- Ensure there is equal clearance at both jambs
- > Secure the angle to the sill by drilling through the interior leg as shown below
- Apply sealant along the exterior edge as shown below



Method 2:

- Install self-sealing flashing on the opening (i.e. Blueskin, etc.)
- Shim the sill
- Insert the frame into the rough opening
- Centre the frame within the rough opening



FRAME INSTALLATION CONTINUED...

IMPORTANT

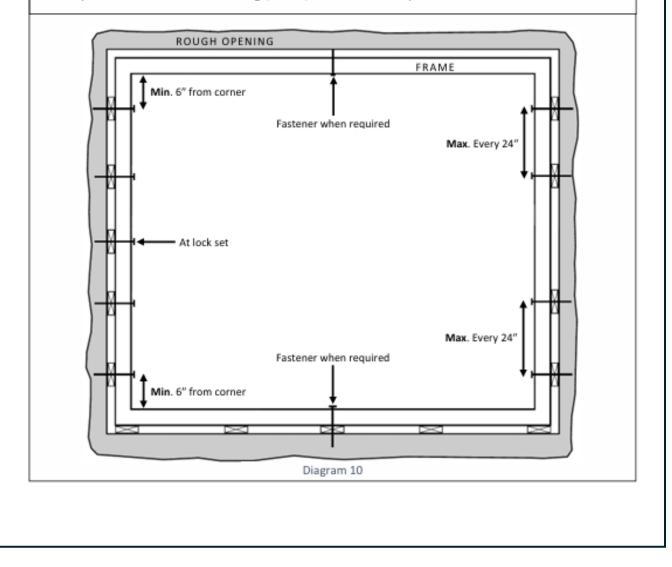
Follow the requirements below to ensure that the frame installation is completed correctly:

- Header is anchored at the centre
- Jambs are fastened within 6" of each corner, and at every 24"
- All screws engage the surrounding structure at least 1-%"

It is recommended that two (2) fasteners are installed at each location for the header and jambs; one in the inner track, and the other in the outer track.

Use a countersink drill bit to make the installation holes so that the flat head installation screws sit flush with the vinyl surface.

For enhanced security, consider installing solid blocking between the jamb and structure at the location of the lock keeper. Put installation screws through, above, and below the keeper.



FRAME INSTALLATION CONTINUED...

NOTE: It is the responsibility of the installer to drill the installation holes.

- Set shims behind the frame installation holes
- Temporarily fasten the frame to the surrounding structure
- > Use a level (laser recommended) and measure frame to ensure it is plumb, square and level
- Adjust the shims as necessary
- Securely fasten all screws
- Insulate the gap between the frame and rough opening
- > Seal the gap with either backer rod and sealant, or batt insulation

IMPORTANT

It is extremely important that the perimeter of the door be sealed thoroughly. This step will ensure air and water tightness.

When applying insulation (low expanding spray foam or batt insulation) between the frame and rough opening, <u>do not</u> overfill. Too much insulation will result in bowing of the frame components, and will reduce the performance of the door.

IMPORTANT

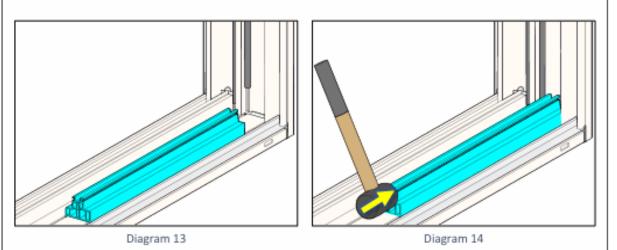
The quantity, size, type, and engagement of the fasteners/supporting shims must be engineered, and is the responsibility of the installation contractor for the following cases:

- High rise buildings
- High wind areas
- Attaching to window systems
- Using oversized doors

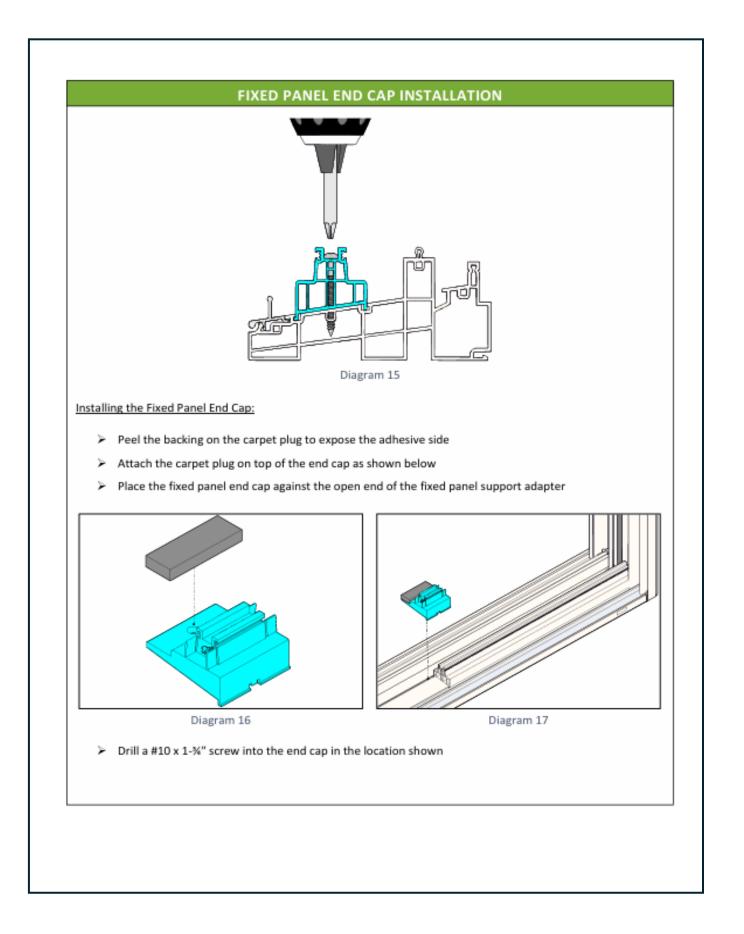
FIXED PANEL SUPPORT ADAPTER INSTALLATION NOTE: The fixed panel support adapter is installed against the same jamb to which the fixed panel is installed. PROCEDURE: Installing the Fixed Panel Support Adapter: 0 Diagram 11 Diagram 12

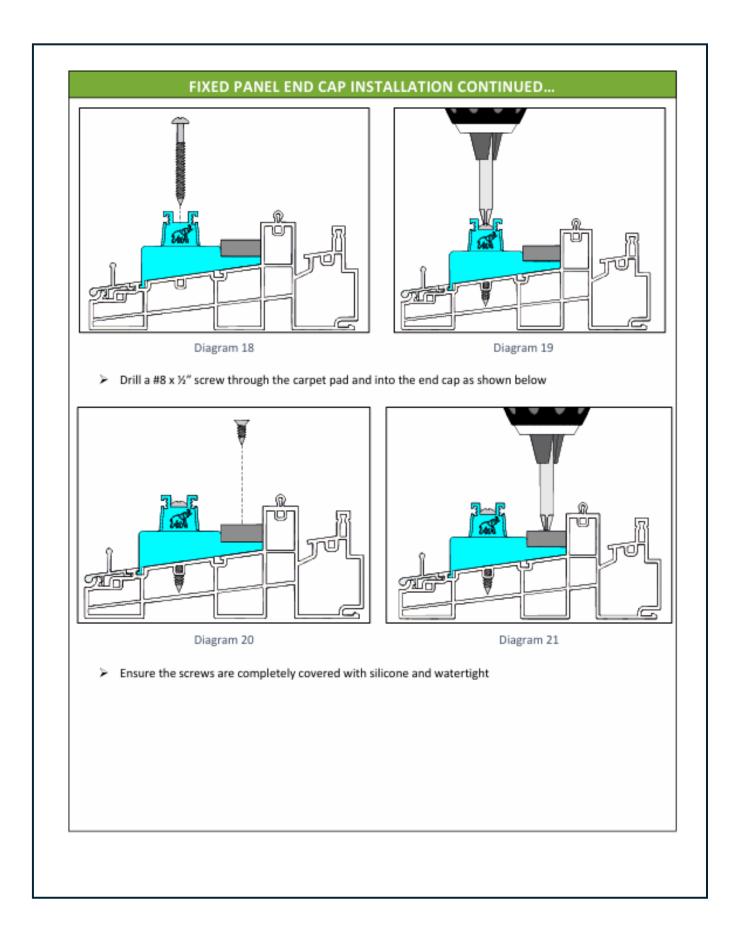
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- Place the fixed panel support adapter in the sill groove and rotate it in place as shown above ۶
- Lift the bulb seal on the fixed panel side as shown below ۶
- Slide the fixed panel support adapter tightly against the jamb (use a rubber mallet if required) ۶



> Use #10 x 1-%" screws every 12" to secure the fixed panel support adapter to the sill as shown





FIXED PANEL INSTALLATION

NOTE: Do not hesitate to use multiple people to install the fixed panels. Incorrect handling can lead to injury and damage to the door.

PROCEDURE:

> Lift the fixed panel into the centre track of the frame header

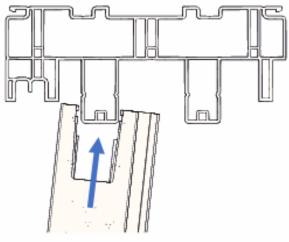
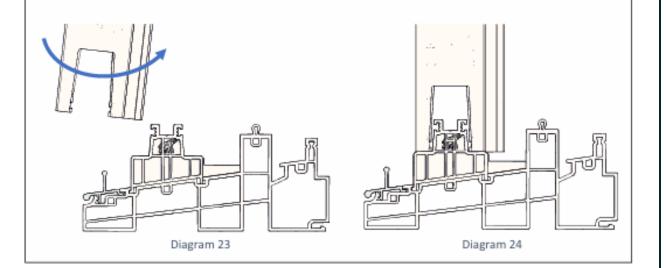
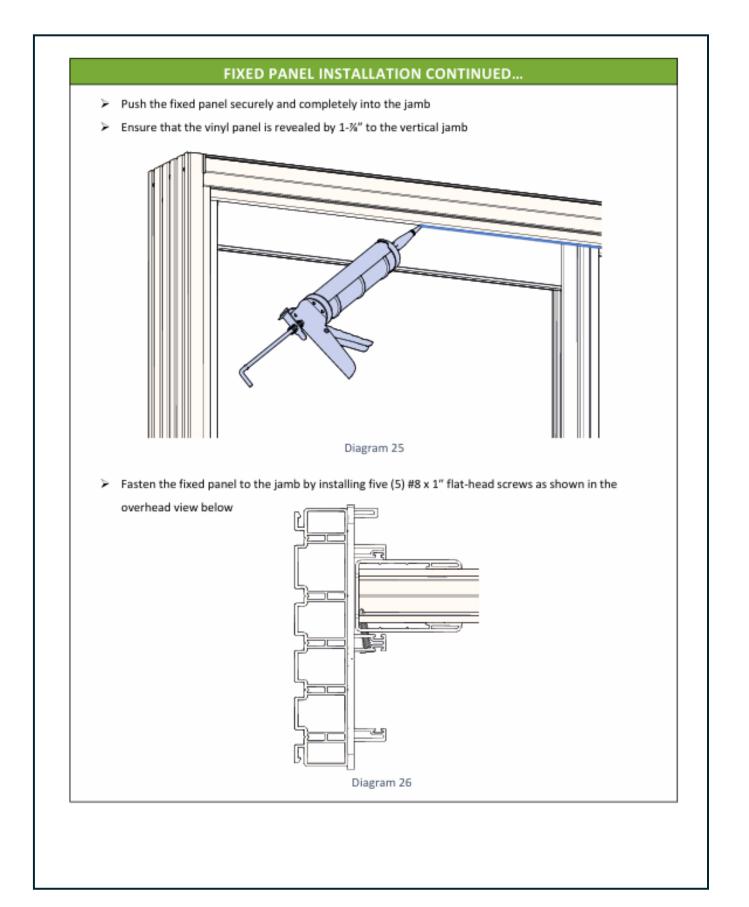


Diagram 22

NOTE: Slide the top and bottom screw covers away from the top and bottom edge of the meeting rail for easier panel installation.

Carefully lower fixed panel onto sill as shown below

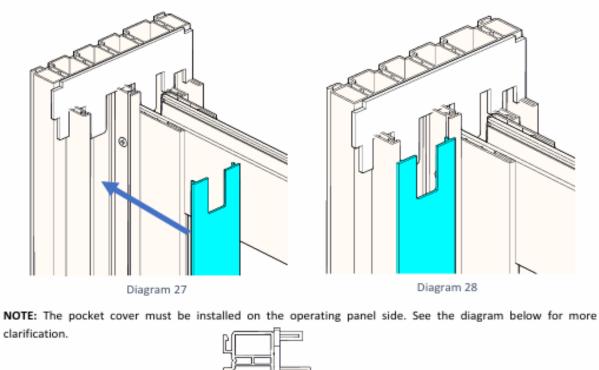


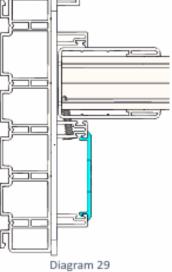


JAMB POCKET COVER INSTALLATION

PROCEDURE:

- > Align the pocket cover in the correct location as shown below
- > Snap the pocket cover into place (use a mallet if necessary)



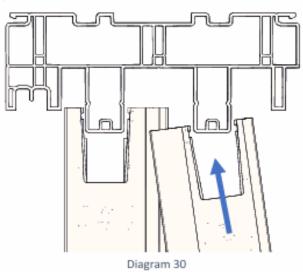


OPERATING PANEL INSTALLATION

NOTE: Do not hesitate to use multiple people to install the fixed panels. Incorrect handling can lead to injury and damage to the door.

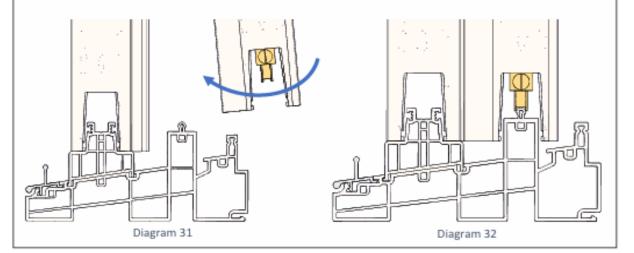
PROCEDURE:

> Lift the operating panel into the inside track of the frame header



NOTE: Slide the top and bottom screw covers away from the top and bottom edge of the meeting rail for easier panel installation.

> Carefully lower the panel onto the roller track of the sill frame as shown below.



OPERATING PANEL INSTALLATION CONTINUED...

> Adjust the rollers (upwards or downwards) with a screwdriver (see diagram below)

NOTE: It is recommended to lift the panel slightly when adjusting the wheels. This makes it easier to turn the screw, and prevents stripping of the adjustment mechanism.

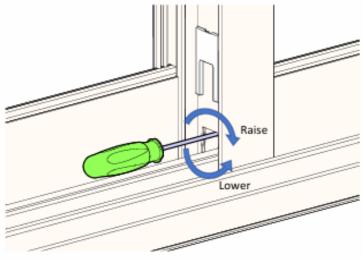


Diagram 33

- > Align the top of the weather-stripping (outside of bottom rail) to the top of the sill
- > Slide the panel in the closing direction within ¼" of the jamb

IMPORTANT

The joint between the panel and jamb should be uniform from top to bottom. If not, adjust the panel downward at one corner, until the panel aligns with the jamb. If the jamb is bowed, remove the installation screws, adjust the shims, and refasten.

NOTE: Ensure the interlocks of both panels are parallel. This will help ensure the panels are installed correctly.

OPERATING PANEL INSTALLATION CONTINUED...

> Adjust the rollers (upwards or downwards) with a screwdriver (see diagram below)

NOTE: It is recommended to lift the panel slightly when adjusting the wheels. This makes it easier to turn the screw, and prevents stripping of the adjustment mechanism.

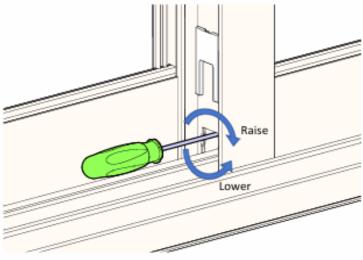


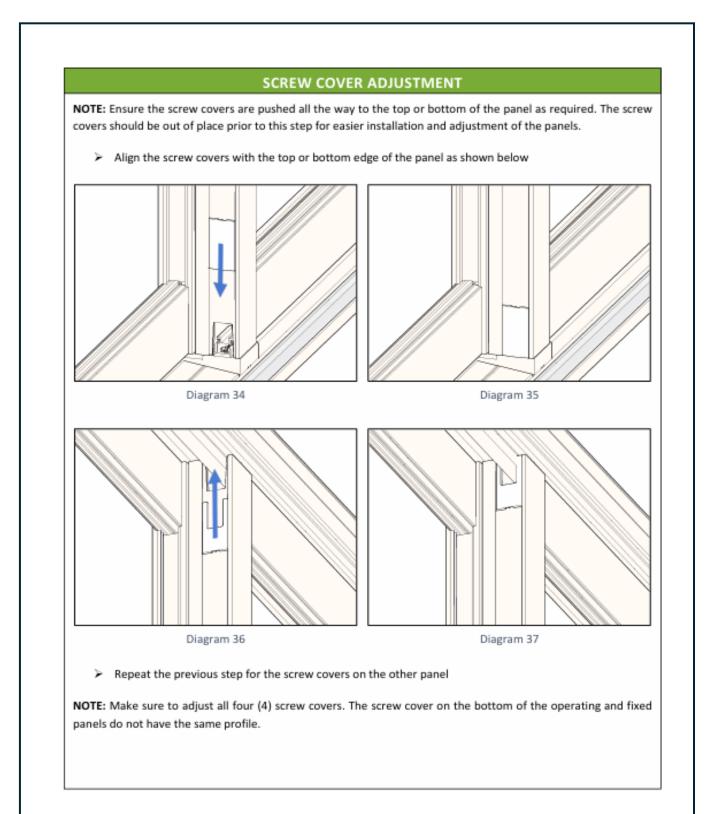
Diagram 33

- > Align the top of the weather-stripping (outside of bottom rail) to the top of the sill
- > Slide the panel in the closing direction within ¼" of the jamb

IMPORTANT

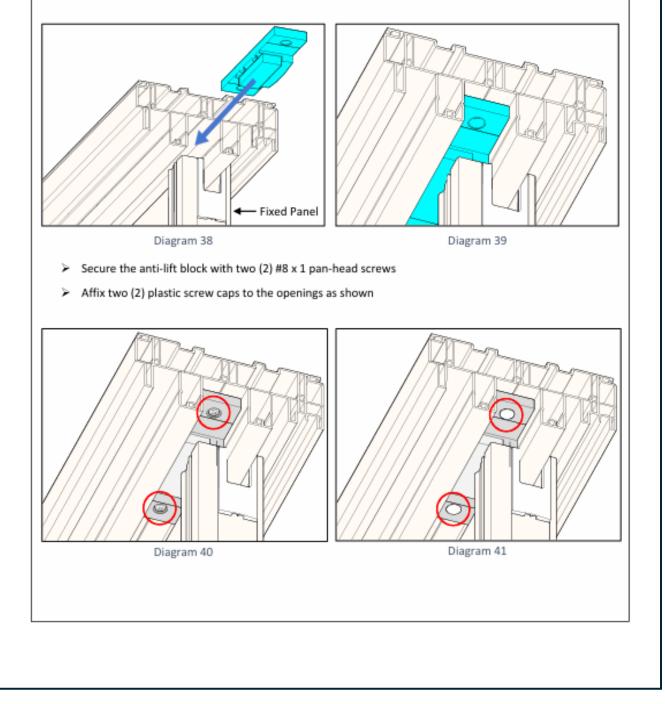
The joint between the panel and jamb should be uniform from top to bottom. If not, adjust the panel downward at one corner, until the panel aligns with the jamb. If the jamb is bowed, remove the installation screws, adjust the shims, and refasten.

NOTE: Ensure the interlocks of both panels are parallel. This will help ensure the panels are installed correctly.



ANTI-LIFT BLOCK INSTALLATION

- > Ensure that both the operating and fixed panels are installed
- > Place the anti-lift block inside the centre pocket of the header in the orientation shown
- Align the raised edge of the anti-lift block with the edge of the interlock stile
- > Ensure the anti-lift block fits as shown in the diagram below



3 PANEL OXO AND OZO

SUPPLEMENTAL INSTRUCTIONS

FRAME INSTALLATION – HEAD ANCHORING – OXO and OXXO DOORS

At a minimum, the head must be anchored at each meeting or parting rail. Follow these instructions for head anchoring at the parting rails. Anchoring of heads at the meeting rails will be done after panel installation during the application of the anti-lift bracket. See two panel installation instructions.

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For the Buckingham door (wood buck frame), drill 3/8" diameter clearance holes through the bottom surface of the head and ¼" into the wood to allow passage and countersinking of the screw head and 3/16" diameter clearance holes through the remainder of the wood frame to allow passage of the screw shaft.

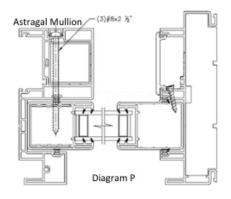
For the Victorian door (all vinyl frame) and Buckingham Eco (Rice Hull frame), drill 3/8" diameter clearance holes through the bottom surface of the head to allow passage of the screw head and 3/16" diameter clearance holes through the secondary surface to allow passage of the screw shaft as shown on Diagram O.

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Use solid shims and ensure that the head is not bowed or twisted by the installation screws. Check for straightness and squareness before proceeding further. After installing the screws, apply urethane sealant around the hole and install the cap plug. Wipe clean any excess sealant.

INSTALLING THE FIXED PANELS – 3 PANEL DOORS

OXO/OZO doors require the use an astragal mullion that is attached to the third (dummy) panel in order to provide a locking position for the active moving panel. The dummy panel has no lock cutouts or interlocking rail. See Diagram P.



For regular fixed panel, follow the same procedure as with 2 panel doors. The fixed panel adapter on this side is ½" shorter than on the dummy panel side.

For the dummy panel, the fixed panel adapter is 1/2" longer than on the opposite side.

Slide the fixed panel adapter tight to the jamb. Lift the dummy panel into the centre track of the frame head and carefully lower onto the fixed panel adapter on sill. Push the dummy panel securely into the jamb and install like a regular fixed panel. (see diagram D)

Attach the OXO/OZO mullion astragal to the rail of the dummy panel using the three #8 X 2 ½" screws provided as shown on Diagram P. Insert the continuous screw cover onto the inside face of the mullion. (NOTE: The mullion astragal is machined to be applied in only one way and is not reversible. OXO mullion is a mirror image of OZO mullion).

INSTALLING THE OPERATING PANEL – 3 PANEL DOORS

For OXO/OZO doors, adjust the operating panel and wheels in the same manner as for a two-panel door aligning the operating panel to the mullion astragal.

HARDWARE AND KEEPER INSTALLATION

For OXO/OZO doors, install the locking mechanism and handles the same as a two-panel door and use the 1" screws provided to attach the keeper to the astragal mullion.



4 PANEL OXXO

SUPPLEMENTAL INSTRUCTIONS

INSTALLING THE FIXED PANEL ADAPTER AND END CAP - 4 PANEL DOORS

For 4 panel doors, repeat the two-panel procedure on both sides of the door.

INSTALLING THE OPERATING PANEL OXXO

For OXXO doors, install and adjust the panels in a similar manner as two panel doors aligning the two operating panels to each other. Apply a continuous bead of caulking into the bi-parting astragal "H"- bar and push it on to the vertical rail without the cutout for the operating hardware using the #8 X 1" screws provided as shown in Diagram Q.

Insert the continuous screw cover into the side of the bi-parting astragal "H"- bar.

HARDWARE AND KEEPER INSTALLATION

For OXXO doors, install the locking mechanism and handles the same as a two-panel door and use the 1" screws provided to attach the keeper to the "H"- bar.

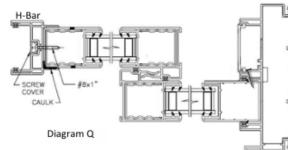
SCREEN INSTALLATION - OXXO DOORS

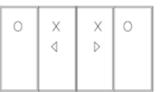
Load the screens into the frame as per the 2 panel door instructions. Slide the screens in the closing direction to within %" of each other. Visually, the joint between the two screens should be uniform from top to bottom. Using a screwdriver adjust the rollers on the bottom of the screens upwards or downwards to align the screens as shown on Diagram M. Adjust the top rollers just enough to snug the screen in the top track and allow easy rolling.

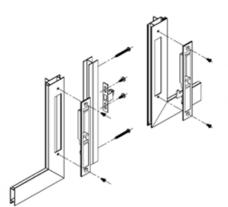
There are 2 mortise screen locks supplied with OXXO doors. Using a screwdriver, remove the striker from one of them to create a dummy lock and install this lock to one of the screens as shown on Diagram R. On this screen, attach the screen "H" bar using 4 self drilling screws.

On the other screen, install the active mortise screen lock using the factory machined holes provided with the striker hook facing upwards. Depending on the hand of the screen, it may be necessary to reverse the handing of the striker hook by removing its retaining screw, reversing the striker, and re-fastening the screw.

With the striker latch in the open position, slide the screens close to each other, mark the location of the top of the striker in the screen "H"bar, and position the keeper within the "H"-bar so that the striker will cleanly engage the keeper. Attach the keeper to the "H"-bar using the self drilling screws provided. Ensure the latch securely holds the screens locked and adjust the keeper up or down as necessary.



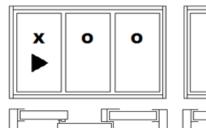


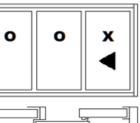


3 PANEL XOO AND OOX SUPPLEMENTAL INSTRUCTIONS

FRAME INSTALLATION - HEAD ANCHORING

At a minimum, the head must be anchored at each meeting or parting rail. Follow these instructions for anchoring heads of XOO and OOX doors at the fixed parting rails only.



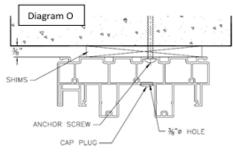


Anchoring of heads at the active meeting rails will be done after panel installation during the application of the anti-lift bracket. Refer to the two panel installation instructions.

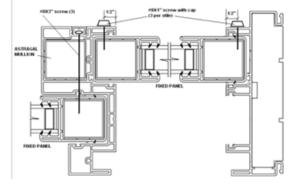
For the Buckingham door, drill 3/8" diameter clearance holes through the bottom surface of the head and ¼" into the wood to allow passage and countersinking of the screw head and 3/16" diameter clearance holes through the remainder of the wood frame to allow passage of the screw shaft.

For the Victorian door, drill 3/8" diameter clearance holes through the bottom surface of the head to allow passage of the screw head and 3/16" diameter clearance holes through the secondary surface to allow passage of the screw shaft as shown on Diagram O.

Use solid shims and ensure that the head is not bowed or twisted by the installation screws. Check for straightness and squareness before proceeding further. After installing the screws, apply urethane sealant around the hole and install the cap plug. Wipe clean any excess sealant.



INSTALLING THE FIXED PANELS



Locate the jamb side fixed panel without hardware on the inner sliding track, adjust the wheels to align the panel vertically to the jamb (see Diagram H), and slide the panel fully into the jamb pocket. Secure the panel to the jamb through the holes with 3 - #8 X 1" screws and screw caps provided as shown on Diagram S.

Attach the Astragal Mullion to the free end of the panel as shown on Diagram S with 3 - #8 X 1" screws and screw caps provided. (NOTE: The mullion astragal is machined to be applied in only one way.) Apply sealant where the astragal contacts the head and the sill.

Install the fixed panel sill adapter snug to the astragal mullion and apply the end cap and carpet plugs as shown on Diagram C.

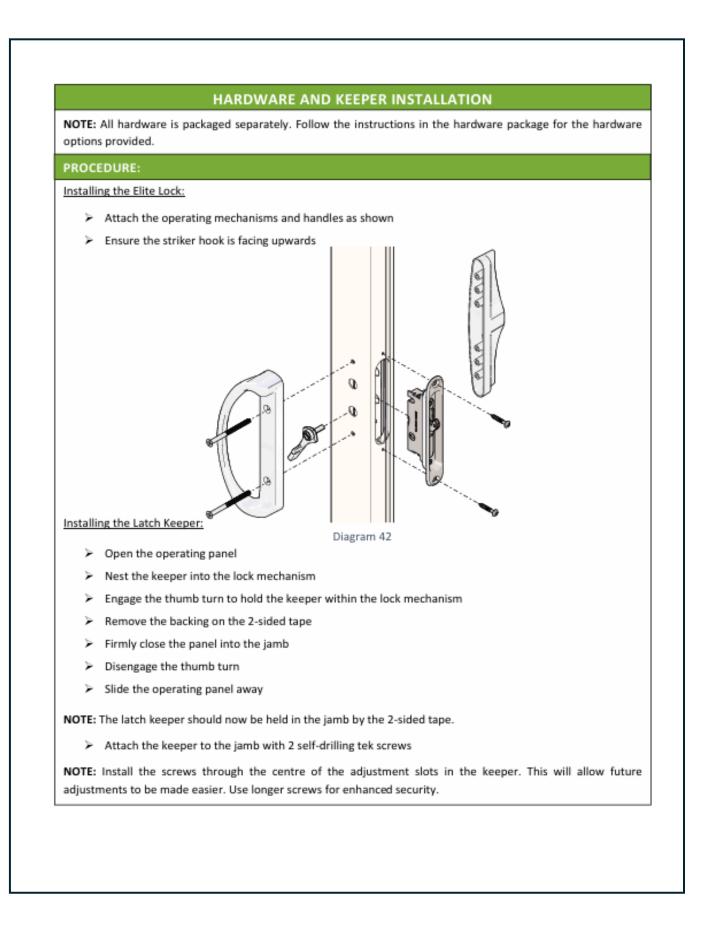
Refer to the two panel installation instructions for changing the handing of the screw covers at the top and bottom of the meeting rail if necessary before proceeding. Lift the middle-fixed panel into the centre track of the frame head and carefully lower on to the fixed panel adapter on the sill. Push it firmly into the astragal mullion as shown on Diagram S. The meeting rail with interlocking hook and the wool pile weather stripping at the free end of the middle panel should now be facing inside.

Tap the screw covers at the top and bottom of the free end of the fixed panel up and down against the head and sill. **The plain cut cover** at the sill should finish <u>on top</u> of the Fixed Panel End Cap as shown on Diagram F. If it slides downwards beyond the cap, this indicates that the fixed panel is not fully engaged into the jamb. Re-install the fixed panel if necessary. Install the 3 - #8 X 3" long screws through the astragal mullion into the exterior fixed panel as shown on Diagram S. Insert the continuous screw cover strip onto the inside face of the mullion as indicated on the diagram.

INSTALLING THE OPERATING PANEL, HARDWARE and SCREEN

Follow the same instructions as for two panel doors.

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SCREEN INSTALLATION

NOTE: Before loading the screen, raise all four wheels by turning the adjustment screws counterclockwise (CCW).

PROCEDURE:

- Insert screen in the outside track of frame header
- Swing bottom of screen toward the sill
- Depress bottom rollers with a flat-head screw driver
- Snap rollers over sill screen track
- > Slide the screen in the closing direction within %" of the jamb
- Ensure the joint between the screen and jamb is uniform
- > Adjust the rollers with a screwdriver, to align the screen as shown
- Adjust the top rollers to snug the screen in the top track
- Ensure the rollers operate smoothly

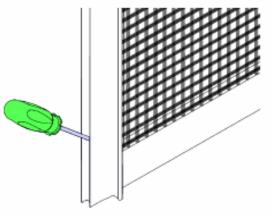
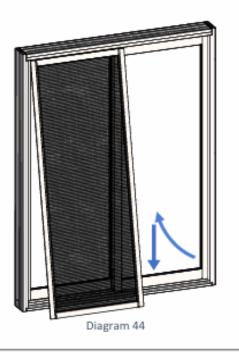


Diagram 43



SUPPLEMENTAL INSTRUCTIONS: PRE-TEST INSPECTION CHECKLIST

- Confirm the sill and header are level and flat. Confirm the jambs are plumb and straight. Check the diagonal distances between opposite corners of the frame. They should be within ¼".
- 2. If any installation holes have been drilled in the sill, they must be completely and thoroughly sealed.
- 3. Confirm that the orientation of the door is correct
- 4. Confirm the drainage is functioning but pouring approximately 4 litres of water into the interior sill track. Water should be essentially drained out through the exterior drains in approximately 45 seconds. If not, remove the fixed panel and sill track cover and remove any debris blocking the drains. Confirm that the weeper covers are in place and that they flap open and closed easily.
- Check that the fixed panel is fully engaged into the side jamb pocket. The fixed panel rail should project past the jamb leg by:
 - a. 1-9/16" for the Victorian and Buckingham doors
- 6. Close the door. Check that the weather-stripping around the moving panel is engaged with the frame. Open the door slightly and check that the vertical lock rail on the moving panel is parallel to the frame lock jamb. Check that the vertical interlocking rail on the moving panel is parallel to the interlocking rail on the fixed panel. If necessary, adjust the height of the rollers to make the rails parallel and engage the weather-stripping.
- Adjust the lock hook so that the moving panel is held snugly when the door is locked. There is an adjustment bolt (slot screwdriver) on the face of the lock assembly.
- In order to minimize air leaks, it is highly recommended that the fixed panel is caulked to the sill, jamb and header with a thin bead of clear silicone.

SUPPLEMENTAL INSTRUCTIONS: MAINTENANCE

Regular cleaning and maintenance will extend the life of your Novatech patio door. It is important to follow the guidelines below to ensure that all patio door components function as intended.

CLEANING THE GLASS:

Consumer and commercial grade cleaning products can be used to clean the glass on our patio doors. Some recommended products include:

- Windex[®]
- Vinegar and water mixture
- Professional glass cleaner

CLEANING THE HARDWARE:

Do not use harsh chemicals or cleaners for the hardware, as it may tarnish the finish of the hardware.

- Use clean water to remove grit and grime
- Do not use acidic and caustic substances

CLEANING THE DRAINAGE HOLES:

Always check for dirt and debris that might be blocking the drainage holes regularly.

· Clear drainage holes of any blockages to ensure water can drain effectively

MAINTAINING THE SLIDING TRACK:

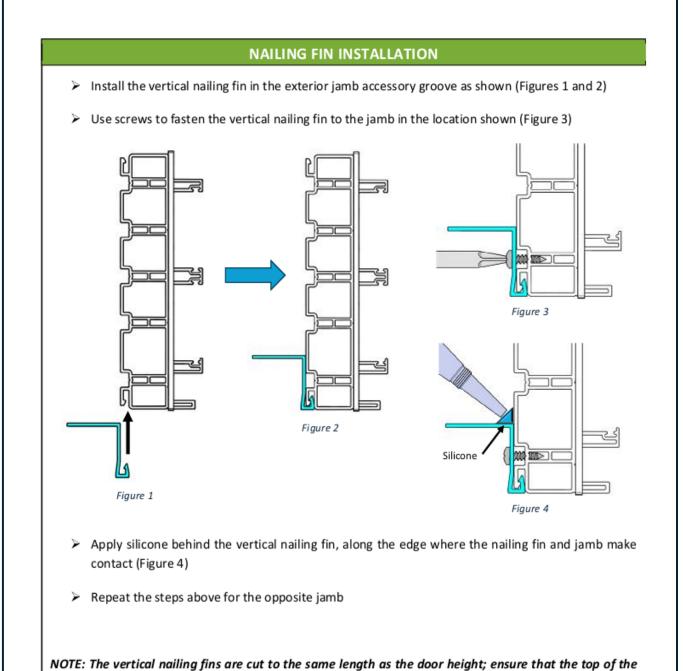
It is critical to clean the sliding track regularly to ensure performance. It is recommended that the owner:

- Vacuum the sill monthly
- Clear out any debris in sliding track
- · Check the sliding track for any deposits that may affect smooth sliding

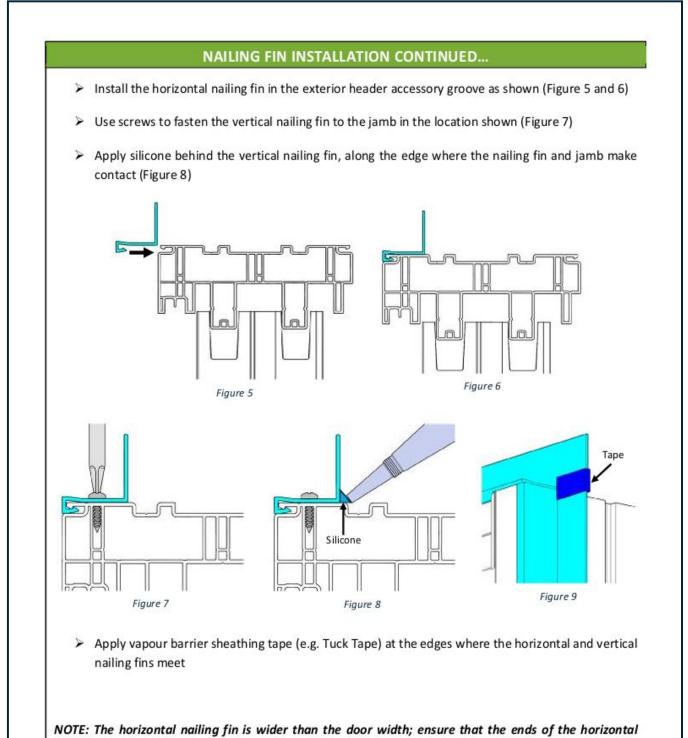
CLEANING THE WEATHER-STRIP:

The weather-strip plays an important role in energy efficiency and thermal performance. Maintain it by doing the following things:

- Clean monthly
- Remove any dust and dirt from weather-strip regularly



vertical nailing fin is flush with the top surface of the header.



nailing fin align with the outermost edges of the vertical nailing fins.

