



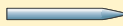
JOINING MULLION (DIRECT MULL) ASSEMBLY INSTRUCTIONS FOR 3-WAY OR 4-WAY JOINTS FOR IMPERVIA AWNING, CASEMENT AND LARGE AWNING



For Additional Mullion Assembly Information; Visit www.installpella.com/mullions,
Call (877) 473-5527 to find a local retailer, or Scan barcode in upper right corner.

YOU WILL NEED THE FOLLOWING ITEMS:

- Pella Window and Door Installation Sealant or equivalent high quality, multi-purpose sealant
- Pella® SmartFlash™ foil backed butyl window and door flashing tape or equivalent
- 12" x 3" x 1" Wood Block with rounded ends
- Pencil or Center Punch
- Clamps
- Installation Fins (4)
- Shims
- Installation Fin Corners (when vinyl installation fins are used)



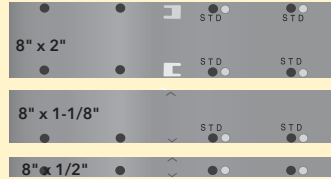
TOOLS REQUIRED:

- Tape measure
- Hammer
- Hack saw (metal-cutting saw)
- Phillips screwdriver
- Sealant gun
- Drill with 1/8" bit
- Dremel Tool
- Green Nitrile Gloves

*Order Head Drip Fin separately for Vertical Mullions

MULLION KIT (2 kits needed) PARTS INCLUDED:

- Mullion Reinforcement plates:
 - 8" x 2" Plate (1 per 3-way mull)
 - 8" x 1-1/8" Plate (2 per mull)
 - 8" x 1/2" Plate (2 per mull)
- #6 x 3/4" Self-drilling Screws (16 for each mull)
- Primer - Three (3) Surface Preparation Wipes 3M 06396
- 3/32" x .5" Strips of Foam Tape
- Strips of Butyl Tape



REMEMBER TO USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

1 Prepare The Windows

Note: The 4-way steps in this instruction depict a horizontal "through mullion." If assembling a 4-way combination with a vertical "through mullion" adjust steps accordingly.

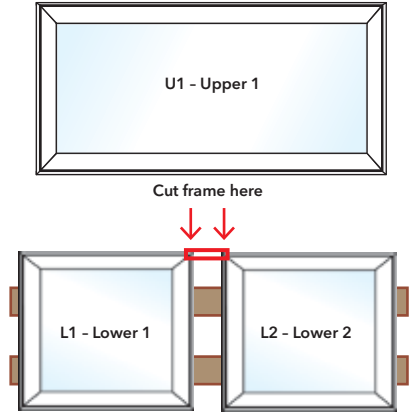
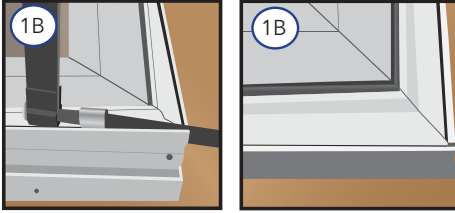
- A. **Lay windows on a smooth clean flat surface exterior side up.** Be sure to place them in the same orientation as they will be assembled into the combination. If removable fins are installed on the windows, remove fins.

Note: Use care to not damage the roto operator stud(s) on the interior side of the window. Place boards under the venting windows to provide clearance between the operator stud(s) and the table.

1 Prepare The Windows (continued)

3-WAY JOINTS:

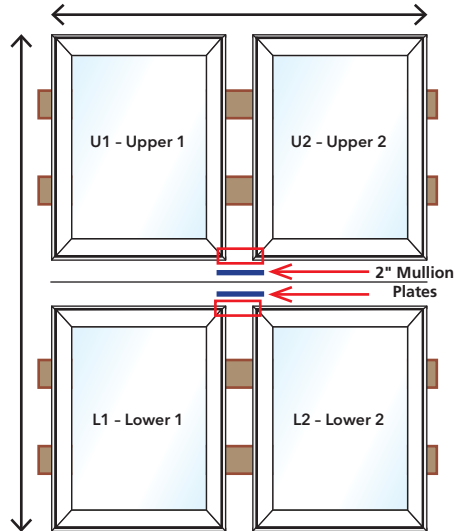
- B. Identify the frame corners of each of L1 & L2 where the 3-way joint will come together. Use a hacksaw or Dremel tool to cut a small notch in the accessory groove of each frame on the exterior. This will provide clearance for the exterior horizontal mullion cover.



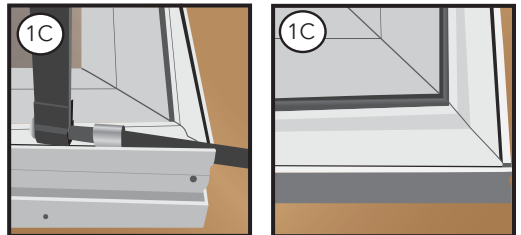
4-WAY JOINTS:

- B. Identify the location of the "through mullion" of the window combination and where the 2" mullion plates will be attached. Determine if the overall combination width or height will be greater. The through mullion will be parallel to the shortest distance. In the example shown; the windows are taller than they are wide, therefore the overall combination height will be greater than the overall combination width. This means the through mullion will be parallel to the width (shortest measurement) of the combination and the 2" mullion plates will be attached to the bottom of the top two windows and the top of the bottom two windows.

Note: Unless Pella indicates otherwise, the 2" mullion plates are to be placed in the short direction.



- C. Identify the frame corners of the 4 windows where the through mullion (mullion cover) will be installed. Use a hacksaw or Dremel tool to cut a small notch in the exterior accessory groove of each frame to provide clearance for the through mullion.



1 Prepare The Windows (continued)

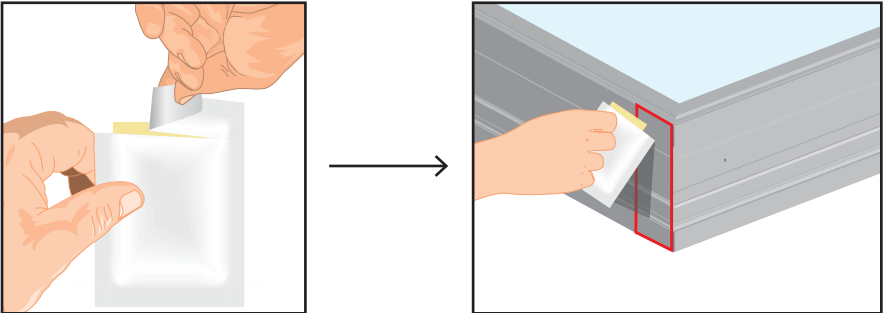
- D. **Flip the windows over so the interior side is up**, Identify the sides of the frames to be joined together and keep them in the correct orientation determined earlier for the combination assembly.
- E. **Identify the sides of the frames to be joined together**. Using one of the two primer* application method options shown; use two of the primer wipes and apply primer to the top and bottom edge of the sides of the window frames to be mullled.

Note: DO NOT apply primer to the face of any window unit or in any location on the unit which will be exposed.

* MSDS available at 3M.com

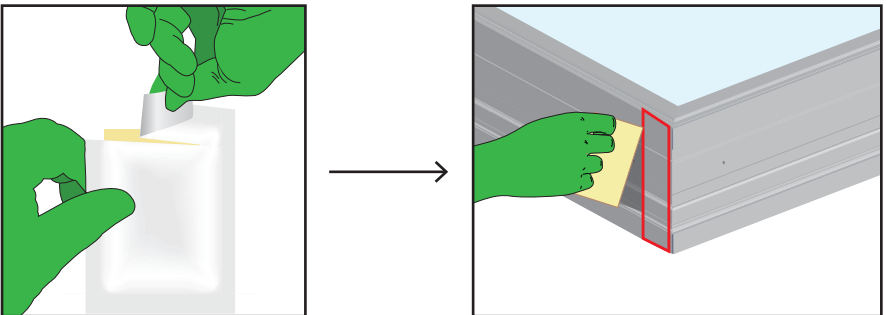
Method 1:

3M™ Adhesion Promoter 06396 is supplied in an easy-to-use sponge applicator packet. The liquid contents of the packet should be completely used as soon as possible after opening. Hold packet upright and avoid squeezing an opened packet to prevent spillage of liquid contents. The packet can be opened by tearing across the top of the packet at the notches. This will expose the sponge applicator. Do not remove the sponge or squeeze a freshly opened packet. Handling the bottom section of the packet should enable application of 3M adhesion promoter 06396 with no mess.



Method 2:

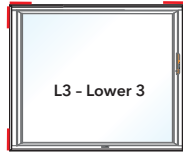
Wear Green Nitrile gloves and tear open foil pack and remove the primer sponge applicator and apply primer.



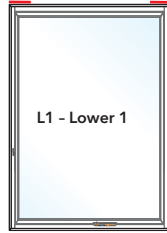
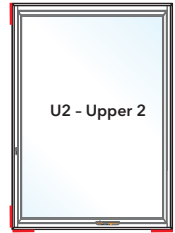
Allow primer to dry before proceeding to the next step.

1 Prepare The Windows (continued)

| or — = locations to apply primer

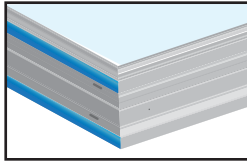
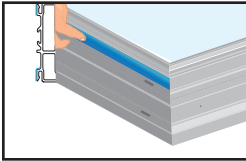


3-Way Joint

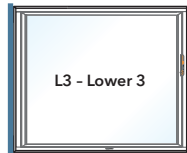
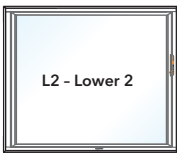
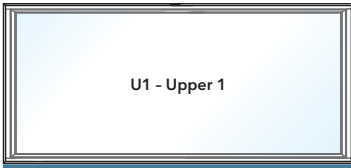


4-Way Joint

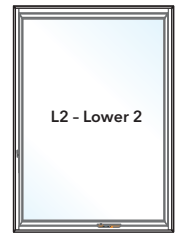
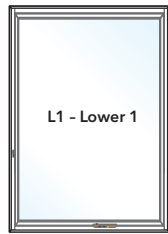
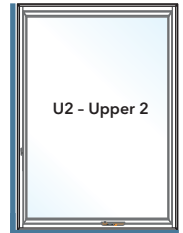
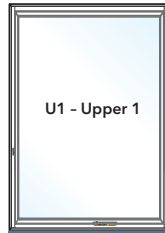
E. Identify the sides of the frames to be joined together. Apply two strips of 1/16" x 1/2" foam tape along the side of one window to be mullered as shown.



| or — = locations to apply foam tape



3-Way Joint



4-Way Joint

2 Vertical Mullion Assembly

3-WAY JOINTS:

Assemble the L1/L2 combination:

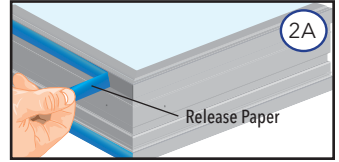
- A. Remove release paper from the foam tape on L2.

4-WAY JOINTS:

Note: The 4-way mullion steps shown in this instruction depict a horizontal "through mullion." If assembling a combination with a vertical "through mullion" adjust steps accordingly.

Assemble the U1/U2 combination:

- A. Remove release paper from the foam tape on U1 or U2.

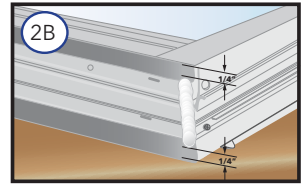


3 & 4-WAY JOINTS:

- B. Starting 1/4" from the frame edge, apply a 3/8" diameter bead of sealant across the sloped sill joint and stop 1/4" from the other frame edge as shown.



Both pieces of tape pressed in and sealant applied.

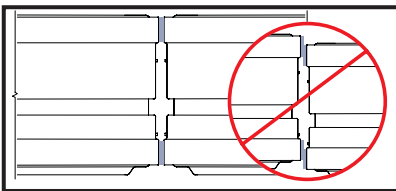


- C. Position and align the two windows (L1 & L2 [3-way] or U1 & U2 [4-way]) with the sides to be mullied facing each other and slowly slide the windows together. Use a straight edge on the ends to help ensure proper alignment of the units.

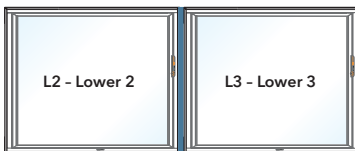
Caution: Units must be aligned before sliding together as foam tape adhesion will limit adjustment.

Note: Make sure both windows are touching along the full length of the mullion joint.

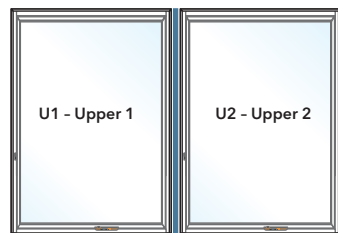
Note: If necessary, clamps may be used to help draw the mullion joint together.



Side/End View



3-Way Joint

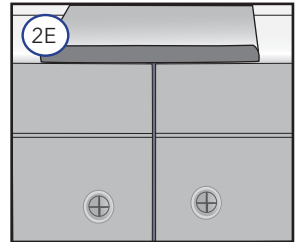
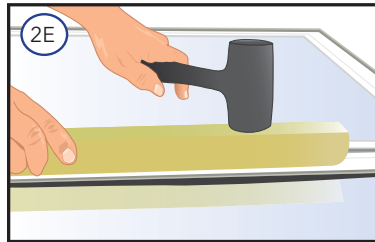
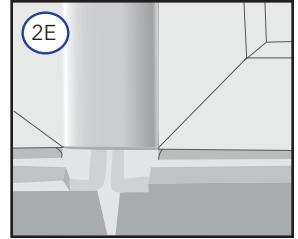


4-Way Joint

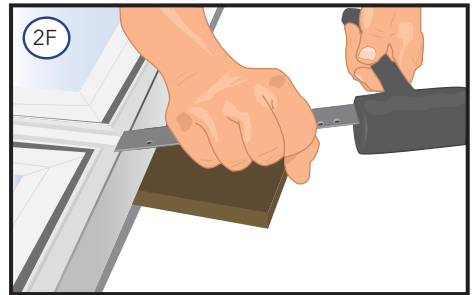
2 Vertical Mullion Assembly (continued)

D. **Cut vertical mullion covers.** Measure the outside frame dimension at the mullion joint length. Cut the interior flanged cover $9/16"$ shorter than the frame dimension and cut the exterior non-flanged cover $3/8"$ shorter than the frame dimension.

E. **Install the interior flanged vertical mullion cover** into the accessory groove of both windows. Align one end of the mullion cover with the frame accessory groove as shown. Tap the end of the mullion cover into the grooves with a hammer and wood block. Continue to drive the cover into the grooves moving slowly along the length of the cover using the hammer and wood block until the cover is completely seated into the grooves. Remove clamps.



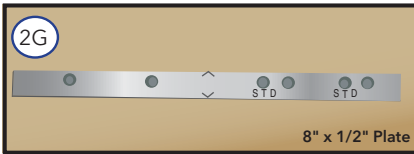
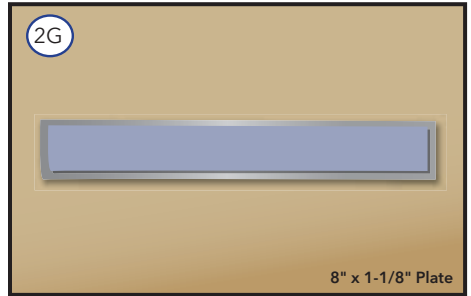
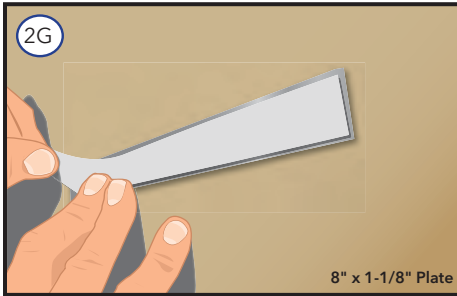
F. **If needed, mullion cover location can be adjusted slightly** using a hammer and straight bar tool (such as one of the mullion plates).



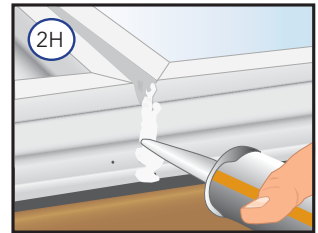
Unit Type	Frame Type	Location	Plate Width	QTY
CM/AW/LA	Fin	All	.5" (ext) 1.125" (int)	1 1
CM/AW/LA	No Fin	All	2"	1

2 Vertical Mullion Assembly (continued)

G. Apply one strip of .040" x 1" butyl tape to the back side of each 8" x 1-1/8" mullion plates, and one strip of .040" x 1/2" butyl tape to the back of the 8" x 1/2" plates.



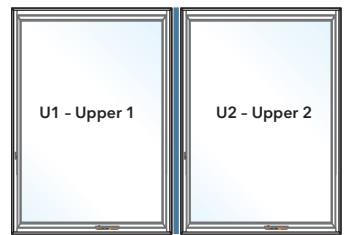
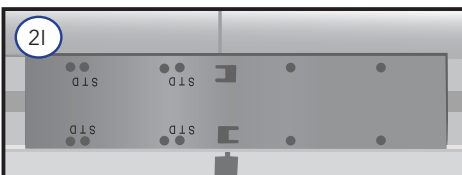
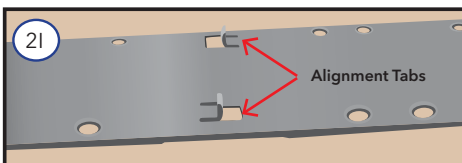
H. Fill any voids in the space between the frames at the end of the mullion with sealant.



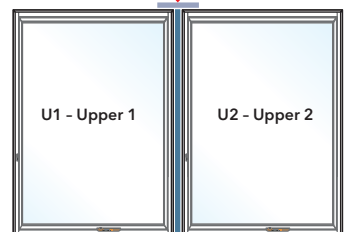
Attach the 8" x 2" Mullion Plate:

Note: DO NOT apply butyl to the 8" x 2" plates. (Plates with alignment tabs.)

I. Position the 8" x 2" mullion plate by inserting the alignment tabs between the two windows on the side where the 3-Way or 4-way mullion joint will be located.



8" x 2" Plate attached here

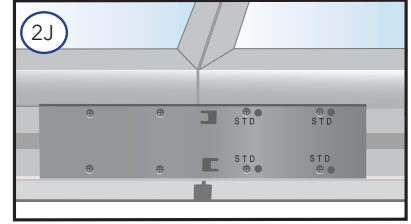
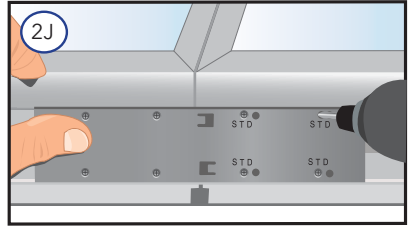
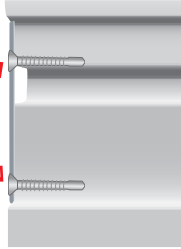


4-Way Joint

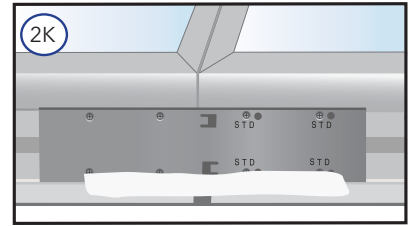
2 Vertical Mullion Assembly (continued)

- J. **Attach the 8" x 2" mullion plate** using eight (8) #6 x 3/4" flat head self-drilling screws. On the end of the plate with 8 holes, only insert screws in the holes marked "STD."

Note: The screw heads at the 4-Way joint plate must be recessed below the outside edges of the frame.

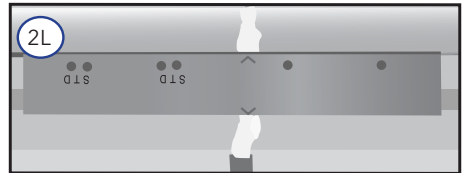


- K. **Apply a 1/4" diameter bead of sealant, 4"** long on the exterior edge of the plate where it meets the frame to each unit, centered across the mullion joint.

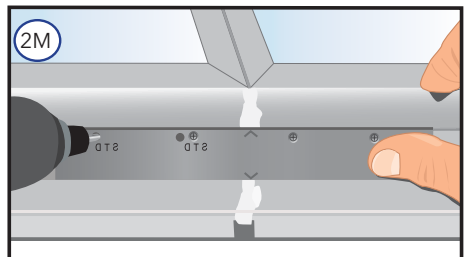


Attach the 8" x 1-1/8" Mullion Plate:

- L. **On the other side of the two windows;** position the 8" x 1-1/8" mullion plate between the two windows by aligning the '∧' of the plate at the point where the two windows come together. Be sure to position the plate with the holes up toward the frame edge.



- M. **Attach the 8" x 1-1/8" mullion plate** using 4 - #6 x 3/4" flat head self-drilling screws. On the end of the plate with 4 holes, insert the screws in the holes marked "STD."



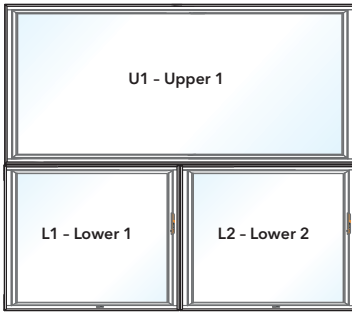
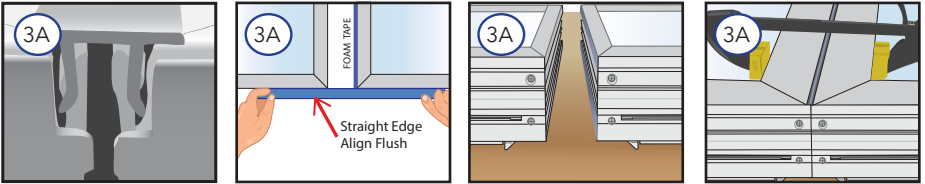
- N. **4-Way units only:** Repeat 2A-2L to assemble L1/L2 combination.

3 Horizontal Mullion Assembly

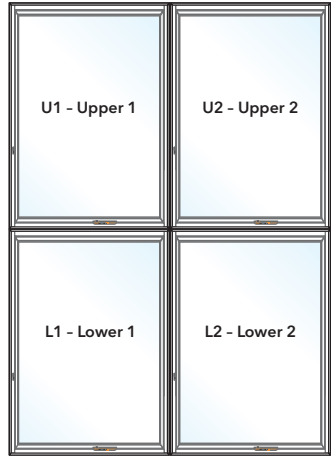
3-WAY JOINTS; U1 TO L1/L2 COMBINATION

4-WAY JOINTS; U1/U2 COMBINATION TO THE L1/L2 COMBINATION

- A. Position and align the L1/L2 combination to the U1 combination (3-Way) or Position and align the U1/U2 combination to the L1/L2 combination (4-Way) . Use a straight edge on the ends to help ensure proper alignment of the units. The window combinations may be clamped together with clamps over the interior frame covers.



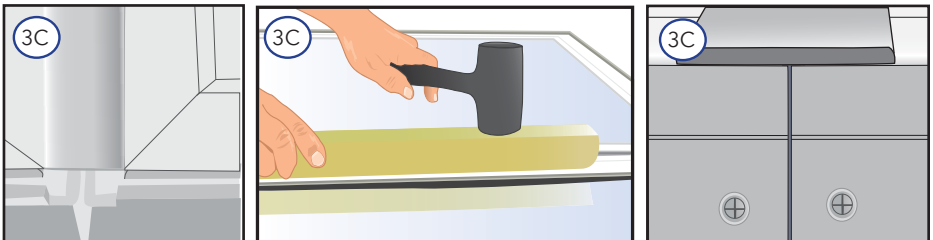
3-Way Joint



4-Way Joint

- B. **Cut horizontal mullion covers.** Measure the outside frame dimension at the horizontal mullion joint length. Cut both the interior flanged and exterior non-flanged mullion covers $7/16$ " shorter than the frame dimension.

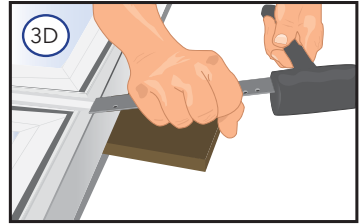
- C. **Insert the interior flanged horizontal mullion cover into the accessory groove of both windows.** Align one end of the mullion cover with the frame accessory groove as shown. Tap the end of the mullion cover into the grooves with a hammer and wood block. Continue to drive the cover into the grooves moving slowly along the length of the cover using the hammer and wood block until the cover is completely seated into the grooves.



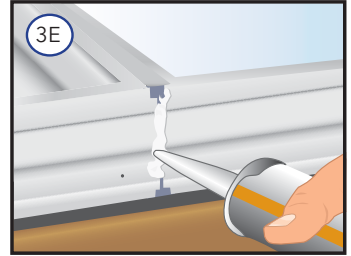
Note: Tapping the cover in slowly using a wood block with rounded edges will help prevent dents in the mull cover. For best results, make sure the wood block is the same width as the mullion covers.

3 Horizontal Mullion Assembly (continued)

- D. If needed, mullion cover location can be adjusted slightly using a hammer and straight bar tool (such as one of the mullion plates).

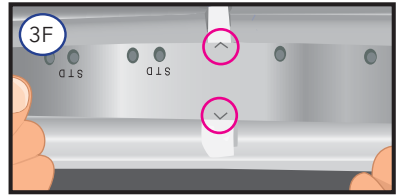


- E. Fill any voids in the space between the frames at the end of the mullion with sealant.

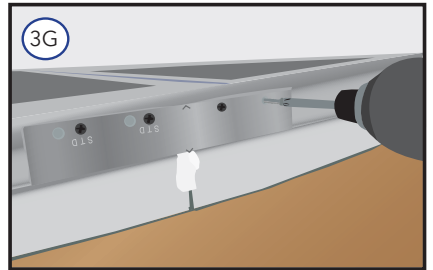
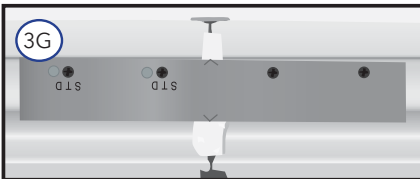


Attach the 8" x 1-1/8" Mullion Plate:

- F. Position the 8" x 1-1/8" mullion plate between the two windows by aligning the end of the plate at the point where the two windows come together. Be sure to position the plate with the holes up toward the frame edge.



- G. Attach the 8" x 1-1/8" mullion plate using 4 - #6 x 3/4" flat head self-drilling screws. On the end of the plate with 4 holes, insert the screws in the holes marked "STD."



Repeat 3F & 3G on the remaining mullion joints around the perimeter of the combination.

4 Fin Prep & Installation and Final Adjustments

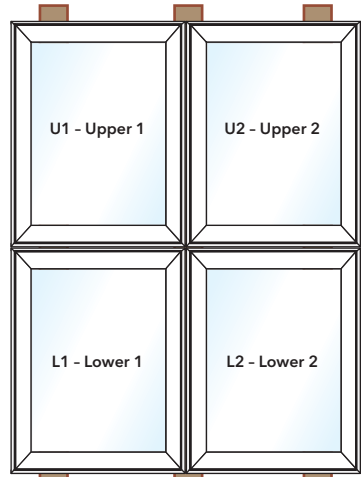
- A. Turn the combination over so the exterior side is up. Use care to make sure the products are held together as they are being turned over.

Note: When the interior side is down, use care to not damage the roto operator stud(s) when sliding the units on the table (flat surface). Place boards under the units to provide clearance between the operator stud(s) and table.

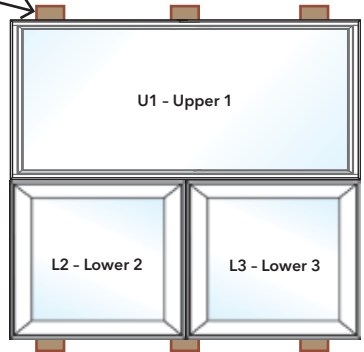


Note: If installing with Installation Clip or Frame Screws, proceed to Step 4G.

Place boards >1/2" thick under the combination to provide clearance for roto operator stud.



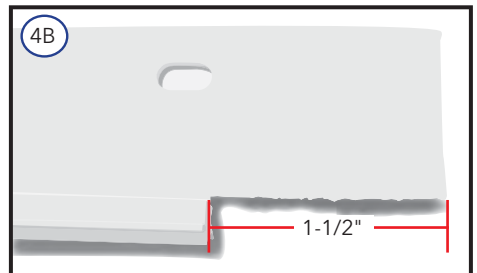
4-Way Joint



3-Way Joint

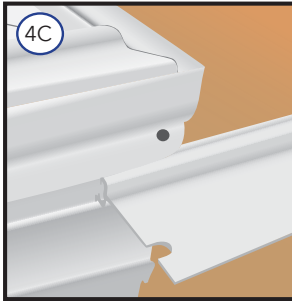
- B. Measure and cut the installation fins for each side of the combination. Cut each fin 2-1/2" longer than both the width and height of the combination. Trim 1-1/2" off each end of the fin to form a notch as shown.

Note: After the fin ends are trimmed; cut each fin in half so the fins can be spliced at the mullion joint after being inserted into the fin grooves on the combinations.

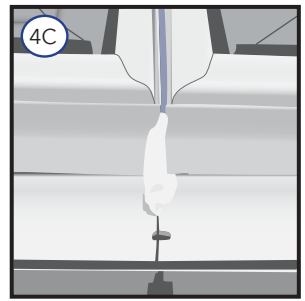


4 Fin Prep & Installation and Final Adjustments (continued)

- C. Fins are to be installed in a watershed pattern with the side fins overlapping the bottom fin and the top fin overlapping the side fins. Insert the non-trimmed end of one of the fin halves into the fin groove and slide it over to the mullion joint. Repeat on the other side so the fins halves meet at the mullion joint. Install the fins around the perimeter of the combination.



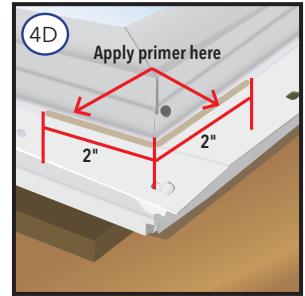
Inserting cut fin with end to be spliced on combination sides with perimeter mullion joints.



The two halves of the fin meet at the mullion joint.

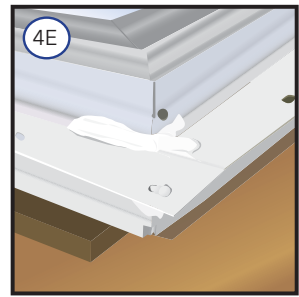
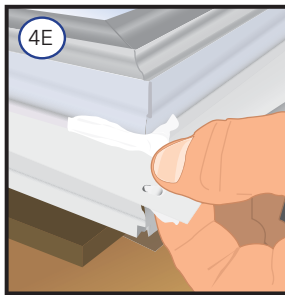
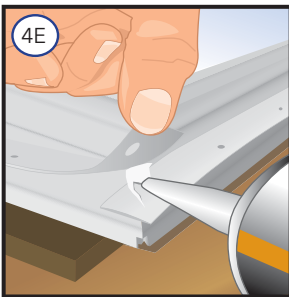
- D. Using one of the primer application methods covered in step 1E; Apply primer, using one (1) of the primer sponge wipes at each corner to the edge of the frame on top of the fin 2" each direction.

Note: Allow primer to flash dry 2 minutes before moving to next step to apply sealant.



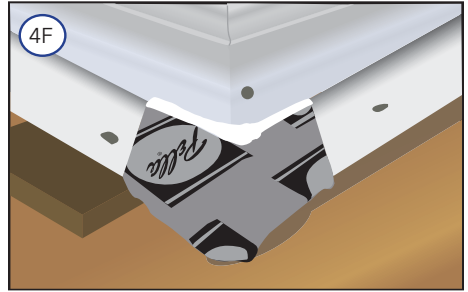
- E. At each corner where the fins overlap, apply a generous bead of sealant between overlapped fins and squeeze to assure a good seal between the fins. Place sealant on the exterior side of the fin for approximately 2" from the corner on each side. Tool sealant applied at the corners.

Note: Make sure there are no gaps in sealant between frame and vinyl fin.



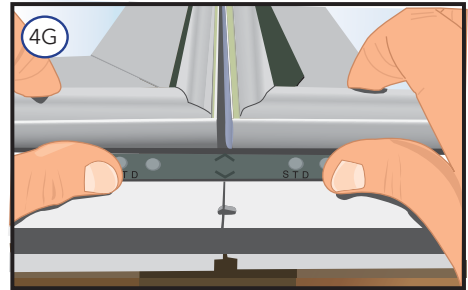
4 Fin Prep & Installation and Final Adjustments (continued)

- F. At each corner, apply a fin corner over the overlapping fins.

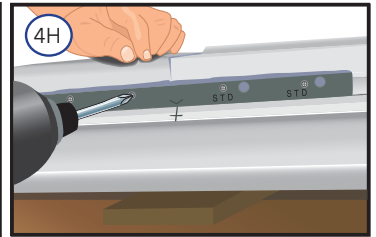
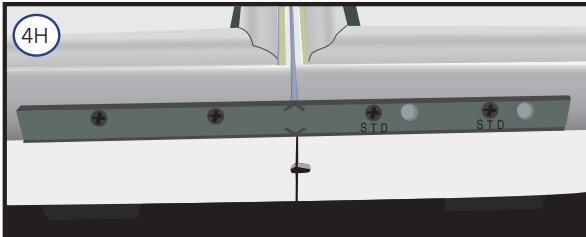


Attach the 8" x 1/2" Mullion Plate:

- G. Position a 8" x 1/2" mullion plate between the two windows at one of the mullion joints by aligning the of the plate at the point where the two windows come together. Be sure to position the plate with the holes up toward the frame edge.

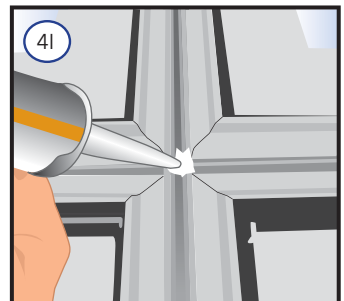
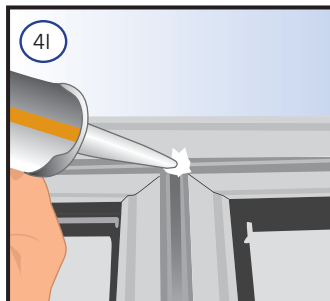


- H. Attach the 8" x 1/2" mullion plate using 4 - #6 x 3/4" flat head self-drilling screws. On the end of the plate with 4 holes, insert the screws in the holes marked "STD."



Repeat 4G-4H on the remaining mullion joints around the perimeter of the combination.

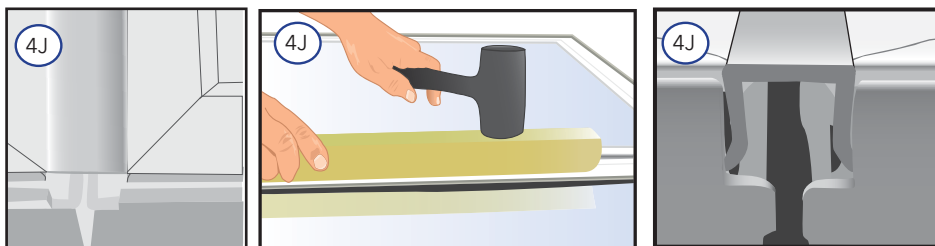
- I. Use sealant to completely fill in at the 3-way or 4-way joint where the windows come together.



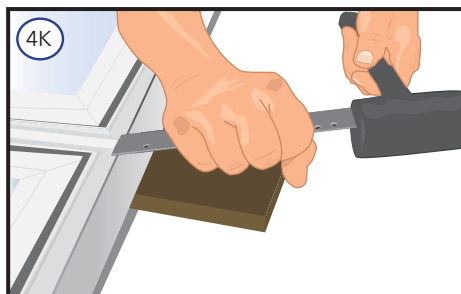
4 Fin Prep & Installation and Final Adjustments (continued)

- J. **Align one end of the mullion cover with the frame accessory groove as shown.** Tap the end of the mullion cover into the grooves with a hammer and wood block. Continue to drive the cover into the grooves moving slowly along the length of the cover using the hammer and wood block until the cover is completely seated into the grooves. Remove clamps.

Note: Tapping the cover in slowly using a wood block with rounded edges will help prevent dents in the mull cover. For best results, make sure the wood block is the same width as the mullion covers.

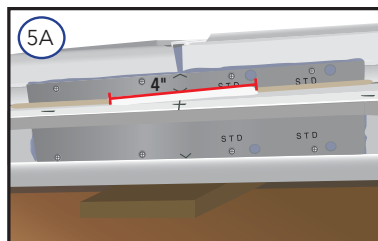


- K. **If needed, mullion cover location can be adjusted slightly** using a hammer and straight bar tool (such as one of the mullion plates).



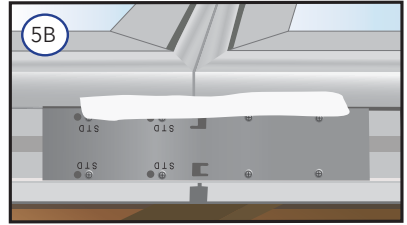
5 Flashing Tape Application Over Fin Splices

- A. **At each mullion joint and spliced fin;** Apply a 3/8" bead of sealant 4" long on the exterior side of the mullion plate, centered on the joint or spliced fin location.



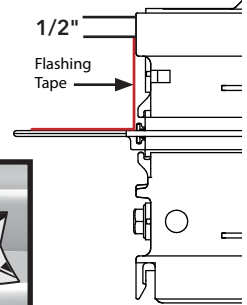
5 Flashing Tape Application Over Fin Splices (continued)

B. For **Block units**, apply the 3/8" bead, 4" long at the exterior edge of the plate.

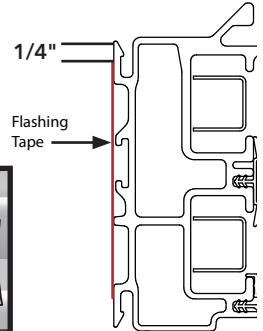


C. For **each mullion joint and fin splice**, cut a piece of flashing tape 12" long.

D. At **each mullion joint and fin splice joint**; apply the flashing tape over the plate and fin so the tape extends 2" beyond either side of the plate. Hold the tape back 1/2" from the frame edge. Fold the tape over the fin and press firmly to adhere to the frame edge and the fin.



E. For **Units without nail fin**; apply flashing tape over the plate and sealant bead so the tape extends 2" beyond either side of the plate. Hold the tape back 1/4" from the frame edge. Press flashing firmly to adhere to the frame edge and plate.



6 Head Drip Fin Installation

Required on Nail Fin Mullions with Vertical Mullion Joints Ending Through the Head.

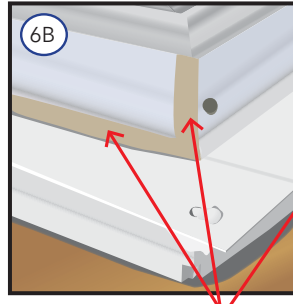
Note: These steps must be performed in immediate succession either in the shop or at the job site.

A. **Cut the head drip fin to the overall width of the window combination.** Dry fit the head drip fin to make sure the fin does not extend beyond the ends of the combination and no more than 1/16" shorter than the combo on each end. Remove the head drip fin before proceeding to 7B.

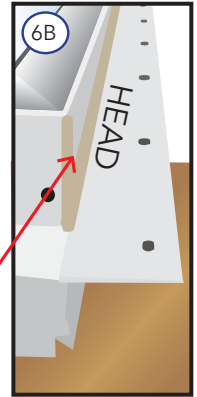
6 Head Drip Fin Installation (continued)

- B. Apply primer, using one (1) of the primer wipes across the top of the head where the fin and frame meet and on each end as shown.

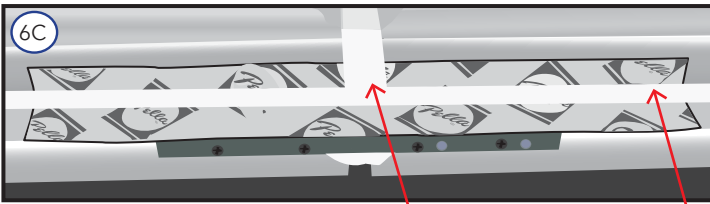
Note: Allow primer to dry at least 2 minutes before proceeding to next step.



Apply primer here

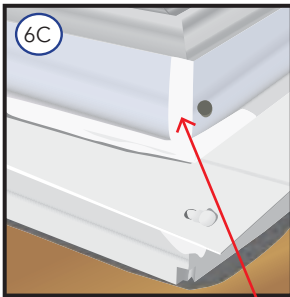
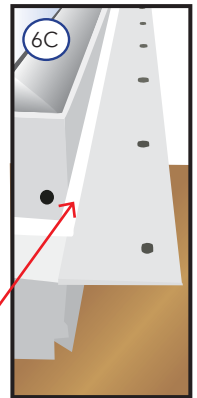


- C. Apply sealant at the top of the exterior mullion cover to seal the space between the mullion cover and window frame heads. Also apply sealant at each end of the top of the combination and across the top of the entire combination at the joint where the fin and frame connect to prep for installation of the head drip fin. Install the drip fin immediately after applying sealant to the head either in the shop or at the job site when installing the combination unit in the opening. Apply a piece of flashing tape at each end overlapping the head drip fin and nailing fin to hold the fin in place while the sealant sets up.

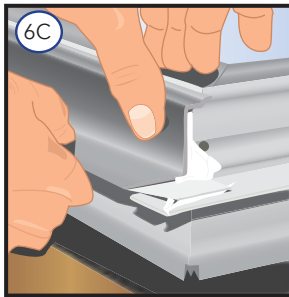


Sealant at mullion joint and across the top of the combination

Sealant in corner across the top of the combination



Sealant at each end and across the top of the combination.



- D. If there are no installation holes in the head drip fin, drill 5/32" clearance holes 1/2" from the top edge, 4" from each end and 6" on center. These will be used for Installation Activities in the Installation Instruction.