

THANK YOU FOR CHOOSING

Milgard Windows & Doors



www.milgard.com



V450 | HomeMaker Series

Installation Recommendations for Fin Frame Doors

These installation recommendations are made available by Milgard Windows & Doors to assist with the integration of mounting fin sliding glass doors into a typical wood-framed structure three or less stories in height. Installation into other structures and frame types are not addressed here.

Please contact Milgard or visit www.milgard.com for additional information.

Important Design Considerations

Read this entire document before proceeding with installation of Milgard's products. Responsibility for product selection and installation rests with the owner, architect, and installer. Do not proceed with installation unless all factors necessary to properly integrate Milgard's products into a building's water management system have been addressed.

Milgard makes no representation or warranty that these recommendations include all information necessary to ensure proper integration into every building. State and local code requirements may impose different or additional demands which will supersede these recommendations. For additional guidance regarding installation of door products refer to applicable industry standards (e.g., AAMA 2400, AAMA InstallationMasters™, ASTM E 2112).

Failure to follow these recommendations, local requirements, or good building practices may affect the availability of remedies under Milgard's warranty. Provide a copy of these recommendations and the applicable Milgard warranty to the owner before installing. Milgard does not permit adoption of its installation recommendations into the contracts of others without its prior, written consent.

Important Pre-Installation Considerations

- Door installation may disturb finish surfaces and paint in existing structures. Specific notice and work site precautions may be required. Additional information is available at www.epa.gov/lead. Comply with all applicable federal, state, and local requirements.
- Job site and worker protections are recommended and may be required. Follow all manufacturers' instructions for appropriate and safe use of protective equipment, tools, materials, hardware and site protections necessary for installation.
- Special disposal considerations may be necessary for materials used during installation. Materials removed from an existing structure may also have their own disposal or recycling requirements. Comply with all applicable federal, state, and local requirements.
- Product specification sheets include important information regarding your product and may include additional installation recommendations, such as fastener use with impact resistant doors, finishing instructions, and appropriate use of low expansive foam insulation.

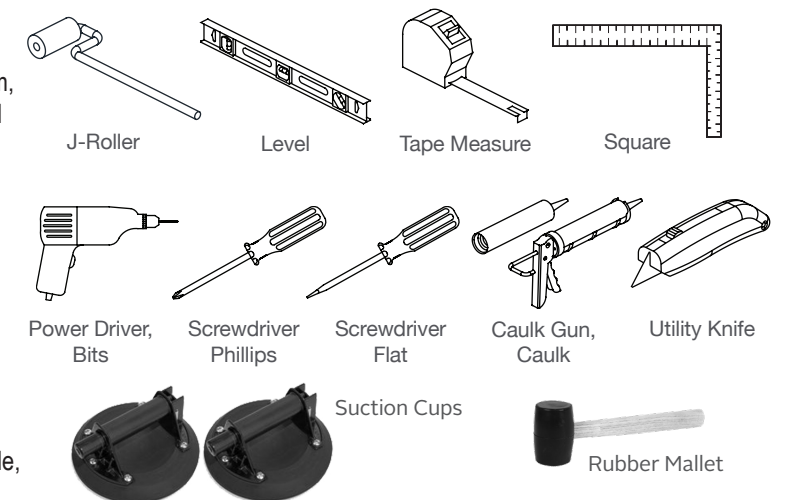
Contact Milgard for product specifications and additional product information for your Milgard product.

Materials Required

- Non-compressible shims.
- Flexible membrane sill pan flashing system.
- Fasteners. Type and number as required by code. At a minimum, fastener type should be sufficient to properly affix the frame and penetrate opening as shown in Figure I of instructions.
- High quality compatible exterior grade sealant.
- Seal tape for the weather resistive barrier*.
- Self-adhering flashing, in a width required by code but no less than 4". AAMA 711 compliant flexible butyl tape flashing or equivalent is recommended.*
- Backer rod.*
- Low-expansive, low-pressure foam or batt type insulation.*

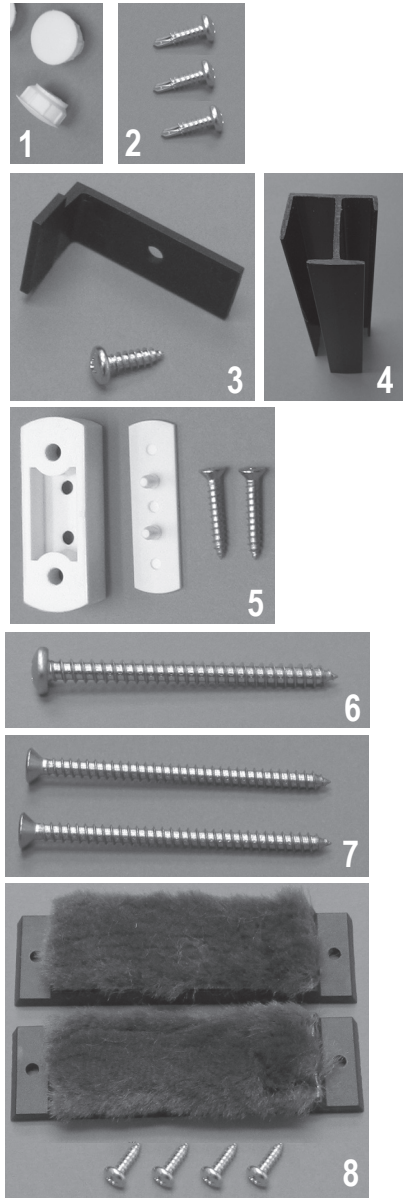
* Use and placement of these materials may be required by code, plan, or good building practices.

Tools Required



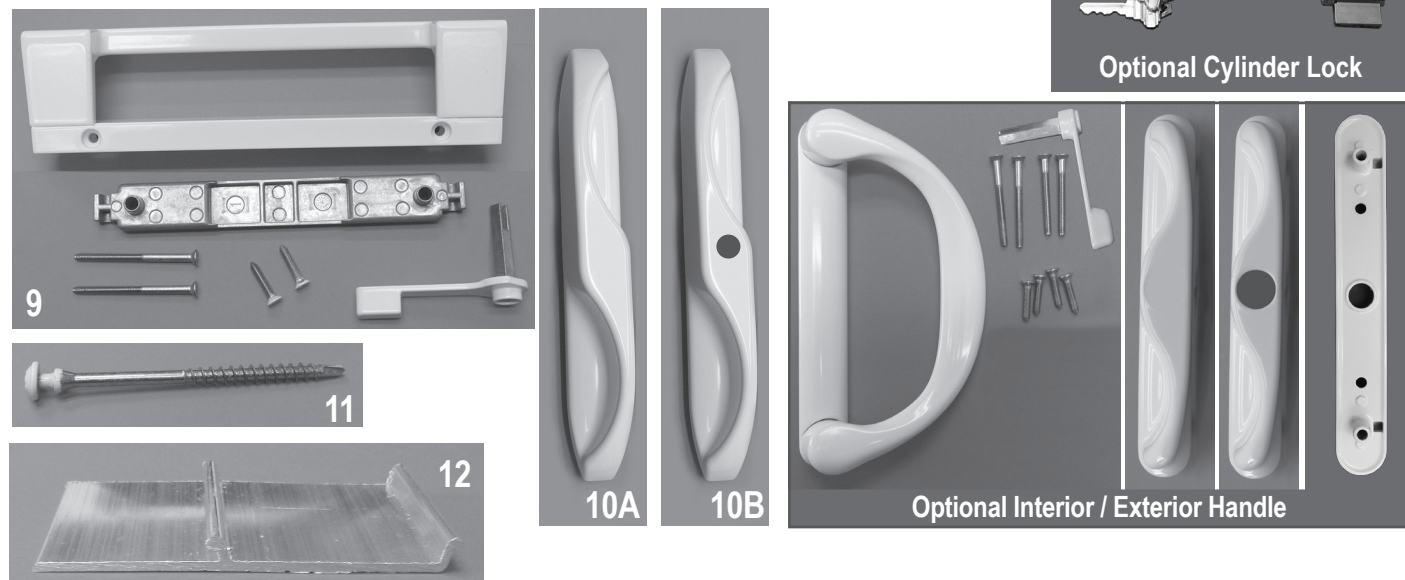
V450 Parts

Part #	Part Name/Description	Color	Quantity			
			2Panel XO / OX	3Panel O-XO OX-O	XO-O O-OX	4Panel OXXO
1	WS30025C 3/8" Hole Plugs	White	6	14	10	12
	WS30004L Black / WS30025J Adobe					
	WS30025A Almond / WS30025B Bronze					
2	FS00595C 1/2" Self Tapping Screws (fixed panel)		4	8	8	8
3	IM00036L L-shaped Fixed Panel End Cap	Black	1	1	3	2
	FS001360 #8 x 1/2" Screw		1	1	3	2
4	V980900L 3" Weep Baffle (Black for all colors)	Black	1	2	2	2
5	IM20800C Bump Stop and Cover	White	1	1	1	2
	IM20800L Black / IM20800D Adobe					
	IM20800A Almond					
	FS004204 #8 x 1-1/2" Screw, self tap		2	2	2	4
6	FS009204 Permanent Keeper Screws 2-1/2"		2	2	2	0
7	FS004203 Astragal Screws #8 x 2" Stainless			4		
8	WS302911 Weather Strip Block		2	2	4	4
	FS001360 #8 x 1/2" Screw		4	4	8	8
9	HD64001C Interior Handle / Handle Kit	White	1	1	1	2
	HD6400L Black / HD64001J Adobe					
	HD64001A Almond					
10A	HD68000C Exterior Handle (Standard)	White	1	1	1	2
	HD68000L Black / HD68000J Adobe					
	HD68000A Almond / HD68000I Silver					
	HD68000B Bronze					
	10B Key lock HD69000C White / HD69000L Blk					
	HD69000I Silver / HD69000B Bronze					
	HD69000A Almond / HD69000J Adobe					



ADDITIONAL PARTS FOR BLOCK FRAME INSTALLATION

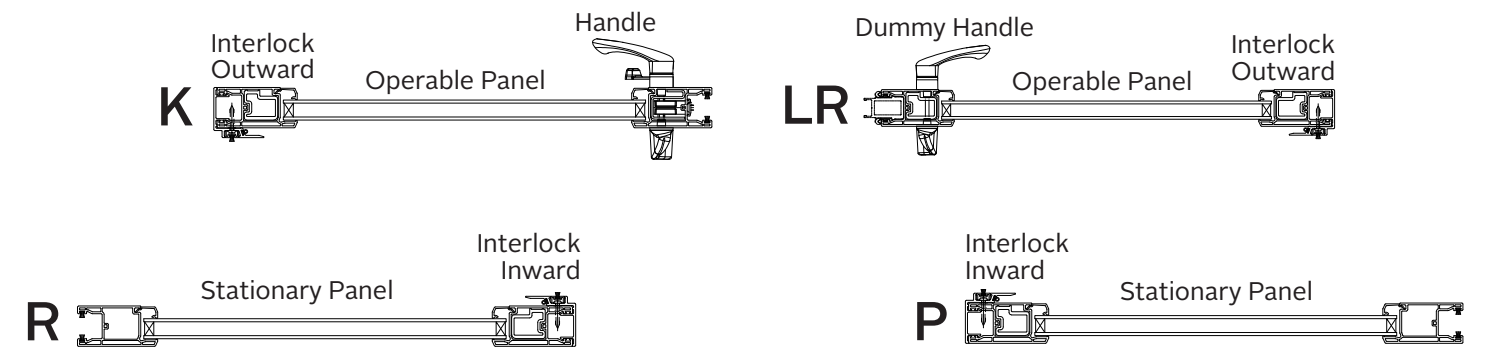
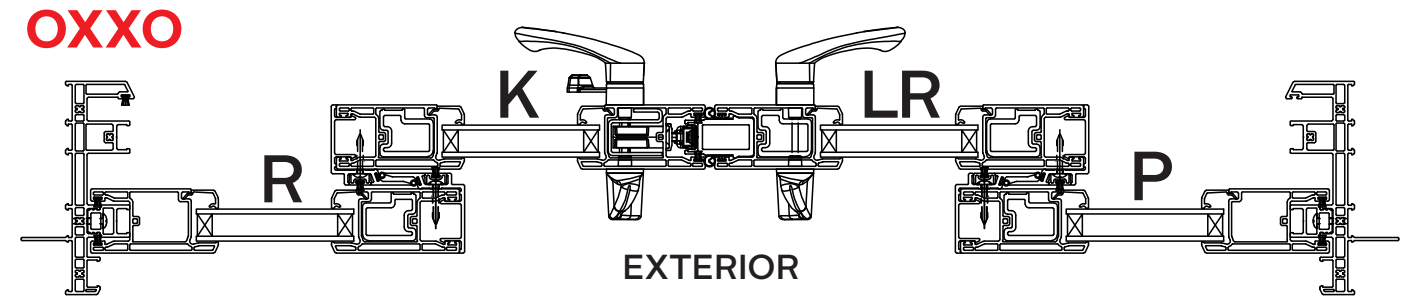
11	FS980000 Installation Screw 3-1/4"		10	16	16	16
12	M9309000 Sill Installation Clips (by width)		8 - 10	8 - 15	8 - 15	10 - 15



4 Panel Configuration with Panel Detail

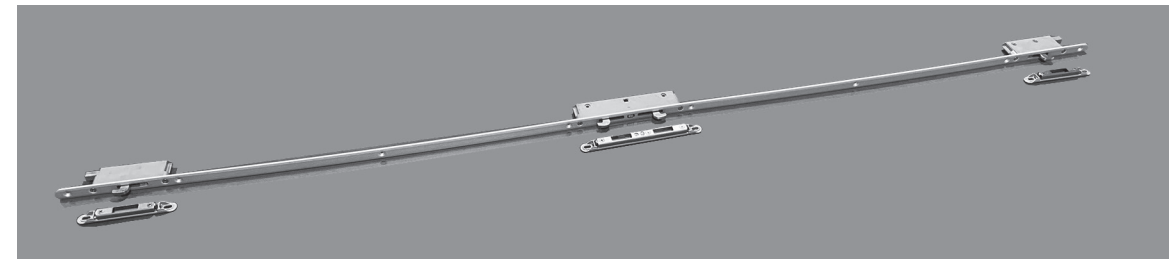
4 Panel Door

Follow the 2-panel door installation instructions. Install both fixed panels with interlock. Install threshold cover. Install operating panels. Install 2 L-shaped fixed panel brackets. Secure the door with fasteners. Fasten fixed panels to frame through pre-drilled holes. Install 4 weather strip blocks, 2 weep baffles, and 2 bump stops. Install handles. The keeper attaches to the factory installed 4-panel adapter.



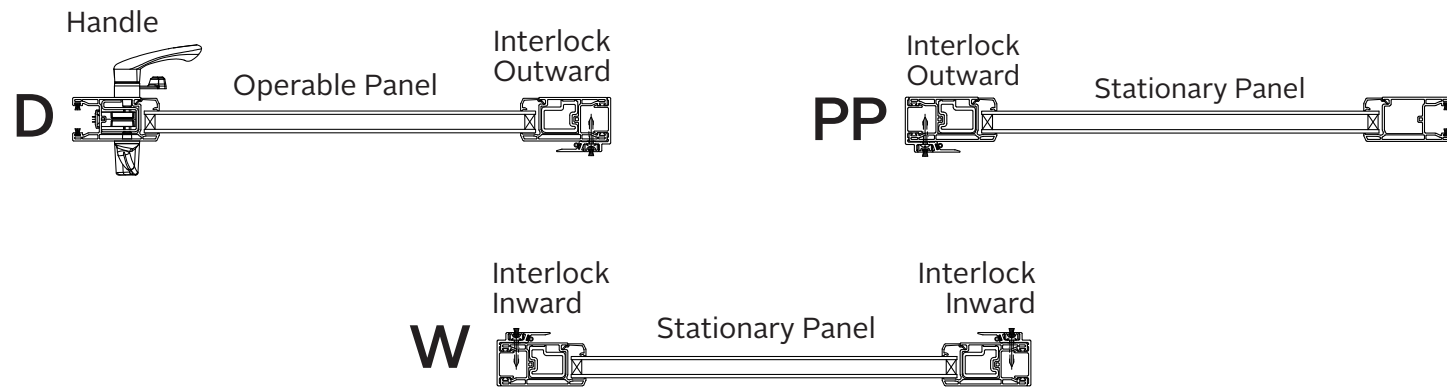
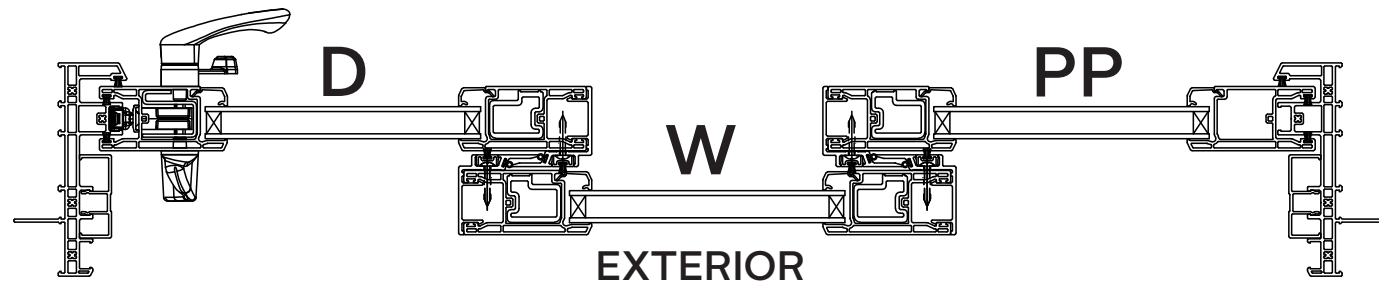
Note: Use 1-1/2" screws to install 4-panel adapter when shipped separately.

Optional 4 - Point Lock and Keeper

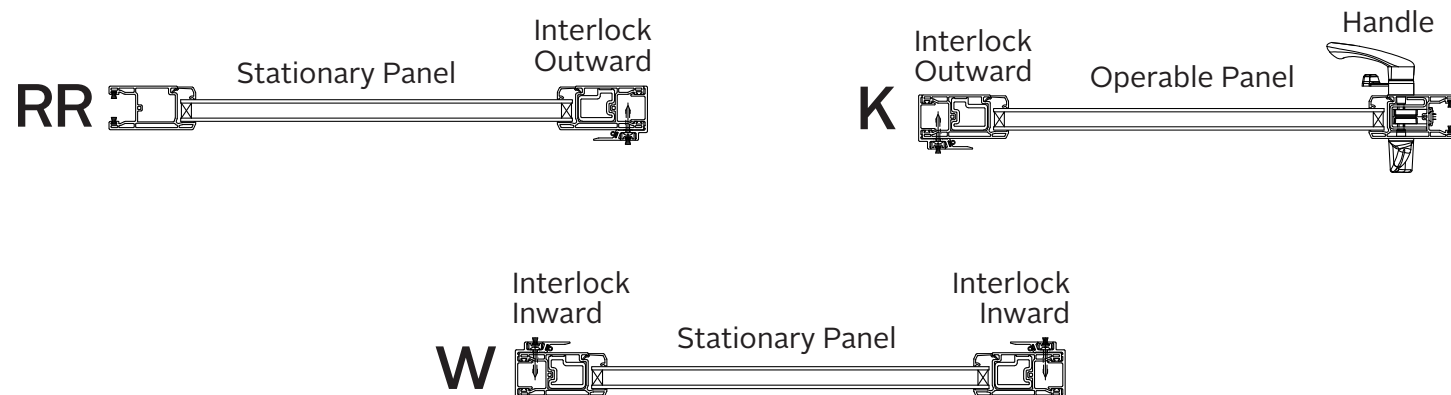
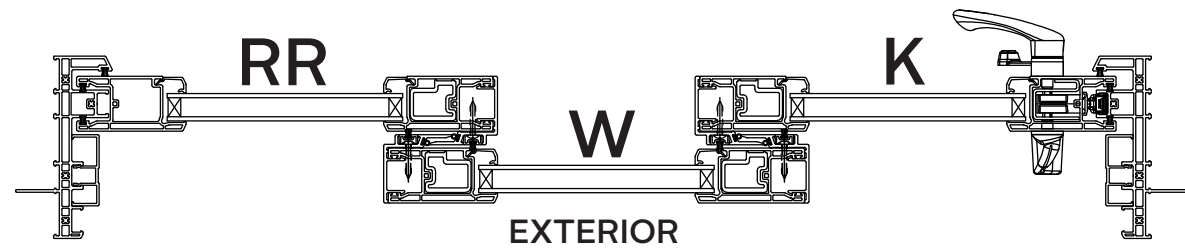


3 Panel Configurations with Panel Detail con't

XOO



OOX



Inspect and Prepare the Product for Installation

1. Inspect the door product thoroughly before beginning installation.
 - Confirm the door matches the size needed for the opening, measuring $\frac{1}{2}$ " smaller than the rough opening dimensions in width and height.
 - Confirm the door's features match the requirements of the project, order, and opening; e.g., Low-E, color, code, rating, operating direction, egress.
 - Confirm there is no damage to the product and that all necessary pieces are in place for a complete installation; e.g., locks, labels, weather stripping.

Do not proceed with installation if there are any concerns about the condition or suitability of the product for installation or compliance with project, order, code, or opening requirements.
2. Keep the jambs plumb and square with the head and sill on the door throughout installation. Keep panels closed and locked throughout installation. Avoid "crown up" or "bow down" conditions at both sill and head. Avoid "bowed out" installations by confirming equal jamb widths throughout installation.

Inspect and Prepare the Rough Opening

3. Make sure the rough opening is in good condition and sits plumb, level, and square.

See Figure 1

Confirming measures should not exceed permissive tolerances in ASTM 2112: $\frac{1}{8}$ " nominal square tolerance for units less than 20 sq.ft. or $\frac{1}{4}$ " for units more than 20 sq. ft. Framing conditions at the rough opening must be sufficient to support the door unit, framing header above, and permit appropriate integration of the door into the building's water management system. Rough openings should be $\frac{1}{2}$ " larger than door frame in width and height.
4. If the building already has a weather resistant barrier (WRB) installed, it is necessary to prepare an opening in the WRB to accept the door. Milgard recommends that the installer follow the WRB manufacturer's recommendation to prepare this opening. The installer must confirm rough opening preparation will not impact the WRB manufacturer's warranty or otherwise inhibit drainage before proceeding.

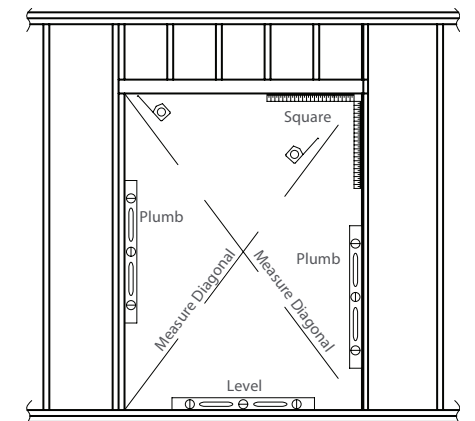


Figure 1

Use a modified "I-cut" at the WRB. **See Figure 2**

- A) Begin with a horizontal cut across the entire width of the head and sill of the rough opening.
- B) Next, in the middle of the opening, make a vertical cut from head to the sill.
- C) Fold the WRB into the opening and secure, trimming excess as necessary. **See Figure 3**
- D) Finally, cut two slits in the WRB at the head corners that angle 45 degrees away from the center of the opening. Each cut should be long enough to ensure that the WRB will fold over the entirety of the later-applied head flashing. Fold the WRB upward as shown and temporarily fasten with tape. **See Figure 4**

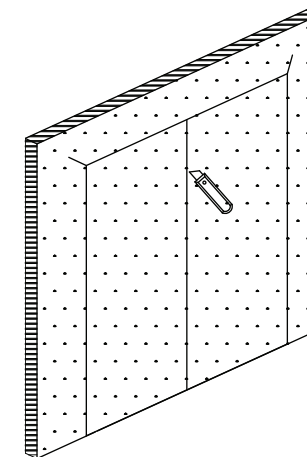


Figure 2

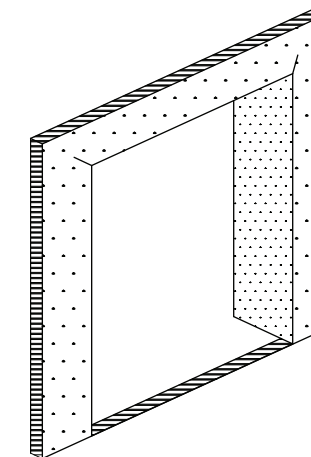


Figure 3

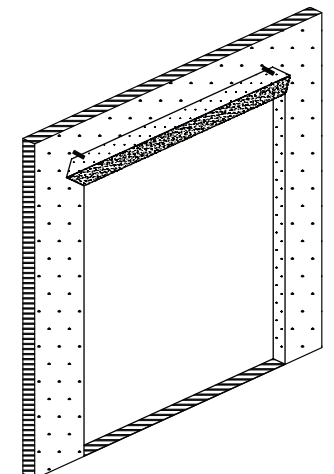


Figure 4

Inspect and Prepare the Rough Opening Cont.

- A) Milgard recommends installers use pan flashing combined with a complete interior air dam around the product. **See Figure 5**
- B) Many pan flashing systems are readily available. Choose one that best suits your construction application. Follow the instructions of the pan flashing supplier.
- C) The fenestration product, WRB, flashings, and pan flashing must be sealed to allow the system to inhibit air and water flow to the interior while allowing any incidental water to drain to the exterior of the building or to the drainage plane.
- D) The interior side of the pan flashing and the ends should be turned upward to prevent water from flowing off the flashing into the wall or other finishes. Incorporating end dams at both sides of the pan flashing is intended to prevent water from entering the walls at the lower corners of the product.

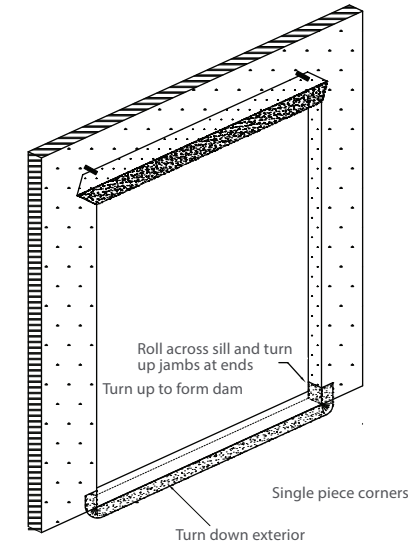


Figure 5

Door Preparation

If your mainframe was shipped assembled, remove packaging/shipping materials such as wrap, corner pads, or shipping support blocks. Inspect frame to ensure there are no concerns.

Apply Sealant, Set, and Secure the Door

- A) Apply a continuous 3/8" bead of premium grade, compatible exterior sealant to the backside of the mounting fins (interior facing) at the head and jambs of the door near the outside edge of the mounting fin. **See Figure 6**

Important: If using nail-fin at the sill with pan flashing leave at least 2 gaps that are 2" wide in the sealant bead at the sill.

Apply a 3/8" bead of premium grade, compatible exterior sealant on the backside of the sill mounting fin (interior facing), leaving at least 2 gaps that are 2" wide in the sealant bead. Do not align sill gaps with weeps. Gaps should not be more than 4" apart on large units. Add more gaps as necessary.

See Figure 7

- B) Set door into center of opening at sill first. Push up into place. Place a temporary fastener into the pre-punched mounting fin in the top and a second in the opposite bottom, no closer than 3" to each corner.

Measure the door to ensure it has remained level and square, and the frame is not bowed.

Place additional fasteners in the opposite top and bottom corners. **See Figure 8**

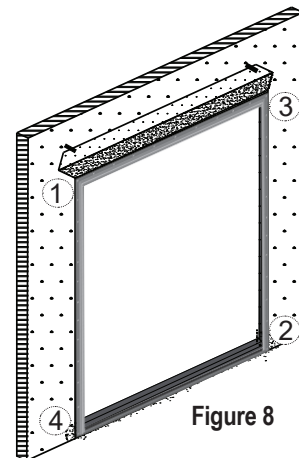


Figure 8

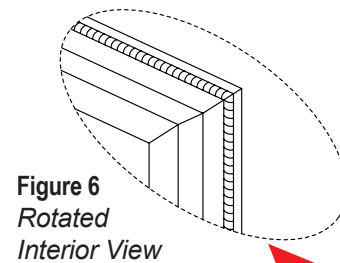


Figure 6
Rotated
Interior View

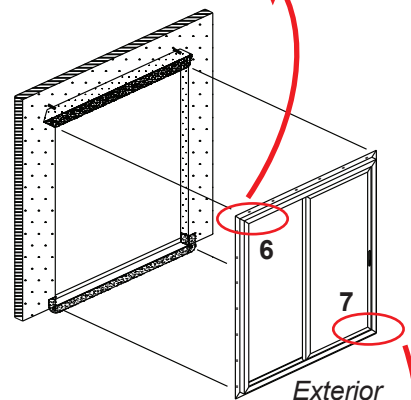


Figure 7
Rotated
Interior View

3 Panel Configurations with Panel Detail

3 Panel Door

Astragal O - XO
OX - O Astragal

Follow the 2-panel door installation instructions. Install both fixed panels. Snap the astragal onto the dead panel and then fasten the astragal to the panel using the pre-drilled holes. #8 x 2" screws and hole plugs provided.

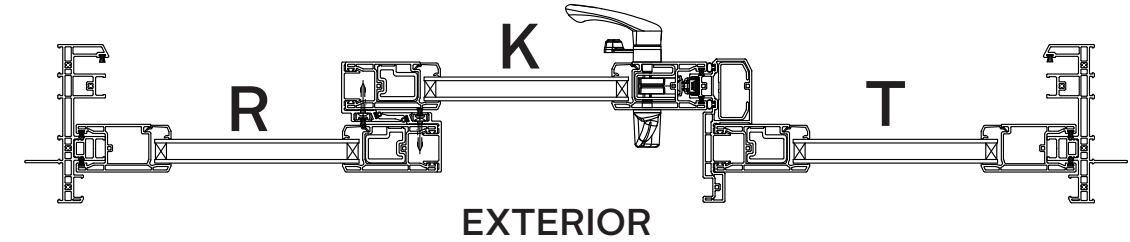
Astragal - 4 pre-drilled holes in a 6'8 door and 5 pre-drilled holes in a 8'0 door. **See Figure 27**

O - OX with interlock

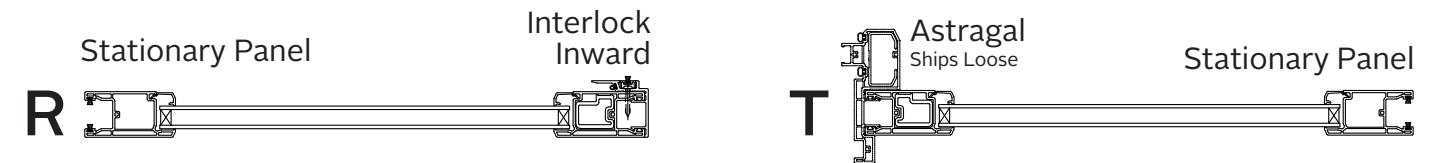
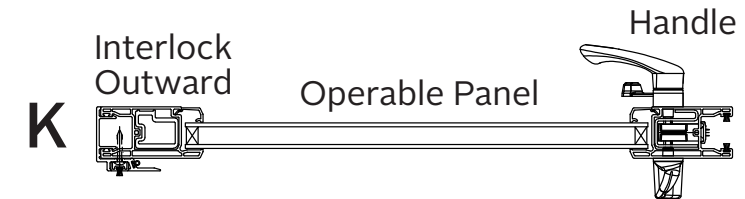
Follow the 2-panel door installation instructions. Install both fixed panels (with interlock). There will be 3 L-shaped panel brackets to install.

XO - O with interlock

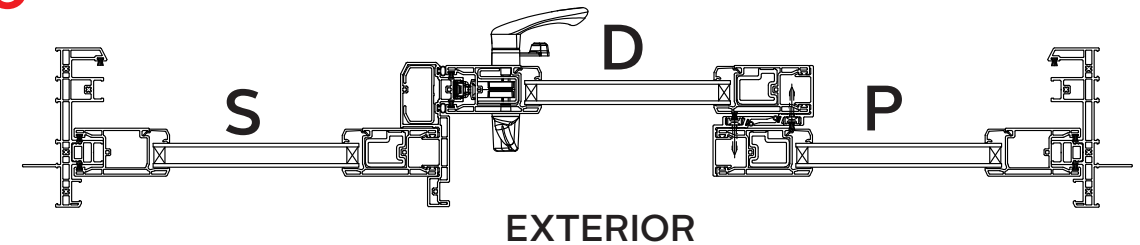
OX-O



EXTERIOR



O-XO



EXTERIOR

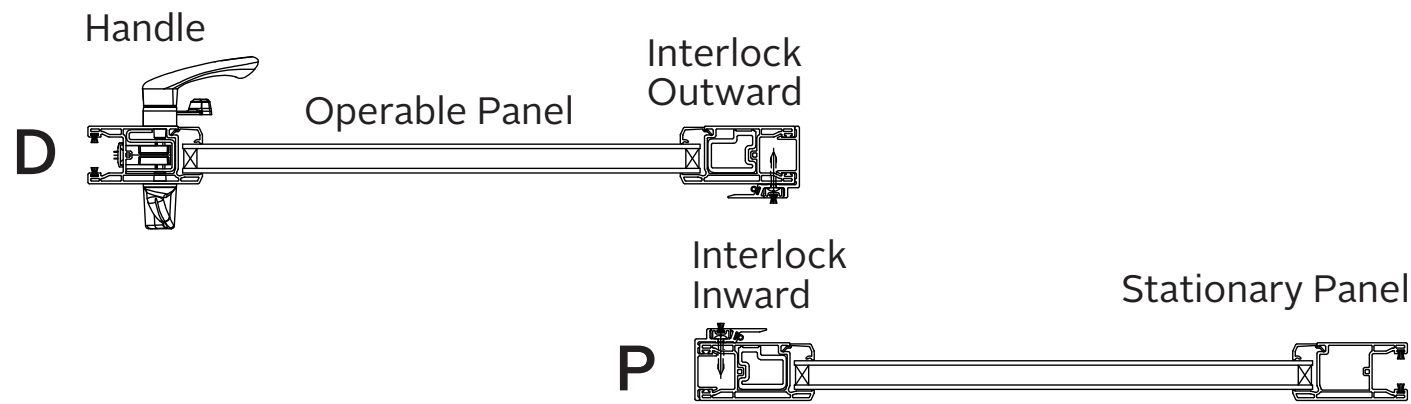
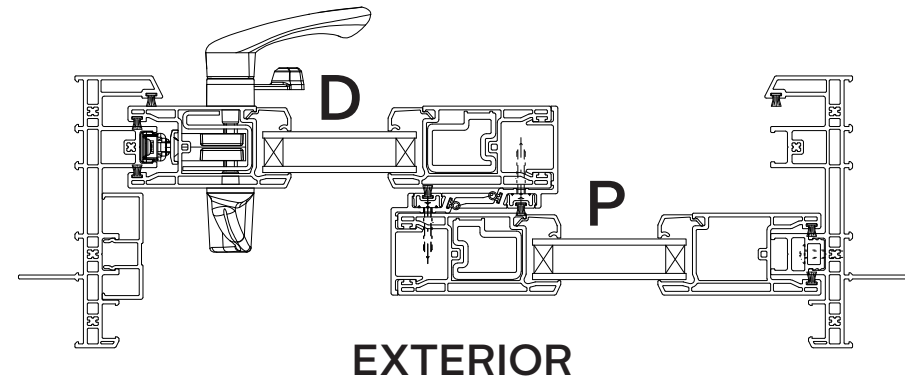


Figure 27

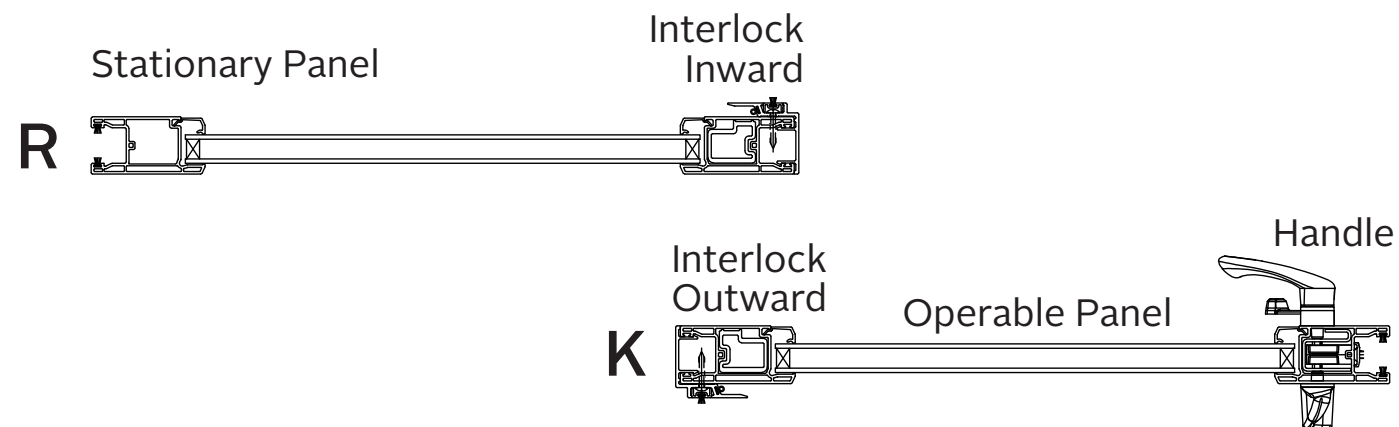
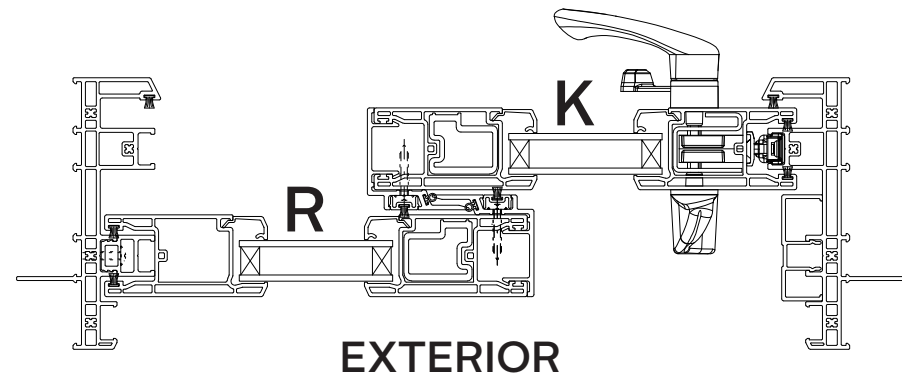


2 Panel Configurations with Panel Detail

XO



OX



Panel Installation

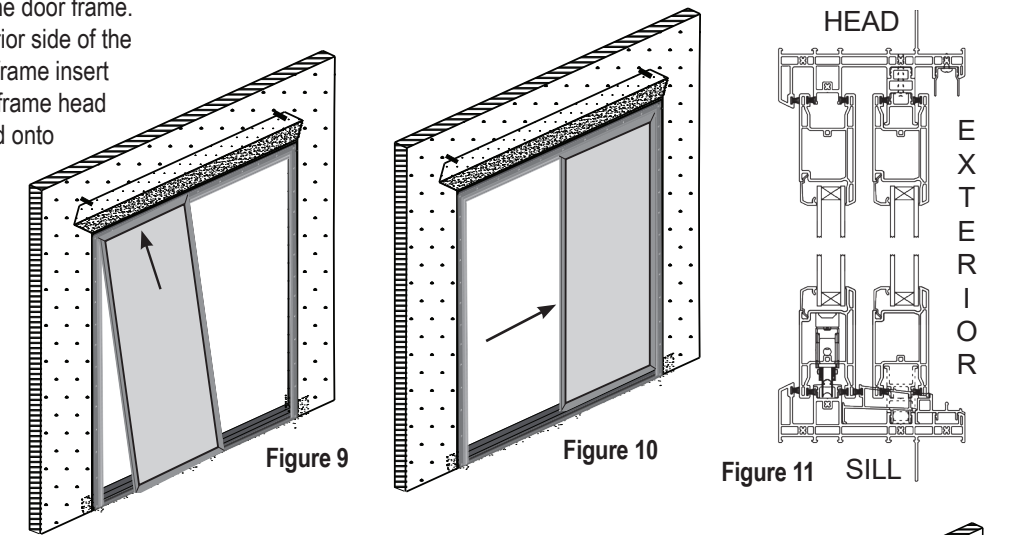
A) Install the fixed panel from the exterior of the door frame. (note: 4 pre-drilled install holes are on interior side of the fixed panel) From the operator side of the frame insert the top of fixed panel into the fixed pocket frame head and swing the bottom of the panel over and onto the fixed pocket in sill. **See Figure 9**

Slide the fixed panel over to the fixed jamb side of the door frame making sure the fixed panel is lined up to slide over and onto the aluminum panel build-up and fits completely into the jamb pocket.

See Figure 10
(Cross section - **See figure 11**)

Check door is level, plumb & square.

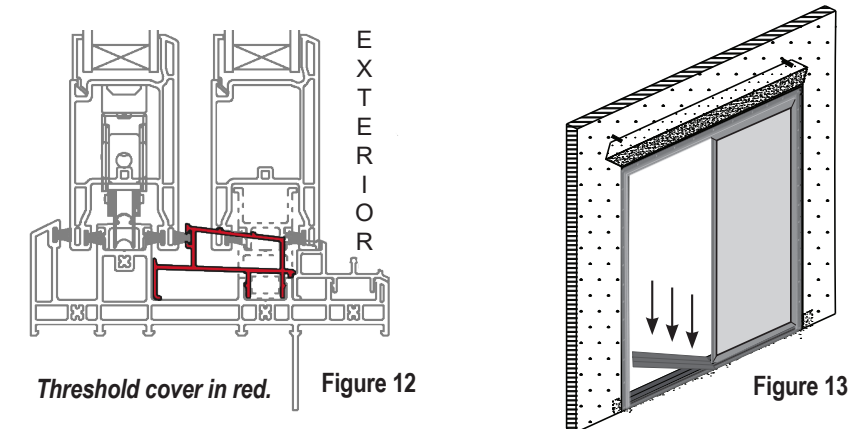
DO NOT FASTEN FIXED PANEL AT THIS TIME.



B) Install the Threshold Cover. Line up cover over sill and tap onto the sill with a rubber mallet. Start by inserting the end of threshold cover opposite of the jamb side and work your way across the sill to the jamb. Recommend using a 3-1/2" rubber mallet.

See Figure 12 and 13

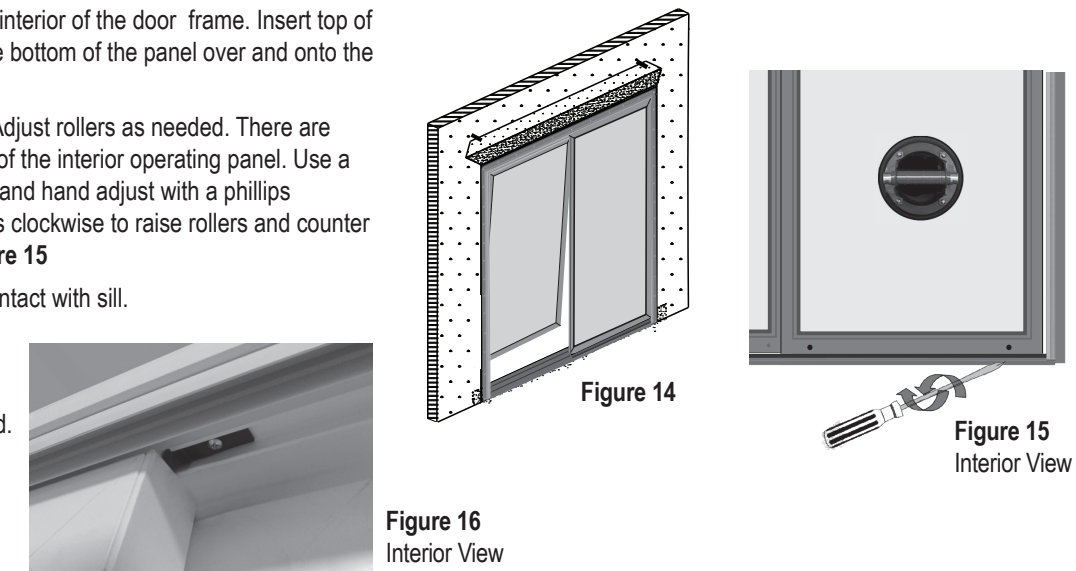
Note: Take care not to scratch vinyl during installation of the threshold cover.



C) Install the operating panel from the interior of the door frame. Insert top of panel into frame head and swing the bottom of the panel over and onto the roller track. **See Figure 14**

Check panel operation and reveal. Adjust rollers as needed. There are 2 adjustment screws on the bottom of the interior operating panel. Use a suction cup to lift weight from panel and hand adjust with a phillips screwdriver. Turn adjustment screws clockwise to raise rollers and counter clockwise to lower rollers. **See Figure 15**

Note: Weather strip should make contact with sill.



D) Install L-shaped fixed panel end cap between the interlock and frame head. **See Figure 16**

Fasteners

Note that some areas such as Florida and Texas require fastener quantities and spacing much more stringent than those employed on the physical test unit. For fastener information regarding these areas, visit www.floridabuilding.org or www.tdi.texas.gov. Search for the product series you are installing and follow the schedule shown rather than the following.

A) Do not over tighten fasteners. Do not allow fasteners to deform frame materials.

B) Beginning in one corner, secure door frame with fasteners. Maintain frame in a square, level, and plumb condition while fastening to rough opening.

C) Complete fixed panel installation. First check the door to make sure it is level, plumb & square. Then fasten the fixed panel to the door frame using the 4 pre-drilled holes on the interior fixed panel / 2 top and 2 bottom. Screws should attach into aluminum fixing clip. Screws (#8 x 1/2" self tapping) and hole plugs are provided. **See Figure 17**

Verify door is level, plumb & square.

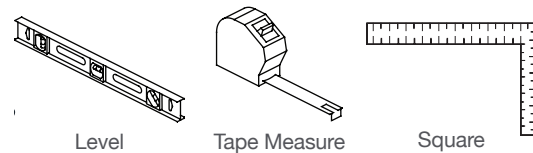
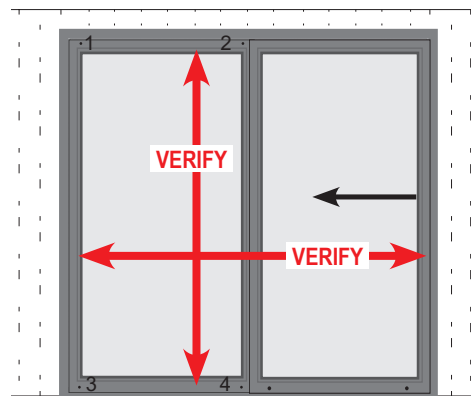


Figure 17



Interior view example 2-panel XO

D) Keeping both panels in place, secure the door with fasteners of a type appropriate for the frame and that penetrate the rough framing by a minimum of 1 1/2" or as required by code. **See Figure 18**

Take care to install fasteners straight, not angled. No fasteners should be located close to any corner. Do not distort the mounting fin with the fasteners. Unless otherwise required by code, Milgard recommends its vinyl products have fasteners applied securely into every other pre-punched slot on all sides of the door. Fastening in locations other than the mounting fin may damage the unit. Do not fasten the door with staples.

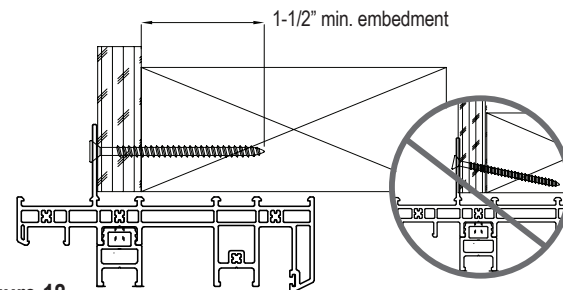


Figure 18

NOTE: Block Frame or Flange Installation
The block or flange frame parts kit includes sill installation clips. The 2" wide aluminum installation clips snap-fit to the sill and are fastened with one #8 x 1-1/2" pan head screw and located 6" from each end and 12" on center. **See Figure 19**

Figure 19

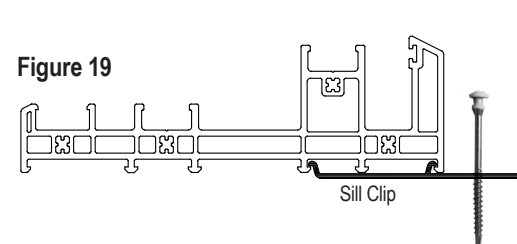
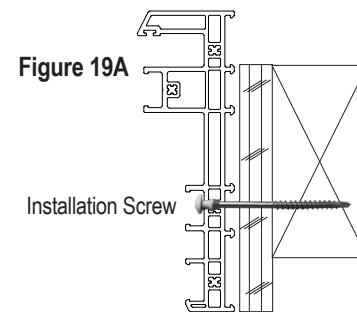


Figure 19A



Pre-drill holes into the head and jambs with a 1/8" drill bit 6" from each end and spaced 12" on center. Fasten through the frame with 3-1/4" installation screw. **See Figure 19A**

E) Install two weather strip blocks. Install the top weather strip block with 2 screws into frame head over the interlock in the channel next to the L-bracket. (1 screw from the exterior and 1 from the interior side of door) Install the bottom weather strip block with 1 screw under the interlock. **See Figure 20 and 21.**

Figure 20 (Exterior Head)



Figure 21 (Interior Sill)



1 screw required

F) Install the weep baffle with the short leg of the baffle against the fixed panel. **See Figure 22**

Note: 2 weep baffles for a 4-panel OXXO configuration.

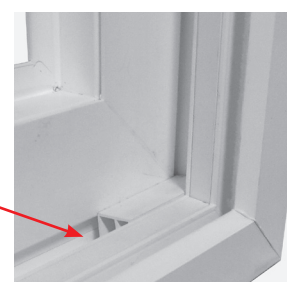


Figure 22

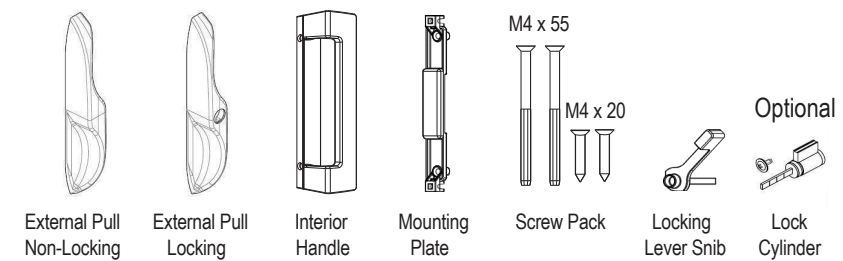
G) Install the bump stop and cover on the interior top corner of the fixed panel. Look for dimples to show screw location. Screws should attach into aluminum fixing clip. #8 x 1-1/2" self tapping screws provided. **See Figure 23**



Figure 23

Handle & Lock Installation

COMPONENTS



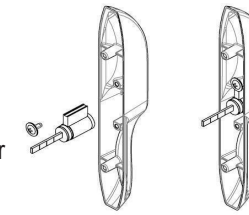
INSTALLATION

Non-Locking Handle

- Skip to step 2

Locking Handle (Optional)

1. Insert Lock Cylinder
 - Remove screw in handle
 - For left hand opening doors, as viewed from the exterior, insert the lock cylinder into the exterior handle as shown
 - Secure with screw supplied in handle
 - For right hand opening doors, flip the cylinder 180 degrees

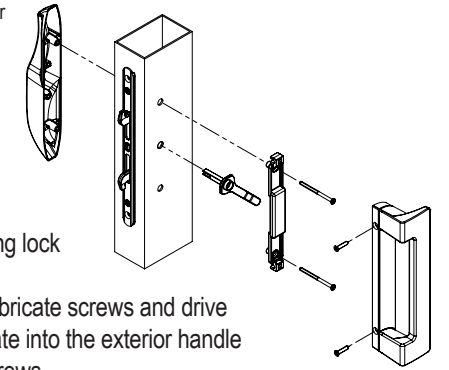


2. Select mounting screw M4 x 55



3. Install Exterior Handle

- Install mounting plate and exterior handle
- Push lock activator and confirm lock down
- Note: reverse by removing lock and flipping over
- For easier installation, lubricate screws and drive through the mounting plate into the exterior handle
- DO NOT over-tighten screws



4. Install Interior Handle

- Install the interior handle using M4 x 20 mounting screws

Adjust the Keeper

1. Use 3 adjustment screws to align keeper with the mortise lock.
2. During step 1 recessed screw should remain tightened.



3. Adjust the center recessed screw. Screw is used to lock in place the Standard 2 pt keeper, by backing out (loosening) until it locks down the keeper.

4. Needed for optional 4 pt. locks. Adjust spring loaded keeper in or out to allow smooth locking of the 4 pt. locking mechanism.

Install the Jamb Filler.

Insert the jamb filler into the operable jamb side of the door frame. Start at the head and work your way down to the sill. The notch end of the jamb filler into the head and the angle end onto the sill.



Install the Screen

Insert the top of the screen door making sure both rollers are in the screen track. Using a putty knife lift each of the two bottom rollers onto the sill screen track. Slide and adjust all 4 rollers as needed.



Integrate the Door

A) Cut two pieces of self-adhered flashing for the jambs that extend a minimum of 1" above the head mounting fin and a minimum of 1" below the sill flashing previously installed. Apply flashing over jamb mounting fins. Use a J-roller to remove bubbles or creases. **See Figure 24**

B) Cut a piece of self-adhered flashing for application at the head of the door. Flashing must extend a minimum of 1" beyond the jamb flashing that was applied in the previous step. Apply flashing over the head mounting fin. Use a J-roller to remove bubbles or creases. **See Figure 25**

C) Remove tape holding WRB flap and fold WRB downward covering the head mounting fin. Be sure the WRB does not affix to the head flashing or create a pocket at the head of the door. Seal the WRB to head flashing using WRB sealant tape to cover the entirety of the top cuts previously made. **See Figure 26**

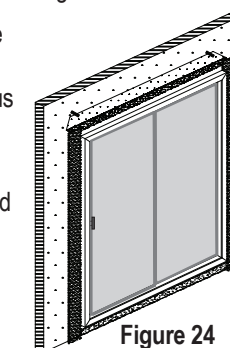


Figure 24

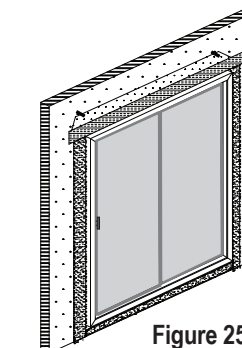


Figure 25

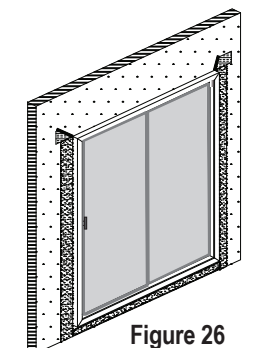


Figure 26