**NEW CONSTRUCTION PATIO DOOR INSTALLATION INSTRUCTIONS**

**WITH NAILING FLANGE**

**Slim Line, Northern Elevations & Classic French Style Patio Doors**

**Recommended materials:**
- High-quality caulking compatible with the building exterior and door surface.
- Shims
- Fasteners
  - For applications requiring DP20 or less and do not have structural mullions use #11, 2” long corrosion resistant roofing nails in every hole. Fastener must penetrate framing material by a minimum of 1-1/2”.
  - For applications requiring greater than DP20 or which have structural mullions use #8, 1-1/2” long corrosion resistant pan head wood screws in every hole and at ends of all mullions. Fastener must penetrate framing material by a minimum of 1”.
- Flexible flashing tape (width determined by application and wall thickness)
- Door and window low-expansion insulating foam or standard fiberglass insulation

**Materials included:**
- (2) #10 x 2-1/2” Phillips Pan head keeper screws
- (2) 3/8” Hole plugs

**Recommended tools:**
- Tape measure
- #6 Level
- Drit/screw gun
- Scissors & utility knife
- Screwdrivers
- (2) #10 x 2-1/2” Phillips Pan head keeper screws
- #11, 2” long corrosion resistant roofing nails in every hole. Fastener must penetrate framing material by a minimum of 1-1/2”.
- Flexible flashing tape (width determined by application and wall thickness)
- Door and window low-expansion insulating foam or standard fiberglass insulation

**PLEASE READ BEFORE BEGINNING:**

- Regional standard practices, environmental conditions and building codes may vary. Identify and follow local regulations and standard practices when they may differ or exceed the enclosed procedures. The responsibility for compliance is yours; the installer, inspector and owner(s).
- Penetrations and openings in the exterior walls shall be flashed or sealed in such a manner that it will inhibit entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711.
- Ensure sizing of the rough opening and all clearances from exterior finish systems to allow for normal materials expansion and contraction, and building shifting. Failure to do so can void Thermo-Tech’s warranty.
- It is the responsibility of the builder, installer, and subcontractors to protect the interior and exterior of windows and doors from excessive contact with harsh chemical washes, construction material contamination, dents and abrasions, and moisture. Damage to glazing, hardware, weather stripping can occur.
- Due to variables in local building codes, jurisdictions and the variety of building details these are recommended instructions only.
- The perimeter joint between window exterior and the exterior building material must conform to the siding manufacturer’s recommendations. All masonry, stucco, or synthetic stucco systems require an expansion joint around the window perimeter that must be filled with sealant compatible with the building material and window components.
- Thermo-Tech recommends the following flashing for new construction installation. The following is for the method when the Water-resistive Barrier (WRB) has been installed before the window installation.

1. **Step 1. Rough opening size**
   a. The rough opening must provide a shim space that does not exceed 3/8” on the jambs and the head of the door.
   b. Verify rough opening is plum and level. It is very important that the sill plate is level. (fig. 1 & 2)

2. **Verifying the sill condition**
   c. Verify the door will fit in the rough opening.
   d. Ensure that the sill condition provides a continuous solid level support along the entire length of the sill.

**WARNING:** This door is glazed with safety glass (tempered or laminated glass) and if broken must be replaced with safety glass. This is in accordance with state and federal laws. Ensure the slide direction is correct before installing. The slide direction cannot be changed. Practice safety!! Wear safety glasses or goggles and appropriate hearing protection when working with any of Thermo-Tech’s window and door products.

**NOTE:** When removal of existing windows/doors is necessary, proper precautions and procedures for lead paint management may be required. Visit www.epa.gov/lead for more information. Consult www.energystar.gov/products/recycle/where_do_old_windows_doors_go for recycling/reuse of old building components.
Step 2. Prepare Water-Resistant Barrier (WRB) for installation

a. Cut opening in WRB by cutting along the top and bottom and down the center. (fig. 3)
b. Fold the side flaps into the rough opening, cut excess flaps and secure, side flaps should cover the interior facing of the framing stud and secure by stapling. (fig. 4)
c. Cut two 45-degree slits a minimum of 8” from the corner of the header to create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. (fig. 4)

Step 3. Install sill flashing

Thermo-Tech recommends a flexible flashing tape for ease of use. If a flexible tape is not available use alternate #2 for sill flashing.

a. Cut the formable flashing tape at least 12” longer than the width of the rough opening sill. (fig. 5)
b. Remove the release paper, cover the horizontal sill by aligning flashing tape inside the edge of the sill and adhere into the rough opening along the sill and up the jambs a minimum of 6”. (fig. 6 & 6a)
c. Fold down on to the face of the exterior wall. Tape, staple or nail to keep the corners in place. (fig. 7)

Alternate #2

a. Cut a piece of self-adhering window flashing tape 9” tall and as long as the opening width plus at least 18”. Apply to the face of the exterior wall so 1” extends above the opening and 9” extends beyond each side of the opening (fig. 8). Cut along the corners of the rough opening and fold down onto the sill (fig. 8a).
b. Cut the second piece of self adhering flashing tape the thickness of the wall plus at least 1”. Make the tape 18” longer then the width of the opening. Align flush with the interior wall and extend the edge of the tape at least 1” past the exterior wall surface. Start the piece 9” up the side of the rough opening and run it to the bottom of the opening, to the other side of the opening and 9” up the other side. Use a utility knife to cut the sill piece on both corners of the rough opening and fold along the outside wall. (fig. 9 & 9a)
5 Step 5. Door installation and removal
NOTE: Depending on the configuration the door may be shipped with the operating panel installed in the door frame or the panel could be shipped loose. If the operating panel is installed when shipped from factory, the installer may find it more convenient to remove before installation, allowing for easier movement and placement of the door.

Operator panel installation and removal:
FOR CLASSIC FRENCH STYLE SLIDING PATIO DOOR:

a. To install the operating panel, adjust the roller assemblies to their most upward position, do this by turning the adjustment screws, located on the bottom edge of each side of the operating panel, counter clockwise with a #2 Phillips screwdriver 8” or longer.

NOTE: Hand adjust only. (fig. 12)

b. Insert the top of the panel into the top pocket of the patio door frame using a wide putty knife at the sill between the frame and rollers to assist in the installation and removal, set the panel into the bottom pocket of sill. (fig. 13)

c. To remove operating panel, lift the panel into the top pocket and bring the bottom of the panel out.

FOR SLIM LINE AND NORTHERN ELEVATIONS SLIDING PATIO DOORS:

a. To install the operation panel, adjust the roller assemblies to their most upward position, do this by turning the adjustment screws, located on the interior face of the bottom rail, counter clockwise with a #3 Phillips screwdriver.

NOTE: Hand adjust only. (fig. 14 & 14a)

b. Insert the top of the panel into the top pocket of the patio door frame, set the panel into the bottom pocket of sill. (fig. 15)

c. To remove operating panel, lift the panel into the top pocket and bring the bottom of the panel out.

WARNING: Handling this door is at a minimum a 2-person job. Ensure that the panels do not fall out of the main frame while handling the door as it may cause damage to the door and/or injury.
Step 6. Setting and fastening the door

a. Remove the blocking the door frame is resting on and position the door into the upright position. Using the same blocking material, position the bottom of the door as to not crush the bottom nail flange.

b. To set the door, center the door in the opening at the sill and tip door into the opening (fig. 16). Fasten the door in the first hole from the corner on each end of the top mounting flange. These are used to help hold the door in place while shimming it plumb and square.

c. Before caulk is allowed to set up, ensure the jambs and sill are straight, level and plumb. Check diagonal measurements of the entire frame (see fig. 2). Adjust as necessary by applying shims 4” to 6” from the sill and the header until unit is square (fig. 17). On the lock side of the frame, place two sets of shims behind the lock keeper. From the center of the lock keeper measure 4” up for one set and 4” down for the other set of shims. On the fixed panel side, place two more sets of shims evenly spaced from the shims that were placed previously (fig. 17).

NOTE: Proper shimming is extremely important. Under shimming can cause the unit to sag out of square, over shimming can result in bowed jambs or head. Both conditions can result in improper operation of door panels. It is not necessary to place shims at the head of the patio door.

d. Fasten the mounting flange to the exterior frame or sheathing. Fasten jambs first then header with the first fasteners on each starting within 6” of a corner. Fasteners should NOT be over compressed into flange. Ensure that there is no bowing in the header and/or jambs. See recommended materials section at the beginning of these instructions for fastener selection and placement.

Step 7. Installing the operator panel

a. If the operating panel is not installed, install now. Refer back to step 5 for instructions on how to install according to door style.

Step 8. Install door handle

a. Install handle set according to the instructions enclosed with the handle set.

Step 9. Adjust door and door lock keeper

a. Now adjust roller assemblies up, (clockwise) until the door slides easily. For Slim Line and Northern Elevations models see fig. 14 & 14a. For Classic French model see fig. 12.

b. Open door 1/4” from the jamb and adjust one roller until operating panel is parallel to the jamb from top to bottom. NOTE: Hand adjust only.

c. Close the door panel and rotate the thumb turn to the locked position. If the door locks, there are no further adjustments to be made. If the door does not lock properly, you will need to adjust the lock keeper either up or down and try locking again.

1. To adjust the lock keeper, remove the top and bottom screws and loosen the center screw to allow the lock keeper to move up and down. Align the lock and keeper as shown below.

2. Further adjustments can be done by adjusting the rollers to align the lock and keeper. NOTE: Hand adjust only.

3. If locking properly, use (2) #10 x 2-1/2” screws supplied and fasten through the top and bottom of the keeper and into the door jamb.

4. When done, use the hole plugs supplied to fill the adjustment screw holes in the door panel.

IMPORTANT: For 4-Lite OXXO doors, you must use 2-#10 x 2-1/4” screws supplied for fastening the keeper.
**Step 10. Finish the weather barrier tape application**

a. Cut two pieces of self-adhering weather barrier tape, add the overall height of the door plus 2" for above the door and long enough to overlap the bottom weather barrier tape. Apply the tape a minimum of 2" above the top of the door head and overlapping the bottom weather barrier tape. *(fig. 18)*

b. Cut flashing tape for the head to overlap the side jamb tape *(fig. 19)*

c. Apply caulking across the head to seal the top piece of house wrap. *(Refer to fig. 10 & fig. 20)*

d. Fold the house wrap down at the header and tape the joints.

e. For drip cap installation see *(fig. 20).*

**Step 11. Insulate and caulk the door frame**

a. Insulate the gap between the door and the rough opening on the interior using either Fiberglass or low-expanding foam insulation. Do not over pack insulation. With any type of insulation ensure the insulation fills the cavity from the nailing flange to the edge of the door frame. *(fig. 21)*

CAUTION: When using expanding foam insulation it is very important not to bow the head or side jambs of the unit.

a. Caulk the interior sill of the patio door and a minimum of 6" up the jambs of the door. *(fig. 22)*
### 12. Sliding Screen Installation and Adjustment

(Screen Keeper Kit attached to screen)

**a.** Using a #1 Phillips screwdriver, turn the adjustment screws counterclockwise to retract the rollers on the top and bottom rail of the screen, stop when you feel resistance. (fig. 23)

**b.** With the adjustment screw facing the interior lift the door into the top screen track far enough to provide clearance for the bottom of the door to swing over the bottom of the track and position it on the screen roller track. You may need to compress the bottom rollers up to properly position the rollers onto the track.

1. Adjust the bottom rollers up to provide enough clearance for the door to slide smoothly. Align the screen door to the jamb for equal sightline, adjusting the rollers up or down as needed.

2. Adjust the top rollers up until the rollers engage the top screen pocket. Turn the adjustment an additional turn. This will put enough tension on the wheels to keep the door rolling smoothly and prevent it from jumping track.

3. Once the screen door is properly adjusted, install the lock keeper.

**NOTE:** Hand adjust only.

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### Slim Line Sliding and Northern Elevations Patio Door Screen Keeper Installation:

**a.** With the screen locking mechanism in the down position, draw a line 1/8” above the actual hook on the mechanism.

**b.** Align the bottom hook of the keeper to the line drawn. The open end of the hook needs to face down and be centered in the screen channel. (fig. 24)

**c.** Fasten the keeper to the frame with screws provided.

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### Classic French Sliding Patio Door Screen Keeper Installation:

**a.** With the screen locking mechanism in the down position, draw a line 1/8” above the actual hook on the mechanism.

**b.** Align the bottom hook of the keeper to the line drawn. The open end of the hook needs to face down and be centered in the screen channel. (fig. 24)

**c.** Fasten the keeper to the frame as shown on fig. 25.
CARE AND MAINTENANCE OF YOUR PATIO DOOR

Cleaning of your New Patio Door:

• Clean all vinyl surfaces with a mild detergent and water solution and a soft cloth or brush
• Do not use abrasive cleaners or corrosive solvents
• For the more stubborn materials use a mild abrasive cleaner
• Clean sill track on a regular basis to ensure smooth easy operation
• Ensure the water drainage system or weep holes in the sill pocket are free from obstructions
• To wash interior or exterior glass use a premixed vinegar-based cleaning solution or make your own using 10% vinegar and 90% water and soft lint free towel (paper or cloth). Or you may use any other non abrasive or non corrosive glass cleaner
• To clean a screen, either remove the screen and wash it with soap and water, or use a drapery brush attachment on your vacuum cleaner
• Wash hardware using a mild detergent and soft cloth. Avoid abrasive cleaners, clothes, or brushes.

DO NOT USE A RAZOR BLADE TO SCRAPE OFF STUBBORN MATERIALS. DOING SO MAY LEAVE PERMANENT MARKS ON THE GLASS OR VINYL.

Simple adjustments you can make:

• If the door operates hard – the door adjustment could be set too low and is dragging. To adjust the door locate the access hole on each bottom edge of the active panel. Using the screwdriver specified in the Recommended tools section at the beginning of the document, turn the screw clockwise to raise the panel as required. Open door 1/4” and check vertical space between frame and door panel. Panel is properly adjusted when space is equal from top to bottom.

• If insect screen operates stiffly – check to make sure rollers are properly seated on the guide rib at the bottom. If bottom appears to be dragging, adjust the screen at the bottom adjustment screws with a #1 Phillips screwdriver.